VO-5630

Revised-4

This manual includes the informations of Supplement-1, 2 and 3 that have been published already.

SONY®

SERVICE MANUAL

SPECIFICATIONS

GENERAL

Video recording	Rotary two-head helical scan system Luminance: fm recording Color signal: converted subcarrier direct recording
Video signal system	Recording: CCIR standards PAL or SECAM color system Playback: CCIR standards PAL or SECAM color/EIA standards NTSC 4.43MHz color system
Power requirements	110 – 240 Vac ±10%, 50/60 Hz ±10%
Power consumption	65 W
Operating position	Horizontal
Storage temperature	–20°C to +60°C (–4°F to +140°F)
Operating temperature	5°C to 40°C (41°F to 104°F)
Dimensions	Approx. 446 x 237 x 516 mm (w/h/d) (17-5/8 x 9-3/8 x 20-3/8 inches) including projecting parts and controls
Weight	Approx. 23.3 kg (51 lb 7 oz)

VIDEO

Input

VIDEO IN	BNC type, x1 1.0 V(p-p) $^{+1.0}_{-0.5}$ V(p-p), 75 ohms, unbalanced, sync negative
DUB IN	7 pin, x1
TV	8 pin, x1

Output

VIDEO OUT	BNC type, x1 1.0 V(p-p) ±0.2 V(p-p), 75 ohms, unbalanced, sync negative
DUB OUT	7 pin, x1
TV	8 pin, x1
Horizontal resolution	Monochrome mode: 330 lines Color mode: 250 lines
Signal-to-noise ratio	Monochrome mode: more than 48 dB Color mode: more than 45 dB
Recording level	Automatic

AUDIO

Input

LINE CH-1, CH-2 IN	Phone jack, x 1 in each –10 dB, 47 Kohms
MIC CH-1, CH-2	Phono jack, x 1 in each –60 dB, for 600 ohm microphones
TV	8 pin, x1

Output

LINE CH-1, CH-2 OUT	Phono jack, x 1 in each –5 dB (with 47 Kohm load)
AUDIO MONITOR	Minijack, x 1 –5 dB (with 47 Kohm load)
HEADPHONES	Stereo phone jack, x1 for 8 ohm headphones Level: adjustable (–24 dB to –46 dB)
TV	8 pin, x1
Signal-to-noise ratio	Better than 48 dB (at 3% distortion) Both channels 1 and 2
Frequency response	50 – 15,000 Hz (channels 1 and 2)

Recording level adjustment

Manual, with audio limiter

SPECIAL FUNCTIONS

Pause	A still picture is obtained, with automatic long pause function
Search	Possible (about 5 times of normal speed in forward and reverse directions)
Tracking control	Possible
Skew control	Possible
Sync system	Internal and external
Dropout compensator	Internal

TAPE TRANSPORT

Tape speed	9.53 cm/sec (3-3/4 ips)

Recording or playback time

60 min (with KCA-60)

Fast forward and rewind time

within 4 min (with KCA-60)

Wow and flutter	±0.25% (DIN)
Tape compatibility	U-matic video cassette tape
Usable tape	KCA, KCS type tape

ACCESSORY SUPPLIED

AC power cord (1)

RECOMMENDED VIDEO EQUIPMENT AND ACCESSORIES

Color Video Monitor Sony CVM and PVM series
Color Video Camera Sony DXC series
Auto Search Control RX-353CE, RX-303CE, RM-300
Remote Control Unit RM-500
Cleaning Cassette KC-1C
Remote Control Cable RCC-5F
Dubbing Cable VDC-5 (5 m)
Monitor Connecting Cable VMC-3P (3 m), VMC-5P (5 m), VMC-10P (10 m)
Video Responder System VRC-100, VRS-110, VRD-100, VRP-100
RF kit RFK-660UCE/660UB/660UF/660CH
Multi Remote Control Unit RM-555
Video and Audio Distributor DA-500
Video and Audio Switcher VCS-500
VTR Selector RM-V5

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SECTION 1
GENERAL DESCRIPTION

1-1. FEATURES

Search operation: Playback at about 5-times normal speed is possible in both forward and reverse directions.

Programmed operation: Program material from the beginning of the tape to the point at which the tape counter reads "000" can be played back repeatedly. It is also possible to stop the tape automatically at the "000" point.

Still picture: When the tape is stopped with the PAUSE button during playback, a still picture can be obtained. The guard band noise is limited to the upper or lower part of the screen so that the still picture is easy to see.

Long pause mode: When the tape is stopped in the pause mode for a long period of time, the machine automatically enters the long pause mode to avoid possible damage to the tape.

Moisture detector: When moisture condenses on the video head drum, the moisture detector is activated and the machine stops to avoid possible tape damage. The AUTO OFF indicator lights to indicate moisture condensation.

Remote control and auto search: The machine can be remotely controlled with an optional remote control unit. Any point on the tape can be searched for and played back automatically using an RX-353CE or RX-303CE Auto Search Control Unit.

Logic control: The logic control system allows you to change modes without pressing the STOP button.

Full automatic rewind: The tape is automatically rewound to the beginning when it runs to the end.

Automatic control of video recording level: The automatic gain control circuit maintains the proper video level, assuring optimum video recording.

Limiter function: The audio recording level is adjusted manually. The limiter circuit minimizes audio distortion at the program peaks.

Two audio tracks: Two audio tracks permits recording and playback of stereo sound or bilingual program material.

Audio dubbing: Audio (commentary, music, etc.) may be added to video recording made earlier.

Timer operation: With the aid of a timer (optional), recording and playback can be started and stopped when the recorder is unattended.

Dubbing connectors: Connectors for duplicating video signals are included.

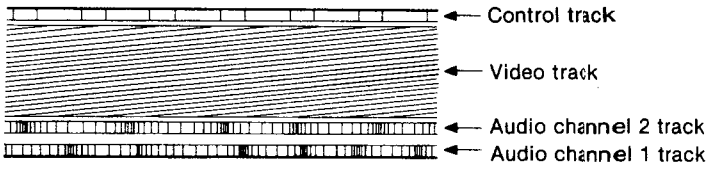
Stable playback picture: The servo system using a direct drive capstan motor and drum motor, and the newly developed digital servo IC assure a stable tape transport which reduces tape jitter.

Rack mounting: The VO-5630 is designed to be mounted in a 19-inch EIA standard rack.

No power adaptation and low power consumption: Thanks to Sony's newly-developed high efficiency switching regulator, the unit can be operated with a wide range of power voltages and frequencies without power adaptation. Power consumption is low.

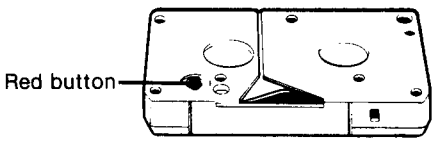
1-2. NOTE ON VIDEO CASSETTE TAPE

The video and audio signals are recorded using the full width of the tape as shown below. Because of this, the tape cannot be recorded in the reverse direction.



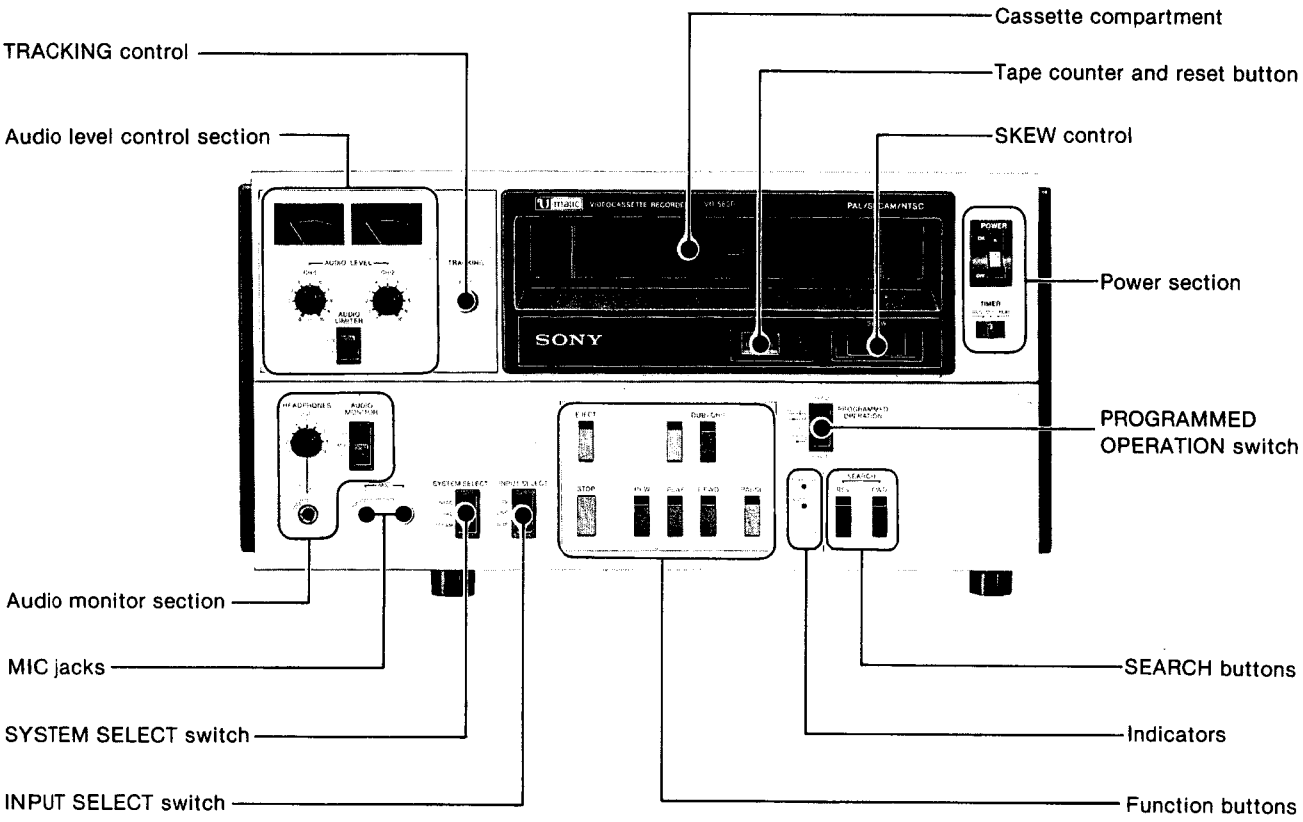
THE RED BUTTON ON THE BOTTOM

If you want to safeguard the material recorded on a cassette, remove the red button on the bottom so it cannot be recorded even if the REC button is pressed. Accidental erasure is now impossible. If you later decide to record on this cassette, replace the button. If a cassette without a red button is inserted into the videocassette recorder, the E-to-E mode picture does not appear on the monitor screen.



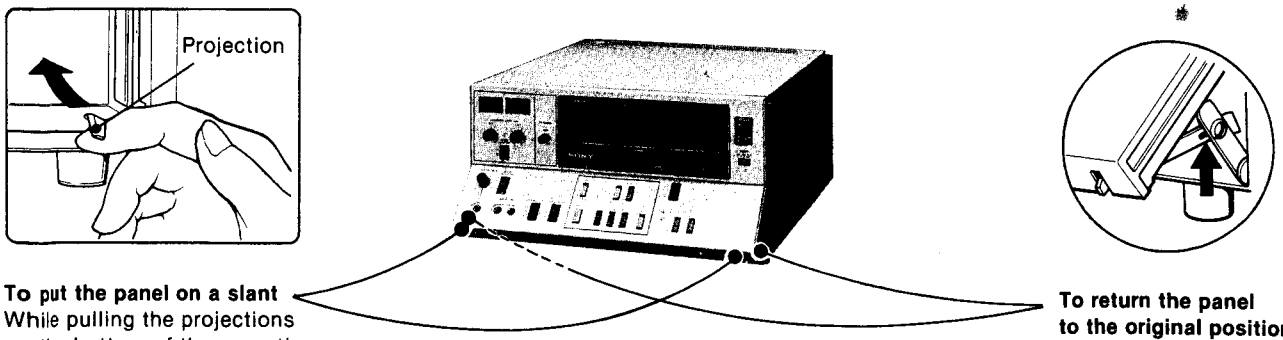
1-3. LOCATION AND FUNCTION OF CONTROLS

FRONT PANEL



TO PUT THE OPERATION PANEL ON A SLANT

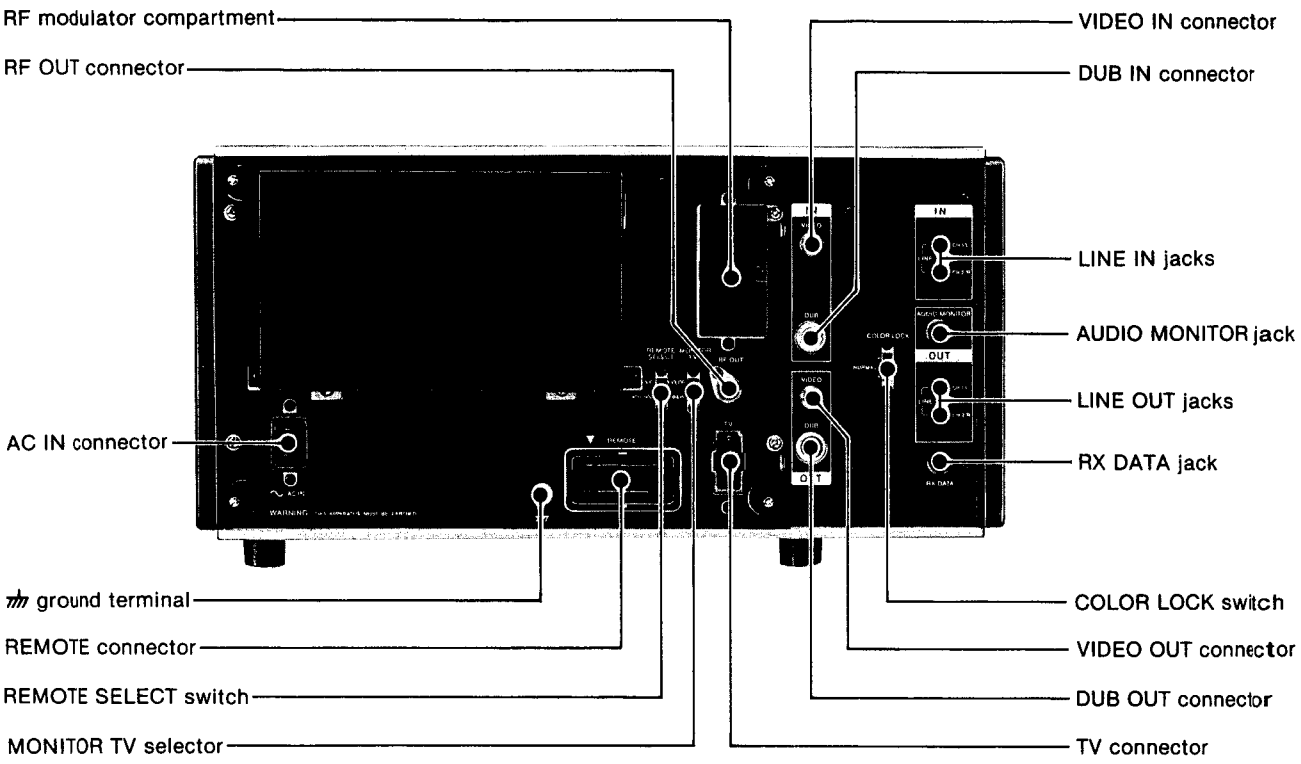
The lower half of the operation panel can be pulled out as shown below.



To put the panel on a slant
While pulling the projections on the bottom of the operation panel out, swing the bottom of the panel out and up until the side braces lock.

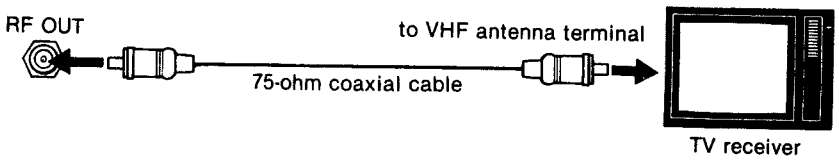
To return the panel to the original position
Push up on the side braces to unlock them and swing the panel down and back until it clicks into place.

REAR PANEL


RF modulator compartment
RF OUT connector
AC IN connector
ground terminal
REMOTE connector
REMOTE SELECT switch
MONITOR TV selector
VIDEO IN connector
DUB IN connector
LINE IN jacks
AUDIO MONITOR jack
LINE OUT jacks
RX DATA jack
COLOR LOCK switch
VIDEO OUT connector
DUB OUT connector
TV connector

1-4. CONNECTIONS AND SELECT SW SETTING

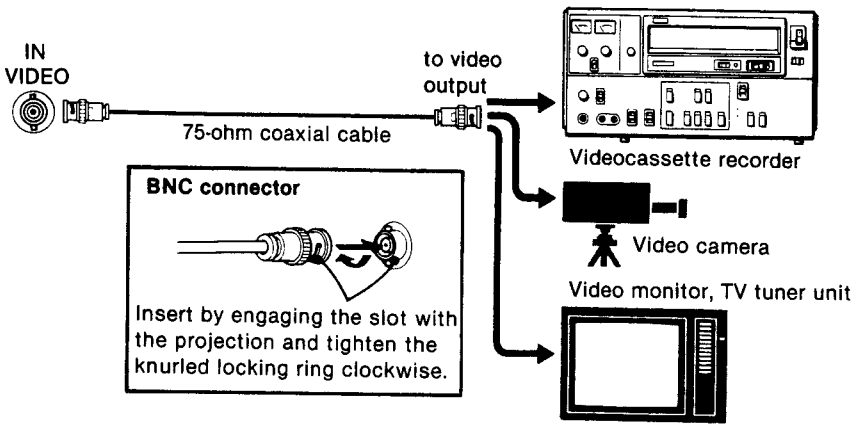
RF OUT connector
The output signal of the RF modulator, if it is inserted, is fed out here. Using this connector, you can see a picture on a conventional TV receiver.



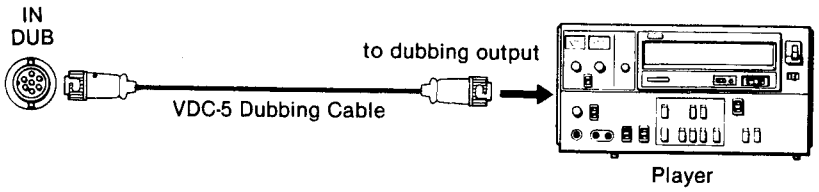
RF modulator compartment
Insert an RF modulator* (optional) here to see a picture on a conventional TV receiver.

*An RF (Radio Frequency) modulator converts the signal to be fed to the TV receiver into a UHF channel signal.

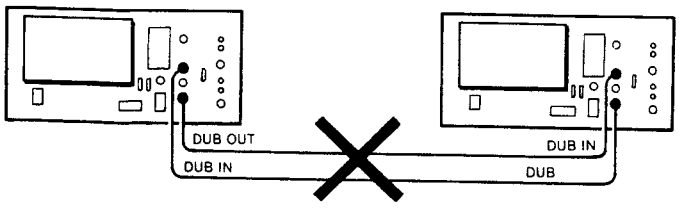
VIDEO IN connector (BNC type)
Connect the video signal to be recorded to this connector.

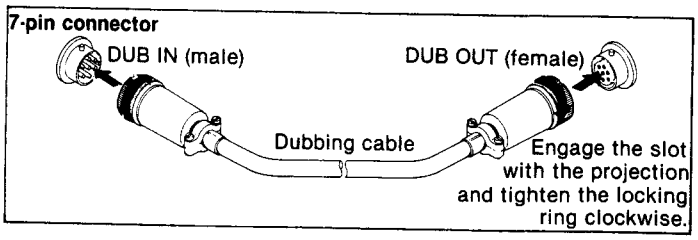


DUB IN connector (7 pin)
When duplicating a tape using a player with a dubbing connector, the video signal is connected using this connector.



Note on DUB connectors
Do not connect the dubbing connectors in parallel.

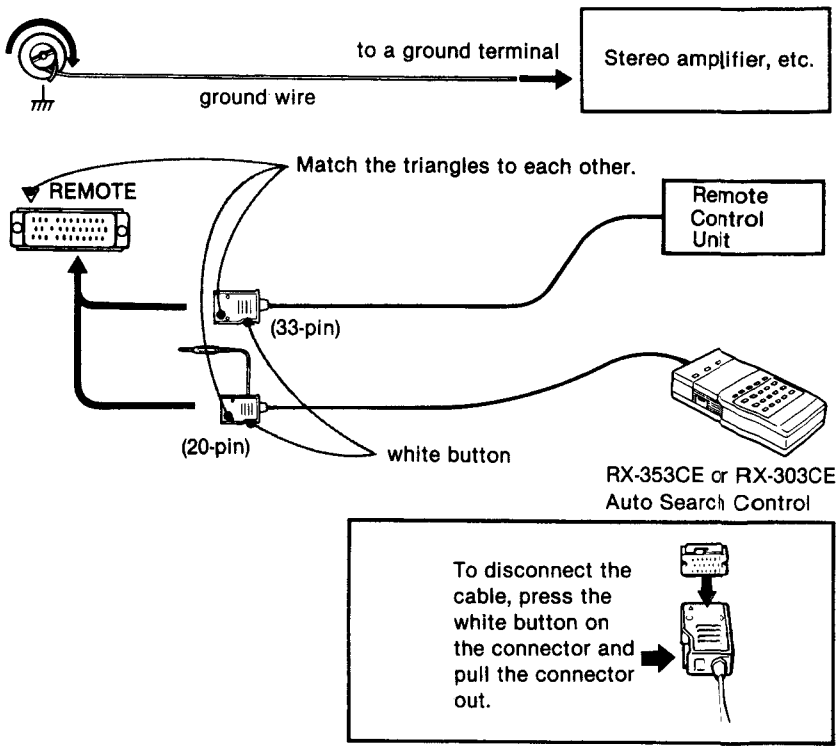




AC IN connector
Connect the supplied ac power cord here.

⏚ ground terminal
To reduce hum in the audio signal, connect this terminal to a ground terminal of the connected audio equipment.

REMOTE connector (33-pin)
Connect an optional auto search control unit or remote control unit to this connector.
- Before connecting the remote control cable, check whether the connector is male or female.
- The REMOTE connector accepts a 20-pin connector. A plug adaptor is unnecessary.
- When a unit which is equipped with a 20-pin connector is connected to the REMOTE connector, do not use the REV button on the unit. If you do, the recorder will malfunction.

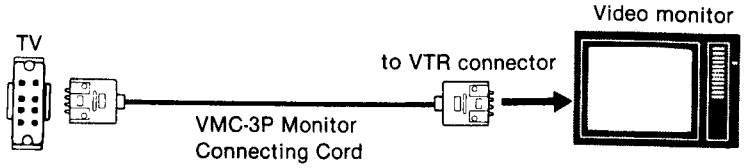


REMOTE SELECT switch
Set this switch depending on the type of the remote control unit or auto search control unit used.
300: When an RM-300, RX-303CE or RX-353CE is used.
400/500: When an RM-420, RM-555, or RM-500 is used.

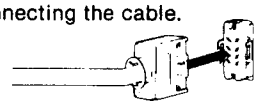
MONITOR TV selector
Set this selector according to the type of video monitor used.
COLOR: For a color monitor.
B & W: For a black and white monitor.

SYSTEM SELECT switch
Selects the video signal system.
NTSC: For playback of a video cassette recorded using the EIA standard $NTSC_{4.43}$ color system.
PAL: For recording and playback of a video cassette recorded using the CCIR standard PAL color system.
SECAM: For recording and playback of a video cassette recorded using the CCIR standard SECAM color system.

TV connector (8-pin)
Connect to the 8-pin VTR connector of a video monitor.
The video and audio input and output connections can be made with a single cable. When this connector is used, the audio signal will be recorded on audio channel 2. The channel selected by the AUDIO MONITOR switch will be heard through the speaker on the video monitor.

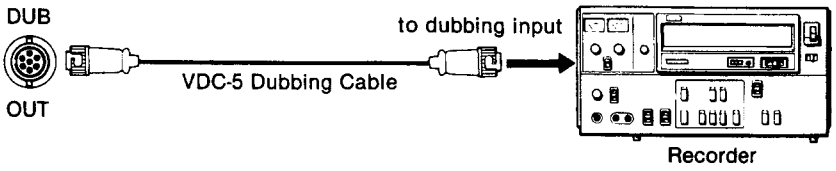


Be sure that the connectors are properly aligned before connecting the cable.

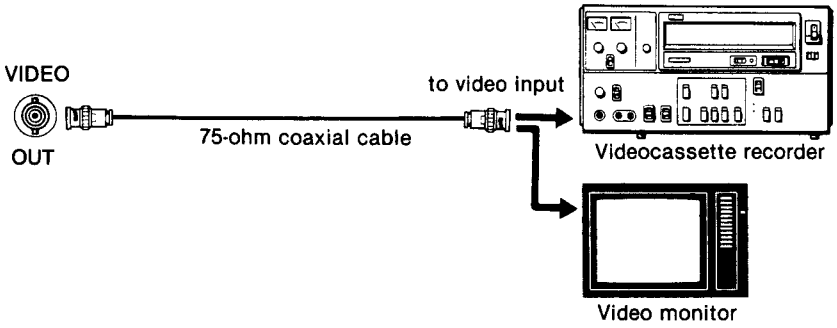


To remove, press the buttons on both sides of the connector.

DUB OUT connector (7 pin)
When duplicating a tape using a recorder with a dubbing connector, the video signal is connected using this connector.

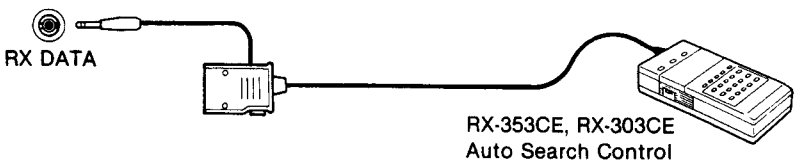


VIDEO OUT connector (BNC type)
The video signal is output here.

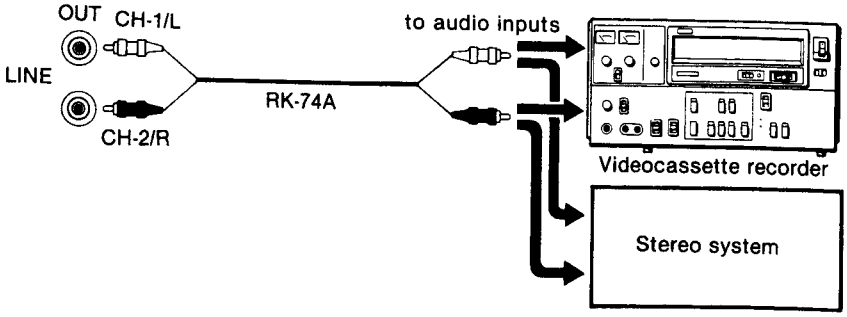


COLOR LOCK switch
As a rule, set to NORMAL. If the playback picture has no color or if the hue is abnormal, set the switch to the upper or lower position marked [•].

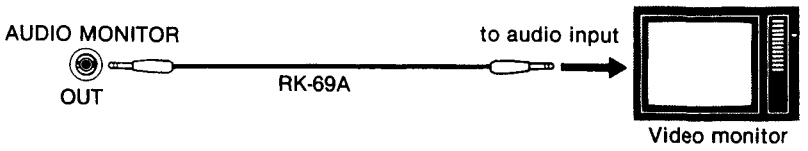
RX DATA jack (mini type)
For recording the data and reading the data recorded on the tape by the auto search control unit.



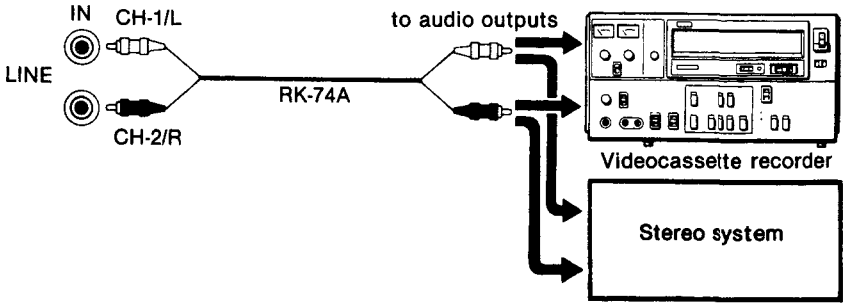
LINE OUT (audio line output) jacks (phono type)
The signals recorded on the audio channel 1 and audio channel 2 are output here.



AUDIO MONITOR jack (mini type)
Connect to the audio input jack on the video monitor. The signal selected by the AUDIO MONITOR switch on the front panel is output here.

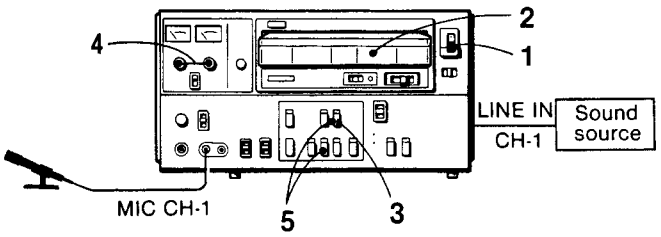


LINE IN (audio line input) jacks (phono type)
Connect the audio signal to be recorded here.



1-5. TO DUB AUDIO

You can add a sound such as music or commentary on the tape on which the video signal has already been recorded. The new sound is recorded on the audio channel 1, and when the new sound is recorded, the previous sound will be erased.



Operation
1. Turn the power on.
2. Insert a recorded video cassette.
3. Press the DUB/CH-1 button.
4. Adjust the audio recording level.
5. Press the DUB/CH-1 and PLAY buttons simultaneously. The recorder enters the audio dubbing mode.

To stop dubbing, press the STOP button.

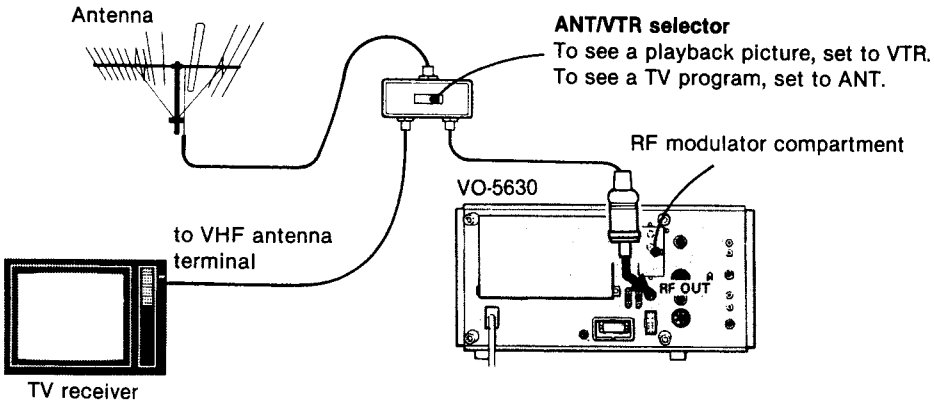
- If both a microphone and another audio source are connected simultaneously, only the sound from the microphone will be recorded.
- When a microphone is used, avoid pointing the microphone at the monitor or turn the sound volume on the monitor down, to prevent acoustic feedback (a whistle-like sound).

To record sound on the middle of the tape
Play the tape to the point at which sound is to be added and press the PAUSE button to stop the tape momentarily. Press the DUB/CH-1 button, then the PAUSE button again. The recorder will enter the audio dubbing mode.

1-6. TO SEE A PICTURE ON A TV RECEIVER

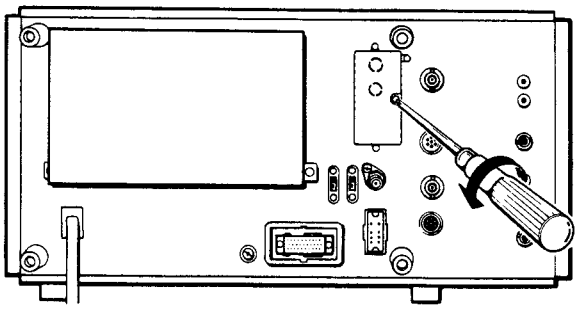
A playback picture can be seen on a conventional TV receiver when an RF modulator (optional) is installed into the VO-5630.
It is, of course, possible to see a TV program as usual.

CONNECTIONS

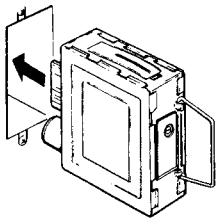


INSTALLATION OF AN RF MODULATOR

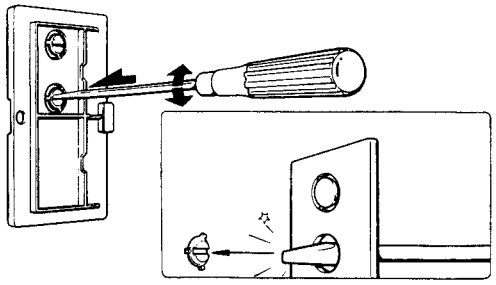
1. Loosen the screw on the RF modulator compartment, and remove the lid.



2. Install the RF modulator into the compartment aligning the direction properly.
3. Replace the lid.



●Push to break off the hole and the channel adjusting screw can be reset without removing the RF modulator compartment lid.
●For details, please refer to the instruction manual furnished with the RF kit.



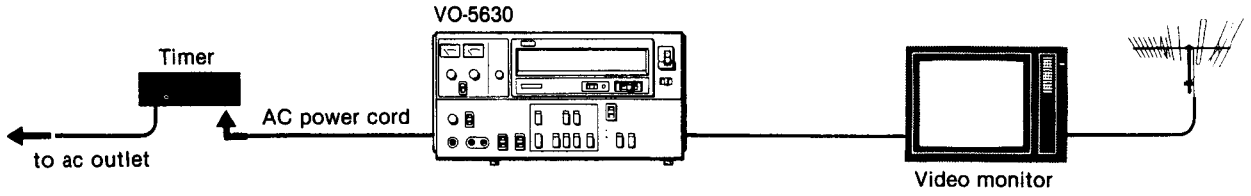
OPERATION

1. Set the ANT/VTR selector on the antenna selector to VTR.
2. Turn the TV receiver on, and set the channel to the output channel of the RF modulator.
3. Turn the recorder on.
4. Insert a recorded video cassette.
5. Set the AUDIO MONITOR switch to the appropriate position.
6. Press the PLAY button. You can see a playback picture on a TV receiver.

1-7. TIMER OPERATION

Using an optional timer, you can start and stop recording and playback while the recorder is unattended.

CONNECTIONS



TIMER RECORDING

1. Turn the recorder on and make preparations for recording.
2. Set the time to start and stop recording on the timer.
3. Set the TIMER switch to REC.

The recording will begin at the time set on the timer.

- When the TIMER switch is set to REC, the function buttons other than the STOP button cannot function. Also the STOP button cannot function during the tape being threaded just after the power is turned on.
- When the timer recording is finished, be sure to set the TIMER switch to OFF. If the POWER switch is set to ON with the TIMER switch remained to REC, the recording will automatically begin and the recorded material will be erased.

TIMER PLAYBACK

1. Turn the recorder on and make the preparations for playback.
2. Set the time to start and stop playback on the timer.
3. Set the TIMER switch to PLAY.

The playback will begin at the time set on the timer.

- Be sure to disconnect the RX-353CE or RX-303CE auto search control unit from this unit or the timer playback will not be activated.

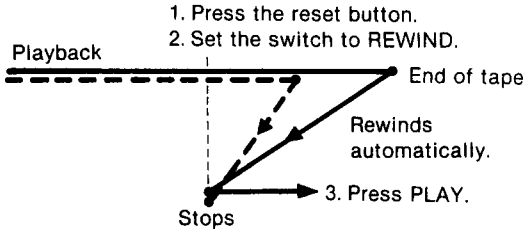
1-8. PROGRAMMED OPERATION

Using the PROGAMMED OPERATION switch, you can locate a particular point quickly or repeatedly play back a particular portion.

- For normal playback, set the PROGRAMMED OPERATION switch to OFF.

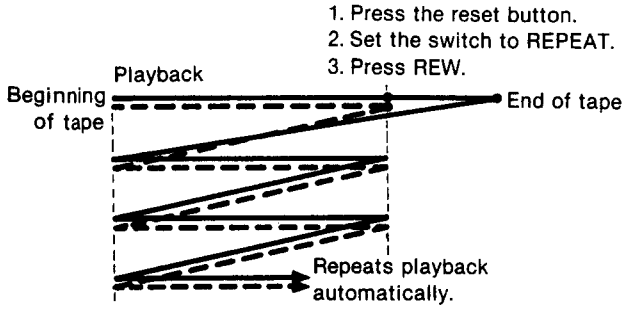
To locate a particular point

1. Play the tape back and press the reset button at the desired point.
2. Set the PROGRAMMED OPERATION switch to REWIND 000.
   At end of the tape, the tape will automatically rewind to the point where the tape counter reads "000" and stop.
- To rewind the tape before the tape reaches the end, press the REW button. The tape will automatically rewind to the "000" point and stop as illustrated by the blue arrow.
3. Press the PLAY button to play the tape back from that point.



To repeat playback between the beginning of the tape and a particular point

1. Search for the point where playback is to stop and press the reset button at that point.
2. Set the PROGRAMMED OPERATION switch to REPEAT START 000.
3. Press the REW button to rewind the tape. The tape rewinds to the beginning of the tape, then the recorder plays back the designated portion on the tape repeatedly.



To repeat playback of entire tape

- When the reset button is pressed at the end of the tape, the tape rewinds to the beginning of the tape and the recorder plays back the entire tape repeatedly.

1-9. AUTO SEARCH CONTROL

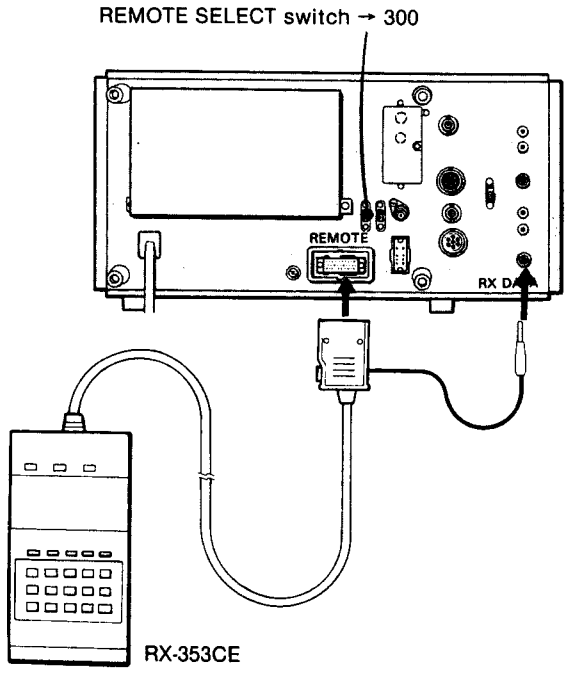
With the RX-353CE or RX-303CE Auto Search Control (optional), any point on the tape designated in minutes and seconds can be automatically located and played back. In addition, up to 8 segments can be automatically played back in any desired order. Refer to the Auto Search Control's instruction manual for details.

Notes

- Setting and controls on the recorder have priority over those on the Auto Search Control.
- Be sure to turn the power of the recorder off when connecting and disconnecting the 20-pin connector.
- Set the REMOTE SELECT switch to 300 and the PROGRAMMED OPERATION switch to OFF when the Auto Search Control is used.

USING THE RX-353CE

The RX-353CE devides the recorded material into segments. A segment has its own number and the beginning and end position on the tape, and we call them the segment data. The segment data can be recorded at the beginning of the audio channel 1 on the tape, and be kept even if the RX-353CE is disconnected or the power of the recorder is turned off. So the data can be used repeatedly.

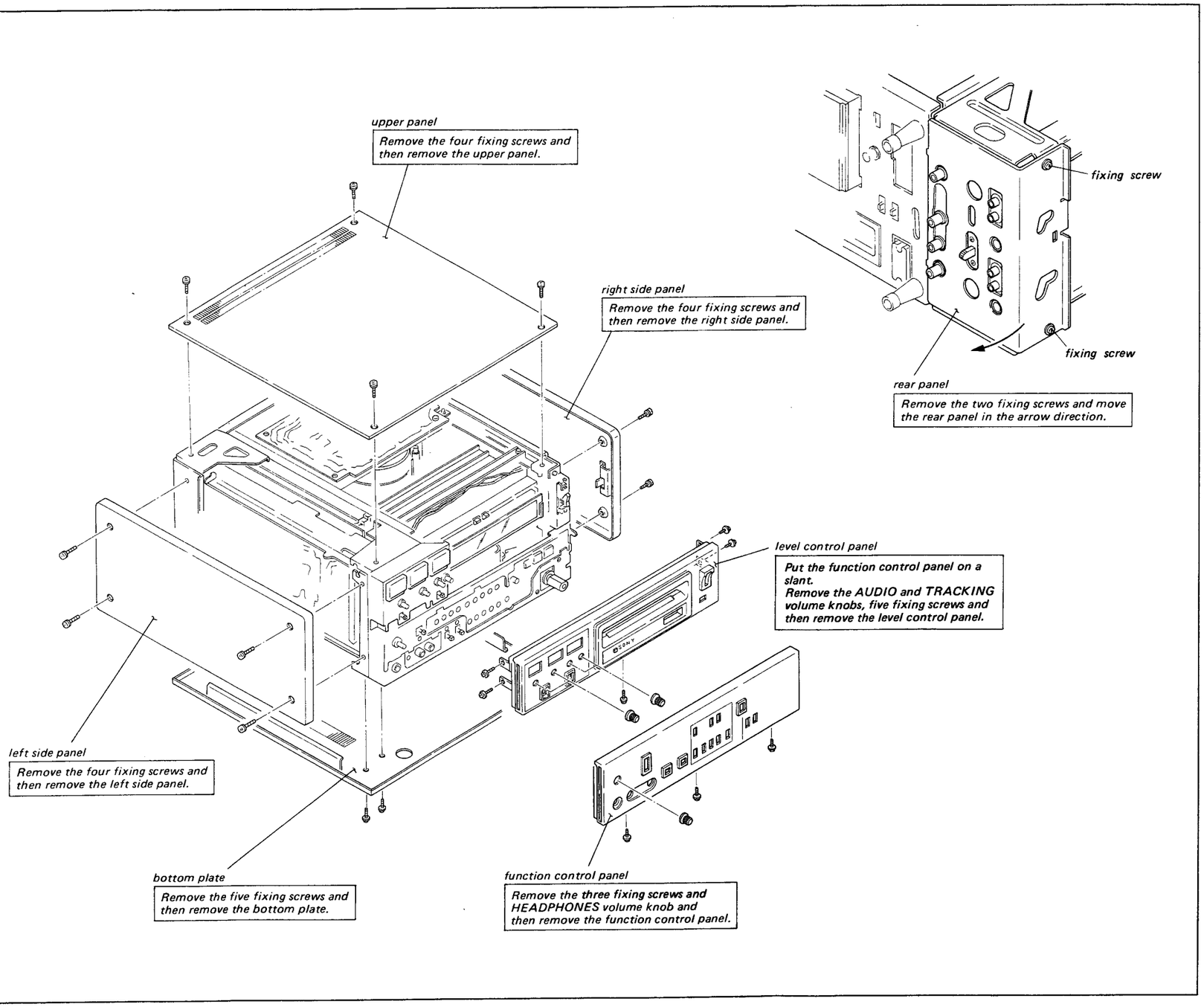


Notes

- The data recording level is automatically adjusted. So the level adjustment is not necessary.
- Do not run the tape with the function buttons or SEARCH buttons on the VO-5630 when the RX-353CE is used. This is because the indication on the tape position indicator of the RX-353CE and the actual tape position do not correspond correctly when the VO-5630 is used to run the tape.

SECTION 2
SERVICE INFORMATION

2-1. DISASSEMBLY OF CABINET



2-2. CASSETTE-UP COMPARTMENT REMOVAL AND INSTALLING PROCEDURES

(1) Remove the upper panel.

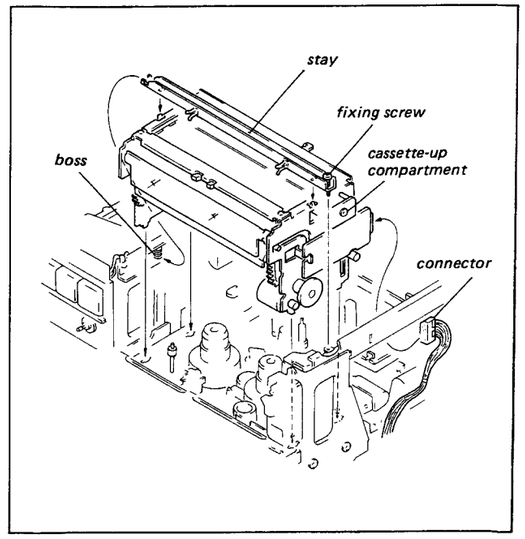
(2) Disconnect the connector of cassette-up compartment.

(3) Loosen the fixing screw of the right-end of stay.

(4) Remove the stay from boss of side panel.

(5) Remove the cassette-up compartment.

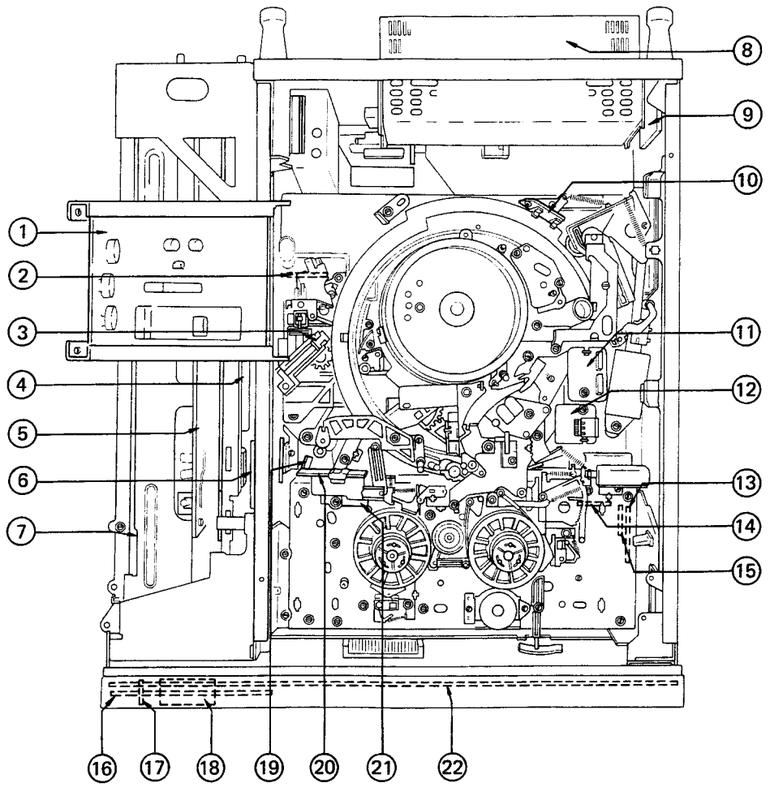
Reverse the removal procedure for installing the cassette-up compartment.



2-3. MAIN PARTS LOCATION

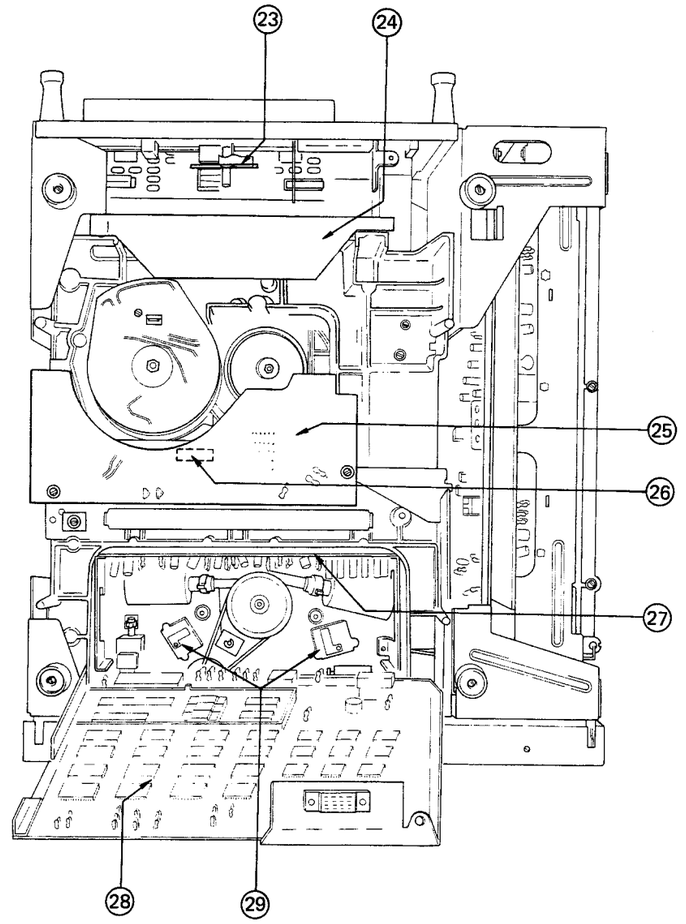
2-3-1. Location of the Printed Circuit Boards

< TOP VIEW >



1. RP-8B BOARD
2. LM-9 BOARD
3. PH-5 BOARD
4. YC-5 BOARD
5. SV-44A BOARD
6. CN-42 BOARD
7. AU-28 BOARD
8. UR-02 (Switching regulator)
9. DC-13B BOARD
10. FR-11 BOARD
11. AH-3 BOARD
12. EC-19 BOARD
13. CC-9 BOARD (Assembled into cassette-up compartment)
14. CC-10 BOARD (Assembled into cassette-up compartment)
15. CC-11 BOARD (Assembled into cassette-up compartment)
16. MC-14 BOARD
17. HP-6 BOARD
18. MI-5 BOARD
19. SW-50 BOARD
20. SW-46 BOARD
21. PH-4 BOARD
22. KY-21 BOARD

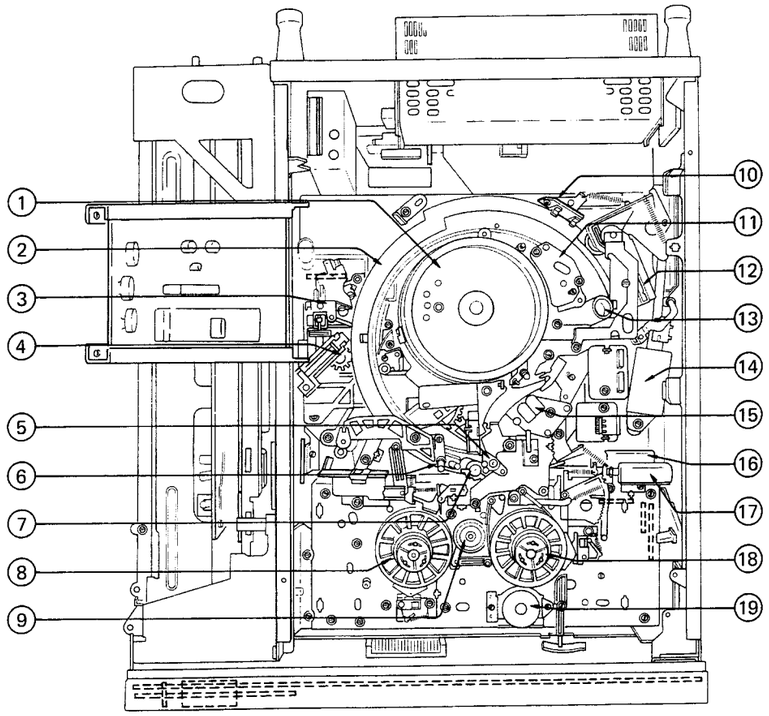
< BOTTOM VIEW >



23. AC-35 BOARD
24. DR-17B BOARD
25. MR-8/MR-11A BOARD
26. PT-9 BOARD
27. PD-16A BOARD
28. SY-75 BOARD
29. SW-43 BOARD

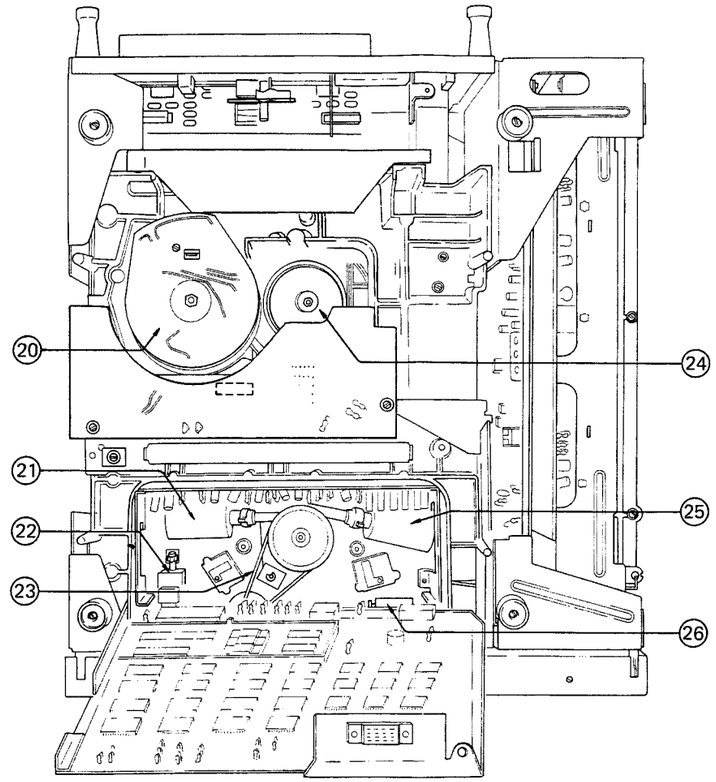
2-3-2. Location of the Mechanical Main Parts/Components

< TOP VIEW >



① Head drum
② Threading ring
③ T correction guide
④ Gear box
⑤ S drawer arm
⑥ T drawer arm
⑦ Pinch roller
⑧ Take-up reel table
⑨ FF/REW idler
⑩ FR detector
⑪ Audio/CTL head
⑫ Pinch lever
⑬ Capstan shaft
⑭ Pinch solenoid
⑮ CTL/Erase head
⑯ Search solenoid
⑰ Skew solenoid
⑱ Supply reel table
⑲ Reel motor

< BOTTOM VIEW >



⑳ Capstan motor
㉑ Supply idler solenoid
㉒ Supply brake solenoid
㉓ Belt for FF/REW idler
㉔ Drum motor
㉕ Take-up idler solenoid
㉖ Take-up brake solenoid

2-4. 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.

2-5. MACHINE POSITION FOR REPAIR WORK

When the system control circuit repair work is attempted or mechanical maintenance is attempted, place the machine with its left side panel on its top.

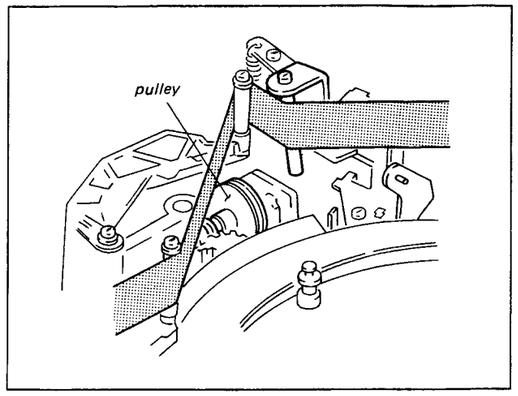
2-6. CASSETTE REMOVAL PROCEDURE WHEN NORMAL EJECTION IS NOT POSSIBLE

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) Turn off the POWER.

(2) Remove the upper panel.

(3) Turn the white colored pulley of the gear box in the clockwise direction with finger until the threading ring places into the FR-STOP position.
(The threading ring moves in the unthreading direction. But the tape remains at the position of threading completion.)

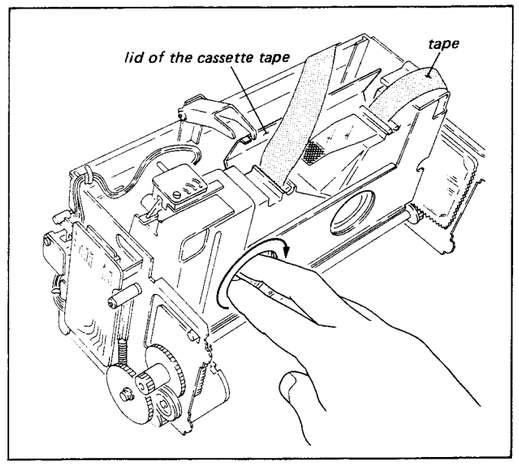


(4) Disconnect the connector of the cassette-up compartment.

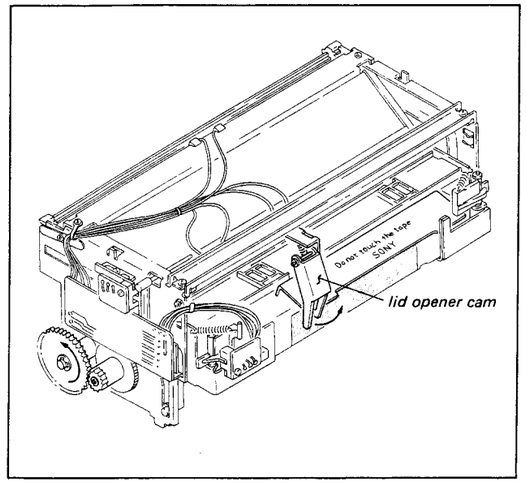
(5) Loosen the right-end fixing screw of the stay, and remove the stay from the boss of the side panel.

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

(7) 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.



(8) Raise the cam for opening the lid and close the cassette tape lid.



(9) Remove the tape from the cassette compartment.

(10) 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.

(11) Locate the cause of the trouble and remedy the problem.

2-7. TO OPERATE THE MACHINE WITHOUT INSTALLING CASSETTE TAPE

(1) Remove the cassette-up compartment referring to sec. 2-2. (Tape beginning sensor and tape end sensor are disabled according to disconnect the connector of cassette-up compartment.)

(2) Turn off the POWER. (The machine is put into the FR-STOP mode automatically.)

(3) The machine can be placed into the desired mode by pressing the function button to corresponding to the mode.

2-8. TAPE SLACK DETECTOR

If the tape is not taken up and tape slack is occurred in the machine, these conditions are detected with the reel rotation detector under the reel table. The reel rotation detector is composed with the slit of the reel table and the photointerrupter. If the reel table is stopped its rotation more than 0.3 sec. in all modes, the reel rotation detector circuit detect as the tape slackes in the machine, and generates the auto stop signal.

2-9. FIXTURE

Description	Part Number
Drum Eccentricity Gauge (3)	J-6001-820-A
Drum Eccentricity Gauge (2)	J-6001-830-A
Drum Eccentricity Gauge (1)	J-6001-840-A
Drum Eccentricity Gauge (4)	J-6001-930-A
Dihedral Adjusting Screw	J-6080-013-A
Flatness Plate	J-6009-830-A
Reel Table Height Check Base Jig	J-6130-010-A
Reel Table Height Check Jig	J-6130-020-A
Pinch Lever Adjustment Jig	J-6150-020-A
Cleaning Fluid	Y-2031-001-0
Cleaning Piece	2-034-697-00
Torque Measurement Tape (100 mm dia.)	3-702-215-01
Back Tension Adjustment Jig	3-702-216-01
Sony Oil	7-661-018-01
Tension Scale (50 g full scale)	7-732-050-20
Tension Scale (100 g full scale)	7-732-050-30
Tension Scale (200 g full scale)	7-732-050-40
Tension Scale (500 g full scale)	7-732-050-50
Alignment Tape, RR5-3SA	8-960-015-04
Alignment Tape, RR5-2SC-PAL	8-960-035-61
Alignment Tape, RR4-7SC-SECAM	8-960-034-87
Thickness Gauge	9-911-053-00
Head Demagnetizer, HE-4	Standard products.

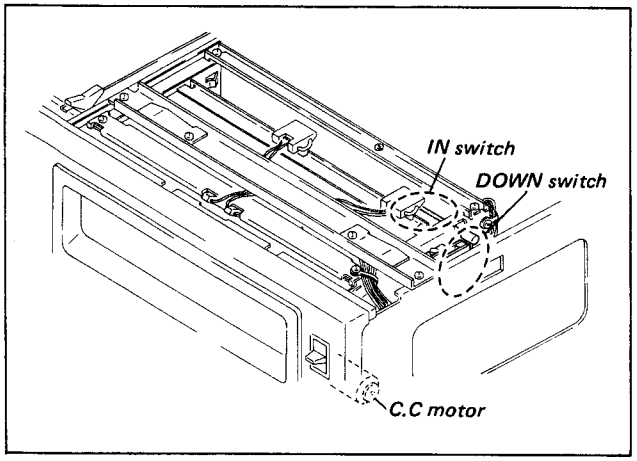
2-10. PRINTED CIRCUIT BOARD

The circuit board information is provided below.

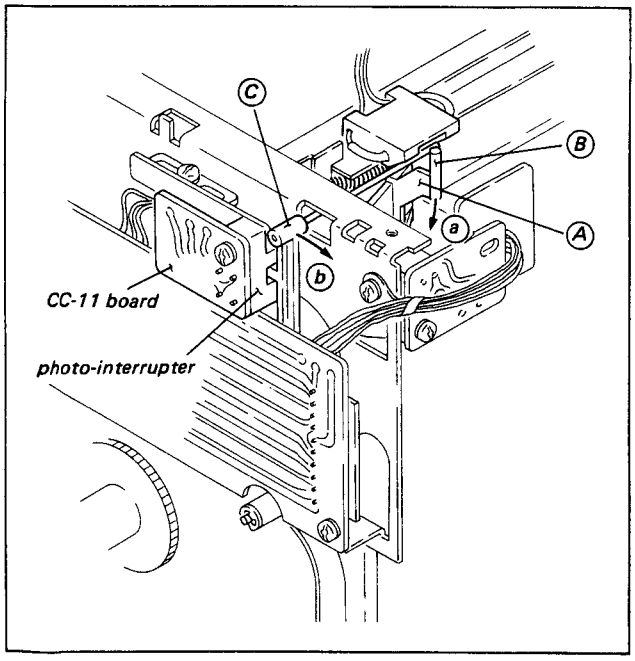
SYSTEM	BOARD	CIRCUIT FUNCTION
VIDEO	YC-5	Luminance and Chrominance Signal Modulator/Demodulator
	RP-8B	Record/Playback Amplifier
AUDIO	AU-28	Audio REC/PB Amplifier Bias/Erase Oscillator
	MI-5	CH-1/CH-2 Mic Input
	HP-6	Headphones Level Control/Headphones Jack
	EC-19	Full Erase/CTL PB Head
	AH-3	Audio REC/PB/Erase and CTL REC/PB Head
	MC-14	Audio/Tracking Meter and Level Control
SERVO	SV-44A	Drum/Capstan Speed and Phase PWM Servo
	DR-17B	Drum/Capstan Motor Driver
POWER SUPPLY	AC-35	AC Input
	UR-02	Switching Regulator
	DC-13B	Power Supply and Regulator
SYSTEM CONTROL	FR-11	Threading Ring Mechanical Position Detector
	PH-4	Tape Tension Detector
	PH-5	Tape Beginning Sensor Tape End Sensor
	KY-21	Function Key Board Display Driver Mode/Input/Monitor Select
	MR-8 MR-11A	Threading/Cassette Compartment Motor Driver Reel Motor Control and Driver Skew/Search/Pinch Solenoid Driver
	PD-16A	Take up Idler/Brake and Supply Idler/ Brake Solenoid Driver
	SW-43	Take up Reel Rotation Detector Supply Reel Rotation Detector
	LM-9	Threading Motor
	SW-46	Miss REC Detector
	SW-50	Unthread End Detector
	CC-9	Cassette Compartment Motor/Pilot Lamp
	CC-10	Cassette in Detector
	CC-11	Cassette Down Detector
	SY-75	System Control
	PT-9	Reel Motor Power Driver
	CN-42	Connection Board

2-11. CASSETTE-UP COMPARTMENT OPERATION

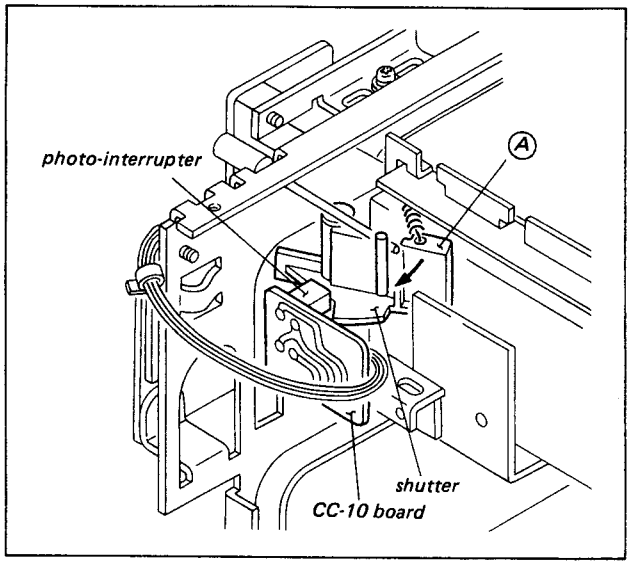
The cassette insertion system in the VO-5600 is a front access system. The cassette compartment drops automatically after the cassette tape has been inserted into the cassette compartment and threading action is started after the cassette is seated in the home position.
The timing of the electronic switches and motor are referring sec. 2-13.
The cassette down switch, cassette in switch and cassette compartment motor operates as follows:



(1) Cassette 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".

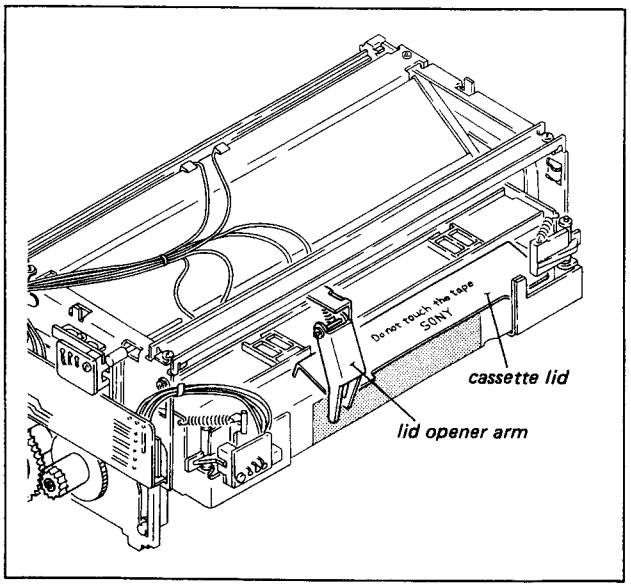


(2) Cassette In Switch
The cassette tape is inserted by hand further after the DOWN switch operates (until the cassette is stopped).
The Ⓐ shutter covers the photo-interrupter on the CC-10 board and the IN switch turns to "H".



(3) Cassette Compartment Motor (C.C. Motor)
When the IN switch turns to "H" after the cassette insertion, about 11.3 V 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.

(4) 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.



2-12. TAPE TENSION CONTROL MECHANISM

The tape tension control mechanism of VO-5600 is composed with the mechanical and electrical tape tension control mechanisms.

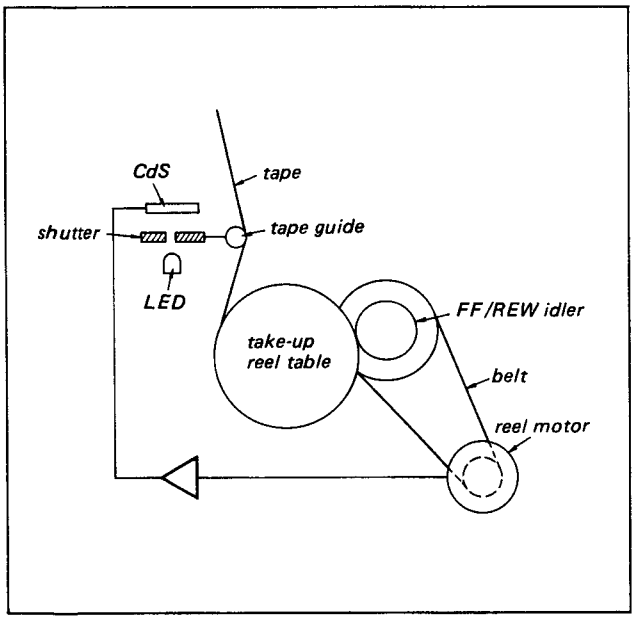
(1) The tape tension control mechanism in normal playback, record, FWD search and unthreading modes (when the take-up reel table rotates in the counterclockwise direction (except FF mode)) is as follows:

(i) Tape feeding side (supply reel table side)
The tape back tension control mechanism of the tape feeding side is the same as the conventional VTR. This back tension control mechanism is the mechanical tape tension control mechanism.

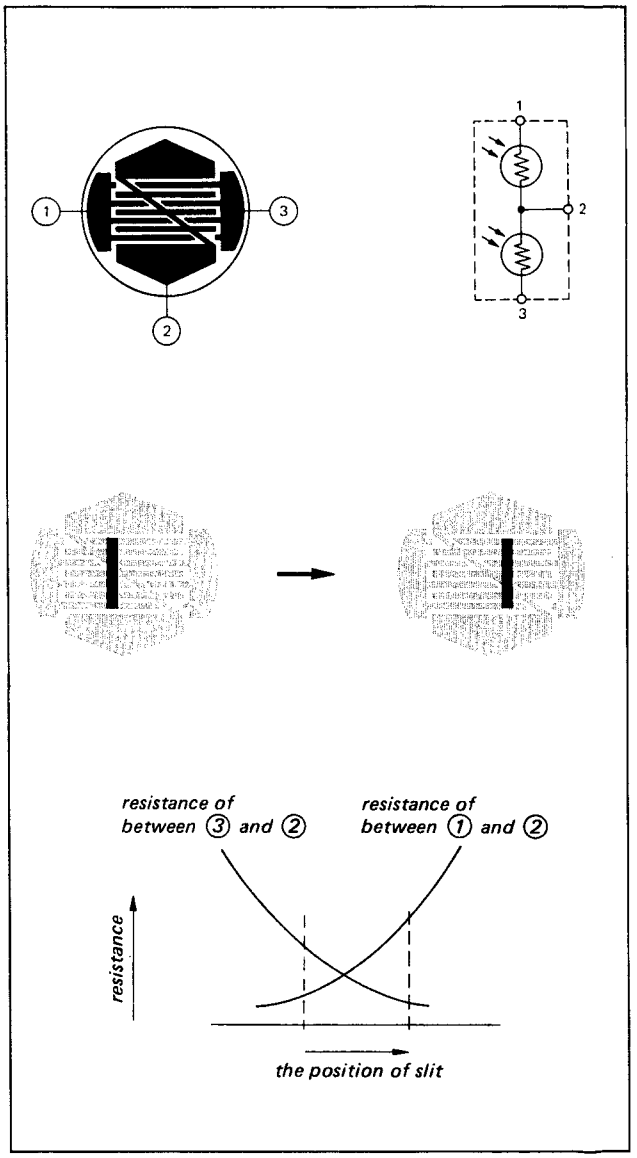
Tension Arm ⟶ Brake Band ⟶ Supply Reel Table
(Tape Tension) ⟵ Skew Control

(ii) Tape taking-up side (take-up reel table side)
The tape tension of the take-up side is controlled with the electrical tape tension control mechanism. The R brake shoe is released from the take-up reel table in this mode. The electrical tape tension control mechanism is composed with the following blockes.

Tension Arm ⟶ Shutter ⟶ LED / CdS ⟶ Reel Motor Torque is controlled with this output
(Tape Tension)



The light emitted by an LED is received by the CdS detector element through a slit on the shutter connected with the tape guide. The electrodes' pattern of this CdS is shown in 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.

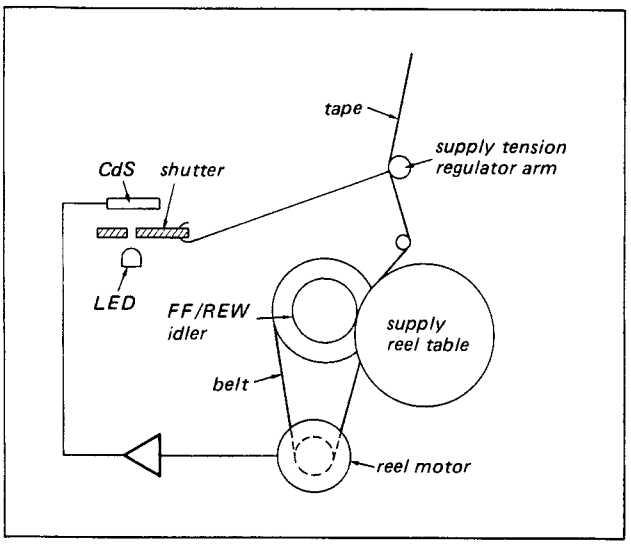


(2) The tape tension control mechanism in REV search mode (when the supply reel table rotates in the counterclockwise direction (except REW mode)) is as follows:

(i) Tape feeding side (take-up reel table side)
The tape is supplied from the take-up reel table in this mode. The tape tension control mechanism is the same as the supply side tape tension control mechanism as mentioned former.

Tension Arm ⟶ R Brake Shoe ⟶ Take-up Reel Table
(Tape Tension)

(ii) Tape taking-up side (supply reel table side)
The tape tension of the take-up side (supply reel table side) is controlled with the electrical tape tension control mechanism.

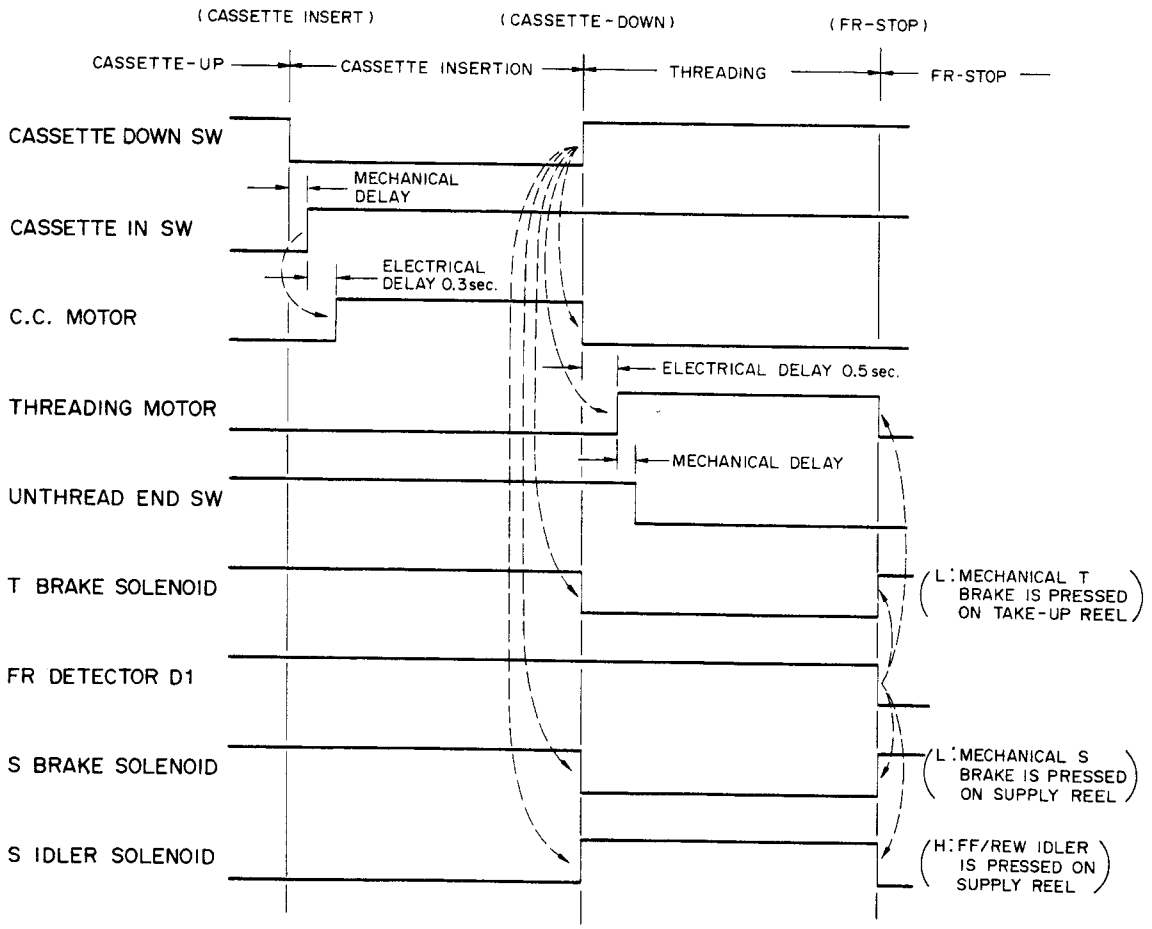


2-13. TIMING OF SWITCH, MOTOR AND SOLENOID

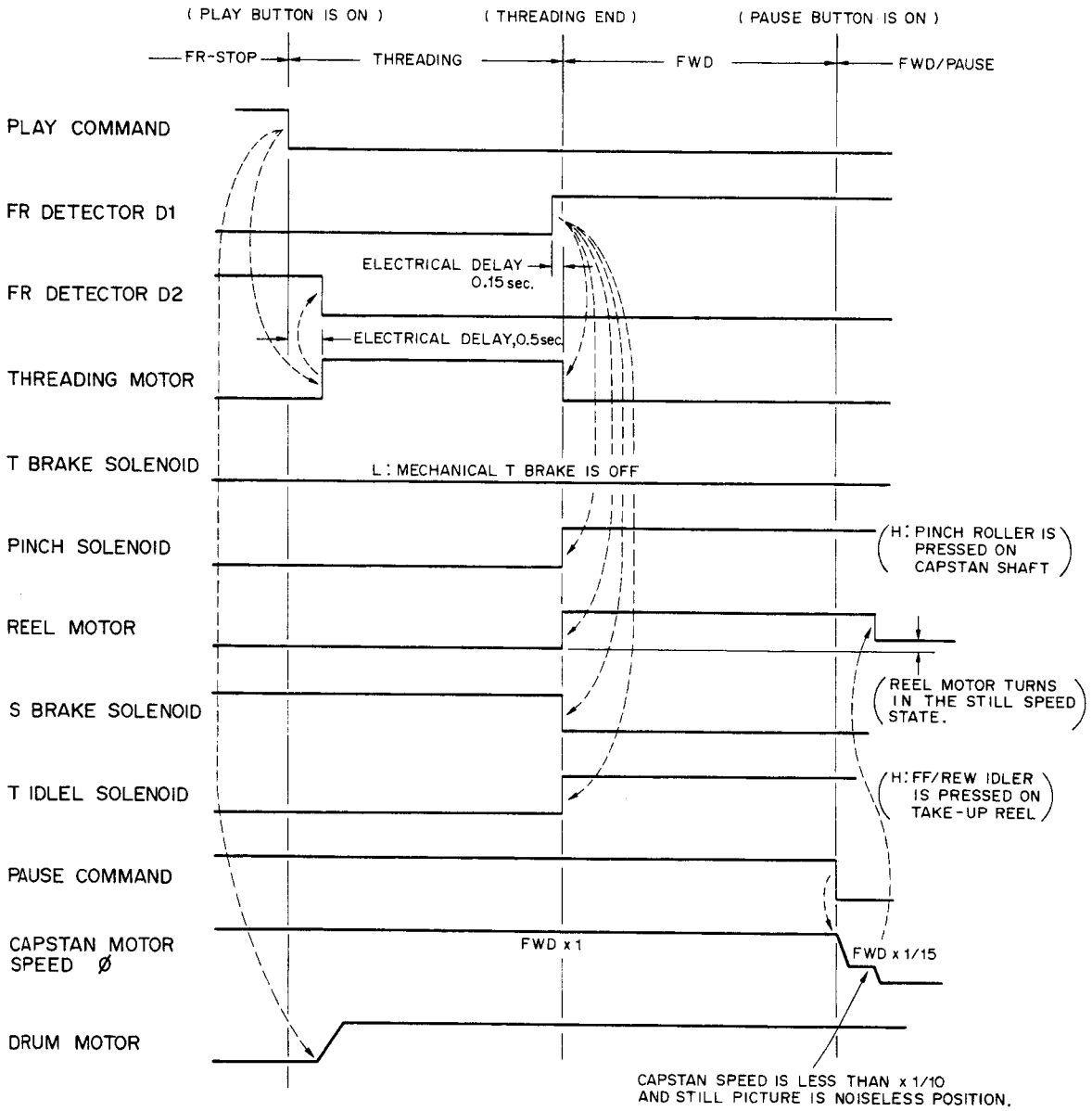
- The timing of the electronic switches, motors and solenoids in the following modes are follows.

Cassette in → FR-STOP
FR-STOP → FWD → FWD/PAUSE
FR-STOP → REC → REC/PAUSE
FWD → FWD SEARCH → REV SEARCH
FWD → FR-STOP
FR-STOP → FF → FR-STOP
FR-STOP → EJECT Completion

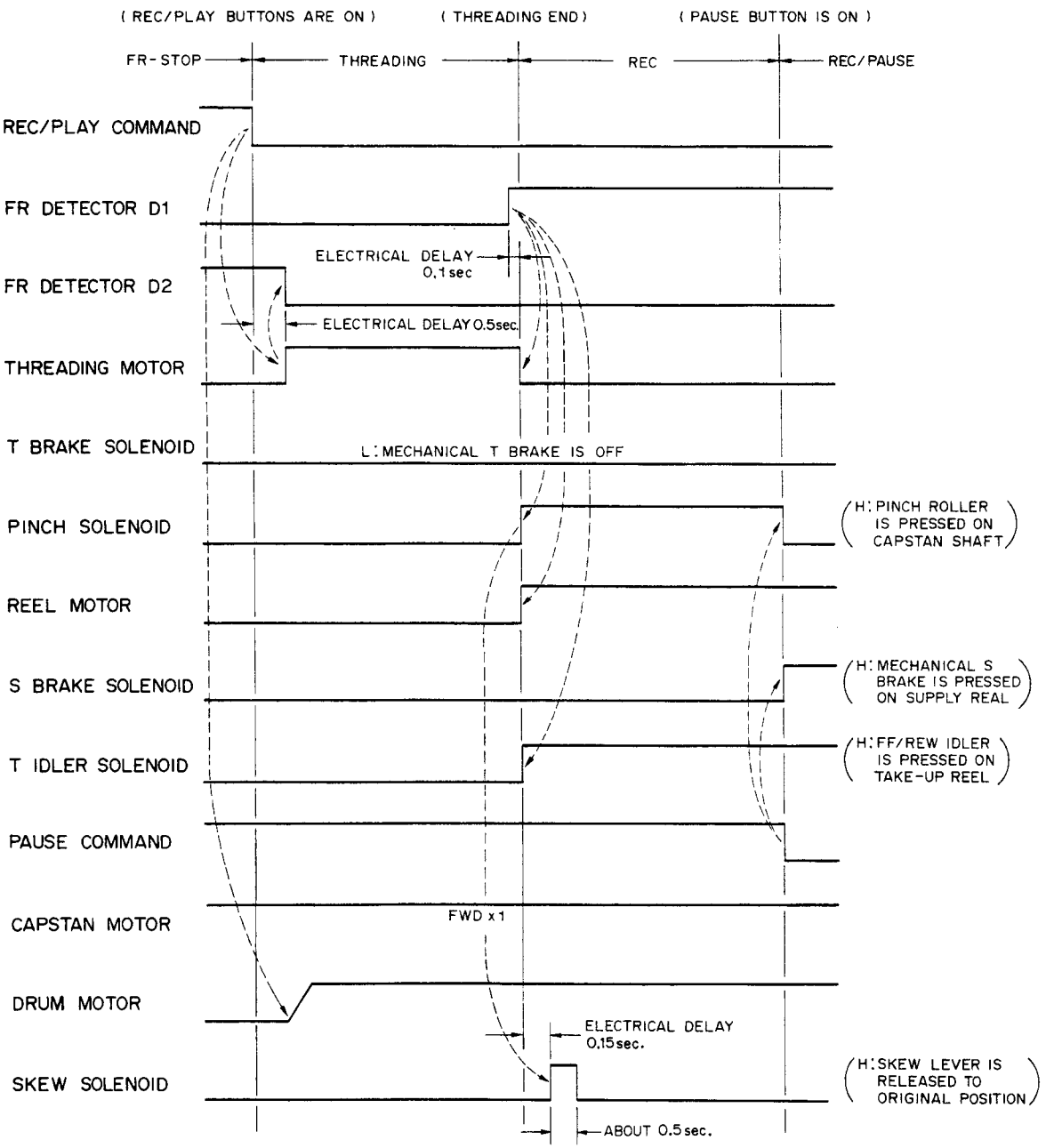
- CASSETTE-IN→FR-STOP



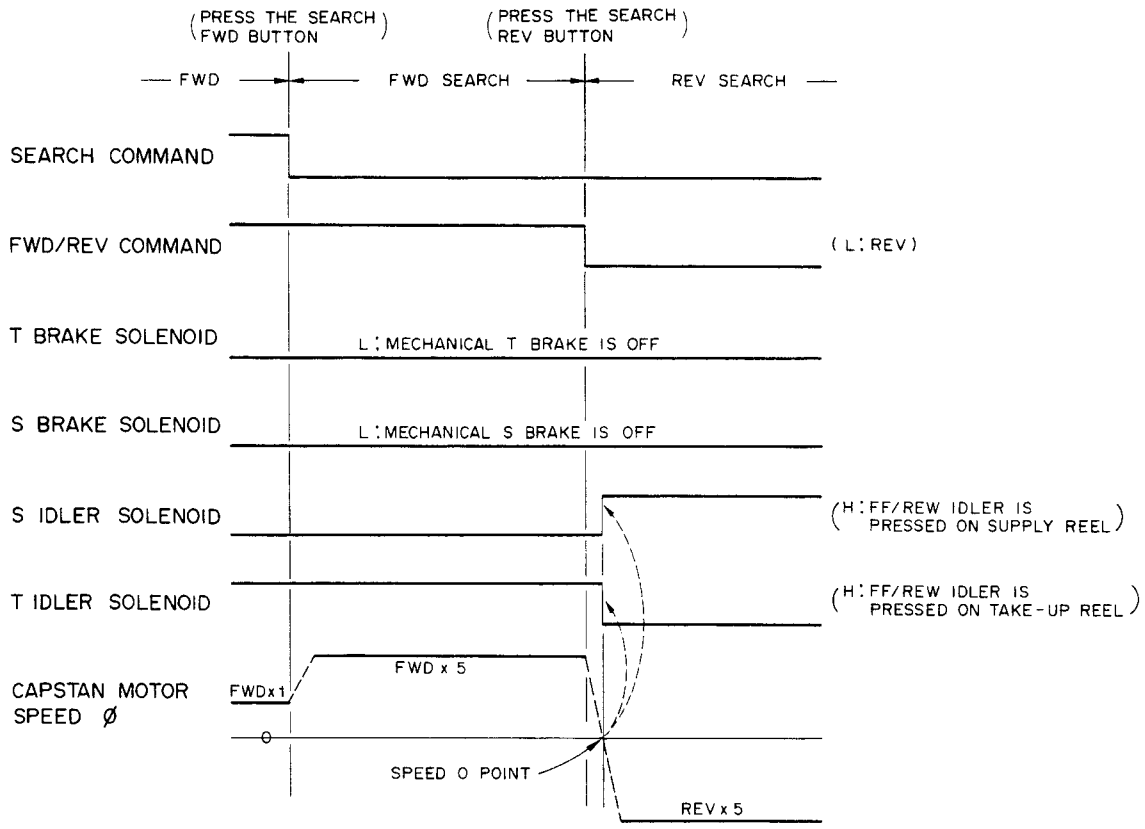
• FR−STOP→FWD→FWD/PAUSE



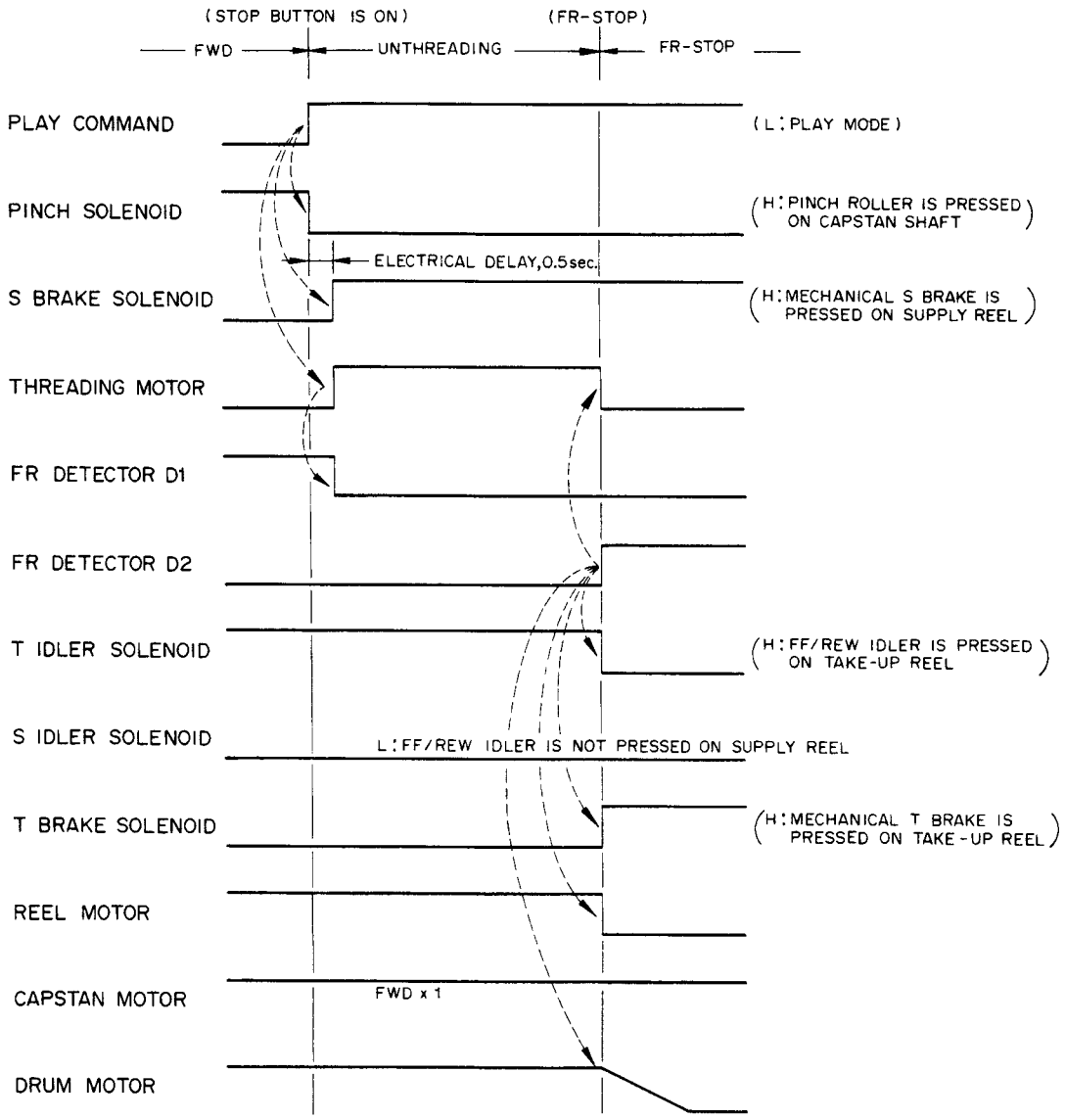
• FR-STOP→REC→REC/PAUSE



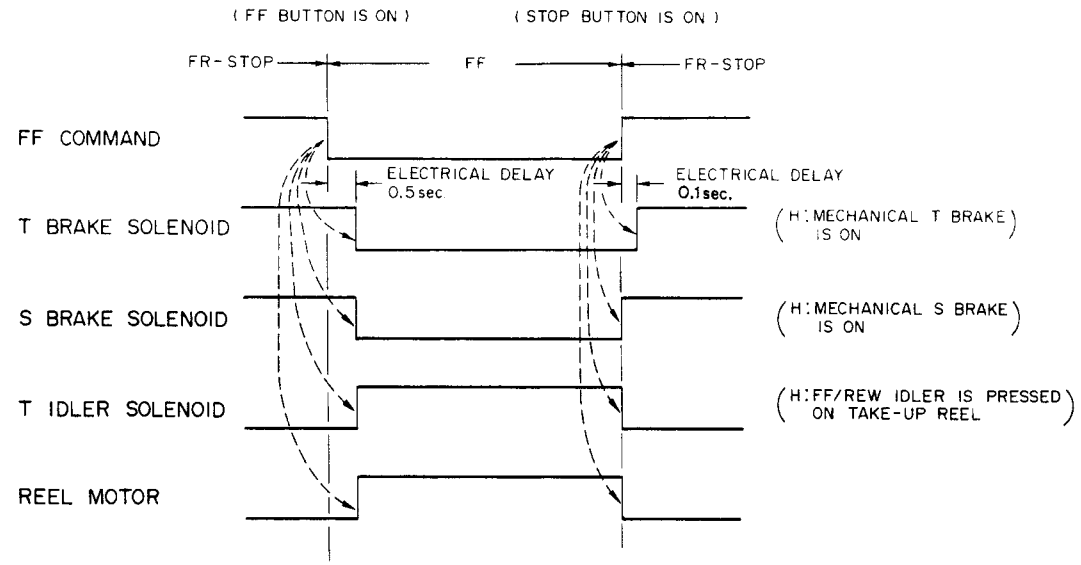
• FWD → FWD SEARCH → REV SEARCH



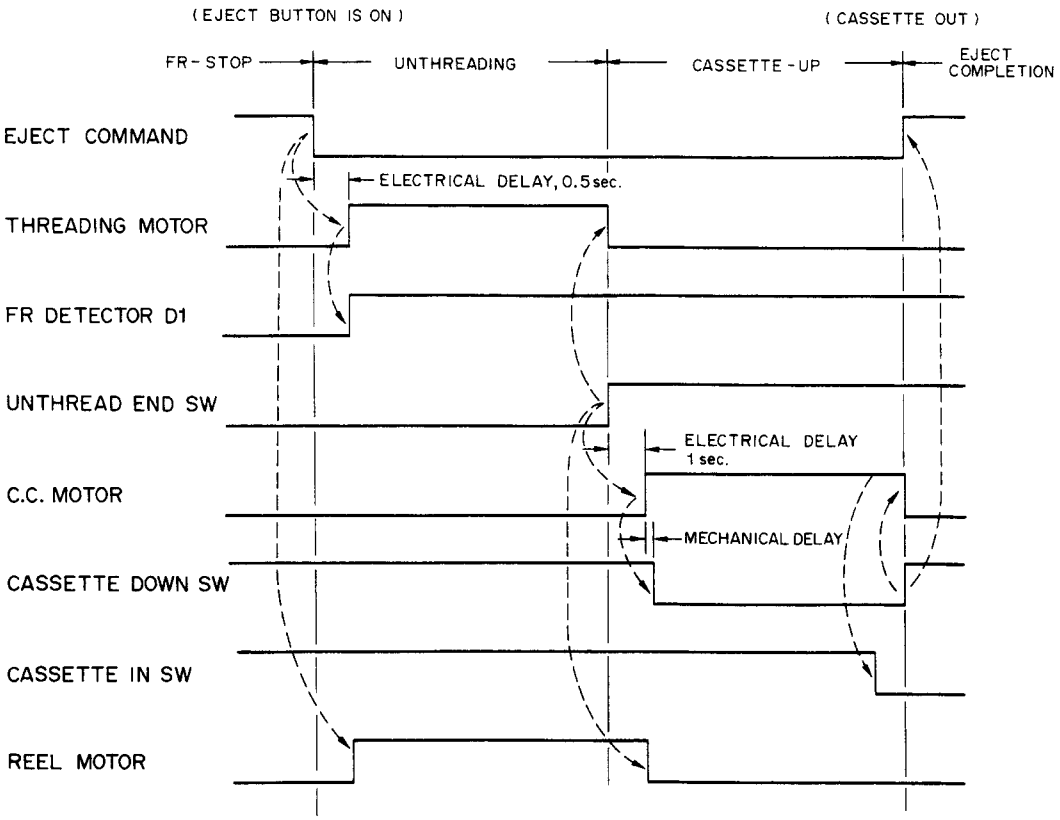
• FWD → FR-STOP


(STOP BUTTON IS ON)
(FR-STOP)
FWD
UNTHREADING
FR-STOP
PLAY COMMAND
(L: PLAY MODE)
PINCH SOLENOID
(H: PINCH ROLLER IS PRESSED ON CAPSTAN SHAFT)
ELECTRICAL DELAY,0.5sec.
S BRAKE SOLENOID
(H: MECHANICAL S BRAKE IS PRESSED ON SUPPLY REEL)
THREADING MOTOR
FR DETECTOR D1
FR DETECTOR D2
T IDLER SOLENOID
(H: FF/REW IDLER IS PRESSED ON TAKE-UP REEL)
S IDLER SOLENOID
L: FF/REW IDLER IS NOT PRESSED ON SUPPLY REEL
T BRAKE SOLENOID
(H: MECHANICAL T BRAKE IS PRESSED ON TAKE-UP REEL)
REEL MOTOR
CAPSTAN MOTOR
FWD x 1
DRUM MOTOR

• FR-STOP → FF → FR – STOP



• FR – STOP → EJECT COMPLETION



SECTION 3
PERIODIC CHECK AND MAINTENANCE

It is recommended to perform the maintenance and the periodic check mentioned below for the best operation of the function and performance of the machine and for prolonging the lives of the machine and the tape.

3-1. MAINTENANCE AFTER REPAIRS

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

(1) Cleaning of video heads

- Press the cleaning piece moistured with the cleaning fluid and turn the drum slowly with the hand, cleaning the heads. (Never turn the motor by the electric power for the cleaning.)
- Never move the cleaning piece in the vertical direction of the head tip in the cleaning. It tends to damage the head tips.

(2) Cleaning of tape running system

- Wipe the tape bearing surfaces (of the tape guide, drum, capstan, and pinch roller) with cleaning piece saturated with the cleaning fluid.

(3) Cleaning of drive system

- Wipe the drive system (such as belt, idler, and reel table surface) with cleaning piece saturated with the cleaning fluid.

3-2. PERIODIC CHECK

Perform the maintenance checks described separately in accordance with the operational hours of the machine.

3-3. OTHERS

(1) SONY oil

- Be sure to use the SONY oil as the lubrication oil. (If oil other than the SONY oil is used, various troubles due to a different viscosity tends to be caused.)

SONY oil: Part No. 7-661-018-01

- Use the SONY oil in which dust or other foreign material have not mixed for lubricating the bearing. (If foreign material is in the oil, wear or burning of the bearing tends to be caused.)

(2) Grease

Be sure to use the following grease.
SONY grease: Part No. 7-662-001-62 (SGL-501)

(3) Regarding overhaul of equipment

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

Reel motor;	about 3,000H
Capstan motor;	about H
Threading motor;	about H
Cassette-up compartment motor;	about H
Audio/CTL head;	about 3,000H
CTL/Erase head;	about H

■ : apply oil ○ : cleaning ◆ : replace ◇ : check ◎ : apply a grease

Item \ Operating Hours (H)	Part No. of Replacement Parts	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	Remarks
Tape path cleaning	———	○	○	○	○	○	○	○	○	○	○	Perform whenever repair work is attempted NOTE, 1
Video heads cleaning and replace	A-6709-136-A	○	◆	○	◆	○	◆	○	◆	○	◆	Life of the video heads are affected extensively by operating ambient conditions NOTE, 2
Replacement of pinch roller	A-6750-125-D	○	◆	○	◆	○	◆	○	◆	○	◆	Life of the pinch roller are affected extensively by operating systems NOTE, 3
Replacement of FF/REW idler belt	3-668-785-00	○	○	○	◆	○	○	○	◆	○	○	
Replacement of reel table	A-6739-017-A	○	■	○	◆	○	■	○	◆	○	■	NOTE, 4
Replacement of R brake shoe	X-3668-737-0	–	–	–	◆	–	–	–	◆	–	–	NOTE, 5
Replacement of brake band	X-3668-707-0	–	–	–	◆	–	–	–	◆	–	–	NOTE, 6
Replacement of belt on gear box	3-668-946-00	○	○	○	○	○	○	○	◆	○	○	
Replacement of belt on cassette-up compartment	3-653-387-00	○	○	○	○	○	○	○	◆	○	○	
Cleaning the shaft of the threading roller on the threading ring	———	–	○	–	○	–	○	–	○	–	○	Clean with a cloth dampened with a cleaning fluid NOTE, 7
Apply a grease on the ring rollers	———	–	◎	–	◎	–	◎	–	◎	–	◎	Apply a grease on the surface of the ring roller
Check the FWD back tension	———	–	◇	–	◇	–	◇	–	◇	–	◇	NOTE, 8
Check the FWD torque	———	–	◇	–	◇	–	◇	–	◇	–	◇	NOTE, 9
Check the REV torque	———	–	◇	–	◇	–	◇	–	◇	–	◇	NOTE, 10
Check the brake torque	———	–	–	–	◇	–	–	–	◇	–	–	NOTE, 11

*NOTE, 1: Refer to sec. 3-1.
*NOTE, 2: Refer to sec. 3-1.
*NOTE, 3: After this replacement, perform the adjustments as following page 4-6 "pinch roller replacement".
*NOTE, 4: After this replacement, perform the adjustments as following page 4-6 "take-up reel table replacement" and "supply reel table replacement".
*NOTE, 5: After this replacement, perform the adjustments as following page 4-7 "R brake shoe replacement".
*NOTE, 6: After this replacement, perform the adjustments as following page 4-6 "brake band replacement".
*NOTE, 7: Refer to sec. 4-6.
*NOTE, 8: Refer to sec. 6-6.
*NOTE, 9: Refer to sec. 6-3.
*NOTE, 10: Refer to sec. 6-4.
*NOTE, 11: Refer to sec. 6-1.

SECTION 4
REPLACEMENT OF MAJOR PARTS

4-1. REPLACEMENT OF UPPER DRUM ASSEMBLY

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

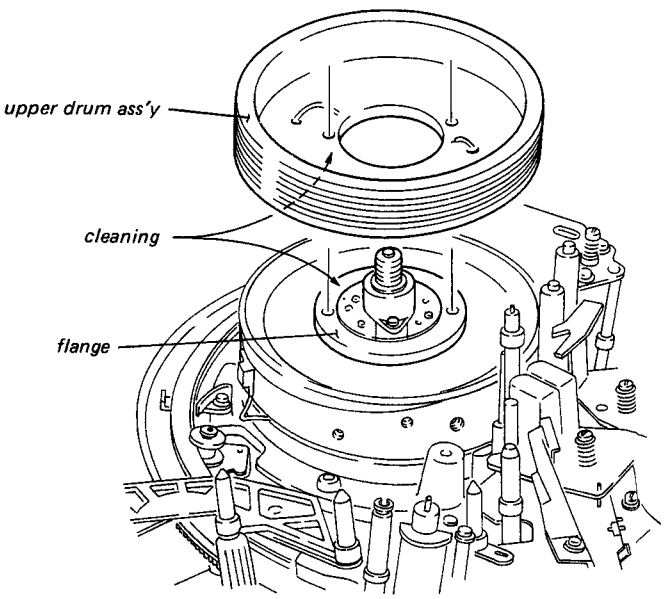
Tool: Drum eccentricity gauge (1)
Drum eccentricity gauge (2)
Drum eccentricity gauge (3)
Drum eccentricity gauge (4)
Cleaning fluid

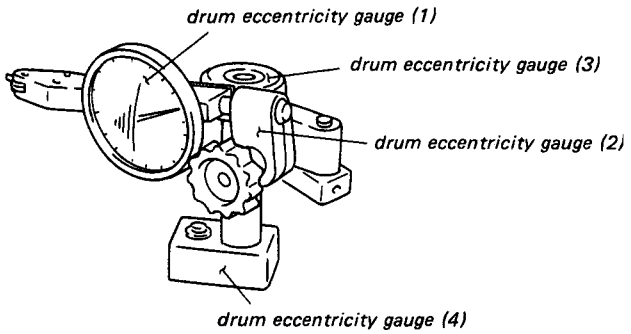
Replacement procedure:

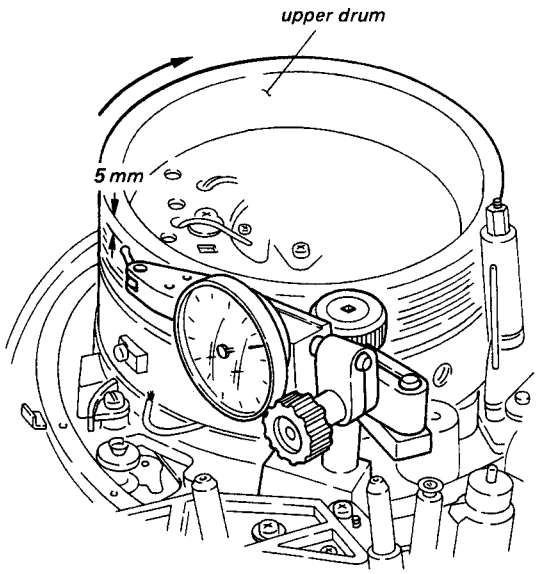
(1) Unsolder the four leads of the video head from the printed circuit board and remove the upper drum assembly from the head drum assembly.
(2) Clean the matching surfaces of the flange and new upper drum assembly with a cloth moistened with cleaning fluid. (If there is a spacer between drum and flange, it should be remain in place, or be re-installed in the same place with the new upper drum assembly.)
(3) Place the upper drum assembly 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) Remove the S guard block (Because the S guard's bottom connector is inserted into the connector on the chassis, it need the power to remove.)
(2) Assemble the drum eccentricity gauges (1), (2), (3) and (4) as shown in figure. Mount the assembled gauges on the machine so that the tip probe positiones at the point about 5 mm apart from the top edge of the upper drum.
(3) Turn the upper drum slowly clockwise and confirm the pointer deflection of the gauge is within 5μ during one complete turn of the upper drum. If this specification is satisfied, proceed with step (5). If it is not, perform step (4).
(4) Tap the inside of the upper drum with a nylon hammer or a screwdriver handle and like so that the gauge deflection remains within 5μ.
(5) After the adjustment, tighten the two screws that are securing the upper drum, alternately and gradually using a tightening torque: 14 ~ 16 kg.cm.





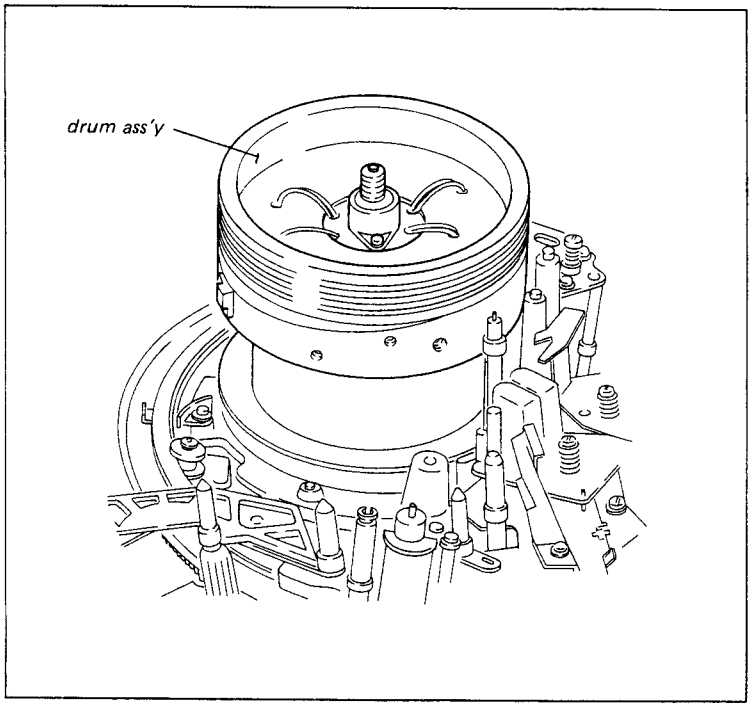


(6) After the screws are tightened, check again that the eccentricity of the upper drum is within 5μ.
(7) Solder the four leads from the video heads to the printed circuit board.
(8) Install the S guard block.
(9) Perform the various adjustments as shown in page 4-6.

4-2. REPLACEMENT OF DRUM ASSEMBLY

Replacement procedure:

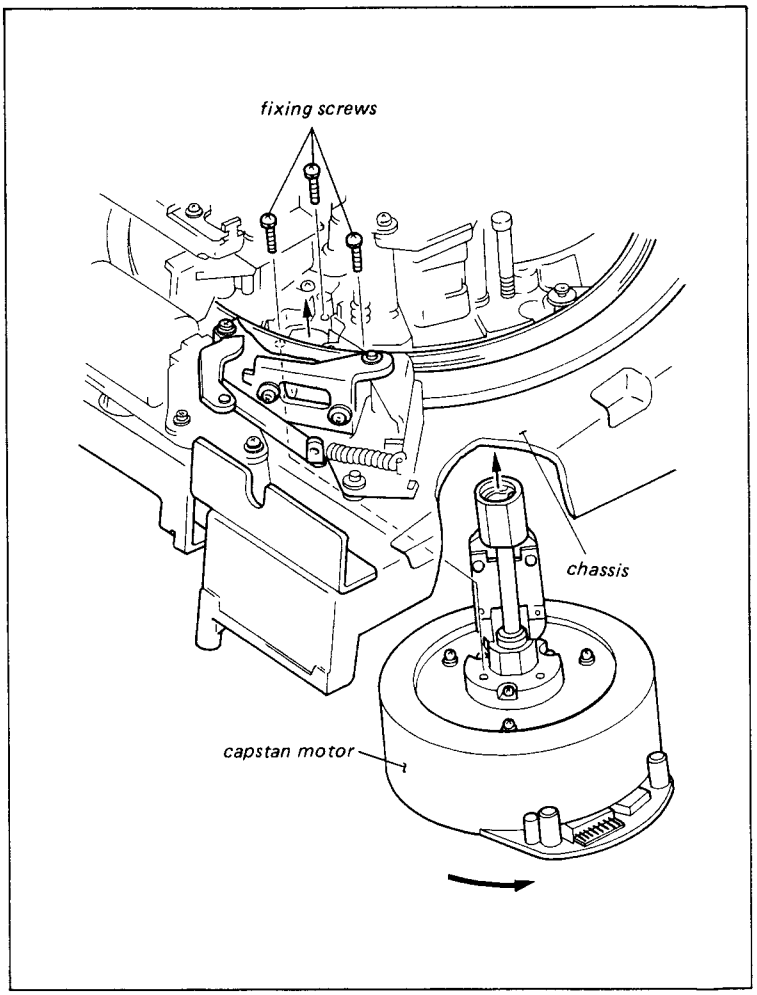
(1) Disconnect the connectors (CN1 and CN2) of the drum assembly and CN202 on the RP-8B board.
(2) Remove the three fixing screws on the back of the chassis and remove the defective drum.
(3) Install the drum on the base while turning the drum assembly in the clockwise direction as seen from top of the set.
(4) Connect the three connectors.
(5) Perform the various adjustments as shown in page 4-6.



4-3. REPLACEMENT OF CAPSTAN MOTOR

Replacement procedure:

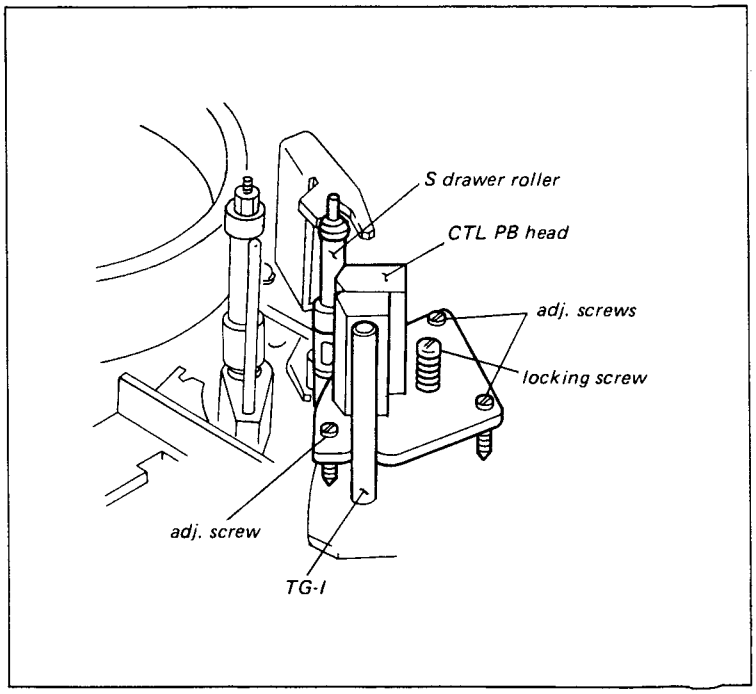
(1) Remove the capstan motor.
(2) Install the new capstan motor and thread three fixing screws snugly but do not tighten.
(3) While turning the capstan motor in the counterclockwise direction as seen from top of the set and tighten the fixing screws.



4-4. REPLACEMENT OF CTL PB HEAD

Replacement procedure:

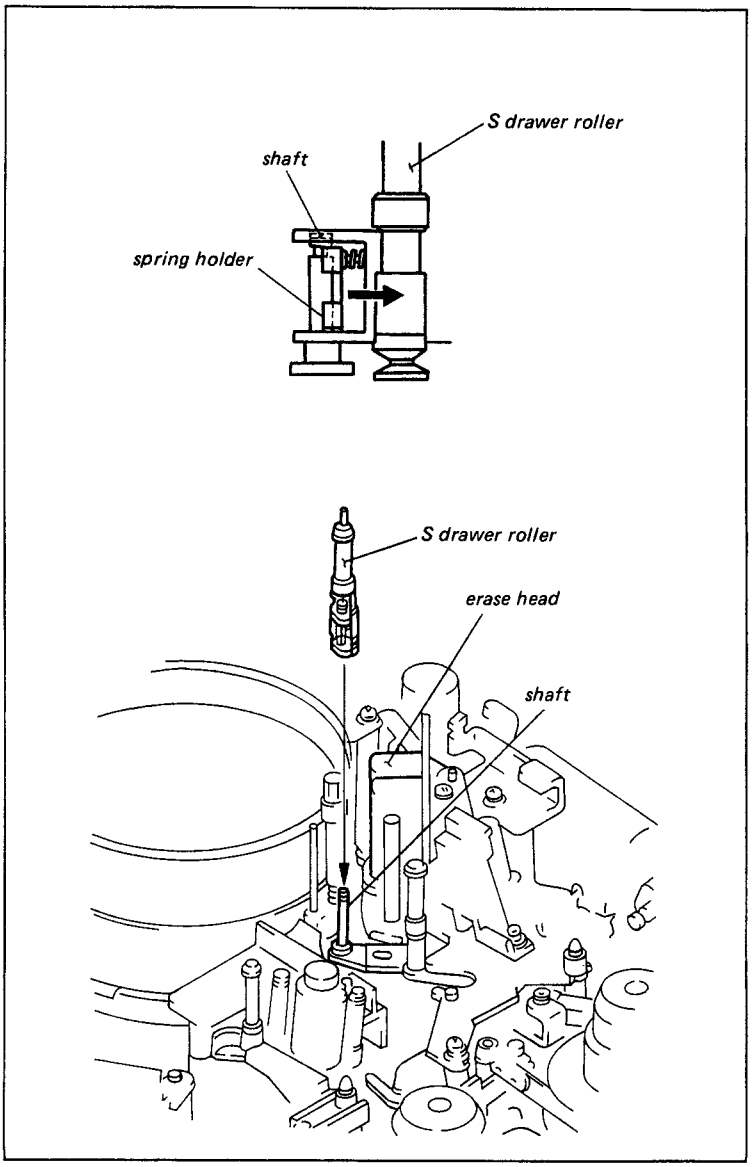
(1) Remove the locking screw and remove the CTL PB head from the chassis.
Do not tighten or loosen three adjusting screws.
(2) Loosen the two fixing screws under the bracket and replace the CTL PB head.



4-5. REPLACEMENT OF S DRAWER ROLLER

Replacement procedure:

(1) Put the machine into the EJECT completion mode without cassette tape.
(2) Turn the pulley of the gear box with finger until the S drawer roller places in front of the CTL PB head.
(3) Remove the S drawer roller from the shaft while pushing the spring holder in the arrow direction.
(4) Install the new S drawer roller into the shaft until the S drawer roller lockes to the shaft while pushing the spring holder in the arrow direction.



4-6. REPLACEMENT/ADJUSTMENT OF TAPE GUIDES ON THREADING RING

Tool and equipment:

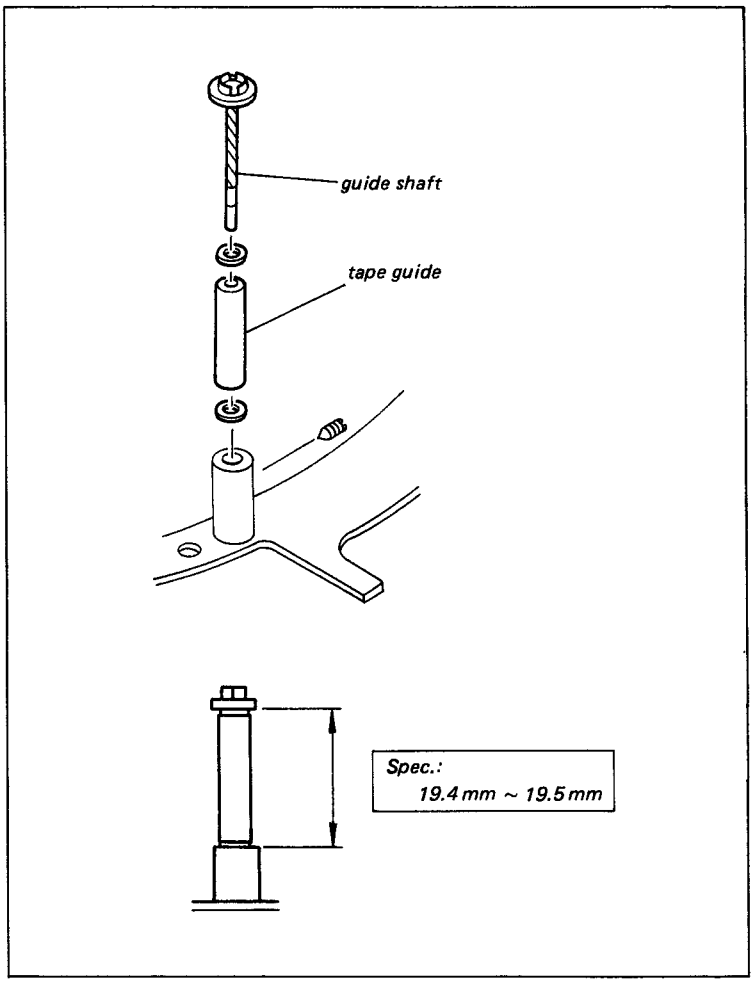
Slide vernier calliper or the equivalent.
Cleaning fluid.

Replacement procedure:

(1) Remove the tape guide.
(2) Clean the surface of the shaft with a cloth dampened with a cleaning fluid.
(3) Assemble the parts.
(4) The sub-ring upper tape guide and lower tape guide are necessary to perform the guide width adjustment.

Adjustment procedure:

(1) Adjust the tape guide width to meet the required specification.



4-7. ADJUSTMENT ITEM TABLE AFTER MAIN PARTS REPLACEMENT

Replacement Parts	Adjustment Items
• Threading Ring	→ Threading Ring Rotation Adjustment (5-3-1) → Gear Box Position Adjustment (5-3-2) → FR Detector Block (5-3-4) Mounting Position Adjustment → Pinch Roller Self-Alignment Adjustment (5-3-3) → Pinch Lever Pre-set Adjustment (5-4-1) → Pinch Roller Pre-set Adjustment (5-4-2) → FF and REW Modes Tape Path Adjustment (7-1) → T Correction Guide Slantness Adjustment (7-2) → Tape Path Adjustment Around Pinch Roller (7-6, (7-6-1, 7-6-2)) → FWD Mode Tape Path Adjustment (1) (7-3) → FWD Mode Tape Path Adjustment (2) (7-4) → REV Mode Tape Path Adjustment (7-5) → Video Tracking Adjustment (7-7-1) → CTL. PB Head (7-7-2) Height/Azimuth/Zenith Adjustment → Video Tracking Adjustment (check). (7-7-1)
• Pinch Roller	→ Pinch Roller Self-Alignment Adjustment (5-3-3) → Pinch Roller Pre-set Adjustment (5-4-2) → FWD Mode (7-4) Tape Path Adjustment (2) → REV Mode Tape Path Adjustment (7-5) → Tape Path Adjustment (7-6, (7-6-1, 7-6-2)) Around Pinch Roller → Video Tracking Adjustment (check). (7-7-1)
• Take-up Reel Table	→ Reel Table Height and Vertical Play Adjustment (5-1-2) → T Brake Torque Adjustment (6-1-2) → REW Brake Torque Adjustment (6-1-3) → FF and REW Torque Adjustment (6-2) → FWD Torque Adjustment (6-3) → FF and REW Tape Path Adjustment. (7-1)
• Supply Reel Table	→ Reel Table Height and Vertical Play Adjustment (5-1-2) → S Brake Torque Adjustment (6-1-1) → FF and (6-2) REW Torque Adjustment → REV Torque Adjustment (6-4) → FF Back Tension Adjustment (6-5) → FWD Back Tension Adjustment (6-6) → Video Tracking Adjustment (check). (7-7-1)
• Brake Band	→ FF Back Tension Adjustment (6-5) → FWD Back Tension Adjustment. (6-6)
• Capstan Motor	→ Pinch Lever Right Angle Adjustment → Pinch Roller Self-Alignment Adjustment (5-3-3) → Capstan (9-7) SEARCH x5 Speed Adjustment → Capstan FWD and REV Detector Adjustment (9-8) → Capstan (9-4) Free Speed Adjustment (CCIR) → Capstan Free Speed Adjustment (NTSC) (9-5) → Capstan STOP (9-6) Servo Adjustment → FWD Mode Tape Path Adjustment (2) (7-4) → REV Mode Tape Path Adjustment (7-5) → Tape Path Adjustment Around Pinch Roller (7-6, (7-6-1, 7-6-2)) → Video Tracking Adjustment (check). (7-7-1)
• Threading Motor	→ Gear Box Position Adjustment. (5-3-2)
• Reel Motor	→ FWD Torque Adjustment (6-3) → REV Torque Adjustment (6-4) → Still Speed Adjustment. (9-15-1)
• CTL. PB Head	→ CTL. PB Head Height/Azimuth/Zenith Adjustment (7-7-2) → Tracking Adjustment (check). (7-7-1)
• Audio/CTL Head	→ Audio Head Height Adjustment (7-7-3) → Audio Head Azimuth Adjustment (7-7-5) → Video Tracking Adjustment (7-7-1) → Audio Head Height Adjustment (7-7-3) → Audio Head Azimuth Adjustment (7-7-5) → Audio Head Phase Adjustment (7-7-6) → Audio/CTL Head Position Adjustment (7-7-7) → Audio System Alignment. (10-1 ~ 10-11)

Replacement Parts	Adjustment Items
• Drum Assembly →	Tracking Adjustment (7-7, (7-7-1 ~ 7-7-7) → FF and REW Tape Path Adjustment (7-1) → FWD Mode Tape Path Adjustment (2) (7-4) → REV Mode Tape Path Adjustment (7-5) → Video Head Dihedral Adjustment (7-8) → Drum AFC Bias Adjustment (CCIR) (9-9) → Drum AFC Bias Adjustment (NTSC) (9-10) → Drum AFC Transient Adjustment (9-11) → Drum Lock Phase Adjustment (CCIR) (9-12) → Drum Lock Phase Adjustment (NTSC) (9-13) → Switching Position Adjustment. (9-14)
• Upper Drum Assembly →	Upper Drum and Eccentricity Adjustment (4-1) → Tracking Adjustment (7-7, (7-7-1 ~ 7-7-7) → FF and REW Tape Path Adjustment (7-1) → FWD Mode Tape Path Adjustment (2) (7-4) → REV Mode Tape Path Adjustment (7-5) → Video Head Dihedral Adjustment (7-8) → PB RF Amplifier Adjustment (11-1, (11-1-1 ~ 11-1-5) → Record Amplifier Adjustment. (11-4, (11-4-1 ~ 11-4-3))
• R Brake Shoe →	T. Tension Regulator Operating Position Adjustment (5-6-2) → Rew Brake Torque Adjustment. (6-1-3)

SECTION 5
LINK AND DRIVE SYSTEM ALIGNMENT

5-1. REEL TABLE SYSTEM ADJUSTMENT

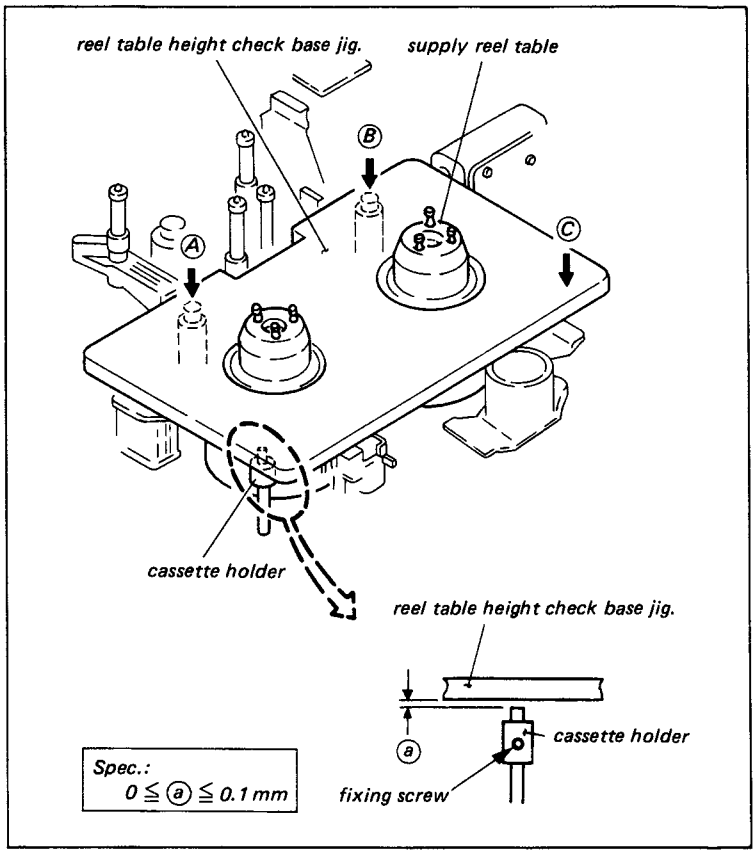
5-1-1. Cassette Holder Position Adjustment

Tool and equipment:
Reel table height check base jig.
Thickness gauge.

