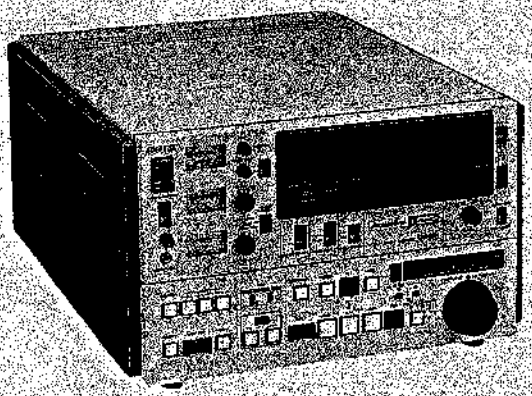
SONY

VIDEOCASSETTE RECORDER

BVU-800P



Professional U-matic H

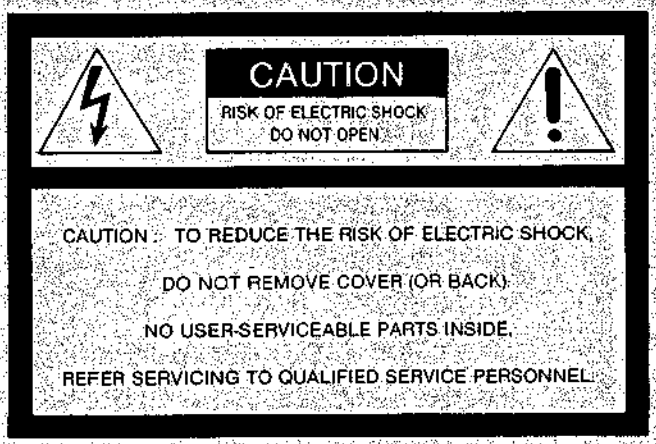
OPERATION AND MAINTENANCE MANUAL

4th Edition (Revised 16)

Serial No. 11646 and Higher

WARNING

To prevent fire or shock hazard, do not expose the set to rain or moisture.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Warning—This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interferne to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

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SECTION 1
OPERATION

1-1. FEATURES

Quick access to the edit points

Search functions providing a recognizable picture in the shuttle mode (in which the playback speed can be varied from 1/30 to 10 times normal speed in both forward and reverse) and the jog mode (in which the picture moves as the search dial moves), enable operators to locate the edit point more quickly. Also in the fast forward and rewind mode, the tape is threaded around the drum and a recognizable picture can be obtained using a time base corrector.

Edit functions

In the assembly edit mode, the video, audio channel 1 and channel 2 signals can be edited simultaneously. In the insert edit mode, the video, audio channel 1 and channel 2 signals can be edited independently. The edit material can be viewed before and after recording.

Front access

Every operation, including cassette insertion and removal, is performed from the front panel, which can be tilted to individual's preference up to 90° (6 steps).

Remote control

When editing using two BVU-800P video cassette recorders, the front panel controls of the recorder, which can be detached, can also remotely control the player.

Time code recording/playback function

The tape has a special channel, the address track, which allows the EBU time code to be recorded and played back without sacrificing an audio channel with a time code generator and reader.

ϕ^2 (Phi square)-servo loop circuit

The BVU-800P feature prevents picture disturbances ("flagging" or "whipping") at the edit point, since it ensures proper H-phase and frame phase alignment. The H-phase alignment is performed automatically.

Capstan servo

The BVU-800P incorporates a capstan servo circuit which locks onto the external signal.

Framing servo

This identifies each even and odd field in a given frame, and ensures that edits occur precisely between the end of an even field and the start of the next odd field, for clean edits.

Color framing

The BVU-800P incorporates a color framing circuit which identifies each of the four fields in a frame and aligns the fields to prevent the color flashing at the edit point.

Direct drive system with six DC motors

Six motors are mounted independently in the BVU-800P. Brushless DC motor, directly coupled with the drum assembly and newly developed brushless DC motor, is employed to the capstan assembly. Since the supply reel and the take-up reel are driven by the independent motors and the tension on the tape is precisely set by a servo system, quick access can be made.

Digital time counter

The time counter indicates the amount of tape advancement at normal speed in hours, minutes, seconds and frames by counting the CTL signals. It can also indicate the lap time of editing.

Automatic/manual video recording systems

System provides a choice of either AUTO or MANUAL video recording level control.

Audio system

The audio recording and playback levels can be adjusted separately. If necessary, a limiter can be activated so that virtually distortion-free recordings of sudden, very strong input signals can be made. The CH-1 and CH-2 audio signals can be mixed while recording.

Editing/duplicating connectors

DUB IN and DUB OUT connectors permit editing and duplicating of video signals with little degradation, even over several generations.

Time base corrector (TBC) connection

The BVU-800P is provided with an external subcarrier input connector (SC IN) and an external sync input connector (EXT SYNC IN) which allow it to be connected to a time base corrector. It is also possible to connect an external dropout compensator (from a TBC, etc.) to the BVU-800P's RF OUTPUT connector. A time base corrector such as a BVT-2000P can be employed.

Auto rewind/auto stop

Auto rewind function automatically rewinds the tape to the beginning at the end of the tape. Auto stop function automatically stops the tape at the top of the tape.

Indicator lamps

These lamps are conveniently located on the front panel, notifying the operator of the conditions of the color framing servo lock, of internal moisture condensation, time code recording/playback and of the operation of the capstan and drum servo lock.

Plug-in boards and modules

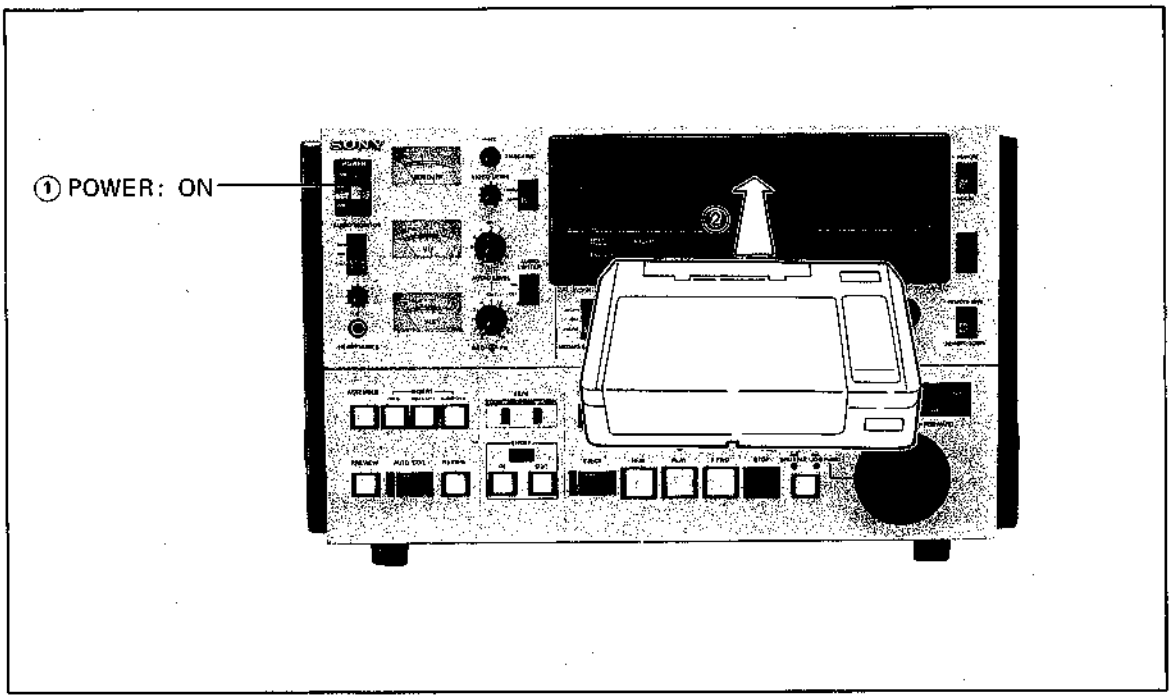
Plug-in boards and modules are designed for the ease of the service and maintenance by simply removing the top panel.

Mountable in standard 19" rack

The BVU-800P is mountable in a 19" standard rack.

1-2. CASSETTE INSERTION AND REMOVAL

TO INSERT A CASSETTE

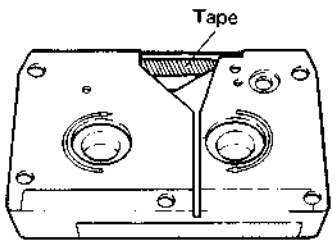


- The tape will be automatically threaded, the drum will rotate and a still picture will be displayed.

TO REMOVE A CASSETTE

Press the EJECT button while the POWER switch is set to ON.

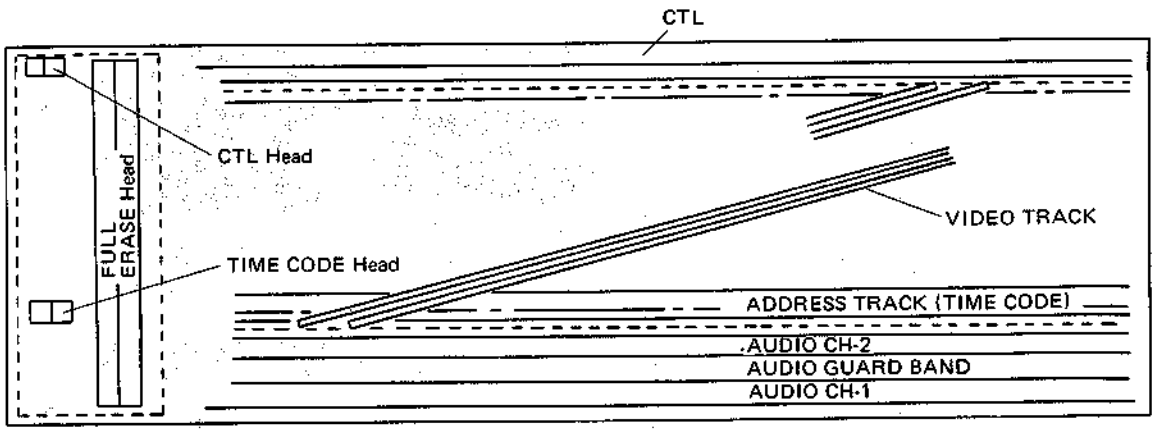
Notes:
- Use Sony U-matic (or its equivalent) type KCA-60 (60 minutes) and KCS-20 (20 minutes) video cassette tapes with this machine.
- **Remove the cassette after every use before the power is turned off.**
  If you have turned off the power with the cassette in, turn on the power (The EJECT lamp will light for a moment and then the STANDBY and the STOP lamp will light.) After the STOP lamp lights, press the EJECT button to eject the cassette.
- When over winded tape cassette is threaded, the machine automatically detects it and goes into fast forward or rewind mode in order to prevent accidental head tip damage by the leader tape. Only if a KCA cassette in which the leader strip of the tape end has accidentally been drawn out is inserted, the cassette will be automatically ejected. In this case, turn the supply reel by hand until the end-leader strip is wound onto the supply reel and re-insert the cassette.



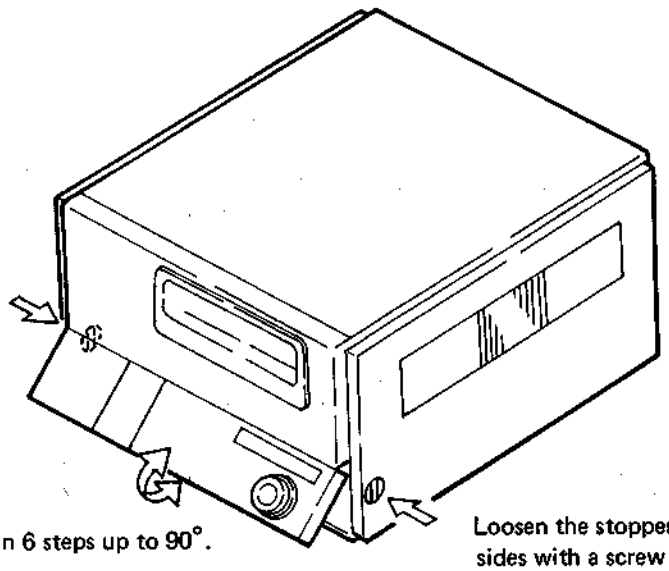
To keep a recorded program from being accidentally erased

Remove a small round red cap on the bottom of a cassette, so that the record function cannot be activated. If you wish to record on a cassette which has had the cap removed, replace the cap again. In normal use, keep this cap in place.

- The illustration below shows the tape pattern recorded using this machine with the time code generator.



CONTROL PANEL POSITIONING



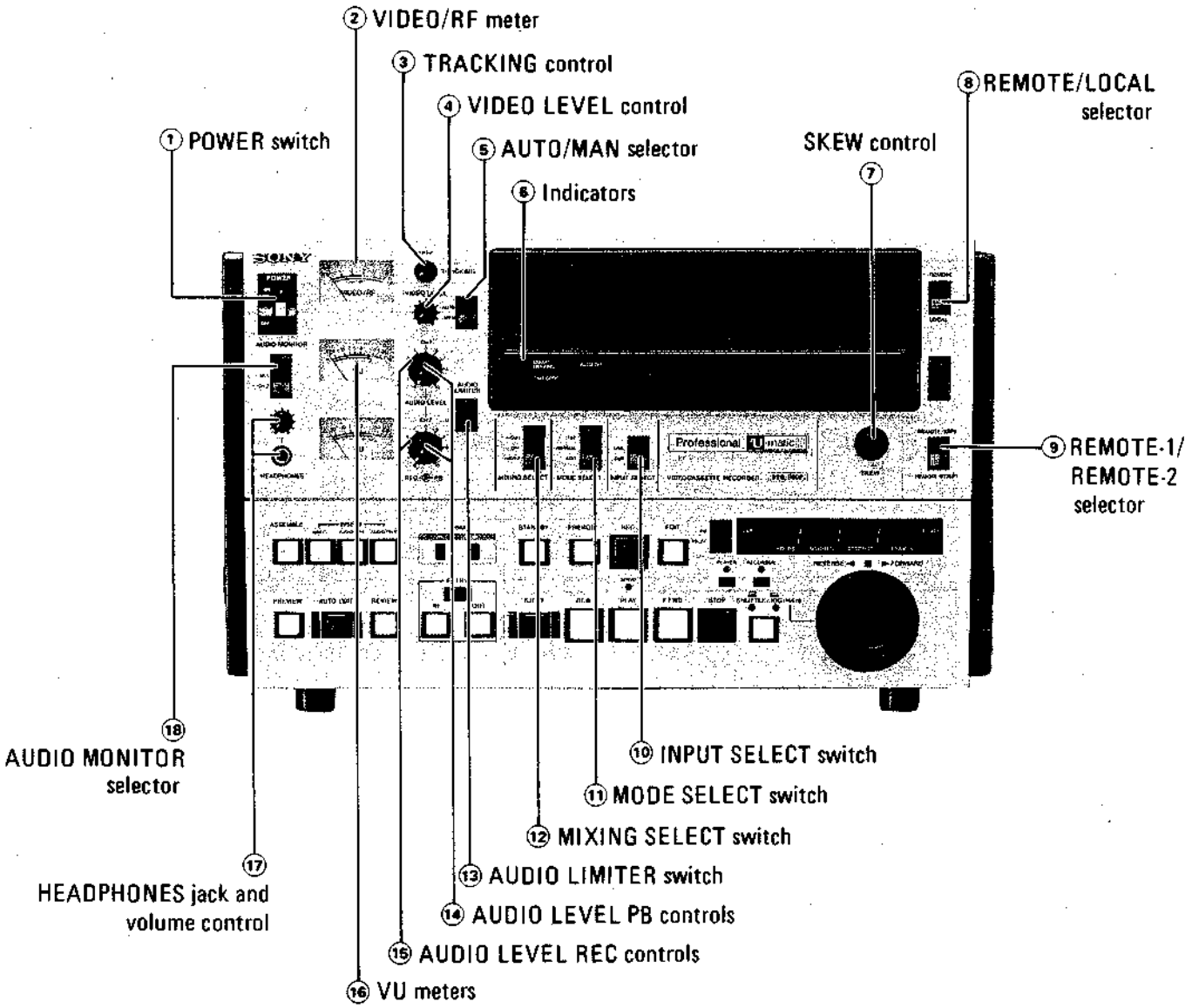
Can be tilted in 6 steps up to 90°.

Loosen the stopper screws on both sides with a screw driver.

- The control panel can be detached for full function remote control by cable. For details, see section 2.

1-3. LOCATION AND FUNCTION OF CONTROLS

FRONT PANEL



① POWER switch

Press ON to turn on the power. The meters and the counter figure 0:00:00:00 will light up.

② VIDEO/RF meter

Indicates the input video level during recording or E-to-E mode.
Indicates the playback FM signal level (tracking level) during playback.

③ TRACKING control

This control adjusts the tracking of the tape during playback.
Normally, set this control to the center FIXED position.
When a noise appears in the playback picture, turn this control to the left or right so that the VIDEO/RF meter ② needle points to the maximum value. After the playback of a tape with noise, return the control to the FIXED position.
While recording, always set this control to the FIXED position. If you adjust the control during recording, the playback picture may be unstable at this point.

④,⑤ VIDEO LEVEL (AUTO/MAN) selector and control

AUTO: The sync AGC circuit is activated and the video input level is automatically adjusted. The sync AGC circuit detects the input sync signal level and provides automatic gain control.

MAN: The input video level during recording E-to-E mode can be adjusted manually. Turn the VIDEO LEVEL control so that the pointer of the VIDEO/RF meter ② is in the blue zone.

⑥ Indicators

FRAMING: Lights when the COLOR FRAMING switch on the rear panel is set to ON and the color framing mechanism is activated.

TIME CODE: Lights when the time code signals are being recorded or played back.

AUTO OFF: Lights when the moisture condensation is detected inside the unit or while the irregular tape tension is detected.

⑦ SKEW control

This control adjusts the tension of the tape. The top of the picture may be distorted if the tape has been recorded on a unit-under abnormal tension condition. Turn this control so that you obtain the best possible picture. This control automatically returns to the FIXED position when the unit is set in the record mode.

⑧ REMOTE/LOCAL selector

REMOTE: When the unit is to be remotely controlled by another BVU-800P or an editing control. unit connected to the REMOTE connector of the unit, set this switch to REMOTE. The function buttons (except the STOP and EJECT button) do not operate.

LOCAL: When the unit is to be operated by its own function buttons or when the unit is to be used as a recorder and to remotely operate another BVU-800P connected to the REMOTE connector (9 pin) as a player.

⑨ REMOTE-1 (9 pin)/REMOTE-2 (36 pin) selector

When the REMOTE/LOCAL selector ⑧ is set to REMOTE, set this selector to the appropriate position.

REMOTE-1: When the 9-pin REMOTE connector is used.

REMOTE-2: When the 36-pin REMOTE connector is used.

⑩ VIDEO INPUT SELECT switch

Selects the video signals to be recorded.

LINE: Signals from the VIDEO IN connectors will be recorded.

DUB: Signals from the DUB connector will be recorded.

⑪ MODE SELECT switch

Selects the reference signal for servo lock.

TBC: When playing back with a TBC connected

NORMAL: When playing back without a TBC connected or recording

EDIT: When editing

Regarding the relationship between this switch and the SERVO LOCK selector on the rear panel, see the table in "MODE SELECT SWITCH AND SERVO LOCK SELECTOR".

⑫ MIXING SELECT switch

Selects the channel the mixed audio signals of CH-1 and CH-2 are to be recorded.

to CH-1: The mixed signal will be recorded on CH-1. (The audio signal of CH-2 will be recorded on CH-2.)

OFF: The audio signal of CH-1 and CH-2 will be recorded on CH-1 and CH-2, respectively.

to CH-2: The mixed signal will be recorded on CH-2. (The audio signal of CH-1 will be recorded on CH-1.)

This switch also selects the channel the mixed audio signals are to be output in the E-to-E mode.

⑬ AUDIO LIMITER switch

The limiter control circuit is actuated when this switch is set to ON. The circuit limits sudden surges of input signals to a fixed level during recording so that satisfactory recording characteristics can be obtained with low distortion.

⑭ AUDIO LEVEL PB controls (The inner control)

Adjust the output audio level of CH-1 and CH-2. When the unit is in the playback mode, turn this control so that the maximum value on the VU meter ⑯ is 0 VU.

⑮ AUDIO LEVEL REC controls (The outer control)

Adjust the input audio level of CH-1 and CH-2. When the recorder is in the E-to-E mode, turn this control so that the maximum value on the VU meter ⑯ is 0 VU.

⑯ VU meters

Indicate the input audio level when the unit is in the record or E-to-E mode, and the output audio level when the unit is in the playback mode.

⑰ HEADPHONES jack and volume control

Connect 8-ohm stereo headphones here. The audio during recording, edit-recording or playback can be monitored. The volume is adjusted with this control.

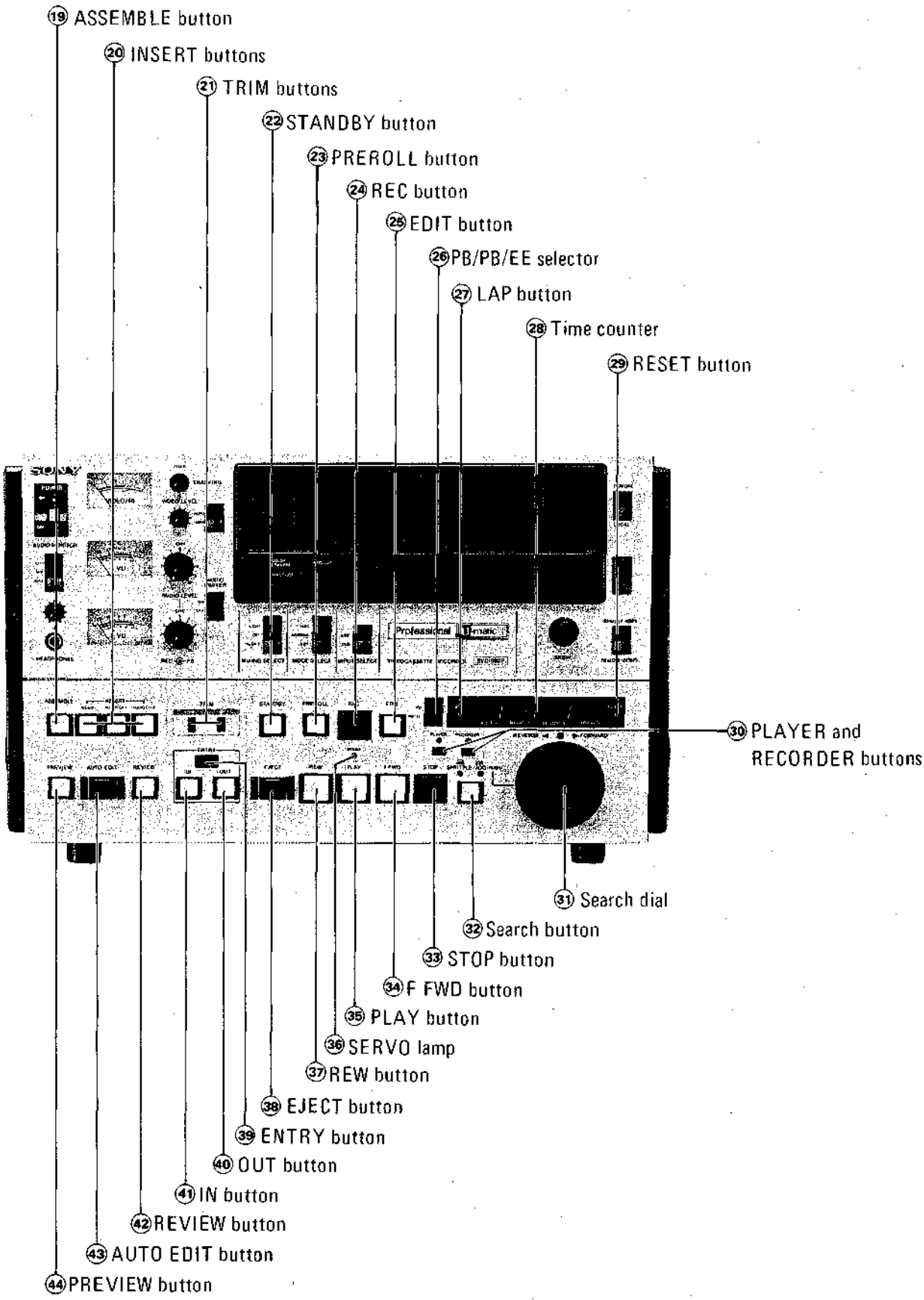
⑱ AUDIO MONITOR selector

Selects the audio output from the HEADPHONES jack ⑰ and MONITOR connectors on the rear panel.

CH-1: Audio channel 1

MIX: Both channels 1 and 2 from the HEADPHONES jack or both channels mixed from the MONITOR and AUDIO OUT MONITOR connectors.

CH-2: Audio channel 2


⑲ ASSEMBLE button
⑳ INSERT buttons
㉑ TRIM buttons
㉒ STANDBY button
㉓ PREROLL button
㉔ REC button
㉕ EDIT button
㉖ PB/PB/EE selector
㉗ LAP button
㉘ Time counter
㉙ RESET button
㉚ PLAYER and RECORDER buttons
㉛ Search dial
㉜ Search button
㉝ STOP button
㉞ F FWD button
㉟ PLAY button
㊱ SERVO lamp
㊲ REW button
㊳ EJECT button
㊴ ENTRY button
㊵ OUT button
㊶ IN button
㊷ REVIEW button
㊸ AUTO EDIT button
㊹ PREVIEW button

⑲ ASSEMBLE button

Press this button to set the unit in the assembly edit mode. Pressing the button turns it on and pressing it again turns it off.

⑳ INSERT buttons

Selects the input signal for insert editing. Pressing the button turns it on and pressing it again turns it off.

㉑ TRIM buttons

The memorized edit-in and edit-out points can be moved any number of frames. While pressing the IN or OUT button, press the appropriate button.

㉒ STANDBY button

While the power is on, the STANDBY lamp is lit indicating that the drum rotates and the unit is in the standby mode.
When this button is pressed during the stop mode, the drum will stop rotating and the tension on the tape is slackened, which protects the video head from being clogged. To put the unit in the stop mode or in other function mode, press the STANDBY button or the desired function button (except the STOP button).

㉓ PREROLL button

Press this button to run the tape at high speed to a preroll point 10 seconds (or 5 seconds depending on the setting of the preroll time switch) prior to the edit-in point.
If the edit-in point has not been entered and this button is pressed, the point where the button has been pressed will be entered as the edit-in point and the preroll will proceed.

㉔ REC (record) button

Press this button and the PLAY button simultaneously to set the unit in the record mode.
While this button is pressed in the play, search, fast forward or rewind mode, the E-to-E mode video and audio can be monitored. Release the button to set the unit in the same mode as before the button was pressed. In the stop mode, the E-to-E mode picture and audio are kept monitored when the button is pressed and released. Press the STOP button to set the unit in the previous mode.

㉕ EDIT button

Press this button and the PLAY button simultaneously for manual editing.
While this button is pressed in the play, search, fast forward or rewind mode, the selected E-to-E mode video and audio can be monitored. Release the button to set the unit in the same mode as before the button was pressed. In the stop mode, the selected E-to-E mode picture and audio are kept monitored when the button is pressed and released Press the STOP button to set the unit in the previous mode.

㉖ PB/PB/EE selector

Selects the video and audio to be monitored.
For details, see the table on page 1-14.

㉗ LAP button

When this button is pressed, the lap time will be indicated by the time counter.

㉘ Time counter

Indicates how much the tape has advanced at normal speed in hours, minutes, seconds and frames.

㉙ RESET button

Press this button to set the counter number to "0:00:00:00". The memorized counter numbers of edit-in and edit-out points are cleared when this button is pressed.

㉚ PLAYER and RECORDER buttons

When two BVU-800Ps are connected for editing, the PLAYER button on the recorder is used to remotely control the player.

RECORDER button: Press this button to use the function buttons on the recorder in the usual way.

PLAYER button: Press this button so that the standby, eject, fast forward, play, rewind, stop, shuttle, jog, preroll, entry in/out, trim and time counter functions of the player can be remotely controlled with the buttons on the recorder.

㉛ Search dial

This dial is used to quickly locate the desired editing points.
Pressing the dial in sets the unit in the jog mode and pressing it again sets the unit in the shuttle mode. The appropriate lamp lights.

SHUTTLE: Turn the dial to the right or left. The tape speed can be varied 1/30, 1/10, 1/5, 1/2, 1, 2, 5 or 10 times normal in either direction.

JOG: Rotate the dial to the right or left. The tape moves in the direction and at the speed of rotation, from 0 to 1 normal speed. When you stop rotating the dial, a still picture will be obtained.

- When the power is turned on, be sure to set the dial to the ■ position once before it is used.

㉜ Search button

Press this button to set the unit in the search mode.

㉝ STOP button

Press this button to set the unit in the stop mode. The reel motor stops, the pinch roller is released, the drum rotates and the tape is threaded.

㉞ F FWD (fast forward) button

Press this button to advance the tape rapidly.

㉟ PLAY button

Press this button to play back the tape.
Press this button and the REC button simultaneously to record.
During playback press this button and the EDIT button simultaneously to edit manually.
During manual recording, press this button to stop the recording.

㊱ SERVO lamp

This lamp lights when the drum servo and the capstan servo are locked.

㊲ REW (rewind) button

Press this button to rewind the tape.

㊳ EJECT button

When this button is pressed, the tape is unthreaded and the cassette is ejected. The counter is reset to "0:00:00:00" when the time counter functions in the CTL mode.

- Be sure to eject the cassette after every use before the power is turned off.

㊴ ENTRY button

Press this button and the IN or OUT button simultaneously to enter the edit-in or edit-out point.

㊵ OUT button

When this button and the ENTRY button are pressed simultaneously, the edit-out point will be entered.
When this button is pressed, the edit-out point frame number will be displayed on the time counter.

㊶ IN button

When this button and the ENTRY button are pressed simultaneously, the edit-in point will be entered.
When this button is pressed, the edit-in point frame number will be displayed on the time counter.

㊷ REVIEW button

Press this button to review the edit-recorded picture and sound.

㊸ AUTO EDIT buttton

Press this button for automatic edit-recording.

㊹ PREVIEW button

Press this button for an edit-recording rehearsal. The edited tape to be recorded can be monitored prior to the actual recording.

⑱ REMOTE-1 connector (9-pin)

Connect another BVU-800P for editing with the 9-pin remote control cable (supplied).

⑲ HOURS METER

This meter operates while the tape is running to record the total elapsed time the unit is in the record, playback, editing, search, fast forward or rewind mode to a maximum of 1000 hours.

⑳ VOLTAGE SELECT

Adjustable to 100, 120, 220 or 240 Vac

㉑ AC IN connector

Connect to a wall outlet with the ac power cord supplied.

㉒ TBC connector

A time base corrector can be connected.

㉓ TIME CODE OUT connector (RCA phono)

The played back time code signal is supplied from this connector. A time code reader can be connected. In the record or E-to-E mode, the time code signal from the TIME CODE IN connector ㉔ will be supplied.

㉔ TIME CODE IN connector (RCA phono)

This is to record the time codes on the tape track. Connect a time code generator.

1-4. RECORDING

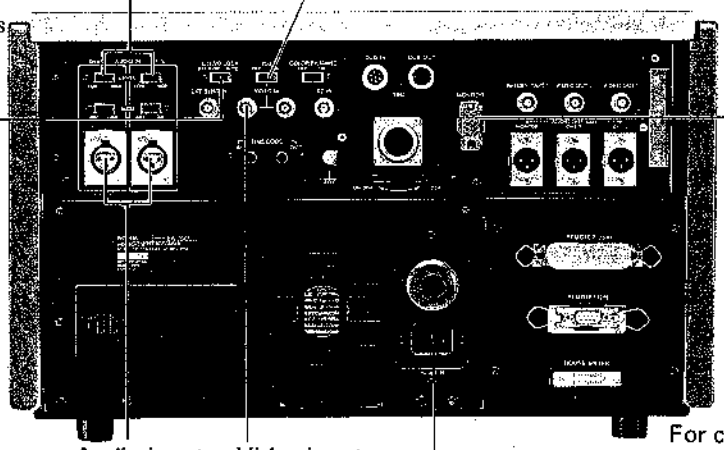
1. PREPARATIONS

Set the controls to the appropriate position as follows.

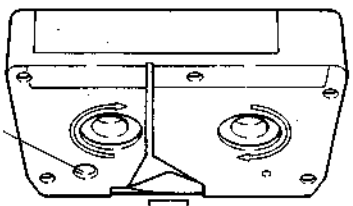
AUDIO IN LEVEL: LOW or HIGH
LOW: –60 dB, 3 k-ohms (for mic connection)
HIGH: +4 dB, 10 k-ohms/600 ohms (for line use)
When this switch is set to this position, set the 600 Ω switch as follows.
ON: 600 ohms
OFF: 10 k-ohms

75 Ω ON/OFF: ON
When a looping output is employed, set this switch to OFF.

SERVO LOCK:
AUTO:
Normal position
EXT SYNC:
For external sync
(See page 1-15.)



For connections, see page 1-48.



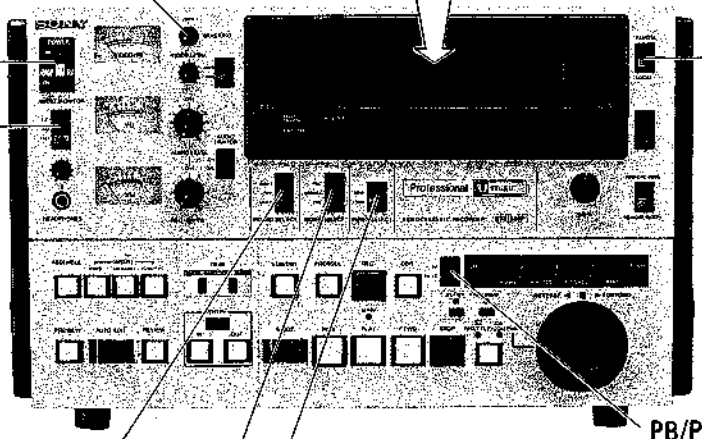
Insert a video cassette

The red cap should be placed.

TRACKING: FIXED

POWER: ON

AUDIO MONITOR:
MIX, normally



REMOTE/LOCAL:
LOCAL

Front panel

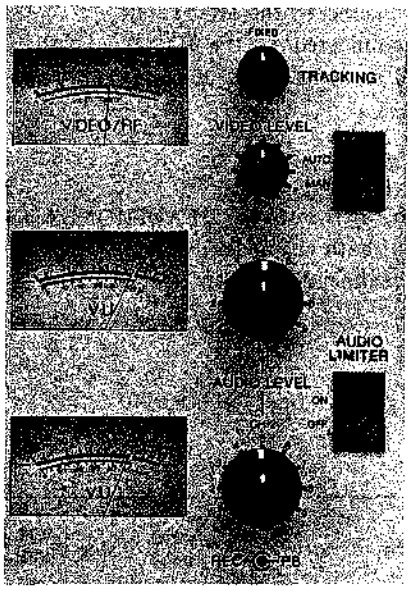
PB/PB/EE: PB/EE, normally

MIXING SELECT: OFF, normally

MODE SELECT: NORMAL

INPUT SELECT: LINE or DUB
LINE: The video signal of the unit connected to the VIDEO IN connector will be recorded.
DUB: The video signal of the player connected to the DUB IN connector will be recorded.

2. VIDEO AND AUDIO LEVEL ADJUSTMENTS



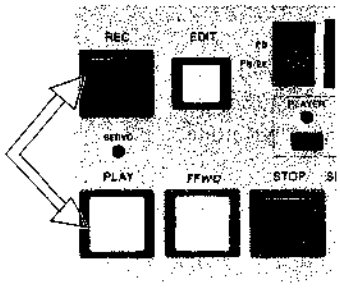
Video level

To adjust the video level automatically, set the VIDEO LEVEL switch to AUTO.
To adjust the video level manually, set the VIDEO LEVEL switch to MAN and turn the VIDEO LEVEL control so that the meter's pointer is within the blue zone.

Audio level

Set the AUDIO LIMITER switch to OFF. Adjust the AUDIO LEVEL controls for channels 1 and 2 so that AUDIO LEVEL meters read approximately zero at the maximum deflection.
If you want to record audio using the limiter, set the AUDIO LIMITER switch to ON.

3. TO START RECORDING



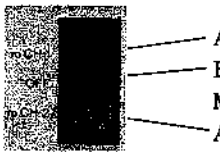
Press the REC and PLAY buttons simultaneously.
It takes several seconds for the drum and capstan servo to lock. The servo lamp will light.
The lamps lit: REC, PLAY, STANDBY

To stop recording, press the STOP button.
The lamps lit: STOP, STANDBY
If the tape reaches the end, it will automatically rewind to the beginning and stop.

TO MONITOR VIDEO AND AUDIO SIGNALS

Video signals: Can be monitored with a monitor connected to the VIDEO OUT connector or the MONITOR connector.

Audio signals: Can be monitored with audio systems connected to the AUDIO MONITOR connector, with a monitor connected to the MONITOR connector, or with a stereo headphones connected to the HEADPHONES jack. The signals to be monitored can be selected by using the AUDIO MONITOR selector as follows.



Audio channel 1
Both channels from the HEADPHONES jack
Mixed of both channels from the MONITOR connectors
Audio channel 2

SETTING THE PB/PB/EE SELECTOR

This selector selects the picture and audio on the monitor.

Mode / Selector position	Cassette up	Threading or unthreading	Play	Record	Edit	Search	Fast forward or rewind	Stop	When the standby mode is turned off
PB/EE	EE	EE	PB	EE	EE	PB	EE	EE	EE
PB	EE	EE	PB	EE	EE	PB	PB	PB	PB

While the REC button is pressed in the play, search, fast forward or rewind mode, the E-to-E mode picture and audio can be monitored. While the EDIT button is pressed, the E-to-E mode picture and audio selected by the ASSEMBLE or INSERT buttons can be monitored. When the button is released, the unit will set to the prior condition.

In the stop mode, the E-to-E mode picture and audio are kept monitored when the REC or EDIT button is pressed and released. Press the STOP button to set the unit into the prior condition or press the proper button to set the unit into another mode.

MODE SELECT SWITCH AND SERVO LOCK SELECTOR

These switches select the video signal from the VIDEO IN or DUB IN connector, the external signal from EXT SYNC IN connector or the internal sync signal as the reference signal for servo lock.

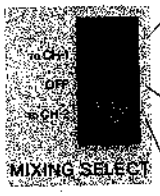
SERVO LOCK selector position		AUTO			EXT SYNC	
VTR operating mode		Recording	Playback, E-E		Recording	Playback, E-E
MODE SELECT switch position		EDIT, NORMAL, TBC	EDIT	NORMAL TBC	EDIT, NORMAL, TBC	
Input signal to VIDEO IN or DUB IN	Input signal to EXT SYNC IN					
Yes	Yes	VIDEO	VIDEO (EXT SYNC)*	EXT SYNC IN (VIDEO)**	EXT SYNC IN	
Yes	No	VIDEO	VIDEO (Internal sync signal)*		VIDEO	VIDEO (Internal sync signal)*
No	Yes		EXT SYNC IN			
No	No		Internal sync signal			

* When the player is in the mode other than playback during editing using the BVE-500, BVE-500ACE, BVE-800 or two BVU-800Ps, the recorder's servo reference signal is as indicated in parentheses.

** On the model with the serial number 11491 and higher, the recorder's reference signal will be VIDEO when one of the ASSEMBLE or INSERT buttons is pressed (the button is lit), and the VTR is in the PLAY mode or the EDIT button is lit.

MIXING THE AUDIO SIGNALS

The audio signals of channel 1 and channel 2 can be mixed during recording. It is also possible to record the mixed signal on either channel 1 or channel 2 by setting the MIXING SELECT switch as follows:

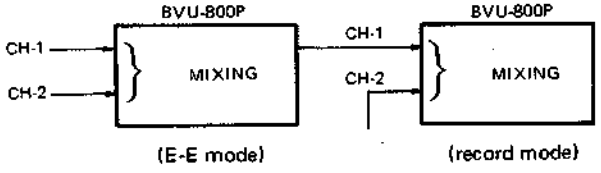


The mixed signal will be recorded on channel 1.
(The audio signal of channel 2 will be recorded on channel 2.)

The audio signal of channel 1 and 2 will be recorded on the respective channels.

The mixed signal will be recorded on channel 2.
(The audio signal of channel 1 will be recorded on channel 1.)

- The mixed audio input signals of channels 1 and 2 will be mixed recorded at the same level.
- When two BVU-800Ps are connected, three of audio signals can be mixed.



TAPE PROTECTION

If the unit stays in the stop mode for more than 8 minutes, the unit will automatically turn off the standby mode (the drum stops rotating) to protect the tape and the video heads. If the tape is stopped in the search mode for more than 8 minutes, the tape will advance in forward direction at the 1/30 normal speed. To set the unit into the desired mode (except the stop mode) press the appropriate button. To set the unit into the stop mode, press the STANDBY button.

MOISTURE CONDENSATION

If the moisture is condensed, the drum and the capstan motors stop and the cassette will be ejected. The AUTO OFF lamp on the front panel will light. Then the drum will begin rotating again. To operate the machine, wait until the AUTO OFF lamp will go off and about ten minutes will have passed.

TIME CODE RECORDING

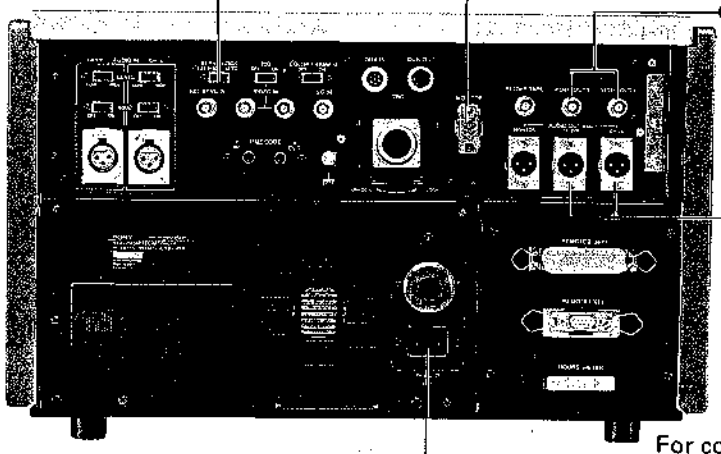
For simultaneous recording of time code, connect an EBU time code generator to the TIME CODE IN connector. No adjustment is necessary, as the time code is recorded with the limiter.
During recording, the TIME CODE lamp lights.

1-5. PLAYBACK

1. PREPARATION

Set the controls as follows.

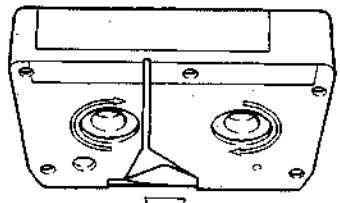
SERVO LOCK:
AUTO:
Normal position
EXT SYNC:
For external sync
(See page 1-15.)



Rear panel

For connections, see page 1-49.

Insert a recorded video cassette.

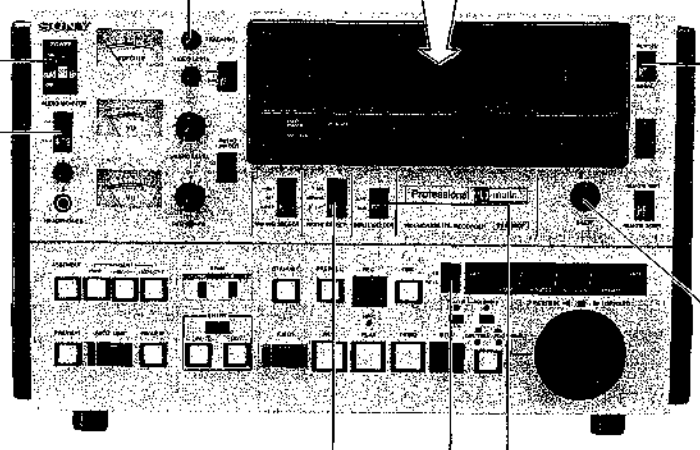


TRACKING: FIXED

POWER: ON

AUDIO MONITOR:
MIX, normally

REMOTE/LOCAL:
LOCAL



SKEW: FIXED

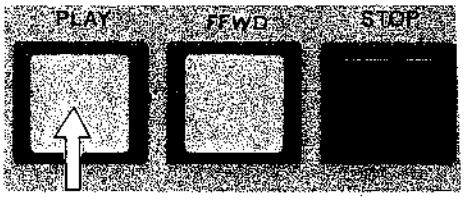
Front panel

MODE SELECT: NORMAL, normally

PB/PB/EE: PB, normally

INPUT SELECT:
When the video input signal is selected as a reference signal, set this switch to the position which indicates where the signal is connected.

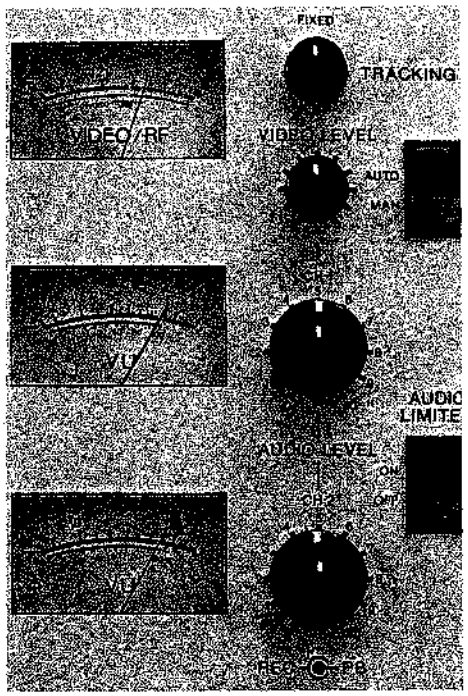
2. TO START PLAYBACK



Press the **PLAY** button.
It will take several seconds for the drum and the capstan servo to lock. The servo lamp will light when the servo is locked.
The lamps lit: PLAY, STANDBY

To stop playback, press the STOP button.
The lamps lit: STOP, STANDBY
If the tape reaches the end, it will automatically rewind to the beginning and stop.

3. ADJUSTMENTS



TRACKING AND SKEW ADJUSTMENTS

Normally, set these controls at the FIXED position.

If a noise appears on the playback picture,
Turn the TRACKING control to left or right so that the pointer of the VIDEO/RF meter points as far to the right as possible.

- When the playback of the particular tape is finished, return the control to the FIXED position.

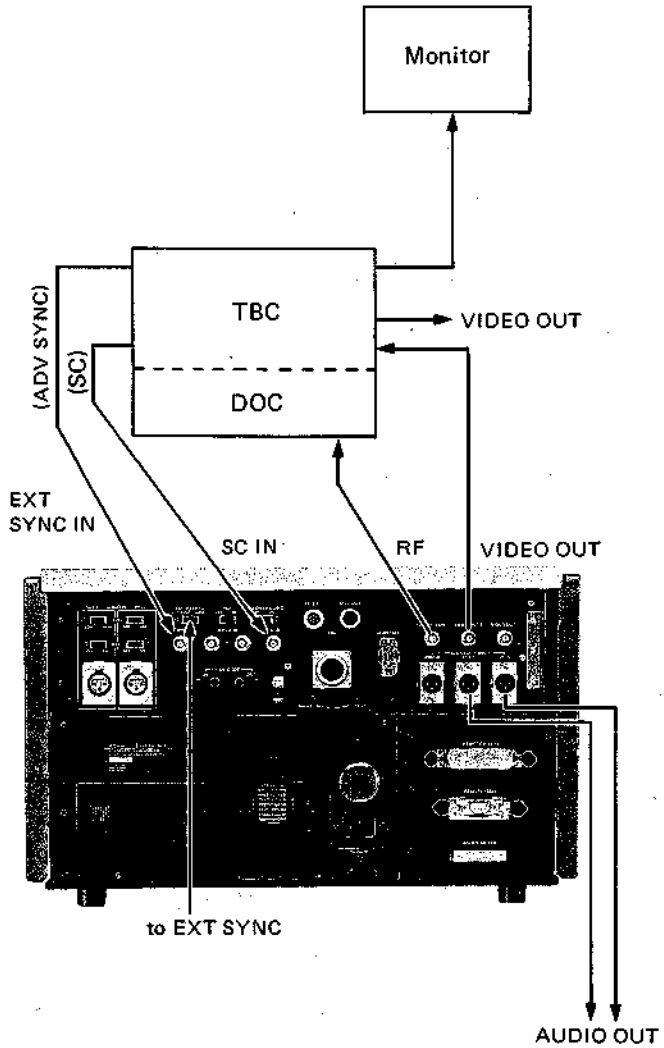
If the top of the picture is distorted,
Turn the SKEW control to the position which gives the best possible picture.

VIDEO AND AUDIO LEVEL ADJUSTMENTS

Video level
The video level is adjusted automatically.

Audio level
During playback, adjust the AUDIO LEVEL controls for channels 1 and 2 so that the AUDIO LEVEL meters read approximately zero at the maximum deflection.

PLAYBACK WITH A TIME BASE CORRECTOR



Set the MODE SELECT switch on the front panel to TBC.

TO MONITOR VIDEO AND AUDIO SIGNALS

See page 1-14.

AUTOMATIC RELEASE

See page 1-15.

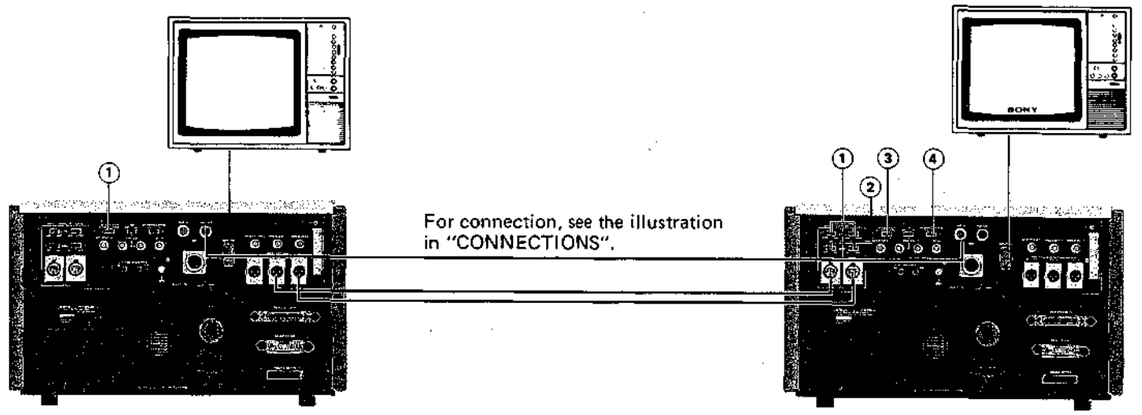
TIME CODE PLAYBACK

For reading out the time code, connect an EBU time code reader to the TIME CODE OUT connector. During playback, the TIME CODE lamp lights.

1-6. EDITING

1-6-1. Editing with Two BVU-800P Video Cassette Recorders

1. PREPARATIONS

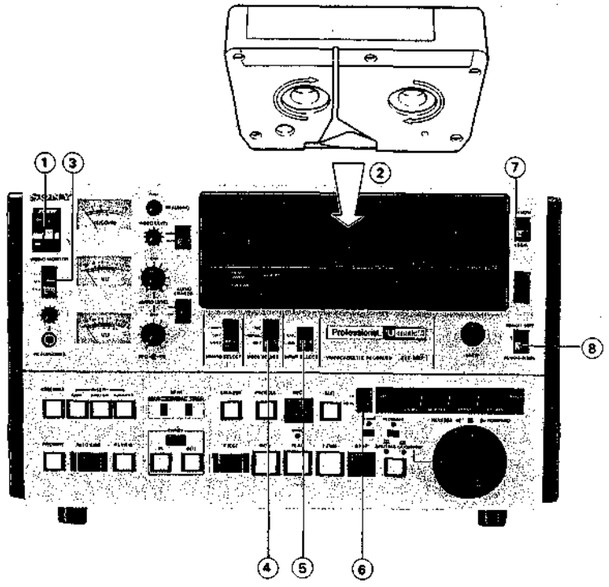


PLAYER

① SERVO LOCK:
AUTO: Normal position
EXT SYNC: For external sync.

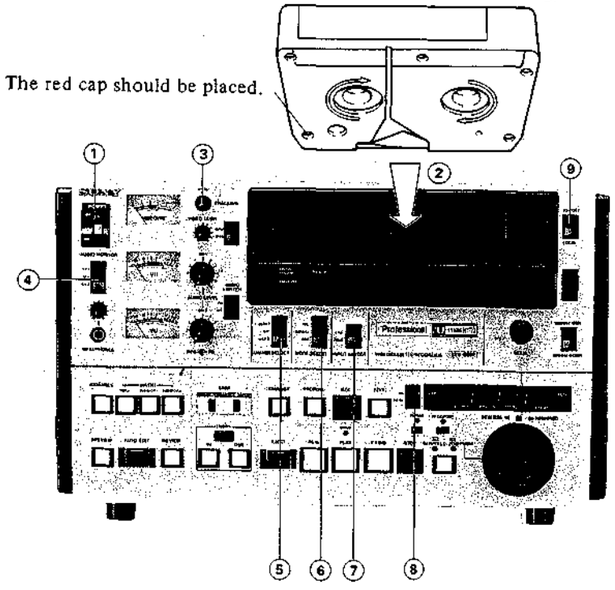
RECORDER

① AUDIO IN LEVEL: HIGH
② 600 Ω: ON
③ SERVO LOCK:
AUTO: Normal position
EXT SYNC: For external sync.
④ COLOR FRAMING: ON
When the color framing mechanism is not to be activated during auto edit-recording, set this switch to OFF.



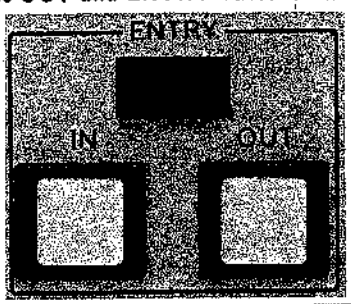
① POWER: ON
② Insert a recorded video cassette
③ AUDIO MONITOR: MIX
④ MODE SELECT: EDIT
⑤ INPUT SELECT:
When the video input signal is selected as a reference signal, set this switch to the position which indicates where the signal is connected.
⑥ PB/PB/EE: PB
⑦ REMOTE/LOCAL:
REMOTE
⑧ REMOTE-1/REMOTE-2:
REMOTE-1
Adjust the video and audio levels, tracking and skew as shown on page 1-17.

The red cap should be placed.



① POWER: ON
② Insert a cassette to be edit recorded.
③ TRACKING: FIXED
④ AUDIO MONITOR: MIX
⑤ MIXING SELECT: OFF
⑥ MODE SELECT: EDIT
⑦ INPUT SELECT: DUB
When the VIDEO IN connector is used for the video signal from the player, set to LINE.
⑧ PB/PB/EE: PB/EE
⑨ REMOTE/LOCAL: LOCAL
Adjust the video and audio levels as shown on page 1-13.

EDIT-OUT POINT FOR THE PLAYER

❶ Locate the desired edit-out point in the same way as you located the edit-in point.	(Steps ❶ through ❺ on the previous page.)
❷ Press the OUT and ENTRY buttons simultaneously. 	The OUT lamp lights. The counter number at this point will be memorized as the edit-out point. • If the same point is entered as the edit-in and the edit-out points or if the edit-out point is entered before the edit-in point, the edit-in point will be cleared. Enter the edit-in and edit-out points correctly.

• The edit-out point should be entered into either the player or the recorder.

EDIT-IN POINT FOR THE RECORDER

❶ Press the RECORDER button. 	The RECORDER lamp will light.
❷ Locate the point on the tape from which the scene is to be recorded in the same way as you searched for the edit-in point on the player.	The IN lamp blinks.
❸ Press the IN and ENTRY buttons simultaneously.	The IN lamp lights. The counter number at this point will be memorized as the edit-in point. The first edit-in point should be at least 10 seconds after the beginning of the tape (or at least 5 seconds after the beginning of the tape when the preroll time switch is set to OFF.)

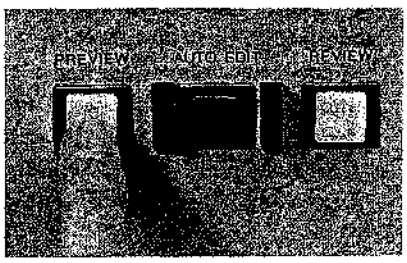
EDIT-OUT POINT FOR THE RECORDER

If the edit-out point is to be entered into the recorder, proceed as follows:

1) Locate the point where recording is to end in the same way as you searched for the edit-in point on the player.
2) Press the OUT and ENTRY buttons simultaneously.
   The counter number at this point will be memorized as the edit-out point.

4. TO REHEARSE EDITING: THE PREVIEW MODE

Once the edit-in and edit-out points have been set, you can rehearse the scene by pressing the PREVIEW button.



❶ After the edit-in and edit-out points have been set, press the PREVIEW button.
The PREVIEW lamp will light.

❷ Watch the recorder's monitor.
Check that the edit-in and edit-out points are correct and that the quality of the picture to be recorded is satisfactory.

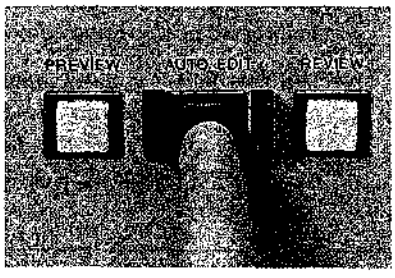
❸ If necessary, re-enter the edit-in and edit-out points and rehearse the scene again by pressing the PREVIEW button.

To stop the tape during previewing, press the STOP button. If you want to start auto edit recording during previewing, press the AUTO EDIT button.

5. TO BEGIN EDIT RECORDING

Press the AUTO EDIT button.

The recording will automatically proceed.



- You can start automatic edit-recording during previewing or skipping previewing.

When the edit recording is finished

When the recording of one scene (from the edit-in to the edit-out point) is finished, search for and enter the edit-in and edit-out points for the next scene, as described on the previous pages. You can also make the edit-out point of one scene as the next edit-in point for the recorder. For details, see page 1-33.

To monitor the edit recording

You can monitor the recording from 10 seconds (or 5 seconds) prior to the edit-in point to 2 seconds after the edit-out point on a video monitor connected to the recorder.
In the insert edit mode, if the tape on the recorder is missing some CTL signals or has a part the servo is unlocked, the playback picture of the tape on the recorder will appear on the monitor and the edit recording is not made during that portion.

To stop the edit recording

To stop recording before the edit-out point, press the OUT and ENTRY buttons simultaneously.

Tape protection

If the unit stays in the search still mode for more than 8 minutes, the tape will move in the 1/30 normal speed in forward direction to protect the tape and the video heads, keeping the precise edit-in point.

To change the preroll time

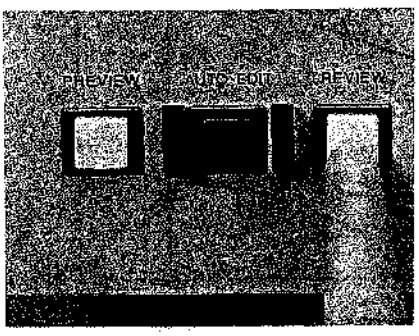
The preroll time can be changed, if necessary, to 5 seconds. The preroll time set on the recorder will be selected for both the player and recorder. For details see section 2. If the color framing mechanism is to be activated, the preroll time should be set to 10 seconds.

To adjust the edit accuracy

The edit accuracy is preset within ±1 frame at the factory. If any adjustment is necessary, see section 2 and the following sections.

6. TO CHECK THE RECORDING: THE REVIEW MODE

When a scene has been recorded from the edit-in point to the edit-out point, you can check the result by pressing the REVIEW button.

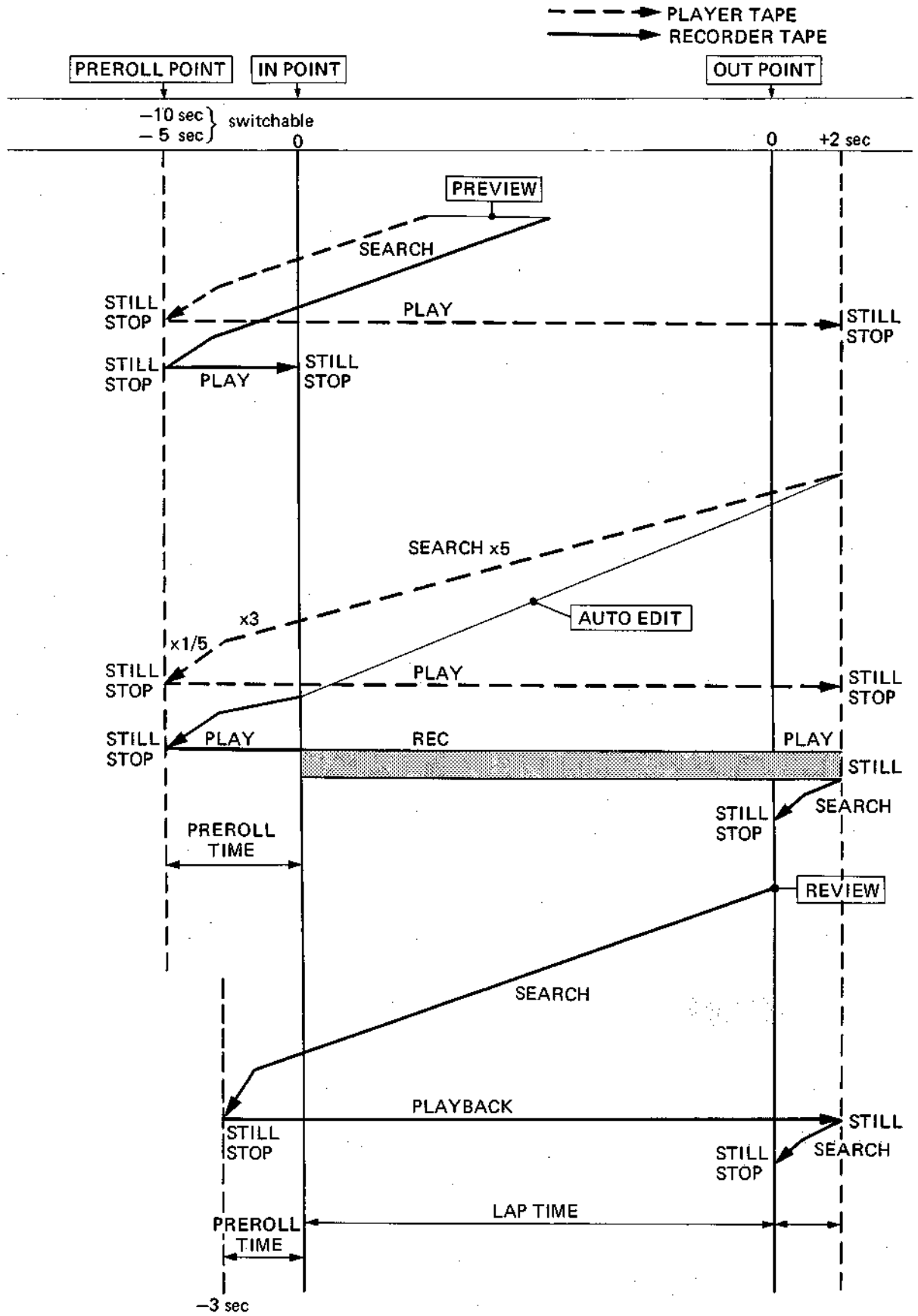


❶ Press the REVIEW button after the recording has been made.
The REVIEW lamp will light.
The tape on the recorder only will move.

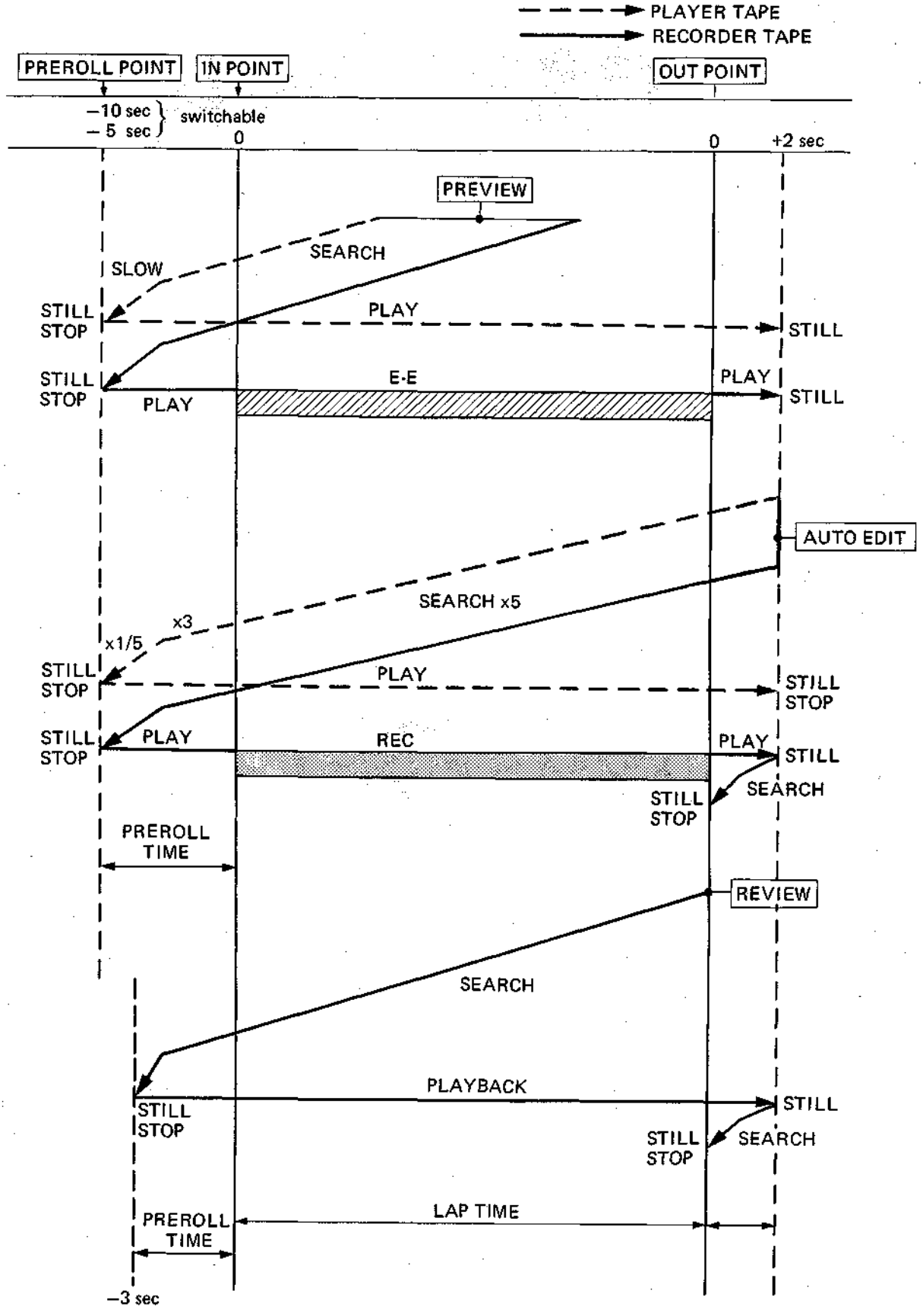
❷ Watch the recorder's monitor to check the quality of the recording.

To stop the tape during reviewing, press the STOP button.

TAPE MOTION
ASSEMBLE MODE



INSERT MODE


PLAYER TAPE
RECORDER TAPE
PREROLL POINT
IN POINT
OUT POINT
−10 sec
− 5 sec
switchable
0
0
+2 sec
PREVIEW
SEARCH
SLOW
STILL
STOP
PLAY
STILL
STILL
STOP
E-E
PLAY
PLAY
STILL
AUTO EDIT
SEARCH x5
x3
x1/5
STILL
STOP
PLAY
STILL
STOP
STILL
STOP
PLAY
REC
PLAY
STILL
STILL
STOP
SEARCH
PREROLL
TIME
REVIEW
SEARCH
PLAYBACK
STILL
STOP
STILL
STILL
STOP
SEARCH
LAP TIME
PREROLL
TIME
−3 sec

TIME COUNTER (TAPE TIMER)

The time counter counts the CTL signals on the tape and the displayed figures indicate how much the tape has advanced at normal speed in hours, minutes, seconds and frames. The number changes as the tape moves.

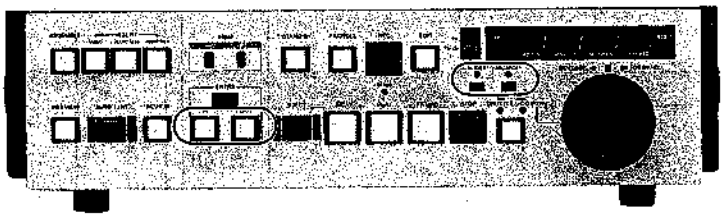
- Counter will not count the time since there is no CTL signal. Therefore, the count display using a non-recorded tape is erroneous.

To set the time counter to "0:00:00:00"
Press the RESET button.

- When the tape runs in reverse from "0:00:00:00", a minus sign "–" will be displayed to the left of the figures.
- You will find that indexing the contents of your tapes by the figures on the time counter will make searching for editing points much easier.

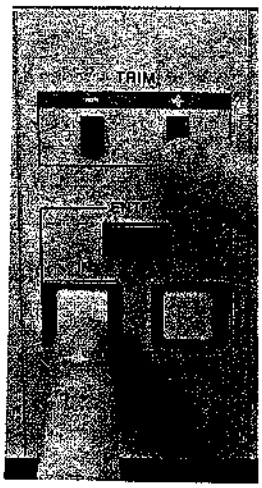
To check the edit-in and edit-out points by the time counter

Press the IN or OUT button for the player (Press the PLAYER button.) or for the recorder (Press the RECORDER button.) and hold it down.



While the button is pressed, the figures of the edit-in or the edit-out point of the player or of the recorder will be displayed.

The TRIM mode: fine adjustment of the editing points using the time counter



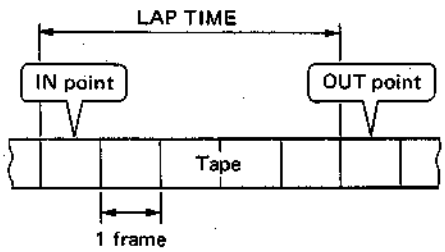
❶ Press the IN or OUT button and hold it down through step ❷.
The frame number of the edit-in or edit-out point will be displayed.

❷ Press and release the TRIM + button to advance the editing point one frame or press and release the TRIM – button to set the point back one frame.
The frame number displayed will change accordingly.

Repeat pressing and releasing the + or – button until you achieve the desired frame number.

You may also change the edit point by entering another point.

When the lap button is pressed

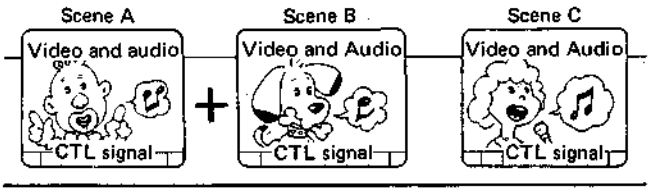


The lap time will be indicated by the time counter.

Editing points entered	The figures displayed indicate
The edit-in and edit-out points have been entered.	The duration of the edit-in and edit-out points.
Only the edit-in point has been entered.	The duration of the edit-in point and the point where the button is pressed.
Only the edit-out point has been entered.	The duration of the previously edited scene.
The edit-in and edit-out points have not been entered.	The duration of the previously edited scene.

ASSEMBLY EDITING

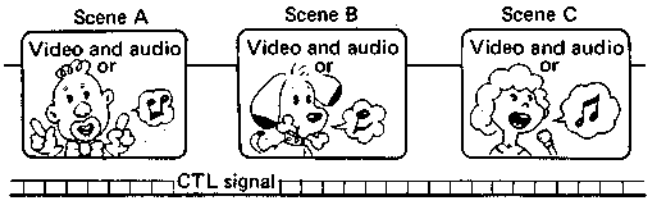
In the assembly edit mode, all the signals – video, audio channel 1 and channel 2 and CTL signals – are recorded on the tape simultaneously. First record the video, audio and CTL signals of scene A and then record the video, audio and CTL signals of scene B, scene C, scene D and so on.



The assembly edit mode is used on a non-recorded tape where the video and audios are recorded simultaneously. The recordings are made back to back.
If the new material is edited on a previously recorded tape in the assembly mode, the fully erased portion will be produced on the tape after the edit-out point and the picture will be unstable at that point. To add a new material on a previously recorded tape, edit in the insert edit mode.

INSERT EDITING

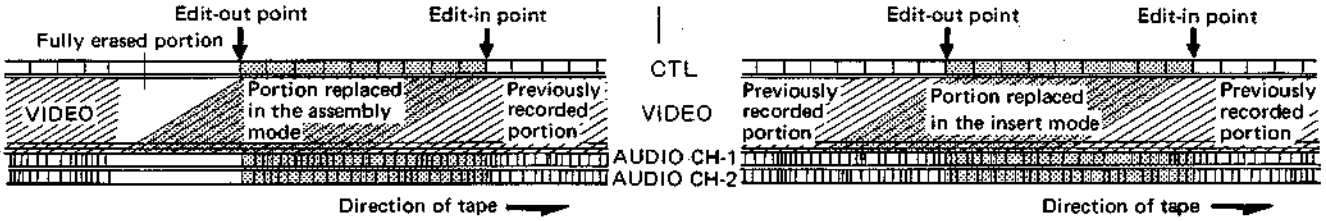
In the insert edit mode, the CTL signal should have already been recorded. New video and/or audio signals are added keyed to this CTL signal.



The insert edit mode is the mode to use when you want–

- to perform accurates edits on a pre-recorded tape.
- to add music and/or narration to a tape on which the video signal has been already recorded.
- to add video signal to a tape on which an audio signal has been already recorded.
- to replace the video and/or audio signals of a tape which has been edited in the assembly mode.

In the insert edit mode, a new scene can be inserted into a previously recorded tape. The picture will be stable at the edit-out point.



TO RECORD ON A NEW TAPE IN THE ASSEMBLY MODE

It is not necessary to record the CTL signal in advance, but if the assembly edit is to be made from the beginning to the new tape or after a blank on the tape, a CTL signal has to be recorded for at least 10 seconds 5 seconds, if the preroll time switch is at the OFF position) prior to the first edit-in point. Instead of recording a CTL signal, you may simply duplicate the tape in the record mode.

TO RECORD ON A NEW TAPE IN THE INSERT MODE

The CTL signal should be recorded continuously in the portion to be recorded and for at least 10 seconds (5 seconds, if the preroll time switch is at the OFF position) prior to and after that portion.
To record the CTL signal:

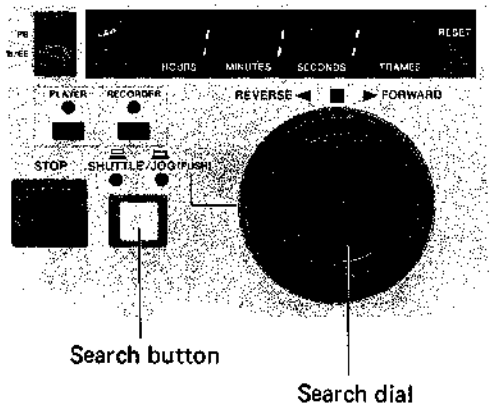
- Connect a video camera and continuously record its output signal.
- Connect a standard video signal generator and continuously record its output signal.

BLINK OF THE LAMPS

Operate the buttons above which the lamps are blinking, and the editing can be completed. The blinking and lighting of lamps are as follows.

- The ASSEMBLE and INSERT (VIDEO, AUDIO CH1, AUDIO CH2) lamps blink indicating that the editing mode is to be determined by pressing the appropriate button.
  One or more lamps light indicating that the editing mode has been determined.
- The IN and/or OUT lamp(s) for the player and recorder blink indicating that the editing point(s) must be entered.
  The IN and OUT lamps light when the edit-in and edit-out points have been entered but the editing has not been performed.
- The PREVIEW and AUTO EDIT lamps blink indicating that you can proceed either the preview or auto edit operation.
  The PREVIEW or AUTO EDIT lamp lights to indicate that the recorder is in one of these modes.

HOW TO USE THE SEARCH BUTTON



Use 1: to enter the unit directly into the shuttle mode at the speed set on the Search dial.

❶ Set the Search dial to the desired position to the position for 5 times normal forward speed, for example, in the shuttle mode.

❷ Press the PLAY button.
The recorder will enter the playback mode.

❸ Press the Search button.
The machine will enter directly into the shuttle mode at 5 times normal forward speed.

Use 2: to prevent accidental entry into the search mode

While operating this unit, if the Search dial is touched, the machine will enter the search mode. To prevent this, set the switch S4 on the SY-37 board to OFF. Now the Search dial will not operate until the Search button is pressed. For details, see section 2.

QUICK EDITING

You can save time by entering the edit-in and edit-out points in the preview mode.

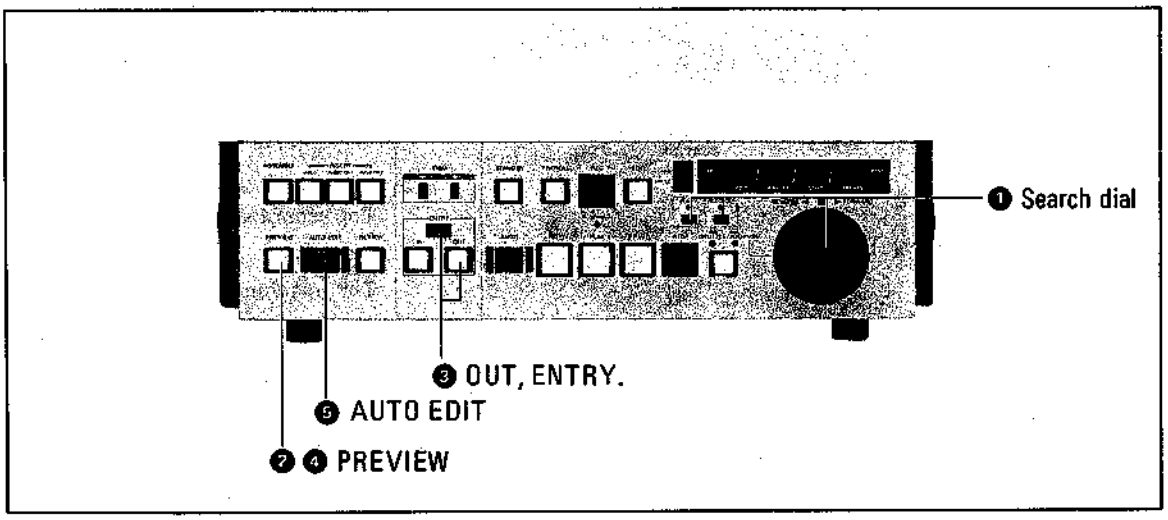
❶ Locate the desired edit-in points for the player and the recorder by using the Search dial. Obtain a still picture.

❷ Press the PREVIEW button.
The points obtained in the step ❶ will be memorized as the edit-in points for the player and recorder. The preview will start.
The IN lamps will light.

❸ Watch the recorder's monitor and at the point where the scene is to end, press the OUT and ENTRY buttons simultaneously on the player or the recorder.
The counter number will be memorized as the edit-out point.
The tape will run for 2 more seconds as a post roll and return to the preroll point.
- You may also use the Search dial to locate the desired point where the scene should end.

❹ If necessary, preview the tape again.

❺ Press the AUTO EDIT button.
The edit recording will be made.



To edit even more quickly

You can edit by skipping the entry procedures.

❶ Locate the edit-in points on the player and the recorder using the Search dial. Obtain a still picture.

❷ Press the AUTO EDIT button.
Recording will be made from that point which will be the edit-in points on the player and recorder.

❸ Watch the recorder's monitor and at the point where the scene is to end, press the OUT and ENTRY buttons simultaneously on the recorder or the player.
The recording will stop at this point, which will be the edit-out point.

CONTINUOUS EDITING: THE BUTT EDIT

When you have finished recording from edit-in point to edit-out point, the recorder returns to the edit-out point and stops. You can make this edit-out point as the next edit-in point for the recorder.
This technique is called "Butt edit".

❶ Locate the desired positions and enter the next edit-in and edit-out points for the player.

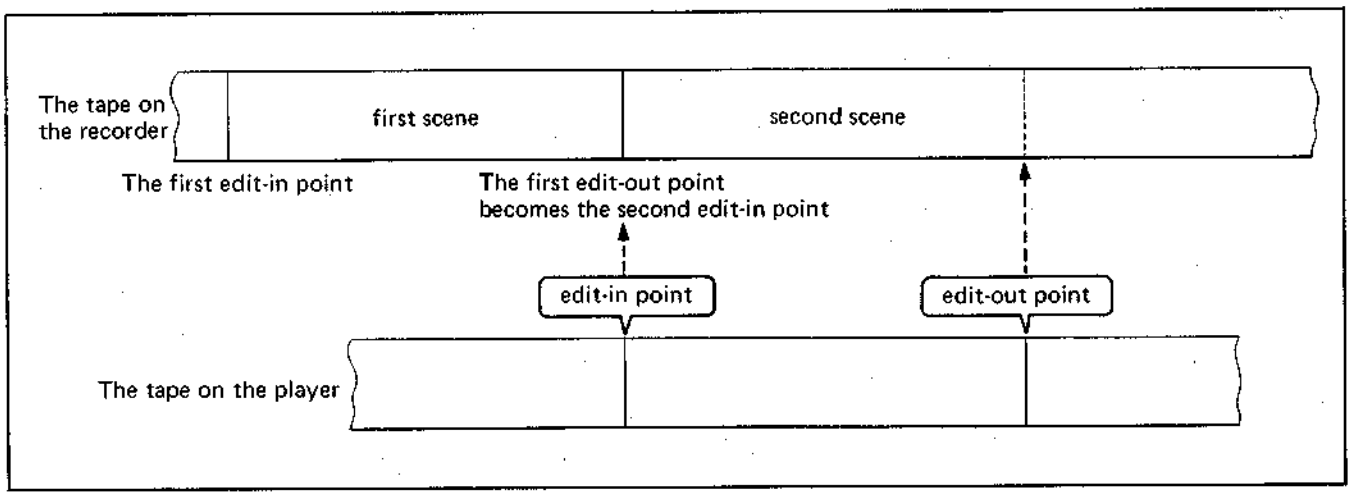
❷ Press the AUTO EDIT button.
The recording will be performed.

Or you may proceed as follows:

❶ Locate the desired position and enter the next edit-in point for the player.

❷ Press the AUTO EDIT button.
The recording will start.

❸ Watch the recorder's monitor and at the point where the scene is to end, press the OUT and ENTRY buttons simultaneously on the recorder or player.
The recording will stop at this point, which will be the edit-out point.



THE SPLIT EDIT: TO SET DIFFERENT EDIT-IN OR EDIT-OUT POINT FOR VIDEO AND AUDIO

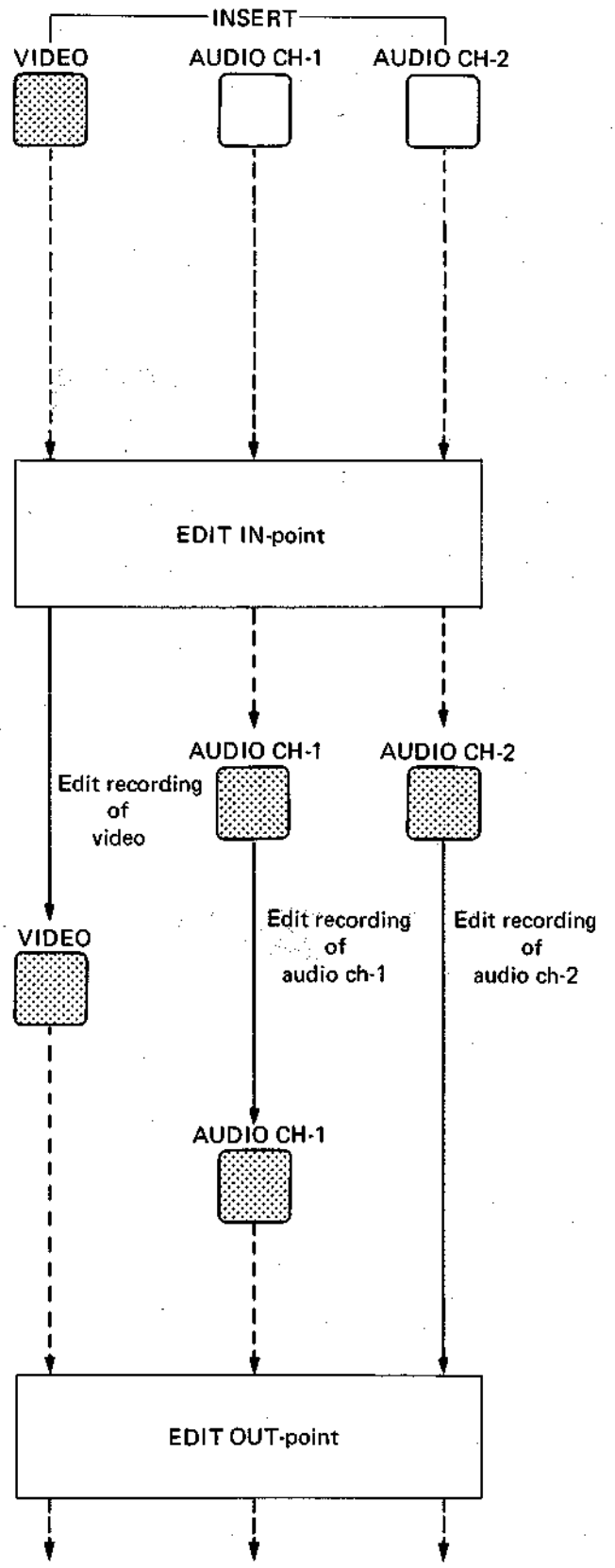
In the insert edit mode, you can stop the edit-recording of the video and audio channel 1 and audio channel 2 separately.

1. Select the desired input signal with any or all of the INSERT buttons.
2. Start automatic edit-recording.
3. At the point where the edit-recording of the video or audio is to stop, press the appropriate INSERT button(s).
   The corresponding light(s) will turn off.
   At the point where the edit-recording of the video or audio is to begin, press the appropriate INSERT button(s).
   The corresponding light(s) will turn on.
   You may cut in or cut out the desired signal(s) at any point by pressing the INSERT button(s). Even if all the signals are cut out, the desired signal(s) can be cut in simply by pressing the INSERT button(s).
4. When the edit-out point has been entered, the recording will stop automatically. When the edit-out point has not been entered, press the ENTRY and OUT buttons to stop edit-recording.
   Once you stop edit-recording, the video or audio signals cannot be cut in by simply pressing the INSERT buttons.

Or in the manual insert edit mode, you can split-edit in the same way. To stop edit-recording, press the PLAY button.

Example of the split edit

The buttons to be pressed



The video signal is selected for the input signal.

Edit recording of video signal starts by pressing the AUTO EDIT button.

Edit recording of audio ch-1 and ch-2 signal starts.

Recording of the video signal ends.

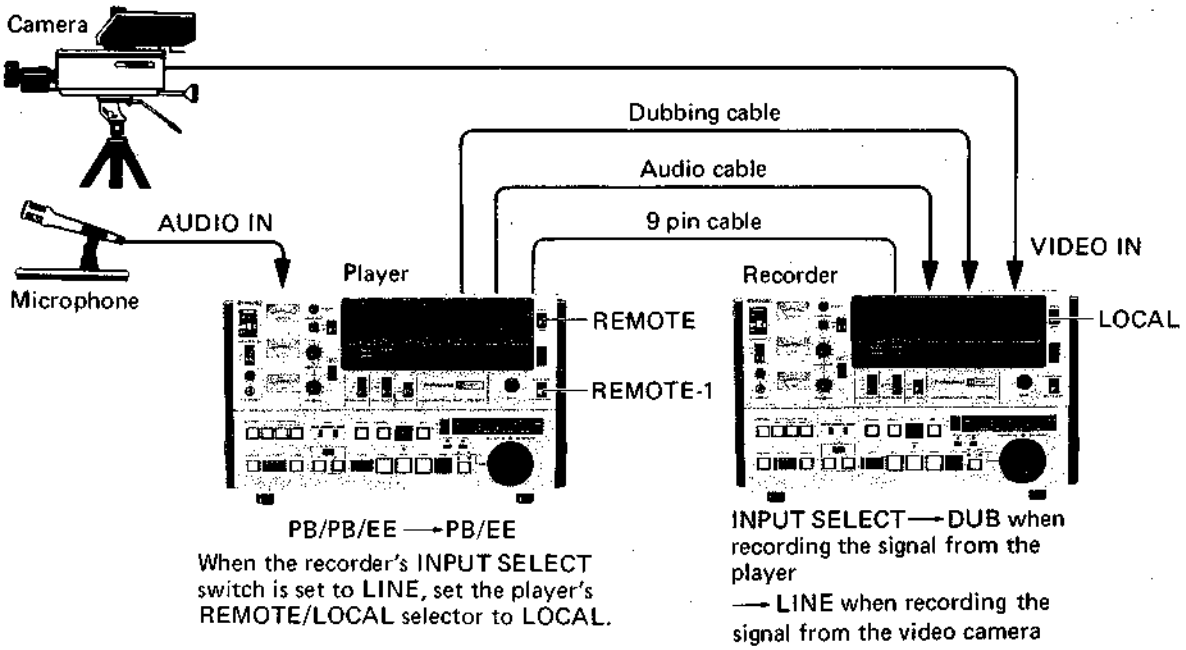
Recording of the audio ch-1 signal ends.

Edit-recording ends.

EDITING THE SIGNAL FROM A VIDEO CAMERA: THE LIVE EDIT

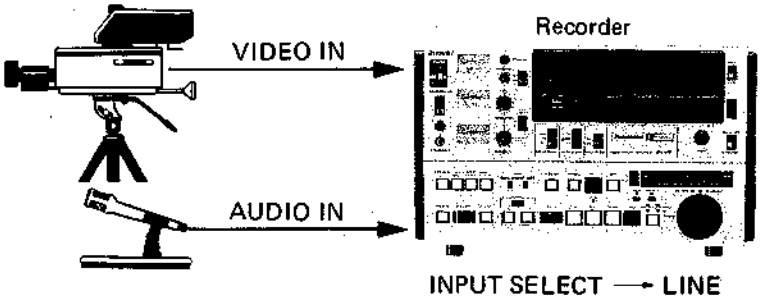
Connections

To record while editing using a signal from a video camera and signal from a player:
Make connections as shown in the illustration.



- While recording the signal from the camera, set the player in the stop mode.

To record a signal from a video camera only:
Connect a video camera to the VIDEO IN connector of the recorder. Set the INPUT SELECT switch of the recorder to LINE.



Operation

❶ Select the editing mode: assembly or insert.

Assembly editing

❷ Enter only the edit-in point of the recorder and start the recording of the camera signal with the AUTO EDIT button.

❸ At the point where the camera recording is to end, press the ENTRY and OUT buttons simultaneously.

Insert editing

❶ Enter the edit-in and edit-out points of the recorder and start the recording of the camera signal with the AUTO EDIT button.
You may also start recording with only the edit-in point entered and stop the recording by pressing the ENTRY and OUT buttons simultaneously.

- When assembly editing, the edit-out point cannot be entered on the recorder.

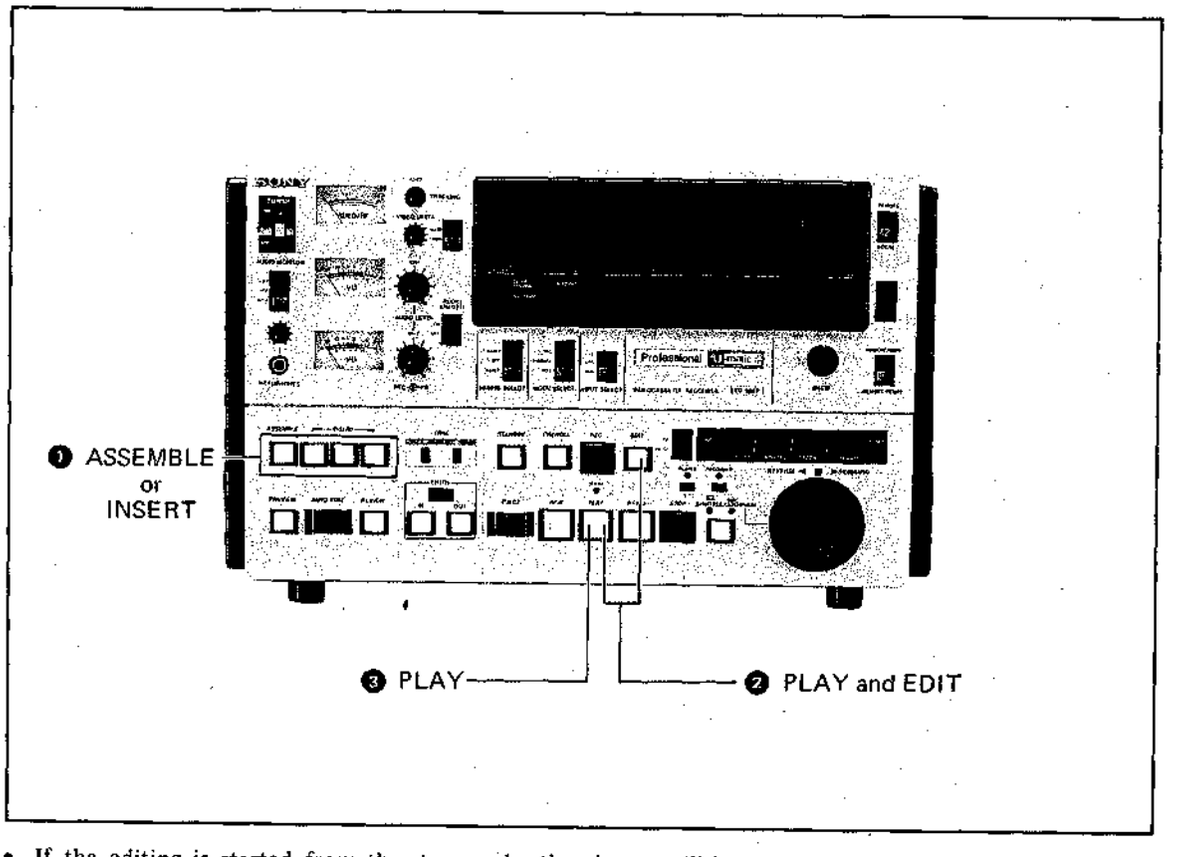
MANUAL EDITING

Operation

❶ Select the editing mode: assembly or insert.

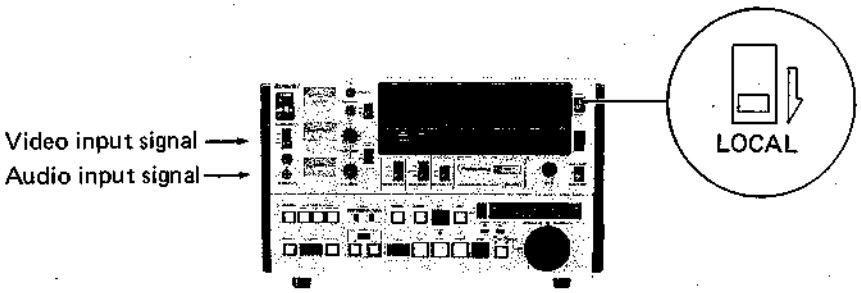
❷ During the playback of both the recorder and player, at the point where the scene is to begin, simultaneously press the PLAY and EDIT buttons on the recorder.
Recording will begin at the point the buttons have been pressed.

❸ At the point where the scene is to end, press the PLAY button on the recorder.
The edit recording will stop and the playback will begin on the recorder.



- If the editing is started from the stop mode, the picture will be unstable at the edit-in point.
To obtain a perfectly stable playback picture, start the playback at least 10 seconds prior to the edit-in point.

1-6-2. Editing Using One BVU-800P Video Cassette Recorder

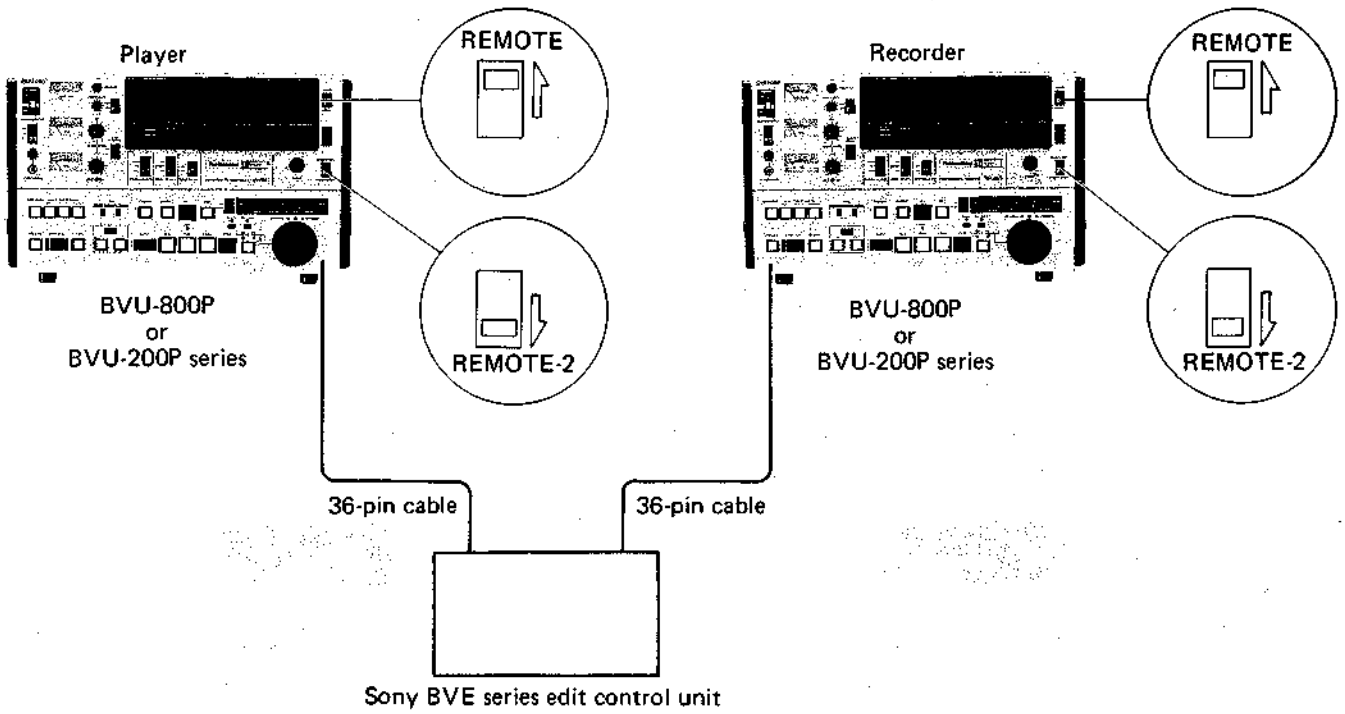


With this machine, if you connect a video and audio input signal, editing can be made as described on the previous pages.

Notes:

- Set the REMOTE/LOCAL switch to LOCAL.
- The entry of the edit-in and edit-out points, AUTO EDIT, PREVIEW, TRIM can be proceeded with this machine. Operate the input video and audio signal source separately.

1-6-3. Editing with a Conventional Control Unit

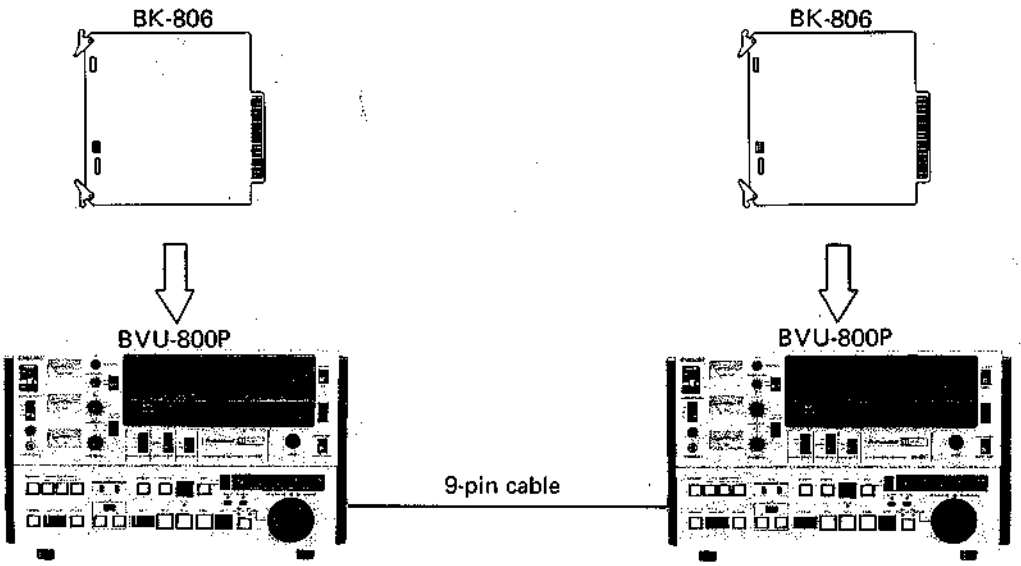


Use the function buttons on the control unit to remotely control the player and the recorder.

- For connection, see page 1-49.
- Set the REMOTE/LOCAL switch to REMOTE if it is equipped.
- Set the REMOTE-1/REMOTE-2 switch to REMOTE-2
- To remove the cassette in the machine, set the REMOTE/LOCAL switch to LOCAL and then press the EJECT button.
  To operate the machine, with the control unit, return the switch to the REMOTE position.
- When the BVE-500 series Search dial is set to x2, the tape of the BVU-800P runs at 5 times normal speed and when set to x1/20, at 1/30 normal speed.
- When changing the mode of the BVU-800P from the search mode using a button on the BVE-500 series, be sure to keep the button pressed until the machine is set in your desired mode.
- When the buttons on the BVE-500 series are pressed, the appropriate lamps on the BVU-800P may not light. The lamps on the BVE-500 series indicate the correct operating mode of the player and recorder.
- When the BVE-500 series control unit is connected, the preroll time of the VTRs is set with the preroll time switch in the BVE-500 unit to 3 or 5 seconds.
- When the BVU-800P is used as a recorder when the BVE-500 series unit is connected, set the COLOR FRAMING switch on the recorder to OFF.

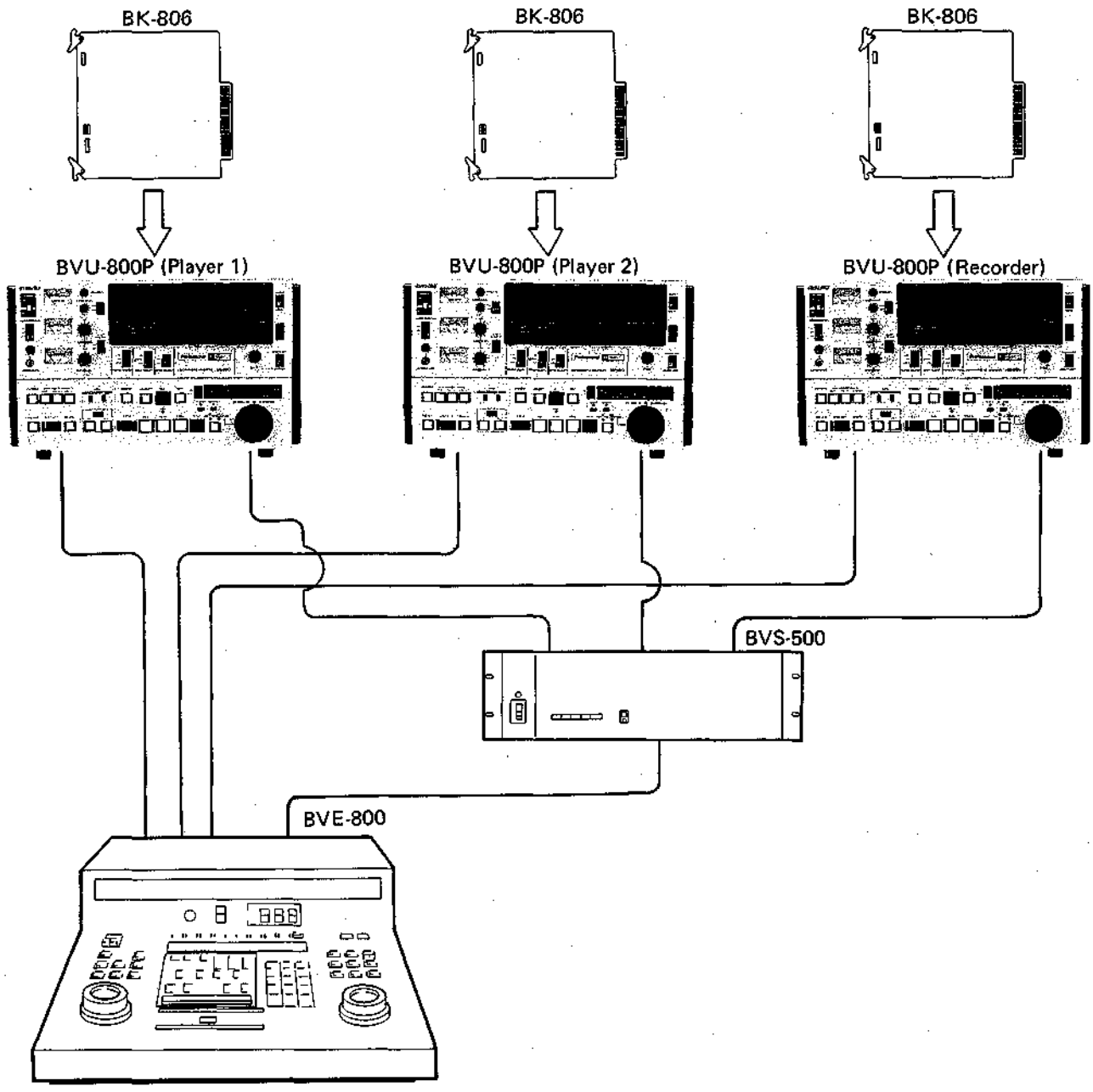
1-6-4. Time Code Editing

USING TWO BVU-800P VIDEO CASSETTE RECORDERS



The recording and playback of time code and the time code editing will be possible when the BK-806 time code generator/reader is inserted into the BVU-800P instead of the TC-13 circuit board.
The input and output connections of the time code is not required for editing.
For details, refer to the instruction manual furnished with the BK-806.

USING THE BVE-800 AND THE BVS-500



When the BVE-800 automatic editing control unit and the BVS-500 video and audio switcher are used together, the following operation will be possible.

a) A/B roll editing (Three VTRs are controlled)
b) Automatic split editing
c) Auto-editing using the multievent memory
d) Auto-search
e) Tape punching of edit lists with the TTY
f) Program length calculation
g) Cue tone recording and playback

For details, refer to the instruction manual furnished with the BVE-800 and BVS-500.

1-7. TAPE PROTECTION

In order to prevent any damage to the tape, the machine automatically goes into reset mode, when something wrong happens during operation.

For example;

– Fast forward/rewind/forward/reverse/stop/still mode:
When irregular reel rotation or tape tension is detected, system control forces machine to STOP or EJECT, then after 3 seconds, if irregular reel rotation or tape tension is still detected, reel motor power will turn off and mechanical brake is applied simultaneously.

– During threading/unthreading:
When irregular reel rotation or tape tension is detected, system control forces machine to STOP or EJECT.

– Irregular voltage, Sensor LED damage:
When irregular voltage at B + power line or sensor LED damage (no light) is detected, system control forces machine to STOP or EJECT, then mechanical brake is applied.

1-8. CLEANING THE HEAD

A KC-1C cleaning cassette (optional) is used to clean the video and audio heads. The tape is threaded into the unit in the same way as the video cassette.

1) Insert the cleaning cassette and press the PLAY button at once.
2) Run the tape for about 10 seconds.
3) Eject the cassette at once.

- Because the head rotates even in the stop mode, leaving the cassette in the machine cause the head worn out.

1-9. CHECK ROUTINES

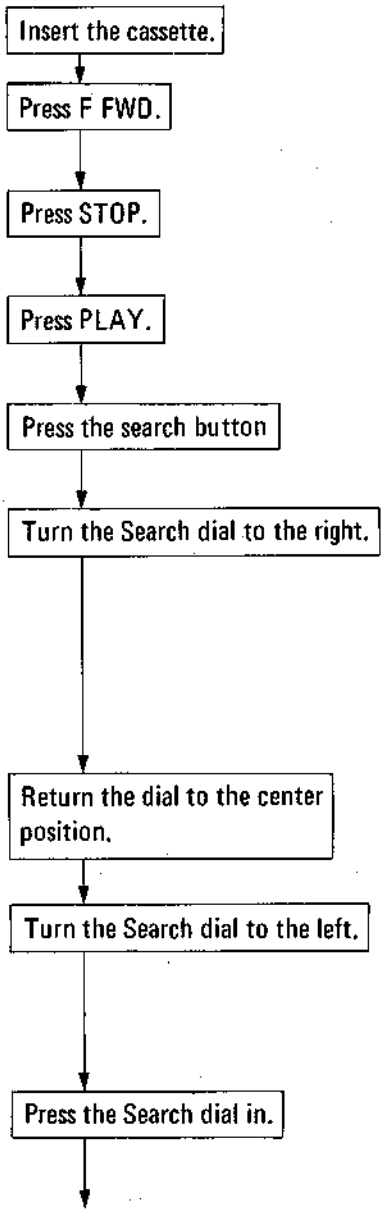
To check that all functions of the BVU-800P are operating properly, execute the following routines.

To check playback functions

First, connect a video and audio monitor and prepare a video cassette tape on which video signals and audio CH-1 and CH-2 signals are recorded.

With switches set to

POWER : ON
REMOTE/LOCAL : LOCAL
PB/PB/EE : PB
AUDIO MONITOR : MIX



Check that

The playback picture of high speed appears and the video and audio are not muted.

A still picture appears.

The playback picture appears. Audio CH-1 and CH-2 are heard.

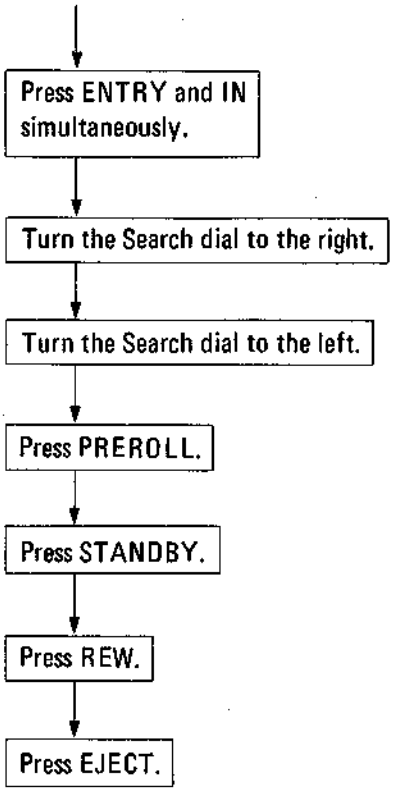
The search lamp lights.

The playback speed changes from low to high. When the dial is turned to the position at which a click is felt, the machine enters into the fast forward mode (x10). (When the machine enters into the fast forward mode, the pinch roller is released and the picture is stopped or distorted for a moment.)
The SHUTTLE lamp lights.

The still picture appears.

The reverse playback picture appears. The speed changes from low to high. When the dial is turned to the position at which a click is felt, the machine enters into the rewind mode (x10).

The still picture appears.
The JOG lamp lights.



IN lamp lights.
Note the counter number of the point (edit-in).

The forward playback picture in the jog mode appears.

The reverse playback picture in the jog mode appears.

The tape runs to a point 10 seconds prior to the edit-in point and stops. A still picture appears.

STANDBY lamp goes off.

PB/PB/EE : PB/EE

The tape rewinds. The E-to-E mode picture appears. At the beginning of the tape, the tape stops automatically.

The cassette is ejected.

To check recording functions

First,

- Prepare a video cassette tape on which recording can be made.
- Connect signals to the VIDEO IN, AUDIO IN CH-1 and CH-2 connectors.
- Connect a video and audio monitor.

With switches set to	Action	Check that
POWER : ON REMOTE/LOCAL : LOCAL INPUT SELECT : LINE PB/PB/EE : PB AUDIO MONITOR : MIX	Insert the cassette.	
	Press REC and PLAY simultaneously.	The recording begins.
	Press REW.	The tape rewinds. Rewind the tape to the beginning of recording and stop the tape.
	Press PLAY.	Playback of the recorded scene appears. The audio CH-1 and CH-2 are heard.
	Press REC and hold it down during playback.	E-to-E mode picture appears while the REC is pressed.
	Press INSERTs (VIDEO, AUDIO CH-1 and CH-2).	The VIDEO, AUDIO CH-1 and AUDIO CH-2 lamps light.
	Press PLAY and EDIT simultaneously.	The manual edit recording will begin.
	Press PLAY.	The edit recording will stop, but the tape will continue to run in the playback mode.
	Press STOP.	Still picture of the tape appears.
	Press EDIT.	The E-to-E mode picture and sound selected by the INSERT buttons appear.
	Press EDIT.	The E-to-E mode picture and sound disappear and the still picture of the tape appears.
PB/PB/EE : PB/EE	Press REW.	The tape rewinds. Rewind the tape to the beginning of edit-recording and stop the tape.
	Press PLAY.	Playback of the edit-recorded scene appears. The audio CH-1 and CH-2 is heard.
	Press F FWD.	The tape advances rapidly and stops at the end of the tape. Then the tape rewinds automatically and stops at the beginning.
	Press EJECT.	The cassette is ejected.

To check editing functions

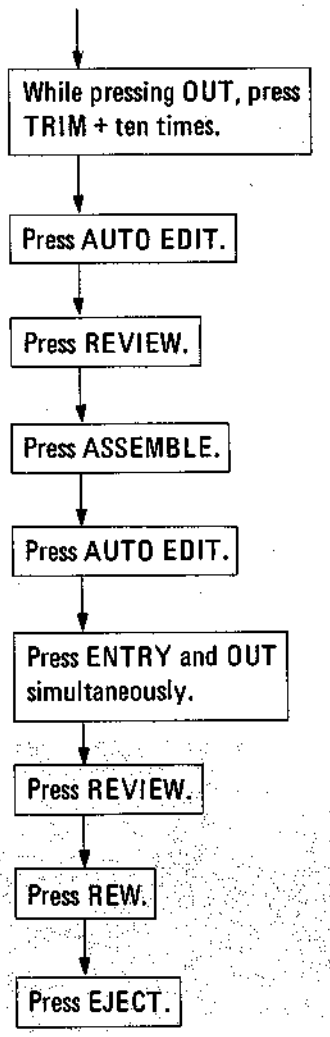
First,

- Prepare a tape on which video, audio CH-1 and audio CH-2 are recorded.
- Connect signals to the VIDEO IN and AUDIO IN connectors.
- Connect a video and audio monitor.

With switches set to

POWER : ON
REMOTE/LOCAL : LOCAL
AUDIO MONITOR: MIX

Action	Check that
Insert the cassette.	
Press PLAY.	Playback picture appears.
Press Search button. (Search dial at ■ position)	The still picture appears.
Press ENTRY and IN simultaneously.	Note the counter number of the point (edit-in).
Locate a point for the edit-out point with Search dial.	
Press ENTRY and OUT simultaneously.	Note the counter number of the point (edit-out).
Press INSERTs (VIDEO, AUDIO CH-1 and AUDIO CH-2).	
Press PREVIEW.	Previewing proceeds.
Press IN.	The counter number of the edit-in point is displayed.
While pressing IN, press TRIM – ten times.	The counter number decreases by ten frames.
Press OUT.	The counter number of the edit-out point is displayed.



The counter number increases by ten frames.

Auto edit recording proceeds.

The reviewing of the edit recorded scene proceeds.

The ASSEMBLE button lights.

The point where the AUTO EDIT has been pressed is entered as the edit-in point and auto edit recording begins.

The point is entered as the edit-out point and auto edit recording stops.

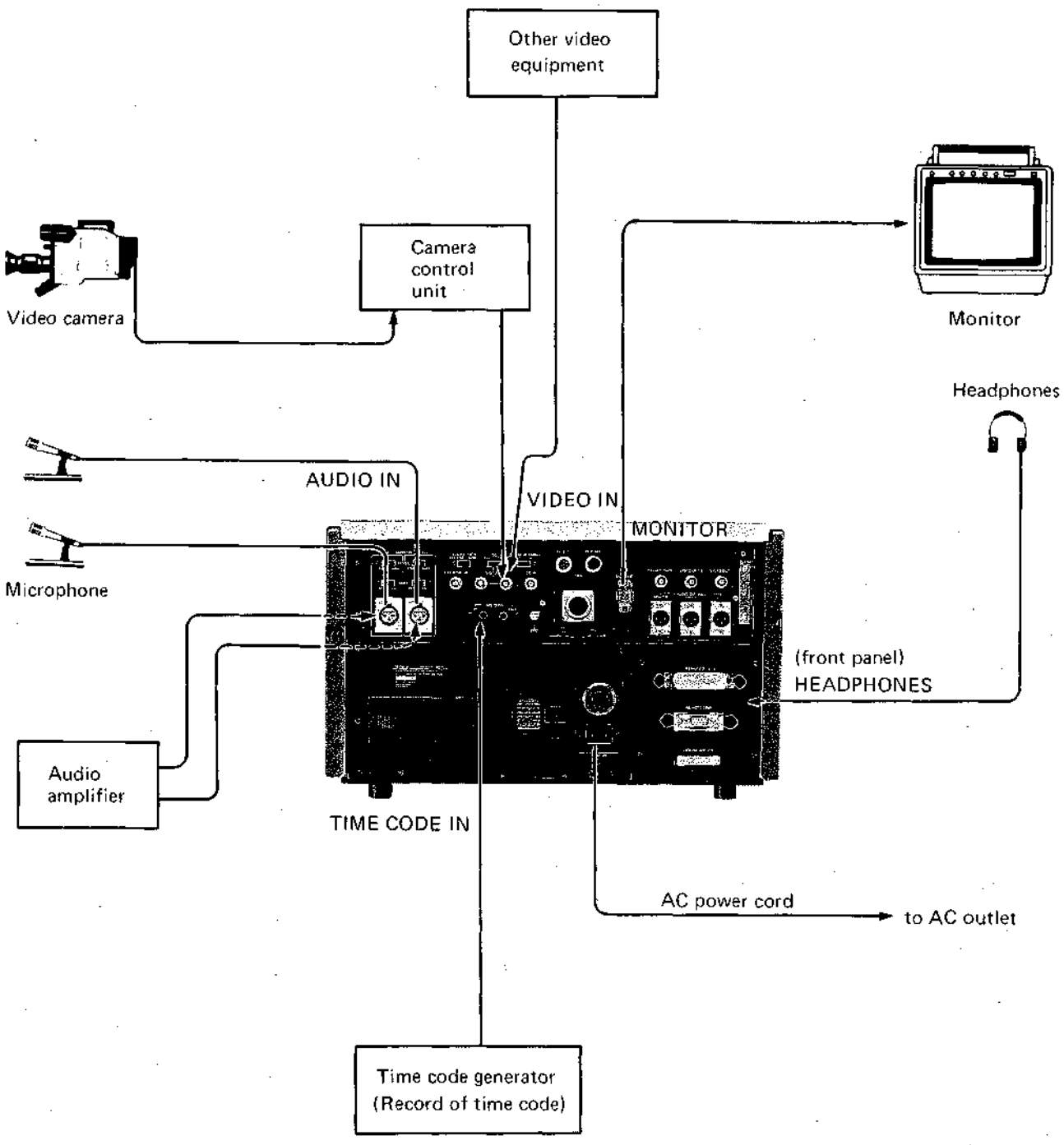
The reviewing of the edit recorded scene is proceeded.

The tape stops at the beginning.

The cassette is ejected.

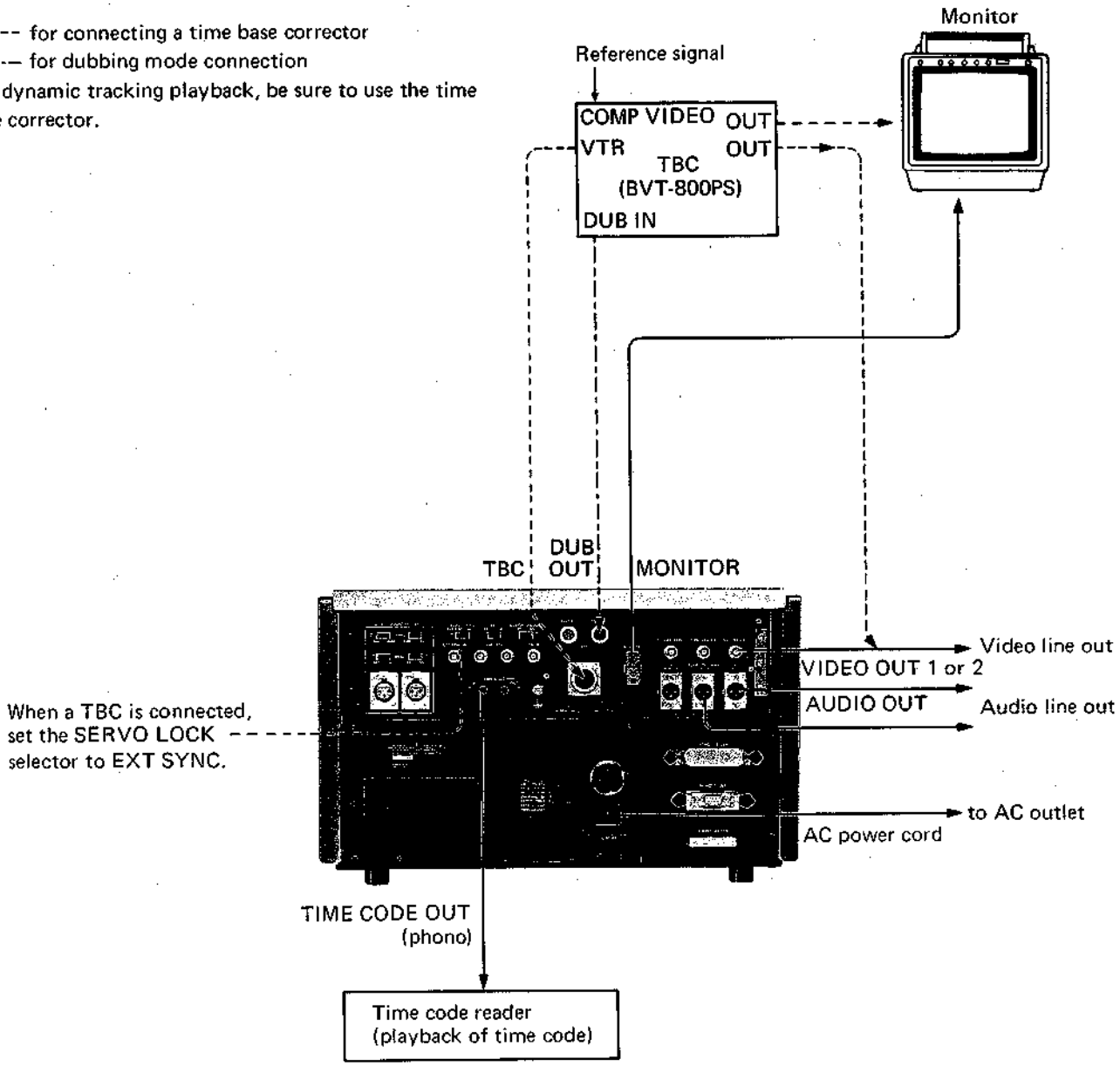
1-10. CONNECTIONS

RECORDING

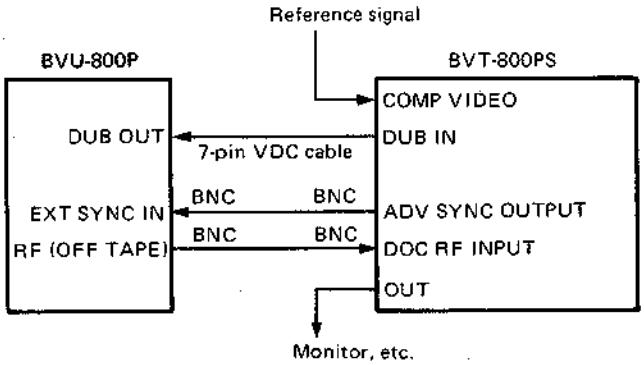


PLAYBACK

----- for connecting a time base corrector
-·-·- for dubbing mode connection
For dynamic tracking playback, be sure to use the time base corrector.

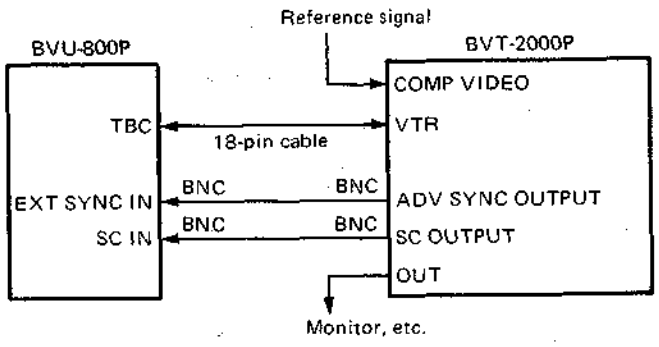


The BVT-800PS can be connected without using an 18-pin cable as follows.

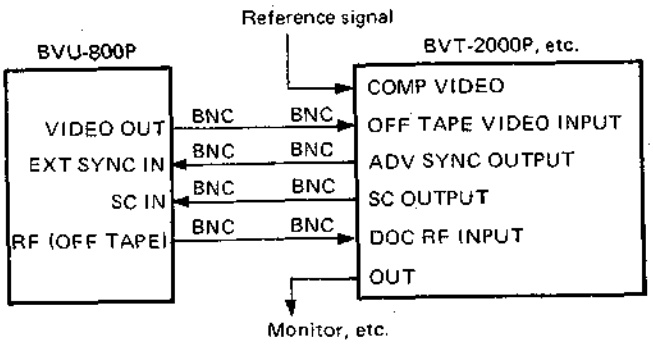


When a time base corrector other than BVT-800PS is used, connect it as follows.

- To connect a BVT-2000P using an 18-pin cable

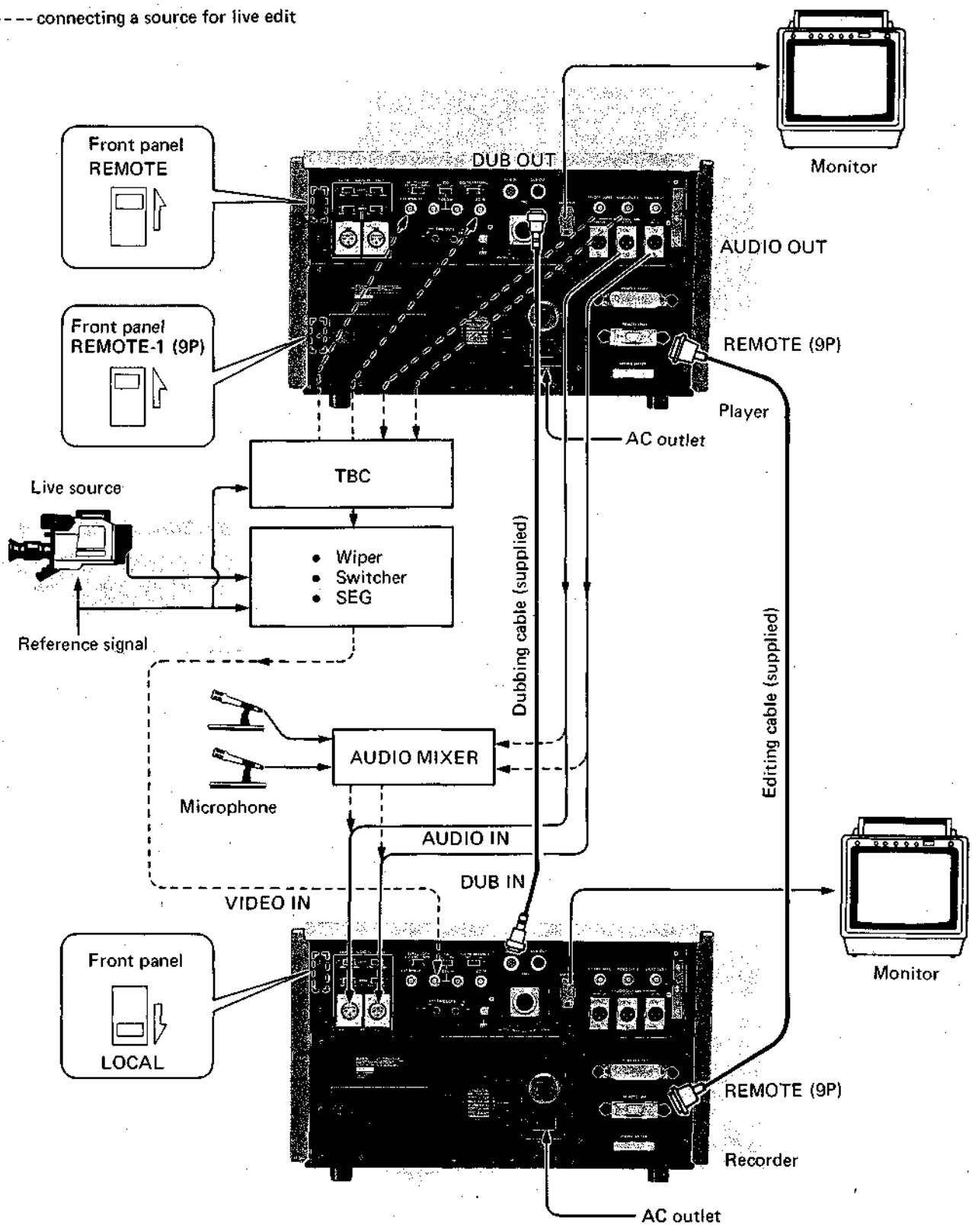


- To connect a time base corrector without using an 18-pin cable



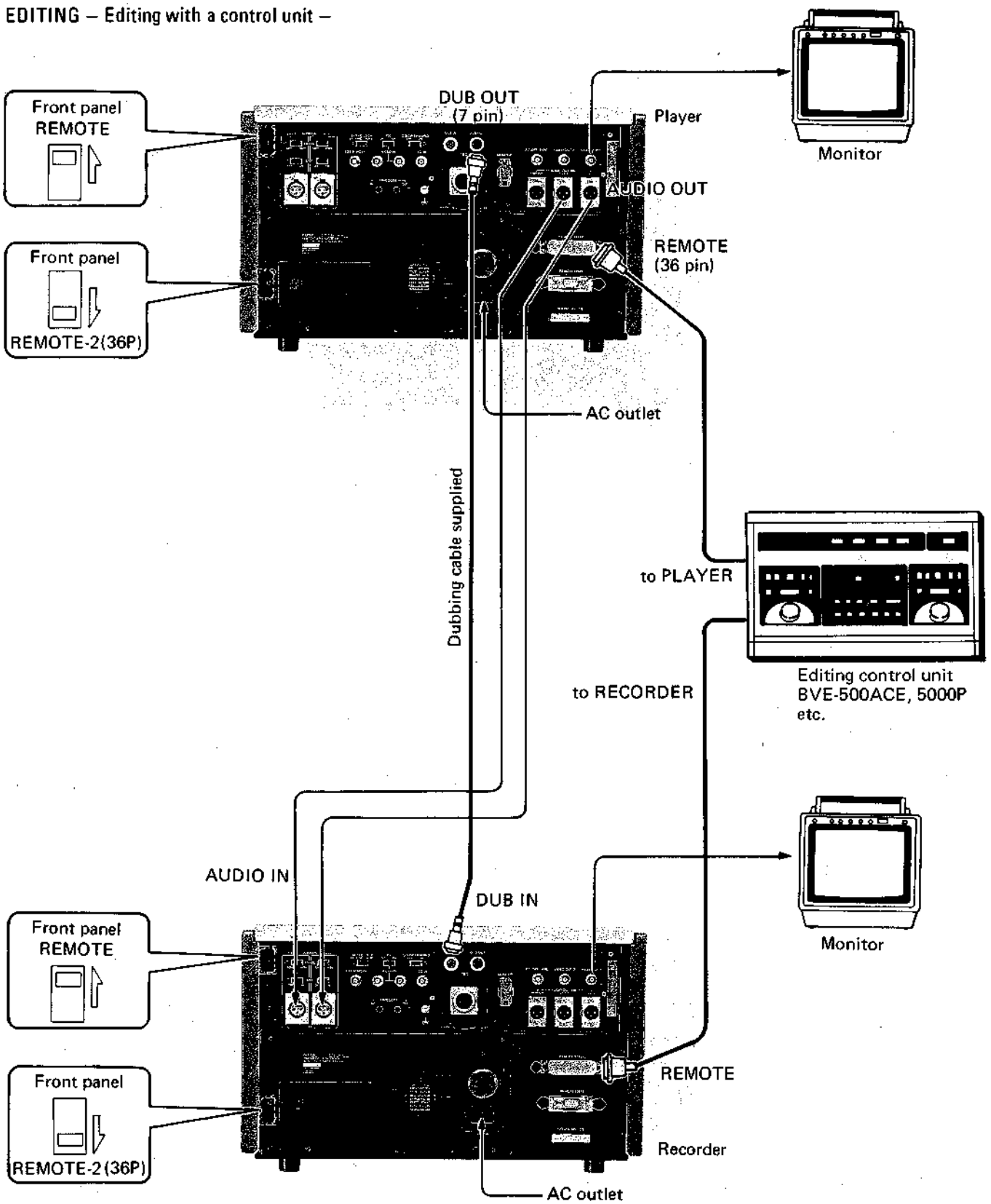
EDITING – Editing with two BVU-800Ps –

– – – – connecting a source for live edit



- Do not make simultaneous (parallel) connections with the DUB IN connector on the player and DUB OUT connector on the recorder.

EDITING – Editing with a control unit –



- Do not make simultaneous (parallel) connections with the DUB IN connector on the player and the DUB OUT connector on the recorder.
- For the live source connection, see the previous pages.
- The video cassette recorder with 36 pin connector can be connected other than the BVU-800P, but the function is limited according to the function of the machine.

1-11. SPECIFICATIONS

MECHANICAL

Weight	37 kg (81 lb 9 oz)
Dimensions	454 x 283 x 550 mm ($17\frac{7}{8}$ x $11\frac{1}{4}$ x $21\frac{3}{4}$ inches) (w/h/d)
Operating position	Horizontal
Tape transport mechanism	U-matic system (3/4-inch KCA, KCS cassettes)
Tape speed	9.53 cm/s
Wow/flutter	±0.25% (DIN)
Record/playback time	60 min. maximum with KCA-60 video cassette
Fast forward time	Less than 4 min. with KCA-60 video cassette
Rewind time	Less than 2.5 min with KCA-60 video cassette
Search speed	SHUTTLE: Still, 1/30, 1/10, 1/5, 1/2, 1, 2, 5 and 10 times normal in forward and reverse direction JOG: Still to 1 in forward and reverse direction
Connectors	
AC IN	3-pin AC connector
VIDEO IN x2	BNC connectors
VIDEO OUT x2	BNC connectors
AUDIO IN CH-1/L, CH-2/R	XLR female connectors
AUDIO OUT CH-1/L, CH-2/R	XLR male connectors
AUDIO OUT MONITOR	XLR male connectors
TIME CODE IN	RCA phono jack
TIME CODE OUT	RCA phono jack
DUB IN	7-pin male connector
DUB OUT	7-pin female connector
SC IN	BNC connector
EXT SYNC IN	BNC connector
RF (OFF TAPE)	BNC connector
TBC	CCY connector
MONITOR OUT	8-pin connector
REMOTE (36-p)	36-pin connector
REMTOE (9-p)	RS-422 9-pin connector
HEADPHONES	JM-60 headphones binaural jack
Operating temperature	+5°C to +40°C
Storage temperature	−20°C to +60°C

ELECTRICAL

Power requirements	AC 100/120/220/240 V ±10% (Selectable), 48 to 64 Hz
Power consumption	170W
Editing functions	ASSEMBLE and INSERT (VIDEO, AUDIO CH-1, AUDIO CH-2), AUTO EDIT, MANUAL EDIT PREVIEW, REVIEW, PREROLL, TRIM

VIDEO

Video recording system	Luminance: FM Chroma: SC low-range conversion
Input	PAL composite video, sync negative 1.0 Vp-p $^{+1.0}_{-0.5}$ V, 75Ω, unbalanced
Output	PAL composite video, sync negative 1.0 Vp-p ± 0.2 V, 75Ω, unbalanced
Dubbing input	Luminance signal: 0.5 Vp-p Sync negative, Impedance: 75Ω ± 10% Chroma signal: 0.5 Vp-p Impedance: 75Ω ± 10%
Dubbing output	Luminance signal: 0.5 Vp-p Sync negative Impedance: 75Ω ± 10% Chroma signal: 0.5 Vp-p Impedance: 75Ω ± 10%
Horizontal resolution	370 lines (monochrome mode) 260 lines (color mode)
Signal to noise ratio	More than 46 dB (monochrome mode) More than 46 dB (color mode)

AUDIO

Input	**(MIC)**	−60 dB, 3 k-ohms, balanced (matches 600-ohm microphones)
	(LINE)	+4 dB, 10 k-ohms/600 ohms, balanced
Output	**(LINE)**	+4 dB, low impedance, balanced (600-ohm load permissible)
	(HEADPHONES)	−46 to −26 dB, 8 ohms load, binaural
	(MONITOR)	+4 dB, 600-ohm load, balanced
Distortion		Less than 2.0% (1 kHz reference level)
Frequency response		50 Hz to 15 kHz
Signal to noise ratio		48 dB (at 3% distortion level)
TIME CODE input		0 dB ± 6 dB, 10 k-ohms, unbalanced (0 dB = 1.55 Vp-p pulse)
TIME CODE output		0 dB ± 3 dB, low impedance, unbalanced (0 dB = 1.55 Vp-p pulse)

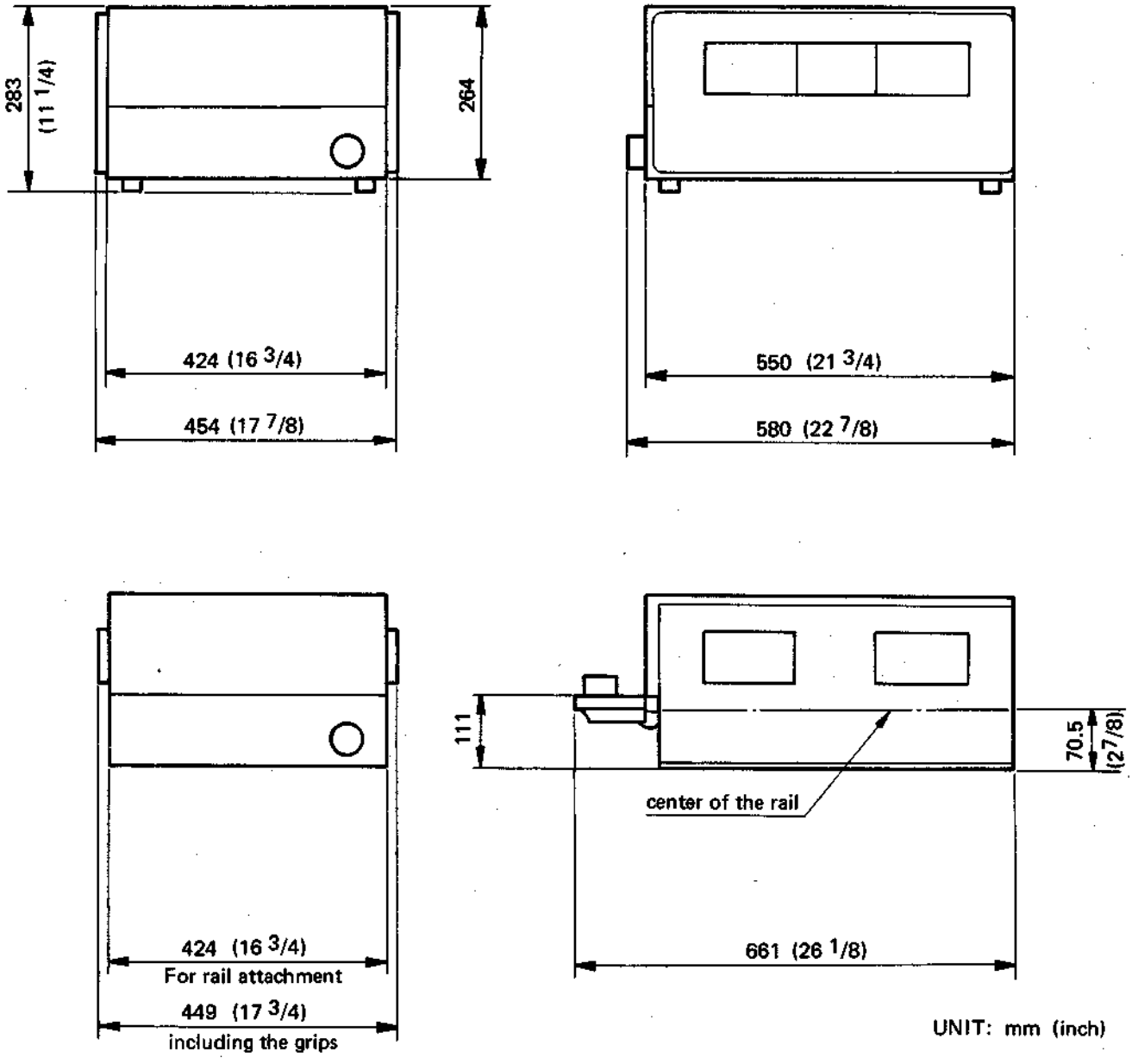
SC input	2 Vp-p ± 1V, 75 ohms, unbalanced
SYNC input	0.2 Vp-p to 5 Vp-p, negative, 75 ohms, unbalanced (1 Vp-p ± 0.2 V with VIDEO input)
RF output (OFF TAPE)	0.5 Vp-p ± 0.1 V, 75 ohms, unbalanced

Design and specifications subject to change without notice.

Accessories supplied

AC power cord 1
Dubbing cable VDC-5 (5 m) 1
Remote control cable (9 pin-9 pin) RCC-5G 1
Extension board EX-7 1
Operation and maintenance manual 1

VIEW OF EXTERIOR



UNIT: mm (inch)

TEIL 1
BETRIEB

1-1. BESONDERE MERKMALE

Schnelles Auffinden der Schnittpunkte

Ein Suchlauf, bei dem das Wiedergabebild erkennbar ist, erlaubt ein schnelles Auffinden der Schnittpunkte. Der Suchlauf ist auf 2 Arten durchführbar: Beim Shuttle-Betrieb ist die Wiedergabegeschwindigkeit von 1/30 bis zum 10 fachen Wert der Normalgeschwindigkeit in beiden Richtungen variierbar; im Jog-Betrieb bewegt sich das Bild analog der Drehung des Suchlauf-Knopfes. Auch beim Schnellvorlauf- und Rücklaufbetrieb bleibt das Band um die Kopftrommel geschlungen, und bei Verwendung eines Time-Base-Correctors erhält man ein erkennbares Bild.

Schnittbetrieb

Bei Anfügschnitten werden der Videokanal sowie die Tonkanäle 1 und 2 gleichzeitig geschnitten. Bei Einfügschnitten können Videokanal, Tonkanal 1 und Tonkanal 2 unabhängig voneinander geschnitten werden. Das Schnittmaterial kann vor und nach dem Aufnehmen betrachtet werden.

Bedienung an der Vorderseite

Alle Bedienungsfunktionen, einschließlich Einlegen und Herausnehmen der Cassette, können am vorne angebrachten Bedienungspult vorgenommen werden. Das Bedienungspult kann für individuelle Bedienbarkeit in 6 Stufen bis maximal 90° verdreht werden.

Fernbedienung

Werden für den Schnittbetrieb zwei BVU-800P Video-Cassettenrecorder verwendet, so kann die Wiedergabemaschine von den Bedienungselementen der Aufnahmemaschine aus fernbedient werden. Das Bedienungspult kann abgenommen werden.

Zeitkode-Aufnahme/Wiedergabe

Das Gerät besitzt eine getrennte Adreßspur, so daß der EBU-Zeitkode aufgezeichnet und wiedergegeben werden kann, wenn ein Zeitkode-Generator und ein Auswerter angeschlossen ist. Es braucht dazu keine Tonspur aufgegeben zu werden.

ϕ^2-Servoregelkreis

Auch an einer Schnittstelle werden Bildstörungen (kurzzeitiges Kippen des Bildes) vermieden, da der BVU-800P eine H-Phasenkorrektur- und eine Bildfangeinrichtung besitzt. Die H-Phasenkorrektur arbeitet automatisch.

Antriebswellen-Servo

Der BVU-800P besitzt eine Antriebswellen-Servoschaltung, die von einem externen Signal gesteuert wird.

Halbbildgenauarbeitender Servo

Dieses System erkennt die geraden und ungeraden Halbbilder in einem Vollbild und sorgt für einen exakten Schnitt zwischen dem Ende eines geraden Halbbildes und dem Anfang des nächsten ungeraden Halbbildes.

Halbbildrichtige Farbträgerverkopplung

Der BVU-800P besitzt einen Schaltkreis für halbbildrichtige Farbträgerverkopplung, der alle vier Halbbilder erkennt und sie so ausrichtet, daß am Schnittpunkt keine Farbblitze entstehen.

Direktantrieb mit sechs Gleichstrommotoren

Der BVU-800P besitzt sechs getrennt angebrachte Motoren. Die Kopftrommel wird von einem bürstenlosen Gleichstrommotor direkt angetrieben. Zum Antrieb der Antriebswelle dient ebenfalls ein bürstenloser Gleichstrommotor, der für diesen Zweck neu entwickelt wurde. Da die Abwickelspule und die Aufwickelspule von getrennten Motoren angetrieben werden, kann der Bandzug von einem Servosystem genau geregelt werden. Dies ermöglicht einen schnellen Zugriff zu einer bestimmten Bandstelle.

Digitaler Zeitzähler

Der Zeitzähler zeigt bei Normalgeschwindigkeit die bereits verbrauchte Bandmenge in Stunden, Minuten, Sekunden und Einzelbildern an. Zu diesem Zweck werden die CTL-Signale gezählt. Es kann auch die Schnittzeit angezeigt werden.

Automatisches oder manuelles Video-Aufnahmesystem

Der Video-Aufnahmepegel kann entweder automatisch oder manuell eingestellt werden.

Tonsignal-System

Die beiden Tonsignal-Aufnahme- bzw. Wiedergabepegel können getrennt eingestellt werden. Falls erforderlich kann ein Begrenzer aktiviert werden, um auch bei plötzlich auftretenden starken Pegelspitzen des Eingangssignals eine verzerrungsfreie Aufnahme sicherzustellen. Die Signale von Tonkanal 1 und Tonkanal 2 können beim Aufnehmen auch gemischt werden.

Schnitt/Kopieranschlüsse

Beim Kopieren der Videosignale über die DUB IN- und DUB OUT-Anschlüsse kommt es auch nach etlichen Wiederholvorgängen nur zu einer äußerst geringen Qualitätseinbuße.

Anschluß eines Time-Base-Correctors

Der BVU-800P besitzt einen Eingang für ein externes Hilfsträgersignals (SC IN) und einen Eingang für ein externes Synchronisationssignal (EXT SYNC IN), so daß ein Time-Base-Corrector angeschlossen werden kann. Außerdem ist ein HF-Ausgang (RF OUT) vorgesehen, an den ein Dropout-Compensator (BVT-2000P etc.) angeschlossen werden kann.

Automatischer Bandrücklauf und automatischer Bandstop am Ende

Ist das Band bis zum Ende durchgelaufen, so wird es automatisch zum Anfang zurückgespult und dort automatisch gestoppt.

Kontrollampen

Diese Lampen sind gut erkennbar auf der Vorderseite angebracht und zeigen dem Operator die Funktion des farbträgerverkoppelten Halbbild-Servosystems, der Synchronisation, eine eventuelle Kondenswasserbildung im Geräteinneren, die Zeitkode-Aufnahme/Wiedergabe sowie den Betrieb des Antriebswellen- und Kopftrommel-Servosystems an.

Einsteckbare Platinen und Module

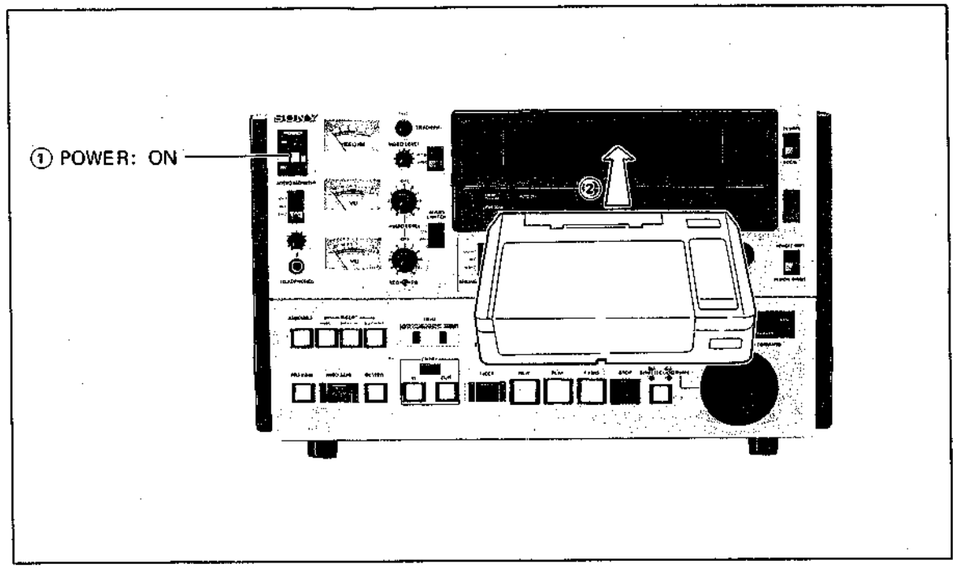
Bei der Entwicklung der einsteckbaren Platinen und Moduln wurde großen Wert auf Service- und Wartungsfreundlichkeit gelegt. Sie sind leicht durch Abnehmen der oberen Geräteabdeckung zugänglich.

Einbaumöglichkeit in ein 19-Zoll Normgestell

Der BVU-800P kann in ein 19-Zoll EIA-Normgestell eingebaut werden.

1-2. EINLEGEN UND HERAUSNEHMEN EINER CASSETTE

EINLEGEN EINER CASSETTE



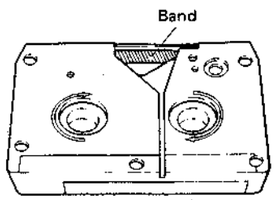
- Das Band fädelt sich automatisch ein, die Kopftrommel beginnt sich zu drehen, und auf dem Bildschirm erscheint ein Standbild.

HERAUSNEHMEN EINER CASSETTE

Drücken Sie die EJECT-Taste bei eingeschaltetem Netzschalter.

Hinweise:

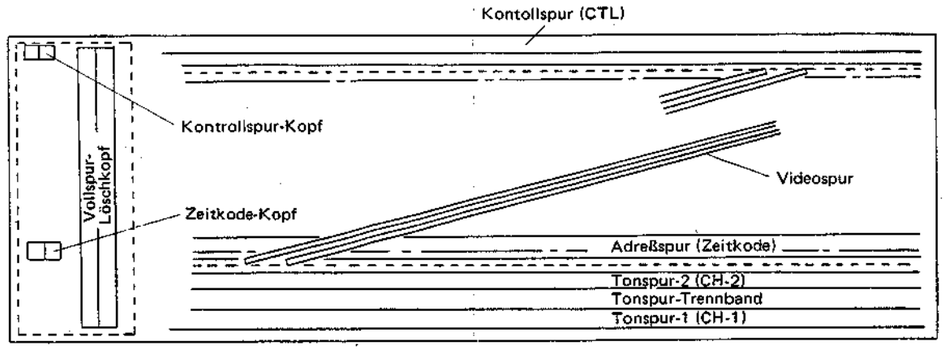
- Verwenden Sie in diesem Gerät nur Sony U-matic Videocassetten oder die entsprechenden Typen KCA-60 (60 Minuten) oder KCS-20 (20 Minuten).
- Nehmen Sie nach der Verwendung die Cassette heraus, bevor Sie das Gerät abschalten.
  Wurde der Netzschalter trotz eingelegter Cassette ausgeschaltet, so schalten Sie ihn wieder ein. Die EJECT-Lampe leuchtet dann kurzzeitig auf, und anschließend leuchten die STANDBY- und die STOP-Lampe. Drücken Sie zum Herausnehmen der Cassette die EJECT-Taste, sobald die STOP-Lampe aufleuchtet.
- Wird ein zu weit aufgespultes Band eingefädelt, so sorgt ein Sensor automatisch für ein schnelles Rück- bzw. Vorspulen, um die Kopfspitze vor Beschädigungen durch das Vorspannband zu bewahren. Wird eine KCA-Cassette mit versehentlich herausgezogenem endseitigen Vorspannband eingelegt, so wird die Cassette automatisch wieder ausgeworfen. Drehen Sie in diesem Fall die Abwickelspule manuell, bis das endseitige Vorspannband ganz aufgewickelt ist, und legen Sie die Cassette dann wieder ein.



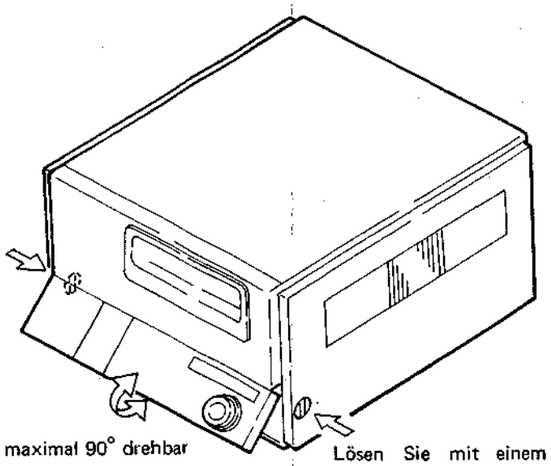
Schutz eines bespielten Bandes vor versehentlichem Löschen

Entfernen Sie die kleine rote Kappe an der Unterseite der Cassette; das Gerät kann dann nicht in die Aufnahmefunktion übergehen. Setzen Sie die Kappe wieder ein, wenn die Cassette wieder für Aufnahmen herangezogen werden soll. Lassen Sie die Kappe normalerweise eingesetzt.

- Die Abbildung unten zeigt das von diesem Gerät erzeugte Aufnahmespurmuster bei Verwendung eines Zeitkode-Generators.



AUSRICHTUNG DES BEDIENUNGSPULTES



In 6 Stufen bis maximal 90° drehbar

Lösen Sie mit einem Schraubenzieher die beiden seitlich angebrachten Arretierschrauben.

- Das Bedienungspult kann abgenommen, und sämtliche Funktionen können über Kabel fernbedient werden. Genauere Informationen dazu finden Sie im Teil 2.

⑬ Tonpegel-Begrenzerschalter [AUDIO LIMITER]

Steht dieser Schalter auf ON, so arbeitet der Tonpegel-Begrenzerschaltkreis. Bei der Aufnahme reduziert dieser Schaltkreis plötzlich auftretende Pegelspitzen des Eingangssignals auf einen festen Pegel, so daß stets eine verzerrungsfreie Aufnahme hoher Qualität gewährleistet ist.

⑭ Wiedergabe-Tonpegel-Regler [AUDIO LEVEL PB] (innerer Regler)

Stellen Sie hier den Ausgangstonpegel von Tonsignal 1 und Tonsignal 2 ein. Stellen Sie die Regler bei Wiedergabe so ein, daß die VU-Meter ⑯ in den Spitzen bis 0 VU ausschlagen.

⑮ Wiedergabe-Tonpegel-Regler [AUDIO LEVEL PB] (äußerer Regler)

Stellen Sie hier den Eingangstonpegel von Tonsignal-1 und Tonsignal-2 ein. Befindet sich der Recorder im E-zu-E-Betrieb, so stellen Sie diese Regler so ein, daß die VU-Meter ⑯ in den Spitzen bis 0 VU ausschlagen.

⑯ VU-Meter

Befindet sich der Recorder im Aufnahme oder E-zu-E-Betrieb, so zeigen die VU-Meter den Eingangstonpel an; befindet er sich im Wiedergabebetrieb, so zeigen die VU-Meter den Ausgangstonpegel an.

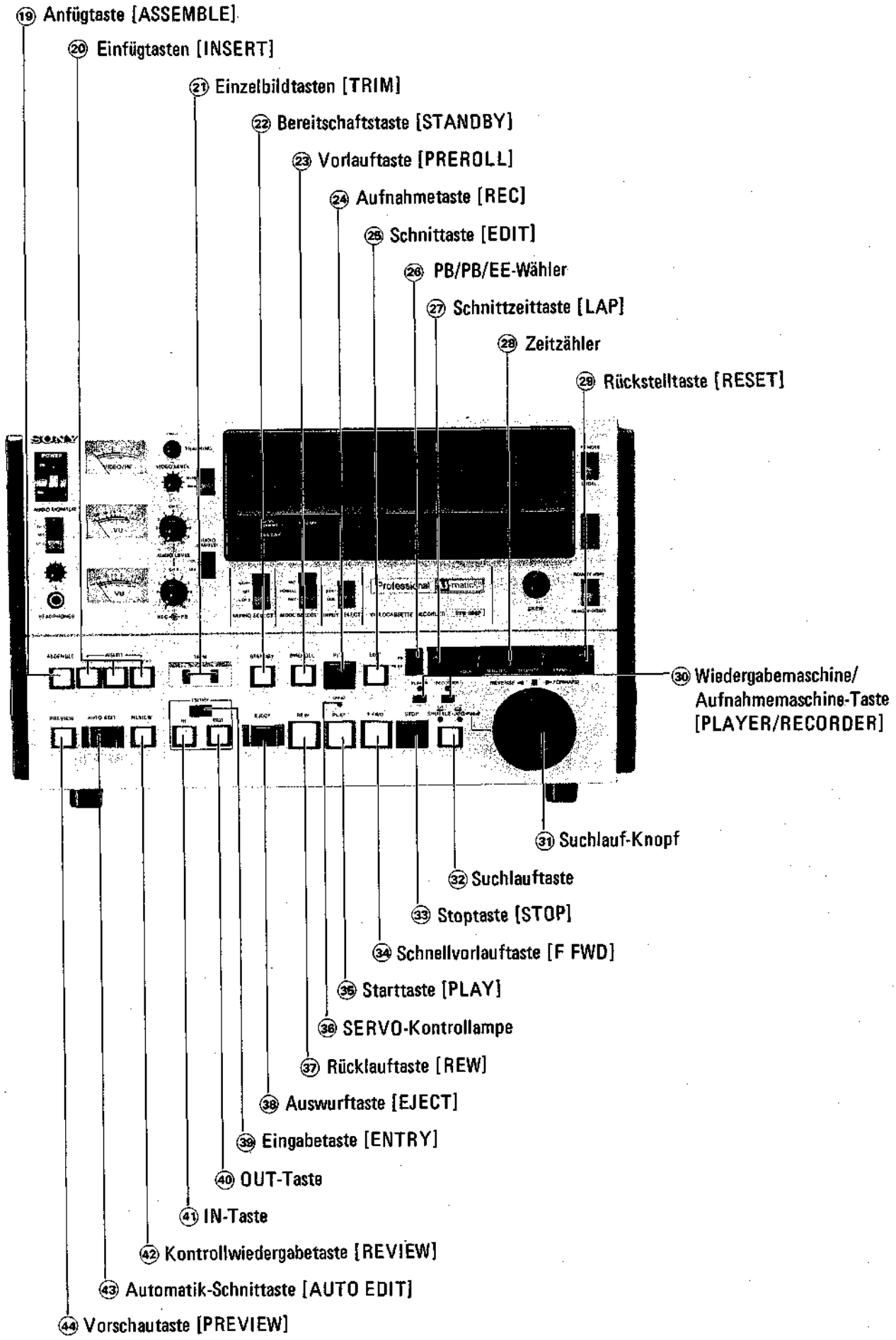
⑰ Kopfhörerbuchse [HEADPHONES] und Kopfhörerlautstärke-Regler

Hier kann ein 8-Ohm Stereokopfhörer angeschlossen werden. Der Ton kann bei Aufnahme, beim Schnittvorgang und beim Wiedergabebetrieb mitgehört werden. Die Lautstärke des Mithörtons ist am Kopfhörerlautstärkeregler einstellbar.

⑱ Tonsignal-Wähler [AUDIO MONITOR]

Hier kann das Tonausgangssignal der HEADPHONES-Buchse ⑰ und der auf der Rückseite befindlichen MONITOR-Anschlüsse gewählt werden.

CH-1: Tonsignal-1
MIX: Signal 1 und 2 liegt an der HEADPHONES-Buchse bzw. das Mischsignal aus beiden Signalen liegt an den MONITOR- und AUDIO OUT MONITOR-Anschlüssen an.
CH-2: Tonsignal-2


⑲ Anfügtaste [ASSEMBLE]
⑳ Einfügtasten [INSERT]
㉑ Einzelbildtasten [TRIM]
㉒ Bereitschaftstaste [STANDBY]
㉓ Vorlauftaste [PREROLL]
㉔ Aufnahmetaste [REC]
㉕ Schnittaste [EDIT]
㉖ PB/PB/EE-Wähler
㉗ Schnittzeittaste [LAP]
㉘ Zeitzähler
㉙ Rückstelltaste [RESET]
㉚ Wiedergabemaschine/ Aufnahmemaschine-Taste [PLAYER/RECORDER]
㉛ Suchlauf-Knopf
㉜ Suchlauftaste
㉝ Stoptaste [STOP]
㉞ Schnellvorlauftaste [F FWD]
㉟ Starttaste [PLAY]
㊱ SERVO-Kontrollampe
㊲ Rücklauftaste [REW]
㊳ Auswurftaste [EJECT]
㊴ Eingabetaste [ENTRY]
㊵ OUT-Taste
㊶ IN-Taste
㊷ Kontrollwiedergabetaste [REVIEW]
㊸ Automatik-Schnittaste [AUTO EDIT]
㊹ Vorschautaste [PREVIEW]

⑲ Anfügtaste [ASSEMBLE]

Drücken Sie diese Taste zum Anfügbetrieb. Durch nochmaliges Drücken wird der Anfügbetrieb wieder ausgeschaltet.

⑳ Einfügtasten [INSERT]

Wählen Sie an diesen Tasten das Eingangssignal für den Einfügbetrieb.

㉑ Einzelbildtasten [TRIM]

Der gespeicherte Schnittanfangs- und Schnittendpunkt kann um jede beliebige Anzahl von Einzelbildern verändert werden. Drücken Sie dazu die IN- oder OUT-Taste zusammen mit der entsprechenden Einzelbildtaste.

㉒ Bereitschaftstaste [STANDBY]

Wird der Netzschalter eingeschaltet, so leuchtet die STANDBY-Lampe und zeigt damit an, daß sich die Kopftrommel dreht und das Gerät betriebsbereit ist. Wird diese Taste während der Stopfunktion gedrückt, so bleibt die Kopftrommel stehen, und die Bandspannung verringert sich, um einer Beschädigung des Videokopfes vorzubeugen. Auf dem Bildschirm erscheint das E-zu-E-Bild. Drücken Sie die STANDBY-Taste erneut oder eine andere Betriebstaste (außer der STOP-Taste), um das Gerät wieder in den Stop-Betrieb oder einen anderen Betrieb umzuschalten.

㉓ Vorlauftaste [PREROLL]

Drücken Sie diese Taste, um das Band zu einem 10 Sekunden oder 5 Sekunden (je nach Stellung des Vorlaufzeit-Schalters) vor dem Schnittanfangspunkt liegenden Punkt laufen zu lassen.
Wurde kein Schnittanfangspunkt eingegeben, so wird der Punkt, an dem die Vorlauftaste gedrückt wird, als Schnittanfangspunkt eingegeben, und der Vorlauf beginnt an diesem Punkt.

㉔ Aufnahmetaste [REC]

Drücken Sie diese Taste gleichzeitig mit der PLAY-Taste, um das Gerät in den Aufnahmebetrieb zu schalten.
Wird diese Taste im Wiedergabe-, Suchlauf-, Schnellvorlauf- oder Rücklaufbetrieb gedrückt, so erscheint das E-zu-E-Bild- und das Tonsignal. Wird die Taste wieder ausgerastet, so befindet sich das Gerät in der gleichen Betriebsfunktion wie vor dem Drücken der Taste. Beim Stopbetrieb erscheint bei gedrückter und ausgerasteter Taste das E-zu-E-Bild- und Tonsignal. Drücken Sie die STOP-Taste, um das Gerät wieder in der vorhergehenden Betriebszustand überzuführen.

㉕ Schnittaste [EDIT]

Drücken Sie für manuellen Schnittbetrieb diese Taste gleichzeitig mit der PLAY-Taste.
Wird diese Taste im Wiedergabe-, Suchlauf-, Schnellvorlauf- oder Rücklaufbetrieb gedrückt, so erscheint das E-zu-E-Videosignal und das Tonsignal. Wird die Taste wieder ausgerastet, so befindet sich das Gerät in der gleichen Betriebsfunktion wie vor dem Drücken der Taste. Beim Stopbetrieb erscheint bei gedrückter und ausgerasteter Taste das E-zu-E-Bild- und Tonsignal. Drücken Sie die STOP-Taste, um das Gerät wieder in der vorhergehenden Betriebszustand überzuführen.

㉖ PB/PB/EE-Wähler

Stellen Sie hier das abzubildende Videosignal und das Tonsignal ein. Genauere Informationen dazu finden Sie in der Tabelle auf Seite 1-70.

㉗ Schnittzeittaste [LAP]

Wird diese Taste gedrückt, so erscheint die Schnittzeit auf dem Zeitzähler.

㉘ Zeitzähler

Der Zeitzähler zeigt bei Normalgeschwindigkeit die bereits durchgelaufene Bandmenge in Stunden, Minuten, Sekunden und Einzelbildern an.

㉙ Rückstelltaste [RESET]

Drücken Sie diese Taste, um die Anzeige des Zeitzählers auf „0:00:00:00" zu stellen. Die gespeicherten Schnittanfangs- und Schnittendpunkte werden beim Drücken dieser Taste gelöscht.

㉚ Wiedergabemaschine/Aufnahmemaschine-Taste [PLAYER/RECORDER]

Werden zum Schnittbetrieb zwei BVU-800P zusammengeschaltet, so kann die Wiedergabemaschine von der Aufnahmemaschine aus fernbedient werden, wenn die PLAYER-Taste der Aufnahmemaschine gedrückt wird.

RECORDER-Taste: Drücken Sie diese Taste, um die Funktionstasten der Aufnahmemaschine in gewohnter Weise benutzen zu können.

PLAYER-Taste: Wird diese Taste gedrückt, so kann die Bereitschafts-, Auswurf-, Schnellvorlauf-, Wiedergabe-, Rücklauf-, Stop-, Shuttle-, Jog-, Vorlauf-, Eingabe-, IN/OUT-, Einzelbild- und Zeitzählerfunktion der Wiedergabemaschine von der Aufnahmemaschine aus fernbedient werden.

㉛ Suchlauf-Knopf

Mit diesem Knopf können die gewünschten Schnittpunkte schnell aufgefunden werden.
Durch Drücken des Knopfes geht das Gerät in den Jog-Betrieb und durch nochmaliges Drücken geht es in den Shuttle-Betrieb.
Die entsprechende Lampe leuchtet auf.

SHUTTLE: Drehen Sie den Knopf nach rechts oder nach links. Die Bandgeschwindigkeit kann dadurch von 1/30, 1/10, 1/5, 1/2, 1, 2, 5 bis zur 10 fachen Normalgeschwindigkeit in beiden Richtungen verändert werden.

JOG: Drehen Sie den Knopf nach rechts oder nach links. Das Band bewegt sich dann entsprechend der Richtung und Geschwindigkeit der Knopfdrehung (von 0 bis Normalgeschwindigkeit). Wird der Knopf nicht gedreht, so erscheint ein Standbild.

- Achten Sie darauf, den Knopf beim Einschalten des Netzschalters vor dem Benutzen einmal kurz auf die Stellung ■ zu stellen.

㉜ Suchlauftaste

Drücken Sie diese Taste, um das Gerät in die Suchlauffunktion zu schalten.

㉝ Stoptaste [STOP]

Drücken Sie diese Taste, um das Gerät in die Stopfunktion zu schalten. Der Spulenmotor hält dann an, die Andruckrolle fährt zurück, die Kopftrommel dreht sich, und das Band bleibt eingefädelt.

㉞ Schnellvorlauftaste [F FWD]

Drücken Sie diese Taste, um das Band schnell vorzuspulen.

㉟ Starttaste [PLAY]

Drücken Sie zur Wiedergabe des Bandes diese Taste.
Drücken Sie zur Aufnahme diese Taste gleichzeitig mit der REC-Taste. Drücken Sie zum manuellen Schneiden während der Wiedergabe diese Taste gleichzeitig mit der EDIT-Taste.
Drücken Sie während der manuellen Aufnahme diese Taste zum Stoppen des Aufnahmevorgangs.

㊱ SERVO-Kontrollampe

Diese Kontrollampe leuchtet auf, sobald das Servosystem der Kopftrommel und der Antriebswelle stabil arbeitet.

㊲ Rücklauftaste [REW]

Drücken Sie diese Taste zum Rückspulen des Bandes.

㊳ Auswurftaste [EJECT]

Drücken Sie diese Taste, um das Band auszufädeln und die Cassette auszuwerfen. Die Zähleranzeige wird auf „0:00:00:00" zurückgestellt, wenn der Zeitzähler im CTL-Betrieb arbeitet.

- Achten Sie darauf, die Cassette jedesmal vor dem Ausschalten des Geräts herauszunehmen.

㊴ Eingabetaste [ENTRY]

Drücken Sie diese Taste zusammen mit der IN- oder OUT-Taste, um den Schnittanfangs- bzw. Schnittendpunkt einzugeben.

㊵ OUT-Taste

Wird diese Taste zusammen mit der ENTRY-Taste gedrückt, so wird der Schnittendpunkt eingegeben.
Beim Drücken dieser Taste erscheint auf dem Zeitzähler die Einzelbildnummer des Schnittendes.

㊶ IN-Taste

Wird diese Taste zusammen mit der ENTRY-Taste gedrückt, so wird der Schnittanfangspunkt eingegeben.
Beim Drücken dieser Taste erscheint auf dem Zeitzähler die Einzelbildnummer des Schnittanfangs.

㊷ Kontrollwiedergabetaste [REVIEW]

Drücken Sie zum Überprüfen des beim Schnittvorgang aufgezeichneten Bild- und Tonsignals diese Taste.

㊸ Automatik-Schnittaste [AUTO EDIT]

Drücken Sie diese Taste zum Starten des automatischen Schnittvorganges.

㊹ Vorschautaste [PREVIEW]

Drücken Sie diese Taste zur Probevorschau des Schnittvorgangs. Vor der eigentlichen Schnittaufnahme kann die Aufnahmeabfolge dann am Monitor überprüft werden.

⑮ Tonausgänge [AUDIO OUT] (CH-1/CH-2) (XLR-Stecker)

An diesen Ausgängen liegen die Tonsignale an, deren Pegel an dem an der Vorderseite angebrachten AUDIO LEVEL-Regler eingestellt werden kann.

⑯ Monitor-Tonsignalausgang [AUDIO OUT MONITOR] (XLR-Stecker)

Schließen Sie hier das Tonmithör-System an. Das anliegende Ausgangssignal kann an dem an der Vorderseite angebrachten AUDIO MONITOR-Wähler und an dem MIXING SELECT-Wähler eingestellt werden.

⑰ Fernbedienungsanschluß-2 [REMOTE-2] (36-polig)

Schließen Sie hier eine Sony Schnittsteuer-Einheit der BVE-Serie (z.B. BVE-500ACE oder 5000P) mit einem gesondert lieferbaren 36-poligen Fernbedienungskabel an.

⑱ Fernbedienungsanschluß-1 [REMOTE-1] (9-polig)

Schließen Sie hier mit dem 9-poligen Fernbedienungskabel (mitgeliefert) einen weiteren BVU-800P für den Schnittbetrieb an.

⑲ Stundenanzeige [HOURS METER]

Diese Anzeige zeigt die gesamte Zeit an, die das Gerät im Aufnahme-, Wiedergabe-, Schnitt-, Suchlauf-, Schnellvorlauf- oder Rücklaufbetrieb verwendet wurde (bis maximal 1000 Stunden).

⑳ Spannungswähler [VOLTAGE SELECT]

Einstellbar auf 100, 120, 220 oder 240V Wechselspannung.

㉑ Netzanschluß [AC IN]

Schließen Sie hier das mitgelieferte Netzkabel an, und stecken Sie den Netzstecker in eine Wandsteckdose.

㉒ Time-Base-Corrector-Anschluß [TBC]

An diesem Anschluß kann ein Time-Base-Corrector angeschlossen werden.

㉓ Zeitkode Ausgang [TIME CODE OUT] (RCA-Cinch)

An diesem Anschluß liegt das Wiedergabe-Zeitkodesignal an. Es kann ein Zeitkodeauswerter angeschlossen werden. Bei Aufnahme- und E-zu-E-Betrieb liegt hier das Zeitkode-Signal vom TIME CODE IN-Anschluß ㉔ an.

㉔ Zeitkode-Eingang [TIME CODE IN] (RCA-Cinch)

Schließen Sie hier zur Aufzeichnung des Zeitkode-Signals einen Zeitkode-Generator an.

1-4. AUFNAHME

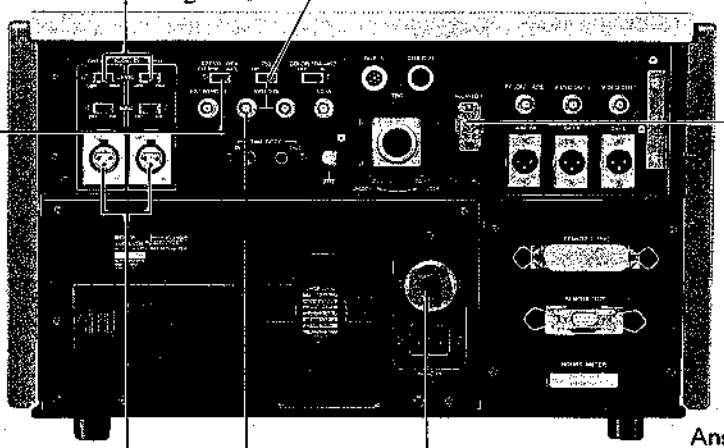
1. VORBEREITUNGEN

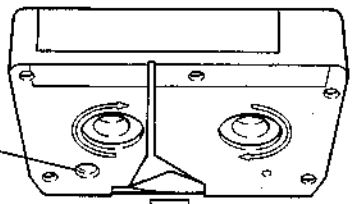
Stellen Sie die Bedienungselemente auf die im folgenden angegebenen Stellungen.

AUDIO IN LEVEL: LOW oder HIGH
LOW: –60 dB, 3 k Ohm (zum Anschluß von Mikrofonen)
HIGH: +4 dB, 10 k Ohm/600 Ohm (zum Anschluß anderer Geräte)
Steht der Schalter in dieser Stellung, so stellen Sie den 600Ω-Wähler folgendermaßen ein:
ON: 600 Ohm
OFF: 10 k Ohm

75Ω ON/OFF: ON
Stellen Sie den Schalter für Schleifenausgang auf OFF.

SERVO LOCK:
AUTO: Normalstellung
EXT SYNC:
Für externe Synchronisation (siehe Seite 1-15)



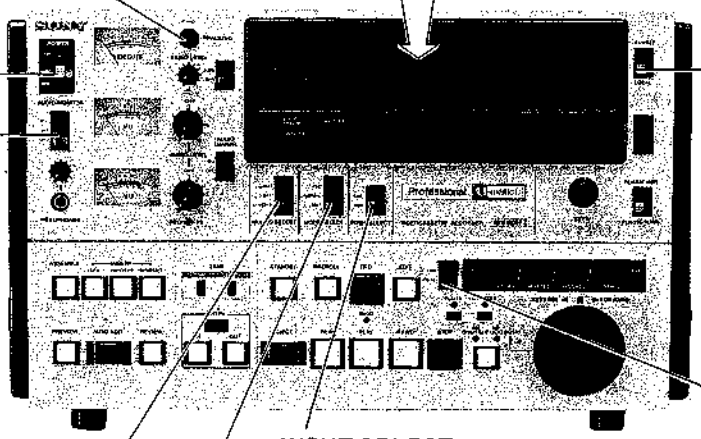


TRACKING: FIXED

POWER: ON

AUDIO MONITOR:
normalerweise auf MIX

REMOTE/LOCAL:
LOCAL



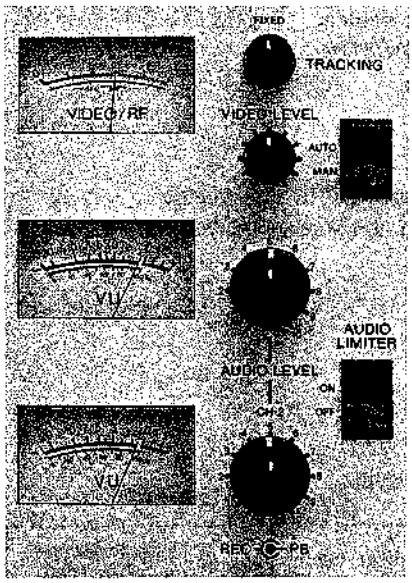
PB/PB/EE: normalerweise auf PB/EE

INPUT SELECT: LINE oder DUB
LINE: Das Videosignal des am VIDEO IN-Anschluß angeschlossenen Geräts wird aufgenommen.
DUB: Das Videosignal des am DUB IN-Anschluß angeschlossenen Wiedergabegeräts wird aufgenommen.

MIXING SELECT: normalerweise auf OFF

MODE SELECT: NORMAL

2. EINSTELLUNG DES VIDEO- UND TONPEGELS



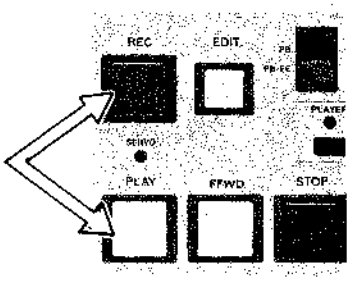
Videopegel

Stellen Sie zur automatischen Videopegel-Aussteuerung den AUTO/MAN-Wähler auf AUTO.
Stellen Sie zur manuellen Videopegel-Aussteuerung den AUTO/MAN-Wähler auf MAN, und regulieren Sie den VIDEO LEVEL-Regler so ein, daß der Zeiger der Pegelanzeige sich im blauen Bereich bewegt.

Tonpegel

Stellen Sie den AUDIO LIMITER-Schalter auf OFF.
Stellen Sie dann die AUDIO LEVEL-Regler für Kanal 1 und Kanal 2 so ein, daß die VU-Meter maximal bis 0 ausschlagen.
Stellen Sie für Aufnahmen mit Tonpegel-Begrenzung den AUDIO LIMITER-Schalter auf ON.

3. STARTEN DER AUFNAHME



Drücken Sie gleichzeitig die REC- und die PLAY-Taste.
Es dauert einige Sekunden, bis das Kopftrommel- und Bandantriebswellen-Servo-System stabil arbeitet. Die SERVO-Kontrollampe leuchtet dann auf.
Außerdem leuchten die Anzeigen: REC, PLAY, STANDBY.

Drücken Sie zum Stoppen der Aufnahme die STOP-Taste.
Es leuchten die Anzeigen: STOP, STANDBY.
Ist das Band bis zum Ende durchgelaufen, so wird es automatisch zurückgespult und am Bandanfang angehalten.

ABGREIFEN VON VIDEO- UND TONSIGNAL

Videosignal: Es kann am VIDEO OUT- oder am MONITOR-Anschluß abgegriffen werden.

Tonsignal: Zum Abgreifen des Tonsignals kann am AUDIO MONITOR-Anschluß ein Audiosystem, am MONITOR-Anschluß ein Monitor oder an der HEADPHONES-Buchse ein Stereo-Kopfhörer angeschlossen werden. Das anliegende Tonsignal kann folgendermaßen am AUDIO MONITOR-Wähler eingestellt werden.

Tonsignal-1
Beide Signale an der HEADPHONES-Buchse
Beide Signale gemischt am MONITOR-Wähler
Tonsignal-2

STELLUNG DES PB/PB/EE-WÄHLERS

Mit diesem Wähler wird das Monitorbildsignal und das Monitortonsignal eingestellt.

Betriebsart / Stellung des Wählers	Cassetten-auswurf	Einfädeln oder Ausfädeln	Wieder-gabe	Auf-nahme	Schnitt	Such-lauf	Schnellvor- oder Rücklauf	Stop	Wenn der Bereit-schaftsbetrieb ausgeschaltet wird
PB/EE	EE	EE	PB	EE	EE	PB	EE	EE	EE
PB	EE	EE	PB	EE	EE	PB	PB	PB	PB

Beim Drücken der REC-Taste während des Wiedergabe-, Suchlauf-, Schnellvorlauf- oder Rücklaufbetriebs erscheint auf dem Monitor das E-zu-E-Bild- und Tonsignal. Beim Drücken der EDIT-Taste kann am Monitor das E-zu-E-Bild- und das an der ASSEMBLE- oder INSERT-Taste gewählte Tonsignal kontrolliert werden. Wird die Taste ausgerastet, so geht das Gerät wieder in den vorhergehenden Betriebszustand über.

Während des Stopbetriebs erscheint beim Drücken und Ausrasten der REC- oder EDIT-Taste das E-zu-E-Bild- und Tonsignal weiter am Monitor. Drücken Sie die STOP-Taste, um das Gerät in den vorhergehenden Betriebszustand überzuführen, oder drücken Sie die entsprechende Taste zum Überführen in einen anderen Betriebszustand.

BEZUGSIGNALWÄHLER UND SYNCHRONSIGNAL-WÄHLER

Mit diesen Wählern kann das am VIDEO IN- oder am DUB IN-Anschluß anliegende Videosignal, das am EXT SYNC IN-Anschluß anliegende externe Signal oder das interne Synchronisationssignal als Bezugsignal für die Synchronisation ausgewählt werden.

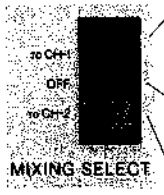
Stellung des SERVO LOCK-Wählers		AUTO			EXT SYNC	
Betriebsart des Video-Recorders		Aufnahme	Wiedergabe, E-E		Aufnahme	Wiedergabe, E-E
Stellung des MODE SELECT-Wählers		EDIT, NORMAL, TBC	EDIT	NORMAL, TBC	EDIT, NORMAL, TBC	
Eingangssignal an VIDEO IN oder DUB IN	Eingangssignal an EXT SYNC IN					
ja	ja	VIDEO	VIDEO (EXT SYNC)*	EXT SYNC IN (VIDEO)**	EXT SYNC IN	
ja	nein	VIDEO	VIDEO (internes Synchronisationssignal)*		VIDEO	VIDEO (Internes Synchronisationssignal)*
nein	ja		EXT SYNC IN			
nein	nein		Internes Synchronisationssignal			

* Ist ein BVE-500, BVE-500ACE, BVE-800 oder zwei BVU-800P zum Schneiden angeschlossen, und befindet sich das Gerät nicht in Wiedergabe, so ist das Bezugsignal der Synchronisierung in den Klammern angegeben.

** Am Modell mit Seriennummer 11491 oder mehr wird das Bezugsignal der Aufnahmemaschine VIDEO sein, wenn eine der ASSEMBLE- bzw. INSERT-Tasten gedrückt ist (die Taste leuchtet) und sich der Videorecorder im Wiedergabebetrieb befindet, oder wenn die EDIT-Taste leuchtet.

MISCHUNG DER TONSIGNALE

Beim Aufnehmen können die Tonsignale von Kanal 1 und Kanal 2 gemischt werden. Es ist auch möglich, das gemischte Tonsignal entweder auf Spur 1 oder Spur 2 aufzunehmen. Stellen Sie dazu den MIXING SELECT-Wähler wie folgt ein:

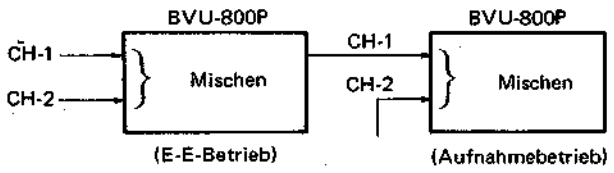


Das Mischsignal wird auf Spur 1 aufgezeichnet.
(Das Tonsignal von Kanal 2 wird auf Spur 2 aufgezeichnet.)

Das Tonsignal von Kanal 1 und Kanal 2 wird auf den entsprechenden Spuren aufgezeichnet.

Das Mischsignal wird auf Spur 2 aufgezeichnet.
(Das Tonsignal von Kanal 1 wird auf Spur 1 aufgezeichnet.)

- Das Mischsignal aus Tonsignal-1 und Tonsignal-2 wird mit gleichem Pegel gemischt aufgezeichnet.
- Werden zwei BVU-800P zusammengeschaltet, so können drei Tonsignale gemischt werden.



BANDSCHUTZAUTOMATIK

Befindet sich das Gerät länger als 8 Minuten in der Stopfunktion, so wird der Bereitschaftsbetrieb automatisch abgeschaltet (die Kopftrommel bleibt stehen), um das Band und die Videoköpfe zu schonen. Wird das Band im Suchlaufbetrieb länger als 8 Minuten angehalten, so läuft es mit 1/30 der Normalgeschwindigkeit in Vorwärtsrichtung weiter. Bringen Sie dann das Gerät durch Drücken der entsprechenden Taste in die gewünschte Betriebsfunktion (außer Stopfunktion). Um das Gerät in die Stopfunktion zu bringen, muß die STANDBY-Taste gedrückt werden.

KONDENSWASSERANSAMMLUNG

Wenn sich Kondenswasser angesammelt hat, so bleibt der Kopftrommel- und der Antriebswellen-Motor stehen, und die Cassette wird ausgeworfen. An der Vorderseite des Geräts leuchtet dann die AUTO OFF-Lampe auf. Nach kurzer Zeit setzt sich die Kopftrommel wieder in Bewegung. Ist die AUTO OFF-Lampe wieder erloschen, so warten Sie noch etwa 10 Minuten, bevor Sie das Gerät benutzen.

ZEITKODE-AUFZEICHNUNG

Schließen Sie zur gleichzeitigen Aufzeichnung des Zeitkodes einen EBU-Zeitkode-Generator am TIME CODE IN-Anschluß an.

Da beim Aufzeichnen des Zeitkodes ein Begrenzer wirksam ist, braucht keine Einstellung vorgenommen zu werden.

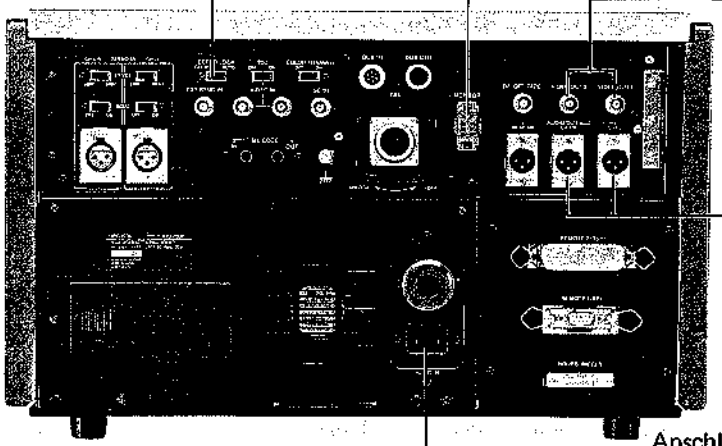
Beim Aufnehmen leuchtet die TIME CODE-Anzeige.

1-5. WIEDERGABE

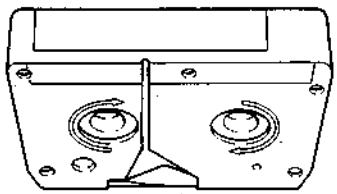
1. VORBEREITUNG

Stellen Sie die Bedienungselemente folgendermaßen ein:

SERVO LOCK:
AUTO: Normalstellung
EXT SYNC:
Für externe Synchronisation (siehe Seite 1-69)



eine bespielte Videocassette einlegen



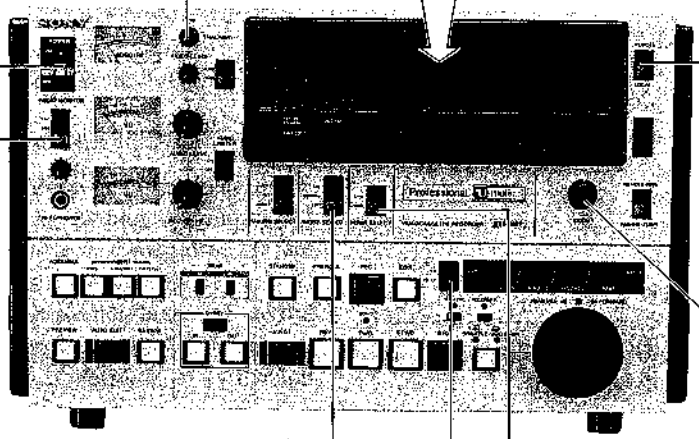
TRACKING: FIXED

POWER: ON

AUDIO MONITOR:
MIX, normalerweise

REMOTE/LOCAL:
LOCAL

SKEW: FIXED

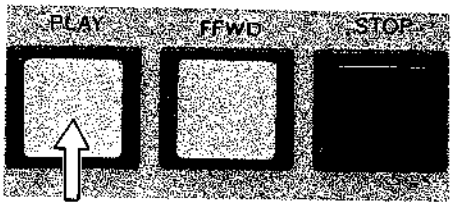


MODE SELECT: normalerweise auf NORMAL

PB/PB/EE: normalerweise auf PB

INPUT SELECT:
Wird das Videosignal als Bezugsignal herangezogen, so stellen Sie den Wähler auf den Anschluß, an dem das Videosignal angeschlossen ist.

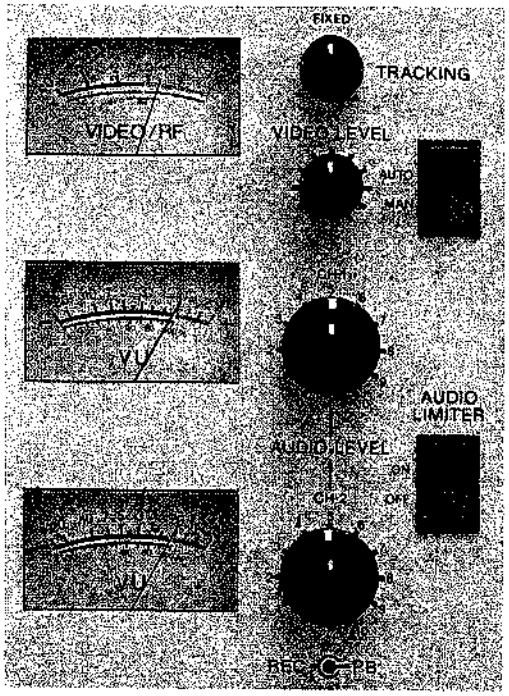
2. STARTEN DER WIEDERGABE



Drücken Sie die PLAY-Taste.
Das Kopftrommel- und das Antriebswellen-Servo-System brauchen einige Sekunden, bevor sie stabil arbeiten. Bei stabilem Betrieb leuchtet die SERVO-Kontrollampe auf.
Es leuchten die Lampen: PLAY, STANDBY.

Drücken Sie zum Stoppen der Wiedergabe die STOP-Taste.
Es leuchten die Lampen: STOP, STANDBY.
Ist das Band bis zum Ende durchgelaufen, so wird es automatisch zurückgespult und am Bandanfang angehalten.

3. EINSTELLUNGEN



Stellen Sie die Regler normalerweise auf FIXED.
Ist das Wiedergabebild gestört,
so drehen Sie den TRACKING-Regler nach links oder nach rechts, so daß der Zeiger der VIDEO/RF-Anzeige möglichst weit ausschlägt.

- Stellen Sie den Regler nach beendeter Wiedergabe dieses speziellen Bandes wieder auf FIXED.

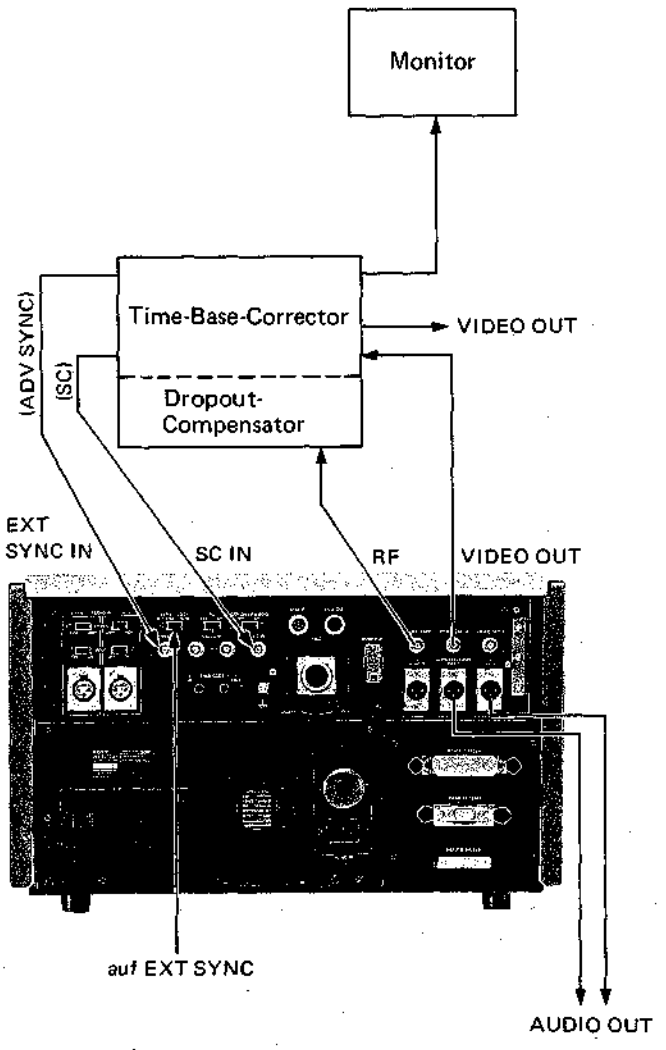
Treten Störungen im oberen Bildteil auf,
so stellen Sie den SKEW-Regler so ein, daß die Bildqualität optimal ist.

EINSTELLUNG DES VIDEO- UND TONPEGELS

Videopegel:
Der Videopegel wird automatisch eingestellt.

Tonpegel:
Stellen Sie die AUDIO LEVEL-Regler für Tonsignal-1 und Tonsignal-2 bei Wiedergabe so ein, daß die VU-Meter in den Spitzen bis 0 ausschlagen.

WIEDERGABE MIT EINEM TIME-BASE-CORRECTOR



Stellen Sie den auf der Vorderseite angebrachten MODE SELECT-Wähler auf TBC.

ABGREIFEN VON VIDEO- UND TONSIGNAL

Siehe Seite 1-70.

AUTOMATISCHE ABSCHALTUNG

Siehe Seite 1-71.

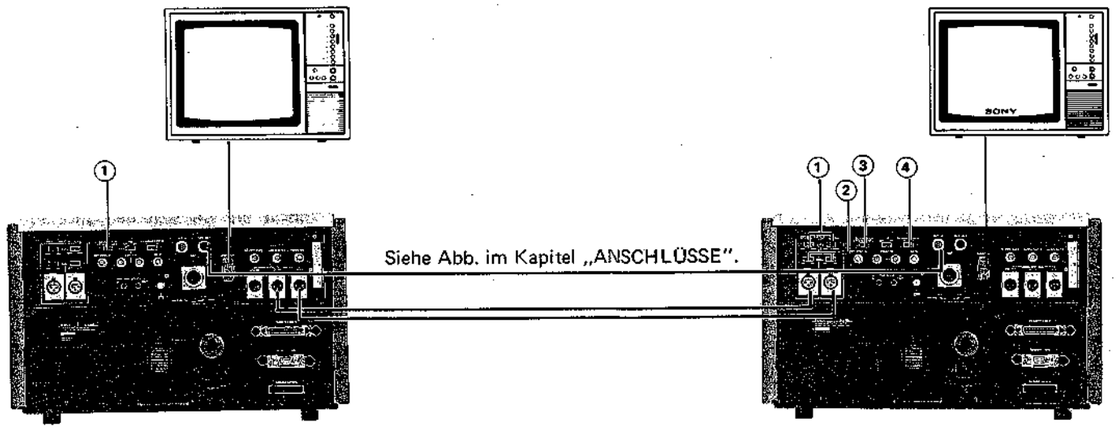
ZEITKODE-WIEDERGABE

Schließen Sie zur Auswertung des EBU-Zeitkodes einen Zeitkode-Auswerter am TIME CODE OUT-Anschluß an. Bei Wiedergabebetrieb leuchtet dann die TIME CODE-Lampe auf.

1-6. SCHNEIDEN

1-6-1. SCHNEIDEN UNTER VERWENDUNG VON ZWEI BVU-800P VIDEO-CASSETTENRECORDERN

1. VORBEREITUNGEN

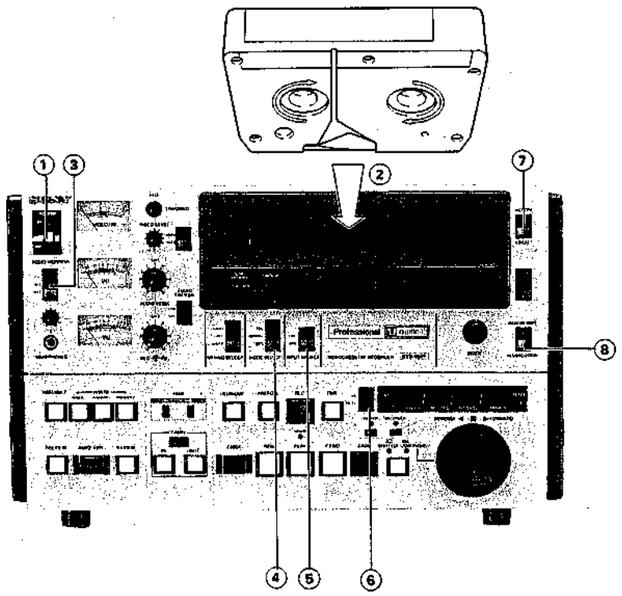


WIEDERGABEMASCHINE

① **SERVO LOCK:**
AUTO: Normalstellung
EXT SYNC: Für externe Synchronisation

AUFNAHMEMASCHINE

① **AUDIO IN LEVEL:** HIGH
② **600Ω:** ON
③ **SERVO LOCK:**
AUTO: Normalstellung
EXT SYNC: Für externe Synchronisation
④ **COLOR FRAMING:** ON
Soll das farbträgerverkoppelte Halbbild-Servosystem bei der automatischen Schnittaufnahme nicht verwendet werden, so stellen Sie den Schalter auf OFF.



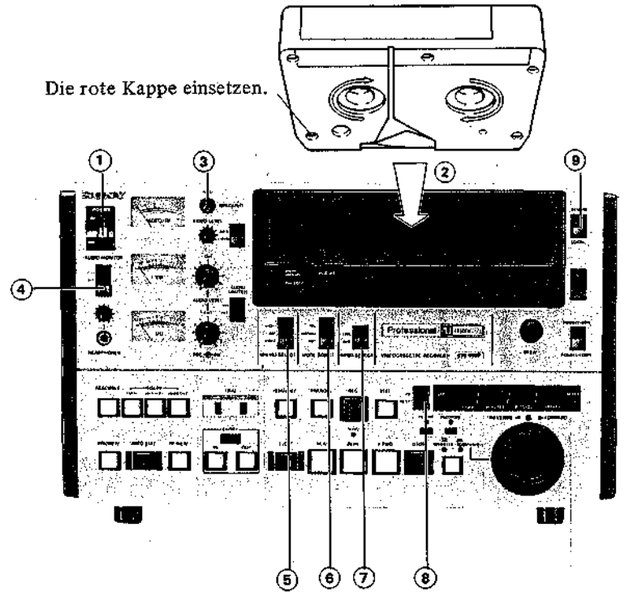
① **POWER:** ON
② Legen Sie eine bespielte Video-Cassette ein.

③ **AUDIO MONITOR:** MIX

④ **MODE SELECT:** EDIT

⑤ **INPUT SELECT:**
Wird das Video-Eingangssignal als Bezugsignal herangezogen, so stellen Sie diesen Schalter auf den Anschluß, an dem das Signal anliegt.

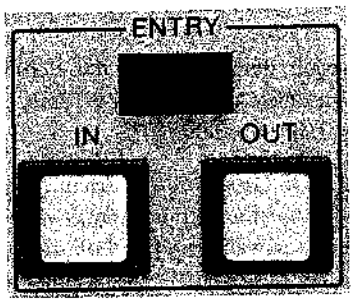
⑥ **PB/PB/EE:** PB
⑦ **REMOTE/LOCAL:** REMOTE
⑧ **REMOTE-1/REMOTE-2:**
REMOTE-1
Stellen Sie den Video- und Tonpegel sowie die Spurlage und den Schrägfehler wie auf Seite 1-73 gezeigt ein.



Die rote Kappe einsetzen.

① **POWER:** ON
② Legen Sie die Cassette für die Schnittaufnahme ein.
③ **TRACKING:** FIXED
④ **AUDIO MONITOR:** MIX
⑤ **MIXING SELECT:** OFF
⑥ **MODE SELECT:** EDIT
⑦ **INPUT SELECT:** DUB
Wird zum Anschluß des von der Wiedergabemaschine zugeleiteten Videosignals der VIDEO IN-Anschluß verwendet, so stellen Sie den Wähler auf LINE.
⑧ **PB/PB/EE:** PB/EE
⑨ **REMOTE/LOCAL:** LOCAL
Stellen Sie den Video- und Audiopegel wie auf Seite 1-69 gezeigt ein.

SCHNITTENDPUNKT DER WIEDERGABEMASCHINE

❶ **Lokalisieren Sie den gewünschten Schnittendpunkt in der gleichen Weise wie den Schnittanfangspunkt.**	(Führen Sie die Schritte ❶ bis ❺ der vorhergehenden Seite aus.)
❷ **Drücken Sie gleichzeitig die OUT- und die ENTRY-Taste.** 	Die OUT-Lampe leuchtet auf. Der Zählerstand dieses Punktes wird als Schnittendpunkt abgespeichert. • Werden die gleichen Punkte als Schnittanfangs- und Schnittendpunkt eingegeben oder wird der Schnittendpunkt vor dem Schnittanfangspunkt eingegeben, so wird der Schnittanfangspunkt gelöscht. Achten Sie auf die richtige Eingabe des Schnittanfangs- und Schnittendpunktes.

• Der Schnittendpunkt kann entweder in die Wiedergabemaschine oder in die Aufnahmemaschine eingegeben werden.

SCHNITTANFANGSPUNKT DER AUFNAHMEMASCHINE

❶ **Drücken Sie die RECORDER-Taste.** 	Die RECORDER-Anzeige leuchtet auf.
❷ **Lokalisieren Sie den Bandpunkt, von dem ab die Szene aufgenommen werden soll in gleicher Weise wie den Schnittanfangspunkt der Wiedergabemaschine.**	Die IN-Lampe blinkt.
❸ **Drücken Sie gleichzeitig die IN- und die ENTRY-Taste.**	Die IN-Lampe leuchtet. Der Zählerstand dieses Punktes wird als Schnittanfangspunkt abgespeichert. Der erste Schnittanfangspunkt sollte mindestens 10 Sekunden vom Bandanfang entfernt liegen (bzw. 5 Sekunden vom Bandanfang, wenn der Vorlaufzeit-Schalter auf OFF steht).

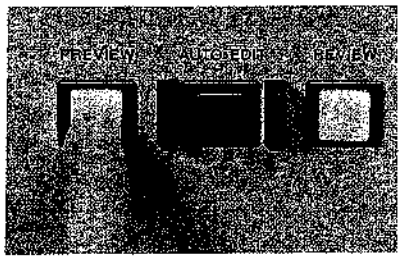
SCHNITTENDPUNKT DER AUFNAHMEMASCHINE

Gehen Sie zur Eingabe des Schnittendpunktes der Aufnahmemaschine folgendermaßen vor:

1) Lokalisieren Sie den Endpunkt der Aufnahme in gleicher Weise wie den Schnittanfangspunkt der Wiedergabemaschine.
2) Drücken Sie gleichzeitig die OUT- und die ENTRY-Taste.
   Der Zählerstand dieses Punktes wird als Schnittendpunkt abgespeichert.

4. PROBEVORSCHAU DES SCHNITTVORGANGES (PREVIEW)

Sind die Schnittanfangs- und Schnittendpunkte einmal festgelegt, so kann durch Drücken der PREVIEW-Taste eine Probevorschau des Schnittvorgangs vorgenommen werden.



❶ Drücken Sie nach dem Festlegen der Schnittanfangs- und Schnittendpunkte die PREVIEW-Taste.
Die PREVIEW-Lampe leuchtet.

❷ Beobachten Sie den Monitor der Aufnahmemaschine. Überprüfen Sie, ob die Schnittanfangs– und Schnittendpunkte richtig gewählt sind und ob die Qualität des aufzuzeichnenden Bildes zufriedenstellend ist.

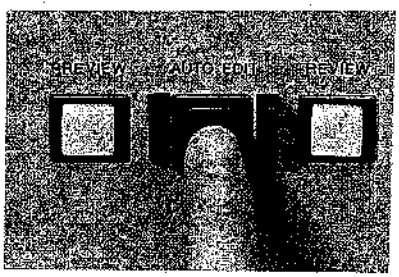
❸ Ändern Sie falls notwendig die Schnittanfangs- und Schrittendpunkte, und überprüfen Sie die Szene erneut durch Drücken der PREVIEW-Taste.

Drücken Sie zum Anhalten des Bandes während der Probevorschau die STOP-Taste. Soll die automatische Schnittaufnahme während der Probevorschau beginnen, so drücken Sie die AUTO EDIT-Taste.

5. STARTEN DER SCHNITTAUFNAHME

Drücken Sie die AUTO EDIT-Taste.

Die Aufnahme wird automatisch ausgeführt.



- Die automatische Schnittaufnahme kann während der Probevorschau gestartet werden; sie kann jedoch auch direkt ohne vorherige Probevorschau gestartet werden.

Nach beendeter Schnittaufnahme

Ist das Aufnehmen einer Szene (vom Schnittanfangs- bis zum Schnittendpunkt) beendet, so suchen Sie die Schnittanfangs- und Schnittendpunkte der nächsten Szene, wie auf den vorhergehenden Seiten beschrieben, auf. Der Schnittendpunkt einer Szene kann auch zum Schnittanfangspunkt der nächsten Aufnahme gewählt werden.

Bildüberwachung während der Schnittaufnahme

Während der Schnittaufnahme kann das zwischen 10 Sekunden (bzw. 5 Sekunden) vor dem Schnittanfangspunkt und 2 Sekunden nach dem Schnittendpunkt liegende Material auf dem an die Aufnahmemaschine angeschlossenen Monitor überwacht werden.
Fehlt beim Einfügbetrieb ein Teil des CTL-Signals auf dem Band der Aufnahmemaschine oder ist ein Teil nicht synchronisiert, so erscheint das Wiedergabebild der Aufnahmemaschine auf dem Monitor und die Schnittaufnahme wird an diesem Teil nicht durchgeführt.

Stop während der Schnittaufnahme

Zum Stoppen der Aufnahme vor Erreichen des Schnittendpunktes drücken Sie gleichzeitig die OUT- und die ENTRY-Taste.

Bandschutzautomatik

Wird das Gerät im Suchlaufbetrieb länger als 8 Minuten angehalten, so bewegt sich das Band mit 1/30 der Normalgeschwindigkeit in Vorwärtsrichtung weiter, um das Band zu schützen. Der abgespeicherte Schnittpunkt bleibt erhalten.

Ändern der Vorlaufzeit

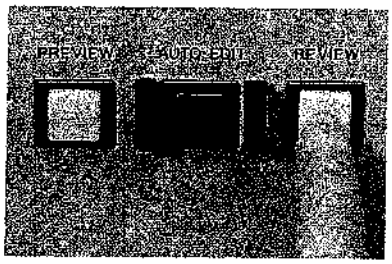
Falls notwending kann die Vorlaufzeit auf 5 Sekunden geändert werden. Die Vorlaufzeit der Wiedergabe- und der Aufnahmemaschine weist den an der Aufnahmemaschine eingestellten Wert auf.

Einstellung der Schnittgenauigkeit

Die Schnittgenauigkeit ist werkseitig auf ± ein Einzelbild eingestellt. Ist eine Neueinstellung erforderlich, so schlagen Sie im Teil 2 und den folgenden Teilen nach.

6 ÜBERPRÜFUNG DER SCHNITTAUFNAHME (REVIEW)

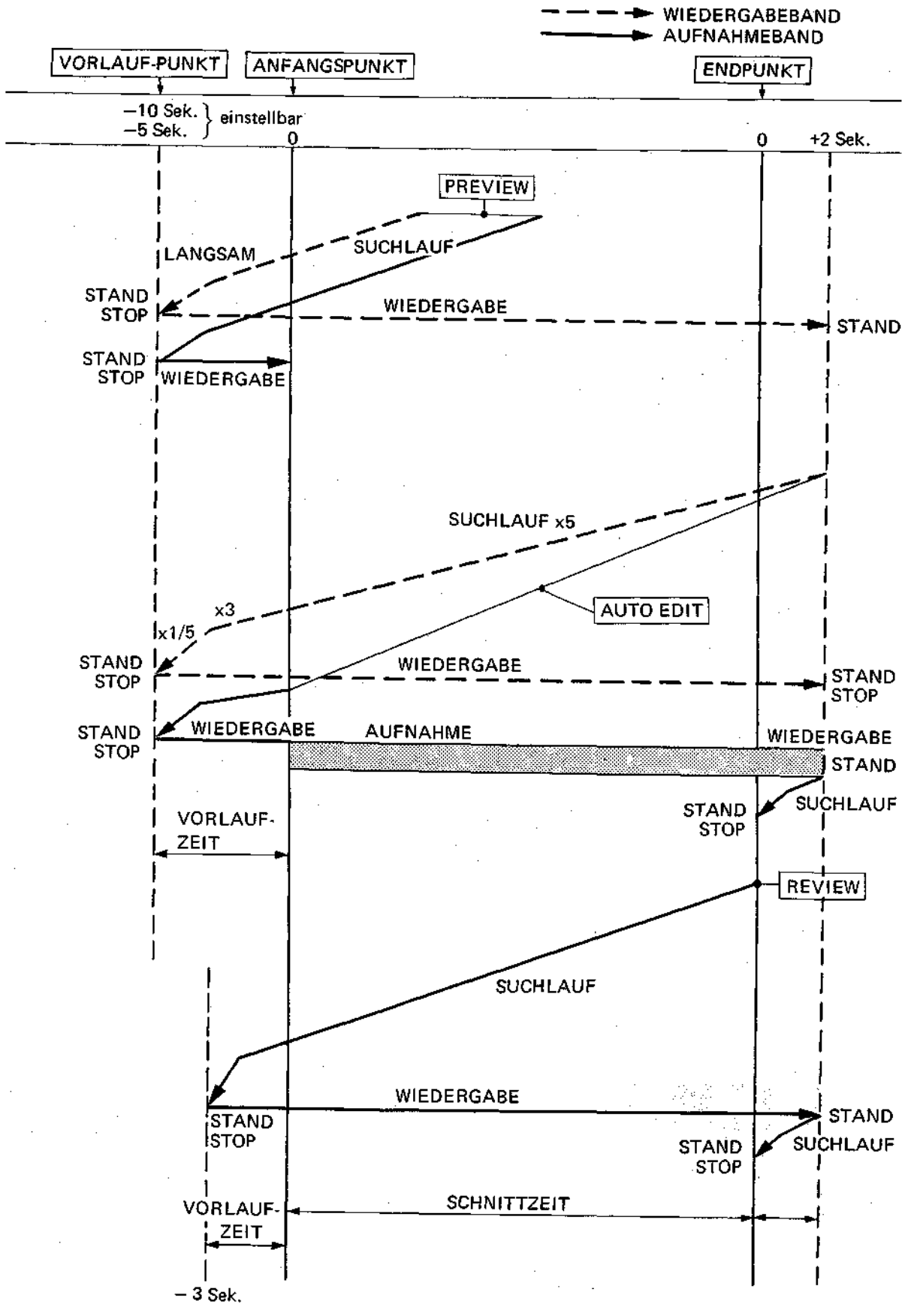
Ist eine Szene vom Schnittanfangs- bis zum Schnittendpunkt aufgezeichnet, so kann das Schnittergebnis durch Drücken der REVIEW-Taste überprüft werden.



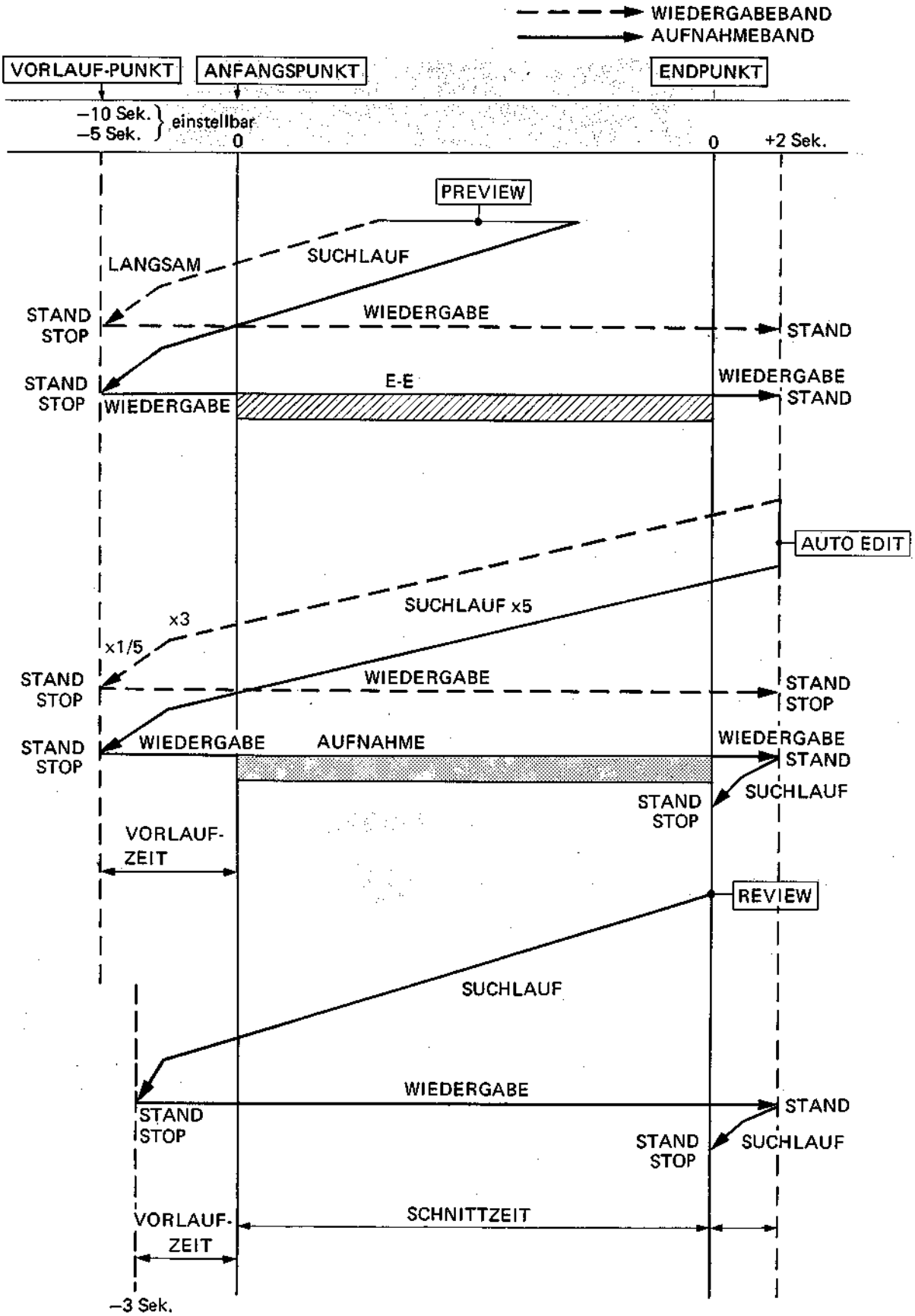
❶ Drücken Sie nach beendeter Aufnahme die REVIEW-Taste.
Die REVIEW-Lampe leuchtet auf.
Nur das Band der Aufnahmemaschine bewegt sich.

❷ Überprüfen Sie die Qualität der Schnittaufnahme auf dem Monitor der Aufnahmemaschine.
Drücken Sie zum Anhalten des Bandes während der Überprüfung der Schnittaufnahme die STOP-Taste.

BANDBEWEGUNG
ANFÜGBETRIEB



EINFÜGBETRIEB



ZEITZÄHLER (BANDZÄHLER)

Der Zeitzähler zählt die auf dem Band aufgezeichneten CTL-Signale, und die auf der Anzeige erscheinenden Zahlen zeigen bei Normalgeschwindigkeit die bereits durchgelaufene Bandmenge in Stunden, Minuten, Sekunden und Einzelbildern an. Die Anzeige ändert sich mit dem Bandlauf.

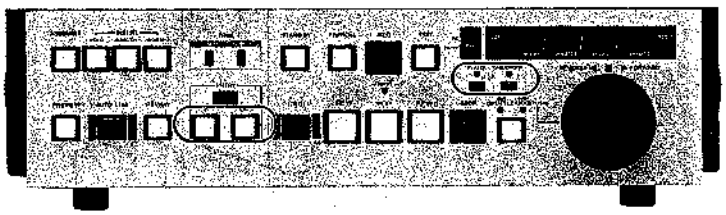
- Ist kein CTL-Signal aufgezeichnet, so kann der Zähler die Zeit nicht zählen. Deshalb kommt es bei einem unbespielten Band zu einer fehlerhaften Anzeige.

Rückstellung des Zeitzählers auf „0:00:00:00"
Drücken Sie die RESET-Taste.

- Läuft das Band vom „0:00:00:00" -Punkt aus rückwärts, so erscheint links vor der Zahlenanzeige das Zeichen „–".
- Zum leichteren Auffinden der Schnittpunkte empfiehlt es sich mit Hilfe der Zeitzähleranzeige eine Liste des Bandinhalts anzulegen.

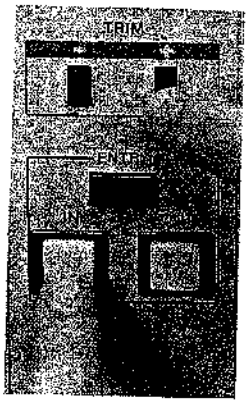
Überprüfung der Schnittanfans- und Schnittendpunkte mit Hilfe des Zeitzählers

Ist die PLAYER-Taste gedrückt, so zeigt der Zeitzähler beim Drücken der IN- oder OUT-Taste die Schnittanfangs- bzw. Schnittendpunkte der Wiedergabemaschine an; ist die RECORDER-Taste gedrückt, so zeigt er die entsprechenden Punkte der Aufnahmemaschine an.



Die Anzeige erfolgt nur solange die entsprechende Taste gedrückt wird.

Feineinstellung des Schnittpunktes (TRIM)



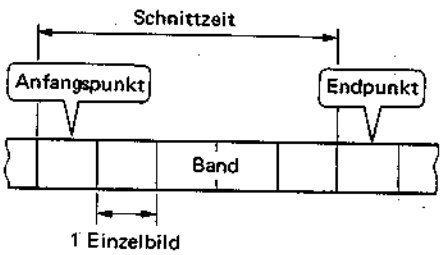
❶ Drücken Sie die IN- und OUT-Taste, und lassen Sie sie während Schritt ❷ gedrückt.
Auf der Anzeige erscheint die Einzelbildnummer des Schnittanfangs- und des Schnittendpunktes.

❷ Drücken Sie zum Vorrücken des Schnittpunktes um ein Einzelbild die TRIM + -Taste und zum Rücksetzen des Schnittpunktes um ein Einzelbild die TRIM – -Taste kurzzeitig.

Drücken Sie die + oder – -Taste mehrmals kurzzeitig, bis die gewünschte Einzelbildnummer erscheint.

Der Schnittpunkt kann auch durch Eingeben eines neuen Punktes geändert werden.

Drücken der LAP-Taste



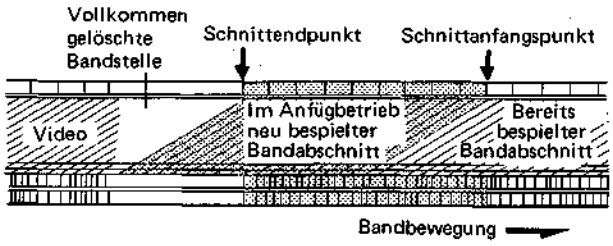
Die Schnittzeit wird vom Zeitzähler angezeigt.

Eingegebene Schnittpunkte	Die Zeitzähleranzeige zeigt Folgendes an:
Schnittanfangs- und Schnittendpunkte sind eingegeben.	Zeit vom Schnittanfangs- zum Schnittendpunkt.
Nur der Schnittanfangspunkt ist eingegeben.	Zeit vom Schnittanfangspunkt bis zum Punkt, an dem die Taste gedrückt wurde.
Nur der Schnittendpunkt ist eingegeben.	Zeit der vorhergehenden Schnittszene.
Schnittanfangs- und Schnittendpunkte sind nicht eingegeben.	Zeit der vorhergehenden Schnittszene.

EINFÜGSCHNITTE

Bei Einfügbetrieb werden sämtliche Signale – Video, Tonsignal-1, Tonsignal-2 und CTL-Signale – gleichzeitig auf Band aufgezeichnet. Zuerst werden die Video-, Ton- und CTL-Signale von Szene A und anschließend die Video-, Ton- und CTL-Signale von Szene B, Szene C usw. aufgezeichnet.

Der Anfügbetrieb dient zur gleichzeitigen Aufzeichnung von Video- und Tonsignal auf ein unbespieltes Band. Die Aufnahmeteile schließen rückseitig lückenlos ab.
Wenn eine neue Szene auf ein bereits bespieltes Band im Anfügbetrieb aufgenommen wird, entsteht am Schnittendpunkt eine vollkommen gelöschte Bandstelle, so daß das Bild an dieser Stelle instabil wird. Verwenden Sie deshalb zum Einfügen von neuen Szenen auf bereits bespielte Bänder den Einfügbetrieb.

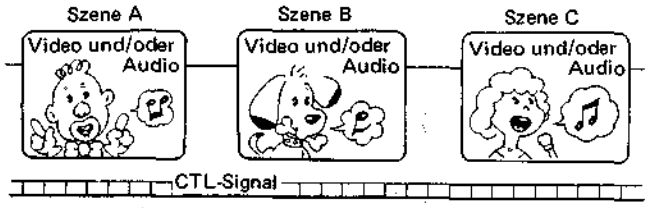


AUFNAHME AUF EIN NEUES BAND IM ANFÜGBETRIEB

Eine vorhergehende Aufzeichnung des CTL-Signals ist nicht notwendig; soll die Anfügaufnahme jedoch vom Anfang eines neuen Bandes oder nach einer gelöschten Bandstelle vorgenommen werden, muß mindestens 10 Sekunden (bzw. 5 Sekunden, wenn der Vorlaufzeit-Schalter auf OFF steht) vor dem ersten Schnittpunkt ein CTL-Signal aufgezeichnet sein.
Statt ein CTL-Signal aufzunehmen, kann man auch einfach im Aufnahmebetrieb ein Band kopieren.

EINFÜGSCHNITTE

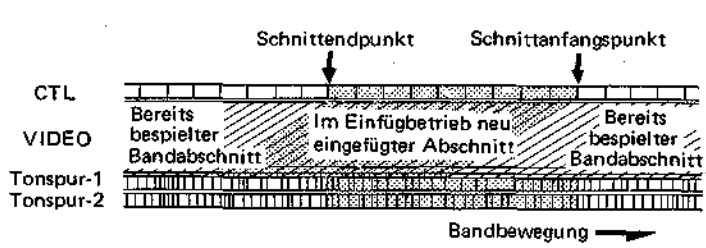
Bei Einfügbetrieb muß das CTL-Signal bereits auf dem Band aufgezeichnet sein. Neue Video- und/oder Tonsignale werden synchron zu diesem CTL-Signal aufgenommen.



Einfügbetrieb ist das geeignete Verfahren, wenn Sie –

- exakte Schnitte auf ein bereits bespieltes Band durchführen wollen.
- Musik bzw. einen Kommentar auf ein Band, auf das bereits Videosignale aufgezeichnet sind, aufnehmen wollen.
- Videosignale auf ein Band, auf das bereits Tonsignale aufgezeichnet sind, aufnehmen wollen.
- Video- und/oder Tonsignale auf ein Band, das im Anfügbetrieb redigiert worden ist, neu aufzeichnen wollen.

Bei Einfügbetrieb ist es möglich, eine neue Szene in eine bereits vorhandene Aufnahme einzufügen. Das Bild am Schnitt-Endpunkt ist stabil.



AUFNAHME AUF EIN NEUES BAND IM EINFÜGBETRIEB

Das CTL-Signal muß durchgehend mindestens 10 Sekunden (bzw. 5 Sekunden, wenn der Vorlaufzeit-Schalter auf OFF steht) vor und nach der zu bespielende Stelle aufgezeichnet sein.
Zum Aufnehmen des CTL-Signals:

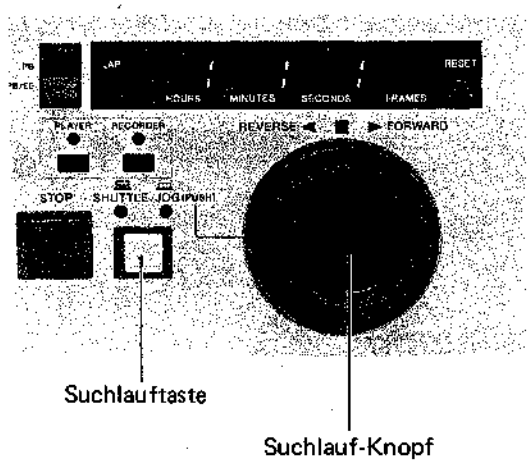
- Schließen Sie eine Video-Kamera an, und nehmen Sie das Ausgangssignal durchgehend auf.
- Schließen Sie einen normalen Videosignalgenerator an, und nehmen Sie das Ausgangssignal durchgehend auf.

BLINKEN DER KONTROLLAMPEN

Drücken Sie die Tasten, über denen die Kontrollampen blinken, um den Schnittvorgang abzuschließen. Das Aufleuchten und Blinken der Kontrollampen hat folgende Bedeutung.

- Das Blinken der ASSEMBLE- und INSERT (VIDEO, AUDIO CH1, AUDIO CH2)-Lampen zeigt an, daß der Schnittbetrieb durch Drücken der entsprechende Taste festgelegt werden muß.
  Das Leuchten mehrerer Lampen oder einer Lampe zeigt an, daß der Schnittbetrieb festgelegt ist.
- Das Blinken der IN- und/oder OUT-Lampe(n) an der Wiedergabe- und Aufnahmemaschine zeigt an, daß der (die) Schnittpunkt(e) eingegeben werden muß (müssen).
  Das Leuchten der IN- und OUT-Lampen zeigt an, daß die Schnittanfangs- und Schnittendpunkte festgelegt sind, aber die Schnittaufnahme noch nicht durchgeführt wurde.
- Das Blinken der PREVIEW- und AUTO EDIT-Lampe zeigt an, daß der Vorschaubetrieb oder der automatische Schnittbetrieb durchgeführt werden kann.
  Das Leuchten der PREVIEW- oder AUTO EDIT- Lampe zeigt an, daß sich die Aufnahmemaschine im entsprechenden Betriebszustand befindet.

VERWENDUNG DES SUCHLAUF-KNOPFES



Verwendungsart 1: Direkte Überführung des Geräts in den Shuttle-Betrieb mit der am Suchlauf-Knopf eingestellten Geschwindigkeit

❶ Stellen Sie den Suchlauf-Knopf in die gewünschte Stellung im Shuttle-Betrieb (z.B. auf 5 fache Normalgeschwindigkeit in Vorwärtsrichtung).

❷ Drücken Sie die PLAY-Taste.
Der Recorder geht in den Wiedergabebetrieb über.

❸ Drücken Sie die Suchlauftaste.
Das Gerät geht direkt in den Shuttle-Betrieb mit 5 facher Normalgeschwindigkeit in Vorwärtsrichtung über.

Verwendungsart 2: Verhinderung von ungewolltem Übergang in den Suchlaufbetrieb

Wird der Suchlauf-Knopf während des Betriebs versehentlich berührt, geht das Gerät in den Suchlaufbetrieb über. Um dies zu verhindern, stellen Sie den auf der Platine SY-37 angebrachten Schalter S4 auf OFF. Der Suchlauf-Knopf ist dann nur betriebsbereit, wenn die Suchlauftaste gedrückt wird. Genauere Information hierzu finden Sie im Teil 2.

