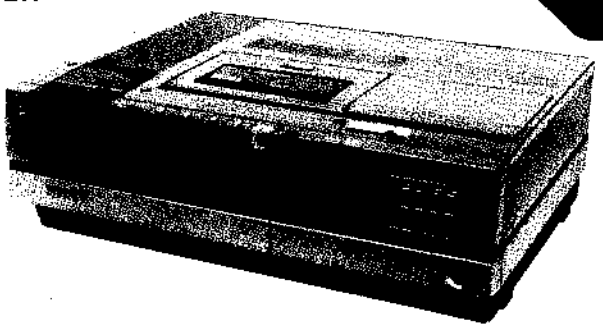
Betamax

VIDEOCASSETTE RECORDER

SL-C5E



SPECIFICATIONS

System

Video recording system: Rotary two-head helical scanning

Video signal: CCIR standards, PAL colour

Aerial input: 75-ohm asymmetrical aerial socket

Channel coverage: VHF: Western European channels E2–12
UHF: Western European channels E21–68
(Up to 8 channels can be preset.)

RF output signal: UHF channels E30 to E39 (variable)
75-ohms, unbalanced

Video

Input: VIDEO IN: BNC connector
1.0 V(p-p) $^{+1.0}_{-0.5}$ V(p-p)
75 ohms unbalanced,
sync negative

Output: VIDEO OUT: BNC connector
1.0 V(p-p) ±0.1 V(p-p)
75 ohms unbalanced,
sync negative

Horizontal resolution: Colour: 260 lines
B/W: 300 lines

Signal-to-noise ratio: Colour: Better than 40 dB
B/W: Better than 43 dB

Audio

Input: AUDIO IN: phono jack
47 kilohms, –10 dBs
(0 dBs = 0.775V rms)
MIC: mini jack
–60 dBs, suitable for microphones with 600-ohm impedance

Output: AUDIO OUT: phono jack
Load impedance less than 10 kilohms
–5 dBs with 47 kilohms load
unbalanced

MICROFILM

Frequency response: 50 Hz to 10 kHz

Signal-to-noise ratio: Better than 40 dB

Audio distortion: Less than 4% at 400 Hz

Tape transport

Tape speed: 18.73 mm/sec.

Maximum recording time: 2 hours 10 min. (with Sony L-500 cassette)
3 hours 15 min. (with L-750)

Fast foward/rewind time: Within 3 1/2 min. (with L-500)

Timer

Clock: Crystal lock

Control time: 24-hour cycle

Timer setting: Only for recording
1 event/day, adjustable for any day(s) of the week

General

Power requirements: 110, 127, 220 or 240 V ±10% ac, adjustable by authorized Sony personnel, (factory preset at 220V)
50/60 Hz

Power consumption: 55W

Storage temperature: –20°C to +65°C (–4°F to +149°F)

Operating temperature: 5°C to 40°C (41°F to 104°F)

Dimensions: Approx. 485 x 168 x 379 mm (w/h/d)
(19 1/8 x 6 5/8 x 15 inches)
not including projecting parts and controls

Weight: Approx. 16.4 kg (36 lb 3 oz)

Accessory supplied

75-ohm coaxial cable (for recorder to TV connection) . . . 1

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND ⚠ MARK ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

SONY®

SERVICE MANUAL

TABLE OF CONTENTS

SECTION 1
GENERAL

1-1. GENERAL

Videocassette Recorder SL-C5E has many features such as logic control to set up a function with its corresponding feather touch button, a quartz lock type 1 event 7 day timer (one recording operation at any date during the week starting tomorrow can be preset), a high speed picture search function to find the picture you want to see, and a timing phase pause function. This VTR can be controlled remotely on the remote commander, optional equipment.

Logic Control System
The function buttons can be handled only with soft touch because of the logic control system. A random access system is employed so that the button corresponding to your purpose can be pressed for setting up the function mode without pressing the STOP button.

High Speed Picture Search
Black and white pictures can be viewed during the high speed tape feeding and the tape rewinding when the CUE/REVIEW button is pressed in the playback operation of the tape. This function is effective for searching a desired picture.

Timer Recording
One recording operation on this VTR in the coming week can be preset by the incorporated high precision digital timer locked to a crystal resonator. Brightness of the timer display can be controlled by the DIMMER switch so that the display can be read in a bright room.

Remote Control (with an optional equipment)
All the VTR function except EDIT and DUB can be controlled remotely on the Remote Commander.

A video camera can be connected to the SONY K-type (14 pins) camera socket on this VTR with one cable and pictures shot by the camera can be recorded at once.

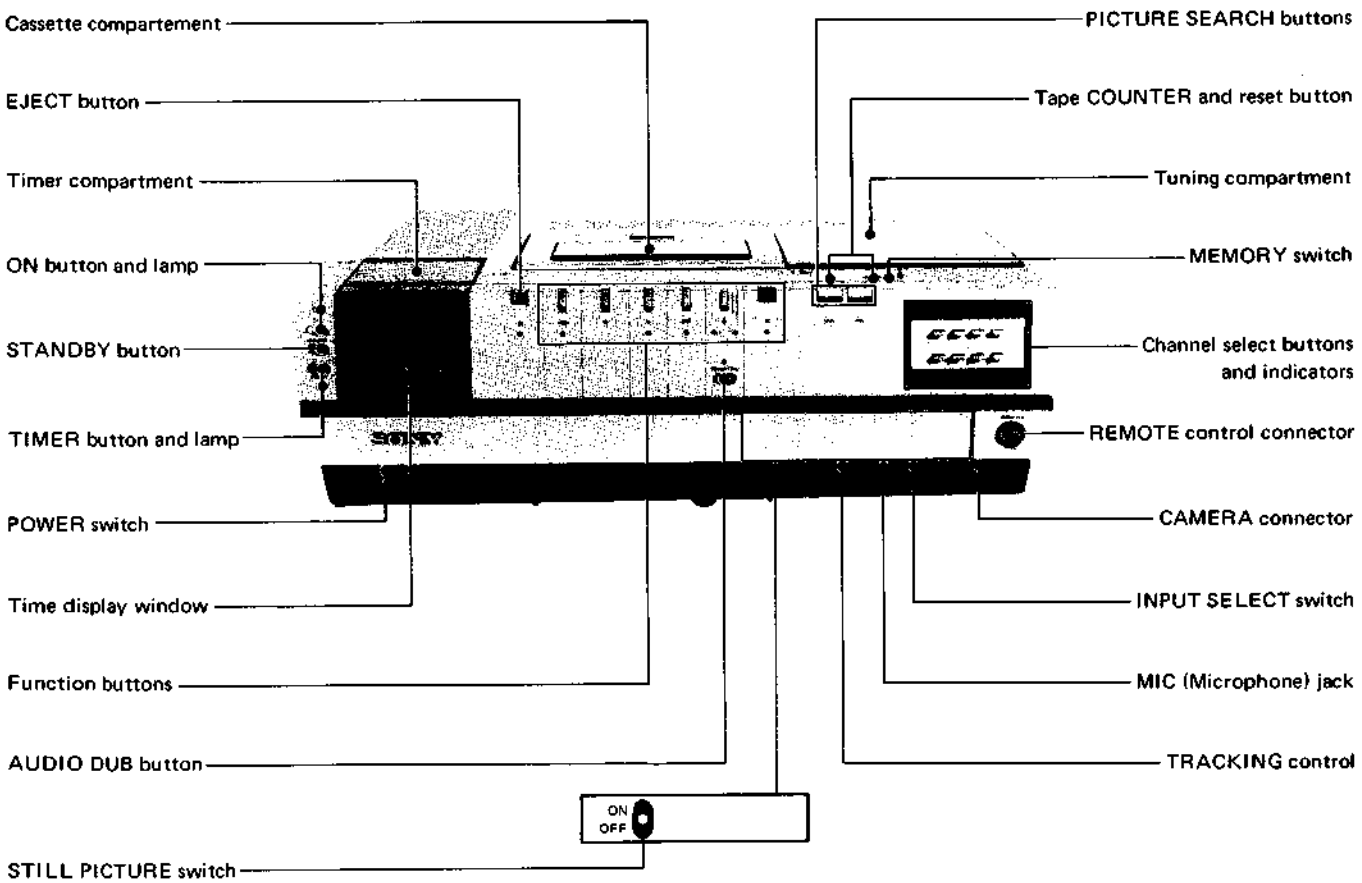
Audio Dubbing
Sound can be added to a pre-recorded tape.

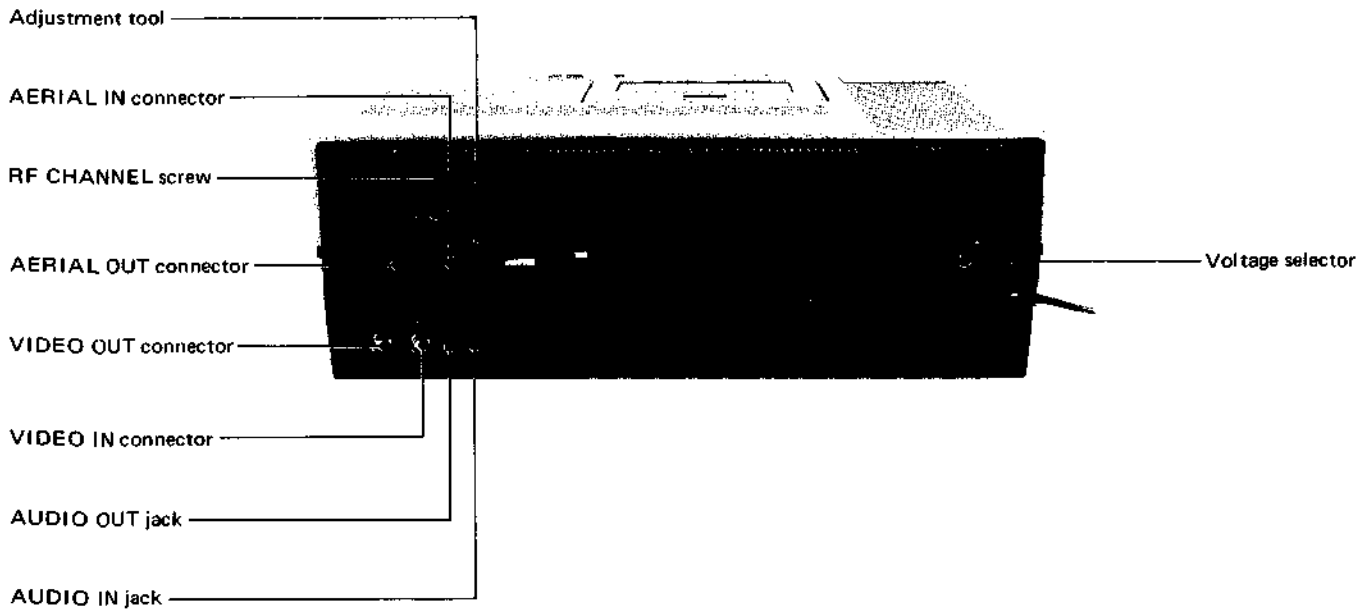
Timing Phase Pause
The timing phase circuit eliminates a picture disorder at the seam between the recorded pictures.

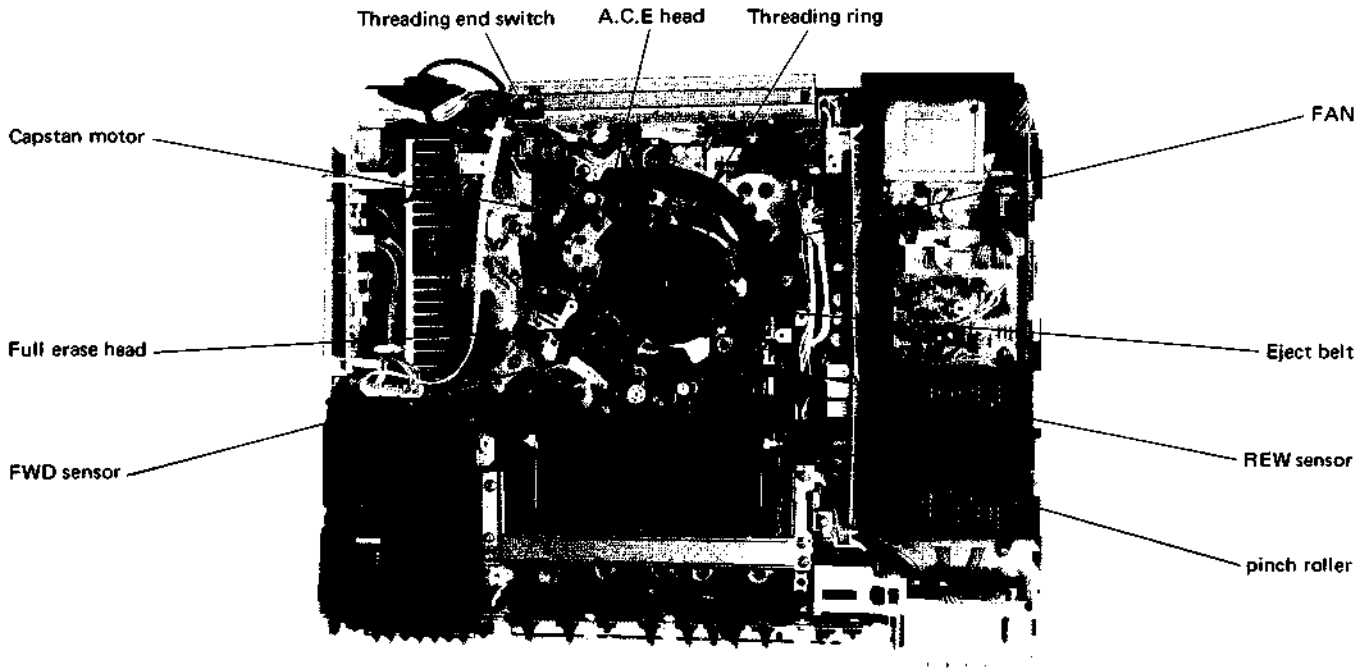
Still Picture
A black and white still picture can be viewed in the PLAY mode by setting the STILL switch to the ON position.

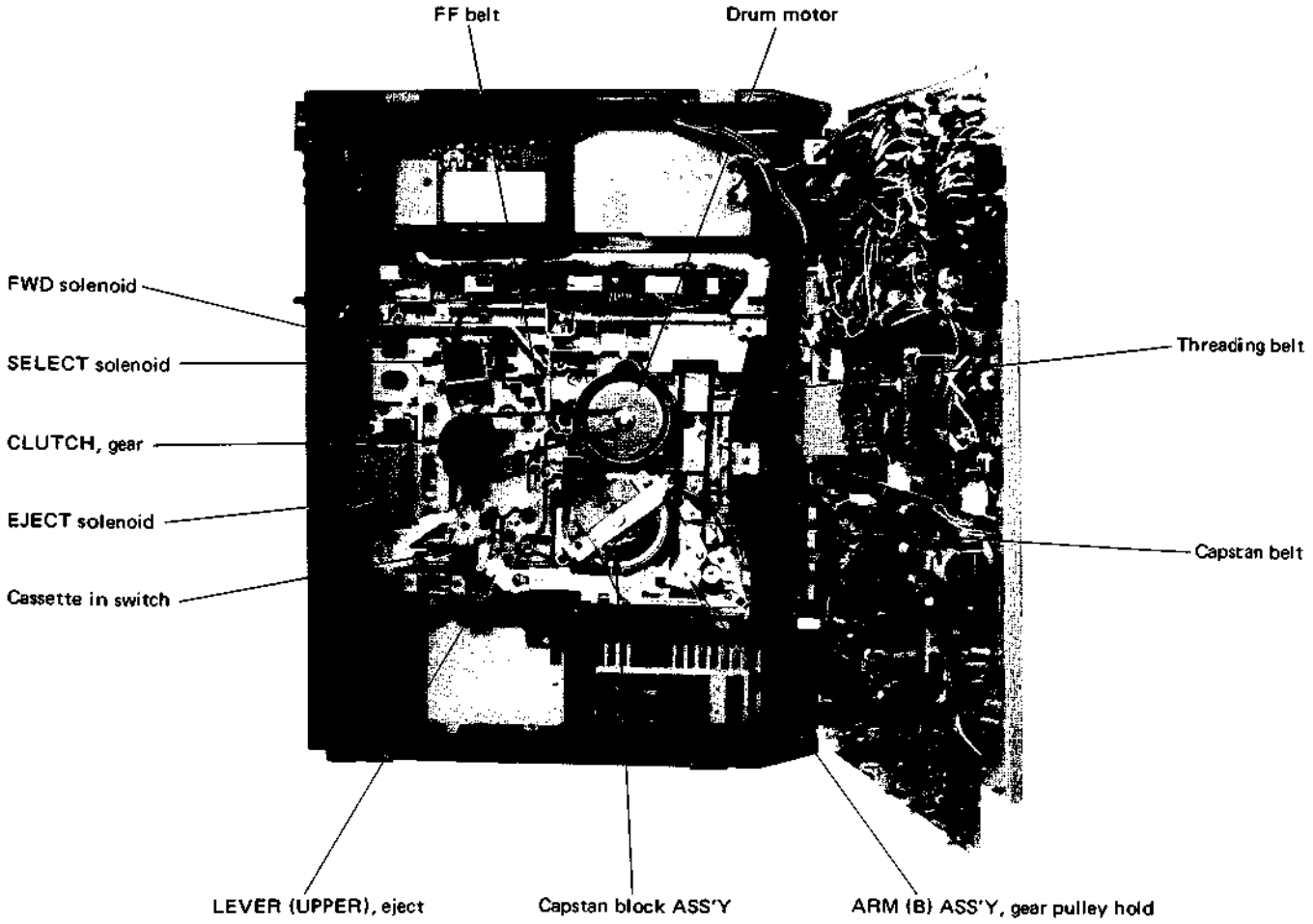
Soft Cassette Eject
The cassette compartment lifts quietly because of the employment of an oil damper and the cassette eject noise is reduced.

1-2. LOCATION AND FUNCTION OF CONTROLS

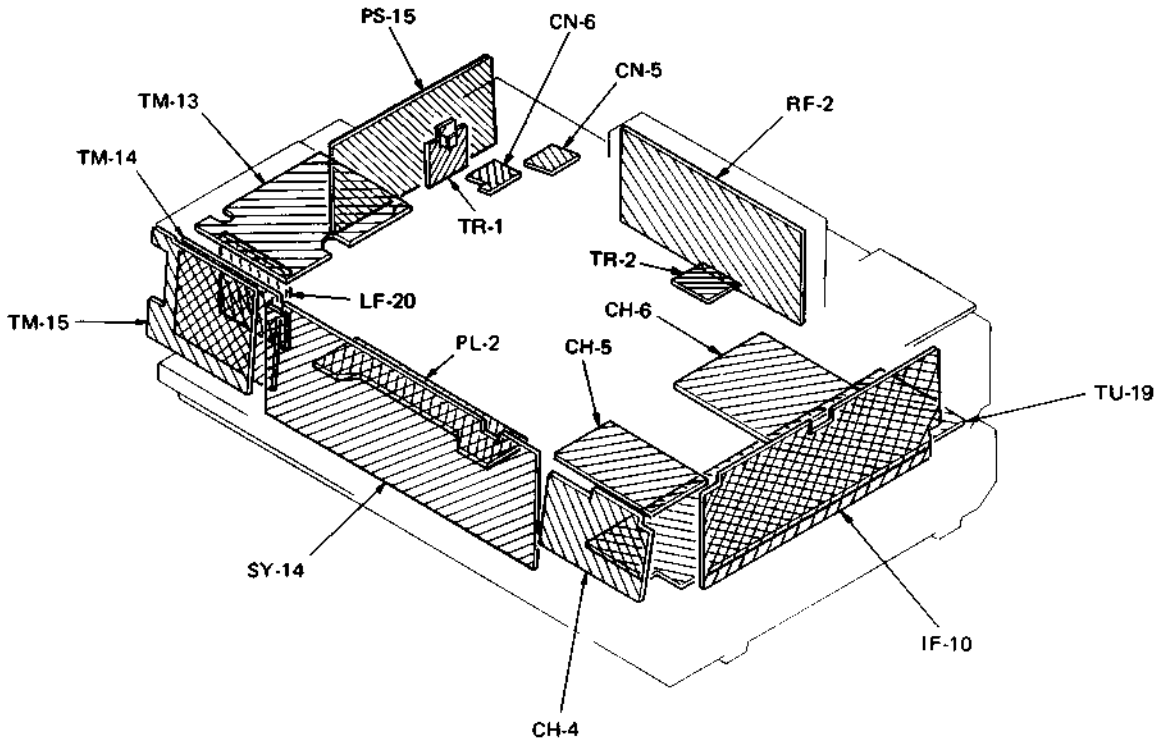


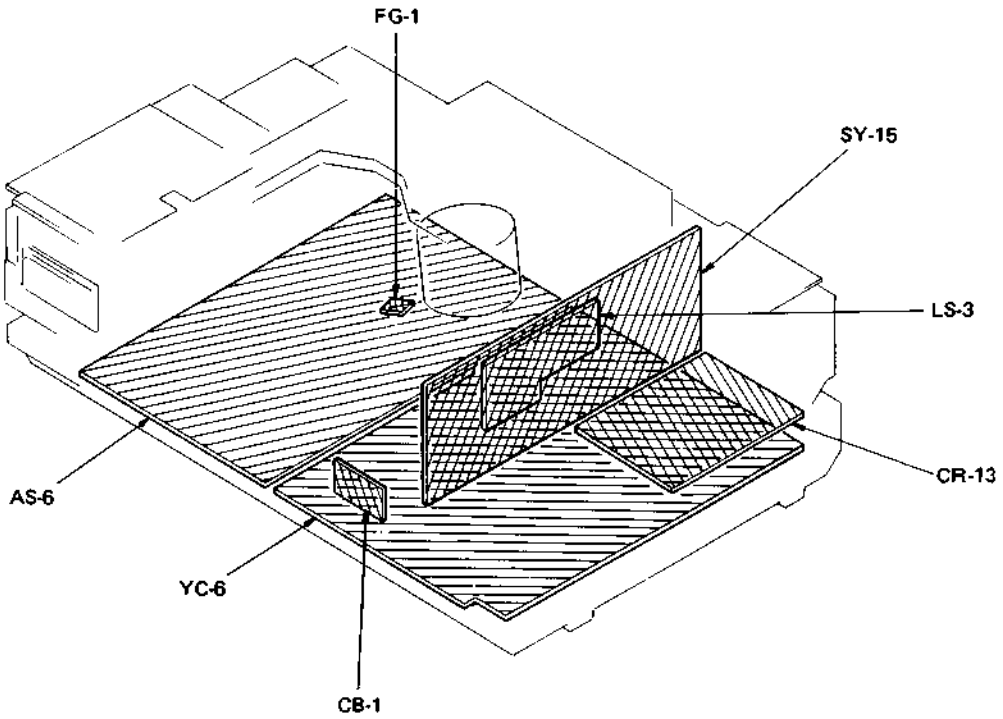



Threading end switch
A.C.E head
Threading ring
Capstan motor
FAN
Full erase head
Eject belt
FWD sensor
REW sensor
pinch roller


FF belt
Drum motor
FWD solenoid
SELECT solenoid
Threading belt
CLUTCH, gear
EJECT solenoid
Capstan belt
Cassette in switch
LEVER (UPPER), eject
Capstan block ASS'Y
ARM (B) ASS'Y, gear pulley hold

CIRCUIT BOARDS LOCATION

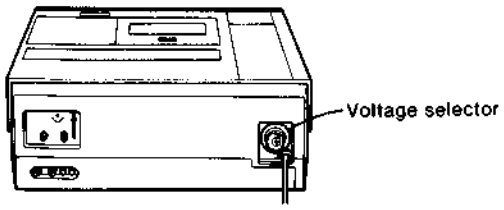




1-3. CONNECTION AND OPERATION

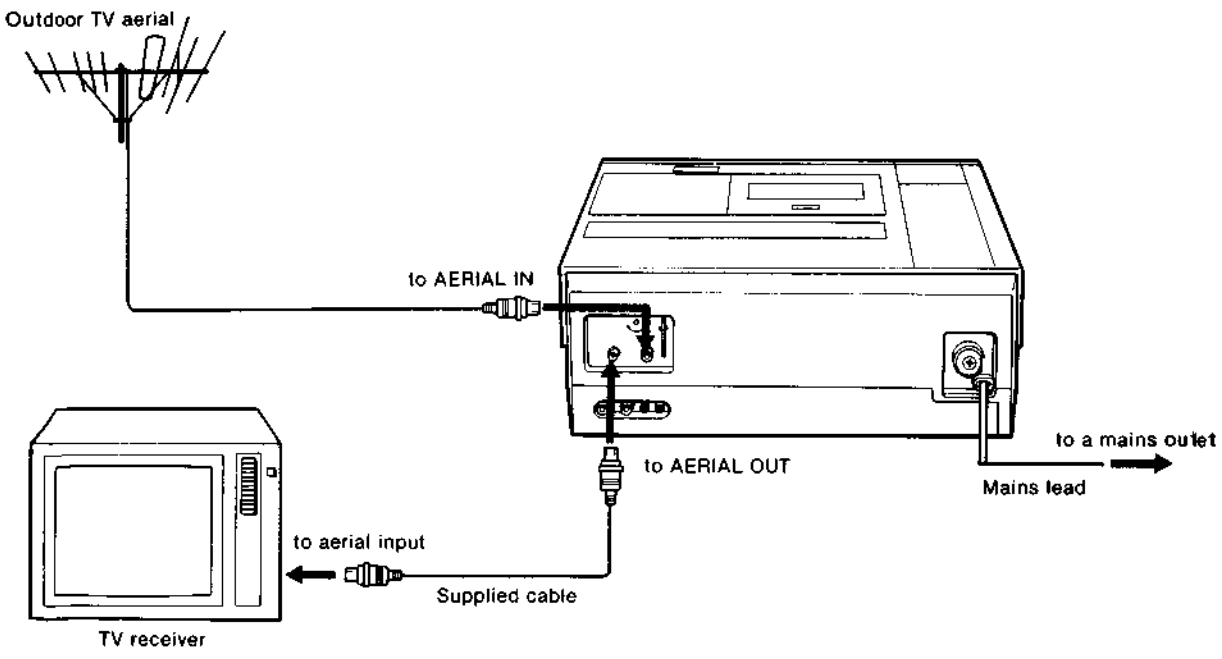
1-3-1. Operating Voltage

Before connecting the set to the power source, check that the voltage selector located at the rear is set to your local mains power voltage.
The operating voltage is preadjusted to 220 V at the factory and is adjustable to 110, 127, or 240 V ac by authorized Sony personnel. To change the voltage setting, please consult your nearest Sony dealer.



1-3-2. System Connections

❶ Unplug your TV receiver from the mains outlet, and remove the aerial cable from its socket in the back of the TV. Then connect the aerial cable to the AERIAL IN socket at the rear of the recorder.
❷ Connect the aerial input of the TV receiver to the AERIAL OUT socket of the recorder, using the supplied cable.
You will find that each socket accepts only one end of the cable.
❸ Connect the recorder and the TV receiver to the mains supply with their own mains leads.

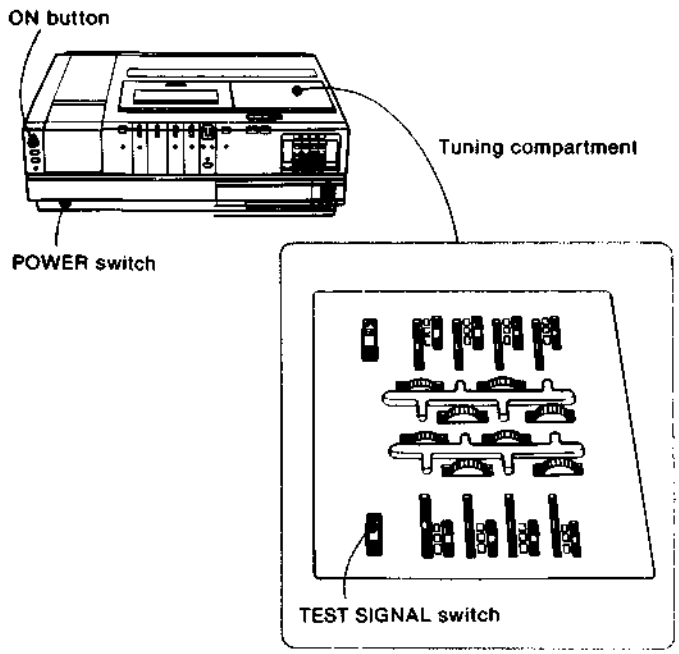


1-3-3. Tuning of the TV and the Recorder

TV ADJUSTMENT

First, adjust your TV receiver so that it is tuned to the signals from the recorder.

❶ After making the connections described on page 4, depress the POWER switch and the ON button of the recorder to turn it on.

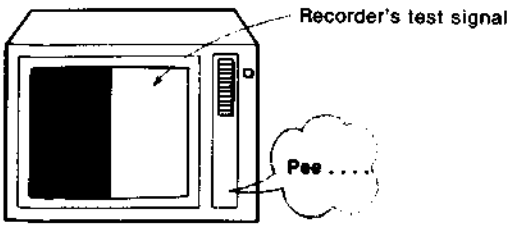


❷ Open the tuning compartment lid and set the TEST SIGNAL switch to ON.

❸ Turn on the TV and select a channel on the TV which is not used for receiving a TV station. Tune the channel until you see a clear black and white pattern on the TV screen and you hear a high-pitched tone. This is the recorder's test signal.

— If all the channels on your TV are used for receiving stations, select the channel you watch least.

— If you are not sure how to tune your TV, please refer to the TV's instruction manual or consult your dealer.



❹ **If the test picture is free of disturbance,** set the TEST SIGNAL switch to OFF.

If the test picture is not free of disturbance

There might be interference. To receive the recorder's signal on your TV without interference, proceed as follows:

❶ Reset the TEST SIGNAL switch in the tuning compartment to OFF.

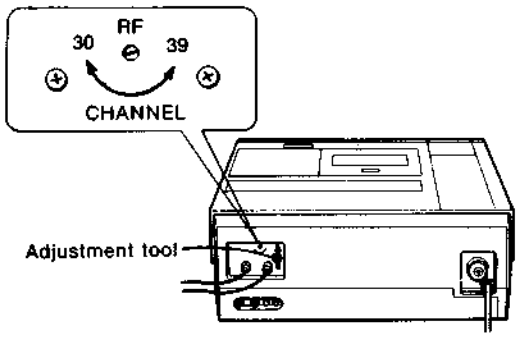
You will probably see interference or perhaps even a TV programme on the TV screen.

❷ Adjust the channel of the TV to a channel between UHF E30 and E39 with the tuning control or the fine tuning control on the TV, so that the TV screen shows only "snow" and so that all you can hear is a steady rustling sound.

❸ Set the TEST SIGNAL switch to ON again.

❹ Slowly turn the RF CHANNEL screw on the back of the recorder until you see an undistorted test picture on the TV screen.

You can use the adjustment tool located to the right of the RF CHANNEL screw hole to turn the screw.



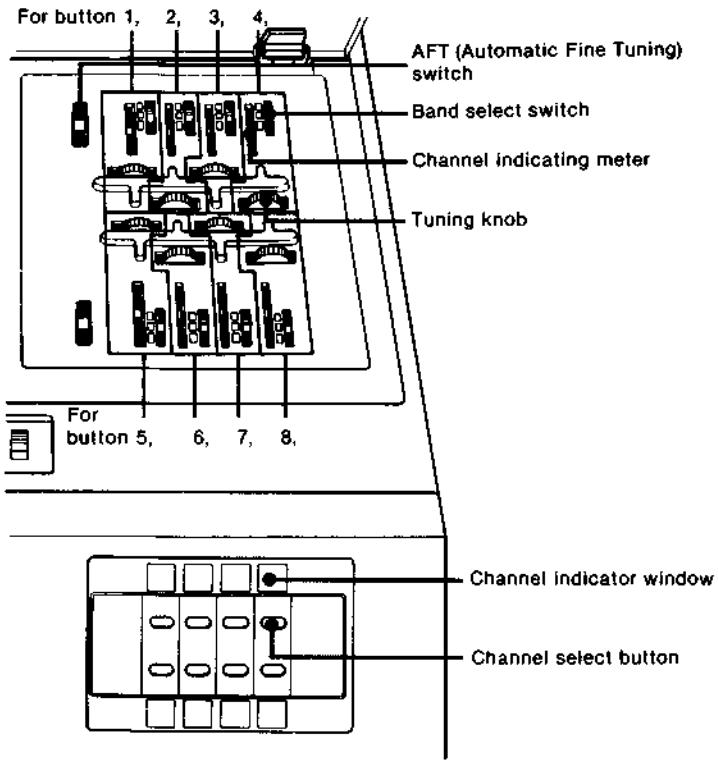
❺ Reset the TEST SIGNAL switch to OFF.

Now your TV receiver is tuned to the recorder. Whenever you use the video recorder, you should set the TV to the channel which you have chosen above.

RECORDER CHANNEL PRESETTING

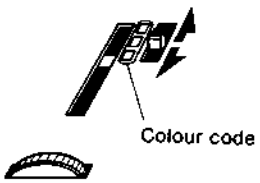
Once you have tuned your TV to the recorder, the next step is to tune the recorder to all the TV stations that you can receive in your area.
Up to 8 TV stations can be preset in any order.

Location of the tuning controls



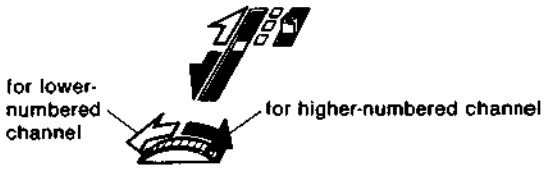
Presetting procedure

❶ Check that the TV and the recorder are turned on.
❷ Set the INPUT SELECT switch to TUNER.
❸ Open the tuning compartment lid and set the AFT switch to OFF.
❹ Press the channel select button to be preset. The corresponding channel indicator lamp will light.
❺ Set the band select switch for that button to one of the three colour-coded positions:
to tune in channel E21 through E68 .....set to **blue.**
to tune in channel E5 through E12 .....set to **yellow.**
to tune in channel E2 through E4 .....set to **red.**



❻ Turn the tuning knob until the desired station is properly tuned in.

The channel indicating meter provides a visual indication of the approximate location of the tuning knob within the operating range of the band select switch.



When the picture appears, slowly turn the tuning knob to the right until a herringbone pattern appears in the coloured part of the picture, then turn the knob back until the picture is perfectly clear.

❼ Repeat steps ❹, ❺ and ❻ for all the other channels.

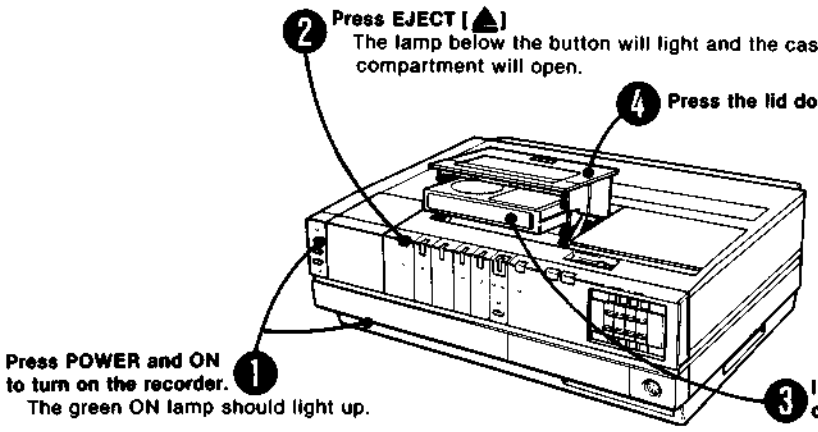
To identify the channels, consult a newspaper or TV programme guide.

❽ Set the AFT switch to ON when all the stations have been set up, then close the lid of the tuning compartment.

You can now fully utilize the recorder without ever having to touch this compartment again.

1-3-4. Cassette Insertion and Removal

TO INSERT A CASSETTE



TO REMOVE A CASSETTE

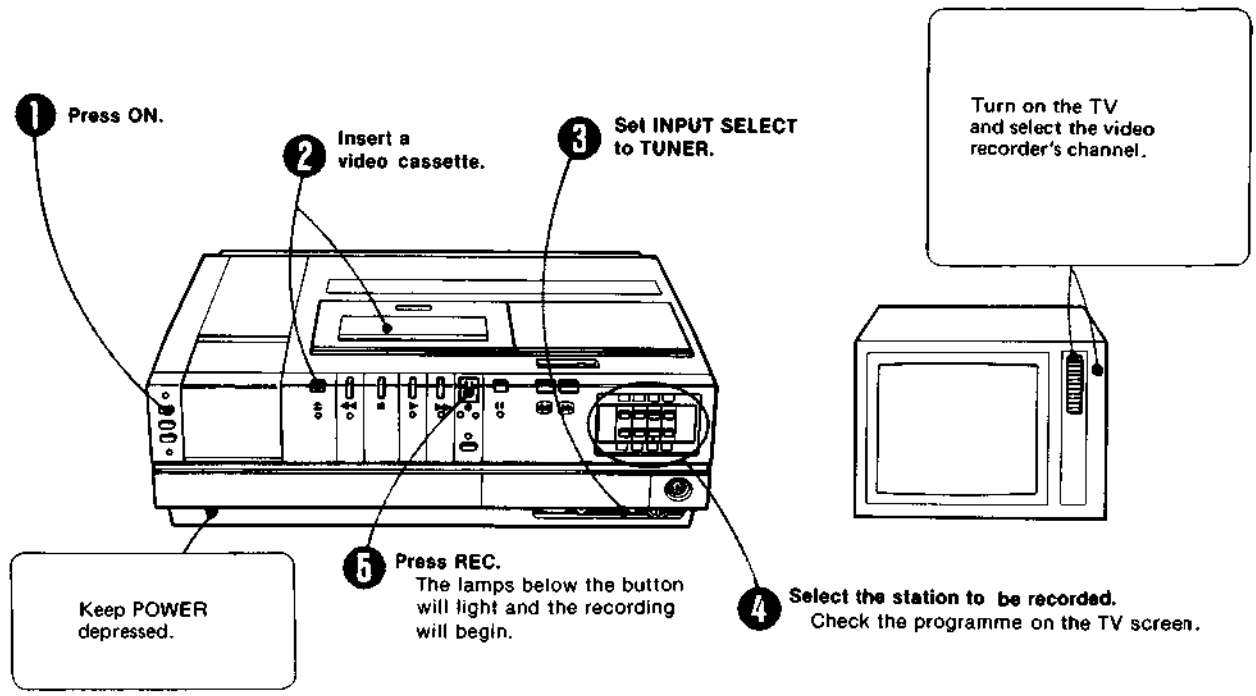
CAUTION: Make sure that the power is turned on before attempting to remove a cassette.

1. Press the EJECT button.
   There will be a delay of a few seconds while the tape is moved away from the recorder's head, after which the cassette compartment will open.
2. Remove the cassette.
3. Press the lid down.

1-3-5. Recording TV Programmes

RECORDING PROCEDURE

- First check the points indicated in green, then follow the blue-numbered sequence.

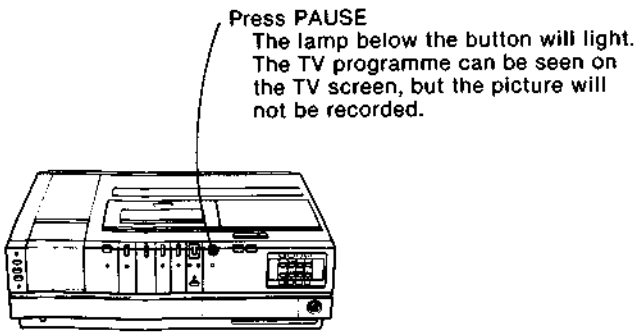


To stop recording, press the STOP button.

- We recommend to rewind the tape to the beginning when the recordidng is finished, using the REW button.

TO STOP THE TAPE MOMENTARILY

Press the PAUSE button to cut out any portion of a broadcast you do not want to record, such as a commercial.



To resume recording, press this button again.

- At the point where the PAUSE button was pressed during recording, some slight instability may occur in the playback picture, but the picture transition will be much smoother than if the STOP button were used.

Automatic release

To protect the video head and the tape, the pause mode will be automatically released after about 8 minutes and recording will begin again.

RECORDING ONE TV PROGRAMME WHILE VIEWING ANOTHER

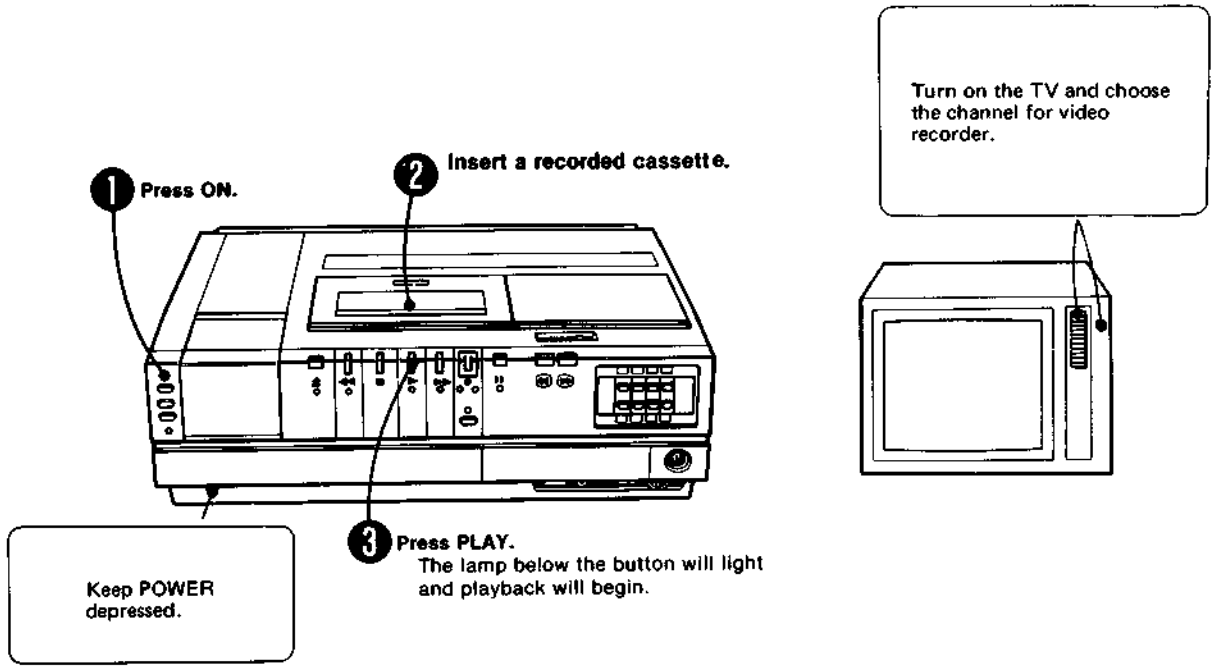
You can enjoy one TV programme while recording another TV programme as follows:

❶ Start recording the desired TV programme in the usual way.

❷ Select the channel you want to view with the TV's programme selector.

PLAYBACK PROCEDURE

- First check the points indicated in green, then follow the blue-numbered sequence.



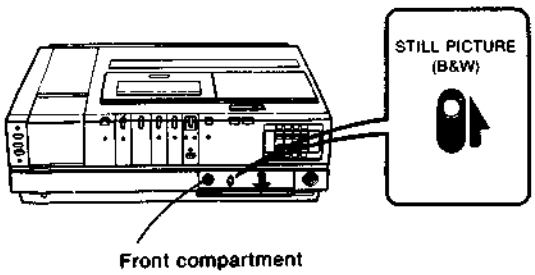
To stop playback, press the STOP button.

- If the tape is at the end, it cannot be played back. In this case, press the REW button to rewind the tape.

TO GET A STILL PICTURE

You can obtain a black and white still picture during playback as follows:

❶ Open the front compartment and set the STILL PICTURE (B&W) switch to ON.



❷ Press the PLAY button to start playback.
❸ At the desired point, press the PAUSE button.
A still picture will be displayed on the TV screen.
- In the still picture, the noise band may appear, but this is normal.

❹ To resume playback, press the PAUSE button again.

To stop the tape momentarily without a still picture display

❶ Set the STILL PICTURE (B&W) switch located in the front compartment to OFF.
❷ Press the PAUSE button during playback to stop the tape.
No picture will be shown on the TV screen during the pause mode.

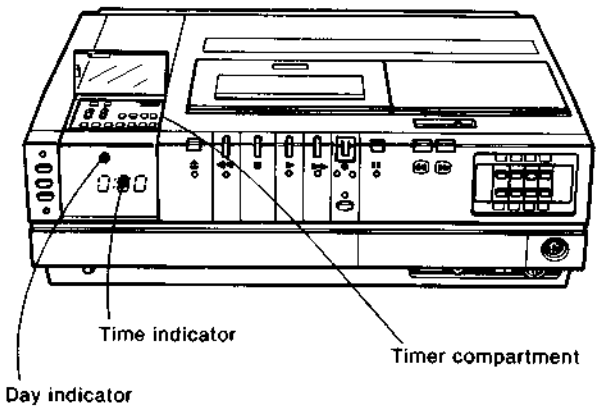
Automatic release

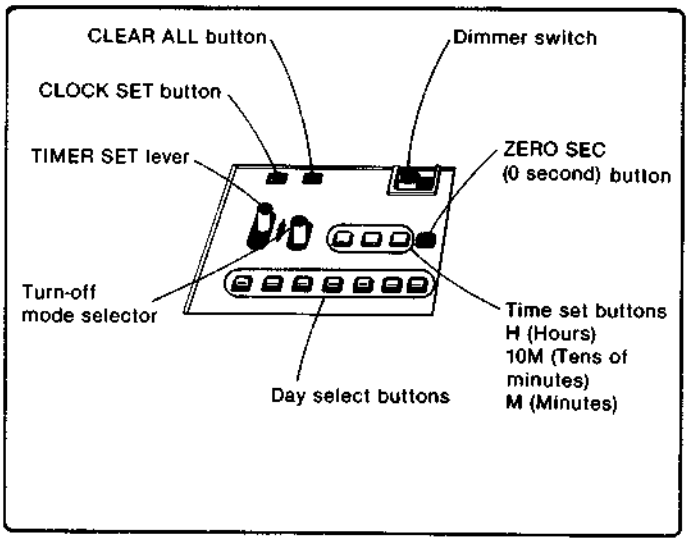
To protect the video head and the tape, the pause mode will be automatically released after about 8 minutes and playback will begin again.

1-3-7. Timer Activated Operation

Using the built-in timer, you can record a TV programme without being in attendance.
This timer is only for recording.

IDENTIFICATION OF THE TIMER SECTION'S PART





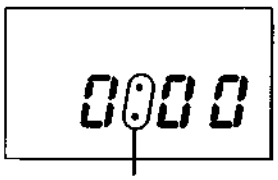
SETTING THE CLOCK

When you depress the POWER switch to ON, the dots on the time indicator start blinking. This means the clock must be set. The clock time can be adjusted as follows:

- If the time indicator does not show 0:00 or if the dots do not blink when the power is turned on, press the CLEAR ALL button, then proceed as follows.

❶ Open the timer compartment lid.

❷ Press the CLOCK SET button and hold it down until step ❸



Dots stop blinking.

❸ Press one of the day select buttons to set the day of the week.

The corresponding day indicator lamp will light.

The day select buttons are numbered 1 to 7. You can designate any day of the week as Day 1. If Sunday, say, is chosen as Day 1 and you are setting the time on Tuesday, press button 3.

Lights up.

❹ Press the H button to advance the hour digits on the clock to the correct time.

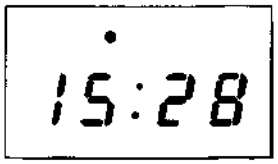
The button can be pressed in two ways.

— If the button is held down, the digits will advance continuously until the button is released.

— If the button is pressed and immediately released, the digits will advance by one.

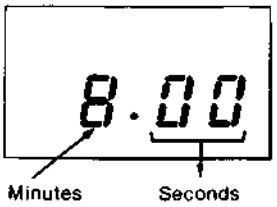
❺ Press the 10M and M buttons to advance the minute's tens and units digits to the correct time, in the same way as the hours digits were set.

The hours or the tens of minutes digits will not advance even when tens of the minutes or units digits return to 0. The H, 10M and M buttons operate independently.

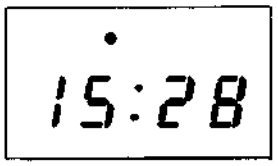


❻ When the standard time signal (received by radio, telephone, etc.) of the time you have set is given, depress the ZERO SEC button.

The built-in clock will start operating from the 0 second of the displayed time.



❼ Now release the CLOCK SET button.



When the dots between the hours and minutes blink

The dots between the hours and minutes will blink to indicate that the power has been interrupted or that the CLEAR ALL button has been depressed. If this happens, the clock time and timer settings should be reset.

CLEAR ALL button

This button cancels all the timer and clock settings.

Press this button when the time indicator display is irregular. The clock will be reset to 0:00 and will not advance and the memory of the timer setting will be erased.

TIMER RECORDING

You can set a turn-on time and a turn-off time of the recording with the built-in timer. It is possible to set a turn-on time without setting a turn-off time if you want the recorder to turn-off at the end of the tape. You cannot, however, set only a turn-off time. The timer can be set to operate either any day (or days) of the week or every day.

Turn-on/off time setting

When a new setting is made, the previous timer setting will be automatically cancelled.

❶ Open the timer compartment lid.
❷ While holding the TIMER SET lever in the TURN ON position (away from you), set the turn-on time and days as follows.
— Set the desired turn-on time using the H, 10M, and M buttons in the same way you set the clock time.
— Select the day(s) to make a recording by using the day select button(s).

When the TIMER SET lever is set to TURN ON, all day indicators light. To select a day, depress the day select button(s) corresponding to the day(s) you **do not want** to make a recording. The corresponding lamp(s) will go out.

- The timer will function on the days whose indicators light.
- To select a day whose day select button you have depressed mistakenly, depress the button again and the lamp will light up.

❸ While holding the TIMER SET lever in the TURN OFF position (toward you), set the turn-off time with the H, 10M and M buttons.

There is no need to select the turn-off time day. The recorder will be turned off within 24 hours of the turn-on time at the turn-off time set.

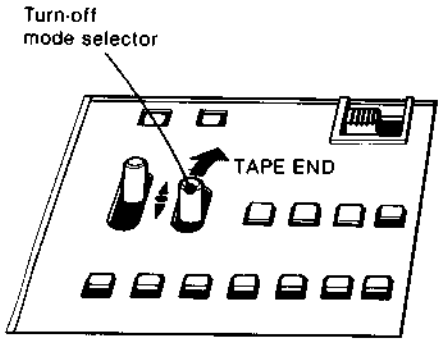
❹ Set the turn-off mode selector to TURN OFF.

In this way, the turn-on and turn-off times are set. Now you must prepare the recorder for timer operation following the "Timer recording procedure".

To record to the end of the tape

You can set the recorder so that timer recording will continue to the end of the tape and so that the recorder will automatically turn off at that time.

To do this, set the turn-off mode selector to the TAPE END position.

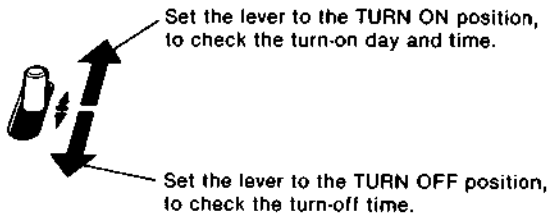


CAUTION: When the turn-off mode selector is set to TAPE END, the recording will continue to the tape end even if the turn-off time is set at an earlier time than the tape end. For example, suppose that you are using a Sony L-500 cassette which allows 2 hours 10 min. of recording and that recording starts at 10:00. In this case, recording will stop at 12:10 with the switch set to TAPE END, even if the turn-off time is set, say, at 11:00.

Be sure to reset this selector to the TURN OFF position (toward you) in order to stop timer recording at a particular time.

To check the timer setting

Move the TIMER SET lever up or down to check the timer setting shown on the time indicator.



Timer recording procedure

❶ Set the turn-on day and time and the turn-off time as described in "Turn-on/off time setting".
❷ Press the TIMER button.

The green ON lamp lights up.

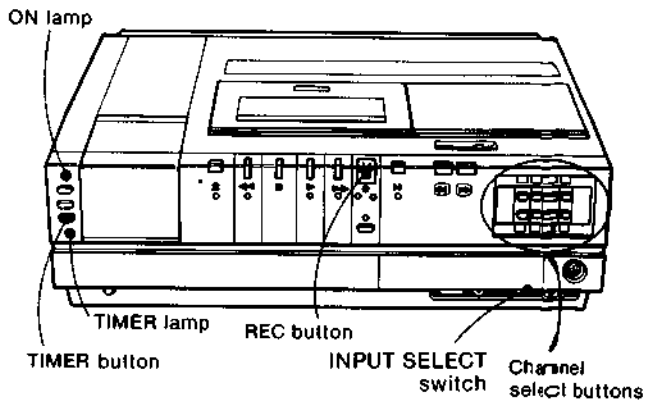
❸ Set the INPUT SELECT switch to TUNER.
❹ Select the desired channel to be recorded with the recorder's channel select buttons.

We recommend checking the selected channel on the TV screen. After checking the channel, be sure to turn the TV off.

❺ Insert a video cassette into the compartment.
❻ Press the REC button.

The green ON lamp goes off and the red TIMER lamp lights, indicating that the power to the recorder is turned off and the timer section is now standing by.

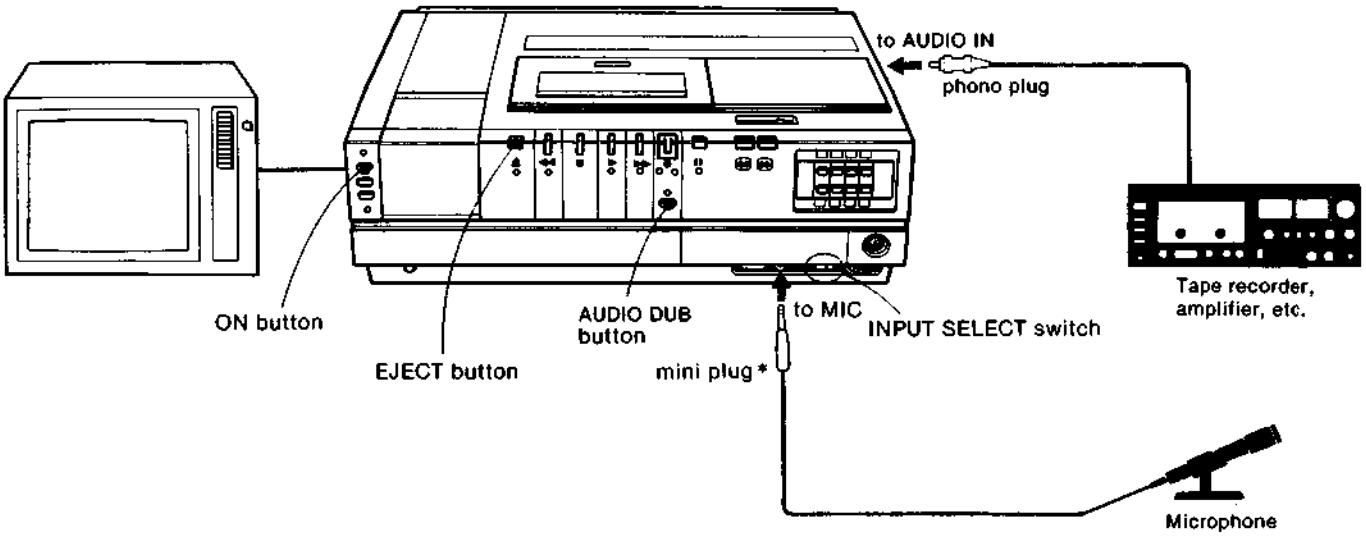
At the preset turn-on time on the preset day, recording will start automattically and will continue to the preset turn-off time or to the tape end, then the recorder will be turned off.



1-3-8. Dubbing Audio

You can record only sound such as music, commentary, etc., on a previously recorded tape. A new recording automatically erases the previous recording.

To dub audio from the beginning of the tape



*If the microphone has a phone type plug, use a Sony PC-1A plug adaptor to make the connection.

❶ Connect the sound source, such as a microphone, tape recorder, etc., to the MIC jack at the front or the AUDIO IN jack at the rear.
If both a microphone and another audio source are connected, only the microphone sound will be recorded.
❷ Set the INPUT SELECT switch to LINE.
❸ Turn on the TV and select the channel for the video recorder.
❹ Depress the ON button to turn on the recorder.
❺ Press the EJECT button and insert a recorded cassette.
❻ Press the AUDIO DUB button.
The recorder will enter the audio dubbing mode.
❼ Start playing the sound to be added.
To stop dubbing, press the STOP button.

NOTE: You cannot record only sound on a blank tape which has no previously recorded video signals.

If a whistle-like sound occurs during microphone recording
Move the microphone away from the TV or turn the TV volume down.

To record a sound in the middle of the tape
Locate in the playback mode to the point on the tape where the sound is to be added, then press the PAUSE button to stop the tape momentarily.
Press the AUDIO DUB button, then the PAUSE button again to release the pause mode. The recorder will now enter the audio dubbing mode.

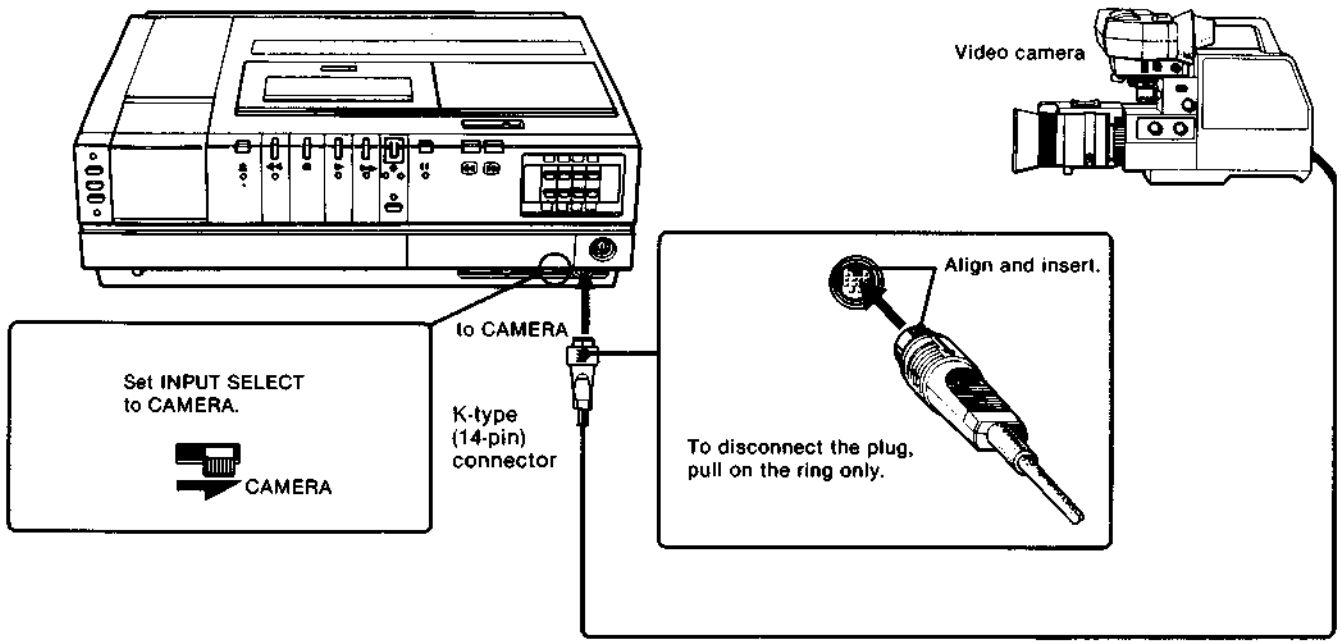
1-3-9. Camera Recording

Using a video camera, you can produce your own programmes.

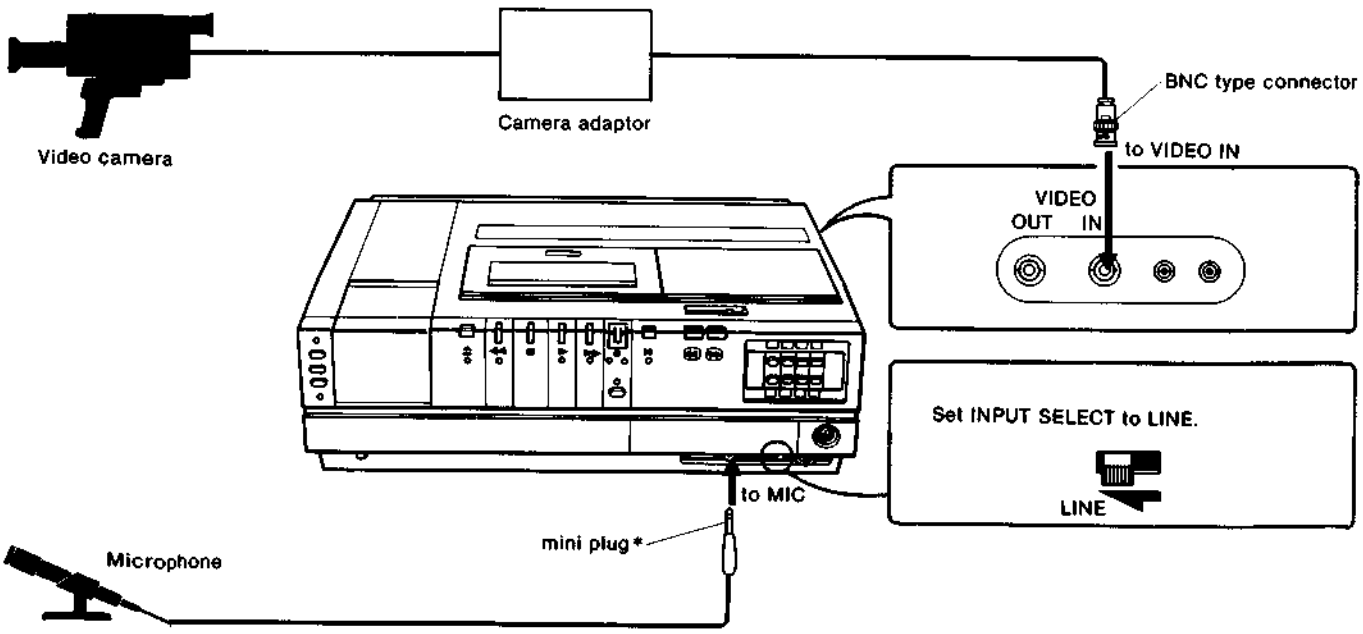
CONNECTIONS

- The camera to be connected must conform to CCIR TV standard (PAL colour system).

When using a Sony video camera equipped with a K-type (14-pin) connector



When using a camera equipped with a BNC type video output connector



*If the microphone has a phone type plug, use a Sony PC-1A plug adaptor to make the connection.

OPERATION

❶ Depress the ON button and insert a video cassette into the compartment.

❷ Check the INPUT SELECT switch setting.

When the camera is connected to the 14-pin CAMERA connector ..... to CAMERA

When the camera is connected to the VIDEO IN connector at the rear ..... to LINE

❸ Make the necessary adjustments on the camera.

For details on the camera operation, see the instruction manual furnished with the camera.

❹ Press the REC button on the recorder.

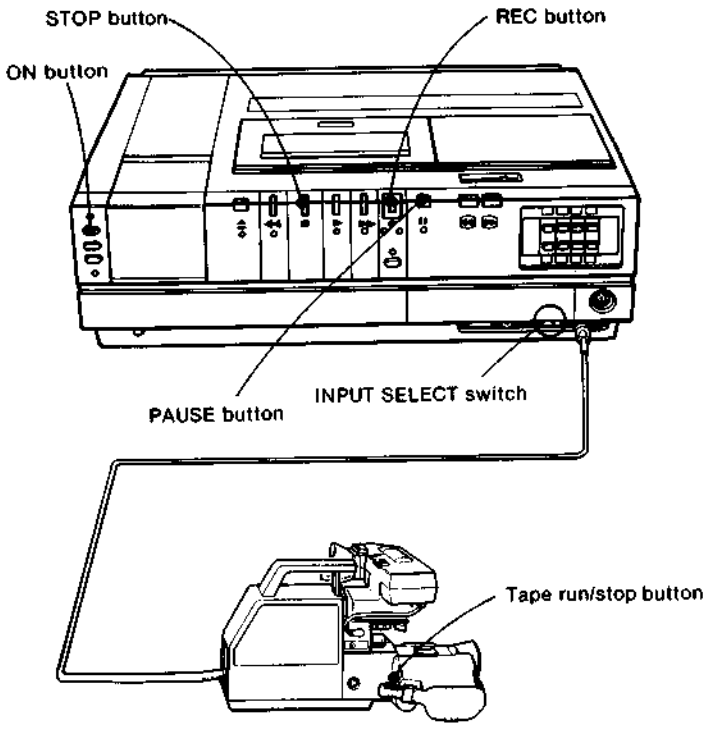
When using a Sony video camera equipped with K-type connector, the recorder will enter the recording pause mode.

To start recording, press the tape run/stop button on the camera.

The tape run/stop button can start and stop the recording.

When using a video camera equipped with BNC connector, the recording will begin immediately.

In this situation, use the PAUSE button on the recorder to stop and start recording.



When all recordings have been finished, press the STOP button.

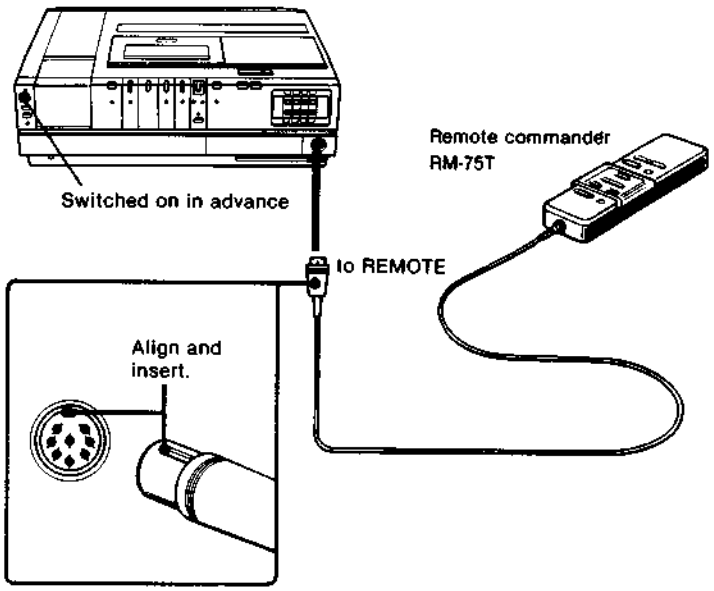
When a TV is connected to the recorder

You can monitor the picture from the camera on the TV screen. Turn on the TV and select the channel for the video recorder.

● If a whistle-like sound occurs while you are monitoring the picture on the TV, point the microphone (or the camera if the microphone is built into the camera) away from the TV or turn down the TV volume.

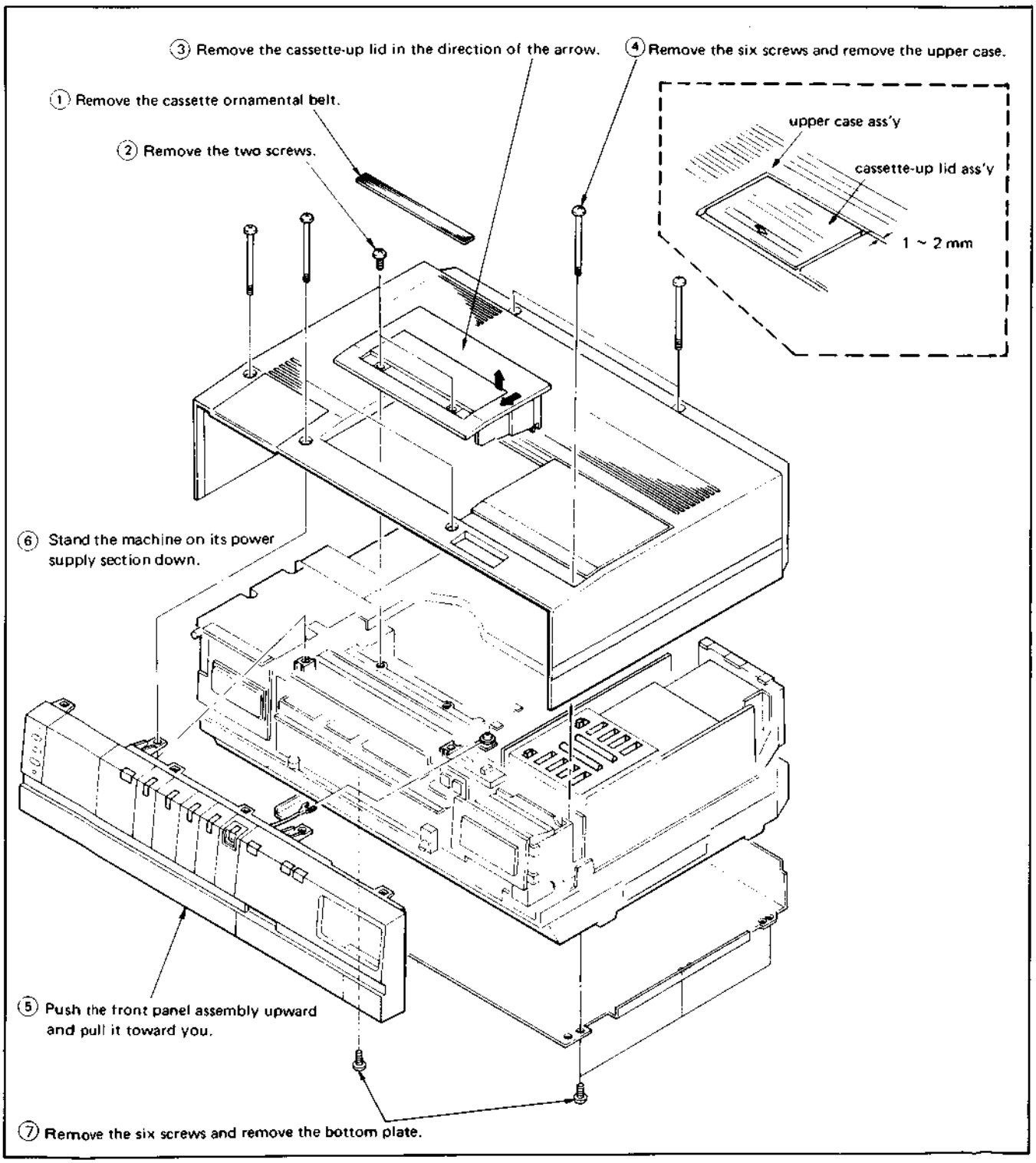
1-3-10. Remote Control Operation

With the optional RM-75T remote commander, you can control the tape transport from a distance (the RM-75T's cable is 6 m long). The function of the function buttons on the remote commander is in most cases the same as that of the corresponding button on the recorder.

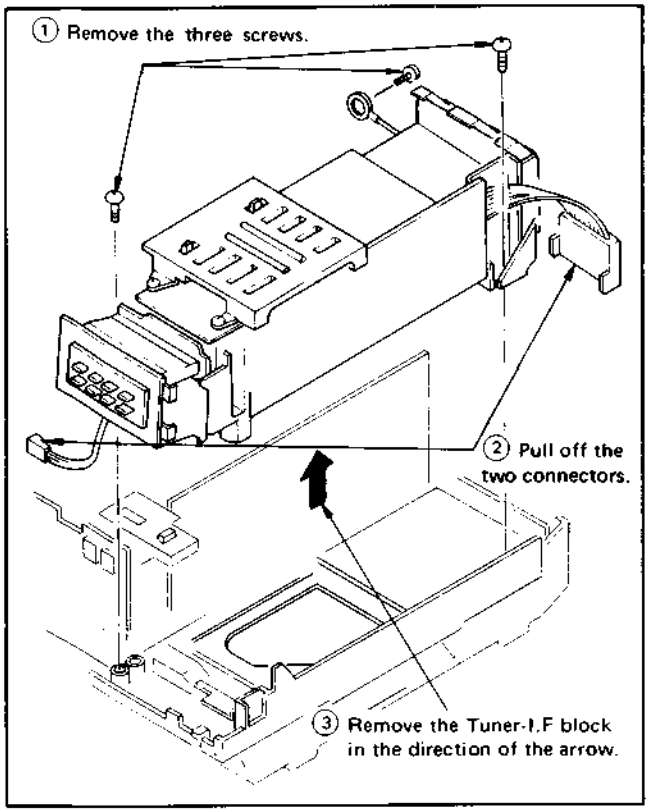


1-4. DISASSEMBLY

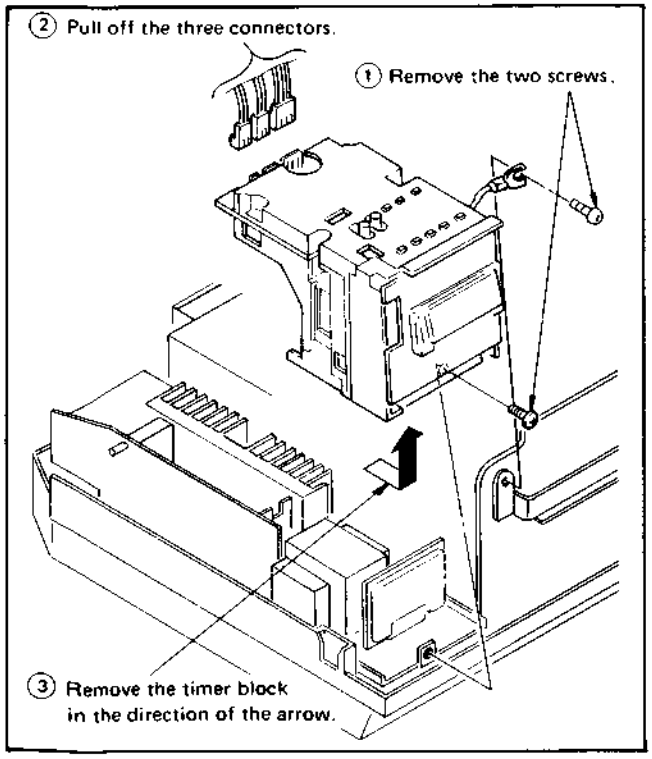
1-4-1. Cabinet Removal



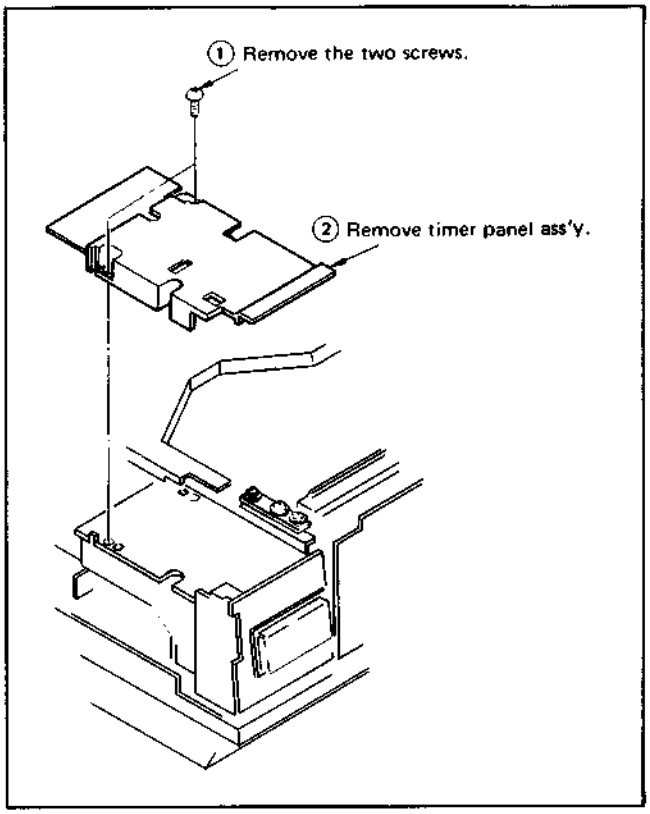
1-4-2. Tuner-I.F Block Removal



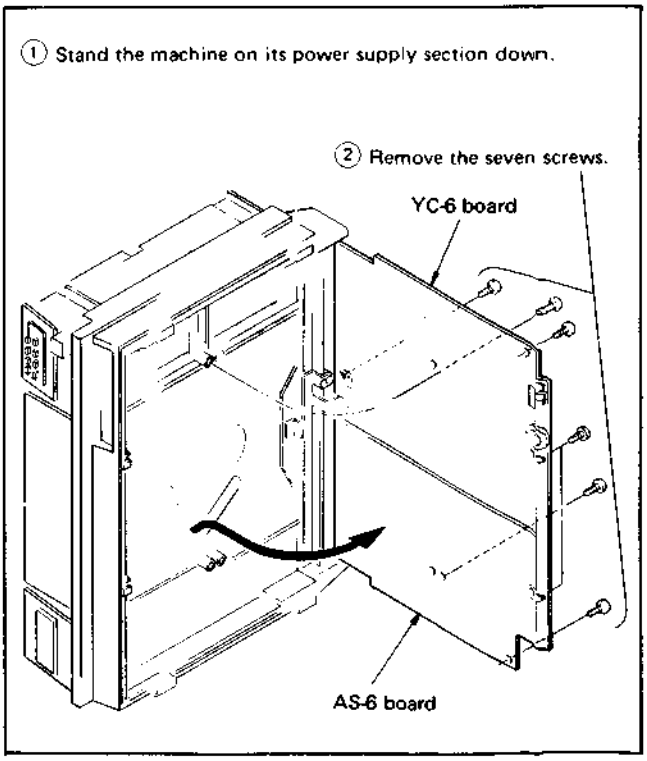
1-4-3. Timer Block Removal



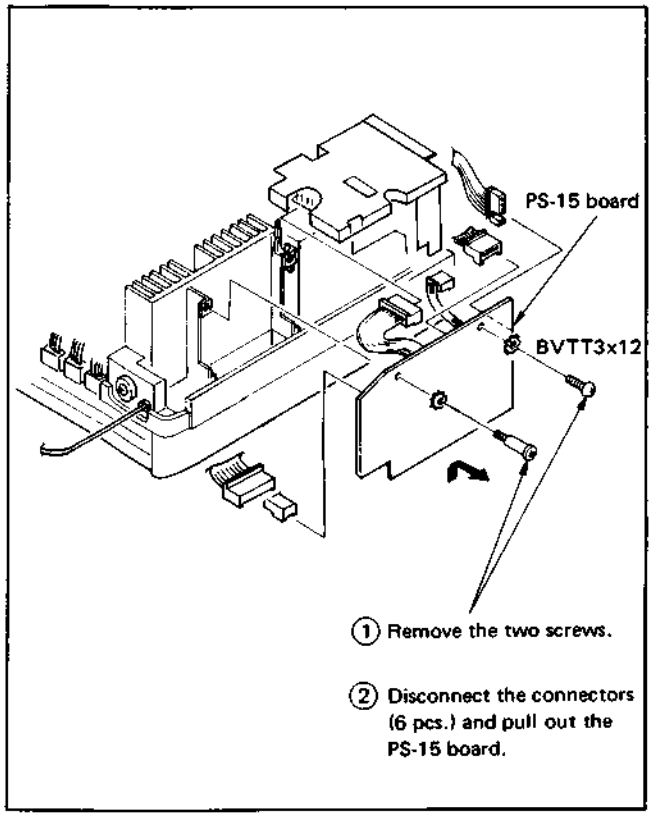
1-4-4. Timer Panel Removal



1-4-5. Checks of YC-6 and AS-6 Boards

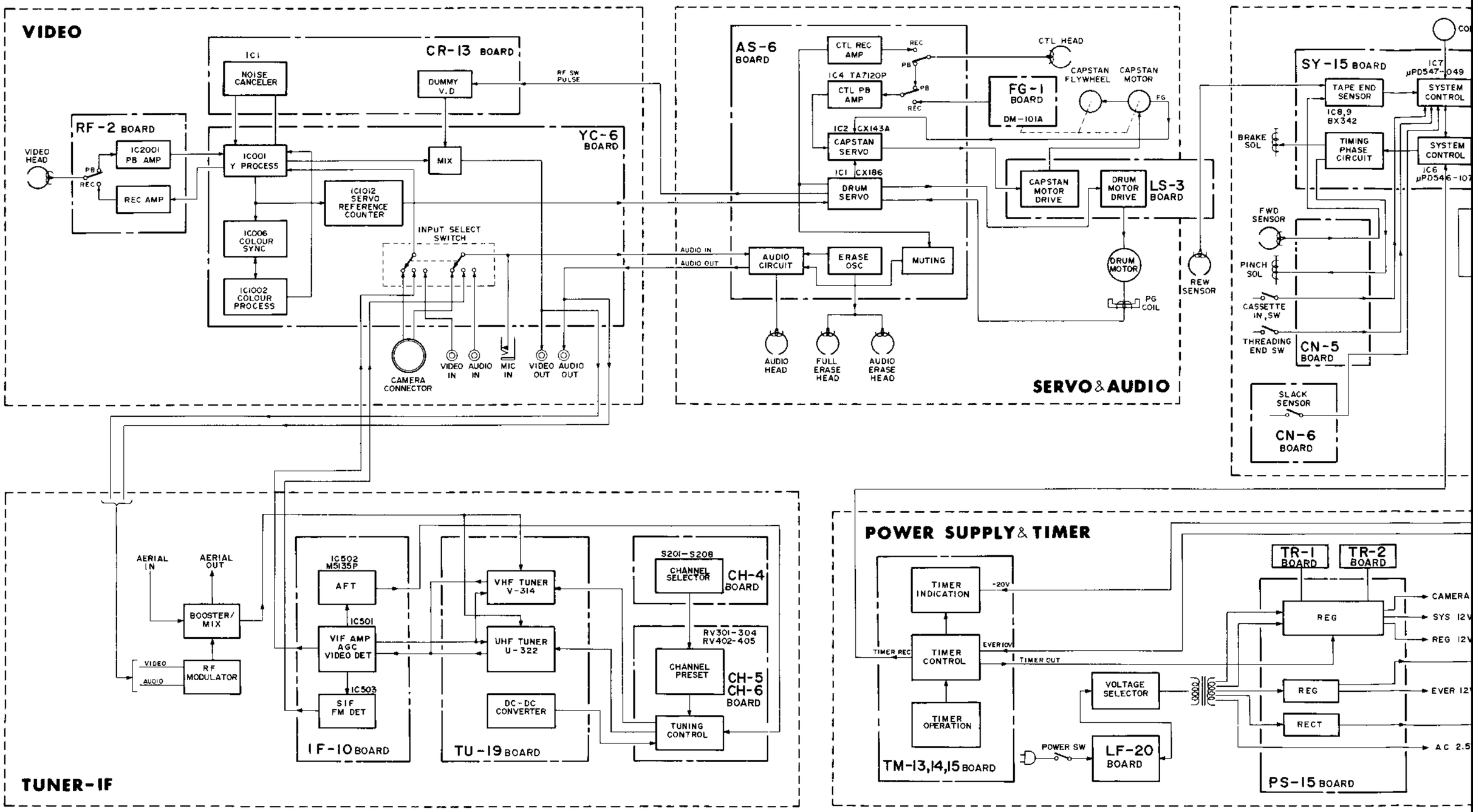


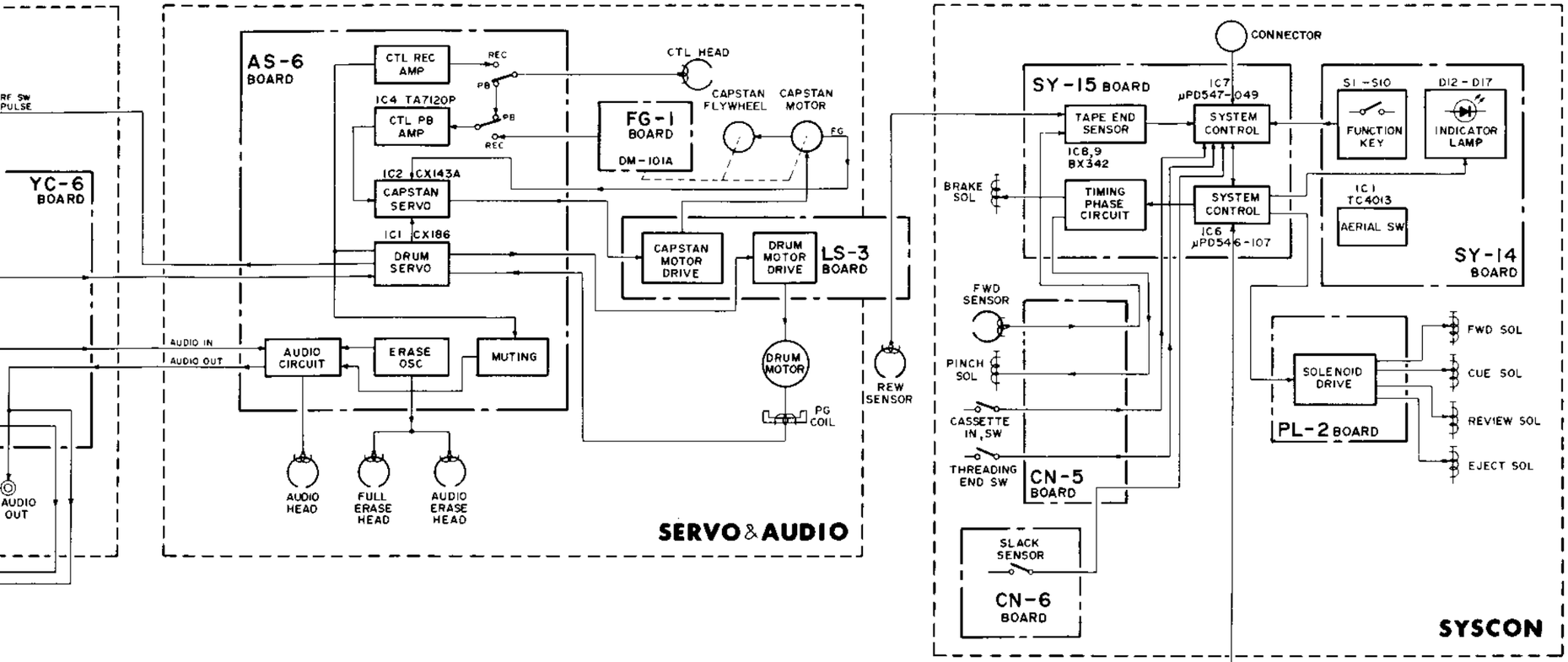
1-4-6. Check of PS-15 Board

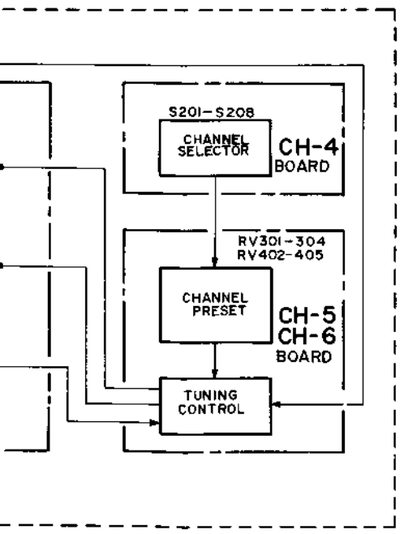


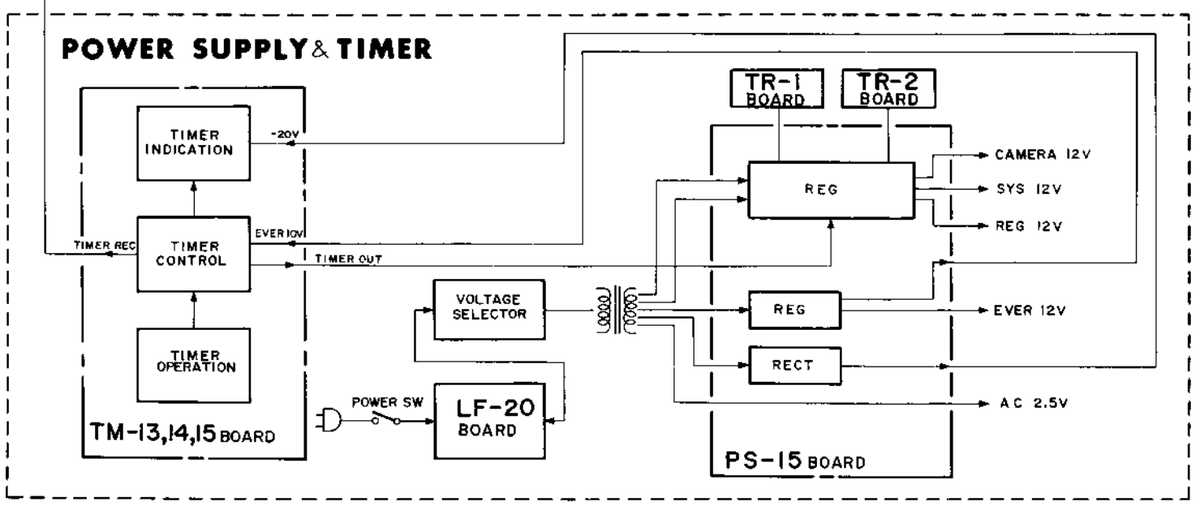
SECTION 2
BLOCK DIAGRAM

OVERALL BLOCK DIAGRAM

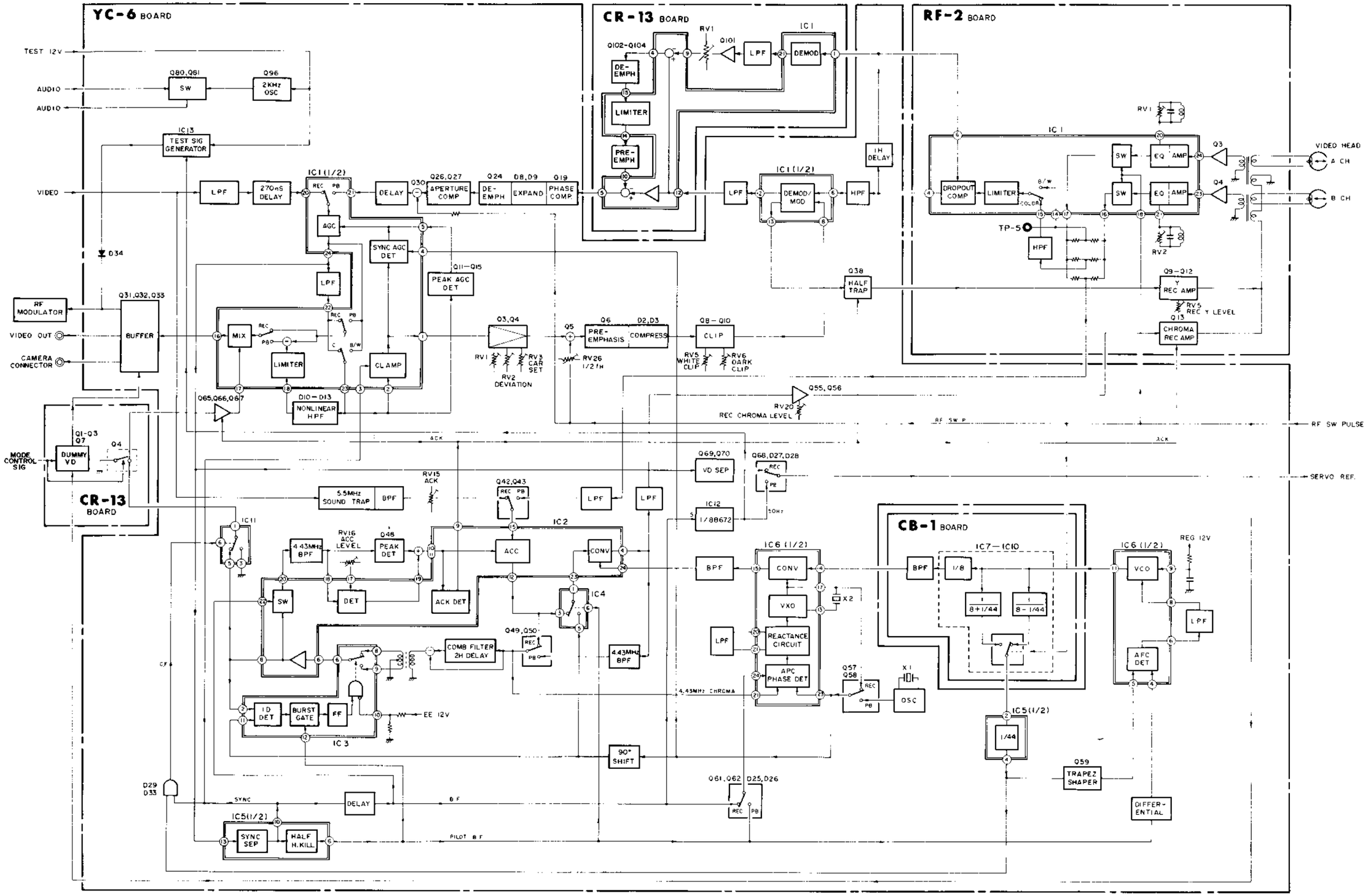



RF SW PULSE
YC-6 BOARD
AUDIO OUT
AS-6 BOARD
CTL REC AMP
REC
PB
CTL HEAD
IC4 TA7120P
CTL PB AMP
CAPSTAN FLYWHEEL
CAPSTAN MOTOR
FG-1 BOARD DM-101A
FG
IC2 CX143A
CAPSTAN SERVO
IC1 CX186
DRUM SERVO
CAPSTAN MOTOR DRIVE
DRUM MOTOR DRIVE
LS-3 BOARD
AUDIO IN
AUDIO OUT
AUDIO CIRCUIT
ERASE OSC
MUTING
DRUM MOTOR
PG COIL
REW SENSOR
AUDIO HEAD
FULL ERASE HEAD
AUDIO ERASE HEAD
SERVO & AUDIO
CONNECTOR
SY-15 BOARD
IC7 μPD547-049
TAPE END SENSOR
IC8,9 BX342
SYSTEM CONTROL
S1 - S10
FUNCTION KEY
D12 - D17
INDICATOR LAMP
BRAKE SOL
TIMING PHASE CIRCUIT
SYSTEM CONTROL
IC6 μPD546-107
IC1 TC4013
AERIAL SW
SY-14 BOARD
FWD SENSOR
PINCH SOL
CASSETTE IN SW
THREADING END SW
CN-5 BOARD
SOLENOID DRIVE
PL-2 BOARD
FWD SOL
CUE SOL
REVIEW SOL
EJECT SOL
SLACK SENSOR
CN-6 BOARD
SYSCON