Mode: EJECT completion

Check procedure:
Check that the clearance between the base jig and the cassette holder 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 holder so that meets the required specification.



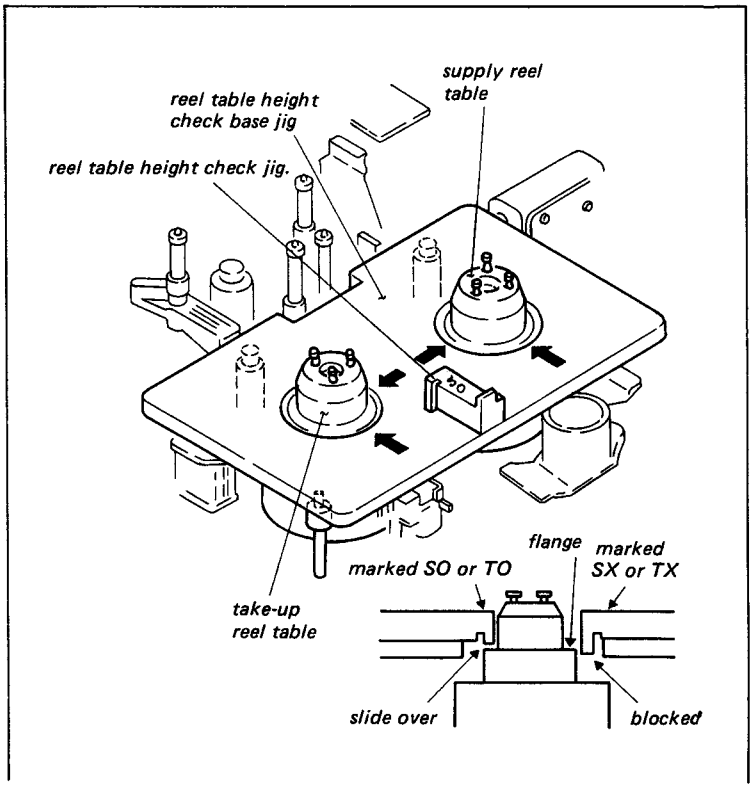
5-1-2. Reel Table Height and Vertical Play Adjustment

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

Mode: EJECT completion

Tool and equipment:
Reel table height check base jig.
Reel table height check jig.
Slide vernier callipers or the equivalent.

Check procedure:
(1) 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.



(2) Fasten a reel table securing screw, and push up and down the reel table for inspection. Check that the vertical play meets the required specification.

Adjustment procedure:

(1) Adjust height by the washer from under the reel table.

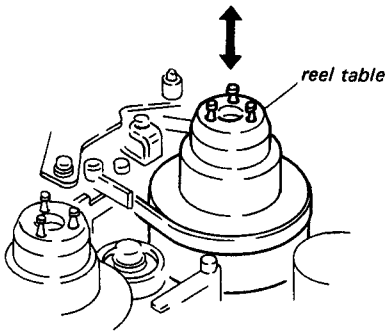
(2) Adjust vertical play by the washer on top of the reel table.

< NOTE >

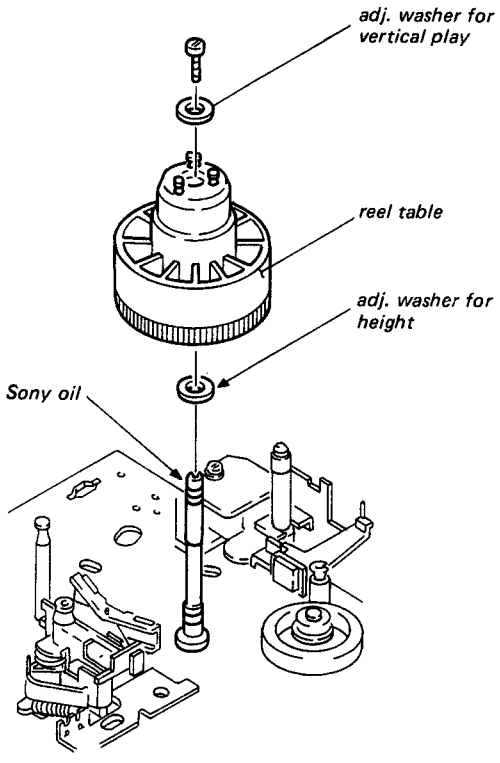
Apply a drop of SONY oil on the reel spindle as shown in figure, whenever the reel table is removed and is adjusted its height with washer.

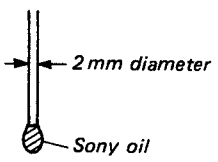
Amount of oil should be one drop that is scooped by tip of 2 mm diameter twig such as pencil lead.

- 6 mm diameter washer
  - 0.5 mm thick, 3-701-444-21
  - 0.25 mm thick, 3-701-444-11
  - 0.13 mm thick, 3-701-444-01



Spec.:
vertical play
0.17 mm ~ 0.38 mm





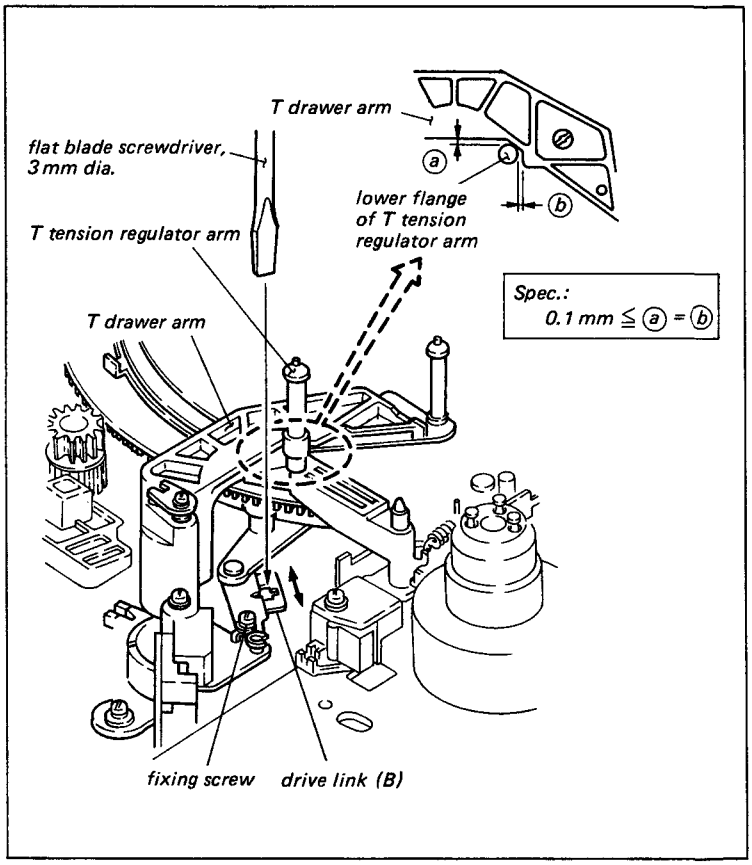
5-2. T DRAWER ARM ADJUSTMENT

5-2-1. T Drawer Arm EJECT Position Adjustment

Mode: Setting up FR-STOP mode without cassette tape, and press the EJECT button for setting up EJECT completion state.

Check procedure:
Check that the relationship between the lower flange of T tension regulator arm and the T drawer arm meets the required specification.

Adjustment procedure:
Adjust the position of drive link (B) ass'y by the flat blade screwdriver, 3 mm dia. so that meets the required specification.

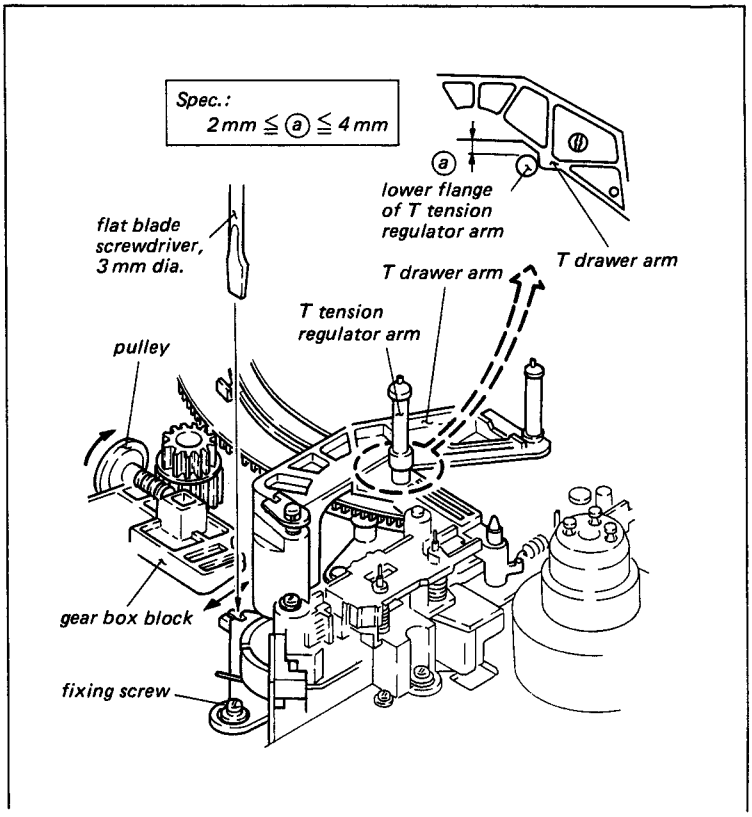


5-2-2. Unthread-end Switch Position Adjustment

Tool and equipment:
Black colored vinyl tape (1 cm x 1.5 cm)

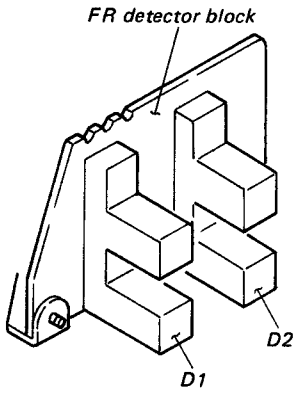
Preparation:
(1) Turn the POWER off in the FR-STOP mode.
(2) Remove the FR detector block, and cover the D2 phote-interrupter (FR-UNTHREAD END Detector) by the black colored vinyl tape.
(Put the FR detector in the FR-STOP mode constantly.)

Check procedure:
(1) Turn POWER on and rotate the pully of gear box block in the clockwise direction with finger.
(2) While the relationship of the T drawer arm and the T tension regulator arm is shown in the figure, check that a energized noise of the take-up brake solenoid is heard in this moment.



Adjustment procedure:

(1) Adjust the position of the photo interrupter holder by the flat blade screwdriver, 3 mm dia. so that meets the required specification.
(2) Turn POWER off, and mount the FR detector block after peel off the black colored vinyl tape.
(3) Adjust the FR detector block mounted position. (sec. 5-3-4.)
(4) Hook the spring on the FR detector block from the pinch lever block.



5-3. THREADING SYSTEM ADJUSTMENT

5-3-1. Threading Ring Rotation Adjustment

- This adjustment is required only when the threading ring is replaced or removed.
- If the threading ring is left unadjusted to have narrower clearance, the ring rotation becomes heavy, or if left to have wider clearance, tape run during threading, FWD, and REV modes will be unstable.

Mode: Check mode; EJECT completion/threading/unthreading
Adjustment mode; EJECT completion

Check procedure:

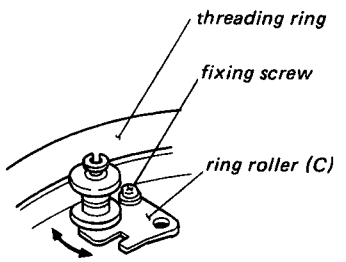
(1) Check that the horizontal play meets the required specification when the threading ring is pushed in the direction of the arrow in the EJECT completion mode.
(2) Check that the rotation of the threading ring into the threading and unthreading modes are smooth.

Adjustment procedure:

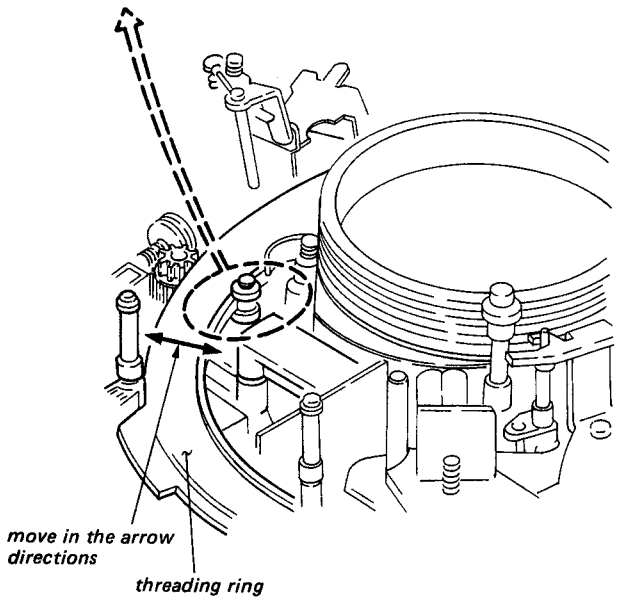
(1) Put the machine into the EJECT completion mode.
(2) Adjust the position of the ring roller (C) so that meets the required specification.

Adjusting procedure;

- Insert a 0.3 mm thick paper between the threading ring and the ring roller (C).
- Paper of this service manual is 0.1 mm thick so that the three fold becomes 0.3 mm thick.



Spec.:
horizontal play
0.2 mm ~ 0.5 mm



5-3-2. Gear Box Position Adjustment

- It is required that the sec. 5-3-1 threading ring rotation adj. is checked to be correct or properly adjusted before initiating this adjustment.

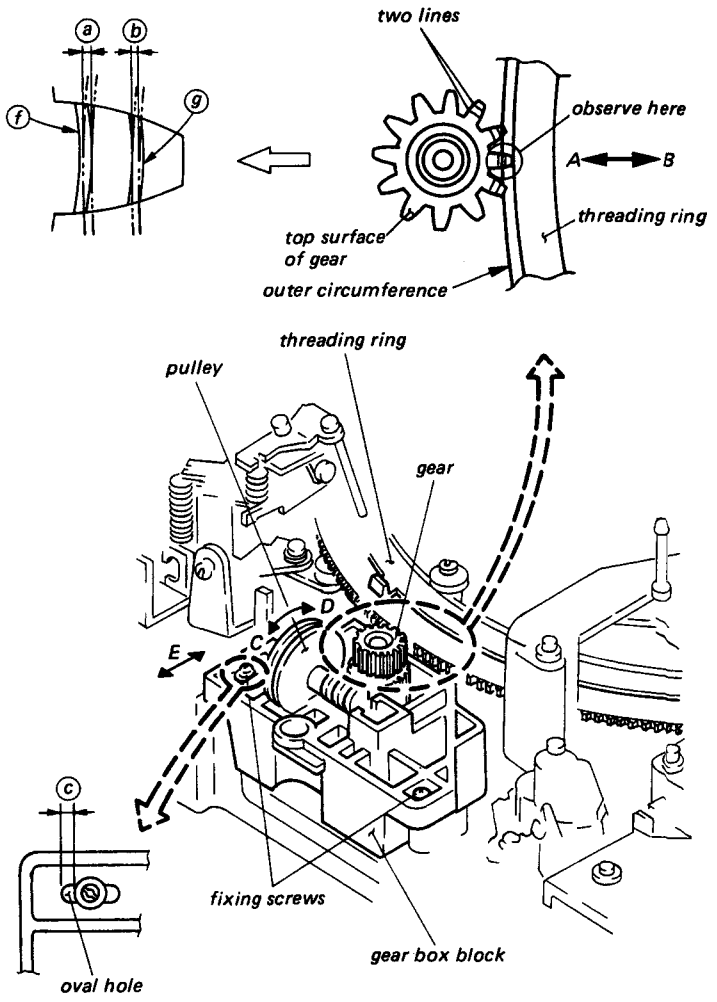
Mode: After completion of EJECT, turn the pulley 1/2 to 1 revolution in the direction of Arrow C in order to push out the Threading.

Check procedure:

(1) In order to make them easier to see during the Adjustment, mark the two lines on the top surface of the gear with a black felt tip pin.
(2) Turn the pulley so that one of the lines is roughly parallel to the outer circumference of the Threading Ring.
(3) Check to be certain that the relationship between the outer circumference of the Threading Ring and the Gear is within the Specifications.

Adjustment procedure:

(1) With the unit's EJECT completed and the pulley turned 1/2 to 1 revolution (as stated above under MODE), turn the pulley back and forth, as indicated by Arrows C and D, so that the Threading Ring and the Gear engage smoothly.
(2) Adjust the position of the Gear Box by moving it in the direction indicated by Arrow E until it is within the Specifications.
(3) Check the sec. 5-3-1 threading ring rotation adj.



Spec.:

(a) When the Threading Ring is moved in the direction of Arrow A, its outer circumference should be on or touching Line "f".
(b) When the Threading Ring is moved in the direction of Arrow B, its outer circumference should be on or touching Line "g".
(c) An oval hole of 0.1 to 1.5 mm should be visible.

5-3-3. Pinch Roller Self-Alignment Adjustment

- If the pinch roller self-alignment is poor, pinch roller's position and inclination against the capstan are erroneous so that the tape will get sear, in the instance of pinch roller's pressing against the capstan.
- Perform the pinch roller pre-set adjustment after this adjustment.

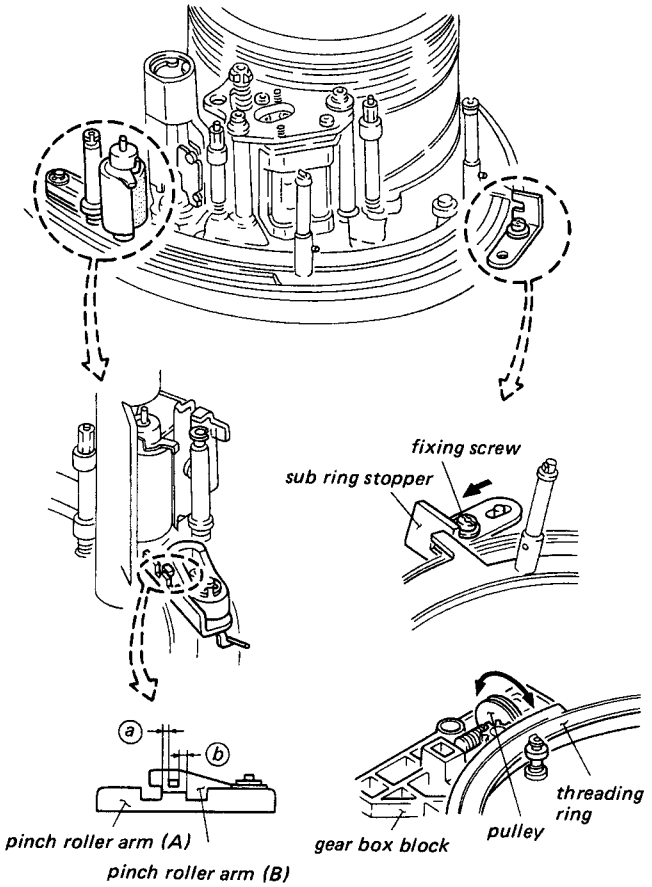
Mode: PLAY

Check procedure:

(1) Put the machine into PLAY mode without cassette.
(2) Check that the relationship between the pinch roller arm (A) and (B) meets the required specification.

Adjustment procedure:

(1) Put the machine into PLAY mode without cassette.
(2) Loosen the fixing screw of sub ring stopper.
(3) Turn the pully of gear box block in the arrow direction with finger.
(4) Push the sub ring stopper in the direction of the arrow and tighten the fixing screw.
(5) Put the machine once into the FR-STOP mode, and confirm as check procedure.



Spec.:
Clearance ⓐ and ⓑ should exist.

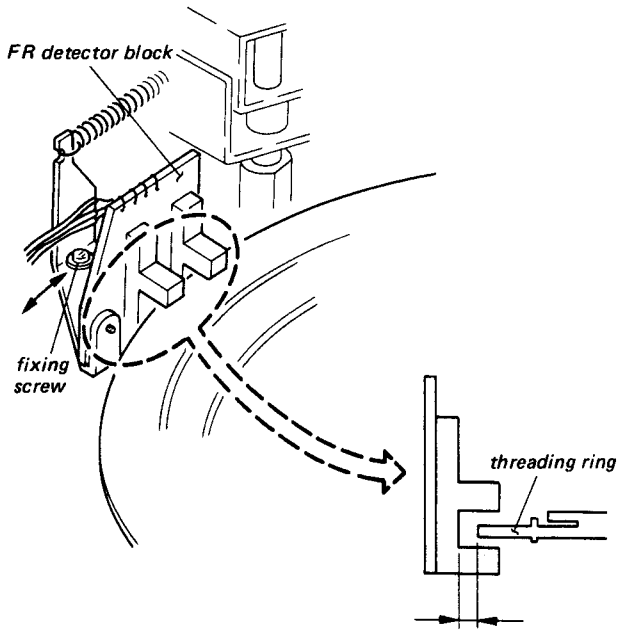
5-3-4. FR Detector Block Mounting Position Adjustment

- It is required that the sec. 5-3-1 threading ring rotation adj. is checked to be correct or properly adjusted before initiating this adjustment.

Mode: Adjustment mode; THREADING completion

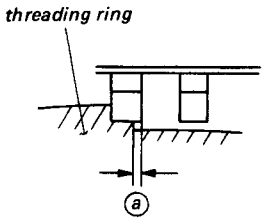
Adjustment procedure:

(1) Put the machine into THREADING completion mode and turn POWER off.
(2) Press the FR detector block against the threading ring, and then return about 1 mm. (Don't return more than 1.5 mm) (Spec. 1)
(3) Adjust the position of the FR detector block in the arrow direction so that meets the required specification 2.
(4) Check that the clearance meets the required specification 1.



Spec. 1:
about 1 mm clearance.

< top view >



Spec. 2:
0 mm ≦ ⓐ ≦ 1 mm

5-4. PINCH LEVER BLOCK ADJUSTMENT

5-4-1. Pinch Lever Pre-set Adjustment

- It is required that the threading ring rotation adj. and the pinch roller self-alignment adj. are checked to be correct or properly adjusted before initiating this adjustment.

Mode: Turn POWER off in PLAY mode.

Check procedure:

(1) Turn POWER off in PLAY mode. Check that the position of the pinch solenoid pin meets the required specification.

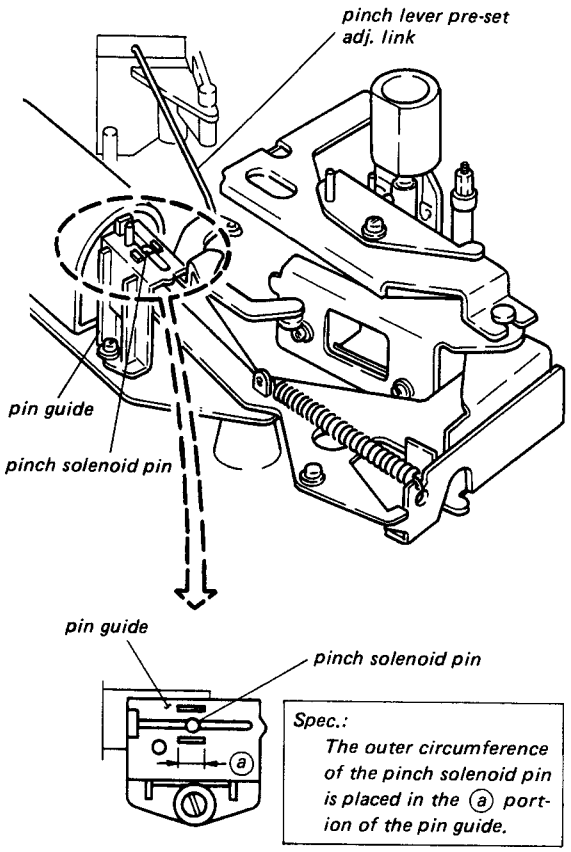
(2) Turn POWER on, and press the PLAY button after once unthreading. Check as procedure (1).

Adjustment procedure:

(1) Adjust the position of pinch solenoid within the specified value, refer to sec. 5-8-5.

(2) If not in step (1), perform the pinch roller self-alignment adjustment within the specified value, refer to sec. 5-3-3.

(3) If not in step (1) and (2), select the pinch lever pre-set adjustment link to the proper hole of the preset lever ass'y to meets the specification.



Spec.:
The outer circumference of the pinch solenoid pin is placed in the ⓐ portion of the pin guide.

5-4-2. Pinch Roller Pre-set Adjustment

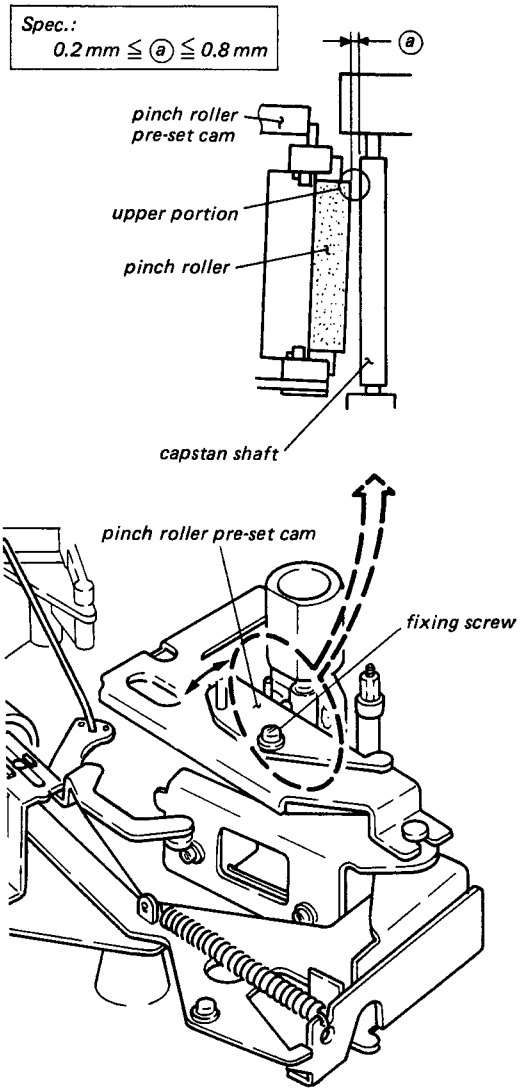
- It is required that the threading ring rotation adj. and the pinch roller self-alignment adj. are checked to be correct or properly adjusted before proceeding this adjustment.

Mode: Turn POWER off in PLAY mode.

Tool and equipment:
Thickness gauge

Check procedure:
(1) Turn POWER off in PLAY mode. Check that the clearance between the upper portion of pinch roller and the capstan shaft meets the required specification.
(2) Turn POWER on, and press the PLAY button after once unthreading. Check as procedure (1).

Adjustment procedure:
(1) Turn POWER off. Move the position of the pre-set cam in the direction of the arrow so that meets the required specification.
(2) Confirm as check procedure in this step.



5-4-3. Pinch Solenoid Block Position Adjustment

Mode: PLAY

Tool and equipment:

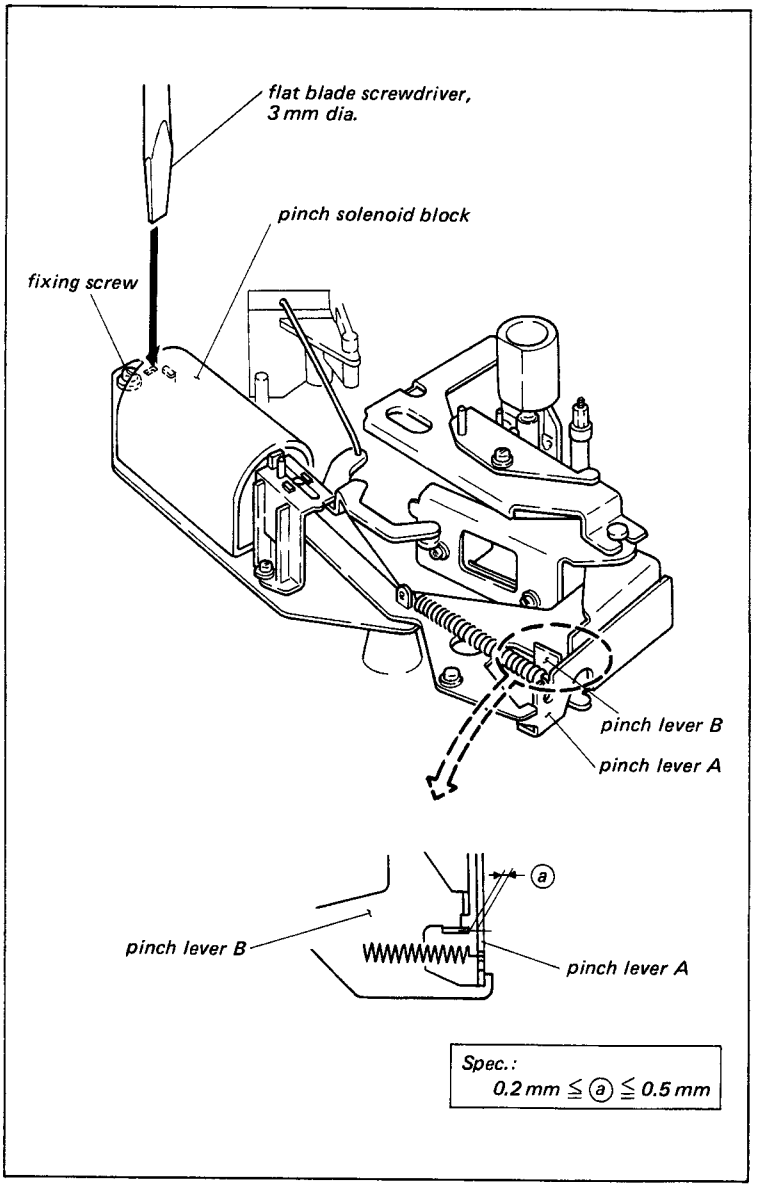
Thickness gauge

Check procedure:

(1) Thread a tape and put the machine into PLAY mode.
(2) Check that the clearance between the pinch lever A and B meets the required specification.
(3) Repeat the unthreading/threading two or three times. Check as procedure (2).

Adjustment procedure:

(1) Adjust the position of the pinch solenoid block by the flat blade screwdriver, 3 mm dia. in PLAY mode so that meets required specification.
(2) Confirm as check procedure (2) and (3).



5-5. T TAPE SENSOR POSITION ADJUSTMENT

- There are two adjustments of the height and the clearance between a tape and LED in this section.

Mode: Thread a tape and put the machine into FR-STOP and PLAY modes.

Tool and equipment:
Thickness gauge

Check procedure:

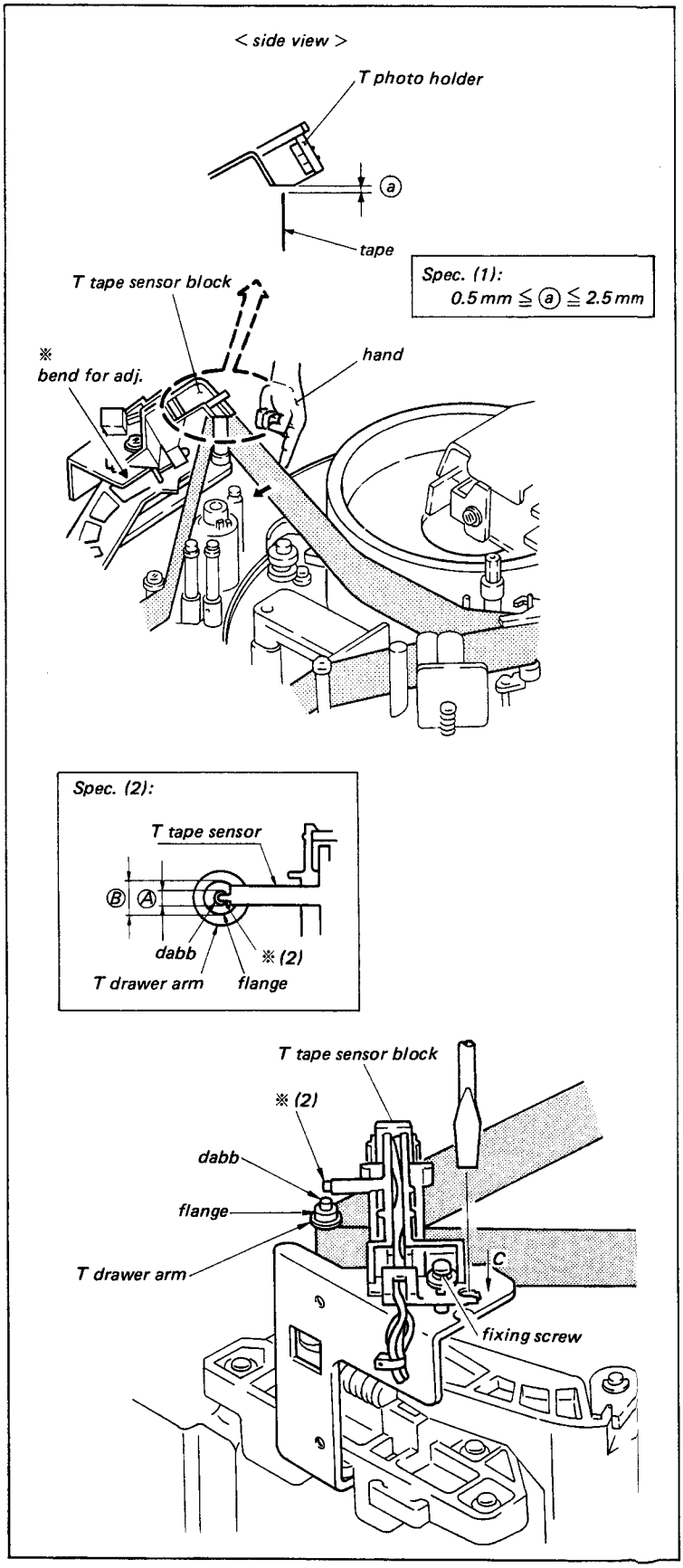
(1) Thread a tape and put the machine into FR-STOP mode. Push the tape against the cassette tape side with finger as shown in figure. Check that the clearance between the top edge of a tape and the bottom side of T photo holder block (black colored plastic) meets the required specification (Spec. (1)).

(2) Next, when set to PLAY mode from FR-SOTP mode, confirm *(2) part of the T Tape sensor block within the specification B of SPEC (2).

Adjustment procedure:

(1) Bend the ※ marked position in figure with pliers so that meets the required specification. Confirm as check procedure (2).

(2) Set to PLAY mode from FR-STOP mode and adjust C block so that *(2) part of T Tape sensor becomes within the specification A of SPEC (2).



5-6. TENSION ARM SYSTEM ADJUSTMENT

5-6-1. S Drawer Roller Ass'y Limiter Adjustment

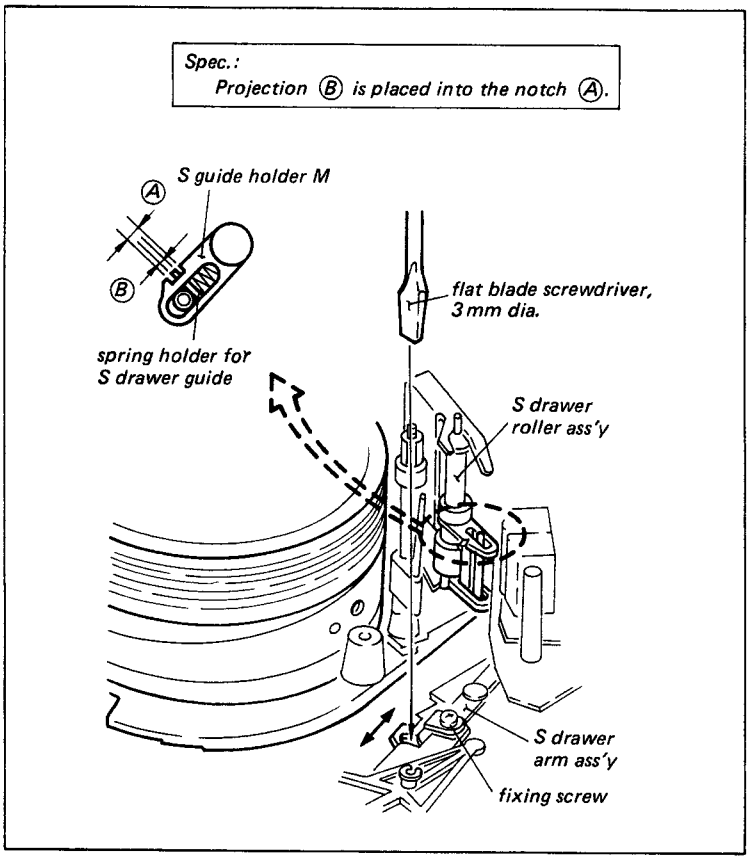
Mode: FR-STOP

Check procedure:

Check that the spring holder for S drawer guide, marked Ⓑ, of the S drawer arm ass'y is placed into notch of the S guide holder M, marked Ⓐ.

Adjustment procedure:

(1) Adjust the position of the S drawer arm ass'y by the flat blade screwdriver, 3 mm dia. so that meets the required specification.



5-6-2. T Tension Regulator Operating Position Adjustment

Mode: FR-STOP

Tool and equipment:

Thickness gauge

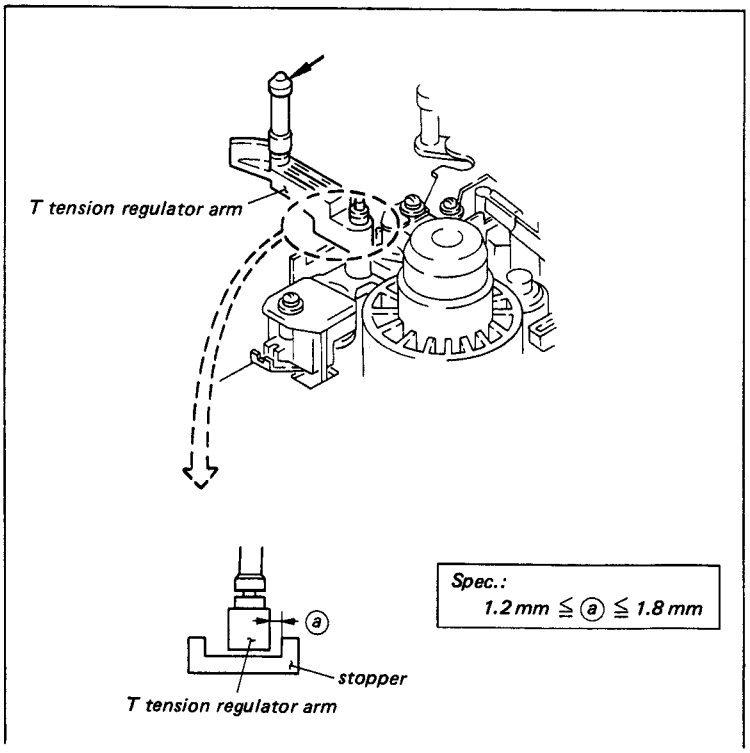
Check procedure:

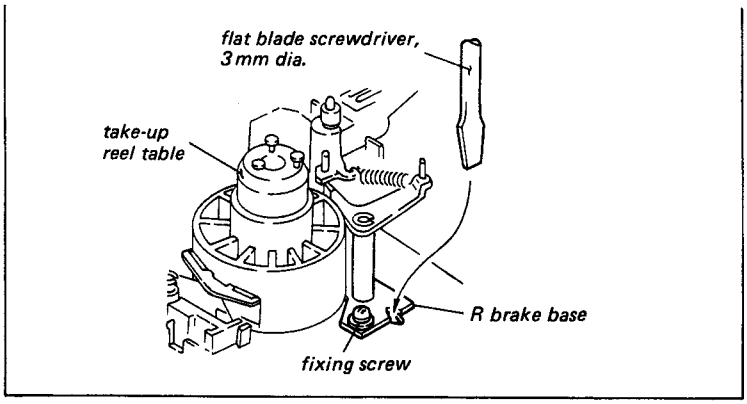
(1) Push the T tension regulator arm lightly to the left with finger as far as it will go (in the arrow direction), and remove the finger gently.

(2) Check that the clearance between T tension regulator arm and stopper meets the required specification.

Adjustment procedure:

(1) Adjust the position of R brake lever by the flat blade screwdriver, 3 mm dia. so that meets the required specification.





5-6-3. S Tension Regulator Operating Position Adjustment

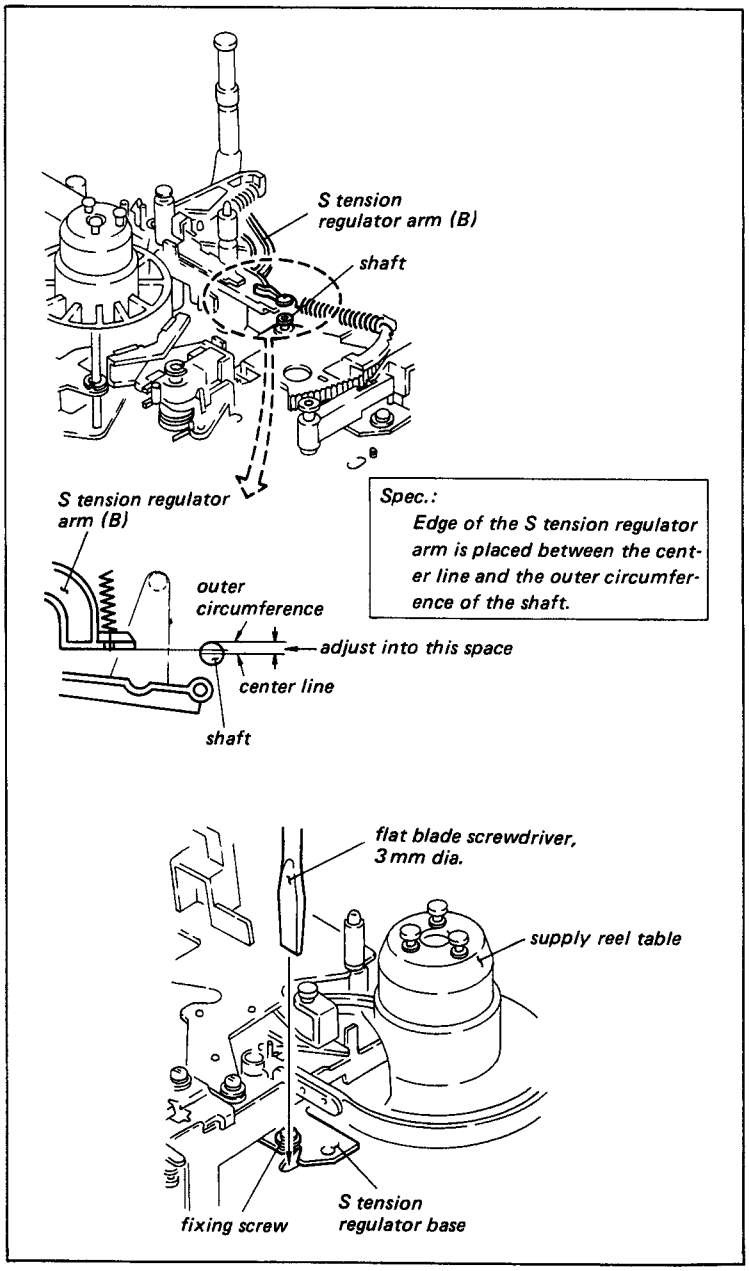
Mode: FF

Check procedure:

(1) Put the machine into FF mode without cassette tape.
(2) Check that the edge of S tension regulator arm (B) meets the required specification.

Adjustment procedure:

(1) Adjust the position of S tension regulator base so that meets the required specification.



5-6-4. Tension Detector Position Adjustment

Mode: FWD/SEARCH REV

Tool and equipment:
DC voltmeter

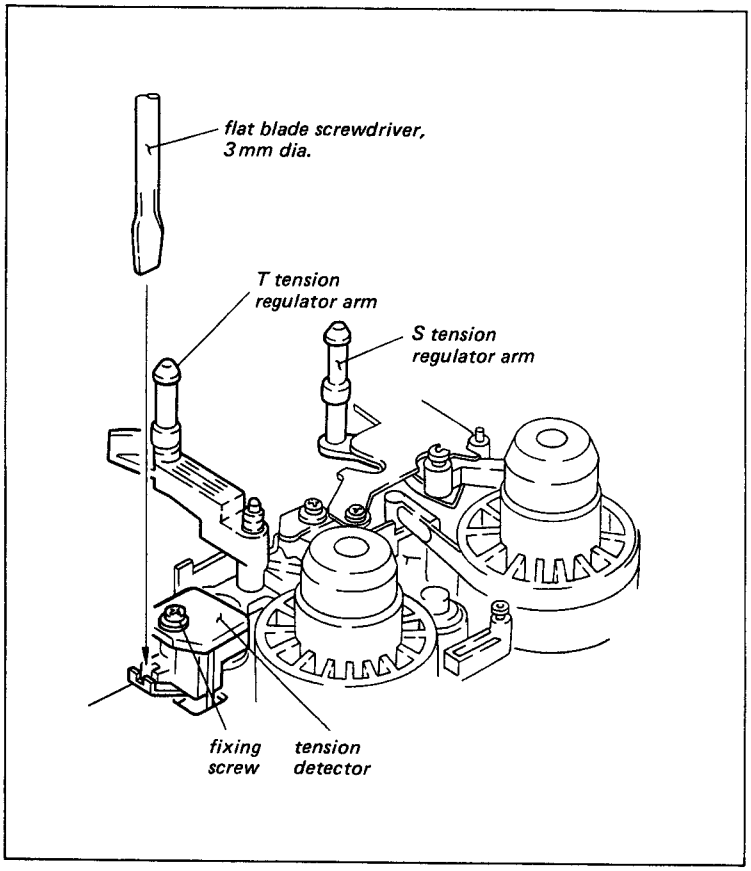
Preparation: Connect dc voltmeter to TP17/SY-75 board.

Check procedure:

(1) Put the machine into FWD mode without cassette tape.
(2) Push the T tension regulator arm to the right with finger as far as it will go. Check that the dc voltage is more than 9 V.
(3) Push the T tension regulator arm to the left with finger as far as it will go Check that the dc voltage is less than 2 V.
(4) Put the machine into SEARCH REV mode.
(5) Push the S tension regulator arm to the right with finger as far as it will go.
Check that the dc voltage is less than 2 V.
(6) Push the S tension regulator arm to the left with finger as far as it will go. Check that the dc voltage is more than 9 V.

Adjustment procedure:

(1) Adjust the position of tension detector so that meets the required specification.



5-7. SOLENOID SYSTEM ADJUSTMENT

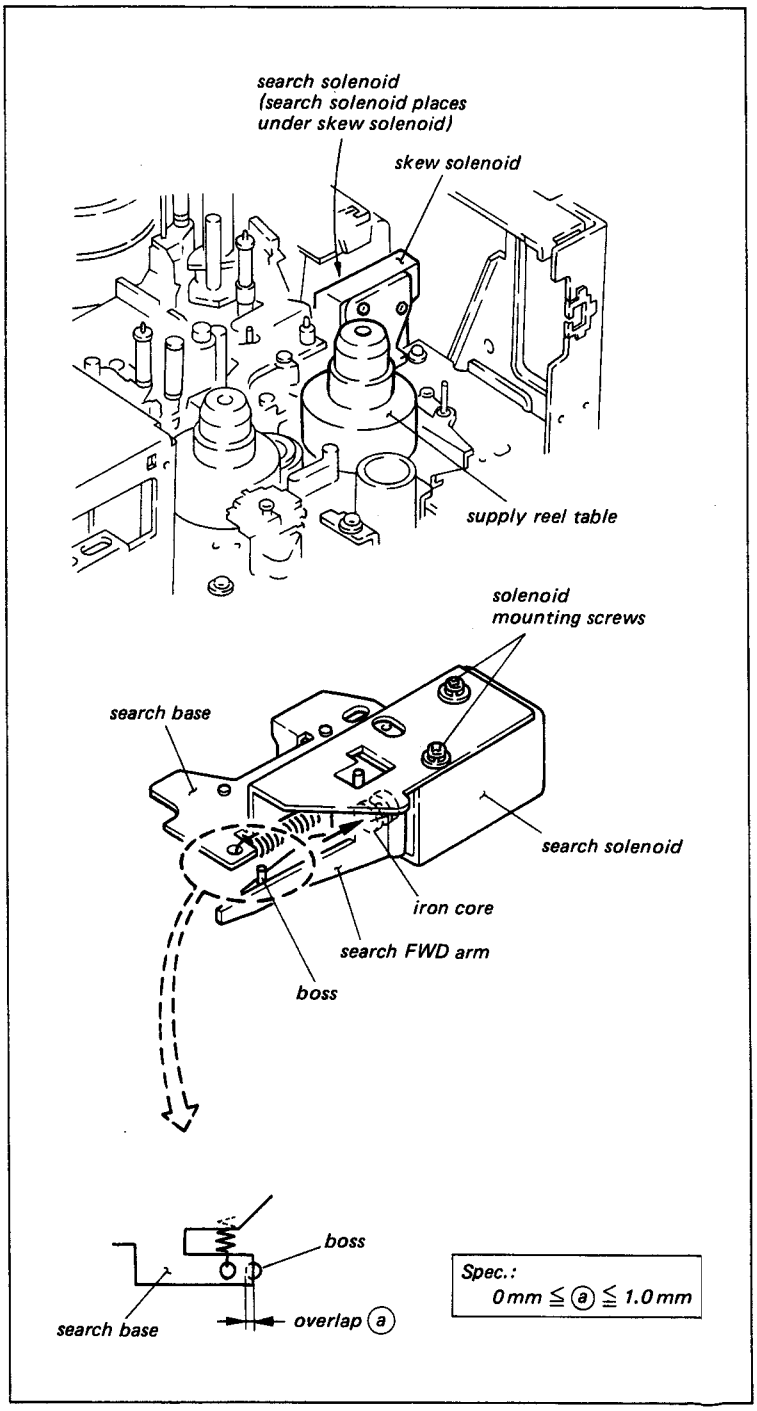
5-7-1. Search Solenoid Mounting Position Adjustment

- This adjustment is usually not required. But proceed with the following step only when the search solenoid is replaced or removed.

Mode: Remove the search solenoid block from the chassis.

Adjustment procedure:

Move the iron core into the fully energized position (indicated by the arrow as far as it will go). Adjust the mounting position of the search solenoid so that the overlap of the search FWD arm boss and the search base meet the required specification.



5-7-2. Skew Solenoid Mounting Position Adjustment

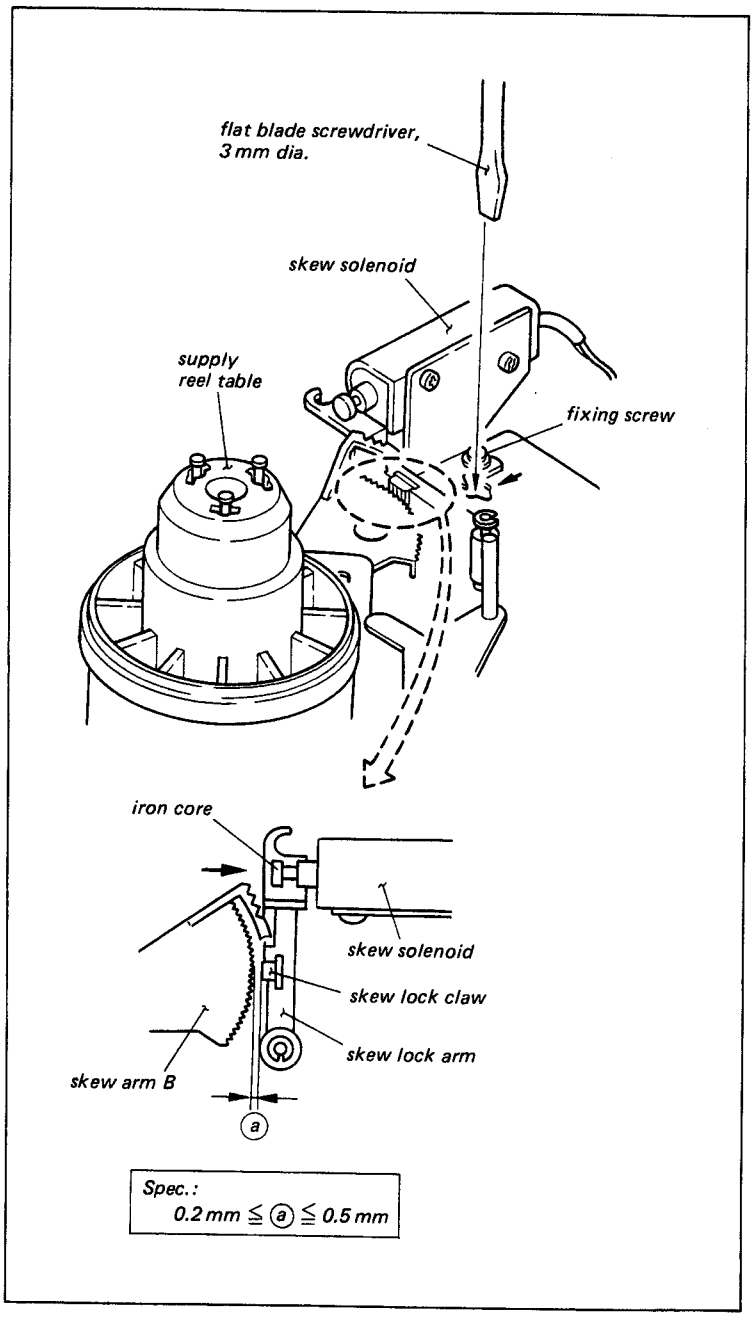
Mode: EJECT completion

Check procedure:

Check that the clearance between the skew lock claw and the skew arm B meets the required specification when the skew solenoid iron core is push in the direction of the arrow.

Adjustment procedure:

Adjust the position of the skew solenoid with a flat blade screwdriver, 3 mm dia. so that meets the required specification.



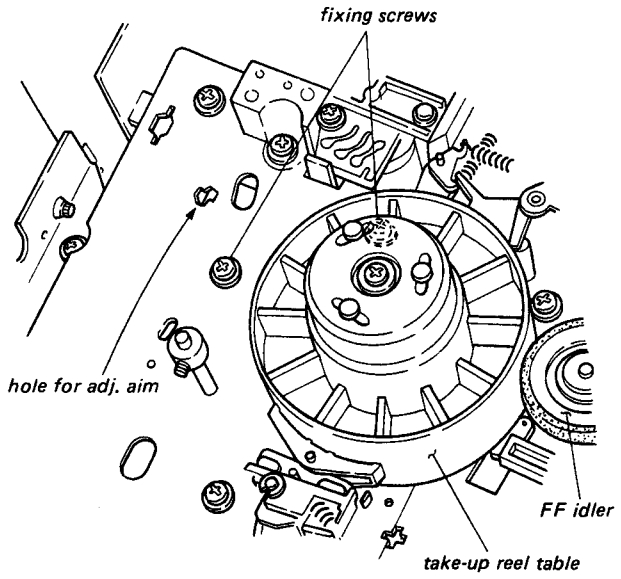
5-7-3. T Idler Solenoid Position Adjustment

- This adjustment is performed when T idler solenoid is replaced or removed and F.FWD torque does not meet the specification.

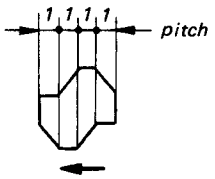
Mode: F.FWD mode without cassette tape

Adjustment procedure:

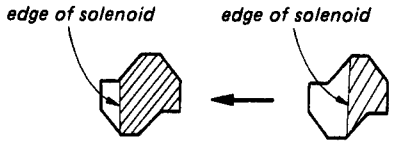
(1) Put the machine into F.FWD mode without cassette tape.
(2) Loosen the T idler solenoid fixing screws about 1/2 turn.
(3) Adjust the position of the T idler solenoid so that 0.01 ~ 0.1 mm clearance exists between the take-up reel table and the FF idler.
(4) Note the hole to be provided for adjusting aim after proceeding the procedure (3).
Confirm that where the edge of this solenoid is placed in this hole.
(5) Move the solenoid in the arrow direction only one pitch from the position of procedure (4), and tighten the fixing screws.



< hole for adj. aim >



< for example >



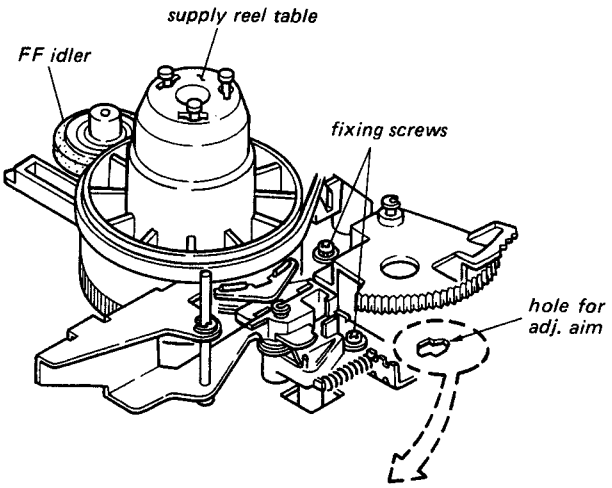
5-7-4. S Idler Solenoid Position Adjustment

- This adjustment is required only when the supply idler solenoid is replaced or removed and the REW torque does not meet the specification.

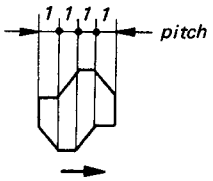
Mode: REW mode without cassette tape

Adjustment procedure:

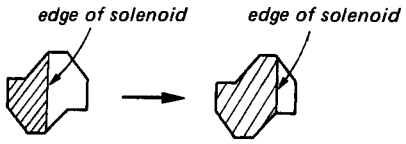
(1) Put the machine into REW mode without cassette tape.
(2) Loosen the supply idler solenoid fixing screws about 1/2 turn.
(3) Adjust the position of the S idler solenoid so that 0.01 ~ 0.1 mm clearance exists between the supply reel table and the FF idler.
(4) Note the hole to be provided for adjusting aim after proceeding the procedure (3).
Confirm that where the edge of this solenoid is placed in this hole.
(5) Move the solenoid in the arrow direction only one pitch from the position of procedure (4). Tighten fixing screws.



< hole for adj. aim >



< for example >

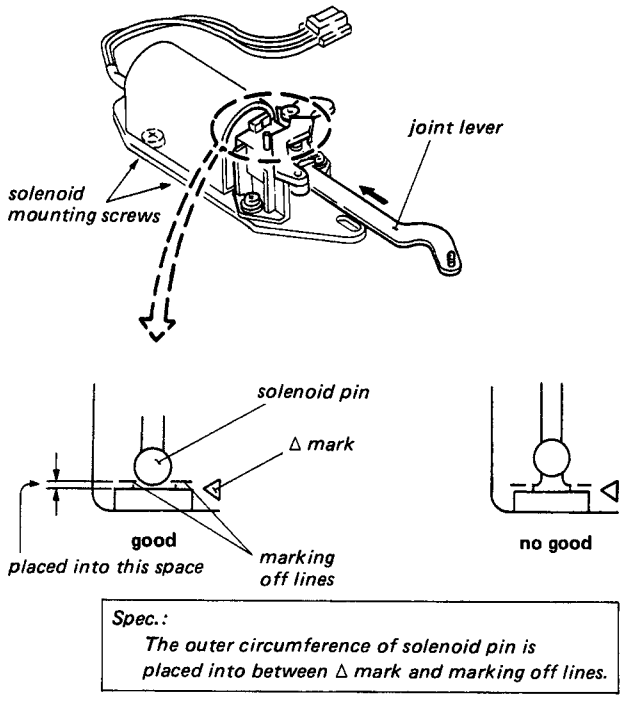


5-7-5. Pinch Solenoid Mounting Position Adjustment

- This adjustment is usually not required. Proceed with the following step only when the pinch solenoid is replaced or removed.

Mode: Remove the pinch solenoid block from the chassis.

Adjustment procedure:
Move the joint lever into the fully energized position (indicated by the arrow as far as it will go). Adjust the solenoid mounting position so that the outer circumference of solenoid pin meets the required specification.



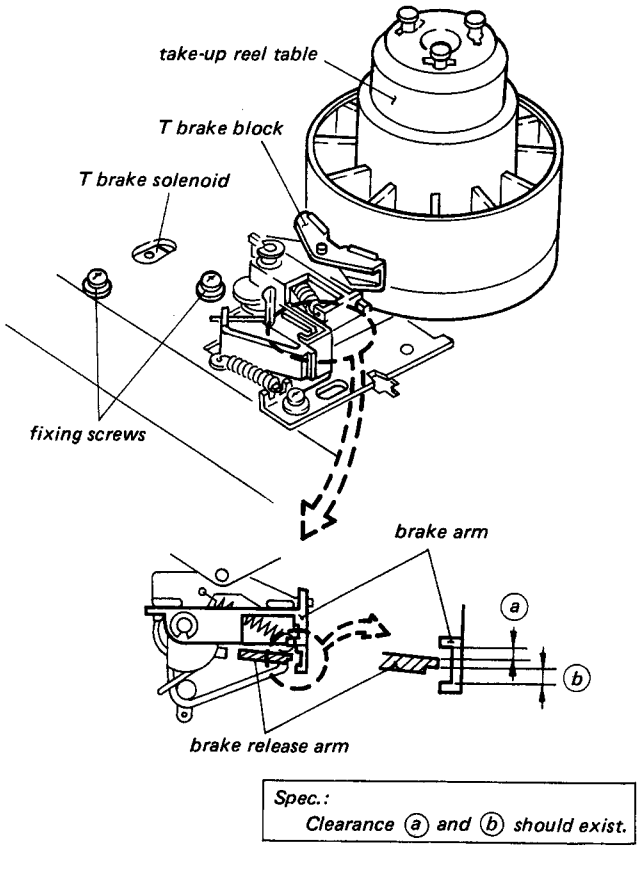
Spec.:
The outer circumference of solenoid pin is placed into between Δ mark and marking off lines.

5-7-6. T Brake Solenoid Position Adjustment

Mode: REW mode without cassette tape

Check procedure:
Check that the relationship between the brake release arm and the brake arm meets the required specification.

Adjustment procedure:
Adjust the position of the T brake solenoid so that meets the required specification.



Spec.:
Clearance (a) and (b) should exist.

5-7-7. S Brake Solenoid Position Adjustment

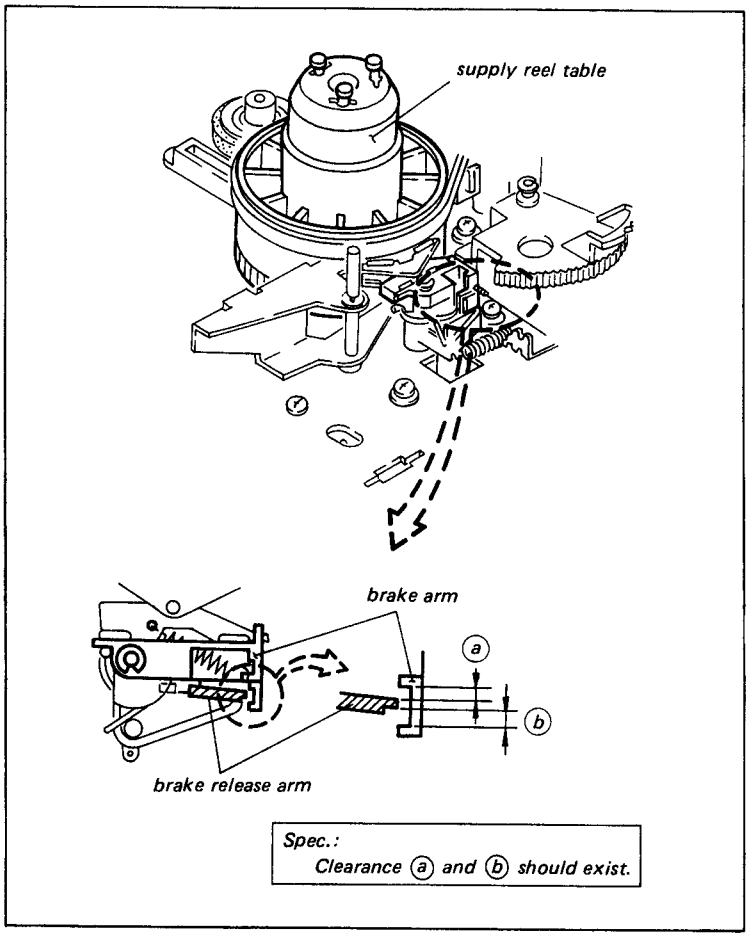
Mode: REW mode without cassette tape

Check procedure:

Check that the relationship between the brake release arm and the brake arm meets the required specification.

Adjustment procedure:

Adjust the position of the S brake solenoid so that meets the required specification.



5-8. CASSETTE-UP COMPARTMENT ADJUSTMENT

- The cassette-up compartment has two photo-electrical switches. The on/off timing of these switches are adjusted as follows.

5-8-1. Cassette-in Switch Position Adjustment

Tool and equipment:

KCA type cassette tape.
Tester.
Thickness gauge.

Preparation: (1) Remove the cassette-up compartment from the chassis.
(2) Connect the plug of the harness for cassette-up compartment and the terminal on the CC-9 board with the jumper leads.

plug of harness (CN1)	terminal on CC-9 board
4pin (5 V) ⟷	4pin/CN1
5 or 2pin (GND) ⟷	5 or 2pin/CN1

(3) Turn POWER on.

Check procedure:

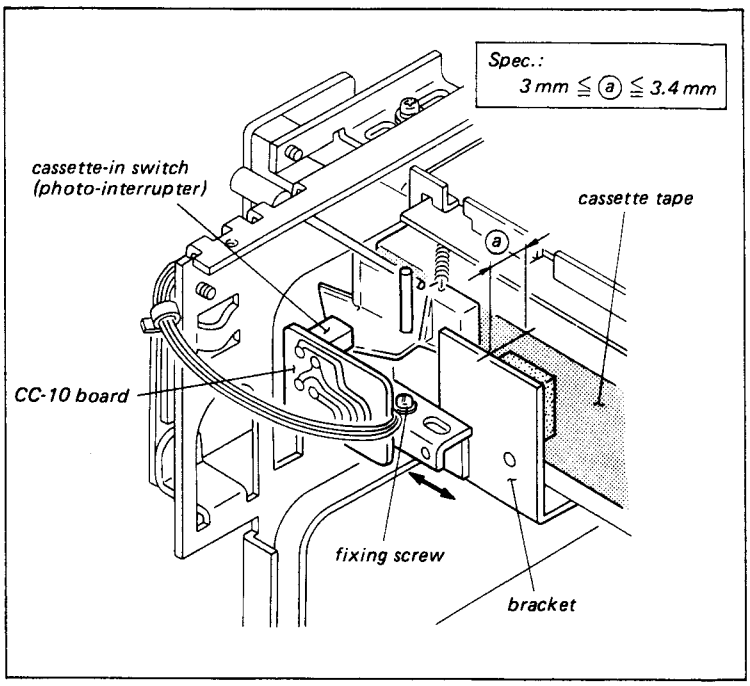
(1) Connect the tester to ② terminal on CC-9 board.
(2) Insert a KCA type cassette tape slowly.
(3) Check that the clearance between the front side of the cassette tape and the bracket of cassette-up compartment meets the required specification when the tester is turned "H" level (about 5 V).

Adjustment procedure:

(1) Adjust the position of the cassette-in switch in the direction of the arrow so that meets the required specification.

Adjusting procedure;

Insert a 3.3 mm thick 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.



5-8-2. Cassette-down Switch Position Adjustment

Tool and equipment:

Tester

Preparation

(1) Remove the cassette-up compartment from the chassis.

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

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

(3) Turn POWER on.

Check procedure:

(1) Connect the 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.

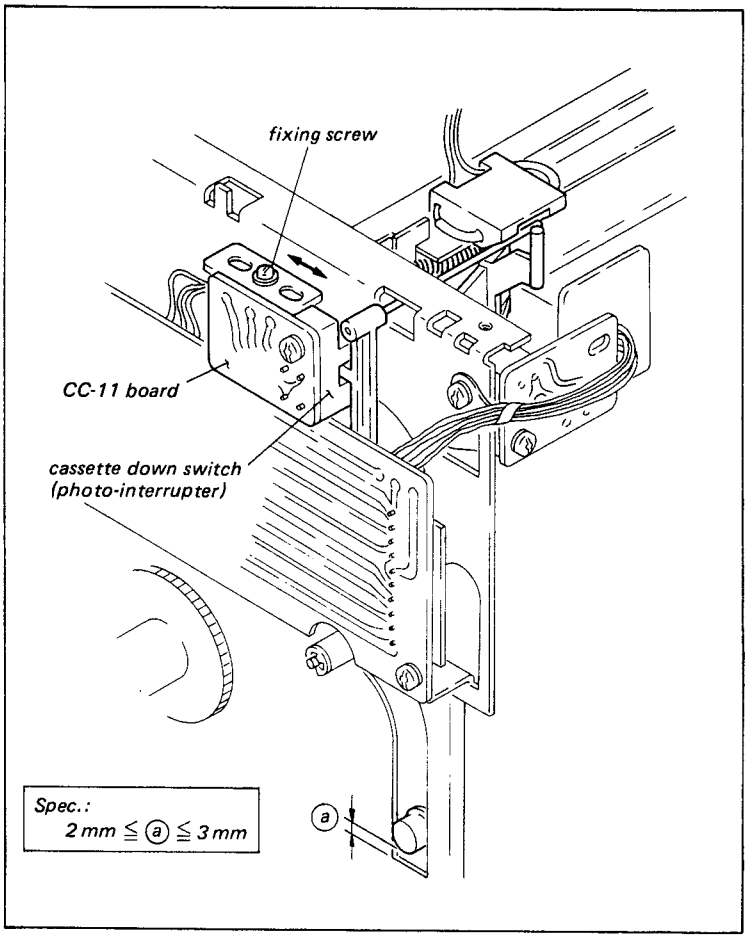
(3) Check that the clearance between the roller and the guide meets the required specification.

Adjustment procedure:

(1) Adjust the position of the cassette-down switch in the direction of the arrow so that meets the required specification.

Adjusting procedure;

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



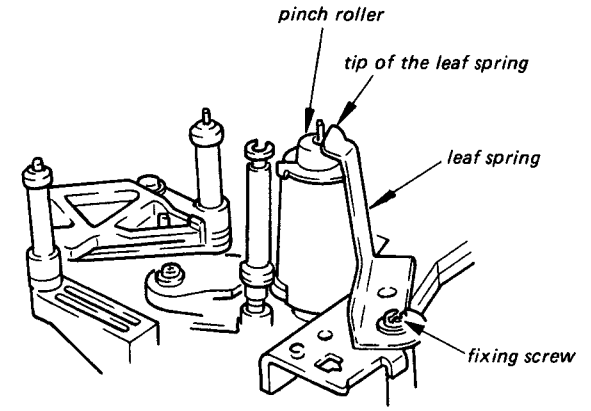
5-9. LEAF SPRING POSITION ADJUSTMENT

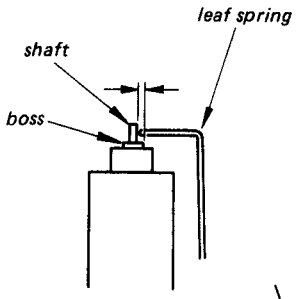
Check procedure:

(1) Turn on POWER. Put the machine into the EJECT mode after put into the PLAY mode once.
(2) Turn the gear box pulley with finger so that the edge of the T drawer arm is placed into the center of the shaft as shown in figure.
(3) Check that the relationship between leaf spring and pinch roller shaft meets the required specification 1.
(4) Put the machine into the EJECT completion mode. Check that the clearance between leaf spring and pinch roller.

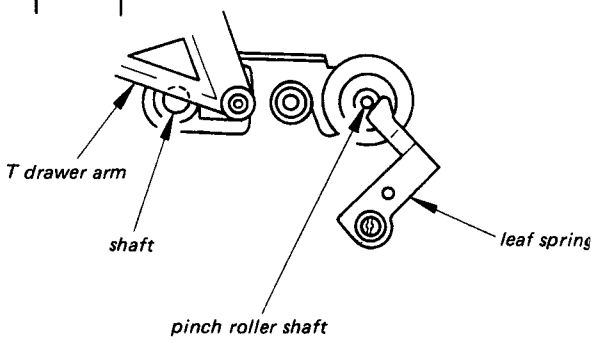
Adjustment procedure:

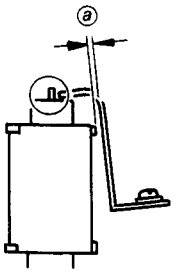
(1) Adjust the position of the leaf spring so that meets the required specifications.





Spec. 1:
Tip of the leaf spring is placed between the shaft and the outer surface of the boss.





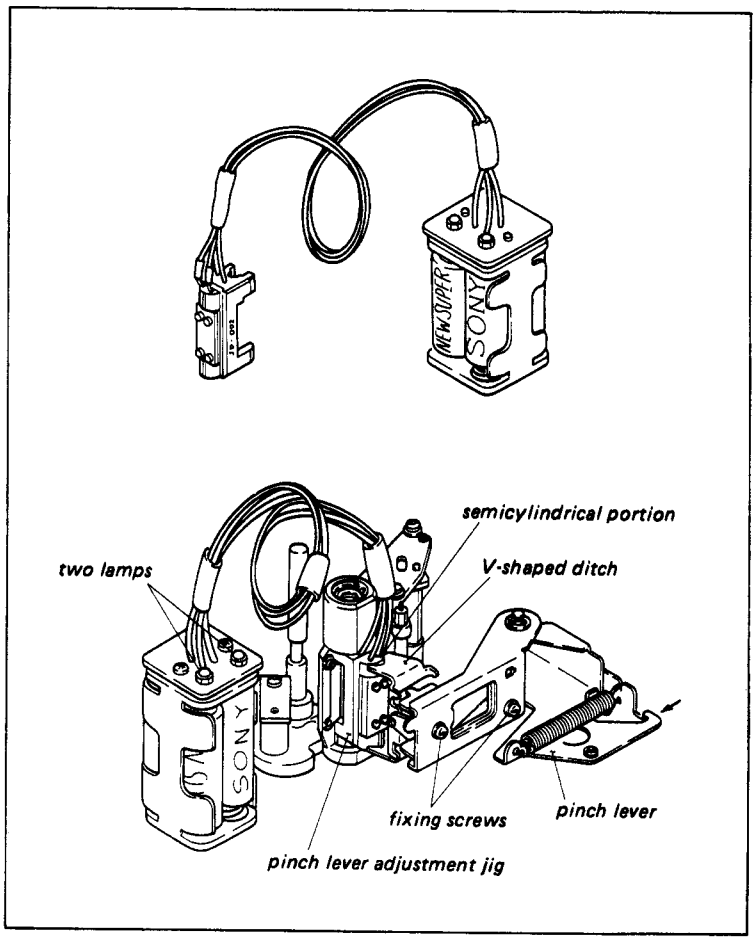
Spec. 2:
Clearance ⓐ should exist.

5-10. 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 replacement.

Tool : Pinch lever adjustment jig
Mode : EJECT completion
Check procedure:
(1) Install the pinch 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 fixing screws of the pinch lever and adjust the V-shaped ditch to the correct position.
(2) After this adjustment, tighten the fixing screws and check again.



SECTION 6
BACK TENSION AND TORQUE ALIGNMENT

6-1. BRAKE SYSTEM ADJUSTMENT

6-1-1. S Brake Torque Adjustment

Tool and equipment:

Reel table torque measurement tape (100 mm dia.)
Tension scale (200 g full scale).

Mode: EJECT completion/POWER off.

Check procedure:

(1) Grasp the top of the supply reel table with finger. Check that the clearance between the brake arm and the lining holder meets the required specification (1) as shown in figure as it is turned clockwise direction approx. 30 degrees.

(2) Install the jig tape on the supply reel table and hook a tension scale on an end of the jig tape. Pull out the tape at the constant speed of approx. 9.5 cm/sec. in the direction of the arrow. Check that the scale reading meets the required specification (2).

Adjustment procedure:

For spec. 1

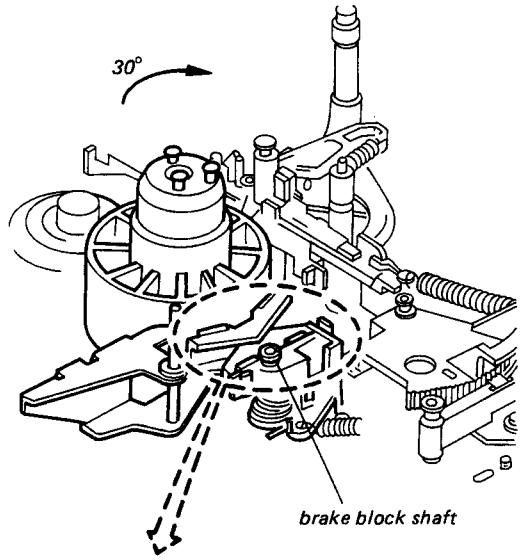
(1) Bend the brake block shaft toward the reel table or the opposite direction with finger.

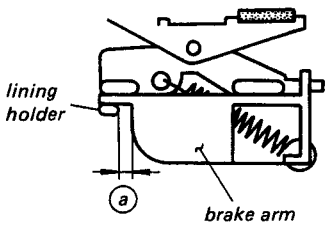
For spec. 2

(2) Clean the surface of the reel table with cloth moistened with cleaning fluid.

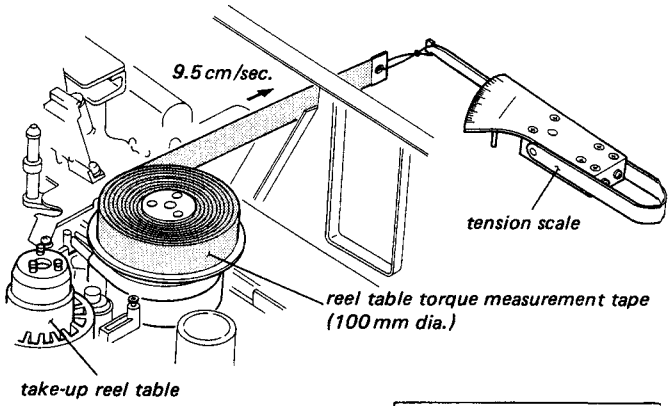
(3) If the scale reading does not meet the specification (2), replace the lining holder and check again.

(4) If not in step (2), replace the reel table and check again.





Spec. 1:
0.6 mm ≦ ⓐ ≦ 1.0 mm



Spec. 2:
100 g ~ 170 g (on scale)
(500 g.cm ~ 850 g.cm)

6-1-2. T Brake Torque Adjustment

Tool and equipment:

Reel table torque measurement tape (100 mm dia.)
Tension scale (200 g full scale).

Mode: EJECT completion/POWER off.

Check procedure:

(1) Grasp the top of the take-up reel table with finger. Check that the clearance between the brake arm and the lining holder meets the required specification (1) as shown in figure as it is turned clockwise direction approx. 30 degrees.

(2) Install the jig tape on the take-up reel table and hook a tension scale on an end of the jig tape. While pushing the T tension regulator arm to the left as far as it will go, pull out the tape at the constant speed of approx. 9.5 cm/sec. in the direction of the arrow. Check that the scale reading meets the required specification (2).

Adjustment procedure:

For spec. 1

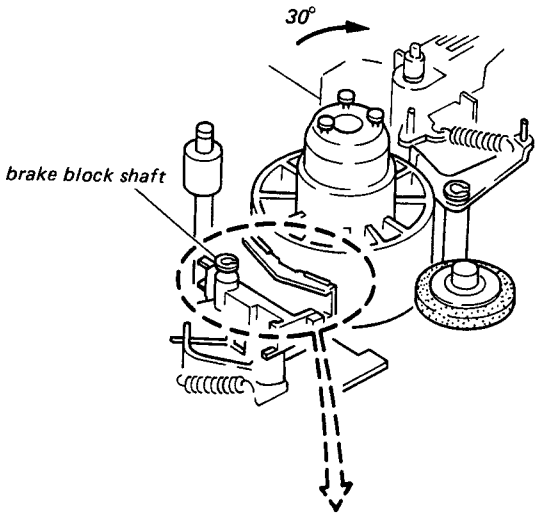
(1) Bend the brake block shaft toward the reel table or the opposite direction with finger.

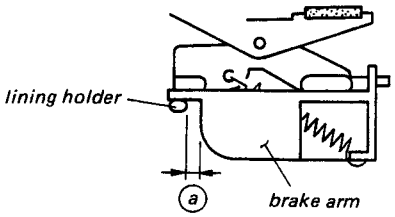
For spec. 2

(2) Clean the surface of the reel table with cloth moistened with cleaning fluid.

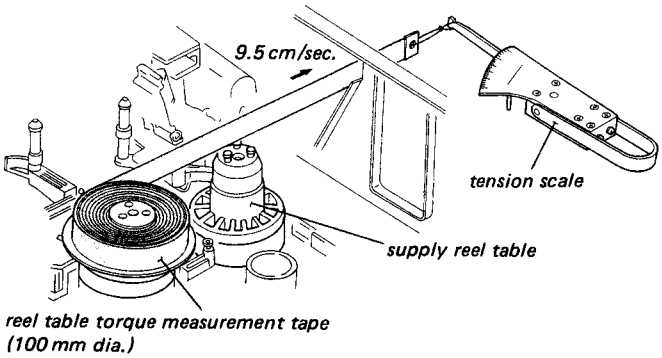
(3) If the scale reading does not meet the specification (2), replace the lining holder and check again.

(4) If not in step (2), replace the reel table and check again.





Spec. 1:
0.6 mm ≦ ⓐ ≦ 1.0 mm



Spec. 2:
100 g ~ 170 g (on scale)
(500 g.cm ~ 850 g.cm)

6-1-3. REW Brake Torque Adjustment

Tool and equipment:

Reel table torque measurement tape (100 mm dia.)
Tension scale (50 g full scale)

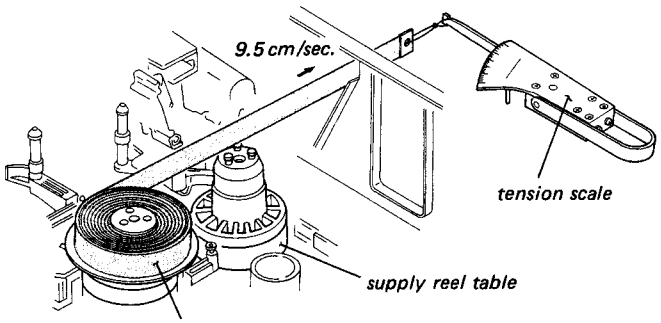
Mode: REW

Check procedure:

(1) Install the jig tape on the take-up reel table and hook a tension scale on an end of the jig tape.
(2) Put the machine into the REW mode. Pull out the tape at the constant speed of approx. 9.5 cm/sec. in the direction of the arrow. Check that the scale reading meets the required specification.

Adjustment procedure:

(1) If the scale reading does not meet the specification, replace the R brake ass'y and check again.
(2) If not in step (1), replace the reel table and check again.



Spec.:
18 g ~ 36 g (on scale)
(90 g.cm ~ 180 g.cm)

6-2. FF/REW TORQUE ADJUSTMENT

- It is required that the sec. 5-7-3 T idler solenoid position adj. and sec. 5-7-4 S idler solenoid position adj. are checked to be correct or properly adjusted before initiating this adjustment.

Tool and equipment:

Reel table torque measurement tape (100 mm dia.)
Tension scale (500 g full scale).

Mode: FF and REW

Check procedure:

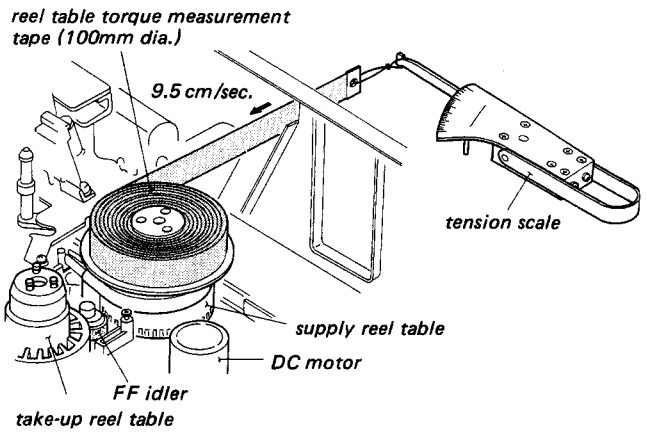
FF torque

(1) Install the jig tape on the take-up reel table and hook a tension scale on an end of the tape. Pull out the tape.
(2) Put the machine into FF mode. Let the tape pulled at the constant speed of approx. 9.5 cm/sec. check that the scale reading meets the required specification.

REW torque

(3) Install the jig tape on the supply reel table and hook a tension scale on an end of the tape. Pull out the tape.
(4) Put the machine into the REW mode. Let the tape pulled at the constant speed of approx. 9.5 cm/sec. Check that the scale reading meets the required specification.

< REW torque measurement method >



Spec.:
higher than 300 g (on scale)
(higher than 1500 g.cm)

Adjustment procedure:

Both FF torque and REW torque are adjusted by the following adjustment procedures.

(1) Clean the surface of the reel table, FF idler and belt with cloth moistened with cleaning fluid. Check the torque again.

(2) If not in step (1), put the machine into FF or REW mode without cassette and check that the dc voltage at the terminals of dc motor is 10.5 V ± 1.5 V in the FF or REW mode. If the dc voltage is out of spec., check that the circuit operation of MR board operates correctly.

(3) If not in steps (1) and (2), replace the reel table, FF idler and belt.

6-3. FWD TORQUE ADJUSTMENT

Mode: FWD/SEARCH FWD

Check procedure:

(1) Install the KCS-20 cassette tape at the tape end portion.

(2) Put the machine into the FWD mode. Check that the relationship between the T tension regulator arm and cassette tape meets the required specification.

(3) Install the KCA-60 cassette tape at the tape end portion.

(4) Put the machine into SEARCH FWD mode.

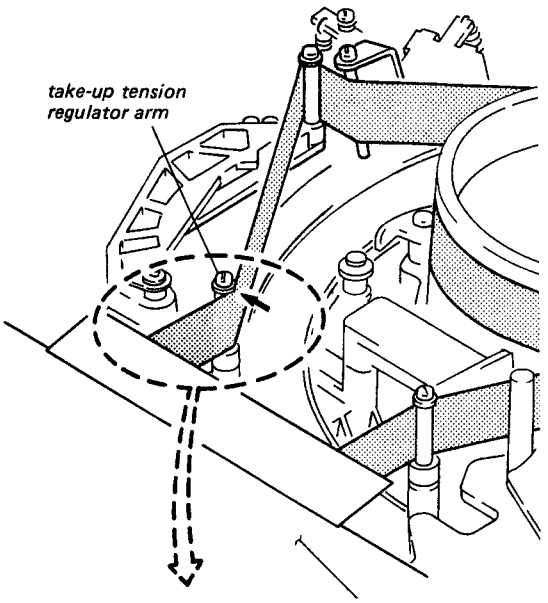
(5) Check that the tape runs without slack around the T tension regulator arm.

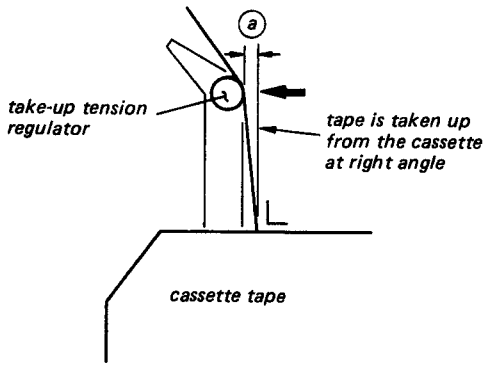
(6) Push the T tension regulator arm to the left as far as it will go, check that the tape slack is occurred around the T tension regulator arm.

Adjustment procedure:

(1) Adjust RV-1 on MR-8 or MR-11A board meets the required specification in FWD mode.

(2) Confirm as check procedures (3) ~ (6).





Spec.:
0 mm ≦ ⓐ ≦ 2 mm

6-4. REV TORQUE ADJUSTMENT

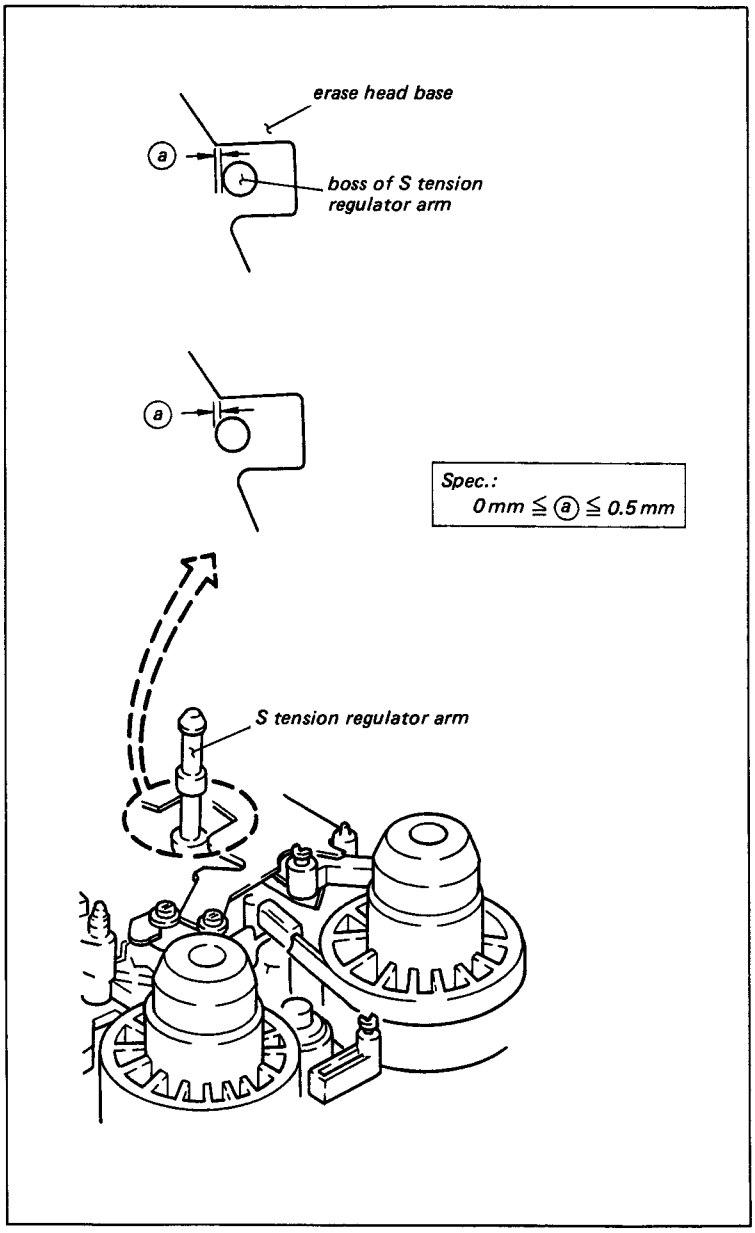
Mode: SEARCH REV mode

Check procedure:

(1) Install the KCS-20 cassette tape at the tape beginning portion.
(2) Put the machine into SEARCH REV mode.
(3) Check that the relationship between the boss of S tension regulator and the bracket of erase head base meets the required specification.

Adjustment procedure:

(1) Adjust RV-2 on MR-8 or MR-11A board meets the required specification.



6-5. FF BACK TENSION ADJUSTMENT

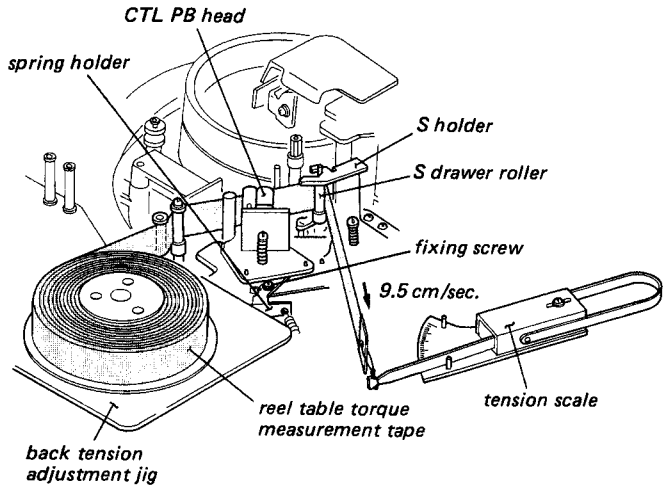
- It is required that the sec. 5-6-3 supply tension regulator operating position adj. is checked to be correct or properly adjusted before initiating this adjustment.
- It is required that the sec. 6-6 FWD back tension adj. is performed after this adjustment.

Tool and equipment:

Back tension adjustment jig.
Reel table torque measurement tape (100 mm dia.)
Tension scale (50 g full scale)

Preparation:

(1) Turn POWER on in FR-STOP mode. (When POWER on, the S drawer roller moves to the FR-STOP position and put the machine into FR-STOP mode automatically.)
(2) Turn the pulley of gear box block in the clockwise direction viewing from the front panel with finger so that the S drawer roller places in front of the CTL PB head.
(3) Install the back tension adjustment jig.
(4) Install the jig tape on the supply reel table and thread the tape as shown in figure. Check that the tape does not curl at the flange of S drawer roller.
(5) Turn the pulley in opposite direction in step 2) so that the S drawer roller is engaged with the S holder.
(6) Hook a tension scale on an end of tape.



Spec.:
40 g ~ 50 g (on scale)

Check procedure:

(1) Press the FF button and put into FF mode.
(2) Pull out the tape at the constant speed of approx. 9.5 cm/sec. in the arrow direction.
Check that the scale reading meets the required specification.

Adjustment procedure:

(1) Adjust the position of the spring holder meets the required specification with flat blade screwdriver, 3 mm dia.
(2) Check that the scale reading meets the required specification once refer to the check procedure.
(3) Perform sec. 6-6 FWD back tension adjustment.

6-6. FWD BACK TENSION ADJUSTMENT

- It is required that the sec. 5-6-3 supply tension regulator operating position adj. and sec. 6-5 FF back tension adj. are checked to be correct or properly adjusted before initiating this adjustment.

Tool and equipment:

Back tension adjustment jig.
Reel table torque measurement tape (100 mm dia.)
Tension scale (100 g full scale)

Preparation:

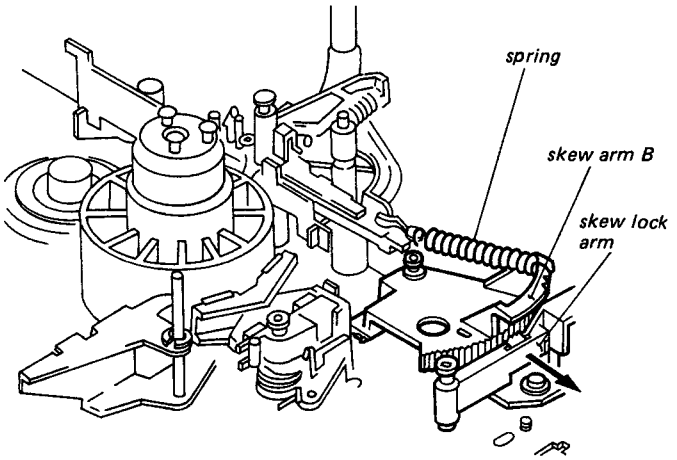
(1) Push the skew arm in the arrow direction.
(2) Turn on the POWER and put the machine into the FR-STOP mode. (When turn on the POWER, the S drawer roller moves to the FR-STOP position and put the machine into the FR-STOP mode automatically.)
(3) Turn the pulley of gear box block in the clockwise direction viewing from the front panel with finger so that the S drawer roller places in front of the CTL PB head.
(4) Install the back tension adjustment jig.
(5) Install the jig tape on the supply reel table and thread the tape as shown in figure.
Check that the tape does not curl at the flange on S drawer roller.
(6) Turn the pulley in opposite direction in step (3) so that the S drawer roller is engaged with the S holder.
(7) Hook a tension scale on an end of tape.

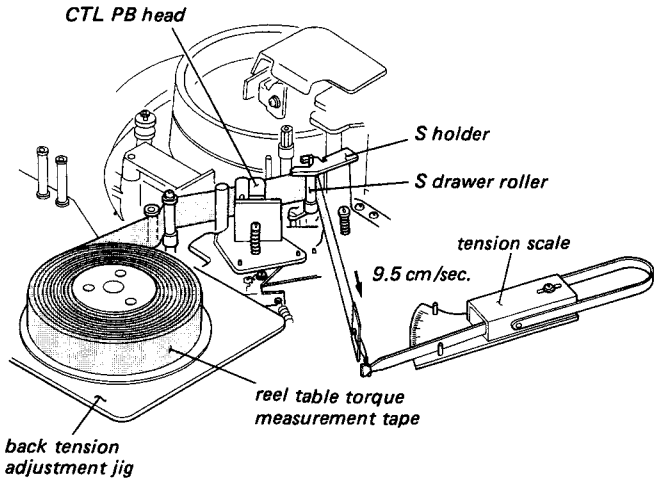
Check procedure:

(1) Press the PLAY button and put into PLAY mode.
(2) Pull out the tape at the constant speed of approx. 9.5 cm/sec. in the arrow direction.
Check that the scale reading meets the required specification.

Adjustment procedure:

(1) Select the proper spring hook of the skew arm B so that the scale reading meets the required specification.
(2) After this adjustment, check again refer to check procedure.





Spec.:
70 g ~ 75 g (on scale)

SECTION 7
TAPE RUN ALIGNMENT

7-1. FF/REW MODES TAPE PATH ADJUSTMENT

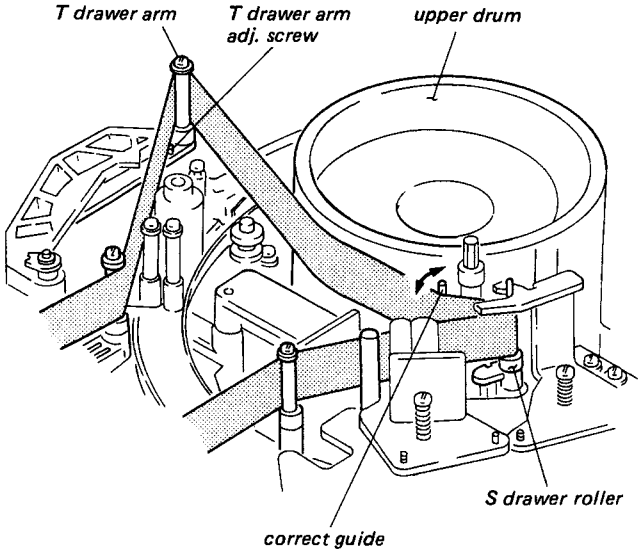
Mode: FF and REW

Check procedure:

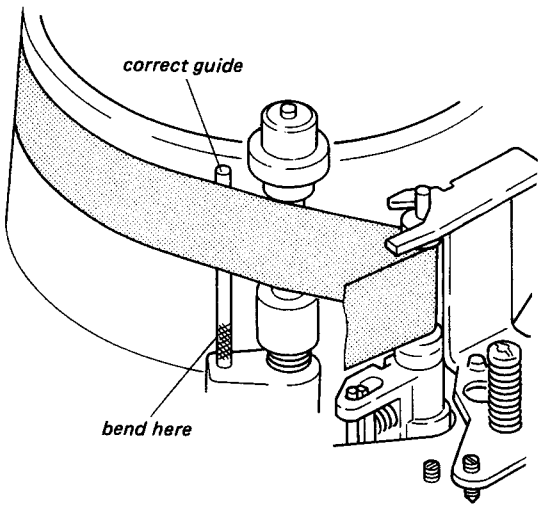
(1) Install KCA-60 cassette tape (use the middle portion of the tape). Put the machine into REW mode.
(2) Observe the surface of the running tape very carefully around T drawer arm. Check that the tape tension is exactly equal at the tape top and tape bottom. (Spec. 1)
(3) Check that the tape runs without curl at the upper or lower flange of S drawer roller in the REW mode. (Spec. 2)
(4) Put the machine once into the STOP mode, and put into the REW mode. Check that the tape runs without curl at the S drawer roller in the moment of just after the REW mode. (Spec. 3)
(5) Put the machine into FF mode. Check that the tape runs without curl at the S drawer roller and T drawer arm in the moment of just after the FF mode. (Spec. 4)
(6) Put the machine into FWD mode. Check that the top of the correct guide pin does not contact with the tape and drum. (Spec. 5)

Adjustment procedure:

Spec. 1
(1) Adjust the slantness of T drawer arm by turning the T drawer arm adjusting screw.
Spec. 2
(2) Bend the bottom of the correct guide with pliers in the arrow direction.
Spec. 3
(3) Fine bend the bottom of the correct guide with pliers to satisfies the spec. 2) and 3).
Spec. 4
(4) Fine adjust the slantness of the T drawer arm by turning the T drawer arm adjusting screw to satisfies the spec. 1) and 4).



Spec. 1.



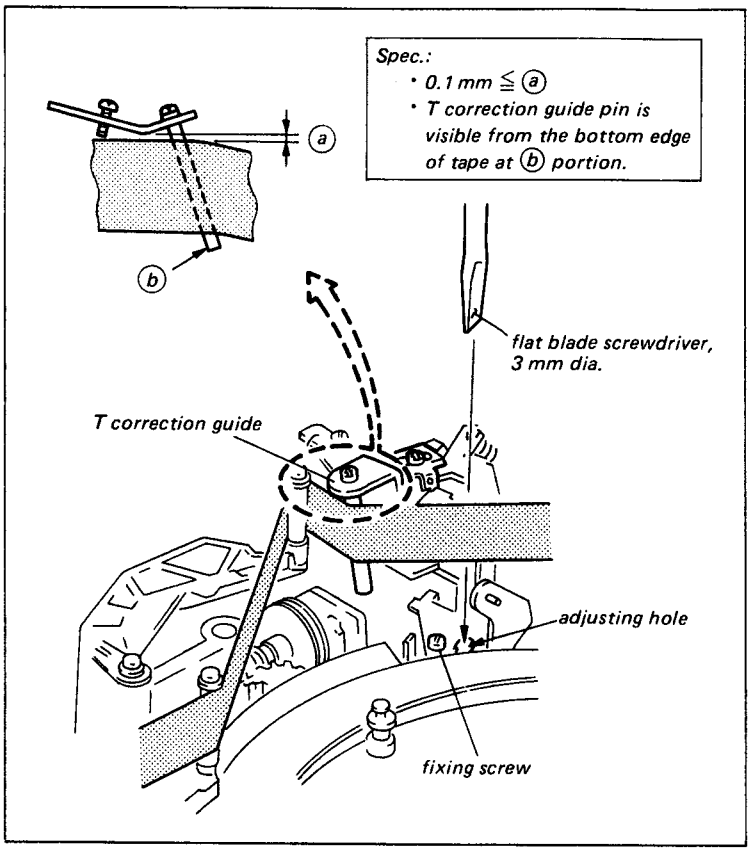
7-2. T CORRECTION GUIDE SLANTNESS ADJUSTMENT

Check procedure:

(1) Install KCA-60 cassette tape, and put the machine into the FR-STOP mode.
(2) Press the PLAY button. The threading operation starts. Turn off the POWER when the pinch roller is pathed in front of the T correction guide.
(3) Check that the clearance between the tape top edge and the upper bracket of T correction guide meets the required specification.

Adjustment procedure:

(1) Adjust the position of T correction guide with flat blade screwdriver 3 mm dia. meets the required specification.
(2) After this adjustment, perform sec. 7-3 FWD mode tape path adjustment (1).



TAPE RUN

7-3. FWD MODE TAPE PATH ADJUSTMENT (1)

- It is required that the sec. 7-2 T correction guide slantness adj. and sec. 7-1 FF/REW modes tape path adj. are checked to be correct or properly adjusted before initiating this adjustment.

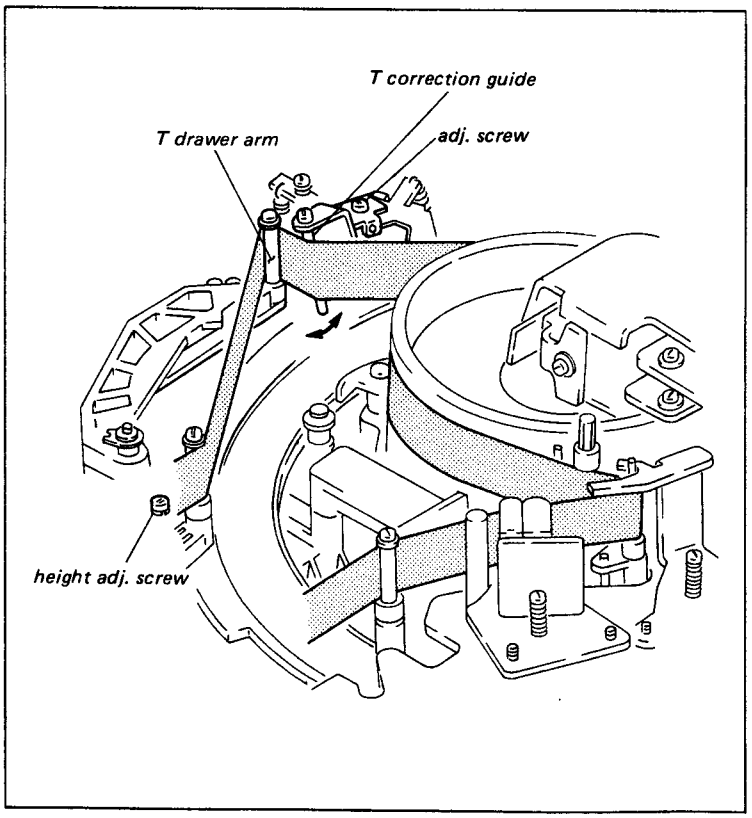
Mode: FWD

Check procedure:

(1) Install KCA-60 cassette tape (after the KCA-60 tape has run after 30 minutes). Put the machine into FWD mode.
(2) Check that the tape runs without curl at the upper or lower flange of T drawer arm. (Spec. 1)
(3) Check that the tape tension is exactly equal at the tape top and tape bottom, and the tape runs without curl at the lower flange of T drawer arm. (Spec. 2)

Adjustment procedure:

Spec. 1
(1) Adjust the height of T drawer arm by turning the T drawer arm height adjusting screw.
Spec. 2
(2) Adjust the T correction guide in the arrow direction by adjusting screw.



7-4. FWD MODE TAPE PATH ADJUSTMENT (2)

Mode: FWD

Check procedure:

(1) Install KCA-60 cassette tape (use the middle portion of the tape). Put the machine into FWD mode.
(2) Check to see carefully two positions indicated by the ※ mark in figure, check that the tape tension is exactly equal at the tape top and tape bottom. (Spec. 1)
(3) Check that the clearance between the lower flange of threading roller and the tape bottom edge meets the required specification (2).

Adjustment procedure:

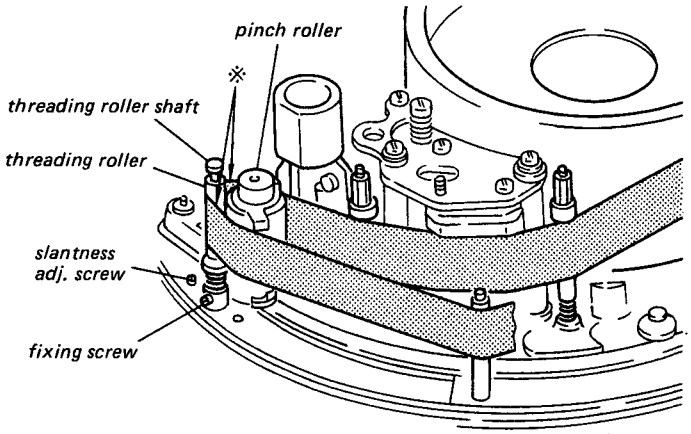
(1) Loosen the fixing screw in the bottom of the threading roller as shown in figure.

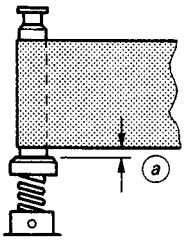
Spec. 1

(2) Adjust the slantness of the threading roller by turning the slantness adjusting screw.

Spec. 2

(3) Adjust the height of the threading roller by turning the threading roller shaft.
(4) Check again that the slantness and height meets the required specification 1) and 2).





Spec. 2:
0.01 mm ≦ ⓐ ≦ 0.15 mm

7-5. REV MODE TAPE PATH ADJUSTMENT

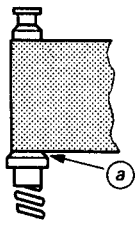
Check procedure:

(1) Install KCA-60 cassette tape (use the middle portion of the tape).
(2) Put the machine into SEARCH REV mode. Check that the tape runs in contact with the lower flange of the threading roller without curl.
(3) Put the machine into SEARCH FWD mode. Check that the clearance between the lower flange of the threading roller and the tape bottom edge meets the required specification and the tape does not curl at the lower or upper flange of TG-IV.

Adjustment procedure:

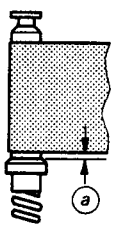
(1) Fine adjust the height of the threading roller by turning the threading roller shaft.
(2) After this adjustment, perform sec. 7-4 FWD mode tape path adjustment (2).

< SEARCH REV >



Spec.:
The tape runs in contact with ⓐ portion without curl.

< SEARCH FWD >

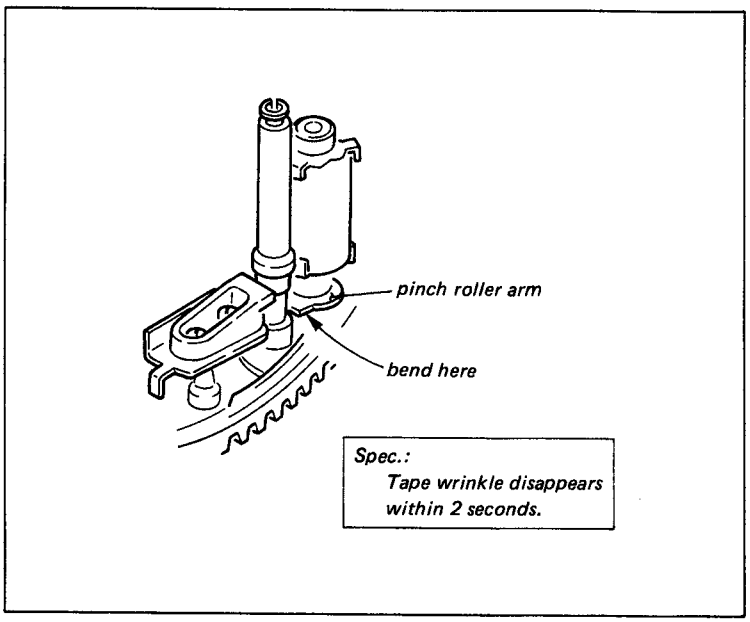


Spec.:
0.01 mm ≦ ⓐ ≦ 0.15 mm

7-6. TAPE PATH ADJUSTMENT AROUND PINCH ROLLER

7-6-1. Tape Wrinkle Remove Adjustment

- The first priority of this adjustment is to remove the tape wrinkle around the pinch roller, happening in the moment of just after the pinch roller pressing against the capstan.
- If the tape wrinkle is generated, perform sec. 7-6-2 pinch roller slantness adjustment at first. After this adjustment performed, fine adjust this adjustment once again.



Check procedure:

(1) Install KCA-60 cassette tape at the tape beginning portion.

(2) Put the machine into FWD mode, SEARCH REV mode, repeat SEARCH REV and SEARCH FWD mode, PAUSE ON/OFF mode in the REC mode, and PAUSE ON/OFF mode in the playback mode. Check that the tape wrinkle does not appear or disappear within specified time when the tape runs toward the specified direction in these modes.

Adjustment procedure:

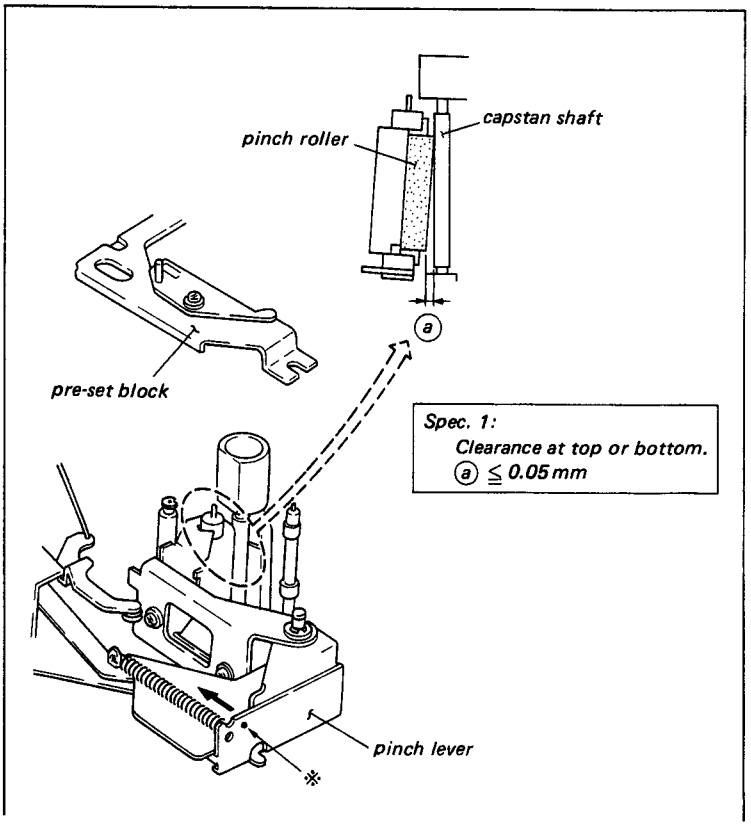
(1) Perform sec. 7-6-2 pinch roller slantness adjustment.

(2) Check the tape wrinkle refer to check procedure. If not, bend the pinch roller arm.

TAPE RUN

7-6-2. Pinch Roller Slantness Adjustment

Mode: Threading completion mode without cassette tape.



Check procedure:

(1) Remove the pinch roller pre-set bracket.

(2) Put the machine into the threading completion mode without cassette tape. Turn POWER off.

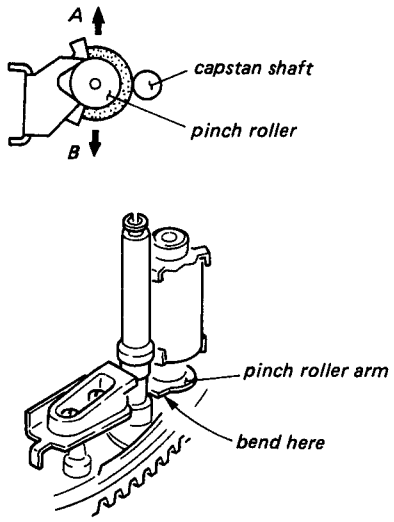
(3) Push lightly the ※ marked portion of the pinch lever in the arrow direction with finger.

(4) When the upper or lower section of the pinch roller came into contact with the capstan shaft. Check that the clearance between the lower or upper section of the pinch roller and the capstan shaft meets the required specification (1).

(5) Push lightly the ※ marked portion of the pinch lever in the arrow direction with finger.
Just before the pinch roller comes into contact with the capstan shaft, check that the upper section of the pinch roller does not move in the "A" direction nor "B" direction as observed by eye, visually. (Spec. 2)

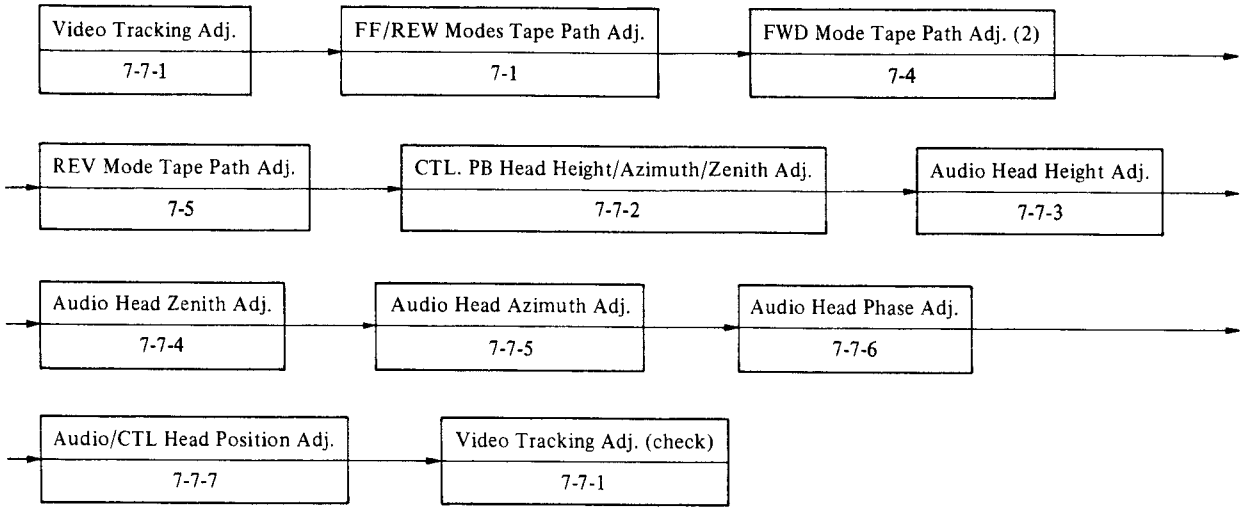
Adjustment procedure:

(1) Turn POWER on. The threading ring put into the unthreading operation. Turn POWER off in the moment when the pinch roller comes in front of the audio/CTL head.
(2) Bend the pinch roller arm.
(3) Check that the pinch roller slantness meets the required specification referring to check procedure. If not, repeat the foregoing step 2) until the specification 1) and 2) are met.
(4) Install the pinch roller pre-set bracket, and perform sec. 5-4-2 pinch roller pre-set adj.



7-7. TRACKING ADJUSTMENT

The tracking adjustment is required to be performed as following steps.



The tracking adjustment is required to be performed as following steps.

7-7-1. Video Tracking Adjustment

Tool and equipment:

Alignment tape, RR5-2SC-PAL
Flatness plate
Oscilloscope

Preparation:

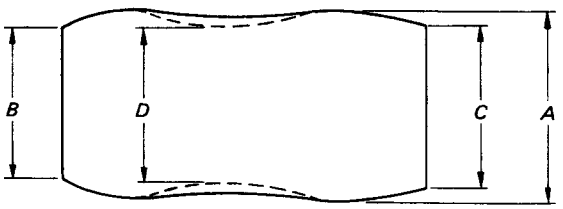
(1) Connect the oscilloscope to TP18/RP-8B board, and EXT.TRIG. from TP14/RP-8B board.
(2) Play back the color-bar segment of alignment tape.

Check procedure:

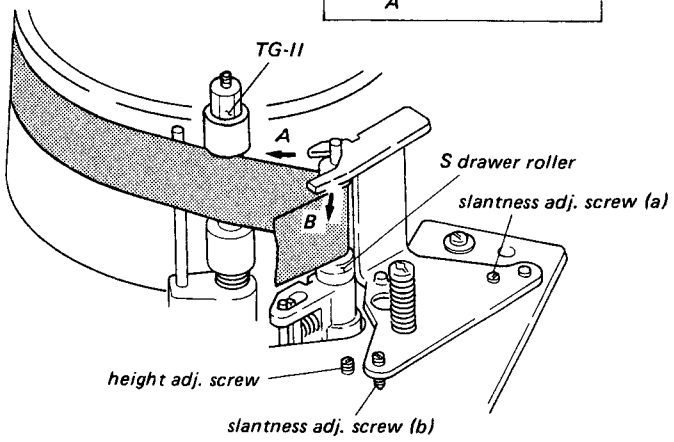
(1) While observing the waveform on the scope, turn the TRACKING control in both directions noting that the RF waveform maintains a flat envelope while the amplitude increases and decreases.
(2) Adjust the TRACKING control so that the RF envelope is just before starting to decrease.
Check that the RF envelope fluctuation and head-to-tape contact are within the specification.

Adjustment procedure:

- When the video tracking adjustment is performed, the drum entrance side tape guide's height adjustment is usually not required. But when this guide (TG-II) is replaced or removed, adjust the height of this guide so that the tape runs at the center of this guide without tape runs in contact with upper or lower flange.



Spec.:
< head to tape contact >
$\frac{B}{A} \geqq 0.70 \quad \frac{C}{A} \geqq 0.70$
< fluctuation >
$\frac{D}{A} \geqq 0.90$



TAPE RUN

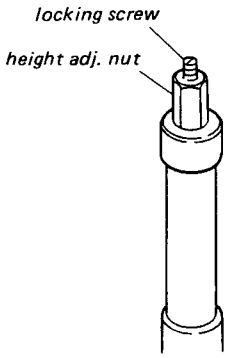
- S drawer roller unit has three adjusting screws. These three adjusting screws functions as follows.
  (i) Slantness adjusting screw (a)
  Turning this screw in the clockwise direction, the upper section of S drawer roller slants in the arrow "A" direction.
  (ii) Slantness adjusting screw (b)
  Turning this screw in the counter clockwise direction, the upper section of S drawer roller slants in the arrow "B" direction.
  The RF envelope meets the required specification but tape runs curl at upper flange of S drawer roller, this screw is only used in this manner to remove tape curl.
  (iii) Height adjusting screw
  Turning this screw in the clockwise direction, makes the height of S drawer roller lower.
- When the drum exit side tape guides (TG-III, TG-IV) adjustment are performed, loosen the locking screw 1 ~ 2 turns and adjust the height by turning the height adjusting nut.
- When the tracking at the drum's input side is no good.
  (1) Set the TRACKING control so that the RF envelope amplitude is made to 70 ~ 80% of the maximum amplitude.
  (2) Adjust height and slantness of S drawer roller by turning the height adjusting screw and slantness adjusting screw (a) so that the RF envelope is flat.

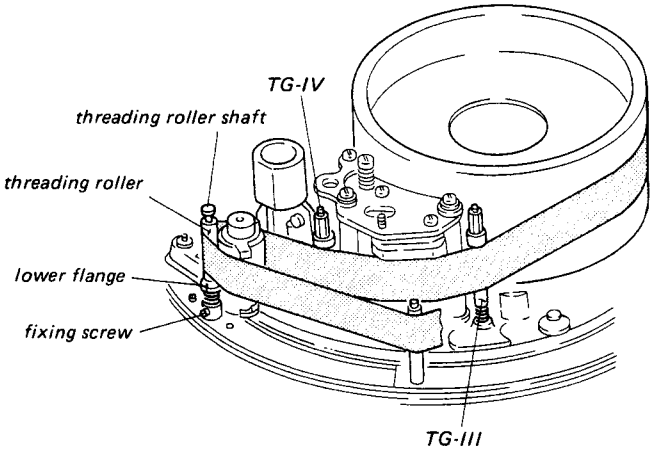
(CAUTION)

  (i) Observe the surface of the running tape very carefully around S drawer roller. Check that the tape tension is exactly equal at the tape top and tape bottom.
  (ii) Check that the tape runs in contact with the upper flange of S drawer roller without tape curl.

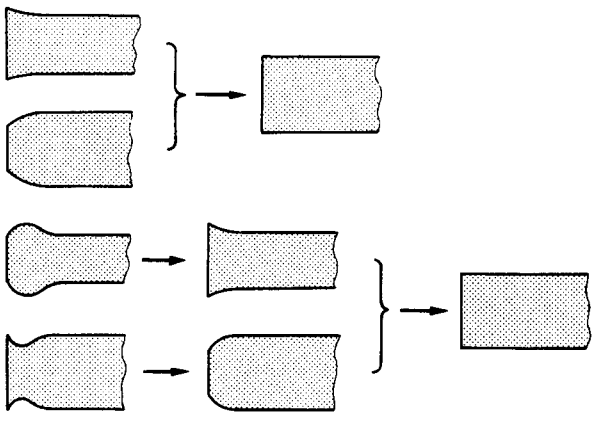
- When the tracking at the drum's center portion is no good. It is required that the drum's input side tracking adjustment to be correctly adjusted before initiating this adjustment.
  (3) Set the TRACKING control so that the RF envelope amplitude is made to 70 ~ 80% of the maximum amplitude.
  (4) Adjust height and slantness of S drawer roller by turning the height adjusting screw and slantness adjusting screw (a) so that the RF envelope is flat.