SCHNELLES SCHNEIDEN

Sie können Zeit sparen, indem Sie die Schnittanfangs- und Schnittendpunkte im Vorschaubetrieb eingeben.

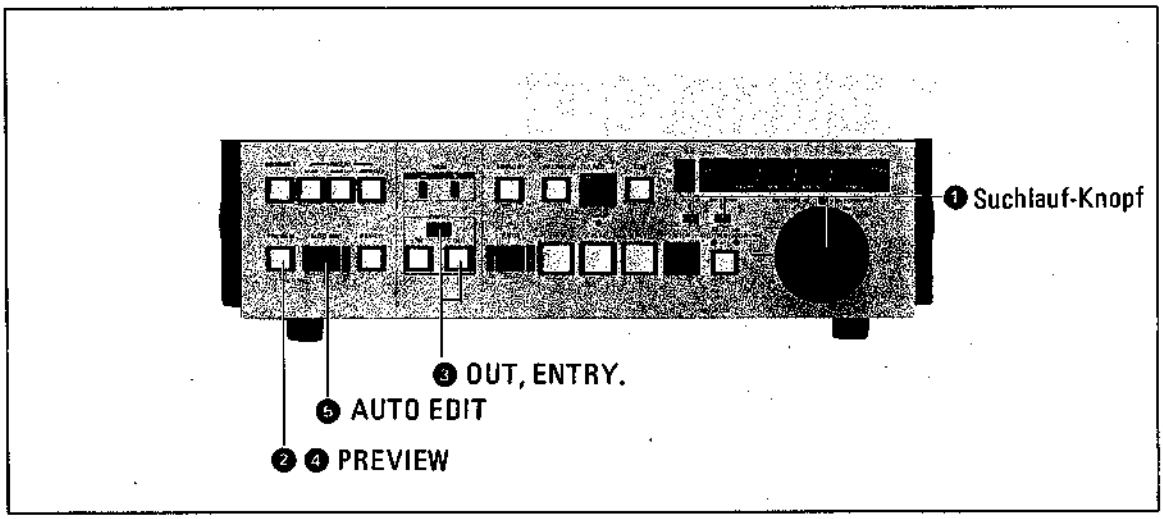
❶ Suchen Sie den Schnittanfangs- und den Schnittendpunkt mit dem Suchlauf-Knopf sowohl für die Wiedergabe- als auch für die Aufnahmemaschine auf. Stellen Sie ein Standbild ein.

❷ Drücken Sie die PREVIEW-Taste.
Die im Schritt ❶ eingestellten Punkte werden als Schnittanfangs- und Schnittendpunkt der Aufnahme- und der Wiedergabemaschine abgespeichert. Der Vorschaubetrieb beginnt.
Die IN-Lampen leuchten.

❸ Beobachten Sie den Monitor der Aufnahmemaschine und drücken Sie am Endpunkt der Szene gleichzeitig die OUT- und die ENTRY-Tasten an der Wiedergabe- und an der Aufnahmemaschine.
Der Wert des Zeitzählers wird dann als Schnittendpunkt abgespeichert. Das Band hat dann noch eine Auslaufzeit von weiteren 2 Sekunden und kehrt dann zum Vorlauf-Punkt zurück.
- Sie können den Punkt, an dem die Szene enden soll, auch mit dem Suchlauf-Knopf aufsuchen.

❹ Falls notwendig führen Sie noch eine Vorschau durch.

❺ Drücken Sie die AUTO EDIT-Taste.
Die Schnittaufnahme beginnt dann.



Noch schnelleres Schneiden

Auch ohne Eingabe von Anfangs- und Endpunkten können Schnitte gemacht werden.

❶ Suchen Sie den Schnittanfangs- und den Schnittendpunkt mit dem Suchlauf-Knopf an der Wiedergabe- und an der Aufnahmemaschine auf. Stellen Sie dann ein Standbild ein.

❷ Drücken Sie die AUTO EDIT-Taste.
Dieser Punkt wird dann zum Schnittanfangspunkt der Wiedergabe- und der Aufnahmemaschine.

❸ Beobachten Sie den Monitor der Aufnahmemaschine, und drücken Sie an dem gewünschten Endpunkt der Szene gleichzeitig die OUT- und die ENTRY-Taste an der Wiedergabe- und an der Aufnahmemaschine. Dieser Punkt wird dann zum Schnittendpunkt, an dem die Aufnahme endet.

FORTLAUFENDES SCHNEIDEN (BUTT)

Nach einem Schnittvorgang kehrt der Recorder zum Schnittendpunkt zurück und stoppt. Dieser Schnittendpunkt kann zum nächsten Schnittanfangspunkt gemacht werden.
Diese Redigierungsart wird Butt-Betrieb genannt.

❶ Suchen Sie die gewünschten Stellen auf, und geben Sie die nächsten Schnittanfangs- und Schnittendpunkte für die Wiedergabemaschine ein.

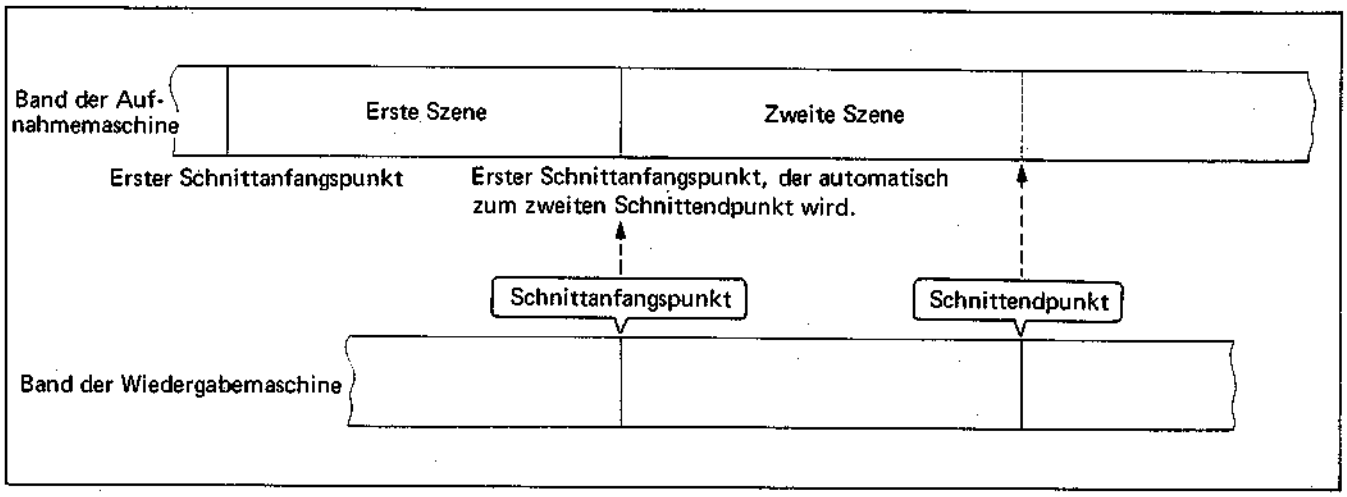
❷ Drücken Sie die AUTO EDIT-Taste.
Der Schnittvorgang wird dann ausgeführt.

Sie können auch folgendermaßen vorgehen:

❶ Suchen Sie die gewünschte Stelle, und geben Sie den nächsten Schnittanfangspunkt für die Wiedergabemaschine ein.

❷ Drücken Sie die AUTO EDIT-Taste.
Die Schnittvorgang beginnt dann.

❸ Beobachten Sie den Monitor der Aufnahmemaschine, und drücken Sie an dem gewünschten Endpunkt der Szene gleichzeitig die OUT- und die ENTRY-Taste an der Wiedergabe- und an der Aufnahmemaschine. Dieser Punkt wird dann zum Schnittendpunkt, an dem die Aufnahme endet.



UNTERSCHIEDLICHE SCHNITTANFANGS- ODER SCHNITTENDPUNKTE FÜR VIDEO UND AUDIO (SPLIT)

Bei Einfügbetrieb kann der Schnittvorgang der Videospur, der Tonspur-1 und der Tonspur-2 an verschiedenen Stellen gestoppt werden.

❶ Wählen Sie das gewünschte Eingangssignal durch Drücken einer oder aller INSERT-Tasten.

❷ Starten Sie den automatischen Schnittvorgang.

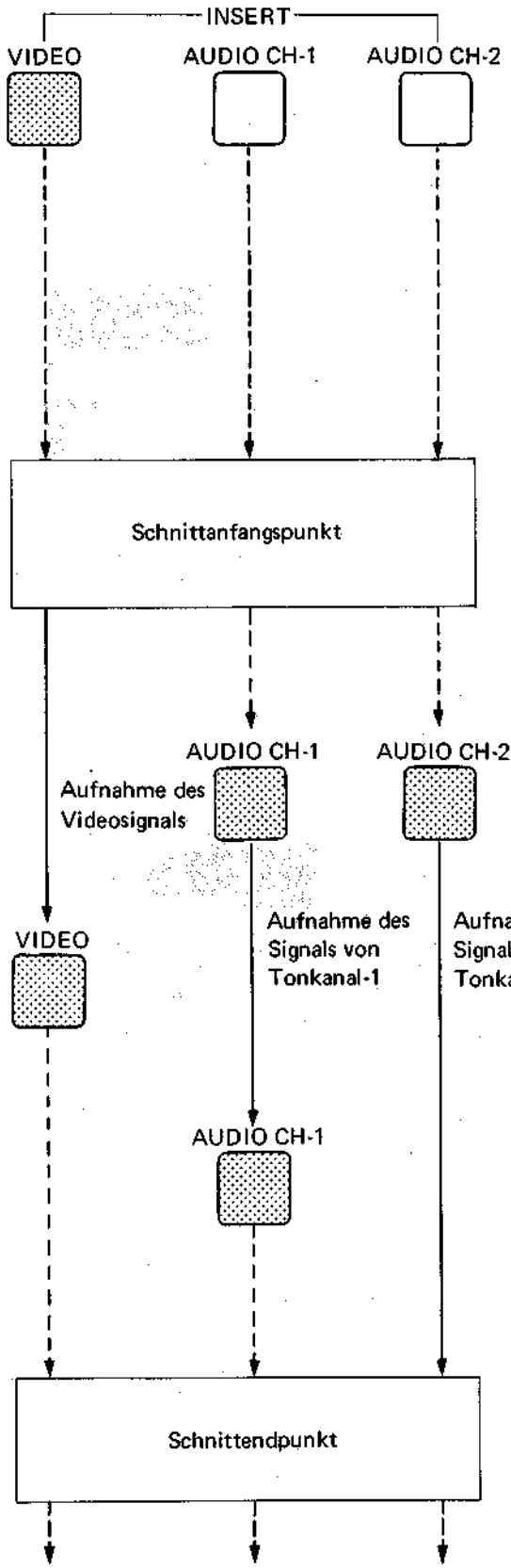
❸ Drücken Sie die entsprechende(n) INSERT-Taste(n) an der Stelle, an der der Schnittvorgang des Video- oder des Tonsignals gestoppt werden soll.
Die entsprechende(n) Kontrollampe(n) geht (gehen) aus.
Drücken Sie die entsprechende(n) INSERT-Taste(n) an der Stelle, an der der Schnittvorgang der Video- oder des Tonsignals begonnen werden soll.
Die entsprechende(n) Kontrollampe(n) leuchtet (leuchten) auf.
An jeder beliebigen Stelle kann (können) das (die) gewünschte(n) Signal(e) durch Drücken der entsprechenden INSERT-Taste(n) ein- bzw. ausgeblendet werden. Dies ist auch möglich, wenn gerade alle Signale ausgeblendet sind.

❹ Ist ein Schnittendpunkt eingegeben, wird der Schnittvorgang automatisch gestoppt. Ist kein Schnittendpunkt eingegeben, so drücken Sie zum Stoppen des Schnittvorgangs die ENTRY- und die OUT-Taste:
Ist der Schnittvorgang einmal gestoppt, kann keine Einblendung des Video- oder des Tonsignals durch einfaches Drücken der INSERT-Tasten mehr vorgenommen werden.

Auch im manuellen Einfügschnitt-Betrieb kann der Split-Schnittvorgang in gleicher Weise durchgeführt werden. Drücken Sie dann zum Stoppen des Schnittvorgangs die PLAY-Taste.

Beispiel eines Split-Schnittvorgangs

Diese Taste drücken



Das Videosignal wird als Eingangssignal gewählt.

Zum Starten des Schnittvorgangs AUTO EDIT-Taste drücken.

Die Aufnahme des Signals von Tonkanal-1 und Tonkanal-2 beginnt.

Die Aufnahme des Videosignals endet.

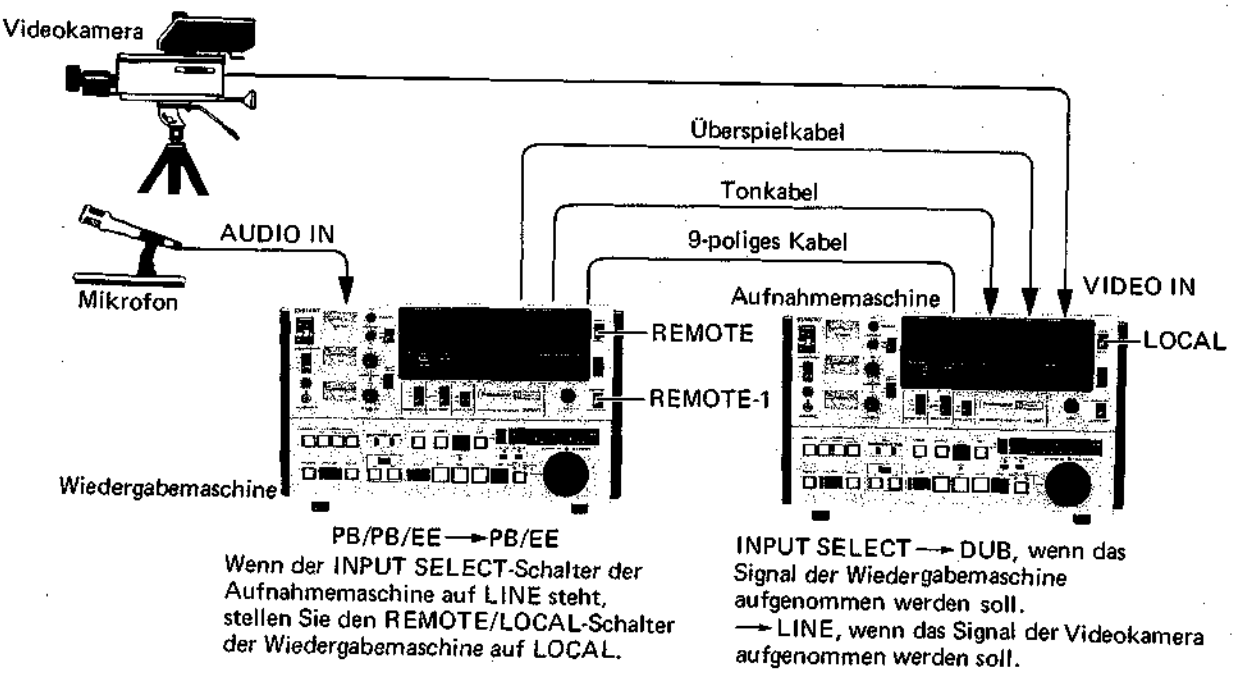
Die Aufnahme des Signals von Tonkanal-1 endet.

Der Schnittvorgang ist beendet.

SCHNEIDEN MIT EINEM SIGNAL VON EINER VIDEOKAMERA (LIVE-SCHNITT)

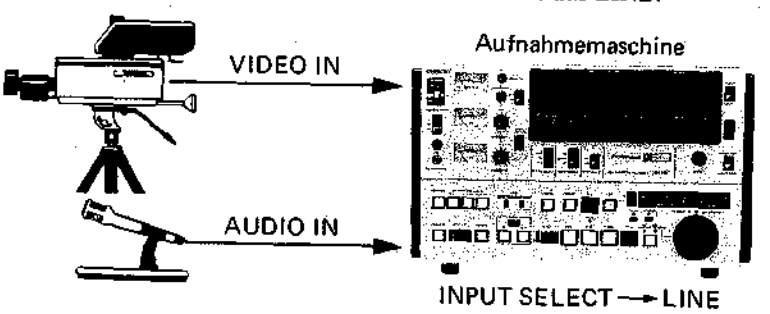
Anschlüsse

Schneiden mit einem Videokamerasignal und einem Wiedergabemaschinensignal:
Stellen Sie die Anschlüsse her, wie in der Abbildung gezeigt.



- Wird das Signal der Videokamera aufgenommen, stellen Sie die Wiedergabemaschine auf STOP.

Schneiden nur mit einem Videokamerasignal:
Schließen Sie die Videokamera am VIDEO IN-Anschluß der Aufnahmemaschine an, und stellen Sie den INPUT SELECT-Wähler der Aufnahmemaschine auf LINE.



Betrieb

❶ Stellen Sie die Schnittbetriebsart ein: Anfüg- oder Einfügschnitt.

Anfügschnitt

❷ Geben Sie nur den Schnittanfangspunkt der Aufnahmemaschine ein, und starten Sie den Schnittvorgang des Videokamerasignals durch Drücken der AUTO EDIT-Taste.

❸ Drücken Sie zum Beenden des Schnittes gleichzeitig die ENTRY- und die OUT-Taste.

Einfügschnitt

❶ Geben Sie den Schnittanfangs- und den Schnittendpunkt der Aufnahmemaschine ein, und starten Sie den Schnittvorgang mit der AUTO EDIT-Taste.
Sie können den Schnittvorgang auch starten, wenn nur der Schnittanfangspunkt eingegeben ist. Drücken Sie in diesem Fall zum Stoppen des Schnittvorgangs gleichzeitig die ENTRY- und die OUT-Taste.

- Beim Anfügschnittbetrieb kann der Schnittendpunkt nicht an der Aufnahmemaschine eingegeben werden.

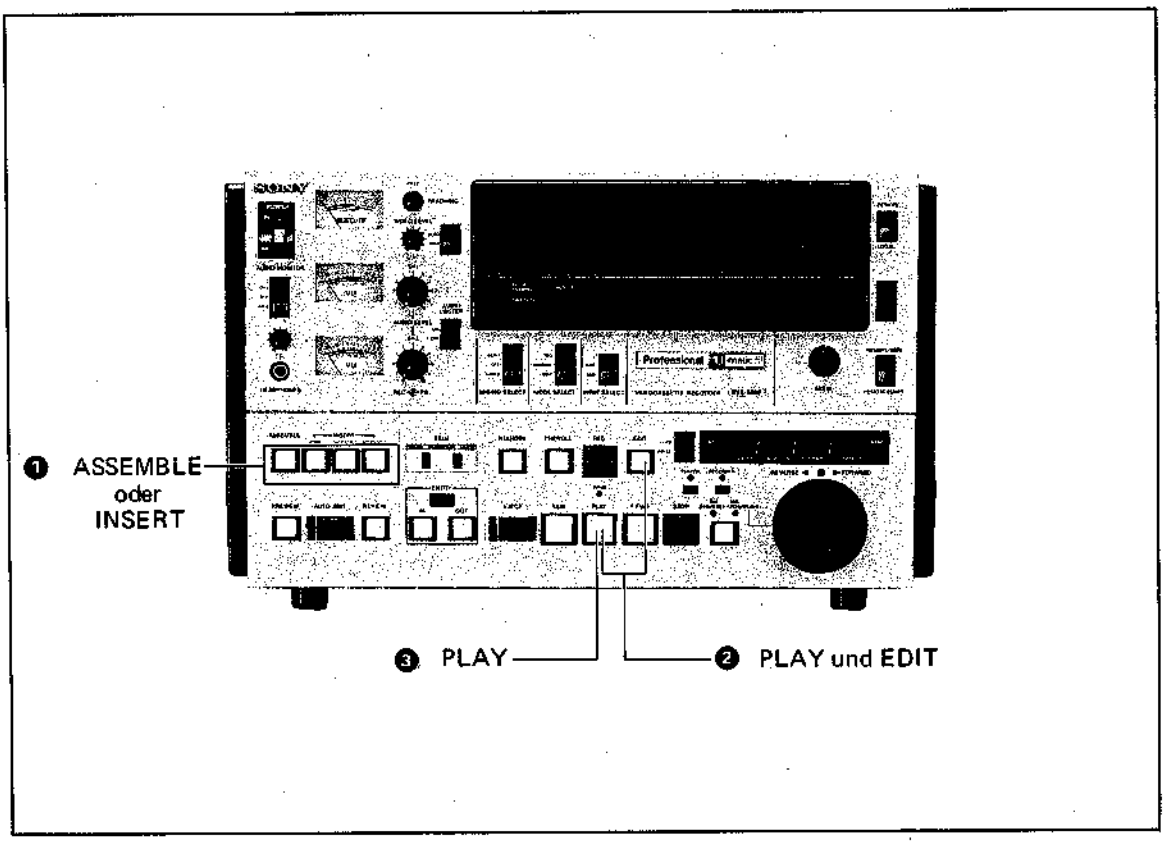
MANUELLES SCHNEIDEN

BETRIEB

❶ Stellen Sie die Schnittbetriebsart ein: Anfüg- oder Einfügschnitt.

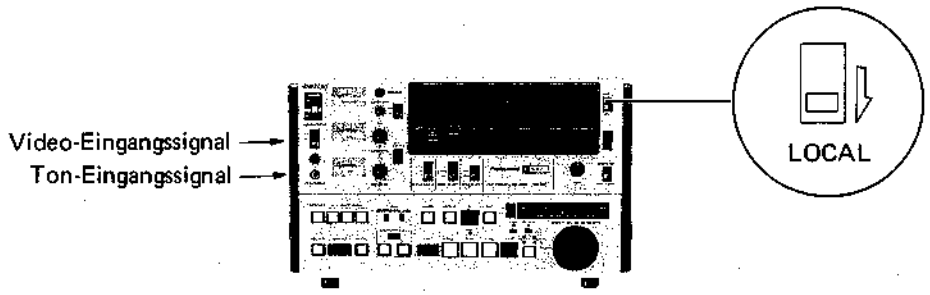
❷ Stellen Sie die Aufnahme- und die Wiedergabemaschine auf Wiedergabe und drücken Sie am gewünschten Schnittanfangspunkt gleichzeitig die PLAY- und die EDIT-Taste der Aufnahmemaschine.
Der Schnittvorgang beginnt dann beim Drücken dieser Tasten.

❸ Drücken Sie an der gewünschten Schnittendstelle die PLAY-Taste der Aufnahmemaschine. Der Aufnahmebetrieb wird dann gestoppt, und die Aufnahmemaschine geht in den Wiedergabebetrieb über.



- Wenn der Schnitt aus der Stopstellung des Recorders heraus vorgenommen wurde, so ist das Bild am Schnittanfangspunkt instabil. Um ein vollkommen stabiles Wiedergabebild zu erhalten, muß die Wiedergabe mindestens 10 Sekunden vor dem Schnittanfangspunkt einsetzen.

1-6-2. Schneiden unter Verwerdung eines BVU-800P Video-Cassettenrecorders

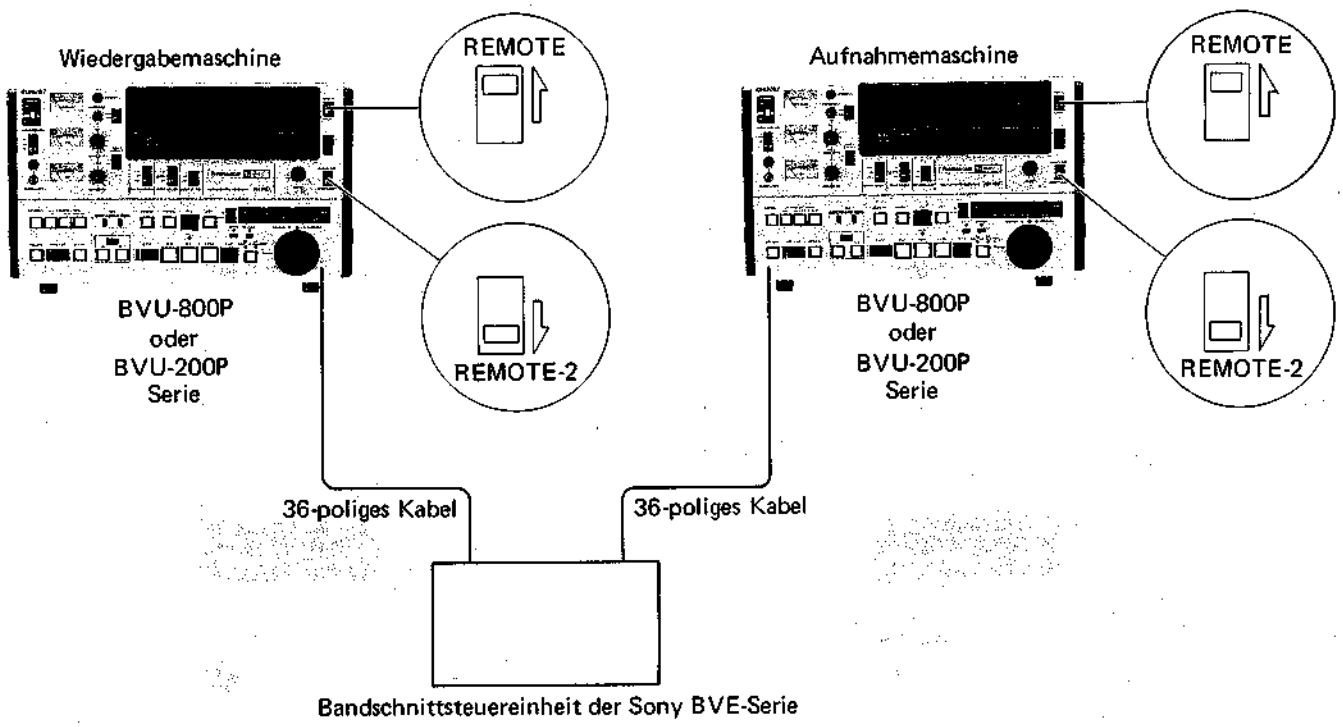


Es kann ein angeschlossens Video- oder Ton-Eingangssignal wie auf den vorhergehenden Seiten beschrieben geschnitten werden.

Hinweise:

- Stellen Sie den REMOTE/LOCAL-Wähler auf LOCAL.
- Es können folgende Funktionen durchgeführt werden: Eingabe der Schnittanfangs- und Schnittendpunkte, AUTO EDIT, PREVIEW und TRIM. Bedienen Sie die Video- und Toneingangssignalquellen getrennt.

1-6-3. Schneiden unter Verwendung einer herkommlichen Steuereinheit

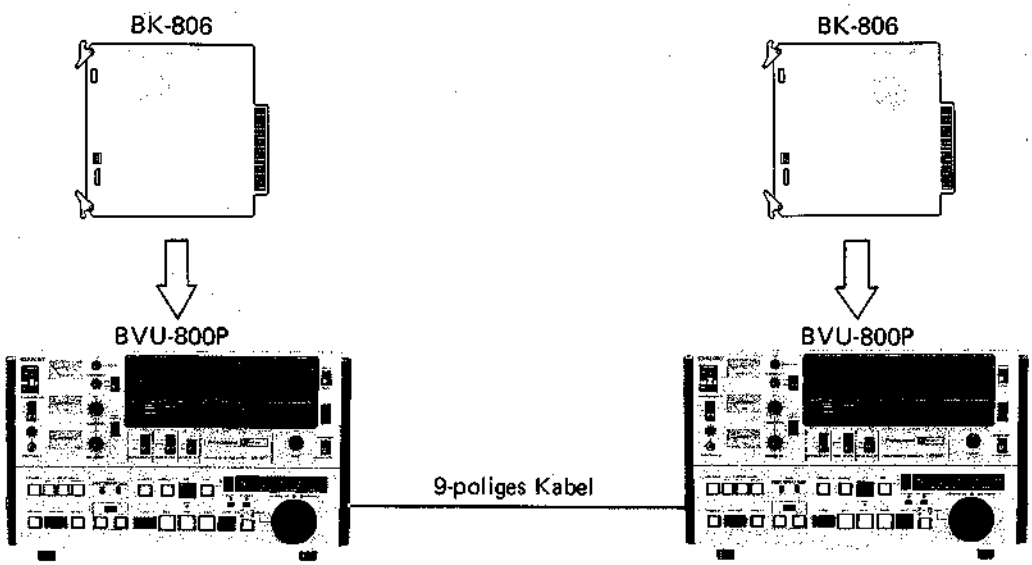


Verwenden Sie die Bedienungselemente der Steuereinheit, um die Aufnahme- und Wiedergabemaschine fernzubedienen.

- Anschlüsse siehe Seite 1-107.
- Falls vorhanden, stellen Sie den REMOTE/LOCAL-Wähler auf REMOTE.
- Stellen Sie den REMOTE-1/REMOTE-2-Wähler auf REMOTE-2.
- Stellen Sie zum Herausnehmen der Cassette den REMOTE/LOCAL-Wähler auf LOCAL, und drücken Sie die EJECT-Taste.
  Stellen Sie den Wähler zur Fernbedienung danach wieder auf REMOTE.
- Steht der Suchlauf-Knopf der Geräte der BVE-500 Serie auf x2, so läuft das Band des BVU-800P mit 5 facher Normalgeschwindigkeit; steht er auf x1/20, so läuft es mit 1/30 der Normalgeschwindigkeit.
- Wird der BVU-800P durch Drücken einer Taste an einem Gerät der BVE-500 Serie vom Suchlauf- in einen anderen Betrieb umgeschaltet, so halten Sie die Taste so lange gedrückt, bis das Gerät richtig in den gewünschten Betriebszustand geschaltet hat.
- Wird an einem Gerät der BVE-500 Serie eine Taste gedrückt, so leuchtet eventuell die entsprechende Kontrollampe am BVU-800P nicht auf. Der korrekte Betriebszustand der Aufnahme- und Wiedergabemaschine wird in diesem Fall durch die Kontrollampen des BVE-500 angezeigt.
- Beim Anschluß einer Bandschnittsteuereinheit der BVE-500 Serie wird die Vorlaufzeit der Videorecorder an der Bandschnittsteuereinheit auf 3 oder 5 Sekunden eingestellt.
- Beim Anschluß einer Bandschnittsteuereinheit der BVE-500 Serie ist der COLOR FRAMING-Schalter des als Aufnahmemaschine geschalteten BVU-800P auf OFF zu stellen.

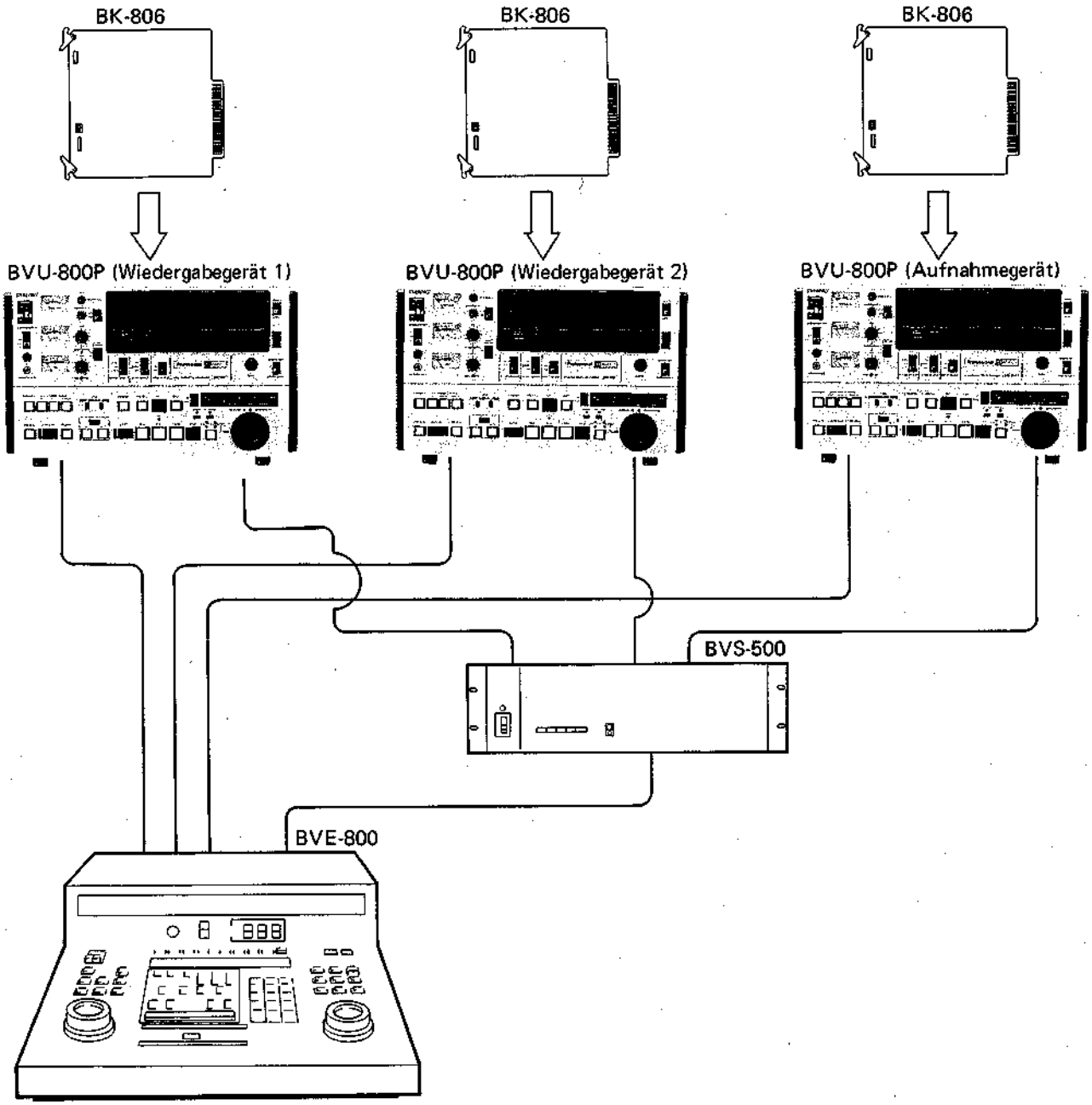
1-6-4. Zeitcode-Schnittbetrieb

BEI VERWENDUNG ZWEIER BVU-800P VIDEORECORDER



Wird die TC-13 Leiterplatte des BVU-800P gegen die Zeitcode-Generator/Auswerter-Leiterplatte BK-806 ausgetauscht, ist Aufnehmen und Wiedergeben des Zeitcodes sowie Zeitcode-Schnittbetrieb möglich.
Für den Schnittbetrieb brauchen die Zeitcode-Eingänge und Ausgänge nicht angeschlossen zu werden.
Genauere Informationen finden Sie in der Bedienungsanleitung der BK-806.

VERWENDUNG DER BVE-800 UND DES BVS-500



Wird die automatische Schnitt-Steuereinheit BVE-800 zusammen mit dem Video/Audio-Umschalter BVS-500 verwendet, so sind folgende Funktionen möglich.

a) A/B Roll-Schnittbetrieb (drei Videorecorder werden gesteuert)
b) Automatischer separater Tonschnitt
c) Automatischer Schnittbetrieb mit dem Merfachschnitt-Speicher
d) Automatischer Suchlauf
e) Ausgabe der Schnittlisten auf Lochstreifen eines Fernschreibers
f) Berechnung der Programmlänge
g) Aufnahme und Wiedergabe von Cue-Signalen

Genauere Informationen finden Sie in den Bedienungsanleitungen der BVE-800 und des BVS-500.

1-7. BANDSCHUTZAUTOMATIK

Um das Band vor einer eventuellen Beschädigung zu bewahren, geht das Gerät automatisch in die Stop- oder Cassettenauswurf-Funktion über, wenn während des Betriebs eine Abnormalität auftritt.

Einige Beispiele:

– Im Schnellvorlauf-, Rücklauf-, Vorlauf-, Stop- und Standbetrieb:
Wird eine abnormale Spulendrehung oder Bandspannung festgestellt, so sorgt ein Kontrollsystem für einen Übergang in die Stop-Funktion des Geräts oder für ein Auswerfen der Cassette; ist die abnormale Spulendrehung oder Bandspannung nach 3 Sekunden immer noch vorhanden, so wird der Spulenmotor abgeschaltet, und gleichzeitig wird eine mechanische Bremse aktiviert.

– Beim Ein/Ausfädeln:
Wird eine abnormale Spulendrehung oder Bandspannung festgestellt, so sorgt ein Kontrollsystem für einen Übergang in die Stop-Funktion oder für ein Auswerfen der Cassette.

– Falsche Spannung, kaputte LED
Wird an der B+ Leitung eine falsche Spannung oder eine kaputte LED-Anzeige festgestellt, so sorgt ein Kontrollsystem für einen Übergang in die Stop-Funktion oder ein Auswerfen der Cassette.

1-8. REINIGUNG DER KÖPFE

Verwenden Sie zur Reinigung der Video- und Tonköpfe die Reinigungscassette KC-1C (Sonderzubehör). Das Reinigungsband wird in gleicher Weise wie das Videoband eingefädelt.

1) Legen Sie die Reinigungscassette ein, und drücken Sie sofort die PLAY-Taste.
2) Lassen Sie das Band etwa 10 Sekunden laufen.
3) Werfen Sie die Cassette sofort wieder aus.

- Da sich der Kopf auch in der Stop-Funktion dreht, kommt es zu einer übermäßigen Abnutzung der Köpfe, wenn die Cassette im Gerät gelassen wird.

1-9. FUNKTIONSÜBERPRÜFUNGEN

Führen Sie die folgende Prüfabfolge durch, um alle Bedienungsfunktionen des BVU-800P zu überprüfen.

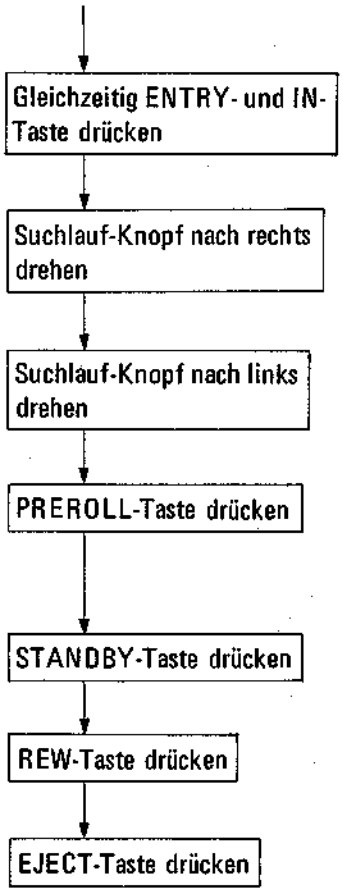
Überprüfung des Wiedergabebetriebs

Schließen Sie zunächst einen Monitor sowie ein Gerät zur Kontrolle des Tonsignals an, und bereiten Sie eine Cassette vor, auf der ein Video-, ein Tonspur-1- und ein Tonspur-2-Signal aufgezeichnet ist.

Stellung der Wähler

POWER : ON
REMOTE/LOCAL : LOCAL
PB/PB/EE : PB
AUDIO MONITOR : MIX

Auszuführender Bedienungsschritt	Überprüfungspunkte
Cassette einlegen	
F FWD-Taste drücken	Erscheint ein Wiedergabebild hoher Geschwindigkeit und setzt das Video- und Tonsignal nicht aus?
STOP-Taste drücken	Erscheint ein Standbild?
PLAY-Taste drücken	Erscheint das Wiedergabebild? Ist Tonsignal-1 und Tonsignal-2 hörbar?
Suchlauftaste drücken	Leuchtet die SEARCH-Lampe?
Suchlauf-Knopf nach rechts drehen	Wird die Wiedergabegeschwindigkeit schneller? Geht das Gerät in den Schnellvorlauf (×10) über, wenn der Knopf bis zum Klicken gedreht wird? (Beim Übergang in den Schnellvorlauf fährt die Andruckrolle zurück, und die Bildwiedergabe wird unterbrochen oder einen Moment gestört.) Leuchtet die SHUTTLE-Lampe?
Suchlauf-Knopf in die Mittelstellung zurückdrehen	Erscheint ein Standbild?
Suchlauf-Knopf nach links drehen	Erfolgt die Wiedergabe rückwärts? Erhöht sich die Wiedergabegeschwindigkeit, wenn der Knopf weite nach links gedreht wird? Geht das Gerät in den Rücklauf über (×10), wenn der Knopf bis zum Klicken gedreht wird?
Suchlauf-Knopf hineindrücken	Erscheint ein Standbild? Leuchtet die JOG-Lampe?



Leuchtet die IN-Lampe?
Notieren Sie den Zählerstand dieses Punktes (Schnittanfangspunkt).

Erscheint das Wiedergabebild in Vorwärtsrichtung im Jog-Betrieb?

Erscheint das Wiedergabebild in Rückwärtsrichtung im Jog-Betrieb?

Läuft das Band zu einem 10 Sekunden vor der Schnittanfangspunkt liegenden Punkt, und stoppt es dort? Erscheint dann ein Standbild?

Geht die STANDBY-Lampe aus?

PB/PB/EE : PB/EE

Spult das Band zurück? Erscheint das E-zu-E-Bild? Stoppt das Band automatisch am Bandanfang?

Wird die Cassette ausgeworfen?

Überprüfung des Aufnahmebetriebs

Vorbereitungen:

- Besorgen Sie eine unbespielte Cassette.
- Schließen Sie Signale an die VIDEO IN-, AUDIO IN CH-1 und CH-2-Anschlüsse an.
- Schließen Sie einen Monitor sowie ein Gerät zur Kontrolle des Tonsignals an.

Stellung der Wähler		Auszuführender Bedienungsschritt	Überprüfungspunkte
POWER	: ON	Cassette einlegen	
REMOTE/LOCAL	: LOCAL		
INPUT SELECT	: LINE		
PB/PB/EE	: PB	Gleichzeitig REC- und PLAY-Taste drücken	Beginnt der Aufnahmevorgang?
		REW-Taste drücken	Spult das Band zurück? (Spulen Sie das Band bis zum Anfang zurück, und stoppen Sie es dort.)
AUDIO MONITOR	: MIX	PLAY-Taste drücken	Wird das aufgenommene Material wiedergegeben? Ist Tonsignal-1 und Tonsignal-2 hörbar?
		REC-Taste drücken und während der Wiedergabe gedrückt halten	Erscheint das E-zu-E-Bild, solange die REC-Taste gedrückt ist?
		INSERT-Tasten drücken (VIDEO, AUDIO CH-1 und CH-2)	Leuchten die VIDEO-, AUDIO CH-1- und AUDIO CH-2-Lampen?
		Gleichzeitig PLAY- und EDIT-Taste drücken	Beginnt die manuelle Schnittaufnahme?
		PLAY-Taste drücken	Endet die Schnittaufnahme und läuft das Band aber noch im Wiedergabebetrieb weiter?
		STOP-Taste drücken	Erscheint ein Standbild?
		EDIT-Taste drücken	Erscheint das an den INSERT-Tasten gewählte E-zu-E-Bild- und Tonsignal?
		EDIT-Taste drücken	Verschwindet das E-zu-E-Bild- und Tonsignal, und erscheint ein Standbild?
PB/PB/EE	: PB/EE	REW-Taste drücken	Spult das Band zurück? (Spulen Sie das Band bis zum Anfang der Schnittaufnahme zurück, und stoppen Sie es dort.)
		PLAY-Taste drücken	Wird die Schnittszene wiedergegeben, und ist Tonsignal-1 und Tonsignal-2 hörbar?
		F FWD-Taste drücken	Spult das Band vor, und stoppt es am Bandende? Spult das Band dann automatisch zurück, und stoppt es am Bandanfang?
		EJECT-Taste drücken	Wird die Cassette ausgeworfen?

Überprüfung des Schnittbetriebs

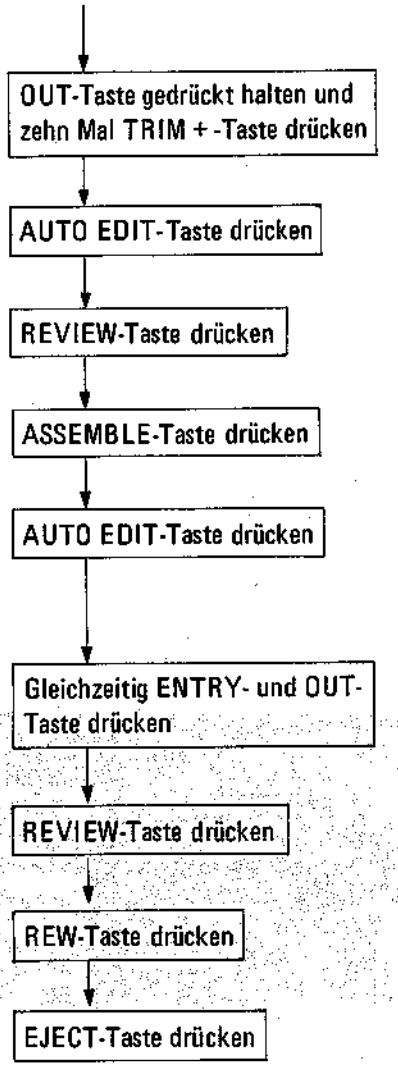
Vorbereitung

- Bereiten Sie eine Cassette vor, auf der ein Video-, ein Tonspur-1- und ein Tonspur-2-Signal aufgezeichnet ist.
- Schließen Sie Signale an den VIDEO IN- und AUDIO IN-Anschlüssen an.
- Schließen Sie einen Monitor so wie ein Gerät zur Kontrolle des Tonsignals an.

Stellung der Wähler

POWER : ON
REMOTE/LOCAL : LOCAL
AUDIO MONITOR : MIX

Auszuführende Bedienungsschritte	Überprüfungspunkte
Cassette einlegen	
PLAY-Taste drücken	Erscheint ein Wiedergabebild?
Suchlauftaste drücken (Suchlauf-Knopf auf ■)	Erscheint ein Standbild?
Gleichzeitig ENTRY- und IN-Taste drücken	Notieren Sie den Zählerstand dieses Punktes (Schnittanfangspunkt).
Mit dem Suchlauf-Knopf einen Schnittendpunkt aufsuchen	
Gleichzeitig ENTRY- und OUT-Taste drücken	Notieren Sie den Zählerstand dieses Punktes (Schnittendpunkt)
INSERT-Tasten drücken (VIDEO, AUDIO CH-1 und AUDIO CH-2)	
PREVIEW-Taste drücken	Beginnt der Vorschaubetrieb?
IN-Taste drücken	Wird der Schnittanfangspunkt am Zeitzähler angezeigt?
IN-Taste gedrückt halten und zehn Mal TRIM – -Taste drücken	Erniedrigt sich der Zählerstand um zehn Einzelbilder?
OUT-Taste drücken	Wird der Schnittendpunkt am Zeitzähler angezeigt?



Erhöht sich der Zählerstand um zehn Einzelbilder?

Beginnt der automatische Schnittvorgang?

Beginnt die Kontrollwiedergabe des Schnittvorgangs?

Leuchtet die ASSEMBLE-Lampe?

Wird der Punkt, an dem die ASSEMBLE-Taste gedrückt wird, als Schnittanfangspunkt eingegeben, und beginnt der automatische Schnittvorgang an diesem Punkt?

Wird der Punkt als Schnittendpunkt eingegeben, und stoppt der automatische Schnittvorgang an dieser Stelle?

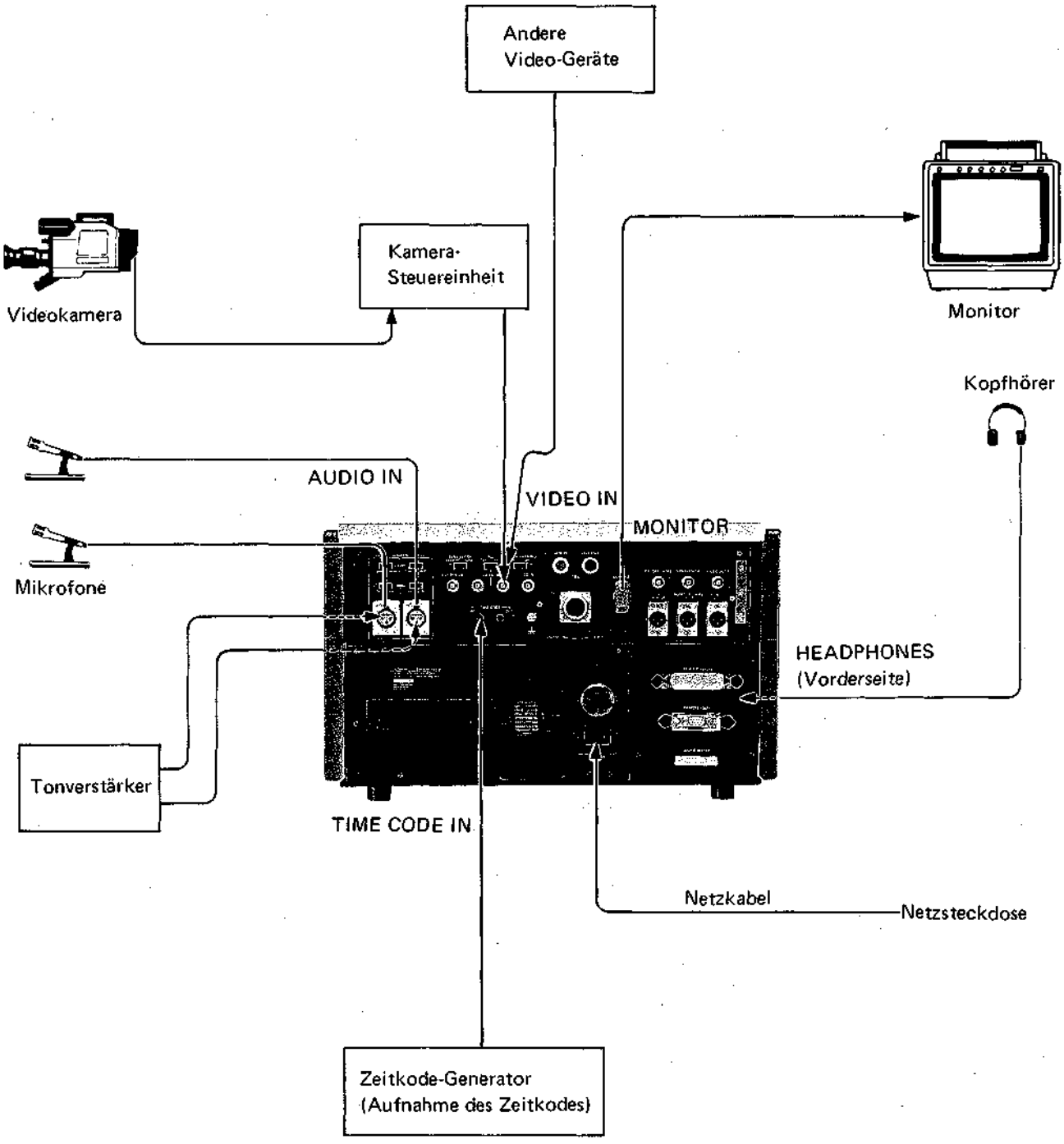
Beginnt die Knotrollwiedergabe des Schnittvorgangs?

Stoppt das Band am Bandanfang?

Wird die Cassette ausgeworfen?

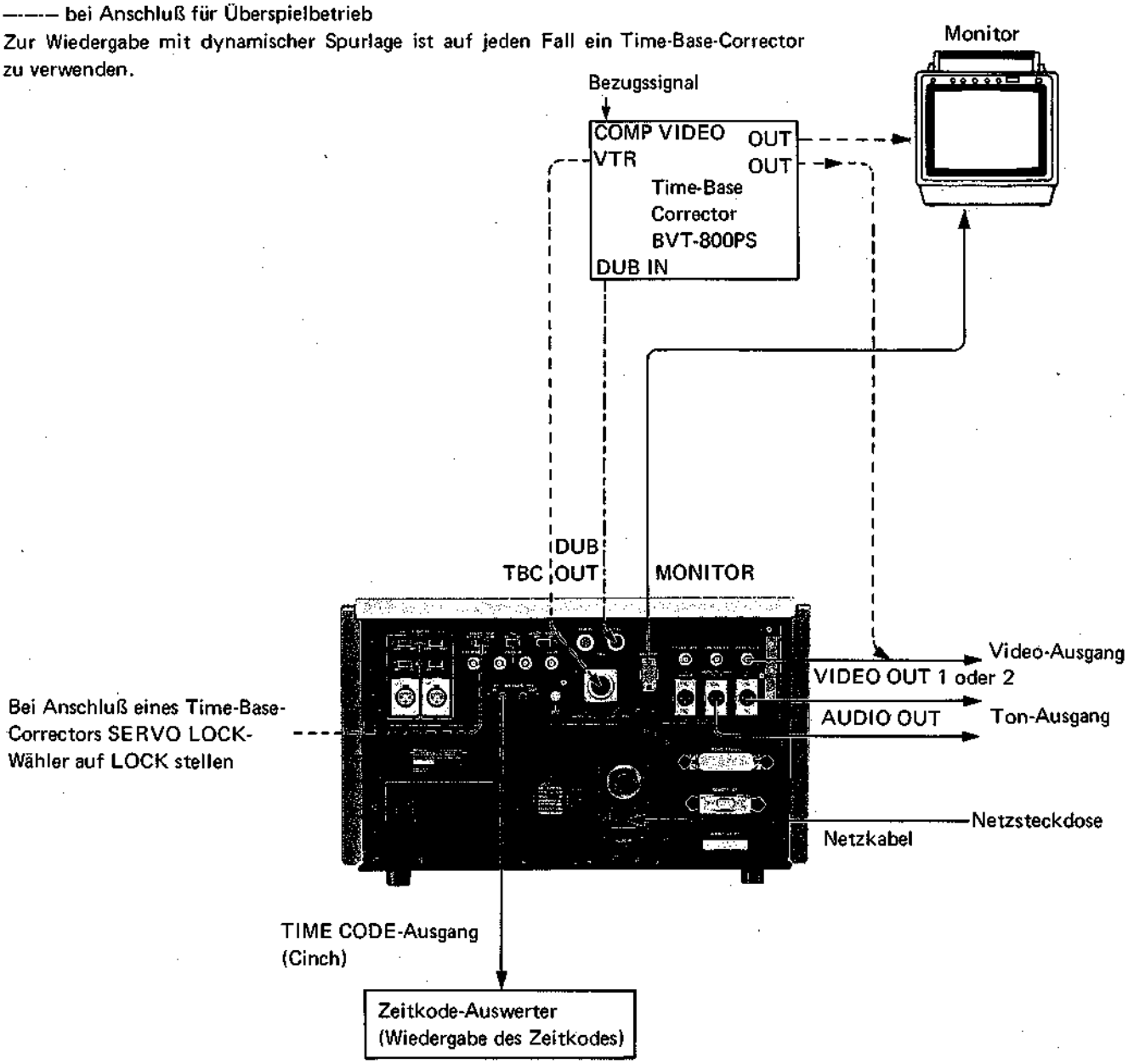
1-10. ANSCHLÜSSE

AUFNAHME

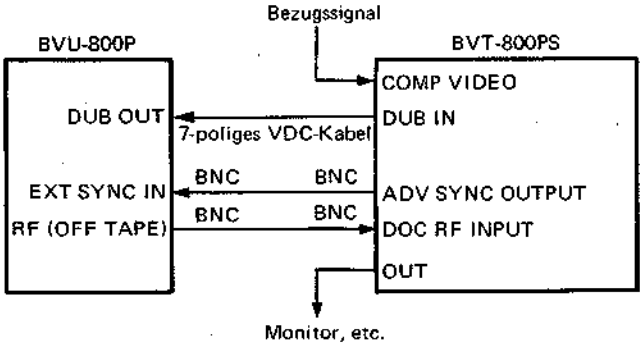


WIEDERGABE

- - - - - bei Anschluß eines Time-Base-Correctors
——— bei Anschluß für Überspielbetrieb
Zur Wiedergabe mit dynamischer Spurlage ist auf jeden Fall ein Time-Base-Corrector zu verwenden.

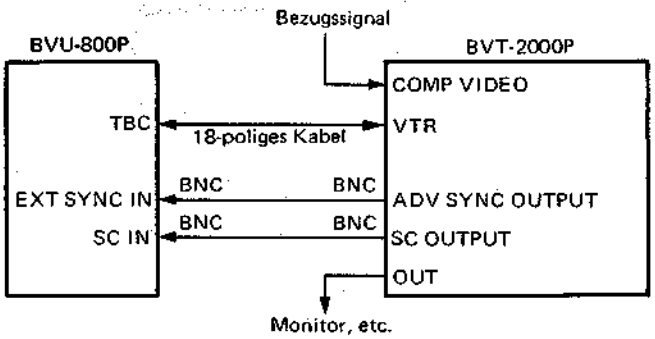


Der BVT-800PS kann ohne Verwendung von einem 18-poligen Kabel wie folgt angeschlossen werden.

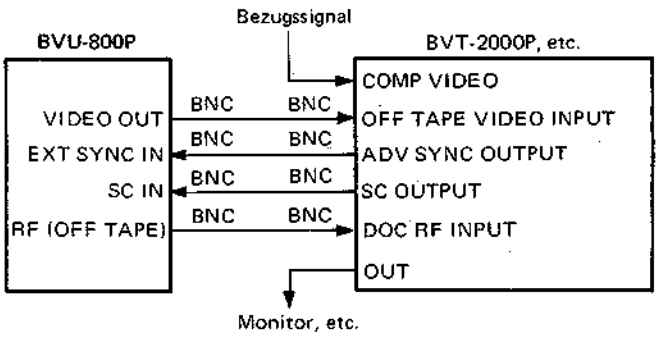


Wenn ein Time-Base-Corrector außer BVT-800PS verwendet werden soll, schließen Sie ihn wie folgt an.

- Zum Anschluß eines BVT-2000P unter Verwendung von einem 18-poligen Kabel.

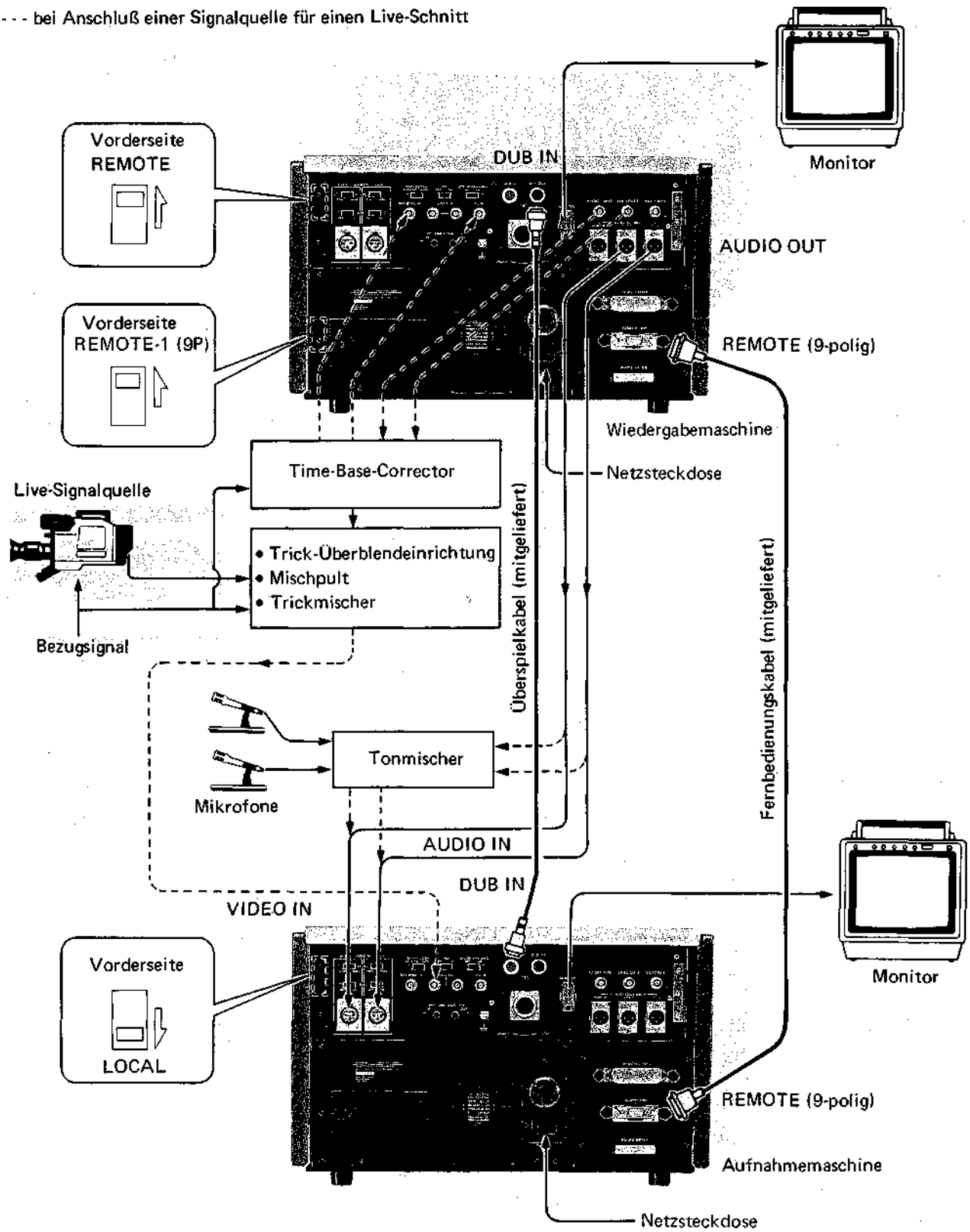


- Zum Anschluß eines Time-Base-Correctors ohne Verwendung von einem 18-poligen Kabel.



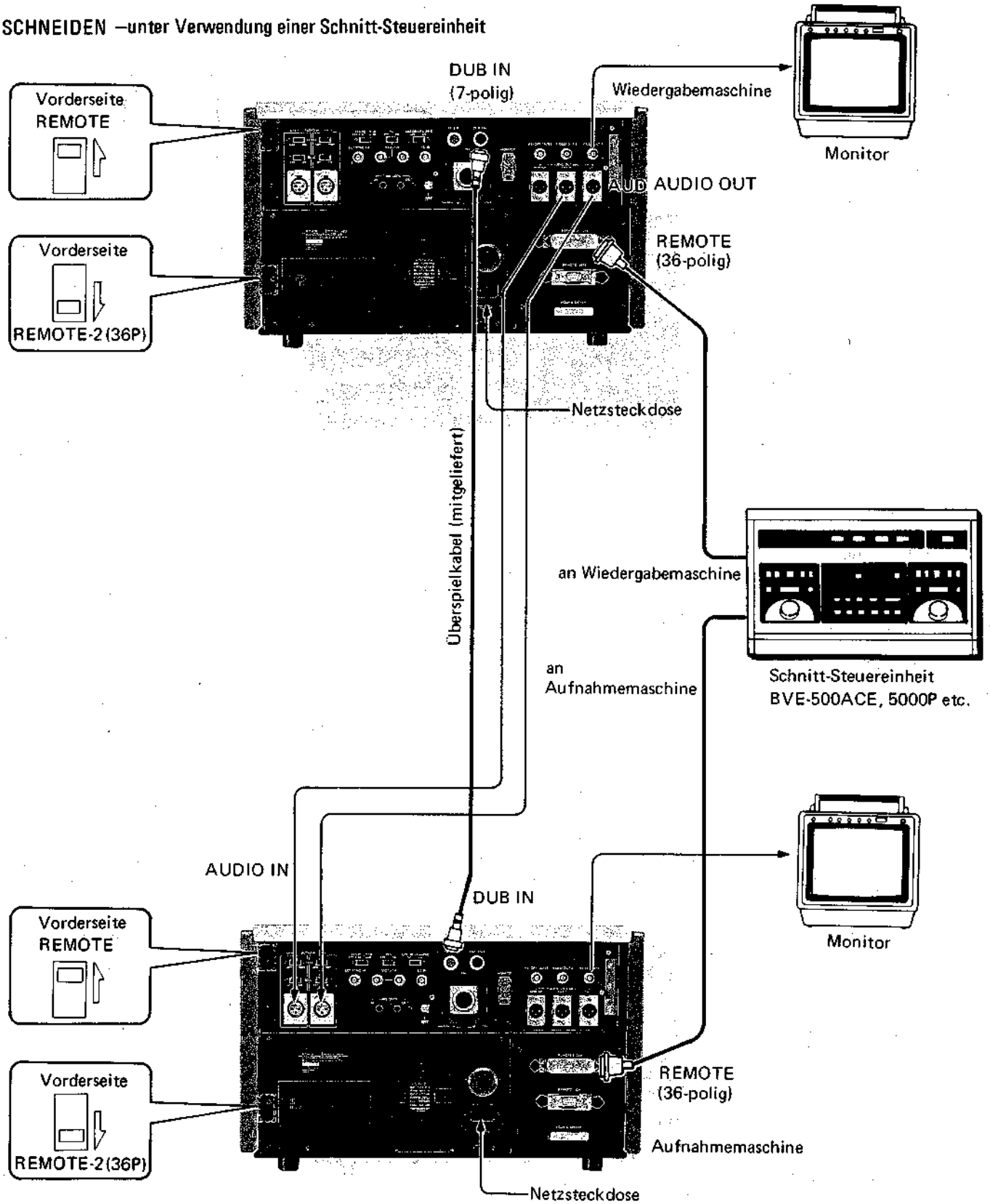
SCHNEIDEN —unter Verwendung von zwei BVU-800P

---- bei Anschluß einer Signalquelle für einen Live-Schnitt



- Verbinden Sie nicht noch zusätzlich den DUB IN-Anschluß der Wiedergabemaschine mit dem DUB OUT-Anschluß der Aufnahmemaschine.

SCHNEIDEN –unter Verwendung einer Schnitt-Steuereinheit



- Verbinden Sie nicht noch zusätzlich den DUB IN-Anschluß der Wiedergabemaschine mit dem DUB OUT-Anschluß der Aufnahmemaschine.
- Zum Anschluß einer Live-Signalquelle siehe vorhergehende Seite.
- Es kann auch ein anderer Video-Cassettenrecorder, der einen 36-poligen Anschluß besitzt, angeschlossen werden. Es können dann aber nur die am jeweiligen Gerät vorhandenen Bedienungsfunktionen ausgeführt werden.

1-11. TECHNISCHE DATEN

MECHANISCHE BAUTEILE

Gewicht	37 kg
Abmessung (B x H x T)	454 x 283 x 550 mm
Betriebslage	Horizontal
Bandlaufwerk	U-matic System (3/4-Zoll KCA, KCS Cassetten)
Bandgeschwindigkeit	9,53 cm/Sek.
Gleichlaufschwankungen	±0,25% (DIN)
Aufnahme/Wiedergabespielzeit	max. 60 Min. mit KCA-60 Video-Cassette
Schnellvorlaufzeit	weniger als 4 Min. mit KCA-60 Video-Cassette
Rücklaufzeit	weniger als 2,5 Min. mit KCA-60 Video-Cassette
Suchlaufgeschwindigkeit	SHUTTLE: Stand, 1/30, 1/10, 1/5, 1/2, 1, 2, 5 und 10 fache Normalgeschwindigkeit in Vorwärts- und Rückwärtsrichtung JOG: Stand bis Normalgeschwindigkeit in Vorwärts- und Rückwärtsrichtung

Anschlüsse

AC IN	3-poliger Wechselspannungsanschluß
VIDEO IN x2	BNC-Anschluß
VIDEO OUT x2	BNC-Anschluß
AUDIO IN CH-1/L, CH-2/R	XLR-Buchse
AUDIO OUT MONITOR	XLR-Stecker
TIME CODE IN	RCA-Cinchbuchse
TIME CODE OUT	RCA-Cinchbuchse
DUB IN	7-poliger Stecker
DUB OUT	7-polige Buchse
SC IN	BNC-Anschluß
EXT SYNC IN	BNC-Anschluß
RF (OFF TAPE)	BNC-Anschluß
TBC	CCY-Anschluß
MONITOR OUT	8-poliger Anschluß
REMOTE (36P)	36-poliger Anschluß
REMOTE (9P)	RS-422 9-poliger Anschluß
HEADPHONES	JM-60 Stereo-Klinkenbuchse
Betriebstemperatur	+5°C bis +40°C
Lagertemperature	−20°C bis +60°C

ELEKTRISCHE BAUTEILE

Versorgungsspannung	100/120/220/240V ±10%, Wechselspannung (einstellbar) 48 bis 64 Hz
Leistungsaufnahme	170W
Schnittbetriebsarten	ASSEMBLE und INSERT (VIDEO, AUDIO CH-1, AUDIO CH-2), AUTO EDIT, MANUAL EDIT, PREVIEW, REVIEW, PREROLL, TRIM

VIDEO

Videoaufzeichnungssystem	Luminanzsignal: Frequenzmodulation Chromasignal: Heruntersetzung des Farbträgers
Eingang	PAL-FBAS-Signal, negative Synchronisation 1,0 Vss $^{+1,0}_{-0,5}$V, 75Ω, asymmetrisch
Ausgang	PAL-FBAS-Signal, negative Synchronisation 1,0 Vss ± 0,2V 75Ω, asymmetrisch
Kopiereingang	Luminanzsignal: 0,5 Vss negative Synchronisation, Impedanz: 75Ω ± 10% Chromasignal: 0,5 Vss Impedanz: 75Ω ± 10%
Kopierausgang	Luminanzsignal: 0,5 Vss negative Synchronisation, Impedanz: 75Ω ± 10% Chromasignal: 0,5 Vss Impedanz: 75Ω ± 10%
Horizontalauflösung	370 Zeilen (bei Schwarzweiß) 260 Zeilen (bei Farbe)
Signal-Rauschabstand	besser als 46 dB (bei Schwarzweiß) besser als 46 dB (bei Farbe)

TONTEIL

Eingang	**(MIC)**	−60 dB, 3 kΩ, symmetrisch (für Mikrofone mit 600Ω)
	(LINE)	+4 dB, 10 kΩ/600Ω, symmetrisch
Ausgang	**(LINE)**	+4 dB, niedrige Impedanz, symmetrisch (600Ω Lastimpedanz möglich)
	(HEADPHONES)	−46 bis −26 dB, 8Ω, Stereo
	(MONITOR)	+4 dB, 600Ω, symmetrisch

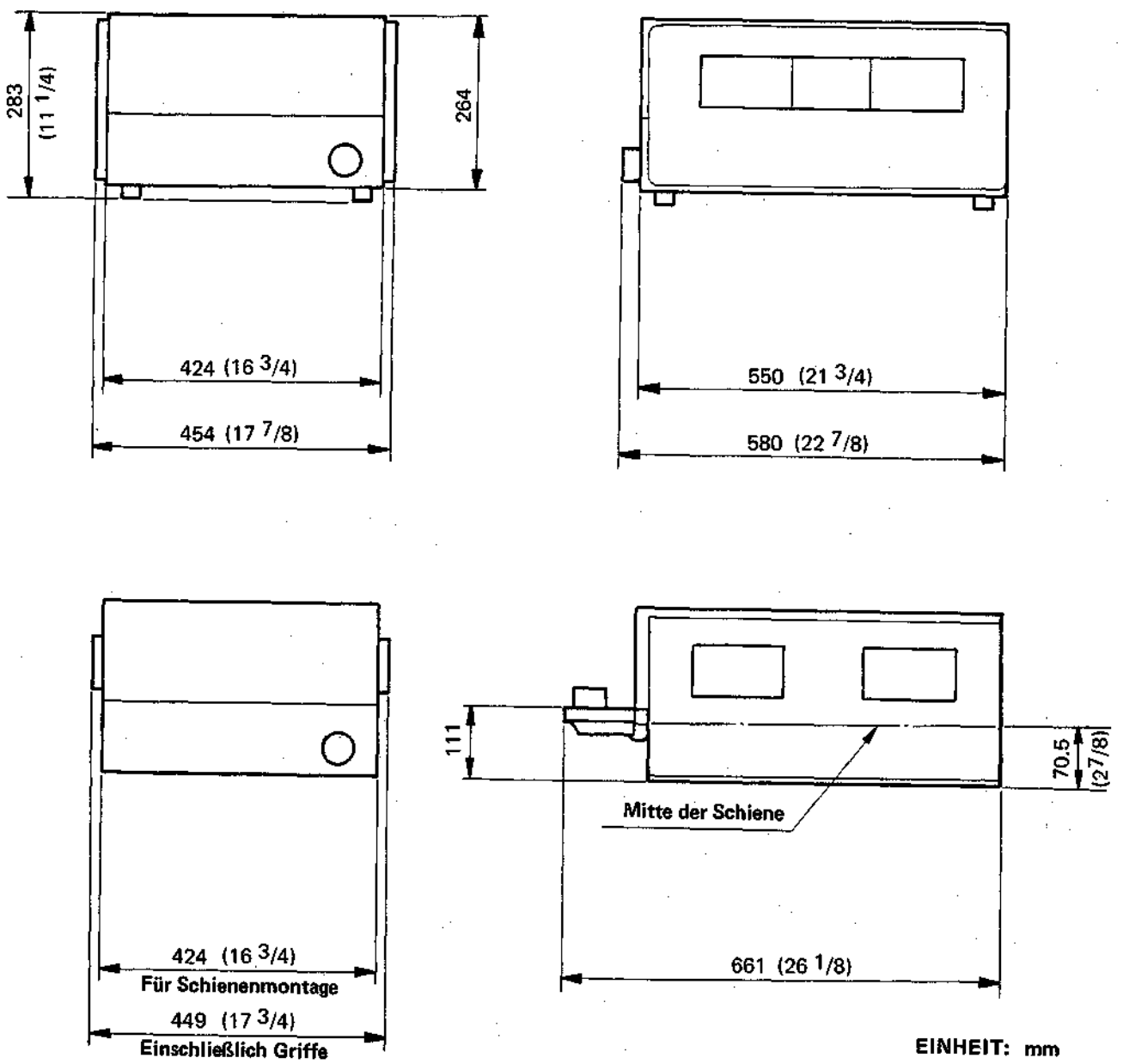
Verzerrungen	kleiner als 2,0% (bei 1 kHz-Bezugsignal)
Frequenzgang	50 Hz bis 15 kHz
Signal-Rauschabstand	48 dB (bei einem Klirr von 3%)
TIME CODE-Eingang	0 dB ± 6 dB, 10 kΩ, asymmetrisch (0 dB = 1,55 Vss Implus)
TIME CODE-Ausgang	0 dB ± 3 dB, niedrige Impedanz, asymmetrisch (0 dB = 1,55 Vss Implus)
SC-Eingang	2 Vss ± 1V, 75Ω, asymmetrisch
SYNC-Eingang	0,2 Vss bis 5 Vss, negativ, 75Ω, asymmetrisch (1 Vss ± 0,2V bei Videoeingangssignal)
RF-Ausgang (OFF TAPE)	0,5 Vss ± 0,1V, 75Ω, asymmetrisch

Mitgeliefertes Zubehör

Netzkabel	1
Überspielkabel VDC-5 (5m)	1
Fernbedienungkabel (9-polig, 9-polig) RCC-5G	1
Service-Anschlußplattine EX-7	1
Bedienungs- und Wartungsanleitung	1

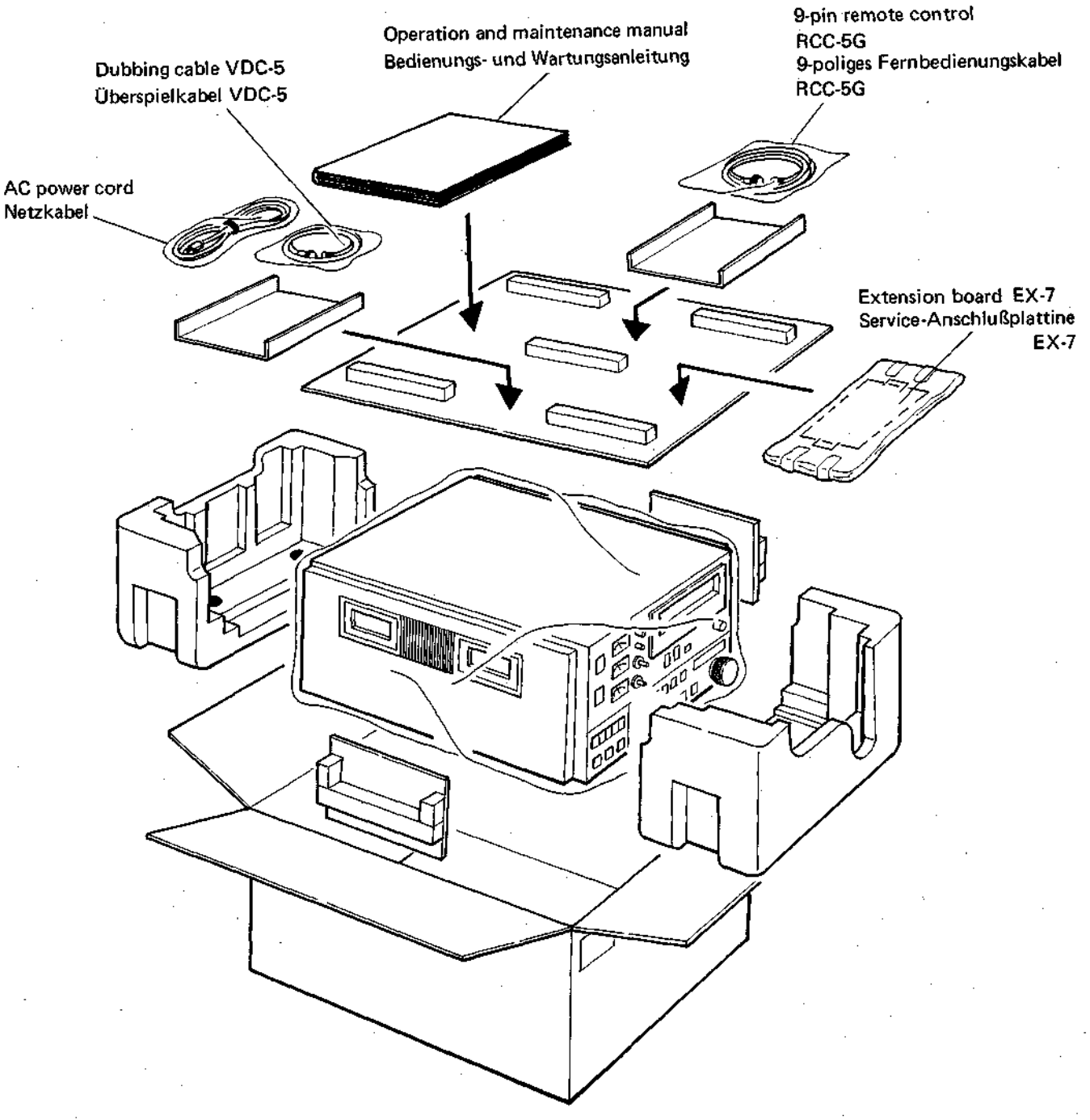
Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.

AUSSENANSICHT DES GERÄTS



EINHEIT: mm

1-12. REPACKING FOR SHIPMENT/WIEDERVERPACKUNG FÜR TRANSPORTZWECKE



SECTION 2
INSTALLATION

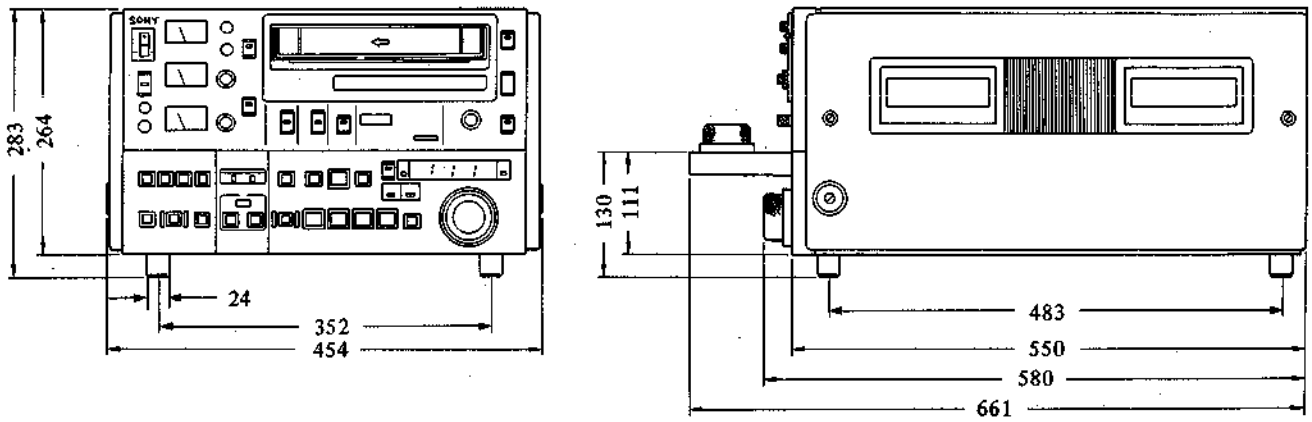
Be sure to install the BVU-800P at the installation space under the required operational environment as regulated below. It will assure the BVU-800P's superior performance while maintaining the excellent serviceability and accessibility.

2-1. OPERATIONAL ENVIRONMENT

- Areas where the BVU-800P will be exposed to direct sunlight, or any other strong direct lights.
- Avoid installation in dusty areas or areas where it is subject to vibration.
- Avoid areas where high electric or magnetic fields are to be found.
- Good air circulation is essential to prevent internal heat buildup. Place the set in locations with sufficient air circulation. Do not block the ventilation holes on the cabinet and the rear panel.
- Avoid installation in a location near heat sources. The set should only be operated in a temperature range from 5°C to 40°C.

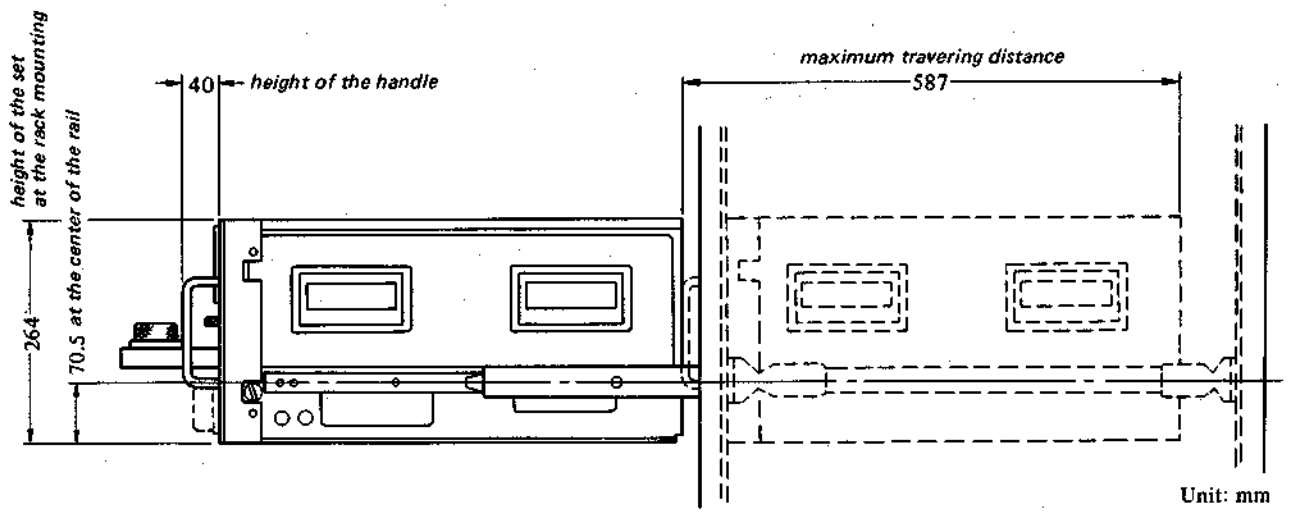
2-2. INSTALLATION SPACE

- The outer dimensions of the set are shown in the figure below.
- The rear side of the set must be at least 40 cm away from the wall for ventilation and maintenance.
- When the set is operated on the desk or similar condition, assure that the vertical clearance above the BVU-800P is at least 40 cm to provide the accessability to the printed circuit boards and other mechanical parts. But note that it is not necessary to provide the space when the set is mounted in a rack since the printed circuit boards can be repaired after the set is pulled out.



Unit: mm

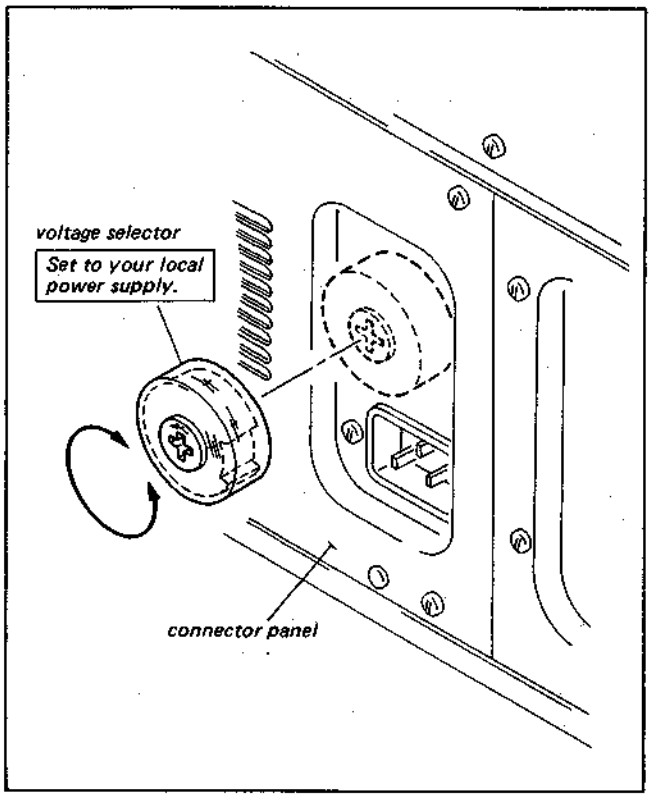
When the BVU-800P is mounted in a rack.



Unit: mm

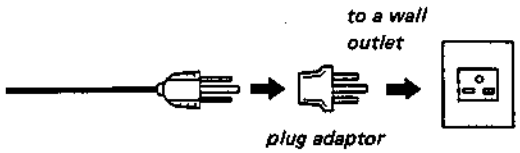
2-3. OPERATING VOLTAGE

The BVU-800P's power line voltage can be set to 100 V, 120 V, 220 V or 240 V for use anywhere in the world. Before connecting the set to the power source, check that the operating voltage of your set is identical to that of your local power supply. The BVU-800P can operate on either 50 Hz or 60 Hz.



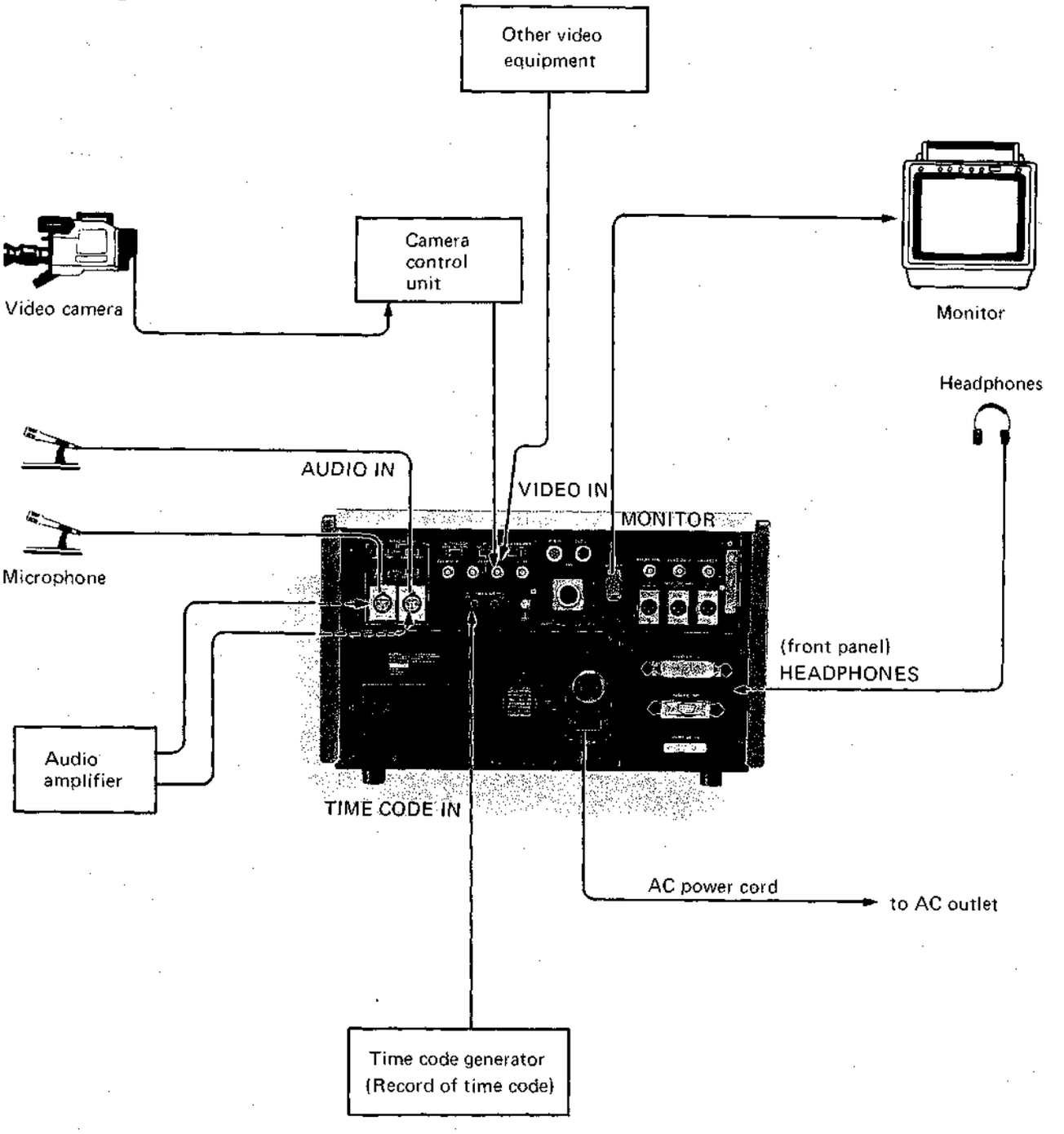
Note on AC power connection

To use the set in other countries on 220 or 240 V ac, set the VOLTAGE SELECTOR to 220 or 240 V and use a commercially available plug adaptor as illustrated.



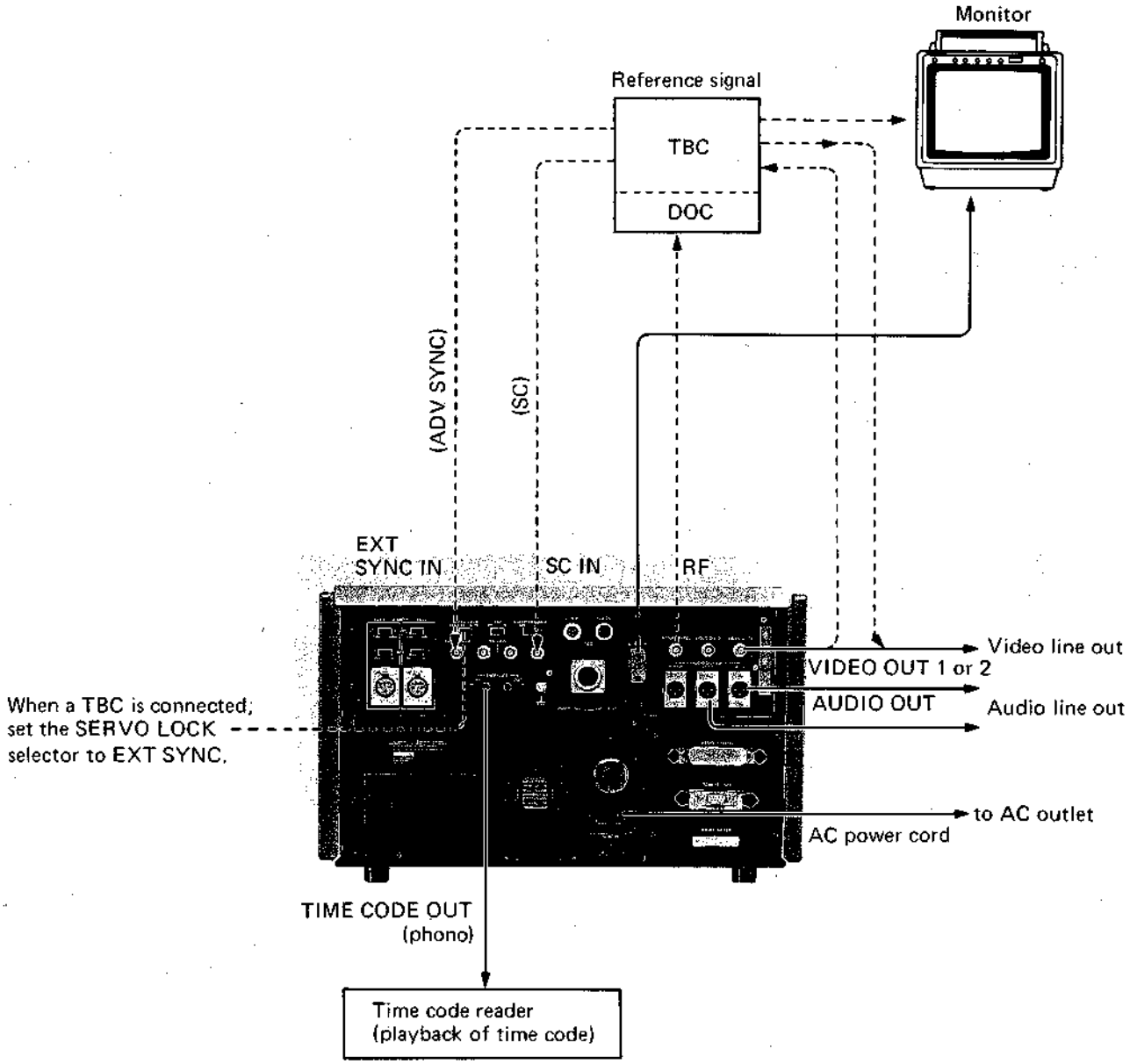
2-4. CONNECTIONS

RECORDING



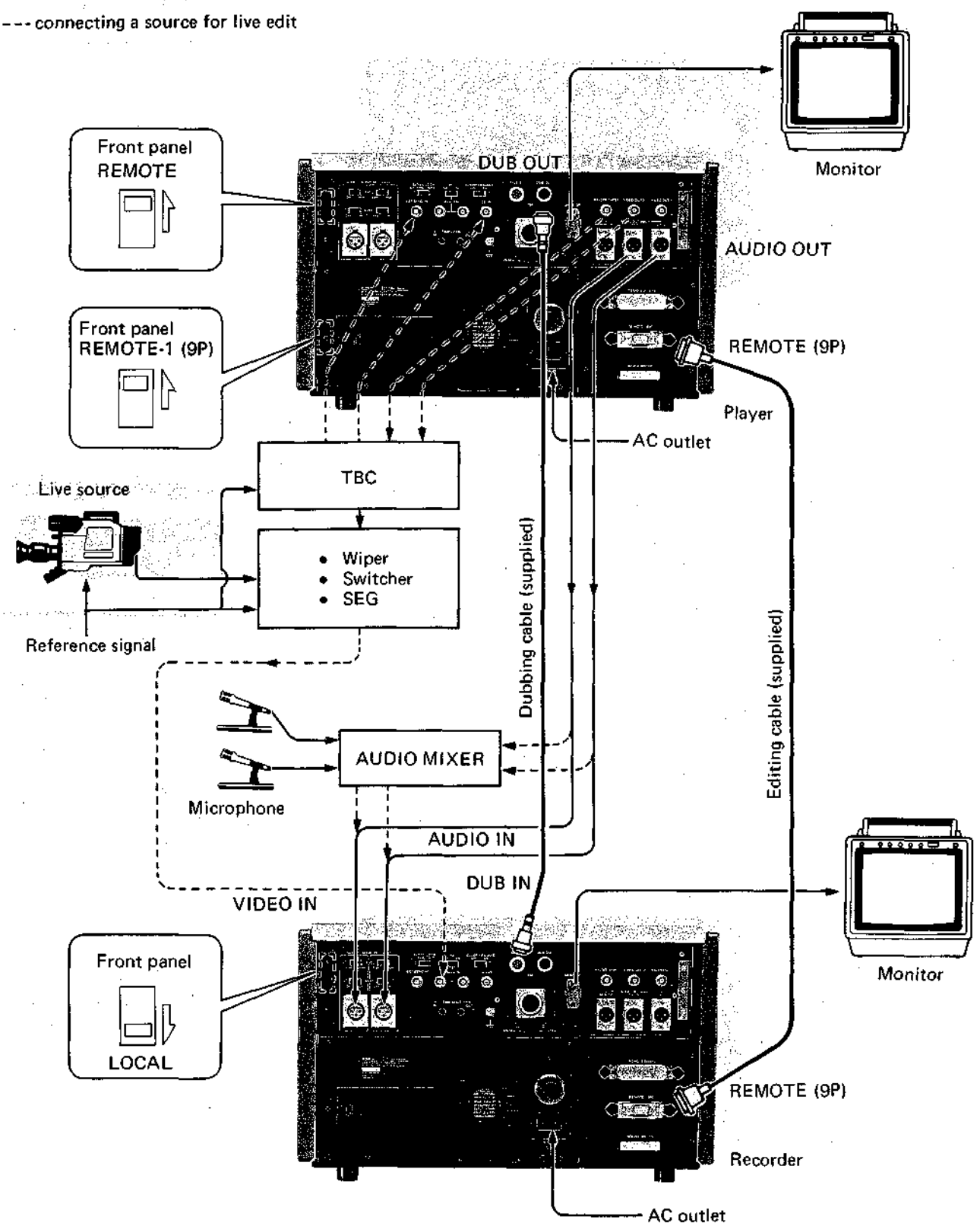
PLAYBACK

---- for connecting a time base corrector



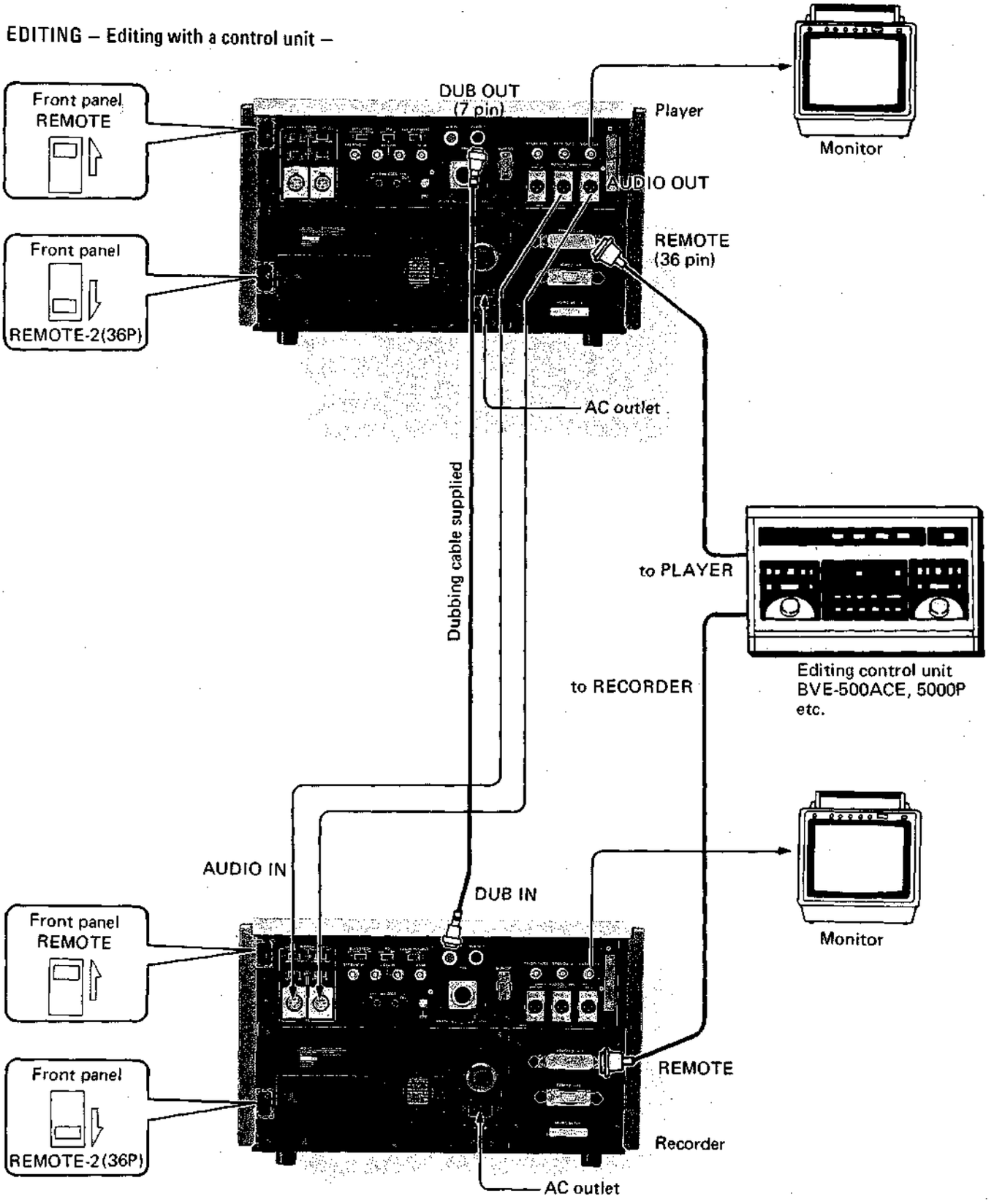
EDITING – Editing with two BVU-800s –

---- connecting a source for live edit



- Do not make simultaneous (parallel) connections with the DUB IN connector on the player and DUB OUT connector on the recorder.

EDITING – Editing with a control unit –



- Do not make simultaneous (parallel) connections with the DUB IN connector on the player and the DUB OUT connector on the recorder.
- For the *live source connection*, see the previous pages.
- The video cassette recorder with 36 pin connector can be connected other than the BVU-800P, but the function is limited according to the function of the machine.

2-5. INPUT/OUTPUT SIGNAL OF THE CONNECTOR

Input and output signal of the main connectors on the connector panel are follows:

INPUT

VIDEO IN : 1.0 Vp-p $^{+1.0}_{-0.5}$ V, sync negative, 75 ohms, unbalanced

DUBBING IN : Luminance signal: 0.5 Vp-p, sync negative, impedance: 75Ω ± 10%
Chroma signal: 0.5 Vp-p, impedance: 75Ω ± 10%

EXT. SYNC IN : 0.2 Vp-p ~ 5 Vp-p, negative, 75 ohms, unbalanced
(1 Vp-p ±0.2 V with VIDEO input)

SC IN : 2 Vp-p ±1 V, 75 ohms, unbalanced

AUDIO IN : MIC: −60 dB, 3 k-ohms, balanced (matches 600 ohm microphone)
LINE: +4 dB, 10 k-ohms/600 ohms, balanced

TIME CODE IN : 0 dB ±6 dB, 10 k-ohms, unbalanced
(0 dB = 1.55 Vp-p pulse)

OUTPUT

VIDEO OUT : 1.0 Vp-p, ±0.2 V, sync negative, 75 ohms, unbalanced

DUBBING OUT : Luminance signal: 0.5 Vp-p, sync negative, impedance: 75Ω ± 10%
Chroma signal: 0.5 Vp-p, impedance: 75Ω ± 10%

RF OUT (OFF TAPE) : 0.5 Vp-p ±0.1 V, 75 ohms, unbalanced

AUDIO OUT : LINE: +4 dB, low impedance, balanced (600 ohm load permissible)
MONITOR: +4 dB, 600 ohm load, balanced
HEADPHONES: −46 dB ~ −26 dB, 8 ohms load, binaural

TIME CODE OUT : 0 dB ±3 dB, low impedance, unbalanced
(0 dB = 1.55 Vp-p pulse)

REMOTE CONTROL

REMOTE 2 (36P)

Pin	I/O Signal
1	UNREG 5 V
2	L-FF COMMAND IN (Pulse width is more than 5 msec.)
3	L-FWD COMMAND IN (Pulse width is more than 5 msec.)
4	L-REW COMMAND IN (Pulse width is more than 5 msec.)
5	L-EJECT COMMAND IN (Pulse width is more than 5 msec.)
6	L-STOP COMMAND IN (Pulse width is more than 5 msec.)
7	L-PAUSE COMMAND IN (Pulse width is more than 5 msec.)
8	L-REC COMMAND IN (Pulse width is more than 5 msec.)
9	L-CUT IN COMMAND IN (Pulse width is more than 5 msec.)
10	L-EDIT COMMAND IN (Pulse width is more than 5 msec.)
11	L-CUT OUT COMMAND IN (Pulse width is more than 5 msec.)
12	L-FF STATUS OUT
13	L-FWD STATUS OUT
14	L-REW STATUS OUT
15	L-STANDBY STATUS OUT
16	L-STOP STATUS OUT

Pin	I/O Signal
17	L-PAUSE STATUS 1 OUT
18	L-REC STATUS OUT
19	L-INSERT STATUS OUT
20	L-VIDEO INSERT IN
21	L-AUDIO 1 INSERT IN
22	L-AUDIO 2 INSERT IN
23	L-REVERSE COMMAND IN
24	SPEED A IN
25	SPEED B IN
26	L-CTL PULSE OUT (Pulse width is 470 msec.)
27	L-TACH OUT
28	L-CAPSTAN OUT
29	SYNCHRONIZE IN
30	NC
31	H-NORMAL FWD IN
32	L-PAUSE STATUS 2 OUT
33	L-SEARCH COMMAND IN ("L" level during shuttle or jog mode.)
34	NC
35	GND
36	NC

TBC

Pin	I/O Signal
A	EXT SYNC IN (X)
B	GND
1	VIDEO OUT (X)
2	VIDEO OUT (G)
3	NC
4	NC
5	NC
6	DOC PULSE OUT (X)
7	DOC PULSE OUT (G)
8	H-PLAY STS OUT
9	DUB C OUT (X)
10	NC
11	NC
12	NC
13	DUB Y OUT (X)
14	DUB Y OUT (G)
15	NC
16	NC

2-6. CONNECTION CONNECTOR

When external cables are connected to the various connectors on the BVU-800P connector panel during the installation or the maintenance, hardwares as stated below or the equivalents must be used.

Panel Indication	Connection Connector
VIDEO IN EXT. SYNC IN SC IN VIDEO OUT 1 VIDEO OUT 2 RF (OFF TAPE)	1-560-069-11 PLUG, BNC, MALE
DUB IN	1-561-055-00 PLUG, 7P, FEMALE
DUB OUT	1-508-948-00 PLUG, 7P, MALE
AUDIO IN	1-508-084-00 CONNECTOR, 3P, MALE
AUDIO OUT	1-508-083-00 CONNECTOR, 3P, FEMALE
TIME CODE	1-506-311-00 PLUG, PIN
MONITOR	1-506-161-00 CONNECTOR, 8P, MALE
TBC	1-508-495-00 PLUG, 9P, MALE
REMOTE 2 (36P)	1-508-852-00 CONNECTOR, 36P, MALE
REMOTE 1 (9P)	1-560-651-00 PLUG, 9P (M) AND 1-561-749-00 JUNCTION SHELL, 9P

2-7. SELECT SWITCH SETTING

Along with the select switches on the control panel and the connector panel, the switches listed below are on the circuit boards. The functions of these switches on the circuit boards are described and the switches must be used according to systems and conditions.

- **SY-37 board**

(i) SYNCHRONIZE sw. (Ref. No., S2-1)
In PREVIEW or AUTO EDIT mode, recorder will perform synchronization to the player by SEARCH mode between PREROLL-point and IN-point (VTR synchronization).
This switch select either to use this function or not. Because synchronization will be performed by recorder, this switch of the player does not be effected.
ON: Perform synchronization.
(PREROLL TIME will be adjusted to 10 seconds automatically and PREROLL TIME switch will be nullified.)
OFF: No synchronization.
When the set is shipped, the SYNCHRONIZE sw is set to the OFF position.

(ii) PREROLL TIME sw. (Ref. No., S2-3)
Selects 5 seconds or 10 seconds for the preroll time at the editing.
ON: 5 seconds
OFF: 10 seconds
When the set is shipped, the PREROLL TIME switch is set to the OFF position.

(iii) SEARCH DIAL sw. (Ref. No., S2-2)
There are two ways to set up the SHUTTLE mode from the PLAY mode.
(1) SEARCH dial is turned directly without pressing the SHUTTLE button in the PLAY mode.
(2) The SHUTTLE button is pressed in the PLAY mode.
The SEARCH DIAL switch selects above two system (1) or (2).
ON: system (1)
OFF: system (2)
When the set is shipped, the SEARCH DIAL switch is set to the ON position. When the BVU-800P is used as the playback machine (such as on air), it is recommended to use the second method (the switch is in the OFF position) to avoid accidental mode switching.

(iv) EIA/CCIR select sw. (Ref. No., S5)
Selects for EIA use or CCIR use for the TIMER DISPLAY.
For EIA use: Switch 1 is only OFF position, the other switches are ON position.
For CCIR use: All the switches are ON position.
When the set is shipped, the EIA/CCIR select switch is set to the CCIR position.

(v) KEY select sw. (Ref. No., S3)
The function of BVU-800P can be controlled by either control panel of unit or optional control panel (BK801). However, to connect both control panel two of 40 pin flat cable connectors were equipped on SY-37 board.
This switch select one function control panel from above two.
This switch positioned to front: CN31 is selected.
This switch positioned to back: CN32 is selected.
When the set is shipped, the KEY switch is set to the CN31 is selected position.

- **SY-37 board**

(vi) CTL Indicator (Time counter) function select sw. during time code mode. (Ref. No., S5-3)
Selects CTL data display or Time Code data display in Time Code mode.
(1) When BVU-800P is used in Time Code mode or Auto mode with TC-20 board or optional Time Code Generator/Reader (BK806), the CTL data is indicated on the indicator by pressing the [LAP] button on the function of BVU-800P twice in 0.6 seconds. Still the Time Code data controls the VTR.
(2) In the above mode (CTL data display mode) when the [LAP] button is pressed twice again in 0.6 seconds, the indicator will be changed to indicate the Time Code data. CTL data display can be changed to time code display by selecting from player Local mode to Remote mode and by pressing RECORDER select button on the front panel of the BVU-800P.
(3) When editing a recorded tape that has no Time Code signal recording, the Time Code data is reset by pressing the [RESET] button.
(4) When the tape is ejected, the Time Code data and the CTL data are not reset automatically. Press the [RESET] button and these data will be reset.

(5) In the case of Data communication between two sets (9 pin, RS422), the indicator of Player BVU-800P machine remains same as indication, before ROMs update.
For CTL Indicator in Time Code mode, set this switch to OFF.
Except above mode, set this switch to ON.
When the set is shipped, this switch is set to the ON position.

(vii) AUDIO/VIDEO Edit Timing Differrence Compensation sw. (Ref. No., S5-4)
This switch can compensates for the timing difference of editing points of Audio and Video in Auto editing mode or Assembly editing mode. Also this switch is controlled by ROMs of version 8.
In order to compensate for the timing difference of editing point, perform the following procedure.
(1) Select the "Edit command timing switch" which is installed on optional unit such as BVE-800 and BVE-3000 etc.
Select to "–3" frames.
(2) Conditions
1. When the editor is used to editing, use the editor that is equipped with "Edit command timing switch", such as BVE-800, BVE-1000, BVE-3000A and BVE-5000.
2. Controlled by 9 pin (RS422).
3. Audio cut-in point will have double recording in 2 frame piriod.
To compensate for the timing difference of Audio and Video, set this switch to OFF.
If not compensating, set this switch to ON.
When the set is shipped, this switch is set to the ON position.

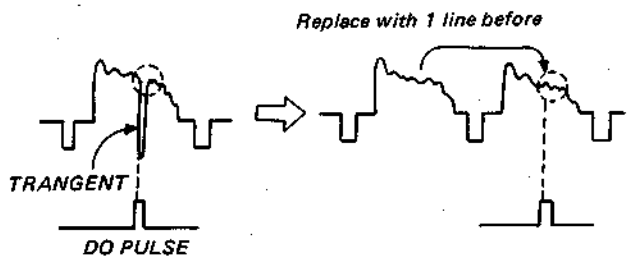
(viii) DTR-2000 Select sw. (Ref. No., S5-5)
When connecting with DTR-2000 and assembly editing is done, set this switch to OFF.
(The previous recorded time codes are read and the relative next time codes is recorded at the editing point so that the consecutive time codes are recorded on the tape.)
When remote control (BVE-800 or etc.) other than DTR-2000 is connected, set this switch to ON.
When the set is shipped, this switch is set to the ON position.

- **MD-12 board**

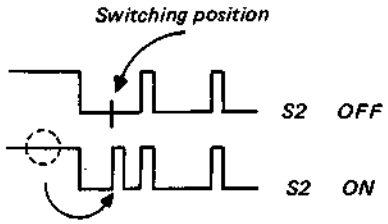
(i) HIGH FREQUENCY ON/OFF sw. (Ref. No., S1)
This switch is only used for electrical alignment.
When the set is shipped, the HIGH FREQUENCY ON/OFF switch is set to the OFF position.

- **YD-9 board** (Serial No. 11491 and higher)

(i) VIDEO DROP OUT DETECTOR ENABLE sw. (Ref. No., S1)
When this switch set to on, "Video Drop Out Detector" which detect negative trangent noise under pedestal level, trigger D.O.C. circuit to replace the noise part with one line before. If this compensation is needed such as microwave transmission without TBC, this switch should be ON.
Factory Set: OFF



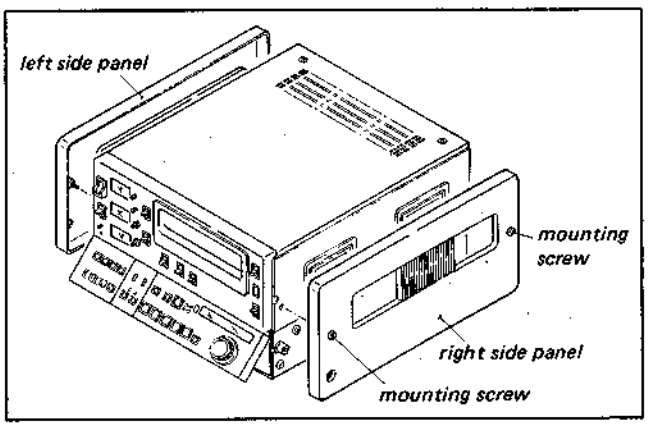
(ii) SWITCHING NOISE SUPRESSOR ENABLE sw. (Ref. No., S2)
This switch enables "Switching Noise Supressor". But, in case following conditioned tape (abnormally recorded), will be reproduced, this switch should be set to off.
Condition: Head switching points located in the vertical Sync.
Reason: Normally, Switching Noise Supressor detect switching points and trigger DOC circuit to replace a part with one line before. However, if switching point located in the 1st line in vertical sync, switching noise part which is sync tip level, will be replaced with pedestal level, and causing positive pulse will be inserted in vertical sync as shown below.
Factory Set: ON



2-8. RACK MOUNTING

The BVU-800P can be mounted in the 19-inch standard rack. It is recommended to use the PACK MOUNT KIT, BK805, optional part (including the slide rails and the handle brackets) or the following ACCURIDE'S slide rail.
RACK-MOUNT SLIDES MODEL 305
SLIDE LENGTH 22 INCH

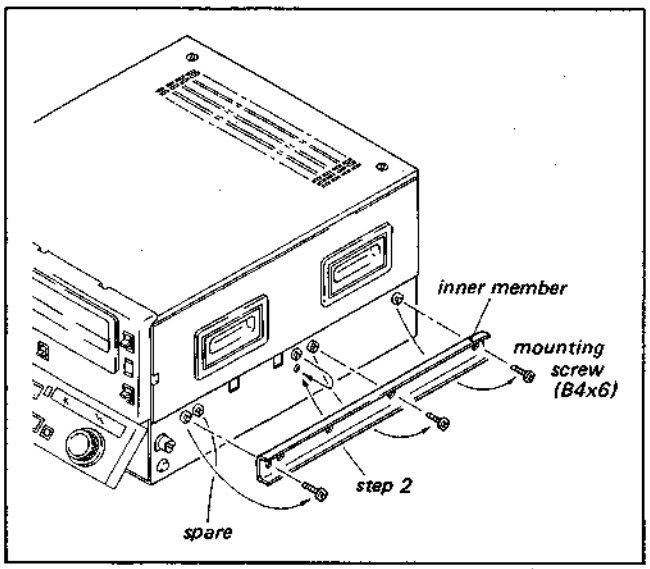
1. Loosen two mounting screws on the right and the left side panels.
- Mounting screws will not be detached since it uses a retainer on the inside the cover.

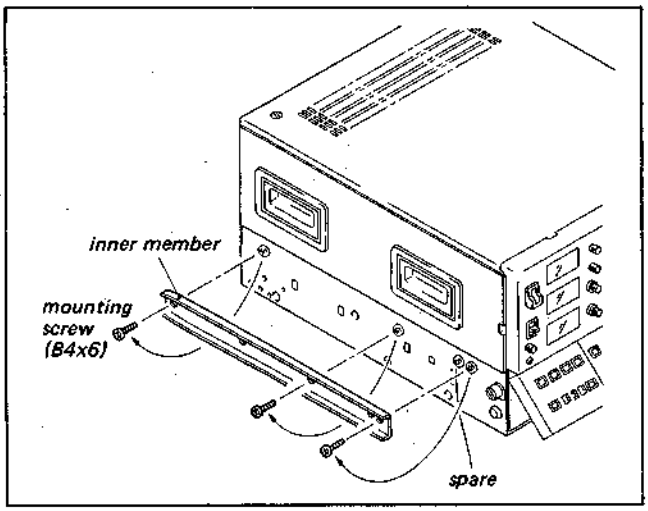


2. Remove a mounting screw on the chassis (R) as shown in figure, and thread the mounting screw to a lower hole.

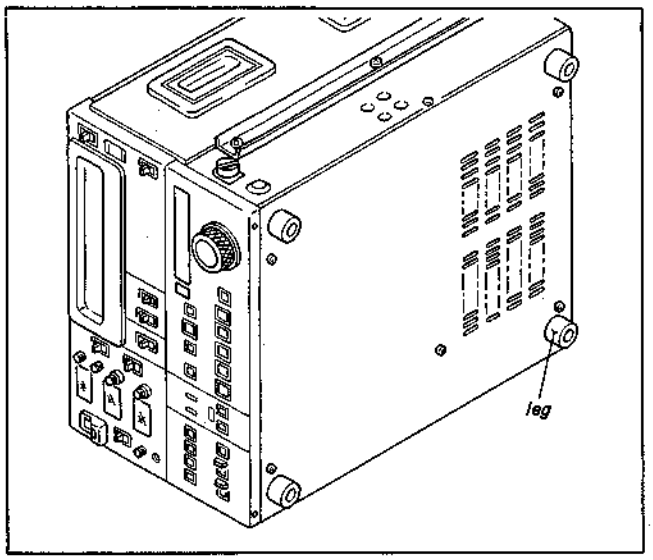
3. Remove the each four mounting screws on the (R) chassis and the (L) chassis.

4. Attach the inner members of the slide rails to the (R) chassis and the (L) chassis with the screws removed in step (3).
- Length of the screws used for the attachment is limited. If the screws supplied with the chassis are lost, a screw 6 mm in length (B4x6) must be used.
- The inner member must be fixed at three points with the screws.

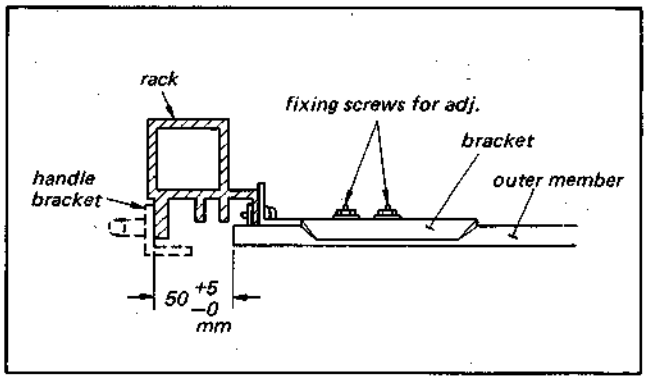




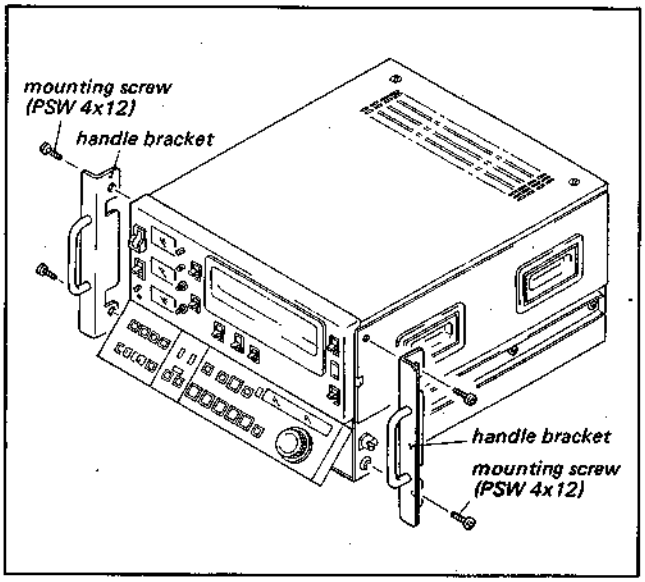
5. Remove four legs located under the set.
   - If the set is mounted in the rack without removing the legs. It will contact the lower set and the upper set cannot be pulled out from the rack.



6. Attach the outer member bracket of the slide rail to the rack and position from the edge of the slide rail to the outside of the rack so that the position satisfies to the specified value.

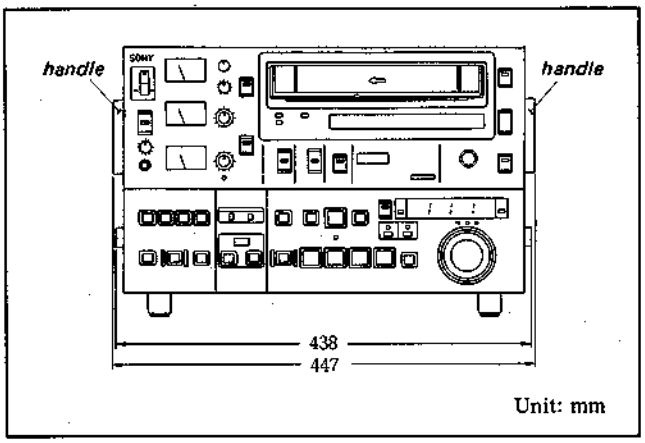


7. Attach the handle brackets.



NOTE:

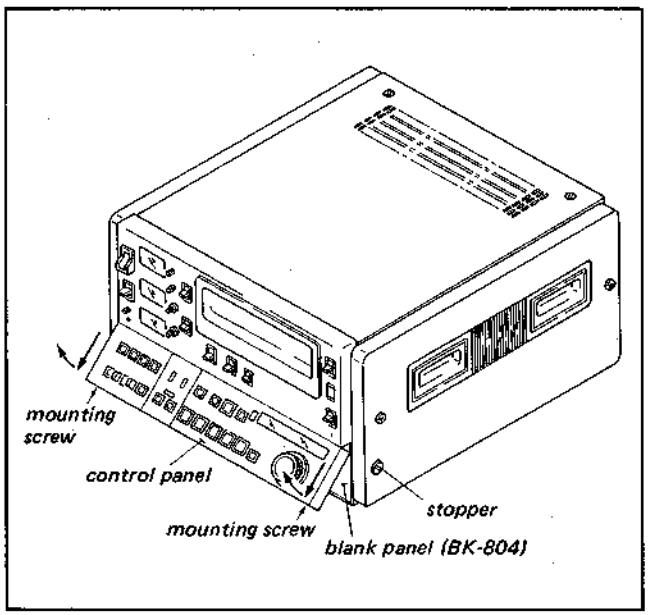
1. Six sets of the BVU-800P can be mounted on the 19-inch standard rack.
   When the several sets are mounted on the rack, it is recommended to install the fan for ventilation. Good air circulation is essential to prevent internal heat buildup in the rack. 5°C to 40°C environmental condition must be met throughout all units.
2. Be sure to stabilize the rack to the floor to avoid the accidents when the BVU-800P is pulled out.
3. Dimension without side panels are shown in figure.
   If the rack front width is narrower than the set width, the set must be mounted after the handles on the right and left made been removed.



2-9. CONTROL PANEL UNIT REMOVAL

When the control panel unit is removed to be used as the remote control unit, perform the following steps.

1. Loosen the control panel stopper on the right and the left side panels. Open the control panel.



2. Remove two mounting screws as shown in figure and move the control panel unit in the direction shown by the arrows for removal.

3. Remove the flat cable on the rear side of the control panel.

4. Connect the optional flat cable (5 m), BK802. (Refer to sec. 2-11.)

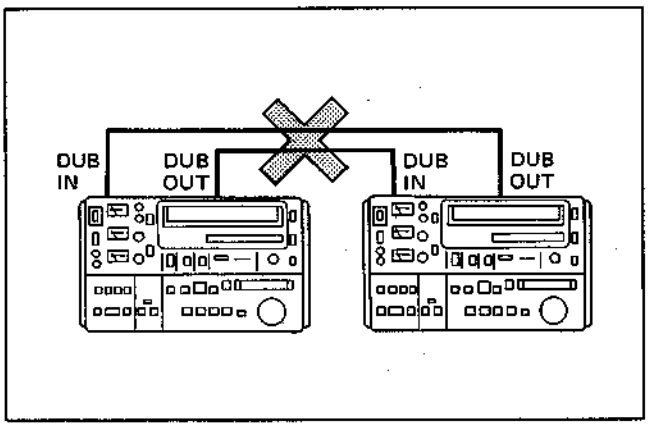
5. Attach the optional blank panel, BK804.

2-10. SUPPLIED ACCESSORY

Supplied BVU-800P accessories are as follows.

1. AC Power Cord

2. Dubbing Cable (VDC-5)
This cable is utilized when the tape to tape editing and dubbing are used with using the dubbing cable. (length: 5 m)
Only the video signal can be transmitted by this cable and the audio signal does not. For the audio signals the different cables are required.



3. 9 Pin Remote Control Cable
This cable is used for the remote control from one BVU-800 as a recorder to the other BVU-800 as a player when the two sets of the BVU-800 are used for the tape to tape editing and dubbing.

4. Extension Board (EX-7)
The BVU-800P main circuit board is a plug-in type which is easy to remove of install. Extension board, EX-7 is used for check and maintenance of the main board.
It is more than adequate with supplied extension board.
However, if it is required to have additional boards, it can be obtained through service organization.

2-11. OPTIONAL ACCESSORY

The followings are provided as the optional accessory.
The suitable accessory should be used for each system.

1. Control Panel (BK801)
When the BVU-800P is operated from the remote place, the function control panel of the BVU-800P can be separated and functioned as the remote controller. And also the other remote controller (BK801) is provided as the optional accessory. The BK801 includes the control panel and 40P flat cable which connects the control panel to the BVU-800P.

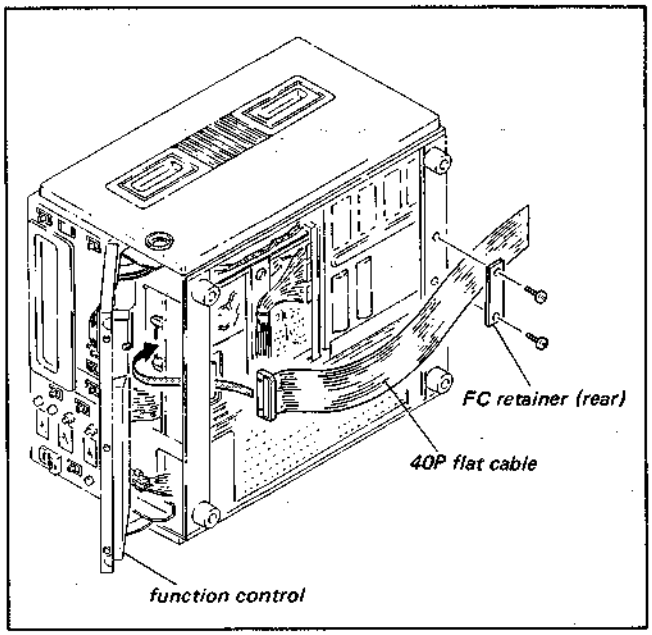
2. 40P Flat Cable (BK802)
40P flat cable is used for connecting the control panel to the BVU-800P, when the control panel unit is separated from the BVU-800P and used as the remote controller.
This cable length is 5 m, however in case that the different cable is required, the following cable are recommended.

Produced by 3M
3517 Series
#28 AWG Stranded
Jacketed/Shielded Flat Cable
.050" (1.27 mm) Center Spacing
Number of Conductors: 40

The flat cable can be extended up to maximum 10 m (in no interference condition such as an electrical noise).

Installation:

1. Open the function control panel.
2. Remove the bottom plate and FC retainer (rear).
3. Install the 40P flat cable as shown in figure.



3. Control Panel Case (BK803)
The BK803 control panel case is the optional unit which houses the remote control panel dismantled from the BVU-800P.

4. Blank Panel (BK804)
The BK804 blank panel is the plate which covers the block of BVU-800P resulted in empty by removing the control panel.

5. Rack Mount Kit (BK805)
The BK805 rack mount kit is used for mounting the BVU-800P on the 19-inch standard rack. This mounting kit consists of two slide-rails and two handle-brackets.

6. Function Panel Rear Cover (BK811)
The BK811 function panel rear cover is the plate which covers the rear side of the function control when the control panel is tilted.

7. 9-Pin Remote Control Cable (RCC-5G, RCC-10G, RCC-30G)
Three kinds of 9-pin remote control cable are provided.

Type	Length
RCC-5G:	5 m
RCC-10G:	10 m
RCC-30G:	30 m

This remote cable connects the 9-pin remote connector on the connector panel to the BVU-800P.

NOTE: The remote cable can be extended up to 1200 m.

SECTION 3
TECHNICAL INFORMATION

3-1. SPECIFICATIONS

GENERAL:

MECHANICAL:

Weight:	37 kg (81 lb 9 oz)
Dimensions:	454 x 283 x 550 mm (17 7/8 x 11 1/4 x 21 3/4 inches) (w/h/d)
Tape transport mechanism:	U-matic system (3/4 inch cassettes)
Tape speed:	9.53 cm/s
Wow/flutter:	±0.25% (DIN)
Record/playback time:	Maximum of 60 min. with type KCA-60 video cassette
Fast forward time:	Less than 4 min. with type KCA-60 video cassette
Rewind time:	Less than 2.5 min. with type KCA-60 video cassette
Search speed:	SHUTTLE: Still, 1/30, 1/10, 1/5, 1/2, 1, 2, 5, and 10 times normal in forward and reverse direction JOG: Still to 1 in forward and reverse direction

CONNECTORS:

AC IN:	3-pin AC connector
VIDEO IN x2:	BNC connectors
VIDEO OUT x2:	BNC connectors
AUDIO IN CH-1/CH-2:	XLR female connectors
AUDIO OUT CH-1/CH-2:	XLR male connectors
AUDIO OUT MONITOR:	XLR male connectors
TIME CODE IN:	RCA phono jack
TIME CODE OUT:	RCA phono jack
DUB IN:	7-pin male connector
DUB OUT:	7-pin female connector
SC IN:	BNC connector
EXT SYNC IN:	BNC connector
RF OUT (OFF TAPE):	BNC connector
TBC:	CCY connector
MONITOR OUT:	8-pin connector
REMOTE (36-p):	36-pin connector
REMOTE (9-p):	RS-422 9-pin connector
HEADPHONES:	JM-60 headphones binaural jack
Operating temperature:	+5°C to +40°C
Storage temperature:	−20°C to +60°C

ELECTRICAL:

Power requirements:	AC 100/120/220/240 V ±10% (Selectable) 48 to 64 Hz
Power consumption:	170W
Editing functions:	ASSEMBLE and INSERT (VIDEO, AUDIO CH-1, AUDIO CH-2) AUTO EDIT, MANUAL EDIT PREVIEW, REVIEW, PREROLL, TRIM

VIDEO:

Video recording system:	Luminance: FM Chroma: SC low-range conversion
Input:	PAL composite video, sync negative 1.0 Vp-p $^{+1.0}_{-0.5}$ V 75Ω, unbalanced
Output:	PAL composite video, sync negative 1.0 Vp-p ±0.2 V, 75Ω, unbalanced
Dubbing input:	Luminance signal: 0.5 Vp-p Sync negative, Impedance: 75Ω ±10% Chroma signal: 0.5 Vp-p Impedance: 75Ω ±10%
Dubbing output:	Luminance signal: 0.5 Vp-p Sync negative, Impedance: 75Ω ±10% Chroma signal: 0.5 Vp-p Impedance: 75Ω ±10%
Horizontal resolution:	370 lines (monochrome mode) 260 lines (color mode)
Signal to noise ratio:	More than 46 dB (monochrome mode) More than 46 dB (color mode)

AUDIO:

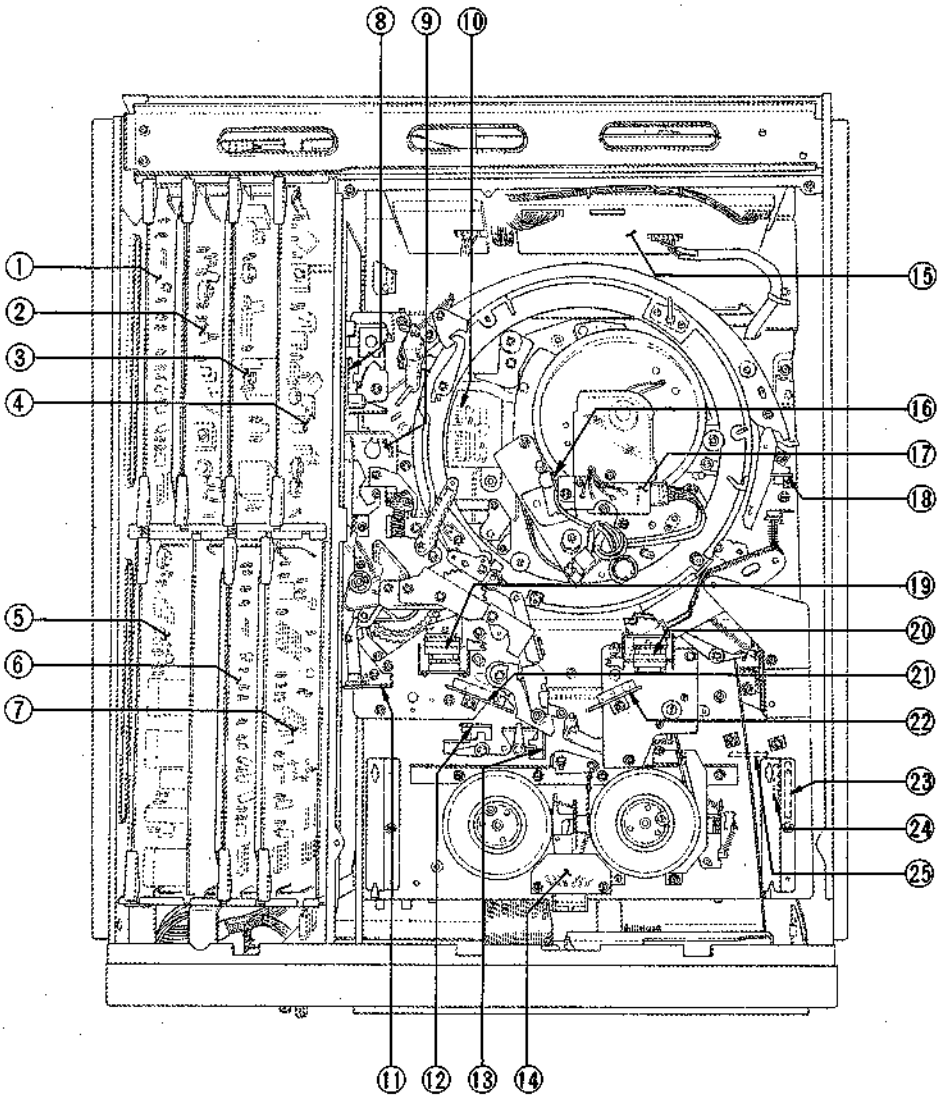
Input:	(MIC) −60 dB, 3 k-ohms, balanced (matches 600 ohm microphones) (LINE) +4 dB, 10 k-ohms/600 ohms, balanced
Output:	(LINE) +4 dB, low impedance, balanced (600 ohm load permissible) (HEADPHONES) −46 to −26 dB, 8 ohms load, binaural (MONITOR) +4 dB, 600 ohm load, balanced
Distortion:	Less than 2.0% (1 kHz reference level)
Frequency response:	50 Hz to 15 kHz
Signal to noise ratio:	48 dB (at 3% distortion level)

TIME CODE	**Input:**	0 dB ±6 dB, 10 k-ohms, unbalanced (0 dB = 1.55 Vp-p pulse)
	Output:	0 dB ±3 dB, low impedance, unbalanced (0 dB = 1.55 Vp-p pulse)
SC	**Input:**	2 Vp-p ±1 V, 75 ohms, unbalanced
SYNC	**Input:**	0.2 Vp-p to 5 Vp-p, negative, 75 ohms, unbalanced (1 Vp-p ±0.2 V with VIDEO input)
RF output (OFF TAPE):		0.5 Vp-p ±0.1 V, 75 ohms, unbalanced

3-2. LOCATION OF MAIN PARTS

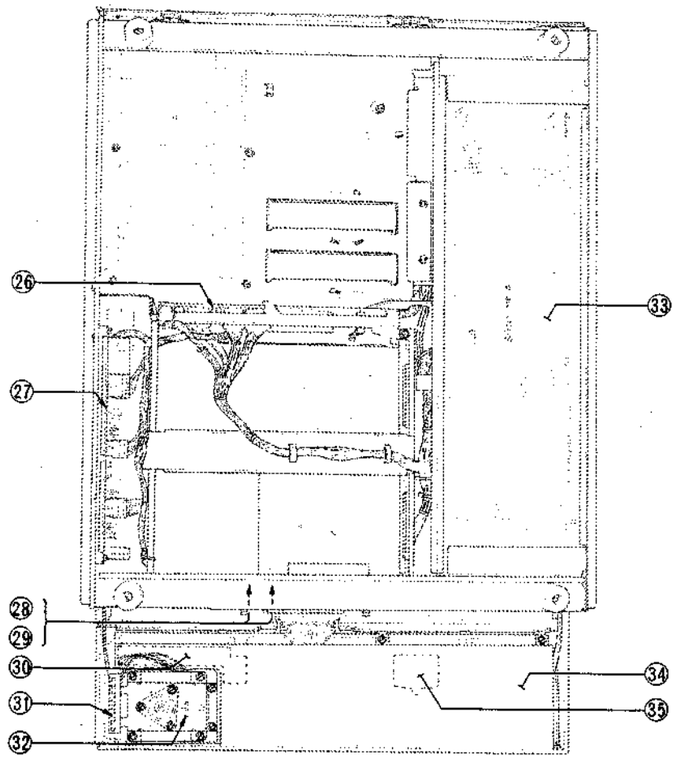
3-2-1. Location of the Printed Circuit Boards

< TOP VIEW >



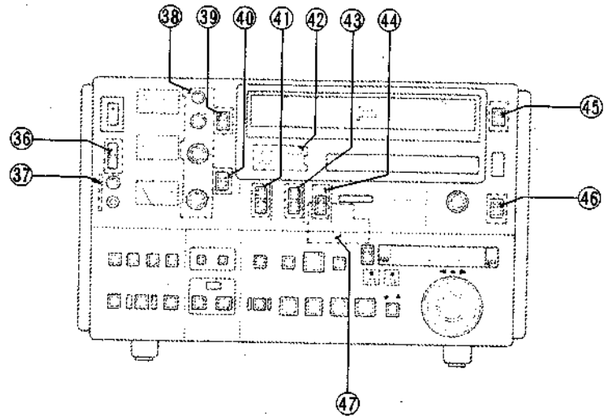
① TC-13-1 BOARD
② CD-14 BOARD
③ YD-9 BOARD
④ MD-12 BOARD
⑤ AU-13 BOARD
⑥ RS-3 BOARD
⑦ SV-52 BOARD
⑧ EK-3 BOARD
⑨ TM-8 BOARD
⑩ TM-4 BOARD
⑪ EK-2 (A) BOARD
⑫ PC-7 (B) BOARD
⑬ PC-7 (A) BOARD
⑭ EM-1 BOARD
⑮ RP-5-1 BOARD
⑯ TC-12 BOARD
⑰ SR-14 BOARD
⑱ EK-2 (B) BOARD
⑲ TAKE-UP SIDE TENSION DETECTOR
⑳ SUPPLY SIDE TENSION DETECTOR
㉑ PC-12 BOARD
㉒ PC-8 BOARD
㉓ CC-9 BOARD (with Cassette-up Compartment)
㉔ CC-11 BOARD (with Cassette-up Compartment)
㉕ CC-10 BOARD (with Cassette-up Compartment)

< BOTTOM VIEW >



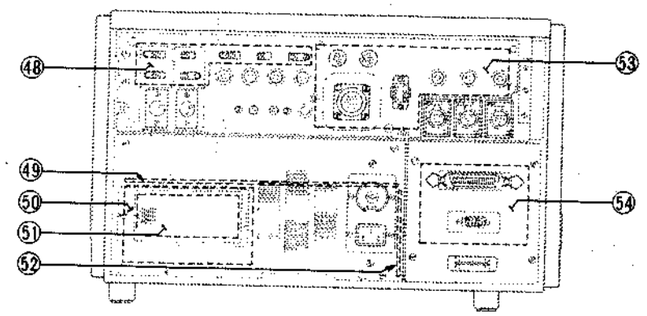
26 MB-9 BOARD
27 SY-71 BOARD
28 SY-36 BOARD
29 SY-37/37A BOARD
30 DP-9 BOARD
31 PC-9 BOARD
32 PC-14 BOARD
33 MB-8 BOARD
34 KY-9 BOARD
35 KY-14 BOARD

< FRONT VIEW >



36 AO-2 BOARD
37 HP-5 BOARD
38 MF-1 BOARD
39 LV-1 BOARD
40 MS-5 (A) BOARD
41 MS-5 (B) BOARD
42 WL-1 BOARD
43 MS-5 (C) BOARD
44 MS-5 (D) BOARD
45 MS-5 (E) BOARD
46 PR-33 BOARD
47 RE-3 BOARD

< REAR VIEW >



48 SA-9 BOARD
49 PD-14 BOARD
50 PW-79 BOARD
51 FU-16 BOARD
52 PW-50 BOARD
53 AO-3 BOARD
54 RM-4 BOARD

3-3. PRINTED CIRCUIT BOARDS

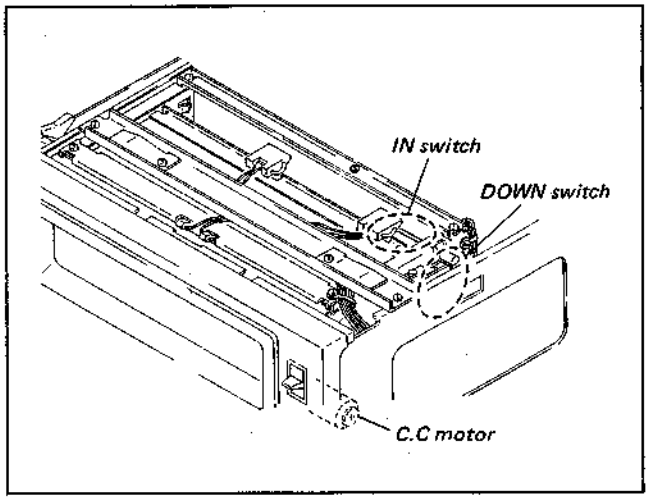
The circuit board information is provided below.

System	Circuit board	Circuit function
VIDEO	MD-12	• Luminance and chrominance signal modulator.
	RP-5-1	• REC/PB amplifier • Rotary erase amplifier
	YD-9	• Luminance signal demodulator
	CD-14	• Chrominance signal demodulator
AUDIO	AU-13	• REC/PB amplifier • Audio system control
	AU-25	• Bias oscillator • CH-1/CH-2 erase oscillator
	SA-9	• Input impedance converter (high ↔ low)
	AO-2	• Audio monitor switch
	AO-3	• CH-1/CH-2 output amplifier • Monitor out selector/output amplifier
	HP-5	• Headphones level adj.
SERVO	SV-52	• Capstan/drum speed and phase servo
	CF-9	• CTL REC/PB amplifier
	RS-3 (RS-4)	• Tape tension detector • Reel motor driver control
	EM-1	• Reel rotation detector
	MD-12	• Blanking switcher
TIME CODE	TC-13-1	• Time code REC/PB amplifier • Automatic reference sync selector (for servo) • CTL counter (for display)
SYSTEM CONTROL	SY-36	• Function control
	SY-37 SY-37A	• System control micro processor
	SY-71	• Cassette compartment motor driver • Threading motor driver • Skew solenoid driver • Pinch solenoid driver • T brake solenoid driver • S brake solenoid driver • S tension regulator solenoid driver • Humidity detector
	KY-9 (KY-14)	• Key board with serial data ↔ parallel data converter
	DP-9	• Display
	PC-9	• Search dial
	PC-14	• Search dial
POWER DRIVER	PD-14 (PD-15, PD-17, PD-21, DP-8, DP-9)	• Full erase oscillator • 12 V regulator • 5 V regulator • −12 V regulator • Drum motor power driver • Capstan motor power driver • Reel motor power driver
POWER SUPPLY	PW-50	• Power supply
	PW-79	• Switching regulator
	FU-16	• Fuse

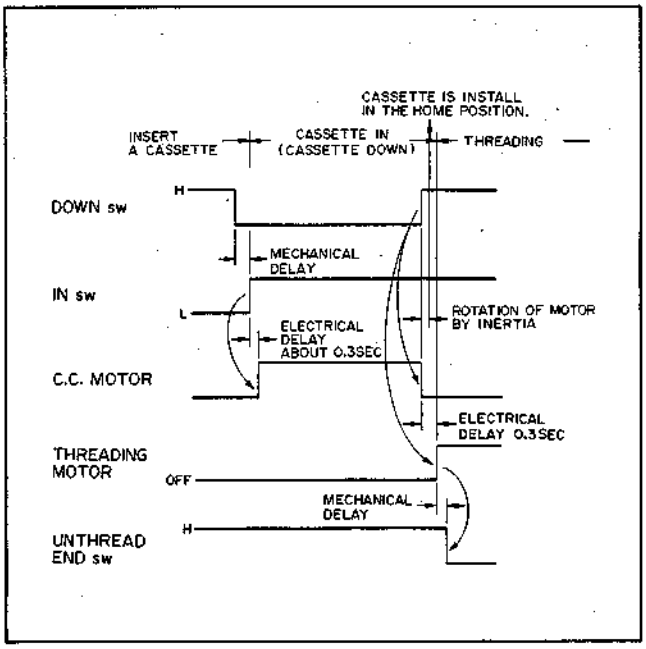
3-4. MECHANICAL OPERATION

3-4-1. Cassette-in/Cassette-out Operation

The cassette insertion system in the BVU-800P is a front access system. The cassette compartment drops automatically after the cassette tape has been inserted into the cassette compartment and threading action is started after the cassette is seated in the home position.
The timing chart of the photoelectric sensor and the motor are as follows:



(1) Cassette-in Operation
The timing of the Cassette Down switch (DOWN switch), the Cassette-in switch (IN switch), the Cassette Compartment motor (C.C. motor), the Threading motor, and the Unthreading End switch in the cassette-in operation are as follows:



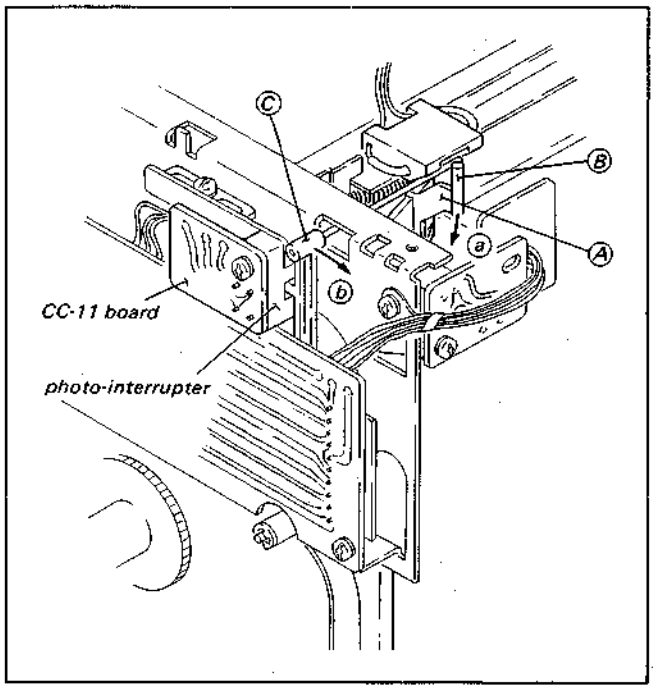
- The DOWN switch and the IN switch are turned to "H" or "L" in the manner stated below and the C.C. motor operate as follows:

(i) DOWN switch

The cassette tape is inserted by hand and then the cassette pushing lever (called Ⓐ for making the sentence simple) moves in the direction indicated by arrow ⓐ.

The down switch arm (called ⓒ) which has been held by the pin (called Ⓑ) of the Ⓐ moves in the direction shown by arrow ⓑ with the movement of Ⓐ, and the shutter of ⓒ opens the photo-interrupter on the CC-11 board.

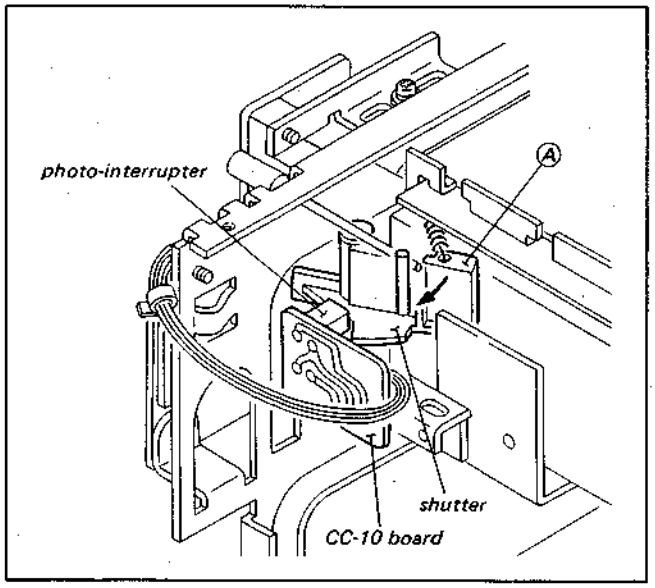
Then the DOWN switch turns to "L".



(ii) IN switch

The cassette tape is inserted by hand further after the DOWN switch operates (until the cassette is stopped).

The Ⓐ shutter covers the photo-interrupter on the CC-10 board and the IN switch turns to "H".



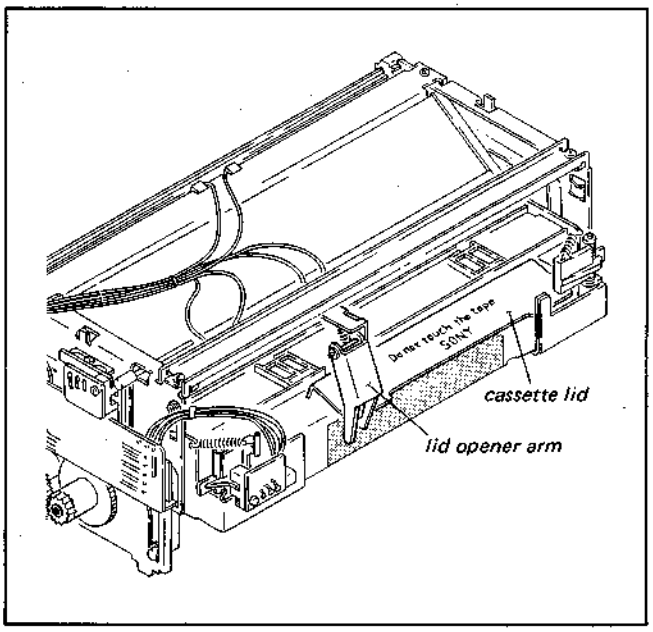
(iii) C.C. motor

When the IN switch turns to "H" after the cassette insertion, about 11.3 V from the SY-71 board is impressed on the C.C. motor via the CC-9 board and the motor starts. The power of the motor moves the cassette compartment through the belt and the gears.

(iv) Cassette tape lid opener

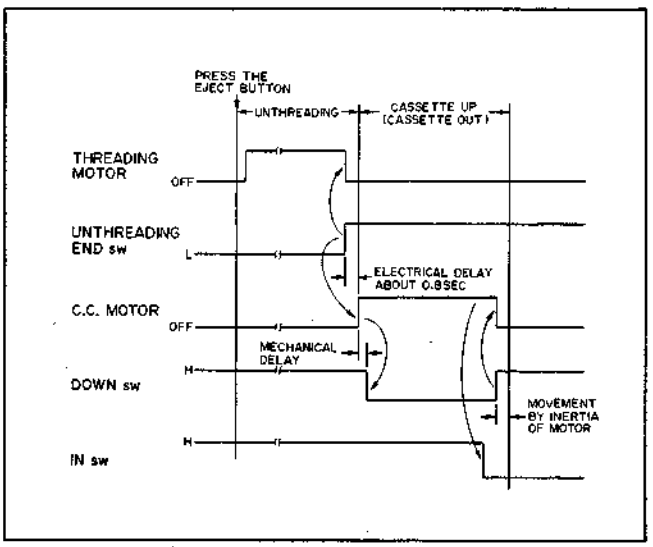
When the cassette tape is inserted, the C.C. motor rotates, and the cassette compartment moves.

The lid opener arm holds the bottom section of the cassette lid at the point where the horizontal movement of the cassette compartment changes to the vertical movement. The lid is opened following with the downward movement of the cassette compartment.



(2) EJECT Operation

The timing of the Threading motor, the Unthreading End switch, the C.C. motor, and the IN switch in the eject operation are as follows:



(3) Protection Circuit

(i) If the cassette tape is removed forcibly when the cassette tape is dropping, the IN switch turns to "L", puts the machine into the EJECT mode, the C.C. motor rotation is reversed, and the cassette-up operation takes place.

(ii) If the cassette tape after the cassette-up is pushed in by hand forcibly in the rear direction, the C.C. motor rotates 5 seconds in reverse direction after the cassette-up and the cassette-down operation take place again (for preventing the C.C. motor from burning). And if the drop and rise time of the cassette compartment takes more than about 5 seconds, it is assumed that the cassette compartment is blocked by something and the motor rotation is stopped.

(iii) The motor drive circuit operates only about 2 seconds in the cassette-up or the cassette-down operation.

3-4-2. Threading and Unthreading Operation

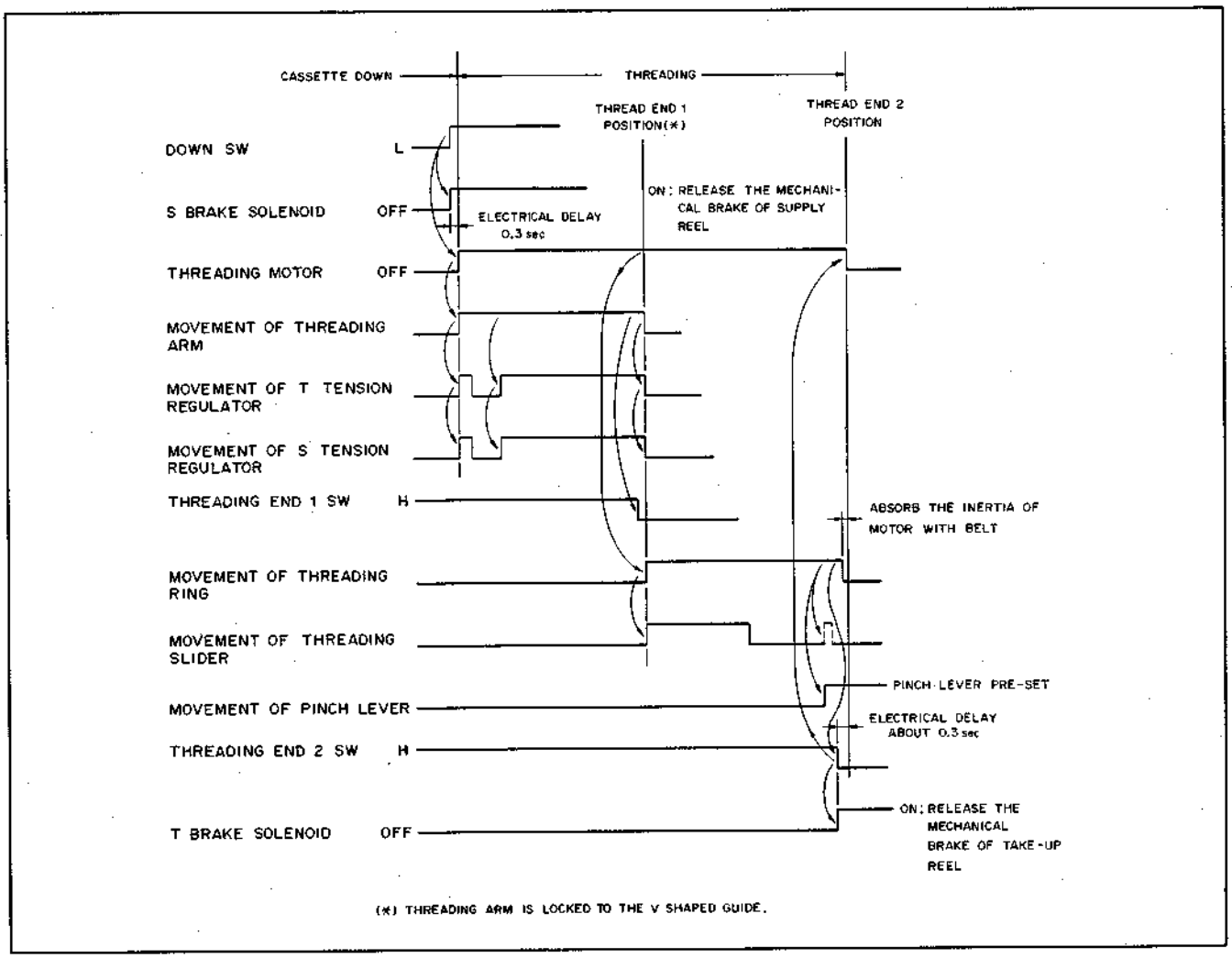
The cassette compartment drops automatically after the cassette tape is inserted into the cassette compartment.
When the cassette tape is placed into the home position, the threading arm moves, and the tape will be drawn out from the cassette. At this point, the threading arm moves to thread the tape around the drum.

In the threading operation, the tape is drawn from the supply reel. In the unthreading operation, the tape is rewound onto the supply reel (when the set condition is normal), but the tape is taken up by the take-up reel when the set is in the states as mentioned below.

- When the power is turned ON while the tape is threaded, all condition will wake up as tape being threaded. (When the power is turned ON, the set goes through unthreading motion and then the threads again.)
- When the AUTO-OFF lamp turns ON. (Condensation is caused on the head drum.) (The set is forcibly placed into the EJECT mode.)
- When the tape tension detector detects a slacken tape or an excessively high tension. (In the tape protection mode.)
  (In the threading completion state (it is called threading end mode), the set is placed into the STOP mode once and, if the tape protection signal exists for more than 2 seconds in the STOP mode, the EJECT mode is set up forcibly. When the tape protection signal is generated in the threading or the unthreading mode, the set is placed into the EJECT mode.)

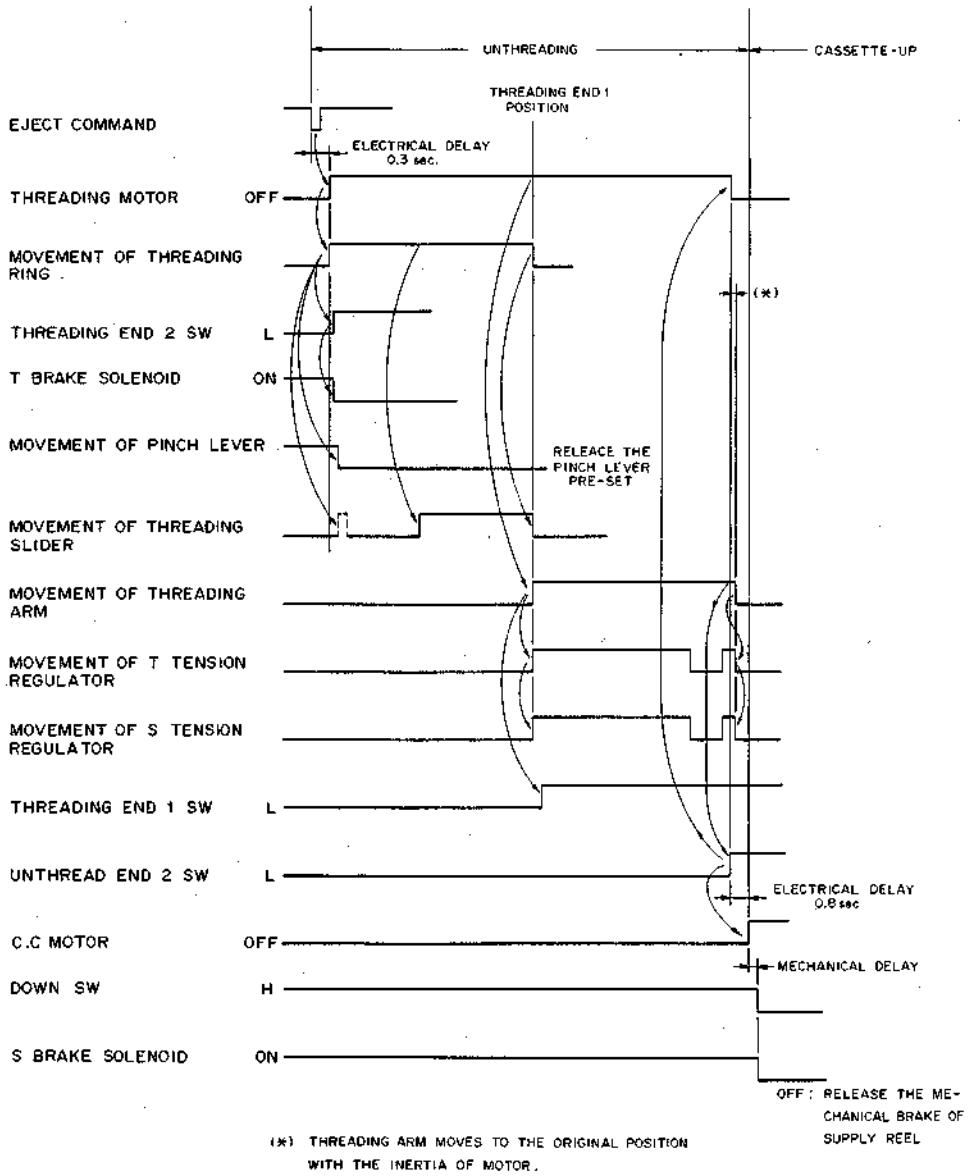
(1) Threading Operation
The operational timing of the electronic switches, the motor, and the ring are shown below.

(THREADING OPERATION)



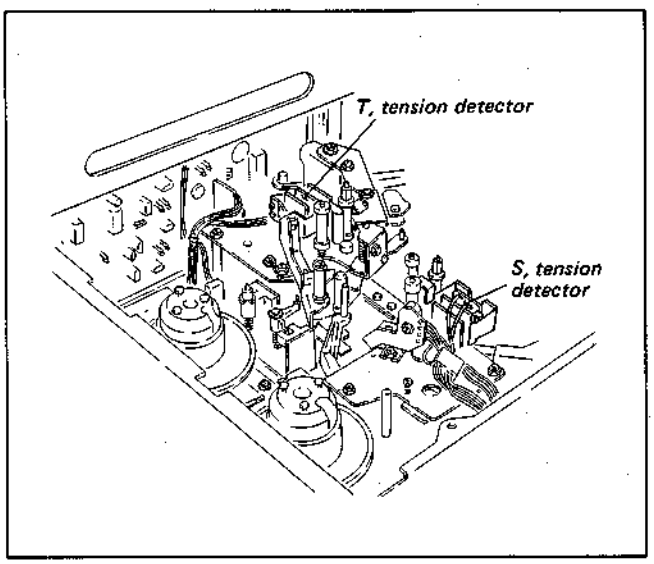
(2) Unthreading Operation
The operational timing of the electronic switches, the motor, the tape guide, and the ring are as follows. If the THREADING DISABLE or TAPE PROTECTION signal is generated, the eject operation is stopped.

(UNTHREADING OPERATION)



3-4-3. Electrical Tape Tension Detector

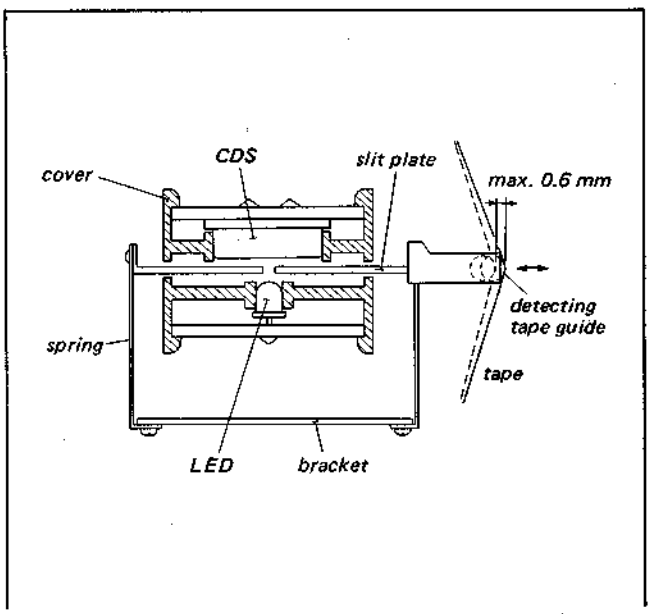
The BVU-800P has two tension detectors. One is placed near the tape entrance side of the cassette tape and the other near the exit for providing an optimum tape tension. The fundamental mechanism of the tension detector is as follows.

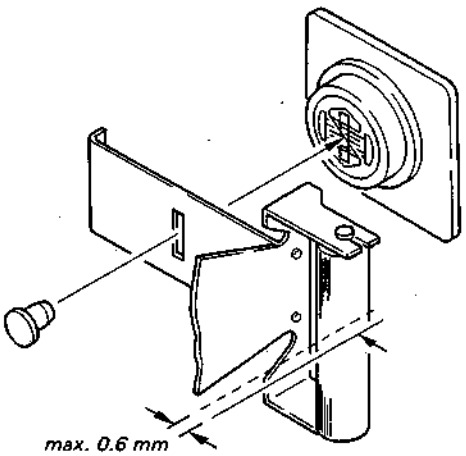


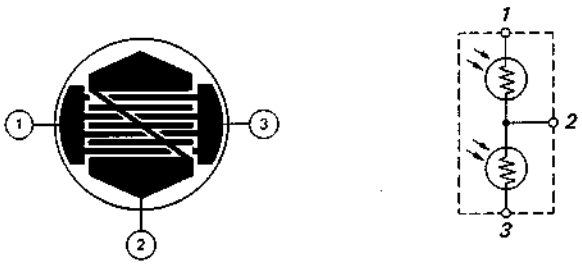
(1) Fundamental Mechanism

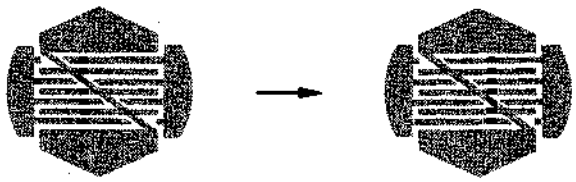
The fundamental mechanism of the tension detector is shown in the figure. The light emitted by an LED is received by the CDS detection element through a slit on the slit plate connected directly to the tape guide. The electrode's pattern of this CDS is shown in the figure. The slit moves with the tape tension change and the point where the light reflector moves. Then the resistance values between ① - ② and the resistance between ③ - ② are vary. The tape tension around the tension detector tape guide is detected by the resistance variation.

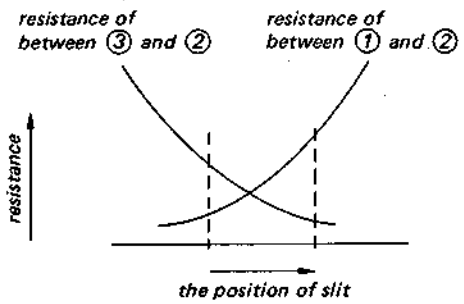
This resistance variation output controls the reel motor torque, and the tape tension is controlled.











(2) Actual Operation

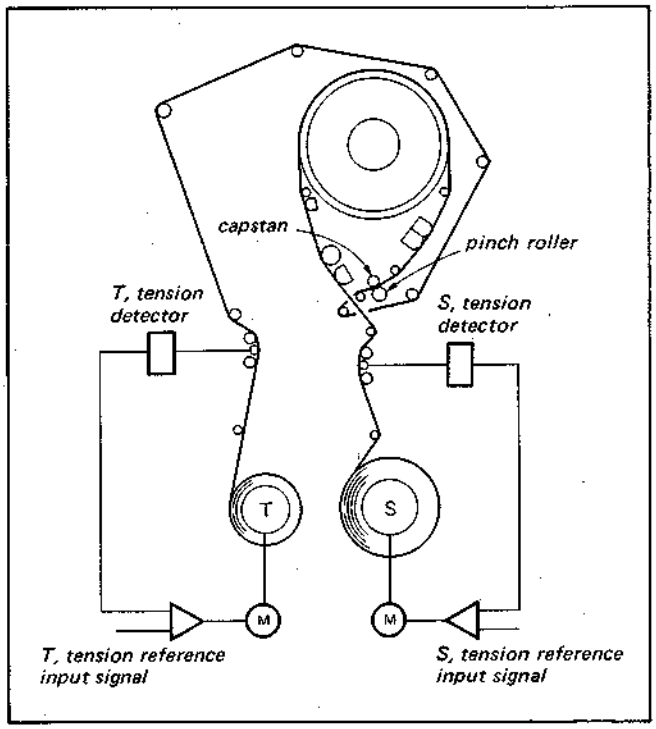
The movable distance of the tape guide directly connected to the slit plate is adjusted with the stopper from 0 to 0.6 mm. The 0 point and the sensitivity of the detecting operation are set with variable resisters on the RS-4 board. The tape tension, when the tape guide moves about 0.6 mm, corresponds to about 300 grams. If 43 grams or more tension is applied on the supply side tension detector in the F-FWD mode, 43 grams or more tension on the take-up side tension detector in the REW mode, on 255 grams or more tension is applied on the supply side and the take-up side tension detectors in the modes other than the above, the BVU-800P consideres to have abnormal tension and will go into the stop mode to protect the tape.

On the other hand, when the tension applied on the tape is less than 8 grams, it is regarded to have a tape slack and the auto stop mode is set up in any mode for the tape protection.

3-4-4. FWD, REV, SHUTTLE, JOG Operation

(1) Tension Servo System

The tension servo loops shown in the figure function independently for the supply and the take-up motor in the FWD (excepting the modes set up by pressing the PLAY button, i.e., the REC mode and the ×1 SPEED PLAY mode), REV, SHUTTLE, JOG, STILL and the STOP mode. Thus the tape tensions on the supply and the take-up side are controlled to the optimum conditions at the all time. The tape tension on the supply side is controlled by the mechanical tension control mechanism comprised from the tension arm, the brake band, and the supply reel table in the modes set up by the PLAY button, that is, in the REC mode and the ×1 SPEED PLAY mode. In this case, the power is not supplied to the supply reel motor. The tape tension on the take-up side in the REC mode and the ×1 SPEED PLAY mode is controlled to optimum condition by the tension servo loop as well as in the FWD (excepting the REC and the ×1 SPEED PLAY mode), REV, SHUTTLE, JOG, STILL, and the STOP mode.

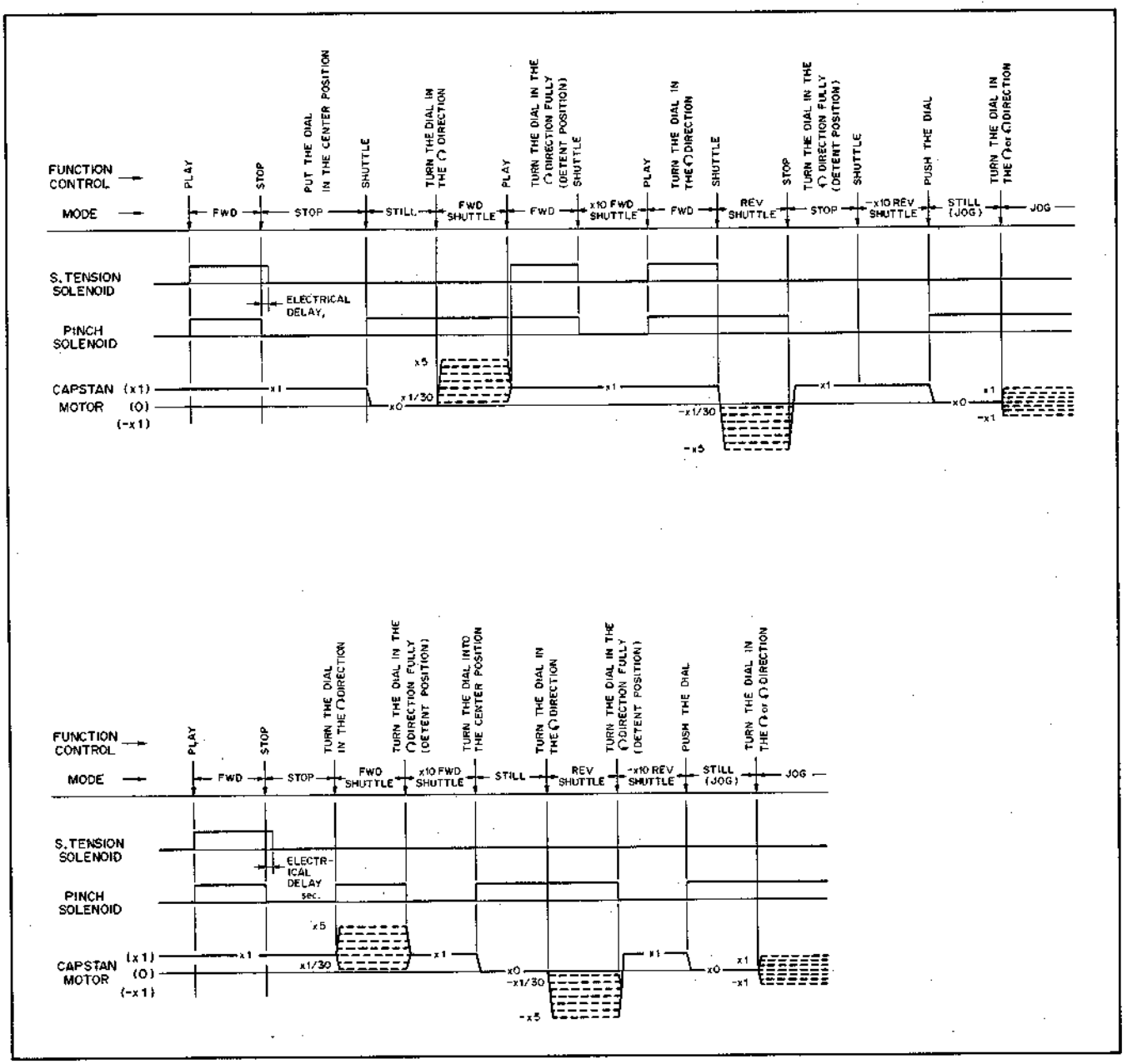


(2) Timing Chart

The timing of the S tension solenoid, pinch solenoid, and the rotation of the capstan motor in the FWD, REV, SHUTTLE, and the JOG mode are shown below. There are two method for the mode switching from the PLAY to the SHUTTLE; One is by pressing the SHUTTLE button and the other is by not pressing the SHUTTLE button. The two method are described here separately. Please refer to page 2-8, for the switching the two ways.

The tape speed in the SHUTTLE operation by using the SEARCH DIAL can be switched to 16 steps to 0, x±1/30, x±1/10, x±1/5, x±1/2, x±1, x±2, x±5, x±10. In the steps from the x±1/30 to x±5 speed, the pinch roller is engaged and the tape will be driven by the capstan. In the x±10 speed (the SEARCH DIAL is at the detent position), the pinch roller is not engaged and the tape is driven by the supply or the take-up reel.

In the JOG operation, the tape speed can be changed from 0 to x±1 and the tape is driven by the capstan.

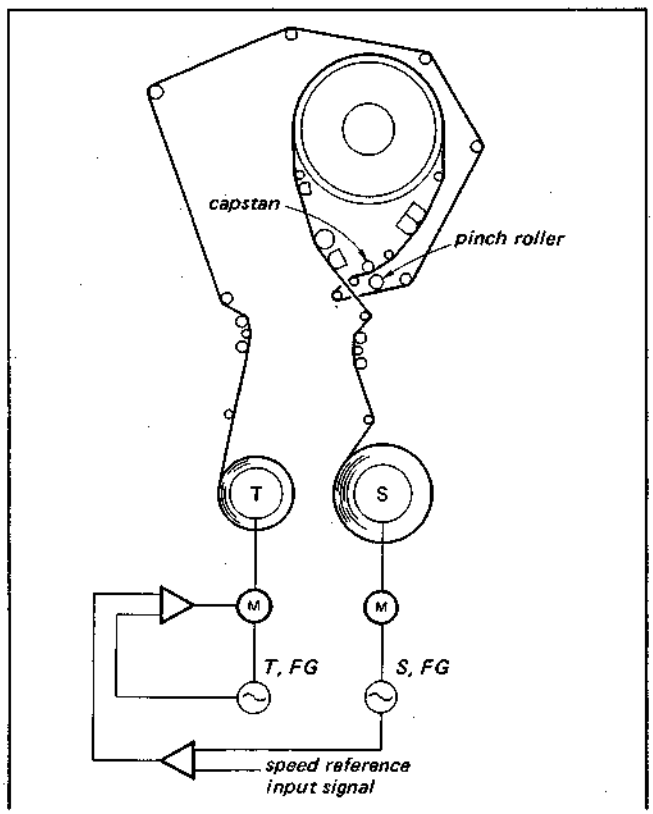


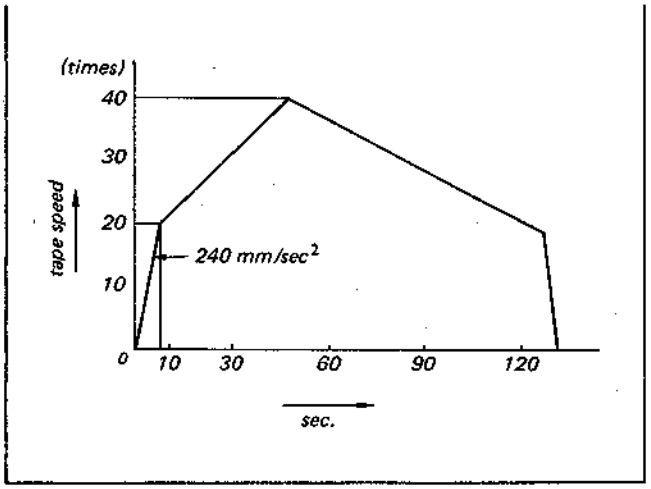
3-4-5. F. FWD and REW Operation

In the F. FWD and the REW operation, the pinch roller is disengaged and the tape is moved by the take-up or the supply reel motor at a high speed.
The reel servo makes the speed servo and the tension servo work on the basis using the detected signals from the tension detectors on the take-up and the supply side and the rotation numbers detected by the DMEs (Divided Type Magnetoresistance Element) near by the take-up and the supply reel table. Then the tape tension and the rotation numbers of the reel table are controlled by the speed servo and the tension servo.
The reel servo system in the F. FWD mode is identical with the one in the REW mode and the servo operation in the F. FWD mode is described here.

(1) Speed Servo System

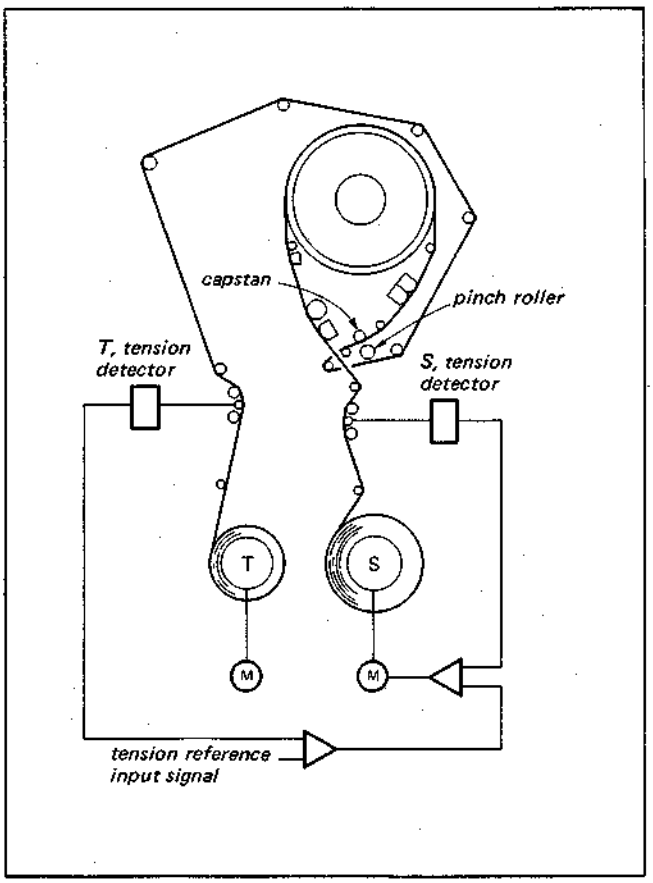
- The speed servo system is designed as shown in the following block diagram.
- The take-up side FG and the take-up reel motor makes a minor servo loop. In this case the reference input signal is made from the error signal from the revolution speed of the supply reel table and the other reference input signal. Therefore the rotation numbers of the supply reel table from the tape is controlled for constant speed.
- The system regulates the revolution speed of the supply reel of the tape in the F. FWD mode so that the tape overrun becomes minimal (the leader tape does not come into contact with the head drum) when the auto stop mode is set up at the end of the tape and the brake is applied on the reel.
- The speed servo system is designed with above two main loops.





(2) Tension Servo System

- The tension servo system is designed as shown in the following block diagram.
- The supply side tape tension is detected by the tension detector. And this signal is fed back to the supply reel motor torque.
- The reference input signal of the tape tension is made from the error signal of the tension detector output signal and the other reference input signal of the tape tension.

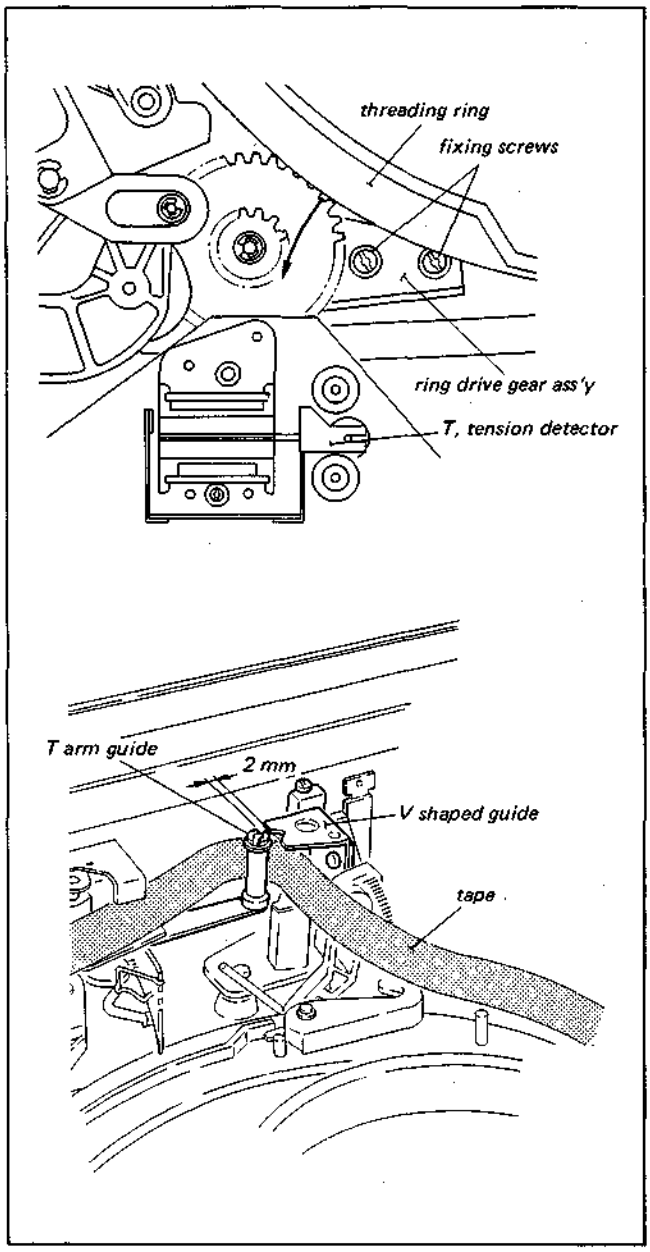


3-5. CASSETTE REMOVAL PROCEDURE WHEN NORMAL EJECTION IS NOT POSSIBLE

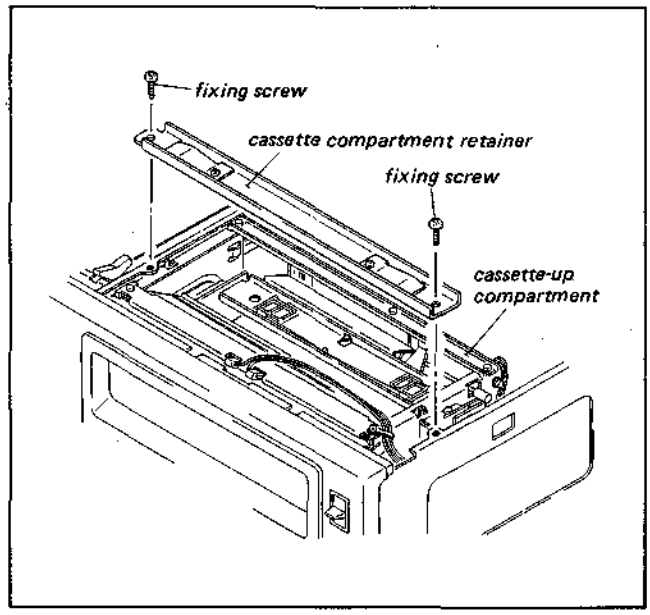
If the eject operation becomes impossible due to trouble or the cassette-up compartment does not rise when the eject operation takes place, the cassette tape can be removed from the set by the procedures described below.

1. Remove the upper panel.

2. Loosen the ring drive gear assembly two mounting screws. And move the ring drive gear assembly in the arrow direction. Turn the threading ring by hand in the counterclockwise direction until the T arm guide moves away about 2 mm from the V shaped guide.
   (The threading ring and the threading slider move in the unthreading direction. But the tape remains at the position of the threading completion.)

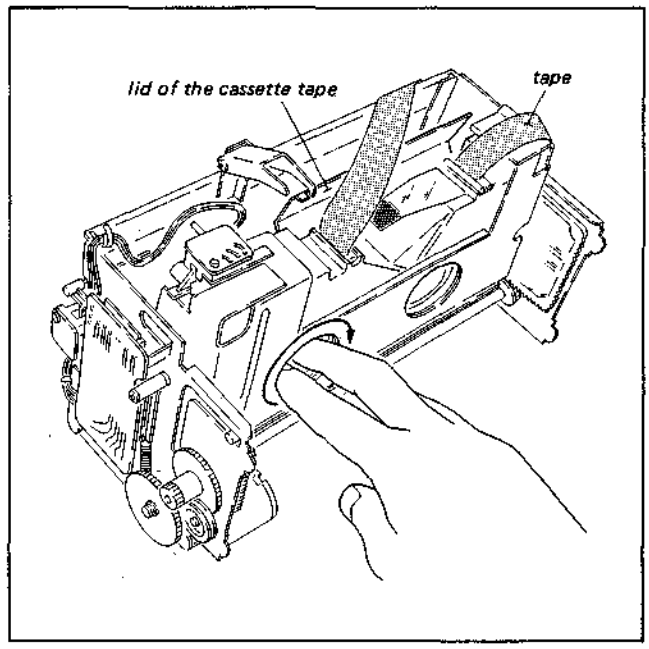


3. Remove the cassette compartment retainer and disconnect the connector on the CC-9 board.

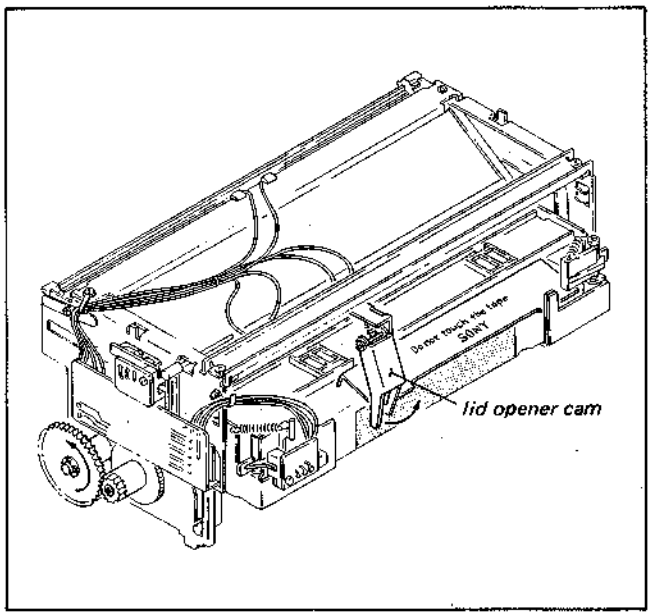


4. Bring up the cassette compartment with the cassette tape in it slowly. Remove the tape remaining in the set carefully so that it does not damage.

5. Hold the cassette tape lid so that it does not close. Wind the tape into the cassette tape by turning the reel hub on the back of the cassette tape with finger.



6. Raise the cam for opening the lid and close the cassette tape lid.



7. Remove the tape from the cassette compartment.

8. Turn the gear on the right side of the cassette compartment counterclockwise direction by hand in order to place the cassette compartment into the up state.

9. Locate the cause of the trouble and remedy the problem.

SECTION 4
PERIODIC CHECK AND MAINTENANCE

It is recommended that the following periodic check and maintenance schedule be employed in order to obtain maximum performance and longer tape life from the BVU-800P.

4-1. PERIODIC CHECK AND MAINTENANCE SCHEDULE

1. Perform the system control operation check in sec. 4-2 daily before the operation.

2. Perform the maintenance check described separately in accordance with the operating hours of the machine. (Table 4-1)
   The BVU-800P has an hour meter on the connector panel for the periodic check and the maintenance. The hour meter accumulates and records the elapsed time of all the modes in which the drum rotates while the tape is threaded (i.e., the FWD, REV, REC, SHUTTLE, and JOG modes). It is recommended that the hour meter is used as a tool for determining the periodic check. When the hour meter indicates the maximum value, 1000 hours, the hours meter must be replaced with a new one.
   (SONY Part No.: 1-548-141-41)

3. It is recommended to perform the following checks and adjustments after the machine whose operational hours reach 200, 500, 750, and 1000 hours in order to obtain good quality picture.
   If it is not to meet the specifications, perform the upper drum assembly replacement.
   NOTE: Video head life is effected extensively by operating ambient conditions.

   13-1-1 ~ 13-1-4.
   Playback Amplifier Adjustment
   13-1-5. Y-RF Balance/Level Adjustment
   13-1-6. Chroma RF Balance/Level Adjustment
   13-5-1. Record Current Frequency Response Adjustment
   13-5-2. Y Record Current Adjustment
   13-5-3. Chroma Record Current Adjustment
   13-7. Overall Frequency Response Adjustment
   14-1. Rotary Erase Current Adjustment

○ : Cleaning ◇ : Check ◆ : Replacement

Item \ Operating Hours (H)	Part No. of replacement part	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	Remarks
Tape path cleaning (including the video heads)	———	○	○	○	○	○	○	○	○	○	○	Perform whenever repair work is attempted
Check and adjustment of the supply side and the take-up side tension detector	———	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	
Replacement of the pinch roller (When the BVU-800P is used as the editing machine)	A-6750-113-D ARM ASS'Y, PINCH	–	◆	–	◆	–	◆	–	◆	–	◆	
Replacement of the pinch roller (When the BVU-800P is used as the playback machine (such as on air))	A-6750-113-D ARM ASS'Y, PINCH	–	–	–	◆	–	–	–	◆	–	–	
Check the FWD back tension (Replacement of the brake band)	X-3668-045-0 BAND ASS'Y, BRAKE	–	◇	–	◆	–	◇	–	◆	–	◇	
Check the brake torque (Replacement of the brake shoe)	X-3642-166-0 SHOE ASS'Y	–	–	–	◇	–	–	–	◆	–	–	
Replacement of the belt of the threading motor assembly	3-668-173-00 BELT (3), LM	–	○	–	○	–	○	–	◆	–	○	
Replacement of the belt of the cassette compartment	3-653-387-00 BELT, LM	–	–	–	–	–	–	–	◆	–	–	
Replacement of the brush of the slip-ring assembly	3-607-104-00 BRUSH or A-6709-360-A BRUSH (4) ASS'Y	–	–	–	–	–	–	–	◆	–	–	

NOTE: Regarding overhaul of equipment.
When overhaul of an equipment is attempted, replace parts referring list. For the parts not listed in the following list, such as motors and stationary heads, refer the following items.

reel motor:	about 3,000 H
capstan motor:	about H
cassette compartment motor:	about H
threading motor:	about H
audio/CTL head:	about 3,000 H
erase head:	about 4,000 H
time code head:	about 4,000 H

4-2-2. Record Function Check

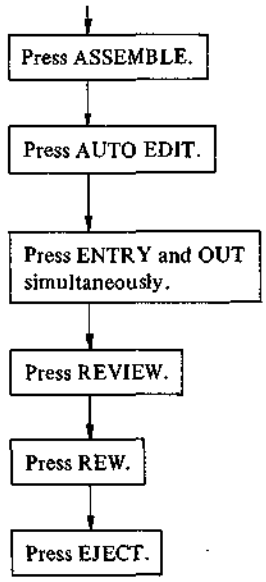
- Insert a video cassette tape on which recording can be made.
- Connect signals to the VIDEO IN, AUDIO IN CH-1 and CH-2 connectors.
- Connect a video and audio monitor.

With switches set to		Action	Check that
POWER : ON REMOTE/LOCAL : LOCAL INPUT SELECT : LINE PB/PB/EE : PB AUDIO MONITOR : MIX		Insert the cassette.	
		Press REC and PLAY simultaneously.	The recording begins.
		Press REW.	The tape rewinds. Rewind the tape to the beginning of recording and stop the tape.
		Press PLAY.	Playback of the recorded scene appears. The audio CH-1 and CH-2 are present.
		Press REC and hold it down during playback.	E-to-E mode picture appears while the REC is pressed.
		Press INSERTs (VIDEO, AUDIO CH-1 and CH-2).	The VIDEO, AUDIO CH-1 and AUDIO CH-2 lamps light.
		Press PLAY and EDIT simultaneously.	The manual edit recording will begin.
		Press PLAY.	The edit recording will stop, but the tape will continue to run in the playback mode.
		Press STOP.	Still picture of the tape appears.
		Press EDIT	The E-to-E mode picture and audio selected by the INSERT buttons appear.
		Press EDIT.	The E-to-E mode picture and audio disappear and the still picture of the appears.
PB/PB/EE : PB/EE		Press REW.	The tape rewinds. Rewind the tape to the beginning of edit-recording and stop the tape.
		Press PLAY.	Playback of the edit-recorded video appears. The audio CH-1 and CH-2 is present.
		Press F. FWD.	The tape advances rapidly and stops at the end of the tape. Then the tape rewinds automatically and stops at the beginning.
		Press EJECT.	The cassette is ejected.

4-2-3. Editing Function Check

- Install a recorded tape (Video, Audio CH-1/CH-2). (Do not utilize an alignment tape).
- Apply the video and audio CH-1/CH-2 signals.
- The following is the procedure when the SEARCH DIAL switch on the SY-37 board is in the ON position.

With switches set to	Action	Check that
POWER : ON REMOTE LOCAL : LOCAL AUDIO MONITOR : MIX	Insert the cassette.	
	Press PLAY.	Playback picture appears.
	Press Search button. (Search dial at ■ position)	The still picture appears.
	Press ENTRY and IN simultaneously.	Note the counter number of the point (edit-in).
	Locate a point for the edit-out point with Search dial.	
	Press ENTRY and OUT simultaneously.	Note the counter number of the point (edit-out).
	Press INSERTs (VIDEO, AUDIO CH-1 and AUDIO CH-2).	
	Press PREVIEW.	Previewing proceeds.
	Press IN.	The counter of the edit-in point is displayed.
	While pressing IN, press TRIM − ten times.	The counter decreases by ten frames.
	Press OUT.	The counter of the edit-out point is displayed.
	While pressing OUT, press TRIM + ten times.	The counter increases by ten frames.
	Press AUTO EDIT.	Auto edit recording proceeds.
	Press REVIEW.	The reviewing of the edit recorded area proceeds.



The ASSEMBLE button lights.

The point where the AUTO EDIT has been pressed is entered as the edit-in point and auto edit recording begins.

The point is entered as the edit-out point and auto edit recording stops.

The reviewing of the edit recorded area is proceeded.

The tape stops at the beginning.

The cassette is ejected.

4-3. MAINTENANCE AFTER REPAIRS

Perform the following maintenance after repair without regarding the machine operating hours.

1. Video heads and the rotary erase heads cleaning. (Referring sec. 4-5-1.)
2. Tape movement area cleaning. (Referring sec. 4-5-2.)

4-4. FIXTURE FOR PERIODIC CHECK AND MAINTENANCE

J-6001-820-A	Drum Eccentricity Gauge (3)
J-6001-830-A	Drum Eccentricity Gauge (2)
J-6001 840-A	Drum Eccentricity Gauge (1)
J-6001-930-A	Drum Eccentricity Gauge (4)
J-6080-013-A	Dihedral Adjusting Screw
J-6009-830-A	Flatness Plate
Y-2031-001-0	Cleaning Fluid
2-034-697-00	Cleaning Piece
3-702-215-01	Torque Measurement Tape (100 mm dia.)
3-702-216-01	Back Tension Adjustment Jig
7-732-050-30	Tension Scale (100g full scale)
7-732-050-40	Tension Scale (200g full scale)
8-960-020-62	Alignment Tape, RR5-2SB-PAL
9-911-053-00	Thickness Gauge
Standard products	Head Demagnetizer, HE-4

4-5. PERIODIC CHECK AND MAINTENANCE PROCEDURE

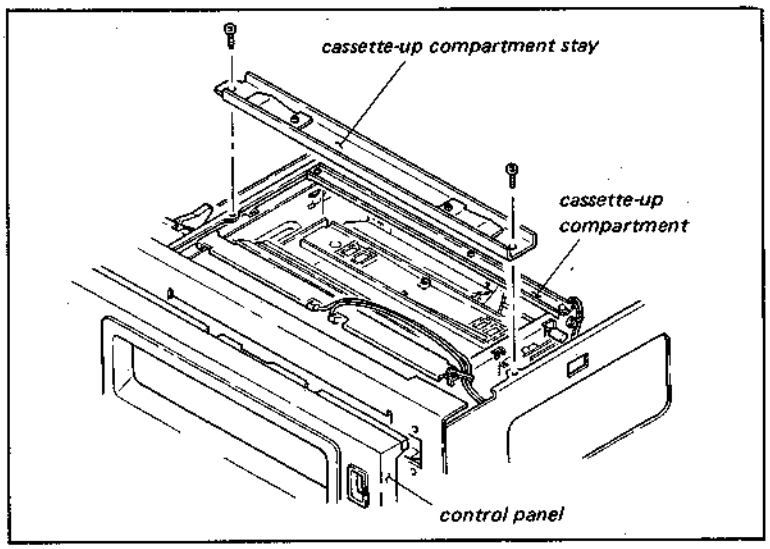
When the periodic check or maintenance is attempted, a few items are necessary to remove the cassette-up compartment and to mute the tape beginning sensor and the tape end sensor.
And it is necessary to check the tracking adjustment after the upper drum replacement is attempted.
If necessary, perform the following procedures.

[1] Removal of Cassette-up Compartment

(1) Remove the upper panel, each side ornamental panels, and the control panel.

(2) Remove the cassette-up compartment stay.

(3) And bring up the cassette-up compartment from the machine.



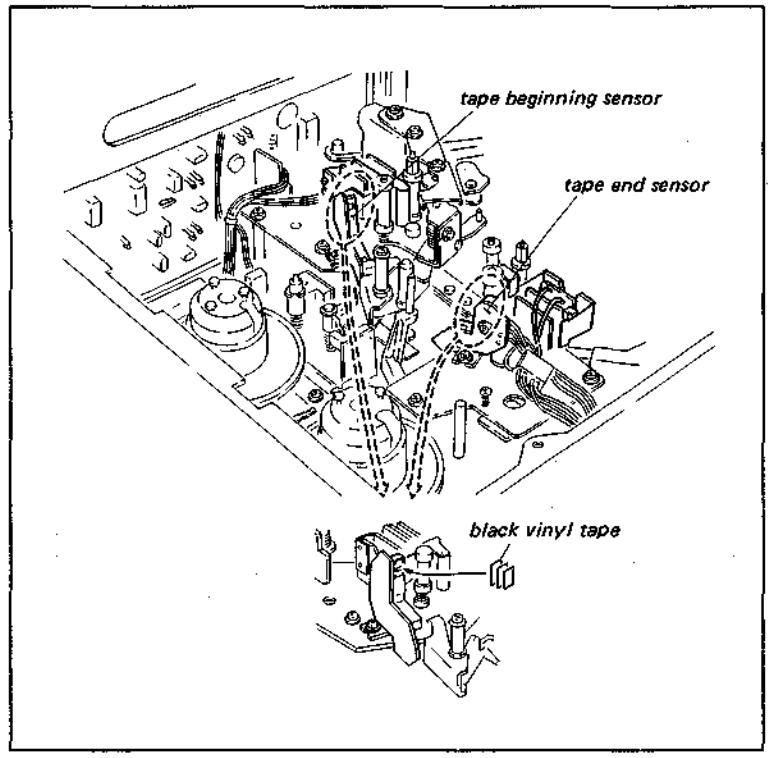
[II] Muting of Tape Beginning Sensor and Tape End Sensor

(1) Cut a piece of black vinyl tape into a piece of 1 cm x 1.5 cm long and place it over to each photo-transistors. Light will path through one or two pieces of tape so that three pieces of black vinyl tape should be over lapped.

(CAUTION)

Never forget to remove the black vinyl tape from the two photo-transistors.

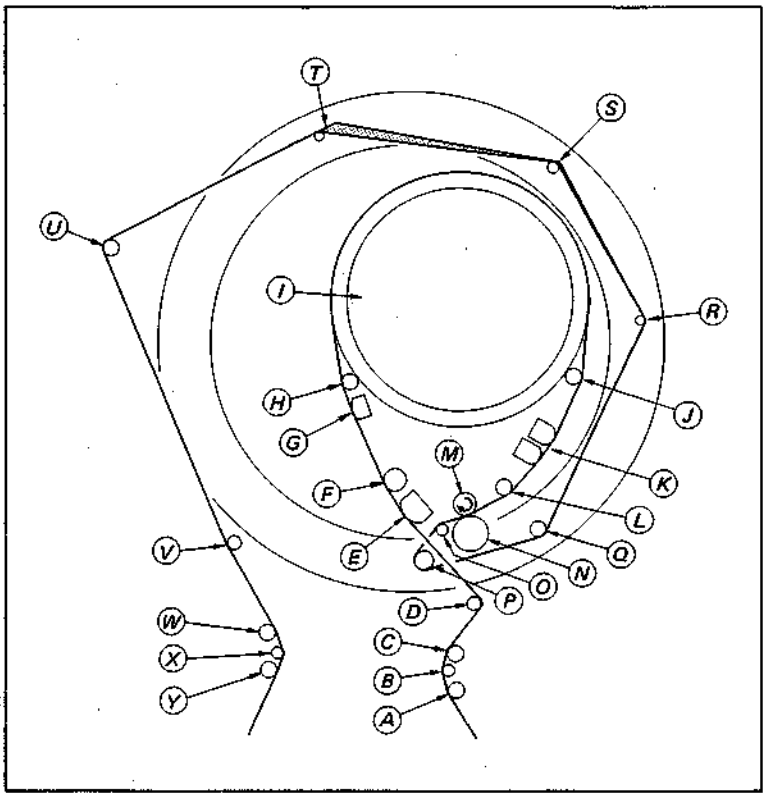
If the machine is placed into the F. FWD or REW mode without removing the black vinyl tape, the machine cannot detect the tape beginning or tape end. So the machine cannot operate the AUTO STOP operation. The tape and the machine are put into the dangerous situation.



[III] Tracking Check

Location of the tape guides and heads are follows.

Ⓐ : supply tape guide 1
Ⓑ : supply side tension detecting guide
Ⓒ : supply tape guide 2
Ⓓ : supply tension regulator arm pin
Ⓔ : full erase head
Ⓕ : TG-1
Ⓖ : time code head
Ⓗ : TG-2
Ⓘ : head drum
Ⓙ : TG-3
Ⓚ : audio/CTL head
Ⓛ : TG-4
Ⓜ : capstan shaft
Ⓝ : pinch roller
Ⓞ : correction guide
Ⓟ : threading guide (1)
Ⓠ : threading guide (2)
Ⓡ : threading guide (3)
Ⓢ : threading guide (4)
Ⓣ : correction guide (A)
Ⓤ : 5th guide
Ⓥ : 6th guide
Ⓦ : take-up tape guide 2
Ⓧ : take-up side tension detecting guide
Ⓨ : take-up tape guide 1



The tracking adjustment is required to be performed in the following steps.

9-3. Video Tracking Adjustment
9-5-2. Time Code Head Height Adjustment
9-5-3. Time Code Head Zenith Adjustment
9-6-1. Audio Head Height Adjustment
9-6-2. Audio Head Zenith Adjustment
9-6-3. Audio Head Azimuth Adjustment
9-6-4. Audio Head Phase Adjustment
9-7. Audio/CTL Head Position Adjustment
9-8. Video Head Dihedral Adjustment
9-9. Video Head Azimuth Adjustment
11-11. Switching Position Adjustment
11-12. Drum Lock Phase Adjustment
13-1-1 ~ 13-1-4. Playback Amplifier Adjustment
13-1-5. Y-RF Balance/Level Adjustment
13-1-6. Chroma RF Balance/Level Adjustment
13-5-1. Record Current Frequency Response Adjustment
13-5-2. Y Record Current Adjustment
13-5-3. Chroma Record Current Adjustment
13-7. Overall Frequency Response Adjustment
14-1. Rotary Erase Current Adjustment

[IV] Note For Adjustment Spec.

The word "SPECIFICATION" used in this alignment procedure does not imply the parameter is guaranteed but is only a guidline to obtain optimum performance.

4-5-1. Cleaning Procedure of the Video Heads and the Rotary Erase Heads

With the power OFF. Press the cleaning piece moistured with the cleaning fluid and turn the drum slowly with hand, cleaning the video heads and the rotary erase heads. (Do not exert too much pressure.)

NOTE: Never move the cleaning piece in the vertical direction of the head tip in the cleaning. It may to damage the head tips.

4-5-2. Cleaning Procedure of Tape Movement Areas

Wipe the tape bearing surface (of the tape guides, drum, stationary heads, capstan shaft, and the pinch roller) with a piece of cleaning piece moistened with the cleaning fluid.

Cleaning fluid: SONY Part No. Y-2031-001-0
Cleaning piece: SONY Part No. 2-034-697-00

NOTE: Don't clean the surface condensation sensor on the lower drum with the cleaning cloth moistened with the cleaning fluid. Clean the surface with dry cloth.

4-5-3. Head Degaussing

It is recommended to demagnetize the rotary heads and the stationary heads with demagnetizer when using as a playback machine.

Demagnetizer: SONY HE-4.

- Bring the tip of the demagnetizer as close as possible to the head tip without actually contacting it. Draw demagnetizer very slowly and turn off demagnetizer when it is at least three feet away from the machine.

4-5-4. Cleaning of Slip-Rings and Brushes

The head drum assembly slip-rings and the brushes do not required periodical cleaning. However if a dust adheres on the slip rings or the brushes, clean the slip-rings or the brushes as follows.

1. Clean the slip-ring or the brush by using soft brush which has short hairs. If this brush can not obtained, use a blower brush and cotton swab.

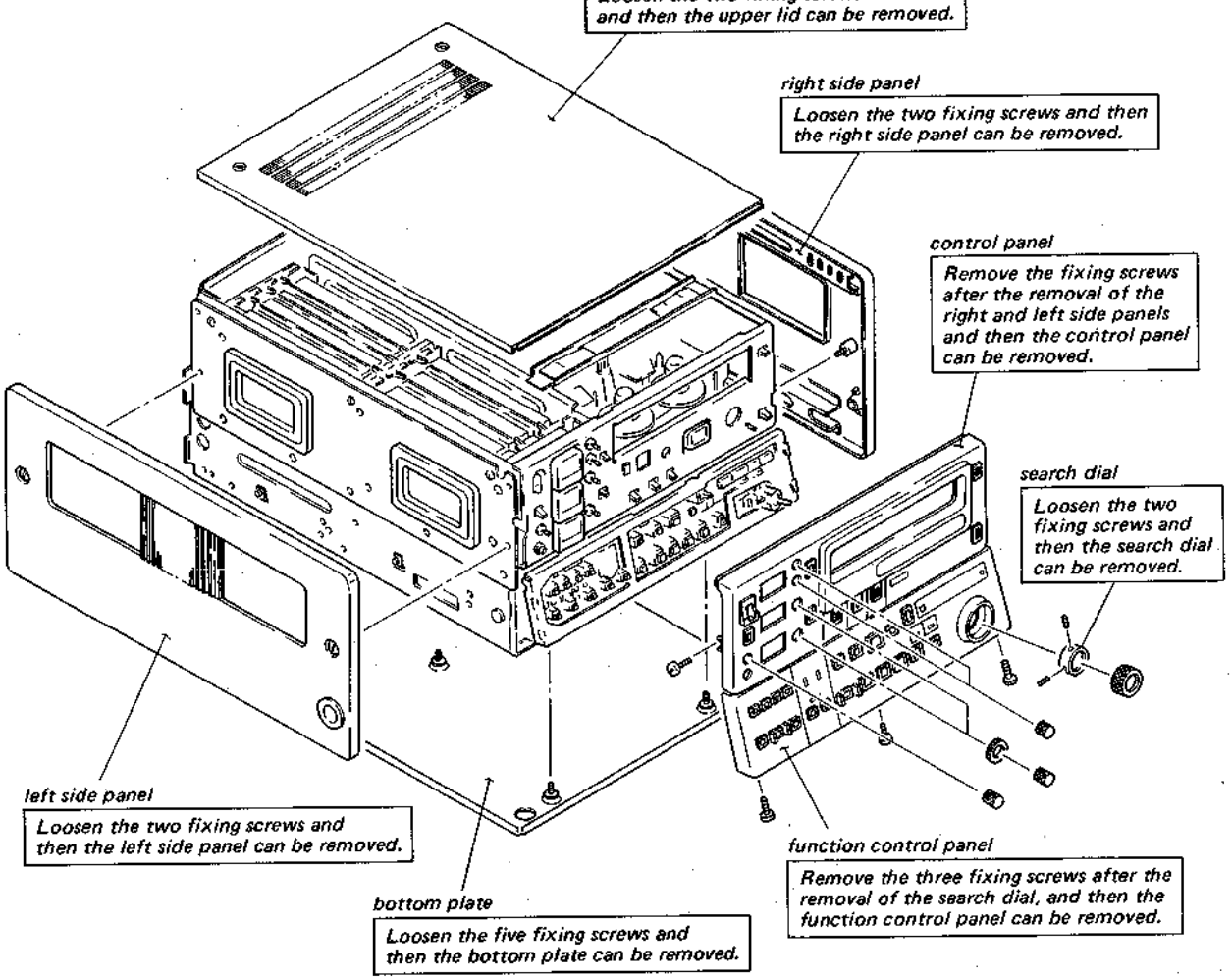
2. Cleaning fluid is not necessary. However if it is difficult to remove persistent debris, use Freon as cleaning agent.

NOTE:

1. Do not use the alcohol as a cleaning fluid. If the slip-rings and the brushes are cleaned with alcohol, the surface tend to attract material which may increase the resistance at the contact area.
2. Do not use conductive grease.

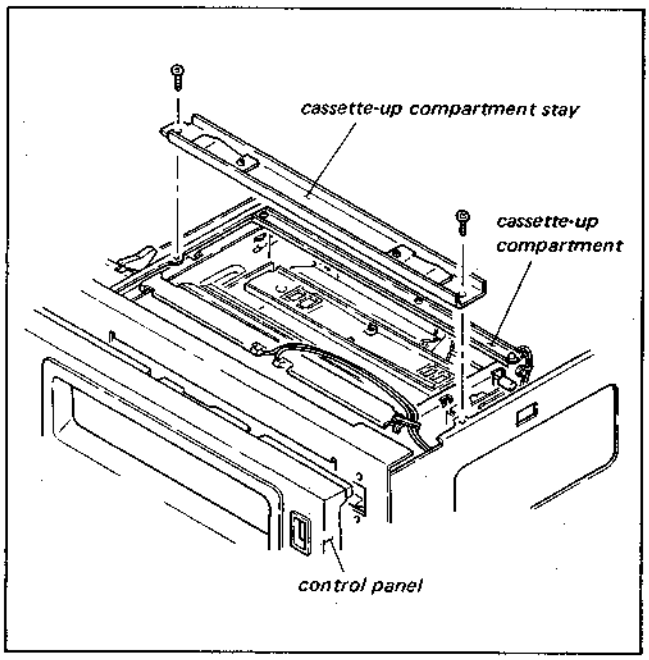
SECTION 5
SERVICE INFORMATION

5-1. REMOVAL OF CABINET



5-2. REMOVAL OF CASSETTE-UP COMPARTMENT

1. Remove the upper panel, each side ornamental panels, and the control panel.
2. Remove the cassette-up compartment stay.
3. And bring up the cassette-up compartment from the machine.



5-3. SPARE PARTS

1. Safety Related Components Warning.
   Components identified by shading marked with ⚠ on the schematic diagrams, exploded views and electrical spare parts list are critical to safe operation. Replace these components with Sony parts whose part numbers appear in this manual or in service bulletins and service manual supplements published by Sony.
2. Replacement Parts supplied from Sony Parts Center will sometimes have a different shape from the original parts. This is due to "accommodating the improved parts and/or engineering changes" or "standardization of genuine parts".
   This manual's exploded views and electrical spare parts list indicate the parts numbers of "the standardized genuine parts at present".
   Regarding engineering parts changes in our engineering department, refer to Sony service bulletins and service manual supplements.
3. Printed Components in Bold-Face type on the exploded views and electrical spare parts list are normally stocked for replacement purposes. The remaining parts are not normally required for routine service work. Orders for parts not shown in Bold-Face type will be processed, but allow for additional delivery time.

5-4. MODULE EXTENDER

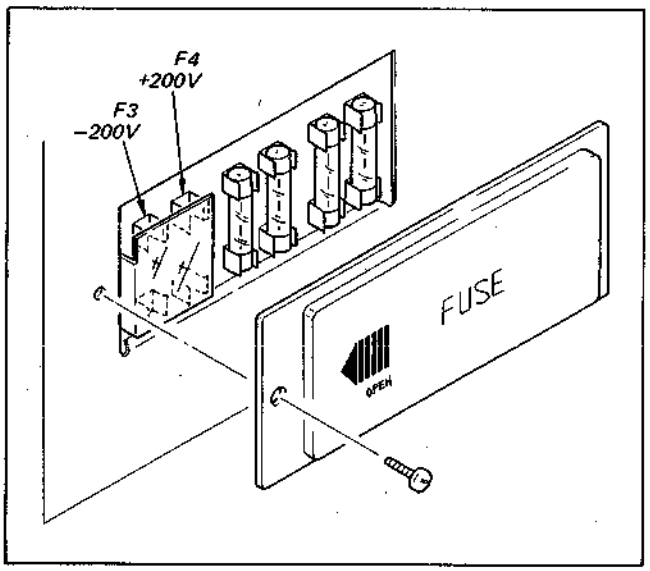
The Amp chassis printed circuit boards can be serviced using a module extender. Simply insert the extender into the Amp chassis and connect the circuit board to be serviced to the end of the extension board.

(CAUTION)

Be sure to turn off power before inserting or removing extenders or printed circuit boards.

5-5. CAUTION OF HIGH VOLTAGE

Do not touch fuse post at any time, even power is off. (Especially Ref. No. F3 and F4 on FU-16 board at power block.)



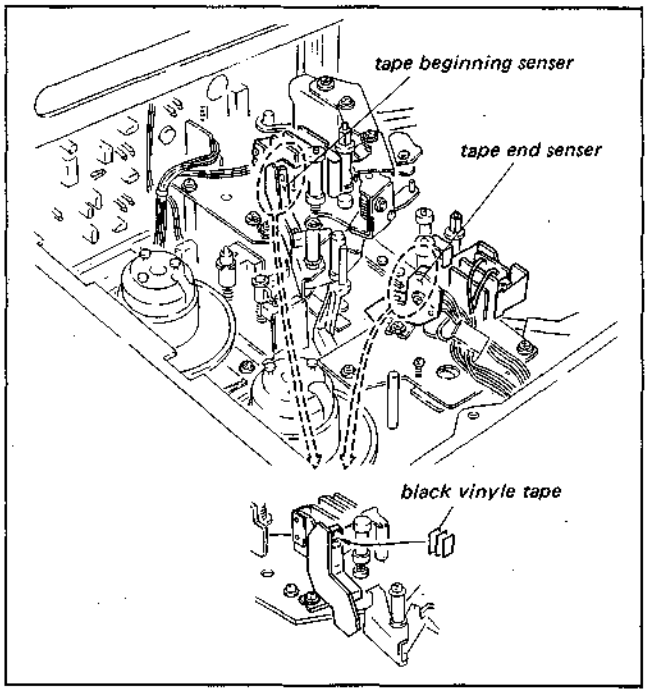
5-6. MUTING OF TAPE BEGINNING SENSOR AND TAPE END SENSOR

Cut a piece of black vinyl tape into a piece of 1 cm x 1.5 cm long and place it over to each photo-transistors. Light will path through one or two pieces of tape so that three pieces of black vinyl tape should be over lapped.

(CAUTION)

Never forget to remove the black vinyl tape from the two photo-transistors.

If the machine is placed into the F. FWD or REW mode without removing the black vinyl tape, the machine cannot detect the tape beginning or tape end. So the machine cannot operate the AUTO STOP operation. The tape and the machine are put into the dangerous situation.



5-7. FIXTURE

Parts Number	Description	For Use
J-6001-820-A	Drum Eccentricity Gauge (3)	Upper drum eccentricity adjustment
J-6001-830-A	Drum Eccentricity Gauge (2)	
J-6001-840-A	Drum Eccentricity Gauge (1)	
J-6001-930-A	Drum Eccentricity Gauge (4)	
J-6080-013-A	Dihedral Adjusting Screw	Video head dihedral adjustment
J-6009-830-A	Flatness Plate	Stationary head and tape guide slantness adjustment
J-6130-010-A	Reel Table Height Check Base Jig	Reel table height adjustment
J-6130-020-A	Reel Table Height Check Jig	
J-6150-020-A	Pinch Lever Adjustment Jig	Pinch lever right angle adjustment
J-6150-960-A	Reel Motor Shaft Slantness Check Jig	Reel motor shaft slantness adjustment
Y-2031-001-0 2-034-697-00	Cleaning Fluid Cleaning Piece	Cleaning
8-899-999-51	Torque Measurement Tape (100 mm dia.)	Measurement of torque
3-702-216-01	Back Tension Adjustment Jig	Back tension adjustment
7-723-902-00	Inspection Mirror	For clearance check
7-732-050-30	Tension Scale (100g full scale)	Measurement of back tension and torque
7-732-050-40	Tension Scale (200g full scale)	
7-662-001-62	Sony Grease, SGL-501	For lubrication
8-960-020-61	Alignment Tape RR5-1SB-PAL	Tracking, audio, video and overall adjustment
9-911-053-00	Thickness Gauge	For clearance check
Standard Products	Head Demagnetizer (HE-4)	Degaussing of heads

5-8. SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set.

Check the metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

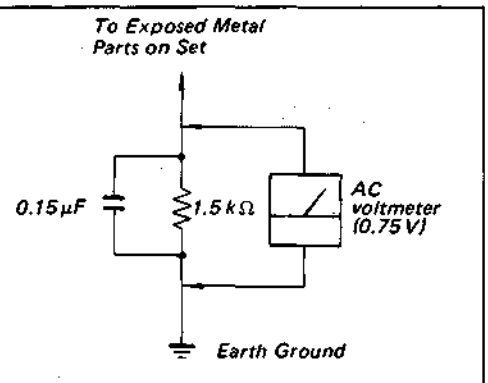


Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 6
REPLACEMENT OF MAJOR PARTS

6-1. REPLACEMENT OF DRUM ASSEMBLY

Relacement procedure:

(1) Remove the brush assembly for the slip ring.
(2) Disconnect the connector of the drum assembly. Remove the three fixing screws and remove the defective drum.
(3) Install a drum on the base while turning the drum assembly in a counterclockwise direction as seen from top of the set.
(4) Re-connect the connector.
(5) Install the brush assembly for the slip-ring.

6-2. REPLACEMENT OF UPPER DRUM ASSEMBLY

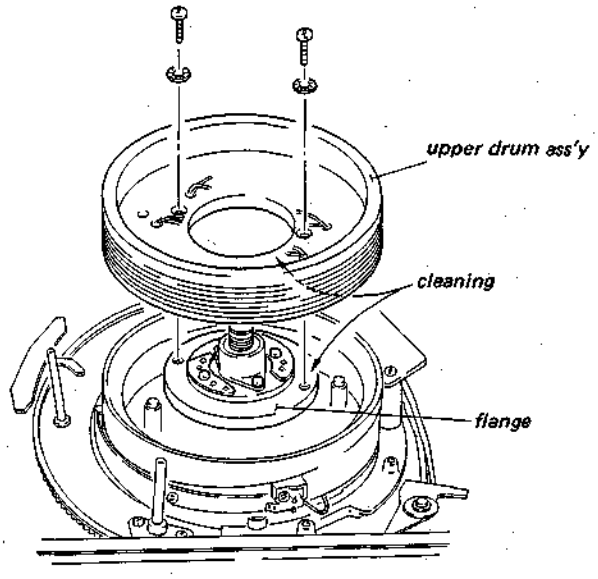
The rotary video and erase heads cannot be replaced individually; the whole upper drum assembly must be replaced when any one of these heads fails.

Tool:

Drum eccentricity gauge (1)
Drum eccentricity gauge (2)
Drum eccentricity gauge (3)
Drum eccentricity gauge (4)

Replacement procedure:

(1) Remove the brush assembly for slip ring.
(2) Unsolder the eight leads of the video and rotary erase heads from the printed circuit board and remove the upper drum assembly from the head drum assembly.
(3) Clean the matching surface of the flange and new upper drum assembly with a cloth moistened with cleaning fluid. (If there is a spacer between drum and flange, it should be remain in place, or be re-installed in the same place with the new upper drum assembly.)



(4) Place the upper drum assemly so that the head of the white leads is close to the round indentation on the surface of the flange. (The rounded indentation can be seen through the hole in the end of the printed circuit board the white leads are connected to.) Thread the two screws snugly but do not tighten.

Adjustment procedure:

(1) Assemble the drum eccentricity gauges (1),(2),(3) and (4) as shown in figure. Mount the assembled jigs on the machine so that the tip probe positions at the point about 5mm apart from the top edge of the upper drum.

(2) Turn the upper drum slowly clockwise and confirm the pointer deflection of the gauge is within 5 micron during one complete turn of the upper drum. If this specification is satisfied, proceed with step (4). If it is not, perform step (3).

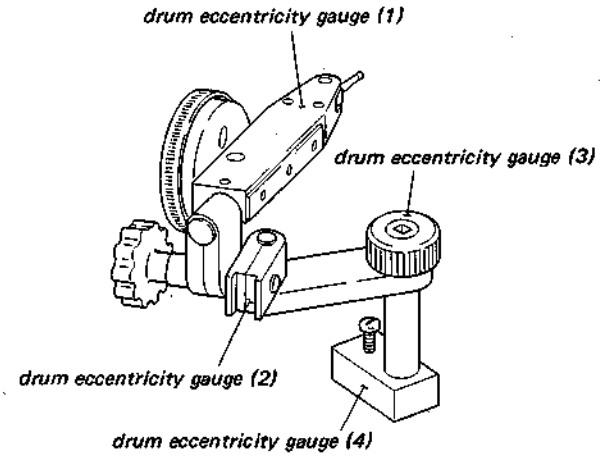
(3) Tap the inside of the upper drum with a nylon hammer or a screwdriver handle and like so that the gauge deflection remains within 5 micron.

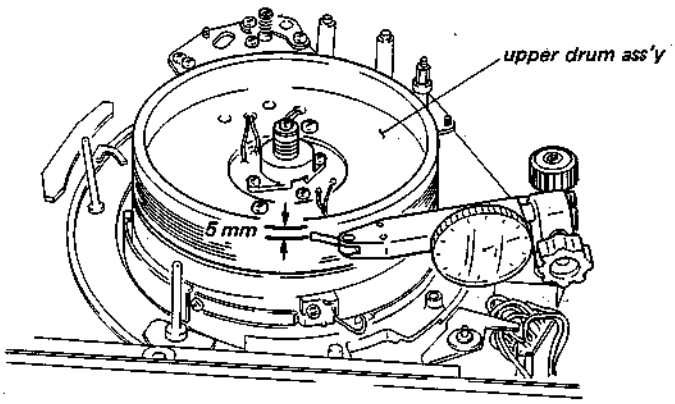
(4) After the adjustment, tighten the two screws that are securing the upper drum, alternately and gradually using a tighening torque:14 to 16kg x cm.

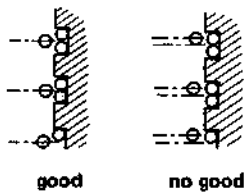
(5) After the screws are tightened, check again that the eccentricity of the upper drum is within 5 micron.

(6) Solder the eight leads from the video and rotary erase heads to the printed circuit board.

(7) Install the brush assembly for the slip ring. (The positional relationship of the slip-ring and the brush must be as shown in the figure.)







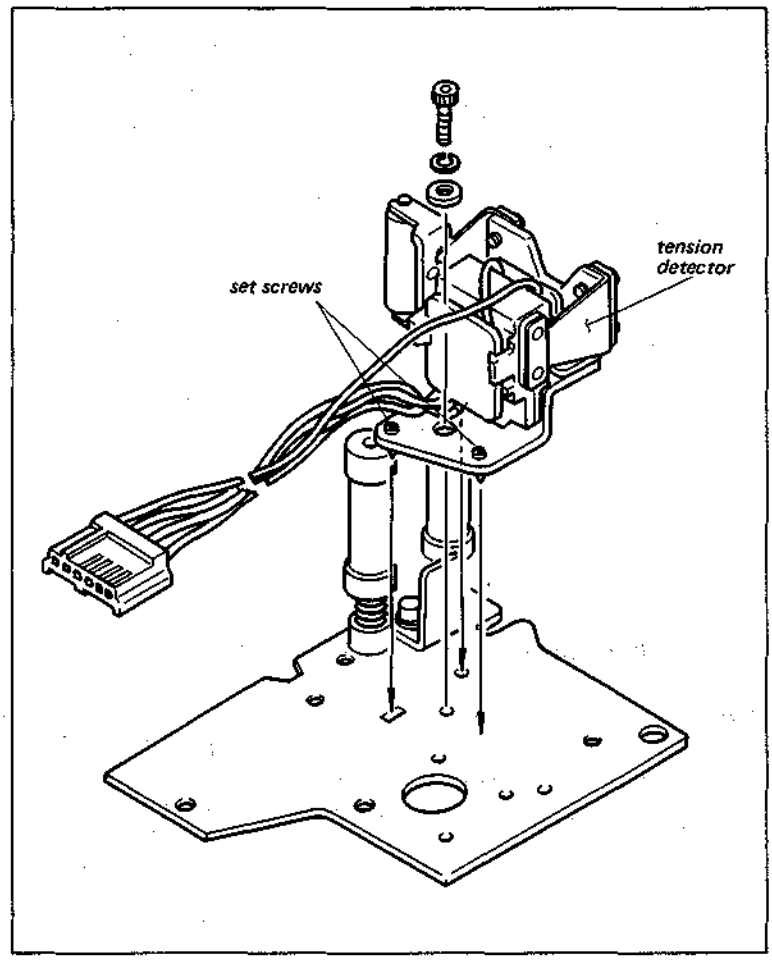
REPLACEMENT

6-3. REPLACEMENT OF TENSION DETECTOR

T and S tension detectors are precisely factory calibrated before shipment.Therefore the component parts cannot be replaced as the single parts ;the whole tension detector must be replaced.