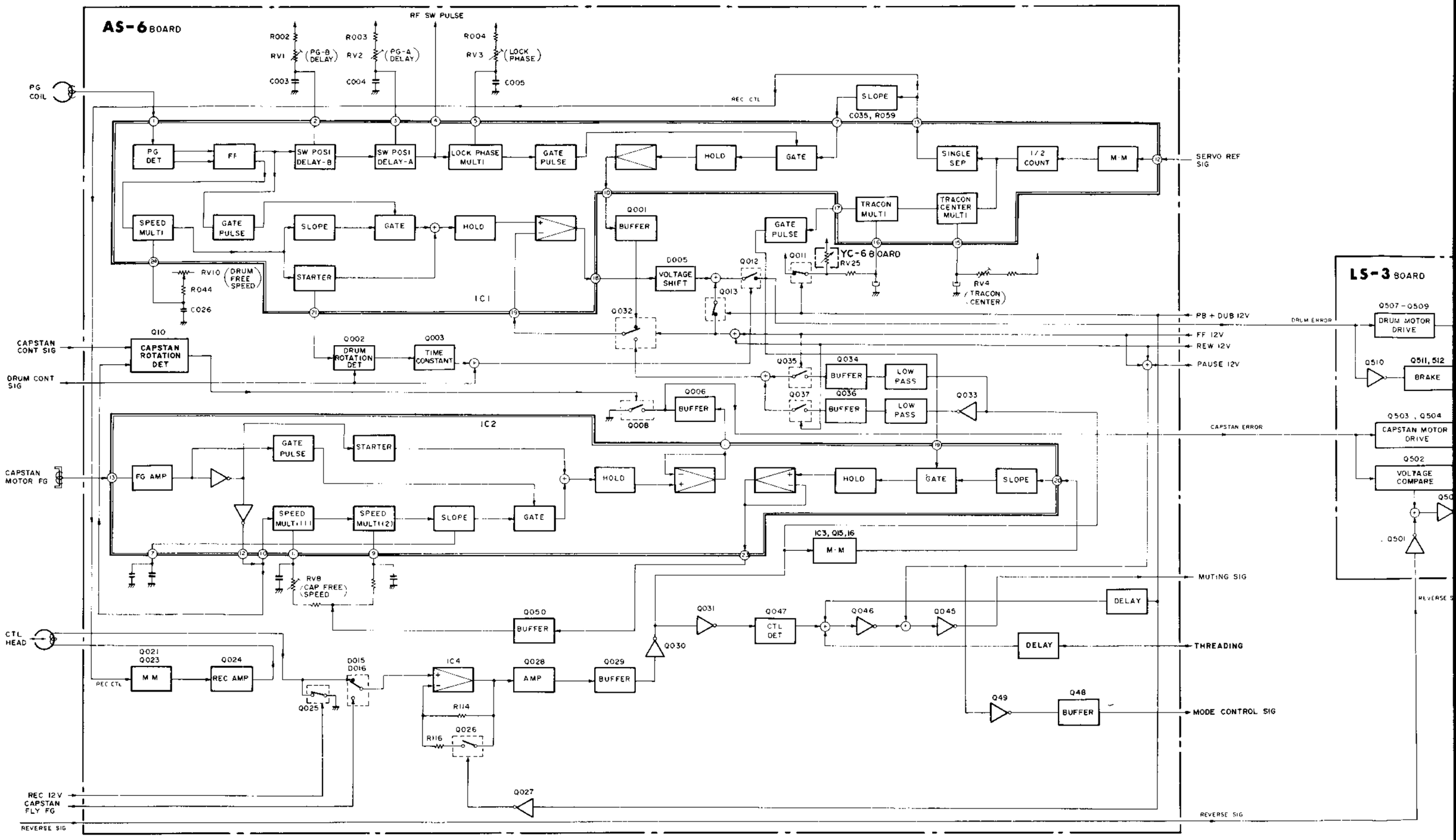

S201 - S208
CHANNEL SELECTOR
CH-4 BOARD
RV301 - 304
RV402 - 405
CHANNEL PRESET
CH-5
CH-6
BOARD
TUNING CONTROL

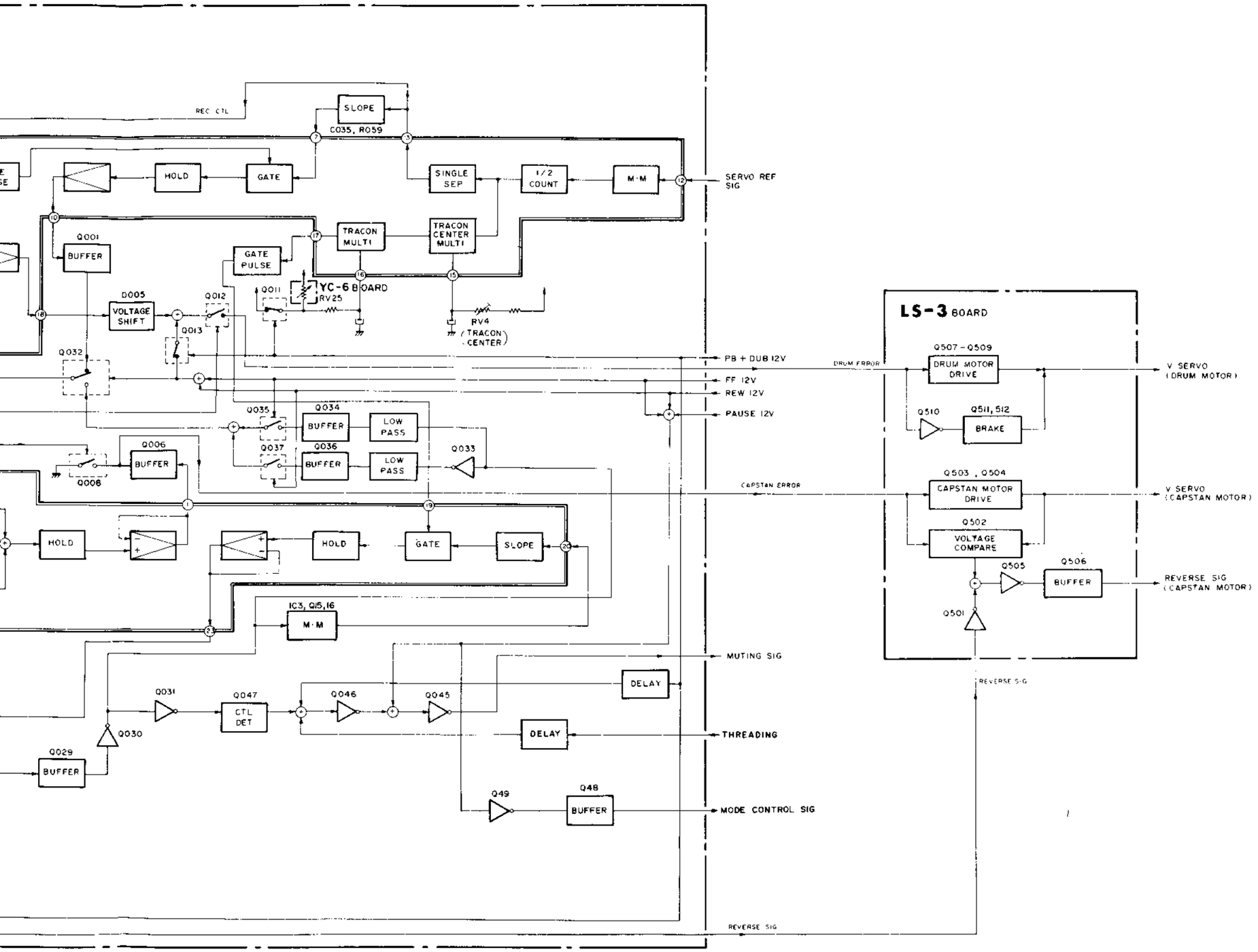

POWER SUPPLY & TIMER
TIMER INDICATION
-20V
TIMER CONTROL
EVER 10V
TIMER REC
TIMER OUT
TIMER OPERATION
TM-13,14,15 BOARD
VOLTAGE SELECTOR
POWER SW
LF-20 BOARD
TR-1 BOARD
TR-2 BOARD
REG
REG
RECT
CAMERA 12V
SYS 12V
REG 12V
EVER 12V
AC 2.5V
PS-15 BOARD

VIDEO SYSTEM BLOCK DIAGRAM

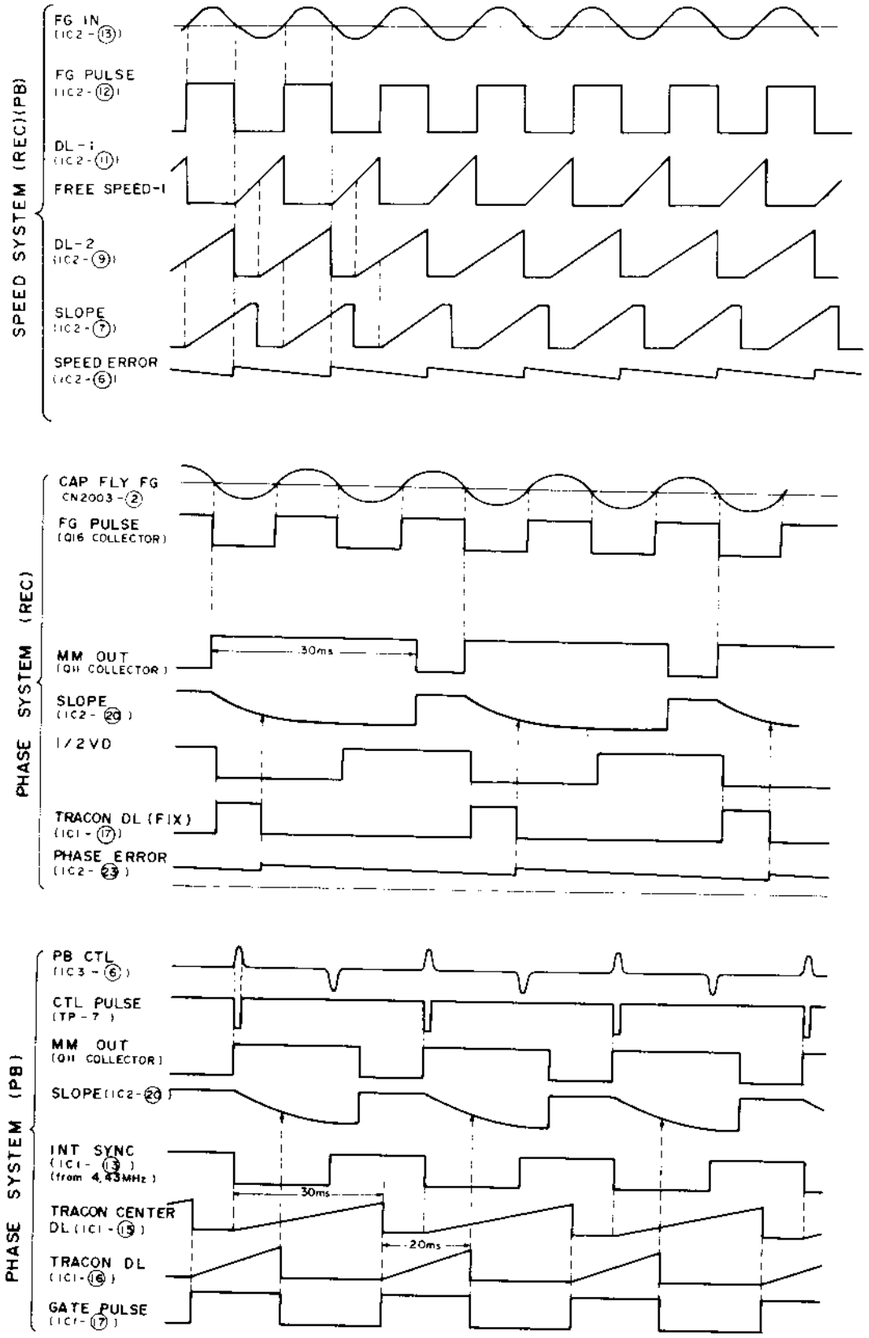


SERVO SYSTEM BLOCK DIAGRAM

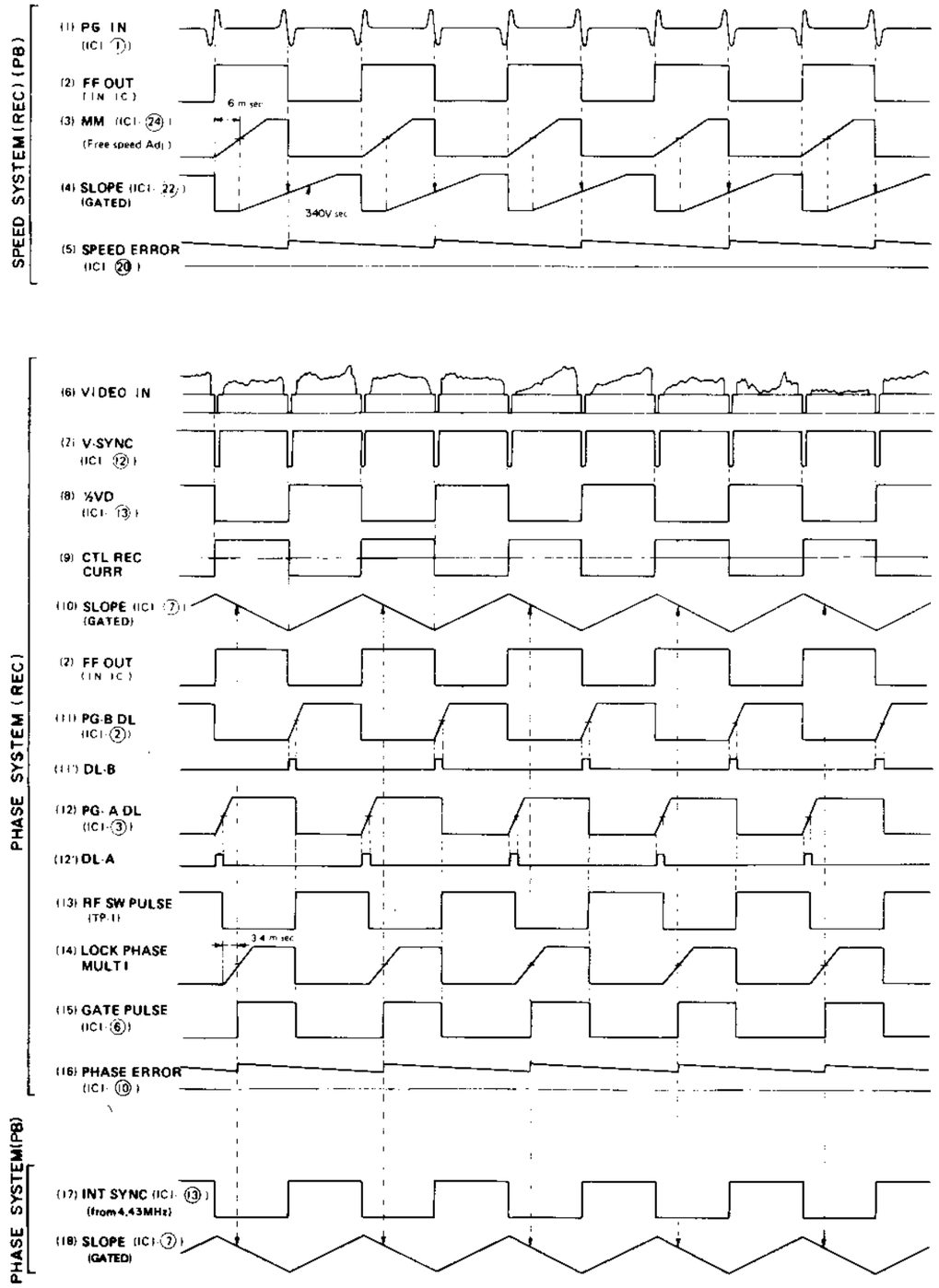



REC CTL
SLOPE
C035, R059
HOLD
GATE
SINGLE SEP
1/2 COUNT
M-M
SERVO REF SIG
Q001
BUFFER
GATE PULSE
TRACON MULTI
TRACON CENTER MULTI
D005
VOLTAGE SHIFT
Q012
Q013
Q011
VC-6 BOARD
RV25
RV4 (TRACON CENTER)
Q032
PB + DUB 12V
FF 12V
REW 12V
PAUSE 12V
Q035
Q034
BUFFER
LOW PASS
Q006
BUFFER
Q006
Q037
Q036
BUFFER
LOW PASS
Q033
HOLD
HOLD
GATE
SLOPE
IC3, Q15, 16
M-M
MUTING SIG
DELAY
Q031
Q047
CTL DET
Q046
Q045
Q030
DELAY
THREADING
Q029
BUFFER
Q49
Q48
BUFFER
MODE CONTROL SIG
REVERSE SIG
LS-3 BOARD
DRUM ERROR
Q507 - Q509
DRUM MOTOR DRIVE
V SERVO (DRUM MOTOR)
Q510
Q511, 512
BRAKE
CAPSTAN ERROR
Q503 , Q504
CAPSTAN MOTOR DRIVE
V SERVO (CAPSTAN MOTOR)
Q502
VOLTAGE COMPARE
Q505
Q506
BUFFER
REVERSE SIG (CAPSTAN MOTOR)
Q501
REVERSE SIG

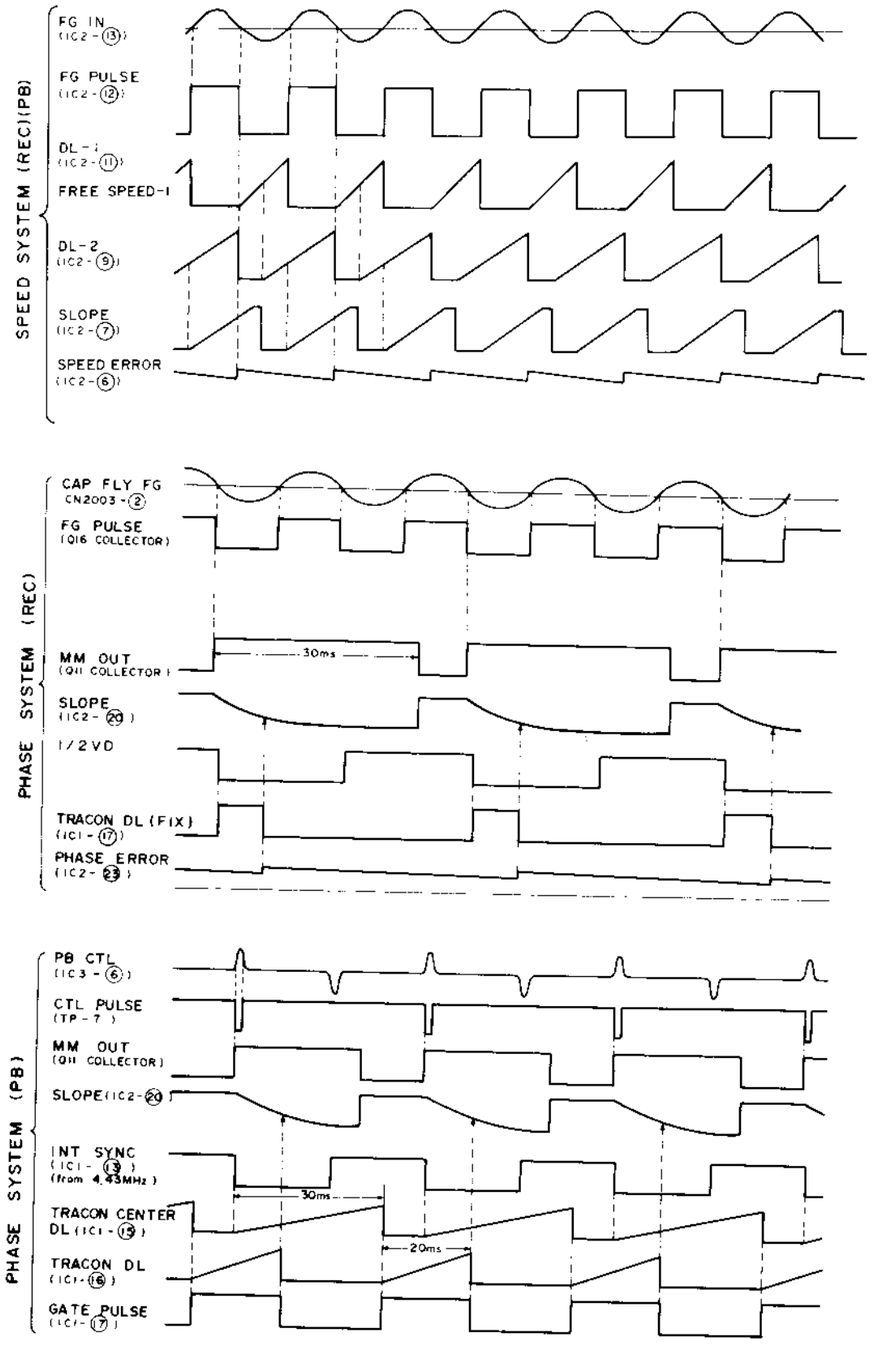
CAPSTAN SERVO TIMING CHART



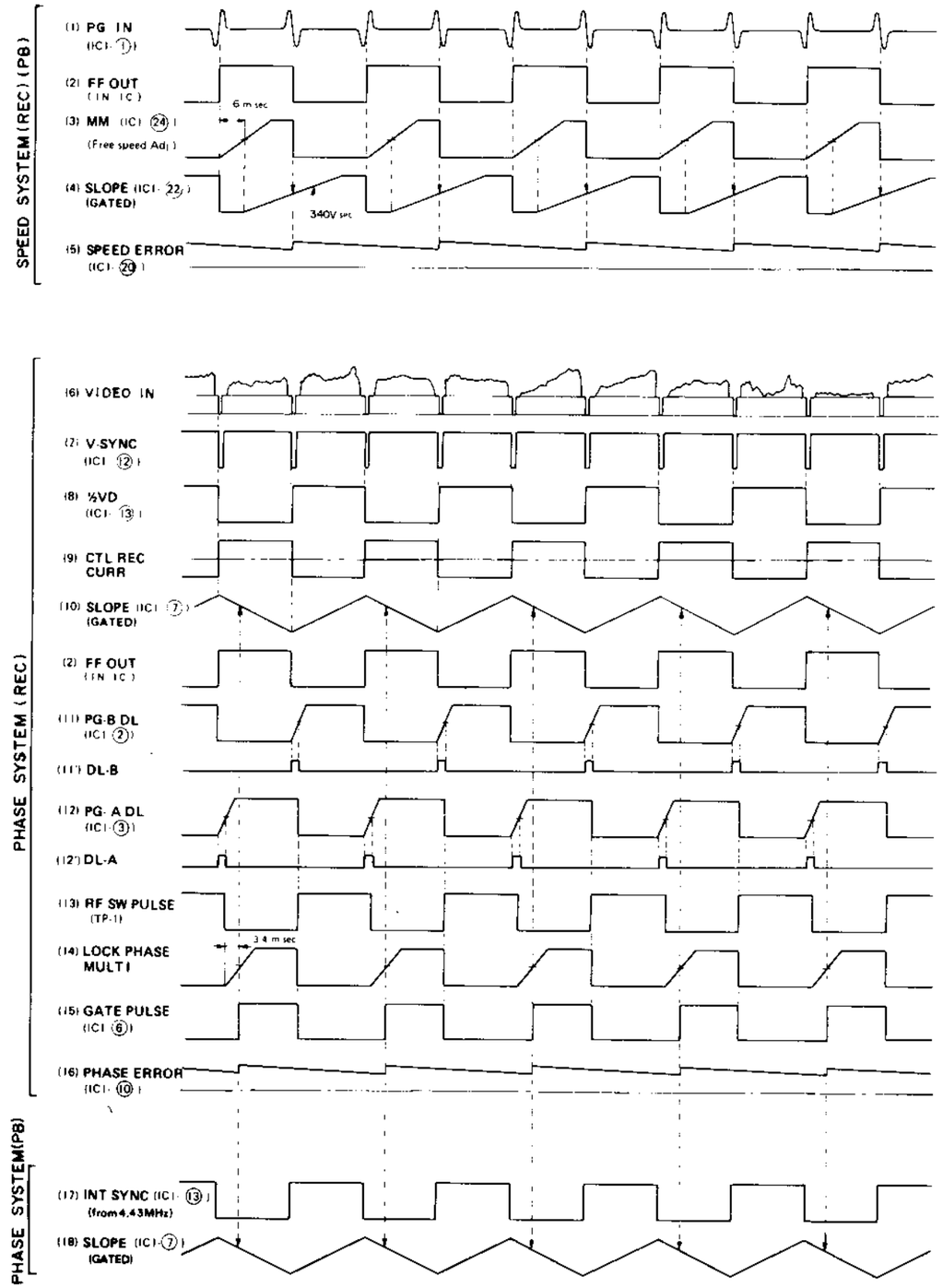
DRUM SERVO TIMING CHART



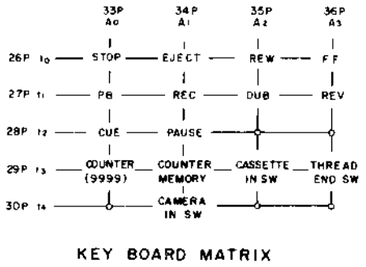
CAPSTAN SERVO TIMING CHART



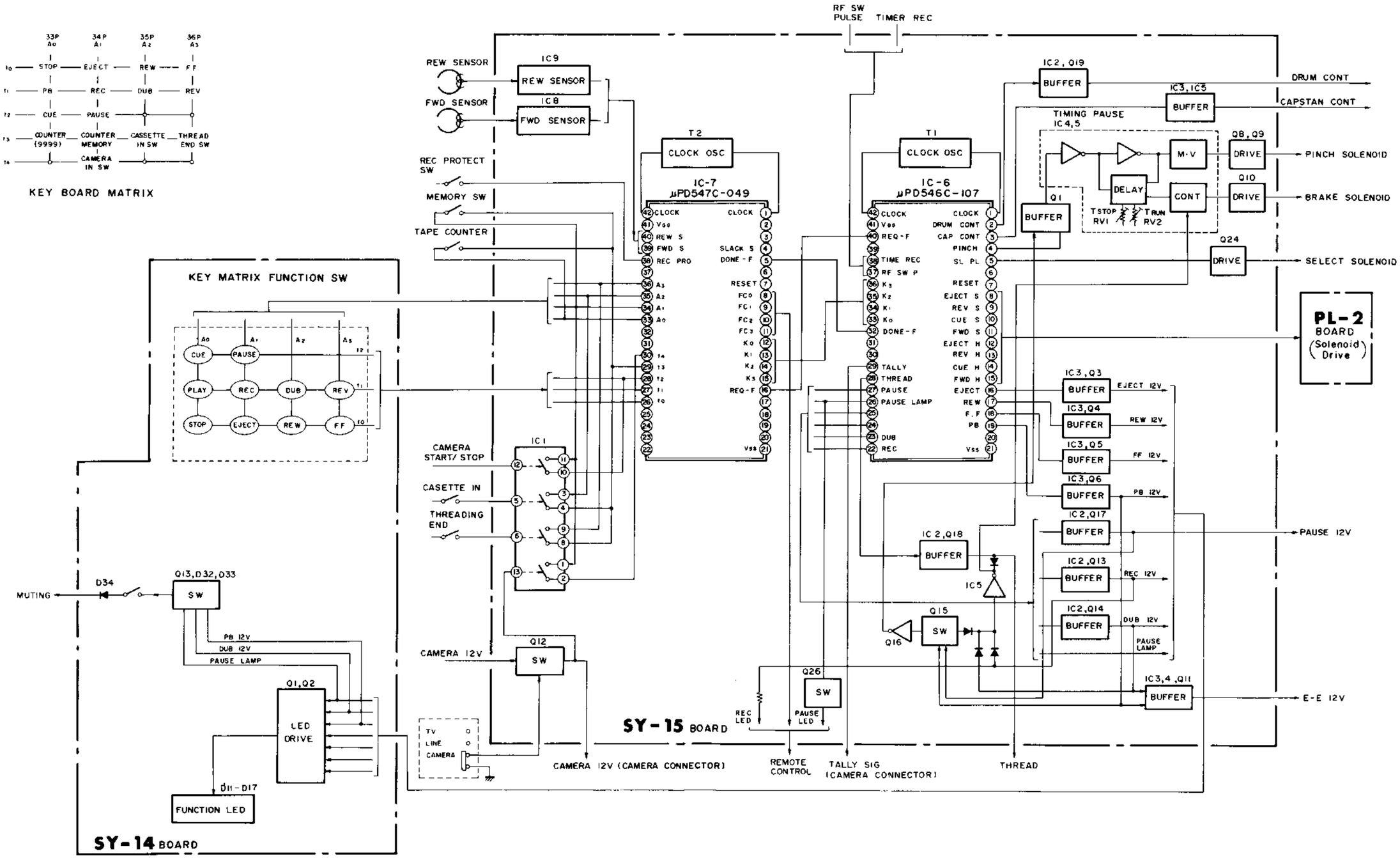
DRUM SERVO TIMING CHART



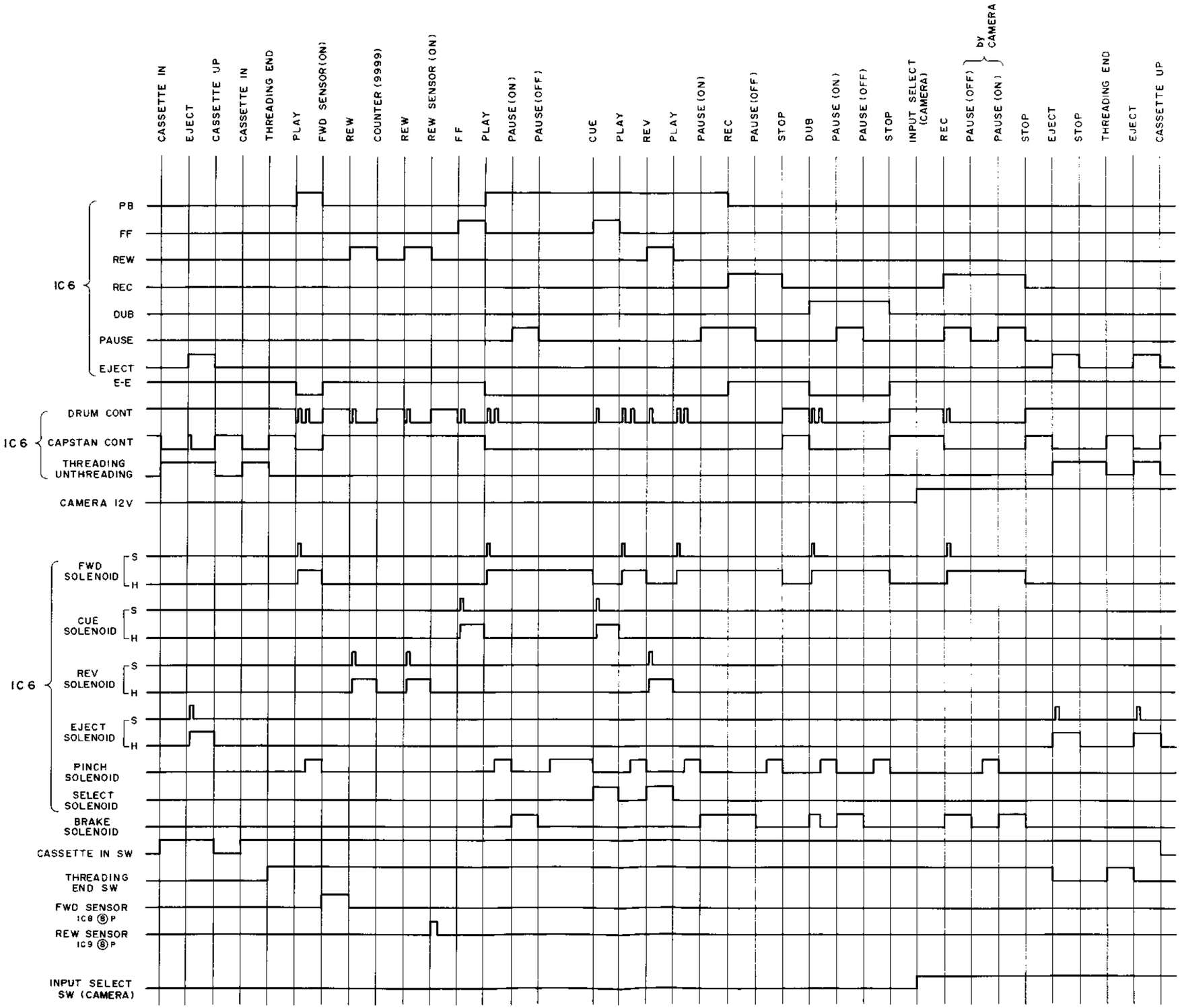
SYSTEM CONTROL BLOCK DIAGRAM



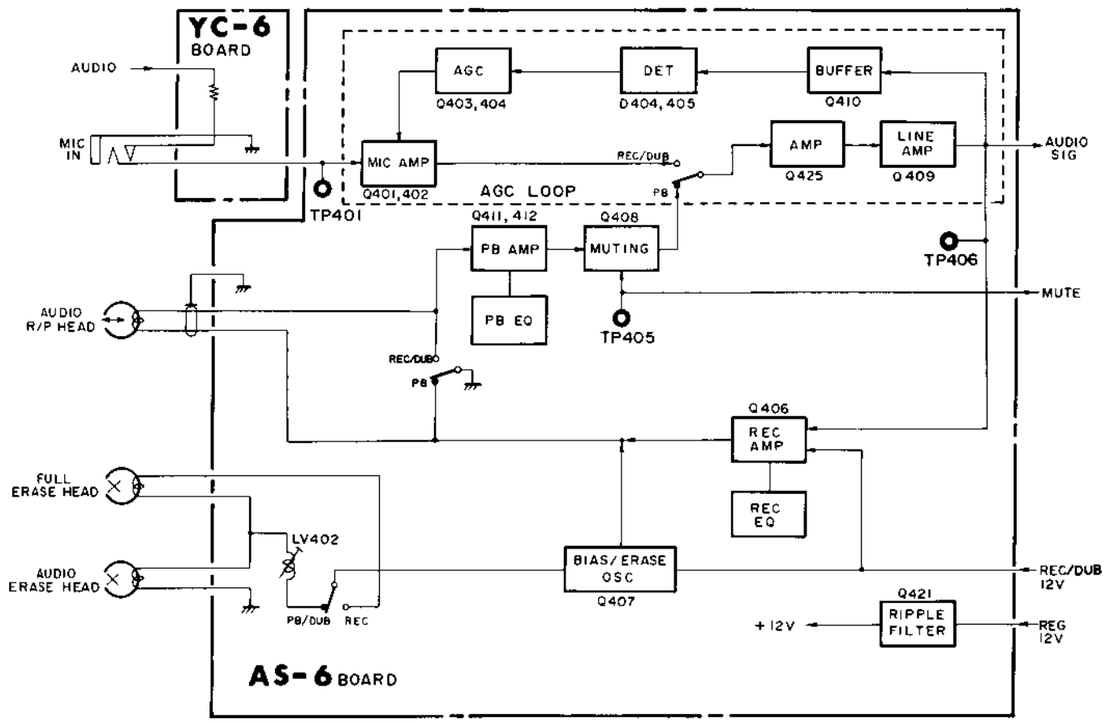
KEY BOARD MATRIX



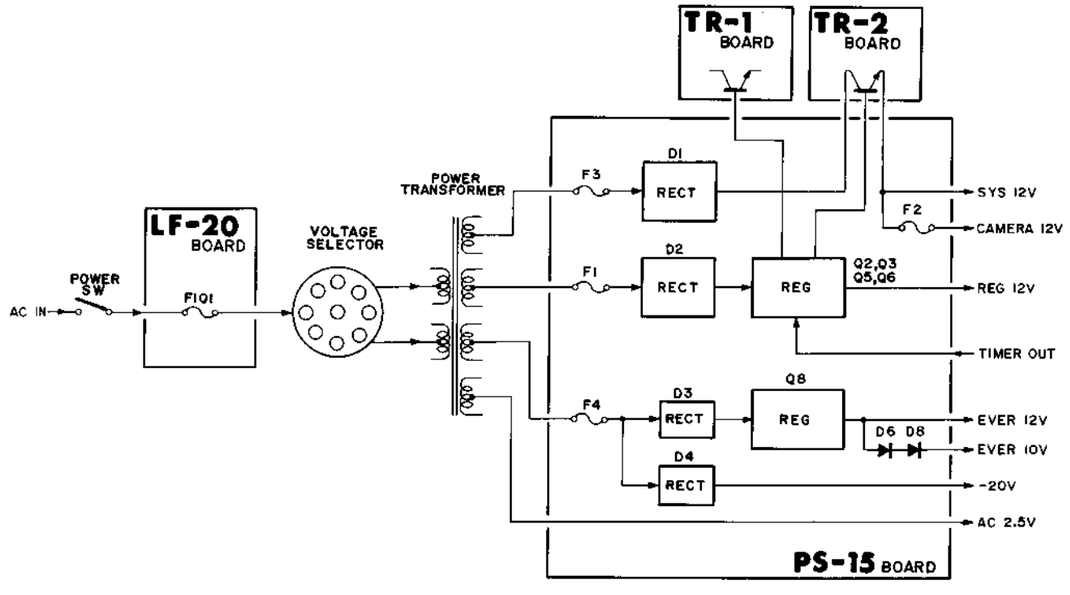
SYSTEM CONTROL TIMING CHART



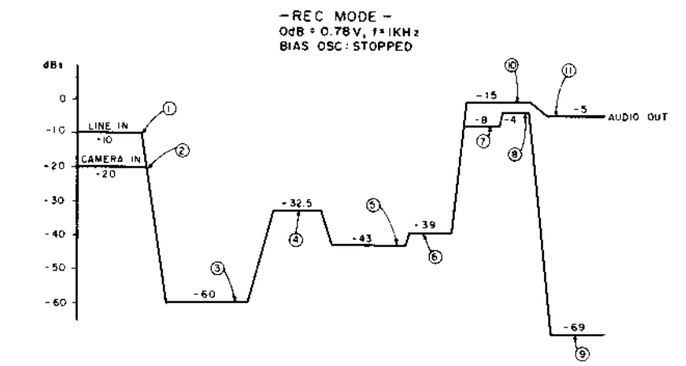
AUDIO BLOCK DIAGRAM

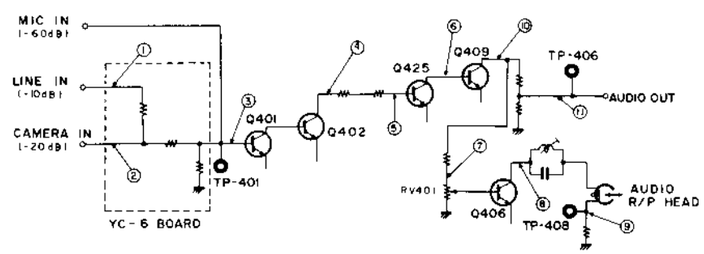


POWER SUPPLY BLOCK DIAGRAM

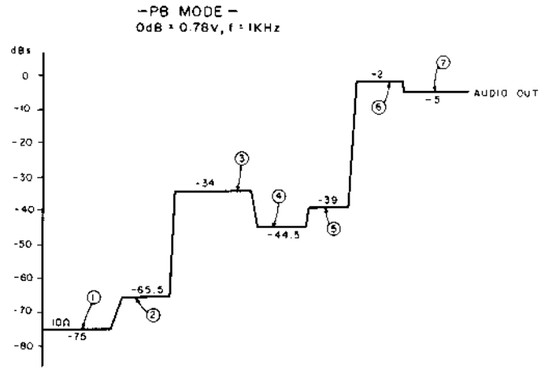


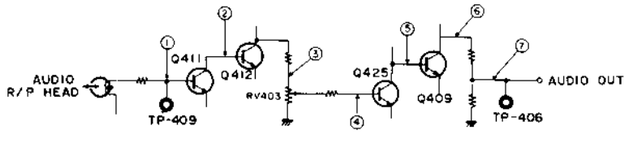
AUDIO LEVEL DIAGRAM
– REC MODE –



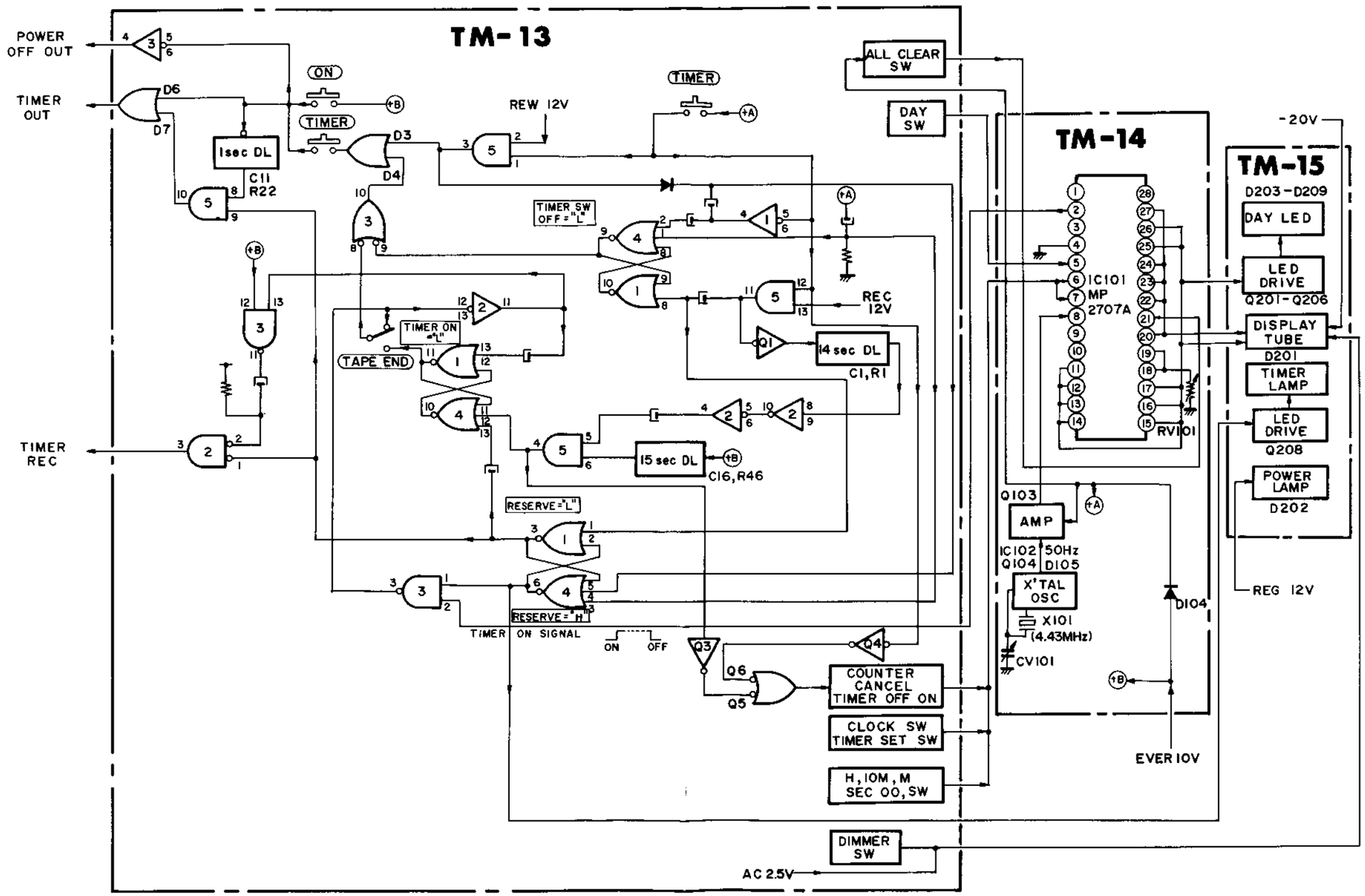


– PB MODE –

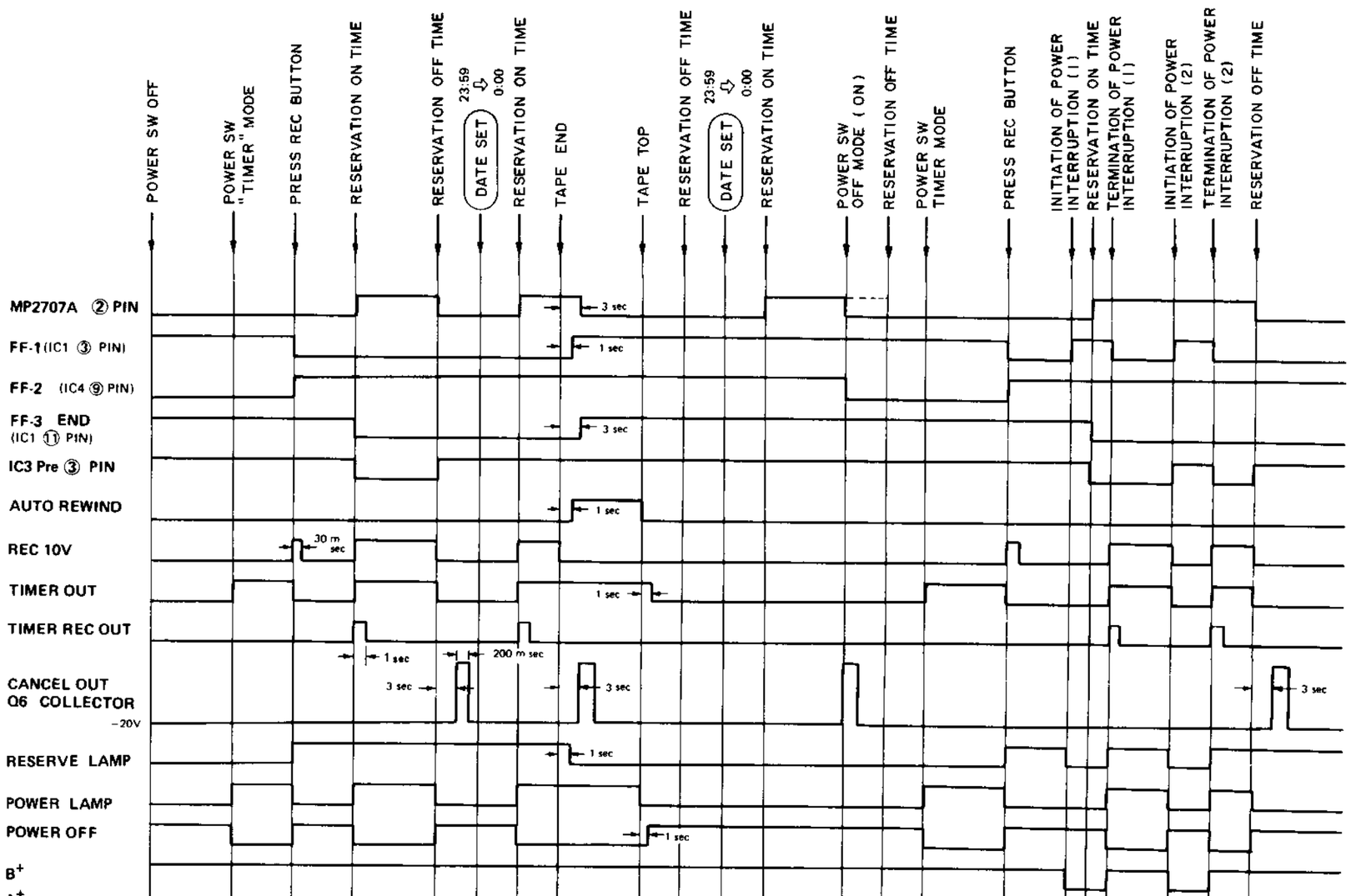




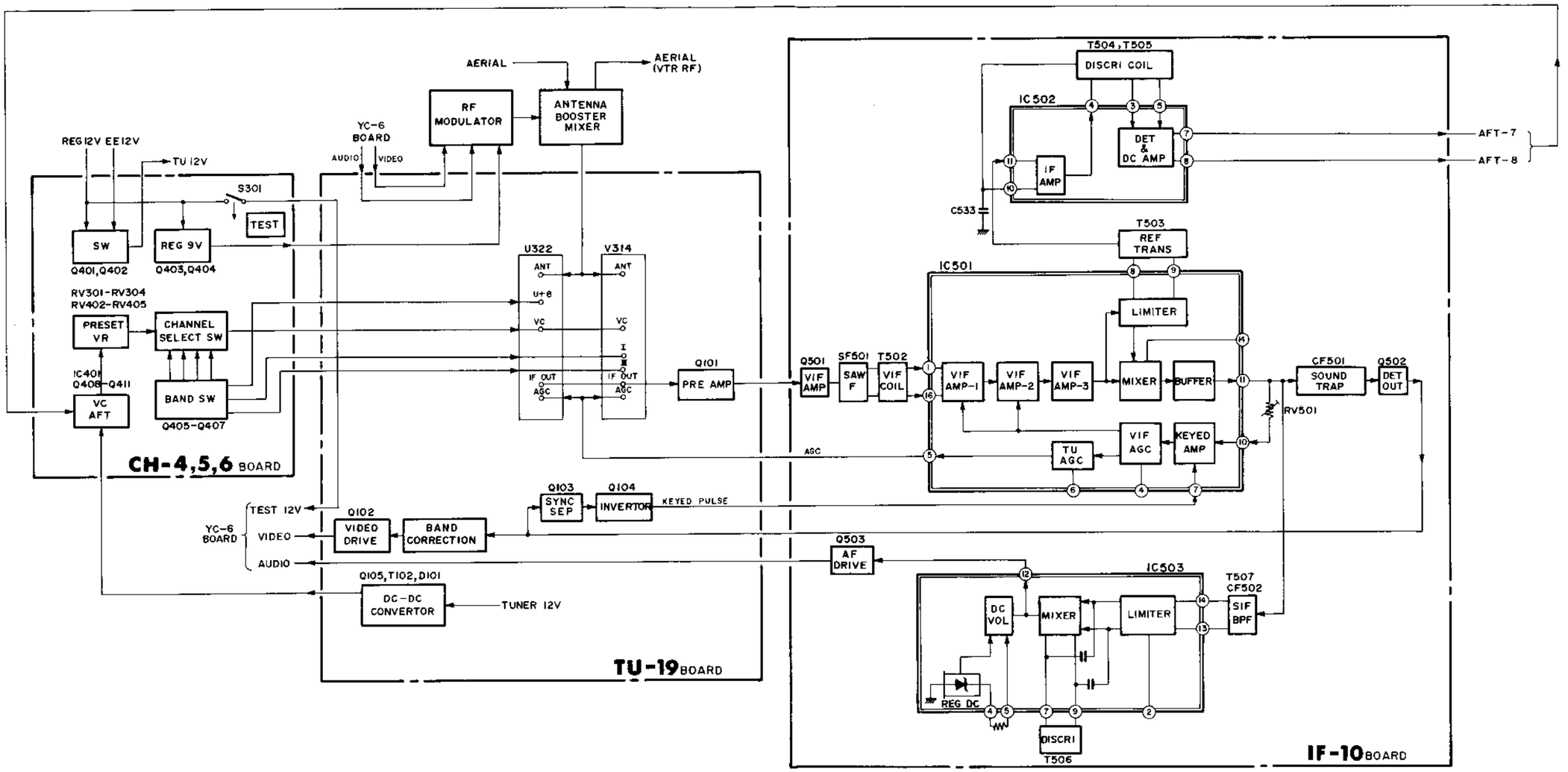
TIMER BLOCK DIAGRAM



TIMER TIMING CHART



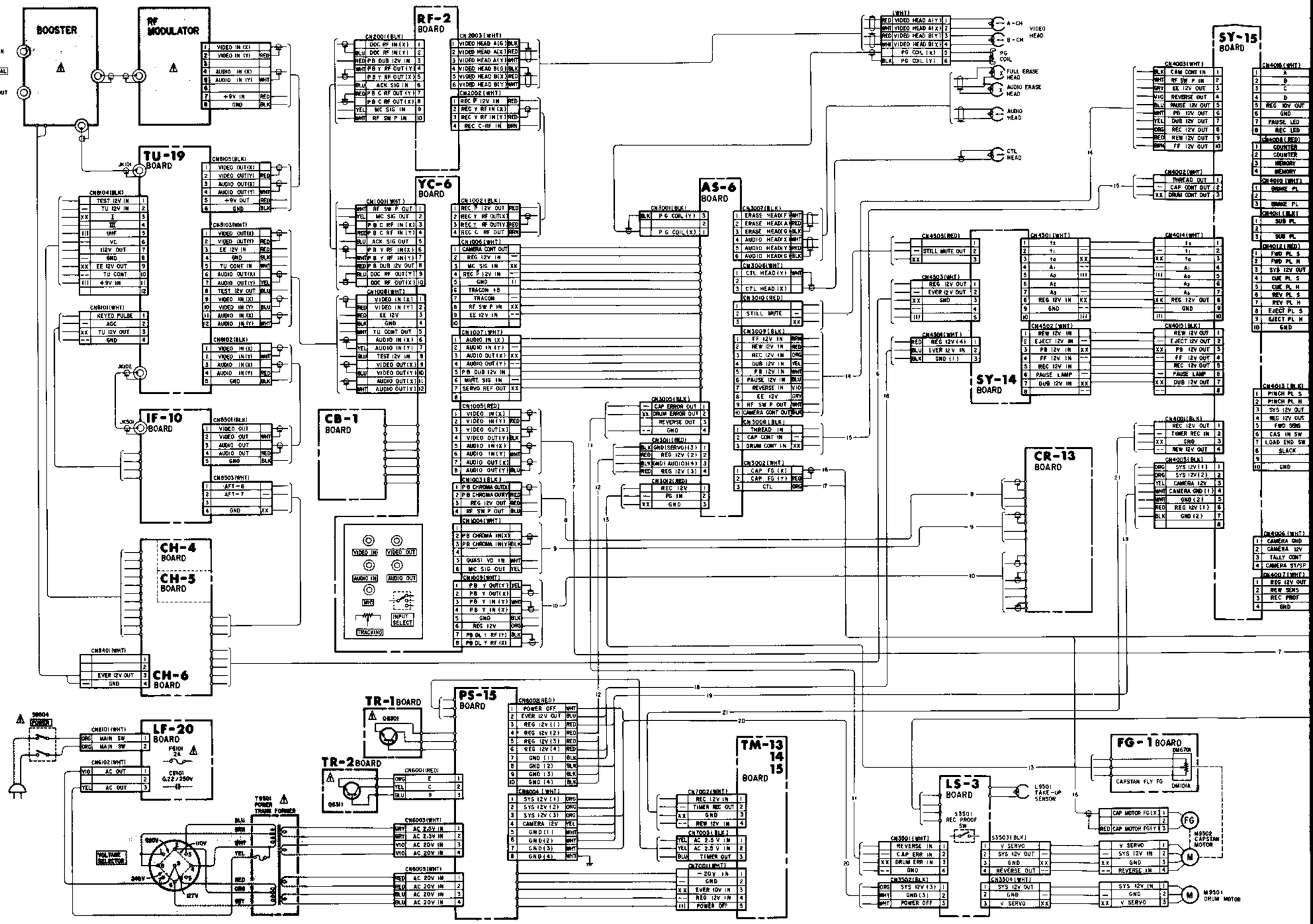
TUNER BLOCK DIAGRAM



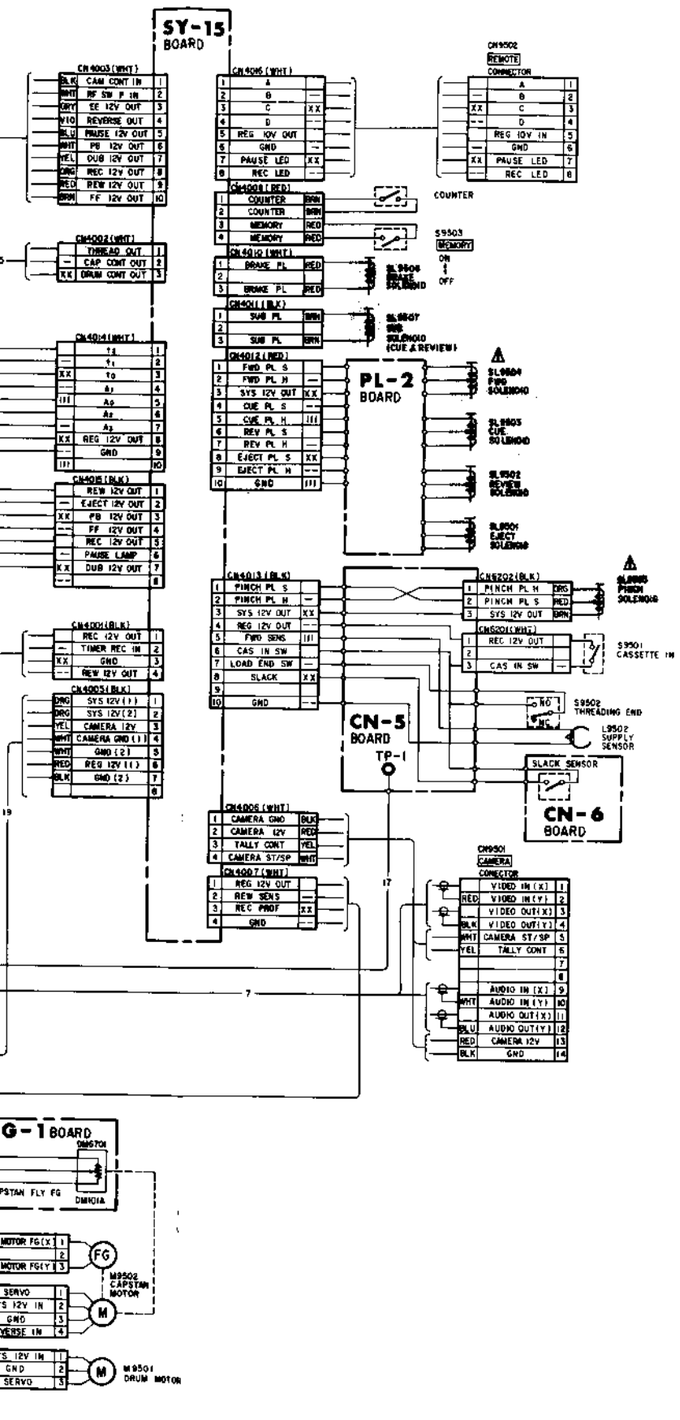
SECTION 3
PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

FRAME SCHEMATIC DIAGRAM

– Ref. No. CHASSIS: 9500 series –



3-1 3-2

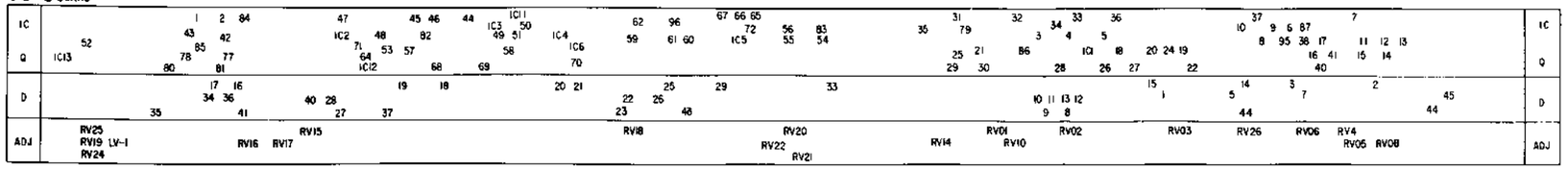


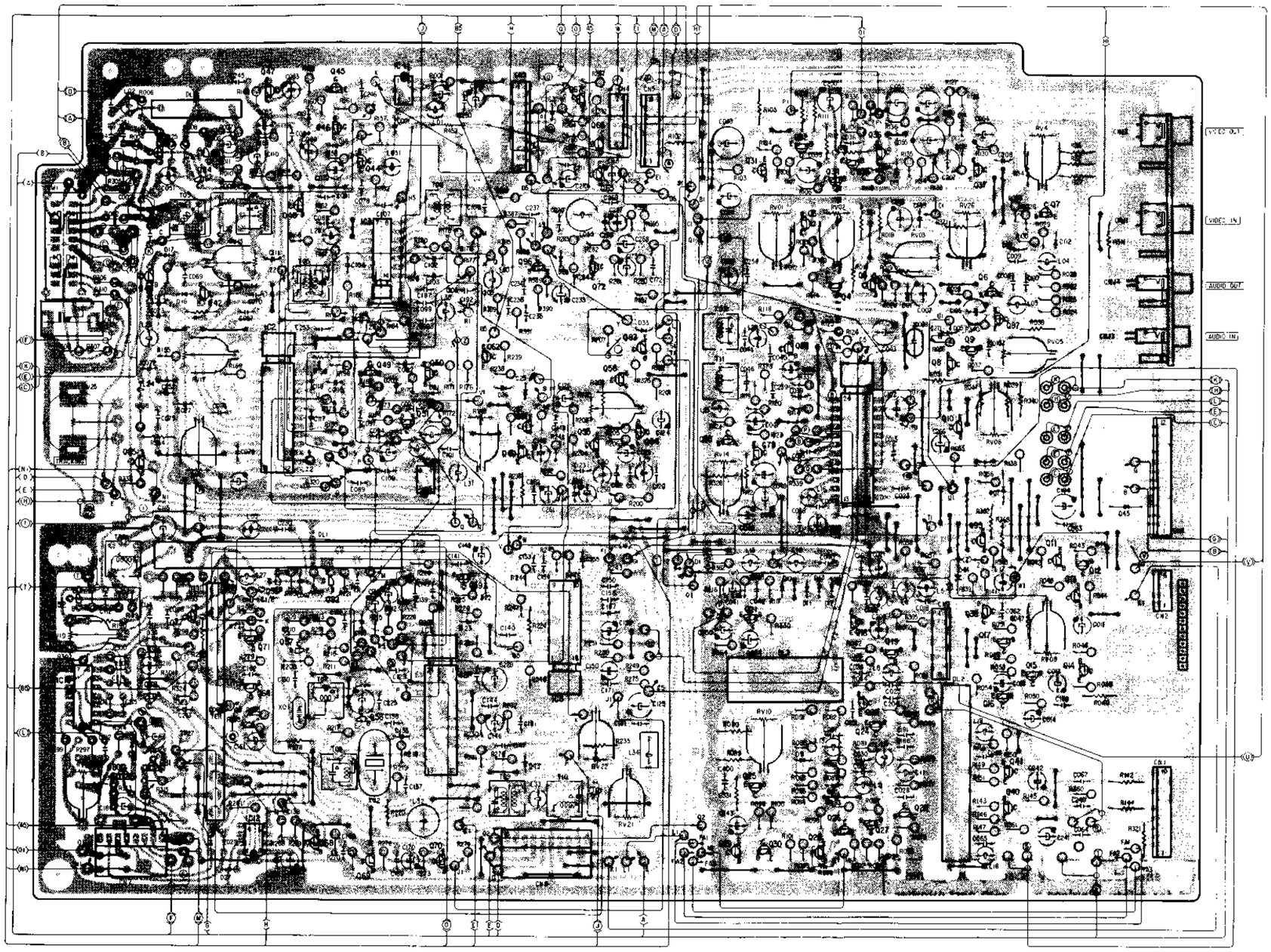
The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

YC-6, CB-1 (Y & CHIROMA SIGNALS RECODE/PLAYBACK PROCESS), RF-2 (LOW-CONVERTED CHROMA & Y-FM SIGNAL RECORD/PLAYBACK PROCESS) AND CR-13 (VD INSERTION & NOISE CANCELLER) PRINTED WIRING BOARDS

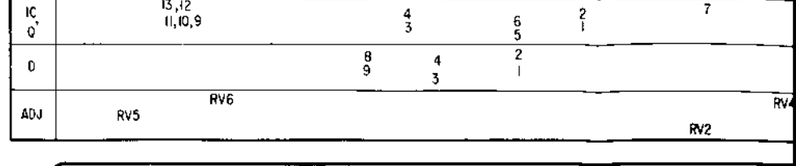
– Ref. No. YC-6, CB-1 BOARD: 1000 series RF-2 BOARD: 2000 series CR-13 BOARD: 5000 series –

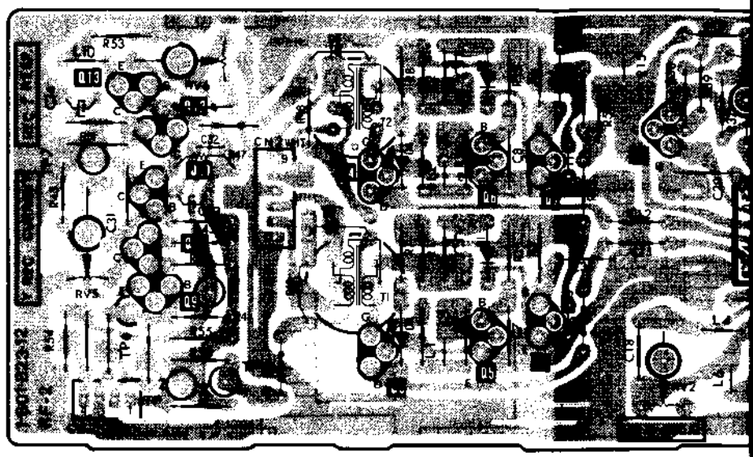
YC-6 BOARD



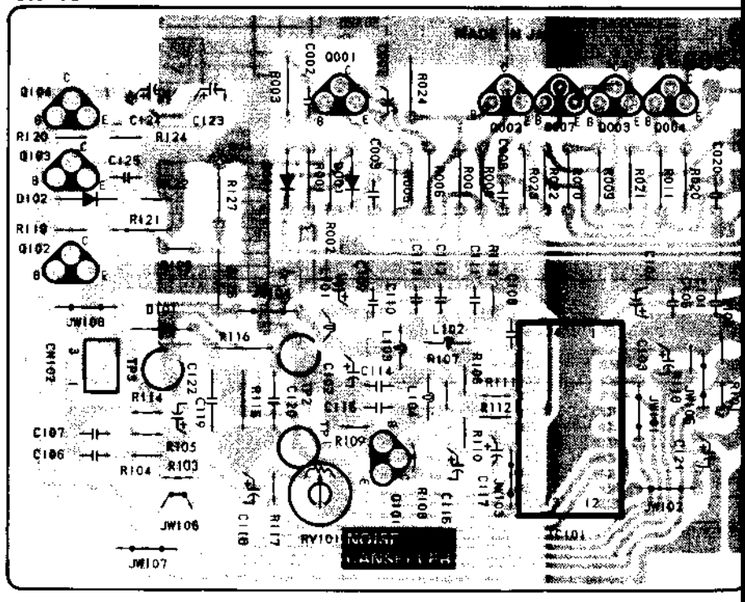


RF-2 BOARD

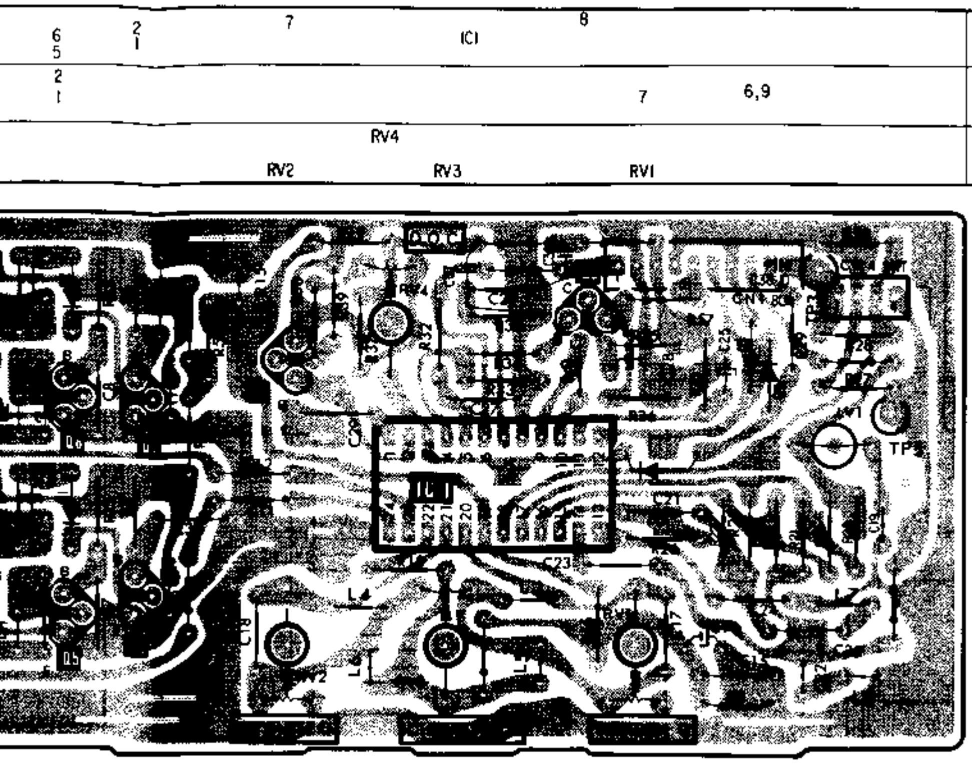


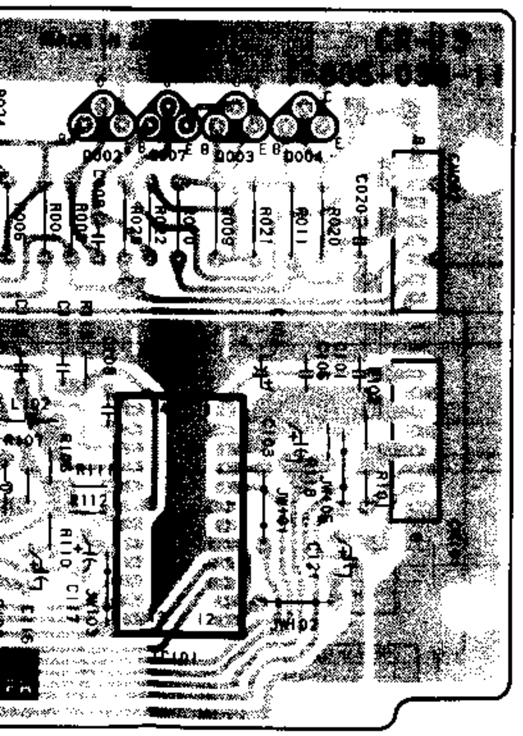


CR-13 BOARD

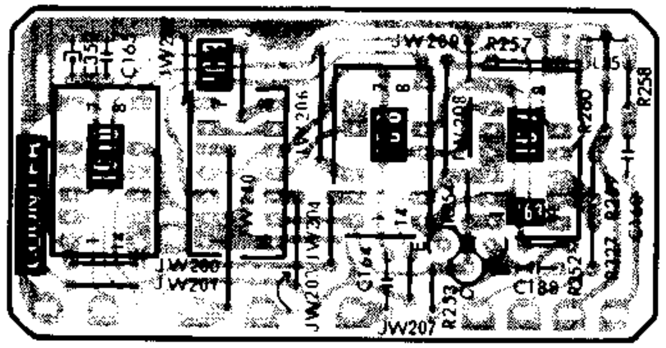


IRING BOARDS

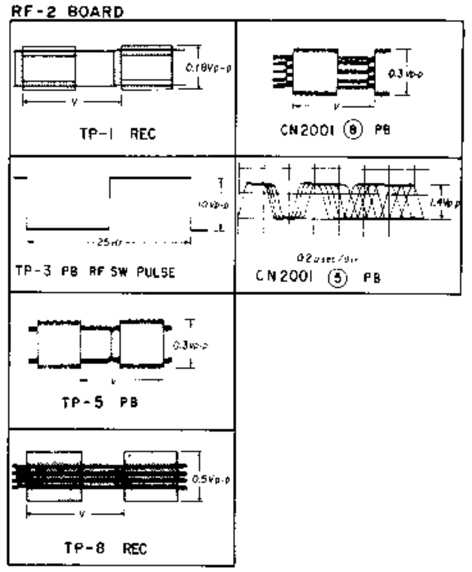




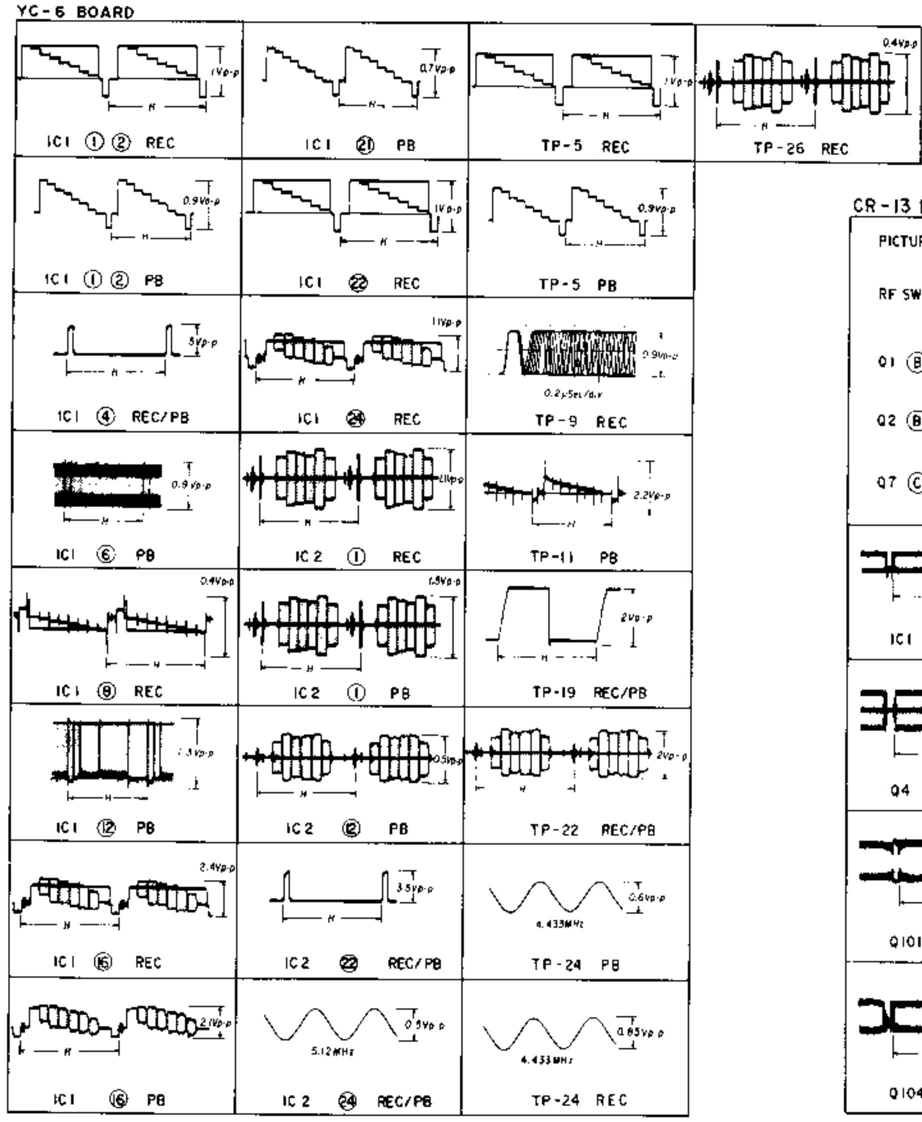
CB-1 BOARD



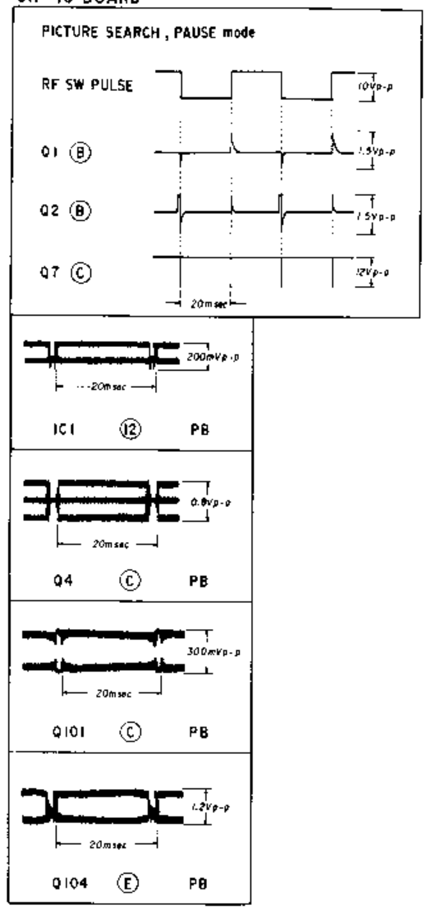
RF-2 BOARD



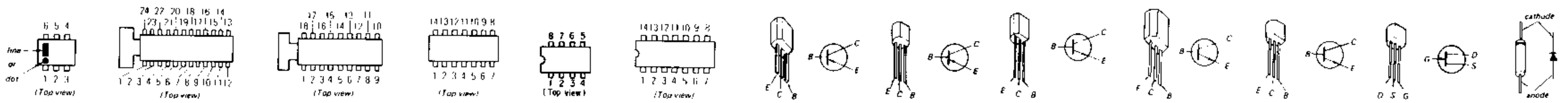
YC-6 BOARD



CR-13 BOARD

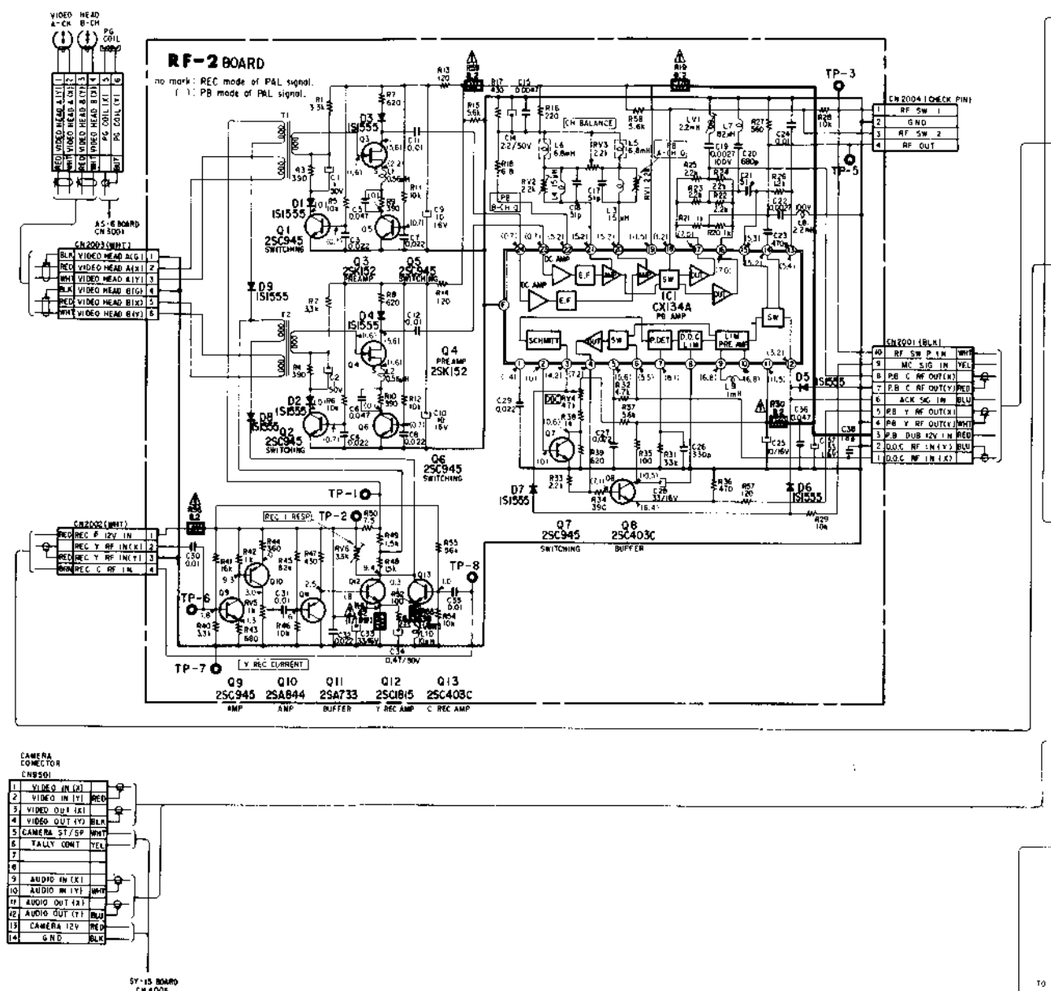


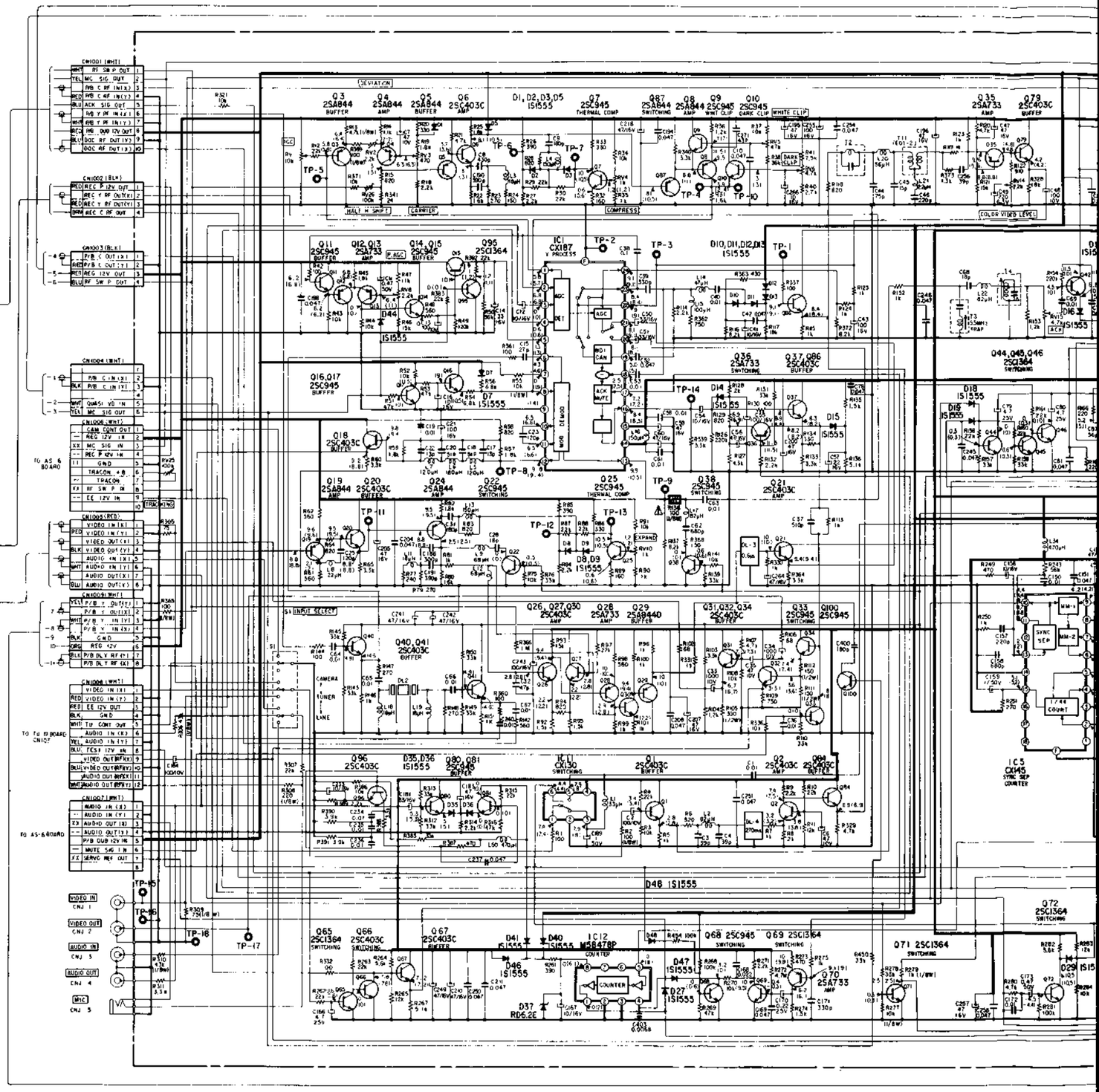
CX130 | CX134A CX135 CX136A CX187 CX832 | CX145 | CX150B | M58478P | TC4069UBP SN74LS10 SN74LS74A SN74LS93 | 2SA844 | 2SA733 | 2SC945 | 2SC403C | 2SC1815 2SC1474 | 2SK152 | RD6.2EB 1S1555



YC-6, CB-1 (Y & CHROMA SIGNALS RECORD/PLAYBACK PROCESS), RF-2 (LOW-CONVERTED CHROMA & Y-FM SIGNAL RECORD/PLAYBACK PROCESS) AND CR-13 (VD INSERTION & NOISE CANCELLER) BOARDS SCHEMATIC DIAGRAM

– Ref. No. YC-6, CB-1 BOARD: 1000 series RF-2 BOARD: 2000 series CR-13 BOARD: 5000 series –



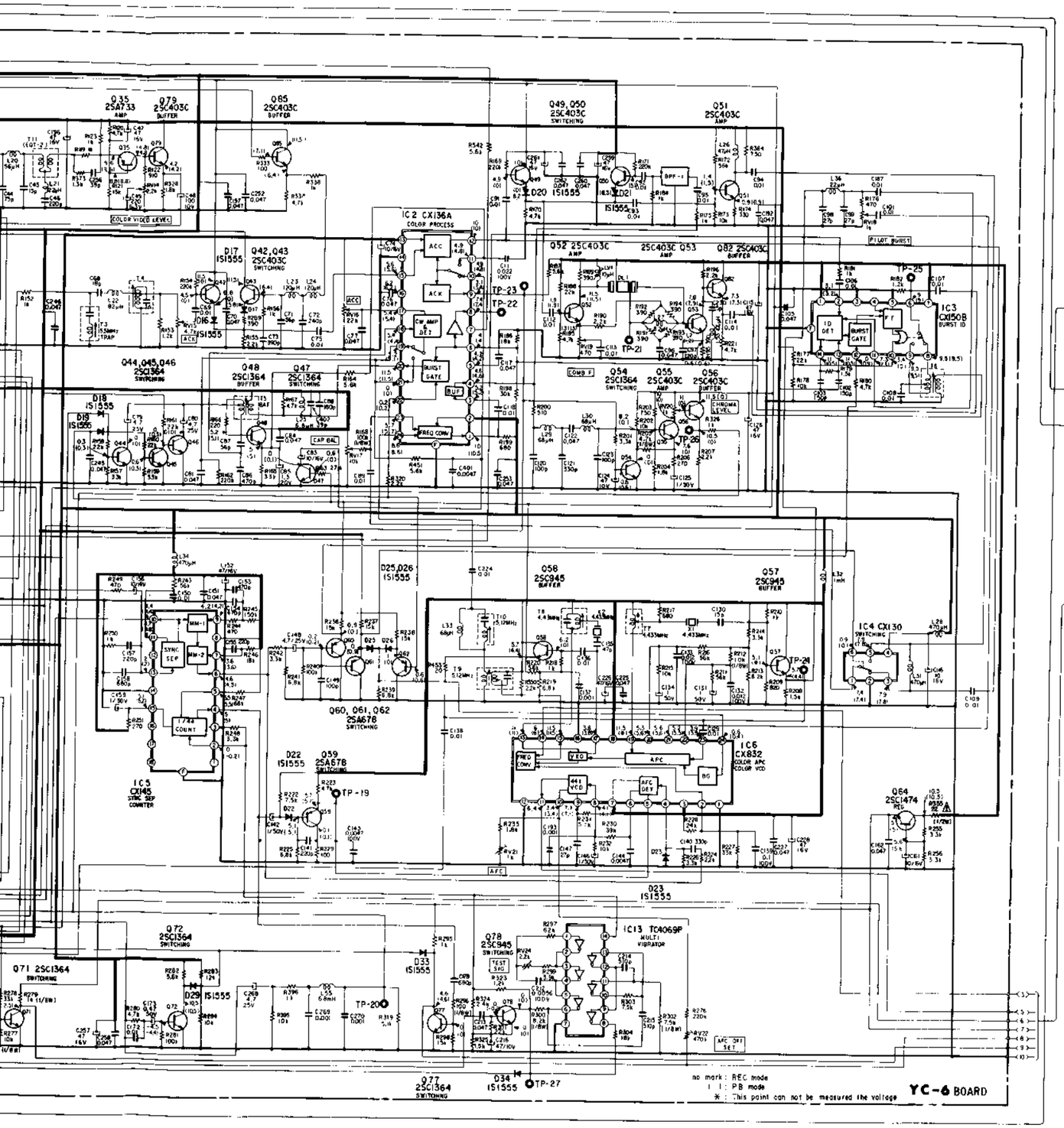


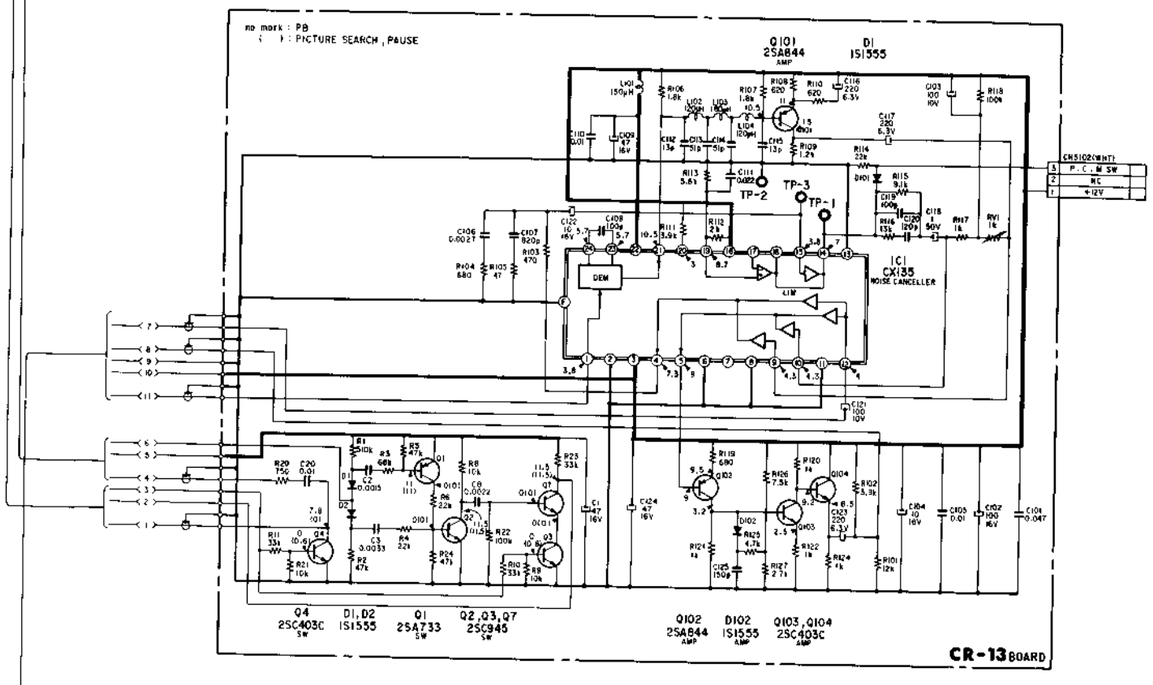
NOTES:

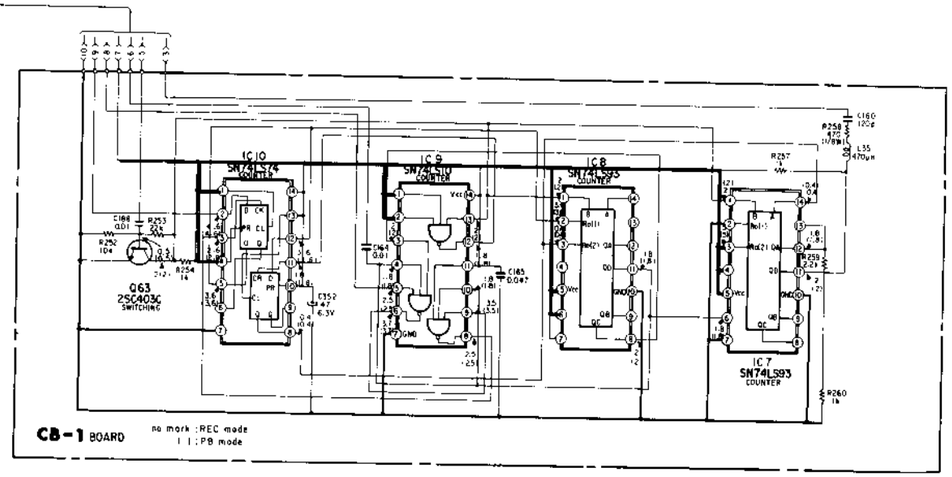
- All resistors are in ohms, ¼ W unless otherwise noted. kΩ = 1000Ω; MΩ = 1000kΩ
- All capacitors are in μF unless otherwise noted. p : μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⏦: nonflammable resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (20kΩ/V).