(TG-III / TG-IV)





< drum entrance side >



(CAUTION)

(i) Adjust the slantness adjusting screw (a) in the clockwise within 10 degrees.

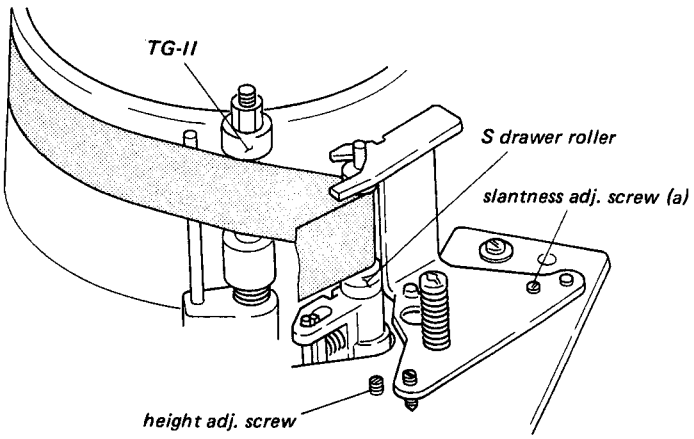
(ii) When the drum's center portion tracking adjustment performs, the drum's input side tracking must maintain to flat.

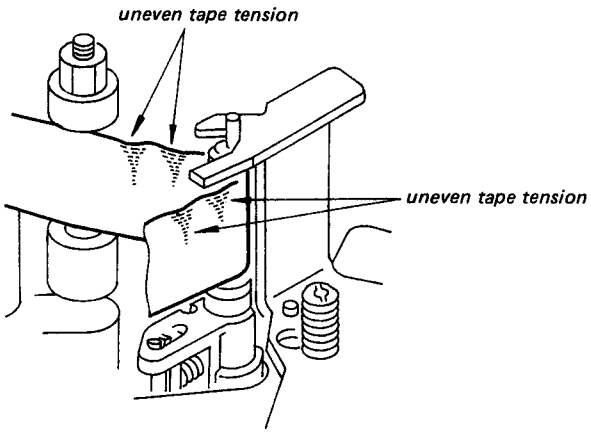
(iii) Check that the tape runs in contact with the upper flange of S drawer roller without tape curl.

(5) When the RF envelope is not flat with step 4), adjust height of TG-III and TG-IV.

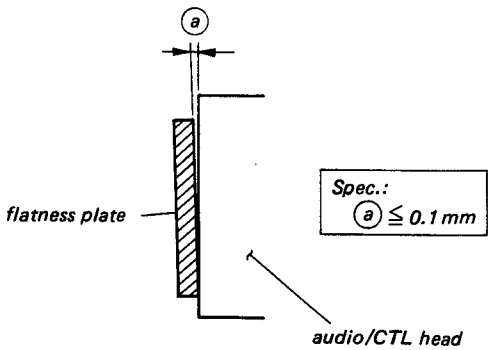
(6) When the RF envelope is not flat with steps 4) and 5), adjust zenith of the audio/CTL head within the allowable range. Adjust height of TG-III and TG-IV once again.

(7) Check that the clearance between the tape bottom edge and the lower flange of threading roller is 0.01 mm ~ 0.15 mm clearance. If not, perform height adjustment of threading roller by turning the threading roller shaft.





< zenith adj. for audio/CTL head >



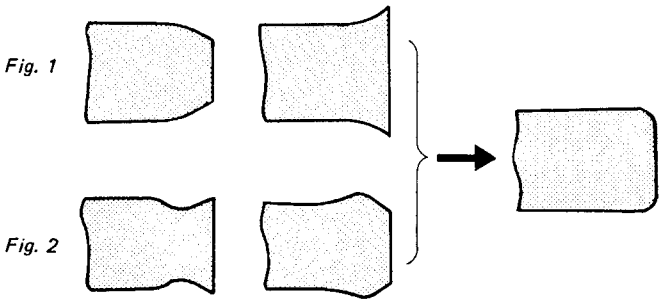
- When the tracking at the drum's exit side is no good.

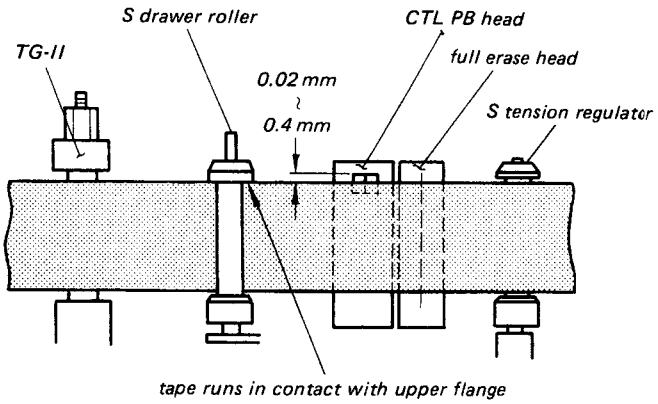
(8) Set the TRACKING control so that the RF envelope amplitude is made to 70 ~ 80% of the maximum amplitude.

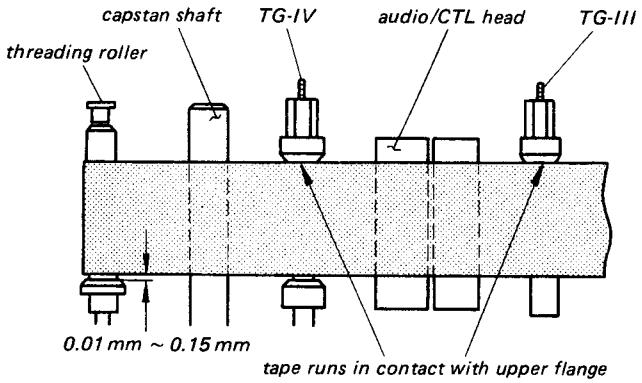
(9) When the RF envelope is not flat as shown in figure 1, adjust height of TG-IV so that the RF envelope is flat. After this adjustment, adjust height of TG-III so that the tape runs in contact with upper flange. When the RF envelope is not flat as shown in figure 2, adjust height of TG-III and TG-IV so that the RF envelope 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 TG-III and TG-IV.

(10) Check that the clearance between the tape bottom edge and the lower flange of threading roller is 0.01 mm ~ 0.15 mm clearance. If not, perform height adjustment of threading roller by turning the threading roller shaft.

< drum exit side >







7-7-2. CTL PB Head Height/Azimuth/Zenith Adjustments

- CTL PB head height, azimuth, and zenith adjustments are closely related. If any one of these three adjustments is attempted, perform the rest of two adjustments at the same time.

Tool and equipment:

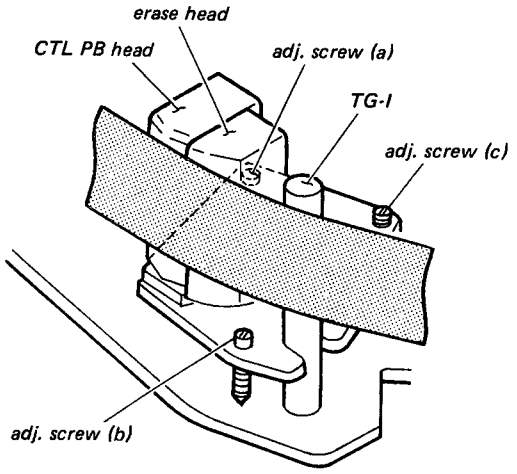
Flatness plate

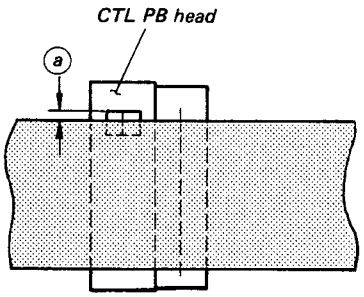
Check procedure:

(1) Check that at the top and bottom clearances between erase head and TG-I meets the required specification. (Spec. 2: Azimuth check)
(2) Check that the clearance between the erase head and flatness plate meets the required specification, when the flatness plate set on the erase head and TG-I. (Spec. 3: Zenith check)
(3) Install a cassette tape, and put the machine into FWD mode.
(4) Check that the relationship between the top edge of tape and CTL PB head meets the required specification. (Spec. 1: Height check)

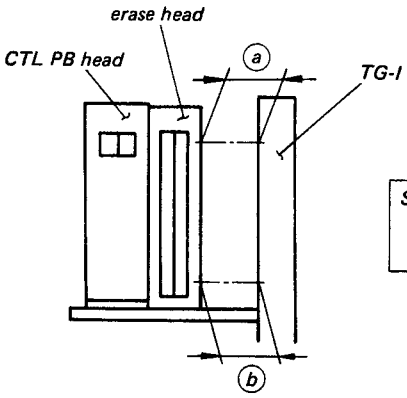
Adjustment procedure:

(1) Adjust the adjusting screw (a) meets the required specification (2).
(2) Adjust the adjusting screw (b) meets the required specification (3).
(3) Turn three adjusting screws of exactly equal amount in clockwise or counterclockwise direction so that the relationship between tape and head meets the required specification (1).



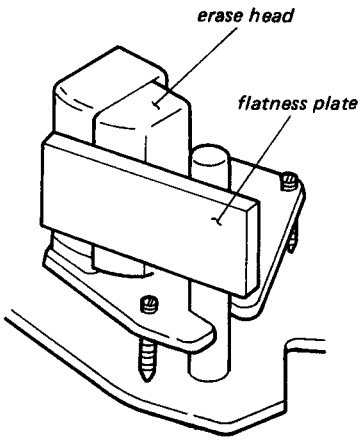


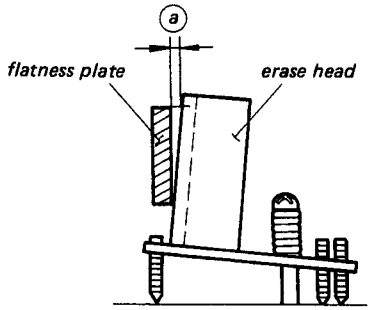
Spec.:
(height)
0.02 mm ≦ ⓐ ≦ 0.4 mm



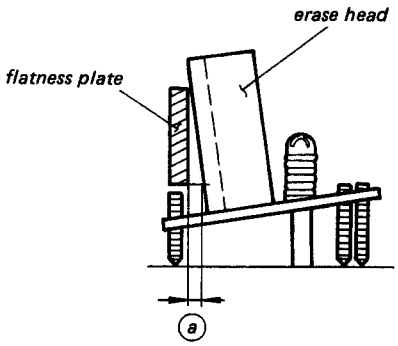
Spec.:
(azimuth)
ⓐ ≒ ⓑ

TAPE RUN





Spec.:
(Zenith)
ⓐ ≦ 0.1 mm



7-7-3. Audio Head Height Adjustment

Tool and equipment:

Alignment tape, RR5-2SC-PAL
VTVM or oscilloscope

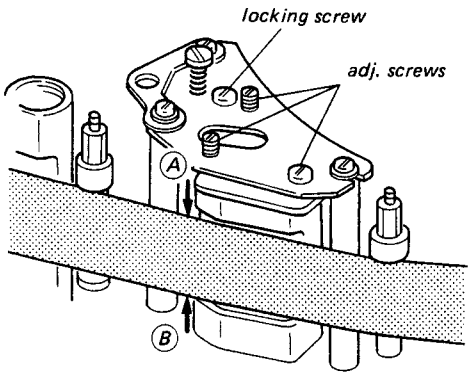
Preparation: (1) Connect the VTVM or oscilloscope to AUDIO OUT CH-1 and CH-2 terminals.
(2) Playback the audio 1 kHz segment of the alignment tape.

Check procedure:

(1) Check that the CH-1 output level increase is less than 0.5 dB when pressing down at Ⓐ.
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 Ⓑ.
If not, perform the steps (3) and (4) of the adjustment procedure.

Adjustment procedure:

(1) Loosen the locking screw and turn adjusting screws (R) and (A) of exactly equal amount in counterclockwise direction and turn adjusting screw (C) of exactly equal amount in clockwise direction.
(2) Tighten the locking screw and check height again.
(3) Loosen the locking screw and turn adjusting screws (R) and (A) of exactly equal amount in clockwise direction and turn the screw (C) of exactly equal amount in counterclockwise direction.
(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 Ⓑ portion.*

7-7-4. Audio Head Zenith Adjustment

Tool and equipment:

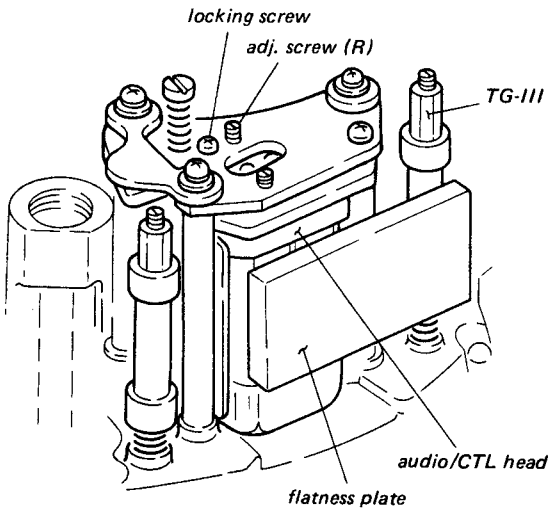
Flatness plate

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-III.

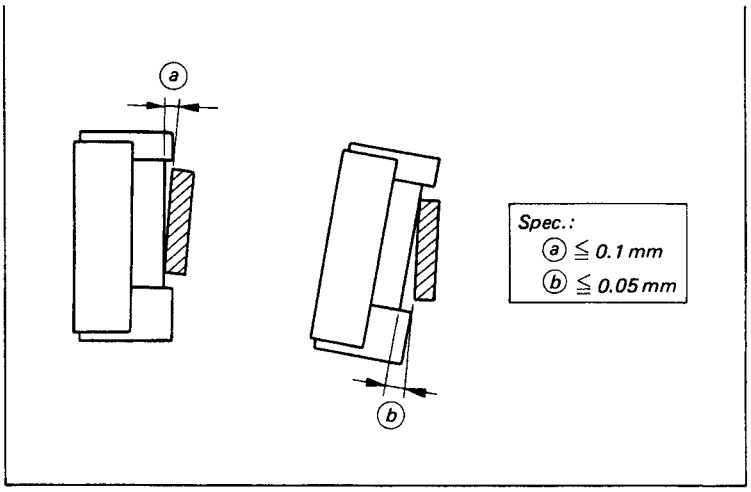
Adjustment procedure:

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 ¼ ~ ½ turns.
(4) Turn the adjusting screw (R) in clockwise direction.
(5) Tighten the locking screw and check zenith again.

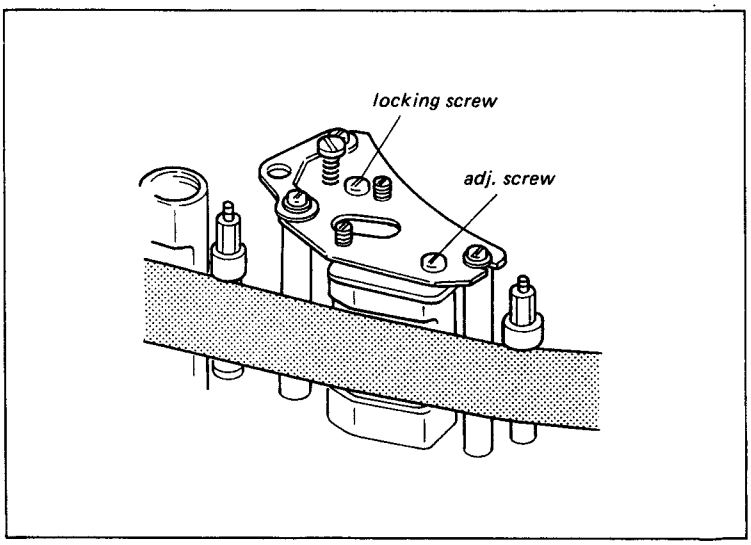


7-7-5. Audio Head Azimuth Adjustment

Tool and equipment:
Alignment tape, RR5-2SC-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 maximum output level by turning the adjusting screw.
(2) Tighten the locking screw.



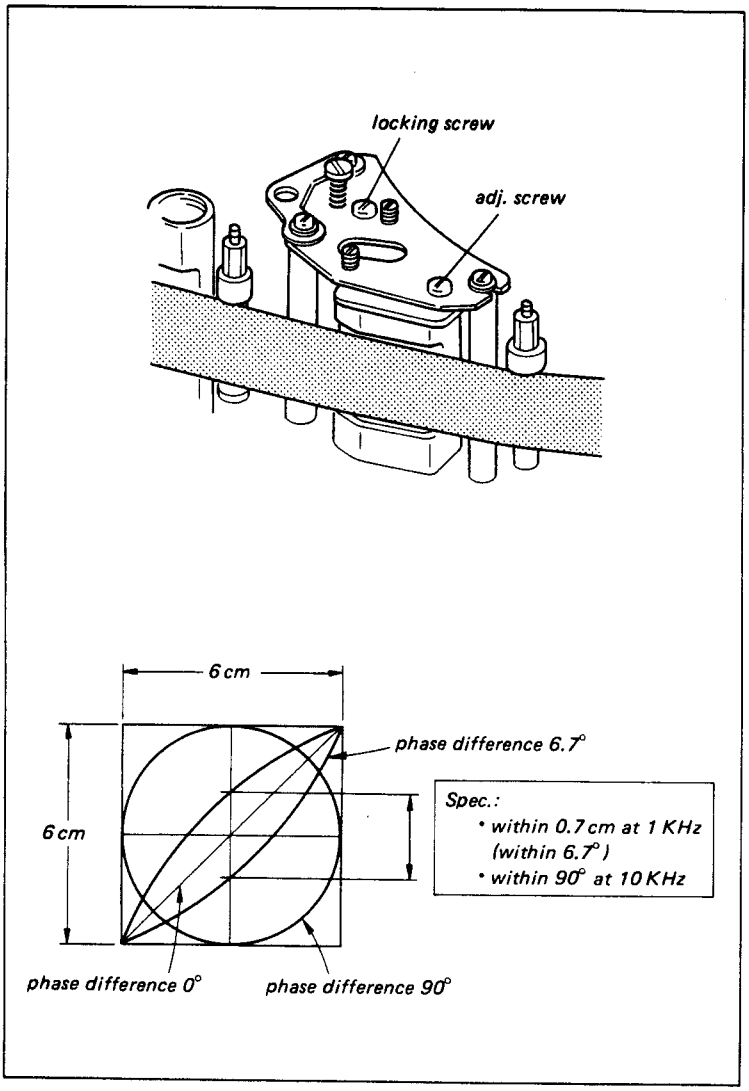
7-7-6. Audio Head Phase Adjustment

Tool and equipment:
Alignment tape, RR5-2SC-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 ¼ ~ ½ turns and adjust the phase by turning the adjusting screw.
(2) Tighten the locking screw and confirm phase again.



7-7-7. Audio/CTL Head Position Adjustment

VO-5630 has two types of video head track width.

The label of upper drum ass'y (type of upper drum ass'y)	Track width
RV-5 (RP) (A-6709-136-A)	85 μm
DUR-23-R (A-6709-400-A)	105 μm

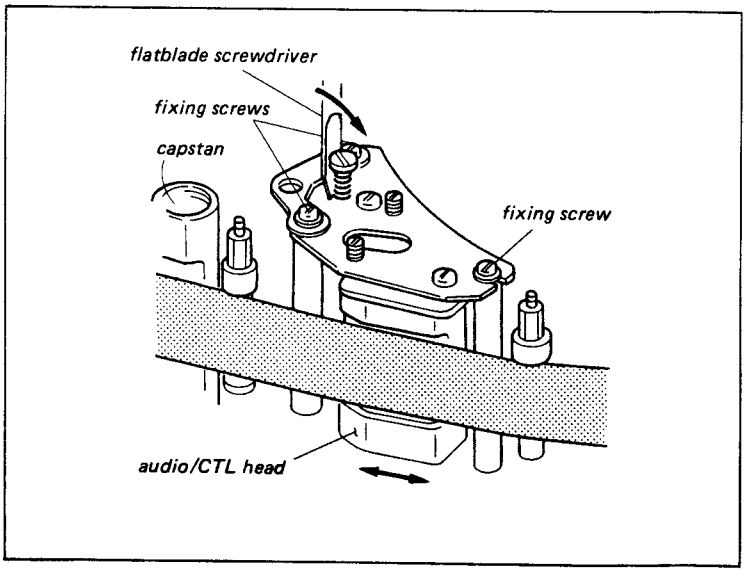
The recorded video track width on the alignment tape are 85 μm and 105 μm. Therefore this CTL head position adjustment of VO-5630 has two ways.
Be sure to perform this adjustment.

Tool and equipment:
Alignment tape, RR5-2SA-PAL/5-2SC-PAL
Oscilloscope

Preparation:
(1) Connect the oscilloscope to TP18/RP-8B board, and EXT.TRIG. from TP14/RP-8B board.
(2) Playback the color-bar segment of the alignment tape.

Check procedure:
(1) Check that the RF envelope has the maximum amplitude when the TRACKING control is set in the detent position.

Adjustment procedure:
(1) Adjust the position of the audio/CTL head.



- For use Alignment tape, RR5-2SC-PAL with 85 μm video head track width.

- For use Alignment tape, RR5-2SA-PAL with 105 μm video head track width.

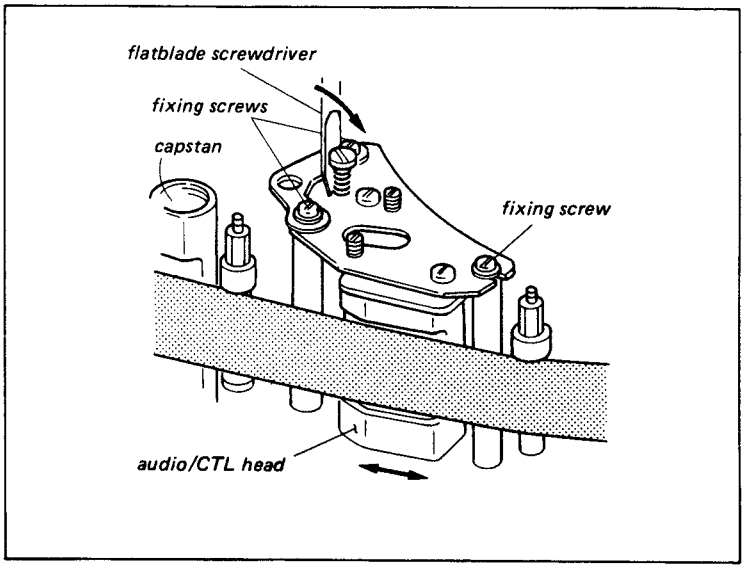
Preparation: (1) Connect the oscilloscope to TP18/RP-8B board, TP21/SV-44A board, EXT.TRIG. from TP14/RP-8B board.
(2) Playback the color bar segment of the alignment tape.

Check procedure:

(1) Set the TRACKING control to its center click (detent) position.
(2) Turn the TRACKING control in counterclockwise direction until the waveform at TP18/RP-8B board is just before starting to decrease from the maximum amplitude, check that the waveform at TP21/SV-44A advances 1.2 ± 0.3 msec. from the step (1) position.
(3) Turn the TRACKING control in clockwise direction until the waveform at TP18/RP-8B board is just before starting to decrease from the maximum amplitude, check that the waveform at TP21/SV-44A is delayed 1.2 ± 0.3 msec. from the step (1) position.

Adjustment procedure:

(1) Turn the TRACKING control in counterclockwise direction until the waveform at TP18/RP-8B advance 1.2 msec. from the step (1) position of check procedure.
(2) Loosen the three fixing screws.
(3) Move the CTL head block toward the capstan shaft as far as it will go, and install the flatblade screwdriver as shown in figure. Move the screwdriver in the arrow direction. Stop the movement of the screwdriver when the RF envelope waveform just turn into the maximum amplitude.
(4) Check the CTL head position meets the specifications according to steps (2) and (3) of check procedure.
(5) Tighten the fixing screws of the CTL head block.
(6) Check again that the CTL head position meets the specifications.



7-8. VIDEO HEAD DIHEDRAL ADJUSTMENT

Tool and equipment:

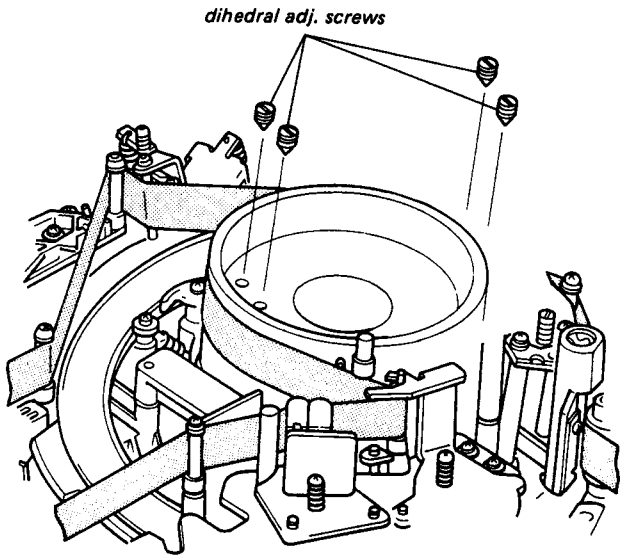
Dihedral adjusting screw
Alignment tape, RR5-2SC-PAL
Video monitor

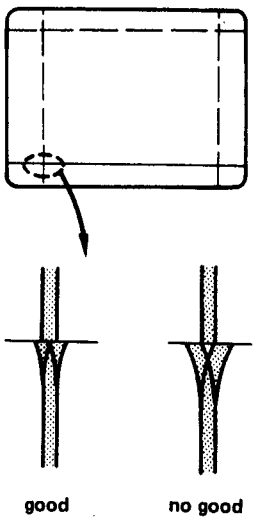
Check procedure:

Check that the vertical line beneath the switching point. If the vertical line does not split into two lines, no adjustment is 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 quarter 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.





SECTION 8
POWER SUPPLY AND SYSTEM CONTROL ALIGNMENT

8-1. REG +12V ADJUSTMENT(SWITCHING REGULATOR)

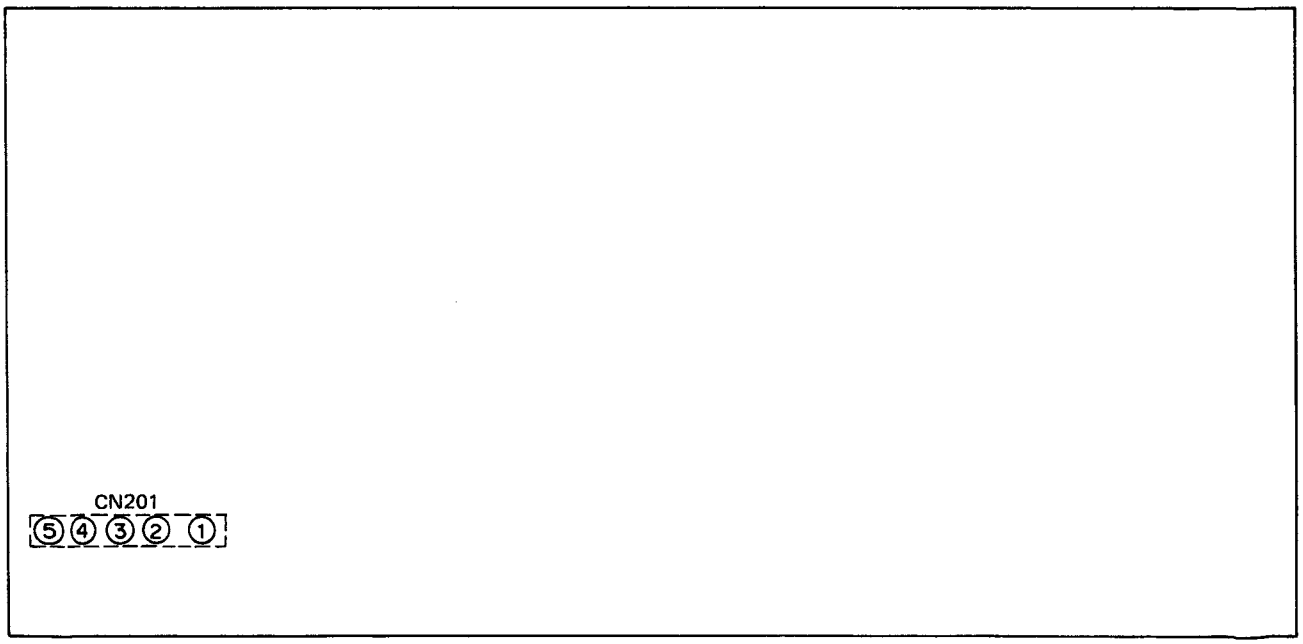
.More than 5 minutes should be elapsed after POWER ON.
.Any mode.

Check point; CN201-1/UR-02

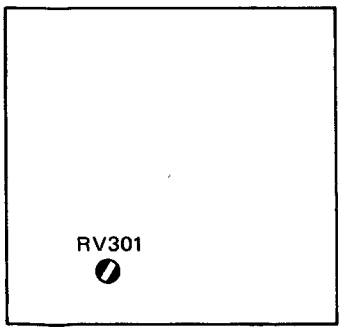
Spec: 12.0V±0.1Vdc

Adj: RV301/C(UR-02)

NOTE:If the REG 12V adjustment is attempted, re-alignment of the video system and servo system are required.
Do not attempt adjustment to REG 12V power supply unless machine performance is obviously poor due to incorrect power supply voltage.
If adjustments are made to the power supply, re-alignment of the video and servo systems are necessary.



M Board



C Board

8-2. REG +9V ADJUSTMENT

.POWER ON.
.STOP mode.

Check point: TP1/DC-13B

Spec: 9.0V±0.1Vdc

Adj: RV1/DC-13B

8-3. DIGITAL VCC +5V ADJUSTMENT FOR SERVO

.FWD mode.

Check point: TP32/SV-44A

Spec: 5.0V±0.1Vdc

Adj: RV16/SV-44A

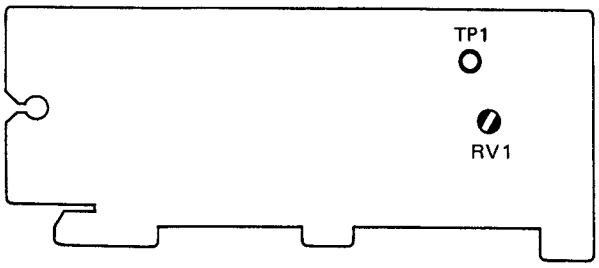
8-4. TAPE SENSOR BALANCE ADJUSTMENT

.STOP mode.

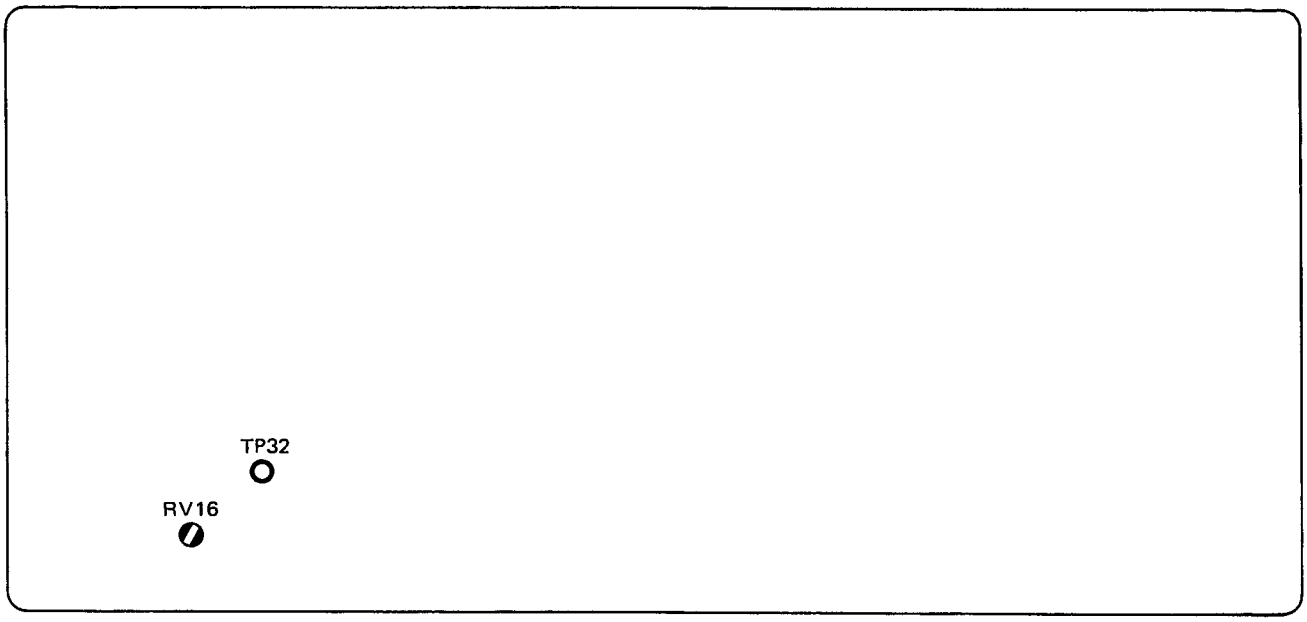
Check point: TP4/SY-75

Spec: 6.0V±0.2Vdc

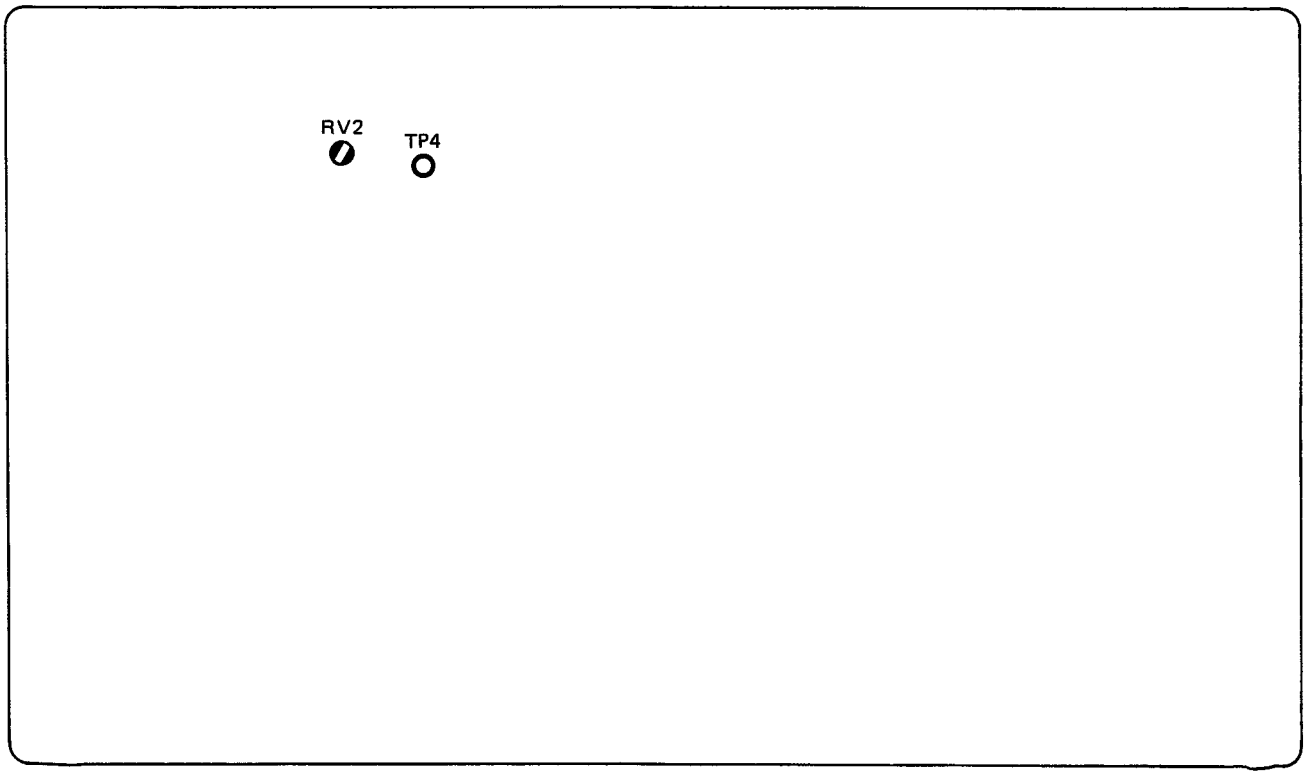
Adj: RV2/SY-75



DC-13B Board



SV-44A Board



SY-75 Board

SECTION 9
SERVO SYSTEM ALIGNMENT

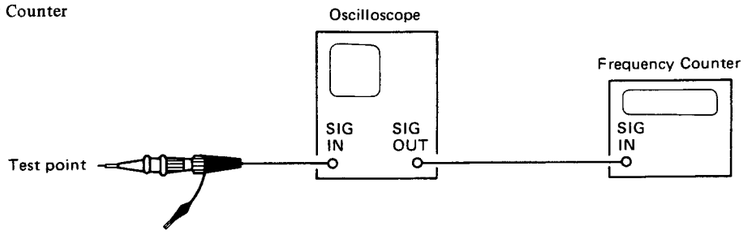
[Equipment Required]

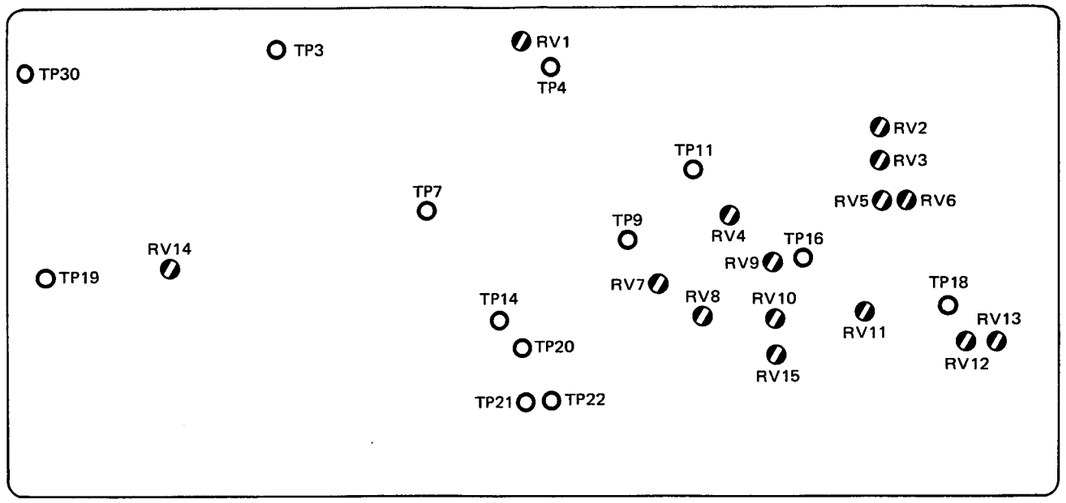
- Alignment Tape; RR5-2SA-PAL (Part No.: 8-960-015-63) or RR5-2SC-PAL (Part No.: 8-960-035-61) or
  RR5-1S-PAL (Part No.: 8-960-015-61) and RR5-2SA (Part No.: 8-960-015-03) or RR5-3SA (Part No.: 8-960-015-04)

RR5-2SA-PAL/RR5-2SC-PAL/RR5-2SA/RR5-3SA

Real Time Counter (min.)	Tape Counter	Video Track	Audio Track
00:00 – 04:00	000 – 100	Monoscope	3 KHz, 0 dB
04:00 – 09:00	100 – 208	Color-bar	———
09:00 – 14:00	208 – 300	R-F sweep	———
14:00 – 16:00	300 – 335	Mod. 20T pulse	1 KHz, 0 dB
16:00 – 18:00	335 – 367	M.S. w/burst	10 KHz, – 10 dB
18:00 – 20:00	367 – 398	Pseudo C.B. for DOC adj.	———

- Blank Tape; KCA-60, KCS-20
- Dual Trace Oscilloscope
- Frequency Counter





SV-44A Board

9-1. AUDIO/CTL HEAD POSITION ADJUSTMENT

.Refer to Sec. 7-7-7.

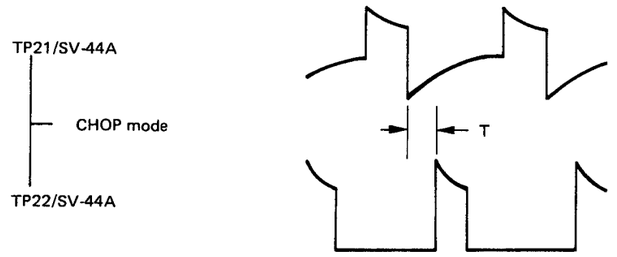
9-2. TRACKING MULTI ADJUSTMENT(CCIR)

.Playing back the color bar segment of Alignment Tape RR5-2SC PAL.
.Set the TRACKING control to its center detent.
.SYSTEM SELECT sw;PAL

Check point; TP21 and TP22/SV-44A

Trig; TP22/SV-44A

Spec;



T = 0 ± 100μS

Adj; RV15/SV-44A

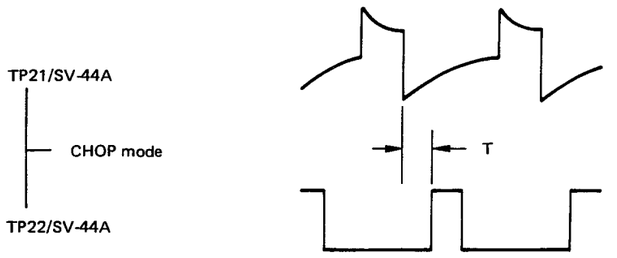
9-3. TRACKING MULTI ADJUSTMENT(EIA)

.Playing back the color bar segment of Alignment Tape RR5-3SA.
.Set the TRACKING control to its center detent.
.SYSTEM SELECT sw;NTSC

Check point; TP21 and TP22/SV-44A

Trig; TP22/SV-44A

Spec;



T = 0 ± 100μS

Adj; RV10/SV-44A

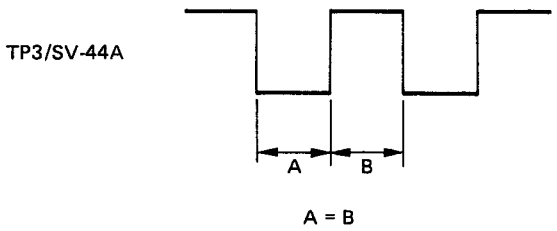
9-4. CAPSTAN FREE SPEED ADJUSTMENT(CCIR)

.Playing back the Alignment Tape RR5-2SC PAL.
.Short between TP28 and E3 on SV-44A board with jumper lead.
.SYSTEM SELECT sw;PAL

Check point; TP3/SV-44A

Trig; TP3/SV-44A

Spec;



A = B

Adj; RV5/SV-44A

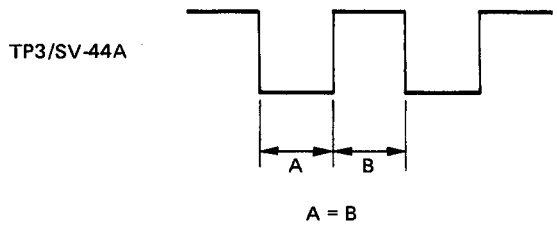
9-5. CAPSTAN FREE SPEED ADJUSTMENT(EIA)

.Playing back the Alignment Tape RR5-3SA.
.Short between TP28 and E3 on SV-44A board with jumper lead.
.SYSTEM SELECT sw;NTSC

Check point; TP3/SV-44A

Trig; TP3/SV-44A

Spec;



A = B

Adj; RV6/SV-44A

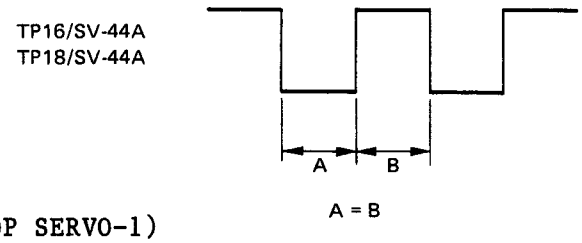
9-6. CAPSTAN STOP SERVO ADJUSTMENT

.STOP mode.

Check point; TP16/SV-44A(STOP SERVO-1)
TP18/SV-44A(STOP SERVO-2)

Trig; TP22/SV-44A

Spec;



A = B

Adj; RV13/SV-44A(STOP SERVO-1)
RV12/SV-44A(STOP SERVO-2)

9-7. CAPSTAN SEARCH x5 SPEED ADJUSTMENT

.Playing back the blank tape.
.FWD PAUSE mode
.Short between TP30 and E3 on SV-44A board with jumper lead.

Check point; TP19/SV-44A

Spec; $36Hz^{+8Hz}_{-6Hz}$

Adj; RV11/SV-44A

9-8. CAPSTAN FWD/REV DETECTOR ADJUSTMENT

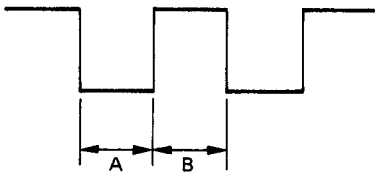
.Playing back the Alignment Tape RR5-2SC PAL.
.Set the TRACKING control to its center detent.
.SYSTEM SELECT sw;PAL

Check point; TP19/SV-44A

Trig; TP19/SV-44A

Spec;

TP19/SV-44A



A = B

Adj; RV14/SV-44A

9-9. DRUM AFC BIAS ADJUSTMENT(CCIR)

.Playing back the Alignment Tape RR5-2SC PAL.
.FWD and FWD PAUSE modes.
.Set the TRACKING control to its center detent.
.SYSTEM SELECT sw;PAL

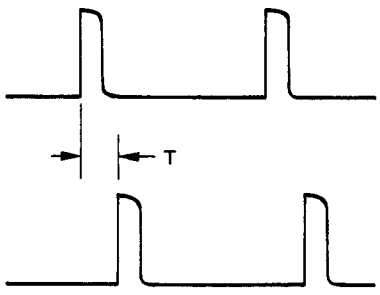
Check point; TP7/SV-44A

Trig; TP7/SV-44A

Spec;

TP7/SV-44A
(FWD mode)

TP7/SV-44A
(FWD PAUSE mode)



T = 0 ± 0.1μS

Adj; RV4/SV-44A

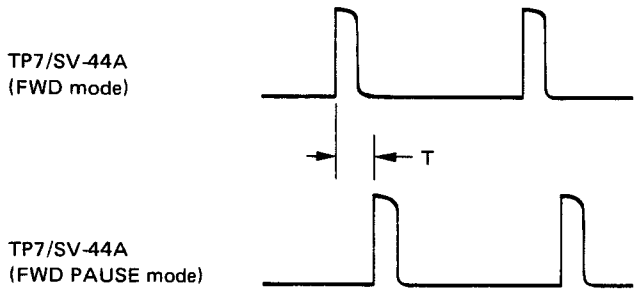
9-10. DRUM AFC BIAS ADJUSTMENT(EIA)

.Playing back the Alignment Tape RR5-3SA.
.FWD and FWD PAUSE modes.
.Set the TRACKING control to its center detent.
.SYSTEM SELECT sw;NTSC

Check point; TP7/SV-44A

Trig; TP7/SV-44A

Spec;



T = 0 ± 0.1μS

Adj; RV9/SV-44A

9-11. DRUM AFC TRANSIENT ADJUSTMENT

.Playing back the Alignment Tape RR5-2SC PAL.
.FWD and FWD PAUSE mode.
.Set the TRACKING control to its center detent.
.SYSTEM SELECT sw;PAL

Check point; TP11/SV-44A

Spec; FWD PAUSE mode=3.5Vdc(REF)
FWD mode=3.5V±0.1Vdc

Adj; RV7/SV-44A

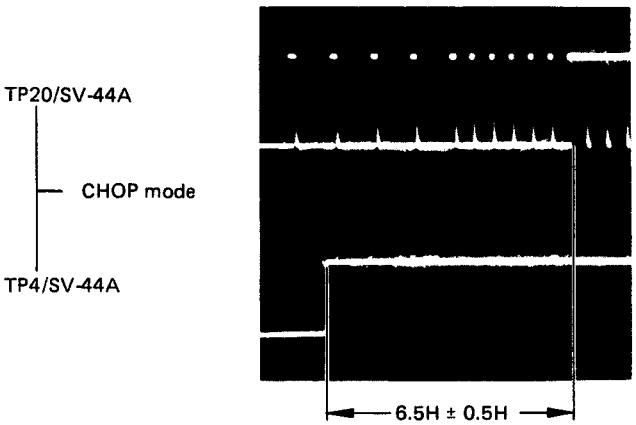
9-12. DRUM LOCK PHASE ADJUSTMENT(CCIR)

.VIDEO LINE IN;CCIR Video signal.
.Short between TP14 and E3 on SV-44A board with jumper lead.
.REC mode.
.SYSTEM SELECT sw;PAL

Check point; TP20 and TP4/SV-44A

Trig; TP22/SV-44A

Spec;



Adj; RV2/SV-44A

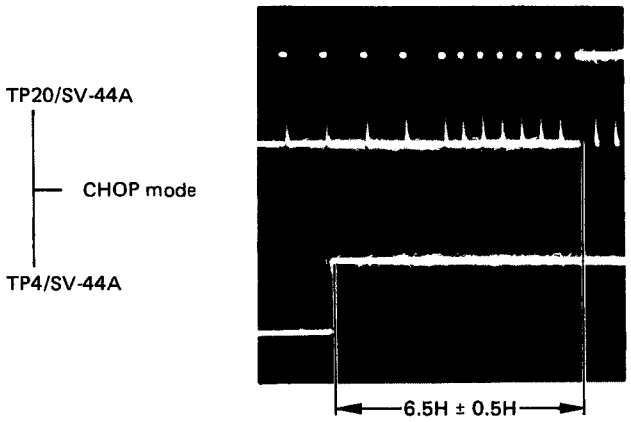
9-13. DRUM LOCK PHASE ADJUSTMENT(EIA)

.VIDEO LINE IN;NTSC Video signal.
.Short between TP14 and E3 on SV-44A board with jumper lead.
.REC mode.
.SYSTEM SELECT sw;NTSC

Check point; TP20 and TP4/SV-44A

Trig; TP22/SV-44A

Spec;



Adj; RV3/SV-44A

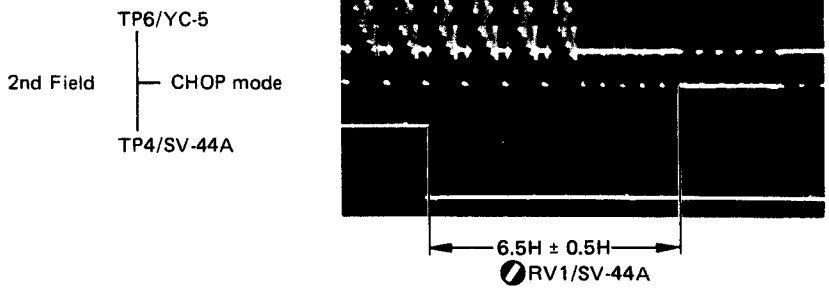
9-14-1. SWITCHING POSITION ADJUSTMENT(CCIR)

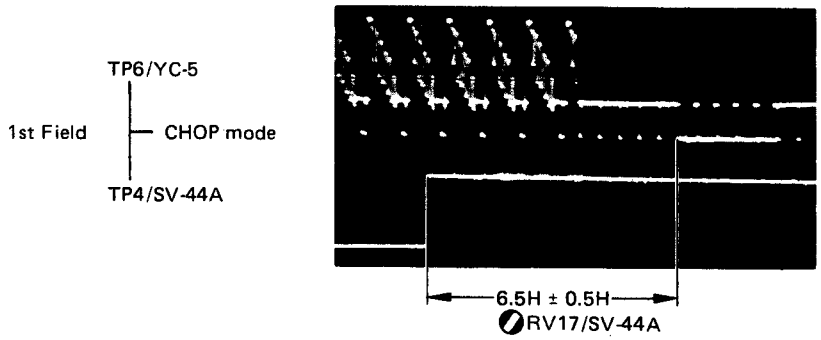
.Playing back the color bar segment of Alignment Tape RR5-2SC PAL.
.Short between TP7,TP14 and E3 on SV-44A board with jumper leads.
.Set the TRACKING control to its center detent.
.SYSTEM SELECT sw;PAL

Check point; TP4/SV-44A and TP6/YC-5

Trig;

Spec;





Adj; RV1/SV-44A(1st Field)
RV17/SV-44A(2nd Field)

SERVO

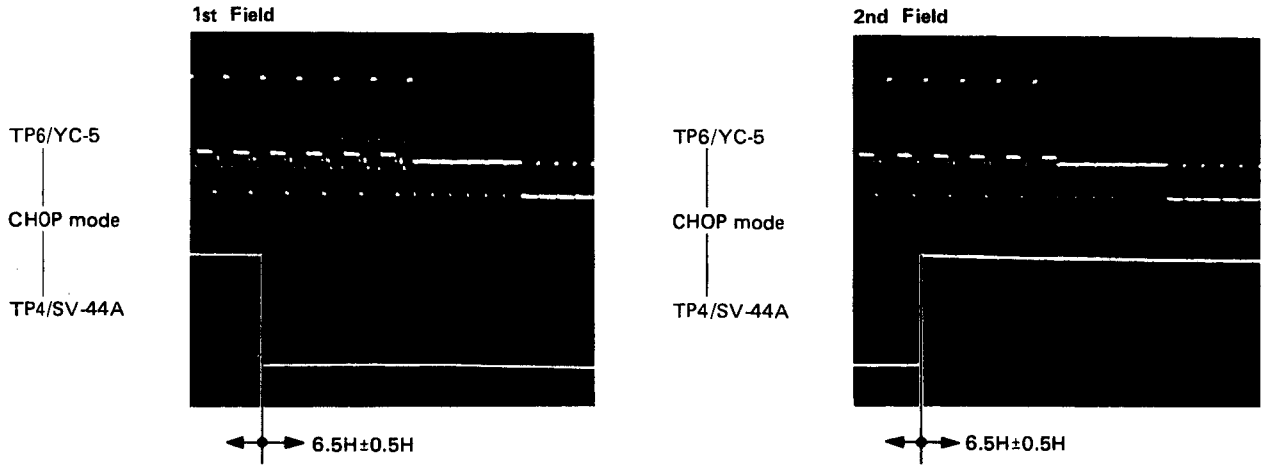
9-14-2. SWITCHING POSITION ADJUSTMENT(EIA)

.Playing back the color bar segment of the Alignment Tape RR5-3SA.
.Short between TP7,TP14 and E3 on SV-44A board with jumper leads.
.Set the TRACKING control to its center detent.
.SYSTEM SELECT sw;NTSC

Check point; TP4/SV-44A and TP6/YC-5

Trig; TP22/SV-44A

Spec;



Adj; RV1/SV-44A(1st Field)
RV8/SV-44A(2nd Field)

9-15. REEL SERVO ADJUSTMENT

9-15-1. Still Speed Adjustment

.FWD PAUSE mode

Check point; CN6-1 and CN6-3/MR-8 or MR-11A

Spec; 0.4V$\pm$ 0.02Vdc

Adj; RV3/MR-8 or RV4/MR-11A

NOTE;**FWD torque Alignment(RV1/MR-8 or MR-11A)** and **REV torque Alignment(RV2/MR-8 or MR-11A)** Refer to Mechanical Alignment sec.6-3 and 6-4.

SECTION 10
AUDIO SYSTEM ALIGNMENT

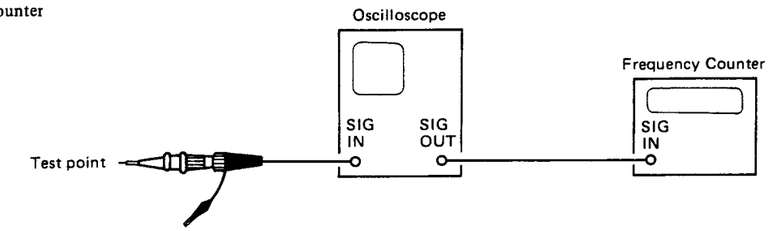
[Equipment Required]

- Alignment Tape; RR5-2SA-PAL (Part No.: 8-960-015-63) or RR5-2SC-PAL (Part No.: 8-960-035-61) or RR5-1S-PAL (Part No.: 8-960-015-61)

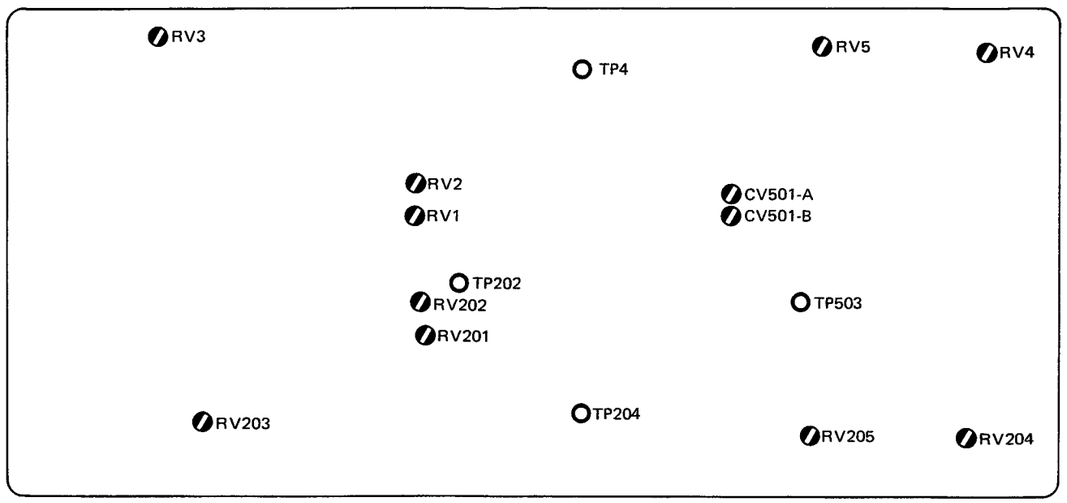
RR5-2SA-PAL/RR5-2SC-PAL

Real Time Counter (min.)	Tape Counter	Video Track	Audio Track
00:00 – 04:00	000 – 100	Monoscope	3 KHz, 0 dB
04:00 – 09:00	100 – 208	Color-bar	———
09:00 – 14:00	208 – 300	R-F sweep	———
14:00 – 16:00	300 – 335	Mod. 20T pulse	1 KHz, 0 dB
16:00 – 18:00	335 – 367	M.S. w/burst	10 KHz, –10 dB
18:00 – 20:00	367 – 398	Pseudo C.B. for DOC adj.	———

- Blank Tape; KCA-60, KCS-20
- Oscilloscope
- Frequency Counter



)NY-SP0630 / DRUCK 7



AU-28 Board

10-1. PB OUTPUT FREQUENCY RESPONSE ADJUSTMENT

.Playing back the 1kHz and 10kHz segments of Alignment Tape.

Check Point; AUDIO LINE OUT(Terminated by 47kohm)

Spec; (1kHz Level=REF Level)
10kHz Level=(REF Level)-10dB±0.5dB

Adj; RV1/AU-28(CH-1)
RV201/AU-28(CH-2)

10-2. AUDIO LEVEL CONTROL SETTING/METER CALIBRATION ADJUSTMENT

.MIC IN;1kHz,-60dB
.LIMITER sw;OFF
.EE mode
.AUDIO LINE OUT (Terminated by 47kohms)-5dB±0.5dB(CH-1=CH-2)
(By AUDIO LEVEL VR)

Check Point; AUDIO METER(CH-1=CH-2)

Spec; 0dB±0.5dB

Adj; RV4/AU-28(CH-1)
RV204/AU-28(CH-2)

NOTE;The AUDIO LEVEL VR should not be touched until rest of Sec.10 Audio System Alignment are completed.

10-3. PB OUTPUT LEVEL ADJUSTMENT

.Playing back the 10kHz segments of Alignment Tape.

Check point; AUDIO LINE OUT (Terminated by 47kohm)

Spec; -5dB±0.5dB(CH-1=CH-2)

Adj; RV2/AU-28(CH-1)
RV202/AU-28(CH-2)

10-4. AUDIO BIAS/ERASE FREQUENCY ADJUSTMENT

.AUDIO IN;no signal input.
.REC mode.

Check point; TP503/AU-28

Spec: 71kHz±0.1kHz

Adj; LV501/AU-28

10-5. AUDIO BIAS CURRENT ADJUSTMENT

.MIC IN;1kHz/10kHz,-80dB.
.REC/PB mode.

Check point; AUDIO LINE OUT (Terminated by 47kohm)

Spec;

$$\begin{bmatrix}\text{10kHz} \\ \text{REC/PB Level}\end{bmatrix} = \begin{bmatrix}\text{1kHz} \\ \text{REC/PB LEVEL}\end{bmatrix} \pm 0.5\text{dB}$$

Increasing the BIAS voltage by 1V(rms)
(measured at TP501/AU-28 for CH-1,TP502/AU-28 for CH-2)
corresponds to the decrease of 0.4dB of the 10kHz REC/PB level

Adj; CV501-A/AU-28(CH-1)
CV501-B/AU-28(CH-2)

10-6. BIAS TRAP ADJUSTMENT (REC-1)

.AUDIO IN;no signal input.
.REC mode.

Check point; TP4/AU-28(CH-1)
TP204/AU-28(CH-2)

Spec; Adjust for minimum signal amplitude.

Adj; LV3/AU-28(CH-1)
LV203/AU-28(CH-2)

10-7. AUDIO LIMITER GAIN ADJUSTMENT

. MIC IN;1kHz,-30dB.
. LIMITER sw;ON.
. STOP mode.

Check point; AUDIO LINE OUT(Terminated by 47kohm)

Spec; -2dB±0.5dB(CH-1=CH-2)

Adj; RV3/AU-28(CH-1)
RV203/AU-28(CH-2)

10-8. REC LEVEL ADJUSTMENT

.MIC IN;1kHz,-60dB.
.LIMITER sw;OFF
.REC and PB modes.

Check point; AUDIO LINE OUT(Terminated by 47kohm)

Spec; The self record/playback level should be -5dB±0.5dB(The level difference between CH-1 and CH-2 should be less than 0.5dB)

If adjustment is found to be necessary, increase or decrease the EE signal level at TP5/AU-28(CH-1) or TP205/AU-28(CH-2) during EE mode,by the same signal level as is found to be adjusted in the self record/playback procedure.

Adj; RV5/AU-28(CH-1)
RV205/AU-28(CH-2)

10-9. INSERT BIAS FREQUENCY ADJUSTMENT

.AUDIO IN; no signal input.
.AUDIO DUB mode(CH-1).

Check point; TP503/AU-28

Spec; 71kHz±0.1kHz

Adj; LV502/AU-28(CH-1)

10-10. PB BIAS TRAP ADJUSTMENT

.Using a blank tape that has not been recoded audio signal.
.AUDIO DUB mode(CH-1).

Check point; TP202/AU-28

Spec; Minimize the signal amplitude(bias leak)

Adj: LV202/AU-28

10-11. CROSS-TALK CANCEL ADJUSTMENT

.MIC IN;5kHz,-60dB.
.Using an audio blank tape.
.AUDIO DUB mode(CH-1).

Check point; LINE OUT

Spec; Minimize the signal amplitude(cross-talk)

Adj; RV6/AU-28

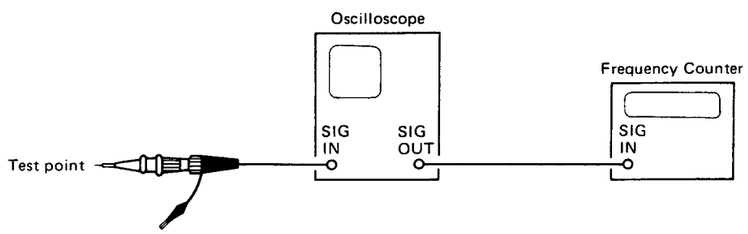
SECTION 11
VIDEO SYSTEM ALIGNMENT

[Equipment Required]

- Dual Trace Oscilloscope
- Frequency Counter
- Video Sweep Generator (with Burst)
- Blank Tape; KCA-60 (SONY standard product)
- Alignment Tape; RR5-2SA-PAL (Part No.: 8-960-015-63) or RR5-2SC-PAL (Part No.: 8-960-035-61) or RR5-1S-PAL (Part No.: 8-960-015-61)

RR5-2SA-PAL/RR5-2SC-PAL

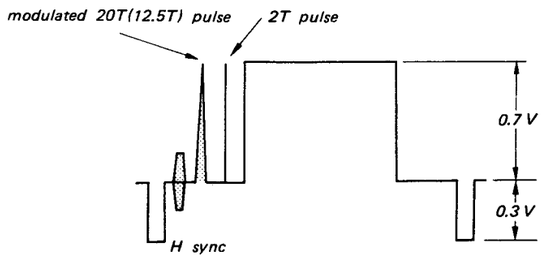
Real Time Counter (min.)	Tape Counter	Video Track	Audio Track
00:00 – 04:00	000 – 100	Monoscope	3 KHz, 0 dB
04:00 – 09:00	100 – 208	Color-bar	———
09:00 – 14:00	208 – 300	R-F sweep	———
14:00 – 16:00	300 – 335	Mod. 20T pulse	1 KHz, 0 dB
16:00 – 18:00	335 – 367	M.S. w/burst	10 KHz, –10 dB
18:00 – 20:00	367 – 398	Pseudo C.B. for DOC adj.	———



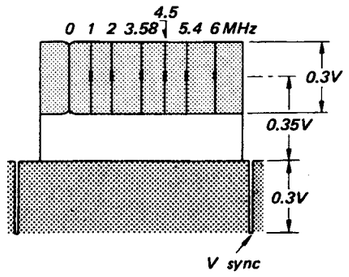
[Video Signals Required]

- Color Bar Signal; 75% color bar signal
- Color Video Signal; Any video signal that has the CCIR specified subcarrier and sync signals.

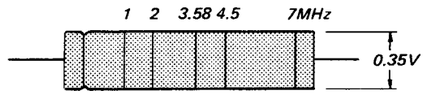
- Sin^2 wave signal;

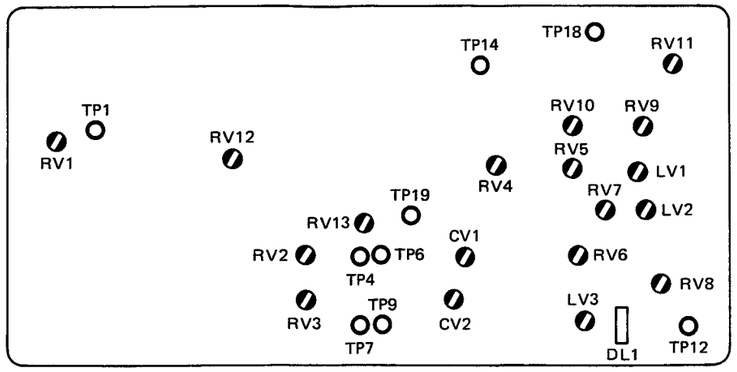


- Gated Sweep Signal;

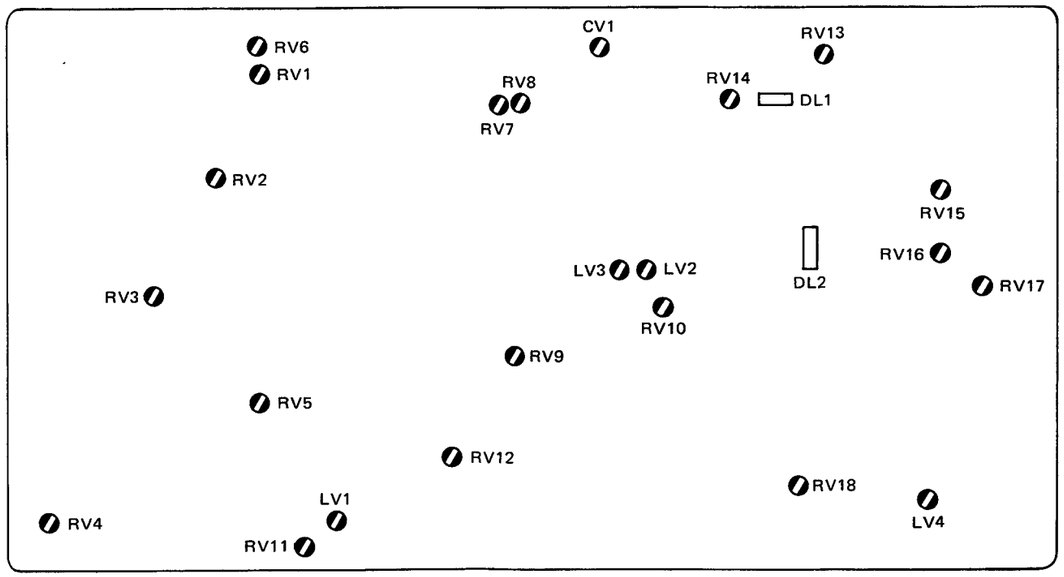


- Sweep Signal;





RP-8B Board



YC-5 Board

11-1. PLAYBACK RF AMPLIFIER ADJUSTMENT

11-1-1. PB RF Frequency Response Adjustment

.Playing back the RF sweep segment of Alignment Tape RR5-2SA PAL or RR5-2SC PAL.
.Short between TP7 and E2 on SV-44A board with jumper lead.
.Set the TRACKING control to its center detent.
.SYSTEM SELECT sw;PAL/SECAM

(1)6.0MHz Tuning Adjustment

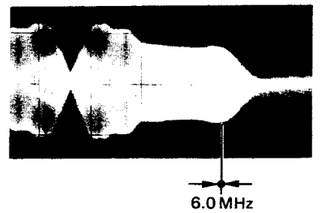
.RV4(CH-A)and RV6(CH-B)/RP-8B; Fully clockwise.
.RV5(CH-A)and RV7(CH-B)/RP-8B; Fully counterclockwise.

Check point; TP18/RP-8B

Trig; TP14/RP-8B

Spec;

TP18/RP-8B



Waveform peak = 6.0 MHz

Adj; CV1/RP-8B(CH-A)
CV2/RP-8B(CH-B)

(2)4.5MHz Tuning Adjustment

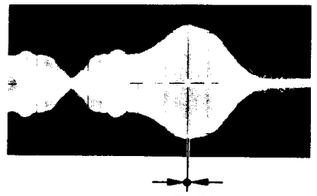
.RV4(CH-A)and RV6(CH-B); Fully counterclockwise.
.RV5(CH-A)and RV7(CH-B); Fully clockwise.

Check point; TP18/RP-8B

Trig; TP14/RP-8B

Spec;

TP18/RP-8B



Waveform peak = 4.5 MHz

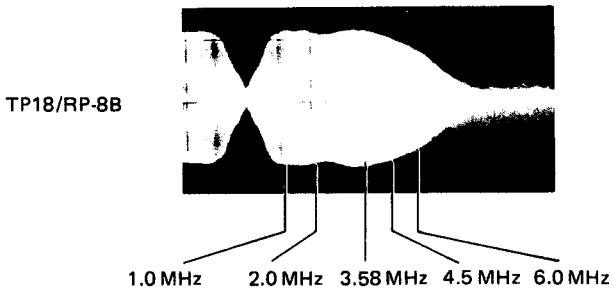
Adj; LV1/RP-8B(CH-A)
LV2/RP-8B(CH-B)

(3)Frequency Response Adjustment

Check point; TP18/RP-8B

Trig; TP14/RP-8B

Spec;



RR5-2SA PAL

2.0MHz	3.58MHz	4.5MHz	6.0MHz
100% REF.	100% ±10%	90% ±10%	50% ±15%

RR5-2SC PAL

2.0MHz	3.58MHz	4.5MHz	6.0MHz
100% REF.	110% ±10%	110% ±10%	90% ±10%

Adj; RV4/RV5(CH-A)/RP-8B
RV6/RV7(CH-B)/RP-8B

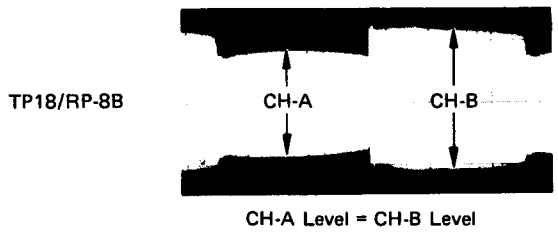
11-1-2. PB Y-RF Output Balance Adjustment

.Playing back the color bar segment of Alignment Tape RR5-2SC PAL.
.Set the TRACKING control to its center detent.
.SYSTEM SELECT sw;PAL/SECAM

Check point; TP18/RP-8B

Trig; TP14/RP-8B

Spec;



CH-A Level = CH-B Level

Adj; RV10/RP-8B

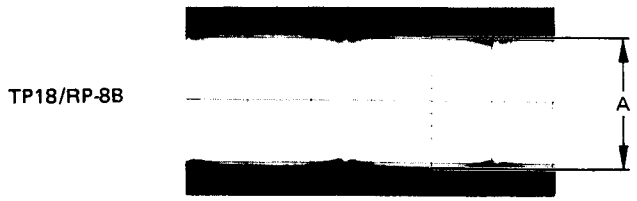
11-1-3. PB Y-RF Output Level Adjustment

.Playing back the color bar segment of Alignment Tape RR5-2SA PAL or RR5-2SC PAL.
.Set the TRACKING control to its center detent.
.SYSTEM SELECT sw;PAL/SECAM

Check point; TP18/RP-8B

Trig; TP14/RP-8B

Spec;



RR5-2SA PAL	RR5-2SC PAL
A=0.5V±0.05Vp-p	0.7V±0.05Vp-p

Adj; RV11/RP-8B

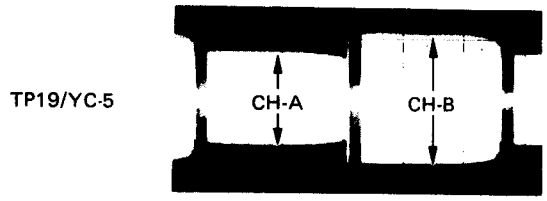
11-1-4. PB Chroma-RF Output Balance Adjustment

.Playing back the color bar segment of Alignment Tape RR5-2SC PAL.
.Set the TRACKING control to its center detent.
.SYSTEM SELECT sw;PAL

Check point; TP19/YC-5

Trig; TP14/RP-8B

Spec;



CH-A Level = CH-B Level

Adj; RV9/RP-8B

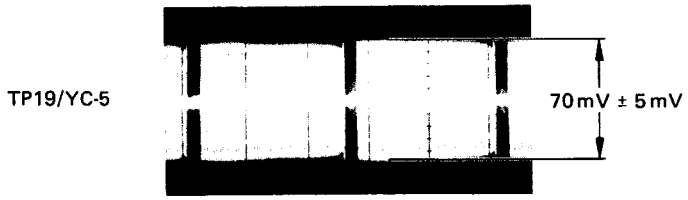
11-1-5. PB Chroma-RF Output level Adjustment

.Playing back the color bar segment of Alignment Tape RR5-2SC PAL.
.Set the TRACKING control to its center detent.
.SYSTEM SELECT sw;PAL

Check point; TP19/YC-5

Trig; TP14/RP-8B

Spec;



Adj; RV8/RP-8B

NOTE; Do not use the Alignment Tape,RR4-7SA SECAM/RR4-7S SECAM/RR4-7SC SECAM.

11-2. Y AMPLIFIER ADJUSTMENT

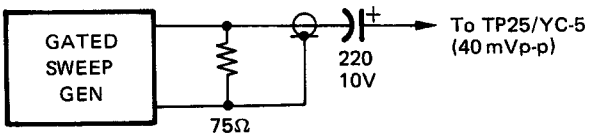
11-2-1. Noise Canceller Adjustment

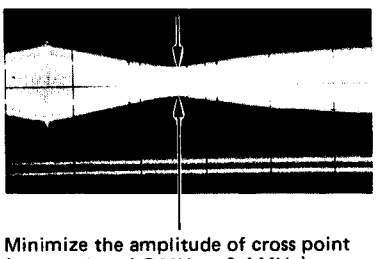
.Playing back the color bar segment of Alignment Tape RR5-2SC PAL.
.Temporarily connect the capacitor(220/10V) between TP26 and E2
on YC-5 Board.
.Temporarily connect the GATED sweep(output 40mVp-p).
.SYSTEM SELECT sw;PAL/SECAM

Check point; TP6/YC-5

Trig;TP20/SV-44A

Spec;





Adj; RV1/YC-5

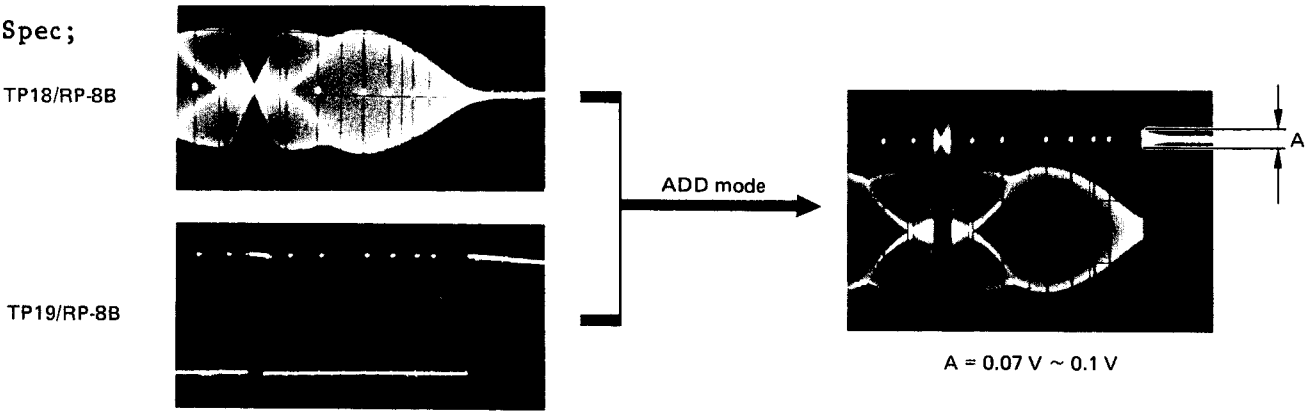
11-2-2. Drop-Out Sensitivity Level Adjustment

.Playing back the RF sweep segment of Alignment Tape RR5-2SC PAL.
.SYSTEM SELECT sw;PAL/SECAM

Check point; TP18/RP-8B and TP19/RP-8B

Trig; TP14/RP-8B

Spec;



Adj; RV13/RP-8B

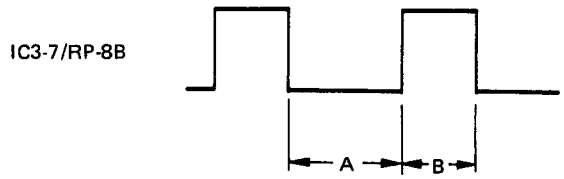
11-2-3. RF-Band Noise Adjustment

.Playing back the color bar segment of Alignment Tape RR5-2SC PAL.
.REV mode.
.Preset the RV12/RP-8B;Fully counterclockwise.
.SYSTEM SELECT sw;PAL

Check point;IC3-7/RP-8B

Trig;IC3-7/RP-8B

Spec;



$$\frac{B}{A} = \frac{2}{3}$$

Adj;RV12/RP-8B

11-2-4. Carrier Balance Adjustment

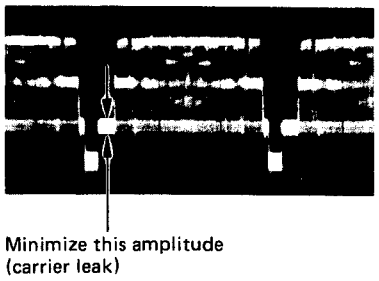
.Playing back the Monoscope segment of Alignment Tape RR5-2SC PAL.
.SYSTEM SELECT sw;PAL/SECAM

Check point; TP3/YC-5

Trig; TP9/YC-5

Spec;

TP3/YC-5



Adj; RV5/YC-5

11-2-5. Y Output Level Adjustment

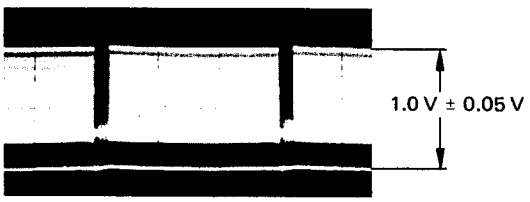
.Playing back the Color bar segment of Alignment Tape RR5-2SC PAL.
.VIDEO LINE OUT:Terminated by 75 ohm Resistor.
.SYSTEM SELECT sw;PAL

Check point; TP6/YC-5

Trig; TP4/SV-44A

Spec;

TP6/YC-5



Adj; RV6/YC-5

11-2-6. SYNC Tip Carrier Frequency Adjustment

.No signal input.
.EE mode.
.SYSTEM SELECT sw;PAL/SECAM

Check point; TP1/RP-8B

Spec; 3.8MHz±0.05MHz

Adj; RV7/YC-5

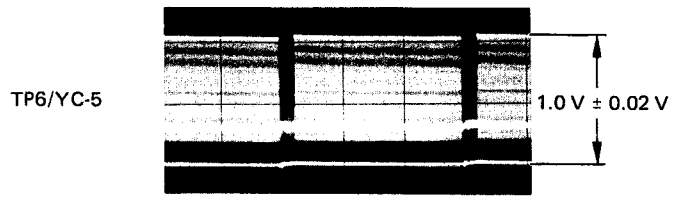
11-2-7. FM Deviation Adjustment

.VIDEO LINE IN;CCIR color bar signal.
.REC mode and PB modes.
.RV8/YC-5 fully clockwise.
.SYSTEM SELECT sw;PAL/SECAM

Check point; TP6/YC-5(Terminated by 75 ohm Resistor)

Trig; TP20/SV-44A

Spec;



Adj; RV2/YC-5

Repeat the sequence of
Adj--Record--Playback(level check)
until required specification is met.

11-2-8. White Clip Adjustment

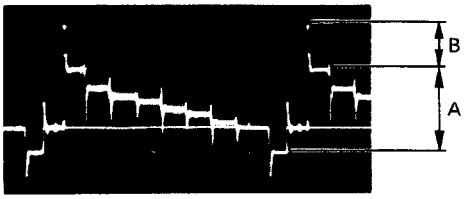
.VIDEO LINE IN;CCIR color bar signal.
.EE mode.
.SYSTEM SELECT sw;PAL/SECAM

Check point; TP8/YC-5

Trig; TP9/YC-5

Spec;

TP8/YC-5



$$\frac{B}{A} = \frac{1}{2}$$

Adj; RV8/YC-5

11-2-9. False VD Adjustment

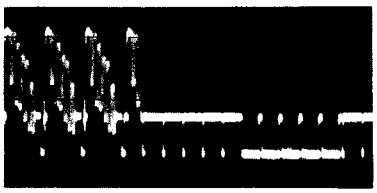
.Playing back the Alignment Tape RR5-2SC PAL.
.FWD SEARCH or REV SEARCH modes.
.SYSTEM SELECT sw;PAL

Check point; TP6/YC-5

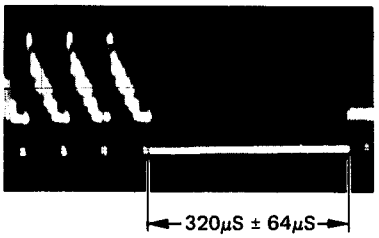
Trig; TP4/SV-44A

Spec;

TP6/YC-5
(FWD mode)



TP6/YC-5
(SEARCH mode)



Adj: RV12/YC-5

11-2-10. REC Y Phase Equalizer Adjustment

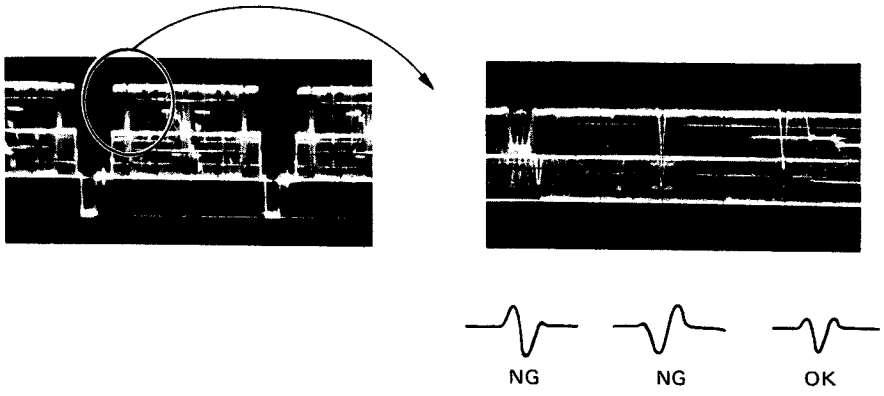
.VIDEO LINE IN;CCIR Monoscope with burst.
.EE mode.
.SYSTEM SELECT sw;PAL/SECAM

Check point; TP4/YC-5

Trig; TP9/YC-5

Spec:

TP4/YC-5



Adj: RV3/YC-5

11-2-11. PB Y Phase Equlizer Adjustment

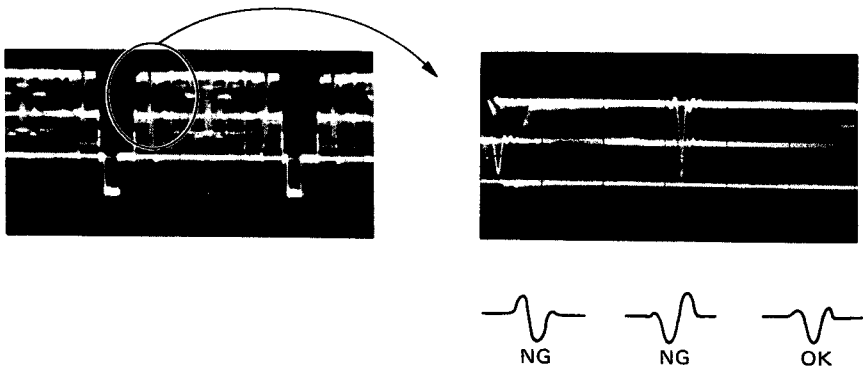
.Playing back the M.S w/burst segment of Alignment Tape RR5-2SC PAL.
.SYSTEM SELECT sw;PAL/SECAM

Check point; TP4/YC-5

Trig; TP9/YC-5

Spec;

TP4/YC-5



Adj; RV4/YC-5

11-3. CHROMA AMPLIFIER ADJUSTMENT

11-3-1. DUB Video Bias Trap Adjustment

.Playing back the tape that has been recorded only CTL signal.
.AUDIO DUB mode(CH-1).

Check point; TP12/RP-8B

Spec; Minimize the amplitude(audio bias leak)

Adj; LV3/RP-8B

* To record only the CTL signal on tape;
  Short between TP1 and E2 on RP-8B board with jumper lead and
  put the machine into the REC mode.

11-3-2. 4.43MHz Reference Oscillator Frequency Adjustment

.STOP mode.

Check point; TP24/YC-5

Trig; TP24/YC-5

Spec; 4.433631MHz±5Hz

Adj; CV1/YC-5

11-3-3. APC 5.12MHz Tuning Adjustment

.VIDEO LINE IN;PAL color bar signal.
.EE mode.
.SYSTEM SELECT sw;PAL

Check point; TP13/YC-5

Trig; TP13/YC-5

Spec; Maximize the amplitude(5.119193MHz±1kHz)

Adj; LV2 and LV3/YC-5

11-3-4. Chroma Converter Balance Adjustment

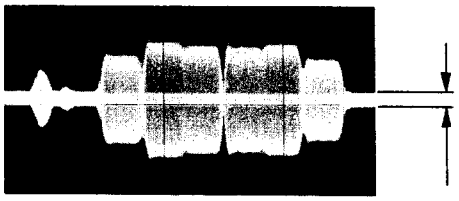
.Playing back the color bar segment of Alignment Tape RR5-2SC PAL.
.SYSTEM SELECT sw;PAL

Check point; TP23/YC-5

Trig; TP9/YC-5

Spec;

TP23/YC-5



Minimize this amplitude
(carrier leak)

Adj; RV15/YC-5

11-3-5. ACC Burst Tuning Adjustment

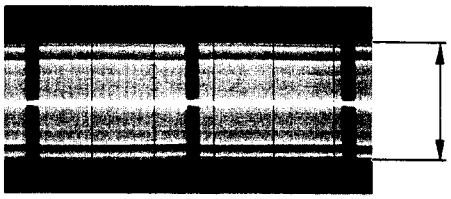
.VIDEO LINE IN;PAL color bar signal.
.EE mode.
.SYSTEM SELECT sw;PAL

Check point; TP23/YC-5

Trig;TP22/SV44A

Spec;

TP23/YC-5



Minimize the Chroma level

Adj; LV4/YC-5

11-3-6. ACC Level Adjustment

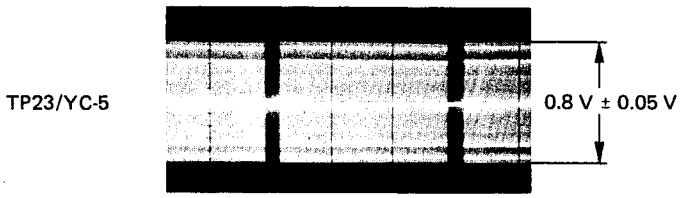
.VIDEO LINE IN;PAL color bar signal.
.EE mode.

SYSTEM SELECT sw;PAL

Check point; TP23/YC-5

Trig; TP22/SV-44A

Spec;



Adj; RV10/YC-5

11-3-7. VCO Frequency Level Adjustment

.Playing back the color bar segment of Alignment Tape RR5-2SC PAL.
.COLRO LOCK sw;Center detent.
.SYSTEM SELECT sw;PAL

Check point; TP15/YC-5

Spec; 8.1V±0.1Vdc and normal hue on the monitor screen.

Adj; RV9/YC-5

11-3-8. APC Gain Adjustment

.Playing back the color bar segment of Alignment Tape RR5-2SC PAL.
.Short between TP14 and E2 on YC-5 board with jumper lead.
.SYSTEM SELECT sw;PAL

Check point; TP15/YC-5

Trig; TP4/SV-44A

Spec;

Adj; RV11/YC-5

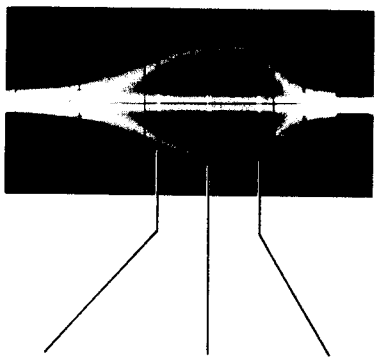
11-3-9. REC Chroma Frequency Response Adjustment

.VIDEO LINE IN;CCIR the Gated sweep signal with burst.
.EE mode.
.SYSTEM SELECT sw;PAL

Check point; TP16/YC-5

Trig; TP20/SV-44A

Spec;



3.93MHz	4.43MHz	4.93MHz
95±10%	100% REF.	80% +20% -15%

Adj; LV1/YC-5

11-3-10. Chroma Mix Level Adjustment

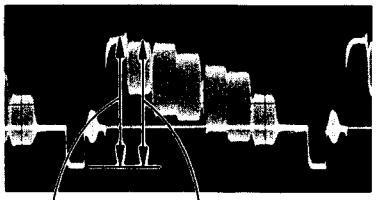
.Playing back the color bar segment of Alignment Tape RR5-2SC PAL.
.VIDEO LINE OUT:Terminated by 75 ohm Resistor.
.SYSTEM SELECT sw;PAL

Check point; TP6/YC-5

Trig; TP9/YC-5

Spec; (white peaklevel)=(chroma peak level)

TP6/YC-5



Adj; RV18/YC-5

11-3-11. SECAM Chroma Trap Adjustment

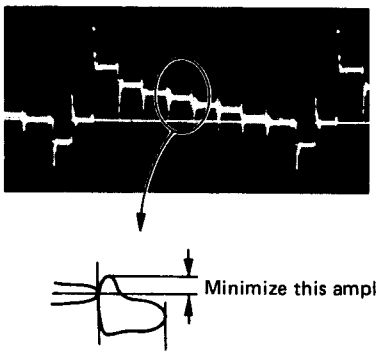
.VIDIO LINE IN;SECAM color bar signal.
.EE mode.
.SYSTEM SELECT sw;SECAM

Check point; TP8/YC-5

Trig; TP9/YC-5

Spec;

TP8/YC-5



Adj; LV5/YC-5

11-4. RECORD AMPLIFIER ADJUSTMENT

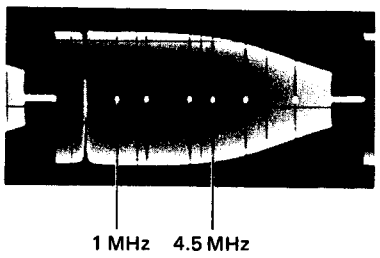
11-4-1. Y REC Current Frequensy Responce Adjustment

.VIDEO LINE IN;CCIR Video signal.(B/W)
.Short between TP1 and E2 on RP-8B board with jumper lead.
.Connect the Sweep signal, between TP3 and E2 on RP-8B board.
.Unsolder temporarily,between TP4 and TP6 (TP7 and TP9)
on RP-8B Board.
.REC mode.
.SYSTEM SELECT sw;PAL/SECAM

Check point; TP4 and TP6/RP-8B(CH-A),TP7 and TP9/RP-8B(CH-B)

Trig; TP22/SV-44A

Spec; Waveform of between TP4 and TP6/RP-8B(CH-A)
TP7 and TP9/RP-8B(CH-B)



1.0MHz	4.5MHz
100% REF.	74% ±5%

Adj; RV2(CH-A)/RP-8B
RV3(CH-B)/RP-8B

After this adjustment,solder between TP4 and TP6/RP-8B
TP7 and TP9/RP-8B

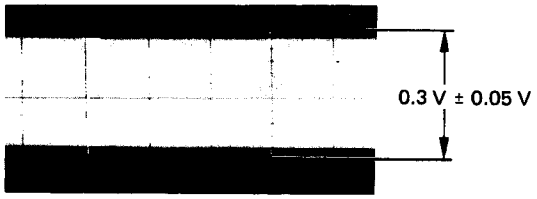
11-4-2. Y REC Current Level Adjustment

.VIDEO LINE IN;CCIR color video signal.
.Unsolder temporarily,between TP4 and TP6 (TP7 and TP9)
on RP-8B Board.
.REC mode.
.SYSTEM SELECT sw;PAL

Check Point; Waveform of between TP4(TP7)/RP-8B and TP6(TP9)/RP-8B
( ) is CH-B.

Trig; TP-22/SV-44A

Spec; sync tip level



Adj; RV1/RP-8B

After this adjustment,solder between TP4 and TP6/RP-8B
TP7 and TP9/RP-8B

11-4-3. Chroma REC Current Level Adjustment

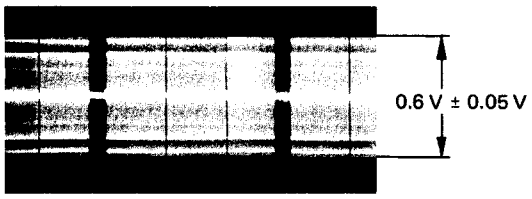
.VIDEO LINE IN;PAL color Bar signal.
.REC mode.

Check point; TP16/YC-5

Trig; TP22/SV-44A

Spec;

TP16/YC-5



Adj; RV14/YC-5

11-5. DUB CHROMA ADJUSTMENT

11-5-1. DUB Chroma Output Level Adjustment(REC/EE)

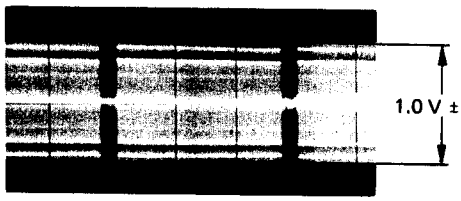
.VIDEO LINE IN;PAL color bar signal.
.EE mode.
.SYSTEM SELECT sw;PAL

Check point; TP17/YC-5

Trig; TP22/SV-44A

Spec;

TP17/YC-5



Adj; RV17/YC-5

11-5-2. DUB REC Chroma Output Level Adjustment.

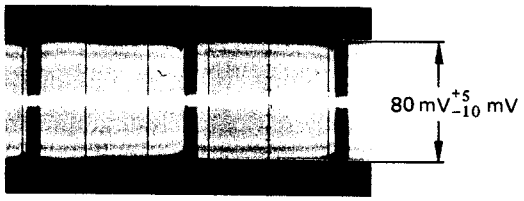
.VIDEO LINE IN;PAL color bar signal.
.Self Record then play back mode.
.SYSTEM SELECT sw;PAL

Check point; TP19/YC-5

Trig; TP22/SV-44A

Spec;

TP19/YC-5



Adj; RV13/YC-5

Repeat the sequence of adj--record--playback(level check)until required specification is met.

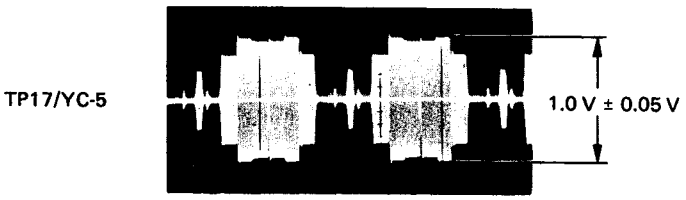
11-5-3. DUB Chroma Output Level Adjustment(PB/DUB)

.VIDEO LINT IN;PAL color bar signal.
.Self Record then play back mode.
.SYSTEM SELECT sw;PAL

Check point; TP17/YC-5

Trig; TP22/SV-44A

Spec;



Adj; RV16/YC-5

Repeat the sequence of Adj--record--playback(level check)until required specification is met.

11-6. Y/CHROMA DELAY TIME ADJUSTMENT

.This adjustment is usually not necessary since Y/Chroma delay time variation among multiple recorders and players are negligibly small.

11-6-1. PB Y/C Delay Time Adjustment

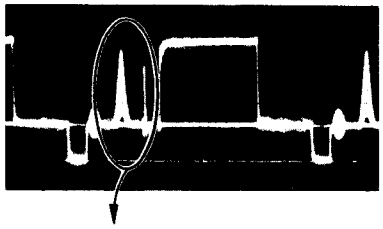
.Playing back the MOD.20T pulse segment of Alignment Tape RR5-2SC PAL.
.SYSTEM SELECT sw;PAL

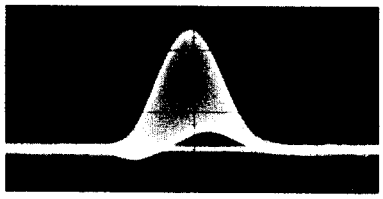
Check point; TP6/YC-5

Trig; TP9/YC-5

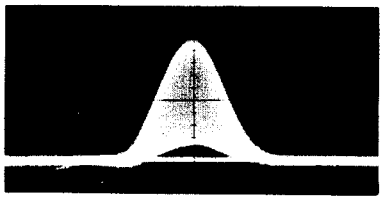
Spec;

TP6/YC-5

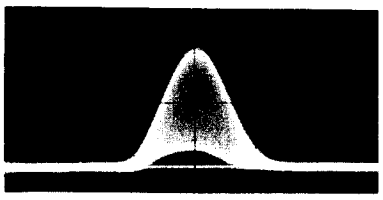




NG
Chroma advances with respect to Y.



OK



NG
Chroma lags with respect to Y.

VIDEO

Adj; DL1/RP-8B

11-6-2. REC Y/C Delay Time Adjustment

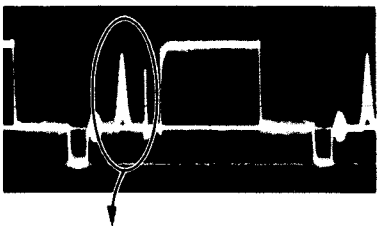
.VIDEO LINE IN;Sin^2 wave signal.
.Playing back the Self Recorded Tape.

Check point; TP6/YC-5

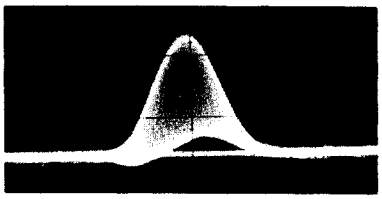
Trig; TP9/YC-5

Spec;

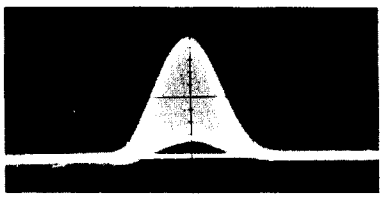
TP-6/YC-5



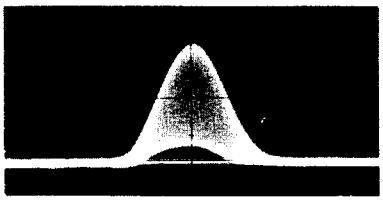
NG
Chroma advances with respect to Y.



OK



NG
Chroma lags with respect to Y.



Repeat the sequence of
Adj--Record--Playback(waveform check)
until required specification is met.

Adj; DL1/YC-5

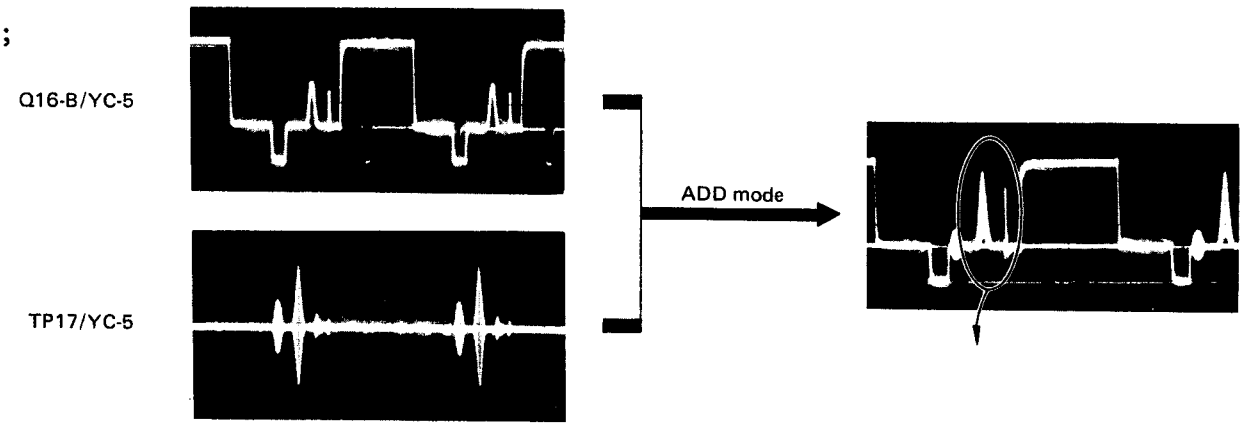
11-6-3. DUB Y/C Delay Time Adjustment

.Playing back the MOD.20T pulse segment of Alignment Tape RR5-2SC PAL.
.SYSTEM SELECT sw;PAL

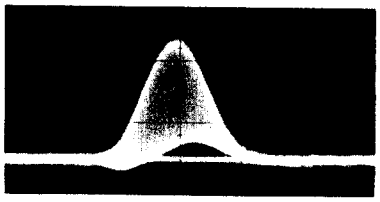
Check point;Q16-B and TP17/YC-5

Trig; TP9/YC-5

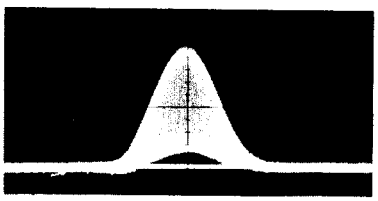
Spec;



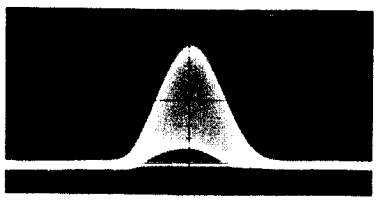
NG
Chroma advances with respect to Y.



OK



NG
Chroma lags with respect to Y.

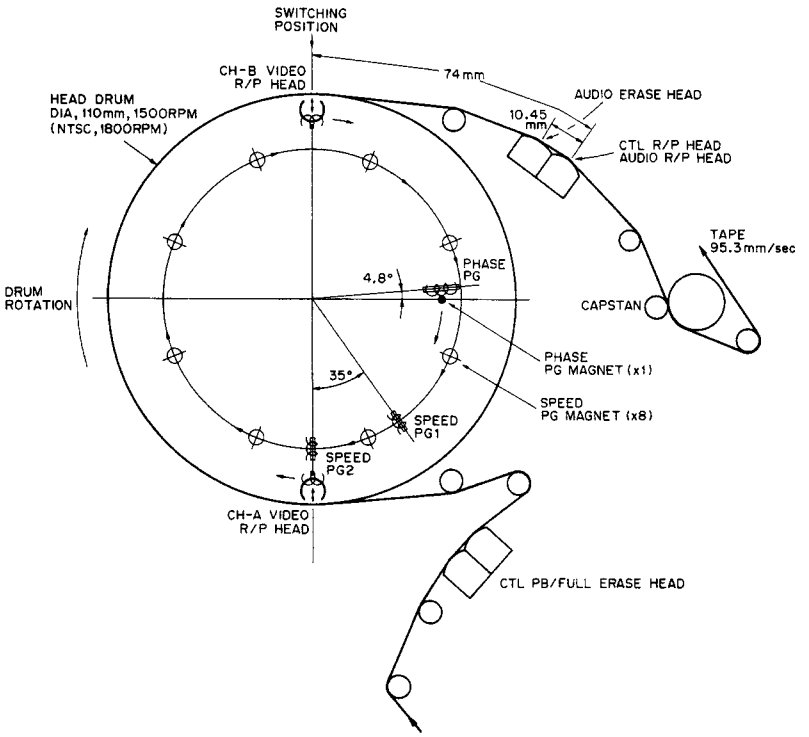


VIDEO

Adj; DL2/YC-5

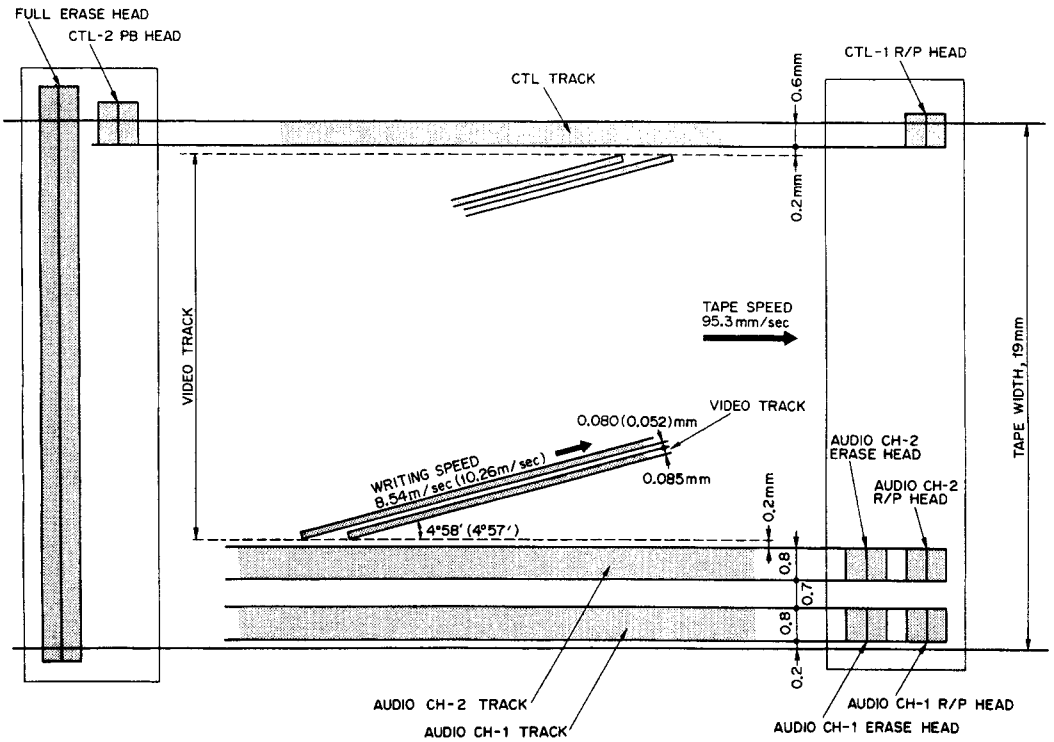
SECTION 12
BLOCK DIAGRAM AND TIMING CHARTS

HEAD LOCATION

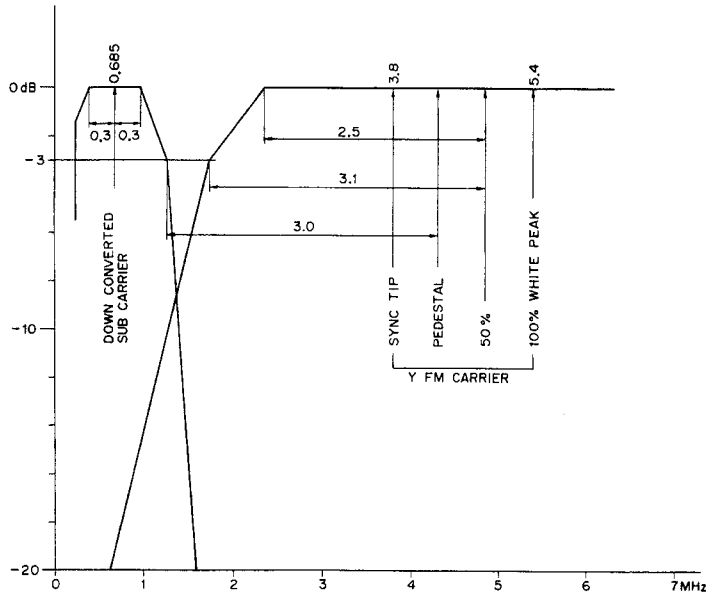


TAPE PATTERN

( ) is NTSC mode



FREQUENCY ALLOCATION



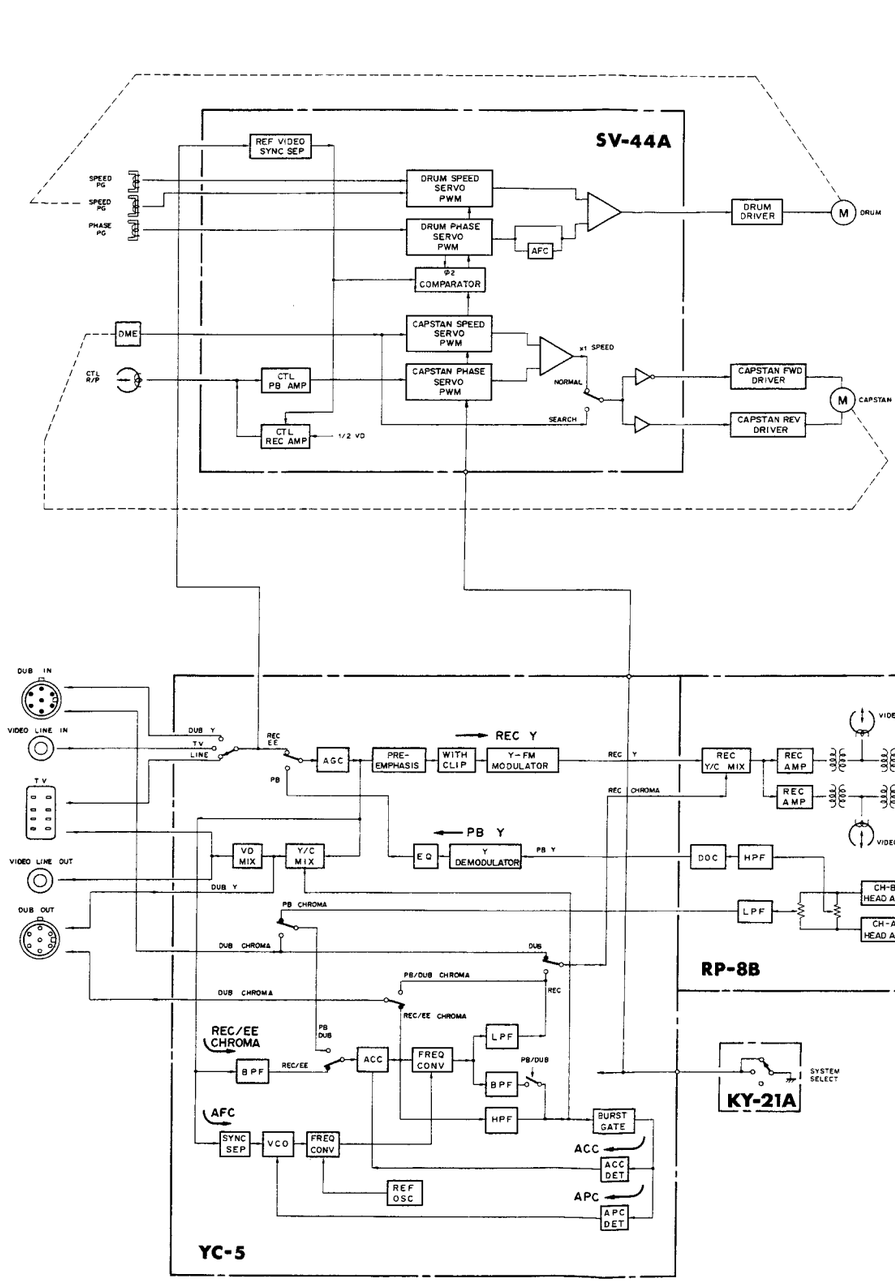
CIRCUIT FUNCTION OVERALL

CIRCUIT FUNCTION OF THE PRINTED CIRCUIT BOARD

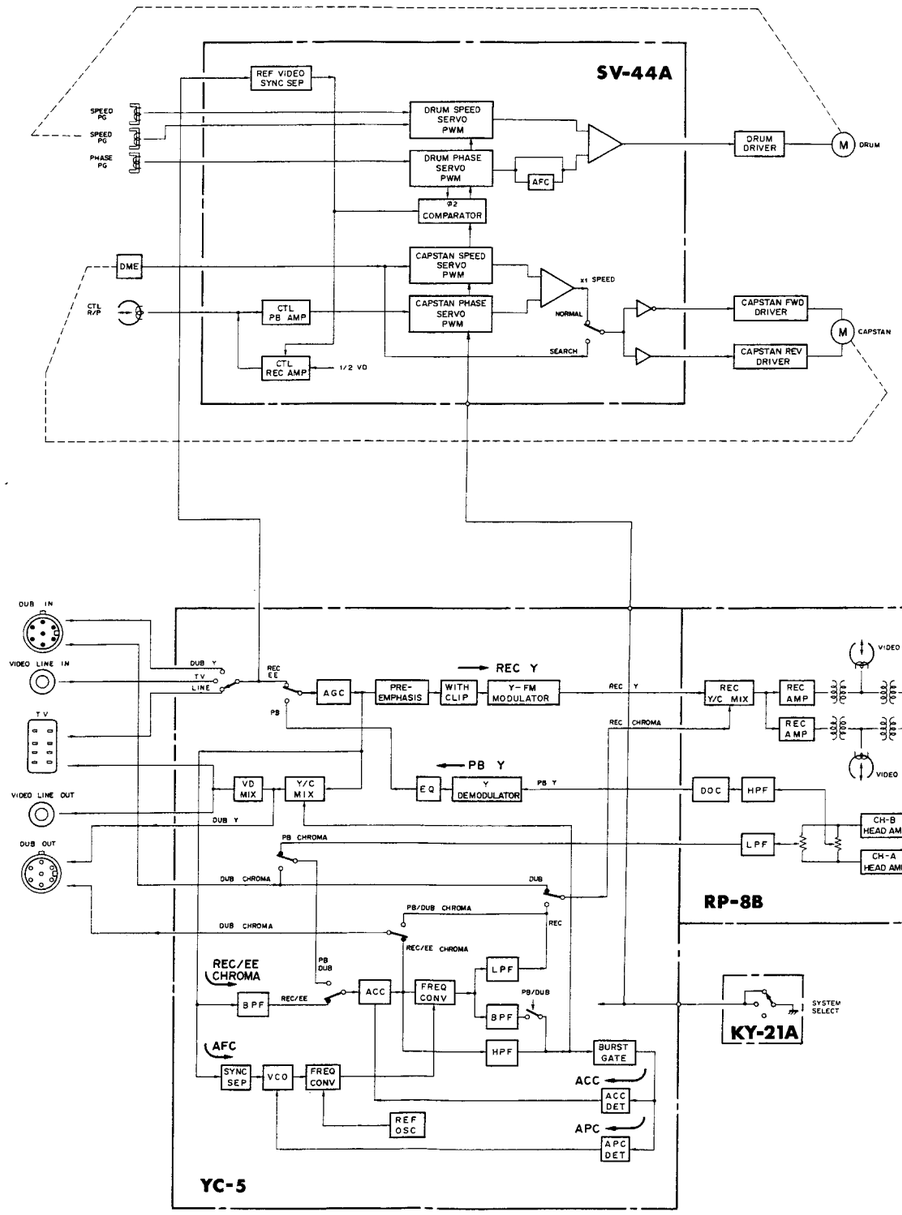
The Circuit Board Information is Provided Below

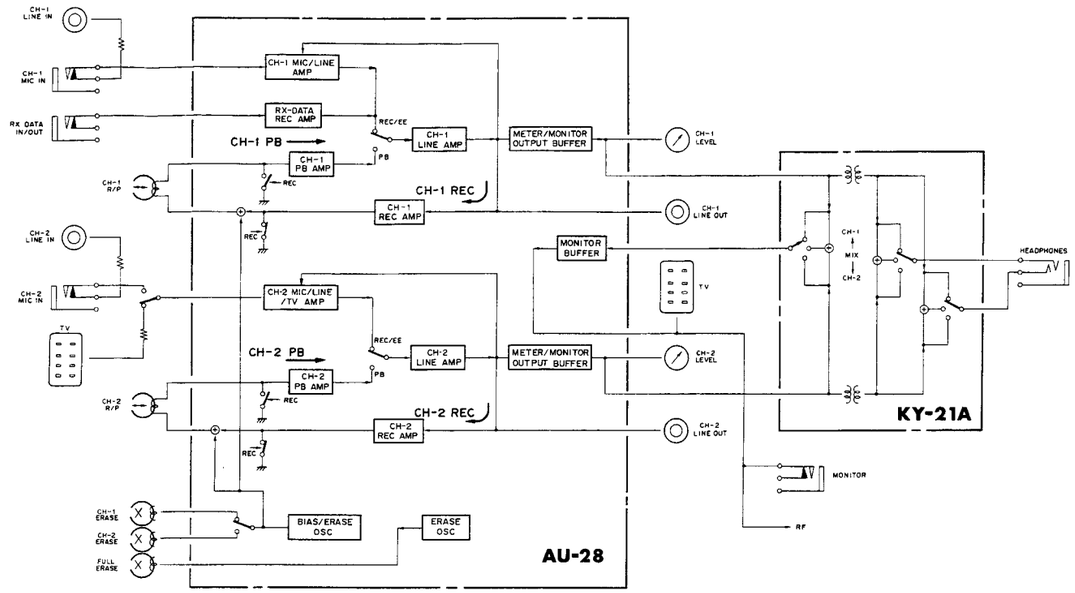
SYSTEM	BOARD	CIRCUIT FUNCTION
VIDEO	YC-5	*Luminance and Chrominance Signal Modulator/Demodulator
	RP-8B	*Record /Play back amplifier
AUDIO	AH-3	*Audio REC/PB/ERASE and CTL REC/PB Head
	AU-28	*Audio REC/PB Amplifier *Bias/Erase Oscillator
	EC-19	*Full Erase Head
	HP-6	*Headphones Jack/Level Control
	MC-14	*Audio Meter/Level and Tracking Control
	MI-5	*CH-1/CH-2 Mic Input
SERVO	DR-17B	*Drum/Capstan Driver
	SV-44A	*Drum/Capstan Speed and Phase PWM Servo
POWER	AC-35	*AC input
	DC-13B	*Power Supply/Regulator
	UR-02	*Switching Regulator
SYSTEM CONTROL	CC-9	*Cassette Compartment Motor/Pilot Lamp
	CC-10	*Cassette In Detector
	CC-11	*Cassette Down Detector
	CN-42	*Connection Board
	FR-11	*Threading Ring Mechanical Position Detector
	KY-21A	*Function Key Board *Display Driver *Mode/Input/Monitor Select
	LM-9	*Threading Motor
	MR-8 MR-11A	*Threading/CC Motor Driver *Reel Motor Control/Driver *Skew/Search/Pinch Solenoid Driver
	PD-16A	*Take up Idler/Brake Supply Idler/Brake Driver
	PH-4	*Tension Regulator
	PH-5	*Tape End/Tape Beginning Sensor
	PT-9	*Reel Motor Power Driver
	SW-43	*Supply/Take up Rotation Detecter
	SW-46	*Miss Rec Detector
	SW-50	*FR Unthread End Detector
	SY-75	*System Control