Replacement procedure:

(1) Remove the cap screw and remove the tension detector.
(2) Install the two set screws to the new tension detector.
(3) Install the tension detector to the set.

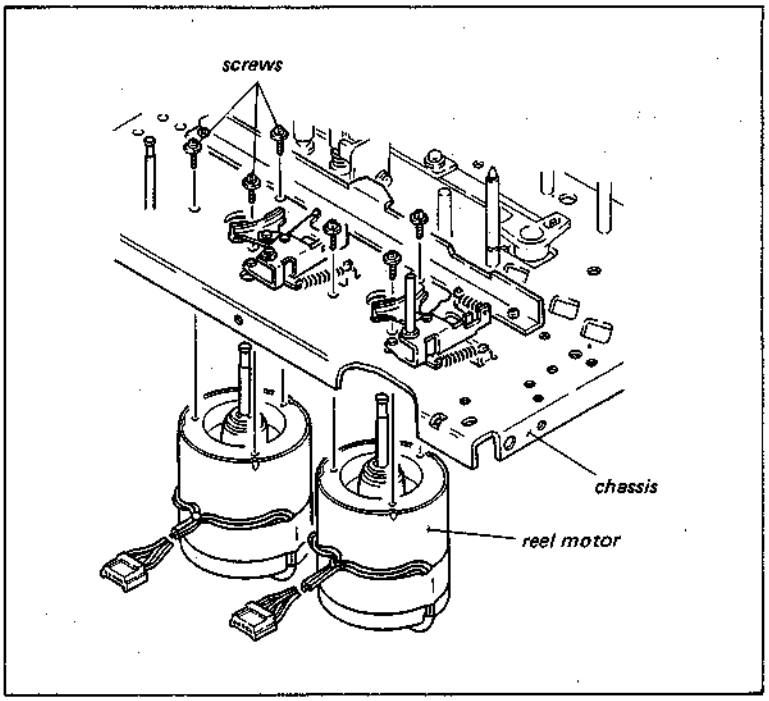


6-4. REPLACEMENT OF MOTOR

6-4-1. Replacement of Reel Motor

Replacement procedure:

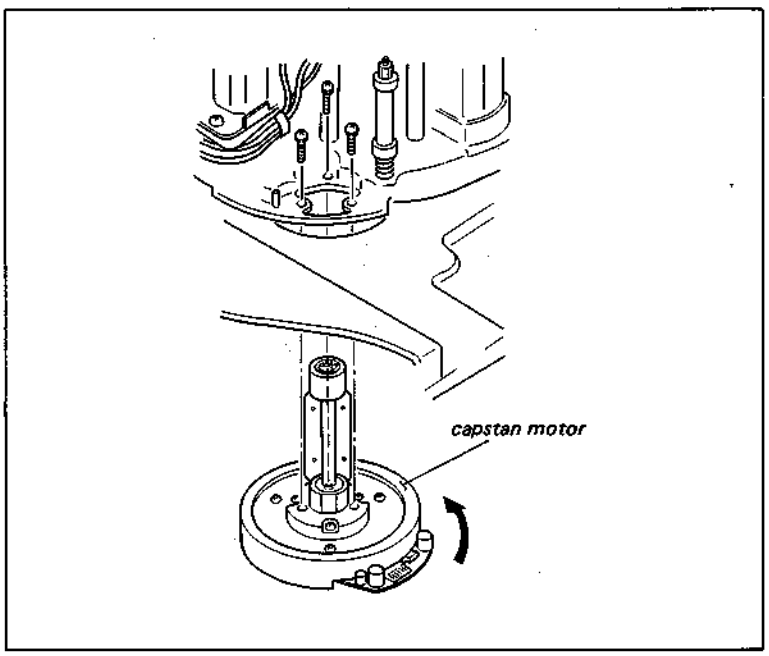
(1) Loosen the two set screws on the under side of the reel table. Remove the reel table from reel shaft.
(2) Remove the three screws and replace the reel motor.



6-4-2. Replacement of Capstan Motor

Replacement procedure:

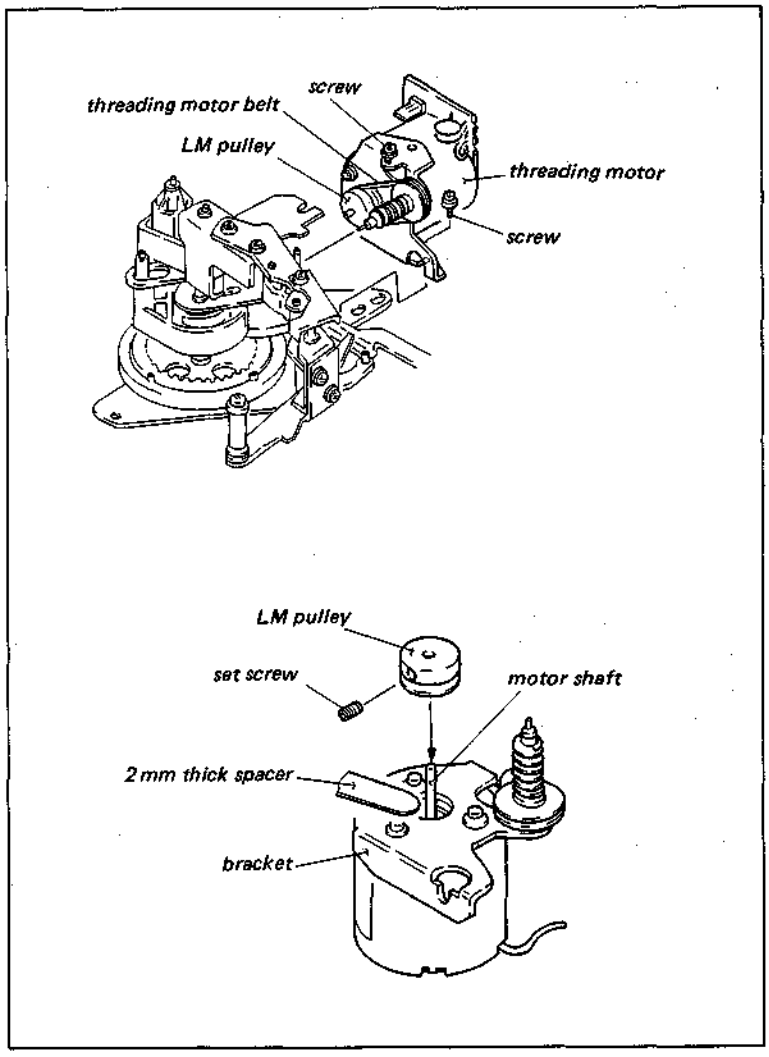
(1) Remove the three screws and remove the capstan motor.
(2) Install the new capstan motor.
(3) While turning the capstan motor in the counterclockwise direction and tighten the fixing screw.



6-4-3. Replacement of Threading Motor

Tool: Allen wrench (each edge has 1.27mm)
Thickness gauge

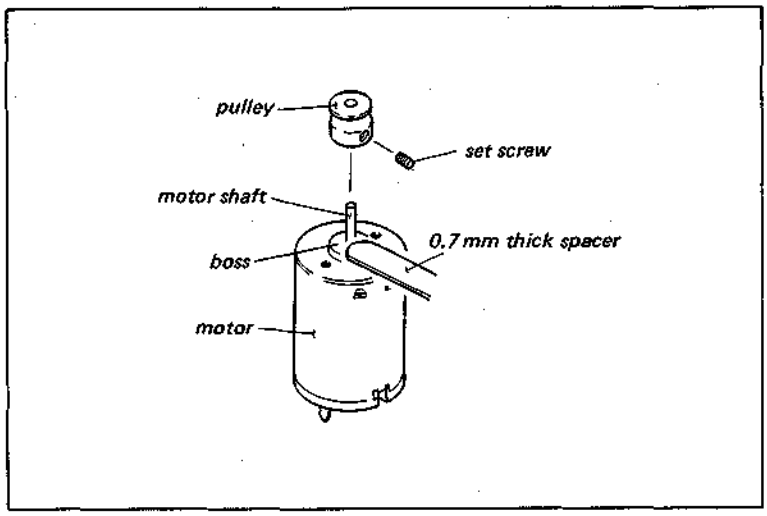
Replacement procedure:
(1) Remove the threading motor block from chassis.
(2) Replace the motor.
(3) Install the LM pully so that the clearance between the pully and the bracket is 2mm.



6-4-4. Replacement of Cassette-up Assembly's motor

Tool: Allen wrench (each edge has 1.5mm)
Thickness gauge

Replacement procedure:
(1) Replace the cassette-up assembly's motor.
(2) Install the pully so that it positioned 0.7mm apart from the ege of the motor boss.



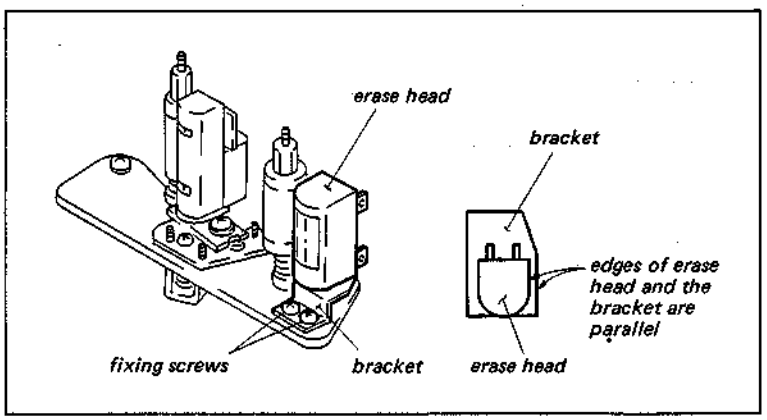
6-5. REPLACEMENT OF THE STATIONARY HEAD

6-5-1. Replacement of Erase Head

Replacement procedure:

(1) Remove the erase head brock. Remove the two screws and replace the erase head.

(2) Install the erase head so that the positional relationship between the erase head and bracket is as shown in figure.

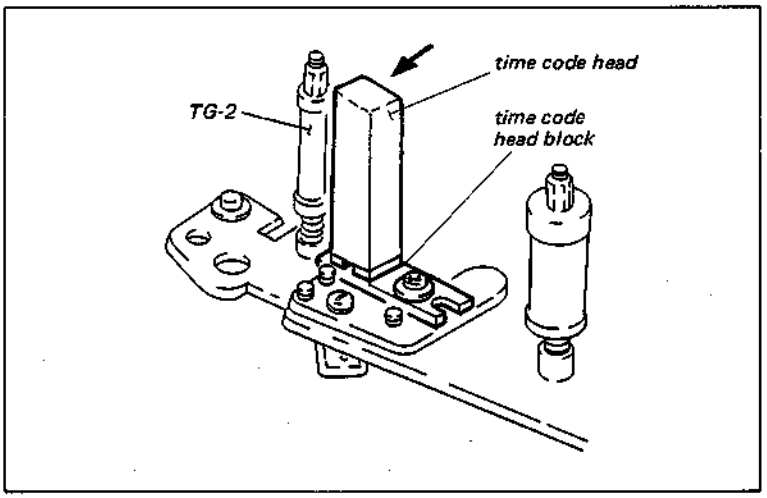


6-5-2. Replacement of Time Code Head

Replacement procedure:

(1) Remove the time code head block. Remove the two screws and replace the time code head block.

(2) Install the time code head while pressing it in the direction of the arrow.

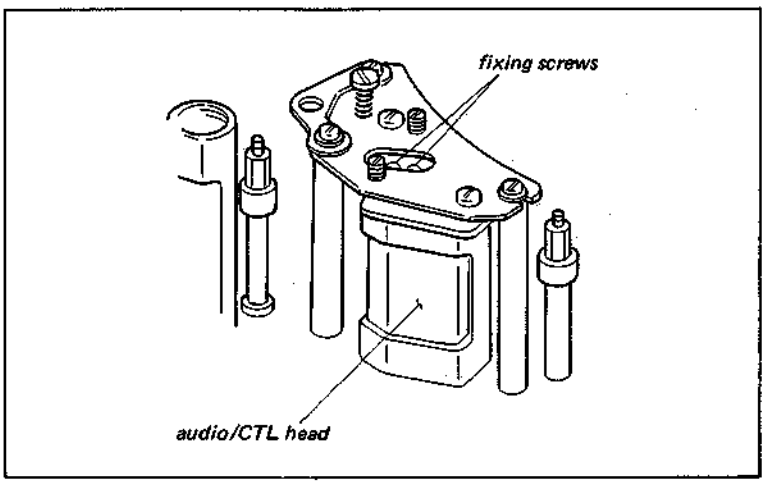


6-5-3. Replacement of Audio/CTL Head

Replacement procedure:

(1) Remove the audio/CTL head block from the machine.

(2) Install the audio/CTL head turning in the clockwise direction.

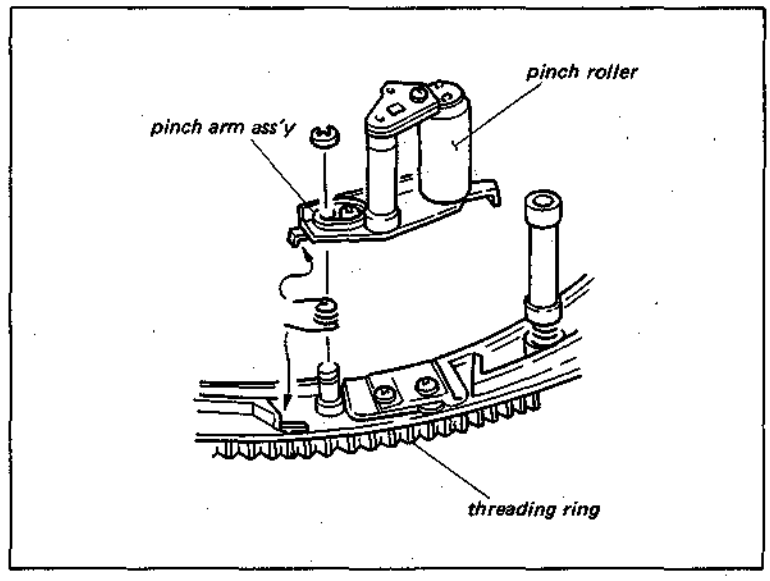


6-6. REPLACEMENT OF PINCH ROLLER

The pinch roller cannot be replaced individually. The whole pinch arm assembly must be replaced.

Replacement procedure:

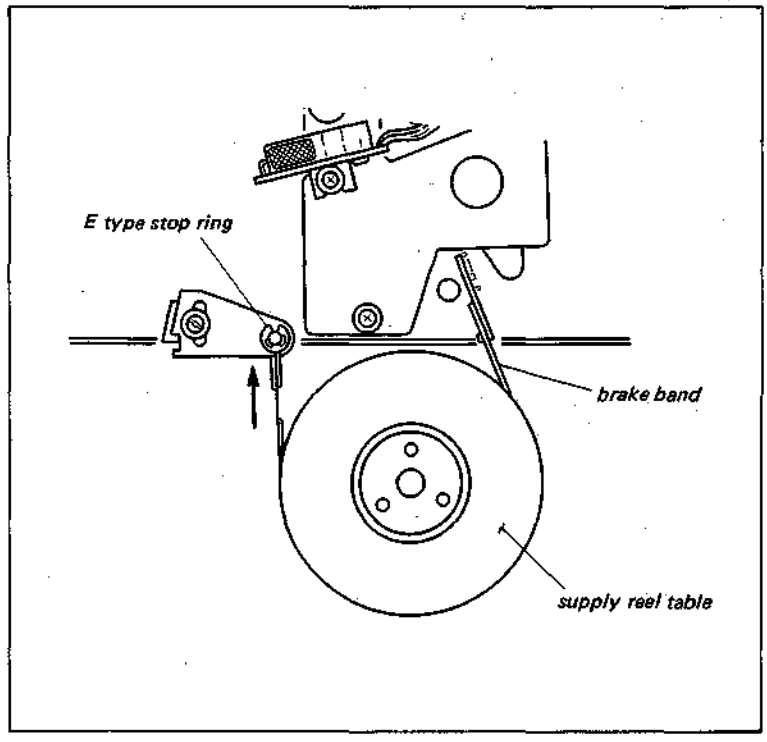
(1) Remove the pinch arm ass'y from the threading ring.
(2) Install the new pinch arm ass'y on the threading ring as shown in figure.



6-7. REPLACEMENT OF BRAKE BAND

Replacement procedure:

(1) Put the machine into STOP mode.
(2) Turn off the power.
(3) Remove the brake band protector.
(4) Remove the E type stop ring. And move the brake band in the direction shown by arrow for removal.
(5) Replace the new one.

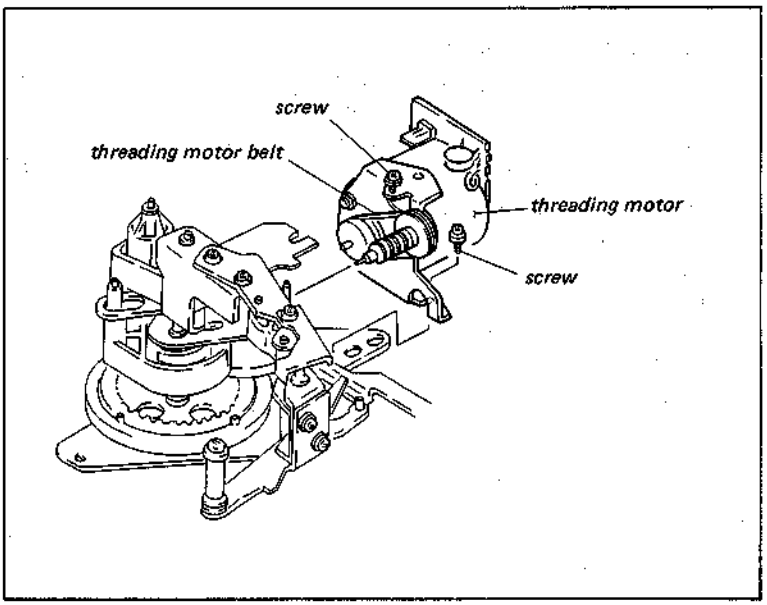


6-8. REPLACEMENT OF THE BELT

6-8-1. Replacement of the Threading Motor's belt

Replacement procedure:

(1) Put the machine into the EJECT completion mode.
(2) Turn off the power and remove the MD and YD board.
(3) Disconnect the connector of the threading motor block.
(4) Remove the worm gear cover.
(5) Loosen the two fixing screws of the motor block and remove the motor block toward the amp chassis.
(6) Replace the belt with a new one.
(7) Assemble the motor block by reversing steps (6) to (1).
(8) Turn on the power and insert a cassette tape. Check the threading and unthreading operations are smooth.

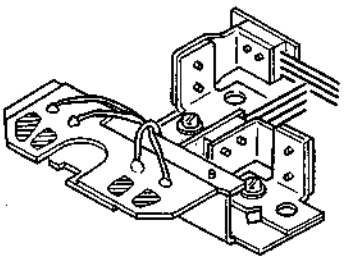


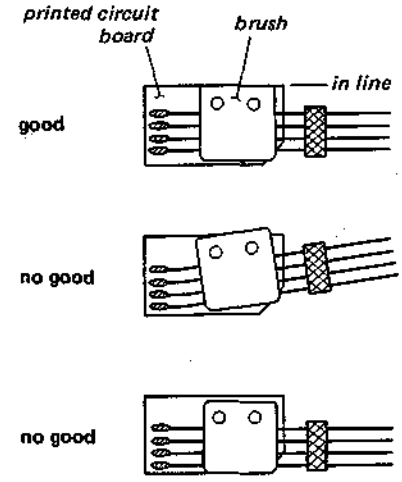
6-9. BRUSH REPLACEMENT

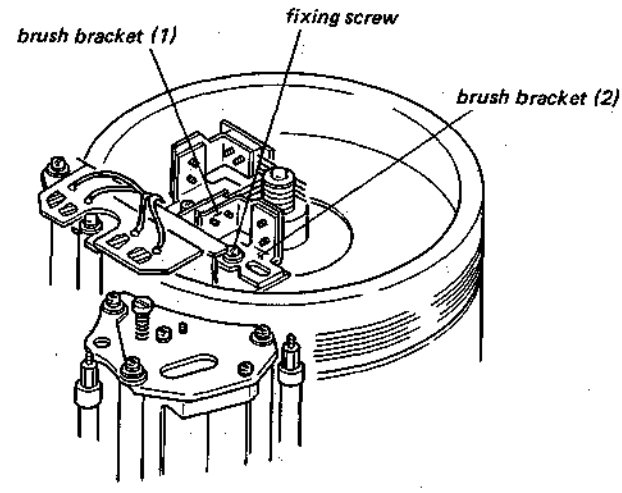
Spare parts of the brush is prepared as the following two types.
1. Brush assembly as shown in figure.
2. Single part of the brush.
Replacement procedure of the single part is described here.
It is necessary to perform the brush height adjustment and brush position adjustment in any type of spare parts.

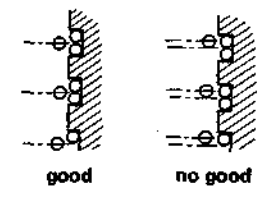
Replacement procedure:

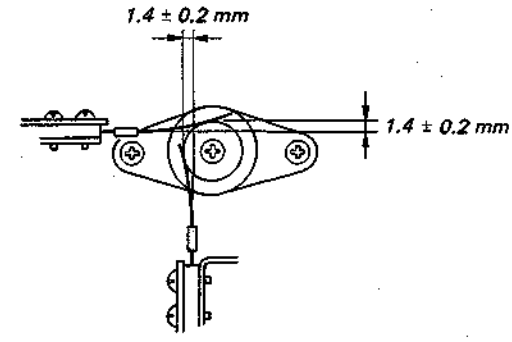
(1) Remove the brush and solder the new brush to the printed circuit board so that the edge of the brush and the printed circuit board are in the same plane.
(2) Install the assembled brush into the brush bracket.




printed circuit board
brush
in line
good
no good
no good


brush bracket (1)
fixing screw
brush bracket (2)


good
no good


1.4 ± 0.2 mm
1.4 ± 0.2 mm

6-10. ADJUSTMENT ITEM TABLE AFTER MAIN PARTS REPLACEMENT

Replacement of Drum Assembly

Slip-ring and Brush Position Adjustment (9-10) ⟶ FWD Back tension Adjustment (8-4) ⟶ Pinch Roller Azimuth Adjustment (9-1-5) ⟶ Tape Run Adjustment at Threading Guide (1) (9-2-1) ⟶ Tape Wrinkle Release Adjustment at Pinch Roller (9-2-2) ⟶ Video Tracking Adjustment (9-3) ⟶ FF/REV Tape Run Overall Adjustment (9-2-6) ⟶ Time Code Head Height Adjustment (9-5-2) ⟶ Time Code Head Zenith Adjustment (9-5-3) ⟶ Audio Head Adjustment (9-6) ⟶ Video Head Dihedral Adjustment (9-8) ⟶ Video Head Azimuth Adjustment (9-9) ⟶ AUDIO/ CTL Head Position Adjustment (9-7) ⟶ Drum Free Speed Adjustment (11-2) ⟶ Drum Lock Phase Adjustment (11-12) ⟶ Switching Position Adjustment (11-11) ⟶ Picture Splitting Compensator Adjustment (11-13) ⟶ DC Balance Adjustment (13-1-1) ⟶ RF 7MHz Adjustment (13-1-2) ⟶ RF 5.8MHz Tuning (13-1-3) ⟶ RF Frequency Response Adjustment (13-1-4) ⟶ Y-RF Balance/ Level Adjustment (13-1-5) ⟶ Chroma-RF Balance/Level Adjustment (13-1-6) ⟶ Record Current Frequency Response Adjustment (13-5-1) ⟶ Y Record Current Adjustment (13-5-2) ⟶ Chroma Record Current Adjustment (13-5-3) ⟶ Overall Frequency Reaponse Ajustment (13-7) ⟶ Rotary Erase Current Adjustment (14-1)

Replacement of Upper Drum Assembly

Upper Drum Eccentricity Adjustment (6-2) ⟶ Slip-ring and Brush Position Adjustment (9-10) ⟶ Video Tracking Adjustment (9-3) ⟶ FF/REV Tape Run Overall Adjustment (9-2-6) ⟶ Time Code Head Height Adjustment (9-5-2) ⟶ Time Code Head Zenith Adjustment (9-5-3) ⟶ Audio Head Adjustment (9-6) ⟶ Video Head Dihedral Adjustment (9-8) ⟶ Video Head Azimuth Adjustment (9-9) ⟶ AUDIO/CTL Head Position Adjustment (9-7) ⟶ Drum Free Speed Adjustment (11-2) ⟶ Drum Lock Phase Adjustment (11-12) ⟶ Switching Position Adjustment (11-11) ⟶ Picture Splitting Compensator Adjustment (11-13) ⟶ DC Balance Adjustment (13-1-1) ⟶ RF 7MHz Adjustment (13-1-2) ⟶ RF 5.8MHz Tuning (13-1-3) ⟶ RF Frequency Response Adjustment (13-1-4) ⟶ Y-RF Balance/Level Adjustment (13-1-5) ⟶ Chroma-RF Balance/Level Adjustment (13-1-6) ⟶ Record Current Frequency Response Adjustment (13-5-1) ⟶ Y Record Current Adjustment (13-5-2) ⟶ Chroma Record Current Adjustment (13-5-3) ⟶ Overall Frequency Reaponse Ajustment (13-7) ⟶ Rotary Erase Current Adjustment (14-1)

Replacement of AUDIO/CTL Head

Audio Head Zenith Adjustment (9-6-2) ⟶ Audio Head Azimuth Adjustment (9-6-3) ⟶ Audio Head Height Adjustment (9-6-1) ⟶ Video Tracking Adjustment (9-3) ⟶ FWD/REV Tape Run Overall Adjustment (9-2-6) ⟶ Audio Head Height Adjustment (9-6-1) ⟶ Audio Head Azimuth Adjustment (9-6-3) ⟶ Audio Head Phase Adjustment (9-6-4) ⟶ AUDIO/CTL Head Position Adjustment (9-7) ⟶ Playback Frequency Response/Level Adjustment (12-6) ⟶ Playback Output Level Adjustment (12-7) ⟶ Record Level Adjusment (12-17) ⟶ Record Current Frequency Response Adjustment (1) (12-18) ⟶ Record Current Frequency Response Adjustment (2) (12-19) ⟶ Audio Erase Current Adjustment (1) (12-9) ⟶ Audio Erase Current Adjustment (2) (12-10) ⟶ Audio Erase Current Adjustment (3) (12-11) ⟶ Record Bias Current Adjustment (1) (12-12) ⟶ Record Bias Current Adjustment (2) (12-16)

Replacement of Time Code Head

Time Code Head Zenith Adjustment (9-5-3) → Time Code Head Tape-to-Head Contact Adjustment (9-5-1) → Time Code Head Height Adjustment (9-5-2) → Video Tracking Adjustment (9-3) → FWD/REV Tape Run Overall Adjustment (9-2-6) → AUDIO/CTL Head Position Adjustment (9-7) → Time Code Playback/Output Level Adjustment (14-4) → Time Code Record Current Adjustment (14-5)

Replacement of Erase Head

Erase Head Zenith Adjustment (9-4) → Video Tracking Adjustment (9-3) → FWD/REV Tape Run Overall Adjustment (9-2-6) → AUDIO/ CTL Head Position Adjustment (9-7)

Replacement of Capstan Motor

Capstan Free Speed Adjustment (11-3) → Pinch Roller Adjustment (9-1) → Tape Run Adjustment at Threading Guide (1) (9-2-1) → Tape Wrinkle Release Adjustment at Pinch Roller (9-2-2) → FWD/REV Tape Run Overall Adjustment (9-2-6) → Vidio Tracking Adjustment (9-3) → AUDIO/CTL Head Position Adjustment (9-7)

Replacement of Pinch Roller

Pinch Roller Self-Alignment Adjustment (9-1-3) → Pinch Roller Zenith Adjustment (9-1-4) → Pinch Roller Azimuth Adjustment (9-1-5) → Pinch Roller Preset Adjustment (9-1-6) → Tape Run Adjustment at Threading Guide (1) (9-2-1) → Tape Wrinkle Release Adjustment at Pinch Roller (9-2-2) → Video Tracking Adjustment (check) (9-3) → FWD/REV Tape Run Overall Adjustment (9-2-6) → AUDIO/CTL Head Position Adjustment (check) (9-7)

Replacement of Threading Ring

Threading Ring Rotation Adjustment (7-10-1) → Ring Drive Gear Engagement Adjustment (7-10-2) → Ring Sensor Position Adjustment (7-10-3) → Threading Slider Assembly End Position Adjustment (7-10-5) → Threading Slider EJECT Position Adjustment (7-10-6) → Release Cam Installing Position Adjustment (7-10-7) → Pinch Roller Stopper Position Adjustment (9-1-2) → Pinch Roller Self-Alignment Adjustment (9-1-3) → Pinch Roller Zenith Adjustment (9-1-4) → Pinch Roller Azimuth Adjustment (9-1-5) → Pinch Roller Preset Adjustment (9-1-6) → Tape Run Adjustment at Threading Guide (1) (9-2-1) → Tape Wrinkle Release Adjustment at Pinch Roller (9-2-2) → Tape Run Adjustment at Correction Guide (A) (9-2-3) → Tape Run Adjustment at 6th Guide (9-2-4) → Video Tracking Adjustment (9-3) → FWD/REV Tape Run Overall Adjustment (9-2-6) → AUDIO/CTL Head Position Adjustment (9-7)

Replacement of Take-up Reel Table

Reel Table Height Adjustment (7-2) → EM-1 Board Mounting Position Adjustment (7-3) → Brake Torque Adjustment (8-3) → FWD/REV Tape Run Overall Adjustment (9-2-6)

Replacement of Supply Reel Table

Reel Table Height Adjustment (7-2) → EM-1 Board Mounting Position Adjustment (7-3) → Brake Torque Adjustment (8-3) → Supply tension Regulator Arm FWD Position Adjustment (7-6) → FWD Back Tension Adjustment (8-4) → Video Tracking Adjustment (9-3) → FWD/REV Tape Run Overall Adjustment (9-2-6)

Replacement of Brake Band

Supply Tension Regulator Arm FWD Position Adjustment (7-6) → FWD Back Tension Adjustment (8-4) → FWD/REV Tape Run Overall Adjustment (9-2-6) → Video Tracking Adjustment (check) (9-3) → AUDIO/CTL Head Position Adjustment (9-7)

Replacement of Take-up Reel Motor

Reel Motor Shaft Slantness Adjustment (7-4) → Reel Table Height Adjustment (7-2) → EM-1 Board Mounting Position Adjustment (7-3) → Take-up Reel Motor Speed Adjustment (11-14) → Take-up Reel Motor Current Sensitive Adjustment (8-7) → Brake Torque Adjustment (8-3) → FWD/REV Tape Run Overall Adjustment (9-2-6) → Video Tracking Adjustment (check) (9-3)

Replacement of Supply Reel Motor

Reel Motor Shaft Slantness Adjustment (7-4) → Reel Table Height Adjustment (7-2) → EM-1 Board Mounting Position Adjustment (7-3) → Supply Reel Motor Speed Adjustment (11-15) → Supply Reel Motor Current Sensitive Adjustment (8-8) → Brake Torque Adjustment (8-3) → Supply Tension Regulator Arm FWD Position Adjustment (7-6) → FWD Back Tension Adjustment (8-4) → FWD/REV Tape Run Overall Adjustment (9-2-6) → Video Tracking Adjustment (check) (9-3) → AUDIO/CTL Head Position Adjustment (9-7)

Replacement of Tension Detector

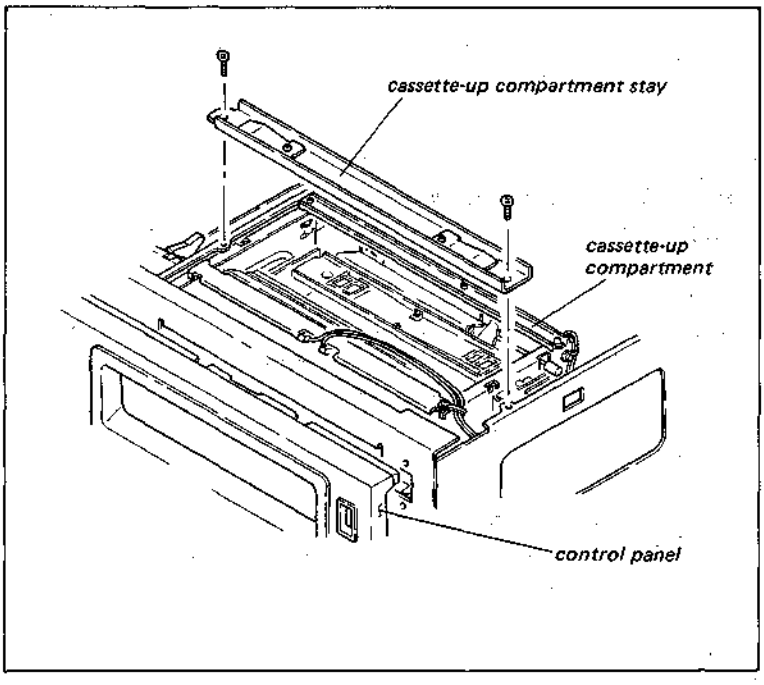
Tension Detector Adjustment (8-5)

SECTION 7
LINK AND DRIVE SYSTEM ALIGNMENT

(PREPARATION)
When the adjustment in this section is attempt, there are few items to need operating as follows.

(1) Removal of Cassette-up Compartment

Remove the upper panel, each side ornamental panels.
Loosen the right and left sides fixing screws of control panel.
Remove the cassette-up compartment stay.
Disconnect the connector of the cassette-up compartment.
And bring up the cassette-up compartment from the machine.

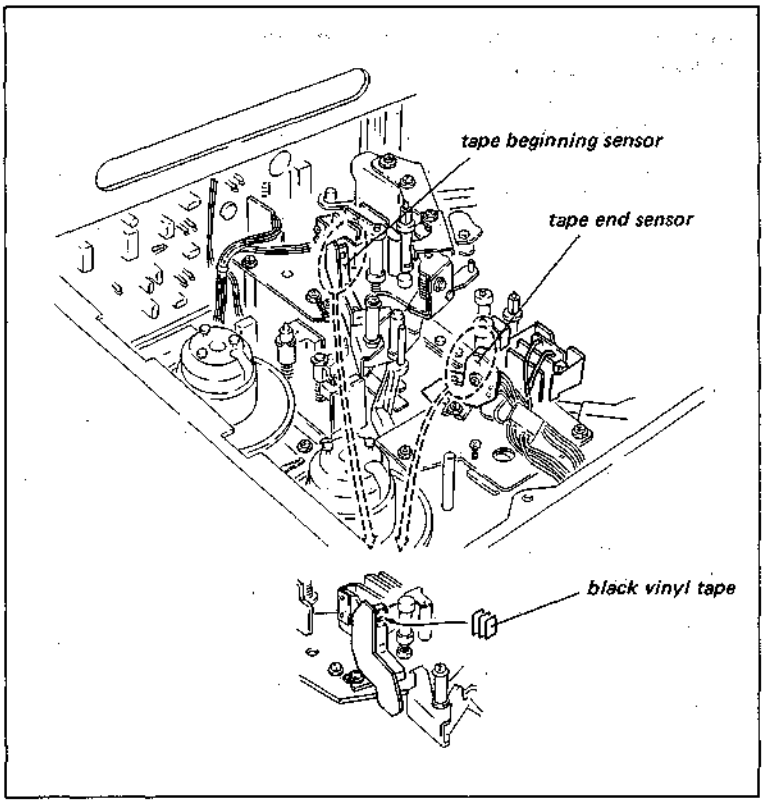


(2) Muting of Tape Beginning Sensor and Tape End Sensor

There are two sensors to detect the tape beginning and the tape end and to operate the AUTO STOP near the supply and take-up reel tables. When the machine is operated without inserting the cassette-tape, it is necessary to mute this function.
Cut a piece of black vinyl tape into a piece of 1 cm x 1.5 cm long and place it over to each photo-transistors. Light will path through one or two pieces of tape so that three pieces of black vinyl tape should be over-lapped.

(CAUTION)

Never forget to remove the black vinyl tape from the two photo-transistors. If the machine is placed into the F.FWD or REW mode without removing the black vinyl tape, the machine cannot detect the tape beginning or tape end. So the machine connot operate the AUTO STOP operation. The tape and the machine are put into the dangerous situation.



(3) Module Extender

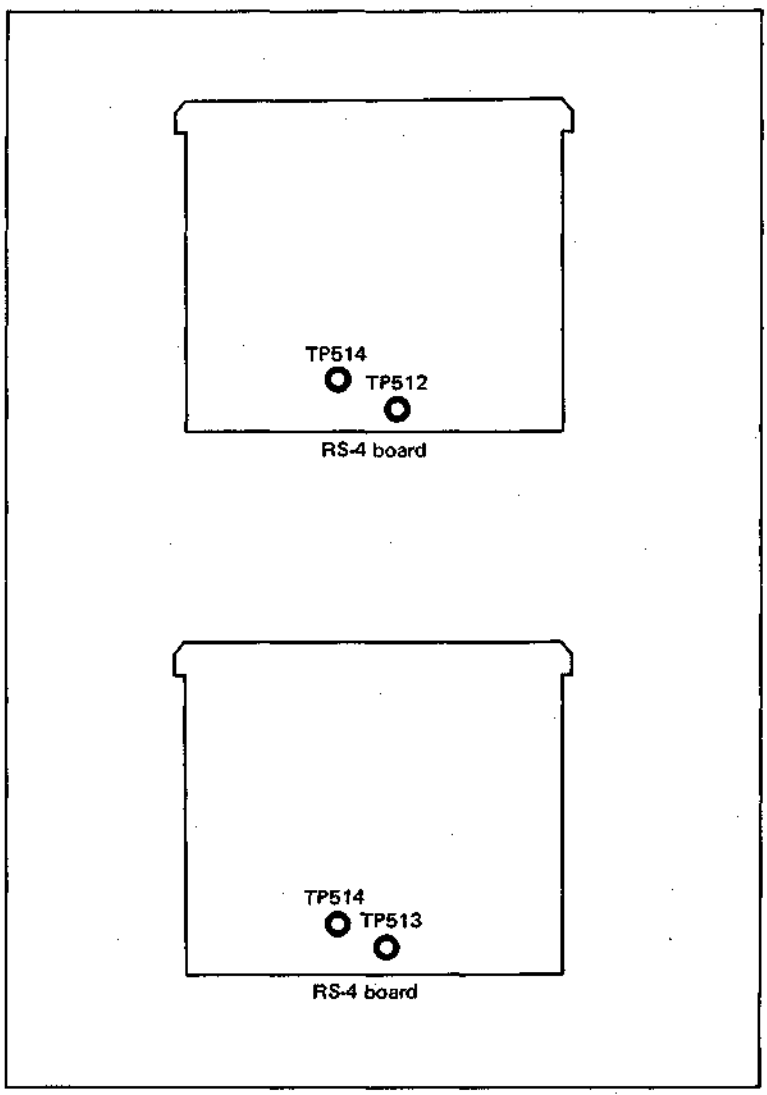
Be sure to turn off power before inserting or removing printed circuit board.
Do not touch the connector of printed circuit board.

(4) Muting of TAPE PROTECTION Signal

When the machine is put into the PLAY, FF or REW mode without inserting the cassette tape, it is necessary to mute the TAPE PROTECTION signal for the tape protection. These operations are as follows.

- Remove the RS-4 board.
- Insert the extension board into this position and insert the RS-4 board to the end of the extension board.

Short between TP512 and TP514/ RS-4 with short clip lead.



(5) Muting of THREADING MOTOR DISABLE Signal

It is necessary to stop the THREADING MOTOR DISABLE signal so that the machine is putted into the threading or unthreading mode without inserting the cassette tape.

These operations are as follows.
Remove the RS-4 board from the machine
Insert the extension board into this position and insert the RS-4 board to the end of the extension board.
Short between TP513 and TP514/ RS-4 with short clip lead.

(6) Cassette Insertion in Alignment

The tape does not insert except the particular appointment in this alignment.

(7) Definition of Mode and Procedure to Put the Machine into the Certain Mode without Cassette Tape.

•EJECT Completion Mode.

The states that the 5th guide, 6th guide and the supply tension regulator arm return to the EJECT position completely. The machine is put into the mode as mentioned above to press the EJECT button.

•STOP Mode

The states that the threading ring turns into the clockwise direction as far as it will go and the pinch roller is positioned in front of the capstan shaft.

Turn on the power after mute the functions of tape beginning and end sensors.

One or two seconds later, start the threading operation automatically and put the machine into the STOP mode.

•PLAY Mode

Stop the functions of the TAPE PROTECTION signal and THREADING DISABLE signal.

Put the machine into STOP mode as mentioned above and press the PLAY button.

Grasp the supply and take-up reel tables by hand. The machine is putted into the PLAY mode automatically.

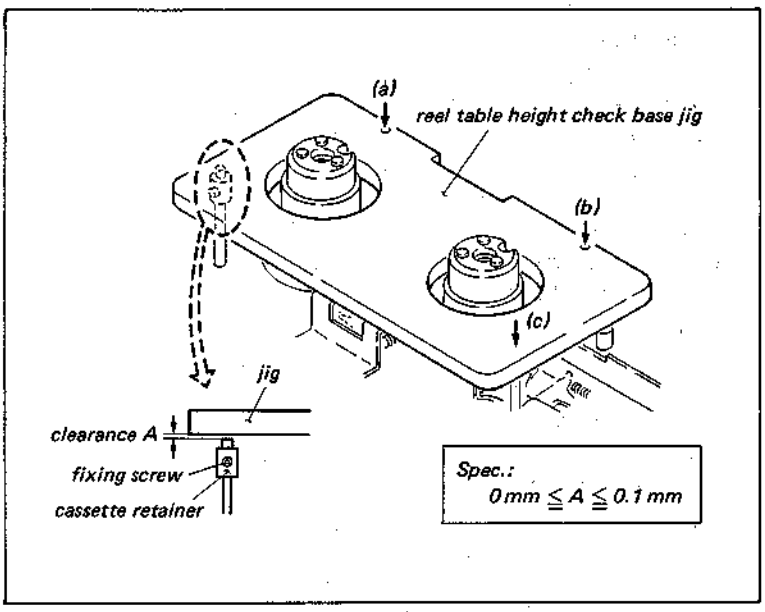
7-1. CASSETTE RETAINER HEIGHT ADJUSTMENT

Tool:
Reel table height check base jig
Thickness gauge

Mode:STOP

Check procedure:
Check that the clearance between the base jig and the cassette retainer meets the required specification while pushing lightly the reel table height check base jig marked (a), (b) and (c) toward the chassis.

Adjustment procedure:
Adjust the position of the cassette retainer to meet the required specification.



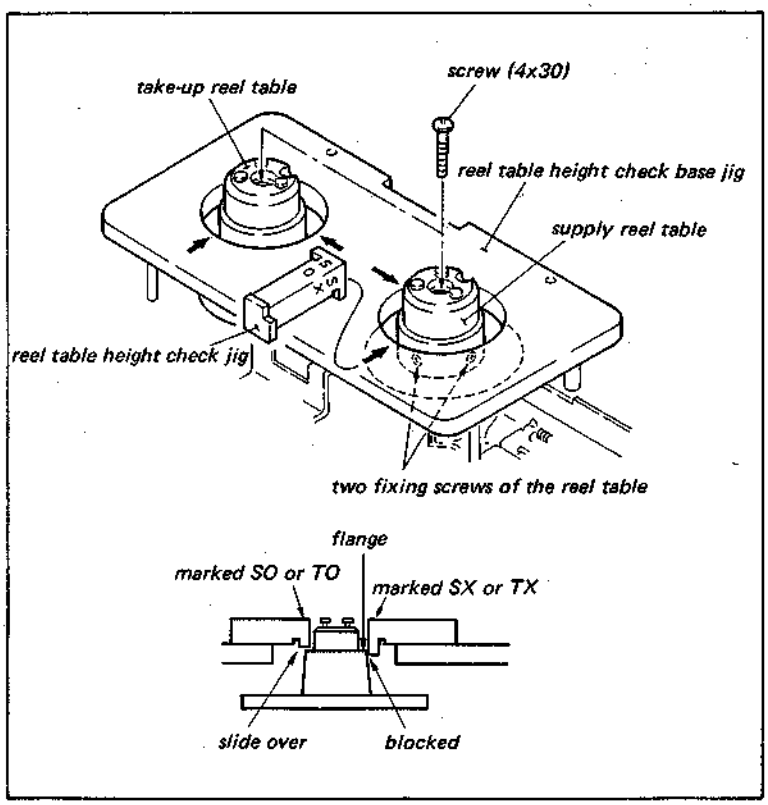
7-2. REEL TABLE HEIGHT ADJUSTMENT

Since the reel table height from the chassis functions as the reference height in the entire tape thread and run system, it is required that the reel table height adjustment should be attempted carefully, and deliberately.

Tool:
Reel table height check base jig
Reel table height check jig
Screw (4 x 30)
Allen wrench (each edge has 1.5mm)

Mode: Power off mode

Check procedure:
Check that the probes of the reel table height check jig marked "SO" and "TO" can slide over the reel table leaving a space between the jig and the reel table, while the probes marked "SX" and "TX" are blocked, and cannot slide over reel table.
Use the "SO" and "SX" probes for the supply reel table.
Use the "TO" and "TX" probes for the take-up reel table.



Adjustment procedure:
(1) Thread the screw (4 x 30) at the center of the reel table as far as it will go.
(2) Loosen the two fixing screws of the reel table.
(3) Turn the threaded screw to meet the required specification.
When heigher the reel table, press it lightly while turning the screw to the counterclockwise direction.
(4) After adjusting, tighten the screws at the side of reel table and check height again.

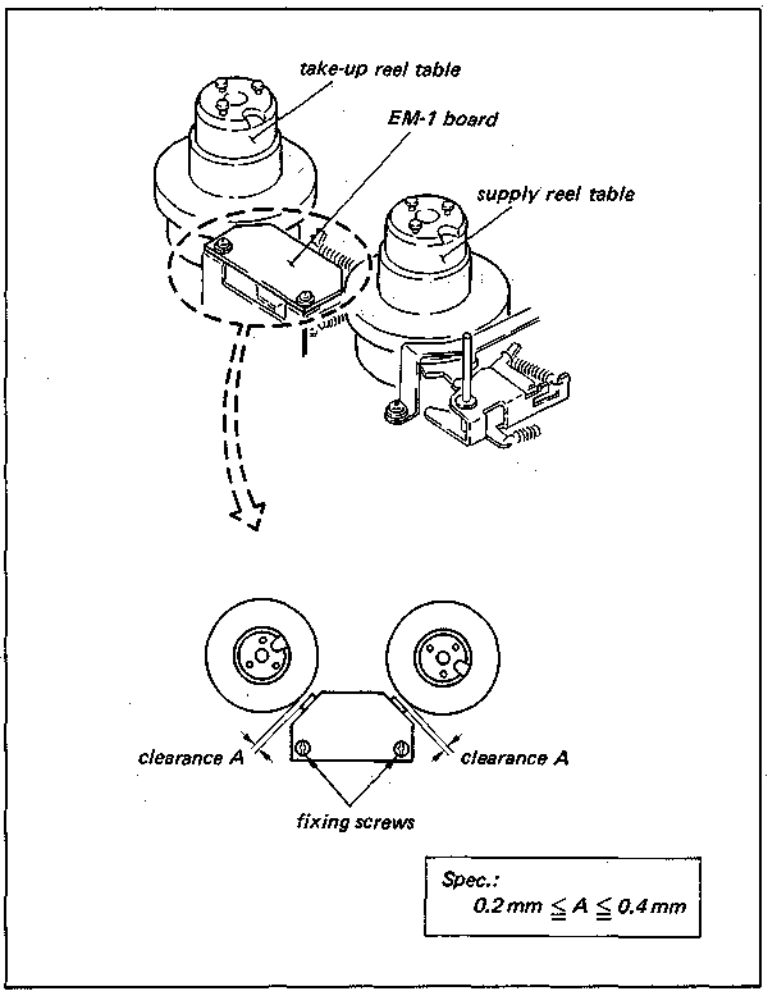
7-3. EM-1 BOARD MOUNTING POSITION ADJUSTMENT

Tool: Thickness gauge

Mode:STOP

Check procedure:
Check that the clearance meets the required specification.

Adjustment procedure:
Adjust the EM-1 board mounting position.



7-4. REEL MOTOR SHAFT SLANTNESS ADJUSTMENT

This adjustment is required only when the reel motor is replaced or removed.

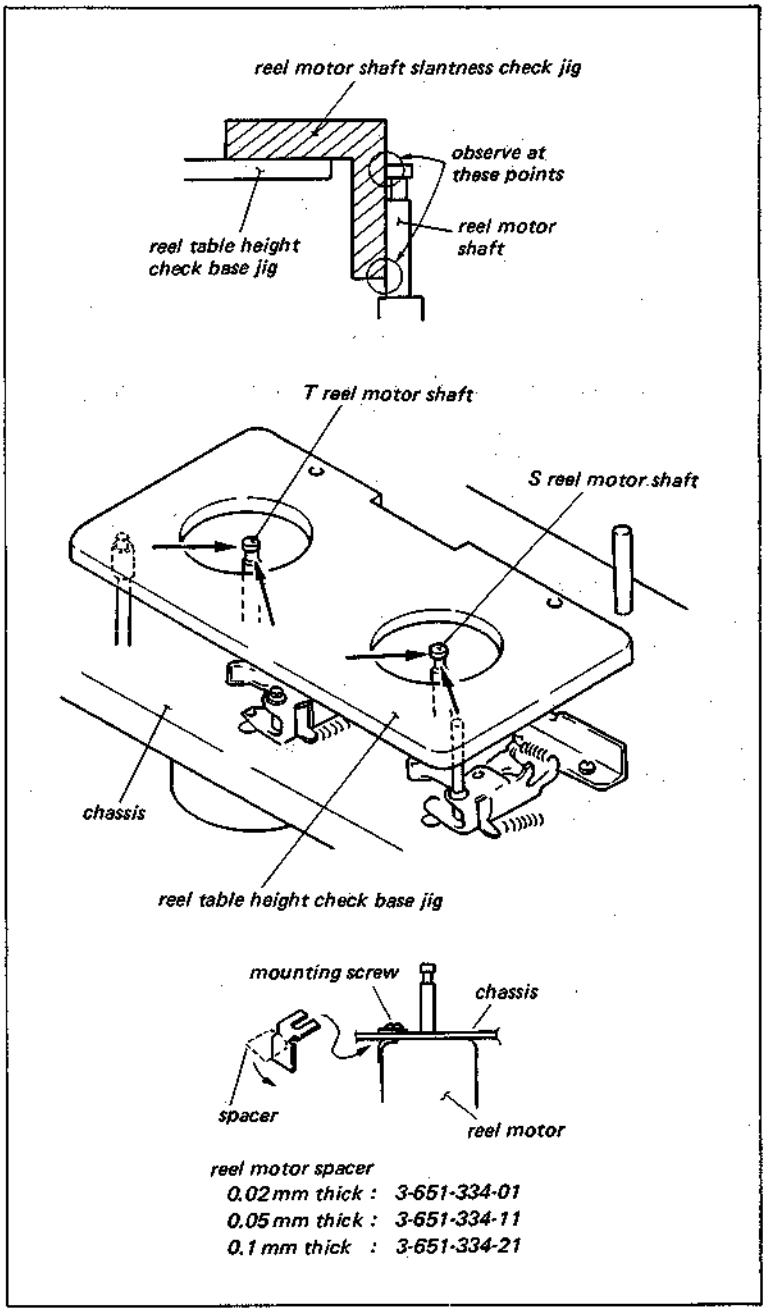
Tool:
Reel table height check base jig
Reel motor shaft slantness check jig

Mode:EJECT completion

Preparation:
Loosen the two screws at the side of reel table and remove the reel table.

Check procedure:
Check that there is little clearance between the jig and the reel motor shaft at the upper or the lower portion as visual, when the reel motor shaft slantness check jig is set on the reel motor shaft from two directions as shown in figure.

Adjustment procedure:
Loosen the three fixing screws. Insert the reel motor spacer between the reel motor and the chassis to meet the required specification.



reel motor spacer
0.02 mm thick : 3-651-334-01
0.05 mm thick : 3-651-334-11
0.1 mm thick : 3-651-334-21

7-5. S TENSION REGULATOR ARM FF POSITION ADJUSTMENT

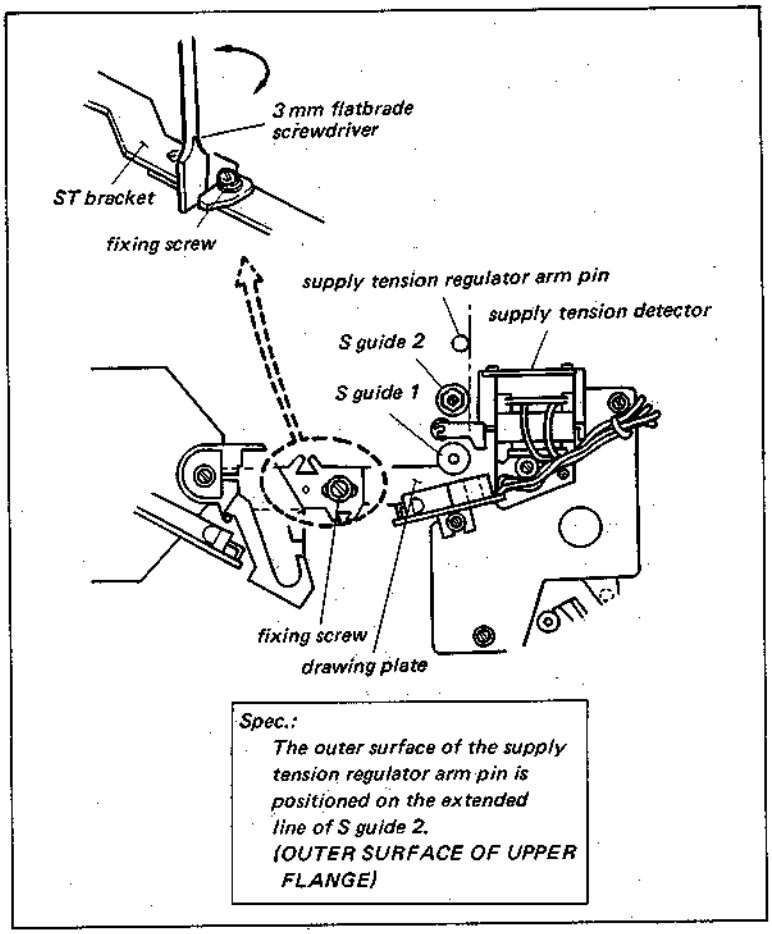
Tool: Extension board

Mode: STOP

Preparation:
(1) Mute the tape beginning sensor and the tape end sensor.
(2) Mute the TAPE PROTECTION signal and the THREADING MOTOR DISABLE signal.
(3) Turn the power on and put the machine into STOP mode. Turn the power off.

Check procedure:
Check that the positional relationship between the S tension regurator arm pin and the S guide (2) meets the required specification.

Adjustment procedure:
(1) Loosen the fixing screw of the ST bracket about 1/2 turns.
(2) Insert a flatbrade 3mm screwdriver into a notch, and move the ST bracket by turning the screwdriver slowly to meet the required specification.
(3) Tighten the screw while pressing the ST bracket against the drum.

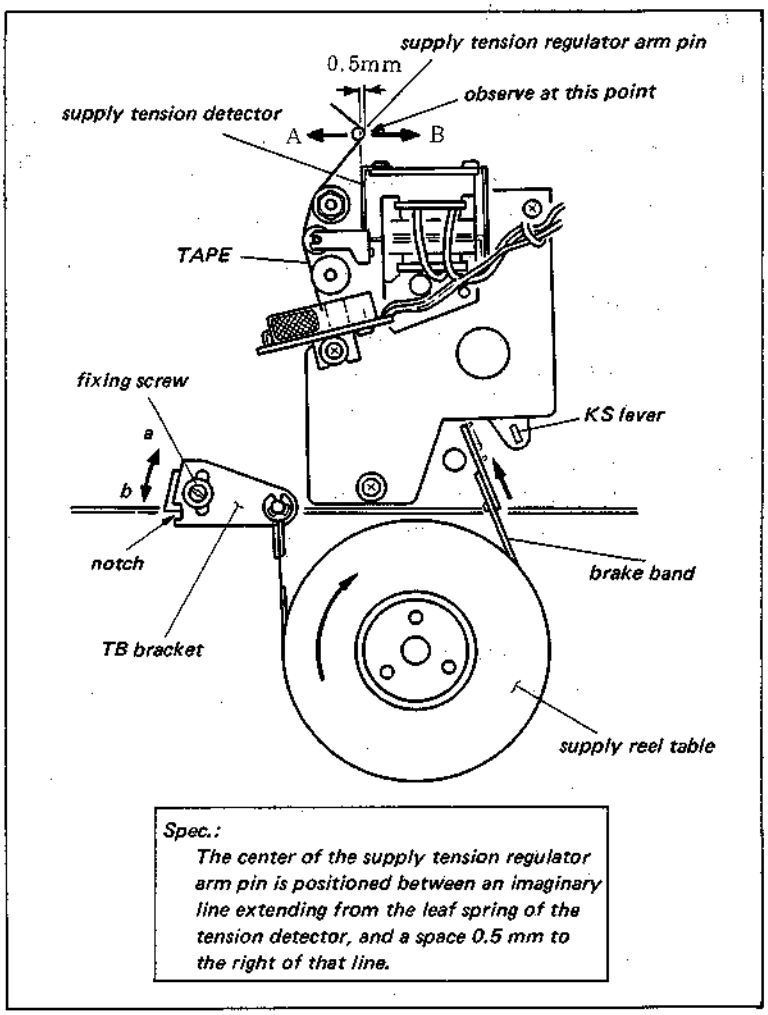


7-6. SUPPLY TENSION REGULATOR ARM FWD POSITION ADJUSTMENT

Tool: KCS-20 cassette tape

Check procedure:
While playing back the begining of KCS-20 cassette tape, check that positional relationship of the supply tension regulator arm pin and the supply tension detector meets the specification.
If not, perform the adjustment procedure.

Adjustment procedure:
(1) Remove the KCS-20 cassette tape.
(2) Loosen the fixing screw about 1/4 turn.
(3) Insert a flatblade 3mm screwdriver into the notch of the TB bracket, and move the TB bracket in the direction shown by the arrow. Check that the positional relationship is in the specification in the same manner as check procedure.
If supply thension regulator arm pin is positioned at A side then, turn the TB bracket to "a" direction.
And if it is on B side, turn it to "b" direction.
(4) Perform FWD back tension adjustment.



Spec.:
The center of the supply tension regulator arm pin is positioned between an imaginary line extending from the leaf spring of the tension detector, and a space 0.5 mm to the right of that line.

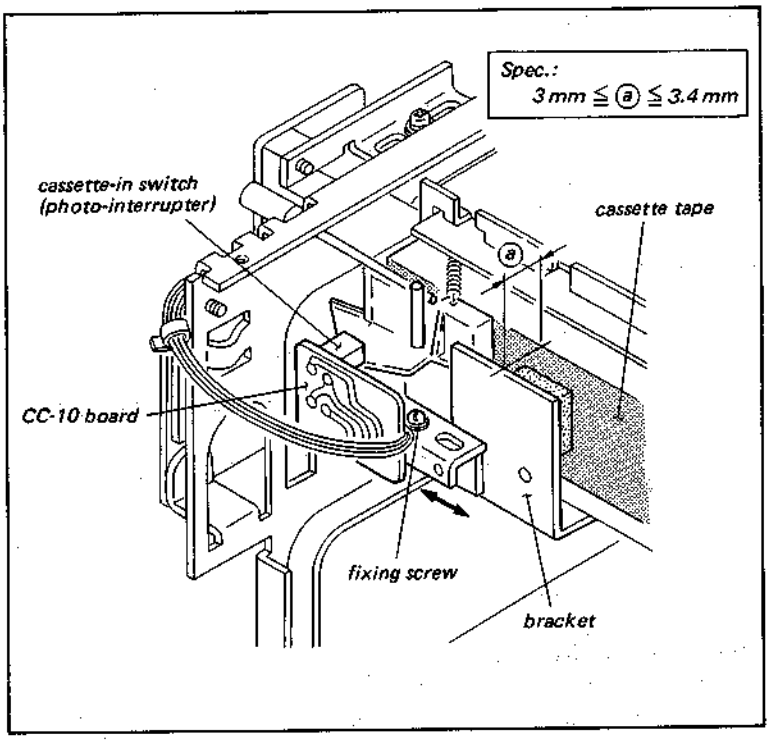
7-7. CASSETTE-UP COMPARTMENT ADJUSTMENT

7-7-1. IN Switch Position Adjustment

Tool:
KCA-60 cassette tape
Thickness gauge
Circuit tester

Preparation:
(1) Connect the connector CN19 of the harness for cassette-up compartment and the terminal on the CC-9 board with the jumper leads.

connector of harness	terminal on CC-9 board
4 pin (5 V) ←——→	4 pin/CN1
5 or 2 pin (GND) ←——→	5 or 2 pin/ CN1



(2) Turn on the power.

Check procedure:
(1) Connect the circuit tester to 2 terminal on CC-9 board.
(2) Insert a KCA-60 cassette tape slowly.
(3) Check that the clearance between the front side of the cassette tape and the bracket of cassette-up compartment meets the required specification when the circuit tester is turned "H" level.(about 5 V)

Adjustment procedure:
Adjust the position of the cassette-in switch in the direction of the arrow to meet the required specification.
Adjusting procedure;
Insert a 3.3mm thickness gauge between cassette tape and bracket.
Adjust the position of the cassette-in switch so that the tester is turned to "H" in this position.

7-7-2. DOWN Switch Position Adjustment

Tool: Circuit tester

Preparation:

(1) Connect the connector of the harness for cassette-up compartment and the terminal on CC-9 board with the jumper leads.

connector of harness	terminal on CC-9 board
4 pin (5 V) ←→	4 pin/CN1
5 or 2 pin (GND) ←→	5 or 2 pin/ CN1

(2) Turn on the power.

Check procedure:

(1) Connect the circuit tester to 5 terminal on CC-9 board.

(2) Turn the white colored gear on the right side of the cassette-up compartment in the clockwise direction.

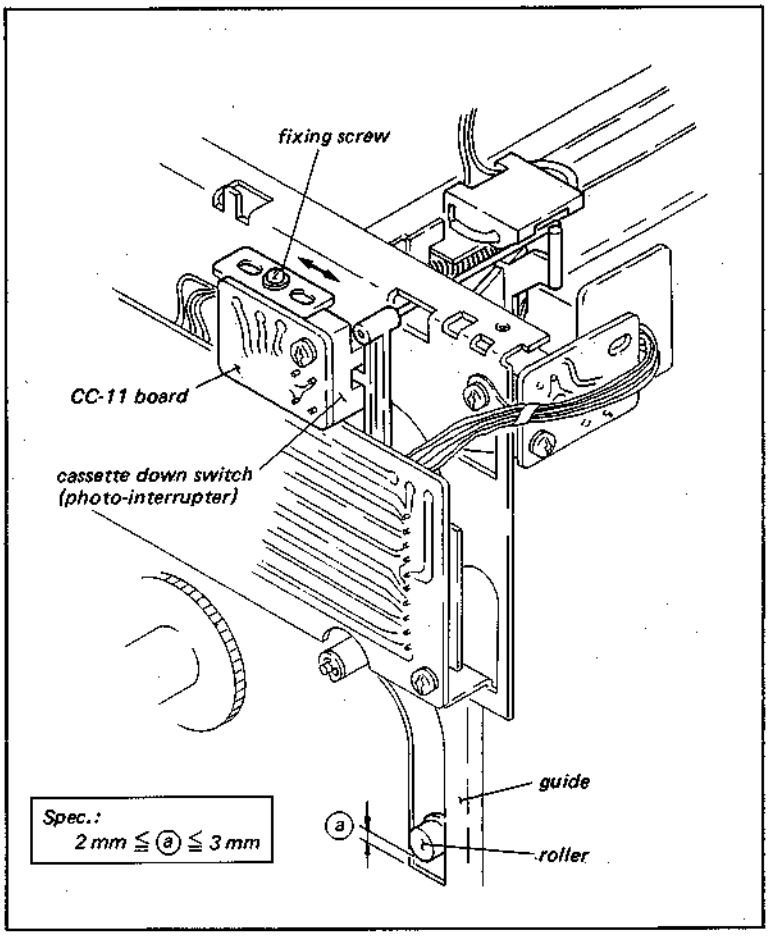
(3) When the circuit tester is turned to "H", check that the clearance between the roller and the guide meets the required specification.

Adjustment procedure:

Adjust the position of the cassette-down switch in the direction of the arrow to meet the required specification.

Adjusting procedure;

Turn the gear on the right side so that the clearance between the roller and the guide is 2.2mm clearance. Adjust the position of the cassette-down switch so that the circuit tester is turned to "H" in this position.



7-8. SKEW SOLENOID MOUNTING POSITION ADJUSTMENT

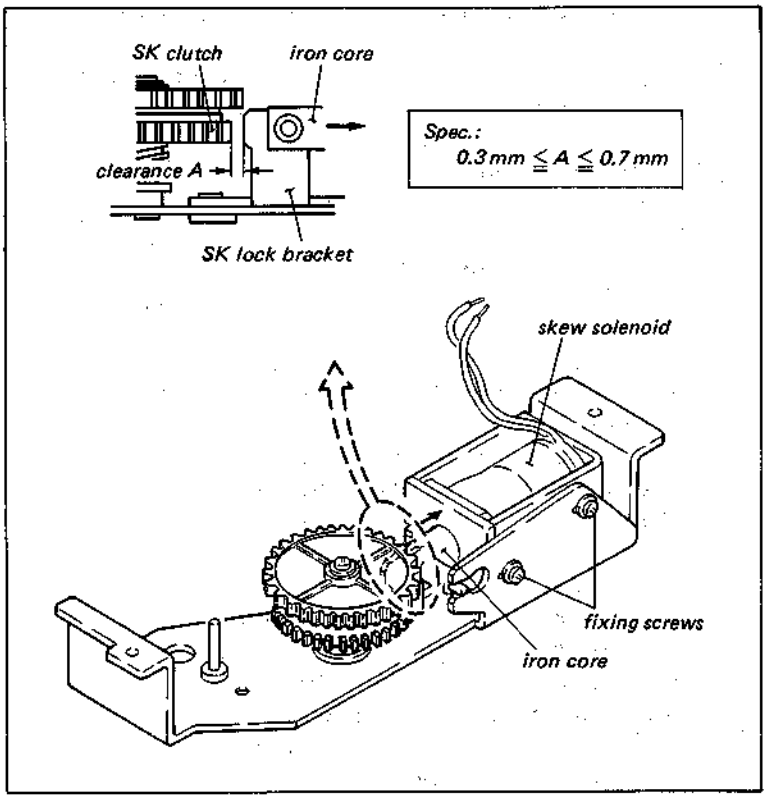
Check procedure:

(1) Push the iron core into the fully energized position as far as it will go.

(2) Check that the clearance between the white colored SK clutch and SK lock bracket meets the required specification as visual.

Adjustment procedure:

Adjust the mounting position of the skew solenoid to meet the required specification.



7-9. SUPPLY TENSION SOLENOID MOUNTING POSITION ADJUSTMENT

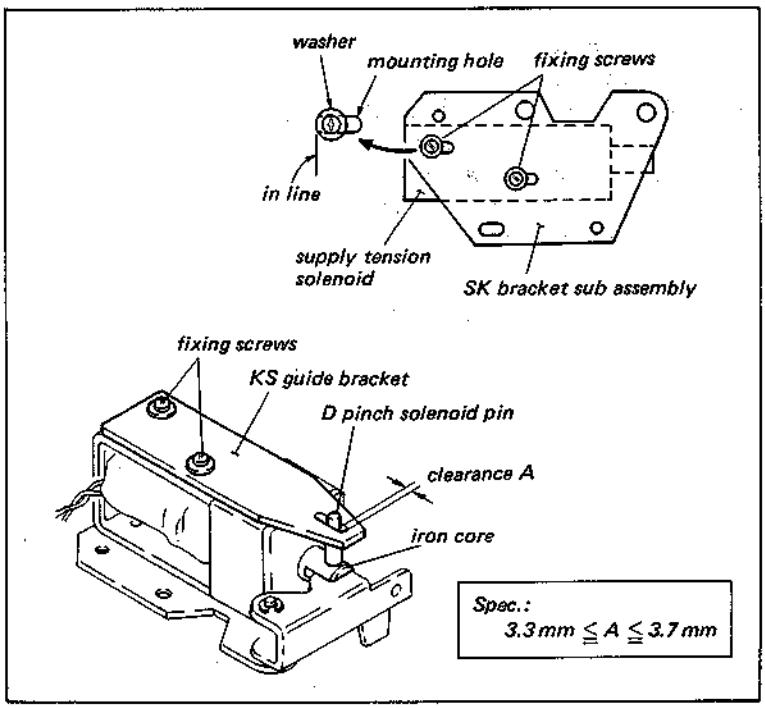
Remove the supply tension solenoid from the machine in this adjustment.

Tool: Thickness gauge

Adjustment procedure:

(1) Attach the supply tension solenoid to the KS bracket sub assembly so that meets the relationship between the washer and the bracket as shown in figure.

(2) Push the iron core into the energized position with finger, and attach the KS guide bracket so that the positional relationship between KS guide bracket and D pinch solenoid pin meets the specification.



7-10. THREADING SYSTEM ADJUSTMENT

7-10-1. Threading Ring Rotation Adjustment

This adjustment is required only when the threading ring is replaced or removed. It is usually not required.

Adjustment procedure:

(1) Loosen the screw of the ring sensor.

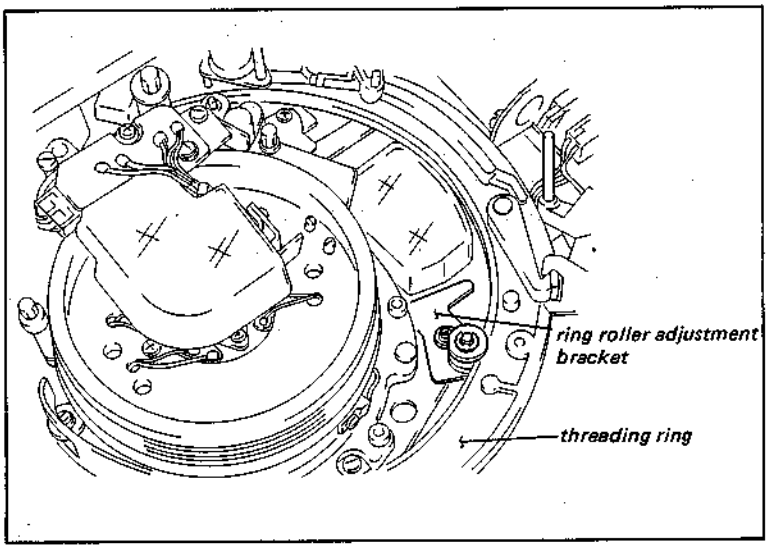
(2) Cancel the engagement of the ring drive gear and the threading ring.

(3) Remove the protector (R) above the ring roller adjustment bracket.

(4) Adjust the position of the ring roller adjustment bracket to meet the required specification.
Adjusting procedure;
Insert a 0.3mm thick paper between the threading ring and the ring roller. Paper of this maintenance manual is 0.1mm thick so that the three fold becomes 0.3mm thick.

(5) Check that the rotation of the threading ring is smooth when it rotates to clockwise and counterclockwise directions several times with finger.
(If rotation becomes heavy in specific position, perform the procedure (4) in that position.)

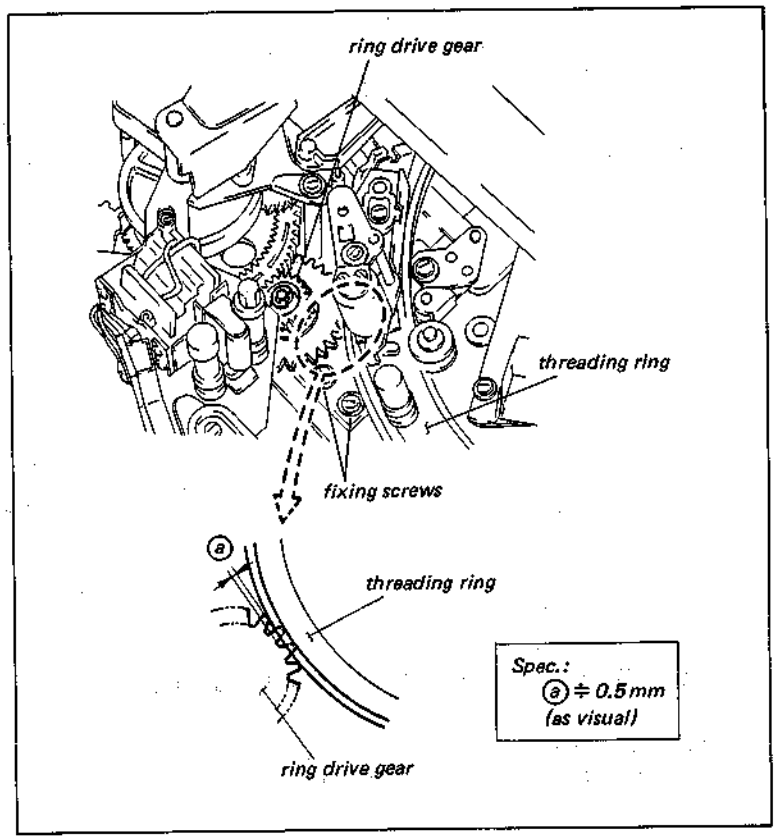
(6) After this adjustment, perform the sec.7-10-2 Ring Drive Gear Engagement Adjustment and sec.7-10-3 Ring Sensor Position Adjustment.



7-10-2. Ring Drive Gear Engagement Adjustment

Mode:
Engage the 5th guide in the V guide to turn the pully of threading motor with finger.

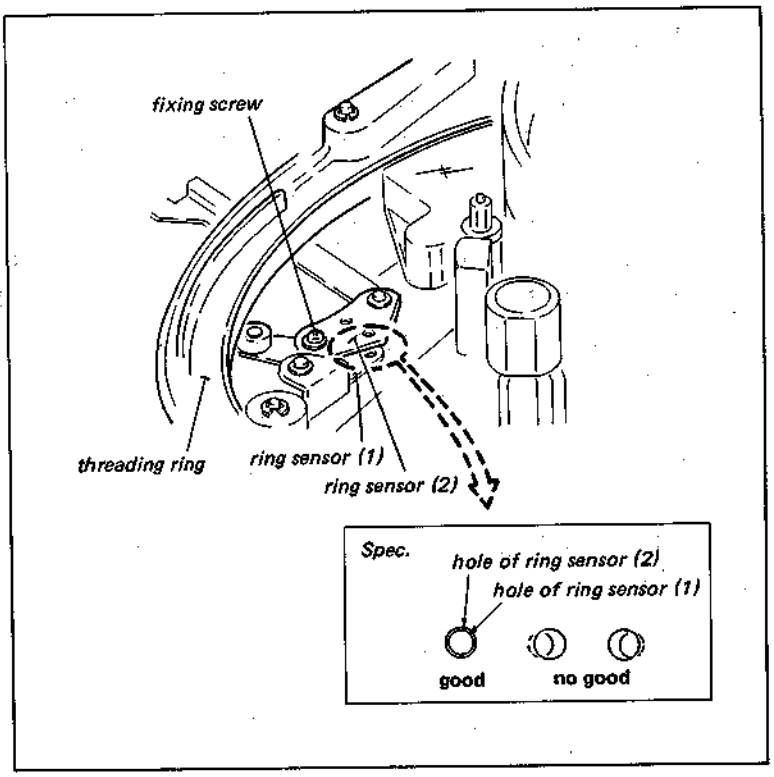
Adjustment procedure:
(1) Adjust the ring drive gear position so that the positional relationship between the ring drive gear and the threading ring meets the required specification.
(2) Repeat the threading/unthreading mode two or three times and check that the rotation are smooth.
(3) After adjustment, perform the Ring Sensor Position Adjustment.



7-10-3. Ring Sensor Position Adjustment

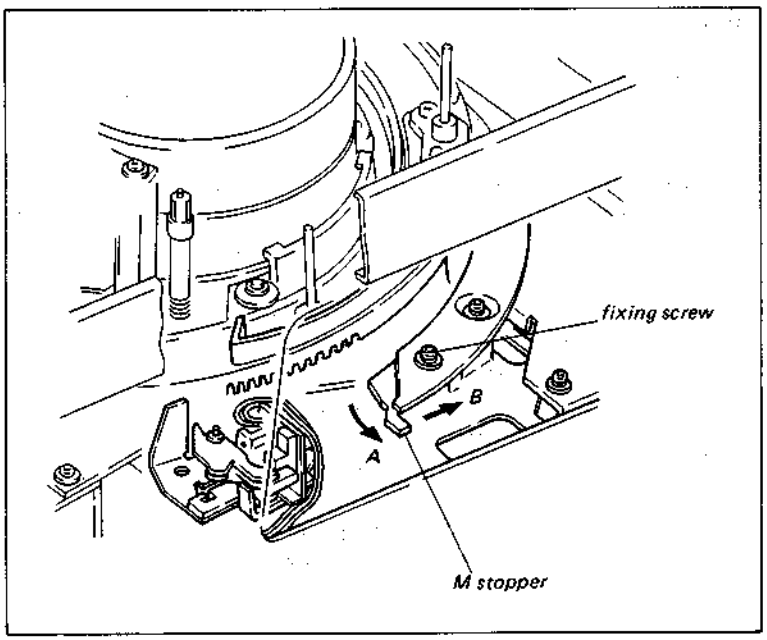
Mode:EJECT completion

Adjustment procedure:
Remove the screw and put the ring sensors (1) and (2) so that the positional relationship of their holes meets the required specification.



7-10-4. M Stopper Mounting Position Adjustment

Adjustment procedure:
Install the M stopper to put aside the A and B directions as far as it will go.



7-10-5. TH Holder End Position Adjustment

Check procedure:
(1) Insert a KCA-60 cassette tape (use the end portion of the tape).
(2) Turn off power in the moment when the pinch roller comes in front of the audio/CTL head.
(3) Check that the clearance B meets the required specification (1) as shown in Fig.2. If not, perform the following adjustment.
(4) Turn on power. Put the machine into the STOP mode.
(5) Check that the positional relationship between the roller and the M stopper meets the required specification (2) as shown in Fig.3.
(6) Repeat the EJECT and STOP modes two or three times. Check as procedure (5).

Adjustment procedure:
(1) Adjust the position of the TH holder to meets the required specification (1).
(2) After adjustment, check as procedures (4) to (6) of check procedure.

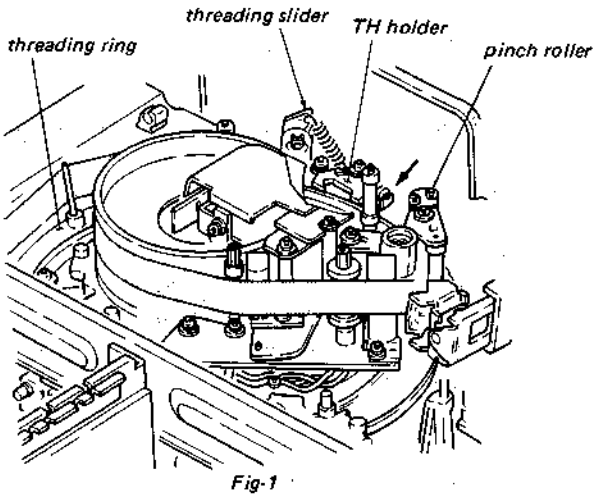
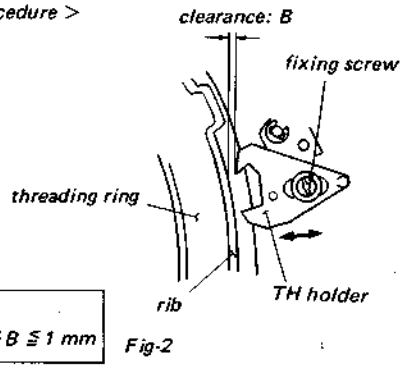


Fig-1

< adjusting procedure >



Spec (1):
0.5 mm ≦ B ≦ 1 mm

Fig-2

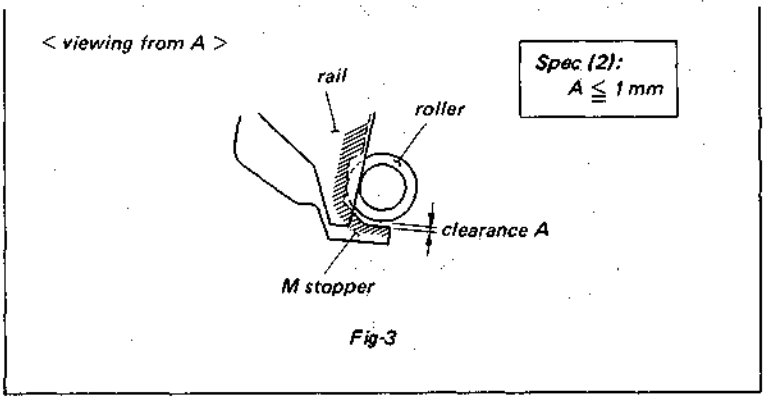
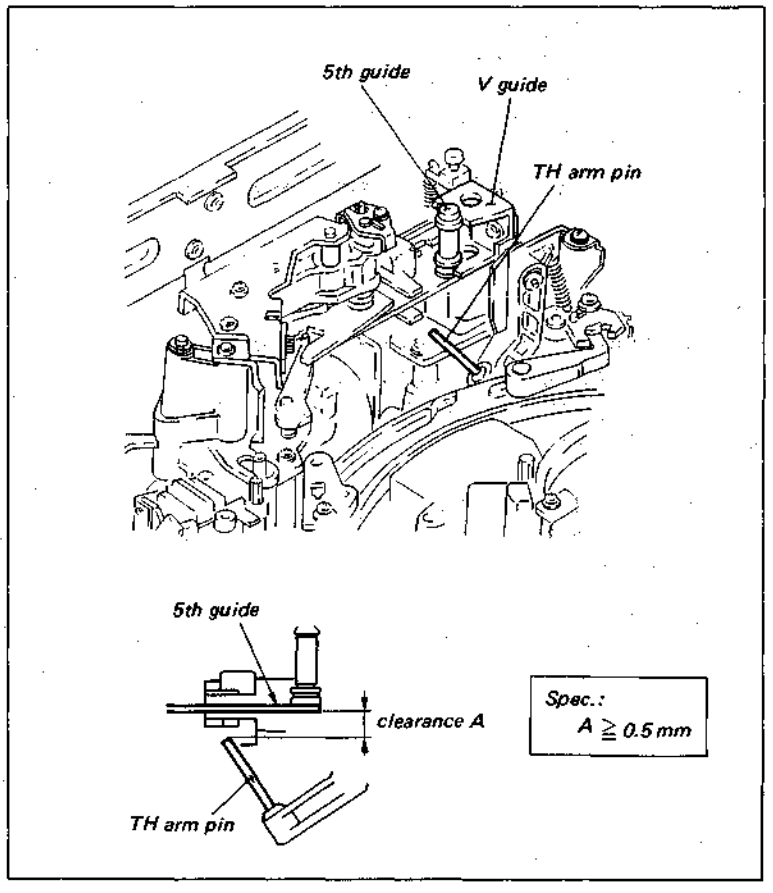


Fig-3

7-10-6. Threading Slider EJECT Position Adjustment

Mode:EJECT completion

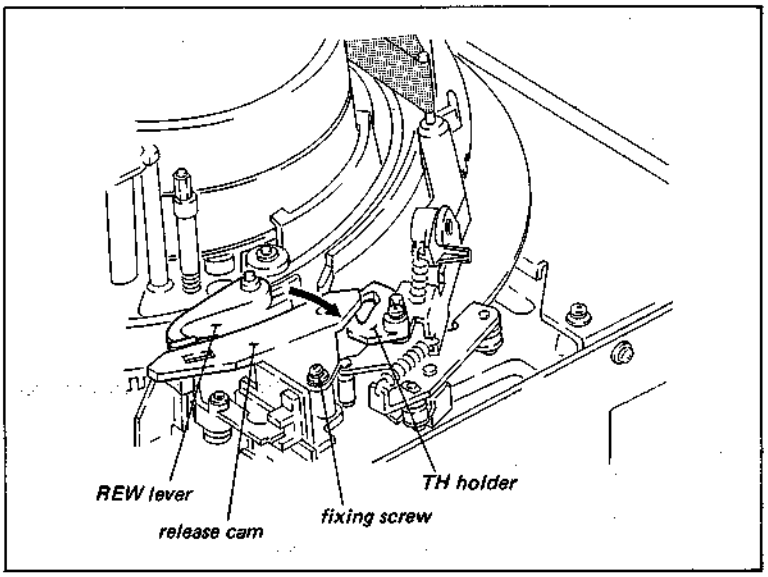
Check procedure:
Check that the clearance between the 5th guide and the TH arm pin meets the required specification.



7-10-7. Release Cam Installing Position Adjustment

Check procedure:
(1) Insert a KCA-60 cassette tape (use the beginning portion of the tape) and put the machine into the STOP mode.
(2) After turn off the power, turn on again and put the machine into unthreading mode.
(3) Check that the REW lever lockes to the TH holder.

Adjustment procedure:
(1) Adjust the position of the release cam in the direction of the arrow so that meets the specification.
(2) After this adjustment, check as the check procedure.

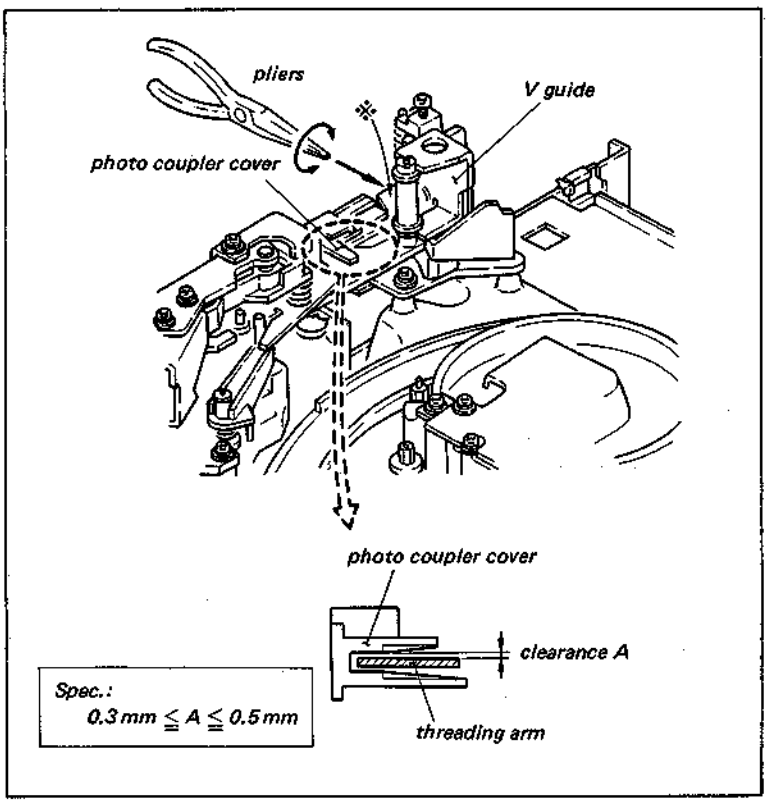


7-10-8. Photo Coupler Cover Height Adjustment

Mode:STOP

Check procedure:
Check that the clearance between the threading arm and the photo coupler cover meets the required specification.

Adjustment procedure:
Adjust to bend the * marked portion of the V guide with pliers.



7-10-9. 5th Guide Operating Position Adjustment

Tool:KCS-20 cassette tape

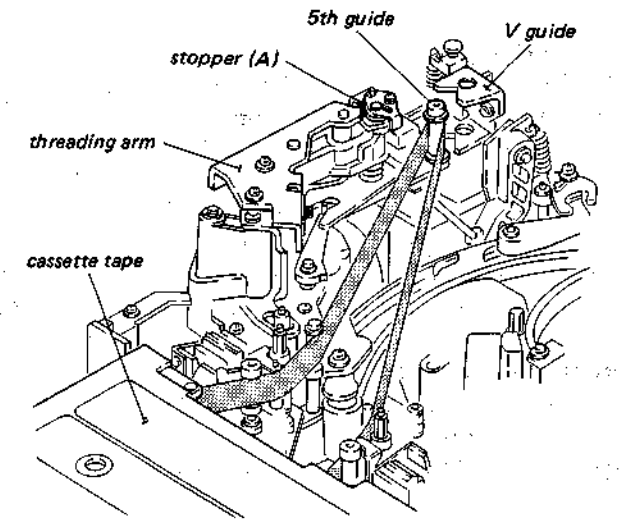
Mode:STOP←→EJECT

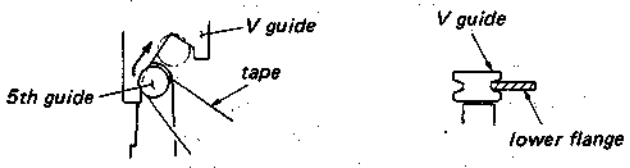
Check procedure:

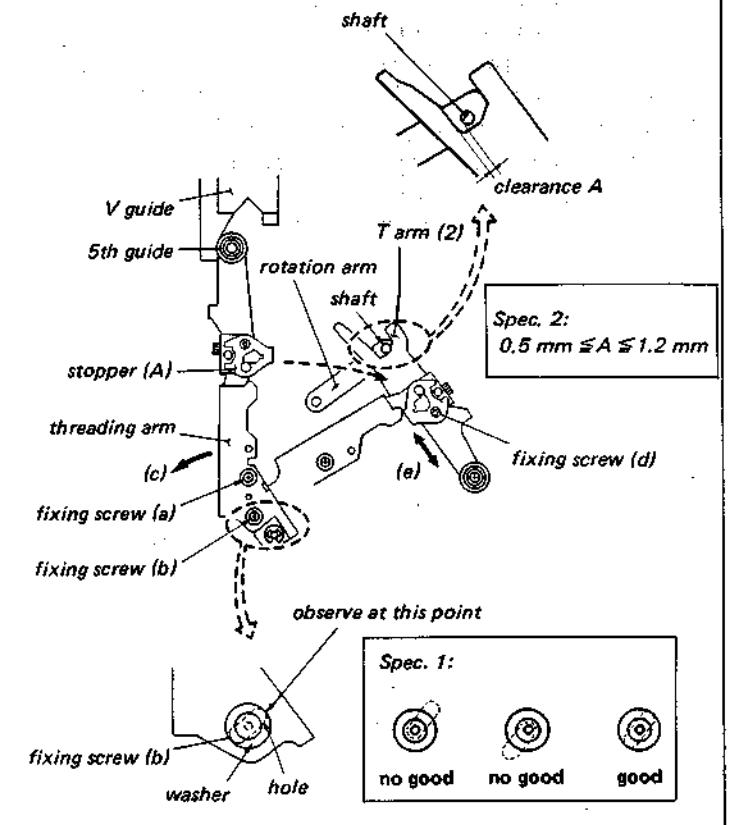
(1) Energize the tape beginning/ end sensors.
(2) Put the KCS-20 cassette-tape (use the end portion of the tape). Turn the T reel hub in the counterclockwise direction with finger as far as it will go.
(3) Insert the cassette-tape to the machine in the power off mode.
(4) Turn on the power and put the machine into the threading mode. Check that the 5th guide fits the V guide as shown in figure.
(5) Repeat the EJECT and STOP modes several times. Check again.

Adjustment procedure:

(1) Remove the cassette tape.
(2) Put the machine into STOP mode. Put the 5th guide on the position as shown in figure according to turn the pully of threading motor with finger.
(3) Loosen the fixing screws (a) and (b), and slide the threading arm in the direction of the arrow (c). Adjust the position of threading arm so that the relationship between the washer of screw (b) and screw hole of threading arm meets the specification (1).
(4) Turn the pully of threading motor so that the T arm (2) is in the position as shown in figure.
(5) Loosen the fixing screw (d) and then slide the stopper (A) in the direction of the arrow (e). Adjust that the positional relationship of the rotation arm shaft and the T arm (2) meets the specification (2) as shown in figure, and tighten the screw.







7-10-10. 5th Guide Unthreading Position Adjustment

Mode:STOP EJECT completion

Check procedure:

(1) Put the machine into STOP mode once and put into EJECT completion mode by pushing EJECT button.

(2) Check that the clearance between the 5th guide and the 5G holder meets the required specification.

Adjustment procedure:

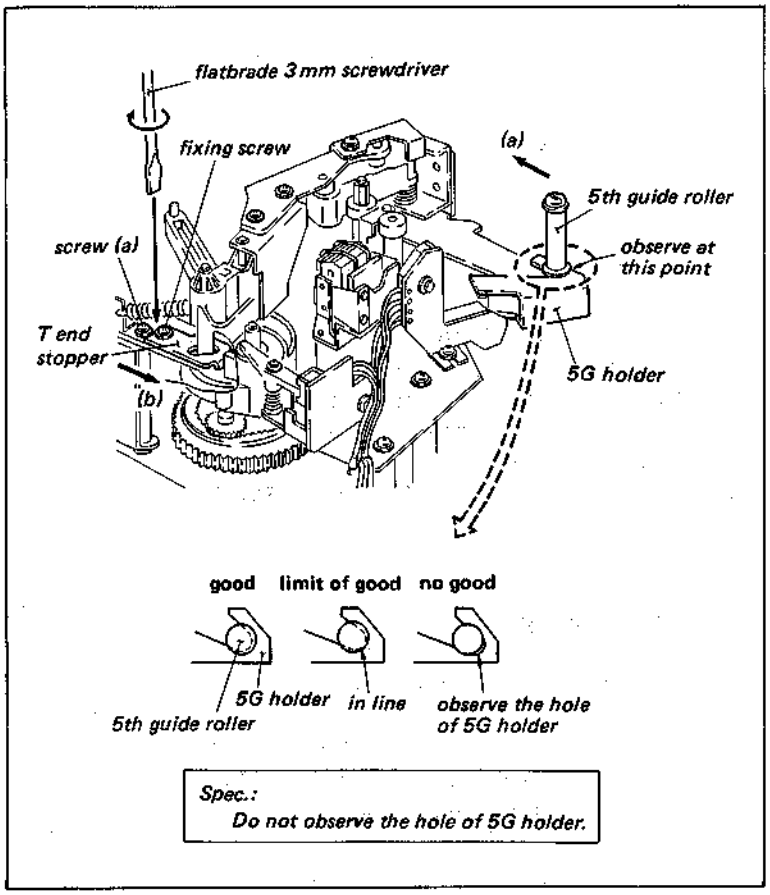
(1) Put the machine into the EJECT completion mode.

(2) Loosen the fixing screw about two turns.

(3) Rotate the pully of the threading motor two or three turns so that the 5th guide roller fits into the 5G holder.

(4) Tighten the fixing screw once, and loosen it about 1/2 turn.

(5) Insert a flatbrade 3mm screw driver between the T end stopper and the screw (a) and turn the screwdriver in the direction of the arrow. Move the T end stopper in the direction of the arrow (b) with the screwdriver until the 5th guide roller gets to move in the direction of the arrow (a) and tighten the screw.



7-10-11. T End Sensor Position Adjustment

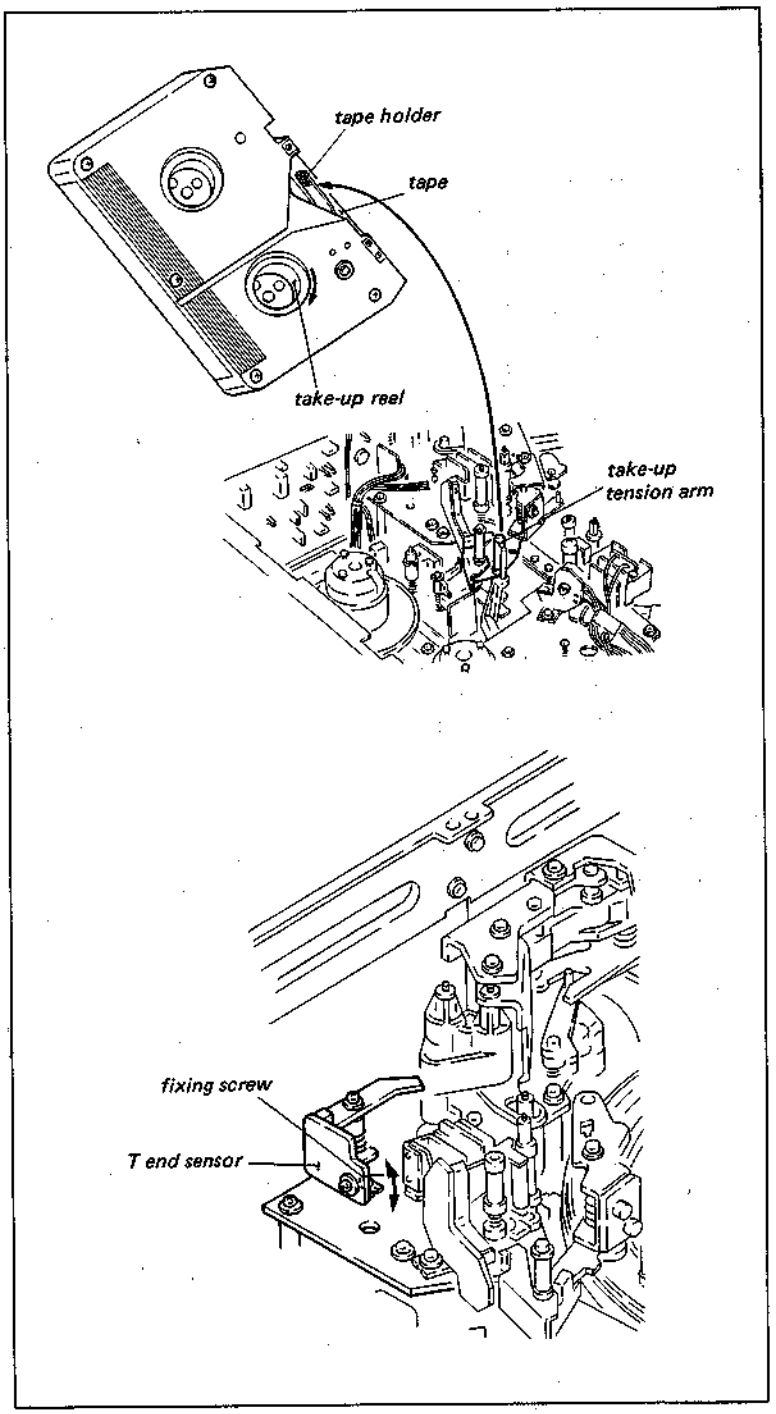
Tool: KCS-20 or KCA-60 cassette tape

Check procedure:

(1) Turn off the power.
(2) Turn the take-up reel hub of cassette tape with finger, and remove the slack of tape.
(3) Fully open the lid of cassette tape and insert the cassette tape so that the take-up tension arm is placed between the cassette tape and the tape holder.
(4) Turn the pully of the gear box and bring the take-up tension arm into contact with the tape.
(5) Turn on the power. Check that the machine is putted into the threading mode after the take-up tension arm moves toward the reel table side once.

Adjustment procedure:

Adjust the position of the T end sensor to meet the required specification.



7-10-12. Take-up Tension Arm, Unthreading Position Adjustment

Tool:KCS-20 or KCA-60 cassette tape

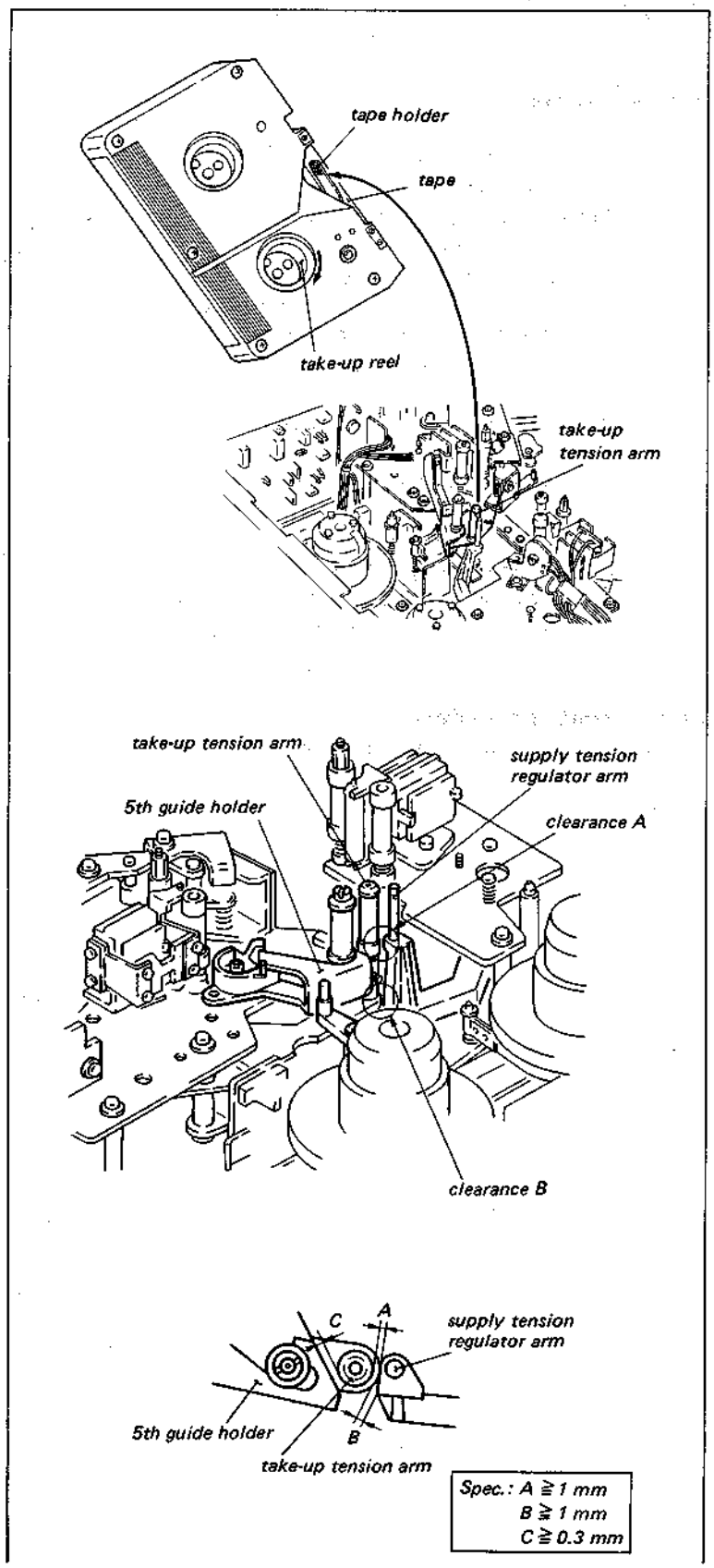
Mode:EJECT completion

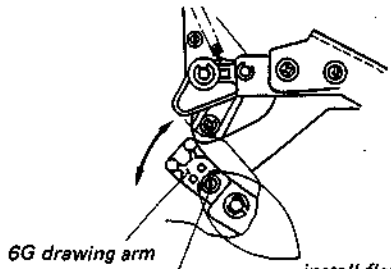
Check procedure:

(1) Turn the take-up reel hub of cassette tape with finger, and remove the slack of tape.
(2) Fully open the lid of cassette tape and insert the cassette tape so that the take-up tension arm is placed between the cassette tape and the tape holder.
(3) Check that the tape does not contact with the take-up tension arm.
(4) Check that the positional relationship of the take-up tension arm, 5th guide holder and the S tension regulator arm meets the required specification.

Adjustment procedure:

Adjust the position of the 6G drawing arm to meet the required specification.




6G drawing arm
fixing screw
install flatbrade 3 mm screwdriver into these portion and adjust 6G drawing arm by turning the screwdriver

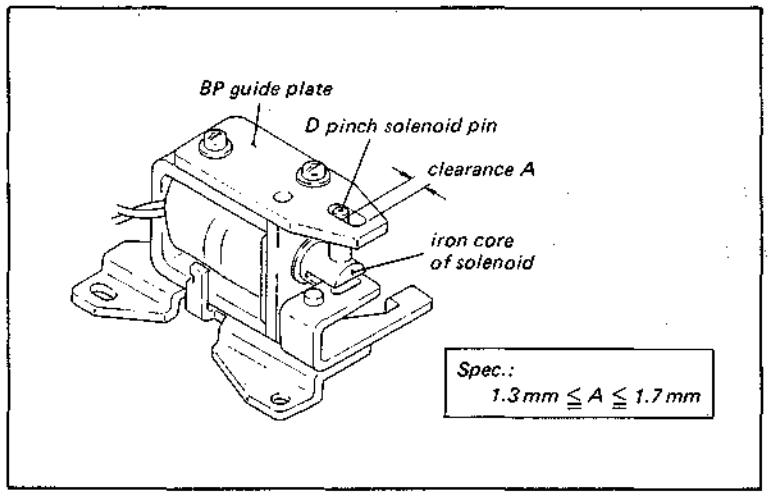
SECTION 8
BACK TENSION AND TORQUE ALIGNMENT

8-1. BRAKE SOLENOID MOUNTING POSITION ADJUSTMENT

This machine has the brake solenoid independently for the supply and the take-up reel tables. Adjusting procedures of the supply and the take-up sides in the same way.

Tool: Thickness gauge

Adjustment procedure:
After the iron core of the solenoid is pushed with finger to set up the energized state, adjust the position of the BP guide plate to meet the required specification.



8-2. BRAKE LEVER ADJUSTMENT

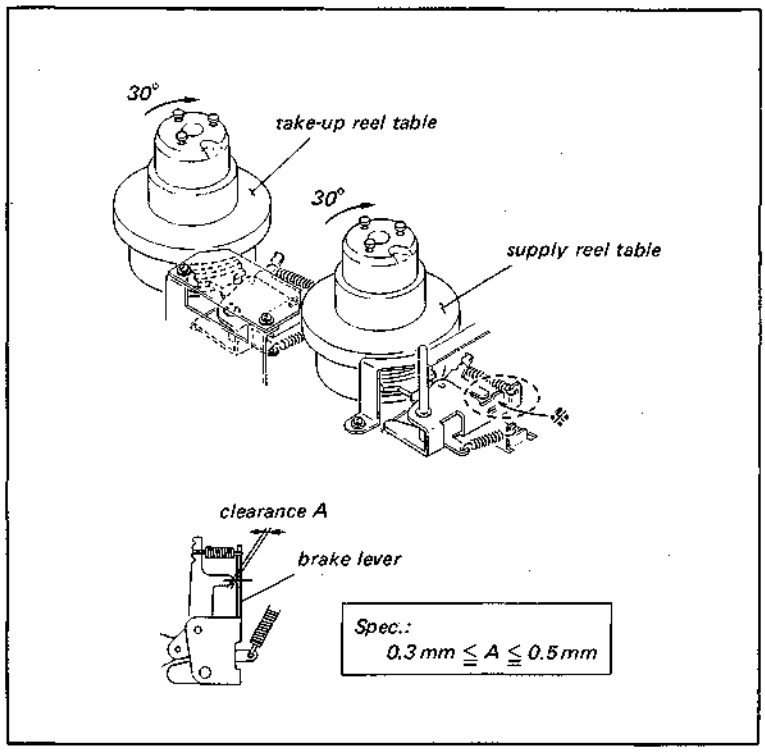
This machine has the reel brake independently for the supply and the take-up reel tables. Perform this adjustment independently for the T reel brake and the S reel brake.

Tool: Thickness gauge

Mode:EJECT completion

Check procedure:
Grasp the reel table by hand and turn to the clockwise direction about 30 degrees. Check the clearance A to meet the required specification.

Adjustment procedure:
Bend the * marked portion of the brake lever to meet the required specification with a pliers.



8-3. BRAKE TORQUE ADJUSTMENT

This machine has the reel brake independently for the supply and the take-up reel tables. Perform this adjustment independently for the T reel brake and the S reel brake.

Tool:
Reel table torque measurement tape (100 mm dia.)
Tension scale (200 g full scale)

Preparation:
Remove the handle bracket on the right side of the set.

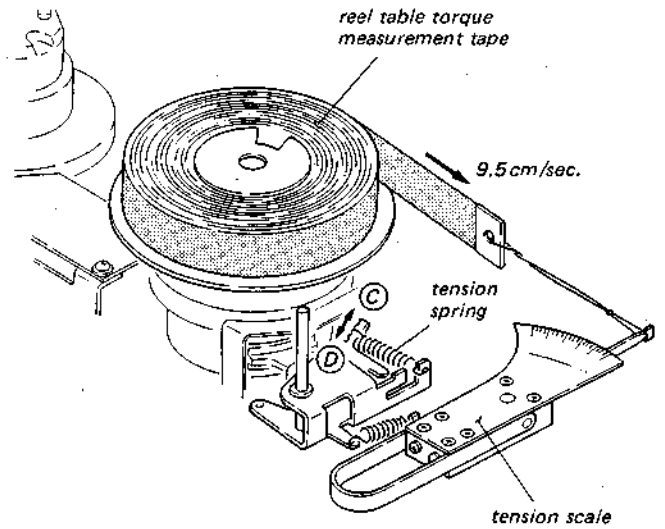
Mode:EJECT completion

Check procedure:
Install the jig tape on the reel table. Pull out the tape at a constant speed of approx 9.5 cm/sec. and confirm that the scale reading is in the specification.

Adjustment procedure:
(1) Select the proper spring hook to meet the specification.

Ⓒ direction: increases brake torque
Ⓓ direction: decrease brake torque

(2) It is not to meet the specification, replace the brake shoe.

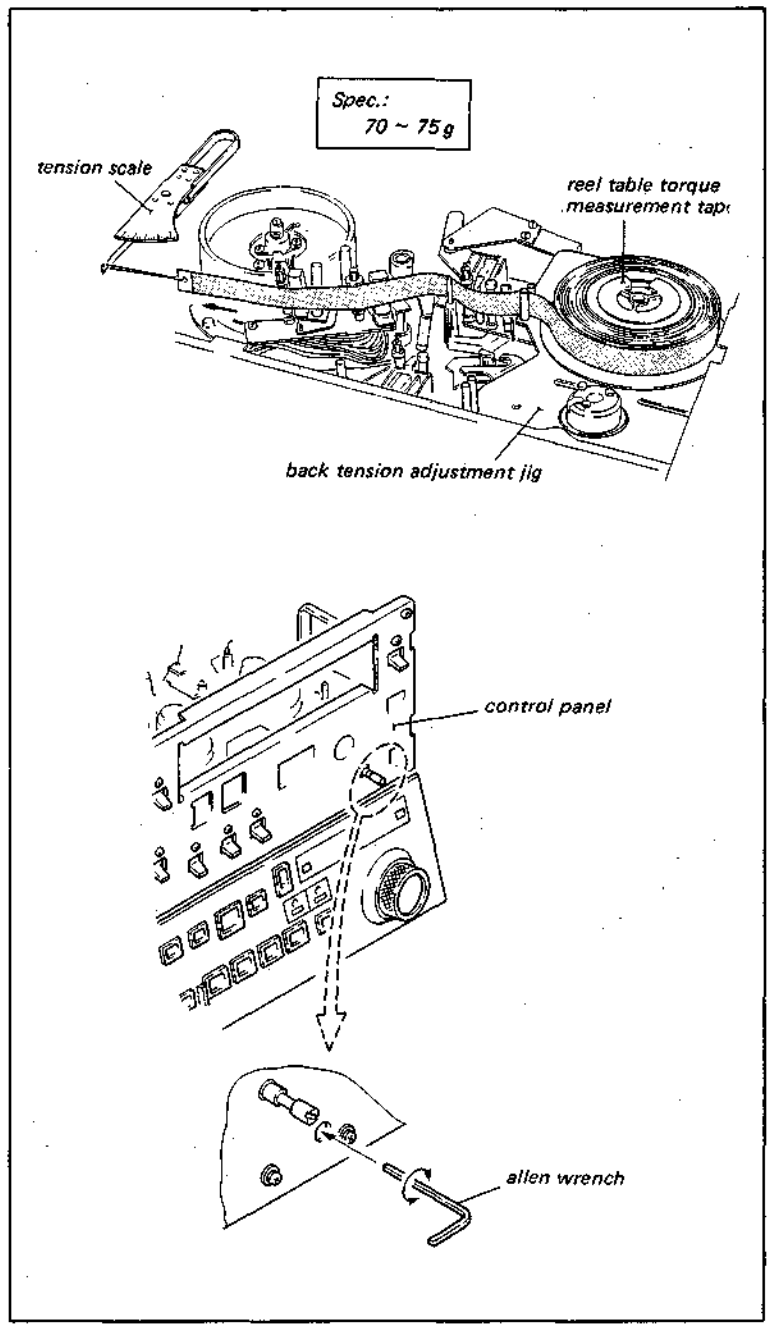


Spec.:
120g ~ 160g (on scale)
(600g·cm ~ 800g·cm)

8-4. FWD BACK TENSION ADJUSTMENT

Tool:
Back tension adjustment jig
Reel table torque measurement tape (100 mm dia.)
Tension scale (100 g fullscale)
Allen wrench (each edge has 2 mm)

Preparation:
(1) Mute the tape beginning sensor and tape end sensor.
(2) Mute the TAPE PROTECTION and the THREADING MOTOR DISABLE signals.
(3) Open the connector panel. Disconnect all connectors of the RP-5-1 board and remove the RP-5-1 board from the chassis.
(4) Turn on the power and put the machine into PLAY mode.
(5) Set the SKEW control knob to its center click (detent) position.
(6) Install the back tension adjustment jig.
(7) Install the jig tape on the supply reel table and thread a tape as shown in figure.
(CAUTION)
Take care that the head drum is rotating in a high speed.

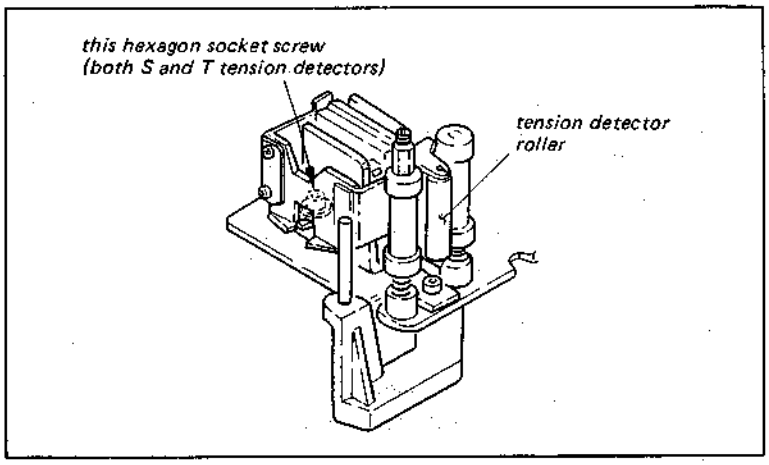


Check procedure:
(1) Hook a tension scale on an end of the tape. Pull out the tape at a constant speed of approx 9.5 cm/sec. and confirm that the scale reading is in the specification.
(2) After check and adjustment, remove the jig tape and back tension adjustment jig. Press the EJECT button.

Adjustment procedure:
(1) Insert the allen wrench into the hole on the control panel as shown in figure. And turn the hexagon socket screw to meet the adjustment specification.
(2) If it is not to meet the specification, replace the brake band assembly.

8-5. TENSION DETECTOR ADJUSTMENT

(CAUTION)
Do not loosen the screw as in figure. The position of tension detector roller is determined by this screw. This screw is adjusted precisely with a jig in the factory.



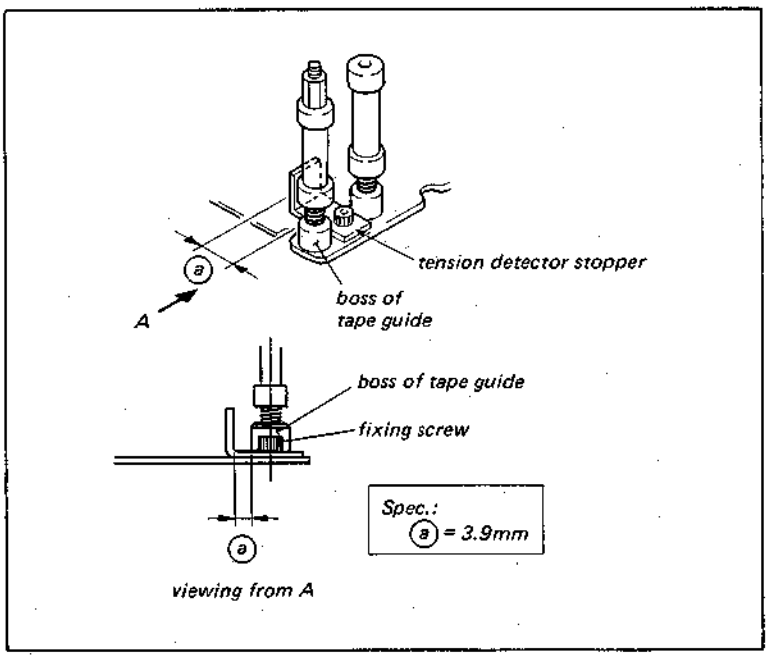
8-5-1. Tension Detector Stopper Position Adjustment

This adjustment is required only when the tension detector is replaced or removed. This stopper controls the operating range of the tension detector.
If this adjustment is poor, the optimum tape tension and the normal tape movement being not expected.
This machine has tension detectors at the supply and the take-up reel sides. The adjustment procedure descrebed is only for the take-up side but can be applied on the operation at the supply side.

Tool: Slide vernier caliper or equivalent

Check procedure:
Check that the positional relationship between tape guide shaft and stopper to meet the specification.

Adjustment procedure:
Adjust the position of the stopper to meet the required specification.



8-5-2. T Tension Detector Roller Zenith Adjustment

This adjustment is performed to install the tension detector in the machine.

Tool:
Allen wrench (each edge has 2 mm)
Flatness plate

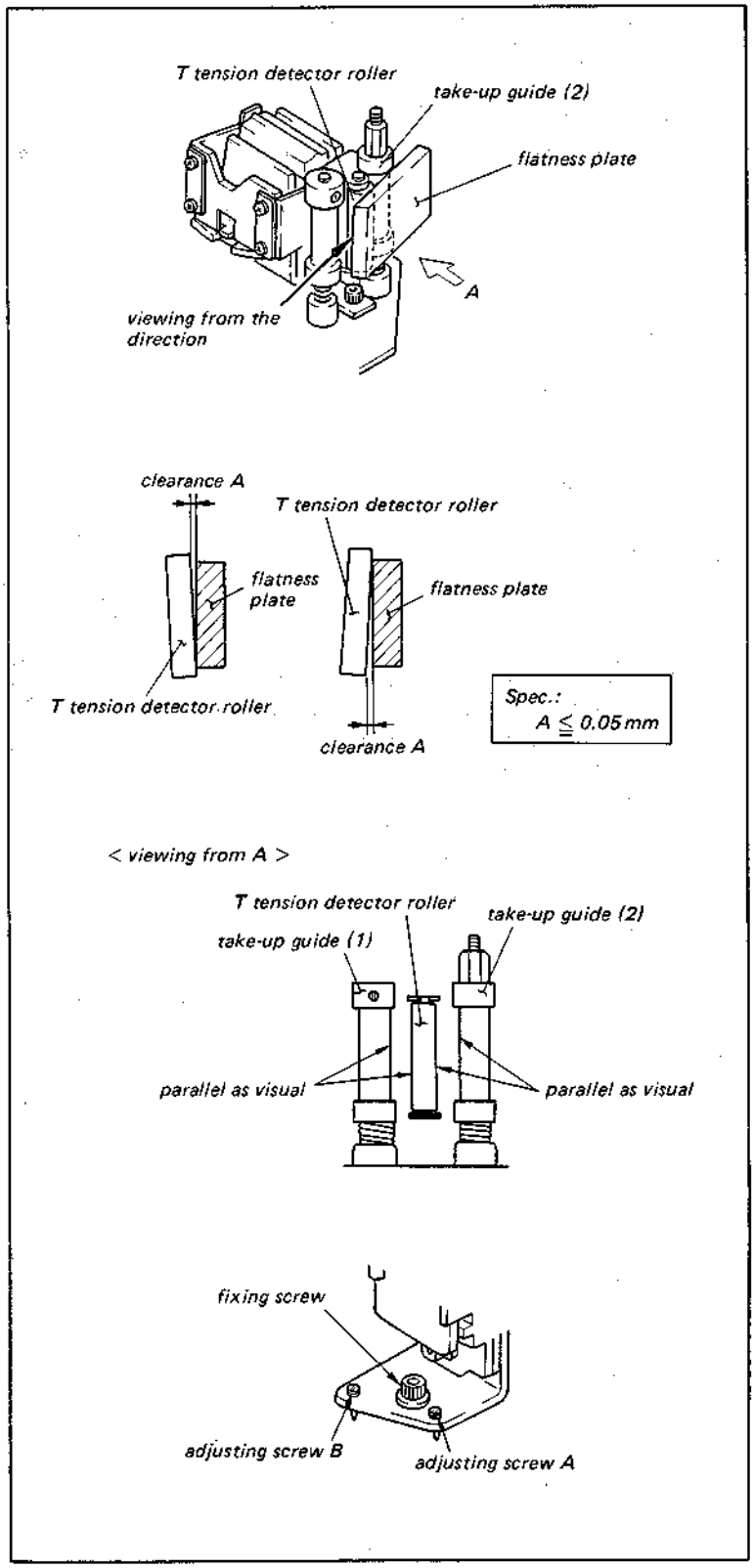
Mode:STANDBY

Check procedure:
(1) Check that the clearance between the detector roller and the flatness plate meets the required specification, when the flatness plate is set on the take-up guide (2) as shown in figure and the flatness plate is touched lightly with the T tension detector roller.

(2) Check that the tension detector roller parallels with the take-up guide (1) and (2) viewing from the direction of the arrow A.

Adjustment procedure:
(1) If the check procedure (1) is out of specification.
When the clearance is out of spec. at the top portion, loosen the fixing screw and turn the adjusting screw (A) in clockwise direction.
Tighten the fixing screw and check zenith again.
When the clearance is out of spec. at the bottom portion, turn the adjusting screw (A) in counterclockwise direction.
Thighten the fixing screw and check zenith again.

(2) If the check procedure (2) is out of specification.
When the clearance is out of spec. at the top portion. loosen the fixing screw and turn the adjusting screws (A) and (B) of exactly equal amount in clockwise direction. Tighten the fixing screw and check zenith again.



When the clearance is out of spec. at the bottom portion, turn the adjusting screws (A) and (B) of exactly equal amount in counterclockwise direction. Thighten the fixing screw and check zenith again.

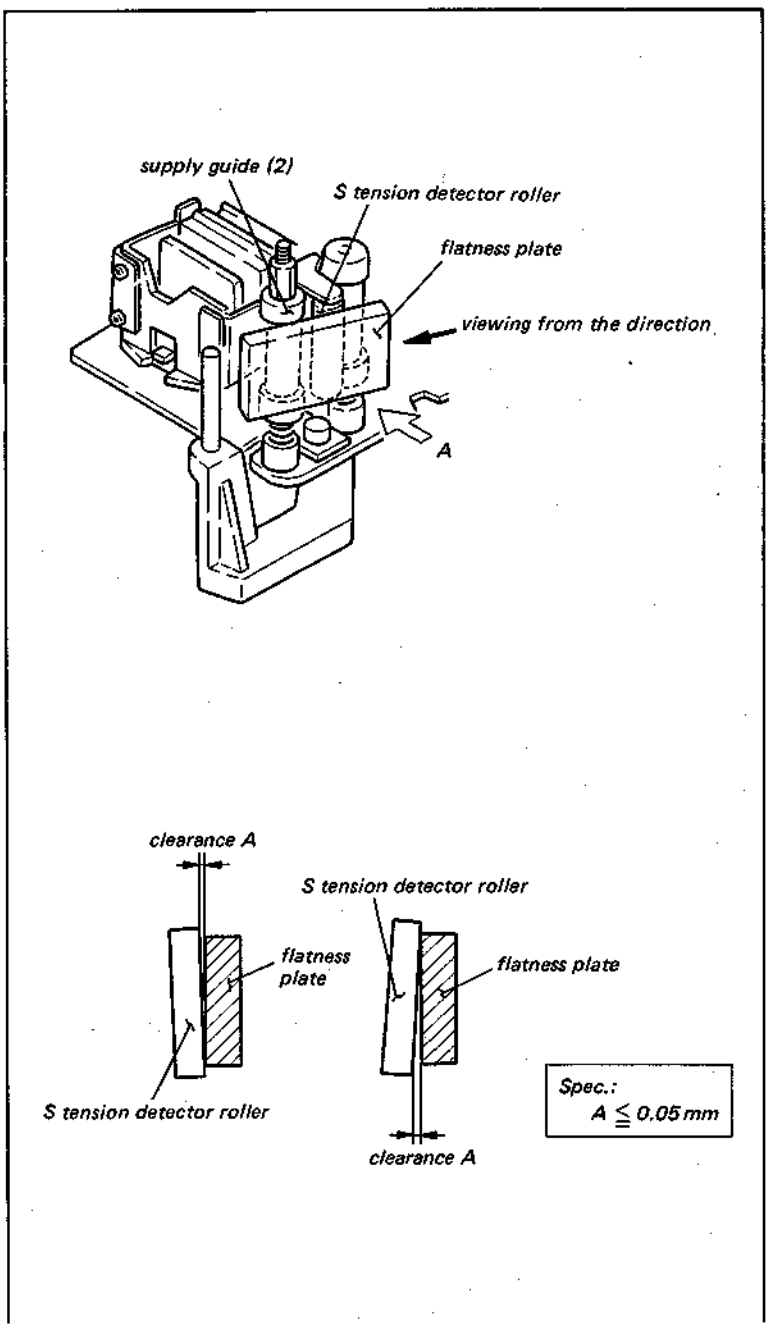
8-5-3. S Tension Detector Roller Zenith Adjustment

This adjustment is performed to install the tension detector in the machine.

Tool:
Flatness plate
Allen wrench (each edge has 2 mm)

Mode:STANDBY

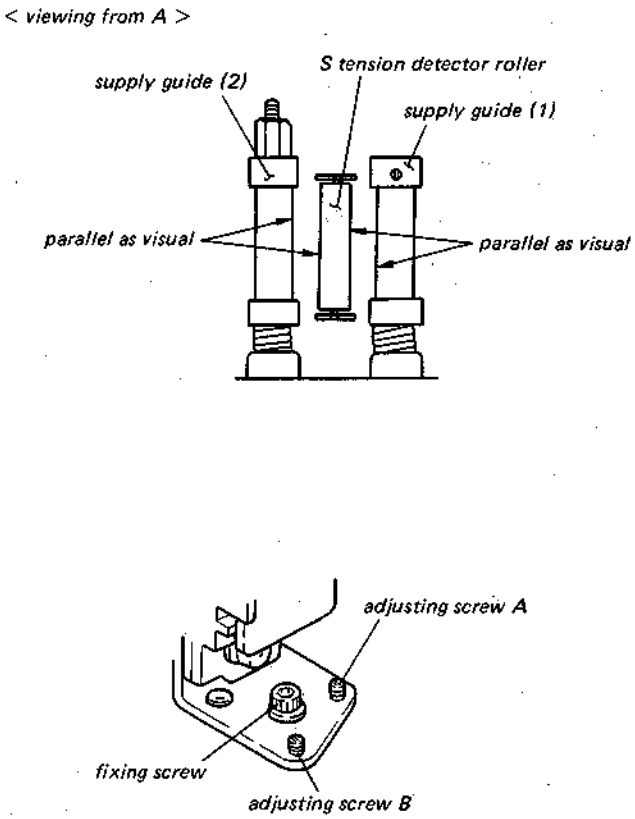
Check procedure:
(1) Check that the clearance between the detector roller and the flatness plate meets the required specification, when the flatness plate is set on the supply guide (2) as shown in figure and the flatness plate is touched lightly with the S tension detector roller
(2) Check that the tension detector roller parallels with the supply guide (1) and (2) viewing from the direction of the arrow A.



Adjustment procedure:

(1) If the check procedure (1) is out of specification.
When the clearance is out of spec. at the top portion, loosen the fixing screw and turn the adjusting screw (A) in clockwise direction.
Tighten the fixing screw and check zenith again.
When the clearance is out of spec. at the bottom portion, turn the adjusting screw (A) in counterclockwise direction.
Thighten the fixing screw and check zenith again.

(2) If the check procedure (2) is out of specification.
When the clearance is out of spec. at the top portion. loosen the fixing screw and turn the adjusting screws (A) and (B) of exactry equal amount in counterclockwise direction.
Tighten the fixing screw and check zenith again.
When the clearance is out of spec. at the bottom portion, turn the adjusting screws (A) and (B) of exactly equal amount in clockwise direction.
Thighten the fixing screw and check zenith again.



8-6. OPERATION CHECK AND ADJUSTMENT OF TENSION DETECTOR

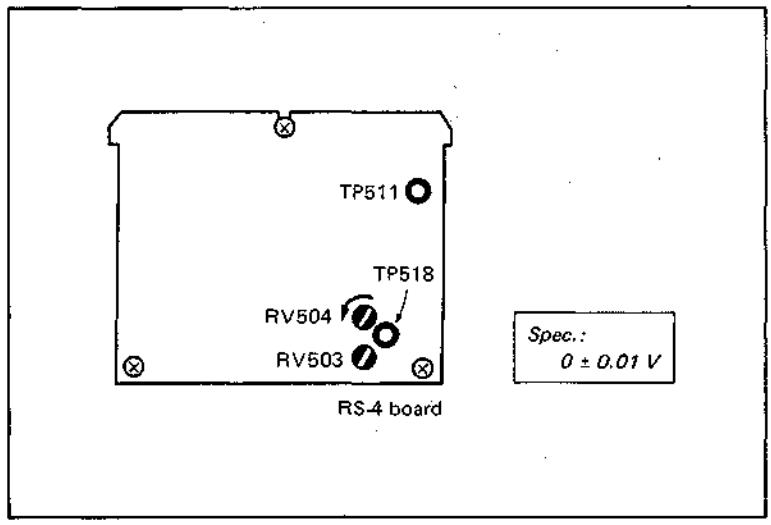
The operational points of the supply side and take-up side tension detectors are determined at the two points i.e. the 0 g tape tension point and the 100 g tape tension point. Here the check and adjustment for operational point are descrived.

8-6-1. Supply Tension Detector 0 Gram Point Adjustment

Mode:EJECT

Tool:
Extension board
DC boltmeter (Digital multimeter)

Preparation:
(1) Turn the RV504/RS-4 board to the counterclockwise direction as far as it will go. Do not turn these variable resistors except when the RS-4 board replacement is performed.
(2) Connect (-) termianl/DC voltmeter to TP511/RS-4 board and (+) termenal/DC voltmeter from TP518/ RS-4 board.
(3) Turn on the power.



Check procedure:
Check that the indication of DC voltmeter meets the required specification.

Adjustment procedure:
Adjust the RV503/RS-4 board to meet the required specification.

8-6-2. Take-up Tension Detector 0 Gram Point Adjustment

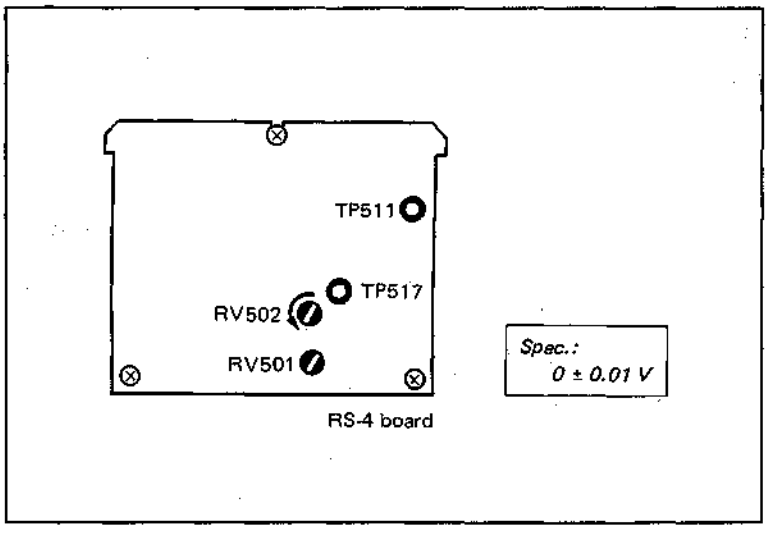
Mode:EJECT

Tool:
Extension board
DC voltmeter (Digital multimeter)

Preparation:
(1) Turn the RV502/RS-4 board to the counterclockwise direction as far as it will go. Do not turn these variable resistors except when the RS-4 board replacement is performed.
(2) Connect (-) terminal/DC voltmeter to TP511/RS-4 board and (+) termianl/DC voltmeter to TP517/RS-4 board.
(3) Turn on the power.

Check procedure:
Check that the indication of DC voltmeter meets the required specification.

Adjustment procedure:
Adjust the RV501/RS-4 board to meet the required specification.



8-6-3. Supply Tension Detector 100 Gram Point Adjustment

Mode:STANDBY

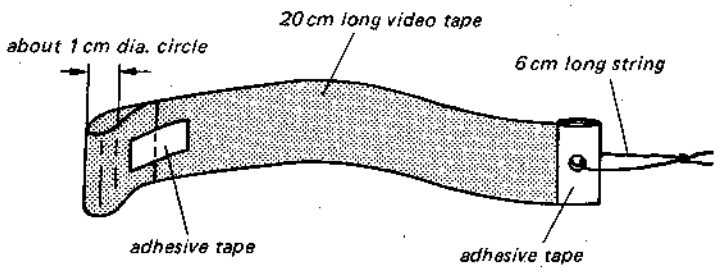
Tool:
DC voltmeter (Digital multimeter)
Locally-Specially-Made-Tape (prepare this tape referring follows)
Cut a tape into 20 cm long. Attach an adhesive tape on an end of the tape as shown in figure. Make a hole on the adhesive tape. Make a loop of 6 cm long string through the hole. Make a circle about 1 cm dia. from another end of the tape and fix the tape by a adhesive tape.

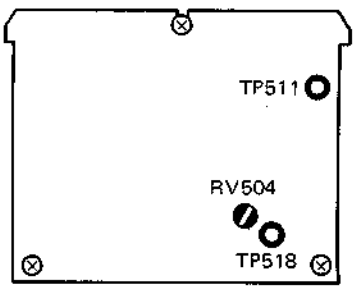
Tension scale (100 g full scale)
Extension board

Preparation:
(1) Connect (-) terminal/DC voltmeter to TP511/RS-4 board and (+) terminal/DC voltmeter to TP518/RS-4 board.
(2) Mute the tape beginning sensor and tape end sensor.
(3) Mute the TAPE PROTECTION and the THREADING MOTOR DISABLE signals.
(4) Put the machine into the STOP mode. Grasp the take-up and supply reel tables by hand and press the STANDBY button.

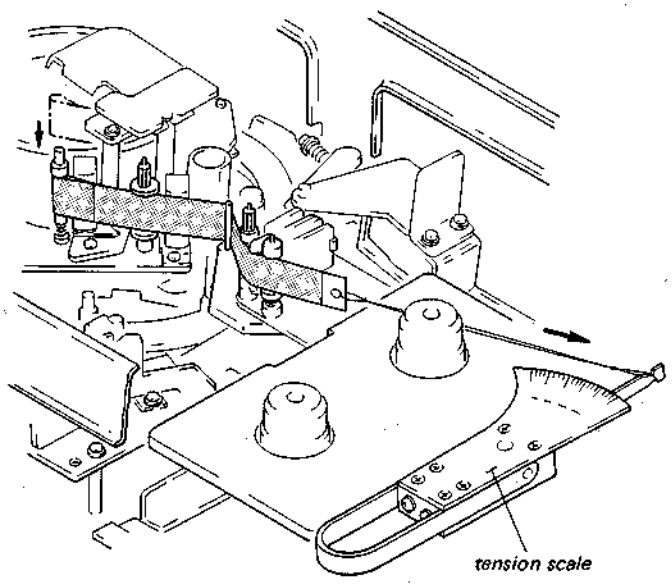
Check procedure:
(1) Thread the special jig tape as shown in figure, and hook a tension scale on an end of the tape.
(2) Move the tension scale slowly to as shown in figure direction and sets the scale 100 ± 5 g. When the scale reading is over 105 g, put the tension scale reading into 80 g once, and sets the scale 100 ± 5 g.
(3) Check that the indication of the DC voltmeter meets the required specification.

Adjustment procedure:
Adjust the RV504 to meet the required specification.





Spec.:
0.49 ± 0.01 V



8-6-4. Take-up Tension Detector 100 Gram Point Adjustment

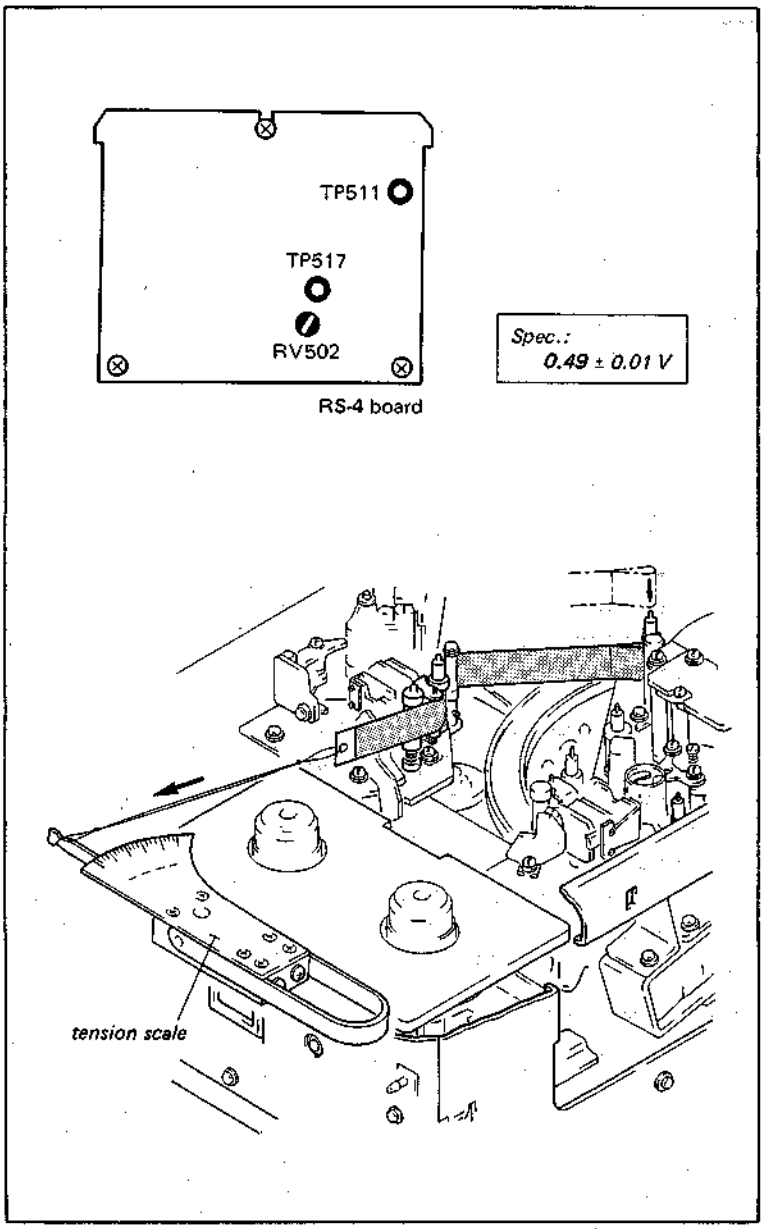
Mode:STANDBY

Tool:
DC voltmeter (Digital multimeter)
Locally-Specially-Made-Tape
(referring sec. 8-6-3)
Tension scale (100 g full scale)
Extension board

Preparation:
(1) Connect (-) terminal/DC voltmeter to TP511/RS-4 board and (+) terminal/DC voltmeter to TP517/RS-4 board.
(2) Mute the tape beginning sensor and tape end sensor.
(3) Mute the TAPE PROTECTION and the THREADING MOTOR DISABLE signals.
(4) Put the machine into the STOP mode. Grasp the take-up and supply reel tables by hand and press the STANDBY button.

Check procedure:
(1) Thread the special jig tape as shown in figure, and hook a tension scale on an end of the tape.
(2) Move the tension scale slowly to as shown in figure direction and sets the scale 100 ± 5 g. When the scale reading is over 105 g, put the tensin scale reading into 80 g once, and sets the scale 100 ± 5 g.
(3) Check that the indication of the DC voltmeter meets the required specification.

Adjustment procedure:
Adjust the RV502 to meet the required specification.



8-7. TAKE-UP REEL MOTOR CURRENT SENSITIVE ADJUSTMENT

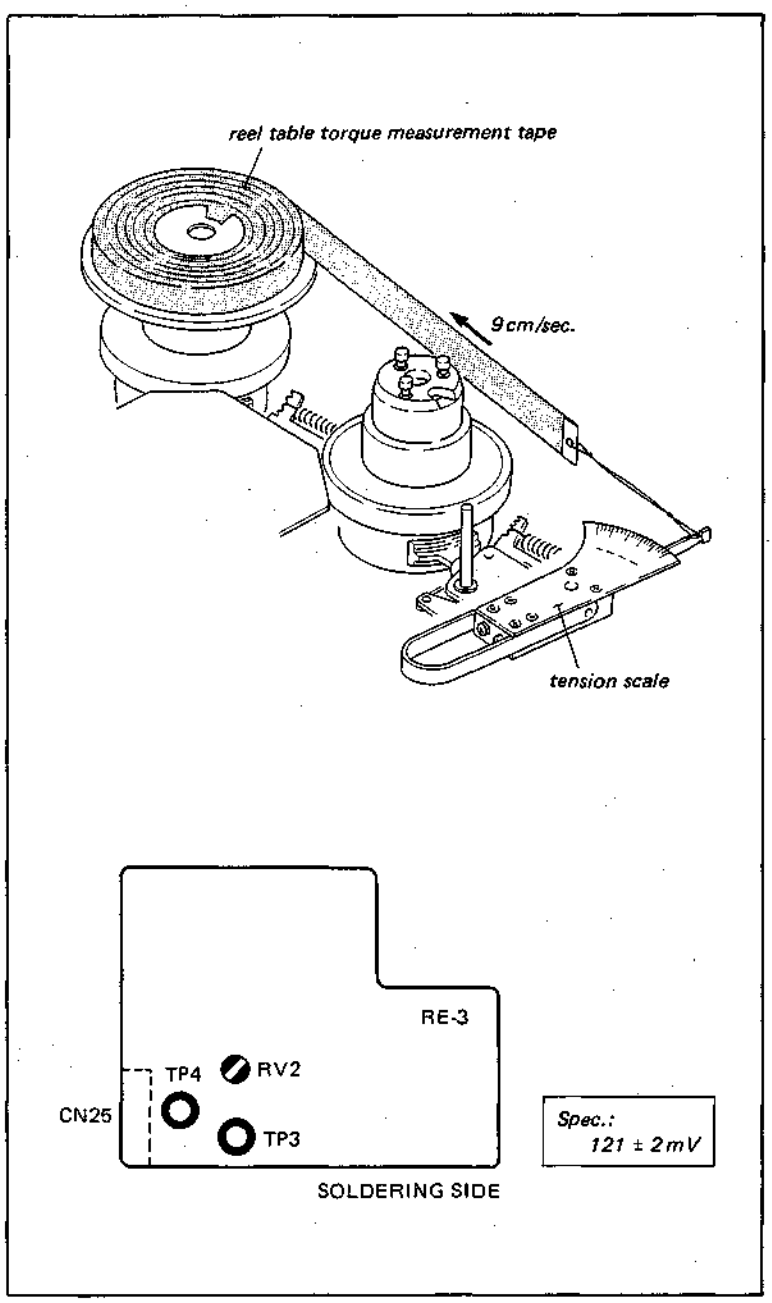
Mode: EJECT completion

Tool:
Extension board
Reel table torque measurement tape (100 mm dia.)
Tension scale (100 g full scale)
DC voltmeter
Constant current power supply

Preparation:
(1) Remove the RS-3 board and insert the extension board. Do not insert the RS-3 board into the end of the extension board.
(2) Disconnect the CN25 on the RE-3 board.
(3) Turn on the power. Check that the take-up side reel brake is released.
(4) Connect (-) terminal of the constant current power supply to TP3/RE-3 board, and (+) terminal to TP4/RE-3 board.
(5) Connect (-) terminal of the DC voltmeter to A15/Extension board, and (+) terminal to A16/Extension board
(6) Install the torque measurement tape on the take-up reel table.

Check procedure:
(1) Turn the CURRENT control knob of the constant current power supply slightly, perform the procedure (2).
(2) Hook a tension scale on an end of the tape as shown in figure and let the tape pulled at a constant speed of approx.9 cm/sec. and repeat the procedure (1) and (2) until the scale reading comes to 96 ± 4 g. (If the measuring value fluctuates, take the average reading of the tension scale.)
(3) When the scale reading is 96 ± 4 g, check that the voltmeter reading meets the required specification.

Adjustment procedure:
Adjust the RV2/RE-3 board to meet the required specification.



8-8. SUPPLY REEL MOTOR CURRENT SENSITIVE ADJUSTMENT

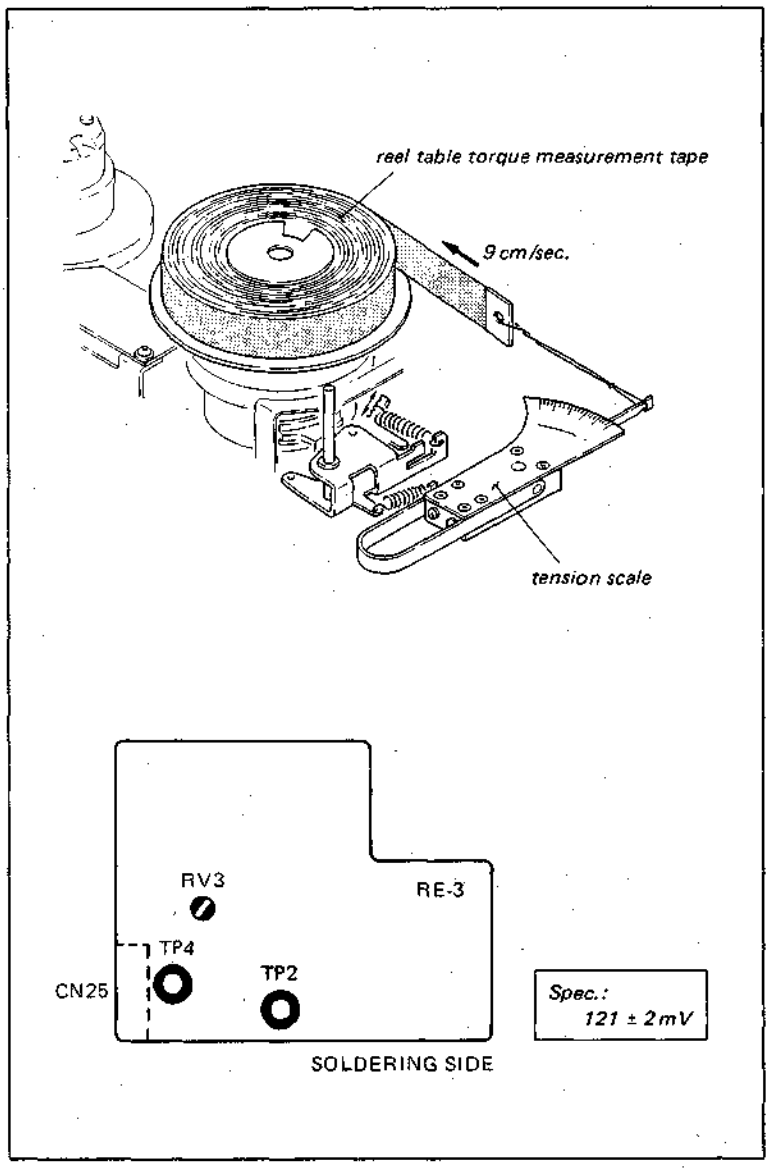
Mode:EJECT completion

Tool:
Extension board
Reel table torque measurement tape (100 mm dia.)
Tension scale (100 g full scale)
DC voltmeter
Constant current power supply

Preparation:
(1) Remove the RS-3 board and insert the extension board. Do not insert the RS-3 board into the end of the extension board.
(2) Disconnect the CN25 on the RE-3 board.
(3) Release the supply side reel brake.
(4) Turn on the power.
(5) Connect (-) terminal of the constant current power supply to TP2/RE-3 board, and (+) terminal to TP4/RE-3 board.
(6) Connect (-) terminal of the DC voltmeter to A17/Extension board, and (+) terminal to A18/Extension board
(7) Install the torque measurement tape on the supply reel table.

Check procedure:
(1) Turn the CURRENT control knob of the constant current power supply slightly, perform the procedure (2).
(2) Hook a tension scale on an end of the tape as shown in figure and let the tape pulled at a constant speed of approx.9 cm/sec. and repeat the procedures (1) and (2) until the scale reading comes to 96 ± 4 g. (If the measuring value fluctuates, take the average reading of the tension scale.)
(3) When the scale reading is 96 ± 4 g, check that the voltmeter reading meets the required specification.

Adjustment procedure:
Adjust the RV3/RE-3 board to meet the required specification.



8-9. DME FG OUTPUT CHECK

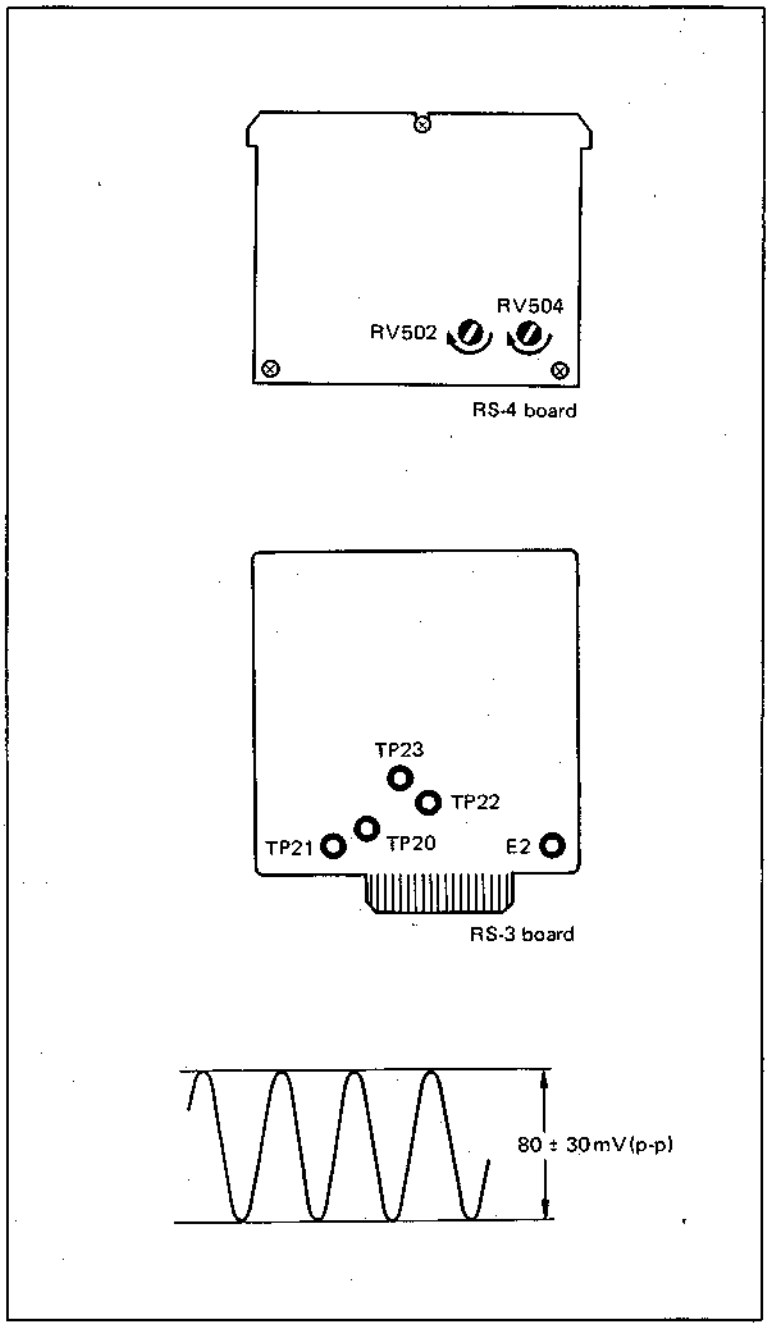
EM-1 Board Mounting Position Adjustment should be completed before initiating this adjustment.

Tool:
Extension board
Oscilloscope

Preparation:
(1) Remove the RS-3 board and insert the extension board into this position. Insert the RS-3 board into the end of the extension board.
(2) Turn the RV502 and RV504 on the RS-4 board in the clockwise direction as far as it will go. Do not turn these variable resistors except when the RS-4 board replacement is performed.
(3) Mute the TAPE PROTECTION signal
(4) Connect the oscilloscope to TP20, 21, 22 or 23 on the RS-3 board as following the check procedures and connect the ground to E 2.
(5) Turn on the power.

Check procedure:
(1) When the take-up reel table is turned to the counterclockwise direction by hand, check that the TP20 and 21 outputs meet the required specification.
(2) When the supply reel table is turned to the counterclockwise direction by hand, check that the TP22 and 23 outputs meet the required specification.

Adjustment procedure:
If it is not, replace DME and check again.
After this adjustment, perform the sec. 8-6-3 Supply Tension Detector 100 Gram Point Adjustment and sec. 8-6-4 Take-up Tension Detector 100 Gram Point Adjustment.



SECTION 9
TAPE RUN ALIGNMENT

9-1. PINCH ROLLER ADJUSTMENT

9-1-1. Pinch Lever Right Angle Adjustment

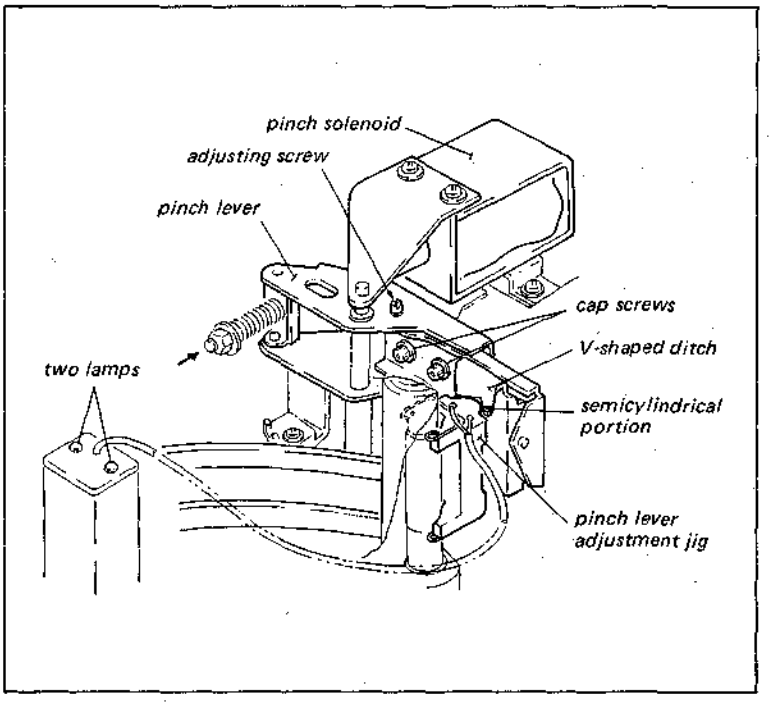
This adjustment is precisely factory-calibrated before shipment so that no adjustment is required except the pinch lever and the capstan shaft replacements.

Tool: Pinch lever adjustment jig

Mode:EJECT Completion

Check procedure:
(1) Install the pich lever adjustment jig taking care not to give scar on the capstan.
(2) Push the pinch lever until V-shaped ditch of the pinch lever contacts the semicylindrical portion of the jig lightly. Check that the two lamps of the jig light at the same time.

Adjustment procedure:
(1) Loosen the two cap screws of the pinch lever and adjust the adjusting screw.
(2) After this adjustment, tighten the cap screws and check again.



9-1-2. Pinch Roller Stopper Position adjustment

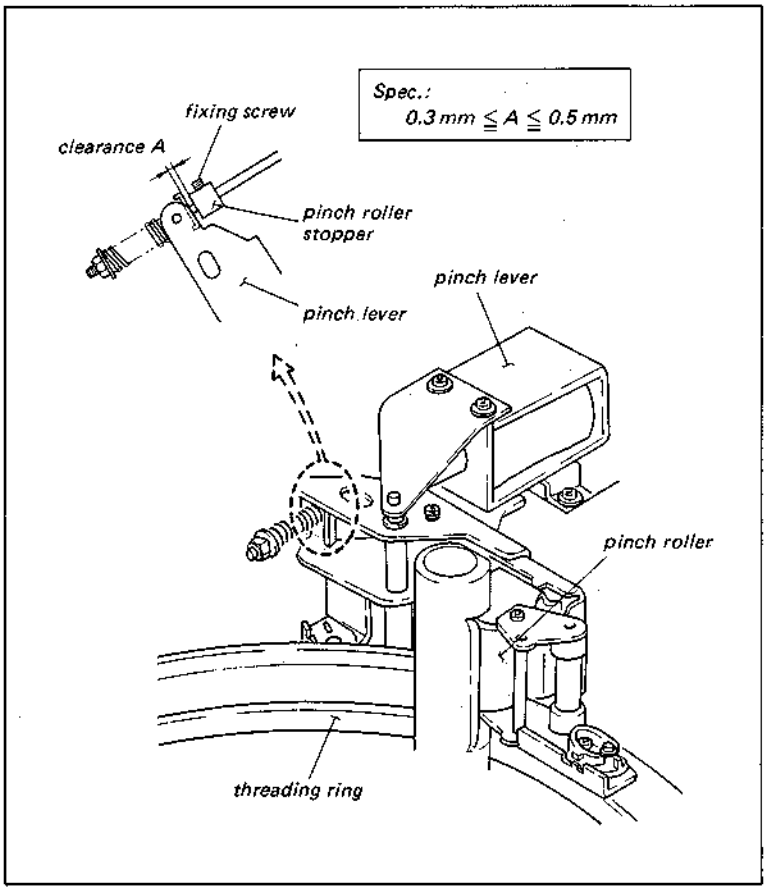
If the clearance is narrower than the specification, the possible trouble is that the pinch roller pressure against the capstan shaft may be so low that the tape will not be advanced at the proper speed.
If, in opposite, the clearance is too much, it is possible that the iron core is not engaged.

Tool: Thickness gauge

Mode:PLAY

Check procedure:
(1) Check that the clearance between the pinch roller stopper and the pinch lever meets the required specification using a thickness gauge.
(2) Repeat pressing the PLAY and STOP buttons two or three times and check that the clearance.

Adjustment procedure:
Adjust the position of the pinch roller stopper.

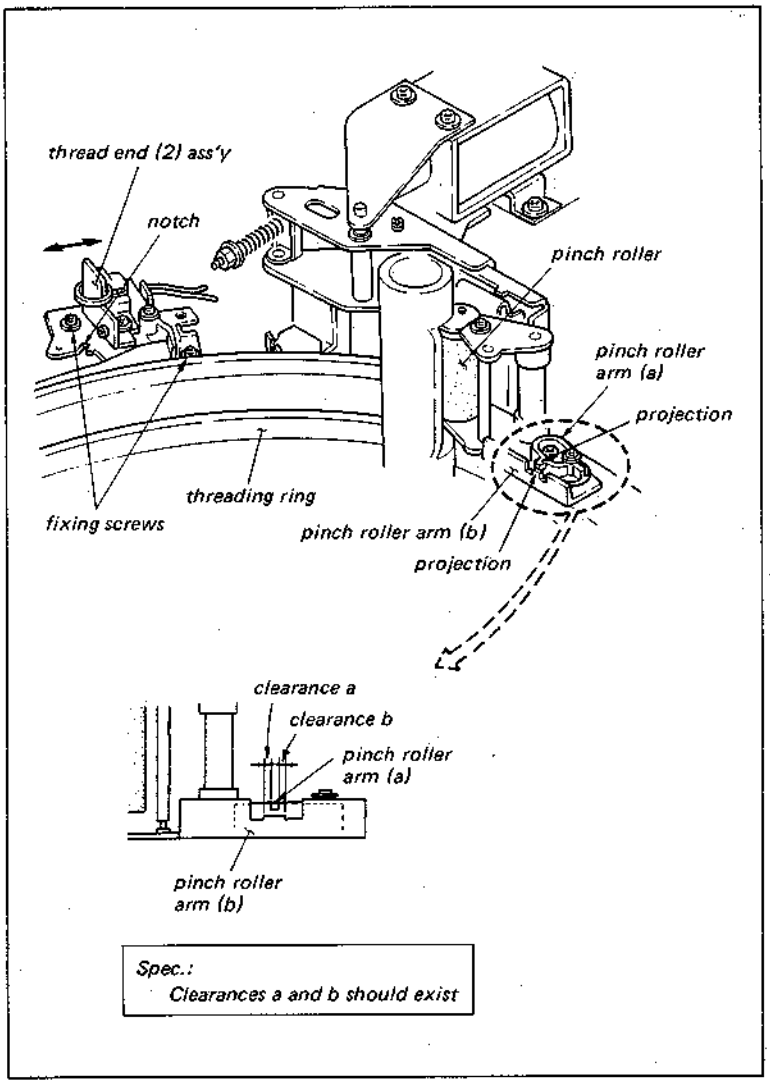


9-1-3. Pinch Roller Self-Alignment Adjustment

Mode:PLAY

Check procedure:
Check that the positional relationship between the pinch roller arm (a) and the pinch roller arm (b) meets the required specification.

Adjustment procedure:
(1) Loosen the fixing screw 1/4 turns of the thread end (2) ass'y.
(2) Insert a flatbrade 3mm screwdriver into the notch, and move the thread end (2) ass'y in the direction shown by arrow to meet the required specification.
(3) Repeat the PLAY and EJECT modes two or three times, and check the positional relationship meets the required specification.



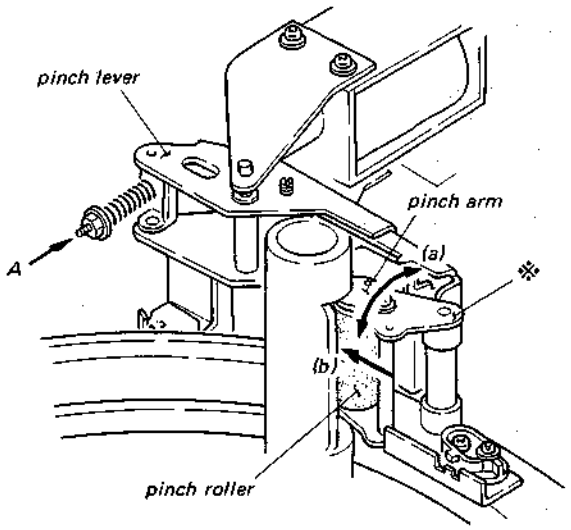
9-1-4. Pinch Roller Zenith Adjustment

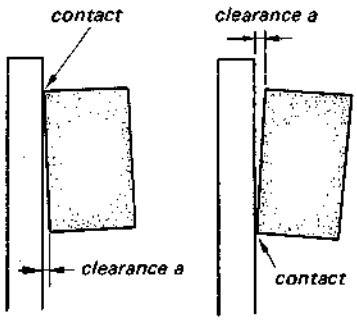
Mode:STOP

Check procedure:
Push the pinch lever A portion in the direction of the arrow lightly so that the pinch roller contacts the capstan shaft. Check that the positional relationship between the pinch roller and the capstan shaft meets the required specification.

Adjustment procedure:
If the clearance is out of spec. at the bottom portion when the top portion is in contact with the capstan shaft.
(1) Hold the * marked portion of the pinch arm and bend it in the direction of the arrow (a).

If the clearance is out of spec. at the top portion when the bottom portion is in contact with the capstan shaft.
(2) Hold the * marked portion of the pinch arm and bend it in the direction of the arrow (b).





Spec.:
$a \leqq 0.1$ mm (as visual)

9-1-5. Pinch Roller Azimuth Adjustment

If this adjustment is poor, possible trouble is that a curl of tape at top and bottom flanges of tape guides (3) and (4), threading guides (1),(2) and (3), is resulted during the period of tape threading and tape will get scar.

Mode:PLAY

Tool:
Inspection mirror(handle)
Inspection mirror(mirror)
Circuit tester
Sony grease

Check procedure:

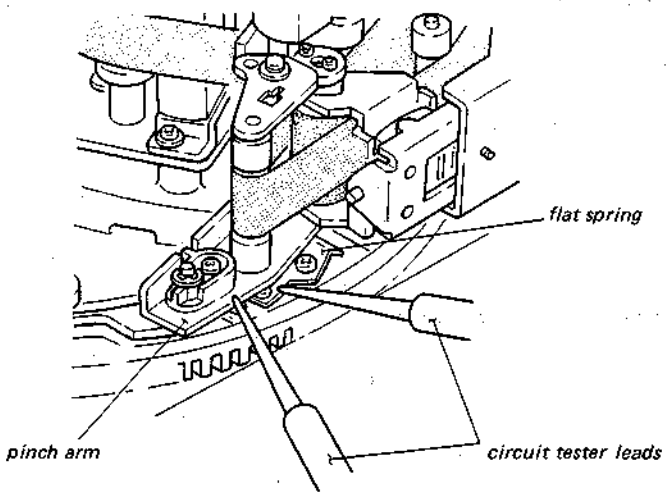
(1) Insert a KCA-60 cassette tape (use the middle portion of the tape for this adjustment)and put the machine into the threading mode.
(2) Observe the tape run during the threading at the TG-3, TC-4, threading guides (1), (2) and (3). Check that there exists no tape curl at top and bottom flanges of the tape guides.
(3) Check to repeat the threading operation two or three times.

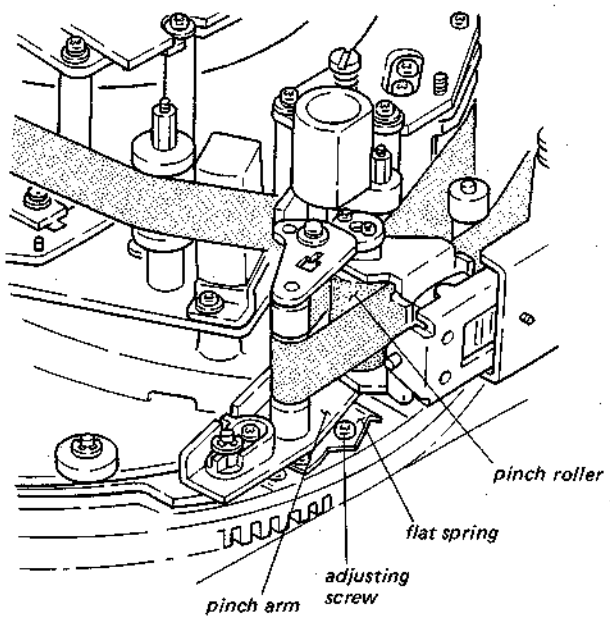
Adjustment procedure:

(1) Turn the adjusting screw to the clockwise direction and put not to contact flat spring to the pinch arm.
(2) Contact the circuit tester leads to flat spring and pinch arm as shown in figure. Turn the adjusting screw to the counterclockwise direction slowly until the flat spring contacts the pinch arm.
(3) Check the tape curl as check procedure. Fine-adjust the adjusting screw so that the curl does not exists.
(4) Put the machine into EJECT completion mode. Push the pinch arm toward the drum ass'y lightly with a finger, and smear sony grease a little onto the projection of the flat spring.

(CAUTION)

Take care not to smear sony grease onto the pinch roller and the guides.





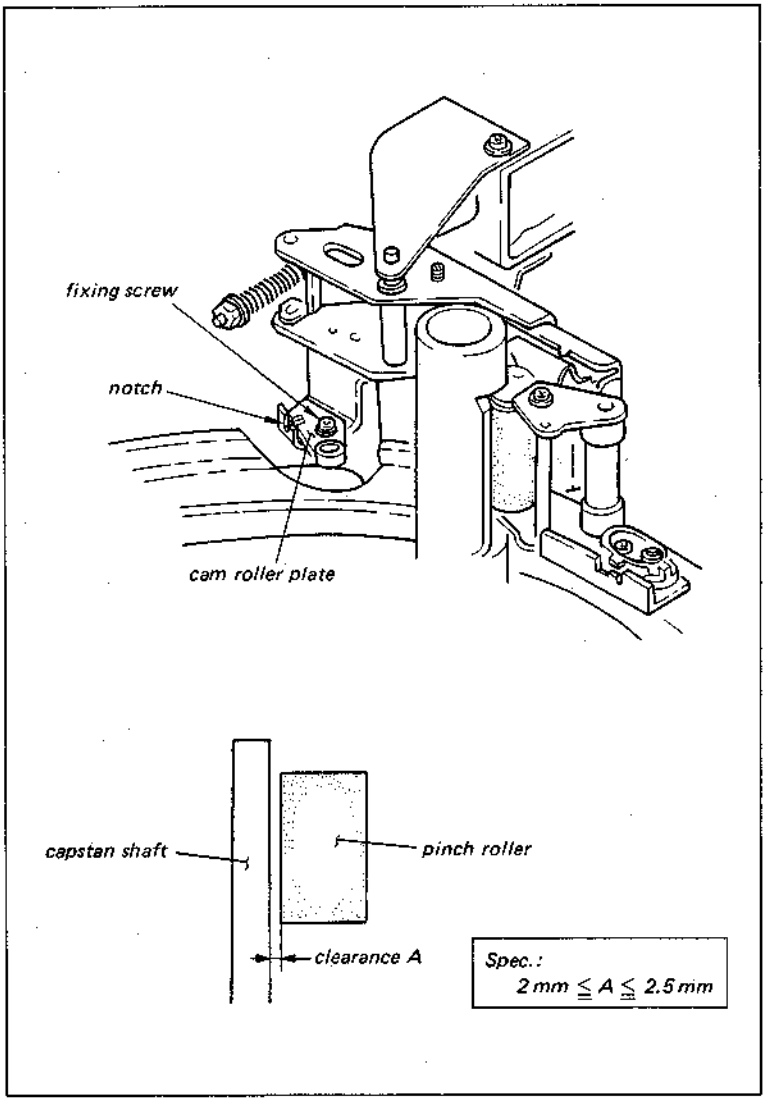
9-1-6. Pinch Roller Preset Adjustment

Mode:STOP

Tool: Thickness gauge

Check procedure:
Check that the clearance between the capstan shaft and the pinch roller meets the required specification.

Adjustment procedure:
(1) Loosen the fixing screw of the cam roller plate about 1/4 turns.
(2) Insert a flatbrade 3 mm screwdriver into the notch of the cam roller plate, and adjust the position meets the required specification
(3) Repeat the EJECT and STOP modes two or three times and check clearance.



9-2. FWD/REV TAPE RUN ADJUSTMENT

9-2-1. Tape Run Adjustment at Threading Guide (1)

Mode:PLAY/STOP

Tool: Allen wrench (each edge has 0.9mm/1.27mm)

Check procedure:

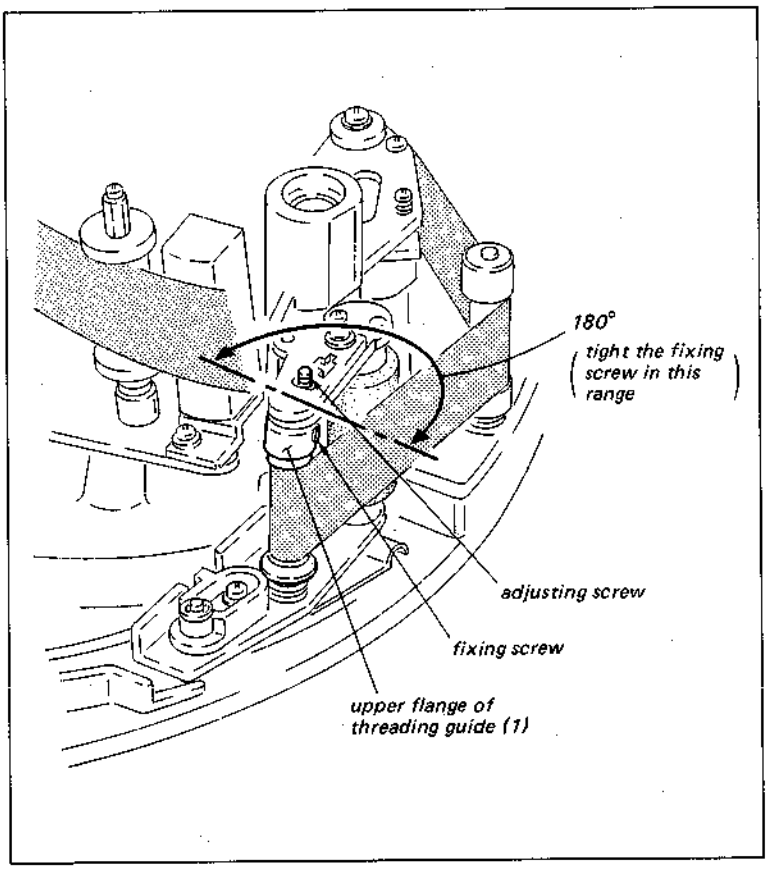
(1) Insert a KCA-60 cassette tape (use the middle portion of the tape for this adjustment). Put the machine into the FWD mode(x1). Check that the tape top edge runs in contact with the upper flange of the threading guide (1) without curl.

(2) Put the machine into the STOP mode. Check that the tape top edge contacts the upper flange of the threading guide (1) without curl.

Adjustment procedure:

(1) Loosen the fixing screw of the flange and adjust to meet the required specification with adjusting screw in the PLAY mode.

(2) Tighten the fixing screw of upper flange within the range as shown in figure.



9-2-2. Tape Wrinkle Release Adjustment at Pinch Roller

Mode:FWD(x1/30) to FWD(x5)
REV(x1/30) to REV(x5)

Tool: Allen wrench (each edge has 1.27mm)

Check procedure:

(1) Insert a KCA-60 cassette tape (use the middle portion of the tape for this adjustment). Put the machine into the REV mode(x1). Observe the surface of the running tape very carefully in the A section as shown in figure. Check that amount of tape tension at the two points is exactly equal i.e., equal at the tape top and tape bottom. The tape wrinkle should be as shown in figure.

(2) Repeat the FWD(x1/30) to (x5) and the REV(x1/30) to (x5) operation. Observe the surface of the running tape very carefully in the A section as shown in figure. Check that amount of tape tension is exactly equal.

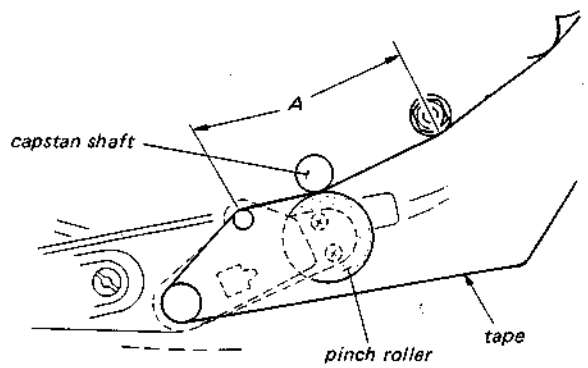
(3) Put the KCA-60 cassette tape at the tape beginning portion. Put the machine into the FWD(x1) and REV(x1) mode. Check that the tape wrinkle, that is given in the moment of the pinch roller's pressing against the capstan, does disappear within 1.5 second.

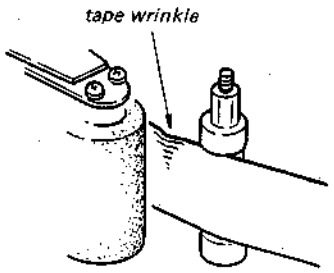
(4) Put the machine into the FWD (x5) and REV(x5) modes. If a scar does not mark, though tape wrinkles does disappear in a moment, it is acceptable.

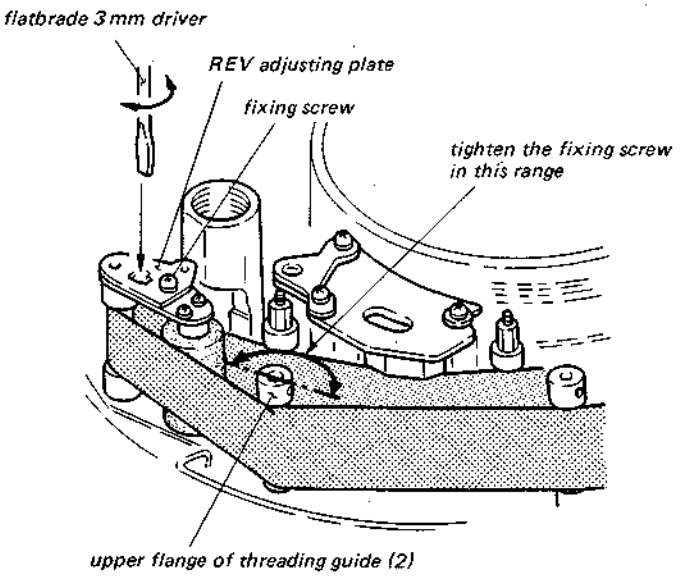
(5) Put the tape at the tape end portion. Check that the tape wrinkle as the same manner in steps (3) and (4).

Adjustment procedure:

(1) Fine-adjust the position of upper flange of threading guide (2) to satisfies the specification.







(CAUTION)
Tighten the fixing screw of upper flange within the range as shown in figure.

(2) If the tape tension at the two points does not turn into the exactly equal by step (1), loosen the fixing screw 1/2 to 1/4 turns of REV adjusting plate and insert a flatbrade 3mm screwdriver into the hole, and turn the screwdriver in the direction shown by arrow until the tape tension at the two points is exactly equal.

9-2-3. Tape Run Adjustment at Correction Guide (A)

Mode:FWD(X1), REV(x1)

Check procedure:

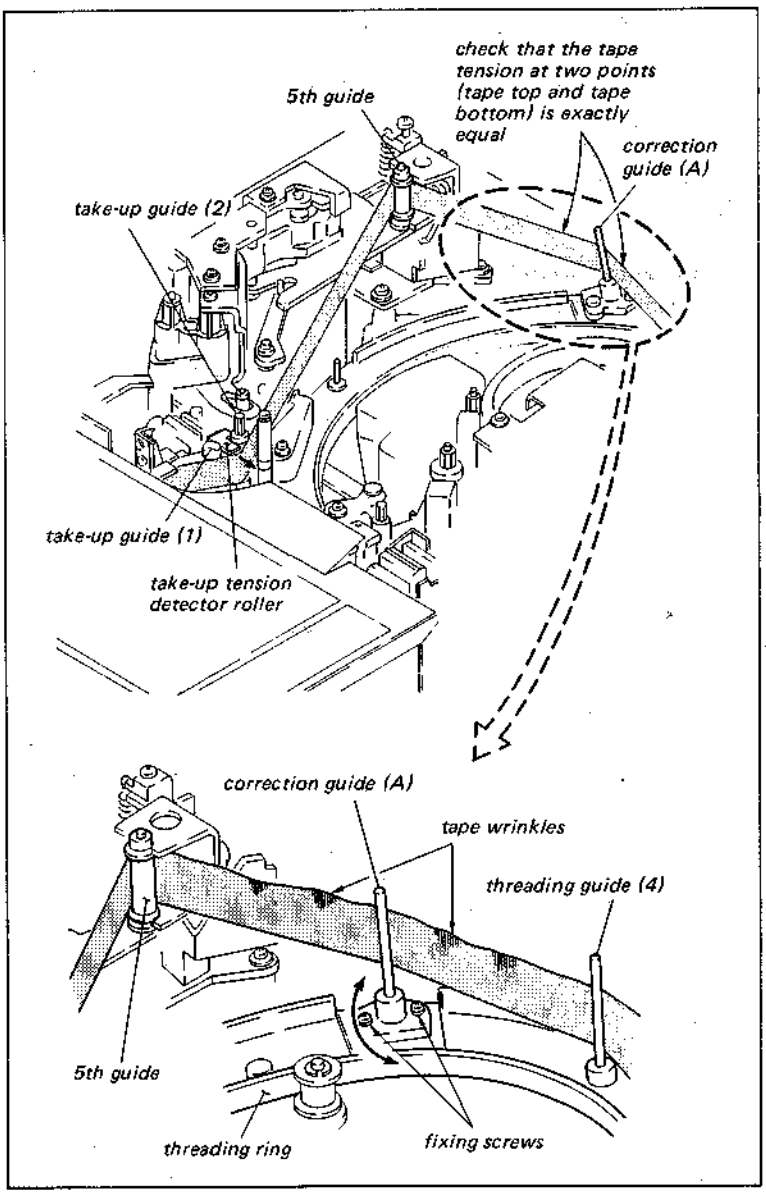
(1) Insert a KCA-60 cassette tape (use the middle portion of the tape for this adjustment) and put the machine into the FWD mode(x1).

(2) Observe the surface of the running tape very carefully in the position as shown in figure. Check that amount of tape tension at the two points is exactly equal i.e., equal at the tape top and tape bottom.

(3) Put the machine into the REV mode(x1). Check that the tape tension as the same manner in step (2).

(4) Put the machine into the FWD mode(x1). Press the T-tension detector roller lightly in the direction of the arrow with finger.
Check that the tape runs without curl at the top and bottom flanges of 5th guide.

Adjustment procedure:
Loosen the fixing screw of correction guide (A) 1/2 turns and move the guide in the direction of the arrow to meet the required specification in all modes.



9-2-4. Tape Run Adjustment at 6th Guide

Mode:FWD(xl), REV(xl)

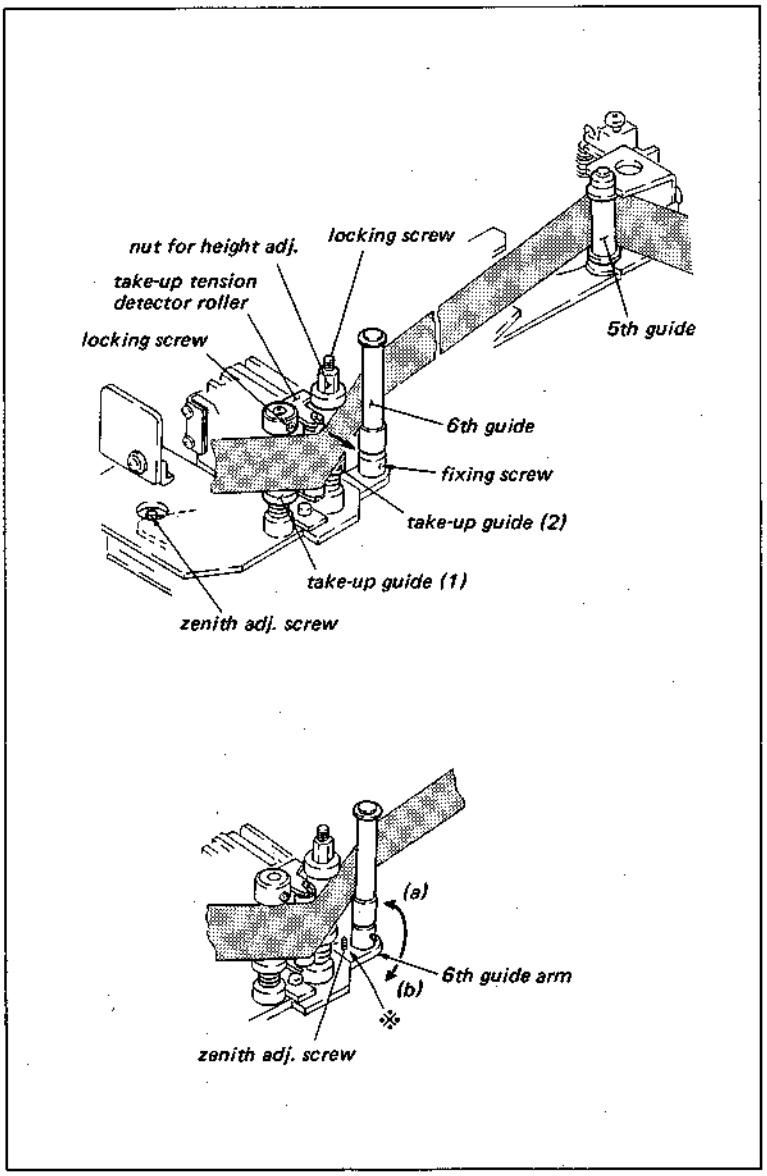
Check procedure:

(1) Insert a KCA-60 cassette tape (use the middle portion of the tape for this adjustment). Put the machine into the FWD mode(xl).

(2) Check that the tape runs without curl at the top and bottom flanges of the 6th guide, take-up guide (1) and (2).

(3) Check the tape run same as the above in the REV(xl) mode.

(4) Put the machine into the FWD (xl)mode. Push the T tension detector roller lightly in the direction of the arrow with finger. Check that the tape running without curl at the top and bottom flanges of take-up guide (1) and (2).



Adjustment procedure:

If there exists tape curl in the procedures (2) and (3).

(1) If there exists tape curl at the 6th guide, loosen the fixing screw and adjust the height.
If there exists tape curl at the take-up guide (1) and (2), loosen the locking screw of take-up guide (2). Turn the adjusting nut and adjust the height.

If there exists tape curl in the procedure (4).

(2) If there exists tape curl at the top and bottom flanges of take-up guides (1) and (2), turn the 6th guide zenith adj. screw in the clockwise direction.
If there exists tape curl at the bottom flange, tune the adj. screw in the counter-clockwise direction.

Do not rotate the zenith adj. screw more than one full turn (360 degrees) in either direction of the clockwise or counterclockwise.

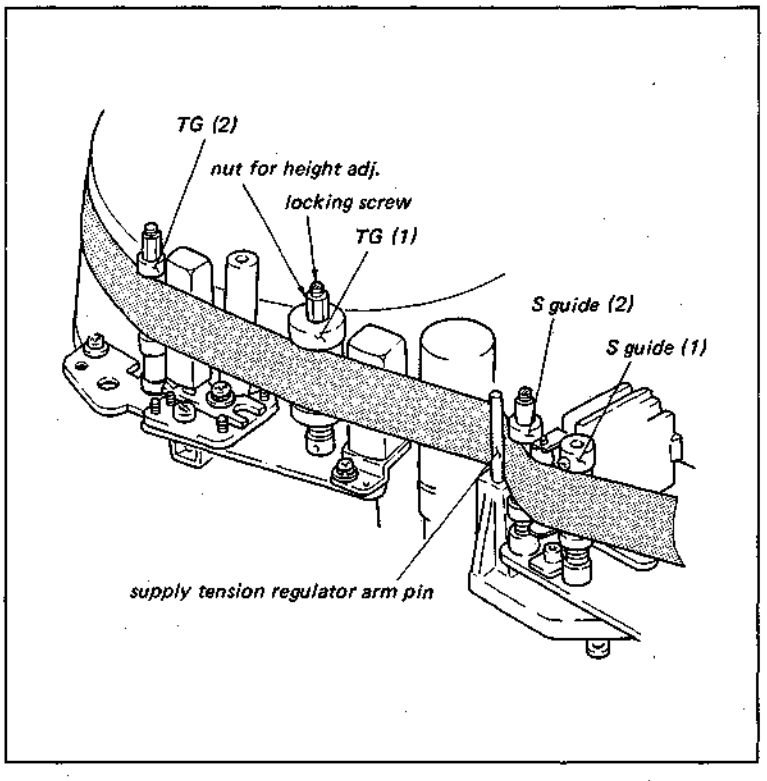
(3) If the adjusting is not satisfied in step (2), adjust as follows.
Turn the zenith adj. screw of 6th guide.

9-2-5. Tape Run Adjustment at S Guide (1) and (2)

Tool:
Alignment tape, RR5-2SB-PAL
Oscilloscope
Extension board

Mode:FWD(x1), REV(x1)

Check procedure:
(1) Insert a KCA-60 cassette tape (use the middle portion of the tape for this adjustment) and put the machine into the FWD(x1) mode.
(2) Check that there are not curl at tape guides (1), (2), TG1 and TG2.
(3) Check that amount of tape tension at the two points is exactly equal i.e., equal at the tape top and tape bottom at the supply tension regulator.



Adjustment procedure:
(1) Connect the oscilloscope to TP29/YD-9 board and externally trigger from TP3/YD-9 board.
(2) Play back the color-bar portion or the monoscope portion of the alignment tape.

(3) Adjust height of the guides so that the RF envelope fluctuation maintains flatness and the tape run without curl of supply guide (1), (2), TG1 and TG2. Adjust height so that amount of tape tension at the supply tension regulator is exactly equal i.e., equal at the tape top and tape bottom. Do not adjust the slantness of supply tension regulator arm pin.

9-2-6. FWD/REV Tape Run Overall Adjustment

Mode:FWD(x1), REV(x1)

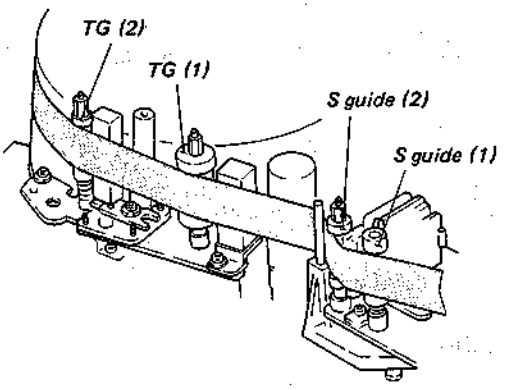
Check procedure:

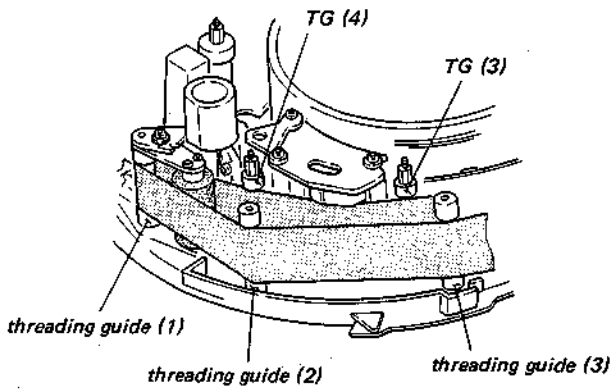
(1) Insert a KCA-60 cassette tape. Repeat putting the machine into the FWD (x1)and the REV-(x1) modes. Check as follows.

(2) Check that there is not curl of supply guide (1), (2), TG1 and TG2. Tape curl, if it exists in the FWD(x1) or the REV(x1) modes, check that the tape curl meets the specification.
Observe the surface of the running tape very carefully in the supply tension regulator. Check that amount of tape tension at the tape top and tape bottom is exactly equal amount.

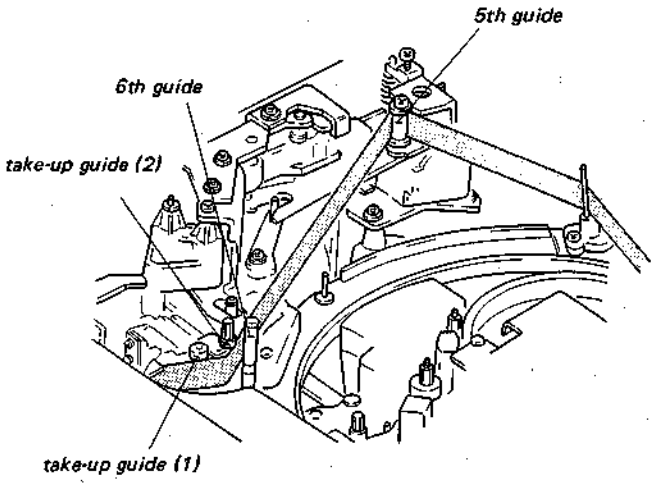
(3) Check that there exists no tape curl of TG3, TG4 and threading guide (2). Tape curl, if it exists in the FWD(x1) or the REV(x1) modes, check that curl meets the specification. Check that there exists no tape curl at threading guide (1).

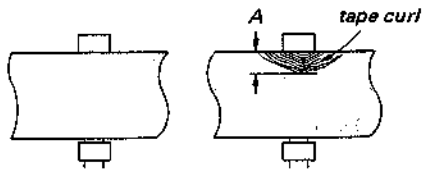
(4) Check that there exists no tape curl at 5th guide. Tape curl, if it exists in the FWD(x1) or the REV(x1) mode, check that curl meets the required specification. Check that there exists no tape curl at take-up guide (1), (2) and 6th guide.





Adjustment procedure:
If tape curl does not meet the required specification, perform the sec.9-2 FWD/REV Tape Run Adjustment.





Spec.:
There exists no tape curl in REV and FWD modes. If there exists tape curl, the tape curl in either FWD or REV mode is acceptable.

Acceptable tape curl is $A \leqq \frac{\text{tape width}}{4}$

9-2-7. S Tension Regulator Arm Pin Slantness Adjustment

This adjustment is usually not required. Proceed the following steps only when the supply tension regulator arm block is replaced or removed.

Tool: Flatness plate

Mode: STANDBY

Check procedure:

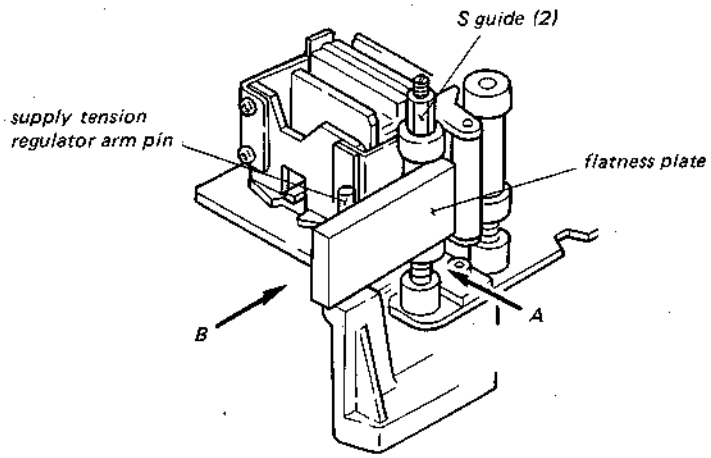
(1) Set the flatness plate on the supply guide (2) as shown in figure. Press the flatness plate with the S tension regulator pin lightly. Check that the clearance between S tension regulator pin and flatness plate meets the required specification.

(2) Check that the clearances of the top and bottom between the S tension regulator pin and the supply guide (2) are equal viewing from the direction of the arrow A.

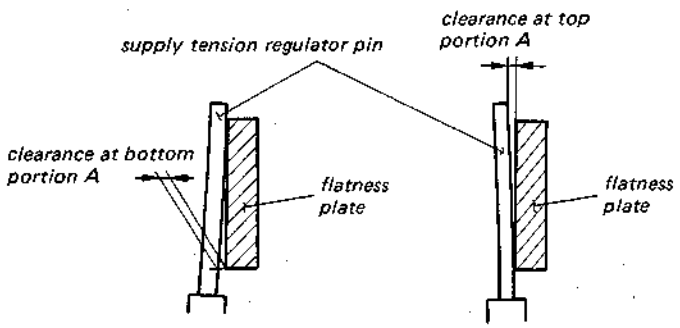
Adjustment procedure:

(1) If the check procedure (1) is out of specification.
When the clearance is out of spec. at the top portion, loosen the fixing screw about 1/2 turns and turn the adjusting screw A and B of exactly equal amount in clockwise direction. Tighten the fixing screw and check again.
When the clearance is out of spec. at the bottom portion, turn the adjusting screws A and B of exactly equal amount in counterclockwise direction. Tighten the fixing screw and check again.

(2) If the check procedure (2) is out of specification.
When the clearance is out of spec. at the top portion, loosen the fixing screw about 1/2 turns and turn the adjusting screw A and B of exactly equal amount in clockwise direction. Tighten the fixing screw and check again.

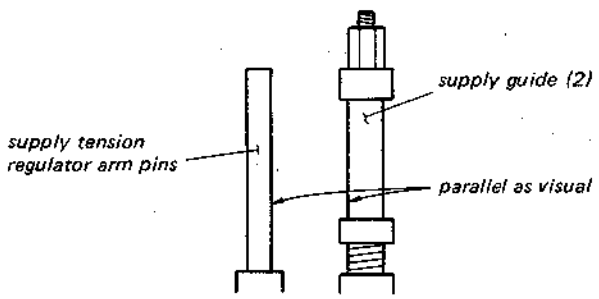


< viewing from B >



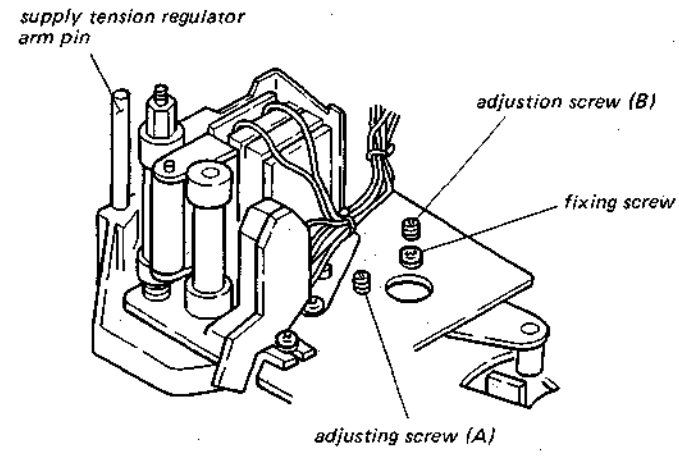
Spec.:
Clearance at top or bottom portion
$A \leq 0.05$ mm

< viewing from A >



TAPE RUN

When the clearance is out of spec. at the bottom portion, turn the adjusting screws A and B of exactly equal amount in counterclockwise direction. Tighten the fixing screw and check again.



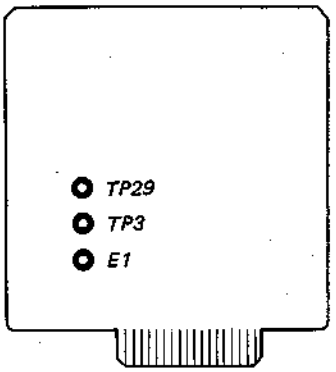
9-3. VIDEO TRACKING ADJUSTMENT

Tool:
Alignment tape, RR5-2SB-PAL
Flatness plate
Extension board
Oscilloscope

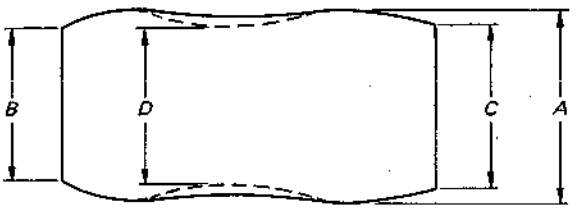
Preparation:
(1) Connect the oscilloscope to TP29/YD-9 board, and externally trigger from TP3/YD-9 board.
(2) Turn on the power.
(3) Playback the color-bar portion of the alignment tape.

Check procedure:
(1) While observing the waveform on the scope, turn the TRACKING control knob in the both directions noting that the RF waveform maintains a flat envelope while the amplitude increases and decreases.
(2) Confirm that the RF waveform fluctuation and head-to-tape contact are within the specification when the RF envelope is made as large as possible by turning the TRACKING control knob.

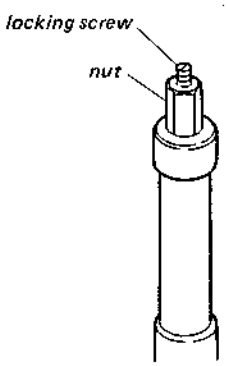
Adjustment procedure:
When perform the tape guide height adjustment, loosen the locking screw of tape guides.
When the tracking at the drum's input side is no good.
(1) Set the TRACKING control knob so that the RF waveform amplitude is made to 70 to 80 % of the maximum amplitude.
(2) Adjust height of the tape guides of TG-1, TG-2 and supply tape guide 2. Do not adjust the slantness of the supply tension regulator arm.
When the tracking at the drum's exit side is no good.
(3) Set the TRACKING control knob so that the RF waveform amplitude is made to 70 to 80 % of the maximum amplitude.



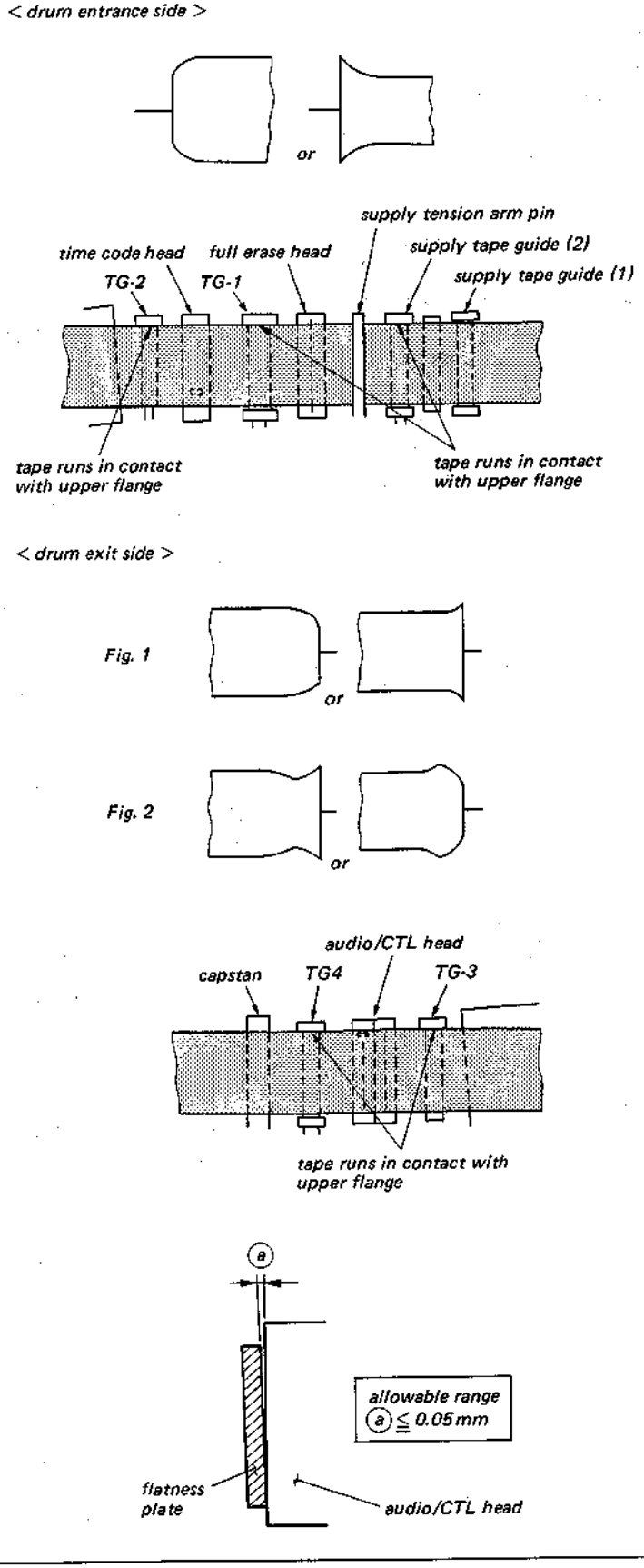
YD-9 board



Spec.:
< head-to-tape contact >
$\frac{B}{A} \geqq 0.70$ $\frac{C}{A} \geqq 0.70$
< fluctuation of amplitude >
$\frac{D}{A} \geqq 0.9$



(4) When the RF waveform is not flat as shown in Fig.1, adjust the height of TG-3 and TG-4 so that the RF waveform is flat. When the RF waveform is no flat as shown in Fig.2, adjust the height of TG-3 and TG-4 so that the RF waveform is flat. If it does not with this adjustment, adjust the zenith of the audio/CTL head within the allowable range. Adjust the height of the TG-3 and TG-4.



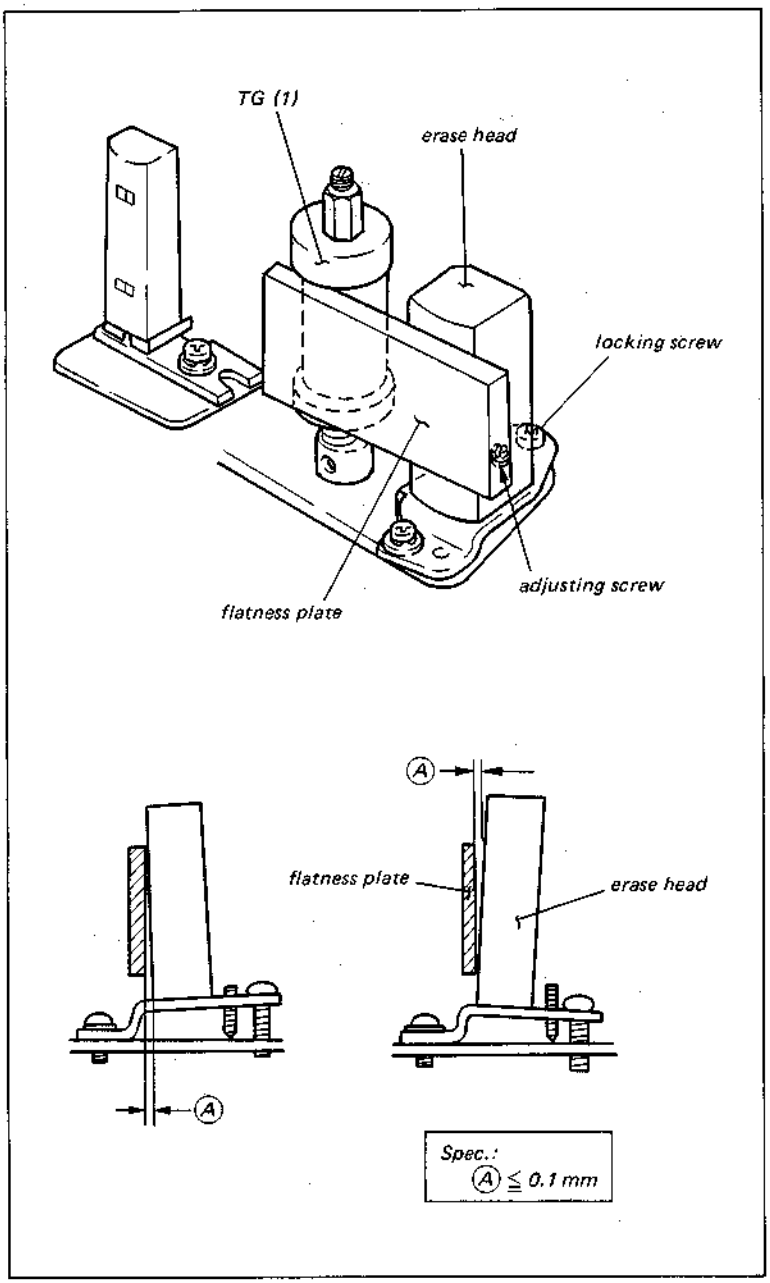
9-4. ERASE HEAD ZENITH ADJUSTMENT

Tool: Flatness plate

Check procedure:
Check that the clearnace between the erase head and the flatness plate meets the required specification, when the flatness plate is set on the erase head and TG1.

Adjustment procedure:
When the clearance is out of spec. at the top portion of the erase head.
(1) Turn the adjusting screw in counterclockwise direction.
(2) Tighten the locking screw and check zenith again.

When the clearance is out of spec. at the bottom portion of the erase head.
(3) Loosen the locking screw.
(4) Turn the adjusting screw in clockwise direction.
(5) Tighten the locking screw and check zenith again.



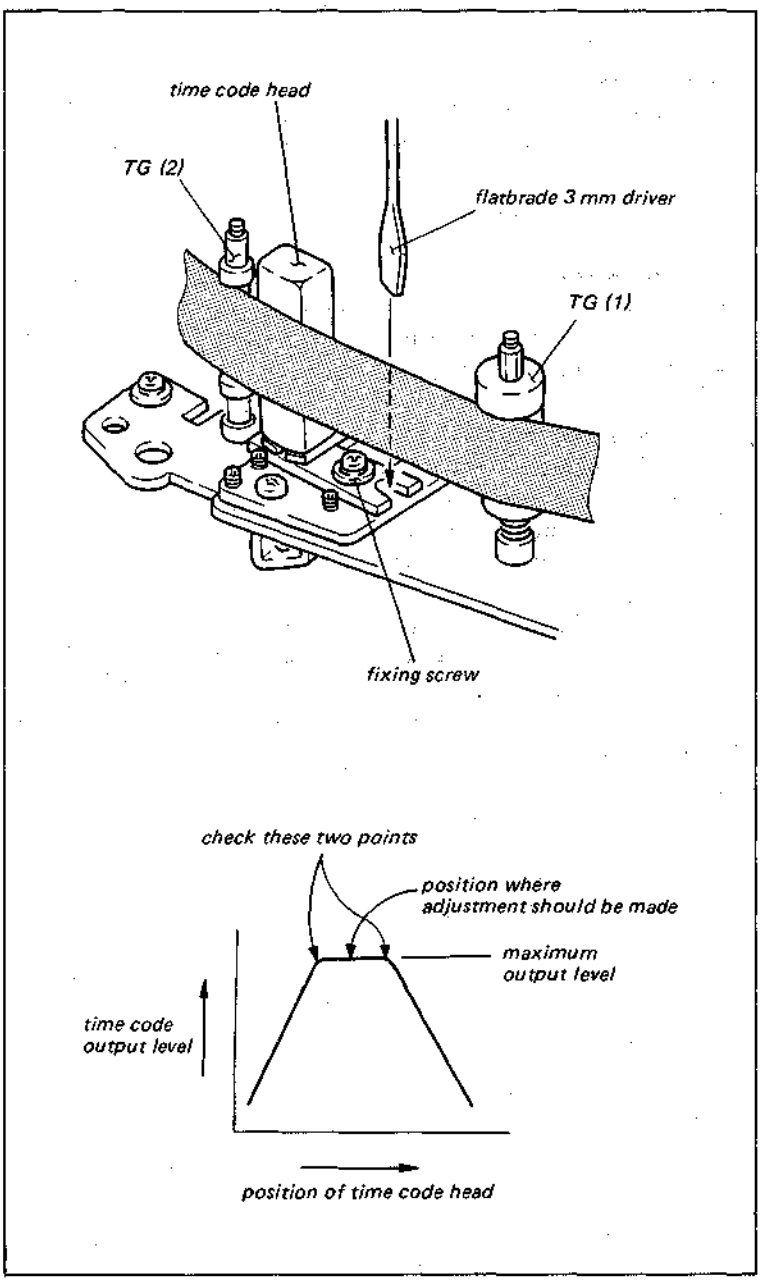
9-5. TIME CODE HEAD ADJUSTMENT

9-5-1. Time Code Head Tape-to-Head Contact Adjustment

Tool:
Alignment tape, RR5-2SB-PAL
VTVM or oscilloscope

Preparation:
(1) Connect the VTVM or oscilloscope to TIME CODE OUT terminal.
(2) Playback the color-bar portion of the alignment tape. (time code output level is about -30 dB.)

Adjustment procedure:
(1) Loosen the fixing screw of time code head about 1/4 turns.
(2) Insert a flatbrade 3mm screwdriver into the hole as shown in figure. Adjust the time code head block where the output is maximum and starting to decrease.
(3) Set the time code head block on the middle portion of two points and tighten the fixing screw.



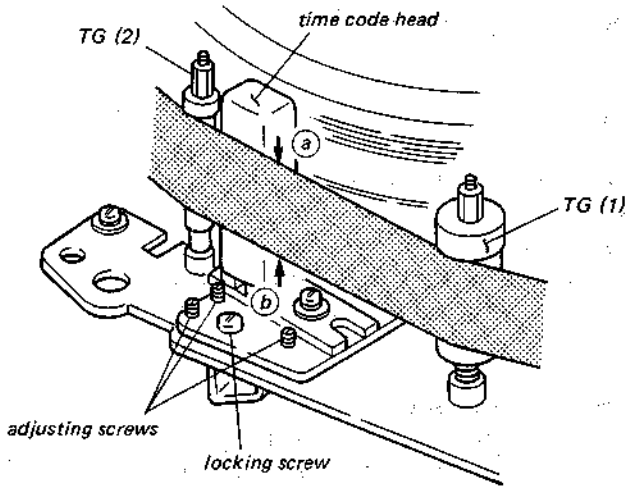
9-5-2 Time Code Head Height Adjustment

Tool:
Alignment tape, RR5-2SB-PAL
VTVM or Oscilloscope

Preparation:
(1) Connect the VTVM or oscilloscope to TIME CODE OUT terminal.
(2) Playback the color-bar portion of the alignment tape.

Check procedure:
Check that the level increase is less than 0.5 dB when pressing down at A and pushing up B.

Adjustment procedure:
Level increase is more than 0.5 dB when pressing down at A.
(1) Loosen the locking screw 1/2 to 1/4 turns and turn 3 adjusting screws of exactly equal amount in clockwise direction.
(2) Tighten the locking screw and check height again.
Level increase is more than 0.5 dB when pushing up at B.
(3) Turn 3 adjusting screws of exactly equal amount in counterclockwise direction.
(4) Tighten the locking screw and check height again.



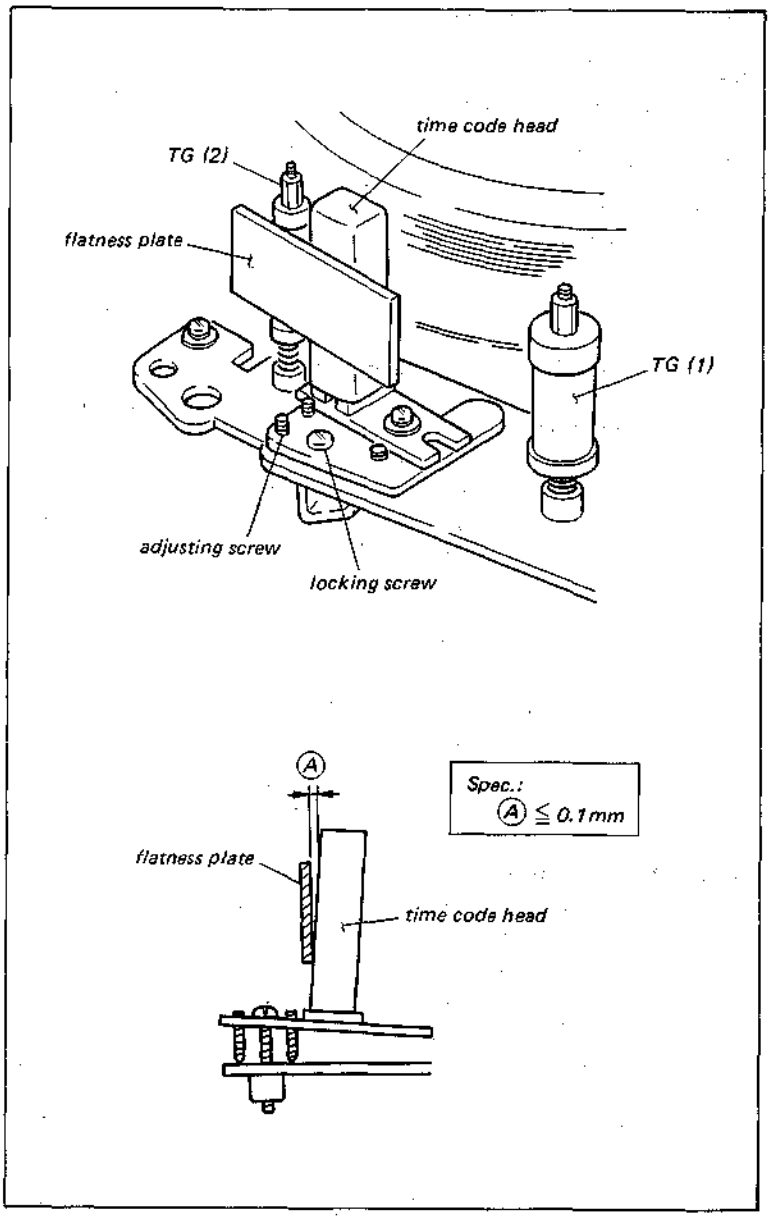
Spec.:
Level increase is less than 0.5 dB when pressing down at (a) and pushing up (b).

9-5-3. Time Code Head Zenith Adjustment

Tool: Flatness plate

Check procedure:
Check that the clearnace between the time code head and the flatness plate meets the required specification, when the flatness plate is set on the time code head and TG-2.

Adjustment procedure:
When the clearance is out of spec. at the top portion of the time code head.
(1) Turn the adjusting screw in counterclockwise direction.
(2) Tighten the locking screw and check zenith again.
When the clearance is out of spec. at the bottom portion of the time code head.
(3) Loosen the locking screw 1/4 to 1/2 turns and turn the adjusting acrew in clockwise direction.
(4) Tighten the locking screw and check zenith again.



9-6. AUDIO HEAD ADJUSTMENT

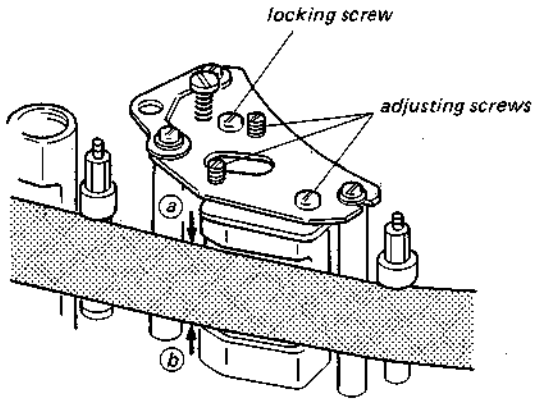
9-6-1. Audio Head Height Adjustment

Tool:
Alignment tape, RR5-2SB-PAL
VTVM or Oscilloscope

Preparation:
(1) Connect the VTVM or oscilloscope to AUDIO OUT CH-1 and CH-2 terminals.
(2) Playback the audio 1 kHz portion of the alignment tape.

Check procedure:
(1) Check that the CH-1 output level increase is less than 0.5 dB when pressing down at A. If not, perform the steps (1) and (2) of the adjustment procedure.
(2) Check that the CH-2 output level increase is less than 0.5 dB when pushing up at B. If not, perform the steps (3) and (4) of the adjustment procedure.

Adjustment procedure:
(1) Loosen the locking screw and turn the zenith height adjusting screws (R) and (F) counterclockwise at the same amount and turn the azimuth adjusting screw clockwise at the same amount.
(2) Tighten the locking screw and check height again.
(3) Loosen the locking screw and turn the zenith height adjusting screws (R) and (F) clockwise at the same amount and turn the azimuth adjusting screw counterclockwise at the same amount.
(4) Tighten the locking screw and check height again.



Spec.:
- *CH-1 level increase is less than 0.5 dB when pressing down at ⓐ portion.*
- *CH-2 level increase is less than 0.5 dB when pushing up at ⓑ portion.*

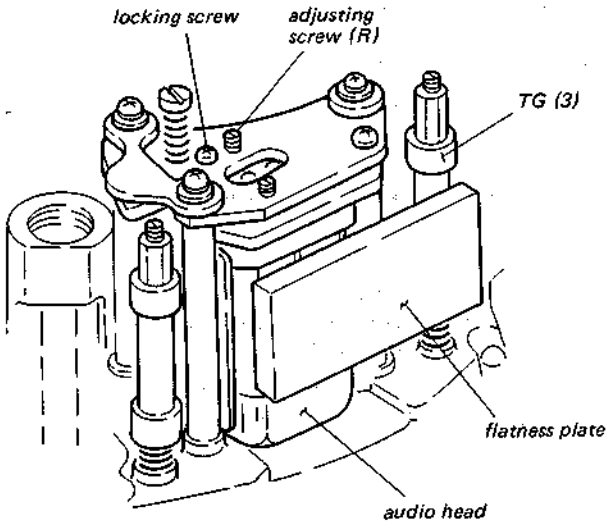
9-6-2. Audio Head Zenith Adjustment

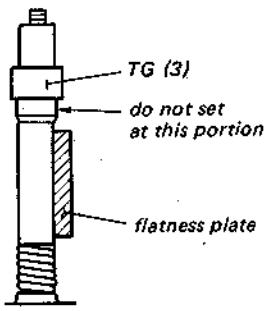
Tool: Flatness plate

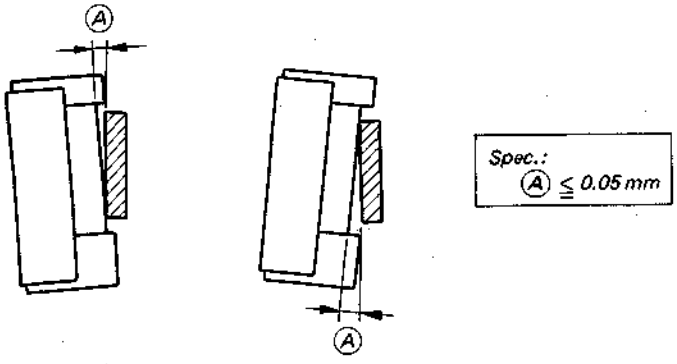
Check procedure:
Check that the clearance between the audio head and the flatness plate meets the required specification, when the flatness plate is set on the audio head and TG-3. Do not set the flatness plate on the upper portion of the TG-3.

Adjustment procedure:
.When the clearance is out of spec. at the top portion of the audio head.
(1) Turn the adjusting screw (R) in counterclockwise direction.
(2) Tighten the locking screw and check zenith again.

.When the clearance is out of spec. at the bottom portion of the audio head.
(3) Loosen the locking screw 1/4 to 1/2 turns and turn the adjusting screw (R) in clockwise direction.
(4) Tighten the locking screw and check zenith again.





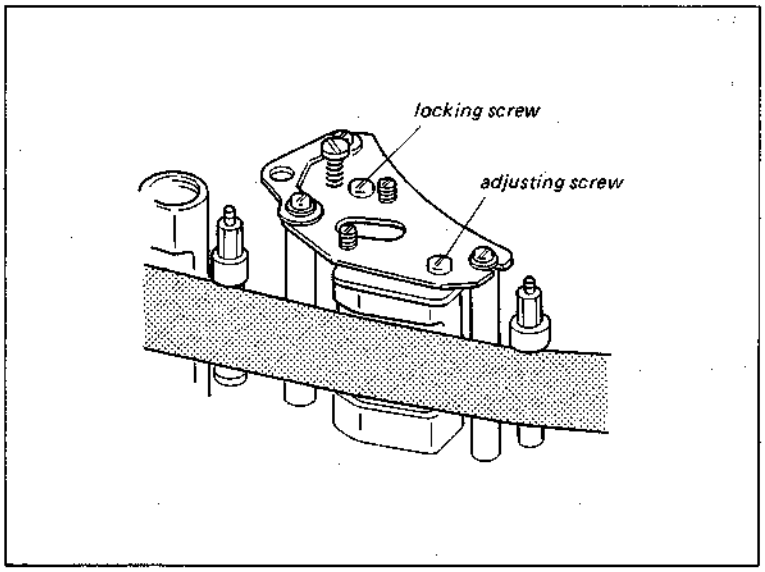


9-6-3. Audio Head Azimuth Adjustment

Tool:
Alignment tape, RR5-2SB-PAL
VTVM or oscilloscope

Preparation:
(1) Connect the VTVM or oscilloscope to AUDIO OUT CH-1 or CH-2 terminal.
(2) Playback the audio 10 kHz portion of the alignment tape.

Adjustment procedure:
(1) Loosen the locking screw and adjust the maxmum output level by turning the adjusting screw.
(2) Tighten the locking screw.



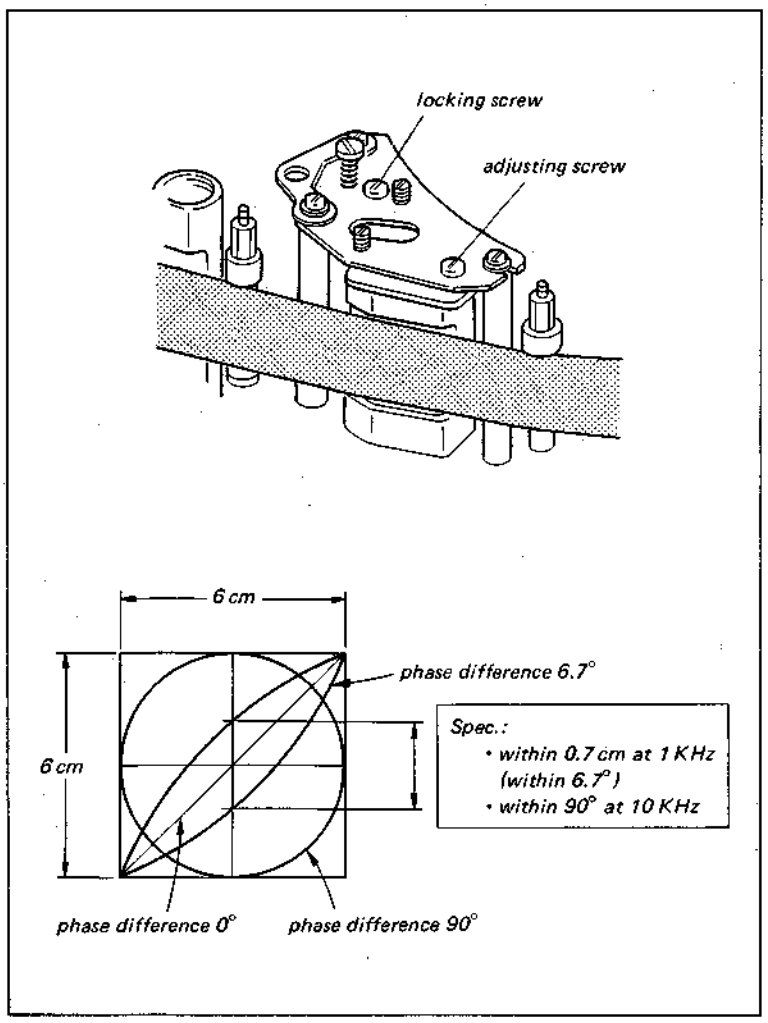
9-6-4. Audio Head Phase Adjustment

Tool:
Alignment tape, RR5-2SB-PAL
Oscilloscope

Preparation:
(1) Connect the horizontal and vertical terminals of the oscilloscope to AUDIO OUT CH-1 and CH-2 terminals.
(2) Playback the audio 1 kHz portion of the alignment tape.
(3) Adjust the scope for horizontal and vertical amplitudes of 6 cm of a lissajous waveshape.

Check procedure:
Check that the vertical amplitude at the center in the horizontal direction is within the specification at 1 kHz and 10 kHz.

Adjustment procedure:
(1) Loosen the locking screw 1/4 to 1/2 turns and adjust the phase by turning the adjusting screw.
(2) Tighten the locking screw and confirm phase again.



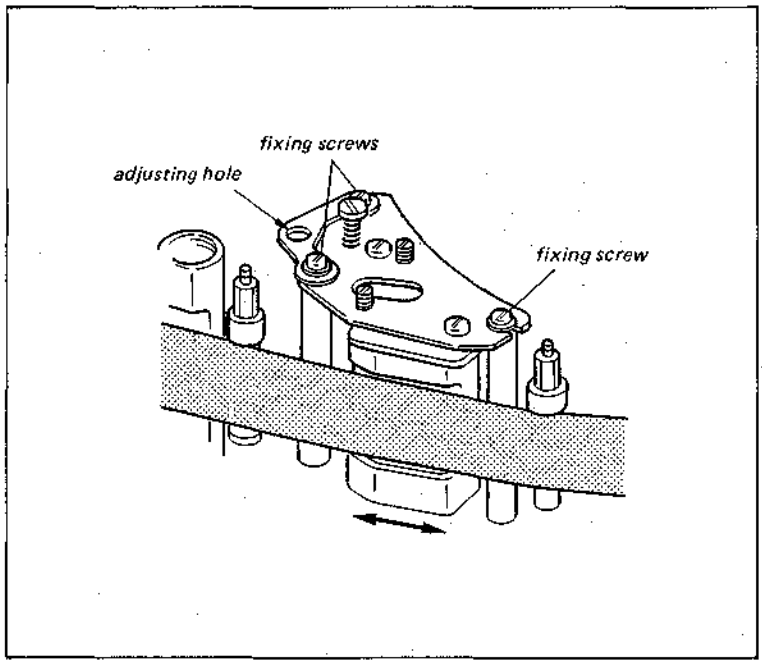
9-7. AUDIO/CTL HEAD POSITION ADJUSTMENT

Tool:
Alignment tape, RR5-2SB-PAL
Oscilloscope

Preparation:
(1) Connect the oscilloscope to TP29/YD-9 board, and externally trigger from TP3/YD-9 board.
(2) Playback the color-bar portion of the alignment tape.