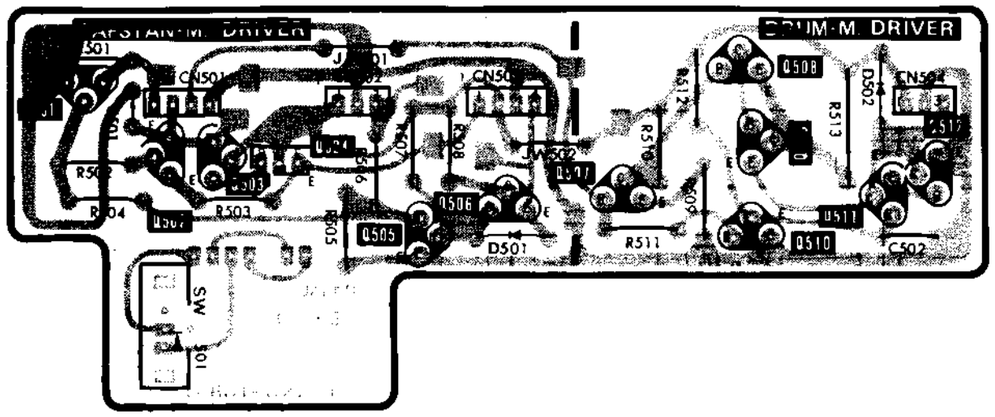
The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

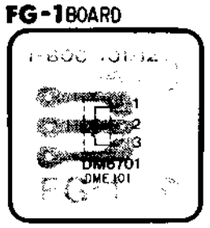
SCHEMATIC DIAGRAM











AS-6 (SERVO, AUDIO RECORD/PLAYBACK PROCESS), LS-3 (CAPSTAN & DRUM MOTOR DRIVE) AND FG-1 (CAPSTAN FLY FG) PRINTED WIRING BOARDS

– Ref. No. AS-6 BOARD: 3000 series LS-3 BOARD: 3500 series FG-1 BOARD: 6700 series –

LS-3 BOARD

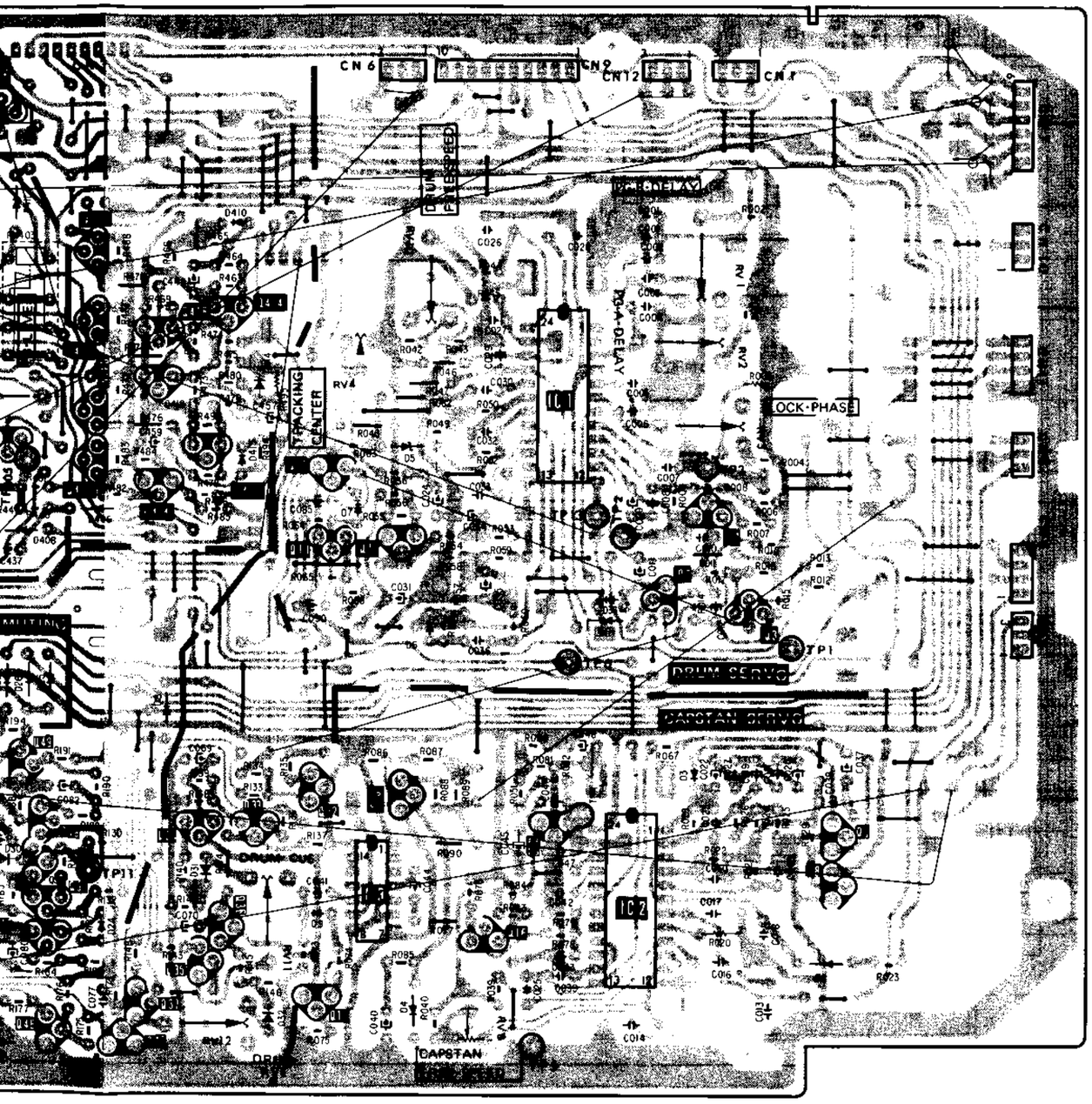
Q	501 502 503 504 505 506 507 508 509 510 511 512	Q
D	501 502	D

FG-1 BOARD

AS-6 BOARD

Q, IC	29 404 28 402 401 407 403 25 27 26 24 IC4 21 406 405 411 23 410 412 409 421 425 427 408 49 48 30 31 47 46 415 417 419 423 45 416 418 424 37 420 34 35 36 414
D	402 14 13 409 16 15 401 10 12 404 405 403 416 21 23 22 30 27 20 411 408 28,26,25 406 24 8 31 410 413
ADJ	RV402 LV401 LV402 RV401 RV404 RV403 RV12

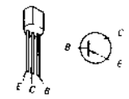
427 49 48 30 31 47 46 408 415 417 419 423 416 418 424 45 37 420 34 35 36 414 33 12 13 32 15 11 IC3 10 16 IC1 50 2 1 IC2 3 6 8	Q, IC
411 408 406 7 28,26,25 20 24 8 410 413 31 414 32 9 7 5 4 6 33 1 3 2	D
RV12 RV11 RV4 RV10 RV8 RV1, RV2, RV3	ADJ



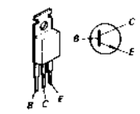
AS-6 BOARD

IC1 ⑥ REC/PB	IC2 ⑦ REC/PB	TP-10 PB
IC1 ⑦ REC/PB	IC2 ⑨ REC/PB	TP-11 REC
IC1 ⑫ REC	IC2 ⑪ REC/PB	TP-11 PB
IC1 ⑫ PB	IC2 ⑫ REC/PB	Q407 ⓒ REC
IC1 ⑯ REC	IC2 ⑬ REC/PB	
IC1 ⑯ PB	IC2 ⑳ REC/PB	
IC1 ㉒ REC/PB	TP-1 REC/PB	
IC1 ㉔ REC/PB	TP-10 REC	

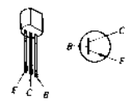
2SA772
2SA733



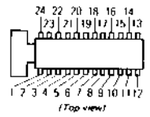
2SC1061



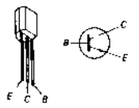
2SC1345
2SC1475



CX143A
CX186

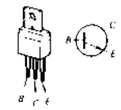


2SC945
2SC1364



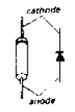
TA7120P

2SC1761



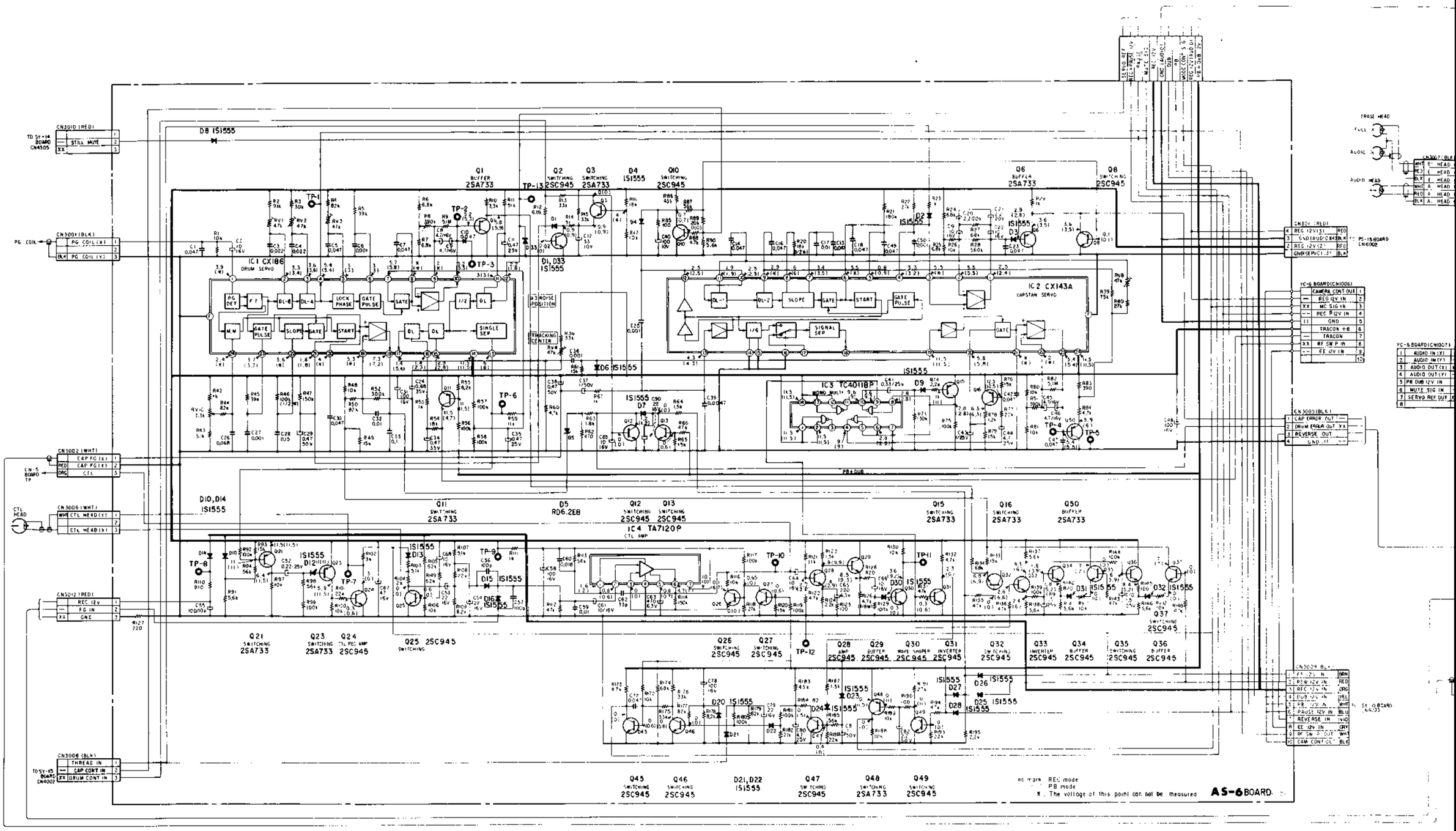
TC4011BP

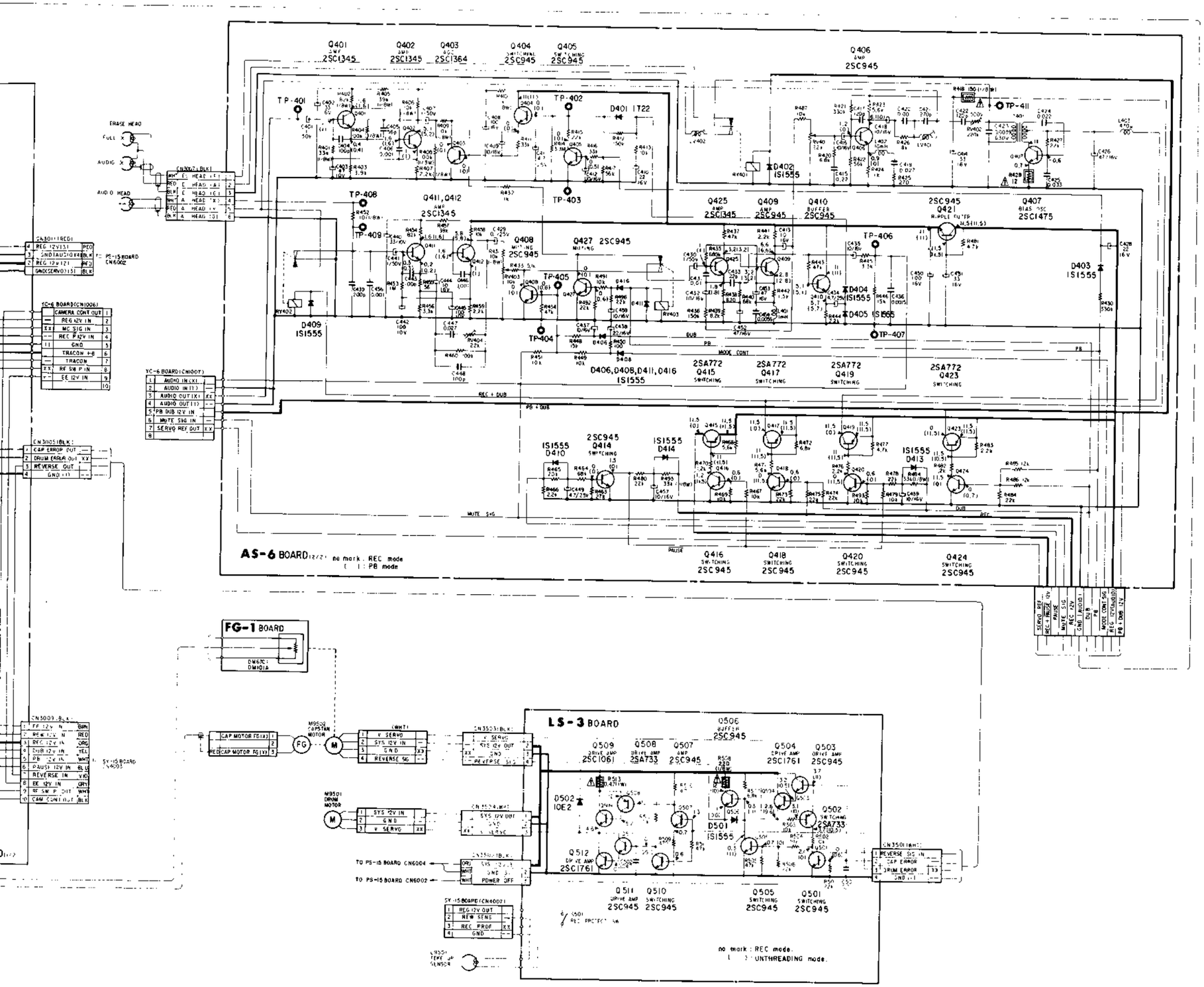
10E2
1S1555
(T22
RD6.2EB



AS-6 (SERVO, AUDIO RECORD/PLAYBACK PROCESS), LS-3 (CAPSTAN & DRUM MOTOR DRIVE) AND FG-1 (CAPSTAN FLY FG) BOARDS SCHEMATIC DIAGRAM

– Ref. No. AS-6 BOARD: 3000 series LS-3 BOARD: 3500 series FG-1 BOARD: 6700 series –





NOTES:

- All resistors are in ohms, ¼ W unless otherwise noted. kΩ = 1000Ω; MΩ = 1000kΩ
- All capacitors are in μF unless otherwise noted. p : μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : nonflammable resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (20kΩ/V).

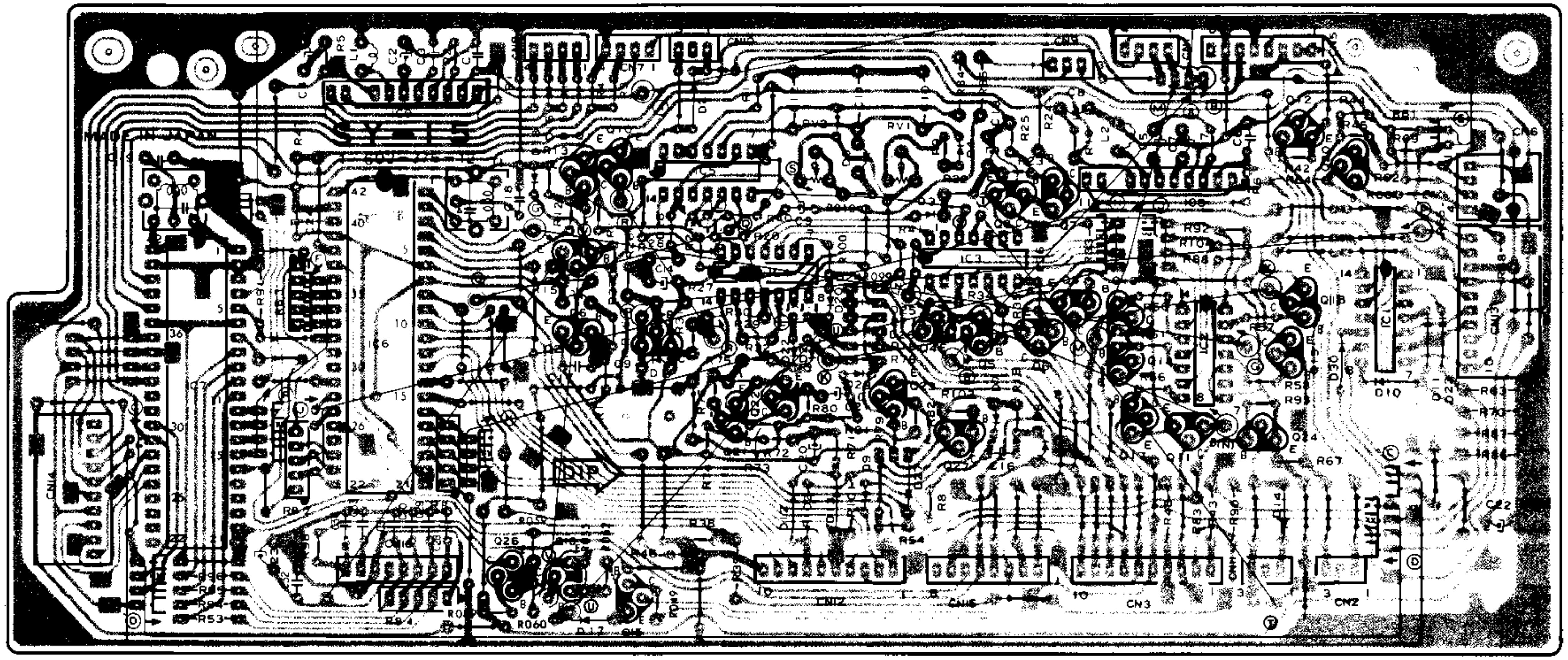
The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

SY-15 (SYSTEM CONTROL), SY-14 (FUNCTION KEY, LAMP & ANTENNA SWITCH), PL-2 (SOLENOID DRIVE), CN-5 (RELAY) AND CN-6 (SLACK SENSOR) PRINTED WIRING BOARDS

– Ref. No. SY-15 BOARD: 4000 series SY-14 BOARD: 4500 series PL-2 BOARD: 4600 series CN-5, CN-6 BOARD: 6200 series –

SY-15 BOARD

Q, IC	IC7, IC6, IC9, 26, 1, 25, 2, 16, 10, 15, 9, IC5, 21, IC4, 22, 23, 4, IC3, 27, 5, 8, 6, 7, 3, 13, 14, 17, IC8, IC2, 11, 12, 18, 19, 24, 20, IC1	Q, IC
D	18, 16, 15, 6, 17, 1, 28, 2, 22, 21, 12, 20, 13, 29, 5, 9, 24,25,26,19, 3, 27, 4, 7, 8, 14, 30, 10, 11, 23	D
ADJ	RV2, RV1	ADJ

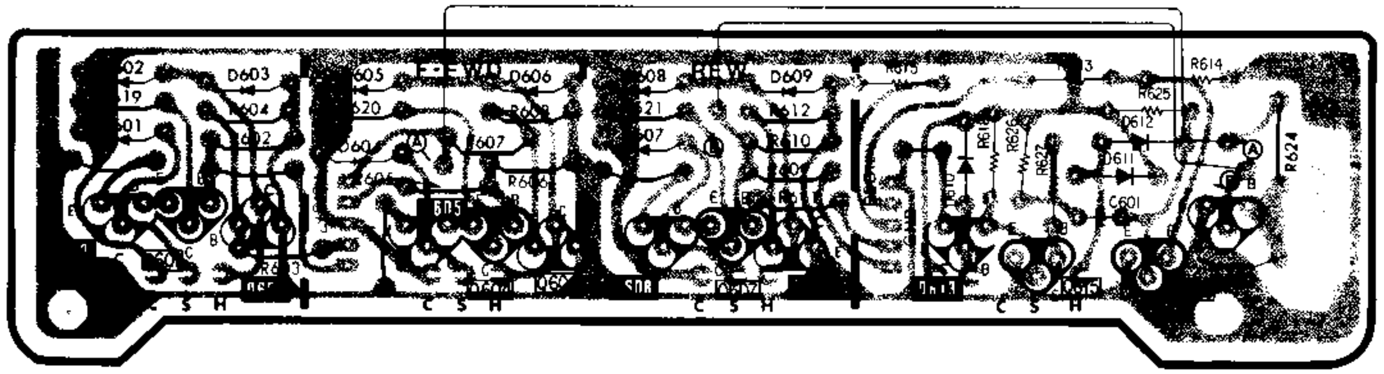


SY-14 BOARD

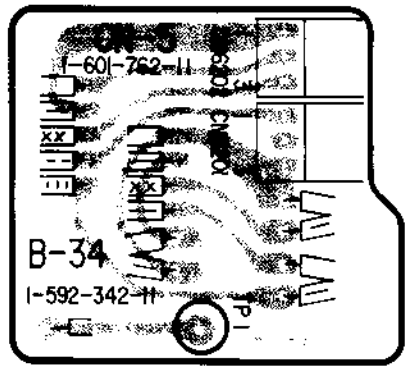
Q, IC	
D	

PL-2 BOARD

Q	602, 601, 603, 605, 604, 606, 608, 607, 609, 613, 615, 610, 610, 614	Q
D	602, 601, 603, 605, 604, 606, 608, 607, 609, 610, 611, 612	D

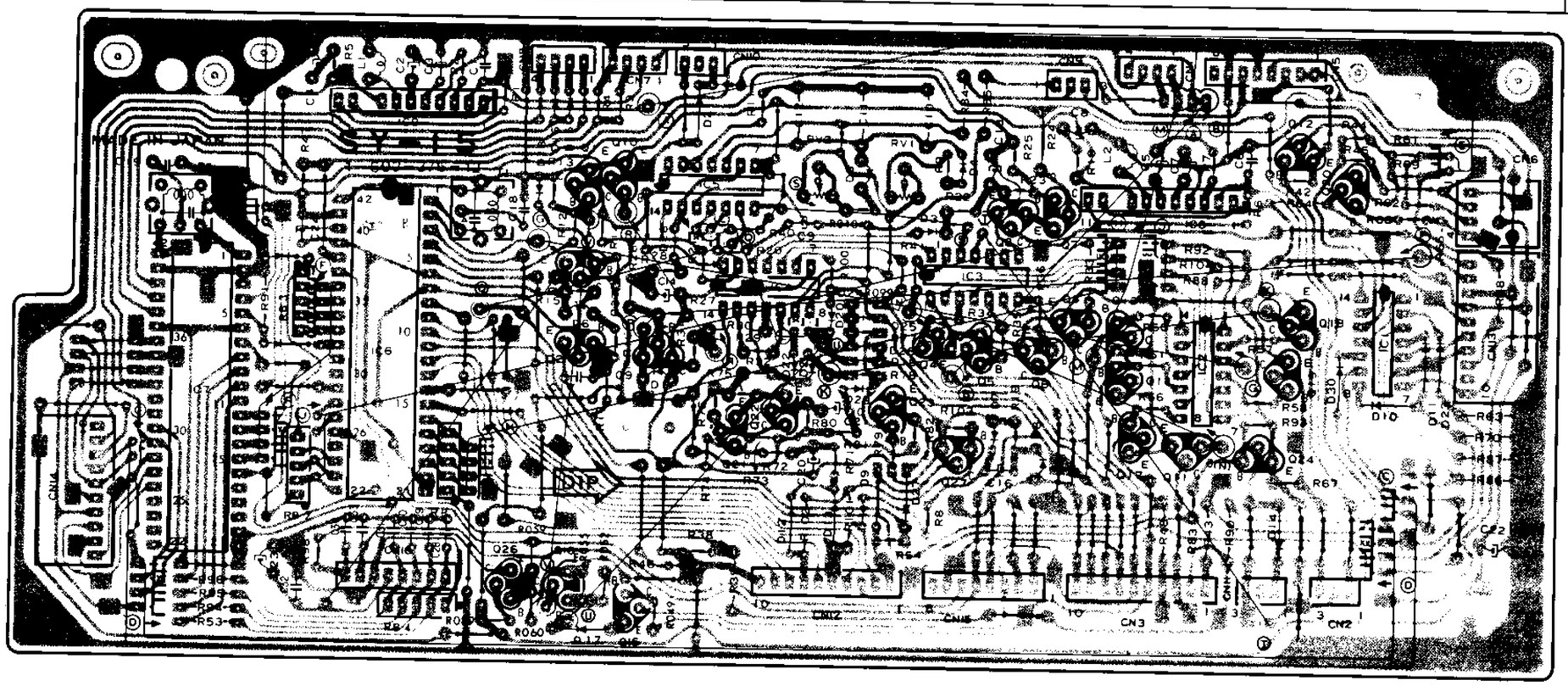


CN-5 BOARD



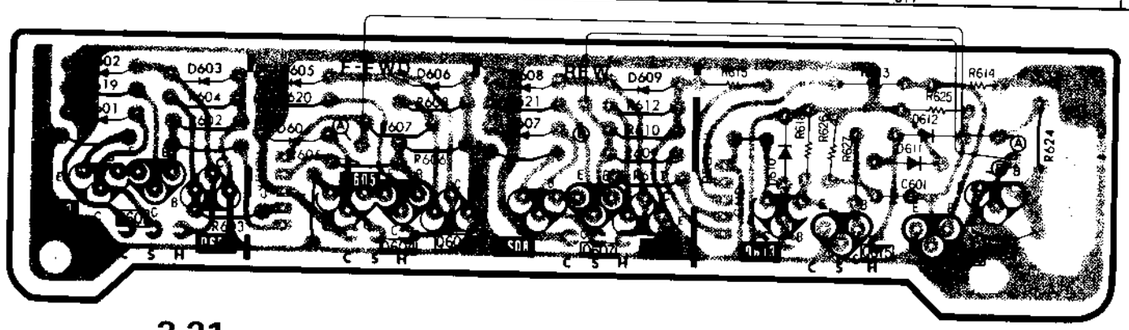
SY-15 BOARD

Q, IC	IC7 IC6 IC9 IC5 IC4 IC3 IC8 IC2 IC1	Q, IC
D		D
ADJ	RV2 RV1	ADJ

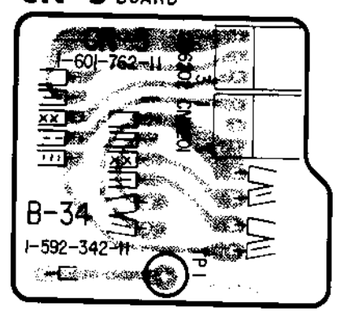


PL-2 BOARD

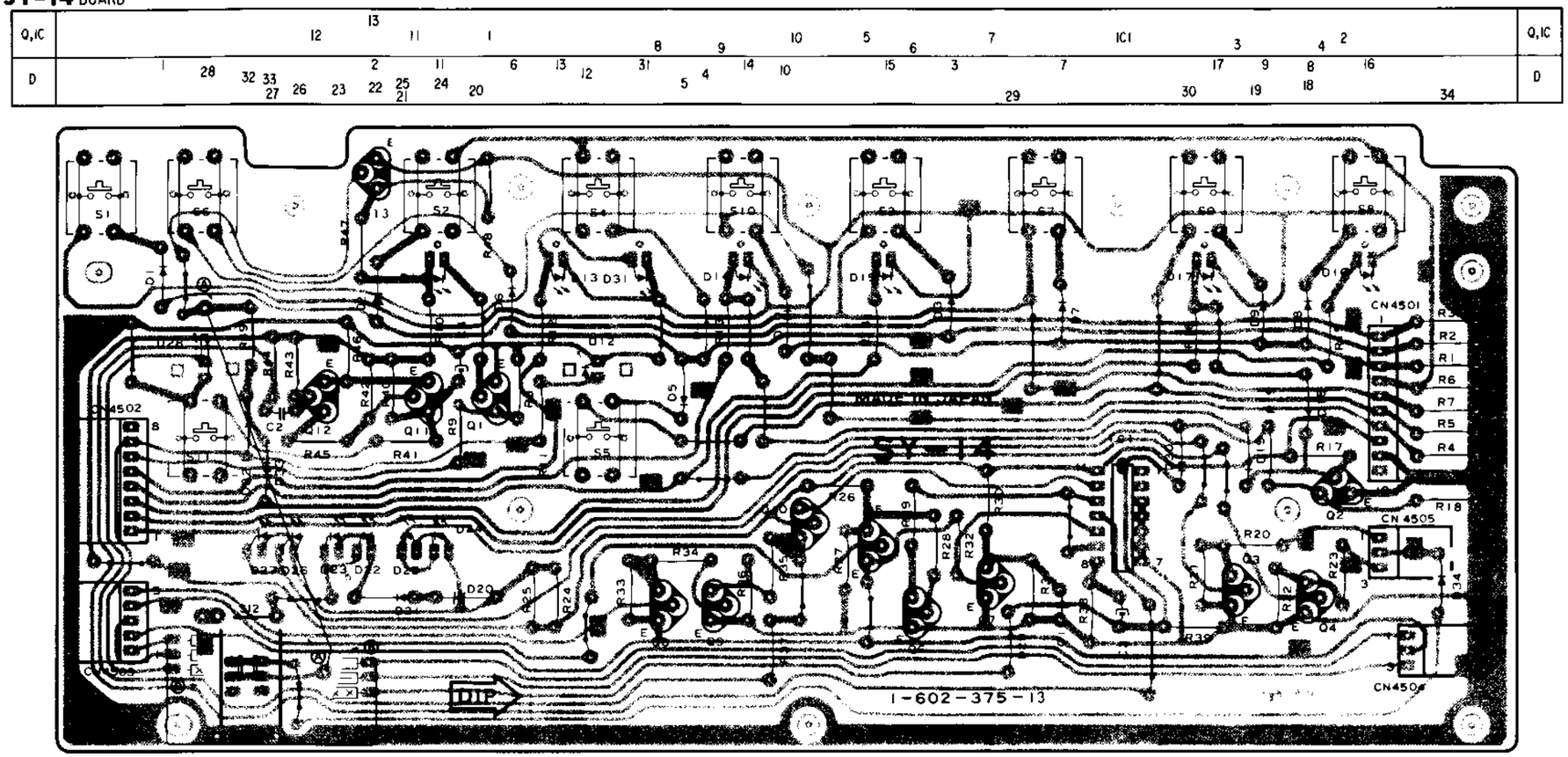
Q	602 601 603 605 604 606 608 607 609 613 615 610 610 614	Q
D	602 601 603 605 604 606 608 607 609 610 611 612	D



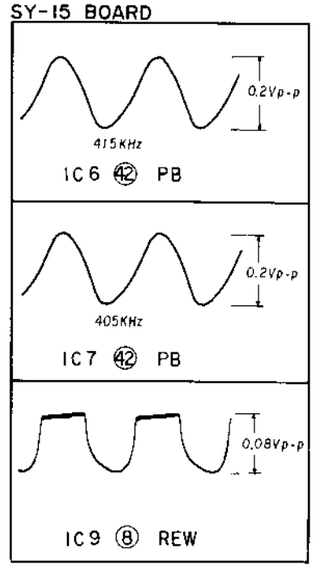
CN-5 BOARD



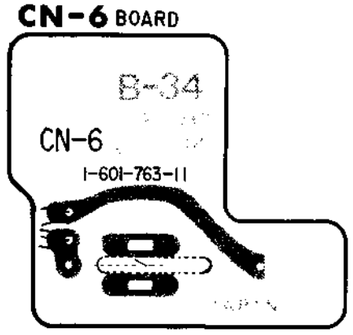
SY-14 BOARD



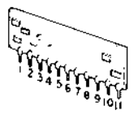
SY-15 BOARD



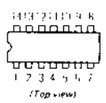
CN-6 BOARD



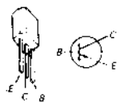
BX342



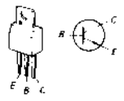
TC4001BP
TC4066BP
TC4069UBP



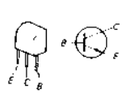
2SA1026



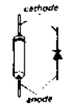
2SC1124



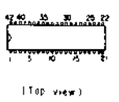
2SC2315



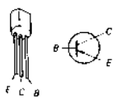
10E2
1S1555
RD8.2E-B
RD11E-B



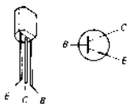
μPD546C107
μPD547C049



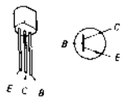
2SA772



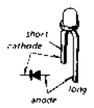
2SC945



2SC1364
2SC1474



TLR123



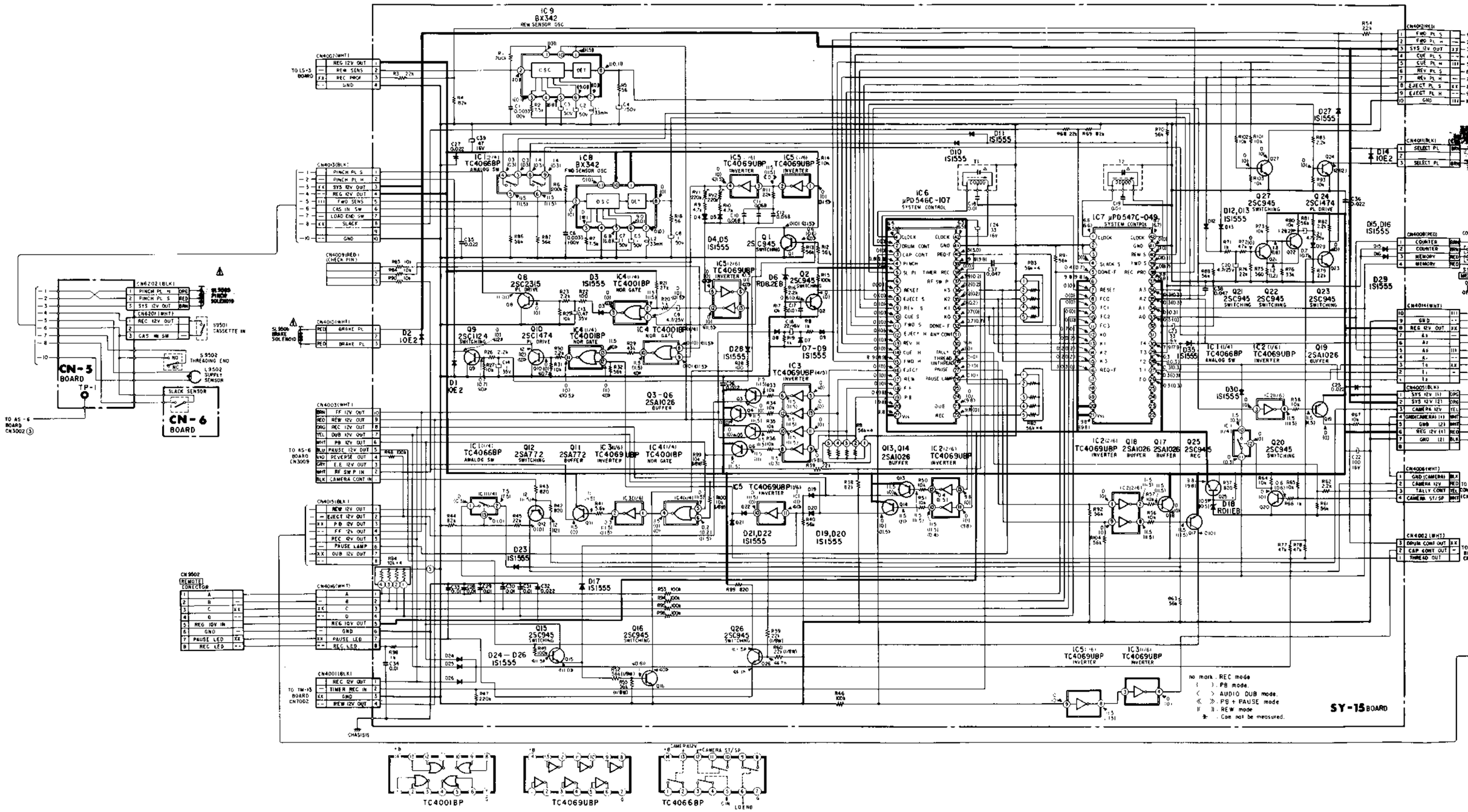
NOTES:

- All resistors are in ohms, ¼ W unless otherwise noted. kΩ = 1000Ω; MΩ = 1000kΩ
- All capacitors are in μF unless otherwise noted. p : μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : nonflammable resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (20kΩ/V).

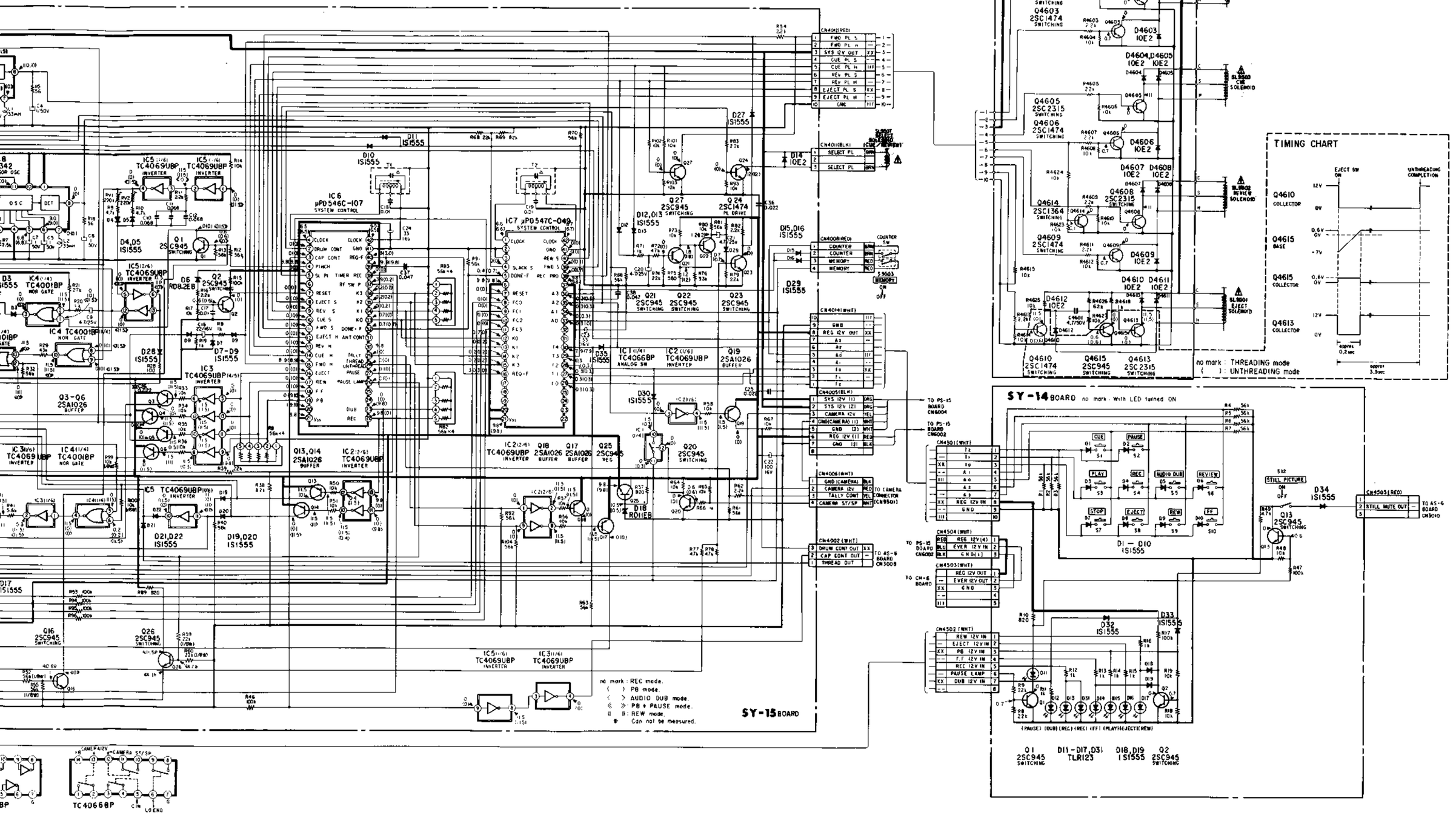
The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

SY-15 (SYSTEM CONTROL), SY-14 (FUNCTION KEY, LAMP & ANTENNA SWITCH), PL-2 (SOLENOID DRIVE), CN-5 (RELAY) AND CN-6 (SLACK SENSOR) BOARDS SCHEMATIC DIAGRAM

– Ref. No. SY-15 BOARD: 4000 series SY-14 BOARD: 4500 series PL-2 BOARD: 4600 series CN-5, CN-6 BOARD: 6200 series –

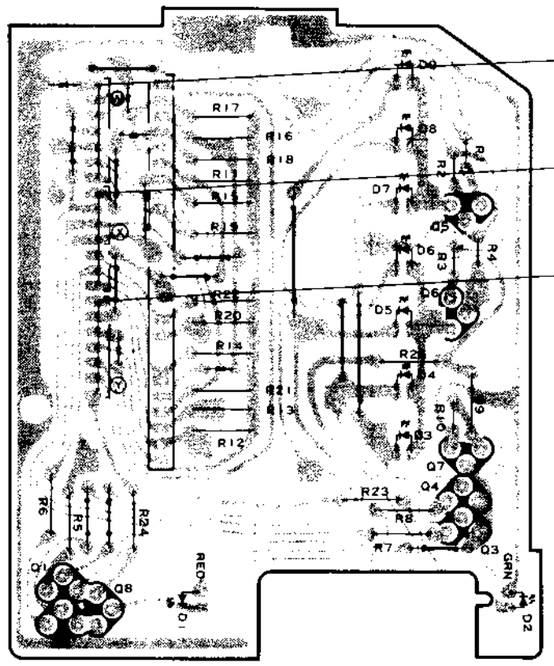


OID DRIVE), CN-5 (RELAY) AND CN-6 (SLACK SENSOR) BOARDS SCHEMATIC DIAGRAM
ries –

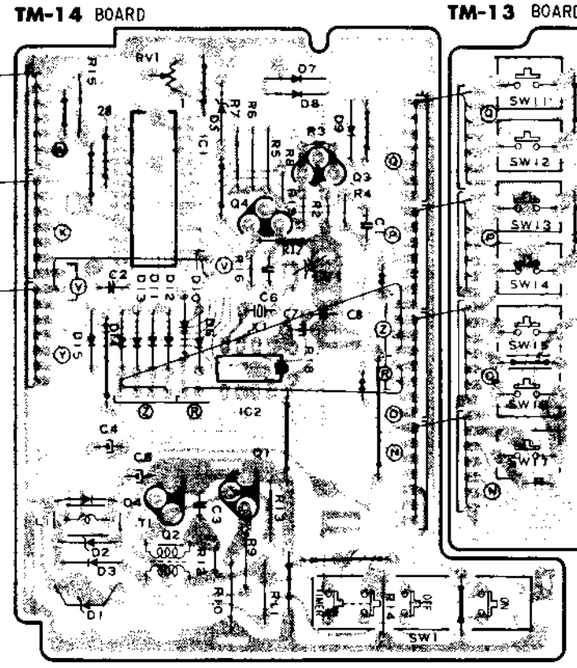


PS-15 (POWER SUPPLY), LF-20 (LINE FILTER), TM-13, TM-14, TM-15 (PROGRAM TIMER) AND TR-1, TR-2 (POWER TRANSISTOR) PRINTED WIRING BOARDS
– Ref. No. PS-15 BOARD: 6000 series LF-20 BOARD: 6100 series TM-13, TM-14, TM-15 BOARD:7000 series TR-1, TR-2 BOARD: 6300 series –

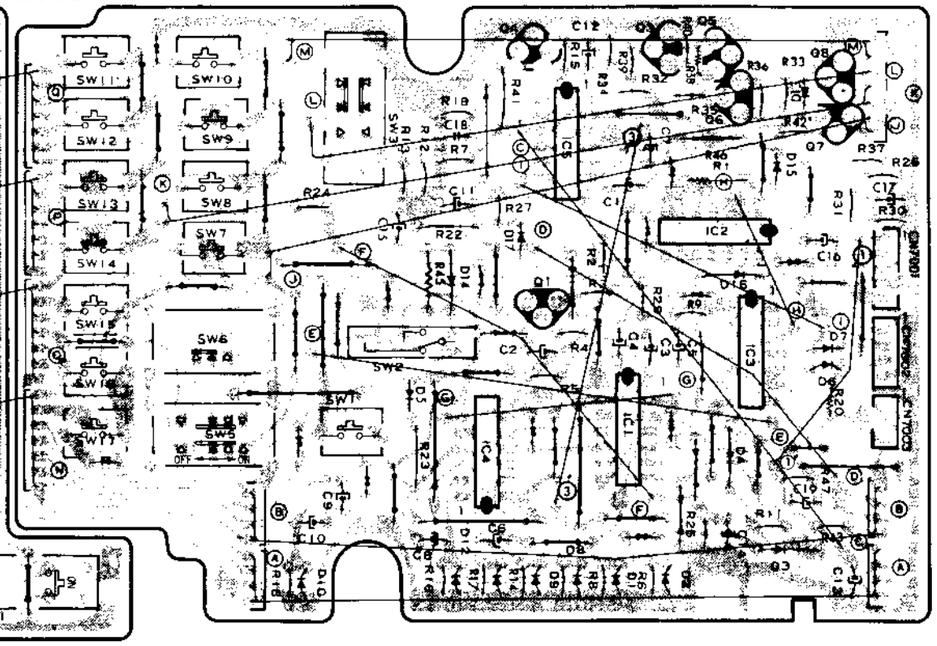
TM-15 BOARD



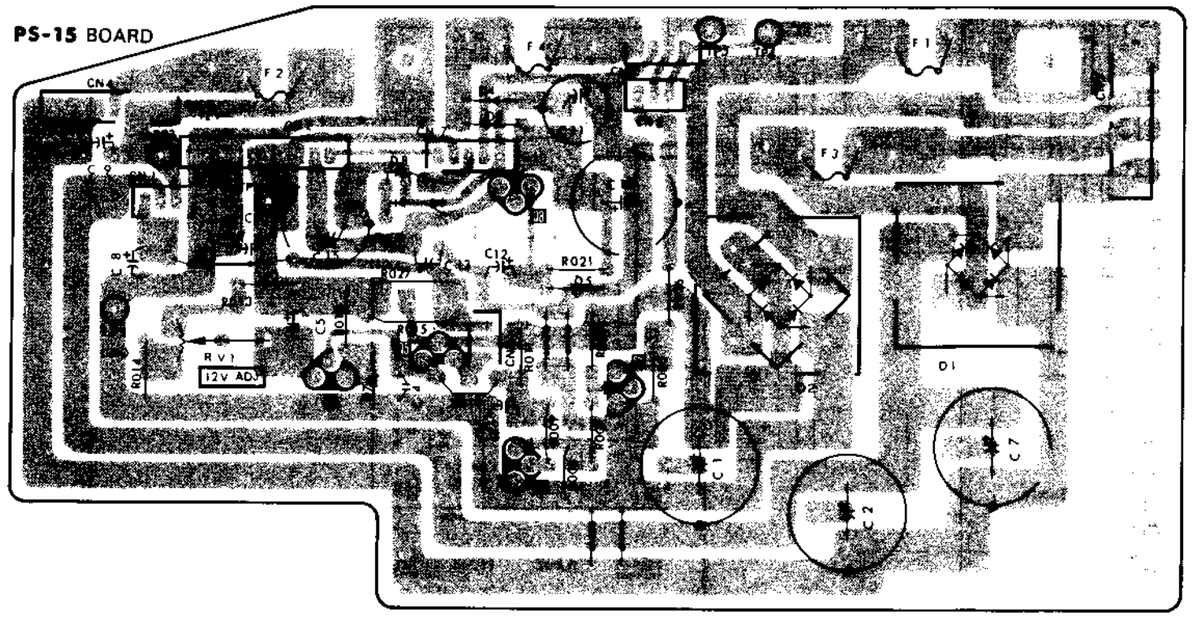
TM-14 BOARD



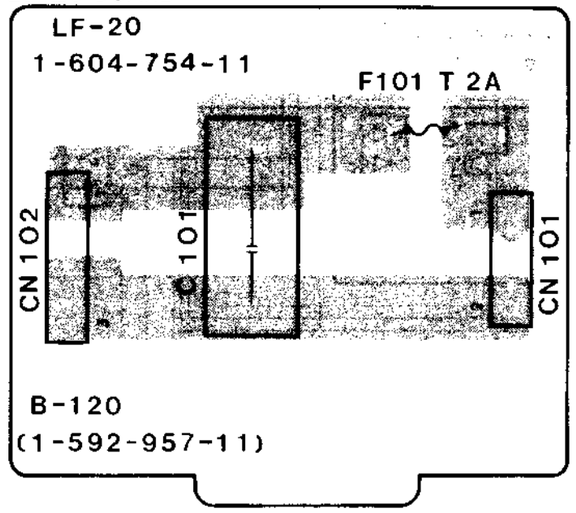
TM-13 BOARD



PS-15 BOARD

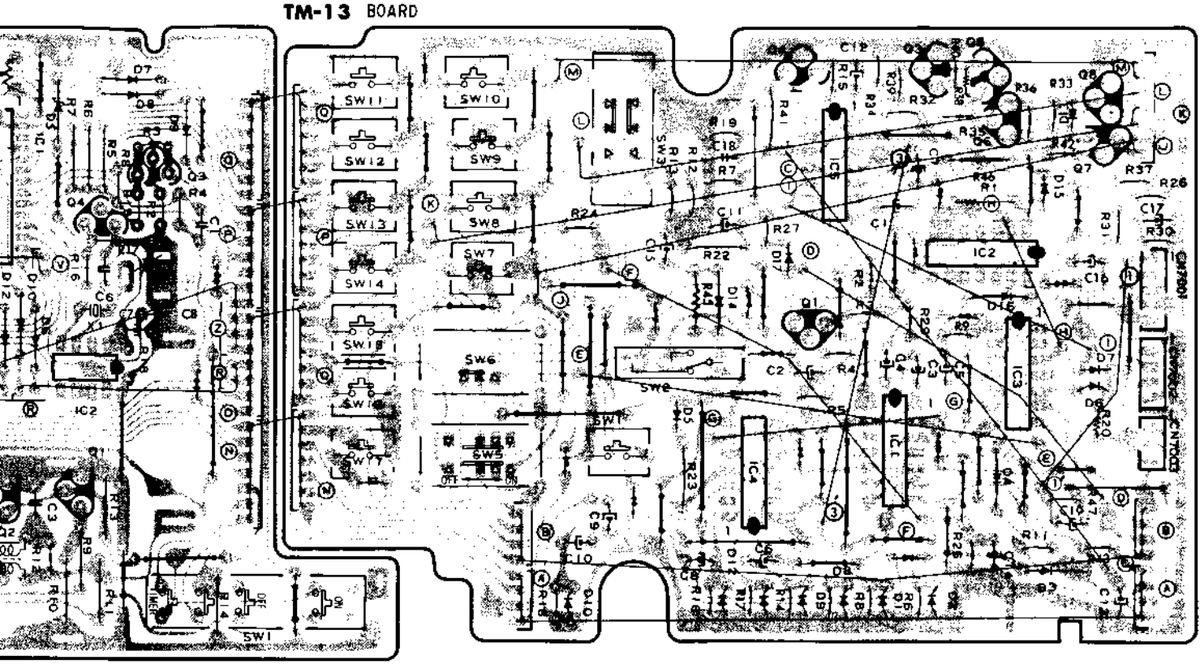


LF-20 BOARD

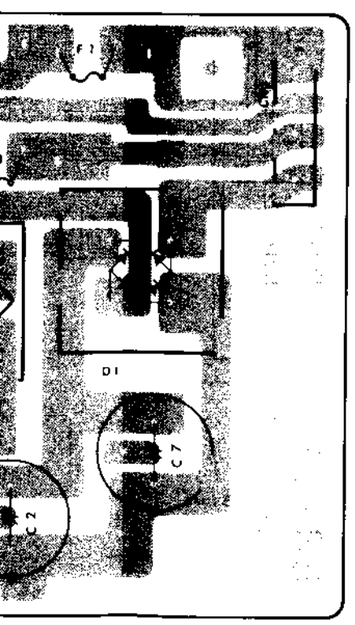


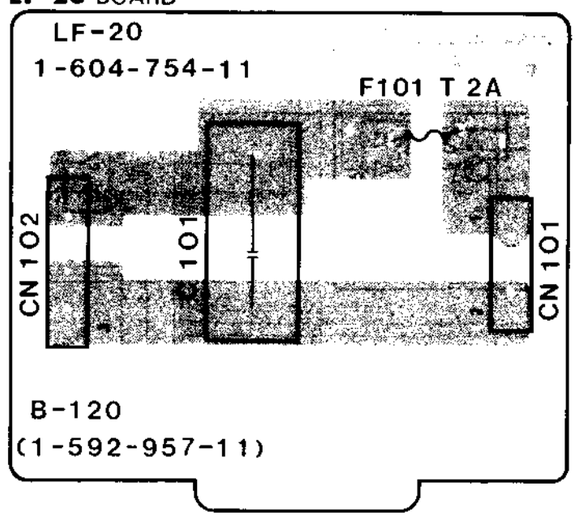
R-1, TR-2 (POWER TRANSISTOR) PRINTED WIRING BOARDS
BOARD: 6300 series –

TM-13 BOARD

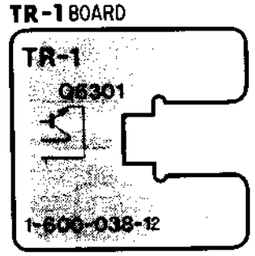


LF-20 BOARD

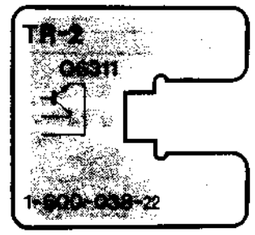




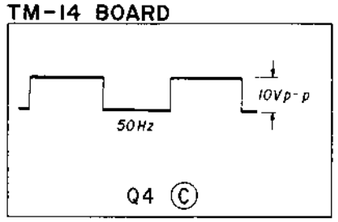
TR-1 BOARD



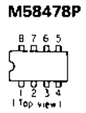
TR-2 BOARD



TM-14 BOARD

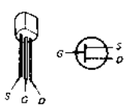


M58478P



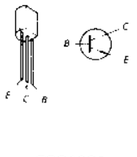
MP2707A

TC4001BP
TC4011BP
TC4025BP
TC4081BP

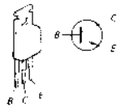


2SA733

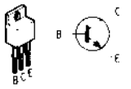
2SC945



2SC1061

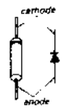


2SC2315

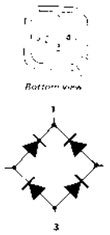


2SK105

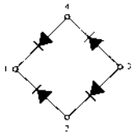
10E2
1S1555
RD3.9E-B
RD6.2E-B
RD13E-B



M4B31

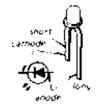


M4B41

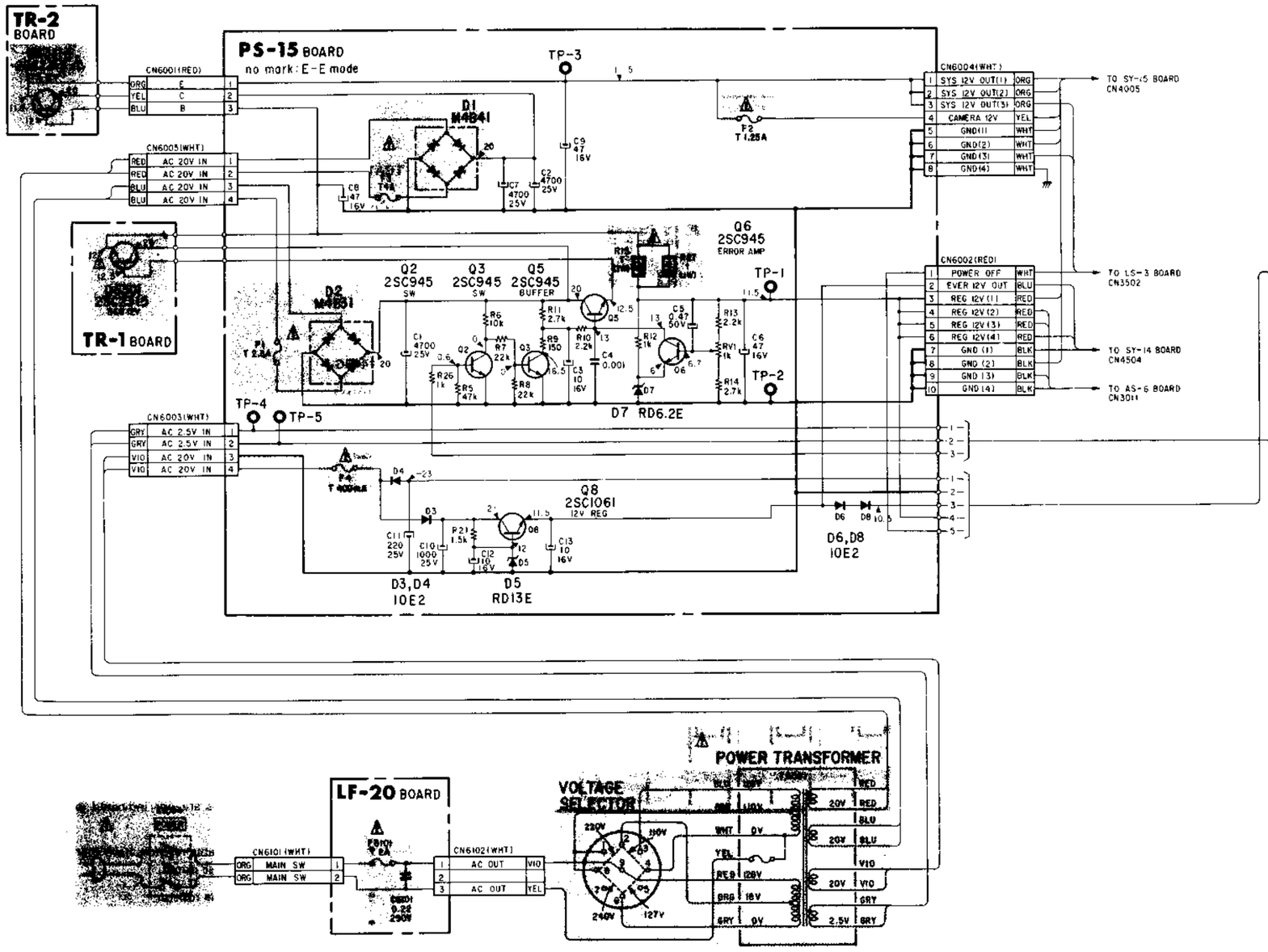


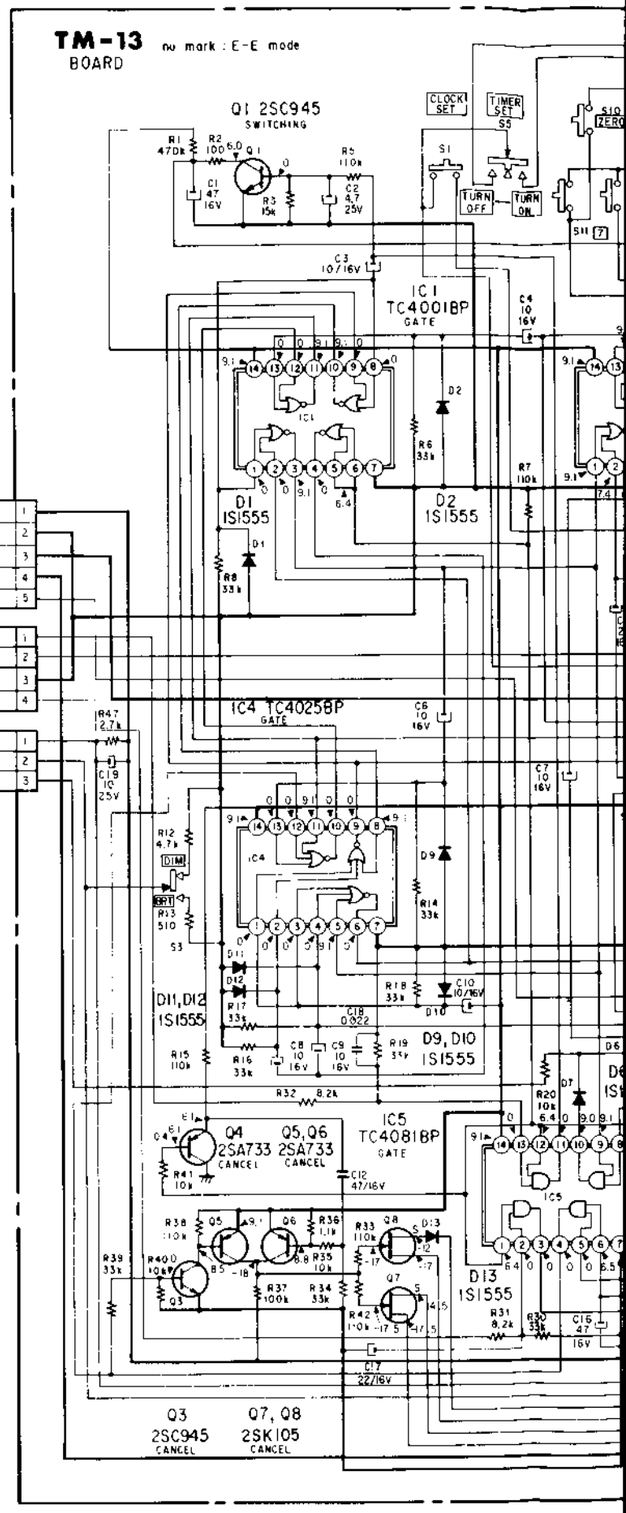
TLR114
TLG114

TLR123

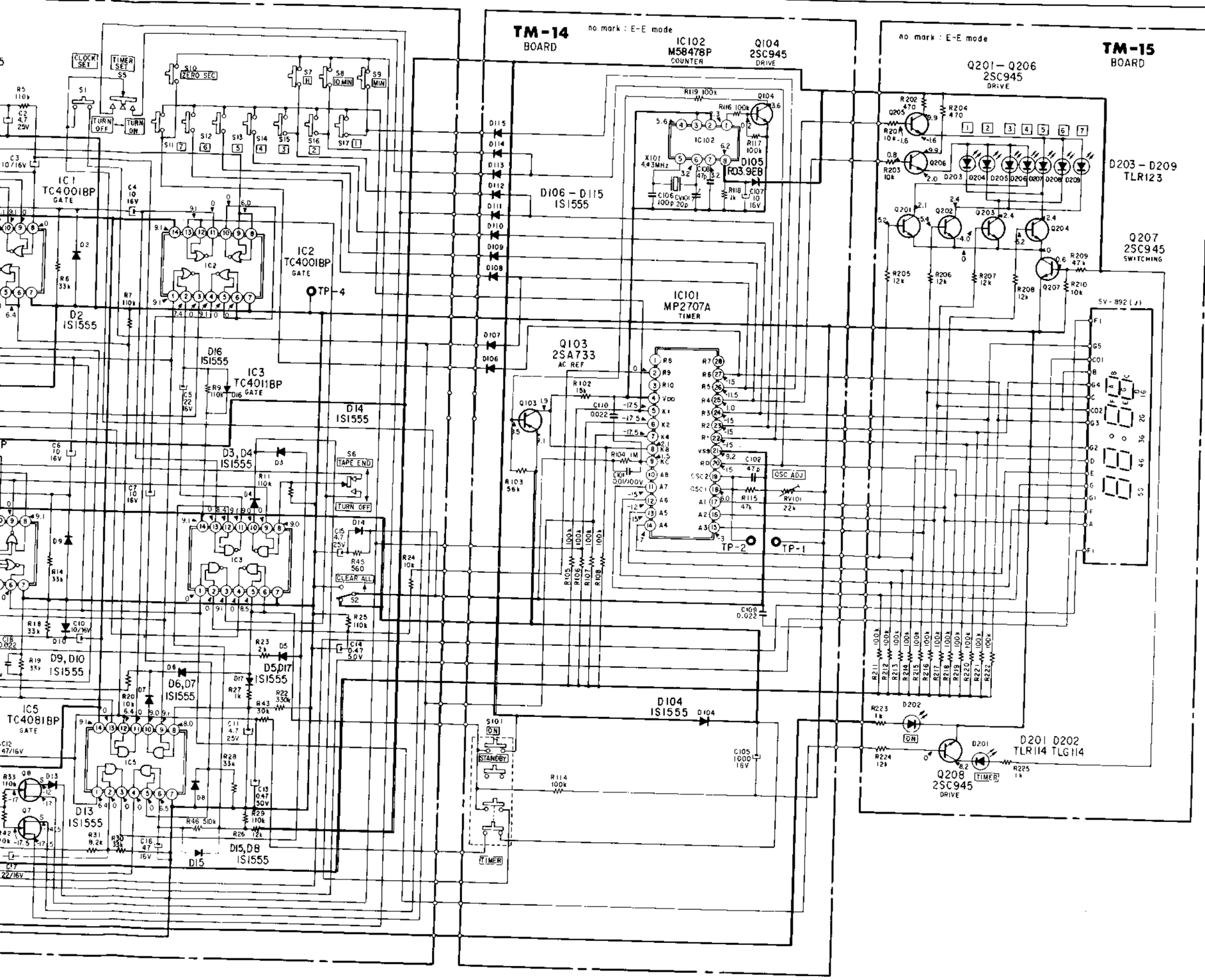


PS-15 (POWER SUPPLY), LF-20 (LINE FILTER), TM-13, TM-14, TM-15 (PROGRAM TIMER) AND TR-1, TR-2 (POWER TRANSISTOR) BOARDS SCHEMATIC DIAGRAM
– Ref. No. PS-15 BOARD: 6000 series LF-20 BOARD: 6100 series TM-13, TM-14, TM-15 BOARD: 7000 series TR-1, TR-2 BOARD: 6300 series –





POWER SUPPLY, TIMER



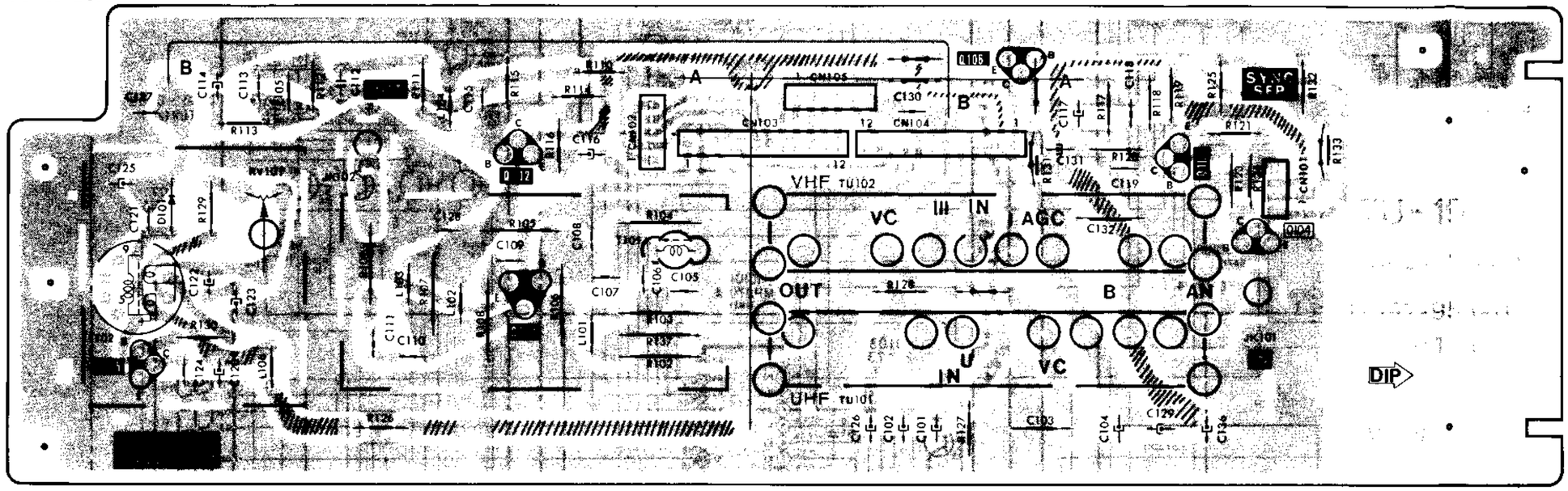
NOTES:

- All resistors are in ohms, ¼ W unless otherwise noted. kΩ = 1000Ω; MΩ = 1000kΩ
- All capacitors are in μF unless otherwise noted. p : μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⚠ : nonflammable resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (20kΩ/V).

The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

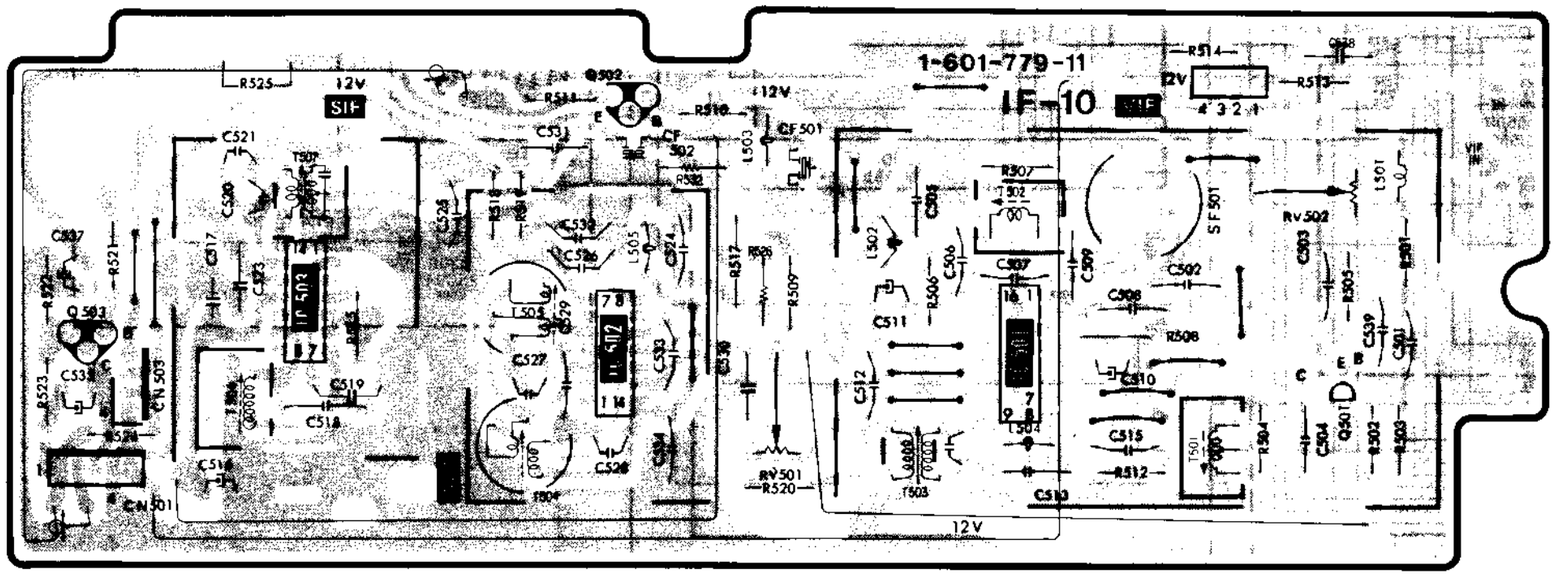
IF-10 (VIF, SIF & AFT), TU-19 (TUNER & DC CONVERTER), CH-4 (CHANNEL SELECT), CH-5 (BAND SELECT & CHANNEL TUNING) AND CH-6 (AFT CONTROL, BAND SWITCH & 9V REG) PRINTED WIRING BOARDS
– Ref. No. IF-10 BOARD: 8500 series TU-19 BOARD: 8100 series CH-4 BOARD: 8200 series CH-5 BOARD: 8300 series CH-6 BOARD: 8400 series –

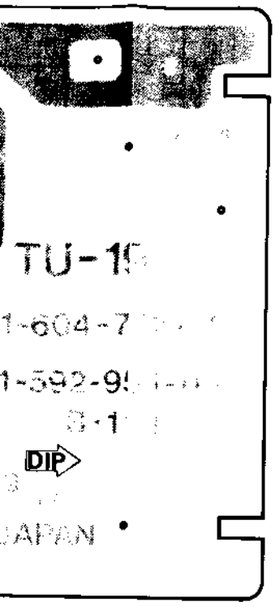
TU-19 BOARD



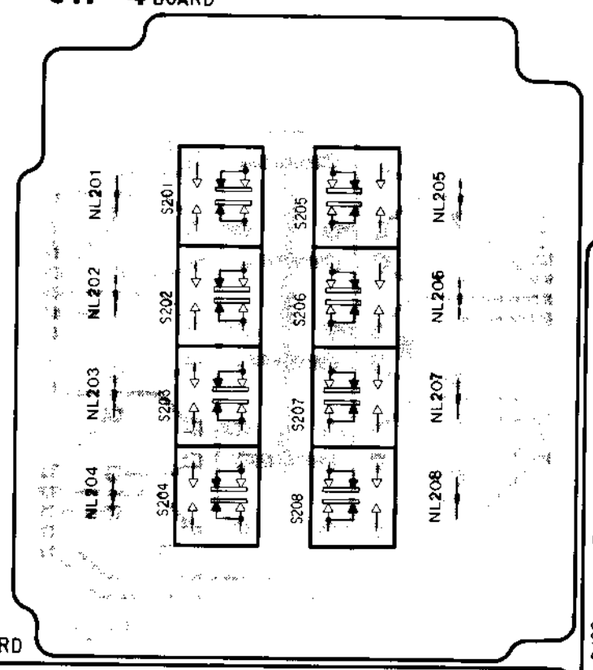
IF-10 BOARD

IC Q	503	IC503	502 IC502	IC501	501	IC Q
ADJ		RV501			RV502	ADJ

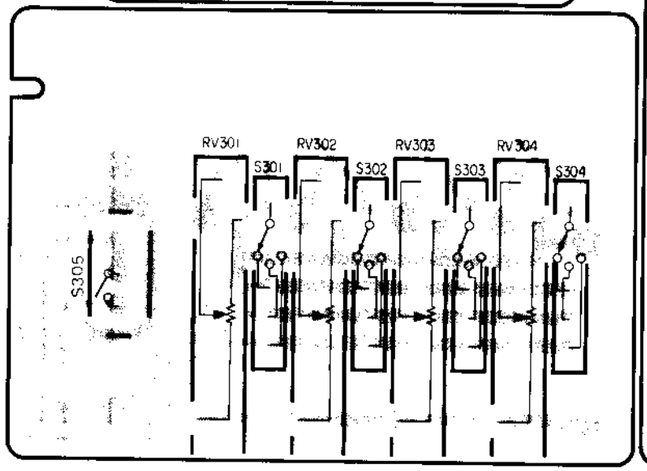




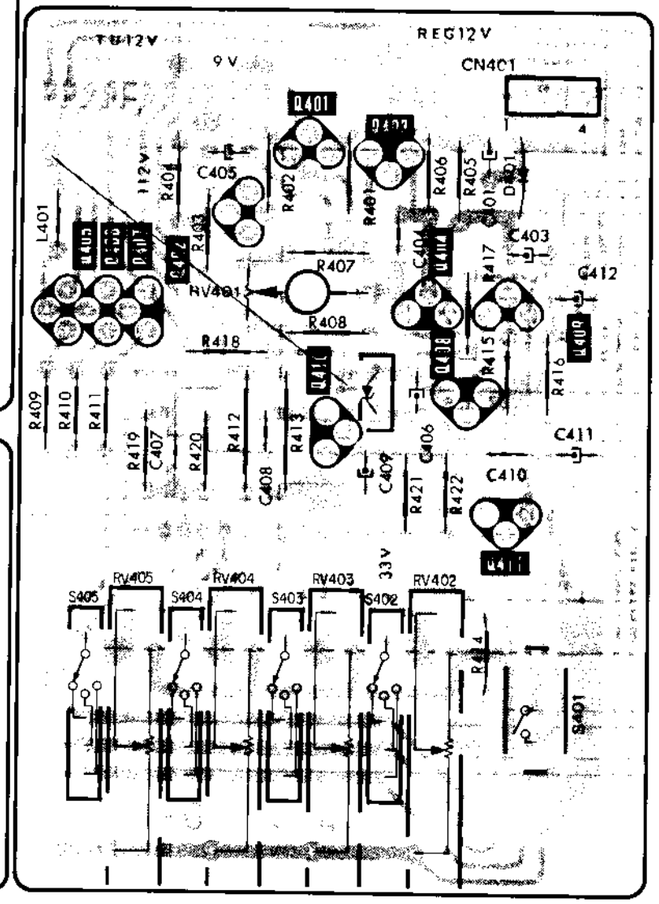
CH-4 BOARD



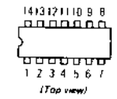
CH-5 BOARD



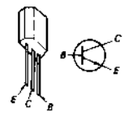
CH-6 BOARD



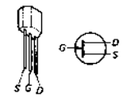
M5135P



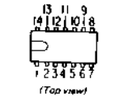
2SC403C



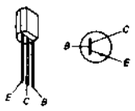
2SK23A



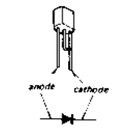
TBA120UB



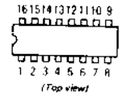
2SC945



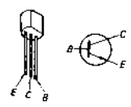
μPC574J



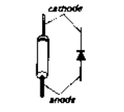
TBA1440G



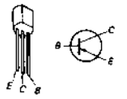
2SC1364
2SC1475



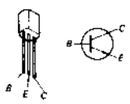
RD6.2E



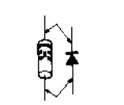
2SA733
2SA772



2SC2009



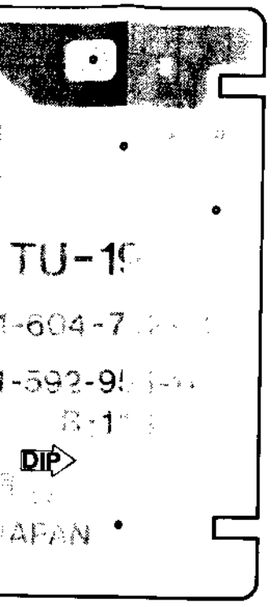
1SS82



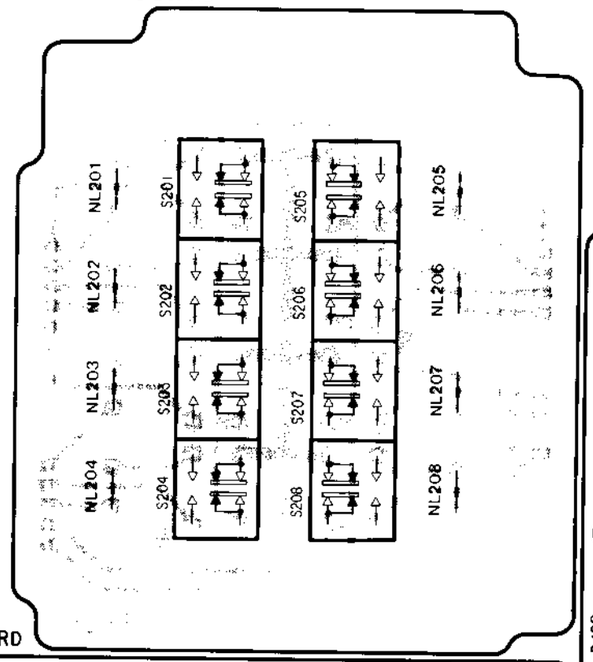
NOTES:

- All resistors are in ohms, ¼ W unless otherwise noted. kΩ = 1000Ω; MΩ = 1000kΩ
- All capacitors are in μF unless otherwise noted. p : μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (20kΩ/V).

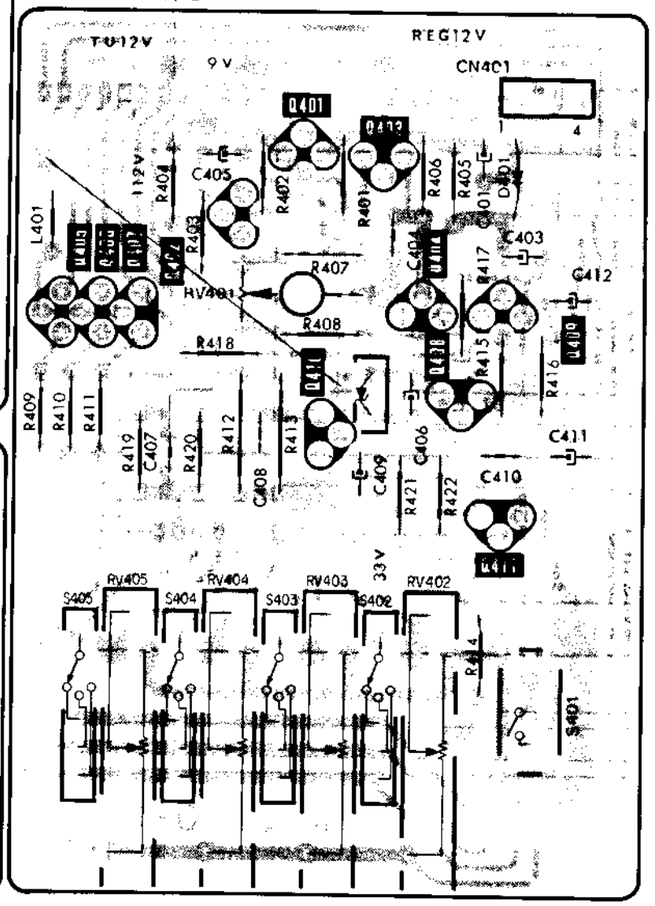
The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.