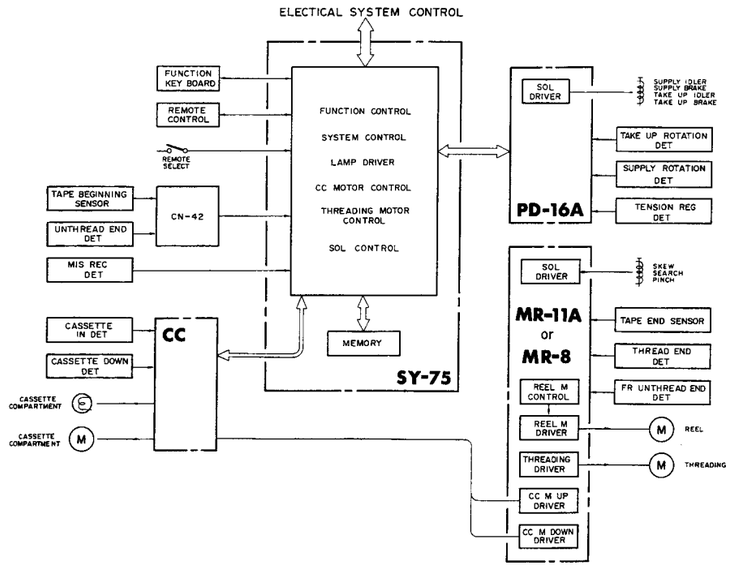
OVERALL BLOCK DIAGRAM



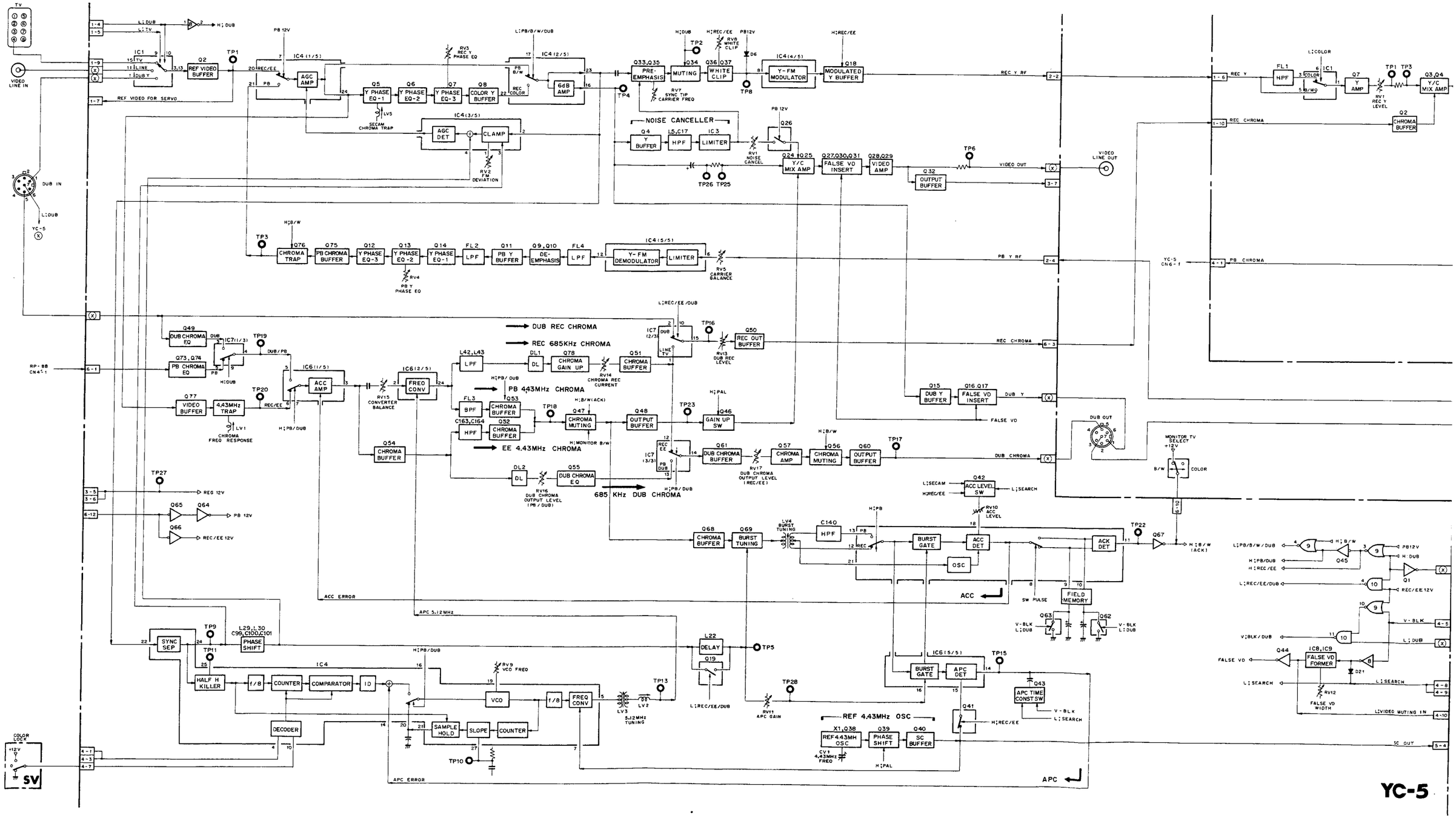
OVERALL BLOCK DIAGRAM

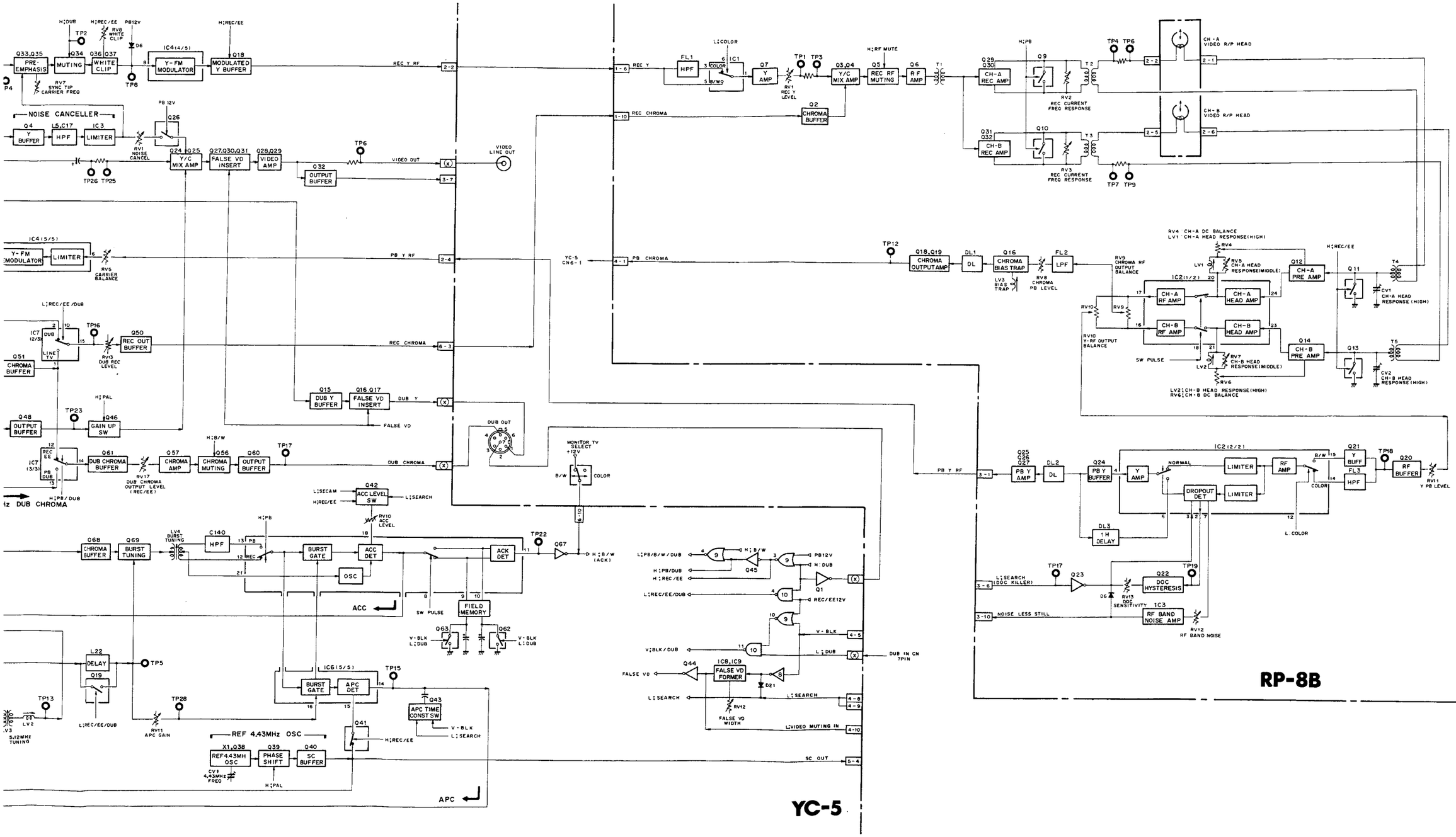






VIDEO SYSTEM BLOCK DIAGRAM

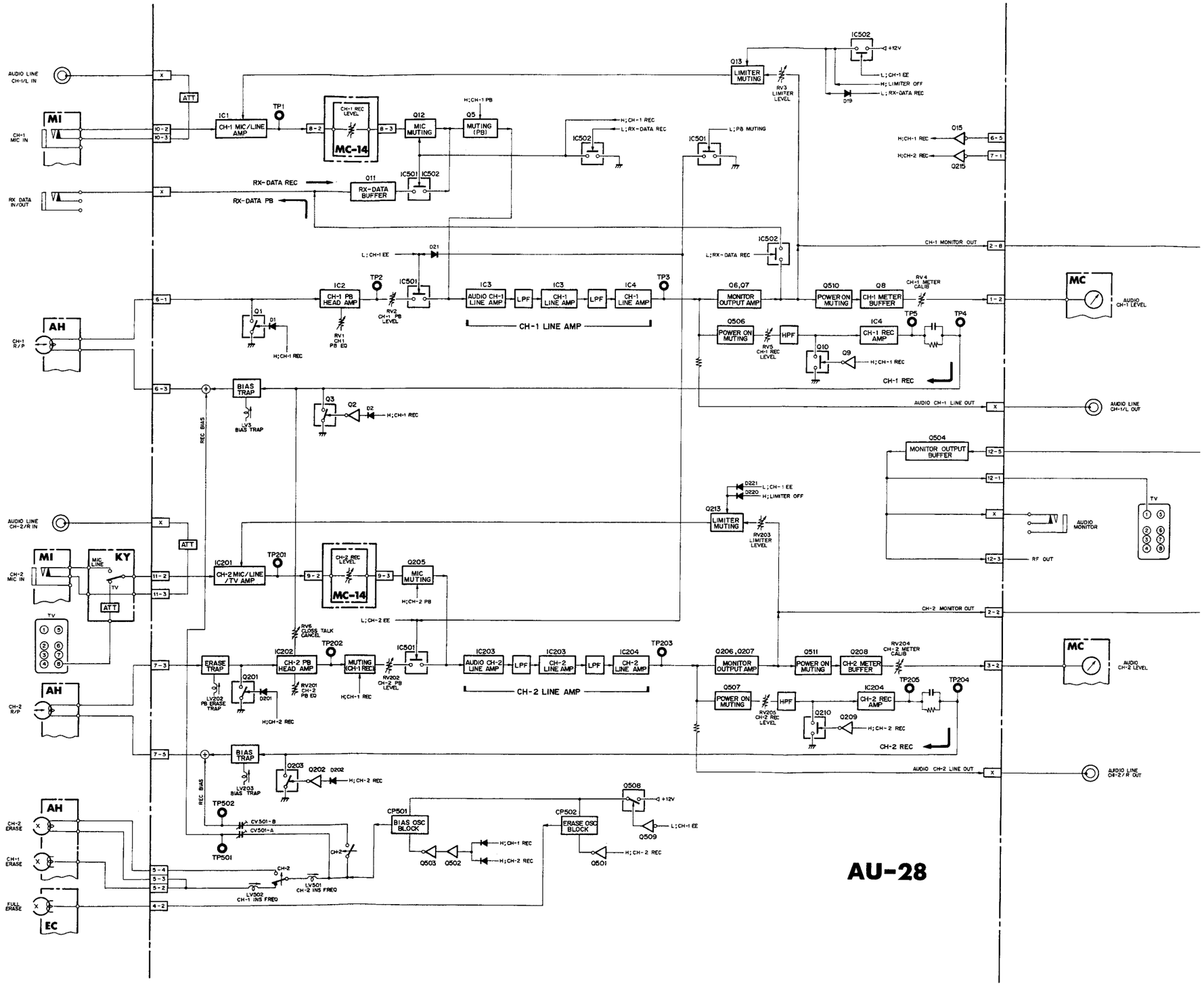



H;DUB
H;REC/EE
PB12V
TP2
RV8 WHITE CLIP
D6
IC4(4/5)
H;REC/EE
Q33,Q35 PRE-EMPHASIS
Q34 MUTING
Q36,Q37 WHITE CLIP
Y-FM MODULATOR
Q18 MODULATED Y BUFFER
TP8
RV7 SYNC TIP CARRIER FREQ
REC Y RF
2-2
NOISE CANCELLER
PB 12V
Q26
Q4 Y BUFFER
L5,C17 HPF
IC3 LIMITER
RV1 NOISE CANCEL
Q24,Q25 Y/C MIX AMP
Q27,Q30,Q31 FALSE VD INSERT
Q28,Q29 VIDEO AMP
Q32 OUTPUT BUFFER
TP6
VIDEO OUT
3-7
VIDEO LINE OUT
TP26 TP25
IC4(5/5)
Y-FM MODULATOR
LIMITER
RV5 CARRIER BALANCE
PB Y RF
2-4
L;REC/EE/DUB
IC7 12/3
TP16
Q50 REC OUT BUFFER
RV13 DUB REC LEVEL
REC CHROMA
6-3
Q51 CHROMA BUFFER
H;PAL
Q48 OUTPUT BUFFER
TP23
Q46 GAIN UP SW
Q15 DUB Y BUFFER
Q16,Q17 FALSE VD INSERT
DUB Y
FALSE VD
DUB OUT
H;B/W
Q56 CHROMA MUTING
Q57 CHROMA AMP
Q60 OUTPUT BUFFER
TP17
DUB CHROMA
Q61 DUB CHROMA BUFFER
RV17 DUB CHROMA OUTPUT LEVEL (REC/EE)
H;PB/DUB
MONITOR TV SELECT +12V
B/W
COLOR
L;SECAM
H;REC/EE
Q42 ACC LEVEL SW
L;SEARCH
RV10 ACC LEVEL
Q68 CHROMA BUFFER
Q69 BURST TUNING
LV4 BURST TUNING
C140 HPF
H;PB
PB
REC
BURST GATE
ACC DET
ACK DET
OSC
TP22
Q67
H;B/W (ACK)
ACC
SW PULSE
FIELD MEMORY
Q63
Q62
V-BLK L;DUB
L22 DELAY
Q19
TP5
TP13
TP28
L;REC/EE/DUB
RV11 APC GAIN
IC6(5/5)
BURST GATE
APC DET
TP15
Q43 APC TIME CONST SW
V-BLK L;SEARCH
Q41
H;REC/EE
REF 4.43MHz OSC
X1,Q38 REF4.43MH OSC
Q39 PHASE SHIFT
Q40 SC BUFFER
CV1 4.43MHz FREQ
H;PAL
SC OUT
5-4
APC
L;PB/B/W/DUB
H;PB/DUB
H;REC/EE
L;REC/EE/DUB
Q45
PB12V
H;DUB
Q1
REC/EE12V
V-BLK
4-5
V;BLK/DUB
L;DUB
DUB IN CN 7PIN
FALSE VD
Q44
IC8,IC9 FALSE VD FORMER
D21
L;SEARCH
4-8
4-9
RV12 FALSE VD WIDTH
L;VIDEO MUTING IN
4-10
YC-5 CN6-1
4-1
PB CHROMA
TP12
Q18,Q19 CHROMA OUTPUT AMP
DL1
Q16 CHROMA BIAS TRAP
LV3 BIAS TRAP
RV8 CHROMA PB LEVEL
FL2 LPF
RV9 CHROMA RF OUTPUT BALANCE
RV10 Y-RF OUTPUT BALANCE
IC2(1/2)
CH-A RF AMP
CH-B RF AMP
CH-A HEAD AMP
CH-B HEAD AMP
SW PULSE
RV4 CH-A DC BALANCE
LV1 CH-A HEAD RESPONSE(HIGH)
RV5 CH-A HEAD RESPONSE(MIDDLE)
RV7 CH-B HEAD RESPONSE(MIDDLE)
RV6
LV2;CH-B HEAD RESPONSE(HIGH)
RV6;CH-B DC BALANCE
Q12 CH-A PRE AMP
Q14 CH-B PRE AMP
Q11
Q13
T4
T5
CV1 CH-A HEAD RESPONSE (HIGH)
CV2 CH-B HEAD RESPONSE (HIGH)
H;REC/EE
PB Y RF
3-1
Q25,Q26,Q27 PB Y AMP
DL2
Q24 PB Y BUFFER
Y AMP
NORMAL
DROPOUT DET
LIMITER
RF AMP
B/W
COLOR
Q21 Y BUFF
FL3 HPF
TP18
Q20 RF BUFFER
RV11 Y PB LEVEL
L COLOR
DL3 1H DELAY
L;SEARCH (DOC KILLER)
3-6
TP17
Q23
TP19
Q22 DOC HYSTERESIS
D6
RV13 DOC SENSITIVITY
NOISE LESS STILL
3-10
IC3 RF BAND NOISE AMP
RV12 RF BAND NOISE
Q29,Q30 CH-A REC AMP
Q31,Q32 CH-B REC AMP
H;PB
Q9
Q10
T2
T3
RV2 REC CURRENT FREQ RESPONSE
RV3 REC CURRENT FREQ RESPONSE
TP4 TP6
TP7 TP9
CH-A VIDEO R/P HEAD
CH-B VIDEO R/P HEAD
2-1
2-2
2-5
2-6
L;COLOR
Q2 CHROMA BUFFER
H;RF MUTE
Q5 REC RF MUTING
Q6 RF AMP
T1
Q3,Q4 Y/C MIX AMP
TP1 TP3
RV1 REC Y LEVEL
Q7 Y AMP
FL1 HPF
IC1
L;COLOR
REC Y
1-6
REC CHROMA
1-10

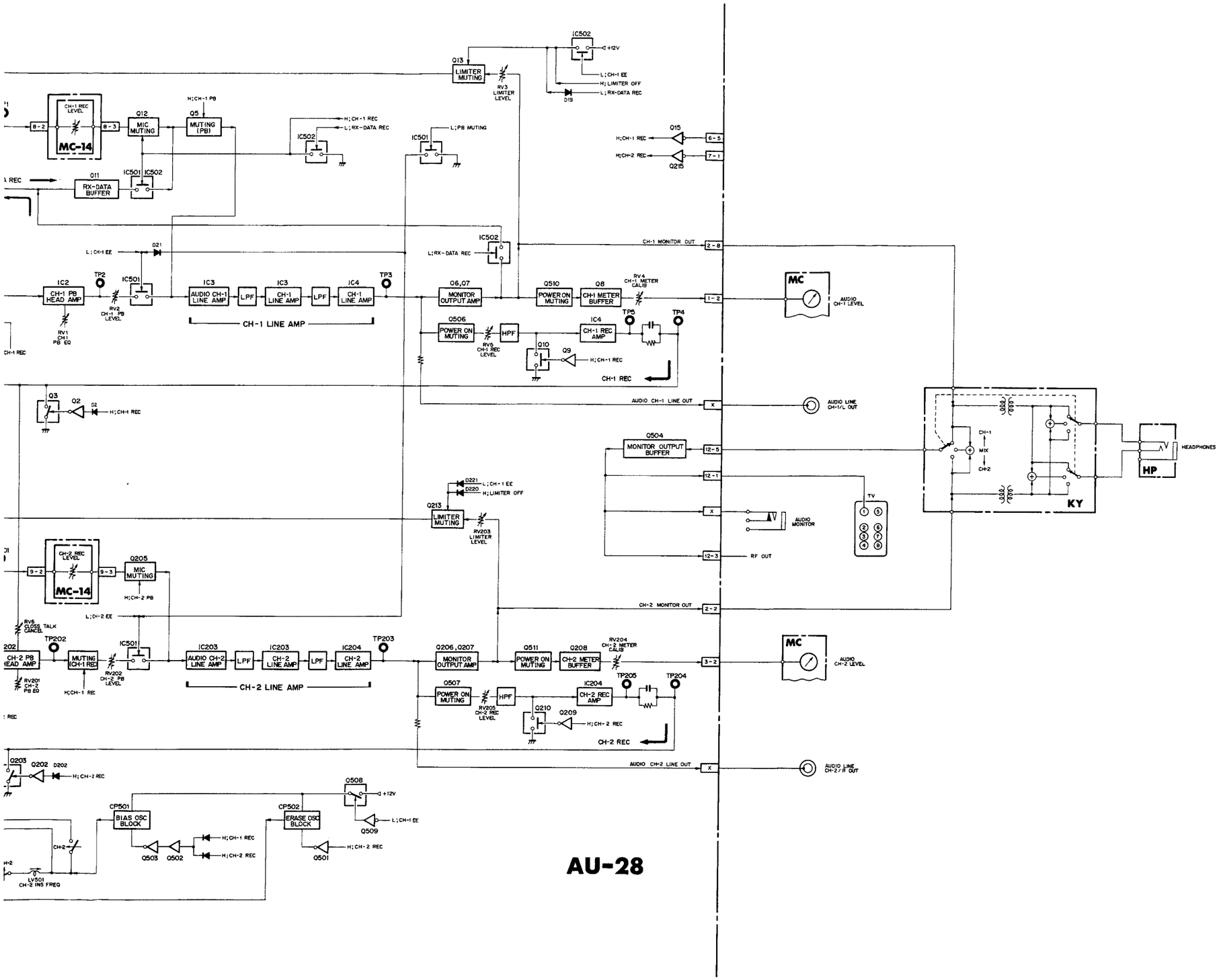
YC-5

RP-8B

AUDIO SYSTEM BLOCK DIAGRAM



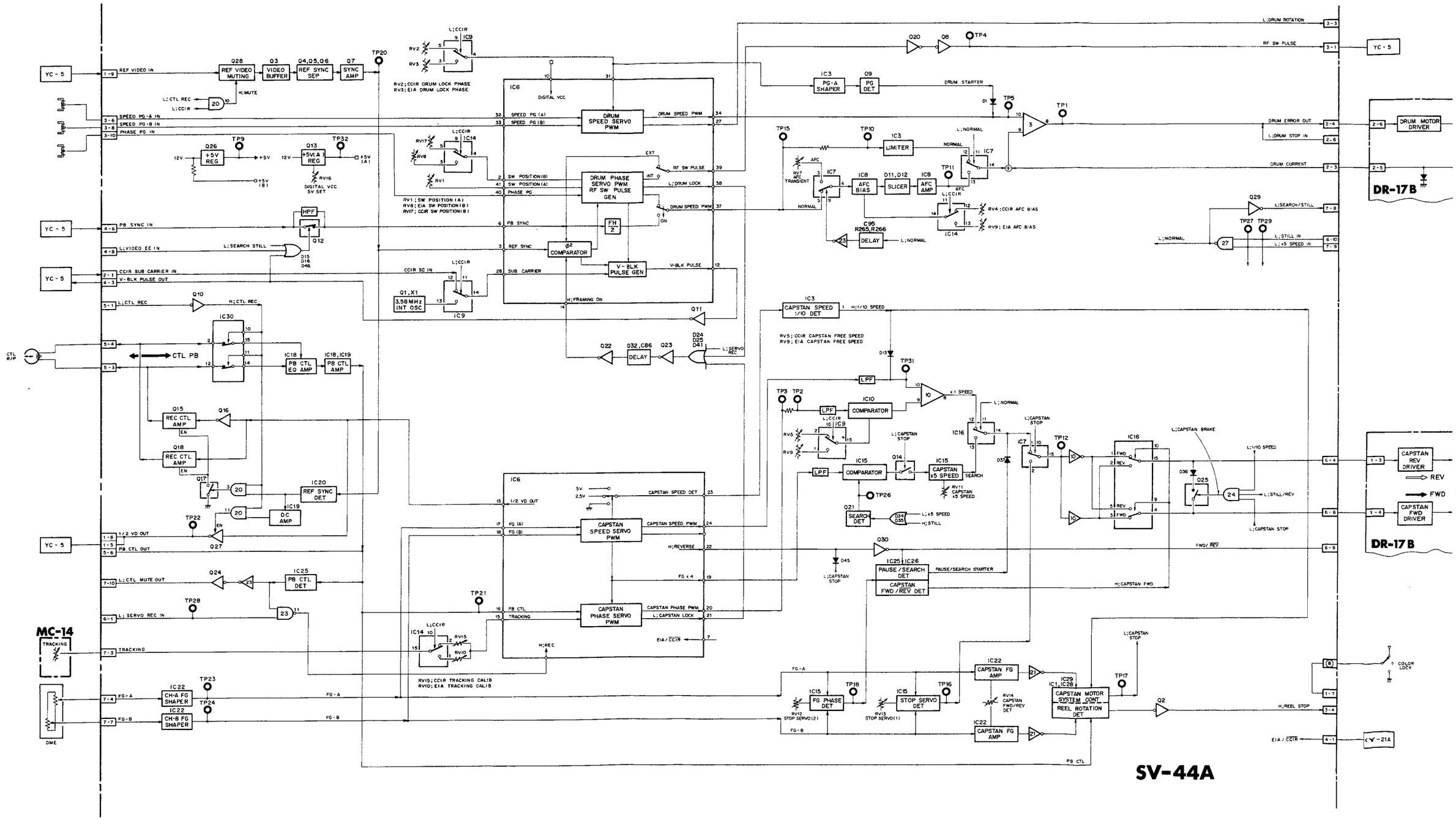
AU-28

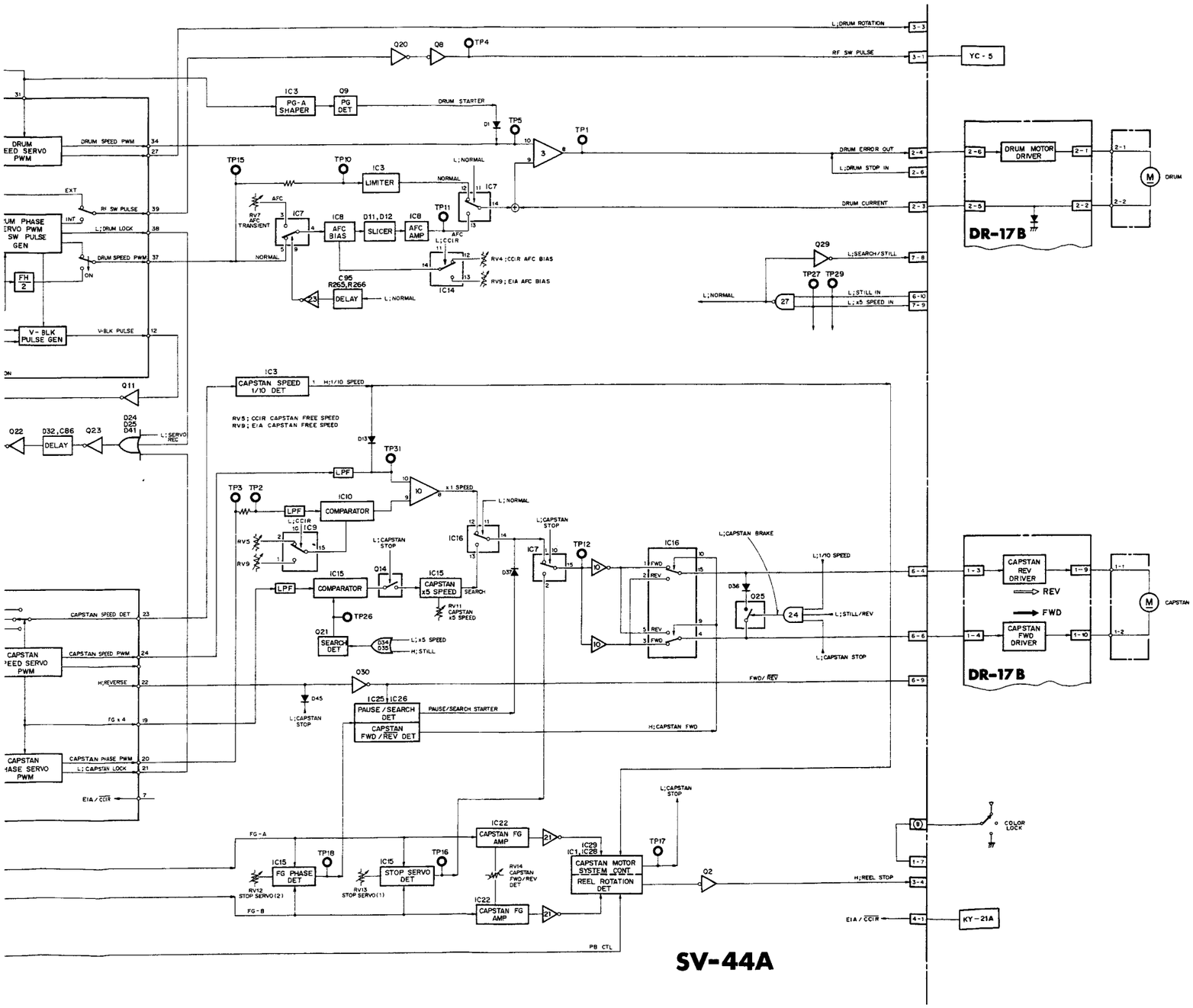

IC502
+12V
L;CH-1 EE
H;LIMITER OFF
L;RX-DATA REC
D19
Q13
LIMITER MUTING
RV3 LIMITER LEVEL
H;CH-1 PB
CH-1 REC LEVEL
MC-14
Q12
MIC MUTING
Q5
MUTING (PB)
H;CH-1 REC
L;RX-DATA REC
IC501
L;PB MUTING
Q15
H;CH-1 REC
H;CH-2 REC
Q215
Q11
RX-DATA BUFFER
IC501 IC502
D21
L;CH-1 EE
L;RX-DATA REC
CH-1 MONITOR OUT
IC2
CH-1 PB HEAD AMP
TP2
RV1 CH-1 PB EQ
RV2 CH-1 PB LEVEL
IC3
AUDIO CH-1 LINE AMP
LPF
CH-1 LINE AMP
IC4
TP3
CH-1 LINE AMP
Q6,07
MONITOR OUTPUT AMP
Q510
POWER ON MUTING
Q8
CH-1 METER BUFFER
RV4 CH-1 METER CALIB
MC
AUDIO CH-1 LEVEL
Q506
POWER ON MUTING
RV5 CH-1 REC LEVEL
HPF
IC4
CH-1 REC AMP
TP5
TP4
Q10
Q9
H;CH-1 REC
CH-1 REC
Q3
Q2
D2
H;CH-1 REC
AUDIO CH-1 LINE OUT
AUDIO LINE CH-1/L OUT
Q504
MONITOR OUTPUT BUFFER
CH-1
MIX
CH-2
KY
HEADPHONES
HP
TV
AUDIO MONITOR
RF OUT
D221
D220
L;CH-1 EE
H;LIMITER OFF
Q213
LIMITER MUTING
RV203 LIMITER LEVEL
CH-2 REC LEVEL
MC-14
Q205
MIC MUTING
H;CH-2 PB
L;CH-2 EE
CH-2 MONITOR OUT
RV6 CROSS TALK CANCEL
TP202
IC501
IC203
AUDIO CH-2 LINE AMP
LPF
CH-2 LINE AMP
IC204
TP203
CH-2 LINE AMP
Q206,0207
MONITOR OUTPUT AMP
Q511
POWER ON MUTING
Q208
CH-2 METER BUFFER
RV204 CH-2 METER CALIB
MC
AUDIO CH-2 LEVEL
MUTING (CH-1 REC)
H;CH-1 REC
RV202 CH-2 PB LEVEL
RV201 CH-2 PB EQ
CH-2 LINE AMP
0507
POWER ON MUTING
RV205 CH-2 REC LEVEL
HPF
IC204
CH-2 REC AMP
TP205
TP204
Q210
Q209
H;CH-2 REC
CH-2 REC
Q203
Q202
D202
H;CH-2 REC
AUDIO CH-2 LINE OUT
AUDIO LINE CH-2/R OUT
0508
+12V
L;CH-1 EE
Q509
CP501
BIAS OSC BLOCK
CP502
ERASE OSC BLOCK
H;CH-1 REC
H;CH-2 REC
Q503
Q502
Q501
CH-2
LV501 CH-2 INS FREQ

AU-28

SERVO SERVO

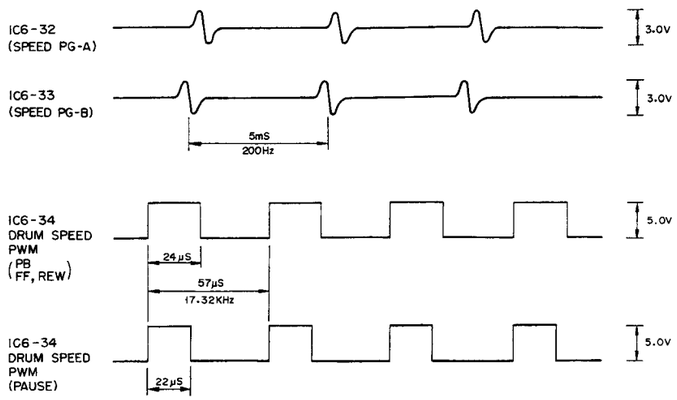
SERVO SYSTEM BLOCK DIAGRAM



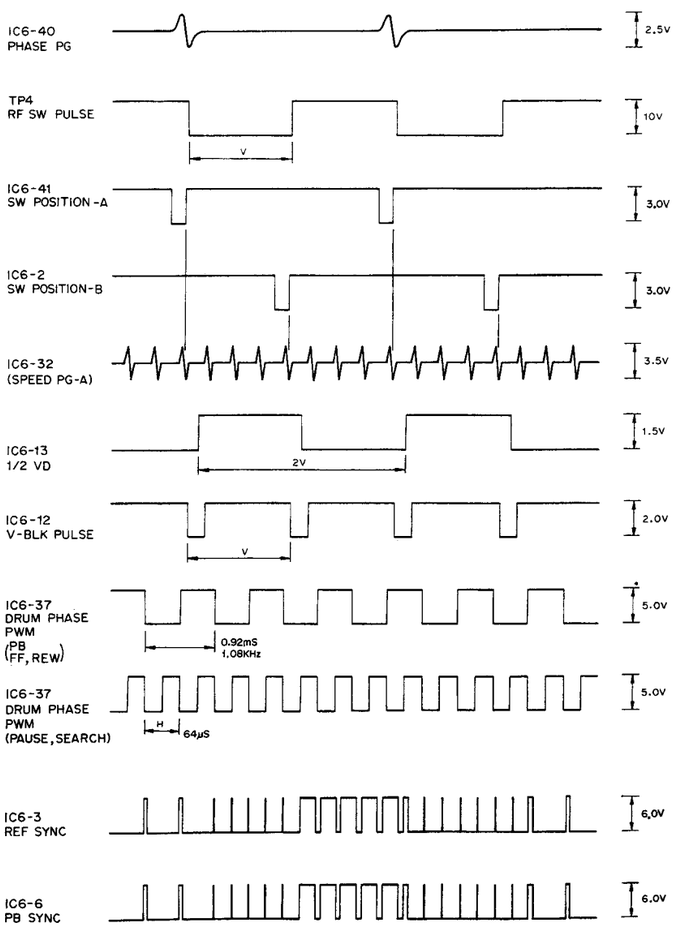

L;DRUM ROTATION
RF SW PULSE
YC-5
Q20
Q8
TP4
IC3
PG-A SHAPER
Q9
PG DET
DRUM STARTER
D1
TP5
TP1
DRUM SPEED PWM
DRUM ERROR OUT
L;DRUM STOP IN
DRUM CURRENT
DRUM MOTOR DRIVER
DR-17B
M
DRUM
TP15
TP10
IC3
LIMITER
L;NORMAL
IC7
AFC
RV7 AFC TRANSIENT
IC8
AFC BIAS
D11,D12
SLICER
AFC AMP
TP11
L;CCIR
RV4;CCIR AFC BIAS
RV9;EIA AFC BIAS
IC14
C95
R265,R266
DELAY
EXT
INT
RF SW PULSE
L;DRUM LOCK
FH/2
ON
V-BLK PULSE GEN
V-BLK PULSE
Q29
L;SEARCH/STILL
TP27
TP29
L;STILL IN
L;x5 SPEED IN
Q11
IC3
CAPSTAN SPEED 1/10 DET
H;1/10 SPEED
RV5;CCIR CAPSTAN FREE SPEED
RV9;EIA CAPSTAN FREE SPEED
Q22
D32,C86
DELAY
Q23
D24
D25
D41
L;SERVO REC
D13
TP31
LPF
TP3
TP2
IC10
COMPARATOR
IC9
RV5
RV9
L;CAPSTAN STOP
IC16
L;CAPSTAN BRAKE
IC7
TP12
IC16
FWD
REV
L;1/10 SPEED
D37
IC15
COMPARATOR
Q14
IC15
CAPSTAN x5 SPEED
SEARCH
RV11 CAPSTAN x5 SPEED
D36
Q25
24
L;STILL/REV
TP26
Q21
SEARCH DET
D34
D35
L;x5 SPEED
H;STILL
CAPSTAN REV DRIVER
REV
FWD
CAPSTAN FWD DRIVER
CAPSTAN
CAPSTAN SPEED DET
CAPSTAN SPEED PWM
H;REVERSE
FG x 4
CAPSTAN PHASE PWM
L;CAPSTAN LOCK
EIA/CCIR
Q30
FWD/REV
D45
L;CAPSTAN STOP
IC25,IC26
PAUSE/SEARCH DET
CAPSTAN FWD/REV DET
PAUSE/SEARCH STARTER
H;CAPSTAN FWD
FG-A
FG-B
IC15
FG PHASE DET
TP18
IC15
STOP SERVO DET
TP16
RV12 STOP SERVO(2)
RV13 STOP SERVO(1)
IC22
CAPSTAN FG AMP
RV14 CAPSTAN FWD/REV DET
IC22
CAPSTAN FG AMP
IC29
IC1,IC28
CAPSTAN MOTOR SYSTEM CONT
REEL ROTATION DET
TP17
Q2
H;REEL STOP
COLOR LOCK
EIA/CCIR
KY-21A
PB CTL
SV-44A

SERVO SYSTEM TIMING CHARTS
CCIR (PAL/SECAM) mode

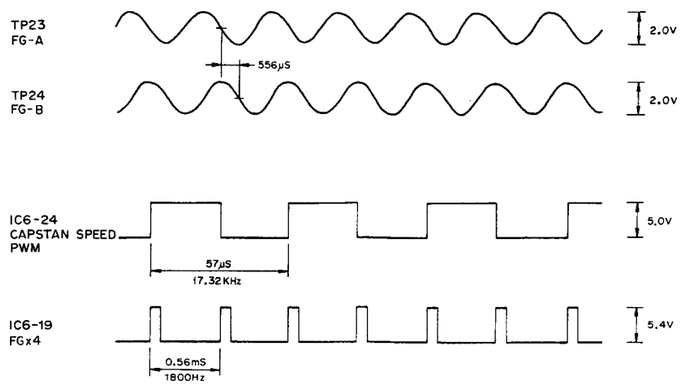
DRUM SPEED PWM SERVO



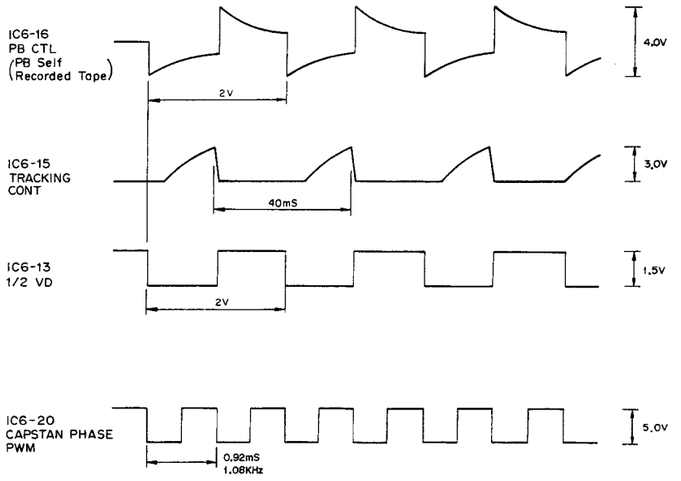
DRUM PHASE PWM SERVO



CAPSTAN SPEED PWM SERVO



CAPSTAN PHASE PWM SERVO

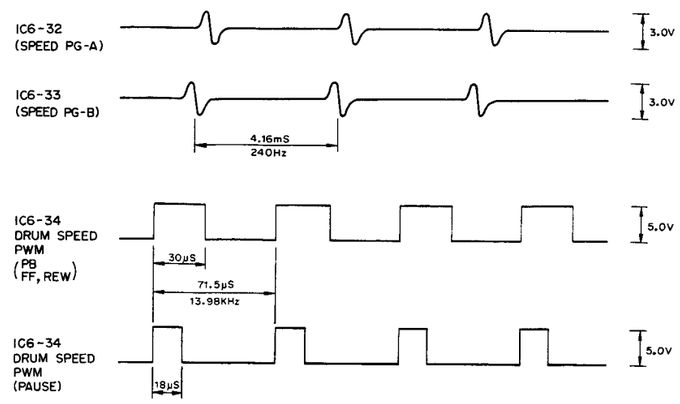


TIMING CHART (EIA)

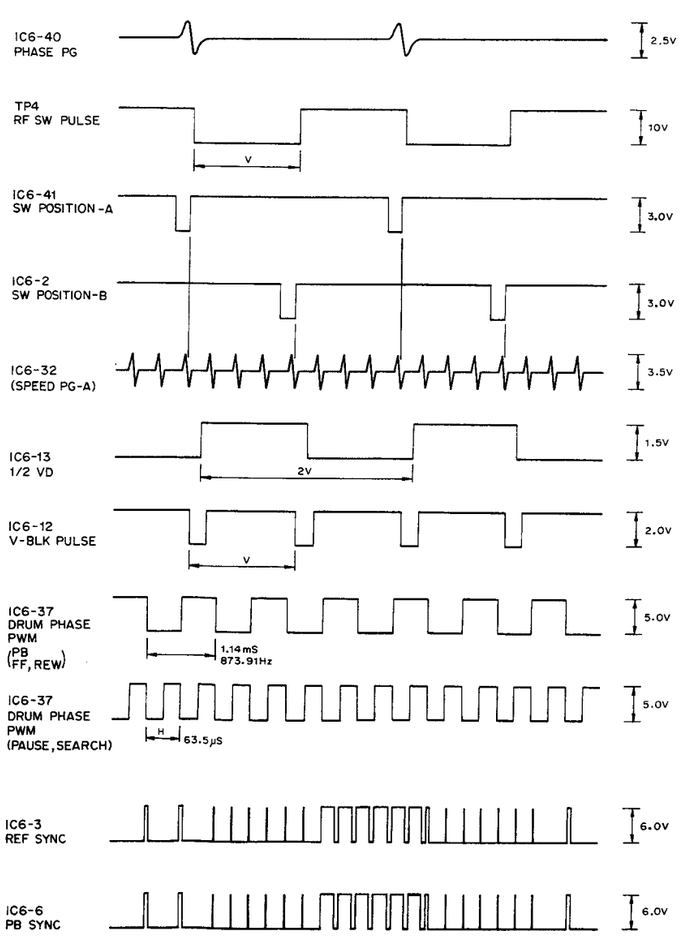
TIMING CHART (EIA)

EIA (NTSC) mode

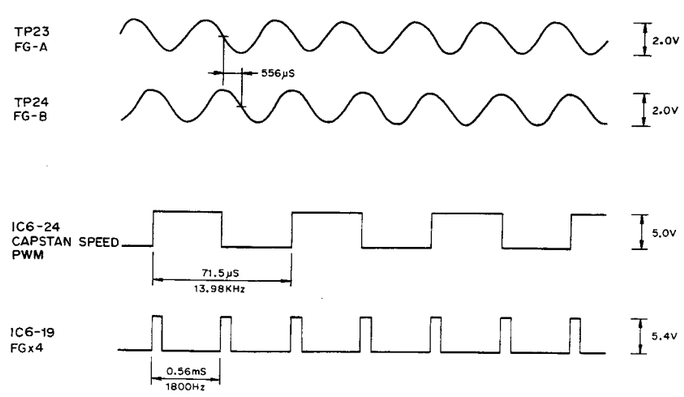
DRUM SPEED PWM SERVO



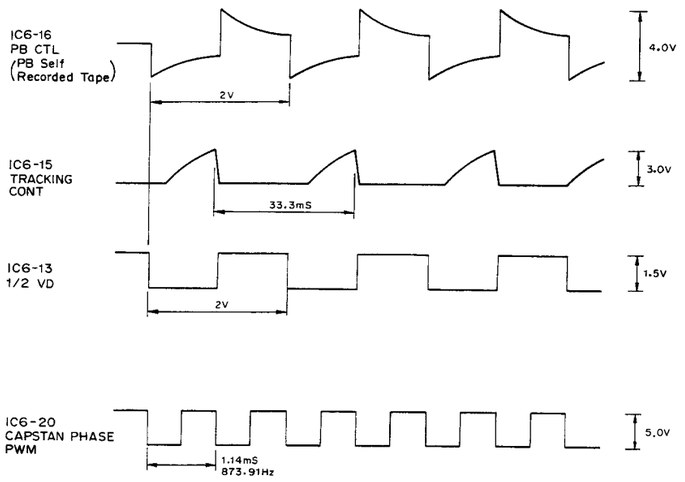
DRUM PHASE PWM SERVO



CAPSTAN SPEED PWM SERVO



CAPSTAN PHASE PWM SERVO

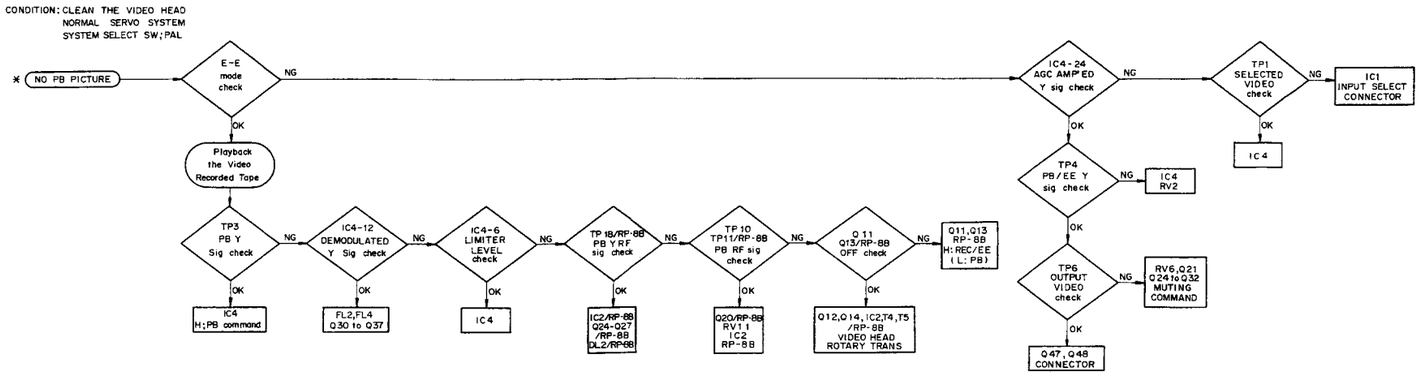


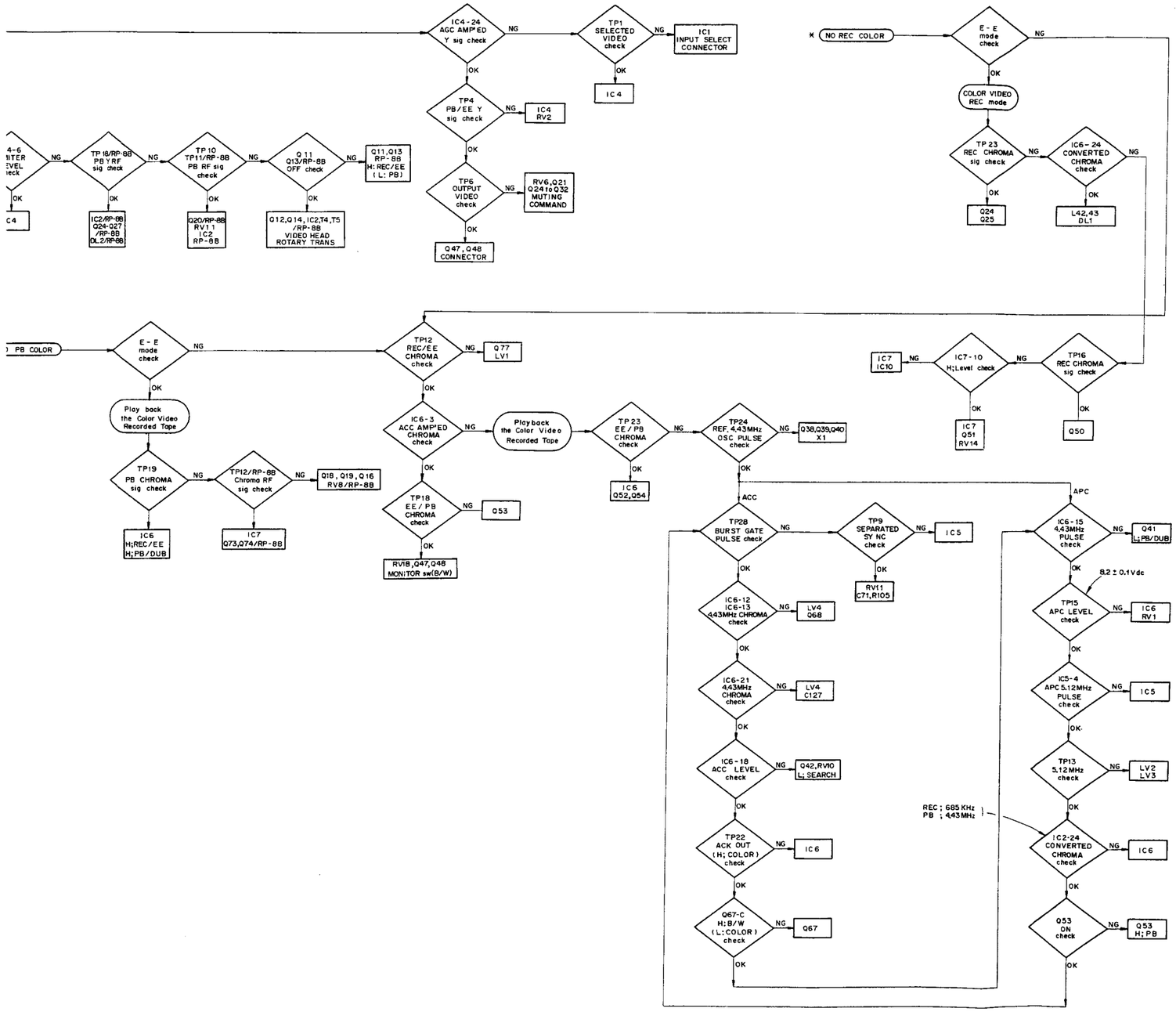
ONY-SP0630 / DRUCK 21

VIDEO FLOW CHART

SECTION 13
FLOW CHART

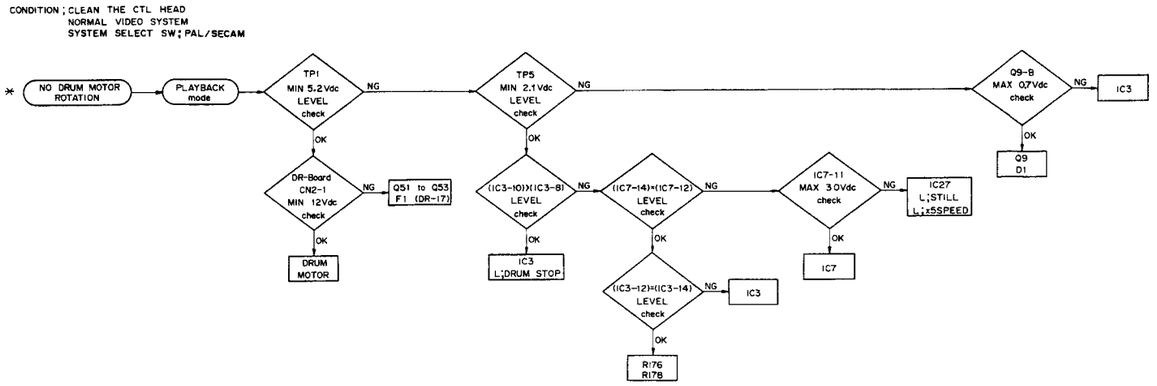
VIDEO SYSTEM FLOW CHART

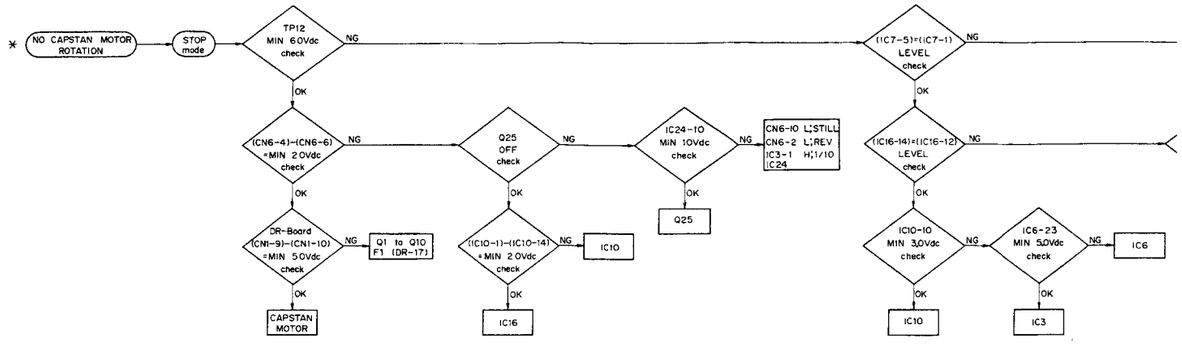


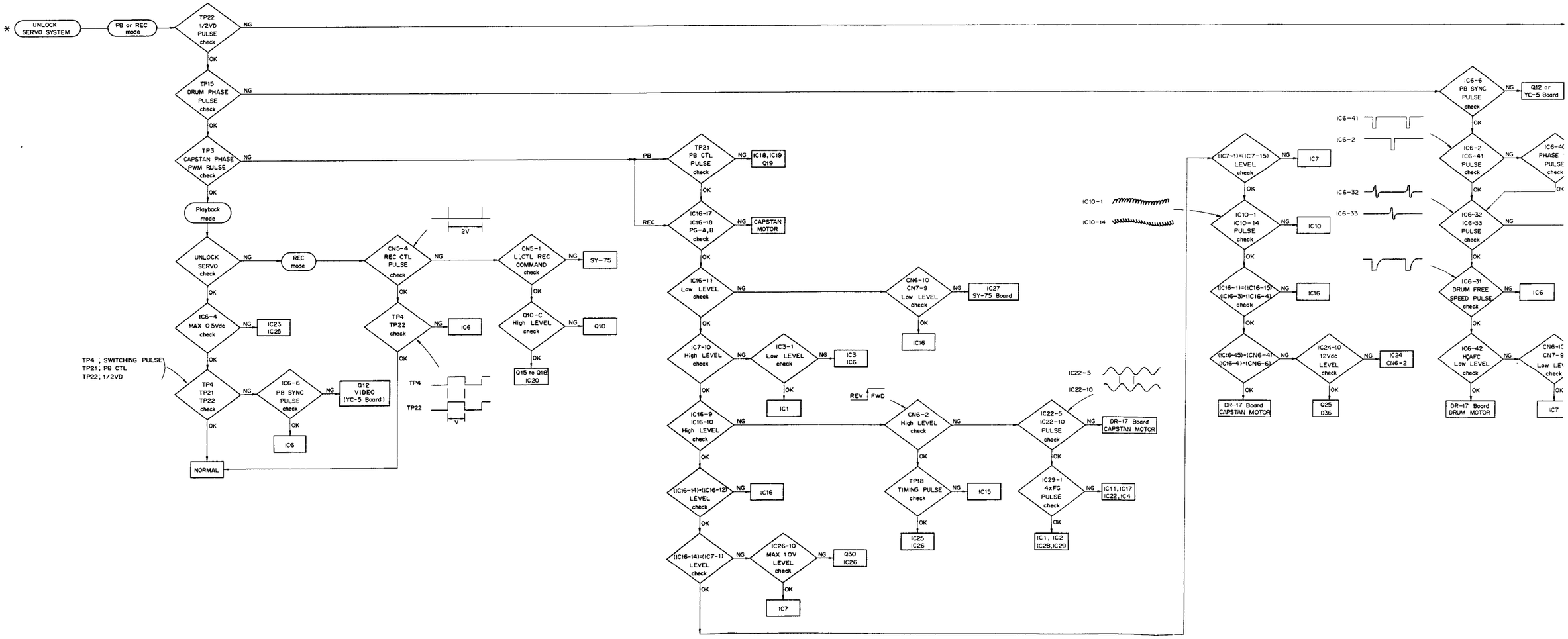


VIDEO FLOW CHART

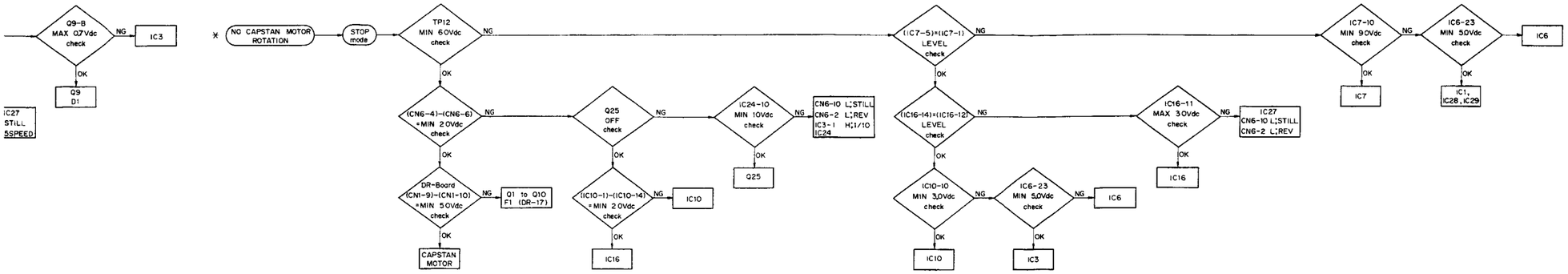
SERVO SYSTEM FLOW CHART

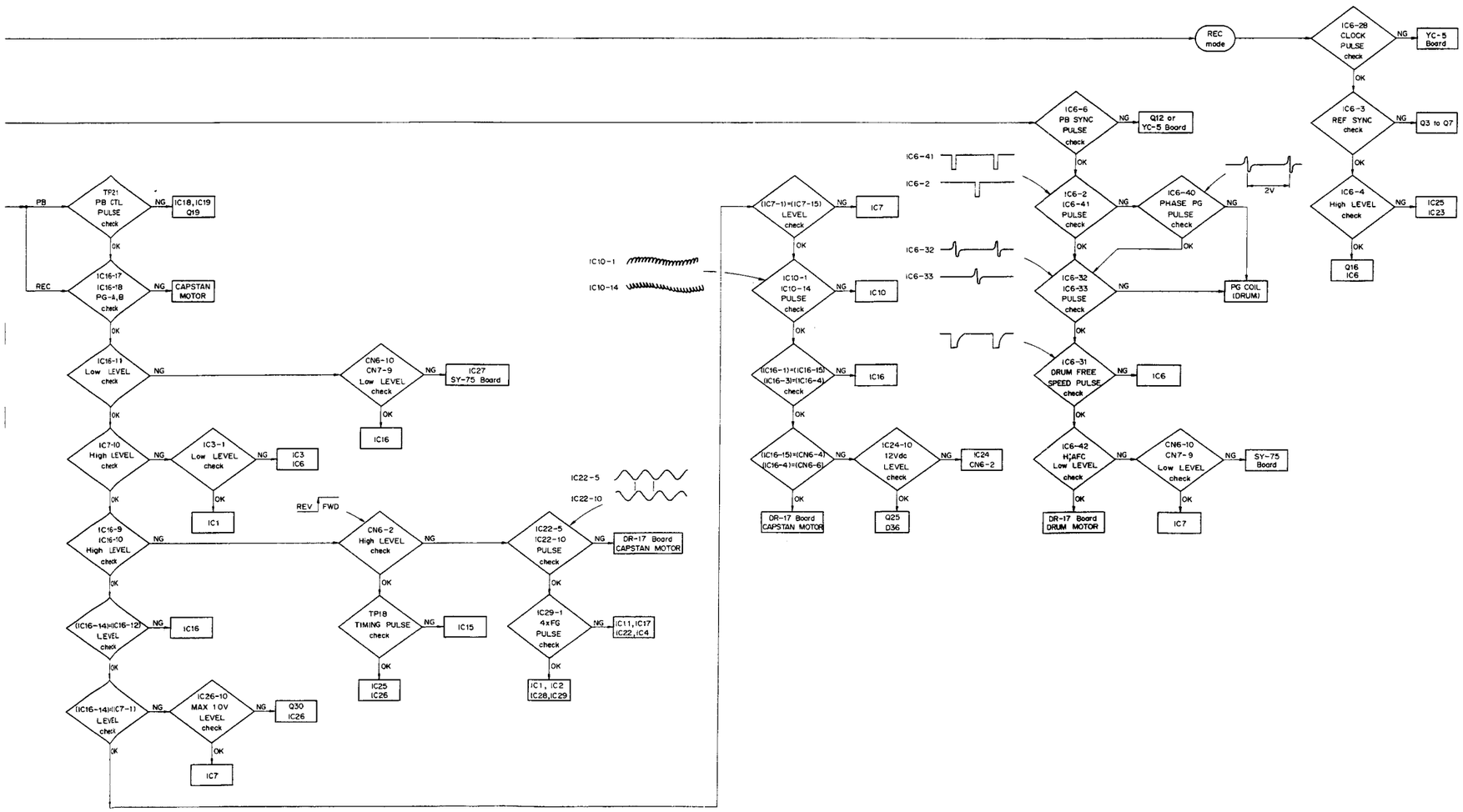






SERVO FLOW CHART SERVO FLOW CHART

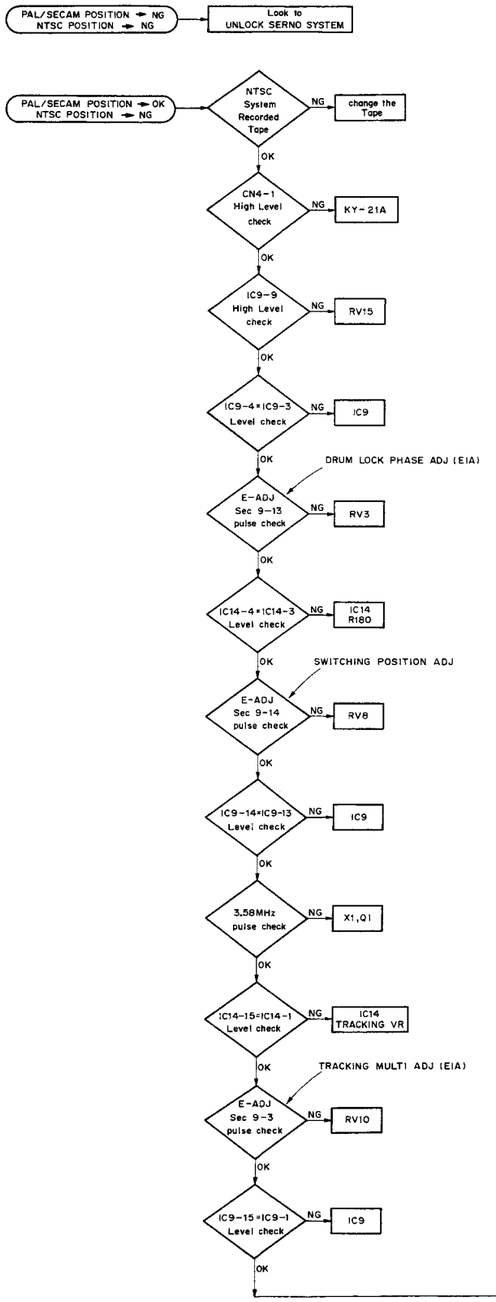


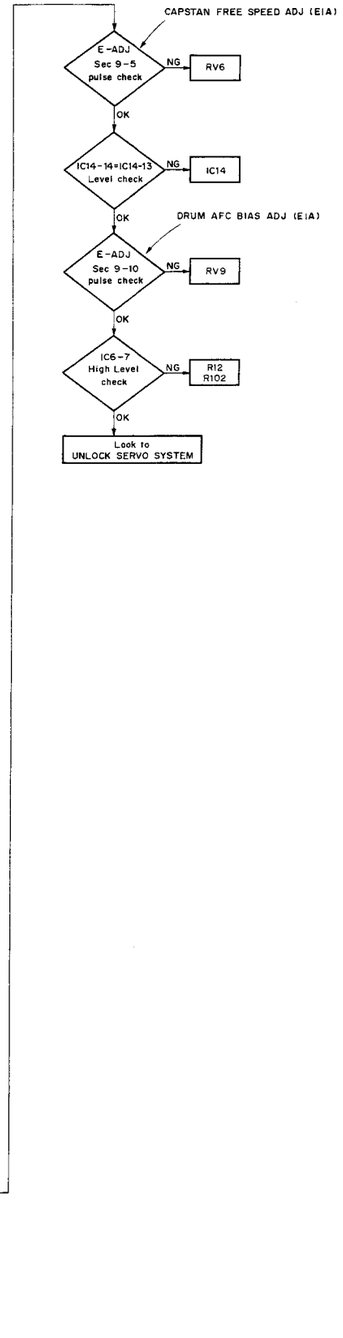


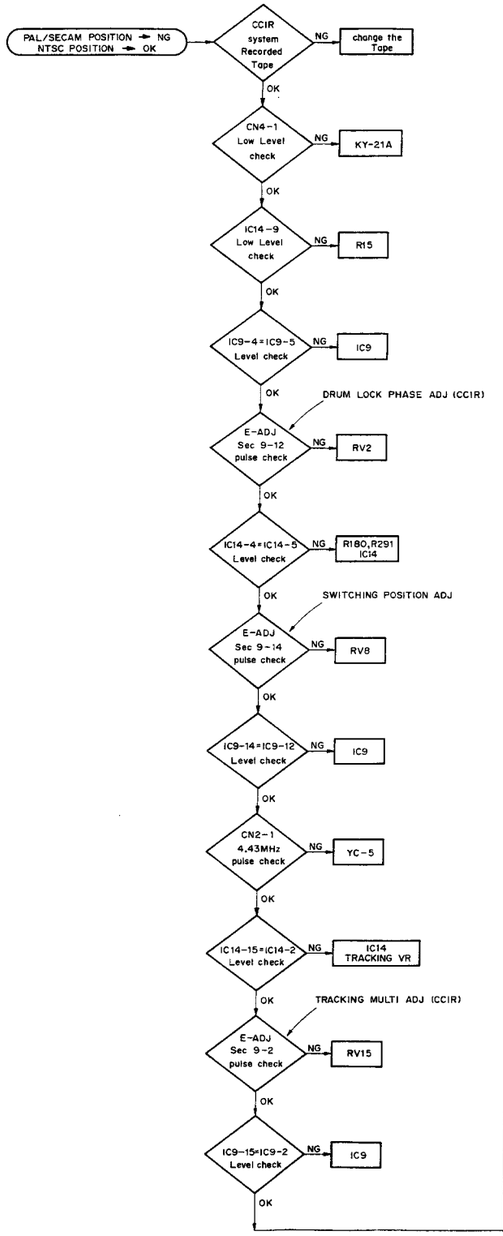
SERVO FLOW CHART

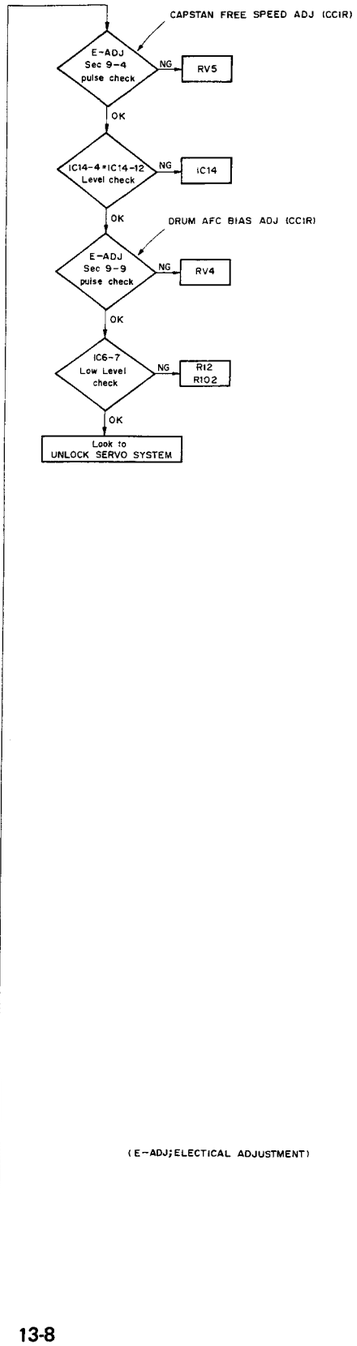
SERVO FLOW CHART

UNLOCK SERVO by SYSTEM SELECT sw







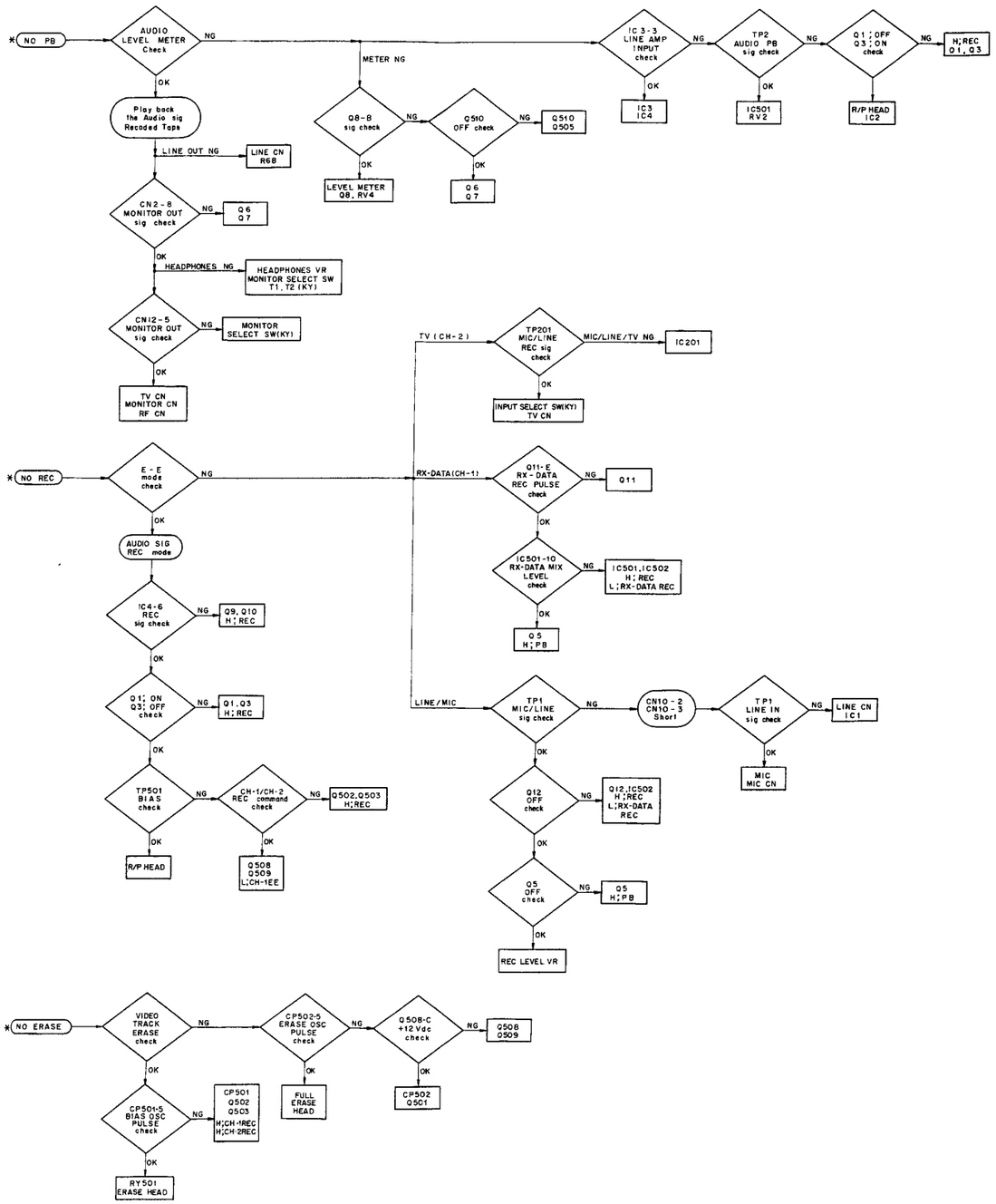


(E-ADJ; ELECTICAL ADJUSTMENT)

AUDIO FLOW CHART

AUDIO SYSTEM FLOW CHART

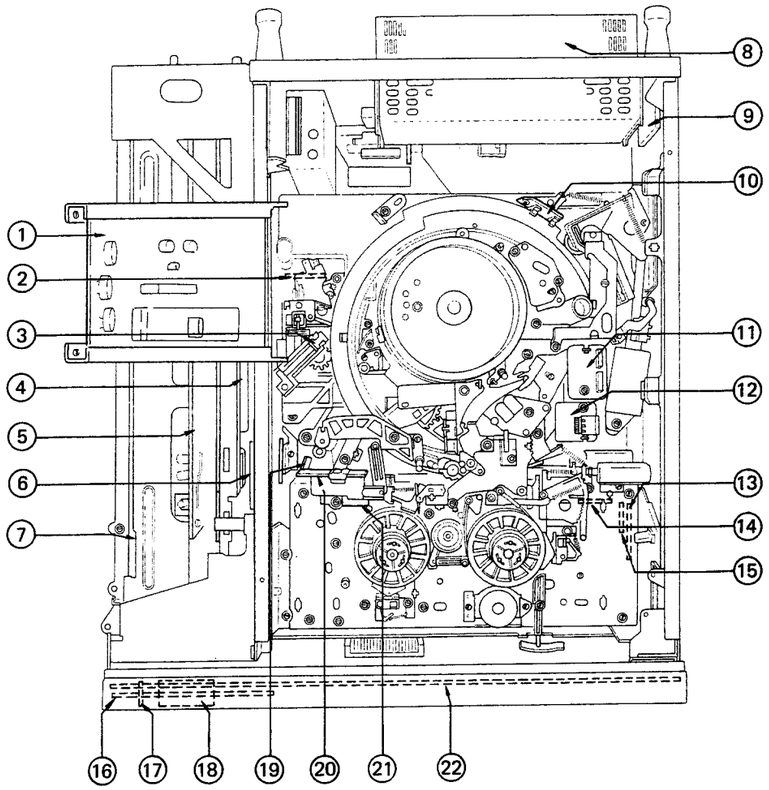
CONDITION : CLEAN THE AUDIO HEAD



SECTION 14
PRINTED WIRING BOARD AND SCHEMATIC DIAGRAMS

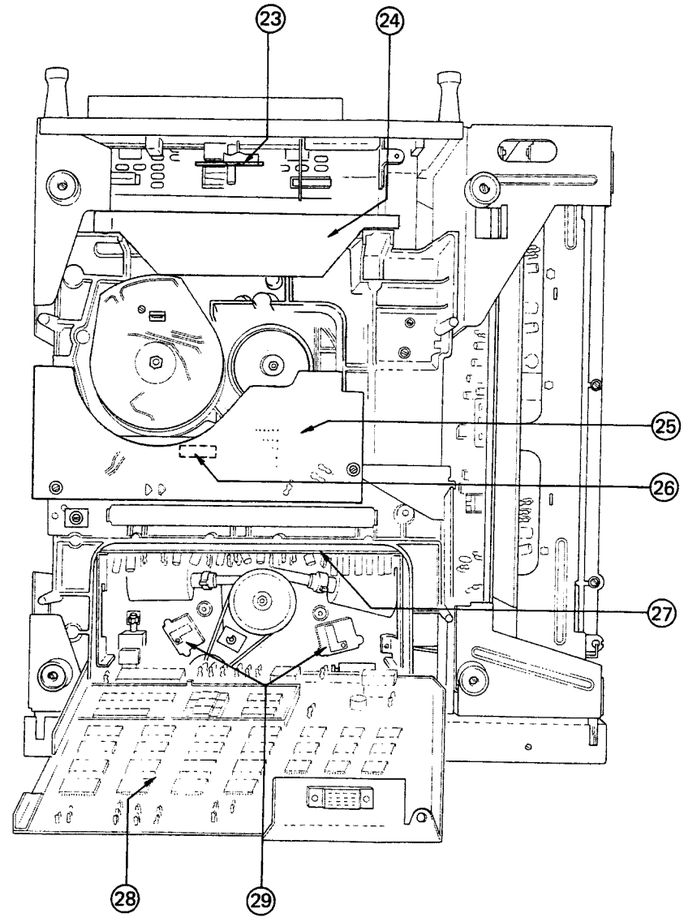
LOCATION OF MAIN PARTS

< TOP VIEW >



(23) AC-35 BOARD
(11) AH-3 BOARD
(7) AU-28 BOARD
(13) CC-9 BOARD (Assembled into cassette-up compartment)
(14) CC-10 BOARD (Assembled into cassette-up compartment)
(15) CC-11 BOARD (Assembled into cassette-up compartment)
(6) CN-42 BOARD
(9) DC-13B BOARD
(24) DR-17B BOARD
(12) EC-19 BOARD
(10) FR-11 BOARD
(17) HP-6 BOARD
(22) KY-21 BOARD
(2) LM-9 BOARD
(16) MC-14 BOARD

< REAR VIEW >

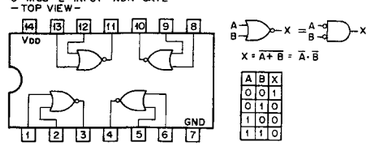


(18) MI-5 BOARD
(25) MR-8/MR-11A BOARD
(27) PD-16A BOARD
(21) PH-4 BOARD
(3) PH-5 BOARD
(26) PT-9 BOARD
(1) RP-8B BOARD
(5) SV-44A BOARD
(29) SW-43 BOARD
(20) SW-46 BOARD
(19) SW-50 BOARD
(28) SY-75 BOARD
(8) UR-02 BOARD (Switching regulator)
(4) YC-5 BOARD

SEMICONDUCTOR ELECTRODES

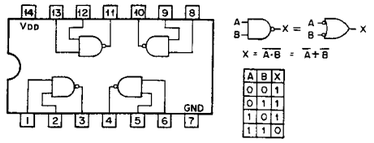
TYPE	INTERCHANGEABILITY				PAGE
CD4001AE/BE CD4011AE/BE CD4012AE/BE CD4013AE/BE CD4016AE/BE CD4023AE/BE CD4024AE/BE CD4025AE/BE CD4030AE/BE	TC4001BP TC4011BP TC4012BP TC4016BP TC4023BP TC4024BP TC4025BP TC4030BP	HD14001BP HD14011BP	MB84001B MB84011B MB84013B MB84016B	uPD4001BC uPD4011BC uPD4030BC	14-4
CD4052BE CD4053BE CD4069UBE CD4071BE CD4073BE CD4075BE CD4081BE CX-130 CX-134A	TC4052BP TC4053BP TC4069UBP TC4071BP TC4073BP TC4075BP TC4081BP	HD14053BP HD14069UBP	MB84069B	uPD4069UBC uPD4071BC uPD4081BC	14-5
CX-187 CX-188 CX-757 CX-859 LM324 LM358JG				uPC324C uPC358C	14-6
M54519P M54529P MC14520BCP MC14538BCP MC14584BCP NJM2903D	TC4520BP	HD14538BP		uPD4584BC	14-7
RC4558 M54543L TA7060AP TC4013BP uPC1158H2 uPC311C	NJM4558D			uPC4558C	14-8

CD4001AE/BE (RCA)
TC4001BP (TOSHIBA)
HD14001BP (HITACHI)
M884001B (FUJITSU)
μPD4001BC (NEC)
C-MOS 2-INPUT NOR GATE
-TOP VIEW-



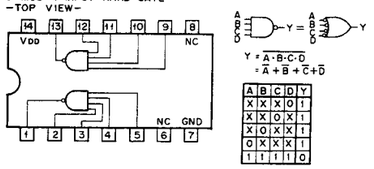
A	B	X
0	0	1
0	1	0
1	0	0
1	1	0

CD4011AE/BE (RCA)
TC4011BP (TOSHIBA)
HD14011BP (HITACHI)
M884011B (FUJITSU)
μPD4011BC (NEC)
C-MOS 2-INPUT NAND GATE
-TOP VIEW-



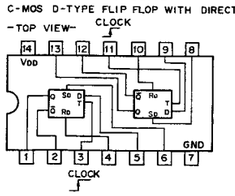
A	B	X
0	0	1
0	1	1
1	0	1
1	1	0

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)
M884013B (FUJITSU)
C-MOS D-TYPE FLIP FLOP WITH DIRECT SET/RESET
-TOP VIEW-



DIRECT R-S FLIP FLOP

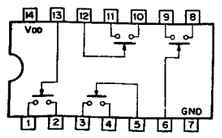
Sp	Rp	Q
0	0	On
0	1	0
1	0	1
1	1	0

D-TYPE FLIP FLOP

tn	tn+1
D	Q
0	0
1	1

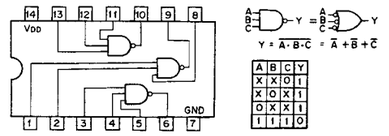
CLOCK ↑: tn; BEFORE CLOCK, tn+1; AFTER CLOCK

CD4016AE/BE (RCA)
TC4016BP (TOSHIBA)
M884016B (FUJITSU)
C-MOS BILATERAL SWITCH
-TOP VIEW-



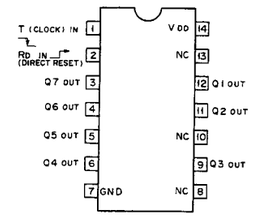
CONT IN	SW
0	OFF
1	ON

CD4023AE/BE (RCA)
TC4023BP (TOSHIBA)
C-MOS 3-INPUT NAND GATE
-TOP VIEW-



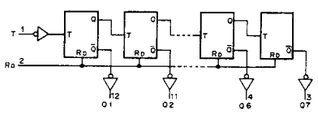
A	B	C	Y
X	X	0	1
X	0	X	1
0	X	X	1
1	1	1	0

CD4024AE/BE (RCA)
TC4024BP (TOSHIBA)
C-MOS ASYNCHRONOUS 7-BIT BINARY COUNTER
-TOP VIEW-

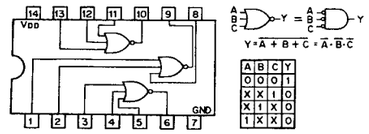


COUNT	INPUTS T	INPUTS RD	OUTPUTS Q7	Q6	Q5	Q4	Q3	Q2	Q1
0	X	1	0	0	0	0	0	0	0
1	↓	0	0	0	0	0	0	0	1
2	↓	0	0	0	0	0	0	1	0
3	↓	0	0	0	0	0	0	1	1
4	↓	0	0	0	0	0	1	0	0
125	↓	0	1	1	1	1	1	0	1
126	↓	0	1	1	1	1	1	1	0
127	↓	0	1	1	1	1	1	1	1
—	0	0	NO CHANGE						
—	1	0							

0 ; LOW
1 ; HIGH
X ; DONT'CARE

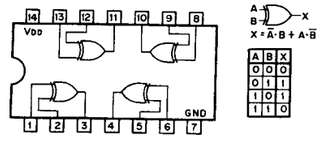


CD4025AE/BE (RCA)
TC4025BP (TOSHIBA)
C-MOS 3-INPUT NOR GATE
-TOP VIEW-



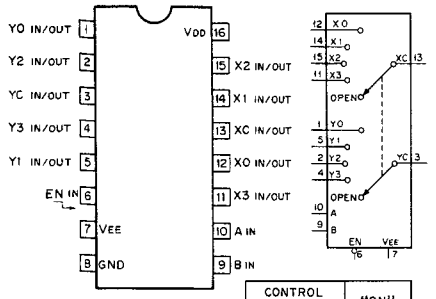
A	B	C	Y
0	0	0	1
X	X	1	0
X	1	X	0
1	X	X	0

CD4030AE/BE (RCA)
TC4030BP (TOSHIBA)
μPD4030BC (NEC)
C-MOS EXCLUSIVE OR GATE
-TOP VIEW-



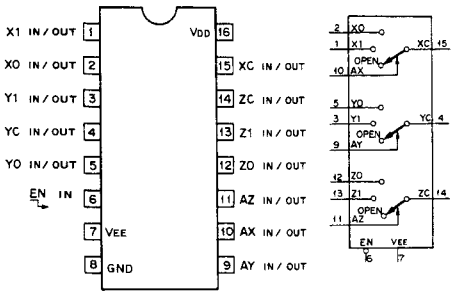
A	B	X
0	0	0
0	1	1
1	0	1
1	1	0

CD4052BE (RCA)
TC4052BP (TOSHIBA)
C-MOS 4-CHANNEL MULTIPLEXER / DEMULTIPLEXER
— TOP VIEW —



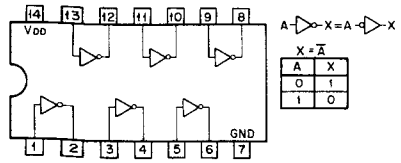
CONTROL INPUTS			"ON" CHANNEL
EN	B	A	
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	X	X	OPEN

CD4053BE (RCA)
TC4053BP (TOSHIBA)
HD140538P (HITACHI)
C-MOS 2-CHANNEL MULTIPLEXER / DEMULTIPLEXER
— TOP VIEW —



CONT. INPUTS		ON CHANNEL
EN	A (X,Y,Z)	
0	0	0
0	1	1
1	X	OPEN

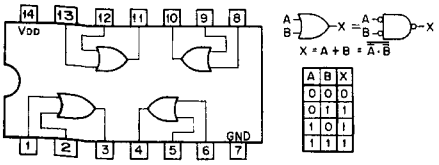
CD4069UBE (RCA)
TC4069UBP (TOSHIBA)
HD14069BP (HITACHI)
MB84069B (FUJITSU)
μPD4069UBC (NEC)
C-MOS INVERTER
— TOP VIEW —



$X = \overline{A}$

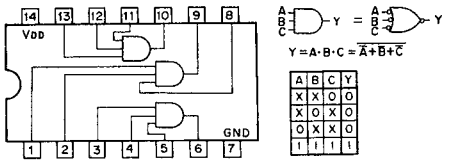
A	X
0	1
1	0

CD4071BE (RCA)
TC4071BP (TOSHIBA)
μPD4071BC (NEC)
C-MOS 2-INPUT OR GATE
— TOP VIEW —



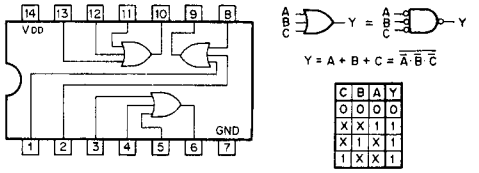
A	B	X
0	0	0
0	1	1
1	0	1
1	1	1

CD4073BE (RCA)
TC4073BP (TOSHIBA)
C-MOS 3-INPUT POSITIVE AND GATE
— TOP VIEW —



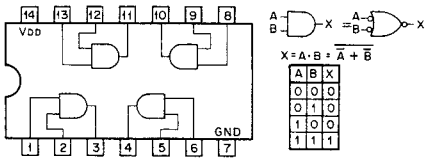
A	B	C	Y
X	X	0	0
X	0	X	0
0	X	X	0
1	1	1	1

CD4075BE (RCA)
TC4075BP (TOSHIBA)
C-MOS 3-INPUT OR GATE
— TOP VIEW —



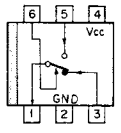
C	B	A	Y
0	0	0	0
X	X	1	1
X	1	X	1
1	X	X	1

CD4081BE (RCA)
TC4081BP (TOSHIBA)
μPD4081BC (NEC)
C-MOS 2-INPUT AND GATE
— TOP VIEW —



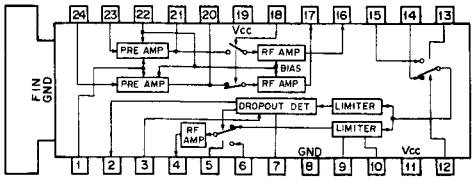
A	B	X
0	0	0
0	1	0
1	0	0
1	1	1

CX130 (SONY)
ANALOG SWITCH
— TOP VIEW —



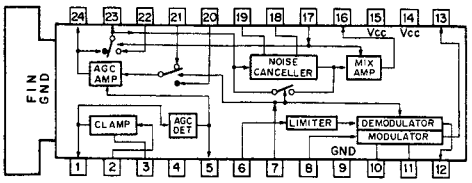
CONT. INPUT (PIN6)	SW
LOW OR OPEN	
HIGH	

CX134A (SONY)
— TOP VIEW —

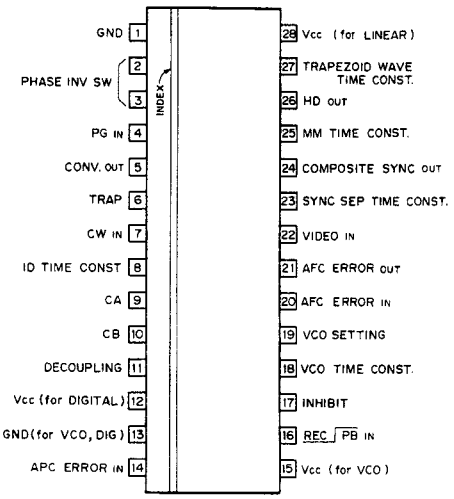


SEMICONDUCTOR ELECTRODES

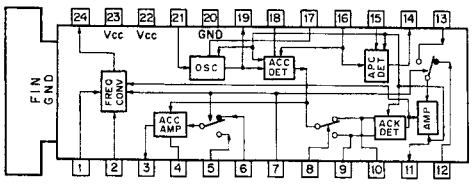
CX187 (SONY)
—TOP VIEW—

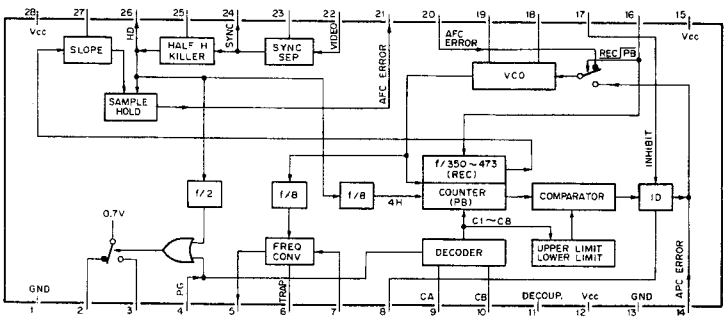


CX859 (SONY)
—TOP VIEW—



CX188 (SONY)
—TOP VIEW—





DECODER TRUTH TABLE

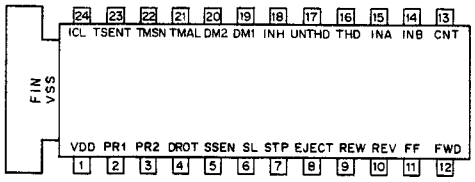
CA \ CB	LOW	OPEN	HIGH
LOW	C1	C7	—
OPEN	C4	C5	C6
HIGH	—	*C2 C3	C8

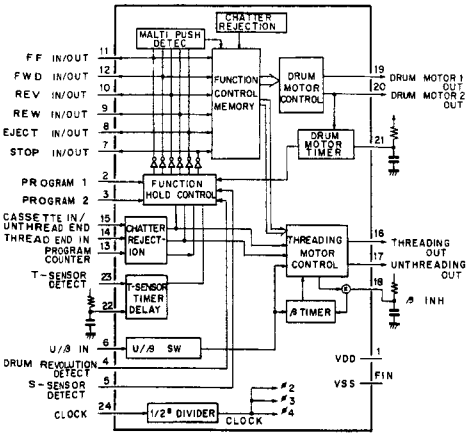
* PG : L --- C2
PG : H --- C3

AFC/APC PRESET DATA

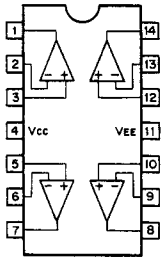
	AFC COUNT DOWN	APC ID COUNT	
		UPPER LIM.	LOWER LIM.
C1	f/473	105	95
C2	f/351	129	119
C3	f/353	137	127
C4	f/351	118	104
C5	f/351	131	117
C6	f/351	144	130
C7	f/350	136	104
C8	——	125	115

CX757 (SONY)
P-MOS VTR SYSTEM CONTROL
—TOP VIEW—

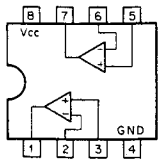




LM324 (NSC)
μPC324C (NEC)
QUAD. OP AMPLIFIER
—TOP VIEW—

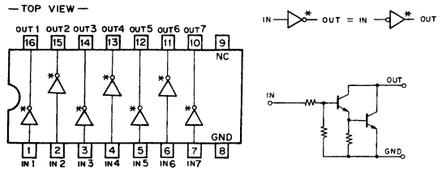


LM358JG (TI)
μPC358C (NEC)
DUAL OPERATIONAL AMPLIFIERS
—TOP VIEW—

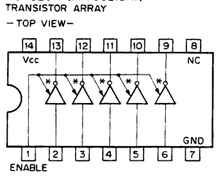


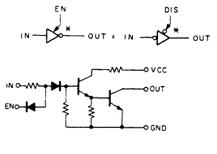
SEMICONDUCTOR ELECTRODES

M54519P (MITSUBISHI)
7 STAGE DRIVER
— TOP VIEW —



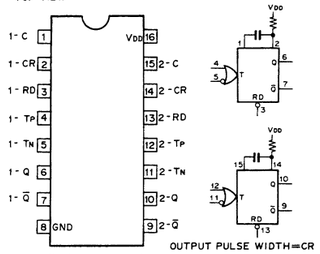
M54529P (MITSUBISHI)
TRANSISTOR ARRAY
— TOP VIEW —



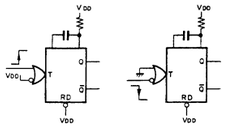


IN	EN	OUT
0	1	1
1	1	0
X	0	OPEN

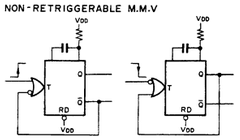
MC14538BCP (MOTOROLA)
HD14538BP (HITACHI)
C-MOS DUAL RETRIGGERABLE/NON-RETRIGGERABLE MONOSTABLE MULTIVIBRATOR
-TOP VIEW-



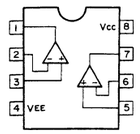
RETRIGGERABLE M.M.V



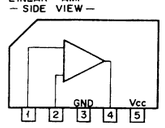
NON-RETRIGGERABLE M.M.V



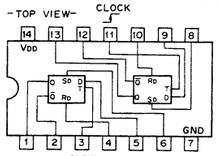
RC4558 (RAYTHEON)
NJM4558D (JRC)
μPC4558C (NEC)
OPERATIONAL AMPLIFIER
-TOP VIEW-



TA7060AP (TOSHIBA)
LINEAR AMP
— SIDE VIEW —



TC4013BP (TOSHIBA)
C-MOS D-TYPE FLIP FLOP WITH DIRECT SET / RESET
-TOP VIEW-



DIRECT R-S FLIP FLOP

So	Ro	Q	Q̄
0	0	Qn	Q̄n
0	1	0	1
1	0	1	0
1	1	0	1

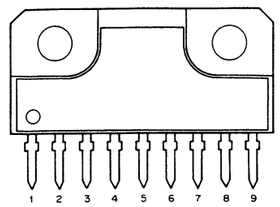
D-TYPE FLIP FLOP

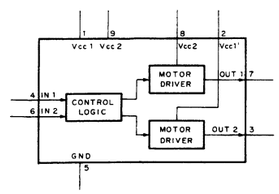
tn	tn+1
D	Q
0	0
1	1

CLOCK T: ⌐ tn; BEFORE CLOCK
tn+1; AFTER CLOCK

0: LOW LEVEL
1: HIGH LEVEL

M54543L (MITSUBISHI)
BI-DIRECTIONAL MOTOR DRIVER
— SIDE VIEW —

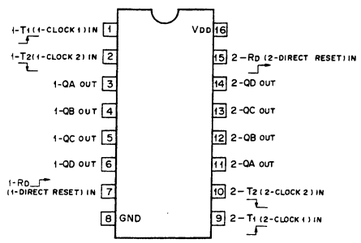




IN		OUT		MODE
1	2	1	2	
0	0	Z	Z	NO OPERATION
1	0	1	0	ROTATION
0	1	0	1	REVERSE ROTATION
1	1	0	0	BRAKE

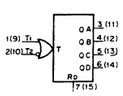
0: LOW LEVEL
1: HIGH LEVEL
Z: HIGH IMPEDANCE

MC14520BCP (MOTOROLA)
TC4520BP (TOSHIBA)
C-MOS DUAL 4-BIT BINARY UP COUNTER
— TOP VIEW —



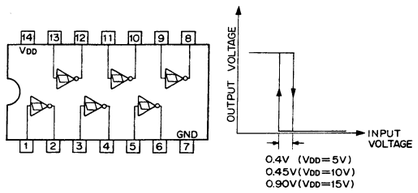
STATE	OUTPUTS			
	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

0: LOW
1: HIGH

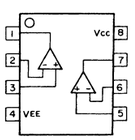


T1	T2	Ro	ACTION
↓	1	0	INCREMENT COUNTER
0	↓	0	INCREMENT COUNTER
↓	X	0	NO CHANGE
X	↑	0	NO CHANGE
↓	0	0	NO CHANGE
1	↑	0	NO CHANGE
X	X	1	QA THRU QD = 0

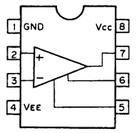
MC14584BCP (MOTOROLA)
μPD4584BC (NEC)
C-MOS SCHMITT TRIGGER INVERTER
— TOP VIEW —



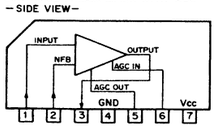
NJM2903D (JRC)
OPERATIONAL AMPLIFIER
-TOP VIEW-



μPC311C (NEC)
VOLTAGE COMPARATOR
-TOP VIEW-

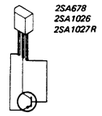


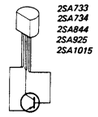
μPC1158H2 (NEC)
LOW NOISE PREAMPLIFIER WITH AGC
— SIDE VIEW —

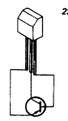


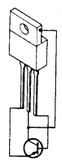
SEMICONDUCTOR ELECTRODES

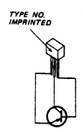
(2SA•••, 2SB•••)



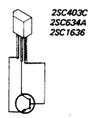


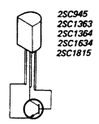


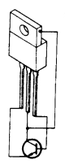


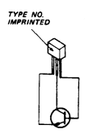


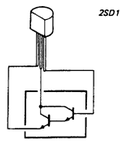
(2SC•••, 2SD•••)

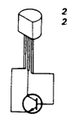


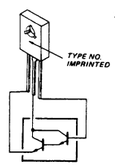


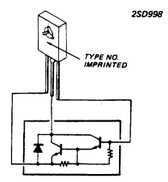




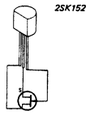


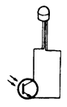


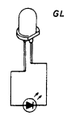


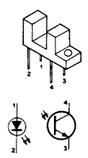


(OTHER)







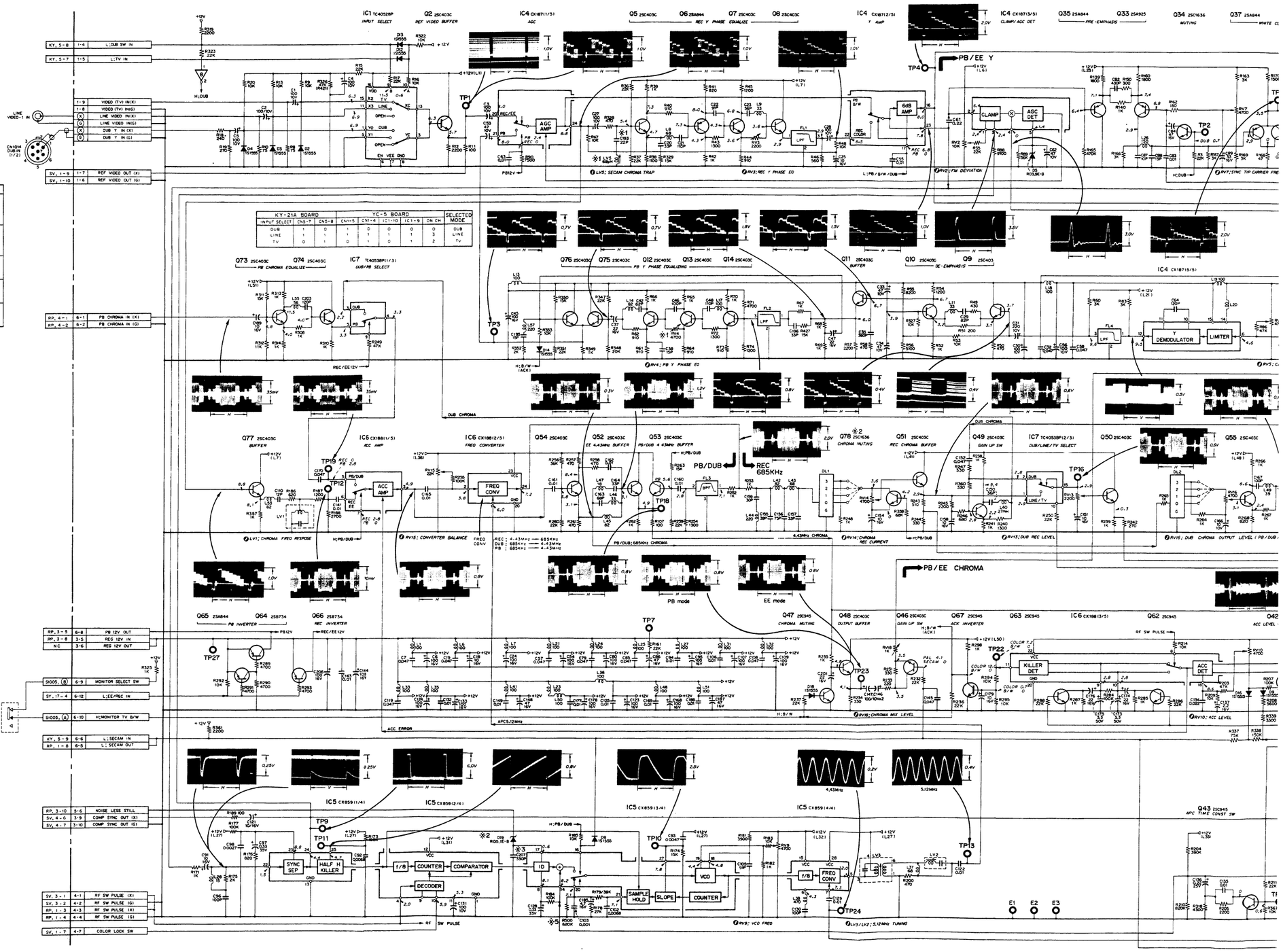


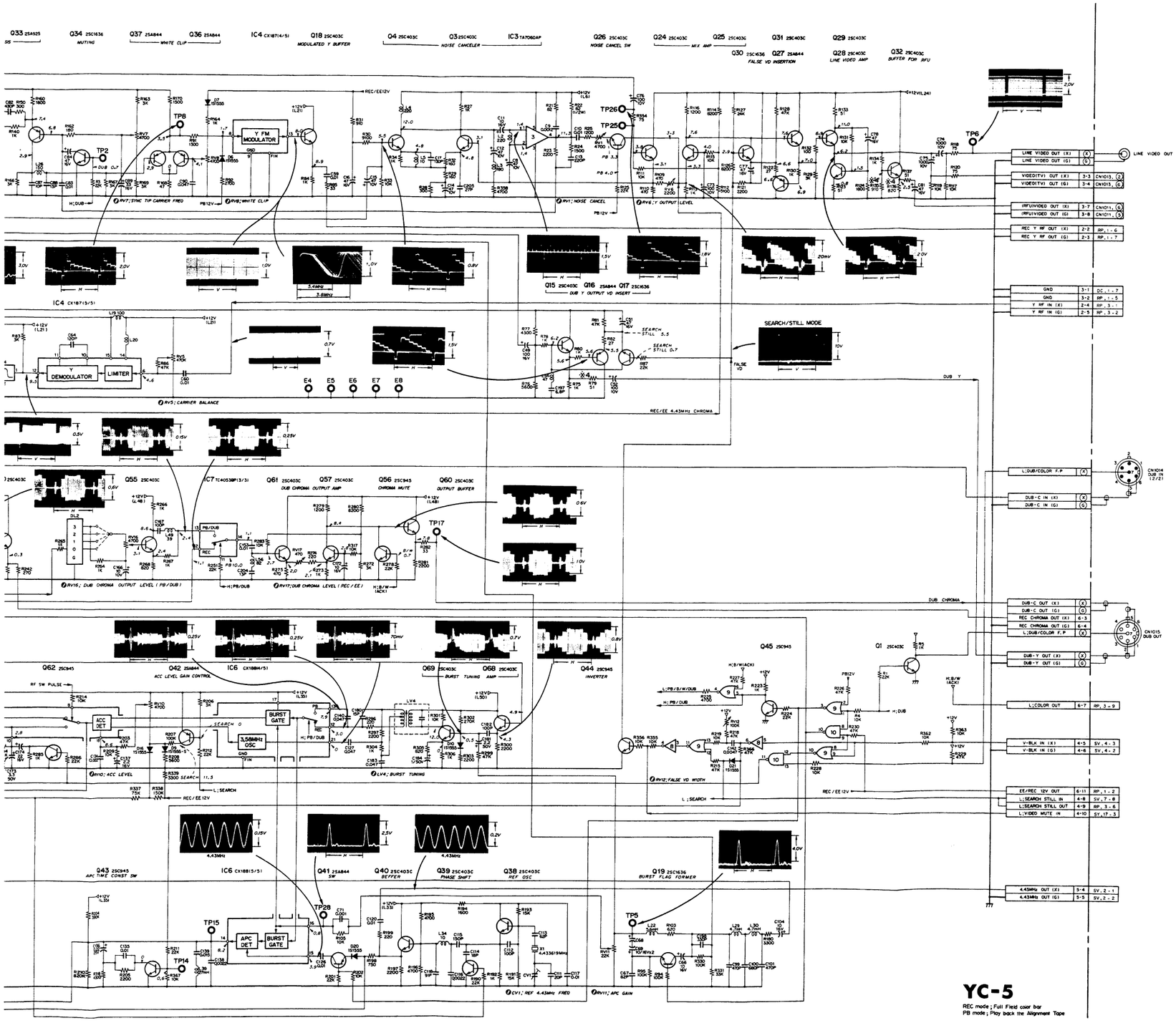
SONY-SP0630 / DRUCK 32

YC-5
(VIDEO MOD/DEMODULATOR)

NOTE:

MARK	CHANGE INFORMATION		SERIAL NO.
※1	C193 18P → 22P		AEP: 12341 ~
	L52 82μH DELETED		UK: 10311 ~
	LV5 68μH ADDED		U/C: 10201 ~
	RV4 2200 → 4700		
※2	D19 RD3.0E-B → RD5.1E-B		AEP: 12841 ~
			UK: 10311 ~
	Q78 2SC4030 → 2SC1636		U/C: 10201 ~
※3	C207 51P → 330P		AEP: 13441 ~
			UK: 10511 ~
			U/C: 10201 ~
※4	R79 33 → 51		AEP: 14541 ~
	R135 1K → 910		UK: 10911 ~
	R136 2200 → 820		U/C: 10201 ~
※5	R500 620K ADDED		AEP: 28441 ~
			UK: 13811 ~
			U/C: 10501 ~





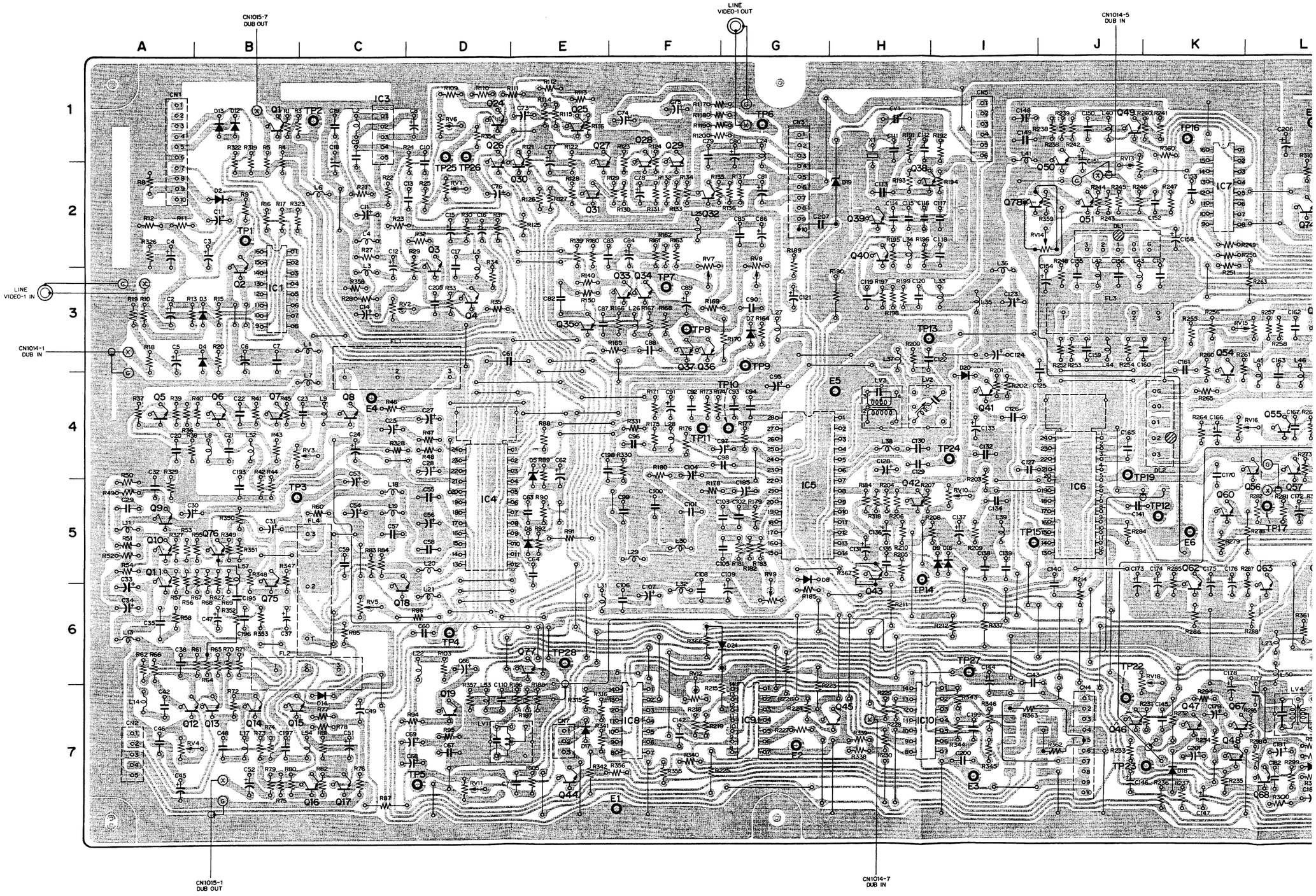
YC-5

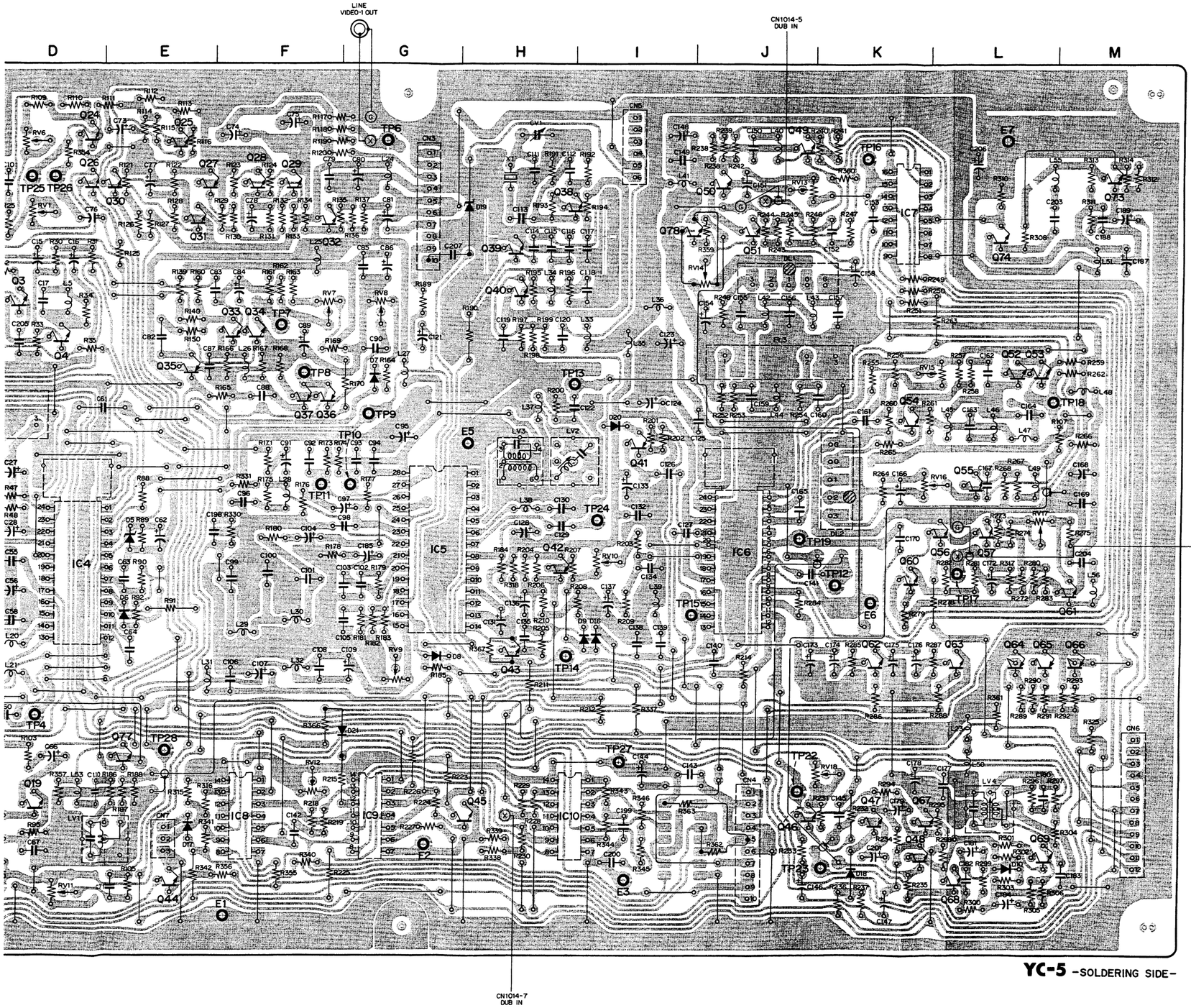
REC mode ; Full Field color bar
PB mode ; Play back the Alignment Tape

SONY-SP0630 / DRUCK 34

YC-5
(VIDEO MOD/DEMODULATOR)

UP TO 10340 (AEP)
UP TO 10110 (UK)



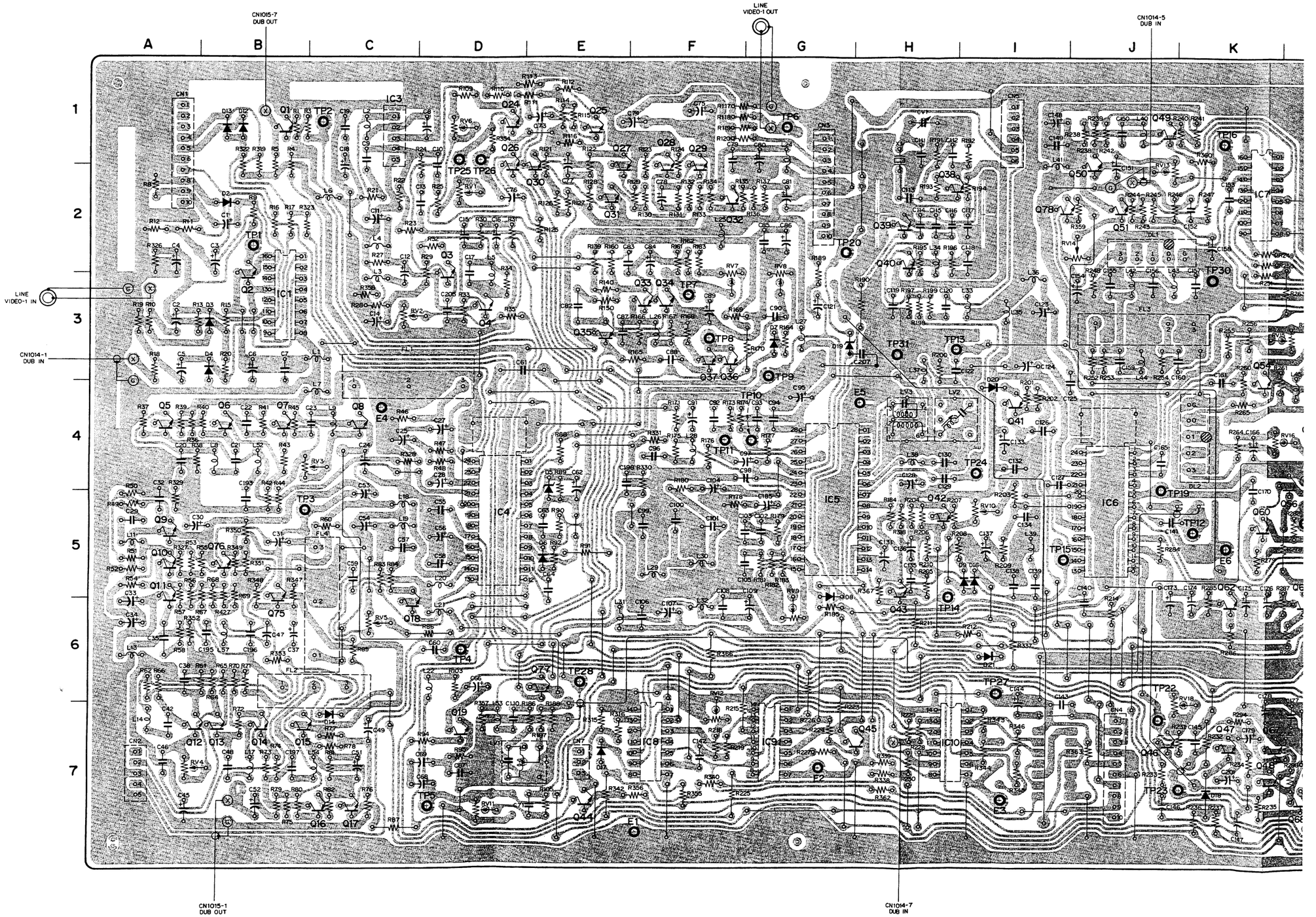


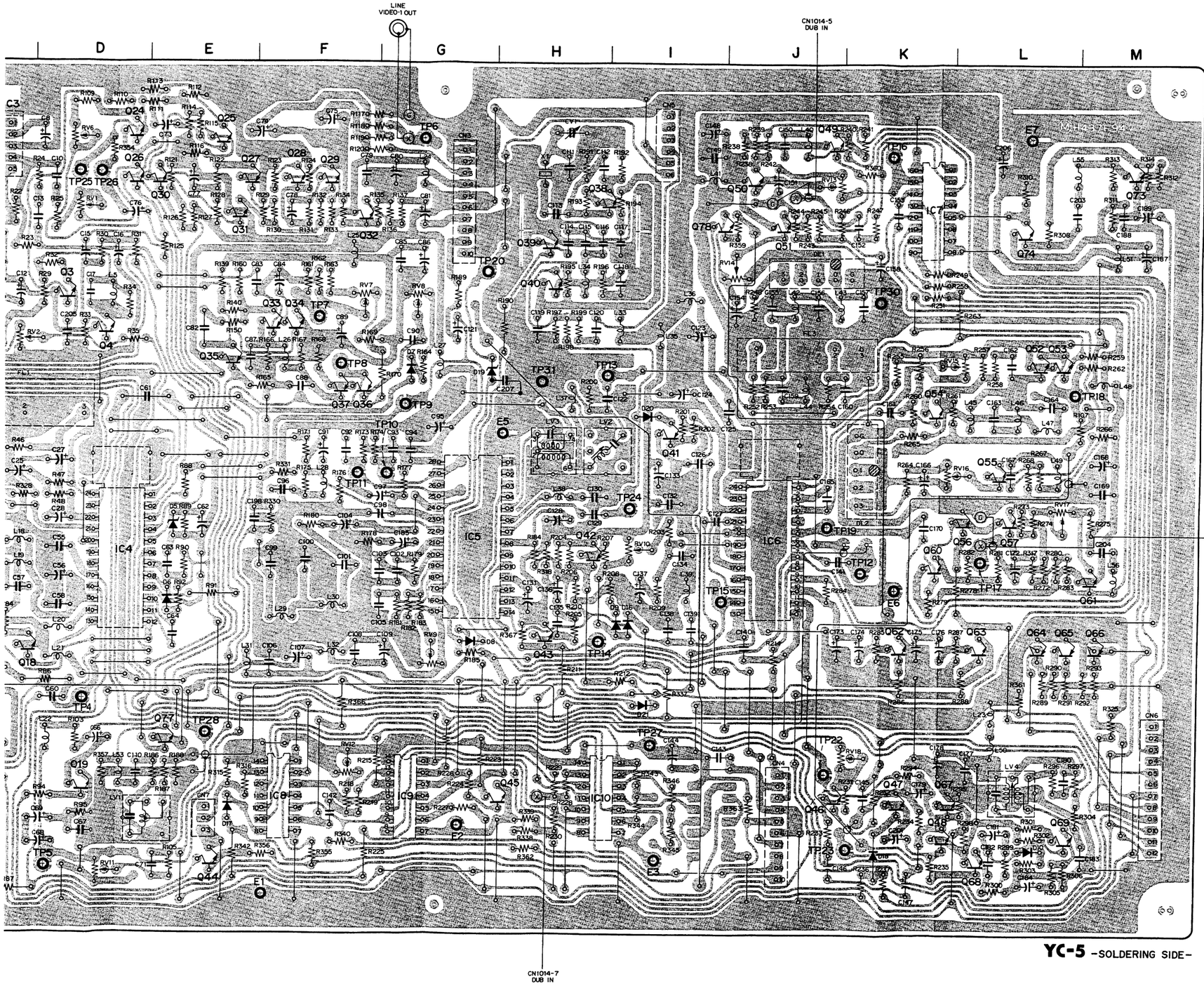
YC-5 –SOLDERING SIDE–

CN1	A - 1		Q34	F - 3	
CN2	A - 7		Q35	E - 3	
CN3	G - 2		Q36	F - 3	
CN4	M - 7		Q37	F - 3	
CN5	I - 1		Q38	H - 2	
CN6	J - 7		Q39	H - 2	
CN7	E - 7		Q40	H - 2	
			Q41	I - 4	
CV1	H - 1		Q42	H - 5	
			Q43	H - 5	
D2	B - 2		Q44	E - 7	
D3	B - 3		Q45	H - 7	
D4	B - 3		Q46	J - 7	
D5	E - 4		Q47	K - 7	
D6	E - 5		Q48	K - 7	
D7	G - 3		Q49	J - 1	
D8	G - 5		Q50	J - 2	
D9	I - 5		Q51	J - 2	
D10	L - 7		Q52	L - 3	
D12	B - 1		Q53	L - 3	
D13	B - 1		Q54	K - 3	
D14	C - 7		Q55	L - 4	
D16	I - 5		Q56	L - 4	
D17	E - 7		Q57	L - 4	
D18	K - 7		Q60	K - 5	
D19	H - 2		Q61	M - 5	
D20	I - 4		Q62	K - 6	
D21	F - 6		Q63	L - 6	
			Q64	L - 6	
DL1	J - 2		Q65	L - 6	
DL2	K - 4		Q66	M - 6	
			Q67	K - 7	
E1	F - 7		Q68	L - 7	
E2	G - 7		Q69	L - 7	
E3	I - 7		Q73	M - 1	
E4	C - 4		Q74	L - 2	
E5	H - 4		Q75	B - 6	
E6	K - 5		Q76	B - 5	
E7	L - 1		Q77	E - 6	
			Q78	I - 2	
FL1	C - 3				
FL2	C - 6		RV1	D - 2	
FL3	J - 3		RV2	C - 3	
FL4	C - 5		RV3	B - 4	
			RV4	A - 7	
IC1	B - 3		RV5	C - 6	
IC2	C - 1		RV6	D - 1	
IC4	D - 5		RV7	F - 3	
IC5	G - 5		RV8	G - 3	
IC6	J - 5		RV9	G - 6	
IC7	K - 2		RV10	I - 5	
IC8	F - 7		RV11	D - 7	
IC9	G - 7		RV12	F - 7	
IC10	H - 7		RV13	J - 2	
			RV14	J - 2	
LV1	E - 7		RV15	L - 3	
LV2	H - 4		RV16	K - 4	
LV3	H - 4		RV17	L - 4	
LV4	L - 7		RV18	K - 7	
Q1	B - 1		TP1	B - 2	
Q2	B - 3		TP2	C - 1	
Q3	D - 3		TP3	B - 5	
Q4	D - 3		TP4	D - 6	
Q5	A - 4		TP5	D - 7	
Q6	B - 4		TP6	G - 1	
Q7	B - 4		TP7	F - 3	
Q8	C - 4		TP8	F - 3	
Q9	A - 5		TP9	G - 3	
Q10	A - 5		TP10	G - 4	
Q11	A - 5		TP11	F - 4	
Q12	A - 7		TP12	K - 5	
Q13	B - 7		TP13	H - 3	
Q14	B - 7		TP14	H - 6	
Q15	B - 7		TP15	I - 5	
Q16	C - 7		TP16	K - 1	
Q17	C - 7		TP17	L - 5	
Q18	C - 6		TP18	L - 3	
Q19	D - 7		TP19	J - 4	
Q24	D - 1		TP22	J - 1	
Q25	E - 1		TP23	K - 7	
Q26	D - 1		TP24	I - 4	
Q27	E - 1		TP25	D - 1	
Q28	F - 1		TP26	D - 1	
Q29	F - 1		TP27	I - 6	
Q30	E - 2		TP28	E - 6	
Q31	E - 2				
Q32	F - 2		X1	H - 1	
Q33	F - 3				

YC-5
(VIDEO MOD/DEMODULATOR)