Check procedure:
Check that the RF waveform has the maximum amplitude when the TRACKING control knob is set in the detent position.

Adjustment procedure:
Adjust the position of the audio/CTL head in the direction of the arrow.

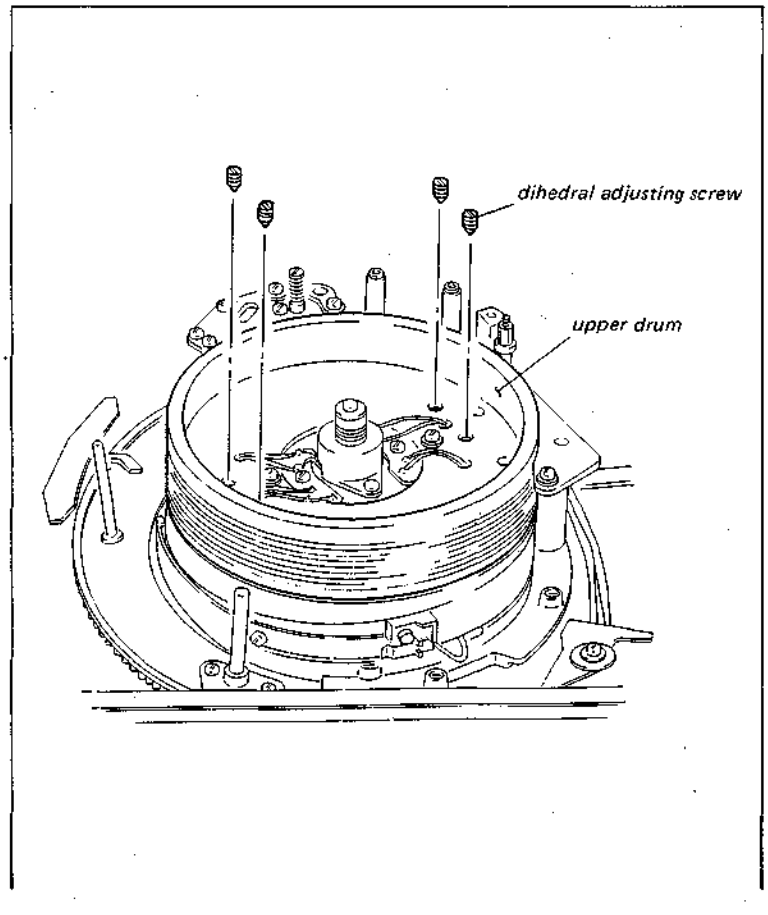


9-8. VIDEO HEAD DIHEDRAL ADJUSTMENT

Video head dihedral adj. and video head azimuth adj. are closely related. If any one of these adjustments is attempted, perform another adjustment at the same time.

Tool:
Dihedral adjusting screw
Alignment tape, RR5-2SB-PAL
Video monitor

Check procedure:
(1) Playback the monoscope portion of the alignment tape.
(2) Check that one vertical line beneath the switching point on the monitor screen looks divided into two separated lines which should normally be one line. (If one vertical line looks as two separate lines, dihedral adjustment is necessary. When one line is not divided into two lines, adjustment is not necessary.)



Adjustment procedure:

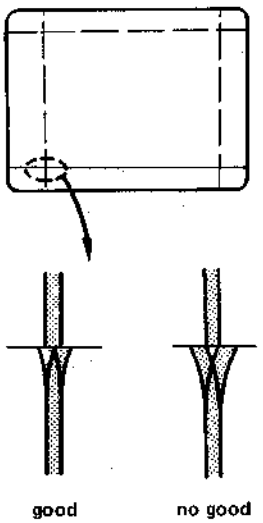
(1) Screw lightly four dihedral adjusting screws into the upper drum.

(2) Turn either of the two screws adjacent to the video head with white leads until some resistance is felt.

(3) If this screw is turned further, the video head is moved and the dihedral is adjusted. Therefore, turn this screw an additional quater turn.

(4) Check for dihedral distortion. If the distortion has gotton worse, turn this screw back one turn and tighten the other screw a quarter turn. Check again for dihedral distortion and continue in this way until dihedral error is eliminated.

(5) When the adjustment is completed, remove the four dihedral adjusting screws. After removal, playback the alignment tape and check dihedral again as error sometimes reappears after screws are removed.



9-9. VIDEO HEAD AZIMUTH ADJUSTMENT

Tool:
Alignment tape, RR5-2SB-PAL
Oscilloscope

Preparation:
(1) Connect the oscilloscope to TP12/RP-5-1 board, and externally trigger from TP3/ YD-9 board.
(2) Turn on the power.
(3) Playback the RF 8MHz portion of the alignment tape, and adjust the TRACKING control for the maximum RF output signal amplitude.

Check Procedure:
(1) Check that the RF output signal of amplitude is within the specification.
If not, put the machine into the STANDBY mode first, and adjust as follows.

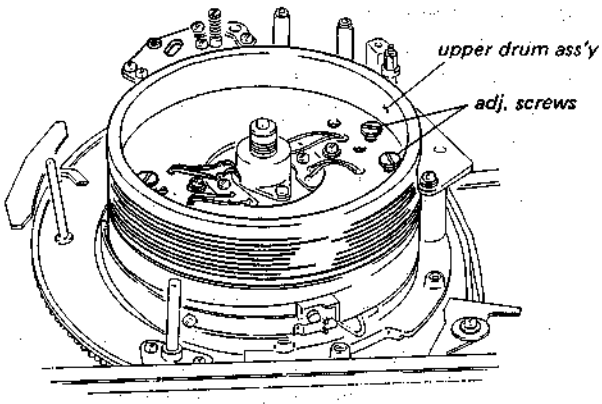
(i) If the RF output signal is out of spec. as shown in Fig.1,

Locate the video head tip with white lead to the alignment tape side.
Turn the azimuth adjusting screw that locate the right side of the video head with white lead.

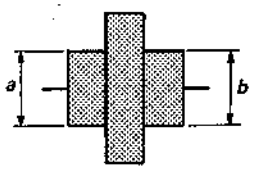
(ii) If the RF output signal is out of spec. as shown in Fig.2,

Locate the video head tip with white lead to the alignment tape side.
Turn the azimuth adj. screw that locate the left side of the video head with white lead.

(2) connect the oscilloscope to TP11/RP-5-1 board.
(3) check and/or adjust to the other video head tip (with red lead) in the same manner as described in step (1).
(4) After this adjustment, perform the sec.9-8 Video Head Dihedral Adjustment.



Spec.



a = b

Fig. 1.

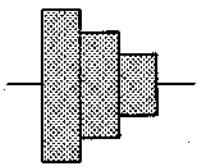
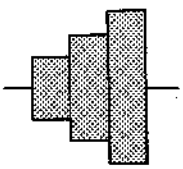


Fig. 2.



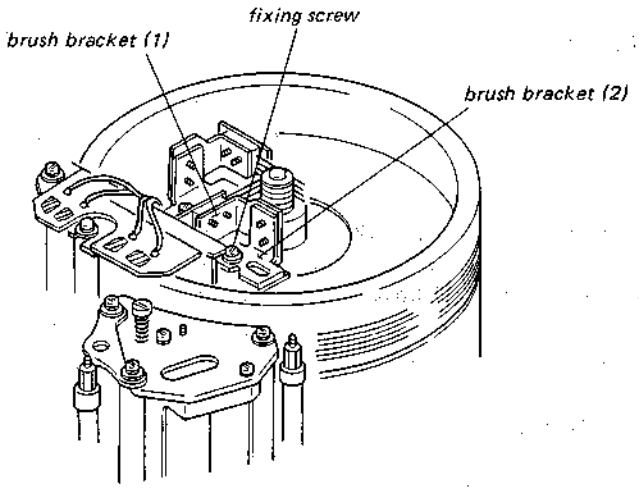
9-10. SLIP-RING AND BRUSH POSITION ADJUSTMENT

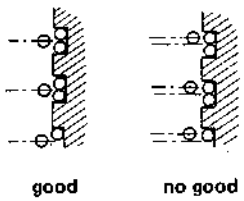
Adjustment procedure:

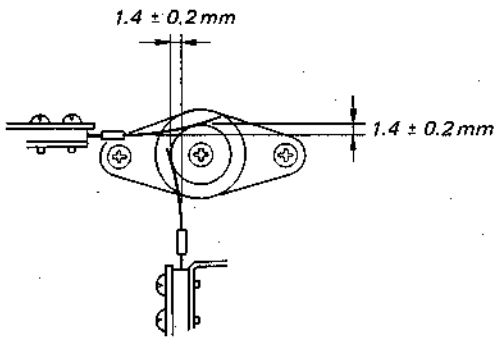
(1) Loosen the fixing screw of the brush bracket (2) and disengage the brush from the slip-ring. Tighten the fixing screw.

(2) Loosen the fixing screw of the brush bracket (1). Adjust the height of the brush bracket (1) to meet the specification.

(3) Loosen the fixing screw of the brush bracket (2) again. Adjust the position of the brush to meet the specification.







SECTION 10
POWER SUPPLY/SYSTEM CONTROL ALIGNMENT

[Equipment Required]
- DC Voltmeter
- Oscilloscope
- (BVE-500ACE or BVR-510ACE)

> Note : Not always to readjust power line for slite out-of-specification so far as servo and video system are normal because it affects servo and video chracteristic.

10-1. SWITCHING REGULATOR ADJUSTMENT

10-1-1. Excess Voltage Detector Circuit adjustment

(1) Turn off the Power Switch and turn the RV2 on PW-79 board fully counterclockwise. (component side view)
(2) Turn on the Power Switch and adjust the voltage at TP305 on PD board to 17.0 ± 0.1V by RV1 on PW-79 board.

> Caution : Care should be taken for adjustment of RV2 as it may damage many compornents if the voltage at TP305/PD board exceeds 17.1V.

(3) Turn RV2 on PW-79 board gradually clockwise (component side view) until the voltage at TP305 on PD board will be 0V.

> Note : Perform 10-1-2 output voltage adjustment successively.

10-1-2. OUTPUT Voltage Adjustment

(1) Turn off the Power Switch and turn the RV1 on PW-79 board fully counterclockwise. (component side view)
(2) Wait two minutes or more, then turn on the Power Switch and set to the STOP mode. (with tape threaded)
(3) Adjust the voltage at TP305 on PD board to 15.5 ± 0.1V with RV1 on PW-79 board.

> Note : Confirm the specification of 10-2 REG5V adjustment and 10-3 REG12V adjustment when this output voltage adjustment is performed.

10-2. REG5V ADJUSTMENT

«machine conditions for adjustment»
- STOP mode

«spec.»
- TP304/PD-14
- **5.33 ± 0.01V**

●RV2/PD-14

10-3. REG12V ADJUSTMENT

«machine conditions for adjustment»
- STOP mode

«spec.»
- TP301/PD-14
- **12.0 ± 0.1V**

●RV1/PD-14

10-4. TAPE BEGINNING/END DETECTOR ADJUSTMENT

«machine conditions for adjustment»
- STOP mode
- without cassette

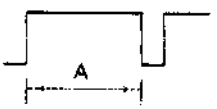
«spec.»
- TP1/RE-3
- **6.0 ± 0.2V**

●RV1/RE-3

10-5. SEARCH × 10 MODE DETECTOR ADJUSTMENT

«machine conditions for adjustment»
- FWD SEARCH ×5 mode (Just before clik position)

«spec.»
- IC41-10/SY-36



- **A = 18.5 ± 0.3μS**

●RV2/SY-36

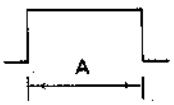
10-6. PINCH ROLLER PRESSURE TIMING ADJUSTMENT (1)

NOTE ; This adjustment is only performed in remote control with 36P remote connector.

«machine conditions for adjustment»
- REMOTE/LOCAL SW ; REMOTE
- REMOTE 1/2 SW ; 2 (36P)
- Change the mode, REMOTE SEARCH STILL mode to REMOTE SEARCH FWD mode.
  (BVE-500A or BVR-510A is used in this adjustment.)

«spec.»

- IC50-6/SY-36



- **A = 180 ± 3mS**

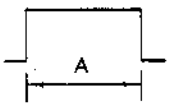
● RV1/SY-36

10-7. PINCH ROLLER PRESSING TIMING ADJUSTMENT (2)

«machine conditions for adjustment»
- Change the mode, STOP mode to PLAY mode.

«spec.»

- IC50-10/SY-36



- **A = 180 ± 3mS**

● RV3/SY-36

SECTION 11
SERVO SYSTEM ALIGNMENT

[Equipment Required]
- Oscilloscope
- Audio Oscillator
- Frequency Counter
- Alignment Tape
  RR5-2SB PAL (Parts No.8-960-020-62)

Time (min.)	Video	Audio	Time code
5	Color bars	3kHz,0dB	1kHz
5	R-F sweep	–	–
5	Monoscope	–	–
2.5	Modulated 20T pulse	1kHz,0dB	–
2.5	R-F 8MHz	10kHz,-10dB	–

[Definition of Mode]

Mode	Frequency at TP11 on SV board. (Hz)
PLAY	approx. 450
SEARCH × 1/30	approx. 15
SEARCH × 1/10	approx. 40
SEARCH × 1/5	approx. 83
SEARCH × 1/2	approx. 220
SEARCH × 1	approx. 444
SEARCH × 2	approx. 890
SEARCH × 5	approx. 2230
SEARCH × 10	approx. 450 (Click position)

11-1. CAPSTAN FG BIAS ADJUSTMENT

«machine conditions for adjustment»
- STOP mode

«spec.»
- TP11/SV board
- **DUTY = 50 ± 2%**

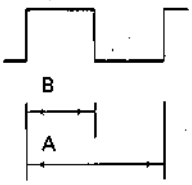
RV14/SV board

«spec.»
- TP12/SV board
- **DUTY = 50 ± 2%**

RV17/SV board

NOTE ;

$$DUTY = \frac{B}{A}$$



11-2. DRUM FREE SPEED ADJUSTMENT

«machine conditions for adjustment»
- STOP mode

«spec.»
- TP5/SV board
- **DUTY = 50 ± 2%**

RV4/SV board

NOTE ; After completing this adjustment, perform the section 11-12. Drum Lock Phase Adjustment (RV4 fine adj.).

11-3. CAPSTAN FREE SPEED ADJUSTMENT

«machine conditions for adjustment»
- STOP mode

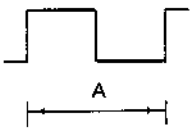
«spec.»
- TP7/SV board
- **DUTY = 60 ± 2%**

RV11/SV board

11-4. SEARCH × 5 ADJUSTMENT

«machine conditions for adjustment»
- FWD SEARCH × 5 mode

«spec.»
- TP12/SV board



- **A = 0.44 ± 0.01mS**

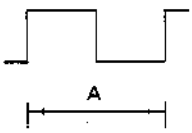
RV3/SV board

NOTE ; After completing this adjustment, perform the section 11-6. SEARCH × 1 adjustment (RV3 fine adj.).

11-5. SEARCH × 1/30 ADJUSTMENT

«machine conditions for adjustment»
- FWD SEARCH × 1/30 mode

«spec.»
- TP12/SV board



- **A = 67 ± 10mS**

RV15/SV board

SERVO

11-6. SEARCH × 1 ADJUSTMENT (RV3 fine adj.)

«machine conditions for adjustment»
- FWD SEARCH × 1 mode
- MODE SELECT SW ; TBC

«spec.»
- TP12/SV board
- **444 ± 2Hz**

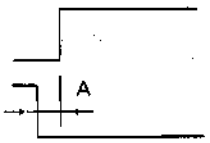
RV3/SV board

11-7. TRACKING CONTROL CALIBRATION

«machine conditions for adjustment»
- Playback mode ; Alignment tape (Color bar segment)
- TRACKING ; FIXED

«spec.»

- 38B/SV board
- TP501/CF-9



TRIG ; 38B/SV board

- **A = 0 ± 0.05mS**

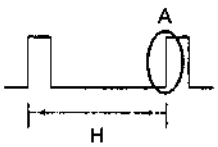
RV1/SV board

11-8. DRUM AFC (H period) ADJUSTMENT

«machine conditions for adjustment»
- Change the mode, PLAY mode to STILL (SEARCH) mode.

«spec.»

- TP2/SV board



- **Oscilloscope DELAY mode at A portion.**
- **H period (in PLAY mode) ± 0.05μS = H period (in STILL mode)**

RV13/SV board

11-9. AFC BIAS ADJUSTMENT

«machine conditions for adjustment»
- Change the mode, STILL (SEACH) mode to PLAY mode.

«spec.»
- TP9/SV board
- **The dc level at STILL mode = The dc level at PLAY mode**

RV12/SV board

11-10. CAPSTAN SPEED DETECTOR ADJUSTMENT

«machine conditions for adjustment»
- FWD SEARCH × 1/30 mode

«spec.»

- IC28-6/SV board

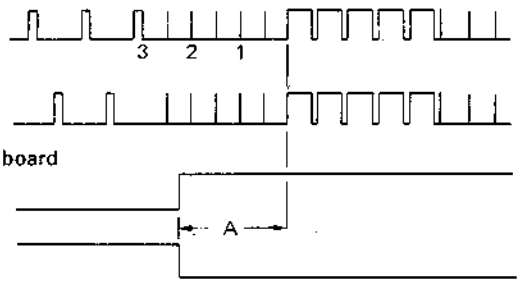
- **A = 0.67 ± 0.01mS**

RV2/SV board

11-11. SWITCHING POSITION ADJUSTMENT

«machine conditions for adjustment»
- Playback mode ; Alignment tape (Color bar segment)
- Short between TP3 and GND/SV board with jumper.
- Short between TP2 and GND/SV board with jumper.
- TRACKING ; FIXED

«spec. at the adjustment»
- 5A/SV board



- TP18/SV board

- **A = 2.25 ± 0.15H**

RV6/SV board (rising)
RV8/SV board (falling)

«spec. at the checking»
- $A = 2.25\,H \begin{smallmatrix} +\,0.75\,H \\ -\,1.75 \end{smallmatrix}$

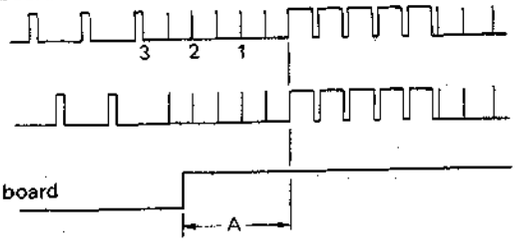
NOTE ; Once the switching position adjustment is completed to 2.25H ± 0.15H, if the data measured using another alignment tape is within 0.5H — 3.0H. This is acceptable because of tape torerance.

SERVO

11-12. DRUM LOCK PHASE ADJUSTMENT (RV4 fine adj.)

«machine conditions for adjustment»
- REC mode
- VIDEO IN ; Color bar
- Short between TP3 and GND/SV board with jumper.
- Short between TP2 and GND/SV board with jumper.
  (S/N. up to 12185 . . . PAL
  S/N. up to 10185 . . . SECAM)
- Short between IC100-6 pin (or IC5-6 pin) and GND/SV board with jumper. (S/N. 12186 and higher . . . PAL
  S/N. 10186 and higher . . . SECAM)

«spec.»
- TP15/SV board



- TP18/SV board
- A = 2.25 ± 0.15H

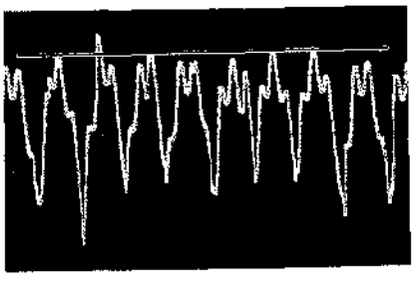
●RV4/SV board

11-13. PICTURE SPLITTING COMPENSATOR ADJUSTMENT

NOTE ; This adjustment is not necessary in normal service operation except when the variable resistor, upper drum assy and/or drum assy is replaced.

«machine conditions for adjustment»
- Playback mode ; Alignment tape (monoscope segment)

«spec.»
- TP19/SV board

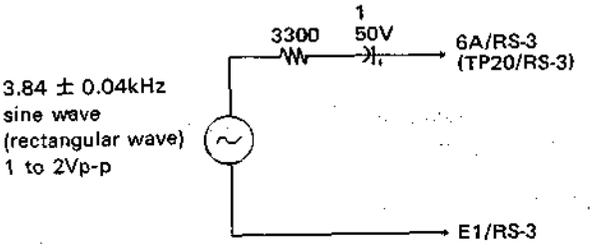


- Flatten the peak level as possible as maximum level.

●RV9/SV board
●RV10/SV board

11-14. TAKE UP REEL MOTOR SPEED ADJUSTMENT

«machine condetions for adjustment»
- Cassette up mode
- Confirm that dc level at TP24 on RS-3 board is 12 ± 0.2V.
- Connect the sine wave (or rectangular wave) at 6A on RS-3 board.

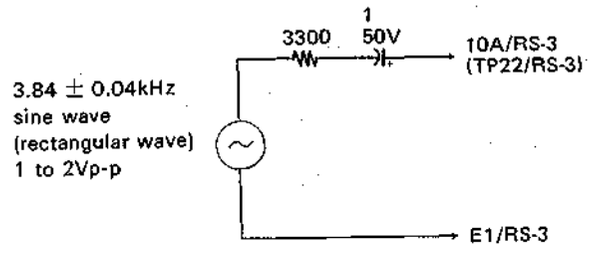


«spec.»
- TP4/RS-3
- 5 ± 0.05V

●RV1/RS-3

11-15. SUPPLY REEL MOTOR SPEED ADJUSTMENT

«machine conditions for adjustment»
- Cassette up mode
- Confirm that dc level at TP24 on RS-3 board is 12 ± 0.2V.
- Connect the sine wave (or rectangular wave) at 10A on RS-3 board.



«spec.»
- TP10/RS-3
- 5 ± 0.05V

●RV2/RS-3

11-16. CAPSTAN SYNCHRONIZE ADJUSTMENT

«machine conditions for adjustment»
- Playback mode ; Alignment tape (Color bar segment)
- Connect between 3A and CN1-39/SV board with 10kΩ resistor.

«spec.»
- TP12/SV board
- **470 ± 1Hz**

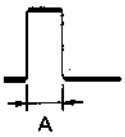
●RV16/SV board

11-17. REF 135degrees BURST PULSE ADJUSTMENT

«machine conditions for adjustment»
- EE mode
- VIDEO IN ; color bar

«spec.»

- TP702/CF-9



- **A = 10 ± 5μS**

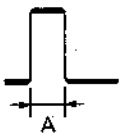
●RV502/CF-9

11-18. PB 135degrees BURST PULSE ADJUSTMENT

«machine conditions for adjustment»
- Playback mode ; Alignment tape (Color bar segment)
- VIDEO IN ; color bar

«spec.»

- TP701/CF-9



- **A = 15 + 5μS**
  − 10μS

●RV501/CF-9

NOTE ;
●RV5/SV board (DT Switching Position Adjustment)
●RV7/SV board (DT Switching Position Adjustment)
These adjustments are not necessary to perform in BVU-800P.

NOTE ;
●RV2/RE-3 (Take-up Reel Motor Current Sense Adjustment)
●RV3/RE-3 (Supply Reel Motor Current Sense Adjustment)
●RV501/RS-4 (T Tension Detector 0 gram Point Adjustment)
●RV502/RS-4 (T Tension Detector 100 gram Point Adjustment)
●RV503/RS-4 (S Tension Detector 0 gram Point Adjustment)
●RV504/RS-4 (S Tension Detector 100 gram Point Adjustment)
Refer to the Mechanical Alignment.

11-19. ASSEMBLE COMPENSATOR ADJUSTMENT

NOTE ; 1. Perform adjustments of section 11-2 (Drum Free Speed), section 11-11 (Switching Position) and 11-12 (Drum Lock Phase) before this adjustment.

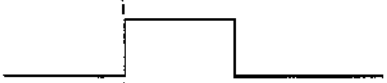
2. Aplicable serial No. : 12186 and later. (PAL)
10186 and later. (SECAM)
(P.C. board part No. 1-607-914-13 and later.)

«machine conditions for adjustment»
- REC mode
- VIDEO IN ; color bar

«spec.»

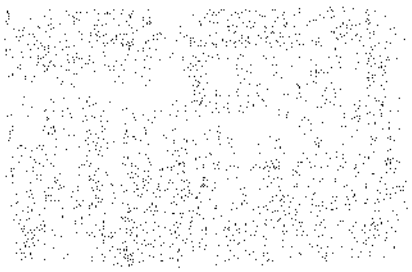
- TP15/SV board

- IC100-6/SV board
  (or IC5-6/SV board)



equalize the phase

●RV100/SV board



SECTION 12
AUDIO SYSTEM ALIGNMENT

[Equipment Required]
- Audio Oscillator
- Audio Attenuator
- VTVM
- Frequency Counter
- Oscilloscope
- Blank Tape
- Alignment Tape
  RR5-2SB PAL (Parts No.8-960-020-62)

Time (min.)	Video	Audio	Time code
5	Color bars	3kHz,0dB	1kHz
5	R-F sweep	–	–
5	Monoscope	–	–
2.5	Modulated 20T pulse	1kHz,0dB	–
2.5	R-F 8MHz	10kHz,-10dB	–

[Switch/VR Setting]
* Front Panel
AUDIO MONITOR CH-1
TRACKING ..... FIXED
VIDEO ..... AUTO
AUDIO LIMITER ..... OFF
MIXING SELECT ..... OFF
MODE SELECT ..... NORMAL
INPUT SELECT ..... LINE
SKEW ..... CLICK
REMOTE 1/2 ..... 2 (36P)
REMOTE/LOCAL ..... LOCAL
PB/PB • EE ..... PB • EE
* Rear Panel
AUDIO IN LEVEL ..... LOW

12-1. AUDIO LEVEL CONTROL SETTING

«machine conditions for adjustment»
- EE mode
- AUDIO IN ; 1kHz, −60dB

«spec.»
- 21A/AU-13 (CH-1)
- **0 ± 0.5dB**

◐AUDIO REC LEVEL (CH-1)

«spec.»
- 34A/AU-13 (CH-2)
- **0 ± 0.5dB**

◐AUDIO REC LEVEL (CH-2)

NOTE ; The AUDIO LEVEL CONTROL should not be touched until rest of section 12 AUDIO SYSTEM ALIGNMENT are completed.

12-2. OUTPUT LEVEL ADJUSTMENT

«machine conditions for adjustment»
- EE mode
- AUDIO IN ; 1kHz, −60dB

«spec.»
- CH-1 AUDIO OUT (600Ω terminated)
- **4 ± 0.5dB**

◐RV1/AO-3

«spec.»
- CH-2 AUDIO OUT (600Ω terminated)
- **4 ± 0.5dB**

◐RV2/AO-3

12-3. MONITOR OUT LEVEL ADJUSTMENT

«machine conditions for adjustment»
- EE mode
- AUDIO IN ; 1kHz, −60dB
- AUDIO MONITOR SW ; CH-1

«spec.»
- AUDIO MONITOR OUT (600Ω terminated)
- **4 ± 0.5dB**

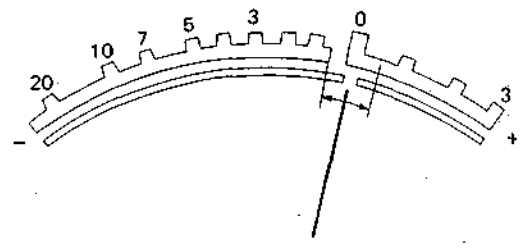
◐RV3/AO-3

Reference
(AUDIO MONITOR SW ; at MIX 7 ± 2dB)

12-4. LEVEL METER CALIBRATION

«machine conditions for adjustment»
- EE mode
- AUDIO IN ; 1kHz, −60dB

«spec.»
- VU meter



- **0 ± 0.5 scale**

◐RV5/AU-13 (CH-1)

«spec.»
- **0 ± 0.5 scale**

◐RV105/AU-13 (CH-2)

12-5. LIMITER LEVEL ADJUSTMENT

«machine conditions for adjustment»
- EE mode
- AUDIO IN ; 1kHz, −30dB
- LIMITER SW ; ON

«spec.»
- CH-1 AUDIO OUT (600Ω terminated)
- **7 ± 0.5dB**

RV3/AU-13 (CH-1)

«spec.»
- CH-2 AUDIO OUT (600Ω terminated)
- **7 ± 0.5dB**

RV103/AU-13 (CH-2)

12-6. PLAYBACK FREQUENCY RESPONSE /LEVEL ADJUSTMENT

«machine conditions for adjustment»
- Playback mode ; Alignment tape (1kHz/10kHz segment)

«spec.»
- CH-1 AUDIO OUT (600Ω terminated)
- **10kHz PB Level**
  = (1kHz PB Level −10dB) ± 1.5dB

RV1/AU-13 (CH-1)

«spec.»
- CH-2 AUDIO OUT (600Ω terminated)
- **10kHz PB Level**
  = (1kHz PB Level −10dB) ± 1.5dB

RV101/AU-13 (CH-2)

12-7. PLAYBACK OUTPUT LEVEL ADJUSTMENT

«machine conditions for adjustment»
- PLAYback mode ; Alignment tape (1kHz segment)
- Adjust the AUDIO PB LEVEL at same degrees of AUDIO REC LEVEL.

«spec.»
- CH-1 AUDIO OUT (600Ω terminated)
- **4 ± 0.5dB**

RV2/AU-13 (CH-1)

«spec.»
- CH-2 AUDIO OUT (600Ω terminated)
- **4 ± 0.5dB**

RV102/AU-13 (CH-2)

12-8. BIAS OSCILLATOR FREQUENCY ADJUSTMENT

«machine conditions for adjustment»
- REC mode

«spec.»
- TP501/AU-25
- **70 ± 2kHz**

LV501/AU-25

12-9. AUDIO ERASE CURRENT ADJUSTMENT (1)

«machine conditions for adjustment»
- REC mode

«spec.»
- TP511/AU-25
- **Maximum level**

LV506/AU-25

12-10. AUDIO ERASE CURRENT ADJUSTMENT (2)

«machine conditions for adjustment»
- CH-1 INSERT mode

«spec.»
- TP511/AU-25
- **Maximum level**

LV505/AU-25

12-11. AUDIO ERASE CURRENT ADJUSTMENT (3)

«machine conditions for adjustment»
- CH-2 INSERT mode

«spec.»
- TP511/AU-25
- **Maximum level**

LV504/AU-25

12-12. RECORD BIAS CURRENT ADJUSTMENT (1)

«machine conditions for adjustment»
- REC mode
- Turn RV501/AU-25 fully counterclockwise. (CH-1) (adjust from soldering side)
- Turn RV502/AU-25 fully counterclockwise. (CH-2) (adjust from soldering side)

«spec.»
- TP502/AU-25 (CH-1)
- **Maximum level**

LV502/AU-25 (CH-1)

«spec.»
- TP503/AU-25 (CH-2)
- **Maximum level**

LV503/AU-25 (CH-2)

NOTE ; After completing this adjustment, perform the section 12-16. Record Bias Current Adjustment (2).

12-13. BIAS TRAP ADJUSTMENT (1)

«machine conditions for adjustment»
- REC mode
- AUDIO IN ; no signal

«spec.»
- TP2/AU-13 (CH-1)
- **Minimum level**

LV2/AU-13 (CH-1)

«spec.»
- TP102/AU-13 (CH-2)
- **Mimimum level**

LV102/AU-13 (CH-2)

12-14. BIAS TRAP ADJUSTMENT (2)

«machine conditions for adjustment»
- CH-1 INSERT mode

«spec.»
- TP101/AU-13
- **Minimum level**

LV101/AU-13

12-15. BIAS TRAP ADJUSTMENT (3)

«machine conditions for adjustment»
- CH-2 INSERT mode

«spec.»
- TP1/AU-13
- **Minimum level**

LV1/AU-13

12-16. RECORD BIAS CURRENT ADJUSTMENT (2)

«machine conditions for adjustment»
- REC mode

«spec.»
- TP1/AU-13 (CH-1)
- **12mVrms**

RV501/AU-25 (CH-1)

«spec.»
- TP101/AU-13 (CH-2)
- **12mVrms**

RV502/AU-25 (CH-2)

12-17. RECORD CURRENT LEVEL ADJUSTMENT

«machine conditions for adjustment»
- REC mode
- AUDIO IN ; 1kHz, −60dB
- Turn RV7/AU-13 fully counterclockwise. (CH-1) (adjust from soldering side)
- Turn RV107/AU-13 fully counterclockwise. (CH-2) (adjust from soldering side) (S/N. up to 12335 (PAL) / S/N. up to 10185 (SECAM))

«spec.»
- TP3/AU-13 (CH-1)
- **−1 ± 1.0dB**

RV4/AU-13 (CH-1)

«spec.»
- TP103/AU-13 (CH-2)
- **−1 ± 1.0dB**

RV104/AU-13 (CH-2)

NOTE ; After completing this adjustment, perform the section 12-19. Record Current Frequency Response Adjustment (2).

12-18. RECORD CURRENT FREQUENCY RESPONSE ADJUSTMENT (1)

«machine conditions for adjustment»
- REC mode
- AUDIO IN ; 18kHz, −90dB
- Turn RV7/AU-13 fully counterclockwise. (CH-1) (adjust from soldering side)
- Turn RV107/AU-13 fully counterclockwise. (CH-2) (adjust from soldering side) (S/N. up to 12335 (PAL) S/N. up to 10185 (SECAM))

«spec.»
- TP3/AU-13 (CH-1)
- **Maximum level**

LV3/AU-13 (CH-1)

«spec.»
- TP103/AU-13 (CH-2)
- **Maximum level**

LV103/AU-13 (CH-2)

NOTE ; After completing this adjustment, perform the section 12-19. Record Current Frequency Response Adjustment (2).

12-19. RECORD CURRENT FREQUENCY RESPONSE ADJUSTMENT (2)

«machine conditions for adjustment»
- REC mode
- AUDIO IN ; 10kHz, −60dB

«spec.»
- TP3/AU-13 (CH-1)
- **Maximum level**

RV7/AU-13 (CH-1)

«spec.»
- TP103/AU-13 (CH-2)
- **Maximum level**

RV107/AU-13 (CH-2)

12-20. CROSSTALK CANCEL ADJUSTMENT (1)

«machine conditions for adjustment»
- CH-1 INSERT mode
- Use the tape that is not recorded of the AUDIO signal.

«spec.»
- CH-2 AUDIO OUT (600Ω terminated)
- **Minimum level**

RV6/AU-13

12-21. CROSSTALK CANCEL ADJUSTMENT (2)

«machine conditions for adjustment»
- CH-2 INSERT mode
- Use the tape that is not recorded of the AUDIO signal.

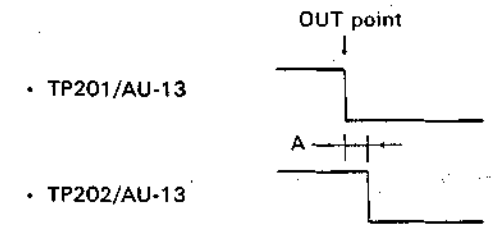
«spec.»
- CH-1 AUDIO OUT (600Ω terminated)
- **Minimum level**

RV106/AU-13

12-22. CH-1 INSERT OFF DELAY TIME ADJUSTMENT

«machine conditions for adjustment»
- Change the mode, CH-1 INSERT mode to ENTRY OUT mode.

«spec.»



TRIG ; SINGLE TP201/AU-13 (−)

NOTE ; Applicable parts number 1-604-337-11 to -15.

- **A = 120 ± 10mS**

RV202/AU-13

Reference
When A < 120mS ; Turn the RV202 clockwise. (adjust from soldering side)
When A > 120mS ; Turn the RV202 counterclockwise. (adjust from soldering side)

NOTE ; Applicable parts number 1-604-337-16 and later.

- **A = 80 ± 10mS**

RV202/AU-13

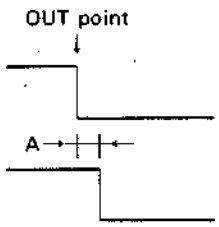
Reference
When A < 80mS ; Turn the RV202 clockwise. (adjust from soldering side)
When A > 80mS ; Turn the RV202 counterclockwise. (adjust from soldering side)

12-23. CH-2 INSERT OFF DELAY TIME ADJUSTMENT

«machine conditions for adjustment»

- Change the mode, CH-2 INSERT mode to ENTRY OUT mode.

«spec.»



- TP204/AU-13
- TP205/AU-13

TRIG ; SINGLE TP204/AU-13 (−)

NOTE ; Applicable parts number 1-604-337-11 to -15.

- **A = 120 ± 10mS**

●RV204/AU-13

Reference
When A < 120mS ; Turn the RV204 clockwise.
(adjust from soldering side)
When A > 120mS ; Turn the RV204 counterclockwise.
(adjust from soldering side)

NOTE ; Applicable parts number 1-604-337-16 and later.

- **A = 80 ± 10mS**

●RV204/AU-13

Reference
When A < 80mS ; Turn the RV204 clockwise.
(adjust from soldering side)
When A > 80mS ; Turn the RV204 counterclockwise.
(adjust from soldering side)

12-24. CH-1 BIAS ON DELAY TIME ADJUSTMENT

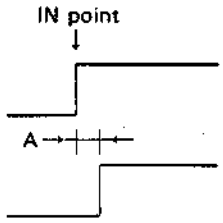
NOTE ; Applicable parts number 1-604-337-11 to -15.

NOTE ; This adjustment is not necessary for parts number 1-604-337-16 and later.

«machine conditions for adjustment»

- Change the mode, STOP mode to CH-1 INSERT mode.

«spec.»



- TP202/AU-13
- TP506/AU-25

TRIG ; SINGLE TP202/AU-13 (+)

- **A = 100 ± 10mS**

●RV203/AU-13

Reference
When A < 100mS ; Turn the RV203 clockwise.
(adjust from soldering side)
When A > 100mS ; Turn the RV203 counterclockwise.
(adjust from soldering side)

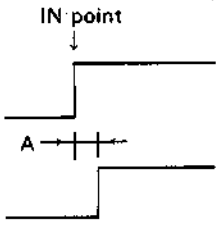
12-25. CH-2 BIAS ON DELAY TIME ADJUSTMENT

NOTE ; Applicable parts number 1-604-337-11 to -15.

NOTE ;This adjustment is not necessary for parts number 1-604-337-16 and later.

«machine conditions for adjustment»
- Change the mode, STOP mode to CH-2 INSERT mode.

«spec.»



- TP205/AU-13
- TP507/AU-25

TRIG ; SINGLE TP205/AU-13 (+)

- **A = 100 ± 10mS**

●RV205/AU-13

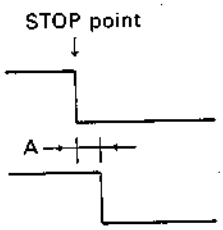
Reference
When A < 100mS ; Turn the RV205 clockwise. (adjust from soldering side)
When A > 100mS ; Turn the RV205 counterclockwise. (adjust from soldering side)

12-26. CH-1 REC OFF DELAY TIME ADJUSTMENT

NOTE ; Applicable parts number 1-604-337-16 and later.

«machine conditions for adjustment»
- Change the mode, CH-1 REC mode to STOP mode.

«spec.»



- TP202/AU-13
- TP203/AU-13

TRIG ; SINGLE TP202/AU-13 (−)

- **A = 50 + 5mS − 0mS**

●RV208/AU-13

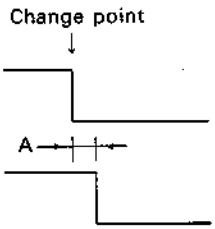
Reference
When A < 50mS ; Turn the RV208 clockwise. (adjust from soldering side)
When A > 50mS ; Turn the RV208 counterclockwise. (adjust from soldering side)

12-27. CH-1 REC/EE OFF DELAY TIME ADJUSTMENT

NOTE ; Applicable parts number 1-604-337-16 and later.

«machine conditions for adjustment»
- STOP mode
- PB/PB・EE SW ; Change the switch PB・EE to PB position.

«spec.»



- TP202/AU-13
- TP207/AU-13

TRIG ; SINGLE TP202/AU-13 (−)

- **A = 60 + 5mS − 0mS**

●RV206/AU-13

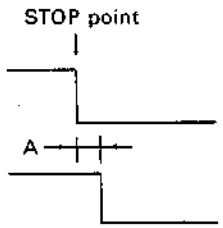
Reference
When A < 60mS ; Turn the RV206 clockwise. (adjust from soldering side)
When A > 60mS ; Turn the RV206 counterclockwise. (adjust from soldering side)

12-28. CH-2 REC OFF DELAY TIME ADJUSTMENT

NOTE ; Applicable parts number 1-604-337-16 and later.

«machine conditions for adjustment»
- Change the mode, CH-2 REC mode to STOP mode.

«spec.»



TRIG ; SINGLE TP205/AU-13 (−)

- **A = 50 + 5mS**
  − 0mS

RV209/AU-13

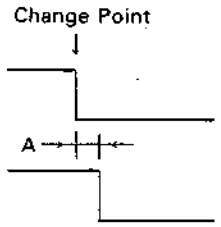
Reference
When A < 50mS ; Turn the RV209 clockwise.
(adjust from soldering side)
When A > 50mS ; Turn the RV209 counterclockwise.
(adjust from soldering side)

12-29. CH-2 REC/EE OFF DELAY TIME ADJUSTMENT

NOTE ; Applicable parts number 1-604-337-16 and later.

«machine conditions for adjustment»
- STOP mode
- PB/PB • EE SW ; Change the switch PB • EE to PB position.

«spec.»



TRIG ; SINGLE TP205/AU-13 (−)

- **A = 60 + 5mS**
  − 0mS

RV207/AU-13

Reference
When A < 60mS ; Turn the RV207 clockwise.
(adjust from soldering side)
When A > 60mS ; Turn the RV207 counterclockwise.
(adjust from soldering side)

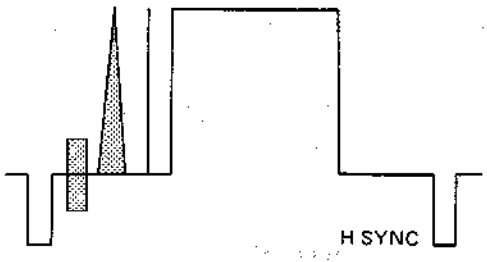
SECTION 13
VIDEO SYSTEM ALIGNMENT

[Equipment Required]
- Oscilloscope
- Frequency Counter
- Blank Tape
- Alignment Tape
  RR5-2SB PAL (Parts No.8-960-020-62)

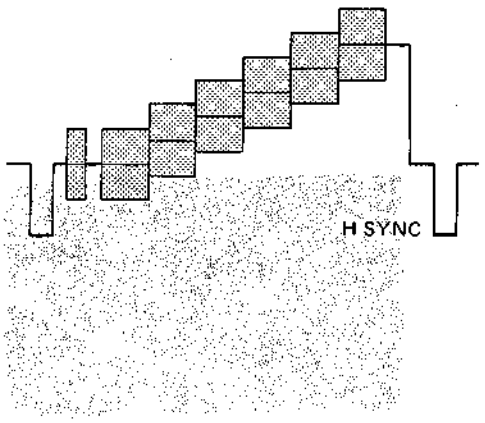
Time (min.)	Video	Audio	Time code
5	Color bars	3kHz,0dB	1kHz
5	R-F sweep	–	–
5	Monoscope	–	–
2.5	Modulated 20T pulse	1kHz,0dB	–
2.5	R-F 8MHz	10kHz,-10dB	–

- Video Signal Generator
- Video Sweep Generator
- DC Voltmeter
- Vectorscope

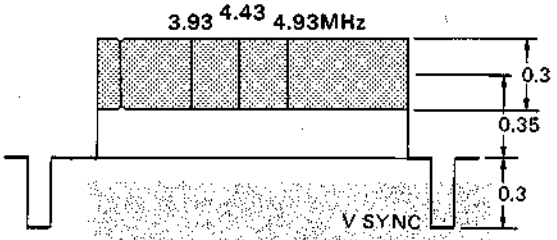
[Video Signal Required]
- 75% color bar signal
- B/W Video Signal
- Modulated 20T pulse signal



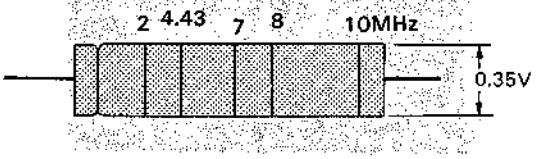
- Linearity (5 STEP) Signal



- Gated Sweep Signal



- Sweep Signal



[Switch/VR Setting]

* Front Panel

AUDIO MONITOR	MIX
HEADPHONES LEVEL	MID
TRACKING	FIXED
VIDEO	AUTO
AUDIO LIMITER	OFF
MIXING SELECT	OFF
MODE SELECT	NORMAL
INPUT SELECT	LINE
SKEW	CLICK
REMOTE 1/2	2 (36P)
REMOTE/LOCAL	LOCAL
PB/PB • EE	PB • EE

* Rear Panel

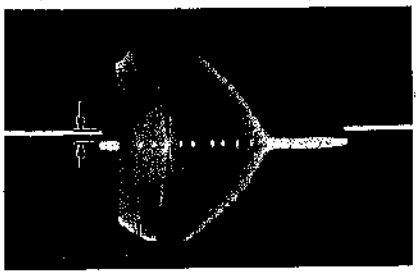
FRAMING SERVO	ON
VIDEO IN	ON
SERVO LOCK	AUTO

13-1. PLAYBACK AMPLIFIER ADJUSTMENT

13-1-1. DC Balance Adjustment

«machine conditions for adjustment»
- Playback mode ; Alignment tape (RF sweep segment)
- Short between TP2 and GND/SV board with jumper.

«spec.»
- TP4/YD board



TRIG ; TP3/YD board

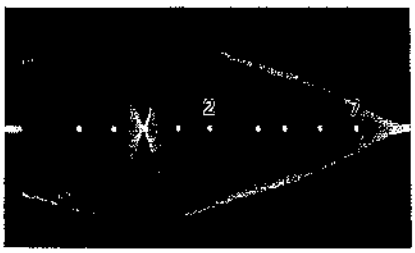
- **Equalize the DC levels of both channels.**

●RV3/YD board

13-1-2. RF 7MHz Adjustment

«machine conditions for adjustment»
- Playback mode ; Alignment tape (RF sweep segment)
- Short between TP2 and GND/SV board with jumper.
- Turn RV2/YD board (CH-A) fully counterclockwise. (adjust from the component side)
- Turn RV1/YD board (CH-B) fully counterclockwise. (adjust from the component side)

«spec.»
- TP6/YD board



TRIG ; TP3/YD board

- **Belinear of envelope 2MHz to 7MHz.**

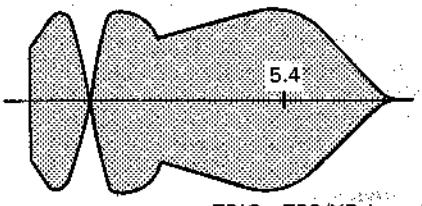
●RV4/RP board (CH-A)
●RV6/RP board (CH-B)

NOTE ; After completing this adjustment, perform the section 13-1-3. RF 5.4MHz adjustment.

13-1-3. RF 5.4MHz Tuning

«machine conditions for adjustment»
- Playback mode ; Alignment tape (RF sweep segment)
- Short between TP2 and GND/SV board with jumper.
- Turn RV2/YD board (CH-A) fully clockwise. (adjust from the component side)
- Turn RV1/YD board (CH-B) fully clockwise. (adjust from the component side)

«spec.»
- TP6/YD board



TRIG ; TP3/YD board

- **Maximize the level at 5.4MHz portion.**

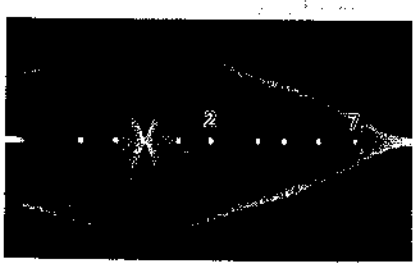
●LV2/YD board (CH-A)
●LV1/YD board (CH-B)

NOTE ; After completing this adjustment, perform the section 13-1-4. RF Frequency Response adjustment

13-1-4. RF Frequency Response Adjustment

«machine conditions for adjustment»
- Playback mode ; Alignment tape (RF sweep segment)
- Short between TP2 and GND/SV board with jumper.

«spec.»
- TP6/YD board



TRIG ; TP3/YD board

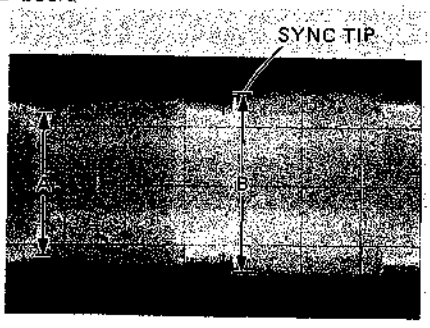
2MHz	7MHz
100% reference	35 ± 5%

●RV2/YD board (CH-A)
●RV1/YD board (CH-B)

13-1-5. Y-RF Balance/Level Adjustment

«machine conditions for adjustment»
- Playback mode ; Alignment tape (color bar segment)

«spec.»
- TP29/YD board



TRIG ; TP3/YD board

- **A = B**

● RV4/YD board (balance)

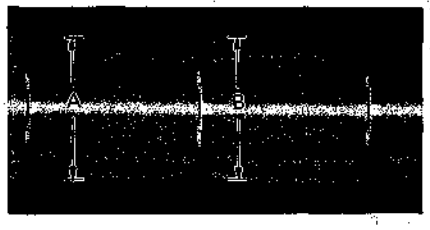
- **A = 0.3 ± 0.04V (SYNC TIP portion)**

● RV6/YD board (level, pre-adjustment)

13-1-6. Chroma RF Balance/Level Adjustment

«machine conditions for adjustment»
- Playback mode ; Alignment tape (color bar segment)

«spec.»
- TP10/YD board



TRIG ; TP3/YD board

- **A = B**

● RV5/YD board (balance)

- **A = 0.2 ± 0.01V**

● RV7/YD board (level)

13-1-7. Audio Bias Trap Adjustment

«machine conditions for adjustment»
- Install the recorded tape that the CTL signal is only pre-recorded (video signal is not recorded), and put the AUDIO CH-1 INSERT mode.

«spec.»
- TP9/YD board
- **Minimize the level**

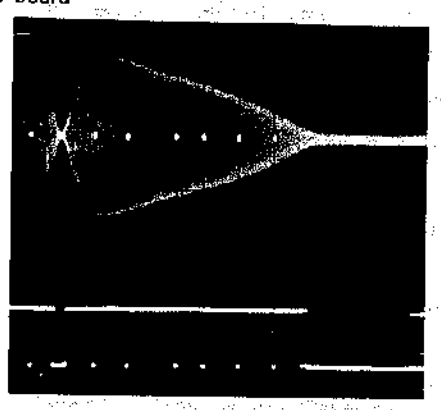
● LV3/YD board

13-2. Y DEMODURATOR ADJUSTMENT

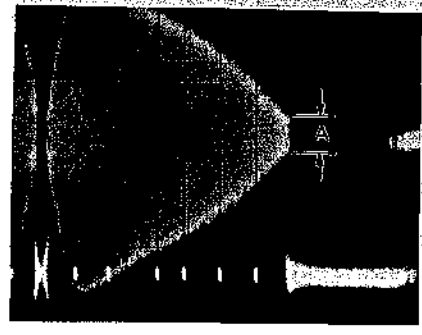
13-2-1. Dropout Compensator Sensitivity Adjustment

«machine conditions for adjustment»
- Playback mode ; Alignment tape (RF sweep segment)

«spec.»
- TP29/YD board



- TP12/YD board
- Oscilloscope ADD mode



- Turn in fully counterclockwise first, and then turn slowly in clockwise to meets the specification.
- **A = 34 ± 5mV**

● RV8/YD board

13-2-2. Carrier Balance Adjustment

«machine conditions for adjustment»
- Playback mode ; Alignment tape (color bar segment)

«spec.»
- TP22/YD board

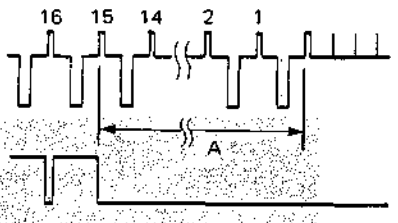
- **Mimimize the noise level at SYNC portion.**

● RV9/YD board

13-2-3. V BLK Pulse Width Adjustment

«machine conditions for adjustment»
- Playback mode ; Alignment tape (color bar segment)

«spec.»



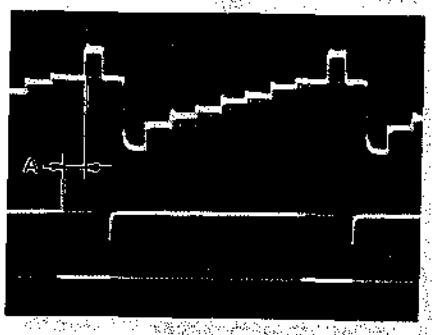
- TP202/YD board
- TP201/YD board
- **A = 15H**

RV201/YD board

13-2-4. H BLK Pulse Width Adjustment

«machine conditions for adjustment»
- Playback mode ; Alignment tape (color bar segment)

«spec.»
- TP202/YD board



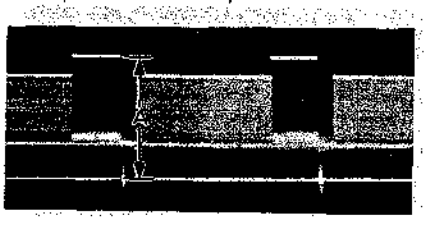
- TP201/YD board
- **A = 6 ± 1μS**

RV202/YD board

13-2-5. B/W Mode Y Output Level Adjustment

«machine conditions for adjustment»
- Playback mode ; Alignment tape (color bar segment)
- Short between TP10 and GND/YD board with jumper.

«spec.»
- VIDEO OUT (75Ω terminated)



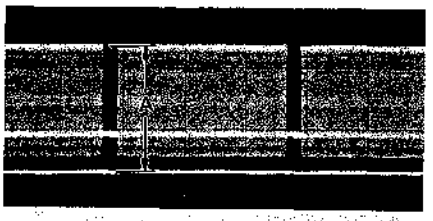
- **A = 1 ± 0.05V**

RV10/YD board

13-2-6. COLOR Mode Y Output Level Adjustment

«machine conditions for adjustment»
- Playback mode ; Alignment tape (color bar segment)

«spec.»
- VIDEO OUT (75Ω terminated)



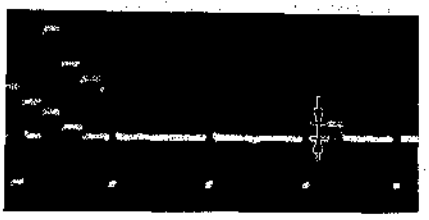
- **A = 1 ± 0.05V**

RV12/YD board

13-2-7. Dropout Compensator Level Adjustment

«machine conditions for adjustment»
- Playback mode ; Alignment tape (color bar segment)

«spec.»
- TP27/YD board

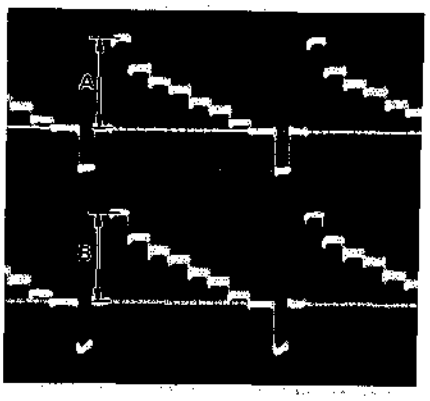


- **Equalize the levels, pedestal level and compensated portion level.**

NOTE ; Normally, switching point comes in video portion (2.25H before V sync), so when you perform DOC level adj., turn a TRACKING VR to move switching point in EQ pulse portion (just before V sync) for easy adj..

RV14/YD board

«spec.»
- TP22/YD board



- TP24/YD board
- **A = B**

RV13/YD board
LV4/YD board

13-3. CHROMA DEMODULATOR ADJUSTMENT

13-3-1. REF OSC Adjustment

«machine conditions for adjustment»
- Playback mode ; Alignment tape (color bar segment)

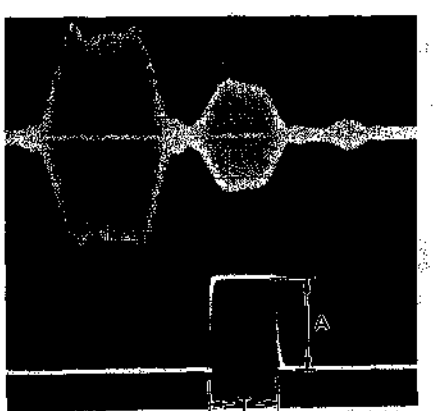
«spec.»
- TP2/CD board
- **4,433,619 ± 5Hz**

●T1/CD board

13-3-2. ACC Burst Flag Adjustment

«machine conditions for adjustment»
- Playback mode ; Alignment tape (color bar segment)

«spec.»
- TP6/CD board



- TP110/CD board

- **A = 4.5 ± 0.1V**

●RV110/CD board (level)

- **T = 2.2 ± 0.1μS**

●RV109/CD board (width)

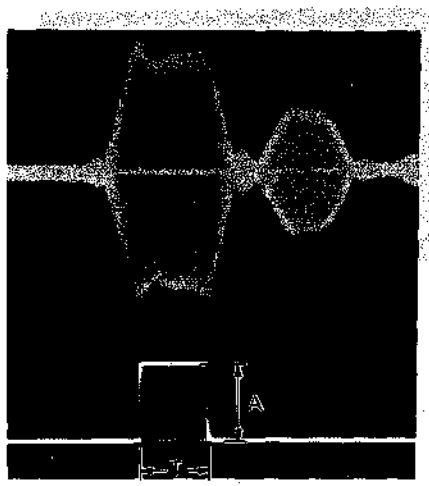
- **Phase the center positions of the burst and the burst flag pulse.**

●RV108/CD board (phase)

13-3-3. APC Burst Flag Adjustment

«machine conditions for adjustment»
- Playback mode ; Alignment tape (color bar segment)

«spec.»
- TP6/CD board



- TP104/CD board

- **A = 3.4 ± 0.1V**

●RV104/CD board (level)

- **T = 2.2 ± 0.1μS**

●RV103/CD board (width)

- **Phase the center positions of the pilot burst and the burst flag pulse.**

●RV102/CD board (phase)

13-3-4. VCO Frequency Adjustment

«machine conditions for adjustment»
- Playback mode ; Alignment tape (color bar segment)

«spec.»
- TP3/CD board
- **8.4 ± 0.05V**

●RV106/CD board

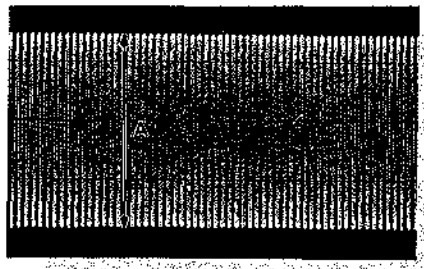
13-3-5. PB5.36MHz Tuning Adjustment

«machine conditions for adjustment»

- Playback mode ; Alignment tape (color bar segment)

«spec.»

- TP108/CD board



- **A = 0.6 + 0.1V**
  − 0.05V

RV107/CD board

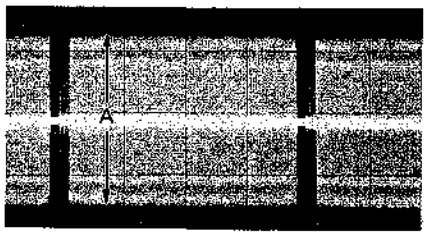
13-3-6. ACC Level Adjustment

«machine conditions for adjustment»

- Playback mode ; Alignment tape (color bar segment)

«spec.»

- TP4/CD board



TRIG ; TP5/CD board

- **A = 0.8 ± 0.05V**

RV1/CD board

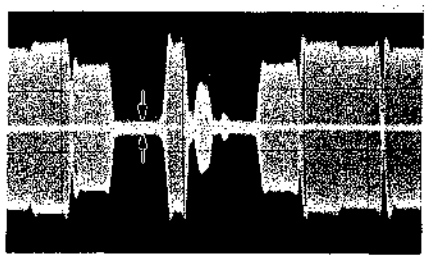
13-3-7. Converter Balance Adjustment

«machine conditions for adjustment»

- EE mode
- VIDEO IN ; color bar

«spec.»

- TP6/CD board



- **Minimize the carrier leak.**

RV5/CD board

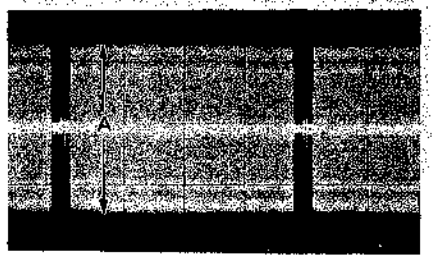
13-3-8. DUB Chroma Level Adjustment

«machine conditions for adjustment»

- Playback mode ; Alignment tape (color bar segment)

«spec.»

- TP11/CD board



- **A = 1 ± 0.1V**

RV399 (RV6)/CD board

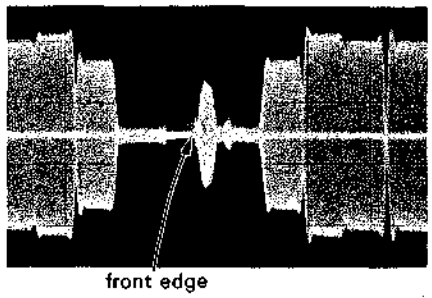
13-3-9. Pilot Burst Gate Pulse Adjustment

«machine conditions for adjustment»

- Playback mode ; Alignment tape (color bar segment)

«spec.»

- TP9/CD board



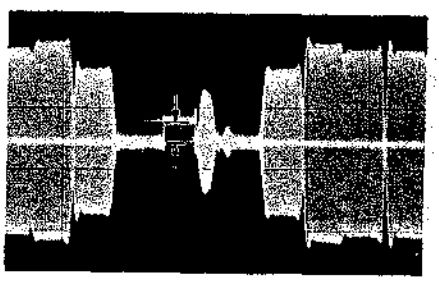
- **Mute to front edge of burst.**

RV105/CD board

13-3-10. Pilot Burst Eliminator DC Level Adjustment

«machine conditions for adjustment»
- Playback mode ; Alignment tape (color bar segment)

«spec.»
- TP9/CD board



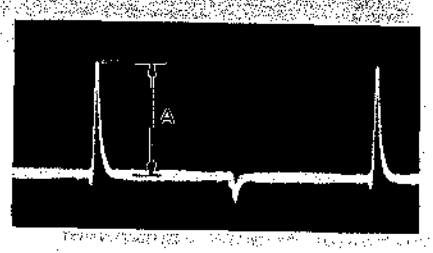
- **Equalize the DC levels.**

● RV2/CD board

13-3-11. PB 135degrees Burst Tuning

«machine conditions for adjustment»
- Playback mode ; Alignment tape (color bar segment)

«spec.»
- TP501/CD board



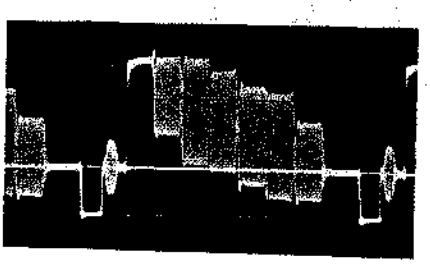
- **Maximize the A level.**

● LV501/CD board

13-3-12. Y/C Mix Level Adjustment

«machine conditions for adjustment»
- Playback mode ; Alignment tape (color bar segment)

«spec.»
- TP204/CD board



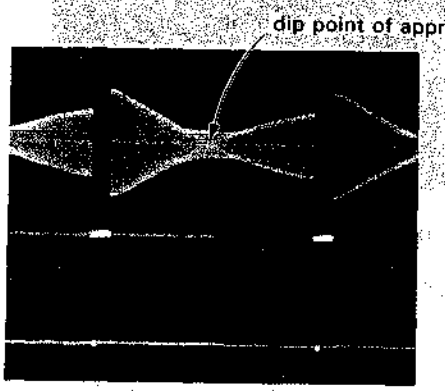
- **Adjust the chroma level to Y 100% level.**

● RV201/CD board

13-3-13. Noise Canceller Adjustment

«machine conditions for adjustment»
- Remove YD board from the set.
- Turn RV203 (RV240)/CD board fully counterclockwise. (adjust from component side)
- Feed a 80mVp-p gated sweep signal to 36A/CD board.

«spec.»
- TP204/CD board



- **Minimize the dip point level.**

● RV202/CD board

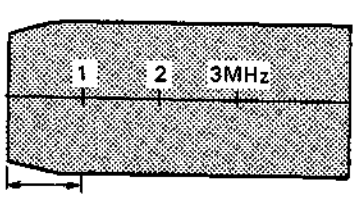
NOTE ; After completing this adjustment, insert the YD board to the set.

NOTE ; After completing this adjustment, perform the section 13-3-14. Noise Canceller Low-range Compensator Adjustment.

13-3-14. Noise Canceller Low-range Compensator Adjustment

«machine conditions for adjustment»
- Remove YD board from the set.
- Feed a 1Vp-p gated sweep signal to 36A/CD board.

«spec.»
- TP204/CD board



- **Flatten the 0MHz to 1MHz portion.**

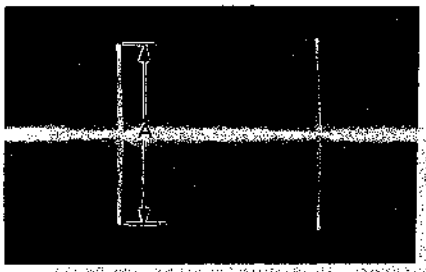
● RV203 (RV240)/CD board

NOTE ; After completing this adjustment, insert the YD board to the set.

13-3-15. Time Code Detector Level Adjustment

«machine conditions for adjustment»
- Playback mode ; Alignment tape (time code segment)

«spec.»
- TP102/CD board



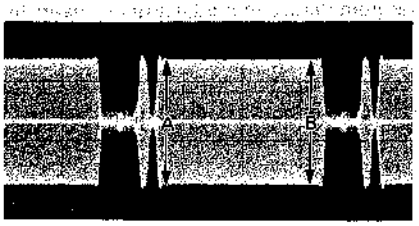
- **A = 2.8 ± 0.1V**

RV101/CD board

13-3-16. DG Compensator Adjustment

«machine conditions for adjustment»
- Playback self-recorded portion.
- VIDEO IN ; Linearity (5 STEP) signal (with sub-carrier and burst)

«spec.»
- TP6/CD board



- **A = B**

RV7/CD board

13-3-17. TBC VCO Shift Adjustment

«machine conditions for adjustment»
- SEARCH mode ; Alignment tape (color bar segment)
- Turn the dial to FWD and then STILL position.
- MODE SELECT SW ; TBC

«spec.»
- TP3/CD board
- **9.15 ± 0.05V**

RV302/CD board

«machine conditions for adjustment»
- SEARCH mode ; Alignment tape (color bar segment)
- Turn the dial to REV and then STILL position.
- MODE SELECT SW ; TBC

«spec.»
- TP3/CD board
- **7.7 ± 0.05V**

RV301/CD board

13-4. MODULATOR ADJUSTMENT

13-4-1. Sync Tip Carrier Adjustment

«machine conditions for adjustment»
- EE mode
- VIDEO IN ; no signal

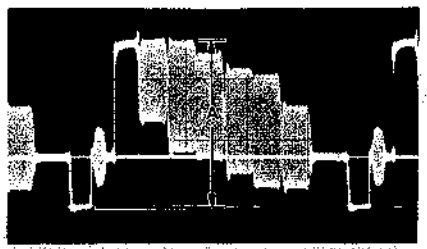
«spec.»
- TP9/MD board
- **4.8 ± 0.05MHz**

RV4/MD board

13-4-2. FM Deviation Adjustment

«machine conditions for adjustment»
- EE mode.
- VIDEO IN ; color bar

«spec.»
- VIDEO OUT (75Ω terminated)



- **A = 1 ± 0.05V**

RV1/MD board

13-4-3. Modulator Balance Adjustment

«machine conditions for adjustment»
- EE mode
- VIDEO IN ; no signal

«spec.»
- TP9/MD board ; Scope CH-A
- TP9/MD board (INVERT) ; Scope CH-B

  CH-A, CH-B ; ALT mode

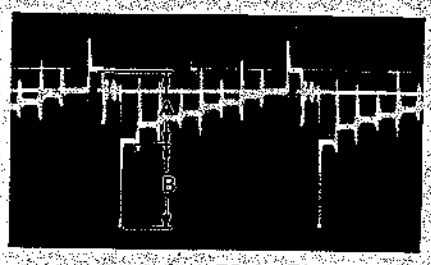
- **T = 0**

RV3/MD board

13-4-4. White Clip Adjustment

«machine conditions for adjustment»
- EE mode.
- VIDEO IN ; color bar
- Short between TP7 and TP8/MD board with jumper.

«spec.»
- TP12/MD board



TRIG ; TP5/MD board

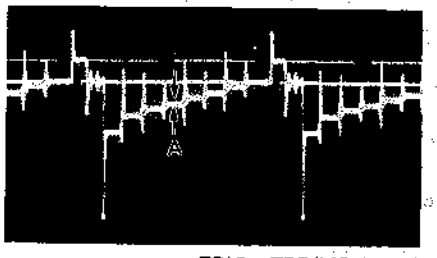
$$\frac{B}{A} = \frac{120\ ^{+5}_{-0}}{100}$$

●RV2/MD board

13-4-5. SC Trap Adjustment

«machine conditions for adjustment»
- EE mode
- VIDEO IN ; color bar
- Short between TP7 and TP8/MD board with jumper.

«spec.»
- TP12/MD board



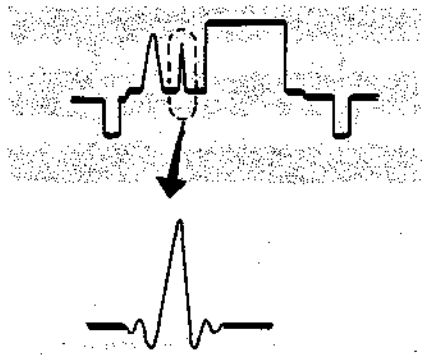
TRIG ; TP5/MD board
- **Minimize the A amplitude. (4.43MHz)**

●LV1/MD board

13-4-6. Modulator Frequency Response Adjustment

«machine conditions for adjustment»
- EE mode
- VIDEO IN ; modulated 20T pulse

«spec.»
- TP3/MD board



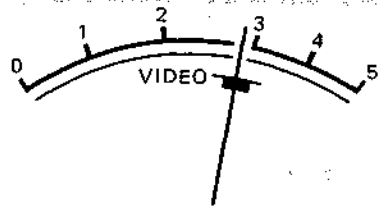
- **Equalize the both levels, pre-shoot level and under-shoot level.**

●RV6/MD board

13-4-7. Video Meter Adjustment

«machine conditions for adjustment»
- EE mode
- VIDEO IN ; color bar
- VIDEO SW ; AUTO

«spec.»
- VIDEO/RF meter



- **Set the indication in the center of blue scale.**

●RV202/MD board

13-4-8. 5.36MHz Oscillator Adjustment

«machine conditions for adjustment»
- EE mode

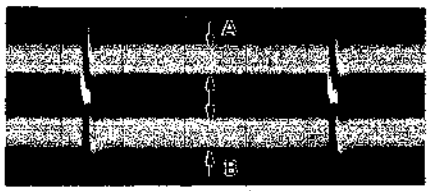
«spec.»
- TP109/MD board
- **5,357,437 ± 4Hz**

●CV101/MD board

13-4-9. APC fo Adjustment

«machine conditions for adjustment»
- EE mode
- VIDEO IN ; color bar

«spec.»
- TP104/MD board



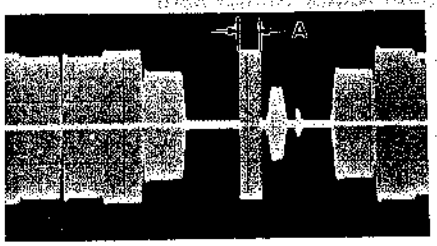
- A = B

●T101/MD board

13-4-10. Pilot Burst Width Adjustment

«machine conditions for adjustment»
- EE mode
- VIDEO IN ; color bar

«spec.»
- TP107/MD board



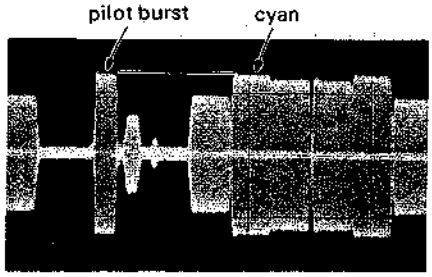
- A = 3.5 ± 0.1μS

●RV103/MD board

13-4-11. Pilot Burst Level Adjustment

«machine conditions for adjustment»
- EE mode
- VIDEO IN ; color bar

«spec.»
- TP108/MD board



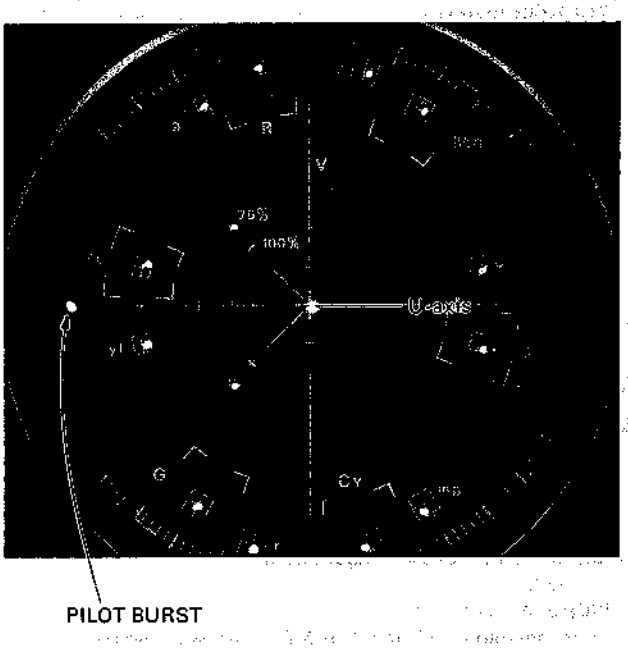
- Equalize the both levels, pilot burst level and cyan level.

●RV101/MD board

13-4-12. Pilot Burst Phase Adjustment

«machine conditions for adjustment»
- EE mode
- VIDEO IN ; color bar

«spec.»
- TP107/MD board



PILOT BURST

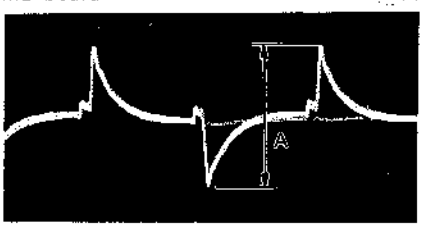
- Phase the pilot burst to the U-axis with ± 1 degree.

●LV101/MD board

13-4-13. REF 135degrees Burst Pulse Level Adjustment

«machine conditions for adjustment»
- EE mode
- VIDEO IN ; color bar

«spec.»
- TP206/MD board



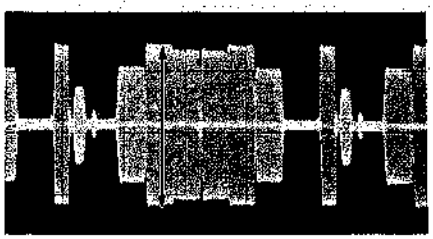
- A = 1.0 ± 0.2V

●RV203/MD board

13-4-14. REC ACC Level Adjustment

«machine conditions for adjustment»
- EE mode
- VIDEO IN ; color bar

«spec.»
- TP108/MD board



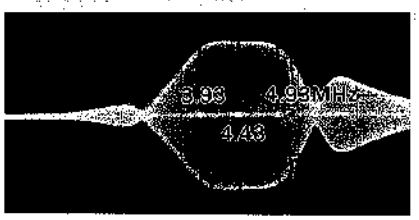
- **Chroma Level = 0.4 ± 0.02V**

◐RV102/MD board

13-4-15. REC Chroma Frequency Response Adjustment

«machine conditions for adjustment»
- EE mode
- VIDEO IN ; gated sweep signal (with burst)

«spec.»
- TP108/MD board



4.43MHz	3.93MHz	4.93MHz
100% reference	90 ± 5%	90 ± 5%

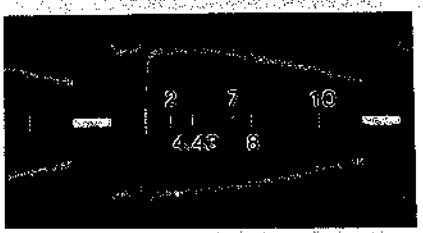
◐FL101/MD board

13-5. RECORD AMPLIFIER ADJUSTMENT

13-5-1. Record Current Frequency Response Adjustment

«machine conditions for adjustment»
- REC mode
- VIDEO IN ; B/W signal
- Short between TP4 and E2/RP board with jumper.
- Unsolder between TP5 and TP6/RP board (CH-A), and connect low resistor (1 to 5.1Ω) to unsoldered portion.
- Unsolder between TP8 and TP9/RP board (CH-B), and connect low resistor (1 to 5.1Ω) to unsoldered portion.
- Short between TP6 and GND/RP board with jumper. (CH-A)
- Short between TP9 and GND/RP board with jumper. (CH-B)
- Feed a sweep signal to TP3/RP board.

«spec.»
- TP5/RP board (GND ; TP6) ..... CH-A



2MHz	4.43MHz	7MHz	8MHz	10MHz
100% reference	100 ± 10%	94 ± 10%	84 ± 5%	64 + 5% − 10%

◐RV3/RP board (CH-A)

«spec.»
- TP8/RP board (GND ; TP9) ..... CH-B

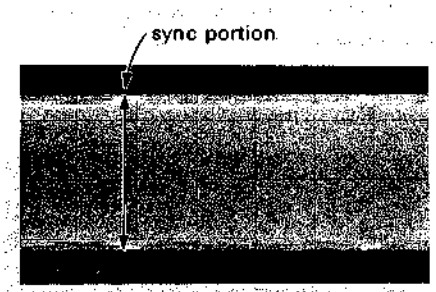
2MHz	4.43MHz	7MHz	8MHz	10MHz
100% reference	100 ± 10%	94 ± 10%	84 ± 5%	64 + 5% − 10%

◐RV5/RP board (CH-B)

13-5-2. Y Record Current Adjustment

«machine conditions for adjustment»
- REC mode
- VIDEO IN ; B/W signal
- Unsolder between TP5 and TP6/RP board (CH-A), and connect low resistor (1 to 5.1Ω) to unsoldered portion.
- Unsolder between TP8 and TP9/RP board (CH-B), and connect low resistor (1 to 5.1Ω) to unsoldered portion.
- Short between TP6 and GND/RP board with jumper. (CH-A)
- Short between TP9 and GND/RP board with jumper. (CH-B)

«spec.»
- TP5/RP board (GND ; TP6) or TP8/RP board (GND ; TP9)



- **Sync Level = 67 + 8mA × R (Ω)**
  − 5mA × R (Ω)

(cf. R = 1Ω 67 + 8mV
− 5mV)

● RV2/RP board

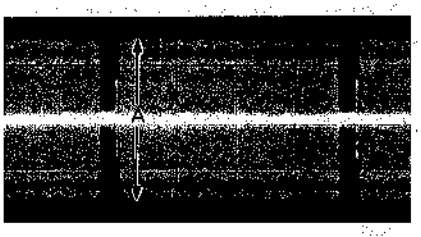
13-5-3. Chroma Record Current Adjustment

«machine conditions for adjustment»
- REC mode
- VIDEO IN ; color bar
- Short between TP4 and E2/RP board with jumper.
- Unsolder between TP5 and TP6/RP board (CH-A), and connect low resistor (1 to 5.1Ω) to unsoldered portion.
- Unsolder between TP8 and TP9/RP board (CH-B), and connect low resistor (1 to 5.1Ω) to unsoldered portion.
- Short between TP6 and GND/RP board with jumper. (CH-A)
- Short between TP9 and GND/RP board with jumper. (CH-B)

«how to adjustment»
- TP5/RP board (GND ; TP6) or TP8/RP board (GND ; TP9)
- **Chroma Level = (15 ± 5mA) × R (Ω)**
  (cf. R = 2Ω 30 ± 10mV)

● RV1/RP board

«spec.»
- Playback self-recorded portion. (After removing the short jumper of between TP4 and E2/RP board)
- TP1/CD board



TRIG ; TP5/CD board

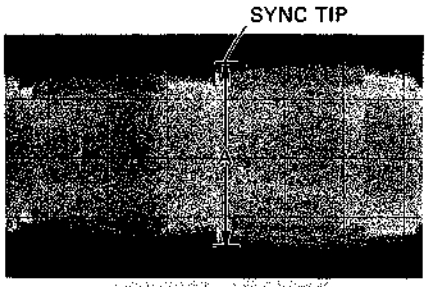
- **A = 0.23 + 0.015V**
  − 0.04V

Reference
Chroma Level > 0.23V ; Turn RV1 to clockwise.
(adjust from soldering side)
Chroma Level < 0.23V ; Turn RV1 to counterclockwise.
(adjust from soldering side)

13-5-4. Y RF LEVEL Adjustment

«machine conditions for adjustment»
- Playback self-recorded portion.
- VIDEO IN ; color bar

«spec.»
- TP29/YD board



TRIG ; TP3/YD board

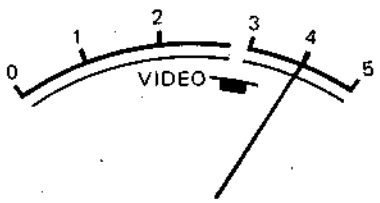
- **A = 0.34 ± 0.04V**

● RV6/YD board (level)

13-5-5. TRACKING METER Calibration

«machine conditions for adjustment»
- Playback self-recorded portion.
- VIDEO IN ; color bar
- TRACKING ; FIXED

«spec.»
- VIDEO/RF meter



- **Set the scale 4.**

● RV201/MD board

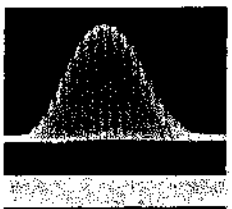
13-6. Y/C DELAY TIME ADJUSTMENT

13-6-1. PB Delay Time Adjustment

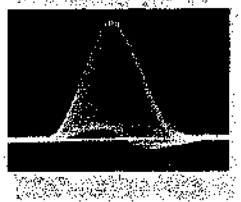
«machine conditions for adjustment»
- Playback mode ; Alignment tape (modulated 20T pulse segment)

«spec.»
- VIDEO OUT

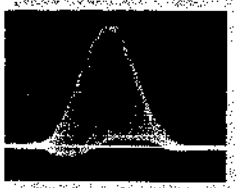
OK



Y progressed to C.



C progressed to Y.



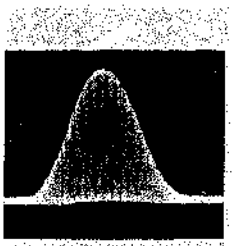
● DL1/CD board
● CV1/CD board (fine adj.)

13-6-2. DUB Delay Time Adjustment

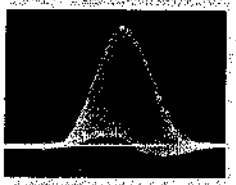
«machine conditions for adjustment»
- Playback mode ; Alignment tape (modulated 20T pulse segment)

«spec.»
- DUB Y OUT (Scope CH-A)
- DUB C OUT (Scope CH-B)
- Oscilloscope ADD mode

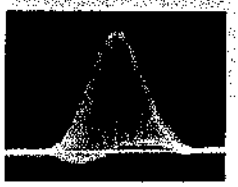
OK



Y progressed to C.



C progressed to Y.



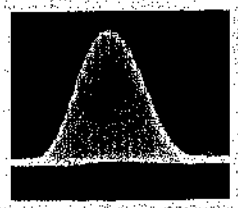
- DL2/CD board
- CV2/CD board (fine adj.)

13-6-3. Record Delay Time Adjustment

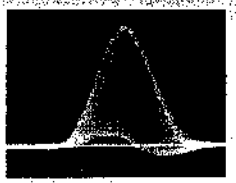
«machine conditions for adjustment»
- Playback self-recorded portion.
- VIDEO IN ; modulated 20T pulse

«spec.»
- VIDEO OUT

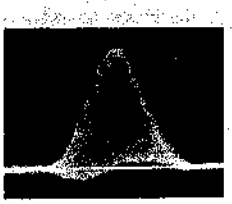
OK



Y progressed to C.



C progressed to Y.



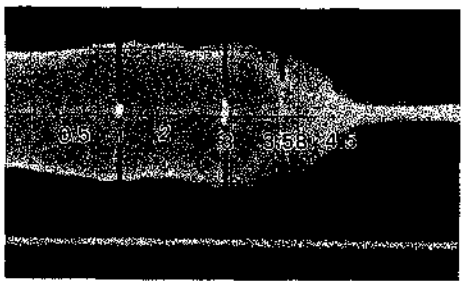
- DL101/MD board
- CV102/MD board (fine adj.)

13-7. OVERALL FREQUENCY RESPONSE ADJUSTMENT

13-7-1. B/W mode Y Playback Frequency Response Adjustment

«machine conditions for adjustment»
- Playback the self-recorded portion.
- VIDEO IN ; gated sweep (without burst)

«spec.»
- TP27/YD board



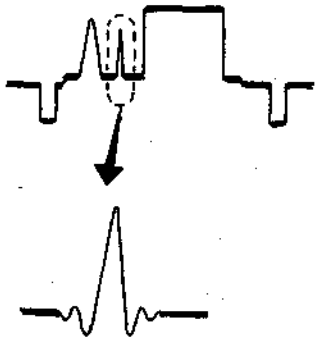
0.5MHz	1MHz	2MHz	3MHz	3.58MHz	4.5MHz
100% reference	100 ± 5%	100+15 −10%	100+5 −10%	100+5 −10%	70+20 −10%

RV15/YD board

13-7-2. Color mode Y Phase Equalizer Adjustment

«machine conditions for adjustment»
- Playback the self-recorded portion.
- VIDEO IN ; modulated 20T pulse
- VIDEO LEVEL SW ; MAN
- VIDEO LEVEL VR ; Adjust the level of VIDEO OUT (75Ω terminated) in EE mode is 0.8Vp-p.

«spec.»
- TP27/YD board



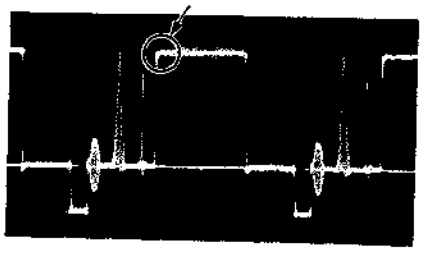
- **Equalize the both levels, pre-shoot level and under-shoot level.**

RV11/YD board

13-7-3. Smear Compensator Adjustment

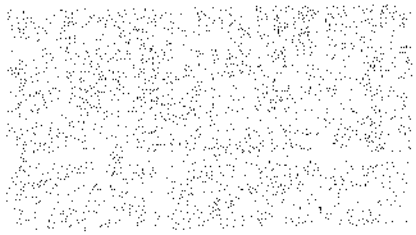
«machine conditions for adjustment»
- Playback self-recorded portion.
- VIDEO IN ; modulated 20T pulse

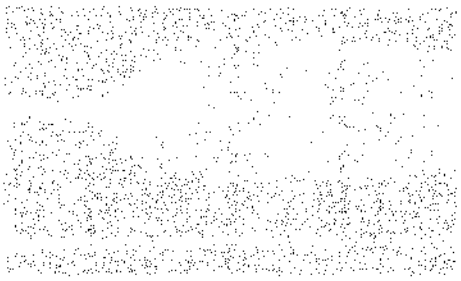
«spec.»
- VIDEO OUT



- **Be almost right angle.**

RV5/MD board





SECTION 14
EDITING SYSTEM ALIGNMENT

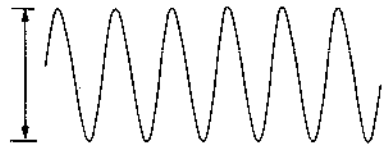
[Equipment Required]
- Oscilloscope
- Audio Oscillator
- Audio Attenuator
- Blank Tape
- Alignment Tape
  RR5-2SB PAL (Parts No.8-960-020-62)

Time (min.)	Video	Audio	Time code
4	Color bars	3kHz,0dB	1kHz
5	R-F sweep	–	–
5	Monoscope	–	–
2	Modulated 20T pulse	1kHz,0dB	–
2	R-F 8MHz	10kHz,-10dB	–

14-1. ROTARY ERASE CURRENT ADJUSTMENT

«machine conditions for adjustment»
- VIDEO INSERT mode
- VIDEO IN ; color bar

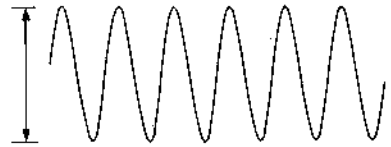
«spec.»
- TP104/RP board (CH-B)



- **1 ± 0.02V**

RV101/RP board (CH-B)

«spec.»
- TP102/RP board (CH-A)



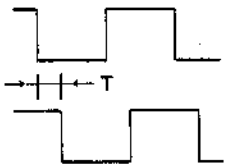
- **1 ± 0.02V**

RV102/RP board (CH-A)

14-2. DT SWITCHING PULSE ADJUSTMENT

«machine conditions for adjustment»
- EE mode
- VIDEO IN ; color bar
- Short between 3B and 26B/MD board with jumper.

«spec.»
- 40B/MD board



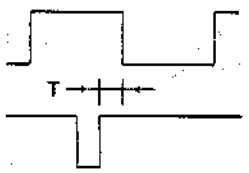
- 39B/MD board
- **T = 5 ± 0.1mS**

RV504/MD board

14-3. RE GATE PULSE POSITION ADJUSTMENT

«machine conditions for adjustment»
- EE mode
- VIDEO IN ; color bar
- Short between 3B and 30B/MD board with jumper.

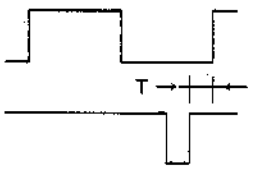
«spec.»
- 39B/MD board



- TP504/MD board
- **T = 3 ± 0.05mS**

RV501/MD board (CH-A)

«spec.»
- 39B/MD board



- TP503/MD board
- **T = 3 ± 0.05mS**

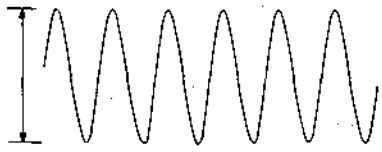
RV502/MD board (CH-B)

14-4. TIME CODE PLAYBACK/OUTPUT LEVEL ADJUSTMENT

NOTE ; Applicable parts number 1-604-341-11 to -14.

«machine conditions for adjustment»
- Playback mode ; Alignment tape (time code segment)

«spec.»
- TP104/TC-13



- **1.5 ± 0.1V**

● RV102/TC-13 (Playback Level)

«spec.»
- TC OUT
- **0 ± 0.5dB**

● RV103/TC-13 (Output Level)

14-4. TIME CODE PLAYBACK AMPLIFIER ADJUSTMENT

14-4-1. Playback Amplifier Offset Adjustment

NOTE ; Applicable parts number 1-604-341-15 and later.

«machine conditions for adjustment»
- STOP mode

«spec.»
- TP105/TC-13
- **0 ± 0.2V**

● RV103/TC-13

14-4-2. Time code Output Level Adjustment

NOTE ; Applicable parts number 1-604-341-15 and later.

«machine conditions for adjustment»
- Playback mode ; Alignment tape (time code segment)

«spec.»
- TC OUT
- **0 ± 0.5dB**

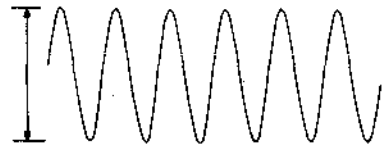
● RV102/TC-13

Reference ; The level at TC OUT is 0 ± 2 dB.

14-5. TIME CODE RECORD CURRENT ADJUSTMENT

«machine conditions for adjustment»
- Playback the self-recorded portion.
- VIDEO IN ; color bar
- TC IN ; rectangular wave (sine wave), 1.2kHz, 0dB

«spec.»
- TP104/TC-13



- **1.9 ± 0.1V**

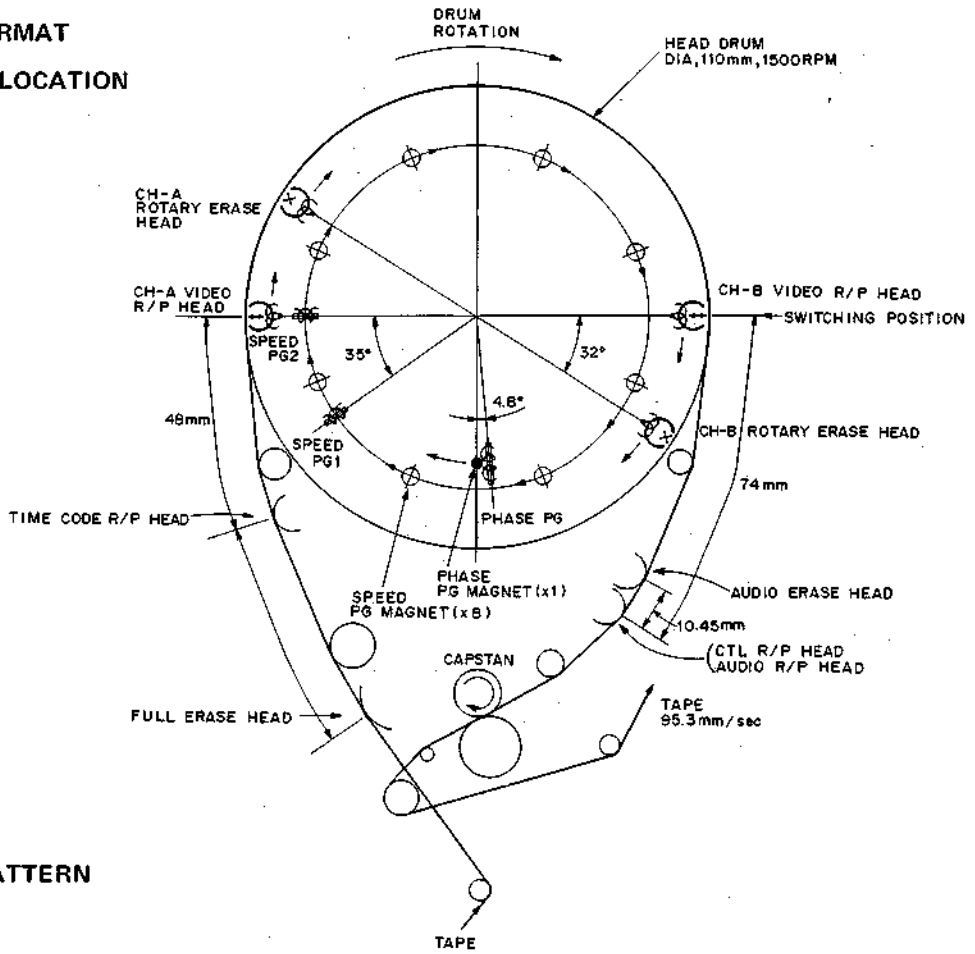
● RV101/TC-13

Reference
Time code level < 1.9V ; Turn the RV101 to counterclockwise. (adjust from the component side)
Time code level > 1.9V ; Turn the RV101 to clockwise. (adjust from the component side)

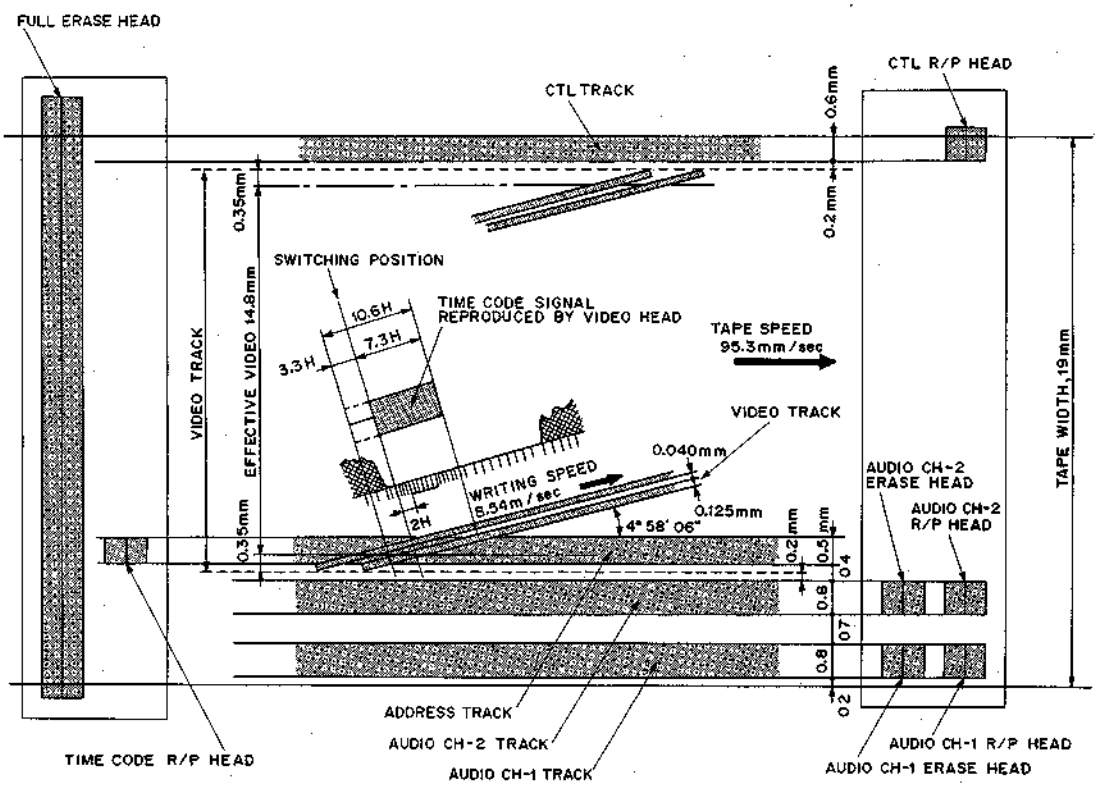
SECTION 15
BLOCK DIAGRAM

15-1. TAPE FORMAT

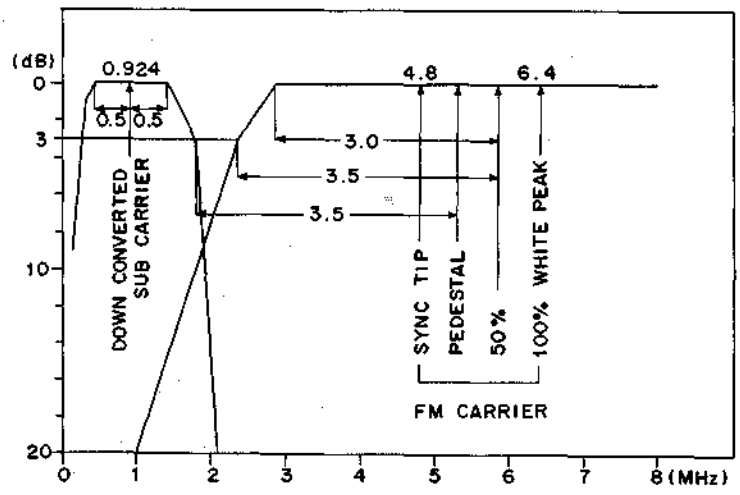
15-1-1. HEADS LOCATION



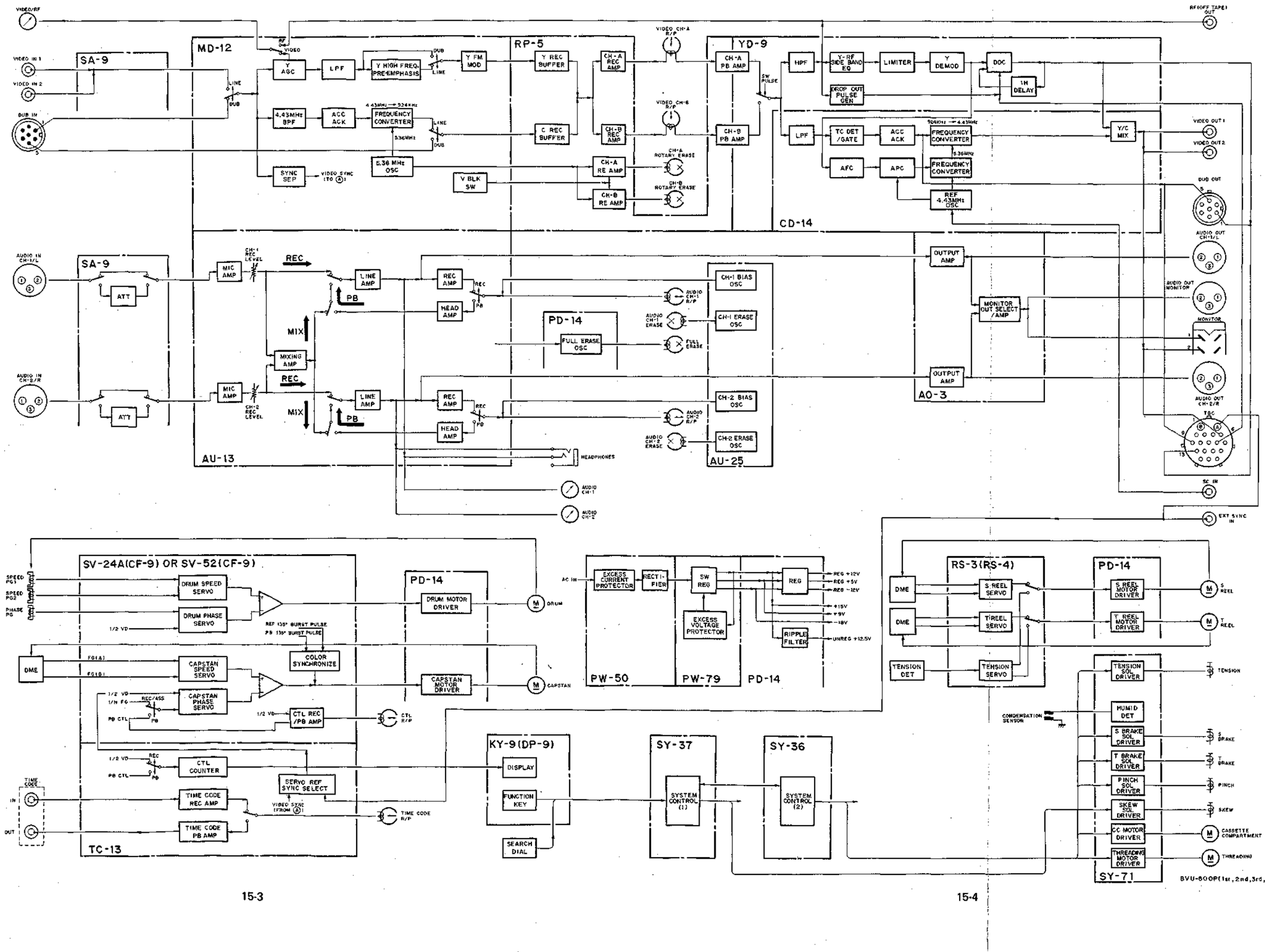
15-1-2. TAPE PATTERN



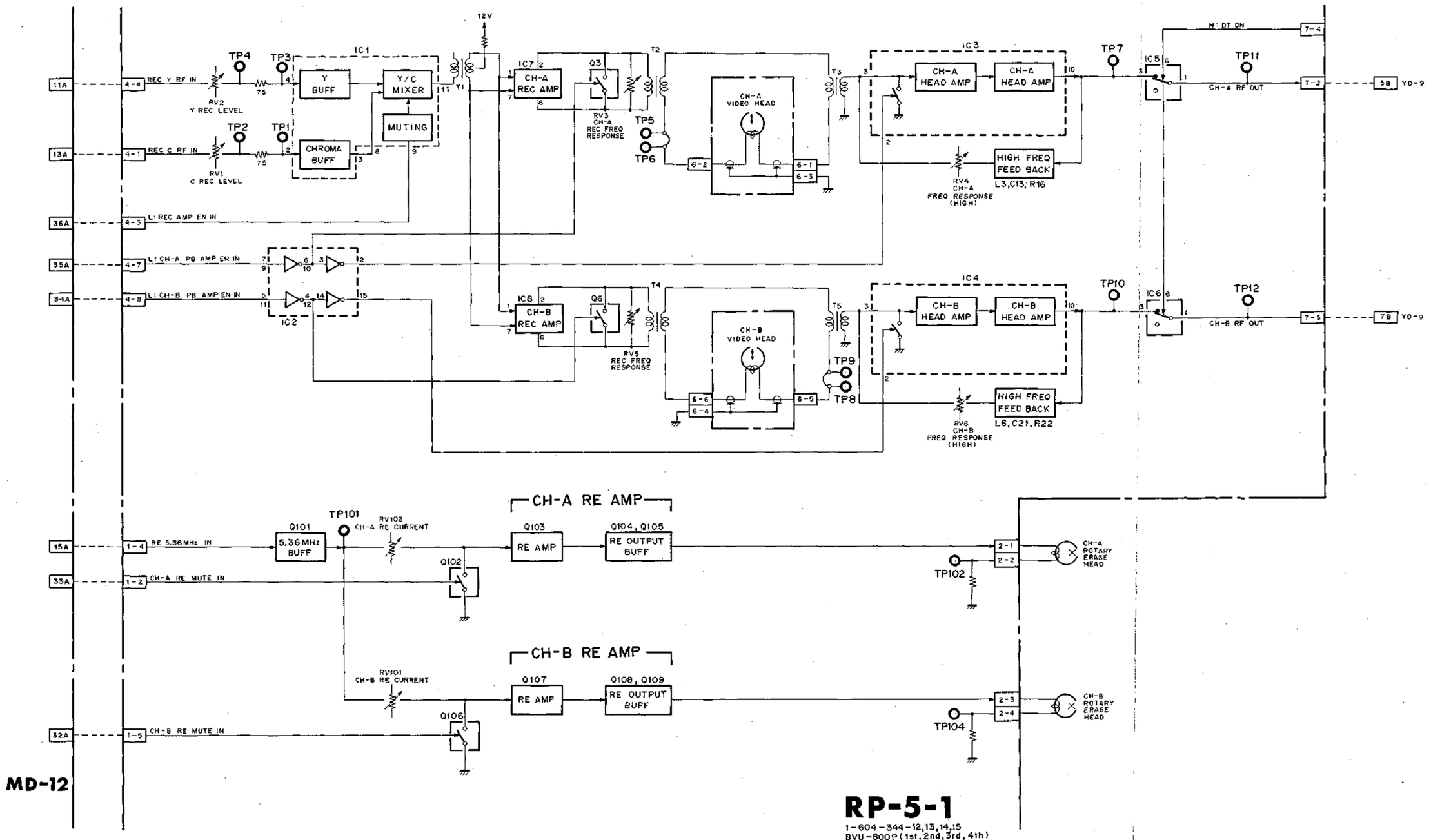
15-2. FREQUENCY ALLOCATION



OVERALL SYSTEM



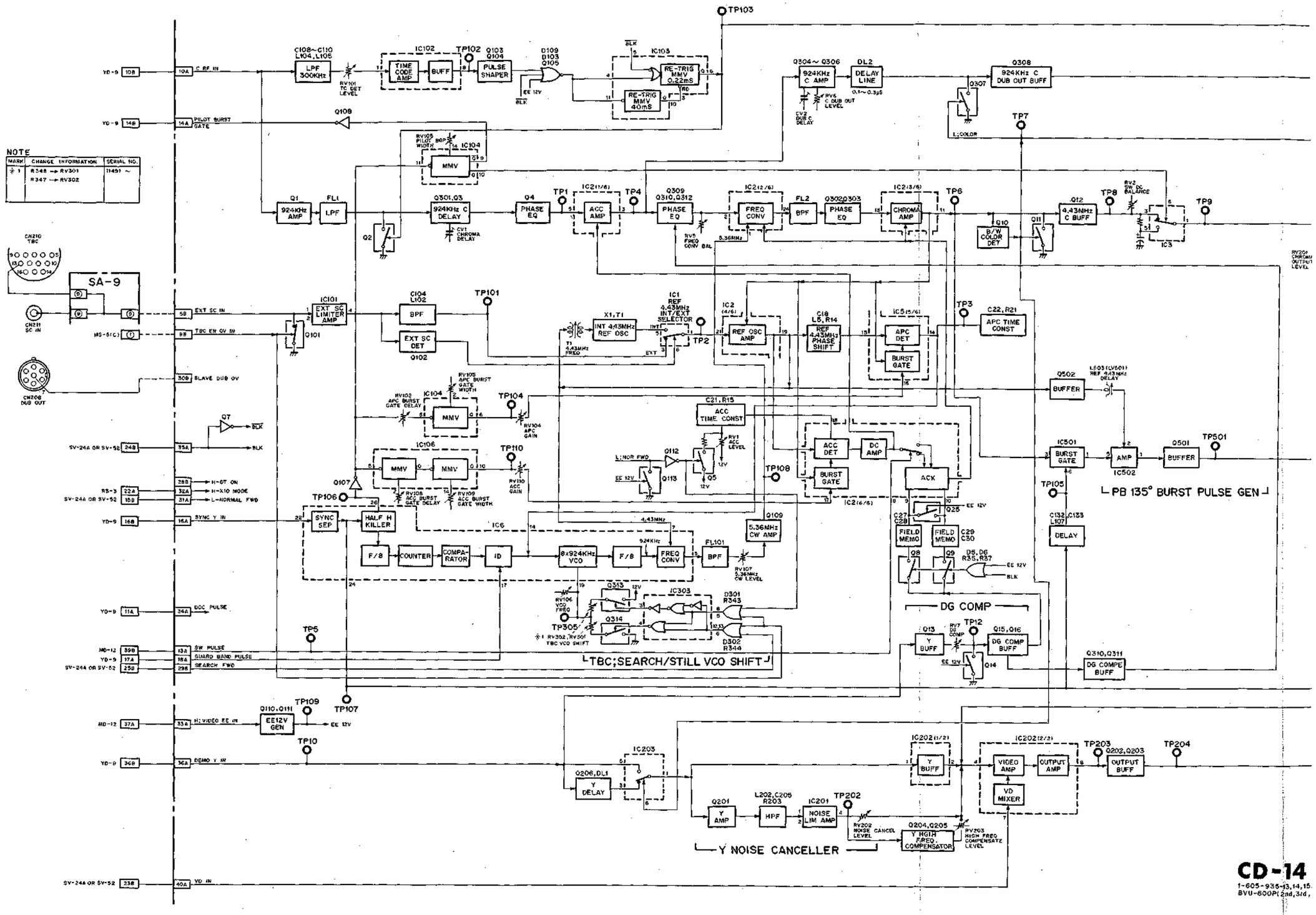
Y/C REC PB AMPLIFIER
ROTARY ERASE AMPLIFIER



MD-12

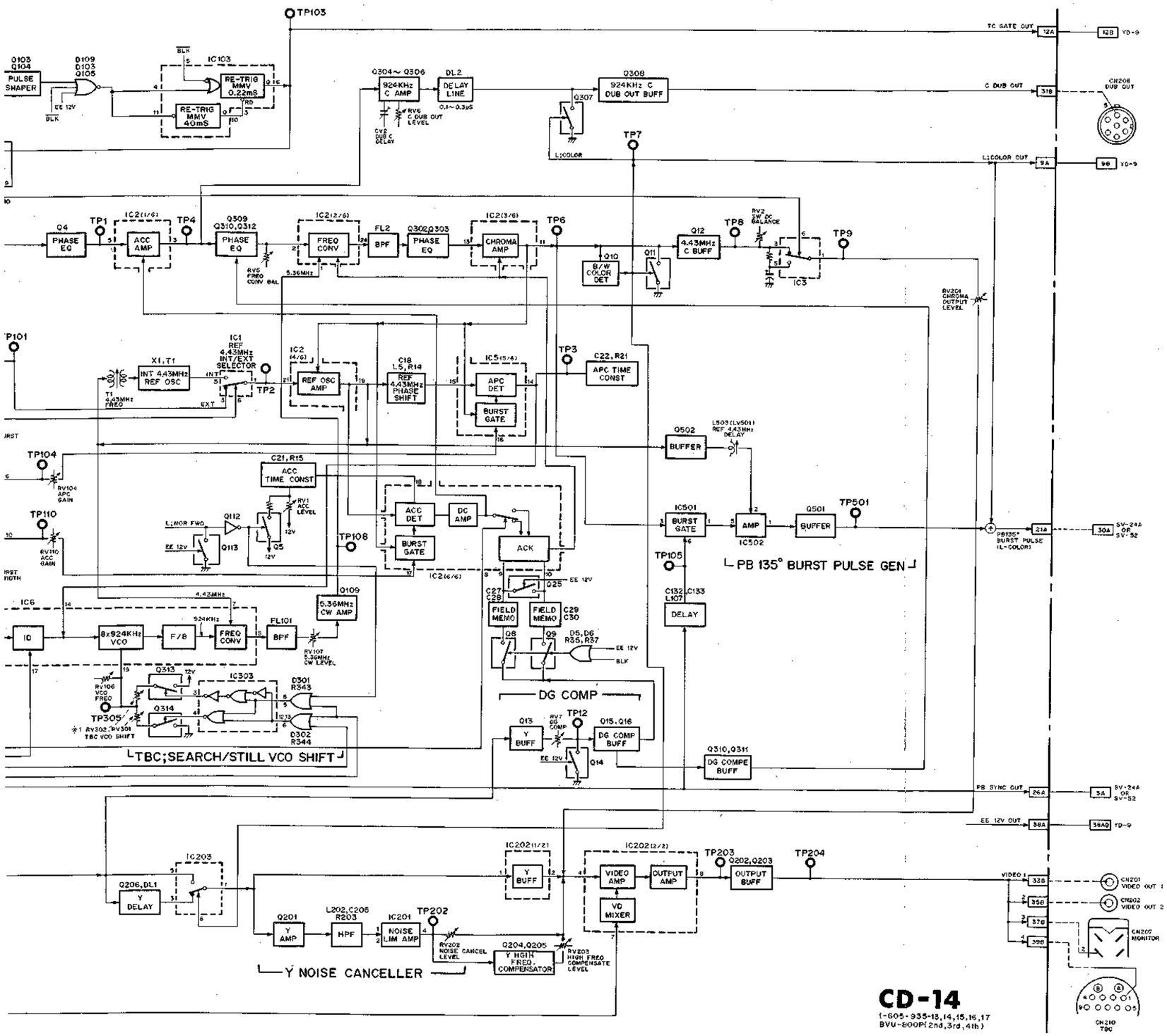
RP-5-1
1-604-344-12,13,14,15
BVU-800P (1st, 2nd, 3rd, 4th)

CHROMA DEMODULATOR



CD-14

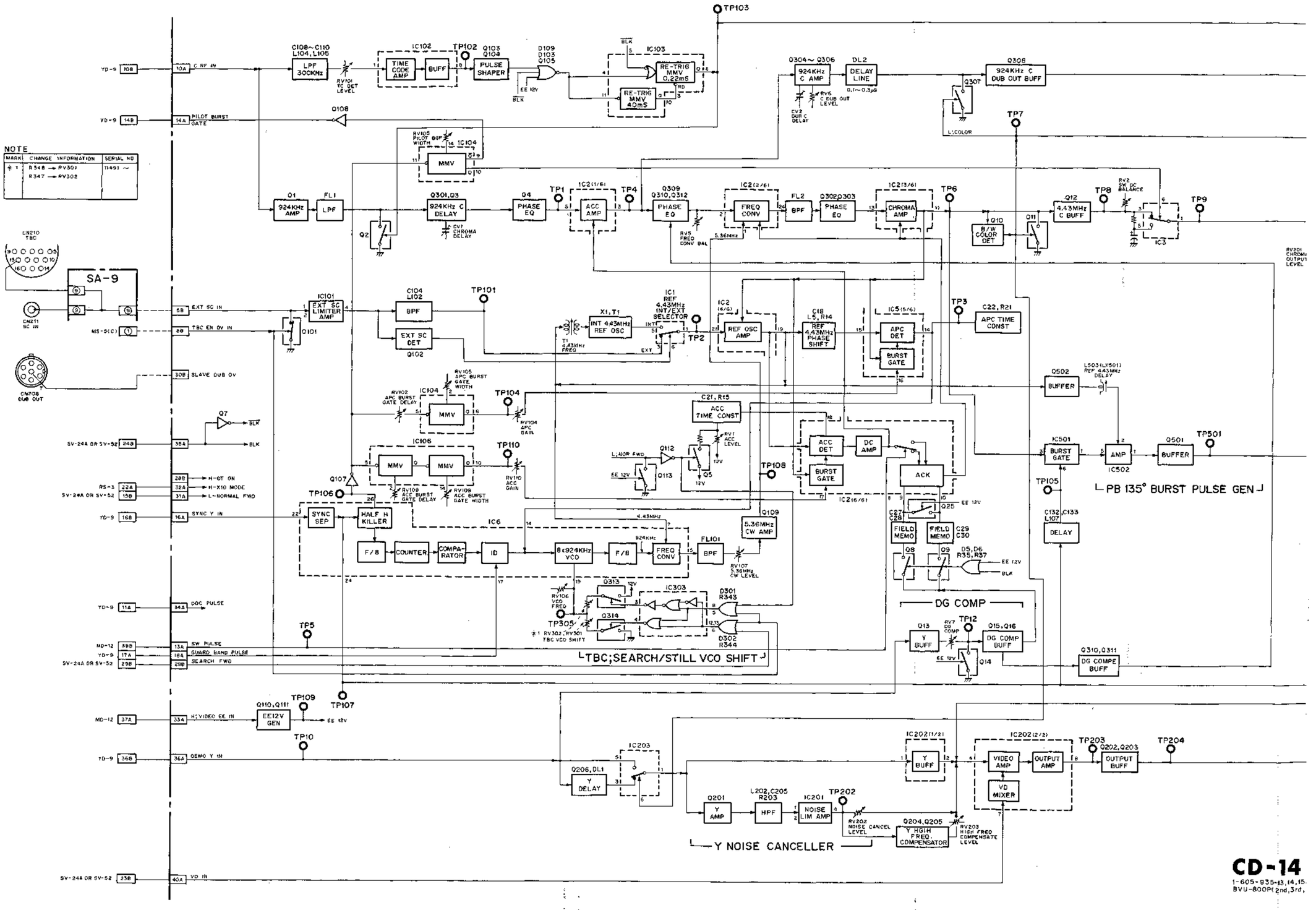
1-605-935-13,14,15.
BVU-800P(2nd,3rd,

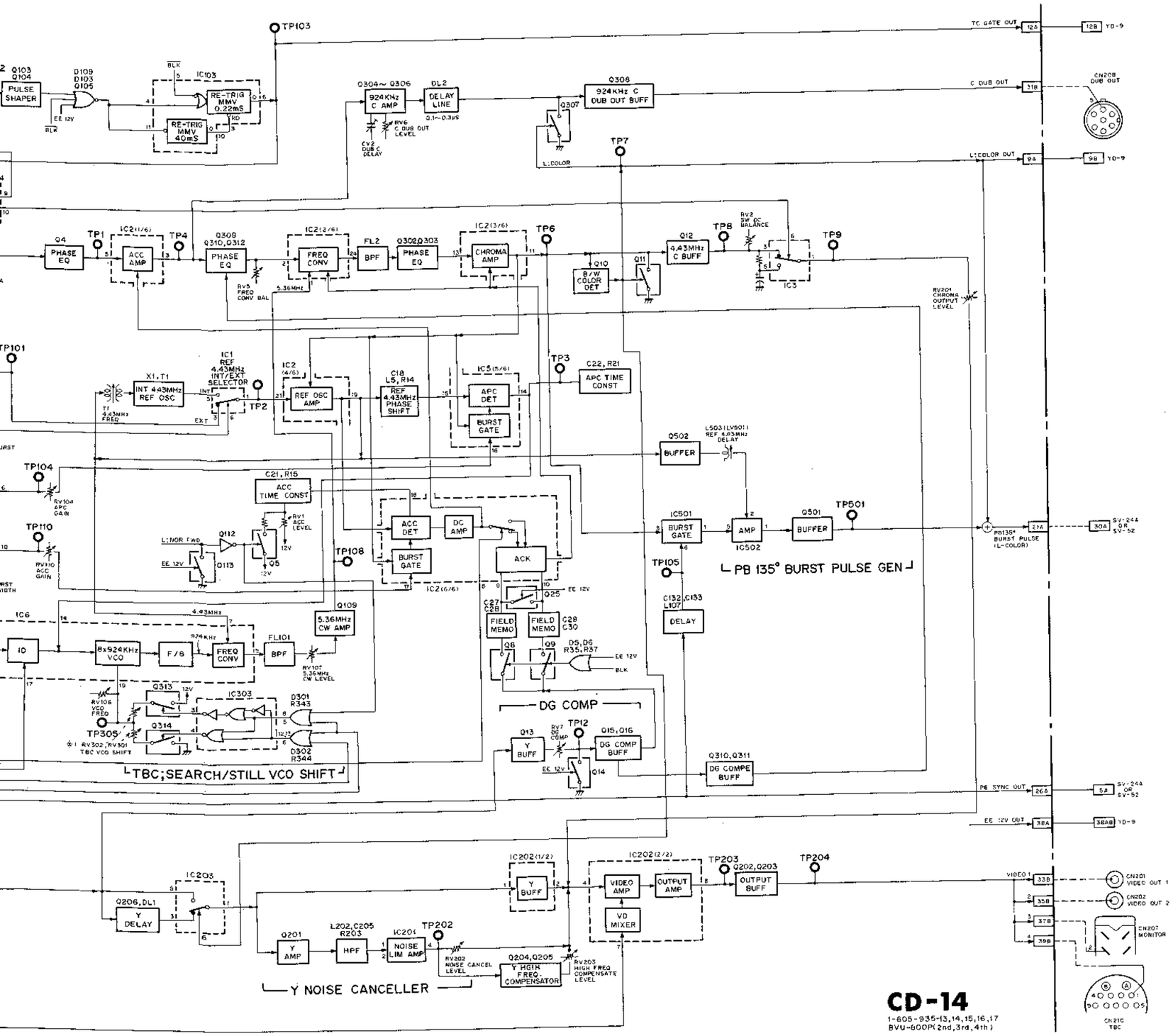


CD-14

(-605-935-13,14,15,16,17
BVU-800P(2nd,3rd,4th)

CHROMA DEMODULATOR

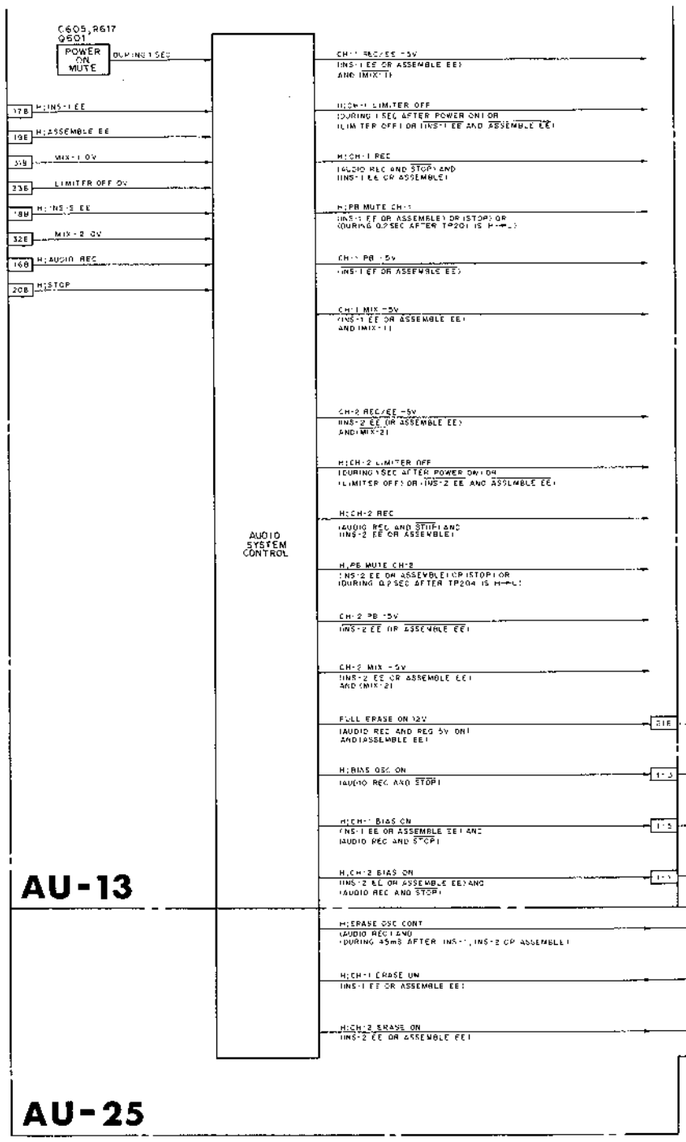


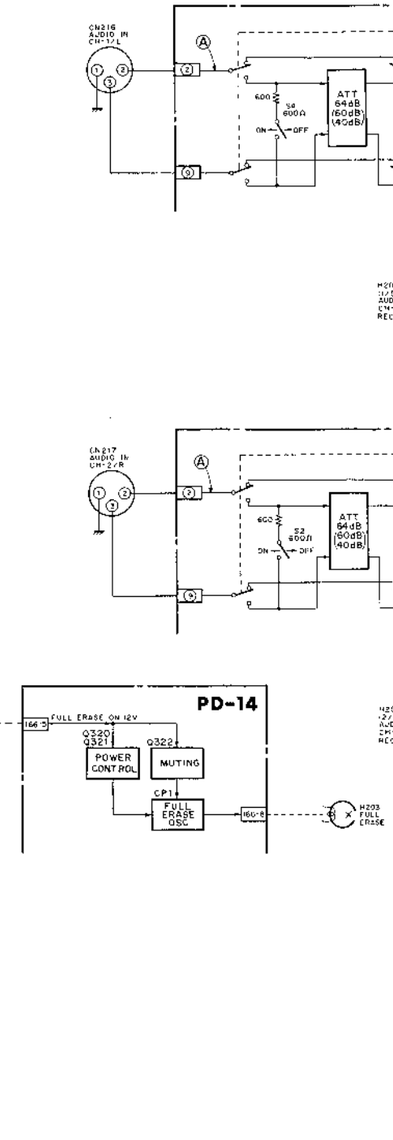


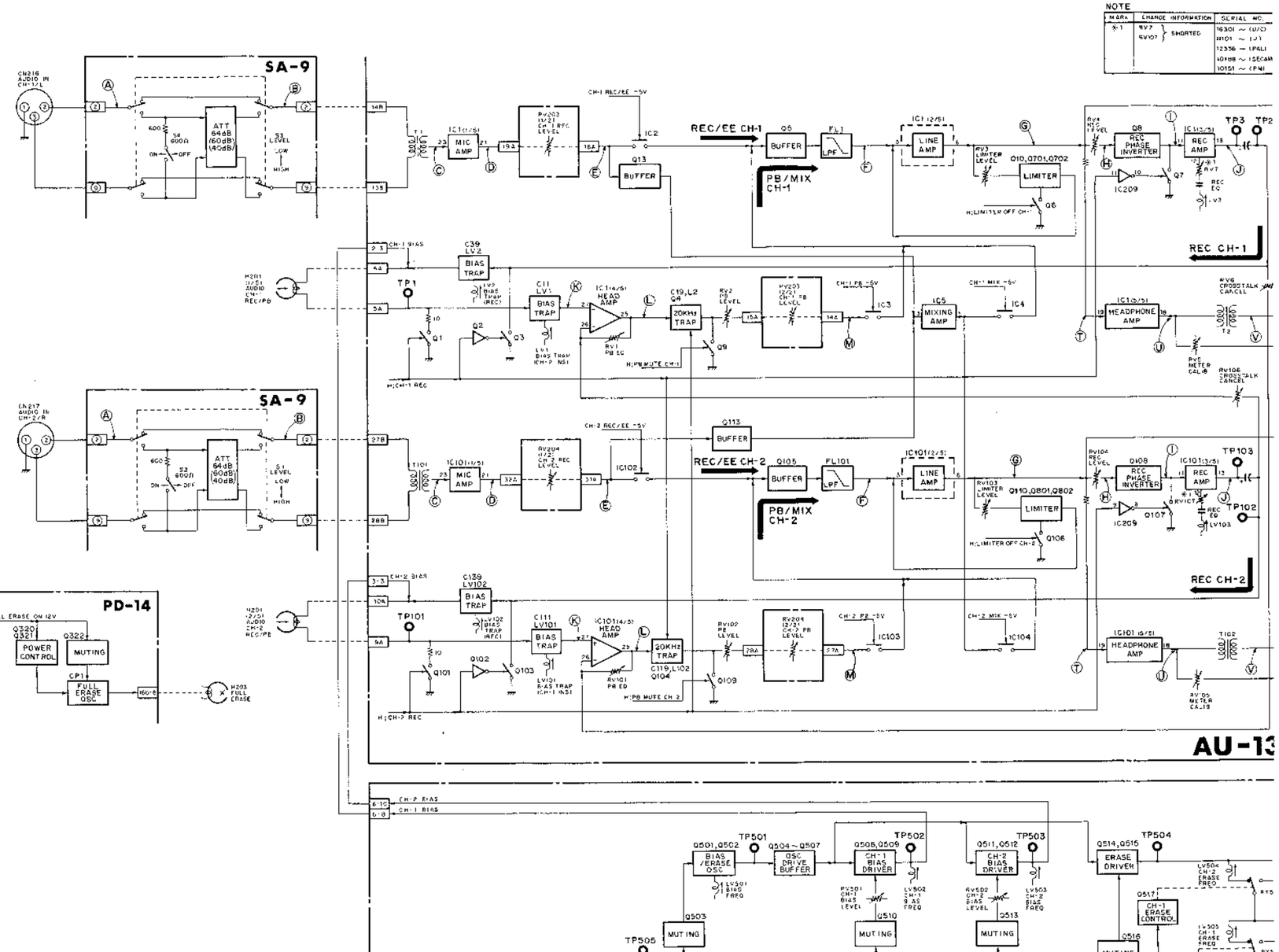
CD-14
1-605-935-13,14,15,16,17
BVU-600P(2nd,3rd,4th)

C DEMOD

AUDIO SYSTEM

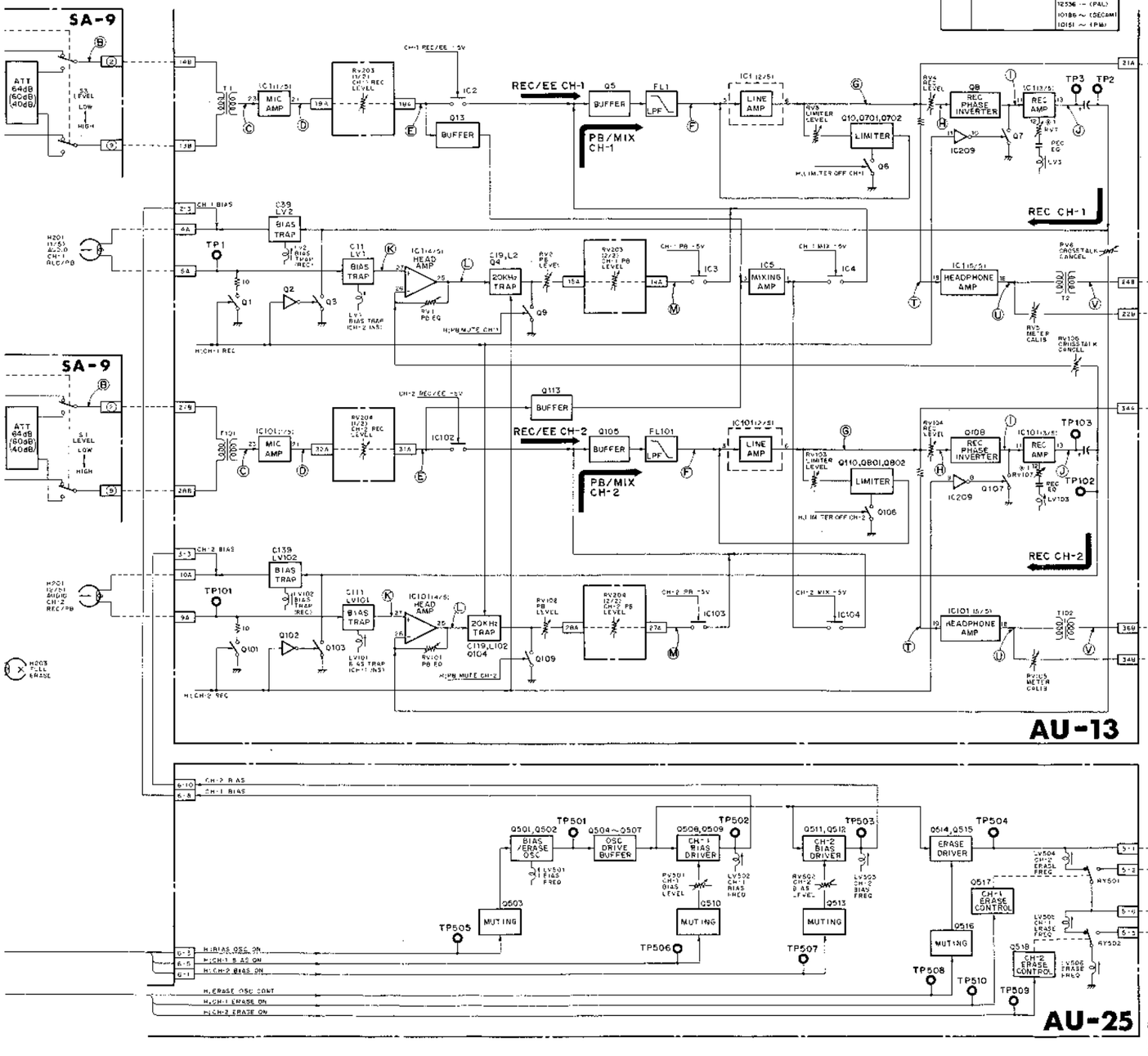




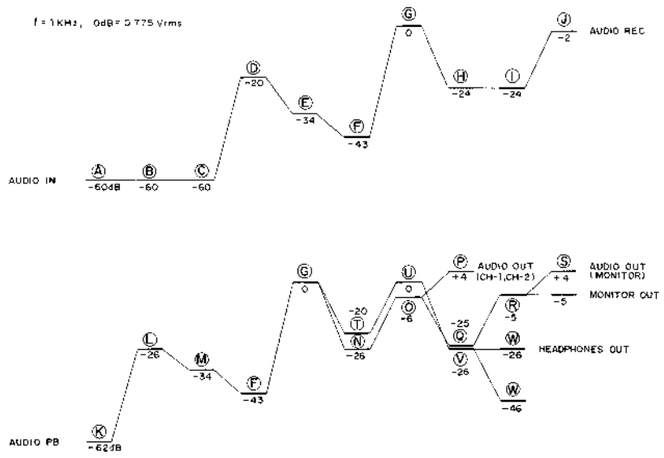


NOTE

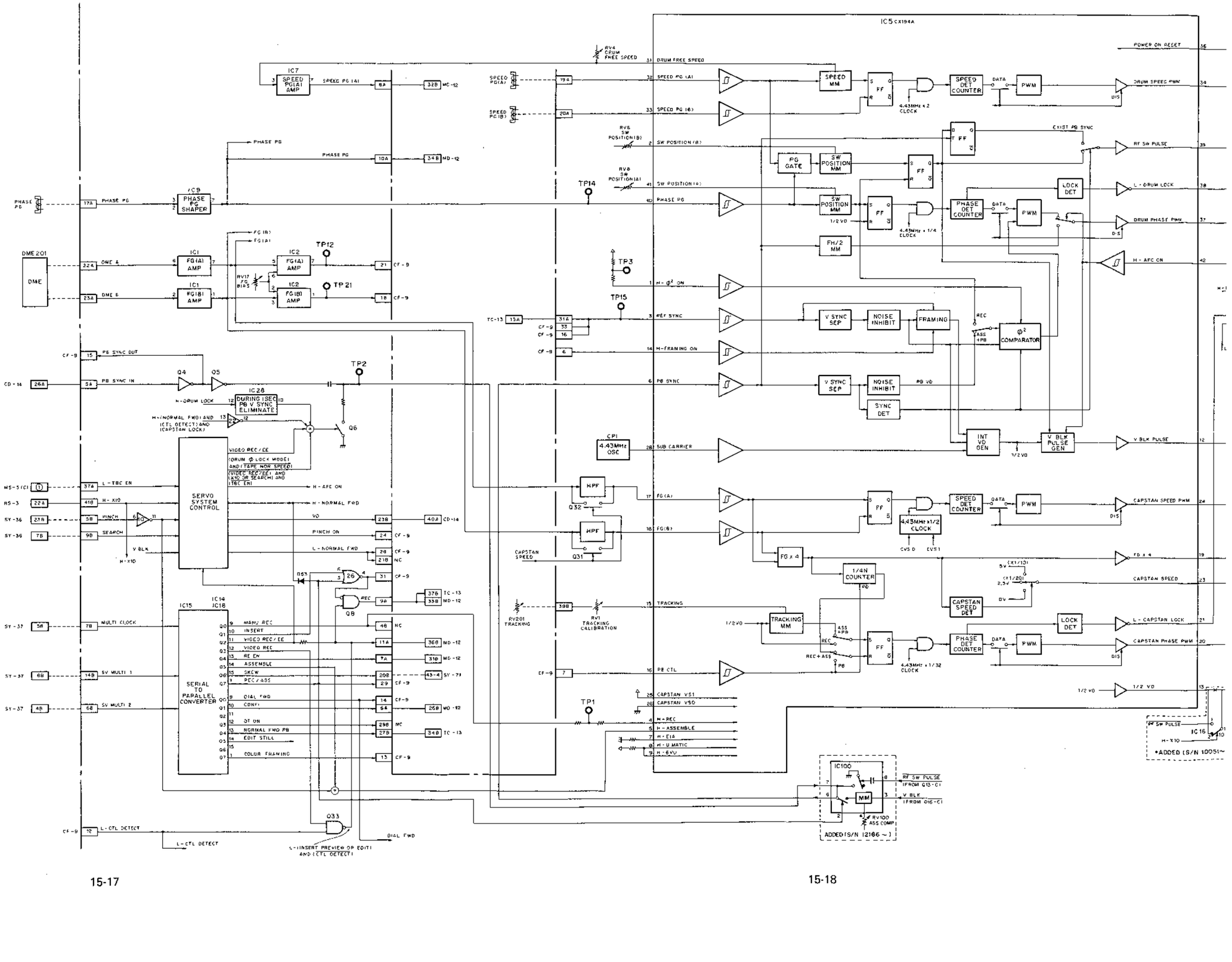
MARK	CHANGE INFORMATION	SERIAL NO.
※1	MVT, RV107 SHORTED	16301 ~ (U/EI) 17101 ~ (J) 12536 ~ (PAL) 10186 ~ (SECAM) 10151 ~ (PM)



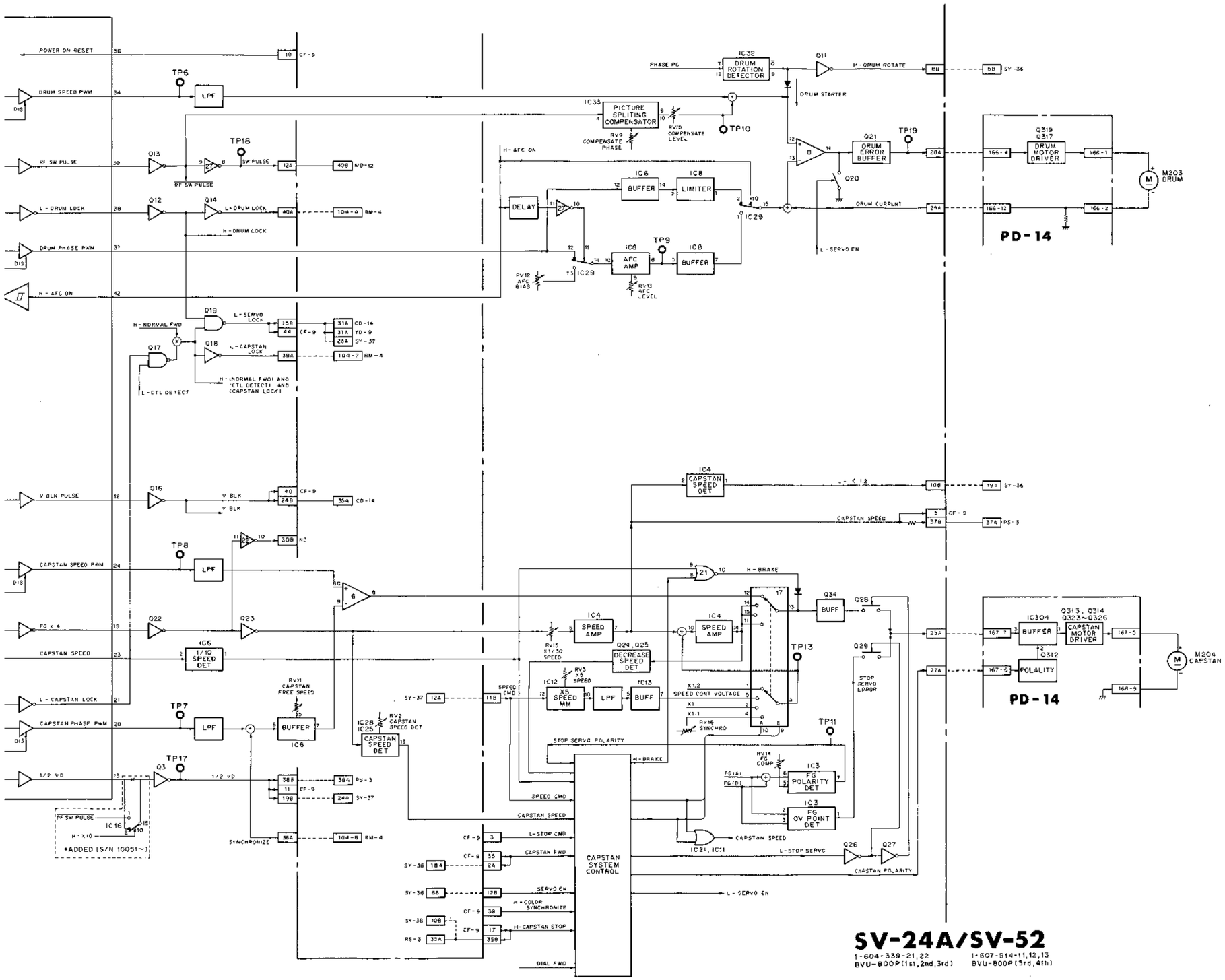
8VU-800 (3rd, 4th, 5th, 6th)
8VU-800P (2nd, 3rd, 4th)
8VU-800S (1st, 2nd, 3rd)
8VU-800PM (1st)



DRUM SERVO
CAPSTAN SERVO



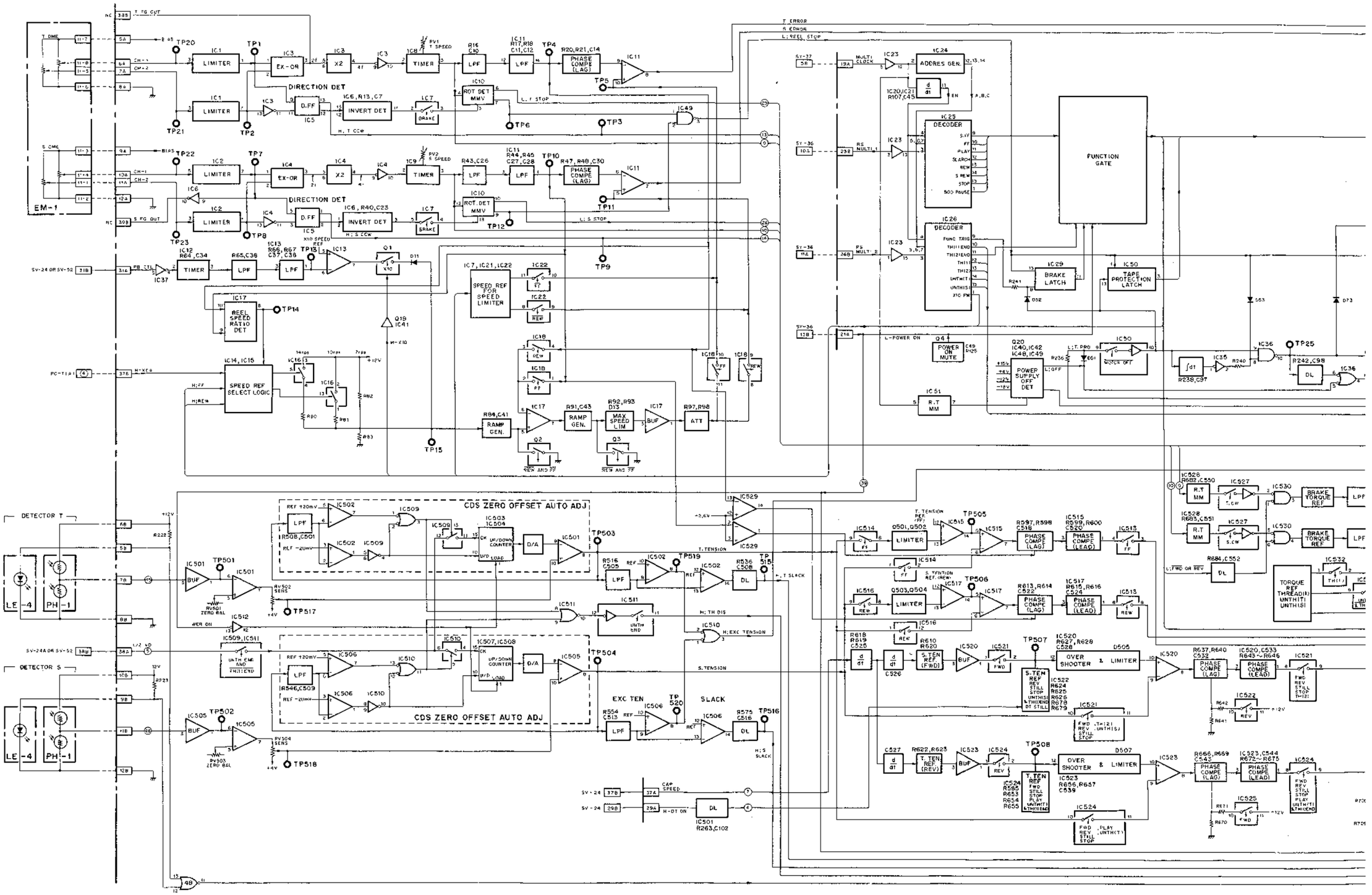
DRUM/CAPSTAN SERVO



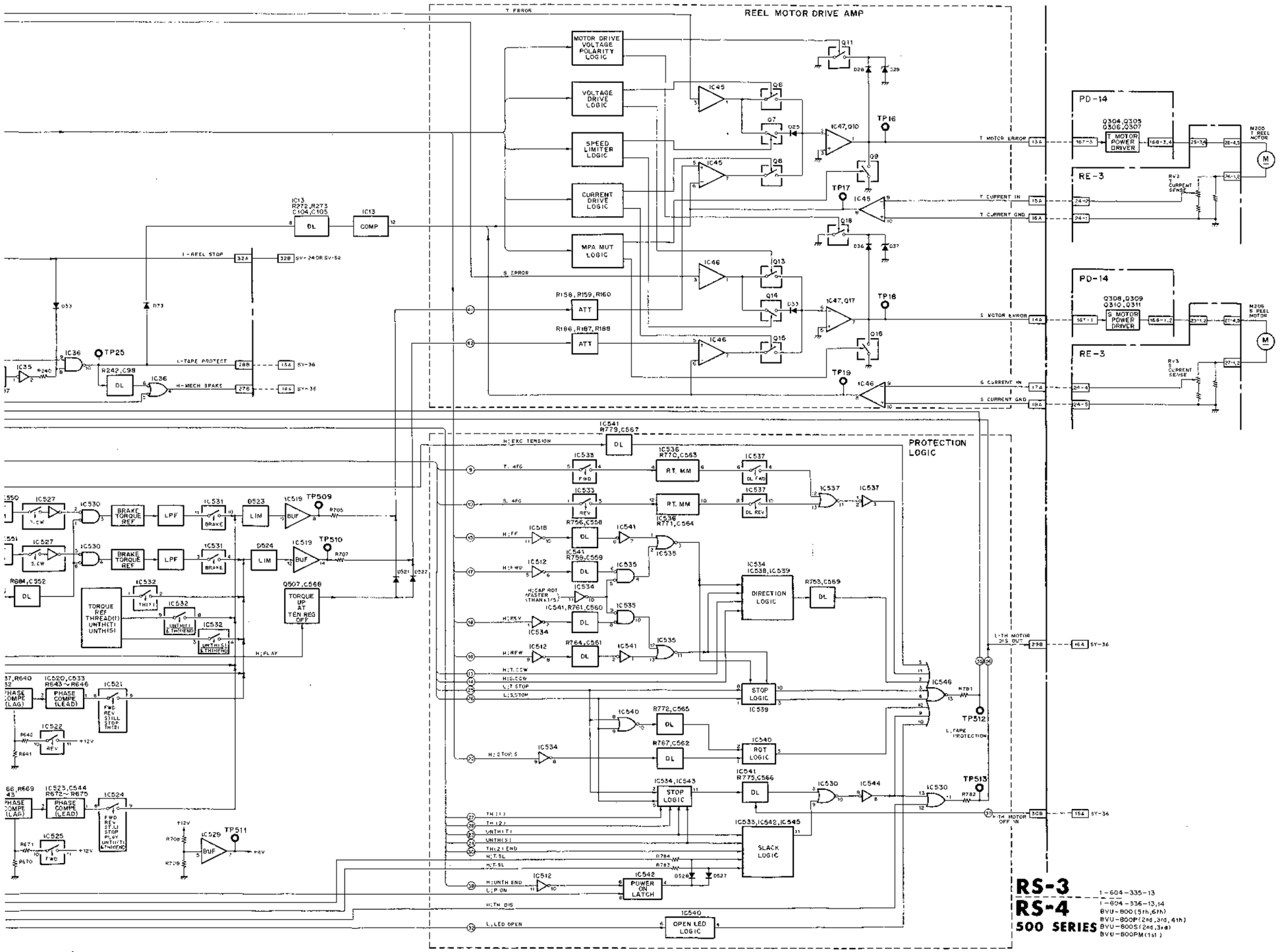
SV-24A/SV-52

1-604-339-21,22 BVU-800P(1st,2nd,3rd)
1-607-914-11,12,13 BVU-800P(3rd,4th)

REEL SERVO
TAPE TENSION SERVO



REEL/TAPE TENSION SERVO



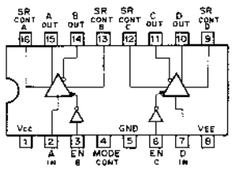
RS-3 1-604-335-13
RS-4 1-604-336-13,14
500 SERIES BVU-800(5th,6th)
BVU-800P(2nd,3rd,4th)
BVU-800S(2nd,3rd)
BVU-800PM(1st)

SECTION 16
SEMICONDUCTOR ELECTRODES

TYPE	INTERCHANGEABILITY					PAGE
AM26LS30PC AM26LS31PC AM26LS32PC						16-3
BX343 BX350 BX373 BX375 BX388 BX389 BX3914 BX3915	 BX373A BX3915A					16-4
CD4001BE CD4009UBE CD4011BE CD4012BE	TC4001BP TC4009UBP TC4011BP TC4012BP	HD14001BP HD14011BP	μPD4001C μPD4011C	MB84001B MB84011B	MC14001BCP	
CD4013BE CD4015BE CD4020BE CD4023BE CD4025BE CD4027BE CD4030BE CD4043BE	TC4013BP TC4015BP TC4020BP TC4023BP TC4025BP TC4027BP TC4030BP TC4043BP		μPD4013C μPD4023C μPD4027C	MB84013B MB84027B		16-5
CD4052BE CD4053BE CD4066BE CD4068BE CD4069UBE CD4071BE CD4072BE CD4073BE CD4075BE	TC4052BP TC4053BP TC4066BP TC4068BP TC4069UBP TC4071BP TC4072BP TC4073BP TC4075BP	 HD14066BP HD14069UBP	 μPD4069C	 MB84053B MB84069B		16-6
CD4077BE CD4078BE CD4081BE CD4082BE CD4085BE CD4093BE CD4099BE CD40161BE	– TC4078BP TC4081BP TC4082BP TC4085BP TC4093BP TC4099BP TC40161BP	 HD14081BP	 μPD4078C μPD4081C	MB84077B MB84081B	MC14077BCP	16-7
CX130 CX131A CX133A CX134A CX135 CX170 CX188 CX756A CX757						16-8
CX859 CX872 HA1807 LB1264 LM324 LM339 M54517P	 NJM2902N	 HA17902P	 μPC324C μPC339C			16-9

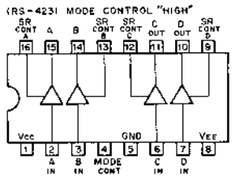
TYPE	INTERCHANGEABILITY					PAGE
M54519P M54529P MB8532 MC14510BCP MC14512BCP MC14516BCP	 TC4510BP TC4512BP TC4516BP		 μPD4512C μPD4516C			16-10
MC14519BCP MC14528BCP MC14538BCP MC14539BCP MC14584BCP MC14598BCP	– TC4528BP – TC4539BP	 HD14538BP	μPD4519C μPD4539C			16-11
NE555N NJM2903D NJM4562D RC4558 SN74LS05N SN7407N SN74LS32N SN74LS74AN SN16913P SN74LS138N SN74LS139N	M51841P μPC4558C	 NJM4558D	 μPC1458C			16-12
SN74LS156N SN74LS158N SN74LS244N SN74LS377N SN74LS378N SN74LS379N						16-13
TA7060AP TA7069P TA7076P TA7617AP TC5067BP TC40H074P TC40H368P TL082CP μA78□□UC μA79□□UC μPA54H μPA64H	 μPC143□□H	 μPC78□□H				16-14
μPA76V-FA						16-16
μPC311C μPD444C						16-15

AM26LS30PC (ADVANCED MICRO DEVICE)
DIFFERENTIAL RS-422 PARTY LINE/SINGLE ENDED RS-423 LINE DRIVER
(RS-422) MODE CONTROL "LOW"

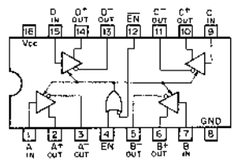


SR CONT: SLEW RATE CONTROL

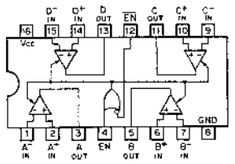
(RS-423) MODE CONTROL "HIGH"



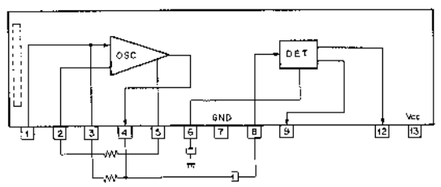
AM26LS31PC (ADVANCED MICRO DEVICE)
HIGH SPEED DIFFERENTIAL LINE DRIVER
— TOP VIEW —



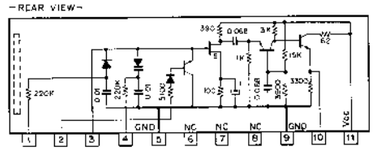
AM26LS32PC (ADVANCED MICRO DEVICE)
HIGH SPEED DIFFERENTIAL LINE RECEIVER
— TOP VIEW —



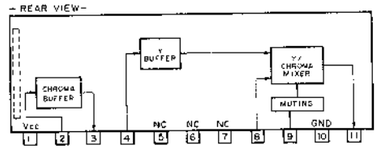
BX343 (SONY)
OSCILLATOR/DETECTOR
—REAR VIEW—



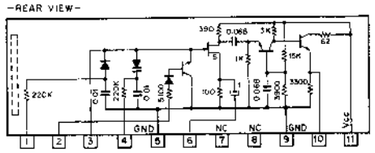
BX350 (SONY)
VIDEO HEAD AMP/MUTING
—REAR VIEW—



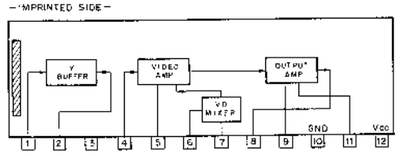
BX373 (SONY)
BX373A (SONY)
MIX AMP
—REAR VIEW—



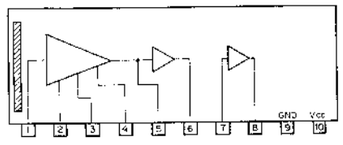
BX375 (SONY)
VIDEO HEAD AMP/MUTING
—REAR VIEW—



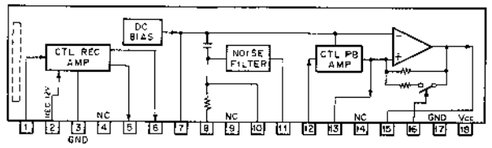
BX388 (SONY)
VIDEO AMP/VD MIXER
—IMPRINTED SIDE—



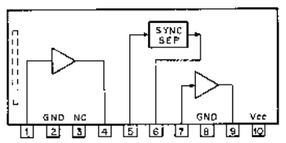
BX389 (SONY)
VIDEO AMPLIFIER
— IMPRINTED SIDE —



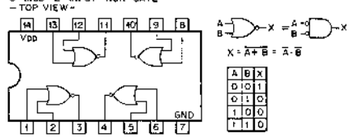
BX3914 (SONY)
CTL REC/PB AMPLIFIER
— IMPRINTED SIDE —



BX3915 (SONY)
BX3915A (SONY)
SYNC SEPARATOR
—IMPRINTED SIDE—

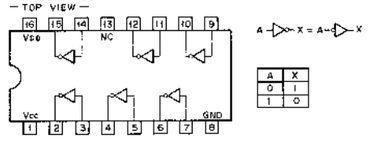


CD4001AE/BE (RCA)
TC4001BP (TOSHIBA)
HD14001BP (HITACHI)
MB84001B (FUJITSU)
μPD4001C (NEC)
MC14001BCP (MOTOROLA)
C-MOS 2-INPUT NOR GATE
—TOP VIEW—



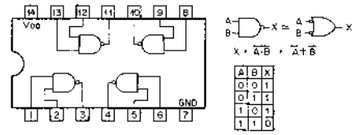
A	B	X
0	0	1
0	1	0
1	0	0
1	1	0

CD4009UBE (RCA)
TC4009UBP (TOSHIBA)
C-MOS INVERTING TYPE BUFFER/CONVERTER
(TO TTL LEVEL)
—TOP VIEW—



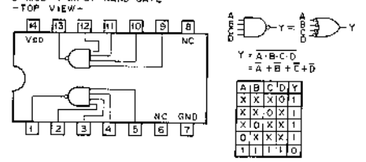
A	X
0	1
1	0

CD4011AE/BE (RCA)
TC4011BP (TOSHIBA)
HD14011BP (HITACHI)
MB84011B (FUJITSU)
μPD4011C (NEC)
C-MOS 2-INPUT NAND GATE
—TOP VIEW—



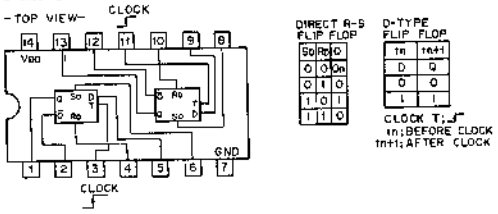
A	B	X
0	0	1
0	1	1
1	0	1
1	1	0

CD4012AE/BE (RCA)
TC4012BP (TOSHIBA)
C-MOS 4-INPUT NAND GATE
—TOP VIEW—

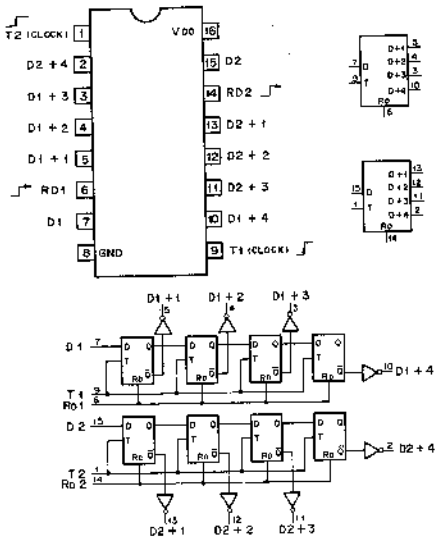


A	B	C	D	Y
X	X	X	0	1
X	X	0	X	1
X	0	X	X	1
0	X	X	X	1
1	1	1	1	0

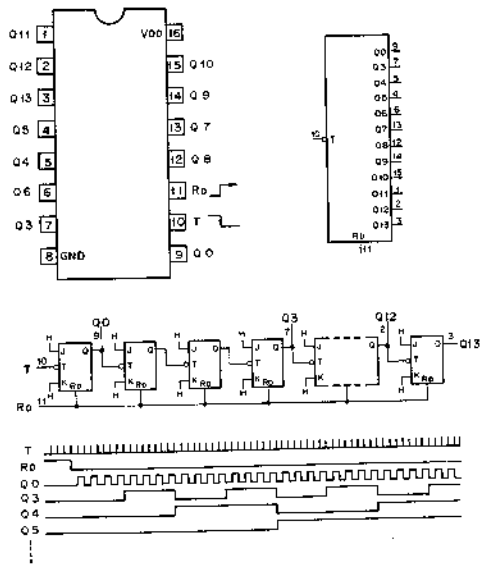
CD4013AE / BE (RCA)
TC4013BP (TOSHIBA)
MB84013B (FUJITSU)
μPD4013C (NEC)
C-MOS D-TYPE FLIP FLOP WITH DIRECT SET / RESET



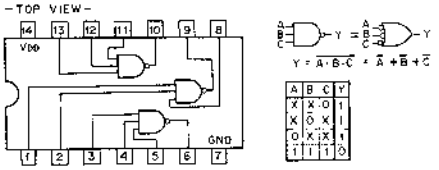
CD4015AE/BE (RCA)
TC4015BP (TOSHIBA)
C-MOS DUAL 4-STAGE STATIC SHIFT REGISTER WITH DIRECT RESET
-TOP VIEW-



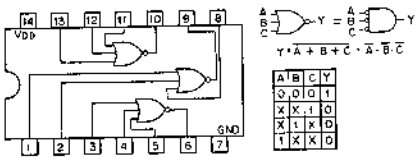
CD4020AE/BE (RCA)
TC4020BP (TOSHIBA)
C-MOS 14-STAGE RIPPLE-CARRY BINARY COUNTER/DIVIDER
-TOP VIEW-



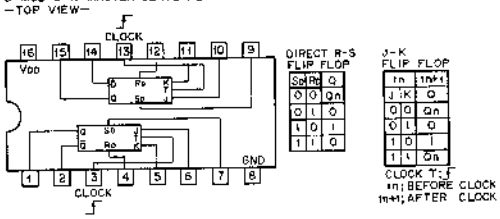
CD4023AE/BE (RCA)
TC4023BP (TOSHIBA)
μPD4023C (NEC)
C-MOS 3-INPUT NAND GATE
-TOP VIEW-



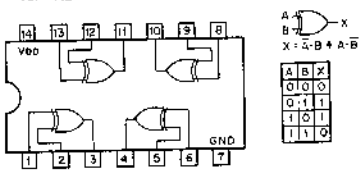
CD4025AE/BE (RCA)
TC4025BP (TOSHIBA)
C-MOS 3-INPUT NOR GATE
-TOP VIEW-



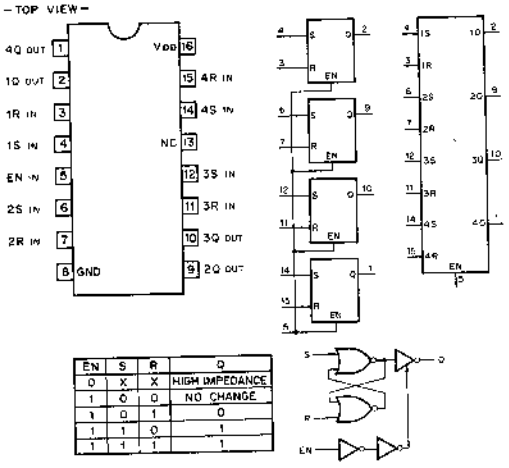
CD4027AE/BE (RCA)
TC4027BP (TOSHIBA)
MB84027B (FUJITSU)
μPD4027C (NEC)
C-MOS J-K MASTER SLAVE FLIP FLOP WITH DIRECT SET/RESET
-TOP VIEW-



CD4030AE/BE (RCA)
TC4030BP (TOSHIBA)
C-MOS EXCLUSIVE OR GATE
-TOP VIEW-

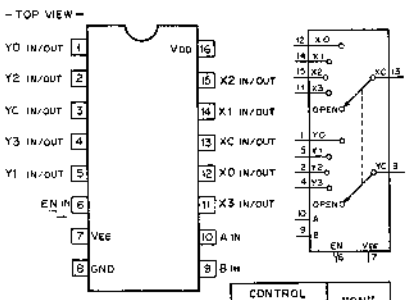


CD4043BE (RCA)
TC4043BP (TOSHIBA)
C-MOS POSITIVE NOR R/S FLIP-FLOP
-TOP VIEW-



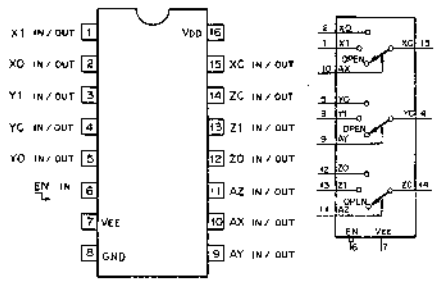
EN	S	R	Q
0	X	X	HIGH IMPEDANCE
1	0	0	NO CHANGE
1	0	1	0
1	1	0	1
1	1	1	1

CD4052BE (RCA)
TC4052BP (TOSHIBA)
C-MOS 4-CHANNEL MULTIPLEXER / DEMULTIPLEXER



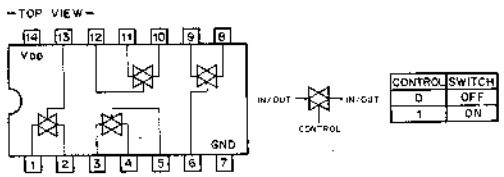
CONTROL INPUTS			"ON" CHANNEL
EN	B	A	
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	X	X	OPEN

CD4053BE (RCA)
TC4053BP (TOSHIBA)
MB84053B (FUJITSU)
C-MOS 2-CHANNEL MULTIPLEXER / DEMULTIPLEXER



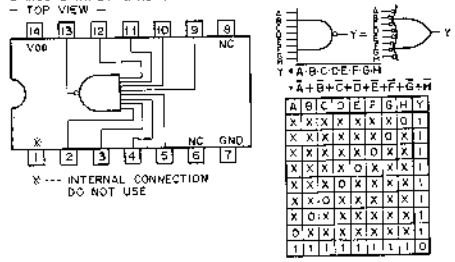
CONT. INPUTS		ON CHANNEL
EN	A (X,Y,Z)	
0	0	0
0	1	1
1	X	OPEN

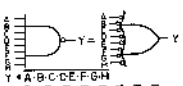
CD4066AE/BE (RCA)
TC4066BP (TOSHIBA)
HD14066BP (HITACHI)
C-MOS BILATERAL ANALOG SWITCH



CONTROL	SWITCH
0	OFF
1	ON

CD4068BE (RCA)
TC4068BP (TOSHIBA)
C-MOS 8-INPUT NAND GATE

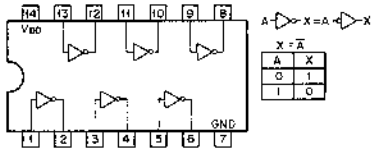




$Y = \overline{A \cdot B \cdot C \cdot D \cdot E \cdot F \cdot G \cdot H}$
$= \overline{A} + \overline{B} + \overline{C} + \overline{D} + \overline{E} + \overline{F} + \overline{G} + \overline{H}$

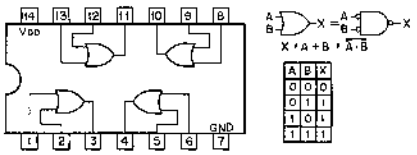
A	B	C	D	E	F	G	H	Y
X	X	X	X	X	X	X	0	1
X	X	X	X	X	X	0	X	1
X	X	X	X	X	0	X	X	1
X	X	X	X	0	X	X	X	1
X	X	X	0	X	X	X	X	1
X	X	0	X	X	X	X	X	1
X	0	X	X	X	X	X	X	1
0	X	X	X	X	X	X	X	1
1	1	1	1	1	1	1	1	0

CD4069UBE (RCA)
TC4069UBP (TOSHIBA)
HD14069UBP (HITACHI)
MB84069B (FUJITSU)
μPD4069C (NEC)
C-MOS INVERTER
- TOP VIEW -



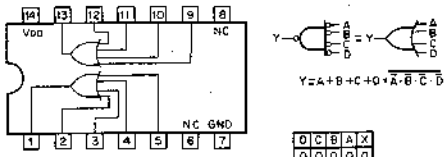
A	X
0	1
1	0

CD4071BE (RCA)
TC4071BP (TOSHIBA)
C-MOS 2-INPUT OR GATE
- TOP VIEW -



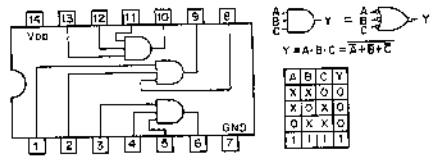
A	B	X
0	0	0
0	1	1
1	0	1
1	1	1

CD4072BE (RCA)
TC4072BP (TOSHIBA)
C-MOS 4-INPUT OR GATE
- TOP VIEW -



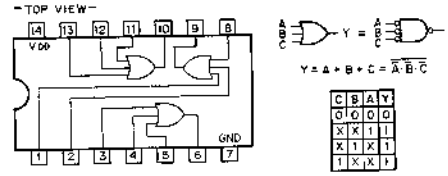
D	C	B	A	X
0	0	0	0	0
X	X	X	1	1
X	X	1	X	1
X	1	X	X	1
1	X	X	X	1

CD4073BE (RCA)
TC4073BP (TOSHIBA)
C-MOS 3-INPUT POSITIVE AND GATE
- TOP VIEW -



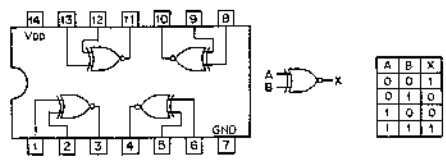
A	B	C	Y
X	X	0	0
X	0	X	0
0	X	X	0
1	1	1	1

CD4075BE (RCA)
TC4075BP (TOSHIBA)
C-MOS 3-INPUT OR GATE
- TOP VIEW -



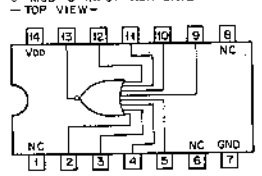
C	B	A	Y
0	0	0	0
X	X	1	1
X	1	X	1
1	X	X	1

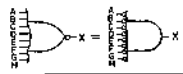
CD4077BE (RCA)
MB84077B (FUJITSU)
MC14077BCP(MOTOROLA)
C-MOS EXCLUSIVE NOR GATE
—TOP VIEW—



A	B	X
0	0	1
0	1	0
1	0	0
1	1	1

CD4078BE (RCA)
TC4078BP (TOSHIBA)
μPD4078C (NEC)
C-MOS 8-INPUT NOR GATE
—TOP VIEW—

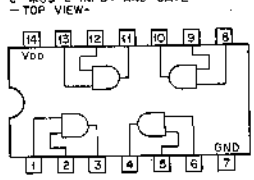


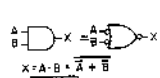


$X = \overline{A+B+C+D+E+F+G+H}$
$= \overline{A} \cdot \overline{B} \cdot \overline{C} \cdot \overline{D} \cdot \overline{E} \cdot \overline{F} \cdot \overline{G} \cdot \overline{H}$

A	B	C	D	E	F	G	H	X
0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	1	0
0	0	0	0	0	0	1	0	0
0	0	0	0	0	0	1	1	0
:	:	:	:	:	:	:	:	:
1	1	1	1	1	1	1	0	0
1	1	1	1	1	1	1	1	0

CD4081BE (RCA)
TC4081BP (TOSHIBA)
HD14081BP (HITACHI)
MB84081B (FUJITSU)
μPD4081C (NEC)
C-MOS 2-INPUT AND GATE
—TOP VIEW—

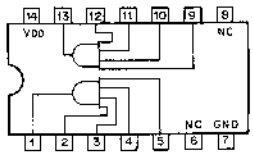


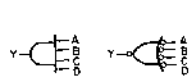


$X = A \cdot B = \overline{\overline{A} + \overline{B}}$

A	B	X
0	0	0
0	1	0
1	0	0
1	1	1

CD4082BE (RCA)
TC4082BP (TOSHIBA)
C-MOS 4-INPUT AND GATE
—TOP VIEW—

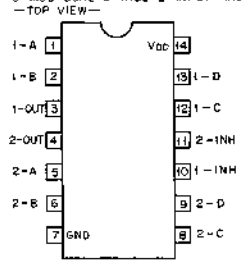


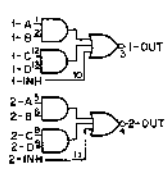


$Y = ABCD = \overline{\overline{A} + \overline{B} + \overline{C} + \overline{D}}$

D	C	B	A	Y
X	X	X	0	0
X	X	0	X	0
X	0	X	X	0
0	X	X	X	0
1	1	1	1	1

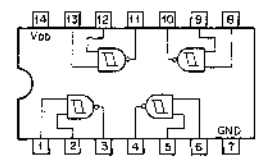
CD4085BE (RCA)
TC4085BP (TOSHIBA)
C-MOS DUAL 2-WIDE 2-INPUT AND-OR-INVERT GATE
—TOP VIEW—

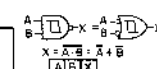




OUTPUT = $\overline{A \cdot B + C \cdot D + INH}$

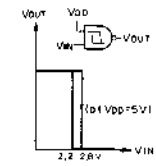
CD4093BE (RCA)
TC4093BP (TOSHIBA)
C-MOS 2-INPUT NAND SCHMITT TRIGGER
—TOP VIEW—



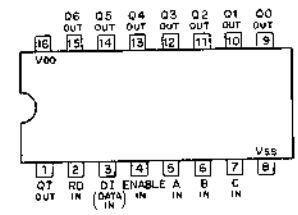


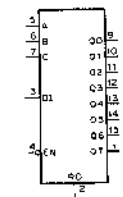
$X = \overline{A \cdot B} = \overline{A} + \overline{B}$

A	B	X
0	0	1
0	1	1
1	0	1
1	1	0



CD4099BE (RCA)
TC4099BP (TOSHIBA)
C-MOS 8-BIT ADDRESSABLE LATCH
—TOP VIEW—





MODE SELECTION

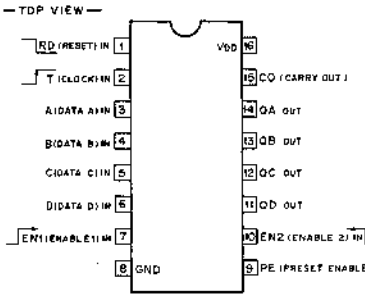
CONTROL INPUT		OUTPUT OF ADDRESSED LATCH	OUTPUT OF EACH OTHER LATCH
EN	RD		
0	0	D	Qno
0	1	D	0
1	0	Qno	Qno
1	1	0	0

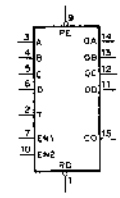
Qno : HOLDS PREVIOUS DATA

LATCH SELECTION

CONTROL INPUT			ADDRESSED LATCH
C	B	A	
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	0	0	4
1	0	1	5
1	1	0	6
1	1	1	7

CD40161BE (RCA)
TC40161BP (TOSHIBA)
C-MOS PRESETTABLE SYNCHRONOUS 4-BIT BINARY COUNTER WITH ASYNCHRONOUS RESET
—TOP VIEW—

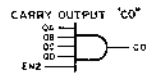




MODE SELECTION

CONTROL INPUTS				MODE
RD	PE	EN1	EN2	
0	X	X	X	RESET (ASYNCHRONOUS)
1	0	X	X	PRESET (SYNCHRONOUS)
↑	1	0	X	NO COUNT
↑	1	X	0	NO COUNT
↑	1	↑	1	COUNT

CARRY OUTPUT "CO"

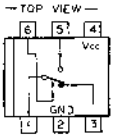


CO IS HIGH WHEN EN2 INPUT IS HIGH AND COUNT IS "15".

COUNT SEQUENCE

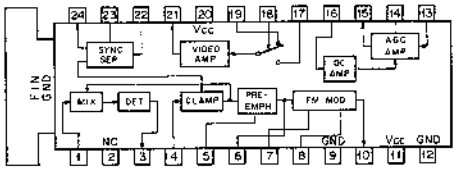
COUNT	OUTPUTS			
	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

CX130 (SONY)
ANALOG SWITCH
— TOP VIEW —

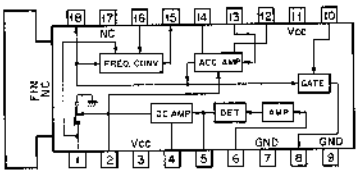


CONT. INPUT (PIN 6)	SW
LOW OR OPEN	
HIGH	

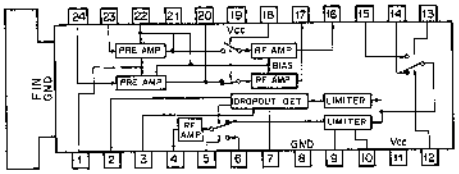
CX131A (SONY)
— TOP VIEW —



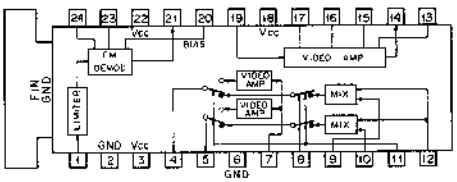
CX133A (SONY)
— TOP VIEW —



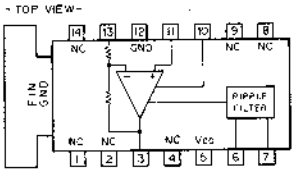
CX134A (SONY)
— TOP VIEW —



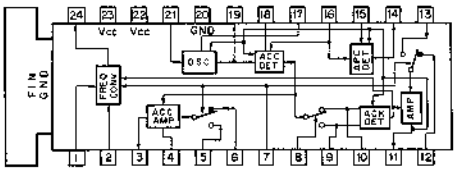
CX135 (SONY)
— TOP VIEW —



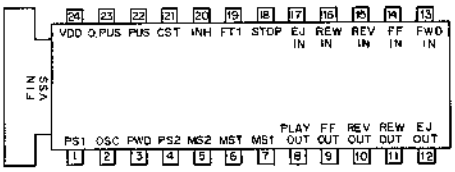
CX170 (SONY)
AUDIO POWER AMP
— TOP VIEW —

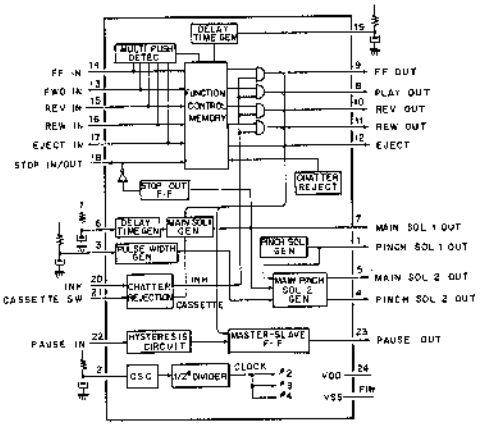


CX188 (SONY)
— TOP VIEW —

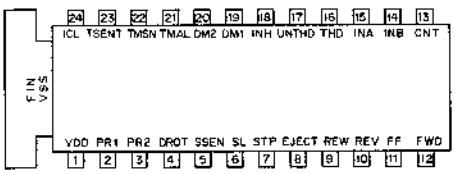


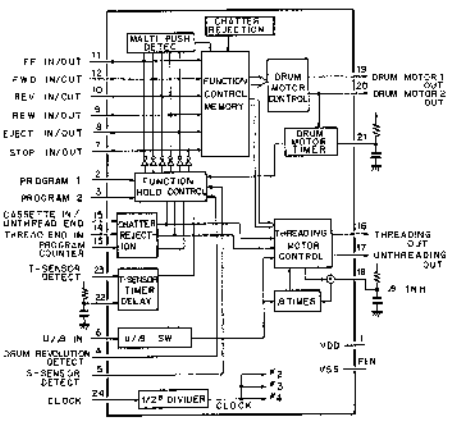
CX756A (SONY)
P-MOS VTR SYSTEM CONTROL
— TOP VIEW —



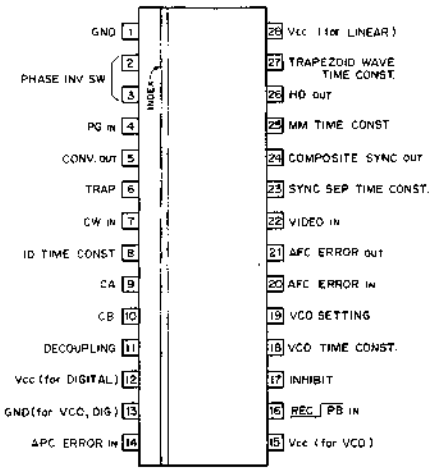


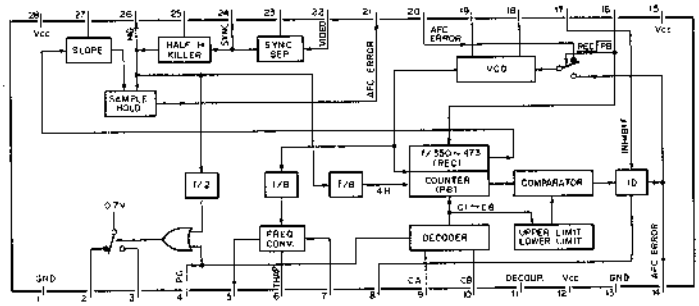
CX757 (SONY)
P-MOS VTR SYSTEM CONTROL
— TOP VIEW —





CX 859 (SONY)
—TOP VIEW—





DECODER TRUTH TABLE

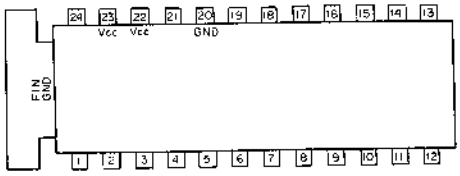
CA \ CB	LOW	OPEN	HIGH
LOW	C1	C7	—
OPEN	C4	C5	C6
HIGH	—	*C2 C3	C8

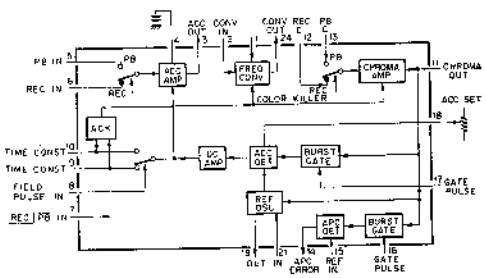
* PG : L··· C2
PG : H··· C3

AFC/APC PRESET DATA

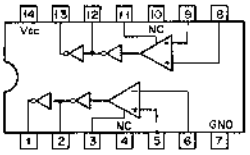
	AFC COUNT DOWN	APC ID COUNT	
		UPPER LIM.	LOWER LIM.
C1	f/473	105	95
C2	f/351	129	119
C3	f/353	137	127
C4	f/351	118	104
C5	f/351	131	117
C6	f/351	144	130
C7	f/350	136	104
C8	——	125	115

CXB72 (SONY)
— TOP VIEW —

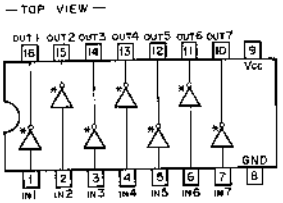


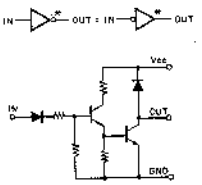


HA1807 (HITACHI)
VOLTAGE COMPARATOR
— TOP VIEW —

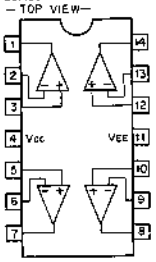


LB 1264 (SANYO)
7 STAGE DRIVER
— TOP VIEW —

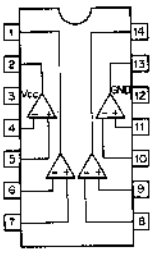




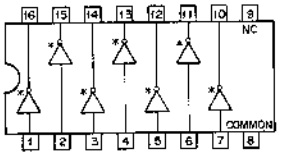
LM324 (NSC)
μPC324C (NEC)
HA17902P (HITACHI)
NJM2902N (JRC)
QUAD. OP AMPLIFIER
—TOP VIEW—

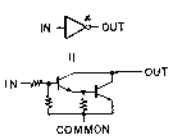


LM339 (NSC)
μPC339C (NEC)
COMPARATOR
—TOP VIEW—



M54517P (MITSUBISHI)
TRANSISTOR ARRAY
— TOP VIEW —

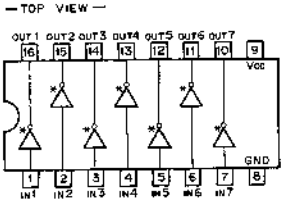


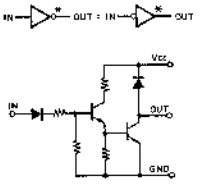


M54519P (MITSUBISHI)

7 STAGE DRIVER

— TOP VIEW —

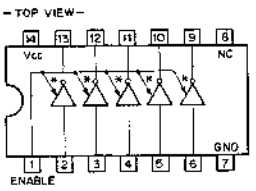


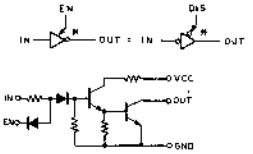


M54529P (MITSUBISHI)

TRANSISTOR ARRAY

— TOP VIEW —



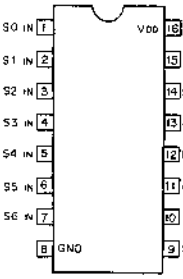


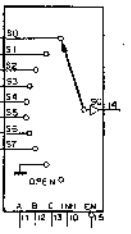
IN	EN	OUT
0	1	1
1	1	0
X	0	OPEN

MC14512BCP(MOTOROLA)
TC4512BP (TOSHIBA)
μPD4512C (NEC)

C-MOS 8-CHANNEL DATA SELECTOR/MULTIPLEXER

— TOP VIEW —





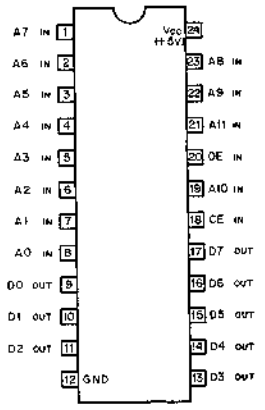
CONTROL INPUTS					OUTPUT
EN	INH	C	B	A	SC
0	0	0	0	0	S0
0	0	0	0	1	S1
0	0	0	1	0	S2
0	0	0	1	1	S3
0	0	1	0	0	S4
0	0	1	0	1	S5
0	0	1	1	0	S6
0	0	1	1	1	S7
0	1	X	X	X	GND
1	X	X	X	X	OPEN

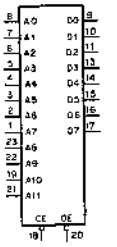
0; LOW LEVEL
1; HIGH LEVEL
X; LOW OR HIGH

MB8532 (FUJITSU)

32K(4K-8) UV ERASABLE PROM

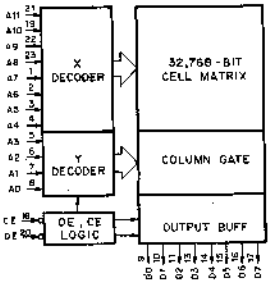
— TOP VIEW —





IN		OUT	FUNCTION
CE	OE	Dn	
0	0	DENTERED	READ
1	X	HIGH Z	STANDBY

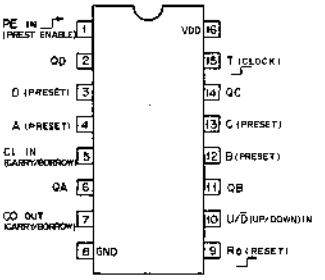
A0-A11 ; ADDRESS
CE ; CHIP ENABLE
OE ; OUTPUT ENABLE
O0-O7 ; DATA OUTPUTS

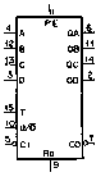


MC14516BCP (MOTOROLA)
TC4516BP (TOSHIBA)
μPD4516C (NEC)

C-MOS PRESETTABLE BINARY UP/DOWN COUNTER

— TOP VIEW —





INPUTS					OUTPUTS			
T	R0	PE	CI	U/D	QD	QC	QB	QA
X	1	X	X	X	0	0	0	0
X	0	1	X	X	SET TO A,B,C,D			
↓	0	0	0	1	COUNT UP			
↓	0	0	0	0	COUNT DOWN			
0	0	0	X	X	NO CHANGE			
X	0	0	1	X	NO CHANGE			

CO=L
CI=L B(DOWN · COUNT "0" OR UP · COUNT "15")

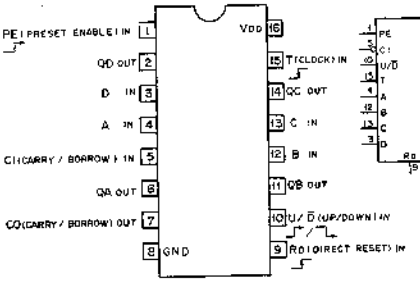
COUNT	OUTPUTS			
	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

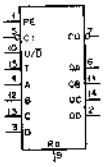
COUNT UP ——— COUNT DOWN

MC14510BCP (MOTOROLA)
TC4510BP (TOSHIBA)

C-MOS PRESETTABLE BCD UP/DOWN COUNTOR

— TOP VIEW —





INPUTS					OUTPUTS			
T	RD	PE	CI	U/D	QD	QC	QB	QA
X	1	X	X	X	0	0	0	0
X	0	1	X	X	SET TO A,B,C,D			
↓	0	0	0	1	COUNT UP			
↓	0	0	0	0	COUNT DOWN			
0	0	0	X	X	NO CHANGE			
X	0	0	1	X	NO CHANGE			

CO=L
CI=L B(DOWN · COUNT "0" OR UP · COUNT "9")

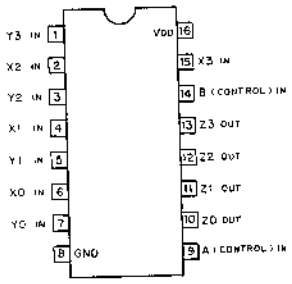
COUNT	OUTPUTS			
	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1

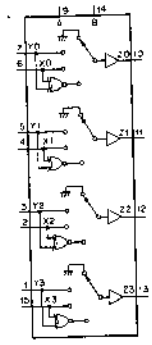
COUNT UP ——— COUNT DOWN

MC14519BCP (MOTOROLA)
μPD4519C (NEC)

C-MOS 4-BIT AND / OR SELECTOR
2-CHANNEL DATA SELECTOR
EXCLUSIVE "NOR" GATE

— TOP VIEW —



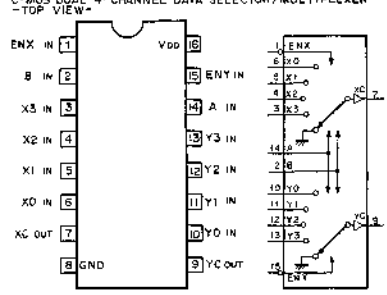


CONTROL		OUTPUT
A	B	Z
0	0	GND
0	1	Y
1	0	X
1	1	VDD

MC14539BCP (MOTOROLA)
TC4539BP (TOSHIBA)
μPD4539C (NEC)

C-MOS DUAL 4-CHANNEL DATA SELECTOR/MULTIPLEXER

-TOP VIEW-

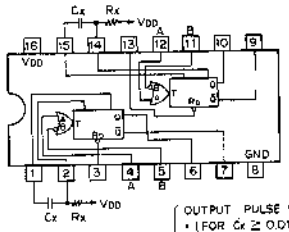


CONT IN			ON CHANNEL
EN	B	A	
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	X	X	GND

MC14528BCP (MOTOROLA)
TC4528BP (TOSHIBA)

C-MOS RETRIGGERABLE / RESETTABLE MMV

-TOP VIEW-



INPUTS			OUTPUTS	
A	B	RD	Q	$\overline{Q}$
↓	1	1	↑	↓
0	↑	1	↑	↓
1	↓	1	↓	↑
0	1	↓	↓	↑
X	X	0	0	1

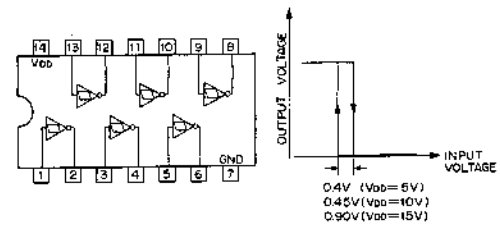
OUTPUT PULSE WIDTH Q OR $\overline{Q}$

- (FOR $C_x \geq 0.01\mu F$ USE FORMULA)
  $P.W = 0.2 \cdot R_x \cdot C_x \cdot \ln (V_{DD} - GND)$
- (FOR $C_x < 0.01\mu F$ USE DATA BOOK)

MC14584BCP (MOTOROLA)

C-MOS SCHMITT TRIGGER INVERTER

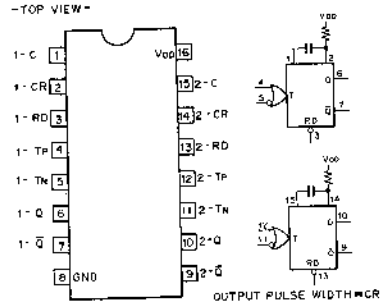
—TOP VIEW—



MC14538BCP (MOTOROLA)
HD14538BP (HITACHI)

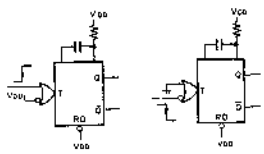
C-MOS DUAL RETRIGGERABLE/NON-RETRIGGERABLE MONOSTABLE MULTIVIBRATOR

-TOP VIEW-

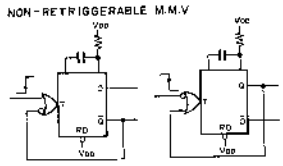


OUTPUT PULSE WIDTH = CR

RETRIGGERABLE M.M.V



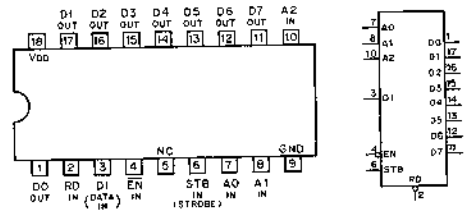
NON-RETRIGGERABLE M.M.V



MC14598BCP (MOTOROLA)

C-MOS 8-BIT BUS-COMPATIBLE THREE-STATE LATCHES

-TOP VIEW-



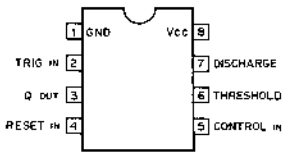
LATCH TRUTH TABLE

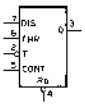
CONTROL INPUT			OUTPUT OF ADDRESSED LATCH	OUTPUT OF OTHER LATCHES
EN	STB	RD		
1	0	1	NO CHANGE	NO CHANGE
1	1	1	DATA	NO CHANGE
1	X	0	D	D
0	X	X	OPEN	OPEN

LATCH SELECTION

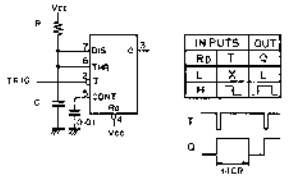
CONTROL INPUT			ADDRESSED LATCH
A2	A1	A0	
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	0	0	4
1	0	1	5
1	1	0	6
1	1	1	7

NE555N (SIGNETICS)
M51841P (MITSUBISHI)
TIMER
—TOP VIEW—

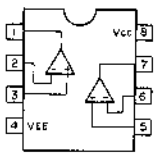




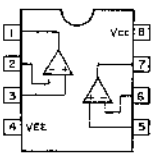
MONOSTABLE MULTIVIBRATOR



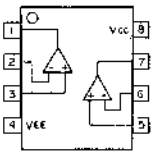
NJM29030 (JRC)
OPERATIONAL AMPLIFIER
-TOP VIEW-



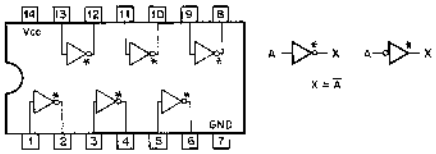
RC4558 (RAYTHEON)
μPC4558C(NEC)
NJM4558D(JRC)
μPC1458C(NEC)
OPERATIONAL AMPLIFIER
-TOP VIEW-



NJM4562D (JRC)
OPERATIONAL AMPLIFIER
-TOP VIEW-

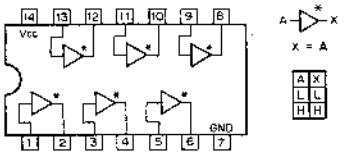


SN74LS05N (TI) SN7405N (TI)
TTL INVERTER WITH OPEN COLLECTOR
— TOP VIEW —

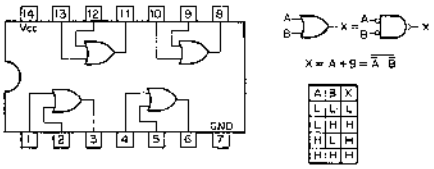


* ; OPEN COLLECTOR MARK

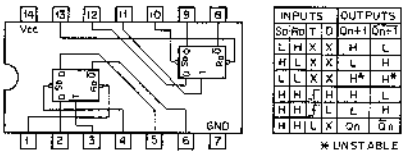
SN7407N (TI)
TTL BUFFER / DRIVER
WITH OPEN - COLLECTOR
— TOP VIEW —



SN74LS32N(TI)
TTL 2-INPUT POSITIVE - OR GATE
— TOP VIEW —

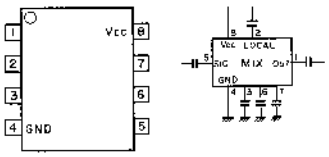


SN74LS74AN (TI)
TTL D-TYPE FLIP FLOP WITH DIRECT SET/RESET
—TOP VIEW—

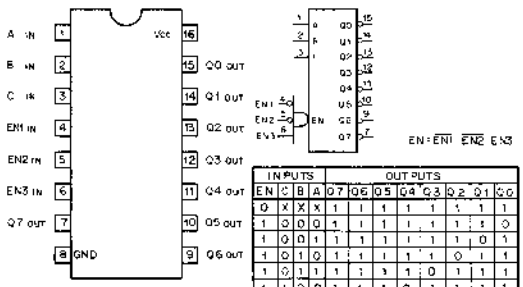


* UNSTABLE

SN16913P (TI)
BALANCED MIXER
— TOP VIEW —

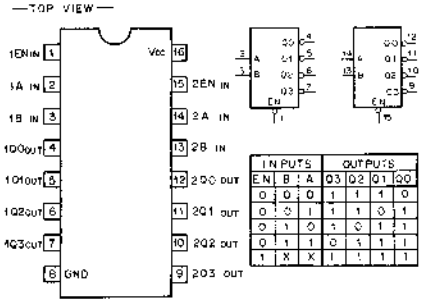


SN74LS138N (TI)
TTL 3-TO-8-LINE DECODER/DEMULTIPLEXER
—TOP VIEW—



INPUTS				OUTPUTS							
EN	C	B	A	Q7	Q6	Q5	Q4	Q3	Q2	Q1	Q0
Q	X	X	X	1	1	1	1	1	1	1	1
1	Q	Q	Q	1	1	1	1	1	1	1	Q
1	Q	Q	1	1	1	1	1	1	1	Q	1
1	Q	1	Q	1	1	1	1	1	Q	1	1
1	Q	1	1	1	1	1	1	Q	1	1	1
1	1	Q	Q	1	1	1	Q	1	1	1	1
1	1	Q	1	1	1	Q	1	1	1	1	1
1	1	1	Q	1	Q	1	1	1	1	1	1
1	1	1	1	Q	1	1	1	1	1	1	1

SN74LS139N (TI)
TTL 2-TO-4-LINE DECODER/DEMULTIPLEXER
—TOP VIEW—

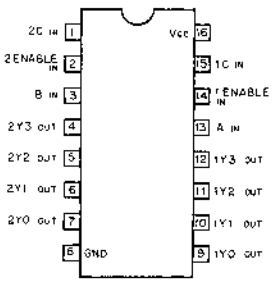


INPUTS			OUTPUTS			
EN	B	A	Q3	Q2	Q1	Q0
0	0	0	1	1	1	0
0	0	1	1	1	0	1
0	1	0	1	0	1	1
0	1	1	0	1	1	1
1	X	X	1	1	1	1

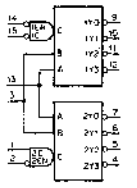
SN74LS156N (TI)

TTL DUAL 2-LINE-TO-4-LINE DECODER/DEMULTIPLEXER
(OPEN COLLECTOR OUTPUT)

— TOP VIEW —



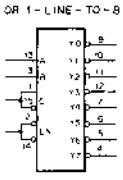
DUAL 2-LINE-TO-4-LINE DECODER
OR DUAL 1-LINE-TO-4-LINE DEMULTIPLEXER



INPUTS				OUTPUTS			
ENABLE	DATA	SELECT					
1EN	1C	B	A	1Y3	1Y2	1Y1	1Y0
0	0	0	0	1	1	1	0
0	0	0	1	1	1	0	1
0	0	1	0	1	0	1	1
0	0	1	1	0	1	1	1
X	1	X	X	1	1	1	1
1	X	X	X	1	1	1	1

INPUTS				OUTPUTS			
ENABLE	DATA	SELECT					
2EN	2C	B	A	2Y3	2Y2	2Y1	2Y0
0	1	0	0	1	1	1	0
0	1	0	1	1	1	0	1
0	1	1	0	1	0	1	1
0	1	1	1	0	1	1	1
X	0	X	X	1	1	1	1
1	X	X	X	1	1	1	1

3-LINE-TO-8-LINE DECODER
OR 1-LINE-TO-8-LINE DEMULTIPLEXER

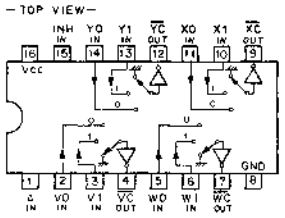


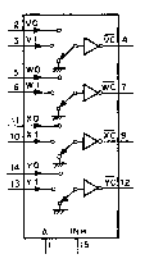
INPUTS				OUTPUTS							
ENABLE/DATA	SELECT										
EN	C	B	A	Y7	Y6	Y5	Y4	Y3	Y2	Y1	Y0
0	0	0	0	1	1	1	1	1	1	1	0
0	0	0	1	1	1	1	1	1	1	0	1
0	0	1	0	1	1	1	1	1	0	1	1
0	0	1	1	1	1	1	1	0	1	1	1
0	1	0	0	1	1	1	0	1	1	1	1
0	1	0	1	1	1	0	1	1	1	1	1
0	1	1	0	1	0	1	1	1	1	1	1
0	1	1	1	0	1	1	1	1	1	1	1
1	X	X	X	1	1	1	1	1	1	1	1

SN74LS158N (TI)

TTL 2-LINE-TO-1-LINE INVERTED DATA SELECTOR/MULTIPLEXER

— TOP VIEW —



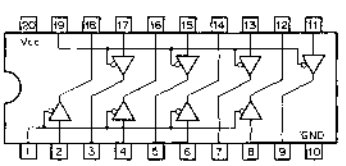


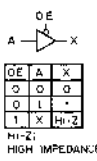
CONT. IN		ON CHANNEL
INH	A	
L	L	0
L	H	1
H	X	GND

SN74LS244N (TI)

TTL OCTAL BUFFER/LINE DRIVER
(3-STATE OUTPUT)

—TOP VIEW—





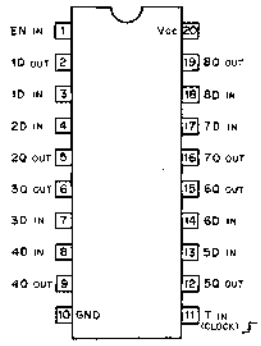
OE	A	X
0	0	0
0	1	1
1	X	Hi-Z

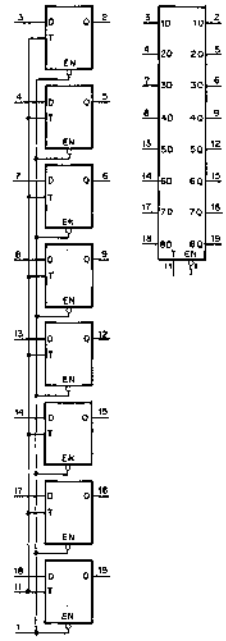
Hi-Z: HIGH IMPEDANCE

SN74LS377N (TI)

TTL D-TYPE FLIP-FLOP WITH ENABLE

— TOP VIEW —





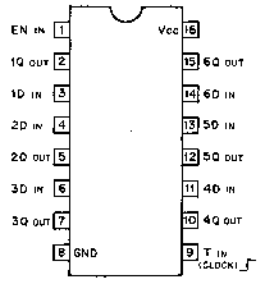
EACH FLIP-FLOP

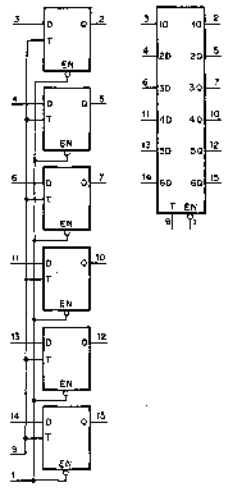
INPUTS			OUT
EN	T	D	Q
1	X	X	Q0
0	↑	1	1
0	↑	0	0
X	0	X	Q0

SN74LS378N (TI)

TTL D-TYPE FLIP-FLOP WITH ENABLE

— TOP VIEW —





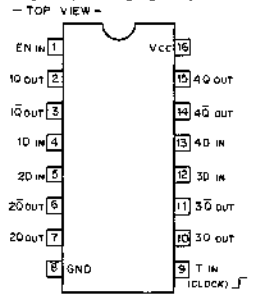
EACH FLIP-FLOP

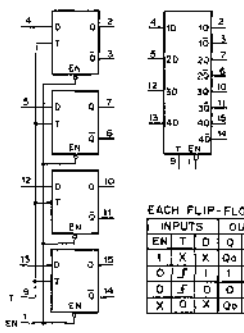
INPUTS			OUT
EN	T	D	Q
1	X	X	Q0
0	↑	1	1
0	↑	0	0
X	0	X	Q0

SN74LS379N (TI)

TTL QUAD D-TYPE FLIP-FLOP WITH ENABLE

— TOP VIEW —

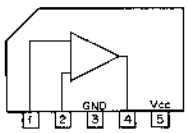




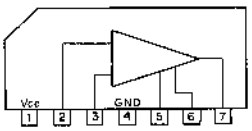
EACH FLIP-FLOP

INPUTS			OUT	
EN	T	D	Q	Q̄
1	X	X	Q0	Q̄0
0	↑	1	1	0
0	↑	0	0	1
X	0	X	Q0	Q̄0

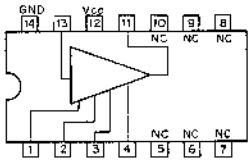
TA7060AP (TOSHIBA)
TA7060P (TOSHIBA)
LINEAR AMP
— SIDE VIEW —



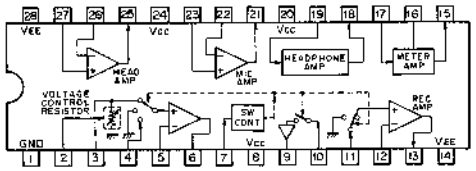
TA7069P(TOSHIBA)
VIDEO AMPLIFIER
— SIDE VIEW —



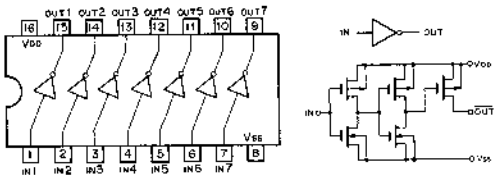
TA7076P(TOSHIBA)
VIDEO LINEAR AMP
— TOP VIEW —



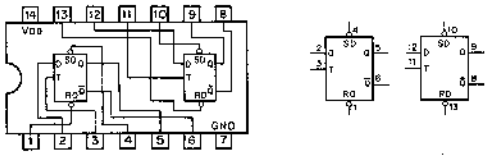
TA7617AP (TOSHIBA)
AUDIO AMPLIFIER FOR TAPE DECK
— TOP VIEW —



TC5067BP (TOSHIBA)
C-MOS HIGH VOLTAGE BUFFER/INVERTING TYPE
— TOP VIEW —



TC40H074P (TOSHIBA)
C-MOS HIGH SPEED D-TYPE FLIP-FLOP WITH DERECT SET/RESET
— TOP VIEW —



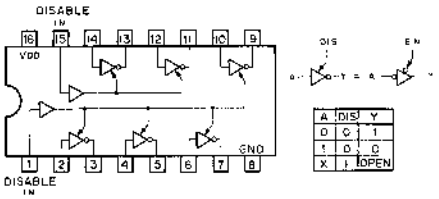
D-MODE

tn	tn + 1	
D	Q	$\overline{Q}$
0	0	1
1	1	0

R-S MODE

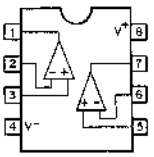
INPUT		OUTPUT	
RD	SD	Q	$\overline{Q}$
0	0	H	H
0	1	L	H
1	0	H	L
1	1	Q-MODE	

TC40H368P(TOSHIBA)
C-MOS INVERTING 3-STATE BUFFER
— TOP VIEW —

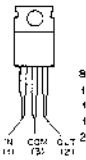


A	DIS	Y
0	0	1
1	0	0
X	1	OPEN

TL082CP (TI)
OPERATIONAL AMPLIFIER
(JFET-INPUT)
— TOP VIEW —

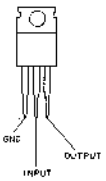


μA78□□UC (FSC)
μPC143□□H (NEC)
μPC78□□H (NEC)
POSITIVE VOLTAGE REGULATOR (1A)

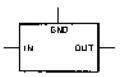


5V	μA7805UC	FS7805	μPC14305H
6V	μA7806UC		
8V	μA7808UC		μPC14308H
8.5V	μA7885UC		
12V	μA7812UC	FS7812	μPC14312H
15V	μA7815UC	FS7815	μPC14315H
18V	μA7818UC		
24V	μA7824UC	FS7824	

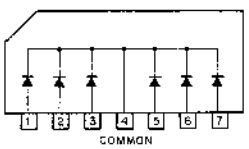
μA79□□UC (FSC)
FS79□□ (SANKEN)
NEGATIVE VOLTAGE REGULATOR (1A)



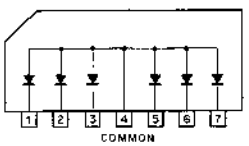
− 5V	μA7905UC	FS7905	μPC7905H
− 6V	μA7906UC		
− 8V	μA7908UC		μPC7908H
−12V	μA7912UC		μPC7912H
−15V	μA7915UC		μPC7915H
−18V	μA7918UC		μPC7918H
−24V	μA7924UC		μPC7924H



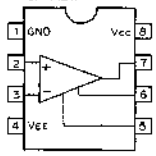
μPA54H (NEC)
DIODE ARRAY
— SIDE VIEW —



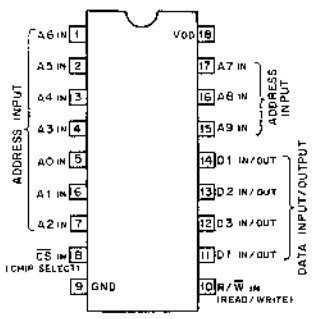
μPA64H (NEC)
DIODE ARRAY
— SIDE VIEW —

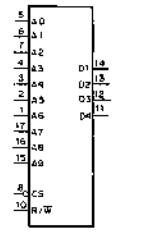


μPC311C (NEC)
VOLTAGE COMPARATOR
– TOP VIEW –

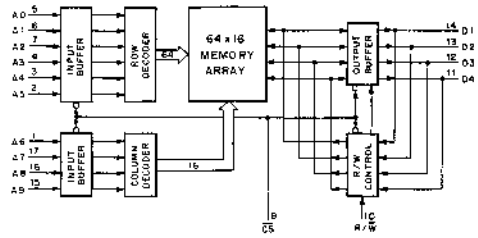


μPD444C (NEC)
C-MOS 4096-BIT (1024 x 4) STATIC RAM
– TOP VIEW –





$\overline{CS}$	R/$\overline{W}$	DATA
0	0	READ OUT
0	1	WRITE IN
1	X	HIGH-IMPEDANCE

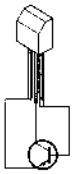


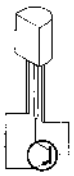
TR (PNP, NPN, FET), LED

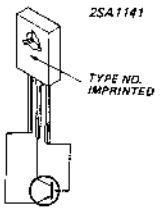
(2SA×××, 2SB×××)


2SA733
2SA844

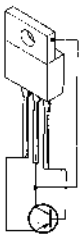

2SA678
2SA1026
2SA1027R

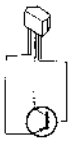

2SB733
2SB734


2SA684
2SA773
2SB739
2SB740

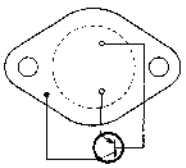


2SA1141

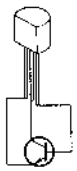

2SA771
2SB834
2SB856


2SA1115

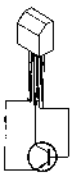
BOTTOM VIEW

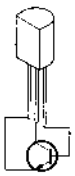

2SA747
2SA747A

(2SC×××, 2SD×××)

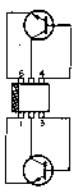

2SC641K
2SC945
2SC1363
2SC1364
2SC1634

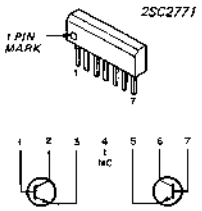

2SC403C
2SC1636


2SD773
2SD774

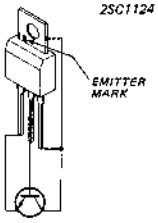

2SC1474
2SD788
2SD789

TOP VIEW

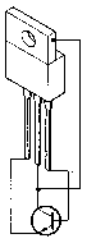

2SC1963

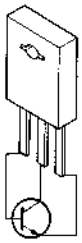


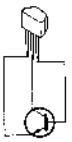
2SC2771



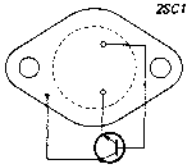
2SC1124

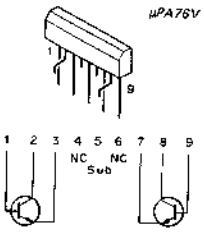

2SC1983
2SC2315


2SC2681


2SC2603

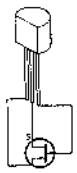
BOTTOM VIEW


2SC1116

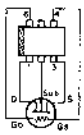


μPA76V

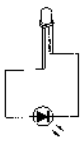
(OTHER)

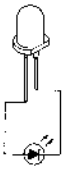

2SK43

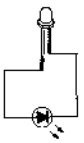
TOP VIEW

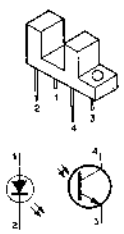

TX429M


SPS102

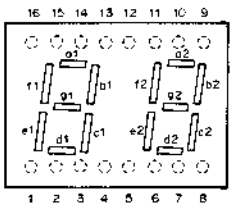

BR5104S

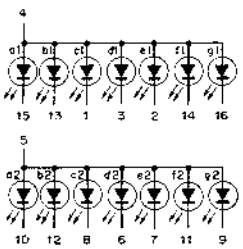

GL-5HD5


HLMP-1302
TLO123
TLO124


PS4005

TLR321 (TOSHIBA)
DUAL 7-SEGMENT LED
—TOP VIEW—





SECTION 17
PRINTED CIRCUIT BOARD AND SCHEMATIC DIAGRAM

17-1. CIRCUIT FUNCTION OF THE PRINTED CIRCUIT BOARD

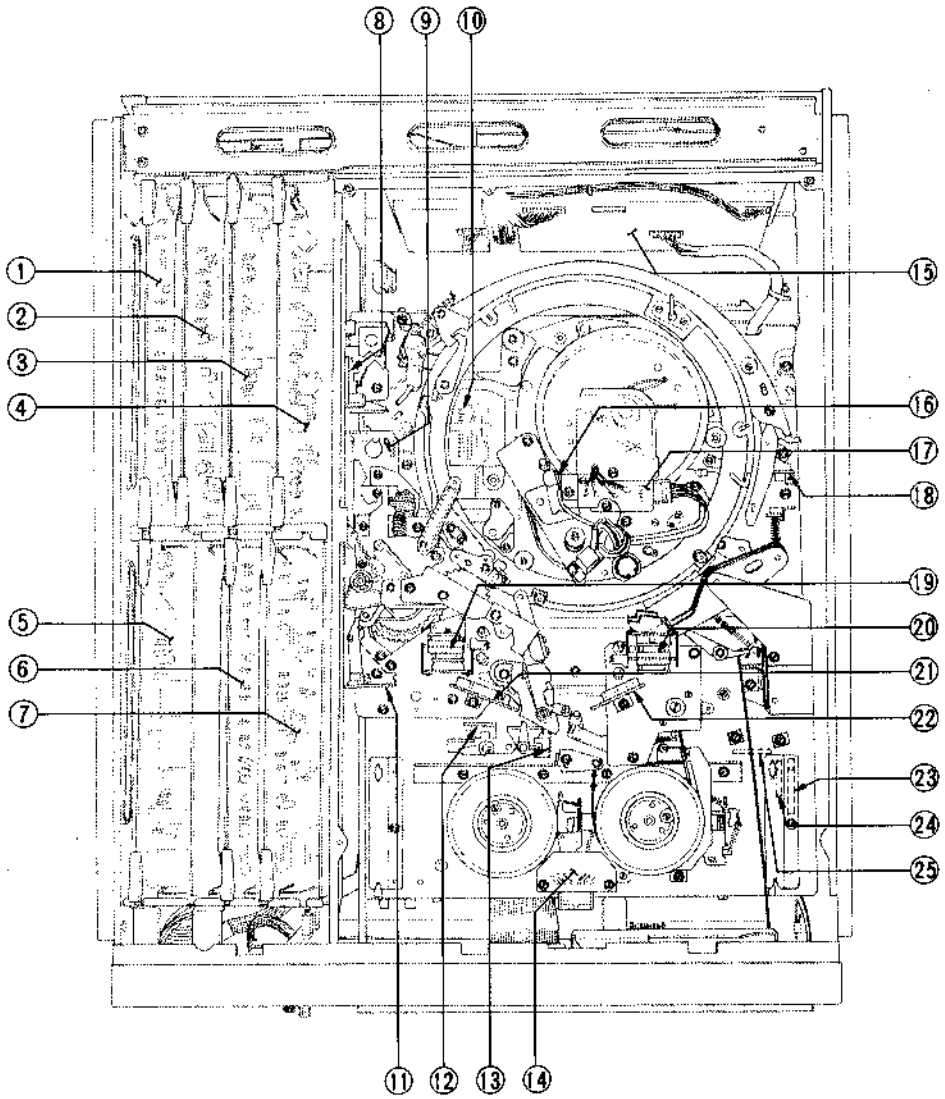
The circuit board information is provided below.