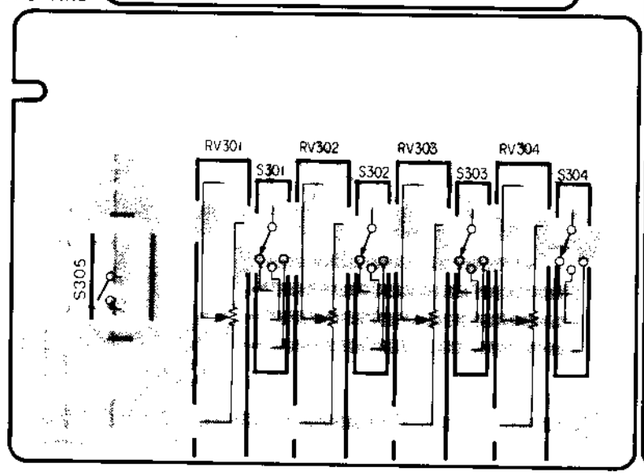
CH-4 BOARD



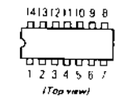
CH-6 BOARD



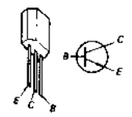
CH-5 BOARD



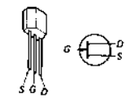
M5135P



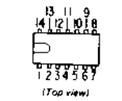
2SC403C



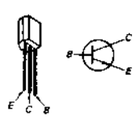
2SK23A



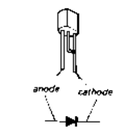
TBA120UB



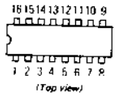
2SC945



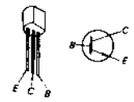
μPC574J



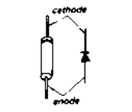
TBA1440G



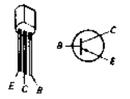
2SC1364
2SC1475



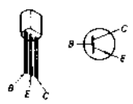
RD6.2E



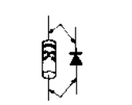
2SA733
2SA772



2SC2009



1SS82

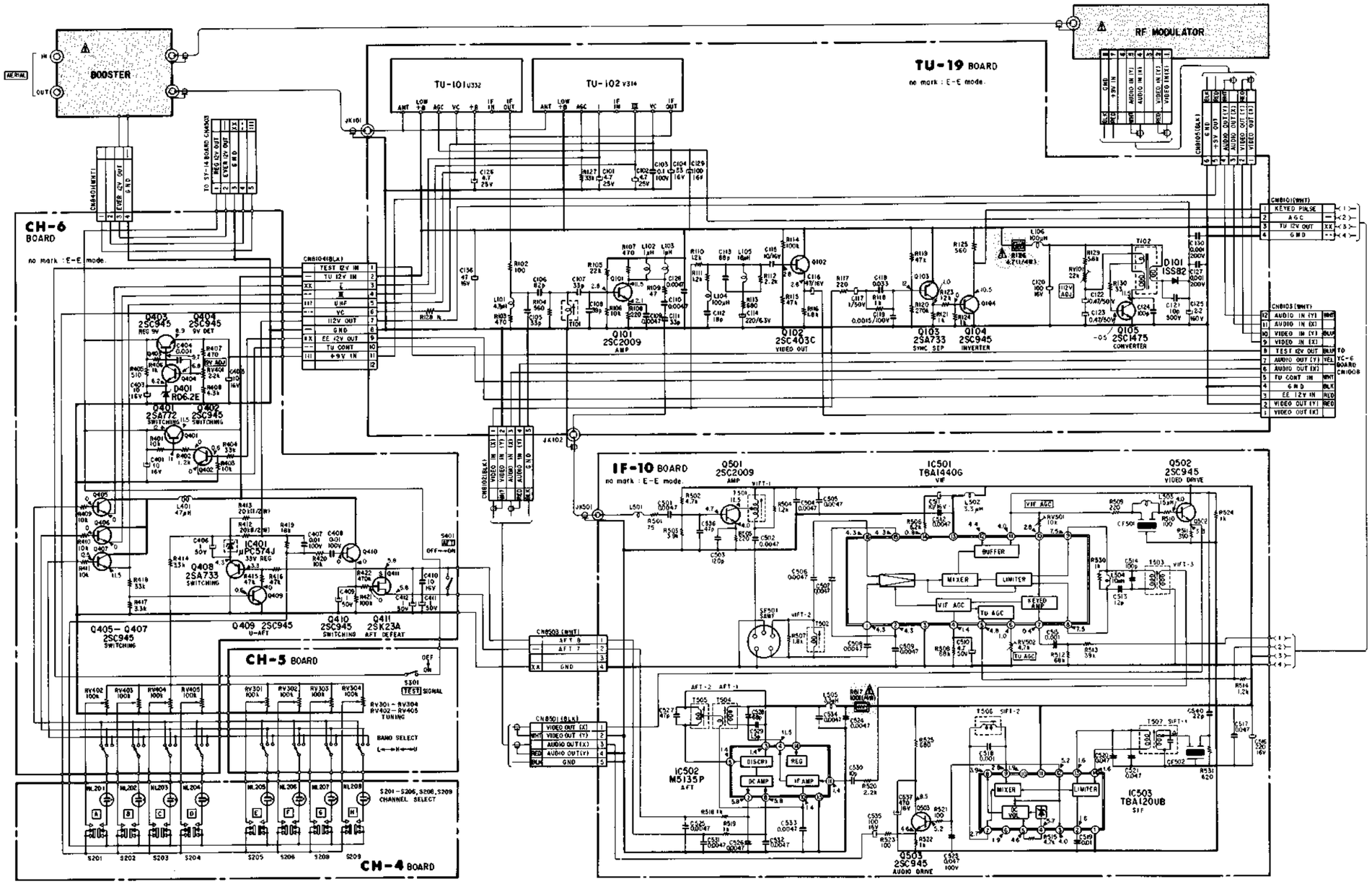


NOTES:

- All resistors are in ohms, $\frac{1}{4}$ W unless otherwise noted. kΩ = 1000Ω; MΩ = 1000kΩ
- All capacitors are in μF unless otherwise noted. p : μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : nonflammable resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (20kΩ/V).

The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

IF-10 (VIF, SIF & AFT), TU-19 (TUNER & DC CONVERTER), CH-4 (CHANNEL SELECT), CH-5 (BAND SELECT & CHANNEL TUNING) AND CH-6 (AFT CONTROL, BAND SWITCH & 9V REG) BOARDS SCHEMATIC DIAGRAM
– Ref. No. IF-10 BOARD: 8500 series TU-19 BOARD: 8100 series CH-4 BOARD: 8200 series CH-5 BOARD: 8300 series CH-6 BOARD: 8400 series –

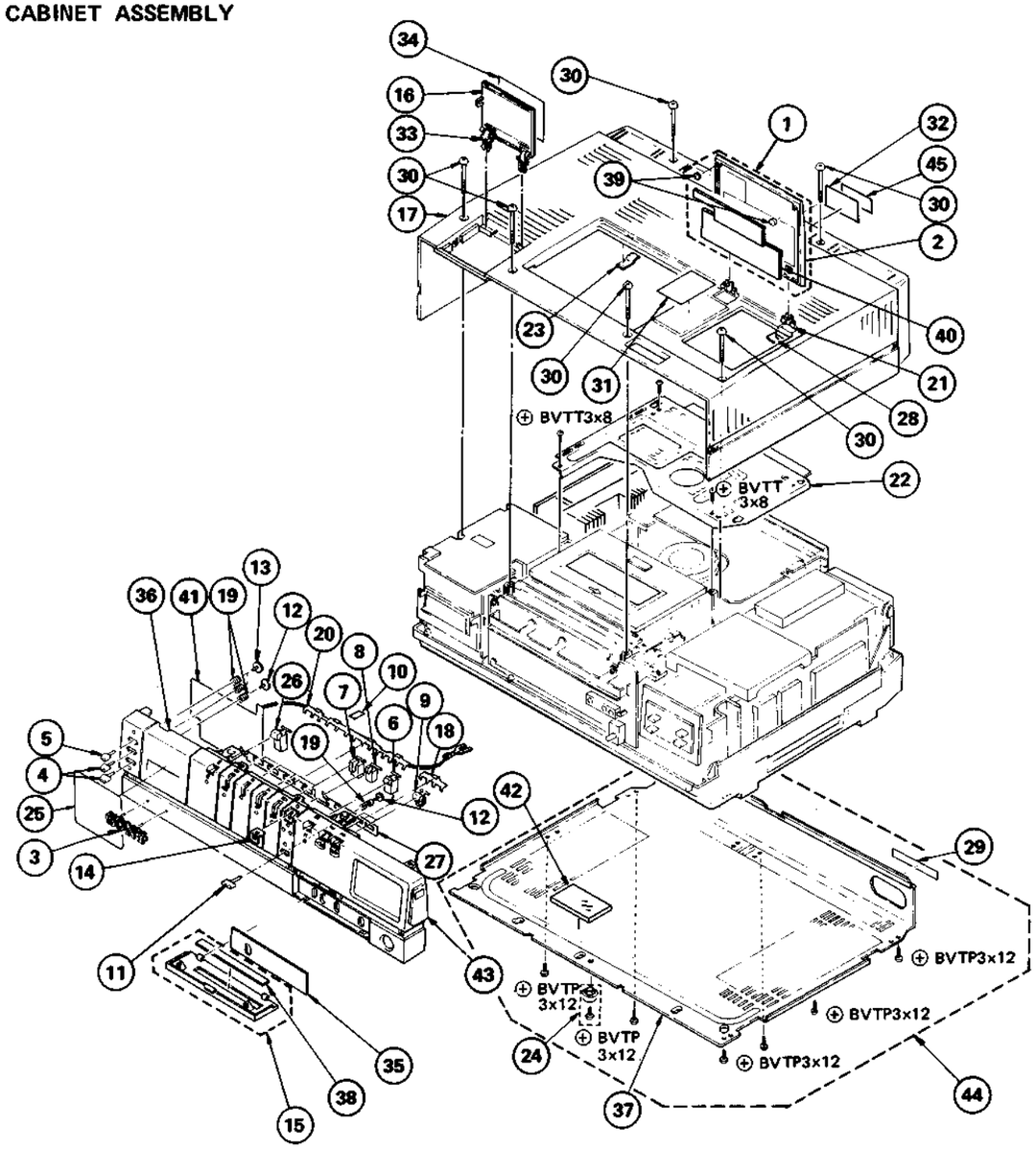


SECTION 4
EXPLODED VIEWS

Note:

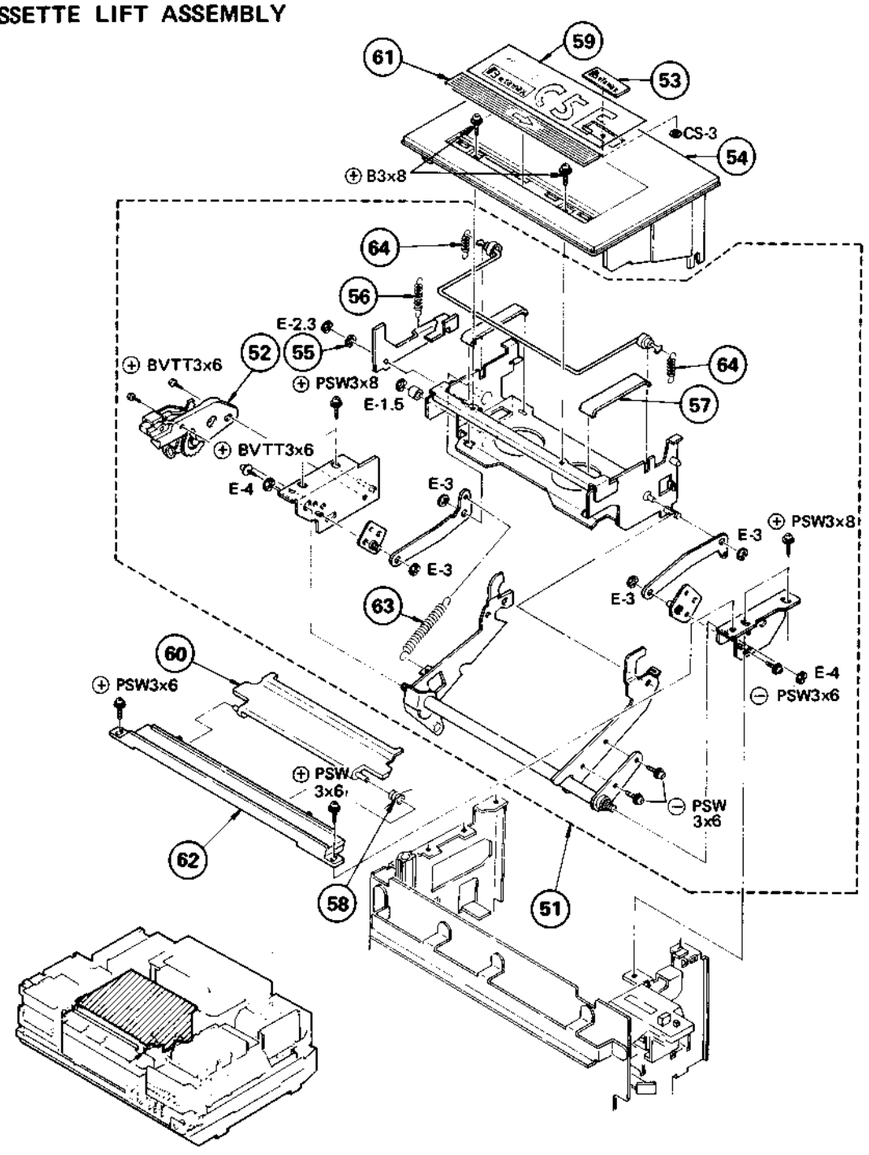
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
- As to the part numbered with E-, refer to the electrical parts list.
- Items marked "♦" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

CABINET ASSEMBLY



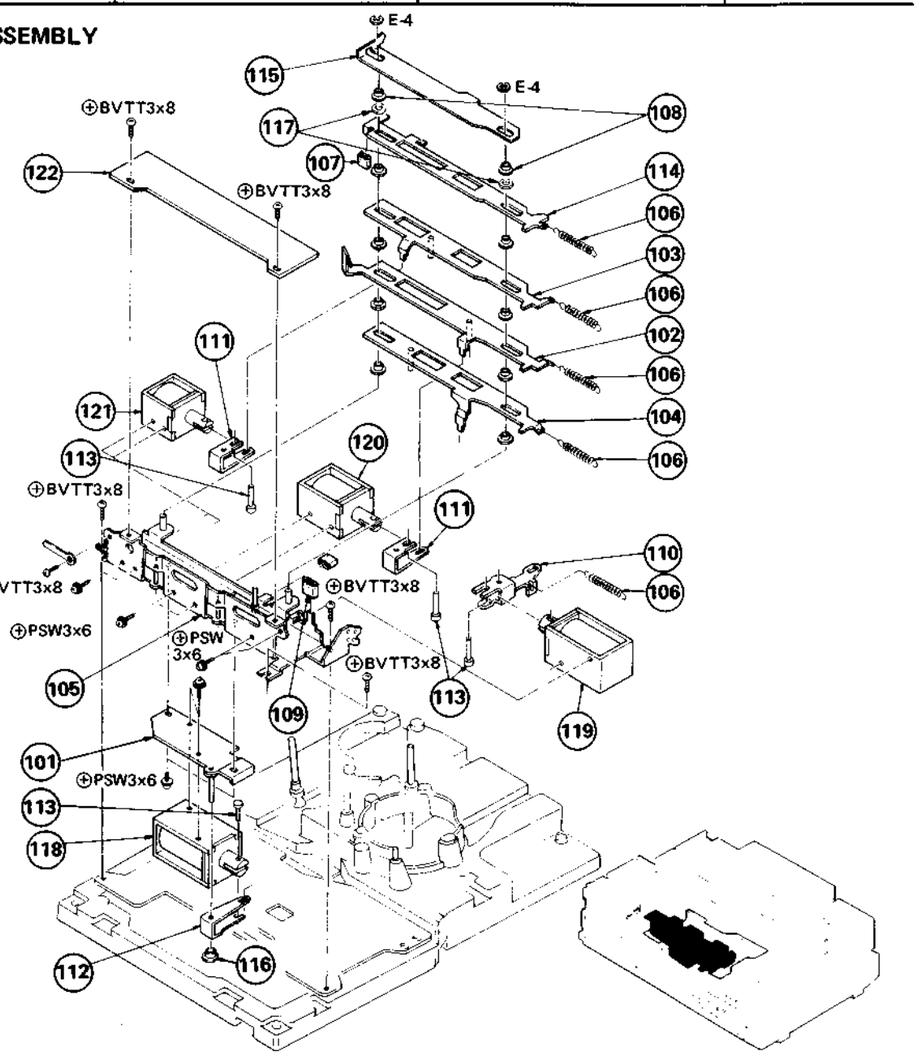
No.	Part No.	Description	Remark
1	X-3669-005-0	DOOR ASS'Y, preset	- - - - 2, 39, 40
2	3-659-599-91	DOOR, preset	
3	3-548-973-00	EMBLEM, SONY	
4	3-659-535-01	SWITCH, P	
5	3-659-535-11	SWITCH, P	
6	3-662-247-00	BUTTON (PAUSE), F	
7	3-659-537-00	BUTTON (2), F	
8	3-659-538-00	BUTTON (3), F	
9	3-659-539-00	BUTTON (4), F	
10	3-662-345-00	SPACER, button; F	
11	3-659-541-00	SWITCH (2), S.F	
12	3-659-542-00	RETAINER, spring	
13	3-659-542-11	RETAINER, spring	
14	3-659-543-03	PLATE, ornamental; REC button	
15	X-3669-001-0	DOOR ASS'Y, front	- - - - 38
16	3-659-590-00	LID, timer	
17	3-669-001-00	CASE, upper	
18	3-659-607-00	RETAINER (2), button	
19	3-659-609-00	SPRING, compression	
20	3-659-616-00	RETAINER (1), button	
21	3-659-618-00	HINGE, spring	
22	♦3-659-671-00	COVER, shield	
23	3-659-748-00	CLOTH, masking; upper case	
24	3-659-768-00	FOOT	
25	3-660-901-00	COVER, front; timer	
26	3-662-248-00	BUTTON (EJECT), F	
27	3-660-959-00	SPRING, LEAF	
28	3-831-441-XX	CLOTH (2), masking; upper case	
29	3-662-260-00	LABEL, input/output	
30	3-662-325-00	SCREW, tap	
31	3-669-020-00	LABEL (ENGLISH), guide, preset	
32	♦3-669-002-00	LABEL, model number (CSE)	
33	3-703-035-11	SHAFT, LID	
34	3-663-209-00	STICKER, timer	
35	♦3-663-216-00	LABEL, pause	
36	3-669-009-00	WINDOW, timer	
37	3-663-229-00	PLATE, bottom (M)	
38	3-663-232-00	LABEL, front door	
39	4-314-871-00	CUSHION	
40	3-669-013-00	LABEL (ENGLISH), caution door	
41	♦3-663-242-00	INSULATOR, front ground	
42	♦3-669-003-00	INSULATOR	
43	3-663-208-31	FRONT (RIGHT)	
44	X-3669-004-0	PLATE ASS'Y, bottom	- - - 29, 37
45	3-703-274-00	LABEL, approval	

CASSETTE LIFT ASSEMBLY



No.	Part No.	Description	Remark
51	A-6751-061-A	CASSETTE-UP BLOCK ASS'Y	– 52, 56, 57, 63, 64
52	A-6751-079-A	DAMPER ASS'Y, rotary	
53	X-3658-101-0	EMBLEM ASS'Y (P)	
54	X-3669-003-0	LID ASS'Y, cassette-up	– – – 53, 65
55	3-701-439-01	WASHER	
56	3-642-490-00	SPRING, tension	
57	3-659-498-00	CUSHION, cassette holder	
58	3-659-531-00	SPRING	
59	3-669-005-00	STICKER, C5E	
60	3-659-583-00	PLATE, blind cassette	
61	3-659-585-00	STRIP, ornamental cassette	
62	3-659-598-81	GUIDE, cassette	
63	3-660-995-00	SPRING, tension	
64	3-659-636-00	SPRING, tension	

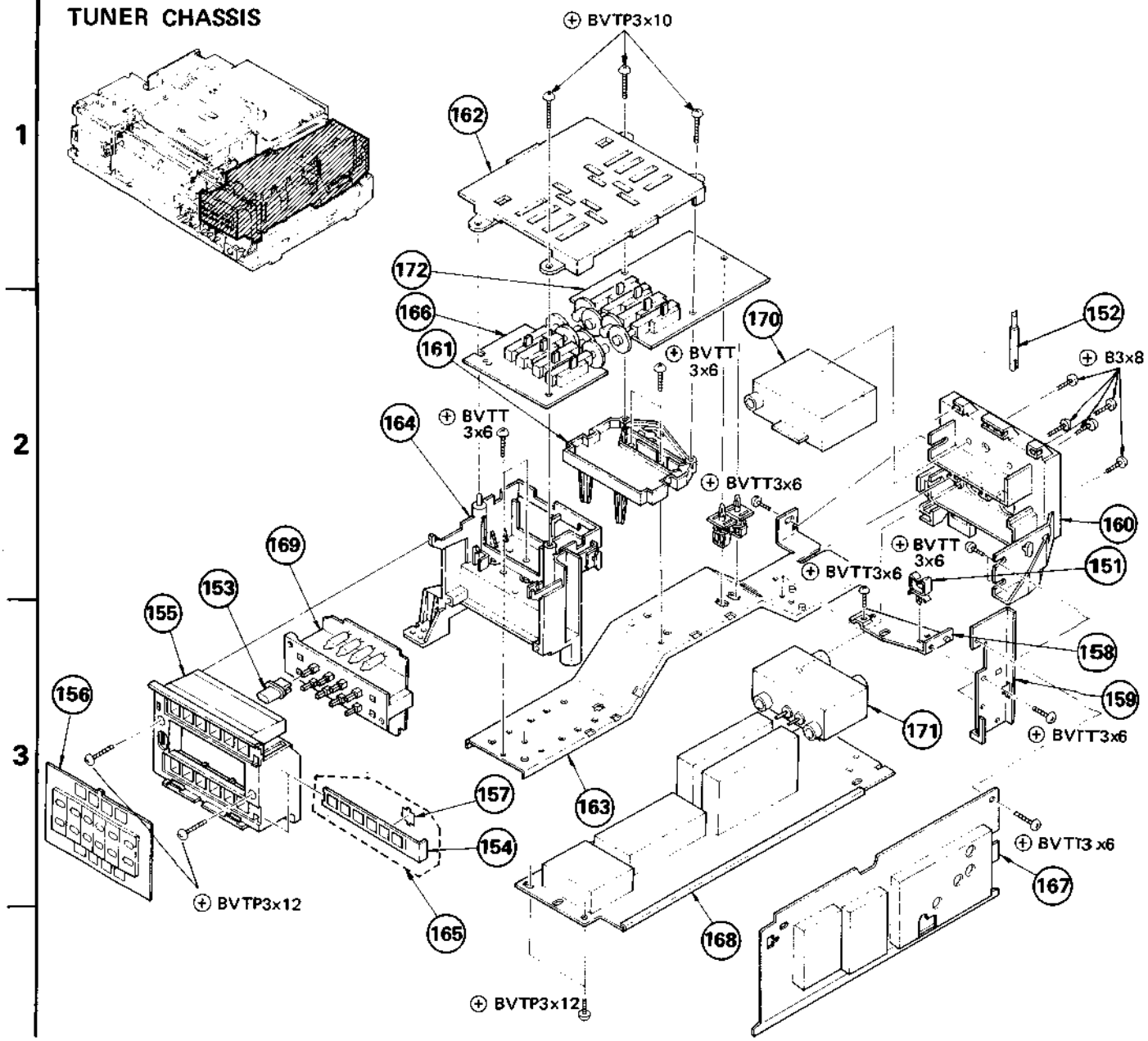
FUNCTION ASSEMBLY



No.	Part No.	Description	Remark
101	X-3659-329-0	BASE ASS'Y, E solenoid	
102	X-3659-341-0	PLATE ASS'Y, slide; F	– – – – 106
103	X-3659-342-0	PLATE ASS'Y, slide; R	– – – – 106
104	X-3659-343-0	PLATE ASS'Y, slide; E	– – – – 106
105	X-3659-353-0	FRAME ASS'Y, F solenoid	– – 109
106	3-536-006-XX	SPRING, tension	
107	3-537-790-21	SUPPORT, tension; arm	
108	3-646-271-00	BOSS	
109	3-655-856-11	RETAINER, tension regulator	
110	3-659-478-00	LEVER, F	
111	3-659-479-00	LEVER, FR	
112	3-659-480-00	LEVER, E	
113	3-659-481-00	PIN, solenoid	
114	3-659-569-00	PLATE, slide; B	
115	3-659-790-00	PLATE, slide; FB	
116	3-703-074-00	CAP 3, shaft	
117	3-701-443-11	WASHER	
⚠118	1-454-213-00	SOLENOID, plunger EJECT	
⚠119	1-454-214-00	SOLENOID, plunger FWD	
⚠120	1-454-215-00	SOLENOID, plunger CUE	
⚠121	1-454-216-00	SOLENOID, plunger REVIEW	
122	1-601-821-00	PC BOARD, PL-2	

The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

TUNER CHASSIS

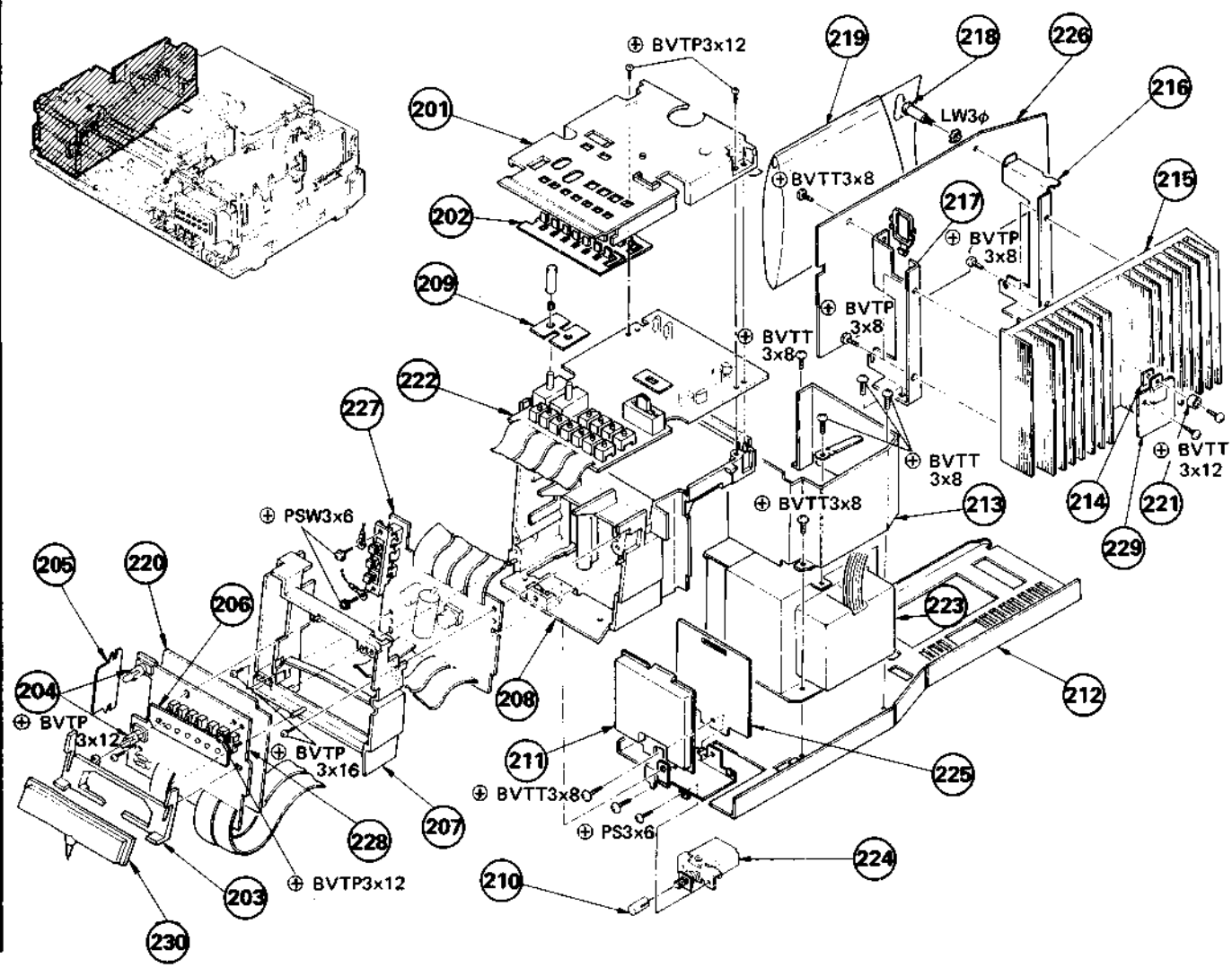


No.	Part No.	Description	Remark
151	♦3-655-214-00	CLIP, cable	
152	3-656-301-00	SCREWDRIVER, control	
153	3-659-520-00	KNOB, channel	
154	3-659-580-00	HOLDER, indicator	
155	♦3-659-597-00	COVER, lamp	
156	3-659-733-51	PLATE, ornamental channel	
157	3-663-223-00	INDICATOR (C), 8 channel	
158	♦3-662-234-00	REINFORCEMENT, IF	
159	3-663-218-00	PLATE, ornamental; 8 gung preset	
160	♦3-663-220-02	CHASSIS (D), tuner	
161	♦3-663-226-00	CHASSIS (A), tuner	
162	♦3-662-242-00	BRACKET, IF	
163	3-662-289-00	CHASSIS (B), tuner	
164	♦3-663-210-00	CHASSIS (C), tuner	

No.	Part No.	Description	Remark
165	A-6707-116-A	HOLDER (C) ASS'Y, indicator – 151, 157	
166	♦A-6721-047-A	CH-5 BOARD, complete	
167	♦A-6721-038-A	COMPLETE PCB, IF-10	
168	♦A-6721-082-A	COMPLETE PCB, TU-19	
169	♦A-6721-047-A	CH-4 BOARD, complete	
⚠170	1-464-105-00	MODULATOR, RF	
⚠171	1-463-296-00	ANTENNA BOOSTER, mixer (BT-911)	
172	♦A-6721-047-A	CH-6 BOARD, complete	

The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

TIMER BLOCK ASSEMBLY

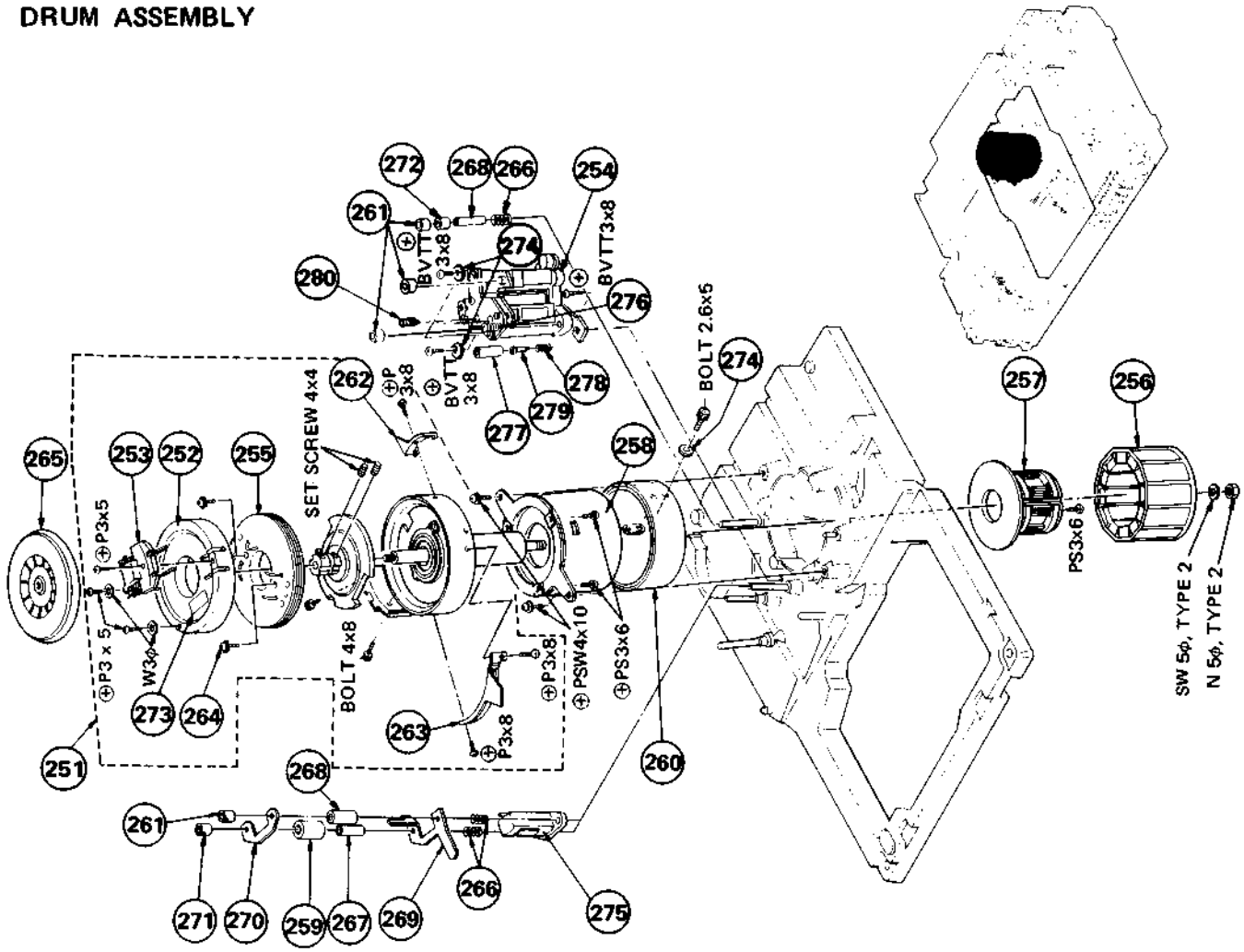


No.	Part No.	Description	Remark
201	X-3669-007-0	PANEL ASS'Y, timer	---- 202
202	3-659-708-00	BUTTON, timer	
203	♦3-659-686-00	HOLDER, indication tube	
204	3-659-684-00	HOLDER, power lamp	
205	♦3-663-243-00	INSULATOR, timer ground	
206	♦3-659-794-00	PLATE, positioning, LED	
207	♦3-659-677-00	FRAME, front timer	
208	♦3-659-674-00	FRAME, rear timer	
209	3-662-269-00	CLOTCH, masking, switch	
210	4-334-115-00	KNOB, clock day	
211	♦3-662-355-00	COVER, LF-17 PC BOARD	
212	X-3669-002-0	CHASSIS ASS'Y, unit; power	
213	♦3-659-670-00	PLATE, shield, transformer	
214	3-660-978-00	SHEET, heat resisting	
215	♦3-659-692-00	HEAT SINK	
216	♦3-659-514-00	BRACKET (A), heat sink	
217	♦3-659-515-00	BRACKET (B), heat sink	

No.	Part No.	Description	Remark
218	3-659-743-00	SCREW, STEP	
219	♦3-669-010-00	COVER, insulating	
220	3-662-344-00	COVER, TM	
221	2-832-002-00	BUSHING, insulating	
222	♦A-6728-124-B	MOUNTED PCB, TM-13	
⚠223	1-446-970-00	TRANSFORMER, power	
⚠224	1-552-992-00	SWITCH, push	
225	♦1-604-754-00	PC BOARD, LF-20	
226	♦1-604-753-00	PC BOARD, PS-15	
227	♦1-602-378-15	PC BOARD, TM-14	
228	♦1-602-379-14	PC BOARD, TM-15	
229	♦1-600-038-00	PC BOARD, TR-1	
230	1-519-174-00	INDICATOR, tube	

The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

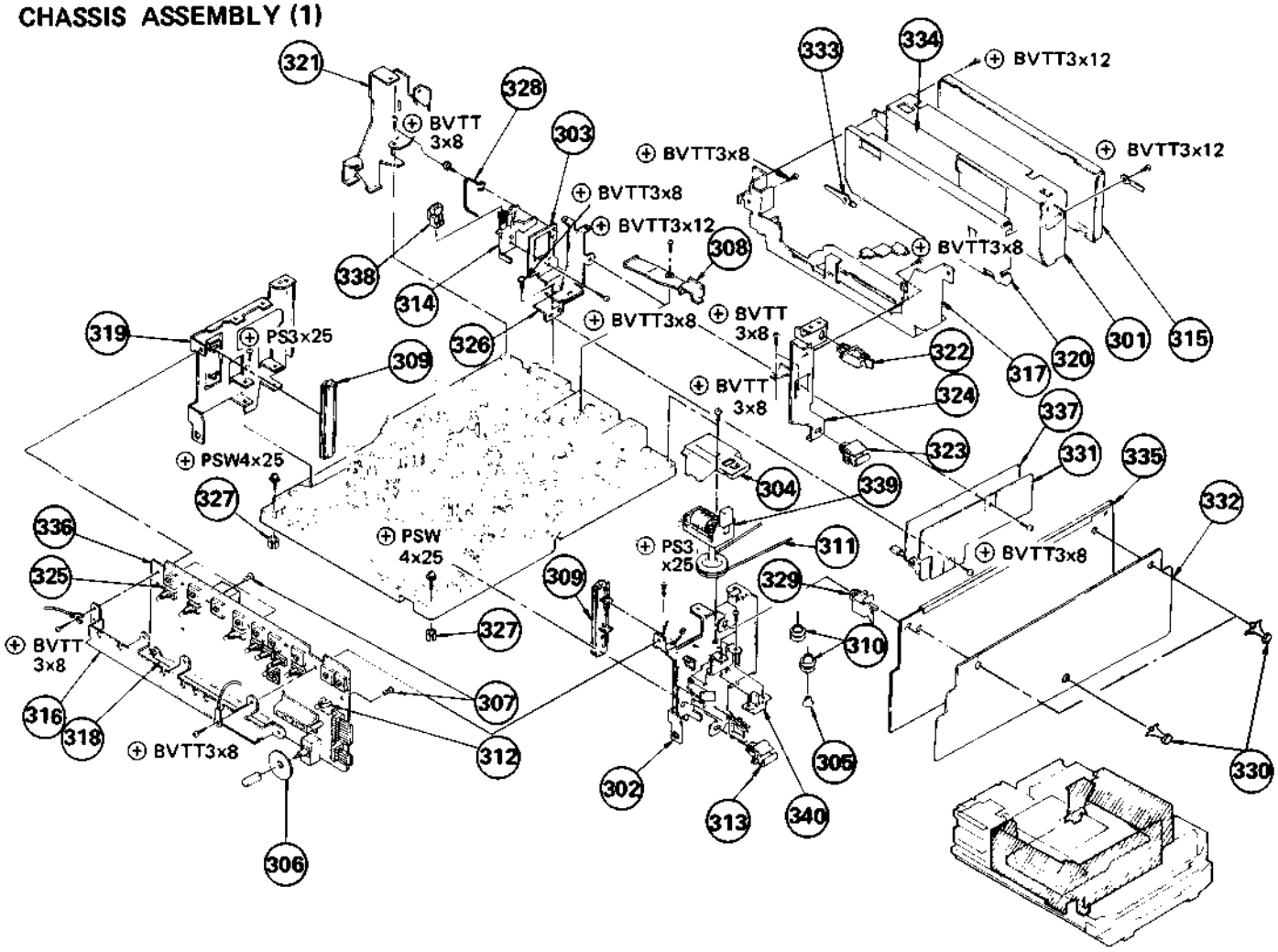
DRUM ASSEMBLY



No.	Part No.	Description	Remark
251	A-6050-070-A	DRUM ASS'Y (DSH-10A-R)	252, 253, 255, 262, 263, 264, 273
252	A-6760-050-A	DRUM SUB ASS'Y, upper	253
253	X-3652-718-0	SPRING ASS'Y	
254	A-6761-035-A	A.C.E. ASS'Y	261, 266 276–279
255	A-6762-044-A	VIDEO HEAD DISK ASS'Y (DSR-10-R)	
256	♦X-2619-402-0	ROTOR ASS'Y	
257	X-2619-403-0	STATOR ASS'Y	
258	♦X-3652-713-0	CASE ASS'Y, shield	
259	X-3659-304-0	ROLLER ASS'Y, guide; No. 1	
260	♦X-3659-376-0	SHIELD ASS'Y, drum	274
261	3-645-562-00	NUT	
262	3-652-728-00	BRACKET (B), tape	
263	3-652-741-00	BRACKET (A), tape	

No.	Part No.	Description	Remark
264	3-652-751-00	SCREW (⊕ P EXT tooth WS 3 ×8)	
265	3-658-122-00	FAN	
266	3-659-324-00	SPRING, compression	
267	3-659-341-00	SLEEVE, guide; No. 1	
268	3-659-342-00	SLEEVE, guide; No. 2	
269	♦3-659-343-00	BRACKET, tape; entrance	
270	3-659-344-00	PLATE, guide; entrance	
271	3-659-345-00	NUT, guide; No. 1	
272	3-659-716-00	FLANGE, guide	
273	♦3-662-905-21	LABEL	
274	♦3-845-490-00	WASHER	
275	8-825-687-30	HEAD, full erase EF182-21	
276	3-645-513-00	SPRING, head deck adjustment	
277	3-659-752-00	NUT, A.C.E. lock	
278	3-659-750-00	SPRING, compression	
279	3-659-751-00	SCREW, A.C.E adjustment	
280	3-659-332-00	SCREW	

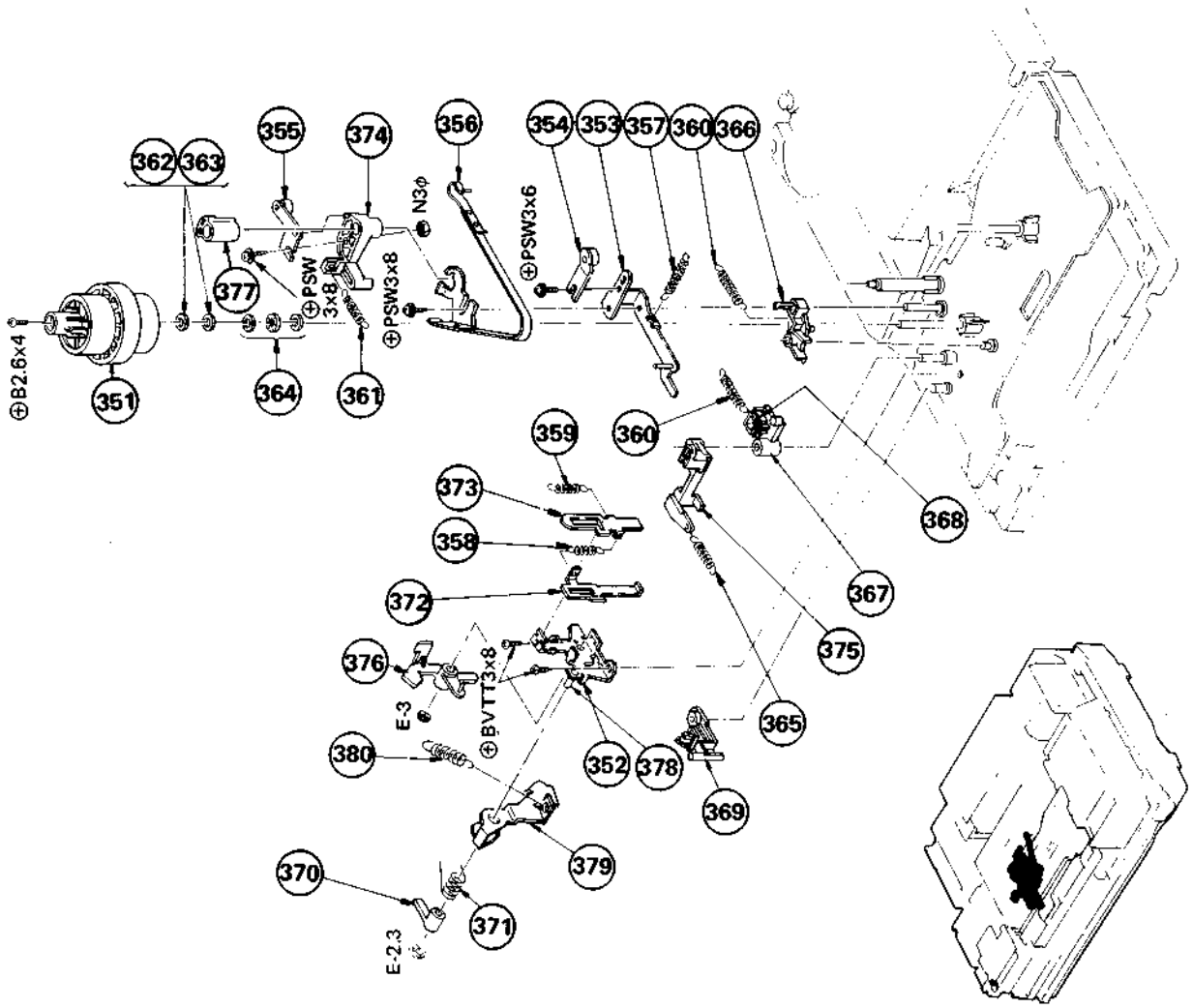
CHASSIS ASSEMBLY (1)



No.	Part No.	Description	Remark
301	♦X-3659-339-0	CASE (A) ASS'Y, shield	
302	♦X-3659-352-0	BRACKET (RIGHT) ASS'Y, cassette	
303	♦X-3659-361-0	OPENER ASS'Y, lid - - - - 326	
304	X-3664-306-0	COVER (F) ASS'Y, counter	
305	3-703-075-00	CAP 2, shaft	
306	3-538-139-00	CLOTH, switch	
307	3-646-090-00	RIVET, nylon	
308	♦3-659-303-00	RETAINER (SMALL), harness	
309	♦3-659-482-00	SUPPORT	
310	3-659-484-00	PULLEY, midway; counter	
311	3-659-485-00	BELT, counter	
312	♦3-659-486-00	HOLDER(C), LED	
313	♦3-703-072-00	HOLDER, plate; P	
314	♦3-659-548-00	HOLDER, T sensor	
315	♦3-659-549-00	LID BOTTOM, shield case (A)	
316	♦3-659-573-00	BRACKET (UPPER), FS PC board	
317	♦3-659-591-00	HOLDER, shield case	
318	♦3-659-628-00	BRACKET (LOWER), FS PC board	
319	♦3-659-629-00	BRACKET, cassette-up (LEFT)	

No.	Part No.	Description	Remark
320	X-3659-358-0	LID, upper, shield case (A)	
321	♦3-659-673-00	FOOT (LEFT), rear	
322	♦3-659-681-00	HOLDER, PC board	
323	♦3-659-682-00	HOLDER, PC board	
324	♦3-659-683-00	LEG, rear (RIGHT)	
325	3-659-685-00	HOLDER (B), LED	
326	♦3-659-688-00	LEG, fixed, CD-1	
327	3-659-719-00	STOPPER, punching M4 screw	
328	3-659-762-02	ARM, ejector static	
329	♦3-703-141-00	HOLDER, PCB	
330	4-812-134-11	RIVET nylon, 3.5ϕ	
331	♦3-663-246-00	INSULATOR, LS	
332	♦3-663-267-00	INSULATOR	
333	♦4-857-472-00	CLAMP	
334	♦A-6711-216-A	COMPLETE PCB, RF-2	
335	♦A-6717-198-A	COMPLETE PCB, SY-15 (CH)	
336	♦A-6717-214-A	COMPLETE PCB, SY-14 (E)	
337	♦A-6725-152-A	COMPLETE PCB, LS-3	
338	1-543-145-00	HEAD, sensing	
339	1-548-534-00	COUNTOR	
340	1-552-877-00	SWITCH, slide	

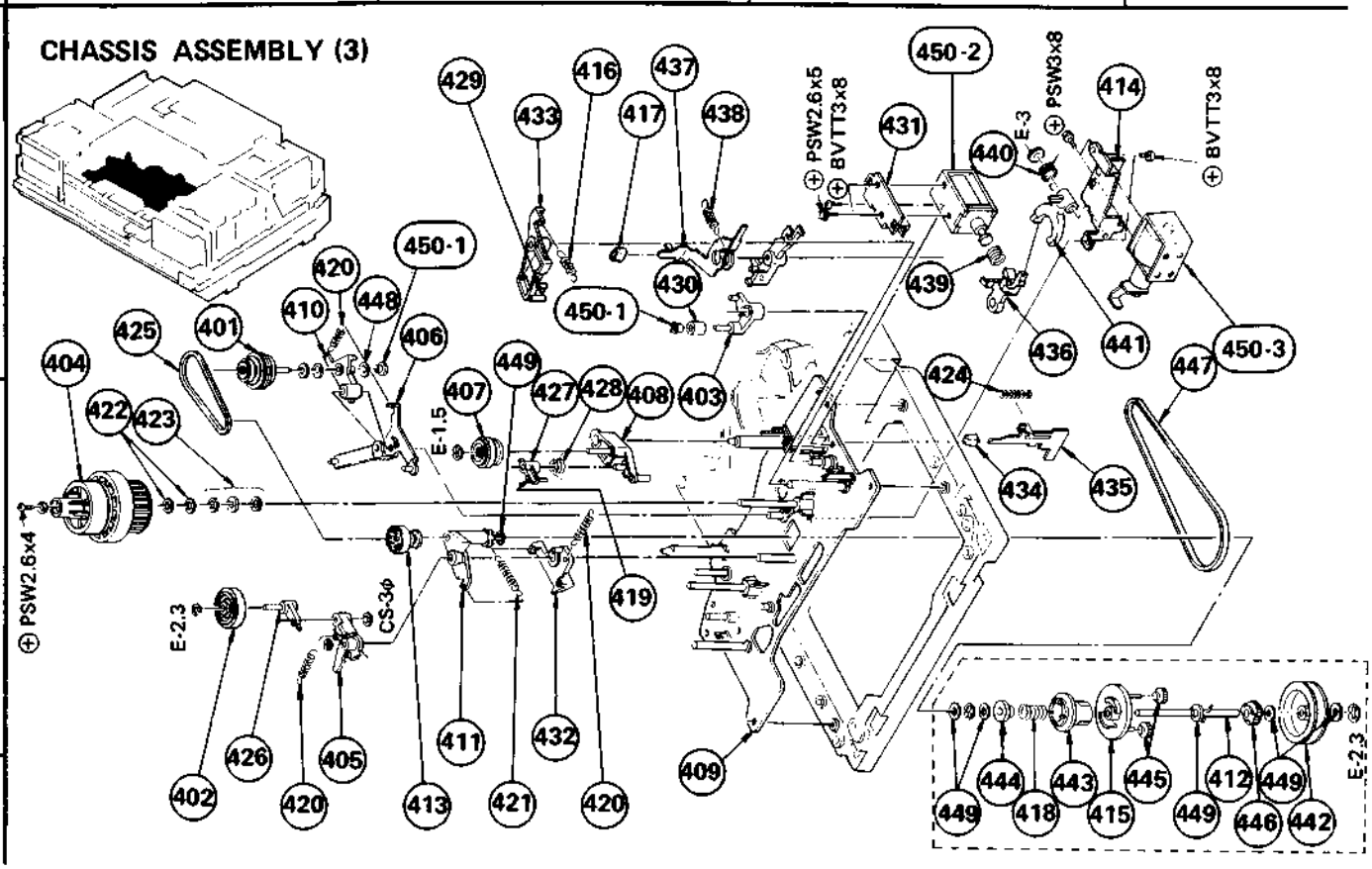
CHASSIS ASSEMBLY (2)



No.	Part No.	Description	Remark
351	X-3659-315-3	REEL ASS'Y, S	
352	♦X-3659-317-2	BRACKET ASS'Y, lock	- - - 381
353	♦X-3659-322-0	ARM ASS'Y, ring	
354	X-3659-323-0	PLATE ASS'Y, adjustment; R	
355	X-3659-326-0	ARM ASS'Y, cassette compartment	
356	X-3659-328-2	BAND ASS'Y, tension regulator	
357	3-143-060-00	SPRING, tension	
358	3-667-306-00	SPRING, tension	
359	3-667-311-00	SPRING, tension	
360	3-534-217-00	SPRING, tension	
361	3-537-205-00	SPRING, tension	
362	3-646-184-00	SPACER (T:0.2), reel ADJ	
363	3-646-184-11	SPACER (T:0.1), reel ADJ	
364	3-646-185-00	BEARING	
365	3-648-626-00	SPRING, tension	

No.	Part No.	Description	Remark
366	♦3-659-415-00	LEVER, press; REW	
367	♦3-659-445-00	BRAKE, S	
368	3-659-446-00	LINING, brake	
369	3-659-452-00	ARM, brake release	
370	♦3-659-454-02	ARM, ring lock	
371	3-667-308-00	SPRING	
372	♦3-659-457-02	PLATE, slide; MS	
373	♦3-659-458-00	DETECTION, cassette	
374	♦3-659-562-00	ARM (1), cassette compartment	
375	♦3-659-567-00	BRAKE, soft	
376	3-659-624-03	LOCK, cassette compartment	
377	3-660-916-00	STOPPER, end	
378	3-667-310-00	SHAFT, 1.2 flange	
379	3-667-307-00	PLATE, lock, slide	
380	3-667-309-00	SPRING, tension	

CHASSIS ASSEMBLY (3)

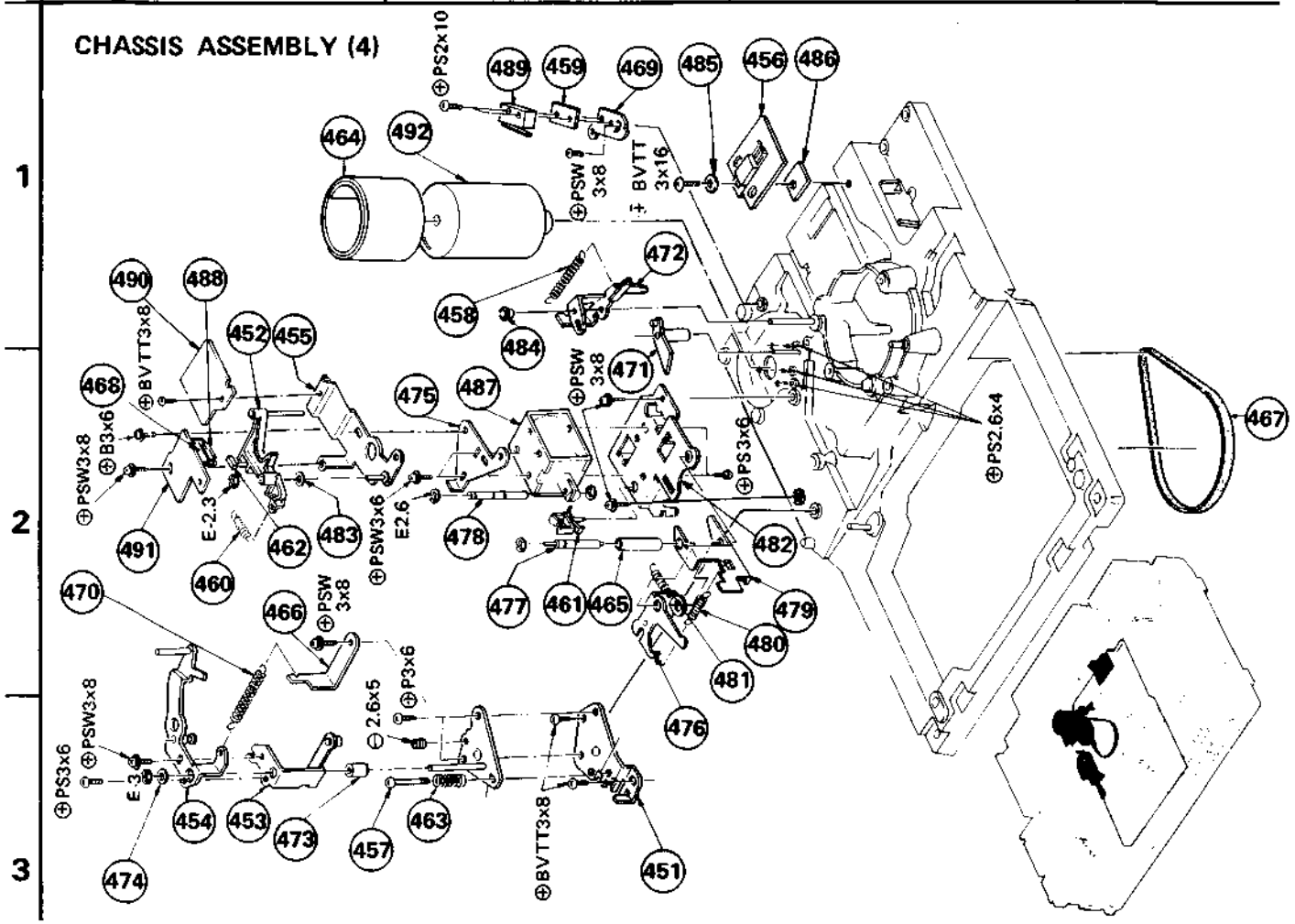


No.	Part No.	Description	Remark
401	X-3653-310-0	LIMITER ASS'Y, FWD	448
402	X-3653-315-0	IDLER ASS'Y	
403	♦X-3659-311-0	ARM ASS'Y, TB	
404	X-3664-344-0	TABLE ASS'Y, reel; T	
405	♦X-3659-318-0	BRACKET ASS'Y, adjustment	
406	X-3659-319-0	LEVER ASS'Y, FWD	
407	X-3659-324-0	IDLER ASS'Y, E	
408	♦X-3659-325-0	ARM ASS'Y, E idler	
409	♦X-3659-347-0	CHASSIS ASS'Y, mechanism	
410	X-3659-410-0	ARM ASS'Y, FWD	
411	X-3661-512-3	ARM ASS'Y, FF	
412	X-3661-518-0	SHAFT ASS'Y, midway pulley	
413	X-3661-520-0	PULLEY ASS'Y, midway	
414	♦X-3661-572-0	FRAME ASS'Y, SL	
415	X-3662-207-0	ARM ASS'Y, planet gear	
416	3-534-217-00	SPRING, tension	
417	3-538-051-11	RUBBER, brake	
418	3-543-966-00	SPRING, compression	
419	3-553-038-00	SPACER, EBF	
420	3-642-483-00	SPRING, tension	
421	3-645-168-00	SPRING, tension	
422	3-646-184-00	SPACER	
423	3-646-185-00	BEARING	
424	3-646-312-00	SPRING	
425	3-653-324-00	BELT, FWD	
426	♦3-659-416-00	LEVER, REW	
427	♦3-659-431-00	CLAW, ratchet	
428	3-659-432-00	SPRING	

No.	Part No.	Description	Remark
429	3-659-446-00	LINING, brake	
430	3-659-464-00	ROLLER, TB arm	
431	♦3-659-470-00	BASE, PB solenoid	
432	♦3-659-564-00	LEVER, FF press	
433	♦3-659-791-02	BRAKE, T	
434	3-667-320-00	CAP	
435	♦3-660-943-00	PLATE, erasing protection	
436	♦3-660-982-00	ARM, PB press	
437	♦3-660-983-00	BRAKE, P	
438	3-660-984-00	SPRING, tension	
439	3-660-985-00	SPRING, compression	
440	3-661-570-00	SPRING	
441	♦3-661-574-00	LEVER, clutch	
442	3-662-221-02	GEAR, mechanism pulley	
443	3-662-223-00	CLUTCH	
444	3-662-225-00	RETAINER, spring	
445	3-662-274-00	GEAR, planet	
446	3-662-275-00	GEAR, driving	
447	3-662-347-00	BELT, FF	
448	3-701-437-11	WASHER	
449	3-701-439-21	WASHER	
450-1	3-703-075-00	CAP 2, shaft	
⚠450-2	1-454-185-21	SOLENOID	
450-3	1-454-229-00	SOLENOID, plunger	

The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

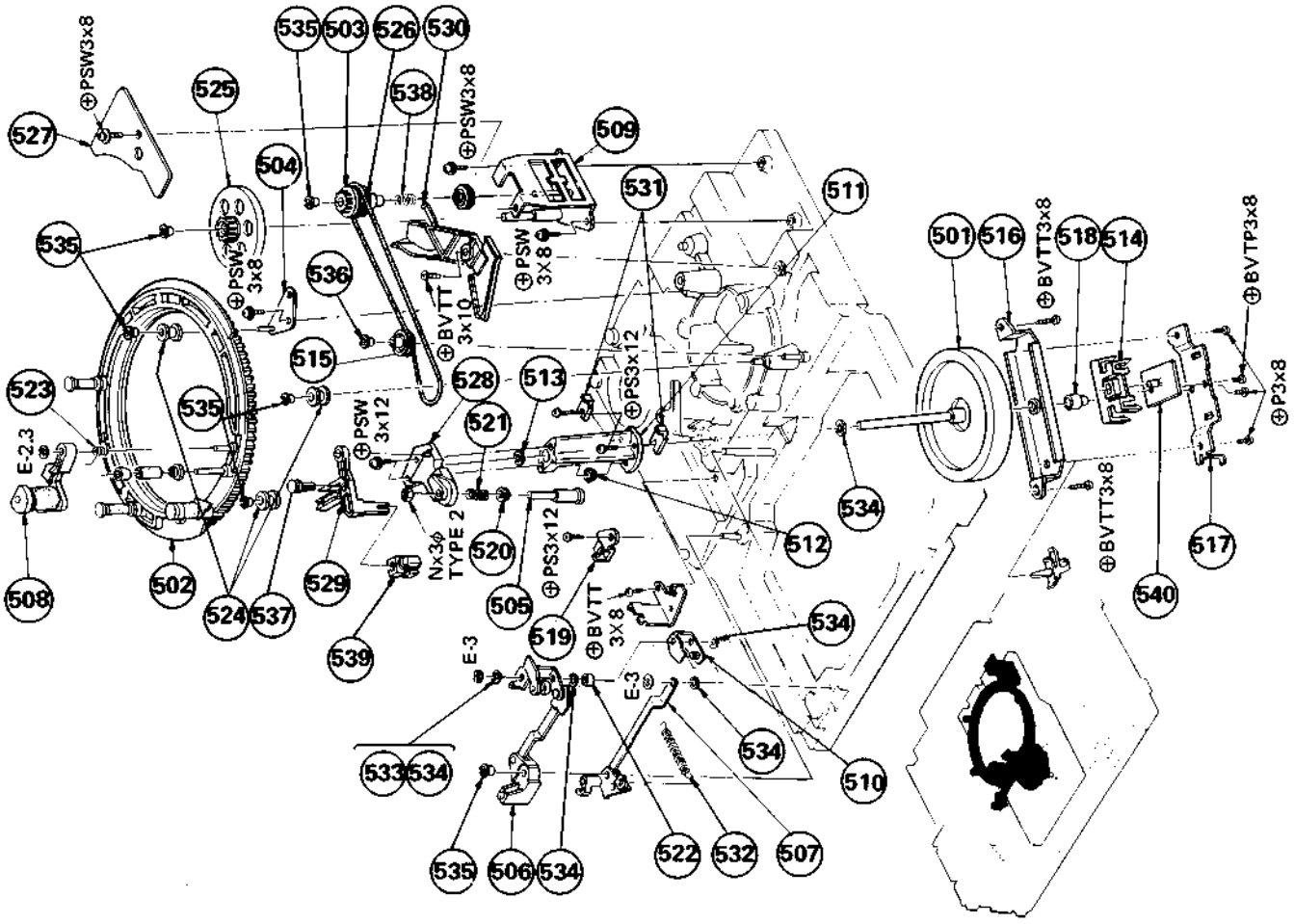
CHASSIS ASSEMBLY (4)



No.	Part No.	Description	Remark
451	♦X-3659-305-0	PLATE ASS'Y, adjustment	
452	X-3659-310-4	ARM ASS'Y, detection; slack	
453	♦X-3659-369-0	ARM ASS'Y, tension regulator	
454	♦X-3659-370-2	PLATE ASS'Y, arm	
455	♦X-3659-380-0	BASE ASS'Y	
456	♦1-600-038-00	PC BOARD, TR-2	
457	♦3-437-173-02	SCREW, head adjusting	
458	3-533-223-11	SPRING, tension	
459	3-534-263-00	INSULATOR	
460	3-542-476-00	SPRING, tension	
461	♦3-644-407-00	CLIP, AC wire; E	
462	3-646-571-00	MAGNET	
463	3-652-413-00	SPRING, compression	
464	♦3-658-173-00	SHIELD, capstan	
465	♦3-658-194-00	SPACER (4-25)	
466	♦3-659-319-00	PLATE, adjustment; BT	
467	3-659-351-00	BELT, capstan	
468	♦3-659-359-00	PLATE, boost; reed switch	
469	♦3-659-360-00	BRACKET, threading end; MS	
470	3-659-378-02	SPRING, tension	
471	♦3-659-392-00	ARM, lock keep	
472	♦3-659-557-04	ARM, lock	
473	3-659-757-00	SPACER	
474	3-659-758-00	WASHER	
475	♦3-659-775-00	PLATE, adjustment; lever shaft	
476	♦3-659-777-00	LEVER (B), pinch press	
477	♦3-659-778-00	SHAFT, pinch press lever	
478	♦3-659-780-00	PIN, lever; pinch press	
479	♦3-659-781-00	LEVER (A), pinch press	
480	3-659-784-00	SPRING, tension	
481	3-659-785-00	SPRING, tension	
482	♦3-659-789-00	BASE, pinch plunger	
483	3-701-439-11	WASHER	
484	3-703-074-00	CAP3, shaft	
485	2-832-002-00	BUSHING, insulating	
486	3-660-978-00	SHEET, heat resisting	
⚠487	1-454-217-00	SOLENOID, plunger	
488	1-552-180-00	SWITCH, reed	
489	1-552-665-00	SWITCH, micro	
490	♦1-601-762-00	PC BOARD, CN-5	
491	♦1-601-763-00	PC BOARD, CN-6	
492	A-6737-096-A	MOTOR ASS'Y, capstan	

The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

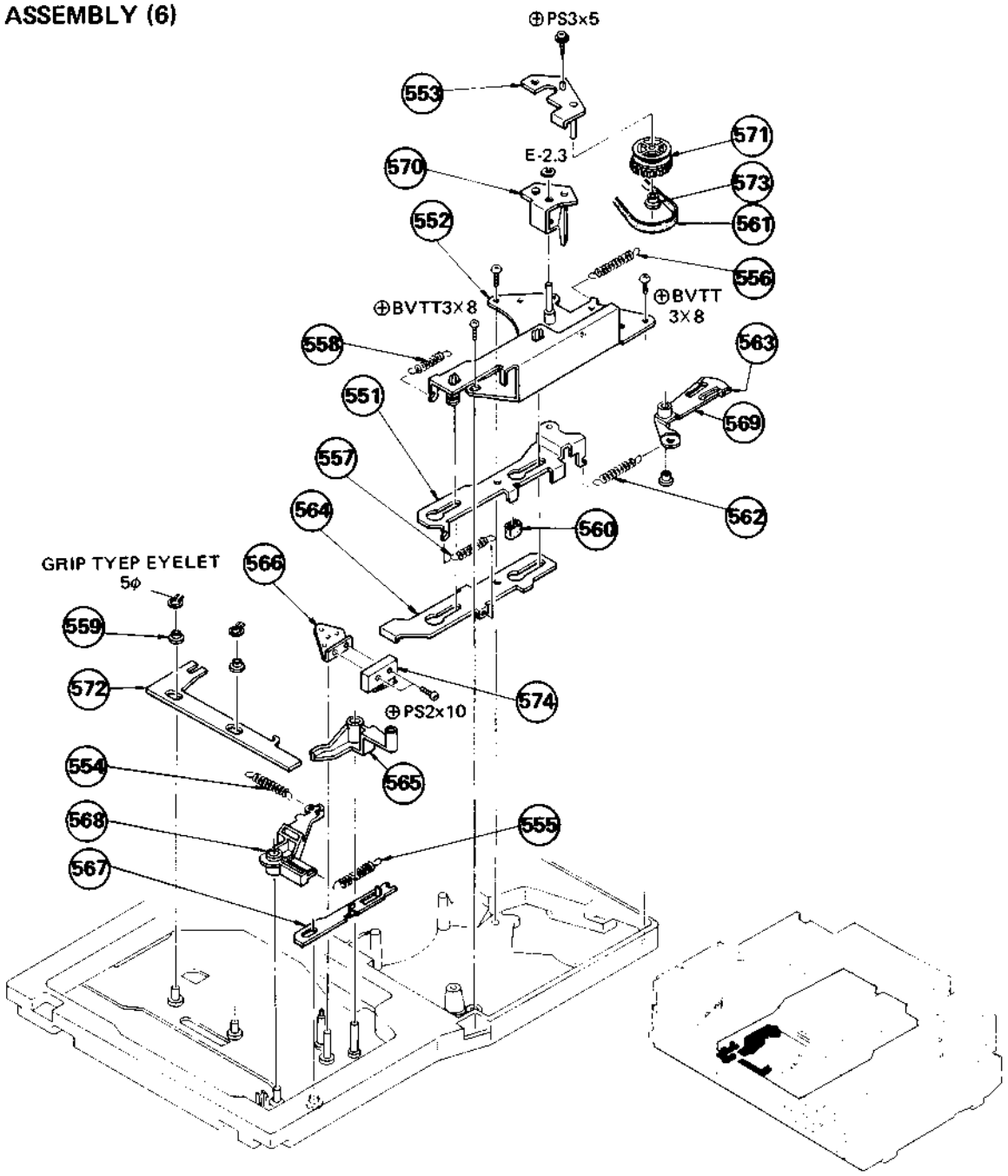
CHASSIS ASSEMBLY (5)



No.	Part No.	Description	Remark
501	A-6735-032-A	CAPSTAN BLOCK ASS'Y	
502	A-6750-087-A	RING BLOCK ASS'Y, threading	508, 523
503	X-3659-301-0	LIMITER ASS'Y, E	538
504	♦X-3664-337-0	SUPPORT ASS'Y, ring roller	
505	X-3659-308-0	GUIDE ASS'Y, No. 0	
506	X-3659-333-0	STOPPER ASS'Y, tension regulator	
507	X-3659-335-5	LINK ASS'Y (1), release	532
508	X-3659-337-0	ARM ASS'Y, pinch roller	
509	♦X-3659-340-0	BRACKET ASS'Y, midway pulley	
510	X-3659-386-3	LINK ASS'Y (2), release	
511	X-3662-201-0	HOUSING ASS'Y, capstan	
512	3-646-182-00	CAP, oil	
513	3-646-183-00	ABSORBER, capstan oil	
514	3-658-161-00	HOLDER, DME	
515	3-659-302-00	PULLEY, idle	
516	3-659-312-00	RETAINER, capstan	
517	♦3-659-313-00	PLATE, adjustment; DME	
518	3-659-314-00	RETAINER, thrust	
519	♦3-659-320-00	HOOK, spring; release	

No.	Part No.	Description	Remark
520	3-659-337-00	FLANGE No. 0, guide upper	
521	3-659-338-00	SPRING, compression	
522	3-659-365-00	SPACER (4-3)	
523	3-659-388-00	SPRING	
524	3-659-391-00	ROLLER, ring	
525	3-659-396-00	GEAR (B), midway	
526	3-659-397-XX	BELT, eject	
527	♦3-659-414-00	PLATE, control	
528	3-659-551-00	FRAME, guide; No. 0	
529	♦3-659-632-00	HOLDER, S sensor	
530	♦3-659-691-00	RETAINER (LARGE), harness	
531	3-659-759-11	SPACER, capstan	
532	3-660-911-00	SPRING, tension	
533	3-701-441-11	WASHER	
534	3-701-441-21	WASHER	
535	3-703-074-00	CAP3, shaft	
536	3-703-075-00	CAP2, shaft	
537	4-829-039-00	RIVET, nylon	
538	3-660-987-00	SPRING, compression	
539	1-543-145-00	HEAD, sensing	
540	♦1-600-101-00	PC BOARD, FG-1	

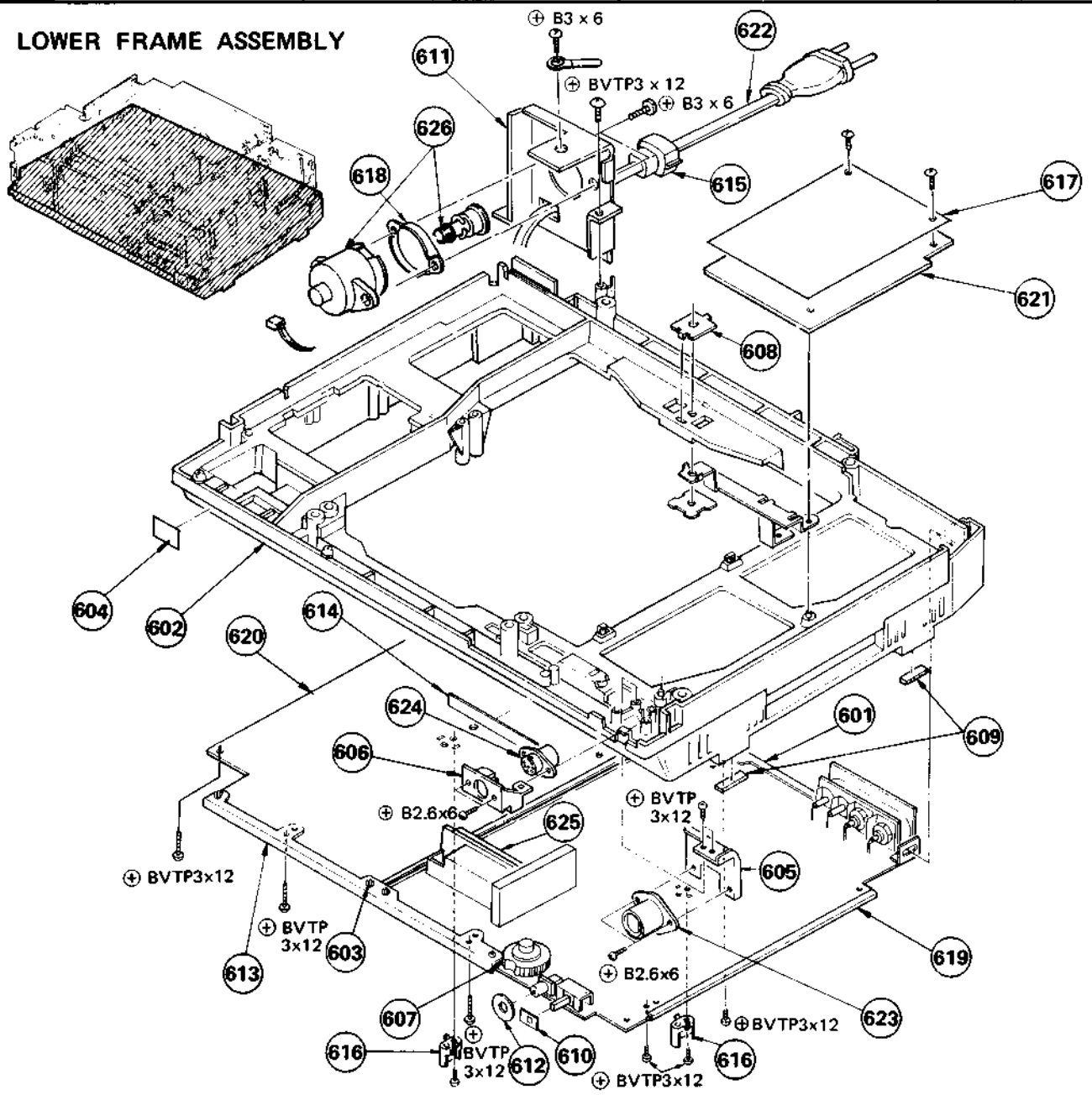
CHASSIS ASSEMBLY (6)



No.	Part No.	Description	Remark
551	♦ X-3659-303-0	LEVER (LOWER) ASS'Y, EJECT _ _ 560	
552	♦ X-3669-006-0	BASE ASS'Y, unit threading,	
553	♦ X-3659-360-0	ARM (B) ASS'Y, gear pulley hold	
554	2-101-155-00	SPRING, tension	
555	3-532-125-00	SPRING, tension	
556	3-533-223-11	SPRING, tension	
557	3-642-510-00	SPRING, tension	
558	♦ 3-642-513-00	SPRING, tension	
559	3-646-271-00	BOSS	
560	3-655-856-11	RETAINER, tension regulator	
561	3-659-301-00	BELT, threading	
562	3-659-393-00	SPRING, tension	

No.	Part No.	Description	Remark
563	3-659-394-00	SHOE, brake	
564	♦ 3-659-395-00	LEVER (UPPER), EJECT	
565	3-659-453-00	ARM, EL	
566	♦ 3-663-005-00	BRACKET (P), C-SW	
567	♦ 3-659-460-00	PLATE, release; lock	
568	3-659-560-00	ARM, E	
569	♦ 3-659-679-00	ARM, motor brake	
570	♦ 3-659-705-00	ARM (A), gear pulley hold	
571	3-659-706-11	PULLEY, gear	
572	♦ 3-663-029-00	JOINT	
573	3-703-074-00	CAP 3, shaft	
574	1-552-663-00	SWITCH, micro	

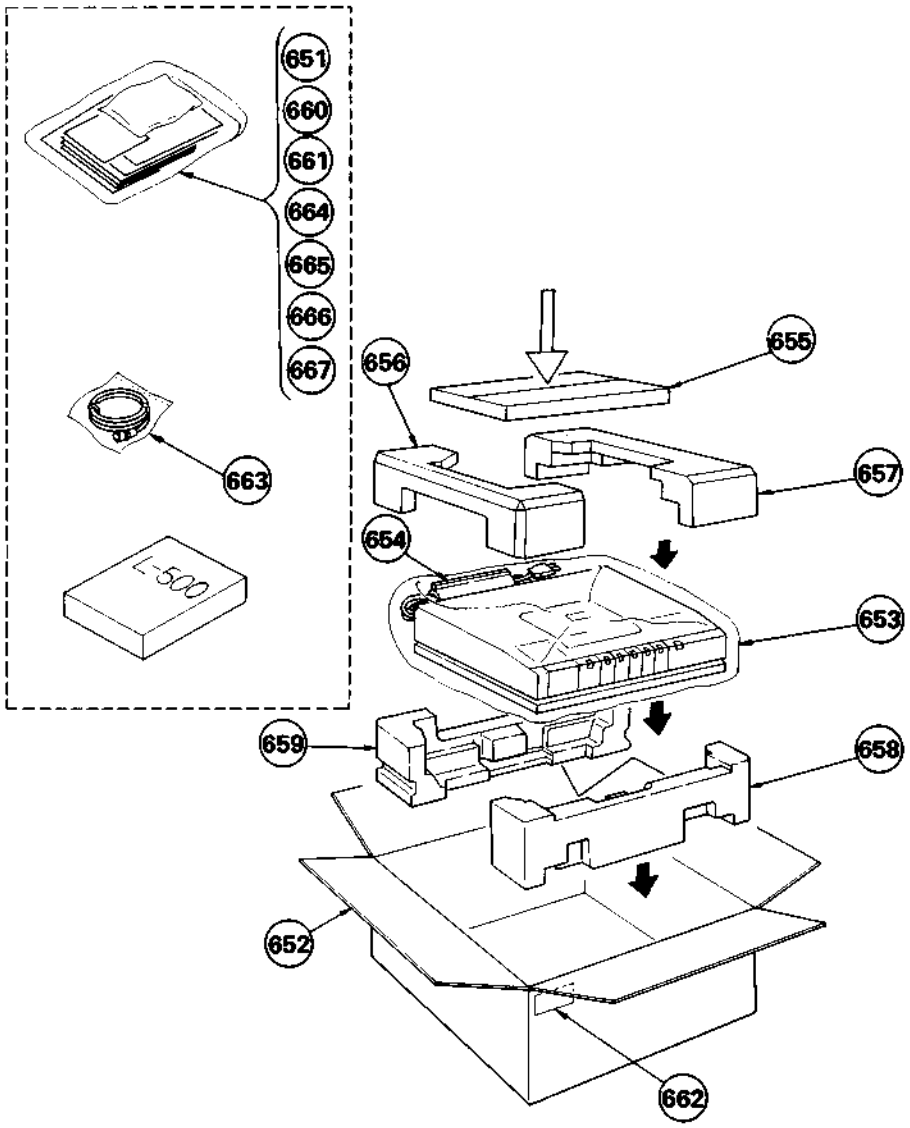
LOWER FRAME ASSEMBLY



No.	Part No.	Description	Remark
601	X-3662-208-0	BRACKET (A) ASS'Y, chassis	
602	X-3669-008-0	FRAME ASS'Y, lower _ _ _ _ 604, 614	
603	3-646-090-00	RIVET, nylon	
604	3-656-344-00	LABEL, power switch	
605	♦3-659-522-00	BRACKET, camera connector	
606	3-659-523-00	BRACKET, remote control	
607	3-659-528-00	KNOB, track control	
608	♦3-659-529-00	SPACER, plate	
609	3-659-532-00	FELT, foot	
610	3-659-663-00	COVER, slide switch	
611	3-669-008-00	PANEL, power	
612	3-662-261-00	COVER, microphone jack	
613	♦3-662-279-00	BRACKET (B), chassis	
614	3-662-280-00	LABEL, input	
615	3-703-244-00	BUSHING CORD	
616	3-659-530-00	BLOCK SUPPORT, bottom plate	
617	♦3-669-003-00	INSULATOR	
618	♦3-669-006-00	SPACER	
619	♦A-6711-257-C	COMPLETE PCB, YC-6 (CH)	
620	♦A-6715-108-A	COMPLETE PCB, AS-6	
621	♦A-6711-295-A	COMPLETE PCB, CR-13	
⚠622	1-534-817-XX	POWER CORD	
623	1-561-261-00	CONNECTOR, camera	
624	1-561-320-00	CONNECTOR, remote	
625	♦1-601-836-00	PC BOARD, CB-1	
⚠626	1-526-643-00	VOLTAGE SELECTOR, socket	

The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

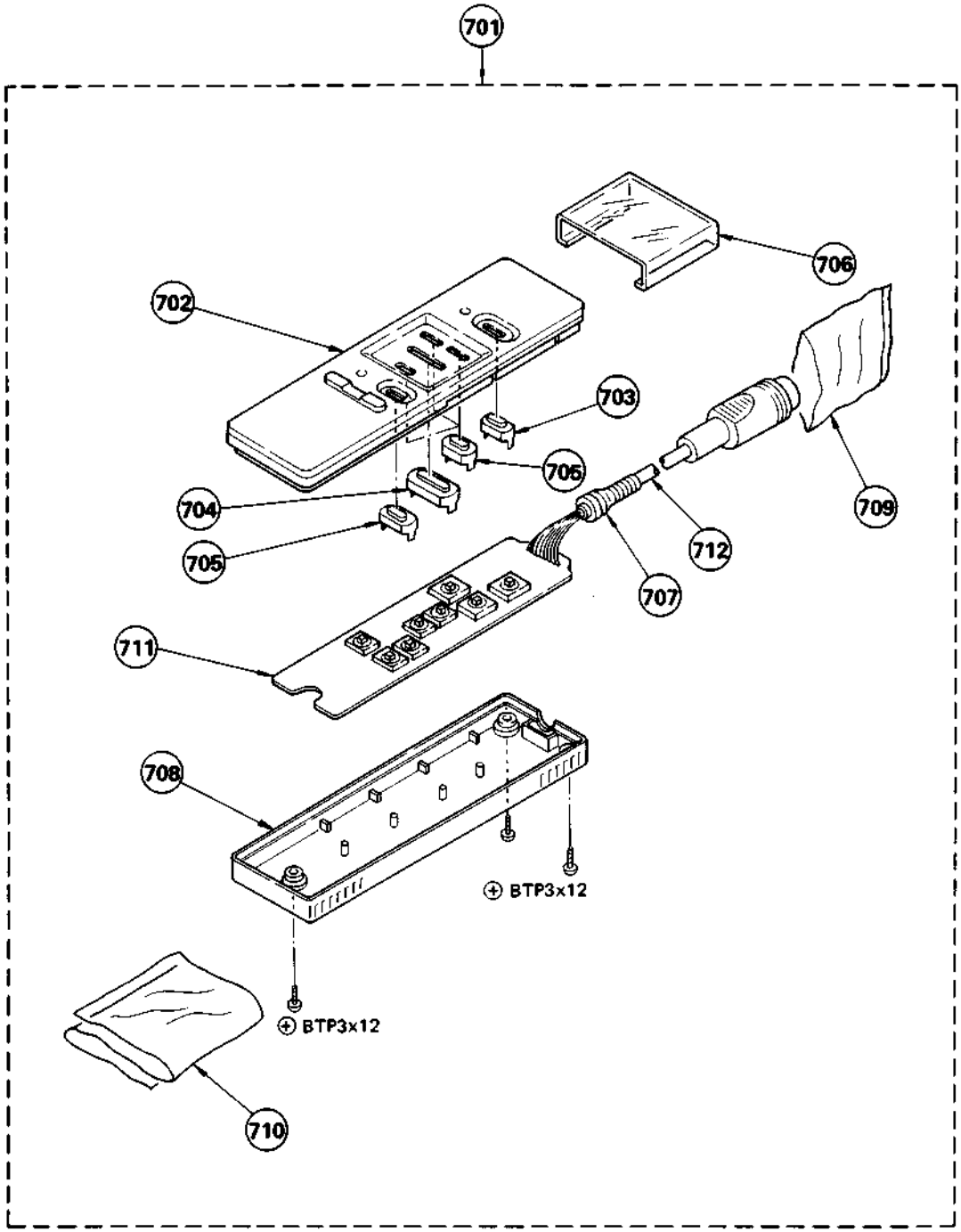
PACKING



No.	Part No.	Description	Remark
651	3-662-364-00	BAG, polyethylene	
652	X-3669-009-1	INDIVIDUAL CARTON ASS'Y	
653	3-656-390-00	BAG, protection	
654	3-660-986-00	SHEET, protection	
655	3-662-327-00	CASE, accessory	
656	3-662-328-00	CUSHION, left upper	
657	3-662-329-00	CUSHION, right upper	
658	3-662-358-00	CUSHION, (FRONT LOWER)	
659	3-662-359-00	CUSHION, (REAR LOWER)	
660	3-701-630-00	BAG, polyethylene	
661	3-783-573-11	MANUAL, instruction	
662	3-701-540-02	LABEL, tack	
663	1-551-513-00	CABLE, codxial ASS'Y	

No.	Part No.	Description	Remark
664	3-669-014-00	LABEL (GERMAN), caution, door	
	3-669-015-00	LABEL (FRENCH), caution, door	
	3-669-016-00	LABEL (DUTCH), caution, door	
	3-669-017-00	LABEL (SWEDISH), caution, door	
	3-669-018-00	LABEL (SPANISH), caution, door	
	3-669-019-00	LABEL (ITALIAN), caution, door	
665	3-669-021-00	LABEL (GERMAN), gide, preset	
	3-669-022-00	LABEL (FRENCH), gide, preset	
	3-669-023-00	LABEL (DUTCH), gide, preset	
	3-669-024-00	LABEL (SWEDISH), gide, preset	
	3-669-025-00	LABEL (SPANISH), gide, preset	
	3-669-026-00	LABEL (ITALIAN), gide, preset	
666	3-795-147-11	MANUAL (1), instant information	
	3-795-148-11	MANUAL (2), instant information	
	3-795-149-11	MANUAL (3), instant information	
	3-795-150-11	MANUAL (4), instant information	
667	3-795-170-11	INSTRUCTION	

COMMANDER BLOCK ASSEMBLY RM-75CH



No.	Part No.	Description	Remark
701	A-6701-122-A	COMMANDER ASS'Y	
		remote	702–710, E701 E702
702	X-3663-218-1	CASE (UPPER) ASS'Y	
703	3-659-695-00	KEY TOP (REC)	
704	3-659-696-00	KEY TOP (STOP)	
705	3-659-698-00	KEY TOP	
706	3-659-699-11	COVER, slide	
707	3-703-244-00	BUSHING, cord	
708	3-663-251-00	CASE (LOWER)	
709	3-701-613-00	BAG, polyethylene	
710	3-701-625-00	BAG, polyethylene	
711	♦1-602-393-00	PC BOARD	
712	1-551-761-61	CORD, with din plug 8P	