10341 TO 10840 (AEP)





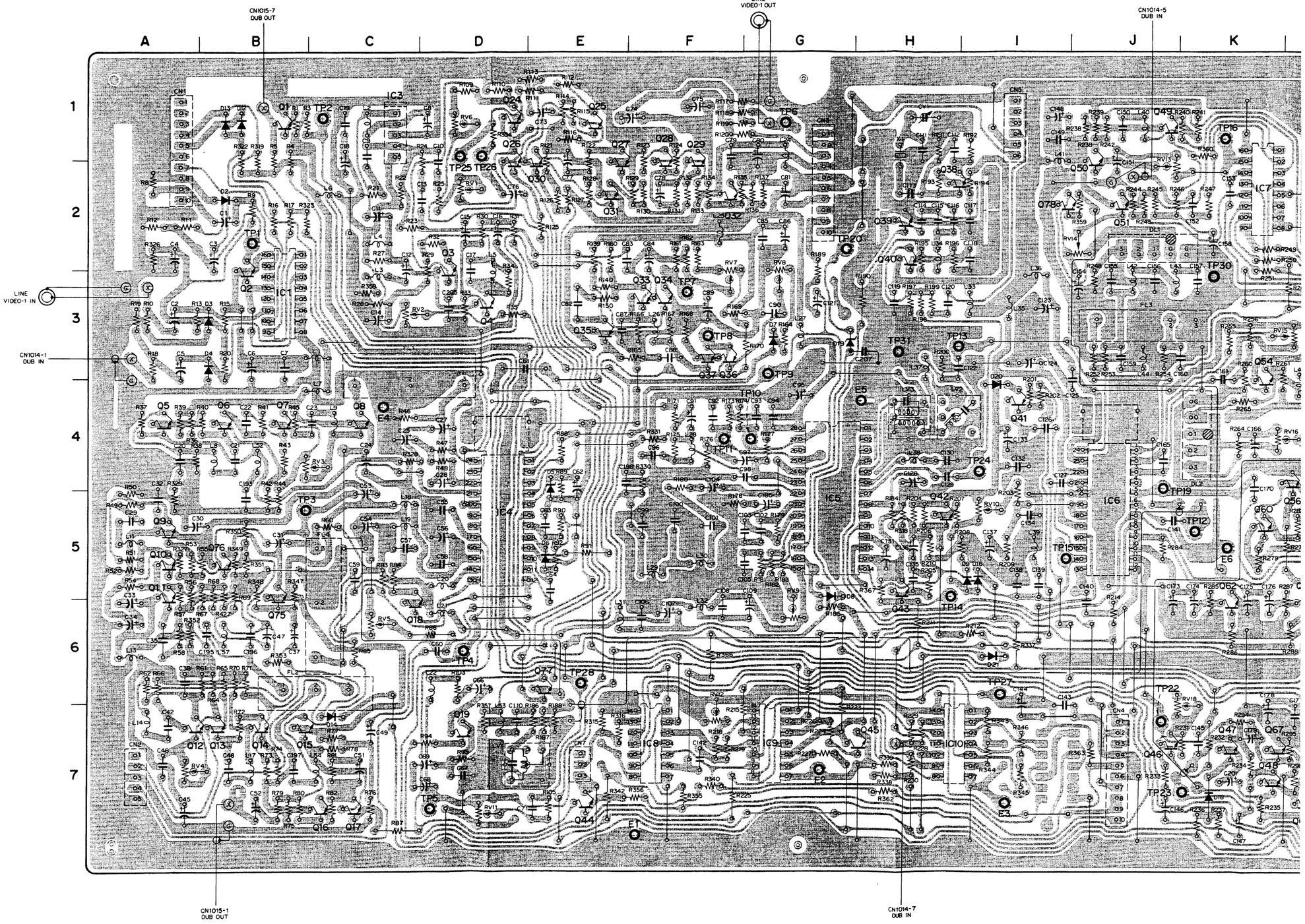
YC-5 -SOLDERING SIDE-

CN1	A - 1
CN2	A - 7
CN3	G - 2
CN4	M - 7
CN5	I - 1
CN6	J - 7
CN7	E - 7
CV1	H - 1
D2	B - 2
D3	B - 3
D4	B - 3
D5	E - 4
D6	E - 5
D7	G - 3
D8	G - 5
D9	I - 5
D10	L - 7
D12	B - 1
D13	B - 1
D14	C - 7
D16	I - 5
D17	E - 7
D18	K - 7
D19	G - 3
D20	I - 4
D21	I - 6
DL1	J - 2
DL2	K - 4
E1	F - 7
E2	G - 7
E3	I - 7
E4	C - 4
E5	H - 4
E6	K - 5
E7	L - 1
FL1	C - 3
FL2	C - 6
FL3	J - 3
FL4	C - 5
IC1	B - 3
IC2	C - 1
IC4	D - 5
IC5	G - 5
IC6	J - 5
IC7	K - 2
IC8	F - 7
IC9	G - 7
IC10	H - 7
LV1	E - 7
LV2	H - 4
LV3	H - 4
LV4	L - 7
Q1	B - 1
Q2	B - 3
Q3	D - 3
Q4	D - 3
Q5	A - 4
Q6	B - 4
Q7	B - 4
Q8	C - 4
Q9	A - 5
Q10	A - 5
Q11	A - 5
Q12	A - 7
Q13	B - 7
Q14	B - 7
Q15	B - 7
Q16	C - 7
Q17	C - 7
Q18	C - 6
Q19	D - 7
Q24	D - 1
Q25	E - 1
Q26	D - 1
Q27	E - 1
Q28	F - 1
Q29	F - 1
Q30	E - 2
Q31	E - 2
Q32	F - 2
Q33	F - 3
Q34	F - 3
Q35	E - 3
Q36	F - 3
Q37	F - 3
Q38	H - 2
Q39	H - 2
Q40	H - 2
Q41	I - 4
Q42	H - 5
Q43	H - 5
Q44	E - 7
Q45	H - 7
Q46	J - 7
Q47	K - 7
Q48	K - 7
Q49	J - 1
Q50	J - 2
Q51	J - 2
Q52	L - 3
Q53	L - 3
Q54	K - 3
Q55	L - 4
Q56	L - 4
Q57	L - 4
Q60	K - 5
Q61	M - 5
Q62	K - 6
Q63	L - 6
Q64	L - 6
Q65	L - 6
Q66	M - 6
Q67	K - 7
Q68	L - 7
Q69	L - 7
Q73	M - 1
Q74	L - 2
Q75	B - 6
Q76	B - 5
Q77	E - 6
Q78	I - 2
RV1	D - 2
RV2	C - 3
RV3	B - 4
RV4	A - 7
RV5	C - 6
RV6	D - 1
RV7	F - 3
RV8	G - 3
RV9	G - 6
RV10	I - 5
RV11	D - 7
RV12	F - 7
RV13	J - 2
RV14	J - 2
RV15	L - 3
RV16	K - 4
RV17	L - 4
RV18	K - 7
TP1	B - 2
TP2	C - 1
TP3	B - 5
TP4	D - 6
TP5	D - 7
TP6	G - 1
TP7	F - 3
TP8	F - 3
TP9	G - 3
TP10	G - 4
TP11	F - 4
TP12	K - 5
TP13	H - 3
TP14	H - 6
TP15	I - 5
TP16	K - 1
TP17	L - 5
TP18	L - 3
TP19	J - 4
TP20	G - 2
TP22	J - 1
TP23	K - 7
TP24	I - 4
TP25	D - 1
TP26	D - 1
TP27	I - 6
TP28	E - 6
TP30	K - 3
TP31	H - 3
X1	H - 1

INY-SP0630 / DRUCK 41

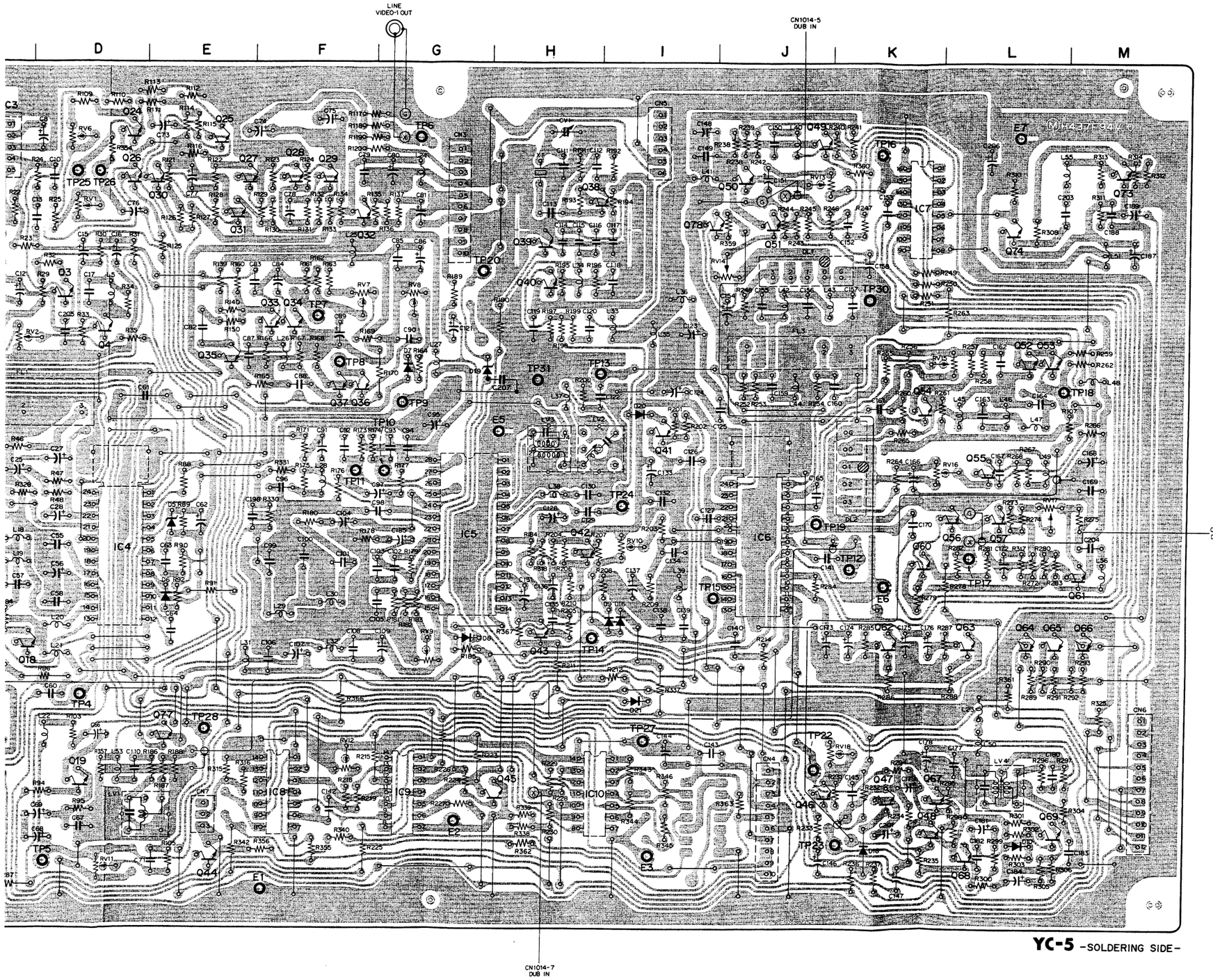
YC-5
(VIDEO MOD/DEMODULATOR)

10841 TO 26540 (AEP)
10111 TO 13310 (UK)
10001 TO 10400 (U/C)



14-27 (a)

14-28 (a)



YC-5 -SOLDERING SIDE-

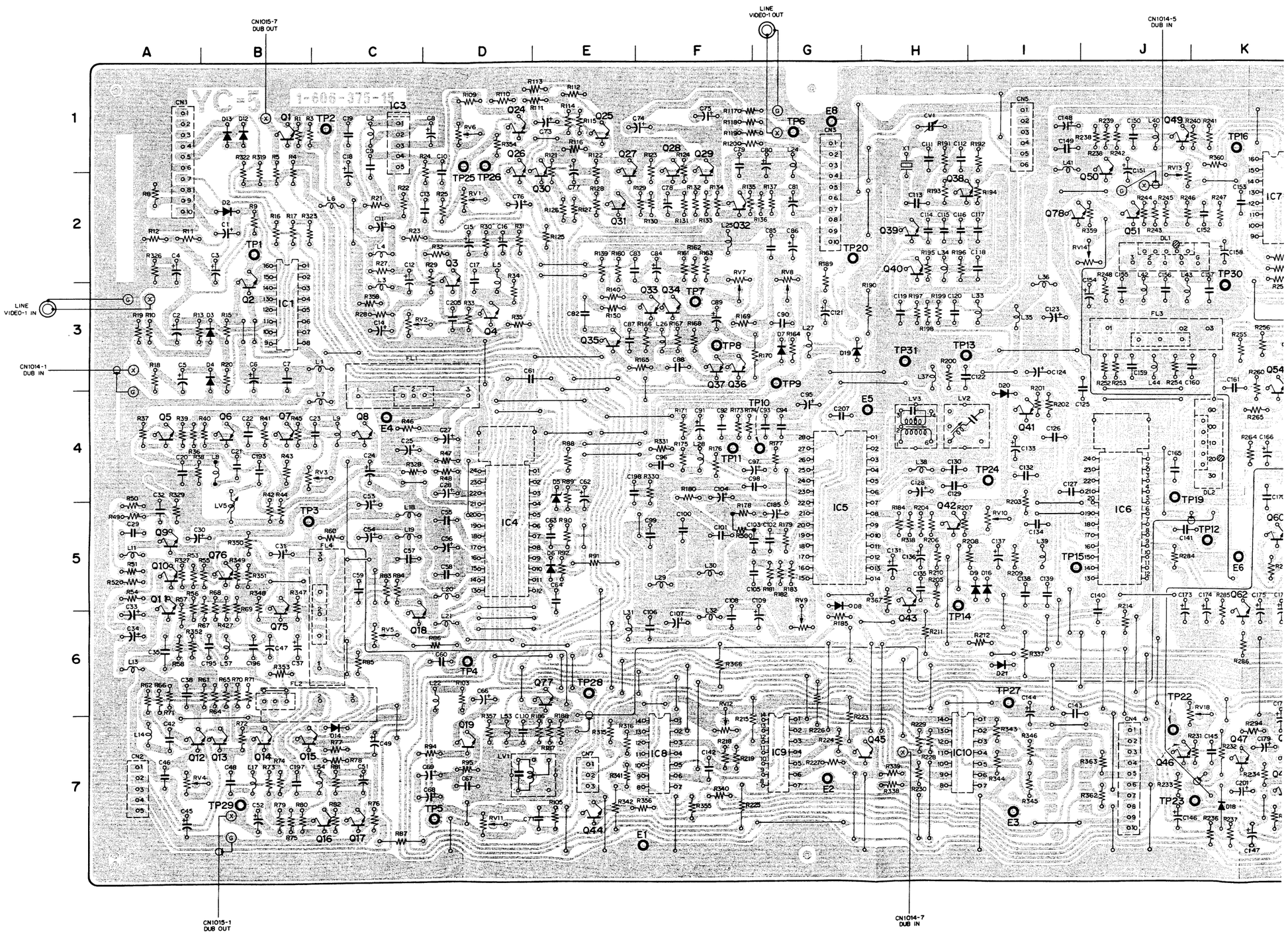
14-28 (a)

CN1	A - 1	Q36	F - 3
CN2	A - 7	Q37	F - 3
CN3	G - 2	Q38	H - 2
CN4	M - 7	Q39	H - 2
CN5	I - 1	Q40	H - 2
CN6	J - 7	Q41	I - 4
CN7	E - 7	Q42	H - 5
		Q43	H - 5
CV1	H - 1	Q44	E - 7
		Q45	H - 7
D2	B - 2	Q46	J - 7
D3	B - 3	Q47	K - 7
D4	B - 3	Q48	K - 7
D5	E - 4	Q49	J - 1
D6	E - 5	Q50	J - 2
D7	G - 3	Q51	J - 2
D8	G - 5	Q52	L - 3
D9	I - 5	Q53	L - 3
D10	L - 7	Q54	K - 3
D12	B - 1	Q55	L - 4
D13	B - 1	Q56	L - 4
D14	C - 7	Q57	L - 4
D16	I - 5	Q60	K - 5
D18	K - 7	Q61	M - 5
D19	G - 3	Q62	K - 6
D20	I - 4	Q63	L - 6
D21	I - 6	Q64	L - 6
		Q65	L - 6
DL1	J - 2	Q66	M - 6
DL2	K - 4	Q67	K - 7
		Q68	L - 7
E1	F - 7	Q69	L - 7
E2	G - 7	Q73	M - 1
E3	I - 7	Q74	L - 2
E4	C - 4	Q75	B - 6
E5	H - 4	Q76	B - 5
E6	K - 5	Q77	E - 6
E7	L - 1	Q78	I - 2
FL1	C - 3	RV1	D - 2
FL2	C - 6	RV2	C - 3
FL3	J - 3	RV3	B - 4
FL4	C - 5	RV4	A - 7
		RV5	C - 6
IC1	B - 3	RV6	D - 1
IC2	C - 1	RV7	F - 3
IC4	D - 5	RV8	G - 3
IC5	G - 5	RV9	G - 6
IC6	J - 5	RV10	I - 5
IC7	K - 2	RV11	D - 7
IC8	F - 7	RV12	F - 7
IC9	G - 7	RV13	J - 2
IC10	H - 7	RV14	J - 2
		RV15	L - 3
LV1	E - 7	RV16	K - 4
LV2	H - 4	RV17	L - 4
LV3	H - 4	RV18	K - 7
LV4	L - 7		
		TP1	B - 2
Q1	B - 1	TP2	C - 1
Q2	B - 3	TP3	B - 5
Q3	D - 3	TP4	D - 6
Q4	D - 3	TP5	D - 7
Q5	A - 4	TP6	G - 1
Q6	B - 4	TP7	F - 3
Q7	B - 4	TP8	F - 3
Q8	C - 4	TP9	G - 3
Q9	A - 5	TP10	G - 4
Q10	A - 5	TP11	F - 4
Q11	A - 5	TP12	K - 5
Q12	A - 7	TP13	H - 3
Q13	B - 7	TP14	H - 6
Q14	B - 7	TP15	I - 5
Q15	B - 7	TP16	K - 1
Q16	C - 7	TP17	L - 5
Q17	C - 7	TP18	L - 3
Q18	C - 6	TP19	J - 4
Q19	D - 7	TP20	G - 2
Q24	D - 1	TP22	J - 1
Q25	E - 1	TP23	K - 7
Q26	D - 1	TP24	I - 4
Q27	E - 1	TP25	D - 1
Q28	F - 1	TP26	D - 1
Q29	F - 1	TP27	I - 6
Q30	E - 2	TP28	E - 6
Q31	E - 2	TP30	K - 3
Q32	F - 2	TP31	H - 3
Q33	F - 3		
Q34	F - 3	X1	H - 1
Q35	E - 3		

14-29 (a)

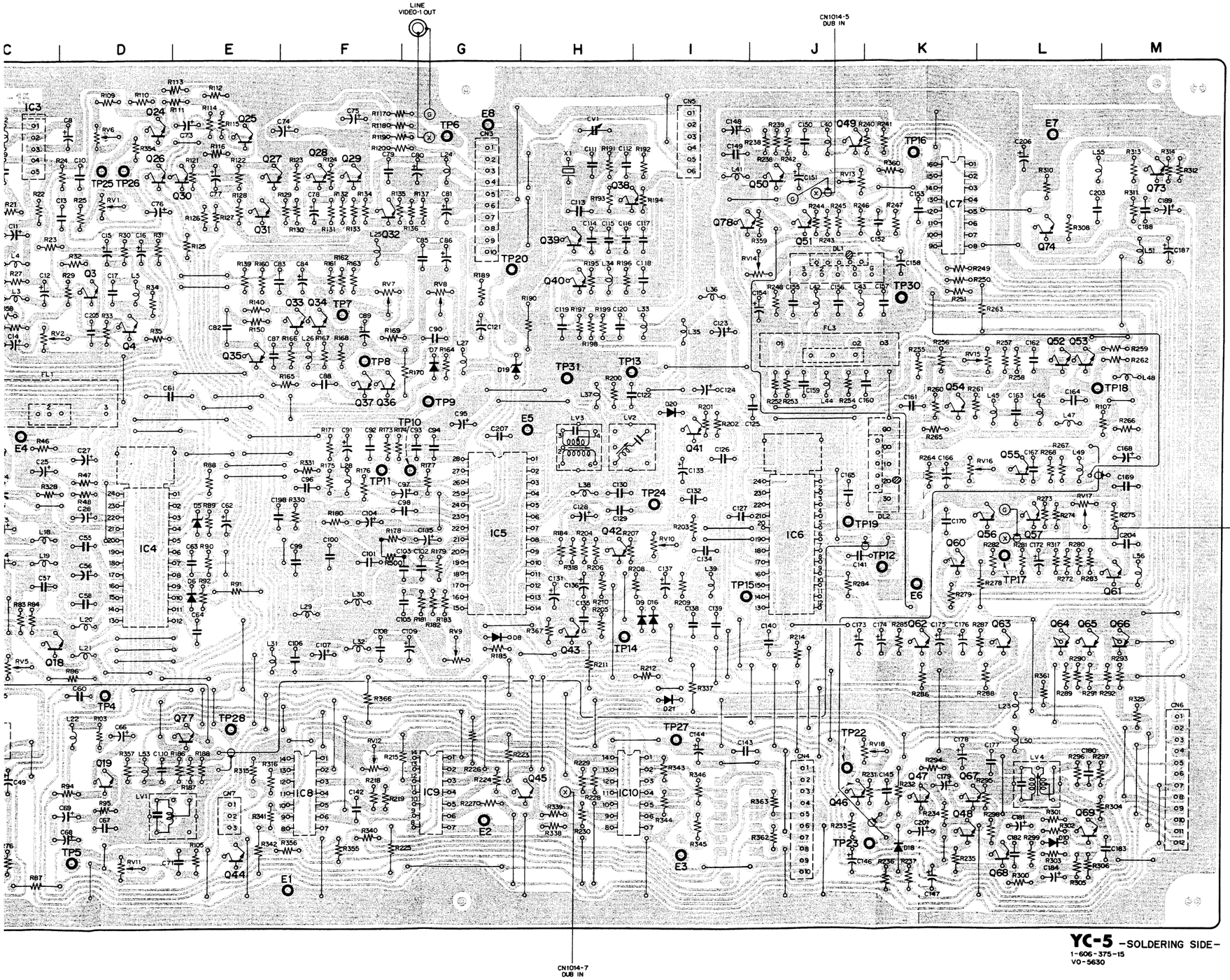
YC-5 (VIDEO MOD/DEMODULATOR)

S/N 26541 AND LATER (AEP)
S/N 13311 AND LATER (UK)
S/N 10401 AND LATER (U/C)



14-27 (b)

14-28 (b)

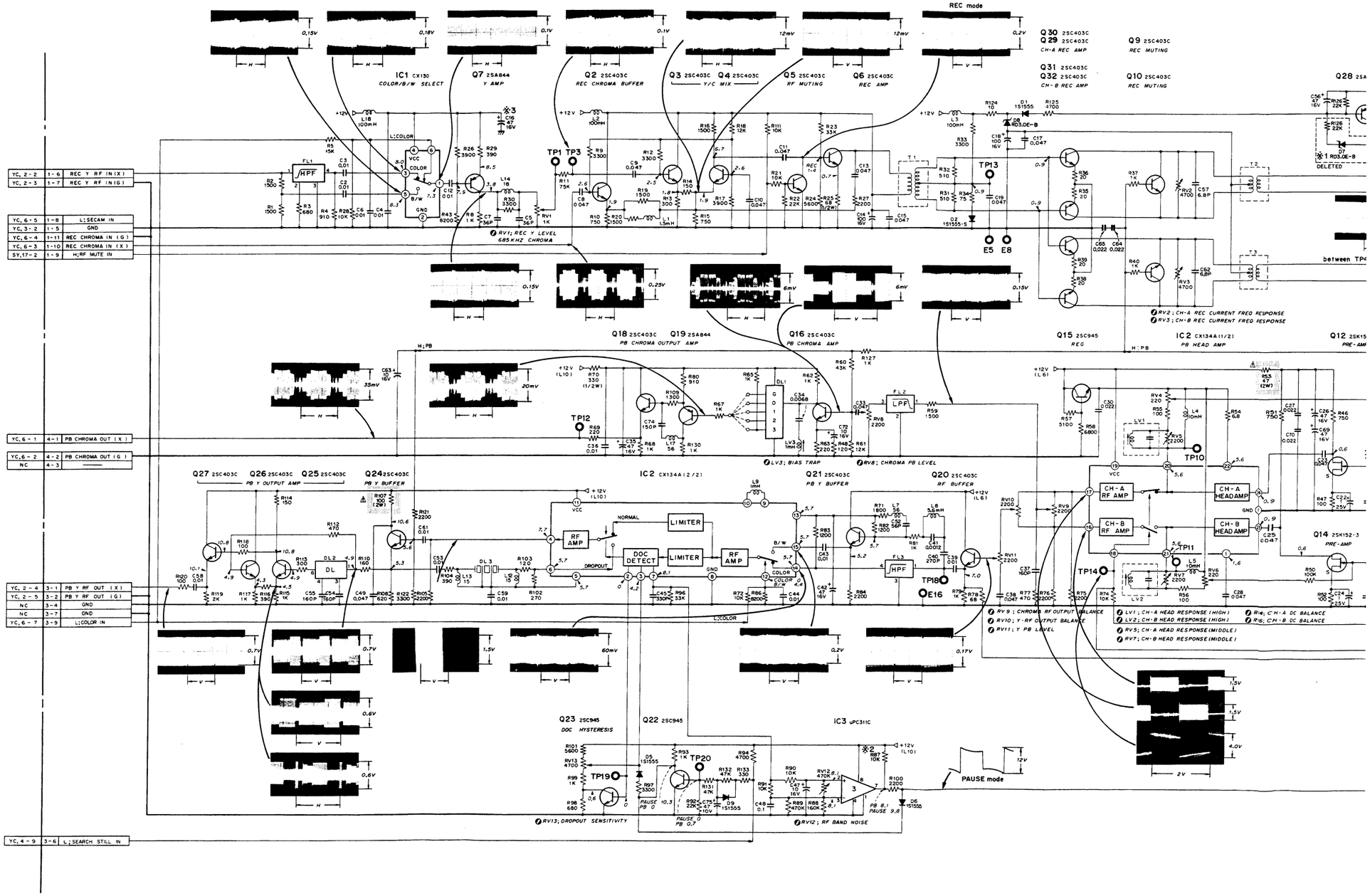


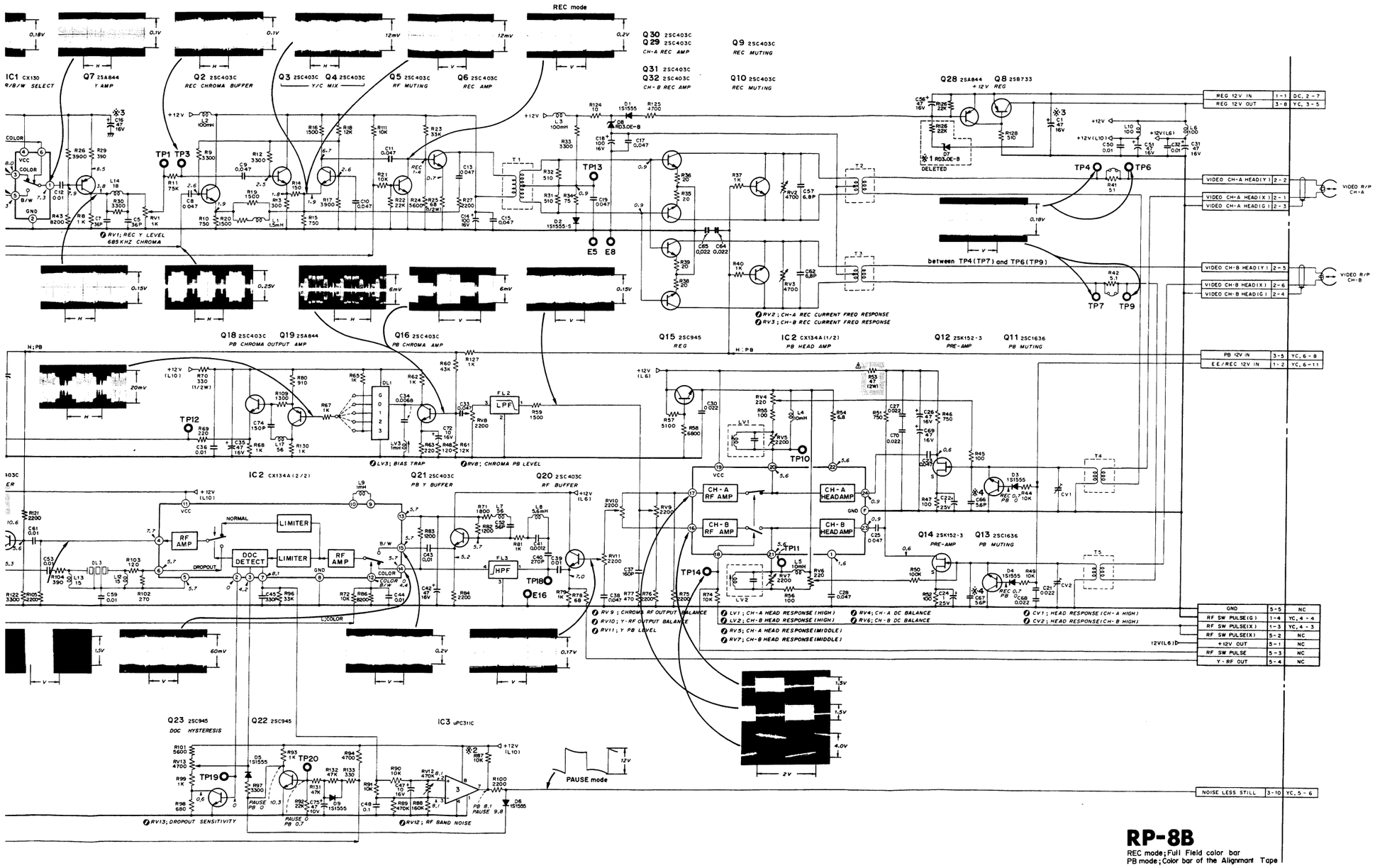
CN1	A - 1	Q36	F - 3
CN2	A - 7	Q37	F - 3
CN3	G - 2	Q38	H - 2
CN4	M - 7	Q39	H - 2
CN5	I - 1	Q40	H - 2
CN6	J - 7	Q41	I - 4
CN7	E - 7	Q42	H - 5
		Q43	H - 5
CV1	H - 1	Q44	E - 7
		Q45	H - 7
D2	B - 2	Q46	J - 7
D3	B - 3	Q47	K - 7
D4	B - 3	Q48	K - 7
D5	E - 4	Q49	J - 1
D6	E - 5	Q50	J - 2
D7	G - 3	Q51	J - 2
D8	G - 5	Q52	L - 3
D9	I - 5	Q53	L - 3
D10	L - 7	Q54	K - 3
D12	B - 1	Q55	L - 4
D13	B - 1	Q56	L - 4
D14	C - 7	Q57	L - 4
D16	I - 5	Q60	K - 5
D18	K - 7	Q61	M - 5
D19	G - 3	Q62	K - 6
D20	I - 4	Q63	L - 6
D21	I - 6	Q64	L - 6
		Q65	L - 6
DL1	J - 2	Q66	M - 6
DL2	K - 4	Q67	K - 7
		Q68	L - 7
E1	F - 7	Q69	L - 7
E2	G - 7	Q73	M - 1
E3	I - 7	Q74	L - 2
E4	C - 4	Q75	B - 6
E5	H - 4	Q76	B - 5
E6	K - 5	Q77	E - 6
E7	L - 1	Q78	I - 2
E8	G - 1		
		RV1	D - 2
FL1	C - 3	RV2	C - 3
FL2	C - 6	RV3	B - 4
FL3	J - 3	RV4	A - 7
FL4	C - 5	RV5	C - 6
		RV6	D - 1
IC1	B - 3	RV7	F - 3
IC2	C - 1	RV8	G - 3
IC4	D - 5	RV9	G - 6
IC5	G - 5	RV10	I - 5
IC6	J - 5	RV11	D - 7
IC7	K - 2	RV12	F - 7
IC8	F - 7	RV13	J - 2
IC9	G - 7	RV14	J - 2
IC10	H - 7	RV15	L - 3
		RV16	K - 4
LV1	E - 7	RV17	L - 4
LV2	H - 4	RV18	K - 7
LV3	H - 4		
LV4	L - 7	TP1	B - 2
LV5	B - 5	TP2	C - 1
		TP3	B - 5
Q1	B - 1	TP4	D - 6
Q2	B - 3	TP5	D - 7
Q3	D - 3	TP6	G - 1
Q4	D - 3	TP7	F - 3
Q5	A - 4	TP8	F - 3
Q6	B - 4	TP9	G - 3
Q7	B - 4	TP10	G - 4
Q8	C - 4	TP11	F - 4
Q9	A - 5	TP12	K - 5
Q10	A - 5	TP13	H - 3
Q11	A - 5	TP14	H - 6
Q12	A - 7	TP15	I - 5
Q13	B - 7	TP16	K - 1
Q14	B - 7	TP17	L - 5
Q15	B - 7	TP18	L - 3
Q16	C - 7	TP19	J - 4
Q17	C - 7	TP20	G - 2
Q18	C - 6	TP22	J - 1
Q19	D - 7	TP23	K - 7
Q24	D - 1	TP24	I - 4
Q25	E - 1	TP25	D - 1
Q26	D - 1	TP26	D - 1
Q27	E - 1	TP27	I - 6
Q28	F - 1	TP28	E - 6
Q29	F - 1	TP29	B - 7
Q30	E - 2	TP30	K - 3
Q31	E - 2	TP31	H - 3
Q32	F - 2		
Q33	F - 3	X1	H - 1
Q34	F - 3		
Q35	E - 3		

RP-8B
(VIDEO REC/PB AMPLIFIER)

NOTE:

MARK	CHANGE INFORMATION	SERIAL NO.
※1	D7 RD3.0E-B DELETED	AEP: 10841 ~ UK: 10111 ~ U/C: 10001 ~
※2	R87 1K → 10K	AEP: 12841 ~ UK: 10311 ~ U/C: 10201 ~
※3	C1, C16 47/16V ADDED	AEP: 15141 ~ UK: 11211 ~ U/C: 10201 ~
※4	C66, C67 5.6PF DELETED	AEP: 23241 ~ UK: 12811 ~ U/C: 10301 ~





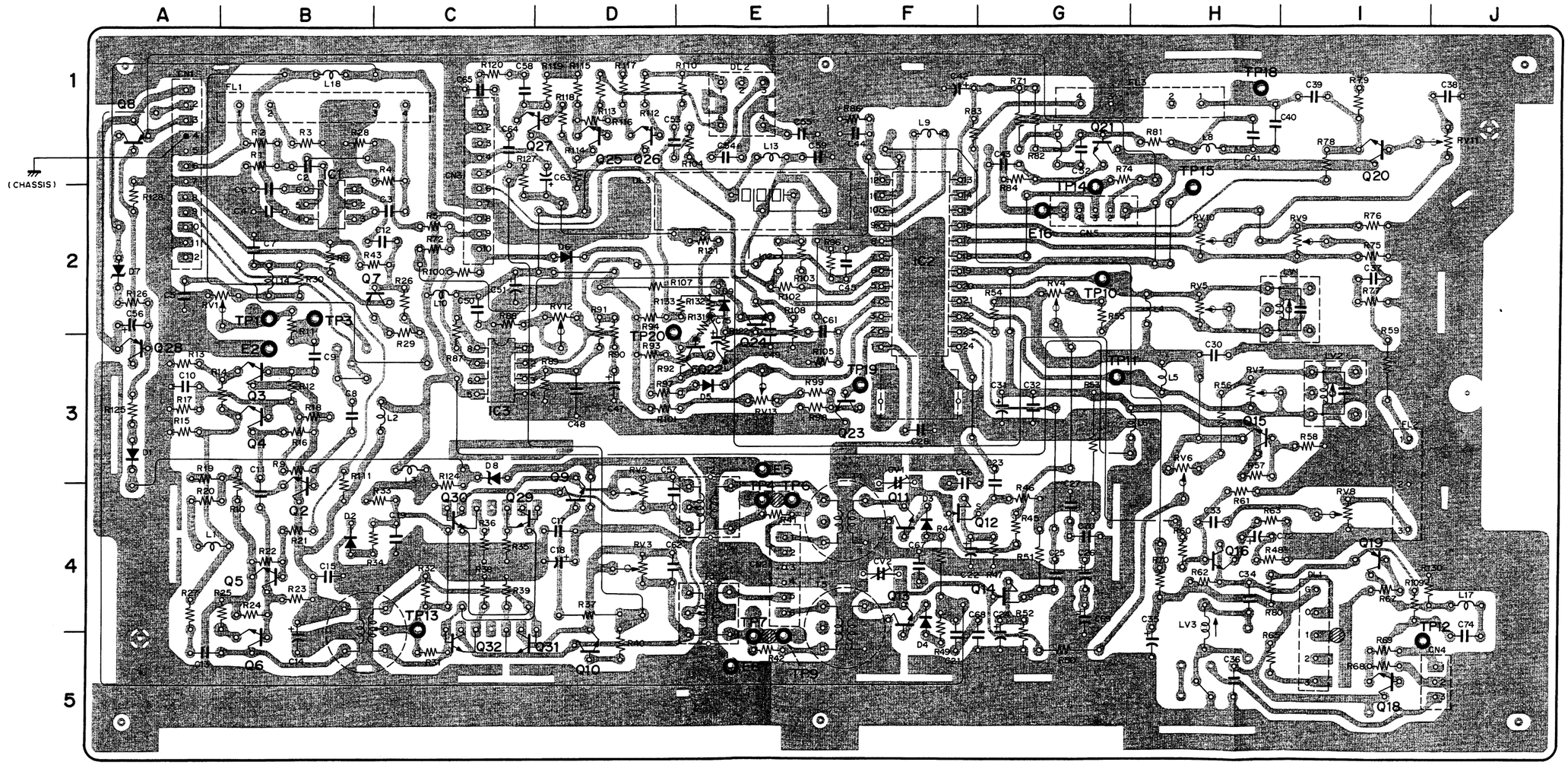
RP-8B

REC mode; Full Field color bar
PB mode; Color bar of the Alignment Tape

NOTE: **The shaded and ⚠ -marked components are critical to safety.**
Replace only with same components as specified.

RP-8B
(VIDEO REC/PB AMPLIFIER)

UP TO 10840 (AEP)
UP TO 10110 (UK)

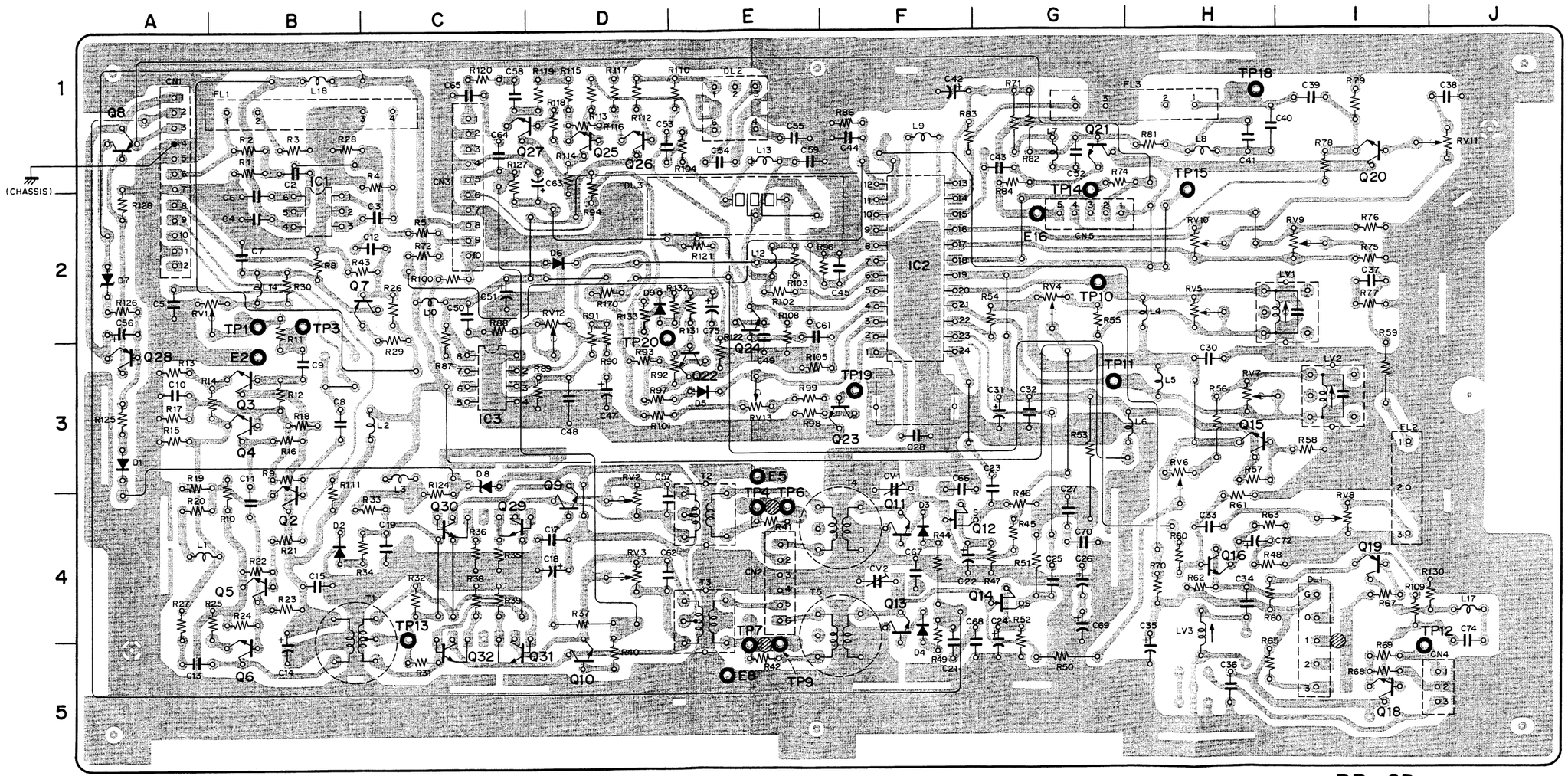


RP-8B – SOLDERING SIDE –

SONY-SP0630 / DRUCK 50

RP-8B
(VIDEO REC/PB AMPLIFIER)

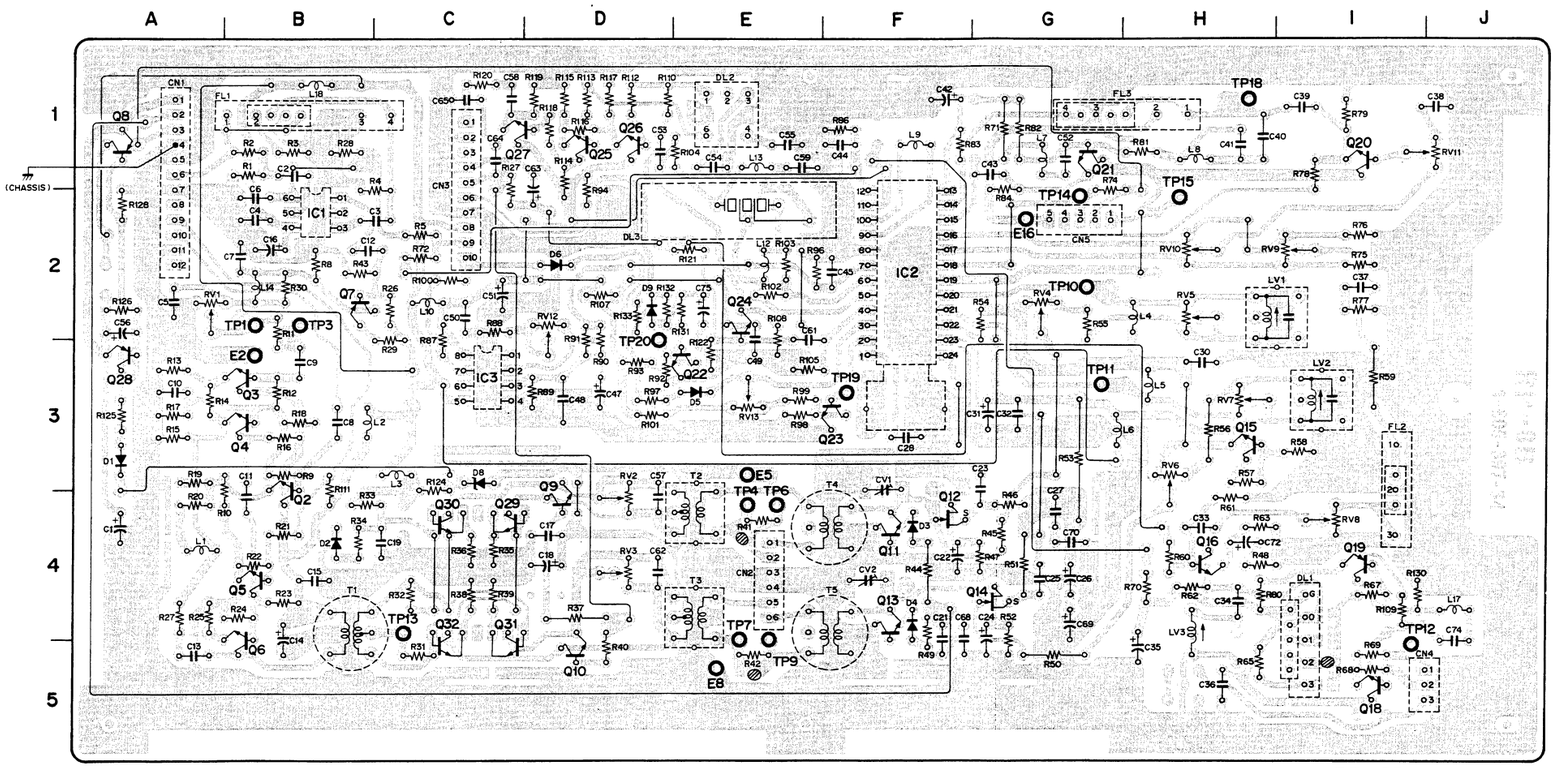
10841 TO 26540 (AEP)
10111 TO 13310 (UK)
10001 TO 10400 (U/C)



RP-8B – SOLDERING SIDE –

RP-8B (VIDEO REC/PB AMPLIFIER)

S/N 26541 AND LATER (AEP)
S/N 13311 AND LATER (UK)
S/N 10401 AND LATER (U/C)

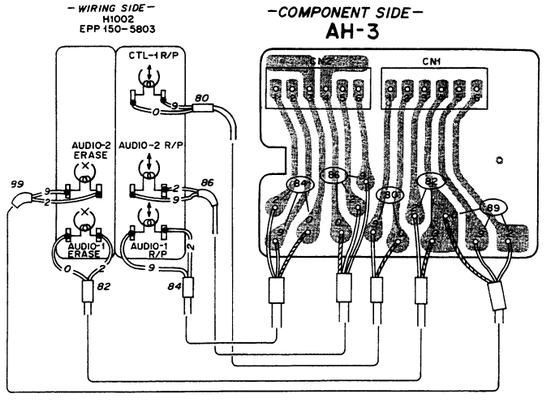


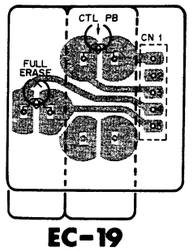
RP-8B – SOLDERING SIDE –
1-605-397-34
VO-5630

CN1	A-1	Q2	B-4	RV1	A-2	TP1	B-2
CN2	E-4	Q3	B-3	RV2	D-4	TP3	B-2
CN3	C-1	Q4	B-3	RV3	D-4	TP4	E-4
CN4	J-5	Q5	B-4	RV4	G-2	TP6	E-4
CN5	G-2	Q6	B-5	RV5	H-2	TP7	E-4
		Q7	B-2	RV6	H-3	TP9	E-4
CV1	F-3	Q8	A-1	RV7	H-3	TP10	G-2
CV2	F-4	Q9	D-4	RV8	I-4	TP11	G-3
		Q10	D-5	RV9	I-2	TP12	I-5
D1	A-3	Q11	F-4	RV10	H-2	TP13	C-4
D2	B-4	Q12	F-4	RV11	J-1	TP14	G-2
D3	F-4	Q13	F-4	RV12	D-2	TP15	H-2
D4	F-4	Q14	G-4	RV13	E-3	TP18	H-1
D5	E-3	Q15	H-3			TP19	F-3
D6	D-2	Q16	H-4	T1	B-4	TP20	D-3
D8	C-3	Q18	I-5	T2	E-4		
D9	D-2	Q19	I-4	T3	E-4		
		Q20	I-1	T4	F-4		
DL1	I-4	Q21	G-1	T5	F-4		
DL2	E-1	Q22	E-3				
DL3	E-2	Q23	F-3	TP1	B-2		
		Q24	E-2	TP3	B-2		
E2	B-3	Q25	D-1	TP4	E-4		
E5	E-3	Q26	D-1	TP6	E-4		
E8	E-5	Q27	C-1	TP7	E-4		
E16	G-2	Q28	A-3	TP9	E-4		
		Q29	C-4	TP10	G-2		
FL1	B-1	Q30	C-4	TP11	G-3		
FL2	I-3	Q31	C-4	TP12	I-5		
FL3	G-1	Q32	C-4	TP13	C-4		
				TP14	G-2		
IC1	B-2			TP15	H-2		
IC2	F-2			TP18	H-1		
IC3	C-3			TP19	F-3		
				TP20	D-3		
LV1	I-2						
LV2	I-3						
LV3	H-4						

AH-3, EC-19 MI-5, HP-6

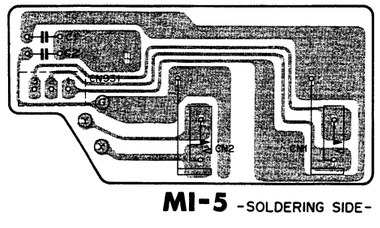
AH-3 (AUDIO REC/PB HEAD)
EC-19 (ERASE/CTL PB HEAD)



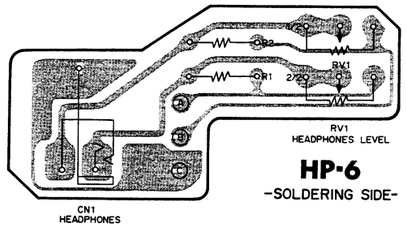


EC-19
- SOLDERING SIDE -

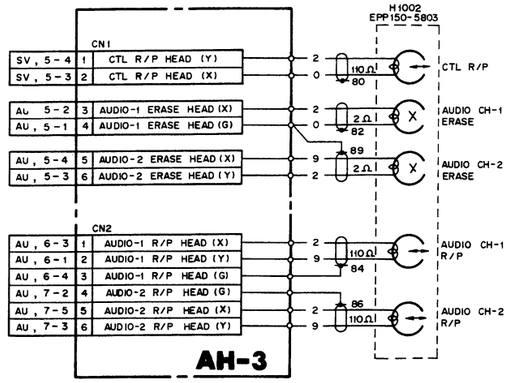
MI-5 (MIC INPUT)
HP-6 (HEADPHONES)



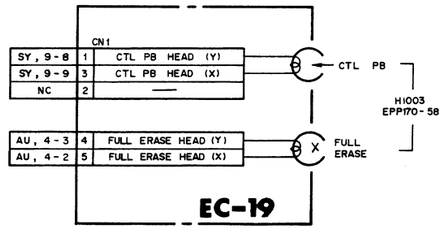
MI-5 -SOLDERING SIDE-



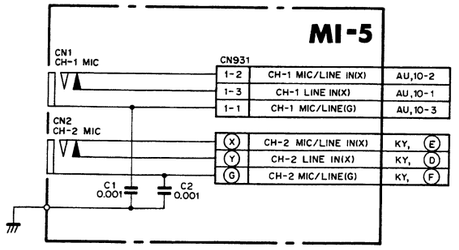
HP-6
-SOLDERING SIDE-

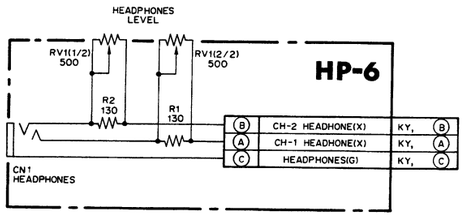


AH-3

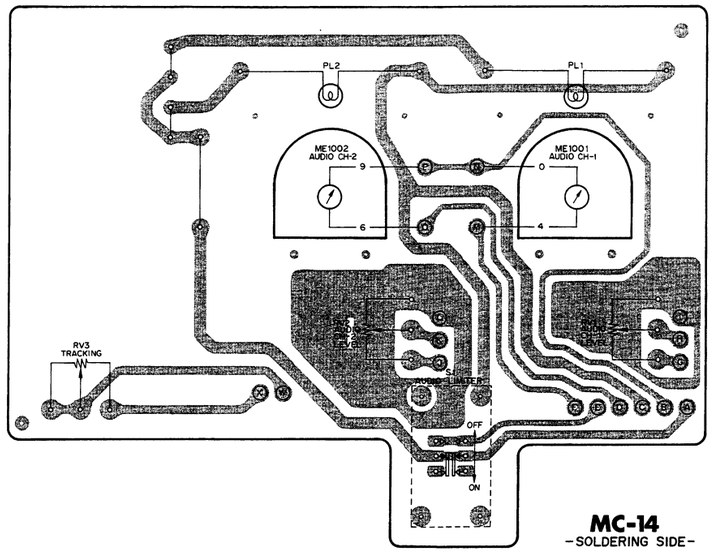


EC-19

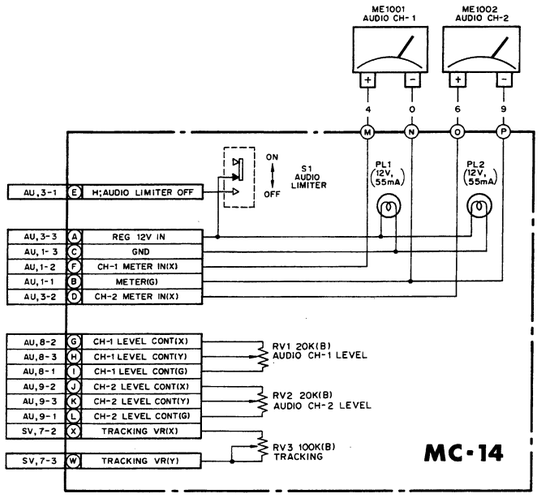




MC-14 (METER/TRACKING VR)

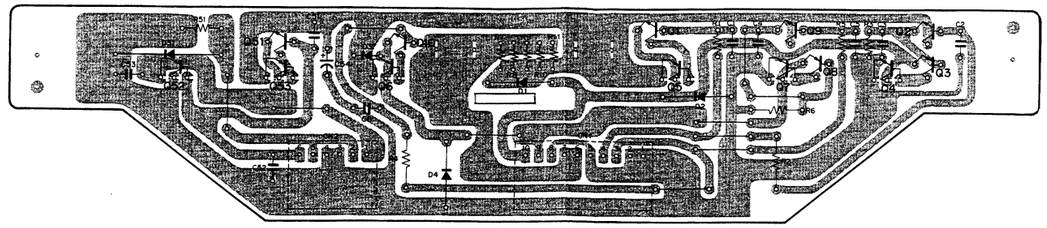


MC-14
-SOLDERING SIDE-

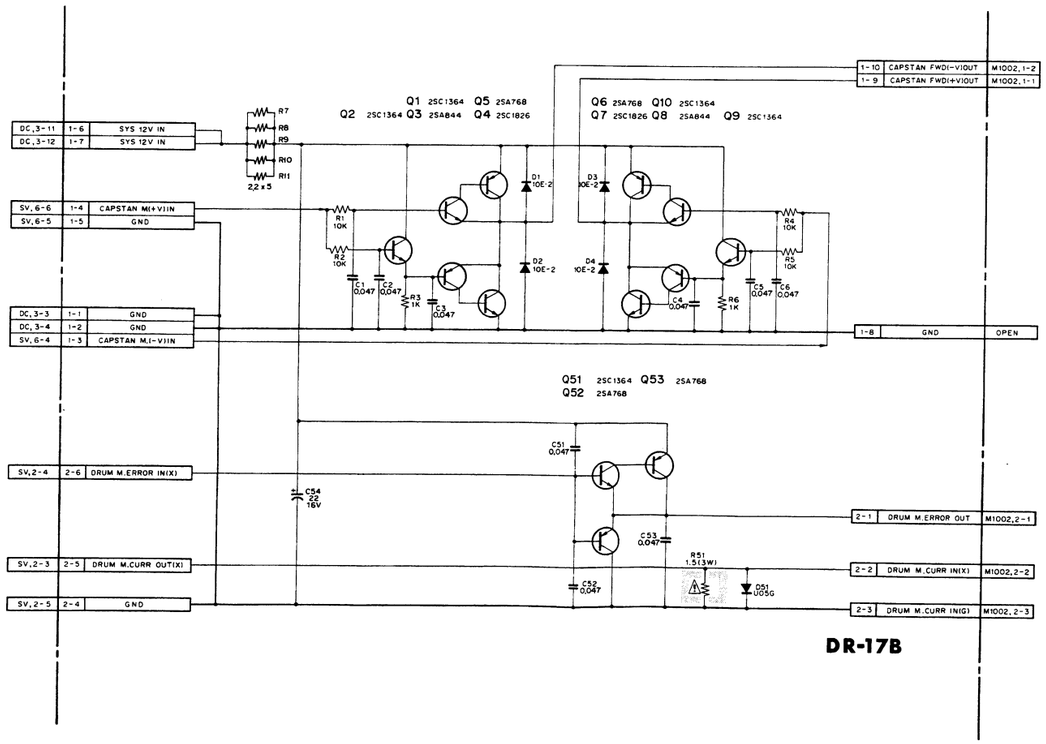


MC-14

DR-17B (DRUM/CAPSTAN DRIVER)



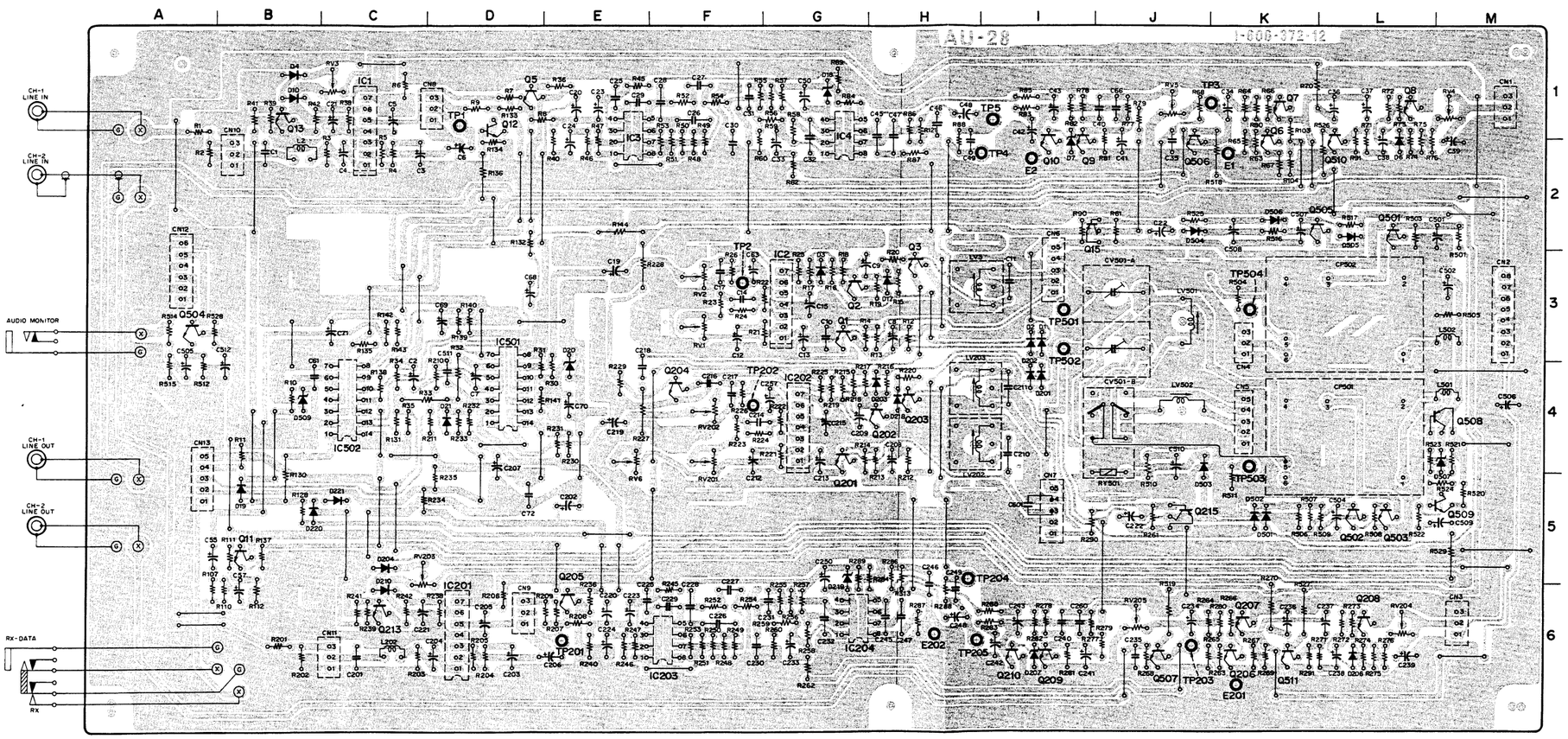
DR-17B -SOLDERING SIDE-



DR-17B

NOTE **The shaded and ⚠ -marked components are critical to safety.**
Replace only with same components as specified.

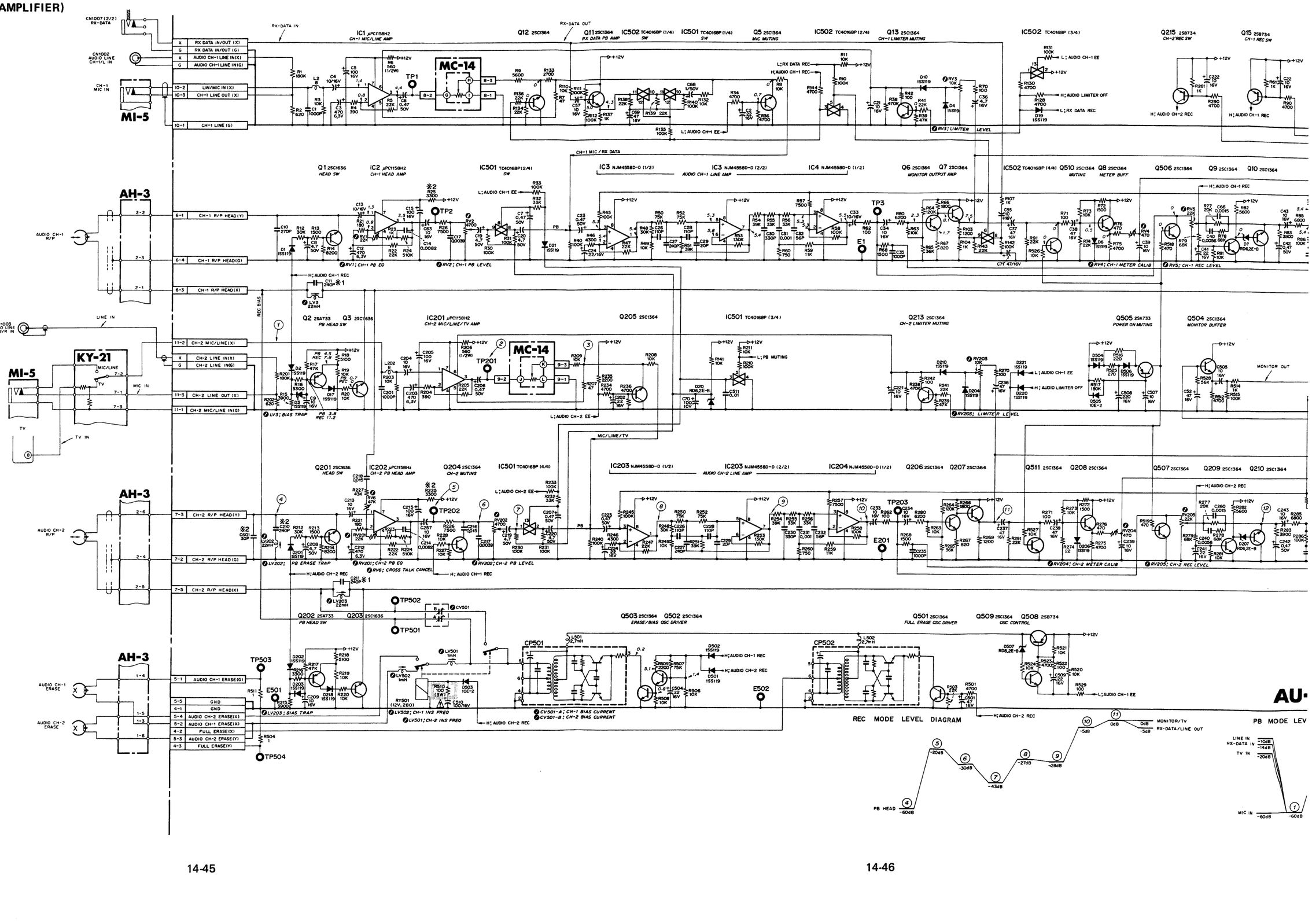
AU-28 (AUDIO REC/PB AMPLIFIER)

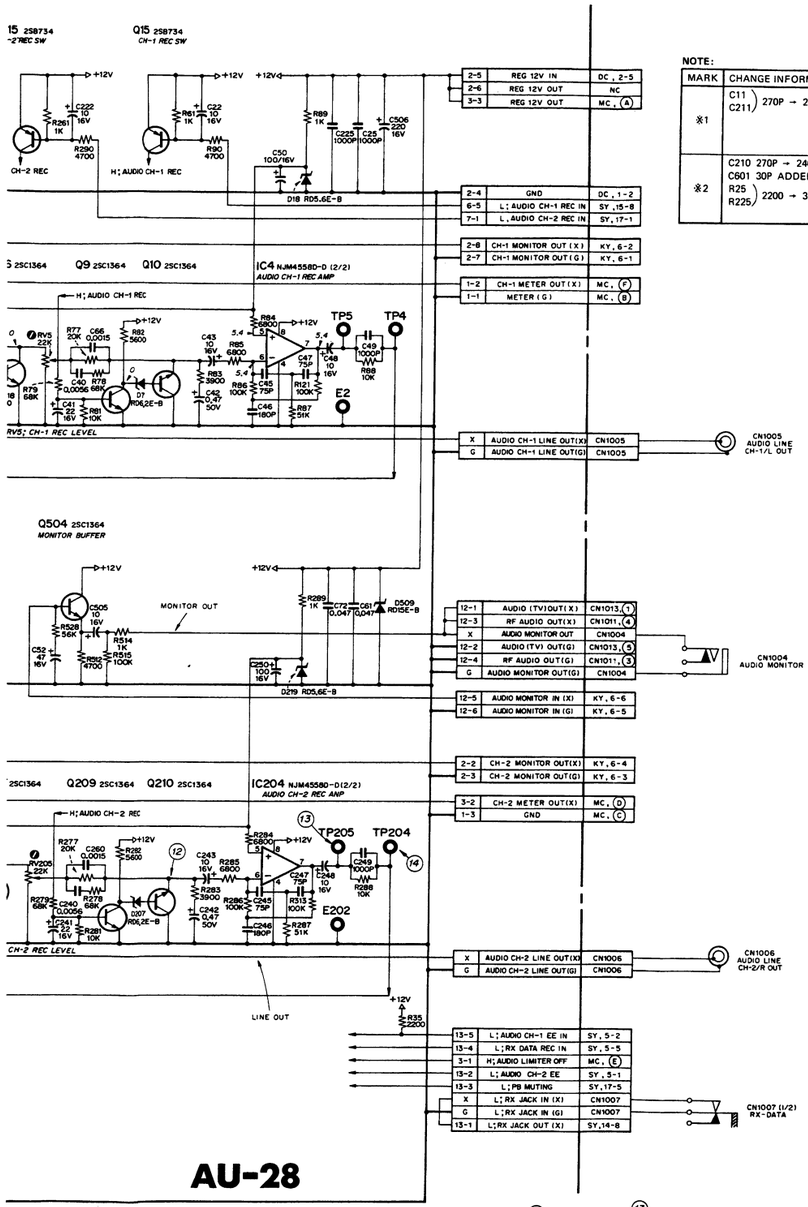


AU-28 – SOLDERING SIDE –

CN1	M-1	Q1	G-3
CN2	M-3	Q2	G-3
CN3	M-6	Q3	H-3
CN4	K-3	Q5	D-1
CN5	K-4	Q6	K-2
CN6	I-3	Q7	K-1
CN7	I-5	Q8	L-1
CN8	D-1	Q9	I-2
CN9	D-6	Q10	I-2
CN10	B-2	Q11	B-5
CN11	C-6	Q12	D-2
CN12	A-3	Q13	B-1
CN13	A-4	Q15	I-2
		Q201	G-4
CP501	L-4	Q202	H-4
CP502	L-3	Q203	H-4
		Q204	F-4
CV501A	J-3	Q205	E-6
CV501B	J-3	Q206	K-6
		Q207	K-6
D1	I-3	Q208	L-6
D2	I-3	Q209	I-6
D3	G-3	Q210	I-6
D4	B-1	Q213	C-6
D6	L-2	Q215	J-5
D7	I-2	Q501	L-2
D10	B-1	Q502	L-5
D17	H-3	Q503	L-5
D18	G-1	Q504	A-3
D19	B-5	Q505	K-2
D20	E-4	Q506	J-2
D21	D-4	Q507	J-6
D201	I-4	Q508	M-4
D202	I-4	Q509	M-5
D203	H-4	Q510	L-2
D204	C-5	Q511	K-6
D206	L-6		
D207	I-6	RV1	F-3
D210	C-5	RV2	F-3
D218	H-4	RV3	C-1
D219	G-5	RV4	M-1
D220	B-5	RV5	J-1
D221	C-5	RV201	F-4
D501	K-5	RV202	F-4
D502	K-5	RV203	C-5
D503	J-4	RV204	L-6
D504	J-2	RV205	J-5
D505	L-2		
D506	K-2	RY501	J-4
D507	M-4		
D509	B-4	TP1	D-1
		TP2	F-3
E1	K-2	TP3	J-1
E2	I-2	TP4	H-2
E201	K-6	TP5	I-1
E202	H-6	TP201	E-6
		TP202	F-4
IC1	C-1	TP203	J-6
IC2	G-3	TP204	H-5
IC3	E-1	TP205	H-6
IC4	G-1	TP501	I-3
IC201	D-6	TP502	I-3
IC202	G-4	TP503	K-4
IC203	F-6	TP504	K-3
IC204	G-6		
IC501	D-4		
IC502	C-4		
LV3	H-3		
LV202	H-4		
LV203	H-4		
LV501	J-3		
LV502	J-4		

AU-28
(AUDIO REC/PB AMPLIFIER)



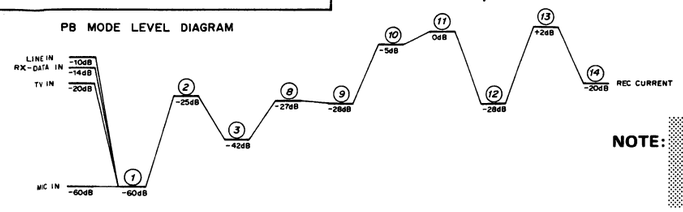


NOTE:

MARK	CHANGE INFORMATION	SERIAL NO.
※1	C11) 270P → 240P C211)	VO-5600 U/C: 15651~ " J: 10501~ VO-5630 AEP: 13441~ " UK: 10511~ " U/C: 10201~
※2	C210 270P → 240P C601 30P ADDED R25) 2200 → 3300 R225)	VO-5600 U/C: 18451~ " J: 10701~ VO-5630 AEP: 16541~ " UK: 11511~ " U/C: 10201~

TOR/TV
ATA/LINE OUT

PB MODE LEVEL DIAGRAM

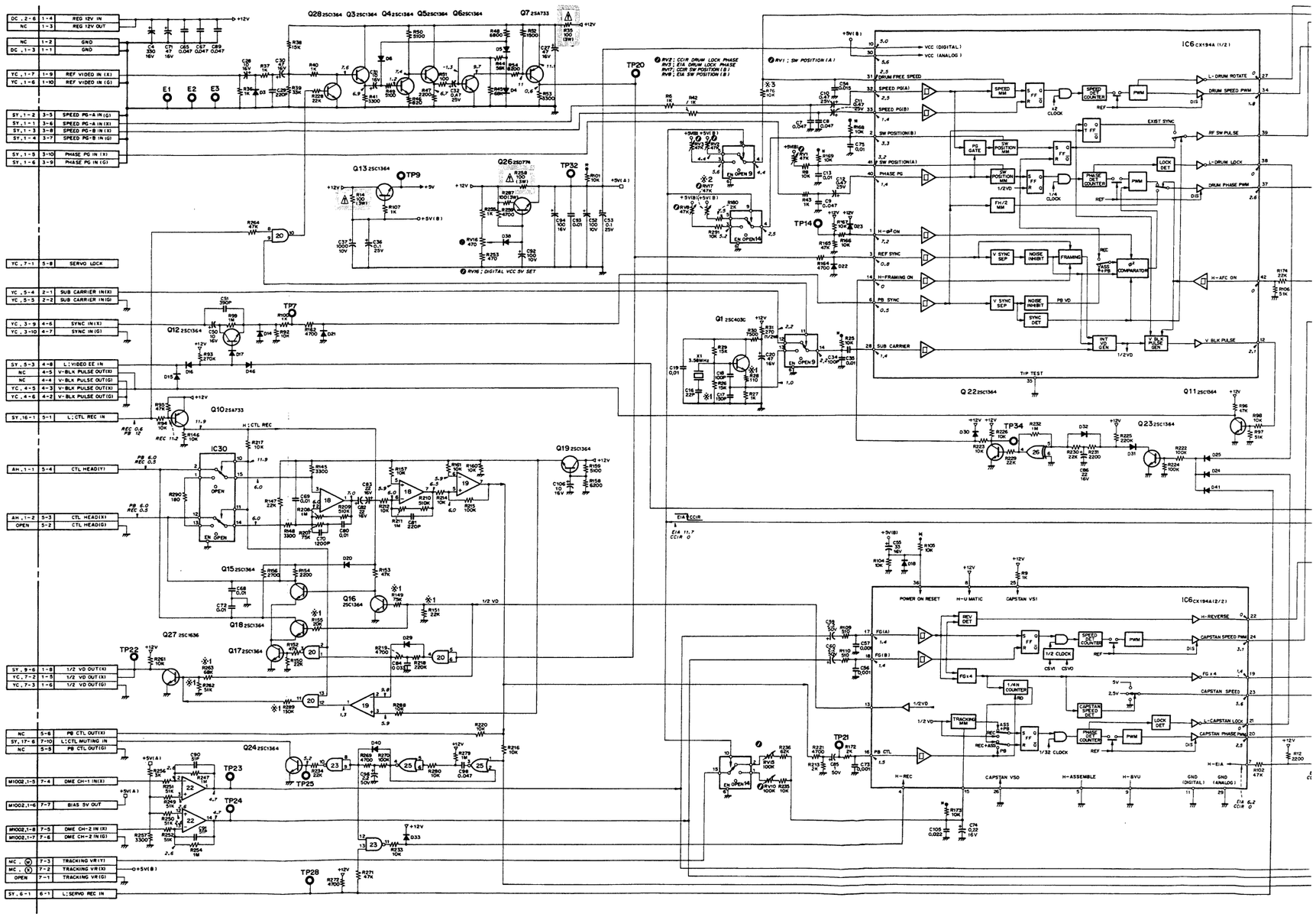


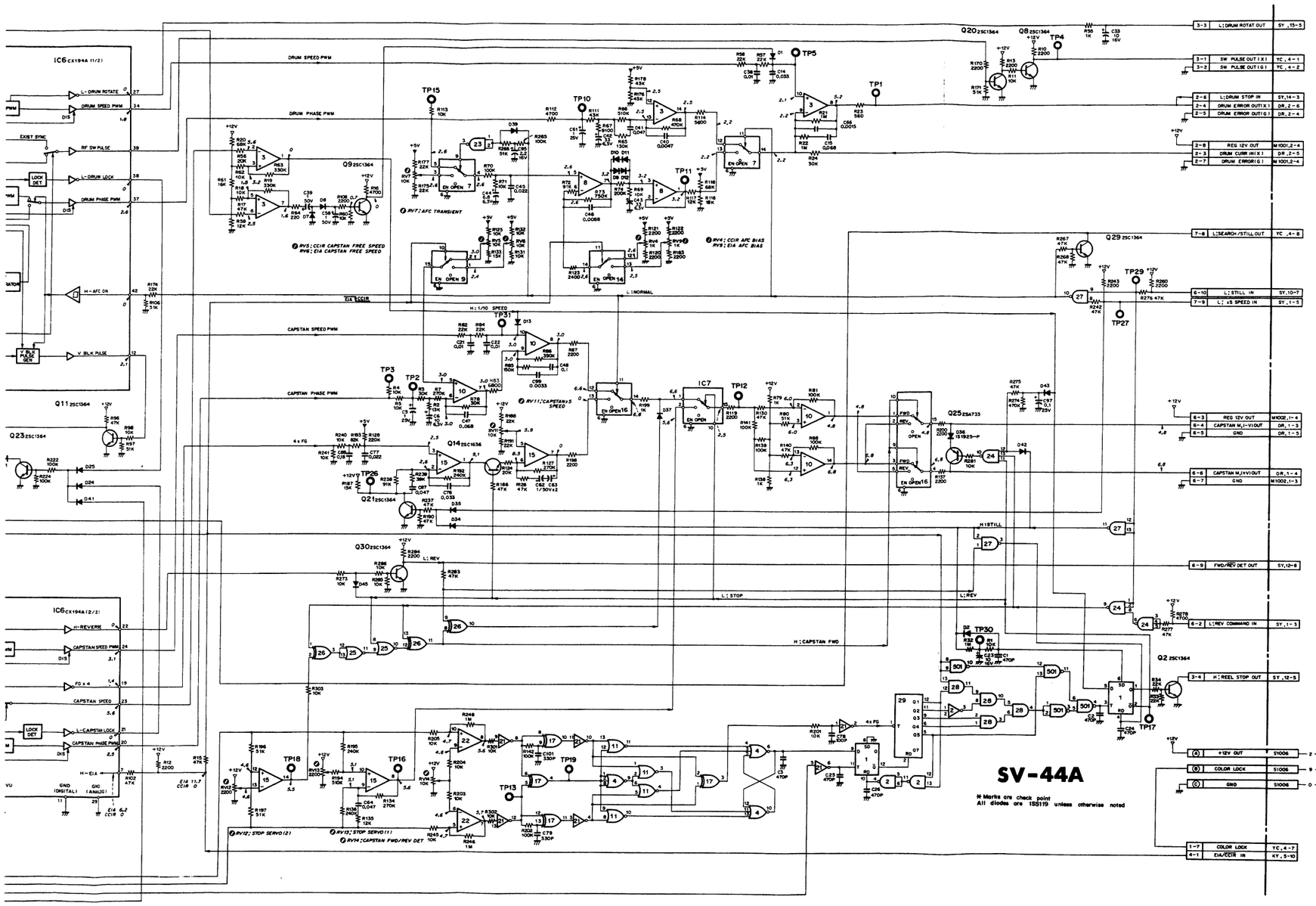
NOTE: **The shaded and ⚠ -marked components are critical to safety.**
Replace only with same components as specified.

SV-44A
(DRUM/CAPSTAN PWM SERVO)

NOTE:

MARK	CHANGE INFORMATION	SERIAL NO.
※1	C17 100P ← 150P R28 270 ← 110 R149 10K ← 75K R151 22K DELETED R155 10K ← 20K R262 51K DELETED R263 22K ← 68K R289 100K ← 150K	AEP: 12341 ~ UK: 10311 ~ U/C: 10201 ~
※2	RV17 47K ADDED	AEP: 13441 ~ UK: 10511 ~ U/C: 10211 ~
※3	R76 15K ← 10K	AEP: 39341 ~ UK: 15111 ~ U/C: 10701 ~





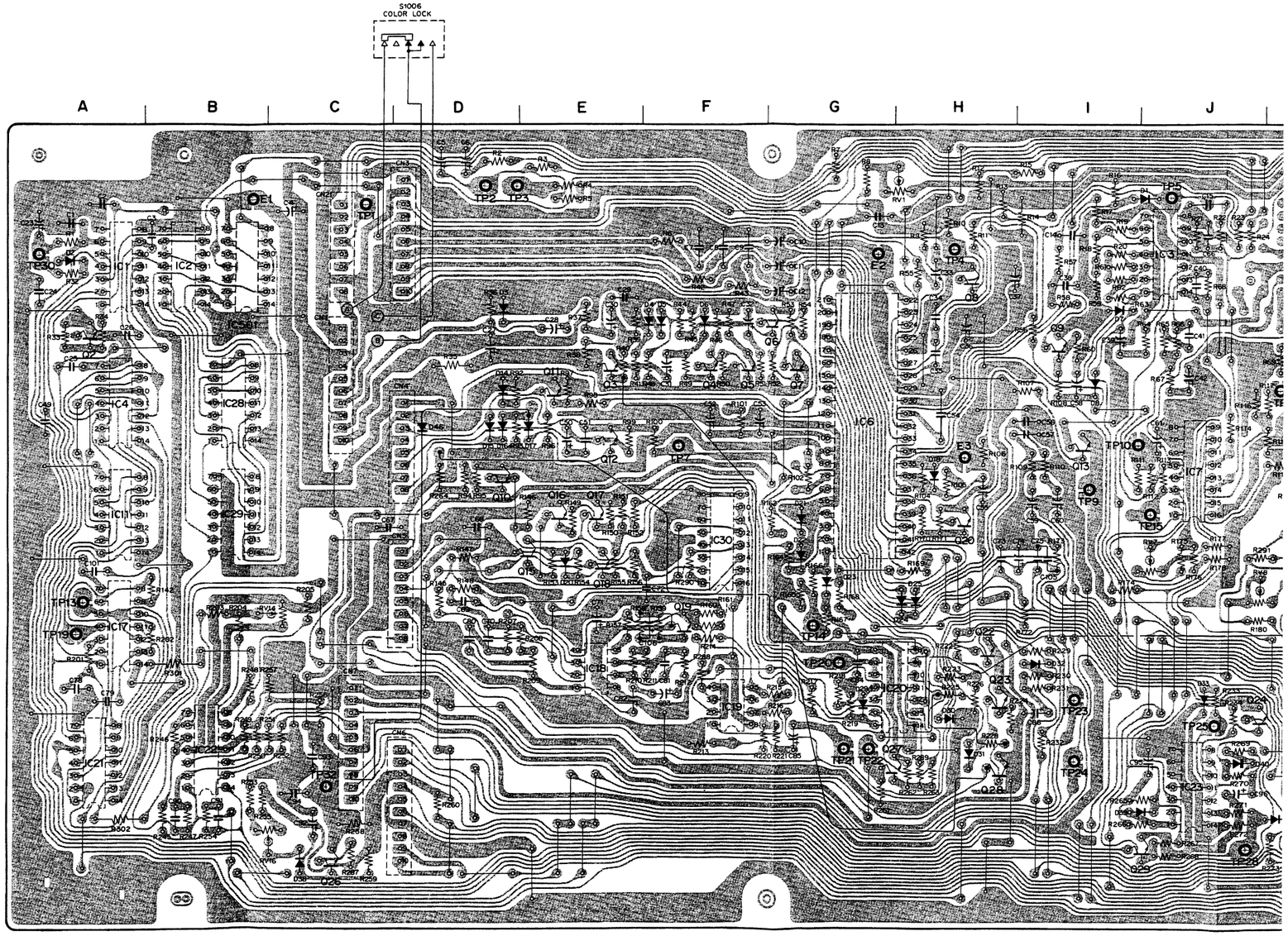
REF NO.	TYPE	12V PIN	GND PIN
IC 1	TC4013BP	14	7
IC 2	TC4511BP	16	8
IC 3	μPC324C	4	11
IC 4	TC4025BP	14	7
IC 5	—	—	—
IC 6	CX194A	—	—
IC 7	TC4053BP	16	8
IC 8	μPC358C	8	4
IC 9	TC4053BP	16	8
IC 10	μPC324C	4	11
IC 11	TC4001BP	14	7
IC 12	—	—	—
IC 13	—	—	—
IC 14	TC4053BP	16	8
IC 15	μPC324C	4	11
IC 16	TC4053BP	16	8
IC 17	TC4030BP	14	7
IC 18	NJM4558D-D	8	4
IC 19	μPC4558C	8	4
IC 20	TC4081BP	14	7
IC 21	MC14584BCP	14	7
IC 22	μPC324C	4	11
IC 23	TC4011BP	14	7
IC 24	TC4023BP	14	7
IC 25	TC4001BP	14	7
IC 26	TC4030BP	14	7
IC 27	TC4011BP	14	7
IC 28	TC4081BP	14	7
IC 29	TC4024BP	14	7
IC 30	TC4053BP	16	8
ICS01	TC4011BP	14	7

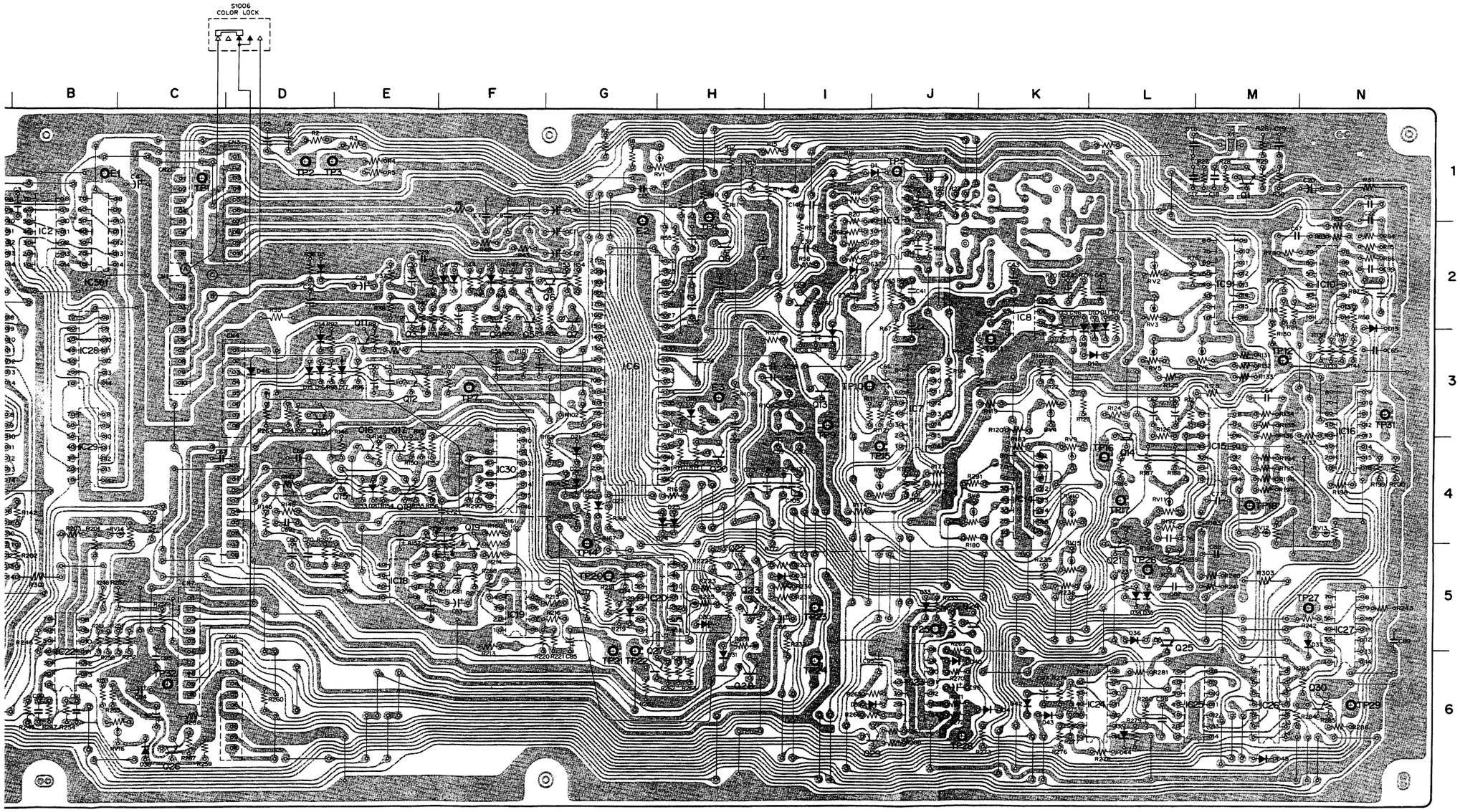
NOTE: **The shaded and ⚠ -marked components are critical to safety.**
Replace only with same components as specified.

SV-44A
(DRUM/CAPSTAN PWM SERVO)

UP TO 10840 (AEP)
UP TO 10110 (UK)

CN1	C-2	IC1	A-2	TP1	C-1
CN2	C-1	IC2	B-2	TP2	D-1
CN3	D-1	IC3	J-1	TP3	D-1
CN4	D-3	IC4	A-3	TP4	H-1
CN5	D-4	IC6	G-3	TP5	J-1
CN6	D-6	IC7	J-3	TP7	F-3
CN7	C-5	IC8	K-2	TP9	I-3
		IC9	M-2	TP10	I-3
D1	J-1	IC10	N-2	TP11	K-3
D2	A-1	IC11	A-4	TP12	M-3
D3	D-2	IC14	K-4	TP13	A-4
D4	F-2	IC15	M-4	TP14	G-4
D5	F-2	IC16	N-3	TP15	J-4
D6	F-2	IC17	A-4	TP16	L-4
D7	I-2	IC18	E-5	TP17	L-4
D8	I-3	IC19	F-5	TP18	M-4
D9	K-2	IC20	H-5	TP19	A-5
D10	L-2	IC21	A-6	TP20	G-5
D11	L-2	IC22	B-5	TP21	G-5
D12	L-3	IC23	J-6	TP22	G-5
D13	N-2	IC24	L-6	TP23	I-5
D14	D-3	IC25	M-6	TP24	I-6
D15	D-3	IC26	M-6	TP25	J-5
D16	D-3	IC27	N-5	TP26	L-5
D17	E-3	IC28	B-3	TP27	N-5
D18	H-3	IC29	B-4	TP28	J-6
D20	E-4	IC30	F-4	TP29	N-6
D21	G-4	IC501	B-2	TP30	A-1
D22	G-4			TP31	N-3
D23	G-4	Q1	M-1	TP32	C-6
D24	H-4	Q2	A-2		
D25	H-4	Q3	E-2	RV1	H-1
D29	G-5	Q4	F-2	RV2	L-2
D30	H-5	Q5	F-2	RV3	L-2
D31	H-6	Q6	G-2	RV4	K-3
D32	I-5	Q7	G-2	RV5	L-3
D33	J-5	Q8	H-2	RV6	M-3
D34	L-5	Q9	I-2	RV7	J-4
D35	L-5	Q10	D-3	RV8	J-4
D36	L-5	Q11	E-3	RV9	K-4
D37	N-5	Q12	E-3	RV10	K-4
D38	C-6	Q13	I-3	RV11	L-4
D39	J-6	Q14	L-3	RV12	M-4
D40	J-6	Q15	E-4	RV13	N-4
D41	K-6	Q16	E-4	RV14	C-4
D42	K-6	Q17	E-4	RV15	K-5
D43	K-6	Q18	E-4	RV16	C-6
D44	L-6	Q19	F-4		
D45	M-6	Q20	H-4	X1	M-1
D46	D-3	Q21	L-4		
		Q22	H-5		
E1	B-1	Q23	H-5		
E2	G-1	Q24	J-5		
E3	H-3	Q25	L-5		
		Q26	C-6		
		Q27	H-6		
		Q28	H-6		
		Q29	J-6		
		Q30	N-6		





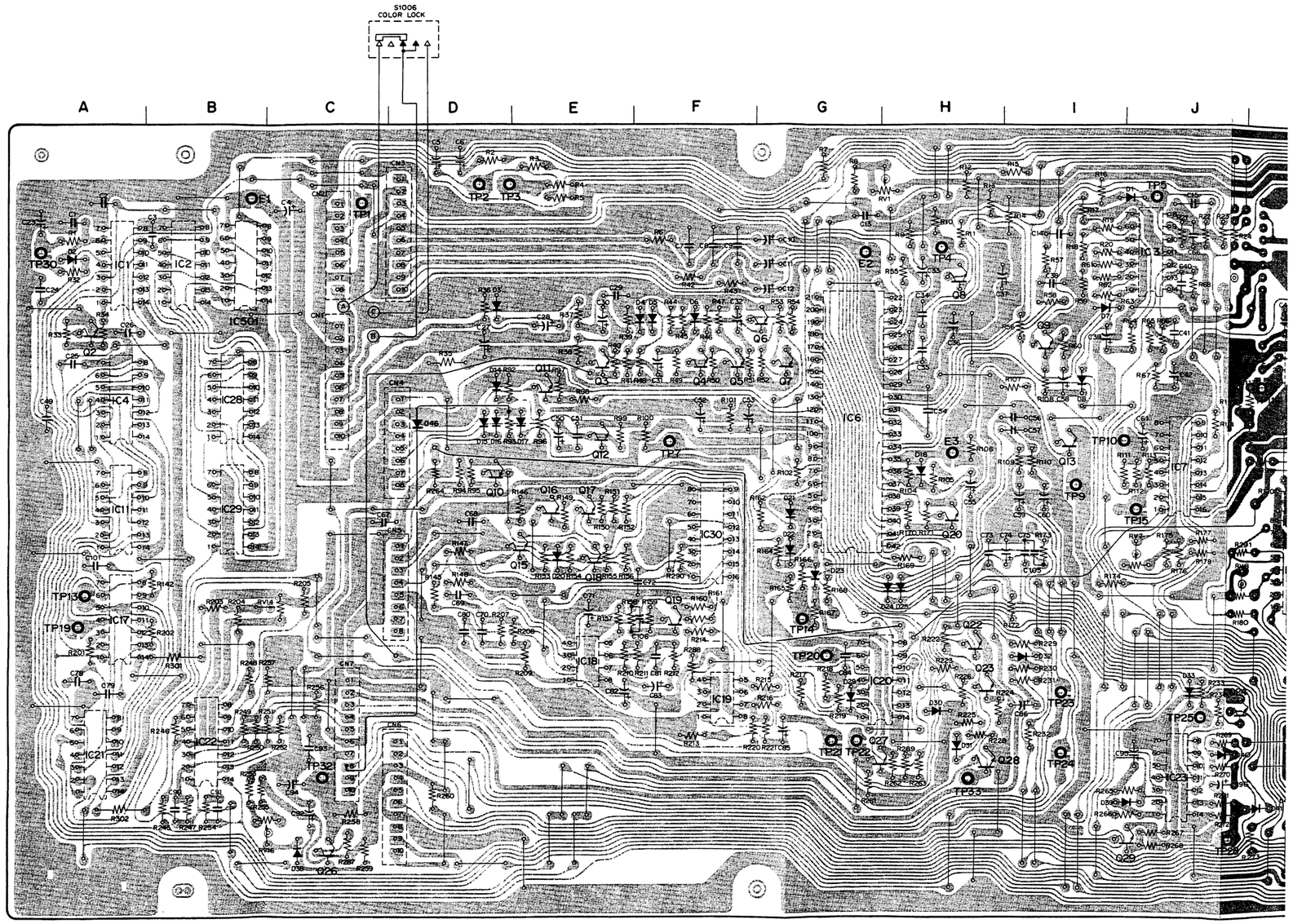
SV-44A -SOLDERING SIDE-

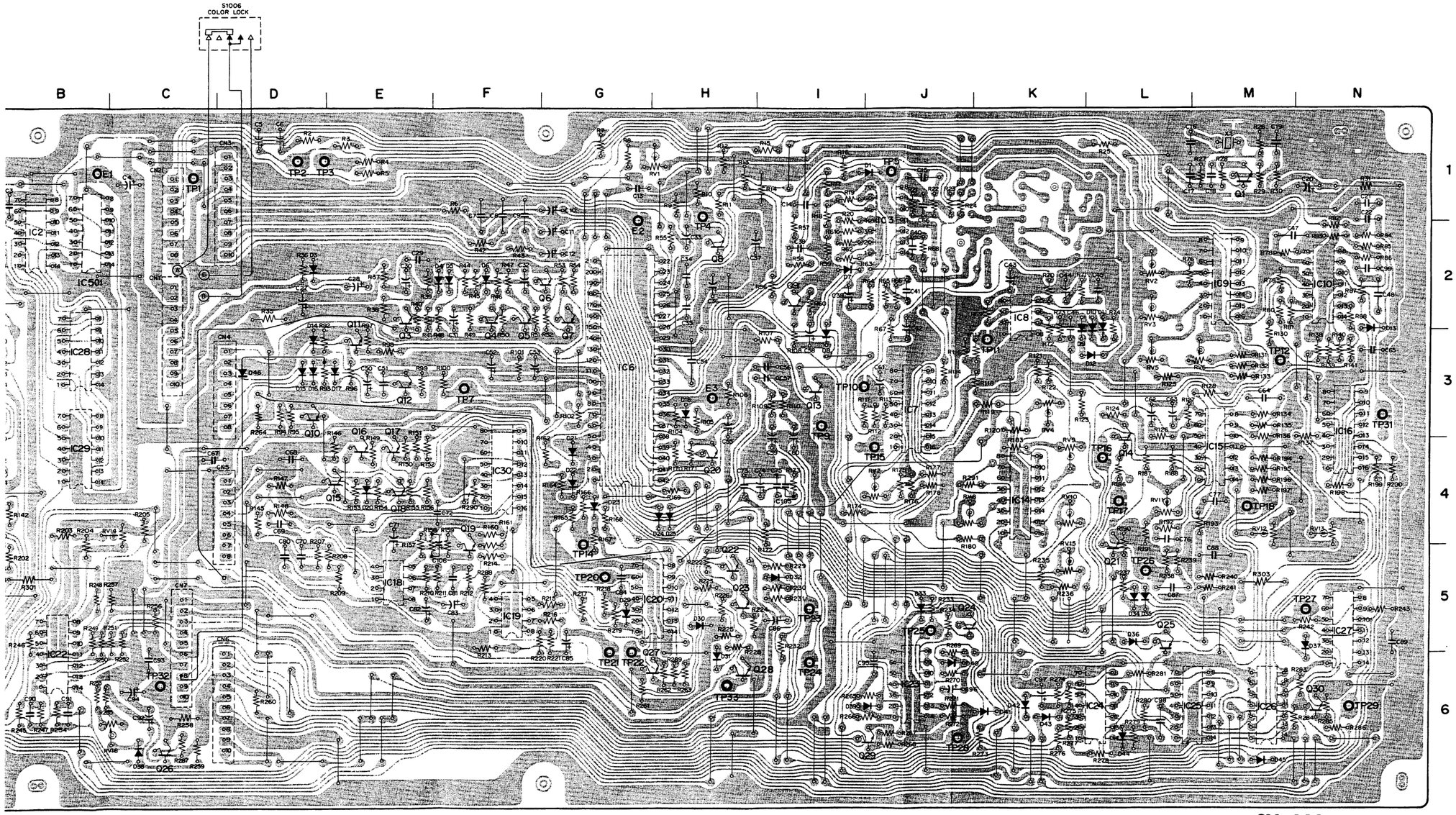
SONY-SP0630 / DRUCK 64

SV-44A
(DRUM/CAPSTAN PWM SERVO)

10841 TO 11640 (AEP)
10111 TO 10210 (UK)
10001 TO 10200 (U/C)

CN1	C-2	IC1	A-2	TP1	C-1
CN2	C-1	IC2	B-2	TP2	D-1
CN3	D-1	IC3	J-1	TP3	D-1
CN4	D-3	IC4	A-3	TP4	H-1
CN5	D-4	IC6	G-3	TP5	J-1
CN6	D-6	IC7	J-3	TP7	F-3
CN7	C-5	IC8	K-2	TP9	I-3
		IC9	M-2	TP10	I-3
D1	J-1	IC10	N-2	TP11	K-3
D2	A-1	IC11	A-4	TP12	M-3
D3	D-2	IC14	K-4	TP13	A-4
D4	F-2	IC15	M-4	TP14	G-4
D5	F-2	IC16	N-3	TP15	J-4
D6	F-2	IC17	A-4	TP16	L-4
D7	I-2	IC18	E-5	TP17	L-4
D8	I-3	IC19	F-5	TP18	M-4
D9	K-2	IC20	H-5	TP19	A-5
D10	L-2	IC21	A-6	TP20	G-5
D11	L-2	IC22	B-5	TP21	G-5
D12	L-3	IC23	J-6	TP22	G-5
D13	N-2	IC24	L-6	TP23	I-5
D14	D-3	IC25	M-6	TP24	I-6
D15	D-3	IC26	M-6	TP25	J-5
D16	D-3	IC27	N-5	TP26	L-5
D17	E-3	IC28	B-3	TP27	N-5
D18	H-3	IC29	B-4	TP28	J-6
D20	E-4	IC30	F-4	TP29	N-6
D21	G-4	IC501	B-2	TP30	A-1
D22	G-4			TP31	N-3
D23	G-4	Q1	M-1	TP32	C-6
D24	H-4	Q2	A-2	TP33	H-6
D25	H-4	Q3	E-2		
D29	G-5	Q4	F-2	RV1	H-1
D30	H-5	Q5	F-2	RV2	L-2
D31	H-6	Q6	G-2	RV3	L-2
D32	I-5	Q7	G-2	RV4	K-3
D33	J-5	Q8	H-2	RV5	L-3
D34	L-5	Q9	I-2	RV6	M-3
D35	L-5	Q10	D-3	RV7	J-4
D36	L-5	Q11	E-3	RV8	J-4
D37	N-5	Q12	E-3	RV9	K-4
D38	C-6	Q13	I-3	RV10	K-4
D39	J-6	Q14	L-3	RV11	L-4
D40	J-6	Q15	E-4	RV12	M-4
D41	K-6	Q16	E-4	RV13	N-4
D42	K-6	Q17	E-4	RV14	C-4
D43	K-6	Q18	E-4	RV15	K-5
D44	L-6	Q19	F-4	RV16	C-6
D45	M-6	Q20	H-4		
D46	D-3	Q21	L-4	X1	M-1
		Q22	H-5		
E1	B-1	Q23	H-5		
E2	G-1	Q24	J-5		
E3	H-3	Q25	L-5		
		Q26	C-6		
		Q27	H-6		
		Q28	H-6		
		Q29	J-6		
		Q30	N-6		



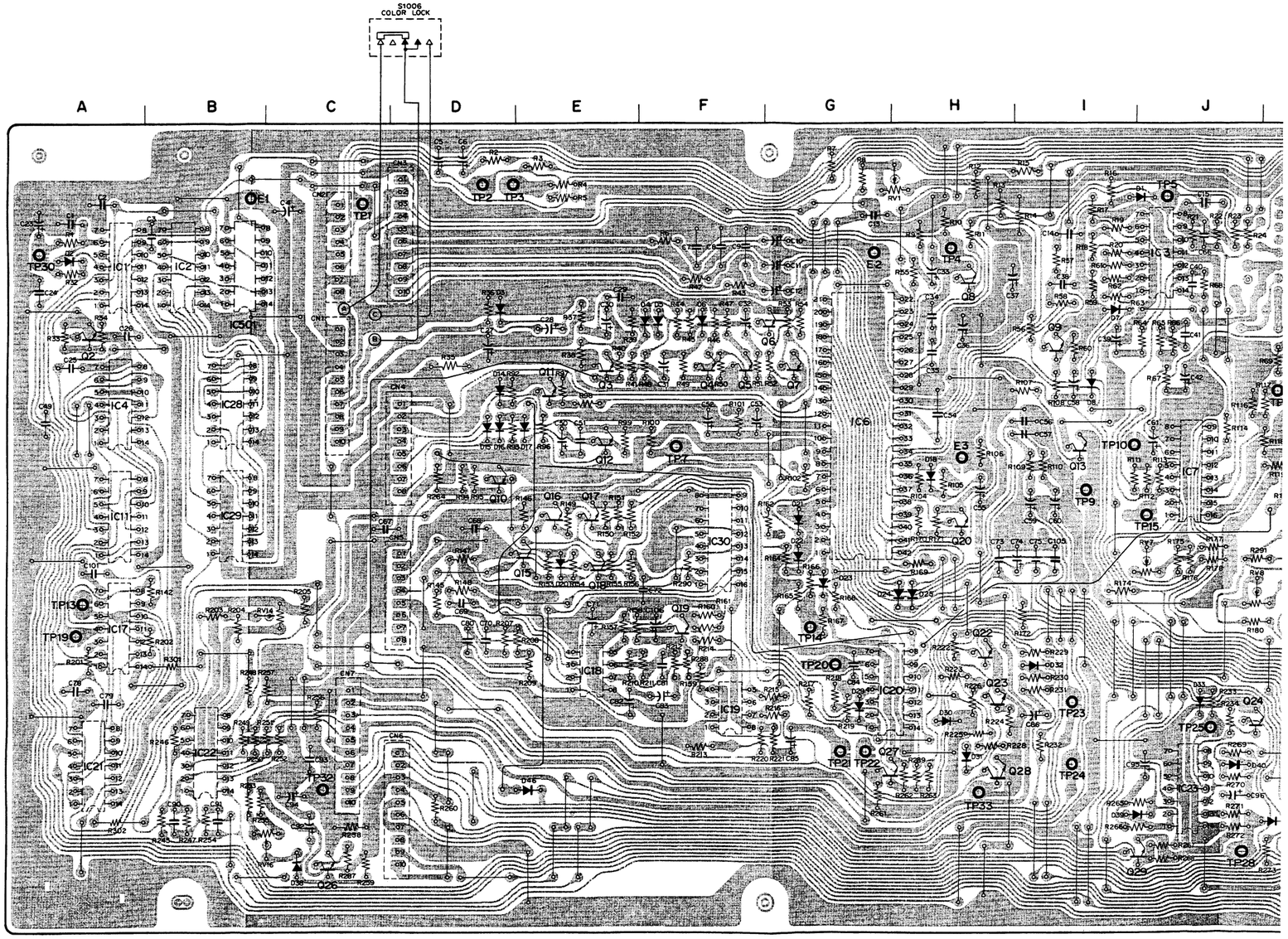


SV-44A -SOLDERING SIDE-

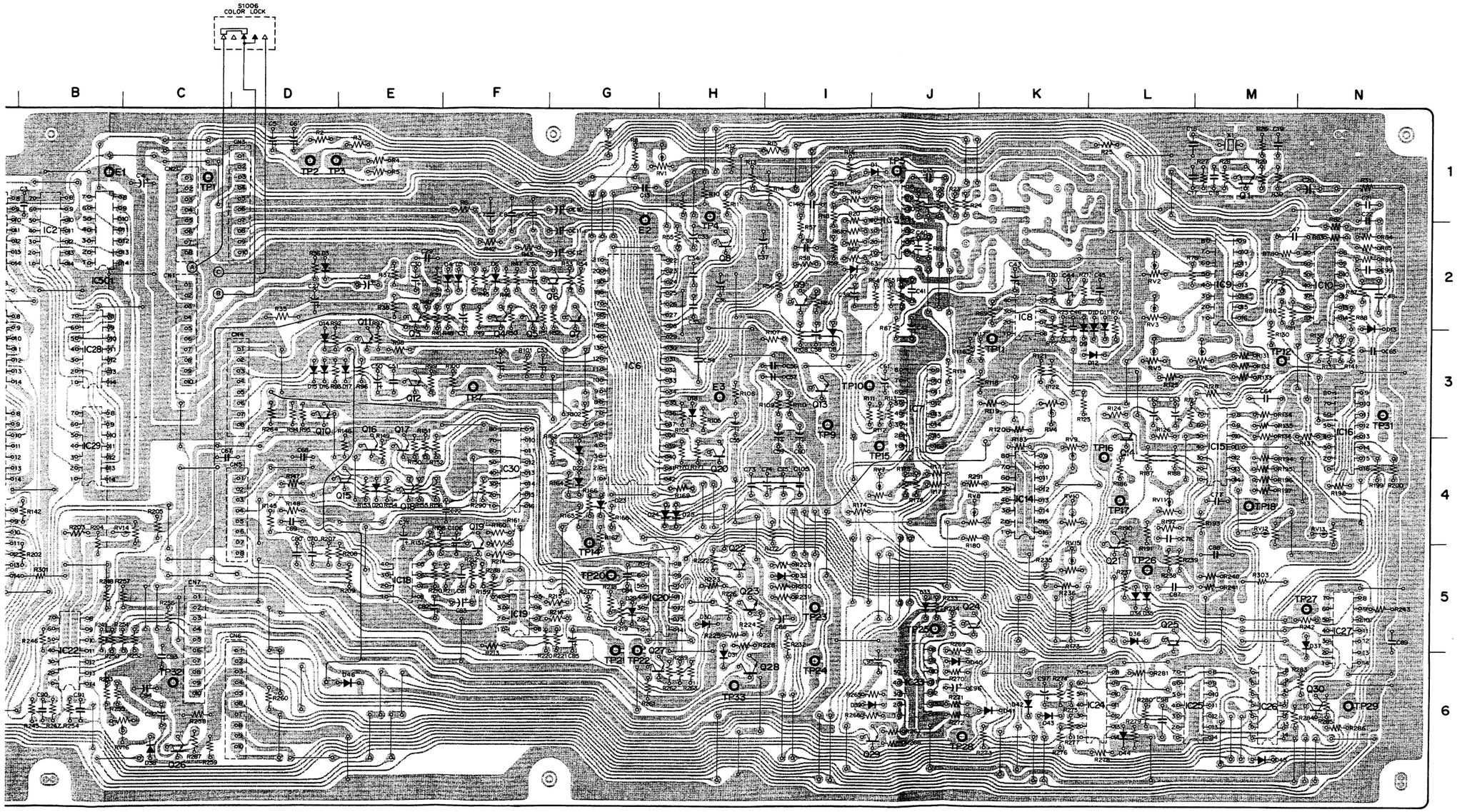
SV-44A
(DRUM/CAPSTAN PWM SERVO)

11641 TO 13440 (AEP)
10211 TO 10510 (UK)

CN1	C-2	IC1	A-2	TP1	C-1
CN2	C-1	IC2	B-2	TP2	D-1
CN3	D-1	IC3	J-1	TP3	D-1
CN4	D-3	IC4	A-3	TP4	H-1
CN5	D-4	IC6	G-3	TP5	J-1
CN6	D-6	IC7	J-3	TP7	F-3
CN7	C-5	IC8	K-2	TP9	I-3
		IC9	M-2	TP10	I-3
D1	J-1	IC10	N-2	TP11	K-3
D2	A-1	IC11	A-4	TP12	M-3
D3	D-2	IC14	K-4	TP13	A-4
D4	F-2	IC15	M-4	TP14	G-4
D5	F-2	IC16	N-3	TP15	J-4
D6	F-2	IC17	A-4	TP16	L-4
D7	I-2	IC18	E-5	TP17	L-4
D8	I-3	IC19	F-5	TP18	M-4
D9	K-2	IC20	H-5	TP19	A-5
D10	L-2	IC21	A-6	TP20	G-5
D11	L-2	IC22	B-5	TP21	G-5
D12	L-3	IC23	J-6	TP22	G-5
D13	N-2	IC24	L-6	TP23	I-5
D14	D-3	IC25	M-6	TP24	I-6
D15	D-3	IC26	M-6	TP25	J-5
D16	D-3	IC27	N-5	TP26	L-5
D17	E-3	IC28	B-3	TP27	N-5
D18	H-3	IC29	B-4	TP28	J-6
D20	E-4	IC30	F-4	TP29	N-6
D21	G-4	IC501	B-2	TP30	A-1
D22	G-4			TP31	N-3
D23	G-4	Q1	M-1	TP32	C-6
D24	H-4	Q2	A-2	TP33	H-6
D25	H-4	Q3	E-2		
D29	G-5	Q4	F-2	RV1	H-1
D30	H-5	Q5	F-2	RV2	L-2
D31	H-6	Q6	G-2	RV3	L-2
D32	I-5	Q7	G-2	RV4	K-3
D33	J-5	Q8	H-2	RV5	L-3
D34	L-5	Q9	I-2	RV6	M-3
D35	L-5	Q10	D-3	RV7	J-4
D36	L-5	Q11	E-3	RV8	J-4
D37	N-5	Q12	E-3	RV9	K-4
D38	C-6	Q13	I-3	RV10	K-4
D39	J-6	Q14	L-3	RV11	L-4
D40	J-6	Q15	E-4	RV12	M-4
D41	K-6	Q16	E-4	RV13	N-4
D42	K-6	Q17	E-4	RV14	C-4
D43	K-6	Q18	E-4	RV15	K-5
D44	L-6	Q19	F-4	RV16	C-6
D45	M-6	Q20	H-4		
D46	E-6	Q21	L-4	X1	M-1
		Q22	H-5		
E1	B-1	Q23	H-5		
E2	G-1	Q24	J-5		
E3	H-3	Q25	L-5		
		Q26	C-6		
		Q27	H-6		
		Q28	H-6		
		Q29	J-6		
		Q30	N-6		



SV-44A

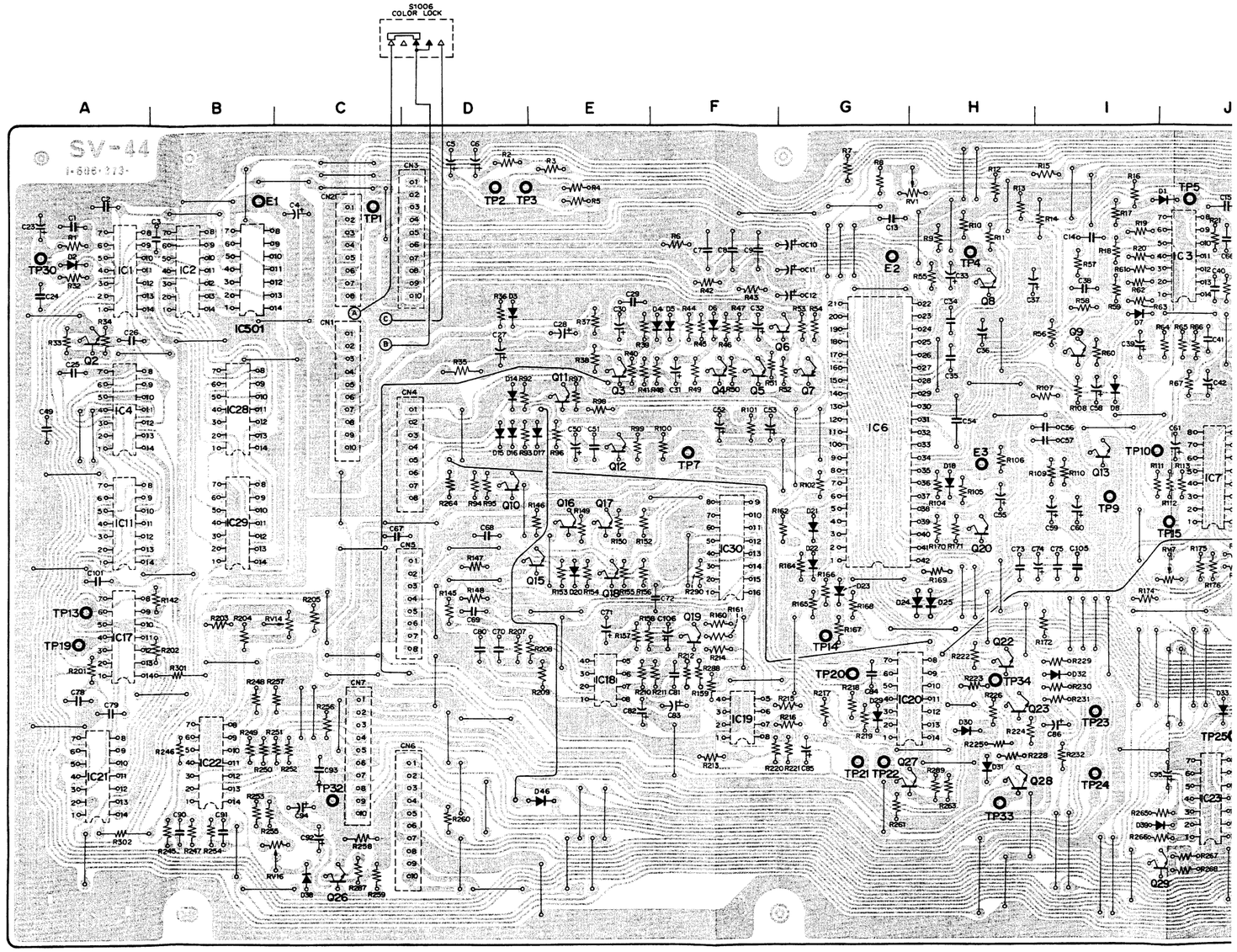


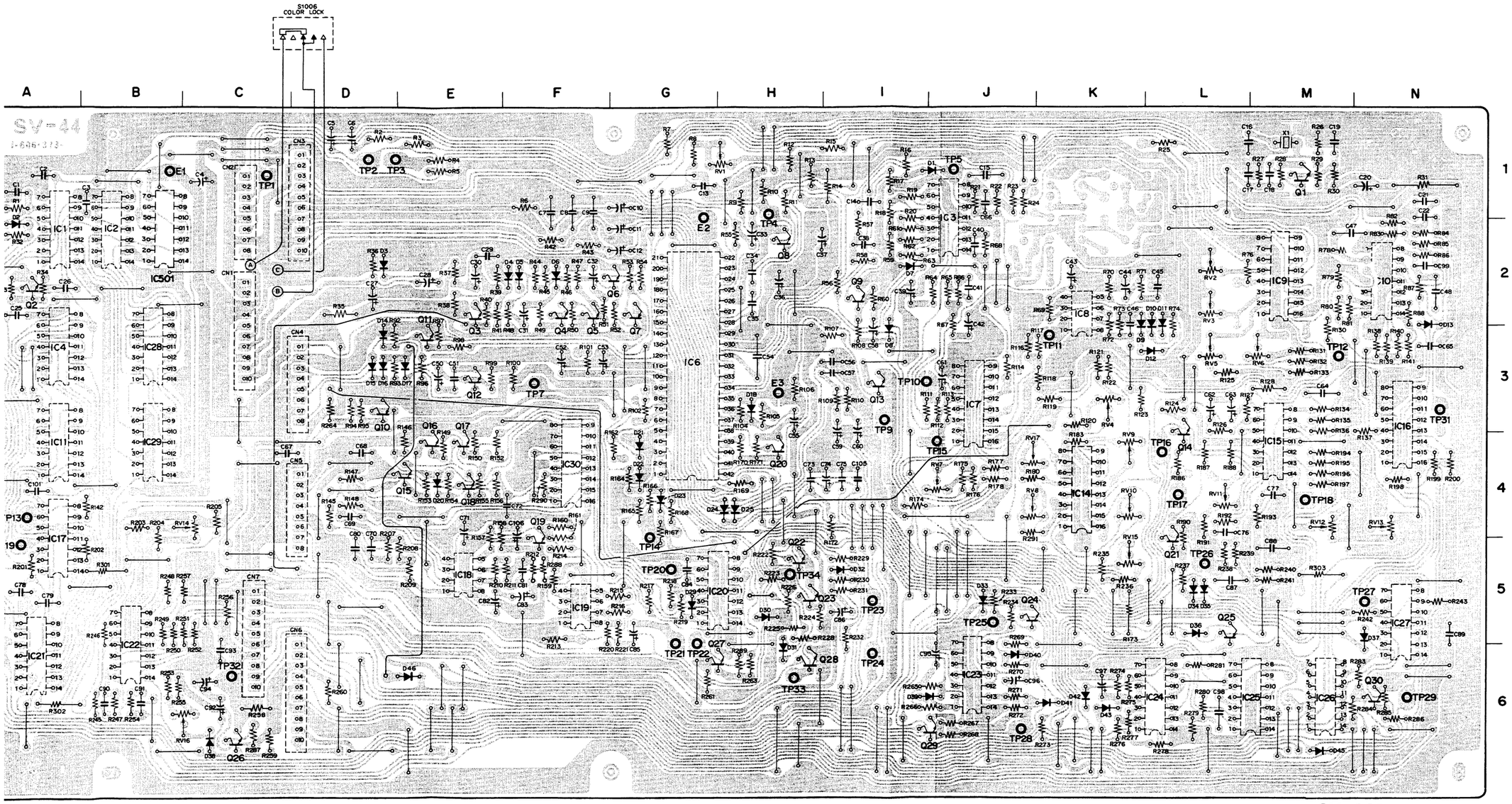
SV-44A –SOLDERING SIDE–

SV-44A
(DRUM/CAPSTAN PWM SERVO)

S/N 13441 AND LATER (AEP)
S/N 10511 AND LATER (UK)
S/N 10201 AND LATER (U/C)

CN1	C-2	IC1	A-2	TP1	C-1
CN2	C-1	IC2	B-2	TP2	D-1
CN3	D-1	IC3	J-1	TP3	D-1
CN4	D-3	IC4	A-3	TP4	H-1
CN5	D-4	IC6	G-3	TP5	J-1
CN6	D-6	IC7	J-3	TP7	F-3
CN7	C-5	IC8	K-2	TP9	I-3
		IC9	M-2	TP10	I-3
D1	J-1	IC10	N-2	TP11	K-3
D2	A-1	IC11	A-4	TP12	M-3
D3	D-2	IC14	K-4	TP13	A-4
D4	F-2	IC15	M-4	TP14	G-4
D5	F-2	IC16	N-3	TP15	J-4
D6	F-2	IC17	A-4	TP16	L-4
D7	I-2	IC18	E-5	TP17	L-4
D8	I-3	IC19	F-5	TP18	M-4
D9	K-2	IC20	H-5	TP19	A-5
D10	L-2	IC21	A-6	TP20	G-5
D11	L-2	IC22	B-5	TP21	G-5
D12	L-3	IC23	J-6	TP22	G-5
D13	N-2	IC24	L-6	TP23	I-5
D14	D-3	IC25	M-6	TP24	I-6
D15	D-3	IC26	M-6	TP25	J-5
D16	D-3	IC27	N-5	TP26	L-5
D17	E-3	IC28	B-3	TP27	N-5
D18	H-3	IC29	B-4	TP28	J-6
D20	E-4	IC30	F-4	TP29	N-6
D21	G-4	IC501	B-2	TP30	A-1
D22	G-4			TP31	N-3
D23	G-4	Q1	M-1	TP32	C-6
D24	H-4	Q2	A-2	TP33	H-6
D25	H-4	Q3	E-2	TP34	H-5
D29	G-5	Q4	F-2		
D30	H-5	Q5	F-2	RV1	H-1
D31	H-6	Q6	G-2	RV2	L-2
D32	I-5	Q7	G-2	RV3	L-2
D33	J-5	Q8	H-2	RV4	K-3
D34	L-5	Q9	I-2	RV5	L-3
D35	L-5	Q10	D-3	RV6	M-3
D36	L-5	Q11	E-3	RV7	J-4
D37	N-5	Q12	E-3	RV8	J-4
D38	C-6	Q13	I-3	RV9	K-4
D39	J-6	Q14	L-3	RV10	K-4
D40	J-6	Q15	E-4	RV11	L-4
D41	K-6	Q16	E-4	RV12	M-4
D42	K-6	Q17	E-4	RV13	N-4
D43	K-6	Q18	E-4	RV14	C-4
D45	M-6	Q19	F-4	RV15	K-5
D46	E-6	Q20	H-4	RV16	C-6
		Q21	L-4	RV17	J-4
E1	B-1	Q22	H-5		
E2	G-1	Q23	H-5	X1	M-1
E3	H-3	Q24	J-5		
		Q25	L-5		
		Q26	C-6		
		Q27	H-6		
		Q28	H-6		
		Q29	J-6		
		Q30	N-6		

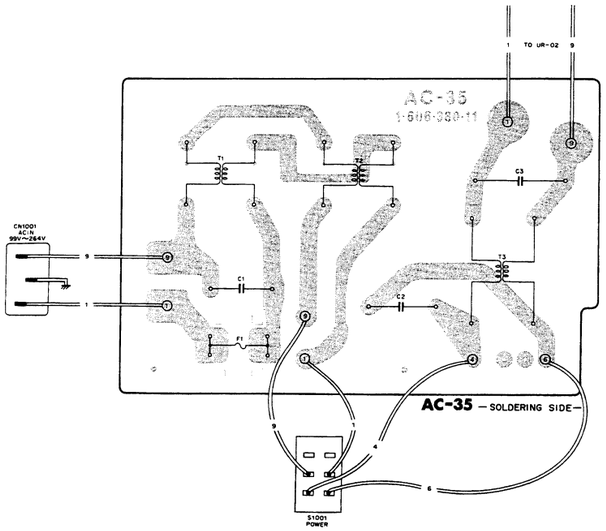




SV-44A – SOLDERING SIDE –
1-606-373-26,27,28,29
VO-5630

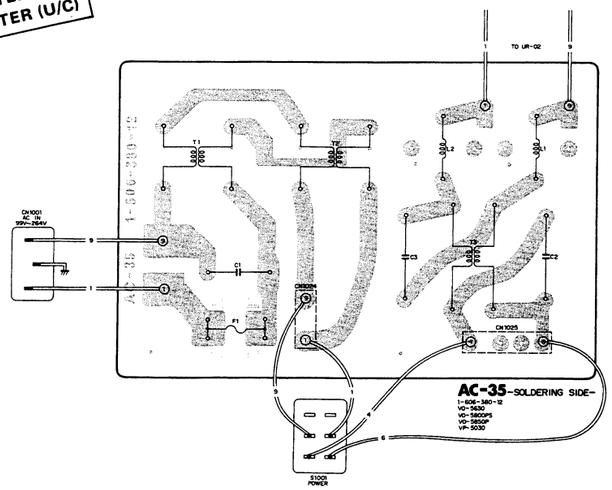
AC-35 (AC INPUT)

S/N UP TO 25440 (AEP)
S/N UP TO 13110 (UK)
S/N UP TO 10400 (U/C)



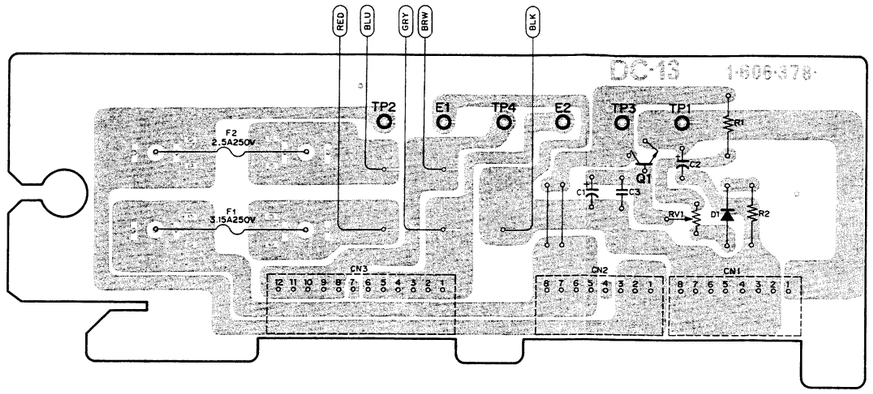
AC-35 – SOLDERING SIDE –

S/N 25441 AND LATER (AEP)
S/N 13111 AND LATER (UK)
S/N 10401 AND LATER (U/C)

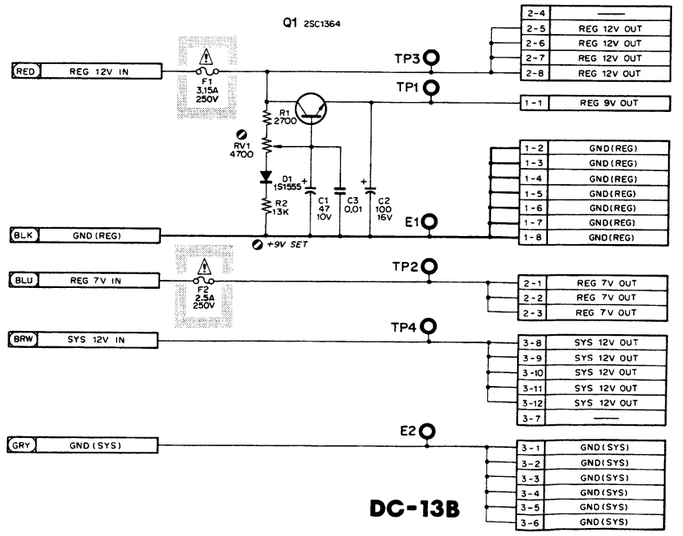


AC-35 – SOLDERING SIDE –
1-606-380-12
VO-5630
VO-5630PS
VO-5630P
VP-3030

DC-13B (DC POWER SUPPLY)

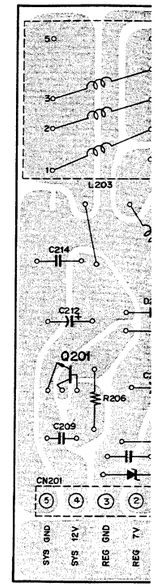


DC-13B – SOLDERING SIDE –



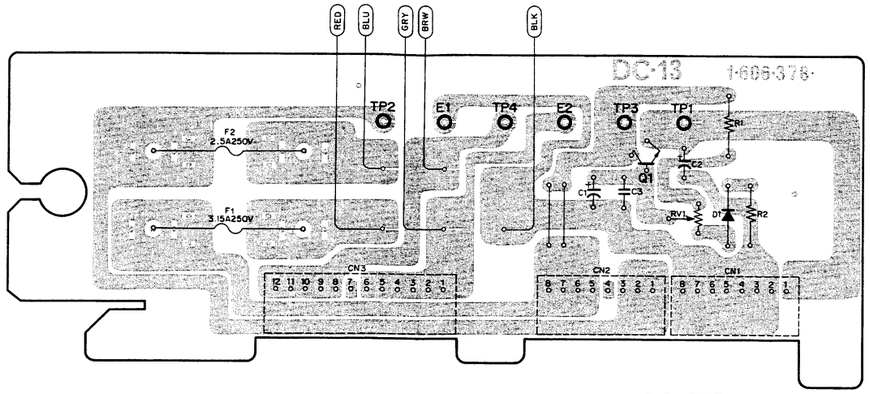
DC-13B

NOTE: **The shaded and ⚠-marked components are critical to safety.**
Replace only with same components as specified.