System	Circuit board	Circuit function
VIDEO	MD-12	• Luminance and chrominance signal modulator.
	RP-5-1	• REC/PB amplifier • Rotary erase amplifier
	YD-9	• Luminance signal demodulator
	CD-14	• Chrominance signal demodulator
AUDIO	AU-13	• REC/PB amplifier • Audio system control
	AU-25	• Bias oscillator • CH-1/CH-2 erase oscillator
	SA-9	• Input impedance converter (high ⟷ low)
	AO-2	• Audio monitor switch
	AO-3	• CH-1/CH-2 output amplifier • Monitor out selector/output amplifier
	HP-5	• Headphones level adj.
SERVO	SV-24A or SV-52	• Capstan/drum speed and phase servo
	CF-9	• CTL REC/PB amplifier
	RS-3 (RS-4)	• Tape tension detector • Reel motor driver control
	EM-1	• Reel rotation detector
	MD-12	• Blanking switcher
TIME CODE	TC-13-1	• Time code REC/PB amplifier • Automatic reference sync selector (for servo) • CTL counter (for display)
SYSTEM CONTROL	SY-36	• Function control
	SY-37 SY-37A	• System control micro processor
	SY-71	• Cassette compartment motor driver • Threading motor driver • Skew solenoid driver • Pinch solenoid driver • T brake solenoid driver • S brake solenoid driver • S tension regulator solenoid driver • Humidity detector
	KY-9 (KY-14)	• Key board with serial data ⟷ parallel data converter
	DP-9	• Display
	PC-9	• Search dial
	PC-14	• Search dial
POWER DRIVER	PD-14 (PD-15, PD-17, PD-21, DP-8, DP-9)	• Full erase oscillator • 12 V regulator • 5 V regulator • −12 V regulator • Drum motor power driver • Capstan motor power driver • Reel motor power driver
POWER SUPPLY	PW-50	• Power supply
	PW-79	• Switching regulator
	FU-16	• Fuse

LOCATION OF PCB

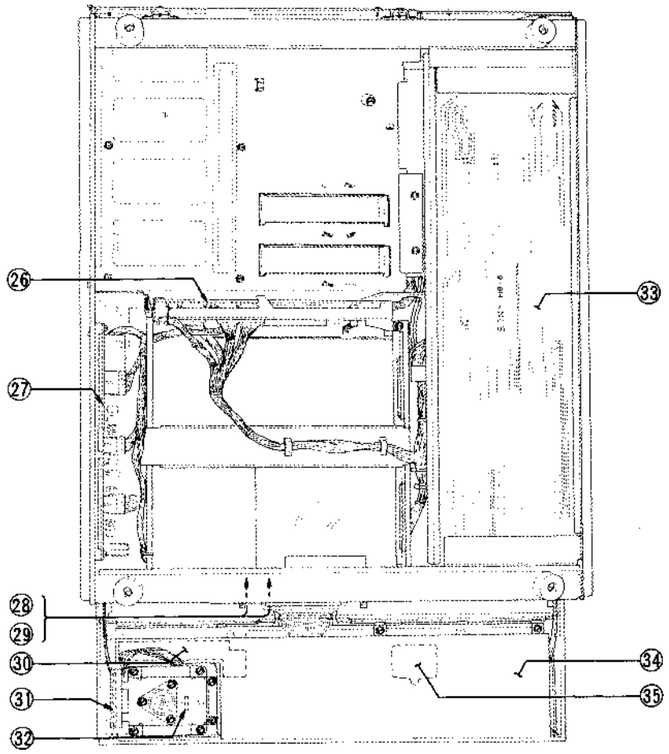
17-2. LOCATION OF THE PRINTED CIRCUIT BOARD

< TOP VIEW >

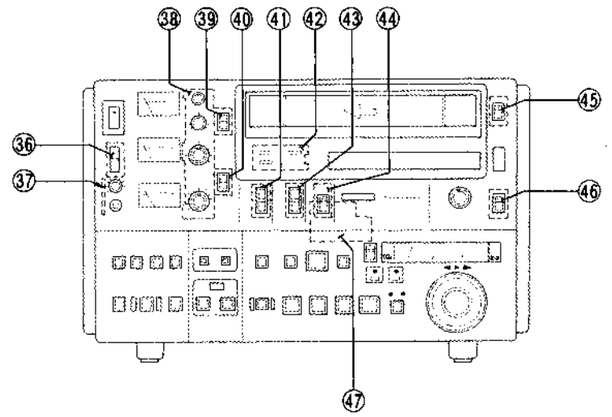


LOCATION OF PCB LOCATION OF PCB

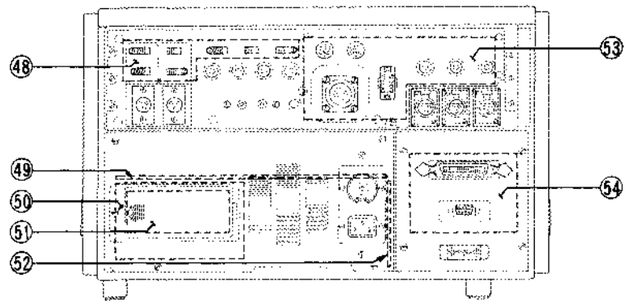
< BOTTOM VIEW >



< FRONT VIEW >



< REAR VIEW >



AO-2	36
AO-3	53
AU-13 (AU-25)	5
CC-9	23
CC-10	25
CC-11	24
CD-14	2
DP-9	30
EK-2 (A)	11
EK-2 (B)	18
EK-3	8
EM-1	14

FU-16	51
HP-5	37
KY-9	34
KY-14	35
LE-4 (A)	20
LE-4 (B)	19
LV-1	39
MB-8	33
MB-9	26
MD-12	4
MF-1	38
MS-5 (A)	40

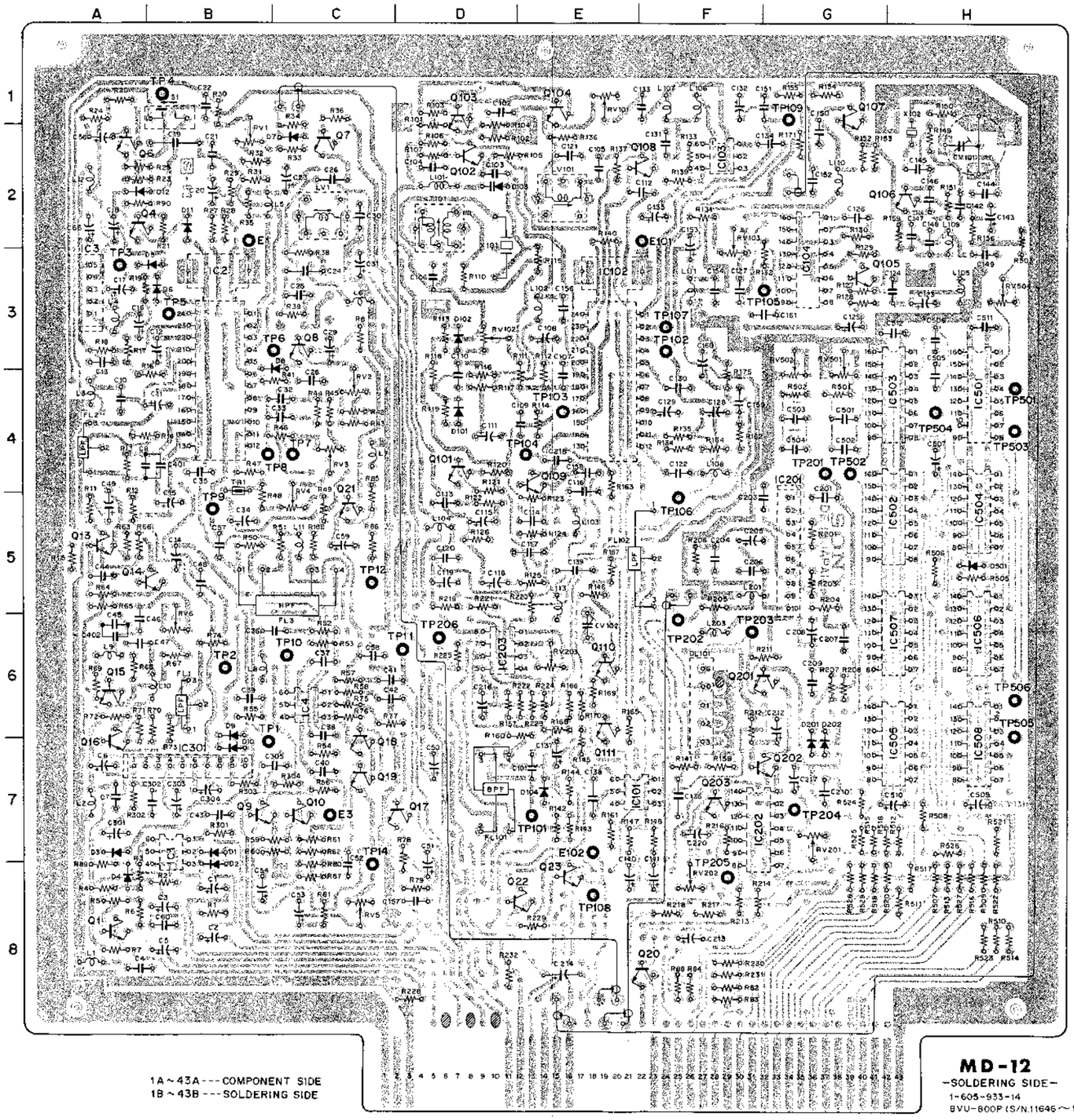
MS-5 (B)	41
MS-5 (C)	43
MS-5 (D)	44
MS-5 (E)	45
PC-7 (A)	13
PC-7 (B)	12
PC-8	22
PC-9	31
PC-12	21
PC-14	32
PD-14 (PD-15, PD-17, DR-8, DR-9)	49

PH-1 (A)	20
PH-1 (B)	19
PR-33	46
PW-50	52
PW-79	50
RE-3	47
RM-4	54
RP-5-1	15
RS-3 (RS-4)	6
SA-9	48
SR-14	17
SV-24A or SV-52 (CF-9)	7

SY-36	28
SY-37/37A	29
SY-71	27
TC-12	16
TC-13-1	1
TM-4	10
TM-8	9
YD-9	3
WL-1	42

MD-12 (Y/C MODULATOR)
(BLANKING SWITCHER)

SER. NO. 11646 to 12285



MD-12
-SOLDERING SIDE-
1-605-933-14
BVU-800P (S/N 11646 ~ 12285)

CV101	H-2	RV1	B-2				
CV102	E-6	RV2	C-4				
		RV3	C-4				
C1	B-7	RV4	C-5				
D2	B-8	RV5	C-8				
D3	A-7	RV6	B-6				
D4	A-8	RV101	E-1				
D5	A-3	RV102	D-3				
D6	B-3	RV103	F-2				
D7	C-2	RV201	G-7				
D8	B-3	RV202	F-8				
D9	B-7	RV203	E-6				
D10	B-7	RV501	G-3				
D11	B-2	RV502	G-3				
D12	A-2	RV504	H-3				
D101	D-4						
D102	D-3	S1	B-1				
D103	D-2						
D104	E-7	T101	D-2				
D201	G-7						
D202	G-7	TP1	B-7				
D501	H-5	TP2	B-6				
		TP3	A-3				
DL101	F-6	TP4	B-1				
		TP5	B-3				
E1	B-2	TP6	B-3				
E2	A-1	TP7	C-4				
E3	C-7	TP8	B-4				
E4	C-8	TP9	B-5				
E101	E-2	TP10	C-6				
E102	E-7	TP11	D-6				
		TP12	C-5				
FL1	B-6	TP13	C-6				
FL2	A-4	TP101	E-7				
FL3	C-5	TP102	F-3				
FL101	D-7	TP103	E-4				
FL102	E-5	TP104	E-4				
		TP105	F-3				
IC1	B-7	TP106	F-5				
IC2	B-3	TP107	F-3				
IC3	A-3	TP108	E-8				
IC4	C-6	TP109	G-1				
IC101	E-7	TP201	G-4				
IC102	E-4	TP202	F-6				
IC103	F-2	TP203	F-8				
IC104	G-3	TP204	G-7				
IC201	G-5	TP205	F-8				
IC202	F-7	TP206	D-6				
IC203	D-6	TP501	H-4				
IC301	B-7	TP502	G-4				
IC501	H-4	TP503	H-4				
IC502	H-5	TP504	H-4				
IC503	H-4	TP505	H-7				
IC504	H-5	TP506	H-6				
IC505	H-7						
IC506	H-6	X101	D-2				
IC507	H-6	X102	H-2				
IC508	H-7						
LV1	C-2						
LV101	E-2						
Q1	A-8						
Q4	A-2						
Q6	A-2						
Q7	C-2						
Q8	C-3						
Q9	B-7						
Q10	C-7						
Q13	A-5						
Q14	A-5						
Q15	A-6						
Q16	A-7						
Q17	C-7						
Q18	C-7						
Q19	C-7						
Q20	E-8						
Q21	C-5						
Q22	D-8						
Q23	E-8						
Q101	D-4						
Q102	D-2						
Q103	D-1						
Q104	E-1						
Q105	G-3						
Q106	H-2						
Q107	G-1						
Q108	E-2						
Q109	E-7						
Q110	E-6						
Q111	E-6						
Q201	F-6						
Q202	F-7						
Q203	F-7						

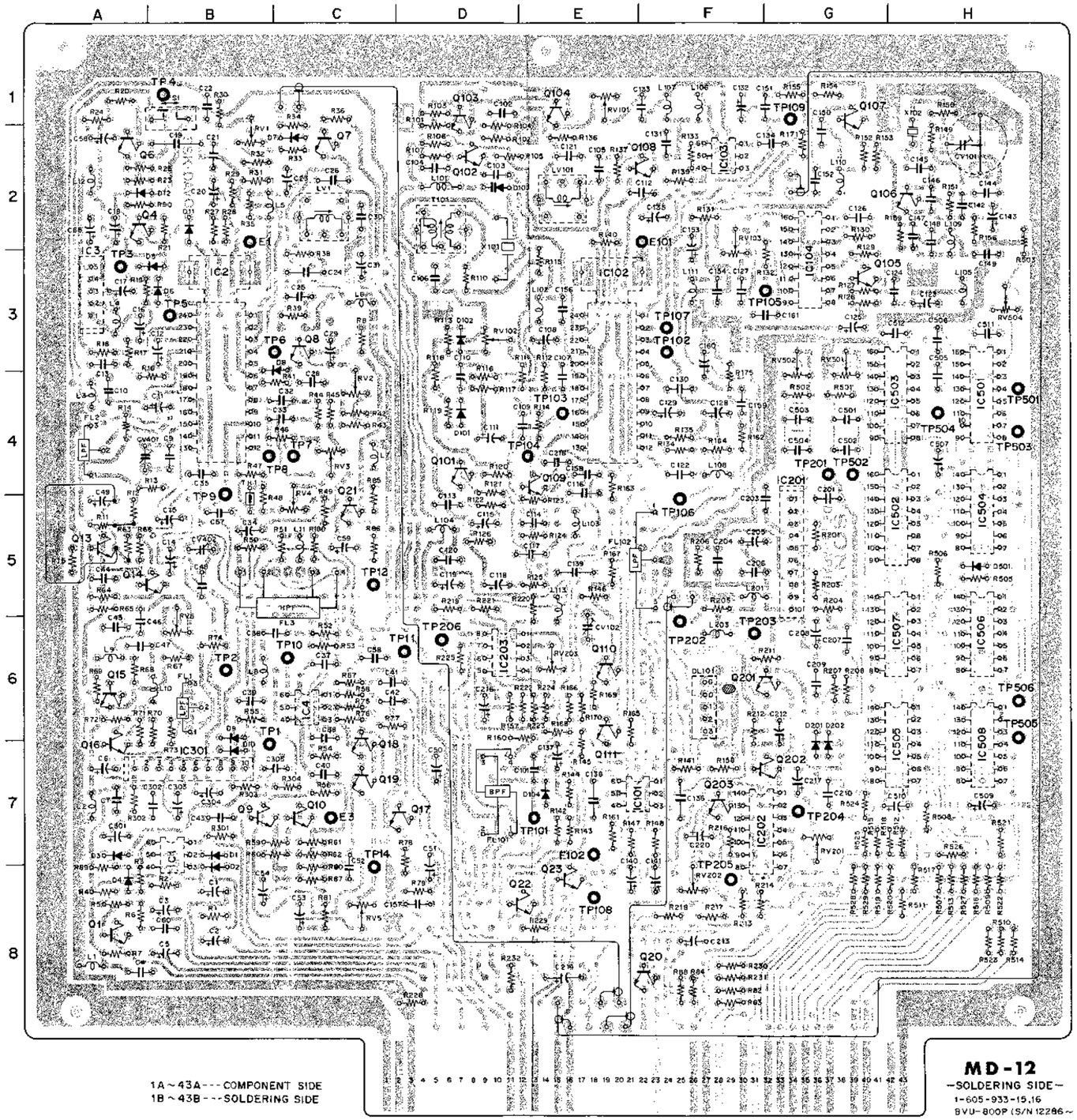
MD-12 MD-12

MD-12 (Y/C MO
(BLANKI

SER. NO. 1

MD-12 (Y/C MODULATOR) (BLANKING SWITCHER)

SER. NO. 12286 and higher



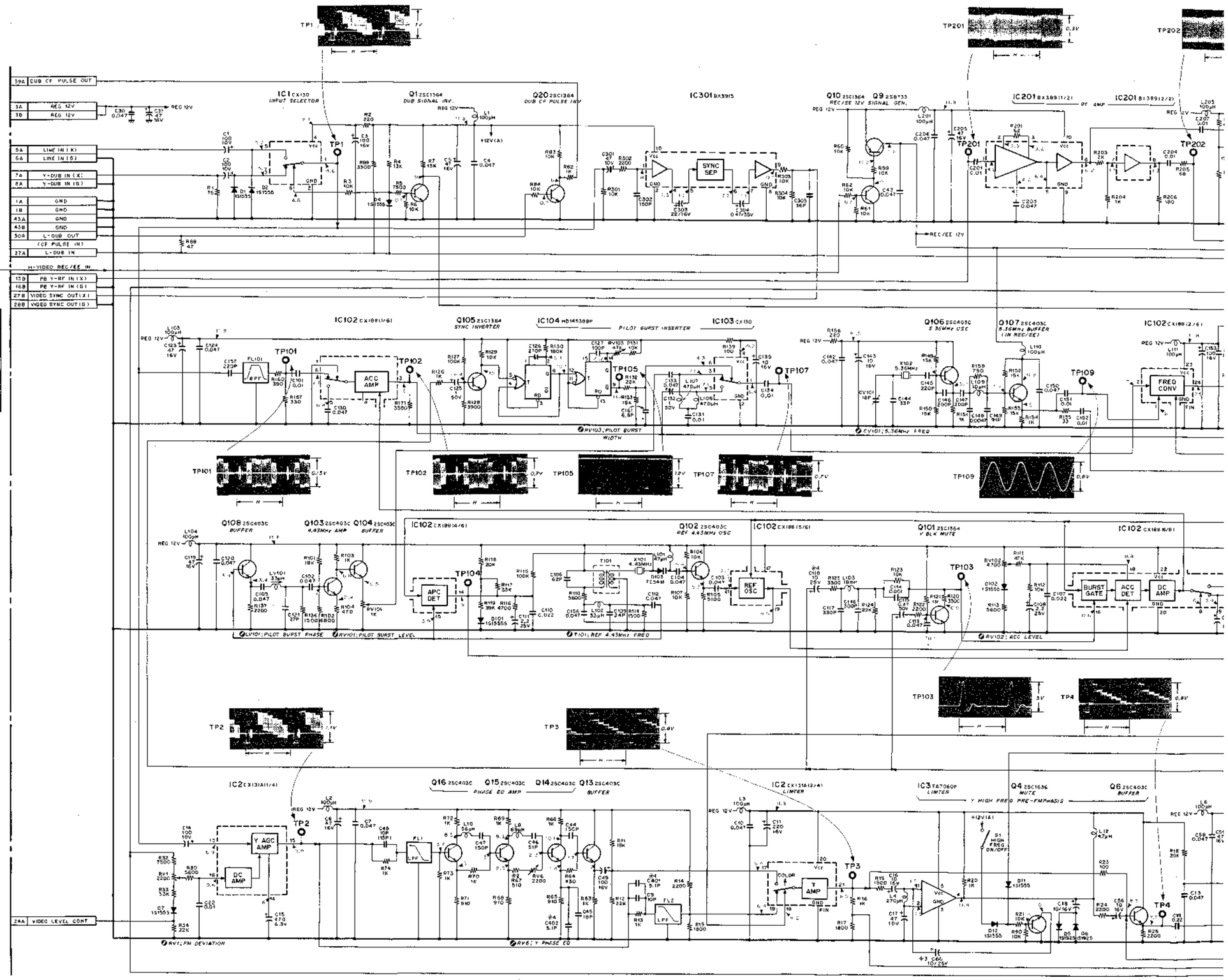
CV101	H-2		RV1	B-2	
CV102	E-6		RV2	C-4	
CV401	A-4		RV3	C-4	
CV402	B-5		RV4	C-5	
			RV5	C-8	
D1	B-7		RV6	B-6	
D2	B-8		RV101	E-1	
D3	A-7		RV102	D-3	
D4	A-8		RV103	F-2	
D5	A-3		RV201	G-7	
D6	B-3		RV202	F-8	
D7	C-2		RV203	E-6	
D8	B-3		RV501	G-3	
D9	B-7		RV502	G-3	
D10	B-7		RV504	H-3	
D11	B-2				
D12	A-2		S1	B-1	
D101	D-4				
D102	D-3		T101	D-2	
D103	D-2				
D104	E-7		TP1	B-7	
D201	G-7		TP2	B-6	
D202	G-7		TP3	A-3	
D501	H-5		TP4	B-1	
			TP5	B-3	
DL101	F-6		TP6	B-3	
			TP7	C-4	
E1	B-2		TP8	B-4	
E2	A-1		TP9	B-5	
E3	C-7		TP10	C-6	
E4	C-8		TP11	D-6	
E101	E-2		TP12	C-5	
E102	E-7		TP13	C-6	
			TP101	E-7	
FL1	B-6		TP102	F-3	
FL2	A-4		TP103	E-4	
FL3	C-5		TP104	E-4	
FL101	D-7		TP105	F-3	
FL102	E-5		TP106	F-5	
			TP107	F-3	
IC1	B-7		TP108	E-8	
IC2	B-3		TP109	G-1	
IC3	A-3		TP201	G-4	
IC4	C-6		TP202	F-6	
IC101	E-7		TP203	F-6	
IC102	E-4		TP204	G-7	
IC103	F-2		TP205	F-8	
IC104	G-3		TP206	D-8	
IC201	G-5		TP501	H-4	
IC202	F-7		TP502	G-4	
IC203	D-6		TP503	H-4	
IC301	B-7		TP504	H-4	
IC501	H-4		TP505	H-7	
IC502	H-5		TP506	H-6	
IC503	H-4				
IC504	H-5		X101	D-2	
IC505	H-7		X102	H-2	
IC506	H-6				
IC507	H-6				
IC508	H-7				
LV1	C-2				
LV101	E-2				
Q1	A-8				
Q4	A-2				
Q6	A-2				
Q7	C-2				
Q8	C-3				
Q9	B-7				
Q10	C-7				
Q13	A-5				
Q14	A-5				
Q15	A-6				
Q16	A-7				
Q17	C-7				
Q18	C-7				
Q19	C-7				
Q20	E-8				
Q21	C-5				
Q22	D-8				
Q23	E-8				
Q101	D-4				
Q102	D-2				
Q103	D-1				
Q104	E-1				
Q105	G-3				
Q106	H-2				
Q107	G-1				
Q108	E-2				
Q109	E-7				
Q110	E-6				
Q111	E-6				
Q201	F-6				
Q202	F-7				
Q203	F-7				

MD-12 (Y/C MODULATOR) (BLANKING SWITCHER)

SER. NO. 10601 to 12285

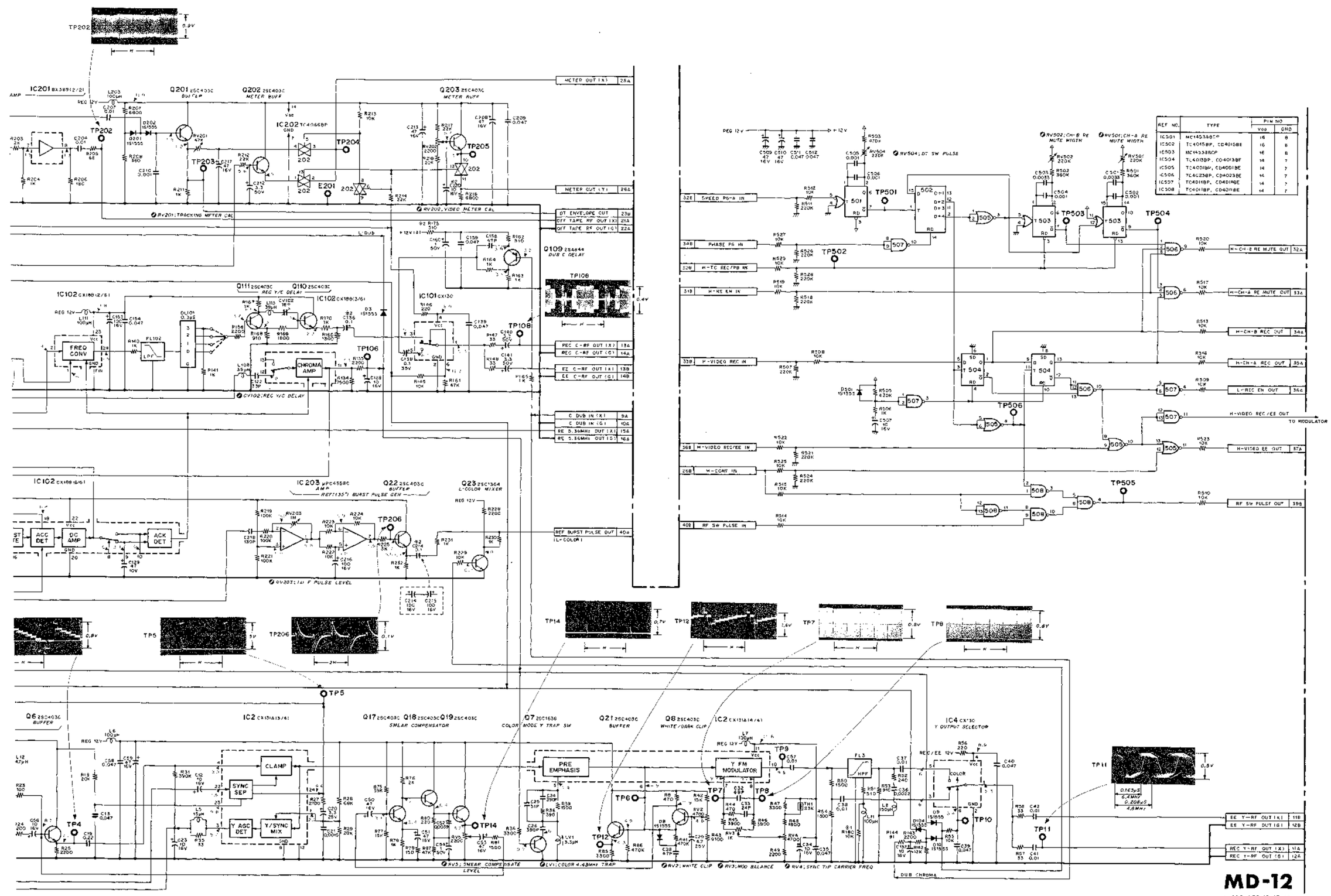
NOTE

MARK	CHANGE INFORMATION	SERIAL NO.
※1	R160 10K ADDED	11231～
※2	C136 1/50V→0.1 C214 100/16V→0.1 C215 100/16V→DELETED C220 10/16V ADDED R67 510 ADDED R175 510 ADDED	11491～
※3	C66 10/16V→10/25V	11646～
※4	C118 10/16V→10/25V C401 5.1P ADDED C402 5.1P ADDED	11986～



17-7(a)

17-8(a)



17-9(a)

17-10(a)

MD-12

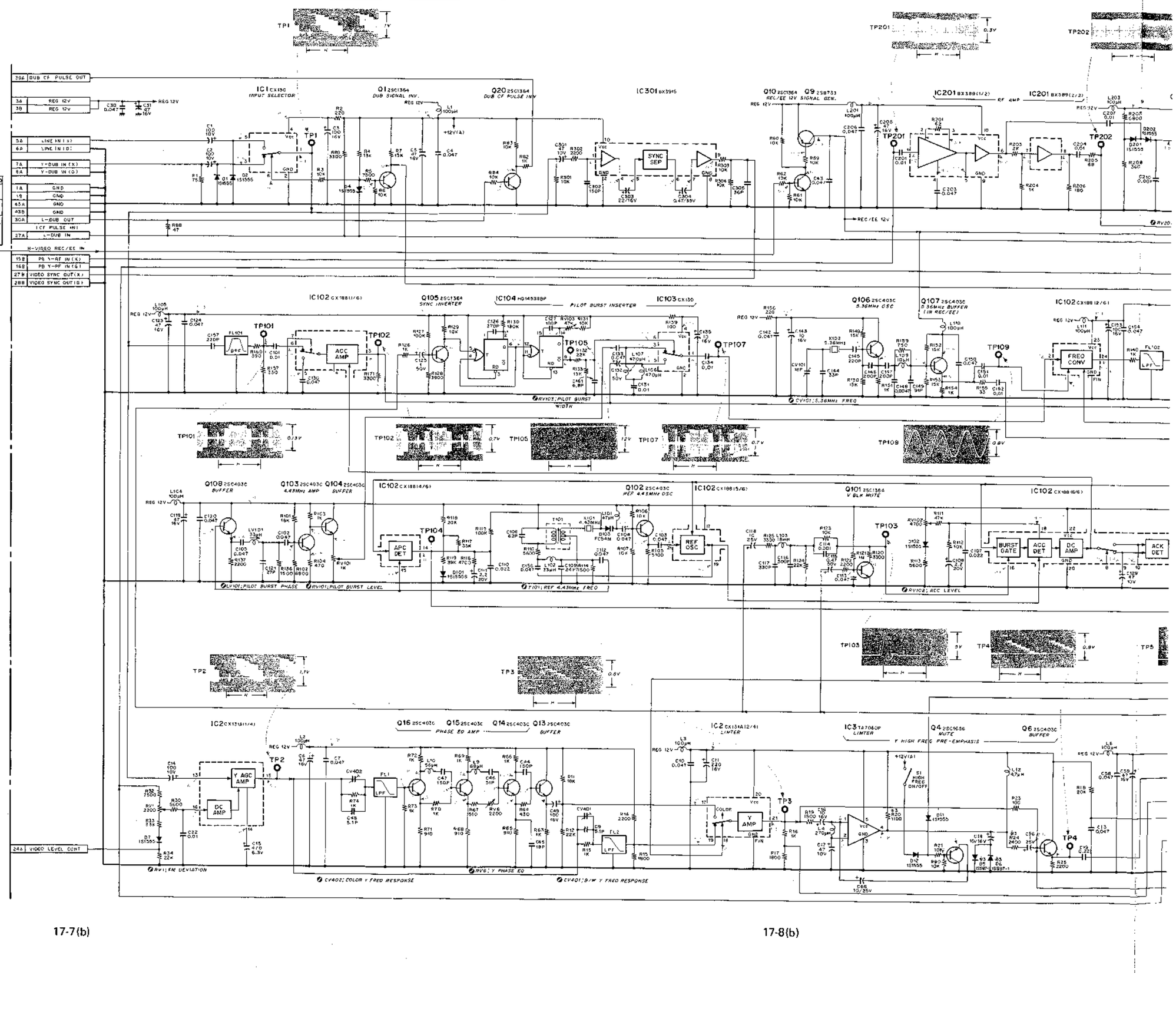
1-605-933-12,13,14
BVU-800P(S/N 10601~12285)

MD-12 (Y/C MODULATOR) (BLANKING SWITCHER)

SER. NO. 12286 and higher

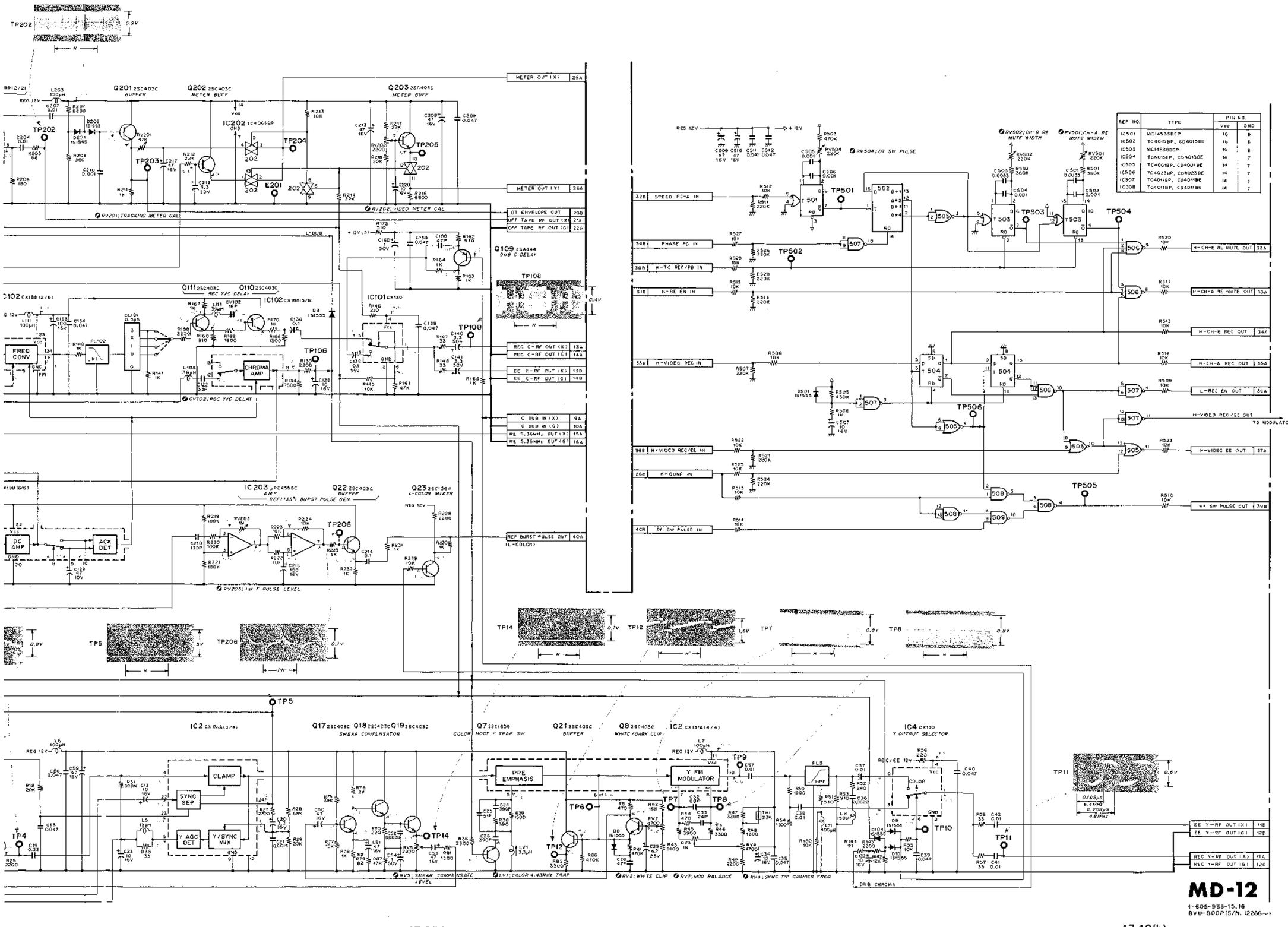
NOTE

MARK	CHANGE INFORMATION	SERIAL NO
※1	R46 3900 → 3300	12526~
※2	R79 150 → 82	13726~
※3	D5, 6 1S1925 → 1SS97-1 R20 1K → 1100 R24 2200 → 2400	16589~



17-7(b)

17-8(b)



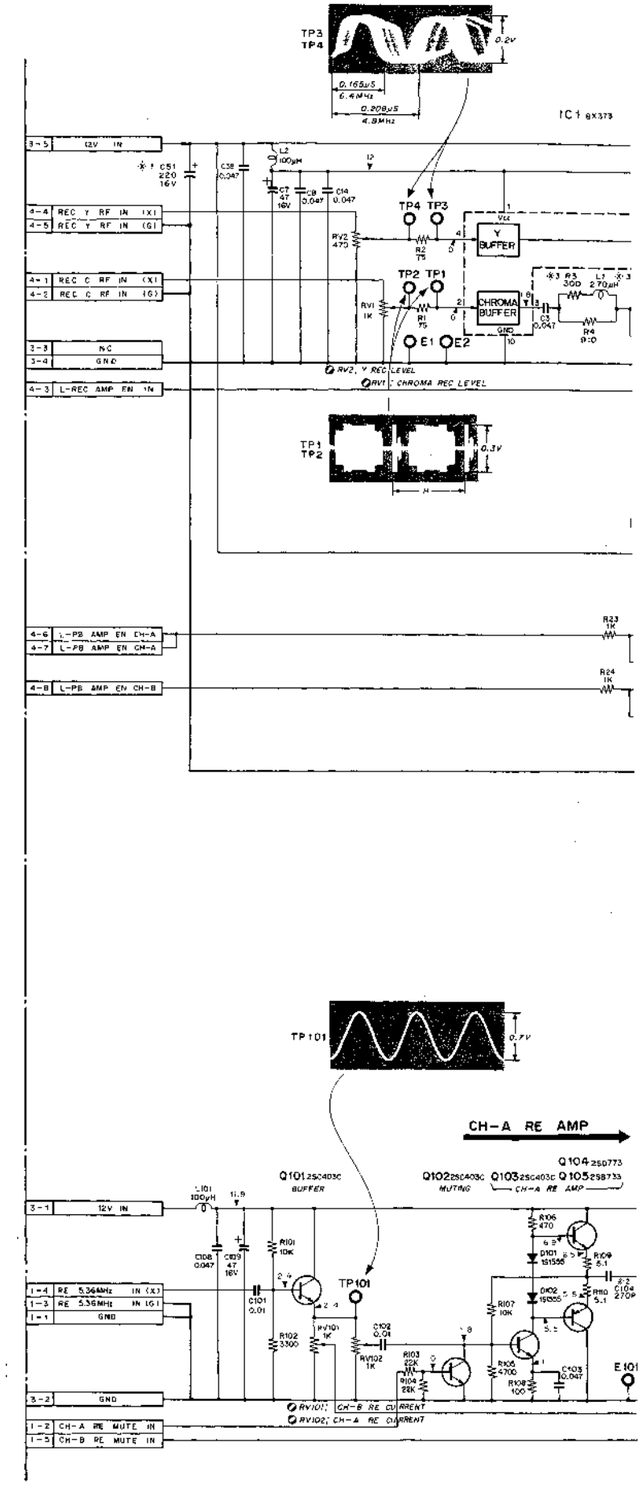
REF NO.	TYPE	PIN NO.	
		Vcc	GND
IC501	MC14538BCP	16	8
IC502	TC4015BP, CD4015BE	16	8
IC503	MC14538BCP	16	8
IC504	TC4013BP, CD4013BE	14	7
IC505	TC4001BP, CD4001BE	14	7
IC506	TC4023BP, CD4023BE	14	7
IC507	TC4011BP, CD4011BE	14	7
IC508	TC4011BP, CD4011BE	14	7

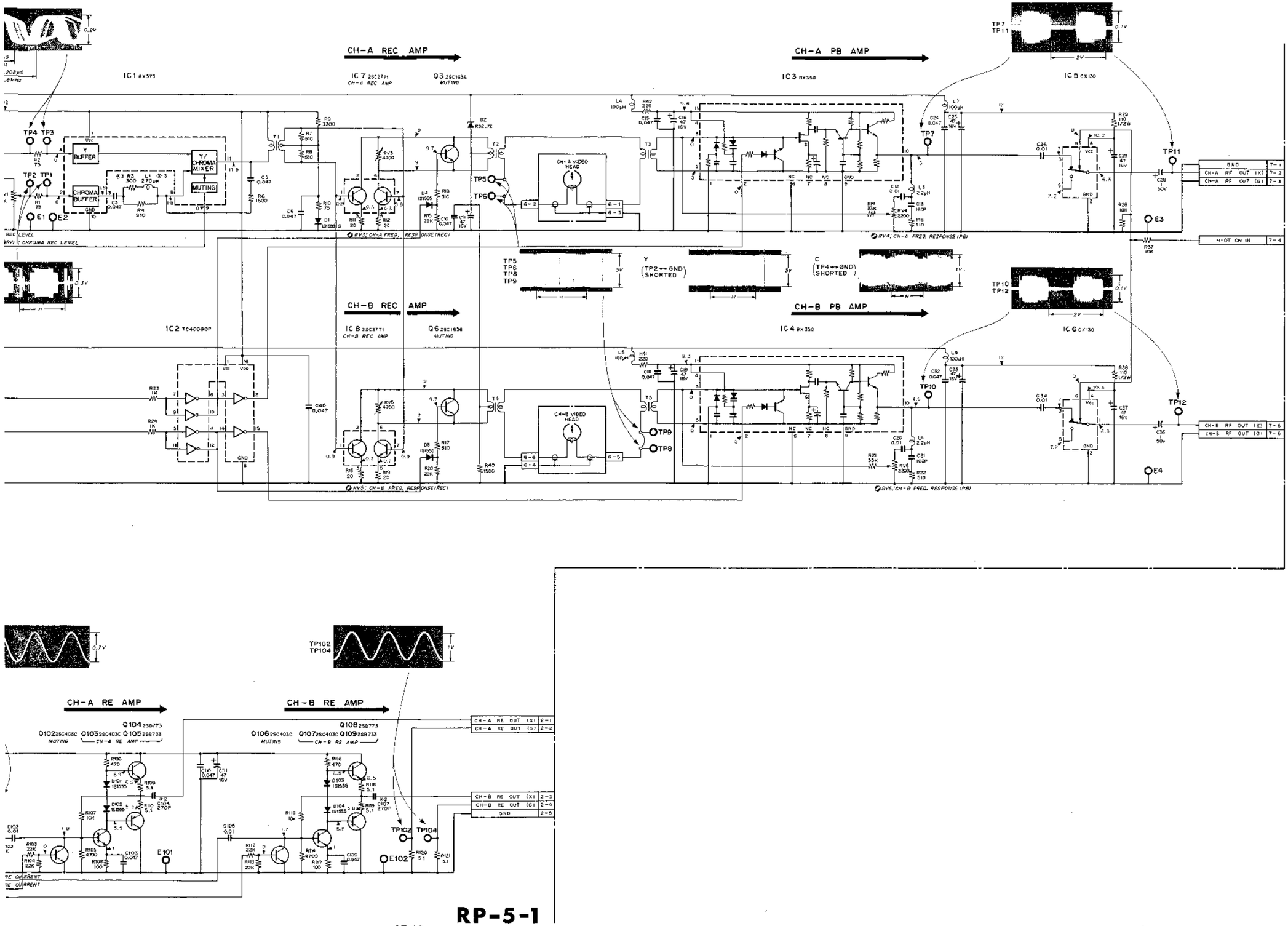
MD-12
1-605-933-15, 16
8VU-800P (S/N 12286~)

RP-5-1 (Y/C REC PB AMPLIFIER) (ROTARY ERASE AMPLIFIER)

NOTE

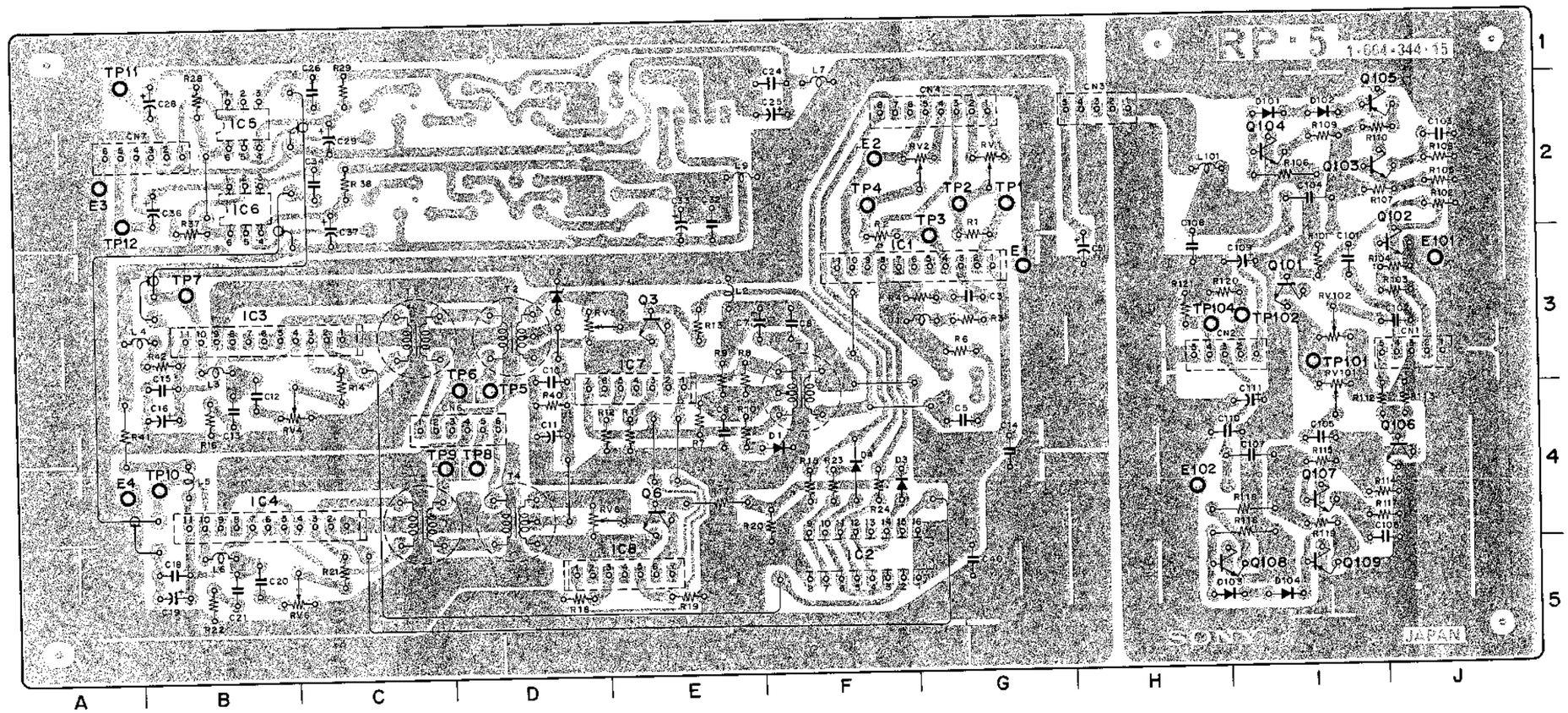
MARK	CHANGE INFORMATION	SERIAL NO.
※1	C51 220μ/16V ADDED	10051～
※2	C104 240P→270P C107 240P→270P	11491～
※3	L1 470μH →270μH R3 820 →300	12336～




CH-A REC AMP
CH-A PB AMP
CH-B REC AMP
CH-B PB AMP
IC1 BX573
IC2 TC40098P
IC3 BX350
IC4 BX350
IC5 CX130
IC6 CX130
IC7 2SC2771
CH-A REC AMP
Q3 2SC1636
MUTING
IC8 2SC2771
CH-B REC AMP
Q6 2SC1636
MUTING
TP1 TP2 TP3 TP4
TP5 TP6 TP8 TP9
TP7 TP11
TP10 TP12
Y BUFFER
CHROMA BUFFER
Y/CHROMA MIXER
MUTING
CH-A VIDEO HEAD
CH-B VIDEO HEAD
Y (TP2↔GND) (SHORTED)
C (TP4↔GND) (SHORTED)
RV1; CH-A FREQ. RESPONSE (REC)
RV2; CH-A REC LEVEL
RV3; CHROMA REC LEVEL
RV4; CH-A FREQ. RESPONSE (PB)
RV5; CH-B FREQ. RESPONSE (REC)
RV6; CH-B FREQ. RESPONSE (PB)
E1 E2 E3 E4
GND 7-1
CH-A RF OUT (X) 7-2
CH-A RF OUT (G) 7-3
4-DT ON IN 7-4
CH-B RF OUT (X) 7-5
CH-B RF OUT (G) 7-6

TP102 TP104
CH-A RE AMP
CH-B RE AMP
Q102 2SC4080 Q103 2SC4030 Q105 2SB733
Q104 2SD773
Q106 2SC4030 Q107 2SC4030 Q109 2SB733
Q108 2SD773
MUTING
CH-A RE AMP
MUTING
CH-B RE AMP
E101
E102
TP102 TP104
CH-A RE OUT (X) 2-1
CH-A RE OUT (G) 2-2
CH-B RE OUT (X) 2-3
CH-B RE OUT (G) 2-4
GND 2-5

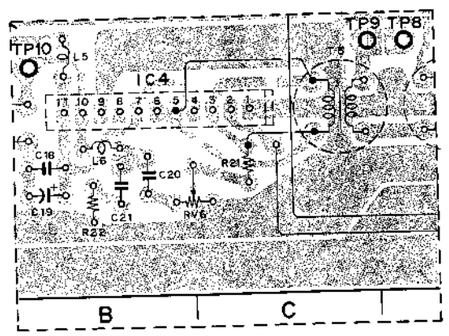
RP-5-1 (Y/C REC PB AMPLIFIER)
(ROTARY ERASE AMPLIFIER)



CN1	J - 3	RV1	G - 2
CN2	I - 3	RV2	G - 2
CN3	H - 2	RV3	E - 3
CN4	G - 2	RV4	C - 3
CN6	D - 4	RV5	E - 4
CN7	B - 2	RV6	C - 5
		RV101	I - 4
D1	F - 4	RV102	I - 3
D2	D - 3		
D3	F - 4	T1	F - 3
D4	F - 4	T2	D - 3
D101	I - 2	T3	C - 3
D102	I - 2	T4	D - 4
D103	I - 5	T5	C - 4
D104	I - 5		
		TP1	G - 2
E1	G - 3	TP2	G - 2
E2	F - 2	TP3	G - 2
E3	A - 2	TP4	F - 2
E4	A - 4	TP5	D - 3
E101	J - 3	TP6	D - 3
E102	H - 4	TP7	B - 3
		TP8	D - 4
IC1	G - 3	TP9	C - 4
IC2	F - 5	TP10	B - 4
IC3	B - 3	TP11	A - 1
IC4	B - 4	TP12	A - 2
IC5	B - 2	TP101	I - 3
IC6	B - 2	TP102	I - 3
IC7	E - 3	TP104	H - 3
IC8	E - 5		
Q3	E - 3		
Q6	E - 4		
Q101	I - 3		
Q102	J - 3		
Q103	J - 2		
Q104	I - 2		
Q105	J - 2		
Q106	J - 4		
Q107	I - 4		
Q108	H - 5		
Q109	I - 5		

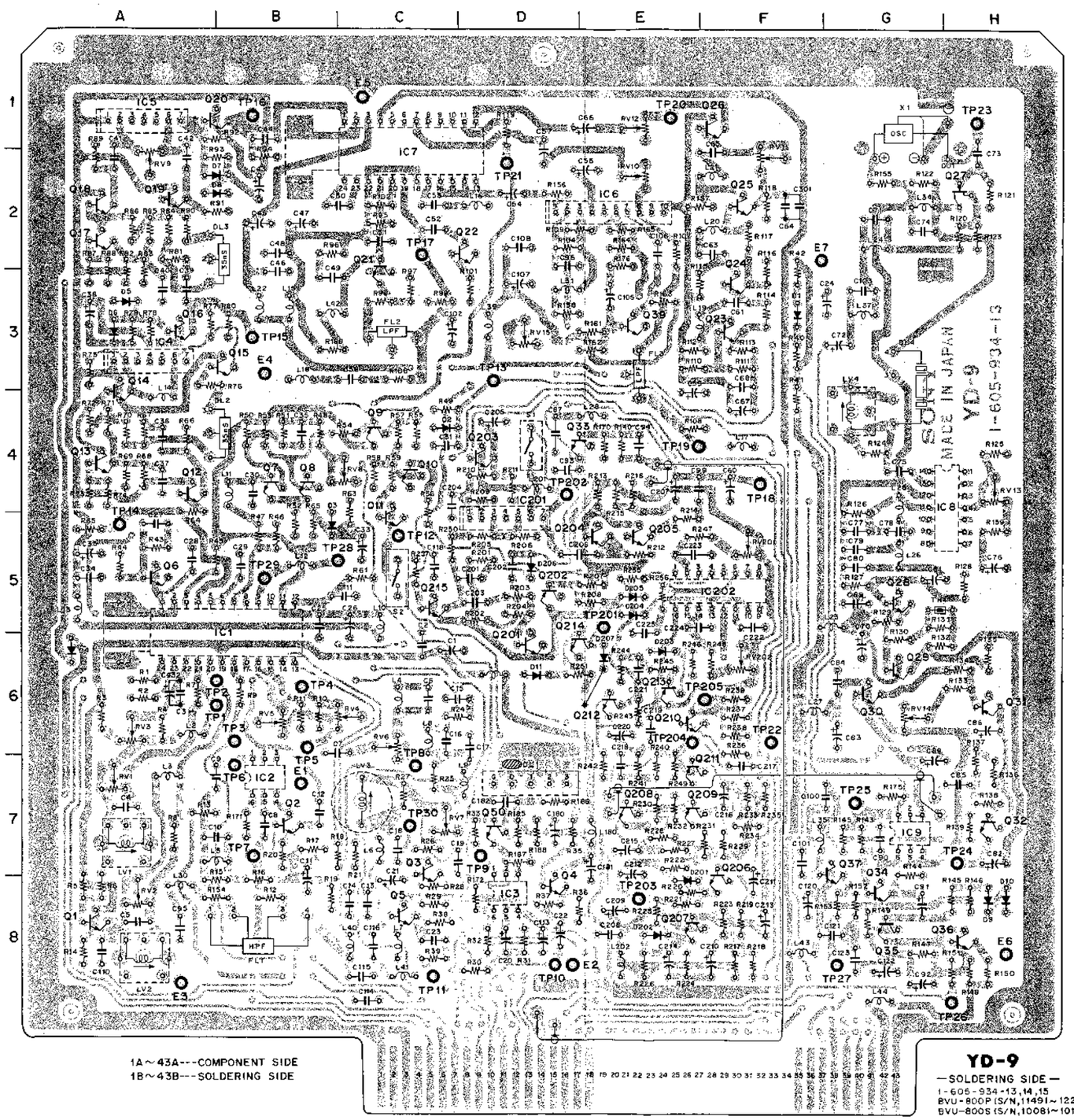
RP-5 –SOLDERING SIDE–
1-604-344-15
BVU-800 (S/N.13751 ~ (U/C)
(S/N.10651 ~ (J)
BVU-800P (S/N.11491 ~)
BVU-800S (S/N.10081 ~)
BVU-800PM (S/N.10001 ~)

Serial No. 11646 and Higher (PAL)
Serial No. 10081 and Higher (SECAM)



YD-9 (Y DEMODULATOR)

SER. No. 11491 to 12285



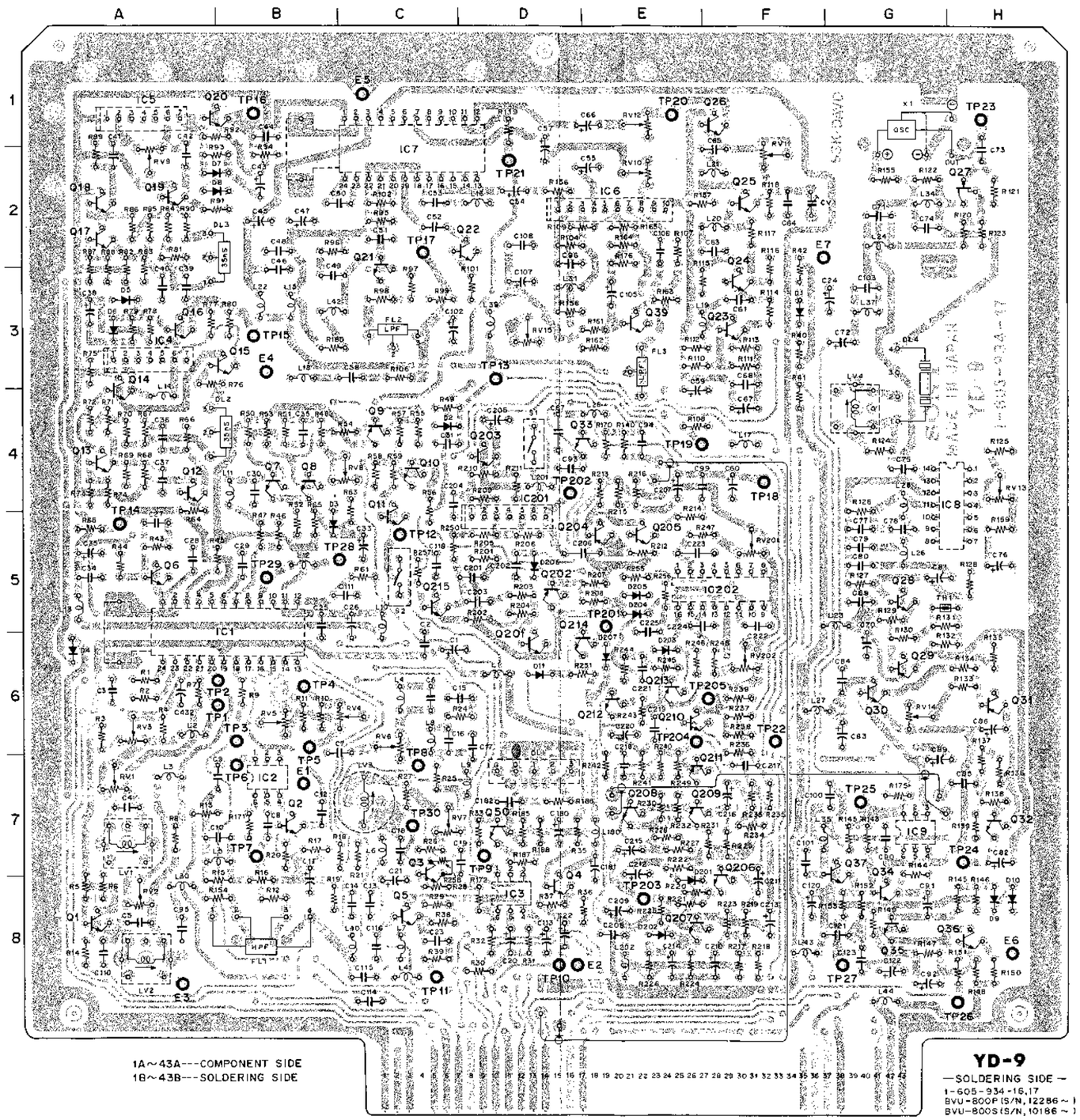
1A～43A---COMPONENT SIDE
1B～43B---SOLDERING SIDE

YD-9
—SOLDERING SIDE—
1-605-934-13,14,15
BVU-800P (S/N,11491～12285)
BVU-800S (S/N,10081～10185)

D1	F-3	Q201	D-6		
D2	C-4	Q202	D-5		
D3	B-5	Q203	D-4		
D4	A-6	Q204	E-5		
D5	A-3	Q205	E-6		
D6	A-3	Q206	F-7		
D7	B-2	Q207	E-8		
D8	B-2	Q208	E-7		
D9	H-8	Q209	E-7		
D10	H-8	Q210	E-6		
D11	D-6	Q211	E-7		
D201	E-8	Q212	E-6		
D202	E-8	Q213	E-6		
D203	E-6	Q214	E-6		
D204	E-5	Q215	C-5		
D205	E-5				
D206	D-5	RV1	A-7		
D207	E-6	RV2	A-8		
		RV3	A-6		
DL1	D-7	RV4	C-6		
DL2	B-4	RV5	B-6		
DL3	B-2	RV6	C-6		
DL4	G-3	RV7	C-7		
		RV8	C-4		
E1	B-7	RV9	A-2		
E2	D-8	RV10	E-2		
E3	A-8	RV11	F-2		
E4	B-3	RV12	E-1		
E5	C-1	RV13	H-4		
E6	H-8	RV14	G-6		
E7	G-2	RV15	D-3		
		RV201	F-5		
FL1	B-8	RV202	F-6		
FL2	C-3				
FL3	E-3	S1	D-4		
		S2	C-5		
IC1	B-5				
IC2	B-7	TP1	B-6		
IC3	D-8	TP2	B-6		
IC4	A-3	TP3	B-6		
IC5	A-1	TP4	B-6		
IC6	E-2	TP5	B-6		
IC7	C-2	TP6	B-7		
IC8	H-4	TP7	B-7		
IC9	G-7	TP8	C-7		
IC201	D-5	TP9	D-7		
IC202	F-5	TP10	D-8		
		TP11	C-8		
LV1	C-7	TP12	C-5		
LV2	A-8	TP13	D-3		
LV3	C-7	TP14	A-5		
LV4	G-3	TP15	B-3		
		TP16	B-1		
Q1	A-8	TP17	C-2		
Q2	B-7	TP18	F-4		
Q3	C-7	TP19	F-4		
Q4	D-8	TP20	E-1		
Q5	C-8	TP21	D-2		
Q6	A-5	TP22	F-6		
Q7	B-4	TP23	H-1		
Q8	B-4	TP24	H-7		
Q9	C-4	TP25	G-7		
Q10	C-4	TP26	H-8		
Q11	C-5	TP27	G-8		
Q12	A-4	TP28	C-5		
Q13	A-4	TP29	B-5		
Q14	A-4	TP30	C-7		
Q15	B-3	TP201	E-5		
Q16	A-3	TP202	D-4		
Q17	A-2	TP203	E-8		
Q18	A-2	TP204	E-6		
Q19	A-2	TP205	F-8		
Q20	B-1				
Q21	C-3	X1	G-1		
Q22	D-2				
Q23	F-3				
Q24	F-3				
Q25	F-2				
Q26	F-1				
Q27	H-2				
Q28	G-5				
Q29	G-6				
Q30	G-6				
Q31	H-6				
Q32	H-7				
Q33	E-4				
Q34	G-8				
Q35	G-8				
Q36	H-8				
Q37	G-7				
Q39	E-3				
Q50	D-7				

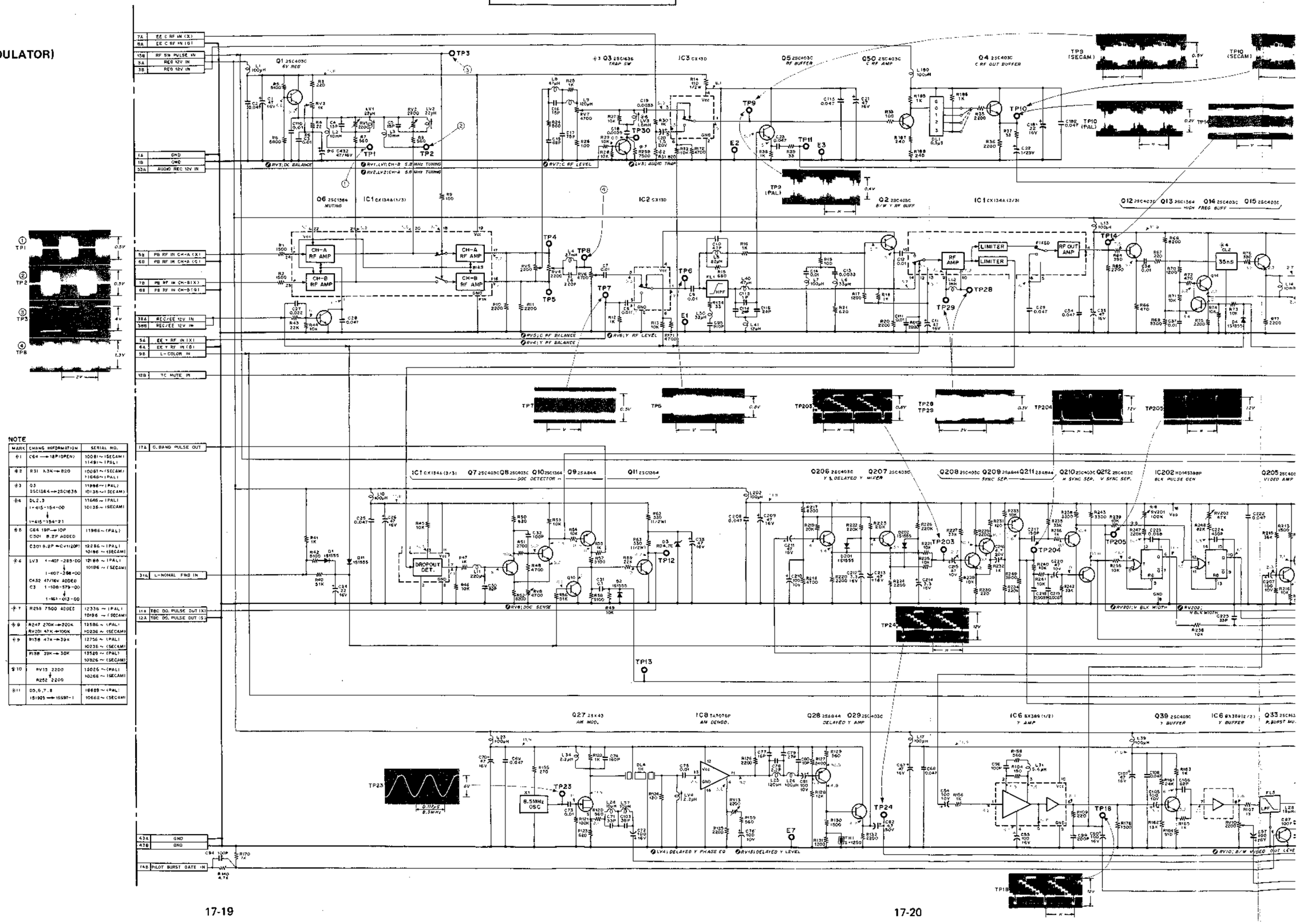
YD-9 (Y DEMODULATOR)

SER. NO. 12286 and higher



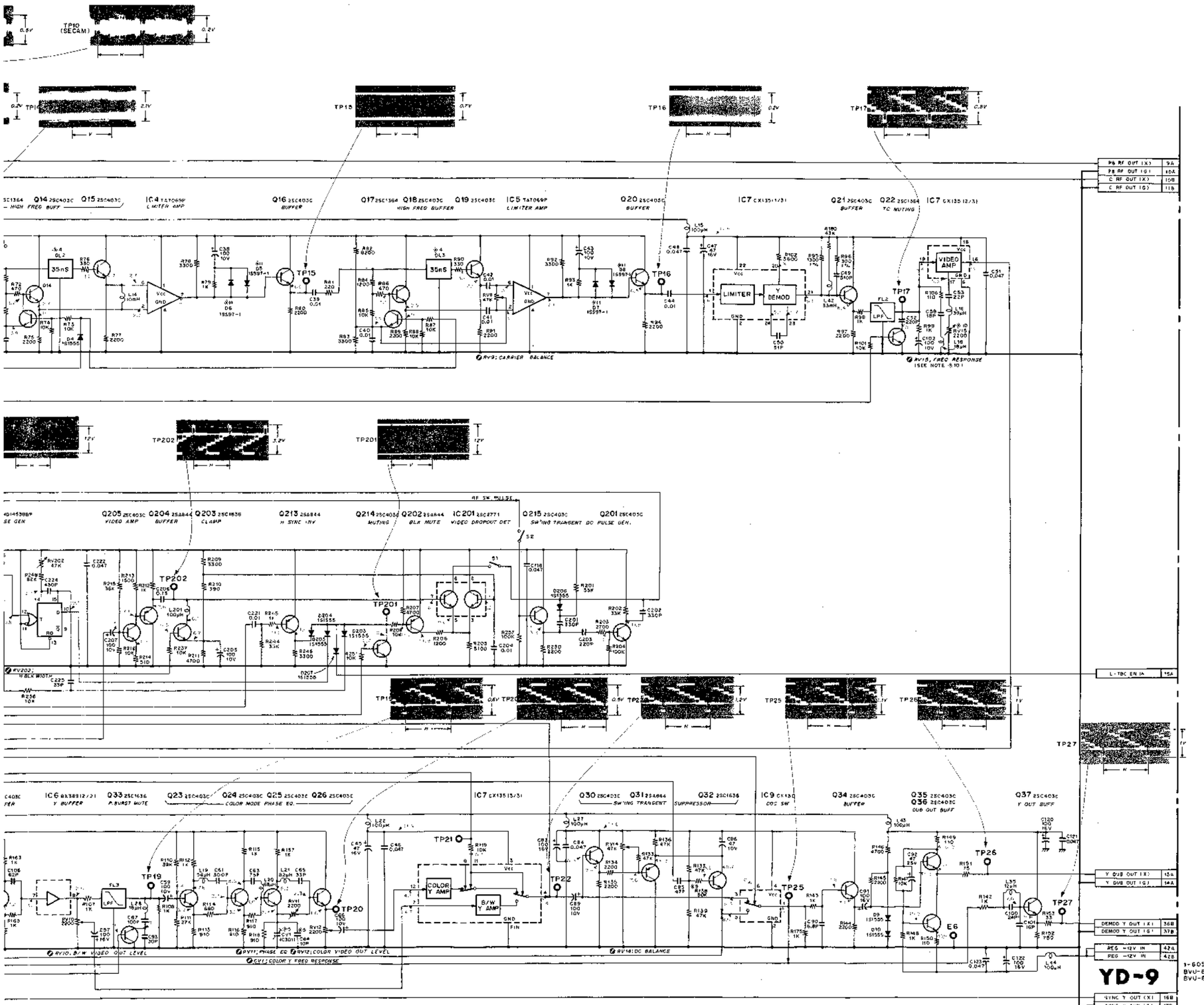
CV1	F-2	Q201	D-6
		Q202	D-5
D1	F-3	Q203	D-4
D2	C-4	Q204	E-5
D3	B-5	Q205	E-5
D4	A-6	Q206	F-7
D5	A-3	Q207	E-8
D6	A-3	Q208	E-7
D7	B-2	Q209	E-7
D8	B-2	Q210	E-6
D9	H-8	Q211	E-7
D10	H-8	Q212	E-6
D11	D-6	Q213	E-6
D201	E-8	Q214	E-6
D202	E-8	Q215	C-5
D203	E-6		
D204	E-5	RV1	A-7
D205	E-5	RV2	A-8
D206	D-5	RV3	A-6
D207	E-6	RV4	C-6
		RV5	B-6
DL1	D-7	RV6	C-6
DL2	B-4	RV7	C-7
DL3	B-2	RV8	C-4
DL4	G-3	RV9	A-2
		RV10	E-2
E1	B-7	RV11	F-2
E2	D-8	RV12	E-1
E3	A-8	RV13	H-4
E4	B-3	RV14	G-6
E5	C-1	RV15	D-3
E6	H-8	RV201	F-5
E7	G-2	RV202	F-6
FL1	B-8	S1	D-4
FL2	C-3	S2	C-6
FL3	E-3		
		TP1	B-6
IC1	B-5	TP2	B-6
IC2	B-7	TP3	B-6
IC3	D-8	TP4	B-6
IC4	A-3	TP5	B-6
IC5	A-1	TP6	B-7
IC6	E-2	TP7	B-7
IC7	C-2	TP8	C-7
IC8	H-4	TP9	D-7
IC9	G-7	TP10	D-8
IC201	D-5	TP11	C-8
IC202	F-5	TP12	C-5
		TP13	D-3
LV1	C-7	TP14	A-5
LV2	A-8	TP15	B-3
LV3	C-7	TP16	B-1
LV4	G-3	TP17	C-2
		TP18	F-4
Q1	A-8	TP19	F-4
Q2	B-7	TP20	E-1
Q3	C-7	TP21	D-2
Q4	D-8	TP22	F-6
Q5	C-8	TP23	H-1
Q6	A-5	TP24	H-7
Q7	B-4	TP25	G-7
Q8	B-4	TP26	H-8
Q9	C-4	TP27	G-8
Q10	C-4	TP28	C-5
Q11	C-5	TP29	B-5
Q12	A-4	TP30	C-7
Q13	A-4	TP201	E-5
Q14	A-4	TP202	D-4
Q15	B-3	TP203	E-8
Q16	A-3	TP204	E-6
Q17	A-2	TP205	F-8
Q18	A-2		
Q19	A-2	X1	G-1
Q20	B-1		
Q21	C-3		
Q22	D-2		
Q23	F-3		
Q24	F-3		
Q25	F-2		
Q26	F-1		
Q27	H-2		
Q28	G-5		
Q29	G-6		
Q30	G-6		
Q31	H-6		
Q32	H-7		
Q33	E-4		
Q34	G-8		
Q35	G-8		
Q36	H-8		
Q37	G-7		
Q39	E-3		
Q50	D-7		

YD-9 (Y DEMODULATOR)



NOTE

MARK	CHANG INFORMATION	SERIAL NO.
※1	C64 ⟶ 18P(OPEN)	10081 ~ (SECAM) 11481 ~ (PAL)
※2	R31 6.3K ⟶ 820	10081 ~ (SECAM) 11646 ~ (PAL)
※3	Q3 2SC1364 ⟶ 2SC1636	11986 ~ (PAL) 10136 ~ (SECAM)
※4	DL2,3 1-415-154-00 ↓ 1-415-154-21	11646 ~ (PAL) 10136 ~ (SECAM)
※5	C64 18P ⟶ 10P C301 8.2P ADDED	11986 ~ (PAL)
	C301 8.2P ⟶ C-(120P)	12286 ~ (PAL) 10186 ~ (SECAM)
※6	LV3 1-407-285-00 ↓ 1-407-268-00 C432 47/16V ADDED C3 1-106-579-00 ↓ 1-161-013-00	12186 ~ (PAL) 10186 ~ (SECAM)
※7	R258 7500 ADDED	12336 ~ (PAL) 10186 ~ (SECAM)
※8	R247 270K ⟶ 220K RV201 47K ⟶ 100K	12586 ~ (PAL) 10236 ~ (SECAM)
※9	R238 47K ⟶ 39K	12756 ~ (PAL) 10236 ~ (SECAM)
	R238 39K ⟶ 30K	13526 ~ (PAL) 10326 ~ (SECAM)
※10	RV13 2200 ↓ R252 2200	13026 ~ (PAL) 10266 ~ (SECAM)
※11	D5,6,7,8 1S1925 ⟶ 1SS97-1	18688 ~ (PAL) 10662 ~ (SECAM)

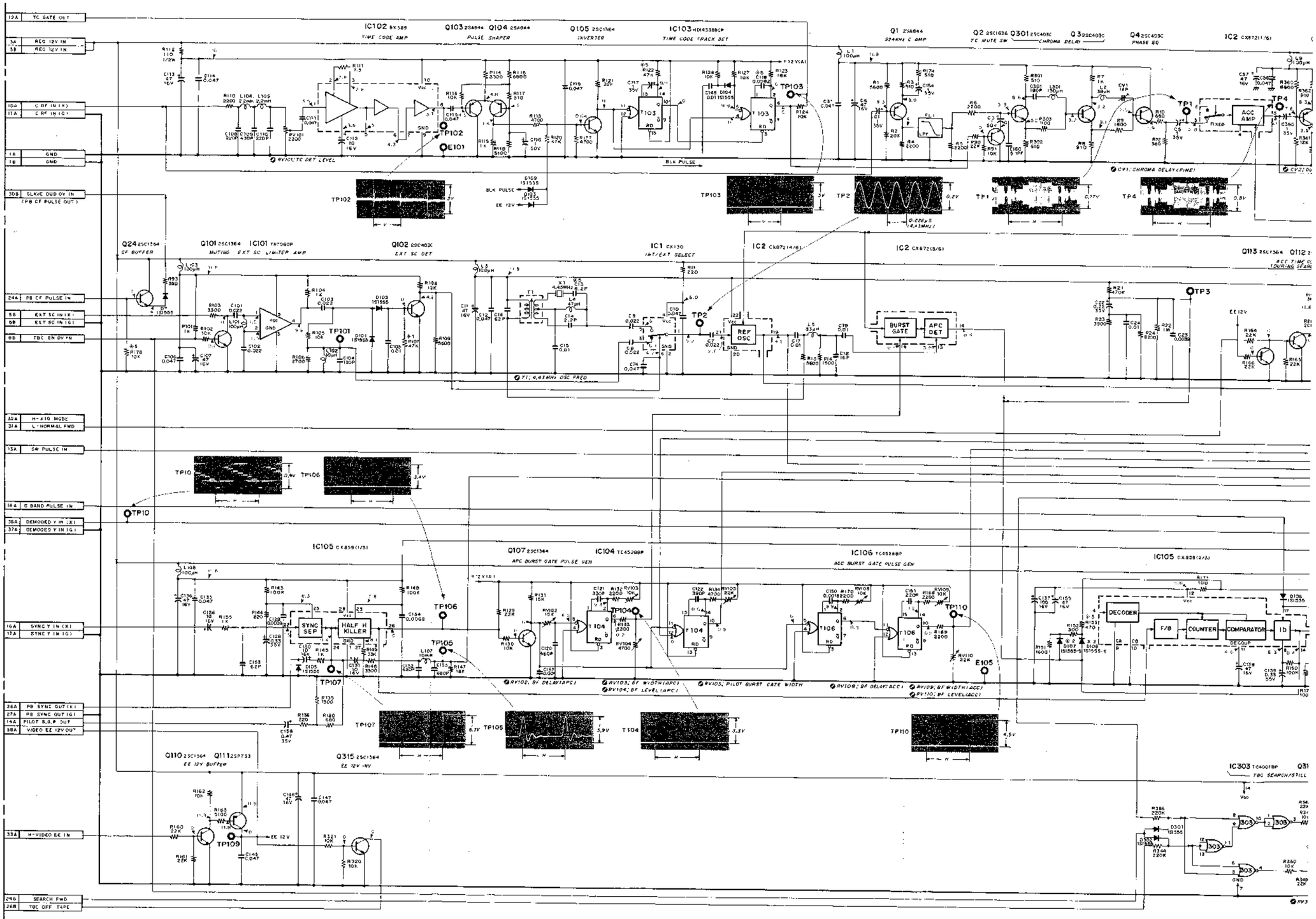

TP10 (SEC4M)
TP15
TP16
TP17
TP201
TP202
TP19
TP20
TP21
TP22
TP25
TP26
TP27
Q14 2SC403C Q15 2SC403C
IC4 TA7069P LIMITER AMP
Q16 2SC403C BUFFER
Q17 2SC1364 Q18 2SC403C Q19 2SC403C
IC5 TA7069P LIMITER AMP
Q20 2SC403C BUFFER
IC7 CX1351/31
Q21 2SC403C Q22 2SC1364
IC7 CX1351/31
35nS
LIMITER
Y DEMOD
VIDEO AMP
LPF
RV3: CARRIER BALANCE
RV15, FREQ RESPONSE (SEE NOTE 10)
P6 RF OUT (X) 9A
P8 RF OUT (G) 10A
C RF OUT (X) 10B
C RF OUT (G) 11B
Q205 2SC403C Q204 2SA844 Q203 2SC1636
Q213 2SA844
Q214 2SC403C Q202 2SA844
IC201 2SC2771
Q215 2SC403C
Q201 2SC403C
VIDEO AMP BUFFER CLAMP H SYNC INV MUTING BLK MUTE VIDEO DROPOUT DET SWING TRANSIENT DC PULSE GEN.
RV202: H BLK WIDTH
L-TBC EN (A) 15A
IC6 CX38812/21
Q33 2SC1636
Q23 2SC403C Q24 2SC403C Q25 2SC403C Q26 2SC403C
IC7 CX1351/31
Q30 2SC403C Q31 2SA844
Q32 2SC1636
IC9 CX130
Q34 2SC403C
Q35 2SC403C Q36 2SC403C
Q37 2SC403C
Y BUFFER P.BURST MUTE COLOR MODE PHASE EQ. SWING TRANSIENT SUPPRESSOR COL SW BUFFER DUB OUT BUFF Y OUT BUFF
COLOR Y AMP
B/W Y AMP
RV10: B/W VIDEO OUT LEVEL
RV11: PHASE EQ RV12: COLOR VIDEO OUT LEVEL
RV13: COLOR Y FREQ RESPONSE
RV14: DC BALANCE
Y DUB OUT (X) 15A
Y DUB OUT (G) 14A
DEMOD Y OUT (X) 36B
DEMOD Y OUT (G) 37B
AFC -12V IN 42A
AFC -12V IN 42B
SYNC Y OUT (X) 16B
SYNC Y OUT (G) 17B
YD-9
1-605-934-13,14,15,16,17
BVU-800P
BVU-800S

CD-14 CHROMA DEMODULATOR

SER. NO. 11646 to 12485

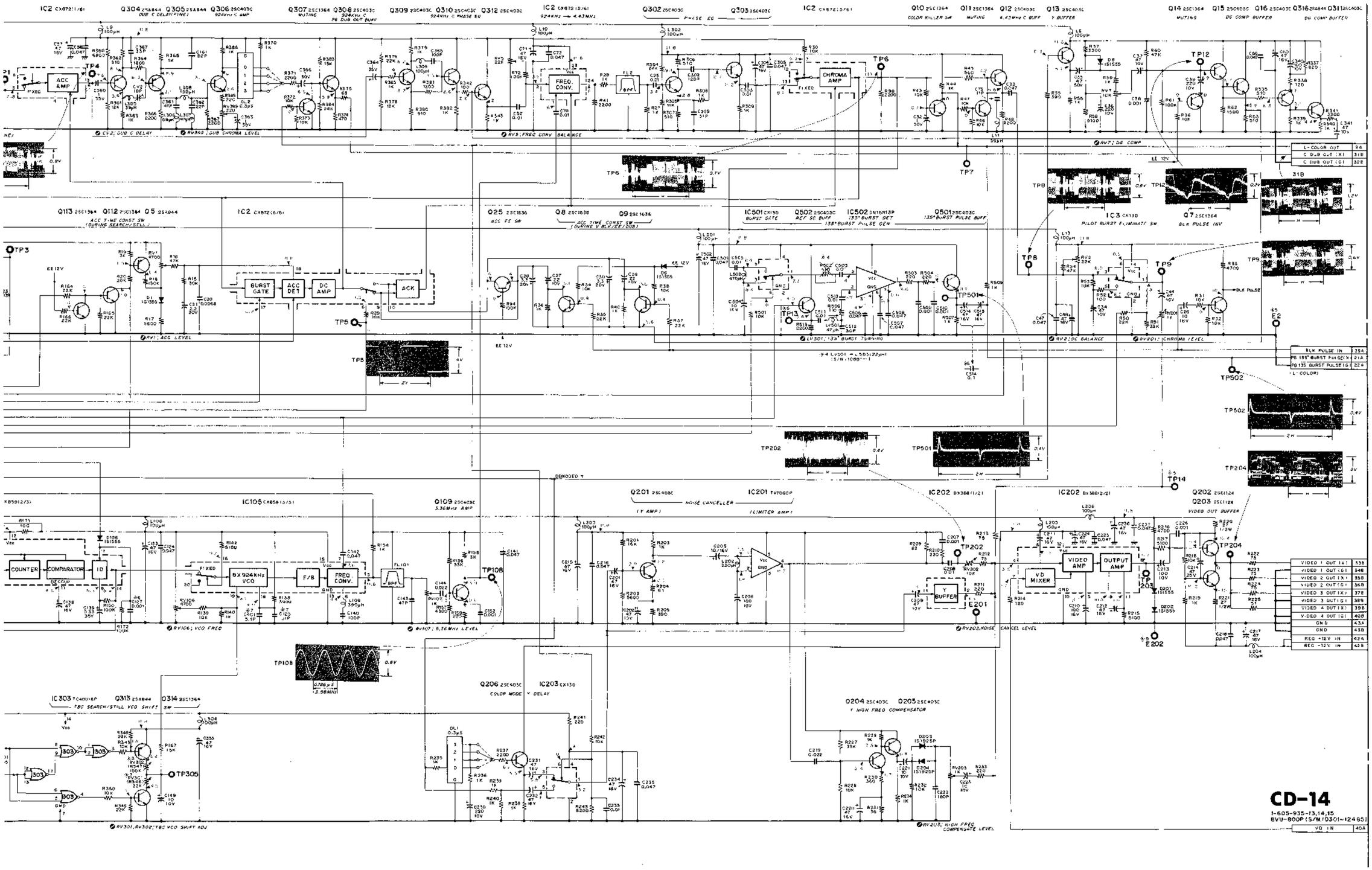
NOTE

MARK	CHANGE INFORMATION		SERIAL NO
※ 1	R107	2.7K	~ 10550
		OPEN	10551 ~ 11490
		47K	11491 ~
※ 2	D107, D108	151535 → 151555-S	10801 ~
※ 3	R153 560→470		10807 ~
	R247 82K→68K		
	R247 68K→RV302 100K		11491 ~
	R248 10K→RV301 22K		
※ 4	LV501 47μH		10801 ~
	↓		
	L503 22μH		
	4502 510 SHORTED		
※ 5	R122 33K→47K		11491 ~
	R178 10K ADDED		
	C13 12PF→8.2PF		
	C114 0.018→0.0082		
	C514 47/16V→0.01		
	C515 47/16V SHORTED		
	TP13 TP14 E9 E202	ADDED	
※ 6	C127 0.01→0.001		11491 ~
※ 7	C125 56P→51P		11986 ~
	C401 5.1P ADDED		



17-23(a)

17-24(a)

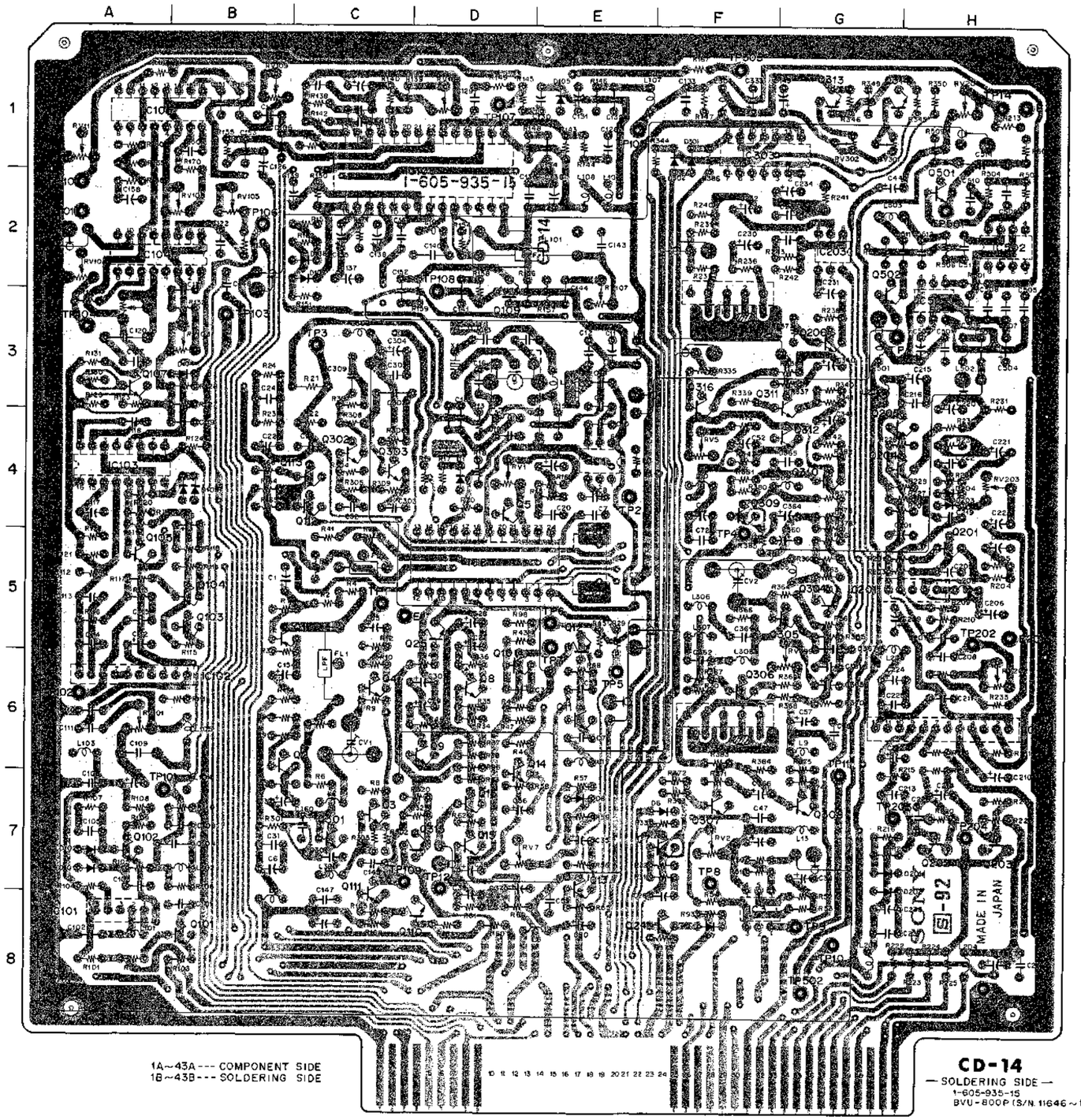

IC2 CX872111/61
Q304 2SA844 Q305 2SA844 Q306 2SC403C
DUB C DELAY(LINE)
924KHz C AMP
Q307 2SC1364 Q308 2SC403C
MUTING 924KHz C
PB DUB OUT BUFF
Q309 2SC403C Q310 2SC403C Q312 2SC403C
924KHz C PHASE EQ
IC2 CX872112/61
924KHz → 4.43MHz
Q302 2SC403C
PULSE EQ
Q303 2SC403C
IC2 CX872115/61
Q10 2SC1364
COLOR KILLER SW
Q11 2SC1364 MUTING
Q12 2SC403C 4.43MHz C BUFF
Q13 2SC403C
Y BUFFER
Q14 2SC1364
MUTING
Q15 2SC403C
DC COMP BUFFER
Q16 2SC403C
Q316 2SA844 Q312 2SC403C
DC COMP BUFFER
ACC AMP
FREQ. CONV.
CHROMA AMP
TP4
TP5
TP6
TP7
TP8
TP9
TP12
TP3
TP202
TP204
TP501
TP502
TP305
TP108
RV2; DUB C DELAY
RV399; DUB CHROMA LEVEL
RV5; FREQ CONV BALANCE
RV7; DC COMP
L-COLOR OUT 318
C DUB OUT (X) 318
C DUB OUT (G) 322
Q113 2SC1364 Q112 2SC1364 Q5 2SA844
ACC TIME CONST SW
(DURING SEARCH/STILL)
IC2 CX872116/61
Q25 2SC1636
ACC FF SW
Q8 2SC1636
DCC TIME CONST SW
(DURING V BLK/FF/REW)
IC501 CX130
BURST GATE
Q502 2SC403C
ACC SC BUFF
IC502 SN10R13P
135° BURST DET
135° BURST PULSE GEN
Q501 2SC403C
135° BURST PULSE BUFF
IC3 CX130
PILOT BURST ELIMINATE SW
Q7 2SC1364
BLK PULSE INV
BURST GATE
ACC DET
DC AMP
ACK
RV1; ACC LEVEL
RV501; 135° BURST TUNING
RV2; DC BALANCE
RV201; CHROMA LEVEL
BLK PULSE IN 35A
PB 135° BURST PULSE(X) 21A
PB 135 BURST PULSE(G) 22A
(L-COLOR)
IC105 CX858151/51
Q109 2SC403C
5.36MHz AMP
IC201 TA7060P
NOISE CANCELLER
(Y AMP)
(LIMITER AMP)
IC202 BX388(1/2)1
Q201 2SC403C
Q202 2SC1124
Q203 2SC1124
VIDEO OUT BUFFER
COUNTER
COMPARATOR
ID
6X 924KHz VCO
F/B
FREQ. CONV.
BPF
Y BUFFER
VD MIXER
VIDEO AMP
OUTPUT AMP
RV106; VCO FREQ
RV107; 5.36MHz LEVEL
RV202; NOISE CANCEL LEVEL
VIDEO 1 OUT (X) 33B
VIDEO 1 OUT (G) 34B
VIDEO 2 OUT (X) 35B
VIDEO 2 OUT (G) 36B
VIDEO 3 OUT (X) 37B
VIDEO 3 OUT (G) 38B
VIDEO 4 OUT (X) 39B
VIDEO 4 OUT (G) 40B
GND 43A
GND 43B
REG +12V IN 42A
REG -12V IN 42B
IC303 TC4011BP
Q313 2SA844 Q314 2SC1364
TBC SEARCH/STILL VCO SHIFT SW
Q206 2SC403C IC203 CX130
COLOR MODE Y DELAY
Q204 2SC403C Q205 2SC403C
Y HIGH FREQ COMPENSATOR
RV301, RV302; TBC VCO SHIFT ADJ
RV203; HIGH FREQ COMPENSATE LEVEL
VD IN 40A
CD-14
1-605-935-13,14,15
BVU-800P (S/N 10301~12485)

17-25(a)

17-26(a)

CD-14 CHROMA DEMODULATOR

SER. NO. 11646 to 12485



1A~43A --- COMPONENT SIDE
1B~43B --- SOLDERING SIDE

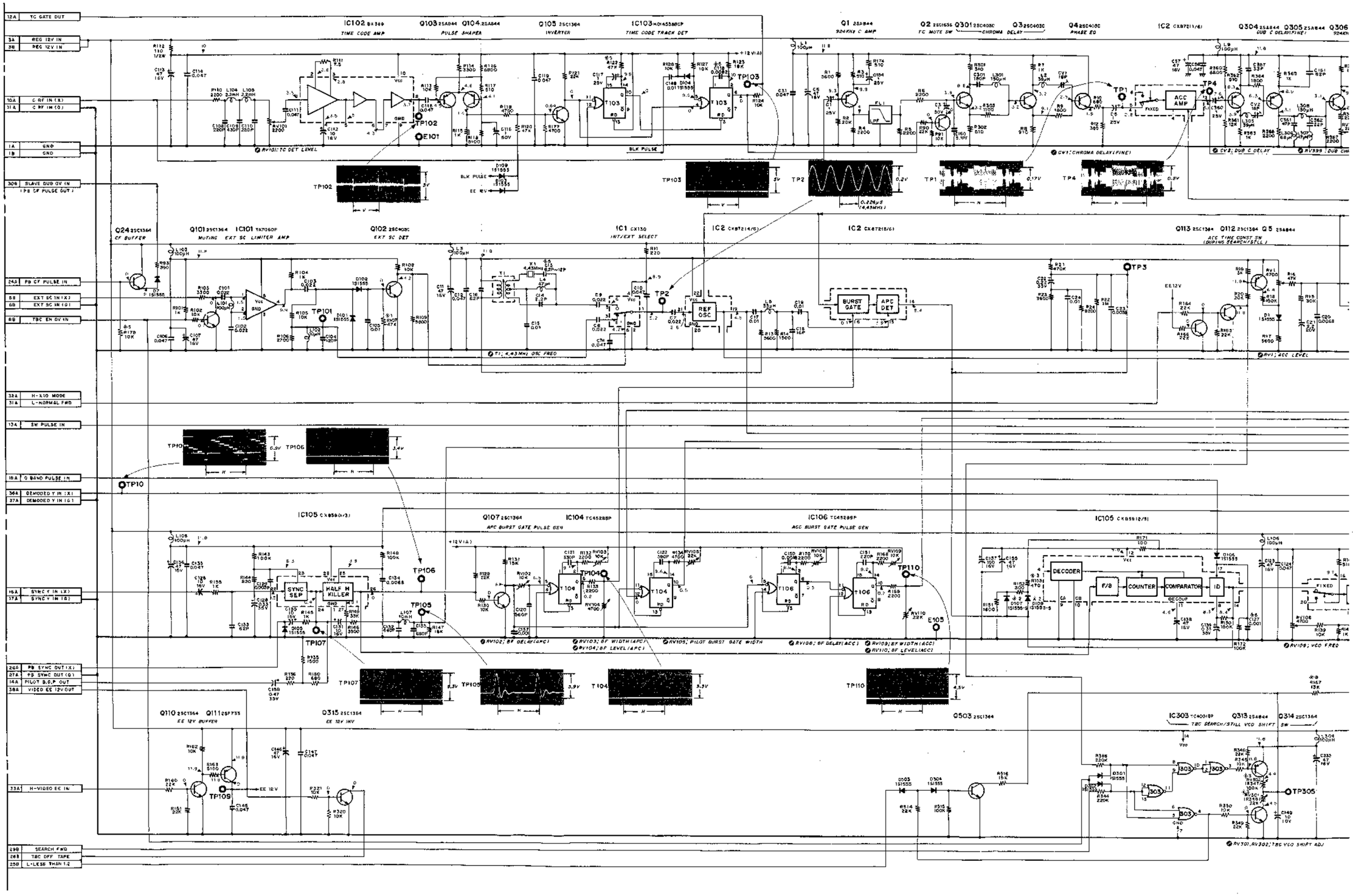
CD-14
— SOLDERING SIDE —
1-605-935-15
BVU-800P (S/N 11646~12485)

CV1	C-6		Q308	G-7	
CV2	F-5		Q309	F-4	
			Q310	G-4	
D1	D-4		Q311	G-3	
D6	F-7		Q312	G-4	
D7	F-8		Q313	G-1	
D8	E-7		Q314	G-1	
D101	A-7		Q315	D-7	
D102	A-7		Q316	F-3	
D103	B-4		Q501	H-2	
D104	B-3		Q502	G-2	
D105	E-1				
D106	B-1		RV1	D-4	
D107	C-2		RV2	F-7	
D108	C-2		RV5	F-4	
D109	B-4		RV7	D-7	
D201	G-7		RV101	A-6	
D202	G-7		RV102	A-3	
D203	H-4		RV103	B-3	
D204	H-4		RV104	A-2	
D301	F-1		RV105	B-2	
D302	F-1		RV106	D-1	
			RV107	E-2	
DL1	F-2		RV108	B-2	
DL2	F-6		RV109	B-1	
			RV110	A-1	
E1	D-5		RV201	H-1	
E2	H-1		RV202	H-6	
E101	A-2		RV203	H-4	
E201	H-5		RV301	G-1	
E202	H-8		RV302	G-1	
			RV399	G-5	
FL1	C-6				
FL2	C-5		T1	D-3	
FL101	D-2				
			TP1	C-5	
IC1	E-4		TP2	E-4	
IC2	D-5		TP3	C-3	
IC3	F-8		TP4	F-4	
IC101	A-8		TP5	E-6	
IC102	A-6		TP6	E-5	
IC103	A-4		TP7	E-5	
IC104	A-2		TP8	F-7	
IC105	D-1		TP9	G-8	
IC106	A-1		TP10	G-8	
IC201	H-5		TP11	G-6	
IC202	H-6		TP12	D-7	
IC203	G-2		TP13	G-3	
IC303	F-1		TP14	H-1	
IC501	H-2		TP101	A-7	
IC502	H-2		TP102	A-6	
			TP103	B-3	
Q1	B-5		TP104	A-3	
Q2	B-6		TP105	E-1	
Q3	C-7		TP106	B-2	
Q4	C-6		TP107	D-1	
Q5	D-4		TP108	D-2	
Q7	F-7		TP109	D-7	
Q8	D-6		TP110	A-2	
Q9	D-6		TP202	H-5	
Q10	D-6		TP203	G-7	
Q11	E-6		TP204	H-7	
Q12	E-5		TP305	F-1	
Q13	E-7		TP501	H-2	
Q14	D-6		TP502	G-8	
Q15	D-7				
Q16	D-7		X1	D-3	
Q24	F-8				
Q25	D-5				
Q101	B-8				
Q102	A-7				
Q103	B-5				
Q104	B-5				
Q105	A-5				
Q107	A-3				
Q109	D-2				
Q110	D-8				
Q111	C-8				
Q112	C-4				
Q113	C-4				
Q201	H-5				
Q202	H-7				
Q203	H-7				
Q204	H-4				
Q205	H-4				
Q206	G-3				
Q301	C-7				
Q302	C-4				
Q303	C-4				
Q304	G-5				
Q305	G-5				
Q306	F-6				
Q307	F-7				

CD-14 (CHROMA DEMODULATOR) SER. NO. 12486 and higher

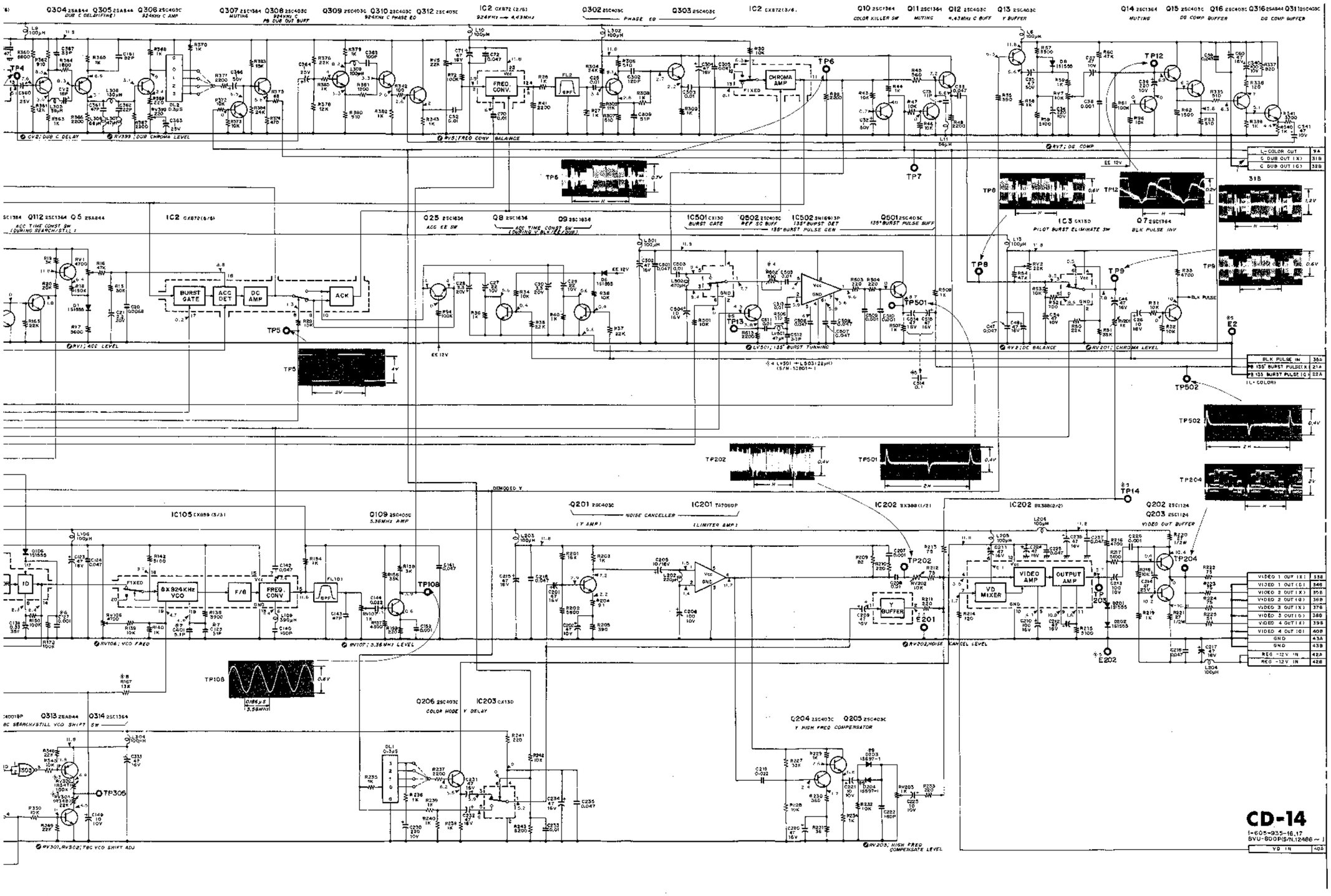
NOTE

MARK	CHANGE INFORMATION		SERIAL NO.
※ 1	R107	2.7K	~10350
		OPEN	10351~11450
		47K	11451~
※ 2	D107, D108 1S1555 → 1S1555-S		10801~
※ 3	R153 560→470		10801~
	R347 62K→68K		
	R347 68K→RV302,100K		11491~
	R348 10K→RV301, 22K		
※ 4	LV501 47μH		10801~
	L503 22μH		
	R302 510 SHORTED		
※ 5	R122 33K→47K		11491~
	R178 10K ADDED		
	C13 82P→12P		
	C118 0.018→0.0082		
	C514 47/16V→0.01		
	C513 47/16V SHORTED		
	TP13 TP14 E2 E202	ADDED	
※ 6	C127 0.01→0.001		11491~
※ 7	C125 56P→51P		11965~
	C401 5.1P ADDED		
※ 8	R167 18K→13K		10856~
※ 9	Q203, 204 1S1925P→1S387-1		10689~



17-23(b)

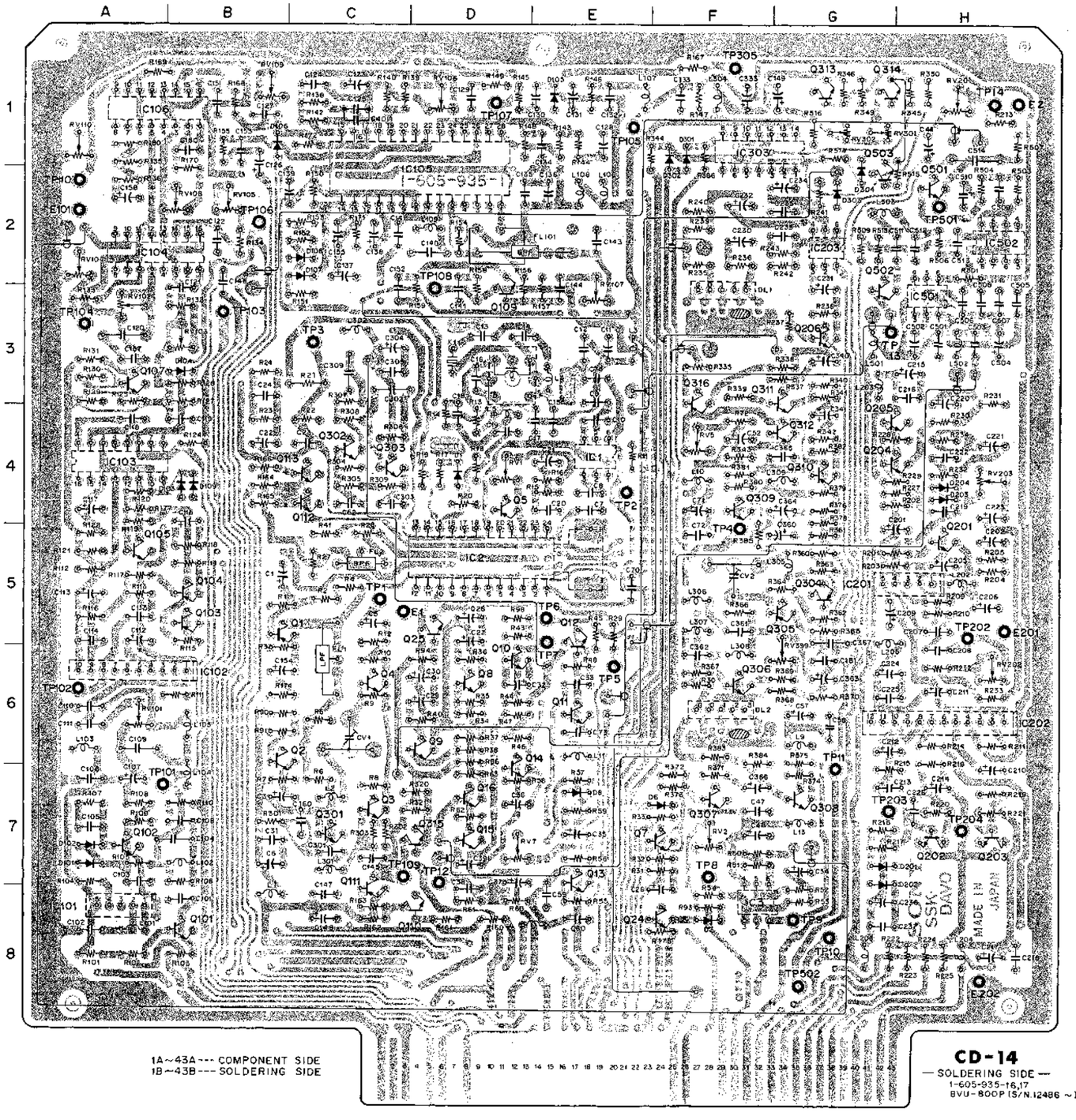
17-24(b)


Q304 2SA844 Q305 2SA844 Q306 2SC403C
DUB C DELAY(FINE)
924KHz C AMP
Q307 2SC1364 Q308 2SC403C
MUTING
924KHz C
PB DUB OUT BUFF
Q309 2SC403C Q310 2SC403C Q312 2SC403C
924KHz C PHASE EQ
IC2 CXB72 (2/6)
924KHz → 4.43MHz
Q302 2SC403C
PHASE EQ
Q303 2SC403C
IC2 CXB72(3/6)
Q10 2SC1364
COLOR KILLER SW
Q11 2SC1364
MUTING
Q12 2SC403C
4.43MHz C BUFF
Q13 2SC403C
Y BUFFER
Q14 2SC1364
MUTING
Q15 2SC403C
DG COMP BUFFER
Q16 2SC403C Q316 2SA844 Q31 2SC403C
DG COMP BUFFER
TP4
TP5
TP6
TP7
TP8
TP9
TP12
TP13
TP14
TP108
TP202
TP204
TP305
TP501
TP502
CV2; DUB C DELAY
RV399 ; DUB CHROMA LEVEL
RV3; FREQ CONV BALANCE
RV7; DG COMP
L-COLOR OUT 9A
C DUB OUT (X) 31B
C DUB OUT (C) 32B
31B
EE 12V
Q112 2SC1364 Q5 2SA844
ACC TIME CONST SW
(DURING SEARCH/STILL)
IC2 CXB72(5/6)
BURST GATE
ACC DET
DC AMP
ACK
RV1; ACC LEVEL
Q25 2SC1636
ACC EE SW
Q8 2SC1636
ACC TIME CONST SW
(DURING V BLK EE DUB)
Q9 2SC1636
IC501 CX130
BURST GATE
Q502 2SC403C
REF SC BUFF
IC502 3N169(3)P
135° BURST DET
135° BURST PULSE GEN
Q501 2SC403C
135° BURST PULSE BUFF
IC3 CX130
PILOT BURST ELIMINATE SW
Q7 2SC1364
BLK PULSE INV
RV2; DC BALANCE
RV201; CHROMA LEVEL
LV501; 135° BURST TUNNING
BLK PULSE
BLK PULSE IN 36A
PB 135° BURST PULSE(X) 21A
PB 135 BURST PULSE (C) 22A
(L+COLOR)
IC105 CX859 (5/6)
Q109 2SC403C
5.36MHz AMP
FIXED
8×924KHz VCO
F/8
FREQ. CONV
BPF
RV106; VCO FREQ
RV107; 5.36MHz LEVEL
Q201 2SC403C
(Y AMP)
NOISE CANCELLER
IC201 TA7060P
(LIMITER AMP)
IC202 BX388(1/2)
IC202 BX388(2/2)
Q202 2SC1124
Q203 2SC1124
VIDEO OUT BUFFER
VD MIXER
VIDEO AMP
OUTPUT AMP
Y BUFFER
RV202; NOISE CANCEL LEVEL
VIDEO 1 OUT (X) 33B
VIDEO 1 OUT (C) 34B
VIDEO 2 OUT (X) 35B
VIDEO 2 OUT (C) 36B
VIDEO 3 OUT (X) 37B
VIDEO 3 OUT (C) 38B
VIDEO 4 OUT (X) 39B
VIDEO 4 OUT (C) 40B
GND 43A
GND 43B
REG +12V IN 42A
REG -12V IN 42B
Q206 2SC403C
COLOR MODE Y DELAY
IC203 CX130
Q204 2SC403C Q205 2SC403C
Y HIGH FREQ COMPENSATOR
Q313 2SA844 Q314 2SC1364
BC SEARCH/STILL VCO SHIFT SW
RV301, RV302; TBC VCO SHIFT ADJ
RV205; HIGH FREQ COMPENSATE LEVEL
CD-14
VD IN 40B

17-25(b)

17-26(b)

CD-14 (CHROMA DEMODULATOR) SER. NO. 12486 and higher

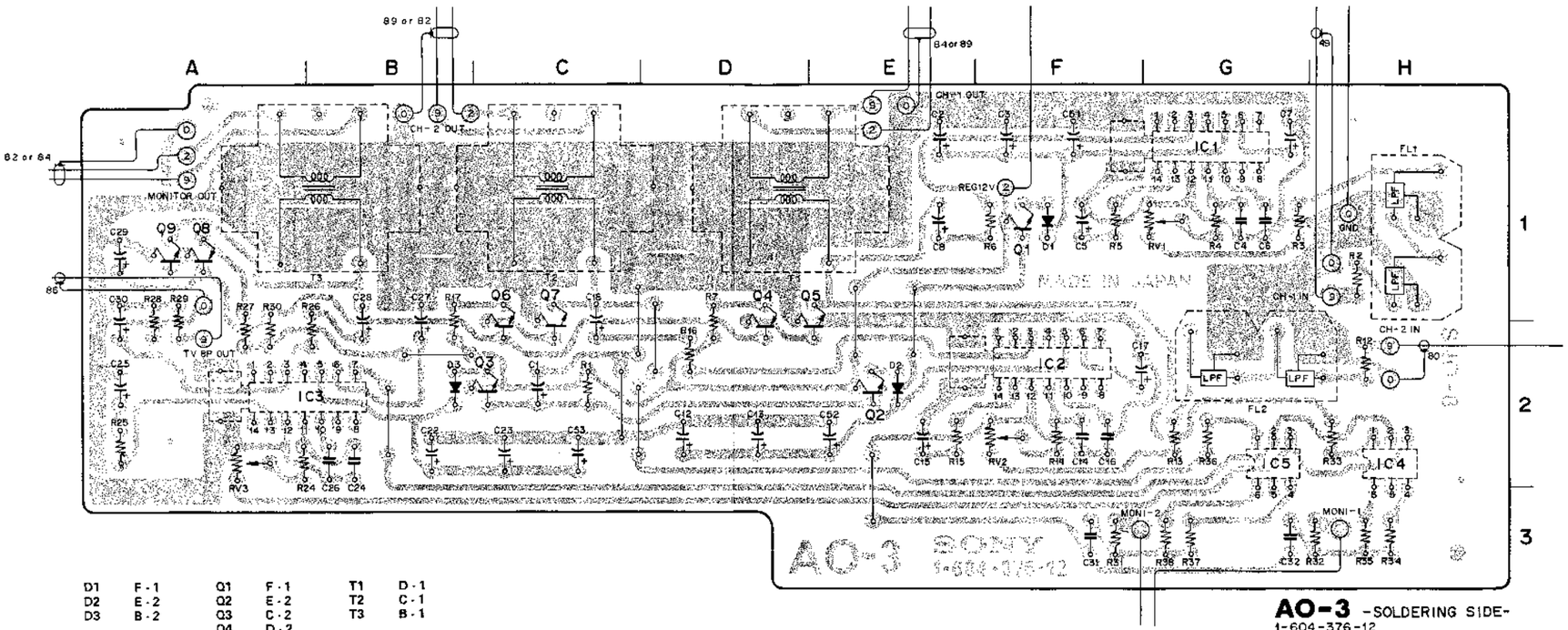


1A~43A --- COMPONENT SIDE
1B~43B --- SOLDERING SIDE

CD-14
— SOLDERING SIDE —
1-605-935-16,17
BVU-800P (S/N 12486 ~)

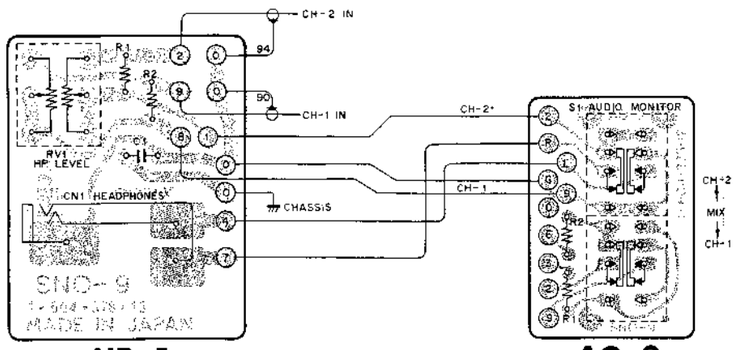
CV1	C-6		Q308	G-7
CV2	F-5		Q309	F-4
			Q310	G-4
D1	D-4		Q311	G-3
D6	F-7		Q312	G-4
D7	F-8		Q313	G-1
D8	E-7		Q314	G-1
D101	A-7		Q315	D-7
D102	A-7		Q316	F-3
D103	B-4		Q501	H-2
D104	B-3		Q502	G-2
D105	E-1		Q503	G-2
D106	B-1			
D107	C-2		RV1	D-4
D108	C-2		RV2	F-7
D109	B-4		RV5	F-4
D201	G-7		RV7	D-7
D202	G-7		RV101	A-6
D203	H-4		RV102	A-3
D204	H-4		RV103	B-3
D301	F-7		RV104	A-2
D302	F-1		RV106	B-2
D303	G-2		RV106	D-1
D304	G-2		RV107	E-2
			RV108	B-2
DL1	F-2		RV109	B-1
DL2	F-6		RV110	A-1
			RV201	H-1
E1	D-5		RV202	H-6
E2	H-1		RV203	H-4
E101	A-2		RV301	G-1
E201	H-5		RV302	G-1
E202	H-8		RV399	G-5
			T1	D-3
FL1	C-6			
FL2	C-5		TP1	C-6
FL101	D-2		TP2	E-4
			TP3	C-3
IC1	E-4		TP4	F-4
IC2	D-5		TP5	E-6
IC3	F-8		TP6	E-6
IC101	A-8		TP7	E-5
IC102	A-6		TP8	F-7
IC103	A-4		TP9	G-8
IC104	A-2		TP10	G-8
IC105	D-1		TP11	G-6
IC106	A-1		TP12	D-7
IC201	H-5		TP13	G-3
IC202	H-6		TP14	H-1
IC203	G-2		TP101	A-7
IC303	F-1		TP102	A-6
IC501	H-2		TP103	B-3
IC502	H-2		TP104	A-3
			TP105	E-1
Q1	B-5		TP106	B-2
Q2	B-6		TP107	D-1
Q3	C-7		TP108	D-2
Q4	C-6		TP109	D-7
Q5	D-4		TP110	A-2
Q7	F-7		TP202	H-5
Q8	D-6		TP203	G-7
Q9	D-6		TP204	H-7
Q10	D-6		TP305	F-1
Q11	E-6		TP501	H-2
Q12	E-5		TP502	G-8
Q13	E-7			
Q14	D-6		X1	D-3
Q15	D-7			
Q16	D-7			
Q24	F-8			
Q25	D-5			
Q101	B-8			
Q102	A-7			
Q103	B-5			
Q104	B-5			
Q105	A-5			
Q107	A-3			
Q109	D-2			
Q110	D-8			
Q111	C-8			
Q112	C-4			
Q113	C-4			
Q201	H-5			
Q202	H-7			
Q203	H-7			
Q204	H-4			
Q205	H-4			
Q206	G-3			
Q301	C-7			
Q302	C-4			
Q303	C-4			
Q304	G-5			
Q305	G-5			
Q306	F-8			
Q307	F-7			

AO-3 (AUDIO OUTPUT AMPLIFIER)
AO-2 (AUDIO OUTPUT SELECTOR)
HP-5 (HEADPHONES)



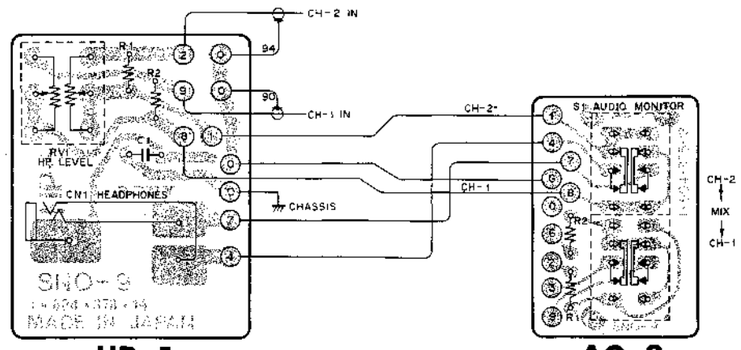
AO-3 -SOLDERING SIDE-
1-604-376-12
BVU-800
BVU-800P
BVU-800S
BVU-800PM

D1	F-1	Q1	F-1	T1	D-1
D2	E-2	Q2	E-2	T2	C-1
D3	B-2	Q3	C-2	T3	B-1
		Q4	D-2		
FL1	H-1	Q5	E-2		
FL2	G-2	Q6	C-2		
		Q7	C-2		
IC1	G-1	Q8	A-1		
IC2	F-2	Q9	A-1		
IC3	A-2				
IC4	H-2	RV1	G-1		
IC5	G-2	RV2	F-2		
		RV3	A-2		



HP-5
-SOLDERING SIDE-
1-604-378-13
BVU-800
BVU-800P
BVU-800S

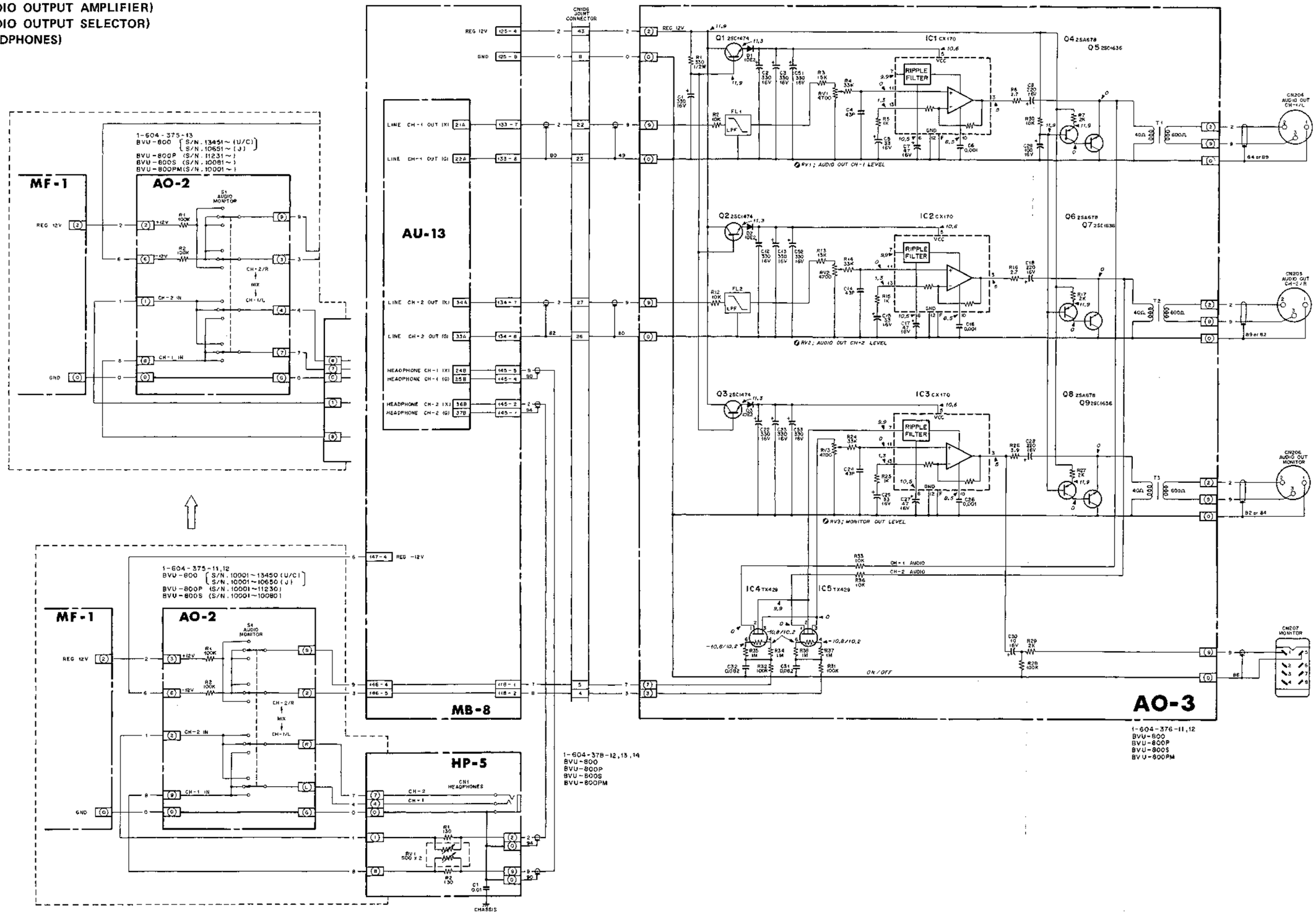
AO-2
-SOLDERING SIDE-
1-604-375-12
BVU-800 (S/N, 10201～13450 (U/C)
S/N, 10101～10650 (J))
BVU-800P (S/N, 10001～11230)
BVU-800S (S/N, 10001～10080)



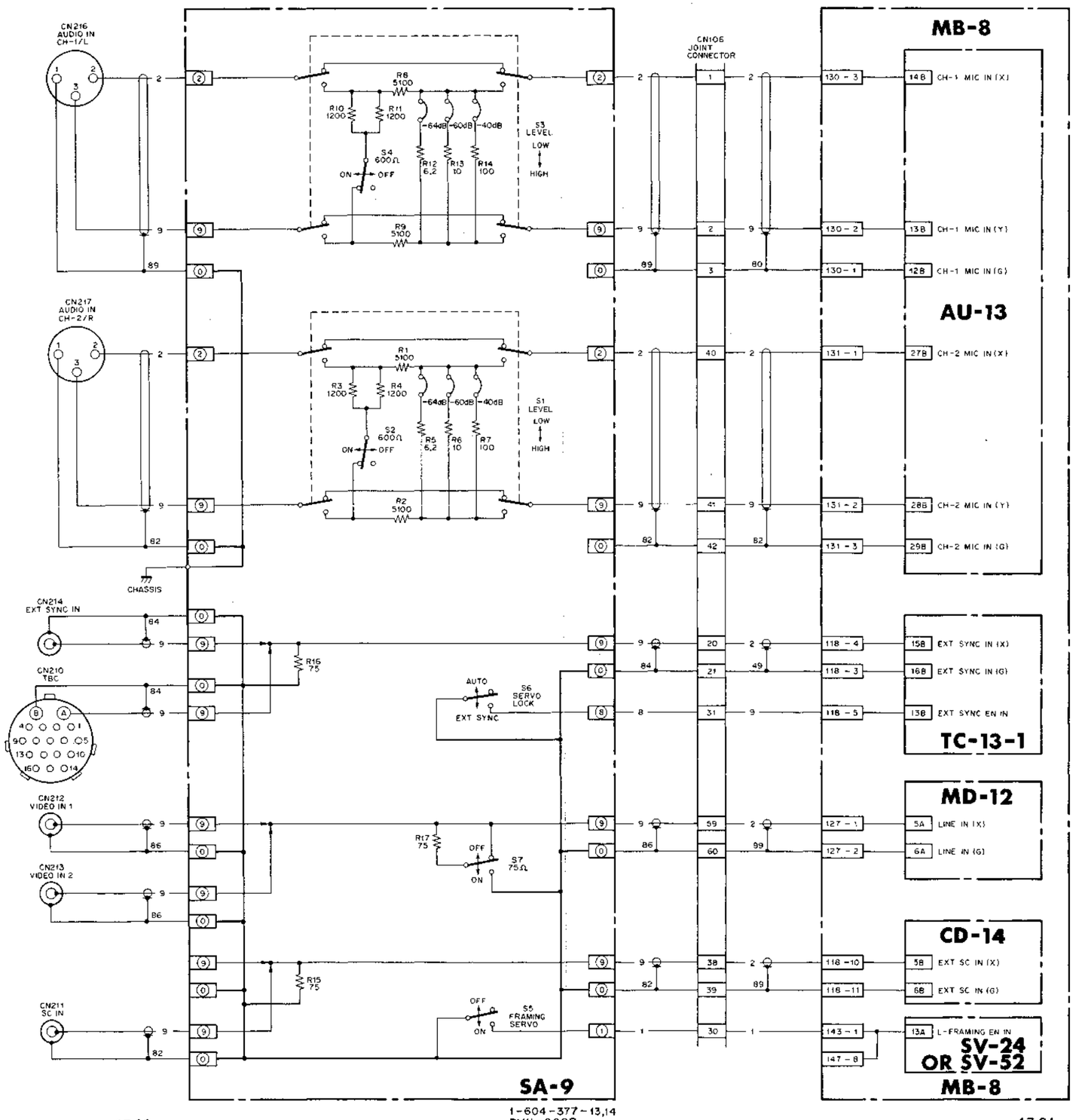
HP-5
-SOLDERING SIDE-
1-604-378-14
BVU-800
BVU-800P
BVU-800S
BVU-800PM

AO-2
-SOLDERING SIDE-
1-604-375-13
BVU-800 (S/N, 13451～(U/C)
S/N, 10651～(J))
BVU-800P (S/N, 11231～)
BVU-800S (S/N, 10081～)
BVU-800PM (S/N, 10001～)

AO-3 (AUDIO OUTPUT AMPLIFIER)
AO-2 (AUDIO OUTPUT SELECTOR)
HP-5 (HEADPHONES)

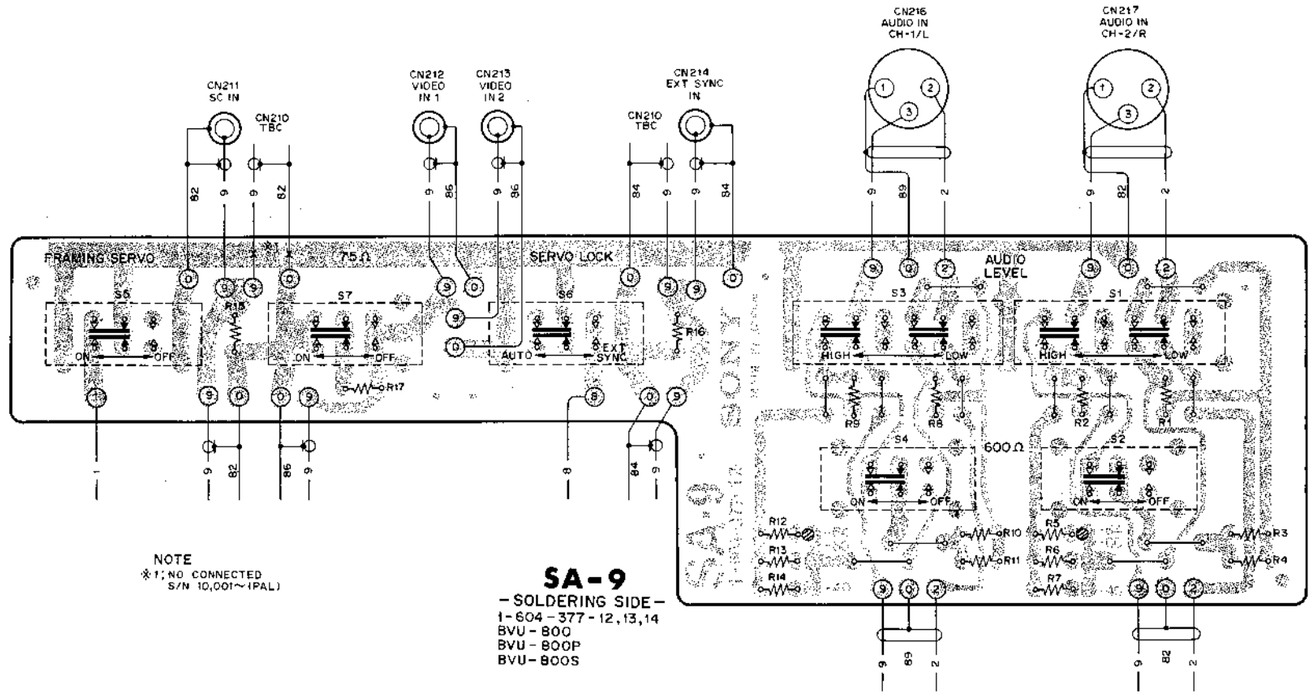


SA-9 (SYSTEM SELECT SWITCH)
(AUDIO INPUT LEVEL SELECT)



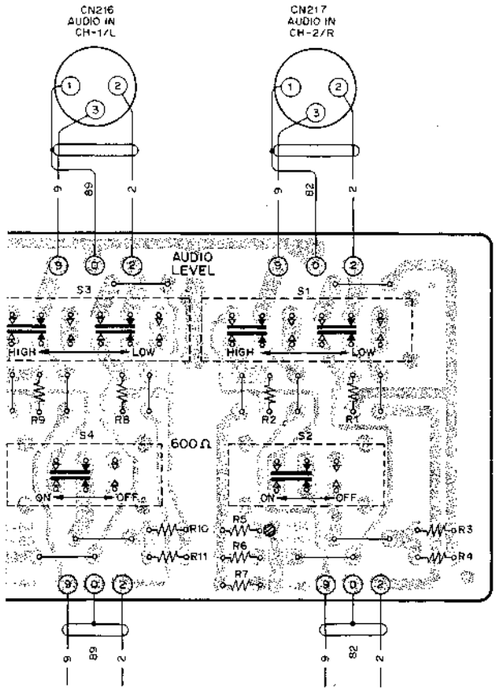
1-604-377-13,14
BVU-800P

SA-9 (SYSTEM SELECT SWITCH)
(AUDIO INPUT LEVEL SELECT)



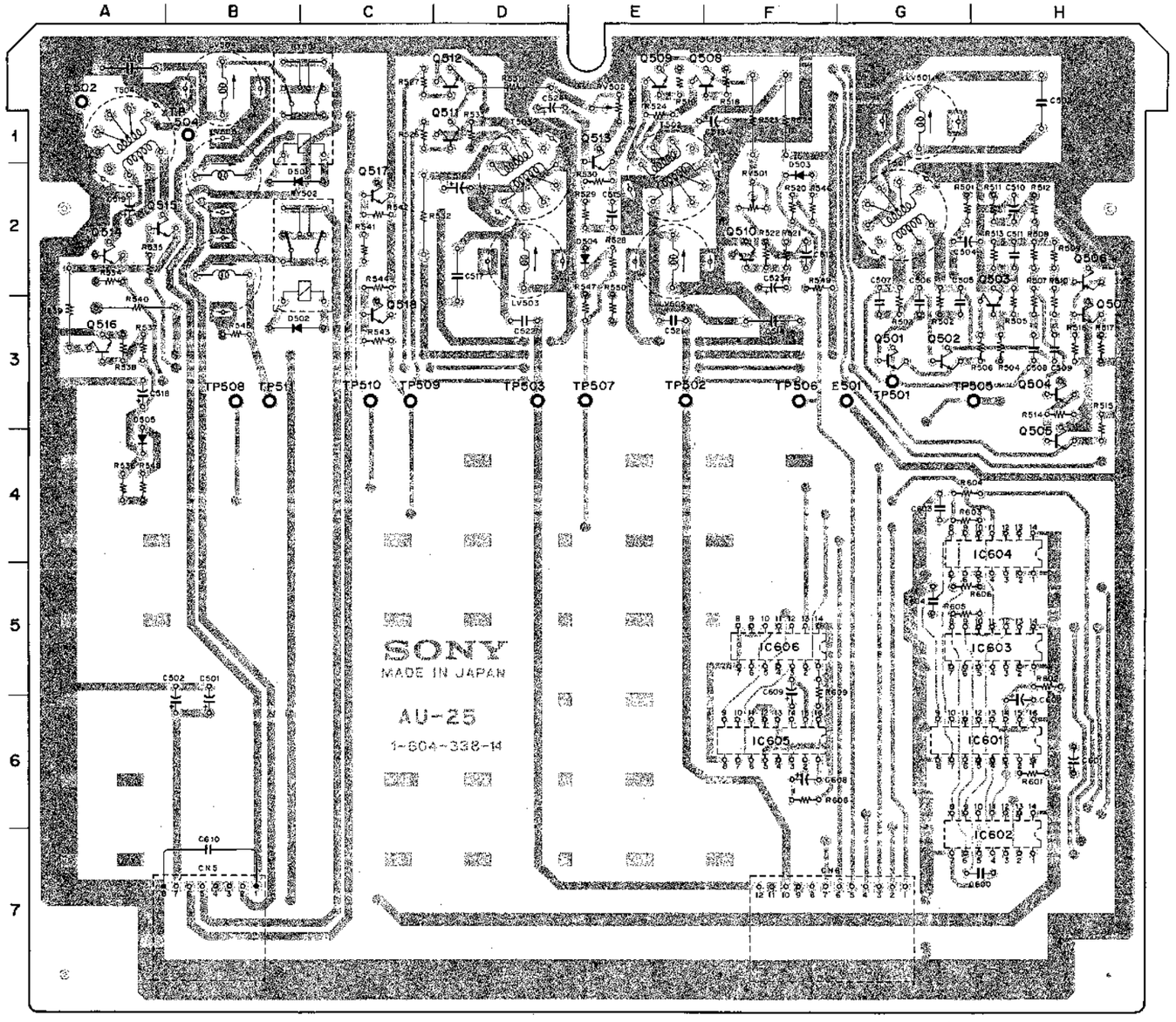
NOTE
※1; NO CONNECTED
S/N 10,001~(PAL)

SA-9
– SOLDERING SIDE –
1-604-377-12,13,14
BVU-800
BVU-800P
BVU-800S


CN216
AUDIO IN
CH-1/L
CN217
AUDIO IN
CH-2/R
AUDIO
LEVEL
S3
S1
HIGH
LOW
HIGH
LOW
R10
R9
R8
R2
R1
S4
600Ω
S2
ON
OFF
ON
OFF
R10
R11
R5
R6
R7
R3
R4

AU-13, AU-25

AU-13 (AUDIO REC/PB AMPLIFIER) SER. NO. 11646 to 12335
(AUDIO SYSTEM CONTROL)
AU-25 (BIAS/ERASE OSCILLATOR)



CN5 B-7
CN6 F-7

D501 B-2
D502 B-3
D503 F-2
D504 E-2
D505 A-4

E501 G-3
E502 A-1

IC601 H-6
IC602 H-7
IC603 H-5
IC604 H-4
IC605 F-6
IC606 F-5

LV501 G-1
LV502 E-2
LV503 D-2
LV504 B-1
LV505 B-2
LV506 B-2

Q501 G-3
Q502 G-3
Q503 H-3
Q504 H-3
Q505 H-4
Q506 H-2
Q507 H-3
Q508 F-1
Q509 E-1
Q510 F-2
Q511 D-1
Q512 D-1
Q513 E-1
Q514 A-2
Q515 A-2
Q516 A-3
Q517 C-2
Q518 C-3

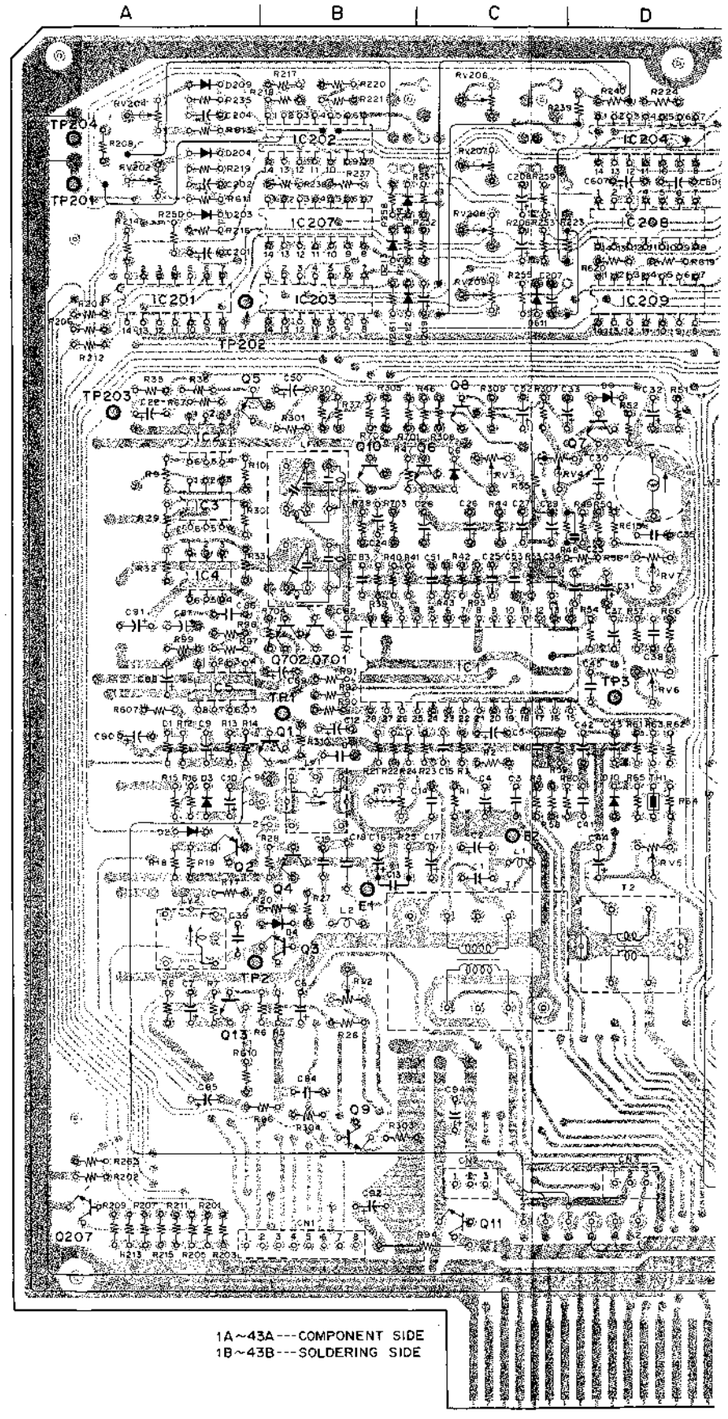
RV501 F-2
RV502 E-1

RY501 C-1
RY502 C-2

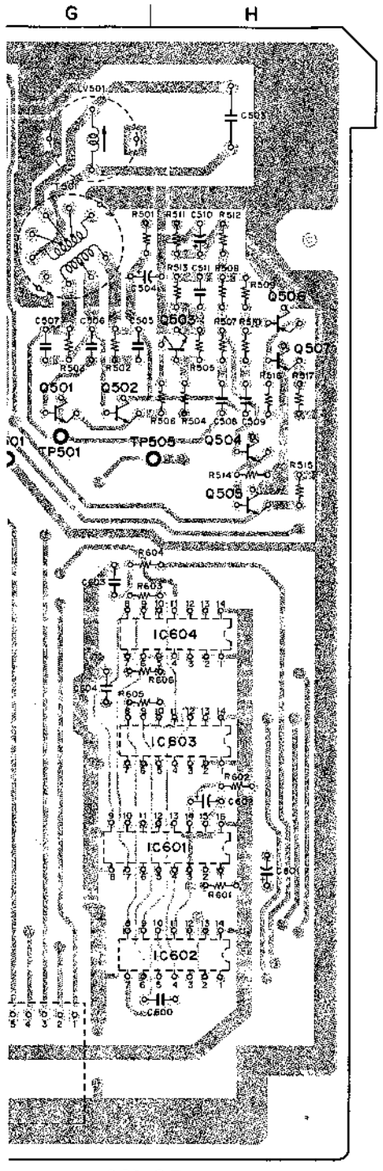
T501 G-2
T502 E-2
T503 D-2
T504 A-1

TP501 G-3
TP502 E-3
TP503 D-3
TP504 B-1
TP505 H-3
TP506 F-3
TP507 E-3
TP508 B-3
TP509 C-3
TP510 C-3
TP511 B-3

AU-25 –SOLDERING SIDE–
1-604-338-14
BVU-800
BVU-800P
BVU-800S
BVU-800PM



1A~43A---COMPONENT SIDE
1B~43B---SOLDERING SIDE



AU-25 –SOLDERING SIDE–
1-604-338-14
BVU-800
BVU-800P
BVU-800S
BVU-800PM

CN5 B-7
CN6 F-7

D501 B-2
D502 B-3
D503 F-2
D504 E-2
D505 A-4

E501 G-3
E502 A-1

IC601 H-6
IC602 H-7
IC603 H-5
IC604 H-4
IC605 F-6
IC606 F-5

LV501 G-1
LV502 E-2
LV503 D-2
LV504 B-1
LV505 B-2
LV506 B-2

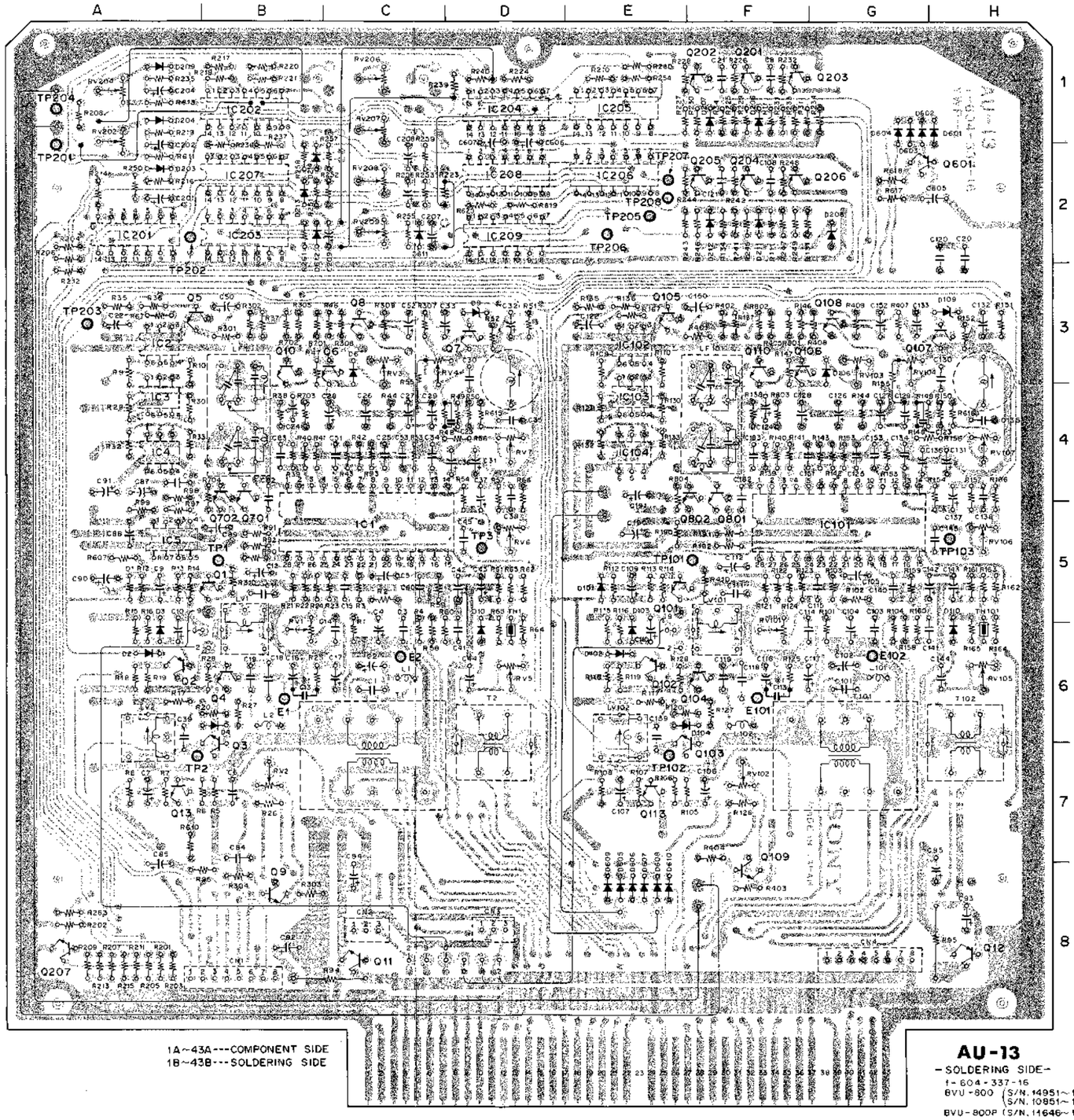
Q501 G-3
Q502 G-3
Q503 H-3
Q504 H-3
Q505 H-4
Q506 H-2
Q507 H-3
Q508 F-1
Q509 E-1
Q510 F-2
Q511 D-1
Q512 D-1
Q513 E-1
Q514 A-2
Q515 A-2
Q516 A-3
Q517 C-2
Q518 G-3

RV501 F-2
RV502 E-1

RY501 C-1
RY502 C-2

T501 G-2
T502 E-2
T503 D-2
T504 A-1

TP501 G-3
TP502 E-3
TP503 D-3
TP504 B-1
TP505 H-3
TP506 F-3
TP507 E-3
TP508 B-3
TP509 C-3
TP510 C-3
TP511 B-3



1A~43A---COMPONENT SIDE
1B~43B---SOLDERING SIDE

CN3 D-8
CN4 G-8

D1 A-5
D2 A-6
D3 A-6
D4 B-6
D6 C-3
D9 D-3
D10 D-6
D101 E-5
D102 E-6
D103 E-6
D104 F-6
D106 G-3
D109 H-3
D110 H-6
D203 A-2
D204 A-1
D206 F-1
D207 F-1
D208 G-2
D209 A-1
D211 F-2
D212 F-2
D213 B-2
D214 B-2
D601 H-1
D602 G-1
D603 G-1
D604 G-1
D605 E-8
D606 E-8
D607 E-8
D608 E-8
D609 E-8
D610 E-8
D611 C-2
D612 B-2

E1 B-6
E2 C-6
E101 F-6
E102 G-6

IC1 C-5
IC2 A-3
IC3 A-4
IC4 A-4
IC5 A-5
IC101 G-5
IC102 E-3
IC103 E-4
IC104 E-4
IC201 A-2
IC202 B-1
IC203 B-2
IC204 D-1
IC205 E-1
IC206 E-2
IC207 B-2
IC208 D-2
IC209 D-2

LF1 B-4
LF101 F-4

LV1 B-6
LV2 A-6
LV3 D-3
LV101 F-6
LV102 E-6
LV103 H-3

Q1 B-5
Q2 A-6
Q3 B-7
Q4 B-6
Q5 A-3
Q6 C-3
Q7 D-3
Q8 C-3
Q9 B-8
Q10 B-3
Q11 C-8
Q12 H-8
Q13 A-7
Q101 E-5
Q102 E-6
Q103 F-7
Q104 F-6
Q105 E-3
Q106 F-3
Q107 H-3
Q108 G-3
Q109 F-8
Q201 F-1
Q202 F-1
Q203 F-1
Q204 F-2
Q205 F-2
Q206 F-2
Q207 A-8
Q601 G-2
Q701 B-4
Q702 B-4
Q801 F-4
Q802 F-4

RV1 B-6
RV2 B-7
RV3 C-3
RV4 C-3
RV5 D-6
RV6 D-5
RV7 D-4
RV101 F-6
RV102 F-7
RV103 G-3
RV104 G-3
RV105 H-6
RV106 H-5
RV107 H-4
RV202 A-1
RV204 A-1
RV206 C-1
RV207 C-1
RV208 C-2
RV209 C-2

T1 C-7
T2 D-6
T101 G-7
T102 H-6

TH1 D-6
TH101 H-6

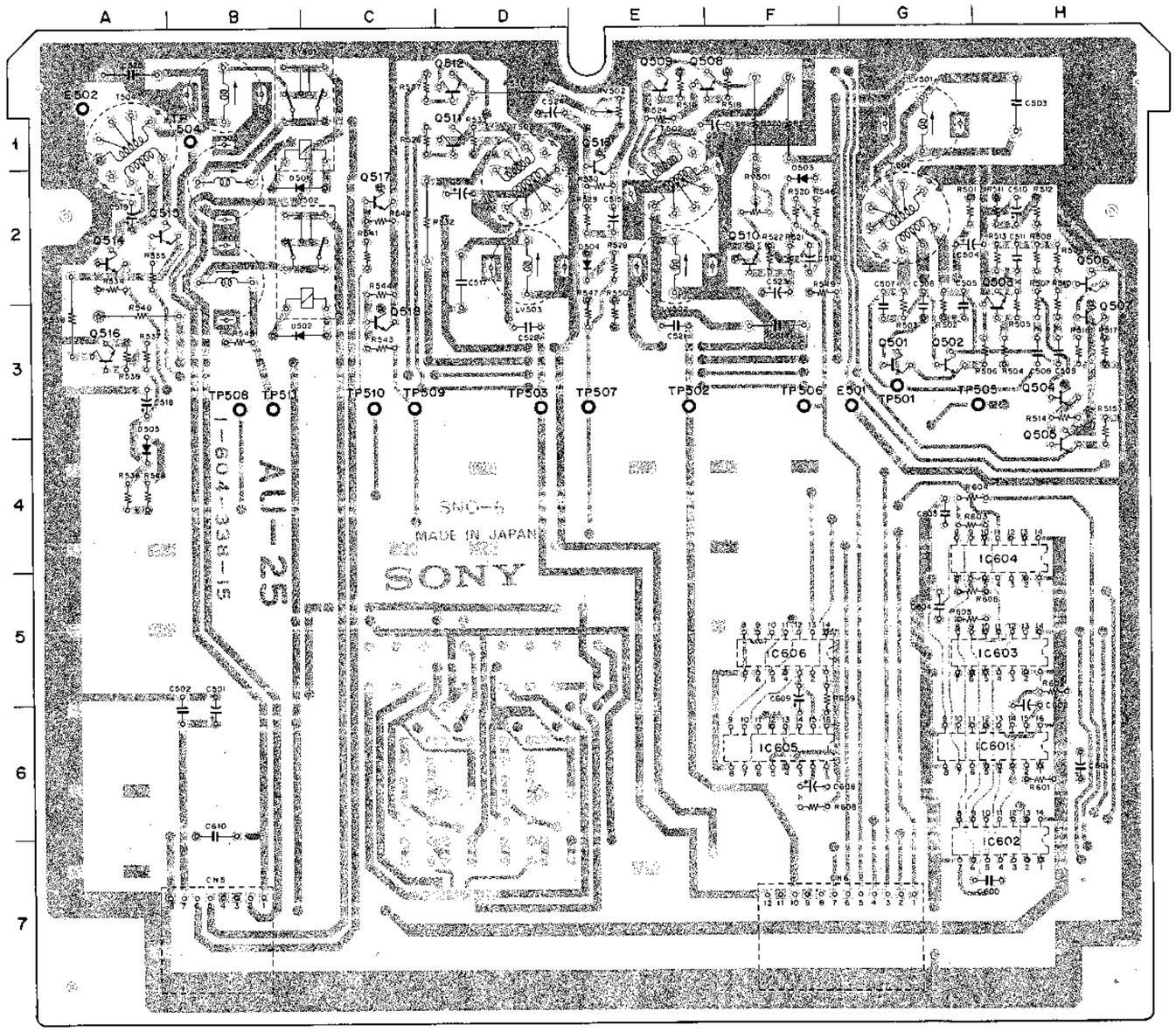
TP1 B-5
TP2 A-7
TP3 D-5
TP101 F-5
TP102 E-7
TP103 H-5
TP201 A-1
TP202 A-2
TP203 A-3
TP204 A-1
TP205 E-2
TP206 E-2
TP207 E-2
TP208 E-2

NOTE
※1 C13, C113 ⟶ CHOOSE

AU-13
–SOLDERING SIDE–
1-604-337-16
BVU-800 (S/N. 14951~16300 (U/C)) (S/N. 10851~11100 (J))
BVU-800P (S/N. 14646~12235)
BVU-800S (S/N. 10106~10185)

AU-13 (AUDIO REC/PB AMPLIFIER)
(AUDIO SYSTEM CONTROL)
AU-25 (BIAS/ERASE OSCILLATOR)

SER. NO. 12336 and higher



CN5 B-7
CN6 F-7

D501 B-2
D502 B-3
D503 F-2
D504 E-2
D505 A-4

E501 G-3
E502 A-1

IC601 H-6
IC602 H-7
IC603 H-5
IC604 H-4
IC605 F-6
IC606 F-5

LV501 G-1
LV502 E-2
LV503 D-2
LV504 B-1
LV505 B-2
LV506 B-2

Q501 G-3
Q502 G-3
Q503 H-3
Q504 H-3
Q505 H-4
Q506 H-2
Q507 H-3
Q508 F-1
Q509 E-1
Q510 F-2
Q511 D-1
Q512 D-1
Q513 E-1
Q514 A-2
Q515 A-2
Q516 A-3
Q517 C-2
Q518 C-3

RV501 F-2
RV502 E-1

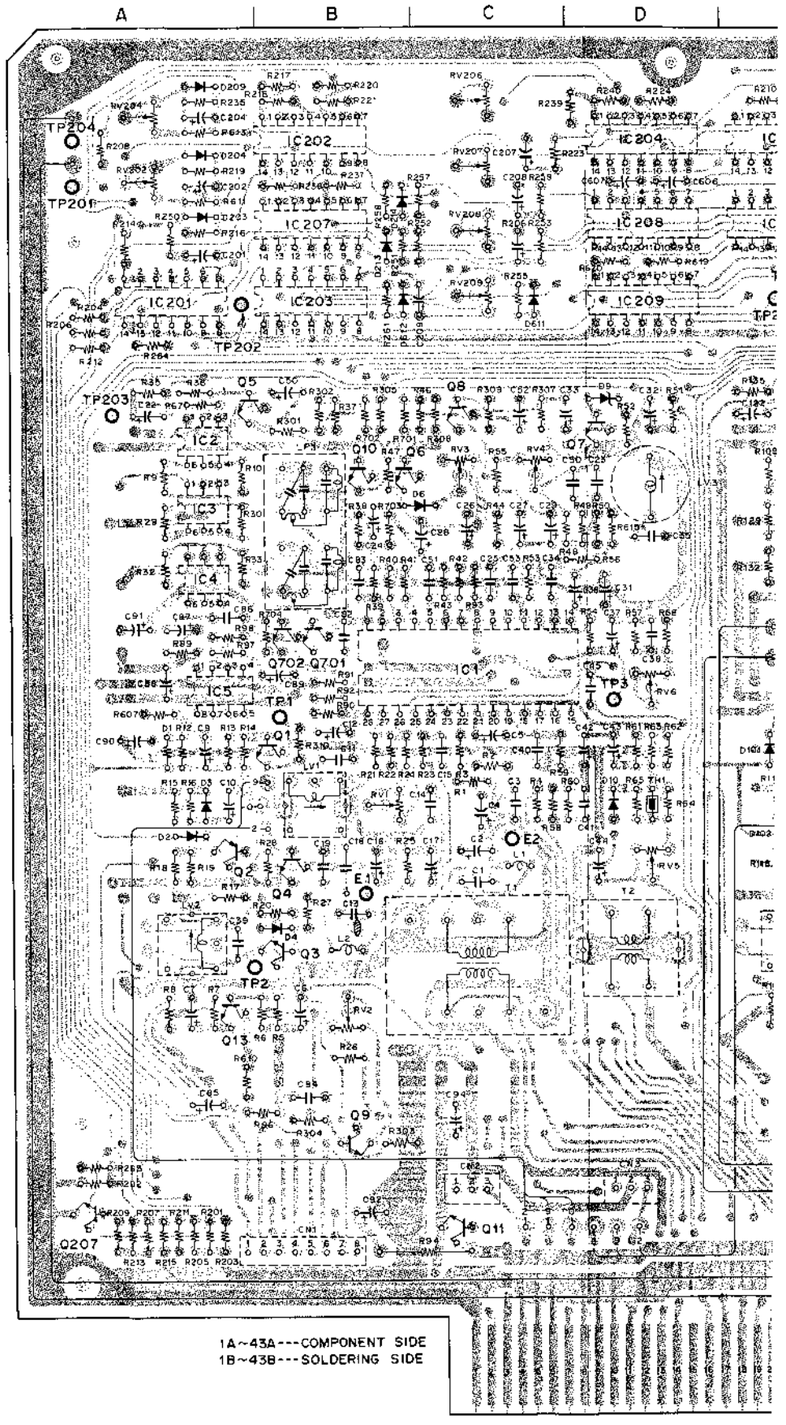
RY501 C-1
RY502 C-2

T501 G-2
T502 E-2
T503 D-2
T504 A-1

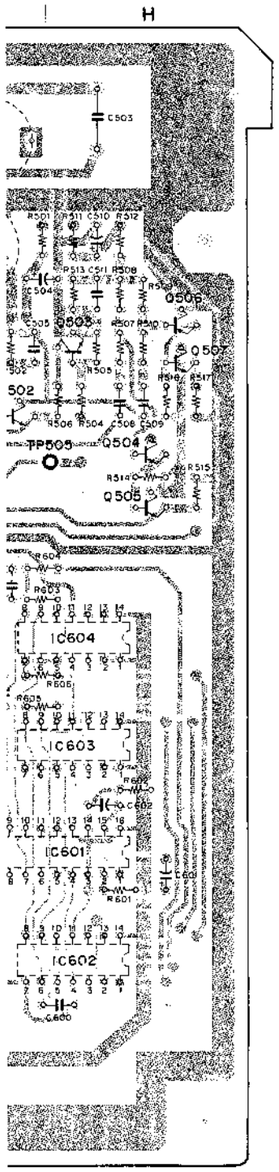
TP501 G-3
TP502 E-3
TP503 D-3
TP504 B-1
TP505 H-3
TP506 F-3
TP507 E-3
TP508 B-3
TP509 C-3
TP510 C-3
TP511 B-3

AU-25 –SOLDERING SIDE–
1-604-338-15
BVU-800 (S/N. 16301～(U/C)
S/N. 11101～(J))
BVU-800P S/N. 12356～
BVU-800S S/N. 10186～
BVU-800PM S/N. 10151～

AU-13 (AUDIO REC/PB AMPLIFIER)
(AUDIO SYSTEM CONTROL)



AU-13 (AUDIO REC/PB AMPLIFIER) (AUDIO SYSTEM CONTROL)



CN5 B-7
CN6 F-7

D501 B-2
D502 B-3
D503 F-2
D504 E-2
D505 A-4

E501 G-3
E502 A-1

IC601 H-6
IC602 H-7
IC603 H-5
IC604 H-4
IC605 F-6
IC606 F-5

LV501 G-1
LV502 E-2
LV503 D-2
LV504 B-1
LV505 B-2
LV506 B-2

Q501 G-3
Q502 G-3
Q503 H-3
Q504 H-3
Q505 H-4
Q506 H-2
Q507 H-3
Q508 F-1
Q509 E-1
Q510 F-2
Q511 D-1
Q512 D-1
Q513 E-1
Q514 A-2
Q515 A-2
Q516 A-3
Q517 C-2
Q518 C-3

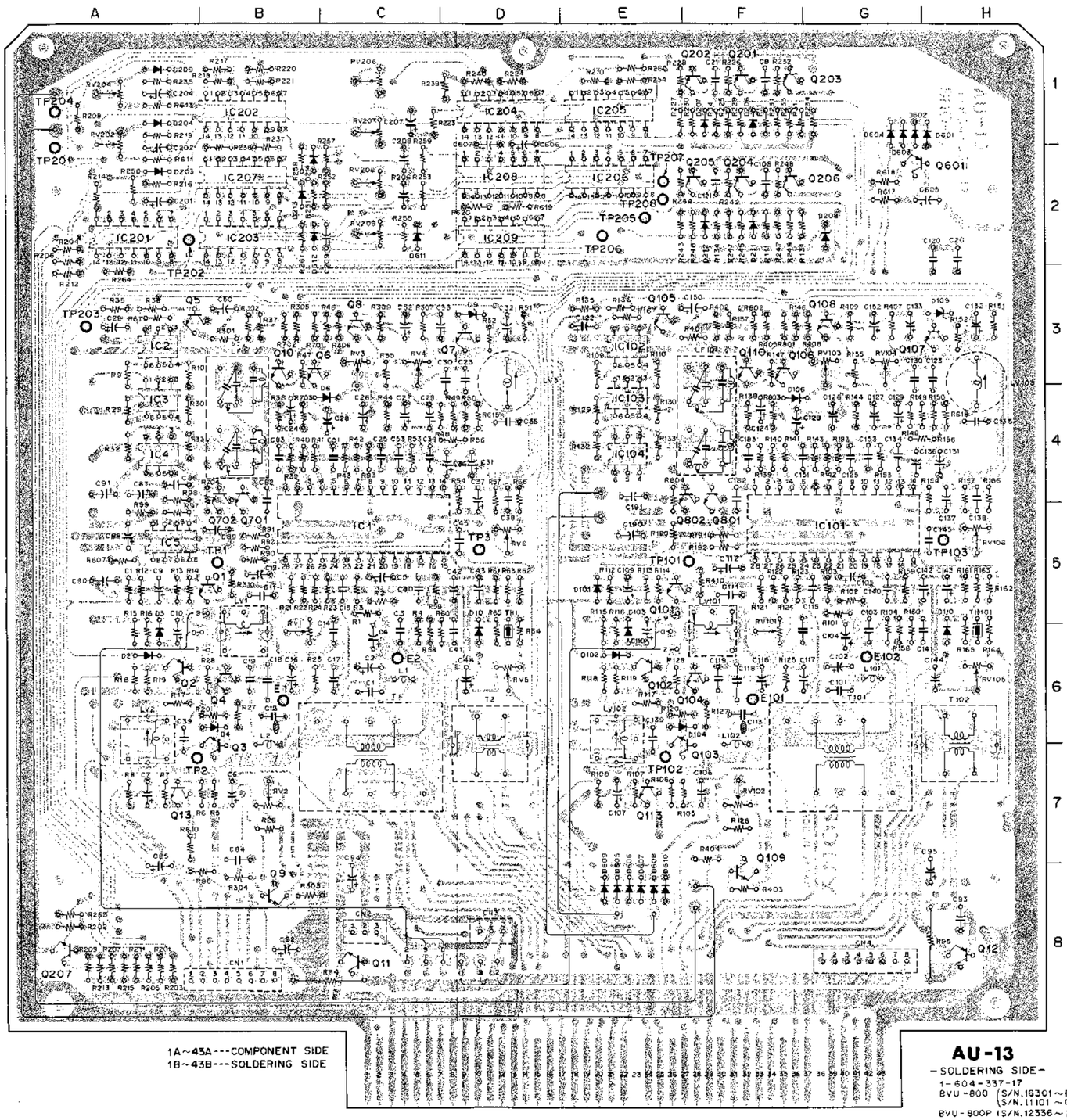
RV501 F-2
RV502 E-1

RY501 C-1
RY502 C-2

T501 G-2
T502 E-2
T503 D-2
T504 A-1

TP501 G-3
TP502 E-3
TP503 D-3
TP504 B-1
TP505 H-3
TP506 F-3
TP507 E-3
TP508 B-3
TP509 C-3
TP510 C-3
TP511 B-3

AU-25 –SOLDERING SIDE–
-604-336-15
BVU-800 (S/N. 16301 ~ (U/C) S/N. 11101 ~ (J))
BVU-800P S/N. 12336 ~
BVU-800S S/N. 10186 ~
BVU-800PM S/N. 10151 ~



CN3 D-8
CN4 G-8

D1 A-5
D2 A-6
D3 A-6
D4 B-6
D6 C-4
D9 D-3
D10 D-6
D101 E-5
D102 E-6
D103 E-6
D104 F-6
D106 F-4
D109 H-3
D110 H-6
D203 A-2
D204 A-1
D206 F-1
D207 F-1
D208 G-2
D209 A-1
D211 F-2
D212 F-2
D213 B-2
D214 B-2
D601 H-1
D602 G-1
D603 G-1
D604 G-1
D605 E-8
D606 E-8
D607 E-8
D608 E-8
D609 E-8
D610 E-8
D611 C-2
D612 B-2

E1 B-6
E2 C-6
E101 F-6
E102 G-6

IC1 C-5
IC2 A-3
IC3 A-4
IC4 A-4
IC5 A-5
IC101 G-5
IC102 E-3
IC103 E-4
IC104 E-4
IC201 A-2
IC202 B-1
IC203 B-2
IC204 D-1
IC205 E-1
IC206 E-2
IC207 B-2
IC208 D-2
IC209 D-2

LF1 B-4
LF101 F-4

LV1 B-6
LV2 A-6
LV3 D-3
LV101 F-6
LV102 E-6
LV103 H-3

Q1 B-5
Q2 A-6
Q3 B-7
Q4 B-6
Q5 A-3
Q6 C-3
Q7 D-3
Q8 C-3
Q9 B-8
Q10 B-3
Q11 C-8
Q12 H-8
Q13 A-7
Q101 E-5
Q102 E-6
Q103 F-7
Q104 F-6
Q105 E-3
Q106 F-3
Q107 H-3
Q108 G-3
Q109 F-8
Q201 F-1
Q202 F-1
Q203 F-1
Q204 F-2
Q205 F-2
Q206 F-2
Q207 A-8
Q601 G-2
Q701 B-4
Q702 B-4
Q801 F-4
Q802 F-4

RV1 B-6
RV2 B-7
RV3 C-3
RV4 C-3
RV5 D-6
RV6 D-5
RV101 F-6
RV102 F-7
RV103 G-3
RV104 G-3
RV105 H-6
RV106 H-5
RV202 A-1
RV204 A-1
RV206 C-1
RV207 C-1
RV208 C-2
RV209 C-2

T1 C-7
T2 D-6
T101 G-7
T102 H-6

TH1 D-6
TH101 H-6

TP1 B-5
TP2 A-7
TP3 D-5
TP101 F-5
TP102 E-7
TP103 H-5
TP201 A-1
TP202 A-2
TP203 A-3
TP204 A-1
TP205 E-2
TP206 E-2
TP207 E-2
TP208 E-2

1A~43A---COMPONENT SIDE
1B~43B---SOLDERING SIDE

AU-13
–SOLDERING SIDE–
1-604-337-17
BVU-800 (S/N. 16301 ~ (U/C) S/N. 11101 ~ (J))
BVU-800P (S/N. 12336 ~)
BVU-800S (S/N. 10186 ~)
BVU-800PM (S/N. 10151 ~)

AU-13 (AUDIO REC/PB AMPLIFIER)
(AUDIO SYSTEM CONTROL)
AU-25 (BIAS/ERASE OSCILLATOR)

NOTE

MARK	CHANGE INFORMATION	SERIAL NO.
※1	C523, C524 1/35→DELETED	14951～(U/C) 10851～(J) 10106～(SECAM) 11646～(PAL) 10151～(PM) 90101～(PM)

MARK	CHANGE INFORMATION	SERIAL NO.
※2	C523, C524 1/35V ADDED	15251～(U/C) 10851～(J) 10186～(SECAM) 11986～(PAL) 10151～(PM) 90101～(PM)

MARK	CHANGE INFORMATION	SERIAL NO.
※3	C610 270P ADDED	15451～(U/C) 10951～(J) 12186～(PAL) 10186～(SECAM) 10151～(PM) 90101～(PM)

MARK	CHANGE INFORMATION	SERIAL NO.
※4	C502 10/16V→0.047	15301～(U/C) 11101～(J) 12336～(PAL) 10185～(SECAM) 10151～(PM) 90101～(PM)

REF NO.	TYPE	PIN NO. +V(12V)	PIN NO. GND
IC201	TC4071BP , CD4071BE	14	7
IC202	TC4069UBP , CD4069UBE	14	7
IC203	TC4081BP , CD4081BE	14	7
IC204	TC4069UBP , CD4069UBE	14	7
IC205	TC4081BP , CD4081BE	14	7
IC206	TC4081BP , CD4081BE	14	7
IC207	TC4081BP , CD4081BE	14	7
IC208	TC4069UBP , CD4069UBE	14	7
IC209	TC4069UBP , CD4069UBE	14	7

REF NO.	TYPE	PIN NO. VDD(12V)	PIN NO. GND
IC401	MC14538BCP	16	8
IC402	TC4030BP, CD4030BE	14	7
IC403	TC4071BP, CD4071BE	14	7
IC404	TC4081BP, CD4081BE	14	7
IC405	MD14538BP, MC14538BCP	16	8
IC406	TC4013BP, CD4013BE	14	7

AU-25
1-604-338-14,15
BVU-800
BVU-800P
BVU-800S
BVU-800PM

NOTE

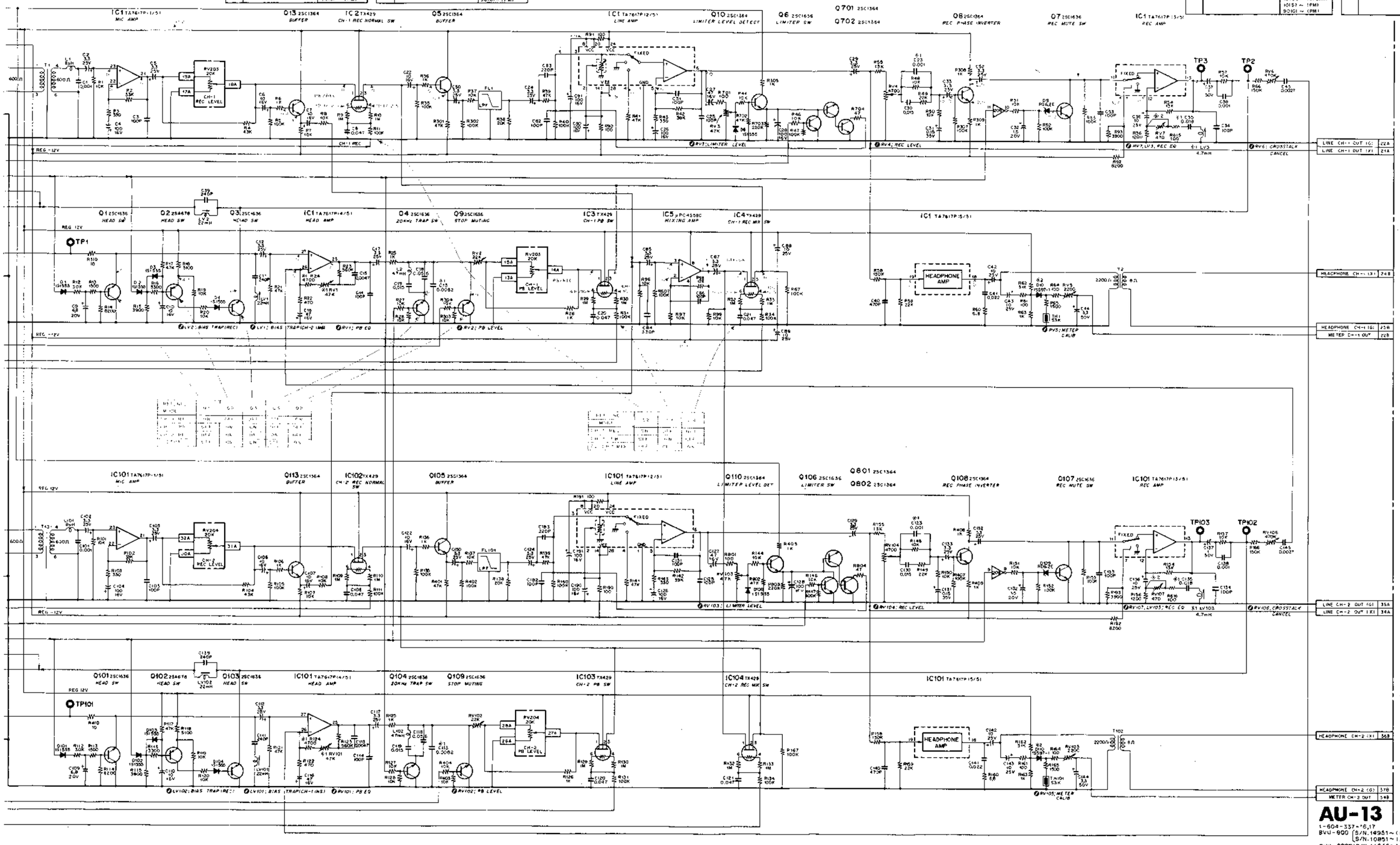
MARK	CHANGE INFORMATION	SERIAL NO.
※1	C13, C113 0.0082→CHANGE R24, R124 10K→4700 RV1, RV101 22K→47K	15251～(U/C) 10851～(J) 11646～(SECAM) 10136～(PAL) 10151～(PM) 90101～(PM)

MARK	CHANGE INFORMATION	SERIAL NO.
※2	RV7 / RV107 → SHORTED	16301～(U/C) 11101～(J) 12336～(PAL) 10186～(SECAM) 10151～(PM) 90101～(PM)

NOTE

MARK	CHANGE INFORMATION	SERIAL NO.
※1	C83, C123 0.001→0.0022 C35, C135 0.0022→0.018 LV3, LV103 3.3mH→4.7mH	15251～(U/C) 10851～(J) 11646～(SCA) 10136～(SECAM) 10157～(PM) 90101～(PM)

MARK	CHANGE INFORMATION	SERIAL NO.
※2	D10, 110 151925→1S59T-1	24456～(U/C) 12615～(J) 16889～(PAL) 10663～(SECAM) 10563～(PM) 90121～(PM)

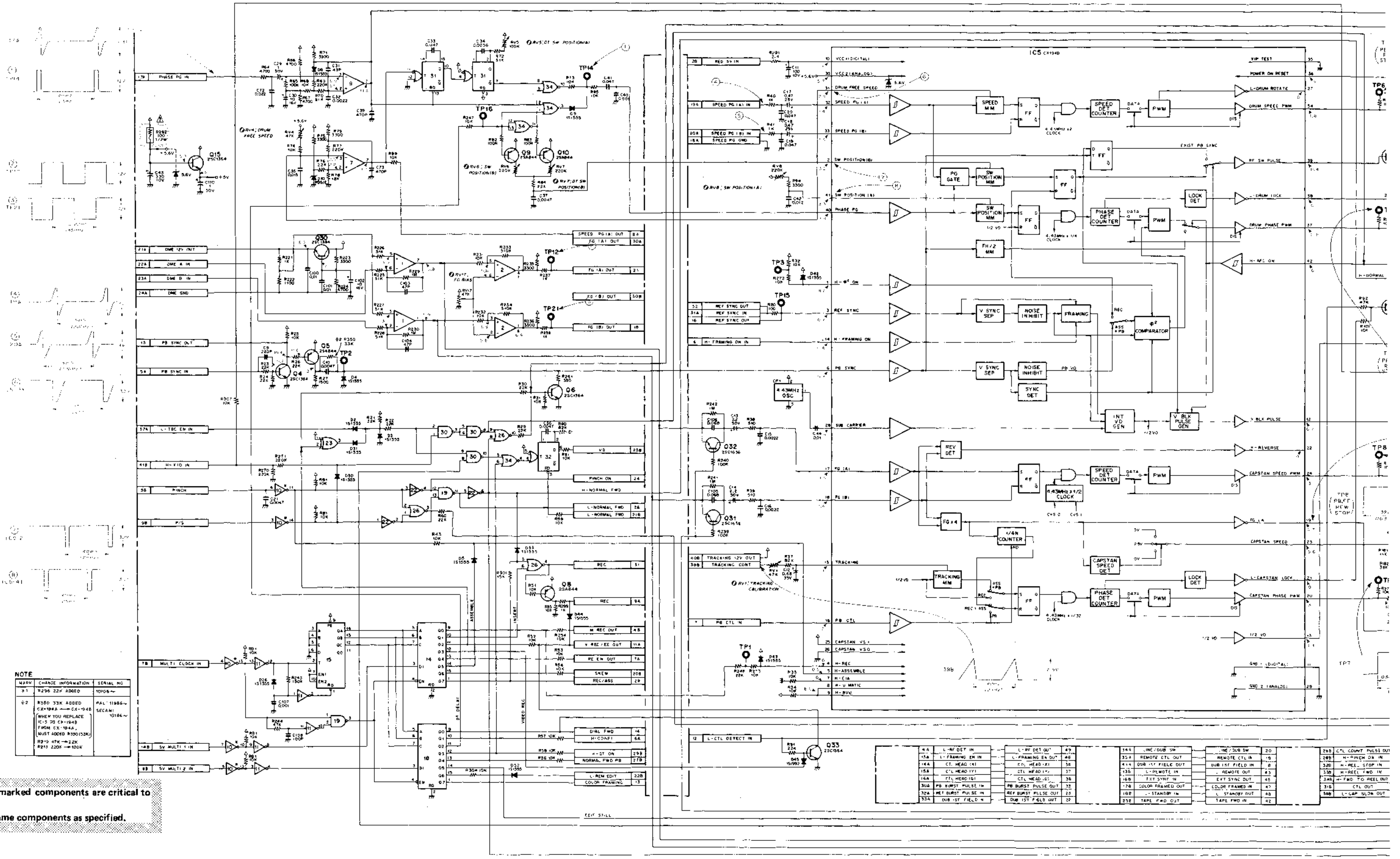


AU-13

L-604-337-*6,17
BVU-900 [S/N.14951～(U/C1) S/N.10851～(J)]
BVU-800P(S/N.11646～)
BVU-800S(S/N.10106～)
BVU-800PM[S/N.10151～ S/N.90101～]

V-52 (DRUM SERVO)
(CAPSTAN SERVO)

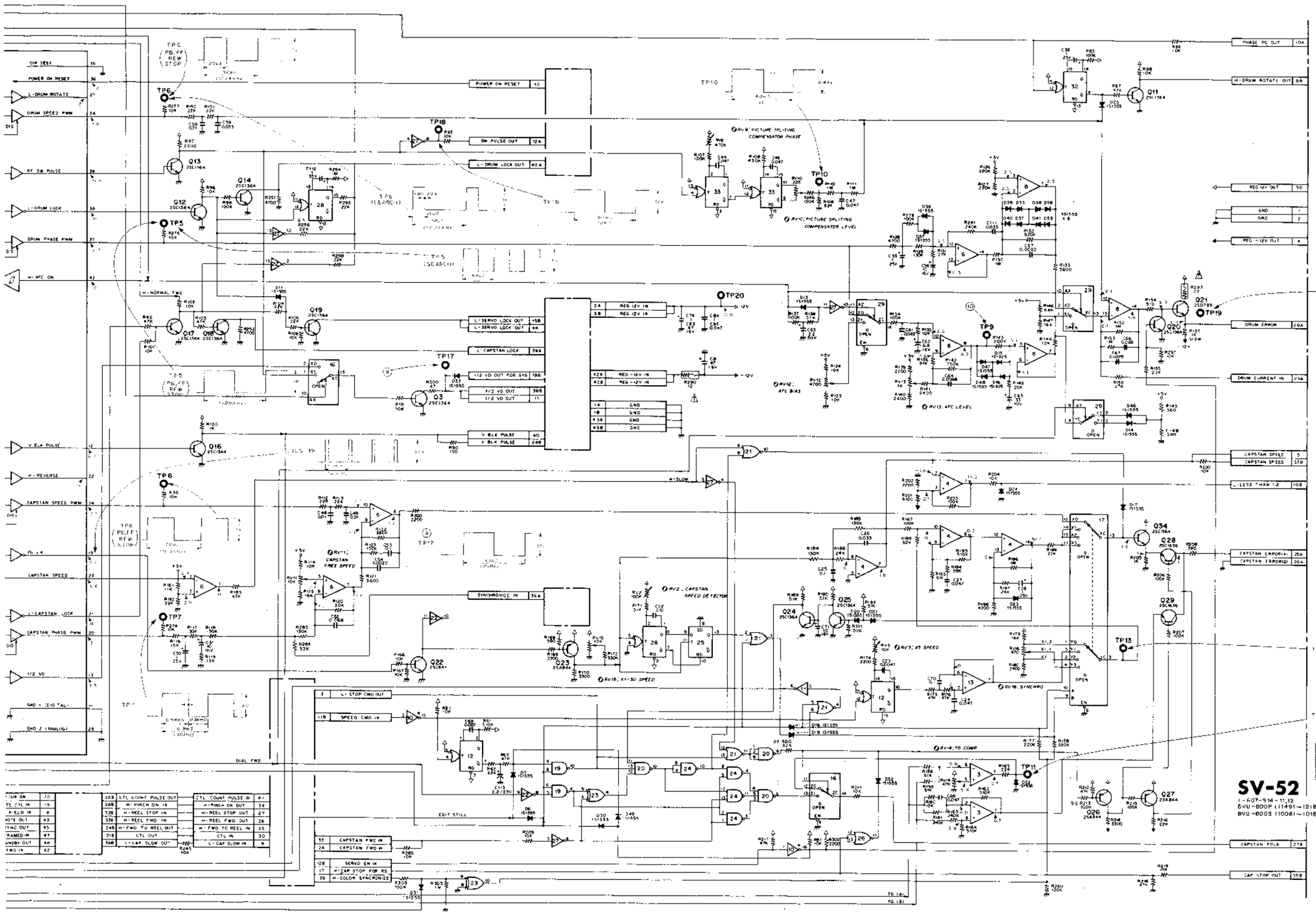
SER. NO. 11491 to 12185 (PAL)
SER. NO. 10081 to 10185 (SECAM)



NOTE

MARK	CHANGE INFORMATION	SERIAL NO
※1	R296 22K ADDED	10705～
※2	R350 33K ADDED CX-194A → CX-194B (WHEN YOU REPLACE IC-5 TO CX-194B FROM CX-194A, MUST ADDED R350(33K)) R270 47K → 22K R271 220K → 100K	PAL: 11986～ SECAM: 10186～

The shaded and ⚠-marked components are critical to safety.
Replace only with same components as specified.



17-47 (a)

17-48 (a)

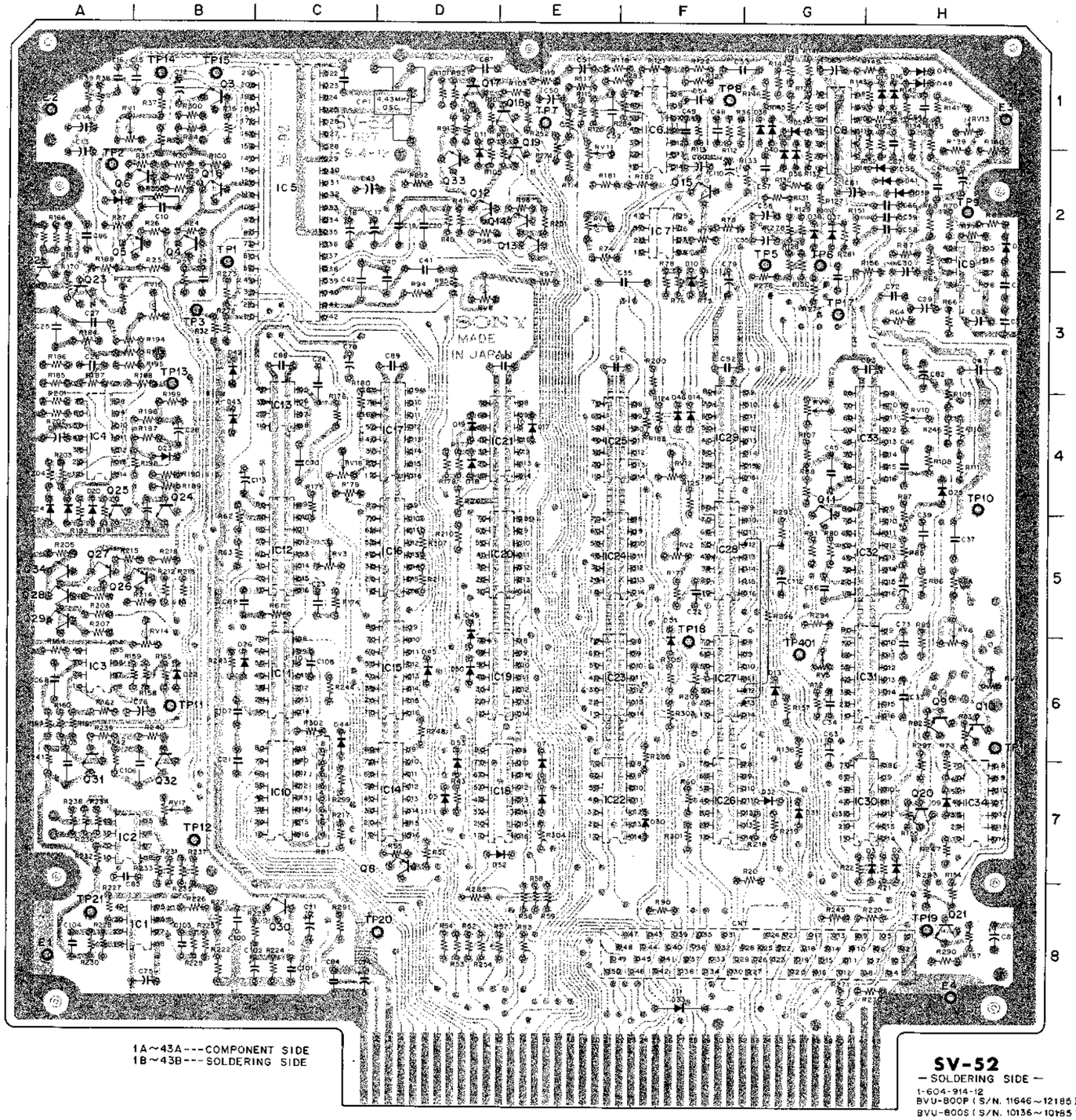
SV-52

1-607-914-11,12
BVU-800P (110491~121851)
BVU-800S (110081~110851)

SV-52 (DRUM SERVO)
(CAPSTAN SERVO)

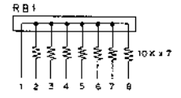
SER. NO. 11646 to 12185 (PAL)

REF NO.	TYPE	PIN NO.			
		+VH(12V)	+V(5V)	GND	-VI(-12V)
IC 1	μPC4558C	8		4	
IC 2	NJM2903D	8		4	
IC 3	μPC4558C	8			4
IC 4	μPC324C	4			11
IC 5	CX194A	30	10	11,29	
IC 6	μPC324C	4		11	
IC 7	μPC311C	8		1,4	
IC 8	μPC324C	4		11	
IC 9	μPC311C	8		1,4	
IC10	M54517P			8	
IC11	TC4069UBP,CD4069UBE	14		7	
IC12	MC1453B6CP	16		8	
IC13	μPC4558C	8			4
IC14	TC4099BP , CD4099BE	16		8	
IC15	TC4016BP , CD4016BE	16		8	
IC16	TC4053BP , CD4053BE	16		8	
IC17	TC4052BP , CD4052BE	16		8	
IC18	TC4099BP , CD4099BE	16		8	
IC19	TC4011BP , CD4011BE	14		7	
IC20	TC4023BP , CD4023BE	14		7	
IC21	TC4001BP , CD4001BE	14		7	
IC22	TC4069UBP, CD4069UBE	14		7	
IC23	TC4030BP , CD4030BE	14		7	
IC24	TC4011BP , CD4011BE	14		7	
IC25	TC4013BP , CD4013BE	14		7	
IC26	TC4001BP , CD4001BE	14		7	
IC27	TC4069UBP, CD4069UBE	14		7	
IC28	MC14538BCP	16		8	
IC29	TC4053BP , CD4053BE	16		8	
IC30	TC4011BP , CD4011BE	14		7	
IC31	MC14538BCP	16		8	
IC32	MC14538BCP	16		8	
IC33	MC14538BCP	16		8	
IC34	TC4001BP , CD4001BE	14		7	



CN1	G-8	IC1	B-8	RB1	C-7
		IC2	A-7		
CP1	D-1	IC3	A-6	RV1	A-1
		IC4	A-4	RV2	F-5
D2	H-7	IC5	C-2	RV3	C-5
D3	H-7	IC6	F-1	RV4	E-2
D4	A-2	IC7	F-2	RV5	G-6
D5	D-7	IC8	G-1	RV6	H-5
D6	E-7	IC9	H-2	RV7	H-6
D7	E-7	IC10	C-7	RV8	D-3
D8	H-2	IC11	C-6	RV9	G-4
D9	H-7	IC12	C-5	RV10	H-4
D10	F-3	IC13	C-4	RV11	E-2
D11	D-2	IC14	D-7	RV12	F-4
D13	G-8	IC15	D-6	RV13	H-1
D14	F-4	IC16	D-5	RV14	B-5
D15	H-1	IC17	D-4	RV15	B-3
D16	H-1	IC18	E-7	RV16	C-4
D17	E-4	IC19	E-6	RV17	B-7
D18	D-4	IC20	E-5		
D19	D-4	IC21	E-4	TP1	B-2
D20	A-4	IC22	E-7	TP2	A-2
D21	A-4	IC23	E-6	TP3	B-3
D22	B-6	IC24	E-5	TP5	G-2
D23	B-4	IC25	E-4	TP6	G-2
D24	A-4	IC26	F-7	TP7	E-1
D25	H-4	IC27	F-6	TP8	F-1
D26	B-6	IC28	F-5	TP9	H-2
D30	F-7	IC29	F-4	TP10	H-4
D31	G-7	IC30	H-7	TP11	B-6
D32	G-7	IC31	H-6	TP12	B-7
D33	F-8	IC32	H-5	TP13	B-3
D36	G-2	IC33	H-4	TP14	B-1
D37	G-2	IC34	H-7	TP15	B-1
D38	G-1			TP16	H-6
D39	H-2	Q3	B-1	TP17	G-3
D40	G-1	Q4	B-2	TP18	F-6
D41	H-2	Q5	B-2	TP19	H-8
D42	B-3	Q6	B-2	TP20	D-8
D43	B-4	Q8	D-7	TP21	A-8
D44	C-8	Q9	H-6		
D45	D-6	Q10	H-6		
D46	F-4	Q11	G-5		
D47	H-1	Q12	D-2		
D48	H-1	Q13	E-2		
D49	D-5	Q14	E-2		
D50	D-6	Q15	F-2		
D51	F-6	Q16	B-2		
D52	E-7	Q17	D-1		
D53	D-7	Q18	E-1		
D55	H-2	Q19	E-2		
D56	G-2	Q20	H-7		
D57	G-1	Q21	H-8		
D58	G-2	Q22	A-3		
		Q23	A-3		
E1	A-8	Q24	B-4		
E2	A-1	Q25	A-4		
E3	H-1	Q26	B-5		
E4	H-8	Q27	A-5		
		Q28	A-5		
		Q29	A-5		
		Q30	C-8		
		Q31	A-7		
		Q32	B-7		
		Q33	D-2		
		Q34	A-5		

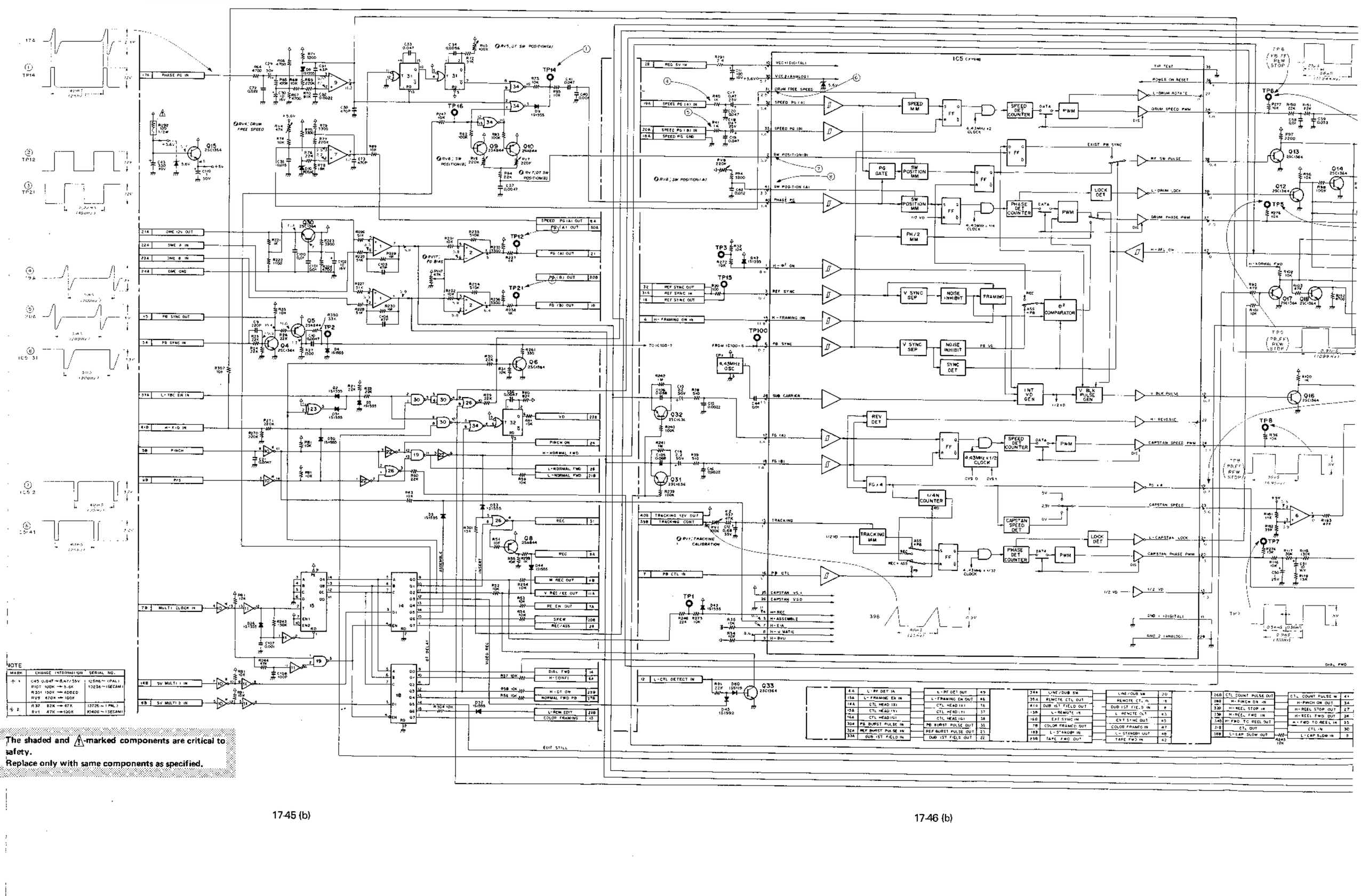
NOTE
※1 (R350)
WHEN YOU REPLACE IC-5
TO CX-194B FROM CX-194A
MUST ADDED R350



SV-52
— SOLDERING SIDE —
1-604-914-12
BVU-800P (S/N. 11646~12185)
BVU-800S (S/N. 10136~10185)

SV-52 (DRUM SERVO) (CAPSTAN SERVO)

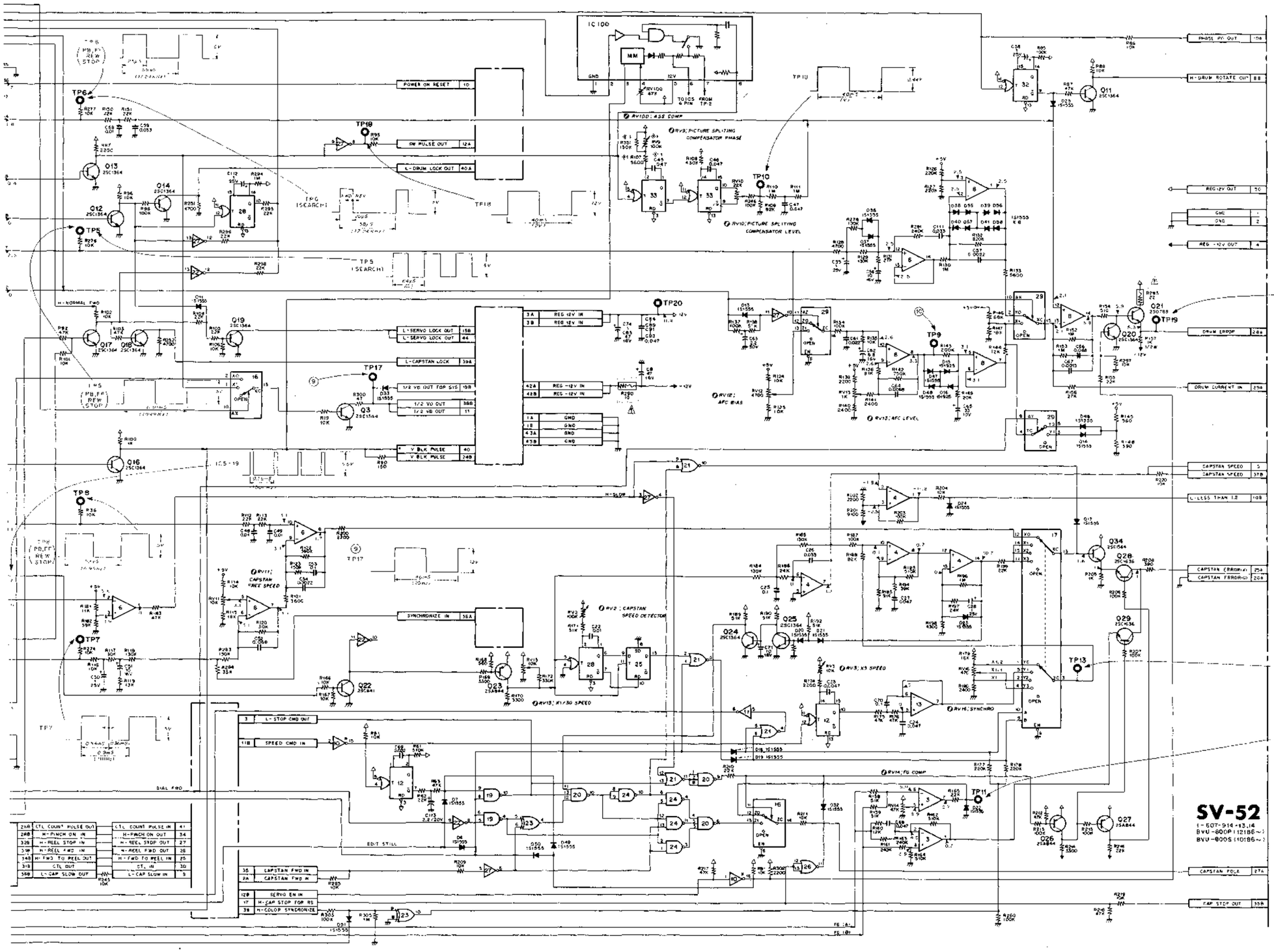
SER. NO. 12186 and higher (PAL)
SER. NO. 10186 and higher (SECAM)



NOTE

MARK	CHANGE INFORMATION	SERIAL NO.
※1	C45 0.047 → 0.47/50V R107 100K → 5.6K R351 150K → ADDED RV9 470K → 100K	12586~ (PAL) 10236~ (SECAM)
※2	R37 82K → 47K RV1 47K → 100K	13726~ (PAL) 10406~ (SECAM)

The shaded and ⚠-marked components are critical to safety.
Replace only with same components as specified.

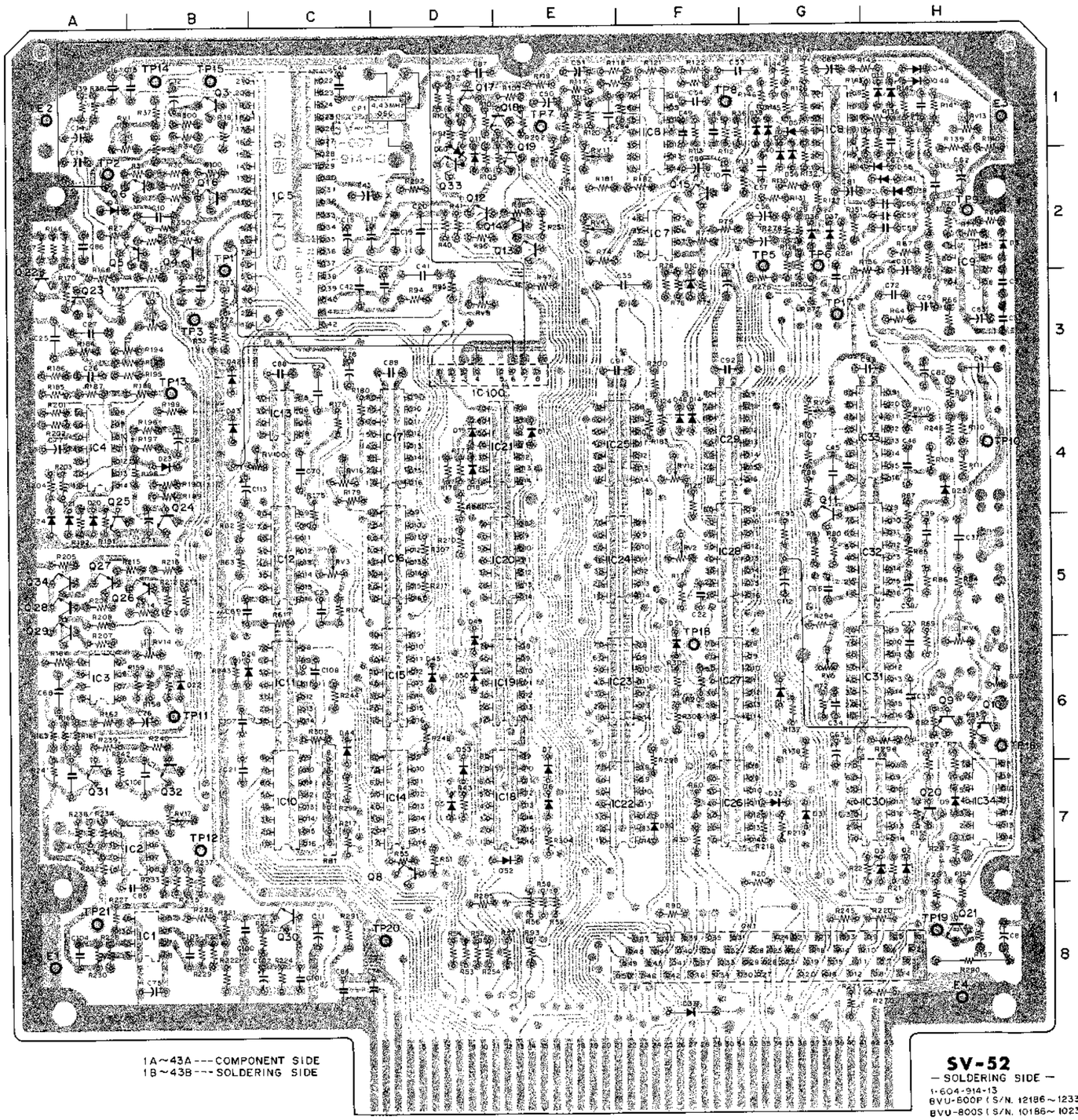

IC100
TP6
TP5
TP8
TP7
TP17
TP18
TP10
TP11
TP20
TP9
TP13
POWER ON RESET
SW PULSE OUT
L-DRUM LOCK OUT
L-SERVO LOCK OUT
L-CAPSTAN LOCK
1/2 V0 OUT FOR SIG
1/2 V0 OUT
V BLK PULSE
REG +12V IN
REG -12V IN
GND
SYNCHRONIZE IN
L-STOP CMD OUT
SPEED CMD IN
SERVO EN IN
H-CAP STOP FOR RS
H-COLOR SYNCHRONIZE
CAPSTAN FWD IN
PHASE PG OUT
H-DRUM ROTATE OUT
REG +12V OUT
REG -12V OUT
DRUM ERROR
DRUM CURRENT IN
CAPSTAN SPEED
L-LESS THAN 1.2
CAPSTAN ERROR(A)
CAPSTAN ERROR(B)
CAPSTAN POLE
CAP STOP OUT
CTL COUNT PULSE OUT
H-PINCH ON IN
H-REEL FWD IN
H-FWD TO REEL OUT
CTL OUT
L-CAP SLOW OUT
CTL COUNT PULSE IN
H-PINCH ON OUT
H-REEL STOP OUT
H-REEL FWD OUT
H-FWD TO REEL IN
CT. IN
L-CAP SLOW IN
RV100: 4.5S COMP
RV9; PICTURE SPLITING COMPENSATOR PHASE
RV10; PICTURE SPLITING COMPENSATOR LEVEL
RV11; CAPSTAN FREE SPEED
RV12; APC BIAS
RV13; APC LEVEL
RV2; CAPSTAN SPEED DETECTOR
RV3; X3 SPEED
RV13; X1/30 SPEED
RV14; FG COMP
RV15; SYNCHRO
SV-52
1-607-914-13.14
BVU-800P (12186~)
BVU-800S (10186~)

17-47 (b)

17-48 (b)

SV-52 (DRUM SERVO)
(CAPSTAN SERVO)

SER. NO. 12186 to 12335 (PAL)
SER. NO. 10186 to 10235 (SECAM)



REF NO.	TYPE	PIN NO.			
		+V(+12V)	+V(5V)	GND	-V(-12V)
IC 1	μPC4558C	8		4	
IC 2	NJM2903D	8		4	
IC 3	μPC4558C	8			4
IC 4	μPC324C	4			11
IC 5	CX194A	30	10	11,29	
IC 6	μPC324C	4		11	
IC 7	μPC311C	8		1,4	
IC 8	μPC324C	4		11	
IC 9	μPC311C	8		1,4	
IC 10	M54517P			8	
IC 11	TC4069UBP,CD4069UBE	14		7	
IC 12	MC14538BCP	16		8	
IC 13	μPC4558C	8			4
IC 14	TC4099BP , CD4099BE	16		8	
IC 15	TC40161BP , CD40161BE	16		8	
IC 16	TC4053BP , CD4053BE	16		8	
IC 17	TC4052BP , CD4052BE	16		8	
IC 18	TC4099BP , CD4099BE	16		8	
IC 19	TC4011BP , CD4011BE	14		7	
IC 20	TC4023BP , CD4023BE	14		7	
IC 21	TC4001BP , CD4001BE	14		7	
IC 22	TC4069UBP, CD4069UBE	14		7	
IC 23	TC4030BP , CD4030BE	14		7	
IC 24	TC4011BP , CD4011BE	14		7	
IC 25	TC4013BP , CD4013BE	14		7	
IC 26	TC4001BP , CD4001BE	14		7	
IC 27	TC4069UBP, CD4069UBE	14		7	
IC 28	MC14538BCP	16		8	
IC 29	TC4053BP , CD4053BE	16		8	
IC 30	TC4011BP , CD4011BE	14		7	
IC 31	MC14538BCP	16		8	
IC 32	MC14538BCP	16		8	
IC 33	MC14538BCP	16		8	
IC 34	TC4001BP , CD4001BE	14		7	

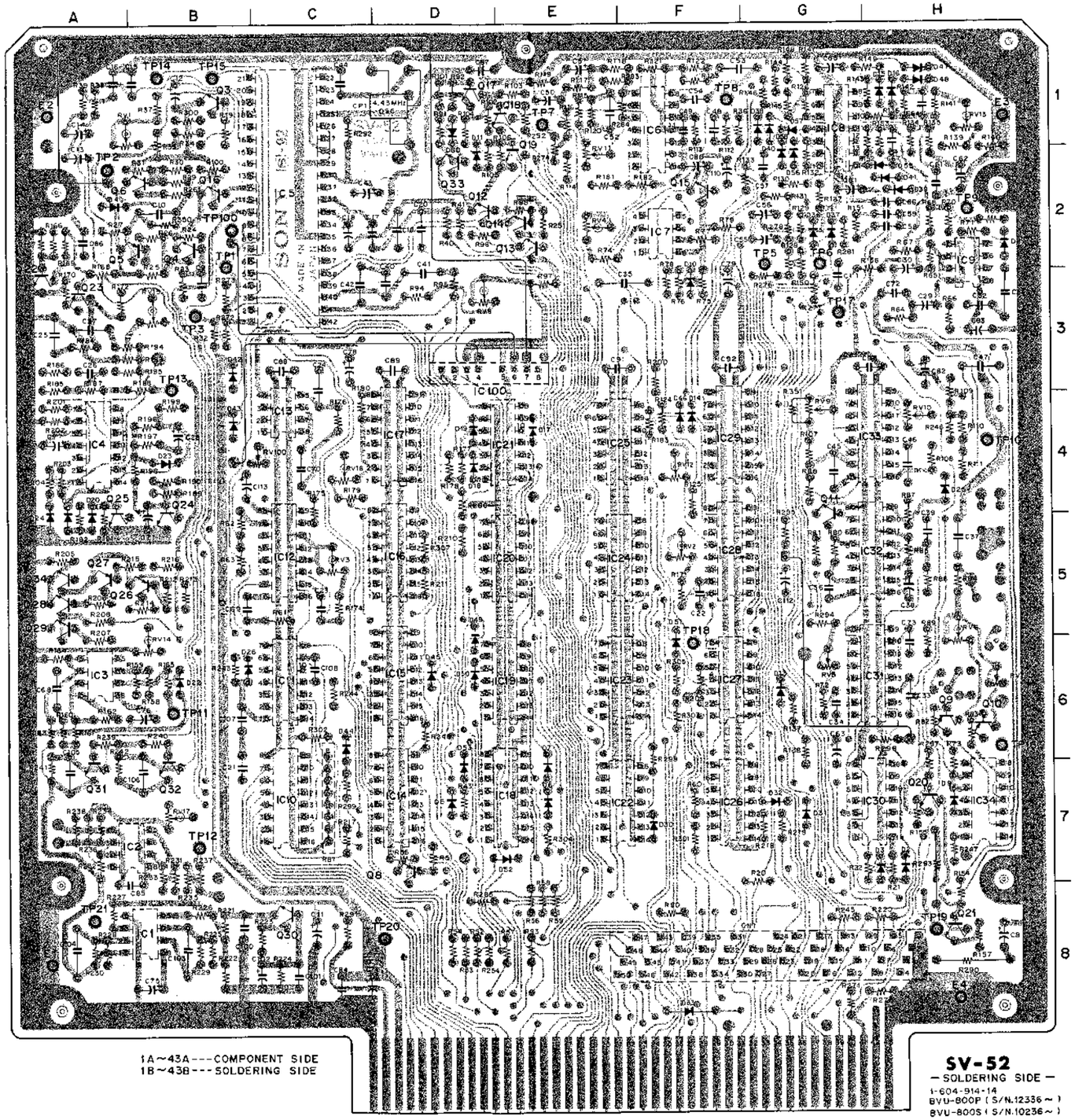
CN1	G-8	IC1	B-8	RB1	C-7
		IC2	A-7		
CP1	D-1	IC3	A-5	RV1	A-1
		IC4	A-4	RV2	F-5
D2	H-7	IC5	C-2	RV3	C-5
D3	H-7	IC6	F-1	RV4	E-2
D4	A-2	IC7	F-2	RV5	G-6
D5	D-7	IC8	G-1	RV6	H-5
D6	E-7	IC9	H-2	RV7	H-6
D7	E-7	IC10	C-7	RV8	D-3
D8	H-2	IC11	C-6	RV9	G-4
D9	H-7	IC12	C-5	RV10	H-4
D10	F-3	IC13	C-4	RV11	E-2
D11	D-2	IC14	D-7	RV12	F-4
D13	G-6	IC15	D-6	RV13	H-1
D14	F-4	IC16	D-5	RV14	B-5
D15	H-1	IC17	D-4	RV15	B-3
D16	H-1	IC18	E-7	RV16	C-4
D17	E-4	IC19	E-6	RV17	B-7
D18	D-4	IC20	E-5	RV100	C-4
D19	D-4	IC21	E-4		
D20	A-4	IC22	E-7	TP1	B-2
D21	A-4	IC23	E-6	TP2	A-2
D22	B-6	IC24	E-6	TP3	B-3
D23	B-4	IC25	E-4	TP5	G-2
D24	A-4	IC26	F-7	TP6	G-2
D25	H-4	IC27	F-6	TP7	E-1
D26	B-6	IC28	F-5	TP8	F-1
D30	F-7	IC29	F-4	TP9	H-2
D31	G-7	IC30	H-7	TP10	H-4
D32	G-7	IC31	H-6	TP11	B-6
D33	F-8	IC32	H-5	TP12	B-7
D36	G-2	IC33	H-4	TP13	B-3
D37	G-2	IC34	H-7	TP14	B-1
D38	G-1	IC100	D-3	TP15	B-1
D39	H-2			TP16	H-6
D40	G-1	Q3	B-1	TP17	G-3
D41	H-2	Q4	B-2	TP18	F-6
D42	B-3	Q5	B-2	TP19	H-8
D43	B-4	Q6	B-2	TP20	D-8
D44	C-6	Q8	D-7	TP21	A-8
D45	D-8	Q9	H-6		
D46	F-4	Q10	H-6		
D47	H-1	Q11	G-5		
D48	H-1	Q12	D-2		
D49	D-5	Q13	E-2		
D50	D-6	Q14	E-2		
D51	F-8	Q15	F-2		
D52	E-7	Q16	B-2		
D53	D-7	Q17	D-1		
D55	H-2	Q18	E-1		
D56	G-2	Q19	E-2		
D57	G-1	Q20	H-7		
D58	G-2	Q21	H-8		
D60	D-1	Q22	A-3		
		Q23	A-3		
E1	A-8	Q24	B-4		
E2	A-1	Q25	A-4		
E3	H-1	Q26	B-5		
E4	H-8	Q27	A-5		
		Q28	A-5		
		Q29	A-5		
		Q30	C-8		
		Q31	A-7		
		Q32	B-7		
		Q33	D-2		
		Q34	A-5		

1A~43A---COMPONENT SIDE
1B~43B---SOLDERING SIDE

SV-52
— SOLDERING SIDE —
1-604-914-13
BVU-800P (S/N. 12186~12335)
BVU-800S (S/N. 10186~10235)

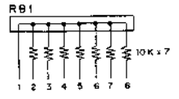
SV-52 (DRUM SERVO)
(CAPSTAN SERVO)

SER. NO. 12336 and higher (PAL)
SER. NO. 10236 and higher (SECAM)



REF NO.	TYPE	PIN NO. +V(+12V)	+V(5V)	GND	-V(-12V)
IC 1	μPC4558C	8		4	
IC 2	NJM2903D	8		4	
IC 3	μPC4558C	8			4
IC 4	μPC324C	4			11
IC 5	CX194A	30	10	11,29	
IC 6	μPC324C	4		11	
IC 7	μPC311C	8		1,4	
IC 8	μPC324C	4		11	
IC 9	μPC311C	8		1,4	
IC 10	M54517P			8	
IC 11	TC4069UBP,CD4069UBE	14		7	
IC 12	MC14538BCP	16		8	
IC 13	μPC4558C	8			4
IC 14	TC4099BP , CD4099BE	16		8	
IC 15	TC40161BP , CD40161BE	16		8	
IC 16	TC40539BP , CD4053BE	16		8	
IC 17	TC40528P , CD4052BE	16		8	
IC 18	TC4099BP , CD4099BE	16		8	
IC 19	TC4011BP , CD4011BE	14		7	
IC 20	TC4023BP , CD4023BE	14		7	
IC 21	TC4001BP , CD4001BE	14		7	
IC 22	TC4069UBP, CD4069UBE	14		7	
IC 23	TC4030BP , CD4030BE	14		7	
IC 24	TC4011BP , CD4011BE	14		7	
IC 25	TC4013BP , CD4013BE	14		7	
IC 26	TC4001BP , CD4001BE	14		7	
IC 27	TC4069UBP, CD4069UBE	14		7	
IC 28	MC14538BCP	16		8	
IC 29	TC40539BP , CD4053BE	16		8	
IC 30	TC4011BP , CD4011BE	14		7	
IC 31	MC14538BCP	16		8	
IC 32	MC14538BCP	16		8	
IC 33	MC14538BCP	16		8	
IC 34	TC4001BP , CD4001BE	14		7	

CN1	G-8	IC1	B-8	RB1	C-7
		IC2	A-7		
CP1	D-1	IC3	A-6	RV1	A-1
		IC4	A-4	RV2	F-5
D2	H-7	IC5	C-2	RV3	C-5
D3	H-7	IC6	F-1	RV4	E-2
D4	A-2	IC7	F-2	RV5	G-6
D5	D-7	IC8	G-1	RV6	H-5
D6	E-7	IC9	H-2	RV7	H-6
D7	E-7	IC10	C-7	RV8	D-3
D8	H-2	IC11	C-6	RV9	G-4
D9	H-7	IC12	C-5	RV10	H-4
D10	F-3	IC13	C-4	RV11	E-2
D11	D-2	IC14	D-7	RV12	F-4
D13	G-6	IC15	D-6	RV13	H-1
D14	F-4	IC16	D-5	RV14	B-5
D15	H-1	IC17	D-4	RV15	B-3
D16	H-1	IC18	E-7	RV16	C-4
D17	E-4	IC19	E-6	RV17	B-7
D18	D-4	IC20	E-5	RV100	C-4
D19	D-4	IC21	E-4		
D20	A-4	IC22	E-7	TP1	B-2
D21	A-4	IC23	E-6	TP2	A-2
D22	B-6	IC24	E-5	TP3	B-3
D23	B-4	IC25	E-4	TP5	G-2
D24	A-4	IC26	F-7	TP6	G-2
D25	H-4	IC27	F-6	TP7	E-1
D26	B-6	IC28	F-5	TP8	F-1
D30	F-7	IC29	F-4	TP9	H-2
D31	G-7	IC30	H-7	TP10	H-4
D32	G-7	IC31	H-6	TP11	B-6
D33	F-8	IC32	H-5	TP12	B-7
D36	G-2	IC33	H-4	TP13	B-3
D37	G-2	IC34	H-7	TP14	B-1
D38	G-1	IC100	D-3	TP15	B-1
D39	H-2			TP16	H-6
D40	G-1	Q3	B-1	TP17	G-3
D41	H-2	Q4	B-2	TP18	F-6
D42	B-3	Q5	B-2	TP19	H-8
D43	B-4	Q6	B-2	TP20	D-8
D44	C-6	Q8	D-7	TP21	A-8
D45	D-6	Q9	H-6	TP100	B-2
D46	F-4	Q10	H-6		
D47	H-1	Q11	G-5		
D48	H-1	Q12	D-2		
D49	D-5	Q13	E-2		
D50	D-6	Q14	E-2		
D51	F-6	Q15	F-2		
D52	E-7	Q16	B-2		
D53	D-7	Q17	D-1		
D55	H-2	Q18	E-1		
D56	G-2	Q19	E-2		
D57	G-1	Q20	H-7		
D58	G-2	Q21	H-8		
D60	D-1	Q22	A-3		
		Q23	A-3		
E1	A-8	Q24	B-4		
E2	A-1	Q25	A-4		
E3	H-1	Q26	B-5		
E4	H-8	Q27	A-5		
		Q28	A-5		
		Q29	A-5		
		Q30	C-8		
		Q31	A-7		
		Q32	B-7		
		Q33	D-2		
		Q34	A-5		



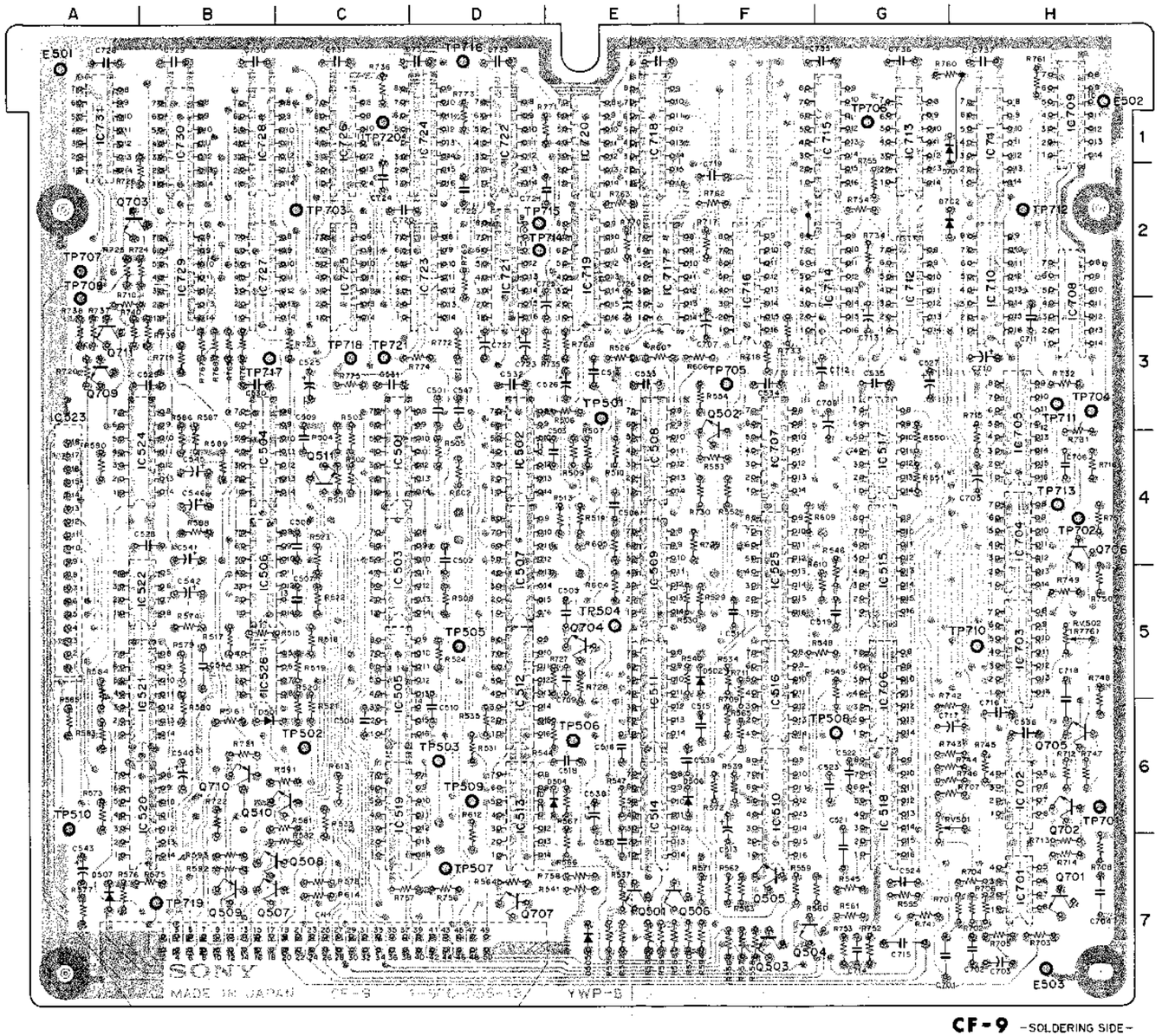
1A~43A---COMPONENT SIDE
1B~43B---SOLDERING SIDE

SV-52
— SOLDERING SIDE —
1-604-914-14
BVU-800P (S/N.12336~)
BVU-800S (S/N.10236~)

CF-9 (CTL REC
(COLOR F

CF-9 (CTL REC PB AMPLIFIER) (COLOR FRAMING)

SER. NO. 11491 and higher (PAL)
SER. NO. 10081 and higher (SECAM)



CF-9 –SOLDERING SIDE–
1-606-056-13,14
BVU-800P (S/N.11491～)
BVU-800S (S/N.10081～)

CN1	C-7	Q701	H-7	IC501	C-4	TP501	E-3
		Q702	H-6	IC502	D-4	TP502	C-6
D501	B-6	Q703	A-2	IC503	C-5	TP503	D-6
D502	F-5	Q704	E-5	IC504	B-4	TP504	E-5
D504	E-6	Q705	H-6	IC505	C-5	TP505	D-5
D505	E-7	Q706	H-4	IC506	B-5	TP506	E-6
D506	F-6	Q707	D-7	IC507	D-5	TP507	D-7
D507	A-7	Q708	A-3	IC508	E-4	TP508	G-6
D701	H-1	Q710	B-6	IC509	E-5	TP509	D-6
D702	G-2	Q711	A-3	IC510	F-6	TP510	A-6
				IC511	E-5	TP701	H-6
E501	A-1	RV501	G-6	IC512	D-5	TP702	H-4
E502	H-1	RV502 (R776)	H-5	IC513	D-6	TP703	C-2
E503	H-7			IC514	E-6	TP704	H-3
				IC515	G-5	TP705	F-3
				IC516	F-5	TP706	G-1
				IC517	G-4	TP707	A-2
				IC518	G-6	TP708	A-3
				IC519	C-6	TP710	H-5
				IC520	A-6	TP711	H-3
				IC521	A-5	TP712	H-2
				IC522	A-5	TP713	H-4
				IC523	A-4	TP714	D-2
				IC524	A-4	TP715	D-2
				IC525	F-4	TP716	D-1
				IC526	B-5	TP717	B-3
				IC701	H-7	TP718	C-3
				IC702	H-6	TP719	B-7
				IC703	H-5	TP720	C-1
				IC704	H-4	TP721	C-3
				IC705	H-4		
				IC706	G-5		
				IC707	F-4		
				IC708	H-2		
				IC709	H-1		
				IC710	H-2		
				IC711	H-1		
				IC712	G-2		
				IC713	G-1		
				IC714	G-2		
				IC715	G-1		
				IC716	F-2		
				IC717	E-2		
				IC718	E-1		
				IC719	E-2		
				IC720	E-1		
				IC721	D-2		
				IC722	D-1		
				IC723	D-2		
				IC724	D-1		
				IC725	C-2		
				IC726	C-1		
				IC727	B-2		
				IC728	B-1		
				IC729	B-2		
				IC730	B-1		
				IC731	A-1		
				Q501	E-7		
				Q502	F-4		
				Q503	F-7		
				Q504	F-7		
				Q505	F-7		
				Q506	E-7		
				Q507	B-7		
				Q508	B-7		
				Q509	B-7		
				Q510	C-6		
				Q511	C-4		

CF-9 (CTL REC PB AMPLIFIER) (COLOR FRAMING)

REF NO.	TYPE	PIN NO. +V(12V)	GND	-V(-12V)
IC501	TC4030BP,CD4030BE	14	7	
IC502	TC4011BP,CD4011BE	14	7	
IC503	TC4001BP,CD4001BE	14	7	
IC504	TC4013BP,CD4013BE	14	7	
IC505	TC4027BP,CD4027BE	16	8	
IC506	TC4001BP,CD4001BE	14	7	
IC507	TC4510BP,MC14510BCP	16	8	
IC508	TC4081BP,CD4081BE	14	7	
IC509	TC4012BP,CD4012BE	14	7	
IC510	MC14538BCP	16	8	
IC511	TC4001BP,CD4001BE	14	7	
IC512	TC4053BP,CD4053BE	16	8	
IC513	TC4069BP,CD4069BE	14	7	
IC514	TC4011BP,CD4011BE	14	7	
IC515	TC4053BP,CD4053BE	16	8	
IC516	TC4069BP,CD4069BE	14	7	
IC517	TC4001BP,CD4001BE	14	7	
IC518	MC14538BCP	16	8	
IC519	TC4011BP,CD4011BE	14	7	
IC520	TC4066BP,CD4066BE	14	7	
IC521	MC14584BCP	14	7	
IC522	μPC4558C	8	4	
IC523	BX3914	18	17	
IC524	TC4011BP,CD4011BE	14	7	
IC525	TC4510BP,MC14510BCP	16	8	
IC526	μPC4558C	8	—	4

NOTE

MARK	CHANGE INFORMATION		SERIAL NO.
※1	TP720,721 ADDED		11491～(PAL)
	R715 82K→68K		10081～(SECAM)
	R731 82K→68K		
	R775 1K ADDED		
※2	R714 22K→47K		11986～(PAL)
	R749 22K→47K		10186～(SECAM)
※3	C541 22/16V→100/25V		12186～(PAL)
	C542 22/16V→100/25V		10186～(SECAM)
※4	RV502 220K→RY76 220K		12586～(PAL)
	R744	22K ON 82K	10236～(SECAM)
		22K	12856～(PAL)
			10236～(SECAM)

INFORMATION	SERIAL NO.
21 ADDED	11491 ~ (PAL)
K→68K	10081 ~ (SECAM)
K→68K	
K ADDED	
K→47K	11986 ~ (PAL)
K→47K	10186 ~ (SECAM)
6V→100/25V	12186 ~ (PAL)
6V→100/25V	10186 ~ (SECAM)
K→R776 220K	12586 ~ (PAL)
	10236 ~ (SECAM)
2K OR 82K	12586 ~ 12655(PAL)
2K	12655 ~ (PAL)
	10236 ~ (SECAM)

REF NO.	TYPE	PIN NO. +V(12V)	PIN NO. GND
IC 701	TL082CP	8	4
IC 702	TL082CP	8	4
IC 703	TC4081BP, CD4081BE	14	7
IC 704	TC4013BP, CD4013BE	14	7
IC 705	HD14538BP	16	8
IC 706	TC4013BP, CD4013BE	14	7
IC 707	TC4013BP, CD4013BE	14	7
IC 708	TC4013BP, CD4013BE	14	7
IC 709	TC4013BP, CD4013BE	14	7
IC 710	HD14538BP	16	8
IC 711	TC4081BP, CD4081BE	14	7
IC 712	TC4030BP, CD4030BE	14	7
IC 713	TC4071BP, CD4071BE	14	7
IC 714	HD14538BP	16	8
IC 715	TC4015BP, CD4015BE	16	8
IC 716	HD14538BP	16	8
IC 717	TC4069UBP, CD4069UBE	14	7
IC 718	TC4015BP, CD4015BE	16	8
IC 719	HD14538BP	16	8
IC 720	TC4073BP, CD4073BE	14	7
IC 721	HD14538BP	16	8
IC 722	TC4001BP, CD4001BE	14	7
IC 723	TC4013BP, CD4013BE	14	7
IC 724	HD14538BP	16	8
IC 725	TC4013BP, CD4013BE	14	7
IC 726	TC4073BP, CD4073BE	14	7
IC 727	TC4071BP, CD4071BE	14	7
IC 728	TC4081BP, CD4081BE	14	7
IC 729	TC4013BP, CD4013BE	14	7
IC 730	TC4013BP, CD4013BE	14	7
IC 731	TC4011BP, CD4011BE	14	7

CF-9
1-606-056-12,13,14
BVU-800P(S/N,10551~)
BVU-800S(S/N,10031~)

RS-3 RS-3

RS-3 (REEL SEP

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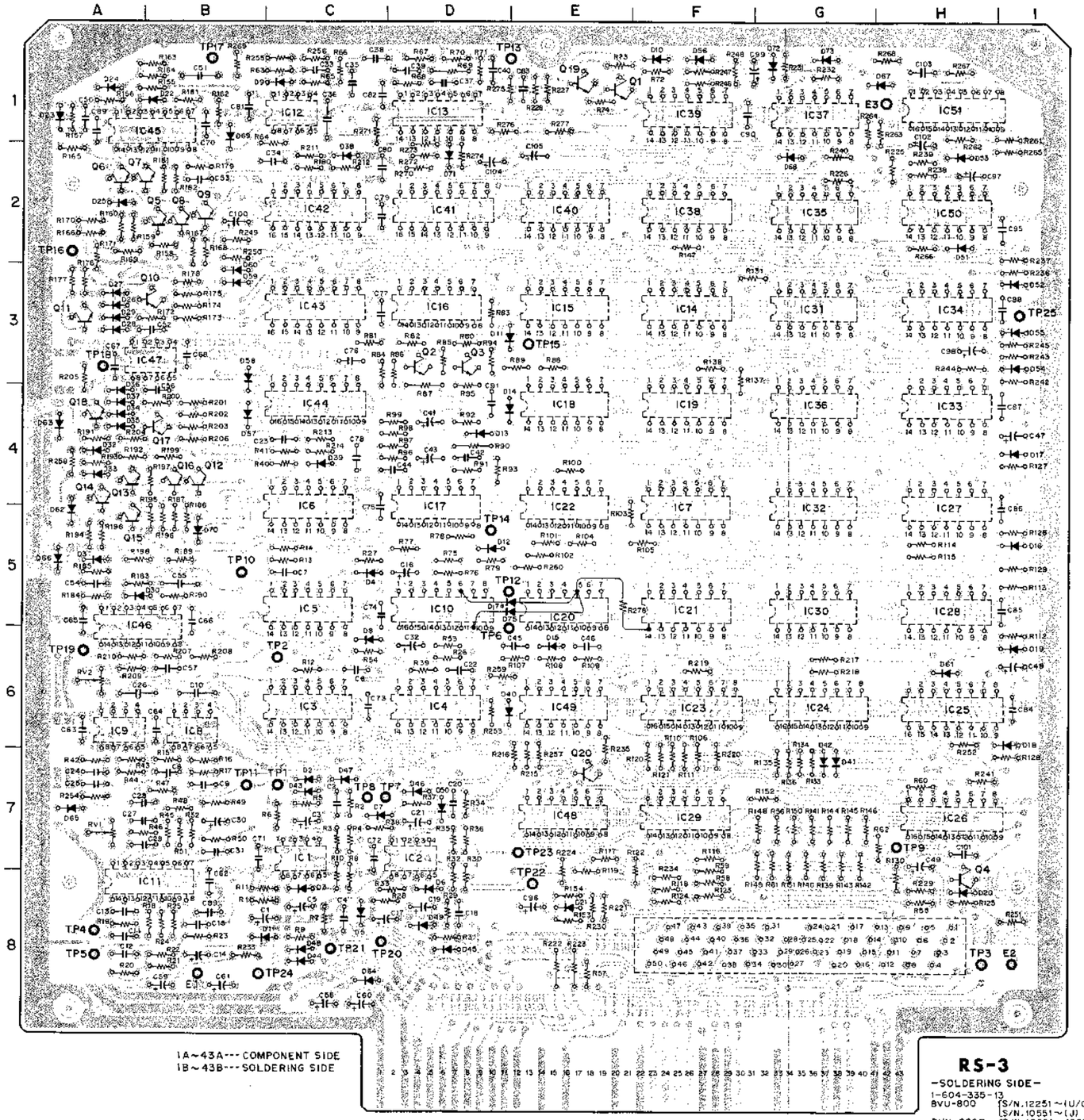
8

RS-3 (REEL SERVO) SER. NO. 10801 and higher



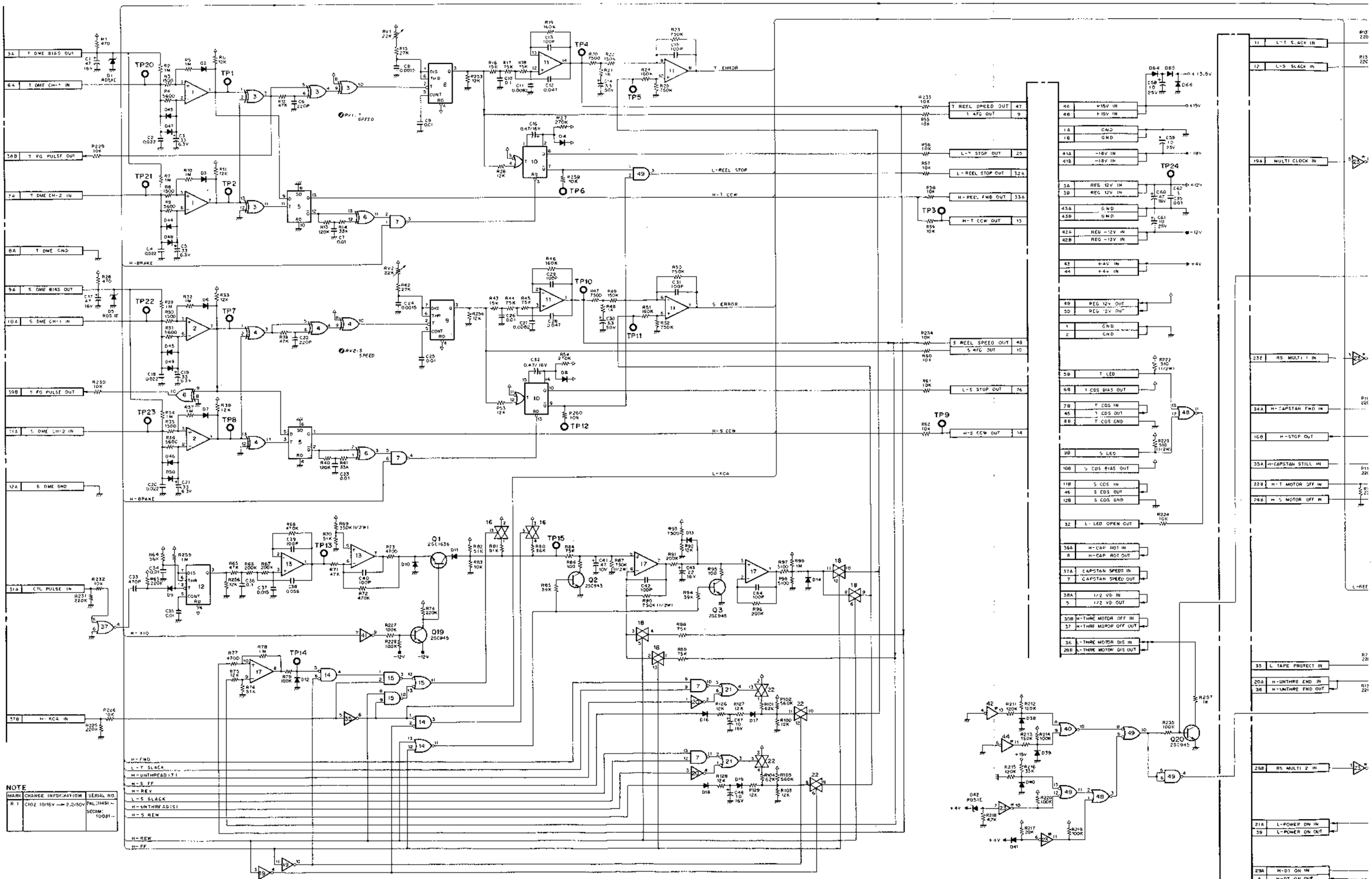
1A~43A--- COMPONENT SIDE
1B~43B---SOLDERING SIDE

RS-3
-SOLDERING SIDE-
1-604-335-13
BVU-800 (S/N.12251~(U/C))
BVU-800P (S/N.10551~(J))
(S/N.10551~10600)
(S/N.10801~)
BVU-800S (S/N.10031~)
BVU-800PM (S/N.10001~)
(S/N.90001~)

D1	C-8	IC1	C-7	RV1	A-7
D2	C-7	IC2	D-7	RV2	A-6
D3	C-8	IC3	C-6		
D4	C-5	IC4	D-6	TP1	C-7
D5	C-8	IC5	C-5	TP2	C-6
D6	D-8	IC6	C-5	TP3	H-8
D7	C-7	IC7	F-5	TP4	A-8
D8	C-6	IC8	B-6	TP5	A-8
D9	C-1	IC9	A-6	TP6	E-6
D10	F-1	IC10	D-5	TP7	D-7
D11	D-3	IC11	B-8	TP8	C-7
D12	D-6	IC12	C-1	TP9	H-7
D13	D-4	IC13	D-1	TP10	B-5
D14	E-4	IC14	F-3	TP11	B-7
D15	E-6	IC15	E-3	TP12	E-5
D16	F-5	IC16	D-3	TP13	E-1
D17	I-4	IC17	D-5	TP14	D-5
D18	I-6	IC18	E-4	TP15	E-3
D19	I-6	IC19	F-4	TP16	A-2
D20	H-8	IC20	E-5	TP17	B-1
D21	E-8	IC21	F-5	TP18	A-3
D22	B-1	IC22	E-6	TP19	A-6
D23	A-1	IC23	F-6	TP20	C-8
D24	A-1	IC24	G-6	TP21	C-8
D25	A-2	IC25	H-6	TP22	E-8
D26	A-3	IC26	H-7	TP23	E-7
D27	A-3	IC27	H-5	TP24	B-8
D28	A-3	IC28	H-5	TP25	I-3
D29	A-3	IC29	F-7		
D30	A-5	IC30	G-5		
D31	A-5	IC31	G-3		
D32	A-4	IC32	G-5		
D33	A-4	IC33	H-4		
D34	A-4	IC34	H-3		
D35	A-4	IC35	G-2		
D36	A-4	IC36	G-4		
D37	A-4	IC37	G-1		
D38	C-2	IC38	F-2		
D39	C-4	IC39	F-1		
D40	E-6	IC40	E-2		
D41	G-7	IC41	D-2		
D42	G-7	IC42	C-2		
D43	C-7	IC43	C-3		
D44	C-8	IC44	C-4		
D45	D-8	IC45	B-1		
D46	D-7	IC46	A-6		
D47	C-7	IC47	B-3		
D48	C-8	IC48	E-7		
D49	D-8	IC49	E-6		
D50	D-7	IC50	H-2		
D51	H-2				
D52	I-3	Q1	E-1		
D53	H-2	Q2	D-3		
D54	I-3	Q3	D-3		
D55	I-3	Q4	H-8		
D56	F-1	Q5	B-2		
D57	B-4	Q6	A-2		
D58	B-3	Q7	A-2		
D59	B-3	Q8	B-2		
D60	B-3	Q9	B-2		
D61	H-6	Q10	B-3		
D62	A-5	Q11	A-3		
D63	A-4	Q12	B-4		
D64	C-8	Q13	A-4		
D65	A-7	Q14	A-4		
D66	A-5	Q15	A-5		
D67	H-1	Q16	B-4		
D68	G-2	Q17	B-4		
D69	B-1	Q18	A-4		
D70	B-5	Q19	E-1		
D71	D-2	Q20	E-7		
D72	G-1				
D73	G-1				
D74	D-5				
D75	D-5				
E1	B-8				
E2	I-8				
E3	H-1				

PFF.NO.	TYPE	PIN NO.				
		+V(+35V)	+V(+12V)	GND	-V(-12V)	-V(-18V)
IC 1	NJM2903D		8	4		
2	NJM2903D		8	4		
3	TC4030BP,CD4030BE		14	7		
4	TC4030BP,CD4030BE		14	7		
5	TC4013BP,CD4013BE		14	7		
6	TC4030BP,CD4030BE		14	7		
7	TC4011BP,CD4011BE		14	7		
8	NE555N,M51841P		8	1		
9	NE555N,M51841P		8	1		
10	MC14538BCP,HD1453BBP		16	8		
11	μPC324C,LM324		4		11	
12	NE555N,M51841P		8	1		
13	μPC324C,LM324		4		11	
14	TC4001BP,CD4001BE		14	7		
15	TC4011BP,CD4011BE		14	7		
16	TC4066BP,CD4066BE		14	7		
17	μPC324C,LM324		4		11	
18	TC4066BP,CD4066BE		14	7		
19	TC4069BP,CD4069BE		14	7		
20	TC4069BP,CD4069BE		14	7		
21	TC4011BP,CD4011BE		14	7		
22	TC4066BP,CD4066BE		14	7		
23	M54517P			8		
24	TC4016BP,CD4016BE		16	8		
25	TC4099BP,CD4099BE		16	8		
26	TC4099BP,CD4099BE		16	8		
27	TC4001BP,CD4001BE		14	7		
28	TC4069BP,CD4069BE		14	7		
29	TC4001BP,CD4001BE		14	7		
30	TC4001BP,CD4001BE		14	7		
31	TC4001BP,CD4001BE		14	7		
32	TC4011BP,CD4011BE		14	7		
33	TC4001BP,CD4001BE		14	7		
34	TC4001BP,CD4001BE		14	7		
35	TC4069BP,CD4069BE		14	7		
36	TC4011BP,CD4011BE		14	7		
37	TC4001BP,CD4001BE		14	7		
38	TC4011BP,CD4011BE		14	7		
39	TC4001BP,CD4001BE		14	7		
40	TC4001BP,CD4001BE		14	7		
41	TC5067BP		16	8		
42	M54519P				8	
43	TC5067BP		16	8		
44	M54519P					8
45	μPC324C,LM324		4		11	
46	μPC324C,LM324		4		11	
47	μPC4558C,RC4558	8				4
48	TC4001BP,CD4001BE		14	7		
49	TC4011BP,CD4011BE		14	7		
50	TC4001BP,CD4001BE		14	7		
51	MC14538BCP		16	8		—

RS-3 (REEL SERVO) **SER. NO. 10801 to 13325**

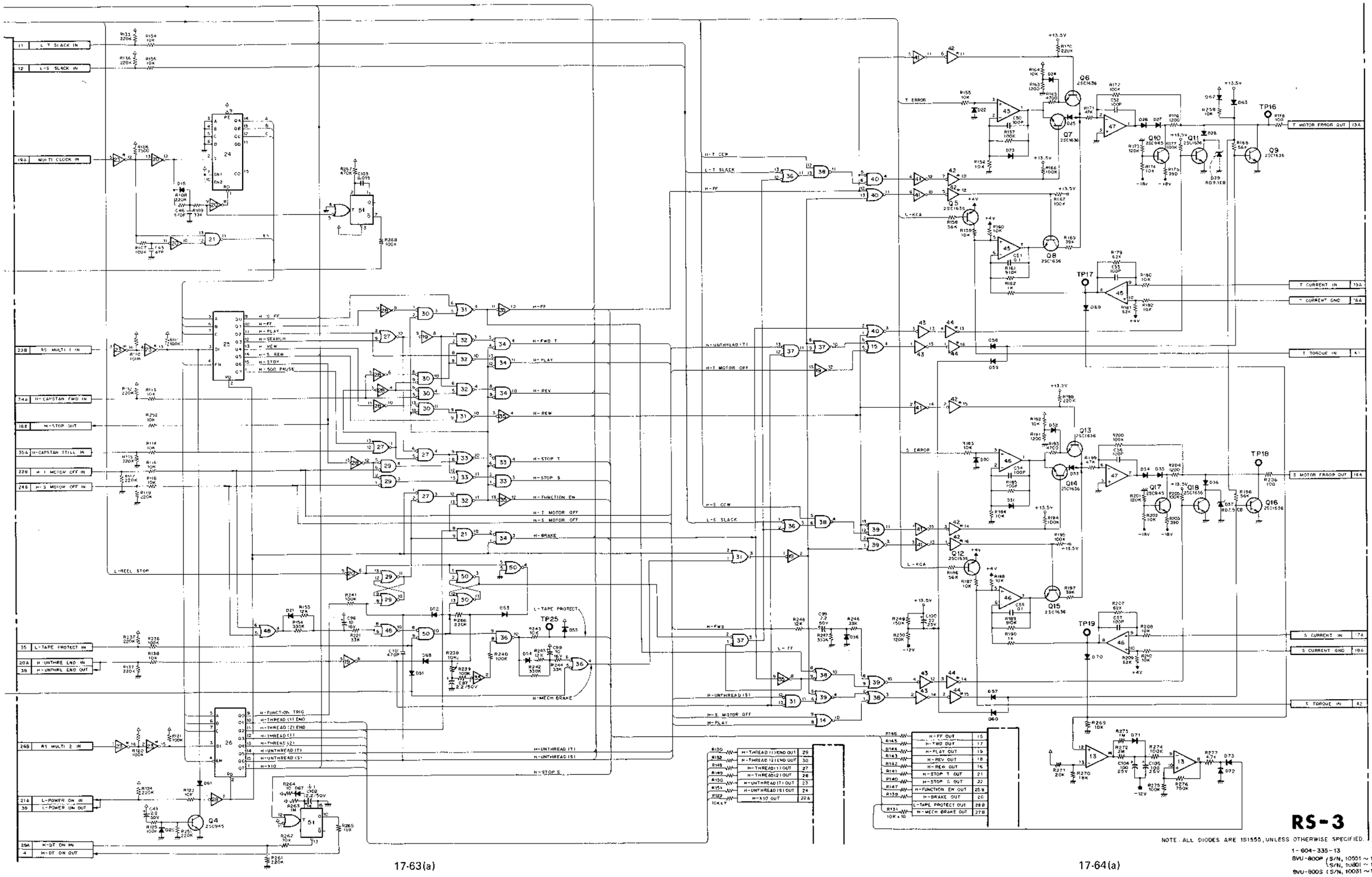


NOTE

MARK	CHANGE INFORMATION	SERIAL NO.
* 1	C102 10/16V → 2.2/50V	PAL:11451 ~ SECAM: 10081 ~

17-61(a)

17-62(a)



17-63(a)

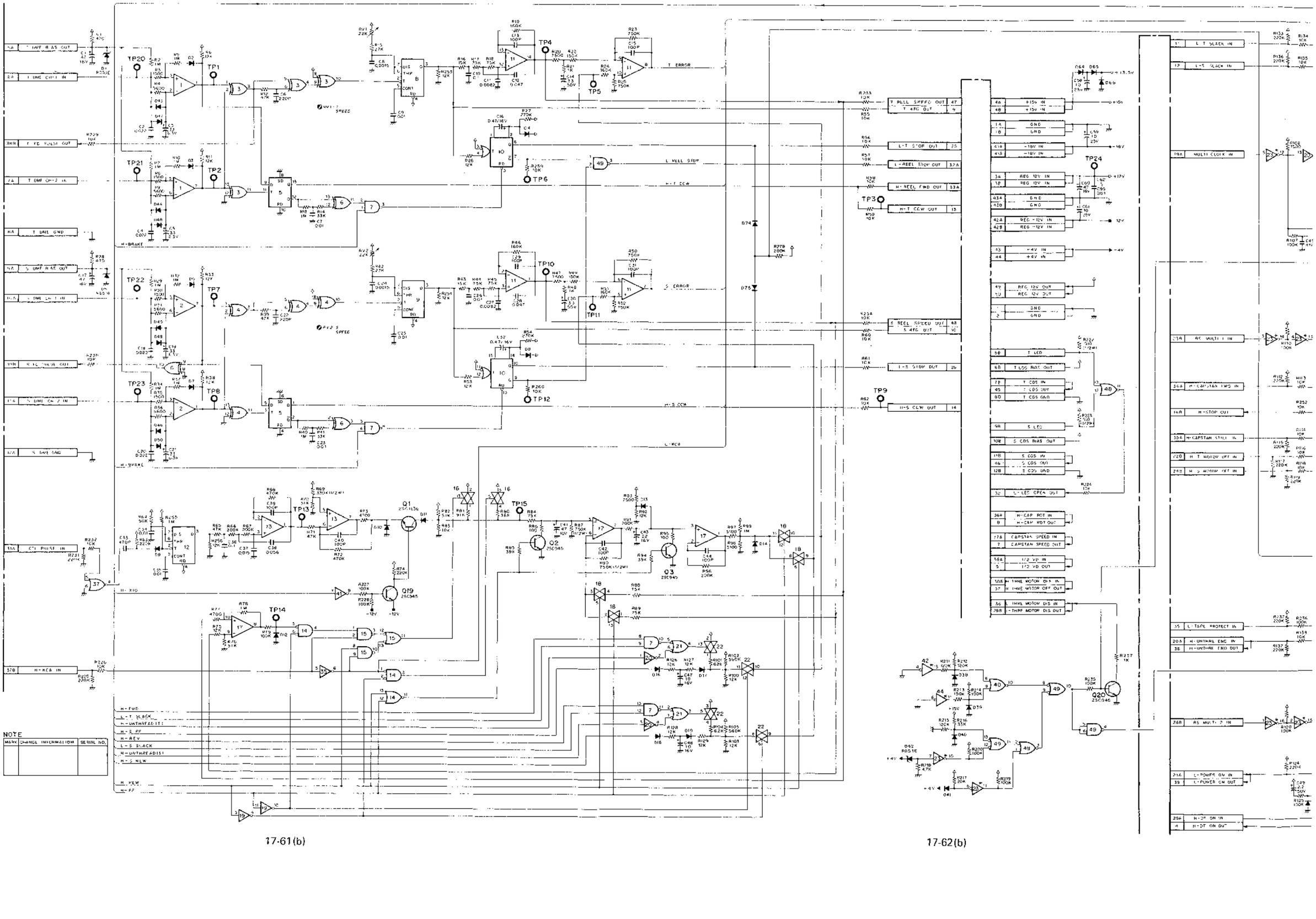
17-64(a)

RS-3

NOTE. ALL DIODES ARE 1S1555, UNLESS OTHERWISE SPECIFIED.