SECTION 5
ELECTRICAL PART LIST

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

- =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

- Items marked " ♣ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

CAPACITORS
- MF : μF, PF : μμF

RESISTORS
- All resistors are in ohms
- F : nonflammable

COILS
- MMH : mH, UH : μH

Ref.No	Part No	Description			Remark
	♣:A-6711-257-C	Y-C6 BOARD, COMPLETE			
		**********			
	1-536-614-00	TERMINAL BOARD, CONTROL PANEL			
	3-509-140-00	HOLDER, WIRE			
		FILTER			
BPF001	1-231-375-00	FILTER, BANDPASS			
BPF001	1-231-375-00	FILTER, BAND PASS			
		CAPACITOR			
C001	1-101-004-00	CERAMIC	0.01MF		50V
C002	1-123-307-00	ELECT	100MF	20%	10V
C003	1-102-965-00	CERAMIC	39PF	5%	50V
C004	1-102-965-00	CERAMIC	39PF	5%	50V
C006	1-123-306-00	ELECT	47MF	20%	10V
C007	1-123-306-00	ELECT	47MF	20%	10V
C008	1-102-823-00	CERAMIC	43PF	5%	50V
C009	1-102-976-00	CERAMIC	180PF	5%	50V
C010	1-161-021-00	CERAMIC	0.047MF	10%	25V
C011	1-123-351-00	ELECT	0.47MF	20%	50V
C012	1-123-356-00	ELECT	10MF	20%	16V
C013	1-123-307-00	ELECT	100MF	20%	10V
C014	1-123-318-00	ELECT	33MF	20%	16V
C015	1-102-961-00	CERAMIC	27PF	5%	50V
C016	1-123-356-00	ELECT	10MF	20%	16V
C017	1-102-950-00	CERAMIC	13PF	5%	50V
C018	1-101-882-00	CERAMIC	51PF	5%	50V
C019	1-101-004-00	CERAMIC	0.01MF		50V
C020	1-101-882-00	CERAMIC	51PF	5%	50V
C021	1-123-333-00	ELECT	100MF	20%	16V
C022	1-102-950-00	CERAMIC	13PF	5%	50V
C023	1-102-530-00	CERAMIC	120PF	5%	50V
C025	1-102-816-00	CERAMIC	120PF	5%	50V
C028	1-102-953-00	CERAMIC	18PF	5%	50V
C031	1-102-976-00	CERAMIC	180PF	5%	50V
C032	1-101-880-00	CERAMIC	47PF	5%	50V
C033	1-123-311-00	ELECT	1000MF	20%	10V
C034	1-123-311-00	ELECT	1000MF	20%	10V
C035	1-123-306-00	ELECT	47MF	20%	10V
C036	1-161-013-00	CERAMIC	0.01MF	10%	25V
C037	1-101-059-00	CERAMIC	510PF	5%	50V
C038	1-161-025-00	CERAMIC	0.1MF	10%	25V
C039	1-102-820-00	CERAMIC	330PF	5%	50V
C040	1-161-013-00	CERAMIC	0.01MF	10%	25V
C041	1-123-356-00	ELECT	10MF	20%	16V
C042	1-161-021-00	CERAMIC	0.047MF	10%	25V
C043	1-123-333-00	ELECT	100MF	20%	16V
C044	1-101-890-00	CERAMIC	75PF	5%	50V
C045	1-102-951-00	CERAMIC	15PF	5%	50V
C046	1-102-978-00	CERAMIC	220PF	5%	50V
C047	1-123-319-00	ELECT	47MF	20%	16V
C048	1-123-307-00	ELECT	100MF	20%	10V

Ref.No	Part No	Description			Remark
C049	1-123-296-00	ELECT	220MF	20%	6.3V
C050	1-123-318-00	ELECT	33MF	20%	16V
C051	1-123-318-00	ELECT	33MF	20%	16V
C052	1-161-021-00	CERAMIC	0.047MF	10%	25V
C053	1-161-013-00	CERAMIC	0.01MF	10%	25V
C054	1-123-356-00	ELECT	10MF	20%	16V
C055	1-123-333-00	ELECT	100MF	20%	16V
C056	1-123-319-00	ELECT	47MF	20%	16V
C057	1-123-317-00	ELECT	22MF	20%	16V
C058	1-161-013-00	CERAMIC	0.01MF	10%	25V
C059	1-123-319-00	ELECT	47MF	20%	16V
C060	1-123-319-00	ELECT	47MF	20%	16V
C061	1-161-013-00	CERAMIC	0.01MF	10%	25V
C062	1-102-116-00	CERAMIC	680PF	10%	50V
C063	1-161-013-00	CERAMIC	0.01MF	10%	25V
C064	1-161-013-00	CERAMIC	0.01MF	10%	25V
C065	1-161-013-00	CERAMIC	0.01MF	10%	25V
C066	1-161-013-00	CERAMIC	0.01MF	10%	25V
C067	1-161-013-00	CERAMIC	0.01MF	10%	25V
C068	1-102-953-00	CERAMIC	18PF	5%	50V
C069	1-101-004-00	CERAMIC	0.01MF		50V
C070	1-101-006-00	CERAMIC	0.047MF		50V
C071	1-101-884-00	CERAMIC	56PF	5%	50V
C072	1-102-979-00	CERAMIC	240PF	5%	50V
C073	1-102-822-00	CERAMIC	390PF	5%	50V
C074	1-131-199-00	TANTALUM	10MF	20%	16V
C075	1-101-004-00	CERAMIC	0.01MF		50V
C076	1-101-006-00	CERAMIC	0.047MF		50V
C077	1-101-006-00	CERAMIC	0.047MF		50V
C078	1-101-006-00	CERAMIC	0.047MF		50V
C079	1-123-328-00	ELECT	4.7MF	20%	25V
C080	1-123-328-00	ELECT	4.7MF	20%	25V
C081	1-101-006-00	CERAMIC	0.047MF		50V
C083	1-123-356-00	ELECT	10MF	20%	16V
C084	1-101-006-00	CERAMIC	0.047MF		50V
C085	1-131-202-00	TANTALUM	1.5MF	20%	20V
C086	1-102-824-00	CERAMIC	430PF	5%	50V
C087	1-101-884-00	CERAMIC	56PF	5%	50V
C089	1-101-004-00	CERAMIC	0.01MF		50V
C091	1-101-004-00	CERAMIC	0.01MF		50V
C092	1-101-004-00	CERAMIC	0.01MF		50V
C093	1-101-004-00	CERAMIC	0.01MF		50V
C094	1-101-004-00	CERAMIC	0.01MF		50V
C095	1-101-004-00	CERAMIC	0.01MF		50V
C096	1-101-006-00	CERAMIC	0.047MF		50V
C097	1-102-816-00	CERAMIC	120PF	5%	50V
C098	1-102-961-00	CERAMIC	27PF	5%	50V
C099	1-102-961-00	CERAMIC	27PF	5%	50V
C101	1-101-004-00	CERAMIC	0.01MF		50V
C102	1-101-361-00	CERAMIC	150PF	5%	50V
C103	1-101-361-00	CERAMIC	150PF	5%	50V
C105	1-101-006-00	CERAMIC	0.047MF		50V
C106	1-101-004-00	CERAMIC	0.01MF		50V

Ref.No	Part No	Description			Remark
C107	1-101-004-00	CERAMIC	0.01MF		50V
C108	1-101-004-00	CERAMIC	0.01MF		50V
C109	1-101-004-00	CERAMIC	0.01MF		50V
C111	1-108-381-00	MYLAR	0.022MF	10%	100V
C112	1-101-004-00	CERAMIC	0.01MF		50V
C113	1-101-004-00	CERAMIC	0.01MF		50V
C114	1-101-004-00	CERAMIC	0.01MF		50V
C115	1-123-319-00	ELECT	47MF	20%	16V
C116	1-123-356-00	ELECT	10MF	20%	16V
C117	1-101-006-00	CERAMIC	0.047MF		50V
C118	1-101-004-00	CERAMIC	0.01MF		50V
C120	1-102-973-00	CERAMIC	100PF	5%	50V
C121	1-102-820-00	CERAMIC	330PF	5%	50V
C122	1-101-006-00	CERAMIC	0.047MF		50V
C123	1-102-973-00	CERAMIC	100PF	5%	50V
C124	1-123-306-00	ELECT	47MF	20%	10V
C125	1-123-352-00	ELECT	1MF	20%	50V
C126	1-123-319-00	ELECT	47MF	20%	16V
C129	1-101-004-00	CERAMIC	0.01MF		50V
C130	1-102-851-00	CERAMIC	15PF	5%	50V
C131	1-123-352-00	ELECT	1MF	20%	50V
C132	1-108-378-00	MYLAR	0.012MF	10%	100V
C133	1-108-378-00	MYLAR	0.012MF	10%	100V
C134	1-123-352-00	ELECT	1MF	20%	50V
C135	1-102-852-00	CERAMIC	47PF	5%	50V
C136	1-101-004-00	CERAMIC	0.01MF		50V
C137	1-101-001-00	CERAMIC	0.001MF		50V
C138	1-101-004-00	CERAMIC	0.01MF		50V
C139	1-108-389-00	MYLAR	0.1MF	10%	100V
C140	1-102-820-00	CERAMIC	330PF	5%	50V
C141	1-102-978-00	CERAMIC	220PF	5%	50V
C142	1-123-352-00	ELECT	1MF	20%	50V
C143	1-108-373-00	MYLAR	0.0047MF	10%	100V
C144	1-101-003-00	CERAMIC	0.0047MF		50V
C146	1-123-352-00	ELECT	1MF	20%	50V
C147	1-102-516-00	CERAMIC	27PF	5%	50V
C148	1-123-328-00	ELECT	4.7MF	20%	25V
C149	1-102-973-00	CERAMIC	100PF	5%	50V
C150	1-102-129-00	CERAMIC	0.01MF	10%	50V
C151	1-101-006-00	CERAMIC	0.047MF		50V
C152	1-123-319-00	ELECT	47MF	20%	16V
C153	1-102-824-00	CERAMIC	430PF	5%	50V
C154	1-102-824-00	CERAMIC	430PF	5%	50V
C155	1-102-978-00	CERAMIC	220PF	5%	50V
C156	1-123-356-00	ELECT	10MF	20%	16V
C157	1-102-978-00	CERAMIC	220PF	5%	50V
C158	1-102-116-00	CERAMIC	680PF	10%	50V
C159	1-123-352-00	ELECT	1MF	20%	50V
C161	1-123-356-00	ELECT	10MF	20%	16V
C162	1-101-006-00	CERAMIC	0.047MF		50V
C166	1-123-328-00	ELECT	4.7MF	20%	25V
C167	1-123-356-00	ELECT	10MF	20%	16V
C168	1-101-005-00	CERAMIC	0.022MF		50V

Ref.No	Part No	Description			Remark
C169	1-101-006-00	CERAMIC	0.047MF		50V
C170	1-131-343-00	TANTALUM	0.22MF	20%	35V
C171	1-102-820-00	CERAMIC	330PF	5%	50V
C172	1-101-004-00	CERAMIC	0.01MF		50V
C173	1-123-351-00	ELECT	0.47MF	20%	50V
C178	1-102-116-00	CERAMIC	680PF	10%	50V
C181	1-123-318-00	ELECT	33MF	20%	16V
C183	1-123-319-00	ELECT	47MF	20%	16V
C184	1-123-307-00	ELECT	100MF	20%	10V
C186	1-102-981-00	CERAMIC	300PF	5%	50V
C187	1-101-004-00	CERAMIC	0.01MF		50V
C189	1-123-352-00	ELECT	1MF	20%	50V
C190	1-102-822-00	CERAMIC	390PF	5%	50V
C191	1-102-822-00	CERAMIC	390PF	5%	50V
C192	1-101-006-00	CERAMIC	0.047MF		50V
C193	1-101-001-00	CERAMIC	0.001MF		50V
C194	1-101-006-00	CERAMIC	0.047MF		50V
C195	1-123-319-00	ELECT	47MF	20%	16V
C196	1-123-319-00	ELECT	47MF	20%	16V
C197	1-101-006-00	CERAMIC	0.047MF		50V
C198	1-101-006-00	CERAMIC	0.047MF		50V
C200	1-123-319-00	ELECT	47MF	20%	16V
C204	1-101-006-00	CERAMIC	0.047MF		50V
C205	1-123-319-00	ELECT	47MF	20%	16V
C207	1-123-319-00	ELECT	47MF	20%	16V
C208	1-101-006-00	CERAMIC	0.047MF		50V
C210	1-123-319-00	ELECT	47MF	20%	16V
C211	1-101-006-00	CERAMIC	0.047MF		50V
C212	1-108-374-00	MYLAR	0.0056MF	10%	100V
C213	1-101-006-00	CERAMIC	0.047MF		50V
C214	1-101-059-00	CERAMIC	510PF	5%	50V
C215	1-101-059-00	CERAMIC	510PF	5%	50V
C216	1-123-306-00	ELECT	47MF	20%	10V
C218	1-123-319-00	ELECT	47MF	20%	16V
C224	1-101-004-00	CERAMIC	0.01MF		50V
C225	1-101-006-00	CERAMIC	0.047MF		50V
C226	1-123-319-00	ELECT	47MF	20%	16V
C227	1-101-006-00	CERAMIC	0.047MF		50V
C228	1-123-319-00	ELECT	47MF	20%	16V
C230	1-102-942-00	CERAMIC	5PF	0.5PF	50V
C233	1-123-356-00	ELECT	10MF	20%	16V
C234	1-101-004-00	CERAMIC	0.01MF		50V
C235	1-101-004-00	CERAMIC	0.01MF		50V
C236	1-101-004-00	CERAMIC	0.01MF		50V
C237	1-101-006-00	CERAMIC	0.047MF		50V
C240	1-101-004-00	CERAMIC	0.01MF		50V
C241	1-123-319-00	ELECT	47MF	20%	16V
C242	1-123-319-00	ELECT	47MF	20%	16V
C243	1-123-333-00	ELECT	100MF	20%	16V
C245	1-101-006-00	CERAMIC	0.047MF		50V
C246	1-101-006-00	CERAMIC	0.047MF		50V
C249	1-123-319-00	ELECT	47MF	20%	16V
C250	1-101-006-00	CERAMIC	0.047MF		50V

Ref.No	Part No	Description			Remark
C251	1-101-006-00	CERAMIC	0.047MF		50V
C252	1-101-006-00	CERAMIC	0.047MF		50V
C253	1-101-006-00	CERAMIC	0.047MF		50V
C254	1-101-006-00	CERAMIC	0.047MF		50V
C255	1-123-333-00	ELECT	100MF	20%	16V
C256	1-102-965-00	CERAMIC	39PF	5%	50V
C257	1-123-319-00	ELECT	47MF	20%	16V
C258	1-101-006-00	CERAMIC	0.047MF		50V
C259	1-123-319-00	ELECT	47MF	20%	16V
C260	1-101-006-00	CERAMIC	0.047MF		50V
C261	1-123-319-00	ELECT	47MF	20%	16V
C262	1-101-006-00	CERAMIC	0.047MF		50V
C263	1-101-004-00	CERAMIC	0.01MF		50V
C264	1-123-319-00	ELECT	47MF	20%	16V
C266	1-123-356-00	ELECT	10MF	20%	16V
C268	1-123-328-00	ELECT	4.7MF	20%	25V
C269	1-108-555-00	MYLAR	0.001MF	5%	50V
C270	1-108-555-00	MYLAR	0.001MF	5%	50V
C271	1-102-966-00	CERAMIC	43PF	5%	50V
C400	1-102-976-00	CERAMIC	180PF	5%	50V
C401	1-101-003-00	CERAMIC	0.0047MF		50V
C402	1-102-647-00	CERAMIC	39PF	5%	50V
C403	1-102-127-00	CERAMIC	0.0068MF	10%	50V

CONNECTOR

CN009 ♣	1-508-846-00	PIN, CONNECTOR 8P	
CN1001 ♣	1-508-744-00	PIN, CONNECTOR 10P	
CN1002 ♣	1-508-797-00	PIN, CONNECTOR 4P	
CN1003 ♣	1-508-797-00	PIN, CONNECTOR 4P	
CN1004 ♣	1-508-845-00	PIN, CONNECTOR 6P	
CN1005 ♣	1-508-846-00	PIN, CONNECTOR 8P	
CN1006 ♣	1-508-736-00	PIN, CONNECTOR 10P	
CN1007 ♣	1-508-849-00	PIN, CONNECTOR 8P	
CN1008	1-508-910-00	PIN, CONNECTOR 12P	

JACK

CNJ005	1-507-667-00	JACK, MIC

DIODE

D001	8-719-815-55	DIODE 1S1555
D002	8-719-815-55	DIODE 1S1555
D003	8-719-815-55	DIODE 1S1555
D005	8-719-815-55	DIODE 1S1555
D007	8-719-815-55	DIODE 1S1555
D008	8-719-815-55	DIODE 1S1555
D009	8-719-815-55	DIODE 1S1555
D010	8-719-815-55	DIODE 1S1555
D011	8-719-815-55	DIODE 1S1555
D012	8-719-815-55	DIODE 1S1555
D013	8-719-815-55	DIODE 1S1555
D014	8-719-815-55	DIODE 1S1555
D015	8-719-815-55	DIODE 1S1555
D016	8-719-815-55	DIODE 1S1555
D017	8-719-815-55	DIODE 1S1555
D018	8-719-815-55	DIODE 1S1555
D019	8-719-815-55	DIODE 1S1555
D020	8-719-815-55	DIODE 1S1555
D021	8-719-815-55	DIODE 1S1555
D022	8-719-815-55	DIODE 1S1555
D023	8-719-815-55	DIODE 1S1555
D025	8-719-815-55	DIODE 1S1555
D026	8-719-815-55	DIODE 1S1555
D027	8-719-815-55	DIODE 1S1555
D029	8-719-815-55	DIODE 1S1555
D033	8-719-815-55	DIODE 1S1555
D034	8-719-815-55	DIODE 1S1555
D035	8-719-815-55	DIODE 1S1555
D036	8-719-815-55	DIODE 1S1555
D037	=>8-719-162-07	DIODE RD6.2E-B
D040	8-719-815-55	DIODE 1S1555
D041	8-719-815-55	DIODE 1S1555
D044	8-719-815-55	DIODE 1S1555
D046	8-719-911-19	DIODE 1SS119
D047	8-719-911-19	DIODE 1SS119
D048	8-719-911-19	DIODE 1SS119

DELAY LINE

DL001	1-415-192-00	DELAY LINE 127.886MSEC
DL002	1-415-203-00	DELAY LINE
DL003	1-415-148-00	DELAY LINE
DL004	1-415-204-00	DELAY LINE

IC

IC001	8-751-870-00	IC CX-187
IC002	8-751-360-00	IC CX-136A
IC003	8-759-600-50	IC CX-150B
IC004	8-751-300-00	IC CX-130
IC005	8-751-450-00	IC CX-145
IC006	8-758-320-00	IC CX-832
IC011	8-751-300-00	IC CX-130
IC012	8-759-684-78	IC M58478P
IC013	8-759-240-69	IC TC4069UBP

COIL

L001	1-407-163-XX	MICRO INDUCTOR 33UH
L002	1-407-168-XX	MICRO INDUCTOR 82UH
L002	1-408-420-00	MICRO INDUCTOR 82UH
L003	1-407-160-XX	MICRO INDUCTOR 18UH
L004	1-407-171-XX	MICRO INDUCTOR 150UH
L004	1-408-423-00	MICRO INDUCTOR 150UH
L005	1-407-170-XX	MICRO INDUCTOR 120UH
L006	1-407-172-XX	MICRO INDUCTOR 180UH
L007	1-407-170-XX	MICRO INDUCTOR 120UH
L008	1-407-161-XX	MICRO INDUCTOR 22UH
L009	1-407-167-XX	MICRO INDUCTOR 68UH
L009	1-408-419-00	MICRO INDUCTOR 68UH

- Items marked " ♣ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Ref.No	Part No	Description	Remark
L011	1-407-160-XX	MICRO INDUCTOR 18UH	
L012	1-407-167-XX	MICRO INDUCTOR 68UH	
L012	1-408-419-00	MICRO INDUCTOR 68UH	
L013	1-407-171-XX	MICRO INDUCTOR 150UH	
L013	1-408-423-00	MICRO INDUCTOR 150UH	
L014	1-407-165-XX	MICRO INDUCTOR 47UH	
L014	1-408-417-00	MICRO INDUCTOR 47UH	
L015	1-407-169-XX	MICRO INDUCTOR 100UH	
L015	1-408-421-00	MICRO INDUCTOR 100UH	
L016	1-407-171-XX	MICRO INDUCTOR 150UH	
L016	1-408-423-00	MICRO INDUCTOR 150UH	
L017	1-407-168-XX	MICRO INDUCTOR 82UH	
L017	1-408-420-00	MICRO INDUCTOR 82UH	
L018	1-407-160-XX	MICRO INDUCTOR 18UH	
L019	1-407-160-XX	MICRO INDUCTOR 18UH	
L020	1-407-166-XX	MICRO INDUCTOR 56UH	
L020	1-408-418-00	MICRO INDUCTOR 56UH	
L021	1-407-161-XX	MICRO INDUCTOR 22UH	
L022	1-407-168-XX	MICRO INDUCTOR 82UH	
L022	1-408-420-00	MICRO INDUCTOR 82UH	
L023	1-407-170-XX	MICRO INDUCTOR 120UH	
L024	1-407-170-XX	MICRO INDUCTOR 120UH	
L025	1-407-188-XX	MICRO INDUCTOR 6.8UH	
L026	1-407-165-XX	MICRO INDUCTOR 47UH	
L027	1-407-189-XX	MICRO INDUCTOR 8.2UH	
L028	1-407-177-XX	MICRO INDUCTOR 470UH	
L029	1-407-167-XX	MICRO INDUCTOR 68UH	
L029	1-408-419-00	MICRO INDUCTOR 68UH	
L030	1-407-167-XX	MICRO INDUCTOR 68UH	
L030	1-408-419-00	MICRO INDUCTOR 68UH	
L031	1-407-177-XX	MICRO INDUCTOR 470UH	
L032	1-407-195-XX	MICRO INDUCTOR 1MMH	
L033	1-407-167-XX	MICRO INDUCTOR 68UH	
L033	1-408-419-00	MICRO INDUCTOR 68UH	
L034	1-407-488-00	MICRO INDUCTOR 470UH	
L036	1-407-161-XX	MICRO INDUCTOR 22UH	
L050	1-407-177-XX	MICRO INDUCTOR 470UH	
L053	1-407-169-XX	MICRO INDUCTOR 100UH	
L053	1-408-421-00	MICRO INDUCTOR 100UH	
L055	1-407-204-XX	MICRO INDUCTOR 6.8MMH	
LV001	1-407-569-00	COIL,VARIABLE 10.0MH	

TRANSISTOR

Q001	8-724-375-01	TRANSISTOR 2SC403C	
Q002	8-724-375-01	TRANSISTOR 2SC403C	
Q003	=>8-729-612-77	TRANSISTOR 2SA1027R	
Q004	=>8-729-612-77	TRANSISTOR 2SA1027R	
Q005	=>8-729-612-77	TRANSISTOR 2SA1027R	
Q006	8-724-375-01	TRANSISTOR 2SC403C	
Q007	=>8-729-663-47	TRANSISTOR 2SC1364	
Q008	=>8-729-612-77	TRANSISTOR 2SA1027R	
Q009	8-729-663-47	TRANSISTOR 2SC1364	
Q010	8-729-663-47	TRANSISTOR 2SC1364	
Q011	8-729-663-47	TRANSISTOR 2SC1364	
Q012	8-729-384-48	TRANSISTOR 2SA844	
Q013	8-729-384-48	TRANSISTOR 2SA844	
Q014	8-729-663-47	TRANSISTOR 2SC1364	
Q015	8-729-663-47	TRANSISTOR 2SC1364	
Q016	8-729-663-47	TRANSISTOR 2SC1364	
Q017	8-729-663-47	TRANSISTOR 2SC1364	
Q018	8-724-375-01	TRANSISTOR 2SC403C	
Q019	=>8-729-612-77	TRANSISTOR 2SA1027R	
Q020	8-724-375-01	TRANSISTOR 2SC403C	
Q021	8-724-375-01	TRANSISTOR 2SC403C	
Q022	8-729-663-47	TRANSISTOR 2SC1364	
Q024	=>8-729-612-77	TRANSISTOR 2SA1027R	
Q025	=>8-729-663-47	TRANSISTOR 2SC1364	
Q026	8-724-375-01	TRANSISTOR 2SC403C	
Q027	8-724-375-01	TRANSISTOR 2SC403C	
Q028	8-729-384-48	TRANSISTOR 2SA844	
Q029	=>8-729-612-77	TRANSISTOR 2SA1027R	
Q030	8-724-375-01	TRANSISTOR 2SC403C	
Q031	8-724-375-01	TRANSISTOR 2SC403C	
Q032	8-724-375-01	TRANSISTOR 2SC403C	
Q033	8-729-663-47	TRANSISTOR 2SC1364	
Q034	8-724-375-01	TRANSISTOR 2SC403C	
Q035	8-729-384-48	TRANSISTOR 2SA844	
Q036	8-729-384-48	TRANSISTOR 2SA844	
Q037	8-724-375-01	TRANSISTOR 2SC403C	
Q038	8-729-663-47	TRANSISTOR 2SC1364	
Q040	8-724-375-01	TRANSISTOR 2SC403C	
Q041	8-724-375-01	TRANSISTOR 2SC403C	
Q042	8-724-375-01	TRANSISTOR 2SC403C	
Q043	8-724-375-01	TRANSISTOR 2SC403C	
Q044	8-729-663-47	TRANSISTOR 2SC1364	
Q045	8-729-663-47	TRANSISTOR 2SC1364	
Q046	8-729-663-47	TRANSISTOR 2SC1364	
Q047	8-729-663-47	TRANSISTOR 2SC1364	
Q048	8-729-663-47	TRANSISTOR 2SC1364	
Q049	8-724-375-01	TRANSISTOR 2SC403C	
Q050	8-724-375-01	TRANSISTOR 2SC403C	
Q051	8-724-375-01	TRANSISTOR 2SC403C	
Q052	8-724-375-01	TRANSISTOR 2SC403C	
Q053	8-724-375-01	TRANSISTOR 2SC403C	
Q054	8-729-663-47	TRANSISTOR 2SC1364	
Q055	8-724-374-00	TRANSISTOR 2SC403C	
Q056	8-724-374-00	TRANSISTOR 2SC403C	
Q057	=>8-729-663-47	TRANSISTOR 2SC1364	
Q058	=>8-729-663-47	TRANSISTOR 2SC1364	
Q059	8-727-384-48	TRANSISTOR 2SA844	
Q060	8-727-384-48	TRANSISTOR 2SA844	
Q061	8-727-384-48	TRANSISTOR 2SA844	
Q062	8-727-384-48	TRANSISTOR 2SA844	
Q064	8-729-100-13	TRANSISTOR 2SC2001	
Q065	8-729-663-47	TRANSISTOR 2SC1364	
Q066	8-724-375-01	TRANSISTOR 2SC403C	

* =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Ref.No	Part No	Description	Remark
Q067	8-724-375-01	TRANSISTOR 2SC403C	
Q068	8-729-663-47	TRANSISTOR 2SC1364	
Q069	8-729-663-47	TRANSISTOR 2SC1364	
Q070	8-729-384-48	TRANSISTOR 2SA844	
Q071	8-729-663-47	TRANSISTOR 2SC1364	
Q072	8-729-663-47	TRANSISTOR 2SC1364	
Q077	8-729-663-47	TRANSISTOR 2SC1364	
Q078	8-729-663-47	TRANSISTOR 2SC1364	
Q079	8-724-375-01	TRANSISTOR 2SC403C	
Q080	8-729-663-47	TRANSISTOR 2SC1364	
Q081	8-729-663-47	TRANSISTOR 2SC1364	
Q082	8-724-375-01	TRANSISTOR 2SC403C	
Q084	8-724-375-01	TRANSISTOR 2SC403C	
Q085	8-724-375-01	TRANSISTOR 2SC403C	
Q086	8-724-375-01	TRANSISTOR 2SC403C	
Q087	=>8-729-612-77	TRANSISTOR 2SA1027R	
Q095	8-729-663-47	TRANSISTOR 2SC1364	
Q096	8-724-375-01	TRANSISTOR 2SC403C	
Q100	8-729-663-47	TRANSISTOR 2SC1364	

RESISTOR

Ref.No	Part No	Description			Remark
R001	1-246-449-00	CARBON	100	5%	1/4W
R002	1-246-771-00	CARBON	100		1/8W
R003	1-246-795-00	CARBON	10K		1/8W
R004	1-246-799-00	CARBON	22K		1/8W
R005	1-246-473-00	CARBON	1K	5%	1/4W
R006	1-246-471-00	CARBON	820	5%	1/4W
R007	1-246-783-00	CARBON	1K		1/8W
R008	1-246-847-00	CARBON	2K		1/8W
R009	1-246-787-00	CARBON	2.2K		1/8W
R010	1-246-799-00	CARBON	22K		1/8W
R011	1-246-796-00	CARBON	12K		1/8W
R012	1-246-505-00	CARBON	22K	5%	1/4W
R013	1-246-791-00	CARBON	4.7K		1/8W
R014	1-246-474-00	CARBON	1.1K	5%	1/4W
R015	1-246-471-00	CARBON	820	5%	1/4W
R018	1-246-481-00	CARBON	2.2K	5%	1/4W
R019	1-246-479-00	CARBON	1.8K	5%	1/4W
R020	1-246-777-00	CARBON	330		1/8W
R021	1-246-791-00	CARBON	4.7K		1/8W
R022	1-246-478-00	CARBON	1.6K	5%	1/4W
R023	1-246-459-00	CARBON	270	5%	1/4W
R024	1-246-453-00	CARBON	150	5%	1/4W
R025	1-246-786-00	CARBON	1.8K		1/8W
R026	1-246-778-00	CARBON	390		1/8W
R027	1-246-481-00	CARBON	2.2K	5%	1/4W
R028	1-246-782-00	CARBON	820		1/8W
R029	1-246-799-00	CARBON	22K		1/8W
R030	1-246-799-00	CARBON	22K		1/8W
R031	1-246-478-00	CARBON	1.6K	5%	1/4W
R032	1-246-454-00	CARBON	160	5%	1/4W
R033	1-246-461-00	CARBON	330	5%	1/4W
R034	1-246-497-00	CARBON	10K	5%	1/4W
R035	1-246-473-00	CARBON	1K	5%	1/4W
R036	1-246-475-00	CARBON	1.2K	5%	1/4W
R037	1-246-795-00	CARBON	10K		1/8W
R038	1-246-510-00	CARBON	36K	5%	1/4W
R040	1-246-483-00	CARBON	2.7K	5%	1/4W
R041	1-246-494-00	CARBON	7.5K	5%	1/4W
R042	1-246-771-00	CARBON	100		1/8W
R043	1-246-795-00	CARBON	10K		1/8W
R044	1-246-795-00	CARBON	10K		1/8W
R045	1-246-786-00	CARBON	1.8K		1/8W
R046	1-246-797-00	CARBON	15K		1/8W
R047	1-246-498-00	CARBON	11K	5%	1/4W
R048	1-246-467-00	CARBON	560	5%	1/4W
R049	1-246-523-00	CARBON	120K	5%	1/4W
R050	1-246-804-00	CARBON	56K		1/8W
R051	1-246-803-00	CARBON	47K		1/8W
R052	1-246-795-00	CARBON	10K		1/8W
R053	1-246-803-00	CARBON	47K		1/8W
R054	1-246-793-00	CARBON	6.8K		1/8W
R055	1-246-795-00	CARBON	10K		1/8W
R056	1-246-793-00	CARBON	6.8K		1/8W
R057	1-246-786-00	CARBON	1.8K		1/8W
R058	1-246-471-00	CARBON	820	5%	1/4W
R059	1-246-786-00	CARBON	1.8K		1/8W
R060	1-246-789-00	CARBON	3.3K		1/8W
R061	1-246-467-00	CARBON	560	5%	1/4W
R062	1-246-467-00	CARBON	560	5%	1/4W
R064	1-246-841-00	CARBON	620		1/8W
R065	1-246-789-00	CARBON	3.3K		1/8W
R075	1-246-795-00	CARBON	10K		1/8W
R076	1-246-801-00	CARBON	33K		1/8W
R077	1-246-458-00	CARBON	240	5%	1/4W
R079	1-246-459-00	CARBON	270	5%	1/4W
R080	1-246-478-00	CARBON	1.6K	5%	1/4W
R081	1-246-783-00	CARBON	1K		1/8W
R082	1-246-786-00	CARBON	1.8K		1/8W
R083	1-246-782-00	CARBON	820		1/8W
R084	1-246-787-00	CARBON	2.2K		1/8W
R085	1-246-778-00	CARBON	390		1/8W
R086	1-246-461-00	CARBON	330	5%	1/4W
R087	1-246-799-00	CARBON	22K		1/8W
R088	1-246-799-00	CARBON	22K		1/8W
R089	1-246-454-00	CARBON	160	5%	1/4W
R090	1-246-473-00	CARBON	1K	5%	1/4W
R091	1-246-795-00	CARBON	10K		1/8W
R092	1-246-785-00	CARBON	1.5K		1/8W
R093	1-246-785-00	CARBON	1.5K		1/8W
R094	1-246-782-00	CARBON	820		1/8W
R095	1-246-477-00	CARBON	1.5K	5%	1/4W
R096	1-246-473-00	CARBON	1K	5%	1/4W
R097	1-246-799-00	CARBON	22K		1/8W
R098	1-246-467-00	CARBON	560	5%	1/4W
R099	1-246-473-00	CARBON	1K	5%	1/4W

* =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Ref.No	Part No	Description				Remark
R100	1-246-473-00	CARBON	1K	5%	1/4W	
R101	1-246-473-00	CARBON	1K	5%	1/4W	
R102	1-246-445-00	CARBON	68	5%	1/4W	
R103	1-246-789-00	CARBON	3.3K		1/8W	
R104	1-246-784-00	CARBON	1.2K		1/8W	
R105	1-244-860-00	CARBON	300	5%	1/2W	
R106	1-246-445-00	CARBON	68	5%	1/4W	
R107	1-246-791-00	CARBON	4.7K		1/8W	
R108	1-246-795-00	CARBON	10K		1/8W	
R109	1-246-470-00	CARBON	750	5%	1/4W	
R110	1-246-801-00	CARBON	33K		1/8W	
R111	1-244-853-00	CARBON	150	5%	1/2W	
R112	1-244-853-00	CARBON	150	5%	1/2W	
R113	1-246-473-00	CARBON	1K	5%	1/4W	
R114	1-246-787-00	CARBON	2.2K		1/8W	
R115	1-246-473-00	CARBON	1K	5%	1/4W	
R116	1-246-794-00	CARBON	8.2K		1/8W	
R117	1-246-798-00	CARBON	18K		1/8W	
R118	1-246-782-00	CARBON	820		1/8W	
R119	1-246-783-00	CARBON	1K		1/8W	
R120	1-246-791-00	CARBON	4.7K		1/8W	
R121	1-246-797-00	CARBON	15K		1/8W	
R122	1-246-472-00	CARBON	910	5%	1/4W	
R123	1-246-783-00	CARBON	1K		1/8W	
R124	1-246-783-00	CARBON	1K		1/8W	
R125	1-246-783-00	CARBON	1K		1/8W	
R126	1-246-811-00	CARBON	220K		1/8W	
R127	1-246-851-00	CARBON	4.3K		1/8W	
R128	1-246-847-00	CARBON	2K		1/8W	
R129	1-246-782-00	CARBON	820		1/8W	
R130	1-246-771-00	CARBON	100		1/8W	
R131	1-246-509-00	CARBON	33K	5%	1/4W	
R132	1-246-787-00	CARBON	2.2K		1/8W	
R133	1-246-789-00	CARBON	3.3K		1/8W	
R134	1-246-461-00	CARBON	330	5%	1/4W	
R135	1-246-785-00	CARBON	1.5K		1/8W	
R136	1-246-852-00	CARBON	5.1K		1/8W	
R137	1-246-495-00	CARBON	8.2K	5%	1/4W	
R138 ⚠	1-211-427-00	CARBON	100	5%	1/8W	F
R139	1-246-801-00	CARBON	33K		1/8W	
R141	1-246-795-00	CARBON	10K		1/8W	
R142	1-246-467-00	CARBON	560	5%	1/4W	
R143	1-246-801-00	CARBON	33K		1/8W	
R144	1-246-449-00	CARBON	100	5%	1/4W	
R145	1-246-801-00	CARBON	33K		1/8W	
R146	1-246-783-00	CARBON	1K		1/8W	
R147	1-246-459-00	CARBON	270	5%	1/4W	
R148	1-246-776-00	CARBON	270		1/8W	
R149	1-246-801-00	CARBON	33K		1/8W	
R150	1-246-801-00	CARBON	33K		1/8W	
R151	1-246-473-00	CARBON	1K	5%	1/4W	
R152	1-246-783-00	CARBON	1K		1/8W	
R153	1-246-784-00	CARBON	1.2K		1/8W	
R154	1-246-529-00	CARBON	220K	5%	1/4W	
R155	1-246-787-00	CARBON	2.2K		1/8W	
R156	1-246-473-00	CARBON	1K	5%	1/4W	
R157	1-246-801-00	CARBON	33K		1/8W	
R158	1-246-799-00	CARBON	22K		1/8W	
R159	1-246-801-00	CARBON	33K		1/8W	
R160	1-246-799-00	CARBON	22K		1/8W	
R161	1-246-799-00	CARBON	22K		1/8W	
R162	1-246-811-00	CARBON	220K		1/8W	
R163	1-246-800-00	CARBON	27K		1/8W	
R164	1-246-792-00	CARBON	5.6K		1/8W	
R165	1-246-801-00	CARBON	33K		1/8W	
R166	1-246-775-00	CARBON	220		1/8W	
R167	1-246-791-00	CARBON	4.7K		1/8W	
R168	1-246-807-00	CARBON	100K		1/8W	
R169	1-246-811-00	CARBON	220K		1/8W	
R170	1-246-791-00	CARBON	4.7K		1/8W	
R171	1-246-811-00	CARBON	220K		1/8W	
R172	1-246-804-00	CARBON	56K		1/8W	
R173	1-246-795-00	CARBON	10K		1/8W	
R174	1-246-461-00	CARBON	330	5%	1/4W	
R175	1-246-783-00	CARBON	1K		1/8W	
R176	1-246-779-00	CARBON	470		1/8W	
R177	1-246-799-00	CARBON	22K		1/8W	
R178	1-246-795-00	CARBON	10K		1/8W	
R179	1-246-785-00	CARBON	1.5K		1/8W	
R180	1-246-791-00	CARBON	4.7K		1/8W	
R181	1-246-783-00	CARBON	1K		1/8W	
R182	1-246-784-00	CARBON	1.2K		1/8W	
R184	1-246-473-00	CARBON	1K	5%	1/4W	
R185	1-246-791-00	CARBON	4.7K		1/8W	
R186	1-246-798-00	CARBON	18K		1/8W	
R187	1-246-792-00	CARBON	5.6K		1/8W	
R188	1-246-799-00	CARBON	22K		1/8W	
R189	1-246-463-00	CARBON	390	5%	1/4W	
R190	1-246-481-00	CARBON	2.2K	5%	1/4W	
R191	1-246-778-00	CARBON	390		1/8W	
R192	1-246-778-00	CARBON	390		1/8W	
R193	1-246-778-00	CARBON	390		1/8W	
R194	1-246-778-00	CARBON	390		1/8W	
R195	1-246-463-00	CARBON	390	5%	1/4W	
R196	1-246-787-00	CARBON	2.2K		1/8W	
R198	1-246-861-00	CARBON	30K		1/8W	
R199	1-246-469-00	CARBON	680	5%	1/4W	
R200	1-246-840-00	CARBON	510		1/8W	
R201	1-246-789-00	CARBON	3.3K		1/8W	
R202	1-246-497-00	CARBON	10K	5%	1/4W	
R203	1-246-470-00	CARBON	750	5%	1/4W	
R204	1-246-786-00	CARBON	1.8K		1/8W	
R205	1-246-791-00	CARBON	4.7K		1/8W	
R206	1-246-459-00	CARBON	270	5%	1/4W	
R207	1-246-787-00	CARBON	2.2K		1/8W	
R208	1-246-477-00	CARBON	1.5K	5%	1/4W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No	Part No	Description				Remark
R209	1-246-471-00	CARBON	820	5%	1/4W	
R210	1-246-783-00	CARBON	1K		1/8W	
R211	1-246-804-00	CARBON	56K		1/8W	
R212	1-246-795-00	CARBON	10K		1/8W	
R213	1-246-794-00	CARBON	8.2K		1/8W	
R214	1-246-789-00	CARBON	3.3K		1/8W	
R215	1-246-795-00	CARBON	10K		1/8W	
R216	1-246-804-00	CARBON	56K		1/8W	
R217	1-246-469-00	CARBON	680	5%	1/4W	
R218	1-246-783-00	CARBON	1K		1/8W	
R219	1-246-793-00	CARBON	6.8K		1/8W	
R220	1-246-491-00	CARBON	5.6K	5%	1/4W	
R221	1-246-791-00	CARBON	4.7K		1/8W	
R222	1-246-854-00	CARBON	7.5K		1/8W	
R223	1-246-791-00	CARBON	4.7K		1/8W	
R224	1-246-481-00	CARBON	2.2K	5%	1/4W	
R225	1-246-793-00	CARBON	6.8K		1/8W	
R226	1-246-789-00	CARBON	3.3K		1/8W	
R227	1-246-801-00	CARBON	33K		1/8W	
R228	1-246-860-00	CARBON	24K		1/8W	
R229	1-246-449-00	CARBON	100	5%	1/4W	
R230	1-246-802-00	CARBON	39K		1/8W	
R231	1-246-852-00	CARBON	5.1K		1/8W	
R232	1-246-795-00	CARBON	10K		1/8W	
R235	1-246-479-00	CARBON	1.8K	5%	1/4W	
R236	1-246-501-00	CARBON	15K	5%	1/4W	
R237	1-246-797-00	CARBON	15K		1/8W	
R238	1-246-797-00	CARBON	15K		1/8W	
R239	1-246-793-00	CARBON	6.8K		1/8W	
R240	1-246-807-00	CARBON	100K		1/8W	
R241	1-246-793-00	CARBON	6.8K		1/8W	
R242	1-246-789-00	CARBON	3.3K		1/8W	
R243	1-246-804-00	CARBON	56K		1/8W	
R244	1-246-779-00	CARBON	470		1/8W	
R245	1-246-809-00	CARBON	150K		1/8W	
R246	1-246-798-00	CARBON	18K		1/8W	
R247	1-246-805-00	CARBON	68K		1/8W	
R248	1-246-789-00	CARBON	3.3K		1/8W	
R249	1-246-779-00	CARBON	470		1/8W	
R250	1-246-783-00	CARBON	1K		1/8W	
R251	1-246-459-00	CARBON	270	5%	1/4W	
R255	1-246-789-00	CARBON	3.3K		1/8W	
R256	1-246-789-00	CARBON	3.3K		1/8W	
R258	1-246-779-00	CARBON	470	5%	1/8W	
R261	1-246-463-00	CARBON	390	5%	1/4W	
R262	1-246-799-00	CARBON	22K		1/8W	
R263	1-246-799-00	CARBON	22K		1/8W	
R264	1-246-792-00	CARBON	5.6K		1/8W	
R265	1-246-796-00	CARBON	12K		1/8W	
R267	1-246-852-00	CARBON	5.1K		1/8W	
R268	1-246-807-00	CARBON	100K		1/8W	
R269	1-246-803-00	CARBON	47K		1/8W	
R271	1-246-787-00	CARBON	2.2K		1/8W	

Ref.No	Part No	Description				Remark
R272	1-210-829-00	COMPOSITION	4.7M	5%	1/4W	
R273	1-246-779-00	CARBON	470		1/8W	
R274	1-246-785-00	CARBON	1.5K		1/8W	
R275	1-246-473-00	CARBON	1K	5%	1/4W	
R276	1-246-811-00	CARBON	220K		1/8W	
R277	1-246-795-00	CARBON	10K		1/8W	
R278	1-246-509-00	CARBON	33K	5%	1/4W	
R279	1-246-783-00	CARBON	1K		1/8W	
R280	1-246-791-00	CARBON	4.7K		1/8W	
R281	1-246-807-00	CARBON	100K		1/8W	
R282	1-246-792-00	CARBON	5.6K		1/8W	
R283	1-246-796-00	CARBON	12K		1/8W	
R284	1-246-795-00	CARBON	10K		1/8W	
R289	1-246-778-00	CARBON	390		1/8W	
R295	1-246-473-00	CARBON	1K	5%	1/4W	
R296	1-246-771-00	CARBON	100		1/8W	
R297	1-246-865-00	CARBON	62K		1/8W	
R298	1-246-797-00	CARBON	15K		1/8W	
R299	1-246-790-00	CARBON	3.9K		1/8W	
R300	1-246-794-00	CARBON	8.2K		1/8W	
R301	1-246-799-00	CARBON	22K		1/8W	
R302	1-246-854-00	CARBON	7.5K		1/8W	
R303	1-246-854-00	CARBON	7.5K		1/8W	
R304	1-246-795-00	CARBON	10K		1/8W	
R305	1-246-830-00	CARBON	75		1/8W	
R306	1-246-863-00	CARBON	43K		1/8W	
R307	1-246-799-00	CARBON	22K		1/8W	
R308	1-246-775-00	CARBON	220		1/8W	
R309	1-246-830-00	CARBON	75		1/8W	
R310	1-246-863-00	CARBON	43K		1/8W	
R311	1-246-485-00	CARBON	3.3K	5%	1/4W	
R312	1-246-509-00	CARBON	33K	5%	1/4W	
R313	1-246-801-00	CARBON	33K		1/8W	
R314	1-246-787-00	CARBON	2.2K		1/8W	
R315	1-246-799-00	CARBON	22K		1/8W	
R316	1-246-513-00	CARBON	47K	5%	1/4W	
R319	1-246-852-00	CARBON	5.1K		1/8W	
R320	1-246-787-00	CARBON	2.2K		1/8W	
R321	1-246-497-00	CARBON	10K	5%	1/4W	
R323	1-246-784-00	CARBON	1.2K		1/8W	
R324	1-246-848-00	CARBON	2.4K		1/8W	
R325	1-246-785-00	CARBON	1.5K		1/8W	
R326	1-246-783-00	CARBON	1K		1/8W	
R328	1-246-479-00	CARBON	1.8K	5%	1/4W	
R329	1-246-791-00	CARBON	4.7K		1/8W	
R330	1-246-783-00	CARBON	1K		1/8W	
R331	1-246-473-00	CARBON	1K	5%	1/4W	
R332	1-246-449-00	CARBON	100	5%	1/4W	
R333	1-246-771-00	CARBON	100		1/8W	
R334	1-246-489-00	CARBON	4.7K	5%	1/4W	
R336	1-246-795-00	CARBON	10K		1/8W	
R337	1-246-771-00	CARBON	100		1/8W	
R338	1-246-473-00	CARBON	1K	5%	1/4W	

Ref.No	Part No	Description				Remark
R339	1-246-789-00	CARBON	3.3K		1/8W	
R340	1-246-789-00	CARBON	3.3K		1/8W	
R341	1-246-434-00	CARBON	24	5%	1/4W	
R350	1-246-787-00	CARBON	2.2K		1/8W	
R356⚠	1-212-865-00	FUSIBLE	22	5%	1/4W	F
R360	1-246-449-00	CARBON	100	5%	1/4W	
R361	1-246-771-00	CARBON	100		1/8W	
R362	1-246-842-00	CARBON	750		1/8W	
R363	1-246-464-00	CARBON	430	5%	1/4W	
R364	1-246-789-00	CARBON	3.3K		1/8W	
R365	1-246-771-00	CARBON	100		1/8W	
R366	1-247-053-00	CARBON	1M		1/8W	
R368	1-246-453-00	CARBON	150	5%	1/4W	
R369	1-246-771-00	CARBON	100		1/8W	
R371	1-246-497-00	CARBON	10K	5%	1/4W	
R372	1-246-794-00	CARBON	8.2K		1/8W	
R373	1-246-845-00	CARBON	1.3K		1/8W	
R382	1-246-505-00	CARBON	22K	5%	1/4W	
R383	1-246-799-00	CARBON	22K		1/8W	
R384	1-246-470-00	CARBON	750	5%	1/4W	
R385	1-246-801-00	CARBON	33K		1/8W	
R386	1-246-795-00	CARBON	10K		1/8W	
R387	1-246-779-00	CARBON	470		1/8W	
R388	1-246-789-00	CARBON	3.3K		1/8W	
R389	1-246-787-00	CARBON	2.2K		1/8W	
R390	1-246-790-00	CARBON	3.9K		1/8W	
R391	1-246-790-00	CARBON	3.9K		1/8W	
R395	1-246-795-00	CARBON	10K		1/8W	
R396	1-246-783-00	CARBON	1K		1/8W	
R450	1-246-509-00	CARBON	33K	5%	1/4W	
R451	1-246-491-00	CARBON	5.6K	5%	1/4W	
R452	1-246-491-00	CARBON	5.6K	5%	1/4W	
R453	1-246-432-00	CARBON	20	5%	1/4W	
R454	1-246-521-00	CARBON	100K	5%	1/4W	

VARIABLE RESISTOR

RV001	1-224-645-XX	RES, ADJ, CARBON	10K
RV002	1-224-643-XX	RES, ADJ, CARBON	2.2K
RV003	1-224-641-XX	RES, ADJ, CARBON	470
RV004	1-226-819-00	RES, ADJ, CARBON	1K
RV005	1-224-647-XX	RES, ADJ, CARBON	47K
RV006	1-224-644-XX	RES, ADJ, CARBON	4.7K
RV008	1-224-643-XX	RES, ADJ, CARBON	2.2K
RV010	1-226-819-00	RES, ADJ, CARBON	1K
RV014	1-224-643-XX	RES, ADJ, CARBON	2.2K
RV015	1-224-644-XX	RES, ADJ, CARBON	4.7K
RV016	1-224-646-XX	RES, ADJ, CARBON	22K
RV017	1-224-645-XX	RES, ADJ, CARBON	10K
RV018	1-226-819-00	RES, ADJ, CARBON	1K
RV019	1-224-641-XX	RES, ADJ, CARBON	470
RV020	1-226-819-00	RES, ADJ, CARBON	1K
RV021	1-226-819-00	RES, ADJ, CARBON	1K
RV022	1-224-552-00	RES, ADJ, CARBON	470K
RV024	1-224-643-XX	RES, ADJ, CARBON	2.2K
RV025	1-226-497-00	RES, VAR, CARBON	100K
RV026	1-224-648-XX	RES, ADJ, CARBON	100K

SWITCH

SW001	1-552-820-00	SWITCH, SLIDE	

TRANSFORMER

T002	1-409-321-00	COIL, TRAP	
T003	1-409-320-00	COIL, TRAP	
T004	1-425-981-00	COIL, REC C BPT	
T005	1-425-785-21	TRANSFORMER,BURST AMP(BAT)	
T006	1-405-669-00	COIL,PST	
T007	1-405-802-00	COIL, OSC	
T008	1-405-803-00	COIL, OSC	
T009	1-425-982-00	COIL, BPT	
T010	1-411-106-00	COIL, TUNING-T	
T011	1-426-027-00	COIL, EQT	
X001	1-527-345-00	CRYSTAL, OSC	
X002	1-527-353-00	CRYSTAL, OSC	

****

♦:A-6711-216-A	RF-2 BOARD, COMPLETE	
	**********	
♦:3-659-694-00	CASE, SHIELD (B) (MAIN)	
♦:3-662-311-00	LID, UPPER, SHIELD CASE (B)	

CAPACITOR

C001	1-123-352-00	ELECT	1MF	20%	50V
C002	1-123-352-00	ELECT	1MF	20%	50V
C003	1-161-494-00	CERAMIC	0.022MF	30%	25V
C004	1-161-494-00	CERAMIC	0.022MF	30%	25V
C005	1-101-006-00	CERAMIC	0.047MF		50V
C006	1-101-006-00	CERAMIC	0.047MF		50V
C007	1-161-494-00	CERAMIC	0.022MF	30%	25V
C008	1-161-494-00	CERAMIC	0.022MF	30%	25V
C009	1-131-371-00	TANTALUM	10MF	20%	16V
C010	1-131-371-00	TANTALUM	10MF	20%	16V
C011	1-161-051-00	CERAMIC	0.01MF	30%	25V
C012	1-161-051-00	CERAMIC	0.01MF	30%	25V
C014	1-123-353-00	ELECT	2.2MF	20%	50V
C015	1-161-047-00	CERAMIC	0.0047MF	30%	50V
C017	1-101-882-00	CERAMIC	51PF	5%	50V
C018	1-101-882-00	CERAMIC	51PF	5%	50V
C019	1-108-370-00	MYLAR	0.0027MF	10%	100V
C020	1-161-319-00	CERAMIC	470PF	10%	50V
C021	1-161-271-00	CERAMIC	100PF	5%	50V
C022	1-108-370-00	MYLAR	0.0027MF	10%	100V
C023	1-161-319-00	CERAMIC	470PF	10%	50V
C024	1-161-051-00	CERAMIC	0.01MF	30%	25V
C025	1-131-371-00	TANTALUM	10MF	20%	16V
C026	1-161-317-00	CERAMIC	330PF	10%	50V

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

• Items marked " ♦ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Ref.No	Part No	Description			Remark
C027	1-161-494-00	CERAMIC	0.022MF	30%	25V
C028	1-123-318-00	ELECT	33MF	20%	16V
C029	1-161-494-00	CERAMIC	0.022MF	30%	25V
C030	1-161-051-00	CERAMIC	0.01MF	30%	25V
C031	1-161-051-00	CERAMIC	0.01MF	30%	25V
C032	1-101-005-00	CERAMIC	0.022MF		50V
C033	1-123-318-00	ELECT	33MF	20%	16V
C034	1-123-351-00	ELECT	0.47MF	20%	50V
C035	1-161-051-00	CERAMIC	0.01MF	30%	25V
C037	1-123-318-00	ELECT	33MF	20%	16V
C038	1-102-953-00	CERAMIC	18PF	5%	50V
		CONNECTOR			
CN001♣	1-508-744-00	PIN, CONNECTOR 10P			
CN002♣	1-508-797-00	PIN, CONNECTOR 4P			
CN003♣	1-508-845-00	PIN, CONNECTOR 6P			
CN004♣	1-508-847-00	PIN, CONNECTOR 4P			
		DIODE			
D001	8-719-815-55	DIODE 1S1555			
D002	8-719-815-55	DIODE 1S1555			
D003	8-719-815-55	DIODE 1S1555			
D004	8-719-815-55	DIODE 1S1555			
D005	8-719-815-55	DIODE 1S1555			
D006	8-719-815-55	DIODE 1S1555			
D007	8-719-815-55	DIODE 1S1555			
D008	8-719-815-55	DIODE 1S1555			
D009	8-719-815-55	DIODE 1S1555			
		IC			
IC001	8-751-340-00	IC CX-134A			
		TRANSISTOR			
L001	1-408-029-00	MICRO INDUCTOR 0.56UH			
L002	1-408-029-00	MICRO INDUCTOR 0.56UH			
L003	1-407-695-00	MICRO INDUCTOR 15UH			
L004	1-407-695-00	MICRO INDUCTOR 15UH			
L005	1-408-158-00	MICRO INDUCTOR 6.8MMH			
L006	1-408-158-00	MICRO INDUCTOR 6.8MMH			
L007	1-407-706-00	MICRO INDUCTOR 120UH			
L008	1-407-496-00	MICRO INDUCTOR 2.2MMH			
L009	1-407-717-00	MICRO INDUCTOR 1MMH			
L010	1-407-693-00	MICRO INDUCTOR 10UH			
		VARIABLE COIL			
LV001	1-407-286-00	MICRO INDUCTOR 2.2MMH			
		TRANSISTOR			
Q001	8-729-663-47	TRANSISTOR 2SC1364			
Q002	8-729-663-47	TRANSISTOR 2SC1364			
Q003	8-765-422-00	TRANSISTOR 2SK152-2			
Q004	8-765-422-00	TRANSISTOR 2SK152-2			
Q005	8-729-663-47	TRANSISTOR 2SC1364			

Ref.No	Part No	Description			Remark
Q006	8-729-663-47	TRANSISTOR 2SC1364			
Q007	8-729-663-47	TRANSISTOR 2SC1364			
Q008	8-724-375-01	TRANSISTOR 2SC403C			
Q009	8-729-663-47	TRANSISTOR 2SC1364			
Q010	8-729-384-48	TRANSISTOR 2SA844			
Q011	=>8-729-612-77	TRANSISTOR 2SA1027R			
Q012	=>8-729-663-47	TRANSISTOR 2SC1364			
Q013	8-724-375-01	TRANSISTOR 2SC403C			
		RESISTOR			
R001	1-246-485-00	CARBON	3.3K	5%	1/4W
R002	1-246-485-00	CARBON	3.3K	5%	1/4W
R003	1-246-463-00	CARBON	390	5%	1/4W
R004	1-246-463-00	CARBON	390	5%	1/4W
R005	1-246-497-00	CARBON	10K	5%	1/4W
R006	1-246-497-00	CARBON	10K	5%	1/4W
R007	1-246-468-00	CARBON	620	5%	1/4W
R008	1-246-468-00	CARBON	620	5%	1/4W
R009	1-246-463-00	CARBON	390	5%	1/4W
R010	1-246-463-00	CARBON	390	5%	1/4W
R011	1-246-497-00	CARBON	10K	5%	1/4W
R012	1-246-497-00	CARBON	10K	5%	1/4W
R013	1-246-451-00	CARBON	120	5%	1/4W
R014	1-246-451-00	CARBON	120	5%	1/4W
R015	1-246-491-00	CARBON	5.6K	5%	1/4W
R016	1-246-457-00	CARBON	220	5%	1/4W
R017	1-246-464-00	CARBON	430	5%	1/4W
R018	1-246-421-00	CARBON	6.8	5%	1/4W
R019⚠	1-212-855-00	FUSIBLE	8.2	5%	1/4W F
R020	1-246-473-00	CARBON	1K	5%	1/4W
R021	1-246-473-00	CARBON	1K	5%	1/4W
R022	1-246-481-00	CARBON	2.2K	5%	1/4W
R023	1-246-481-00	CARBON	2.2K	5%	1/4W
R024	1-246-481-00	CARBON	2.2K	5%	1/4W
R025	1-246-481-00	CARBON	2.2K	5%	1/4W
R026	1-246-475-00	CARBON	1.2K	5%	1/4W
R027	1-246-467-00	CARBON	560	5%	1/4W
R028	1-246-497-00	CARBON	10K	5%	1/4W
R029	1-246-497-00	CARBON	10K	5%	1/4W
R030⚠	1-212-855-00	FUSIBLE	8.2	5%	1/4W F
R031	1-246-509-00	CARBON	33K	5%	1/4W
R032	1-246-489-00	CARBON	4.7K	5%	1/4W
R033	1-246-481-00	CARBON	2.2K	5%	1/4W
R034	1-246-463-00	CARBON	390	5%	1/4W
R035	1-246-449-00	CARBON	100	5%	1/4W
R036	1-246-465-00	CARBON	470	5%	1/4W
R037	1-246-491-00	CARBON	5.6K	5%	1/4W
R038	1-246-473-00	CARBON	1K	5%	1/4W
R039	1-246-468-00	CARBON	620	5%	1/4W
R040	1-246-485-00	CARBON	3.3K	5%	1/4W
R041	1-246-502-00	CARBON	16K	5%	1/4W
R042	1-246-473-00	CARBON	1K	5%	1/4W
R043	1-246-469-00	CARBON	680	5%	1/4W

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

- Items marked "♣" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Ref.No	Part No	Description				Remark
R044	1-246-462-00	CARBON	360	5%	1/4W	
R045	1-246-519-00	CARBON	82K	5%	1/4W	
R046	1-246-497-00	CARBON	10K	5%	1/4W	
R047	1-246-464-00	CARBON	430	5%	1/4W	
R048	1-246-477-00	CARBON	1.5K	5%	1/4W	
R049	1-246-477-00	CARBON	1.5K	5%	1/4W	
R050	1-246-422-00	CARBON	7.5	5%	1/4W	
R051 ⚠	1-211-929-00	CARBON	82	5%	1/2W	F
R052	1-246-449-00	CARBON	100	5%	1/4W	
R053 ⚠	1-211-421-00	CARBON	39	5%	1/2W	F
R054	1-246-497-00	CARBON	10K	5%	1/4W	
R055	1-246-515-00	CARBON	56K	5%	1/4W	
R056 ⚠	1-212-855-00	FUSIBLE	8.2	5%	1/4W	F
R057	1-246-451-00	CARBON	120	5%	1/4W	
R058	1-246-491-00	CARBON	5.6K	5%	1/4W	
R059 ⚠	1-212-855-00	FUSIBLE	8.2	5%	1/4W	F

VARIABLE RESISTOR

RV001	1-224-643-XX	RES, ADJ, CARBON	2.2K
RV002	1-224-643-XX	RES, ADJ, CARBON	2.2K
RV003	1-224-643-XX	RES, ADJ, CARBON	2.2K
RV004	1-224-644-XX	RES, ADJ, CARBON	4.7K
RV005	1-226-819-00	RES, ADJ, CARBON	1K
RV006	1-224-644-XX	RES, ADJ, CARBON	3.3K

TRANSFORMER

T001	1-427-455-00	TRANSFORMER, I/O PUT
T002	1-427-455-00	TRANSFORMER, I/O PUT

****

♣:	A-6711-295-A	CR-13 BOARD, COMPLETE

****

♣:	1-605-038-00	PC BOARD, CR-13

CAPACITOR

C001	1-123-319-00	ELECT	47MF	20%	16V
C002	1-108-559-00	MYLAR	0.0015MF	5%	50V
C003	1-108-567-00	MYLAR	0.0033MF	5%	50V
C008	1-108-563-00	MYLAR	0.0022MF	5%	50V
C020	1-101-004-00	CERAMIC	0.01MF		50V
C101	1-161-021-00	CERAMIC	0.047MF	10%	25V
C102	1-123-333-00	ELECT	100MF	20%	16V
C103	1-123-307-00	ELECT	100MF	20%	10V
C104	1-123-356-00	ELECT	10MF	20%	16V
C105	1-161-013-00	CERAMIC	0.01MF	10%	25V
C106	1-161-006-00	CERAMIC	0.0027MF	10%	25V
C107	1-102-117-00	CERAMIC	820PF	10%	50V
C108	1-102-529-00	CERAMIC	100PF	5%	50V
C109	1-123-319-00	ELECT	47MF	20%	16V
C110	1-161-013-00	CERAMIC	0.01MF	10%	25V
C111	1-161-017-00	CERAMIC	0.022MF	10%	25V
C112	1-102-950-00	CERAMIC	13PF	5%	50V
C113	1-101-882-00	CERAMIC	51PF	5%	50V
C114	1-101-882-00	CERAMIC	51PF	5%	50V
C115	1-102-950-00	CERAMIC	13PF	5%	50V
C116	1-123-296-00	ELECT	220MF	20%	6.3V
C117	1-123-296-00	ELECT	220MF	20%	6.3V
C118	1-123-352-00	ELECT	1MF	20%	50V
C119	1-161-271-00	CERAMIC	100PF	5%	50V
C120	1-161-272-00	CERAMIC	120PF	5%	50V
C121	1-123-307-00	ELECT	100MF	20%	10V
C122	1-123-356-00	ELECT	10MF	20%	16V
C123	1-123-296-00	ELECT	220MF	20%	6.3V
C124	1-123-319-00	ELECT	47MF	20%	16V
C125	1-101-361-00	CERAMIC	150PF	5%	50V

CONNECTOR

CN102 ♣:	1-508-734-00	PIN, CONNECTOR 3P

DIODE

D001	8-719-911-19	DIODE 1SS119
D002	8-719-911-19	DIODE 1SS119
D101	8-719-911-19	DIODE 1SS119
D102	8-719-911-19	DIODE 1SS119

IC

IC101	8-751-350-00	IC CX-135

COIL

L101	1-407-171-XX	MICRO INDUCTOR 150UH
L102	1-407-706-00	MICRO INDUCTOR 120UH
L103	1-407-708-00	MICRO INDUCTOR 180UH
L104	1-407-706-00	MICRO INDUCTOR 120UH

TRANSISTOR

Q001	8-729-117-54	TRANSISTOR 2SA1175
Q002	8-729-663-47	TRANSISTOR 2SC1364
Q003	8-729-663-47	TRANSISTOR 2SC1364
Q004	8-724-375-01	TRANSISTOR 2SC403C
Q007	8-729-663-47	TRANSISTOR 2SC1364
Q101	8-729-384-48	TRANSISTOR 2SA844
Q102	8-729-384-48	TRANSISTOR 2SA844
Q103	8-724-375-01	TRANSISTOR 2SC403C
Q104	8-724-375-01	TRANSISTOR 2SC403C

RESISTOR

R001	1-246-538-00	CARBON	510K	5%	1/4W
R002	1-246-513-00	CARBON	47K	5%	1/4W
R003	1-246-517-00	CARBON	68K	5%	1/4W
R004	1-246-505-00	CARBON	22K	5%	1/4W
R005	1-246-513-00	CARBON	47K	5%	1/4W
R006	1-246-505-00	CARBON	22K	5%	1/4W
R008	1-246-497-00	CARBON	10K	5%	1/4W
R009	1-246-497-00	CARBON	10K	5%	1/4W

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

♣ Items marked " ♣ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Ref.No	Part No	Description				Remark
R010	1-246-509-00	CARBON	33K	5%	1/4W	
R011	1-246-509-00	CARBON	33K	5%	1/4W	
R020	1-246-470-00	CARBON	750	5%	1/4W	
R021	1-246-497-00	CARBON	10K	5%	1/4W	
R022	1-246-521-00	CARBON	100K	5%	1/4W	
R023	1-246-509-00	CARBON	33K	5%	1/4W	
R024	1-246-513-00	CARBON	47K	5%	1/4W	
R101	1-246-499-00	CARBON	12K	5%	1/4W	
R102	1-246-487-00	CARBON	3.9K	5%	1/4W	
R103	1-246-465-00	CARBON	470	5%	1/4W	
R104	1-246-469-00	CARBON	680	5%	1/4W	
R105	1-246-441-00	CARBON	47	5%	1/4W	
R106	1-246-479-00	CARBON	1.8K	5%	1/4W	
R107	1-246-479-00	CARBON	1.8K	5%	1/4W	
R108	1-246-468-00	CARBON	620	5%	1/4W	
R109	1-246-475-00	CARBON	1.2K	5%	1/4W	
R110	1-246-468-00	CARBON	620	5%	1/4W	
R111	1-246-487-00	CARBON	3.9K	5%	1/4W	
R112	1-246-480-00	CARBON	2K	5%	1/4W	
R113	1-246-491-00	CARBON	5.6K	5%	1/4W	
R114	1-246-505-00	CARBON	22K	5%	1/4W	
R115	1-246-496-00	CARBON	9.1K	5%	1/4W	
R116	1-246-500-00	CARBON	13K	5%	1/4W	
R117	1-246-473-00	CARBON	1K	5%	1/4W	
R118	1-246-521-00	CARBON	100K	5%	1/4W	
R119	1-246-469-00	CARBON	680	5%	1/4W	
R120	1-246-473-00	CARBON	1K	5%	1/4W	
R121	1-246-473-00	CARBON	1K	5%	1/4W	
R122	1-246-473-00	CARBON	1K	5%	1/4W	
R124	1-246-473-00	CARBON	1K	5%	1/4W	
R125	1-246-489-00	CARBON	4.7K	5%	1/4W	
R126	1-246-494-00	CARBON	7.5K	5%	1/4W	
R127	1-246-483-00	CARBON	2.7K	5%	1/4W	
		VARIABLE RESISTROR				
RV101	1-224-249-XX	RES, ADJ, SOLID 1K				

****

♣:A-6715-108-A	AS-6 BOARD, COMPLETE	
	**********	
3-509-140-00	HOLDER, WIRE	
♣:3-655-214-00	CLIP, CABLE	
♣:3-662-237-00	LID, UPPER, OS SHIELD CASE	
♣:3-662-239-00	CASE, SHIELD, MA (MAIN)	
♣:3-662-240-00	LID, UPPER, MA SHIELD CASE	
♣:3-662-241-00	LID, BOTTOM, MA SHIELD CASE	
♣:3-662-249-00	LID (B), UPPER, HA SHIELD CASE	
♣:3-662-250-00	LID (B), BOTTOM,HA SHIELD CASE	
♣:3-662-286-00	CASE (MAIN), SHIELD, OS	
♣:3-663-250-00	LID, BOTTOM, OS SHIELD CASE	

Ref.No	Part No	Description			Remark
		CAPACITOR			
C001	1-101-006-00	CERAMIC	0.047MF		50V
C002	1-123-356-00	ELECT	10MF	20%	16V
C003	1-108-587-00	MYLAR	0.022MF	5%	50V
C004	1-108-587-00	MYLAR	0.022MF	5%	50V
C005	1-108-595-00	MYLAR	0.047MF	5%	50V
C006	1-101-001-00	CERAMIC	0.001MF		50V
C007	1-101-006-00	CERAMIC	0.047MF		50V
C008	1-131-369-00	TANTALUM	4.7MF	20%	16V
C009	1-131-369-00	TANTALUM	4.7MF	20%	16V
C010	1-101-006-00	CERAMIC	0.047MF		50V
C011	1-131-345-00	ELECT(SOLID)	0.47MF	10%	25V
C012	1-123-305-00	ELECT	33MF	20%	10V
C013	1-130-200-00	FILM	0.047MF	5%	50V
C014	1-130-200-00	FILM	0.047MF	5%	50V
C016	1-130-200-00	FILM	0.047MF	5%	50V
C017	1-130-199-00	FILM	0.01MF	5%	50V
C018	1-101-006-00	CERAMIC	0.047MF		50V
C019	1-131-371-00	TANTALUM	10MF	20%	16V
C020	1-131-361-00	TANTALUM	2.2MF	20%	20V
C021	1-131-361-00	TANTALUM	2.2MF	20%	20V
C022	1-131-371-00	TANTALUM	10MF	20%	16V
C023	1-101-006-00	CERAMIC	0.047MF		50V
C024	1-131-346-00	TANTALUM	0.68MF	10%	35V
C025	1-101-001-00	CERAMIC	0.001MF		50V
C026	1-130-201-00	FILM	0.068MF	5%	50V
C027	1-101-001-00	CERAMIC	0.001MF		50V
C028	1-130-535-00	FILM	0.15MF	5%	50V
C029	1-123-351-00	ELECT	0.47MF	20%	50V
C030	1-101-006-00	CERAMIC	0.047MF		50V
C031	1-123-333-00	ELECT	100MF	20%	16V
C032	1-101-004-00	CERAMIC	0.01MF		50V
C033	1-161-025-00	CERAMIC	0.1MF	10%	25V
C034	1-131-345-00	TANTALUM	0.47MF	10%	35V
C035	1-131-345-00	ELECT(SOLID)	0.47MF	10%	25V
C036	1-101-001-00	CERAMIC	0.001MF		50V
C037	1-123-352-00	ELECT	1MF	20%	50V
C038	1-123-351-00	ELECT	0.47MF	20%	50V
C039	1-101-003-00	CERAMIC	0.0047MF		50V
C040	1-123-307-00	ELECT	100MF	20%	10V
C041	1-131-344-00	ELECT(SOLID)	0.33MF	10%	25V
C042	1-101-006-00	CERAMIC	0.047MF		50V
C043	1-131-408-00	ELECT(SOLID)	1MF	10%	25V
C044	1-123-328-00	ELECT	4.7MF	20%	25V
C045	1-131-369-00	TANTALUM	4.7MF	20%	16V
C046	1-131-369-00	TANTALUM	4.7MF	20%	16V
C047	1-101-006-00	CERAMIC	0.047MF		50V
C048	1-123-333-00	ELECT	100MF	20%	16V
C049	1-108-595-00	MYLAR	0.047MF	5%	50V
C050	1-108-555-00	MYLAR	0.001MF	5%	50V
C052	1-131-404-00	ELECT(SOLID)	0.22MF	10%	25V
C053	1-123-317-00	ELECT	22MF	20%	16V

* Items marked " ♣ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Ref.No	Part No	Description			Remark
C054	1-123-317-00	ELECT	22MF	20%	16V
C055	1-123-307-00	ELECT	100MF	20%	10V
C056	1-102-106-00	CERAMIC	100PF	10%	50V
C057	1-102-106-00	CERAMIC	100PF	10%	50V
C058	1-123-333-00	ELECT	100MF	20%	16V
C059	1-101-004-00	CERAMIC	0.01MF		50V
C060	1-161-016-00	CERAMIC	0.018MF	10%	25V
C061	1-123-356-00	ELECT	10MF	20%	16V
C062	1-102-963-00	CERAMIC	33PF	5%	50V
C063	1-123-298-00	ELECT	470MF	20%	6.3V
C064	1-123-356-00	ELECT	10MF	20%	16V
C065	1-123-296-00	ELECT	220MF	20%	6.3V
C066	1-123-356-00	ELECT	10MF	20%	16V
C067	1-123-319-00	ELECT	47MF	20%	16V
C068	1-123-356-00	ELECT	10MF	20%	16V
C069	1-131-354-00	TANTALUM	1.5MF	10%	25V
C070	1-131-354-00	TANTALUM	1.5MF	10%	25V
C077	1-101-006-00	CERAMIC	0.047MF		50V
C078	1-123-333-00	ELECT	100MF	20%	16V
C079	1-123-317-00	ELECT	22MF	20%	16V
C080	1-123-328-00	ELECT	4.7MF	20%	25V
C081	1-123-352-00	ELECT	1MF	20%	50V
C082	1-123-353-00	ELECT	2.2MF	20%	50V
C085	1-123-356-00	ELECT	10MF	20%	16V
C090	1-123-317-00	ELECT	22MF	20%	16V
C401	1-123-352-00	ELECT	1MF	20%	50V
C402	1-123-318-00	ELECT	33MF	20%	16V
C403	1-123-306-00	ELECT	47MF	20%	10V
C404	1-102-973-00	CERAMIC	100PF	5%	50V
C405	1-101-884-00	CERAMIC	56PF	5%	50V
C406	1-101-001-00	CERAMIC	0.001MF		50V
C407	1-123-352-00	ELECT	1MF	20%	50V
C408	1-123-333-00	ELECT	100MF	20%	16V
C409	1-123-356-00	ELECT	10MF	20%	16V
C410	1-123-317-00	ELECT	22MF	20%	16V
C411	1-123-328-00	ELECT	4.7MF	20%	25V
C412	1-123-356-00	ELECT	10MF	20%	16V
C413	1-123-356-00	ELECT	10MF	20%	16V
C414	1-123-318-00	ELECT	33MF	20%	16V
C415	1-108-611-00	MYLAR	0.22MF	5%	50V
C416	1-123-356-00	ELECT	10MF	20%	16V
C417	1-102-816-00	CERAMIC	120PF	5%	50V
C418	1-123-356-00	ELECT	10MF	20%	16V
C419	1-108-589-00	MYLAR	0.027MF	5%	50V
C420	1-108-555-00	MYLAR	0.001MF	5%	50V
C421	1-102-980-00	CERAMIC	270PF	5%	50V
C422	1-107-171-00	MICA	120PF	5%	500V
C423	1-129-709-00	FILM	0.0039MF	10%	630V
C424	1-108-587-00	MYLAR	0.022MF	5%	50V
C425	1-108-591-00	MYLAR	0.033MF	5%	50V
C426	1-123-319-00	ELECT	47MF	20%	16V
C428	1-123-317-00	ELECT	22MF	20%	16V
C429	1-131-341-00	ELECT(SOLID)	0.1MF	10%	25V

Ref.No	Part No	Description			Remark
C430	1-123-352-00	ELECT	1MF	20%	50V
C431	1-108-579-00	MYLAR	0.01MF	5%	50V
C432	1-123-356-00	ELECT	10MF	20%	16V
C433	1-102-959-00	CERAMIC	22PF	5%	50V
C434	1-123-328-00	ELECT	4.7MF	20%	25V
C435	1-123-356-00	ELECT	10MF	20%	16V
C436	1-108-559-00	MYLAR	0.0015MF	5%	50V
C437	1-123-356-00	ELECT	10MF	20%	16V
C438	1-123-317-00	ELECT	22MF	20%	16V
C439	1-102-977-00	CERAMIC	200PF	5%	50V
C440	1-123-305-00	ELECT	33MF	20%	10V
C441	1-123-352-00	ELECT	1MF	20%	50V
C442	1-123-307-00	ELECT	100MF	20%	10V
C443	1-102-973-00	CERAMIC	100PF	5%	50V
C444	1-123-356-00	ELECT	10MF	20%	16V
C445	1-123-307-00	ELECT	100MF	20%	10V
C446	1-101-001-00	CERAMIC	0.001MF		50V
C447	1-108-589-00	MYLAR	0.027MF	5%	50V
C448	1-102-973-00	CERAMIC	100PF	5%	50V
C449	1-123-328-00	ELECT	4.7MF	20%	25V
C450	1-123-333-00	ELECT	100MF	20%	16V
C451	1-123-318-00	ELECT	33MF	20%	16V
C452	1-123-319-00	ELECT	47MF	20%	16V
C453	1-123-319-00	ELECT	47MF	20%	16V
C454	1-108-573-00	MYLAR	0.0056MF	5%	50V
C456	1-108-555-00	MYLAR	0.001MF	5%	50V
C457	1-123-356-00	ELECT	10MF	20%	16V
C458	1-123-356-00	ELECT	10MF	20%	16V
C459	1-123-356-00	ELECT	10MF	20%	16V

CONNECTOR

CN001♣:	1-508-742-00	PIN, CONNECTOR 3P
CN002♣:	1-508-742-00	PIN, CONNECTOR 3P
CN005♣:	1-508-797-00	PIN, CONNECTOR 4P
CN006♣:	1-508-742-00	PIN, CONNECTOR 3P
CN007♣:	1-508-845-00	PIN, CONNECTOR 6P
CN008♣:	1-508-742-00	PIN, CONNECTOR 3P
CN009♣:	1-508-744-00	PIN, CONNECTOR 10P
CN010♣:	1-508-742-00	PIN, CONNECTOR 3P
CN011♣:	1-508-797-31	PIN, CONNECTOR 4P
CN012♣:	1-508-742-00	PIN, CONNECTOR 3P

DIODE

D001	8-719-815-55	1S1555
D002	8-719-815-55	DIODE 1S1555
D003	8-719-815-55	DIODE 1S1555
D004	8-719-815-55	DIODE 1S1555
D005	8-719-162-07	DIODE RD6.2E-B
D006	8-719-815-55	DIODE 1S1555
D007	8-719-815-55	DIODE 1S1555
D008	8-719-815-55	DIODE 1S1555
D009	8-719-815-55	DIODE 1S1555
D010	8-719-815-55	DIODE 1S1555

· Items marked " ♣ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Ref.No	Part No	Description	Remark
		DIODE	
D012	8-719-815-55	DIODE 1S1555	
D013	8-719-815-55	DIODE 1S1555	
D014	8-719-815-55	DIODE 1S1555	
D015	8-719-815-55	DIODE 1S1555	
D016	8-719-815-55	DIODE 1S1555	
D020	8-719-815-55	DIODE 1S1555	
D021	8-719-815-55	DIODE 1S1555	
D022	8-719-815-55	DIODE 1S1555	
D023	8-719-815-55	DIODE 1S1555	
D024	8-719-815-55	DIODE 1S1555	
D025	8-719-815-55	DIODE 1S1555	
D026	8-719-815-55	DIODE 1S1555	
D027	8-719-815-55	DIODE 1S1555	
D028	8-719-815-55	DIODE 1S1555	
D030	8-719-815-55	DIODE 1S1555	
D031	8-719-815-55	DIODE 1S1555	
D032	8-719-815-55	DIODE 1S1555	
D033	8-719-815-55	DIODE 1S1555	
D401	8-719-422-21	DIODE 1T22AM	
D402	8-719-815-55	DIODE 1S1555	
D403	8-719-815-55	DIODE 1S1555	
D404	8-719-815-55	DIODE 1S1555	
D405	8-719-815-55	DIODE 1S1555	
D406	8-719-815-55	DIODE 1S1555	
D408	8-719-815-55	DIODE 1S1555	
D409	8-719-815-55	DIODE 1S1555	
D410	8-719-815-55	DIODE 1S1555	
D411	8-719-815-55	DIODE 1S1555	
D413	8-719-815-55	DIODE 1S1555	
D414	8-719-815-55	DIODE 1S1555	
D416	8-719-815-55	DIODE 1S1555	
D417	8-719-815-55	DIODE 1S1555	
		IC	
IC001	8-751-860-00	IC CX-186	
IC002	8-751-430-00	IC CX-143A	
IC003	8-759-240-11	IC TC4011BP	
IC004	8-759-271-20	IC TA7120P	
		COIL	
L401	1-407-492-00	MICRO INDUCTOR 1MMH	
L402	1-407-504-00	MICRO INDUCTOR 10MMH	
L403	1-407-488-00	MICRO INDUCTOR 470UH	
		VARIABLE COIL	
LV401	1-407-240-00	MICRO INDUCTOR 22MMH	
LV402	1-407-286-00	MICRO INDUCTOR 2.2MMH	
		TRANSISTOR	
Q001	8-729-117-54	TRANSISTOR 2SA1175	
Q002	8-729-663-47	TRANSISTOR 2SC1364	
Q003	8-729-117-54	TRANSISTOR 2SA1175	
Q006	8-729-117-54	TRANSISTOR 2SA1175	
Q008	8-729-663-47	TRANSISTOR 2SC1364	
Q010	8-729-663-47	TRANSISTOR 2SC1364	
Q011	8-729-117-54	TRANSISTOR 2SA1175	
Q012	8-729-663-47	TRANSISTOR 2SC1364	
Q013	8-729-663-47	TRANSISTOR 2SC1364	
Q015	8-729-117-54	TRANSISTOR 2SA1175	
Q016	8-729-117-54	TRANSISTOR 2SA1175	
Q021	8-729-117-54	TRANSISTOR 2SA1175	
Q023	8-729-117-54	TRANSISTOR 2SA1175	
Q024	8-729-663-47	TRANSISTOR 2SC1364	
Q025	8-729-663-47	TRANSISTOR 2SC1364	
Q026	8-729-663-47	TRANSISTOR 2SC1364	
Q027	8-729-663-47	TRANSISTOR 2SC1364	
Q028	8-729-663-47	TRANSISTOR 2SC1364	
Q029	8-729-663-47	TRANSISTOR 2SC1364	
Q030	8-729-663-47	TRANSISTOR 2SC1364	
Q031	8-729-663-47	TRANSISTOR 2SC1364	
Q032	8-729-663-47	TRANSISTOR 2SC1364	
Q033	8-729-663-47	TRANSISTOR 2SC1364	
Q034	8-729-663-47	TRANSISTOR 2SC1364	
Q035	8-729-663-47	TRANSISTOR 2SC1364	
Q036	8-729-663-47	TRANSISTOR 2SC1364	
Q037	8-729-663-47	TRANSISTOR 2SC1364	
Q045	8-729-663-47	TRANSISTOR 2SC1364	
Q046	8-729-663-47	TRANSISTOR 2SC1364	
Q047	8-729-663-47	TRANSISTOR 2SC1364	
Q048	8-729-117-54	TRANSISTOR 2SA1175	
Q049	8-729-663-47	TRANSISTOR 2SC1364	
Q050	8-729-612-77	TRANSISTOR 2SA1175	
Q401	8-729-334-58	TRANSISTOR 2SC1345	
Q402	8-729-334-58	TRANSISTOR 2SC1345	
Q403	8-729-663-47	TRANSISTOR 2SC1364	
Q404	8-729-663-47	TRANSISTOR 2SC1364	
Q405	8-729-663-47	TRANSISTOR 2SC1364	
Q406	8-729-663-47	TRANSISTOR 2SC1364	
Q407	8-729-177-43	TRANSISTOR 2SD774	
Q408	8-729-663-47	TRANSISTOR 2SC1364	
Q409	=>8-729-663-47	TRANSISTOR 2SC1364	
Q410	8-729-663-47	TRANSISTOR 2SC1364	
Q411	8-729-334-58	TRANSISTOR 2SC1345	
Q412	8-729-334-58	TRANSISTOR 2SC1345	
Q414	8-729-663-47	TRANSISTOR 2SC1364	
Q415	8-760-515-10	TRANSISTOR 2SA772-15	
Q416	8-729-663-47	TRANSISTOR 2SC1364	
Q417	8-760-515-10	TRANSISTOR 2SA772-15	
Q418	8-729-663-47	TRANSISTOR 2SC1364	
Q419	8-760-515-10	TRANSISTOR 2SA772-15	
Q420	8-729-663-47	TRANSISTOR 2SC1364	
Q421	8-729-663-47	TRANSISTOR 2SC1364	
Q423	8-760-515-10	TRANSISTOR 2SA772-15	
Q424	8-729-663-47	TRANSISTOR 2SC1364	

* =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Ref.No	Part No	Description				Remark
Q425	8-729-334-58	TRANSISTOR 2SC1345				
Q427	8-729-663-47	TRANSISTOR 2SC1364				
		RESISTOR				
R001	1-246-497-00	CARBON	10K	5%	1/4W	
R002	1-246-520-00	CARBON	91K	5%	1/4W	
R003	1-246-508-00	CARBON	30K	5%	1/4W	
R004	1-246-519-00	CARBON	82K	5%	1/4W	
R005	1-246-511-00	CARBON	39K	5%	1/4W	
R006	1-246-493-00	CARBON	6.8K	5%	1/4W	
R007	1-246-493-00	CARBON	6.8K	5%	1/4W	
R008	1-246-535-00	CARBON	390K	5%	1/4W	
R009	1-202-472-00	COMPOSITION	5.1M	5%	1/4W	
R010	1-246-485-00	CARBON	3.3K	5%	1/4W	
R011	1-246-514-00	CARBON	51K	5%	1/4W	
R012	1-246-493-00	CARBON	6.8K	5%	1/4W	
R013	1-246-509-00	CARBON	33K	5%	1/4W	
R014	1-246-442-00	CARBON	51	5%	1/4W	
R015	1-246-509-00	CARBON	33K	5%	1/4W	
R016	1-246-503-00	CARBON	18K	5%	1/4W	
R017	1-246-497-00	CARBON	10K	5%	1/4W	
R020	1-212-684-00	METAL	18K	1%	1/2W	
R021	1-246-527-00	CARBON	180K	5%	1/4W	
R022	1-246-507-00	CARBON	27K	5%	1/4W	
R023	1-246-473-00	CARBON	1K	5%	1/4W	
R024	1-246-493-00	CARBON	6.8K	5%	1/4W	
R025	1-246-493-00	CARBON	6.8K	5%	1/4W	
R026	1-246-497-00	CARBON	10K	5%	1/4W	
R027	1-246-517-00	CARBON	68K	5%	1/4W	
R028	1-246-539-00	CARBON	560K	5%	1/4W	
R029	1-246-473-00	CARBON	1K	5%	1/4W	
R036	1-214-168-00	METAL	33K	1%	1/4W	
R039	1-214-177-00	METAL	75K	1%	1/4W	
R040	1-214-166-00	METAL	27K	1%	1/4W	
R042	1-246-473-00	CARBON	1K	5%	1/4W	
R043	1-246-490-00	CARBON	5.1K	5%	1/4W	
R044	1-214-178-00	METAL	82K	1%	1/4W	
R045	1-246-511-00	CARBON	39K	5%	1/4W	
R046	1-212-702-00	METAL	100K	1%	1/2W	
R047	1-246-525-00	CARBON	150K	5%	1/4W	
R048	1-246-497-00	CARBON	10K	5%	1/4W	
R049	1-246-501-00	CARBON	15K	5%	1/4W	
R050	1-246-519-00	CARBON	82K	5%	1/4W	
R051	1-246-535-00	CARBON	390K	5%	1/4W	
R052	1-246-532-00	CARBON	300K	5%	1/4W	
R053	1-246-473-00	CARBON	1K	5%	1/4W	
R054	1-214-162-00	METAL	18K	1%	1/4W	
R055	1-246-495-00	CARBON	8.2K	5%	1/4W	
R056	1-246-521-00	CARBON	100K	5%	1/4W	
R057	1-246-521-00	CARBON	100K	5%	1/4W	
R058	1-246-521-00	CARBON	100K	5%	1/4W	
R059	1-246-498-00	CARBON	11K	5%	1/4W	
R060	1-246-489-00	CARBON	4.7K	5%	1/4W	

Ref.No	Part No	Description				Remark
R061	1-246-501-00	CARBON	15K	5%	1/4W	
R062	1-246-465-00	CARBON	470	5%	1/4W	
R063	1-246-479-00	CARBON	1.8K	5%	1/4W	
R064	1-246-477-00	CARBON	1.5K	5%	1/4W	
R065	1-246-501-00	CARBON	15K	5%	1/4W	
R066	1-246-513-00	CARBON	47K	5%	1/4W	
R067	1-246-473-00	CARBON	1K	5%	1/4W	
R073	1-246-524-00	CARBON	130K	5%	1/4W	
R074	1-246-481-00	CARBON	2.2K	5%	1/4W	
R075	1-246-521-00	CARBON	100K	5%	1/4W	
R076	1-246-501-00	CARBON	15K	5%	1/4W	
R077	1-246-505-00	CARBON	22K	5%	1/4W	
R078	1-246-475-00	CARBON	1.2K	5%	1/4W	
R079	1-246-501-00	CARBON	15K	5%	1/4W	
R080	1-246-497-00	CARBON	10K	5%	1/4W	
R081	1-246-497-00	CARBON	10K	5%	1/4W	
R082	1-202-472-00	COMPOSITION	5.1M	5%	1/4W	
R083	1-246-463-00	CARBON	390	5%	1/4W	
R084	1-246-489-00	CARBON	4.7K	5%	1/4W	
R085	1-246-449-00	CARBON	100	5%	1/4W	
R086	1-246-512-00	CARBON	43K	5%	1/4W	
R087	1-246-515-00	CARBON	56K	5%	1/4W	
R088	1-246-489-00	CARBON	4.7K	5%	1/4W	
R089	1-246-504-00	CARBON	20K	5%	1/4W	
R090	1-246-491-00	CARBON	5.6K	5%	1/4W	
R091	1-246-491-00	CARBON	5.6K	5%	1/4W	
R092	1-246-521-00	CARBON	100K	5%	1/4W	
R093	1-246-501-00	CARBON	15K	5%	1/4W	
R094	1-246-515-00	CARBON	56K	5%	1/4W	
R097	1-246-497-00	CARBON	10K	5%	1/4W	
R098	1-246-515-00	CARBON	56K	5%	1/4W	
R099	1-246-521-00	CARBON	100K	5%	1/4W	
R100	1-246-497-00	CARBON	10K	5%	1/4W	
R101	1-246-505-00	CARBON	22K	5%	1/4W	
R102	1-246-484-00	CARBON	3K	5%	1/4W	
R103	1-246-490-00	CARBON	5.1K	5%	1/4W	
R104	1-246-480-00	CARBON	2K	5%	1/4W	
R105	1-246-516-00	CARBON	62K	5%	1/4W	
R106	1-246-497-00	CARBON	10K	5%	1/4W	
R107	1-246-490-00	CARBON	5.1K	5%	1/4W	
R108	1-246-505-00	CARBON	22K	5%	1/4W	
R109	1-246-495-00	CARBON	8.2K	5%	1/4W	
R110	1-246-472-00	CARBON	910	5%	1/4W	
R111	1-246-473-00	CARBON	1K	5%	1/4W	
R112	1-246-513-00	CARBON	47K	5%	1/4W	
R113	1-246-515-00	CARBON	56K	5%	1/4W	
R114	1-246-525-00	CARBON	150K	5%	1/4W	
R116	1-246-497-00	CARBON	10K	5%	1/4W	
R117	1-246-521-00	CARBON	100K	5%	1/4W	
R118	1-246-507-00	CARBON	27K	5%	1/4W	
R119	1-246-521-00	CARBON	100K	5%	1/4W	
R120	1-246-501-00	CARBON	15K	5%	1/4W	
R121	1-246-498-00	CARBON	11K	5%	1/4W	