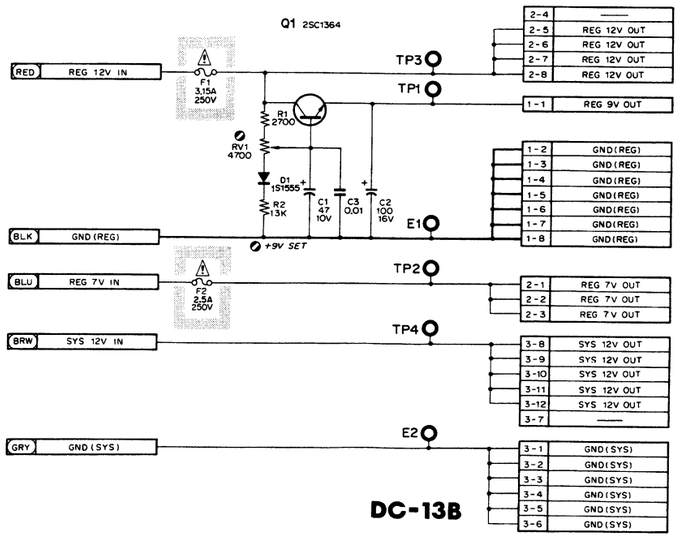


)NY-SP0630 / DRUCK 73

DC-13B (DC POWER SUPPLY)



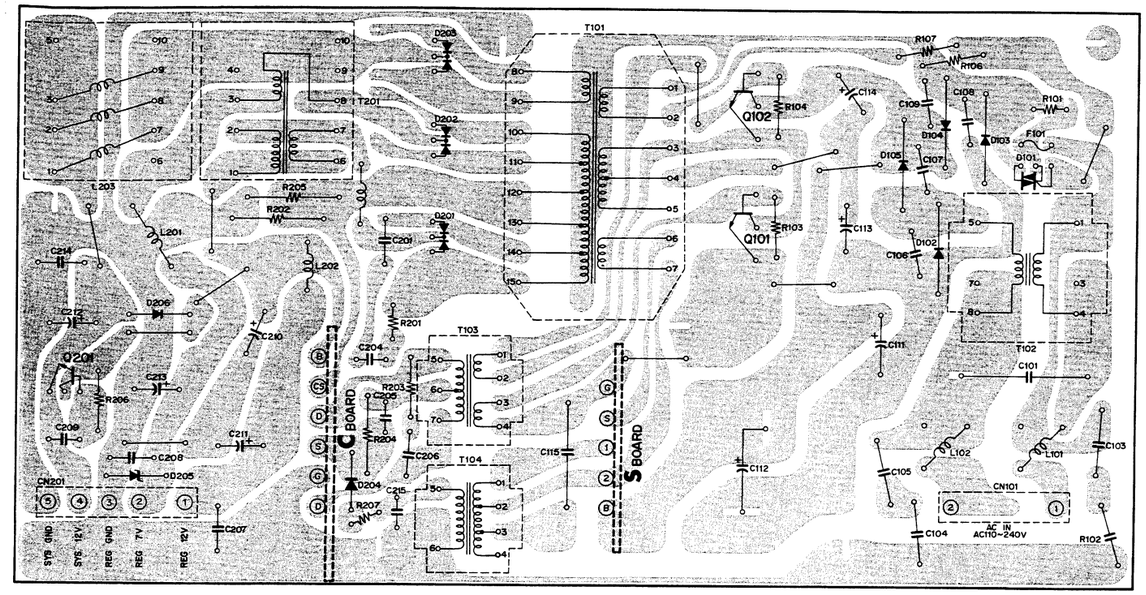
DC-13B -SOLDERING SIDE-



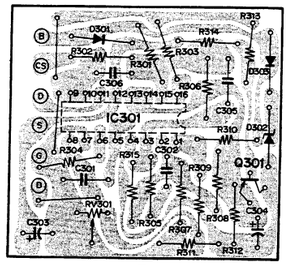
DC-13B

NOTE: **The shaded and ⚠ -marked components are critical to safety.**
Replace only with same components as specified.

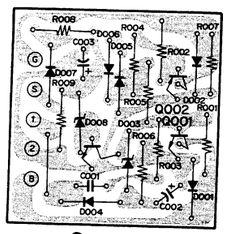
UR-02 (SWITCHING REGULATOR)



M -SOLDERING SIDE-



C-SOLDERING SIDE-

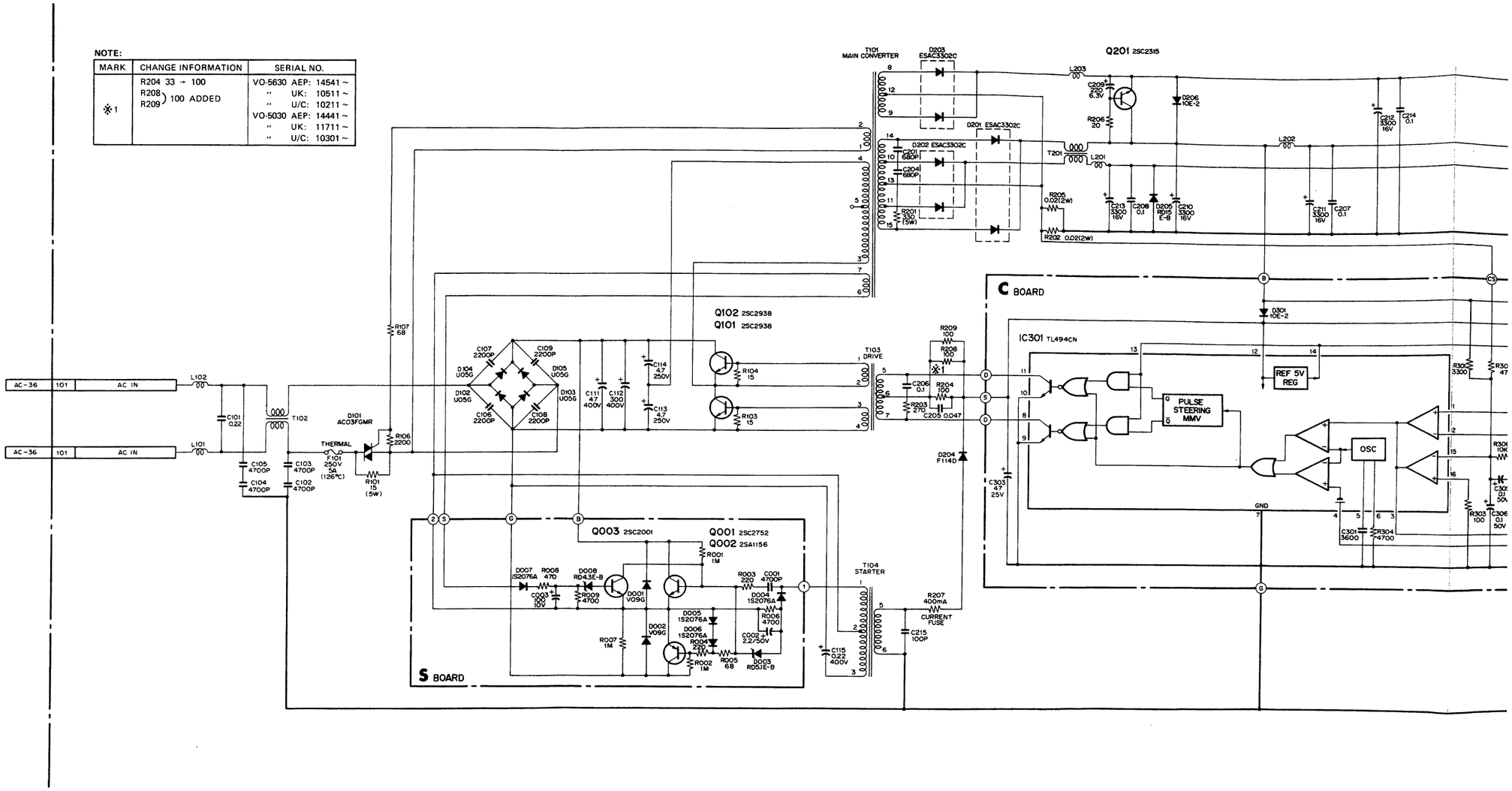


S -SOLDERING SIDE-

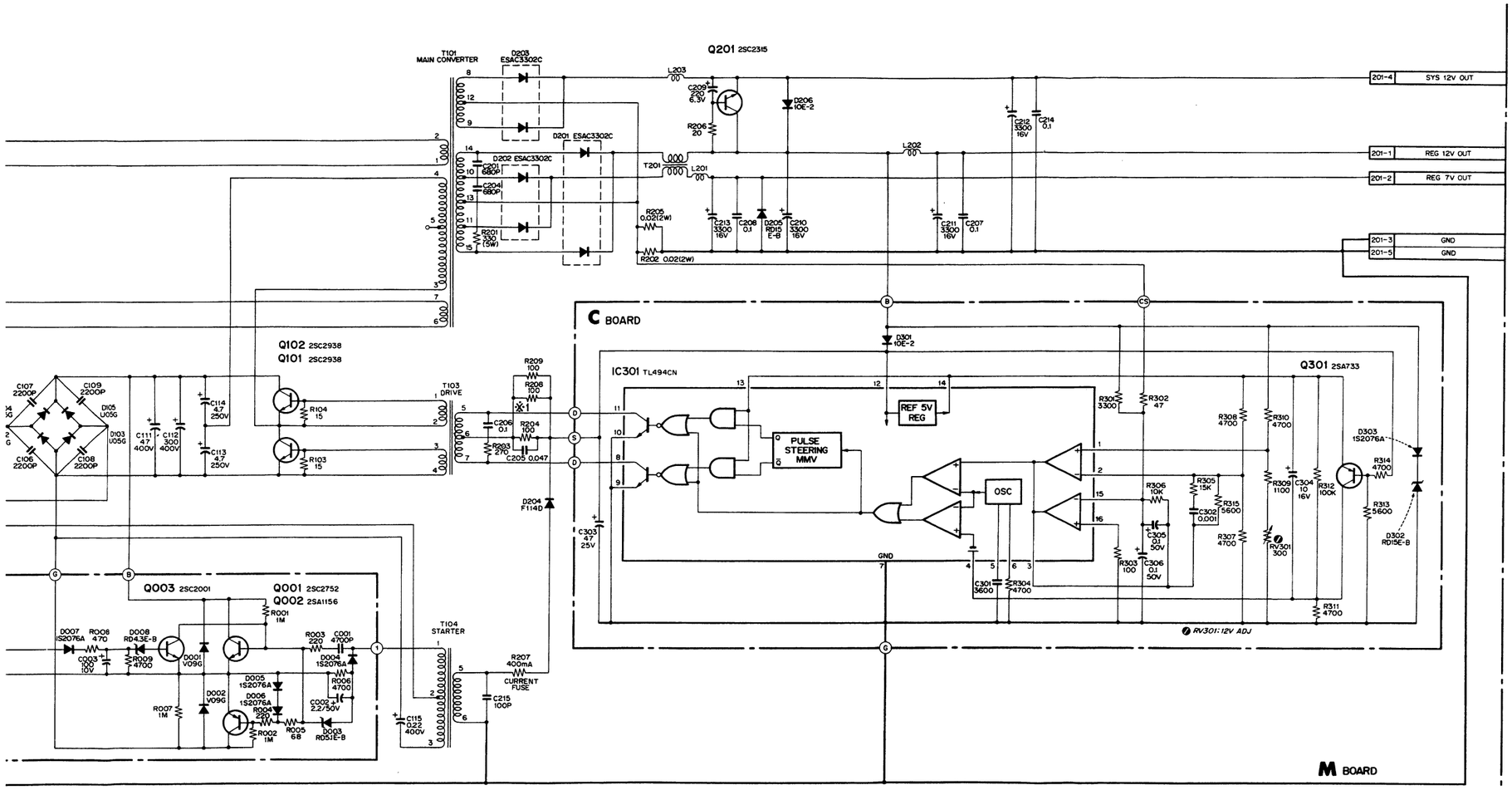
UR-02 (SWITCHING REGULATOR)

NOTE:

MARK	CHANGE INFORMATION	SERIAL NO.
※1	R204 33 → 100 R208, R209 100 ADDED	VO-5630 AEP: 14541 ~ " UK: 10511 ~ " U/C: 10211 ~ VO-5030 AEP: 14441 ~ " UK: 11711 ~ " U/C: 10301 ~

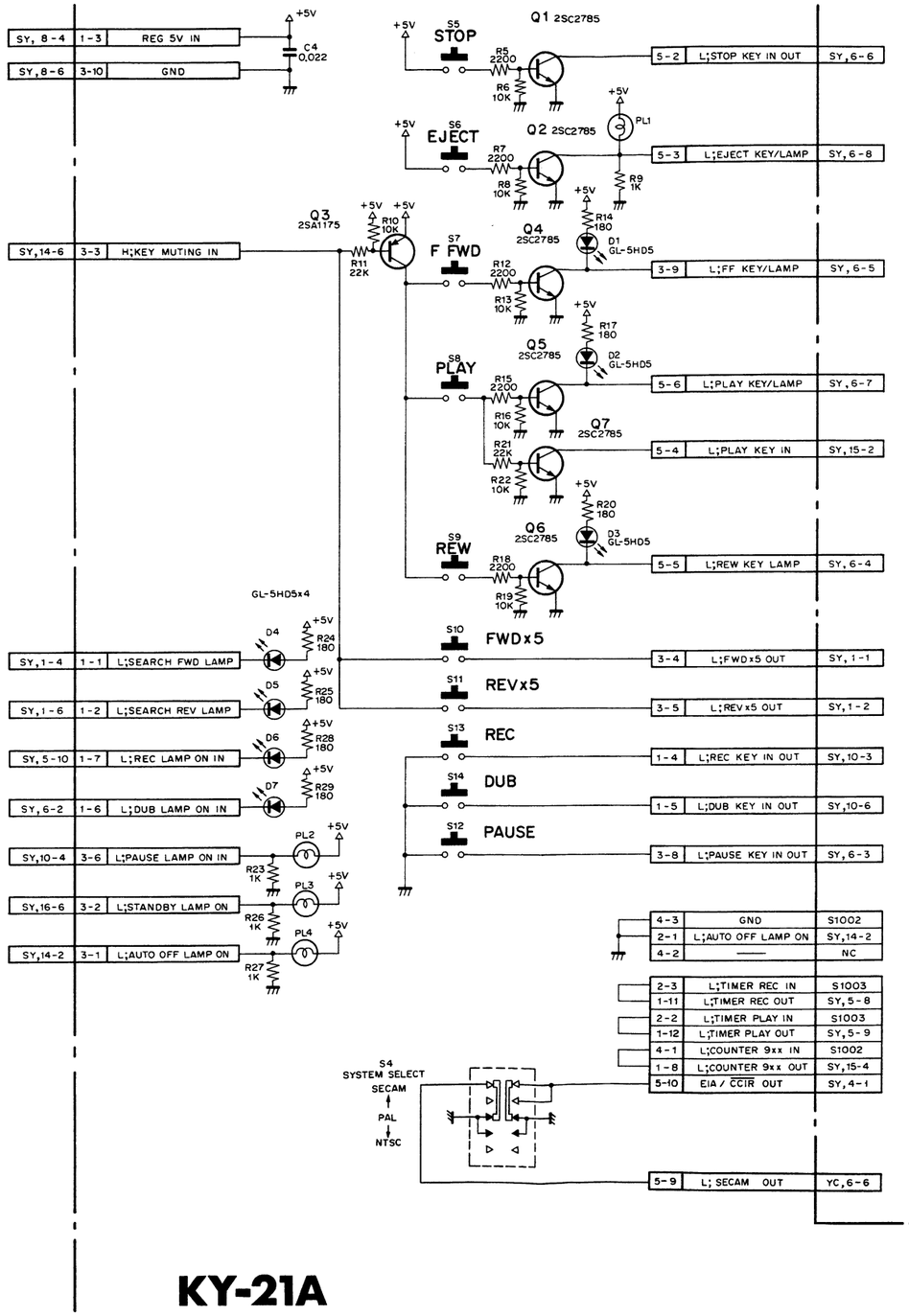


UR-02



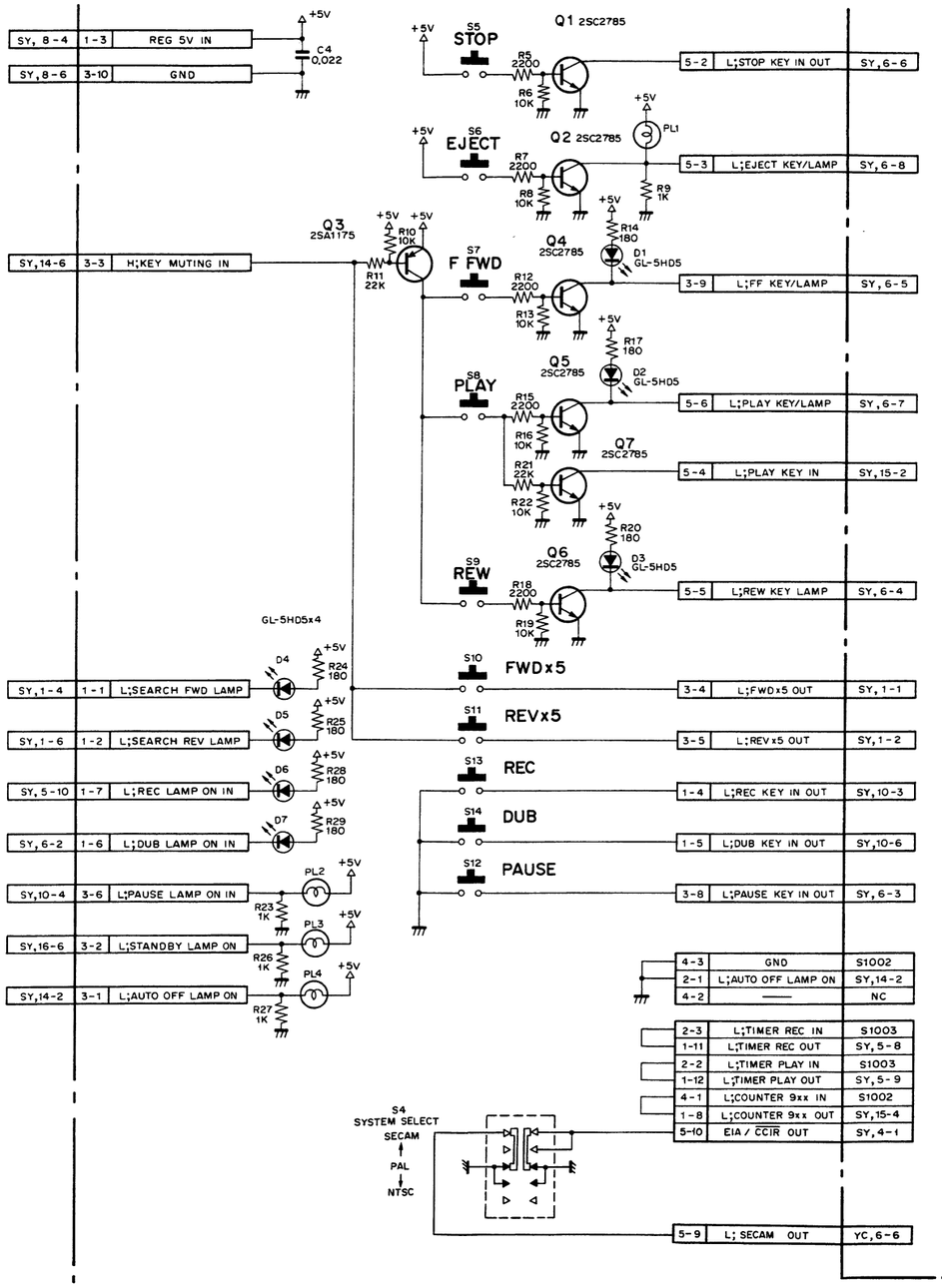
NOTE: **The shaded and ⚠-marked components are critical to safety.**
Replace only with same components as specified.

KY-21A
(FUNCTION KEY/SELECT SW)



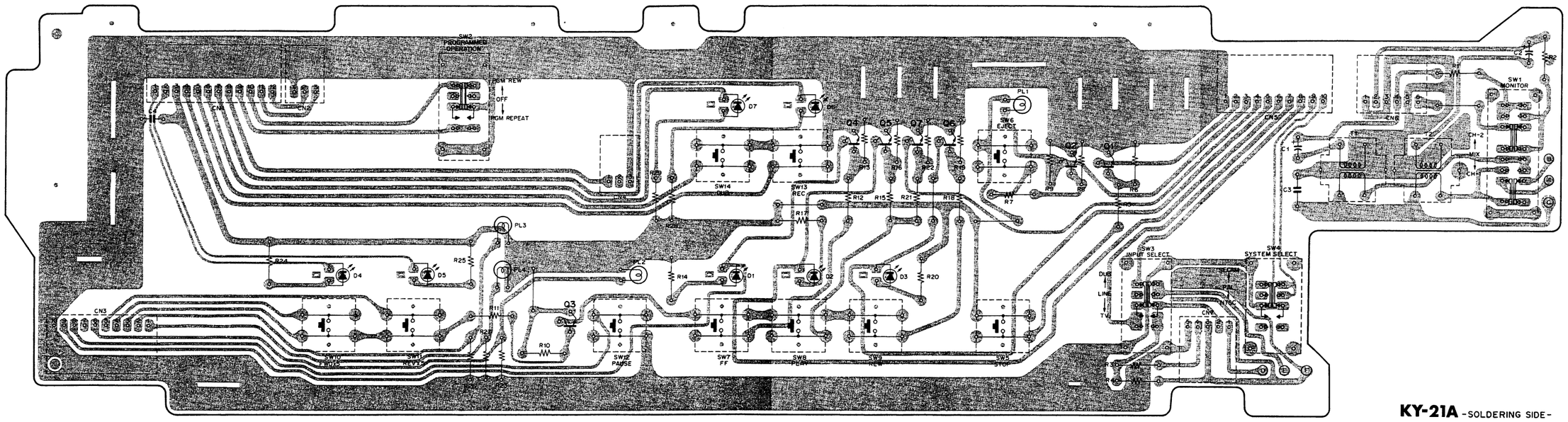
KY-21A

KY-21A
(FUNCTION KEY/SELECT SW)



KY-21A

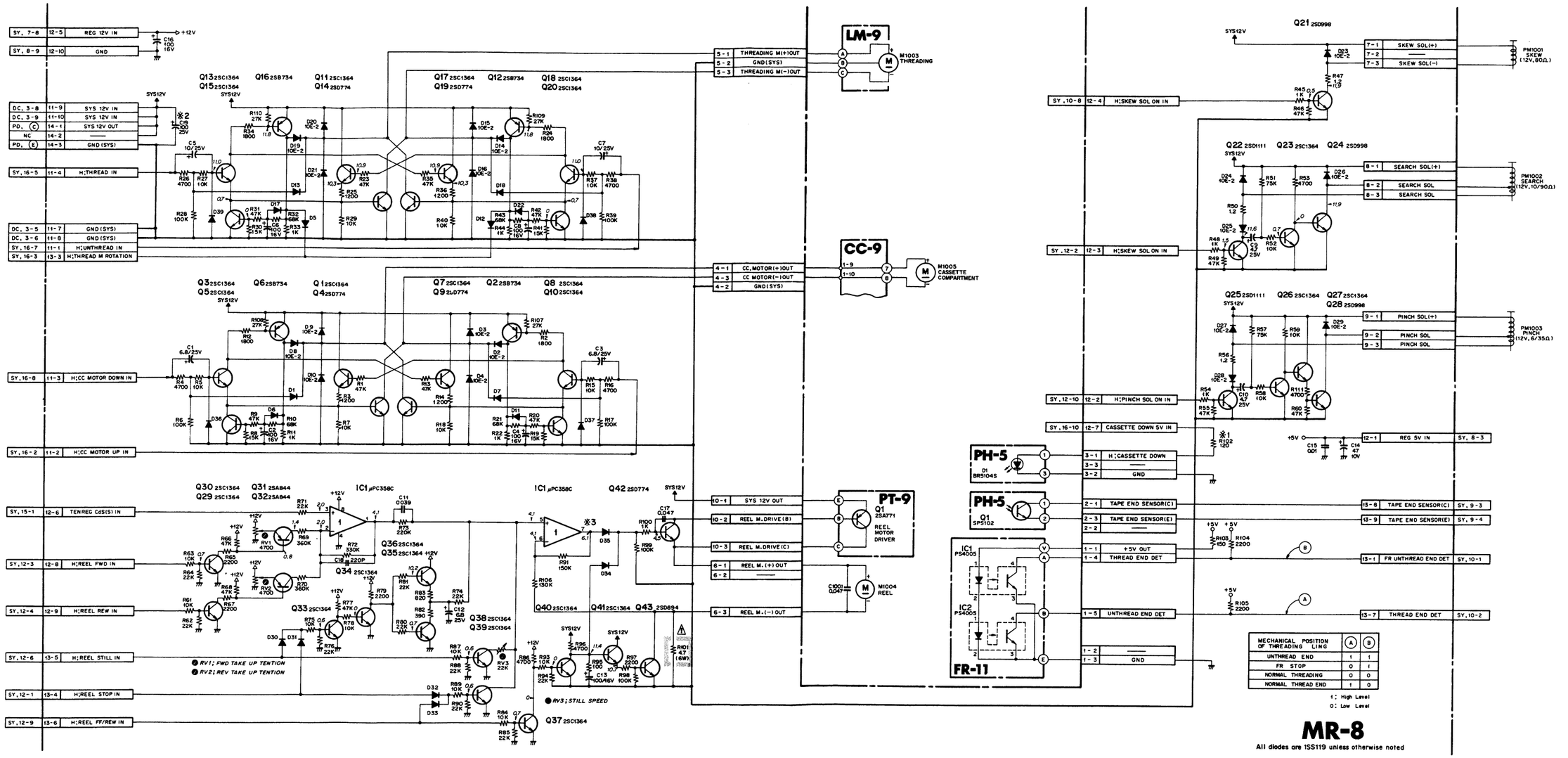
KY-21A
(FUNCTION KEY/SELECT SW)



KY-21A -SOLDERING SIDE-

MR-8 (THREADING/REEL MOTOR DRIVER)
FR-11
LM-9
PH-5
PT-9

UP TO 27440 (AEP)
UP TO 13710 (UK)
UP TO 10500 (U/C)



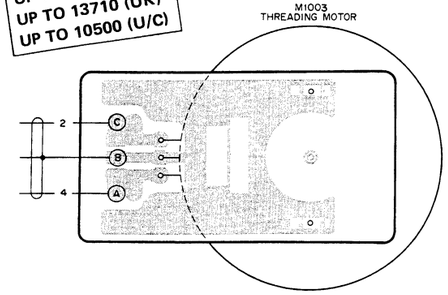
NOTE:

MARK	CHANGE INFORMATION	SERIAL NO.	MARK	CHANGE INFORMATION	SERIAL NO.	MARK	CHANGE INFORMATION	SERIAL NO.
※1	R102 100 → 120	VO-5600 U/C: 17451 ~ " J: 10701 ~ VO-5630 AEP: 14541 ~ " UK: 11211 ~ " U/C: 10201 ~	※2	C19 100 25V ADDED	VO-5600 U/C: 21851 ~ " J: 11101 ~ VO-5630 AEP: 22341 ~ " UK: 12811 ~ " U/C: 10401 ~	※3	R92 1K DELETED	VO-5600 U/C: 22351 ~ " J: 11101 ~ VO-5630 AEP: 23241 ~ " UK: 12811 ~ " U/C: 10401 ~

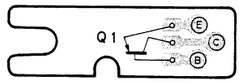
NOTE: The shaded and ⚠-marked components are critical to safety.
Replace only with same components as specified.

MR-8 (THREADING/REEL MOTOR DRIVER)
FR-11
LM-9
PH-5
PT-9

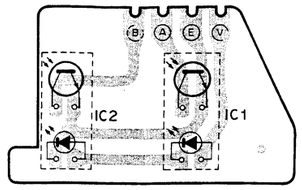
UP TO 27440 (AEP)
UP TO 13710 (UK)
UP TO 10500 (U/C)



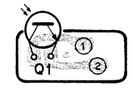
LM-9 – SOLDERING SIDE –



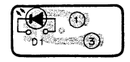
PT-9
– SOLDERING SIDE –



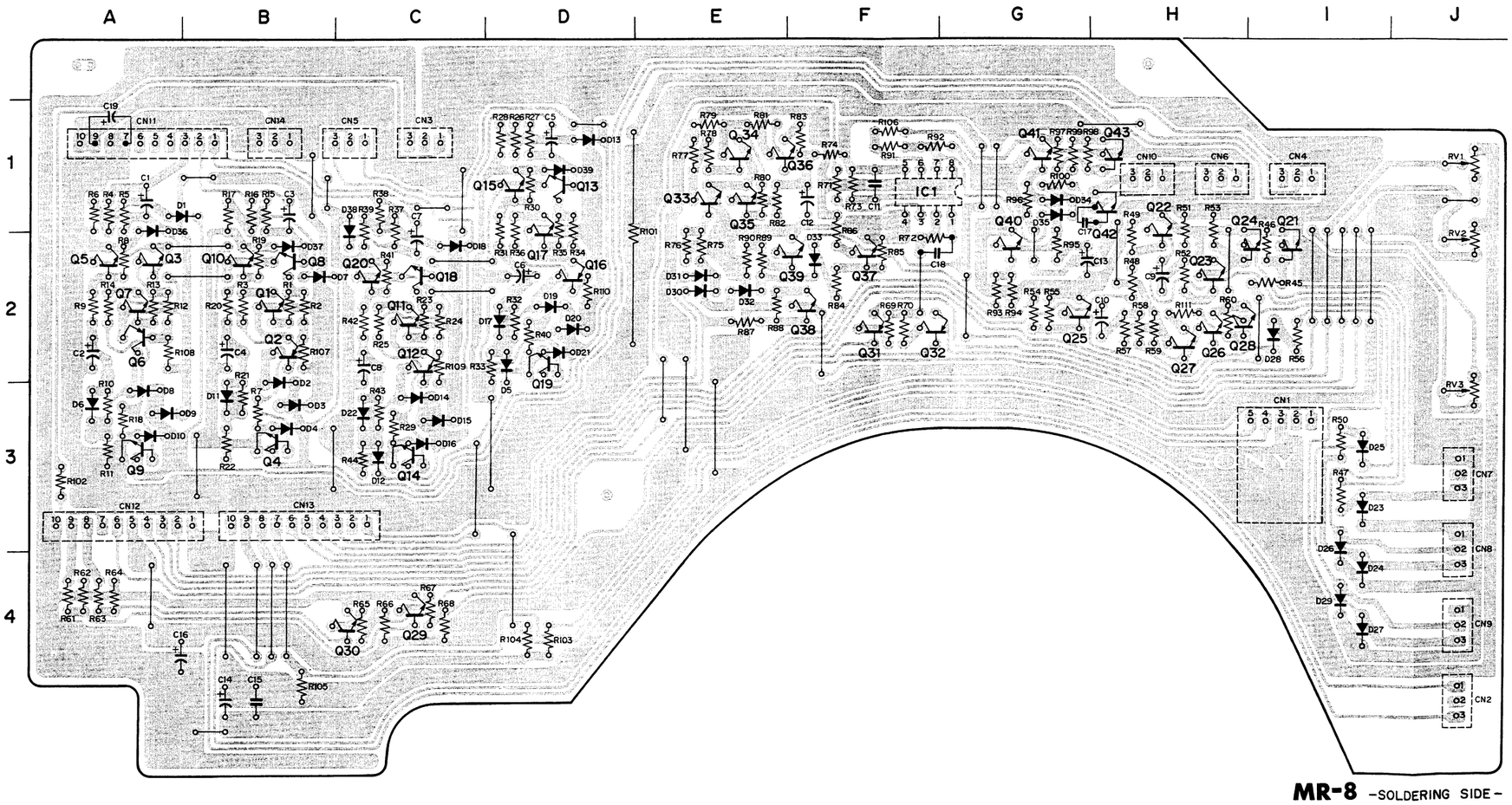
FR-11 – SOLDERING SIDE –



PH-5
–SOLDERING SIDE–



PH-5
–SOLDERING SIDE–



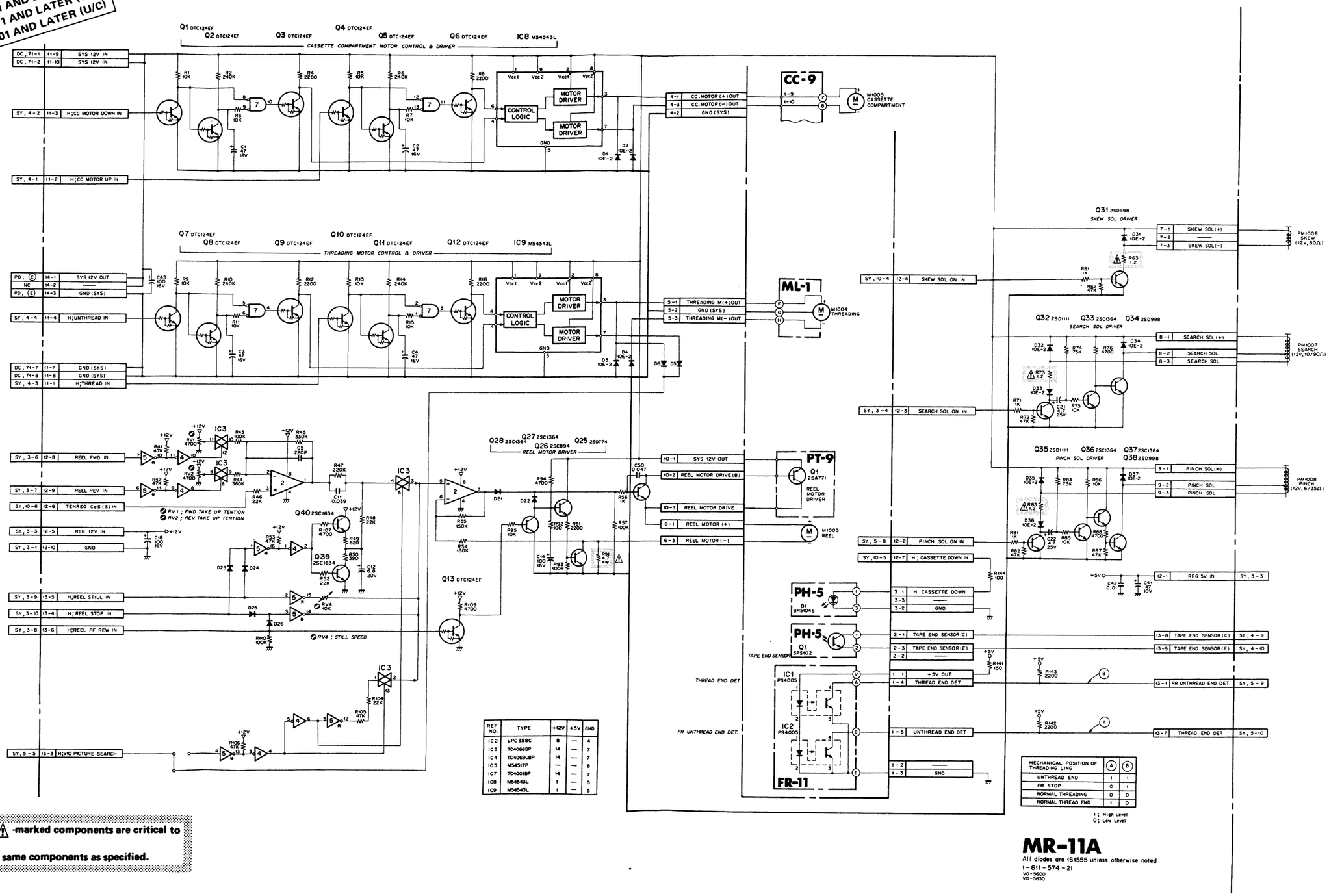
MR-8 –SOLDERING SIDE–

CN1	I - 3	Q1	B - 2
CN2	J - 4	Q2	B - 2
CN3	C - 1	Q3	A - 2
CN4	I - 1	Q4	B - 3
CN5	C - 1	Q5	A - 2
CN6	H - 1	Q6	A - 2
CN7	J - 3	Q7	A - 2
CN8	J - 3	Q8	B - 2
CN9	J - 4	Q9	A - 3
CN10	H - 1	Q10	B - 2
CN11	A - 1	Q11	C - 2
CN12	A - 3	Q12	C - 2
CN13	B - 3	Q13	D - 1
CN14	B - 1	Q14	C - 3
		Q15	D - 1
D1	A - 1	Q16	D - 2
D2	B - 3	Q17	D - 2
D3	B - 3	Q18	C - 2
D4	B - 3	Q19	D - 2
D5	D - 2	Q20	C - 2
D6	A - 3	Q21	I - 2
D7	B - 2	Q22	H - 2
D8	A - 3	Q23	H - 2
D9	A - 3	Q24	I - 2
D10	A - 3	Q25	G - 2
D11	B - 3	Q26	H - 2
D12	C - 3	Q27	H - 2
D13	D - 1	Q28	I - 2
D14	C - 3	Q29	C - 4
D15	C - 3	Q30	C - 4
D16	C - 3	Q31	F - 2
D17	D - 2	Q32	F - 2
D18	C - 2	Q33	E - 1
D19	D - 2	Q34	E - 1
D20	D - 2	Q35	E - 1
D21	D - 2	Q36	E - 1
D22	C - 3	Q37	F - 2
D23	I - 3	Q38	F - 2
D24	I - 4	Q39	F - 2
D25	I - 3	Q40	G - 2
D26	I - 3	Q41	G - 1
D27	I - 4	Q42	H - 1
D28	I - 2	Q43	H - 1
D29	I - 4		
D30	E - 2	RV1	J - 1
D31	E - 2	RV2	J - 2
D32	E - 2	RV3	J - 3
D33	F - 2		
D34	G - 1		
D35	G - 1		
D36	A - 1		
D37	B - 2		
D38	C - 2		
D39	D - 1		
IC1	F - 1		

ONY-SP0630 / DRUCK 81

MR-11A (THREADING/REEL MOTOR DRIVER)
FR-11
LM-9
PH-5
PT-9

S/N 27441 AND LATER (AEP)
S/N 13711 AND LATER (UK)
S/N 10501 AND LATER (U/C)

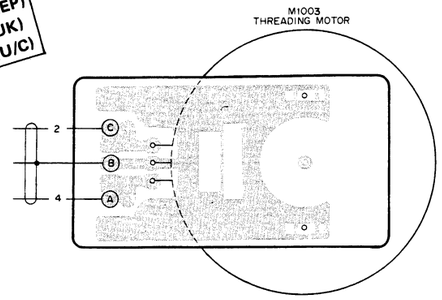


REF NO.	TYPE	+12V	+5V	GND
IC2	μPC358C	8	—	4
IC3	TC4066BP	14	—	7
IC4	TC4069UBP	14	—	7
IC5	M54517P	—	—	7
IC7	TC4001BP	14	—	7
IC8	M54543L	1	—	5
IC9	M54543L	1	—	5

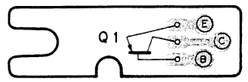
NOTE: **The shaded and ⚠-marked components are critical to safety.**
Replace only with same components as specified.

MR-11A (THREADING/REEL MOTOR DRIVER)
FR-11
LM-9
PH-5
PT-9

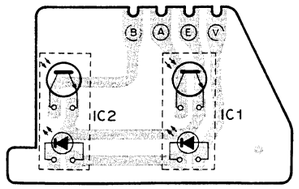
S/N 27441 AND LATER (AEP)
S/N 13711 AND LATER (UK)
S/N 10501 AND LATER (U/C)



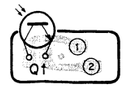
LM-9 – SOLDERING SIDE –



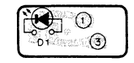
PT-9
– SOLDERING SIDE –



FR-11 – SOLDERING SIDE –

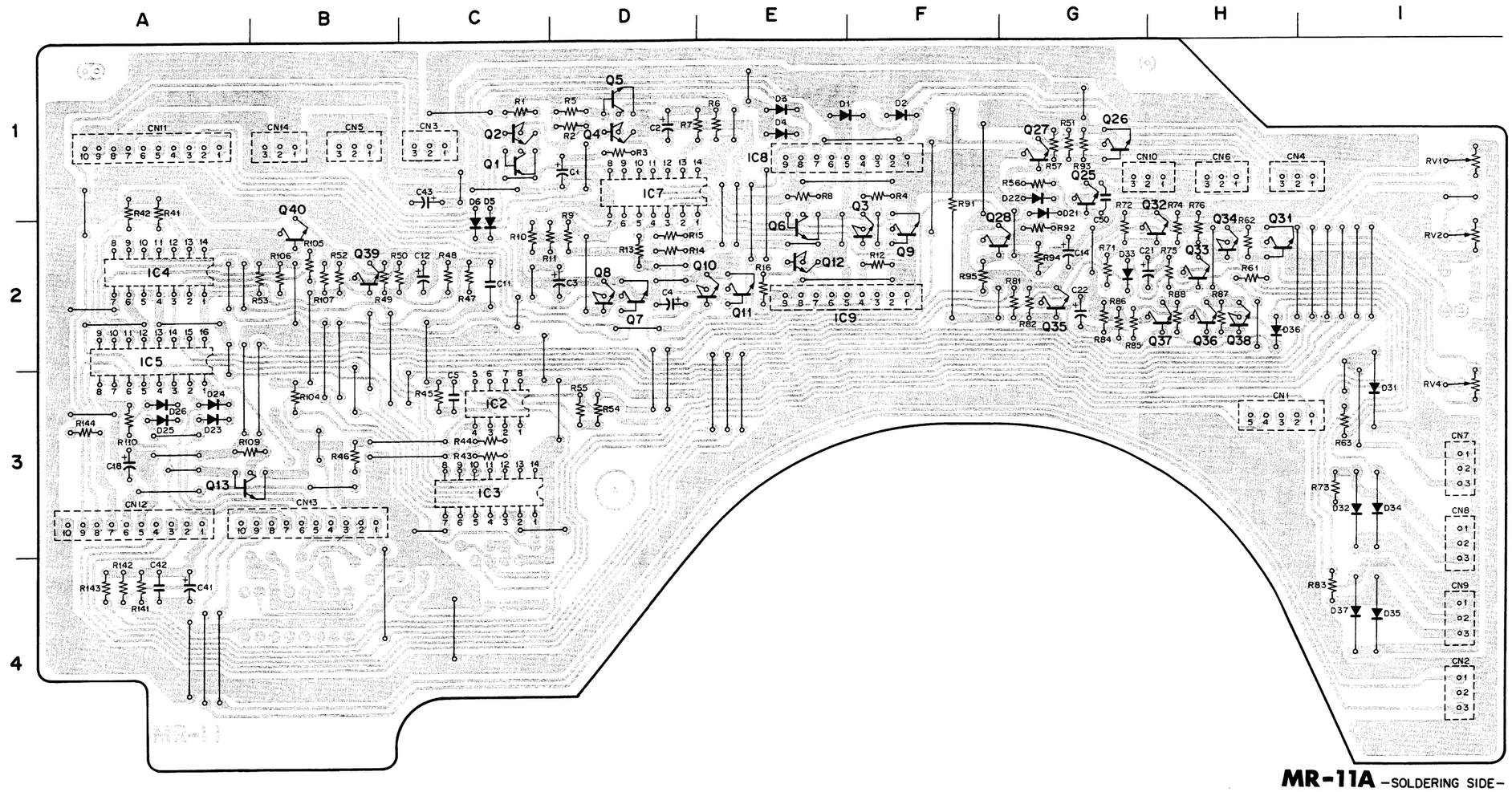


PH-5
-SOLDERING SIDE-



PH-5
-SOLDERING SIDE-

CN1	H-3	Q1	C-1	D1	E-1
CN2	I-4	Q2	C-1	D2	F-1
CN3	C-1	Q3	F-2	D3	E-1
CN4	H-1	Q4	D-1	D4	E-1
CN5	B-1	Q5	D-1	D5	C-2
CN6	H-1	Q6	E-2	D6	C-2
CN7	I-3	Q7	D-2	D21	G-2
CN8	I-3	Q8	D-2	D22	G-1
CN9	I-4	Q9	F-2	D23	A-3
CN10	H-1	Q10	E-2	D24	A-3
CN11	A-1	Q11	E-2	D25	A-3
CN12	A-3	Q12	E-2	D26	A-3
CN13	B-3	Q13	B-3	D31	I-3
CN14	B-1	Q25	G-1	D32	I-3
		Q26	G-1	D33	G-2
		Q27	G-1	D34	I-3
		Q28	F-2	D35	I-4
		Q31	H-2	D36	H-2
		Q32	H-2	D37	I-4
		Q33	H-2		
		Q34	H-2	IC2	C-3
		Q35	G-2	IC3	C-3
		Q36	H-2	IC4	A-2
		Q37	H-2	IC5	A-2
		Q38	H-2	IC7	D-1
		Q39	B-2	IC8	E-1
		Q40	B-2	IC9	E-2
		RV1	I-1		
		RV2	I-2		
		RV4	I-3		

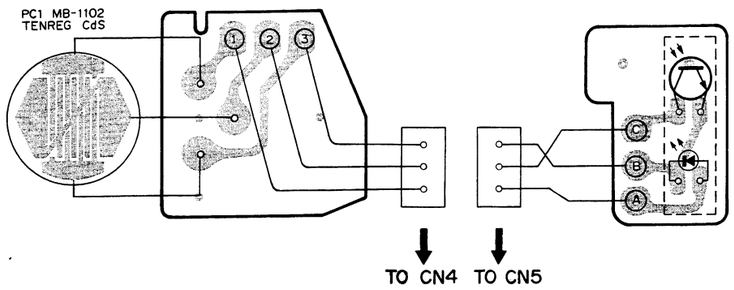


MR-11A – SOLDERING SIDE –
1-611-574-21
VO-5600
VO-5630

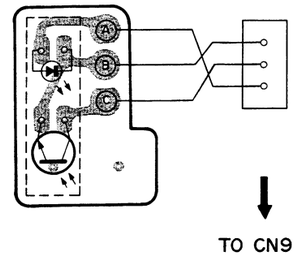
PD-16A (SOLENOID DRIVER/TAPE RUN DET)
SW-43
PH-4

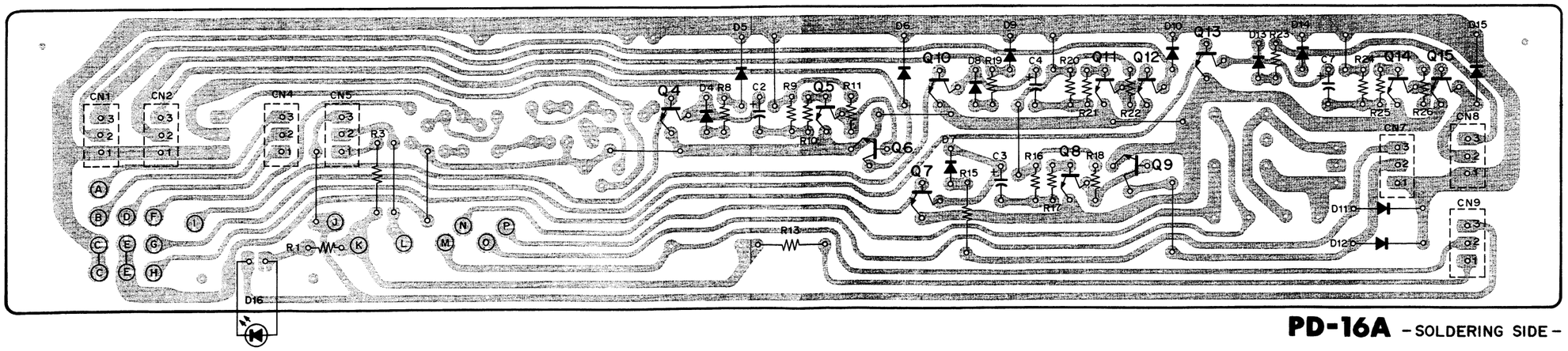
S/N UP TO 30440 (AEP)
S/N UP TO 14110 (UK)
S/N UP TO 10500 (U/C)

PH-4
-SOLDERING SIDE-



SW-43
-SOLDERING SIDE-





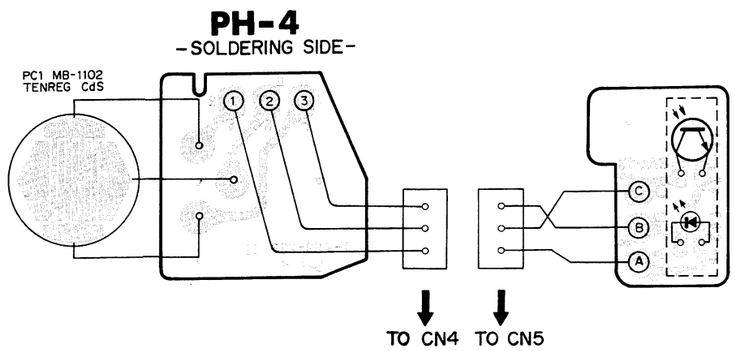
PD-16A -SOLDERING SIDE-

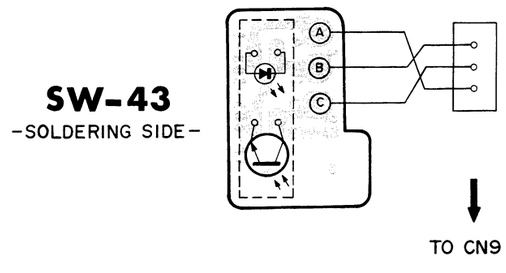
14-83 (a)

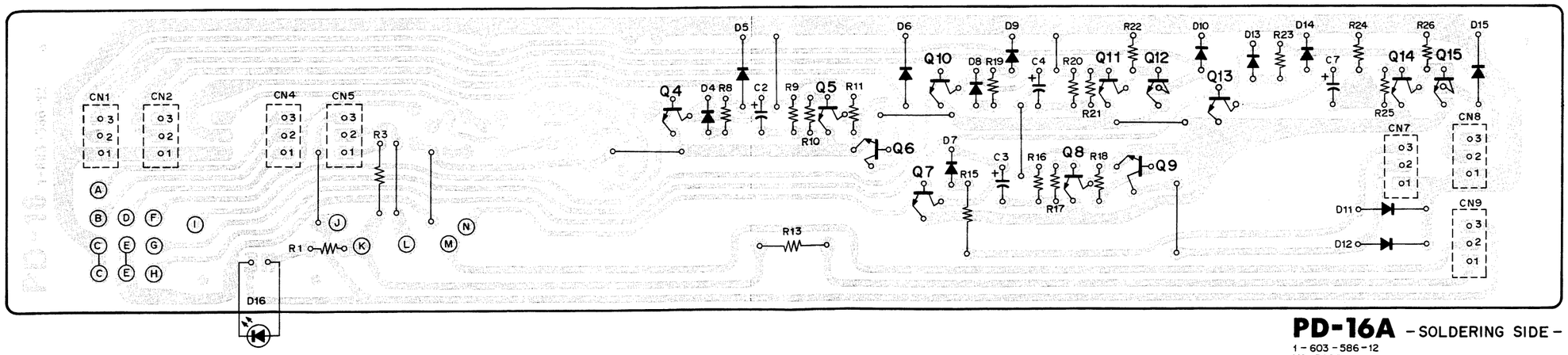
14-84 (a)

PD-16A (SOLENOID DRIVER/TAPE RUN DET)
SW-43
PH-4

S/N 30441 AND LATER (AEP)
S/N 14111 AND LATER (UK)
S/N 10501 AND LATER (U/C)





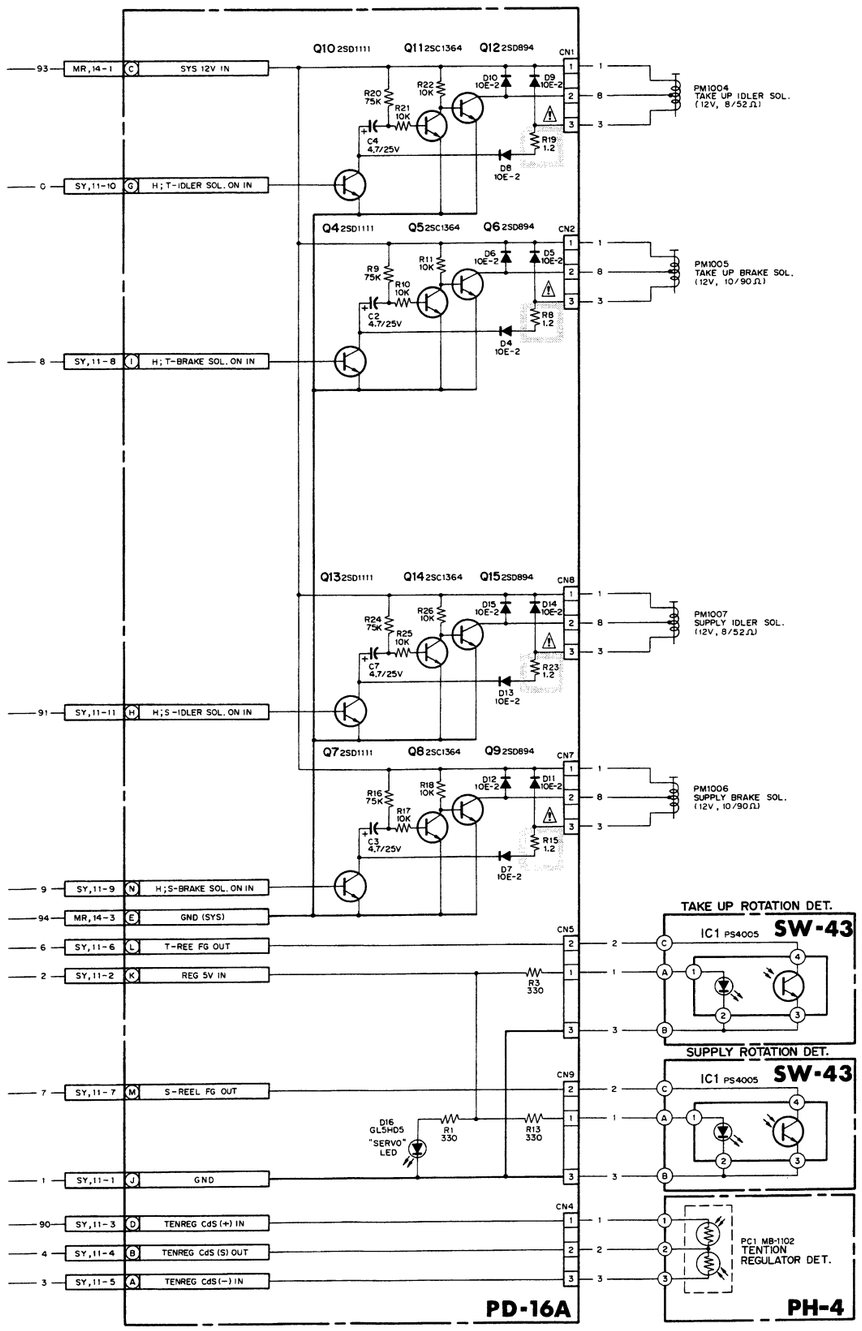


PD-16A – SOLDERING SIDE –
1-603-586-12
VO-5600
VO-5630
VP-5000
VP-5030

14-83 (b)

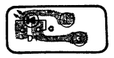
14-84 (b)

PD-16A (SOLENOID DRIVER/TAPE RUN DET)
SW-43
PH-4

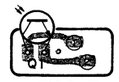


NOTE **The shaded and ⚠ -marked components are critical to safety.**
Replace only with same components as specified.

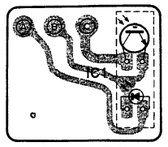
CN-42
PH-4
SW-46
SW-50



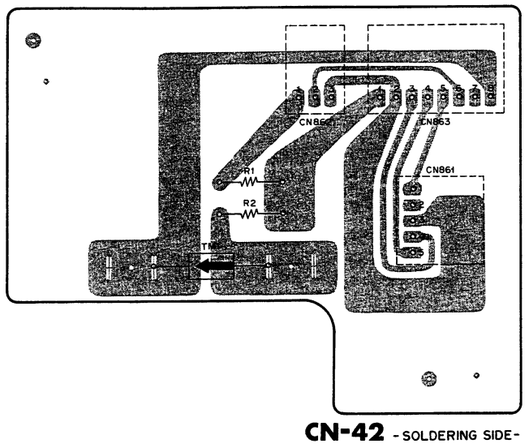
PH-5
-SOLDERING SIDE-



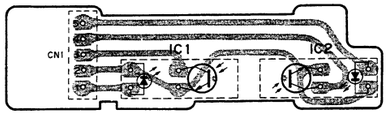
PH-5
-SOLDERING SIDE-



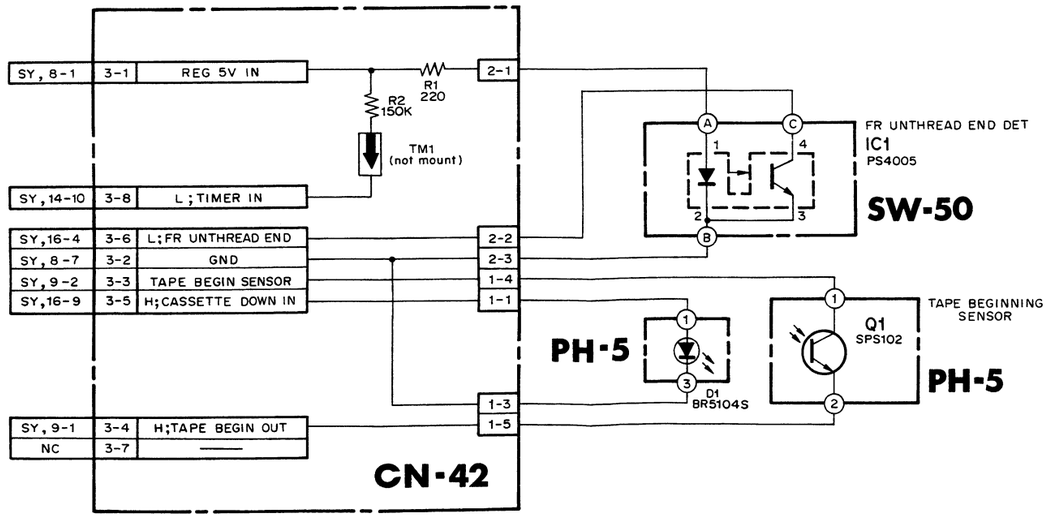
SW-50
-SOLDERING SIDE-



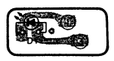
CN-42 -SOLDERING SIDE-



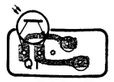
SW-46
-SOLDERING SIDE-



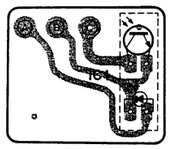
CN-42
PH-4
SW-46
SW-50



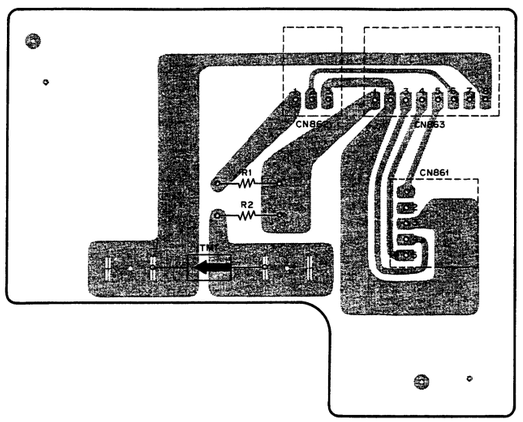
PH-5
–SOLDERING SIDE–



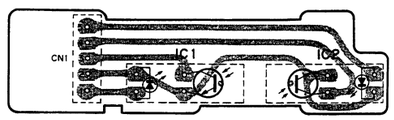
PH-5
–SOLDERING SIDE–



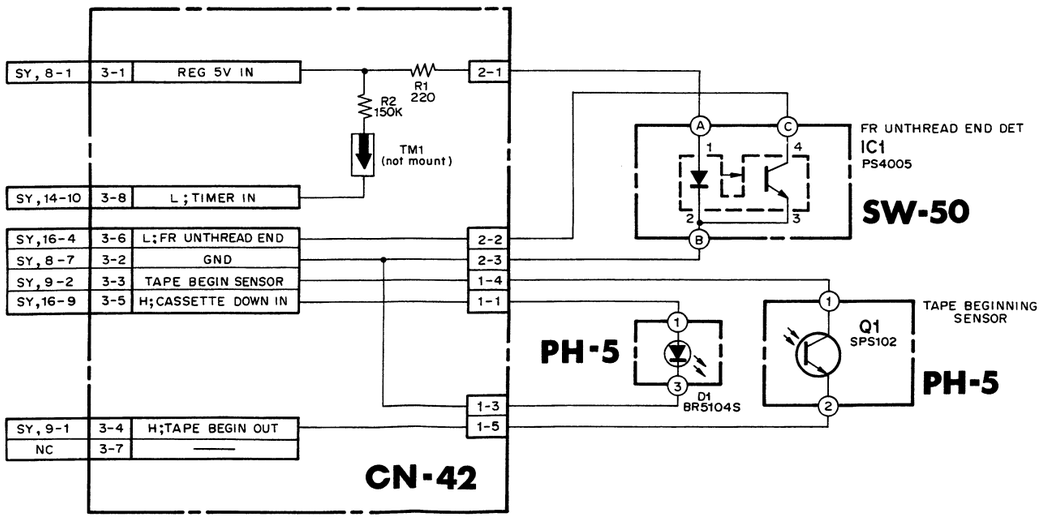
SW-50
– SOLDERING SIDE –



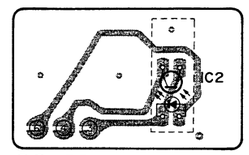
CN-42 - SOLDERING SIDE -



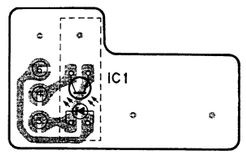
SW-46
–SOLDERING SIDE–



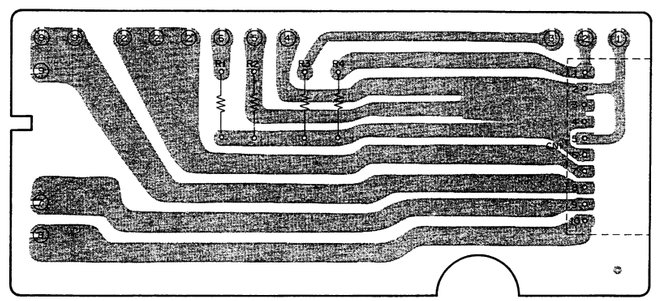
CC-9
CC-10
CC-11
CASSETTE COMPARTMENT



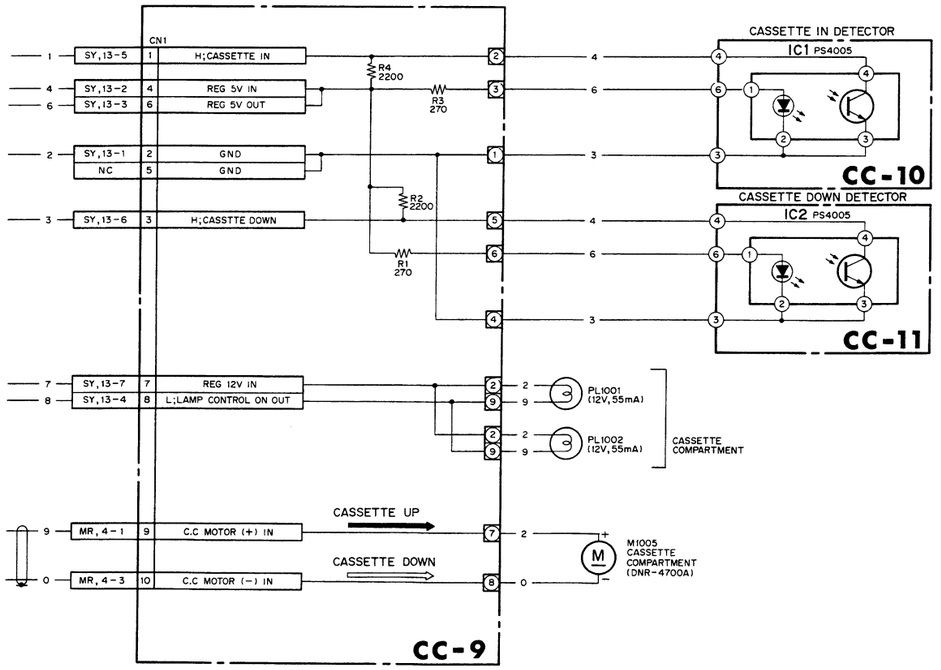
CC-11 – SOLDERING SIDE –



CC-10 – SOLDERING SIDE –

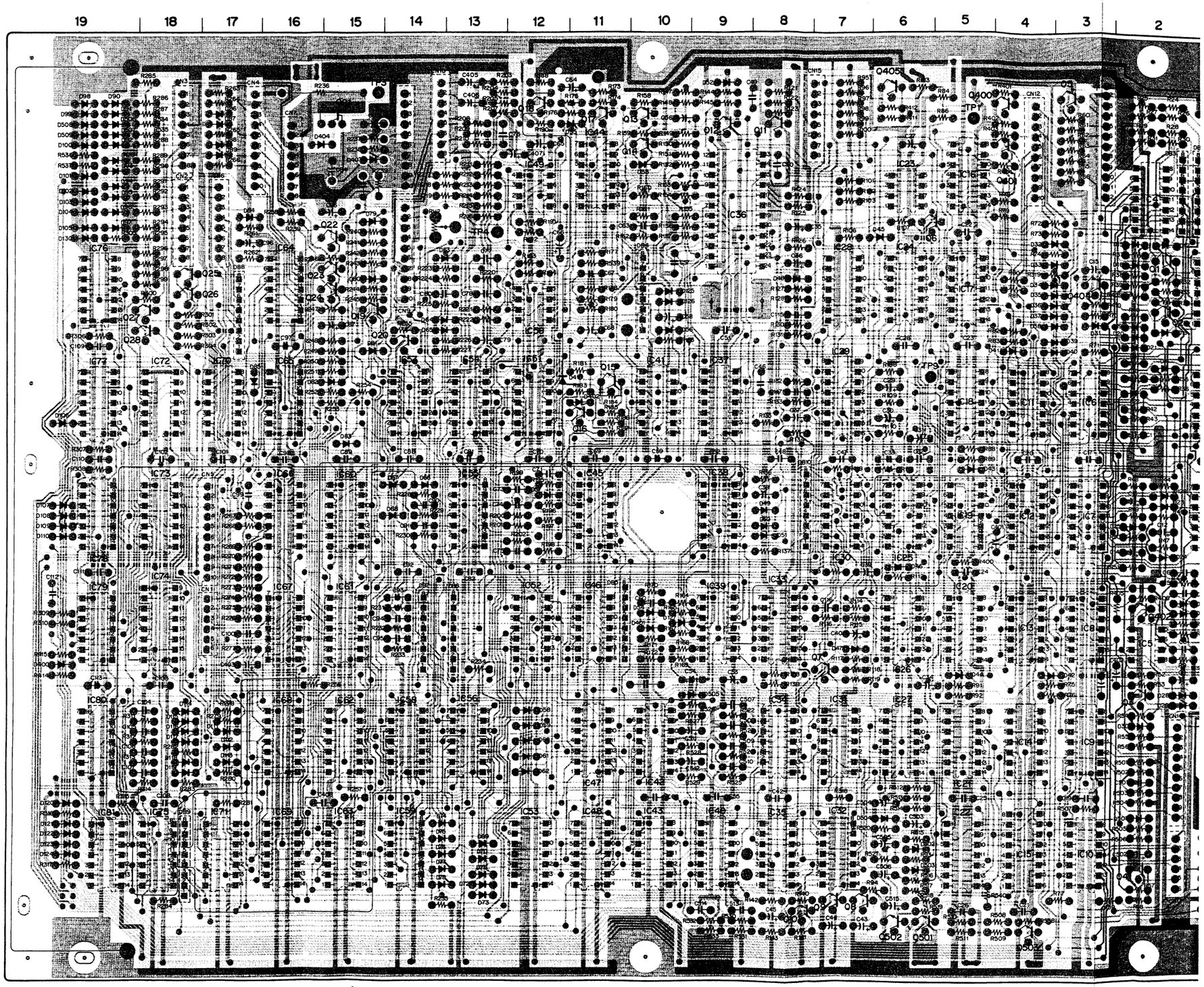


CC-9 – SOLDERING SIDE –

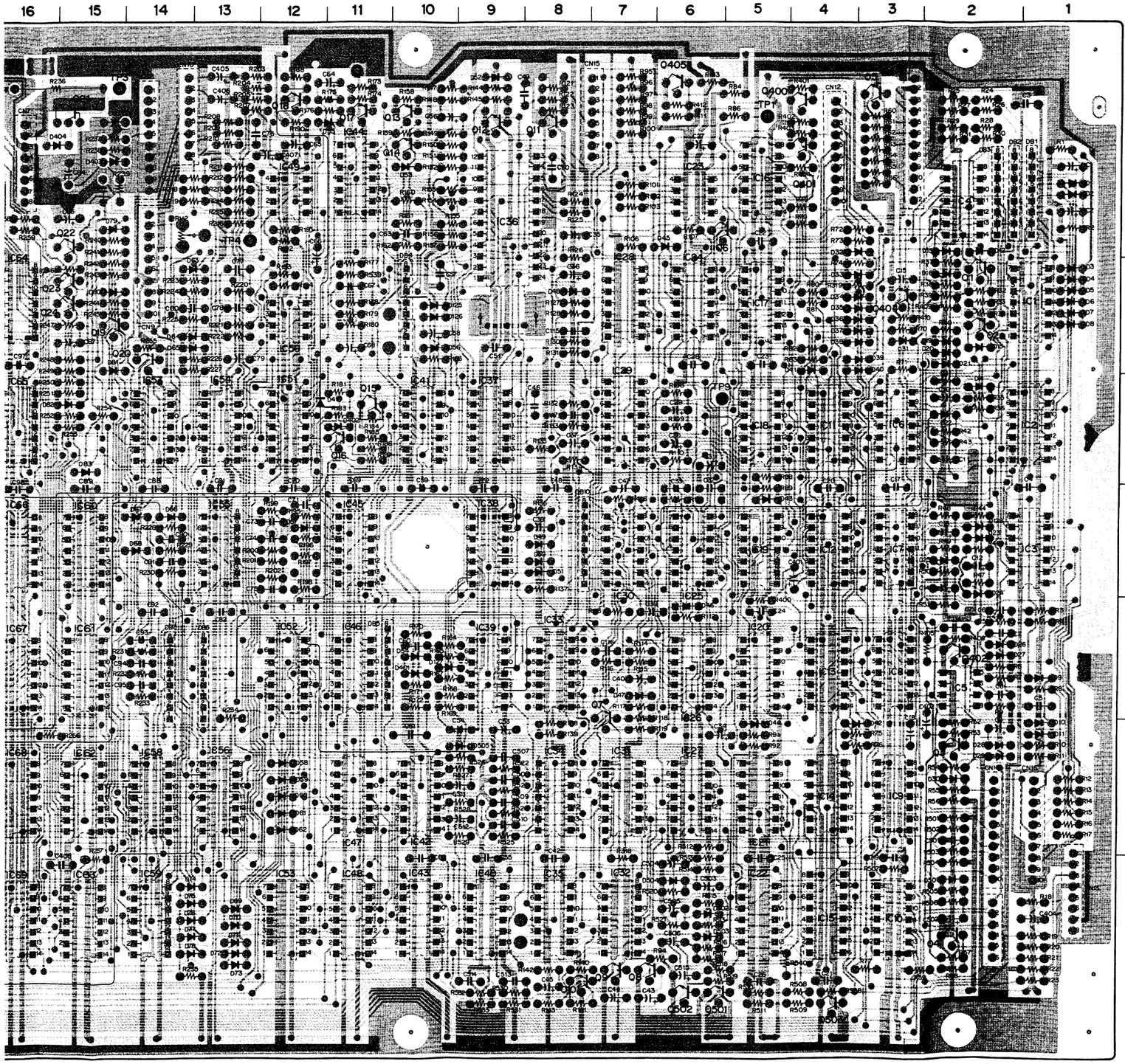


SY-75 (SYSTEM CONTROL)

UP TO 10340 (AEP)
UP TO 10110 (UK)



SY–75 – S



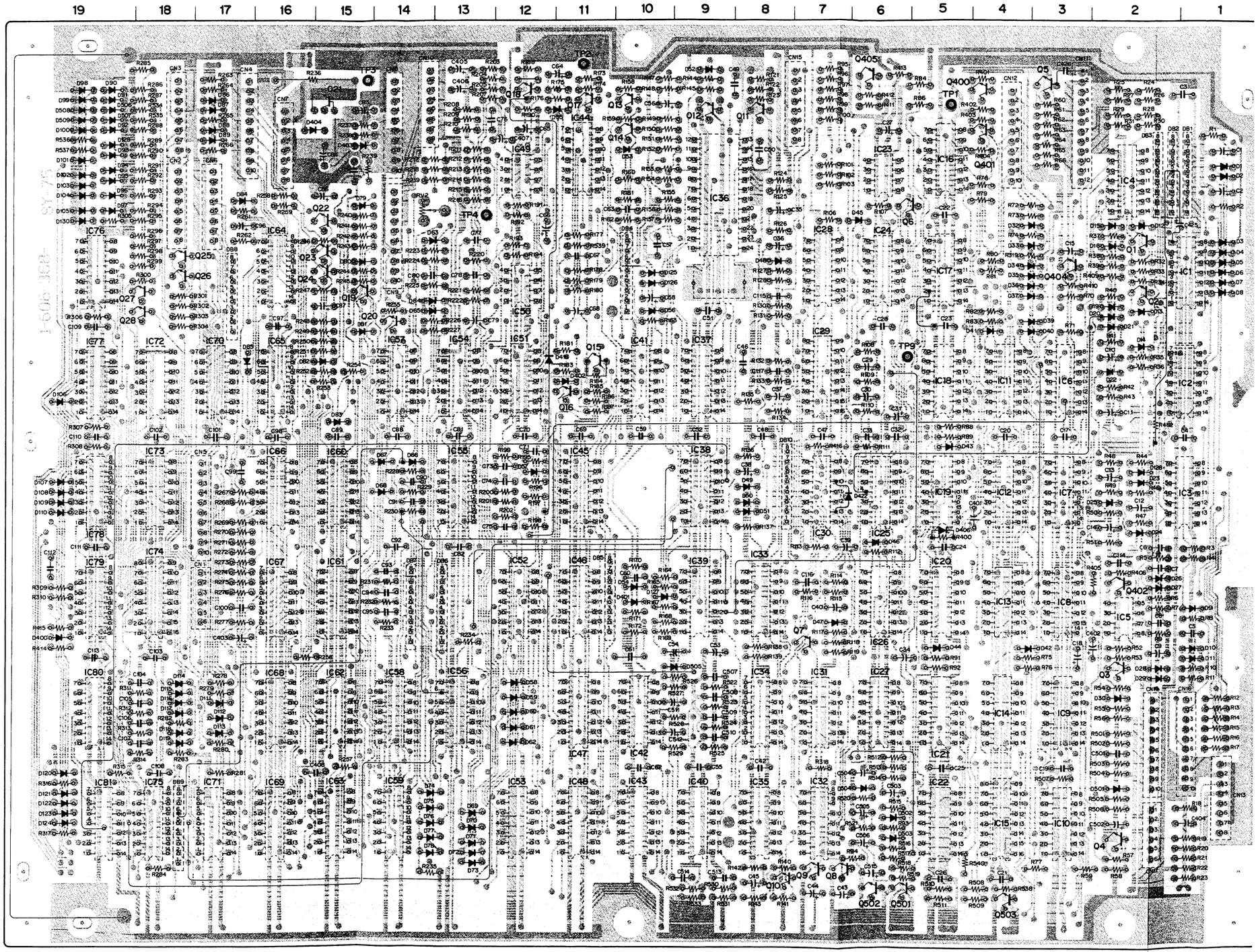
SY-75 – SOLDERING SIDE –

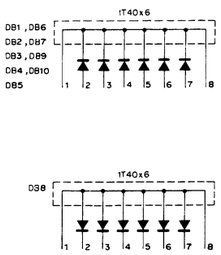
CN1	E - 17	D96	A - 19	IC62	F - 15		
CN2	A - 18	D97	A - 19	IC63	G - 15		
CN3	A - 18	D98	A - 19	IC64	B - 16		
CN4	A - 17	D99	A - 19	IC65	C - 16		
CN5	D - 17	D100	A - 19	IC66	D - 16		
CN6	A - 17	D101	A - 19	IC67	E - 16		
CN7	A - 16	D102	A - 19	IC68	F - 16		
CN8	A - 14	D103	A - 19	IC69	G - 16		
CN9	B - 14	D104	A - 19	IC70	C - 17		
CN10	A - 14	D105	A - 19	IC71	G - 17		
CN11	A - 3	D106	C - 19	IC72	C - 18		
CN12	A - 4	D107	D - 19	IC73	D - 18		
CN13	G - 1	D108	D - 19	IC74	E - 18		
CN14	F - 2	D109	D - 19	IC75	G - 18		
CN15	A - 7	D110	D - 19	IC76	B - 19		
CN16	F - 1	D111	F - 17	IC77	C - 19		
CN17	G - 2	D112	F - 17	IC78	D - 19		
		D113	F - 17	IC79	E - 19		
D1	A - 1	D114	F - 18	IC80	F - 19		
D2	A - 1	D115	F - 18	IC81	G - 19		
D3	B - 1	D116	F - 18				
D4	B - 1	D117	F - 18	Q1	B - 2		
D5	B - 1	D118	F - 18	Q2	B - 2		
D6	B - 1	D119	F - 18	Q3	F - 2		
D7	B - 1	D120	G - 19	Q4	G - 2		
D8	B - 1	D121	G - 19	Q5	A - 3		
D9	E - 1	D122	G - 19	Q6	A - 5		
D10	F - 1	D123	G - 19	Q7	E - 7		
D11	F - 1	D124	G - 19	Q8	G - 7		
D12	A - 2	D125	B - 10	Q9	G - 7		
D13	B - 2	D126	B - 10	Q10	G - 8		
D14	C - 2	D127	E - 10	Q11	A - 8		
D15	A - 2	D128	D - 2	Q12	A - 9		
D16	B - 2	D130	A - 19	Q13	A - 10		
D19	B - 2	D400	E - 19	Q14	A - 10		
D20	B - 2	D401	E - 10	Q15	C - 11		
D21	B - 2	D402	C - 11	Q16	C - 11		
D22	C - 2	D403	A - 15	Q17	A - 11		
D23	D - 2	D404	A - 16	Q18	A - 12		
D24	D - 2	D416	C - 12	Q19	B - 15		
D25	D - 2	D501	G - 2	Q20	B - 14		
D26	E - 2	D502	G - 6	Q21	A - 15		
D27	E - 2	D503	G - 6	Q22	A - 15		
D28	F - 2	D504	G - 6	Q23	B - 15		
D29	F - 2	D505	F - 9	Q24	B - 15		
D30	F - 2	D506	A - 19	Q25	B - 18		
D31	B - 3	D507	A - 19	Q26	B - 18		
D32	A - 4	D508	A - 19	Q27	B - 18		
D33	B - 4	D509	A - 19	Q28	B - 18		
D34	B - 4			Q400	A - 4		
D35	B - 4	IC1	B - 1	Q401	A - 4		
D36	B - 4	IC2	C - 1	Q402	E - 2		
D37	B - 4	IC3	D - 1	Q404	B - 3		
D38	B - 4	IC4	A - 2	Q405	A - 6		
D39	B - 4	IC5	E - 2	Q501	G - 6		
D40	B - 4	IC6	C - 3	Q502	G - 6		
D41	B - 4	IC7	D - 3	Q503	G - 4		
D42	F - 3	IC8	E - 3				
D43	D - 5	IC9	F - 3	RV2	A - 14		
D44	F - 5	IC10	G - 3				
D45	A - 6	IC11	C - 4	TP1	A - 5		
D46	E - 6	IC12	D - 4	TP2	A - 11		
D47	E - 7	IC13	E - 4	TP3	A - 15		
D48	B - 8	IC14	F - 4	TP4	A - 13		
D49	D - 8	IC15	G - 4	TP9	C - 6		
D50	D - 8	IC16	A - 5				
D51	D - 8	IC17	B - 5				
D52	A - 9	IC18	C - 5				
D53	A - 10	IC19	D - 5				
D54	F - 9	IC20	E - 5				
D55	A - 11	IC21	F - 5				
D56	B - 10	IC22	G - 5				
D57	D - 12	IC23	A - 6				
D58	F - 12	IC24	B - 6				
D59	F - 12	IC25	D - 6				
D60	F - 12	IC26	E - 6				
D61	F - 12	IC27	F - 6				
D62	F - 12	IC28	B - 7				
D63	B - 13	IC29	C - 7				
D64	B - 13	IC30	D - 7				
D65	B - 13	IC31	F - 7				
D66	D - 14	IC32	G - 7				
D67	D - 14	IC33	E - 8				
D68	D - 14	IC34	F - 8				
D69	G - 13	IC35	G - 8				
D70	G - 13	IC36	A - 9				
D71	G - 13	IC37	C - 9				
D72	G - 13	IC38	D - 9				
D73	G - 13	IC39	E - 9				
D74	G - 13	IC40	G - 9				
D75	G - 13	IC41	C - 10				
D76	G - 13	IC42	F - 10				
D77	G - 13	IC43	G - 10				
D78	G - 13	IC44	A - 11				
D79	A - 15	IC45	D - 11				
D80	B - 15	IC46	E - 11				
D81	B - 15	IC47	F - 11				
D82	C - 15	IC48	G - 11				
D83	C - 15	IC49	A - 12				
D84	A - 17	IC50	B - 12				
D85	C - 17	IC51	C - 12				
D86	A - 17	IC52	E - 12				
D87	A - 17	IC53	G - 12				
D88	A - 17	IC54	C - 13				
D89	A - 17	IC55	D - 13				
D90	A - 19	IC56	F - 13				
D91	A - 19	IC57	C - 14				
D92	A - 19	IC58	F - 14				
D93	A - 19	IC59	G - 14				
D94	A - 19	IC60	D - 15				
D95	A - 19	IC61	E - 15				

REF. NO	TYPE.	12V PIN	5V PIN	GND PIN
IC1	TC4081BP		14	7
IC2	TC4001BP		14	7
IC3	TC4081BP		14	7
IC4	M54529P		14	7
IC5	μPC4558C	8		4
IC6	TC4069UBP		14	7
IC7	TC4081BP		14	7
IC8	TC4001BP		14	7
IC9	M54529P		14	7
IC10	M54529P		14	7
IC11	TC4081BP		14	7
IC12	TC4011BP		14	7
IC13	TC4071BP		14	7
IC14	TC4001BP		14	7
IC15	M54519P			
IC16	TC4011BP		14	7
IC17	TC4071BP		14	7
IC18	TC4073BP		14	7
IC19	TC4001BP		14	7
IC20	TC4081BP		14	7
IC21	TC4011BP		14	7
IC22	TC4069UBP		14	7
IC23	μPC4558C	8		4
IC24	TC4081BP		14	7
IC25	TC4001BP		14	7
IC26	TC4071BP		14	7
IC27	TC4001BP		14	7
IC28	TC4069UBP		14	7
IC29	HD14538BP		16	8
IC30	TC4069UBP		14	7
IC31	TC4069UBP		14	7
IC32	TC4081BP		14	7
IC33	TC4075BP		14	7
IC34	TC4001BP		14	7
IC35	TC4001BP		14	7
IC36	CX757			
IC37	TC4081BP		14	7
IC38	TC4025BP		14	7
IC39	TC4030BP		14	7
IC40	TC4069UBP		14	7
IC41	TC4073BP		14	7
IC42	TC4001BP		14	7
IC43	TC4011BP		14	7
IC44	M54529P		14	7
IC45	TC4081BP		14	7
IC46	TC4081BP		14	7
IC47	TC4081BP		14	7
IC48	TC4011BP		14	7
IC49	NJM2903D			
IC50	NJM4558D-D	8		4
IC51	M54529P		14	7
IC52	TC4069UBP		14	7
IC53	TC4012BP		14	7
IC54	TC4011BP		14	7
IC55	TC4013BP		14	7
IC56	TC4069UBP		14	7
IC57	M54529P		14	7
IC58	TC4001BP		14	7
IC59	TC4081BP		14	7
IC60	TC4081BP		14	7
IC61	TC4081BP		14	7
IC62	TC4069UBP		14	7
IC63	TC4071BP		14	7
IC64	M54529P		14	7
IC65	M54529P		14	7
IC66	TC4069UBP		14	7
IC67	M54529P		14	7
IC68	TC4011BP		14	7
IC69	TC4001BP		14	7
IC70	TC4081BP		14	7
IC71	TC4081BP		14	7
IC72	TC4013BP		14	7
IC73	TC4073BP		14	7
IC74	TC4520BP		16	8
IC75	TC4001BP		14	7
IC76	M54529P		14	7
IC77	TC4081BP		14	7
IC78	TC4025BP		14	7
IC79	TC4069UBP		14	7
IC80	TC4001BP		14	7
IC81	TC4011BP		14	7
IC506	TC4001BP		14	7

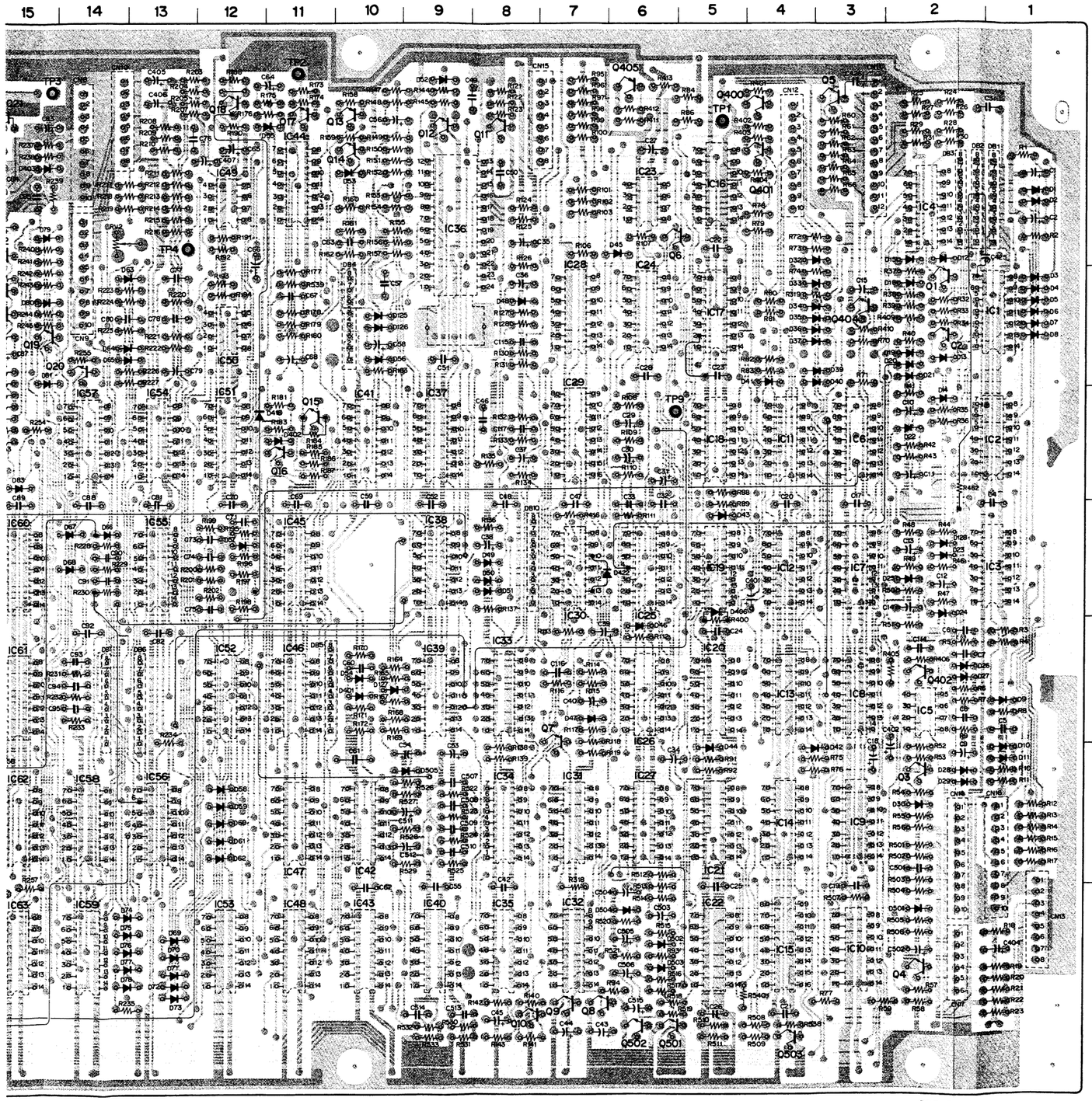
SY-75 (SYSTEM CONTROL)

S/N 10341 TO 16540 (AEP)
S/N 10111 TO 11510 (UK)
S/N 10001 TO 10200 (U/C)





SY-75 – SOLDERING SIDE –



SY-75 – SOLDERING SIDE –

14-95 (a)

CN1	E - 17	D98	A - 19	IC62	F - 15		
CN2	A - 18	D99	A - 19	IC63	G - 15		
CN3	A - 18	D100	A - 19	IC64	B - 16		
CN4	A - 17	D101	A - 19	IC65	C - 16		
CN5	D - 17	D102	A - 19	IC66	D - 16		
CN6	A - 17	D103	A - 19	IC67	E - 16		
CN7	A - 16	D104	A - 19	IC68	F - 16		
CN8	A - 14	D105	A - 19	IC69	G - 16		
CN9	B - 14	D106	C - 19	IC70	C - 17		
CN10	A - 14	D107	D - 19	IC71	G - 17		
CN11	A - 3	D108	D - 19	IC72	C - 18		
CN12	A - 4	D109	D - 19	IC73	D - 18		
CN13	G - 1	D110	D - 19	IC74	E - 18		
CN14	F - 2	D111	F - 17	IC75	G - 18		
CN15	A - 7	D112	F - 17	IC76	B - 19		
CN16	F - 1	D113	F - 17	IC77	C - 19		
CN17	G - 2	D114	F - 18	IC78	D - 19		
		D115	F - 18	IC79	E - 19		
D1	A - 1	D116	F - 18	IC80	F - 19		
D2	A - 1	D117	F - 18	IC81	G - 19		
D3	B - 1	D118	F - 18				
D4	B - 1	D119	F - 18	Q1	B - 2		
D5	B - 1	D120	G - 19	Q2	B - 2		
D6	B - 1	D121	G - 19	Q3	F - 2		
D7	B - 1	D122	G - 19	Q4	G - 2		
D8	B - 1	D123	G - 19	Q5	A - 3		
D9	E - 1	D124	G - 19	Q6	A - 5		
D10	F - 1	D125	B - 10	Q7	E - 7		
D11	F - 1	D126	B - 10	Q8	G - 7		
D12	A - 2	D127	E - 10	Q9	G - 7		
D13	B - 2	D128	D - 2	Q10	G - 8		
D14	C - 2	D130	A - 19	Q11	A - 8		
D15	A - 2	D400	E - 19	Q12	A - 9		
D16	B - 2	D401	E - 10	Q13	A - 10		
D19	B - 2	D402	C - 11	Q14	A - 10		
D20	B - 2	D403	A - 15	Q15	C - 11		
D21	B - 2	D404	A - 16	Q16	C - 11		
D22	C - 2	D406	D - 5	Q17	A - 11		
D23	D - 2	D416	C - 12	Q18	A - 12		
D24	D - 2	D422	D - 7	Q19	B - 15		
D25	D - 2	D501	G - 2	Q20	B - 14		
D26	E - 2	D502	G - 6	Q21	A - 15		
D27	E - 2	D503	G - 6	Q22	A - 15		
D28	F - 2	D504	G - 6	Q23	B - 15		
D29	F - 2	D505	F - 9	Q24	B - 15		
D30	F - 2	D506	A - 19	Q25	B - 18		
D32	A - 4	D507	A - 19	Q26	B - 18		
D33	B - 4	D508	A - 19	Q27	B - 18		
D34	B - 4	D509	A - 19	Q28	B - 18		
D35	B - 4			Q400	A - 4		
D36	B - 4	IC1	B - 1	Q401	A - 4		
D37	B - 4	IC2	C - 1	Q402	E - 2		
D39	B - 4	IC3	D - 1	Q404	B - 3		
D40	B - 4	IC4	A - 2	Q405	A - 6		
D41	B - 4	IC5	E - 2	Q501	G - 6		
D42	F - 3	IC6	C - 3	Q502	G - 6		
D43	D - 5	IC7	D - 3	Q503	G - 4		
D44	F - 5	IC8	E - 3				
D45	A - 6	IC9	F - 3	RV2	A - 14		
D46	E - 6	IC10	G - 3				
D47	E - 7	IC11	C - 4	TP1	A - 5		
D48	B - 8	IC12	D - 4	TP2	A - 11		
D49	D - 8	IC13	E - 4	TP3	A - 15		
D50	D - 8	IC14	F - 4	TP4	A - 13		
D51	D - 8	IC15	G - 4	TP9	C - 6		
D52	A - 9	IC16	A - 5				
D53	A - 10	IC17	B - 5				
D54	F - 9	IC18	C - 5				
D55	A - 11	IC19	D - 5				
D56	B - 10	IC20	E - 5				
D57	D - 12	IC21	F - 5				
D58	F - 12	IC22	G - 5				
D59	F - 12	IC23	A - 6				
D60	F - 12	IC24	B - 6				
D61	F - 12	IC25	D - 6				
D62	F - 12	IC26	E - 6				
D63	B - 13	IC27	F - 6				
D64	B - 13	IC28	B - 7				
D65	B - 13	IC29	C - 7				
D66	D - 14	IC30	D - 7				
D67	D - 14	IC31	F - 7				
D68	D - 14	IC32	G - 7				
D69	G - 13	IC33	E - 8				
D70	G - 13	IC34	F - 8				
D71	G - 13	IC35	G - 8				
D72	G - 13	IC36	A - 9				
D73	G - 13	IC37	C - 9				
D74	G - 13	IC38	D - 9				
D75	G - 13	IC39	E - 9				
D76	G - 13	IC40	G - 9				
D77	G - 13	IC41	C - 10				
D78	G - 13	IC42	F - 10				
D79	A - 15	IC43	G - 10				
D80	B - 15	IC44	A - 11				
D81	B - 15	IC45	D - 11				
D82	C - 15	IC46	E - 11				
D83	C - 15	IC47	F - 11				
D84	A - 17	IC48	G - 11				
D85	C - 17	IC49	A - 12				
D86	A - 17	IC50	B - 12				
D87	A - 17	IC51	C - 12				
D88	A - 17	IC52	E - 12				
D89	A - 17	IC53	G - 12				
D90	A - 19	IC54	C - 13				
D91	A - 19	IC55	D - 13				
D92	A - 19	IC56	F - 13				
D93	A - 19	IC57	C - 14				
D94	A - 19	IC58	F - 14				
D95	A - 19	IC59	G - 14				
D96	A - 19	IC60	D - 15				
D97	A - 19	IC61	E - 15				

REF. NO	TYPE.	12V PIN	5V PIN	GND PIN
IC1	TC4081BP		14	7
IC2	TC4001BP		14	7
IC3	TC4081BP		14	7
IC4	M54529P		14	7
IC5	μPC4558C	8		4
IC6	TC4069UBP		14	7
IC7	TC4081BP		14	7
IC8	TC4001BP		14	7
IC9	M54529P		14	7
IC10	M54529P		14	7
IC11	TC4081BP		14	7
IC12	TC4011BP		14	7
IC13	TC4071BP		14	7
IC14	TC4001BP		14	7
IC15	M54519P	—	—	—
IC16	TC4011BP		14	7
IC17	TC4071BP		14	7
IC18	TC4073BP		14	7
IC19	TC4001BP		14	7
IC20	TC4081BP		14	7
IC21	TC4011BP		14	7
IC22	TC4069UBP		14	7
IC23	μPC4558C	8		4
IC24	TC4081BP		14	7
IC25	TC4001BP		14	7
IC26	TC4071BP		14	7
IC27	TC4001BP		14	7
IC28	TC4069UBP		14	7
IC29	HD14538BP		16	8
IC30	TC4069UBP		14	7
IC31	TC4069UBP		14	7
IC32	TC4081BP		14	7
IC33	TC4075BP		14	7
IC34	TC4001BP		14	7
IC35	TC4001BP		14	7
IC36	CX757	—	—	—
IC37	TC4081BP		14	7
IC38	TC4025BP		14	7
IC39	TC4030BP		14	7
IC40	TC4069UBP		14	7
IC41	TC4073BP		14	7
IC42	TC4001BP		14	7
IC43	TC4011BP		14	7
IC44	M54529P		14	7
IC45	TC4081BP		14	7
IC46	TC4081BP		14	7
IC47	TC4081BP		14	7
IC48	TC4011BP		14	7
IC49	NJM2903D	—	—	—
IC50	NJM4558D-D	8		4
IC51	M54529P		14	7
IC52	TC4069UBP		14	7
IC53	TC4012BP		14	7
IC54	TC4011BP		14	7
IC55	TC4013BP		14	7
IC56	TC4069UBP		14	7
IC57	M54529P		14	7
IC58	TC4001BP		14	7
IC59	TC4081BP		14	7
IC60	TC4081BP		14	7
IC61	TC4081BP		14	7
IC62	TC4069UBP		14	7
IC63	M54529P		14	7
IC64	TC4071BP		14	7
IC65	TC4073BP		14	7
IC66	TC4001BP		14	7
IC67	TC4081BP		14	7
IC68	TC4011BP		14	7
IC69	TC4001BP		14	7
IC70	TC4081BP		14	7
IC71	TC4081BP		14	7
IC72	TC4013BP		14	7
IC73	TC4073BP		14	7
IC74	TC4520BP		16	8
IC75	TC4001BP		14	7
IC76	M54529P		14	7
IC77	TC4081BP		14	7
IC78	TC4025BP		14	7
IC79	TC4069UBP		14	7
IC80	TC4001BP		14	7
IC81	TC4011BP		14	7
IC506	TC4001BP		14	7

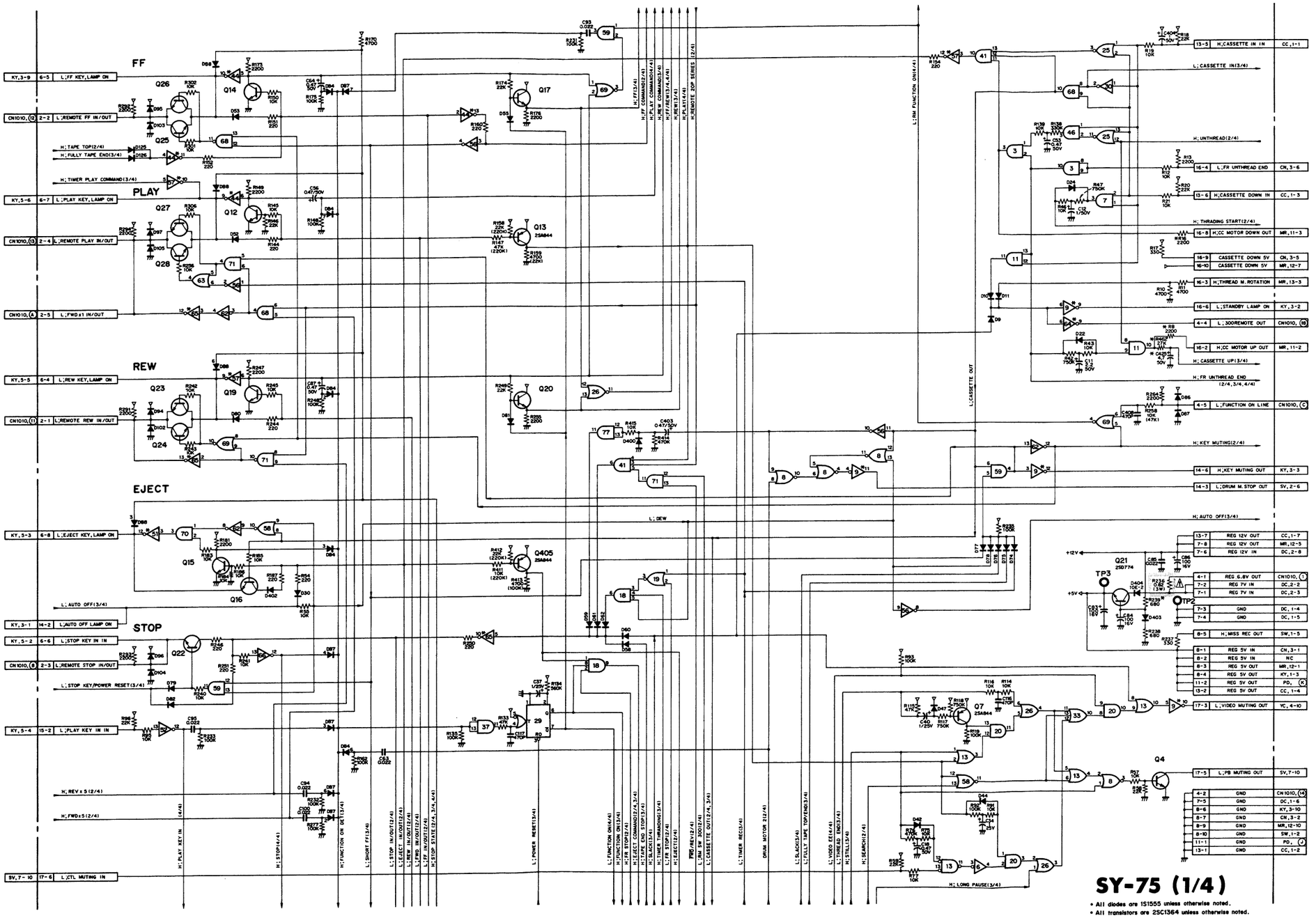
14-96 (a)

SY-75 (1/4)
(SYSTEM CONTROL)

S/N UP TO 16540 (AEP)
S/N UP TO 11510 (UK)
S/N UP TO 10200 (U/C)

NOTE:

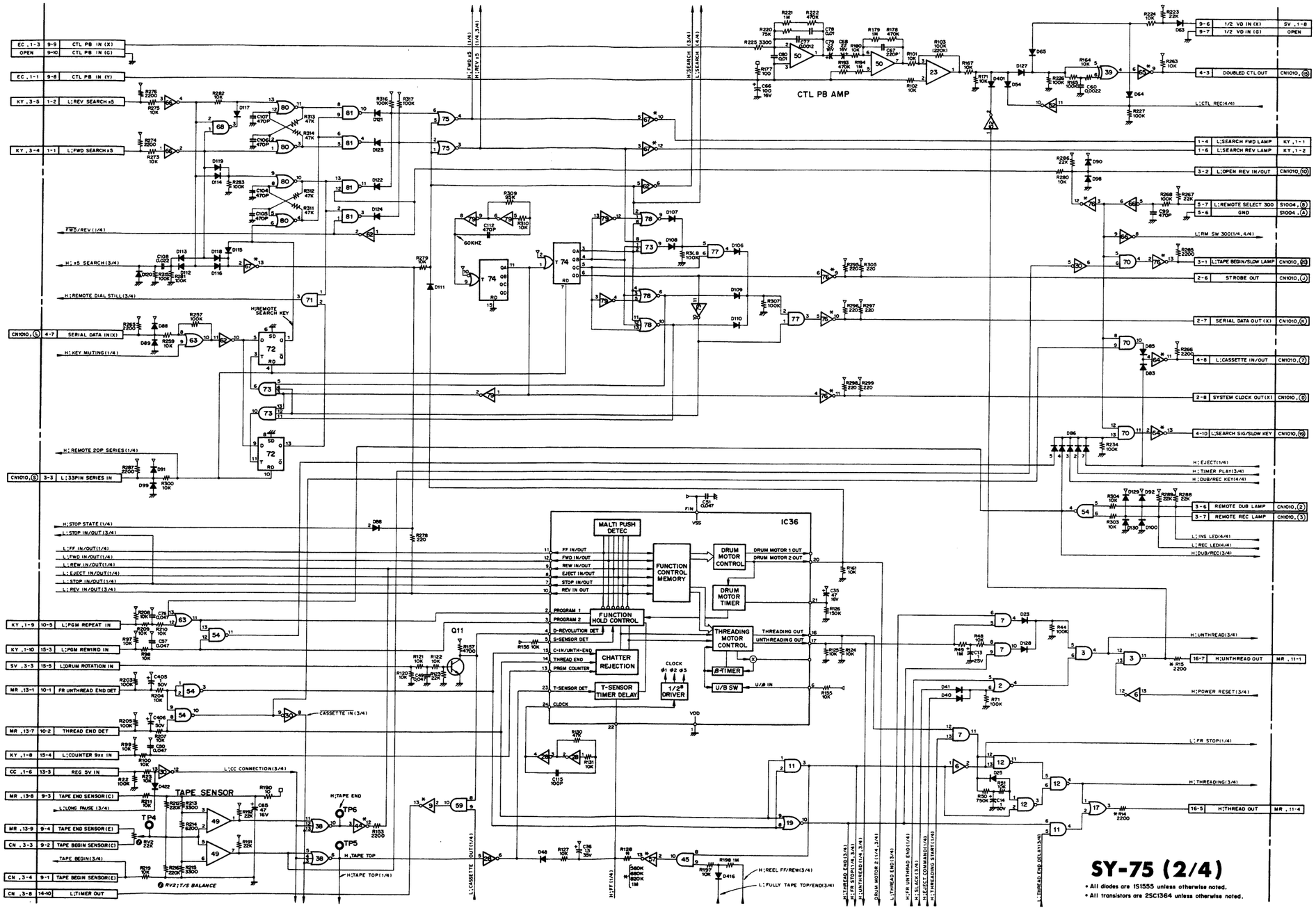
MARK	CHANGE INFORMATION	SERIAL NO.
※1	D31, D38 } 1S1555 DELETED D406, D422 } 1S1555 ADDED R8, R14, R15, R16 } 2200 → 1K R239 750 → 680 C425 4.7/50V ADDED C426 0.022 ADDED R462 27K ADDED CHANGED CONNECTION IC11-4 —— IC17-2 SHORT + OPEN (IC17-2 → GND)	VO-5600 U/C: 14151 ~ " J: 10401 ~ VO-5630 AEP: 12341 ~ " UK: 10311 ~ " U/C: 10201 ~



NOTE: **The shaded and ⚠ -marked components are critical to safety.**
Replace only with same components as specified.

SY-75 (2/4)
(SYSTEM CONTROL)

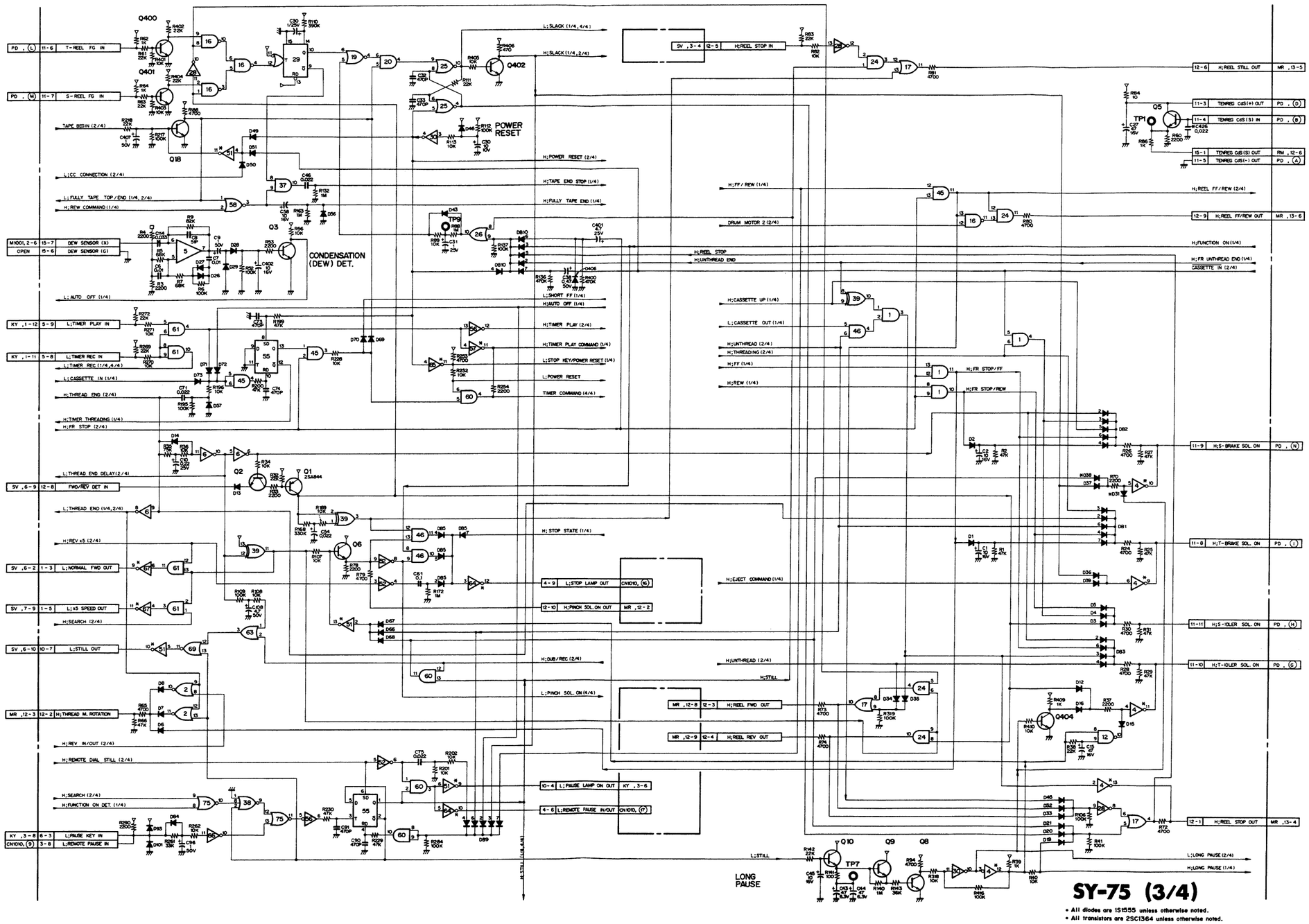
S/N UP TO 16540 (AEP)
S/N UP TO 11510 (UK)
S/N UP TO 10200 (U/C)



NOTE: **The shaded and ⚠ -marked components are critical to safety.**
Replace only with same components as specified.

SY-75 (3/4)
(SYSTEM CONTROL)

S/N UP TO 16540 (AEP)
S/N UP TO 11510 (UK)
S/N UP TO 10200 (U/C)



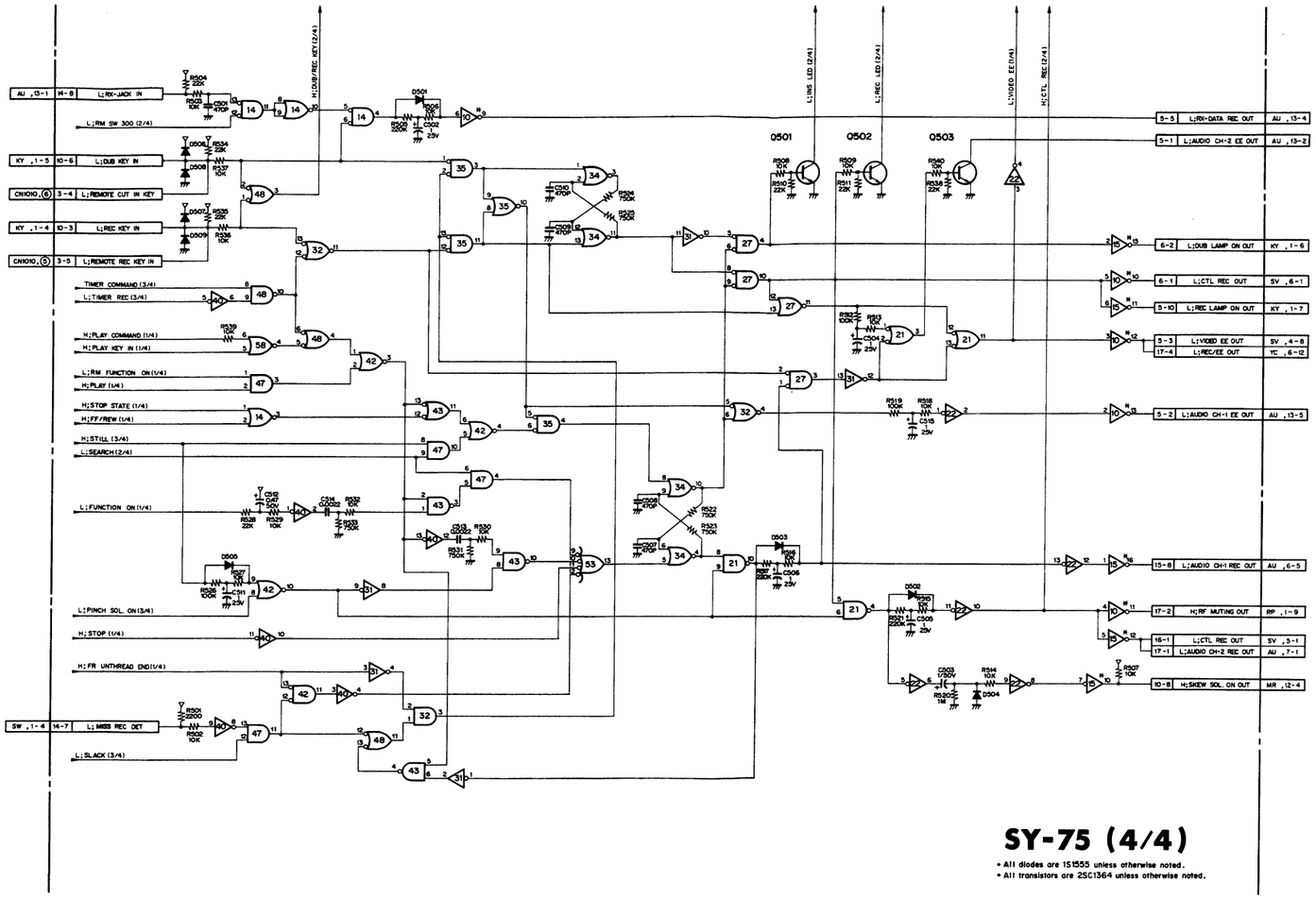
SY-75 (3/4)

- All diodes are 1S1555 unless otherwise noted.
- All transistors are 2SC1364 unless otherwise noted.

NOTE: **The shaded and ⚠-marked components are critical to safety.**
Replace only with same components as specified.

SY-75 (4/4)
(SYSTEM CONTROL)

S/N UP TO 16540 (AEP)
S/N UP TO 11510 (UK)
S/N UP TO 10200 (U/C)



SY-75 (4/4)

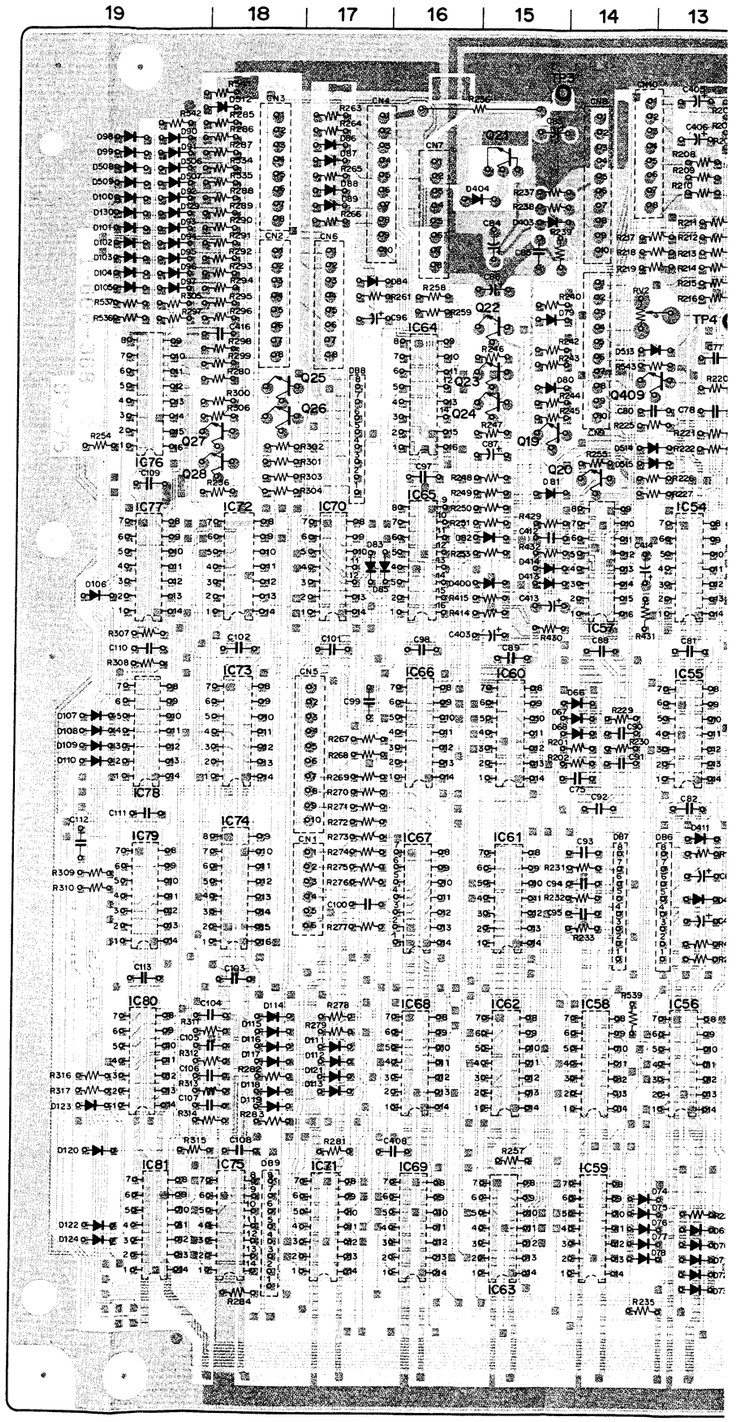
- All diodes are 1S1555 unless otherwise noted.
- All transistors are 2SC1364 unless otherwise noted.

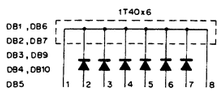
I to

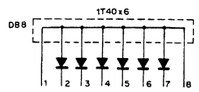
NOTE: **The shaded and ⚠ -marked components are critical to safety.**
Replace only with same components as specified.