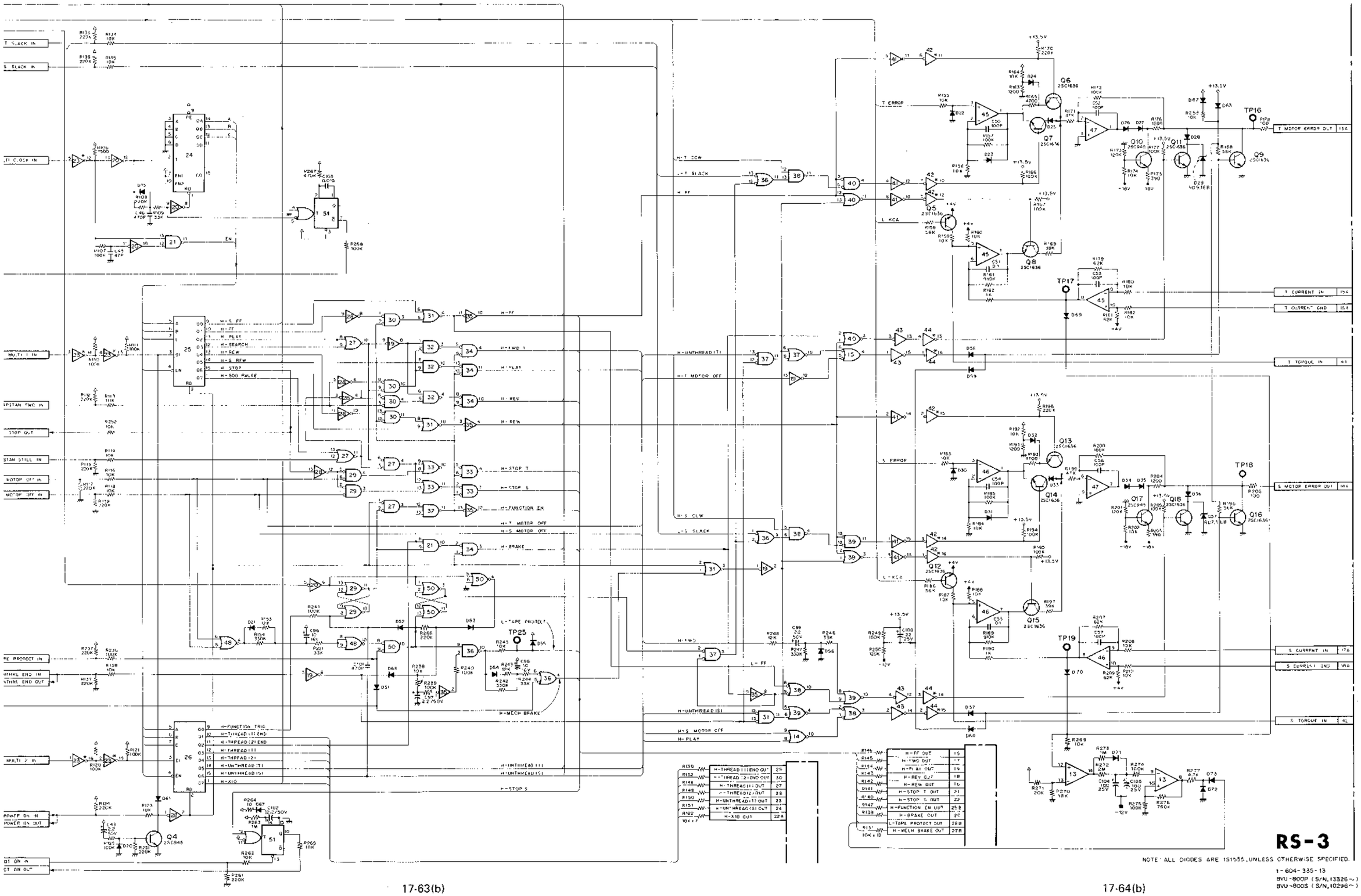
1-604-335-13
BVU-800P (S/N, 10551 ~ 10600)
(S/N, 10801 ~ 13325)
BVU-900S (S/N, 10031 ~ 10295)

RS-3 (REEL SERVO) SER. NO. 13326 and higher



17-61(b)

17-62(b)



17-63(b)

17-64(b)

RS-3

NOTE: ALL DIODES ARE 1S1555, UNLESS OTHERWISE SPECIFIED.

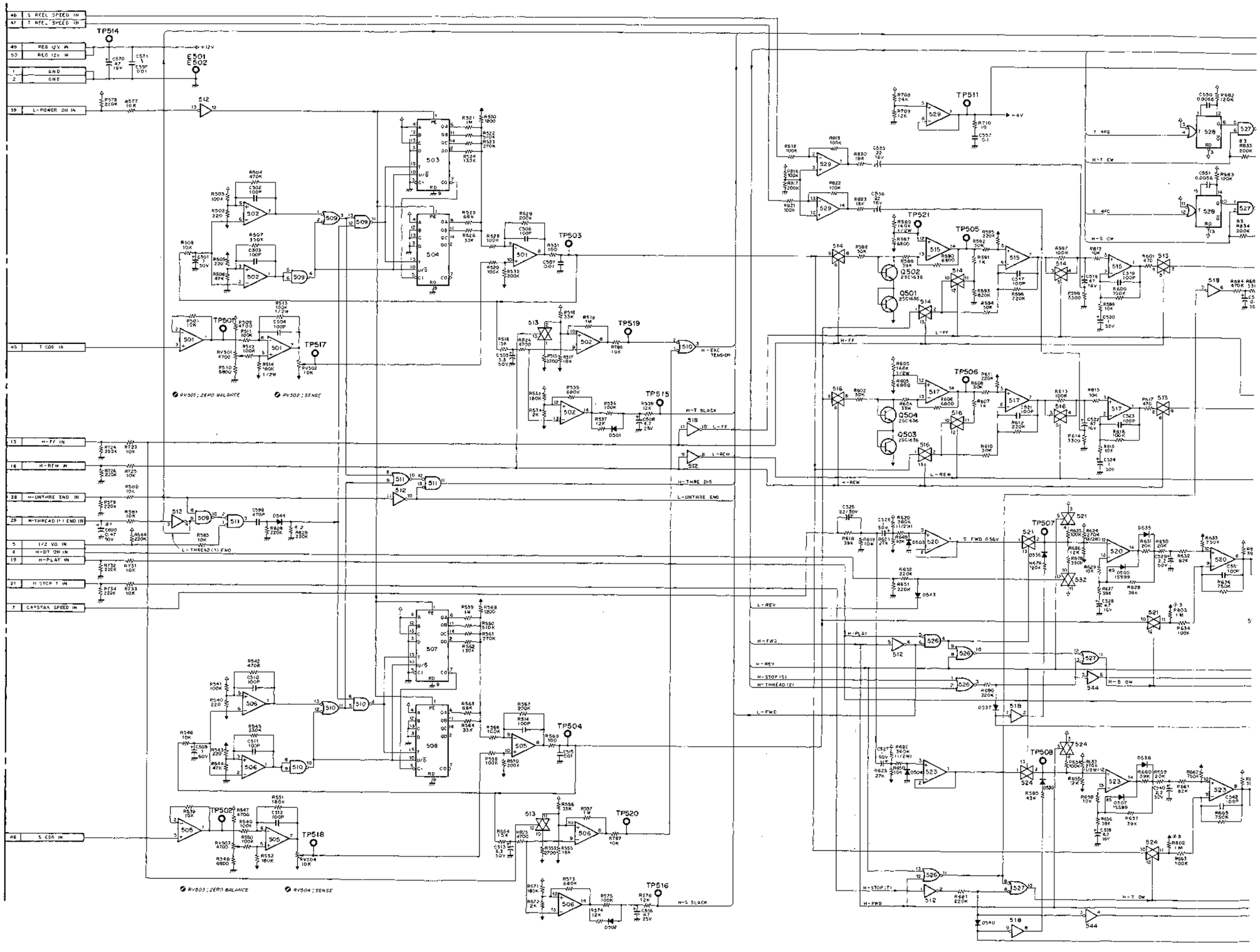
1-604-335-13
BVU-800P (S/N, 13326~)
BVU-800S (S/N, 10296~)

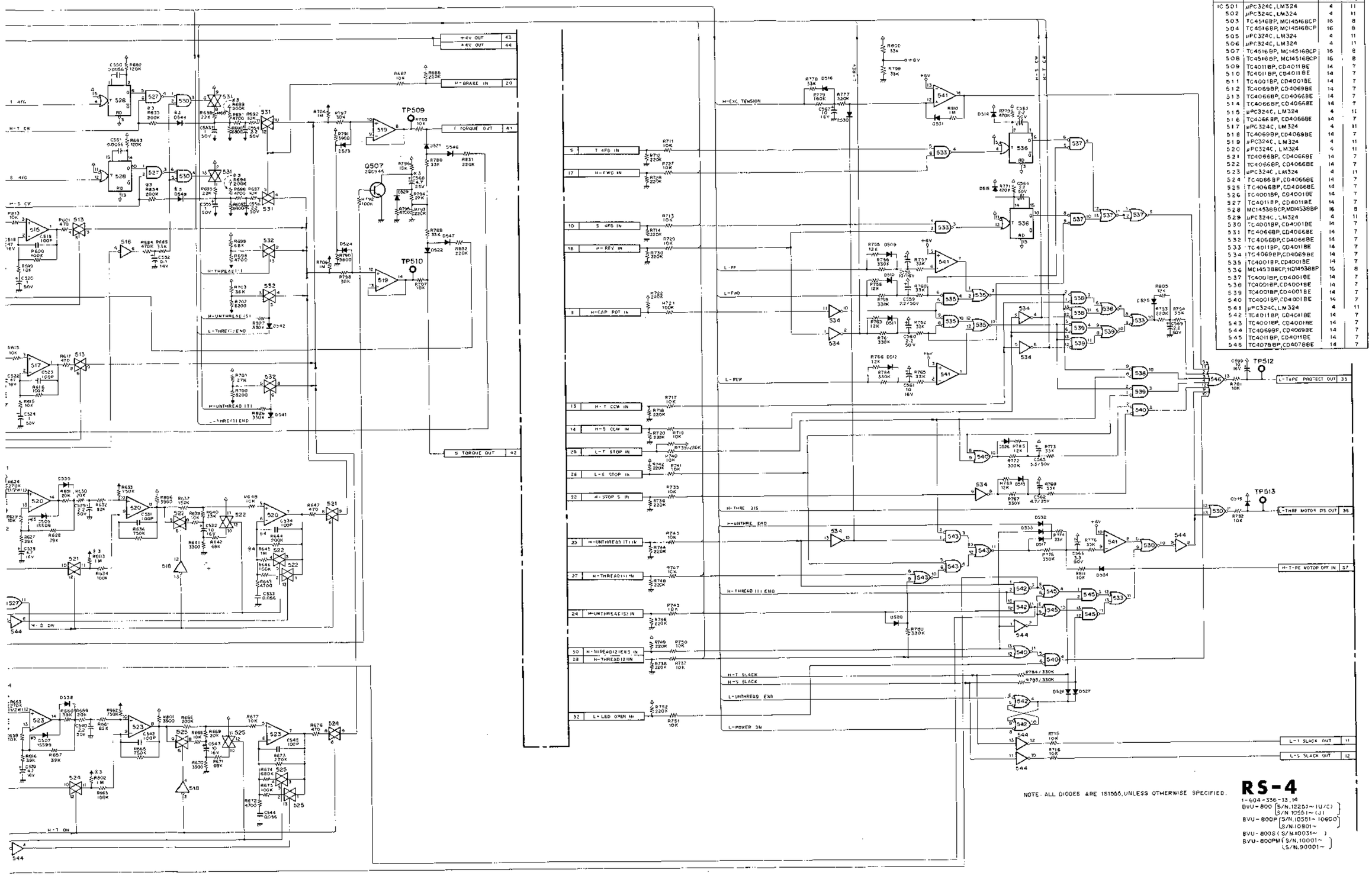
RS-4 (TAPE TENSION SERVO)

SER. NO. 10801 and higher

NOTE

MARK	CHANGE INFORMATION	SERIAL NO.
※1	R582 220K → 0.47/50v C600	U/C : 14121～ J : 10651～ PAL : 12441～ SECAM:10061～ PM : 10053～ PM : 90105～
※2	P829 1M → 220K	U/C : 16601～ J : 11751～ PAL : 12836～ SECAM:10038～ PM : 10151～ PM : 90103～
※3	CHANGE R689 100K → 200K R694 100K → 200K R802 560K → 1M R803 560K → 1M C568 10/16V → 4.7/25V ADDITION (R833/834) (0548/549) R832 200K 0548 C552 HOT 0549 C555 HOT R834 200K	U/C : 18701～ J : 11651～ P : 13326～ S : 10296～ PM : 10171～
※4	R644 270K → 200K R645 680K → 1M	U/C : 19351～ J : 11751～ P : 13726～ S : 10356～ PM : 10181～
※5	D505, 507 1S1925P → 1SS99	U/C : 24456～ J : 12615～ P : 16669～ S : 10652～ PM : 10562～





REF. NO.	TYPE	PIN NO. +V	+12V	GND
IC 501	μPC324C, LM324	4		11
502	μPC324C, LM324	4		11
503	TC4516BP, MC14516BCP	16		8
504	TC4516BP, MC14516BCP	16		8
505	μPC324C, LM324	4		11
506	μPC324C, LM324	4		11
507	TC4516BP, MC14516BCP	16		8
508	TC4516BP, MC14516BCP	16		8
509	TC4011BP, CD4011BE	14		7
510	TC4011BP, CD4011BE	14		7
511	TC4001BP, CD4001BE	14		7
512	TC4069BP, CD4069BE	14		7
513	TC4066BP, CD4066BE	14		7
514	TC4066BP, CD4066BE	14		7
515	μPC324C, LM324	4		11
516	TC4066BP, CD4066BE	14		7
517	μPC324C, LM324	4		11
518	TC4069BP, CD4069BE	14		7
519	μPC324C, LM324	4		11
520	μPC324C, LM324	4		11
521	TC4066BP, CD4066BE	14		7
522	TC4066BP, CD4066BE	14		7
523	μPC324C, LM324	4		11
524	TC4066BP, CD4066BE	14		7
525	TC4066BP, CD4066BE	14		7
526	TC4001BP, CD4001BE	14		7
527	TC4011BP, CD4011BE	14		7
528	MC14538BCP, MD14538BP	16		8
529	μPC324C, LM324	4		11
530	TC4001BP, CD4001BE	14		7
531	TC4066BP, CD4066BE	14		7
532	TC4066BP, CD4066BE	14		7
533	TC4011BP, CD4011BE	14		7
534	TC4069BP, CD4069BE	14		7
535	TC4001BP, CD4001BE	14		7
536	MC14538BCP, MD14538BP	16		8
537	TC4001BP, CD4001BE	14		7
538	TC4001BP, CD4001BE	14		7
539	TC4001BP, CD4001BE	14		7
540	TC4001BP, CD4001BE	14		7
541	μPC324C, LM324	4		11
542	TC4011BP, CD4011BE	14		7
543	TC4001BP, CD4001BE	14		7
544	TC4069BP, CD4069BE	14		7
545	TC4011BP, CD4011BE	14		7
546	TC4078BP, CD4078BE	14		7

NOTE. ALL DIODES ARE 1S1555, UNLESS OTHERWISE SPECIFIED.

RS-4

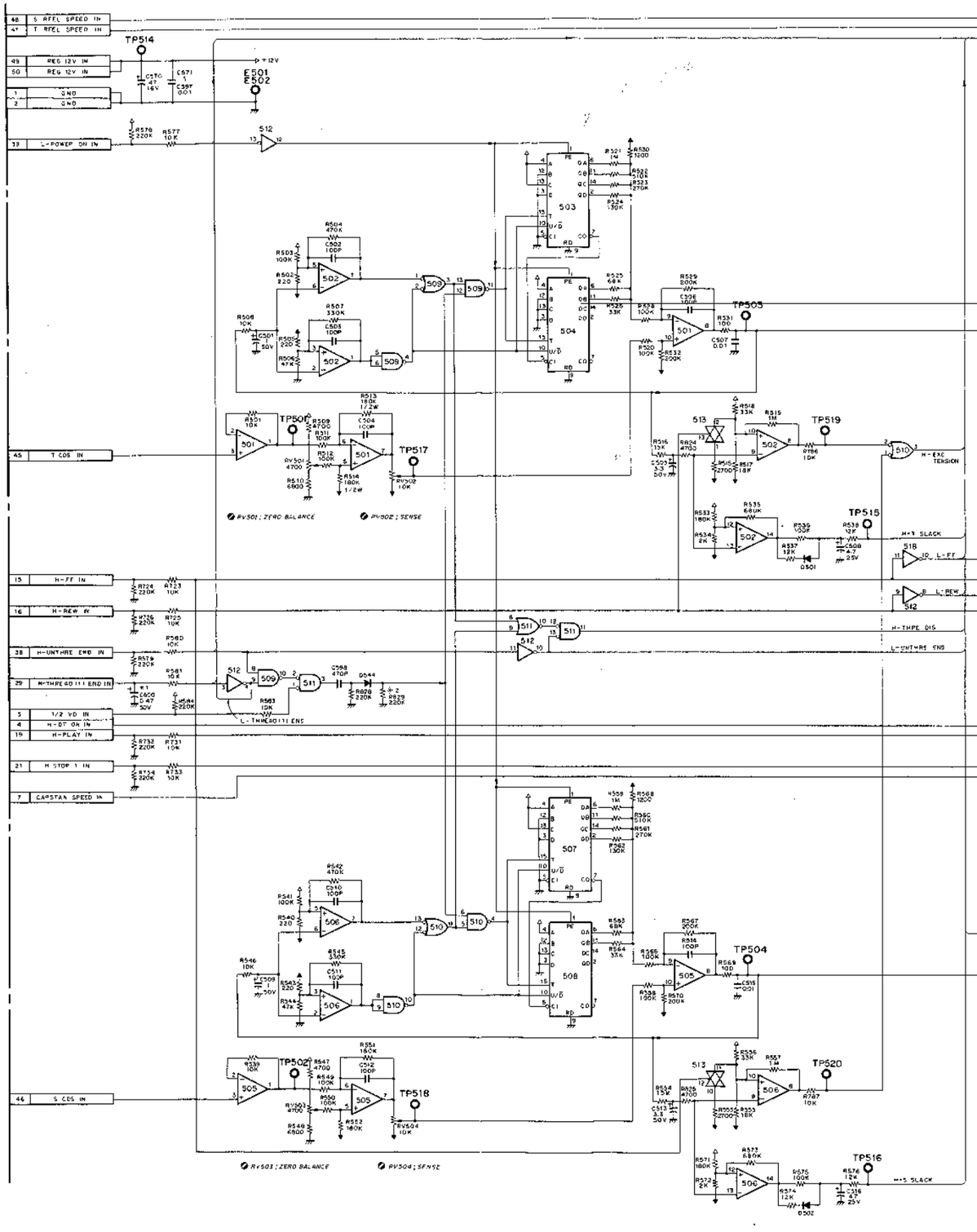
1-604-336-13, 14
BVU-800 (S/N.12251~ (U/C)
(S/N.10551~ (J)
BVU-800P (S/N.10551~ 10600
(S/N.10801~
BVU-800S (S/N.10031~)
BVU-800PM (S/N.10001~
(S/N.90001~

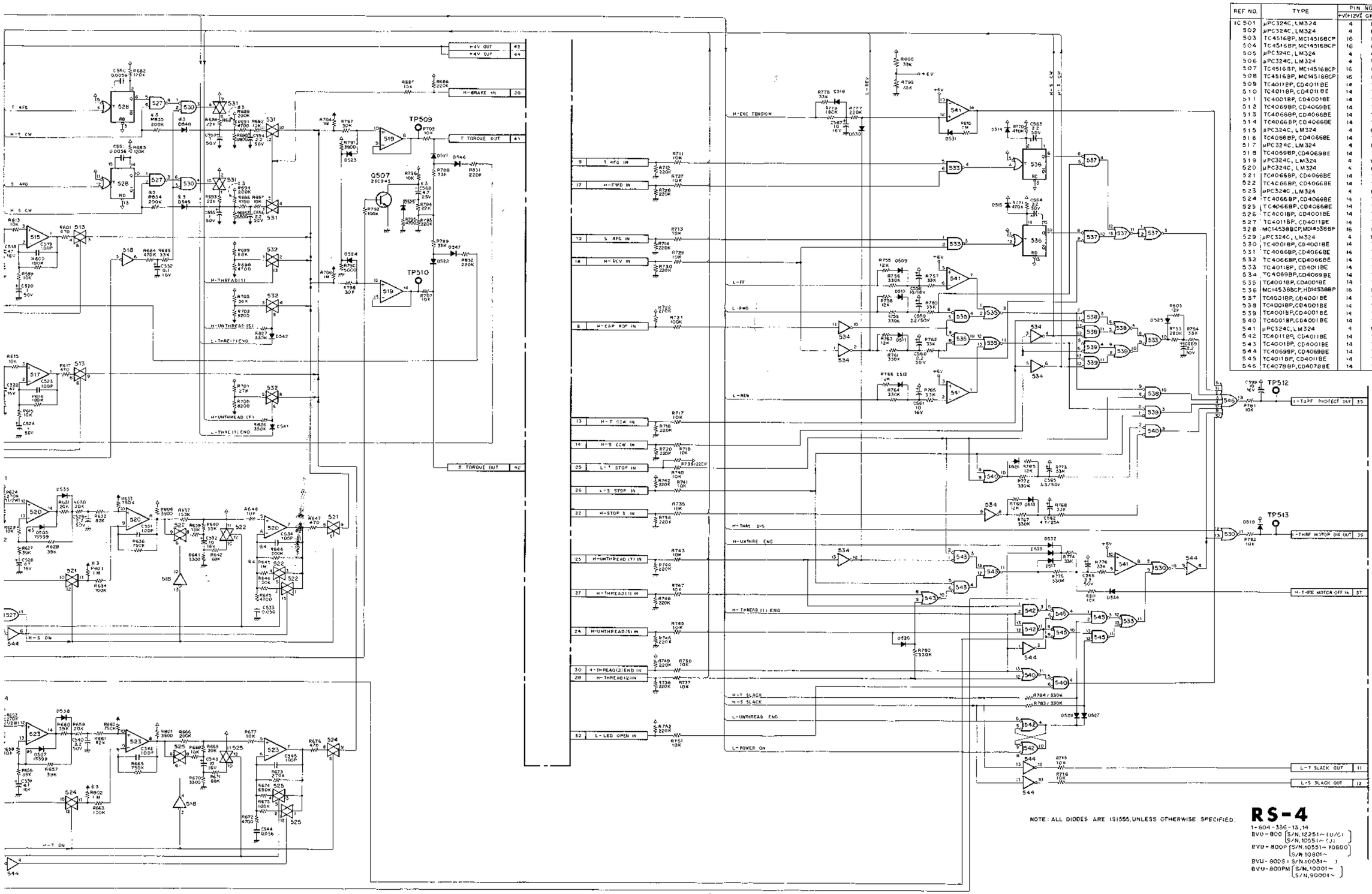
RS-4 (TAPE TENSION SERVO)

SER. NO. 10801 and higher

NOTE

MARK	CHANGE INFORMATION	SERIAL NO.
※1	R382 220K C610 0.47/50V	U/C : 14151~ J : 10651~ PAL : 11491~ SECAM:10081~ PM : 10051~ PM : 80101 ~
※2	R829 1M → 220K	U/C : 16001 ~ J : 11151 ~ PAL : 12334 ~ SECAM:10236~ PM : 10151 ~ PM : 60101 ~
※3	CHANGE R688 100K → 200K R694 100K → 200K R602 560K → 1M R603 560K → 1M C568 10/16V → 4.7/25V ADDITION (R833/834, D548/549) R833 200K D548 → C553 HOT D549 → C555 HOT R834 200K	U/C : 18701 ~ J : 11551 ~ P : 13326 ~ S : 10298 ~ PM : 10171 ~
※4	R644 270K → 300K R645 680K → 1M	U/C : 19351 ~ J : 11751 ~ P : 13726 ~ S : 10336 ~ PM : 10481 ~
※5	C505,507 151925P → 15999	U/C : 24456 ~ J : 12815 ~ P : 18689 ~ S : 10692 ~ PM : 10563 ~





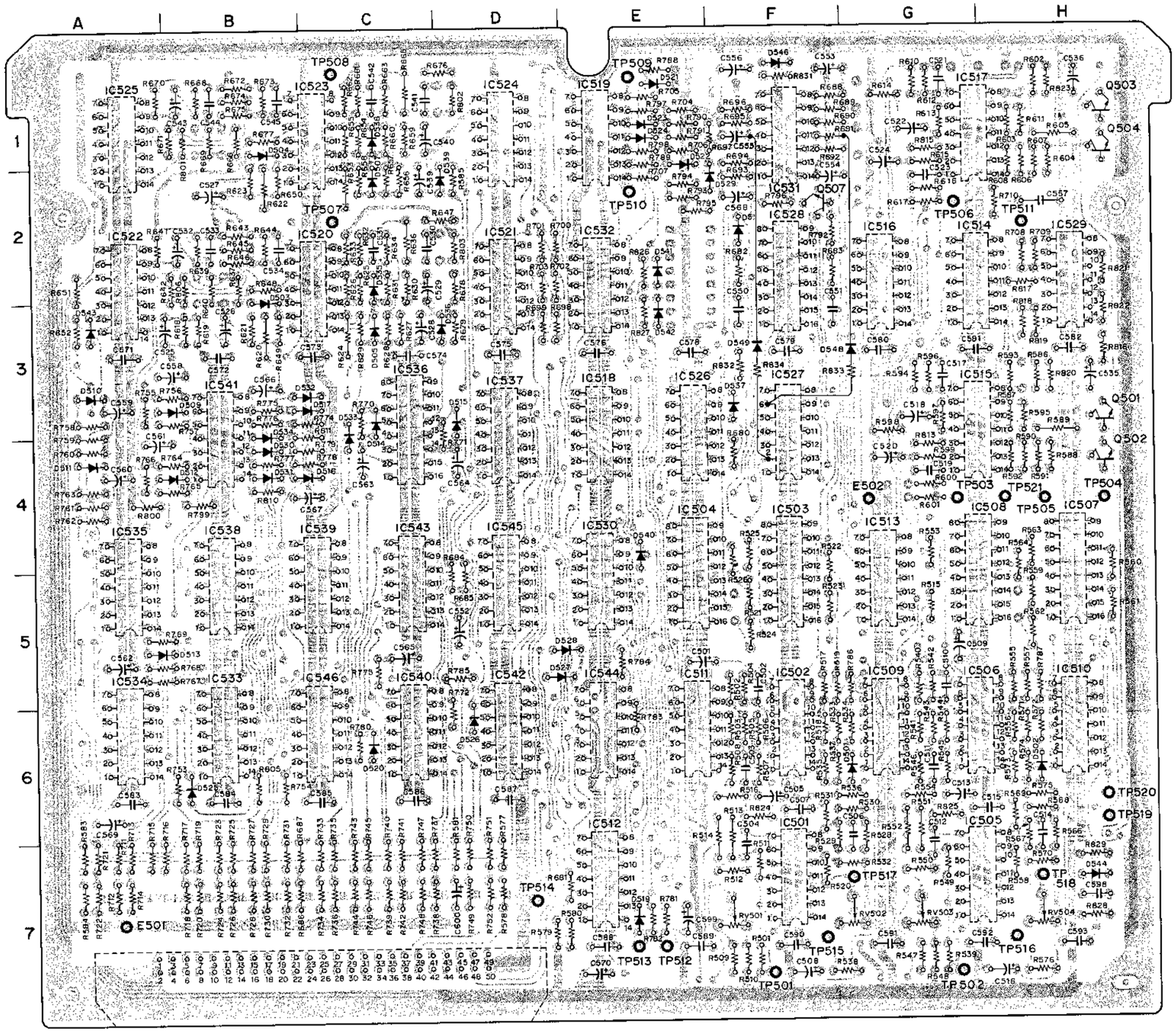
REF NO.	TYPE	PIN NO. +V(+12V)	GND
IC 501	μPC324C, LM324	4	11
502	μPC324C, LM324	4	11
503	TC4516BP, MC14516BCP	16	8
504	TC4516BP, MC14516BCP	16	8
505	μPC324C, LM324	4	11
506	μPC324C, LM324	4	11
507	TC4516BP, MC14516BCP	16	8
508	TC4516BP, MC14516BCP	16	8
509	TC4011BP, CD4011BE	14	7
510	TC4011BP, CD4011BE	14	7
511	TC4001BP, CD4001BE	14	7
512	TC4069BP, CD4069BE	14	7
513	TC4066BP, CD4066BE	14	7
514	TC4066BP, CD4066BE	14	7
515	μPC324C, LM324	4	11
516	TC4066BP, CD4066BE	14	7
517	μPC324C, LM324	4	11
518	TC4069BP, CD4069BE	14	7
519	μPC324C, LM324	4	11
520	μPC324C, LM324	4	11
521	TC4066BP, CD4066BE	14	7
522	TC4066BP, CD4066BE	14	7
523	μPC324C, LM324	4	11
524	TC4066BP, CD4066BE	14	7
525	TC4066BP, CD4066BE	14	7
526	TC4001BP, CD4001BE	14	7
527	TC4011BP, CD4011BE	14	7
528	MC14538BCP, MD14538BP	16	8
529	μPC324C, LM324	4	11
530	TC4001BP, CD4001BE	14	7
531	TC4066BP, CD4066BE	14	7
532	TC4066BP, CD4066BE	14	7
533	TC4011BP, CD4011BE	14	7
534	TC4069BP, CD4069BE	14	7
535	TC4001BP, CD4001BE	14	7
536	MC14538BCP, HD14538BP	16	8
537	TC4001BP, CD4001BE	14	7
538	TC4001BP, CD4001BE	14	7
539	TC4001BP, CD4001BE	14	7
540	TC4001BP, CD4001BE	14	7
541	μPC324C, LM324	4	11
542	TC4011BP, CD4011BE	14	7
543	TC4001BP, CD4001BE	14	7
544	TC4069BP, CD4069BE	14	7
545	TC4011BP, CD4011BE	14	7
546	TC4078BP, CD4078BE	14	7

NOTE: ALL DIODES ARE 1S1555, UNLESS OTHERWISE SPECIFIED.

RS-4

1-604-336-13, 14
BVU-800 (S/N, 12251~ (U/C)
(S/N, 10551~ (J)
BVU-800P (S/N, 10551~ 10800)
(S/N 10801~
BVU-800S (S/N.10031~)
BVU-800PM (S/N, 10001~
(S/N, 90001~

RS-4 (TAPE TENSION SERVO) SER. NO. 10801 and higher



D501 G-6
D502 H-6
D503 B-3
D504 B-1
D505 C-3
D507 C-2
D509 B-3
D510 A-3
D511 A-4
D512 B-4
D513 A-5
D514 C-3
D515 D-3
D516 C-4
D517 C-3
D519 E-7
D520 C-6
D521 E-1
D522 E-2
D523 E-1
D524 E-1
D525 B-6
D526 D-6
D527 D-5
D528 E-5
D529 F-2
D530 B-4
D531 B-4
D532 C-3
D533 C-4
D534 B-4
D535 C-2
D536 D-3
D537 F-3
D538 C-1
D539 D-2
D540 E-4
D541 E-2
D542 E-3
D543 A-3
D544 H-7
D546 F-1
D547 F-2
D548 G-3
D549 F-3

E501 A-7
E502 G-4

IC501 F-7
IC502 F-6
IC503 F-5
IC504 E-5
IC505 G-7
IC506 G-6
IC507 H-5
IC508 G-5
IC509 G-6
IC510 H-6
IC511 E-6
IC512 E-7
IC513 G-5
IC514 G-2
IC515 G-4
IC516 G-2
IC517 G-1
IC518 E-3
IC519 E-1
IC520 C-2
IC521 D-2
IC522 A-2
IC523 C-1
IC524 D-1
IC525 A-1
IC526 E-3
IC527 F-4
IC528 F-2
IC529 H-2
IC530 E-5
IC531 F-1
IC532 E-2
IC533 B-6
IC534 A-6
IC535 A-5
IC536 C-3
IC537 D-3
IC538 B-5
IC539 C-5
IC540 C-6
IC541 B-3
IC542 D-6
IC543 C-5
IC544 E-6
IC545 D-5
IC546 C-6

Q501 H-3
Q502 H-4
Q503 H-1
Q504 H-1
Q507 F-2

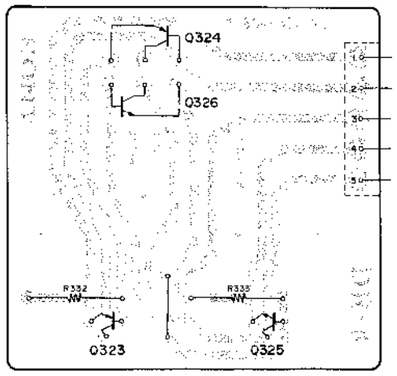
RV501 F-7
RV502 G-7
RV503 G-7
RV504 H-7

TP501 F-7
TP502 G-7
TP503 G-4
TP504 H-4
TP505 H-4
TP506 G-2
TP507 C-2
TP508 C-1
TP509 E-1
TP510 E-2
TP511 H-2
TP512 E-7
TP513 E-7
TP514 D-7
TP515 F-7
TP516 H-7
TP517 G-7
TP518 H-7
TP519 H-6
TP520 H-6
TP521 H-4

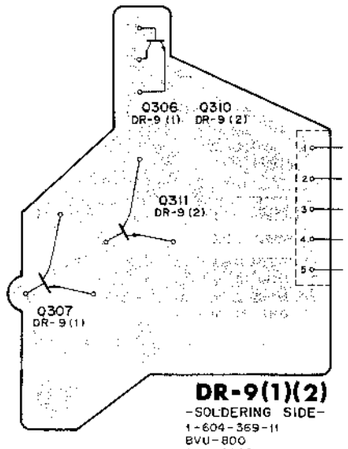
RS-4 —SOLDERING SIDE—
1-604-336-13,14
BVU-800 (S/N.12251~(U/C)) (S/N.10551~(J))
BVU-800P (S/N.10801~) (S/N.10551~10600)
BVU-800S (S/N.10031~)
BVU-800PM (S/N.10001~) (S/N.90001~)

PD-14, PD-15, PD-17, PD-21, DR-8, DR-9 (POWER DRIVE)
(POWER SUPPLY)

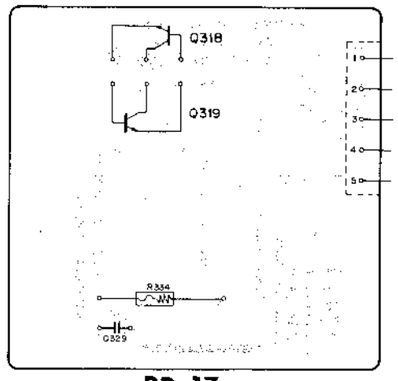
SER. NO. 11491 to 12335 (PAL)
SER. NO. 10081 to 10235 (SECAM)



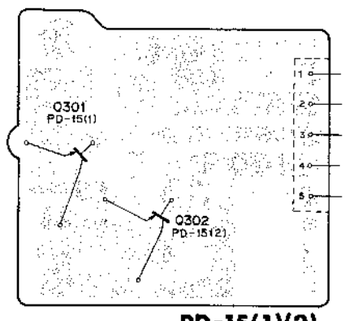
DR-8 -SOLDERING SIDE-
1-604-373-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM



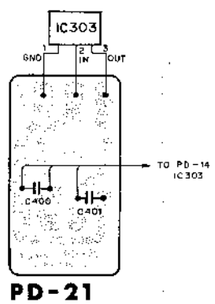
DR-9(1)(2)
-SOLDERING SIDE-
1-604-369-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM



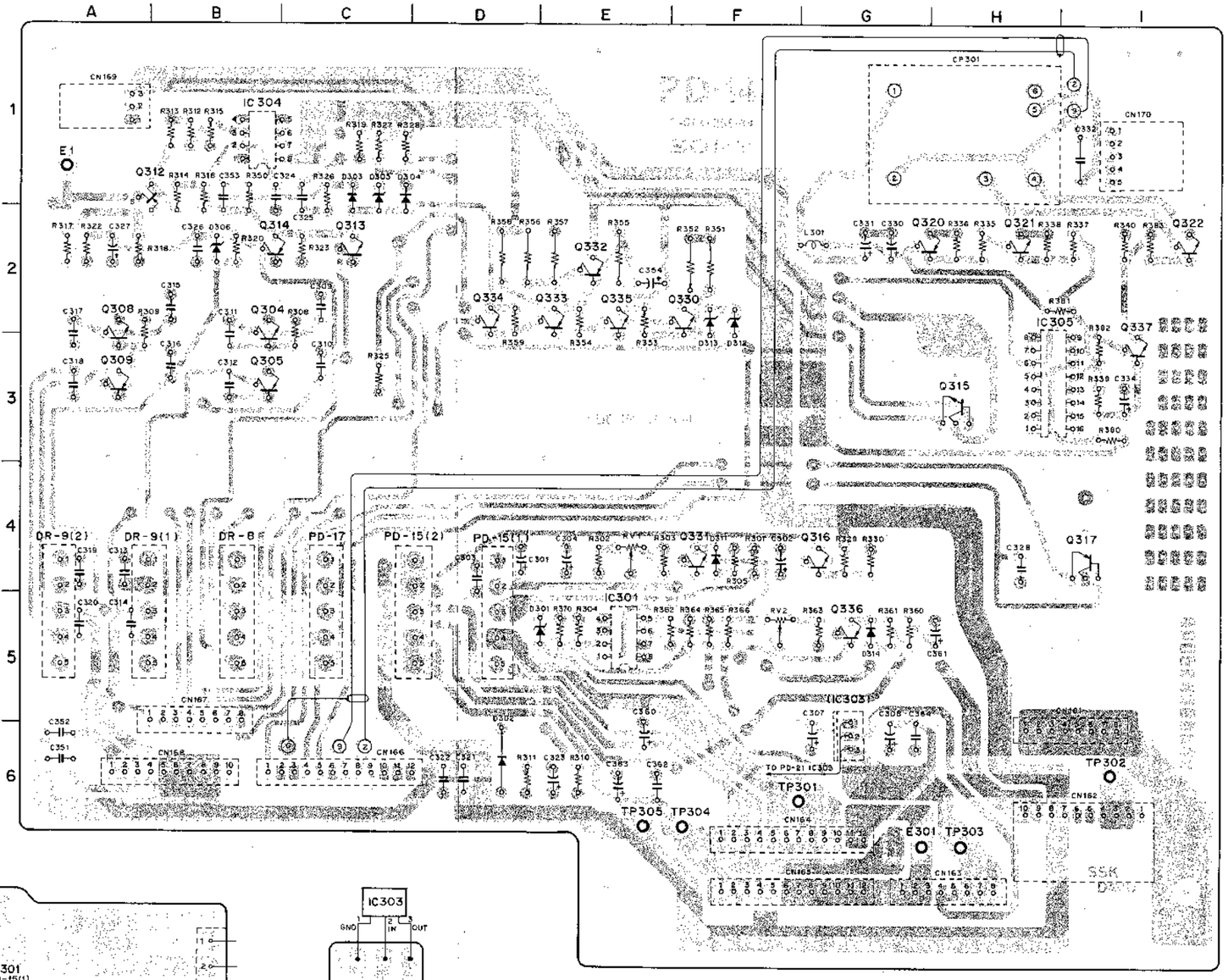
PD-17 -SOLDERING SIDE-
1-604-362-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM



PD-15(1)(2)
- SOLDERING SIDE -
1-604-361-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM



PD-21
-SOLDERING SIDE-
1-608-010-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM



PD-14 -SOLDERING SIDE-
1-604-360-14, 15
BVU-800 (S/N. 13751~16600 (U/C)
S/N. 10651~11150 (J))
BVU-800P (S/N. 11491~12335)
BVU-800S (S/N. 10081~10235)
BVU-800PM (S/N. 10001~10150)

CN161 I - 6
CN162 I - 6
CN163 H - 6
CN164 F - 6
CN165 F - 6
CN166 C - 6
CN167 B - 5
CN168 B - 6
CN169 A - 1
CN170 I - 1

CP301 H - 1

D301 D - 5
D302 D - 6
D303 C - 1
D304 C - 1
D305 C - 1
D306 B - 2
D311 F - 4
D312 F - 2
D313 F - 2
D314 G - 5

E1 A - 1
E301 G - 6

IC301 E - 5
IC303 (G - 5)
IC304 B - 1
IC305 H - 3

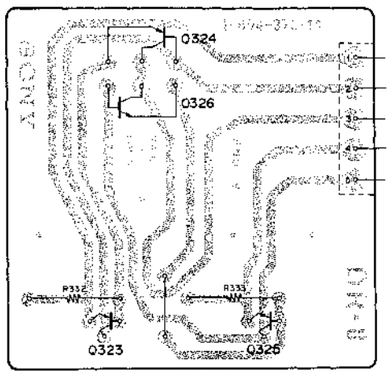
Q304 B - 2
Q305 B - 3
Q308 A - 2
Q309 A - 3
Q312 B - 1
Q313 C - 2
Q314 B - 2
Q315 H - 3
Q316 G - 4
Q317 I - 4
Q320 H - 2
Q321 H - 2
Q322 I - 2
Q330 F - 2
Q331 F - 4
Q332 E - 2
Q333 E - 2
Q334 D - 2
Q335 E - 2
Q336 G - 5
Q337 I - 3

RV1 E - 4
RV2 F - 5

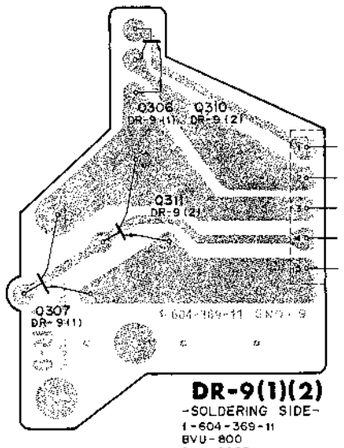
TP301 F - 6
TP302 I - 6
TP303 H - 6
TP304 F - 6
TP305 E - 6

PD-14, PD-15, PD-17, PD-21, DR-8, DR-9 (POWER DRIVE)
(POWER SUPPLY)

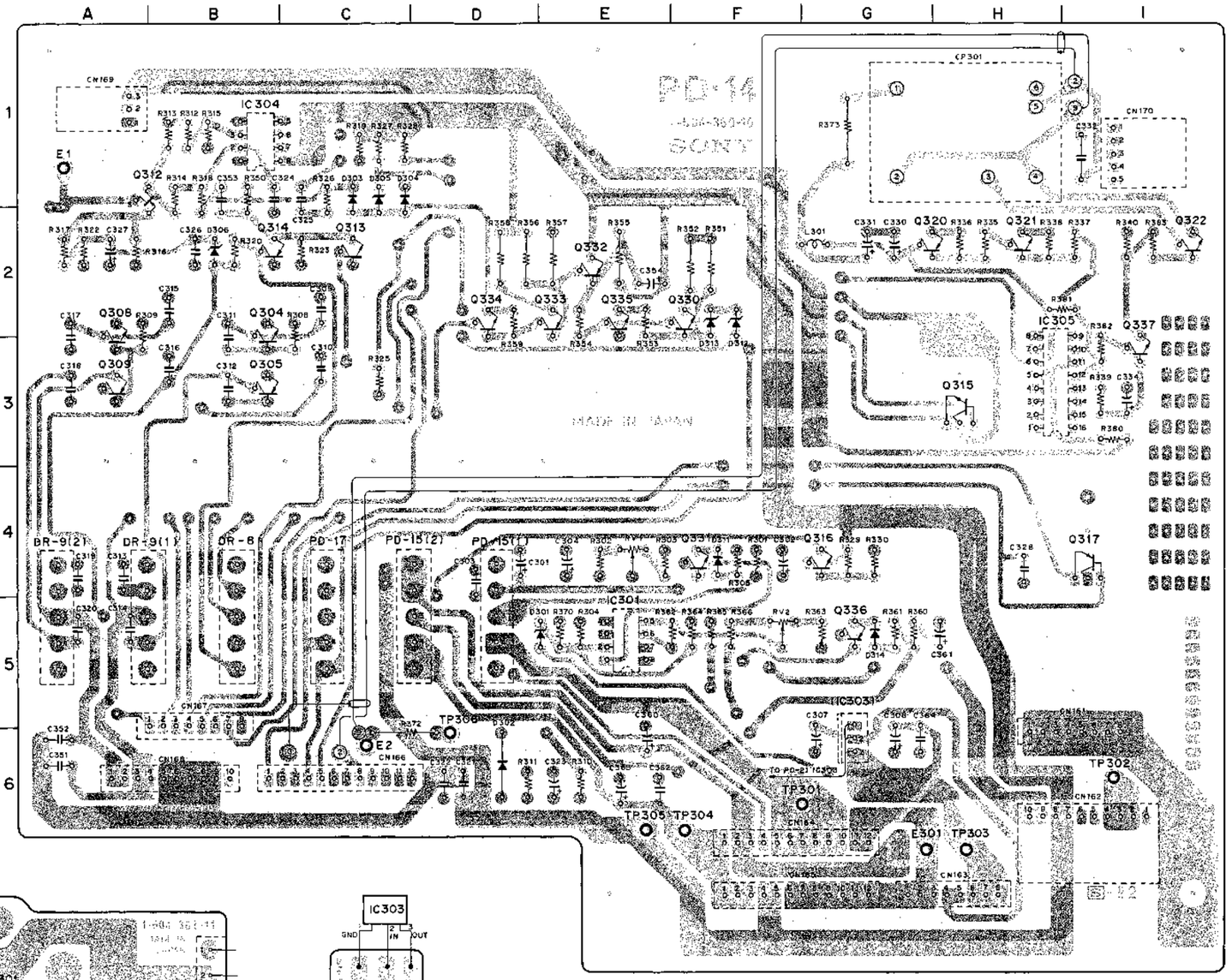
SER. NO. 12336 to 12855



DR-8 -SOLDERING SIDE-
1-604-373-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM



DR-9(1)(2)
-SOLDERING SIDE-
1-604-369-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM



PD-14 -SOLDERING SIDE-
1-604-360-16
BVU-800 (S/N.16601 ~ 17900(U/C))
(S/N.11151 ~ 11550(J))
BVU-800P (S/N.12336 ~ 12855)

CN161 I-6
CN162 I-6
CN163 H-6
CN164 F-6
CN165 F-6
CN166 C-6
CN167 B-5
CN168 B-6
CN169 A-1
CN170 I-1

CP301 H-1

D301 D-5
D302 D-6
D303 C-1
D304 C-1
D305 C-1
D306 B-2
D311 F-4
D312 F-2
D313 F-2
D314 G-5

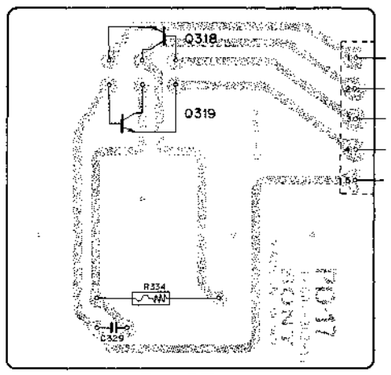
E1 A-1
E2 C-6
E301 G-6

IC301 E-5
IC303 (G-5)
IC304 B-1
IC305 H-3

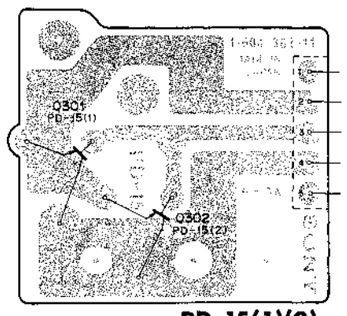
Q304 B-2
Q305 B-3
Q308 A-2
Q309 A-3
Q312 B-1
Q313 C-2
Q314 B-2
Q315 H-3
Q316 G-4
Q317 I-4
Q320 H-2
Q321 H-2
Q322 I-2
Q330 F-2
Q331 F-4
Q332 E-2
Q333 E-2
Q334 D-2
Q335 E-2
Q336 G-5
Q337 I-3

RV1 E-4
RV2 F-5

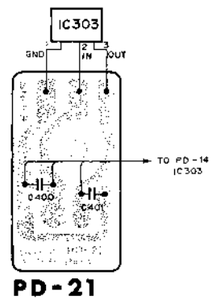
TP301 F-6
TP302 I-6
TP303 H-6
TP304 F-6
TP305 E-6
TP306 D-6



PD-17 -SOLDERING SIDE-
1-604-362-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM



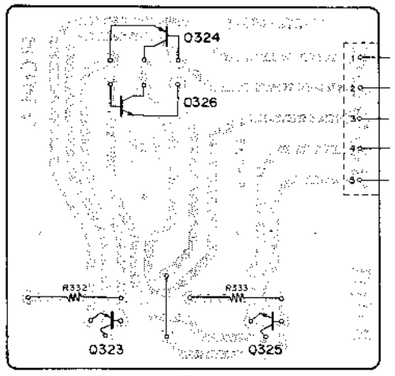
PD-15(1)(2)
-SOLDERING SIDE-
1-604-361-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM



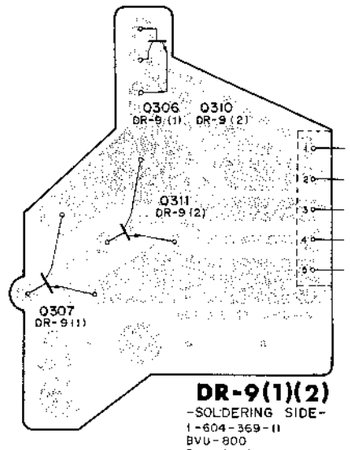
PD-21
-SOLDERING SIDE-
1-608-010-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM

PD-14, PD-15, PD-17, PD-21, DR-8, DR-9 (POWER DRIVE)
(POWER SUPPLY)

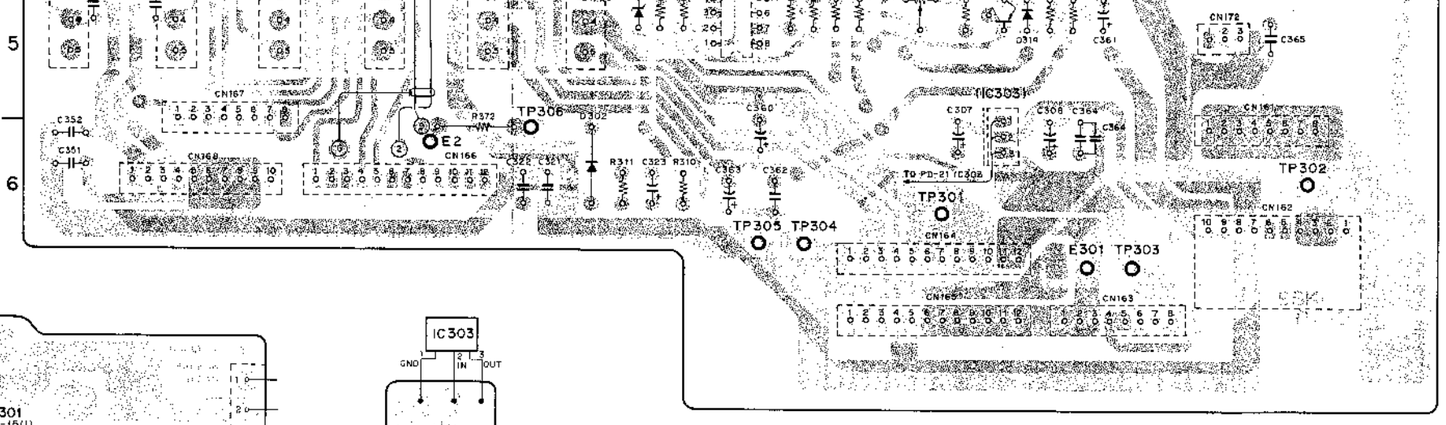
SER. NO. 12856 and higher (PAL)



DR-8 -SOLDERING SIDE-
1-604-373-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM



DR-9(1)(2)
-SOLDERING SIDE-
1-604-369-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM



PD-14 -SOLDERING SIDE-
1-604-360-17
BVU-800 {S/N.17901 ~(U/C) / S/N.11551 ~(J)}
BVU-800P (S/N.12856 ~)
BVU-800S (S/N.10236 ~)
BVU-800PM(S/N.10151 ~)

CN161 I-6
CN162 I-6
CN163 H-6
CN164 F-6
CN165 F-6
CN166 C-6
CN167 B-5
CN168 B-6
CN169 A-1
CN170 I-1
CN172 H-5

CP301 H-1

D301 D-5
D302 D-6
D303 C-1
D304 C-1
D305 C-1
D306 B-2
D311 F-4
D312 F-2
D313 F-2
D314 G-5

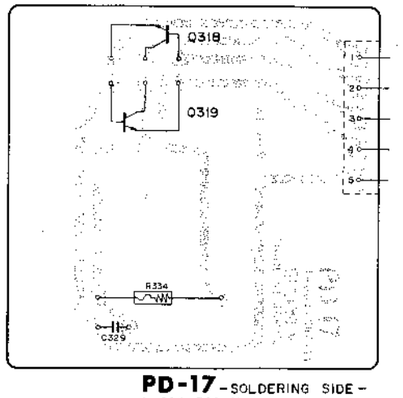
E1 A-1
E2 C-6
E301 G-6

IC301 E-5
IC303 (G-5)
IC304 B-1
IC305 H-3

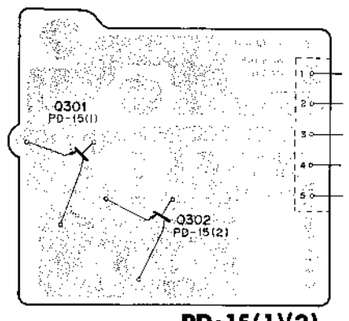
Q304 B-2
Q305 B-3
Q308 A-2
Q309 A-3
Q312 B-1
Q313 C-2
Q314 B-2
Q315 H-3
Q316 G-4
Q317 I-4
Q320 H-2
Q321 H-2
Q322 I-2
Q330 F-2
Q331 F-4
Q332 E-2
Q333 E-2
Q334 D-2
Q335 E-2
Q336 G-5
Q337 I-3

RV1 E-4
RV2 F-5

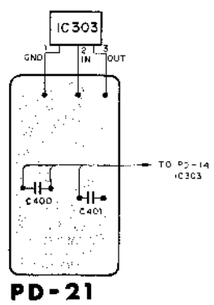
TP301 F-6
TP302 I-6
TP303 H-6
TP304 F-6
TP305 E-6
TP306 D-6



PD-17 -SOLDERING SIDE-
1-604-362-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM



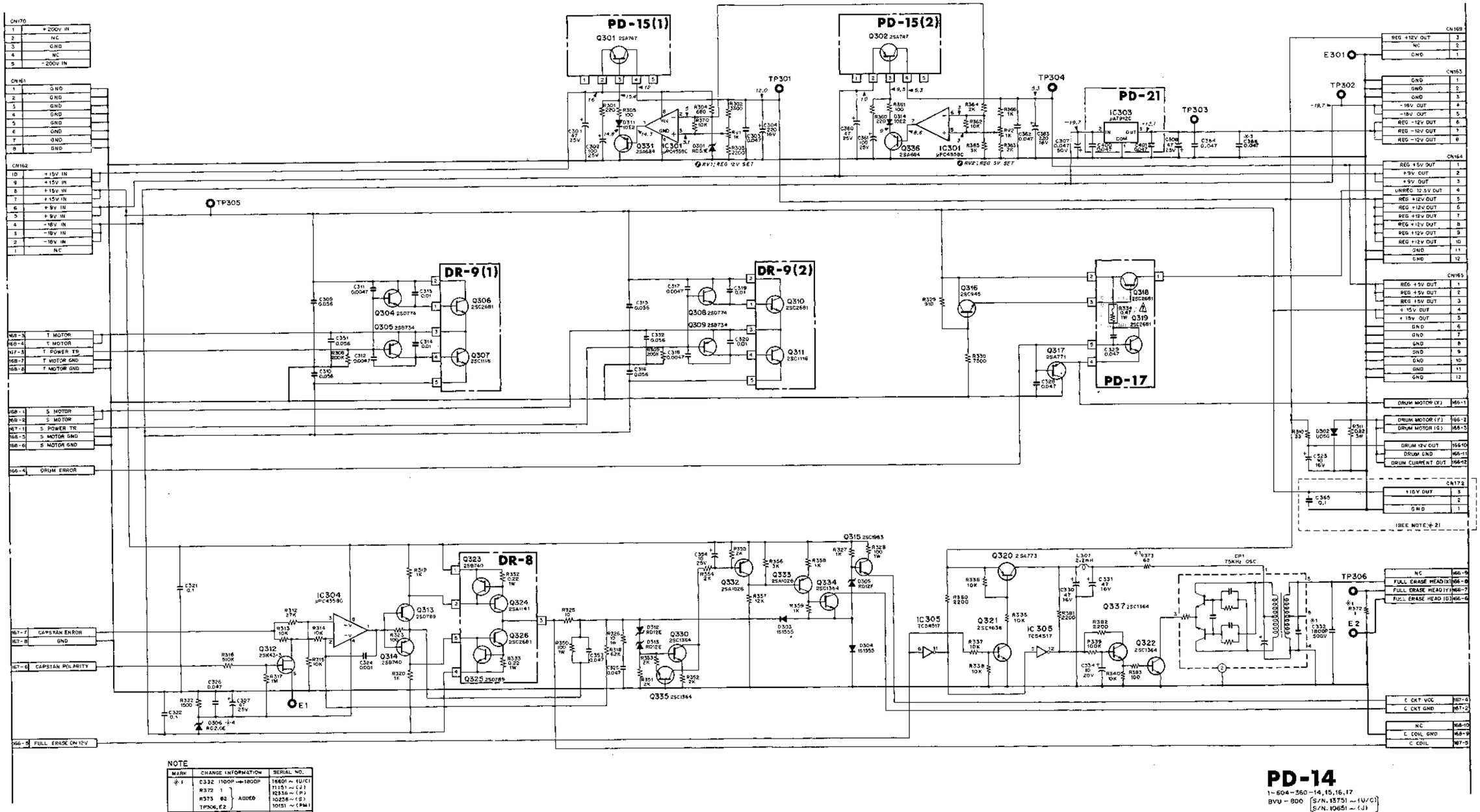
PD-15(1)(2)
-SOLDERING SIDE-
1-604-361-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM



PD-21
-SOLDERING SIDE-
1-608-010-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM

PD-14, PD-15, PD-17, PD-21, DR-8, DR-9 (POWER DRIVE)
(POWER SUPPLY)

SER. NO. 11491 and higher (PAL)
SER. NO. 10081 and higher (SECAM)



NOTE

MARK	CHANGE INFORMATION	SERIAL NO.
※1	C332 1800P → 1800P R372 1 R373 62 ADDED TP306, E2	16601 ~ (U/C) 11151 ~ (J) 12536 ~ (P) 10236 ~ (S) 10151 ~ (PM)
※2	CN172 ADD C363 0.1 ADD	17901 ~ (U/C) 11551 ~ (J) 12656 ~ (P) 10236 ~ (S) 10151 ~ (PM)
※3	C366 0.047 ADD	22001 ~ (U/C) 12201 ~ (J) 14945 ~ (P) 10506 ~ (S) 10251 ~ (PM)
※4	D306 RD3.0E → RD2.0E	24053 ~ (U/C) 12613 ~ (J) 16329 ~ (P) 10644 ~ (S) 10433 ~ (PM)

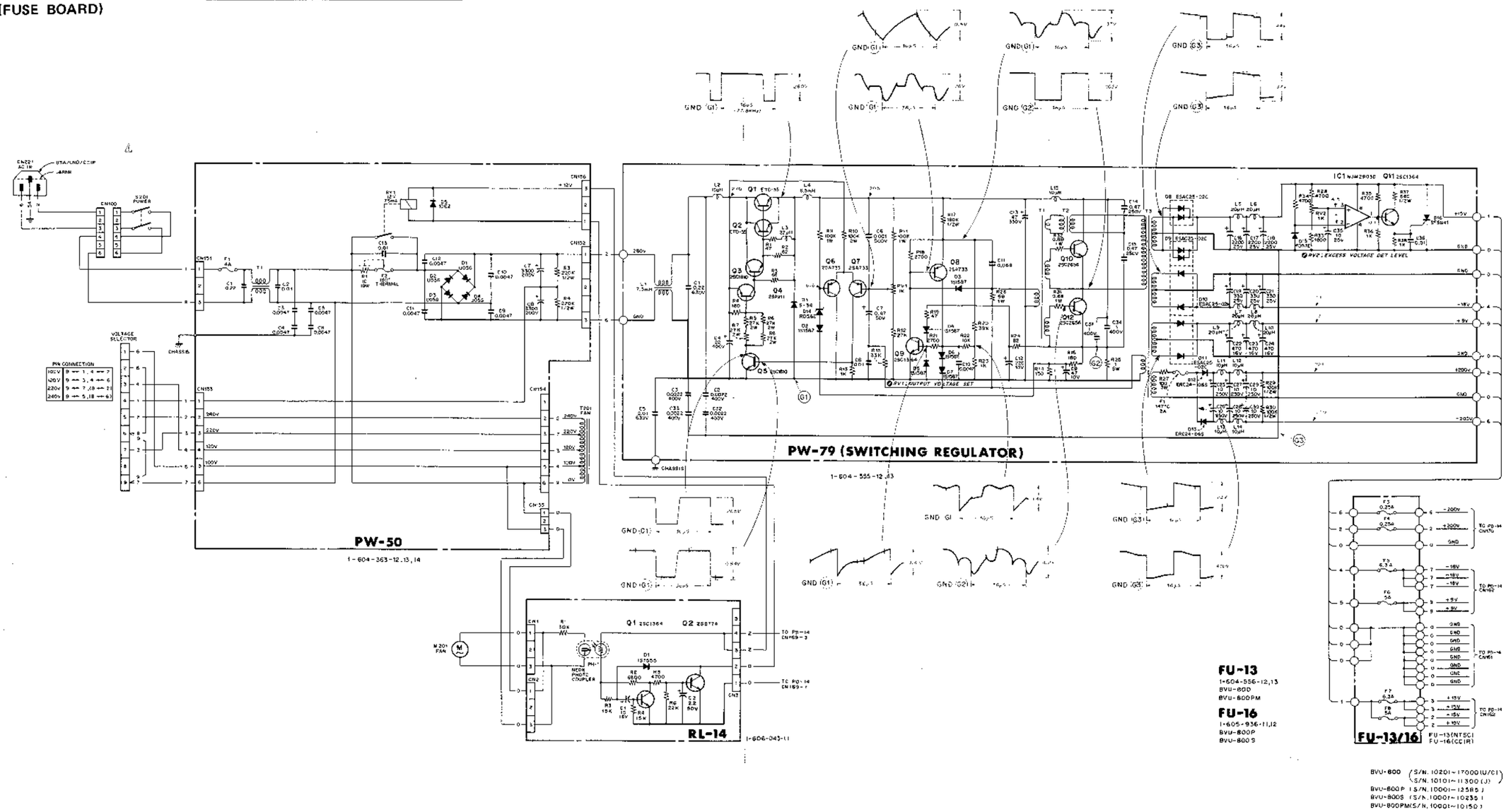
PD-14

1~504~360~14,15,16,17
BVU~800 (S/N. 13751 ~ (U/C)
S/N. 10651 ~ (J))
BVU~800P (S/N. 11491 ~)
BVU~800S (S/N. 10081 ~)
BVU~800PM (S/N. 10001 ~
S/N. 90101 ~)

The shaded and ⚠-marked components are critical to safety.
Replace only with same components as specified.

PW-50, RL-14 (RECTIFIER)
PW-79 (SWITCHING REGULATOR)
FU-16 (FUSE BOARD)

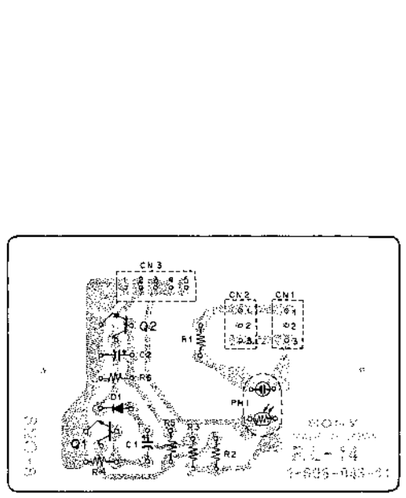
SER. NO. 10001 to 12585 (PAL)
SER. NO. 10001 to 10235 (SECAM)



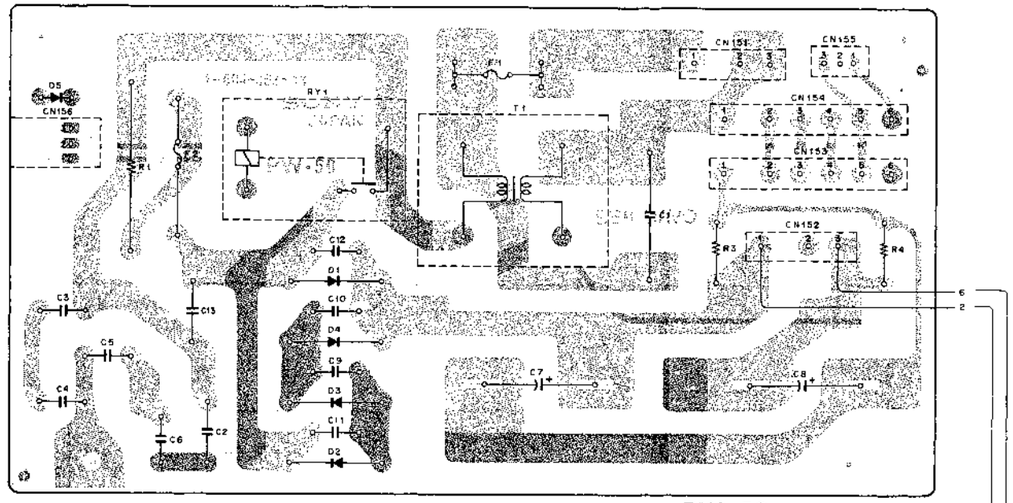
The shaded and ⚠-marked components are critical to safety.
Replace only with same components as specified.

PW-50, RL-14 (RECTIFIER)
PW-79 (SWITCHING REGULATOR)
FU-16 (FUSE BOARD)

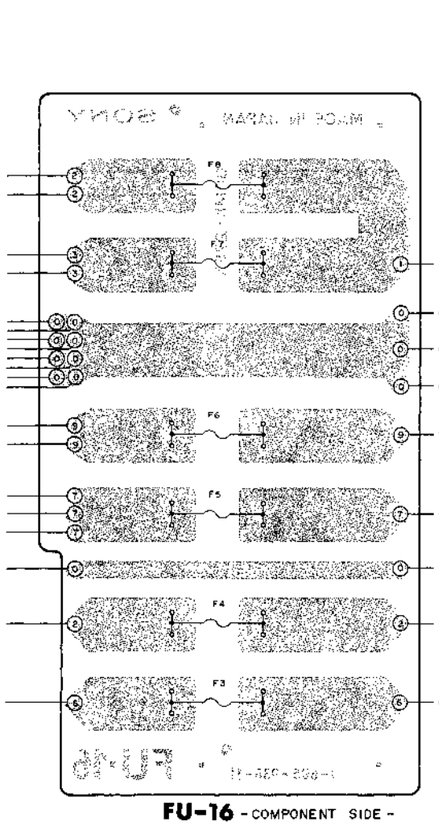
SER. NO. 10001 to 12585 (PAL)
SER. NO. 10001 to 10235 (SECAM)



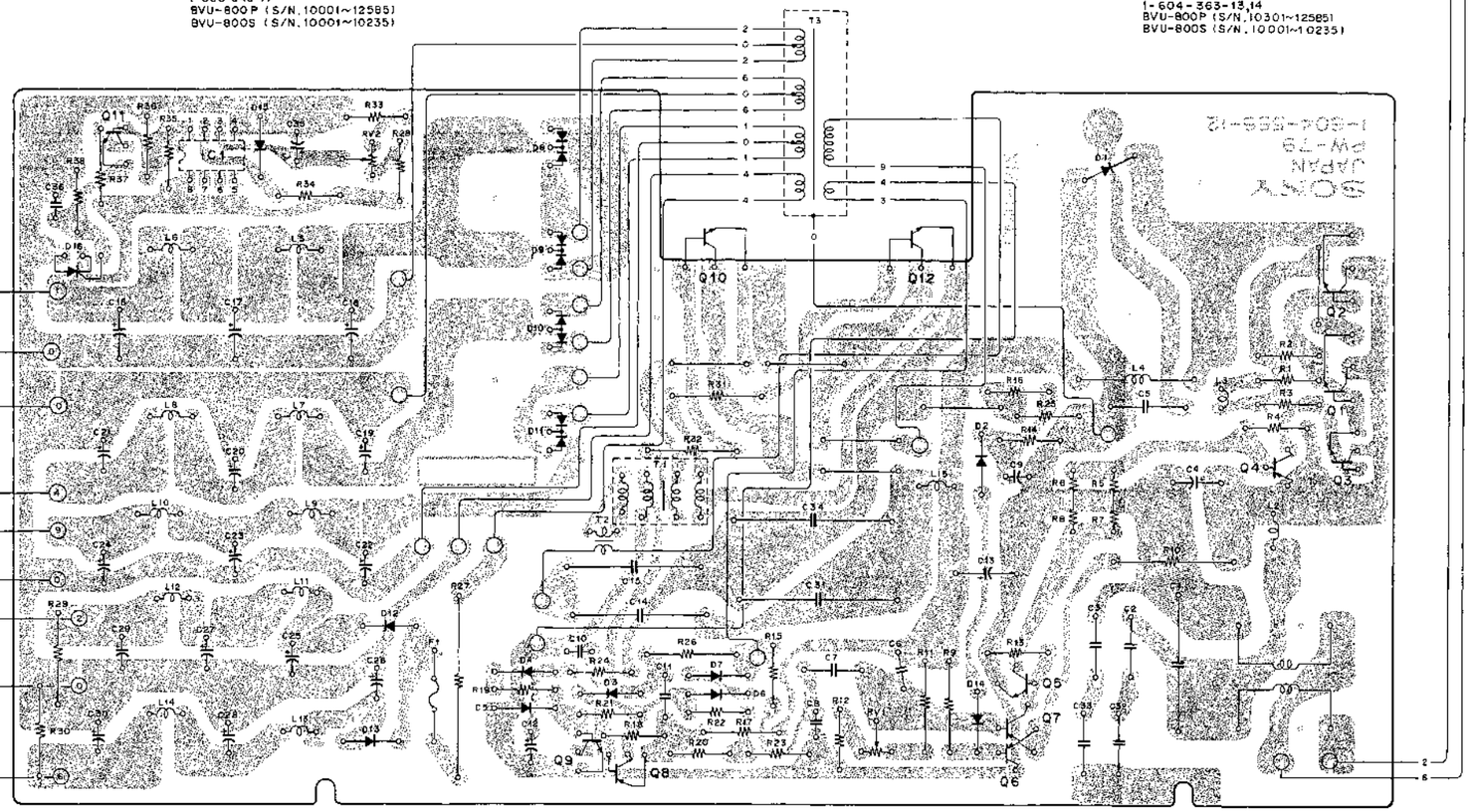
RL-14 - SOLDERING SIDE -
1-606-043-11
BVU-800P (S/N, 10001~12585)
BVU-800S (S/N, 10001~10235)



PW-50 - SOLDERING SIDE -
1-604-363-13,14
BVU-800P (S/N, 10301~12585)
BVU-800S (S/N, 10001~10235)



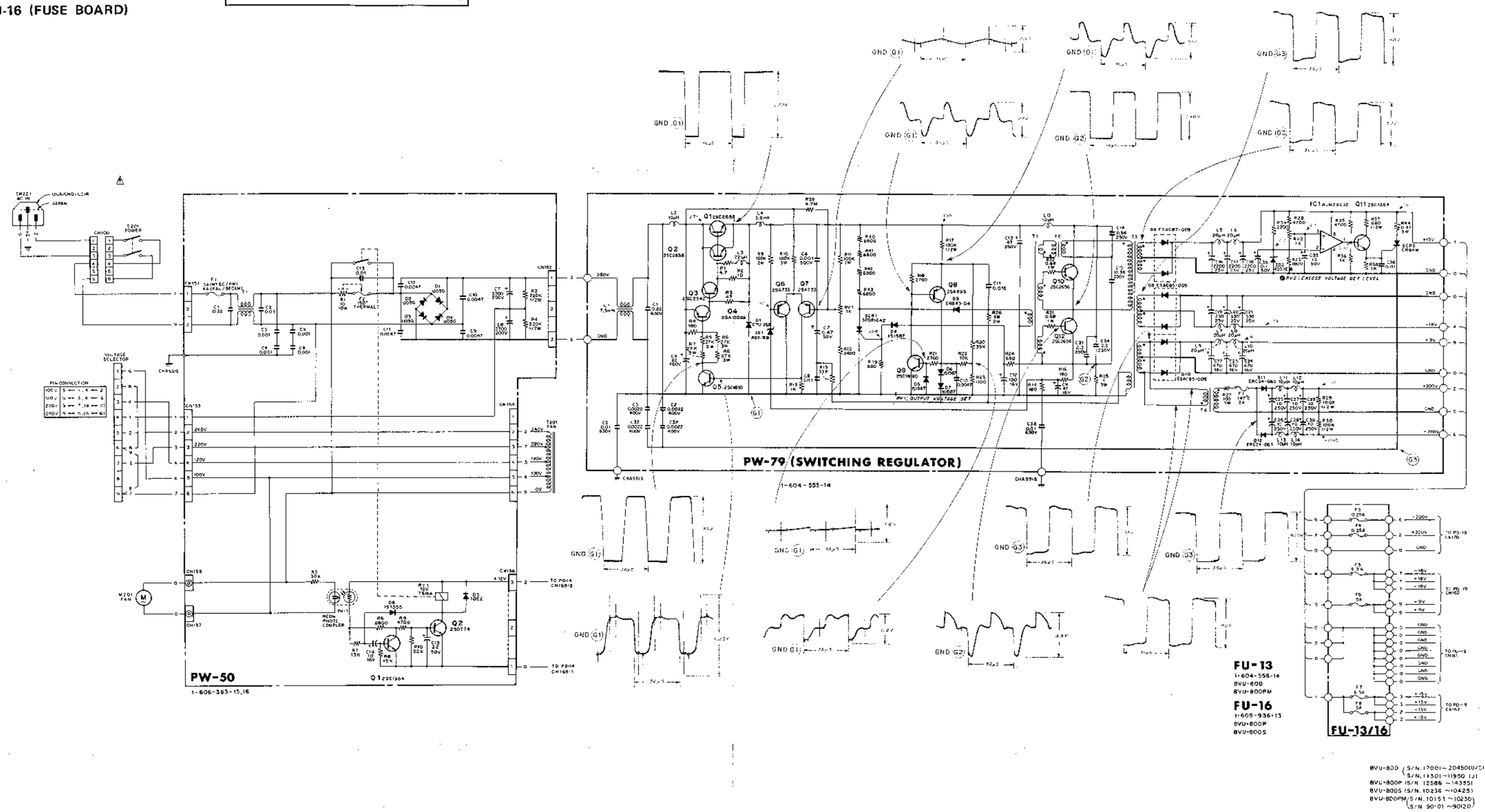
FU-16 - COMPONENT SIDE -
1-605-936-11,12
BVU-800P (S/N, 10001~12585)
BVU-800S (S/N, 10001~10235)



PW-79 - SOLDERING SIDE -
1-604-555-12,13
BVU-800P (S/N, 10001~12585)
BVU-800S (S/N, 10001~10235)

PW-50 (RECTIFIER)
PW-79 (SWITCHING REGULATOR)
FU-16 (FUSE BOARD)

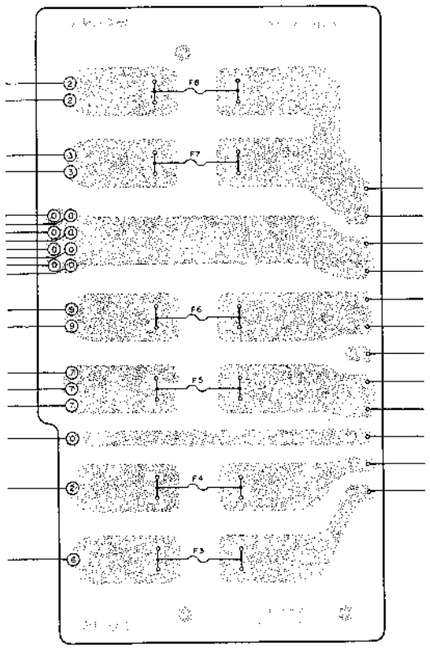
SER. NO. 12586 to 14355 (PAL)
SER. NO. 10236 to 10425 (SECAM)



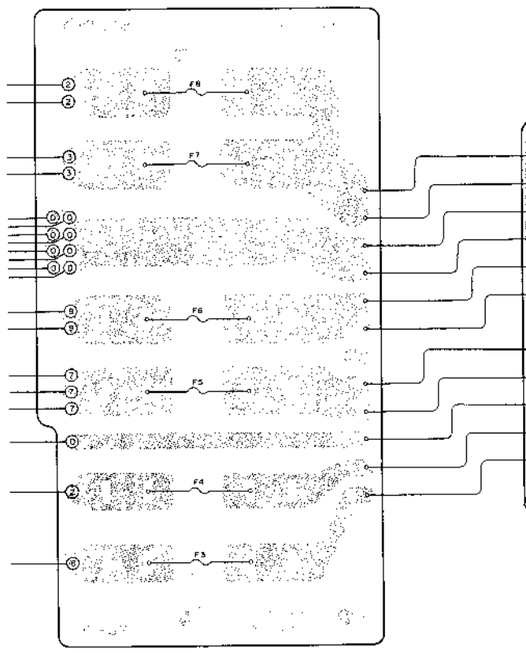
The shaded and ⚠-marked components are critical to safety.
Replace only with same components as specified.

PW-50 (RECTIFIER)
PW-79 (SWITCHING REGULATOR)
FU-16 (FUSE BOARD)

SER. NO. 12586 to 14355 (PAL)
SER. NO. 10236 to 10425 (SECAM)

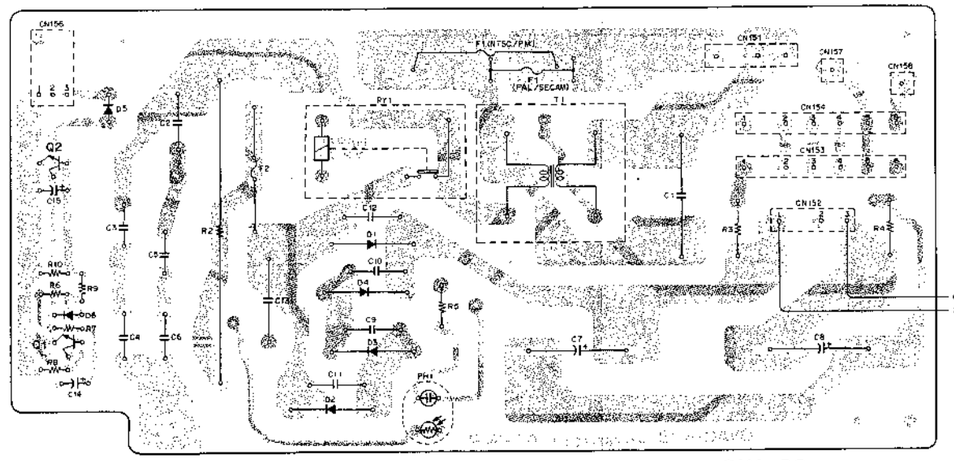


FU-16 – COMPONENT SIDE –
1-605-936-13
BVU-800P(S/N.12586~14355)
BVU-800S(S/N.10236~10425)

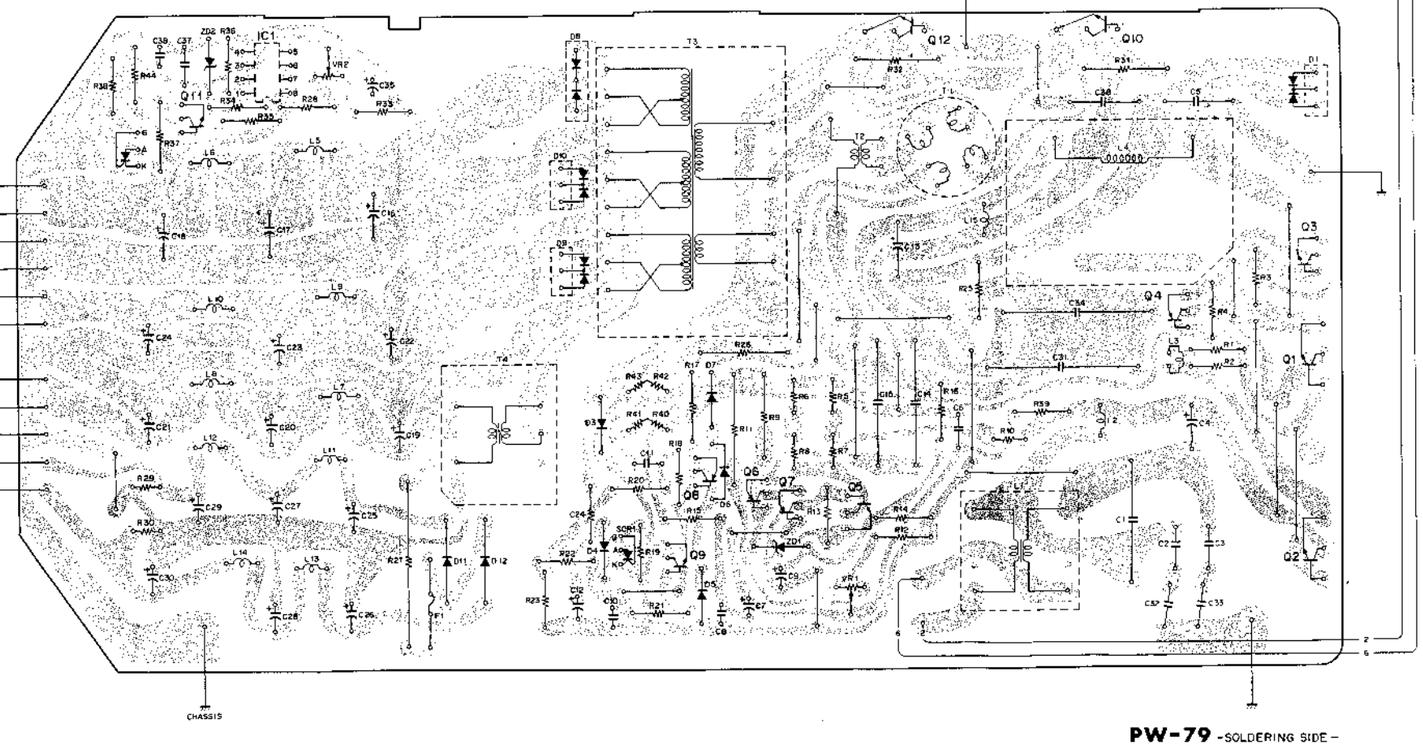


FU-13 – COMPONENT SIDE –
1-604-556-14
BVU-800 (S/N.17001~20450(U/C)
(S/N.11301~11950(J))
BVU-800PM (S/N.10151~10230)
(S/N.90101~90120)

17-77(b)



PW-50 – SOLDERING SIDE –
1-604-363-15,16

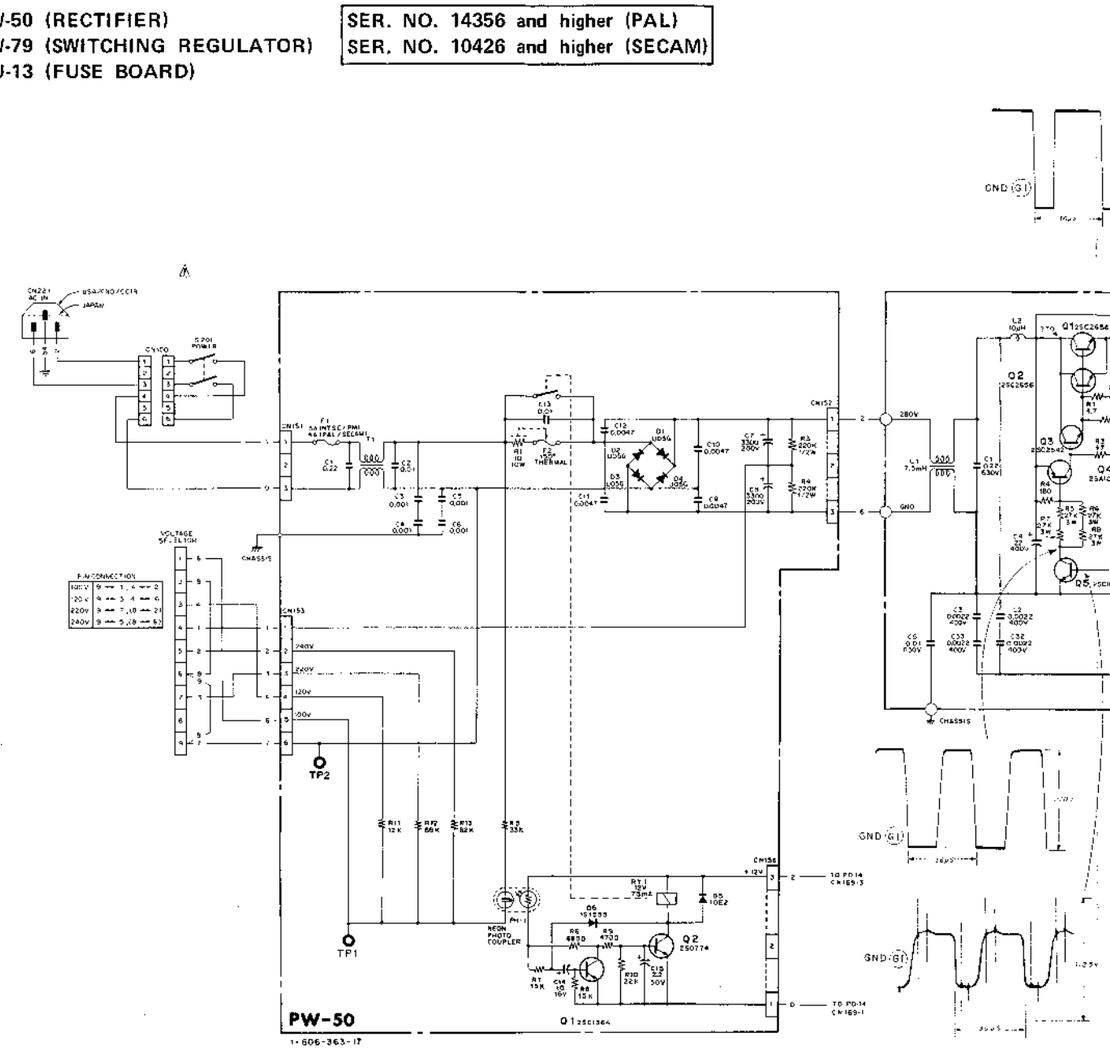


PW-79 – SOLDERING SIDE –
1-604-555-14

17-78(b)

PW-50 (RECTIFIER)
PW-79 (SWITCHING REGULATOR)
FU-13 (FUSE BOARD)

SER. NO. 14356 and higher (PAL)
SER. NO. 10426 and higher (SECAM)



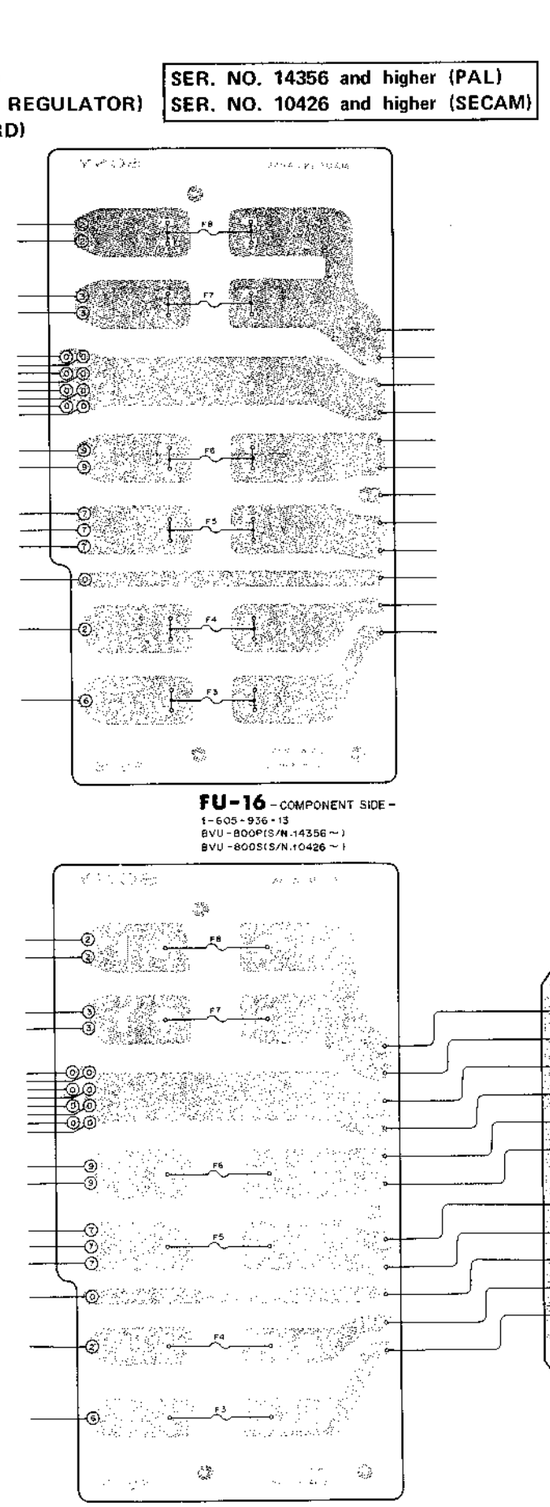
BVU-800 (S/N 20451~(U.K.)
S/N 19511~(J))
BVU-800PS(S/N 14356~)
BVU-800S15 (S/N 10426~)
BVU-800PMS(S/N 10291~)

The shaded and ⚠-marked components are critical to safety.
Replace only with same components as specified.

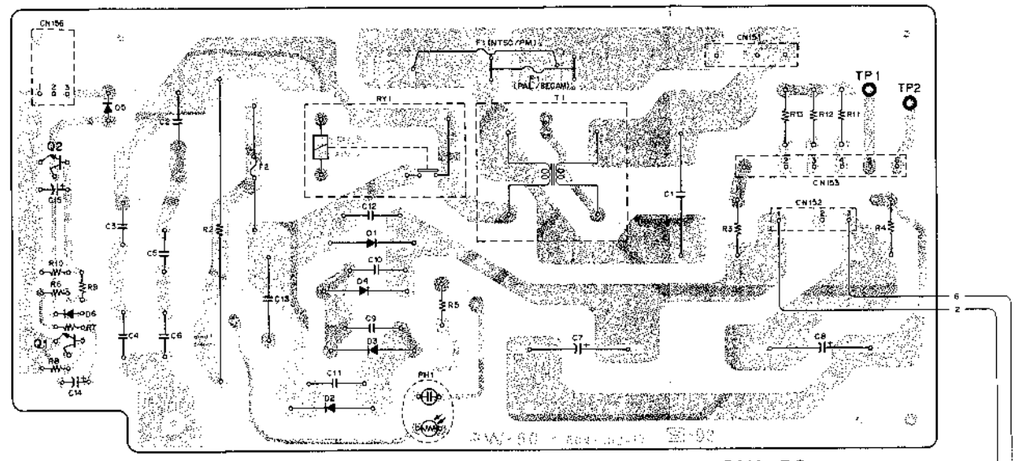
PW-50 (RECTIFIER)
PW-79 (SWITCHING REGULATOR)
FU-13 (FUSE BOARD)

SER. NO. 14356 and higher (PAL)
SER. NO. 10426 and higher (SECAM)

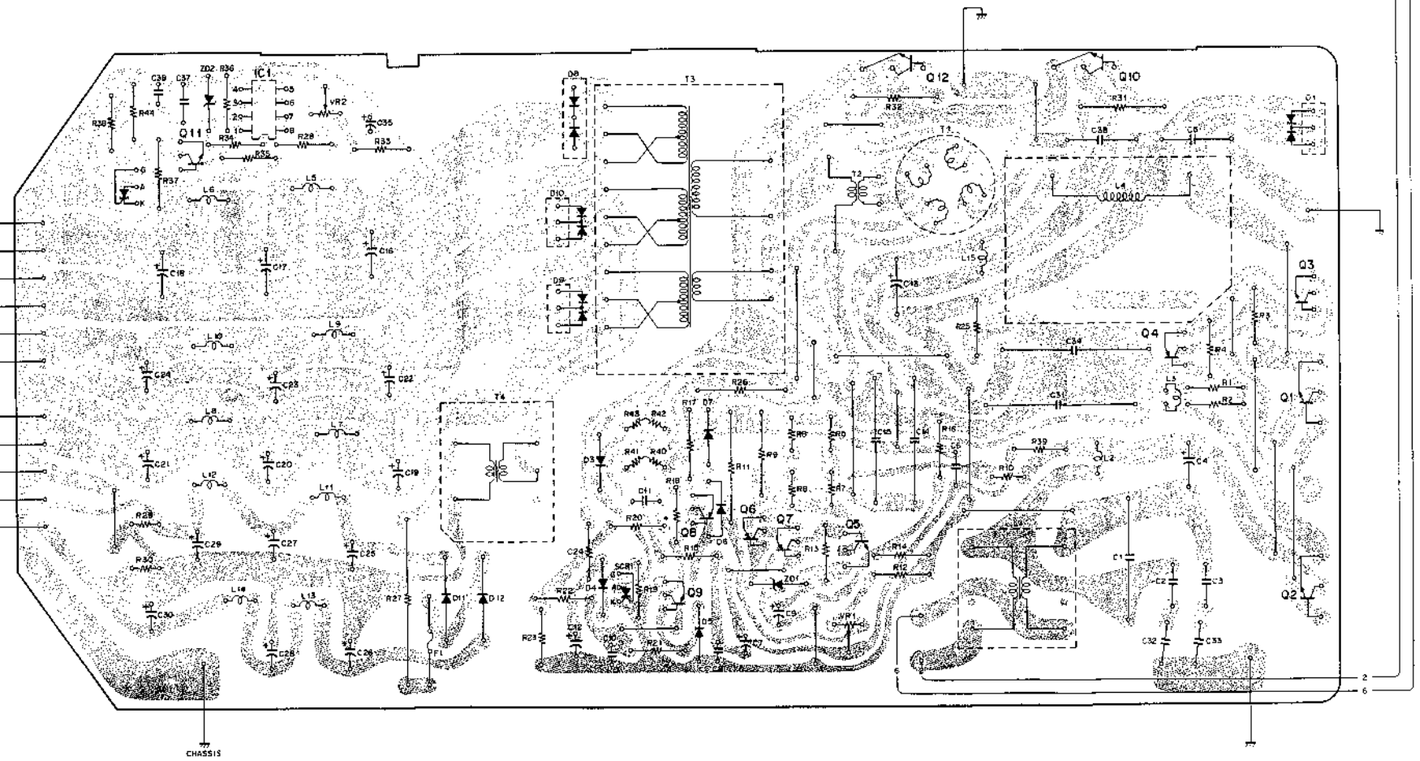
FU-16 – COMPONENT SIDE –
1-605-936-13
BVU-800P(S/N.14356~)
BVU-800S(S/N.10426~)



FU-13 – COMPONENT SIDE –
1-604-556-14
BVU-800 (S/N.20451~(U/C) / S/N.11951~(J))
BVU-800PM(S/N.10231~)

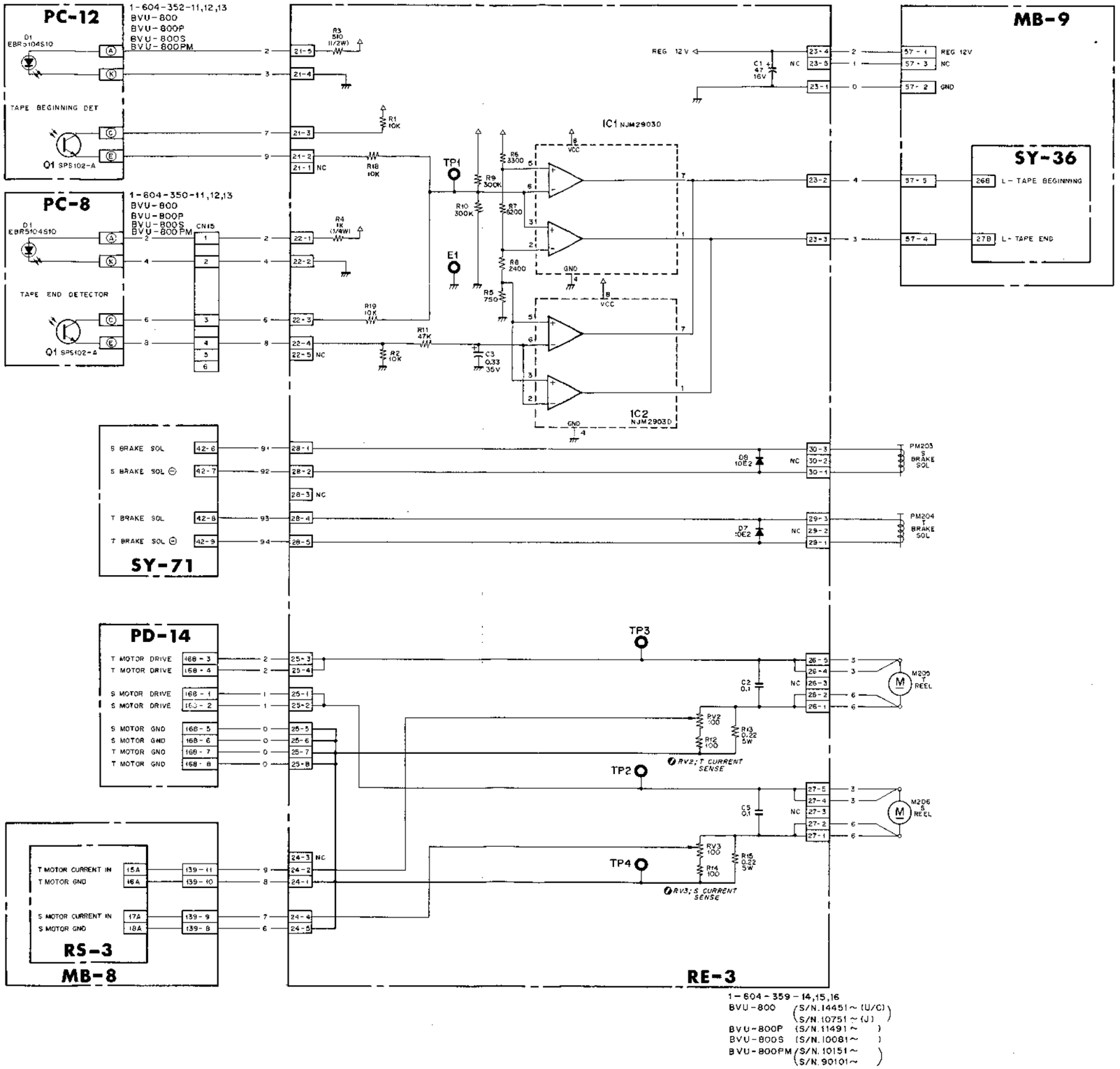


PW-50 – SOLDERING SIDE –
1-604-363-17



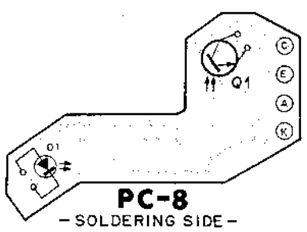
PW-79 – SOLDERING SIDE –
1-604-555-14

RE-3 (REEL MOTOR)
PC-8, PC-12 (TAPE POSITION DETECTOR)

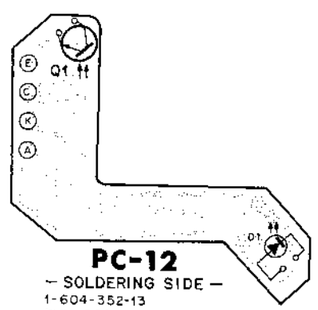


RE-3, PC-8, PC-12

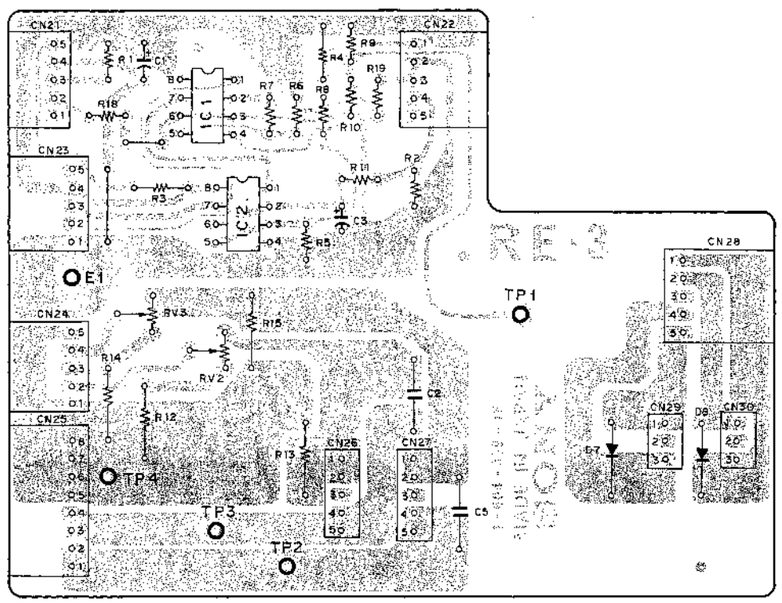
RE-3 (REEL MOTOR)
PC-8, PC-12 (TAPE POSITION DETECTOR)



PC-8
– SOLDERING SIDE –
1-604-350-13
BVU-800
BVU-800P
BVU-800S
BVU-800PM

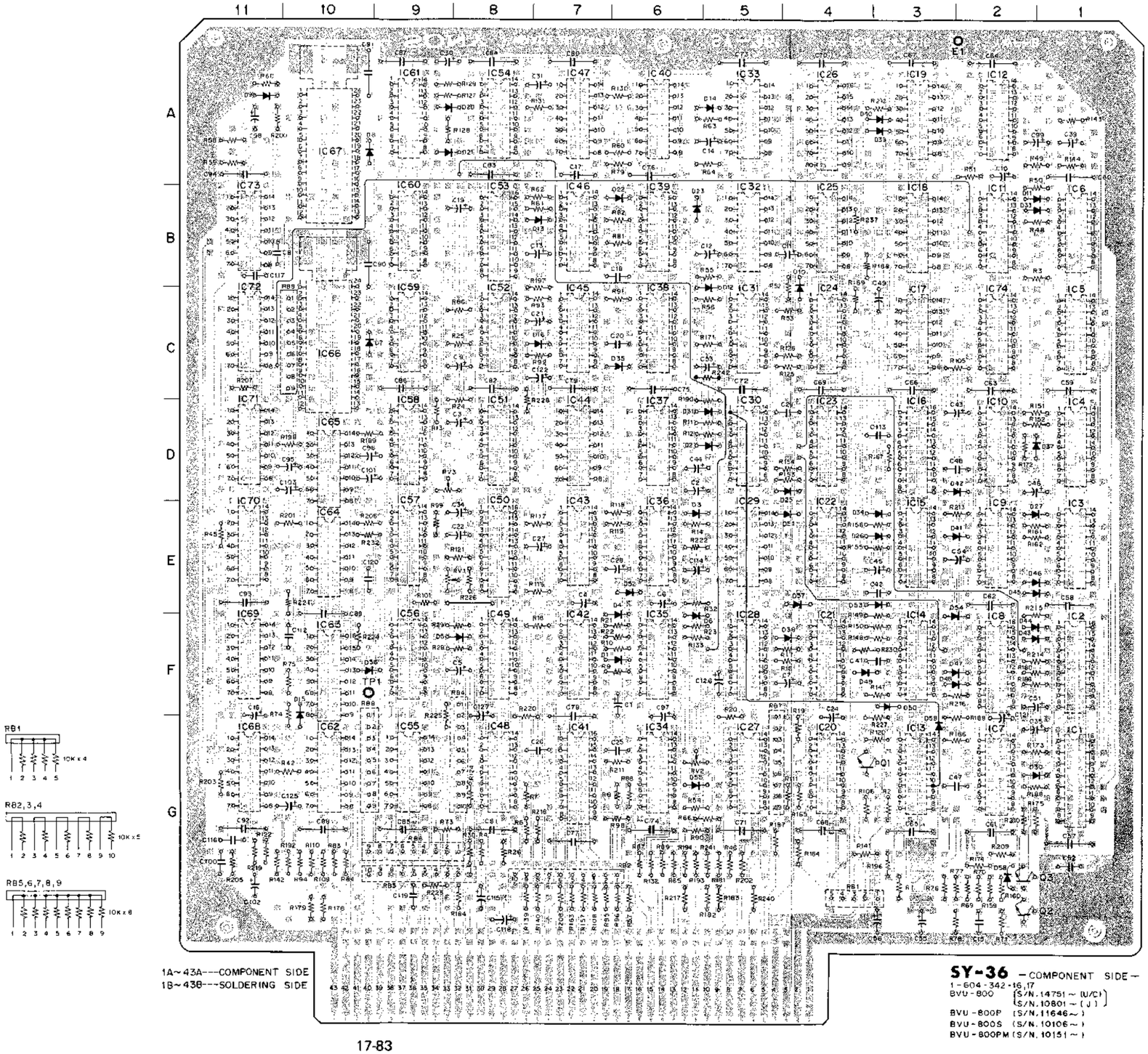


PC-12
– SOLDERING SIDE –
1-604-352-13
BVU-800
BVU-800P
BVU-800S
BVU-800PM



RE-3 – SOLDERING SIDE –
1-604-359-16
BVU-800
BVU-800P
BVU-800S
BVU-800PM

SY-36 (FUNCTION SYSTEM CONTROL)



SY-36 —COMPONENT SIDE—
1-604-342-16,17
BVU-800 (S/N.14751~(U/C)) (S/N.10801~(J))
BVU-800P (S/N.11646~)
BVU-800S (S/N.10106~)
BVU-800PM (S/N.10151~)

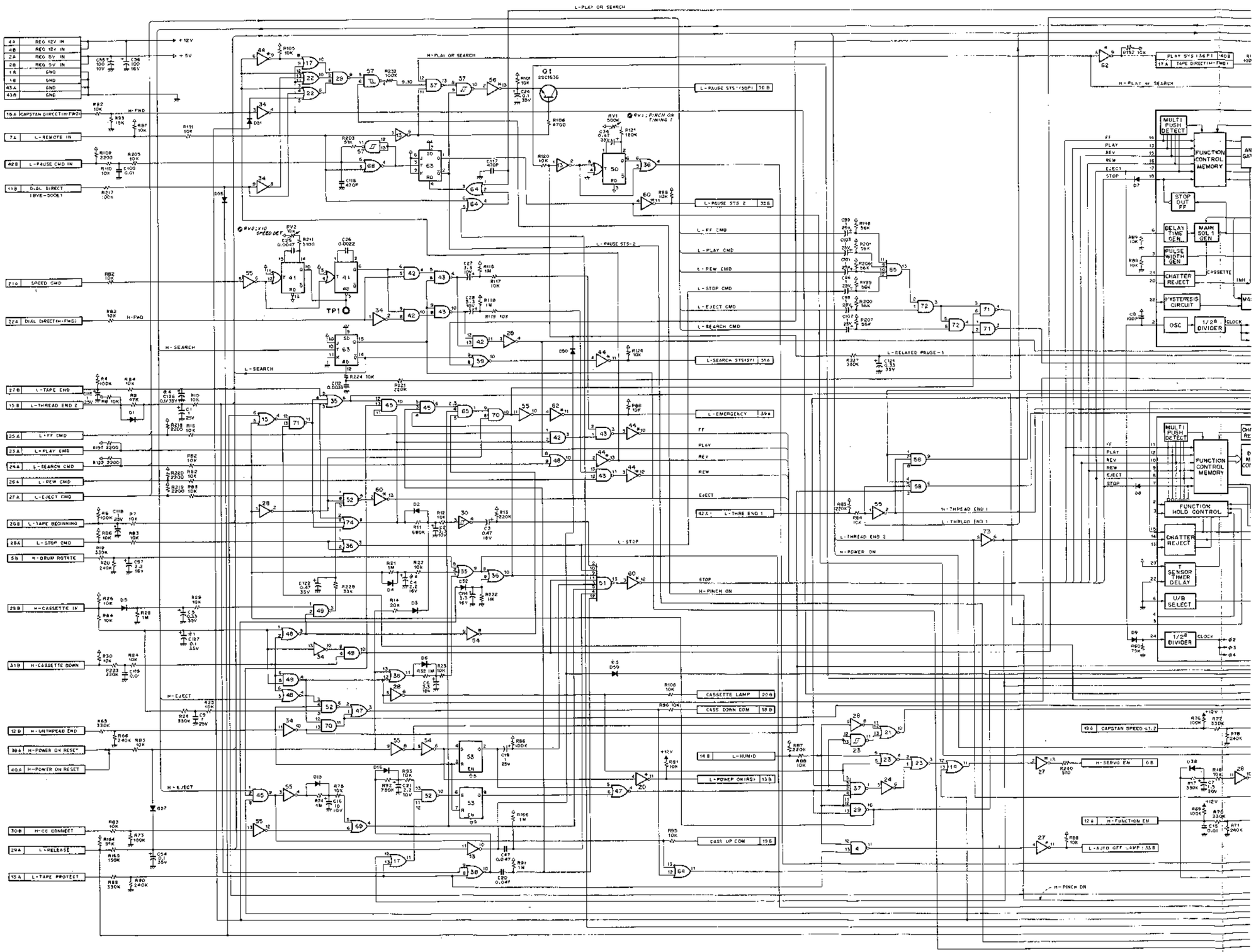
D1	F-6	IC24	C-4		
D2	D-5	IC25	B-4		
D3	E-6	IC26	A-4		
D4	F-6	IC27	G-5		
D5	F-8	IC28	F-5		
D6	E-6	IC29	E-5		
D7	C-10	IC30	D-5		
D8	A-10	IC31	C-5		
D9	A-11	IC32	B-5		
D10	C-4	IC33	A-5		
D11	B-2	IC34	G-6		
D12	C-5	IC35	F-6		
D13	B-7	IC36	E-6		
D14	A-5	IC37	D-6		
D15	F-10	IC38	C-6		
D16	C-7	IC39	B-6		
D20	A-9	IC40	A-6		
D21	A-9	IC41	G-7		
D22	B-6	IC42	F-7		
D23	B-6	IC43	E-7		
D25	D-4	IC44	D-7		
D26	E-3	IC45	C-7		
D27	E-2	IC46	B-7		
D30	G-2	IC47	A-7		
D31	D-5	IC48	G-8		
D33	B-2	IC49	F-8		
D34	D-3	IC50	E-8		
D35	C-6	IC51	D-8		
D37	D-1	IC52	C-8		
D38	F-4	IC53	B-8		
D39	A-3	IC54	A-8		
D40	A-3	IC55	G-9		
D41	E-2	IC56	F-9		
D42	D-2	IC57	E-9		
D43	F-2	IC58	D-9		
D44	F-2	IC59	C-9		
D45	E-2	IC60	B-9		
D46	E-2	IC61	A-9		
D47	F-2	IC62	G-10		
D49	F-4	IC63	F-10		
D50	F-3	IC64	E-10		
D51	E-4	IC65	D-10		
D51	D-4	IC66	C-10		
D52	E-6	IC67	A-10		
D53	E-3	IC68	G-11		
D54	F-2	IC69	F-11		
D55	G-6	IC70	E-11		
D57	E-4	IC71	D-11		
D58	G-2	IC72	C-11		
D59	G-3	IC73	B-11		
		IC74	C-2		
E1	A-2				
		Q1	G-4		
IC1	G-1	Q2	G-2		
IC2	F-1	Q3	G-2		
IC3	E-1				
IC4	D-1	RB1	G-4		
IC5	C-1	RB2	G-7		
IC6	B-1	RB3	G-9		
IC7	G-2	RB4	G-8		
IC8	F-2	RB5	G-7		
IC9	E-2	RB6	G-9		
IC10	D-2	RB7	G-5		
IC11	B-2	RB8	G-10		
IC12	A-2	RB9	C-10		
IC13	G-3				
IC14	F-3	RV1	E-9		
IC15	E-3	RV2	G-6		
IC16	D-3	RV3	D-9		
IC17	C-3				
IC18	B-3	TP1	F-10		
IC19	A-3				
IC20	G-4				
IC21	F-4				
IC22	E-4				
IC23	D-4				

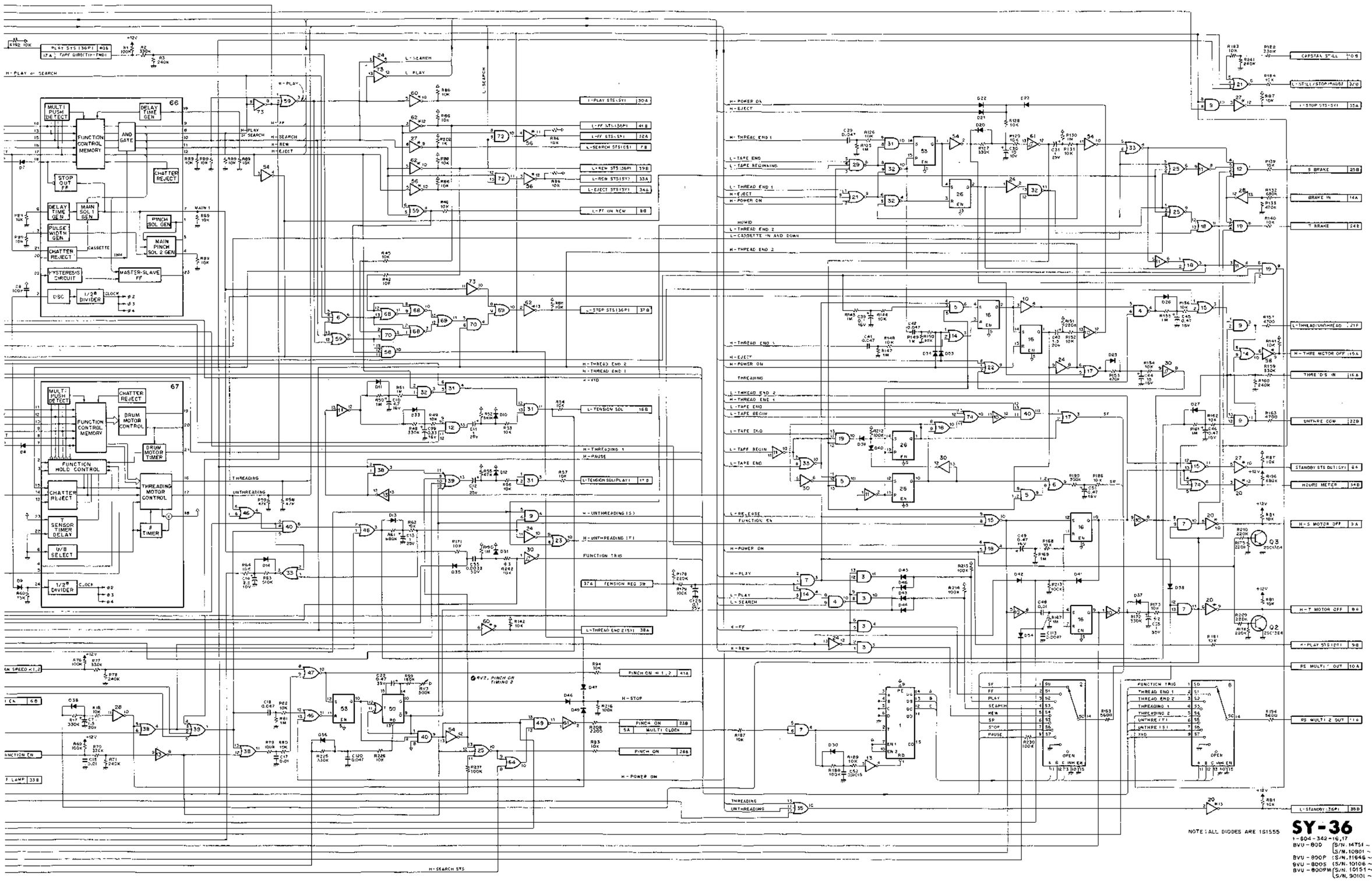
REF NO.	TYPE	PIN NO. +V(15V)	PIN NO. GND
IC1	TC40161BP , CD40161BE	16	8
IC2	TC4512BP , MC14512BCP	16	8
IC3	TC4081BP , CD4081BE	14	7
IC4	TC4011BP , CD4011BE	14	7
IC5	TC4073BP , CD4073BE	14	7
IC6	TC4075BP , CD4075BE	14	7
IC7	TC4081BP , CD4081BE	14	7
IC8	TC4512BP , MC14512BCP	16	8
IC9	TC4081BP , CD4081BE	14	7
IC10	TC4069UBP , CD4069UBE	14	7
IC11	TC4069UBP , CD4069UBE	14	7
IC12	TC4082BP , CD4082BE	14	7
IC13	TC4069UBP , CD4069UBE	14	7
IC14	TC4071BP , CD4071BE	14	7
IC15	TC4001BP , CD4001BE	14	7
IC16	TC4043BP , CD4043BE	16	8
IC17	TC4071BP , CD4071BE	14	7
IC18	TC4071BP , CD4071BE	14	7
IC19	TC4073BP , CD4073BE	14	7
IC20	M54529P		
IC21	TC4025BP , CD4025BE	14	7
IC22	TC4075BP , CD4075BE	14	7
IC23	TC4001BP , CD4001BE	14	7
IC24	TC4069UBP , CD4069UBE	14	7
IC25	TC4025BP , CD4025BE	14	7
IC26	TC4043BP , CD4043BE	16	8
IC27	M54529P		
IC28	TC4069UBP , CD4069UBE	14	7
IC29	TC4023BP , CD4023BE	14	7
IC30	MC14584BCP		
IC31	TC4081BP , CD4081BE	14	7
IC32	TC4011BP , CD4011BE	14	7
IC33	TC4001BP , CD4001BE	14	7
IC34	TC4069UBP , CD4069UBE	14	7
IC35	TC4075BP , CD4075BE	14	7
IC36	TC4071BP , CD4071BE	14	7
IC37	TC4012BP , CD4012BE	14	7
IC38	TC4071BP , CD4071BE	14	7
IC39	TC4072BP , CD4072BE	14	7
IC40	TC4073BP , CD4073BE	14	7
IC41	TC4528BP , MC14528BCP	16	8
IC42	TC4081BP , CD4081BE	14	7
IC43	TC4011BP , CD4011BE	14	7
IC44	M54529P		
IC45	TC4073BP , CD4073BE	14	7
IC46	TC4071BP , CD4071BE	14	7
IC47	TC4001BP , CD4001BE	14	7
IC48	TC4001BP , CD4001BE	14	7
IC49	TC4011BP , CD4011BE	14	7
IC50	HD14538BP	16	8
IC51	TC4068BP , CD4068BE	14	7
IC52	TC4023BP , CD4023BE	14	7
IC53	TC4043BP , CD4043BE	16	8
IC54	TC4069UBP, CD4069UBE	14	7
IC55	TC4069UBP , CD4069UBE	14	7
IC56	M54529P	14	7
IC57	TC4093BP , CD4093BE	14	7
IC58	TC4073BP , CD4073BE	14	7
IC59	TC4001BP , CD4001BE	14	7
IC60	M54529P	14	7
IC61	MC14584BCP	14	7
IC62	M54529P	14	7
IC63	TC4027BP , CD4027BE	16	8
IC64	TC4071BP , CD4071BE	14	7
IC65	TC4082BP , CD4082BE	14	7
IC66	CX756A	F	24
IC67	CX757	F	1
IC68	TC4001BP , CD4001BE	14	7
IC69	TC4071BP , CD4071BE	14	7
IC70	TC4081BP , CD4081BE	14	7
IC71	TC4011BP , CD4011BE	14	7
IC72	TC4081BP , CD4081BE	14	7
IC73	TC4069UBP , CD4069UBE	14	7

SY-36 (FUNCTION SYSTEM CONTROL)

NOTE

MARK	CHANGE INFORMATION	SERIAL NO.
※ 1	C127 1/35V → 0.1/35V	14751 ~ (U/C) 10751 ~ (J) 11646 ~ (PAL) 10106 ~ (SECAM) 1015 ~ (PM) 9010 ~ (PM)
※ 2	C35 2.2/10V → 1/35V	14951 ~ (U/C) 10851 ~ (J) 11646 ~ (PAL) 10126 ~ (SECAM) 10151 ~ (PM) 9010 ~ (PM)
※ 3	D59 1SS193 R242 10K } ADDED	15251 ~ (U/C) 10451 ~ (J) 10126 ~ (SECAM) 11646 ~ (PAL) 10151 ~ (PM) 9010 ~ (PM)
※ 4	C24 1/16V → 2.2/16V C126 1/35V → 0.1/35V	15451 ~ (U/C) 10951 ~ (J) 10106 ~ (SECAM) 12186 ~ (PAL) 10151 ~ (PM) 9010 ~ (PM)





17-87

17-88

SY-36

1-604-342-16,17

BVU-800 (S/N. 14751 ~ (U/C))
(S/N. 10801 ~ (J))

BVU-800P (S/N. 11646 ~)

BVU-800S (S/N. 10106 ~)

BVU-800PM (S/N. 10151 ~)
(S/N. 90101 ~)

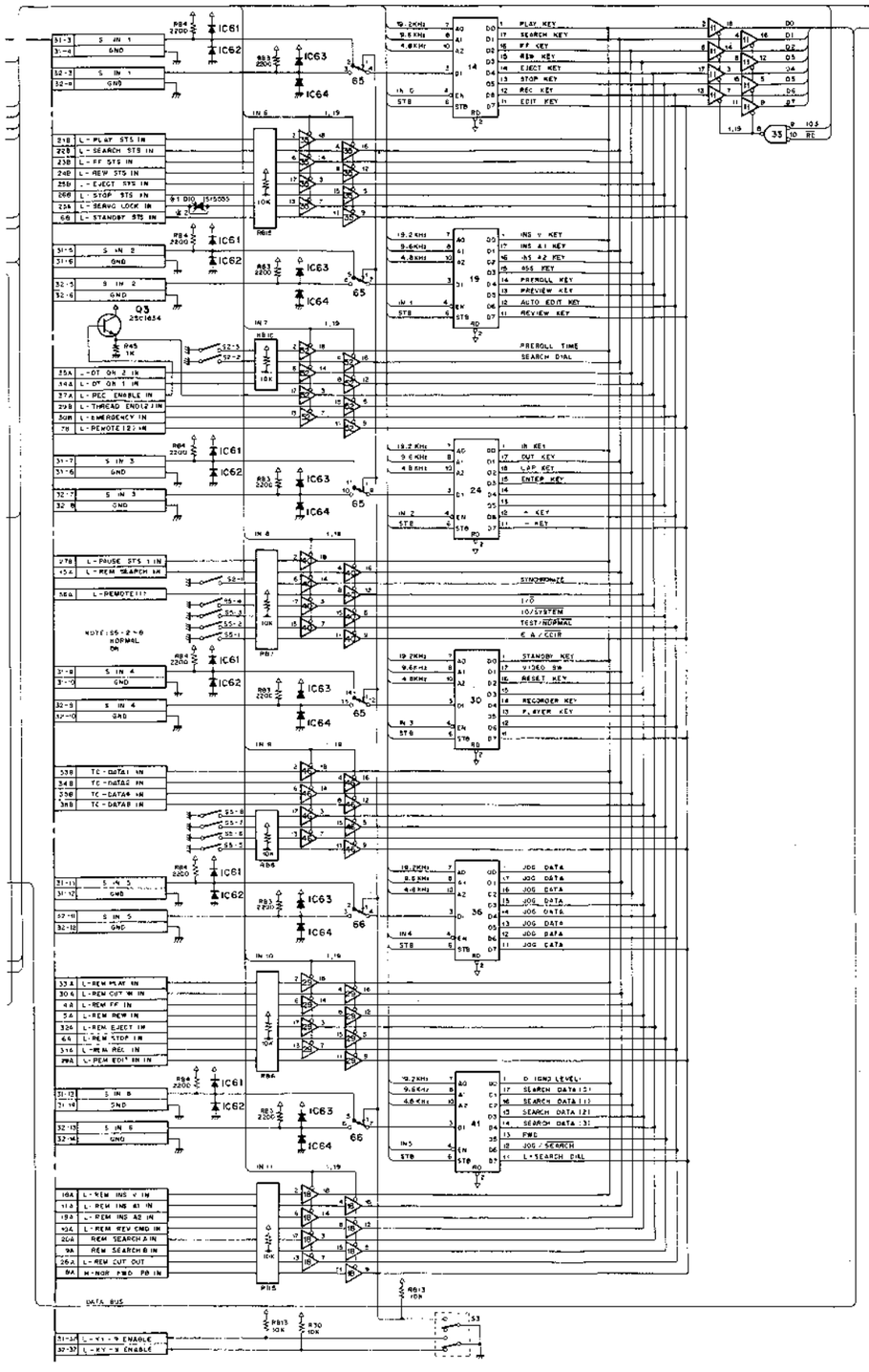
SY-37 (MICRO PROCESSOR)

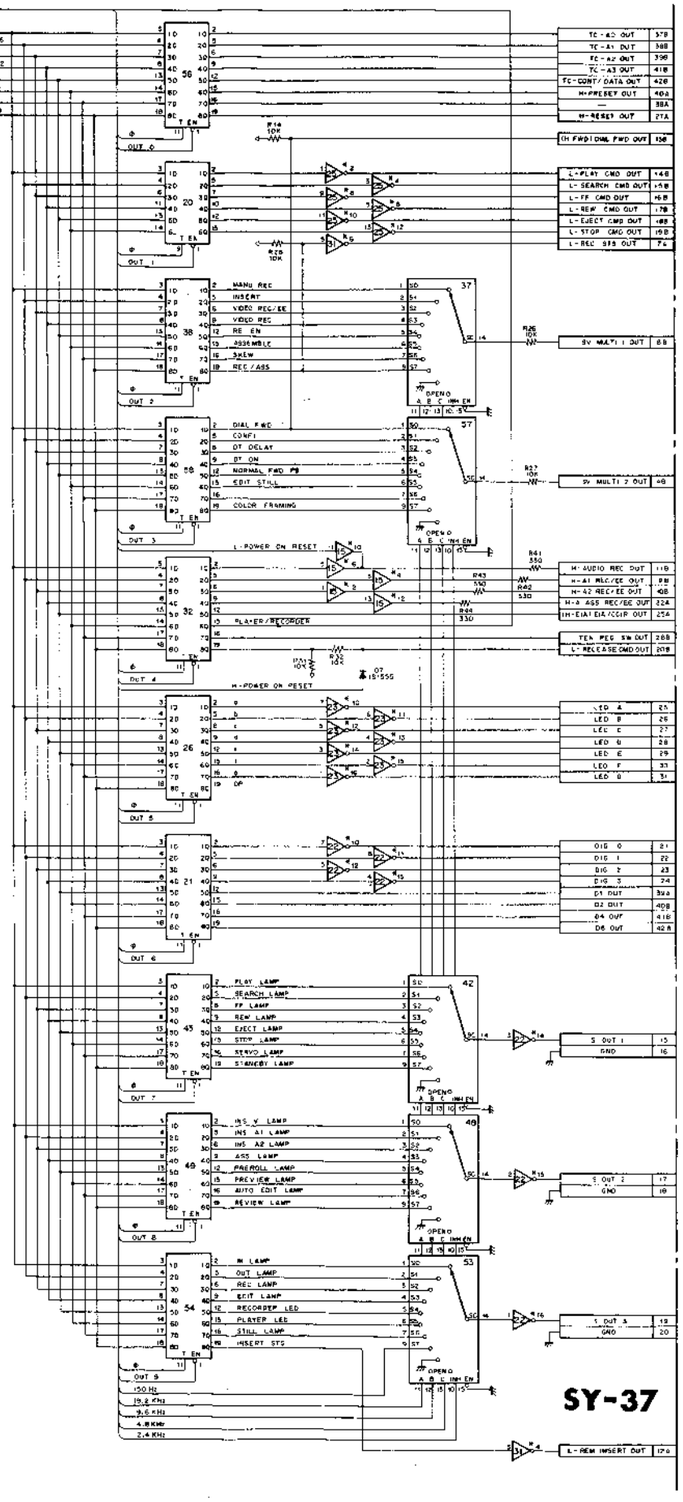
Serial No. UP TO 16328 (PAL)
Serial No. UP TO 10643 (SECAM)

NOTE

MARK	CHANGE INFORMATION	SERIAL NO.
※1	D10 1S1555 ADDED	15231~15430 (U/C) 10851~10930 (J) 11546~12185 (PAL) 10136~10185 (SECAM)
※2	D10 SHORTED (NOT IN USE, WHEN MOUNTED) (M74LS244P (IC-35) IC35 SN74LS244 ⟶ M74LS244P	15431~ (U/C) 10931~ (J) 12186~ (PAL) 10186~ (SECAM) 10151~ (PM) 80101~ (PM)
※3	IC72 ADDED (IC3, IC6, IC7) Y6⟶Y8 IC72 : Y8	15801~ (U/C) 11801~ (J) 13926~ (PAL) 10406~ (SECAM) 10251~ (PM) 80121~ (PM)

REF NO.	TYPE	PIN NO. (+5V)	PIN NO. (GND)
IC 1	AM9513DC	21	11
IC 2	LH0080	11	29
IC 3	MBM2732U8D018	24	12
IC 4	L4C0064	8	31
IC 5	AM9519APC	28	14
IC 6	MBM2732U8C058	24	12
IC 7	MBM2732U8C029	24	12
IC 8	MSM2128-145	24	12
IC 9	AM26LS31PC	16	8
IC10	AM26LS32PC	16	8
IC11	SN74LS244N	20	10
IC12	SN74LS153N	16	8
IC13	—	—	—
IC14	MC14536BCP	16	8
IC15	SN7407N	14	7
IC16	SN74LS244N	20	10
IC17	SN74LS74N	14	7
IC18	SN74LS244N	20	10
IC19	MC14599BCP	16	8
IC20	SN74LS576N	18	9
IC21	SN74LS377N	20	10
IC22	LB1264	9	9
IC23	LB1264	9	9
IC24	MC14596BCP	18	9
IC25	SN74LS08N	14	7
IC26	SN74LS377N	20	10
IC27	TC40H074P	14	7
IC28	TC40208P , C040208E	16	8
IC29	SN74LS244N	20	10
IC30	MC14596BCP	18	9
IC31	SN74LS08N	14	7
IC32	SN74LS377N	20	10
IC33	SN74LS32N	14	7
IC34	TC4001BP , C04001BE	14	7
IC35	SN74LS244N (M74LS244P1	20	10
IC36	MC14599BCP	18	9
IC37	TC4052BP , MC14512BCP	16	8
IC38	SN74LS377N	20	10
IC39	MC14584BCP	14	7
IC40	SN74LS244N	20	10
IC41	MC14538BCP	16	8
IC42	TC4512BP , MC14512BCP	16	8
IC43	SN74LS377N	20	10
IC44	SN74LS136N	16	8
IC45	NJM2903D	8	4
IC46	SN74LS244N	20	10
IC47	—	—	—
IC48	TC4512BP , MC14512BCP	16	8
IC49	SN74LS377N	20	10
IC50	SN74LS138N	16	8
IC51	TC4011BP	14	7
IC52	SN74LS244N	20	10
IC53	TC4013BP , MC14512BCP	16	8
IC54	SN74LS377N	20	10
IC55	SN74LS138N	16	8
IC56	SN74LS377N	20	10
IC57	TC4052BP , MC14512BP	16	8
IC58	SN74LS377N	20	10
IC59	SN74LS138N	16	8
IC60	SN74LS138N	16	8
IC61	μPA54H	—	—
IC62	μPA64H	—	—
IC63	μPA54H	—	—
IC64	μPA64H	—	—
IC65	SN74LS138N	16	8
IC66	SN74LS138N	16	8
IC70	AM26LS30PC	1	5, 8
IC71	AM26LS32PC	16	8
IC72	MBM2732U8C048	24	12


L-PLAY STS IN
L-SEARCH STS IN
L-FF STS IN
L-REW STS IN
L-EJECT STS IN
L-STOP STS IN
L-SERVO LOCK IN
L-STANDBY STS IN
L-PAUSE STS IN
L-REM SEARCH IN
L-REMOTE
L-REM PLAY IN
L-REM CUT IN
L-REM FF IN
L-REM REW IN
L-REM EJECT IN
L-REM STOP IN
L-REM REC IN
L-REM EDIT IN
L-REM INS V IN
L-REM INS A1 IN
L-REM INS A2 IN
L-REM REV CMD IN
REM SEARCH A IN
REM SEARCH B IN
L-REM CUT OUT
H-NOR FWD FB IN
TC-DATA1 IN
TC-DATA2 IN
TC-DATA4 IN
TC-DATA8 IN
L-KY-9 ENABLE
L-KY-N ENABLE
PLAY KEY
SEARCH KEY
FF KEY
REW KEY
EJECT KEY
STOP KEY
REC KEY
EDIT KEY
INS V KEY
INS A1 KEY
INS A2 KEY
ASS KEY
PREROLL KEY
PREVIEW KEY
AUTO EDIT KEY
REVIEW KEY
PREROLL TIME
SEARCH DIAL
IN KEY
OUT KEY
L.P KEY
ENTER KEY
^ KEY
- KEY
SYNCHRONIZE
I/O
I/O SYSTEM
TEST/NORMAL
E A / CETR
STANDBY KEY
VIDEO SW
RESET KEY
RECORDER KEY
PLAYER KEY
JOG DATA
JOG CNTS
L-SEARCH DIAL
D IGNO LEVEL
SEARCH DATA 1
SEARCH DATA 2
SEARCH DATA 3
PWB
JOG-C SEARCH
DATA BUS


TC-A0 OUT
TC-A1 OUT
TC-A2 OUT
TC-A3 OUT
TC-CONT/DATA OUT
H-PRESET OUT
H-RESET OUT
TH FWD/REV FWD OUT
L-PLAY CMD OUT
L-SEARCH CMD OUT
L-FF CMD OUT
L-REW CMD OUT
L-EJECT CMD OUT
L-STOP CMD OUT
L-REC STS OUT
MANU REC
INSERT
VIDEO REC/EE
VIDEO REC
PB EN
ASSEMBLE
3HEW
REC/ASS
5V MULTI 1 OUT
DIAL REG
CONF1
DT DELAY
DT ON
NORMAL FWD PB
EDIT STILL
COLOR FRAMING
5V MULTI 2 OUT
L-POWER ON RESET
H-AUDIO REC OUT
H-A1 REC/EE OUT
H-A2 REC/EE OUT
H-A3 ASS REC/EE OUT
H-EIAJ EIA/ACCIR OUT
TEN REG SW OUT
L-RELEASE CMD OUT
H-POWER ON RESET
LED A
LED B
LED C
LED D
LED E
LED F
LED G
DIG 0
DIG 1
DIG 2
DIG 3
D1 OUT
D2 OUT
D4 OUT
D8 OUT
PLAY LAMP
SEARCH LAMP
FF LAMP
REW LAMP
EJECT LAMP
STOP LAMP
SERVO LAMP
STANDBY LAMP
S OUT 1
GND
INS V LAMP
INS A1 LAMP
INS A2 LAMP
ASS LAMP
PREROLL LAMP
PREVIEW LAMP
AUTO EDIT LAMP
REVIEW LAMP
S OUT 2
GND
M LAMP
OUT LAMP
REC LAMP
EDIT LAMP
RECORDER LED
PLAYER LED
STILL LAMP
INSERT STS
S OUT 3
GND
L-REM INSERT OUT
150 Hz
19.2 KHz
9.6 KHz
4.8 KHz
2.4 KHz
SY-37
1-604-343-15,16
BVU-800 (S/N.14451~10/CH) (S/N.10751~1/1)
BVU-800P (S/N 11491~)
BVU-800S (S/N.10081~)
BVU-800PM (S/N.10151~) (S/N.90101~)

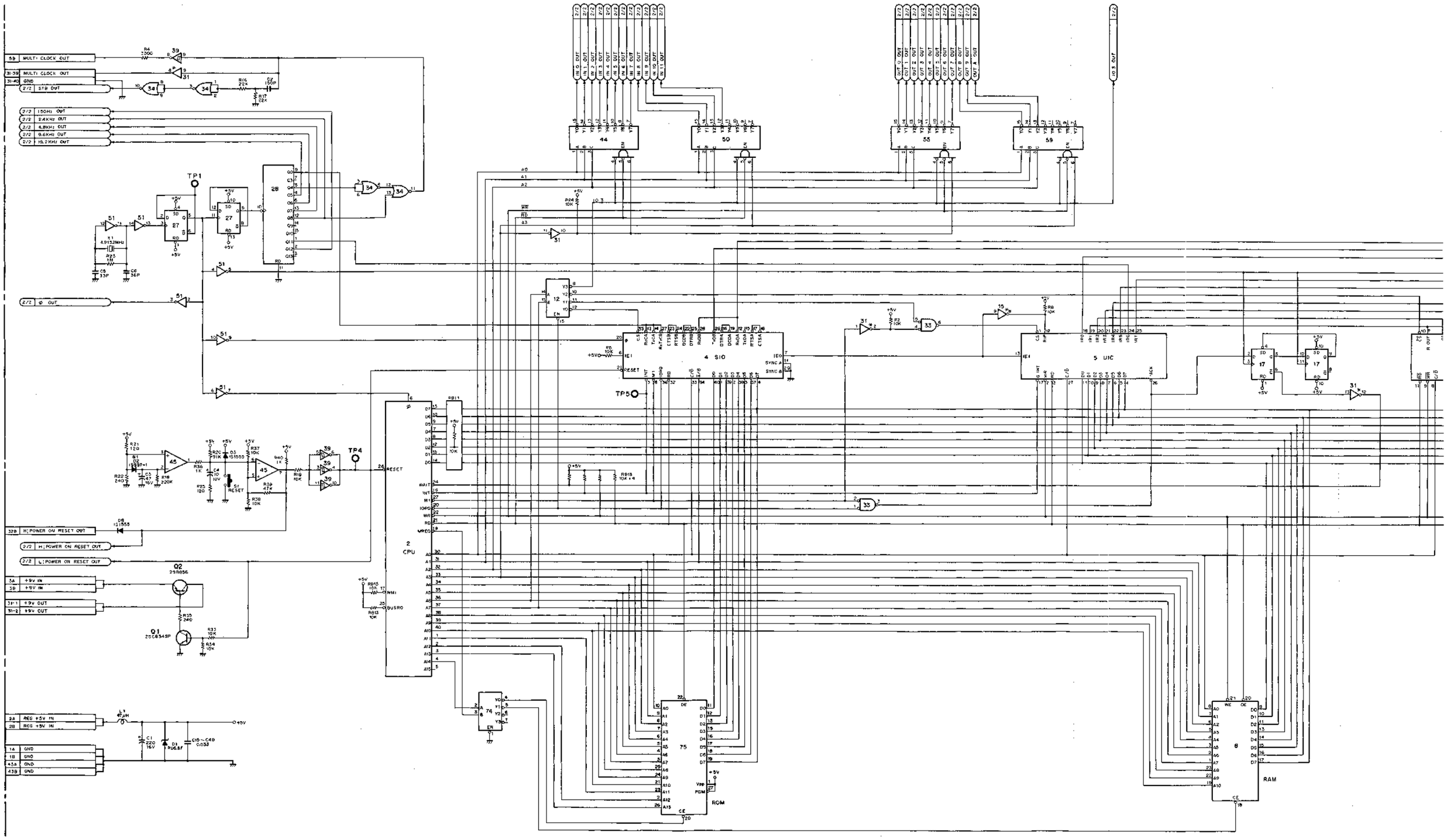
17-91(a)

17-92 (a)

SY-37A(1/2); MICRO PROCESSOR

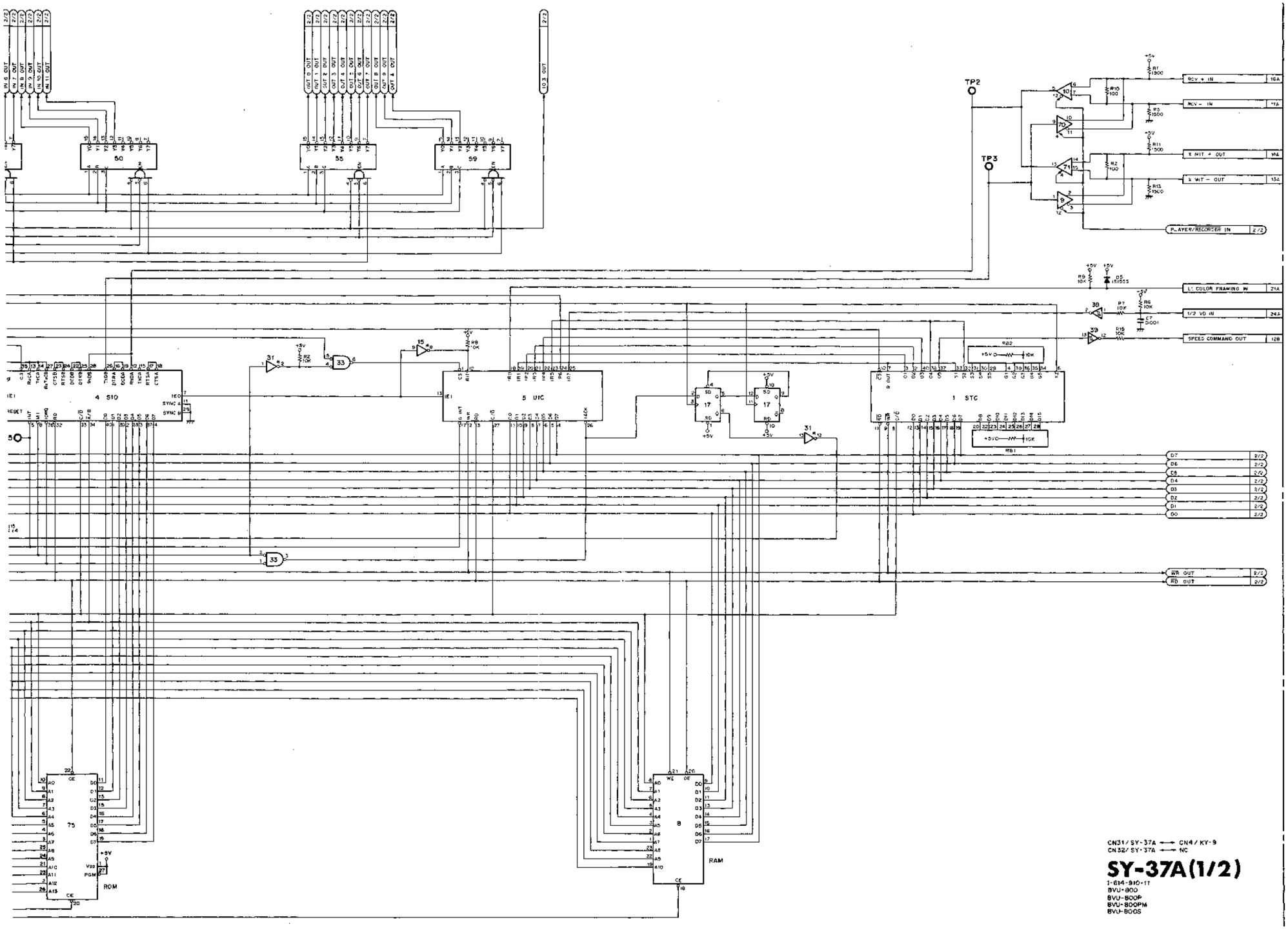
Serial No. 16329 and higher (PAL)
Serial No. 10644 and higher (SECAM)

SY-37A(1/2) SY-37A(1



17-90 (b)

17-91 (b)



REF NO.	TYPE	PIN NO. +V	PIN NO. GND
IC 1	AM9513DC	1	21
IC 2	LH0080	11	29
IC 3	—	24	12
IC 4	LH0084	9	31
IC 5	AM9519APC	28	14
IC 6	—	24	12
IC 7	—	24	12
IC 8	MSM2128-15RS	24	12
IC 9	AM26LS31PC	16	8
IC10	AM26LS32PC	16	8
IC11	SN74LS244N	20	10
IC12	SN74LS139N	16	8
IC13	—		
IC14	MC14598BCP	18	9
IC15	SN7407N	14	7
IC16	SN74LS244N	20	10
IC17	SN74LS74AN	14	7
IC18	SN74LS244N	20	10
IC19	MC14598BCP	18	9
IC20	SN74LS378N	16	8
IC21	SN74LS377N	20	10
IC22	LB1261	9	5
IC23	LB1261	9	8
IC24	MC14598BCP	18	9
IC25	SN74LS05N	14	7
IC26	SN74LS377N	20	10
IC27	TC40H074P	14	7
IC28	TC4020BP	16	8
IC29	SN74LS244N	20	10
IC30	MC14598BCP	18	9
IC31	SN74LS05N	14	7
IC32	SN74LS377N	20	10
IC33	SN74LS32N	14	7
IC34	TC4001BP	14	7
IC35	SN74LS244P	20	10
IC36	MC14598BCP	18	9
IC37	TC4512BP	16	8
IC38	SN74LS377N	20	10
IC39	MC14584BCP	14	7
IC40	SN74LS244N	20	10
IC41	MC14598BCP	18	9
IC42	TC4512BP	16	8
IC43	SN74LS377N	20	10
IC44	SN74LS138N	16	8
IC45	NJM2903D	8	4
IC46	SN74LS244N	20	10
IC47	—		
IC48	TC4512BP	16	8
IC49	SN74LS377N	20	10
IC50	SN74LS138N	16	8
IC51	TC40H368P	16	8
IC52	SN74LS244N	20	10
IC53	TC4512BP	16	8
IC54	SN74LS377N	20	10
IC55	SN74LS138N	16	8
IC56	SN74LS377N	20	10
IC57	TC4512BP	16	8
IC58	SN74LS377N	20	10
IC59	SN74LS138N	16	8
IC60	—	16	8
IC61	μPA54H	—	—
IC62	μPA64H	—	—
IC63	μPA54H	—	—
IC64	μPA64H	—	—
IC65	SN74LS158N	16	8
IC66	SN74LS158N	16	8
IC70	AM26LS31PC	1	5, 8
IC71	AM26LS32PC	16	8
IC72	—	24	12
IC73	SN74HC74N	14	7
IC74	SN74LS139N	16	8
IC75	27128-U900V	28	14

NOTE

MARK	CHANGE INFORMATION	SERIAL NO.
※1	02 151925 → 15697~1	24456 ~ (U/C)
		12615 ~ (J)
		16869 ~ (PAL)
		10862 ~ (SECAM)
		10563 ~ (PM)
		90121 ~ (PM)

CN31/SY-37A ⟷ CN4/KY-9
CN32/SY-37A ⟷ NC

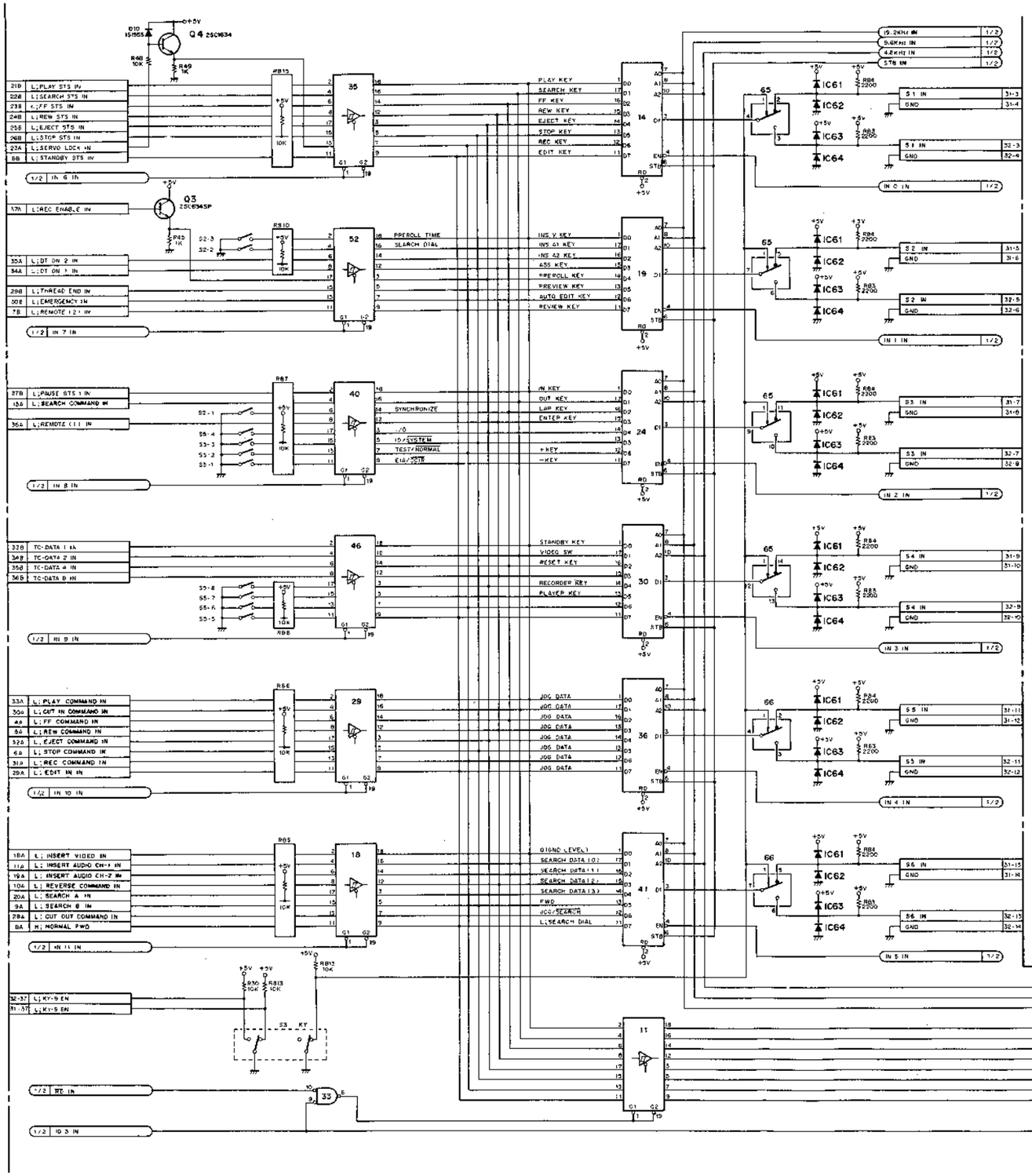
SY-37A(1/2)

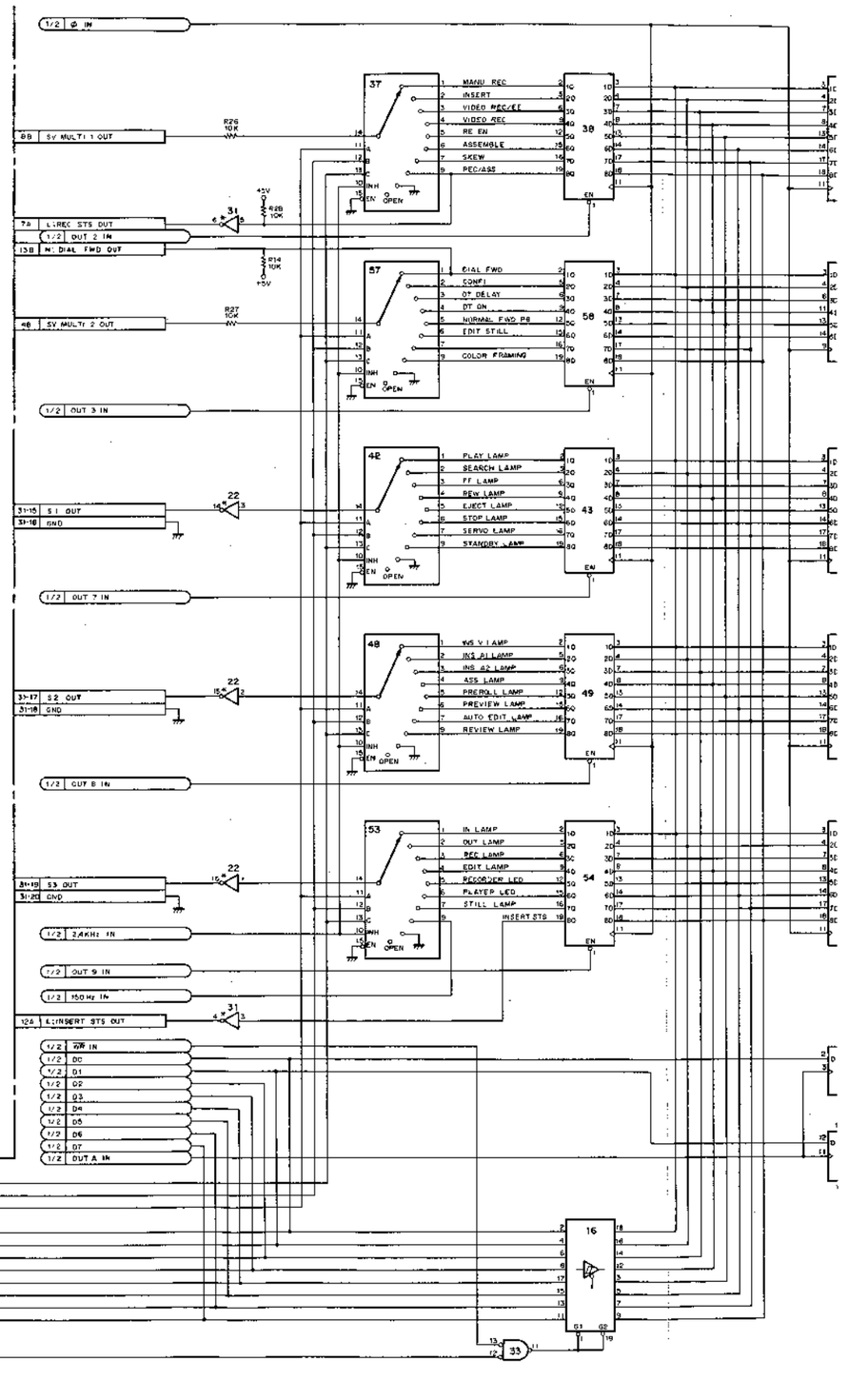
1-614-910-11
BVU-800
BVU-800P
BVU-800PM
BVU-800S

SY-37A(2/2) SY-37A(2

SY-37A(2/2); MICRO PROCESSOR

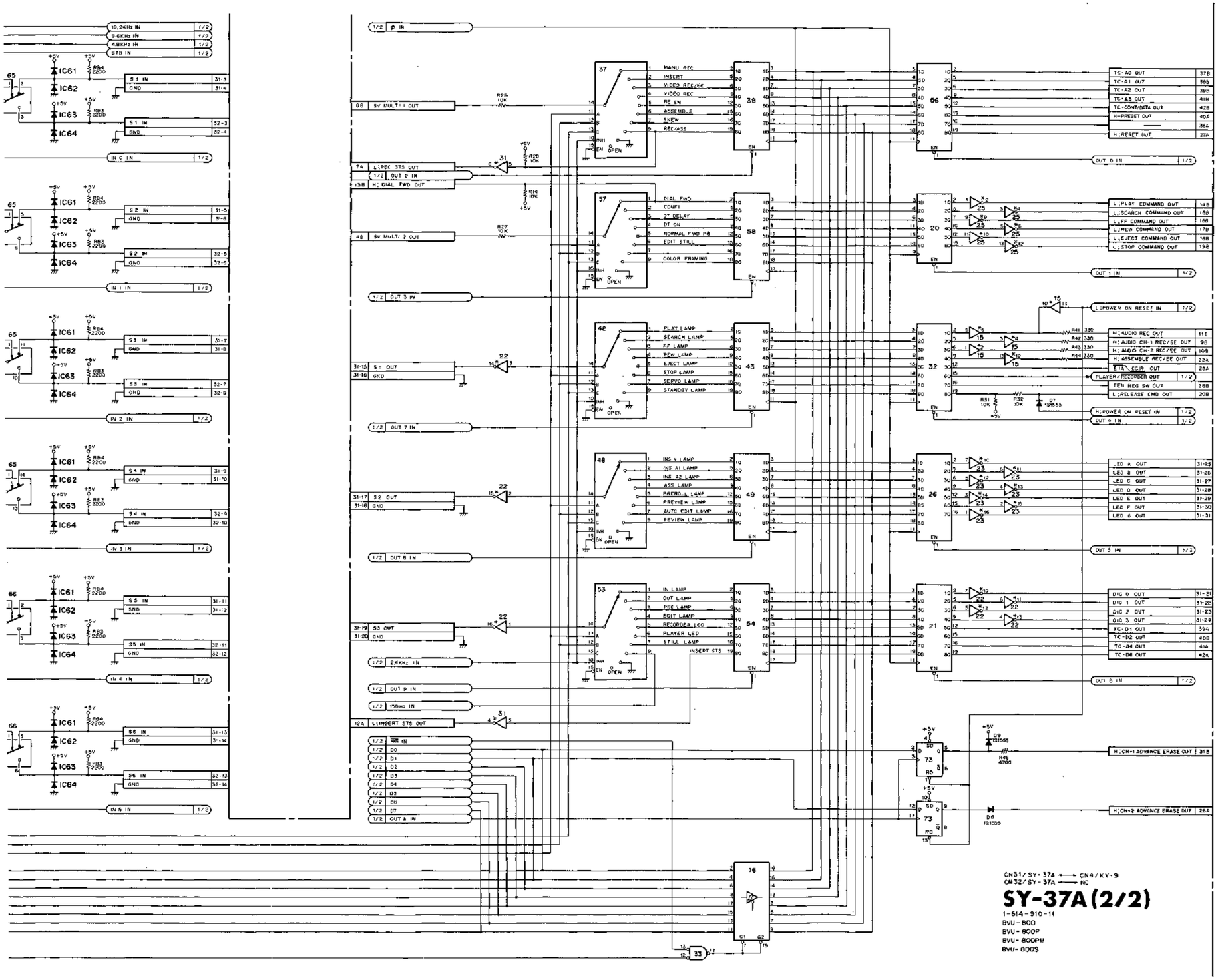
Serial No. 16329 and higher (PAL)
Serial No. 10644 and higher (SECAM)





17-90 (c)

17-91 (c)



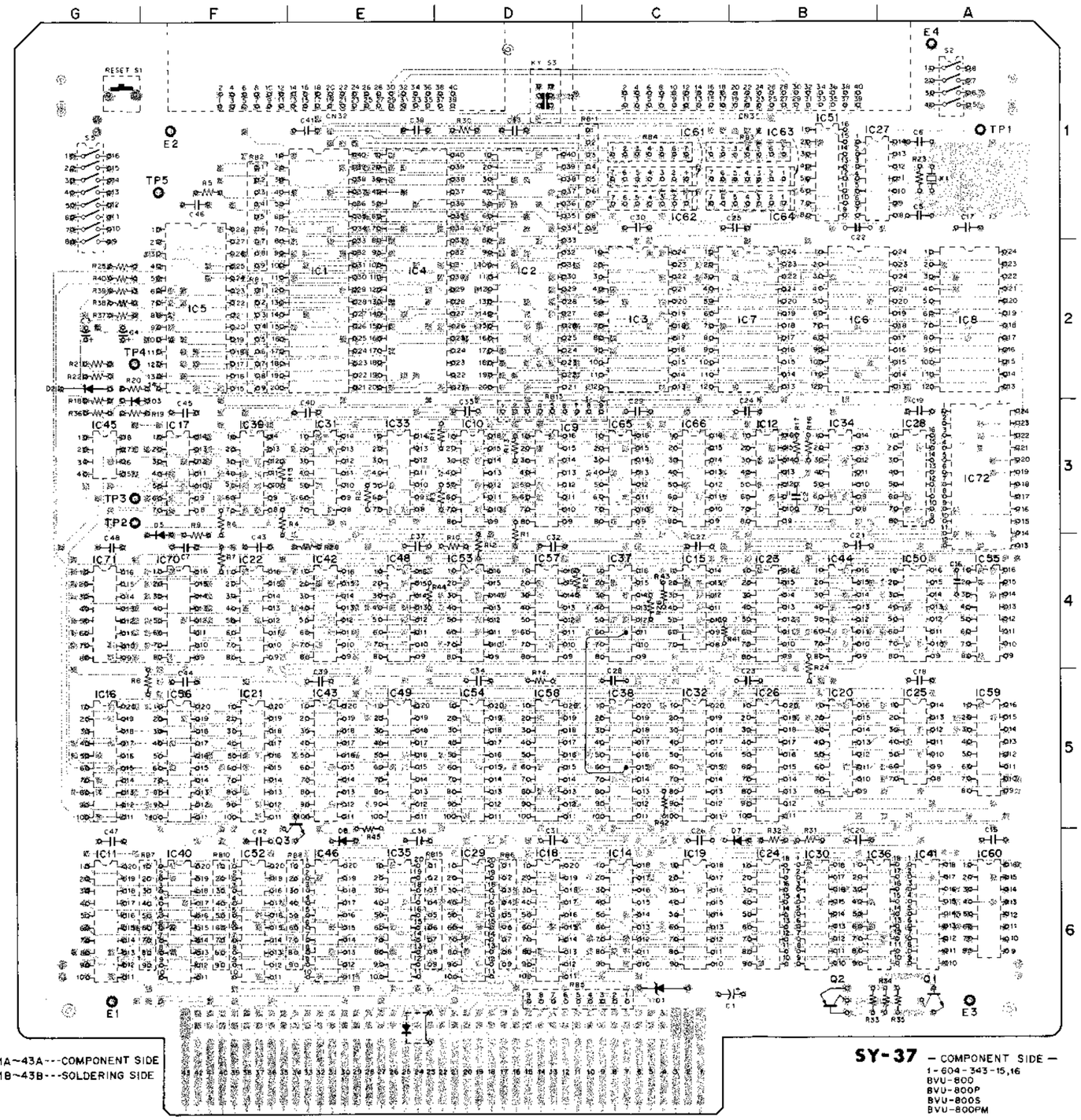
SY-37A(2/2)

1-614-910-11
BVU-800
BVU-800P
BVU-800PM
BVU-800S

REF NO.	TYPE	PIN NO. +V(5V)	PIN NO. GND
IC 1	AM9313DC	1	21
IC 2	LH0080	11	25
IC 3	—	24	12
IC 4	LM0084	9	31
IC 5	AM9519APC	28	14
IC 6	—	24	12
IC 7	—	24	12
IC 8	MSM2128-15RS	24	12
IC 9	AM26LS31PC	16	8
IC10	AM26LS32PC	16	8
IC11	SN74LS244N	20	10
IC12	SN74LS139N	16	8
IC13	—		
IC14	MC14598BCP	18	9
IC15	SN7407N	14	7
IC16	SN74LS244N	20	10
IC17	SN74LS74AN	14	7
IC18	SN74LS244N	20	10
IC19	MC14598BCP	18	9
IC20	SN74LS378N	16	8
IC21	SN74LS377N	20	10
IC22	LB1261	9	8
IC23	LB1261	9	8
IC24	MC14598BCP	18	9
IC25	SN74LS05N	14	7
IC26	SN74LS377N	20	10
IC27	TC40H074P	14	7
IC28	TC4020BP	16	8
IC29	SN74LS244N	20	10
IC30	MC14598BCP	18	9
IC31	SN74LS05N	14	7
IC32	SN74LS377N	20	10
IC33	SN74LS32N	14	7
IC34	TC4001BP	14	7
IC35	M74LS244P	20	10
IC36	MC14598BCP	18	9
IC37	TC4512BP	16	8
IC38	SN74LS377N	20	10
IC39	MC14584BCP	14	7
IC40	SN74LS244N	20	10
IC41	MC14598BCP	18	9
IC42	TC4512BP	16	8
IC43	SN74LS377N	20	10
IC44	SN74LS138N	16	8
IC45	NJM2903D	8	4
IC46	SN74LS244N	20	10
IC47			
IC48	TC4512BP	16	8
IC49	SN74LS377N	20	10
IC50	SN74LS138N	16	8
IC51	TC40H366P	16	8
IC52	SN74LS244N	20	10
IC53	TC4512BP	16	8
IC54	SN74LS377N	20	10
IC55	SN74LS138N	16	8
IC56	SN74LS377N	20	10
IC57	TC4512BP	16	8
IC58	SN74LS377N	20	10
IC59	SN74LS138N	16	8
IC60	—	16	8
IC61	μPA54H	—	—
IC62	μPA54H	—	—
IC63	μPA54H	—	—
IC64	μPAE44	—	—
IC65	SN74LS166N	16	8
IC66	SN74LS158N	16	8
IC70	AM26LS31PC	1	5, 8
IC71	AM26LS32PC	16	8
IC72	—	24	12
IC73	SN74HC74N	14	7
IC74	SN74LS139N	16	8
IC75	27128-J80DV	28	14

SY-37 (MICRO PROCESSOR)

Serial No. UP TO 16328 (PAL)
Serial No. UP TO 10643 (SECAM)



17-93 (a)

CN31 B-1
CN32 E-1

D1 C-6
D2 G-2
D3 G-2
D5 F-3
D6 D-6
D7 B-6
D8 E-6
(D10 E-6)

E1 G-6
E2 F-1
E3 A-6
E4 A-1

IC1 E-2
IC2 D-2
IC3 C-2
IC4 E-2
IC5 F-2
IC6 B-2
IC7 B-2
IC8 A-2
IC9 D-3
IC10 D-3
IC11 G-6
IC12 B-3
IC14 C-6
IC15 C-4
IC16 G-5
IC17 F-3
IC18 D-6
IC19 C-6
IC20 B-5
IC21 F-5
IC22 F-4
IC23 B-4
IC24 B-6
IC25 A-5
IC26 B-5
IC27 B-1
IC28 A-3
IC29 D-6
IC30 B-6
IC31 E-3
IC32 C-5
IC33 E-3
IC34 B-3
IC35 E-6
IC36 B-6
IC37 C-4
IC38 C-5
IC39 F-3
IC40 F-6
IC41 A-6
IC42 E-4
IC43 E-5
IC44 B-4
IC45 G-3
IC46 E-8
IC48 E-4
IC49 E-5
IC50 A-4
IC51 B-1
IC52 F-6
IC53 D-4
IC54 D-5
IC55 A-4
IC56 F-5
IC57 D-4
IC58 D-5
IC59 A-5
IC60 A-6
IC61 C-1
IC62 C-1
IC63 B-1
IC64 B-1
IC65 C-3
IC66 C-3
IC70 F-4
IC71 G-4
(IC72 A-3 .... NOT MOUNTED)

Q1 A-6
Q2 B-6
Q3 E-5

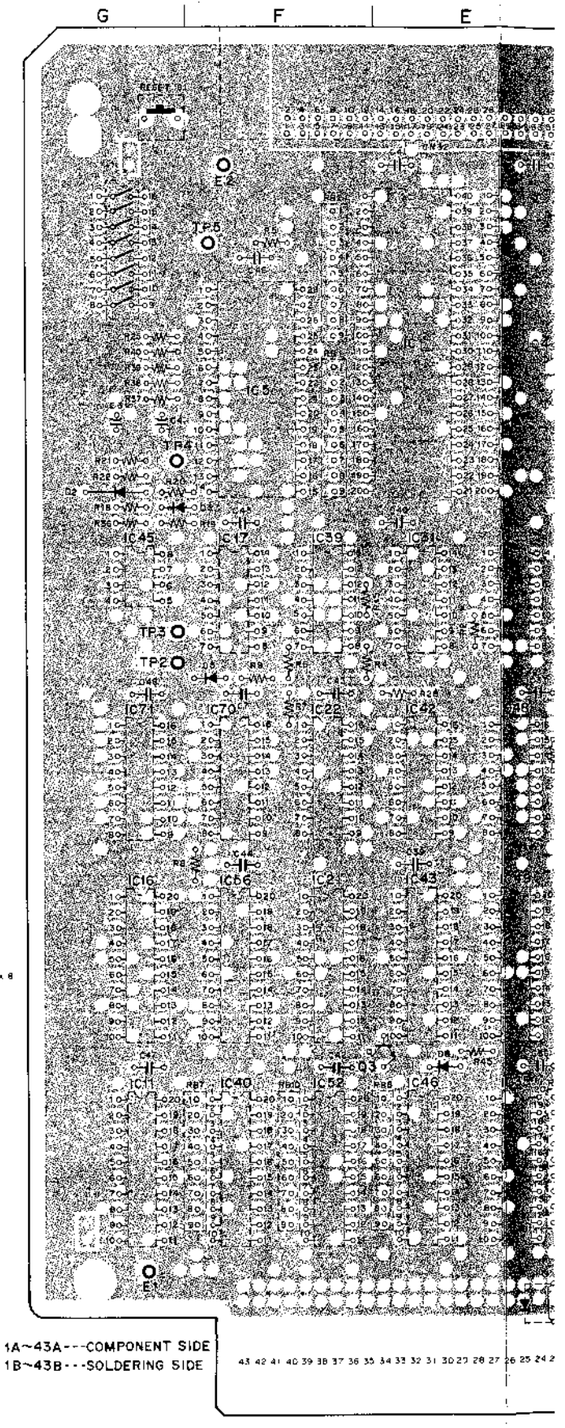
RB1 F-2
RB2 F-1
RB3 B-1
RB4 C-1
RB5 D-6
RB6 D-6
RB7 F-6
RB8 E-6
RB10 F-6
RB11 C-1
RB13 D-3
RB15 E-6

S1 G-1
S2 A-1
S3 D-1
S5 G-1

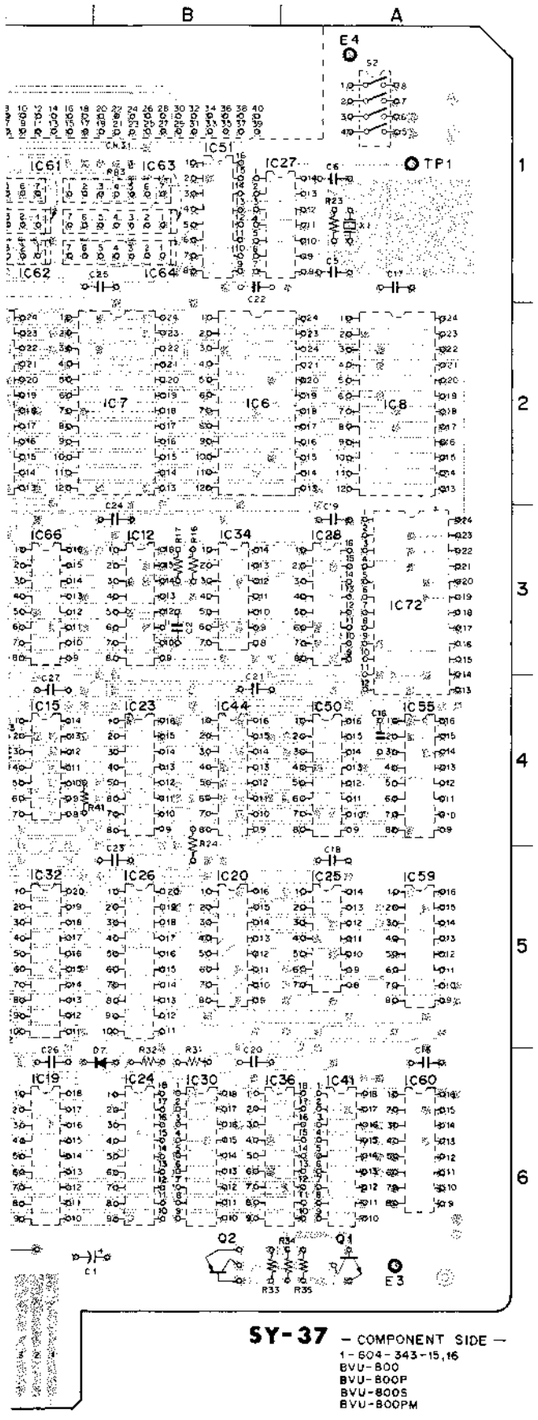
TP1 A-1
TP2 G-3
TP3 G-3
TP4 G-2
TP5 F-1

X1 A-1

RB1,2,5,6,7,8,10,11,13,15 — 10K x 8
RB3,4 — 2200 x 8



17-94 (a)

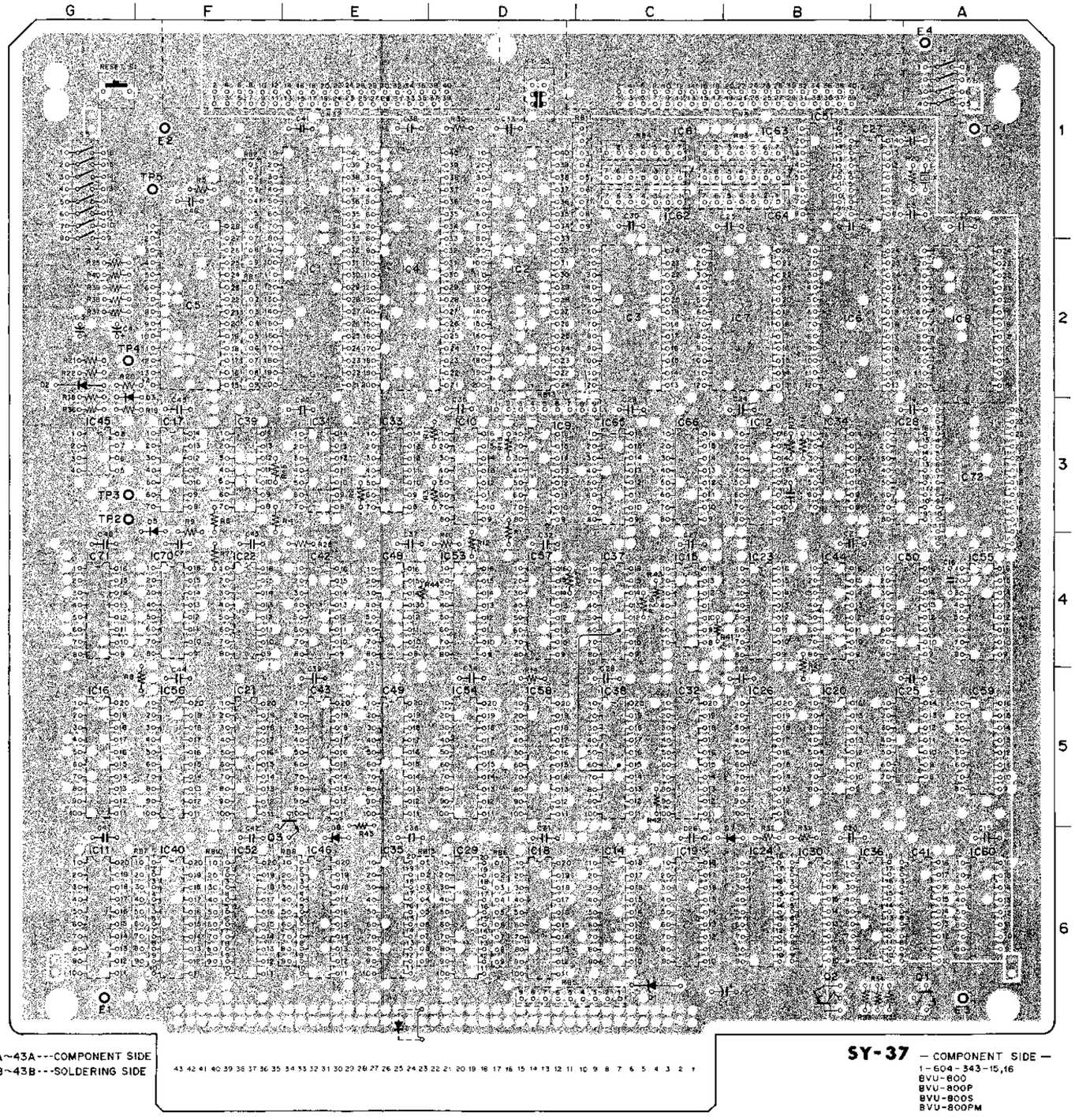


CN31	B-1	RB1	F-2
CN32	E-1	RB2	F-1
		RB3	B-1
D1	C-6	RB4	C-1
D2	G-2	RB5	D-6
D3	G-2	RB6	D-6
D5	F-3	RB7	F-6
D6	D-6	RB8	E-6
D7	B-6	RB10	F-6
D8	E-6	RB11	C-1
(D10	E-6)	RB13	D-3
		RB15	E-6
E1	G-6		
E2	F-1	S1	G-1
E3	A-6	S2	A-1
E4	A-1	S3	D-1
		S5	G-1
IC1	E-2		
IC2	D-2	TP1	A-1
IC3	C-2	TP2	G-3
IC4	E-2	TP3	G-3
IC5	F-2	TP4	G-2
IC6	B-2	TP5	F-1
IC7	B-2		
IC8	A-2	X1	A-1
IC9	D-3		
IC10	D-3		
IC11	G-6		
IC12	B-3		
IC14	C-6		
IC15	C-4		
IC16	G-5		
IC17	F-3		
IC18	D-6		
IC19	C-6		
IC20	B-5		
IC21	F-5		
IC22	F-4		
IC23	B-4		
IC24	B-6		
IC25	A-5		
IC26	B-5		
IC27	B-1		
IC28	A-3		
IC29	D-6		
IC30	B-6		
IC31	E-3		
IC32	C-5		
IC33	E-3		
IC34	B-3		
IC35	E-6		
IC36	B-6		
IC37	C-4		
IC38	C-5		
IC39	F-3		
IC40	F-6		
IC41	A-6		
IC42	E-4		
IC43	E-5		
IC44	B-4		
IC45	G-3		
IC46	E-6		
IC48	E-4		
IC49	E-5		
IC50	A-4		
IC51	B-1		
IC52	F-6		
IC53	D-4		
IC54	D-5		
IC55	A-4		
IC56	F-5		
IC57	D-4		
IC58	D-5		
IC59	A-5		
IC60	A-6		
IC61	C-1		
IC62	C-1		
IC63	B-1		
IC64	B-1		
IC65	C-3		
IC66	C-3		
IC70	F-4		
IC71	G-4		
(IC72	A-3 .... NOT MOUNTED)		
Q1	A-6		
Q2	B-6		
Q3	E-5		

RB1,2,5,6,7,8,10,11,13,15 — 10K x 8

RB3,4 — 2200 x 6

SY-37 — COMPONENT SIDE —
1-604-343-15,16
BVU-800
BVU-800P
BVU-800S
BVU-800PM



1A~43A---COMPONENT SIDE
1B~43B---SOLDERING SIDE

43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

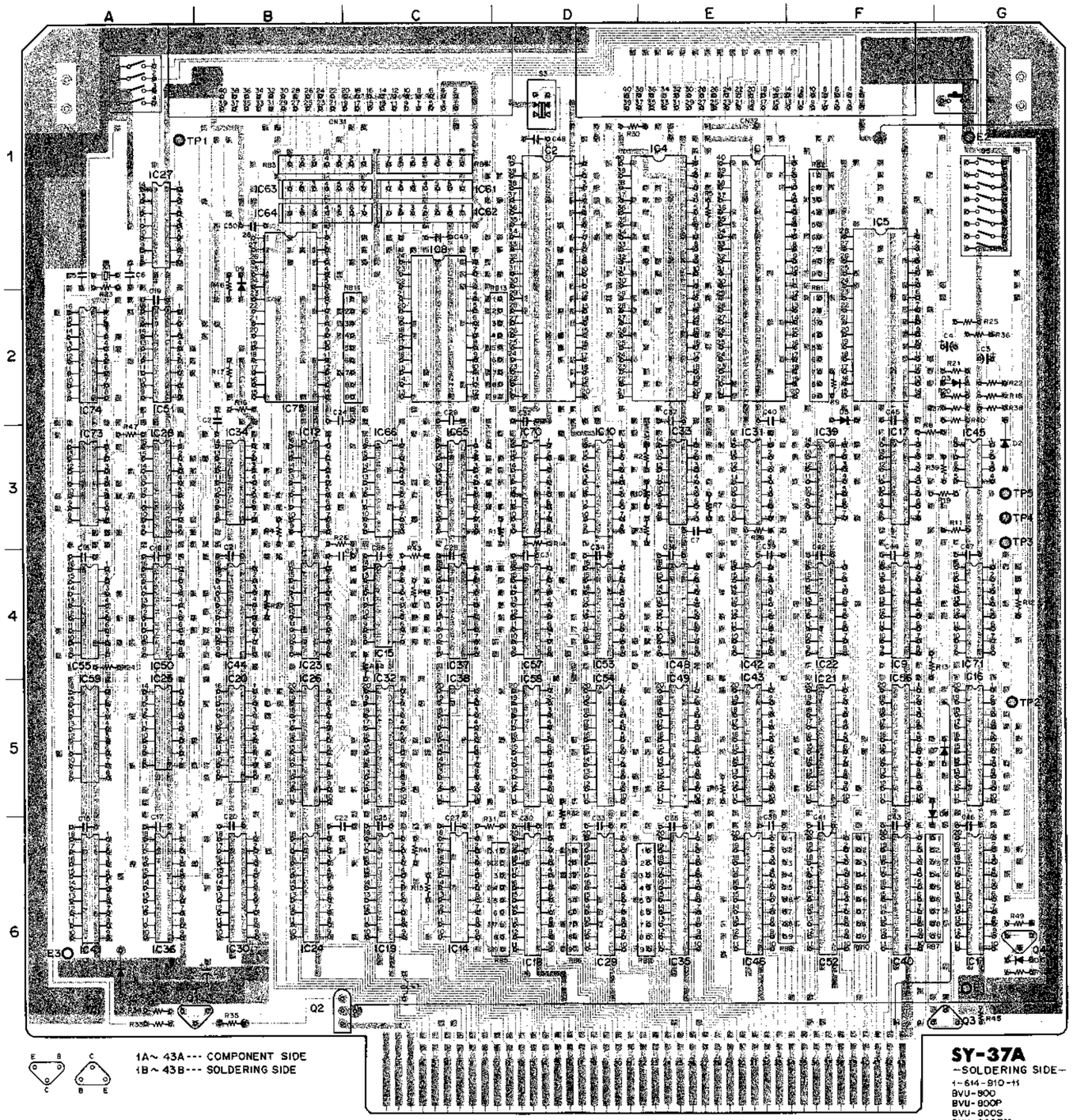
CN31	B-1	RB1	F-2
CN32	E-1	RB2	F-1
		RB3	B-1
D1	C-6	RB4	C-1
D2	G-2	RB5	D-6
D3	G-2	RB6	D-6
D5	F-3	RB7	F-6
D6	D-6	RB8	E-6
D7	B-6	RB10	F-6
D8	E-6	RB11	C-1
(D10	E-6)	RB13	D-3
		RB15	E-6
E1	G-6		
E2	F-1	S1	G-1
E3	A-6	S2	A-1
E4	A-1	S3	D-1
		S5	G-1
IC1	E-2		
IC2	D-2	TP1	A-1
IC3	C-2	TP2	G-3
IC4	E-2	TP3	G-3
IC5	F-2	TP4	G-2
IC6	B-2	TP5	F-1
IC7	B-2		
IC8	A-2	X1	A-1
IC9	D-3		
IC10	D-3		
IC11	G-6		
IC12	B-3		
IC14	C-6		
IC15	C-4		
IC16	G-5		
IC17	F-3		
IC18	D-6		
IC19	C-6		
IC20	B-5		
IC21	F-5		
IC22	F-4		
IC23	B-4		
IC24	B-6		
IC25	A-5		
IC26	B-5		
IC27	B-1		
IC28	A-3		
IC29	D-6		
IC30	B-6		
IC31	E-3		
IC32	C-5		
IC33	E-3		
IC34	B-3		
IC35	E-6		
IC36	B-6		
IC37	C-4		
IC38	C-5		
IC39	F-3		
IC40	F-6		
IC41	A-6		
IC42	E-4		
IC43	E-5		
IC44	B-4		
IC45	G-3		
IC46	E-6		
IC48	E-4		
IC49	E-5		
IC50	A-4		
IC51	B-1		
IC52	F-6		
IC53	D-4		
IC54	D-5		
IC55	A-4		
IC56	F-5		
IC57	D-4		
IC58	D-5		
IC59	A-5		
IC60	A-6		
IC61	C-1		
IC62	C-1		
IC63	B-1		
IC64	B-1		
IC65	C-3		
IC66	C-3		
IC70	F-4		
IC71	G-4		
(IC72	A-3 .... NOT MOUNTED)		
Q1	A-6		
Q2	B-6		
Q3	E-5		

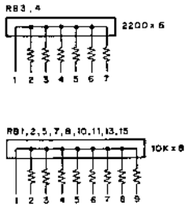
SY-37 — COMPONENT SIDE —
1-604-343-15,16
BVU-800
BVU-800P
BVU-800S
BVU-800PM

SY-37A; MICRO PROCESSOR

Serial No. 16329 and higher (PAL)
Serial No. 10644 and higher (SECAM)

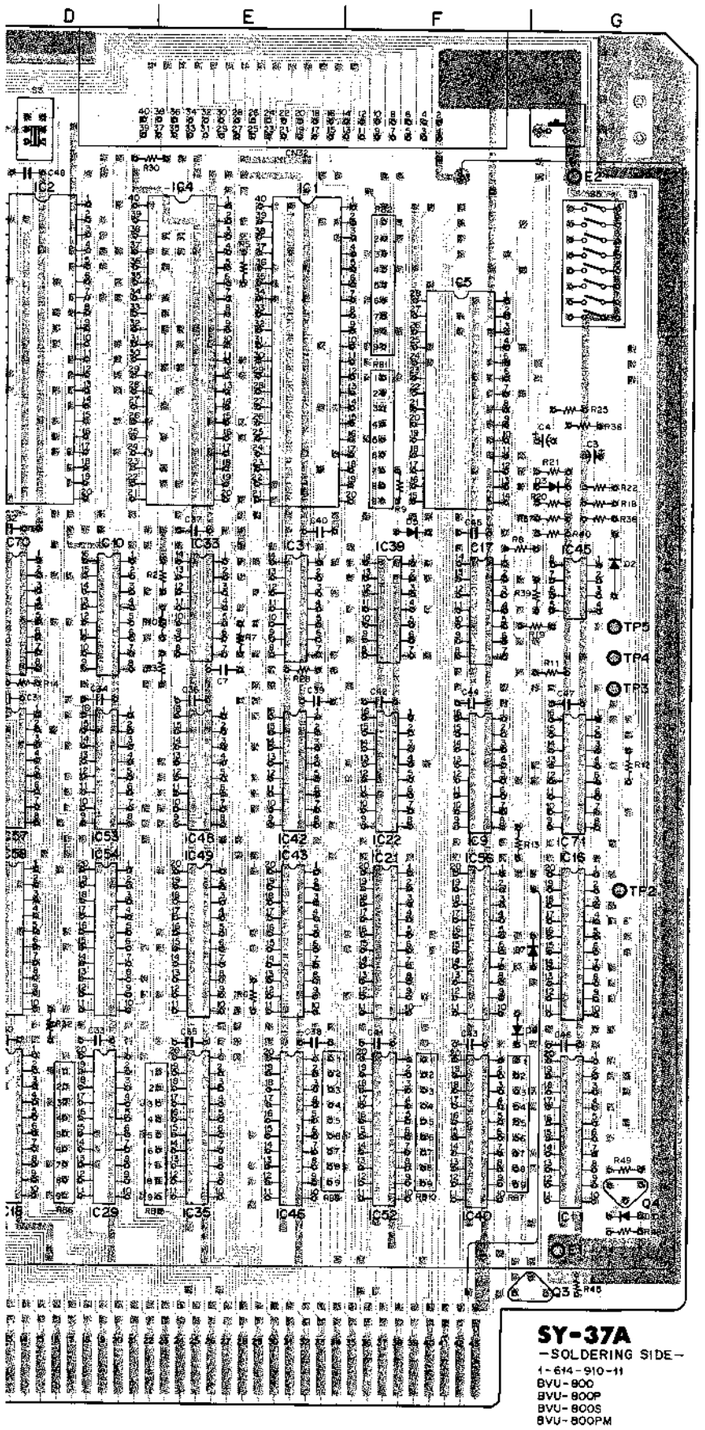
CN31	B - 1	Q1	A - 6
CN32	E - 1	Q2	B - 6
		Q3	G - 6
D1	A - 6	Q4	G - 6
D2	G - 3		
D3	G - 2	RB1	F - 2
D6	F - 2	RB2	F - 1
D7	G - 5	RB3	B - 1
D8	F - 6	RB4	C - 1
D9	B - 1	RB5	D - 6
D10	G - 6	RB6	D - 6
		RB7	F - 6
E1	G - 6	RB8	E - 6
E2	G - 1	RB10	F - 6
E3	A - 6	RB11	C - 2
		RB13	D - 2
IC1	E - 1	RB15	E - 6
IC2	D - 1		
IC4	E - 1	S1	G - 1
IC5	F - 2	S2	A - 1
IC8	C - 2	S3	D - 1
IC9	F - 4	S5	G - 1
IC10	D - 3		
IC11	G - 6	TP1	A - 1
IC12	B - 3	TP2	G - 5
IC14	C - 6	TP3	G - 3
IC15	C - 4	TP4	G - 3
IC16	G - 5	TP5	G - 3
IC17	F - 3		
IC18	D - 6	X1	A - 1
IC19	C - 6		
IC20	B - 5		
IC21	F - 5		
IC22	F - 4		
IC23	B - 4		
IC24	B - 6		
IC25	A - 5		
IC26	B - 5		
IC27	A - 1		
IC28	A - 3		
IC29	D - 6		
IC30	B - 6		
IC31	E - 3		
IC32	C - 5		
IC33	E - 3		
IC34	B - 3		
IC35	E - 6		
IC36	A - 6		
IC37	C - 4		
IC38	C - 5		
IC39	F - 3		
IC40	F - 6		
IC41	A - 6		
IC42	E - 4		
IC43	E - 5		
IC44	B - 4		
IC45	G - 3		
IC46	E - 6		
IC48	E - 4		
IC49	E - 5		
IC50	A - 4		
IC51	A - 2		
IC52	F - 6		
IC53	D - 4		
IC54	D - 5		
IC55	A - 4		
IC56	F - 5		
IC57	D - 4		
IC58	D - 5		
IC59	A - 5		
IC61	C - 1		
IC62	C - 1		
IC63	B - 1		
IC64	B - 1		
IC65	C - 3		
IC66	C - 3		
IC70	D - 3		
IC71	G - 4		
IC73	A - 3		
IC74	A - 2		
IC75	B - 2		



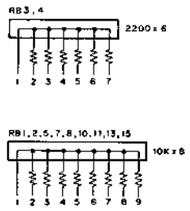


17-93 (b)

17-94 (b)



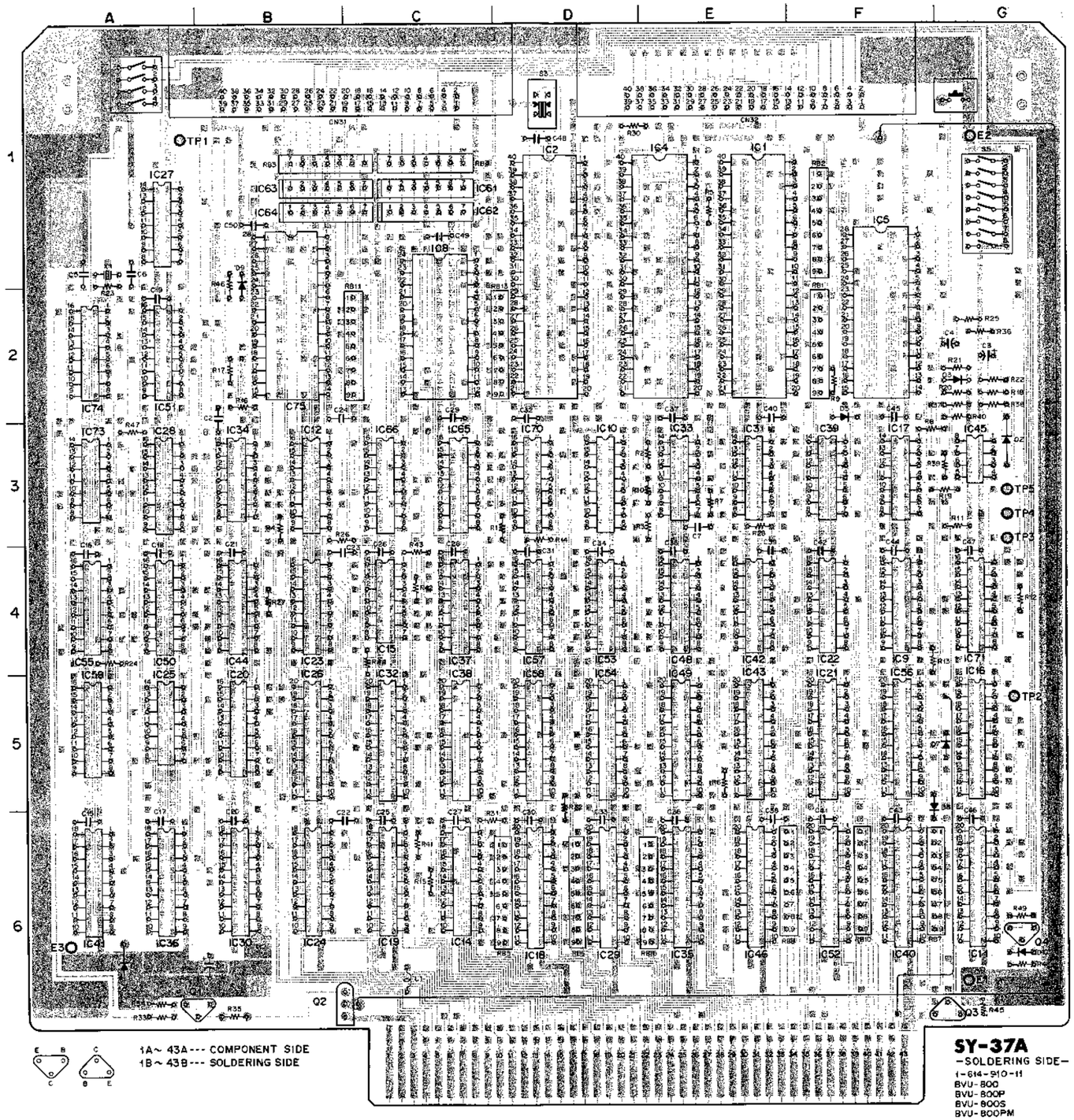
SY-37A
—SOLDERING SIDE—
1-614-910-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM

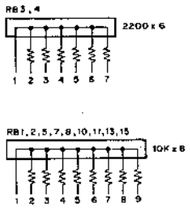


SY-37A; MICRO PROCESSOR

Serial No. 16329 and higher (PAL)
Serial No. 10644 and higher (SECAM)

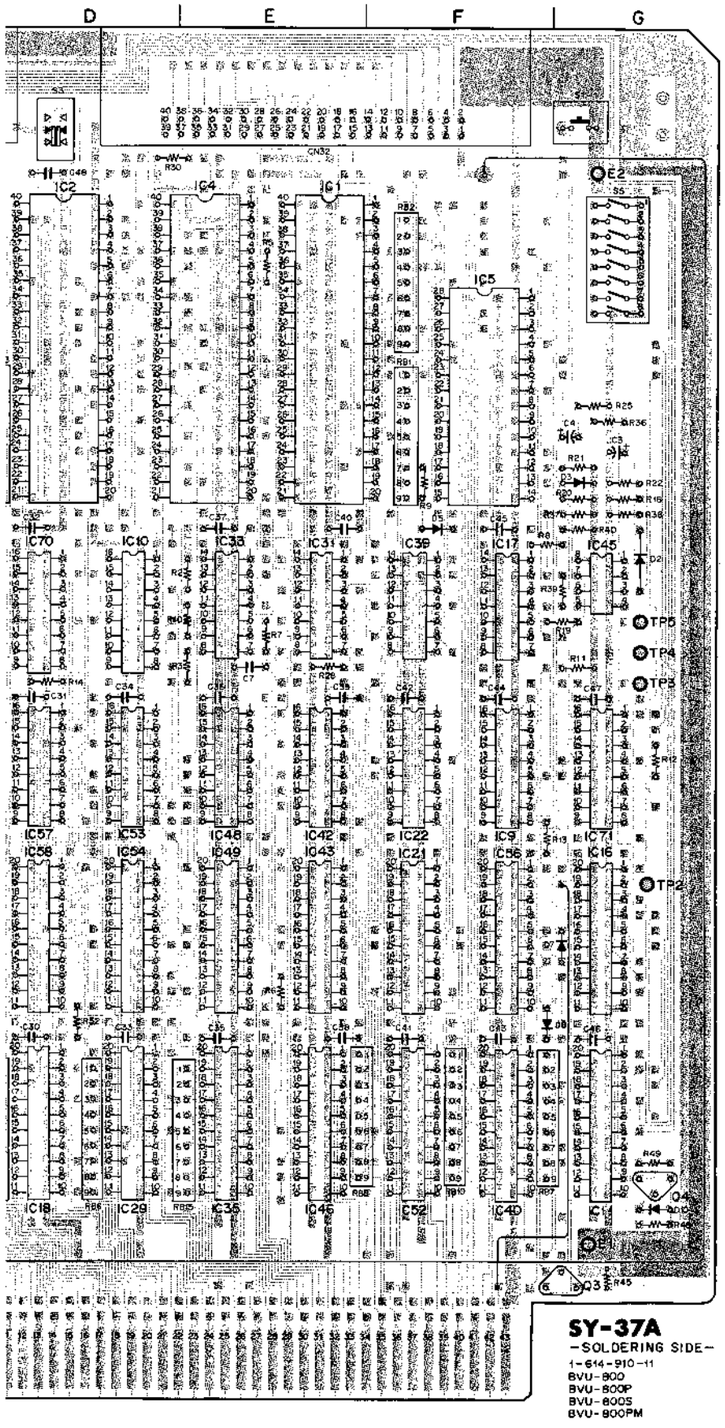
CN31	B - 1	Q1	A - 6
CN32	E - 1	Q2	B - 6
		Q3	G - 6
D1	A - 6	Q4	G - 6
D2	G - 3		
D3	G - 2	RB1	F - 2
D6	F - 2	RB2	F - 1
D7	G - 5	RB3	B - 1
D8	F - 6	RB4	C - 1
D9	B - 1	RB5	D - 6
D10	G - 5	RB6	D - 5
		RB7	F - 6
E1	G - 6	RB8	E - 6
E2	G - 1	RB10	F - 6
E3	A - 6	RB11	C - 2
		RB13	D - 2
IC1	E - 1	RB15	E - 6
IC2	D - 1		
IC4	E - 1	S1	G - 1
IC5	F - 2	S2	A - 1
IC8	C - 2	S3	D - 1
IC9	F - 4	S5	G - 1
IC10	D - 3		
IC11	G - 6	TP1	A - 1
IC12	B - 3	TP2	G - 5
IC14	C - 6	TP3	G - 3
IC15	C - 4	TP4	G - 3
IC16	G - 5	TP5	G - 3
IC17	F - 3		
IC18	D - 6	X1	A - 1
IC19	C - 6		
IC20	B - 5		
IC21	F - 5		
IC22	F - 4		
IC23	B - 4		
IC24	B - 6		
IC25	A - 5		
IC26	B - 5		
IC27	A - 1		
IC28	A - 3		
IC29	D - 6		
IC30	B - 6		
IC31	E - 3		
IC32	C - 5		
IC33	E - 3		
IC34	B - 3		
IC36	E - 6		
IC36	A - 6		
IC37	C - 4		
IC38	C - 5		
IC39	F - 3		
IC40	F - 6		
IC41	A - 6		
IC42	E - 4		
IC43	E - 5		
IC44	B - 4		
IC45	G - 3		
IC46	E - 6		
IC48	E - 4		
IC49	E - 5		
IC50	A - 4		
IC51	A - 2		
IC52	F - 6		
IC53	D - 4		
IC54	D - 5		
IC55	A - 4		
IC56	F - 5		
IC57	D - 4		
IC58	D - 5		
IC59	A - 5		
IC61	C - 1		
IC62	C - 1		
IC63	B - 1		
IC64	B - 1		
IC65	C - 3		
IC66	C - 3		
IC70	D - 3		
IC71	G - 4		
IC73	A - 3		
IC74	A - 2		
IC75	B - 2		



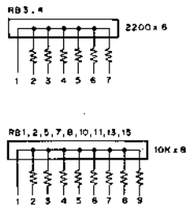


17-93 (c)

17-94 (c)



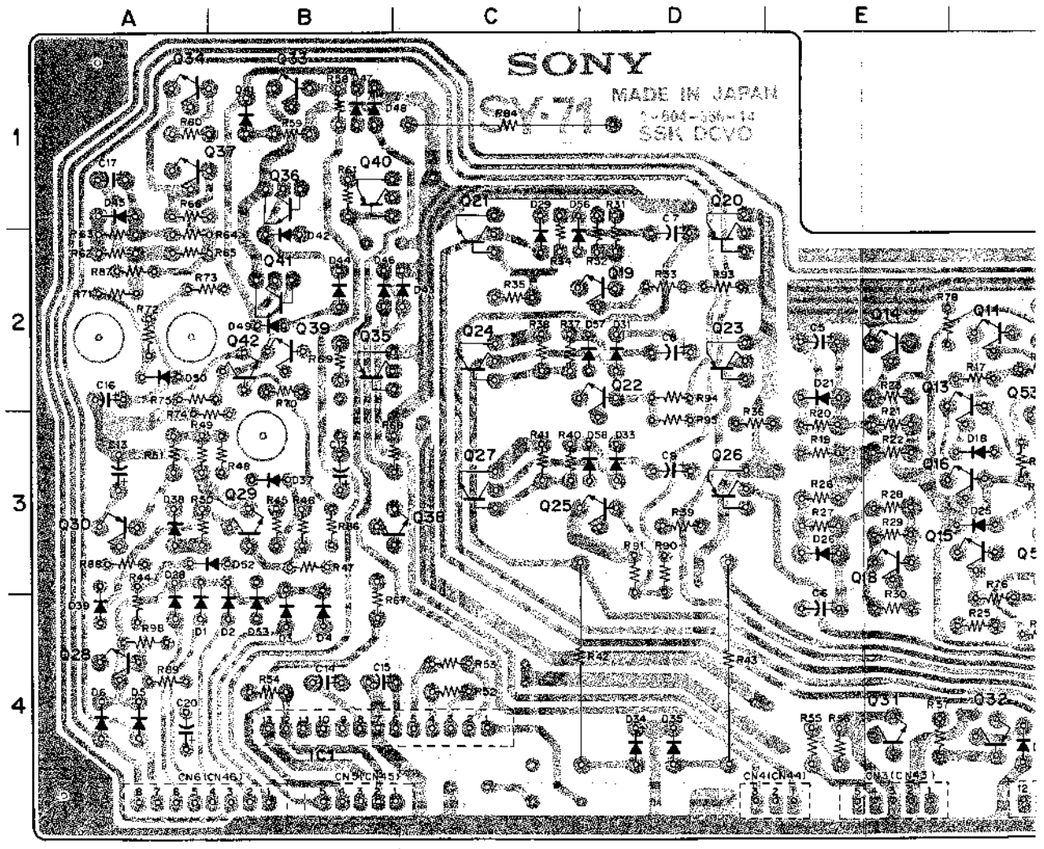
SY-37A
-SOLDERING SIDE-
1-614-910-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM



SY-71 (MOTOR/SOLENOID DRIVER)

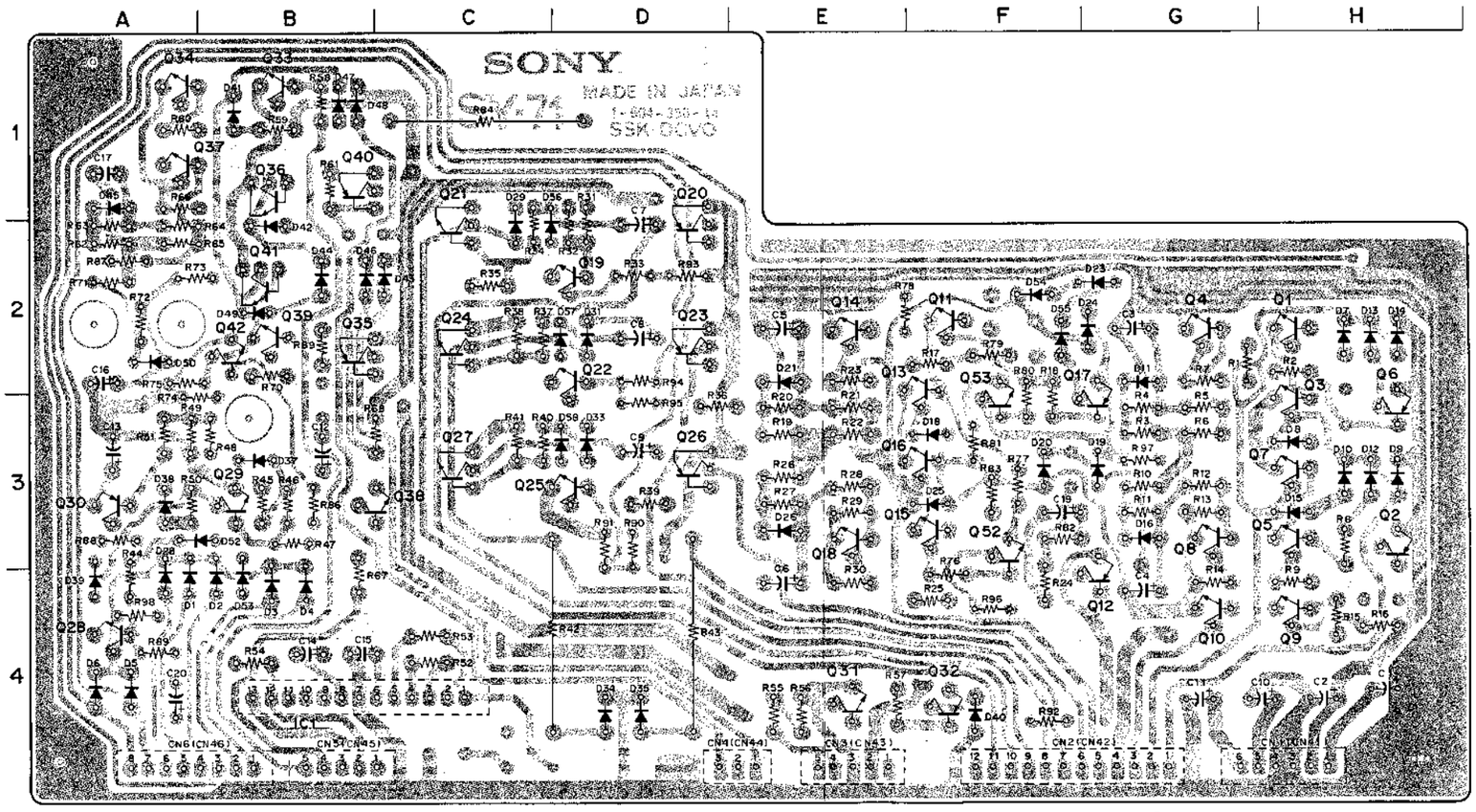
CN1 H -
CN2 F -
CN3 E -
CN4 E -
CN5 B -
CN6 A -

D1 A -
D2 B -
D3 B -
D4 B -
D5 A -
D6 A -
D7 H -
D8 H -
D9 H -
D10 H -
D11 G -
D12 H -
D13 H -
D14 H -
D15 H -
D16 G -
D18 F -
D19 G -
D20 F -
D21 E -
D22 F -
D23 G -



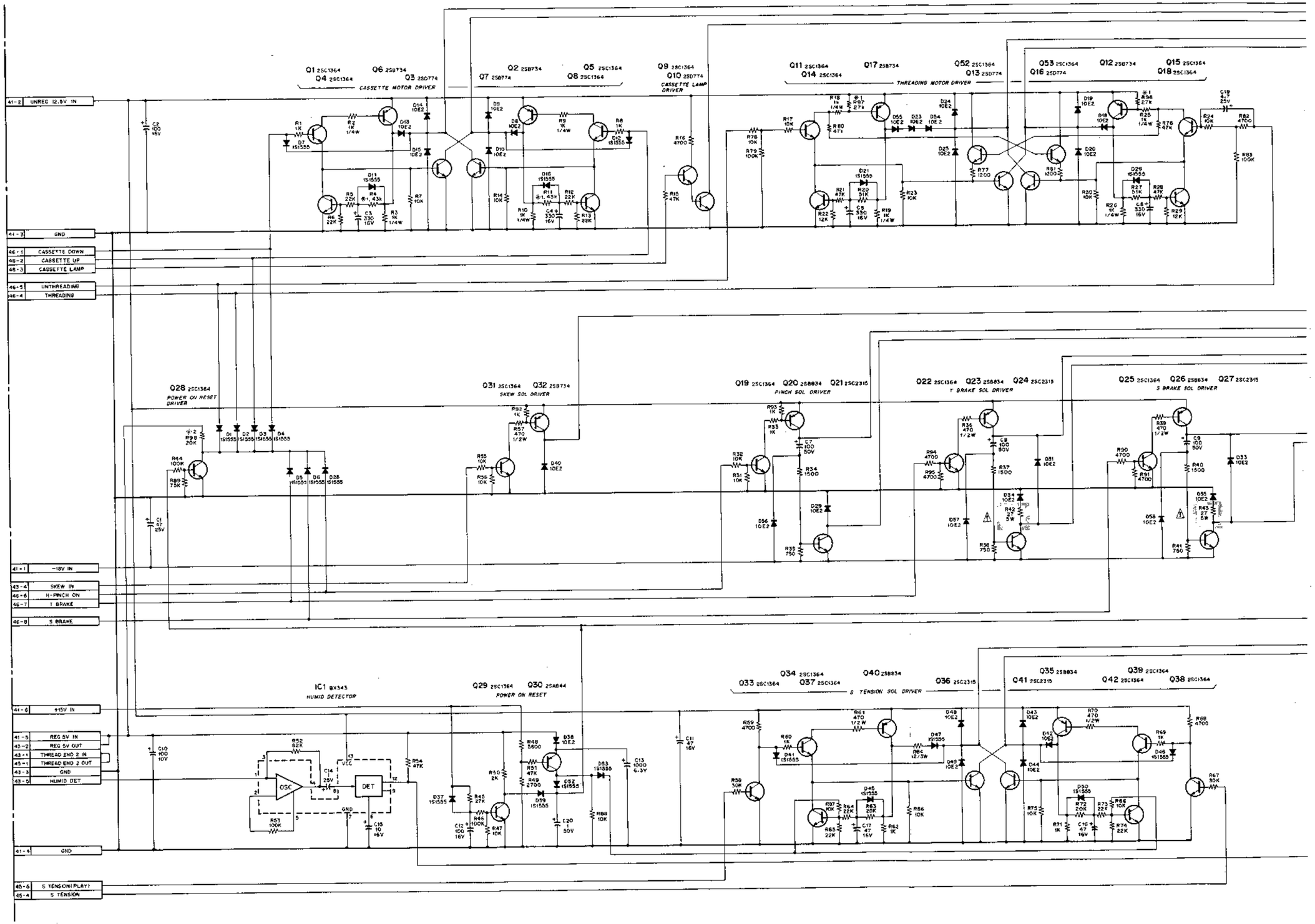
SY-71 (MOTOR/SOLENOID DRIVER)

CN1	H - 4	D24	G - 2	IC1	B - 4	Q29	B - 3
CN2	F - 4	D25	F - 3			Q30	A - 3
CN3	E - 4	D26	E - 3	Q1	H - 2	Q31	E - 4
CN4	E - 4	D28	A - 4	Q2	H - 3	Q32	F - 4
CN5	B - 4	D29	C - 2	Q3	H - 3	Q33	B - 1
CN6	A - 4	D31	D - 2	Q4	G - 2	Q34	A - 1
		D33	D - 3	Q5	H - 3	Q35	B - 2
D1	A - 4	D34	D - 4	Q6	H - 3	Q36	B - 1
D2	B - 4	D35	D - 4	Q7	H - 3	Q37	A - 1
D3	B - 4	D37	B - 3	Q8	G - 3	Q38	B - 3
D4	B - 4	D38	A - 3	Q9	H - 4	Q39	B - 2
D5	A - 4	D39	A - 4	Q10	G - 4	Q40	B - 1
D6	A - 4	D40	F - 4	Q11	F - 2	Q41	B - 2
D7	H - 2	D41	B - 1	Q12	G - 4	Q42	B - 2
D8	H - 3	D42	B - 2	Q13	F - 2	Q52	F - 3
D9	H - 3	D43	C - 2	Q14	E - 2	Q53	F - 3
D10	H - 3	D44	B - 2	Q15	F - 3		
D11	G - 2	D45	A - 1	Q16	F - 3		
D12	H - 3	D46	B - 2	Q17	G - 3		
D13	H - 2	D47	B - 1	Q18	E - 3		
D14	H - 2	D48	B - 1	Q19	D - 2		
D15	H - 3	D49	B - 2	Q20	D - 2		
D16	G - 3	D50	A - 2	Q21	C - 2		
D18	F - 3	D52	A - 3	Q22	D - 2		
D19	G - 3	D53	B - 4	Q23	D - 2		
D20	F - 3	D54	F - 2	Q24	C - 2		
D21	E - 2	D55	F - 2	Q25	D - 3		
D22	F - 3	D56	D - 1	Q26	D - 3		
D23	G - 2	D57	D - 2	Q27	C - 3		
		D58	D - 3	Q28	A - 4		

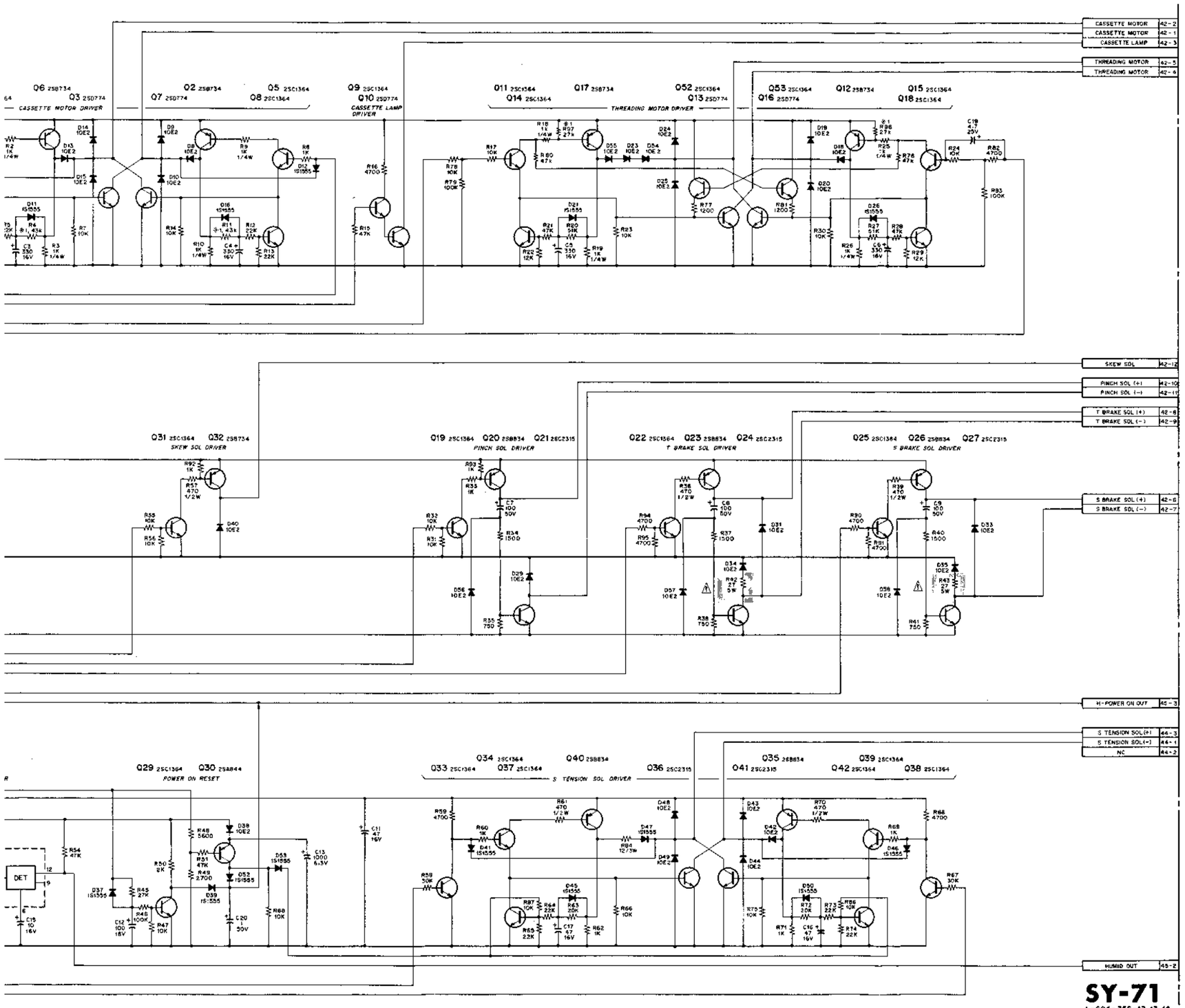


SY - 71 — SOLDERING SIDE —
1-604-356-14
BVU-800
BVU-800P
BVU-800S
BVU-800PM

(MOTOR/SOLENOID DRIVER)



ded and ⚠-marked components are critical to
ty.
lace only with same components as specified.