Ref.No	Part No	Description				Remark
R122	1-246-489-00	CARBON	4.7K	5%	1/4W	
R123	1-246-477-00	CARBON	1.5K	5%	1/4W	
R124	1-246-481-00	CARBON	2.2K	5%	1/4W	
R125	1-246-451-00	CARBON	120	5%	1/4W	
R126	1-246-791-00	CARBON	4.7K	5%	1/8W	
R127	1-246-457-00	CARBON	220	5%	1/4W	
R128	1-246-471-00	CARBON	820	5%	1/4W	
R129	1-246-521-00	CARBON	100K	5%	1/4W	
R130	1-246-497-00	CARBON	10K	5%	1/4W	
R131	1-246-513-00	CARBON	47K	5%	1/4W	
R132	1-246-489-00	CARBON	4.7K	5%	1/4W	
R133	1-246-501-00	CARBON	15K	5%	1/4W	
R134	1-246-517-00	CARBON	68K	5%	1/4W	
R135	1-246-513-00	CARBON	47K	5%	1/4W	
R136	1-246-513-00	CARBON	47K	5%	1/4W	
R137	1-246-491-00	CARBON	5.6K	5%	1/4W	
R138	1-246-491-00	CARBON	5.6K	5%	1/4W	
R139	1-246-521-00	CARBON	100K	5%	1/4W	
R140	1-246-471-00	CARBON	820	5%	1/4W	
R141	1-246-491-00	CARBON	5.6K	5%	1/4W	
R143	1-246-513-00	CARBON	47K	5%	1/4W	
R144	1-246-521-00	CARBON	100K	5%	1/4W	
R145	1-246-449-00	CARBON	100	5%	1/4W	
R146	1-246-491-00	CARBON	5.6K	5%	1/4W	
R148	1-246-513-00	CARBON	47K	5%	1/4W	
R149	1-246-516-00	CARBON	62K	5%	1/4W	
R172	1-246-497-00	CARBON	10K	5%	1/4W	
R173	1-246-489-00	CARBON	4.7K	5%	1/4W	
R174	1-246-517-00	CARBON	68K	5%	1/4W	
R175	1-246-509-00	CARBON	33K	5%	1/4W	
R176	1-246-509-00	CARBON	33K	5%	1/4W	
R177	1-246-519-00	CARBON	82K	5%	1/4W	
R178	1-246-495-00	CARBON	8.2K	5%	1/4W	
R179	1-246-516-00	CARBON	62K	5%	1/4W	
R180	1-246-521-00	CARBON	100K	5%	1/4W	
R181	1-246-521-00	CARBON	100K	5%	1/4W	
R182	1-246-507-00	CARBON	27K	5%	1/4W	
R183	1-246-512-00	CARBON	43K	5%	1/4W	
R184	1-246-447-00	CARBON	82	5%	1/4W	
R185	1-246-515-00	CARBON	56K	5%	1/4W	
R186	1-246-505-00	CARBON	22K	5%	1/4W	
R187	1-246-477-00	CARBON	1.5K	5%	1/4W	
R188	1-246-497-00	CARBON	10K	5%	1/4W	
R189	1-246-497-00	CARBON	10K	5%	1/4W	
R190	1-246-449-00	CARBON	100	5%	1/4W	
R191	1-246-507-00	CARBON	27K	5%	1/4W	
R193	1-246-505-00	CARBON	22K	5%	1/4W	
R194	1-246-513-00	CARBON	47K	5%	1/4W	
R195	1-246-481-00	CARBON	2.2K	5%	1/4W	
R401	1-246-801-00	CARBON	33K	5%	1/8W	
R402	1-246-806-00	CARBON	82K	5%	1/8W	
R403	1-246-487-00	CARBON	3.9K	5%	1/4W	
R404	1-246-807-00	CARBON	100K	5%	1/8W	

Ref.No	Part No	Description				Remark
R405	1-246-802-00	CARBON	39K	5%	1/8W	
R406	1-246-795-00	CARBON	10K	5%	1/8W	
R407	1-246-787-00	CARBON	2.2K	5%	1/8W	
R408	1-246-807-00	CARBON	100K	5%	1/8W	
R409	1-246-795-00	CARBON	10K	5%	1/8W	
R410	1-246-783-00	CARBON	1K	5%	1/8W	
R411	1-246-509-00	CARBON	33K	5%	1/4W	
R412	1-246-525-00	CARBON	150K	5%	1/4W	
R413	1-246-497-00	CARBON	10K	5%	1/4W	
R414	1-210-825-00	COMPOSITION	3.3M	5%	1/4W	
R415	1-246-505-00	CARBON	22K	5%	1/4W	
R416	1-246-509-00	CARBON	33K	5%	1/4W	
R417	1-246-515-00	CARBON	56K	5%	1/4W	
R418 ⚠	1-246-991-00	CARBON	150	5%	1/8W	F
R420	1-246-493-00	CARBON	6.8K	5%	1/4W	
R421	1-246-533-00	CARBON	330K	5%	1/4W	
R422	1-246-515-00	CARBON	56K	5%	1/4W	
R423	1-246-491-00	CARBON	5.6K	5%	1/4W	
R424	1-246-473-00	CARBON	1K	5%	1/4W	
R425	1-246-459-00	CARBON	270	5%	1/4W	
R426	1-246-503-00	CARBON	18K	5%	1/4W	
R427	1-246-505-00	CARBON	22K	5%	1/4W	
R428 ⚠	1-212-859-00	FUSIBLE	12	5%	1/4W	F
R430	1-246-533-00	CARBON	330K	5%	1/4W	
R431	1-246-795-00	CARBON	10K	5%	1/8W	
R432	1-246-473-00	CARBON	1K	5%	1/4W	
R433	1-246-490-00	CARBON	5.1K	5%	1/4W	
R434	1-246-513-00	CARBON	47K	5%	1/4W	
R435	1-246-541-00	CARBON	680K	5%	1/4W	
R436	1-246-525-00	CARBON	150K	5%	1/4W	
R437	1-246-513-00	CARBON	47K	5%	1/4W	
R438	1-246-471-00	CARBON	820	5%	1/4W	
R439	1-246-495-00	CARBON	8.2K	5%	1/4W	
R440	1-246-517-00	CARBON	68K	5%	1/4W	
R441	1-246-481-00	CARBON	2.2K	5%	1/4W	
R442	1-246-477-00	CARBON	1.5K	5%	1/4W	
R443	1-246-513-00	CARBON	47K	5%	1/4W	
R444	1-246-481-00	CARBON	2.2K	5%	1/4W	
R445	1-246-485-00	CARBON	3.3K	5%	1/4W	
R446	1-246-501-00	CARBON	15K	5%	1/4W	
R448	1-246-501-00	CARBON	15K	5%	1/4W	
R449	1-246-497-00	CARBON	10K	5%	1/4W	
R450	1-246-449-00	CARBON	100	5%	1/4W	
R451	1-246-497-00	CARBON	10K	5%	1/4W	
R452	1-246-759-00	CARBON	10	5%	1/8W	
R453	1-246-545-00	CARBON	1M	5%	1/4W	
R454	1-246-519-00	CARBON	82K	5%	1/4W	
R455	1-246-443-00	CARBON	56	5%	1/4W	
R456	1-246-485-00	CARBON	3.3K	5%	1/4W	
R457	1-246-511-00	CARBON	39K	5%	1/4W	
R458	1-246-497-00	CARBON	10K	5%	1/4W	
R459	1-246-481-00	CARBON	2.2K	5%	1/4W	
R460	1-246-521-00	CARBON	100K	5%	1/4W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No	Part No	Description				Remark
R463	1-246-507-00	CARBON	27K	5%	1/4W	
R464	1-246-517-00	CARBON	68K	5%	1/4W	
R465	1-246-504-00	CARBON	20K	5%	1/4W	
R466	1-246-481-00	CARBON	2.2K	5%	1/4W	
R467	1-246-497-00	CARBON	10K	5%	1/4W	
R468	1-246-491-00	CARBON	5.6K	5%	1/4W	
R469	1-246-497-00	CARBON	10K	5%	1/4W	
R470	1-246-475-00	CARBON	1.2K	5%	1/4W	
R471	1-246-491-00	CARBON	5.6K	5%	1/4W	
R472	1-246-493-00	CARBON	6.8K	5%	1/4W	
R473	1-246-505-00	CARBON	22K	5%	1/4W	
R474	1-246-505-00	CARBON	22K	5%	1/4W	
R475	1-246-505-00	CARBON	22K	5%	1/4W	
R476	1-246-481-00	CARBON	2.2K	5%	1/4W	
R477	1-246-489-00	CARBON	4.7K	5%	1/4W	
R478	1-246-505-00	CARBON	22K	5%	1/4W	
R479	1-246-497-00	CARBON	10K	5%	1/4W	
R480	1-246-505-00	CARBON	22K	5%	1/4W	
R481	1-246-489-00	CARBON	4.7K	5%	1/4W	
R482	1-246-475-00	CARBON	1.2K	5%	1/4W	
R483	1-246-481-00	CARBON	2.2K	5%	1/4W	
R484	1-246-505-00	CARBON	22K	5%	1/4W	
R485	1-246-499-00	CARBON	12K	5%	1/4W	
R486	1-246-499-00	CARBON	12K	5%	1/4W	
R487	1-246-497-00	CARBON	10K	5%	1/4W	
R491	1-246-497-00	CARBON	10K	5%	1/4W	
R492	1-246-505-00	CARBON	22K	5%	1/4W	
R493	1-246-497-00	CARBON	10K	5%	1/4W	
R494	1-246-801-00	CARBON	33K	5%	1/8W	
R495	1-246-801-00	CARBON	33K	5%	1/8W	
R496	1-246-505-00	CARBON	22K	5%	1/4W	
		VARIABLE RESISTOR				
RV001	1-224-647-XX	RES, ADJ, CARBON 47K				
RV002	1-224-647-XX	RES, ADJ, CARBON 47K				
RV003	1-224-647-XX	RES, ADJ, CARBON 47K				
RV004	1-224-254-XX	RES, ADJ, METAL GLAZE 47K				
RV008	1-224-254-XX	RES, ADJ, METAL GLAZE 47K				
RV010	1-224-644-XX	RES, ADJ, CARBON 3.3K				
RV011	1-224-645-XX	RES, ADJ, CARBON 10K				
RV012	1-224-645-XX	RES, ADJ, CARBON 10K				
RV401	1-224-646-XX	RES, ADJ, CARBON 22K				
RV402	1-224-256-XX	RES, ADJ, METAL GLAZE 220K				
RV403	1-224-645-XX	RES, ADJ, CARBON 10K				
RV404	1-224-646-XX	RES, ADJ, CARBON 22K				
		RELAY				
RY401	1-515-335-00	RELAY				
RY402	1-515-323-00	RELAY				
RY403	1-515-323-00	RELAY				

Ref.No	Part No	Description				Remark
		TRANSFOMER				
T401	1-405-670-00	TRANSFOMER, OSCILLATOR				
**********						
♦	1-601-821-00	PL-2 BOARD **********				
		CAPACITOR				
C601	1-123-232-00	ELECT	4.7MF	20%	50V	
		DIODE				
D601	8-719-200-02	DIODE 10E-2				
D602	8-719-200-02	DIODE 10E-2				
D603	8-719-200-02	DIODE 10E-2				
D604	8-719-200-02	DIODE 10E-2				
D605	8-719-200-02	DIODE 10E-2				
D606	8-719-200-02	DIODE 10E-2				
D607	8-719-200-02	DIODE 10E-2				
D608	8-719-200-02	DIODE 10E-2				
D609	8-719-200-02	DIODE 10E-2				
D610	8-719-200-02	DIODE 10E-2				
D611	8-719-200-02	DIODE 10E-2				
D612	8-719-200-02	DIODE 10E-2				
		TRANSISTOR				
Q602	8-729-331-53	TRANSISTOR 2SC2315				
Q603	8-729-177-32	TRANSISTOR 2SD773				
Q605	8-729-331-53	TRANSISTOR 2SC2315				
Q606	8-729-177-32	TRANSISTOR 2SD773				
Q608	8-729-331-53	TRANSISTOR 2SC2315				
Q609	8-729-177-32	TRANSISTOR 2SD773				
Q610	8-729-177-32	TRANSISTOR 2SD773				
Q613	8-729-331-53	TRANSISTOR 2SC2315				
Q614	8-729-663-47	TRANSISTOR 2SC1364				
Q615	8-729-663-47	TRANSISTOR 2SC1364				
		RESISTOR				
R602	1-246-497-00	CARBON	10K	5%	1/4W	
R603	1-246-481-00	CARBON	2.2K	5%	1/4W	
R604	1-246-497-00	CARBON	10K	5%	1/4W	
R605	1-246-481-00	CARBON	2.2K	5%	1/4W	
R606	1-246-497-00	CARBON	10K	5%	1/4W	
R607	1-246-481-00	CARBON	2.2K	5%	1/4W	
R608	1-246-497-00	CARBON	10K	5%	1/4W	
R609	1-246-481-00	CARBON	2.2K	5%	1/4W	
R610	1-246-497-00	CARBON	10K	5%	1/4W	
R611	1-246-481-00	CARBON	2.2K	5%	1/4W	
R612	1-246-497-00	CARBON	10K	5%	1/4W	
R613	1-246-481-00	CARBON	2.2K	5%	1/4W	
R614	1-246-497-00	CARBON	10K	5%	1/4W	
R615	1-246-497-00	CARBON	10K	5%	1/4W	
R618	1-246-473-00	CARBON	1K	5%	1/4W	

· Items marked " ♦ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Ref.No	Part No	Description				Remark
R623	1-246-497-00	CARBON	10K	5%	1/4W	
R624	1-246-497-00	CARBON	10K	5%	1/4W	
R625	1-246-497-00	CARBON	10K	5%	1/4W	
R626	1-246-516-00	CARBON	62K	5%	1/4W	
R627	1-246-497-00	CARBON	10K	5%	1/4W	

****

♣:A-6717-198-A SY-15 BOARD, COMPLETE

****

CAPACITOR

C001	1-129-794-00	FILM	0.0033MF	2%	100V	
C002	1-123-352-00	ELECT	1MF	20%	50V	
C003	1-123-352-00	ELECT	1MF	20%	50V	
C004	1-123-352-00	ELECT	1MF	20%	50V	
C005	1-123-352-00	ELECT	1MF	20%	50V	
C006	1-129-794-00	FILM	0.0033MF	2%	100V	
C007	1-123-352-00	ELECT	1MF	20%	50V	
C008	1-123-352-00	ELECT	1MF	20%	50V	
C009	1-123-328-00	ELECT	4.7MF	20%	25V	
C010	1-130-201-00	FILM	0.068MF	5%	50V	
C011	1-130-201-00	FILM	0.068MF	5%	50V	
C012	1-130-201-00	FILM	0.068MF	5%	50V	
C013	1-131-345-00	TANTALUM	0.47MF	20%	35V	
C014	1-131-347-00	TANTALUM	1MF	20%	35V	
C016	1-123-317-00	ELECT	22MF	20%	16V	
C017	1-101-004-00	CERAMIC	0.01MF		50V	
C018	1-101-004-00	CERAMIC	0.01MF		50V	
C019	1-101-004-00	CERAMIC	0.01MF		50V	
C020	1-123-328-00	ELECT	4.7MF	20%	25V	
C021	1-123-328-00	ELECT	4.7MF	20%	25V	
C022	1-123-320-00	ELECT	100MF	20%	16V	
C023	1-123-318-00	ELECT	33MF	20%	16V	
C024	1-123-318-00	ELECT	33MF	20%	16V	
C025	1-101-005-00	CERAMIC	0.022MF		50V	
C026	1-101-005-00	CERAMIC	0.022MF		50V	
C027	1-101-005-00	CERAMIC	0.022MF		50V	
C028	1-101-004-00	CERAMIC	0.01MF		50V	
C029	1-101-004-00	CERAMIC	0.01MF		50V	
C030	1-101-004-00	CERAMIC	0.01MF		50V	
C031	1-101-004-00	CERAMIC	0.01MF		50V	
C032	1-101-005-00	CERAMIC	0.022MF		50V	
C033	1-101-004-00	CERAMIC	0.01MF		50V	
C034	1-101-004-00	CERAMIC	0.01MF		50V	
C035	1-101-005-00	CERAMIC	0.022MF		50V	
C036	1-101-005-00	CERAMIC	0.022MF		50V	
C037	1-101-006-00	CERAMIC	0.047MF		50V	
C038	1-101-006-00	CERAMIC	0.047MF		50V	
C039	1-123-319-00	ELECT	47MF	20%	16V	
C040	1-101-006-00	CERAMIC	0.047MF		50V	
C041	1-101-006-00	CERAMIC	0.047MF		50V	
C042	1-101-006-00	CERAMIC	0.047MF		50V	
C050	1-101-004-00	CERAMIC	0.01MF		50V	

Ref.No	Part No	Description	Remark
		CONNECTOR	
CN001♣	1-508-797-00	PIN, CONNECTOR 4P	
CN002♣	1-508-742-00	PIN, CONNECTOR 3P	
CN003♣	1-508-744-00	PIN, CONNECTOR 10P	
CN005♣	1-508-846-00	PIN, CONNECTOR 8P	
CN006♣	1-508-847-00	PIN, CONNECTOR 4P	
CN007♣	1-508-797-00	PIN, CONNECTOR 4P	
CN008♣	1-508-797-31	PIN, CONNECTOR 4P	
CN009♣	1-508-742-00	PIN, CONNECTOR 3P	
CN010♣	1-508-742-00	PIN, CONNECTOR 3P	
CN011♣	1-508-742-00	PIN, CONNECTOR 3P	
CN012♣	1-508-744-00	PIN, CONNECTOR 10P	
CN013♣	1-508-736-21	PIN, CONNECTOR	
CN014♣	1-508-736-00	PIN, CONNECTOR 10P	
CN015♣	1-508-846-00	PIN, CONNECTOR 8P	
CN016♣	1-508-846-00	PIN, CONNECTOR 8P	
		DIODE	
D001	8-719-200-02	DIODE 10E-2	
D002	8-719-200-02	DIODE 10E-2	
D003	8-719-815-55	DIODE 1S1555	
D004	8-719-815-55	DIODE 1S1555	
D005	8-719-815-55	DIODE 1S1555	
D006	8-719-182-07	DIODE RD8.2E-B	
D007	8-719-815-55	DIODE 1S1555	
D008	8-719-815-55	DIODE 1S1555	
D009	8-719-815-55	DIODE 1S1555	
D010	8-719-815-55	DIODE 1S1555	
D011	8-719-815-55	DIODE 1S1555	
D012	8-719-815-55	DIODE 1S1555	
D013	8-719-815-55	DIODE 1S1555	
D014	8-719-200-02	DIODE 10E-2	
D015	8-719-815-55	DIODE 1S1555	
D016	8-719-815-55	DIODE 1S1555	
D017	8-719-815-55	DIODE 1S1555	
D018	8-719-111-07	DIODE RD11E-B	
D019	8-719-815-55	DIODE 1S1555	
D020	8-719-815-55	DIODE 1S1555	
D021	8-719-815-55	DIODE 1S1555	
D022	8-719-815-55	DIODE 1S1555	
D023	8-719-815-55	DIODE 1S1555	
D024	8-719-815-55	DIODE 1S1555	
D025	8-719-815-55	DIODE 1S1555	
D026	8-719-815-55	DIODE 1S1555	
D027	8-719-815-55	DIODE 1S1555	
D028	8-719-815-55	DIODE 1S1555	
D029	8-719-815-55	DIODE 1S1555	
D030	8-719-815-55	DIODE 1S1555	
D035	8-719-815-55	DIODE 1S1555	
		IC	
IC001	8-759-240-66	IC TC40668P	

* Items marked " ♣ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Ref.No	Part No	Description	Remark
IC002	8-759-240-69	IC TC4069UBP	
IC003	8-759-240-69	IC TC4069UBP	
IC004	8-759-240-01	IC TC4001BP	
IC005	8-759-240-69	IC TC4069UBP	
IC006	8-759-146-17	IC UPD546C107	
IC007	8-759-147-49	IC UPD547C049	
IC008	8-743-420-00	IC BX-342	
IC009	8-743-420-00	IC BX-342	
		COIL	
L001	1-407-594-00	MICRO INDUCTOR 33MMH	
L002	1-407-594-00	MICRO INDUCTOR 33MMH	
		TRANSISTOR	
Q001	8-729-663-47	TRANSISTOR 2SC1364	
Q002	8-729-663-47	TRANSISTOR 2SC1364	
Q003	=>8-729-612-77	TRANSISTOR 2SA1027R	
Q004	=>8-729-612-77	TRANSISTOR 2SA1027R	
Q005	=>8-729-612-77	TRANSISTOR 2SA1027R	
Q006	=>8-729-612-77	TRANSISTOR 2SA1027R	
Q008	8-729-331-53	TRANSISTOR 2SC2315	
Q009	8-725-412-00	TRANSISTOR 2SC1124	
Q010	8-760-335-10	TRANSISTOR 2SC1474	
Q011	8-760-515-10	TRANSISTOR 2SA772-15	
Q012	8-760-515-10	TRANSISTOR 2SA772-15	
Q013	=>8-729-612-77	TRANSISTOR 2SA1027R	
Q014	=>8-729-612-77	TRANSISTOR 2SA1027R	
Q015	8-729-663-47	TRANSISTOR 2SC1364	
Q016	8-729-663-47	TRANSISTOR 2SC1364	
Q017	=>8-729-612-77	TRANSISTOR 2SA1027R	
Q018	=>8-729-612-77	TRANSISTOR 2SA1027R	
Q019	=>8-729-612-77	TRANSISTOR 2SA1027R	
Q020	8-729-663-47	TRANSISTOR 2SC1364	
Q021	8-729-663-47	TRANSISTOR 2SC1364	
Q022	8-729-663-47	TRANSISTOR 2SC1364	
Q023	8-729-663-47	TRANSISTOR 2SC1364	
Q024	8-760-335-10	TRANSISTOR 2SC1474	
Q025	8-729-663-47	TRANSISTOR 2SC1364	
Q026	8-729-663-47	TRANSISTOR 2SC1364	
Q027	8-729-663-47	TRANSISTOR 2SC1364	
		RESISTOR	
R001	1-246-528-00	CARBON 200K 5% 1/4W	
R002	1-246-494-00	CARBON 7.5K 5% 1/4W	
R003	1-246-505-00	CARBON 22K 5% 1/4W	
R004	1-246-519-00	CARBON 82K 5% 1/4W	
R005	1-246-443-00	CARBON 56 5% 1/4W	
R006	1-246-528-00	CARBON 200K 5% 1/4W	
R007	1-246-494-00	CARBON 7.5K 5% 1/4W	
R008	1-246-473-00	CARBON 1K 5% 1/4W	
R009	1-246-489-00	CARBON 4.7K 5% 1/4W	
R010	1-246-489-00	CARBON 4.7K 5% 1/4W	

Ref.No	Part No	Description	Remark
R011	1-246-481-00	CARBON 2.2K 5% 1/4W	
R012	1-246-515-00	CARBON 56K 5% 1/4W	
R013	1-246-515-00	CARBON 56K 5% 1/4W	
R014	1-246-497-00	CARBON 10K 5% 1/4W	
R015	1-246-521-00	CARBON 100K 5% 1/4W	
R016	1-246-481-00	CARBON 2.2K 5% 1/4W	
R017	1-246-497-00	CARBON 10K 5% 1/4W	
R018	1-246-443-00	CARBON 56 5% 1/4W	
R019	1-246-473-00	CARBON 1K 5% 1/4W	
R020	1-246-473-00	CARBON 1K 5% 1/4W	
R021	1-246-507-00	CARBON 27K 5% 1/4W	
R022	1-246-449-00	CARBON 100 5% 1/4W	
R023	1-246-481-00	CARBON 2.2K 5% 1/4W	
R025	1-246-497-00	CARBON 10K 5% 1/4W	
R026	1-246-481-00	CARBON 2.2K 5% 1/4W	
R027	1-246-497-00	CARBON 10K 5% 1/4W	
R028	1-246-449-00	CARBON 100 5% 1/4W	
R029	1-246-512-00	CARBON 43K 5% 1/4W	
R030	1-246-481-00	CARBON 2.2K 5% 1/4W	
R031	1-246-497-00	CARBON 10K 5% 1/4W	
R032	1-246-515-00	CARBON 56K 5% 1/4W	
R033	1-246-497-00	CARBON 10K 5% 1/4W	
R034	1-246-497-00	CARBON 10K 5% 1/4W	
R035	1-246-497-00	CARBON 10K 5% 1/4W	
R036	1-246-497-00	CARBON 10K 5% 1/4W	
R037	1-246-471-00	CARBON 820 5% 1/4W	
R038	1-246-519-00	CARBON 82K 5% 1/4W	
R039	1-246-505-00	CARBON 22K 5% 1/4W	
R040	1-246-515-00	CARBON 56K 5% 1/4W	
R041	1-246-792-00	CARBON 5.6K 5% 1/8W	
R042	1-246-471-00	CARBON 820 5% 1/4W	
R043	1-246-471-00	CARBON 820 5% 1/4W	
R044	1-246-519-00	CARBON 82K 5% 1/4W	
R045	1-246-505-00	CARBON 22K 5% 1/4W	
R046	1-246-521-00	CARBON 100K 5% 1/4W	
R047	1-246-529-00	CARBON 220K 5% 1/4W	
R048	1-246-521-00	CARBON 100K 5% 1/4W	
R049	1-246-521-00	CARBON 100K 5% 1/4W	
R050	1-246-497-00	CARBON 10K 5% 1/4W	
R051	1-246-497-00	CARBON 10K 5% 1/4W	
R052	1-246-804-00	CARBON 56K 5% 1/8W	
R053	1-246-521-00	CARBON 100K 5% 1/4W	
R054	1-246-481-00	CARBON 2.2K 5% 1/4W	
R055	1-246-804-00	CARBON 56K 5% 1/8W	
R056	1-246-497-00	CARBON 10K 5% 1/4W	
R057	1-246-497-00	CARBON 10K 5% 1/4W	
R058	1-246-497-00	CARBON 10K 5% 1/4W	
R059	1-246-799-00	CARBON 22K 5% 1/8W	
R060	1-246-799-00	CARBON 22K 5% 1/8W	
R061	1-246-515-00	CARBON 56K 5% 1/4W	
R062	1-246-481-00	CARBON 2.2K 5% 1/4W	
R063	1-246-515-00	CARBON 56K 5% 1/4W	
R064	1-246-497-00	CARBON 10K 5% 1/4W	

* =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Ref.No	Part No	Description				Remark
R065	1-246-497-00	CARBON	10K	5%	1/4W	
R066	1-246-473-00	CARBON	1K	5%	1/4W	
R067	1-246-497-00	CARBON	10K	5%	1/4W	
R068	1-246-505-00	CARBON	22K	5%	1/4W	
R069	1-246-519-00	CARBON	82K	5%	1/4W	
R070	1-246-515-00	CARBON	56K	5%	1/4W	
R071	1-246-473-00	CARBON	1K	5%	1/4W	
R072	1-246-513-00	CARBON	47K	5%	1/4W	
R073	1-246-497-00	CARBON	10K	5%	1/4W	
R074	1-246-505-00	CARBON	22K	5%	1/4W	
R075	1-246-467-00	CARBON	560	5%	1/4W	
R076	1-246-509-00	CARBON	33K	5%	1/4W	
R077	1-246-513-00	CARBON	47K	5%	1/4W	
R078	1-246-513-00	CARBON	47K	5%	1/4W	
R079	1-246-505-00	CARBON	22K	5%	1/4W	
R080	1-246-497-00	CARBON	10K	5%	1/4W	
R081	1-246-515-00	CARBON	56K	5%	1/4W	
R082	1-246-481-00	CARBON	2.2K	5%	1/4W	
R083	1-246-481-00	CARBON	2.2K	5%	1/4W	
R084	1-246-497-00	CARBON	10K	5%	1/4W	
R085	1-246-497-00	CARBON	10K	5%	1/4W	
R086	1-246-515-00	CARBON	56K	5%	1/4W	
R087	1-246-515-00	CARBON	56K	5%	1/4W	
R088	1-246-515-00	CARBON	56K	5%	1/4W	
R089	1-246-471-00	CARBON	820	5%	1/4W	
R090	1-246-497-00	CARBON	10K	5%	1/4W	
R091	1-246-515-00	CARBON	56K	5%	1/4W	
R092	1-246-515-00	CARBON	56K	5%	1/4W	
R093	1-246-497-00	CARBON	10K	5%	1/4W	
R094	1-246-521-00	CARBON	100K	5%	1/4W	
R095	1-246-521-00	CARBON	100K	5%	1/4W	
R096	1-246-521-00	CARBON	100K	5%	1/4W	
R098	1-246-473-00	CARBON	1K	5%	1/4W	
R099	1-246-795-00	CARBON	10K	5%	1/8W	
R100	1-246-795-00	CARBON	10K	5%	1/8W	
R101	1-246-497-00	CARBON	10K	5%	1/4W	
R102	1-246-497-00	CARBON	10K	5%	1/4W	
R103	1-246-497-00	CARBON	10K	5%	1/4W	
R104	1-246-515-00	CARBON	56K	5%	1/4W	
R105	1-246-505-00	CARBON	22K	5%	1/4W	

BLOCK

RB001	1-231-598-00	COMPOSITION CIRCUIT BLOCK
RB002	1-231-598-00	COMPOSITION CIRCUIT BLOCK
RB003	1-231-598-00	COMPOSITION CIRCUIT BLOCK
RB004	1-231-599-00	COMPOSITION CIRCUIT BLOCK

VARIABLE RESISTOR

RV001	1-224-662-00	RES, ADJ, METAL FILM 220K
RV002	1-224-662-00	RES, ADJ, METAL FILM 220K

TRANSFORMER

T001	1-405-800-00	TRANSFORMER, OSC
T002	1-405-800-00	TRANSFORMER, OSC

****

♦:A-6717-214-A		SY-14 BOARD, COMPLETE
		**********
3-646-090-00		RIVET, NYLON
♦:3-659-486-00		HOLDER (C), LED
♦:3-659-573-00		BRACKET (UPPER), FS PC BOARD
♦:3-659-628-00		BRACKET (LOWER), FS PC BOARD
3-659-685-00		HOLDER (B), LED
4-308-030-11		WASHER, DOUBLE STICK TAPE

CONNECTOR

CN001	♦:1-508-736-00	PIN, CONNECTOR 10P
CN002	♦:1-508-849-00	PIN, CONNECTOR 8P
CN003	♦:1-508-735-00	PIN, CONNECTOR 5P
CN004	♦:1-508-734-00	PIN, CONNECTOR 3P
CN005	♦:1-508-734-00	CONNECTOR PIN

DIODE

D001	8-719-815-55	DIODE 1S1555
D002	8-719-815-55	DIODE 1S1555
D003	8-719-815-55	DIODE 1S1555
D004	8-719-815-55	DIODE 1S1555
D005	8-719-815-55	DIODE 1S1555
D006	8-719-815-55	DIODE 1S1555
D007	8-719-815-55	DIODE 1S1555
D008	8-719-815-55	DIODE 1S1555
D009	8-719-815-55	DIODE 1S1555
D010	8-719-815-55	DIODE 1S1555
D011	8-719-812-31	DIODE TLR123
D012	8-719-812-31	DIODE TLR123
D013	8-719-812-31	DIODE TLR123
D014	8-719-812-31	DIODE TLR123
D015	8-719-812-31	DIODE TLR123
D016	8-719-812-31	DIODE TLR123
D017	8-719-812-31	DIODE TLR123
D018	8-719-815-55	DIODE 1S1555
D019	8-719-815-55	DIODE 1S1555
D031	8-719-812-31	DIODE TLR123
D032	8-719-815-55	DIODE 1S1555
D033	8-719-815-55	DIODE 1S1555
D034	8-719-815-55	DIODE 1S1555

TRANSISTOR

Q001	8-729-663-47	TRANSISTOR 2SC1364
Q002	8-729-663-47	TRANSISTOR 2SC1364
Q013	8-729-663-47	TRANSISTOR 2SC1364

RESISTOR

R001	1-246-515-00	CARBON	56K	5%	1/4W
R002	1-246-515-00	CARBON	56K	5%	1/4W

• Items marked " ♦ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Ref.No	Part No	Description				Remark
R003	1-246-515-00	CARBON	56K	5%	1/4W	
R004	1-246-515-00	CARBON	56K	5%	1/4W	
R005	1-246-515-00	CARBON	56K	5%	1/4W	
R006	1-246-515-00	CARBON	56K	5%	1/4W	
R007	1-246-515-00	CARBON	56K	5%	1/4W	
R008	1-246-505-00	CARBON	22K	5%	1/4W	
R009	1-246-505-00	CARBON	22K	5%	1/4W	
R010	1-246-471-00	CARBON	820	5%	1/4W	
R011	1-246-473-00	CARBON	1K	5%	1/4W	
R012	1-246-473-00	CARBON	1K	5%	1/4W	
R013	1-246-473-00	CARBON	1K	5%	1/4W	
R014	1-246-473-00	CARBON	1K	5%	1/4W	
R015	1-246-473-00	CARBON	1K	5%	1/4W	
R016	1-246-473-00	CARBON	1K	5%	1/4W	
R017	1-246-521-00	CARBON	100K	5%	1/4W	
R018	1-246-497-00	CARBON	10K	5%	1/4W	
R019	1-246-497-00	CARBON	10K	5%	1/4W	
R047	1-246-521-00	CARBON	100K	5%	1/4W	
R048	1-246-497-00	CARBON	10K	5%	1/4W	
R049	1-246-489-00	CARBON	4.7K	5%	1/4W	

SWITCH

SW001	1-552-412-00	SWITCH, KEY BOARD	
SW002	1-552-412-00	SWITCH, KEY BOARD	
SW003	1-552-412-00	SWITCH, KEY BOARD	
SW004	1-552-412-00	SWITCH, KEY BOARD	
SW005	1-552-412-00	SWITCH, KEY BOARD	
SW006	1-552-412-00	SWITCH, KEY BOARD	
SW007	1-552-412-00	SWITCH, KEY BOARD	
SW008	1-552-412-00	SWITCH, KEY BOARD	
SW009	1-552-412-00	SWITCH, KEY BOARD	
SW010	1-552-412-00	SWITCH, KEY BOARD	
SW012	1-516-994-00	SWITCH, LEVER SLIDE	

****

♣:A-6721-038-A	IF-10 BOARD, COMPLETE	
	**********	
♣:3-662-232-00	REINFORCEMENT, IF-10	
♣:3-662-268-00	LID, UPPER, IF SHIELD CASE	
♣:3-662-283-00	CASE (MAIN), SHIELD, VIF	
♣:3-662-333-00	CASE, SHIELD (UPPER), VIF	
♣:4-317-753-13	LID, BOTTOM, SHIELD CASE (A)	
♣:4-317-759-00	SHIELD CASE (A), MAIN	
♣:4-336-029-00	PLATE, SHIELD	
♣:4-336-032-00	CASE (LOWER), SHIELD, VIF	

CAPACITOR

C501	1-161-047-00	CERAMIC	0.0047MF	30%	50V
C502	1-161-047-00	CERAMIC	0.0047MF	30%	50V
C503	1-161-272-00	CERAMIC	120PF	5%	50V
C504	1-161-047-00	CERAMIC	0.0047MF	30%	50V
C505	1-161-047-00	CERAMIC	0.0047MF	30%	50V
C506	1-161-047-00	CERAMIC	0.0047MF	30%	50V
C507	1-161-047-00	CERAMIC	0.0047MF	30%	50V
C508	1-161-047-00	CERAMIC	0.0047MF	30%	50V
C509	1-161-047-00	CERAMIC	0.0047MF	30%	50V
C510	1-123-355-00	ELECT	4.7MF	20%	50V
C511	1-123-356-00	ELECT	10MF	20%	16V
C512	1-161-047-00	CERAMIC	0.0047MF	30%	50V
C513	1-161-280-00	CERAMIC	12PF	5%	50V
C514	1-102-529-00	CERAMIC	100PF	5%	50V
C515	1-161-323-00	CERAMIC	0.001MF	10%	50V
C516	1-123-321-00	ELECT	220MF	20%	16V
C518	1-103-725-00	POLYSTYRENE	0.001MF	5%	50V
C519	1-161-051-00	CERAMIC	0.01MF	30%	25V
C520	1-101-006-00	CERAMIC	0.047MF		50V
C521	1-101-006-00	CERAMIC	0.047MF		50V
C523	1-108-385-00	MYLAR	0.047MF	10%	100V
C524	1-161-047-00	CERAMIC	0.0047MF	30%	50V
C525	1-161-047-00	CERAMIC	0.0047MF	30%	50V
C526	1-161-047-00	CERAMIC	0.0047MF	30%	50V
C527	1-102-852-00	CERAMIC	47PF	5%	50V
C528	1-102-525-00	CERAMIC	68PF	5%	50V
C529	1-161-249-00	CERAMIC	1.5PF	20%	50V
C530	1-161-259-00	CERAMIC	10PF	5%	50V
C531	1-161-047-00	CERAMIC	0.0047MF	30%	50V
C532	1-161-047-00	CERAMIC	0.0047MF	30%	50V
C533	1-161-047-00	CERAMIC	0.0047MF	30%	50V
C534	1-161-047-00	CERAMIC	0.0047MF	30%	50V
C535	1-123-333-00	ELECT	100MF	20%	16V
C536	1-161-267-00	CERAMIC	47PF	5%	50V
C537	1-123-323-00	ELECT	470MF	20%	16V

FILTER

CF501	1-404-134-00	TRAP, CERAMIC (5.5MHZ)
CF502	1-527-263-00	CERAMIC FILTER (5.5MHZ)

CONNECTOR

CN501♣:	1-508-743-00	PIN, CONNECTOR 5P
CN503♣:	1-508-797-00	PIN, CONNECTOR 4P

IC

IC501	8-759-014-40	IC TBA1440G
IC502	8-759-651-35	IC M5135P
IC503	8-759-001-20	IC TBA120UB

PLUG

JK501♣:	1-526-575-00	SOCKET, PLUG

COIL

L501	1-404-221-00	COIL, IF
L502	1-407-687-00	MICRO INDUCTOR 3.3UH
L503	1-407-695-00	MICRO INDUCTOR 15UH
L504	1-407-693-00	MICRO INDUCTOR 10UH
L505	1-407-687-00	MICRO INDUCTOR 3.3UH

* Items marked " ♣ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Ref.No	Part No	Description				Remark
		TRANSISTOR				
Q501	8-725-800-00	TRANSISTOR 2SC1128				
Q502	8-729-663-47	TRANSISTOR 2SC1364				
Q503	8-729-663-47	TRANSISTOR 2SC1364				
		RESISTOR				
R501	1-246-446-00	CARBON	75	5%	1/4W	
R502	1-246-489-00	CARBON	4.7K	5%	1/4W	
R503	1-246-487-00	CARBON	3.9K	5%	1/4W	
R504	1-246-475-00	CARBON	1.2K	5%	1/4W	
R505	1-246-457-00	CARBON	220	5%	1/4W	
R506	1-246-495-00	CARBON	8.2K	5%	1/4W	
R508	1-246-517-00	CARBON	68K	5%	1/4W	
R509	1-246-457-00	CARBON	220	5%	1/4W	
R510	1-246-449-00	CARBON	100	5%	1/4W	
R511	1-246-463-00	CARBON	390	5%	1/4W	
R512	1-246-517-00	CARBON	68K	5%	1/4W	
R513	1-246-511-00	CARBON	39K	5%	1/4W	
R514	1-246-475-00	CARBON	1.2K	5%	1/4W	
R515	1-246-489-00	CARBON	4.7K	5%	1/4W	
R517	⚠ 1-247-005-00	CARBON	100	5%	1/4W	
R518	1-246-473-00	CARBON	1K	5%	1/4W	
R519	1-246-473-00	CARBON	1K	5%	1/4W	
R520	1-246-481-00	CARBON	2.2K	5%	1/4W	
R521	1-246-449-00	CARBON	100	5%	1/4W	
R522	1-246-473-00	CARBON	1K	5%	1/4W	
R523	1-246-449-00	CARBON	100	5%	1/4W	
R524	1-246-461-00	CARBON	330	5%	1/4W	
R525	1-246-469-00	CARBON	680	5%	1/4W	
R526	1-246-457-00	CARBON	220	5%	1/4W	
R530	1-246-473-00	CARBON	1K	5%	1/4W	
R531	1-246-481-00	CARBON	2.2K	5%	1/4W	
		VARIABLE RESISTOR				
RV501	1-224-645-XX	RES, ADJ, CARBON 10K				
RV502	1-224-644-XX	RES, ADJ, CARBON 4.7K				
		FILTER				
SF501	1-404-208-00	SAWF (38.9MHZ)				
		TRANSFOMER				
T501	1-404-206-00	IFT				
T502	1-404-207-00	COIL, VIF				
T503	1-404-203-00	COIL, VIF				
T504	1-403-810-00	TRANSFOMER, AFT DISCRI (PRI)				
T505	1-403-811-00	TRANSFOMER, AFT DISCRI (SEC)				
T506	1-404-135-00	COIL, SIF DISCRI				
T507	1-404-097-00	COIL, SIFT				

Ref.No	Part No	Description				Remark
	♣:A-6721-082-A	TU-19 BOARD, COMPLETE **********				
	♣:3-662-233-00	REINFORCEMENT, TU-7				
	♣:3-662-264-00	LID, BOTTOM, SHIELD CASE (C)				
	♣:3-662-265-00	CASE, SHIELD (C) (MAIN)				
	♣:3-662-266-00	LID, BOTTOM, SHIELD CASE				
	♣:3-662-267-00	CASE, SHIELD, CONVERTER (MAIN)				
	♣:4-317-750-00	LID, UPPER, SHIELD CASE (C)				
		CAPACITOR				
C101	1-123-328-00	ELECT	4.7MF	20%	25V	
C102	1-123-328-00	ELECT	4.7MF	20%	25V	
C103	1-108-389-00	MYLAR	0.1MF	10%	100V	
C104	1-123-318-00	ELECT	33MF	20%	16V	
C105	1-102-884-00	CERAMIC	33PF	5%	50V	
C106	1-102-863-00	CERAMIC	82PF	5%	50V	
C107	1-102-884-00	CERAMIC	33PF	5%	50V	
C108	1-102-889-00	CERAMIC	39PF	5%	50V	
C109	1-102-125-00	CERAMIC	0.0047MF	10%	50V	
C110	1-102-125-00	CERAMIC	0.0047MF	10%	50V	
C111	1-102-963-00	CERAMIC	33PF	5%	50V	
C112	1-102-953-00	CERAMIC	18PF	5%	50V	
C113	1-102-676-00	CERAMIC	68PF	5%	50V	
C114	1-121-419-00	ELECT	220MF		6.3V	
C115	1-121-806-00	ELECT	10MF	20%	16V	
C116	1-123-319-00	ELECT	47MF	20%	16V	
C117	1-123-352-00	ELECT	1MF	20%	50V	
C118	1-108-591-00	MYLAR	0.033MF	5%	50V	
C119	1-108-367-00	MYLAR	0.0015MF	10%	100V	
C120	1-123-333-00	ELECT	100MF	20%	16V	
C121	1-101-804-00	CERAMIC	10PF	5%	500V	
C122	1-123-351-00	ELECT	0.47MF	20%	50V	
C123	1-123-351-00	ELECT	0.47MF	20%	50V	
C124	1-102-973-00	CERAMIC	100PF	5%	50V	
C125	1-123-267-00	ELECT	2.2MF	20%	160V	
C126	1-123-328-00	ELECT	4.7MF	20%	25V	
C127	1-108-409-00	MYLAR	0.001MF	10%	200V	
C128	1-102-125-00	CERAMIC	0.0047MF	10%	50V	
C129	1-123-333-00	ELECT	100MF	20%	16V	
C130	1-108-409-00	MYLAR	0.001MF	10%	200V	
C136	1-123-319-00	ELECT	47MF	20%	16V	
		CONNECTOR				
CN101♣	1-508-797-00	PIN, CONNECTOR 4P				
CN102♣	1-508-743-00	PIN, CONNECTOR 5P				
CN103♣	1-508-910-00	PIN, CONNECTOR 12P				
CN104♣	1-508-910-00	PIN, CONNECTOR 12P				
CN105♣	1-508-845-00	PIN, CONNECTOR 6P				
		DIODE				
D101	8-719-901-83	DIODE 1SS83				

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

• Items marked " ♣ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Ref.No	Part No	Description				Remark
		PLUG				
JK101♣:	1-526-575-00	SOCKET, PLUG				
JK102♣:	1-526-575-00	SOCKET, PLUG				
		COIL				
L101	1-407-689-00	MICRO INDUCTOR 4.7UH				
L102	1-407-178-XX	MICRO INDUCTOR 1UH				
L103	1-407-178-XX	MICRO INDUCTOR 1UH				
L104	1-407-705-00	MICRO INDUCTOR 100UH				
L105	1-407-696-00	MICRO INDUCTOR 18UH				
L106	1-407-705-00	MICRO INDUCTOR 100UH				
		TRANSISTOR				
Q101	8-725-800-00	TRANSISTOR 2SC1128				
Q102	8-724-375-01	TRANSISTOR 2SC403C				
Q103	8-729-612-77	TRANSISTOR 2SA1027R				
Q104	8-729-663-47	TRANSISTOR 2SC1364				
Q105	8-729-177-43	TRANSISTOR 2SD774				
		RESISTOR				
R102	1-246-449-00	CARBON	100	5%	1/4W	
R103	1-246-465-00	CARBON	470	5%	1/4W	
R104	1-246-467-00	CARBON	560	5%	1/4W	
R105	1-246-505-00	CARBON	22K	5%	1/4W	
R106	1-246-497-00	CARBON	10K	5%	1/4W	
R107	1-246-465-00	CARBON	470	5%	1/4W	
R108	1-246-457-00	CARBON	220	5%	1/4W	
R109	1-246-441-00	CARBON	47	5%	1/4W	
R110	1-246-475-00	CARBON	1.2K	5%	1/4W	
R111	1-246-475-00	CARBON	1.2K	5%	1/4W	
R112	1-246-481-00	CARBON	2.2K	5%	1/4W	
R113	1-246-469-00	CARBON	680	5%	1/4W	
R114	1-246-521-00	CARBON	100K	5%	1/4W	
R115	1-246-513-00	CARBON	47K	5%	1/4W	
R116	1-246-479-00	CARBON	1.8K	5%	1/4W	
R117	1-246-457-00	CARBON	220	5%	1/4W	
R118	1-246-473-00	CARBON	1K	5%	1/4W	
R119	1-246-513-00	CARBON	47K	5%	1/4W	
R120	1-246-531-00	CARBON	270K	5%	1/4W	
R121	1-246-473-00	CARBON	1K	5%	1/4W	
R123	1-246-499-00	CARBON	12K	5%	1/4W	
R124	1-246-473-00	CARBON	1K	5%	1/4W	
R125	1-246-467-00	CARBON	560	5%	1/4W	
R126⚠	1-212-849-00	FUSIBLE	4.7	5%	1/4W	F
R127	1-246-509-00	CARBON	33K	5%	1/4W	
R128	1-246-473-00	CARBON	1K	5%	1/4W	
R129	1-246-491-00	CARBON	5.6K	5%	1/4W	
R130	1-246-437-00	CARBON	33	5%	1/4W	
		VARIABLE RESISTOR				
RV101	1-224-646-XX	RES, ADJ, CARBON 22K				

Ref.No	Part No	Description			Remark
		TRANSFORMER			
T101	1-404-096-00	COIL, VHF			
T102	1-446-295-00	TRANSFORMER, CONVERTOR			
		TUNER			
TU101	1-463-242-00	TUNER, UHF ET U322			
TU102	1-463-243-00	TUNER, VHF ET V314			
**********					
♣:	1-604-754-00	LF-20 BOARD **********			
♣:	1-533-087-00	HOLDER, FUSE			
		CAPACITOR			
C101	1-130-160-00	MYLAR	0.22MF	20% 250V	
		CONNECTOR			
CN101♣:	1-508-786-00	2P PLUG (M)			
CN102♣:	1-560-033-00	PLUG, CONNECTOR (3P)			
**********					
♣:	1-604-753-00	PS-15 BOARD **********			
♣:	1-533-087-00	HOLDER, FUSE			
		CAPACITOR			
C001	1-123-403-00	ELECT	4700MF		25V
C002	1-123-403-00	ELECT	4700MF		25V
C003	1-123-356-00	ELECT	10MF	20%	16V
C004	1-108-365-00	MYLAR	0.001MF	10%	100V
C005	1-123-351-00	ELECT	0.47MF	20%	50V
C006	1-123-319-00	ELECT	47MF	20%	16V
C007	1-123-403-00	ELECT	4700MF		25V
C008	1-123-319-00	ELECT	47MF	20%	16V
C009	1-123-319-00	ELECT	47MF	20%	16V
C010	1-123-337-00	ELECT	1000MF	20%	25V
C011	1-123-334-00	ELECT	220MF	20%	25V
C012	1-123-356-00	ELECT	10MF	20%	16V
C013	1-123-356-00	ELECT	10MF	20%	16V
		CONNECTOR			
CN001♣:	1-508-742-00	PIN, CONNECTOR 3P			
CN002♣:	1-508-744-00	PIN, CONNECTOR 10P			
CN003♣:	1-508-797-00	PIN, CONNECTOR 4P			
CN004♣:	1-508-846-00	PIN, CONNECTOR 8P			
CN005♣:	1-508-766-00	4P PLUG (M)			
		DIODE			
D001⚠	8-719-941-13	DIODE M4B-41-13			
D002⚠	8-719-901-13	DIODE M4B31-13			

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

• Items marked " ♣ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Ref.No	Part No	Description				Remark
D003	8-719-200-02	DIODE 10E-2				
D004	8-719-200-02	DIODE 10E-2				
D005	8-719-113-25	DIODE RD13E-B2Z				
D006	8-719-200-02	DIODE 10E-2				
D007	8-719-162-07	DIODE RD6.2E-B				
D008	8-719-200-02	DIODE 10E-2				
		TRANSISTOR				
Q002	8-729-663-47	TRANSISTOR 2SC1364R				
Q003	8-729-663-47	TRANSISTOR 2SC1364R				
Q005	8-729-663-47	TRANSISTOR 2SC1364R				
Q006	8-729-663-47	TRANSISTOR 2SC1364R				
Q008	8-729-316-16	TRANSISTOR 2SC1061				
		RESISTOR				
R005	1-246-513-00	CARBON	47K	5%	1/4W	
R006	1-246-497-00	CARBON	10K	5%	1/4W	
R007	1-246-505-00	CARBON	22K	5%	1/4W	
R008	1-246-505-00	CARBON	22K	5%	1/4W	
R009	1-246-453-00	CARBON	150	5%	1/4W	
R010	1-246-481-00	CARBON	2.2K	5%	1/4W	
R011	1-246-483-00	CARBON	2.7K	5%	1/4W	
R012	1-246-473-00	CARBON	1K	5%	1/4W	
R013	1-246-481-00	CARBON	2.2K	5%	1/4W	
R014	1-246-483-00	CARBON	2.7K	5%	1/4W	
R015 ⚠	1-212-360-00	METAL	1	5%	1W	F
R021	1-246-477-00	CARBON	1.5K	5%	1/4W	
R026	1-246-473-00	CARBON	1K	5%	1/4W	
R027 ⚠	1-212-360-00	METAL	1	5%	1W	F
		VARIABLE RESISTOR				
RV001	1-226-819-00	RES, ADJ, CARBON 1K				
**********						
♦:	A-6725-152-A	LS-3 BOARD, COMPLETE				
		**********				
		CAPACITOR				
C501	1-101-004-00	CERAMIC	0.01MF		50V	
C502	1-101-006-00	CERAMIC	0.047MF		50V	
		CONNECTOR				
CN501 ♦:	1-508-847-00	PIN, CONNECTOR 4P				
CN502 ♦:	1-508-734-21	PIN, CONNECTOR 3P				
CN503 ♦:	1-508-847-00	PIN, CONNECTOR 4P				
CN504 ♦:	1-508-734-00	PIN, CONNECTOR 3P				
		DIODE				
D501	8-719-815-55	DIODE 1S1555				
D502	8-719-200-02	DIODE 10E-2				

Ref.No	Part No	Description				Remark
		TRANSISTOR				
Q501	8-729-663-47	TRANSISTOR 2SC1364				
Q502	=>8-729-612-77	TRANSISTOR 2SA1027R				
Q503	8-729-663-47	TRANSISTOR 2SC1364				
Q504	8-763-113-00	TRANSISTOR 2SC1761				
Q505	8-729-663-47	TRANSISTOR 2SC1364				
Q506	8-729-663-47	TRANSISTOR 2SC1364				
Q507	8-729-663-47	TRANSISTOR 2SC1364				
Q508	=>8-729-612-77	TRANSISTOR 2SA1027R				
Q509	8-729-316-16	TRANSISTOR 2SC1061				
Q510	8-729-663-47	TRANSISTOR 2SC1364				
Q511	8-729-663-47	TRANSISTOR 2SC1364				
Q512	8-763-113-00	TRANSISTOR 2SC1761				
		RESISTOR				
R501	1-246-505-00	CARBON	22K	5%	1/4W	
R502	1-246-497-00	CARBON	10K	5%	1/4W	
R503	1-246-497-00	CARBON	10K	5%	1/4W	
R504	1-246-497-00	CARBON	10K	5%	1/4W	
R505	1-246-513-00	CARBON	47K	5%	1/4W	
R506	1-246-505-00	CARBON	22K	5%	1/4W	
R507	1-246-493-00	CARBON	6.8K	5%	1/4W	
R508 ⚠	1-247-034-00	CARBON	220	5%	1/8W	F
R509	1-246-465-00	CARBON	470	5%	1/4W	
R510	1-246-465-00	CARBON	470	5%	1/4W	
R511	1-246-513-00	CARBON	47K	5%	1/4W	
R512	1-246-497-00	CARBON	10K	5%	1/4W	
R513 ⚠	1-212-356-00	METAL	0.47	5%	1W	F
		SWITCH				
SW501	1-553-035-00	SWITCH, LEVER				
**********						
♦:	1-600-038-00	TR-2 BOARD				
		**********				
		TRANSISTOR				
Q6311 ⚠	8-729-331-53	TRANSISTOR 2SC2315				
**********						
♦:	1-600-038-00	TR-1 BOARD				
		**********				
		TRANSISTOR				
Q6301 ⚠	8-729-331-53	TRANSISTOR 2SC2315				
**********						
♦:	1-600-101-00	FG-1 BOARD				
		**********				
	3-658-161-00	HOLDER, DME				

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

• Items marked " ♦ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

• =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Ref.No	Part No	Description	Remark
	♣:3-659-313-00	PLATE, ADJUSTMENT, DME	
		DME	
DM701	8-745-101-01	DM-101	
		**********	
	♣:1-601-762-00	CN-5 BOARD	
		**********	
	♣:1-508-734-00	PIN, CONNECTOR 3P	
	♣:1-508-734-21	PIN, CONNECTOR 3P	
		**********	
	♣:1-601-763-00	CN-6 BOARD	
		**********	
	1-552-180-00	SWITCH, REED	
	♣:3-659-359-00	PLATE, BOOST, REED SWITCH	
		**********	
	♣:A-6721-047-A	CH-4 BOARD, COMPLETE	
		**********	
	1-552-904-00	SWITCH, PUSH	
		NEON LAMP	
NL201	1-519-154-00	LAMP, NEON	
NL202	1-519-154-00	LAMP, NEON	
NL203	1-519-154-00	LAMP, NEON	
NL204	1-519-154-00	LAMP, NEON	
NL205	1-519-154-00	LAMP, NEON	
NL206	1-519-154-00	LAMP, NEON	
NL207	1-519-154-00	LAMP, NEON	
NL208	1-519-154-00	LAMP, NEON	
		**********	
	♣:A-6721-047-A	CH-5 BOARD, COMPLETE	
		**********	
		VARIABLE RESISTOR	
RV301	1-226-190-21	RES, VAR, PRESET	
RV302	1-226-190-11	RES, VAR PRESET	
RV303	1-226-190-21	RES, VAR, PRESET	
RV304	1-226-190-11	RES, VAR PRESET	
		SWITCH	
S301	1-552-339-00	SWITCH, SLIDE	
S302	1-552-339-00	SWITCH, SLIDE	
S303	1-552-339-00	SWITCH, SLIDE	
S304	1-552-339-00	SWITCH, SLIDE	
S305	1-516-226-00	SLIDE SWITCH	

Ref.No	Part No	Description			Remark
	♣:A-6721-047-A	CH-6 BOARD, COMPLETE			
		**********			
		CAPACITOR			
C401	1-123-356-00	ELECT	10MF	20%	16V
C403	1-123-356-00	ELECT	10MF	20%	16V
C404	1-102-074-00	CERAMIC	0.001MF		25V
C405	1-123-356-00	ELECT	10MF	20%	16V
C406	1-123-352-00	ELECT	1MF	20%	50V
C407	1-108-377-00	MYLAR	0.01MF	10%	100V
C408	1-108-377-00	MYLAR	0.01MF	10%	100V
C409	1-123-352-00	ELECT	1MF	20%	50V
C410	1-121-806-00	ELECT	10MF	20%	16V
C411	1-123-352-00	ELECT	1MF	20%	50V
C412	1-123-352-00	ELECT	1MF	20%	50V
		CONNECTOR			
CN401	♣:1-508-847-00	PIN, CONNECTOR 4P			
		DIODE			
D401	8-719-162-07	DIODE RD6.2E-B			
		IC			
IC401	8-759-157-40	IC UPC574J			
		COIL			
L401	1-407-701-00	MICRO INDUCTOR 47UH			
		TRANSISTOR			
Q401	8-729-373-92	TRANSISTOR 2SA739			
Q402	=>8-729-663-47	TRANSISTOR 2SC1364			
Q403	=>8-729-663-47	TRANSISTOR 2SC1364			
Q404	=>8-729-663-47	TRANSISTOR 2SC1364			
Q405	=>8-729-663-47	TRANSISTOR 2SC1364			
Q406	=>8-729-663-47	TRANSISTOR 2SC1364			
Q407	=>8-729-663-47	TRANSISTOR 2SC1364			
Q408	=>8-729-612-77	TRANSISTOR 2SA1027R			
Q409	=>8-729-663-47	TRANSISTOR 2SC1364			
Q410	=>8-729-663-47	TRANSISTOR 2SC1364			
Q411	8-769-200-20	TRANSISTOR 2SK107-2			
		RESISTOR			
R401	1-246-497-00	CARBON	10K	5%	1/4W
R402	1-246-475-00	CARBON	1.2K	5%	1/4W
R403	1-246-497-00	CARBON	10K	5%	1/4W
R404	1-246-509-00	CARBON	33K	5%	1/4W
R405	1-246-466-00	CARBON	510	5%	1/4W
R406	1-246-473-00	CARBON	1K	5%	1/4W
R407	1-246-465-00	CARBON	470	5%	1/4W
R408	1-246-488-00	CARBON	4.3K	5%	1/4W
R409	1-246-497-00	CARBON	10K	5%	1/4W

• Items marked " ♣ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

• =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Ref.No	Part No	Description				Remark
R410	1-246-497-00	CARBON	10K	5%	1/4W	
R411	1-246-497-00	CARBON	10K	5%	1/4W	
R412	1-244-904-00	CARBON	20K	5%	1/2W	
R413	1-244-904-00	CARBON	20K	5%	1/2W	
R414	1-246-485-00	CARBON	3.3K	5%	1/4W	
R415	1-246-513-00	CARBON	47K	5%	1/4W	
R416	1-246-513-00	CARBON	47K	5%	1/4W	
R417	1-246-485-00	CARBON	3.3K	5%	1/4W	
R418	1-246-509-00	CARBON	33K	5%	1/4W	
R419	1-246-503-00	CARBON	18K	5%	1/4W	
R420	1-246-497-00	CARBON	10K	5%	1/4W	
R421	1-246-521-00	CARBON	100K	5%	1/4W	
R422	1-246-537-00	CARBON	470K	5%	1/4W	
		VARIABLE RESISTOR				
RV401	1-224-643-XX	RES, ADJ, CARBON 2.2K				
RV402	1-226-190-11	RES, VAR PRESET				
RV403	1-226-190-21	RES, VAR, PRESET				
RV404	1-226-190-11	RES, VAR PRESET				
RV405	1-226-190-21	RES, VAR, PRESET				
		SWITCH				
S401	1-516-226-00	SLIDE SWITCH				
S402	1-552-339-00	SWITCH, SLIDE				
S403	1-552-339-00	SWITCH, SLIDE				
S404	1-552-339-00	SWITCH, SLIDE				
S405	1-552-339-00	SWITCH, SLIDE				

****

♣:1-602-379-00 TM-15 BOARD
****

	1-519-174-00	INDICATOR, TUBE
	3-659-684-00	HOLDER, POWER LAMP
	3-659-685-00	HOLDER (B), LED
♣:	3-659-686-00	HOLDER, INDICATION TUBE
		DIODE
D201	8-719-811-41	DIODE TLR114A
D202	8-719-801-14	DIODE TLG114A
D203	8-719-812-31	DIODE TLR123
D204	8-719-812-31	DIODE TLR123
D205	8-719-812-31	DIODE TLR123
D206	8-719-812-31	DIODE TLR123
D207	8-719-812-31	DIODE TLR123
D208	8-719-812-31	DIODE TLR123
D209	8-719-812-31	DIODE TLR123
		TRANSISTOR
Q201	=>8-729-663-47	TRANSISTOR 2SC1364
Q202	=>8-729-663-47	TRANSISTOR 2SC1364
Q203	=>8-729-663-47	TRANSISTOR 2SC1364
Q204	=>8-729-663-47	TRANSISTOR 2SC1364
Q205	=>8-729-663-47	TRANSISTOR 2SC1364
Q206	=>8-729-663-47	TRANSISTOR 2SC1364
Q207	=>8-729-663-47	TRANSISTOR 2SC1364
Q208	=>8-729-663-47	TRANSISTOR 2SC1364

RESISTOR

R201	1-246-497-00	CARBON	10K	5%	1/4W
R202	1-246-465-00	CARBON	470	5%	1/4W
R203	1-246-497-00	CARBON	10K	5%	1/4W
R204	1-246-465-00	CARBON	470	5%	1/4W
R205	1-246-499-00	CARBON	12K	5%	1/4W
R206	1-246-499-00	CARBON	12K	5%	1/4W
R207	1-246-499-00	CARBON	12K	5%	1/4W
R208	1-246-499-00	CARBON	12K	5%	1/4W
R209	1-246-513-00	CARBON	47K	5%	1/4W
R210	1-246-497-00	CARBON	10K	5%	1/4W
R211	1-246-521-00	CARBON	100K	5%	1/4W
R212	1-246-521-00	CARBON	100K	5%	1/4W
R213	1-246-521-00	CARBON	100K	5%	1/4W
R214	1-246-521-00	CARBON	100K	5%	1/4W
R215	1-246-521-00	CARBON	100K	5%	1/4W
R216	1-246-521-00	CARBON	100K	5%	1/4W
R217	1-246-521-00	CARBON	100K	5%	1/4W
R218	1-246-521-00	CARBON	100K	5%	1/4W
R219	1-246-521-00	CARBON	100K	5%	1/4W
R220	1-246-521-00	CARBON	100K	5%	1/4W
R221	1-246-521-00	CARBON	100K	5%	1/4W
R222	1-246-521-00	CARBON	100K	5%	1/4W
R223	1-246-473-00	CARBON	1K	5%	1/4W
R224	1-246-499-00	CARBON	12K	5%	1/4W
R225	1-246-473-00	CARBON	1K	5%	1/4W

****

♣:1-602-378-16 TM-14 BOARD
****

CAPACITOR

C101	1-108-377-00	MYLAR	0.01MF	10%	100V
C102	1-107-077-00	MICA	47PF	5%	50V
C105	1-123-324-00	ELECT	1000MF	20%	16V
C106	1-102-973-00	CERAMIC	100PF	5%	50V
C107	1-123-356-00	ELECT	10MF	20%	16V
C108	1-101-880-00	CERAMIC	47PF	5%	50V
C109	1-161-494-00	CERAMIC	0.022MF	30%	25V
C110	1-102-121-00	CERAMIC	0.0022MF	10%	50V

TRIMAR

CV101	1-141-228-00	CAP, TRIMAR

DIODE

D104	8-719-815-55	DIODE 1S1555
D105	8-719-139-07	DIODE RD3.9E-B
D106	8-719-815-55	DIODE 1S1555
D107	8-719-815-55	DIODE 1S1555

* Items marked " ♣ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

* =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Ref.No	Part No	Description				Remark
D108	8-719-815-55	DIODE 1S1555				
D109	8-719-815-55	DIODE 1S1555				
D110	8-719-815-55	DIODE 1S1555				
D111	8-719-815-55	DIODE 1S1555				
D112	8-719-815-55	DIODE 1S1555				
D113	8-719-815-55	DIODE 1S1555				
D114	8-719-815-55	DIODE 1S1555				
D115	8-719-815-55	DIODE 1S1555				
		IC				
IC101	8-759-927-07	IC MP2707A				
IC102	8-759-684-78	IC M58478P				
		TRANSISTOR				
Q103	=>8-729-612-77	TRANSISTOR 2SA1027R				
Q104	=>8-729-194-56	TRANSISTOR 2SC1364				
		RESISTOR				
R102	1-246-501-00	CARBON	15K	5%	1/4W	
R103	1-246-515-00	CARBON	56K	5%	1/4W	
R104	1-246-545-00	CARBON	1M	5%	1/4W	
R105	1-246-521-00	CARBON	100K	5%	1/4W	
R106	1-246-521-00	CARBON	100K	5%	1/4W	
R107	1-246-521-00	CARBON	100K	5%	1/4W	
R108	1-246-521-00	CARBON	100K	5%	1/4W	
R114	1-246-521-00	CARBON	100K	5%	1/4W	
R115	1-246-513-00	CARBON	47K	5%	1/4W	
R116	1-246-521-00	CARBON	100K	5%	1/4W	
R117	1-246-521-00	CARBON	100K	5%	1/4W	
R118	1-246-473-00	CARBON	1K	5%	1/4W	
R119	1-246-521-00	CARBON	100K	5%	1/4W	
		VARIABLE RESISTOR				
RV101	1-224-253-XX	RES, ADJ, SOLID 22K				
		SWITCH				
SW101	1-552-823-00	SWITCH, PUSH				
		CRYSTAL				
X101	1-527-345-00	CRYSTAL, OSC				

****

♣:A-6728-124-B TM-13 BOARD, COMPLETE

****

		CAPACITOR				
C001	1-123-319-00	ELECT	47MF	20%	16V	
C002	1-123-328-00	ELECT	4.7MF	20%	25V	
C003	1-123-356-00	ELECT	10MF	20%	16V	
C004	1-123-356-00	ELECT	10MF	20%	16V	
C005	1-123-317-00	ELECT	22MF	20%	16V	
C006	1-123-356-00	ELECT	10MF	20%	16V	
C007	1-123-356-00	ELECT	10MF	20%	16V	
C008	1-123-356-00	ELECT	10MF	20%	16V	
C009	1-123-356-00	ELECT	10MF	20%	16V	
C010	1-123-356-00	ELECT	10MF	20%	16V	
C011	1-123-328-00	ELECT	4.7MF	20%	25V	
C012	1-123-654-00	CERAMIC	47MF	20%	16V	
C013	1-123-351-00	ELECT	0.47MF	20%	50V	
C014	1-123-351-00	ELECT	0.47MF	20%	50V	
C015	1-123-328-00	ELECT	4.7MF	20%	25V	
C016	1-123-319-00	ELECT	47MF	20%	16V	
C017	1-123-317-00	ELECT	22MF	20%	16V	
C018	1-101-005-00	CERAMIC	0.022MF		50V	
C019	1-123-329-00	ELECT	10MF	20%	25V	
		CONNECTOR				
CN001	♣:1-508-743-00	PIN, CONNECTOR 5P				
CN002	♣:1-508-797-00	PIN, CONNECTOR 4P				
CN003	♣:1-508-742-00	PIN, CONNECTOR 3P				
		DIODE				
D001	8-719-815-55	DIODE 1S1555				
D002	8-719-815-55	DIODE 1S1555				
D003	8-719-815-55	DIODE 1S1555				
D004	8-719-815-55	DIODE 1S1555				
D005	8-719-815-55	DIODE 1S1555				
D006	8-719-815-55	DIODE 1S1555				
D007	8-719-815-55	DIODE 1S1555				
D008	8-719-815-55	DIODE 1S1555				
D009	8-719-815-55	DIODE 1S1555				
D010	8-719-815-55	DIODE 1S1555				
D011	8-719-815-55	DIODE 1S1555				
D012	8-719-815-55	DIODE 1S1555				
D013	8-719-815-55	DIODE 1S1555				
D014	8-719-815-55	DIODE 1S1555				
D015	8-719-815-55	DIODE 1S1555				
D016	8-719-815-55	DIODE 1S1555				
D017	8-719-815-55	DIODE 1S1555				
		IC				
IC001	8-759-240-01	IC TC4001BP				
IC002	8-759-240-01	IC TC4001BP				
IC003	8-759-240-11	IC TC4011BP				
IC004	8-759-240-25	IC TC4025BP				
IC005	8-759-240-81	IC TC4081BP				
		TRANSISTOR				
Q001	=>8-729-663-47	TRANSISTOR 2SC1364				
Q003	=>8-729-663-47	TRANSISTOR 2SC1364				
Q004	=>8-729-612-77	TRANSISTOR 2SA1027R				
Q005	=>8-729-612-47	TRANSISTOR 2SA1027R				
Q006	=>8-729-173-37	TRANSISTOR 2SA1027R				
Q007	8-729-115-30	TRANSISTOR 2SK105-30				

• Items marked " ♣ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

• =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Ref.No	Part No	Description				Remark
Q008	8-729-115-30	TRANSISTOR 2SK105-30				
		RESISTOR				
R001	1-246-537-00	CARBON	470K	5%	1/4W	
R002	1-246-449-00	CARBON	100	5%	1/4W	
R003	1-246-501-00	CARBON	15K	5%	1/4W	
R005	1-246-522-00	CARBON	110K	5%	1/4W	
R006	1-246-509-00	CARBON	33K	5%	1/4W	
R007	1-246-522-00	CARBON	110K	5%	1/4W	
R008	1-246-509-00	CARBON	33K	5%	1/4W	
R009	1-246-522-00	CARBON	110K	5%	1/4W	
R011	1-246-522-00	CARBON	110K	5%	1/4W	
R012	1-246-489-00	CARBON	4.7K	5%	1/4W	
R013	1-246-466-00	CARBON	510	5%	1/4W	
R014	1-246-509-00	CARBON	33K	5%	1/4W	
R015	1-246-522-00	CARBON	110K	5%	1/4W	
R016	1-246-509-00	CARBON	33K	5%	1/4W	
R017	1-246-509-00	CARBON	33K	5%	1/4W	
R018	1-246-509-00	CARBON	33K	5%	1/4W	
R019	1-246-509-00	CARBON	33K	5%	1/4W	
R020	1-246-497-00	CARBON	10K	5%	1/4W	
R022	1-246-533-00	CARBON	330K	5%	1/4W	
R023	1-246-480-00	CARBON	2K	5%	1/4W	
R024	1-246-497-00	CARBON	10K	5%	1/4W	
R025	1-246-522-00	CARBON	110K	5%	1/4W	
R026	1-246-499-00	CARBON	12K	5%	1/4W	
R027	1-246-473-00	CARBON	1K	5%	1/4W	
R028	1-246-509-00	CARBON	33K	5%	1/4W	
R029	1-246-522-00	CARBON	110K	5%	1/4W	
R030	1-246-509-00	CARBON	33K	5%	1/4W	
R031	1-246-495-00	CARBON	8.2K	5%	1/4W	
R032	1-246-495-00	CARBON	8.2K	5%	1/4W	
R033	1-246-522-00	CARBON	110K	5%	1/4W	
R034	1-246-509-00	CARBON	33K	5%	1/4W	
R035	1-246-497-00	CARBON	10K	5%	1/4W	
R036	1-246-474-00	CARBON	1.1K	5%	1/4W	
R037	1-246-521-00	CARBON	100K	5%	1/4W	
R038	1-246-522-00	CARBON	110K	5%	1/4W	
R039	1-246-509-00	CARBON	33K	5%	1/4W	
R040	1-246-497-00	CARBON	10K	5%	1/4W	
R041	1-246-497-00	CARBON	10K	5%	1/4W	
R042	1-246-522-00	CARBON	110K	5%	1/4W	
R043	1-246-508-00	CARBON	30K	5%	1/4W	
R045	1-246-467-00	CARBON	560	5%	1/4W	
R046	1-246-538-00	CARBON	510K	5%	1/4W	
R047	1-246-483-00	CARBON	2.7K	5%	1/4W	
		SWITCH				
SW001	1-552-438-00	SWITCH, KEY				
SW002	1-552-663-00	SWITCH, MICRO				
SW002	1-552-664-00	SWITCH, MICRO				
SW003	1-516-576-00	SLIDE SWITCH				
SW005	1-552-787-00	SWITCH, LEVER				
SW006	1-516-994-00	SWITCH, LEVER SLIDE				
SW007	1-552-438-00	SWITCH, KEY				
SW008	1-552-438-00	SWITCH, KEY				
SW009	1-552-438-00	SWITCH, KEY				
SW010	1-552-438-00	SWITCH, KEY				
SW011	1-552-438-00	SWITCH, KEY				
SW012	1-552-438-00	SWITCH, KEY				
SW013	1-552-438-00	SWITCH, KEY				
SW014	1-552-438-00	SWITCH, KEY				
SW015	1-552-438-00	SWITCH, KEY				
SW016	1-552-438-00	SWITCH, KEY				
SW017	1-552-438-00	SWITCH, KEY				
**********						
♣:1-601-836-00		CB-1 BOARD, COMPLETE				
		**********				
♣:3-662-317-00		BOARD, TERMINAL, CB				
♣:3-662-318-00		LID, UPPER, SHIELD CASE, CB-1				
♣:3-662-319-00		PLATE, BOTTEN, SHIELD CASE, CB-1				
		CAPACITOR				
C160	1-102-816-00	CERAMIC	120PF	5%	50V	
C164	1-101-004-00	CERAMIC	0.01MF		50V	
C165	1-101-006-00	CERAMIC	0.047MF		50V	
C188	1-101-004-00	CERAMIC	0.01MF		50V	
C352	1-123-294-00	ELECT	47MF	20%	6.3V	
		IC				
IC007	8-759-900-93	IC SN74LS93N				
IC008	8-759-900-93	IC SN74LS93N				
IC009	8-759-900-10	IC SN74LS10N				
IC010	8-759-900-74	IC SN74LS74AN				
		COIL				
L035	1-407-177-XX	MICRO INDUCTER 470UH				
		TRANSISTOR				
Q063	8-724-375-01	TRANSISTOR 2SC403C				
		RESISTOR				
R252	1-246-497-00	CARBON	10K	5%	1/4W	
R253	1-246-505-00	CARBON	22K	5%	1/4W	
R254	1-246-473-00	CARBON	1K	5%	1/4W	
R257	1-246-473-00	CARBON	1K	5%	1/4W	
R258	1-246-779-00	CARBON	470	5%	1/8W	
R259	1-246-481-00	CARBON	2.2K	5%	1/4W	
R260	1-246-473-00	CARBON	1K	5%	1/4W	

* Items marked " ♣ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Ref.No	Part No	Description	Remark
		MISCELLANEOUS **********	
	1-548-534-00	COUNTOR	
	⚠1-463-296-00	ANTENNA BOOSTER, MIXER (BT-971)	
	⚠1-464-105-00	MODULATOR, RF	
	♦:1-555-110-00	CABLE, PIN	
	⚠1-526-643-00	SOCKET, VOLTAGE SELECTOR	
	⚠1-534-817-XX	POWER CORD	
CN9501	1-561-261-00	CONNECTOR, CAMERA	
CN9502	1-561-320-00	CONNECTOR, REMOTE	
F6001	⚠1-532-286-00	TIME-LAG FUSE, 2.5A	
F6002	⚠1-532-285-80	TIME-LAG FUSE, 1.25A	
F6003	⚠1-532-350-00	TIME-LAG FUSE, 4A	
F6004	⚠1-532-066-00	TIME-LAG FUSE, 0.4A	
F6101	⚠1-532-203-00	TIME-LAG FUSE, 2A	
L9501	1-543-145-00	HEAD, SENSING (TAKE-UP)	
L9502	1-543-145-00	HEAD, SENSING (SUPPLY)	
M9502	A-6737-096-A	MOTOR ASSY, CAPSTAN	
S9501	1-552-663-00	SWITCH, MICRO (CASSETTE-IN)	
S9502	1-552-665-00	SWITCH, MICRO (THREADING END)	
S9503	1-552-877-00	SWITCH, SLIDE (MEMORY)	
S9504	⚠1-552-992-00	SWITCH, PUSH	
SL9501	⚠1-454-213-00	SOLENOID, PLUNGER (EJECT)	
SL9502	⚠1-454-216-00	SOLENOID, PLUNGER (REW/REVIEW)	
SL9503	⚠1-454-215-00	SOLENOID, PLUNGER (F.FWD/CUE)	
SL9504	⚠1-454-214-00	SOLENOID, PLUNGER (FWD)	
SL9505	⚠1-454-217-00	SOLENOID, PLUNGER (PINCH)	
SL9506	⚠1-454-186-21	SOLENOID (BRAKE)	
SL9507	⚠1-454-229-00	SOLENOID, PLUNGER (SELECT)	
T9501	⚠1-446-970-00	TRANSFORMER, POWER	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

· Items marked " ♦ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Betamax
VIDEOCASSETTE RECORDER

SL-C5E

No. 1
April, 1981

SUPPLEMENT

Subject: Alignment

SONY
SERVICE MANUAL

TABLE OF CONTENTS

SECTION 1
PREPARATION FOR MECHANICAL SECTION CHECK, ADJUSTMENT, AND REPLACEMENT

1-1. DISASSEMBLY

1. Cabinet Removal

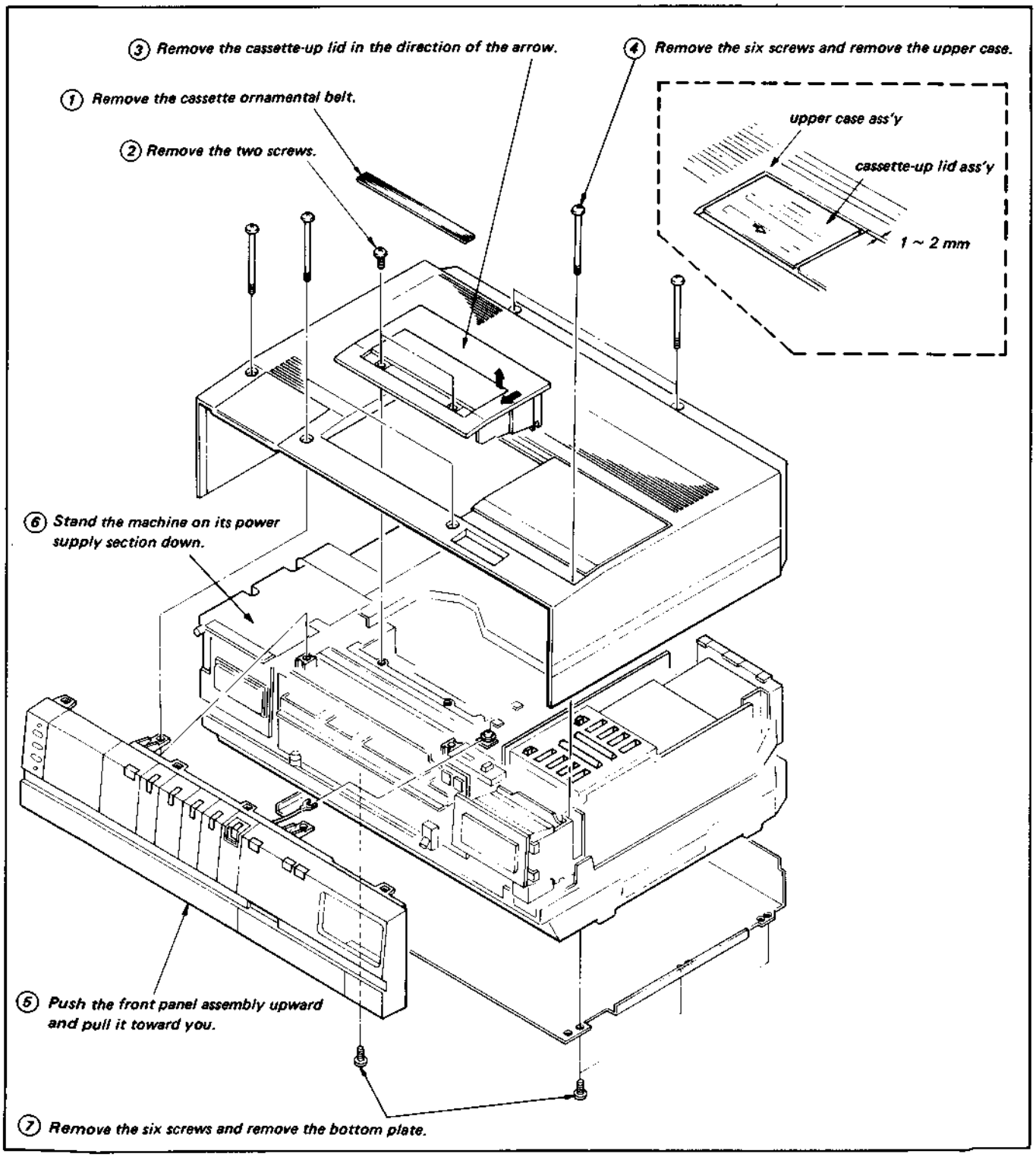


Fig. 1-1. Cabinet removal

2. Tuner-IF Block Removal

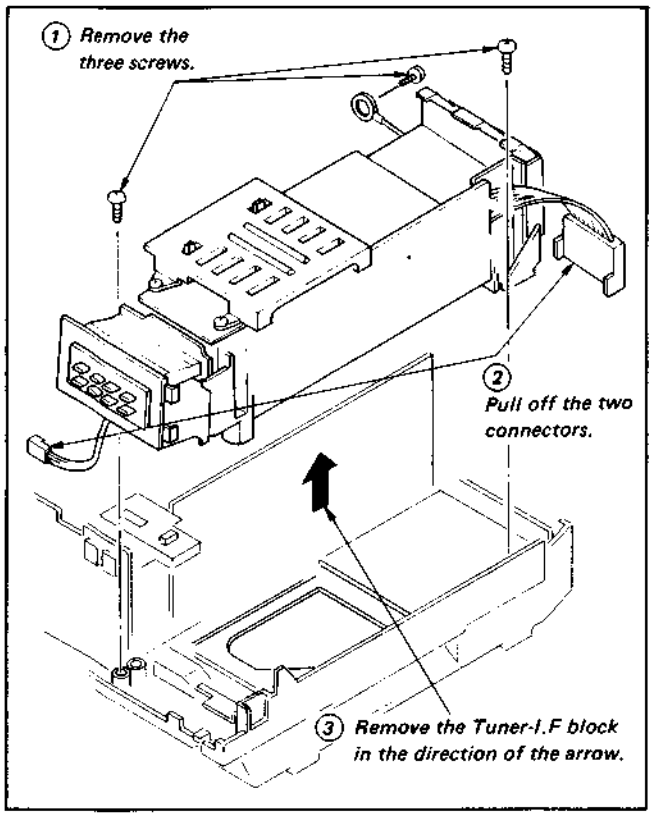


Fig. 1-2.

3. Timer Block Removal

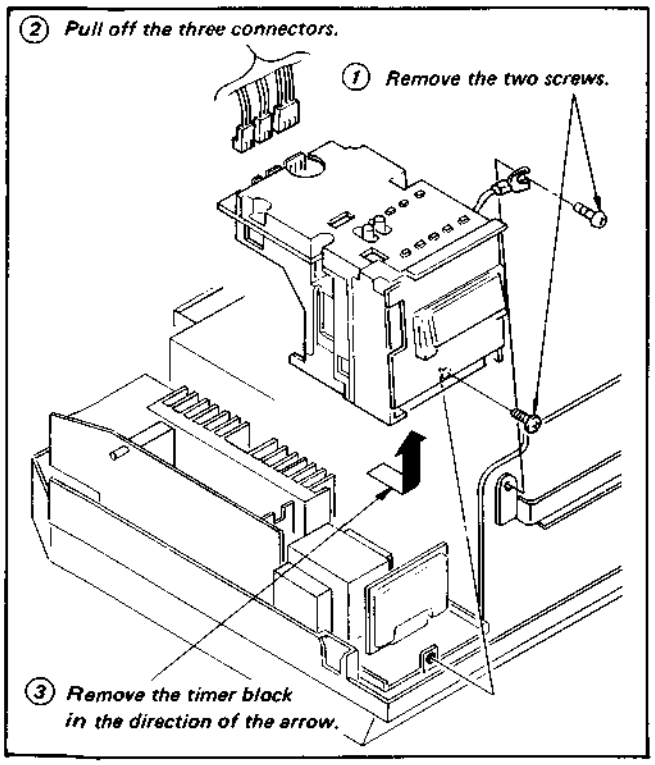


Fig. 1-3.

4. Timer Panel Removal

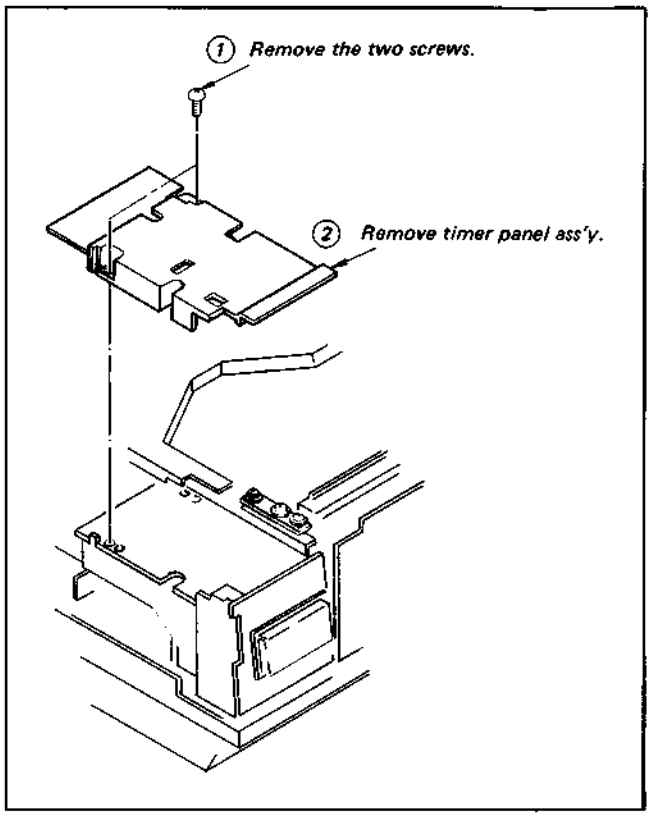


Fig. 1-4.

5. YC-6 and AS-6 Board Removal

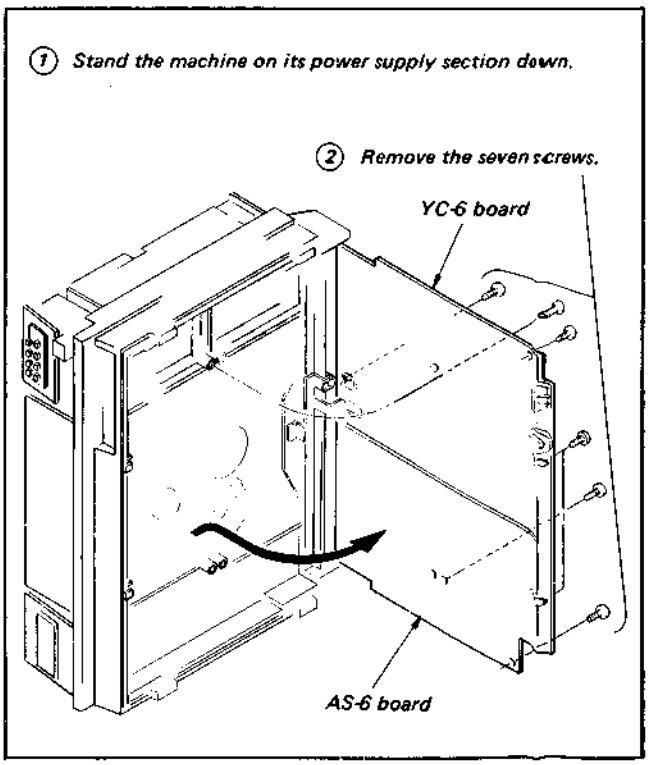


Fig. 1-5.