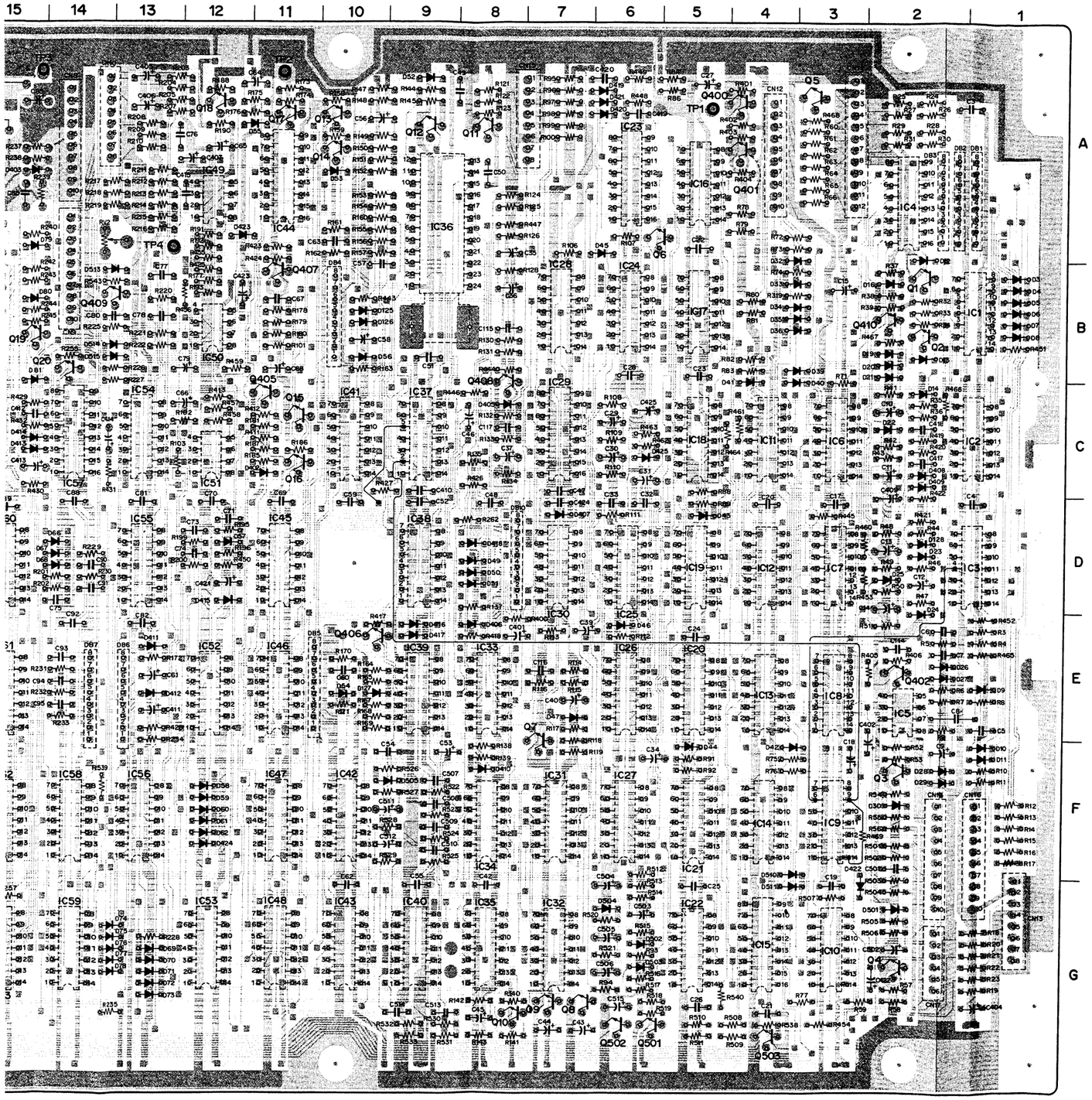
SY-75 (SYSTEM CONTROL)

S/N 16541 TO 22340 (AEP)
S/N 11511 TO 12810 (UK)
S/N 10201 TO 10300 (U/C)









SY-75 – SOLDERING SIDE –

14-95 (b)

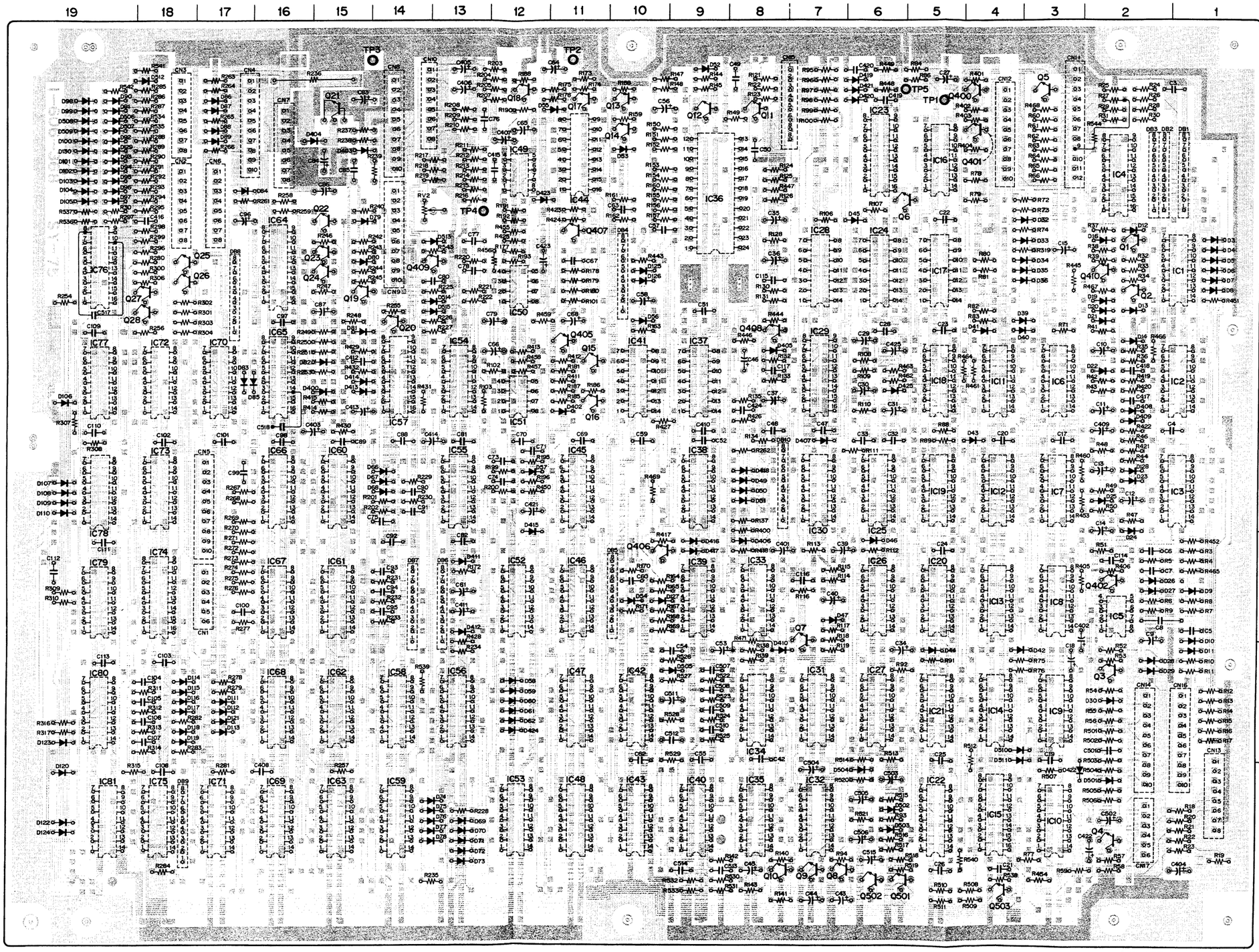
CN1	E - 17	D96	A - 19	IC26	E - 6
CN2	A - 18	D97	A - 19	IC27	F - 6
CN3	A - 18	D98	A - 19	IC28	B - 7
CN4	A - 17	D99	A - 19	IC29	C - 7
CN5	D - 17	D100	A - 19	IC30	D - 7
CN6	A - 17	D101	A - 19	IC31	F - 7
CN7	A - 16	D102	A - 19	IC32	G - 7
CN8	A - 14	D103	A - 19	IC33	E - 8
CN9	B - 14	D104	A - 19	IC34	F - 8
CN10	A - 14	D105	A - 19	IC35	G - 8
CN11	A - 3	D106	C - 19	IC36	A - 9
CN12	A - 4	D107	D - 19	IC37	C - 9
CN13	G - 1	D108	D - 19	IC38	D - 9
CN14	F - 2	D109	D - 19	IC39	E - 9
CN15	A - 7	D110	D - 19	IC40	G - 9
CN16	F - 1	D111	F - 17	IC41	C - 10
CN17	G - 2	D112	F - 17	IC42	F - 10
		D113	F - 17	IC43	G - 10
D3	B - 1	D114	F - 18	IC44	A - 11
D4	B - 1	D115	F - 18	IC45	D - 11
D5	B - 1	D116	F - 18	IC46	E - 11
D6	B - 1	D117	F - 18	IC47	F - 11
D7	B - 1	D118	F - 18	IC48	G - 11
D8	B - 1	D119	F - 18	IC49	A - 12
D9	E - 1	D120	G - 19	IC50	B - 12
D10	F - 1	D121	F - 17	IC51	C - 12
D11	F - 1	D122	G - 19	IC52	E - 12
D12	A - 2	D123	F - 19	IC53	G - 12
D13	B - 2	D124	G - 19	IC54	C - 13
D14	C - 2	D125	B - 10	IC55	D - 13
D16	B - 2	D126	B - 10	IC56	F - 13
D19	B - 2	D127	E - 10	IC57	C - 14
D20	B - 2	D128	D - 2	IC58	F - 14
D21	B - 2	D129	A - 19	IC59	G - 14
D22	C - 2	D130	A - 19	IC60	D - 15
D23	D - 2	D400	C - 15	IC61	E - 15
D24	E - 2	D402	C - 11	IC62	F - 15
D25	D - 2	D403	A - 15	IC63	G - 15
D26	E - 2	D404	A - 16	IC64	B - 16
D27	F - 2	D405	C - 8	IC65	C - 16
D28	F - 2	D406	E - 8	IC66	D - 16
D29	F - 2	D407	D - 7	IC67	E - 16
D30	F - 2	D408	C - 2	IC68	F - 16
D32	B - 3	D409	C - 2	IC69	G - 16
D33	B - 3	D410	F - 8	IC70	C - 17
D34	B - 3	D411	E - 13	IC71	G - 17
D35	B - 3	D412	E - 13	IC72	C - 18
D36	B - 3	D413	C - 15	IC73	D - 18
D39	B - 3	D414	C - 15	IC74	E - 18
D40	B - 3	D415	D - 12	IC75	G - 18
D41	B - 4	D416	E - 9	IC76	B - 19
D42	F - 3	D417	E - 9	IC77	C - 19
D43	D - 5	D418	D - 8	IC78	D - 19
D44	F - 5	D419	A - 6	IC79	E - 19
D45	A - 6	D420	A - 6	IC80	F - 19
D46	E - 6	D421	A - 6	IC81	G - 19
D47	E - 7	D422	G - 2		
D49	D - 8	D423	A - 12	Q1	B - 2
D50	D - 8	D424	F - 12	Q2	B - 2
D51	D - 8	D425	C - 6	Q3	F - 2
D52	A - 9	D501	G - 2	Q4	G - 2
D53	A - 10	D502	G - 6	Q5	A - 3
D54	E - 10	D503	G - 6	Q6	A - 5
D55	A - 11	D504	G - 6	Q7	E - 7
D56	B - 10	D505	F - 10	Q8	G - 7
D57	D - 12	D506	A - 19	Q9	G - 7
D58	F - 12	D507	A - 19	Q10	G - 8
D59	F - 12	D508	A - 19	Q11	A - 8
D60	F - 12	D509	A - 19	Q12	A - 9
D61	F - 12	D510	F - 3	Q13	A - 10
D62	F - 12	D511	G - 3	Q14	A - 10
D66	D - 14	D512	A - 18	Q15	C - 11
D67	D - 14	D513	B - 13	Q16	C - 11
D68	D - 14	D514	B - 13	Q17	A - 11
D69	G - 13	D515	B - 13	Q18	A - 12
D70	G - 13			Q19	B - 15
D71	G - 13	IC1	B - 1	Q20	B - 14
D72	G - 13	IC2	C - 1	Q21	A - 15
D73	G - 13	IC3	D - 1	Q22	A - 15
D74	G - 13	IC4	A - 2	Q23	B - 15
D75	G - 13	IC5	E - 2	Q24	B - 15
D76	G - 13	IC6	C - 3	Q25	B - 18
D77	G - 13	IC7	D - 3	Q26	B - 18
D78	G - 13	IC8	E - 3	Q27	B - 18
D79	A - 15	IC9	F - 3	Q28	B - 18
D80	B - 15	IC10	G - 3	Q400	A - 4
D81	B - 15	IC11	C - 4	Q401	A - 4
D82	C - 15	IC12	D - 4	Q402	E - 2
D83	C - 17	IC13	E - 4	Q405	C - 11
D84	A - 17	IC14	F - 4	Q406	E - 10
D85	C - 17	IC15	G - 4	Q407	B - 11
D86	A - 17	IC16	A - 5	Q408	B - 8
D87	A - 17	IC17	B - 5	Q409	B - 13
D88	A - 17	IC18	C - 5	Q410	B - 2
D89	A - 17	IC19	D - 5	Q501	G - 5
D90	A - 19	IC20	E - 5	Q502	G - 6
D91	A - 19	IC21	F - 5	Q503	G - 4
D92	A - 19	IC22	G - 5		
D93	A - 19	IC23	A - 6	RV2	A - 14
D94	A - 19	IC24	B - 6		
D95	A - 19	IC25	D - 6	TP1	A - 5
				TP2	A - 11
				TP3	A - 15
				TP4	A - 13

REF. NO.	TYPE	12V PIN	5V PIN	GND PIN
IC1	TC4081BP		14	7
IC2	TC4001BP		14	7
IC3	TC4081BP		14	7
IC4	TD62302P		9	8
IC5	μPC4558C	8		4
IC6	TC4069UBP		14	7
IC7	TC4081BP		14	7
IC8	TC4001BP		14	7
IC9	M54529P		14	7
IC10	M54529P		14	7
IC11	TC4081BP		14	7
IC12	TC4011BP		14	7
IC13	TC4071BP		14	7
IC14	TC4001BP		14	7
IC15	M54519P	—	—	—
IC16	TC4011BP		14	7
IC17	TC4071BP		14	7
IC18	TC4073BP		14	7
IC19	TC4001BP		14	7
IC20	TC4081BP		14	7
IC21	TC4011BP		14	7
IC22	TC4069UBP		14	7
IC23	μPC4558C	8		4
IC24	TC4081BP		14	7
IC25	TC4001BP		14	7
IC26	TC4071BP		14	7
IC27	TC4001BP		14	7
IC28	TC4069UBP		14	7
IC29	HD14538BP		16	8
IC30	MC14584BCP		14	7
IC31	TC4069UBP		14	7
IC32	TC4081BP		14	7
IC33	TC4075BP		14	7
IC34	TC4001BP		14	7
IC35	TC4001BP		14	7
IC36	CX757	—	—	—
IC37	TC4081BP		14	7
IC38	TC4025BP		14	7
IC39	TC4030BP		14	7
IC40	MC14584BCP		14	7
IC41	TC4073BP		14	7
IC42	TC4001BP		14	7
IC43	TC4011BP		14	7
IC44	TD62302P		9	8
IC45	TC4081BP		14	7
IC46	TC4081BP		14	7
IC47	TC4081BP		14	7
IC48	TC4011BP		14	7
IC49	NJM2903D	—	—	4
IC50	NJM4558D-D	8		4
IC51	μPC4558C	8		4
IC52	TC4069UBP		14	7
IC53	TC4012BP		14	7
IC54	TC4011BP		14	7
IC55	TC4013BP		14	7
IC56	TC4069UBP		14	7
IC57	MC14538BCP		14	7
IC58	TC4001BP		14	7
IC59	TC4081BP		14	7
IC60	TC4081BP		14	7
IC61	TC4081BP		14	7
IC62	TC4069UBP		14	7
IC63	TC4071BP		14	7
IC64	TD62302P		9	8
IC65	TD62302P		9	8
IC66	TC4069UBP		14	7
IC67	M54529P		14	7
IC68	TC4011BP		14	7
IC69	TC4001BP		14	7
IC70	TC4081BP		14	7
IC71	TC4081BP		14	7
IC72	TC4013BP		14	7
IC73	TC4073BP		14	7
IC74	TC4520BP		16	8
IC75	TC4001BP		14	7
IC76	TD62302P		9	8
IC77	TC4081BP		14	7
IC78	TC4025BP		14	7
IC79	TC4069UBP		14	7
IC80	TC4001BP		14	7
IC81	TC4081BP		14	7

14-96 (b)

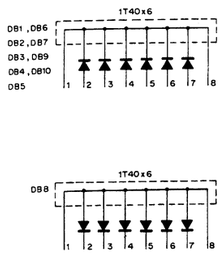
SY-75 (SYSTEM CONTROL)

S/N 22341 TO 31640 (AEP)
S/N 12811 TO 14110 (UK)
S/N 10301 TO 10600 (U/C)



CN1 E - 17
CN2 A - 18
CN3 A - 18
CN4 A - 17
CN5 D - 17
CN6 A - 17
CN7 A - 16
CN8 A - 14
CN9 B - 14
CN10 A - 14
CN11 A - 3
CN12 A - 4
CN13 G - 1
CN14 F - 2
CN15 A - 8
CN16 F - 1
CN17 G - 2

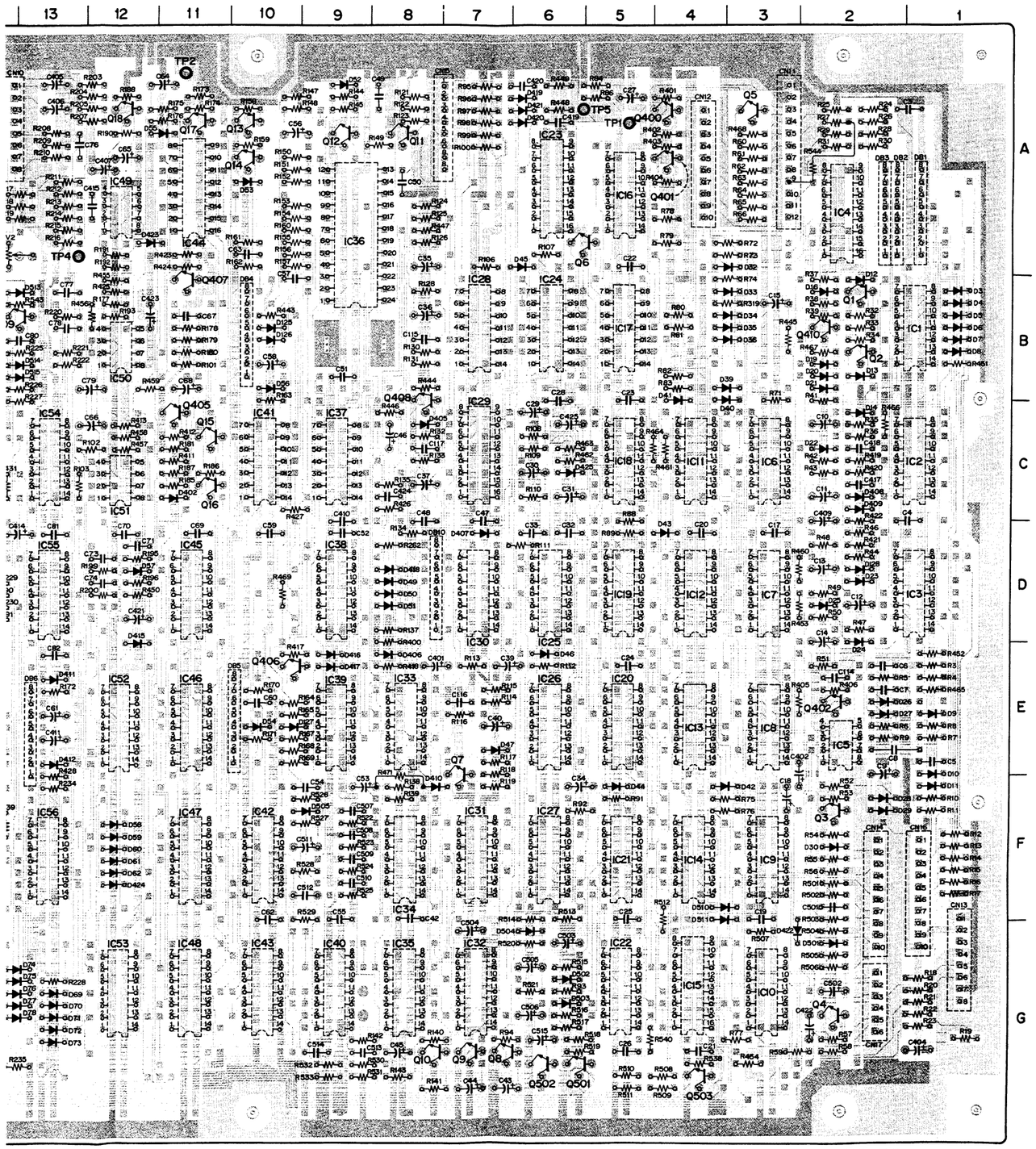
D3 B - 1
D4 B - 1
D5 B - 1
D6 B - 1
D7 B - 7
D8 B - 7
D9 E - 1
D10 E - 1
D11 F - 1
D12 B - 2
D13 B - 2
D14 C - 2
D16 B - 2
D19 B - 2
D20 B - 2
D21 B - 2
D22 C - 2
D23 D - 2
D24 E - 2
D25 D - 2
D26 E - 2
D27 E - 2
D28 F - 2
D29 F - 2
D30 F - 2
D32 A - 4
D33 B - 4
D34 B - 4
D35 B - 4
D36 B - 4
D39 B - 4
D40 B - 4
D41 B - 4
D42 F - 4
D43 D - 4
D44 F - 5
D45 A - 6
D46 E - 6
D47 D - 7
D49 D - 8
D50 D - 8
D51 D - 8
D52 A - 9
D53 A - 10
D54 E - 10
D55 A - 11
D56 B - 10
D57 D - 12
D58 F - 12
D59 F - 12
D60 F - 12
D61 F - 12
D62 F - 12
D66 D - 14
D67 D - 14
D68 D - 14
D69 G - 13
D70 G - 13
D71 G - 13
D72 G - 13
D73 G - 13
D74 G - 13



SY-75 – SOLDERING SIDE –
1-606-368-15
VO-5600
VO-5630

14-94 (c)

14-95 (c)

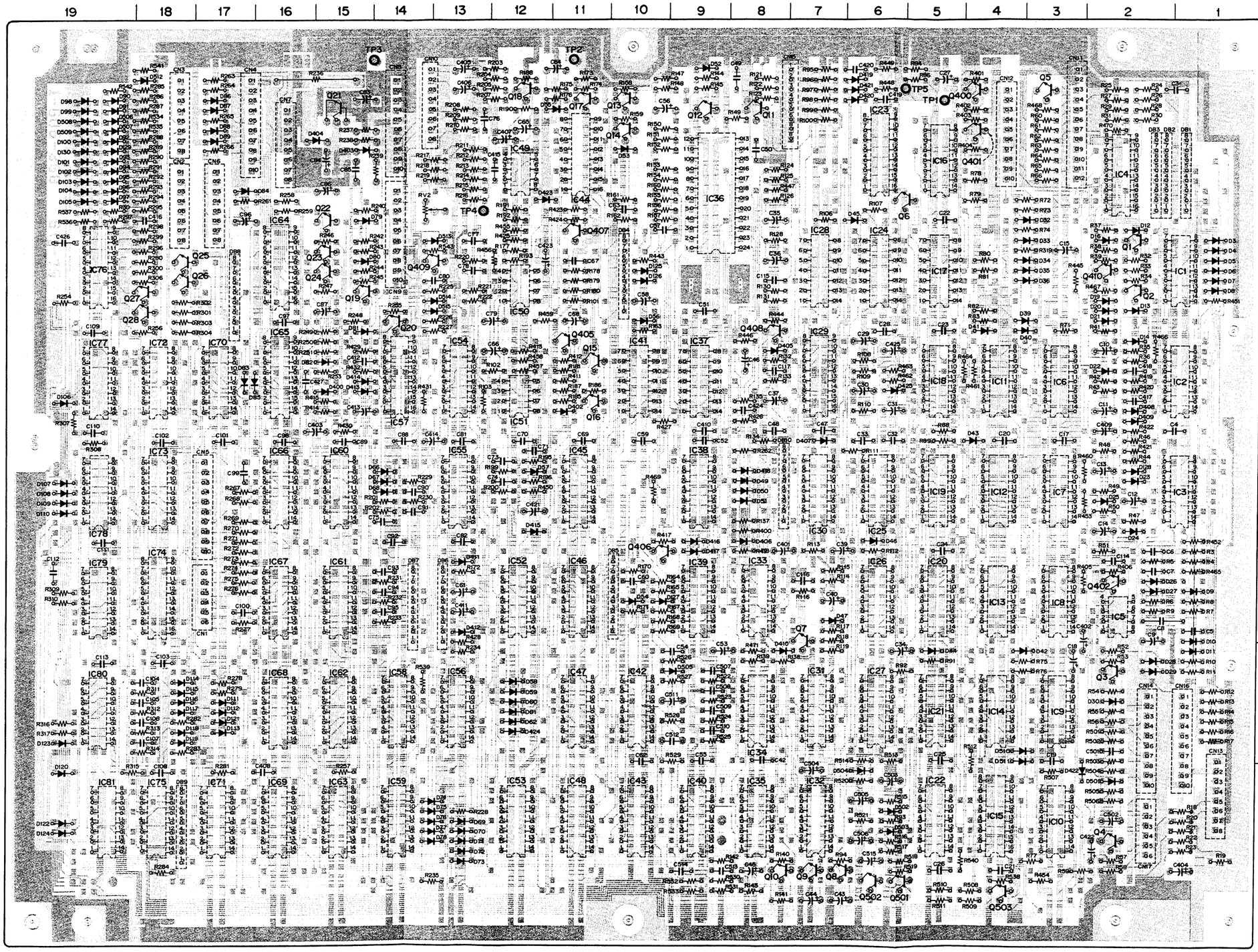


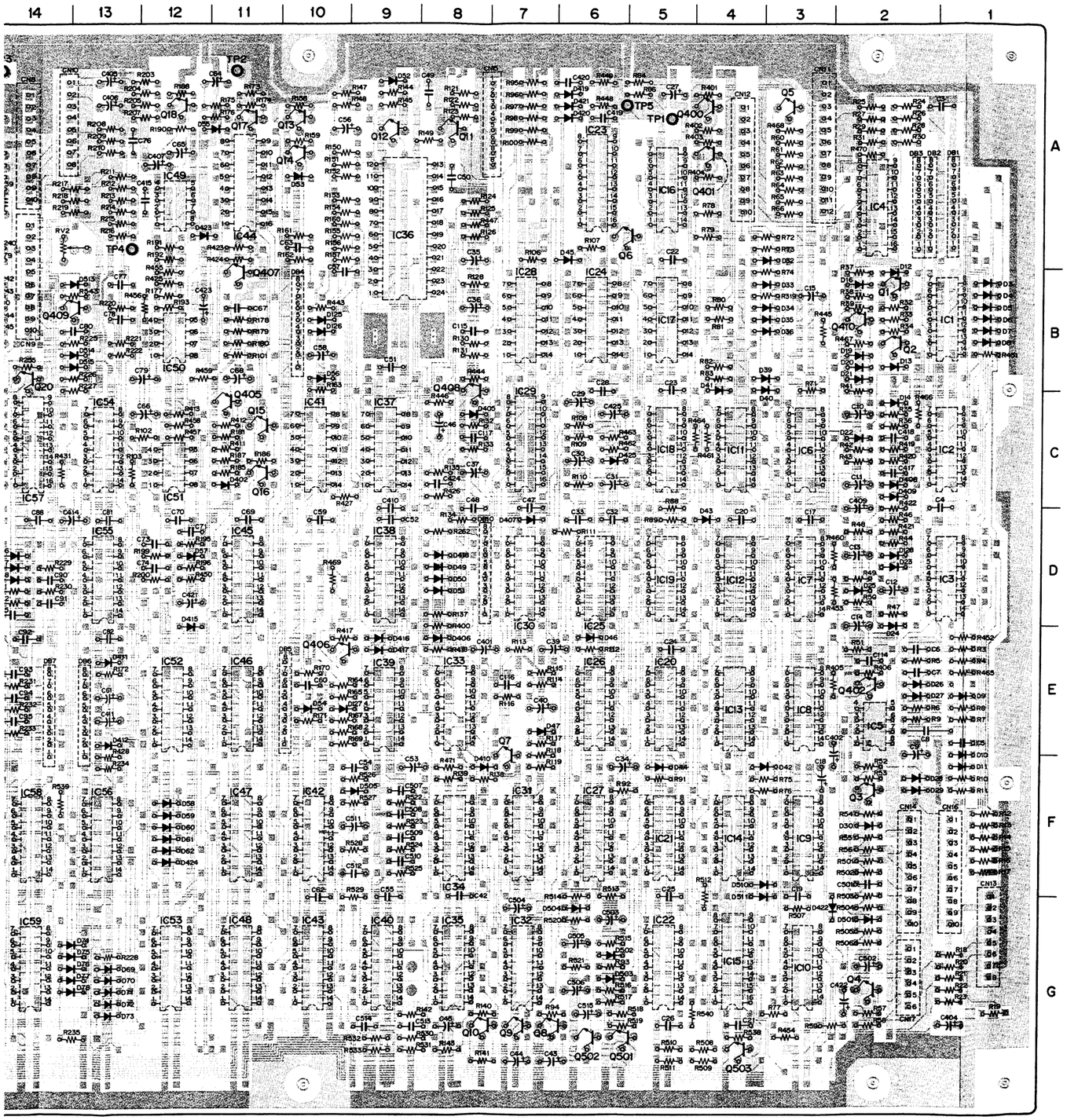
CN1	E - 17	D75	G - 13	D425	C - 6	IC53	G - 12		
CN2	A - 18	D76	G - 13	D501	G - 2	IC54	C - 13		
CN3	A - 18	D77	G - 13	D502	G - 6	IC55	D - 13		
CN4	A - 17	D78	G - 13	D503	G - 6	IC56	F - 13		
CN5	D - 17	D79	A - 15	D504	G - 6	IC57	C - 14		
CN6	A - 17	D80	B - 15	D505	F - 9	IC58	F - 14		
CN7	A - 16	D81	B - 15	D506	A - 19	IC59	G - 14		
CN8	A - 14	D82	C - 15	D507	A - 19	IC60	D - 15		
CN9	B - 14	D83	C - 17	D508	A - 19	IC61	E - 15		
CN10	A - 14	D84	A - 17	D509	A - 19	IC62	F - 15		
CN11	A - 3	D85	C - 17	D510	F - 4	IC63	G - 15		
CN12	A - 4	D86	A - 17	D511	F - 4	IC64	B - 16		
CN13	G - 1	D87	A - 17	D512	A - 18	IC65	C - 16		
CN14	F - 2	D88	A - 17	D513	B - 13	IC66	D - 16		
CN15	A - 8	D89	A - 17	D514	B - 13	IC67	E - 16		
CN16	F - 1	D90	A - 19	D515	B - 13	IC68	F - 16		
CN17	G - 2	D91	A - 19			IC69	G - 16		
		D92	A - 19	DB1	A - 1	IC70	C - 17		
D3	B - 1	D93	A - 19	DB2	A - 2	IC71	G - 17		
D4	B - 1	D94	A - 19	DB3	A - 2	IC72	C - 18		
D5	B - 1	D95	A - 19	DB4	B - 10	IC73	D - 18		
D6	B - 1	D96	A - 19	DB5	E - 10	IC74	E - 18		
D7	B - 7	D97	A - 19	DB6	E - 13	IC75	G - 18		
D8	B - 7	D98	A - 19	DB7	E - 14	IC76	B - 19		
D9	E - 1	D99	A - 19	DB8	B - 17	IC77	C - 19		
D10	E - 1	D100	A - 19	DB9	G - 18	IC78	D - 19		
D11	F - 1	D101	A - 19	DB10	D - 8	IC79	E - 19		
D12	B - 2	D102	A - 19			IC80	F - 19		
D13	B - 2	D103	A - 19	IC1	B - 1	IC81	G - 19		
D14	C - 2	D104	A - 19	IC2	C - 1				
D16	B - 2	D105	A - 19	IC3	D - 1	Q1	B - 2		
D19	B - 2	D106	C - 19	IC4	A - 2	Q2	B - 2		
D20	B - 2	D107	D - 19	IC5	E - 2	Q3	F - 2		
D21	B - 2	D108	D - 19	IC6	C - 3	Q4	G - 2		
D22	C - 2	D109	D - 19	IC7	D - 3	Q5	A - 3		
D23	D - 2	D110	D - 19	IC8	E - 3	Q6	A - 6		
D24	E - 2	D111	F - 17	IC9	F - 3	Q7	E - 7		
D25	D - 2	D112	F - 17	IC10	G - 3	Q8	G - 7		
D26	E - 2	D113	F - 17	IC11	C - 4	Q9	G - 7		
D27	E - 2	D114	F - 18	IC12	D - 4	Q10	G - 8		
D28	F - 2	D115	F - 18	IC13	E - 4	Q11	A - 8		
D29	F - 2	D116	F - 18	IC14	F - 4	Q12	A - 9		
D30	F - 2	D117	F - 18	IC15	G - 4	Q13	A - 10		
D32	A - 4	D118	F - 18	IC16	A - 5	Q14	A - 10		
D33	B - 4	D119	F - 18	IC17	B - 5	Q15	C - 11		
D34	B - 4	D120	G - 19	IC18	C - 5	Q16	C - 11		
D35	B - 4	D121	F - 17	IC19	D - 5	Q17	A - 11		
D36	B - 4	D122	G - 19	IC20	E - 5	Q18	A - 12		
D39	B - 4	D123	F - 19	IC21	F - 5	Q19	B - 15		
D40	B - 4	D124	G - 19	IC22	G - 5	Q20	B - 14		
D41	B - 4	D125	B - 10	IC23	A - 6	Q21	A - 15		
D42	F - 4	D126	B - 10	IC24	B - 6	Q22	A - 15		
D43	D - 4	D127	B - 10	IC25	D - 6	Q23	B - 15		
D44	F - 5	D128	D - 2	IC26	E - 6	Q24	B - 15		
D45	A - 6	D129	A - 19	IC27	F - 6	Q25	B - 18		
D46	E - 6	D130	A - 19	IC28	B - 7	Q26	B - 18		
D47	D - 7	D400	C - 15	IC29	C - 7	Q27	B - 18		
D49	D - 8	D402	C - 11	IC30	D - 7	Q28	B - 18		
D50	D - 8	D403	A - 15	IC31	F - 7	Q400	A - 4		
D51	D - 8	D404	A - 15	IC32	G - 7	Q401	A - 4		
D52	A - 9	D405	C - 8	IC33	E - 8	Q402	E - 2		
D53	A - 10	D406	E - 8	IC34	F - 8	Q405	C - 11		
D54	E - 10	D407	D - 7	IC35	G - 8	Q406	E - 10		
D55	A - 11	D408	C - 2	IC36	A - 9	Q407	B - 11		
D56	B - 10	D409	C - 2	IC37	C - 9	Q408	C - 8		
D57	D - 12	D410	F - 8	IC38	D - 9	Q409	B - 14		
D58	F - 12	D411	E - 13	IC39	E - 9	Q410	B - 2		
D59	F - 12	D412	E - 13	IC40	G - 9	Q501	G - 6		
D60	F - 12	D413	C - 15	IC41	C - 10	Q502	G - 6		
D61	F - 12	D414	C - 15	IC42	F - 10	Q503	G - 4		
D62	F - 12	D415	E - 12	IC43	G - 10				
D66	D - 14	D416	E - 9	IC44	A - 11	RV2	A - 14		
D67	D - 14	D417	E - 9	IC45	D - 11				
D68	D - 14	D418	D - 8	IC46	E - 11	TP1	A - 5		
D69	G - 13	D419	A - 6	IC47	F - 11	TP2	A - 11		
D70	G - 13	D420	A - 6	IC48	G - 11	TP3	A - 15		
D71	G - 13	D421	A - 6	IC49	A - 12	TP4	A - 13		
D72	G - 13	D422	G - 3	IC50	B - 12	TP5	A - 6		
D73	G - 13	D423	A - 12	IC51	C - 12				
D74	G - 13	D424	F - 12	IC52	E - 12				

REF. NO.	TYPE	12V PIN	5V PIN	GND PIN
IC1	TC4081BP		14	7
IC2	TC4001BP		14	7
IC3	TC4081BP		14	7
IC4	TD62302P		9	8
IC5	μPC4558C	8		4
IC6	TC4069UBP		14	7
IC7	TC4081BP		14	7
IC8	TC4001BP		14	7
IC9	M54529P		14	7
IC10	M54529P		14	7
IC11	TC4081BP		14	7
IC12	TC4011BP		14	7
IC13	TC4071BP		14	7
IC14	TC4001BP		14	7
IC15	M54519P	—	—	—
IC16	TC4011BP		14	7
IC17	TC4071BP		14	7
IC18	TC4073BP		14	7
IC19	TC4001BP		14	7
IC20	TC4081BP		14	7
IC21	TC4011BP		14	7
IC22	TC4069UBP		14	7
IC23	TC4020BP	8	16	8
IC24	TC4081BP		14	7
IC25	TC4001BP		14	7
IC26	TC4071BP		14	7
IC27	TC4001BP		14	7
IC28	TC4069UBP		14	7
IC29	HD14538BP		16	8
IC30	MC14584BCP		14	7
IC31	TC4069UBP		14	7
IC32	TC4081BP		14	7
IC33	TC4075BP		14	7
IC34	TC4001BP		14	7
IC35	TC4001BP		14	7
IC36	CX757	—	—	—
IC37	TC4081BP		14	7
IC38	TC4025BP		14	7
IC39	TC4030BP		14	7
IC40	TC4069UBP		14	7
IC41	TC4073BP		14	7
IC42	TC4001BP		14	7
IC43	TC4011BP		14	7
IC44	TD62302P		9	8
IC45	TC4081BP		14	7
IC46	TC4081BP		14	7
IC47	TC4081BP		14	7
IC48	TC4011BP		14	7
IC49	NJM2903D	—	—	4
IC50	NJM4558D-D	8		4
IC51	μPC4558C	8		4
IC52	TC4069UBP		14	7
IC53	TC4012BP		14	7
IC54	TC4011BP		14	7
IC55	TC4013BP		14	7
IC56	TC4069UBP		14	7
IC57	HD14538BP		16	8
IC58	TC4001BP		14	7
IC59	TC4081BP		14	7
IC60	TC4081BP		14	7
IC61	TC4081BP		14	7
IC62	TC4069UBP		14	7
IC63	TC4071BP		14	7
IC64	TD62302P		9	8
IC65	TD62302P		9	8
IC66	TC4069UBP		14	7
IC67	M54529P		14	7
IC68	TC4011BP		14	7
IC69	TC4001BP		14	7
IC70	TC4081BP		14	7
IC71	TC4081BP		14	7
IC72	TC4013BP		14	7
IC73	TC4073BP		14	7
IC74	TC4520BP		16	8
IC75	TC4001BP		14	7
IC76	TD62302P		9	8
IC77	TC4081BP		14	7
IC78	TC4025BP		14	7
IC79	TC4069UBP		14	7
IC80	TC4001BP		14	7
IC81	TC4081BP		14	7

SY-75 (SYSTEM CONTROL)

S/N 31641 AND LATER (AEP)
S/N 14111 AND LATER (UK)
S/N 10601 AND LATER (U/C)





SY-75 – SOLDERING SIDE –
1-606-368-18
VO-5600
VO-5630

14-95 (d)

CN1	E - 17	D75	G - 13	D425	C - 6	IC53	G - 12		
CN2	A - 18	D76	G - 13	D501	G - 2	IC54	C - 13		
CN3	A - 18	D77	G - 13	D502	G - 6	IC55	D - 13		
CN4	A - 17	D78	G - 13	D503	G - 6	IC56	F - 13		
CN5	D - 17	D79	A - 15	D504	G - 6	IC57	C - 14		
CN6	A - 17	D80	B - 15	D505	F - 9	IC58	F - 14		
CN7	A - 16	D81	B - 15	D506	A - 19	IC59	G - 14		
CN8	A - 14	D82	C - 15	D507	A - 19	IC60	D - 15		
CN9	B - 14	D83	C - 17	D508	A - 19	IC61	E - 15		
CN10	A - 14	D84	A - 17	D509	A - 19	IC62	F - 15		
CN11	A - 3	D85	C - 17	D510	F - 4	IC63	G - 15		
CN12	A - 4	D86	A - 17	D511	F - 4	IC64	B - 16		
CN13	G - 1	D87	A - 17	D512	A - 18	IC65	C - 16		
CN14	F - 2	D88	A - 17	D513	B - 13	IC66	D - 16		
CN15	A - 8	D89	A - 17	D514	B - 13	IC67	E - 16		
CN16	F - 1	D90	A - 19	D515	B - 13	IC68	F - 16		
CN17	G - 2	D91	A - 19			IC69	G - 16		
		D92	A - 19	DB1	A - 1	IC70	C - 17		
D3	B - 1	D93	A - 19	DB2	A - 2	IC71	G - 17		
D4	B - 1	D94	A - 19	DB3	A - 2	IC72	C - 18		
D5	B - 1	D95	A - 19	DB4	B - 10	IC73	D - 18		
D6	B - 1	D96	A - 19	DB5	E - 10	IC74	E - 18		
D7	B - 7	D97	A - 19	DB6	E - 13	IC75	G - 18		
D8	B - 7	D98	A - 19	DB7	E - 14	IC76	B - 19		
D9	E - 1	D99	A - 19	DB8	B - 17	IC77	C - 19		
D10	E - 1	D100	A - 19	DB9	G - 18	IC78	D - 19		
D11	F - 1	D101	A - 19	DB10	D - 8	IC79	E - 19		
D12	B - 2	D102	A - 19			IC80	F - 19		
D13	B - 2	D103	A - 19	IC1	B - 1	IC81	G - 19		
D14	C - 2	D104	A - 19	IC2	C - 1				
D16	B - 2	D105	A - 19	IC3	D - 1	Q1	B - 2		
D19	B - 2	D106	C - 19	IC4	A - 2	Q2	B - 2		
D20	B - 2	D107	D - 19	IC5	E - 2	Q3	F - 2		
D21	B - 2	D108	D - 19	IC6	C - 3	Q4	G - 2		
D22	C - 2	D109	D - 19	IC7	D - 3	Q5	A - 3		
D23	D - 2	D110	D - 19	IC8	E - 3	Q6	A - 6		
D24	E - 2	D111	F - 17	IC9	F - 3	Q7	E - 7		
D25	D - 2	D112	F - 17	IC10	G - 3	Q8	G - 7		
D26	E - 2	D113	F - 17	IC11	C - 4	Q9	G - 7		
D27	E - 2	D114	F - 18	IC12	D - 4	Q10	G - 8		
D28	F - 2	D115	F - 18	IC13	E - 4	Q11	A - 8		
D29	F - 2	D116	F - 18	IC14	F - 4	Q12	A - 9		
D30	F - 2	D117	F - 18	IC15	G - 4	Q13	A - 10		
D32	A - 4	D118	F - 18	IC16	A - 5	Q14	A - 10		
D33	B - 4	D119	F - 18	IC17	B - 5	Q15	C - 11		
D34	B - 4	D120	G - 19	IC18	C - 5	Q16	C - 11		
D35	B - 4	D121	F - 17	IC19	D - 5	Q17	A - 11		
D36	B - 4	D122	G - 19	IC20	E - 5	Q18	A - 12		
D39	B - 4	D123	F - 19	IC21	F - 5	Q19	B - 15		
D40	B - 4	D124	G - 19	IC22	G - 5	Q20	B - 14		
D41	B - 4	D125	B - 10	IC23	A - 6	Q21	A - 15		
D42	F - 4	D126	B - 10	IC24	B - 6	Q22	A - 15		
D43	D - 4	D127	E - 10	IC25	D - 6	Q23	B - 15		
D44	F - 5	D128	D - 2	IC26	E - 6	Q24	B - 15		
D45	A - 6	D129	A - 19	IC27	F - 6	Q25	B - 18		
D46	E - 6	D130	A - 19	IC28	B - 7	Q26	B - 18		
D47	D - 7	D400	C - 15	IC29	C - 7	Q27	B - 18		
D49	D - 8	D402	C - 11	IC30	D - 7	Q28	B - 18		
D50	D - 8	D403	A - 15	IC31	F - 7	Q400	A - 4		
D51	D - 8	D404	A - 15	IC32	G - 7	Q401	A - 4		
D52	A - 9	D405	C - 8	IC33	E - 8	Q402	E - 2		
D53	A - 10	D406	E - 8	IC34	F - 8	Q405	C - 11		
D54	E - 10	D407	D - 7	IC35	G - 8	Q406	E - 10		
D55	A - 11	D408	C - 2	IC36	A - 9	Q407	B - 11		
D56	B - 10	D409	C - 2	IC37	C - 9	Q408	C - 8		
D57	D - 12	D410	F - 8	IC38	D - 9	Q409	B - 14		
D58	F - 12	D411	E - 13	IC39	E - 9	Q410	B - 2		
D59	F - 12	D412	E - 13	IC40	G - 9	Q501	G - 6		
D60	F - 12	D413	C - 15	IC41	C - 10	Q502	G - 6		
D61	F - 12	D414	C - 15	IC42	F - 10	Q503	G - 4		
D62	F - 12	D415	E - 12	IC43	G - 10				
D66	D - 14	D416	E - 9	IC44	A - 11	RV2	A - 14		
D67	D - 14	D417	E - 9	IC45	D - 11				
D68	D - 14	D418	D - 8	IC46	E - 11	TP1	A - 5		
D69	G - 13	D419	A - 6	IC47	F - 11	TP2	A - 11		
D70	G - 13	D420	A - 6	IC48	G - 11	TP3	A - 15		
D71	G - 13	D421	A - 6	IC49	A - 12	TP4	A - 13		
D72	G - 13	D422	G - 3	IC50	B - 12	TP5	A - 6		
D73	G - 13	D423	A - 12	IC51	C - 12				
D74	G - 13	D424	F - 12	IC52	E - 12				

REF. NO.	TYPE	12V PIN	5V PIN	GND PIN
IC1	TC4081BP		14	7
IC2	TC4001BP		14	7
IC3	TC4081BP		14	7
IC4	TD62302P		9	8
IC5	μPC4558C	8		4
IC6	TC4069UBP		14	7
IC7	TC4081BP		14	7
IC8	TC4001BP		14	7
IC9	M54529P		14	7
IC10	M54529P		14	7
IC11	TC4081BP		14	7
IC12	TC4011BP		14	7
IC13	TC4071BP		14	7
IC14	TC4001BP		14	7
IC15	M54519P	—	—	—
IC16	TC4011BP		14	7
IC17	TC4071BP		14	7
IC18	TC4073BP		14	7
IC19	TC4001BP		14	7
IC20	TC4081BP		14	7
IC21	TC4011BP		14	7
IC22	TC4069UBP		14	7
IC23	TC4020BP	8	16	8
IC24	TC4081BP		14	7
IC25	TC4001BP		14	7
IC26	TC4071BP		14	7
IC27	TC4001BP		14	7
IC28	TC4069UBP		14	7
IC29	HD14538BP		16	8
IC30	MC14584BCP		14	7
IC31	TC4069UBP		14	7
IC32	TC4081BP		14	7
IC33	TC4075BP		14	7
IC34	TC4001BP		14	7
IC35	TC4001BP		14	7
IC36	CX757	—	—	—
IC37	TC4081BP		14	7
IC38	TC4025BP		14	7
IC39	TC4030BP		14	7
IC40	TC4069UBP		14	7
IC41	TC4073BP		14	7
IC42	TC4001BP		14	7
IC43	TC4011BP		14	7
IC44	TD62302P		9	8
IC45	TC4081BP		14	7
IC46	TC4081BP		14	7
IC47	TC4081BP		14	7
IC48	TC4011BP		14	7
IC49	NJM2903D	—	—	4
IC50	NJM4558D-D	8		4
IC51	μPC4558C	8		4
IC52	TC4069UBP		14	7
IC53	TC4012BP		14	7
IC54	TC4011BP		14	7
IC55	TC4013BP		14	7
IC56	TC4069UBP		14	7
IC57	HD14538BP		16	8
IC58	TC4001BP		14	7
IC59	TC4081BP		14	7
IC60	TC4081BP		14	7
IC61	TC4081BP		14	7
IC62	TC4069UBP		14	7
IC63	TC4071BP		14	7
IC64	TD62302P		9	8
IC65	TD62302P		9	8
IC66	TC4069UBP		14	7
IC67	M54529P		14	7
IC68	TC4011BP		14	7
IC69	TC4001BP		14	7
IC70	TC4081BP		14	7
IC71	TC4081BP		14	7
IC72	TC4013BP		14	7
IC73	TC4073BP		14	7
IC74	TC4520BP		16	8
IC75	TC4001BP		14	7
IC76	TD62302P		9	8
IC77	TC4081BP		14	7
IC78	TC4025BP		14	7
IC79	TC4069UBP		14	7
IC80	TC4001BP		14	7
IC81	TC4081BP		14	7

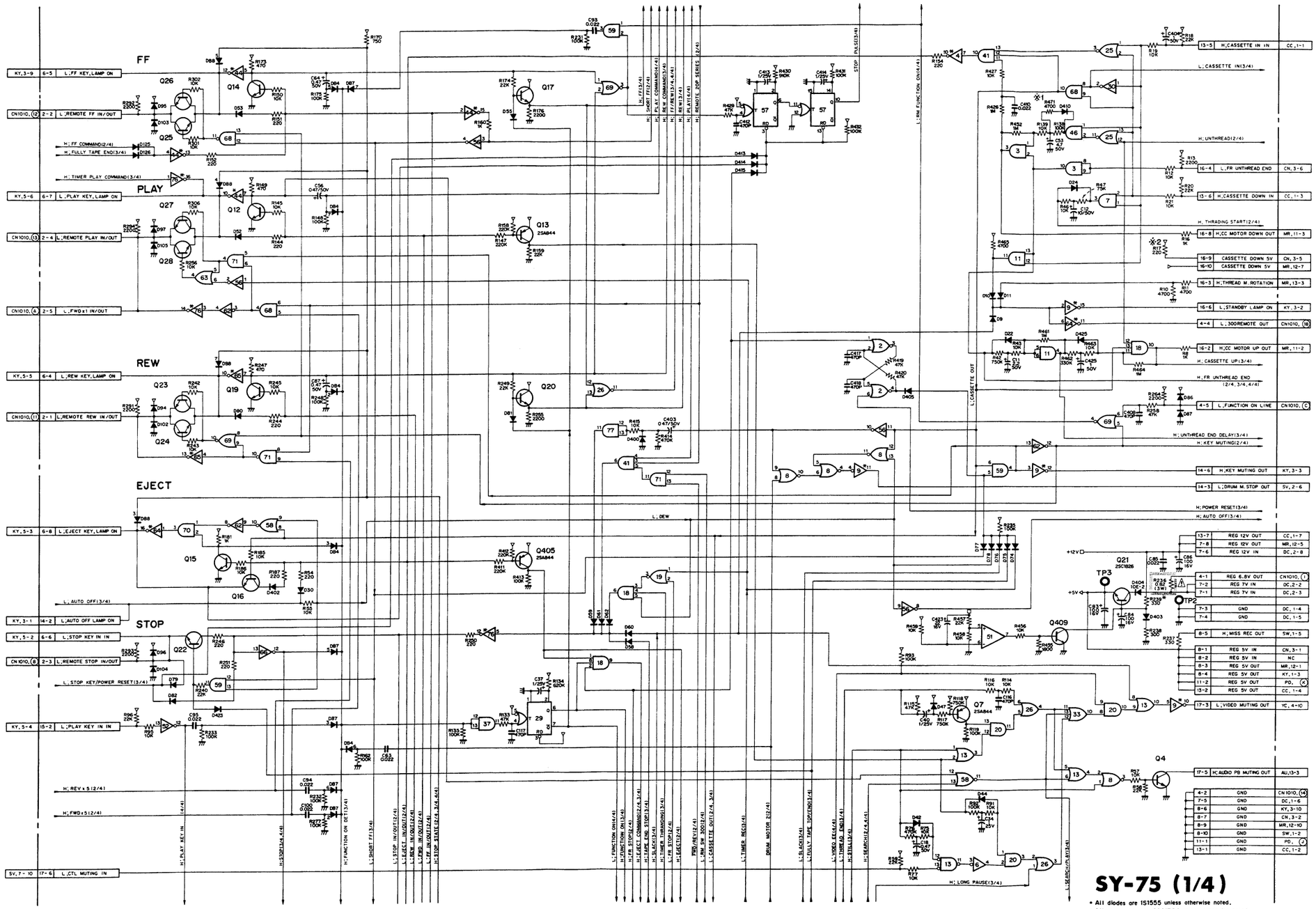
14-96 (d)

SY-75 (1/4)
(SYSTEM CONTROL)

S/N 16541 AND LATER (AEP)
S/N 11511 AND LATER (UK)
S/N 10201 AND LATER (U/C)

NOTE:

MARK	CHANGE INFORMATION	SERIAL NO.
※1	R471 4700 ADDED	VO-5600 U/C: 22351 ~ " J: 11101 ~ VO-5630 AEP: 22341 ~ " UK: 12811 ~ " U/C: 10401 ~
※2	R17 330 → 220	VO-5600 U/C: 28451 ~ " J: 11801 ~ VO-5630 AEP: 28441 ~ " UK: 13811 ~ " U/C: 10501 ~



SY-75 (1/4)

- All diodes are 1S1555 unless otherwise noted.
- All transistors are 2SC1364 unless otherwise noted.

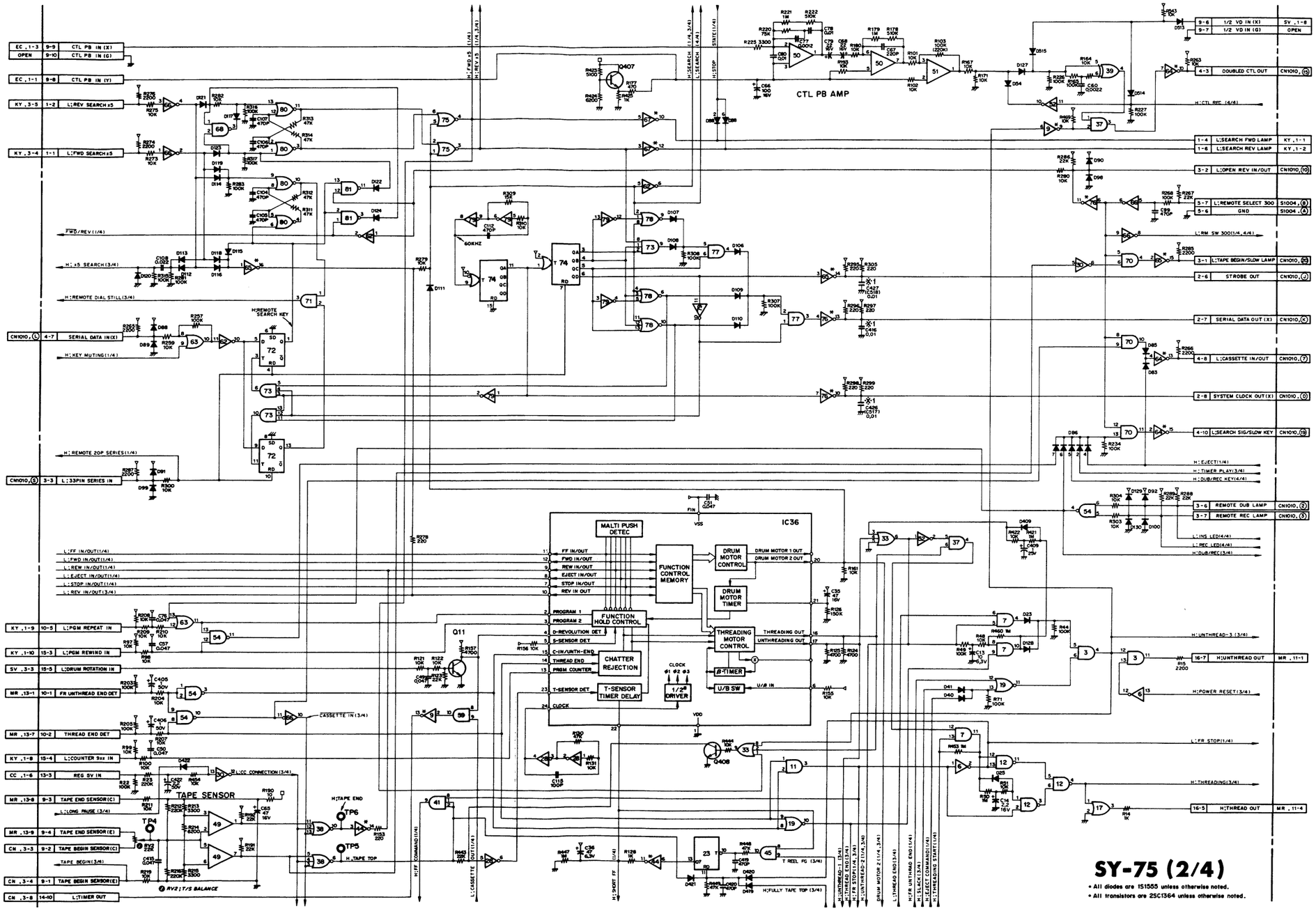
NOTE: **The shaded and ⚠-marked components are critical to safety.**
Replace only with same components as specified.

SY-75 (2/4)
(SYSTEM CONTROL)

S/N 16541 AND LATER (AEP)
S/N 11511 AND LATER (UK)
S/N 10201 AND LATER (U/C)

NOTE:

MARK	CHANGE INFORMATION	SERIAL NO.
※1	C416 0.001 → 0.01 C426 (C517) 0.01 C427 (C518) ADDED	VO-5600 U/C: 21851~ " J: 11101~ VO-5630 AEP: 22341~ " UK: 12811~ " U/C: 10301~



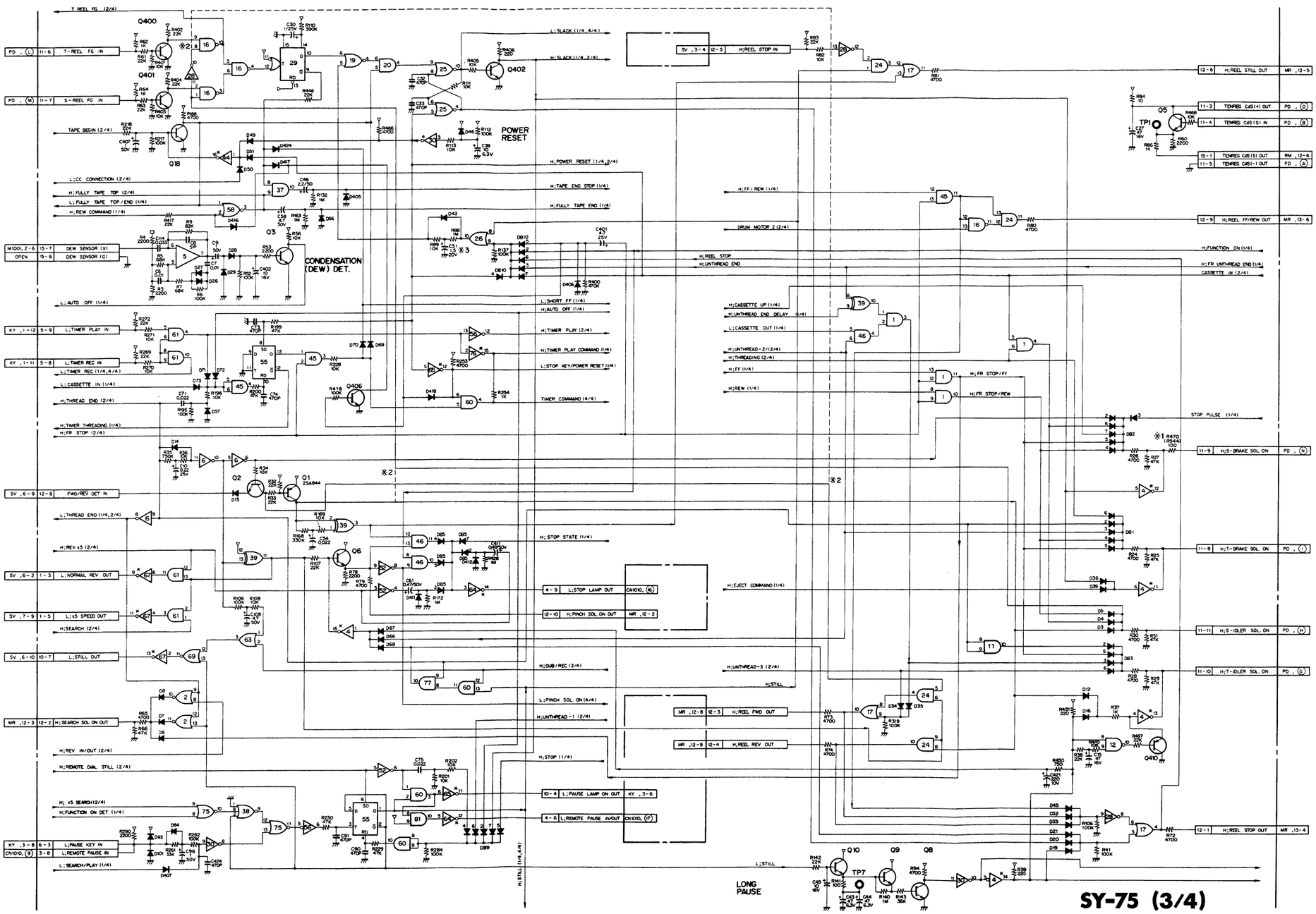
NOTE: **The shaded and ⚠-marked components are critical to safety.**
Replace only with same components as specified.

SY-75 (3/4)
(SYSTEM CONTROL)

S/N 16541 AND LATER (AEP)
S/N 11511 AND LATER (UK)
S/N 10201 AND LATER (U/C)

NOTE:

MARK	CHANGE INFORMATION	SERIAL NO.
※1	R470 (R544) 100 ADDED	VO-5600 U/C: 21851 ~ " J: 11101 ~ VO-5630 AEP: 22341 ~ " UK: 12811 ~ " U/C: 10301 ~
※2	CHANGED CIRCUIT	VO-5600 U/C: 34951 ~ " J: 12201 ~ VO-5630 AEP: 31641 ~ " UK: 14111 ~ " U/C: 10601 ~
※3	C31 1/25 → 1 5/20	VO-5600 U/C: 41201 ~ " J: 12401 ~ VO-5630 AEP: 39341 ~ " UK: 15111 ~ " U/C: 10701 ~



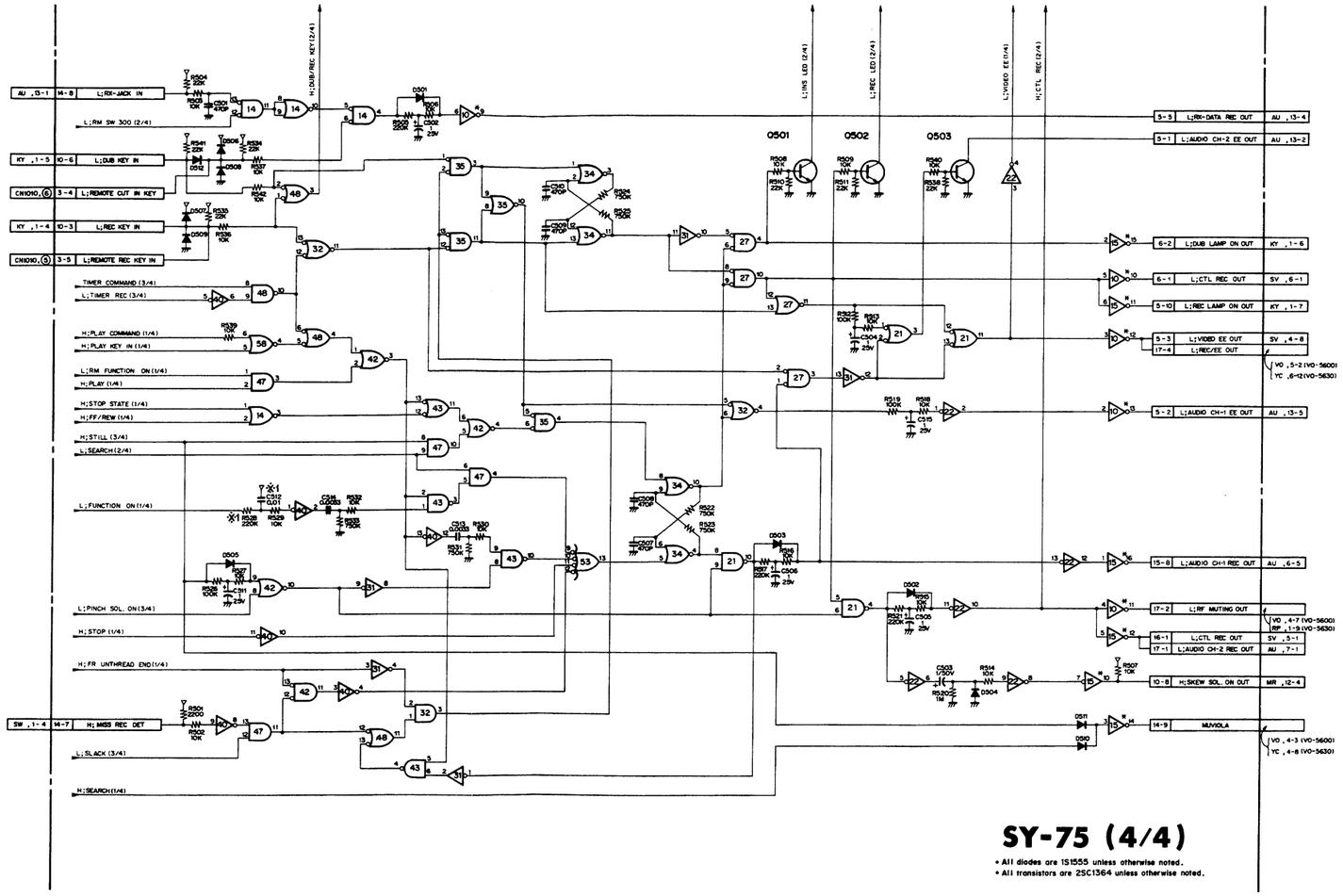
NOTE: **The shaded and ⚠-marked components are critical to safety.**
Replace only with same components as specified.

SY-75 (4/4)
(SYSTEM CONTROL)

S/N 16541 AND LATER (AEP)
S/N 11511 AND LATER (UK)
S/N 10201 AND LATER (U/C)

NOTE:

MARK	CHANGE INFORMATION	SERIAL NO.
※1	C512 0.47/50V → 0.01 R528 22K → 220K	VO-5600 U/C: 21451 ~ " J: 11001 ~ VO-5630 AEP: 21341 ~ " UK: 12811 ~ " J: 10301 ~



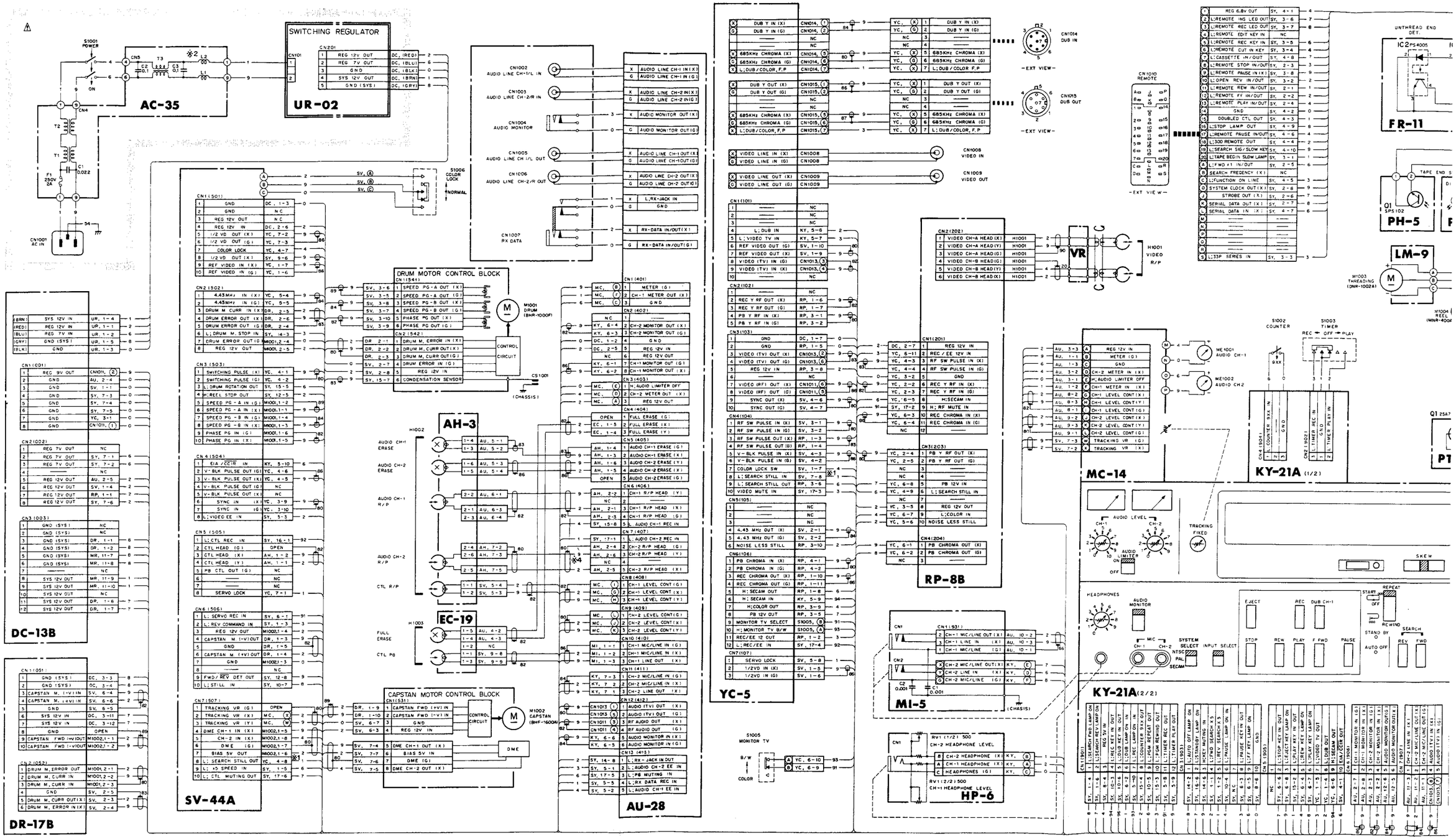
SY-75 (4/4)

- All diodes are 1S1555 unless otherwise noted.
- All transistors are 2SC1364 unless otherwise noted.

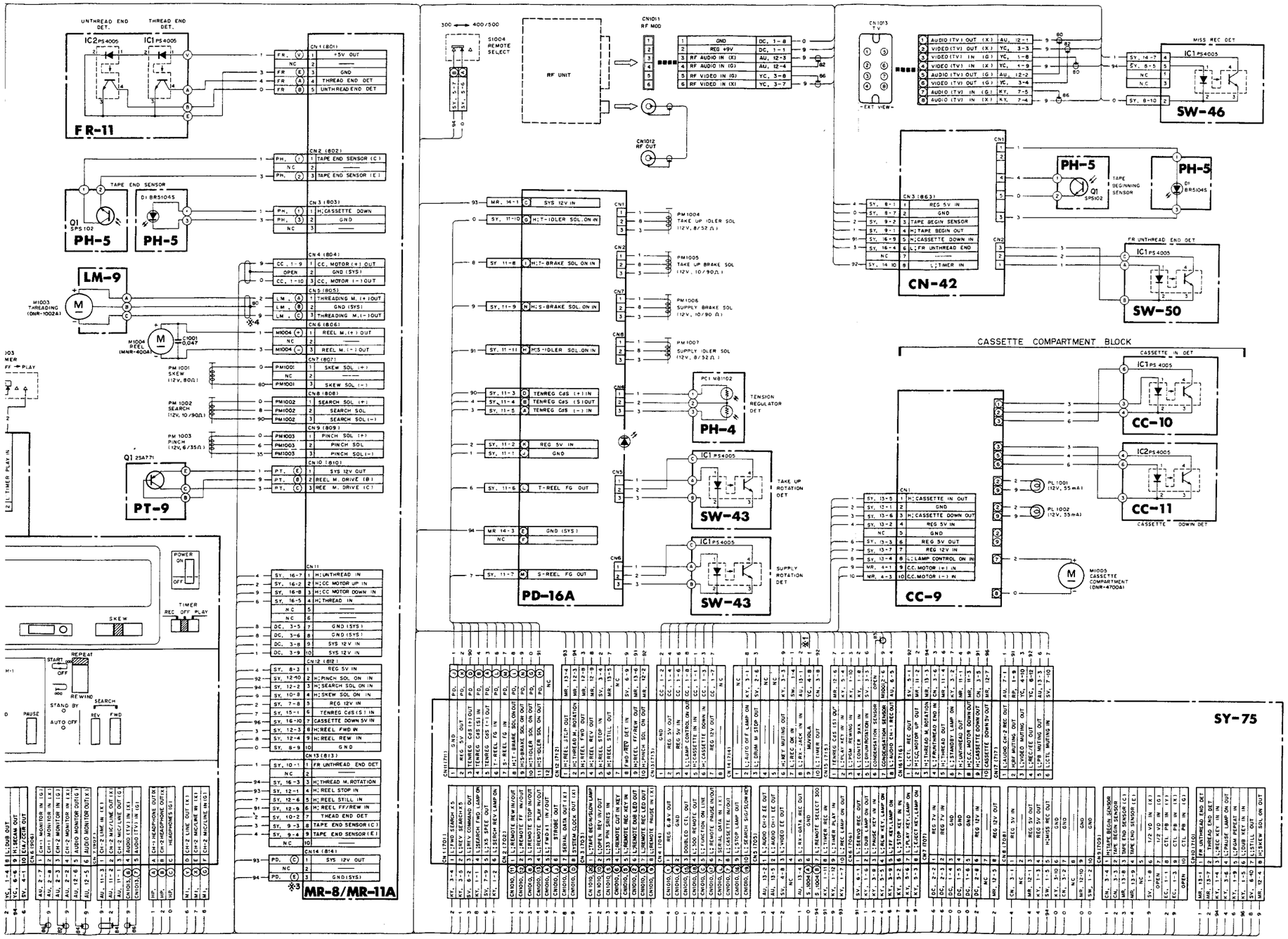
NOTE: **The shaded and ⚠-marked components are critical to safety.**
Replace only with same components as specified.

FRAME FRAME

FRAME



FRAME FRAME



NOTE:

MARK	CHANGE INFORMATION	SERIAL NO.
※1	CHANGED CONNECTION FORMER: YC-5 SV-44A CN104-8 — CN507-8 ↑ NEW: YC-5 SY-75 CN104-8 — CN714-9	AEP: 16541 ~ UK: 11511 ~ U/C: 10201 ~
※2	AC-35 BOARD C3 0.22 → 0.1 L1, L2 ADDED	AEP: 25441 ~ UK: 13111 ~ U/C: 10401 ~
※3	MR-8 BOARD DELETED MR-11A BOARD ADDED	AEP: 27441 ~ UK: 13711 ~ U/C: 10501 ~
※4	CHANGED WIRE COLOR 4 → 9	AEP: 29841 ~ UK: 14111 ~ U/C: 10501 ~

NOTE: **The shaded and ⚠-marked components are critical to safety.**
Replace only with same components as specified.

SECTION 15
SPARE PARTS AND FIXTURE

15-1. 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.

15-2. EXPLODED VIEW

- Exploded views are composed of the following blocks.

(1) Reel Chassis (1)
- Supply reel table
- Supply tension regulator arm
- Search solenoid
- Skew solenoid
- Supply main brake
- Reel motor

(2) Reel Chassis (2)
- Take-up reel table
- FF/REW idler
- Take-up main brake
- Take-up tension regulator arm
- R brake
- Still/miss-rec. detector

(3) Reel Chassis (3)
- Supply idler solenoid
- Take-up idler solenoid
- FF/REW idler pulley
- Supply brake solenoid
- Take-up brake solenoid
- 10 times picture search solenoid

(4) Threading
- Threading ring
- Gear box
- T correction guide
- Tape beginning sensor
- FR detector

(5) Threading Arm
- T drawer arm
- S drawer arm
- Drawer lever

(6) Drum/Capstan
- Head drum
- Capstan motor
- Audio/CTL head
- Brush

(7) Erase Head Base
- Erase head base
- S guard

(8) Pinch Lever
- Pinch lever
- Pinch roller pre-set cam
- Pinch solenoid

(9) Cassette-up Compartment

(10) Function Control
- Function control panel (except ornamental panel)

(11) Chassis (1)
- Chassis (bottom view)

(12) Chassis (2)
- Chassis (rear view)

(13) Meter Panel

(14) Chassis (3)
- Chassis (top view)

(15) Printed Circuit Board
- Printed circuit board (except bottom block)

(16) Ornamental Panel (1)
- Ornamental panel (except control panel)

(17) Ornamental Panel (2)
- Control panel

(18) Switching Regulator (UR-02)

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	———	———

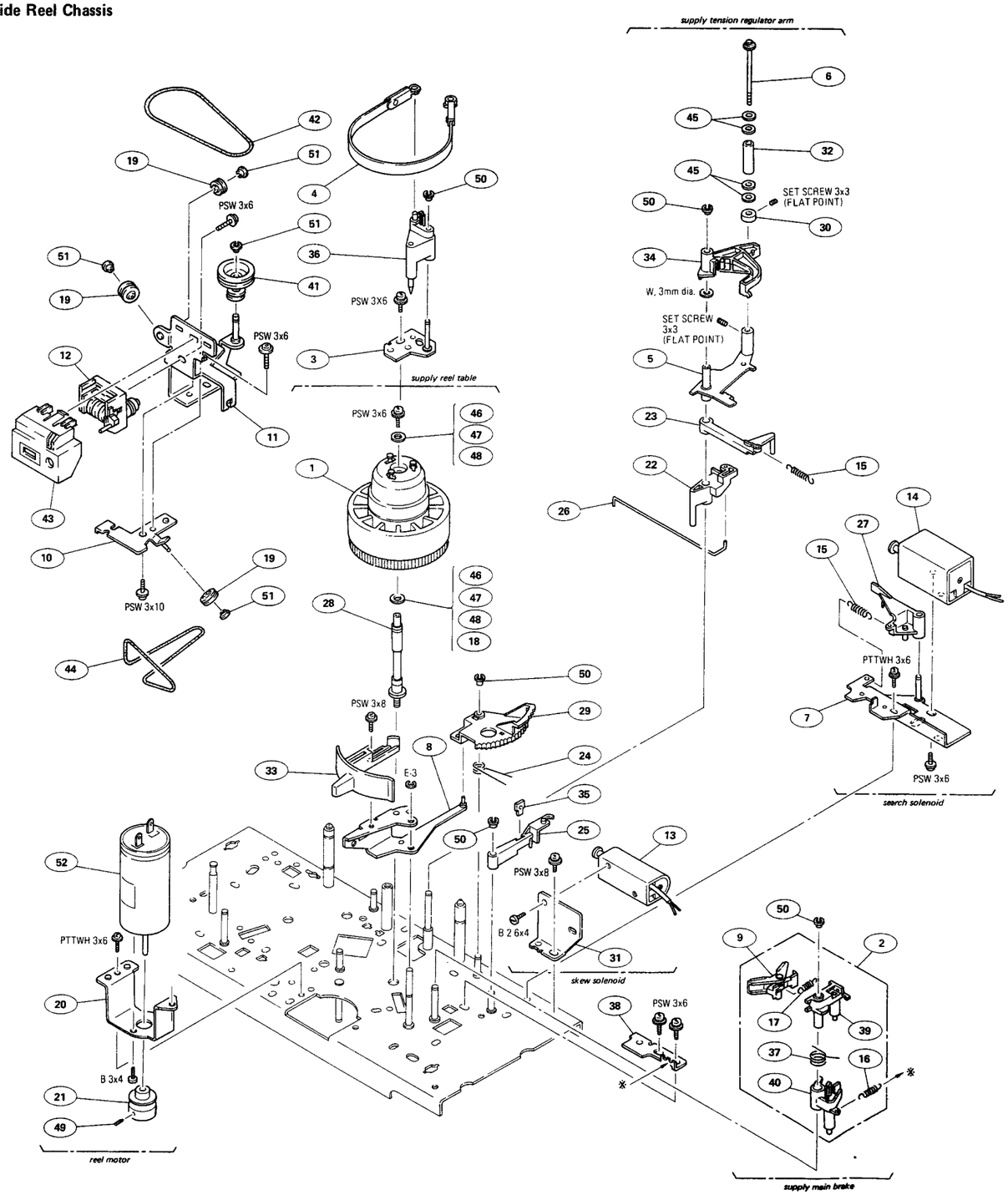
SCREW WASHER

	HEXAGON SOCKET SCREW	HEXAGON SET SCREW	(–) SET SCREW FLAT POINT	(–) SET SCREW CONE POINT
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 x8	7-683-413-05	———	———	7-621-712-65
2.6 x 10	———	———	———	7-621-712-75
3 x 4	———	7-683-238-01	———	———
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	———	———	7-683-177-21
3 x 10	7-683-405-04	———	———	7-683-178-21
3 x 12	———	———	———	7-683-179-21

	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

Supply Side Reel Chassis



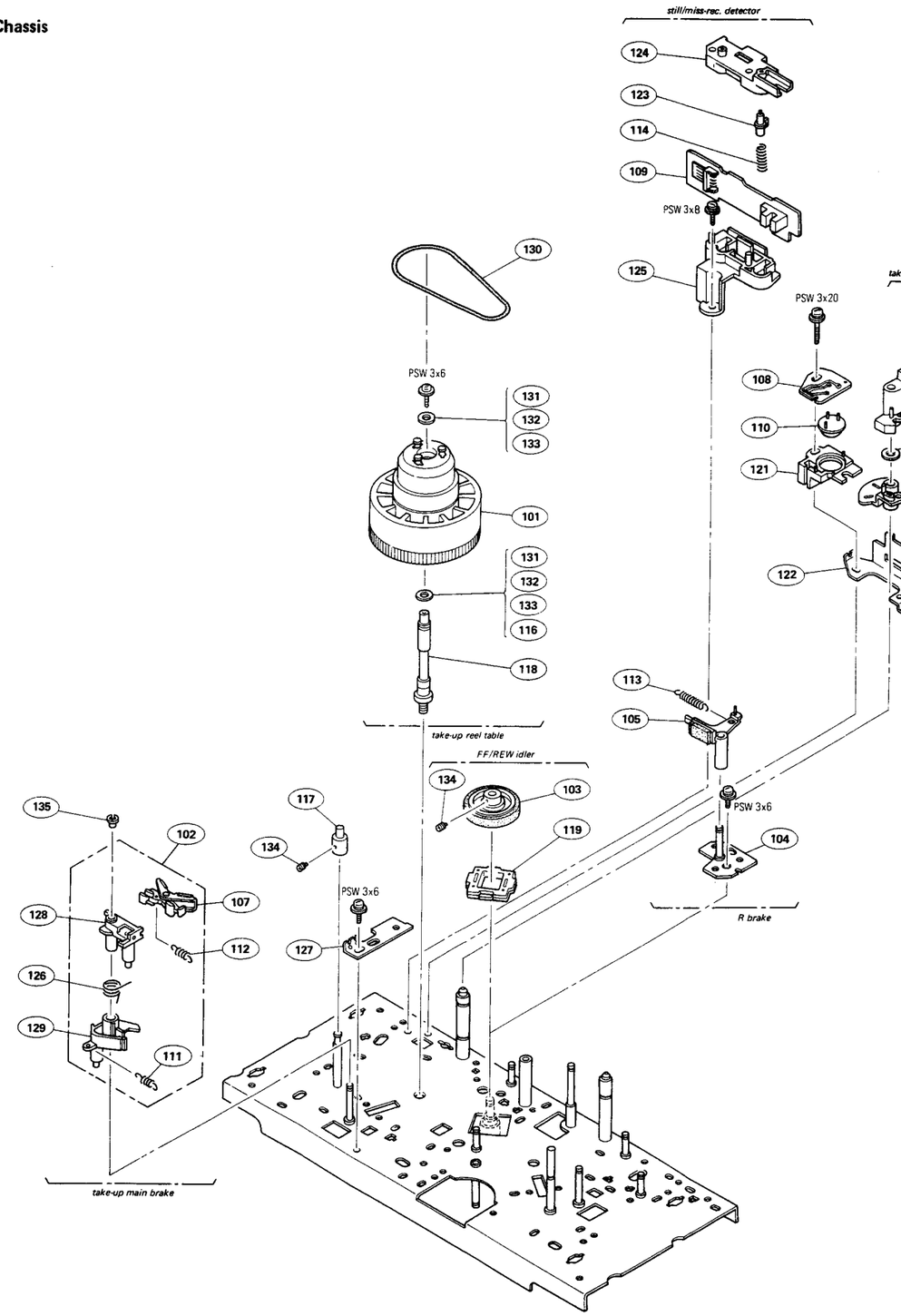
No.	Parts No.	Description
1	**A-6739-017-B**	**TABLE (T) ASS'Y, REEL**
2	**A-6741-038-B**	**BRAKE ASS'Y, MAIN**
3	X-3668-706-0	BASE ASS'Y, S TENSION REGULATOR
4	**X-3668-707-0**	**BAND ASS'Y, S TENSION REGULATOR**
5	**X-3668-708-0**	**ARM (A) ASS'Y, S TENSION REGULATOR**
6	**X-3668-709-0**	**SHAFT (1) ASS'Y, ROLLER**
7	X-3668-717-0	BASE ASS'Y, SEARCH
8	X-3668-725-0	ARM (C) ASS'Y, SKEW
9	**X-3668-749-2**	**HOLDER ASS'Y, LINING**
10	X-3672-603-0	BRACKET ASS'Y, PULLEY
11	X-3672-604-0	BRACKET ASS'Y, COUNTER
12	**Y-2041-071-5**	**COUNTER**
13	**1-454-283-00**	**SOLENOID**
14	**1-454-284-00**	**SOLENOID**
15	**3-534-238-XX**	**SPRING TENSION (23T)**
16	**3-535-369-XX**	**SPRING, TENSION (12T)**
17	**3-548-124-00**	**SPRING, TENSION**
18	**3-645-567-11**	**SPACER, FLANGE**
19	3-660-811-00	ROLLER, GUIDE
20	3-668-783-00	BRACKET, MOTOR
21	**3-668-784-00**	**PULLEY, MOTOR**
22	**3-668-787-02**	**ARM, S DETECTION**
23	3-668-794-00	ARM (A), SKEW
24	**3-668-795-00**	**SPRING**
25	3-668-797-00	ARM, SKEW LOCK
26	**3-668-804-00**	**LINK, DETECTION, TENSION**
27	**3-668-808-00**	**ARM, FWD, SEARCH**
28	3-668-827-00	SHAFT (S), REEL
29	**3-668-835-00**	**ARM (B), SKEW**
30	**3-668-874-00**	**FLANGE (1), LOWER**
31	3-668-875-00	BRACKET
32	**3-668-916-02**	**ROLLER (1), GUIDE**
33	**3-668-920-00**	**LEVER, SKEW**
34	**3-668-936-00**	**ARM (B), S TENSION REGULATOR**
35	**3-668-937-00**	**CLAW, SKEW LOCK**
36	3-668-939-00	ARM, BAND LOCK
37	**3-668-966-00**	**SPRING**
38	3-668-967-00	STOPPER, BRAKE
39	3-668-970-00	ARM, BRAKE
40	3-668-971-00	ARM, BRAKE RELEASE
41	**3-672-601-00**	**PULLEY, MIDWAY, COUNTER**
42	**3-672-602-00**	**BELT (A), COUNTER**
43	3-672-619-00	COVER, COUNTER
44	**3-672-626-00**	**BELT (B), COUNTER**
45	**3-701-438-01**	**WASHER, POLY 2.5MM DIA., 0.13T**
46	**3-701-444-01**	**WASHER, POLY 6MM DIA., 0.13T**
47	**3-701-444-11**	**WASHER, POLY 6MM DIA., 0.25T**
48	**3-701-444-21**	**WASHER, POLY 6MM DIA., 0.5T**
49	**3-701-506-01**	**SET SCREW, DOUBLE POINT 3X4**
50	**3-703-074-00**	**CAP 3, SHAFT**
51	**3-703-075-00**	**CAP 2, SHAFT**
52	**8-835-047-01**	**MOTOR, DC (MNR-4000A)**

NOTE:

1. **The shaded and ⚠-marked components are critical to safety. Replace only with same components as specified.**
2. Parts printed in **Bold-Face type** are normally stocked for replacement purposes. The remaining parts shown in this manual 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.
3. Item with no part number and/or no description are not stocked because they are seldom required for routine service.

REEL CHASSIS (2)

Take-up Side Reel Chassis

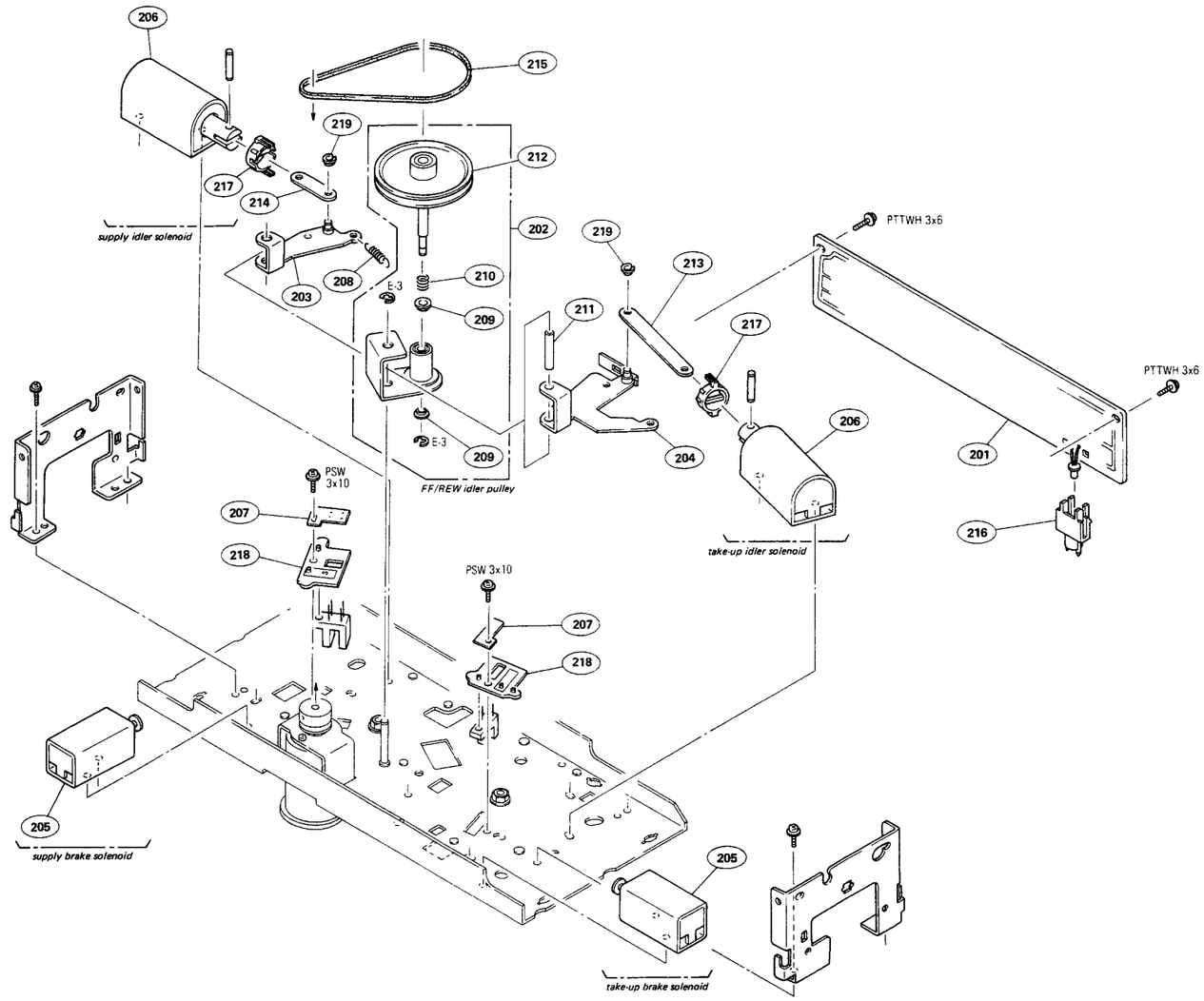


No.	Parts No.	Description
101	**A-6739-017-B**	**TABLE (T) ASS'Y, REEL**
102	**A-6741-038-B**	**BRAKE ASS'Y, MAIN**
103	**X-3646-026-0**	**IDLER ASS'Y, FF**
104	X-3668-705-0	BASE ASS'Y, R BRAKE
105	**X-3668-737-0**	**BRAKE ASS'Y, R**
106	**X-3668-738-0**	**ARM ASS'Y, T TENSION REGULATOR**
107	**X-3668-749-2**	**HOLDER ASS'Y, LINING**
108	1-603-589-00	PRINTED CIRCUIT BOARD, PH-4
109	1-603-590-00	PRINTED CIRCUIT BOARD, SW-46
110	**1-806-232-11**	**DETECTOR MB-1102/S.N.**
111	**3-535-369-XX**	**SPRING, TENSION (12T)**
112	**3-548-124-00**	**SPRING, TENSION**
113	**3-549-861-00**	**SPRING, TENSION**
114	**3-642-126-00**	**SPRING, COMPRESSION**
115	**3-642-427-00**	**SPRING, TENSION**
116	**3-645-567-11**	**SPACER, FLANGE**
117	3-668-031-00	RETAINER (UPPER), CASSETTE
118	3-668-766-00	SHAFT (T), REEL
119	3-668-780-00	CUSHION, IDLER
120	**3-668-788-00**	**ARM, T DETECTION**
121	3-668-789-00	HOLDER, BRIDGE, PHOTO
122	3-668-798-00	STOPPER, T TENSION REGULATOR
123	**3-668-929-00**	**ACTUATOR, SR**
124	3-668-931-00	HOLDER (UPPER), SR
125	3-668-932-00	HOLDER (LOWER), SR
126	**3-668-966-00**	**SPRING**
127	3-668-967-00	STOPPER, BRAKE
128	3-668-970-00	ARM, BRAKE
129	3-668-971-00	ARM, BRAKE RELEASE
130	**3-672-602-00**	**BELT (A), COUNTER**
131	**3-701-444-01**	**WASHER, POLY 6MM DIA., 0.13T**
132	**3-701-444-11**	**WASHER, POLY 6MM DIA., 0.25T**
133	**3-701-444-21**	**WASHER, POLY 6MM DIA., 0.5T**
134	**3-701-506-01**	**SET SCREW, DOUBLE POINT 3X4**
135	**3-703-074-00**	**CAP 3, SHAFT**

NOTE:

1. **The shaded and ⚠-marked components are critical to safety.**
   Replace only with same components as specified.
2. Parts printed in **Bold-Face type** are normally stocked for replacement purposes. The remaining parts shown in this manual 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.
3. Item with no part number and/or no description are not stocked because they are seldom required for routine service.

Reel Chassis (bottom view)



No.	Parts No.	Description
⚠ 201	A-6717-250-A	MOUNTED CIRCUIT BOARD, PD-16A
202	**A-6740-069-A**	**PULLEY BLOCK ASS'Y, IDLER**
203	X-3668-703-0	LEVER ASS'Y, S
204	X-3668-704-0	LEVER ASS'Y, T
205	**1-454-284-00**	**SOLENOID**
206	**1-454-285-00**	**SOLENOID**
207	1-603-434-00	PRINTED CIRCUIT BOARD, SW-43
208	**3-437-452-00**	**SPRING, TENSION**
209	**3-650-512-00**	**COLLAR, (A)**
210	**3-651-572-00**	**SPRING, COMPRESSION**
211	3-668-048-11	SPACER, (DIA. 4X20)
212	**3-668-772-00**	**SHAFT, IDLER PULLEY**
213	3-668-781-00	JOINT, T
214	3-668-782-00	JOINT, S
215	**3-668-785-00**	**BELT (67X2)**
216	3-668-786-00	HOLDER, LED
217	**3-668-826-00**	**RETAINER, PIN, SOLENOID**
218	3-668-828-00	BRACKET, PS
219	**3-703-074-00**	**CAP 3, SHAFT**

NOTE:

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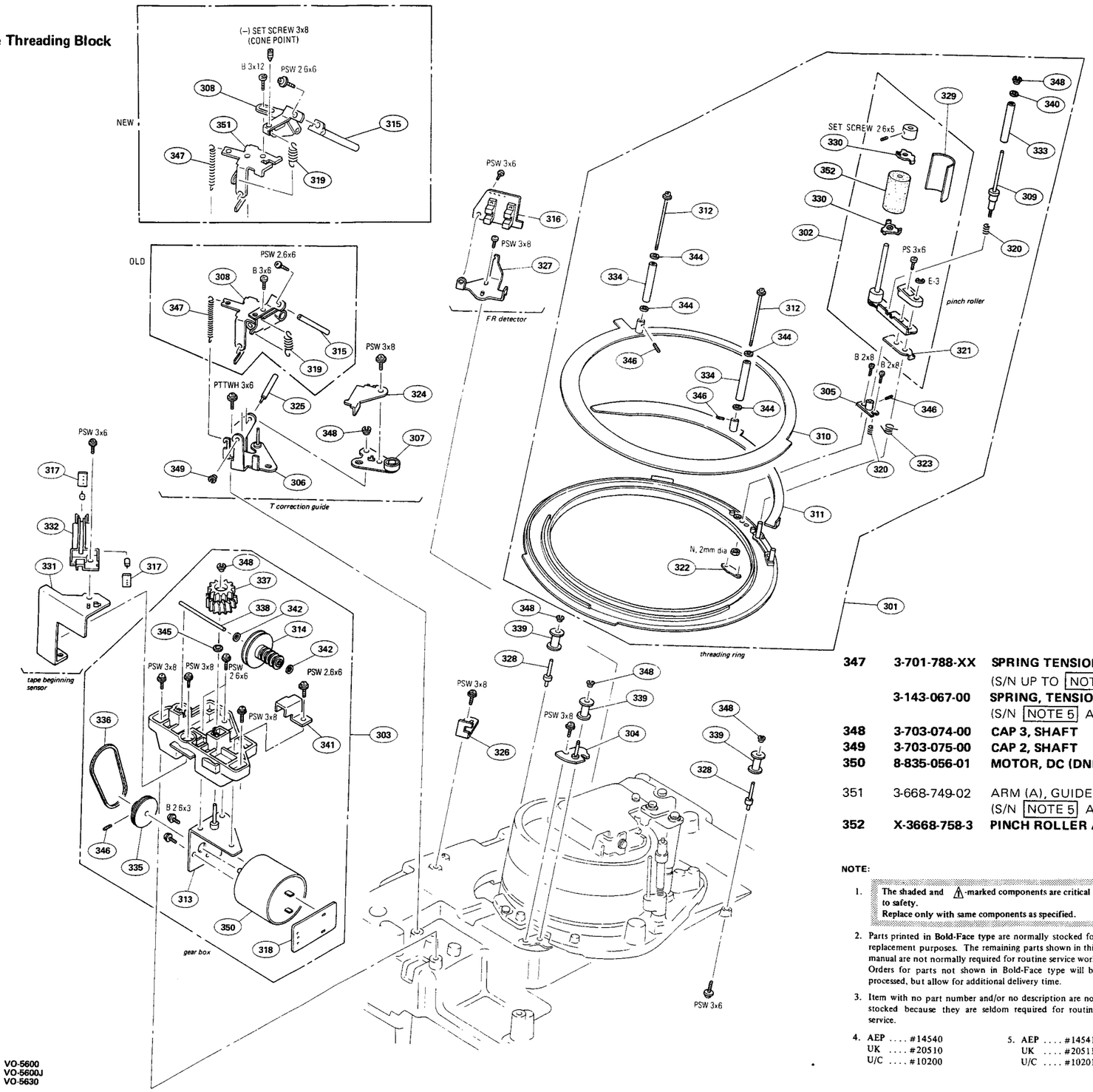
Tape Threading Block



VO-5600
VO-5600J
VO-5630

No.	Parts No.	Description
301	A-6750-192-A	RING BLOCK ASS'Y, MAIN
302	**A-6750-125-D**	**PINCH ROLLER BLOCK ASS'Y**
303	A-6750-134-B	BOX BLOCK ASS'Y, GEAR
304	X-3668-719-0	ROLLER ASS'Y, RING
305	X-3668-720-0	BASE ASS'Y, ROLLER, PRECEDING
306	X-3668-721-0	CHASSIS ASS'Y, GUIDE
307	**X-3668-722-0**	**LOCKER ASS'Y, FR**
308	X-3668-723-0	ARM ASS'Y, GUIDE, T CORRECTION (S/N UP TO NOTE 4)
	X-3668-723-2	ARM ASS'Y, GUIDE, T CORRECTION (S/N NOTE 5 AND HIGHER)
309	**X-3668-724-3**	**SHAFT ASS'Y, ROLLER, PRECEDING**
310	X-3668-731-0	RING (UPPER) ASS'Y, SUB
311	X-3668-732-0	RING (LOWER) ASS'Y, SUB
312	**X-3668-733-0**	**SHAFT ASS'Y, SR GUIDE**
313	X-3668-742-0	BRACKET ASS'Y, MOTOR
314	**X-3668-743-0**	**PULLEY ASS'Y, WORM**
315	**X-3668-756-0**	**SHAFT ASS'Y, T CORRECTION GUIDE** (S/N UP TO NOTE 4)
	X-3668-756-3	**SHAFT ASS'Y, T CORRECTION GUIDE** (S/N NOTE 5 AND HIGHER)
316	1-603-585-00	PRINTED CIRCUIT BOARD, FR-11
317	1-603-737-00	PRINTED CIRCUIT BOARD, PH-5
318	1-606-377-00	PRINTED CIRCUIT BOARD, LM-9
319	**3-472-327-00**	**SPRING, TENSION** (S/N UP TO NOTE 4)
	3-437-289-00	**SPRING, TENSION** (S/N NOTE 5 AND HIGHER)
320	**3-634-196-00**	**SPRING**
321	**3-642-558-00**	**ARM (C), PINCH ROLLER**
322	3-668-743-00	NUT, PLATE, ROLLER, PRECEDING
323	**3-668-745-00**	**SPRING**
324	3-668-753-00	PLATE, ADJUSTMENT, FR LOCKER
325	3-668-754-00	SHAFT, GUIDE ARM, T CORRECTION
326	3-668-755-00	PLATE, STOPPER, SR
327	3-668-756-02	BRACKET, DETECTION, FR
328	3-668-757-00	SHAFT (A), RING ROLLER
329	3-668-888-00	COVER, PINCH
330	3-668-889-00	CAP, PINCH ROLLER
331	3-668-900-00	BRACKET, T SENSOR
332	**3-668-901-00**	**HOLDER, T PHOTO**
333	**3-668-917-00**	**ROLLER, PRECEDING**
334	**3-672-727-01**	**ROLLER, SR GUIDE**
335	**3-668-945-00**	**PULLEY, LM**
336	**3-668-946-00**	**BELT (38.5X1.8), SQUARE**
337	**3-668-947-00**	**PINION, L**
338	3-668-948-00	SHAFT, WORM
339	**3-668-963-00**	**ROLLER, RING**
340	**3-669-926-01**	**WASHER (3), THRUST**
341	3-669-960-00	RETAINER, SHAFT
342	**3-701-437-21**	**WASHER, POLY 2MM DIA., 0.5T**
344	**3-701-438-01**	**WASHER, POLY 2.5MM DIA., 0.25T**
345	**3-701-439-21**	**WASHER, POLY 3MM DIA., 0.5T**
346	**3-701-505-00**	**SET SCREW, DOUBLE POINT 3X3**
347	**3-701-788-XX**	**SPRING TENSION (35T)** (S/N UP TO NOTE 4)
	3-143-067-00	**SPRING, TENSION** (S/N NOTE 5 AND HIGHER)
348	**3-703-074-00**	**CAP 3, SHAFT**
349	**3-703-075-00**	**CAP 2, SHAFT**
350	**8-835-056-01**	**MOTOR, DC (DNR-1002A)**
351	3-668-749-02	ARM (A), GUIDE, T CORRECTION (S/N NOTE 5 AND HIGHER)
352	**X-3668-758-3**	**PINCH ROLLER ASS'Y**

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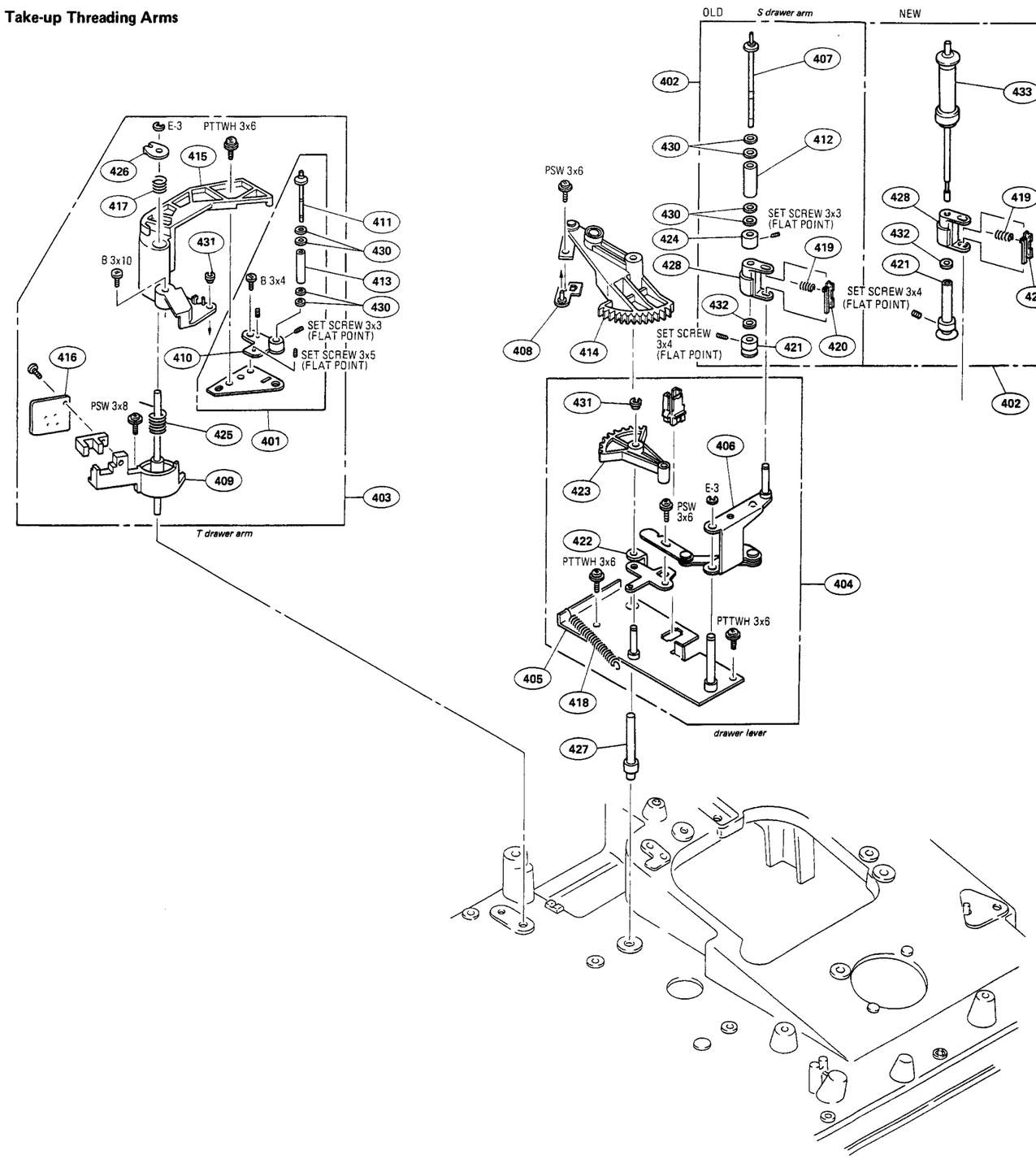
4. AEP ....#14540
   UK ....#20510
   U/C ....#10200
5. AEP ....#14541
   UK ....#20511
   U/C ....#10201

Supply and Take-up Threading Arms



No.	Parts No.	Description
401	**A-6746-020-A**	**ROLLER BLOCK ASS'Y, T GUIDE**
402	**A-6746-021-B**	**ROLLER BLOCK ASS'Y, S DRAWER**
403	A-6750-121-A	ARM BLOCK ASS'Y, T DRAWER
404	A-6750-122-A	ARM BLOCK ASS'Y, S DRAWER
405	X-3668-710-0	BASE ASS'Y, ARM, S DRAWER
406	X-3668-711-0	ARM ASS'Y, S DRAWER
407	**X-3668-712-0**	**SHAFT (2) ASS'Y, ROLLER** S/N UP TO NOTE 4
408	X-3668-713-0	LINK (B) ASS'Y, DRIVING
409	X-3668-714-0	RETAINER ASS'Y, ARM, T DRAWER
410	X-3668-715-0	PLATE ASS'Y, GUIDE, T
411	**X-3668-716-0**	**SHAFT (3) ASS'Y, ROLLER**
412	**X-3668-718-0**	**GUIDE ASS'Y, TAPE** (S/N UP TO NOTE 4)
413	X-3668-727-0	GUIDE ASS'Y, TAPE
414	**X-3668-729-0**	**LEVER ASS'Y, DRAWER**
415	X-3668-741-0	ARM ASS'Y, T DRAWER
416	1-603-435-00	PRINTED CIRCUIT BOARD, SW-50
417	**3-534-854-00**	**SPRING, COMPRESSION**
418	**3-540-506-00**	**SPRING, TENSION**
419	**3-644-718-00**	**SPRING, COMPRESSION**
420	**3-668-718-00**	**RETAINER, SPRING, S DRAWER**
421	**3-668-719-00**	**HOLDER (L), S GUIDE** (S/N UP TO NOTE 4)
	3-668-719-03	HOLDER (L), S GUIDE (S/N NOTE 5 AND HIGHER)
422	3-668-720-00	LIMITER, S DRAWER
423	**3-668-721-00**	**ARM, S DRIVING**
424	3-668-724-00	FLANGE (2), LOWER S/N UP TO NOTE 4
425	3-668-734-00	SPRING
426	**3-668-735-00**	**RETAINER, SPRING**
427	3-668-760-00	SHAFT, DRAWER LEVER
428	**3-668-833-00**	**HOLDER (M), GUIDE, S**
430	**3-701-438-01**	**WASHER, POLY 2.5MM DIA., 0.13T**
431	**3-703-074-00**	**CAP 3, SHAFT**
432	3-669-946-00	RING, O
433	**A-6746-034-A**	**ROLLER BLOCK ASS'Y (2), S DRAWER** (S/N NOTE 5 AND HIGHER)

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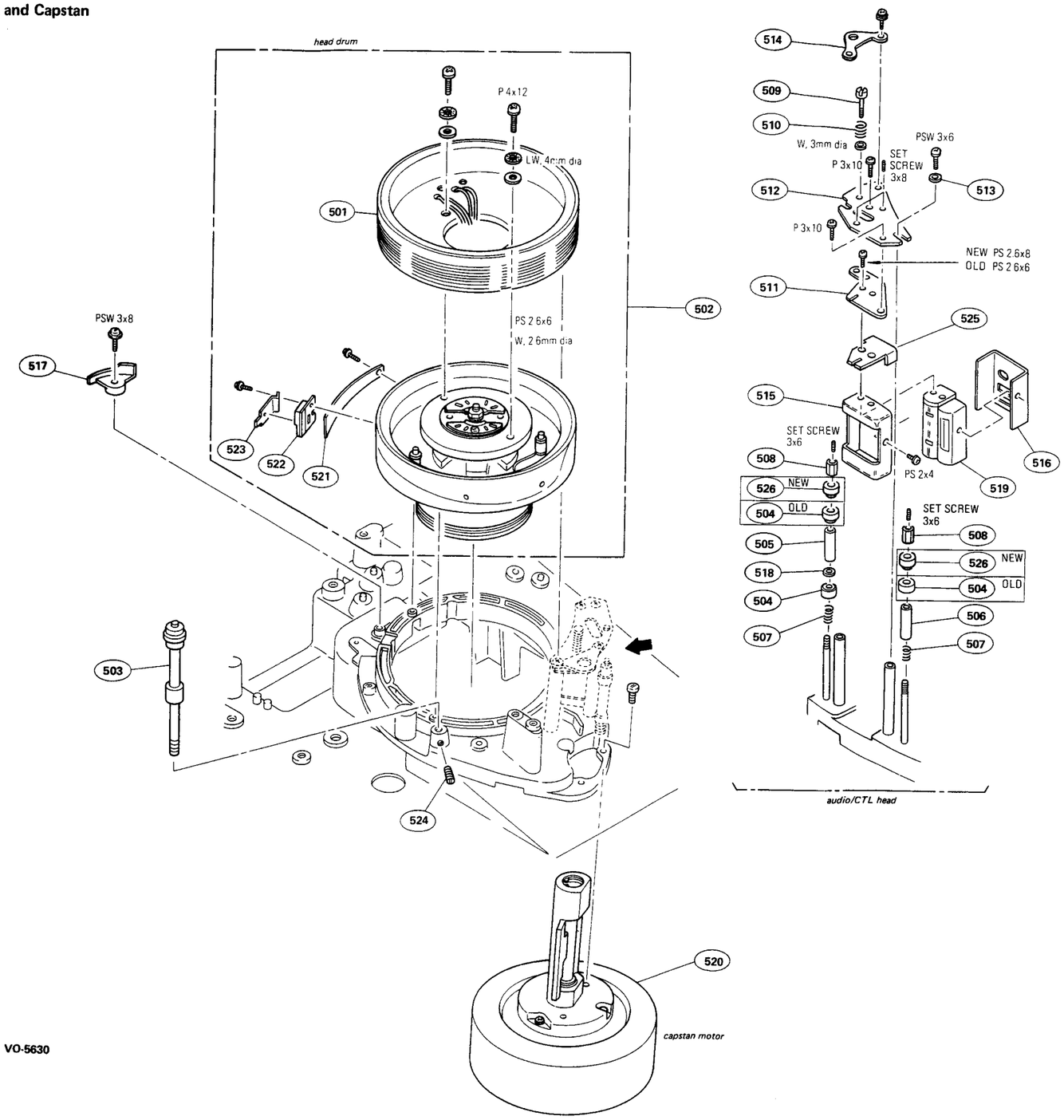
4. AEP .... #25440
   UK .... #13110
   U/C .... #10400
5. AEP .... #25441
   UK .... #13111
   U/C .... #10401

Drum Block and Capstan



VO-5630

No.	Parts No.	Description
501	**A-6709-400-A**	**DRUM ASS'Y, UPPER, DUR-23-R**
502	**A-6709-392-A**	**HEAD DRUM ASS'Y, DUH-23A-R**
503	**A-6709-382-A**	**GUIDE BLOCK ASS'Y, TAPE**
504	**3-641-612-00**	**GUIDE, TAPE**
505	**3-641-613-00**	**GUIDE, TAPE**
506	**3-641-614-00**	**GUIDE, TAPE**
507	**3-641-615-00**	**SPRING, COMPRESSION**
508	**3-641-616-00**	**NUT, TAPE GUIDE ADJUSTMENT**
509	3-641-621-00	SCREW, HEAD ADJUSTMENT
510	**3-641-622-00**	**SPRING, COMPRESSION**
511	3-641-640-00	BRACKET, C.T.L. HEAD (1)
512	3-641-641-02	BRACKET, C.T.L. HEAD (2)
513	3-645-076-00	WASHER, M-REEL S
514	3-647-815-00	PLATE, ADJUSTMENT, C.T.L. HEAD
515	3-650-301-02	COVER, HEAD, D-CTL
516	3-650-302-00	COVER, HEAD, (REAR)
517	3-668-999-00	CAM, PROTECTION
518	**3-669-952-00**	**WASHER, TAPE GUIDE**
519	**8-829-358-31**	**HEAD, CTL (EPP150-5803B)**
520	**8-838-019-01**	**MOTOR, DC (BHF-1600A)**
521	**1-586-633-00**	**CONDENSATION, SENSOR**
522	3-656-501-00	HOLDER, TERMINAL
523	3-656-502-00	PLATE, TERMINAL
524	3-701-508-00	SET SCREW, DOUBLE POINT 3X6
525	3-669-985-00	PLATE, ADJUSTMENT (AEP .... S/N 25441 AND HIGHER) (UK .... S/N 13111 AND HIGHER) (U/C .... S/N 10401 AND HIGHER)
526	**3-688-807-01**	**FLANGE, TAPE GUIDE** **(AEP .... S/N 37541 AND HIGHER)** **(UK .... S/N 14811 AND HIGHER)** **(U/C .... S/N 10601 AND HIGHER)**

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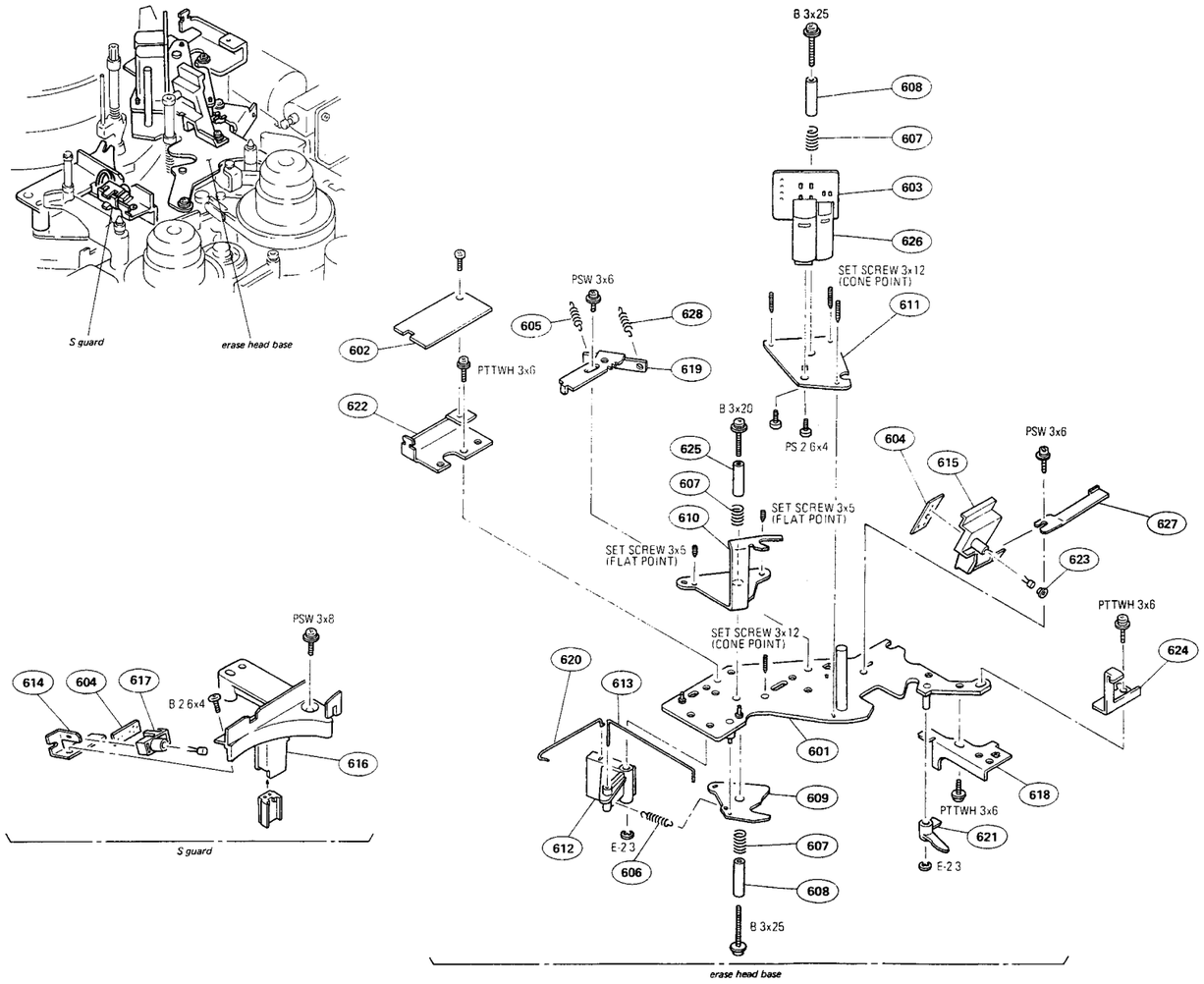
Erase Head Base and S Guard



No.	Parts No.	Description
601	X-3668-728-0	DECK ASS'Y, E HEAD
602	1-586-192-00	PRINTED CIRCUIT BOARD, AH-3
603	1-603-729-00	PRINTED CIRCUIT BOARD, EC-19
604	1-603-737-00	PRINTED CIRCUIT BOARD, PH-5
605	**3-535-558-00**	**SPRING TENSION (23T)** (S/N UP TO NOTE 4)
	3-535-102-00	**SPRING, TENSION** (S/N NOTE 5 AND HIGHER)
606	**3-630-615-XX**	**SPRING TENSION (18T)**
607	**3-637-335-00**	**SPRING, COMPRESSION (C)**
608	3-657-086-00	SPACER (3-20)
609	**3-668-705-00**	**HOLDER (LOWER), S**
610	**3-668-706-00**	**HOLDER (UPPER), S**
611	3-668-707-00	TABLE, HEAD, E
612	3-668-708-00	ARM, DRIVING, CORRECTION GUIDE
613	**3-668-709-00**	**ROD, PULL, CORRECTION GUIDE**
614	3-668-809-02	BRACKET, HOLDER
615	3-668-832-02	HOLDER (S)
616	**3-668-836-02**	**GUARD, S**
617	3-668-837-00	HOLDER, LED
618	3-668-859-00	STOPPER, RING
619	3-668-860-00	HOOK, SPRING, TENSION REGULATOR
620	3-668-884-03	JOINT, RESERVE PRESS
621	3-668-894-00	LEVER, RELEASE
622	3-668-962-00	BRACKET, AH PC BOARD
623	3-669-920-00	COVER, S PHOTO
624	3-669-963-00	SPRING, LEAF, GROUND
625	**4-855-006-11**	**SPACER, PIPE**
626	**8-825-513-20**	**HEAD, CTL ERASE (EPP170-58)**
627	3-669-964-00	PLATE, GROUND (AEP .... S/N 11641 AND HIGHER; UK .... S/N 10311 AND HIGHER; U/C .... S/N 10201 AND HIGHER)
628	**3-534-238-XX**	**SPRING, TENSION (23T)**

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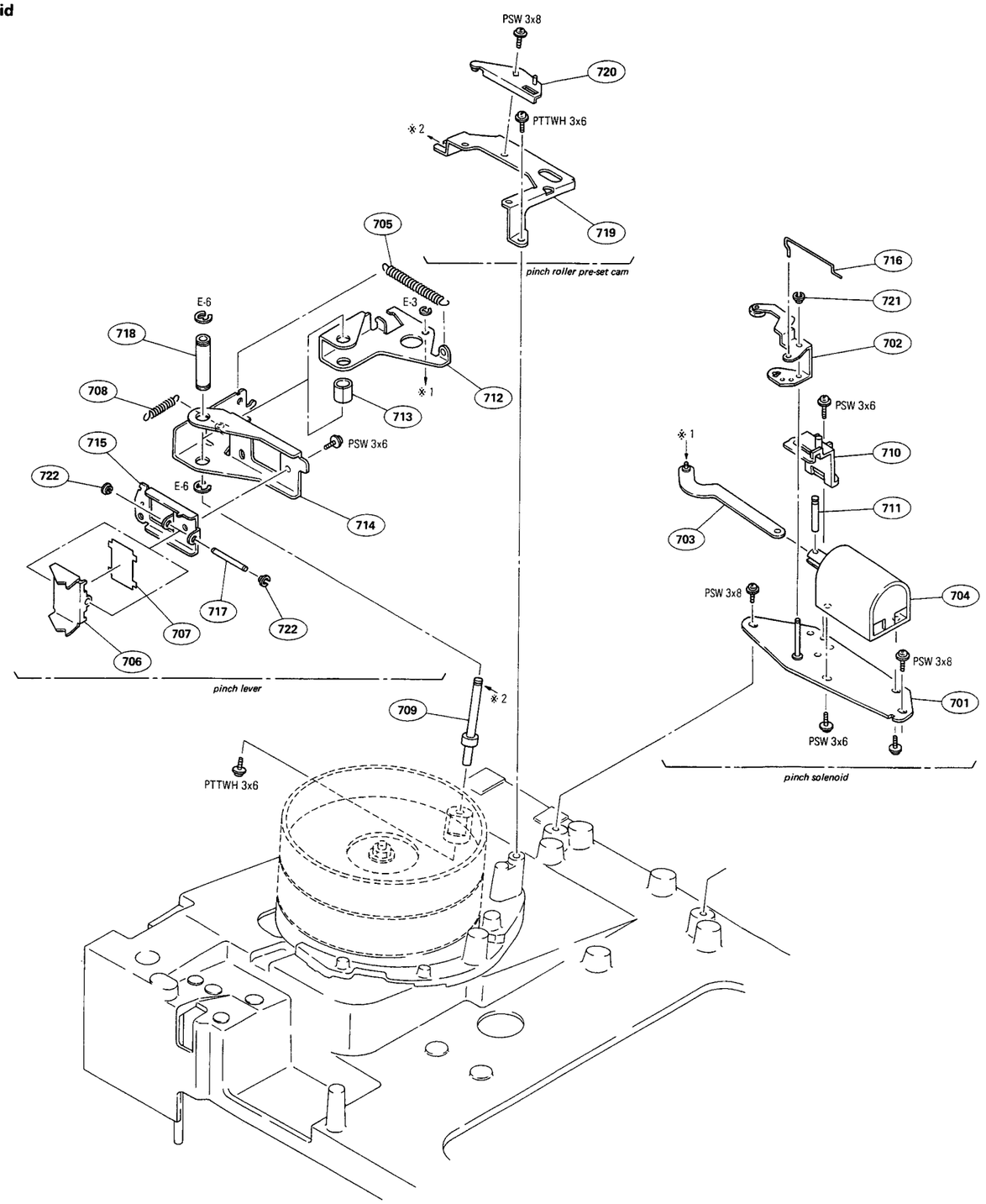
4. AEP .... #19840
   UK .... #12310
   U/C .... #10300
5. AEP .... #19841
   UK .... #12311
   U/C .... #10301

Pinch Lever and Pinch Solenoid



No.	Parts No.	Description
701	X-3668-734-0	BASE ASS'Y, PINCH PRESS
702	**X-3668-735-3**	**LEVER ASS'Y, RESERVE PRESS**
703	X-3668-736-0	JOINT ASS'Y
704	**1-454-286-00**	**SOLENOID**
705	**3-610-265-02**	**SPRING**
706	3-642-518-00	LEVER, PINCH
707	3-642-519-00	SPRING
708	**3-645-392-00**	**SPRING, TENSION**
709	3-668-862-00	SHAFT, PRESS LEVER, PINCH
710	**3-668-863-00**	**GUIDE, ARBOR**
711	**3-668-864-00**	**PIN, SOLENOID**
712	3-668-865-00	LEVER (B), PINCH PRESS
713	3-668-867-00	SPACER (8X9)
714	3-668-868-00	LEVER (A), PINCH PRESS
715	3-668-883-00	PLATE, ADJUSTMENT, PINCH PRESS
716	3-668-884-03	JOINT, RESERVE PRESS
717	3-668-895-00	SHAFT
718	3-668-896-00	SLEEVE, PRESS LEVER, PINCH
719	3-668-997-00	DECK, P SUB PRESS
720	3-668-998-00	CAM, SUB PRESS
721	**3-703-074-00**	**CAP 3, SHAFT**
722	**3-703-075-00**	**CAP 2, SHAFT**