NOTE

MARK	CHANGE INFORMATION	SERIAL NO.
※1	(R4/R11) 30K ⟶ 43K	10851～(U/C) 10251～(J) 10301～(PAL) 10001～(PM) 10001～(SECAM)
	(R96/R97) 27K ADDED	
※2	R98 20K ADDED	11551～(U/C) 10451～(J) 10551～(PAL) 10001～(PM) 10001～(SECAM)

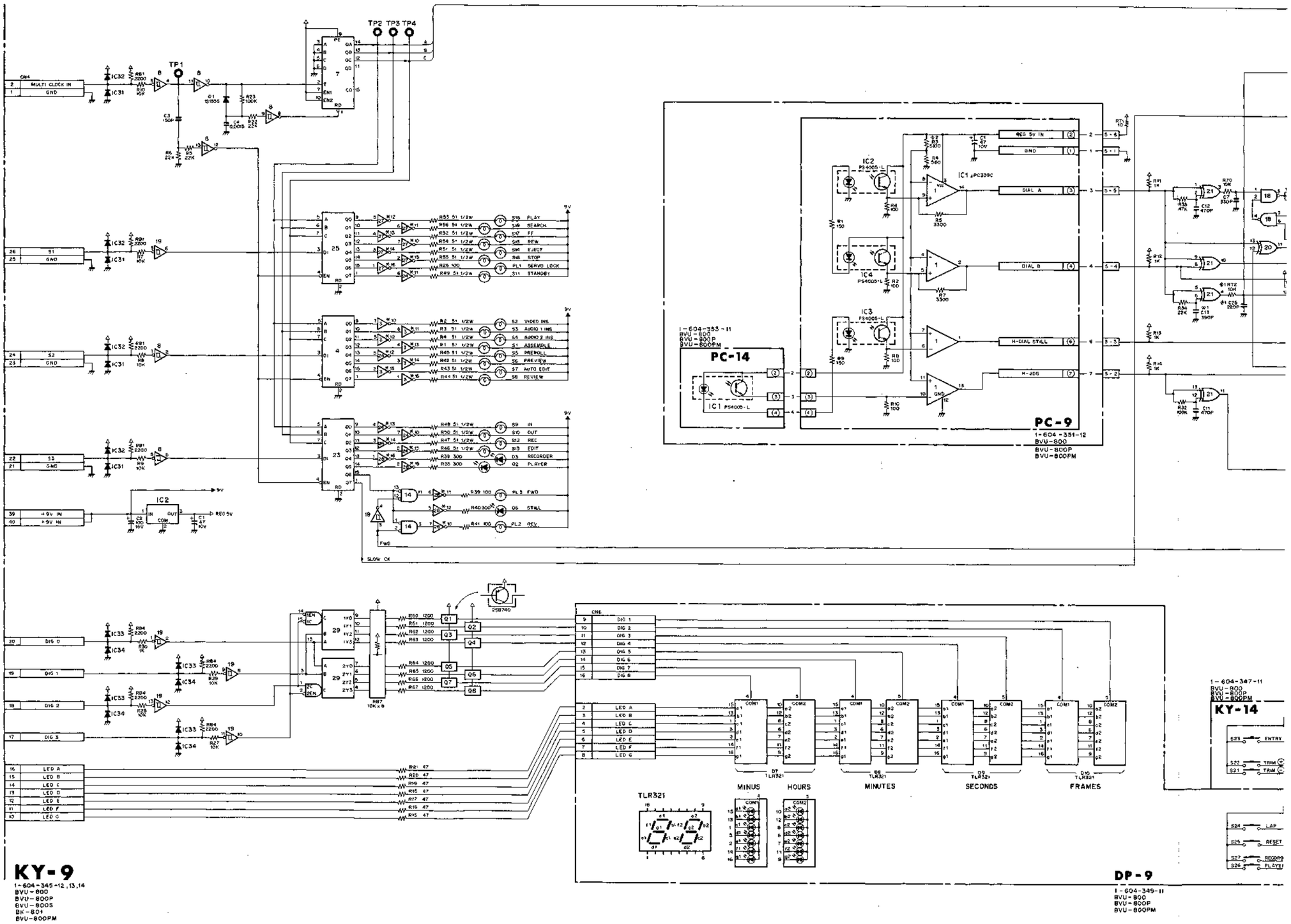
SY-71

1-604-356-12,13,14
BVU-800 (S/N,10501～(U/C)
(S/N,10201～(J)
BVU-800P (S/N,10001～)
BVU-800S (S/N,10001～)
BVU-800PM (S/N,10001～)

KY-9, KY-14 (KEY BOARD)
DP-9 (DISPLAY)
PC-9, PC-14 (SEARCH DIAL)

NOTE

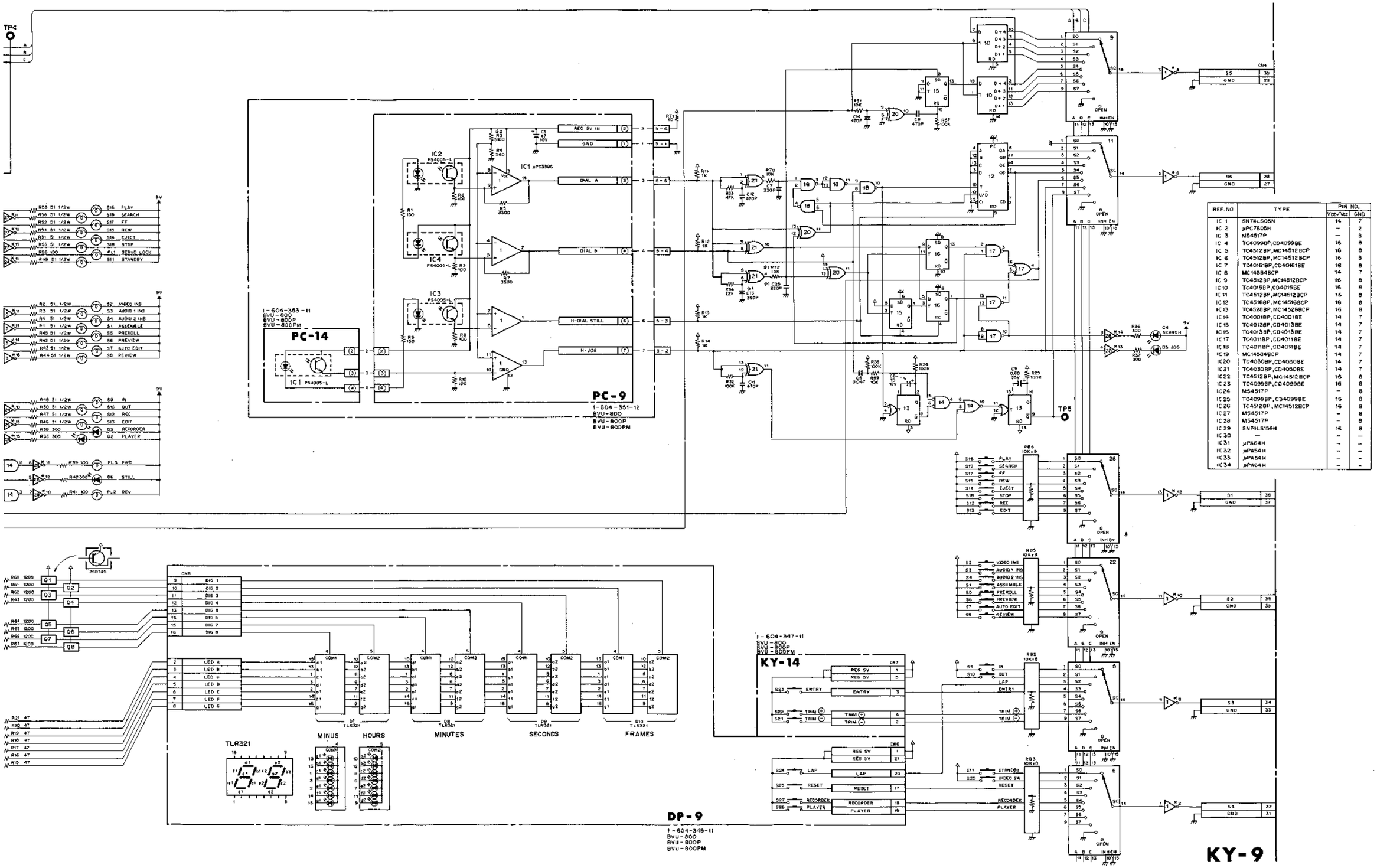
MARK	CHANGE INFORMATION	SERIAL NO.
❖1	R72 10K ADDED C25 220P ADDED C13 220P→390P	11551～(U/C) 10431～(J) 10551～(PAL) 10001～(PM)
❖2	R3 10K→5100	12251～(U/C) 10551～(J) 10351～(PAL) 10031～(SECAM) 10001～(PM)



17-102

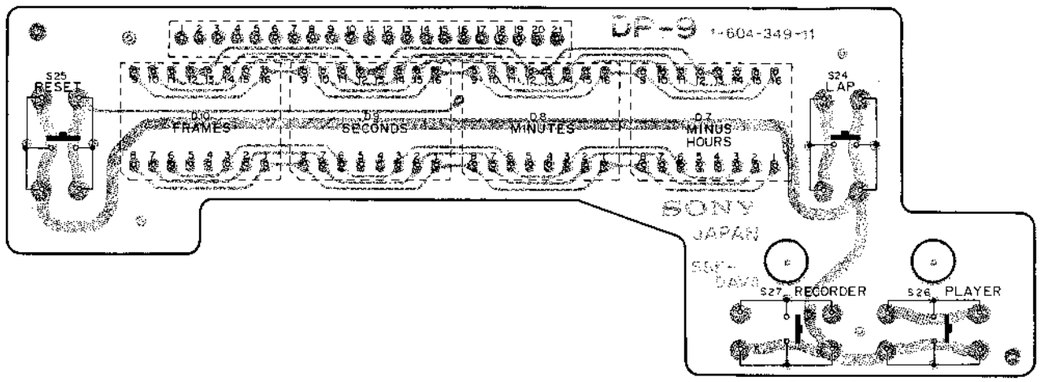
17-103

KY-9, KY-14, DP-9, PC-9, PC-14

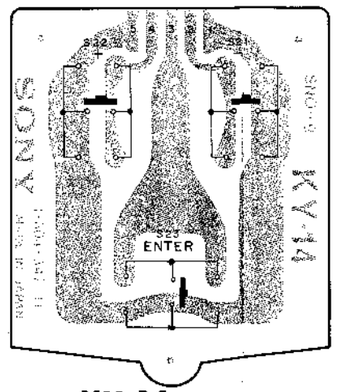


REF.NO	TYPE	PIN NO. Vdd/Vcc	PIN NO. GND
IC 1	SN74LS05N	14	7
IC 2	μPC78D5H	~	2
IC 3	M54517P	—	8
IC 4	TC4099BP,CD4099BE	16	8
IC 5	TC4512BP,MC14512BCP	16	8
IC 6	TC4512BP,MC14512BCP	16	8
IC 7	TC40161BP,CD40161BE	16	8
IC 8	MC14584BCP	14	7
IC 9	TC4512BP,MC14512BCP	16	8
IC 10	TC4015BP,CD4015BE	16	8
IC 11	TC4512BP,MC14512BCP	16	8
IC 12	TC4516BP,MC14516BCP	16	8
IC 13	TC4528BP,MC14528BCP	16	8
IC 14	TC4001BP,CD4001BE	14	7
IC 15	TC4013BP,CD4013BE	14	7
IC 16	TC4013BP,CD4013BE	14	7
IC 17	TC4011BP,CD4011BE	14	7
IC 18	TC4011BP,CD4011BE	14	7
IC 19	MC14584BCP	14	7
IC 20	TC4030BP,CD4030BE	14	7
IC 21	TC4030BP,CD4030BE	14	7
IC 22	TC4512BP,MC14512BCP	16	8
IC 23	TC4099BP,CD4099BE	16	8
IC 24	M54517P	—	8
IC 25	TC4099BP,CD4099BE	16	8
IC 26	TC4512BP,MC14512BCP	16	8
IC 27	M54517P	—	8
IC 28	M54517P	—	8
IC 29	SN74LS156N	16	8
IC 30	—	—	—
IC 31	μPA64H	~	~
IC 32	μPA54H	~	~
IC 33	μPA54H	~	~
IC 34	μPA64H	~	~

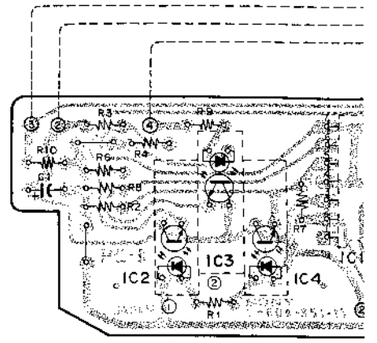
KY-9, KY-14 (KEY BOARD)
DP-9 (DISPLAY)
PC-9, PC-14 (SEARCH DIAL)



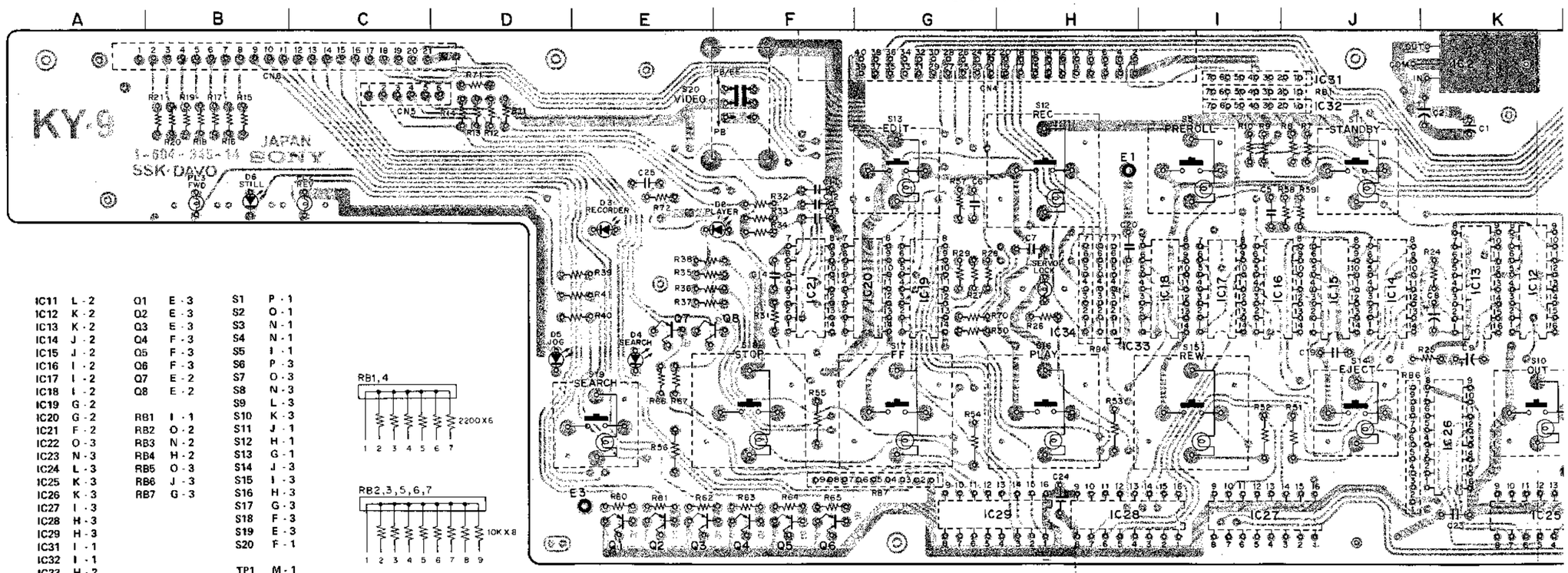
DP-9 -SOLDERING SIDE-
1-604-349-11,12
BVU-800
BVU-800P
BVU-800S
BVU-800PM



KY-14 -SOLDERING SIDE-
1-604-347-11,12
BVU-800
BVU-800P
BVU-800S
BVU-800PM

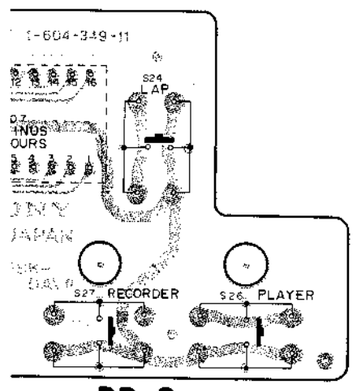


PC-9 -SOLDERING
1-604-351-13
BVU-800 (S/N. 12251 AND
S/N. 10551 AND
BVU-800P (S/N. 10551 ~ 1
S/N. 10801 AND
BVU-800S (S/N. 10031 AN
BVU-800PM (S/N. 10001 A

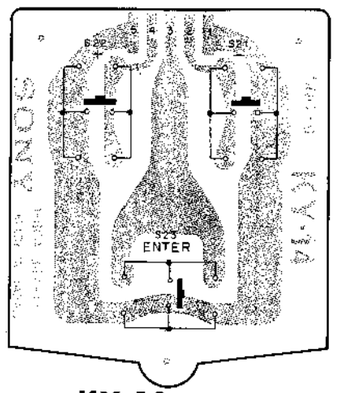


CN4	G-1	IC11	L-2	Q1	E-3	S1	P-1
CN5	C-1	IC12	K-2	Q2	E-3	S2	O-1
CN6	B-1	IC13	K-2	Q3	E-3	S3	N-1
CN7	L-1	IC14	J-2	Q4	F-3	S4	N-1
		IC15	J-2	Q5	F-3	S5	I-1
D1	N-2	IC16	I-2	Q6	F-3	S6	P-3
D2	E-2	IC17	I-2	Q7	E-2	S7	O-3
D3	E-2	IC18	I-2	Q8	E-2	S8	N-3
D4	E-2	IC19	G-2			S9	L-3
D5	E-2	IC20	G-2	RB1	I-1	S10	K-3
D6	B-1	IC21	F-2	RB2	O-2	S11	J-1
		IC22	O-3	RB3	N-2	S12	H-1
E1	H-1	IC23	N-3	RB4	H-2	S13	G-1
E2	P-3	IC24	L-3	RB5	O-3	S14	J-3
E3	E-3	IC25	K-3	RB6	J-3	S15	I-3
		IC26	K-3	RB7	G-3	S16	H-3
IC1	N-1	IC27	I-3			S17	G-3
IC2	K-1	IC28	H-3			S18	F-3
IC3	P-2	IC29	H-3			S19	E-3
IC4	O-2	IC31	I-1			S20	F-1
IC5	O-2	IC32	I-1				
IC6	N-2	IC33	H-2			TP1	M-1
IC7	N-2	IC34	H-2			TP2	O-3
IC8	M-2					TP3	O-3
IC9	M-2					TP4	L-3
IC10	L-2					TP5	L-3

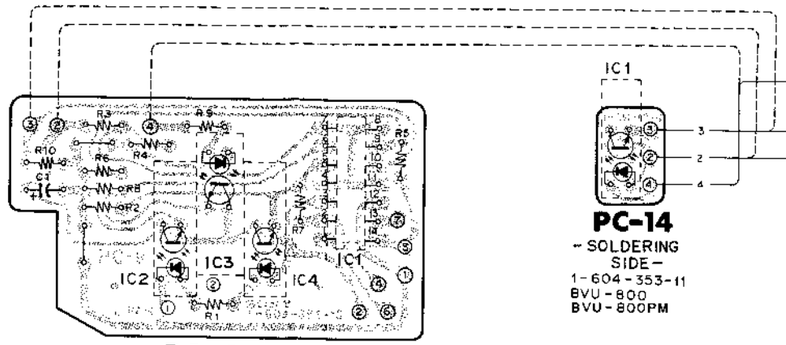
KY-9, KY-14, DP-9, PC-9, PC-14



DP-9 -SOLDERING SIDE-
1-604-349-11,12
BVU-800
BVU-800P
BVU-800S
BVU-800PM

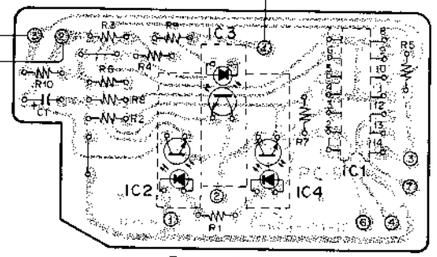


KY-14 -SOLDERING SIDE-
1-604-347-11,12
BVU-800
BVU-800P
BVU-800S
BVU-800PM

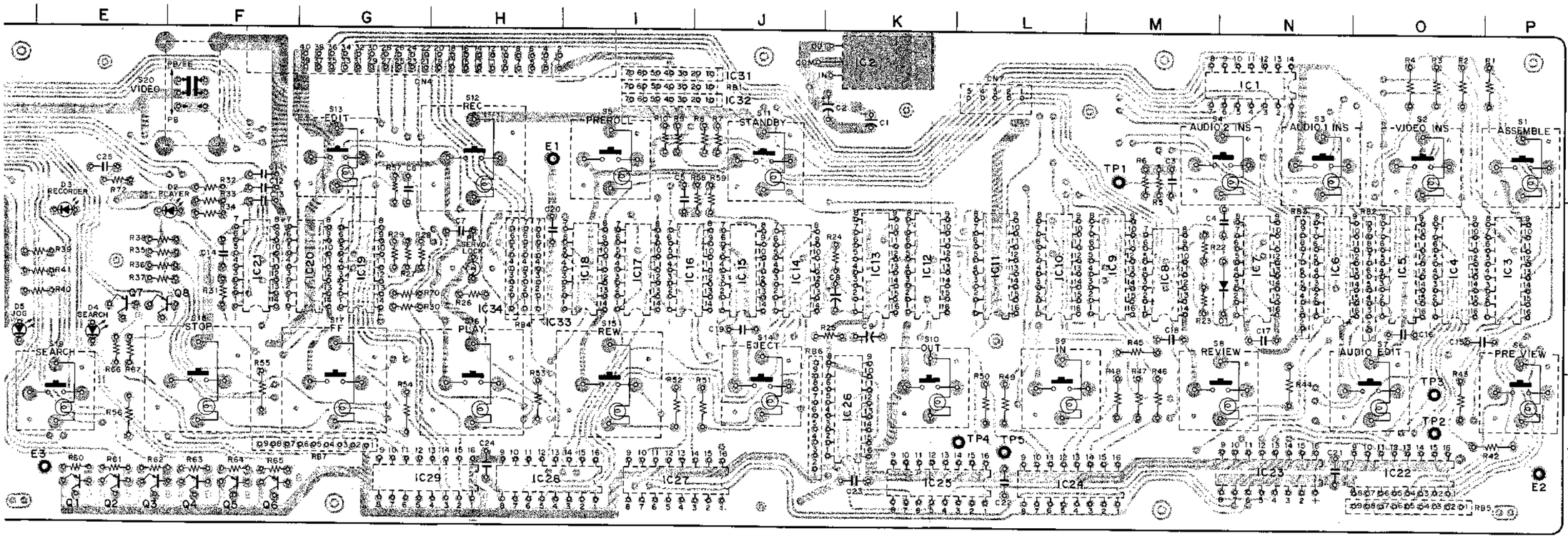


PC-9 -SOLDERING SIDE-
1-604-351-13
BVU-800 (S/N.12251 AND HIGHER (U/C)
(S/N.10551 AND HIGHER (J))
BVU-800P (S/N.10551 ~ 10600
(S/N.10801 AND HIGHER)
BVU-800S (S/N.10031 AND HIGHER)
BVU-800PM (S/N.10001 AND HIGHER)

PC-14
- SOLDERING SIDE -
1-604-353-11
BVU-800
BVU-800PM



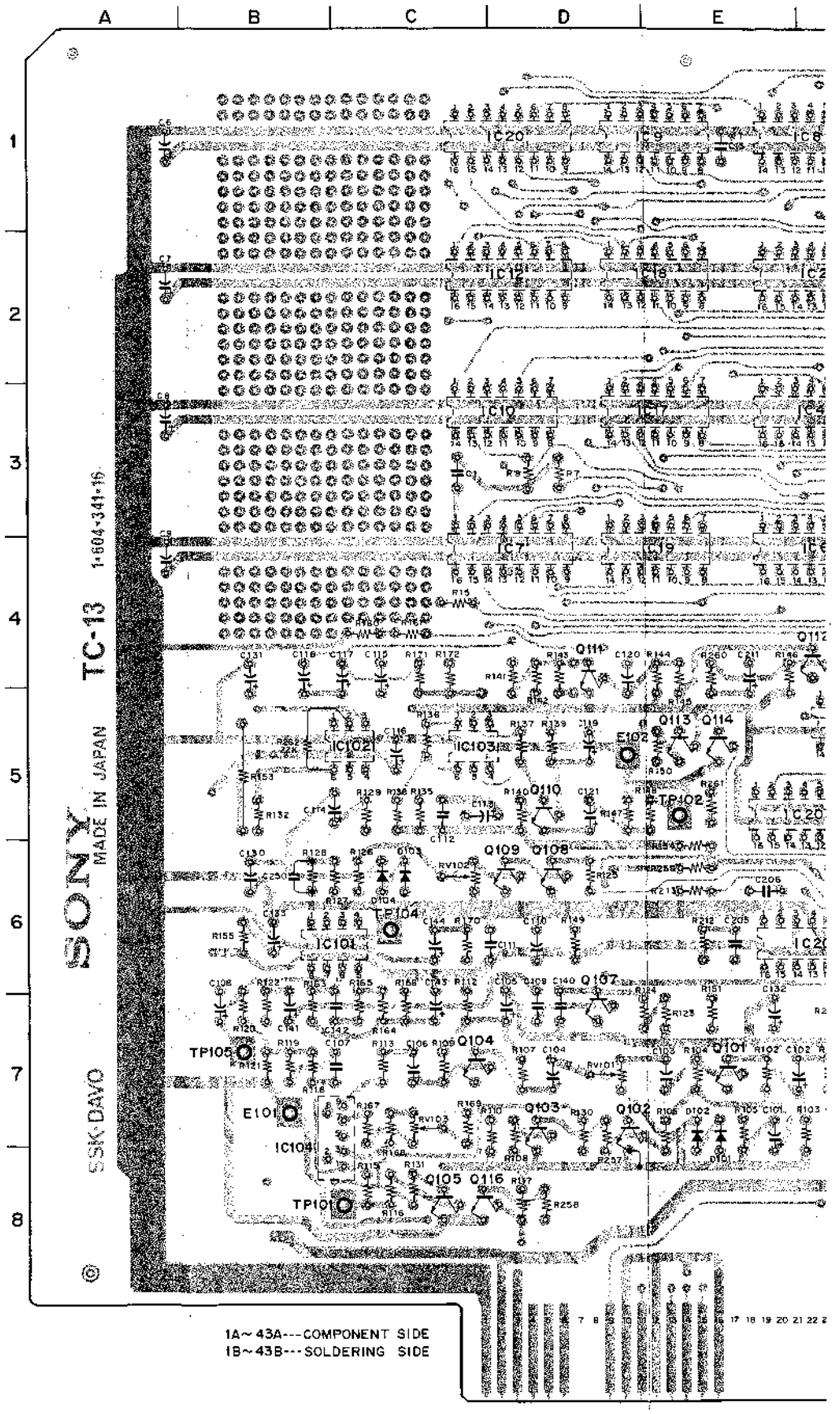
PC-9 -SOLDERING SIDE-
1-604-351-12
BVU-800 (S/N. UP TO 12250 (U/C)
(S/N. UP TO 10550 (J))
BVU-800P (S/N. UP TO 10550
(S/N. 10601 ~ 10800)
BVU-800S (S/N. UP TO 10030)



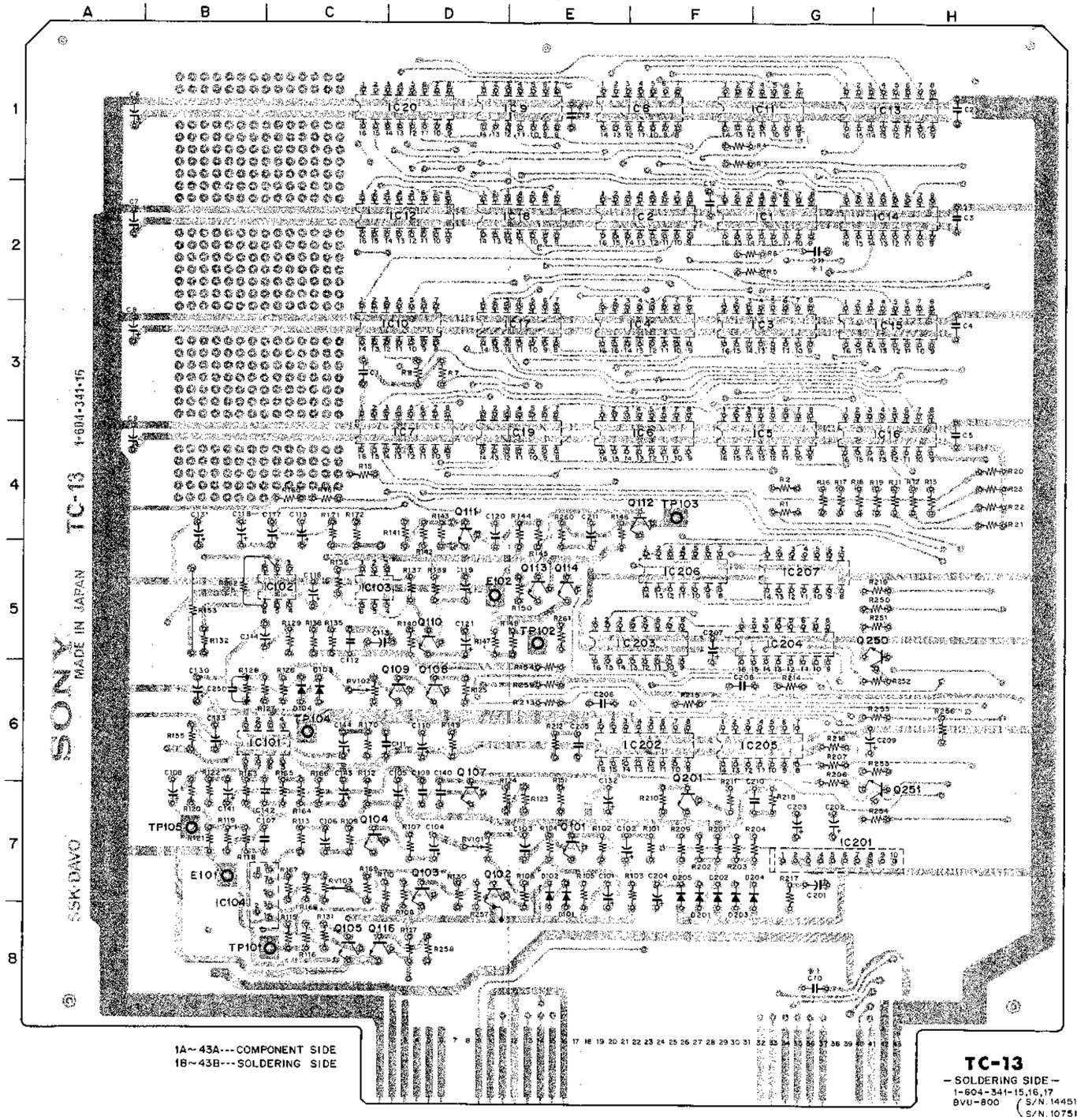
KY-9 -SOLDERING SIDE-
1-604-345-14
BVU-800 (S/N.11551 AND HIGHER(U/C)
(S/N.10451 AND HIGHER(J))
BVU-800P (S/N.10551 AND HIGHER)
BVU-800S (S/N.10031 AND HIGHER)
BVU-800PM (S/N.10001 AND HIGHER)
BK-801

TC-13-1 TC-13-1

TC-13-1 (TIME CODE REC/PB AMPLIFIER)
(CTL COUNTER)
(SERVO REF SYNC SELECTOR)



TC-13-1 (TIME CODE REC/PB AMPLIFIER)
(CTL COUNTER)
(SERVO REF SYNC SELECTOR)



D101 E - 7
D102 E - 7
D103 C - 6
D104 C - 6
D201 F - 7
D202 F - 7
D203 F - 7
D204 G - 7
D205 F - 7

E101 B - 7
E102 D - 5

IC1 G - 2
IC2 F - 2
IC3 G - 3
IC4 F - 3
IC5 G - 4
IC6 F - 4
IC7 D - 4
IC8 F - 1
IC9 E - 1
IC10 D - 3
IC11 G - 1
IC12 D - 2
IC13 H - 1
IC14 H - 2
IC15 H - 3
IC16 H - 4
IC17 E - 3
IC18 E - 2
IC19 E - 4
IC20 D - 1
IC101 B - 6
IC102 C - 5
IC103 C - 5
IC104 B - 7
IC201 G - 7
IC202 F - 6
IC203 F - 5
IC204 G - 5
IC205 G - 6
IC206 F - 5
IC207 G - 5

Q101 E - 7
Q102 D - 7
Q103 D - 7
Q104 C - 7
Q105 C - 8
Q107 D - 7
Q108 D - 6
Q109 D - 8
Q110 D - 5
Q111 D - 4
Q112 F - 4
Q113 E - 5
Q114 E - 5
Q116 C - 8
Q201 F - 7
Q250 H - 5
Q251 H - 7

RV101 D - 7
RV102 C - 6
RV103 C - 7

TP101 C - 8
TP102 E - 5
TP103 F - 4
TP104 C - 6
TP105 B - 7

NOTE,(1) IC206,IC207,R219, AER NOT MOUNTED NTSC MACHINE.

(2) ※1 (C10,11,13); DO NOT USE WITH VERSION 1 THROUGH 5 ROM(IC3,6,7) ON SY-37 BOARD

TC-13
– SOLDERING SIDE –
1-604-341-15,16,17
BVU-800 (S/N. 14451~ (U/C)) (S/N. 10751~ (J))
BVU-800P (S/N. 11491~)
BVU-800S (S/N. 10081~)
BVU-800PM (S/N. 10151~) (S/N. 90101~)

TC-13-1

CTL COUNTER

SECONDS

MINUTES

HOURS

MINUS DETECT

REF. NO	TYPE	PIN NO. (+V1=12V)	PIN NO. (+V1=5V)	PIN NO. GND
IC 1	TC4510BP, MC14510BCP		16	8
IC 2	TC4510BP, MC14510BCP		16	8
IC 3	TC4510BP, MC14510BCP		16	8
IC 4	TC4510BP, MC14510BCP		16	8
IC 5	TC4510BP, MC14510BCP		16	8
IC 6	TC4510BP, MC14510BCP		16	8
IC 7	TC4510BP, MC14510BCP		16	8
IC 8	TC4023BP, CD4023BE		14	7
IC 9	TC4071BP, CD4071BE		14	7
IC 10	TC4069UBP, CD4069BE		14	7
IC 11	TC4077BP, CD4077BE		14	7
IC 12	TC4027BP, CD4027BE		16	8
IC 13	TC4512BP, MC14512BCP		16	8
IC 14	TC4512BP, MC14512BCP		16	8
IC 15	TC4512BP, MC14512BCP		16	8
IC 16	TC4512BP, MC14512BCP		16	8
IC 17	TC4081BP, CD4081BE		14	7
IC 18	TC4073BP, CD4073BE		14	7
IC 19	TC4071BP, CD4071BE		14	7
IC 20	TC4538BP, MC14538BCP		16	8
IC 101	NJM4562D-M, NJM4562DDR	—	1	4
IC 102	CX130	4	—	2
IC 103	2SC1963	—	—	—
IC 104	μPA76V-FA	—	—	—
IC 201	BX3815, BX3915A	—	1	2.8
IC 202	MC14538BCP	16		8
IC 203	TC4539BP, MC14539BCP	16		8
IC 204	TC4512BP, MC14512BCP	16		8
IC 205	TC4001BP, CD4001BE	14		7
IC 206	TC4011BP, CD4011BE	14		7
IC 207	TC4085BP, CD4085BE	14		7

IC SELECTOR

IC104 μPA76V-FA

PB AMP DC OFFSET ADJ

TIME CODE REC AMP

TIME CODE PB AMP

NOTE ;
IC206, IC207, R219
ARE NOT MOUNTED
NTSC MACHINE

REG +12V

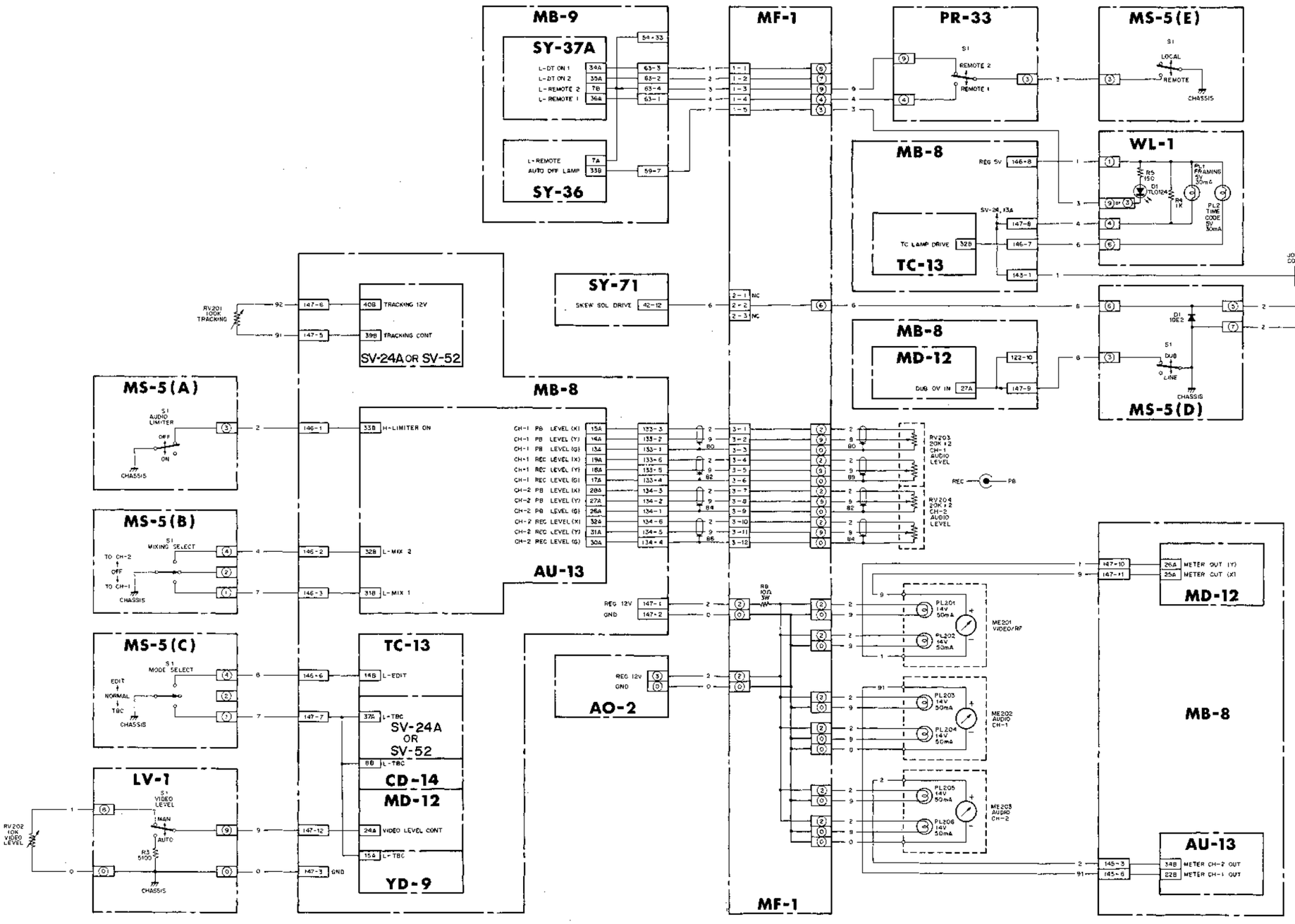
TC-13

1-604-341-15, 16, 17
BVU-800 (S/N.14451~(U/C)
(S/N.10751~(J)
BVU-800P (S/N.11491~)
BVU-800S (S/N.10081~)
BVU-800PM (S/N.10151~
(S/N.90101~

FRAME (1) (FRONT CHASSIS) FRAM

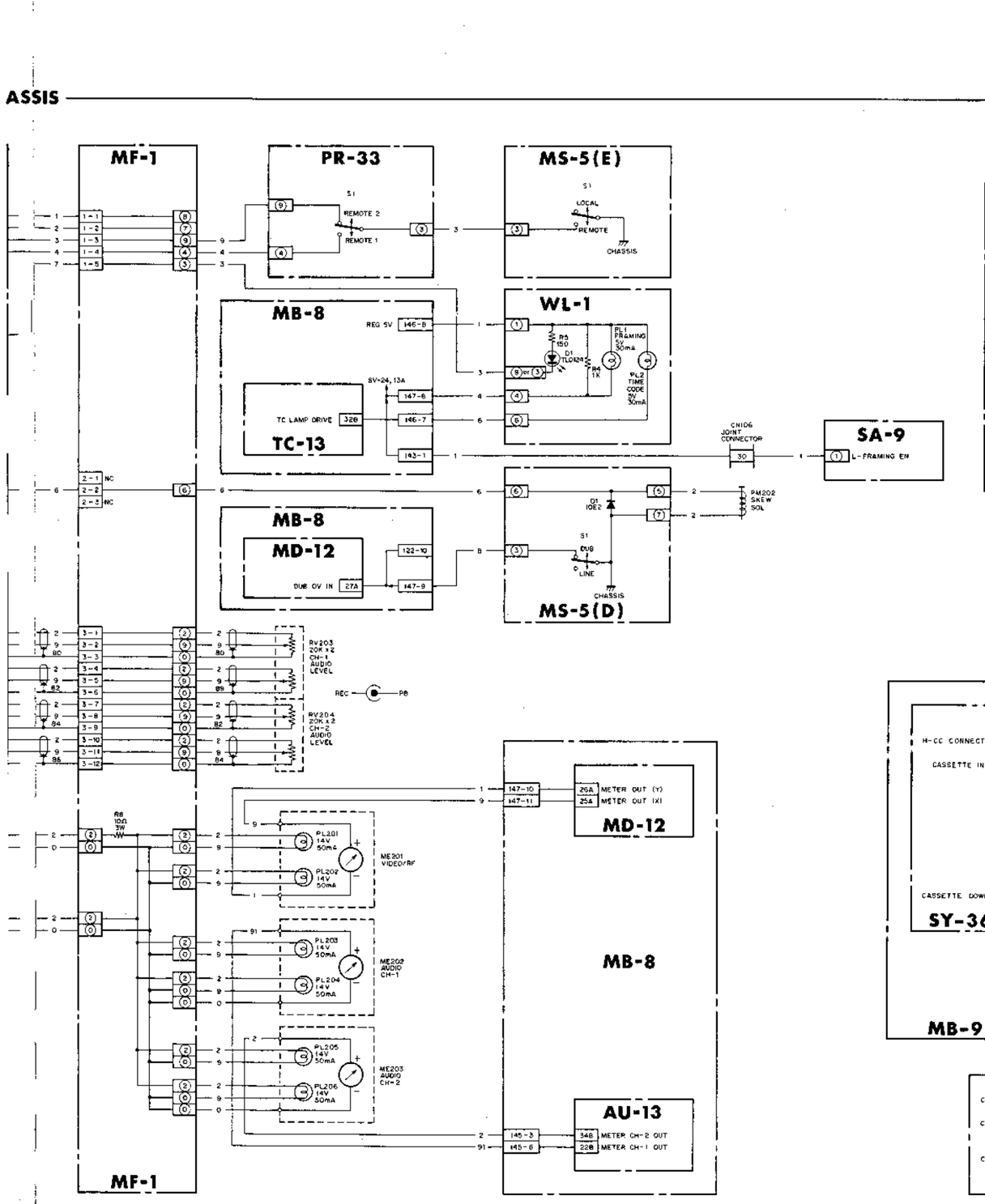
FRAME (1)

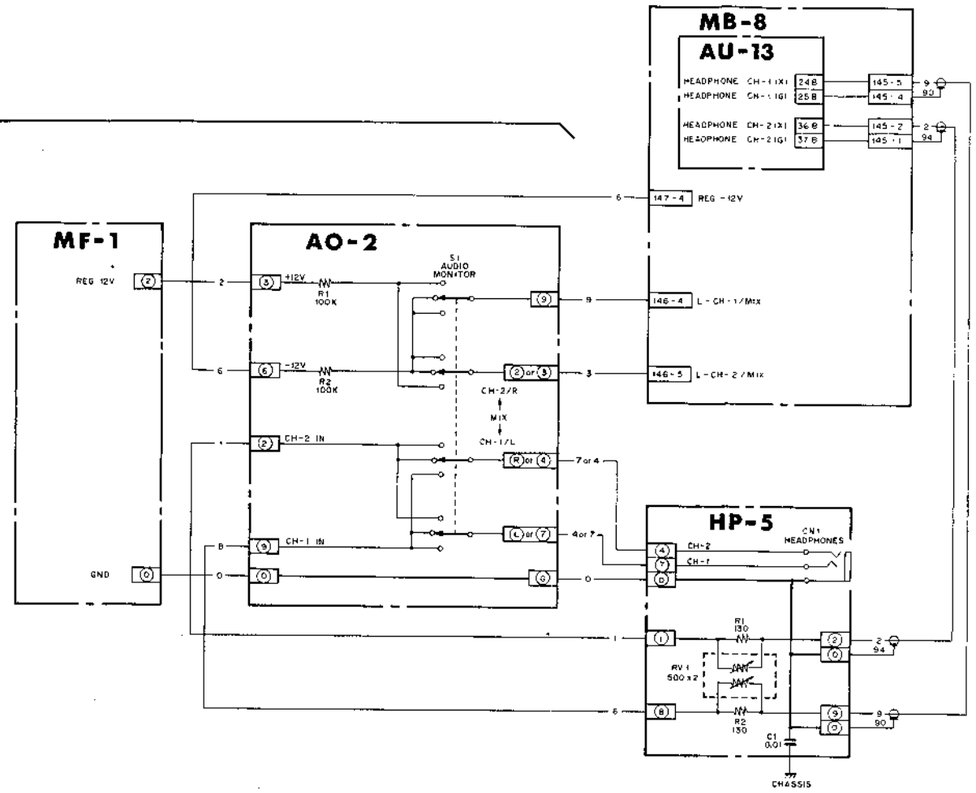
FRONT CHASSIS

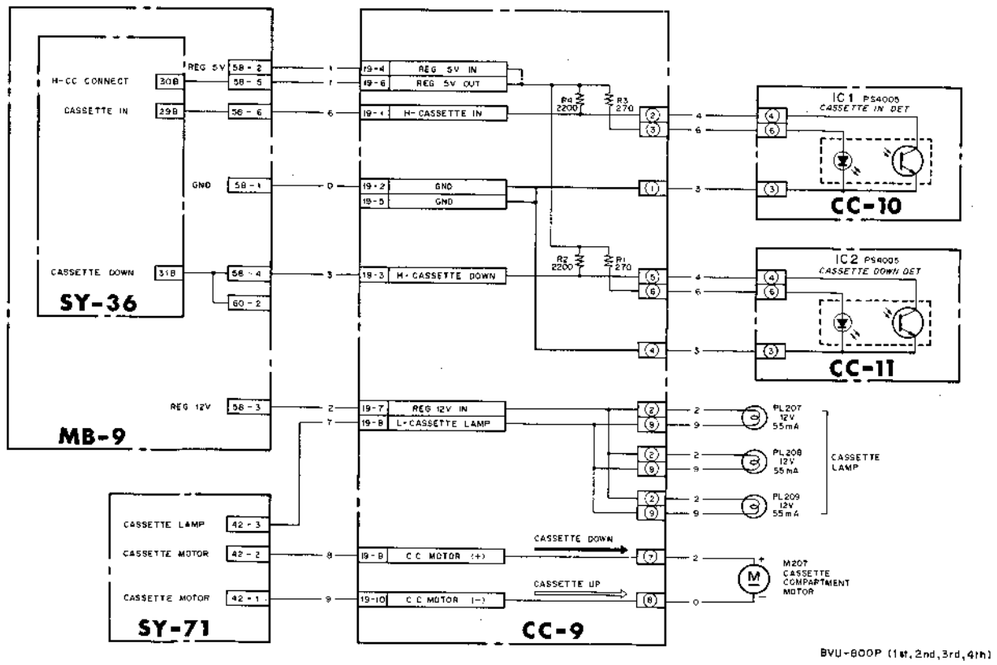


FRAME (1) (FRONT CHASSIS)

ASSIS

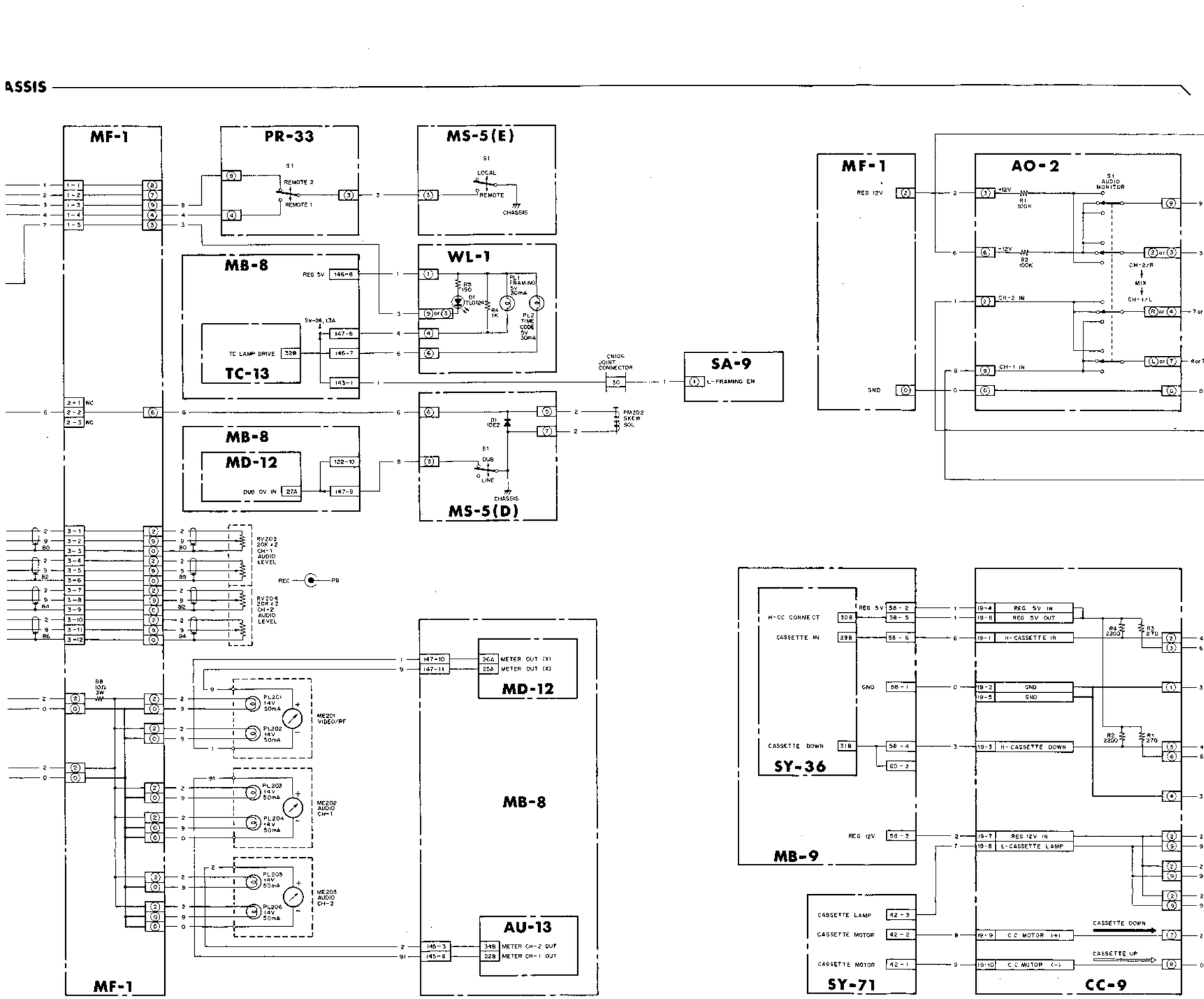




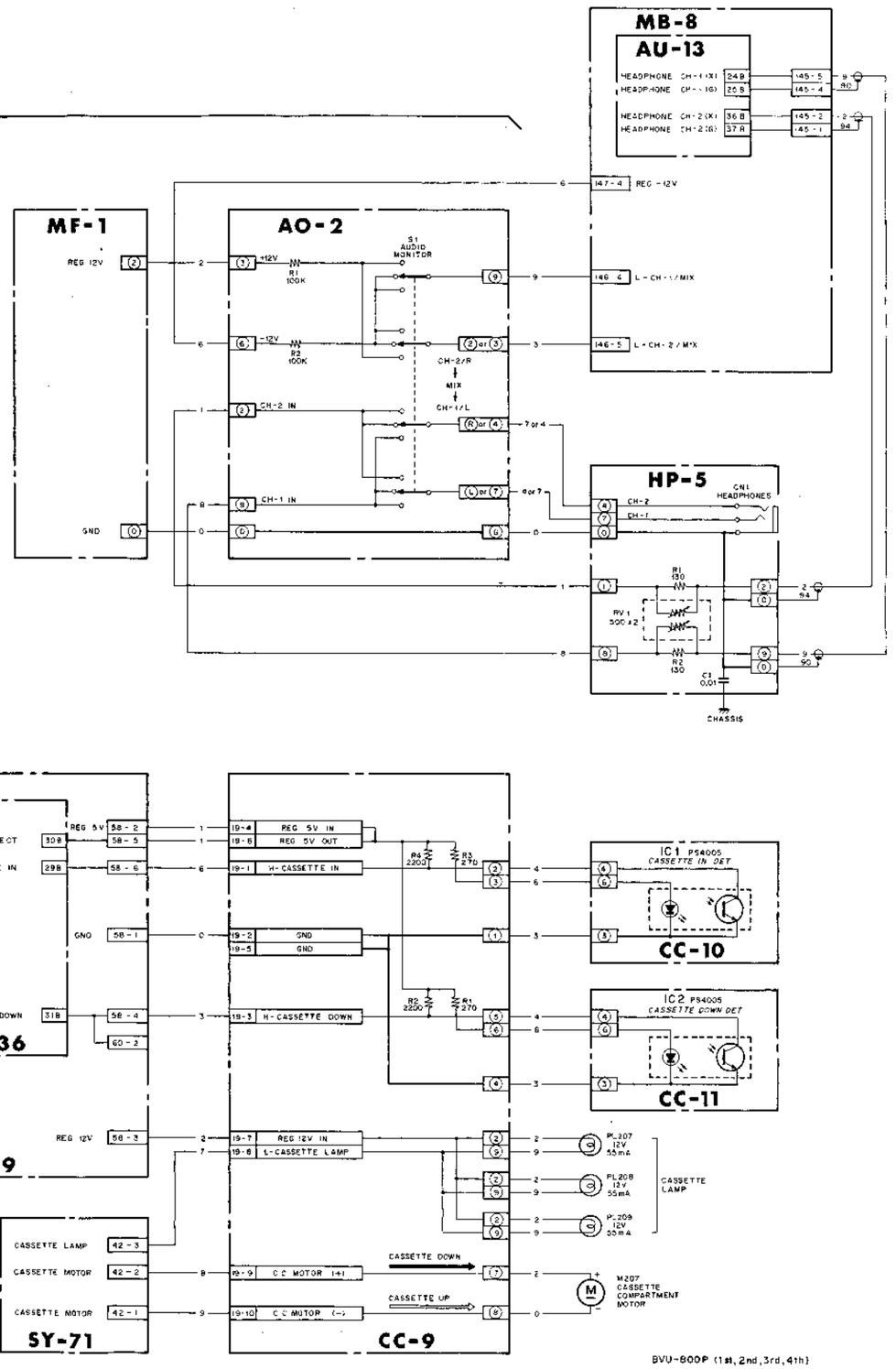


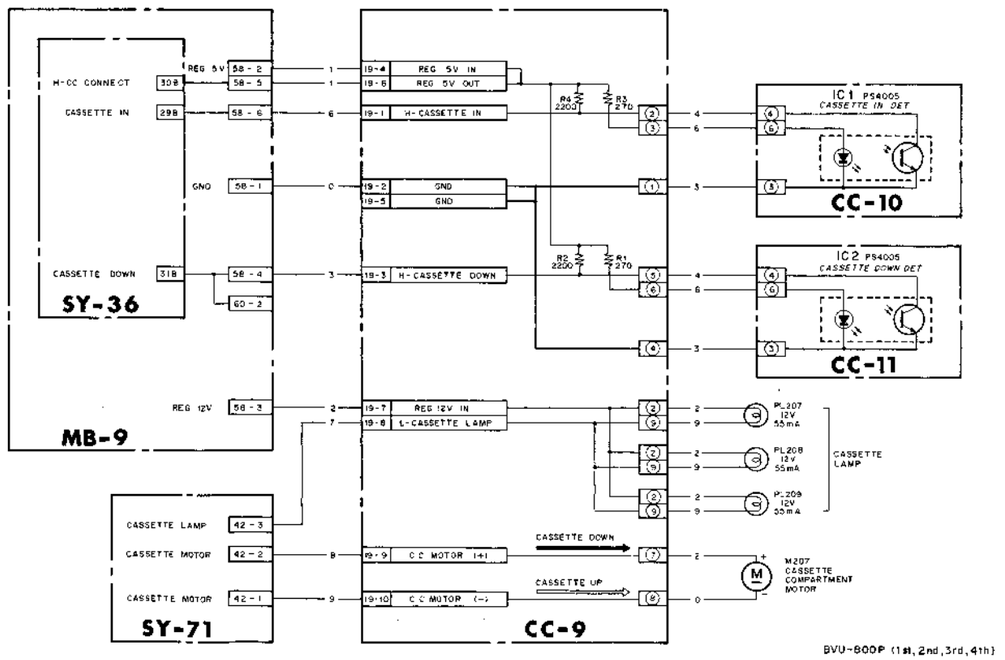
BVU-800P (1st, 2nd, 3rd, 4th)

FRAME (1) (FRONT CHASSIS)



17-115

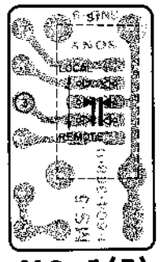




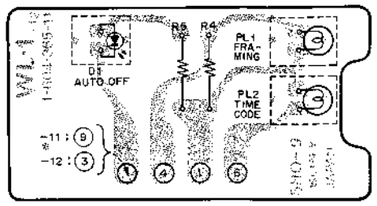
BVU-800P (1st, 2nd, 3rd, 4th)

17-116

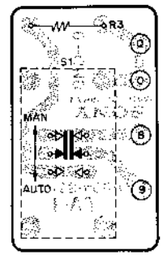
CC-9, CC-10, CC-11, LV-1, MF-1, MS-5, PR-33, WL-1



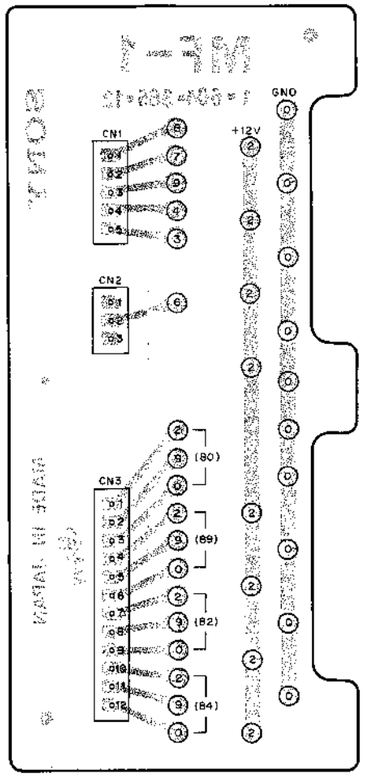
MS-5(E)
- SOLDERING SIDE -
1-604-368-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM



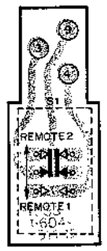
WL-1 - SOLDERING SIDE -
1-604-366-11,12
BVU-800
BVU-800P
BVU-800S
BVU-800PM



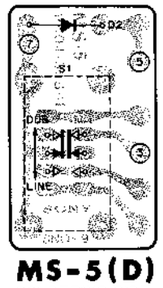
LV-1
- SOLDERING SIDE -
1-604-371-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM



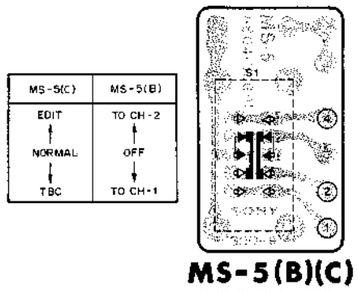
MF-1 - COMPONENT SIDE -
1-604-365-12,13
BVU-800
BVU-800P
BVU-800S
BVU-800PM



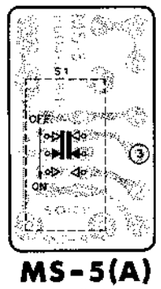
PR-33
- SOLDERING SIDE -
1-604-511-12
BVU-800
BVU-800P
BVU-800S
BVU-800PM



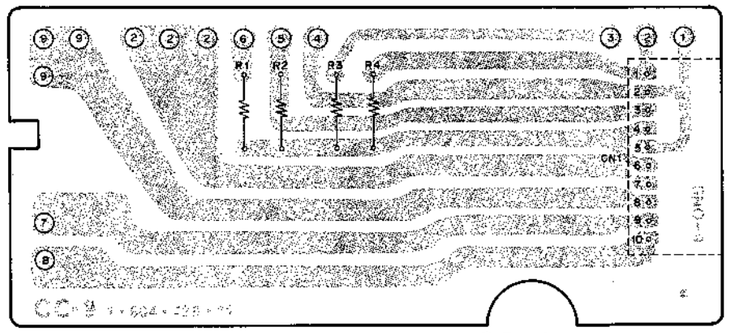
MS-5(D)
- SOLDERING SIDE -
1-604-368-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM



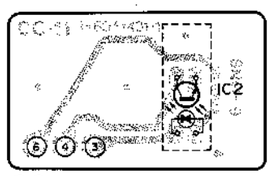
MS-5(B)(C)
- SOLDERING SIDE -
1-604-368-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM



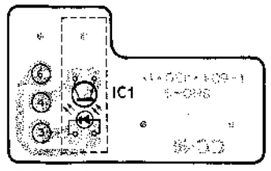
MS-5(A)
- SOLDERING SIDE -
1-604-368-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM



CC-9 - SOLDERING SIDE -
1-604-429-11,12
BVU-800
BVU-800P
BVU-800S
BVU-800PM

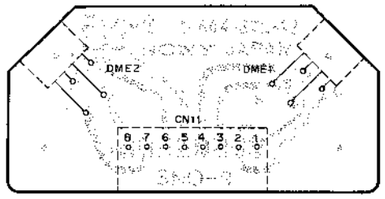


CC-11 - SOLDERING SIDE -
1-604-431-11,12
BVU-800
BVU-800P
BVU-800S
BVU-800PM

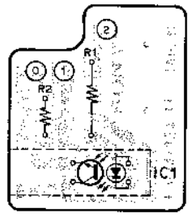


CC-10 - SOLDERING SIDE -
1-604-430-11,12
BVU-800
BVU-800P
BVU-800S
BVU-800PM

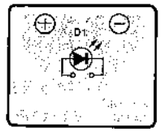
EK-2, EK-3, EM-1, LE-4, PC-7, PH-1, TC-12, TM-4, TM-8



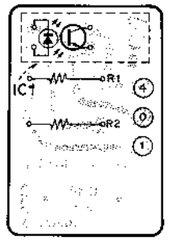
EM-1 –SOLDERING SIDE–
1-604-372-13
BVU-800
BVU-800P
BVU-800S
BVU-800PM



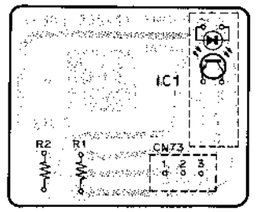
EK-2
–SOLDERING SIDE–
1-604-354-11,12
BVU-800
BVU-800P
BVU-800S
BVU-800PM



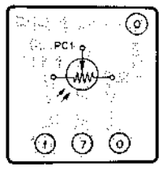
LE-4
–SOLDERING SIDE–
1-604-357-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM



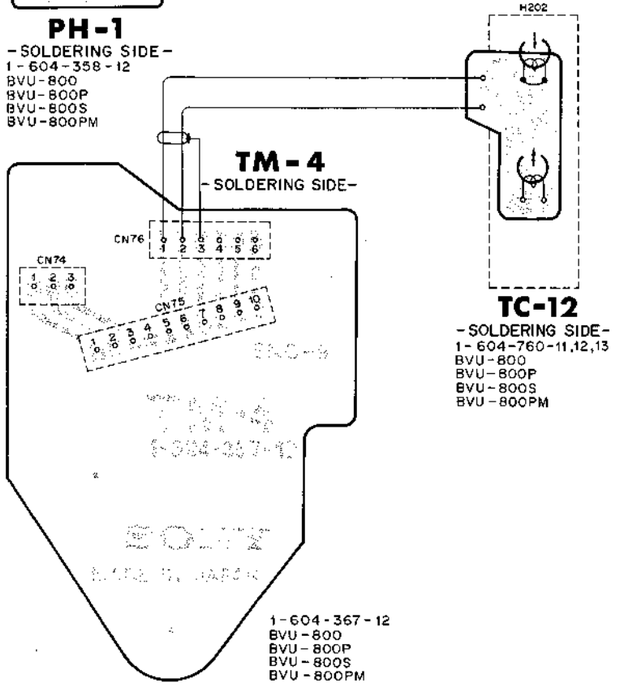
PC-7
–SOLDERING SIDE–
1-604-348-11
BVU-800
BVU-800P
BVU-800S
BVU-800PM



EK-3 –SOLDERING SIDE–
1-604-355-11
BVU-800 (S/N.~11550(U/C)) (S/N.~10450(J))
BVU-800P (S/N.~10550)
BVU-800S (S/N.~10030)

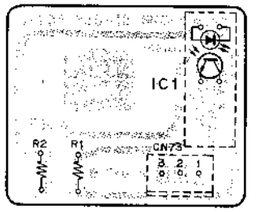


PH-1
–SOLDERING SIDE–
1-604-358-12
BVU-800
BVU-800P
BVU-800S
BVU-800PM



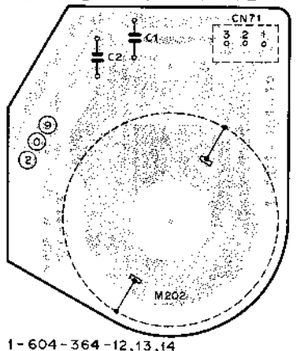
TM-4
–SOLDERING SIDE–
1-604-367-12
BVU-800
BVU-800P
BVU-800S
BVU-800PM

TC-12
–SOLDERING SIDE–
1-604-760-11,12,13
BVU-800
BVU-800P
BVU-800S
BVU-800PM



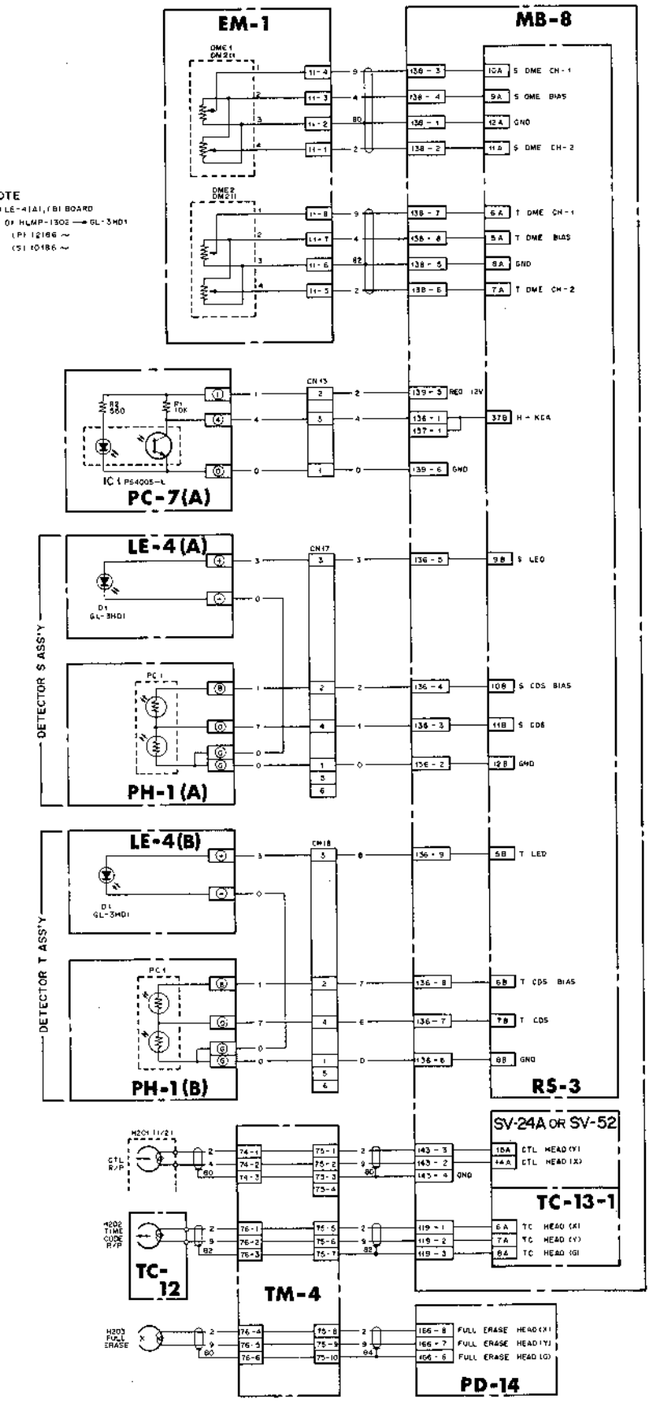
EK-3–SOLDERING SIDE–
1-604-355-12
BVU-800 (S/N.11551~(U/C)) (S/N.10451~(J))
BVU-800P (S/N.10551~)
BVU-800S (S/N.10031~)
BVU-800PM(S/N.10001~)

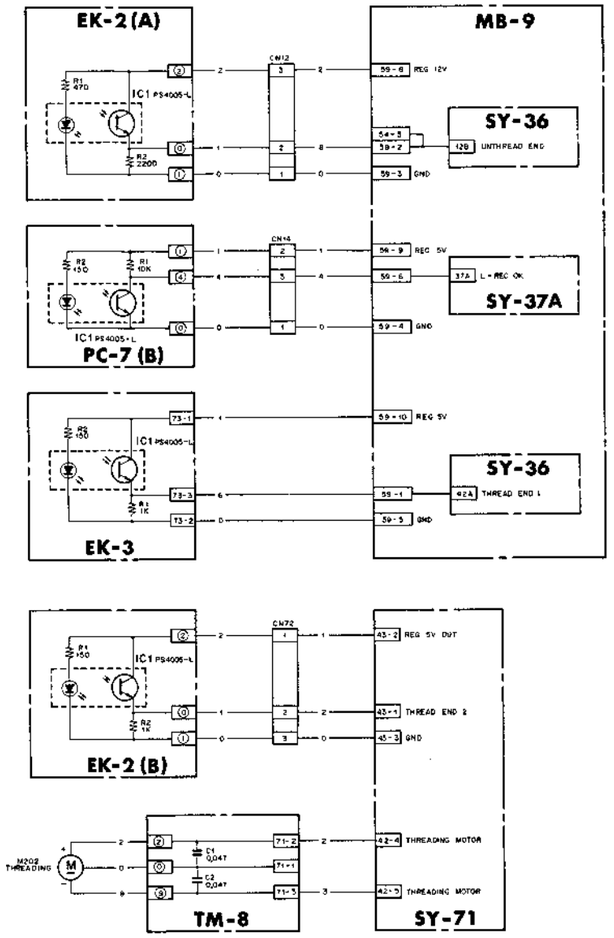
TM-8 –SOLDERING SIDE–

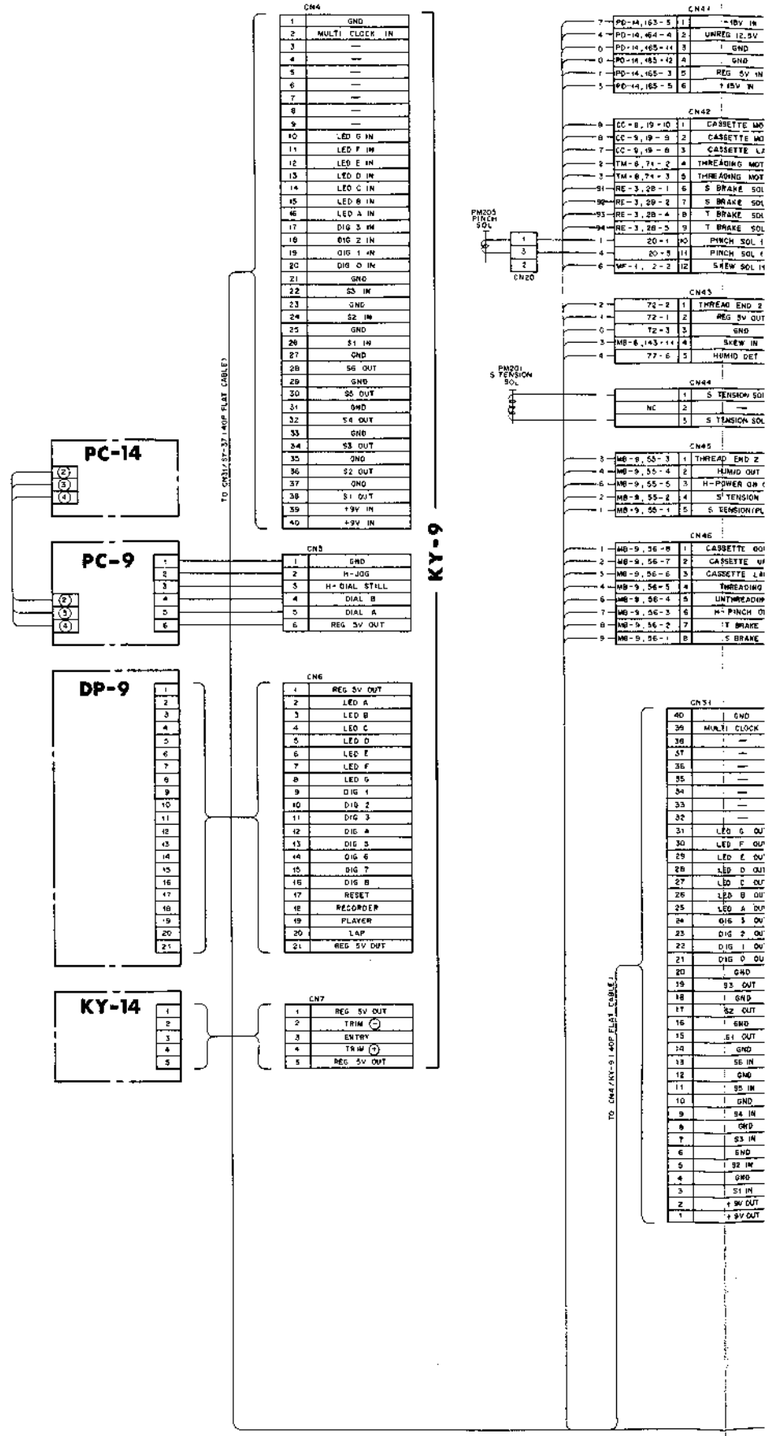


1-604-364-12,13,14
BVU-800
BVU-800P
BVU-800S
BVU-800PM

FRAME (2)


EM-1
MB-8
DME1 DM2211
DME2 DM2211
NOTE
(1) LE-4(A1,(B) BOARD
OF HLMP-1302 → GL-3HD1
(P) 12166 ～
(S) 10186 ～
PC-7(A)
LE-4(A)
D1 GL-3HD1
PH-1(A)
LE-4(B)
D1 GL-3HD1
PH-1(B)
DETECTOR S ASSY
DETECTOR T ASSY
TC-12
TM-4
SV-24A OR SV-52
TC-13-1
PD-14
10A S DME CH-1
9A S DME BIAS
12A GND
11A S DME CH-2
6A T DME CH-1
5A T DME BIAS
8A GND
7A T DME CH-2
37A H-KEA
9B S LEG
10B S CDS BIAS
11B S CDS
12B GND
5B T LED
6B T CDS BIAS
7B T CDS
8B GND
10A CTL HEAD (Y)
14A CTL HEAD (X)
6A TC HEAD (X)
7A TC HEAD (Y)
8A TC HEAD (G)
FULL ERASE HEAD (X)
FULL ERASE HEAD (Y)
FULL ERASE HEAD (G)


EK-2(A)
MB-9
SY-36
SY-37A
PC-7 (B)
EK-3
SY-36
EK-2 (B)
TM-8
SY-71
REG 12V
REG 5V
L-REC OK
GND
THREAD END L
THREAD END R
THREADING MOTOR


PC-14
PC-9
DP-9
KY-14
KY-9
TO CN51/SY-37 (40P FLAT CABLE)
TO CN6/KY-9 (40P FLAT CABLE)
PM205 PINCH SOL
PM201 S TENSION SOL
CN20
GND
MULTI CLOCK IN
REG 5V OUT
LED A
LED B
LED C
LED D
LED E
LED F
LED G
DIG 1
DIG 2
DIG 3
DIG 4
DIG 5
DIG 6
DIG 7
DIG 8
RESET
RECORDER
PLAYER
LAP
REG 5V OUT
TRIM
ENTRY
TRIM
REG 5V OUT

SY-71

CN41

PD-44,163-5	1	+8V IN	
PD-14,164-4	2	UNREG 12.5V IN	
PD-14,165-11	3	GND	
PD-14,165-12	4	GND	
PD-14,165-3	5	REG 5V IN	
PD-14,165-5	6	+15V IN	

CN42

CC-9,19-10	1	CASSETTE MOTOR	
CC-9,19-9	2	CASSETTE MOTOR	
CC-9,19-8	3	CASSETTE LAMP	
TM-8,21-2	4	THREADING MOTOR (+)	
TM-8,21-3	5	THREADING MOTOR (-)	
RE-3,28-1	6	S BRAKE SOL (+)	
RE-3,28-2	7	S BRAKE SOL (-)	
RE-3,28-3	8	T BRAKE SOL (+)	
RE-3,28-5	9	T BRAKE SOL (-)	
20-1	10	PINCH SOL (+)	
20-3	11	PINCH SOL (-)	
MF-1, 2-2	12	SKEW SOL (+)	

CN43

72-2	1	THREAD END 2 IN	
72-1	2	REG 5V OUT	
72-3	3	GND	
MB-8,143-11	4	SKEW IN	
77-6	5	HUMID DET	

CN44

	1	S TENSION SOL (+)	
NC	2	—	
	3	S TENSION SOL (-)	

CN45

MB-9,55-3	1	THREAD END 2 OUT	
MB-9,55-4	2	HUMID OUT	
MB-9,55-5	3	H-POWER ON OUT	
MB-9,53-2	4	S TENSION	
MB-9,58-1	5	S TENSION (PLAY)	

CN46

MB-9,56-8	1	CASSETTE DOWN	
MB-9,56-7	2	CASSETTE UP	
MB-9,56-6	3	CASSETTE LAMP	
MB-9,56-5	4	THREADING	
MB-9,56-4	5	UNTHREADING	
MB-9,56-3	6	H- PINCH ON	
MB-9,56-2	7	T BRAKE	
MB-9,56-1	8	S BRAKE	

CN51

40	GND		
39	MULTI CLOCK OUT		
38	—		
37	—		
36	—		
35	—		
34	—		
33	—		
32	—		
31	LED G OUT		
30	LED F OUT		
29	LED E OUT		
28	LED D OUT		
27	LED C OUT		
26	LED B OUT		
25	LED A OUT		
24	DIG 3 OUT		
23	DIG 2 OUT		
22	DIG 1 OUT		
21	DIG 0 OUT		
20	GND		
19	S3 OUT		
18	GND		
17	S2 OUT		
16	GND		
15	S1 OUT		
14	GND		
13	S0 IN		
12	GND		
11	S5 IN		
10	GND		
9	S4 IN		
8	GND		
7	S3 IN		
6	GND		
5	S2 IN		
4	GND		
3	S1 IN		
2	+5V OUT		
1	+5V OUT		

TO CN4/XC-9 (50P FLAT CABLE)

SY-37A

CN55

ST-71,45-5	1	KEEP SOL (PLAY)	52-17B	
SY-71,45-6	2	KEEP SOL	52-16B	
SY-71,45-1	3	THREAD END 2	52-15B	
SY-71,45-2	4	HUMID IN	52-14B	
SY-71,45-3	5	H-POWER ON RESET	52-36A	

CN56

ST-71,46-8	1	S-BRAKE	52-23B	
SY-71,46-7	2	T-BRAKE	52-24B	
SY-71,46-6	3	H-PINCH ON	52-33B	
SY-71,46-5	4	UNTHREADING	52-22B	
SY-71,46-4	5	THREADING	52-21B	
SY-71,46-3	6	CASSETTE LAMP	52-20B	
SY-71,46-2	7	CASSETTE UP	52-19B	
SY-71,46-1	8	CASSETTE DOWN	52-18B	

CN57

RE-3,23-4	1	REG 12V		
RE-3,23-1	2	GND		
RE-3,23-5	3	—		NC
RE-3,23-3	4	TAPE END	52-27B	
RE-3,23-2	5	TAPE BEGIN	52-26B	

CN58

CC-9,19-2	1	GND		
CC-9,18-4	2	REG 5V		
CC-9,18-7	3	REG 12V		
CC-9,19-3	4	CASSETTE DOWN	52-31B	60-2
CC-9,19-6	5	CASSETTE COMP	52-30B	
CC-9,19-1	6	CASSETTE IN	52-29B	

CN59

73-3	1	THREADING END 1	52-42A	
12-2	2	UNTHRE END	52-42B	54-3
12-1	3	GND		
14-1	4	GND		
73-2	5	GND		
14-3	6	REC OK	54-37A	
MF-1, 1-5	7	AUTO OFF LAMP	52-33B	
12-3	8	REG 12V		
14-2	9	REG 5V		
73-1	10	REG 8V		

CN60

NC	1	TAPE FWD	52-18A	54-21
NC	2	CASSETTE DOWN	52-31B	58-4
NC	3	STOP&STILL	32-32B	

CN61

MB-8,121-2	1	A5	51-41B
MB-8,121-3	2	A4	51-42B
MB-8,121-1	3	A2	51-39B
MB-8,121-4	4	GND	
MB-8,120-9	5	A1	51-38B
MB-8,120-8	6	A0	51-37B
MB-8,120-7	7	D8	51-36B
MB-8,120-10	8	GND	
MB-8,120-5	9	D4	51-35B
MB-8,120-4	10	D2	51-34B
MB-8,120-3	11	D1	51-33B
MB-8,120-6	12	GND	

CN62

MB-8,121-9	1	A3	51-40B
MB-8,121-11	2	A10	51-42A
MB-8,121+10	3	A9	51-41A
MB-8,121-12	4	GND	
MB-8,121-5	5	D8	51-40A
MB-8,121-7	6	D7	51-39A
MB-8,121-6	7	D6	51-38A
MB-8,121-8	8	GND	

CN63

MF-1, 1-4	1	L-REMOTE 1	51-36A	
MF-1, 1-2	2	L-DT ON 2	51-35A	
MF-1, 1-1	3	L-DT ON 1	51-34A	
MF-1, 1-3	4	L-REMOTE 2	51-7B	52-7A 54-33
NC	5		NC	

CN64

PD-14,164-2	1	+5V IN	
PD-14,164-1	2	REG 5V IN	
PD-14,164-3	3	GND	
PD-14,164-10	4	REG 12V IN	
NC	5	—	NC

(SY-37A)

CN51

B			A	
	GND	1	GND	
	REG 5V	2	REG 5V	
	+5V	3	+8V	
54-29	5V MULTI 2	4	REM FF CMD	53-33
54-32	MULTI CLOCK	5	REM REW CMD	53-31
52-6A	STANDBY STS	6	REM STOP CMD	53-29
52-7A	REMOTE	7	REM REC STS	53-17
54-30	5V MULTI 1	8	REM NORMAL FWD	53-15
54-27	A1 REC/EE	9	REM SEARCH B	53-11
54-28	A2 REC/EE	10	REM REVERSE CMD	53-9
54-25	AUDIO REC	11	REM INSERT A1	53-7
54-26	SPEED CMD	12	REM INSERT STS	53-5
52-22A	DIAL FWD	13	X MIT +	53-3
52-23A	PLAY CMD	14	X MIT +	53-1
52-24A	SEARCH CMD	15	L-SEARCH CMD IN	55-2
52-25A	FF CMD	16	RCV +	53-6
52-26A	REW CMD	17	RCV −	53-8
52-27A	EJECT CMD	18	REM INSERT V	53-8
52-28A	STOP CMD	19	REM INSERT A2	53-10
52-29A	RELEASE CMD	20	REM SEARCH A	53-12
52-32A	PLAY STS	21	C.F. OK	54-34
52-34A	SEARCH STS	22	A ASS. REC/EE	54-35
52-32A	FF STS	23	SERVO LOCK	54-36
52-33A	REW STS	24	1/2 VD	54-37
52-34A	EJECT STS	25	EIA/CCIR	54-38
52-35A	STOP STS	26	CH-2 AD E OUT	54-39
32-36B	PAUSE STS 1	27	RESET	54-40
52-37A	TEN REG SW	28	REM CUT OUT	55-24
52-38A	THREAD END	29	REM EDIT IN	53-25
52-39A	EMERGENCY	30	REM CUT IN	53-26
54-1	CH-1 AD E OUT	31	REM REC CMD	53-27
52-40A	H-POWER ON RESET	32	REM ERASE CMD	53-30
61-11	C-D1	33	REM PLAY CMD	53-32
61-10	C-D2	34	DT ON 1	63-3
61-9	C-D4	35	DT ON 2	63-2
61-7	C-D8	36	REMOTE 1	63-1
61-8	C-A0	37	REC OK	59-6
61-5	C-A1	38	C-A6	62-7
61-3	C-A2	39		62-6
62-1	C-A3	40		62-5
61-4	C-A4	41		62-3
61-2	C-A5	42		62-2
	GND	43	GND	

(SY-36)

CN52

B			A	
	GND	1	GND	
	REG 5V	2	REG 5V	
NC	—	3	—	NC
	REG 12V	4	REG 12V	
54-10	DRUM ROTATE	5	MULTI CLOCK	51-5B 54-32
54-9	SERVO EN	6	STANDBY STS	51-6B
54-12	SEARCH STS	7	REMOTE	51-7B 54-33 63-4
54-7	FF/REW	8	T REEL BRAKE	54-11
54-8	PLAY STS	9	S REEL BRAKE	54-14
54-5	CAP STILL	10	PS MULTI 1	54-13
51-10A	REVERSE CMD	11	PS MULTI 2	54-16
54-3	UNTHREAD END	12	FUNCTION EN	54-15
54-4	POWER ON	13	TAPE PROTECTION	54-18
55-4	HUMID IN	14	BRAKE IN	54-17
55-3	THREAD END 2	15	THREADING 1 DIS	54-20
55-2	KEEP SOL	16	THREADING 2 DIS	54-19
55-1	KEEP SOL (PLAY)	17	TAPE DIRECT	54-22
56-8	CASSETTE DOWN	18	CAPSTAN DIRECT	54-21
56-7	CASSETTE UP	19	CAP SPEED < ±1.2	54-24
56-6	CASSETTE LAMP	20	—	54-23
56-5	THREADING	21	SPEED CMD	51-12B 54-26
56-4	UNTHREADING	22	DIAL DIRECTION	51-13B
54-6	PINCH ON	23	PLAY CMD	51-14B
56-2	T BRAKE	24	SEARCH CMD	51-15B
56-1	S BRAKE	25	FF CMD	51-16B
57-5	TAPE BEGIN	26	REW CMD	51-17B
57-4	TAPE END	27	EJECT CMD	51-18B
56-3	PINCH ON	28	STOP CMD	51-19B
58-8	CASSETTE IN	29	RELEASE IN	51-20B
58-5	CASSETTE COMPART	30	PLAY STS	51-21B
58-4	CASSETTE DOWN	31	SEARCH STS	51-22B
60-3	STILL / STOP / PAUSE	32	FF STS	51-23B
59-7	AUTO OFF LAMP	33	REW STS	51-24B
55-14	HOURS METER	34	EJECT STS	51-25B
53-16	PAUSE STS 2	35	STOP STS	51-26B
53-18	PAUSE STS 1	36	H-POWER ON RESET	55-5
53-19	STOP STS (36P)	37	TEN REG SW	51-28B
53-20	STANDBY (36P)	38	THREAD END 2	51-29B
53-21	REW STS (36P)	39	EMERGENCY	51-30B
53-22	PLAY STS (36P)	40	H-POWER ON RESET	51-32B
53-23	FF STS (36P)	41	PINCH ON < ±1.2	54-31
53-28	PAUSE CMD	42	THREAD END 1	59-1
	GND	43	GND	

CN53

51-14A	1	X MIT +	
51-15A	2	L-SEARCH CMD IN	
51-13A	3	X MIT −	
51-16A	4	RCV +	
51-12A	5	REM INSERT STS	
51-17A	6	RCV −	
51-11A	7	REM INSERT A1	
51-18A	8	REM INSERT V	
51-10A	9	REM REVERSE CMD	52-11B
51-19A	10	REM INSERT A2	
51-9A	11	REM SEARCH B	
51-20A	12	REM SEARCH A	
NC	13	—	
52-34B	14	HOURS METER	
51-8A	15	REM NORMAL FWD	
52-35B	16	PAUSE STS 2	
51-7A	17	REC STS	
52-36B	18	PAUSE STS 1	51-27B
52-37B	19	STOP STS (36P)	
52-38B	20	STANDBY (36P)	
52-39B	21	REW STS (36P)	
52-40B	22	PLAY STS (36P)	
52-41B	23	FF STS (36P)	
51-29A	24	REM OUT OUT	
51-29A	25	REM EDIT IN	
51-30A	26	REM CUT IN	
51-31A	27	REM REC CMD	
52-42B	28	PAUSE CMD	
51-6A	29	REM STOP CMD	
51-32A	30	REM EJECT CMD	
51-5A	31	REM REW CMD	
51-33A	32	REM PLAY CMD	
51-4A	33	REM FF CMD	
	34	GND	

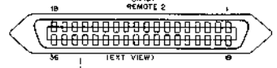
TO CN103/RM-4 (50P FLAT CABLE)

CN54

51-31B	1	—		
53-20	2	STANDBY (36P)	52-38B	
59-2	3	UNTHREAD END	52-42B	
52-43B	4	POWER ON		
52-10B	5	CAP STILL		
52-25B	6	PINCH ON		
52-8B	7	FF / REW		
52-9B	8	PLAY STS		
52-6B	9	SERVO EN		
52-5B	10	DRUM ROTATE		
52-6A	11	T REEL BRAKE		
52-7B	12	SEARCH STS		
52-10A	13	PS MULTI 1		
52-9A	14	S REEL BRAKE		
52-12A	15	FUNCTION EN		
52-11A	16	PS MULTI 2		
52-14A	17	BRAKE IN		
52-13A	18	TAPE PROTECTION		
52-16A	19	THREADING 2 DIS		
52-15A	20	THREADING 1 DIS		
52-18A	21	CAPSTAN DIRECT		
52-17A	22	TAPE DIRECT		
52-20A	23	—		
52-19A	24	CAP SPEED < ±1.2		
51-11B	25	AUDIO REC		
51-9B	26	A1 REC/EE		52-21A
51-10B	27	A2 REC/EE		
51-4B	28	5V MULTI 2		
51-8B	29	5V MULTI 1		
52-44A	30	PINCH ON < ±1.2		
51-8B	31	MULTI CLOCK		52-5A
51-7B	32	REMOTE		63-4 52-7A
51-21A	33	A ASS. REC/EE		
51-23A	34	C.F. OK		
51-24A	35	SERVO LOCK		
51-25A	36	1/2 VD		
51-26A	37	EIA/CCIR		
51-27A	38	RESET		
	39	—		
	40	—		

TO CN102/MB-9 (50P FLAT CABLE)

CN101
REMOTE 2



(TEXT VIEW)

1	+5V OUT	104-5	
2	L-FF CMD IN	103-33	
3	L-FWD CMD IN	103-32	
4	L-REW CMD IN	103-31	
5	L-EJECT CMD IN	103-30	
6	L-STOP CMD IN	103-29	
7	L-PAUSE CMD IN	103-28	
8	L-REC CMD IN	103-27	
9	L-CUT IN CMD IN	103-26	
10	L-EDIT CMD IN	103-25	
11	L-CUT OUT CMD IN	103-24	
12	L-FF STS OUT	103-23	
13	L-FWD STS OUT	103-22	
14	L-REW STS OUT	103-21	
15	L-STANDBY STS OUT	103-20	
16	L-STOP STS OUT	103-19	
17	L-PAUSE 1 OUT	103-18	
18	L-REC STS OUT	103-17	
19	L-INSERT OUT	103-5	
20	L-VIDEO INSERT IN	105-8	
21	L-AUDIO 1 INS IN	105-7	
22	L-AUDIO 2 INS IN	103-15	
23	L-REVERSE IN	103-9	
24	SPEED A IN	103-12	
25	SPEED B IN	103-31	
26	CTL OUT	104-3	
27	L-TACH OUT	104-4	
28	L-CAPSTAN OUT	104-7	
29	SYNCHRONIZE IN	104-9	
30	—	NC	
31	H-NORMAL FWD IN	103-16	
32	L-PAUSE 2 OUT	103-16	
33	L-SEARCH CMD IN	103-2	
34	—	NC	
35	GND		
36	GND		

CN102
REMOTE 1

(EXT VIEW)

1	GND		
2	X MIT −	103-3	
3	RCV +	103-4	
4	GND		
5	—	NC	
6	GND		
7	X MIT +	103-1	
8	RCV −	103-6	
9	GND		

CN103

1	X MIT +	102-7	
2	L-SEARCH CMD OUT	101-33	
3	X MIT −	102-2	
4	RCV +	102-3	
5	REM INSERT STS	101-19	
6	RCV −	102-8	
7	REM INSERT A1	101-21	
8	REM INSERT V	101-20	
9	REM REVERSE CMD	101-23	
10	REM INSERT A2	101-22	
11	REM SEARCH B	101-25	
12	REM SEARCH A	101-24	
13	—	NC	
14	HOURS METER	105-3	
15	REM NORMAL FWD	101-31	
16	PAUSE STS 2	101-32	
17	REC STS	101-18	
18	PAUSE STS 1	101-17	
19	STOP STS (36P)	101-16	
20	STANDBY (36P)	101-15	
21	REW STS (36P)	101-14	
22	PLAY STS (36P)	101-13	
23	FF STS (36P)	101-12	
24	REM CUT OUT	101-11	
25	REM EDIT IN	101-10	
26	REM CUT IN	101-9	
27	REM REC CMD	101-8	
28	PAUSE CMD	101-7	
29	REM STOP CMD	101-6	
30	REM EJECT CMD	101-5	
31	REM REW CMD	101-4	
32	REM PLAY CMD	101-3	
33	REM FF CMD	101-2	
34	GND		

CN104

PD-14,164-11	1	GND		
MB-8,OPEN	2	CTL IN (G)		
MB-8,143-12	3	CTL IN (R)	101-26	
MB-8,126-1	4	L-TACH IN	101-27	
PD-14,164-3	5	+9V	101-1	
MB-8,126-3	6	SYNCHRONIZE OUT	104-29	
MB-8,126-2	7	L-CAPSTAN IN	101-28	
NC	8	—	NC	

CN105

	1	GND	
	2	—	NC
	3	HOURS METER	102-14

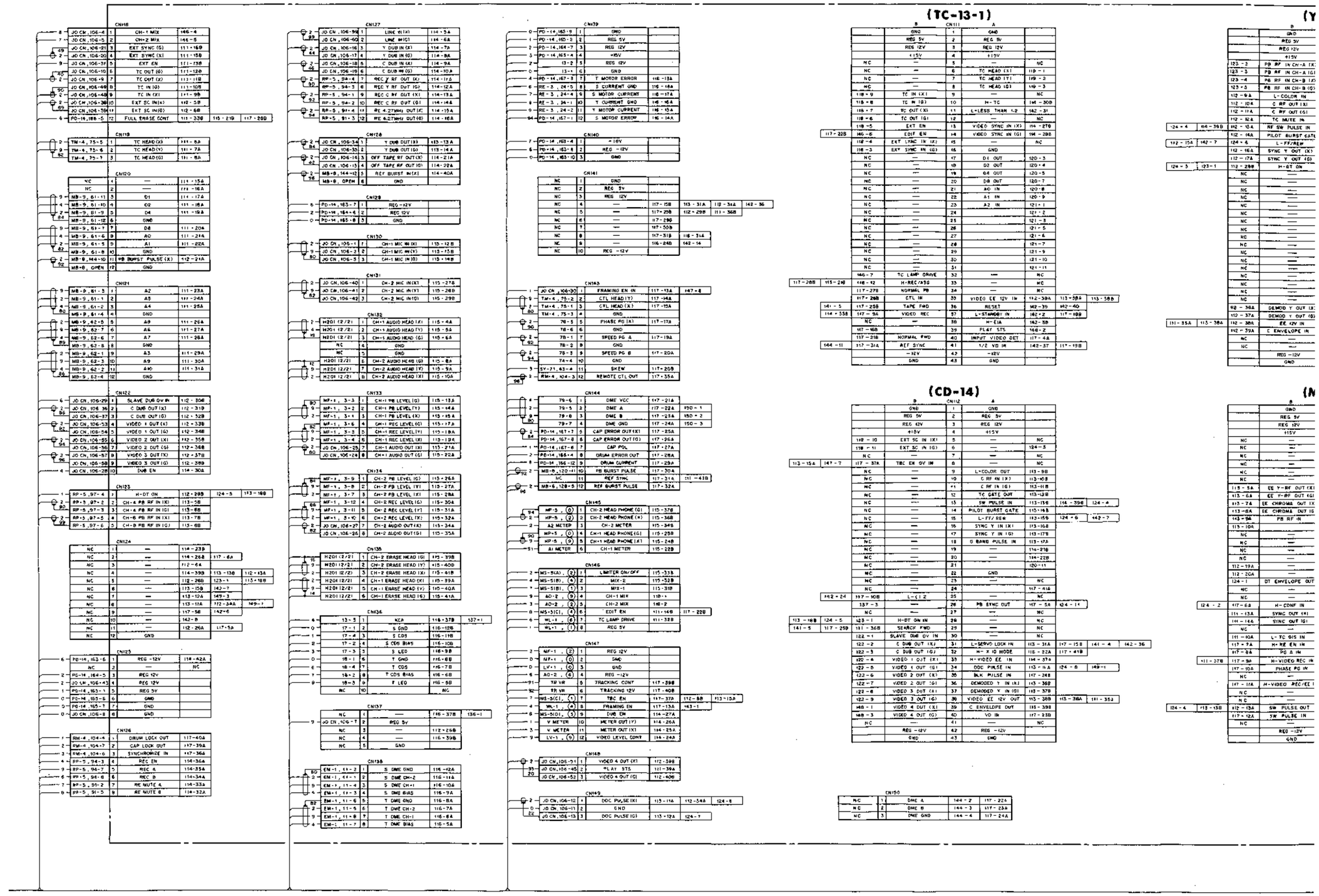
TM201 HOURS METER

RM-4

BVU-800P (1st,2nd,3rd,4th)
BVU-800S (1st,2nd,3rd)

MB-9

FRAME (3)


CN116
JO CN ,106-4 | 1 | CH-1 MIX | 146-4
JO CN ,106-5 | 2 | CH-2 MIX | 146-5
JO CN ,106-21 | 3 | EXT SYNC (G) | 111-169
JO CN ,106-20 | 4 | EXT SYNC (X) | 111-158
JO CN ,106-37 | 5 | EXT EN | 111-139
JO CN ,106-10 | 6 | TC OUT (G) | 111-128
JO CN ,106-9 | 7 | TC OUT (X) | 111-118
JO CN ,106-49 | 8 | TC IN (G) | 111-108
JO CN ,106-48 | 9 | TC IN (X) | 111-98
JO CN ,106-36 | 10 | EXT SC IN(X) | 112-58
JO CN ,106-35 | 11 | EXT SC IN(G) | 112-68
PD-14,168-5 | 12 | FULL ERASE CONT | 113-33B | 115-21B | 117-28B
CN119
TM-4 ,75-5 | 1 | TC HEAD(X) | 111-8A
TM-4 ,75-6 | 2 | TC HEAD(Y) | 111-7A
TM-4 ,75-7 | 3 | TC HEAD(G) | 111-8A
CN120
NC | 1 | — | 111-154
NC | 2 | — | 111-16A
MB-9 ,61-11 | 3 | D1 | 111-17A
MB-9 ,61-10 | 4 | D2 | 111-18A
MB-9 ,61-9 | 5 | D4 | 111-19A
MB-9 ,61-12 | 6 | GND |
MB-9 ,61-7 | 7 | D8 | 111-20A
MB-9 ,61-6 | 8 | A0 | 111-21A
MB-9 ,61-5 | 9 | A1 | 111-22A
MB-9 ,61-8 | 10 | GND |
MB-8 ,144-10 | 11 | PB BURST PULSE (X) | 112-21A
MB-8 , OPEN | 12 | GND |
CN121
MB-9 ,61-3 | 1 | A2 | 111-23A
MB-9 ,61-1 | 2 | A3 | 111-24A
MB-9 ,61-2 | 3 | A4 | 111-25A
MB-9 ,61-4 | 4 | GND |
MB-9 ,62-5 | 5 | A9 | 111-26A
MB-9 ,62-7 | 6 | A6 | 111-27A
MB-9 ,62-6 | 7 | A7 | 111-28A
MB-9 ,62-8 | 8 | GND |
MB-9 ,62-1 | 9 | A5 | 111-29A
MB-9 ,62-3 | 10 | A9 | 111-30A
MB-9 ,62-2 | 11 | A10 | 111-31A
MB-9 ,62-4 | 12 | GND |
CN122
JO CN ,106-29 | 1 | SLAVE DUB 0V IN | 112-30B
JO CN ,106-38 | 2 | C DUB OUT(X) | 112-31B
JO CN ,106-37 | 3 | C DUB OUT (G) | 112-32B
JO CN ,106-53 | 4 | VIDEO 1 OUT (X) | 112-33B
JO CN ,106-54 | 5 | VIDEO 1 OUT (G) | 112-34B
JO CN ,106-55 | 6 | VIDEO 2 OUT (X) | 112-35B
JO CN ,106-56 | 7 | VIDEO 2 OUT (G) | 112-36B
JO CN ,106-57 | 8 | VIDEO 3 OUT(X) | 112-37B
JO CN ,106-58 | 9 | VIDEO 3 OUT(G) | 112-38B
JO CN ,106-28 | 10 | DUB EN | 114-30A
CN123
RP-5 ,97-4 | 1 | H-DT ON | 112-28B | 124-5 | 113-16B
RP-5 ,97-2 | 2 | CH-A PB RF IN (X) | 113-5B
RP-5 ,97-3 | 3 | CH-A PB RF IN (G) | 113-6B
RP-5 ,97-5 | 4 | CH-B PB RF IN (X) | 113-7B
RP-5 ,97-6 | 5 | CH-B PB RF IN (G) | 113-8B
CN124
NC | 1 | — | 114-23B
NC | 2 | — | 114-26B | 117-6A
NC | 3 | — | 112-6A
NC | 4 | — | 114-39B | 113-13B | 112-43A
NC | 5 | — | 112-26B | 123-1 | 113-18B
NC | 6 | — | 113-15B | 142-7
NC | 7 | — | 113-12A | 149-3
NC | 8 | — | 113-11A | 172-34A | 149-7
NC | 9 | — | 117-5B | 142-6
NC | 10 | — | 142-8
NC | 11 | — | 112-26A | 117-5A
NC | 12 | GND
CN125
PD-14,163-6 | 1 | REG -12V | 114-42A
NC | 2 | — | NC
PD-14 ,164-5 | 3 | REG 12V
JO CN ,106-43 | 4 | REG 12V
PD-14 ,165-1 | 5 | REG 5V
PD-14 ,163-5 | 6 | GND
PD-14 ,165-7 | 7 | GND
JO CN ,106-8 | 8 | GND
CN126
RM-4 ,104-4 | 1 | DRUM LOCK OUT | 117-40A
RM-4 ,104-7 | 2 | CAP LOCK OUT | 117-39A
RM-4 ,104-6 | 3 | SYNCHRONIZE IN | 117-36A
RP-5 ,94-3 | 4 | REC EN | 114-36A
RP-5 ,94-7 | 5 | REC A | 114-35A
RP-5 ,94-8 | 6 | REC B | 114-34A
RP-5 ,91-2 | 7 | RE MUTE A | 114-33A
RP-5 ,91-5 | 8 | RE MUTE B | 114-32A
CN127
JO CN ,106-59 | 1 | LINE V (X) | 114-5A
JO CN ,106-60 | 2 | LINE V (G) | 114-6A
JO CN ,106-16 | 3 | Y DUB IN (X) | 114-7A
JO CN ,106-17 | 4 | Y DUB IN (G) | 114-8A
JO CN ,106-18 | 5 | C DUB IN (X) | 114-9A
JO CN ,106-19 | 6 | C DUB IN (G) | 114-10A
RP-5 ,94-4 | 7 | REC Y RF OUT (X) | 114-11A
RP-5 ,94-3 | 8 | REC Y RF OUT (G) | 114-12A
RP-5 ,94-1 | 9 | REC C RF OUT (X) | 114-13A
RP-5 ,94-2 | 10 | REC C RF OUT (G) | 114-14A
RP-5 ,91-4 | 11 | RE 4.27MHz OUT (X) | 114-15A
RP-5 ,91-3 | 12 | RE 4.27MHz OUT (G) | 114-16A
CN128
JO CN ,106-34 | 1 | Y DUB OUT(X) | 113-13A
JO CN ,106-35 | 2 | Y DUB OUT(G) | 113-14A
JO CN ,106-14 | 3 | OFF TAPE RF OUT (X) | 114-21A
JO CN ,106-15 | 4 | OFF TAPE RF OUT (G) | 114-22A
MB-8 ,144-12 | 5 | REF BURST IN (X) | 114-40A
MB-8 , OPEN | 6 | GND
CN129
PD-14 ,163-7 | 1 | REG -12V
PD-14 ,164-6 | 2 | REG 12V
PD-14 ,165-8 | 3 | GND
CN130
JO CN ,106-1 | 1 | CH-1 MIC IN (X) | 115-12B
JO CN ,106-2 | 2 | CH-1 MIC IN (Y) | 115-13B
JO CN ,106-3 | 3 | CH-1 MIC IN (G) | 115-14B
CN131
JO CN ,106-40 | 1 | CH-2 MIC IN (X) | 115-27B
JO CN ,106-41 | 2 | CH-2 MIC IN (Y) | 115-28B
JO CN ,106-42 | 3 | CH-2 MIC IN (G) | 115-29B
CN132
H201 (2/2) | 1 | CH-1 AUDIO HEAD (X) | 115-4A
H201 (2/2) | 2 | CH-1 AUDIO HEAD (Y) | 115-5A
H201 (2/2) | 3 | CH-1 AUDIO HEAD (G) | 115-6A
NC | 4 | GND
NC | 5 | GND
H201 (2/2) | 6 | CH-2 AUDIO HEAD (G) | 115-8A
H201 (2/2) | 7 | CH-2 AUDIO HEAD (Y) | 115-9A
H201 (2/2) | 8 | CH-2 AUDIO HEAD (X) | 115-10A
CN133
MF-1 , 3-3 | 1 | CH-1 PB LEVEL (G) | 115-13A
MF-1 , 3-2 | 2 | CH-1 PB LEVEL (Y) | 115-14A
MF-1 , 3-1 | 3 | CH-1 PB LEVEL (X) | 115-15A
MF-1 , 3-6 | 4 | CH-1 REC LEVEL (G) | 115-17A
MF-1 , 3-5 | 5 | CH-1 REC LEVEL (Y) | 115-18A
MF-1 , 3-4 | 6 | CH-1 REC LEVEL (X) | 115-19A
JO CN ,106-25 | 7 | CH-1 AUDIO OUT (X) | 115-21A
JO CN ,106-24 | 8 | CH-1 AUDIO OUT (G) | 115-22A
CN134
MF-1 , 3-9 | 1 | CH-2 PB LEVEL (G) | 115-26A
MF-1 , 3-8 | 2 | CH-2 PB LEVEL (Y) | 115-27A
MF-1 , 3-7 | 3 | CH-2 PB LEVEL (X) | 115-28A
MF-1 , 3-12 | 4 | CH-2 REC LEVEL (G) | 115-30A
MF-1 , 3-11 | 5 | CH-2 REC LEVEL (Y) | 115-31A
MF-1 , 3-10 | 6 | CH-2 REC LEVEL (X) | 115-32A
JO CN ,106-27 | 7 | CH-2 AUDIO OUT (X) | 115-34A
JO CN ,106-26 | 8 | CH-2 AUDIO OUT (G) | 115-35A
CN135
H201 (2/2) | 1 | CH-2 ERASE HEAD (G) | 115-39B
H201 (2/2) | 2 | CH-2 ERASE HEAD (Y) | 115-40B
H201 (2/2) | 3 | CH-2 ERASE HEAD (X) | 115-41B
H201 (2/2) | 4 | CH-1 ERASE HEAD (X) | 115-39A
H201 (2/2) | 5 | CH-1 ERASE HEAD (Y) | 115-40A
H201 (2/2) | 6 | CH-1 ERASE HEAD (G) | 115-41A
CN136
13-5 | 1 | KCA | 116-37B | 137-1
17-1 | 2 | S GND | 116-12B
17-4 | 3 | S EDS | 116-11B
17-2 | 4 | S EDS BIAS | 116-10B
17-3 | 5 | S LED | 116-9B
18-1 | 6 | T GND | 116-6B
18-4 | 7 | T EDS | 116-7B
18-2 | 8 | T EDS BIAS | 116-6B
18-3 | 9 | F LED | 116-5B
NC | 10 | NC
CN137
NC | 1 | — | 116-37B | 136-1
JO CN ,106-7 | 2 | REG 5V
NC | 3 | — | 112-26B
NC | 4 | — | 116-39B
NC | 5 | GND
CN138
EM-1 ,11-2 | 1 | S DME GND | 116-42A
EM-1 ,11-1 | 2 | S DME CH-2 | 116-11A
EM-1 ,11-4 | 3 | S DME CH-1 | 116-10A
EM-1 ,11-3 | 4 | S DME BIAS | 116-9A
EM-1 ,11-6 | 5 | T DME GND | 116-8A
EM-1 ,11-5 | 6 | T DME CH-2 | 116-7A
EM-1 ,11-8 | 7 | T DME CH-1 | 116-6A
EM-1 ,11-7 | 8 | T DME BIAS | 116-5A
CN139
PD-14 ,165-9 | 1 | GND
PD-14 ,165-2 | 2 | REG 5V
PD-14 ,164-7 | 3 | REG 12V
PD-14 ,165-4 | 4 | +15V
13-2 | 5 | REG 12V
13-1 | 6 | GND
PD-14 ,167-3 | 7 | T MOTOR ERROR | 116-13A
RE-3 , 24-5 | 8 | S CURRENT GND | 116-16A
RE-3 , 24-4 | 9 | S MOTOR CURRENT | 116-17A
RE-3 , 24-1 | 10 | T CURRENT GND | 116-16A
RE-3 , 24-2 | 11 | T MOTOR CURRENT | 116-15A
PD-14 ,167-1 | 12 | S MOTOR ERROR | 116-14A
CN140
PD-14 ,163-4 | 1 | +16V
PD-14 ,163-8 | 2 | REG -12V
PD-14 ,163-10 | 3 | GND
CN141
NC | 1 | GND
NC | 2 | REG 5V
NC | 3 | REG 12V
NC | 4 | — | 117-15B | 113-31A | 112-34A | 142-36
NC | 5 | — | 117-29B | 112-29B | 113-36B
NC | 6 | — | 117-29B
NC | 7 | — | 117-30B
NC | 8 | — | 117-31B | 116-31A
NC | 9 | — | 116-24B | 142-14
NC | 10 | REG -12V
CN143
JO CN ,106-30 | 1 | FRAMING EN IN | 117-13A | 147-8
TM-4 ,75-2 | 2 | CTL HEAD(Y) | 117-14B
TM-4 ,75-1 | 3 | CTL HEAD(X) | 117-15A
TM-4 ,75-3 | 4 | GND
78-5 | 5 | PHASE PG (X) | 117-17A
78-6 | 6 | GND
78-1 | 7 | SPEED PG A | 117-19A
78-2 | 8 | GND
78-3 | 9 | SPEED PG B | 117-20A
74-4 | 10 | GND
SY-21,63-4 | 11 | SKEW | 117-20B
RM-4 ,104-3 | 12 | REMOTE CTL OUT | 117-35A
CN144
79-6 | 1 | DME VCC | 117-21A
79-5 | 2 | DME A | 117-22A | 150-1
79-8 | 3 | DME B | 117-23A | 150-2
79-7 | 4 | DME GND | 117-24A | 150-3
PD-14 ,167-2 | 5 | CAP ERROR OUT(X) | 117-25A
PD-14 ,167-8 | 6 | CAP ERROR OUT(G) | 117-26A
PD-14 ,167-6 | 7 | CAP POL | 117-27A
PD-14 ,166-4 | 8 | DRUM ERROR OUT | 117-28A
PD-14 ,166-12 | 9 | DRUM CURRENT | 117-29A
MB-8 ,120-41 | 10 | PB BURST PULSE | 117-30A
NC | 11 | REF SYNC | 117-31A | 111-41B
MB-8 ,128-5 | 12 | REF BURST PULSE | 117-32A
CN145
HP-5 (2) | 1 | CH-2 HEAD PHONE (G) | 115-37B
HP-5 (2) | 2 | CH-2 HEAD PHONE (X) | 115-36B
A2 METER | 3 | CH-2 METER | 115-34B
HP-5 (0) | 4 | CH-1 HEAD PHONE (G) | 115-25B
HP-5 (9) | 5 | CH-1 HEAD PHONE (X) | 115-24B
A1 METER | 6 | CH-1 METER | 115-22B
CN146
MS-5(A) (2) | 1 | LIMITER ON/OFF | 115-33B
MS-5(B) (4) | 2 | MIX-2 | 115-32B
MS-5(B) (1) | 3 | MIX-1 | 115-31B
AO-2 (9) | 4 | CH-1 MIX | 118-1
AO-2 (2) | 5 | CH-2 MIX | 118-2
MS-5(C) (4) | 6 | EDIT EN | 111-14B | 117-22B
WL-1 (6) | 7 | TC LAMP DRIVE | 111-33B
WL-1 (1) | 8 | REG 5V
CN147
MF-1 (2) | 1 | REG 12V
MF-1 (0) | 2 | GND
LV-1 (0) | 3 | GND
AO-2 (6) | 4 | REG -12V
TR VR | 5 | TRACKING CONT | 117-39B
TR VR | 6 | TRACKING 12V | 117-40B
MS-5(C) (1) | 7 | TBC EN | 117-37A | 112-8B | 113-15A
VA-1 (4) | 8 | FRAMING EN | 117-13A | 143-1
MS-5(D) (3) | 9 | DUB EN | 114-27A
V METER | 10 | METER OUT(Y) | 114-26A
V METER | 11 | METER OUT(X) | 114-25A
LV-1 (9) | 12 | VIDEO LEVEL CONT | 114-24A
CN148
JO CN ,106-51 | 1 | VIDEO 4 OUT (X) | 112-39B
JO CN ,106-45 | 2 | PLAY STS | 121-39A
JO CN ,106-52 | 3 | VIDEO 4 OUT (G) | 112-40B
CN149
JO CN ,106-12 | 1 | DOC PULSE(X) | 113-11A | 112-34A | 124-8
JO CN ,106-11 | 2 | GND
JO CN ,106-13 | 3 | DOC PULSE(G) | 113-12A | 124-7
(TC-13-1)
CN111
B | | A
GND | 1 | GND
REG 5V | 2 | REG 5V
REG 12V | 3 | REG 12V
+15V | 4 | +15V
NC | — | 5 | — | NC
NC | — | 6 | TC HEAD (X) | 119-1
NC | — | 7 | TC HEAD (Y) | 119-2
NC | — | 8 | TC HEAD (G) | 119-3
118-9 | TC IN (X) | 9 | — | NC
118-8 | TC IN (G) | 10 | H-TC | 146-30B
118-7 | TC OUT (X) | 11 | L=LESS THAN 1.2 | 142-31
118-6 | TC OUT (G) | 12 | — | NC
118-5 | EXT EN | 13 | VIDEO SYNC IN (X) | 114-27B
146-6 | EDIT EN | 14 | VIDEO SYNC IN (G) | 114-29B
118-4 | EXT SYNC IN (X) | 15 | — | NC
118-3 | EXT SYNC IN (G) | 16 | GND
NC | — | 17 | D1 OUT | 120-3
NC | — | 18 | D2 OUT | 120-4
NC | — | 19 | D4 OUT | 120-5
NC | — | 20 | D8 OUT | 120-7
NC | — | 21 | A0 IN | 120-8
NC | — | 22 | A1 IN | 120-9
NC | — | 23 | A2 IN | 121-1
NC | — | 24 | | 121-2
NC | — | 25 | | 121-3
NC | — | 26 | | 121-5
NC | — | 27 | | 121-6
NC | — | 28 | | 121-7
NC | — | 29 | | 121-9
NC | — | 30 | | 121-10
NC | — | 31 | | 121-11
146-7 | TC LAMP DRIVE | 32 | — | NC
146-12 | H-REC/ASS | 33 | — | NC
117-27B | NORMAL PB | 34 | — | NC
117-26B | CTL IN | 35 | VIDEO EE 12V IN | 112-39A | 113-5BA | 113-38B
117-25B | TAPE FWD | 36 | RESET | 142-39 | 142-40
117-9A | VIDEO REC | 37 | L-STANDBY IN | 142-2 | 117-18B
NC | — | 38 | H-EIA | 142-5B
147-16B | | 39 | PLAY STS | 146-2
117-21B | NORMAL FWD | 40 | INPUT VIDEO DET | 117-4A
117-31A | REF SYNC | 41 | 1/2 VD IN | 142-37 | 117-19B
— 12V | 42 | -12V
GND | 43 | GND
(CD-14)
CN112
B | | A
GND | 1 | GND
REG 5V | 2 | REG 5V
REG 12V | 3 | REG 12V
+15V | 4 | +15V
119-10 | EXT SC IN (X) | 5 | — | NC
119-11 | EXT SC IN (G) | 6 | — | 124-5
NC | — | 7 | — | NC
117-37A | TBC EN 0V IN | 8 | — | NC
NC | — | 9 | L=COLOR OUT | 113-9B
NC | — | 10 | C RF IN (X) | 113-10B
NC | — | 11 | C RF IN (G) | 113-11B
NC | — | 12 | TC GATE OUT | 113-12B
NC | — | 13 | SW PULSE IN | 113-15B | 114-39B | 124-4
NC | — | 14 | PILOT BURST GATE | 113-16B
NC | — | 15 | L-FF/REW | 113-17B | 124-6 | 142-7
NC | — | 16 | SYNC Y IN (X) | 113-16B
NC | — | 17 | SYNC Y IN (G) | 113-17B
NC | — | 18 | G BAND PULSE IN | 113-17A
NC | — | 19 | — | 114-21B
NC | — | 20 | — | 114-22B
NC | — | 21 | — | 120-11
NC | — | 22 | GND
NC | — | 23 | — | NC
NC | — | 24 | — | 117-41A
137-3 | — | 25 | — | NC
123-1 | H-DT ON IN | 26 | — | NC
131-36B | SEARCH FWD | 27 | — | NC
122-1 | SLAVE DUB 0V IN | 30 | — | NC
122-2 | C DUB OUT (X) | 31 | L=SERVO LOCK IN | 113-31A | 117-15B | 141-4 | 142-36
122-3 | C DUB OUT (G) | 32 | H-X ID MODE | 116-32A | 117-41B
122-4 | VIDEO 1 OUT (X) | 33 | H-VIDEO EE IN | 114-37A
122-5 | VIDEO 1 OUT (G) | 34 | DOC PULSE IN | 113-9A | 124-8 | 149-1
122-6 | VIDEO 2 OUT (X) | 35 | BLK PULSE IN | 117-24B
122-7 | VIDEO 2 OUT (G) | 36 | DEMODED Y IN (X) | 113-36B
122-8 | VIDEO 3 OUT (X) | 37 | DEMODED Y IN (G) | 113-37B
122-9 | VIDEO 3 OUT (G) | 38 | VIDEO EE 12V OUT | 113-38B | 113-38A | 111-35A
148-1 | VIDEO 4 OUT (X) | 39 | C ENVELOPE OUT | 113-39B
148-3 | VIDEO 4 OUT (G) | 40 | VD IN | 117-23B
NC | — | 41 | — | NC
— | REG -12V | 42 | REG -12V
GND | 43 | GND
CN150
NC | 1 | DME A | 144-2 | 117-22A
NC | 2 | DME B | 144-3 | 117-23A
NC | 3 | DME GND | 144-4 | 117-24A
(Y
B
GND
REG 5V
REG 12V
+15V
123-2 | PB RF IN CH-A (X)
123-3 | PB RF IN CH-A (G)
123-4 | PB RF IN CH-B (X)
123-5 | PB RF IN CH-B (G)
112-9A | L-COLOR IN
112-10A | C RF OUT (X)
112-11A | C RF OUT (G)
112-12A | TC MUTE IN
124-4 | 114-39B | 142-15A | RF SW PULSE IN
112-16A | PILOT BURST GATE
112-15A | 142-7 | 124-6 | L-FF/REW
112-16A | SYNC Y OUT (X)
112-17A | SYNC Y OUT (G)
124-5 | 123-1 | 112-29B | H-DT ON
NC
NC
NC
NC
NC
NC
NC
NC
NC
NC
NC
NC
NC
NC
NC
142-38A | DEMOD Y OUT (X)
112-37A | DEMOD Y OUT (G)
131-35A | 113-38A | 112-38A | EE 12V IN
142-39A | C ENVELOPE IN
NC
NC
REG -12V
GND
(N
B
GND
REG 5V
REG 12V
+15V
NC | LEVEL (X)
NC
NC
NC
NC
115-5A | EE Y-RF OUT (X)
113-6A | EE Y-RF OUT (G)
113-7A | EE CHROMA OUT (X)
113-8A | EE CHROMA OUT (G)
143-9A | PB RF IN
113-10A
NC
NC
NC
NC
112-19A
112-20A
124-1 | DT ENVELOPE OUT
NC
NC
124-2 | 117-6B | H-CONF IN
111-13A | SYNC OUT (X)
111-14A | SYNC OUT (G)
NC
111-10A | L-TC OIS IN
117-7A | H-RE EN IN
117-8A | PG A IN
111-37B | 117-9A | H-VIDEO REC IN
117-10A | PHASE PG IN
NC
117-11A | H-VIDEO REC/EE
NC
NC
124-4 | 113-13B | 112-13A | SW PULSE OUT
117-12A | SW PULSE IN
NC
REG -12V
GND

FRAME (3) (MB-8)

(YD-9)

	B CN113		A		
	GND	1	GND		
	REG 5V	2	REG 5V		
	REG +12V	3	REG 12V		
	+15V	4	+15V		
123 - 2	PB RF IN CH-A (X)	5	EE Y RF IN (X)	114 - 11B	
123 - 3	PB RF IN CH-A (G)	6	EE Y RF IN (G)	114 - 12B	
123 - 4	PB RF IN CH-B (X)	7	EE C RF IN (X)	114 - 13B	
123 - 5	PB RF IN CH-B (G)	8	EE C RF IN (G)	114 - 14B	
112 - 9A	L-COLOR IN	9	PB RF OUT (X)	114 - 15B	
112 - 10A	C RF OUT (X)	10	PB RF OUT (G)	114 - 16B	
112 - 11A	C RF OUT (G)	11	TBC DO PULSE OUT (X)	112 - 34A	124 - 8 ; 149 - 1
112 - 12A	TC MUTE IN	12	TBC DO PULSE OUT (G)	124 - 7	149 - 3
124 - 4 ; 114 - 39B	112 - 13A	RF SW PULSE IN	13	Y DUB OUT (X)	128 - 1
112 - 14A	PILOT BURST GATE	14	Y DUB OUT (G)	128 - 2	
112 - 15A ; 142 - 7	124 - 6	L-FF/REW	15	TBC EN OV IN	112 - 8B ; 117 - 37A ; 147 - 7
112 - 16A	SYNC Y OUT (X)	16	—	NC	
112 - 17A	SYNC Y OUT (G)	17	G BAND PULSE OUT	112 - 18A	
124 - 5 ; 123 - 1	112 - 28B	M-DT 09	18	—	NC
	NC	—	19	—	NC
	NC	—	20	—	NC
	NC	—	21	—	NC
	NC	—	22	—	NC
	NC	—	23	—	NC
	NC	—	24	—	NC
	NC	—	25	—	NC
	NC	—	26	—	NC
	NC	—	27	—	NC
	NC	—	28	—	NC
	NC	—	29	—	NC
	NC	—	30	—	NC
	NC	—	31	L-SERVO LOCK IN	112 - 31A ; 147 - 15B ; 141 - 4 ; 117 - 36
	NC	—	32	—	NC
	NC	—	33	AUDIO REC 12V IN	113 - 8B ; 142 - 23
	NC	—	34	—	NC
	NC	—	35	—	NC
	112 - 36A	DEMOD Y OUT (X)	36	—	NC
141 - 35A ; 113 - 38A	112 - 37A	DEMOD Y OUT (G)	37	—	NC
	112 - 38A	EE 12V IN	38	EE 12V IN	112 - 38A ; 113 - 38B ; 111 - 35A
	112 - 39A	C ENVELOPE IN	39	—	NC
	NC	—	40	—	NC
	NC	—	41	—	NC
	REG +12V		42	REG +12V	
	GND		43	GND	

(AU-13)

	B CN115		A		
	GND	1	GND		
	REG 5V	2	—		
	REG 12V	3	REG 12V		
	GND	4	AUDIO HEAD CH-1 (X)	132 - 1	
	GND	5	AUDIO HEAD CH-1 (Y)	132 - 2	
	GND	6	AUDIO HEAD CH-1 (G)	132 - 3	
	GND	7	GND		
	GND	8	AUDIO HEAD CH-2 (G)	132 - 6	
	GND	9	AUDIO HEAD CH-2 (Y)	132 - 7	
	GND	10	AUDIO HEAD CH-2 (X)	132 - 8	
	GND	11	GND		
130 - 1	CH-1 MIC IN (G)	12	—	NC	
130 - 2	CH-1 MIC IN (Y)	13	CH-1 PB LEVEL (G)	133 - 1	
130 - 3	CH-1 MIC IN (X)	14	CH-1 PB LEVEL (Y)	133 - 2	
NC	—	15	CH-1 PB LEVEL (X)	133 - 3	
142 - 25 ; 143 - 33A	AUDIO REC	16	—	NC	
142 - 27	INS-EE	17	CH-1 REC LEVEL (G)	133 - 4	
TA2 - 28	INS-2 EE	18	CH-1 REC LEVEL (Y)	133 - 5	
142 - 35	ASSEMBLE EE	19	CH-1 REC LEVEL (X)	133 - 6	
116 - 16B	M-STOP	20	—	NC	
117 - 29B ; 118 - 12 ; 118 - 33A	FULL ERASE CONT	21	LINE CH-1 OUT (X)	133 - 7	
143 - 6	METER CH-1 OUT	22	LINE CH-1 OUT (G)	133 - 8	
NC	—	23	—	NC	
148 - 5	HEADPHONE CH-1 (X)	24	—	NC	
148 - 4	HEADPHONE CH-1 (G)	25	—	NC	
NC	—	26	CH-2 PB LEVEL (G)	134 - 1	
131 - 1	CH-2 MIC IN (X)	27	CH-2 PB LEVEL (Y)	134 - 2	
131 - 2	CH-2 MIC IN (Y)	28	CH-2 PB LEVEL (X)	134 - 3	
131 - 3	CH-2 MIC IN (G)	29	—	NC	
NC	—	30	CH-2 REC LEVEL (G)	134 - 4	
148 - 3	MIX-1	31	CH-2 REC LEVEL (Y)	134 - 5	
148 - 2	MIX-2	32	CH-2 REC LEVEL (X)	134 - 6	
146 - 11	H-LIMITER ON	33	—	NC	
148 - 3	METER CH-2 OUT	34	LINE CH-2 OUT (X)	134 - 7	
NC	—	35	LINE CH-2 OUT (G)	134 - 8	
145 - 2	HEADPHONE CH-2 (X)	36	—	NC	
145 - 1	HEADPHONE CH-2 (G)	37	—	NC	
NC	—	38	—	NC	
153 - 1	CH-2 ERASE HEAD (G)	39	CH-1 ERASE HEAD (X)	135 - 4	
153 - 2	CH-2 ERASE HEAD (Y)	40	CH-1 ERASE HEAD (Y)	135 - 5	
153 - 3	CH-2 ERASE HEAD (X)	41	CH-1 ERASE HEAD (G)	135 - 6	
REG -12V		42	REG -12V		
GND		43	GND		

(SV-24A OR SV-52)

	B CN117		A		
	GND	1	GND		
	REG 5V	2	CAPSTAN FWD IN	142 - 21	
	REG 12V	3	—	142 - 1	
NC	V REC OUT	4	INPUT VIDEO DET	111 - 40A	
124 - 9	142 - 6	PINCH ON (OT)	5	PB SYNC IN	112 - 26A ; 124 - 11
	142 - 29	MULTI Z IN	6	H-CON	114 - 26B ; 124 - 2
116 - 19A	142 - 32	MULTI CLOCK IN	7	RE-EN OUT	114 - 31B
	142 - 10	H-DRUM ROTATE OUT	8	SPEED PG 1&3 OUT	114 - 32B
	142 - 12	PVS	9	V REC	144 - 33B ; 111 - 37B
112 - 25B	142 - 24	L-C 1,2	10	PHASE PB OUT	114 - 34B
	142 - 26	SERVO CMD IN	11	V REC/EE OUT	114 - 36B
	142 - 9	SERVO EN IN	12	SW PULSE OUT	114 - 40B
	142 - 33	L-REMOTE IN	13	L-FRAMING EN IN	143 - 1 ; 147 - 8
	142 - 30	MULTI IN	14	CTL HEAD (X)	143 - 2
141 - 4 ; 115 - 34A ; 112 - 31A	142 - 36	L-SERVO LOCK OUT	15	CTL HEAD (Y)	143 - 3
	111 - 39B	—	16	CTL HEAD (G)	143 - 4
	142 - 34	COLOR FRAMED OUT	17	PHASE PG IN	143 - 5
111 - 37A	142 - 2	L-STANDBY IN	18	GND	
111 - 41A	142 - 37	1/2 VD OUT	19	SPEED PG1&3 IN	143 - 7
	143 - 11	SKEW	20	SPEED PG1&3 IN	143 - 8
	111 - 40B	NORMAL FWD	21	DME 12V OUT	144 - 1
111 - 14B	146 - 9	EDIT EN	22	DME A IN	144 - 2
	112 - 40A	VD	23	DME B IN	144 - 3
	112 - 38A	V BLK PULSE	24	DME GND	144 - 4
141 - 5 ; 111 - 36B	112 - 29B	TAPE FWD OUT	25	CAPSTAN ERROR (X)	144 - 5
	111 - 35B	CTL COUNT PULSE OUT	26	CAPSTAN ERROR (G)	144 - 6
	111 - 34B	NORMAL FWD PB	27	CAPSTAN FGLA	144 - 7
118 - 12 ; 113 - 21B	111 - 33B	H-PINCH ON IN	28	DRUM ERROR	144 - 8
116 - 29A	141 - 6	M-DT	29	DRUM CURRENT	144 - 9
	141 - 7	FG + 6 OUT	30	PB BURST PULSE IN	144 - 10
116 - 31A	141 - 8	CTL PULSE OUT	31	REF SYNC IN	144 - 11 ; 111 - 42B
	116 - 32A	H-REEL STOP IN	32	REF BURST PULSE IN	144 - 12
142 - 22	116 - 33A	H-REEL FWD IN	33	DUB 1st FIELD IN	114 - 39A
	116 - 34A	H-FWD TO REEL OUT	34	LINE/DUB SW	114 - 38A
142 - 5	116 - 35A	CAP STOP OUT	35	REMOTE CTL OUT	143 - 12
	116 - 36A	L-CAP SLOW OUT	36	SYNCHRONIZE IN	126 - 3
	116 - 37A	CAPSTAN SPEED	37	L-TBC EN IN	112 - 5B ; 147 - 7 ; 113 - 15A
	116 - 38A	1/2 VD OUT	38	—	NC
	147 - 5	TRACKING CONT	39	L-CAPSTAN LOCK	126 - 2
	147 - 6	TRACKING 12V OUT	40	L-DRUM LOCK OUT	126 - 1
	112 - 32A	H-VID IN	41	DUB 1st FIELD OUT	112 - 24A
	REG -12V		42	REG +12V	
	GND		43	GND	

(MD-12)

	B CN114		A		
	GND	1	GND		
	REG 5V	2	REG 5V		
	REG 12V	3	REG 12V		
	+15V	4	+15V		
NC	—	5	LINE IN (X)	127 - 1	
NC	—	6	LINE IN (G)	127 - 2	
NC	—	7	Y-DUB IN (X)	127 - 3	
NC	—	8	Y-DUB IN (G)	127 - 4	
NC	—	9	C-DUB IN (X)	127 - 5	
NC	—	10	C-DUB IN (G)	127 - 6	
113 - 5A	EE Y-RF OUT (X)	11	REC Y-RF OUT (X)	127 - 7	
113 - 6A	EE Y-RF OUT (G)	12	REC Y-RF OUT (G)	127 - 8	
113 - 7A	EE CHROMA OUT (X)	13	REC CHROMA OUT (X)	127 - 9	
113 - 8A	EE CHROMA OUT (G)	14	REC CHROMA OUT (G)	127 - 10	
113 - 9A	PB RF IN	15	RF 5.36MHz OUT (X)	127 - 11	
113 - 10A		16	RF 5.36MHz OUT (G)	127 - 12	
NC	—	17	—	NC	
NC	—	18	—	NC	
NC	—	19	—	NC	
NC	—	20	—	NC	
112 - 19A	—	21	OFF TAPE RF OUT (X)	128 - 3	
112 - 20A	—	22	OFF TAPE RF OUT (G)	128 - 4	
124 - 1	QT ENVELOPE OUT	23	—	NC	
NC	—	24	VIDEO LEVEL CONT	147 - 12	
NC	—	25	METER OUT (X)	147 - 11	
124 - 2 ; 117 - 6A	H-COMP IN	26	METER OUT (Y)	147 - 10	
111 - 13A	SYNC OUT (X)	27	DUB EN IN	147 - 9	
111 - 14A	SYNC OUT (G)	28	—	NC	
NC	—	29	—	NC	
117 - 40A	L-TC 0IS IN	30	DUB EN OUT	122 - 10	
117 - 7A	H-RE EN IN	31	—	NC	
117 - 8A	PG A IN	32	RE MUTE B OUT	126 - 8	
111 - 37B ; 117 - 9A	H-VIDEO REC IN	33	RE MUTE A OUT	126 - 7	
117 - 10A	PHASE PG IN	34	REC B OUT	126 - 6	
NC	—	35	REC A OUT	126 - 5	
117 - 11A	H-VIDEO REC/EE IN	36	L-REC EN OUT	126 - 4	
NC	—	37	H-VIDEO EE OUT	112 - 33A	
NC	—	38		117 - 34A	
141 - 4 ; 113 - 13B ; 112 - 12A	SW PULSE OUT	39		117 - 33A	
117 - 12A	SW PULSE IN	40		128 - 3	
NC	—	41	—	NC	
REG -12V		42	REG -12V		
GND		43	GND		

(RS-3)

	B CN116		A		
	GND	1	GND		
	REG 5V	2	REG 5V		
	REG +12V	3	REG 12V		
	+15V	4	+15V		
136 - 9	T LED	5	T DME BIAS	138 - 6	
136 - 8	T COS BIAS	6	T DME CH-1	138 - 7	
136 - 7	T COS	7	T DME CH-2	138 - 8	
136 - 6	T GND	8	T DME GND	138 - 5	
136 - 5	S LED	9	S DME BIAS	138 - 4	
136 - 4	S COS BIAS	10	S DME CH-1	138 - 3	
136 - 3	S COS	11	S DME CH-2	138 - 2	
136 - 2	S GND	12	S DME GND	138 - 1	
NC	—	13	T MOTOR ERROR	139 - 7	
NC	—	14	S MOTOR ERROR	139 - 12	
NC	—	15	T CURRENT	139 - 11	
115 - 20B	H-STOP M	16	T CURRENT GND	139 - 10	
NC	—	17	S CURRENT	139 - 9	
NC	—	18	S CURRENT GND	139 - 8	
NC	—	19	MULTI CLOCK	117 - 7B ; 142 - 32	
NC	—	20	H-UNTH END	142 - 5	
NC	—	21	L-POWER ON	142 - 8	
142 - 11	H-YM OFF	22	H-A 10 FWD	112 - 32A ; 117 - 41B	
142 - 13	RS MULTI 1	23	—	NC	
142 - 14	H-SW OFF	24	—	NC	
142 - 15	H-FUNC EN	25	—	NC	
142 - 16	RS MULTI 2	26	—	NC	
142 - 17	H-MECH BRAKE	27	—	NC	
142 - 18	L-TAPE PROTECT	28	—	NC	
142 - 19	L-THRE MOTOR DIS	29	H-DF	117 - 29B ; 141 - 6	
142 - 20	H-THRE DIS	30	—	NC	
NC	—	31	CTL PULSE	117 - 31B ; 141 - 8	
NC	—	32	L-REEL STOP	117 - 32B	
NC	—	33	H-REEL FWD	117 - 33B ; 142 - 22	
NC	—	34	H-CAP FWD	117 - 34B	
NC	—	35	H-CAP STILL	117 - 35B ; 142 - 5	
NC	—	36	H-CAP MOT	117 - 36B	
136 - 1 ; 137 - 1	H-XCA	37	CAP SPEED	117 - 37B	
NC	T FG PULSE	38	1/2 VD	117 - 38B	
137 - A	S FG PULSE	39	—	NC	
NC	—	40	—	NC	
-18V		41	-18V		
REG -12V		42	REG -12V		
GND		43	GND		

CN142

	117 - 3A	1	—
117 - 18B	141 - 37A	2	STANDBY (36P)
	116 - 30A	3	UNTHREAC END
	116 - 21A	4	POWER ON
116 - 35A	117 - 35B	5	CAP STILL
	117 - 3B	6	PINCH ON(DY)
124 - 5	115 - 15B	7	FF/REW
	124 - 10	8	PLAY STB
	117 - 12B	9	SERVO EN
	117 - 6B	10	DRUM ROTATE
	116 - 22B	11	T REEL BRAKE
	147 - 9B	12	SEARCH STB
	116 - 23B	13	RS MULTI 1
	116 - 24B	14	S REEL BRAKE
	116 - 25B	15	FUNCTION EN
	116 - 26B	16	RS MULTI 2
	116 - 27B	17	BRAKE
	116 - 28B	18	TAPE PROTECTION
	116 - 29B	19	THREADING 2 DIS
	116 - 30B	20	THREADING 1 DIS
	117 - 2A	21	CAPSTAN DIRECT
116 - 33A	117 - 33B	22	TAPE DIRECT
	NC	23	—
132 - 25B	117 - 10B	24	CAP SPEED (+1.2
113 - 16B	113 - 33A	25	AUDIO REC
	117 - 11B	26	SPEED CMD
	115 - 17B	27	A1 REC/EE
	115 - 18B	28	A2 REC/EE
	117 - 6B	29	SV MULTI 2
	117 - 14B	30	SV MULTI 1
	111 - 11A	31	PINCH ON (+1.2
116 - 19A	147 - 7B	32	MULTI CLOCK
	147 - 15B	33	REMOTE
	147 - 17B	34	C F OK
	115 - 19B	35	8 ASS REC/EE
141 - 4 ; 113 - 3A ; 112 - 31B	117 - 15B	36	SERVO LOCK
	111 - 41A	37	1/2 VD
	111 - 38A	38	EIA/CCIR
142 - 40	111 - 36A	39	RESET
142 - 39	111 - 36A	40	—

TO CN54/MB-8 (40P FLAT CABLE)

MB-8

8VU-600P (1st, 2nd, 3rd, 4th)

NOTE

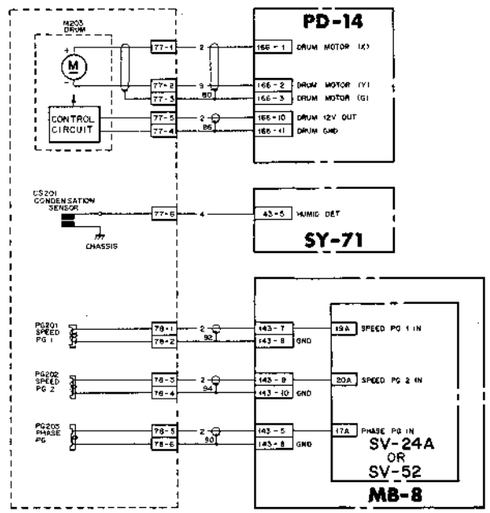
MARK	REF. NO.	CHANGE INFORMATION	SERIAL NO.
		CONNECTED CN112-6B ⟷ CN115-15A CN112-7BA ⟷ CN114-21B CN112-20A ⟷ CN114-22B	10,051~
		CHANGED 137-5 ⟷ 112-26B FROM 137-5 ⟷ 116-3MB	10,101~
		CONNECTED CN112-23B ⟷ CN117-10B	12486~

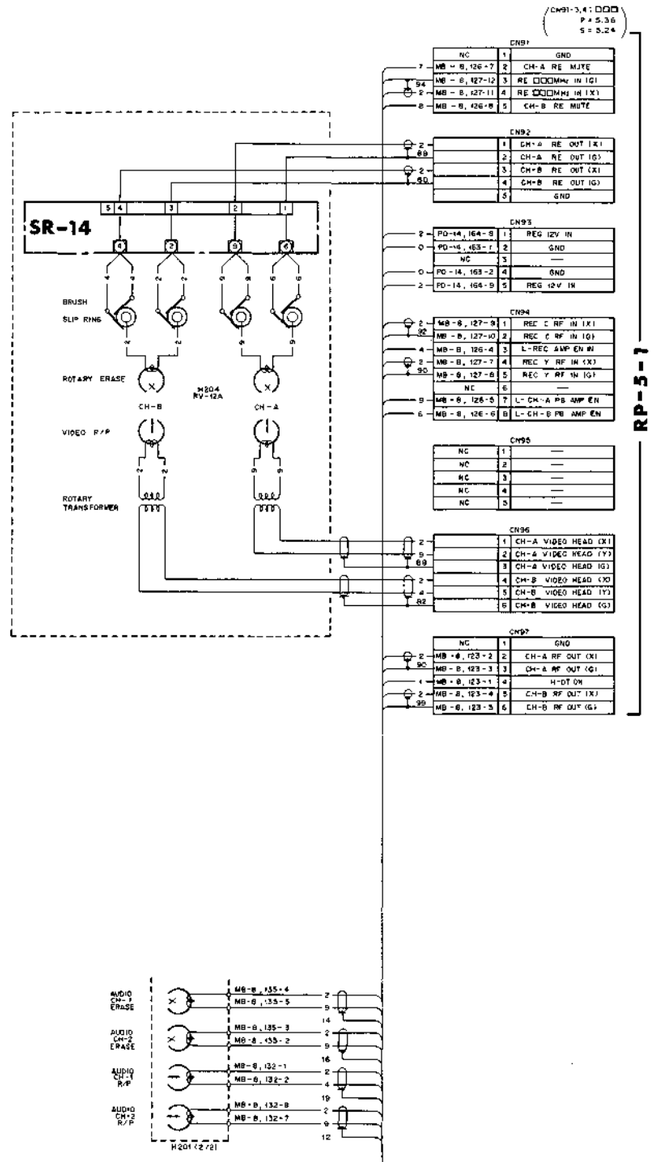
FRAME (4) (REAR CHASSIS)

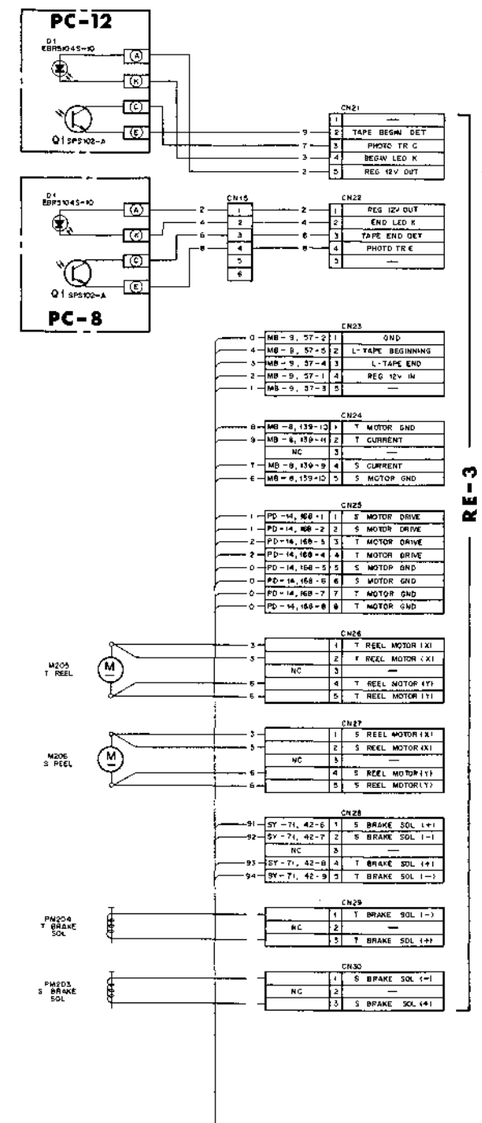
FRAME (4)

NOTE

MARK	CHANGE INFORMATION		SERIAL NO.
※1	CN155(3P) ⟶ CN157(4P)/CN158(1P)		12586~(P) 10236~(S)
※2	PD-14 SIDE	CN172 ADD	12856~(P) 10236~(S)
		M2011DC FAN MOTOR) ADD	14356~(P)
	PW-50 SIDE	TZ01 CN154 CN157/158 M2011AC FAN MOTOR)	10426~(S) DELETE







The shaded and ⚠-marked components are critical to safety.
Replace only with same components as specified.

FRAME (4) (REAR CHASSIS)

REAR CHASSIS

RE-3

PD-14

FU-16

PW-79

(SWITCHING REGULATOR)

PW-50

AO-3

JOINT CONNECTOR

SA-9

TM-14 -SOLDERING SIDE-
1-606-977-11
BVU-800P
BVU-800S

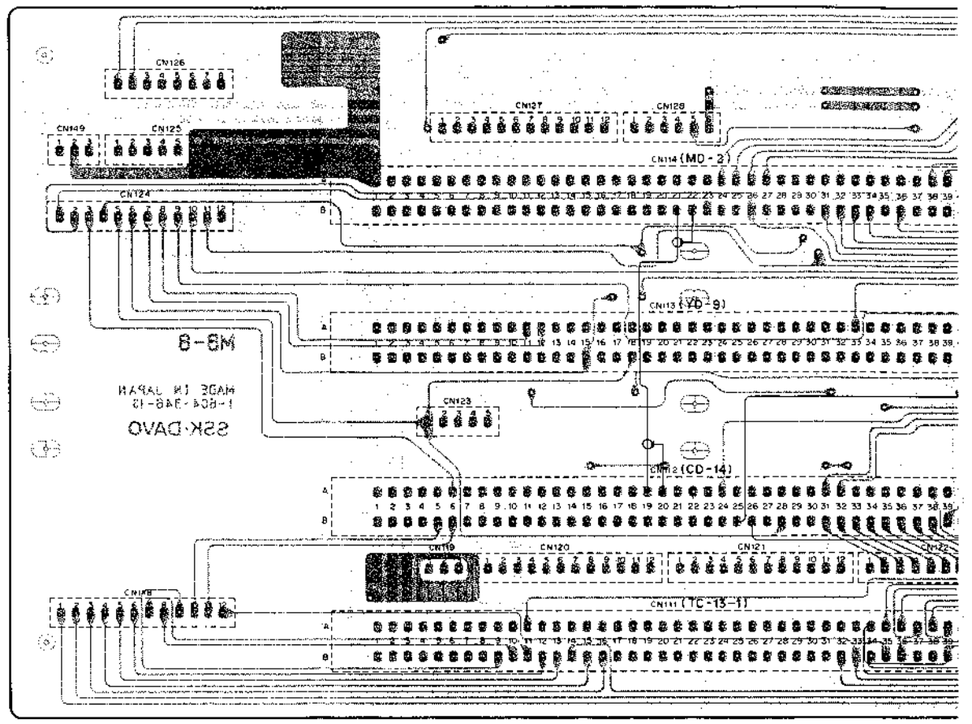
TM-14

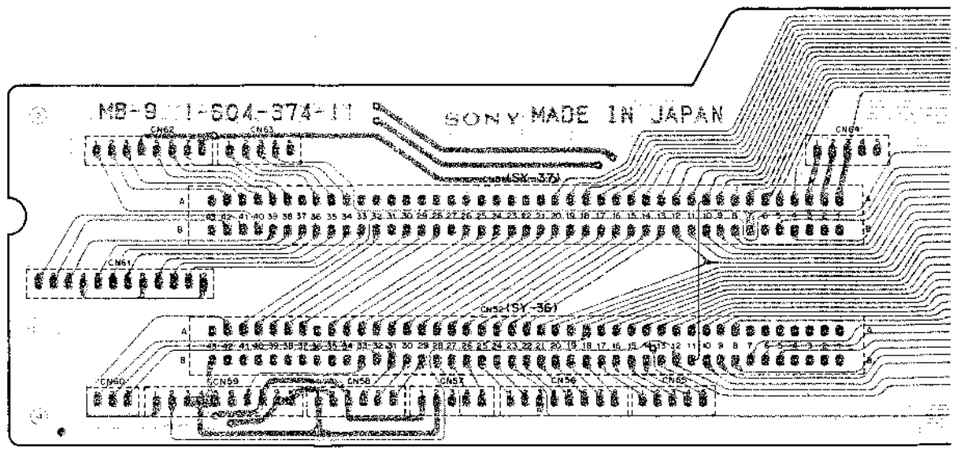
BVU-800P (1st, 2nd, 3rd, 4th)
BVU-800S (1st, 2nd, 3rd)

MB-8, MB-9, RM-4

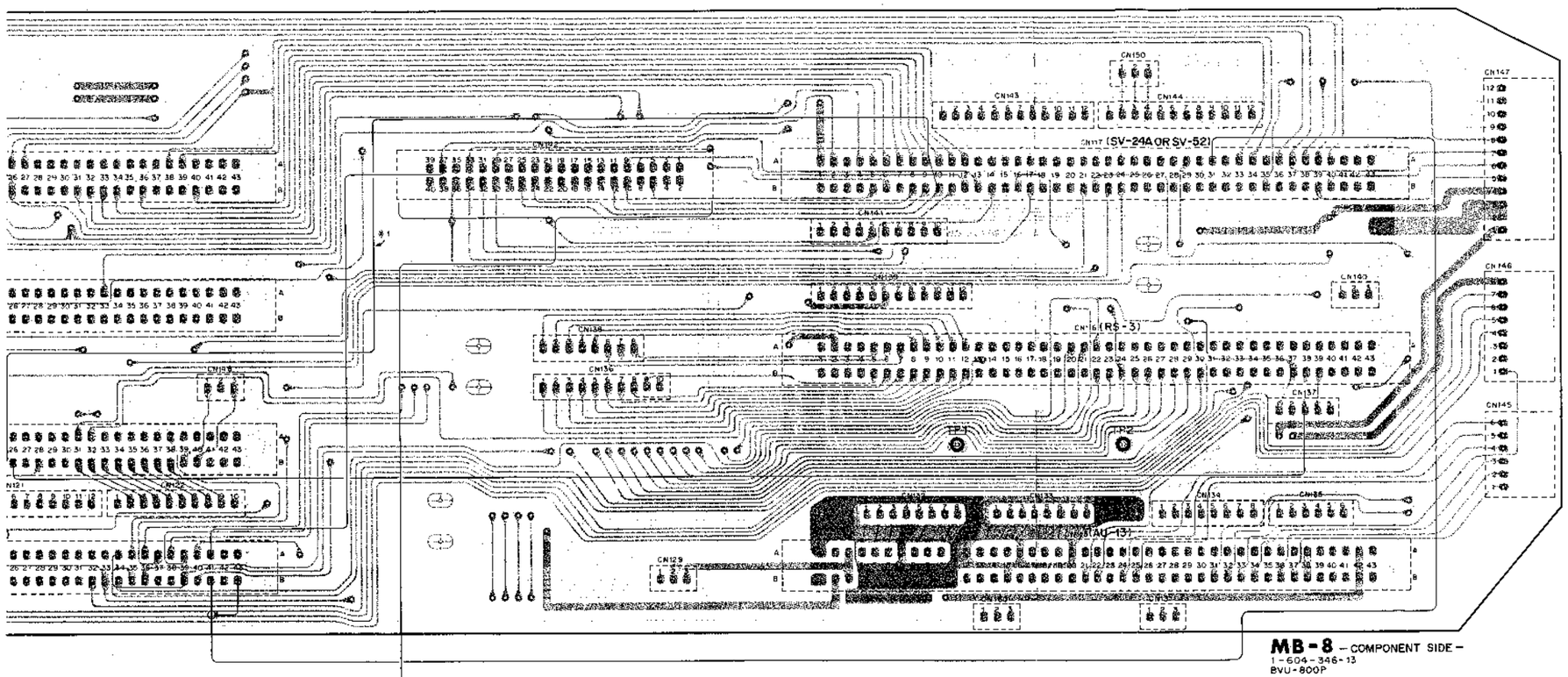
NOTE

MARK	CHANGE INFORMATION	SERIAL NO.
※ 1	CONNECTED (CN112-25B ⟷ CN117-10B)	12486 ～



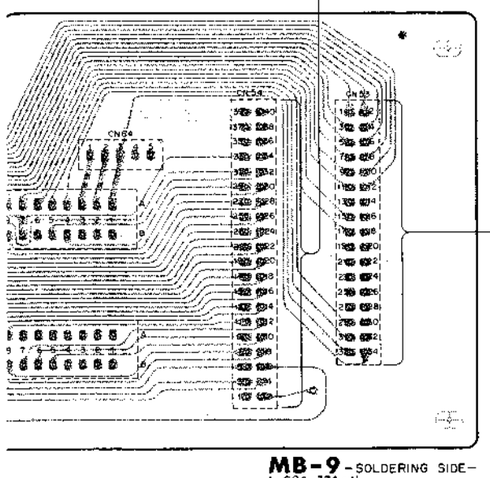


MB-8, MB-9, RM-4

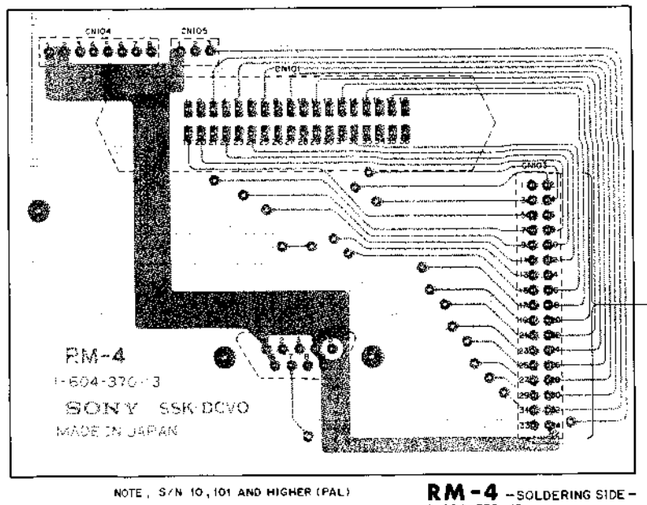


MB-8 – COMPONENT SIDE –
1-604-346-13
BVU-800P

FLAT CABLE 40P



MB-9 – SOLDERING SIDE –
1-604-374-11
BVU-800P



NOTE, S/N 10,101 AND HIGHER (PAL)

RM-4 – SOLDERING SIDE –
1-604-370-13
BVU-800P

FLAT CABLE 34P

SECTION 18
SPARE PARTS AND FIXTURE

18-1. PARTS INFORMATION

1. Safety Related Component Warning
   Components identified by shading marked with ⚠ on the schematic diagrams, exploded views and electrical spare parts list are critical to safe operation. Replace these components with Sony parts whose parts numbers appear as shown in this manual or in service bulletins and service manual supplements published by Sony.
2. Replacement Parts supplied from Sony Parts Center will sometimes have different shape and outside view from the parts which actually in use. This is due to "accommodating the improved parts and/or engineering changes" or "standardization of genuine parts."
   - This manual's exploded views and electrical spare parts lists are indicating the parts numbers of "the standardized genuine parts at present".
   - Regarding engineering parts changes in our engineering department, refer Sony service bulletins and service manual supplements.
3. Printed Components in Bold-Face type on the exploded views and electrical spare parts list are normally stocked for replacement purposes. The remaining parts are not normally required for routine service work. Orders for parts not shown in Bold-Face type will be processed, but allow for additional delivery time.
4. Item with no part number and/or no description are not stocked because they are seldom required for routine service.
5. (T) after a spring description is shown on the exploded views in order to indicate the number of a spring turn required for the use.
   (Example) Spring, tension (24T); This spring must be cut at its 24th turn for actual use.

18-2. EXPLODED VIEW

- Exploded views are composed of the following blocks.
  (1) Reel Chassis (1)
  S, T reel table
  S, T main brake
  KCA/KCS detector
  6th guide.
  (2) Supply Tension Detector Block
  Supply tension detector
  Supply tension regulator arm
  Tape end detector
  (3) Take-up Tension Detector Block
  Take-up tension detector
  Unthread end detector
  Tape beginning detector
  (4) Threading Block
  Threading ring
  Threading slider
  Thread end 2 detector
  Ring drive gear
  (5) Threading Arm Block
  Threading arm
  Threading motor
  Thread end 1 detector
  V guide
  (6) Pinch Lever Block
  Pinch solenoid
  Pinch lever
  (7) Reel Chassis (bottom view)
  S tension solenoid
  S, T brake solenoid
  Reel motor
  (8) Drum Block
  Head drum
  Slip-ring
  Time code/erase head
  Audio/CTL head
  Capstan motor
  (9) Cassette-up Compartment Block
  (10) Control Panel Block
  Control panel
  Skew corrector
  (11) Function Control Panel Block
  Function control panel
  Key switch
  Search dial
  Hinge (R)
  Hinge (L)
  (12) Power Chassis Block
  (13) Connector Panel Block (1)
  (14) Connector Panel Block (2)
  Remote Connector
  (15) Chassis Block
  Printed circuit board
  (16) Ornamental Panel Block (1)
  (17) Ornamental Panel Block (2)
  Function control panel
  Control panel
  (18) Printed Circuit Board
  Shield case
  (19) Supplied Accessory
- Fixing Screw, Stop Ring and Others
  (1) All the screws used in this machine are the TOTSU type unless otherwise noted. The screws are interchangeable with the Phillips type (⊕) and slotted type (⊖) screws.
  (2) Please order as the following parts number when ordering the fixing screws, stop rings, and others.

SCREW

	PS	PSW	B (BZn N)	B (Cr-N)	PTT	PTTWH
2.6 x 4	7-621-972-05	———	7-621-912-10	7-621-912-18	———	———
2.6 x 6	7-621-972-25	7-621-981-15	7-621-912-30	7-621-912-38	———	———
2.6 x 8	7-621-972-35	7-621-981-25	7-621-912-40	7-621-912-48	———	———
3 x 5	7-686-446-01	———	———	———	———	
3 x 6	7-686-447-01	7-686-527-01	7-686-624-09	7-686-624-04	7-687-411-31	7-687-510-31
3 x 8	7-686-448-01	7-686-528-01	7-686-625-09	7-686-625-04	7-687-412-31	7-687-511-31
3 x 10	7-686-449-01	7-686-529-01	7-686-626-09	7-686-626-04	7-687-413-31	7-687-512-31
3 x 12	7-686-450-01	7-686-530-01	7-686-627-09	7-686-627-04	7-687-414-31	7-687-513-31
3 x 16	7-686-452-01	7-686-532-01	7-686-629-09	7-686-629-04	———	———
3 x 20	7-686-453-01	7-686-533-01	7-686-630-09	7-686-630-04	———	———
3 x 25	7-686-454-01	7-686-534-01	7-686-631-09	7-686-631-04		
4 x 8	7-686-468-01	7-686-548-01	7-686-635-09	7-686-635-04	———	———
4 x 12	7-686-470-01	7-686-550-01	7-686-637-09	7-686-637-04	———	———
4 x 14	7-686-471-01	———	7-686-638-09	7-686-638-04	———	———
4 x 16	7-686-472-01	———	7-686-639-09	7-686-639-04	———	———
4 x 20	7-686-473-01	———	7-686-640-09	7-686-640-04	———	———

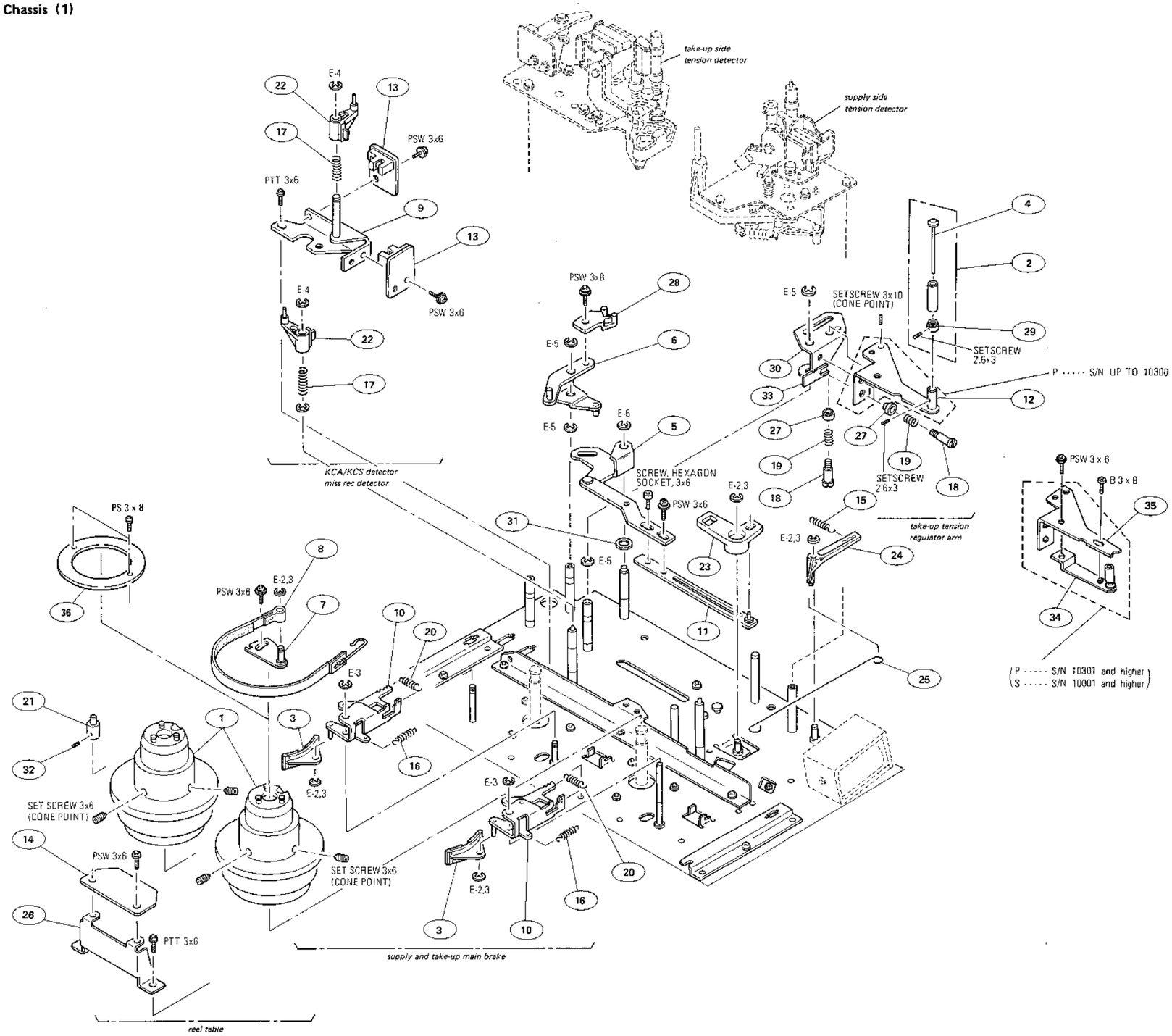
	HEXAGON SOCKET SCREW	HEXAGON SET SCREW	(–) SET SCREW FLAT POINT	(–) SET SCREW CONE POINT	PTP WH
2.6 x 3	———	7-621-734-09	———	———	———
2.6 x 4	7-621-996-24	7-621-735-09	———	———	———
2.6 x 5		7-621-736-09	———	———	———
2.6 x 6	7-683-412-05	———	———	7-621-712-55	———
2.6 x 8	7-683-413-05	———	———	7-621-712-65	———
2.6 x 10	———	———	———	7-621-712-75	———
3 x 5	———	———	7-683-175-01	———	———
3 x 6	7-683-403-04	———	7-683-176-01	7-683-176-21	———
3 x 8	7-683-404-04	3-701-509-01	———	7-683-177-21	7-687-246-11
3 x 10	7-683-405-04	———	———	7-683-178-21	———

WASHER

	FLAT WASHER SMALL W.	FLAT WASHER MIDDLE W.	SPRING WASHER SW.	TOOTHED WASHER TYPE B LW.	HEXAGON NUT N.
2.6 mm	7-688-002-01	7-688-002-12	7-623-207-22	7-623-421-07	7-622-207-05
3 mm	7-688-003-01	7-688-003-12	7-688-003-11	7-623-422-07	7-684-023-04
4 mm	7-688-004-01	7-688-004-12	7-623-210-22	7-623-423-07	7-684-024-04
5 mm	7-688-005-01	7-688-005-01	7-623-212-22	———	7-684-025-04

	STOP RING E TYPE E.
2	7-624-104-04
2.3	7-624-105-04
3	7-624-106-04
4	7-624-108-04
5	7-624-109-04
6	7-624-110-04

Reel Chassis (1)



No.	Parts No.	Description
1	**A-6739-027-A**	**TABLE ASS'Y S REEL**
2	**A-6746-017-A**	**ROLLER ASS'Y, 6G GUIDE**
3	**X-3642-166-0**	**SHOE ASS'Y**
4	X-3668-001-0	GUIDE ASS'Y, 6G
5	X-3668-021-0	PLATE ASS'Y, ST
6	X-3668-025-0	ARM ASS'Y, DRAWER, 6G
7	X-3668-044-0	BRACKET SUB ASS'Y, TB
8	**X-3668-045-0**	**BAND ASS'Y, BRAKE**
9	X-3668-046-0	BRACKET SUB ASS'Y, S.D
10	X-3668-047-0	LEVER SUB ASS'Y, BRAKE
11	X-3668-050-0	PLATE ASS'Y, DRAWING
12	X-3668-051-0	BASE ASS'Y, GUIDE, 6G
13	1-604-348-00	PRINTED CIRCUIT BOARD, "PC-7"
14	A-6748-123-B	DME ASS'Y, "EM-1"
15	**3-446-195-00**	**SPRING, TENSION**
16	**3-535-558-00**	**SPRING, TENSION**
17	**3-543-967-00**	**SPRING, COMPRESSION**
18	3-641-621-00	SCREW, HEAD ADJUSTING
19	**3-641-622-00**	**SPRING, COMPRESSION**
20	3-642-752-00	SPRING, TENSION
21	3-668-031-00	RETAINER (UPPER), CASSETTE
22	**3-668-032-00**	**ACTUATOR, S.D**
23	3-668-033-00	ARM, DRAWER
24	**3-668-034-00**	**LEVER (1), S CHANGE**
25	3-668-036-00	ROD, PULL, S
26	3-668-037-02	BRACKET, R-DME
27	3-668-103-00	ROLLER, CAM
28	3-668-215-00	ARM (1), DRAWER, 6G
29	3-668-224-00	GUIDE (3) (LOWER), 6G
30	3-668-229-00	GUIDE (2), NO. 6
31	**3-701-444-21**	**WASHER, POLY 6MM DIA. (0.5T)**
32	**3-701-506-01**	**SET SCREW, DOUBLE POINT 3x4**
33	**3-651-334-21**	**SPACER (0.1T)**
34	X-3668-084-0	PLATE ASS'Y, ADJUSTING, 6G
35	3-668-223-02	BASE, GUIDE, 6G
36	3-672-979-01	PLATE, REEL TABLE

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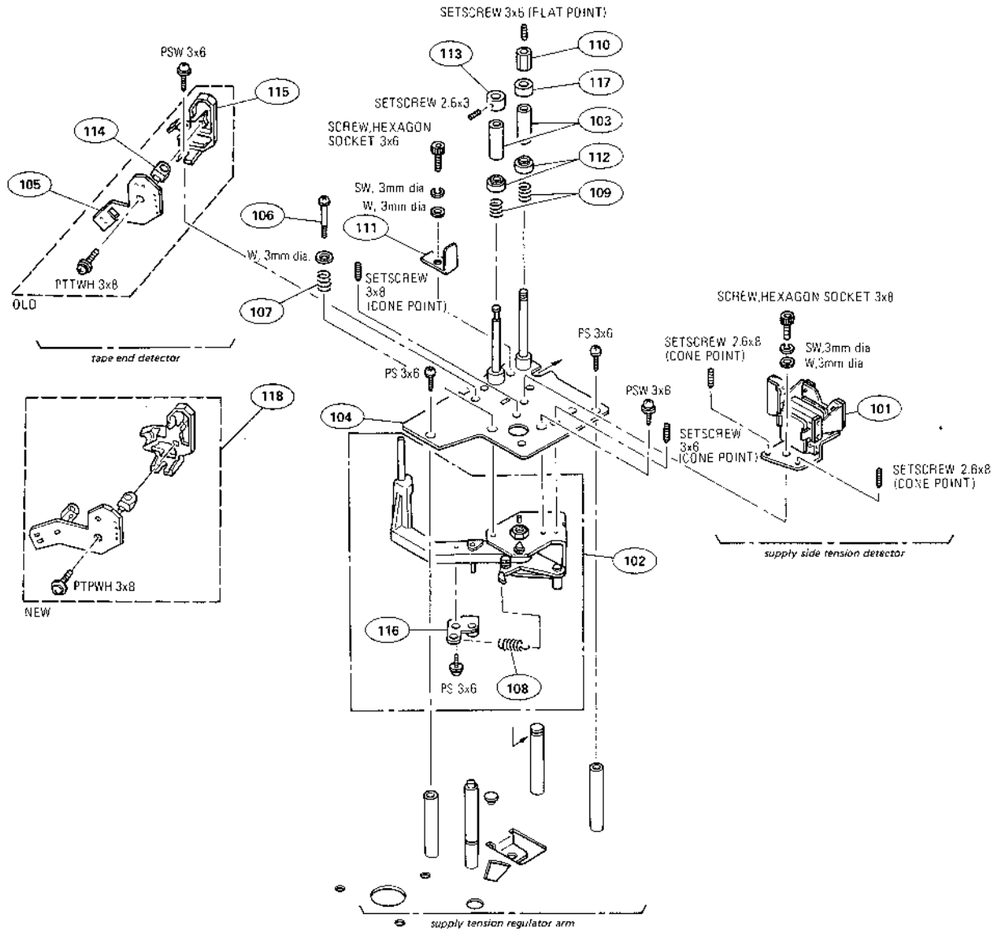
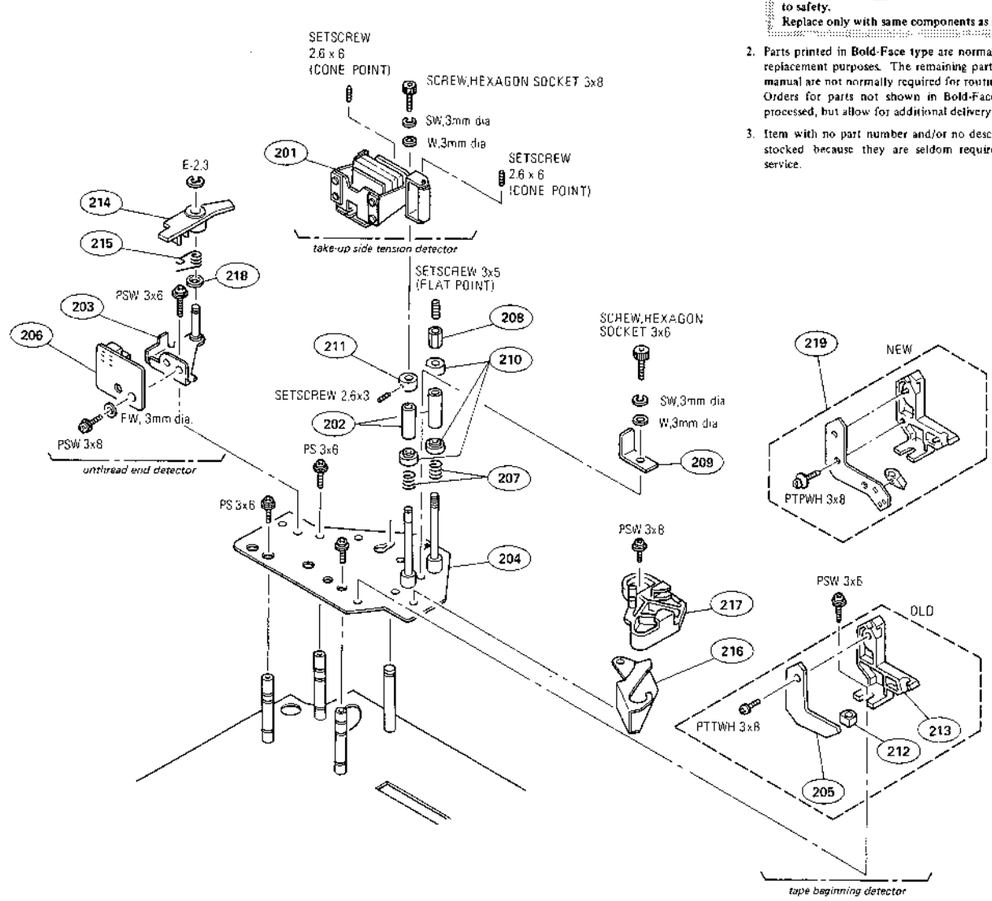
SUPPLY TENSION DETECTOR TAKE-UP TENSION DETECTOR

Supply Tension Detector Block



No.	Parts No.	Description
101	**A-6742-036-B**	**DETECTOR (S) ASS'Y**
102	A-6742-038-B	ARM ASS'Y, TENSION REGULATOR
103	**X-3668-005-0**	**ROLLER ASS'Y (1), GUIDE**
104	X-3668-040-0	BASE SUB ASS'Y, S-TD
105	1-604-350-00	PRINTED CIRCUIT BOARD, "PC-8"
	(P - - - - - S/N UP TO 11490)	
	(S - - - - - S/N UP TO 10080)	
106	**3-418-191-00**	**SCREW**
107	**3-428-132-00**	**SPRING, COMPRESSION**
108	**3-140-194-XX**	**SPRING, TENSION (27T)**
109	**3-537-213-00**	**SPRING, COMPRESSION**
110	**3-641-616-00**	**NUT, TAPE GUIDE ADJUSTMENT**
111	3-668-072-00	STOPPER, T.D
112	**3-668-073-00**	**FLANGE (1), G ROLLER**
113	**3-668-074-00**	**FLANGE (2), G ROLLER**
114	**3-668-076-00**	**SLEEVE, P TR**
	(P - - - - - S/N UP TO 11490)	
	(S - - - - - S/N UP TO 10080)	
115	3-668-089-00	CASE, S-PTR
	(P - - - - - S/N UP TO 11490)	
	(S - - - - - S/N UP TO 10080)	
116	3-668-094-00	BRACKET, T.S
117	**3-668-471-00**	**FLANGE (3), G ROLLER**
118	A-6742-046-A	MOUNT, "PC-8"
	(P - - - - - S/N 11491 AND HIGHER)	
	(S - - - - - S/N 10081 AND HIGHER)	

Take-up Tension Detector Block



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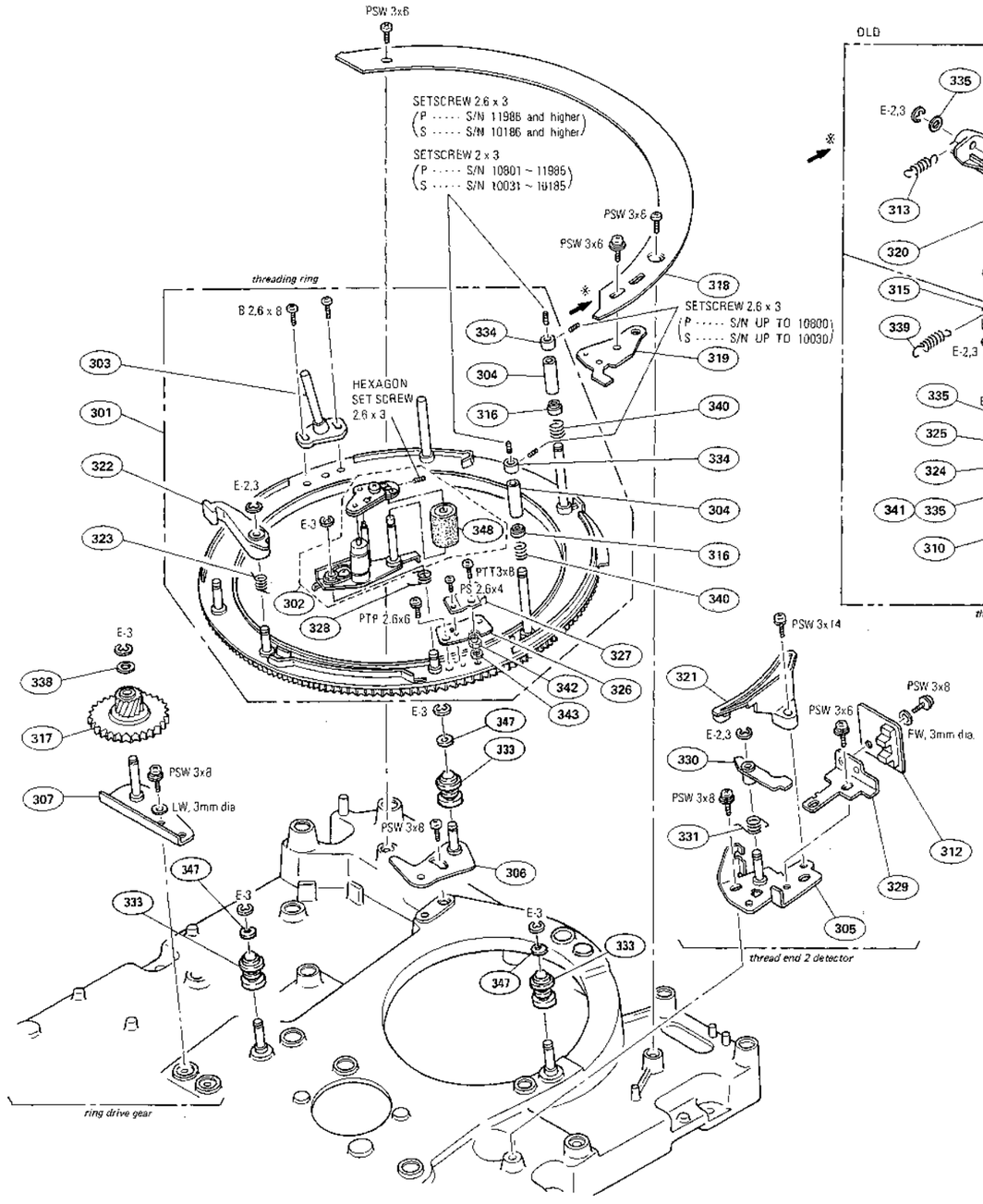
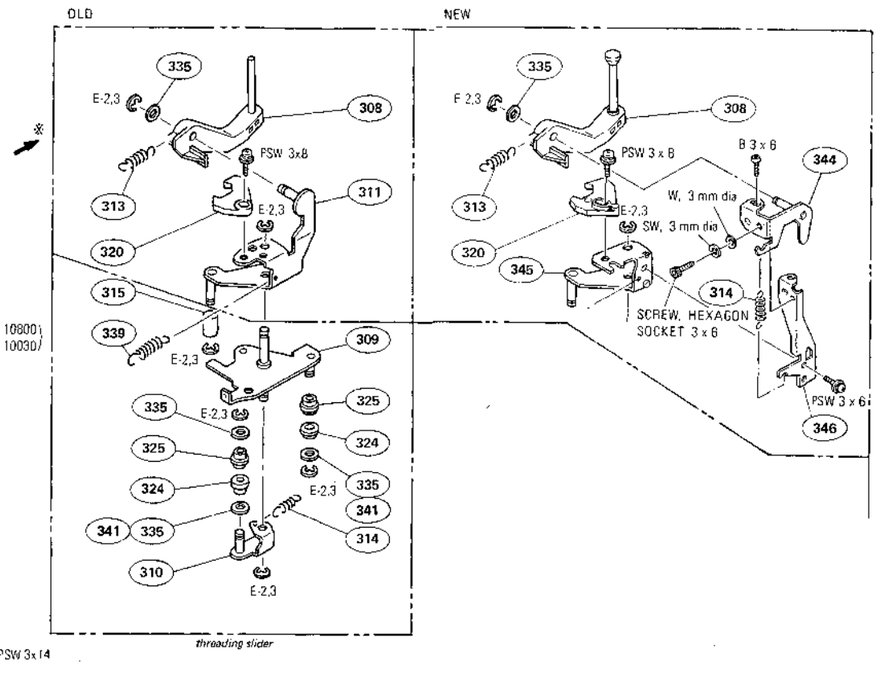
No.	Parts No.	Description
201	**A-6742-034-A**	**DETECTOR (T) ASS'Y**
202	**X-3668-005-0**	**ROLLER ASS'Y (1), GUIDE**
203	X-3668-022-0	BASE ASS'Y, END, UT
204	X-3668-032-0	BASE SUB ASS'Y, T-TD
205	1-604-352-00	PRINTED CIRCUIT BOARD, "PC-12"
	(P - - - - - S/N UP TO 11490)	
	(S - - - - - S/N UP TO 10080)	
206	1-604-354-00	PRINTED CIRCUIT BOARD, "EK-2"
207	**3-537-213-00**	**SPRING, COMPRESSION**
208	**3-641-616-00**	**NUT, TAPE GUIDE ADJUSTMENT**
209	3-668-072-00	STOPPER, T.D
210	**3-668-073-00**	**FLANGE (1), G ROLLER**
211	**3-668-074-00**	**FLANGE (2), G ROLLER**
212	**3-668-076-00**	**SLEEVE, P TR**
	(P - - - - - S/N UP TO 11490)	
	(S - - - - - S/N UP TO 10080)	
213	3-668-077-00	CASE, T-PTR
	(P - - - - - S/N UP TO 11490)	
	(S - - - - - S/N UP TO 10080)	
214	3-668-219-00	SENSOR, END, UT
215	3-668-220-00	SPRING
216	3-668-252-00	HOLDER, 5G
217	3-668-442-00	HOLDER (2), 5G
218	**3-701-439-11**	**WASHER, POLY, 3 MM DIA, 0.25T**
219	A-6742-047-A	MOUNT, "PC-12"
	(P - - - - - S/N 11491 AND HIGHER)	
	(S - - - - - S/N 10081 AND HIGHER)	

Threading Block





No.	Parts No.	Description
301	**A-6750-112-H**	**RING ASS'Y, THREADING**
302	**A-6750-113-G**	**ARM ASS'Y, PINCH**
303	**X-3668-004-0**	**SPACER ASS'Y, GUIDE**
304	**X-3668-005-0**	**ROLLER ASS'Y (1), GUIDE**
305	X-3668-009-0	CHASSIS ASS'Y, END
306	X-3668-010-0	PLATE SUB ASS'Y, ADJUSTMENT
307	X-3668-023-0	BASE ASS'Y, GEAR, RING
308	**X-3668-052-0**	**ARM ASS'Y, T.H.**
		(P ····· S/N Up to 11645
		S ····· S/N Up to 10105)
	X-3668-052-3	**ARM ASS'Y, T.H.**
		(P ····· S/N 11646 and higher
		S ····· S/N 10106 and higher)
309	X-3668-053-0	BASE ASS'Y, M
310	X-3668-054-0	TABLE ASS'Y, ROLLER
311	X-3668-063-0	HOLDER ASS'Y, M
		(P ····· S/N Up to 11645
		S ····· S/N Up to 10105)
312	1-604-354-00	PRINTED CIRCUIT BOARD, "EK-2"
313	**3-549-810-00**	**SPRING, TENSION**
		(P ····· S/N Up to 11645
		S ····· S/N Up to 10105)
	4-858-754-00	SPRING TENTION
		(P ····· S/N 11646 and higher
		S ····· S/N 10106 and higher)
314	3-506-042-XX	SPRING, TENSION (22T)
315	3-642-410-00	ROLLER
316	**3-668-073-00**	**FLANGE(1), G ROLLER**
317	3-668-210-00	GEAR (2), DRIVE, RING
318	3-668-234-00	RAIL (2)
		(P ····· S/N Up to 11490
		S ····· S/N Up to 10080)
	3-668-234-02	RAIL (2)
		(P ····· S/N 11491 and higher
		S ····· S/N 10081 and higher)
319	3-668-235-00	STOPPER, M
320	3-668-245-00	PLATE (2), M-T.H
		(P ····· S/N Up to 11645
		S ····· S/N Up to 10105
	3-668-245-03	PLATE (2), M-T.H.
		(P ····· S/N 11646 and higher
		S ····· S/N 10106 and higher)
321	3-668-246-00	CAM, M RELEASE
322	3-668-247-00	LEVER (3), REW
323	3-668-248-02	SPRING, TORSION
324	**3-668-250-00**	**ROLLER (1), M**
325	**3-668-251-00**	**ROLLER (2), M**
326	3-668-256-03	PLATE, BASE
327	3-668-257-03	SPRING, LEAF
328	3-668-261-00	SPRING, TORSION
329	3-668-282-00	BRACKET, PC
330	3-668-283-00	SENSOR, END
331	3-668-284-00	SPRING
333	**3-672-977-00**	**ROLLER, RING**
334	**3-668-437-00**	**FLANGE (UPPER), ROLLER**
		(P ····· S/N Up to 10800
		S ····· S/N Up to 10030)
	3-668-437-02	**FLANGE (UPPER), ROLLER**
		(P ····· S/N 10801 ~ 11985
		S ····· S/N 10031 ~ 10185
	3-668-437-03	**FLANGE (UPPER), ROLLER**
		(P ····· S/N 11986 and higher
		S ····· S/N 10186 and higher)
335	**3-701-439-21**	**WASHER, POLY 3 MM DIA. (0.5T)**
338	**3-701-441-21**	**WASHER, POLY 4 MM DIA. (0.5T)**
339	**4-858-754-00**	**SPRING, TENSION**
340	3-483-015-00	SPRING
341	**3-701-439-11**	**WASHER, POLY 3 MM DIA. (0.25T)**
342	**4-334-513-00**	**NUT, NYLON**
343	**3-672-910-00**	**WASHER, RUBBER**
344	X-3668-104-0	SUPPORT ASS'Y, ARM
345	X-3668-105-0	HOLDER (LOWER) ASS'Y, M
346	3-672-963-00	HOLDER (UPPER), M
347	**3-701-441-01**	**WASHER, POLY 4MM DIA. (0.13T)**
		(P ····· S/N 13326 and higher
		S ····· S/N 10296 and higher)
348	**X-3668-758-3**	**PINCH ROLLER ASS'Y**

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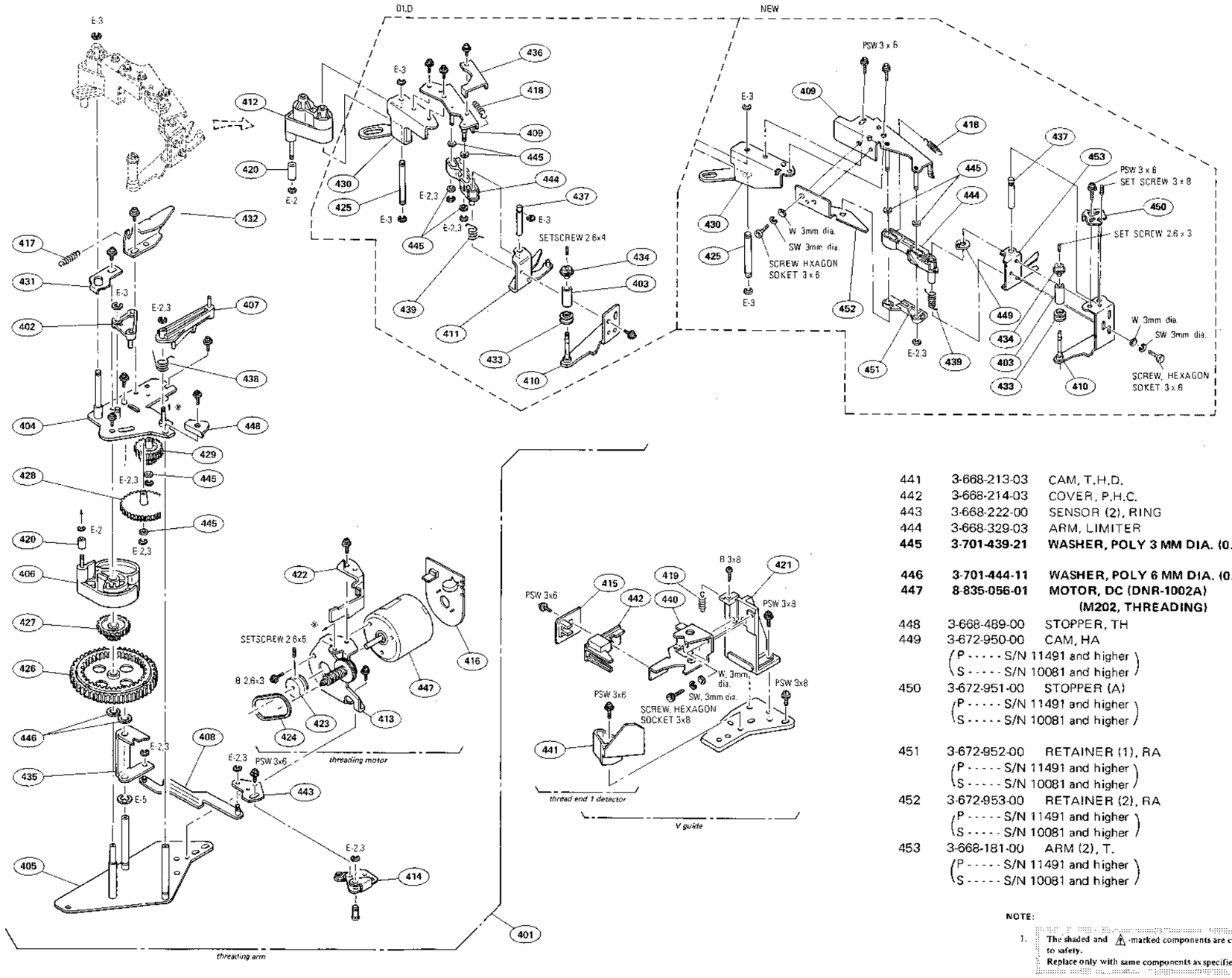
Threading Arm Block



441	3-668-213-03	CAM, T.H.D.
442	3-668-214-03	COVER, P.H.C.
443	3-668-222-00	SENSOR (2), RING
444	3-668-329-03	ARM, LIMITER
445	**3-701-439-21**	**WASHER, POLY 3 MM DIA. (0.5T)**
446	**3-701-444-11**	**WASHER, POLY 6 MM DIA. (0.25T)**
447	**8-835-056-01**	**MOTOR, DC (DNR-1002A) (M202, THREADING)**
448	3-668-489-00	STOPPER, TH
449	3-672-950-00	CAM, HA (P - - - - - S/N 11491 and higher) (S - - - - - S/N 10081 and higher)
450	3-672-951-00	STOPPER (A) (P - - - - - S/N 11491 and higher) (S - - - - - S/N 10081 and higher)
451	3-672-952-00	RETAINER (1), RA (P - - - - - S/N 11491 and higher) (S - - - - - S/N 10081 and higher)
452	3-672-953-00	RETAINER (2), RA (P - - - - - S/N 11491 and higher) (S - - - - - S/N 10081 and higher)
453	3-668-181-00	ARM (2), T. (P - - - - - S/N 11491 and higher) (S - - - - - S/N 10081 and higher)

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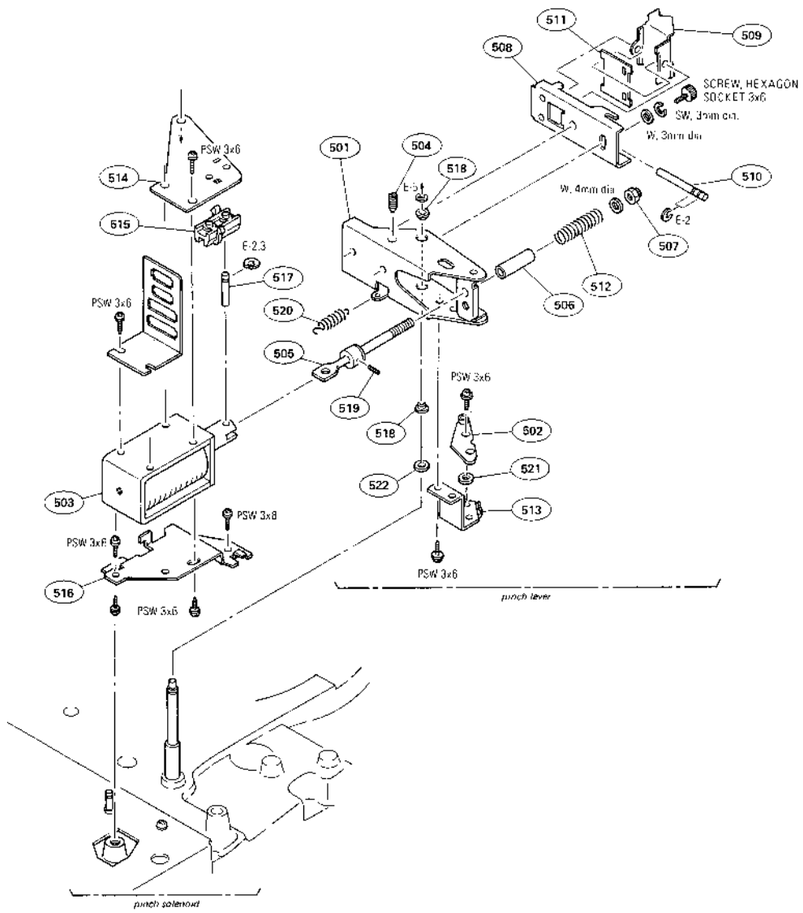
No.	Parts No.	Description
401	A-6750-119-A	THREADING ASS'Y, T.
402	X-3668-002-0	LEVER ASS'Y, R.C.
403	**X-3668-006-0**	**ROLLER ASS'Y (2), GUIDE**
404	X-3668-011-0	BASE (UPPER) ASS'Y, BLOCK, GEAR
405	X-3668-012-0	BASE (LOWER) ASS'Y, BLOCK, GEAR
406	**X-3668-013-0**	**CAM ASS'Y, M**
407	**X-3668-014-0**	**ARM ASS'Y, ROTARY**
408	X-3668-015-0	LEVER ASS'Y, RG
409	X-3668-016-0	ARM ASS'Y, THREADING (P - - - - - S/N UP TO 11490) (S - - - - - S/N UP TO 10080) X-3668-016-3 ARM ASS'Y, THREADING (P - - - - - S/N 11491 and higher) (S - - - - - S/N 10081 and higher)
410	X-3668-017-0	ARM (1) ASS'Y, T. (P - - - - - S/N UP TO 11490) (S - - - - - S/N UP TO 10080) X-3668-017-3 ARM (1) ASS'Y, T. (P - - - - - S/N 11491 and higher) (S - - - - - S/N 10081 and higher)
411	X-3668-018-0	ARM (2) ASS'Y, T. (P - - - - - S/N UP TO 11490) (S - - - - - S/N UP TO 10080)
412	X-3668-019-0	HOLDER ASS'Y, T.H.
413	**X-3668-020-0**	**BRACKET ASS'Y, MOTOR**
414	**X-3668-099-0**	**SENSOR ASS'Y, RING**
415	1-604-355-00	PRINTED CIRCUIT BOARD, "EK-3"
416	1-604-364-00	PRINTED CIRCUIT BOARD, "TM-8"
417	3-540-226-00	SPRING, TENSION
418	**3-486-135-XX**	**SPRING, TENSION (13T)**
419	**3-630-419-XX**	**SPRING, TENSION (16T)**
420	3-642-410-00	ROLLER
421	**3-642-474-00**	**BRACKET, ARM**
422	3-668-171-02	COVER, WORM
423	**3-668-172-00**	**PULLEY (3), LM**
424	**3-668-173-00**	**BELT (3), LM**
425	3-668-184-00	SHAFT, ARM, S
426	3-668-185-00	GEAR, RING
427	3-668-186-00	GEAR
428	3-668-187-00	GEAR, MIDWAY
429	3-668-188-00	WHEEL
430	3-668-190-03	ARM (1), THREADING
431	3-668-191-00	STOPPER, END, T.
432	3-668-192-04	CAM, UNTHREAD
433	**3-668-193-03**	**FLANGE (LOWER), GUIDE**
434	**3-668-194-00**	**FLANGE (UPPER), GUIDE**
435	3-668-195-00	STOPPER, U.T
436	3-668-196-00	STOPPER, ARM, T. (P - - - - - S/N UP TO 11490) (S - - - - - S/N UP TO 10080)
437	3-668-197-00	PIN, CENTER (P - - - - - S/N UP TO 11490) (S - - - - - S/N UP TO 10080) 3-668-197-02 PIN, CENTER (P - - - - - S/N 11491 and higher) (S - - - - - S/N 10081 and higher)
438	3-668-198-00	SPRING
439	3-668-199-03	SPRING
440	3-668-212-00	GUIDE, V

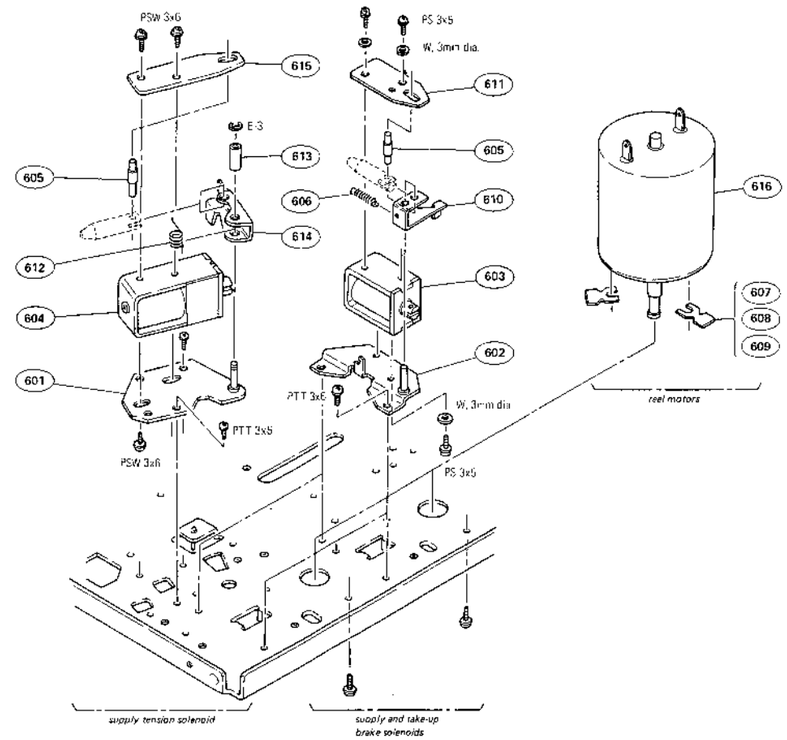
PINCH LEVER REEL CHASSIS (BOTTOM VIEW)

Pinch Lever Block



No.	Parts No.	Description
501	X-3668-007-0	PINCH LEVER SUB ASS'Y
502	X-3668-008-0	PLATE ASS'Y, ROLLER, CAM
503	**1-454-276-00**	**SOLENOID (PINCH, PM205)**
504	3-642-805-00	SCREW, ADJUSTING
505	3-648-054-00	ROD, PLUNGER JOINT
506	3-648-056-00	SPACER, 4X18
507	3-648-057-00	NUT (ISO-4), U
508	3-668-273-00	PINCH LEVER (B)
509	3-668-274-00	PINCH LEVER (C)
510	3-668-276-00	SHAFT
511	3-668-277-00	SPRING
512	3-668-278-00	SPRING, COMPRESSION
513	3-668-279-00	BASE, CAM ROLLER
514	3-668-289-00	REINFORCEMENT
515	3-668-290-00	GUIDE, SHAFT
516	3-668-291-00	BRACKET, SOLENOID
517	3-668-292-00	SHAFT, SOLENOID
518	3-668-294-00	SPACER, PINCH
519	3-701-508-00	SET SCREW, DOUBLE POINT 3X6
520	**3-701-788-XX**	**SPRING, TENSION (48T)**
521	**3-701-440-11**	**WASHER, POLY, 3.5 MM DIA, 0.25T**
522	**3-701-444-11**	**WASHER, POLY, 6 MM DIA, 0.25T**

Reel Chassis (bottom view)



No.	Parts No.	Description
601	X-3668-048-0	BRACKET SUB ASS'Y, KS
602	X-3668-049-0	BRACKET SUB ASS'Y, BP
603	**1-454-278-00**	**SOLENOID (BRAKE) (PM203, 204)**
604	**1-454-279-00**	**SOLENOID (S. TENSION, PM201)**
605	3-645-051-03	PIN, D-PINCH PLUNGER
606	3-645-392-00	SPRING, TENSION
607	**3-651-334-01**	**SPACER, REEL MOTOR (0.02T)**
608	**3-651-334-11**	**SPACER, REEL MOTOR (0.05T)**
609	**3-651-334-21**	**SPACER, REEL MOTOR (0.1T)**
610	3-668-043-00	ARM, BP
611	3-668-044-00	GUIDE, BP
612	3-668-047-00	SPRING
613	3-668-048-01	SPACER (DIA. 4x12)
614	3-668-049-00	LEVER, KS
615	3-668-050-00	PLATE, GUIDE, KS
616	**8-835-050-01**	**MOTOR, DC (MNR-4400A) (REEL, M206, 207)**

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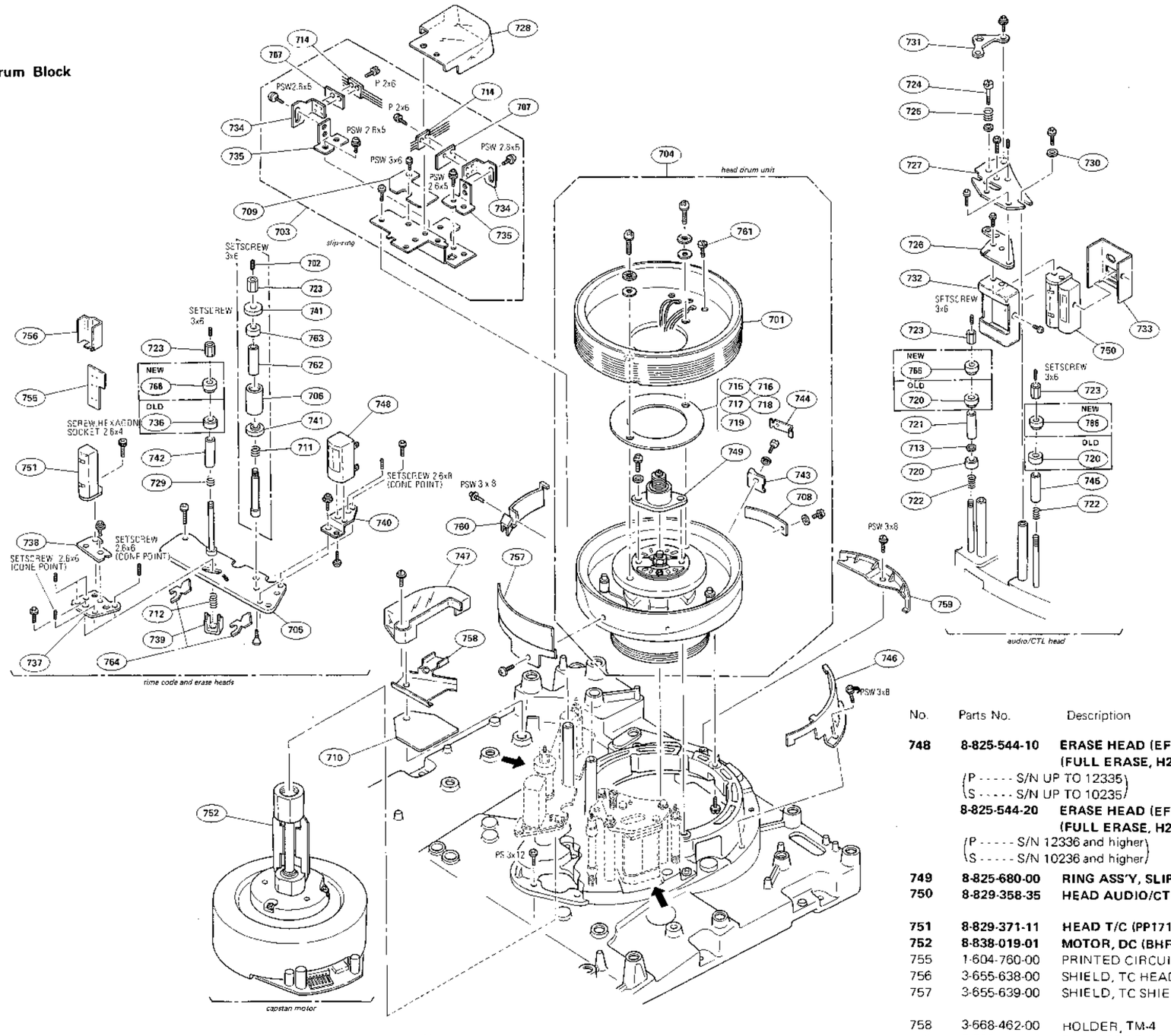
Drum Block



No.	Parts No.	Description
748	**8-825-544-10**	**ERASE HEAD (EF232-58) (FULL ERASE, H203)**
	(P - - - - - S/N UP TO 12335)	
	(S - - - - - S/N UP TO 10235)	
	8-825-544-20	**ERASE HEAD (EF248-58) (FULL ERASE, H203)**
	(P - - - - - S/N 12336 and higher)	
	(S - - - - - S/N 10236 and higher)	
749	**8-825-680-00**	**RING ASS'Y, SLIP**
750	**8-829-358-35**	**HEAD AUDIO/CTL (EPP150-5803B)**
751	**8-829-371-11**	**HEAD T/C (PP171-5802D)**
752	**8-838-019-01**	**MOTOR, DC (BHF-1600A)**
755	1-604-760-00	PRINTED CIRCUIT BOARD "TC-12"
756	3-655-638-00	SHIELD, TC HEAD
757	3-655-639-00	SHIELD, TC SHIELD
758	3-668-462-00	HOLDER, TM-4
759	3-668-472-02	PROTECTOR, (R)
760	3-655-640-00	HOLDER, TAPE
761	3-656-103-00	SCREW, (P) ADJUSTMENT
762	3-655-625-00	SLEEVE, INNER
763	**3-655-628-00**	**BEARING, BALL**
764	**3-651-334-11**	**SPACER, REEL MOTOR**
765	3-669-985-00	PLATE, ADJUSTMENT
	(P - - - - - S/N 12336 and higher)	
	(S - - - - - S/N 10186 and higher)	

No.	Parts No.	Description
766	**3-688-807-01**	**FRANG, TAPE GUIDE**
	(SERIAL No. NOTE 5 and higher)	

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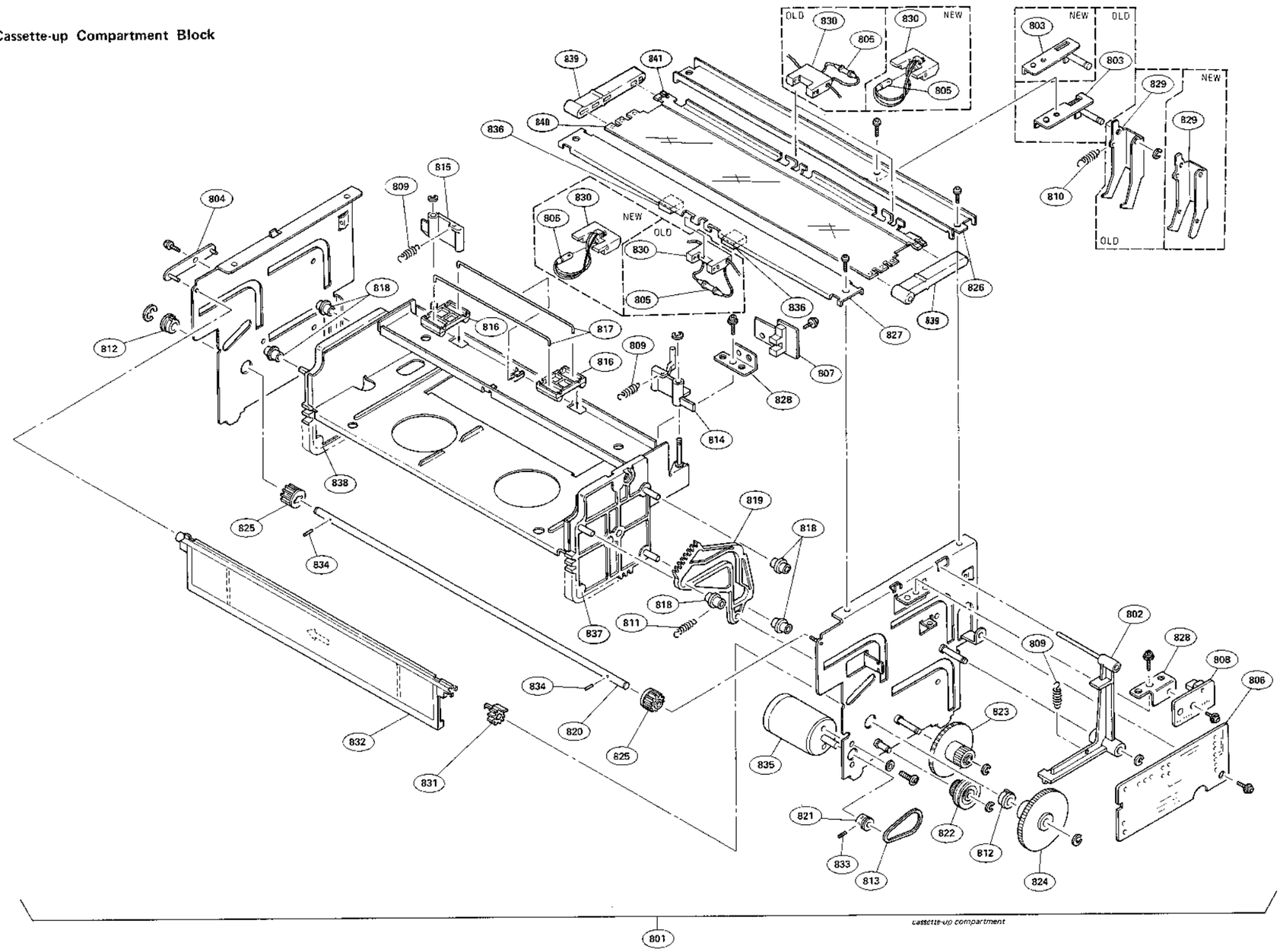
4. P.... #14765 S.... #10425
5. P.... #14766 S.... #10426

No.	Parts No.	Description
701	**A-6709-148-A**	**DRUM ASS'Y, UPPER, RV-14**
702	**A-6709-349-A**	**ROLLER GUIDE ASS'Y, D**
703	A-6709-360-A	BRUSH (4) ASS'Y
704	**A-6709-402-A**	**HEAD DRUM ASS'Y, DUH-14A-R**
705	X-3655-606-0	BASE ASS'Y, GH
	(SERIAL No. Up to NOTE 4)	
	X-3655-606-3	BASE ASS'Y, GH
	(SERIAL No. NOTE 5 and higher)	
706	**X-3655-607-0**	**ROLLER ASS'Y, GUIDE**
707	1-582-150-00	PRINTED CIRCUIT BOARD, BRUSH
708	**1-586-633-00**	**CONDENSATION, SENSOR**
709	1-604-063-00	PRINTED CIRCUIT BOARD, "SR-14"
710	1-604-367-00	PRINTED CIRCUIT BOARD, "TM-4"
711	**3-537-214-00**	**SPRING (LOWER), COMPRESSION**
712	**3-434-141-00**	**SPRING, COMPRESSION**
713	**3-534-329-00**	**WASHER, TAPE GUIDE**
714	**3-607-104-00**	**BRUSH**
715	**3-630-029-01**	**SPACER, FLANGE (0.01T)**
716	**3-630-029-11**	**SPACER, FLANGE (0.02T)**
717	**3-630-029-21**	**SPACER, FLANGE (0.05T)**
718	**3-630-029-31**	**SPACER, FLANGE (0.10T)**
719	**3-630-029-41**	**SPACER, FLANGE (0.03T)**
720	**3-641-612-00**	**GUIDE, TAPE**
721	**3-641-613-00**	**GUIDE, TAPE**
722	**3-641-615-00**	**SPRING, COMPRESSION**
723	**3-641-616-00**	**NUT, TAPE GUIDE ADJUSTMENT**
724	3-641-621-00	SCREW, HEAD ADJUSTING
725	**3-641-622-00**	**SPRING, COMPRESSION**
726	3-641-640-00	BRACKET, (1) C.T.L. HEAD
727	3-641-641-02	BRACKET C.T.L. HEAD, (2)
728	3-641-647-02	GUARD, BRUSH
729	**3-644-718-00**	**SPRING, COMPRESSION**
	(SERIAL No. Up to NOTE 4)	
	3-641-615-00	**SPRING, COMPRESSION**
	(SERIAL No. NOTE 5 and higher)	
730	3-645-076-00	WASHER, M-REEL S
731	3-647-815-00	PLATE, ADJUSTMENT, CTL HEAD
732	3-650-301-02	COVER, HEAD, D-CTL
733	3-650-302-00	COVER, HEAD, (REAR)
734	3-655-613-00	BRACKET (1), BRUSH
735	3-655-614-00	BRACKET (2), BRUSH
736	**3-655-616-00**	**FLANGE (E.F), GUIDE**
	(SERIAL No. Up to NOTE 4)	
737	3-655-618-00	BASE, TC
738	3-655-619-00	BRACKET, TC
739	3-655-620-00	SUPPORT, GUIDE
740	3-655-621-00	BRACKET, HEAD, E
	(P - - - - - S/N UP TO 12335)	
	(S - - - - - S/N UP TO 10235)	
	3-655-652-00	BRACKET (2), E HEAD
	(P - - - - - S/N 12336 and higher)	
	(S - - - - - S/N 10236 and higher)	
741	**3-655-626-00**	**FLANGE**
742	**3-655-630-00**	**GUIDE (E), TAPE**
	(SERIAL No. Up to NOTE 4)	
	3-655-630-02	**GUIDE (E), TAPE**
	(SERIAL No. NOTE 5 and higher)	
743	3-656-501-00	HOLDER, TERMINAL
744	3-656-502-00	PLATE, TERMINAL
745	**3-660-102-00**	**GUIDE, TAPE**
746	3-668-293-00	GUARD, HEAD
747	3-668-441-00	COVER, HARNESS

Cassette-up Compartment Block



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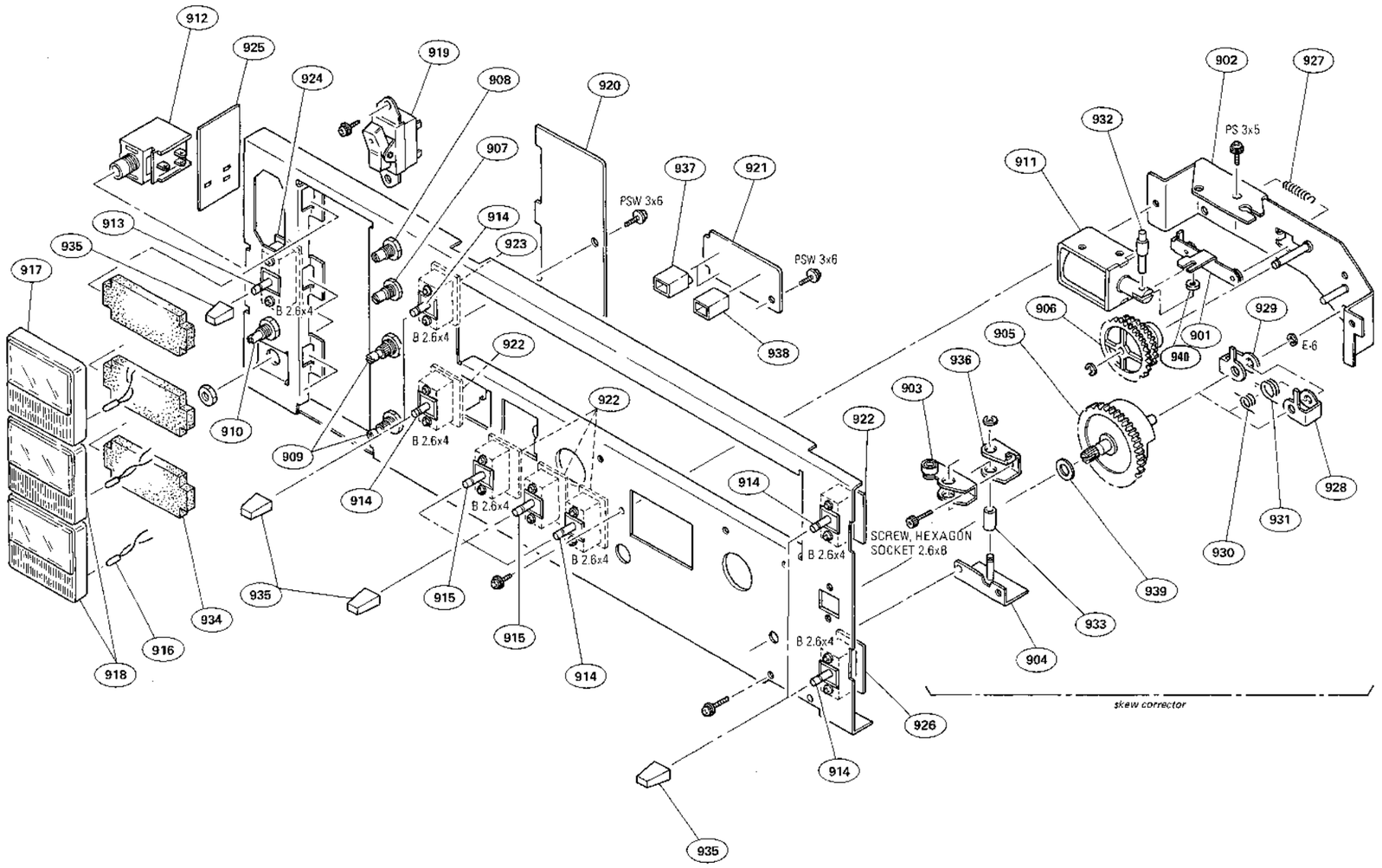
No.	Parts No.	Description
836	3-672-926-00	CUSHION, LID
	(P - - - - - S/N 11491 AND HIGHER)	
	(S - - - - - S/N 10081 AND HIGHER)	
837	**X-3668-057-0**	**CASECON ASS'Y, RACK (RIGHT)**
838	**X-3668-058-0**	**CASECON ASS'Y, RACK (LEFT)**
839	**3-668-313-02**	**FRAME, SUPPORT, REFLECTOR**
840	**3-672-604-11**	**REFLECTOR**
841	**3-672-639-03**	**BRACKET, LAMP**

No.	Parts No.	Description
831	**3-668-315-02**	**GEAR, LID**
832	**3-668-371-00**	**LID, CASSETTE**
833	**3-701-506-01**	**SET SCREW, DOUBLE POINT 3x4**
834	3-703-358-00	PIN, PARALLEL (DIA. 2x8)
835	**8-835-055-01**	**MOTOR, DC (DNR-4700A) (CASSETTE, M207)**

No.	Parts No.	Description
801	**A-6751-104-C**	**CASSETTE COMPARTMENT ASS'Y**
802	**X-3668-059-2**	**ARM ASS'Y, SWITCH, DOWN**
803	X-3668-060-0	HOLDER ASS'Y, ARM
	(P - - - - - S/N UP TO 11230)	
	(S - - - - - S/N UP TO 10080)	
	X-3668-060-2	HOLDER ASS'Y, ARM
	(P - - - - - S/N 11231 ~ 11490)	
	(S - - - - - S/N 10081 ~ 10080)	
	X-3668-060-3	HOLDER ASS'Y, ARM
	(P - - - - - S/N 11491 AND HIGHER)	
	(S - - - - - S/N 10081 AND HIGHER)	
804	X-3668-061-0	SUPPORT ASS'Y, LID
805	**1-518-455-00**	**LAMP, PILOT (PL207, 208, 209)**
	(P - - - - - S/N UP TO 11490)	
	(S - - - - - S/N UP TO 10080)	
	1-518-508-00	**LAMP, PILOT (PL207, 208, 209)**
	(P - - - - - S/N 11491 AND HIGHER)	
	(S - - - - - S/N 10081 AND HIGHER)	
806	1-604-429-00	PRINTED CIRCUIT BOARD, "CC-9"
807	1-604-430-00	PRINTED CIRCUIT BOARD, "CC-10"
808	1-604-431-00	PRINTED CIRCUIT BOARD, "CC-11"
809	3-507-051-00	SPRING, TENSION.
810	**3-534-217-00**	**SPRING, TENSION**
811	**3-536-780-00**	**SPRING, TENSION**
812	**3-668-474-00**	**BEARING**
813	**3-653-387-00**	**BELT, LM**
814	3-668-295-00	LEVER (RIGHT), CASSETTE PUSH-OUT
815	3-668-296-00	LEVER (LEFT), CASSETTE PUSH-OUT
816	**3-668-297-00**	**RETAINER, CASSETTE**
817	3-668-298-00	SPRING
818	**3-668-299-00**	**ROLLER, GUIDE**
819	3-668-300-00	CAM, LID OPEN
820	3-668-301-00	SHAFT, DRIVING
821	**3-668-302-00**	**PULLEY, MOTOR**
822	**3-668-303-00**	**GEAR (A)**
823	3-668-304-00	GEAR (B)
824	3-668-305-00	GEAR (C)
825	3-668-306-00	GEAR (D)
826	3-668-307-00	JOINT (R)
	(P - - - - - S/N UP TO 11230)	
	(S - - - - - S/N UP TO 10080)	
	3-668-307-02	JOINT (R)
	(P - - - - - S/N 11231 AND HIGHER)	
	(S - - - - - S/N 10081 AND HIGHER)	
827	3-668-308-03	JOINT (F)
828	3-668-309-00	BRACKET, SWITCH
829	3-668-310-00	ARM, LID OPENER
	(P - - - - - S/N UP TO 11490)	
	(S - - - - - S/N UP TO 10080)	
	3-668-310-02	ARM, LID OPENER
	(P - - - - - S/N 11491 AND HIGHER)	
	(S - - - - - S/N 10081 AND HIGHER)	
830	**3-668-314-00**	**HOLDER, LAMP**
	(P - - - - - S/N Up to 11490)	
	(S - - - - - S/N Up to 10080)	
	3-668-314-02	**HOLDER, LAMP**
	(P - - - - - S/N 11491 and higher)	
	(S - - - - - S/N 10081 and higher)	

Control Panel Block



No.	Parts No.	Description
901	X-3668-030-0	PLATE ASS'Y, LOCK, SK
902	X-3668-031-0	SUPPORT ASS'Y, SK
903	X-3668-033-0	LEVER (2) ASS'Y, S
904	X-3668-034-0	BRACKET ASS'Y, LEVER, S
905	X-3668-035-0	GEAR (3) ASS'Y, CLUTCH
906	**X-3668-036-0**	**CLUTCH ASS'Y, SK**
907	**1-224-691-XX**	**R, VAR, CARBON 10K**
908	**1-226-616-00**	**R, VAR, CARBON 100K**
909	**1-228-140-00**	**R, VAR, CARBON 20K/20K**
910	**1-228-218-00**	**R, VAR, CARBON 500/500 (RV1)**
911	**1-454-278-00**	**SOLENOID (SKEW, PM202)**
912	**1-507-553-00**	**JACK, JM-60 M-13S**
913	**1-516-963-00**	**SWITCH, LEVER SLIDE**
914	**1-516-994-00**	**SWITCH, LEVER SLIDE**
915	**1-516-995-00**	**SWITCH, LEVER SLIDE**
916	**1-518-461-00**	**LAMP, PILOT**
917	**1-520-438-00**	**METER, VIDEO (VIDEO/RF, ME201)**
918	**1-520-439-00**	**METER, VU (AUDIO CH-1: ME202, AUDIO CH-2: ME203)**
⚠ **919**	**1-553-159-00**	**SWITCH, ROCKER (POWER, S201)**
920	1-604-365-00	PRINTED CIRCUIT BOARD, "MF-1"
921	1-604-366-00	PRINTED CIRCUIT BOARD, "WL-1"
922	1-604-368-00	PRINTED CIRCUIT BOARD, "MS-5"
923	1-604-371-00	PRINTED CIRCUIT BOARD, "LV-1"
924	1-604-375-00	PRINTED CIRCUIT BOARD, "AO-2"
925	1-604-378-00	PRINTED CIRCUIT BOARD, "HP-5"
926	1-604-511-00	PRINTED CIRCUIT BOARD, "PR-33"
927	**3-537-219-00**	**SPRING, TENSION**
928	3-642-403-00	LEVER
929	3-642-404-00	LEVER
930	**3-642-405-00**	**SPRING**
931	**3-642-679-00**	**SPRING**
932	3-645-051-03	PIN, D-PINCH PLUNGER
933	**3-654-603-11**	**SPACER, 3x11**
934	3-668-022-00	CUSHION, METER
935	**3-668-028-00**	**KNOB (SMALL), LEVER SWITCH**
936	3-668-111-00	LEVER (1), S
937	3-668-123-00	HOLDER, LAMP
938	3-668-124-00	HOLDER, LED
939	**3-701-444-21**	**WASHER, POLY 6MM DIA. (0.5T)**
940	**3-701-433-21**	**WASHER, POLY 5MM DIA, (0.5T)**
	(P - - - - - S/N 12576 ~ 13325)	
	(S - - - - - S/N 10236 ~ 10295)	

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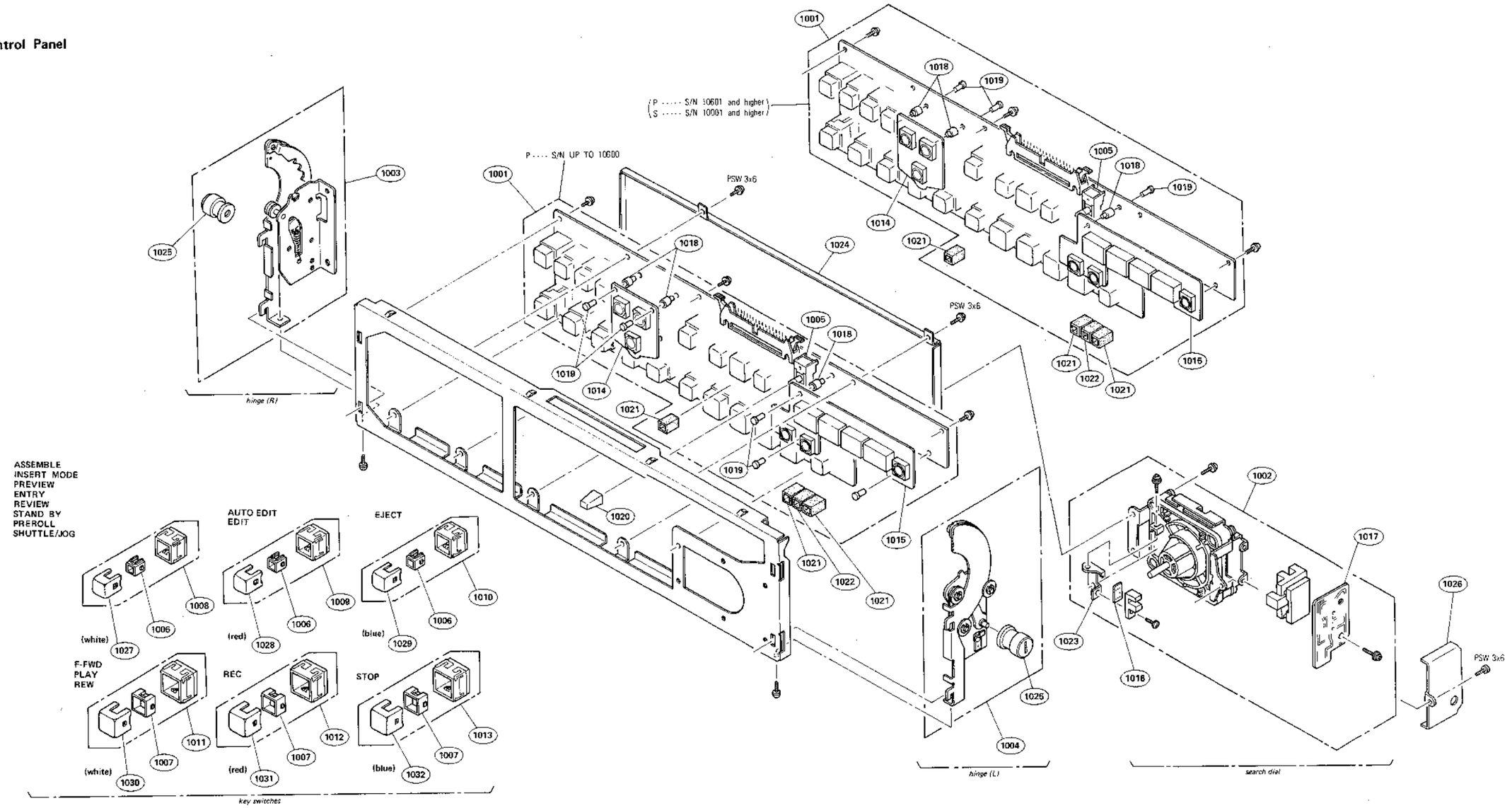
Function Control Panel



No.	Parts No.	Description
1001	A-6717-205-A	MOUNTED CIRCUIT BOARD, "KY-9"
1002	**A-6734-106-A**	**DIAL ASS'Y, SEARCH**
1003	A-6736-030-A	HINGE (L) ASS'Y
1004	A-6736-031-A	HINGE (R) ASS'Y
1005	**1-516-994-00**	**SWITCH, LEVER SLIDE**
1006	**1-518-450-31**	**LAMP, PILOT**
1007	**1-518-450-21**	**LAMP, PILOT**
1008	**1-554-318-11**	**SWITCH, KEY**
1009	**1-554-318-21**	**SWITCH, KEY**
1010	**1-554-318-31**	**SWITCH, KEY**
1011	**1-553-551-12**	**SWITCH, KEY**
1012	**1-553-551-22**	**SWITCH, KEY**
1013	**1-553-551-32**	**SWITCH, KEY**
1014	1-604-347-00	PRINTED CIRCUIT BOARD, "KY-14"
1015	1-604-349-00	PRINTED CIRCUIT BOARD, "DP-9"
1016	1-604-351-00	PRINTED CIRCUIT BOARD, "PC-9"
1017	1-604-353-00	PRINTED CIRCUIT BOARD, "PC-14"
1018	**3-659-487-00**	**HOLDER, BUZZER**
1019	**3-659-488-00**	**PIN, BUZZER HOLDER**
1020	**3-668-028-00**	**KNOB (SMALL), LEVER SWITCH**
1021	3-668-123-00	HOLDER, LAMP
1022	3-668-124-00	HOLDER, LED
1023	3-668-151-00	BRACKET, PC14
1024	3-668-327-00	COVER, KEY PANEL
1025	3-668-407-00	NUT, LOCK
1026	3-668-417-00	COVER, PROTECTION, PC9
1027	**3-706-480-01**	**KEY TOP (WHITE)**
1028	**3-706-480-12**	**KEY TOP (RED)**
1029	**3-706-480-22**	**KEY TOP (BLUE)**
1030	**3-706-481-01**	**KEY TOP (WHITE)**
1031	**3-706-481-11**	**KEY TOP (RED)**
1032	**3-706-481-22**	**KEY TOP (BLUE)**

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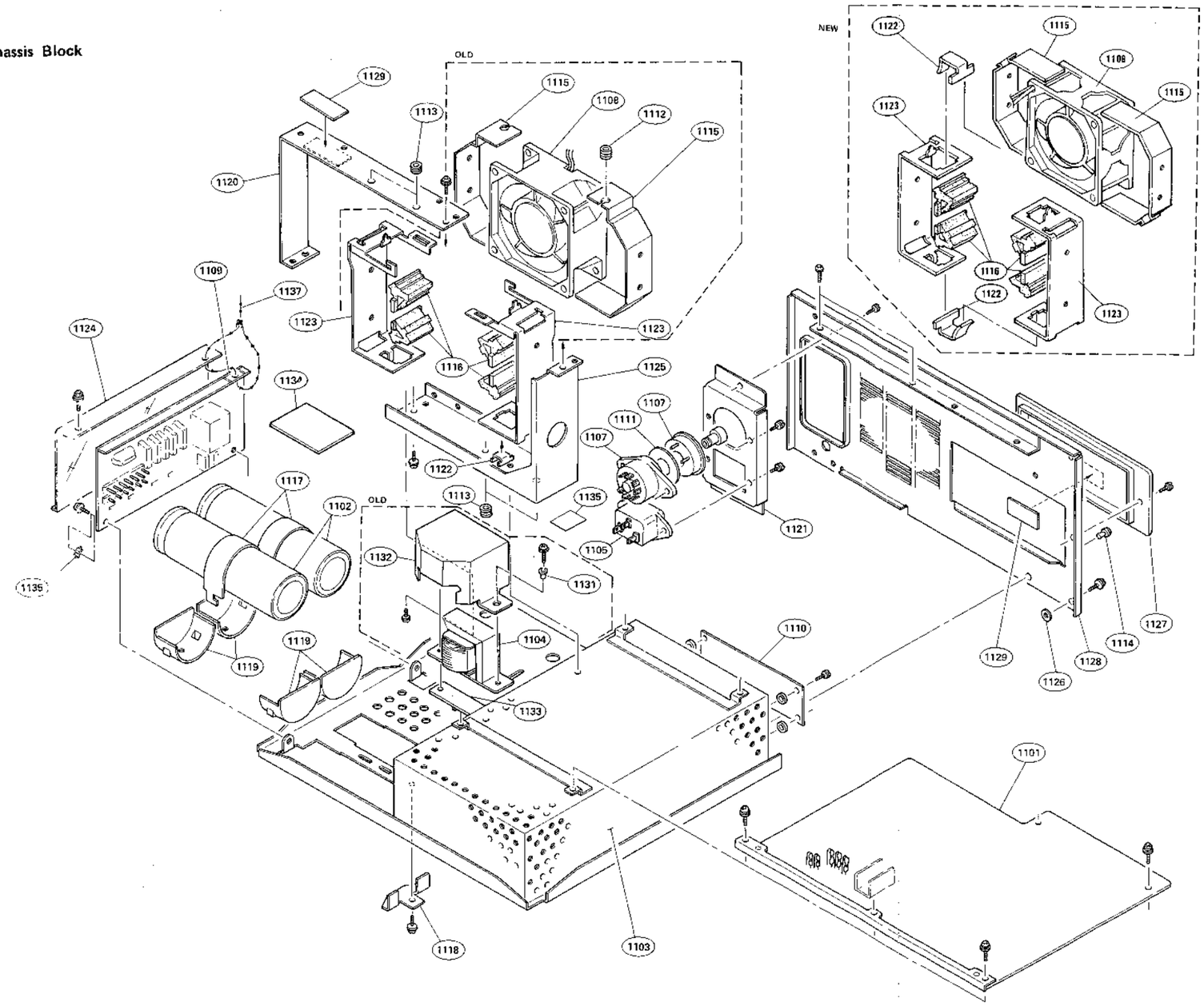
Power Chassis Block



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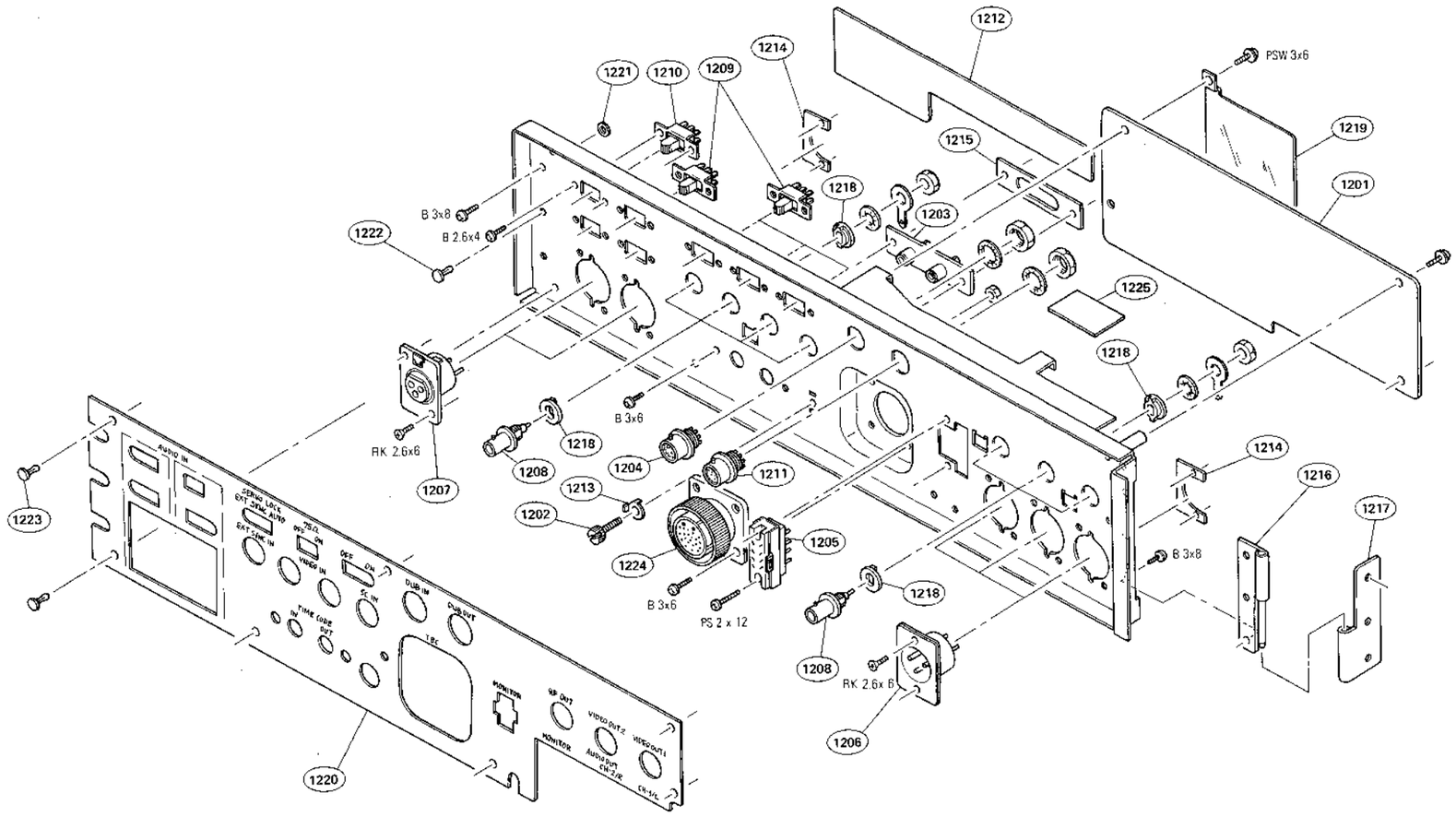
4. P . . . #14355 S . . . #10425
5. P . . . #14356 S . . . #10426

No.	Parts No.	Description
1132	3-668-477-00	SHIELD, AUTO TRANSFORMER
	(SERIAL No. Up to NOTE 4)	
1133	3-668-479-00	INSULATOR, BRACKET
	(SERIAL No. Up to NOTE 4)	
1134	1-606-043-00	PRINTED CIRCUIT BOARD "RL-14"
1135	3-701-961-01	CAUTION (B), UK GROUND
1136	7-623-422-07	LW3, TYPE B
	(P - - - - - S/N 11491 and higher)	
	(S - - - - - S/N 10081 and higher)	
1137	3-509-140-00	TAI BAND
	(P - - - - - 10801 and higher)	
	(S - - - - - 10031 and higher)	

No.	Parts No.	Description
1126	3-668-413-00	WASHER (M3), STOP
1127	3-688-827-00	COVER, FUSE
1128	3-668-422-00	PANEL, PS
1129	3-703-044-26	LABEL, CAUTION
1131	**2-832-002-00**	**BUSHING, INSULATING**
	(SERIAL No. Up to NOTE 4)	

No.	Parts No.	Description
⚠ 1101	A-6723-158-C	MOUNTED CIRCUIT BOARD, "PD-14"
1102	**1-125-250-00**	**C, ELECT 3300MF**
⚠ 1103	1-413-071-21	SWITCHING REGULATOR
⚠ **1104**	**1-446-938-00**	**TRANSFORMER (FAN, T201)**
	(SERIAL No. Up to NOTE 4)	
⚠ **1105**	**1-509-546-00**	**3P INLET (AC IN, CN221)**
⚠ **1107**	**1-526-572-00**	**SOCKET, POWER VOLTAGE SELECT**
⚠ **1108**	**1-541-104-00**	**BLOWER (FAN, M201)**
	(P - - - - - S/N Up to 12585)	
	(S - - - - - S/N Up to 10235)	
⚠ **1108**	**1-541-104-51**	**BLOWER (FAN, M201)**
	(P - - - - - S/N 12586 ~ 14355)	
	(S - - - - - S/N 10236 ~ 10425)	
1108	**1-541-264-11**	**BLOWER (FAN, M201)**
	(SERIAL No. NOTE 5 and higher)	
1109	1-604-363-00	PRINTED CIRCUIT BOARD, "PW-50"
	(P - - - - - S/N Up to 12585)	
	(S - - - - - S/N Up to 10235)	
	1-604-363-16	PRINTED CIRCUIT BOARD, "PW-50"
	(P - - - - - S/N 12586 ~ 14355)	
	(S - - - - - S/N 10236 ~ 10425)	
	1-604-363-17	PRINTED CIRCUIT BOARD, "PW-50"
	(SERIAL No. NOTE 5 and higher)	
1110	1-605-936-00	PRINTED CIRCUIT BOARD, "FU-16"
1111	2-232-802-00	SEAL
1112	**3-470-019-00**	**BUSHING, RUBBER**
	(SERIAL No. Up to NOTE 4)	
1113	**3-564-017-00**	**CUSHION, MOTOR**
1114	**3-646-090-11**	**RIVET, NYLON**
1115	3-650-271-00	PLATE, SHIELD, FAN
	(SERIAL No. Up to NOTE 4)	
	3-672-994-01	PLATE, SHIELD, FAN
	(SERIAL No. NOTE 5 and higher)	
1116	**3-650-272-00**	**ABSORBER, VIBRATION, FAN**
1117	3-668-154-00	BAND, C
1118	3-668-155-00	RETAINER, C
1119	3-668-157-00	RETAINER, C
1120	3-668-158-00	FRAME (B), FAN
1121	3-668-159-00	BRACKET, V.S
1122	3-668-164-00	FASTENER, F
1123	3-668-367-00	HOLDER, FAN
	(SERIAL No. Up to NOTE 4)	
	3-672-995-01	HOLDER, FAN
	(SERIAL No. NOTE 5 and higher)	
1124	3-668-369-00	PROTECTOR, PW
1125	3-668-370-00	FRAME (A), FAN

Connector Panel Block (1)



No.	Parts No.	Description
1201	A-6713-106-A	MOUNTED CIRCUIT BOARD, "AO-3"
1202	**X-2068-004-0**	**TERMINAL ASS'Y**
1203	**1-507-142-XX**	**2P PIN JACK (TIME CODE IN/OUT, CN215)**
1204	**1-508-945-00**	**RECEPTACLE, 7P (MALE) (DUB IN, CN209)**
1205	**1-509-095-00**	**8P MULTI SOCKET (MONITOR, CN207)**
1206	**1-509-176-00**	**RECEPTACLE, XLR, (MALE)**
1207	**1-509-184-00**	**RECEPTACLE, XLR, (FEMALE)**
1208	**1-509-891-00**	**RECEPTACLE, BNC**
	(P----- S/N Up to 14595)	
	(S----- S/N Up to 10455)	
	1-561-781-21	**RECEPTACLE, BNC**
	(P----- S/N 14596 and higher)	
	(S----- S/N 10456 and higher)	
1209	**1-516-777-XX**	**SLIDE SWITCH**
1210	**1-516-783-XX**	**SLIDE SWITCH**
1211	**1-561-045-00**	**RECEPTACLE, 7P (FEMALE) (DUB OUT, CN208)**
1212	1-604-377-00	PRINTED CIRCUIT BOARD, "SA-9"
1213	**2-068-008-00**	**WASHER**
1214	2-232-914-00	PLATE NUT, XLR
1215	3-648-041-00	NUT, PLATE
1216	3-651-651-00	HINGE (A)
1217	3-651-652-00	HINGE (B)
1218	**3-654-545-00**	**SPACER, BNC**
	(P----- S/N Up to 14595)	
	(S----- S/N Up to 10455)	
1219	3-672-975-00	INSULATOR, AO-3
1220	3-668-381-11	PLATE, ORNAMENTAL, PANEL
1221	3-668-413-00	WASHER (M3), STOP
1222	**3-703-356-00**	**RIVET, T TYPE**
1223	**4-812-134-11**	**RIVET NYLON, 3.5**
1224	**1-509-471-00**	**RECEPTACLE, 18P, FEMALE (TBC, CN210)**
1225	1-606-977-00	PRINTED CIRCUIT BOARD, TM-14

NOTE:

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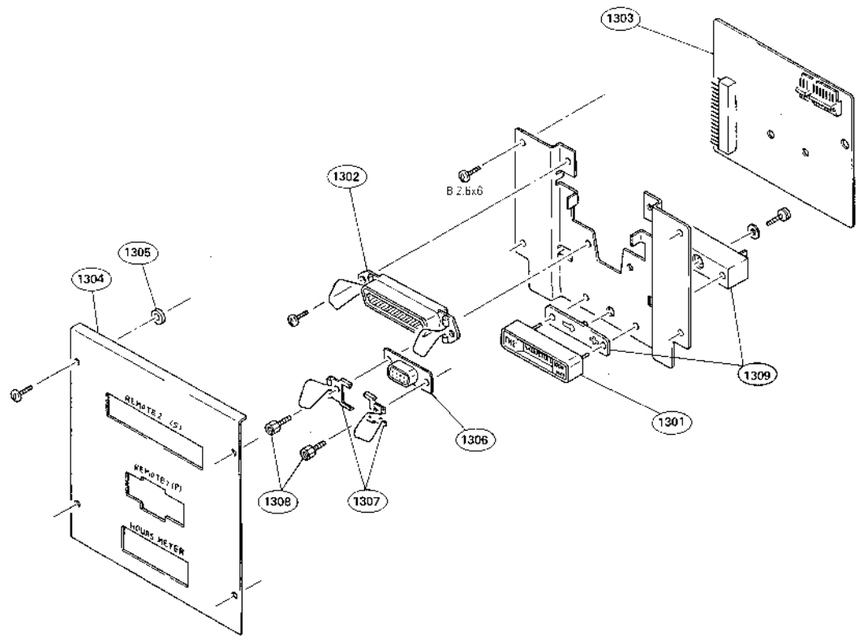
3. Item with no part number and/or no description are not stocked because they are seldom required for routine service.