6. PS-15 Board Removal

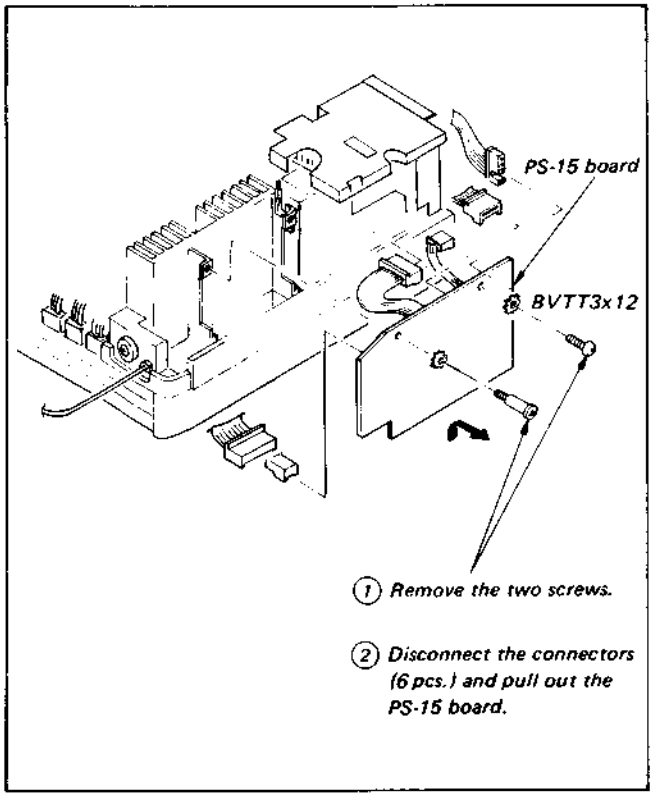


Fig. 1-6.

1-2. NOTES ON MAINTENANCE

1. Never place the machine upside down when the upper case lid has been removed from the machine, with the fan (black) attached on the drum assembly. (Since the fan projects from the chassis surface, an excessive force is applied on the drum if the machine is placed upside down, which could alter the tape movement and the tape interchangeability.)
2. Be sure to install the fan on the drum prior to the tape playback check or the electrical system alignment. If the check or the alignment is performed without the fan installed, the picture on the monitor may bend, as shown in Fig. 1-7.
3. The KR5-1H alignment tape is effective in making the tape path adjustment easy, as compared with the former alignment tapes.

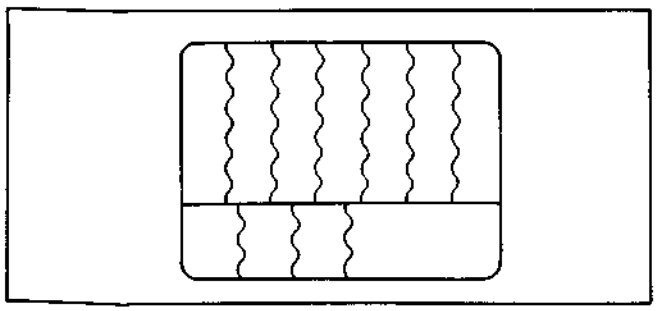


Fig. 1-7.

1-3. OPERATING RECORDER WITHOUT CASSETTE INSTALLED

1. To Set Up Threading Completion State Without Cassette and Cassette Lift Assembly.
   (This state is called "STOP mode" in this guide.)
   - Push down the cassette delection lever until the threading ring stops. (See Fig. 1-8.)

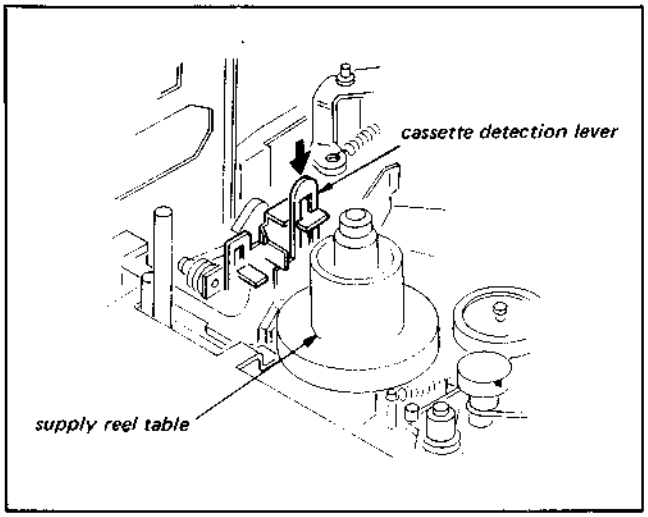


Fig. 1-8.

2. To Set Up PLAY, FAST FWD, And REWIND States Without Cassette Installed
   - Capture the cassette detection lever with an alligator clip, or an equivalent, as shown in Fig. 1-9, to place the cassette detection switch, mounted on the chassis, into the ON state. Then a desired state of operation can be set up by depressing the function button for the desired state. But note that the PLAY function button must be depressed after performing the procedures for stopping the slack sensor operation described in Section 1-4.

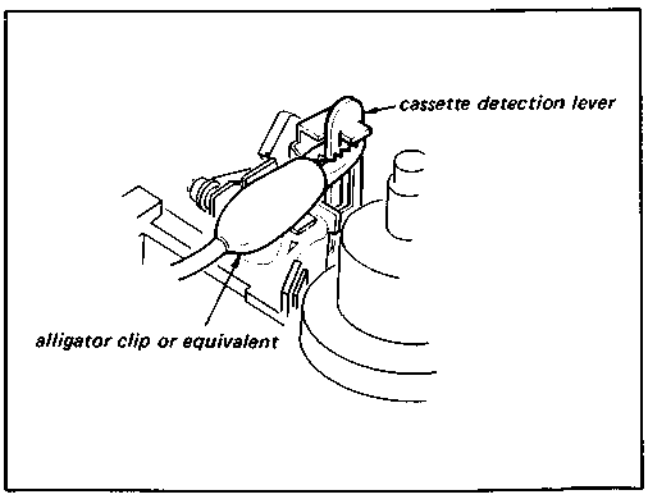


Fig. 1-9.

3. To Set Up EJECT Mode Without a Cassette:

   Note: Remove the alligator clip that captured cassette detection lever in Step 2.

   - Keep pressing the EJECT button until the unthreading is completed.

4. To Set Up RECORD Mode Without a Cassette:

   - Capture the cassette detection lever with an alligator clip as shown in Fig. 1-9, manually depress the erasing protection plate as shown in Fig. 1-10, and perform the procedure in Section 1-4, "Stopping Slack Sensor Operation". Then depress the RECORD button or the AUDIO DUB button.

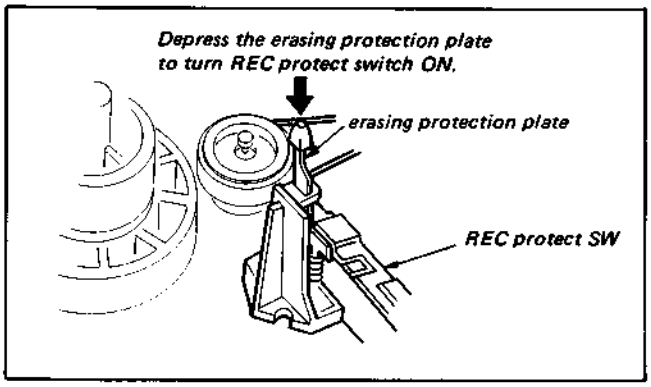


Fig. 1-10.

1-4. STOPPING SLACK SENSOR OPERATION

1. Insert a toothpick, or something like a matchstick whose point is sharpened, into the hole on the CN-6 board as shown in Fig. 1-11 to stop the movement of the slack sensor arm. A plastic pick would be preferred to the wooden one.

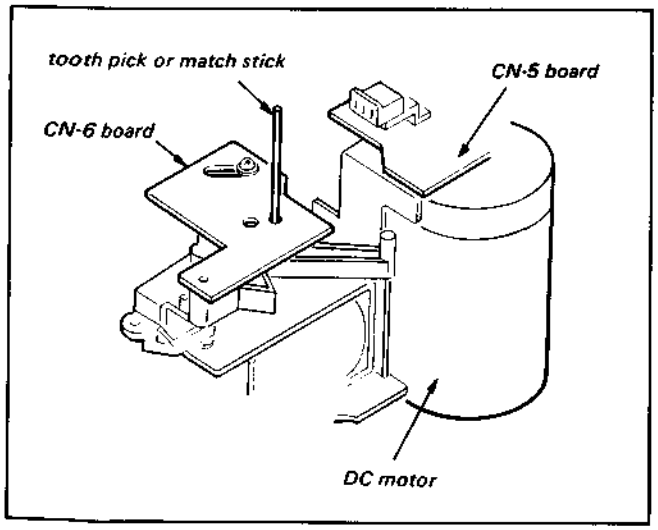
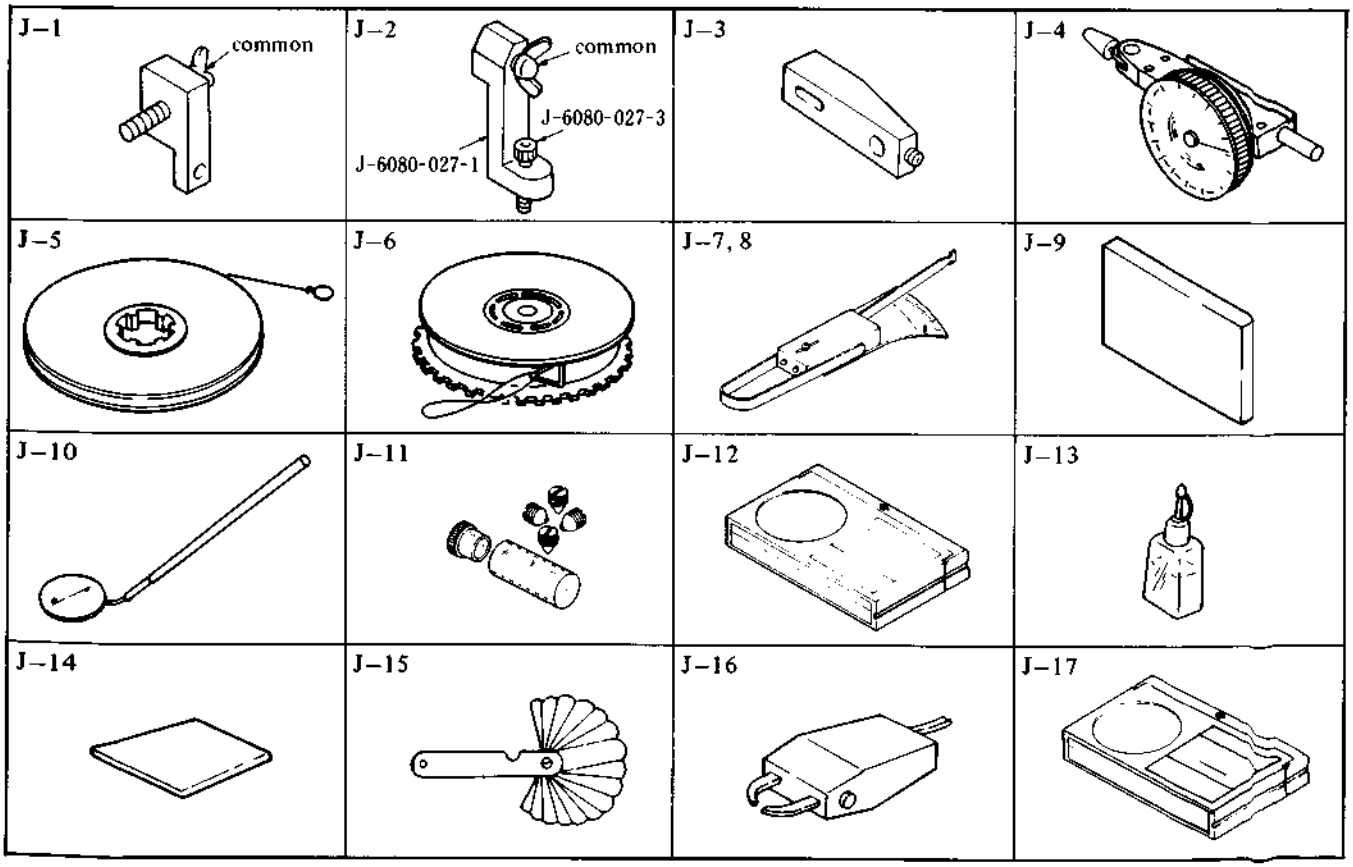


Fig. 1-11.

1-5. TOOLS AND FIXTURES REQUIRED

Ref. No.	Name	Part Code	Carved Jig No.	Use and Remarks
J-1	Video head disk eccentricity adj. jig	J-6080-027-2	SL-0027	Components of the SL-0012 which has been used are utilized as eccentricity adjustment jigs (J-3 and J-4) of the video head disc.
J-2	Video head disk eccentricity adj. jig	J-6080-027-1 J-6080-027-3		
J-3	Video head disk eccentricity adj. jig	J-6080-012-A	SL-0012	
J-4	Video head disk eccentricity adj. jig			
J-5	Reel table tension gauge	J-6080-011-A	SL-0011	For torque measurements
J-6	FWD back tension measurement jig	J-6080-002-A	SL-0002	For FWD back tension measurement
J-7	Sector type gauge (for 50 g)	7-732-050-20	———	For back tension and torque measurements
J-8	Sector type gauge (for 100 g)	7-732-050-30	———	
J-9	Parallel board	J-608-657-0A	SL-0657	For zenith adjustment of the audio/CTL head
J-10	Inspection mirror (handle)	7-723-902-01	———	For tape path adjustment and tape running check Be sure to place an order for the handle and the mirror as a set.
	Inspection mirror (mirror)	7-723-902-11	———	
J-11	Dihedral adjustment screw	J-6080-013-1	SL-0013	For video head dihedral adjustment
J-12	Alignment tape (KR5-1H)	8-969-995-91	———	For over all adjustments such as tracking and picture quality
J-13	Cleaning fluid	Y-2031-001-0	———	For cleaning
J-14	Cleaning piece	2-034-697-00	———	For cleaning
J-15	Thickness gauge	9-911-053-00	———	For checking clearance
J-16	Head demagnetizer	Common	———	For video and audio head degaussing (Demagnetizer HE-2 or HE-3)
J-17	Lapping tape	8-888-004-00	———	For video head cleaning

Note: When the Jig Nos. J-1 and J-2 are ordered, be sure to place an order for these together as a set.



SECTION 2
PERIODIC CHECK AND MAINTENANCE

- It is recommended that the following periodic check and maintenance be performed for obtaining the full function and performance of the machine and extending the lives of the machine and tape.

2-1. MAINTENANCE AFTER REPAIR

The following maintenance items must be performed after repair of the machine without regard to the operating hours of the machine.

(1) Cleaning of the video head disk assembly
- Press chamois saturated with the cleaning fluid or isopropyl alcohol lightly on the video head disk assembly and turn the fan on the drum slowly by hand for cleaning. (Never try to clean the video head disk assembly with the motor running.)
- Never move the chamois vertically against the head tips for cleaning, or the head tips will be damaged.

(2) Cleaning of the tape movement system
- Clean the surfaces which the tape contacts during its movement (the tape guides, drum assembly, capstan, and pinch roller) with chamois saturated with the cleaning fluid or isopropyl alcohol.

(3) Cleaning of the driving system
- Clean the driving elements (such as belts, idlers, and reel table surfaces) with a piece of cloth saturated with the cleaning fluid or isopropyl alcohol.

2-2. PERIODIC CHECK ITEMS

Perform the maintenance and check listed on the table below, according to user's operating hours.

○ Cleaning ◎ Lubrication ★ Replacement ☆ Confirmation

Maintenance & Check		Operating Hour (H) / Replacement Part No.	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	Remarks
Tape Movement System	Cleaning of tape movement system	———	○	○	○	○	○	○	○	○	○	○	This cleaning must be done whenever a repair is made.
	Cleaning & degaussing of ACE ass'y	———	○	○	○	○	○	○	○	○	○	○	
	Cleaning, degaussing & replacement of video head disk ass'y	A-6762-044-A	○	★	○	★	○	★	○	★	○	★	The life of a head varies, depending on operational conditions and methods.
Driving System	Lubrication to thrust retainer	———	—	◎	—	◎	—	◎	—	◎	—	◎	Apply a drop of oil (such as sewing machine oil) on each of upper and lower bearings.
	Lubrication to thrust bearing (under reel table)	———	—	—	◎	—	—	◎	—	—	◎	—	Remove reel table and apply a drop of oil (such as sewing machine oil) on thrust bearing.
	Cleaning & replacement of capstan belt	3-659-351-00	○	○	★	○	○	★	○	○	★	○	•Cleaning must be done whenever repair is made.
	Cleaning & replacement of belts other than capstan belt	———	○	○	○	○	○	○	○	★	○	○	•Replacement must be done depending on operating hours on the table, or every two years.
	Replacement of FWD limiter	X-3653-310-0	—	—	★	—	—	★	—	—	★	—	
	Cleaning of iron core and opening of solenoid	———	—	—	—	○	—	—	—	○	—	—	Wipe iron core and opening of solenoids with a dry cloth.
Performance Confirmation	Abnormal sound	———	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Adjust or replace the section which makes abnormal sound.
	Measurement of FWD back tension	———	—	☆	—	☆	—	☆	—	☆	—	☆	Confirmation must be made according to Section 3-18. Specified value: 35 to 45g. (when measured with jig tape)
	Confirmation of brake system	———	—	☆	—	☆	—	☆	—	☆	—	☆	Confirmation must be made according to Section 3-17.
	Confirmation of record & playback functions	———	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Perform the confirmation whenever repair is made.

- Belts other than capstan belt

FWD belt	:	3-653-324-00
Threading belt	:	3-659-301-00
EJECT belt	:	3-659-397-00
FF belt	:	3-662-347-00
Counter belt	:	3-659-485-00

(Note on Overhaul)

A part replacement must be done in the overhal operation, referring to the listed items. The replacement periods of the motor and the head which are not included in the chart items are as follows.

Full erase head . . . . . about 4,000 operating hours
Capstan motor . . . . . about 2,000 operating hours

2-3. OTHERS

(1) Lubricating Oil

- Be careful in applying oil to any parts.
  Do not permit the oil to coat any surface that is touched by the tape, heads, or drive belts.

- Be sure to use SONY oil (or equivalent) for lubrication. (Various troubles will be caused, if a different viscosity oil is used.)
  SONY Oil: Part No. 7-661-018-01

  OR THE EQUIVALENT OF SEWING MACHINE TYPE OIL

- Use the oil without dust or other foreign material for the bearing lubrication. (If an oil including dust and others is used, friction and burning of the bearing are apt to occur)

- The quantity of "a drop of oil" is about the quantity that will attach to the tip of a 2 mm diameter stick, as shown in the figure.

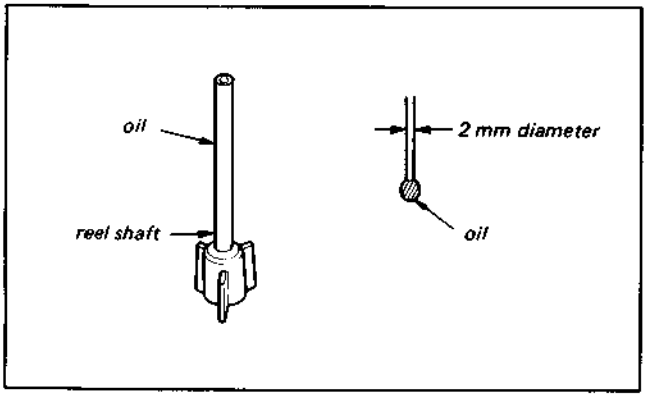


Fig. 2-1.

SECTION 3
CHECK, ADJUSTMENT, AND REPLACEMENT PROCEDURES

3-1. REPLACEMENT OF VIDEO HEAD DISK ASSEMBLY AND ECCENTRICITY ADJUSTMENT

1. Remove the video head disk assembly, following Steps ① to ⑥ shown in Fig. 3-1.

   Note:
   - For removing fan ①, hold video head disk assembly ⑥ (without touching heads) and turn the fan in a counterclockwise direction.
   - Never loosen the two setscrews that fasten the lower flange to the drum shaft.
   - Never loosen the lower two screws of the drum support.
   - Prior to installing the video head disk assembly ⑥, clean surfaces Ⓐ and Ⓑ with a piece of cloth saturated with methanol or isopropyl alcohol.

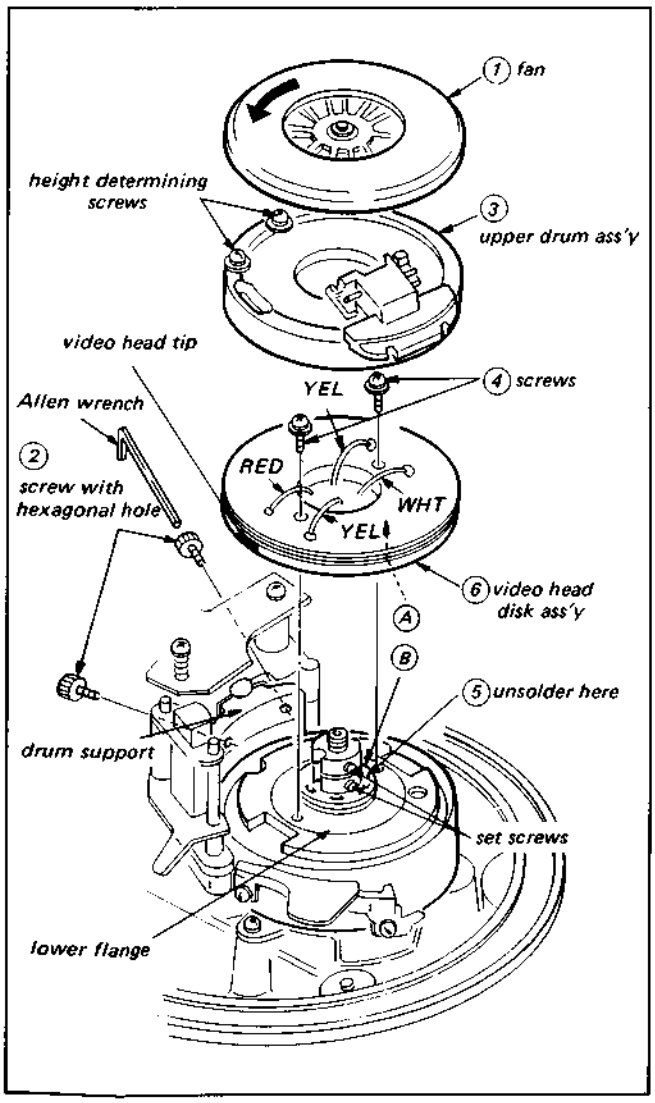


Fig. 3-1. Replacement of the video head disk assembly

2. Install the video head disk assembly tentatively (with two screws only finger-tight) and perform the eccentricity adjustment.

   (i) Combine adjusting fixture parts ①, ②, ③, and ④ as shown in Fig. 3-2. Set the combined fixture on the machine by mounting the eccentricity gauge assembly in the capstan husing assembly. See Fig. 3-2.

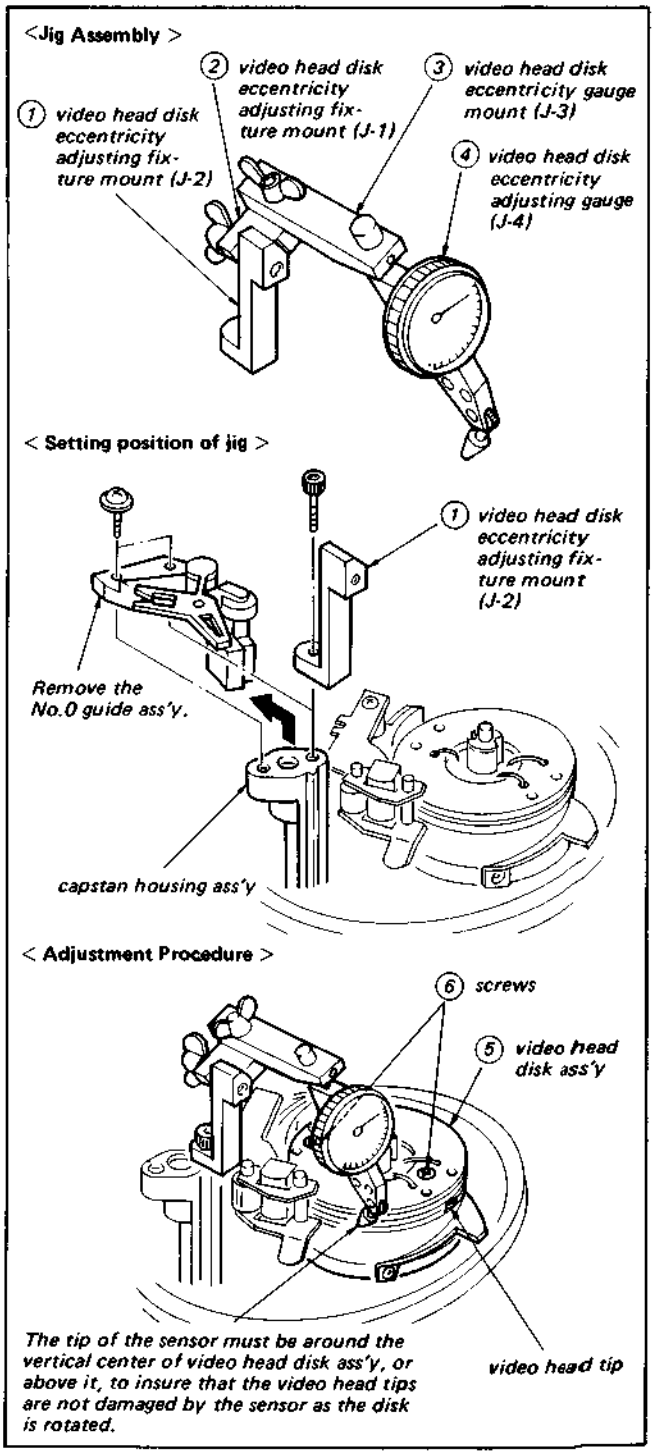


Fig. 3-2. Eccentricity adjustment of the video head disk assembly

(ii) Turn the shaft of the drum counterclockwise slowly with the fingers and adjust the video head disk position so that the variation in the reading of the drum eccentricity adjusting gauge is within 5 μm during each turn of the drum, by very gently tapping a screwdriver whose blade-tip is against the inner circumference of video head disk assembly (5).

(iii) Tighten the screws (6) that secure the video head disk assembly (5) alternately and gradually after the eccentricity adjustment is completed. (tightening torque: more than 10 kg.cm.)

(iv) After the screws are tightened, confirm again that the eccentricity deflection is within 5 μm.

(v) Solder the four leads of the head and remount the upper drum assembly while holding the upper drum height determining screws. (See Fig. 3-1.)

3. Perform the following adjustments after the replacement of the video head disk assembly.

3-11-6. No. 0 guide section assembly adjustment
3-19-1. Tape path adjustment
3-19-4. ACE assembly position adjustment
3-19-5. Video head dihedral adjustment
4-3-1.–2. RF switching position adjustment
4-3-1.–3. REC mode servo lock phase adjustment
4-4-19. Playback amplifier frequency characteristic adjustment (RF-2 board)
4-4-18. Record current adjustment (RF-2 board)
4-4-16. Chroma record current adjustment (YC-6 board)

3-2. REPLACEMENT OF DRUM ASSEMBLY

1. Stand the machine on its left side. Open the YC-6 and AS-6 boards. (Refer to Section 1-1-5.)
2. Remove FF belt (1) and drum shield (2) shown in Fig. 3-3.
3. Remove two screws (1) and connectors (2) and (3) shown in Fig. 3-4. The drum assembly can then be removed, by pulling it up.
4. Loosen the rotor assembly by inserting a long-nose pliers or a screwdriver into the two rotor holes shown in Fig. 3-5 and removing the N5φ nut and SW5φ washer. Pull off the rotor assembly.
5. Remove the screw mounting the stator assembly (shown in Fig. 3-5) and pull off the stator assembly.
6. Install the rotor assembly and the stator assembly (removed in Steps 4 and 5) onto the new drum assembly.

Note: Install the stator assembly so that the 3P connector on the stator assembly fits into the slot of the shield case assembly.

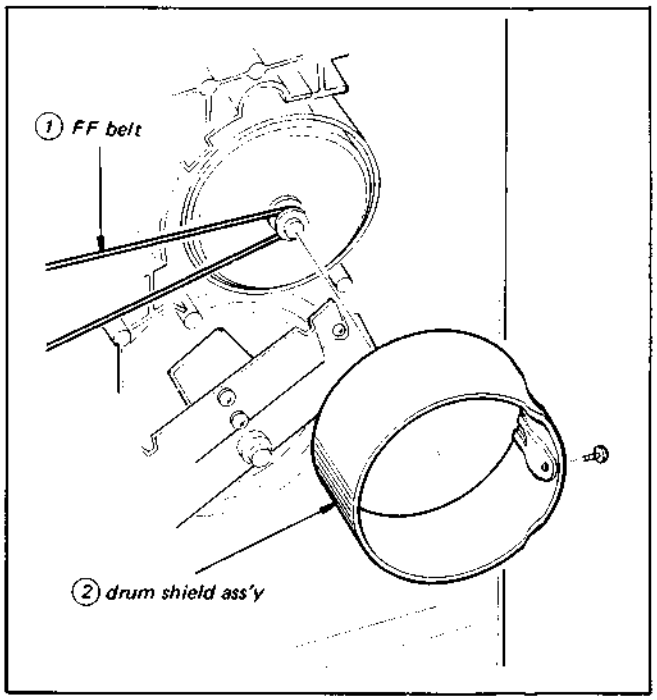


Fig. 3-3. Replacement of drum assembly (1)

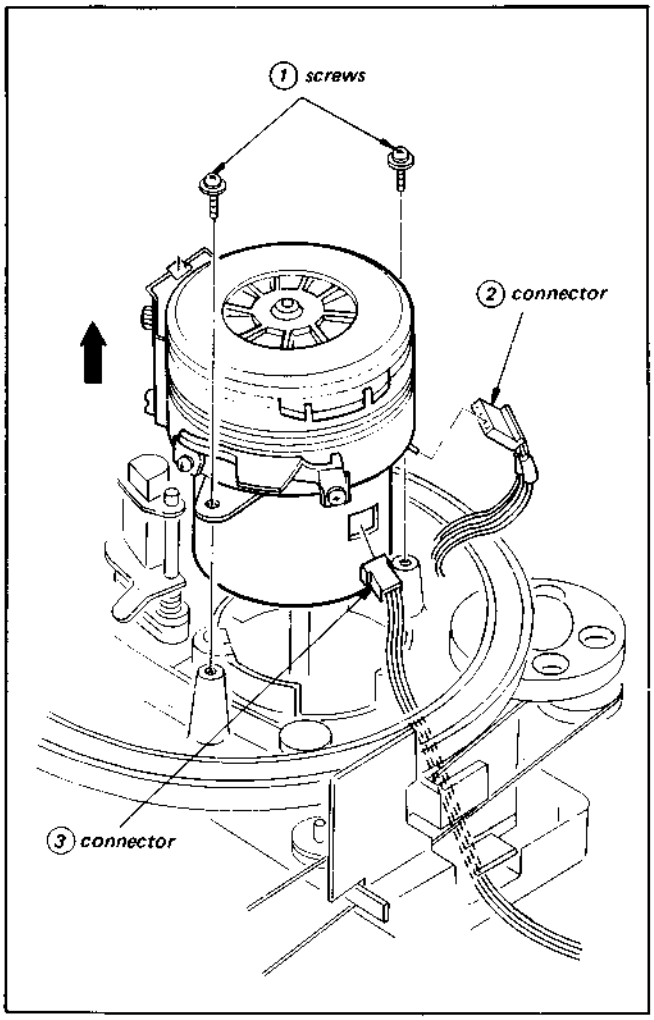


Fig. 3-4. Replacement of drum assembly (2)

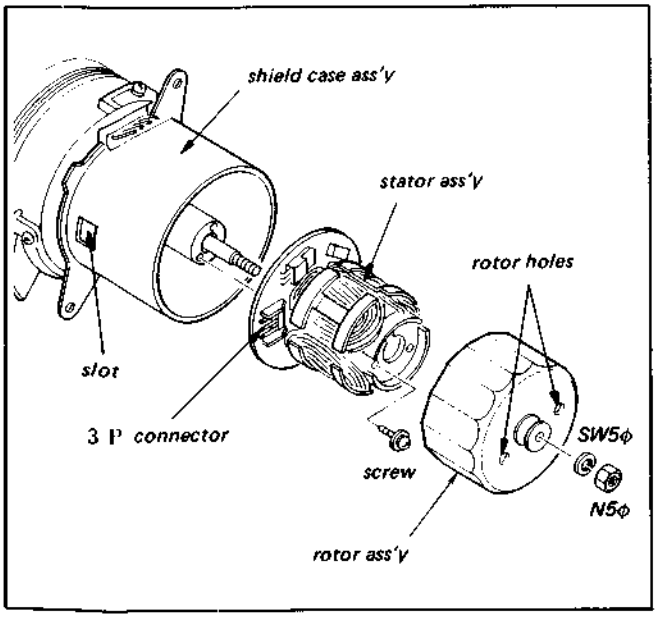


Fig. 3-5. Replacement of drum assembly (3)

7. Install two connectors, the drum shield assembly, and the FF belt on the drum assembly.

Note: 1. The bottom edge of the drum shield must be flush with the bottom edge of the shield base assembly.

2. Do not tighten the drum shield set screw too much or housing will distort.

Pull the leads of connector (A) in the arrow direction and dress the leads so that the leads do not touch the EJECT belt. (See Fig. 3-6.)

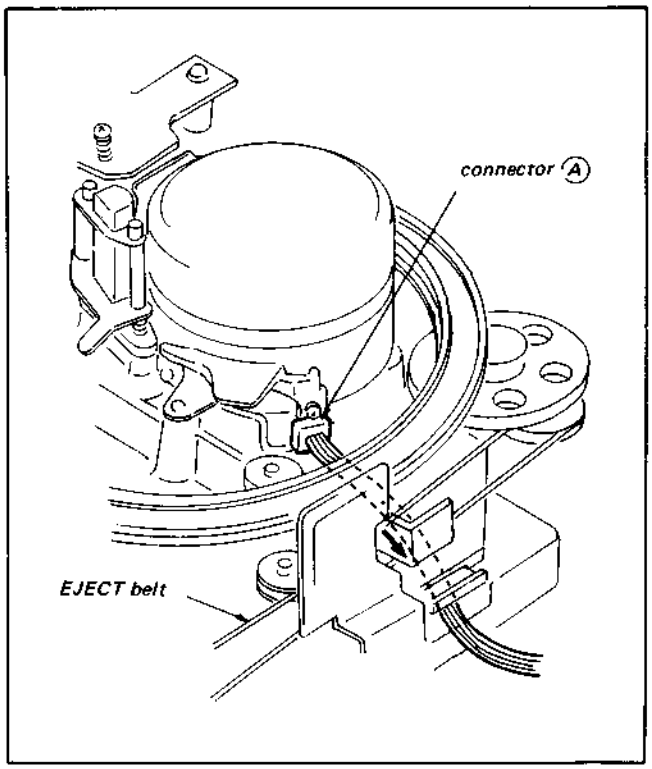


Fig. 3-6. Replacement of drum assembly (4)

8. Perform the following adjustments after the replacement.

3-19-1. Tape path adjustment
3-19-4. ACE assembly position adjustment
4-3-1. Drum servo system adjustment
4-4-19. Playback amplifier frequency characteristic adjustment (RF-2 board)
4-4-18. Record current adjustment (RF-2 board)
4-4-16. Chroma record current adjustment (YC-6 board)

3-3. REPLACEMENT OF CAPSTAN DC MOTOR

1. Stand the machine on its left side. Open the YC-6 and the AS-6 boards. (Refer to Section 1-1-5.)
2. Remove the DC motor from the drum base, following Steps ① to ④ shown in Fig. 3-7.
3. Take out the DC motor, following Steps ① to ⑥ shown in Fig. 3-8.

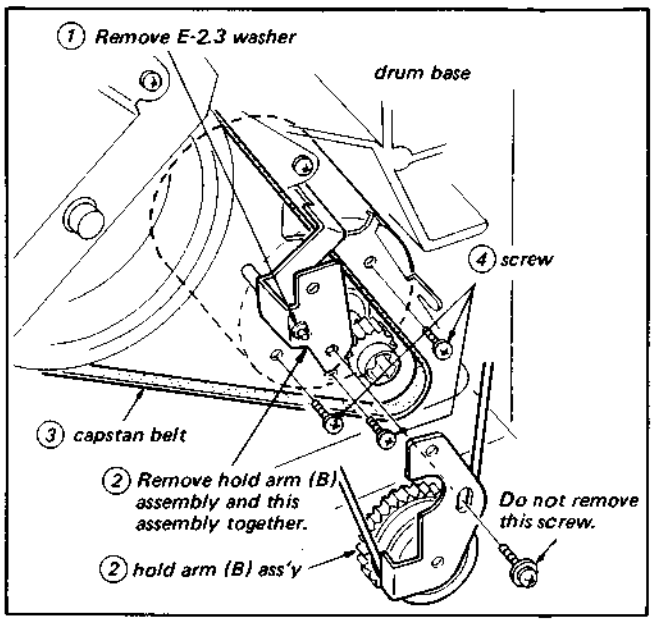


Fig. 3-7. Replacement of DC motor (1)

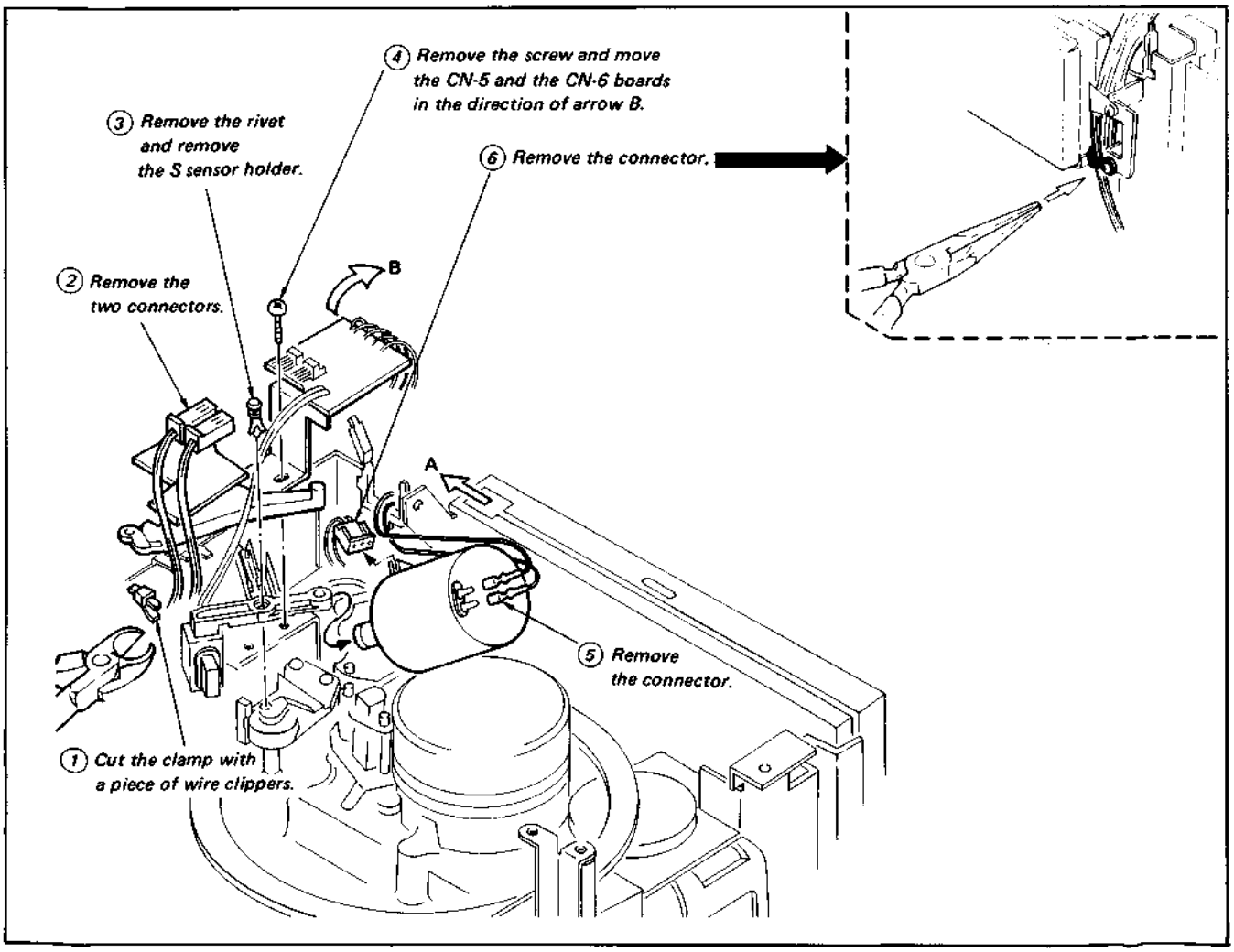


Fig. 3-8. Replacement of DC motor (2)

4. Remove capstan shield (1) from the defective motor and install them on the replacement motor. (See Fig. 3-9.)

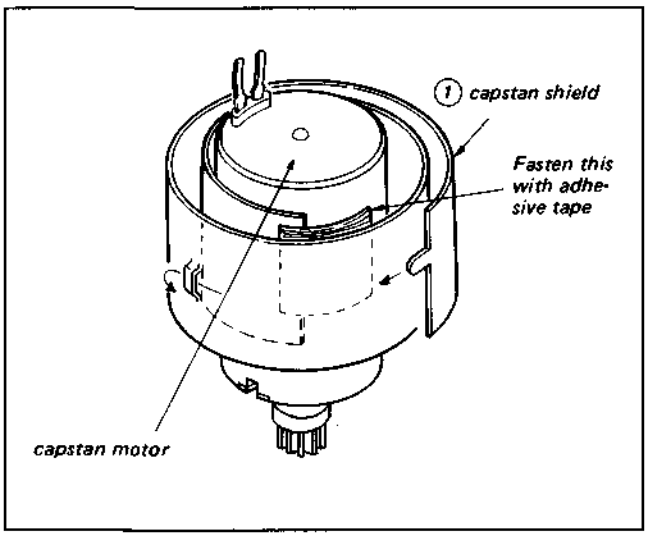


Fig. 3-9. Replacement of DC motor (3)

5. Perform the following adjustment after the replacement.

   4-3-2.–1. Capstan free speed adjustment

3-4. REPLACEMENT AND ADJUSTMENT OF TENSION REGULATOR ARM PLATE ASSEMBLY AND TENSION REGULATOR BAND ASSEMBLY

The tension regulator arm replacement must be done carefully, following the procedure below, because the tape interchangeability is much affected by the tension regulator arm operation.

3-4-1. When Tension Regulator Band Assembly is Replaced;

1. The tension regulator band assembly can be removed after removing screw (1) and hook (2) shown in Fig. 3-10.
2. Perform the tension regulator FWD position adjustment described below after the replacement.
   - (i) Place the machine, without an inserted cassette, into the STOP mode. (Refer to Section 1-3.)
   - (ii) Set up the PLAY mode.
   - (iii) Move the tention regulator band assembly (3) in the arrow direction as shown in Fig. 3-10 so that the positional relationship of the brake band assembly is as shown (A) in Fig. 3-10. Then tighten screw (1)
   - (iv) Perform the FWD back tension adjustment, Section 3-18, after the replacement.

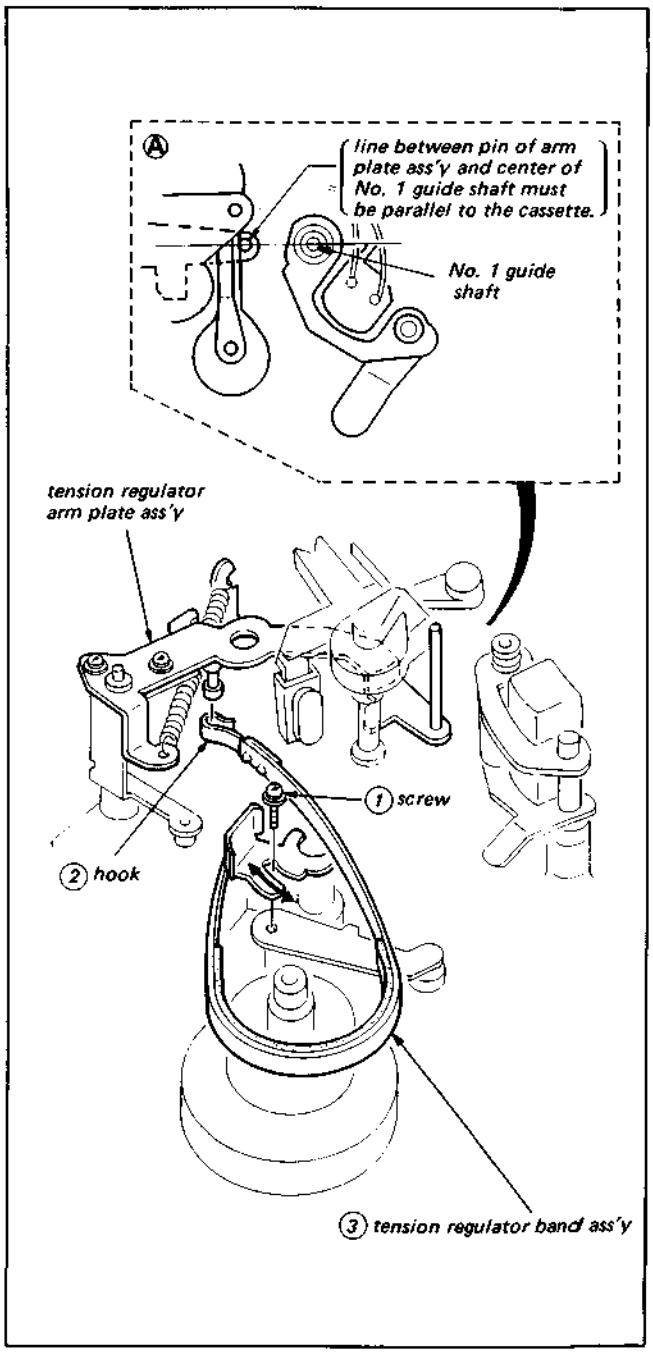


Fig. 3-10. Replacement and adjustment of the tension regulator band assembly

3-4-2. When Tension Regulator Arm Plate is Replaced:

1. The tension regulator arm plate can be removed after removing two screws (2) and spring (3) shown in Fig. 3-11.
2. After the replacement, perform the tension regulator FWD position adjustment as follows.
   (i) Set up the STOP mode without an installed cassette. (Refer to Section 1-3.)
   (ii) Set up the PLAY mode.
   (iii) Loosen screw (5) that mounts tension regulator band assembly (4) as shown in Fig. 3-11. Move tension regulator band assembly (4) in the arrow direction, and tighten screw (5) tentatively when the condition shown in (A) is set up.
   (iv) Insert a standard blade-tip screwdriver into section (B), adjust the clearance between release link (1) assembly (6) and tension regulator arm assembly (7) shown in Fig. 3-11, to be 0.5 to 1.0 mm, and tighten screw (2)
   (v) Repeat Steps (iii) and (iv) again and tighten screws (2) and (5).
   (vi) After the completion of the above steps, perform the FWD back tension adjustment, Section 3-18.

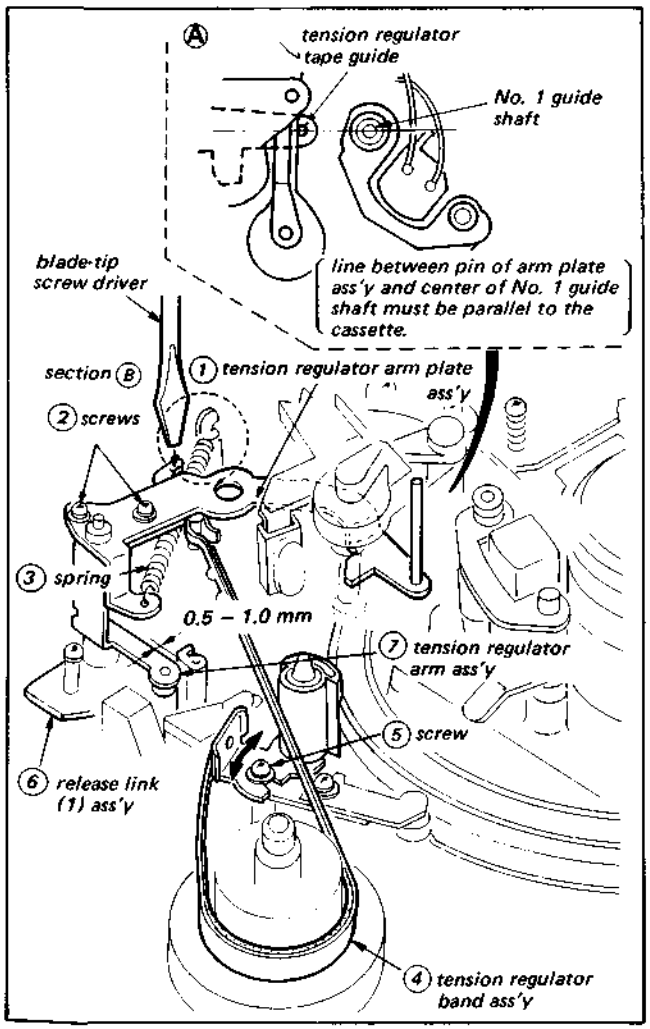


Fig. 3-11. Replacement and adjustment (1) of tension regulator arm plate assembly

3. Play back the 1 MHz segment of the alignment tape (KR5-1H). Loosen the lock screw and adjust screw "A" in Fig. 3-12 so that the RF waveform becomes that (see the waveform in the tape path adjustment, Section 3-19-1.) when the TRACKING knob is turned to the right and left from its center detent position and so that the tape is not apart from the flanges of guides (1), (2) and (3) shown in Fig. 3-12 and there is not a large tape curl at the guides.

   Note: Do not turn screw "A" to the right and left more than 90 degrees from its initial position.

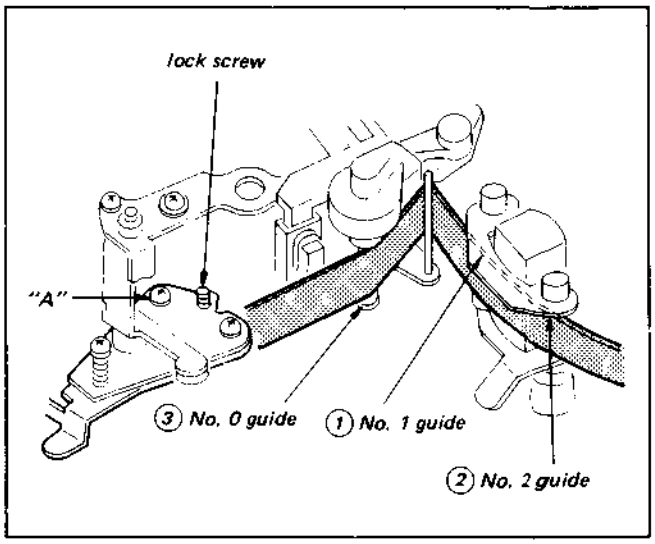


Fig. 3-12. Replacement and adjustment (2) of tension regulator arm plate assembly

4. Confirm that there is not a large bending of the tape at each of the tension regulator guide pin section and the No. 0 guide section shown in Fig. 3-13 after the completion of the adjustment. If the bending is found, repeat Step 3.

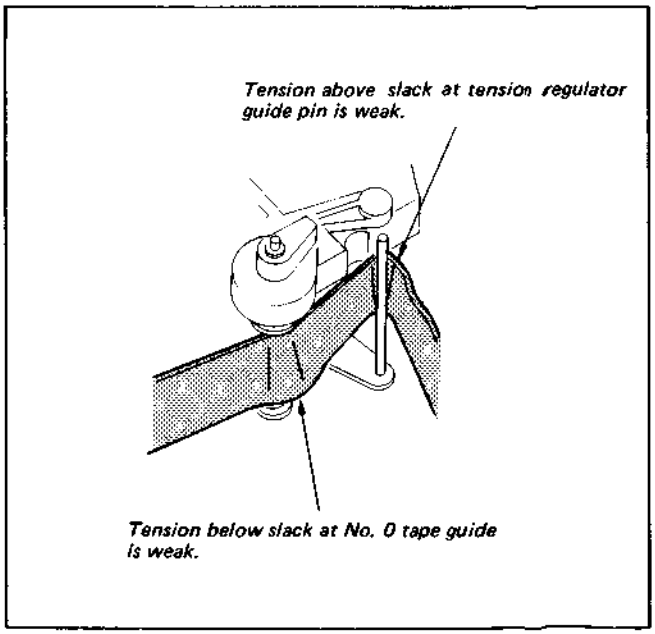


Fig. 3-13. Replacement and adjustment (3) of tension regulator arm plate assembly

3-5. REPLACEMENT OF CASSETTE-LIFT ASSEMBLY

1. Set up the unthreading state and remove the cassette-lift assembly by loosening four screws.
2. Install the cassette-lift assembly so that the reel tables and the reel holes on the cassette holder from concentric circles. (See Fig. 3-14.)
3. Insert the cassette into the cassette-lift compartment after the installation, set up the EJECT mode to perform unthreading after setting up the STOP mode, and confirm that the cassette-lift compartment assembly lifts. Make the confirmation after performing the lid opener position adjustment in Section 3-10.

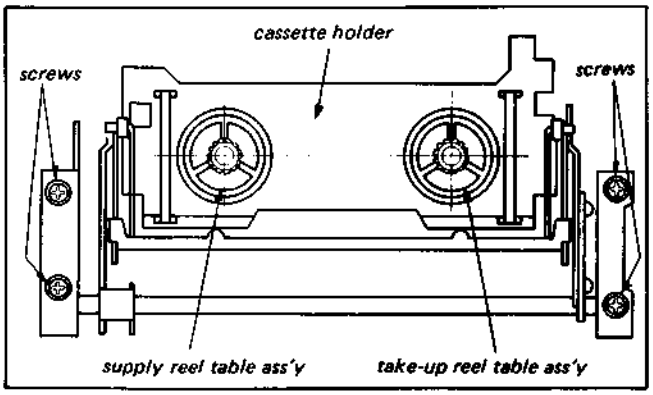


Fig. 3-14. Replacement of cassette-lift assembly

3-6. ADJUSTMENT OF REEL TABLE HEIGHT

- Since the reel table height serves as the reference of the tape movement system, the height must be adjusted caerfully after the reel table replacement.

1. Measure the height of the reel table with a slide caliper prior to the removal of the old reel table. (See Fig. 3-15.)
2. Place a new reel table, measure its height, and adjust height by adding or removing the adjusting spacer so that the difference in the heights of the former and new reel tables is within 0.1mm. (See Fig. 3-15.)

3-7. POSITION ADJUSTMENT, PAUSE SOLENOID

1. Set up the STOP mode without the cassette installed. (Refer to Section 1-3.)
2. Set up the REC PAUSE state so as to place the solenoid into the energized state.
3. Loosen the screws (1) that mount the solenoid and move the solenoid in the direction indicated by screw (A) as shown in Fig. 3-16 so that a clearance is made between the brake rubber and the take-up reel table.
4. Then move the solenoid in the direction shown by arrow (B) and tighten screws (1) after the solenoid is moved further 0.1–0.4 mm in the (B) arrow direction from the point where the brake rubber begins to touch the take-up reel table assembly.

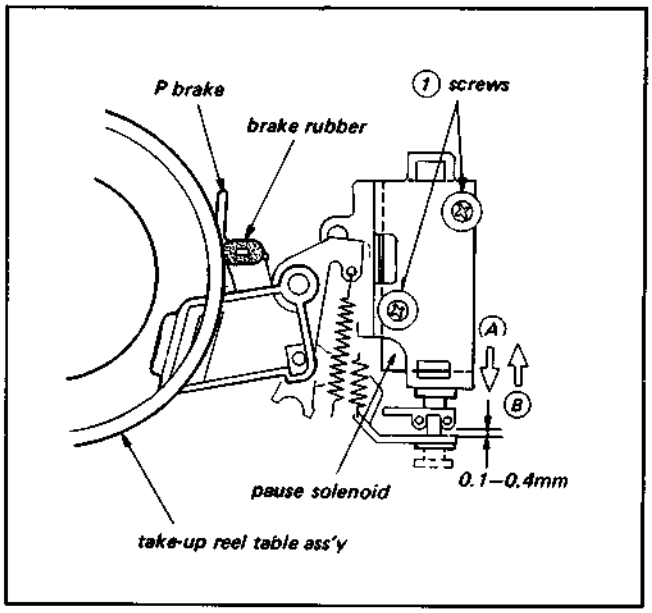


Fig. 3-16. Position adjustment of pause solenoid (Stroke adjustment)

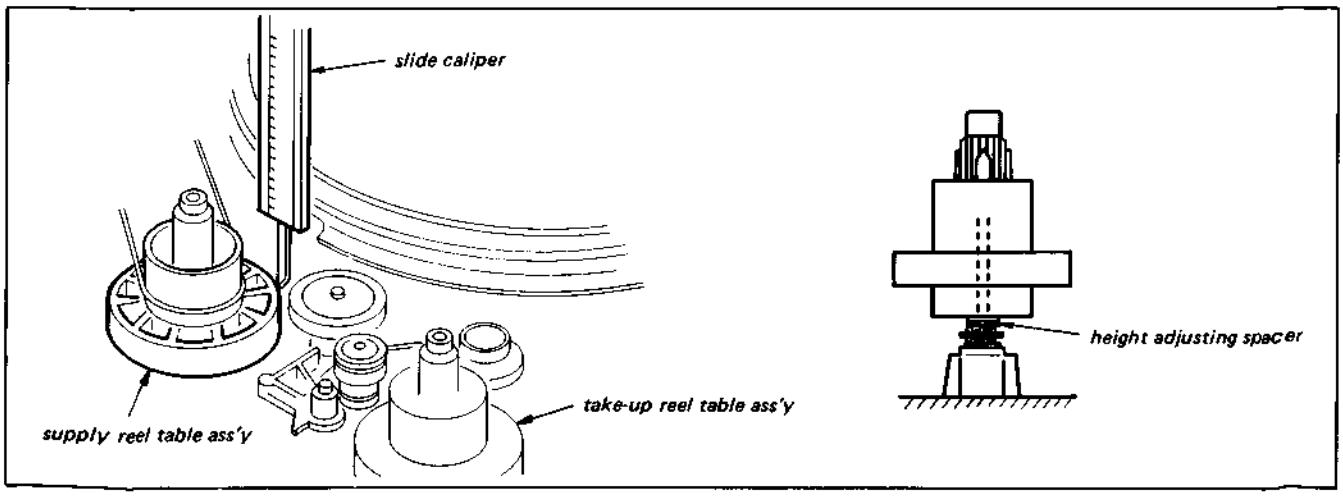


Fig. 3-15. Adjustment of reel table height

3-8. POSITION ADJUSTMENT OF FUNCTION SOLENOID

3-8-1. Position Adjustment of PLAY, F. FWD and REW Solenoids

The four solenoids shown in Fig. 3-17 require careful adjustments because these solenoids are the driving force for the PLAY, F. FWD, and other tape operations. (As to the position adjustment of the EJECT solenoid, refer to Section 3-8-2.)

1. Set up the STOP mode without the cassette. (See Section 1-3.)
2. Remove the two screws fixing the SY-14 board and open the board in the direction of the arrow.

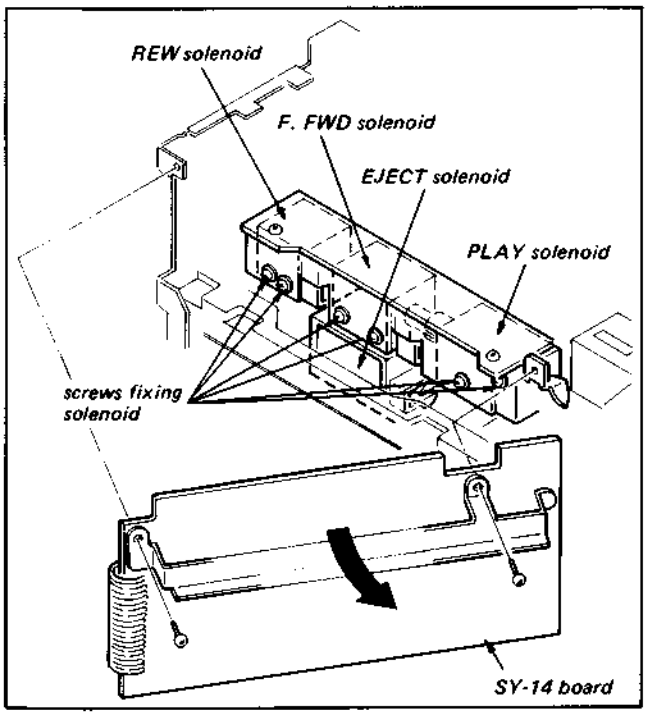
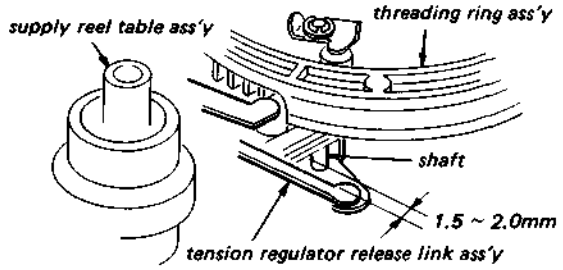


Fig. 3-17. Position adjustment of function solenoid

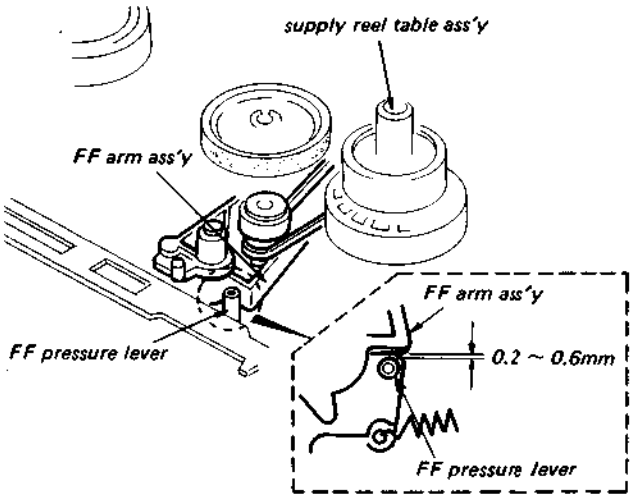
3. Check that the solenoids make the following operations when the relative mode to a solenoid is set up.
   - PLAY solenoid ..... Placing the tension regulator assembly into the operation. Making the FWD limiter assembly press the take-up reel table. Releasing the S and T brakes. Releasing the soft brakes.
   - F. FWD solenoid ..... Making the intermediate pulley assembly press the take-up reel table. Releasing the S and T brakes.
   - REW solenoid ..... Making the REW idler assembly press the supply reel table. Releasing the S and T brakes.
4. Check that the solenoids satisfy the specifications in Fig. 3-18. If the specifications are not satisfied, loosen the screws fixing the solenoid and adjust the position of the solenoid. See Fig. 3-17.
5. After tightening the screws, repeat Steps 3 and 4.

(1) stroke of PLAY solenoid



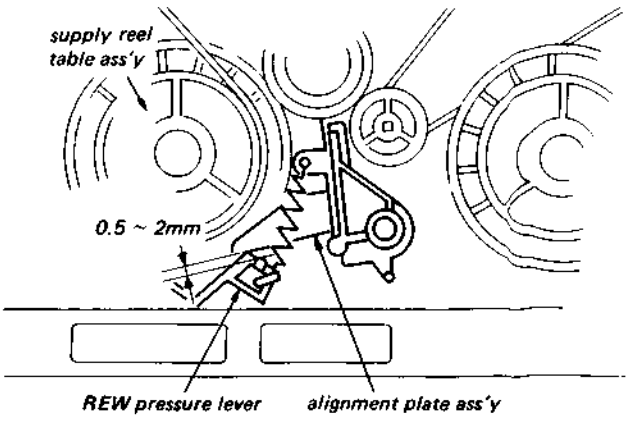
Specification: *A clearance of 1.5 to 2.0mm must be between the tension regulator release link ass'y and the shaft in the PLAY mode.*

(2) stroke of F. FWD solenoid



Specification: *A clearance of 0.2 to 0.6mm must be between the FF arm ass'y and the FF pressure lever in the F. FWD mode.*

(3) stroke of REW solenoid



Specification: *A clearance of 0.5 to 2mm must be between the REW pressure lever and the alignment plate ass'y in the REW mode.*

Fig. 3-18. Specifications of PLAY, F. FWD, and REW solenoid strokes

3-8-2. Position Adjustment of EJECT Solenoid

1. Set up the STOP mode without the cassette. (See Section 1-3.)
2. Check that following operations take place when the EJECT mode is set up.
   - EJECT solenoid . . . . The E idler assembly presses the take-up reel table.
     The ring arm assembly is released.
     The cassette compartment lock is released.
     The gear pulley engages with the motor pulley assembly.
3. Stand the machine on its left side down. Open the YC-6 and the AS-6 boards. (Refer to Section 1-1-5.)
4. Check that the specification shown in Fig. 3-19 is satisfied. If it is not, perform Steps 5, 6, and 7.
5. Push the cassette detect lever and release the lever at a midway of the threading.
6. Loosen the two screws shown in Fig. 3-19. Move the E solenoid base assembly to the position where the specification shown in Fig. 3-19 is satisfied, while turning the capstan motor pulley assembly counterclockwise and setting the solenoid to the energized state.
7. After tightening the screws, repeat Steps 2 and 4.

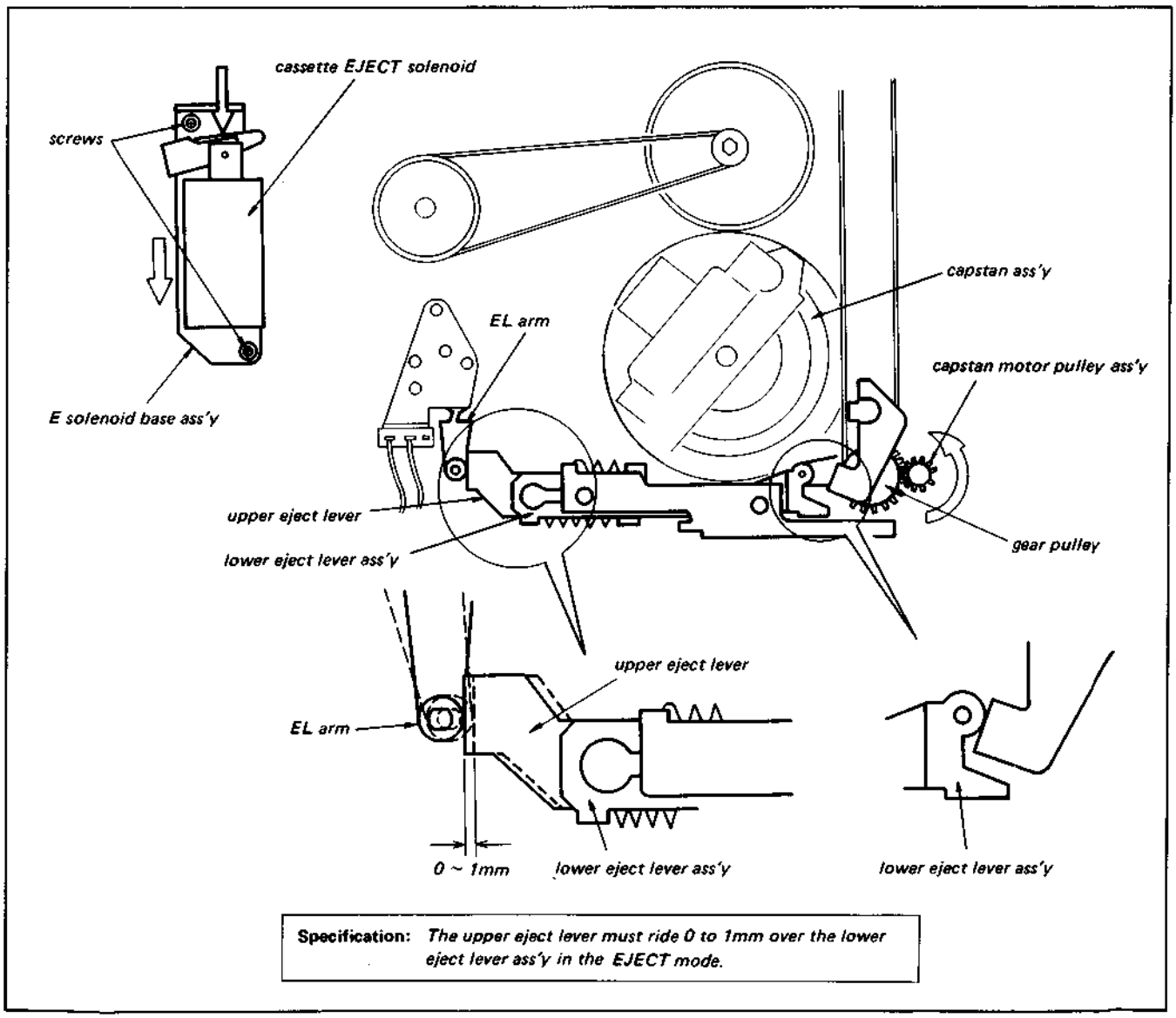


Fig. 3-19. Position adjustment of EJECT solenoid

3-9. ADJUSTMENT OF THREADING AND UNTHREADING

3-9-1. Operation Check of Cassette-in Switch

1. Set up the unthreading completion state without an inserted cassette and turn off the power.
2. Set section (A) as shown in Fig. 3-20.
3. Confirm that the microswitch mounted on the underside of the machine does not turn on when the cassette detection lever (1) is pushed in the arrow direction.
4. Set section (A) as shown in Fig. 3-21.
5. Confirm with a click that the microswitch mounted on the underside of the machine turns on when the cassette detection lever (1) is pushed in the arrow direction.
6. Adjust the mounting position of cassette detection (1) so that it moves more than 1.5mm further from the point where the click is heard.

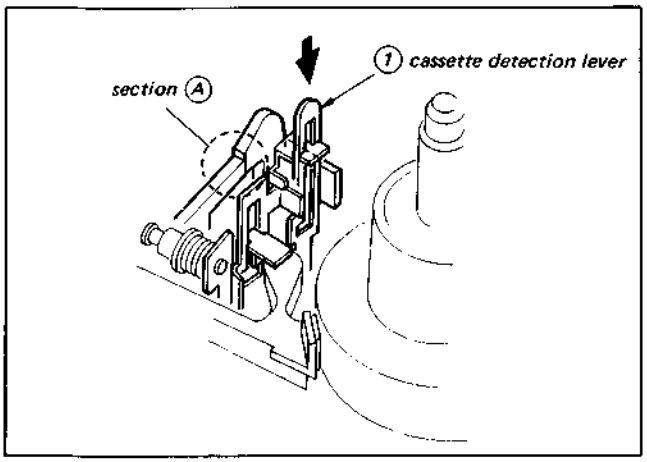


Fig. 3-20. Operation check of cassette-in switch

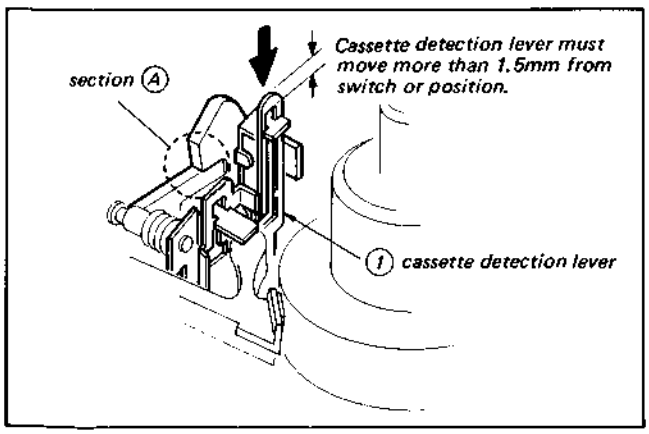


Fig. 3-21. Operation check of cassette-in switch

Note:
- The problem where the cassette-lift assembly does not lock occurs if the microswitch turns on in the condition shown in Fig. 3-20.
- The problem where the modes other than the EJECT mode cannot be set up occurs if the microswitch does not turn on in the state shown in Fig. 3-21.

3-9-2. Position Adjustment of Threading Unit B Assembly and Control Plate

1. Push down the cassette detection lever with fingers to perform the threading operation and release the lever when the threading ring assembly (5) shown in Fig. 3-22 has turned 90 degrees.
2. Loosen screws (1) shown in Fig. 3-22. Make the clearance (0.2mm) between midway gear (B) (4) and threading ring assembly (5) and tighten screws (1).
3. Make a clearance of 0.5mm between control plate (3) and threading ring assembly (5) and tighten screw (6).

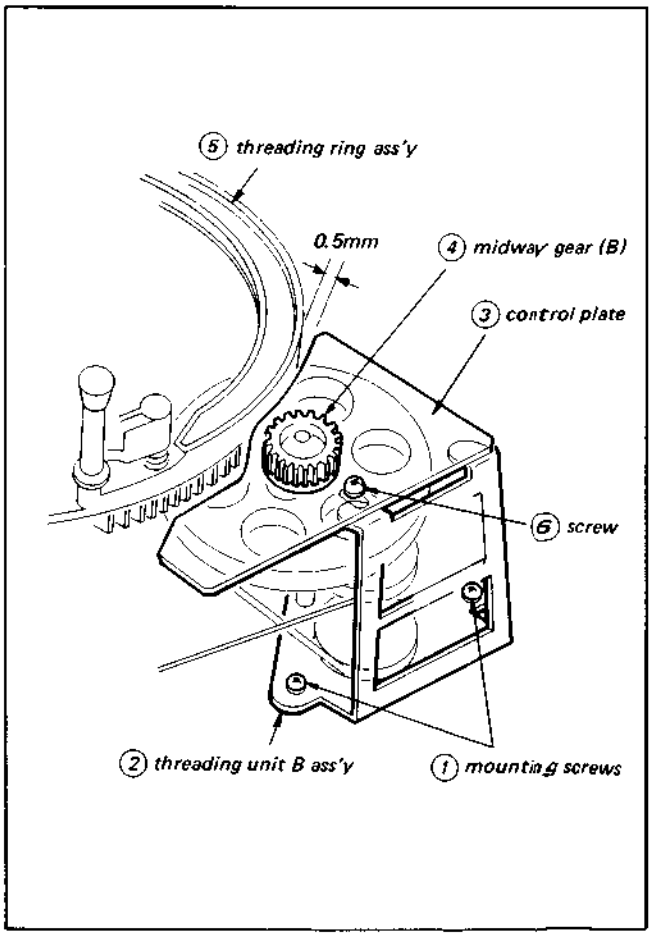


Fig. 3-22. Position adjustment of threading unit B assembly and control plate

3-9-3. Position Adjustment of Gear Pulley Hold Arm Assembly

1. Loosen screw (1) shown in Fig. 3-23, adjust the position of the gear pulley hold arm assembly so that the clearance between the motor pulley assembly (2) and the gear pulley (3) is 0.3 mm, and tighten screw (1).

3-9-4. Adhesion of Brake Shoe

1. Glue the brake shoe to the groove on the brake arm as shown in Fig. 3-23.

   Note: If the brake shoe is not glued in the right position, it is possible for the brake shoe to touch the capstan belt. If the shoe is removed, there is a possibility of the occurrence of an abnormal sound at the initial stage of the unthreading.

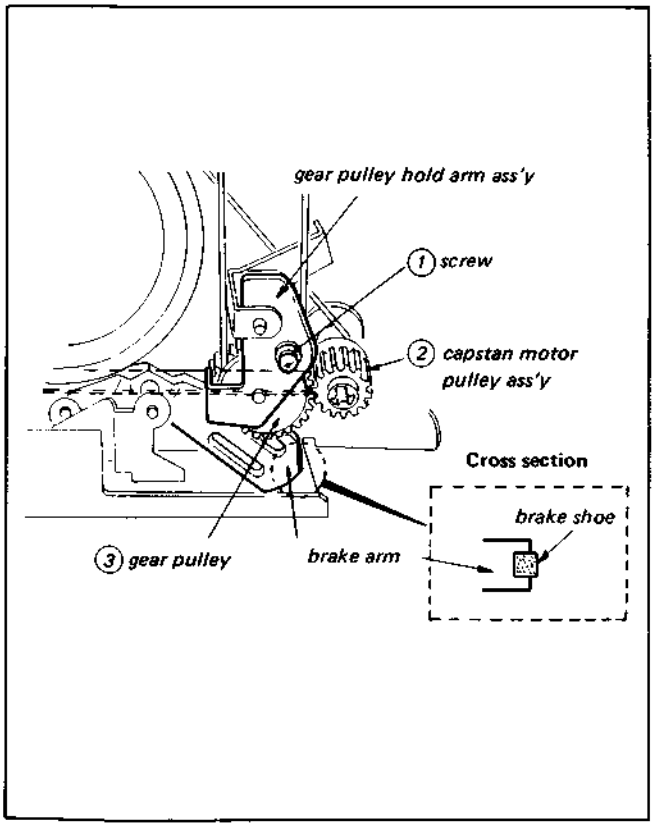


Fig. 3-23. Position adjustment of gear pulley hold arm assembly

3-9-5. Clearance Adjustment of Cassette Lift Assembly Arm

- Since a poor adjustment of the clearance causes the condition that the cassette lift assembly arm (2) is in strong contact with the threading ring assembly (3), the threading and unthreading cannot always be performed smoothly. When the clearance is larger than the specified value, the lock of the cassette lift assembly comes loose and the cassette lift assembly lifts during the unthreading, damaging the tape.

1. Set up the STOP mode without the cassette. (Refer to Section 1-3.)
2. Loosen screw (1) and adjust the position of the cassette lift assembly arm (2) with the thickness gauge so that the clearance between the cassette lift assembly arm (2) and the threading ring (3) satisfies the specification (0.2 mm to 0.5 mm). (See Fig. 3-24.)
3. Check the value again after the screw is tightened.

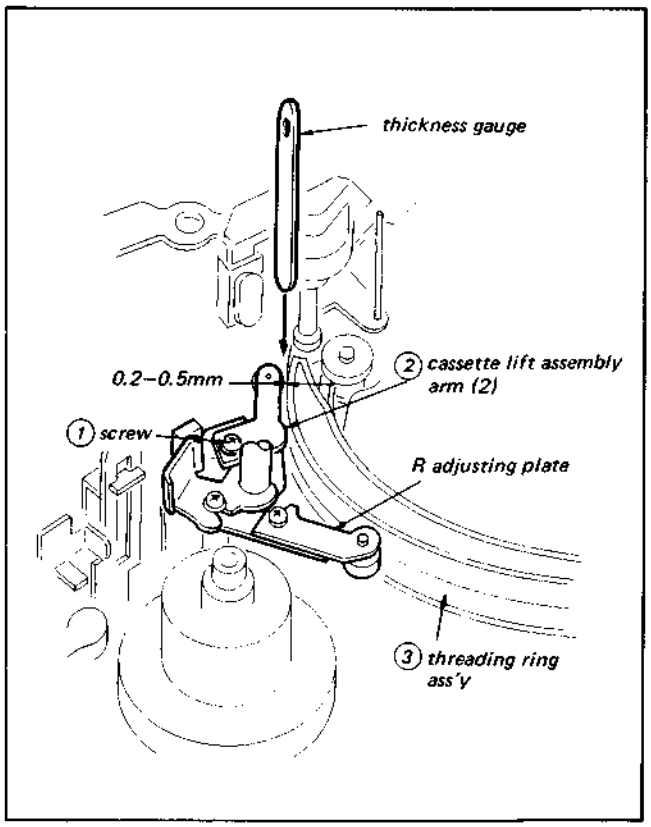


Fig. 3-24. Clearance adjustment of cassette lift assembly arm

3-9-6. Clearance Adjustment of Ring Arm

- The ring arm serves to stabilize the position of the threading ring at the completion of threading. If this adjustment is wrong, there is a possibility that the threading ring may move, from the position reached at the threading completion point, during the PLAY, FAST FWD and RECORD modes.

1. Set up the STOP mode without the cassette. (Refer to Section 1-3.)
2. Set up the PLAY mode.
3. Loosen screw (1) shown in Fig. 3-25 and adjust R adjusting plate assembly (2) so that the clearance between the roller of R adjusting plate assembly (2) and threading ring assembly (3) satisfies the specification (0 to 0.2 mm). Repeat the threading and unthreading operations several times, confirm that the roller of R adjusting plate assembly (2) drops into the bottom of the cam of the threading ring, and tighten screw (1) after the confirmation.

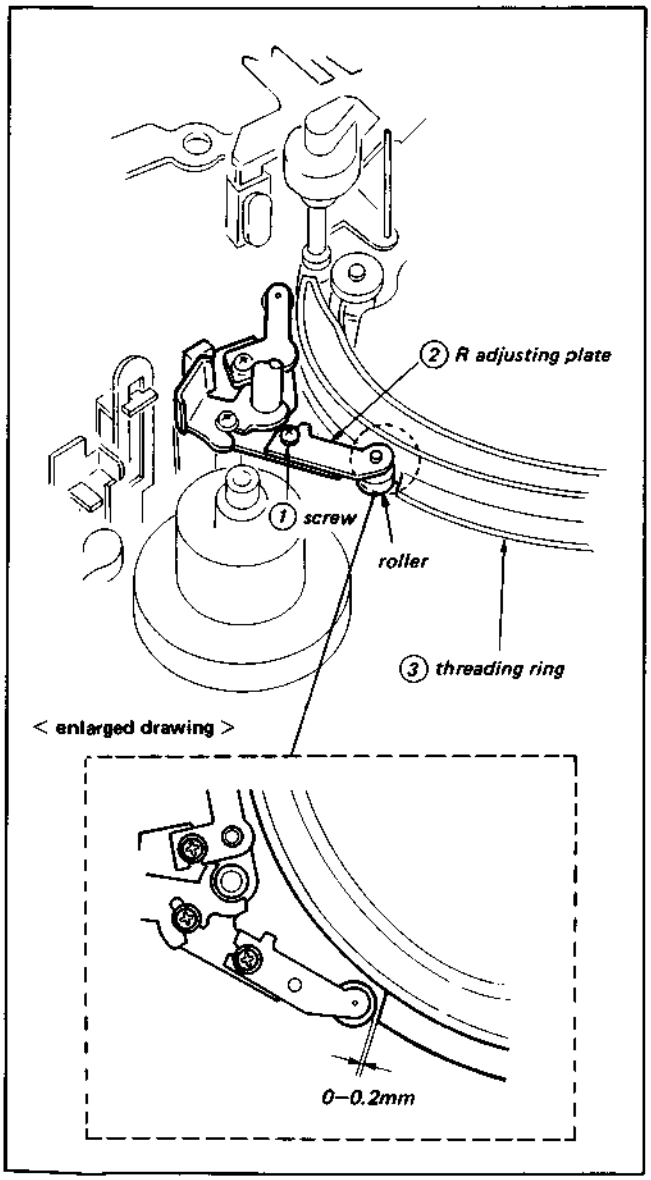


Fig. 3-25. Clearance adjustment of ring arm

3-9-7. Check of Unthreading Completion

1. Set up the STOP mode without the cassette. (Refer to Section 1-3.)
2. Set up the EJECT mode to complete the unthreading.
3. Confirm that the roller of cassette lift assembly arm (2) shown in Fig. 3-26 moves in the arrow direction when the cassette lift assembly arm (2) is pushed in the arrow direction.
4. Confirm that the tension regulator arm assembly is in contact with the boss of the cassette position-determining post. (See Fig. 3-26.)

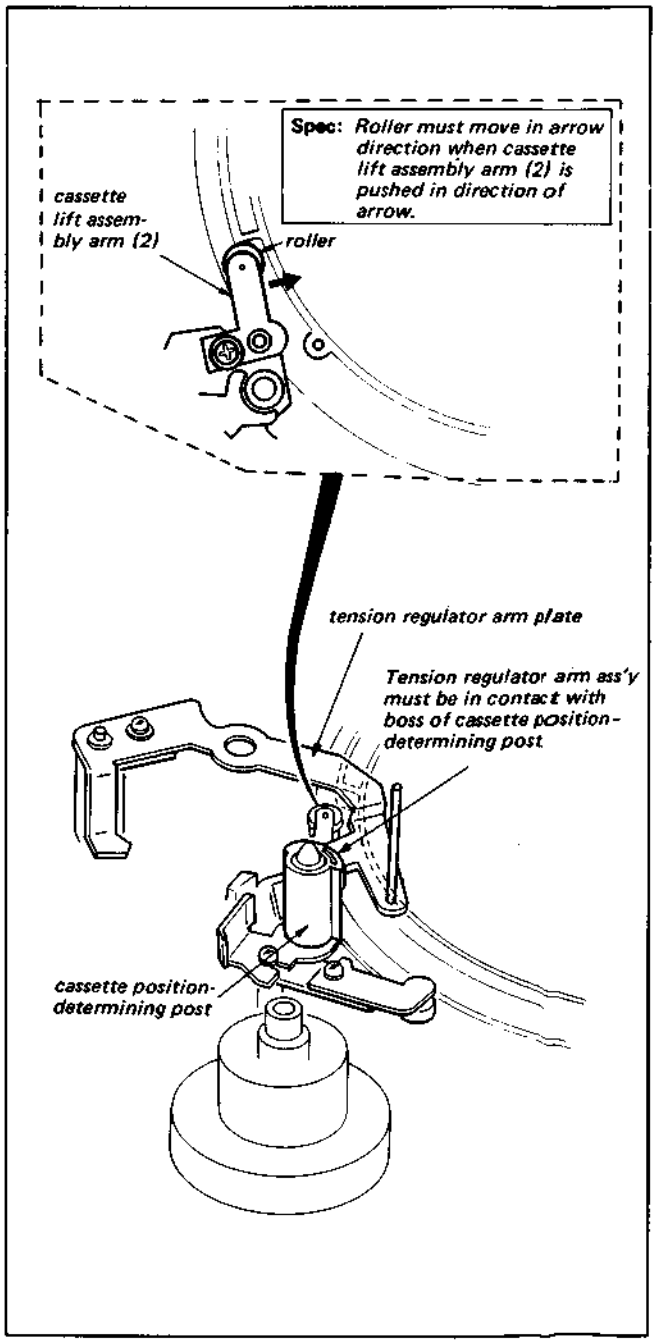


Fig. 3-26. Check of unthreading completion

3-10. POSITION ADJUSTMENT OF LID OPENER

- The mounting position of the cassette lid opener bracket is different when the cassette lift assembly is attached and is not attached to the SL-C5CH.

1. When the cassette lift assembly is attached;

   (i) The plate of the cassette lid opener bracket must be near the center of the slot in the white plastic holder guide when the cassette lift assembly is lowered. If it is not in this position, bend the lower section of the cassette lid opener bracket, as shown in Fig. 3-27. for adjustment.

   (ii) Confirm that section (A) in Fig. 3-27 satisfies the specification (0.5mm to 3mm) when the cassette is inserted and the PLAY mode is set up. This is the spacing between the tape and the take-up sensor.

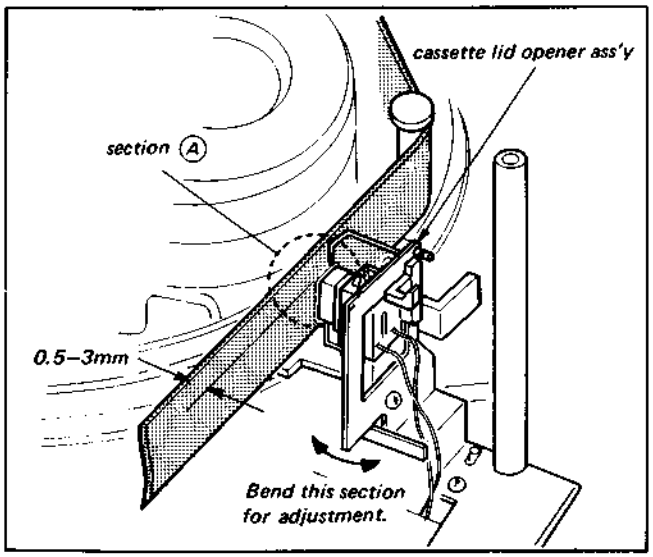


Fig. 3-27. Position adjustment of cassette lid opener metal (1)

2. When the cassette lift assembly is not attached;

   (i) Bend the lower section of the cassette lid opener bracket so that the cassette lid opener bracket positions itself almost at the center of the space marked by asterisk (*) shown in Fig. 3-28, when the cassette is placed on the four position determining posts.

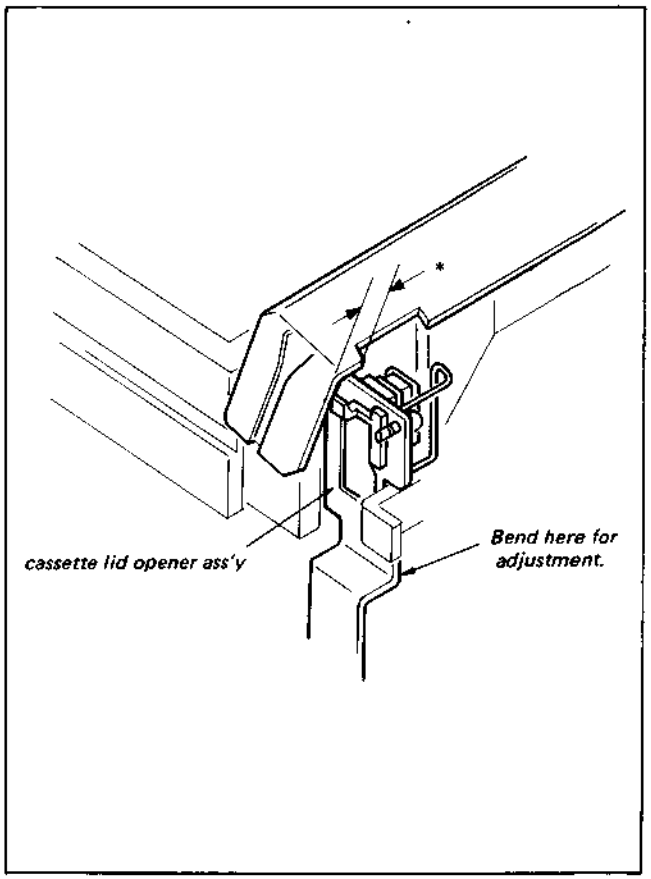


Fig. 3-28. Position adjustment of cassette lid opener metal (2)

3-11. REPLACEMENT AND ADJUSTMENT OF THREADING RING ASSEMBLY

1. Turn the threading ring to a point immediately before the threading completion position and stop it at the point where it does not touch the lock hold arm. (See Fig. 3-29.)
2. Perform procedures (1) to (5) shown in Fig. 3-29.
3. Remove the threading ring while moving the tension regulator arm assembly in the arrow direction by holding its lower section.