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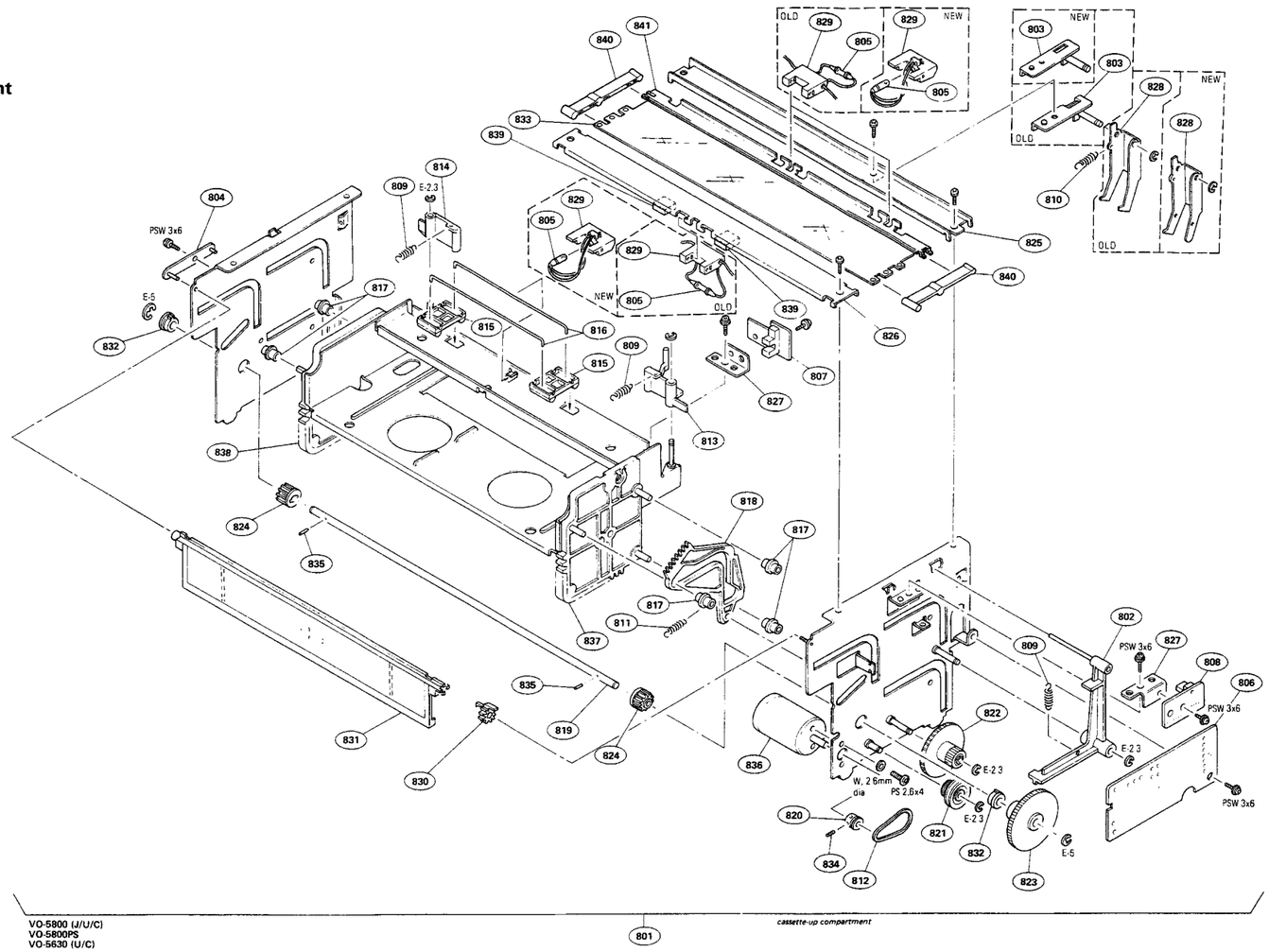
Cassette-up Compartment



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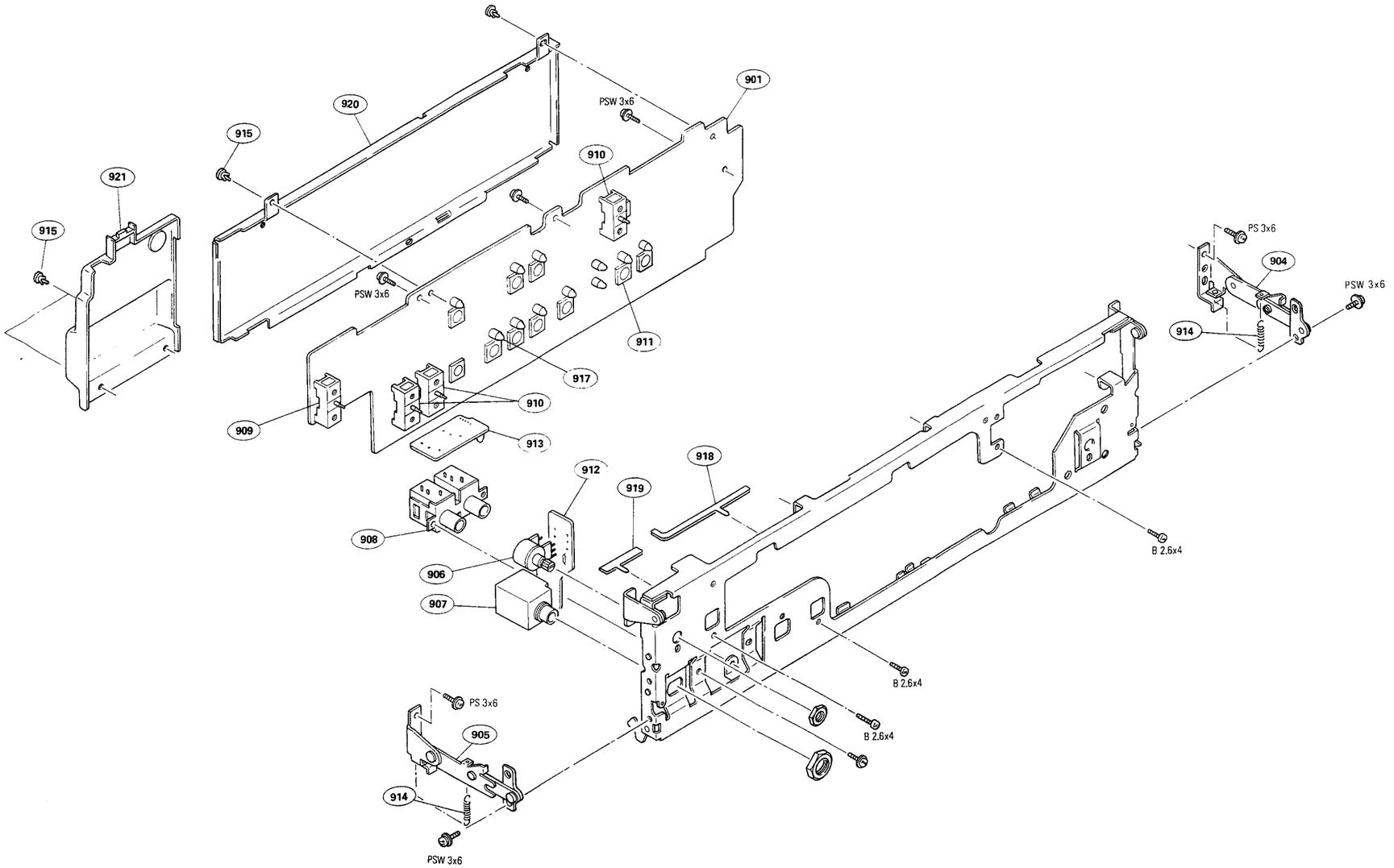
No.	Parts No.	Description
801	**A-6751-104-C**	**CASSETTE-UP ASS'Y**
802	**X-3668-059-0**	**ARM ASS'Y, SWITCH, DOWN**
803	X-3668-060-0	HOLDER ASS'Y, ARM
		AEP: UP TO S/N 13440
		UK:: UP TO S/N 10510
		U/C : UP TO S/N 10200
	X-3668-060-3	HOLDER ASS'Y, ARM
		AEP: S/N 13441 AND LATER
		UK : S/N 10511 AND LATER
		U/C : S/N 10201 AND LATER
804	X-3668-061-0	SUPPORT ASS'Y, LID
805	**1-518-455-00**	**LAMP, PILOT**
		AEP: UP TO S/N 13440
		UK : UP TO S/N 10510
		U/C : UP TO S/N 10200
	1-518-508-00	**LAMP, PILOT**
		AEP: S/N 13441 AND LATER
		UK : S/N 10511 AND LATER
		U/C : S/N 10201 AND LATER
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	**3-653-387-00**	**BELT, LM**
813	3-668-295-00	LEVER (RIGHT), CASSETTE PUSH-OUT
814	3-668-296-00	LEVER (LEFT), CASSETTE PUSH-OUT
815	**3-668-297-00**	**RETAINER, CASSETTE**
816	3-668-298-00	SPRING
817	**3-668-299-00**	**ROLLER, GUIDE**
818	3-668-300-00	CAM, LID OPEN
819	3-668-301-00	SHAFT, DRIVING
820	**3-668-302-00**	**PULLEY, MOTOR**
821	**3-668-303-00**	**GEAR (A)**
822	**3-668-304-00**	**GEAR (B)**
823	**3-668-305-00**	**GEAR (C)**
824	**3-668-306-00**	**GEAR (D)**
825	3-668-307-00	JOINT (R), LEFT & RIGHT
		AEP: UP TO S/N 13440
		UK : UP TO S/N 10510
		U/C : UP TO S/N 10200
	3-668-307-02	JOINT (R), LEFT & RIGHT
		AEP: S/N 13441 AND LATER
		UK : S/N 10511 AND LATER
		U/C : S/N 10201 AND LATER
826	3-668-308-00	JOINT (F), LEFT & RIGHT
		AEP: UP TO S/N 13440
		UK : UP TO S/N 10510
		U/C : UP TO S/N 10200
	3-668-308-03	JOINT (F), LEFT & RIGHT
		AEP: S/N 13441 AND LATER
		UK : S/N 10511 AND LATER
		U/C : S/N 10201 AND LATER
827	3-668-309-00	BRACKET, SWITCH
828	3-668-310-00	ARM, LID OPEN
		AEP: UP TO S/N 13440
		UK : UP TO S/N 10510
		U/C : UP TO S/N 10200
	3-668-310-02	ARM, LID OPEN
		AEP: S/N 13441 AND LATER
		UK : S/N 10511 AND LATER
		U/C : S/N 10201 AND LATER
829	**3-668-314-00**	**HOLDER, LAMP**
		AEP: UP TO S/N 13440
		UK : UP TO S/N 10510
		U/C : UP TO S/N 10200
	3-668-314-02	**HOLDER, LAMP**
		AEP: S/N 13441 AND LATER
		UK : S/N 10511 AND LATER
		U/C : S/N 10201 AND LATER
830	**3-668-315-02**	**GEAR, LID**
831	**3-668-371-00**	**LID, CASSETTE**
832	**3-668-474-00**	**BEARING (6)**
833	**3-672-604-11**	**REFLECTOR**
834	**3-701-506-01**	**SET SCREW, DOUBLE POINT 3X4**
835	3-703-358-00	PIN, PARALLEL (DIA. 2X8)
836	**8-835-055-01**	**MOTOR, DC (DNR-4700A)**
837	**X-3668-057-0**	**CASECON ASS'Y, RACK (RIGHT)**
838	**X-3668-058-0**	**CASECON ASS'Y, RACK (LEFT)**
839	3-672-926-00	CUSHION, LID
		(AEP .... S/N 12841 AND HIGHER
		UK .... S/N 10311 AND HIGHER
		U/C .... S/N 10201 AND HIGHER)
840	**3-668-313-02**	**FRAME, SUPPORT, REFLECTOR**
841	**3-672-639-03**	**BRACKET, LAMP**

Function Control



No.	Parts No.	Description
901	A-6728-403-A	MOUNTED CIRCUIT BOARD, KY-21A
904	X-3668-766-0	STAY (RIGHT) ASS'Y, LOCK
905	X-3668-765-0	STAY (LEFT) ASS'Y, LOCK
906	**1-228-218-00**	**RES, VAR, CARBON 500/500**
907	**1-507-553-00**	**JACK**
908	**1-507-733-00**	**JACK (LARGE TYPE)**
909	**1-516-963-00**	**SWITCH, LEVER SLIDE**
910	**1-516-995-00**	**SWITCH, LEVER SLIDE**
911	**1-552-539-00**	**SWITCH, KEY BOARD**
912	1-606-366-00	PRINTED CIRCUIT BOARD, HP-6
913	1-606-381-00	PRINTED CIRCUIT BOARD, MI-5
914	3-437-288-00	SPRING, TENSION
915	**3-531-576-11**	**RIVET**
917	**3-669-905-00**	**HOLDER, LAMP**
918	3-672-603-00	PROTECTOR (A), HARNESS
919	3-672-606-00	PROTECTOR (B), HARNESS
920	3-672-608-00	PLATE, BOTTOM, KEY BOARD
921	3-672-609-00	COVER, MICROPHONE JACK

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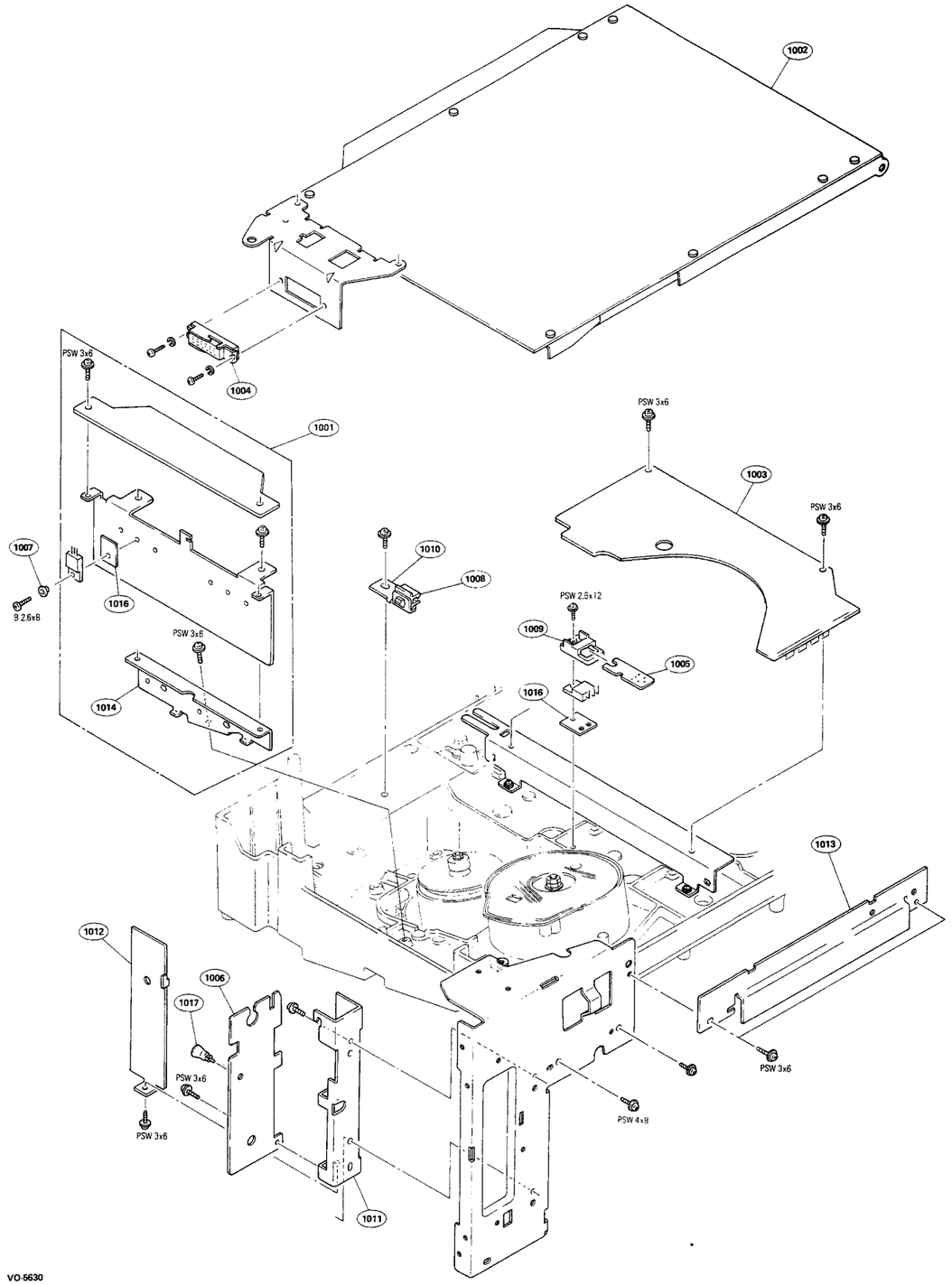
Chassis (bottom view)



No.	Parts No.	Description
⚠1001	A-6715-143-A	MOUNTED CIRCUIT BOARD, DR-17B
⚠1002	A-6717-249-C	MOUNTED CIRCUIT BOARD, SY-75
⚠1002	A-6717-249-D	MOUNTED CIRCUIT BOARD, SY-75
		(AEP . . . . S/N 16541 AND HIGHER UK . . . . S/N 11511 AND HIGHER U/C . . . . S/N 10201 AND HIGHER)
⚠1003	A-6725-357-A	MOUNTED CIRCUIT BOARD, MR-11A
1004	**1-561-583-00**	**RECEPTACLE (FEMALE) 33P**
1005	1-605-018-00	PRINTED CIRCUIT BOARD, PT-9
1006	1-606-378-00	PRINTED CIRCUIT BOARD, DC-13
1007	**2-832-007-00**	**BUSHING (K), INSULATING**
1008	3-642-310-00	HOLDER, CIRCUIT BOARD
1009	3-669-904-00	HOLDER, PT
1010	3-669-927-00	SUPPORT, MR
1011	3-672-611-00	BRACKET, DC
1012	3-672-616-00	PROTECTOR, HARNESS, DC
1013	3-672-620-02	BRACKET, MR
1014	3-672-643-00	SUPPORT, DR
1016	**3-703-207-11**	**INSULATOR, TO-220**
1017	**3-703-356-00**	**RIVET, T TYPE**

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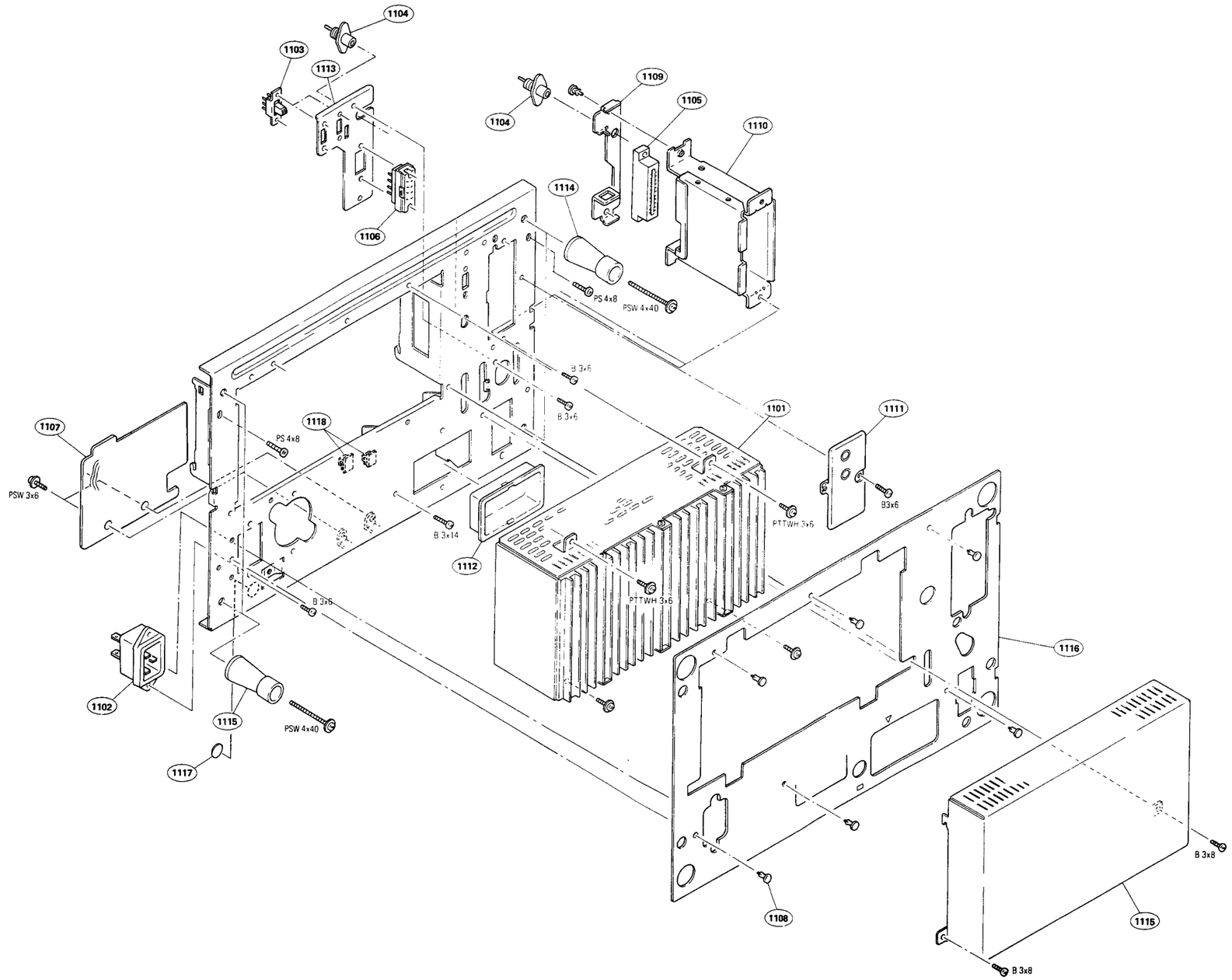
Chassis (rear view)



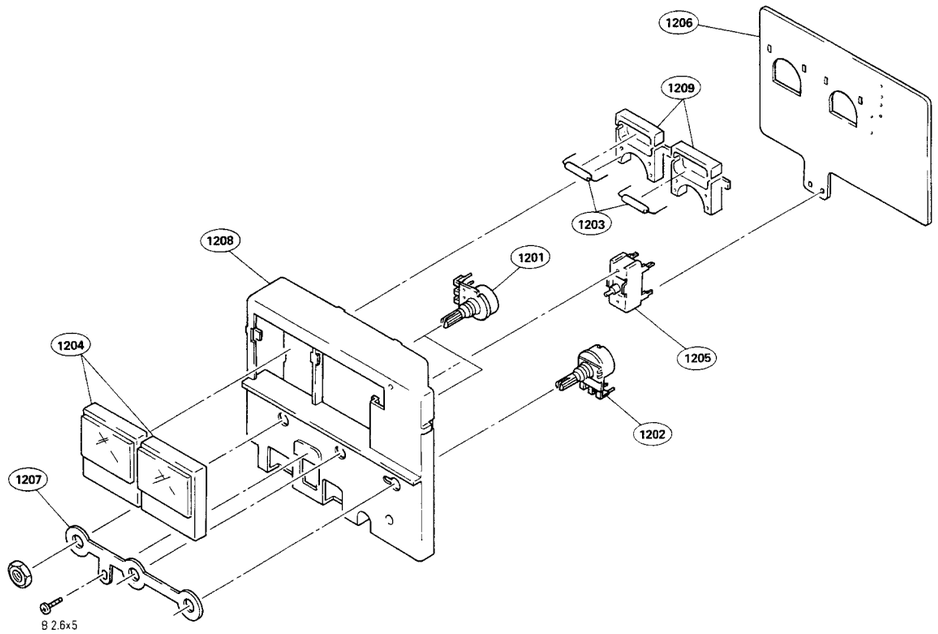
No.	Parts No.	Description
⚠1101	**1-413-075-00**	**SWITCHING REGULATOR (UR-02)**
⚠1102	**1-509-546-00**	**3P INLET**
1103	**1-516-779-XX**	**SLIDE SWITCH**
1104	**1-555-977-00**	**CONNECTOR ASS'Y, DIN**
1105	**1-560-403-00**	**CONNECTOR, PC BOARD**
1106	**1-561-671-00**	**SOCKET, MULTI CONNECTOR 8P**
1107	1-606-380-00	PRINTED CIRCUIT BOARD, AC-35
1108	**3-531-576-11**	**RIVET**
1109	3-661-396-00	PLATE (N), CONNECTOR, RF
1110	3-667-805-00	CASE, MD
1111	3-667-811-00	LID, MD
1112	3-668-814-00	ESCUTCHEON, CONNECTOR
1113	3-668-842-00	PLATE, CONNECTOR, SUB
1114	**3-668-924-00**	**FOOT, REAR**
1115	3-668-989-00	COVER, SWITCH REGULATOR
1116	3-672-618-00	PLATE (T), ORNAMENTAL, REAR PANEL
1117	3-701-699-00	LABEL, GROUND TERMINAL
1118	3-703-072-00	HOLDER, PCB

NOTE:

1. **The shaded and ⚠ -marked components are critical to safety.**
   Replace only with same components as specified.
2. Parts printed in **Bold-Face type** are normally stocked for replacement purposes. The remaining parts shown in this manual 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.
3. Item with no part number and/or no description are not stocked because they are seldom required for routine service.

METER PANEL CHASSIS (3)

Meter Panel

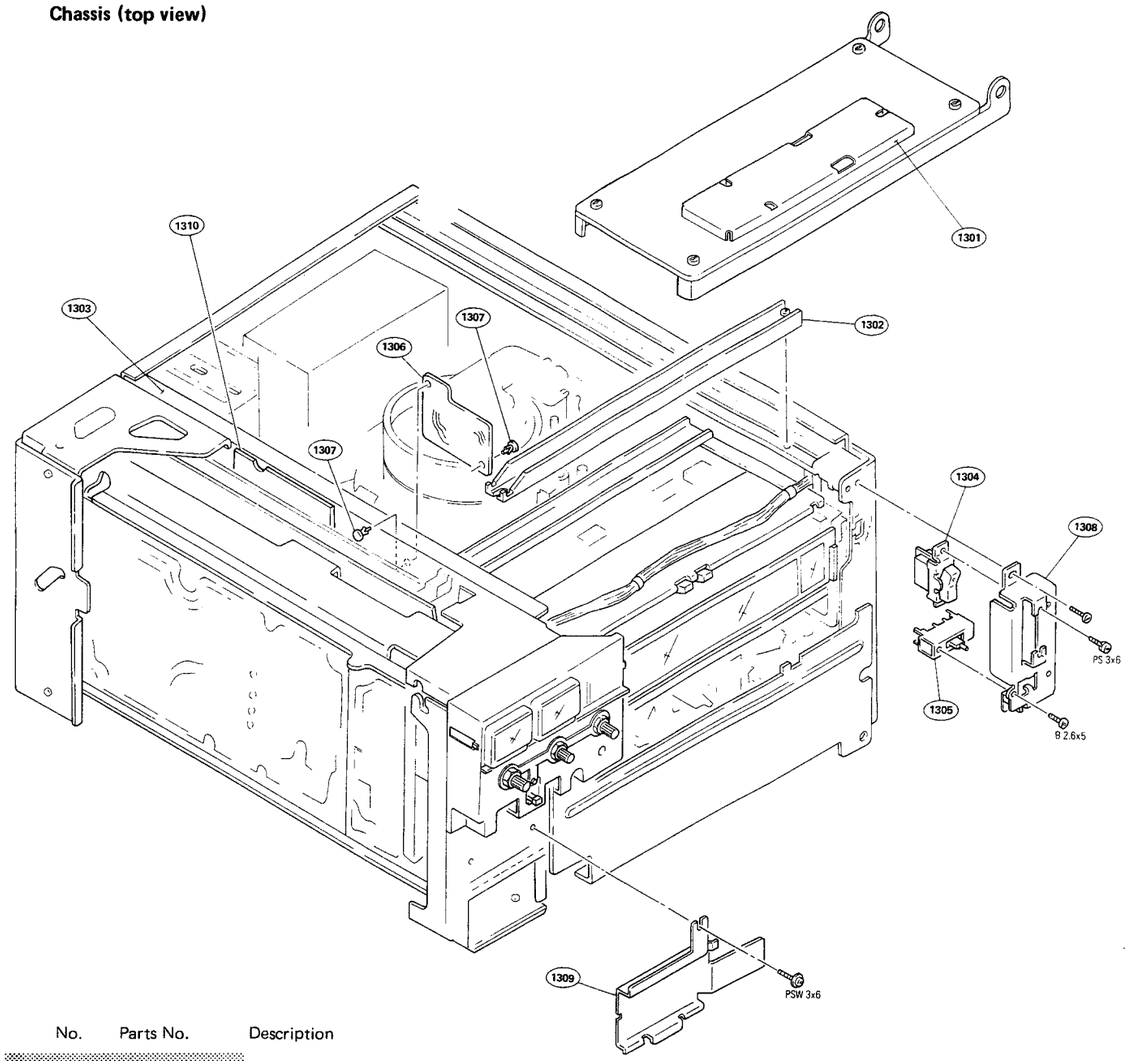


No.	Parts No.	Description
1201	**1-226-395-00**	**RES, VAR, CARBON 20K**
1202	**1-226-983-00**	**RES, VAR, CARBON 100K**
1203	**1-518-462-00**	**LAMP, PILOT**
1204	**1-520-393-00**	**METER, AUDIO**
1205	**1-553-003-00**	**SWITCH, LEVER SLIDE**
1206	1-603-735-00	PRINTED CIRCUIT BOARD, MC-14
1207	3-667-801-00	PLATE (R), GROUND
1208	3-667-810-00	PANEL (RECORDER), METER AEP: UP TO S/N 11640 UK: UP TO S/N 10210 U/C: UP TO S/N 10200
	3-667-810-03	PANEL (RECORDER), METER AEP: S/N 11641 AND LATER UK: S/N 10211 AND LATER U/C: S/N 10201 AND LATER
1209	**3-668-825-00**	**HOLDER, LAMP**

NOTE:

1. **The shaded and ⚠-marked components are critical to safety.**
   Replace only with same components as specified.
2. Parts printed in **Bold-Face type** are normally stocked for replacement purposes. The remaining parts shown in this manual 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.
3. Item with no part number and/or no description are not stocked because they are seldom required for routine service.

Chassis (top view)

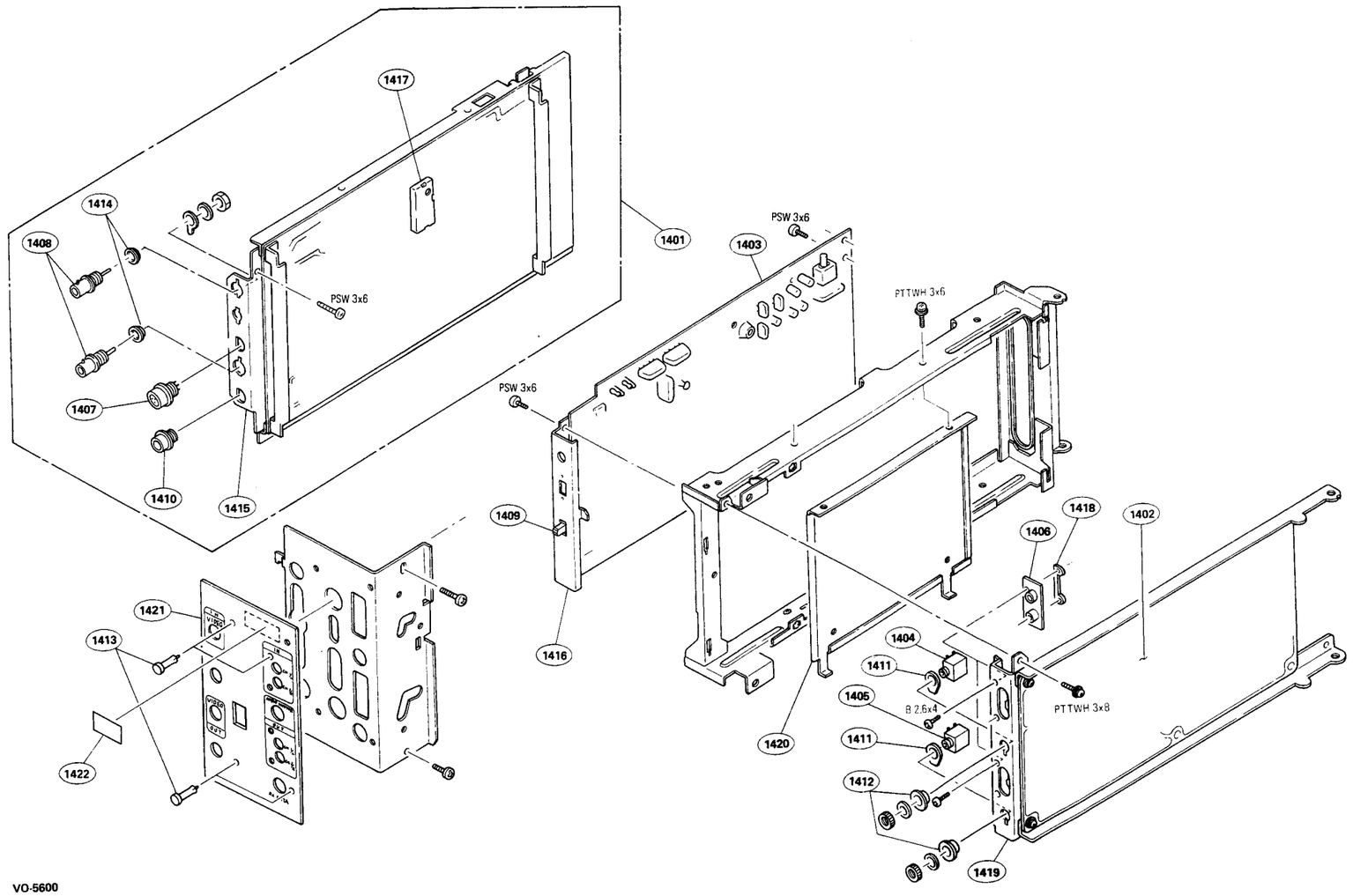


No.	Parts No.	Description
⚠1301	A-6711-334-A	MOUNTED CIRCUIT BOARD, RP-8B
1302	**A-6730-498-A**	**BRACKET ASS'Y**
1303	X-3668-739-3	BEAM ASS'Y, LEFT
⚠1304	**1-553-159-00**	**SWITCH, ROCKER**
1305	**1-553-789-00**	**SWITCH, SLIDE**
1306	1-606-379-00	PRINTED CIRCUIT BOARD, CN-42
1307	**3-531-576-11**	**RIVET**
1308	3-668-811-00	BRACKET, SWITCH, POWER
1309	3-672-610-00	PLATE, SHIELD
1310	3-667-832-00	SHIELD, SIDE PLATE, LEFT (AEP .... S/N 16541 AND HIGHER UK .... S/N 11511 AND HIGHER U/C .... S/N 10201 AND HIGHER)

NOTE:

1. **The shaded and ⚠-marked components are critical to safety.**
   Replace only with same components as specified.
2. Parts printed in **Bold-Face type** are normally stocked for replacement purposes. The remaining parts shown in this manual 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.
3. Item with no part number and/or no description are not stocked because they are seldom required for routine service.

Printed Circuit Boards



VO-5600
VO-5630

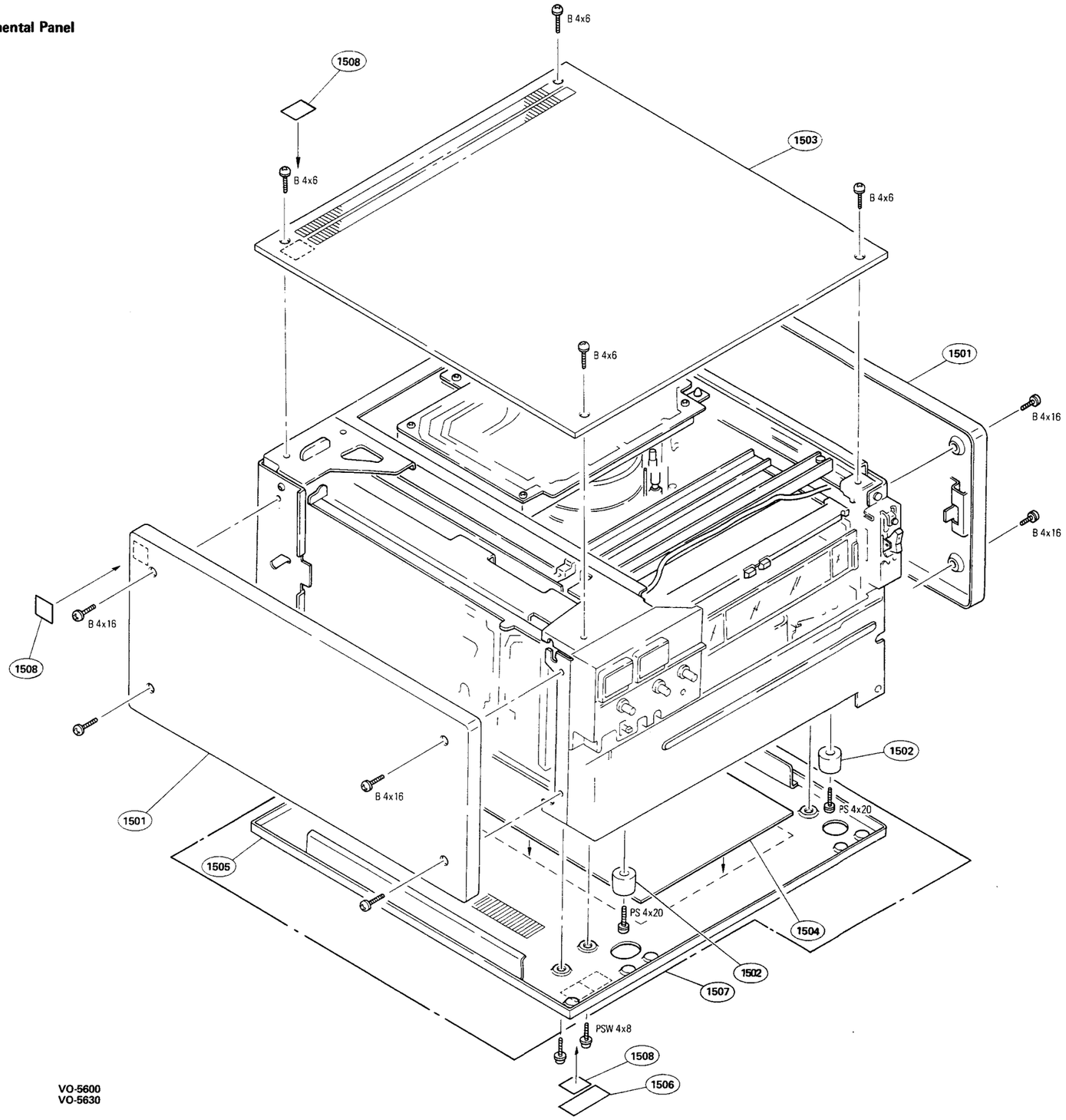
No.	Parts No.	Description
1401	A-6711-333-A	MOUNTED CIRCUIT BOARD, YC-5
⚠1402	A-6713-122-A	MOUNTED CIRCUIT BOARD, AU-28
⚠1403	A-6715-142-A	MOUNTED CIRCUIT BOARD, SV-44A
1404	**1-507-251-XX**	**JACK**
1405	**1-507-473-XX**	**JACK, JM-35 M-7A**
1406	**1-507-732-00**	**JACK, PIN 2P**
1407	**1-508-945-00**	**RECEPTACLE, 7P, (M)**
1408	**1-509-891-00**	**RECEPTACLE, BNC**
		(S/N UP TO [NOTE 4])
	1-562-261-11	**RECEPTACLE, BNC**
		(S/N [NOTE 5] AND HIGHER)
1409	**1-516-781-XX**	**SLIDE SWITCH**
1410	**1-561-045-00**	**RECEPTACLE, 7P, (F)**
1411	**3-437-228-00**	**INSULATOR, JACK**
1412	**3-437-229-01**	**INSULATOR (B), JACK**
1413	**3-531-576-11**	**RIVET**
1414	**3-654-545-00**	**SPACER, BNC**
		(S/N UP TO [NOTE 4])
	3-669-984-00	**WASHER DIA9.6**
		(S/N [NOTE 5] AND HIGHER)
1415	3-667-803-00	PANEL, VO CONNECTOR
		(S/N UP TO [NOTE 4])
	3-667-803-03	PANEL, VO CONNECTOR
		(S/N [NOTE 5] AND HIGHER)
1416	3-667-804-00	PANEL, SV CONNECTOR
		(S/N UP TO [NOTE 4])
	3-667-804-02	PANEL, SV CONNECTOR
		(S/N [NOTE 5] AND HIGHER)
1417	3-667-824-00	SHIELD (P), YC
1418	3-668-841-00	BRACKET, 2P PIN JACK
1419	3-668-848-00	PANEL, AU CONNECTOR
1420	3-669-908-00	SHIELD, AU
1421	3-672-633-00	PLATE (VO) (T), ORNAMENTAL
1422	3-703-845-01	LABEL (N), MAIN CAUTION (FOR U/C)

NOTE:

1. **The shaded and ⚠-marked components are critical to safety.**
   Replace only with same components as specified.
2. Parts printed in **Bold-Face type** are normally stocked for replacement purposes. The remaining parts shown in this manual 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.
3. Item with no part number and/or no description are not stocked because they are seldom required for routine service.
4. AEP .... #22340
   UK .... #12810
   U/C .... #10300
5. AEP .... #22341
   UK .... #12811
   U/C .... #10301

ORNAMENTAL PANEL (1)

Ornamental Panel



VO-5600
VO-5630

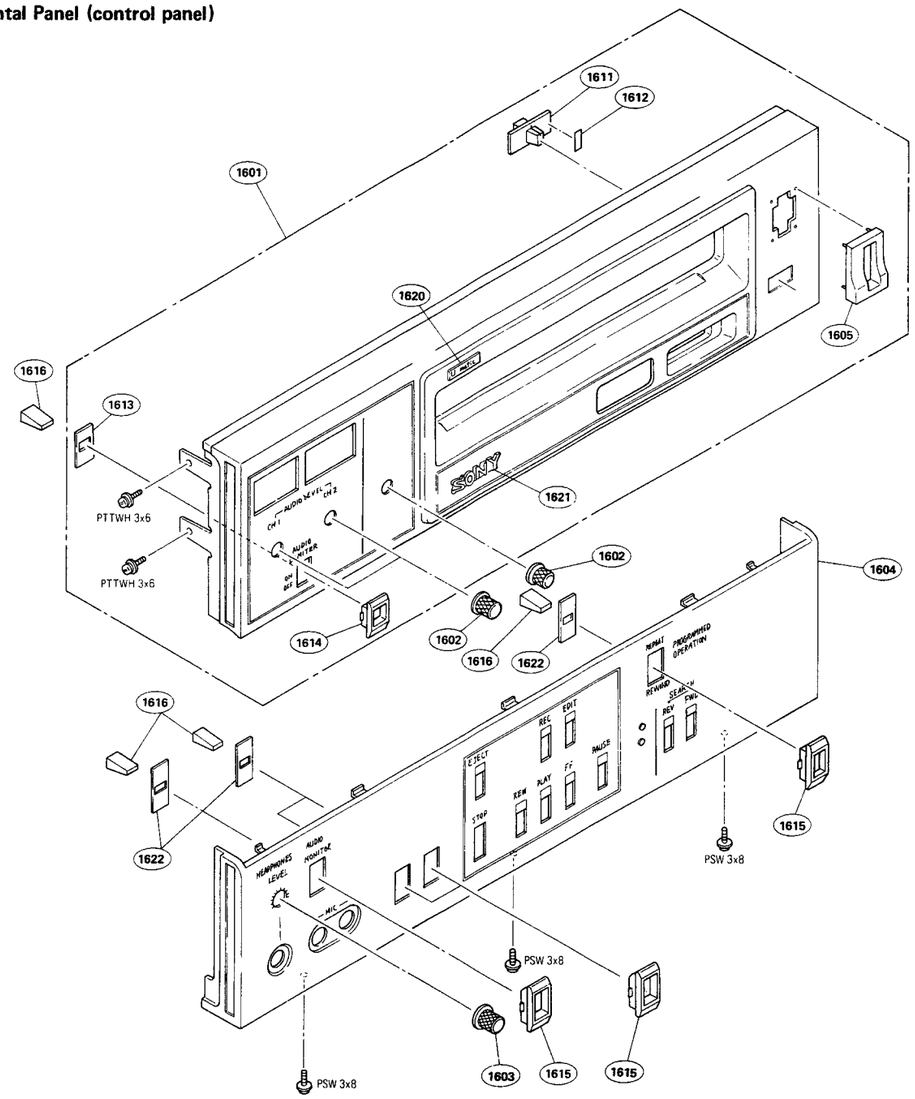
No.	Parts No.	Description
1501	X-3668-744-0	PLATE ASS'Y, SIDE
1502	**X-4839-902-X**	**FOOT**
1503	3-668-940-00	PANEL, UPPER
1504	3-672-622-00	INSULATOR (A), SY (AEP .... S/N UP TO 22340 UK .... S/N UP TO 12810 U/C .... S/N UP TO 10300)
1505	3-672-644-02	PLATE, BOTTOM (AEP .... S/N UP TO 22340 UK .... S/N UP TO 12810 U/C .... S/N UP TO 10300)
1506	3-703-043-21	LABEL, CAUTION, MAIN (FOR AEP/UK)
1507	X-3672-609-0	PLATE ASS'Y, BOTTOM (AEP .... S/N 22341 AND HIGHER UK .... S/N 12811 AND HIGHER U/C .... S/N 10301 AND HIGHER)
1508	3-703-848-01	LABEL (N), SUB CAUTION (FOR U/C)

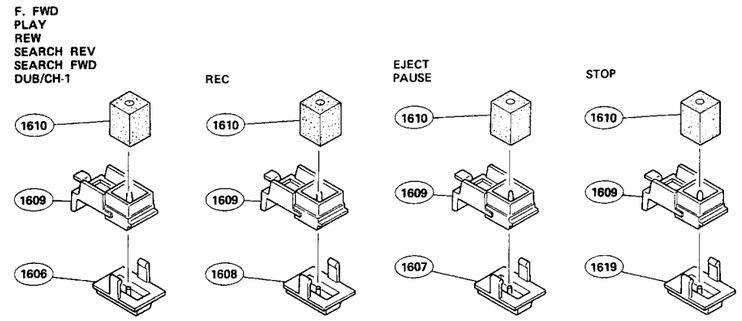
NOTE:

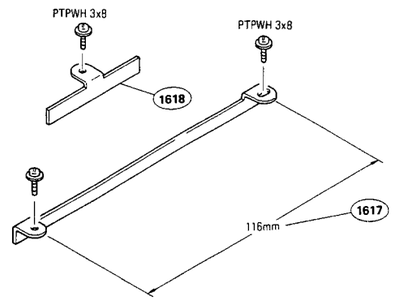
1. **The shaded and ⚠ -marked components are critical to safety.**
   Replace only with same components as specified.
2. Parts printed in **Bold-Face type** are normally stocked for replacement purposes. The remaining parts shown in this manual are not normally required for routine service work.. Orders for parts not shown in Bold-Face type will be processed, but allow for additional delivery time.
3. Item with no part number and/or no description are not stocked because they are seldom required for routine service.

ORNAMENTAL PANEL (2)

Ornamental Panel (control panel)





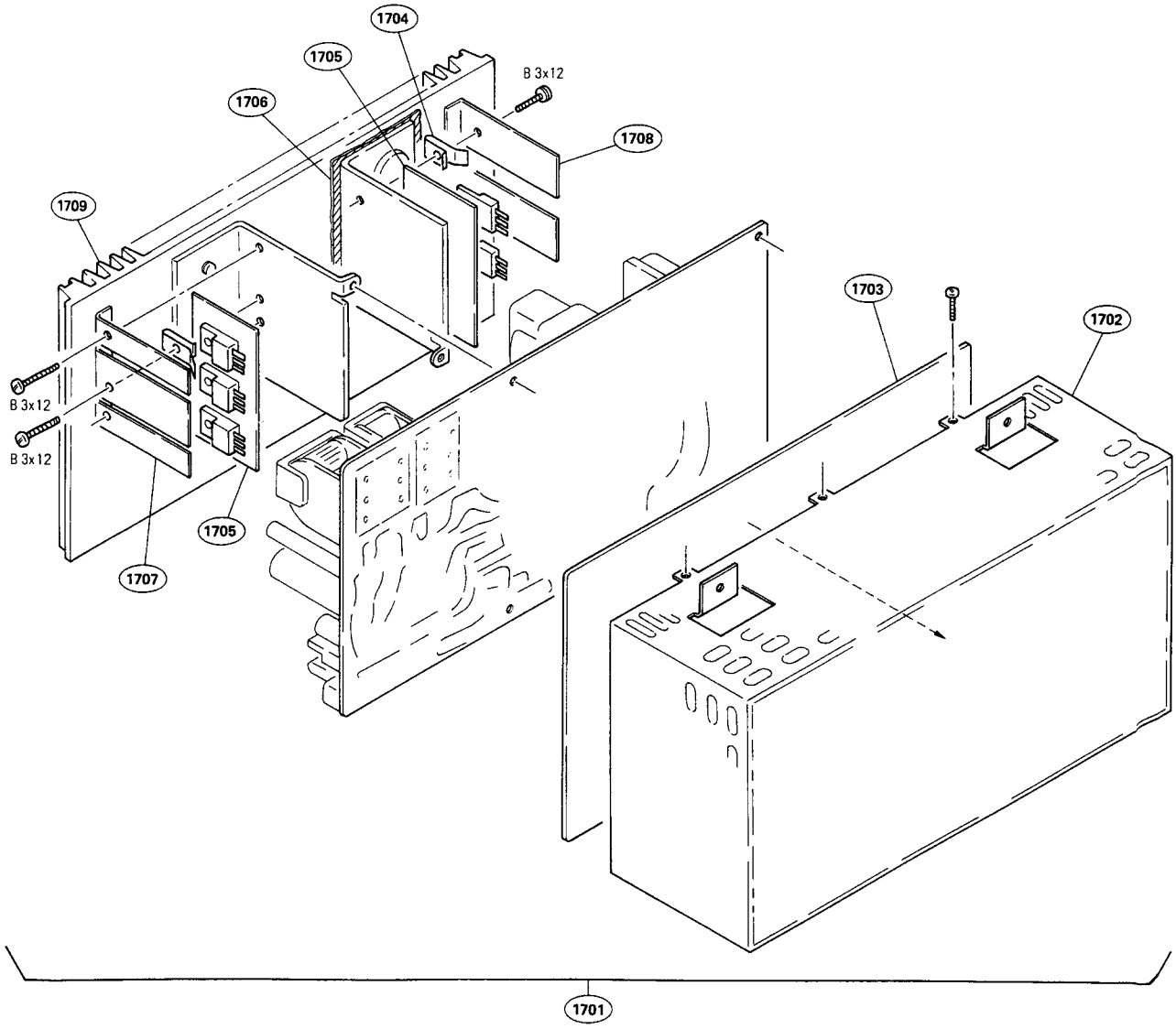


No.	Parts No.	Description
1601	**A-6704-086-A**	**PANEL (T) BLOCK ASS'Y, FRONT, VO**
1602	**X-3661-073-0**	**KNOB ASS'Y, CONTROL**
1603	**X-3668-750-0**	**KNOB ASS'Y, CONTROL**
1604	**X-3672-605-2**	**PANEL (T) ASS'Y, KEY BOARD**
1605	**2-251-642-00**	**GUARD, POWER SWITCH**
1606	**2-284-722-01**	**KEY TOP (A)**
1607	**2-284-722-11**	**KEY TOP (A)**
1608	**2-284-722-21**	**KEY TOP (A)**
1609	**2-284-725-00**	**HOLDER, KEY**
1610	2-284-744-00	CUSHION (B), KEY
1611	3-667-814-00	KNOB, TIMER
1612	3-667-831-00	LABEL, TIMER SWITCH
1613	3-668-015-00	PLATE (SMALL), SWITCH, LEVER
1614	3-668-016-00	FRAME (SMALL), ORNAMENTAL
1615	3-668-018-00	FRAME (MIDDLE), ORNAMENTAL
1616	**3-668-028-00**	**KNOB (SMALL), LEVER SWITCH**
1617	3-668-903-00	RETAINER (A), KEY
1618	3-668-905-00	RETAINER (C), KEY
1619	**3-668-910-00**	**KEY TOP (STOP)**
1620	**3-668-913-00**	**LABEL, U MATIC**
1621	**3-668-914-00**	**EMBLEM, SONY**
1622	3-669-909-03	PLATE, BLIND, LEVER SWITCH

NOTE:

1. **The shaded and ⚠ -marked components are critical to safety. Replace only with same components as specified.**
2. Parts printed in **Bold-Face type** are normally stocked for replacement purposes. The remaining parts shown in this manual 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.
3. Item with no part number and/or no description are not stocked because they are seldom required for routine service.

Switching Regulator (UR-02)



No.	Parts No.	Description
⚠ 1701	1-413-075-00	**SWITCHING REGULATOR (UR-02)**
1702	2-403-440-00	CASE
1703	2-430-484-00	INSULATOR
1704	2-430-683-00	SPRING
1705	2-430-685-00	RUBBER, INSULATING
1706	2-430-686-00	RUBBER, INSULATING
1707	2-430-687-00	RETAINER, SEMICONDUCTOR
1708	2-430-790-00	RETAINER, SEMICONDUCTOR
1709	2-430-813-00	HEAT SINK

NOTE:

1. **The shaded and ⚠ -marked components are critical to safety. Replace only with same components as specified.**
2. Parts printed in **Bold-Face type** are normally stocked for replacement purposes. The remaining parts shown in this manual 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.
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15-3. ELECTRICAL PARTS LIST

Parts that are not listed in the "reference numbers order list" are shown in following table.
Reference numbers are omitted.

CERAMIC CAPACITOR 0.5 pF through 820 pF
50WV

Value	Parts No.
0.5 pF	1-101-837-00
1	1-102-934-00
1.5	1-101-576-00
2	1-102-935-00
3	1-102-936-00
4	1-102-937-00
5	1-102-942-00
6	1-102-943-00
7	1-102-944-00
8	1-102-945-00
9	1-102-946-00
10	1-102-947-00
11	1-102-948-00
12	1-102-949-00
13	1-102-950-00
15	1-102-951-00
16	1-102-952-00
18	1-102-953-00
20	1-102-958-00
22	1-102-959-00

Value	Parts No.
24 pF	1-102-960-00
27	1-102-961-00
30	1-102-962-00
33	1-102-963-00
36	1-102-964-00
39	1-102-965-00
43	1-102-966-00
47	1-101-880-00
51	1-101-882-00
56	1-101-884-00
62	1-101-886-00
68	1-101-888-00
75	1-101-890-00
82	1-102-971-00
91	1-102-972-00
100	1-102-973-00
110	1-102-815-00
120	1-102-816-00
130	1-101-081-00
150	1-101-361-00

Value	Parts No.
160 pF	1-101-367-00
180	1-102-976-00
200	1-102-977-00
220	1-102-978-00
240	1-102-979-00
270	1-102-980-00
300	1-102-981-00
330	1-102-820-00
360	1-102-821-00
390	1-102-822-00
430	1-102-823-00
470	1-102-824-00
510	1-101-059-00
560	1-102-115-00
680	1-102-116-00
820	1-102-117-00

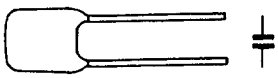
CERAMIC CAPACITOR 0.001μF through 0.1μF
50WV

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	

MYLAR CAPACITOR



0.001μF through 0.22μF
±5% 50WV

Parts No. 1-108-□□□-00

Value	Parts No. −□□□−
0.001μF	555
0.0011	556
0.0012	557
0.0013	558
0.0015	559
0.0016	560
0.0018	561
0.0020	562
0.0022	563
0.0024	564
0.0027	565
0.0030	566
0.0033	567
0.0036	568
0.0039	569

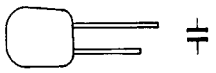
Value	Parts No. −□□□−
0.0043μF	570
0.0047	571
0.0051	572
0.0056	573
0.0062	574
0.0068	575
0.0075	576
0.0082	577
0.0091	578
0.01	579
0.011	580
0.012	581
0.013	582
0.015	583
0.016	584

Value	Parts No. −□□□−
0.018μF	585
0.020	586
0.022	587
0.024	588
0.027	589
0.030	590
0.033	591
0.036	592
0.039	593
0.043	594
0.047	595
0.051	596
0.056	597
0.062	598
0.068	599

Value	Parts No. −□□□−
0.075μF	600
0.082	601
0.091	602
0.1	603
0.11	604
0.12	605
0.13	606
0.15	607
0.16	608
0.18	609
0.20	610
0.22	611

SILVERED MICA CAPACITOR

1 pF through 620 pF
± 5%, 50WV



Parts No. 1-107-□□□-00

Value	Parts No. −□□□−
1 pF	098
2	099
3	100
4	101
5	102
6	103
7	104
8	105
9	106
10	061
11	062
12	063
13	064

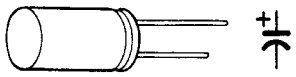
Value	Parts No. −□□□−
15 pF	065
16	066
18	067
20	068
22	069
24	070
27	071
30	072
33	073
36	074
39	075
43	076
47	077

Value	Parts No. −□□□−
51 pF	078
56	079
62	080
68	081
75	082
82	083
91	084
100	085
110	086
120	087
130	088
150	089
160	090

Value	Parts No. −□□□−
180 pF	091
200	092
220	093
240	094
270	095
300	096
330	097
360	231
390	232
430	233
470	234
510	235
560	236
620	237

ELECTROLYTIC CAPACITOR

0.47μF through 470μF
6.3WV through 50 (63, 100)WV



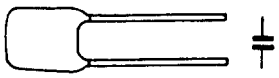
Parts No. 1-123-□□□-00

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

MYLAR CAPACITOR



0.00047μF through 0.22μF
±5% 50WV

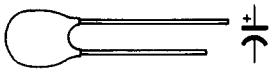
Parts No. 1-130-□□□-00

Value	Parts No. −□□□−
0.00047μF	467
0.00056	468
0.00068	469
0.00082	470
0.001	471
0.0012	472
0.0015	473
0.0018	474
0.0022	475
0.0027	476
0.0033	477

Value	Parts No. −□□□−
0.0039μF	478
0.0047	479
0.0056	480
0.0068	481
0.0082	482
0.01	483
0.012	484
0.015	485
0.018	486
0.022	487
0.027	488

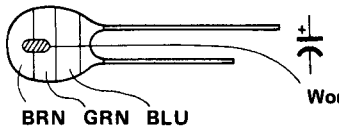
Value	Parts No. −□□□−
0.033μF	489
0.039	490
0.047	491
0.056	492
0.068	493
0.082	494
0.1	495
0.12	496
0.15	497
0.18	498
0.22	499

TANTALUM CAPACITOR



0.01μF through 100μF ± 10%
3.15V through 35V

NOTE: The value of the parts that are marked by * in the below table are indicated by color code. (to the value with ±20%)



Working Voltage Color Code

Ex. BRN GRN BLU
1 5 6
15 x 10^6 pF = 15μF

BLK	RED	YEL	GRN	BLU	GRY	WHT
10V	35	6.3	16	20	25	3.15

Parts No. 1-131-□□□-00

Value		Parts No. −□□□−
0.01μ	35V	*396
0.015	35	*397
0.022	35	*398
0.033	35	*399
0.047	35	*400
0.068	35	*401
0.1	35	341
0.15	35	342
0.22	35	343
0.33	25	*409
	35	344
0.47	20	*412
	35	345
0.68	16	*415
	25	*410
	35	346
1.0	10	*418
	25	498

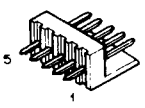
Value		Parts No. −□□□−
1.0μ	35V	347
1.5	6.3	*421
	20	499
	25	354
	35	348
2.2	3.15	*424
	16	500
	20	361
	25	355
	35	349
3.3	10	501
	16	368
	20	362
	25	356
	35	350
4.7	6.3	502
	10	375
	16	369

Value		Parts No. −□□□−
4.7μ	20V	363
	25	357
	35	351
6.8	3.15	503
	6.3	382
	10	376
	16	370
	20	364
	25	358
	35	352
10	3.15	389
	6.3	383
	10	377
	16	371
	20	365
	25	359
	35	353
15	3.15	390
	6.3	384

Value		Parts No. −□□□−
15μ	10V	378
	16	372
	20	366
	25	360
22	3.15	391
	6.3	385
	10	379
	16	373
	20	367
33	3.15	392
	6.3	386
	10	380
	16	374
47	3.15	393
	6.3	387
	10	381
68	3.15	394
	6.3	388
100	3.15	395

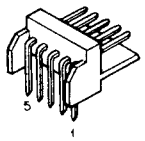
CONNECTOR

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

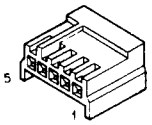
side-type receptacle



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

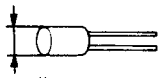
contact

1-560-006-00
(AWG 20 ~ 26)

1-560-007-00
(AWG 26 ~ 30)

MICRO INDUCTOR

1 μH through 470 μH
±5%



5mm dia

Parts No. 1-407-□□□-XX

Value	Parts No. -□□□-
1 μH	178
1.2	179
1.5	180
1.8	181
2.2	182
2.7	183
3.3	184
3.9	185

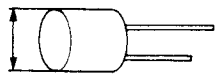
Value	Parts No. -□□□-
4.7 μH	186
5.6	187
6.8	188
8.2	189
10	157
12	158
15	159
18	160

Value	Parts No. -□□□-
22 μH	161
27	162
33	163
39	164
47	165
56	166
68	167
82	168

Value	Parts No. -□□□-
100 μH	169
120	170
150	171
180	172
220	173
270	174
330	175
390	176
470	177

MICRO INDUCTOR

470 μH through 33 mH
±5%



10mm dia

Parts No. 1-407-□□□-00

Value	Parts No. -□□□-
470 μH	488
560	489
680	490
820	491
1 mH	492
1.2	493

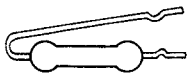
Value	Parts No. -□□□-
1.5 mH	494
1.8	495
2.2	496
2.7	497
3.3	498
3.9	499

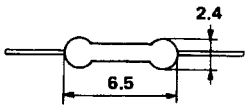
Value	Parts No. -□□□-
4.7 mH	500
5.6	501
6.8	502
8.2	503
10	504
12	505

Value	Parts No. -□□□-
15 mH	506
18	507
22	508
27	509
33	510

RESISTOR

CARBON RESISTOR (1/4W) ±5%, 1/4W, non-special type
1 Ω through 1 MΩ





Parts No. 1-246-□□□-00

Value	Parts No. -□□□-
1 Ω	401
1.1	402
1.2	403
1.3	404
1.5	405
1.6	406
1.8	407
2	408
2.2	409
2.4	410
2.7	411
3	412
3.3	413
3.6	414
3.9	415
4.3	416
4.7	417
5.1	418
5.6	419
6.2	420
6.8	421
7.5	422
8.2	423
9.1	424
10 Ω	425
11	426
12	427
13	428
15	429
16	430
18	431
20	432
22	433
24	434
27	435
30	436

Value	Parts No. -□□□-
33 Ω	437
36	438
39	439
43	440
47	441
51	442
56	443
62	444
68	445
75	446
82	447
91	448
100 Ω	449
110	450
120	451
130	452
150	453
160	454
180	455
200	456
220	457
240	458
270	459
300	460
330	461
360	462
390	463
430	464
470	465
510	466
560	467
620	468
680	469
750	470
820	471
910	472

Value	Parts No. -□□□-
1 kΩ	473
1.1	474
1.2	475
1.3	476
1.5	477
1.6	478
1.8	479
2	480
2.2	481
2.4	482
2.7	483
3.0	484
3.3	485
3.6	486
3.9	487
4.3	488
4.7	489
5.1	490
5.6	491
6.2	492
6.8	493
7.5	494
8.2	495
9.1	496
10 kΩ	497
11	498
12	499
13	500
15	501
16	502
18	503
20	504
22	505
24	506
27	507
30	508

Value	Parts No. -□□□-
33 kΩ	509
36	510
39	511
43	512
47	513
51	514
56	515
62	516
68	517
75	518
82	519
91	520
100 kΩ	521
110	522
120	523
130	524
150	525
160	526
180	527
200	528
220	529
240	530
270	531
300	532
330	533
360	534
390	535
430	536
470	537
510	538
560	539
620	540
680	541
750	542
820	543
910	544
1 MΩ	545

CARBON RESISTOR (1/6W)

±5%, 1/6W, non-special type
2.2Ω through 1MΩ

Parts No. 1-247-□□□-00

Value	Parts No. −□□□−	Value	Parts No. −□□□−	Value	Parts No. −□□□−	Value	Parts No. −□□□−
1Ω	–	36Ω	796	1.2kΩ	833	43kΩ	870
1.1	–	39	797	1.3	834	47	871
1.2	–	43	798	1.5	835	51	872
1.3	–	47	799	1.6	836	56	873
1.5	–	51	800	1.8	837	62	874
1.6	–	56	801	2	838	68	875
1.8	–	62	802	2.2	839	75	876
2	–	68	803	2.4	840	82	877
2.2	767	75	804	2.7	841	91	878
2.4	768	82	805	3	842	100kΩ	879
2.7	769	91	806	3.3	843	110	880
3	770	100Ω	807	3.6	844	120	881
3.3	771	110	808	3.9	845	130	882
3.6	772	120	809	4.3	846	150	883
3.9	773	130	810	4.7	847	160	884
4.3	774	150	811	5.1	848	180	885
4.7	775	160	812	5.6	849	200	886
5.1	776	180	813	6.2	850	220	887
5.6	777	200	814	6.8	851	240	888
6.2	778	220	815	7.5	852	270	889
6.8	779	240	816	8.2	853	300	890
7.5	780	270	817	9.1	854	330	891
8.2	781	300	818	10kΩ	855	360	892
9.1	782	330	819	11	856	390	893
10Ω	783	360	820	12	857	430	894
11	784	390	821	13	858	470	895
12	785	430	822	15	859	510	896
13	786	470	823	16	860	560	897
15	787	510	824	18	861	620	898
16	788	560	825	20	862	680	899
18	789	620	826	22	863	750	900
20	790	680	827	24	864	820	901
22	791	750	828	27	865	910	902
24	792	820	829	30	866	1MΩ	903
27	793	910	830	33	867		
30	794	1kΩ	831	36	868		
33	795	1.1	832	39	869		

CARBON RESISTOR (1/8W)

±5%, 1/8W, non-special type
2.2Ω through 1MΩ

Parts No. 1-246-□□□-00

Value	Parts No. −□□□−
1Ω	–
1.1	–
1.2	–
1.3	–
1.5	–
1.6	–
1.8	–
2	–
2.2	751
2.4	812
2.7	752
3	813
3.3	753
3.6	814
3.9	754
4.3	815
4.7	755
5.1	816
5.6	756
6.2	817
6.8	757
7.5	818
8.2	758
9.1	819
10Ω	759
11	820
12	760
13	821
15	761
16	822
18	762
20	823
22	763
24	824
27	764
30	825

Value	Parts No. −□□□−
33Ω	765
36	826
39	766
43	827
47	767
51	828
56	768
62	829
68	769
75	830
82	770
91	831
100Ω	771
110	832
120	772
130	833
150	773
160	834
180	774
200	835
220	775
240	836
270	776
300	837
330	777
360	838
390	778
430	839
470	779
510	840
560	780
620	841
680	781
750	842
820	782
910	843

Value	Parts No. −□□□−
1kΩ	783
1.1	844
1.2	784
1.3	845
1.5	785
1.6	846
1.8	786
2	847
2.2	787
2.4	848
2.7	788
3.0	849
3.3	789
3.6	850
3.9	790
4.3	851
4.7	791
5.1	852
5.6	792
6.2	853
6.8	793
7.5	854
8.2	794
9.1	855
10kΩ	795
11	856
12	796
13	857
15	797
16	858
18	798
20	859
22	799
24	860
27	800
30	861

Value	Parts No. −□□□−
33kΩ	801
36	862
39	802
43	863
47	803
51	864
56	804
62	865
68	805
75	866
82	806
91	867
100kΩ	807
110	868
120	808
130	869
150	809
160	870
180	810
200	871
220	811

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

ABBREVIATIONS

Ref. No.	Description	Ref. No.	Description	Ref. No.	Description
C□□,CV□□	CAPACITOR	IC□□	IC	Q□□	TRANSISTOR
CF□□	CERAMIC FILTER	J□□	JACK	R□□, RV□□	RESISTOR
CN□□	CONNECTOR	L□□	INDUCTOR	RY□□	RELAY
D□□	DIODE	M□□	MOTOR	S□□, SW□□	SWITCH
DL□□	DELAY LINE	ME□□	METER	SB□□	SOLAR BATTERY
F□□	FUSE	MIC□□	MICROPHONE	T□□	TRANSFORMER
FB□□	FERRITE BEAD	PG□□	PG COIL	TH□□	THERMISTOR
FL□□	FILTER	PL□□	LAMP	X□□	CRYSTAL
H□□	HEAD	PM□□	SOLENOID		

All capacitors are in micro farads unless otherwise specified.

All inductors are in micro henries unless otherwise specified.

All resistors are in ohms.

Ref.No.	Parts No.	Description
AC-35 BOARD		
	1-606-380-00	PRINTED CIRCUIT BOARD, AC-35
	1-533-037-XX	**HOLDER,FUSE**
⚠ C1	1-130-456-00	METALIZED FILM 0.022 20% 250V
⚠ C2	1-130-710-00	POLYESTEL FILM 0.1 20% 250V
⚠ C3	1-130-710-00	POLYESTEL FILM 0.1 20% 250V
⚠ CN4	1-506-371-00	2P PLUG
	1-509-910-00	**2P HOUSING**
	1-509-898-00	**RECEPTACLE**
⚠ CN5	1-560-136-00	4P PLUG
	1-561-427-00	4P HOUSING
	1-561-432-00	RECEPTACLE
⚠ **F1**	**1-532-203-00**	**250V, 2A**
⚠ L1	1-421-621-00	CHOKE COIL
L2	1-421-621-00	CHOKE COIL
⚠ **T1**	**1-421-470-00**	**LINE FILTER**
⚠ **T2**	**1-421-470-00**	**LINE FILTER**
⚠ **T3**	**1-421-259-00**	**LINE FILTER**
AH-3 BOARD		
	1-586-192-00	PRINTED CIRCUIT BOARD, AH-3

Ref.No.	Parts No.	Description
AU-28 BOARD		
⚠ A-6713-122-A		MOUNTED CIRCUIT BOARD, AU-28
		All the diodes that are not listed in this board are 1S1555 (Parts No. 8-719-815-55)
		All the transistors that are not listed in this board are 2SC1364 (Parts No. 8-729-663-47)
C10	**1-107-179-00**	**MICA 270PF 5% 500V**
C11	1-107-178-00	**MICA 240PF 5% 500V**
C29	1-107-209-00	**MICA 20PF 5% 500V**
C210	1-107-178-00	**MICA 240PF 5% 500V**
C211	1-107-178-00	**MICA 240PF 5% 500V**
C229	**1-107-209-00**	**MICA 20PF 5% 500V**
C601	1-107-158-00	MICA 30PF 5% 500V
CP501	**1-464-139-00**	**BIAS OSC.**
CP502	**1-464-139-00**	**ERASE OSC.**
CV501	**1-141-251-00**	**TRIMMER 150PF x2**
D7	**8-719-162-07**	**RD6.2E**
D18	8-719-156-07	**RD5.6E-B**
D20	**8-719-162-07**	**RD6.2E**
D207	**8-719-162-07**	**RD6.2E**
D219	8-719-156-07	**RD5.6E-B**
D503	**8-719-200-02**	**10E-2**
D505	**8-719-200-02**	**10E-2**
D507	**8-719-182-07**	**RD8.2E**
D509	**8-719-115-07**	**RD15E**
IC1	**8-759-115-83**	**uPC1158H2(NEC)**
IC2	**8-759-115-83**	**uPC1158H2(NEC)**
IC3	**8-759-705-58**	**NJM4558D-D (RC4558;RAYTHEON)**
IC4	**8-759-705-58**	**NJM4558D-D (RC4558;RAYTHEON)**
IC201	**8-759-115-83**	**uPC1158H2(NEC)**

NOTES:

1. **The shaded and ⚠ -marked components are critical to safety.**
   Replace only with same components as specified.

2. Parts printed in **Bold-Face type** are normally stocked for replacement purposes. The remaining parts shown in this manual 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.

Ref.No.	Parts No.	Description
IC202	8-759-115-83	uPC1158H2(NEC)
IC203	8-759-705-58	NJM4558D-D (RC4558;RAYTHEON)
IC204	8-759-705-58	NJM4558D-D (RC4558;RAYTHEON)
IC501	8-759-240-16	TC4016BP(CD4016AE/BE;RCA)
IC502	8-759-240-16	TC4016BP(CD4016AE/BE;RCA)
L2	1-407-519-00	8
L202	1-407-519-00	8
LV3	1-409-295-00	VAR, 22mH
LV202	1-409-295-00	VAR, 22mH
LV203	1-409-295-00	VAR, 22mH
LV501	1-407-284-00	VAR, 1mH
LV502	1-407-284-00	VAR, 1mH
Q1	8-761-622-00	2SC1636
Q2	8-729-612-77	2SA1027R
Q3	8-761-622-00	2SC1636
Q15	8-729-103-43	2SB734
Q201	8-761-622-00	2SC1636
Q202	8-729-612-77	2SA1027R
Q203	8-761-622-00	2SC1636
Q215	8-729-103-43	2SB734
Q505	8-729-612-77	2SA1027R
Q508	8-729-103-43	2SB734
R6	1-244-867-00	CARBON 560 5% 1/2W
R57	1-214-750-00	METAL 7.5K 1% 1/4W
R58	1-214-777-00	METAL 100K 1% 1/4W
R59	1-214-754-00	METAL 11K 1% 1/4W
R60	1-214-726-00	METAL 750 1% 1/4W
R206	1-244-867-00	CARBON 560 5% 1/2W
R257	1-214-750-00	METAL 7.5K 1% 1/4W
R258	1-214-777-00	METAL 100K 1% 1/4W
R259	1-214-754-00	METAL 11K 1% 1/4W
R260	1-214-726-00	METAL 750 1% 1/4W
⚠ R510	1-207-636-00	WIREWOUND 100 10% 3W
RV1	1-224-253-XX	VAR, METAL 22K
RV2	1-224-251-XX	VAR, METAL 4.7K
RV3	1-224-252-XX	VAR, METAL 10K
RV4	1-224-248-XX	VAR, METAL 470
RV5	1-224-253-XX	VAR, METAL 22K
RV6	1-224-254-XX	VAR, METAL 47K
RV201	1-224-253-XX	VAR, METAL 22K
RV202	1-224-251-XX	VAR, METAL 4.7K
RV203	1-224-252-XX	VAR, METAL 10K
RV204	1-224-248-XX	VAR, METAL 470
RV205	1-224-253-XX	VAR, METAL 22K
RY501	1-515-476-00	12V, 280 ohm

CC-9 BOARD

	1-604-429-00	PRINTED CIRCUIT BOARD, CC-9

CC-10 BOARD

	1-604-430-00	PRINTED CIRCUIT BOARD, CC-10
IC1	8-719-104-42	PS4005(NEC)

CC-11 BOARD

	1-604-431-00	PRINTED CIRCUIT BOARD, CC-11
IC1	8-719-104-42	PS4005(NEC)

CN-42 BOARD

	1-606-379-00	PRINTED CIRCUIT BOARD, CN-42

NOTES:

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Ref.No.	Parts No.	Description
DC-13B BOARD		
	1-606-378-11	PRINTED CIRCUIT BOARD, DC-13B
	1-533-037-XX	**HOLDER,FUSE**
D1	8-719-815-55	1S1555
⚠ F1	1-532-237-00	250V, 3.15A
⚠ F2	1-532-286-00	250V, 2.5A
Q1	8-729-663-48	2SC1364
RV1	1-224-251-XX	VAR, METAL 4.7K
DR-17B BOARD		
	⚠ A-6715-143-A	MOUNTED CIRCUIT BOARD, DR-17B
D1	8-719-200-02	10E-2
D2	8-719-200-02	10E-2
D3	8-719-200-02	10E-2
D4	8-719-200-02	10E-2
D51	8-719-911-55	U05G
Q1	8-729-663-47	2SC1364
Q2	8-729-663-47	2SC1364
Q3	8-729-384-48	2SA844
Q4	8-729-382-63	2SC1826-Y
Q5	8-729-377-12	2SA771
Q6	8-729-377-12	2SA771
Q7	8-729-382-63	2SC1826-Y
Q8	8-729-384-48	2SA844
Q9	8-729-663-47	2SC1364
Q10	8-729-663-47	2SC1364
Q51	8-729-663-47	2SC1364
Q52	8-729-377-12	2SA771
Q53	8-729-377-12	2SA771
R7	1-202-850-00	COMPOSITION 2.2 5% 1/4W
R8	1-202-850-00	COMPOSITION 2.2 5% 1/4W
R9	1-202-850-00	COMPOSITION 2.2 5% 1/4W
R10	1-202-850-00	COMPOSITION 2.2 5% 1/4W
R11	1-202-850-00	COMPOSITION 2.2 5% 1/4W
⚠ R51	1-207-621-00	WIREWOUND 1.5 10% 2W
FR-11 BOARD		
	1-603-585-00	PRINTED CIRCUIT BOARD, FR-11
IC1	8-719-104-42	PS4005(NEC)
IC2	8-719-104-42	PS4005(NEC)
EC-19 BOARD		
	1-603-729-00	PRINTED CIRCUIT BOARD, EC-19
HP-6 BOARD		
	1-606-366-00	PRINTED CIRCUIT BOARD, HP-6
CN1	1-507-553-00	JACK "HEADPHONES"
RV1	1-228-218-00	VAR, CARBON 500/500

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Ref.No.	Parts No.	Description
KY-21A BOARD		
	A-6728-403-A	MOUNTED CIRCUIT BOARD, KY-21A
D1	8-719-904-55	GL-5HD5
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	8-719-904-55	GL-5HD5
PL1	1-518-262-00	PILOT 5V, 60mA
PL2	1-518-262-00	PILOT 5V, 60mA
PL3	1-518-262-00	PILOT 5V, 60mA
PL4	1-518-262-00	PILOT 5V, 60mA
Q1	8-729-178-54	2SC2785
Q2	8-729-178-54	2SC2785
Q3	8-729-117-54	2SA1175
Q4	8-729-178-54	2SC2785
Q5	8-729-178-54	2SC2785
Q6	8-729-178-54	2SC2785
Q7	8-729-178-54	2SC2785
S1	1-516-963-00	SLIDE "AUDIO MONITOR"
S2	1-516-995-00	SLIDE "REPEAT"
S3	1-516-995-00	SLIDE "INPUT SELECT"
S4	1-516-995-00	SLIDE "SYSTEM SELECT"
S5	1-552-539-00	KEY "STOP"
S6	1-552-539-00	KEY "EJECT"
S7	1-552-539-00	KEY "F FWD"
S8	1-552-539-00	KEY "PLAY"
S9	1-552-539-00	KEY "REW"
S10	1-552-539-00	KEY "FWDx5"
S11	1-552-539-00	KEY "REVx5"
S12	1-552-539-00	KEY "PAUSE"
S13	1-552-539-00	KEY "REC"
S14	1-552-539-00	KEY "DUB"

Ref.No.	Parts No.	Description
T1	1-427-284-00	OUTPUT
T2	1-427-284-00	OUTPUT
LM-9 BOARD		
	1-606-377-00	PRINTED CIRCUIT BOARD, LM-9
MC-14 BOARD		
	1-603-735-00	PRINTED CIRCUIT BOARD, MC-14
RV1	1-226-395-00	VAR, CARBON 20K
RV2	1-226-395-00	VAR, CARBON 20K
RV3	1-226-983-00	VAR, CARBON 100K
PL1	1-518-462-00	PILOT,12V,55mA
PL2	1-518-462-00	PILOT,12V,55mA
S1	1-553-003-00	SLIDE "AUDIO LIMITER"
MI-5 BOARD		
	1-606-381-00	PRINTED CIRCUIT BOARD, MI-5
CN1 CN2	1-507-733-00	2 PIN JACK "MIC IN"

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Ref.No.	Parts No.	Description
MR-8 BOARD		
⚠	A-6725-256-A	MOUNTED CIRCUIT BOARD, MR-8
		All the diodes that are not listed in this board are 1S1555 (Parts No. 8-719-815-55)
		All the transistors that are not listed in this board are 2SC1364 (Parts No. 8-729-663-47)
C1	1-131-358-00	TANTALUM 6.8 10% 25V
C3	1-131-358-00	TANTALUM 6.8 10% 25V
C12	1-131-358-00	TANTALUM 6.8 10% 25V
D2	**8-719-200-02**	**10E-2**
D3	**8-719-200-02**	**10E-2**
D4	**8-719-200-02**	**10E-2**
D8	**8-719-200-02**	**10E-2**
D9	**8-719-200-02**	**10E-2**
D10	**8-719-200-02**	**10E-2**
D14	**8-719-200-02**	**10E-2**
D15	**8-719-200-02**	**10E-2**
D16	**8-719-200-02**	**10E-2**
D19	**8-719-200-02**	**10E-2**
D20	**8-719-200-02**	**10E-2**
D21	**8-719-200-02**	**10E-2**
D23	**8-719-200-02**	**10E-2**
D24	**8-719-200-02**	**10E-2**
D25	**8-719-200-02**	**10E-2**
D26	**8-719-200-02**	**10E-2**
D27	**8-719-200-02**	**10E-2**
D28	**8-719-200-02**	**10E-2**
D29	**8-719-200-02**	**10E-2**
IC1	**8-759-135-80**	**uPC358C(LM358JG;TI)**
Q2	**8-729-103-43**	**2SB734**
Q4	**8-729-177-43**	**2SD774**
Q6	**8-729-103-43**	**2SB734**
Q9	**8-729-177-43**	**2SD774**
Q12	**8-729-103-43**	**2SB734**
Q14	**8-729-177-43**	**2SD774**
Q16	**8-729-103-43**	**2SB734**
Q19	**8-729-177-43**	**2SD774**
Q21	**8-729-199-80**	**2SD998**
Q22	**8-729-811-11**	**2SD1111**
Q24	**8-729-199-80**	**2SD998**
Q25	**8-729-811-11**	**2SD1111**
Q28	**8-729-199-80**	**2SD998**
Q31	**8-729-384-48**	**2SA844**
Q32	**8-729-384-48**	**2SA844**
Q42	**8-729-177-43**	**2SD774**
Q43	**8-729-889-40**	**2SD894**
R47	**1-210-859-00**	**CARBON 1.2 5% 1/8W**
R50	**1-210-859-00**	**CARBON 1.2 5% 1/8W**
R56	**1-210-859-00**	**CARBON 1.2 5% 1/8W**
⚠ **R101**	**1-207-674-00**	**WIREWOUND 4.7 10% 6W**
RV1	**1-224-251-XX**	**VAR, METAL 4.7K**
RV2	**1-224-251-XX**	**VAR, METAL 4.7K**
RV3	**1-224-253-XX**	**VAR, METAL 22K**
MR-11A BOARD	27441 AND LATER (AEP)	
	13711 AND LATER (UK)	
	10501 AND LATER (U/C)	
⚠	A-6725-357-A	MOUNTED CIRCUIT BOARD, MR-11A
		All the diodes that are not listed in this board are 1S1555.(Parts No. 8-719-815-55)
		All the transistors that are not listed in this board are 2SC1364.(Parts No. 8-729-663-47)
D1	8-719-200-02	10E-2
D2	8-719-200-02	10E-2
D3	8-719-200-02	10E-2
D4	8-719-200-02	10E-2
D31	8-719-200-02	10E-2
D32	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
D36	8-719-200-02	10E-2
D37	8-719-200-02	10E-2

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Ref.No.	Parts No.	Description
IC2	8-759-135-80	uPC358C(LM358JG;TI)
IC3	8-759-240-66	TC4066BP(CD4066AE/BE;RCA)
IC4	8-759-240-69	TC4069UBP(CD4069UBE;RCA)
IC5	8-759-645-17	M54517P(MITSUBISHI)
IC7	8-759-240-01	TC4001BP(CD4001AE/BE;RCA)
IC8	8-759-600-24	M54543L(MITSUBISHI)
IC9	8-759-600-24	M54543L(MITSUBISHI)
Q1	8-729-900-37	DTC124EF
Q2	8-729-900-37	DTC124EF
Q3	8-729-900-37	DTC124EF
Q4	8-729-900-37	DTC124EF
Q5	8-729-900-37	DTC124EF
Q6	8-729-900-37	DTC124EF
Q7	8-729-900-37	DTC124EF
Q8	8-729-900-37	DTC124EF
Q9	8-729-900-37	DTC124EF
Q10	8-729-900-37	DTC124EF
Q11	8-729-900-37	DTC124EF
Q12	8-729-900-37	DTC124EF
Q13	8-729-900-37	DTC124EF
Q25	8-729-177-43	2SD774
Q26	8-729-889-40	2SD894
Q27	8-729-663-47	2SC1364
Q28	8-729-663-47	2SC1364
Q31	8-729-199-80	2SD998
Q32	8-729-811-11	2SD1111
Q33	8-729-663-47	2SC1364
Q34	8-729-199-80	2SD998
Q35	8-729-811-11	2SD1111
Q36	8-729-663-47	2SC1364
Q37	8-729-663-47	2SC1364
Q38	8-729-199-80	2SD998
Q39	8-729-663-47	2SC1364
Q40	8-729-663-47	2SC1364
R63	1-210-859-00	CARBON 1.2 5% 1/8W
R73	1-210-859-00	CARBON 1.2 5% 1/8W
R83	1-210-859-00	CARBON 1.2 5% 1/8W
R91	1-207-674-00	WIREWOUND 4.7 10% 6W
RV1	1-224-251-XX	VAR, METAL 4.7K
RV2	1-224-251-XX	VAR, METAL 4.7K
RV4	1-224-252-XX	VAR, METAL 10K

Ref.No.	Parts No.	Description
PD-16A BOARD		
⚠	A-6717-250-A	MOUNTED CIRCUIT BOARD, PD-16A
D4	8-719-200-02	10E-2
D5	8-719-200-02	10E-2
D6	8-719-200-02	10E-2
D7	8-719-200-02	10E-2
D8	8-719-200-02	10E-2
D9	8-719-200-02	10E-2
D10	8-719-200-02	10E-2
D11	8-719-200-02	10E-2
D12	8-719-200-02	10E-2
D13	8-719-200-02	10E-2
D14	8-719-200-02	10E-2
D15	8-719-200-02	10E-2
D16	8-719-904-55	GL-5HD5
Q4	8-729-811-11	2SD1111
Q5	8-729-663-47	2SC1364
Q6	8-729-199-80	2SD998
Q7	8-729-811-11	2SD1111
Q8	8-729-663-47	2SC1364
Q9	8-729-199-80	2SD998
Q10	8-729-811-11	2SD1111
Q11	8-729-663-47	2SC1364
Q12	8-729-199-80	2SD998
Q13	8-729-811-11	2SD1111
Q14	8-729-663-47	2SC1364
Q15	8-729-199-80	2SD998
⚠ R8	1-247-072-00	CARBON 1.2 5% 1/4W
⚠ R15	1-247-072-00	CARBON 1.2 5% 1/4W
⚠ R19	1-247-072-00	CARBON 1.2 5% 1/4W
⚠ R23	1-247-072-00	CARBON 1.2 5% 1/4W

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Ref.No.	Parts No.	Description
PH-4 BOARD		
	1-603-589-00	PRINTED CIRCUIT BOARD, PH-4
IC1	1-806-232-11	MB-1102"TENSION REGULATOR"
PH-5 BOARD		
	1-603-737-00	PRINTED CIRCUIT BOARD, PH-5
D1	8-719-951-04	BR5104S
Q1	8-729-810-22	SPS102
PT-9 BOARD		
	1-605-018-00	PRINTED CIRCUIT BOARD, PT-9
Q1	8-729-377-13	2SA771-Y
RP-8B BOARD		
⚠	A-6711-334-A	MOUNTED CIRCUIT BOARD, RP-8
		All the diodes that are not listed in this board are 1S1555 (Parts No. 8-719-815-55)
C22	1-131-408-00	TANTALUM 1 10% 25V
C24	1-131-408-00	TANTALUM 1 10% 25V
C57	1-107-048-00	MICA 6.8PF 0.5P 500V
C62	1-107-048-00	MICA 6.8PF 0.5P 500V
C66	1-107-047-00	MICA 5.6PF 0.5P 500V
C67	1-107-047-00	MICA 5.6PF 0.5P 500V

Ref.No.	Parts No.	Description
CV1	1-141-244-00	TRIMMER 7PF
CV2	1-141-244-00	TRIMMER 7PF
D2	8-719-815-59	1S1555-S
D7	8-719-130-07	RD3.0E
D8	8-719-130-07	RD3.0E
DL1	1-415-231-00	0.3uS
DL2	1-415-242-00	COIL, 42nS
DL3	1-415-146-00	1H
DL1	1-415-231-21	0.3us S/N 31141 AND LATER(AEP) S/N 14111 AND LATER(UK) S/N 10601 AND LATER(U/C)
FL1	1-231-580-00	HPF
FL2	1-231-579-00	LPF
FL3	1-231-581-00	HPF S/N UP TO 30440 (AEP) S/N UP TO 14110 (UK) S/N UP TO 10500 (U/C)
FL1	1-231-580-21	HPF
FL2	1-231-579-21	LPF
FL3	1-231-581-21	HPF S/N 30441 AND LATER (AEP) S/N 14111 AND LATER (UK) S/N 10501 AND LATER (U/C)
IC1	8-751-300-00	CX130(SONY)
IC2	8-751-340-00	CX134A(SONY)
IC3	8-759-131-11	uPC311C(NEC)
LV1	1-411-107-00	PEAKING
LV2	1-411-107-00	PEAKING
LV3	1-407-267-00	1mH
Q2	8-724-375-01	2SC403C
Q3	8-724-375-01	2SC403C
Q4	8-724-375-01	2SC403C
Q5	8-724-375-01	2SC403C
Q6	8-724-375-01	2SC403C
Q7	8-729-384-48	2SA844
Q8	8-729-113-33	2SB733
Q9	8-761-622-00	2SC1636
Q10	8-761-622-00	2SC1636
Q11	8-761-622-00	2SC1636
Q12	8-765-423-00	2SK152-3
Q13	8-761-622-00	2SC1636
Q14	8-765-423-00	2SK152-3
Q15	8-729-663-47	2SC1364
Q16	8-724-375-01	2SC403C

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Ref.No.	Parts No.	Description
Q18	8-724-375-01	2SC403C
Q19	8-729-384-48	2SA844
Q20	8-724-375-01	2SC403C
Q21	8-724-375-01	2SC403C
Q22	8-729-663-47	2SC1364
Q23	8-729-663-47	2SC1364
Q24	8-724-375-01	2SC403C
Q25	8-724-375-01	2SC403C
Q26	8-724-375-01	2SC403C
Q27	8-724-375-01	2SC403C
Q28	8-729-384-48	2SA844
Q29	8-724-375-01	2SC403C
Q30	8-724-375-01	2SC403C
Q31	8-724-375-01	2SC403C
Q32	8-724-375-01	2SC403C
R25	1-202-859-00	SOLID 68 5% 1/4W
R35	1-214-091-00	METAL 20 1% 1/4W
R36	1-214-091-00	METAL 20 1% 1/4W
R38	1-214-091-00	METAL 20 1% 1/4W
R39	1-214-091-00	METAL 20 1% 1/4W
⚠ R53	1-206-479-00	METAL 47 5% 2W
R70	1-244-861-00	CARBON 330 5% 1/2W
⚠ R107	1-206-640-00	METAL 100 5% 2W
R124	1-247-083-00	NF CARBON 10 5% 1/4W
RV1	1-224-249-XX	VAR,METAL 1K
RV2	1-224-251-XX	VAR,METAL 4.7K
RV3	1-224-251-XX	VAR,METAL 4.7K
RV4	1-224-550-21	VAR,METAL 220
RV5	1-224-250-XX	VAR,METAL 2.2K
RV6	1-224-550-21	VAR,METAL 220
RV7	1-224-250-XX	VAR,METAL 2.2K
RV8	1-224-250-XX	VAR,METAL 2.2K
RV9	1-224-250-XX	VAR,METAL 2.2K
RV10	1-224-250-XX	VAR,METAL 2.2K
RV11	1-224-250-XX	VAR,METAL 2.2K
RV12	1-224-134-XX	VAR,METAL 470K
RV13	1-224-251-XX	VAR,METAL 4.7K
T1	1-426-017-00	AF
T2	1-427-472-00	OUTPUT
T3	1-427-472-00	OUTPUT
T4	1-426-018-00	AF
T5	1-426-018-00	AF

Ref.No.	Parts No.	Description
SV-44A BOARD		
⚠	A-6715-142-A	MOUNTED CIRCUIT BOARD, SV-44A

All the diodes that are not listed in this board are 1SS119 (Parts No. 8-719-911-19)

All the transistors that are not listed in this board are 2SC1364 (Parts No. 8-729-663-47)

C16	1-107-210-00	MICA 22PF 5% 500V
C37	1-123-311-00	ELECT 1000 20% 10V
C54	1-130-224-00	POLYPROPYLENE 0.015 5% 50V
D36	8-719-709-25	1S1925-P
IC1	8-759-240-13	TC4013BP(TOSHIBA)
IC2	8-759-240-11	TC4011BP(CD4011AE/BE;RCA)
IC3	8-759-132-40	uPC324C(LM324;NSC)
IC4	8-759-240-25	TC4025BP(CD4025AE/BE;RCA)
IC6	8-751-941-05	CX194B-5 (SONY)
IC7	8-759-240-53	TC4053BP(CD4053BE;RCA)
IC8	8-759-135-80	uPC358C(LM358JG;TI)
IC9	8-759-240-53	TC4053BP (CD4053BE; RCA)
IC10	8-759-132-40	uPC324C(LM324;NSC)
IC11	8-759-240-01	TC4001BP(CD4001AE/BE;RCA)
IC14	8-759-240-53	TC4053BP(CD4053BE;RCA)
IC15	8-759-132-40	uPC324C(LM324;NSC)
IC16	8-759-240-53	TC4053BP(CD4053BE;RCA)
IC17	8-759-240-30	TC4030BP(CD4030AE/BE;RCA)
IC18	8-759-745-50	NJM4558D-DS (RC4558;RAYTHEON)
IC19	8-759-145-58	uPC4558C(RC4558;RAYTHEON)
IC20	8-759-240-81	TC4081BP(CD4081BE;RCA)
IC21	8-759-045-84	MC14584BCP(MOTOROLA)
IC22	8-759-132-40	uPC324C(LM324;NSC)
IC23	8-759-240-11	TC4011BP(CD4011AE/BE;RCA)
IC24	8-759-240-23	TC4023BP(CD4023AE/BE;RCA)
IC25	8-759-240-01	TC4001BP(CD4001AE/BE;RCA)
IC26	8-759-240-30	TC4030BP(CD4030AE/BE;RCA)
IC27	8-759-240-11	TC4011BP(CD4011AE/BE;RCA)
IC28	8-759-240-81	TC4081BP(CD4081BE;RCA)
IC29	8-759-240-24	TC4024BP(D4024AE/BE;RCA)
IC30	8-759-240-53	TC4053BP(CD4053BE;RCA)
IC501	8-759-240-11	TC4011BP(CD4011AE/BE;RCA)

NOTES:

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Ref.No.	Parts No.	Description
Q1	8-724-375-01	2SC403C
Q7	8-729-384-48	2SA844
Q10	8-729-384-48	2SA844
Q14	8-761-622-00	2SC1636
Q25	8-729-384-48	2SA844
Q26	8-729-177-43	2SD774
Q27	8-761-622-00	2SC1636
⚠ R14	1-207-636-00	WIREWOUND 100 10% 3W
R31	1-244-859-00	270 5% 1/2W
⚠ R35	1-207-636-00	WIREWOUND 100 10% 3W
R76	1-214-156-00	METAL 10K 1% 1/4W
R128	1-212-710-00	METAL 220K 1% 1/2W
R193	1-214-178-00	METAL 82K 1% 1/4W
⚠ R258	1-207-636-00	WIREWOUND 100 10% 3W
⚠ R287	1-207-636-00	WIREWOUND 100 10% 3W
RV1	1-224-254-XX	VAR, METAL 47K
RV2	1-224-254-XX	VAR, METAL 47K
RV3	1-224-254-XX	VAR, METAL 47K
RV4	1-224-249-XX	VAR, METAL 1K
RV5	1-224-252-XX	VAR, METAL 10K
RV6	1-224-252-XX	VAR, METAL 10K
RV7	1-224-252-XX	VAR, METAL 10K
RV8	1-224-254-XX	VAR, METAL 47K
RV9	1-224-249-XX	VAR, METAL 1K
RV10	1-224-255-XX	VAR, METAL 100K
RV11	1-224-252-XX	VAR, METAL 10K
RV12	1-224-250-XX	VAR, METAL 2.2K
RV13	1-224-250-XX	VAR, METAL 2.2K
RV14	1-224-252-XX	VAR, METAL 10K
RV15	1-224-255-XX	VAR, METAL 100K
RV16	1-224-248-XX	VAR, METAL 470
RV17	1-224-254-XX	VAR, METAL 47K
X1	1-527-376-00	OSC. 3.579545MHz

* S/N 16541 AND LATER (AEP)
S/N 11511 AND LATER (UK)
S/N 10201 AND LATER (U/C)

Ref.No.	Parts No.	Description
SW-43 BOARD		
	1-603-434-00	PRINTED CIRCUIT BOARD, SW-43
IC1	8-719-104-42	PS4005(NEC)
SW-46 BOARD		
	1-603-590-00	PRINTED CIRCUIT BOARD, SW-46
IC1	8-719-104-42	PS4005(NEC)
SW-50 BOARD		
	1-603-435-00	PRINTED CIRCUIT BOARD, SW-50
IC1	8-719-104-42	PS4005(NEC)

SY-75 BOARD

⚠ A-6717-249-C	MOUNTED CIRCUIT BOARD, SY-75 S/N UP TO 16540 (AEP) S/N UP TO 11510 (UK) S/N UP TO 10200 (U/C)
⚠ A-6717-249-D	MOUNTED CIRCUIT BOARD, SY-75 S/N 16541 AND LATER (AEP) S/N 11511 AND LATER (UK) S/N 10201 AND LATER (U/C)

All the diodes that are not listed in this board are 1S1555 (Parts No. 8-719-815-55)

All the transistors that are not listed in this board are 2SC1364 (Parts No. 8-729-663-47)

*C50	1-161-021-00	CERAMIC 0.047 10% 25V
C114	1-161-019-00	CERAMIC 0.033 10% 25V
D404	8-719-200-02	10E-2

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Ref.No.	Parts No.	Description
IC1	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC2	8-759-240-01	TC4001BP (CD4001AE/BE; RCA)
IC3	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC4	8-759-645-29	M54529P (MITSUBISHI)
*IC4	8-759-201-08	TD62302P (TOSHIBA)
IC5	8-759-145-58	μPC4558C (R4558; RAYTHEON)
IC6	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC7	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC8	8-759-240-01	TC4001BP (CD4001AE/BE; RCA)
IC9	8-759-600-39	M54529P (MITSUBISHI)
IC10	8-759-645-29	M54529P (MITSUBISHI)
IC11	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC12	8-759-240-11	TC4011BP (CD4011AE/BE; RCA)
IC13	8-759-240-71	TC4071BP (CD4071BE; RCA)
IC14	8-759-240-01	TC4001BP (CD4001AE/BE; RCA)
IC15	8-759-645-19	M54519P (MITSUBISHI)
IC16	8-759-240-11	TC4011BP (CD4011AE/BE; RCA)
IC17	8-759-240-71	TC4071BP (CD4071BE; RCA)
IC18	8-759-240-73	TC4073BP (CD4073BE; RCA)
IC19	8-759-240-01	TC4001BP (CD4001AE/BE; RCA)
IC20	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC21	8-759-240-11	TC4011BP (CD4011AE/BE; RCA)
IC22	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC23	8-759-145-58	μPC4558C (RC4558; RAYTHEON)
*IC23	8-759-240-20	TC4020BP (CD4020BE; RCA)
IC24	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC25	8-759-240-01	TC4001BP (CD4001AE/BE; RCA)
IC26	8-759-240-71	TC4071BP (CD4071BE; RCA)
IC27	8-759-240-01	TC4001BP (CD4001AE/BE; RCA)
IC28	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC29	8-759-045-38	MC14538BCP (MOTOROLA)
IC30	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
*IC30	8-759-045-84	MC14584BCP (MOTOROLA)
IC31	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC32	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC33	8-759-240-75	TC4075BP (CD4075BE; RCA)
IC34	8-759-240-01	TC4001BP (CD4001AE/BE; RCA)
IC35	8-759-240-01	TC4001BP (CD4001AE/BE; RCA)
IC36	8-757-570-00	CX-757 (SONY)
IC37	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC38	8-759-240-25	TC4025BP (CD4025AE/BE; RCA)
IC39	8-759-240-30	TC4030BP (CD4030BE; RCA)
IC40	8-759-240-69	MC14584BCP (MOTOROLA)

Ref.No.	Parts No.	Description
IC41	8-759-240-73	TC4073BP (CD4073BE; RCA)
IC42	8-759-240-01	TC4001BP (CD4001AE/BE; RCA)
IC43	8-759-240-11	TC4011BP (CD4011AE/BE; RCA)
IC44	8-759-645-29	M54529P (MITSUBISHI)
*IC44	8-759-201-08	TD62302P (TOSHIBA)
IC45	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC46	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC47	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC48	8-759-240-11	TC4011BP (CD4011AE/BE; RCA)
IC49	8-759-729-03	NJM2903D (JRC)
IC50	8-759-745-50	NJM4558D-DS (RC4558; RAYTHEON)
IC51	8-759-645-29	M54529P (MITSUBISHI)
*IC51	8-759-145-58	μPC4558C (RC4558; RAYTHEON)
IC52	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC53	8-759-240-12	TC4012BP (CD4012AE/BE; RCA)
IC54	8-759-240-11	TC4011BP (CD4011AE/BE; RCA)
IC55	8-759-240-13	TC4013BP (TOSHIBA)
IC56	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC57	8-759-645-29	M54529P (MITSUBISHI)
*IC57	8-759-045-38	MC14538BCP (MOTOROLA)
IC58	8-759-240-01	TC4001BP (CD4001AE/BE; RCA)
IC59	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC60	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC61	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC62	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC63	8-759-240-71	TC4071BP (CD4071BE; RCA)
*IC64	8-759-645-29	M54529P (MITSUBISHI)
*IC64	8-759-201-08	TD62302P (TOSHIBA)
IC65	8-759-645-29	M54529P (MITSUBISHI)
*IC65	8-759-201-08	TD62302P (TOSHIBA)
IC66	8-759-045-84	MC14584BCP (MOTOROLA)
*IC66	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC67	8-759-645-29	M54529P (MITSUBISHI)
IC68	8-759-240-11	TC4011BP (CD4011AE/BE; RCA)
IC69	8-759-240-01	TC4001BP (CD4001AE/BE; RCA)
IC70	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC71	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC72	8-759-240-13	TC4013BP (TOSHIBA)
IC73	8-759-240-73	TC4073BP (CD4073BE; RCA)
IC74	8-759-245-20	TC4520BP (MC14520BCP; MOTOROLA)
IC75	8-759-240-01	TC4001BP (CD4001AE/BE; RCA)
IC76	8-759-645-29	M54529P (MITSUBISHI)
*IC76	8-759-201-08	TD62302P (TOSHIBA)
IC77	8-759-240-81	TC4081BP (CD4081BE; RCA)
IC78	8-759-240-25	TC4025BP (CD4025AE/BE; RCA)
IC79	8-759-240-69	TC4069UBP (CD4069UBE; RCA)
IC80	8-759-240-01	TC4001BP (CD4001AE/BE; RCA)
IC81	8-759-240-11	TC4011BP (CD4011AE/BE; RCA)
*IC81	8-759-240-81	TC4081BP (CD4081BE; RCA)

*** S/N 16541 AND LATER (AEP)**
S/N 11511 AND LATER (UK)
S/N 10201 AND LATER (U/C)

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Ref.No.	Parts No.	Description
Q1	8-729-384-48	2SA844
Q7	8-729-384-48	2SA844
Q13	8-729-384-48	2SA844
Q21	8-729-177-32	2SD773
*Q21	8-729-382-64	2SC1826
Q405	8-729-384-48	2SA844
*Q410	8-729-384-48	2SA844
⚠R236	1-207-619-00	WIREWOUND 0.82 10% 3W
RV2	1-224-253-XX	VAR, METAL 22K

YC-5 BOARD

A-6711-333-A MOUNTED CIRCUIT BOARD, YC-5

All the diodes that are not listed in this board are 1S1555 (Parts No. 8-719-815-55)

C20	1-107-159-00	MICA 33PF 5% 500V
C21	1-107-170-00	MICA 110PF 5% 500V
C22	1-107-168-00	MICA 91PF 5% 500V
C23	1-107-165-00	MICA 56PF 5% 500V
C29	1-107-037-00	MICA 82P 5% 500V
C38	1-107-206-00	MICA 15PF 5% 500V
C42	1-107-166-00	MICA 62PF 5% 500V
C46	1-107-169-00	MICA 100PF 5% 500V
C48	1-107-170-00	MICA 110PF 5% 500V
C64	1-107-171-00	MICA 120PF 5% 500V
C67	1-107-037-00	MICA 82PF 5% 500V
C87	1-107-202-00	MICA 10PF 5% 500V
C88	1-107-205-00	MICA 13PF 5% 500V
C96	1-107-169-00	MICA 100PF 5% 500V
C99	1-130-014-00	POLYPROPYLEN 470PF 5% 50V
C100	1-130-016-00	POLYPROPYLEN 680PF 5% 50V
C101	1-130-014-00	POLYPROPYLEN 470PF 5% 50V
C105	1-107-168-00	MICA 91PF 5% 500V
C110	1-107-204-00	MICA 12PF 5% 500V
C111	1-107-209-00	MICA 20PF 5% 500V
C112	1-107-169-00	MICA 100PF 5% 500V
C113	1-107-166-00	MICA 62PF 5% 500V
C114	1-107-208-00	MICA 18PF 5% 500V
C118	1-107-168-00	MICA 91PF 5% 500V
C130	1-107-169-00	MICA 100PF 5% 500V

*S/N 16541 AND LATER (AEP)
S/N 11511 AND LATER (UK)
S/N 10201 AND LATER (U/C)

Ref.No.	Parts No.	Description
C156	1-107-167-00	MICA 75PF 5% 500V
C157	1-107-159-00	MICA 33PF 5% 500V
C159	1-107-158-00	MICA 30PF 5% 500V
C163	1-107-036-00	MICA 68PF 5% 500V
C164	1-107-159-00	MICA 33PF 5% 500V
C167	1-107-169-00	MICA 100PF 5% 500V
C180	1-107-206-00	MICA 15PF 5% 500V
C182	1-107-169-00	MICA 100PF 5% 500V
C193	1-107-210-00	MICA 22PF 5% 500V
C195	1-107-206-00	MICA 15PF 5% 500V
C196	1-107-159-00	MICA 33PF 5% 500V
C197	1-107-048-00	MICA 6.8PF 0.5PF 500V
C203	1-107-171-00	MICA 120PF 5% 500V
C204	1-107-209-00	MICA 20PF 5% 500V
C205	1-107-157-00	MICA 27PF 5% 500V
C207	1-102-112-00	MICA 330PF 5% 500V
CV1	1-141-246-00	TRIMMER 18PF
D5	8-719-139-07	RD3.9E
D9	8-719-815-59	1S1555-S
D19	8-719-151-07	RD5.1E-B
DL1	1-415-231-00	0.3us
DL2	1-415-231-00	0.3us
DL1	1-415-231-21	0.3us
DL2	1-415-231-21	0.3us
FL3	1-231-295-31	BPF S/N 31141 AND LATER(AEP) S/N 14111 AND LATER(UK) S/N 10601 AND LATER(U/C)
FL1	1-235-012-21	LPF S/N 30441 AND LATER(AEP) S/N 14111 AND LATER(UK) S/N 10501 AND LATER(U/C)
FL1	1-235-012-00	LPF
FL2	1-235-044-00	LPF
FL3	1-231-295-00	BPF
FL4	1-235-002-00	LPF
IC1	8-759-240-52	TC4052BP(CD4052BE:RCA)
IC3	8-759-200-60	TA7060AP(TOSHIBA)
IC4	8-751-870-00	CX187(SONY)
IC5	8-759-908-59	CX859(SONY)
IC6	8-751-880-00	CX188(SONY)
IC7	8-759-240-53	TC4053BP(CD4053BE:RCA)
IC8	8-759-240-69	TC4069UBP(CD4069UBE:RCA)
IC9	8-759-240-01	TC4001BP(CD4001BE:RCA)
IC10	8-759-240-11	TC4011BP(CD4011BE:RCA)

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Ref.NO.	Parts NO.	Description
L20	1-420-984-00	RF
LV1	1-425-879-00	BPT
LV2	1-411-106-00	TUNING
LV3	1-425-982-00	BPT
LV4	1-425-880-00	BURST AMP
LV5	1-407-238-00	VAR, 68
Q1	8-729-663-47	2SC1364
Q2	8-724-375-01	2SC403C
Q3	8-724-375-01	2SC403C
Q4	8-724-375-01	2SC403C
Q5	8-724-375-01	2SC403C
Q6	8-729-384-48	2SA844
Q7	8-724-375-01	2SC403C
Q8	8-724-375-01	2SC403C
Q9	8-724-375-01	2SC403C
Q10	8-724-375-01	2SC403C
Q11	8-724-375-01	2SC403C
Q12	8-724-375-01	2SC403C
Q13	8-724-375-01	2SC403C
Q14	8-724-375-01	2SC403C
Q15	8-724-375-01	2SC403C
Q16	8-729-384-48	2SA844
Q17	8-761-622-00	2SC1636
Q18	8-724-375-01	2SC403C
Q19	8-761-622-00	2SC1636
Q24	8-724-375-01	2SC403C
Q25	8-724-375-01	2SC403C
Q26	8-724-375-01	2SC403C
Q27	8-729-384-48	2SA844
Q28	8-724-375-01	2SC403C
Q29	8-724-375-01	2SC403C
Q30	8-761-622-00	2SC1636
Q31	8-724-375-01	2SC403C
Q32	8-724-375-01	2SC403C
Q33	8-765-212-30	2SA925
Q34	8-761-622-00	2SC1636
Q35	8-729-384-48	2SA844
Q36	8-729-384-48	2SA844
Q37	8-729-384-48	2SA844
Q38	8-724-375-01	2SC403C
Q39	8-724-375-01	2SC403C
Q40	8-724-375-01	2SC403C
Q41	8-729-384-48	2SA844
Q42	8-729-384-48	2SA844
Q43	8-729-663-47	2SC1364
Q44	8-729-663-47	2SC1364
Q45	8-729-663-47	2SC1364

Ref.NO.	Parts NO.	Description
Q46	8-724-375-01	2SC403C
Q47	8-729-663-47	2SC1364
Q48	8-724-375-01	2SC403C
Q49	8-724-375-01	2SC403C
Q50	8-724-375-01	2SC403C
Q51	8-724-375-01	2SC403C
Q52	8-724-375-01	2SC403C
Q53	8-724-375-01	2SC403C
Q54	8-724-375-01	2SC403C
Q55	8-724-375-01	2SC403C
Q56	8-729-663-47	2SC1364
Q57	8-724-375-01	2SC403C
Q60	8-724-375-01	2SC403C
Q61	8-724-375-01	2SC403C
Q62	8-729-663-47	2SC1364
Q63	8-729-663-47	2SC1364
Q64	8-729-103-43	2SB734
Q65	8-729-384-48	2SA844
Q66	8-729-103-43	2SB734
Q67	8-729-663-47	2SC1364
Q68	8-724-375-01	2SC403C
Q69	8-724-375-01	2SC403C
Q73	8-724-375-01	2SC403C
Q74	8-724-375-01	2SC403C
Q75	8-724-375-01	2SC403C
Q76	8-724-375-01	2SC403C
Q77	8-724-375-01	2SC403C
Q78	8-761-622-00	2SC1636
R22	1-224-847-00	CARBON 82 5% 1/2W
RV1	1-244-251-XX	VAR, METAL 4.7K
RV2	1-224-252-XX	VAR, METAL 10K
RV3	1-224-250-XX	VAR, METAL 2.2K
RV4	1-224-251-XX	VAR, METAL 4.7K
RV5	1-224-134-XX	VAR, METAL 470K
RV6	1-224-250-XX	VAR, METAL 2.2K
RV7	1-224-251-XX	VAR, METAL 4.7K
RV8	1-224-251-XX	VAR, METAL 4.7K
RV9	1-224-251-XX	VAR, METAL 4.7K
RV10	1-224-251-XX	VAR, METAL 4.7K
RV11	1-224-253-XX	VAR, METAL 22K
RV12	1-224-255-XX	VAR, METAL 100K
RV13	1-224-250-XX	VAR, METAL 2.2K
RV14	1-224-251-XX	VAR, METAL 4.7K
RV15	1-224-253-XX	VAR, METAL 22K
RV16	1-224-251-XX	VAR, METAL 4.7K
RV17	1-224-248-XX	VAR, METAL 470
RV18	1-224-249-XX	VAR, METAL 1K
X1	1-527-345-00	OSC. 4.433619MHz

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Ref.No.	Parts No.	Description
FRAME		
⚠	1-413-075-00	SWITCHING REGULATOR (UR-02)
⚠CN1001	1-509-546-00	3P AC INLET
CN1002, CN1003	1-507-732-XX	JACK 2P "AUDIO LINE IN"
CN1004	1-507-251-XX	JACK JM-35 M-10 "AUDIO MONITOR"
CN1005, CN1006	1-507-732-XX	JACK 2P "AUDIO LINE OUT"
CN1007	1-507-473-XX	JACK JM-35 M-7A "RX-DATA"
CN1008	1-562-261-00	RECEPTACLE BNC "VIDEO LINE IN"
CN1009	1-562-261-00	RECEPTACLE BNC "VIDEO LINE OUT"
CN1010	1-561-583-00	RECEPTACLE 33P FEMALE "REMOTE"
	1-561-066-00	CONTACT
CN1011	1-560-403-00	RECEPTACLE,6P FEMALE "RF MOD"
CN1012	1-555-977-00	F RECEPTACLE "RF OUT"
CN1013	1-561-671-00	RECEPTACLE,8P FEMALE "TV"
	1-561-671-00	CONTACT
CN1014	1-508-945-00	"DUB IN"
CN1015	1-561-045-00	"DUB OUT"
CS1001	1-586-633-00	CONDENSATION SENSOR
H1001	A-6709-136-A	DRUM ASSY,UPPER RV-5(RP)
H1002	8-829-358-31	EPP150-5803B "AUDIO RP/ERASE,CTL R/P"
H1003	8-825-513-20	EPP170-58 "CTL PB/FULL ERASE"

Ref.No.	Parts No.	Description
M1001	A-6709-416-A	HEAD DRUM DUH-05A-R
M1002	8-838-019-01	BHF-1600A"CAPSTAN"
M1003	8-835-056-01	DNR-1002"THREADING"
M1004	8-835-047-01	MNR-4000A"REEL"
M1005	8-835-055-01	DNR-4700A "CASSETTE COMPARTMENT"
ME1001	1-520-393-00	AUDIO CH-1
ME1002	1-520-393-00	AUDIO CH-2
PL1001	1-518-455-00	12V,55mA "CASSETTE COMPARTMENT"
PL1002	1-518-455-00	12V,55mA "CASSETTE COMPARTMENT"
*PL1001	1-518-508-00	12V,55mA "CASSETTE COMPARTMENT"
*PL1002	1-518-508-00	12V,55mA "CASSETTE COMPARTMENT"
PM1001	1-454-283-00	12V,80 ohm"SKEW"
PM1002	1-454-284-00	12V,10/90 ohm"SEARCH"
PM1003	1-454-286-00	12V,6/35 ohm "PINCH"
PM1004	1-454-285-00	12V,8/52 ohm "TAKE UP IDLER"
PM1005	1-454-284-00	12V,10/90 ohm "TAKE UP BRAKE"
PM1006	1-454-284-00	12V,10/90 ohm "SUPPLY BRAKE"
PM1007	1-454-285-00	12V,8/52 ohm "SUPPLY IDLER"
⚠S1001	1-553-159-00	ROCKER"POWER"
S1002	Y-2041-071-5	COUNTER
S1003	1-553-789-00	SLIDE"TIMER"
S1004	1-516-779-XX	SLIDE"REMOTE SELECT"
S1005	1-516-779-XX	SLIDE"MONITOR TV"
S1006	1-516-781-XX	SLIDE"COLOR LOCK"

*AEP: S/N AND LATER 13,441
UK : S/N AND LATER 10,511
U/C: S/N AND LATER 10,201

NOTES:

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Ref.No.	Parts No.	Description
SWITCHING REGULATOR		
⚠	1-413-075-00	**UR-02 (C,M,S,BOARDS)**
	1-560-036-00	**CN TO CN**
C BOARD(IN THE UR-02)		
	1-605-679-00	PRINTED CIRCUIT BOARD,C
C301	1-130-652-00	**POLYPROPYLENE 3600PF 100V**
C302	1-130-018-00	**POLYPROPYLENE 1000PF 50V**
C305	1-161-632-00	**METALLIZED POLYPROPYESTER 0.1 50V**
C306	1-161-632-00	**METALLIZED POLYPROPYESTER 0.1 50V**
D301	8-719-200-02	**10E-2**
D302	8-719-100-70	**RD15E-B1**
D303	8-719-815-85	**1S1585**
IC301	8-759-904-94	**TL494CN**
Q301	8-729-117-54	**2SA1175**
⚠ R302	1-247-099-00	**NF,CARBON 47 1/4W**
RV301	1-226-826-00	**VAR,METAL 300**

Ref.No.	Parts No.	Description
M BOARD(IN THE UR-02)		
⚠	1-605-531-00	PRINTED CIRCUIT BOARD,M
	1-564-090-11	5P CONNECTOR PIN
	1-564-163-00	6P CONNECTOR PIN
C101	1-130-711-00	**METALLIZED POLYPROPYESTER 0.22 400V**
C102	1-161-738-00	**CERAMIC 4700PF 400V**
C103	1-161-738-00	**CERAMIC 4700PF 400V**
C104	1-161-738-00	**CERAMIC 4700PF 400V**
C105	1-161-738-00	**CERAMIC 4700PF 400V**
C106	1-161-742-00	**CERAMIC 2200PF 400V**
C107	1-161-742-00	**CERAMIC 2200PF 400V**
C108	1-161-742-00	**CERAMIC 2200PF 400V**
C109	1-161-742-00	**CERAMIC 2200PF 400V**
C111	1-125-268-00	**ELECT 47 400V**
C112	1-125-267-00	**ELECT 300 400V**
C113	1-123-659-00	**ELECT 4.7 250V**
C114	1-123-659-00	**ELECT 4.7 250V**
C115	1-130-808-00	**METALLIZED POLYPROPYESTER 0.22 400V**
C201	1-161-913-00	**CERAMIC 680PF 500V**
C204	1-161-913-00	**CERAMIC 680PF 500V**
C205	1-108-868-00	**POLYPROPYLENE 0.047 50V**
C206	1-161-632-00	**METALLIZED POLYPROPYESTER 0.1 50V**
C207	1-161-632-00	**METALLIZED POLYPROPYESTER 0.1 50V**
C208	1-161-632-00	**METALLIZED POLYPROPYESTER 0.1 50V**
C210	1-123-326-00	**ELECT 3300 16V**
C211	1-123-326-00	**ELECT 3300 16V**
C212	1-123-326-00	**ELECT 3300 16V**
C213	1-123-326-00	**ELECT 3300 16V**
C214	1-161-632-00	**METALLIZED POLYPROPYESTER 0.1 50V**
C215	1-161-925-00	**CERAMIC 100PF 500V**
C217	1-161-915-00	CERAMIC 1000PF 500V
C218	1-161-915-00	CERAMIC 1000PF 500V
⚠ CN101	1-560-437-00	4P AC IN
CN201	1-560-438-00	5P OUT

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Ref.No.	Parts No.	Description
⚠D101	8-719-108-08	AC03FGMAY
D102	8-719-911-55	U05G
D103	8-719-911-55	U05G
D104	8-719-911-55	U05G
D105	8-719-911-55	U05G
D201	8-719-903-02	ESAC33-02C
D202	8-719-903-02	ESAC33-02C
D203	8-719-903-02	ESAC33-02C
D204	8-719-111-44	F114D
D205	8-719-100-70	RD15E-B1
D206	8-719-200-02	10E-2
⚠F101	1-532-604-00	THERMAL 5A,250V,126°C
⚠L101	1-459-215-00	CHOKE
L102	1-459-215-00	CHOKE
L201	1-421-398-00	CHOKE
L202	1-421-370-00	CHOKE
L203	1-421-431-00	CHOKE
⚠Q101	8-729-993-83	2SC2938
⚠Q102	8-729-993-83	2SC2938
Q201	8-729-331-53	2SC2315
⚠R101	1-205-631-00	NF CEMENT 15 5W
R103	1-247-087-00	NF CARBON 15 1/4W
R104	1-247-087-00	NF CARBON 15 1/4W
R107	1-247-103-00	NF CARBON 68 1/4W
R201	1-205-641-00	NF CEMENT 330 5W
R202	1-535-369-00	20mOHM, 2W
⚠R204	1-247-204-00	NF CARBON 33 1/2W
R205	1-535-369-00	20mOHM, 2W
⚠R206	1-247-090-00	NF CARBON 20 1/2W
R207	1-532-605-00	CURRENT FUSE, 400mA
⚠R208	1-202-860-00	NF SOLID 100 1/4W
R209	1-202-860-00	NF SOLID 100 1/4W

Ref.No.	Parts No.	Description
⚠T101	1-447-052-00	MAIN CONVERTER
⚠T102	1-421-468-00	LINE FILTER
⚠T103	1-447-106-00	DIVE
⚠T104	1-447-053-00	STARTER
T201	1-421-467-00	CHOKE

S BOARD(IN THE UR-02)

⚠	1-605-532-00	PRINTED CIRCUIT BOARD, S
C001	1-108-833-00	POLYPROPYLENE 4700PF 50V
⚠D001	8-719-900-95	V09G
D002	8-719-900-95	V09G
D003	8-719-151-07	RD5.1E-B
D004	8-719-815-85	1S1585
D005	8-719-815-85	1S1585
D006	8-719-815-85	1S1585
D007	8-719-815-85	1S1585
D008	8-719-100-24	RD4.3E-B3
Q001	8-729-175-22	2SC2752
Q002	8-729-115-64	2SA1156
Q003	8-729-100-13	2SC2001
R003	1-247-115-00	NF CARBON 220 1/4W
R004	1-247-115-00	NF CARBON 220 1/4W
R005	1-247-103-00	NF CARBON 68 1/4W

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15-4. PACKING METERIAL AND ACCESSORY (SUPPLIED)

⚠1-551-812-00	**CORD, POWER (FOR U/C)**
⚠1-534-698-XX	**CORD, POWER (FOR AEP)**
⚠1-534-819-00	**CORD, POWER (FOR UK)**
3-672-648-00	INDIVIDUAL CARTON
3-672-714-00	CUSHION (UPPER REAR)
3-672-715-00	CUSHION (UPPER FRONT)
3-672-716-00	CUSHION (LOWER REAR)
3-672-717-00	CUSHION (LOWER FRONT)
3-672-720-00	BAG, PROTECTION
3-701-632-00	**BAG POLY (FOR MANUAL)**
⚠3-783-828-13	**MANUAL, INSTRUCTION**

15-5. FIXTURE (OPTIONAL)

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-6002-290-A	**DIHEDRAL ADJUSTING SCREW**
J-6009-830-A	**FLATNESS PLATE**
J-6130-010-A	**REEL TABLE HEIGHT CHECK BASE JIG**
J-6130-020-A	**REEL TABLE HEIGHT CHECK JIG**
J-6150-020-A	**PINCH LEVER ADJUSTMENT JIG**
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**
7-661-018-01	**SONY OIL**
7-732-050-20	**TENSION SCALE (50 g FULL SCALE)**
7-732-050-30	**TENSION SCALE (100 g FULL SCALE)**
7-732-050-40	**TENSION SCALE (200 g FULL SCALE)**
7-732-050-50	**TENSION SCALE (500 g FULL SCALE)**
8-960-015-04	ALIGNMENT TAPE, RR5-3SA
8-960-035-61	ALIGNMENT TAPE, RR5-2SC-PAL
9-911-053-00	THICKNESS GAUGE

Standard products Head Demagnetizer, HE-4

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