CONNECTOR PANEL (2) CHASSIS

Connector Panel Block (2)



No.	Parts No.	Description
1301	**1-548-141-41**	**TIMER (HOURS METER, TM201)**
1302	**1-561-028-00**	**CONNECTOR, 36P (REMOTE 2, CN101)**
1303	1-604-370-00	PRINTED CIRCUIT BOARD, "RM-4"
1304	3-668-343-00	PANEL (RIGHT LOWER), CONNECTOR
1305	3-668-413-00	WASHER (M3), STOP
1306	**1-561-655-00**	**CONNECTOR, 9P (REMOTE 1, CN102)**
1307	3-668-460-00	SPRING
1308	3-668-459-00	SCREW, CONNECTOR
1309	**1-526-829-31**	**SOCKET, TIMER**

NOTE:

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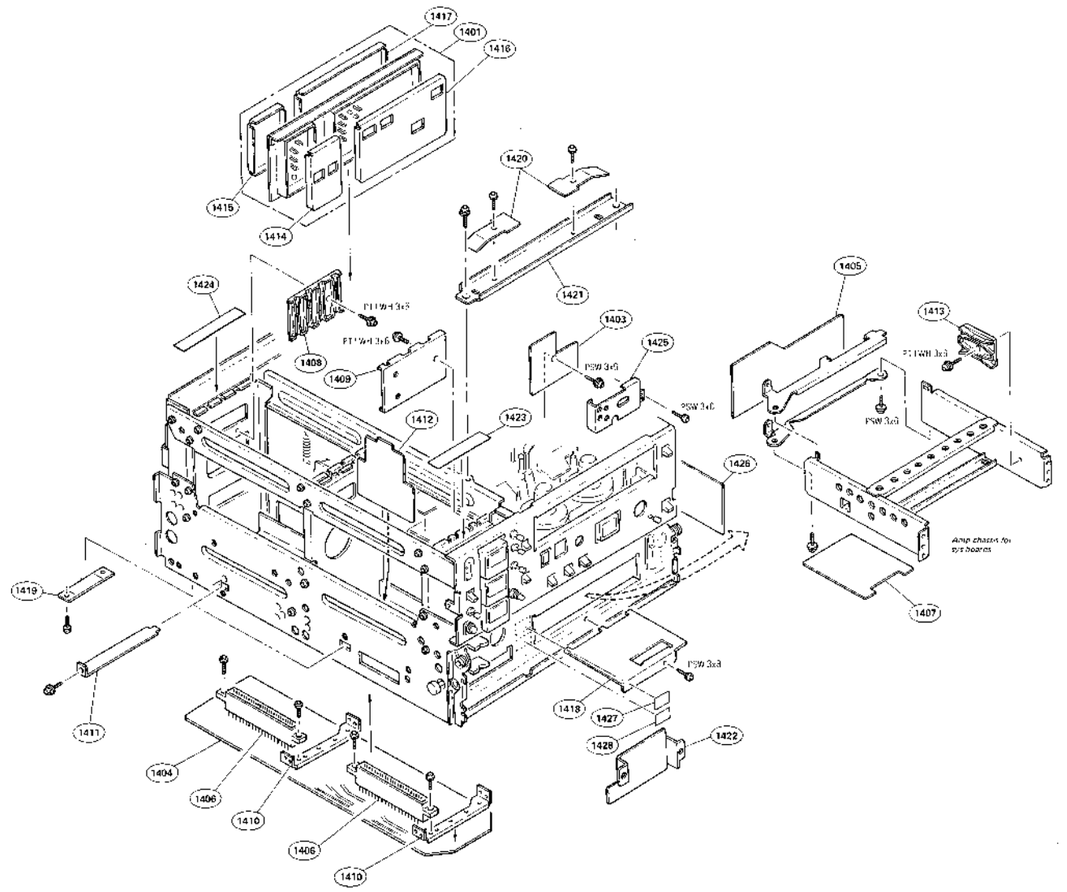
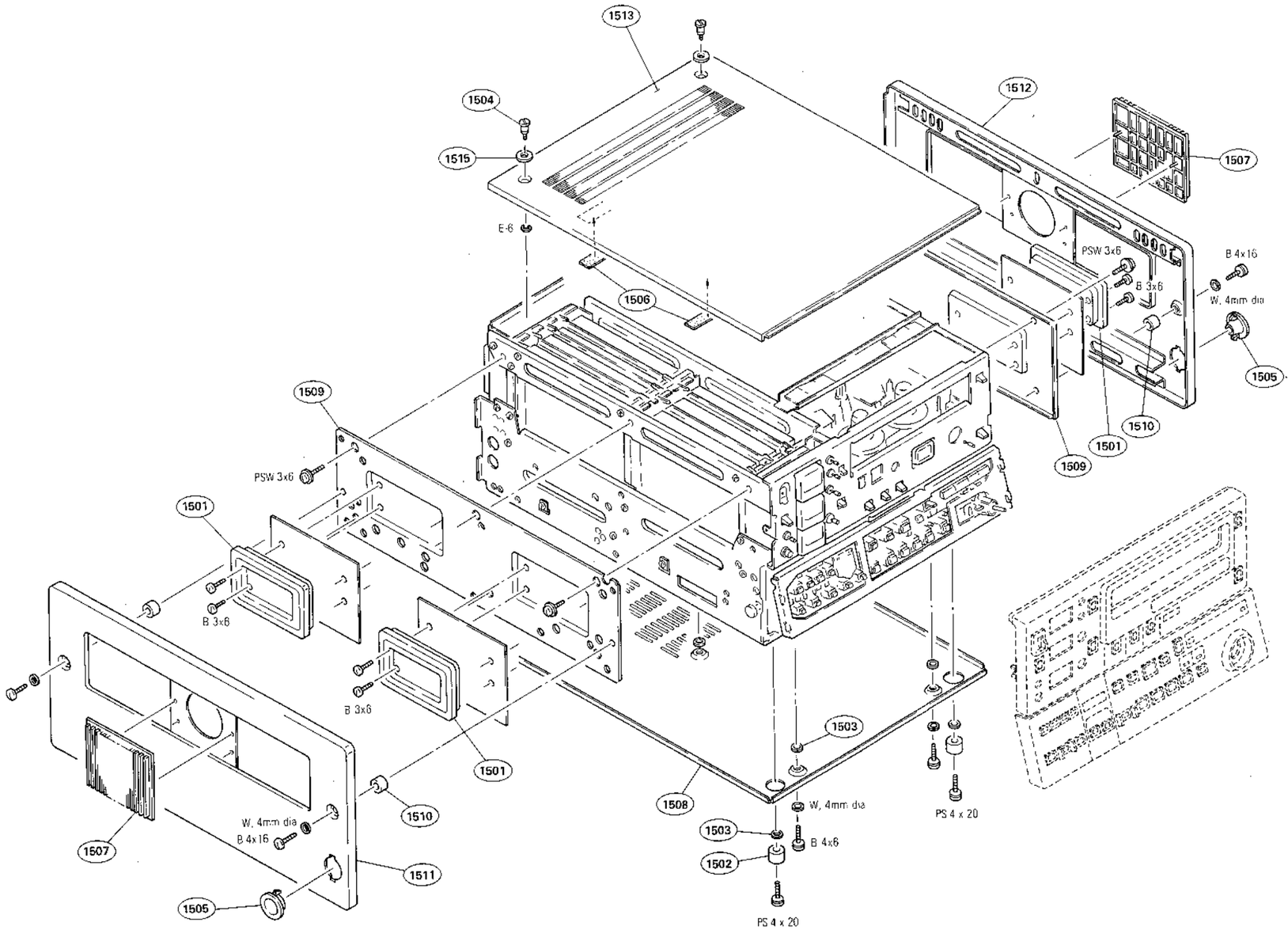
Chassis Block



No.	Parts No.	Description
1401	A-6711-322-A	MOUNTED CIRCUIT BOARD, "RP-5-1"
1403	A-6725-227-B	MOUNTED CIRCUIT BOARD, "RE-3"
1404	A-6728-470-A	MOUNTED CIRCUIT BOARD, "MB-8"
1405	A-6728-238-A	MOUNTED CIRCUIT BOARD, "MB-9"
1406	1-561-654-00	CONNECTOR, 86P
1407	3-668-119-00	PROTECTOR, MB-9
1408	3-668-129-02	GUIDE (3), PC BOARD
1409	3-668-130-00	GUIDE (4), PC BOARD
1410	3-668-131-02	BRACKET (A), CN
1411	3-668-132-00	BRACKET (B), CN
1412	3-668-133-00	PROTECTOR, MB-8
1413	3-668-134-00	GUIDE (2), PC BOARD
1414	3-668-138-00	COVER, UPPER, SHIELD CASE (A)
1415	3-668-139-00	COVER, LOWER, SHIELD CASE (A)
1416	3-668-361-00	COVER, UPPER, SHIELD CASE (B)
1417	3-668-362-00	COVER, LOWER, SHIELD CASE (B)
1418	3-668-423-00	RETAINER (FRONT), FC
1419	3-668-424-00	RETAINER (REAR), FC
1420	**3-668-425-00**	**SPRING**
1421	**3-668-426-00**	**STAY, CASSETTE, COMPARTMENT**
1422	3-668-433-02	COVER, FRONT
1423	3-668-438-00	LABEL (1), PC BOARD
1424	3-668-439-00	LABEL (2), PC BOARD
1425	3-668-440-00	PROTECTOR, RE
1426	A-6717-208-A	MOUNTED CIRCUIT BOARD, "SY-71"
1427	3-668-485-00	LABEL (3), PCB
1428	3-668-486-00	LABEL (4), PCB

Ornamental Panel Block (1)



No.	Parts No.	Description
1501	X-3642-018-0	HANDLE ASS'Y
1502	**3-642-656-01**	**FOOT**
1503	3-650-537-00	WASHER
1504	**3-668-024-00**	**SCREW, COIN, CABINET**
1505	3-668-025-06	ESCUTCHEON, HINGE STOPPER
1506	3-668-026-04	RETAINER,PC
1507	3-668-335-00	ORNAMENT, SIDE PLATE
1508	3-668-375-00	PLATE, BOTTOM
1509	3-668-382-00	BRACKET, HANDLE
1510	3-668-416-00	SPACER, BRACKET, M4
1511	3-668-418-04	PLATE, SIDE, LEFT
1512	3-668-419-04	PLATE, SIDE, RIGHT
1513	3-668-420-04	LID, UPPER
1515	3-418-179-11	WASHER, WHEEL
	(P - - - - - S/N UP TO 11230)	
	(S - - - - - S/N UP TO 10080)	

NOTE:

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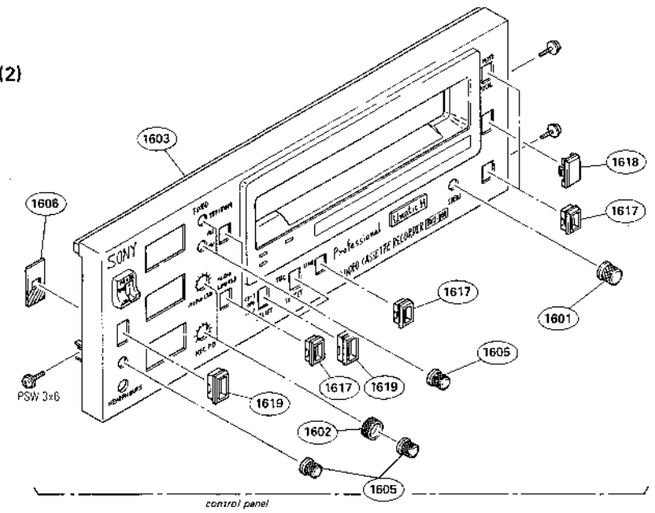
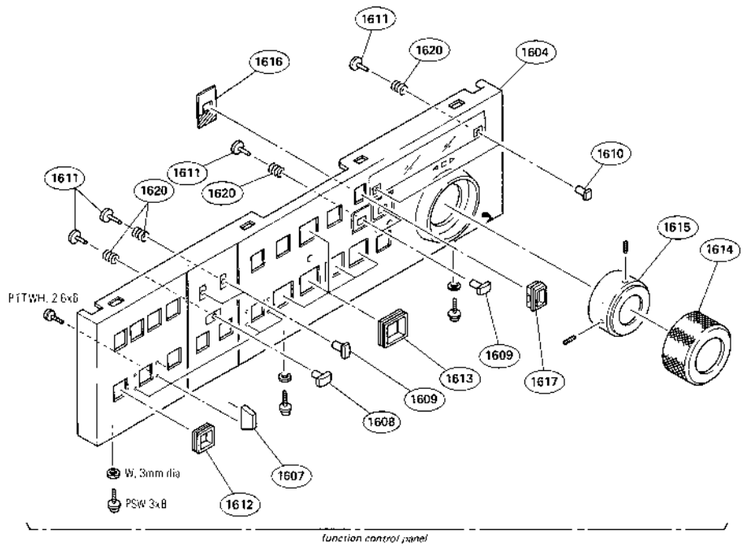
ORNAMENTAL PANEL (2) PRINTED CIRCUIT BOARD

Ornamental Panel Block (2)



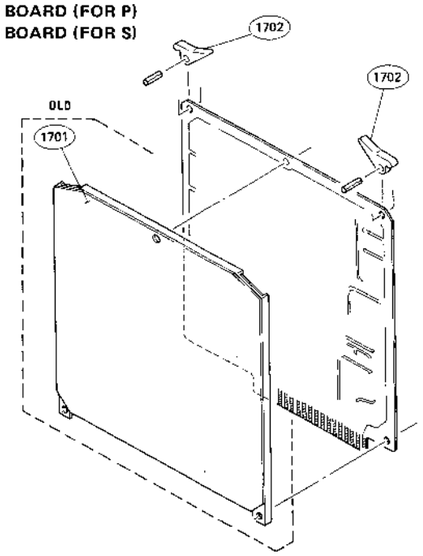


No.	Parts No.	Description
1601	**X-3651-342-0**	**KNOB ASS'Y, CONTROL**
1602	**X-3668-056-0**	**KNOB (W) ASS'Y, CONTROL**
1603	X-3668-079-2	PANEL (P) SUB ASS'Y, FRONT (FOR P)
1603	X-3668-087-0	PANEL (S) SUB ASS'Y, FRONT (FOR S)
1604	X-3668-068-3	PANEL SUB ASS'Y, KEY
	(P - - - - - S/N Up to 11645)	
	(S - - - - - S/N Up to 10135)	
	X-3668-068-8	PANEL SUB ASS'Y, KEY
	(P - - - - - S/N 11646 and higher)	
	(S - - - - - S/N 10136 and higher)	
1605	**X-3668-075-0**	**KNOB ASS'Y, CONTROL**
1606	2-252-623-02	PLATE, SWITCH, LEVER
1607	3-657-986-00	GUARD, REC
1608	**3-668-006-02**	**PUSH BUTTON (15X8)**
1609	**3-668-007-02**	**PUSH BUTTON (5X9)**
1610	**3-668-008-02**	**PUSH BUTTON (3X5)**

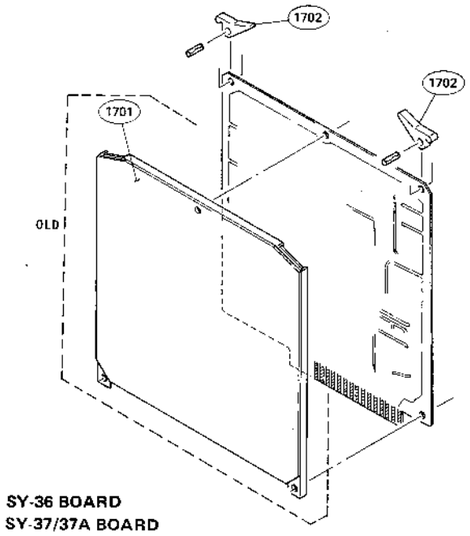
No.	Parts No.	Description
1611	**3-668-009-02**	**PIN, PUSH BUTTON**
1612	3-668-010-00	ESCUTCHEON (12), BUTTON
	(P - - - - - S/N Up to 11645)	
	(S - - - - - S/N Up to 10135)	
	3-675-892-00	ESCUTCHEON, BUTTON (SMALL)
	(P - - - - - S/N 11646 and higher)	
	(S - - - - - S/N 10136 and higher)	
1613	3-668-011-00	ESCUTCHEON (17), BUTTON
	(P - - - - - S/N Up to 11645)	
	(S - - - - - S/N Up to 10135)	
	3-675-891-00	ESCUTCHEON, BUTTON (LARGE)
	(P - - - - - S/N 11646 and higher)	
	(S - - - - - S/N 10136 and higher)	
1614	**3-668-012-00**	**RUBBER, DIAL KNOB**
1615	**3-668-013-00**	**KNOB, DIAL**
1616	3-668-015-00	PLATE (SMALL), SWITCH, LEVER
1617	3-668-016-00	FRAME (SMALL), ORNAMENTAL
1618	3-668-017-02	FRAME (MIDDLE), BLIND, SWITCH
1619	3-668-018-00	FRAME (MIDDLE), ORNAMENTAL
1620	**4-309-349-00**	**SPRING, COIL**

Printed Circuit Board

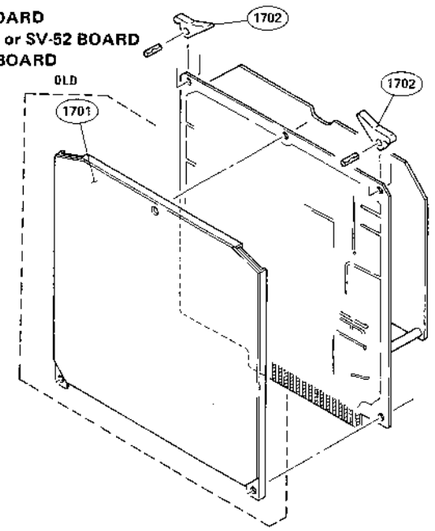
MD-12 BOARD (FOR P)
MD-13 BOARD (FOR S)



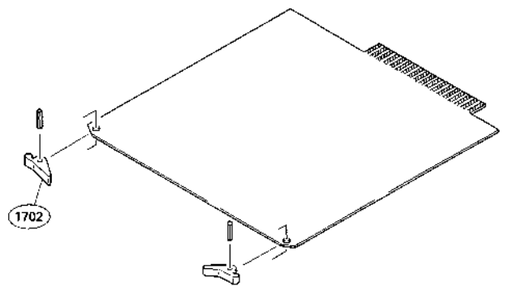
YD-9 BOARD
CD-14 BOARD (FOR P)
CD-15 BOARD (FOR S)
TC-13-1 BOARD



RS-3 BOARD
SV-24A or SV-52 BOARD
AU-13 BOARD



SY-36 BOARD
SY-37/37A BOARD



No.	Parts No.	Description
1701	X-3668-082-2	CASE ASS'Y, (A) SHIELD
	(P - - - - - S/N Up to 12855)	
	(S - - - - - S/N Up to 10235)	
1702	2-251-622-00	LEVER, PC BOARD

NOTE:

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   Replace only with same components as specified.
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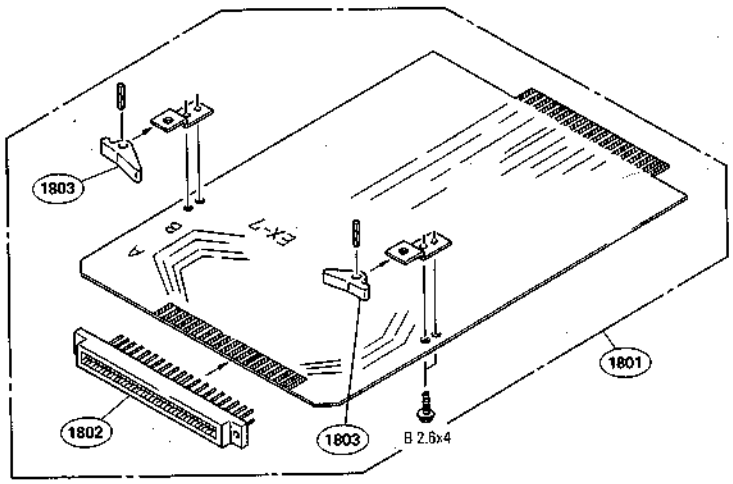
Supplied Accessory



No.	Parts No.	Description
1801	**A-6724-244-A**	**EXTENSION BOARD ASS'Y, EX-7**
1802	1-561-654-00	CONNECTOR, CARD, 86P
1803	2-251-622-00	LEVER, PC BOARD

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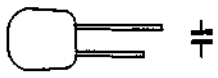
18-3. ELECTRICAL PARTS LIST

Parts that are not listed in the *"reference numbers order list" are* shown in following table.
Reference numbers are omitted.

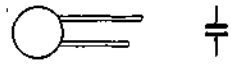
SILVERED MICA CAPACITOR **1 pF through 620 pF ±5%, 50WV**



Parts No. 1-107-□□□-00

Value	Parts No. -□□□-	Value	Parts No. -□□□-	Value	Parts No. -□□□-	Value	Parts No. -□□□-
1 pF	098	15 pF	065	51 pF	078	180 pF	091
2	099	16	066	56	079	200	092
3	100	18	067	62	080	220	093
4	101	20	068	68	081	240	094
5	102	22	069	75	082	270	095
6	103	24	070	82	083	300	096
7	104	27	071	91	084	330	097
8	105	30	072	100	085	360	231
9	106	33	073	110	086	390	232
10	061	36	074	120	087	430	233
11	062	39	075	130	088	470	234
12	063	43	076	150	089	510	235
13	064	47	077	160	090	560	236
						620	237

CERAMIC CAPACITOR **0.001μF through 0.1μF 50WV**



Parts NO. 1-161-□□□-00

Value	Parts No. -□□□-	Substitute
0.001 μF	039	(1-102-074-00)
0.0012	040	
0.0015	041	
0.0018	042	
0.0022	043	(1-102-100-00)
0.0027	044	
0.0033	045	
0.0039	046	(1-102-124-00)
0.0047	047	
0.0056	048	
0.0068	049	
0.0082	050	

Value	Parts No. -□□□-	Substitute
0.01 μF	051	(1-101-118-00)
0.012	052	
0.015	053	
0.018	054	
0.022	055	(1-101-005-00)
0.027	056	
0.033	057	
0.039	058	
0.047	059	(1-101-006-00)
0.056	060	
0.068	061	
0.082	062	
0.1	063	

NOTE:

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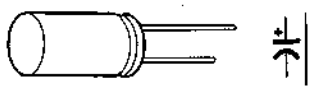
ELECTROLYTIC CAPACITOR 0.47μF through 470μF
6.3WV through 50 (63, 100)WV



Parts No. 1-123-□□□-00

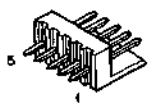
Value		Parts No. -□□□-
0.47μF	50V	
	100	379
1	50	
	100	380
2.2	50	
	100	381
3.3	25	
	35	
	50	
	100	382
4.7	25	
	35	
	50	
	63	369
10	10	
	16	
	25	
	35	
	50	356
22	16	
	25	330

Value		Parts No. -□□□-
22μF	35V	342
	50	
	63	371
33	6.3	
	10	
	16	318
	25	
	35	343
	50	
	63	372
47	6.3	
	10	306
	16	
	25	332
	35	
	50	359
100	6.3	
	10	307
	16	
	25	333
	35	345

Value		Parts No. -□□□-
100μF	50V	360
220	6.3	
	10	308
	16	321
	25	334
	35	346
	50	361
330	6.3	
	10	309
	16	322
	25	335
	35	347
	50	362
470	6.3	298
	10	310
	16	323
	25	336
	35	348
	50	
	63	377

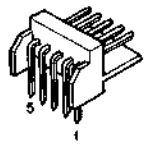
CONNECTOR

top-type receptacle



3P	1-560-008-00
5P	1-560-009-00
6P	1-560-010-00
8P	1-560-011-00
10P	1-560-012-00
12P	1-560-013-00

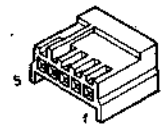
side-type receptacle



3P	1-560-014-00
5P	1-560-015-00
6P	1-560-016-00
8P	1-560-017-00
10P	1-560-018-00
12P	1-560-019-00

plug

housing



3P	1-561-155-00
5P	1-561-156-00
6P	1-561-157-00
8P	1-561-158-00
10P	1-561-159-00
12P	1-561-160-00

contact

1-560-006-00
(AWG 20 ~ 26)

1-560-007-00
(AWG 26 ~ 30)

NOTE:

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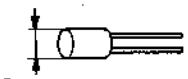
MICRO INDUCTOR **1 μH through 470 μH**
±5%

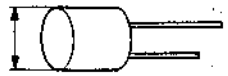


5mm dia

Parts No. 1-407-□□□-XX

Value	Parts No. -□□□-	Value	Parts No. -□□□-	Value	Parts No. -□□□-	Value	Parts No. -□□□-
1 μH	178	4.7 μH	186	22 μH	161	100 μH	169
1.2	179	5.6	187	27	162	120	170
1.5	180	6.8	188	33	163	150	171
1.8	181	8.2	189	39	164	180	172
2.2	182	10	157	47	165	220	173
2.7	183	12	158	56	166	270	174
3.3	184	15	159	68	167	330	175
3.9	185	18	160	82	168	390	176
						470	177

MICRO INDUCTOR **470 μH through 33 mH**
±5%



10mm dia

Parts No. 1-407-□□□-00

Value	Parts No. -□□□-	Value	Parts No. -□□□-	Value	Parts No. -□□□-	Value	Parts No. -□□□-
470 μH	488	1.5 mH	494	4.7 mH	500	15 mH	506
560	489	1.8	495	5.6	501	18	507
680	490	2.2	496	6.8	502	22	508
820	491	2.7	497	8.2	503	27	509
1 mH	492	3.3	498	10	504	33	510
1.2	493	3.9	499	12	505		

NOTE:

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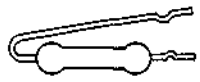
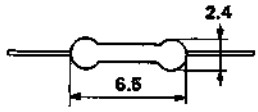
CARBON RESISTOR (1/4W) ±5%, 1/4W, non-special type
1 Ω through 1 MΩ





Parts No. 1-246-□□□-00

Value	Parts No. -□□□-	Value	Parts No. -□□□-	Value	Parts No. -□□□-	Value	Parts No. -□□□-
1 Ω	401	33 Ω	437	1 kΩ	473	33 kΩ	509
1.1	402	36	438	1.1	474	36	510
1.2	403	39	439	1.2	475	39	511
1.3	404	43	440	1.3	476	43	512
1.5	405	47	441	1.5	477	47	513
1.6	406	51	442	1.6	478	51	514
1.8	407	56	443	1.8	479	56	515
2	408	62	444	2	480	62	516
2.2	409	68	445	2.2	481	68	517
2.4	410	75	446	2.4	482	75	518
2.7	411	82	447	2.7	483	82	519
3	412	91	448	3.0	484	91	520
3.3	413	100 Ω	449	3.3	485	100 kΩ	521
3.6	414	110	450	3.6	486	110	522
3.9	415	120	451	3.9	487	120	523
4.3	416	130	452	4.3	488	130	524
4.7	417	150	453	4.7	489	150	525
5.1	418	160	454	5.1	490	160	526
5.6	419	180	455	5.6	491	180	527
6.2	420	200	456	6.2	492	200	528
6.8	421	220	457	6.8	493	220	529
7.5	422	240	458	7.5	494	240	530
8.2	423	270	459	8.2	495	270	531
9.1	424	300	460	9.1	496	300	532
10 Ω	425	330	461	10 kΩ	497	330	533
11	426	360	462	11	498	360	534
12	427	390	463	12	499	390	535
13	428	430	464	13	500	430	536
15	429	470	465	15	501	470	537
16	430	510	466	16	502	510	538
18	431	560	467	18	503	560	539
20	432	620	468	20	504	620	540
22	433	680	469	22	505	680	541
24	434	750	470	24	506	750	542
27	435	820	471	27	507	820	543
30	436	910	472	30	508	910	544
						1 MΩ	545

E. PARTS

NOTE:

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CARBON RESISTOR (1/8W)

±5%, 1/8W, non-special type
2.2Ω through 1MΩ

Parts No. 1-246-□□□-00

Value	Parts No. -□□□-	Value	Parts No. -□□□-	Value	Parts No. -□□□-	Value	Parts No. -□□□-
1Ω	–	33Ω	765	1kΩ	783	33kΩ	801
1.1	–	36	826	1.1	844	36	862
1.2	–	39	766	1.2	784	39	802
1.3	–	43	827	1.3	845	43	863
1.5	–	47	767	1.5	785	47	803
1.6	–	51	828	1.6	846	51	864
1.8	–	56	768	1.8	786	56	804
2	–	62	829	2	847	62	865
2.2	751	68	769	2.2	787	68	805
2.4	812	75	830	2.4	848	75	866
2.7	752	82	770	2.7	788	82	806
3	813	91	831	3.0	849	91	867
3.3	753	100Ω	771	3.3	789	100kΩ	807
3.6	814	110	832	3.6	850	110	868
3.9	754	120	772	3.9	790	120	808
4.3	815	130	833	4.3	851	130	869
4.7	755	150	773	4.7	791	150	809
5.1	816	160	834	5.1	852	160	870
5.6	756	180	774	5.6	792	180	810
6.2	817	200	835	6.2	853	200	871
6.8	757	220	775	6.8	793	220	811
7.5	818	240	836	7.5	854		
8.2	758	270	776	8.2	794		
9.1	819	300	837	9.1	855		
10Ω	759	330	777	10kΩ	795		
11	820	360	838	11	856		
12	760	390	778	12	796		
13	821	430	839	13	857		
15	761	470	779	15	797		
16	822	510	840	16	858		
18	762	560	780	18	798		
20	823	620	841	20	859		
22	763	680	781	22	799		
24	824	750	842	24	860		
27	764	820	782	27	800		
30	825	910	843	30	861		

Parts No. 1-247-□□□-00

Value	Parts No. -□□□-
240kΩ	054
270	046
300	055
330	047
360	056
390	048
430	057
470	049
510	058
560	050
620	059
680	051
750	060
820	052
910	061
1MΩ	053

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AO-2, AO-3

ABBREVIATIONS

Ref. No.	Description	Ref. No.	Description	Ref. No.	Description
C□□, CV□□	CAPACITOR	IC□□	IC	R□□, RV□□	RESISTOR
CN□□	CONNECTOR	L□□, LV□□	INDUCTOR	RY□□	RELAY
CP□□	COMBINATION PARTS	M□□	MOTOR	S□□	SWITCH
D□□	DIODE	ME□□	METER	SB□□	SOLAR BATTERY
DL□□	DELAY LINE	PL□□	LAMP	T□□	TRANSFORMER
F□□	FUSE	PM□□	SOLENOID	TH□□	THERMISTOR
FL□□	FILTER	Q□□	TRANSISTOR	X□□	CRYSTAL
H□□	HEAD				

All capacitors are in micro farads unless otherwise specified.

All inductors are in micro henries unless otherwise specified.

All resistors are in ohms.

E. PARTS

Ref. No.	Parts No.	Description
AO-2 BOARD		
	1-604-375-00	PRINTED CIRCUIT BOARD, AO-2
S1	**1-516-963-00**	**LEVER SLIDE "AUDIO MONITOR"**
AO-3 BOARD		
	A-6713-106-A	MOUNTED CIRCUIT BOARD, AO-3
C6	**1-108-555-00**	**MYLAR 0.001 5% 50V**
C16	**1-108-555-00**	**MYLAR 0.001 5% 50V**
C26	**1-108-555-00**	**MYLAR 0.001 5% 50V**
C31	**1-108-601-00**	**MYLAR 0.082 5% 50V**
C32	**1-108-601-00**	**MYLAR 0.082 5% 50V**

Ref. No.	Parts No.	Description
D1	**8-719-200-02**	**10E-2**
D2	**8-719-200-02**	**10E-2**
D3	**8-719-200-02**	**10E-2**
FL1	**1-235-030-00**	**LOWPASS**
FL2	**1-235-030-00**	**LOWPASS**
IC1	**8-751-701-11**	**CX-170 (SONY)**
IC2	**8-751-701-11**	**CX-170 (SONY)**
IC3	**8-751-701-11**	**CX-170 (SONY)**
IC4	**8-720-002-97**	**TX429D-7 (SONY)**
IC5	**8-720-002-97**	**TX429D-7 (SONY)**
Q1	**8-760-335-10**	**2SC1474**
Q2	**8-760-335-10**	**2SC1474**
Q3	**8-760-335-10**	**2SC1474**
Q4	**8-729-612-77**	**2SA1027R**
Q5	**8-729-201-04**	**2SC2878**
Q6	**8-729-612-77**	**2SA1027R**
Q7	**8-729-201-04**	**2SC2878**
Q8	**8-729-612-77**	**2SA1027R**
Q9	**8-729-201-04**	**2SC2878**
R1	**1-244-861-00**	**CARBON 330 5% 1/2W**

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Ref. No.	Parts No.	Description
RV1	1-224-251-XX	VAR, METAL 4.7K
RV2	1-224-251-XX	VAR, METAL 4.7K
RV3	1-224-251-XX	VAR, METAL 4.7K
T1	1-423-225-00	INPUT/OUTPUT
T2	1-423-225-00	INPUT/OUTPUT
T3	1-423-225-00	INPUT/OUTPUT

AU-13 BOARD

	A-6713-108-B	MOUNTED CIRCUIT BOARD, AU-13 (WITH AU-25)
C1	1-108-555-00	MYLAR 0.01 5% 50V
C2	1-131-356-00	TANTALUM 3.3 10% 25V
C5	1-131-356-00	TANTALUM 3.3 10% 25V
C6	1-131-371-00	TANTALUM 10 10% 16V
C7	1-131-371-00	TANTALUM 10 10% 16V
C8	1-130-491-00	MYLAR 0.047 5% 50V
C9	1-131-364-00	TANTALUM 6.8 10% 20V
C10	1-131-371-00	TANTALUM 10 10% 16V
C12	1-131-356-00	TANTALUM 3.3 10% 25V
*C13	1-108-577-00	MYLAR 0.0082 5% 50V
C15	1-108-571-00	MYLAR 0.0047 5% 50V
C17	1-131-356-00	TANTALUM 3.3 10% 25V
C18	1-108-597-00	MYLAR 0.056 5% 50V
C19	1-108-583-00	MYLAR 0.015 5% 50V
C20	1-130-491-00	MYLAR 0.047 5% 50V
C21	1-130-491-00	MYLAR 0.047 5% 50V
C22	1-131-371-00	TANTALUM 10 10% 16V
C23	1-108-555-00	MYLAR 0.001 5% 50V
C24	1-131-356-00	TANTALUM 3.3 10% 25V
C29	1-131-356-00	TANTALUM 3.3 10% 25V
C30	1-108-583-00	MYLAR 0.015 5% 50V
C31	1-131-342-00	TANTALUM 0.15 10% 35V
C32	1-131-499-00	TANTALUM 1.5 10% 20V
C33	1-131-356-00	TANTALUM 3.3 10% 25V
C35	1-108-585-00	MYLAR 0.018 5% 50V
C38	1-108-555-00	MYLAR 0.001 5% 50V
C40	1-109-162-00	MICA 470PF 5% 300V
C41	1-108-587-00	MYLAR 0.0022 5% 50V
C45	1-108-565-00	MYLAR 0.0027 5% 50V
C50	1-131-356-00	TANTALUM 3.3 10% 25V

*: CHOOSE

Ref. No.	Parts No.	Description
C52	1-131-356-00	TANTALUM 3.3 10% 25V
C84	1-102-112-00	CERAMIC 330P 10% 50V
C85	1-131-356-00	TANTALUM 3.3 10% 25V
C87	1-131-356-00	TANTALUM 3.3 10% 25V
C101	1-108-555-00	MYLAR 0.001 5% 50V
C102	1-131-356-00	TANTALUM 3.3 10% 25V
C105	1-131-356-00	TANTALUM 3.3 10% 25V
C106	1-131-371-00	TANTALUM 10 10% 16V
C107	1-131-371-00	TANTALUM 10 10% 16V
C108	1-130-491-00	MYLAR 0.047 5% 50V
C109	1-131-364-00	TANTALUM 6.8 10% 20V
C110	1-131-371-00	TANTALUM 10 10% 16V
C112	1-131-356-00	TANTALUM 3.3 10% 25V
*C113	1-108-577-00	MYLAR 0.0082 5% 50V
C115	1-108-571-00	MYLAR 0.0047 5% 50V
C117	1-131-356-00	TANTALUM 3.3 10% 25V
C118	1-108-597-00	MYLAR 0.56 5% 50V
C119	1-108-583-00	MYLAR 0.015 5% 50V
C120	1-130-491-00	MYLAR 0.047 5% 50V
C121	1-130-491-00	MYLAR 0.047 5% 50V
C122	1-131-371-00	TANTALUM 10 10% 16V
C123	1-108-555-00	MYLAR 0.001 5% 50V
C124	1-131-356-00	TANTALUM 3.3 10% 25V
C129	1-131-356-00	TANTALUM 3.3 10% 25V
C130	1-108-583-00	MYLAR 0.015 5% 50V
C131	1-131-342-00	TANTALUM 0.15 10% 35V
C132	1-131-499-00	TANTALUM 1.5 10% 20V
C133	1-131-356-00	TANTALUM 3.3 10% 25V
C135	1-108-585-00	MYLAR 0.018 5% 50V
C138	1-108-555-00	MYLAR 0.001 5% 50V
C140	1-109-162-00	MICA 470PF 5% 300V
C141	1-108-587-00	MYLAR 0.022 5% 50V
C145	1-108-565-00	MYLAR 0.0027 5% 50V
C150	1-131-356-00	TANTALUM 3.3 10% 25V
C152	1-131-356-00	TANTALUM 3.3 10% 25V
C201	1-131-499-00	TANTALUM 1.5 10% 20V
C202	1-131-356-00	TANTALUM 3.3 10% 25V
C203	1-131-354-00	TANTALUM 1.5 10% 25V
C204	1-131-356-00	TANTALUM 3.3 10% 25V
C205	1-131-354-00	TANTALUM 1.5 10% 25V
C206	1-131-499-00	TANTALUM 1.5 10% 20V
C207	1-131-499-00	TNATALUM 1.5 10% 20V
C208	1-131-499-00	TANTALUM 1.5 10% 20V
C209	1-131-499-00	TANTALUM 1.5 10% 20V
C503	1-129-714-00	FILM 0.01 10% 630V
C506	1-108-591-00	MYLAR 0.033 5% 50V
C508	1-108-579-00	MYLAR 0.01 5% 50V
C509	1-108-579-00	MYLAR 0.01 5% 50V
C512	1-131-369-00	TANTALUM 4.7 20% 16V
C514	1-129-712-00	FILM 0.0068 10% 630V

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AU-13 (AU-25)

Ref. No.	Parts No.	Description
C515	1-131-364-00	TANTALUM 4.7 20% 20V
C517	1-129-712-00	FILM 0.0068 10% 630V
C518	1-131-358-00	TANTALUM 6.8 10% 25V
C520	1-129-708-00	FILM 0.0033 10% 630V
C521	1-109-169-00	MICA 910PF 5% 300V
C522	1-109-169-00	MICA 910PF 5% 300V
C523	1-131-498-00	TANTALUM 1 10% 25V
C524	1-131-498-00	TANTALUM 1 10% 25V
C600	1-102-114-00	CERAMIC 470PF 10% 50V
C601	1-131-499-00	TANTALUM 1.5 10% 20V
C602	1-131-499-00	TANTALUM 1.5 10% 20V
C603	1-102-114-00	CERAMIC 470P 10% 50V
C604	1-102-114-00	CERAMIC 470P 10% 50V
C606	1-131-499-00	TANTALUM 1.5 10% 20V
C607	1-131-499-00	TANTALUM 1.5 10% 20V
C608	1-131-499-00	TANTALUM 1.5 10% 20V
C609	1-131-499-00	TANTALUM 1.5 10% 20V
C610	1-107-179-00	MICA 270PF 5% 500V
D1	8-719-815-55	1S1555
D2	8-719-815-55	1S1555
D3	8-719-815-55	1S1555
D4	8-719-815-55	1S1555
D6	8-719-815-55	1S1555
D9	8-719-162-07	RD6.2E-B
D10	8-719-101-97	1SS97-1
D101	8-719-815-55	1S1555
D102	8-719-815-55	1S1555
D103	8-719-815-55	1S1555
D104	8-719-815-55	1S1555
D106	8-719-815-55	1S1555
D109	8-719-162-07	RD6.2E-B
D110	8-719-101-97	1SS97-1
D203	8-719-815-55	1S1555
D204	8-719-815-55	1S1555
D205	8-719-815-55	1S1555
D206	8-719-815-55	1S1555
D207	8-719-815-55	1S1555
D208	8-719-162-07	RD6.2E-B
D209	8-719-815-55	1S1555
D210	8-719-815-55	1S1555
D211	8-719-815-55	1S1555
D212	8-719-815-55	1S1555
D213	8-719-815-55	1S1555
D214	8-719-815-55	1S1555
D501	8-719-200-02	10E-2
D502	8-719-200-02	10E-2
D503	8-719-815-55	1S1555
D504	8-719-815-55	1S1555

Ref. No.	Parts No.	Description
D505	8-719-815-55	1S1555
D601	8-719-815-55	1S1555
D602	8-719-815-55	1S1555
D603	8-719-815-55	1S1555
D604	8-719-815-55	1S1555
D605	8-719-815-55	1S1555
D606	8-719-815-55	1S1555
D607	8-719-815-55	1S1555
D608	8-719-815-55	1S1555
D609	8-719-815-55	1S1555
D610	8-719-815-55	1S1555
D611	8-719-815-55	1S1555
D612	8-719-815-55	1S1555
FL1	1-235-030-00	LOWPASS
FL101	1-235-030-00	LOWPASS
IC1	8-759-276-17	TA7617AP (TOSHIBA)
IC2	8-720-002-97	TX-429D-7 (SONY)
IC3	8-720-002-97	TX-429D-7 (SONY)
IC4	8-720-002-97	TX-429D-7 (SONY)
IC5	8-759-145-58	μPC4558C (RC4558; RAYTHEON)
IC101	8-759-276-17	TA7617AP (TOSHIBA)
IC102	8-720-002-97	TX-429D-7 (SONY)
IC103	8-720-002-97	TX-429D-7 (SONY)
IC104	8-720-002-97	TX-429D-7 (SONY)
IC201	8-759-240-71	TC4071BP (CD4071BE; RCA)
IC202	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC203	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC204	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC205	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC206	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC207	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC208	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC209	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC601	8-759-345-38	HD14538BP (MC14538BCP; MOT)
IC602	8-759-240-30	TC4030BP (CD4030BE; RCA)
IC603	8-759-240-71	TC4071BP (CD4071BE; RCA)
IC604	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC605	8-759-345-38	HD14538BP (MC14538BCP; MOT)
IC606	8-759-240-13	TC4013BP (CD4013BE; RCA)
L1	1-407-519-00	FERRITE CORE, 7T
L101	1-407-519-00	FERRITE CORE, 7T
LV1	1-409-295-00	VAR, 22mH
LV2	1-409-295-00	VAR, 22mH
LV3	1-407-288-00	VAR, 4.7mH
LV101	1-409-295-00	VAR, 22mH
LV102	1-409-295-00	VAR, 22mH

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Ref. No.	Parts No.	Description
LV103	1-407-288-00	VAR, 4.7mH
LV501	1-407-286-00	VAR, 2.2mH
LV502	1-407-284-00	VAR, 1mH
LV503	1-407-284-00	VAR, 1mH
LV504	1-407-283-00	VAR, 0.68mH
LV505	1-407-283-00	VAR, 0.68mH
LV506	1-407-282-00	VAR, 0.47mH
Q1	8-729-201-04	2SC2878
Q2	8-729-612-77	2SA1027R
Q3	8-729-201-04	2SC2878
Q4	8-729-201-04	2SC2878
Q5	8-729-663-47	2SC1364
Q6	8-729-201-04	2SC2878
Q7	8-729-201-04	2SC2878
Q8	8-729-663-47	2SC1364
Q9	8-729-201-04	2SC2878
Q10	8-729-663-47	2SC1364
Q11	8-729-177-43	2SD774
Q12	8-729-374-02	2SB740
Q13	8-729-663-47	2SC1364
Q101	8-729-201-04	2SC2878
Q102	8-729-612-77	2SA1027R
Q103	8-729-201-04	2SC2878
Q104	8-729-201-04	2SC2878
Q105	8-729-663-47	2SC1364
Q106	8-729-201-04	2SC2878
Q107	8-729-201-04	2SC2878
Q108	8-729-663-47	2SC1364
Q109	8-729-201-04	2SC2878
Q110	8-729-663-47	2SC1364
Q113	8-729-663-47	2SC1364
Q201	8-729-612-77	2SA1027R
Q202	8-729-612-77	2SA1027R
Q203	8-729-612-77	2SA1027R
Q204	8-729-612-77	2SA1027R
Q205	8-729-612-77	2SA1027R
Q206	8-729-612-77	2SA1027R
Q207	8-729-663-47	2SC1364
Q501	8-729-663-47	2SC1364
Q502	8-729-663-47	2SC1364
Q503	8-729-201-04	2SC2878
Q504	8-729-612-77	2SA1027R
Q505	8-729-177-43	2SD774

Ref. No.	Parts No.	Description
Q506	8-729-612-77	2SA1027R
Q507	8-729-177-43	2SD774
Q508	8-729-177-43	2SD774
Q509	8-729-177-43	2SD774
Q510	8-729-117-44	2SD774-5
Q511	8-729-177-43	2SD774
Q512	8-729-177-43	2SD774
Q513	8-729-117-44	2SD774-5
Q514	8-729-177-43	2SD774
Q515	8-729-177-43	2SD774
Q516	8-729-117-44	2SD774-5
Q517	8-729-177-43	2SD774
Q518	8-729-177-43	2SD774
Q601	8-729-384-48	2SA844
Q701	8-729-663-47	2SC1364
Q702	8-729-663-47	2SC1364
Q801	8-729-663-47	2SC1364
Q802	8-729-663-47	2SC1364
R94	1-244-861-00	CARBON 330 5% 1/2W
R95	1-244-861-00	CARBON 330 5% 1/2W
R511	1-244-817-00	CARBON 4.7 5% 1/2W
R523	1-244-825-00	CARBON 10 5% 1/2W
R525	1-244-833-00	CARBON 22 5% 1/2W
R531	1-244-825-00	CARBON 10 5% 1/2W
R532	1-244-833-00	CARBON 22 5% 1/2W
R539	1-244-825-00	CARBON 10 5% 1/2W
R540	1-244-825-00	CARBON 10 5% 1/2W
RV1	1-224-254-XX	VAR, METAL 47K
RV2	1-224-253-XX	VAR, METAL 22K
RV3	1-224-254-XX	VAR, METAL 47K
RV4	1-224-251-XX	VAR, METAL 4700
RV5	1-224-250-XX	VAR, METAL 2.2K
RV6	1-224-134-XX	VAR, METAL 470K
RV7	1-224-248-XX (S/N up to 12335 (PAL) S/N up to 10185 (SECAM))	VAR, METAL 470
RV101	1-224-254-XX	VAR, METAL 47K
RV102	1-224-253-XX	VAR, METAL 22K
RV103	1-224-254-XX	VAR, METAL 47K
RV104	1-224-251-XX	VAR, METAL 4700
RV105	1-224-250-XX	VAR, METAL 2.2K
RV106	1-224-134-XX	VAR, METAL 470K
RV107	1-224-248-XX (S/N up to 12335 (PAL) S/N up to 10185 (SECAM))	VAR, METAL 470
RV202	1-224-255-XX	VAR, METAL 100K

E. PARTS

NOTE:

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AU-13 (AU-25), BRUSH, CC-9, CC-10, CC-11

Ref. No.	Parts No.	Description
RV203	**1-224-255-XX**	**VAR, METAL 100K**
RV204	**1-224-255-XX**	**VAR, METAL 100K**
RV205	**1-224-255-XX**	**VAR, METAL 100K**
RV206	**1-224-255-XX**	**VAR, METAL 100K**
RV207	**1-224-255-XX**	**VAR, METAL 100K**
RV208	**1-224-255-XX**	**VAR, METAL 100K**
RV209	**1-224-255-XX**	**VAR, METAL 100K**
RV501	**1-224-247-XX**	**VAR, METAL 100**
RV502	**1-224-247-XX**	**VAR, METAL 100**
RY501	**1-515-475-00**	**12V, 280 OHM**
RY502	**1-515-475-00**	**12V, 280 OHM**
T1	**1-427-562-11**	**INPUT/OUTPUT**
T2	**1-427-284-00**	**OUTPUT**
T101	**1-427-562-11**	**INPUT/OUTPUT**
T102	**1-427-284-00**	**OUTPUT**
T501	**1-433-195-00**	**OSC.**
T502	**1-433-196-00**	**BIAS**
T503	**1-433-196-00**	**BIAS**
T504	**1-433-196-00**	**BIAS**
TH1	**1-800-200-00**	**S-3K**
TH101	**1-800-200-00**	**S-3K**

BRUSH BOARD

1-582-150-00	PRINTED CIRCUIT BOARD, BRUSH

CC-9 BOARD

1-604-429-00	PRINTED CIRCUIT BOARD, CC-9

Ref. No.	Parts No.	Description
CC-10 BOARD		
	1-604-430-00	PRINTED CIRCUIT BOARD, CC-10
IC1	**8-719-140-05**	**PS4005 (NEC)**
CC-11 BOARD		
	1-604-431-00	PRINTED CIRCUIT BOARD, CC-11
IC2	**8-719-140-05**	**PS4005 (NEC)**

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Ref. No.	Parts No.	Description
CD-14 BOARD		
	A-6711-304-A	MOUNTED CIRCUIT BOARD, CD-14
C1	1-131-498-00	TANTALUM 1 10% 25V
C5	1-131-498-00	TANTALUM 1 10% 25V
C13	1-107-049-00	MICA 8.2PF 500V
C14	1-107-042-00	MICA 2.2PF 500V
C16	1-102-759-00	CERAMIC 62PF UJ 5% 50V
C18	1-107-207-00	MICA 16PF 5% 500V
C20	1-108-575-00	MYLAR 0.0068 5% 50V
C21	1-131-361-00	TANTALUM 2.2 10% 20V
C22	1-131-343-00	TANTALUM 0.22 10% 35V
C23	1-108-569-00	MYLAR 0.0039 5% 50V
C24	1-108-579-00	MYLAR 0.01 5% 50V
C27	1-131-379-00	TANTALUM 22 10% 10V
C28	1-131-362-00	TANTALUM 3.3 10% 20V
C29	1-131-379-00	TANTALUM 22 10% 10V
C30	1-131-362-00	TANTALUM 3.3 10% 20V
C38	1-108-555-00	MYLAR 0.001 5% 50V
C73	1-107-203-00	MICA 11PF 5% 500V
C117	1-131-498-00	TANTALUM 1 10% 25V
C118	1-108-577-00	MYLAR 0.0082 5% 50V
C120	1-109-555-00	DIPPED MICA 560PF 5% 100V
C122	1-109-160-00	DIPPED MICA 390PF 5% 300V
C127	1-108-556-00	MYLAR 0.001 5% 50V
C129	1-108-569-00	MYLAR 0.0039 5% 50V
C132	1-109-557-00	DIPPED MICA 680PF 5% 100V
C133	1-109-557-00	DIPPED MICA 680PF 5% 100V
C134	1-108-575-00	MYLAR 0.0068 5% 50V
C139	1-131-344-00	TANTALUM 0.33 10% 35V
C148	1-108-579-00	MYLAR 0.01 5% 50V
C149	1-131-377-00	TANTALUM 10 10% 10V
C150	1-108-561-00	MYLAR 0.0018 5% 50V
C152	1-108-555-00	MYLAR 0.001 5% 50V
C154	1-131-498-00	TANTALUM 1 10% 25V
C157	1-108-555-00	MYLAR 0.001 5% 50V
C158	1-131-345-00	TANTALUM 0.47 10% 35V
C160	1-107-026-00	MICA 5.1PF 10% 500V
C207	1-108-555-00	MYLAR 0.001 5% 50V
C208	1-108-579-00	MYLAR 0.01 5% 50V
C219	1-108-587-00	MYLAR 0.022 5% 50V
C221	1-131-377-00	TANTALUM 10 10% 10V

Ref. No.	Parts No.	Description
C223	1-131-377-00	TANTALUM 10 10% 10V
C226	1-108-555-00	MYLAR 0.001 5% 50V
C360	1-131-498-00	TANTALUM 1 10% 25V
C363	1-131-498-00	TANTALUM 1 10% 25V
C364	1-131-498-00	TANTALUM 1 10% 25V
C401	1-107-026-00	MICA 5.1PF 500V
C509	1-108-555-00	MYLAR 0.001 5% 50V
C510	1-108-555-00	MYLAR 0.001 5% 50V
C512	1-107-158-00	MICA 30PF 5% 500V
C514	1-108-251-00	MYLAR 0.1 5% 50V
CV1	1-141-130-00	TRIMMER 2.5PF ~ 18PF
CV2	1-141-130-00	TRIMMER 2.5PF ~ 18PF
D1	8-719-815-59	1S1555-S
D6	8-719-815-55	1S1555
D7	8-719-815-55	1S1555
D8	8-719-815-55	1S1555
D101	8-719-815-55	1S1555
D102	8-719-815-55	1S1555
D103	8-719-815-55	1S1555
D104	8-719-815-55	1S1555
D105	8-719-815-55	1S1555
D106	8-719-815-55	1S1555
D107	8-719-815-59	1S1555-S
D108	8-719-815-59	1S1555-S
D109	8-719-815-55	1S1555
D201	8-719-815-55	1S1555
D202	8-719-815-55	1S1555
D203	8-719-709-25	1S1925-P
D204	8-719-709-25	1S1925-P
D301	8-719-815-55	1S1555
D302	8-719-815-55	1S1555
D303	8-719-815-55	1S1555
D304	8-719-815-55	1S1555
DL1	1-415-096-00	0.3μS (S/N. up to 13725)
	1-415-096-31	(S/N. 13726 and higher)
DL2	1-415-096-00	0.3μS (S/N. up to 13725)
	1-415-096-31	(S/N. 13726 and higher)
FL1	1-235-011-00	LOW PASS
FL2	1-231-382-00	BAND PASS
FL101	1-231-377-00	BAND PASS

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CD-14

Ref. No.	Parts No.	Description
IC1	8-751-300-00	CX-130 (SONY)
IC2	8-758-720-00	CX-872 (SONY)
IC3	8-751-300-00	CX-130 (SONY)
IC101	8-759-200-60	TA7060AP (TOSHIBA)
IC102	8-743-890-00	BX-389 (SONY)
IC103	8-759-345-38	HD14538BP (HITACHI)
IC104	8-759-245-28	TC4528BP (MC14528BCP; MOT)
IC105	8-759-908-59	CX-859 (SONY)
IC106	8-759-245-28	TC4528BP (MC14528BCP; MOT)
IC201	8-759-200-60	TA7060AP (TOSHIBA)
IC202	8-749-938-80	BX-388 (SONY)
IC203	8-751-300-00	CX-130 (SONY)
IC303	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC501	8-751-300-00	CX-130 (SONY)
IC502	8-759-969-13	SN16913P (TI)
L306	1-407-167-61	MICRO 68μH 5%
LV501	1-407-573-00	VAR 47
Q1	8-729-384-48	2SA844
Q2	8-729-201-04	2SC2878
Q3	8-724-375-01	2SC403C
Q4	8-724-375-01	2SC403C
Q5	8-729-384-48	2SA844
Q7	8-729-663-47	2SC1364
Q8	8-729-201-04	2SC2878
Q9	8-729-201-04	2SC2878
Q10	8-729-663-47	2SC1364
Q11	8-729-663-47	2SC1364
Q12	8-724-375-01	2SC403C
Q13	8-724-375-01	2SC403C
Q14	8-729-663-47	2SC1364
Q15	8-724-375-01	2SC403C
Q16	8-724-375-01	2SC403C
Q24	8-729-663-47	2SC1364
Q25	8-729-201-04	2SC2878
Q101	8-729-663-47	2SC1364
Q102	8-724-375-01	2SC403C
Q103	8-729-384-48	2SA844
Q104	8-729-384-48	2SA844
Q105	8-729-663-47	2SC1364
Q107	8-729-663-47	2SC1364
Q109	8-724-375-01	2SC403C
Q110	8-729-663-47	2SC1364
Q111	8-729-113-32	2SB733
Q112	8-729-663-47	2SC1364
Q113	8-729-663-47	2SC1364
Q201	8-724-375-01	2SC403C
Q202	8-725-412-00	2SC1124

Ref. No.	Parts No.	Description
Q203	8-725-412-00	2SC1124
Q204	8-724-375-01	2SC403C
Q205	8-724-375-01	2SC403C
Q206	8-724-375-01	2SC403C
Q301	8-724-375-01	2SC403C
Q302	8-724-375-01	2SC403C
Q303	8-724-375-01	2SC403C
Q304	8-729-384-48	2SA844
Q305	8-729-384-48	2SA844
Q306	8-724-375-01	2SC403C
Q307	8-729-663-47	2SC1364
Q308	8-724-375-01	2SC403C
Q309	8-724-375-01	2SC403C
Q310	8-724-375-01	2SC403C
Q311	8-724-375-01	2SC403C
Q312	8-724-375-01	2SC403C
Q313	8-729-384-48	2SA844
Q314	8-729-663-47	2SC1364
Q315	8-729-663-47	2SC1364
Q316	8-729-384-48	2SA844
Q501	8-724-375-01	2SC403C
Q502	8-724-375-01	2SC403C
Q503	8-729-663-47	2SC1364
R21	1-212-718-00	METAL 470K 1/2W 1%
R23	1-214-146-00	METAL 3.9K 1/4W 1%
R24	1-214-154-00	METAL 8.2K 1/4W 1%
R220	1-244-835-00	CARBON 27 1/2W 5%
R221	1-244-835-00	CARBON 27 1/2W 5%
RV1	1-224-251-XX	VAR, METAL 4.7K
RV2	1-224-253-XX	VAR, METAL 22K
RV5	1-224-253-XX	VAR, METAL 22K
RV7	1-224-252-XX	VAR, METAL 10K
RV101	1-224-250-XX	VAR, METAL 2.2K
RV102	1-224-252-XX	VAR, METAL 10K
RV103	1-224-252-XX	VAR, METAL 10K
RV104	1-224-251-XX	VAR, METAL 4.7K
RV105	1-224-253-XX	VAR, METAL 22K
RV106	1-224-251-XX	VAR, METAL 4.7K
RV107	1-224-249-XX	VAR, METAL 1K
RV108	1-224-252-XX	VAR, METAL 10K
RV109	1-224-252-XX	VAR, METAL 10K
RV110	1-224-253-XX	VAR, METAL 22K
RV201	1-224-660-21	VAR, METAL 1K
RV202	1-224-252-XX	VAR, METAL 10K
RV203	1-224-249-XX	VAR, METAL 1K
RV301	1-226-773-00	VAR, METAL 22K
RV302	1-226-775-00	VAR, METAL 100K
RV399	1-224-550-21	VAR, METAL 220

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Ref. No.	Parts No.	Description
T1	**1-425-880-21**	**BURST AMP**
X1	**1-527-345-00**	**4.43MHz**

EK-2 BOARD

	1-604-354-00	PRINTED CIRCUIT BOARD, EK-2
IC1	**8-719-104-42**	**PS4005-L (NEC)**

EK-3 BOARD

	1-604-355-00	PRINTED CIRCUIT BOARD, EK-3
IC1	**8-719-104-42**	**PS4005-L (NEC)**

EM-1 BOARD

A-6748-123-B	DME ASS'Y EM-1

Ref. No.	Parts No.	Description
FU-16 BOARD		
⚠	1-605-936-00	PRINTED CIRCUIT BOARD, FU-16 (S/N, Up to 12585)
⚠	1-605-936-13	PRINTED CIRCUIT BOARD FU-16 (S/N, 12586 and higher)
⚠	**1-533-037-XX**	**HOLDER, FUSE**
⚠ **F5**	**1-532-325-00**	**6.3A (TIME LAG)**
⚠ **F6**	**1-532-299-00**	**5A (TIME LAG)**
⚠ **F7**	**1-532-325-00**	**6.3A (TIME LAG)**
⚠ **F8**	**1-532-299-00**	**5A (TIME LAG)**

HP-5 BOARD

	1-604-378-00	PRINTED CIRCUIT BOARD, HP-5
C1	**1-108-579-00**	**MYLAR 0.01 5% 50V**
CN1	**1-507-553-00**	**JACK "HEADPHONES"**
RV1	**1-228-218-00**	**VAR, CARBON 500x2**

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KY-9 (KY-14, DP-9)

Ref. No.	Parts No.	Description
KY-9 BOARD		
	A-6717-205-A	MOUNTED CIRCUIT BOARD, KY-9 (WITH KY-14, DP-9)
	1-604-347-00	PRINTED CIRCUIT BOARD, KY-14
	1-604-349-00	PRINTED CIRCUIT BOARD, DP-9
C3	**1-102-108-00**	**CERAMIC 150PF 10% 50V**
C4	**1-102-119-00**	**CERAMIC 0.0015 10% 50V**
C6	**1-102-114-00**	**CERAMIC 470PF 10% 50V**
C7	**1-102-112-00**	**CERAMIC 330PF 10% 50V**
C8	**1-131-377-00**	**TANTALUM 10 10% 10V**
C9	**1-131-346-00**	**TANTALUM 0.68 10% 35V**
C11	**1-102-114-00**	**CERAMIC 470PF 10% 50V**
C12	**1-102-114-00**	**CERAMIC 470PF 10% 50V**
C13	**1-102-113-00**	**CERAMIC 390PF 10% 50V**
C14	**1-102-114-00**	**CERAMIC 470PF 10% 50V**
C25	**1-102-110-00**	**CERAMIC 220PF 10% 50V**
CN4	1-560-454-00	40P
D1	**8-719-815-55**	**1S1555**
D2	**8-719-904-55**	**GL-5HD5**
D3	**8-719-904-55**	**GL-5HD5**
D4	**8-719-904-55**	**GL-5HD5**
D5	**8-719-904-55**	**GL-5HD5**
D6	**8-719-904-55**	**GL-5HD5**
D7	**8-719-803-21**	**TLR321**
D8	**8-719-803-21**	**TLR321**
D9	**8-719-803-21**	**TLR321**
D10	**8-719-803-21**	**TLR321**
IC1	**8-759-900-05**	**SN74LS05N (TI)**
IC2	**8-759-171-05**	**μPC7805H (NEC)**
IC3	**8-759-645-17**	**M54517P (MITSUBISHI)**
IC4	**8-759-240-99**	**TC4099BP (CD4099BE; RCA)**
IC5	**8-759-245-12**	**TC4512BP (MC14512BCP; MOT)**
IC6	**8-759-245-12**	**TC4512BP (MC14512BCP; MOT)**
IC7	**8-759-241-61**	**TC40161BP (CD40161BE; RCA)**
IC8	**8-759-045-84**	**MC14584BCP (MOTOROLA)**
IC9	**8-759-245-12**	**TC4512BP (MC14512BCP; MOT)**
IC10	**8-759-240-15**	**TC4015BP (CD4015BE; RCA)**

Ref. No.	Parts No.	Description
IC11	**8-759-245-12**	**TC4512BP (MC14512BCP; MOT)**
IC12	**8-759-245-16**	**TC4516BP (MC14516BCP; MOT)**
IC13	**8-759-245-28**	**TC4528BP (MC14528BCP; MOT)**
IC14	**8-759-240-01**	**TC4001BP (CD4001BE; RCA)**
IC15	**8-759-240-13**	**TC4013BP (CD4013BE; RCA)**
IC16	**8-759-240-13**	**TC4013BP (CD4013BE; RCA)**
IC17	**8-759-240-11**	**TC4011BP (CD4011BE; RCA)**
IC18	**8-759-240-11**	**TC4011BP (CD4011BE; RCA)**
IC19	**8-759-045-84**	**MC14584BCP (MOTOROLA)**
IC20	**8-759-240-30**	**TC4030BP (CD4030BE; RCA)**
IC21	**8-759-240-30**	**TC4030BP (CD4030BE; RCA)**
IC22	**8-759-245-12**	**TC4512BP (MC14512BCP; MOT)**
IC23	**8-759-240-99**	**TC4099BP (CD4099BE; RCA)**
IC24	**8-759-645-17**	**M54517P (MITSUBISHI)**
IC25	**8-759-240-99**	**TC4099BP (CD4099BE; RCA)**
IC26	**8-759-245-12**	**TC4512BP (MC14512BCP; MOT)**
IC27	**8-759-645-17**	**M54517P (MITSUBISHI)**
IC28	**8-759-645-17**	**M54517P (MITSUBISHI)**
IC29	**8-759-901-56**	**SN74LS156N (TI)**
IC31	**8-759-100-64**	**μPA64H (NEC)**
IC32	**8-759-100-54**	**μPA54H (NEC)**
IC33	**8-759-100-54**	**μPA54H (NEC)**
IC34	**8-759-100-64**	**μPA64H (NEC)**
PL1	**1-518-386-00**	**5V, 30mA**
PL2	**1-518-386-00**	**5V, 30mA**
PL3	**1-518-386-00**	**5V, 30mA**
Q1	**8-729-374-02**	**2SB740**
Q2	**8-729-374-02**	**2SB740**
Q3	**8-729-374-02**	**2SB740**
Q4	**8-729-374-02**	**2SB740**
Q5	**8-729-374-02**	**2SB740**
Q6	**8-729-374-02**	**2SB740**
Q7	**8-729-374-02**	**2SB740**
Q8	**8-729-374-02**	**2SB740**
R1	**1-212-502-00**	**METAL 51 1% 1/2W**
R2	**1-212-502-00**	**METAL 51 1% 1/2W**
R3	**1-212-502-00**	**METAL 51 1% 1/2W**
R4	**1-212-502-00**	**METAL 51 1% 1/2W**
R15	**1-214-100-00**	**METAL 47 1% 1/4W**

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Ref. No.	Parts No.	Description
R16	1-214-100-00	METAL 47 1% 1/4W
R17	1-214-100-00	METAL 47 1% 1/4W
R18	1-214-100-00	METAL 47 1% 1/4W
R19	1-214-100-00	METAL 47 1% 1/4W
R20	1-214-100-00	METAL 47 1% 1/4W
R21	1-214-100-00	METAL 47 1% 1/4W
R26	1-214-108-00	METAL 100 1% 1/4W
R35	1-214-119-00	METAL 300 1% 1/4W
R36	1-214-119-00	METAL 300 1% 1/4W
R37	1-214-119-00	METAL 300 1% 1/4W
R38	1-214-119-00	METAL 300 1% 1/4W
R39	1-214-108-00	METAL 100 1% 1/4W
R40	1-214-119-00	METAL 300 1% 1/4W
R41	1-214-108-00	METAL 100 1% 1/4W
R42	1-212-502-00	METAL 51 1% 1/2W
R43	1-212-502-00	METAL 51 1% 1/2W
R44	1-212-502-00	METAL 51 1% 1/2W
R45	1-212-502-00	METAL 51 1% 1/2W
R46	1-212-502-00	METAL 51 1% 1/2W
R47	1-212-502-00	METAL 51 1% 1/2W
R48	1-212-502-00	METAL 51 1% 1/2W
R49	1-212-502-00	METAL 51 1% 1/2W
R50	1-212-502-00	METAL 51 1% 1/2W
R51	1-212-502-00	METAL 51 1% 1/2W
R52	1-212-502-00	METAL 51 1% 1/2W
R53	1-212-502-00	METAL 51 1% 1/2W
R54	1-212-502-00	METAL 51 1% 1/2W
R55	1-212-502-00	METAL 51 1% 1/2W
R56	1-212-502-00	METAL 51 1% 1/2W
S1	1-554-318-11	KEY "ASSEMBLE" 12 SQUARE
	1-518-450-31	PILOT LAMP 5V 60mA
	3-706-480-01	KEY TOP (WHITE)
S2	1-554-318-11	KEY "VIDEO INS" 12 SQUARE
	1-518-450-31	PILOT LAMP 5V 60mA
	3-706-480-11	KEY TOP (WHITE)
S3	1-554-318-11	KEY "AUDIO 1 INS" 12 SQUARE
	1-518-450-31	PILOT LAMP 5V 60mA
	3-706-480-01	KEY TOP (WHITE)
S4	1-554-318-11	KEY "AUDIO 2 INS" 12 SQUARE
	1-518-450-31	PILOT LAMP 5V 60mA
	3-706-480-01	KEY TOP (WHITE)
S5	1-554-318-11	KEY "PREROLL" 12 SQUARE
	1-518-450-31	PILOT LAMP 5V 60mA
	3-706-480-01	KEY TOP (WHITE)
S6	1-554-318-11	KEY "PREVIEW" 12 SQUARE
	1-518-450-31	PILOT LAMP 5V 60mA
	3-706-480-01	KEY TOP (WHITE)
S7	1-554-318-21	KEY "AUTO EDIT" 12 SQUARE
	1-518-450-31	PILOT LAMP 5V 60mA
	3-706-480-11	KEY TOP (RED)
S8	1-554-318-11	KEY "REVIEW" 12 SQUARE
	1-518-450-31	PILOT LAMP 5V 60mA
	3-706-480-01	KEY TOP (WHITE)
S9	1-554-318-11	KEY "IN" 12 SQUARE
	1-518-450-31	PILOT LAMP 5V 60mA
	3-706-480-01	KEY TOP (WHITE)
S10	1-554-318-11	KEY "OUT" 12 SQUARE
	1-518-450-31	PILOT LAMP 5V 60mA
	3-706-480-01	KEY TOP (WHITE)
S11	1-554-318-11	KEY "STANDBY" 12 SQUARE
	1-518-450-31	PILOT LAMP 5V 60mA
	3-706-480-01	KEY TOP (WHITE)
S12	1-553-551-21	KEY "REC" 17 SQUARE
	1-518-450-21	PILOT LAMP 5V 60mA
	3-706-481-01	KEY TOP (RED)
S13	1-554-318-11	KEY "EDIT" 12 SQUARE
	1-518-450-31	PILOT LAMP 5V 60mA
	3-706-480-01	KEY TOP (WHITE)
S14	1-554-318-31	KEY "EJECT" 12 SQUARE
	1-518-450-31	PILOT LAMP 5V 60mA
	3-706-480-21	KEY TOP (BLUE)
S15	1-553-551-11	KEY "REW" 17 SQUARE
	1-518-450-21	PILOT LAMP 5V 60mA
	3-706-481-01	KEY TOP (WHITE)
S16	1-553-551-11	KEY "PLAY" 17 SQUARE
	1-518-450-21	PILOT LAMP 5V 60mA
	3-706-481-01	KEY TOP (WHITE)
S17	1-553-551-11	KEY "FF" 17 SQUARE
	1-518-450-21	PILOT LAMP 5V 60mA
	3-706-481-01	KEY TOP (WHITE)
S18	1-553-551-32	KEY "STOP" 17 SQUARE
	1-518-450-21	PILOT LAMP 5V 60mA
	3-706-481-21	KEY TOP (BLUE)
S19	1-554-318-11	KEY "SEARCH" 12 SQUARE
	1-518-450-31	PILOT LAMP 5V 60mA
	3-706-480-01	KEY TOP (WHITE)
S20	1-516-994-00	LEVER SLIDE "VIDEO"
S21	1-552-539-00	KEY "TRIM –"
S22	1-552-539-00	KEY "TRIM +"
S23	1-552-539-00	KEY "ENTRY"
S24	1-552-539-00	KEY "LAP"
S25	1-552-539-00	KEY "RESET"
S26	1-552-539-00	KEY "PLAYER"
S27	1-552-539-00	KEY "RECORDER"

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LV-1, MB-8, MB-9, MD-12

Ref. No.	Parts No.	Description
LV-1 BOARD		
	1-604-371-00	PRINTED CIRCUIT BOARD, LV-1
S1	**1-516-994-00**	**LEVER SLIDE "VIDEO LEVEL"**
MB-8 BOARD		
	A-6728-470-A	MOUNTED CIRCUIT BOARD, MB-8
CN111	1-561-654-00	86P
CN112	1-561-654-00	86P
CN113	1-561-654-00	86P
CN114	1-561-654-00	86P
CN115	1-561-654-00	86P
CN116	1-561-654-00	86P
CN117	1-561-654-00	86P
CN142	1-564-773-11	40P
MB-9 BOARD		
	A-6728-238-A	MOUNTED CIRCUIT BOARD, MB-9
CN51	1-561-654-00	86P
CN52	1-561-654-00	86P
CN53	1-555-700-00	WIRE ASS'Y, FLAT 34P (370mm)
CN54	1-560-547-00	40P
MD-12 BOARD		
	A-6711-302-A	MOUNTED CIRCUIT BOARD, MD-12
C9	**1-107-202-00**	**MICA 10PF 5% 500V**
	1-107-206-00	**MICA 15PF 5% 500V**
	1-107-026-00	**MICA 5.1PF 500V**
C16	**1-131-371-00**	**TANTALUM 10 10% 16V**
C19	**1-108-611-00**	**MYLAR 0.22 5% 50V**
C20	**1-131-356-00**	**TANTALUM 3.3 20% 25V**
C21	**1-108-559-00**	**MYLAR 0.0015 5% 50V**
C22	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C24	**1-109-687-00**	**DIPPED MICA 390PF 1% 500V**
C26	**1-109-549-00**	**DIPPED MICA 390PF 5% 100V**
C33	**1-107-211-00**	**MICA 24PF 5% 500V**
C36	**1-108-563-00**	**MYLAR 0.0022 5% 50V**
C48	**1-107-202-00**	**MICA 10PF 5% 50V**
	1-107-206-00	**MICA 15PF 5% 50V**
	1-107-026-00	**MICA 5.1PF 500V**
C52	**1-108-569-00**	**MYLAR 0.0039 5% 50V**
C56	**1-131-498-00**	**TANTALUM 1 20% 25V**
C66	**1-131-359-00**	**TANTALUM 10 20% 25V**
C106	**1-102-759-00**	**CERAMIC 62PF UJ 5% 50V**
C108	**1-131-361-00**	**TANTALUM 2.2 20% 20V**
C111	**1-131-361-00**	**TANTALUM 2.2 20% 20V**
C114	**1-108-555-00**	**MYLAR 0.001 5% 50V**
C116	**1-109-157-00**	**DIPPED MICA 300PF 5% 500V**
C117	**1-109-158-00**	**DIPPED MICA 330PF 5% 500V**
C118	**1-131-359-00**	**TANTALUM 10 10% 25V**
C121	**1-107-157-00**	**MICA 27PF 5% 500V**
C122	**1-107-159-00**	**MICA 33PF 5% 500V**
C136	**1-108-603-00**	**MYLAR 0.1 5% 50V**
C138	**1-108-603-00**	**MYLAR 0.1 5% 50V**
C148	**1-108-571-00**	**MYLAR 0.0047 5% 50V**
C210	**1-108-555-00**	**MYLAR 0.001 5% 50V**
C214	**1-108-603-00**	**MYLAR 0.1 5% 50V**
C304	**1-131-345-00**	**TANTALUM 0.47 20% 35V**
C401	**1-107-026-00**	**MICA 5.1PF 500V**
C402	**1-107-026-00**	**MICA 5.1PF 500V**
C501	**1-108-567-00**	**MYLAR 0.0033 5% 50V**
C502	**1-108-555-00**	**MYLAR 0.001 5% 50V**
C503	**1-108-567-00**	**MYLAR 0.0033 5% 50V**
C504	**1-108-555-00**	**MYLAR 0.001 5% 50V**
C505	**1-108-555-00**	**MYLAR 0.001 5% 50V**
C506	**1-108-555-00**	**MYLAR 0.001 5% 50V**
CV101	**1-141-167-00**	**TRIMMER, 2.5PF ~ 18PF**
CV102	**1-141-246-00**	**TRIMMER, 2.5PF ~ 18PF**
CV401	**1-141-240-00**	**TRIMMER 20PF** (S/N. 12286 and higher(PAL))
CV402	**1-141-240-00**	**TRIMMER 20PF** (S/N. 12286 and higher(PAL))
D1	**8-719-815-55**	**1S1555**
D2	**8-719-815-55**	**1S1555**
D3	**8-719-815-55**	**1S1555**
D4	**8-719-815-55**	**1S1555**
D5	**8-719-101-97**	**1SS97-1**

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Ref. No.	Parts No.	Description
D6	8-719-101-97	1SS97-1
D7	8-719-815-55	1S1555
D8	8-719-815-55	1S1555
D9	8-719-815-55	1S1555
D10	8-719-815-55	1S1555
D11	8-719-815-55	1S1555
D12	8-719-815-55	1S1555
D101	8-719-815-59	1S1556-S
D102	8-719-815-55	1S1555
D103	8-719-915-43	FC54M
D104	8-719-815-55	1S1555
D201	8-719-815-55	1S1555
D202	8-719-815-55	1S1555
D501	8-719-815-55	1S1555
DL101	1-415-096-00	0.3μS (S/N. up to 13725)
	1-415-096-31	0.3μS (S/N. 13726 and higher)
FL1	1-231-380-00	LOW PASS (S/N. up to 13525)
	1-231-380-21	(S/N. 13526 and higher)
FL2	1-231-378-00	LOW PASS
FL3	1-235-009-00	HIGH PASS (S/N. up to 13525)
	1-235-009-21	(S/N. 13526 and higher)
FL101	1-235-013-21	BAND PASS
FL102	1-231-578-00	LOW PASS (S/N. up to 13525)
	1-231-578-21	(S/N. 13526 and higher)
IC1	8-751-300-00	CX-130 (SONY)
IC2	8-751-310-00	CX-131A (SONY)
IC3	8-759-200-60	TA7060AP (TOSHIBA)
IC4	8-751-300-00	CX-130 (SONY)
IC101	8-751-300-00	CX-130 (SONY)
IC102	8-751-880-00	CX-188 (SONY)
IC103	8-751-300-00	CX-130 (SONY)
IC104	8-759-345-38	HD14538BP (HITACHI)
IC201	8-743-890-00	BX-389 (SONY)
IC202	8-759-240-66	TC4066BP (CD4066BE; RCA)
IC203	8-759-145-58	μPC4558C (NEC)
IC301	8-749-909-15	BX3915A (SONY)
IC501	8-759-345-38	HD14538BP (HITACHI)
IC502	8-759-240-15	TC4015BP (CD4015BE; RCA)
IC503	8-759-345-38	HD14538BP (HITACHI)

Ref. No.	Parts No.	Description
IC504	8-759-240-13	TC4013BP (CD4013BE; RCA)
IC505	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC506	8-759-240-23	TC4023BP (CD4023BE; RCA)
IC507	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC508	8-759-240-11	TC4011BP (CD4011BE; RCA)
LV1	1-407-566-00	VAR 3.3μH
LV101	1-407-572-00	VAR 33μH
Q1	8-729-663-47	2SC1364
Q4	8-729-201-04	2SC2878
Q5	8-724-375-01	2SC403C
Q6	8-724-375-01	2SC403C
Q7	8-729-201-04	2SC2878
Q8	8-724-375-01	2SC403C
Q9	8-729-113-32	2SB733
Q10	8-729-663-47	2SC1364
Q13	8-724-375-01	2SC403C
Q14	8-724-375-01	2SC403C
Q15	8-724-375-01	2SC403C
Q16	8-724-375-01	2SC403C
Q17	8-724-375-01	2SC403C
Q18	8-724-375-01	2SC403C
Q19	8-724-375-01	2SC403C
Q20	8-729-663-47	2SC1364
Q21	8-724-375-01	2SC403C
Q22	8-724-375-01	2SC403C
Q23	8-729-663-47	2SC1364
Q101	8-729-663-47	2SC1364
Q102	8-724-375-01	2SC403C
Q103	8-724-375-01	2SC403C
Q104	8-724-375-01	2SC403C
Q105	8-729-663-47	2SC1364
Q106	8-724-375-01	2SC403C
Q107	8-724-375-01	2SC403C
Q108	8-724-375-01	2SC403C
Q109	8-729-612-77	2SA1027R
Q110	8-729-663-47	2SC1364
Q111	8-729-663-47	2SC1364
Q201	8-724-375-01	2SC403C
Q202	8-724-375-01	2SC403C
Q203	8-724-375-01	2SC403C
R20	1-215-422-00	METAL 1.1K 1/6W 1%
R24	1-215-430-00	METAL 2.4K 1/6W 1%

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Ref. No.	Parts No.	Description
R38	**1-214-122-00**	**METAL 390 1/4W 1%**
RV1	**1-224-250-XX**	**VAR, METAL 2.2K**
RV2	**1-224-251-XX**	**VAR, METAL 4.7K**
RV3	**1-224-249-XX**	**VAR, METAL 1K**
RV4	**1-224-251-XX**	**VAR, METAL 4.7K**
RV5	**1-224-250-XX**	**VAR, METAL 2.2K**
RV6	**1-224-250-XX**	**VAR, METAL 2.2K**
RV101	**1-224-249-XX**	**VAR, METAL 1K**
RV102	**1-224-251-XX**	**VAR, METAL 4.7K**
RV103	**1-224-254-XX**	**VAR, METAL 47K**
RV201	**1-224-254-XX**	**VAR, METAL 47K**
RV202	**1-224-250-XX**	**VAR, METAL 2.2K**
RV203	**1-224-871-00**	**VAR, METAL 1M**
RV501	**1-224-256-XX**	**VAR, METAL 220K**
RV502	**1-224-256-XX**	**VAR, METAL 220K**
RV504	**1-224-256-XX**	**VAR, METAL 220K**
S1	**1-552-509-00**	**DIP**
T101	**1-425-880-21**	**BURST AMP**
TH1	**1-800-200-00**	**S-3K**
X101	**1-527-231-00**	**OSC 4.43MHz**
X102	**1-527-374-00**	**OSC 5.36MHz**

MF-1 BOARD

	1-604-365-00	PRINTED CIRCUIT BOARD, MF-1
R8	**1-207-628-00**	**WIRE 10 10% 3W**

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Ref. No.	Parts No.	Description
MS-5 BOARD		
	1-604-368-00	PRINTED CIRCUIT BOARD, MS-5
D1	**8-719-200-02**	**10E2 (ON THE MS-5(D))**
S1	**1-516-994-00**	**LEVER SLIDE** **FOR MS-5(A) "AUDIO LIMITER"** **FOR MS-5(D) "DUB/LINE"** **FOR MS-5(E) "LOCAL/REMOTE"**
	1-516-995-00	**LEVER SLIDE** **FOR MS-5(B) "MIXING SELECT"** **FOR MS-5(C) "MODE SELECT"**

PC-7 BOARD

	1-604-348-00	PRINTED CIRCUIT BOARD, PC-7
IC1	**8-719-104-42**	**PS4005-L (NEC)**

PC-8 BOARD

	A-6742-046-A	MOUNTED CIRCUIT BOARD, PC-8

Note: D1 and Q1 are precisely calibrated their physical position on PC-8 board in the factory by precision fixture.
Do not replace only D1 and Q1. Replace the entire PC-8 board, A-6742-046-A.

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PC-9, PC-12, PC-14, PD-14 (PD-15, PD-17, PD-21, DR-9, DR-8)

Ref. No.	Parts No.	Description
PC-9 BOARD		
	1-604-351-00	PRINTED CIRCUIT BOARD, PC-9
C1	**1-131-379-00**	**TANTALUM 22 10% 10V**
IC1	**8-759-133-90**	**μPC339C (NEC)**
IC2	**8-719-104-42**	**PS4005-L (NEC)**
IC3	**8-719-104-42**	**PS4005-L (NEC)**
IC4	**8-719-104-42**	**PS4005-L (NEC)**
PC-12 BOARD		
	A-6742-047-A	MOUNTED CIRCUIT BOARD, PC-12

Note: D1 and Q1 are precisely calibrated their physical position on PC-12 board in the factory by precision fixture.
Do not replace only D1 and Q1. Replace the entire PC-12 board, A-6742-047-A.

Ref. No.	Parts No.	Description
PC-14 BOARD		
	1-604-353-00	PRINTED CIRCUIT BOARD, PC-14
IC1	**8-719-104-42**	**PS4005-L (NEC)**

Ref. No.	Parts No.	Description
PD-14 BOARD		
⚠	A-6723-158-C	MOUNTED CIRCUIT BOARD, PD-14 (WITH PD-15, PD-17, PD-21, DR-9, DR-8)
	1-560-035-00	B to B, 5P
	1-604-361-00	PRINTED CIRCUIT BOARD, PD-15
	1-604-362-00	PRINTED CIRCUIT BOARD, PD-17
	1-608-010-00	PRINTED CIRCUIT BOARD, PD-21
	1-604-369-00	PRINTED CIRCUIT BOARD, DR-9
	1-604-373-00	PRINTED CIRCUIT BOARD, DR-8
C324	**1-108-555-00**	**MYLAR 0.001 5% 50V**
C332	**1-107-187-00**	**MICA 560PF 5% 500V**
C333	**1-107-187-00**	**MICA 560PF 5% 500V**
C334	**1-131-356-00**	**TANTALUM 3.3 10% 25V**
	1-131-365-00	**TANTALUM 10 10% 25V**
C365	**1-161-025-00**	**CERAMIC 0.1 25V**
CP301	**1-464-139-00**	**OSC.**
D301	**8-719-151-07**	**RD5.1E-B**
D302	**8-719-911-55**	**U05G**
D303	**8-719-815-55**	**1S1555**
D304	**8-719-815-55**	**1S1555**
D305	**8-719-112-88**	**RD12F-B**
D306	**8-719-102-07**	**RD2.0E**
D311	**8-719-200-02**	**10E-2**
D312	**8-719-113-07**	**RD13E-B**
D313	**8-719-113-07**	**RD13E-B**
D314	**8-719-200-02**	**10E-2**
IC301	**8-759-145-58**	**μPC4558C (RC4558; RAYTHEON)**
IC303	**8-759-979-12**	**μA7912UC (FSC)**
IC304	**8-759-145-58**	**μPC4558C (RC4558; RAYTHEON)**
IC305	**8-759-645-17**	**M54517P (MITSUBISHI)**
Q301	**8-729-374-72**	**2SA747**
Q302	**8-729-374-72**	**2SA747**
Q304	**8-729-177-43**	**2SD774**
Q305	**8-729-103-43**	**2SB734**

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Ref. No.	Parts No.	Description
Q306	8-729-168-11	2SC2681
Q307	8-729-311-62	2SC1116
Q308	8-729-177-43	2SD774
Q309	8-729-103-43	2SB734
Q310	8-729-168-11	2SC2681
Q311	8-729-311-62	2SC1116
Q312	8-723-302-00	2SK43-2
Q313	8-729-177-43	2SD774
Q314	8-729-374-02	2SB740
Q315	8-729-331-53	2SC2315
Q316	8-729-663-47	2SC1364
Q317	8-729-377-12	2SA771
Q318	8-729-168-11	2SC2681
Q319	8-729-168-11	2SC2681
Q320	8-729-374-02	2SB740
Q321	8-729-201-04	2SC2878
Q322	8-729-663-47	2SC1364
Q323	8-729-374-02	2SB740
Q324	8-729-114-11	2SA1141
Q325	8-729-177-43	2SD774
Q326	8-729-168-11	2SC2681
Q330	8-729-663-47	2SC1364
Q331	8-729-374-02	2SB740
Q332	8-765-481-20	2SA1028
Q333	8-765-481-20	2SA1028
Q334	8-729-663-47	2SC1364
Q335	8-729-663-47	2SC1364
Q336	8-729-374-02	2SB740
Q337	8-729-663-47	2SC1364
R311	1-207-619-00	WIREWOUND 0.82 10% 3W
R326	1-212-372-00	METAL 10 5% 1W
R332	1-212-352-00	METAL 0.22 5% 1W
R333	1-212-352-00	METAL 0.22 5% 1W
⚠ R334	1-217-465-00	FUSIBLE 0.47 10% 1W
RV1	1-224-249-XX	VAR, METAL 1K
RV2	1-224-249-XX	VAR, METAL 1K

Ref. No.	Parts No.	Description
PR-33 BOARD		
	1-604-511-00	PRINTED CIRCUIT BOARD, PR-33
S1	1-516-994-00	LEVER SLIDE "REMOTE 1/2"

PW-50 BOARD ----- (S/N. Up to 12585 (PAL) / S/N. Up to 10235 (SECAM))

⚠	1-604-363-00	PRINTED CIRCUIT BOARD, PW-50
⚠	1-533-037-XX	HOLDER, FUSE
⚠ C1	1-130-160-00	FILM 0.22 20% 250V
⚠ C2	1-161-744-00	CERAMIC 0.01 400V
⚠ C3	1-161-743-00	CERAMIC 0.0047 400V
⚠ C4	1-161-743-00	CERAMIC 0.0047 400V
⚠ C5	1-161-743-00	CERAMIC 0.0047 400V
⚠ C6	1-161-743-00	CERAMIC 0.0047 400V
C7	1-125-250-00	ELECT 3300 200V
C8	1-125-250-00	ELECT 3300 200V
⚠ C9	1-161-953-00	CERAMIC 0.0047 400V
⚠ C10	1-161-953-00	CERAMIC 0.0047 400V

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Ref. No.	Parts No.	Description
⚠C11	1-161-953-00	CERAMIC 0.0047 400V
⚠C12	1-161-953-00	CERAMIC 0.0047 400V
⚠C13	1-161-744-00	CERAMIC 0.01 400V
⚠CN151	1-560-033-00	3P
⚠CN152	1-560-033-00	3P
⚠CN153	1-560-034-00	6P
⚠CN154	1-560-034-00	6P
⚠CN155	1-560-008-00	3P
D1	8-719-911-55	U05G
D2	8-719-911-55	U05G
D3	8-719-911-55	U05G
D4	8-719-911-55	U05G
D5	8-719-200-02	10E-2
⚠F1	1-532-350-00	4A
⚠F2	1-532-634-00	10A, 150°C
⚠R1	1-217-632-00	WIREWOUND 10 10% 10W
R3	1-244-929-00	CARBON 220K 5% 1/2W
R4	1-244-929-00	CARBON 220K 5% 1/2W
⚠RY1	1-515-357-00	12V 75mA

Ref. No.	Parts No.	Description
⚠T1	1-421-457-00	LINE FILTER

PW-50 BOARD ----- (S/N. 12586 and higher (PAL) / S/N. 10236 and higher (SECAM))

⚠	1-604-363-16	PRINTED CIRCUIT BOARD, PW-50 (S/N. 12586 to 14355 (PAL) / S/N. 10236 to 10425 (SECAM))
⚠	1-604-363-17	PRINTED CIRCUIT BOARD, PW-50 (S/N. 14356 and higher (PAL) / S/N. 10426 and higher (SECAM))
⚠	1-533-037-XX	HOLDER, FUSE

⚠C1	1-130-160-00	MYLAR 0.22 20% 250V
⚠C2	1-161-744-00	CERAMIC 0.01 400V
⚠C3	1-161-741-00	CERAMIC 0.001 10% 400V
⚠C4	1-161-741-00	CERAMIC 0.001 10% 400V
⚠C5	1-161-741-00	CERAMIC 0.001 10% 400V
⚠C6	1-161-741-00	CERAMIC 0.001 10% 400V
C7	1-125-250-00	ELECT 3300 200V
C8	1-125-250-00	ELECT 3300 200V
⚠C9	1-161-743-00	CERAMIC 0.0047 400V
⚠C10	1-161-743-00	CERAMIC 0.0047 400V

E. PARTS

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PW-50, PW-79 (FU-16)

Ref. No.	Parts No.	Description
⚠C11	1-161-743-00	CERAMIC 0.0047 400V
⚠C12	1-161-743-00	CERAMIC 0.0047 400V
⚠C13	1-161-744-00	CERAMIC 0.01 400V
C14	1-131-371-00	TANTALUM 10 16V
⚠CN151	1-560-033-00	3P
⚠CN152	1-560-033-00	3P
⚠CN153	1-560-034-00	6P
⚠CN154	1-560-034-00	6P (S/N. 10001 to 14355 (P) / S/N. 10001 to 10425 (S))
D1	8-719-911-55	U05G
D2	8-719-911-55	U05G
D3	9-719-911-55	U05G
D4	8-719-911-55	U05G
D5	8-719-200-02	10E-2
D6	8-719-815-55	1S1555
⚠F1	1-532-350-00	4A
⚠F2	1-532-634-00	10A, 150°C
⚠PH1	1-519-244-00	NEON PHOTO COUPLER
Q1	8-729-663-47	2SC1364
Q2	8-729-177-43	2SD774

Ref. No.	Parts No.	Description
⚠R1	1-217-632-00	WIREWOUND 10 10% 10W
R3	1-244-929-00	CARBON 220K 5% 1/2W
R4	1-244-929-00	CARBON 220K 5% 1/2W
R5	1-247-276-00	CARBON, NONFLAMABLE 33K 5% 1/2W
R11	1-247-266-00	CARBON, NONFLAMABLE 12K 5% 1/2W
R12	1-247-284-00	CARBON, NONFLAMABLE 68K 5% 1/2W
R13	1-247-286-00	CARBON, NONFLAMABLE 82K 5% 1/2W
		(S/N. 14356 and higher (PAL) / S/N. 10426 and higher (SECAM))
⚠RY1	1-515-357-00	12V 75mA
⚠T1	1-421-457-00	LINE FILTER

PW-79 BOARD ----- (S/N. Up to 12585 (PAL) / S/N. Up to 10235 (SECAM))

	⚠1-413-071-22	SWITCHING REGURATOR (WITH PW-79, FU-16)
	1-533-037-XX	HOLDER, FUSE
	1-605-936-00	PRINTED CIRCUIT BOARD "FU-16"
C1	9-982-833-01	MYLAR 0.22 630V
C2	1-161-734-00	CERAMIC 0.0022 20% 400V
C3	1-161-734-00	CERAMIC 0.0022 20% 400V
C4	9-982-837-01	ELECT 22 400V
C5	1-130-141-00	MYLAR 0.01 20% 30V
C6	9-982-832-01	CERAMIC 0.001 500V
C7	9-982-835-01	MYLAR 0.47 50V
C8	1-108-579-00	MYLAR 0.01 5% 50V
C10	1-108-571-00	MYLAR 0.047 5% 50V
C11	9-982-836-01	MYLAR 0.068 50V
C13	9-982-840-01	ELECT 47 350V
C14	1-130-356-00	MYLAR 0.47 10% 250V
C15	1-130-356-00	MYLAR 0.47 10% 250V
C25	9-982-844-01	ELECT 10 250V
C26	9-982-844-01	ELECT 10 250V

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Ref. No.	Parts No.	Description
C27	9-982-844-01	ELECT 10 250V
C28	9-982-844-01	ELECT 10 250V
C29	9-982-844-01	ELECT 10 250V
C30	9-982-844-01	ELECT 10 250V
C31	9-982-834-01	MYLAR 2.2 250V
C32	1-161-741-00	CERAMIC 0.001 20% 400V
C33	1-161-741-00	CERAMIC 0.001 20% 400V
C34	9-982-834-01	MYLAR 2.2 250V
C36	1-108-579-00	MYLAR 0.01 5% 50V
D1	8-719-303-41	S-34
D2	8-719-815-80	1S1587
D3	8-719-815-80	1S1587
D4	8-719-815-80	1S1587
D5	8-719-815-80	1S1587
D6	8-719-815-80	1S1587
D7	8-719-815-80	1S1587
D8	8-719-912-52	ESAC25-02C
D9	8-719-912-52	ESAC25-02C
D10	8-719-912-50	ESAC25-02N
D11	8-719-912-52	ESAC25-02C
D12	8-719-924-06	ERC24-06S
D13	8-719-924-06	ERC24-06S
D14	8-719-156-25	RD5.6E-B2Z
D15	8-719-151-07	RD5.1E-B
D16	9-982-876-01	SCR, SF5G41
F1	9-982-878-01	THERMAL, 2A 120V 147degrees
IC1	8-759-729-03	NJM2903D (JRC)
L1	1-421-349-00	FILTER, LINE
L2	1-421-329-00	10
L4	1-421-348-00	6.5mH
L5	9-982-877-01	20
L6	9-982-877-01	20
L7	9-982-877-01	20
L8	9-982-877-01	20
L9	9-982-877-01	20
L10	9-982-877-01	20
L11	1-421-329-00	10
L12	1-421-329-00	10
L13	1-421-329-00	10
L14	1-421-329-00	10
L15	1-421-329-00	10

Ref. No.	Parts No.	Description
Q1	8-729-950-40	ETD55-040B
Q2	8-729-950-40	ETD55-040B
Q3	8-763-623-00	2SC1810
Q4	8-765-141-00	2SA911
Q5	8-763-623-00	2SC1810
Q6	8-729-612-77	2SA1027R
Q7	8-729-612-77	2SA1027R
Q8	8-729-612-77	2SA1027R
Q9	8-729-663-47	2SC1364
Q10	8-729-965-61	2SC2656
Q11	8-729-663-47	2SC1364
Q12	8-729-965-61	2SC2656
R1	1-211-514-00	CARBON, NONFLAMMABLE 47 1/4W 5%
R2	1-211-520-00	CARBON, NONFLAMMABLE 82 1/4W 5%
R3	1-211-518-00	CARBON, NONFLAMMABLE 68 1/4W 5%
R4	1-211-528-00	CARBON, NONFLAMMABLE 180 1/4W 5%
R5	1-206-698-00	METAL 27K 2W 5%
R6	1-206-698-00	METAL 27K 2W 5%
R7	1-206-698-00	METAL 27K 2W 5%
R8	1-206-698-00	METAL 27K 2W 5%
R9	1-214-595-00	METAL 100K 1W 5%
R10	1-214-597-00	METAL 100K 2W 5%
R11	1-214-998-00	METAL 100K 1W 5%
R12	1-211-553-00	CARBON, NONFLAMMABLE 2.7K 1/4W 5%
R14	1-211-526-00	CARBON, NONFLAMMABLE 150 1/4W 5%
R16	1-211-528-00	CARBON, NONFLAMMABLE 180 1/4W 5%
R18	1-211-553-00	CARBON, NONFLAMMABLE 2.7K 1/4W 5%
R24	1-211-520-00	CARBON, NONFLAMMABLE 82 1/4W
R25	1-217-160-00	CEMENT 1 5W
R26	9-982-828-01	METAL 68 1W
R27	9-982-830-01	PC 100 3W
R29	1-214-595-00	METAL 100K 1W 5%
R30	1-214-595-00	METAL 100K 1W 5%
R31	9-982-829-01	METAL 0.68 1W 5%
R32	9-982-829-01	METAL 0.68 1W 5%
R37	1-244-869-00	CARBON 680 1/2W 5%

E. PARTS

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Ref. No.	Parts No.	Description
RV1	9-982-831-01	METAL, VAR 1K 1/2W
RV2	9-982-831-01	METAL, VAR 1K 1/2W
T1	1-543-100-00	DRIVE
T2	1-543-100-00	DRIVE
T3	1-446-982-00	CONVERTER

PW-79 BOARD ----- (S/N. 12586 and higher (PAL) / S/N. 10236 and higher (SECAM))

⚠	1-413-071-23	SWITCHING REGULATOR (WITH PW-79, FU-16)
	1-533-037-XX	HOLDER, FUSE
	1-605-936-13	PRINTED CIRCUIT BOARD "FU-16"
	1-604-555-14	PRINTED CIRCUIT BOARD "PW-79"
C1	9-982-833-01	MYLAR 0.22 630V
⚠ C2	1-161-742-00	CERAMIC 0.0022 20% 400V
⚠ C3	1-161-742-00	CERAMIC 0.0022 20% 400V
C4	9-982-837-01	ELECT 22 400V
C5	1-130-141-00	MYLAR 0.01 20% 630V
C6	9-982-832-01	CERAMIC 0.001 500V
C7	9-983-529-01	NON POLAR 0.47 50V
C8	1-108-239-00	MYLAR 0.01 10% 50V
C10	1-108-234-00	MYLAR 0.0047 10% 50V
C11	1-108-237-00	MYLAR 0.068 10% 50V
C13	9-982-840-01	ELECT 47 350V
C14	9-983-530-01	MYLAR 0.56 10% 250V
C15	9-983-530-01	MYLAR 0.56 10% 250V
C25	9-982-844-01	ELECT 10 250V
C26	9-982-844-01	ELECT 10 250V
C27	9-982-844-01	ELECT 10 250V
C28	9-982-844-01	ELECT 10 250V
C29	9-982-844-01	ELECT 10 250V
C30	9-982-844-01	ELECT 10 250V
C31	9-982-834-01	MYLAR 2.2 250V

Ref. No.	Parts No.	Description
⚠ C32	1-161-741-00	CERAMIC 0.001 20% 400V
⚠ C33	1-161-741-00	CERAMIC 0.001 20% 400V
C34	9-982-834-01	MYLAR 2.2 250V
C36	1-108-239-00	MYLAR 0.01 10% 50V
C37	1-108-603-00	MYLAR 0.1 5% 50V
C38	1-130-141-00	MYLAR 0.01 20% 630V
D1	1-806-262-51	CTU-26S
D3	8-719-903-29	ERB43-04
D4	8-719-815-87	1S1587
D5	8-719-815-87	1S1587
D6	8-719-815-87	1S1587
D7	8-719-815-87	1S1587
D8	9-983-533-01	ESAC87-009
D9	8-719-903-16	ESAC85-009
D10	8-719-903-16	ESAC85-009
D11	8-719-924-06	ERC24-06S
D12	8-719-924-06	ERC24-06S
F1	9-982-878-01	THERMAL, 2A 120V 147degrees
IC1	8-759-729-03	NJM2903D (JRC)
⚠ L1	1-421-349-00	FILTER, LINE
L2	1-421-329-00	10
L3	1-407-161-XX	22
L4	9-983-537-01	5mH
L5	9-982-877-01	20
L6	9-982-877-01	20
L7	9-982-877-01	20
L8	9-982-877-01	20
L9	9-982-877-01	20
L10	9-982-877-01	20
L11	1-421-329-00	10
L12	1-421-329-00	10
L13	1-421-329-00	10
L14	1-421-329-00	10
L15	1-421-329-00	10

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Ref. No.	Parts No.	Description
Q1	8-729-965-61	2SC2656
Q2	8-729-965-61	2SC2656
Q3	8-729-954-21	2SC2542
Q4	8-729-100-93	2SA1009A
Q5	8-763-623-00	2SC1810
Q6	8-729-173-37	2SA733
Q7	8-729-173-37	2SA733
Q8	8-729-612-77	2SA1027R
Q9	8-729-389-09	2SC1890
Q10	8-729-965-61	2SC2656
Q11	8-729-663-47	2SC1364
Q12	8-729-965-61	2SC2656
R1	1-247-099-00	CARBON, NONFLAMMABLE 47 1/4W 5%
R2	1-247-105-00	CARBON, NONFLAMMABLE 82 1/4W 5%
R3	1-247-103-00	CARBON, NONFLAMMABLE 68 1/4W 5%
R4	1-247-113-00	CARBON, NONFLAMMABLE 180 1/4W 5%
R5	9-983-524-01	METAL 27K 3W 5%
R6	9-983-524-01	METAL 27K 3W 5%
R7	9-983-524-01	METAL 27K 3W 5%
R8	9-983-524-01	METAL 27K 3W 5%
R9	9-983-525-01	METAL 100K 2W 5%
R10	9-983-526-01	METAL 100K 3W 5%
R11	1-214-998-00	METAL 100K 1W 5%
R12	1-247-140-00	CARBON, NONFLAMMABLE 2400 1/4W 5%
R13	1-247-131-00	CARBON, NONFLAMMABLE 1K 1/4W 5%
R14	1-247-113-00	CARBON, NONFLAMMABLE 180 1/4W 5%
R16	1-247-113-00	CARBON, NONFLAMMABLE 180 1/4W 5%
R18	1-247-141-00	CARBON, NONFLAMMABLE 2.7K 1/4W 5%
R19	1-247-127-00	CARBON, NONFLAMMABLE 680 1/4W 5%
R24	1-247-127-00	CARBON, NONFLAMMABLE 680 1/4W 5%
⚠R25	1-217-160-00	CEMENT 1 5W
R26	9-983-527-01	METAL 68 1W

Ref. No.	Parts No.	Description
R27	9-982-830-01	PC 100 3W
R29	9-983-525-01	METAL 100K 2W 5%
R30	9-983-525-01	METAL 100K 2W 5%
R31	9-982-829-01	METAL 0.68 1W 5%
R32	9-982-829-01	METAL 0.68 1W 5%
R37	1-247-236-00	CARBON 680 1/2W 5%
R39	9-983-528-01	METAL 4700K 1/4W
R40	1-213-151-00	METAL 6800 2W
R41	1-213-151-00	METAL 6800 2W
R42	1-213-151-00	METAL 6800 2W
R43	1-213-151-00	METAL 6800 2W
⚠R44	1-217-158-00	METAL 0.47 5W
RV1	1-224-660-00	METAL, VAR 1K 1/2W
RV2	1-224-249-XX	METAL, VAR 1K 1/2W
SCR1	8-719-801-42	SCR, SFOR1G42
SCR2	9-983-536-01	SCR, CR6AM
T1	1-437-148-00	DRIVE
T2	1-543-100-00	DRIVE
⚠T3	1-447-708-00	CONVERTER
T4	9-983-538-01	STEP-UP
ZD1	8-719-151-07	RD5.1EB
ZD2	8-719-151-07	RD5.1EB

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Ref. No.	Parts No.	Description
RE-3 BOARD		
	A-6725-227-A	MOUNTED CIRCUIT BOARD, RE-3 (S/N. Up to 11490 (PAL) / S/N. Up to 10080 (SECAM))
	A-6725-227-B	MOUNTED CIRCUIT BOARD, RE-3 (S/N. 11491 and higher (PAL) / S/N. 10081 and higher (SECAM))
C3	**1-131-344-00**	**TANTALUM 0.33 10% 35V**
D1	**8-719-815-55**	**1S1555** (S/N. Up to 11490 (P) / S/N. Up to 10080 (S))
D3	**8-719-815-55**	**1S1555**
D4	**8-719-815-55**	**1S1555**
D5	**8-719-815-55**	**1S1555**
D6	**8-719-815-55**	**1S1555**
D7	**8-719-200-02**	**10E-2**
D8	**8-719-200-02**	**10E-2**
IC1	**8-759-308-07**	**HA1807 (HITACHI)** S/N. Up to 11490 (P), 10080(S)
IC1	**8-759-729-03**	**NJM2903D (JRC)** S/N. 11491 (P), 10081 (S) and higher
IC2	**8-759-729-03**	**NJM2903D (JRC)** S/N. 11491 (P), 10081 (S) and higher
Q1	**8-729-663-47**	**2SC1364** S/N. Up to 11490 (P), 10080 (S)
R3	**1-214-125-00**	**METAL 510 1% 1/2W**
R4	**1-212-533-00**	**METAL 1K 1% 1/2W**
R13	**1-217-156-00**	**METAL 0.22 10% 5W**
R15	**1-217-156-00**	**METAL 0.22 10% 5W**
RV1	**1-224-253-XX**	**VAR, METAL 22K** S/N. Up to 11490(P), 10080(S)
RV2	**1-224-247-XX**	**VAR, METAL 100**
RV3	**1-224-247-XX**	**VAR, METAL 100**
RL-14 BOARD -----	(S/N. Up to 12585 (PAL) / S/N. Up to 10235 (SECAM))	
	1-606-043-00	PRINTED CIRCUIT BOARD, RL-14
C1	**1-131-371-00**	**TANTALUM 10 20% 16V**
D1	**8-719-815-55**	**1S1555**
PH1	**1-519-244-00**	**NEON PHOTO COUPLER**
Q1	**8-729-663-47**	**2SC1364**
Q2	**8-729-177-43**	**2SD774**

Ref. No.	Parts No.	Description
RM-4 BOARD		
	1-604-370-00	PRINTED CIRCUIT BOARD, RM-4
CN101	**1-561-028-00**	**36P "REMOTE 2"**
CN102	**1-563-890-11**	**9P "REMOTE 1"**
CN103	1-564-466-11	34P
RP-5-1 BOARD		
	A-6711-322-A	MOUNTED CIRCUIT BOARD, RP-5-1
C3	**1-108-595-00**	**MYLAR 0.047 5% 50V**
C5	**1-108-595-00**	**MYLAR 0.047 5% 50V**
C12	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C20	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C26	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C34	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C101	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C102	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C104	**1-109-567-00**	**MICA 270PF 5% 500V**
C105	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C107	**1-109-567-00**	**MICA 270PF 5% 500V**
D1	**8-719-815-59**	**1S1555S**
D2	**8-719-127-07**	**RD2.7E-B**
D3	**8-719-815-55**	**1S1555**
D4	**8-719-815-55**	**1S1555**
D101	**8-719-815-55**	**1S1555**
D102	**8-719-815-55**	**1S1555**
D103	**8-719-815-55**	**1S1555**
D104	**8-719-815-55**	**1S1555**

NOTES:

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Ref. No.	Parts No.	Description
IC1	**8-743-731-00**	**BX-373A (SONY)**
IC2	**8-759-240-09**	**TC4009UBP (CD4009UBE; RCA)**
IC3	**8-743-500-00**	**BX-350 (SONY)**
IC4	**8-743-500-00**	**BX-350 (SONY)**
IC5	**8-751-300-00**	**CX-130 (SONY)**
IC6	**8-751-300-00**	**CX-130 (SONY)**
IC7	**8-729-677-14**	**2SC2771**
IC8	**8-729-677-14**	**2SC2771**
Q3	**8-729-201-04**	**2SC2878**
Q6	**8-792-201-04**	**2SC2878**
Q101	**8-724-375-01**	**2SC403C**
Q102	**8-724-375-01**	**2SC403C**
Q103	**8-724-375-01**	**2SC403C**
Q104	**8-729-177-32**	**2SD773**
Q105	**8-729-113-32**	**2SB733**
Q106	**8-724-375-01**	**2SC403C**
Q107	**8-724-375-01**	**2SC403C**
Q108	**8-729-177-32**	**2SD773**
Q109	**8-729-113-32**	**2SB733**
R11	**1-214-091-00**	**METAL 20 1% 1/4W**
R12	**1-214-091-00**	**METAL 20 1% 1/4W**
R18	**1-214-091-00**	**METAL 20 1% 1/4W**
R19	**1-214-091-00**	**METAL 20 1% 1/4W**
R29	**1-244-850-00**	**CARBON 110 5% 1/2W**
R38	**1-244-850-00**	**CARBON 110 5% 1/2W**
RV1	**1-224-249-XX**	**VAR, METAL 1K**
RV2	**1-224-248-XX**	**VAR, METAL 470**
RV3	**1-224-251-XX**	**VAR, METAL 4.7K**
RV4	**1-224-250-XX**	**VAR, METAL 2.2K**
RV5	**1-224-251-XX**	**VAR, METAL 4.7K**
RV6	**1-224-250-XX**	**VAR, METAL 2.2K**
RV101	**1-224-249-XX**	**VAR, METAL 1K**
RV102	**1-224-249-XX**	**VAR, METAL 1K**
T1	**1-426-017-00**	**AF**
T2	**1-426-066-00**	**RF**
T3	**1-426-018-00**	**AF**
T4	**1-426-066-00**	**RF**
T5	**1-426-018-00**	**AF**

NOTE:

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   Replace only with same components as specified.

Ref. No.	Parts No.	Description
RS-3 BOARD		
	A-6715-217-B	MOUNTED CIRCUIT BOARD, RS-3 (WITH RS-4)
	1-555-697-00	WIRE ASS'Y, FLAT 50P (25mm)
	1-564-392-00	HEADER, 50P (ON THE RS-4)
C3	**1-131-386-00**	**TANTALUM 33 10% 6.3V**
C5	**1-131-386-00**	**TANTALUM 33 10% 6.3V**
C6	**1-102-110-00**	**CERAMIC 220PF 10% 50V**
C8	**1-108-228-00**	**MYLAR 0.0015 5% 50V**
C10	**1-108-251-00**	**MYLAR 0.1 10% 50V**
C11	**1-108-356-00**	**MYLAR 0.0082 10% 50V**
C12	**1-108-246-00**	**MYLAR 0.047 10% 50V**
C13	**1-102-106-00**	**CERAMIC 100PF 10% 50V**
C15	**1-102-106-00**	**CERAMIC 100PF 10% 50V**
C16	**1-131-345-00**	**TANTALUM 0.47 20% 25V**
C19	**1-131-386-00**	**TANTALUM 33 10% 6.3V**
C21	**1-131-386-00**	**TANTALUM 33 10% 6.3V**
C22	**1-102-110-00**	**CERAMIC 220PF 10% 50V**
C24	**1-108-228-00**	**MYLAR 0.0015 5% 50V**
C26	**1-108-251-00**	**MYLAR 0.1 10% 50V**
C27	**1-108-356-00**	**MYLAR 0.0082 10% 50V**
C28	**1-108-246-00**	**MYLAR 0.047 10% 50V**
C29	**1-102-106-00**	**CERAMIC 100PF 10% 50V**
C31	**1-102-106-00**	**CERAMIC 100PF 10% 50V**
C32	**1-131-345-00**	**TANTALUM 0.47 20% 25V**
C33	**1-102-114-00**	**CERAMIC 470PF 10% 50V**
C34	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C36	**1-108-251-00**	**MYLAR 0.1 10% 50V**
C37	**1-108-240-00**	**MYLAR 0.015 10% 50V**
C38	**1-108-361-00**	**MYLAR 0.056 10% 50V**
C39	**1-102-106-00**	**CERAMIC 100PF 10% 50V**
C40	**1-102-106-00**	**CERAMIC 100PF 10% 50V**
C42	**1-102-106-00**	**CERAMIC 100PF 10% 50V**
C44	**1-102-106-00**	**CERAMIC 100PF 10% 50V**
C46	**1-102-114-00**	**CERAMIC 470PF 10% 50V**
C49	**1-123-612-00**	**ELECT 2.2 50V**
C50	**1-102-106-00**	**CERAMIC 100PF 10% 50V**
C51	**1-108-251-00**	**MYLAR 0.1 10% 50V**
C52	**1-102-106-00**	**CERAMIC 100PF 10% 50V**
C53	**1-102-106-00**	**CERAMIC 100PF 10% 50V**
C54	**1-102-106-00**	**CERAMIC 100PF 10% 50V**
C55	**1-108-251-00**	**MYLAR 0.1 10% 50V**
C56	**1-102-106-00**	**CERAMIC 100PF 10% 50V**
C57	**1-102-106-00**	**CERAMIC 100PF 10% 50V**
C101	**1-102-114-00**	**CERAMIC 470PF 10% 50V**
C103	**1-108-240-00**	**MYLAR 0.015 10% 50V**
C502	**1-102-106-00**	**CERAMIC 100PF 10% 50V**
C503	**1-102-106-00**	**CERAMIC 100PF 10% 50V**
C504	**1-102-106-00**	**CERAMIC 100PF 10% 50V**
C506	**1-102-106-00**	**CERAMIC 100PF 10% 50V**

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Ref. No.	Parts No.	Description
C510	1-102-106-00	CERAMIC 100PF 10% 50V
C511	1-102-106-00	CERAMIC 100PF 10% 50V
C512	1-102-106-00	CERAMIC 100PF 10% 50V
C514	1-102-106-00	CERAMIC 100PF 10% 50V
C517	1-102-106-00	CERAMIC 100PF 10% 50V
C519	1-102-106-00	CERAMIC 100PF 10% 50V
C521	1-102-106-00	CERAMIC 100PF 10% 50V
C523	1-102-106-00	CERAMIC 100PF 10% 50V
C528	1-131-369-00	TANTALUM 4.7 20% 16V
C530	1-108-242-00	MYLAR 0.022 10% 50V
C531	1-102-106-00	CERAMIC 100PF 10% 50V
C532	1-131-371-00	TANTALUM 10 20% 16V
C533	1-108-597-00	MYLAR 0.056 5% 50V
C534	1-102-106-00	CERAMIC 100PF 10% 50V
C539	1-131-369-00	TANTALUM 4.7 20% 16V
C541	1-108-242-00	MYLAR 0.022 10% 50V
C542	1-102-106-00	CERAMIC 100PF 10% 50V
C543	1-131-371-00	TANTALUM 10 20% 16V
C544	1-108-597-00	MYLAR 0.056 5% 50V
C545	1-102-106-00	CERAMIC 100PF 10% 50V
C550	1-108-355-00	MYLAR 0.0056 10% 50V
C551	1-108-355-00	MYLAR 0.0056 10% 50V
C552	1-131-402-00	TANTALUM 0.1 20% 16V
C557	1-108-251-00	MYLAR 0.1 10% 50V
C598	1-102-114-00	CERAMIC 470PF 10% 50V
D1	8-719-151-07	RD5.1E-B
D2	8-719-911-19	1SS119
D3	8-719-911-19	1SS119
D4	8-719-911-19	1SS119
D5	8-719-151-07	RD5.1E-B
D6	8-719-911-19	1SS119
D7	8-719-911-19	1SS119
D8	8-719-911-19	1SS119
D9	8-719-911-19	1SS119
D10	8-719-911-19	1SS119
D11	8-719-911-19	1SS119
D12	8-719-911-19	1SS119
D13	8-719-911-19	1SS119
D14	8-719-911-19	1SS119
D15	8-719-911-19	1SS119
D16	8-719-911-19	1SS119
D17	8-719-911-19	1SS119
D18	8-719-911-19	1SS119
D19	8-719-911-19	1SS119
D20	8-719-911-19	1SS119
D21	8-719-911-19	1SS119
D22	8-719-911-19	1SS119
D23	8-719-911-19	1SS119
D24	8-719-911-19	1SS119
D25	8-719-911-19	1SS119

Ref. No.	Parts No.	Description
D26	8-719-911-19	1SS119
D27	8-719-911-19	1SS119
D28	8-719-911-19	1SS119
D29	8-719-191-07	RD9.1E-B
D30	8-719-911-19	1SS119
D31	8-719-911-19	1SS119
D32	8-719-911-19	1SS119
D33	8-719-911-19	1SS119
D34	8-719-911-19	1SS119
D35	8-719-911-19	1SS119
D36	8-719-911-19	1SS119
D37	8-719-175-07	RD7.5E-B
D38	8-719-911-19	1SS119
D39	8-719-911-19	1SS119
D40	8-719-911-19	1SS119
D41	8-719-911-19	1SS119
D42	8-719-151-07	RD5.1E-B
D43	8-719-911-19	1SS119
D44	8-719-911-19	1SS119
D45	8-719-911-19	1SS119
D46	8-719-911-19	1SS119
D47	8-719-911-19	1SS119
D48	8-719-911-19	1SS119
D49	8-719-911-19	1SS119
D50	8-719-911-19	1SS119
D51	8-719-911-19	1SS119
D52	8-719-911-19	1SS119
D53	8-719-911-19	1SS119
D54	8-719-911-19	1SS119
D55	8-719-911-19	1SS119
D56	8-719-911-19	1SS119
D57	8-719-911-19	1SS119
D58	8-719-911-19	1SS119
D59	8-719-911-19	1SS119
D60	8-719-911-19	1SS119
D61	8-719-911-19	1SS119
D62	8-719-911-19	1SS119
D63	8-719-911-19	1SS119
D64	8-719-911-19	1SS119
D65	8-719-911-19	1SS119
D66	8-719-911-19	1SS119
D67	8-719-911-19	1SS119
D68	8-719-911-19	1SS119
D69	8-719-911-19	1SS119
D70	8-719-911-19	1SS119
D71	8-719-911-19	1SS119
D72	8-719-911-19	1SS119
D73	8-719-911-19	1SS119
D74	8-719-911-19	1SS119
D75	8-719-911-19	1SS119

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Ref. No.	Parts No.	Description
D501	8-719-911-19	1SS119
D502	8-719-911-19	1SS119
D503	8-719-911-19	1SS119
D504	8-719-911-19	1SS119
D505	8-719-104-10	1SS99
D507	8-719-104-10	1SS99
D509	8-719-911-19	1SS119
D510	8-719-911-19	1SS119
D511	8-719-911-19	1SS119
D512	8-719-911-19	1SS119
D513	8-719-911-19	1SS119
D514	8-719-911-19	1SS119
D515	8-719-911-19	1SS119
D516	8-719-911-19	1SS119
D517	8-719-911-19	1SS119
D519	8-719-911-19	1SS119
D520	8-719-911-19	1SS119
D521	8-719-911-19	1SS119
D522	8-719-911-19	1SS119
D523	8-719-911-19	1SS119
D524	8-719-911-19	1SS119
D525	8-719-911-19	1SS119
D526	8-719-911-19	1SS119
D527	8-719-911-19	1SS119
D528	8-719-911-19	1SS119
D529	8-719-911-19	1SS119
D530	8-719-911-19	1SS119
D531	8-719-911-19	1SS119
D532	8-719-911-19	1SS119
D533	8-719-911-19	1SS119
D534	8-719-911-19	1SS119
D535	8-719-911-19	1SS119
D536	8-719-911-19	1SS119
D537	8-719-911-19	1SS119
D538	8-719-911-19	1SS119
D539	8-719-911-19	1SS119
D540	8-719-911-19	1SS119
D541	8-719-911-19	1SS119
D542	8-719-911-19	1SS119
D543	8-719-911-19	1SS119
D544	8-719-911-19	1SS119
D546	8-719-911-19	1SS119
D547	8-719-911-19	1SS119
D548	8-719-911-19	1SS119
D549	8-719-911-19	1SS119
IC1	8-759-729-03	NJM2903D (JRC)
IC2	8-759-729-03	NJM2903D (JRC)
IC3	8-759-240-30	TC4030BP (CE4030BE; RCA)
IC4	8-759-240-30	TC4030BP (CD4030BE; RCA)
IC5	8-759-240-13	TC4013BP (CD4013BE; RCA)

Ref. No.	Parts No.	Description
IC6	8-759-240-30	TC4030BP (CD4030BE; RCA)
IC7	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC8	8-759-618-41	M51841P (NE555N; SIGNETICS)
IC9	8-759-618-41	M51841P (NE555N; SIGNETICS)
IC10	8-759-045-38	MC14538BCP (MOTOROLA)
IC11	8-759-132-40	μPC324C (LM324; NSC)
IC12	8-759-618-41	M51841P (NE555N; SIGNETICS)
IC13	8-759-132-40	μPC324C (LM324; NSC)
IC14	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC15	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC16	8-759-240-66	TC4066BP (CD4066BE; RCA)
IC17	8-759-132-40	μPC324C (LM324; NSC)
IC18	8-759-240-66	TC4066BP (CD4066BE; RCA)
IC19	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC20	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC21	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC22	8-759-240-66	TC4066BP (CD4066BE; RCA)
IC23	8-759-645-17	M54517P (MITSUBISHI)
IC24	8-759-241-61	TC40161BP (CD40161BE; RCA)
IC25	8-759-240-99	TC4099BP (CD4099BE; RCA)
IC26	8-759-240-99	TC4099BP (CD4099BE; RCA)
IC27	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC28	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC29	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC30	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC31	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC32	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC33	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC34	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC35	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC36	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC37	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC38	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC39	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC40	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC41	8-759-250-67	TC5067BP (TOSHIBA)
IC42	8-759-645-19	M54519P (MITSUBISHI)
IC43	8-759-250-67	TC5067BP (TOSHIBA)
IC44	8-759-645-19	M54519P (MITSUBISHI)
IC45	8-759-132-40	μPC324C (LM324; NSC)
IC46	8-759-132-40	μPC324C (LM324; NSC)
IC47	8-759-145-58	μPC4558C (RC4558; RAYTHEON)
IC48	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC49	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC50	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC51	8-759-045-38	MC14538BCP (MOTOROLA)
IC501	8-759-132-40	μPC324C (LM324; NSC)
IC502	8-759-132-40	μPC324C (LM324; NSC)
IC503	8-759-245-16	TC4516BP (MC14516BCP; MOT)
IC504	8-759-245-16	TC4516BP (MC14516BCP; MOT)
IC505	8-759-132-40	μPC324C (LM324; NSC)

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Ref. No.	Parts No.	Description
IC506	8-759-132-40	μPC324C (LM324; NSC)
IC507	8-759-245-16	TC4516BP (MC14516BCP; MOT)
IC508	8-759-245-16	TC4516BP (MC14516BCP; MOT)
IC509	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC510	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC511	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC512	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC513	8-759-240-66	TC4066BP (CD4066BE; RCA)
IC514	8-759-240-66	TC4066BP (CD4066BE; RCA)
IC515	8-759-132-40	μPC324C (LM324; NSC)
IC516	8-759-240-66	TC4066BP (CD4066BE; RCA)
IC517	8-759-132-40	μPC324C (LM324; NSC)
IC518	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC519	8-759-132-40	μPC324C (LM324; NSC)
IC520	8-759-132-40	μPC324C (LM324; NSC)
IC521	8-759-240-66	TC4066BP (CD4066BE; RCA)
IC522	8-759-240-66	TC4066BP (CD4066BE; RCA)
IC523	8-759-132-40	μPC324C (LM324; NSC)
IC524	8-759-240-66	TC4066BP (CD4066BE; RCA)
IC525	8-759-240-66	TC4066BP (CD4066BE; RCA)
IC526	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC527	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC528	8-759-045-38	MC14538BCP (MOTOROLA)
IC529	8-759-132-40	μPC324C (LM324; NSC)
IC530	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC531	8-759-240-66	TC4066BP (CD4066BE; RCA)
IC532	8-759-240-66	TC4066BP (CD4066BE; RCA)
IC533	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC534	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC535	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC536	8-759-045-38	MC14538BCP (MOTOROLA)
IC537	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC538	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC539	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC540	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC541	8-759-132-40	μPC324C (LM324; NSC)
IC542	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC543	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC544	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC545	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC546	8-759-240-78	TC4078BP (CD4078BE; RCA)

Ref. No.	Parts No.	Description
Q1	8-729-201-04	2SC2878
Q2	8-729-663-47	2SC1364
Q3	8-729-663-47	2SC1364
Q4	8-729-663-47	2SC1364
Q5	8-729-201-04	2SC2878
Q6	8-729-201-04	2SC2878
Q7	8-729-201-04	2SC2878
Q8	8-729-201-04	2SC2878
Q9	8-729-201-04	2SC2878
Q10	8-729-663-47	2SC1364
Q11	8-729-201-04	2SC2878
Q12	8-729-201-04	2SC2878
Q13	8-729-201-04	2SC2878
Q14	8-729-201-04	2SC2878
Q15	8-729-201-04	2SC2878
Q16	8-729-201-04	2SC2878
Q17	8-729-663-47	2SC1364
Q18	8-729-201-04	2SC2878
Q19	8-729-663-47	2SC1364
Q20	8-729-663-47	2SC1364
Q501	8-729-201-04	2SC2878
Q502	8-792-201-04	2SC2878
Q503	8-729-201-04	2SC2878
Q504	8-729-201-04	2SC2878
Q507	8-729-663-47	2SC1364
R15	1-214-166-00	METAL 27K 1% 1/4W
R42	1-214-166-00	METAL 27K 1% 1/4W
R64	1-214-174-00	METAL 56K 1% 1/4W
R69	1-212-650-00	METAL 330K 1% 1/2W
R70	1-214-173-00	METAL 51K 1% 1/4W
R75	1-214-158-00	METAL 12K 1% 1/4W
R76	1-214-173-00	METAL 51K 1% 1/4W
R80	1-214-169-00	METAL 36K 1% 1/4W
R81	1-214-179-00	METAL 91K 1% 1/4W
R82	1-214-173-00	METAL 51K 1% 1/4W
R83	1-214-156-00	METAL 10K 1% 1/4W
R84	1-214-177-00	METAL 75K 1% 1/4W
R87	1-214-961-00	METAL 750K 1% 1/2W
R88	1-214-177-00	METAL 75K 1% 1/4W
R89	1-214-177-00	METAL 75K 1% 1/4W
R90	1-214-961-00	METAL 750K 1% 1/2W
R97	1-214-149-00	METAL 5.1K 1% 1/4W
R98	1-214-149-00	METAL 5.1K 1% 1/4W
R159	1-214-156-00	METAL 10K 1% 1/4W
R160	1-214-156-00	METAL 10K 1% 1/4W

E. PARTS

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Ref. No.	Parts No.	Description
R179	1-214-175-00	METAL 62K 1% 1/4W
R180	1-214-156-00	METAL 10K 1% 1/4W
R181	1-214-175-00	METAL 62K 1% 1/4W
R182	1-214-156-00	METAL 10K 1% 1/4W
R187	1-214-156-00	METAL 10K 1% 1/4W
R188	1-214-156-00	METAL 10K 1% 1/4W
R207	1-214-175-00	METAL 62K 1% 1/4W
R208	1-214-156-00	METAL 10K 1% 1/4W
R209	1-214-175-00	METAL 62K 1% 1/4W
R210	1-214-156-00	METAL 10K 1% 1/4W
R222	1-212-526-00	METAL 510 1% 1/2W
R223	1-212-526-00	METAL 510 1% 1/2W
R270	1-214-162-00	METAL 18K 1/4W
R271	1-214-163-00	METAL 20K 1/4W
R272	1-214-971-00	METAL 2M 1/4W
R509	1-214-148-00	METAL 4.7K 1% 1/4W
R510	1-214-152-00	METAL 6.8K 1% 1/4W
R511	1-214-180-00	METAL 100K 1% 1/4W
R512	1-214-180-00	METAL 100K 1% 1/4W
R513	1-212-708-00	METAL 180K 1% 1/2W
R514	1-212-708-00	METAL 180K 1% 1/2W
R516	1-214-142-00	METAL 2.7K 1% 1/4W
R517	1-214-162-00	METAL 18K 1% 1/4W
R518	1-214-168-00	METAL 33K 1% 1/4W
R520	1-214-180-00	METAL 100K 1% 1/4W
R528	1-214-180-00	METAL 100K 1% 1/4W
R547	1-214-148-00	METAL 4.7K 1% 1/4W
R548	1-214-152-00	METAL 6.8K 1% 1/4W
R549	1-214-180-00	METAL 100K 1% 1/4W
R550	1-214-180-00	METAL 100K 1% 1/4W
R551	1-212-708-00	METAL 180K 1% 1/2W
R552	1-212-708-00	METAL 180K 1% 1/2W
R553	1-214-142-00	METAL 2.7K 1% 1/4W
R555	1-214-162-00	METAL 18K 1% 1/4W
R556	1-214-168-00	METAL 33K 1% 1/4W
R558	1-214-180-00	METAL 100K 1% 1/4W
R566	1-214-180-00	METAL 100K 1% 1/4W
R587	1-214-152-00	METAL 6.8K 1% 1/4W
R589	1-212-707-00	METAL 150K 1% 1/2W
R603	1-214-152-00	METAL 6.8K 1% 1/4W
R605	1-212-707-00	METAL 150K 1% 1/2W
R620	1-212-715-00	METAL 360K 1% 1/2W
R621	1-214-166-00	METAL 27K 1% 1/4W
R622	1-212-715-00	METAL 360K 1% 1/2W
R623	1-214-166-00	METAL 27K 1% 1/4W
R624	1-212-712-00	METAL 270K 1% 1/2W
R625	1-214-180-00	METAL 100K 1% 1/4W
R626	1-214-158-00	METAL 12K 1% 1/4W

Ref. No.	Parts No.	Description
R634	1-214-180-00	METAL 100K 1% 1/4W
R636	1-214-961-00	METAL 750K 1% 1/2W
R653	1-212-712-00	METAL 270K 1% 1/2W
R654	1-214-180-00	METAL 100K 1% 1/4W
R655	1-214-158-00	METAL 12K 1% 1/4W
R663	1-214-180-00	METAL 100K 1% 1/4W
R665	1-214-961-00	METAL 750K 1% 1/2W
R705	1-214-156-00	METAL 10K 1% 1/4W
R707	1-214-156-00	METAL 10K 1% 1/4W
R708	1-214-165-00	METAL 24K 1% 1/4W
R709	1-214-158-00	METAL 12K 1% 1/4W
RV1	1-224-253-XX	VAR, METAL 22K
RV2	1-224-253-XX	VAR, METAL 22K
RV501	1-224-251-XX	VAR, METAL 4.7K
RV502	1-224-252-XX	VAR, METAL 10K
RV503	1-224-251-XX	VAR, METAL 4.7K
RV504	1-224-252-XX	VAR, METAL 10K

SA-9 BOARD

	1-604-377-00	PRINTED CIRCUIT BOARD, SA-9
S1	1-516-783-XX	SLIDE "LEVEL (A2)"
S2	1-516-777-XX	SLIDE "600 OHM (A2)"
S3	1-516-783-XX	SLIDE "LEVEL (A1)"
S4	1-516-777-XX	SLIDE "600 OHM (A1)"
S5	1-516-777-XX	SLIDE "FRAMING SERVO"
S6	1-516-777-XX	SLIDE "SERVO LOCK"
S7	1-516-777-XX	SLIDE "75 OHM (V)"

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SR-14, SV-24A/SV-52 (CF-9)

Ref. No.	Parts No.	Description
SR-14 BOARD		
	1-604-063-00	PRINTED CIRCUIT BOARD, SR-14
SV-24A/SV-52 BOARD		
	⚠A-6715-128-A	MOUNTED CIRCUIT BOARD SV-24A (WITH CF-9) (S/N. Up to 11490 (PAL) / S/N. Up to 10080 (SECAM))
	⚠A-6715-128-B	MOUNTED CIRCUIT BOARD SV-52 (WITH CF-9) (S/N. 11491 to 12185 (PAL) / S/N. 10081 to 10185 (SECAM))
	⚠A-6715-128-C	MOUNTED CIRCUIT BOARD SV-52 (WITH CF-9) (S/N. 12186 and higher (PAL) / S/N. 10186 and higher (SECAM))
	1-555-697-00	WIRE ASS'Y, FLAT 50P (25mm)
	1-564-392-00	HEADER, 50P (ON THE CF-9)
C10	**1-108-234-00**	**MYLAR 0.0047 10% 50V**
C12	**1-131-346-00**	**TANTALUM 0.68 10% 35V**
C15	**1-108-230-00**	**MYLAR 0.0022 10% 50V**
C16	**1-108-230-00**	**MYLAR 0.0022 10% 50V**
C17	**1-131-345-00**	**TANTALUM 0.47 10% 25V**
C18	**1-131-345-00**	**TANTALUM 0.47 10% 25V**
C19	**1-108-246-00**	**MYLAR 0.047 10% 50V**
C20	**1-108-246-00**	**MYLAR 0.047 10% 50V**
C21	**1-108-234-00**	**MYLAR 0.0047 10% 50V**
C22	**1-108-239-00**	**MYLAR 0.01 10% 50V**
C23	**1-108-234-00**	**MYLAR 0.0047 10% 50V**
C24	**1-108-246-00**	**MYLAR 0.047 10% 50V**
C25	**1-108-251-00**	**MYLAR 0.1 10% 50V**
C26	**1-108-244-00**	**MYLAR 0.033 10% 50V**
C27	**1-108-246-00**	**MYLAR 0.047 10% 50V**
C28	**1-131-408-00**	**TANTALUM 10% 25V**
C31	**1-161-342-00**	**CERAMIC 43PF SL 5% 50V**
C32	**1-108-230-00**	**MYLAR 0.0022 10% 50V**
C33	**1-108-246-00**	**MYLAR 0.047 10% 50V**
C34	**1-108-239-00** / **1-108-355-00**	**MYLAR 0.01 10% 50V** / **MYLAR 0.0056**
C35	**1-130-224-00**	**POLYPROPYLENE 0.015 5% 50V**
C36	**1-108-234-00**	**MYLAR 0.0047 10% 50V**
C37	**1-108-581-00** / **1-108-571-00**	**MYLAR 0.012 5% 50V** / **MYLAR 0.0047 5% 50V**
C38	**1-131-408-00**	**TANTALUM 1 10% 25V**
C39	**1-102-114-00**	**CERAMIC 470PF B 10% 50V**

Ref. No.	Parts No.	Description
C40	**1-108-227-00**	**MYLAR 0.001 10% 50V**
C41	**1-108-246-00**	**MYLAR 0.047 10% 50V**
C42	**1-108-581-00**	**MYLAR 0.012 5% 50V**
C44	**1-108-239-00**	**MYLAR 0.01 10% 50V**
C45	**1-131-345-00**	**TANTALUM 0.47 10% 35V**
C46	**1-108-595-00**	**MYLAR 0.047 5% 50V**
C47	**1-108-246-00**	**MYLAR 0.047 10% 50V**
C48	**1-108-239-00**	**MYLAR 0.01 10% 50V**
C49	**1-108-239-00**	**MYLAR 0.01 10% 50V**
C50	**1-131-408-00**	**TANTALUM 1 10% 25V**
C51	**1-131-371-00**	**TANTALUM 10 10% 16V**
C52	**1-108-249-00**	**MYLAR 0.068 10% 50V**
C53	**1-108-251-00**	**MYLAR 0.1 10% 50V**
C54	**1-108-230-00**	**MYLAR 0.0022 10% 50V**
C55	**1-131-408-00**	**TANTALUM 1 10% 25V**
C56	**1-131-371-00**	**TANTALUM 10 10% 16V**
C57	**1-108-230-00**	**MYLAR 0.0022 10% 50V**
C58	**1-108-239-00**	**MYLAR 0.01 10% 50V**
C59	**1-108-244-00**	**MYLAR 0.033 10% 50V**
C61	**1-108-242-00**	**MYLAR 0.022 10% 50V**
C62	**1-131-370-00**	**TANTALUM 6.8 10% 16V**
C64	**1-108-237-00**	**MYLAR 0.0068 10% 50V**
C65	**1-131-380-00**	**TANTALUM 33 10% 10V**
C66	**1-108-249-00**	**MYLAR 0.068 10% 50V**
C67	**1-108-228-00**	**MYLAR 0.0015 10% 50V**
C68	**1-108-246-00**	**MYLAR 0.047 10% 50V**
C69	**1-108-242-00**	**MYLAR 0.022 10% 50V**
C70	**1-108-251-00**	**MYLAR 0.1 10% 50V**
C72	**1-108-242-00**	**MYLAR 0.022 10% 50V**
C73	**1-102-114-00**	**CERAMIC 470PF B 10% 50V**
C103	**1-161-267-00**	**CERAMIC 47PF SL 5% 50V**
C104	**1-161-267-00**	**CERAMIC 47PF SL 5% 50V**
C105	**1-108-249-00**	**MYLAR 0.068 10% 50V**
C106	**1-108-249-00**	**MYLAR 0.068 10% 50V**
C107	**1-108-227-00**	**MYLAR 0.001 10% 50V**
C108	**1-102-106-00**	**CERAMIC 100PF B 10% 50V**
C111	**1-108-244-00**	**MYLAR 0.033 10% 50V**
C112	**1-131-498-00**	**TANTALUM 1 10% 25V**
C113	**1-131-361-00**	**TANTALUM 2.2 10% 20V**
C501	**1-102-114-00**	**CERAMIC 470PF B 10% 50V**
C502	**1-102-110-00**	**CERAMIC 220PF B 10% 50V**
C503	**1-102-110-00**	**CERAMIC 220PF B 10% 50V**
C504	**1-102-114-00**	**CERAMIC 470PF B 10% 50V**
C505	**1-102-114-00**	**CERAMIC 470PF B 10% 50V**
C506	**1-102-114-00**	**CERAMIC 470PF B 10% 50V**
C507	**1-102-114-00**	**CERAMIC 470PF B 10% 50V**
C508	**1-102-114-00**	**CERAMIC 470PF B 10% 50V**
C509	**1-102-114-00**	**CERAMIC 470PF B 10% 50V**
C510	**1-102-114-00**	**CERAMIC 470PF B 10% 50V**
C511	**1-102-114-00**	**CERAMIC 470PF B 10% 50V**

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E. PARTS

Ref. No.	Parts No.	Description
C512	1-102-114-00	CERAMIC 470PF B 10% 50V
C513	1-131-369-00	TANTALUM 4.7 10% 16V
C515	1-102-114-00	CERAMIC 470PF B 10% 50V
C516	1-102-114-00	CERAMIC 470PF B 10% 50V
C518	1-102-114-00	CERAMIC 470PF B 10% 50V
C519	1-108-555-00	MYLAR 0.001 5% 50V
C520	1-108-555-00	MYLAR 0.001 5% 50V
C521	1-108-603-00	MYLAR 0.1 5% 50V
C522	1-102-114-00	CERAMIC 470PF B 10% 50V
C523	1-102-114-00	CERAMIC 470PF B 10% 50V
C524	1-108-579-00	MYLAR 0.01 5% 50V
C538	1-131-371-00	TANTALUM 10 10% 16V
C544	1-108-595-00	MYLAR 0.047 5% 50V
C701	1-108-603-00	MYLAR 0.1 5% 50V
C702	1-102-114-00	CERAMIC 470PF B 10% 50V
C703	1-131-361-00	TANTALUM 2.2 10% 20V
C704	1-108-597-00	MYLAR 0.056 5% 50V
C705	1-131-341-00	TANTALUM 0.1 10% 25V
C706	1-108-555-00	MYLAR 0.001 5% 50V
C707	1-131-341-00	TANTALUM 0.1 10% 25V
C708	1-131-341-00	TANTALUM 0.1 10% 25V
C709	1-102-110-00	CERAMIC 220PF B 10% 50V
C710	1-131-341-00	TANTALUM 0.1 10% 25V
C711	1-108-555-00	MYLAR 0.001 5% 50V
C712	1-131-341-00	TANTALUM 0.1 10% 25V
C713	1-131-341-00	TANTALUM 0.1 10% 25V
C714	1-108-587-00	MYLAR 0.022 5% 50V
C715	1-108-603-00	MYLAR 0.1 5% 50V
C716	1-102-114-00	CERAMIC 470PF B 10% 50V
C718	1-108-597-00	MYLAR 0.056 5% 50V
C719	1-108-587-00	MYLAR 0.022 5% 50V
C720	1-102-114-00	CERAMIC 470PF B 10% 50V
C721	1-102-114-00	CERAMIC 470PF B 10% 50V
C722	1-102-114-00	CERAMIC 470PF B 10% 50V
C723	1-131-368-00	TANTALUM 3.3 10% 16V
C724	1-108-579-00	MYLAR 0.01 5% 50V
C725	1-131-361-00	TANTALUM 2.2 10% 16V
C726	1-131-361-00	TANTALUM 2.2 10% 16V
C727	1-131-361-00	TANTALUM 2.2 10% 16V
CP1	1-527-832-00	OSC 4.43MHz

Ref. No.	Parts No.	Description
D2	8-719-815-55	1S1555
D3	8-719-815-55	1S1555
D4	8-719-815-55	1S1555
D5	8-719-815-55	1S1555
D6	8-719-815-55	1S1555
D7	8-719-815-55	1S1555
D8	8-719-815-55	1S1555
D9	8-719-815-55	1S1555
D10	8-719-151-07	RD5.1E-B
D11	8-719-815-55	1S1555
D13	8-719-815-55	1S1555
D14	8-719-815-55	1S1555
D15	8-719-719-25	1S1925-P
D16	8-719-815-55	1S1555
D17	8-719-815-55	1S1555
D18	8-719-815-55	1S1555
D19	8-719-815-55	1S1555
D20	8-719-815-55	1S1555
D21	8-719-815-55	1S1555
D22	8-719-815-55	1S1555
D23	8-719-815-55	1S1555
D24	8-719-815-55	1S1555
D25	8-719-815-55	1S1555
D26	8-719-815-55	1S1555
D30	8-719-815-55	1S1555
D31	8-719-815-55	1S1555
D32	8-719-815-55	1S1555
D33	8-719-815-55	1S1555
D36	8-719-815-55	1S1555
D37	8-719-815-55	1S1555
D38	8-719-815-55	1S1555
D39	8-719-815-55	1S1555
D40	8-719-815-55	1S1555
D41	8-719-815-55	1S1555
D42	8-719-815-55	1S1555
D43	8-719-815-55	1S1555
D44	8-719-815-55	1S1555
D45	8-719-119-92	1S1992
D46	8-719-815-55	1S1555
D47	8-719-815-55	1S1555
D48	8-719-815-55	1S1555
D49	8-719-815-55	1S1555
D50	8-719-815-55	1S1555
D51	8-719-815-55	1S1555
D52	8-719-815-55	1S1555

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Ref. No.	Parts No.	Description
D53	8-719-911-19	1SS119
D55	8-719-911-19	1SS119
D56	8-719-911-19	1SS119
D57	8-719-911-19	1SS119
D58	8-719-911-19	1SS119
D60	8-719-911-19	1SS119
D501	8-719-815-55	1S1555
D502	8-719-815-55	1S1555
D504	8-719-815-55	1S1555
D505	8-719-815-55	1S1555
D506	8-719-815-55	1S1555
D507	8-719-815-55	1S1555
D701	8-719-815-55	1S1555
D702	8-719-815-55	1S1555
IC1	8-759-145-58	μPC4558C (RC4558; RAYTHEON)
IC2	8-759-729-03	NJM2903D (JRC)
IC3	8-759-145-58	μPC4558C (RC4558; RAYTHEON)
IC4	8-759-132-40	μPC324C (LM324; NSC)
IC5	8-751-940-01	CX-194A (SONY) (S/N, UP TO 11985 (PAL) S/N, UP TO 10185 (SECAM))
IC5	8-751-941-04	CX-194B-4 (S/N, 11986 and higher (PAL) S/N, 10186 and higher (SECAM))
IC6	8-759-132-40	μPC324C (LM324; NSC)
IC7	8-759-131-11	μPC311C (NEC)
IC8	8-759-132-40	μPC324C (LM324; NSC)
IC9	8-759-131-11	μPC311C (NEC)
IC10	8-759-645-17	M54517P (MITSUBISHI)
IC11	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC12	8-759-045-38	MC14538BCP (MOTOROLA)
IC13	8-759-145-58	μPC4558C (RC4558; RAYTHEON)
IC14	8-759-240-99	TC4099BP (CD4099BE; RCA)
IC15	8-759-241-61	TC40161BP (CD40161BE; RCA)
IC16	8-759-240-53	TC4053BP (CD4053BE; RCA)
IC17	8-759-240-52	TC4052BP (CD4052BE; RCA)
IC18	8-759-240-99	TC4099BP (CD4099BE; RCA)
IC19	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC20	8-759-240-23	TC4023BP (CD4023BE; RCA)
IC21	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC22	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC23	8-759-240-30	TC4030BP (CD4030BE; RCA)
IC24	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC25	8-759-240-13	TC4013BP (CD4013BE; RCA)
IC26	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC27	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC28	8-759-045-38	MC14538BCP (MOTOROLA)
IC29	8-759-240-53	TC4053BP (CD4053BE; RCA)
IC30	8-759-240-11	TC4011BP (CD4011BE; RCA)

Ref. No.	Parts No.	Description
IC31	8-759-045-38	MC14538BCP (MOTOROLA)
IC32	8-759-045-38	MC14538BCP (MOTOROLA)
IC33	8-759-045-38	MC14538BCP (MOTOROLA)
IC34	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC100	1-464-259-00	CORRECTION UNIT SWITCHING (S/N. 12186 and higher (PAL) S/N. 10186 and higher (SECAM))
IC501	8-759-240-30	TC4030BP (CD4030BE; RCA)
IC502	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC503	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC504	8-759-240-13	TC4013BP (CD4013BE; RCA)
IC505	8-759-240-27	TC4027BP (CD4027BE; RCA)
IC506	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC507	8-759-245-10	TC4510BP (MC14510BCP; MOT)
IC508	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC510	8-759-045-38	MC14538BCP (MOTOROLA)
IC511	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC512	8-759-240-53	TC4053BP (CD4053BE; RCA)
IC513	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC514	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC515	8-759-240-53	TC4053BP (CD4053BE; RCA)
IC516	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC517	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC518	8-759-045-38	MC14538BCP (MOTOROLA)
IC519	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC520	8-759-240-66	TC4066BP (CD4066BE; RCA)
IC521	8-759-045-84	MC14584BCP (MOTOROLA)
IC522	8-759-745-50	NJM4558D-D (JRC)
IC523	8-749-939-14	BX-3914 (SONY)
IC524	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC525	8-759-245-10	TC4510BP (MC14510BCP; MOT)
IC526	8-759-145-58	μPC4558C (RC4558; RAYTHEON)
IC701	8-759-990-82	TL082CP (TI)
IC702	8-759-990-82	TL082CP (TI)
IC703	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC704	8-759-240-13	TC4013BP (CD4013BE; RCA)
IC705	8-759-345-38	HD14538BP (HITACHI)
IC706	8-759-240-13	TC4013BP (CD4013BE; RCA)
IC707	8-759-240-13	TC4013BP (CD4013BE; RCA)
IC708	8-759-240-13	TC4013BP (CD4013BE; RCA)
IC709	8-759-240-13	TC4013BP (CD4013BE; RCA)
IC710	8-759-345-38	HD14538BP (HITACHI)
IC711	8-759-240-81	TC4081BP (CD4081BE; RCA)

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Ref. No.	Parts No.	Description
IC712	8-759-240-30	TC4030BP (CD4030BE; RCA)
IC713	8-759-240-71	TC4071BP (CD4071BE; RCA)
IC714	8-759-345-38	HD14538BP (HITACHI)
IC715	8-759-240-15	TC4015BP (CD4015BE; RCA)
IC716	8-759-345-38	HD14538BP (HITACHI)
IC717	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC718	8-759-240-15	TC4015BP (CD4015BE; RCA)
IC719	8-759-345-38	HD14538BP (HITACHI)
IC720	8-759-240-73	TC4073BP (CD4073BE; RCA)
IC721	8-759-345-38	HD14538BP (HITACHI)
IC722	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC723	8-759-240-13	TC4013BP (CD4013BE; RCA)
IC724	8-759-345-38	HD14538BP (HITACHI)
IC725	8-759-240-13	TC4013BP (CD4013BE; RCA)
IC726	8-759-240-73	TC4073BP (CD4073BE; RCA)
IC727	8-759-240-71	TC4071BP (CD4071BE; RCA)
IC728	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC729	8-759-240-13	TC4013BP (CD4013BE; RCA)
IC730	8-759-240-13	TC4013BP (CD4013BE; RCA)
IC731	8-759-240-11	TC4011BP (CD4011BE; RCA)
Q3	8-769-053-47	2SC1364
Q4	8-769-053-47	2SC1364
Q5	8-729-384-48	2SA844
Q6	8-729-663-47	2SC1364
Q8	8-729-384-48	2SA844
Q9	8-729-384-48	2SA844
Q10	8-729-384-48	2SA844
Q11	8-729-663-47	2SC1364
Q12	8-729-663-47	2SC1364
Q13	8-729-663-47	2SC1364
Q14	8-729-663-47	2SC1364
Q15	8-729-663-47	2SC1364
Q16	8-729-663-47	2SC1364
Q17	8-729-663-47	2SC1364
Q18	8-729-663-47	2SC1364
Q19	8-729-201-04	2SC2878
Q20	8-729-663-47	2SC1364
Q21	8-729-177-43	2SD774
Q22	8-729-364-12	2SC641K
Q23	8-729-384-48	2SA844
Q24	8-729-663-47	2SC1364
Q25	8-729-663-47	2SC1364
Q26	8-729-384-48	2SA844
Q27	8-729-384-48	2SA844
Q28	8-729-201-04	2SC2878

Ref. No.	Parts No.	Description
Q29	8-729-201-04	2SC2878
Q30	8-729-663-47	2SC1364
Q31	8-729-201-04	2SC2878
Q32	8-279-201-04	2SC2878
Q33	8-729-663-47	2SC1364
Q34	8-729-663-47	2SC1364
Q501	8-729-663-47	2SC1364
Q502	8-729-663-47	2SC1364
Q503	8-729-663-47	2SC1364
Q504	8-729-663-47	2SC1364
Q505	8-729-663-47	2SC1364
Q506	8-729-663-47	2SC1364
Q507	8-729-663-47	2SC1364
Q508	8-729-663-47	2SC1364
Q509	8-729-602-67	2SA1026
Q510	8-729-663-47	2SC1364
Q511	8-729-663-47	2SC1364
Q701	8-729-663-47	2SC1364
Q702	8-729-663-47	2SC1364
Q703	8-729-663-47	2SC1364
Q704	8-729-663-47	2SC1364
Q705	8-729-663-47	2SC1364
Q706	8-729-663-47	2SC1364
Q707	8-729-663-47	2SC1364
Q709	8-729-663-47	2SC1364
Q710	8-729-602-67	2SA1026
Q711	8-729-663-47	2SC1364
R157	1-244-873-00	CARBON 1K 1/2W 5%
⚠R290	1-217-387-00	FUSIBLE 10 1/4W 5%
⚠R292	1-217-446-00	FUSIBLE 100 1/2W 5%
⚠R293	1-217-391-00	FUSIBLE 22 1/4W 5%

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Ref. No.	Parts No.	Description
RV1	1-224-255-XX	VAR, METAL 100K
RV2	1-224-255-XX	VAR, METAL 100K
RV3	1-224-252-XX	VAR, METAL 10K
RV4	1-224-254-XX	VAR, METAL 47K
RV5	1-224-255-XX	VAR, METAL 100K
	S/N. Up to 11645(PAL), 10135(SECAM)	
RV5	1-226-775-00	VAR, METAL 100K
	S/N. 11646(PAL), 10136(SECAM) and higher	
RV6	1-224-256-XX	VAR, METAL 220K
RV7	1-224-256-XX	VAR, METAL 220K
	S/N. Up to 11645(PAL), 10135(SECAM)	
RV7	1-226-776-00	VAR, METAL 220K
	S/N. 11646(PAL), 10136(SECAM) and higher	
RV8	1-224-256-XX	VAR, METAL 220K
RV9	1-224-255-XX	VAR, METAL 100K
RV10	1-224-253-XX	VAR, METAL 22K
RV11	1-224-252-XX	VAR, METAL 10K
RV12	1-224-251-XX	VAR, METAL 4.7K
RV13	1-224-249-XX	VAR, METAL 1K
RV14	1-224-254-XX	VAR, METAL 47K
RV15	1-224-252-XX	VAR, METAL 10K
RV16	1-224-248-XX	VAR, METAL 470
RV17	1-224-254-XX	VAR, METAL 47K
RV100	1-226-774-00	VAR, METAL 47K
	S/N. 12186(PAL), 10186(SECAM) and higher	
RV501	1-224-256-XX	VAR, METAL 220K
RV502	1-224-256-XX	VAR, METAL 220K
	S/N. Up to 12585(PAL), 10235(SECAM)	

SY-36 BOARD

A-6717-206-A MOUNTED CIRCUIT BOARD, SY-36
S/N. Up to 11645(PAL), 10105(SECAM)
A-6717-206-B MOUNTED CIRCUIT BOARD, SY-36
S/N. 11646(PAL), 10106(SECAM) and higher

C1	1-131-498-00	TANTALUM 1 10% 25V
C2	1-131-501-00	TANTALUM 3.3 10% 10V
C3	1-131-412-00	TANTALUM 0.47 20% 20V
C4	1-131-500-00	TANTALUM 2.2 10% 16V
C5	1-131-344-00	TANTALUM 0.33 10% 35V
C6	1-131-501-00	TANTALUM 3.3 10% 10V
C7	1-131-499-00	TANTALUM 1.5 10% 20V
C9	1-131-498-00	TANTALUM 1 10% 25V
C10	1-131-369-00	TANTALUM 4.7 10% 16V
C11	1-131-498-00	TANTALUM 1 10% 25V
C12	1-131-498-00	TANTALUM 1 10% 25V
C13	1-131-498-00	TANTALUM 1 10% 25V
C14	1-131-500-00	TANTALUM 2.2 10% 16V
C15	1-108-579-00	MYLAR 0.01 5% 50V
C16	1-131-377-00	TANTALUM 10 10% 10V
C17	1-108-579-00	MYLAR 0.01 5% 50V
C18	1-108-595-00	MYLAR 0.047 5% 50V
C19	1-131-498-00	TANTALUM 1 10% 25V
C20	1-108-595-00	MYLAR 0.047 5% 50V
C21	1-131-500-00	TANTALUM 2.2 10% 16V
C22	1-131-345-00	TANTALUM 0.47 10% 35V
C24	1-131-341-00	TANTALUM 0.1 10% 35V

Ref. No.	Parts No.	Description
C25	1-108-571-00	MYLAR 0.0047 5% 50V
C26	1-108-563-00	MYLAR 0.0022 5% 50V
C27	1-131-501-00	TANTALUM 3.3 10% 10V
C28	1-131-501-00	TANTALUM 3.3 10% 10V
C29	1-108-595-00	MYLAR 0.047 5% 50V
C30	1-131-377-00	TANTALUM 10 10% 10V
C31	1-131-498-00	TANTALUM 1 10% 25V
C34	1-131-345-00	TANTALUM 0.47 10% 35V
C35	1-131-347-00	TANTALUM 1 10% 35V
C39	1-131-341-00	TANTALUM 0.1 10% 35V
C41	1-108-595-00	MYLAR 0.047 5% 50V
C42	1-108-595-00	MYLAR 0.047 5% 50V
C43	1-131-499-00	TANTALUM 1.5 10% 20V
C44	1-131-372-00	TANTALUM 15 10% 16V
C45	1-131-412-00	TANTALUM 0.47 20% 20V
C46	1-131-412-00	TANTALUM 0.47 20% 20V
C47	1-108-595-00	MYLAR 0.047 5% 50V
C48	1-108-579-00	MYLAR 0.01 5% 50V
C49	1-131-412-00	TANTALUM 0.47 20% 20V
C51	1-131-412-00	TANTALUM 0.47 20% 20V
C52	1-108-559-00	MYLAR 0.0015 5% 50V
C53	1-108-567-00	MYLAR 0.0033 5% 50V
C54	1-131-341-00	TANTALUM 0.1 10% 35V
C95	1-131-498-00	TANTALUM 1 10% 25V
C96	1-131-498-00	TANTALUM 1 10% 25V
C97	1-131-500-00	TANTALUM 2.2 10% 16V
C98	1-131-498-00	TANTALUM 1 10% 25V
C99	1-131-409-00	TANTALUM 0.33 20% 25V
C100	1-108-579-00	MYLAR 0.01 5% 50V
C101	1-131-498-00	TANTALUM 1 10% 25V
C102	1-131-498-00	TANTALUM 1 10% 25V
C103	1-131-498-00	TANTALUM 1 10% 25V
C112	1-108-567-00	MYLAR 0.0033 5% 50V
C114	1-131-368-00	TANTALUM 3.3 10% 16V
C115	1-131-498-00	TANTALUM 1 10% 25V
C116	1-102-114-00	CERAMIC 470P 10% 50V
C117	1-102-114-00	CERAMIC 470P 10% 50V
C118	1-131-498-00	TANTALUM 1 10% 25V
C119	1-108-579-00	MYLAR 0.01 5% 50V
C120	1-108-595-00	MYLAR 0.047 5% 50V
C121	1-131-344-00	TANTALUM 0.33 10% 35V
C122	1-131-345-00	TANTALUM 0.47 10% 35V
C125	1-131-341-00	TANTALUM 0.1 10% 35V
C126	1-131-341-00	TANTALUM 0.1 10% 35V
C127	1-131-341-00	TANTALUM 0.1 20% 35V
D1	8-719-815-55	1S1555
D2	8-719-815-55	1S1555
D3	8-719-815-55	1S1555
D4	8-719-815-55	1S1555
D5	8-719-815-55	1S1555

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Ref. No.	Parts No.	Description
D6	8-719-815-55	1S1555
D7	8-719-815-55	1S1555
D8	8-719-815-55	1S1555
D9	8-719-815-55	1S1555
D10	8-719-815-55	1S1555
D11	8-719-815-55	1S1555
D12	8-719-815-55	1S1555
D13	8-719-815-55	1S1555
D14	8-719-815-55	1S1555
D15	8-719-815-55	1S1555
D16	8-719-815-55	1S1555
D20	8-719-815-55	1S1555
D21	8-719-815-55	1S1555
D22	8-719-815-55	1S1555
D23	8-719-815-55	1S1555
D25	8-719-815-55	1S1555
D26	8-719-815-55	1S1555
D27	8-719-815-55	1S1555
D30	8-719-815-55	1S1555
D31	8-719-815-55	1S1555
D33	8-719-815-55	1S1555
D34	8-719-815-55	1S1555
D35	8-719-815-55	1S1555
D36	8-719-815-55	1S1555
D37	8-719-815-55	1S1555
D38	8-719-815-55	1S1555
D39	8-719-815-55	1S1555
D40	8-719-815-55	1S1555
D41	8-719-815-55	1S1555
D42	8-719-815-55	1S1555
D43	8-719-815-55	1S1555
D44	8-719-815-55	1S1555
D45	8-719-815-55	1S1555
D46	8-719-815-55	1S1555
D47	8-719-815-55	1S1555
D48	8-719-815-55	1S1555
D49	8-719-815-55	1S1555
D50	8-719-815-55	1S1555
D51	8-719-815-55	1S1555
D52	8-719-815-55	1S1555
D53	8-719-815-55	1S1555
D54	8-719-815-55	1S1555
D55	8-719-815-55	1S1555
D56	8-719-815-55	1S1555
D57	8-719-815-55	1S1555
D58	8-719-815-55	1S1555
D59	8-719-911-19	1SS119

Ref. No.	Parts No.	Description
IC1	8-759-241-61	TC40161BP (CD40161BE; RCA)
IC2	8-759-245-12	TC4512BP (MC14512BCP; MOT)
IC3	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC4	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC5	8-759-240-73	TC4073BP (CD4073BE; RCA)
IC6	8-759-240-75	TC4075BP (CD4075BE; RCA)
IC7	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC8	8-759-245-12	TC4512BP (MC14512BCP; MOT)
IC9	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC10	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC11	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC12	8-759-240-82	TC4082BP (CD4082BE; RCA)
IC13	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC14	8-759-240-71	TC4071BP (CD4071BE; RCA)
IC15	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC16	8-759-240-43	TC4043BP (CD4043BE; RCA)
IC17	8-759-240-71	TC4071BP (CD4071BE; RCA)
IC18	8-759-240-71	TC4071BP (CD4071BE; RCA)
IC19	8-759-240-73	TC4073BP (CD4073BE; RCA)
IC20	8-759-645-29	M54529P (MITSUBISHI)
IC21	8-759-240-25	TC4025BP (CD4025BE; RCA)
IC22	8-759-240-75	TC4075BP (CD4075BE; RCA)
IC23	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC24	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC25	8-759-240-25	TC4025BP (CD4025BE; RCA)
IC26	8-759-240-43	TC4043BP (CD4043BE; RCA)
IC27	8-759-645-29	M54529P (MITSUBISHI)
IC28	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC29	8-759-240-23	TC4023BP (CD4023BE; RCA)
IC30	8-759-045-84	MC14584BCP (MOTOROLA)
IC31	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC32	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC33	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC34	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC35	8-759-240-75	TC4075BP (CD4075BE; RCA)
IC36	8-759-240-71	TC4071BP (CD4071BE; RCA)
IC37	8-759-240-12	TC4012BP (CD4012BE; RCA)
IC38	8-759-240-71	TC4071BP (CD4071BE; RCA)
IC39	8-759-240-72	TC4072BP (CD4072BE; RCA)
IC40	8-759-240-73	TC4073BP (CD4073BE; RCA)
IC41	8-759-245-28	TC4528BP (MC14528BCP; MOT)
IC42	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC43	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC44	8-759-645-29	M54529P (MITSUBISHI)
IC45	8-759-240-73	TC4073BP (CD4073BE; RCA)
IC46	8-759-240-71	TC4071BP (CD4071BE; RCA)
IC47	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC48	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC49	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC50	8-759-345-38	HD14538BP (HITACHI)

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IC51	8-759-240-68	TC4068BP (CD4068BE; RCA)
IC52	8-759-240-23	TC4023BP (CD4023BE; RCA)
IC53	8-759-240-43	TC4043BP (CD4023BE; RCA)
IC54	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC55	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC56	8-759-645-29	M54529P (MITSUBISHI)
IC57	8-759-240-93	TC4093BP (CD4093BE; RCA)
IC58	8-759-240-73	TC4073BP (CD4073BE; RCA)
IC59	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC60	8-759-645-29	M54529P (MITSUBISHI)
IC61	8-759-045-84	MC14584BCP (MOTOROLA)
IC62	8-759-645-29	M54529P (MITSUBISHI)
IC63	8-759-240-27	TC4027BP (CD4027BE; RCA)
IC64	8-759-240-71	TC4071BP (CD4071BE; RCA)
IC65	8-759-240-82	TC4082BP (CD4082BE; RCA)
IC66	8-757-561-00	CX-756A (SONY)
IC67	8-757-570-00	CX-757 (SONY)
IC68	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC69	8-759-240-71	TC4071BP (CD4071BE; RCA)
IC70	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC71	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC72	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC73	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC74	8-759-240-75	TC4075BP (CD4075BE; RCA)
Q1	8-729-201-04	2SC2878
Q2	8-729-663-47	2SC1364
Q3	8-729-663-47	2SC1364
RV1	1-226-096-00	VAR, METAL 500K
RV2	1-224-940-00	VAR, METAL 10K
RV3	1-226-096-00	VAR, METAL 500K

SY-37 BOARD (*: IC3, 6, 7, 72: Not handling at RPC)

	A-6717-207-B	MOUNTED CIRCUIT BOARD, SY-37
C2	1-102-108-00	CERAMIC 150PF 10% 50V
C4	1-131-377-00	TANTALUM 10 20% 10V
C5	1-102-963-00	CERAMIC 33PF 5% 50V
C6	1-102-963-00	CERAMIC 33PF 5% 50V

Ref. No.	Parts No.	Description
CN31	1-560-454-31	40P
CN32	1-560-454-31	40P
D1	8-719-168-88	RD6.8F-B
D2	8-719-709-25	1S1925-P
D3	8-719-815-55	1S1555
D4	8-719-815-55	1S1555
D5	8-719-815-55	1S1555
D7	8-719-815-55	1S1555
D8	8-719-815-55	1S1555
D10	8-719-815-59	1S1555-S
	(S/N. Up to 12185(PAL) S/N. Up to 10185(SECAM))	
IC1	8-759-005-14	AM9513DC (AMD)
IC2	8-759-906-80	LH0080 (SHARP)
IC3	*8-759-762-24	MBM2732U8001-8 (FUJITSU)
IC4	8-759-906-84	LH0084 (SHARP)
IC5	8-759-005-19	AM9519APC (AMD)
IC6	*8-759-762-26	MBM2732U8003-8 (FUJITSU)
IC7	*8-759-762-25	MBM2732U8002-8 (FUJITSU)
IC8	8-759-921-28	MSM2128-1AS (OKI)
IC9	8-759-926-31	AM26LS31PC (AMD)
IC10	8-759-926-32	AM26LS32PC (AMD)
IC11	8-759-902-44	SN74LS244N (TI)
IC12	8-759-901-39	SN74LS139N (TI)
IC14	8-759-045-98	MC14598BCP (MOTOROLA)
IC15	8-759-974-07	SN7407N (TI)
IC16	8-759-902-44	SN74LS244N (TI)
IC17	8-759-900-74	SN74LS74AN (TI)
IC18	8-759-902-44	SN74LS244N (TI)
IC19	8-759-045-98	MC14598BCP (MOTOROLA)
IC20	8-759-903-78	SN74LS378N (TI)
IC21	8-759-903-77	SN74LS377N (TI)
IC22	8-759-801-11	LB1261 (SANYO)
IC23	8-759-801-11	LB1261 (SANYO)
IC24	8-759-045-98	MC14598BCP (MOTOROLA)
IC25	8-759-900-05	SN74LS05N (TI)
IC26	8-759-903-77	SN74LS377N (TI)
IC27	8-759-220-74	TC40H074P (TOSHIBA)
IC28	8-759-240-20	TC4020BP (CD4020BE; RCA)
IC29	8-759-902-44	SN74LS244N (TI)
IC30	8-759-045-98	MC14598BCP (MOTOROLA)
IC31	8-759-900-05	SN74LS05N (TI)
IC32	8-759-903-77	SN74LS377N (TI)
IC33	8-759-900-32	SN74LS32N (TI)
IC34	8-759-240-01	TC4001BP (CD4001BE; RCA)

NOTE:

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   Replace only with same components as specified.

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Ref. No.	Parts No.	Description
IC35	8-759-902-44	SN74LS244N (TI)
	(S/N. Up to 12185(PAL) S/N. Up to 10185(SECAM))	
IC35	8-759-692-44	M74LS244P(MITSUBISHI)
	(S/N. 12186 and higher(PAL) S/N. 10186 and higher(SECAM))	
IC36	8-759-045-98	MC14598BCP (MOTOROLA)
IC37	8-759-245-12	TC4512BP (MC14512BCP; MOT)
IC38	8-759-903-77	SN74LS377N (TI)
IC39	8-759-045-84	MC14584BCP (MOTOROLA)
IC40	8-759-902-44	SN74LS244N (TI)
IC41	8-759-045-98	MC14598BCP (MOTOROLA)
IC42	8-759-245-12	TC4512BP (MC14512BCP; MOT)
IC43	8-759-903-77	SN74LS377N (TI)
IC44	8-759-901-38	SN74LS138N (TI)
IC45	8-759-729-03	NJM2903D (JRC)
IC46	8-759-902-44	SN74LS244N (TI)
IC48	8-759-245-12	TC4512BP (MC14512BCP; MOT)
IC49	8-759-903-77	SN74LS377N (TI)
IC50	8-759-901-38	SN74LS138N (TI)
IC51	8-759-223-68	TC40H368P (TOSHIBA)
IC52	8-759-902-44	SN74LS244N (TI)
IC53	8-759-245-12	TC4512BP (MC14512BCP; MOT)
IC54	8-759-903-77	SN74LS377N (TI)
IC55	8-759-901-38	SN74LS138N (TI)
IC56	8-759-903-77	SN74LS377N (TI)
IC57	8-759-245-12	TC4512BP (MC14512BCP; MOT)
IC58	8-759-903-77	SN74LS377N (TI)
IC59	8-759-901-38	SN74LS138N (TI)
IC61	8-759-100-54	μPA54H (NEC)
IC62	8-759-100-64	μPA64H (NEC)
IC63	8-759-100-54	μPA54H (NEC)
IC64	8-759-100-64	μPA64H (NEC)
IC65	8-759-901-58	SN74LS158N (TI)
IC66	8-759-901-58	SN74LS158N (TI)
IC70	8-759-926-31	AM26LS31PC (AMD)
IC71	8-759-926-32	AM26LS32PC (AMD)
IC72	* 8-759-762-27	MBM2732U8004-8
Q1	8-729-663-47	2SC1364
Q2	8-729-315-63	2SB856
Q3	8-729-663-48	2SC1364
S1	1-553-542-00	KEY "RESET"
S2	1-516-923-00	DIP
S3	1-553-076-00	SLIDE
S5	1-516-925-21	DIP "EIA/CCIR"
X1	1-527-827-00	4.9152MHz

Ref.No.	Parts No.	Description
SY-37A BOARD		
	A-6717-207-C	MOUNTED CIRCUIT BOARD, SY-37A
C1	1-123-309-00	ELECT 330 20% 10V
C2	1-102-108-00	CERAMIC 150PF 10% 50V
C3	1-123-332-00	ELECT 47 20% 25V
C5	1-102-963-00	CERAMIC 33PF 5% 50V
C6	1-102-963-00	CERAMIC 33PF 5% 50V
C7	1-102-074-00	CERAMIC 0.001 10% 50V
CN31	1-560-454-31	FLAT CABLE, 40P
CN32	1-560-454-31	FLAT CABLE, 40P
D1	8-719-168-88	RD6.8F-B
D2	8-719-101-97	1SS97-1
D3	8-719-911-19	1SS119
D5	8-719-911-19	1SS119
D7	8-719-911-19	1SS119
D8	8-719-911-19	1SS119
D9	8-719-911-19	1SS119
D10	8-719-911-19	1SS119
IC1	8-759-995-14	AM9513DC (TI)
IC2	8-759-960-80	LH0080 (SHARP)
IC4	8-759-906-84	LH0084 (SHARP)
IC5	8-759-995-19	AM9519APC (TI)
IC8	8-759-905-23	MSM2128-15RS (OKI)
IC9	8-759-926-31	AM26LS31PC (TI)
IC10	8-759-926-32	AM26LS32PC (TI)
IC11	8-759-902-44	SN74LS244N (TI)
IC12	8-759-901-39	SN74LS139N (TI)
IC14	8-759-045-98	MC14598BCP (MOTOROLA)
IC15	8-759-974-07	SN7407N (TI)
IC16	8-759-902-44	SN74LS244N (TI)
IC17	8-759-900-74	SN74LS74AN (TI)
IC18	8-759-902-44	SN74LS244N (TI)
IC19	8-759-045-98	MC14598BCP (MOTOROLA)
IC20	8-759-903-78	SN74LS378N (TI)
IC21	8-759-903-77	SN74LS377N (TI)
IC22	8-759-801-11	LB1261 (SANYO)
IC23	8-759-801-11	LB1261 (SANYO)
IC24	8-759-045-98	MC14598BCP (MOTOROLA)

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Ref. No.	Parts No.	Description
IC25	8-759-900-05	SN74LS05N (TI)
IC26	8-759-903-77	SN74LS377N (TI)
IC27	8-759-220-74	TC40H074P (TOSHIBA)
IC28	8-759-240-20	TC4020BP (TOSHIBA)
IC29	8-759-902-44	SN74LS244N (TI)
IC30	8-759-045-98	MC14598BCP (MOTOROLA)
IC31	8-759-900-05	SN74LS05N (TI)
IC32	8-759-903-77	SN74LS377N (TI)
IC33	8-759-900-32	SN74LS32N (TI)
IC34	8-759-240-01	TC4001BP (TOSHIBA)
IC35	8-759-902-44	SN74LS244N (TI)
IC36	8-759-045-98	MC14598BCP (MOTOROLA)
IC37	8-759-245-12	TC4512BP (TOSHIBA)
IC38	8-759-903-77	SN74LS377N (TI)
IC39	8-759-045-84	MC14584BCP (MOTOROLA)
IC40	8-759-902-44	SN74LS244N (TI)
IC41	8-759-045-98	MC14598BCP (MOTOROLA)
IC42	8-759-245-12	TC4512BP (TOSHIBA)
IC43	8-759-903-77	SN74LS377N (TI)
IC44	8-759-901-38	SN74LS138N (TI)
IC45	8-759-729-03	NJM2903D (JRC)
IC46	8-759-902-44	SN74LS244N (TI)
IC48	8-759-245-12	TC4512BP (TOSHIBA)
IC49	8-759-903-77	SN74LS377N (TI)
IC50	8-759-901-38	SN74LS138N (TI)
IC51	8-759-223-68	TC40H368P (TOSHIBA)
IC52	8-759-902-44	SN74LS244N (TI)
IC53	8-759-245-12	TC4512BP (TOSHIBA)
IC54	8-759-903-77	SN74LS377N (TI)
IC55	8-759-901-38	SN74LS138N (TI)
IC56	8-759-903-77	SN74LS377N (TI)
IC57	8-759-245-12	TC4512BP (TOSHIBA)
IC58	8-759-903-77	SN74LS377N (TI)
IC59	8-759-901-38	SN74LS138N (TI)
IC61	8-759-100-54	μPA54H (NEC)
IC62	8-759-100-64	μPA64H (NEC)
IC63	8-759-100-54	μPA54H (NEC)
IC64	8-759-100-64	μPA64H (NEC)
IC65	8-759-901-58	SN74LS158N (TI)
IC66	8-759-901-58	SN74LS158N (TI)
IC70	8-759-926-31	AM26LS31PC (TI)
IC71	8-759-926-32	AM26LS32PC (TI)
IC73	8-759-916-29	SN74HC74N (TI)
IC74	8-759-901-39	SN74LS139N (TI)
IC75	8-759-770-63	27128-U800V-9IC75
L1	1-459-155-00	45μH

Ref. No.	Parts No.	Description
Q1	8-729-600-28	2SC634SP-8
Q2	8-729-315-63	2SB856
Q3	8-729-600-28	2SC634SP-8
Q4	8-729-600-28	2SC634SP-8
S1	1-553-542-00	SWITCH, KEY
S2	1-570-598-11	SWITCH, DIP
S3	1-553-076-21	SWITCH, SLIDE
S5	1-570-623-11	SWITCH, DIP
X1	1-527-827-00	CRYSTAL, 4.9152MHz

SY-71 BOARD

⚠	A-6717-208-A	MOUNTED CIRCUIT BOARD, SY-71
C13	1-123-299-00	ELECT 1000 20% 6.3V
C14	1-131-498-00	TANTALUM 1 10% 25V
D1	8-719-815-55	1S1555
D2	8-719-815-55	1S1555
D3	8-719-815-55	1S1555
D4	8-719-815-55	1S1555
D5	8-719-815-55	1S1555
D6	8-719-815-55	1S1555
D7	8-719-815-55	1S1555
D8	8-719-200-02	10E-2
D9	8-719-200-02	10E-2
D10	8-719-200-02	10E-2
D11	8-719-815-55	1S1555
D12	8-719-815-55	1S1555
D13	8-719-200-02	10E-2
D14	8-719-200-02	10E-2
D15	8-719-200-02	10E-2
D16	8-719-815-55	1S1555
D18	8-719-200-02	10E-2
D19	8-719-200-02	10E-2
D20	8-719-200-02	10E-2

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Ref. No.	Parts No.	Description
D21	8-719-815-55	1S1555
D22	8-719-815-55	1S1555
D23	8-719-200-02	10E-2
D24	8-719-200-02	10E-2
D25	8-719-200-02	10E-2
D26	8-719-815-55	1S1555
D28	8-719-815-55	1S1555
D29	8-719-200-02	10E-2
D31	8-719-200-02	10E-2
D33	8-719-200-02	10E-2
D34	8-719-200-02	10E-2
D35	8-719-200-02	10E-2
D37	8-719-815-55	1S1555
D38	8-719-200-02	10E-2
D39	8-719-815-55	1S1555
D40	8-719-200-02	10E-2
D41	8-719-815-55	1S1555
D42	8-719-200-02	10E-2
D43	8-719-200-02	10E-2
D44	8-719-200-02	10E-2
D45	8-719-815-55	1S1555
D46	8-719-815-55	1S1555
D47	8-719-200-02	10E-2
D48	8-719-200-02	10E-2
D49	8-719-200-02	10E-2
D50	8-719-815-55	1S1555
D52	8-719-815-55	1S1555
D53	8-719-815-55	1S1555
D54	8-719-200-02	10E-2
D55	8-719-200-02	10E-2
D56	8-719-200-02	10E-2
D57	8-719-200-02	10E-2
D58	8-719-200-02	10E-2
IC1	8-743-430-00	BX-343 (SONY)
Q1	8-729-663-47	2SC1364
Q2	8-729-103-43	2SB734
Q3	8-729-177-43	2SD774
Q4	8-729-663-47	2SC1364
Q5	8-729-663-47	2SC1364
Q6	8-729-103-43	2SB734
Q7	8-729-177-43	2SD774
Q8	8-729-663-47	2SC1364
Q9	8-729-663-47	2SC1364
Q10	8-729-177-43	2SD774

Ref. No.	Parts No.	Description
Q11	8-729-663-47	2SC1364
Q12	8-729-103-43	2SB734
Q13	8-729-177-43	2SD774
Q14	8-729-663-47	2SC1364
Q15	8-729-663-47	2SC1364
Q16	8-729-177-43	2SD774
Q17	8-729-103-43	2SB734
Q18	8-729-663-47	2SC1364
Q19	8-729-663-47	2SC1364
Q20	8-729-283-42	2SB834
Q21	8-729-331-53	2SC2315
Q22	8-729-663-47	2SC1364
Q23	8-729-283-42	2SB834
Q24	8-729-331-53	2SC2315
Q25	8-729-663-47	2SC1364
Q26	8-729-283-42	2SB834
Q27	8-729-331-53	2SC2315
Q28	8-729-663-47	2SC1364
Q29	8-729-663-47	2SC1364
Q30	8-729-384-48	2SA844
Q31	8-729-663-47	2SC1364
Q32	8-729-103-43	2SB734
Q33	8-729-663-47	2SC1364
Q34	8-729-663-47	2SC1364
Q35	8-729-283-42	2SB834
Q36	8-729-331-53	2SC2315
Q37	8-729-663-47	2SC1364
Q38	8-729-663-47	2SC1364
Q39	8-729-663-47	2SC1364
Q40	8-729-283-42	2SB834
Q41	8-729-331-53	2SC2315
Q42	8-729-663-47	2SC1364
Q52	8-729-663-47	2SC1364
Q53	8-729-663-47	2SC1364

⚠ R42	1-206-568-00	WIREWOUND 27 10% 5W
⚠ R43	1-206-568-00	WIREWOUND 27 10% 5W
R57	1-244-865-00	CARBON 470 5% 1/2W
R61	1-244-865-00	CARBON 470 5% 1/2W
R70	1-244-865-00	CARBON 470 5% 1/2W
R84	1-217-020-00	CARBON 12 5% 3W

TC-12 BOARD

1-604-760-00 PRINTED CIRCUIT BOARD, TC-12

NOTE:

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Ref. No.	Parts No.	Description
TC-13-1 BOARD		
	A-6715-135-B	MOUNTED CIRCUIT BOARD, TC-13-1
C10	1-101-004-00	CERAMIC 0.01 50V
C11	1-102-114-00	CERAMIC 470P 10% 50V
C13	1-102-114-00	CERAMIC 470P 10% 50V
C107	1-108-583-00	MYLAR 0.015 5% 50V
C109	1-108-569-00	MYLAR 0.0039 5% 50V
C140	1-108-579-00	MYLAR 0.01 5% 50V
C142	1-108-567-00	MYLAR 0.0033 5% 50V
C205	1-108-569-00	MYLAR 0.0039 5% 50V
C206	1-108-569-00	MYLAR 0.0039 5% 50V
C210	1-102-114-00	CERAMIC 470PF 10% 50V
D2	8-719-815-55	1S1555
D101	8-719-815-55	1S1555
D102	8-719-815-55	1S1555
D103	8-719-101-97	1SS97-1
D104	8-719-101-97	1SS97-1
D105	8-719-815-55	1S1555
D201	8-719-815-55	1S1555
D202	8-719-815-55	1S1555
D203	8-719-815-55	1S1555
D205	8-719-815-55	1S1555
IC1	8-759-245-10	TC4510BP (MC14510BCP; MOT)
IC2	8-759-245-10	TC4510BP (MC14510BCP; MOT)
IC3	8-759-245-10	TC4510BP (MC14510BCP; MOT)
IC4	8-759-245-10	TC4510BP (MC14510BCP; MOT)
IC5	8-759-245-10	TC4510BP (MC14510BCP; MOT)
IC6	8-759-245-10	TC4510BP (MC1451BCP; MOT)
IC7	8-759-245-10	TC4510BP (MC14510BCP; MOT)
IC8	8-759-240-23	TC4023BP (CD4023BE; RCA)
IC9	8-759-240-71	TC4071BP (CD4071BE; RCA)
IC10	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC11	8-759-040-77	MC14077BCP (CD4077BE; RCA)
IC12	8-759-240-27	TC4027BP (CD4027BE; RCA)
IC13	8-759-245-12	TC4512BP (MC14512BCP; MOT)
IC14	8-759-245-12	TC4512BP (MC14512BCP; MOT)
IC15	8-759-245-12	TC4512BP (MC14512BCP; MOT)
IC16	8-759-245-12	TC4512BP (MC14512BCP; MOT)
IC17	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC18	8-759-240-73	TC4073BP (CD4073BE; RCA)
IC19	8-759-240-71	TC4071BP (CD4071BE; RCA)
IC20	8-759-145-19	μPD4519C (MC14519BCP; MOT)

Ref. No.	Parts No.	Description
IC101	8-759-700-00	NJM4562DDR (JRC)
IC102	8-751-300-00	CX-130 (SONY)
IC103	8-765-222-20	2SC1963 (SONY)
IC104	8-759-100-32	μPA76V-FA
IC201	8-749-909-15	BX-3915A (SONY)
IC202	8-759-045-38	MC14538BCP (MOTOROLA)
IC203	8-759-245-39	TC4539BP (MC14539BCP; MOT)
IC204	8-759-245-12	TC4512BP (MC14512BCP; MOT)
IC205	8-759-240-01	TC4001BP (CD4001BE; RCA)
IC206	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC207	8-759-240-85	TC4085BP (CD4085BE; RCA)
Q101	8-729-663-47	2SC1364
Q102	8-729-201-04	2SC2878
Q103	8-729-663-47	2SC1364
Q104	8-729-663-47	2SC1364
Q105	8-729-201-04	2SC2878
Q107	8-729-663-47	2SC1364
Q108	8-729-201-04	2SC2878
Q109	8-729-663-47	2SC1364
Q110	8-729-663-47	2SC1364
Q111	8-729-663-47	2SC1364
Q112	8-729-663-47	2SC1364
Q113	8-729-663-47	2SC1364
Q114	8-729-663-47	2SC1364
Q116	8-729-201-04	2SC2878
Q201	8-729-663-47	2SC1364
Q250	8-729-663-47	2SC1364
Q251	8-729-663-47	2SC1364
R139	1-214-084-00	METAL 10 1% 1/4W
R153	1-244-849-00	CARBON 100 5% 1/2W
RV101	1-224-252-XX	VAR, METAL 10K
RV102	1-224-254-XX	VAR, METAL 47K
RV103	1-224-254-XX	VAR, METAL 47K (S/N. Up to 11490 (PAL) / S/N. Up to 10080 (SECAM))
RV103	1-224-247-XX	VAR, METAL 100 (S/N. 11491 and higher (PAL) / S/N. 10081 and higher (SECAM))
TM-4 BOARD		
	1-604-367-00	PRINTED CIRCUIT BOARD, TM-4

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Ref. No.	Parts No.	Description
TM-8 BOARD		
	1-604-364-00	PRINTED CIRCUIT BOARD, TM-8
TM-14 BOARD		
	1-606-977-00	PRINTED CIRCUIT BOARD, TM-14
YD-9 BOARD		
	A-6711-303-A	MOUNTED CIRCUIT BOARD, YD-9
C3	**1-161-013-00**	**CERAMIC 0.01 10% 25V**
C4	**1-107-206-00**	**MICA 15PF 5% 500V**
C5	**1-107-206-00**	**MICA 15PF 5% 500V**
C7	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C8	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C9	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C12	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C13	**1-108-567-00**	**MYLAR 0.0033 5% 50V**
C14	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C16	**1-107-206-00**	**MICA 15PF 5% 500V**
C18	**1-108-569-00**	**MYLAR 0.0039 5% 50V**
C19	**1-108-567-00**	**MYLAR 0.0033 5% 50V**
C20	**1-131-499-00**	**TANTALUM 1.5 10% 20V**
C22	**1-131-498-00**	**TANTALUM 1 10% 25V**
C23	**1-108-595-00**	**MYLAR 0.047 5% 50V**
C31	**1-108-603-00**	**MYLAR 0.1 5% 50V**
C32	**1-107-085-00**	**MICA 100PF 5% 500V**
C27	**1-108-587-00**	**MYLAR 0.022 5% 50V**
C31	**1-107-047-00**	**MICA 5.6PF 500V**
C36	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C37	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C39	**1-108-579-00**	**MYLAR 0.01 5% 50V**

Ref. No.	Parts No.	Description
C40	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C41	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C42	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C44	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C49	**1-109-690-00**	**DIPPED MICA 510PF 1% 500V**
C53	**1-107-210-00**	**MICA 22PF 5% 500V**
C64	**1-107-202-00**	**MICA 10PF 5% 500V**
C65	**1-107-159-00**	**MICA 33PF 5% 500V**
C71	**1-107-159-00**	**MICA 33PF 5% 500V**
C73	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C75	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C78	**1-107-042-00**	**MICA 2.2PF 500V**
C79	**1-107-157-00**	**MICA 27PF 5% 500V**
C80	**1-107-202-00**	**MICA 10PF 5% 500V**
C88	**1-107-210-00**	**MICA 22PF 5% 500V**
C90	**1-107-048-00**	**MICA 6.8PF 500V**
C93	**1-107-158-00**	**MICA 30PF 5% 500V**
C95	**1-109-696-00**	**DIPPED MICA 910PF 5% 500V**
C97	**1-107-207-00**	**MICA 16PF 5% 500V**
C98	**1-107-047-00**	**MICA 5.6PF 500V**
C100	**1-107-211-00**	**MICA 24PF 5% 500V**
C101	**1-107-207-00**	**MICA 16PF 5% 500V**
C104	**1-107-202-00**	**MICA 10PF 5% 500V**
C204	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C206	**1-108-607-00**	**MYLAR 0.15 5% 50V**
C212	**1-131-368-00**	**TANTALUM 3.3 10% 16V**
C214	**1-131-368-00**	**TANTALUM 3.3 10% 16V**
C216	**1-131-363-00**	**TANTALUM 4.7 10% 25V**
C218	**1-108-569-00**	**MYLAR 0.0039 5% 50V**
C219	**1-108-565-00**	**MYLAR 0.0027 5% 50V**
C221	**1-108-579-00**	**MYLAR 0.01 5% 50V**
C223	**1-130-201-00**	**POLYPROPYLENE 0.068 5% 50V**
C225	**1-107-159-00**	**MICA 33PF 5% 500V**
C301	**1-107-049-00**	**MICA 8.2PF 500V**
CV1	**1-141-240-00**	**TRIMMER 20PF** (S/N. 12286 and higher(PAL) S/N. 10186 and higher(SECAM))

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Ref. No.	Parts No.	Description
D1	8-719-815-55	1S1555
D2	8-719-815-55	1S1555
D3	8-719-147-07	RD4.7E-B
D4	8-719-815-55	1S1555
D5	8-719-101-97	1SS97-1
D6	8-719-101-97	1SS97-1
D7	8-719-101-97	1SS97-1
D8	8-719-101-97	1SS97-1
D9	8-719-815-55	1S1555
D10	8-719-815-55	1S1555
D11	8-719-815-55	1S1555
D201	8-719-815-55	1S1555
D202	8-719-815-55	1S1555
D203	8-719-815-55	1S1555
D204	8-719-815-55	1S1555
D205	8-719-815-55	1S1555
D206	8-719-815-55	1S1555
D207	8-719-815-55	1S1555
DL1	1-415-096-00	0.3μS (S/N. up to 13725(PAL) S/N. up to 10355(SECAM))
	1-415-096-31	(S/N. 13726 and higher(PAL) S/N. 10356 and higher(SECAM))
DL2	1-415-154-21	35nS
DL3	1-415-154-21	35nS
DL4	1-415-236-21	1H
FL1	1-235-010-00	HIGH PASS (S/N. up to 13525(PAL) S/N. up to 10355(SECAM))
	1-235-010-21	(S/N. 13526 and higher(PAL) S/N. 10356 and higher(SECAM))
FL2	1-231-381-00	LOW PASS
FL3	1-231-380-00	LOW PASS (S/N. up to 13525(PAL) S/N. up to 10355(SECAM))
	1-231-380-21	(S/N. 13526 and higher(PAL) S/N. 10356 and higher(SECAM))

Ref. No.	Parts No.	Description
IC1	8-751-340-00	CX-134A (SONY)
IC2	8-751-300-00	CX-130 (SONY)
IC3	8-751-300-00	CX-130 (SONY)
IC4	8-759-270-69	TA7069P (TOSHIBA)
IC5	8-759-270-69	TA7069P (TOSHIBA)
IC6	8-749-938-90	BX-389 (SONY)
IC7	8-751-350-00	CX-135 (SONY)
IC8	8-759-270-76	TA7076P (TOSHIBA)
IC9	8-751-300-00	CX-130 (SONY)
IC201	8-729-677-14	2SC2771 (MITSUBISHI)
IC202	8-759-345-38	HD14538BP (HITACHI)
L5	1-407-168-61	MICRO 82
L12	1-408-654-00	INDUCTOR 1mH
L19	1-407-166-61	MICRO 56μH 5%
L20	1-407-167-61	MICRO 68
L21	1-407-168-61	MICRO 82
LV1	1-407-571-00	VAR 22
LV2	1-407-571-00	VAR 22
LV3	1-407-285-00	VAR 1.5mH (S/N. Up to 12185(PAL) S/N. Up to 10185(SECAM))
LV3	1-407-268-00	VAR 1.5mH (S/N. 12186 and higher(PAL) S/N. 10186 and higher(SECAM))
LV4	1-407-565-00	VAR 2.2
Q1	8-724-375-01	2SC403C
Q2	8-724-375-01	2SC403C
Q3	8-729-201-04	2SC2878
Q4	8-724-375-01	2SC403C
Q5	8-724-375-01	2SC403C
Q6	8-729-663-47	2SC1364
Q7	8-724-375-01	2SC403C
Q8	8-724-375-01	2SC403C
Q9	8-729-384-48	2SA844
Q10	8-729-663-47	2SC1364
Q11	8-729-663-47	2SC1364
Q12	8-724-375-01	2SC403C
Q13	8-729-663-47	2SC1364
Q14	8-724-375-01	2SC403C
Q15	8-724-375-01	2SC403C
Q16	8-724-375-01	2SC403C
Q17	8-729-663-47	2SC1364
Q18	8-724-375-01	2SC403C
Q19	8-724-375-01	2SC403C
Q20	8-724-375-01	2SC403C
Q21	8-724-375-01	2SC403C
Q22	8-729-663-47	2SC1364
Q23	8-724-375-01	2SC403C
Q24	8-724-375-01	2SC403C
Q25	8-724-375-01	2SC403C

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Ref. No.	Parts No.	Description
Q26	8-724-375-01	2SC403C
Q27	8-723-303-20	2SK43-3A
Q28	8-729-384-48	2SA844
Q29	8-724-375-01	2SC403C
Q30	8-724-375-01	2SC403C
Q31	8-729-384-48	2SA844
Q32	8-729-201-05	2SC2878-B
Q33	8-729-201-04	2SC2878
Q34	8-724-375-01	2SC403C
Q35	8-724-375-01	2SC403C
Q36	8-724-375-01	2SC403C
Q37	8-724-375-01	2SC403C
Q39	8-724-375-01	2SC403C
Q50	8-724-375-01	2SC403C
Q201	8-724-375-01	2SC403C
Q202	8-729-384-48	2SA844
Q203	8-729-201-04	2SC2878
Q204	8-729-384-48	2SA844
Q205	8-724-375-01	2SC403C
Q206	8-724-375-01	2SC403C
Q207	8-724-375-01	2SC403C
Q208	8-724-375-01	2SC403C
Q209	8-729-384-48	2SA844
Q210	8-724-375-01	2SC403C
Q211	8-729-384-48	2SA844
Q212	8-724-375-01	2SC403C
Q213	8-729-384-48	2SA844
Q214	8-724-375-01	2SC403C
Q215	8-724-375-01	2SC403C

R14	1-247-217-00	CARBON 110 1/2W 5%
R62	1-247-228-00	CARBON 330 1/2W 5%
R63	1-247-228-00	CARBON 330 1/2W 5%
R95	1-214-135-00	METAL 1.3K 1/4W 1%
R247	1-212-712-00	METAL 270K 1/2W 1%
R248	1-214-178-00	METAL 82K 1/4W 1%
RV1	1-224-250-XX	VAR, METAL 2.2K
RV2	1-224-250-XX	VAR, METAL 2.2K
RV3	1-224-249-XX	VAR, METAL 1K
RV4	1-224-250-XX	VAR, METAL 2.2K
RV5	1-224-250-XX	VAR, METAL 2.2K
RV6	1-224-251-XX	VAR, METAL 4.7K
RV7	1-224-251-XX	VAR, METAL 4.7K
RV8	1-224-251-XX	VAR, METAL 4.7K
RV9	1-224-254-XX	VAR, METAL 47K
RV10	1-224-250-XX	VAR, METAL 2.2K

Ref. No.	Parts No.	Description
RV11	1-224-250-XX	VAR, METAL 2.2K
RV12	1-224-250-XX	VAR, METAL 2.2K
RV13	1-224-250-XX	VAR, METAL 2.2K
RV14	1-224-254-XX	VAR, METAL 47K
RV15	1-224-250-XX (S/N. Up to 13025 (PAL) S/N. Up to 10265 (SECAM))	VAR, METAL 2.2K
RV201	1-224-255-XX	VAR, METAL 100K
RV202	1-224-254-XX	VAR, METAL 47K
S1	1-552-509-00	DIP
S2	1-552-509-00	DIP
TH1	1-800-199-00	S-1250
X1	1-527-976-00	OSC 8.5 MHz

WL-1 BOARD

	1-604-366-00	PRINTED CIRCUIT BOARD, WL-1
D1	8-719-812-44	TLO124
PL1	1-518-386-00	5V 30mA
PL2	1-518-386-00	5V 30mA

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FRAME

E. PARTS

Ref. No.	Parts No.	Description
FRAME (REF. NO. 200 SERIES)		
	A-6742-034-A	**DETECTOR T ASS'Y (WITH LE-4B, PH-1B)**
	A-6742-036-B	**DETECTOR S ASS'Y (WITH LE-4A, PH-1A)**
	⚠1-526-572-00	**VOLTAGE SELECTOR**
	1-555-698-00	WIRE ASS'Y, FLAT 40P (100mm) SY-37 TO KY-9
	1-555-699-00	WIRE ASS'Y, FLAT 40P (160mm) MB-8 TO MB-9
CN201	**1-509-891-00**	**BNC "VIDEO OUT 1"**
CN202	**1-509-891-00**	**BNC "VIDEO OUT 2"**
CN203	**1-509-891-00**	**BNC "RF (OFF TAPE)"**
CN204	**1-509-176-00**	**XLR-3P (M) "AUDIO OUT (CH-1/L)"**
CN205	**1-509-176-00**	**XLR-3P (M) "AUDIO OUT (CH-2/R)"**
CN206	**1-509-176-00**	**XLR-3P (M) "AUDIO OUT (MONITOR)"**
CN207	**1-509-095-00**	**8P "MONITOR"**
CN208	**1-561-045-00**	**7P (F) "DUB OUT"**
CN209	**1-508-945-00**	**7P (M) "DUB IN"**
CN210	**1-509-471-00**	**18P (F) "TBC"**
CN211	**1-509-891-00**	**BNC "SC IN"**
CN212	**1-509-891-00**	**BNC "VIDEO IN 1"**
CN213	**1-509-891-00**	**BNC "VIDEO IN 2"**
CN214	**1-509-891-00**	**BNC "EXT SYNC IN"**
CN215	**1-507-142-XX**	**PIN JACK, 2P "TIME CODE IN/OUT"**
CN216	**1-509-184-00**	**XLR-3P (F) "AUDIO IN (CH-1/L)"**
CN217	**1-509-184-00**	**XLR-3P (F) "AUDIO IN (CH-2/R)"**
⚠ CN221	**1-509-546-00**	**3P (M) "AC IN"**
CS201	**1-586-633-00**	**CONDENSATION SENSOR**
DME201	**8-745-203-00**	**DM203 "CAPSTAN"**

Ref. No.	Parts No.	Description
H201	**8-829-358-35**	**EPP150-5803B "AUDIO/CTL"**
H202	**8-829-371-11**	**PP171-5802D "TIME CODE R/P"**
H203	**8-825-544-10**	**EF232-58 "FULL ERASE"** (S/N. Up to 12335 (PAL) / S/N. Up to 10235 (SECAM))
	8-825-544-20	**EF248-58 "FULL ERASE"** (S/N. 12336 and higher (PAL) / S/N. 10236 and higher (SECAM))
H204	**A-6709-148-A**	**RV-14, UPPER DRUM "VIDEO" **
⚠ M201	**1-541-104-00**	**PE2B55 "FAN"** (S/N. Up to 12585 (PAL) / S/N. Up to 10235 (SECAM))
⚠ M201	**1-541-104-51**	**PE2B55 "FAN"** (S/N. 12586 to 14355 (PAL) / S/N. 10236 to 10425 (SECAM))
M201	**1-541-264-11**	**"FAN" DC** (S/N. 14356 and higher (PAL) / S/N. 10426 and higher (SECAM))
M202	**8-835-056-01**	**DNR-1002A "THREADING"**
M203	**A-6709-402-A**	**DUH-14A-R, HEAD ASS'Y "DRUM"**
M204	**8-838-019-01**	**BHF-1600A "CAPSTAN"**
M205	**8-835-050-01**	**MNR-4400A "T REEL"**
M206	**8-835-050-01**	**MNR-4400A "S REEL"**
M207	**8-835-055-01**	**DNR-4700A "CASSETTE C"**
ME201	**1-520-438-00**	**"VIDEO/RF"**
ME202	**1-520-439-00**	**"AUDIO CH-1"**
ME203	**1-520-439-00**	**"AUDIO CH-2"**
PL201	**1-518-461-00**	**14V, 50mA "METER LAMP"**
PL202	**1-518-461-00**	**14V, 50mA "METER LAMP"**
PL203	**1-518-461-00**	**14V, 50mA "METER LAMP"**
PL204	**1-518-461-00**	**14V, 50mA "METER LAMP"**
PL205	**1-518-461-00**	**14V, 50mA "METER LAMP"**
PL206	**1-518-461-00**	**14V, 50mA "METER LAMP"**
PL207	**1-518-455-00**	**12V, 55mA "CASSETTE LAMP"**
PL208	**1-518-455-00**	**12V, 55mA "CASSETTE LAMP"**
PL209	**1-518-455-00**	**12V, 55mA "CASSETTE LAMP"**

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Ref. No.	Parts No.	Description
PM201	**1-454-279-00**	**12.4V 11 OHM "S TENSION"**
PM202	**1-454-278-00**	**11.3V 21 OHM "SKEW"**
PM203	**1-454-278-00**	**11.3V 21 OHM "S BRAKE"**
PM204	**1-454-278-00**	**11.3V 21 OHM "T BRAKE"**
PM205	**1-454-276-00**	**12V 40 OHM "PINCH"**
RV201	**1-226-616-00**	**VAR, 100K "TRACKING"**
RV202	**1-224-691-XX**	**VAR, 10K "VIDEO LEVEL"**
RV203	**1-228-140-00**	**VAR, 20K x 2 "AUDIO LEVEL (CH-1)"**
RV204	**1-228-140-00**	**VAR, 20K x 2 "AUDIO LEVEL (CH-2)"**
⚠S201	**1-553-159-00**	**ROCKER "POWER"**
⚠T201	**1-446-938-00**	**"FAN"**
TM201	**1-548-100-11**	**"HOURS METER"**

Ref. No.	Parts No.	Description

18-4. PACKING MATERIAL AND ACCESSORY (SUPPLIED)

A-6724-244-A EXTENSION BOARD ASS'Y, EX-7
1-561-654-00 CONNECTOR, CARD, 86P
2-251-622-00 LEVER, PC BOARD

⚠ 1-556-760-11 CORD POWER

3-668-443-00 CUSHION, UPPER
(P . . . S/N. up to 14025
S . . . S/N. up to 10405)
3-688-859-01 CUSION UPPER
(P . . . S/N 14026 and higher
S . . . S/N 10406 and higher)
3-668-444-00 SPACER
3-668-445-00 CARTON, INDIVIDUAL
(P . . . S/N up to 14025
S . . . S/N up to 10405)
3-668-445-06 CARTON INDIVIDUAL
(P . . . S/N 14026 and higher
S . . . S/N 10406 and higher)
3-668-446-00 CUSHION, REAR
(P . . . S/N up to 14025
S . . . S/N up to 10405)
3-683-616-03 CUSHION (REAR), LOWER
(P . . . S/N 14026 and higher
S . . . S/N 10406 and higher)
3-668-447-00 CUSHION, FRONT
(P . . . S/N up to 14025
S . . . S/N up to 10405)
3-683-615-03 CUSION (FRONT), LOWER
(P . . . S/N. 14026 and higher
S . . . S/N. 10406 and higher)
3-672-917-00 BOARD, PICK
(P . . . S/N up to 14025
S . . . S/N up to 10405)
3-688-812-01 SPACER SIDE
(P- - - - - S/N 14596 and higher
S- - - - - S/N 10426 and higher)

3-701-649-00 BAG, POLY (FOR BVU-800P/800S)

STANDARD PRODUCTS DUBBING CABLE (VDC-5)
1-508-948-00 PLUG, 7P, MALE
1-561-055-00 PLUG, 7P, FEMALE
STANDARD PRODUCTS 9 PIN, REMOTE CONTROL CABLE (RCC-5G)
1-560-651-00 PLUG, 9P, MALE
1-561-749-00 SHELL

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