   Note: Do not hold the upper section of the tension regulator arm while moving the assembly.

4. Perform the adjustment of control plate (1), R adjusting plate (3), No. 0 guide section assembly (4), and ring roller unit assembly (5) after the replacement.
   (i) As to the adjustment of control plate (1), refer to "Position Adjustment of Threading Unit B assembly and Control Plate", Section 3-9-2.
   (ii) As to the adjustment of R adjusting plate (3), refer to "Clearance Adjustment of Ring Arm", Section 3-9-6.
   (iii) As to the adjustment of No. 0 guide section assembly (4), perform procedure 6 of this section.
   (iv) As to the adjustment of ring roller unit assembly (5), perform the adjustment, referring to detail drawing A in Fig. 3-29.
5. Perform the threading and unthreading several times and confirm the smooth movement of the threading ring.

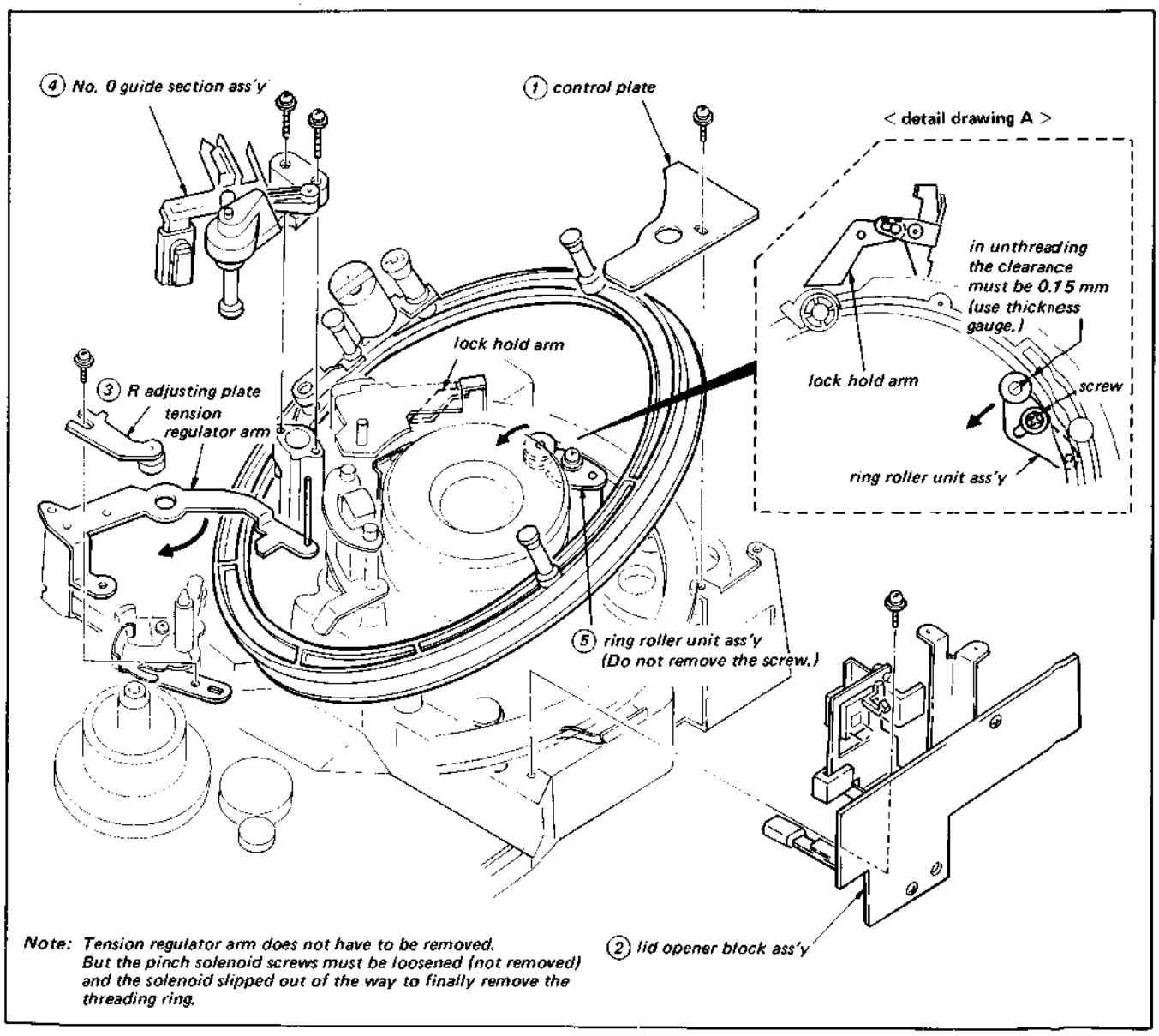


Fig. 3-29. Replacement of threading ring block assembly

6. Adjustment after the mounting of No.0 guide section assembly

   (i) Playback the 1MHz segment of the alignment tape (KR5-1H).

   (ii) Turn the TRACKING control knob so that the RF waveform at TP2005 on RF-2 board is 2/3 of its maximum level. (See Fig. 3-30.)

   (iii) Turn the No.0 guide shown in Fig. 3-30 fully counterclockwise (↶), then clockwise until the point where the RF waveform at the exit section becomes flat with small fluctuation, and tighten the mounting screws.

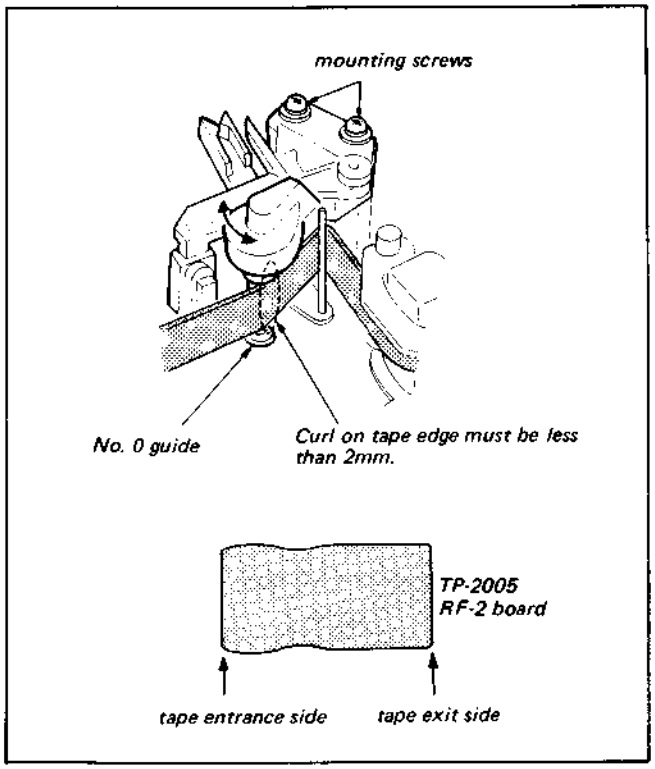


Fig. 3-30. Position adjustment of No.0 guide section assembly mounting

3-12. POSITION ADJUSTMENT OF PINCH ROLLER SOLENOID

3-12-1. Parallelism Adjustment of Pinch Press Lever

1. Set up the STOP mode without the cassette. (Refer to Section 1-3.)
2. Perform Steps (1) to (3) shown in Fig. 3-31 so as to set up the state in which the screw of pinch press lever shaft adjusting plate (4) can be loosened.
3. Loosen the two screws (1) fastening the pinch solenoid base (3) shown in Fig. 3-32 and tighten screws (1) when the pinch solenoid base (3) becomes parallel to the drum base.
4. Loosen two screws (2) shown in Fig. 3-32 by 1/3 to 1/2 turn and move pinch press lever shaft adjusting plate (4) in the direction shown by arrow B.
5. Insert a standard blade-tip screwdriver into hole F when the iron core is pulled slightly and pinch roller arm assembly (5) touches capstan shaft (6) equally along the complete length of the pinch roller. The pinch roller and the capstan should be parallel. Move the pinch press lever shaft adjusting plate (4) in the direction shown by arrow C and tighten the two screws (2) when clearance A becomes 0.

   Note: If the pinch roller arm assembly (5) does not touch the capstan with parallel and equally force when the iron core is pulled slightly, move pinch solenoid base (3) with a standard blade-tip screwdriver in the direction shown by arrow D.

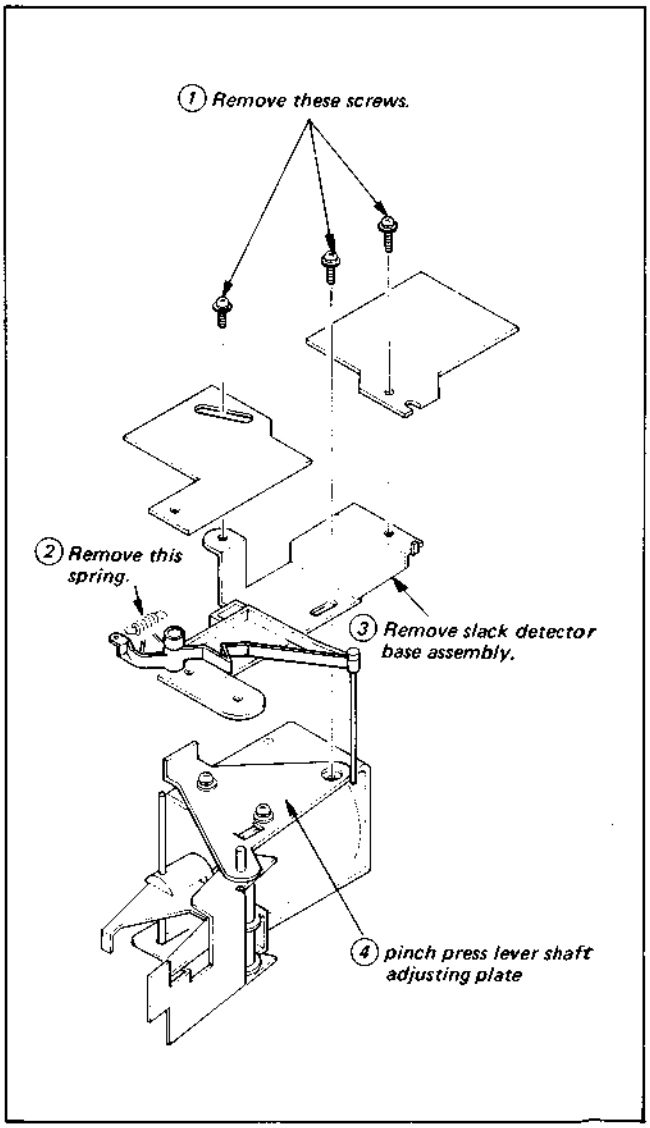


Fig. 3-31. Disassembly

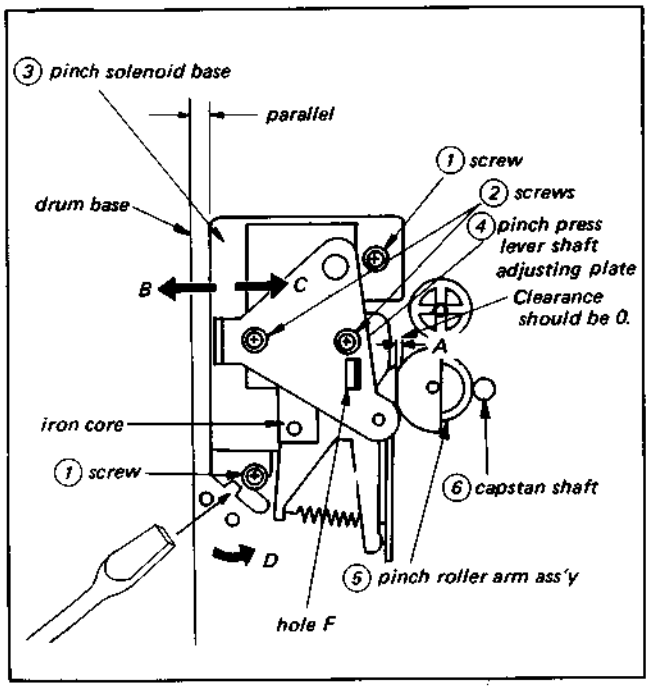


Fig. 3-32. Position adjustment of pinch roller solenoid

3-12-2. Position Adjustment of Pinch Solenoid

1. Check that "Parallelism Adjustment of Pinch Press Lever", Section 3-12-1, has been completed.
2. Loosen the two screws (1) shown in Fig. 3-33 by 1/3 to 1/2 turns.
3. Insert the cassette (L-500) and set up the PLAY mode.
4. Insert the standard blade-tip screwdriver as shown in Fig. 3-33. Move pinch solenoid base (2) in the arrow direction so that the specification at section B is satisfied, and tighten the two screws (1).

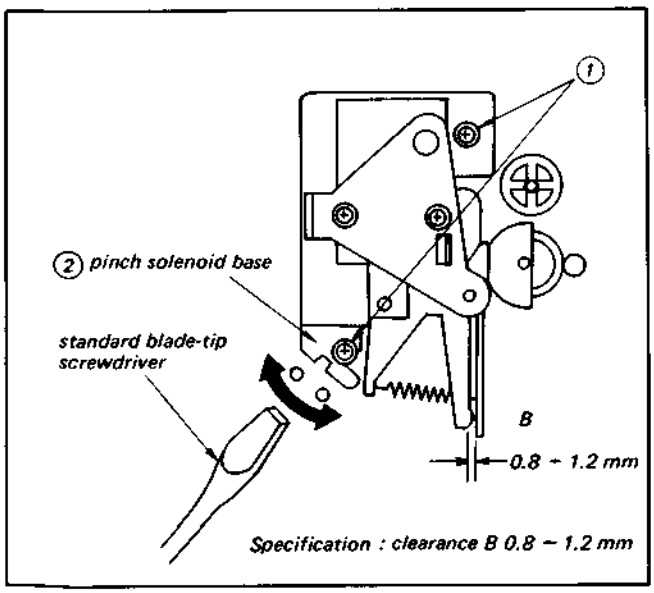


Fig. 3-33. Position adjustment of pinch solenoid

5. Tap the top and bottom of the tape around the capstan entrance and confirm that the specification shown in Fig. 3-34 is satisfied. If not, repeat Step 5 of Section 3-12-1, "Parallelism Adjustment of Pinch Press Lever".
6. Reverse Steps (1) to (3) shown in Fig. 3-31.

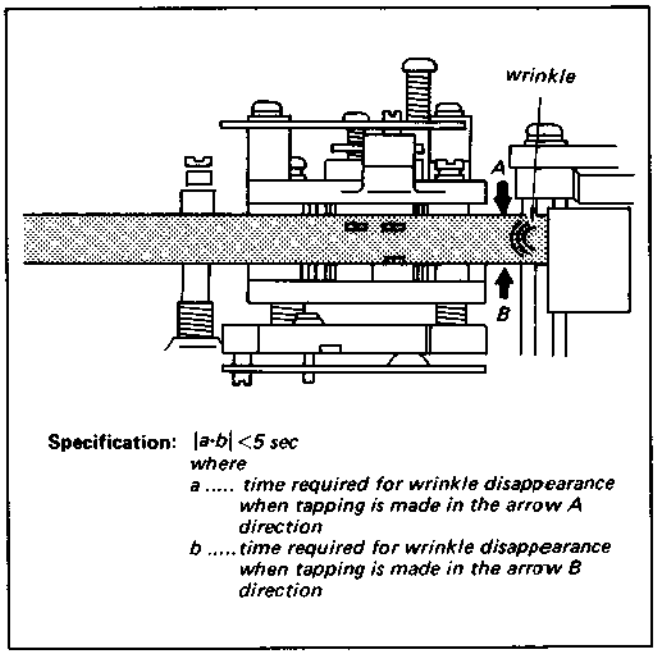


Fig. 3-34.

3-12-3. Position Adjustment of Slack Sensor Operation

1. Set up the STOP mode with the cassette. (Refer to Section 1-3.)
2. Loosen screw (1) and adjust the CN-5 board position to satisfy the specification shown in Fig. 3-35.

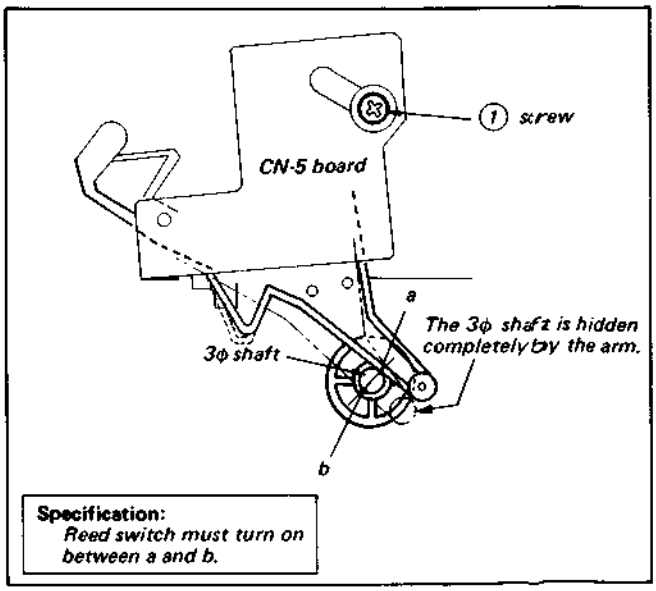


Fig. 3-35. Position adjustment of slack sensor operation

3-13. ADJUSTMENT OF BRAKE RELEASE STROKE

- The FB slide plate shown in Fig. 3-36 releases the take-up, the supply, and the soft brakes.

1. Place the machine without the cassette into the STOP mode. (Refer to Section 1-3.)
2. Bend section E of FB slide plate (2) so that the specification (0.5 to 1mm) of section C when brake release arm (1) is pushed in the direction of arrow D so that the clearances at sections A and B are eliminated.
3. Set up the PLAY mode and check that the take-up, the supply, and the soft brakes are released.

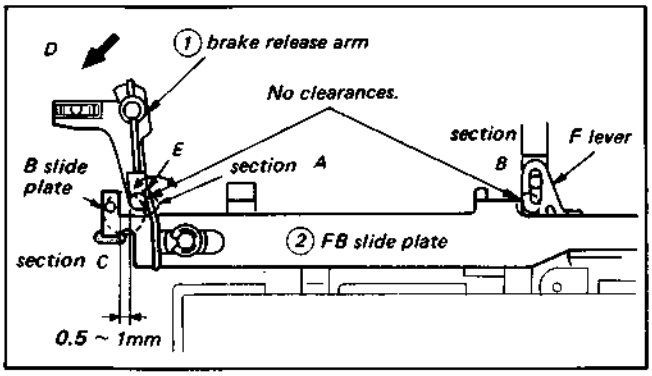


Fig. 3-36. Position adjustment of FB slide plate

3-14. POSITION ADJUSTMENT OF MICROSWITCH

3-14-1. Position Adjustment of Threading End Switch

- Prior to this adjustment, the following adjustments must be completed.

  3-9-5. Clearance adjustment of cassette lift assembly arm
  3-9-6. Clearance adjustment of ring arm
  3-9-7. Check of unthreading completion

1. Turn the threading ring by hand and stop it at the point immediately before the threading completion position.
2. Loosen screw (4) and adjust the position of microswitch (3) so that microswitch (3) turns on before gear pulley hold arm (1) moves from the groove of lock arm (2), while turning the threading ring counterclockwise (↺) slowly by hand. Confirm the turning-on of the microswitch with a click.
3. Adjust the position further so that the clearance between the actuator of microswitch (3) shown in Fig. 3-37 and the microswitch satisfies the specification (0.7mm to 1.0mm) when the threading ring is turned counterclockwise (↺) beyond the threading completion point.
4. Repeat Steps 2 and 3 for confirmation.

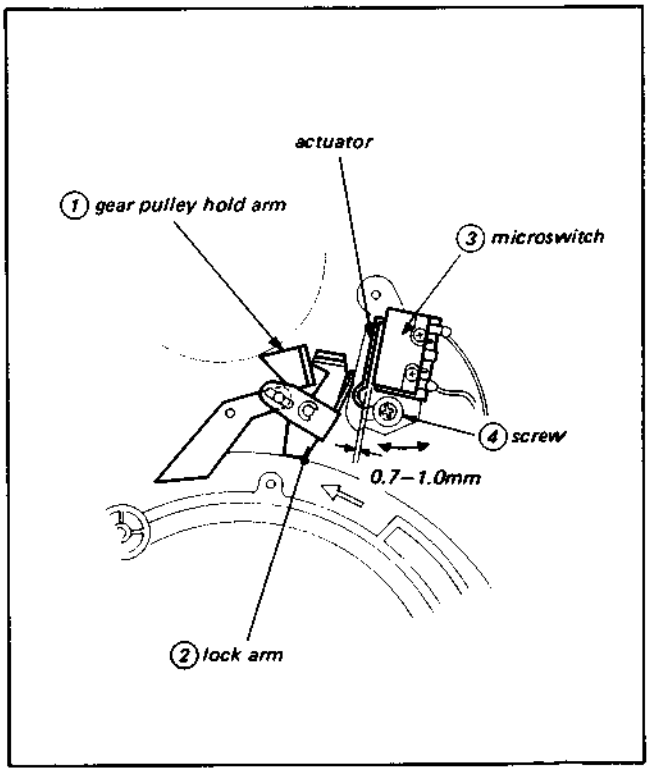


Fig. 3-37. Position adjustment of threading end switch

3-15. CHECK OF TAKE-UP TORQUE

- Since sufficient take-up torque cannot be obtained at the last section of the tape if the take-up torque is below the specified value, tape slackness is caused at the capstan shaft point and sometimes the slack sensor operates.
- The take-up torque tends to increase gradully due to aging.

1. Rewind the tape a little and set up the PLAY mode (for the playback of the very last section of the tape) after the auto-stop at the tape end in the FAST FWD mode. Confirm that the tape runs without any slackness at the capstan shaft area. If the tape slackens, perform the following adjustments.
2. Clean the take-up reel table assembly, the FWD idler assembly, and the FWD belt with a piece of cloth dampened with isopropyl alcohol.
3. Stop the operation of the slack sensor. (Refer to section 1-4.)
4. Attach the reel table tension gauge (Tool Kit Ref. No. J-5) on the take-up reel table as shown in Fig. 3-38.
5. Pull out the string from the reel table tension gauge about 30 cm (12 inches) and hook the sector type tension gauge (50g full scale, Tool Kit Ref.No. J-7) on the end of string.
6. Set up the PLAY mode.
7. Bring the sector type gauge toward the take-up reel table at a speed of approx. 2cm/sec. (8 inch/sec.) as shown in Fig. 3-38. Confirm that the gauge reading is within the specification. If not, replace the FWD limiter assembly and make the check again.

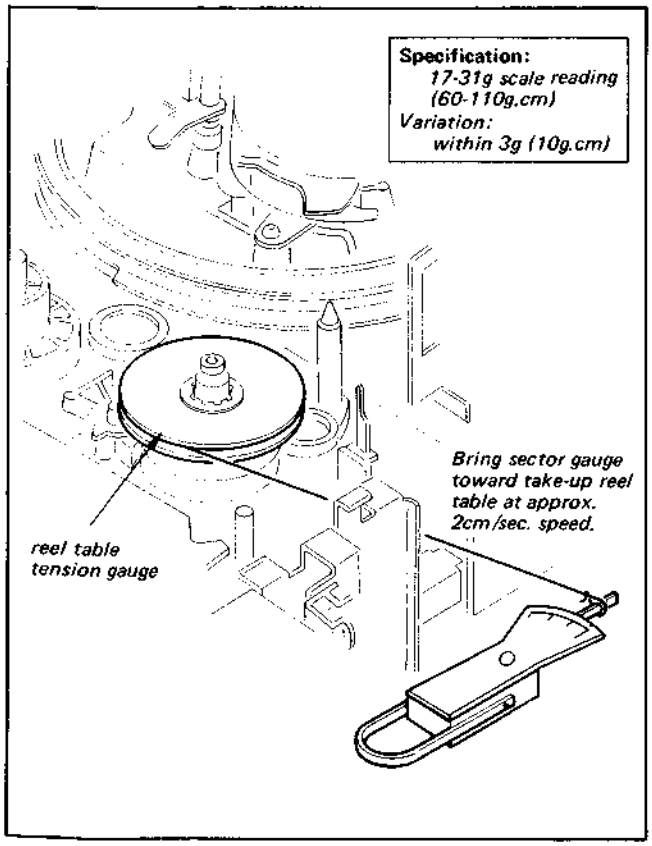


Fig. 3-38. Check of take-up torque

3-16. CHECK OF CASSETTE EJECT TORQUE

- The tape is taken up by the take-up reel table in the cassette EJECT mode. The take-up reel table is driven via the belt by the DC motor, while the threading ring unthreads.
- If the cassette eject torque is below the specification, only the threading ring performs the unthreading operation while the tape is not pulled back into the cassette, and the tape can be damaged.

1. Clean the take-up reel table, the E idler assembly, and the EJECT belt with a piece of cloth dampened with isopropyl alcohol.
2. Attach the reel table tension gauge (Tool Kit Ref. No. J-5) as shown in Fig. 3-39.
3. Pull out the string of the gauge about 30 cm (12 inches) and hook the sector type gauge (50g full scale, Tool Kit Ref. No. J-7) on the end of the string.
4. Set up the EJECT mode.
5. Bring the sector type gauge toward the take-up reel table at a speed of approx. 2cm/sec. during the unthreading as shown in Fig. 3-39. Confirm that the gauge reading is within the specification. If not, replace the E limiter assembly (X-3659-301-0) of the threading unit section and make the confirmation again.

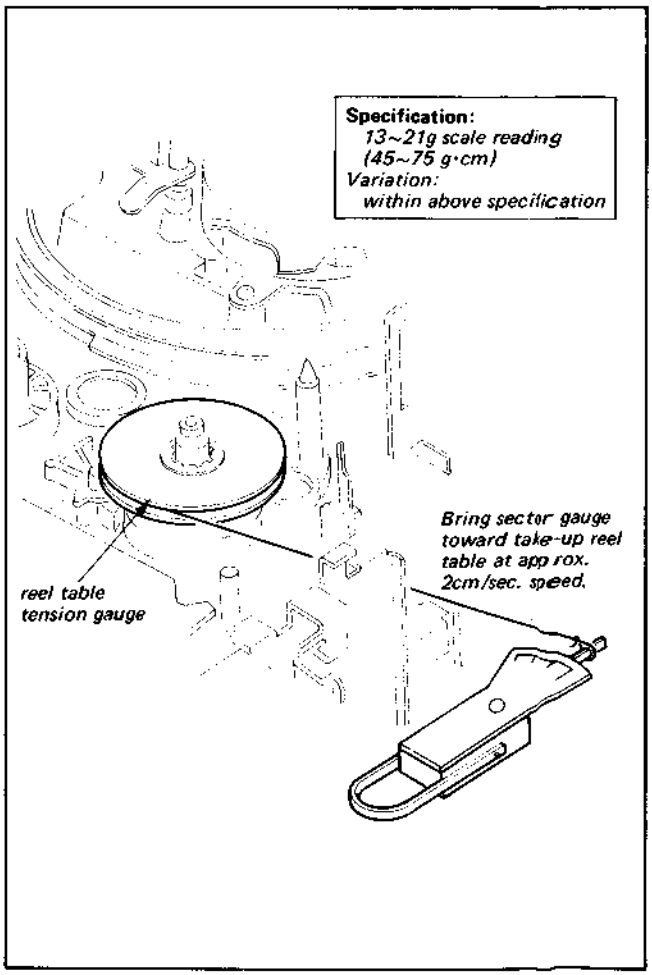


Fig. 3-39. Check of cassette eject torque

3-17. CHECK OF BRAKE TORQUE

- This machine has the supply brake, take-up brake, soft brake, and pause brake to stop the taking-up of the tape in the PAUSE mode. These brakes operate as follows.

Reel table ass'y / Mode	Supply side	Take-up side
Cassette EJECT mode	Supply and soft brakes are ON.	Only take-up brake is ON.
Threading mode	Only soft brake is ON. (It is normal that the supply reel rotates a little, supplying tape.) Soft brake torque; 15 to 30 g.cm. Reel table rotational direction is CW (↻).	Free (Tape is supplied from take-up side.)
STOP mode	Supply and soft brakes are ON. Reel table rotational direction CW (↻): 100 to 500g.cm Reel table rotational direction CCW (↺): 40 to 130g.cm	Only main brake is ON. Reel table rotational direction CW (↻): 20 to 60g.cm Reel table rotational direction CCW (↺): 60 to 500g.cm
FF mode	Only soft brake is ON.	Free (Tape is taken up to take-up side.)
REW mode	Free	Free
PLAY mode	Only FWD back tension brake band is ON.	Free (Tape is taken up to take-up side.)
REC PAUSE mode & PLAY PAUSE mode	FWD back tension brake is ON.	Take-up and pause brakes are ON.
Unthreading mode	Only soft brake is ON. (It is normal that supply reel rotates a little, supplying tape.)	Free (Tape is taken up to take-up side.)

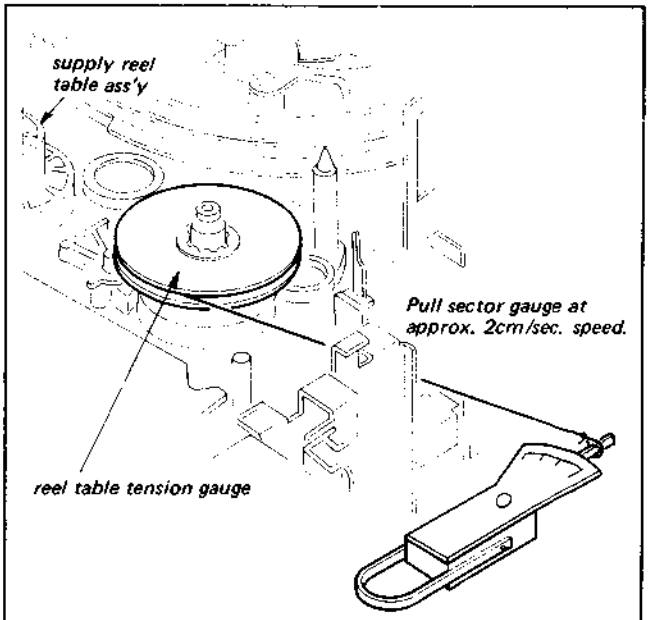
3-17-1. Check of Supply and Take-up Brake Operations

- When the tape slackens in when the mode is changed to STOP from PLAY and to STOP from REWIND, perform the check and adjustment, following the steps below.
- Since the slackness tends to occur when a wound diameter of the tape on a reel table is small, the check must be made in such a state.

1. Insert the cassette and set up the initial state of taking-up of the tape. (Rewind the tape and cue its beginning.)
2. Repeat the operation, changing the mode from PLAY to STOP two or three times and confirm that there is no tape slackness. If the tape slackens, perform steps 5 and 6 for adjustment.
3. Set-up the condition where the tape is about to be completely wound on the take-up reel. (Fast forward the tape and stop the tape movement at its end section.)
4. Repeat the operation, changing the mode from REWIND to STOP two or three times and confirm that no tape slackness occurs. If the tape slackens, perform Steps 5 and 6 for adjustment.
5. Remove the reel table assembly and clean the surface of the reel table assembly and the brake shoe with a piece of cloth dampened with isopropyl alcohol.
6. Clean the brake lining of the S and T brake with a piece of cloth dampened with isopropyl alcohol. If the tape still slacks even if the brake lining clean, replace them and perform the check again.

3-17-2. Check of Supply and Take-up Brake Torque

1. Set up the STOP mode without the cassette. (Refer to Section 1-3.)
2. Attach the reel table tension gauge (Tool Kit Ref. No. J-5) to the take-up reel table as shown in Fig. 3-40 and hook the sector type gauge (100g full scale, Tool Kit Ref. No. J-8) to the end of the string. Pull the sector type gauge at a speed of approx. 2 cm/sec. and read the gauge value.



Note: This figure shows the take-up torque check. For supply brake torque check, set reel table tension gauge on supply reel table.

Fig. 3-40. Check of supply and take-up brake torque

Specification

- When supply reel table ass'y rotates CW (↻): 100 to 500g.cm (Scale value is 29 to 143g.)
- When supply reel table ass'y rotates CCW (↺): 40 to 130g.cm (Scale value is 11 to 37g.)
- When take-up reel table ass'y rotates CW (↻): 20 to 60g.cm (Scale value is 6 to 17g.)
- When take-up reel table ass'y rotates CCW (↺): 60 to 500g.cm (Scale value is 17 to 143g.)

3-17-3. Check and Adjustment of Soft Brake Torque

1. Push the cassette detector lever by hand and release the lever during the threading. (In this condition, the supply and take-up brakes are released.)
2. Mount the reel table tension gauge (Tool Kit Ref. No. J-5) on the supply reel table as shown in Fig. 3-41 and hook the sector type guage (50g full scale, Tool Kit Ref. No. J-7) to the end of the string of the tension gauge.
3. Pull the sector type gauge at a speed of approx. 2cm/sec. and confirm that the gauge reading is within the specification. If the specification is not satisfied, change the position where the spring is hooked onto the soft brake and the F slide plate for adjustment and perform Steps 2 and 3.

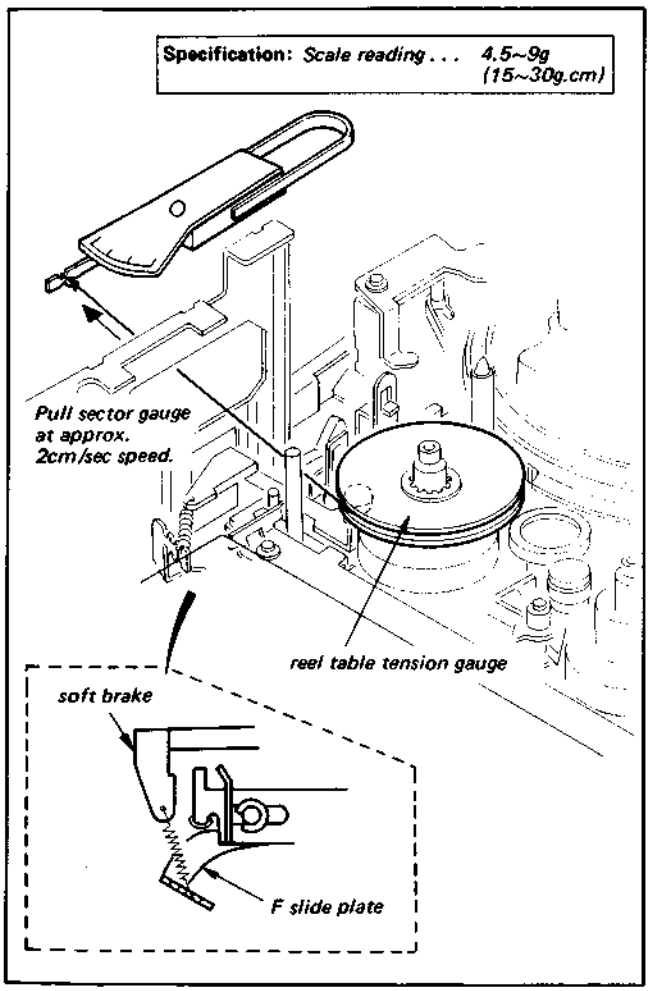


Fig. 3-41. Check of soft brake torque

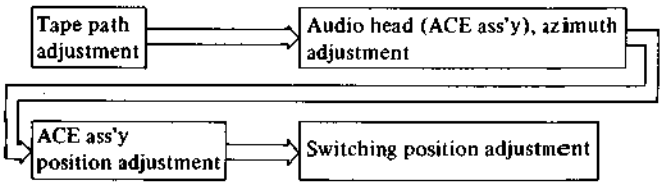
3-18. ADJUSTMENT OF FWD BACK TENSION

- The ideal measurement of the FWD back tension is to measure it under the same conditions as during the actual tape running state. The simple measurement procedure of the FWD back tension is described here. The measurement error due to the different measurement procedure is corrected in the specification.

1. Set up the STOP mode without the cassette. (Refer to Section 1-3.)
2. Place the FWD back tension jig (Tool Kit Ref. No. J-6) on the supply reel table assembly and thread the tape as shown in Fig. 3-42. Hook the sector type gauge (100g full scale, Tool Kit Ref. No. J-8) to the end of the tape.
3. Set up the PLAY mode.
4. Pull the sector type gauge at a speed of approx. 2cm/sec. and confirm that the gauge reading is within the specification. If not, perform Steps 5 and 6.
5. Loosen the screw mounting the BT adjusting plate and move the BT adjusting plate in the direction shown by the arrow for the adjustment.
6. Repeat Steps 2 to 4 again.

3-19. ADJUSTMENT OF TRACKING

- Sequence of tracking adjustment



[Preparation]

1. Fixtures and Tools Required:
   Alignment tape (KR5-1H)
   Dual trace oscilloscope
   Inspection mirror
   Methanol or Isopropyl Alcohol
   Chamois
   3 mm flat tip screwdriver
2. Oscilloscope connection

RF envelope waveform:	TP2005	RF-2b board
External trigger:	TP2003	RF-2b board
AUDIO OUT:	TP3406	AS-6b board
VIDEO OUT:	TP1017	YC-6b board
Switching waveform:	TP2003	RF-2b board

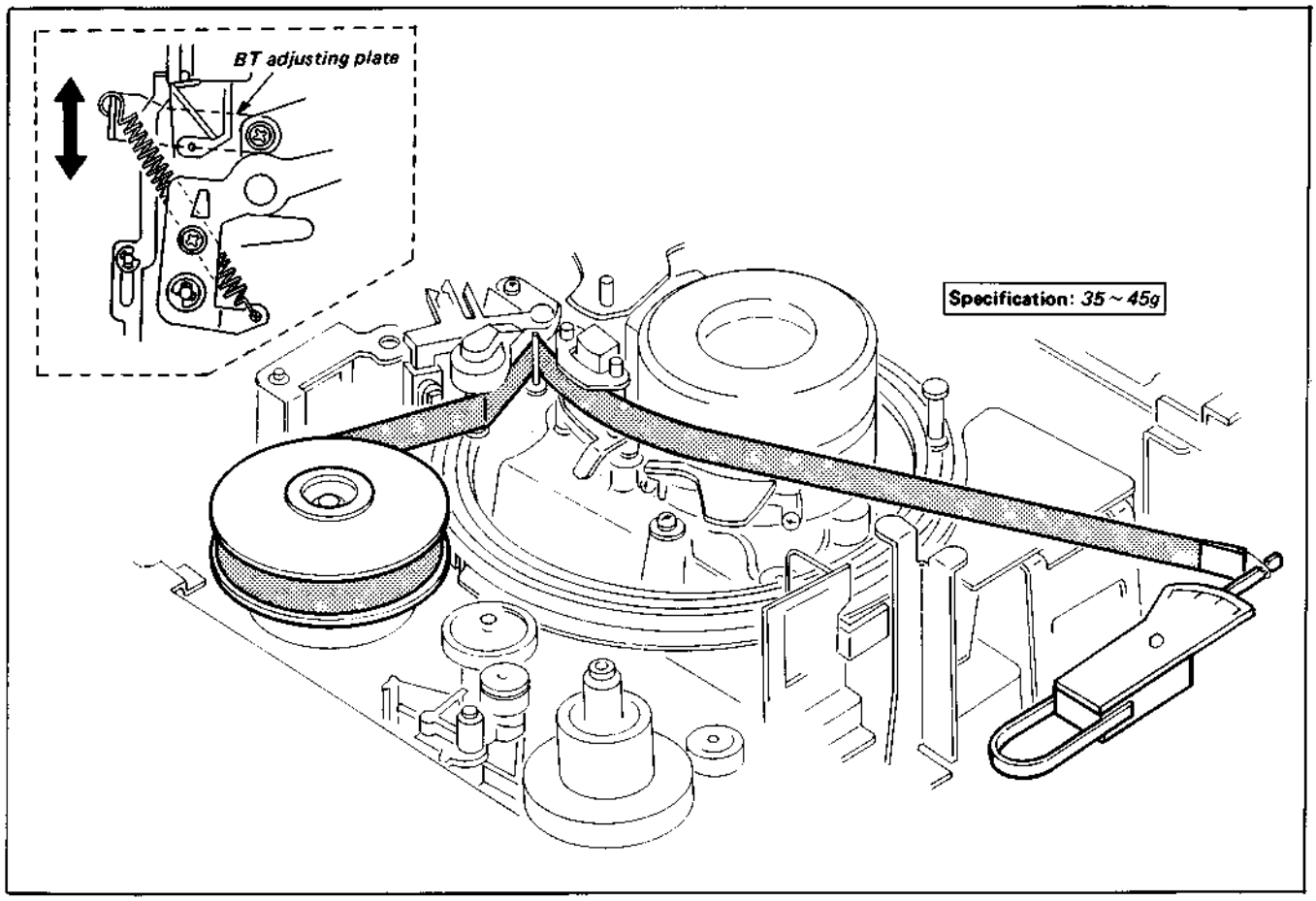


Fig. 3-42. Adjustment of FWD back tension

4. Location of circuit boards

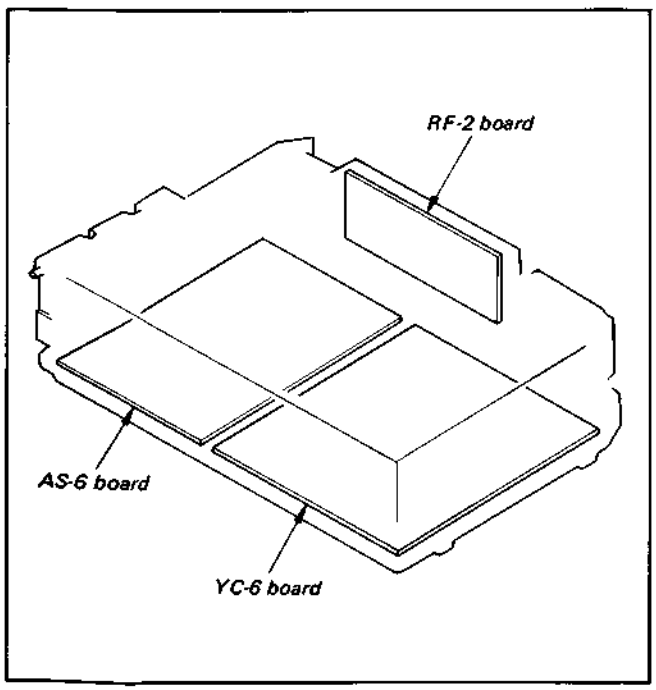


Fig. 3-43. Location of circuit boards

5. Location of tape guides

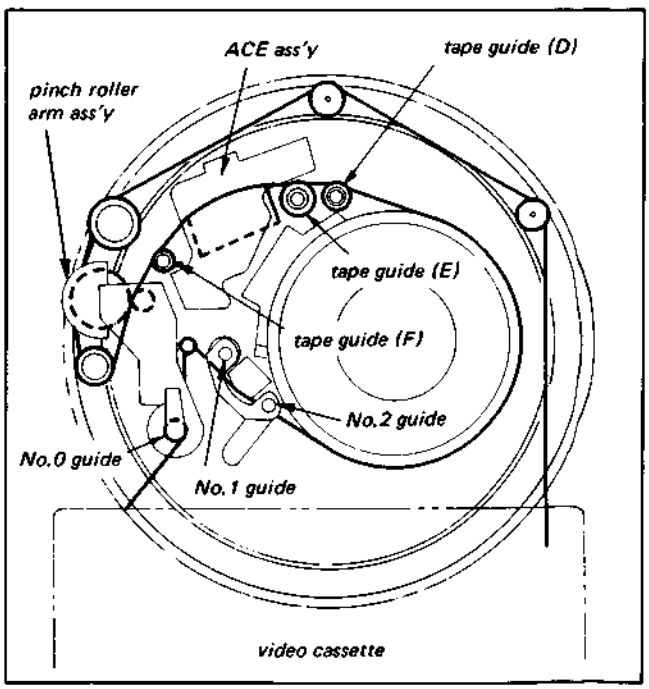


Fig. 3-44. Location of tape guides

3-19-1. Adjustment of Tape Path

- Perform this adjustment carefully because poor adjustment reduces tape interchangeability and picture quality.

1. Clean the tape movement faces (the tape guide, drum, capstan and pinch roller) with chamois dampened with methanol or isopropyl alcohol.
2. Connect the oscilloscope to TP-2005 on the RF-2 board and the external trigger to TP-2003.
3. Play back the 1 MHz segment of the alignment tape (KR5-1H).
4. Confirm that the RF output waveform envelope on the oscilloscope screen increases and decreases, while remaining flat, when the TRACKING control knob is turned to the left and the right from its center detent position. If the RF waveform does not increase and decrease while remaining flat, perform Step 6 for the adjustment.

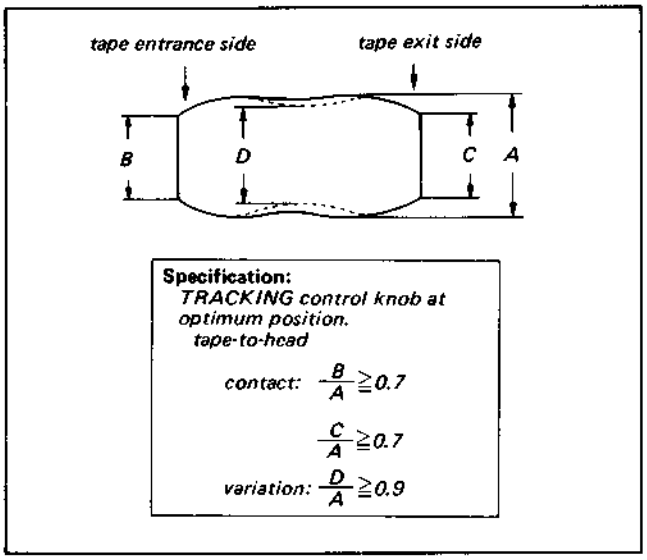


Fig. 3-45. Adjustment of tape path

5. Confirm that the fluctuation and the tape-to-head contact satisfy the specification shown in Fig. 3-45. If they do not, perform Step 6 for the adjustment.

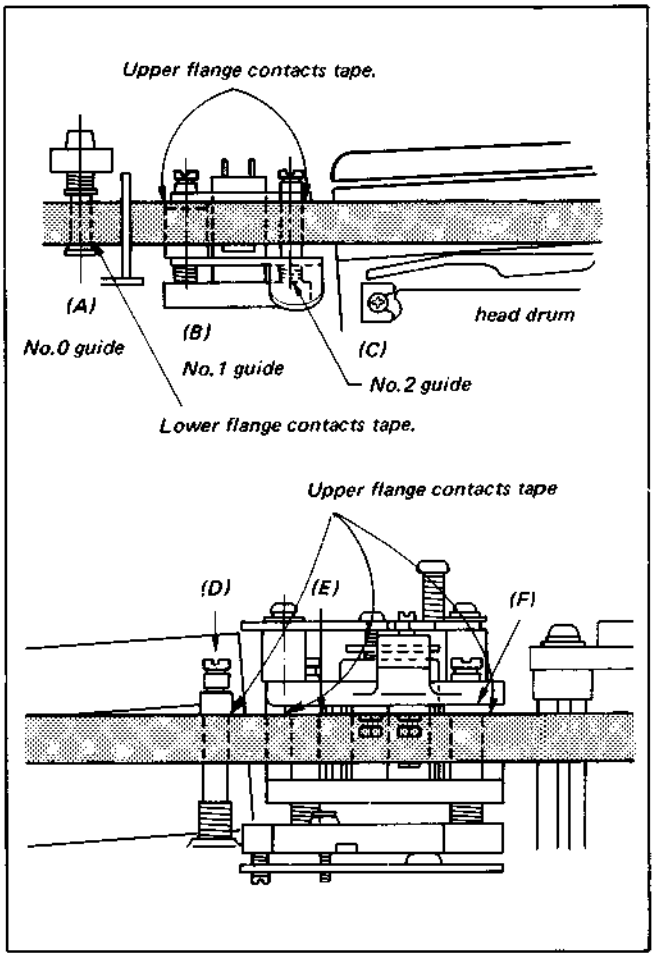


Fig. 3-47. Adjustment of tape path

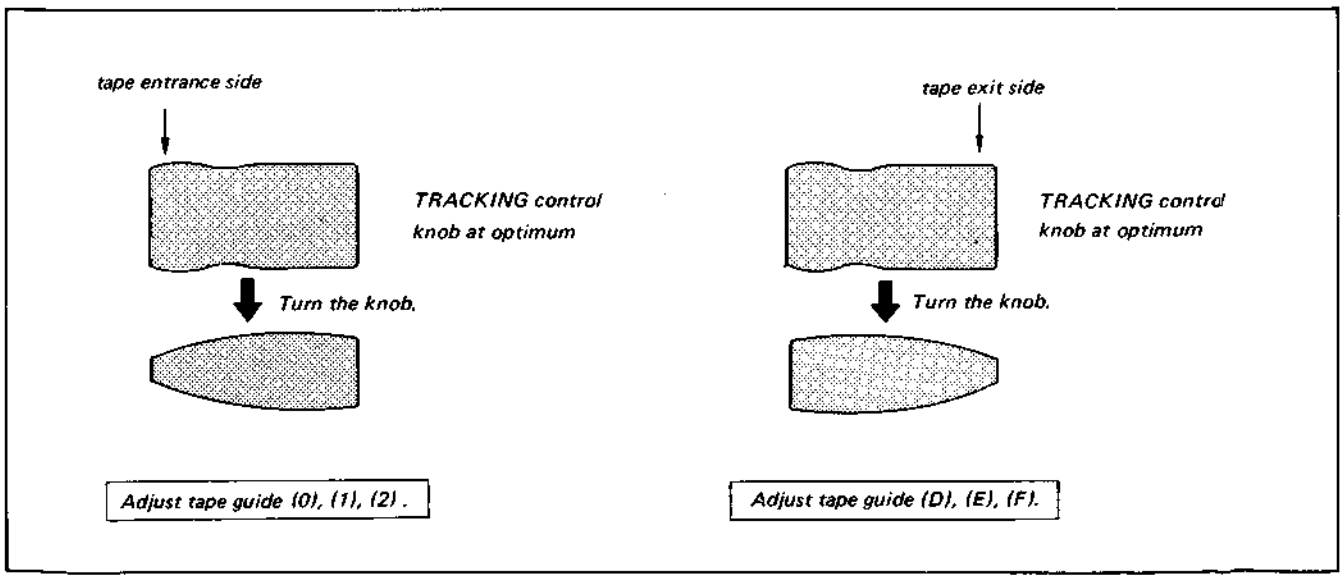


Fig. 3-46. Adjustment of tape path

6. When the waveform at the tape entrance side is not flat as shown in Fig. 3-46 for the clockwise and counterclockwise turning of the TRACKING control knob from center, detent position, adjust the heights of tape guides (0), (1), and (2). When the waveform at the tape exit side is not flat, adjust the heights of tape guides (D), (E), and (F). The height adjustment must be performed so that the tape contacts the drum heads, and there is a minimum curl (not more than 2 mm) at the flange of each tape guide, the upper or lower flanges contact the tape as shown in Fig. 3-47, and the RF waveform is flat.

Note: The construction of the ACE assembly enables the assembly to be adjusted so that its top plate is perpendicular to the face of the moving tape as a whole, but this "Zenith" adjustment is not necessary except after ACE assembly replacement.
Since tape guide (D) regulates the movement of the tape around the drum exit, raise tape guide (D) about 0.5 mm before the adjustment of the tape path on the exit side. Then lower tape guide (D) to the point immediately before the RF waveform varies, and with less than 2 mm curl after the tape path adjustment.

3-19-2. Adjustment of Exit Side Tracking after ACE Assembly Replacement

1. The ACE assembly can be removed if the three screws shown in Fig. 3-48 are removed

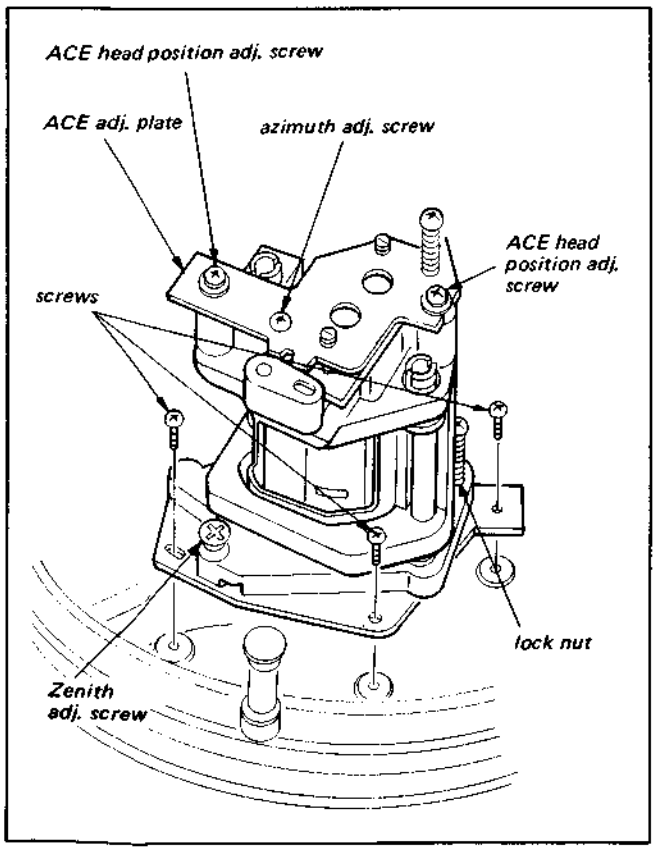


Fig. 3-48. Removal of ACE assembly

2. Perform the adjustment following Step 3 after the completion of the replacement.
3. Raise the tape guide (D) shown in Fig. 3-47 by 0.5 mm. (Turn the nut one turn.)
4. Play back the 1 MHz segment of the alignment tape (KR5-1H). Confirm that the RF wave output (see Fig. 3-45) satisfies the specification and there is a minimum curl (not more than 2 mm) on the tape edge contacting the tape guide. Confirm that the RF waveform varied from the flat state when the tape guides (E) and (F) are raised and adjust the heights of the tape guides so that the waveform output becomes flat.
5. When the waveform does not vary if the tape guides (E) and (F) are raised in Step 4 or when the waveform does not become flat if the tape guides are lowered, perform the adjustment, following the procedure below.
   (i) Loosen the lock nut shown in Fig. 3-48.
   (ii) Turn the zenith adjusting screw counterclockwise (↺) a little more than 30 degrees and turn it clockwise (↻) until the screw returns to the point 30 degrees counterclockwise from its original point.
   (iii) Perform Step 4 again. If the specification is not satisfied, perform Step 5 again. Since the ACE assembly was adjusted perpendicularly when assembled at the factory, do not turn the zenith adjusting screw more than 60 degrees to the right and left from the original position.
   (iv) After the adjustment, tighten the lock nut until a slight resistance for the tightening is felt and confirm that the specification in Step 4 is satisfied.
6. When there is an edge curl at the tape contacting the tape guide in Step 4, perform the adjustment, following the procedure below.
   (i) Loosen the lock nut shown in Fig. 3-48.
   (ii) Tighten the zenith adjusting screw clockwise only 15 degrees.
   (iii) Perform Step 4 again. If the specification is not satisfied, perform Steps 5 and 6 again, but do not turn the zenith adjusting screw to the right and left more than 60 degrees from its original position.
   (iv) Tighten the lock nut until a slight resistance is felt after the adjustment. Confirm that the specification in Step 4 is satisfied.

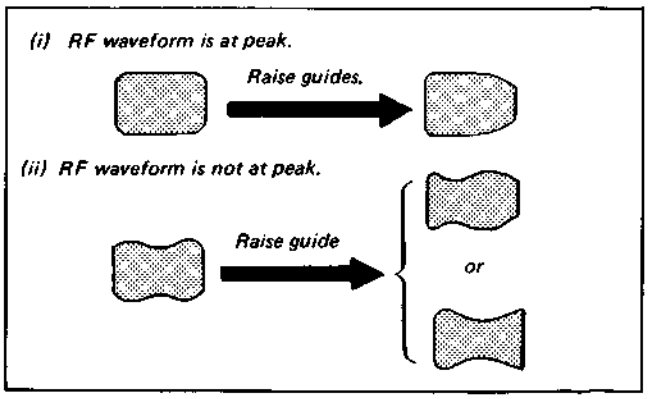


Fig. 3-49. Adjustment of exit side tracking after ACE assembly replacement

3-19-3. Audio Head Azimuth Adjustment

[Connection of Relative Equipment]

The connections of the equipments to the input/output terminals are shown in Fig. 3-50.

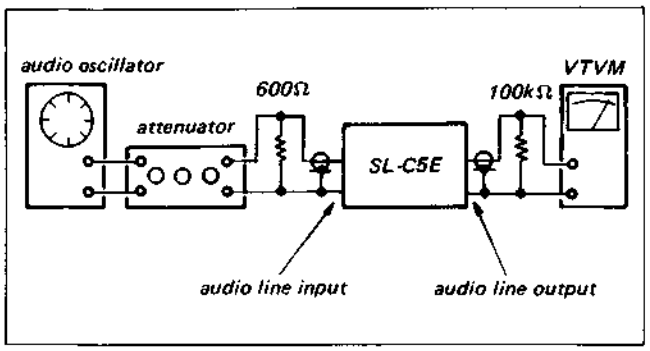


Fig. 3-50. Connections

1. Terminate the audio line output terminal with a 100 kΩ resistor and connect a VTVM.
2. Play back the 5 kHz signal segment of the alignment tape.
3. Adjust the azimuth adjustment screw on the audio head for a maximum VTVM reading. (See Fig. 3-50).

   Note: Loosen azimuth adjustment screw before the adjustment and tighten it after the completion.

3-19-4. Position Adjustment of ACE Assembly

- This adjustment includes the mechanical head mounting position adjustment and the electrical tracking control center adjustment.
- The adjustment sequence is to perform the tracking control center adjustment and then the mechanical adjustment of the head mounting position. If this sequence is reversed, poor tracking occurs.

1. Connect a dual-trace oscilloscope as follows.

   CH-1 . . . . . TP-2005 (RF-2 board)
   CH-2 . . . . . TP-3406 (AS-6 board)
   Ext trigger . . . . . TP-2003 (RF-2 board)

2. Play back the 1 MHz segment of alignment tape KR5-1H. (See Fig. 3-51).
3. Set the tracking control to the center, detent, position and confirm that the output waveform level is maximum and the 0 level point of the audio signal appears at the Bch waveform point as shown in Fig. 3-51. If the specification is not satisfied, perform the following Step 4.

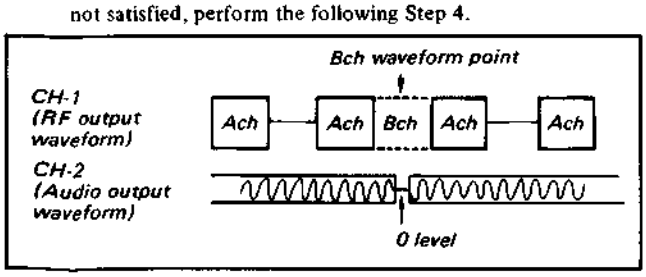


Fig. 3-51. Position adjustment of ACE assembly (1)

4. Perform the tracking control center adjustment. [Refer to section 4-3-2(2)].
5. Set the TRACKING control knob to its center detent point and play back the 1 MHz segment of the alignment tape (KR5-1H).
6. Loosen the two position adjusting screws of the ACE head and adjust the cut-out section of section A for maximum RF output waveform and a 0 level of audio signal at the Bch waveform point. (See Fig. 3-51).

   Note: Perform the adjustment so that the center of the cut-out section of the A section will almost match the center of the round hole.

7. Play back the 1 MHz segment of the alignment tape and confirm the proper picture appearance.
8. Tighten the position adjusting screw of the ACE head.

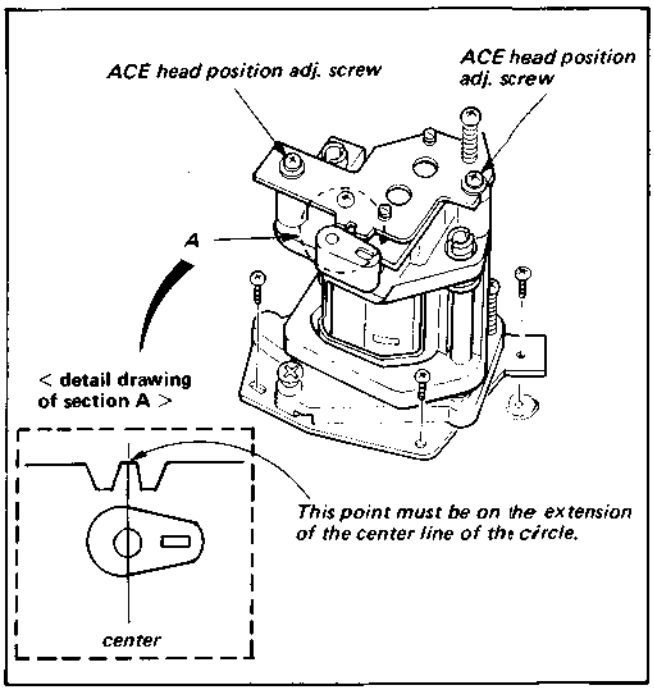


Fig. 3-52. Position adjustment of ACE assembly (2)

3-19-5. Video Head Dihedral Adjustment

- Generally this adjustment is not necessary except after the video head disk replacement.

  Note: The dihedron of a video head disk for replacement purposes was adjusted precisely with a microscope at the factory and the readjustment is usually not necessary.

- The ACE assembly position adjustment has been completed prior to this dihedral adjustment.
- The judgment of the video head dihedron must be performed in the condition that the monoscope signal segment of the alignment tape (KR5-1H) is played back and the TRACKING control knob is set to the center detent position. (See Fig. 3-53.)

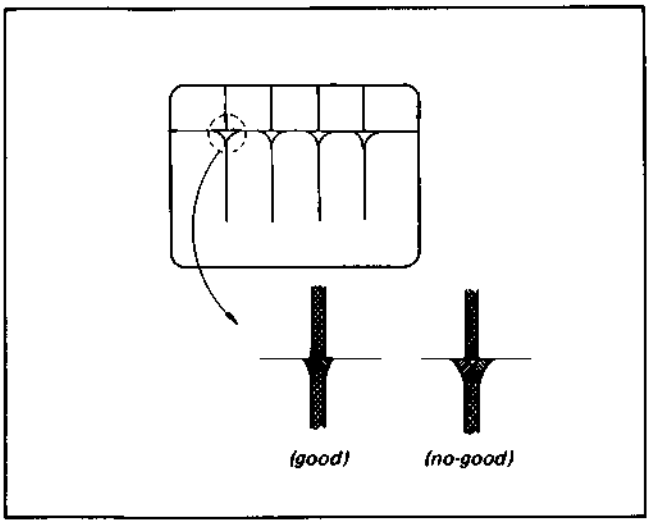


Fig. 3-53.

- When the dihedron is no-good, the preparation of the video head dihedral adjustment is to install two dihedral adjusting screws in the holes close to the small mark (•) shown in Fig. 3-54 and tighten them until the screw heads are level with the top surface of the video head disk. (If the screws are not tightened until their heads become level with the surface, the upper drum of the video head disk is caught by the adjusting screw heads and the video head disk cannot rotate. If the screws are tightened excessively, the head base is moved and the dihedral distortion becomes larger.)

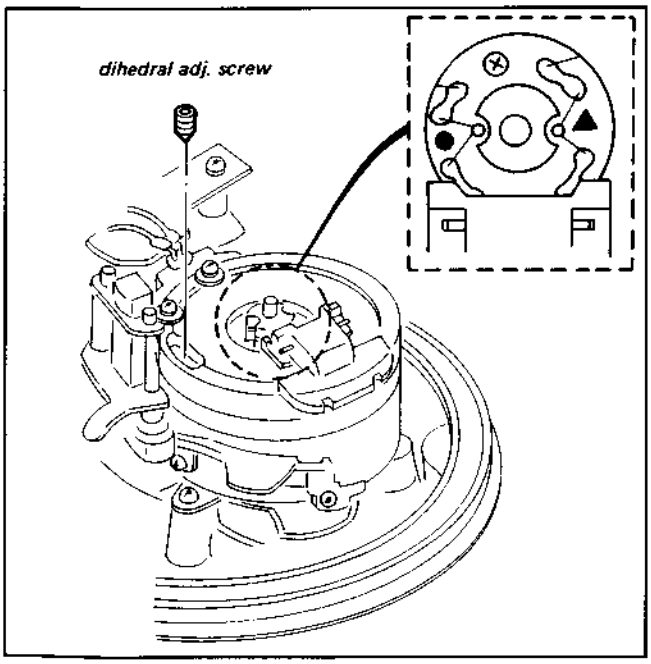


Fig. 3-54.

When the dihedron is no-good;

(1) When the split becomes small for the clockwise turn of the TRACKING control knob, the B head shifts by C in the arrow direction as shown in Fig. 3-55 and is tracing the magnetic pattern on the tape. The adjusting screw in adjustment hole E shown in the figure must be tightened further to shift the B head in the left direction until the good dihedron shown in Fig. 3-53 is obtained.
Set the TRACKING control knob to the center detent point.

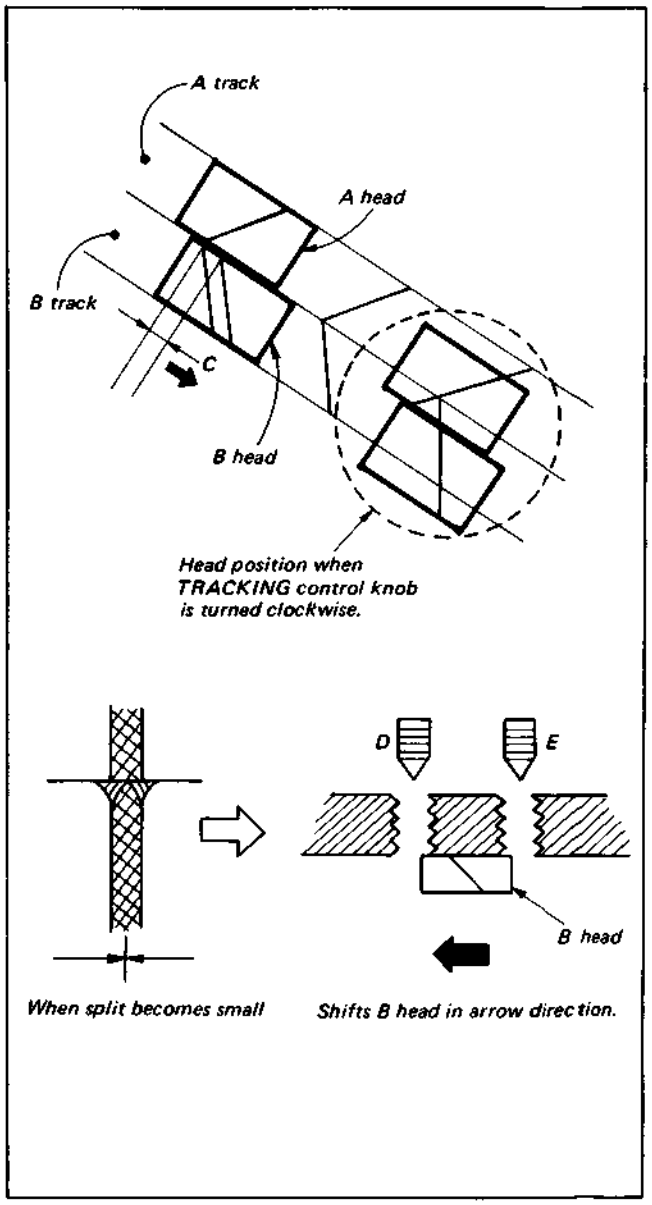


Fig. 3-55.

(2) When the split becomes large for the clockwise turn of the TRACKING control knob, the B head shifts by C in the arrow direction as shown in Fig. 3-56 and is tracing the magnetic pattern. The adjusting screw in adjustment hole D shown in the figure, must be tightened further to shift the B head in the right direction until the good dihedron shown in Fig. 3-53 is obtained.
Set the TRACKING control knob to the center detent point.

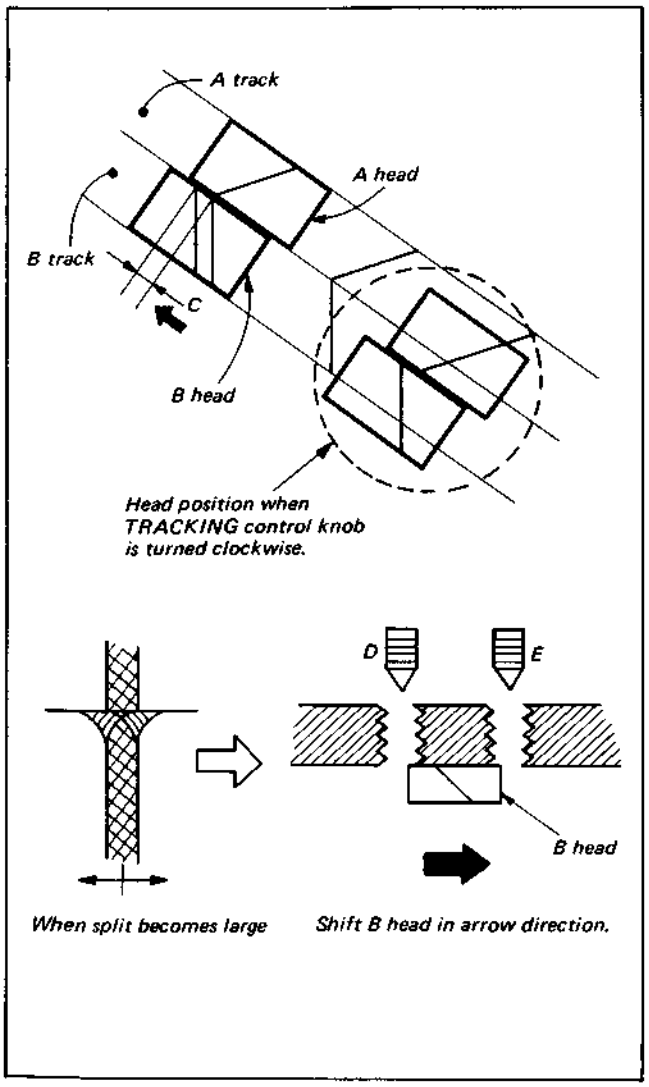


Fig. 3-56.

(3) Remove the adjusting screws after the completion of the adjustment and check the dihedron again.

SECTION 4
ELECTRICAL ALIGNMENT

All the electrical alignment can be performed by using the equipment mentioned below, the alignment tape, and the PAL colour bar signal (100%).

[Equipment Required]

(1) Colour Monitor TV

(2) Oscilloscope, Dual-trace, Bandwidth . . . more than 10 MHz with delay mode

(3) Frequency Counter

(4) PAL Colour-Bar Generator

(5) Digital voltmeter

(6) VOM (20 KΩ/V)

(7) Audio Signal Generator

(8) Attenuator

(9) Alignment Tape, type: KR5-1H, Code No. 8-969-995-91

(10) Alignment Tool (Adjusting screwdriver for semi-fixed resistors and coils)
Jig No. SL-0001, Code No. J-6080-001-A

[Setup for Alignment]

The antenna should be connected correctly to the antenna input terminal of the videocassette recorder.

It is important that the video output signal satisfies the specification because the telecast signal received by the incorporated tuner of the videocassette recorder is utilized as the adjustment signal of the machine. The incorporated tuner should be set to the channel with the best reception. The video signal should be checked with an oscilloscope connected to TP-15 on the YC-6 board. Verify that the sync signal amplitude is approx. 0.3 Vp-p and the video signal amplitude is approx. 0.7 Vp-p at peak. Adjust the fine tuning while observing the signal and the TV screen so that the burst signal amplitude becomes approx. 0.3 V ± 0.1 Vp-p. Also confirm that there is no spikes observed at the sync signal portion. (See Fig. 4-1.)

The video (colour bar) signal for the alignment is shown in Fig. 4-1.

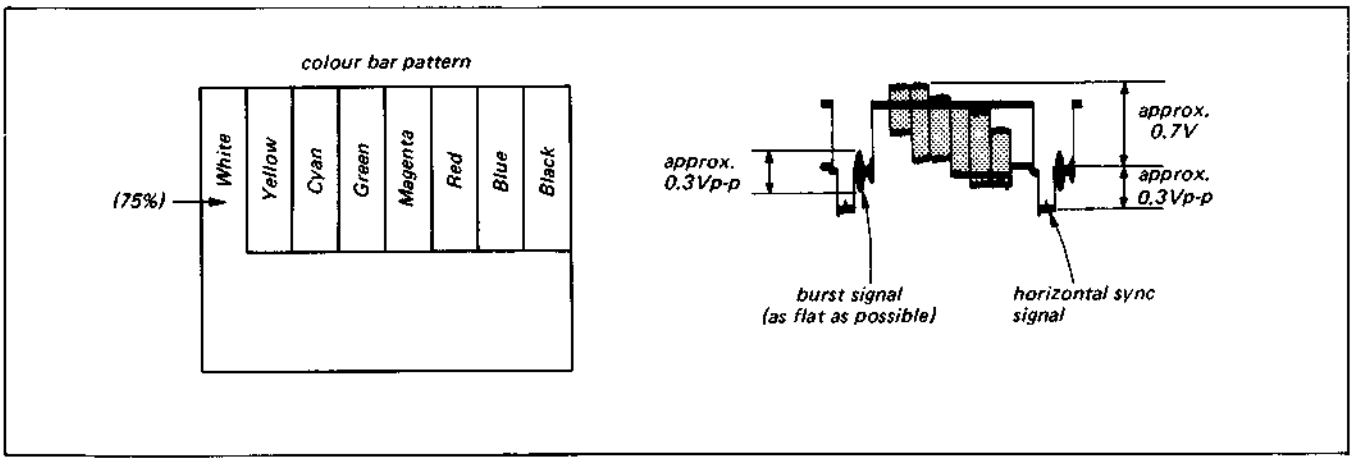


Fig. 4-1. Video (colour bar) signal

[Alignment Tape]

KR5-1H

	Video signal	Audio signal	Playing time	Use for
1.	Colour bars	3 kHz – 5 dB	5 min	General performance, tape speed checks, switching position adjustment.
2.	Monoscope	333 Hz – 25 dB	5 min	Video head dihedral, audio level adjustment.
3.	RF sweep	5 kHz – 25 dB	5 min	Video, audio frequency characteristics, audio azimuth adjustment marker: 1, 2, 3.58, 4.5, 5.2 MHz
4.	Tracking 1 MHz (CH-A) *1 (Channel B is inserted in every 3 frames.)	1 kHz – 5 dB *2 (Signal is dropped out in the positions where channel B is inserted.)	5 min	Tracking, Audio height adjustments CTL Position check (Check if *1 and *2 are the same position.)

[Alignment Tool for Semi-fixed Variable Resistors and Coils]

Semi-fixed variable resistors and inductances should be adjusted with the alignment tool exclusively prepared for the adjustment of the components. A common screwdriver is too large for adjusting the components from the conductor side of a printed cricuit board.

The metal blade of the alignment tool is used for variable resistors and trimmer capacitors and the plastic tip is used for variable inductances.

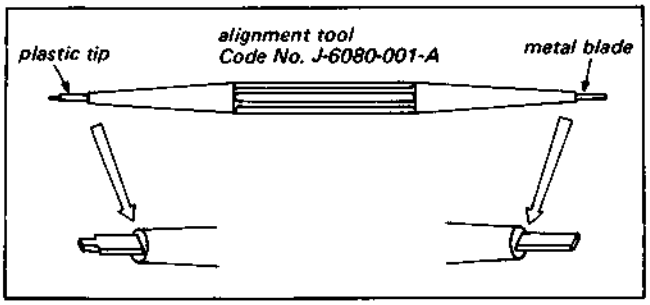


Fig. 4-2. Alignment tool

[Required Levels and Impedances of Input and Output]

VIDEO

Input ..... VIDEO IN: BNC connector
1.0 Vp-p, 75 ohms
unbalnced, sync negative

Output ..... VIDEO OUT: BNC connector
1.0 Vp-p, 75 ohms
unbalanced, sync negative

AUDIO

Input ..... AUDIO IN: Phono connector, 47 kohms, −10 dBs
MIC: mini jack, −60 dBs, suitable for microphone with 600-ohm impedance

Output ..... AUDIO OUT: Phono connector, Less than 10 kohms, −5 dBs (47 kohm load), unbalanced

[Colour Bar Signal]

The 100% colour bar signal recorded on the Alignment tape is shown in Fig. 4-3.

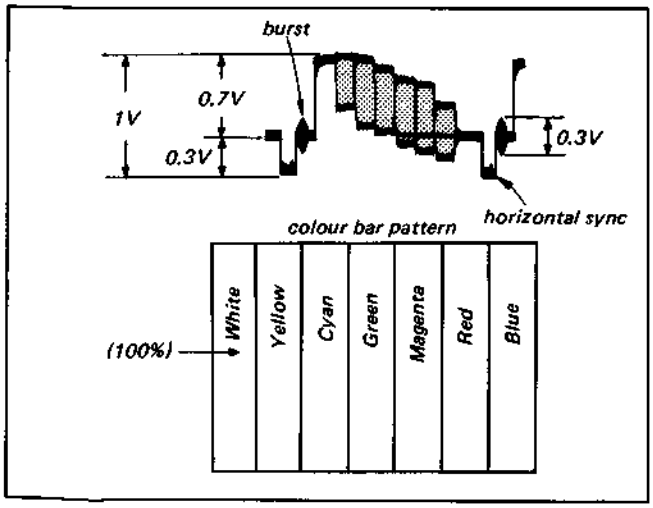
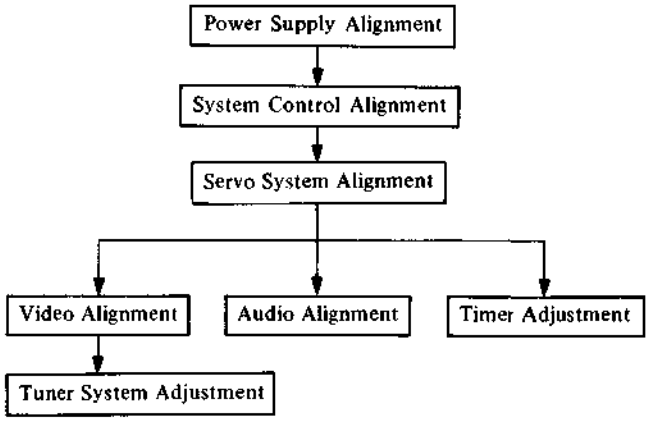


Fig. 4-3. Colour bar signal recorded on the alignment tape

[Alignment Sequence]

The alignment should be performed following the sequence below.



4-1. POWER SUPPLY ALIGNMENT AND CHECK (PS-15 board)

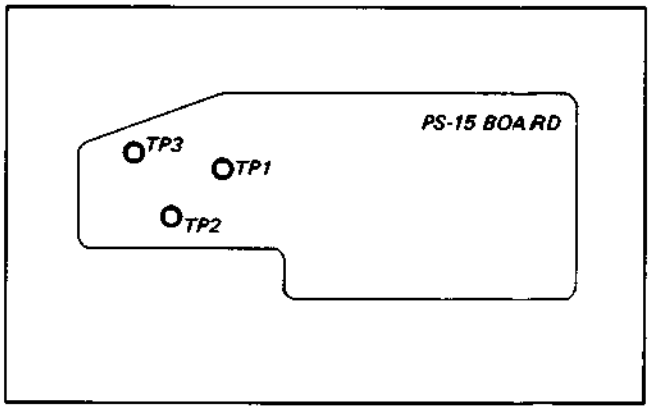


Fig. 4-1-1. Test point

1. REG 12V Adjustment
   (1) Check that the input voltage is the rated voltage ± 10%.
   (2) Connect the VOM to TP1.
   (3) Adjust RV001 for a 12V ± 0.1 V reading.
2. +12V Check
   (1) Connect the VOM to pin 1 of CN2.
   (2) Check that the voltage is 12V ± 0.5V.
3. SYS 12V Check
   (1) Check that the voltage at TP1 is 12V.
   (2) Connect the VOM to TP3.
   (3) Check that the voltage is 12V ± 1V.

4-2. SYSTEM CONTROL ALIGNMENT AND CHECK (SY-15 board)

1. Clock Oscillating Frequency Adjustment (SY-15 board)

   (1) Connect the frequency counter to pin 42 of IC6.

   Note: The input impedance of the frequency counter should be more than 10 MΩ.

   (2) Adjust T1 for 400 kHz ± 0.5 kHz. (See Fig. 4-2-1.)

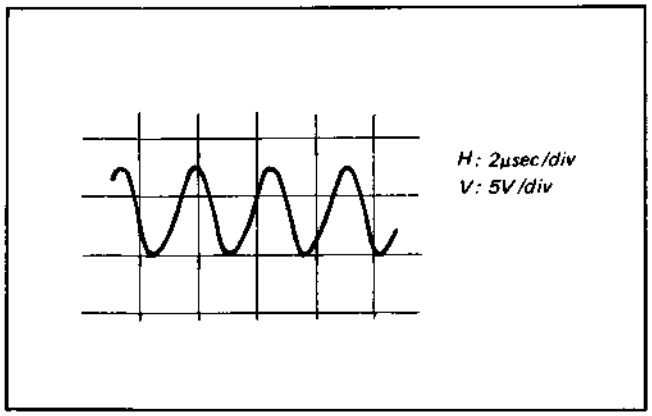


Fig. 4-2-1. Adjustment of clock oscillating frequency

2. Clock Oscillating Frequency Adjustment (SY-15 board)

   (1) Connect the frequency counter to pin 42 of IC7.

   Note: The input impedance of the frequency counter should be more than 10 MΩ.

   (2) Adjust T2 for 400 kHz ± 0.5 kHz. (See Fig. 4-2-1.)

3. Threading Check

   (1) Load a cassette.

   (2) Check that the threading is performed.
   Threading time: about 3 seconds

4. Unthreading Check

   (1) Press the EJECT button.

   (2) Check that the unthreading is performed as soon as the EJECT lamp turns on, the lamp turns off after the completion of the unthreading, and the cassette lift assembly rises.
   Unthreading time: about 4 seconds

4-3. SERVO SYSTEM ALIGNMENT

4-3-1. Drum Servo System Adjustment

1. Drum Free Speed Adjustment (AS-6 board)

   (1) Set up the REC mode.
   (2) Connect the oscilloscope as follows.

   CH-1 . . . . . pin 1 of IC1
   CH-2 . . . . . pin 7 of IC1

   (3) Confirm that the waveform locks as shown in Fig. 4-3-1.

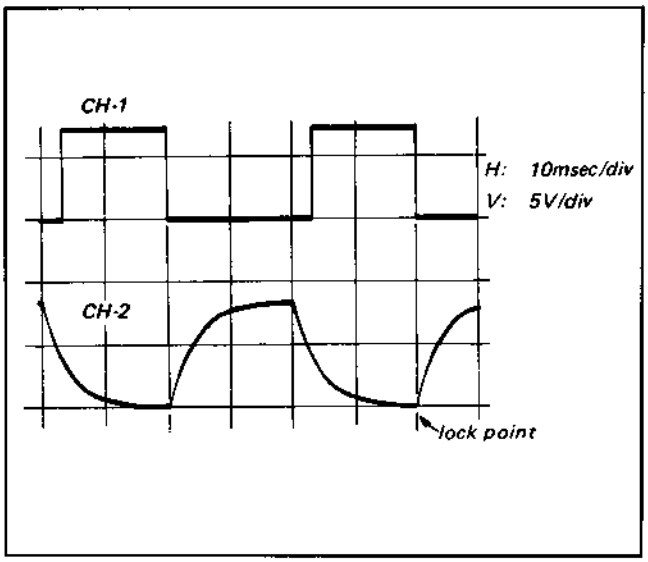


Fig. 4-3-1. Drum free speed adjustment

   (4) Connect the CH-1 probe of the oscilloscope to TP2 (pin 10 of IC1).

   Input range: DC

   (5) Adjust RV10 for 5.2 ± 0.3 Vdc. (See Fig. 4-3-2.)

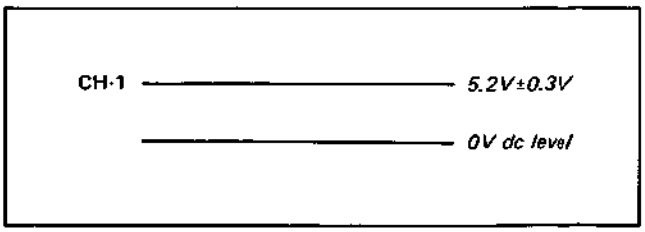


Fig. 4-3-2. Drum free speed adjustment

2. RF Switching Position Adjustment (YC-6, RF-2, & AS-6 boards)

(1) Play back the coulor bar segment of the alignment tape.

(2) Connect the oscilloscope to TP5 on the RF-2 board.

(3) Adjust the TRACKING knob for maximum output. (See Fig. 4-3-3.)

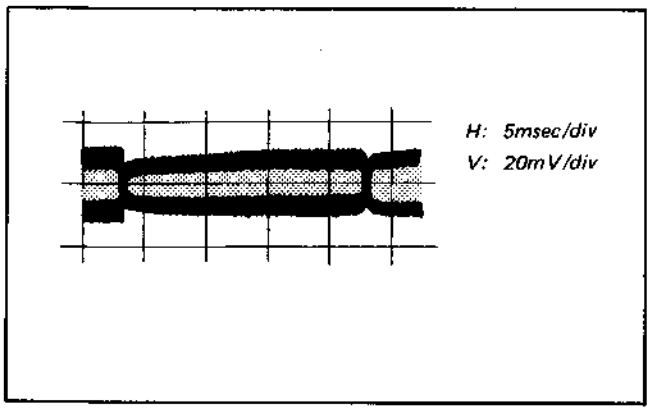


Fig. 4-3-3. RF output level adjustment

(4) Connect the oscilloscope as follows.
CH-1 . . . . . TP1/AS-6 board
CH-2 . . . . . Emitter of Q34/YC-6 board

(5) Adjust RV2 on the AS-6 board so that the phase difference between the falling section of the CH-1 waveform and the vertical sync signal of the CH-2 video signal are 7 H ± 2 H. (See Fig. 4-3-4.)

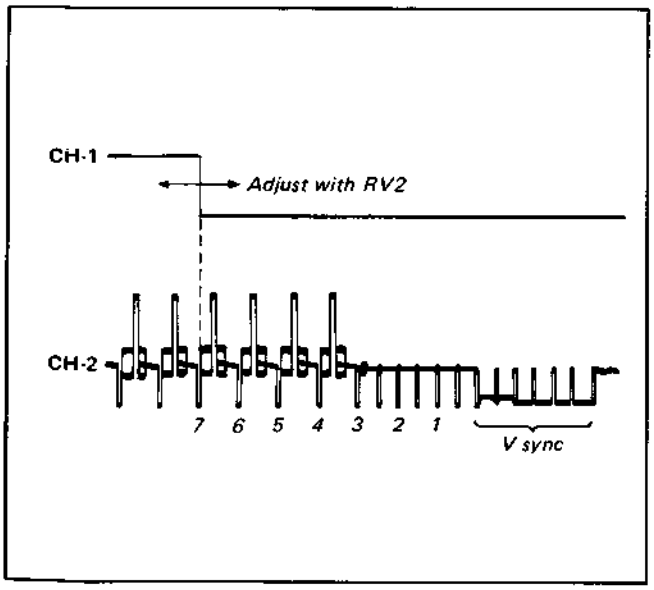


Fig. 4-3-4. RF switching position adjustment (1)

(6) Adjust RV1 on the AS-6 board so that the phase difference between the rising section of the CH-1 waveform and the vertical sync signal of the CH-2 video signal are 7 H ± 2 H. (See Fig. 4-3-5.)

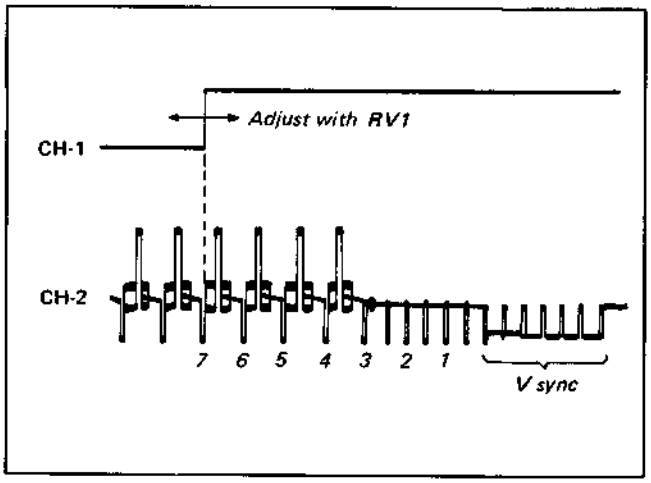


Fig. 4-3-5. RF switching position adjustment (2)

3. Record-Servo Lock Phase Adjustment (YC-6 & AS-6 boards)

(1) Record a video signal.

(2) Connect the oscilloscope as follows.
CH-1 . . . . . TP1/AS-6 board
CH-2 . . . . .,pin 20 of IC1/YC-6 board

(3) Adjust RV3 on the AS-6 board so that the phases of the falling section of the CH-1 waveform and the vertical sync signal of the CH-2 video signal are 7 H ± 2 H. (See Fig. 4-3-6.)

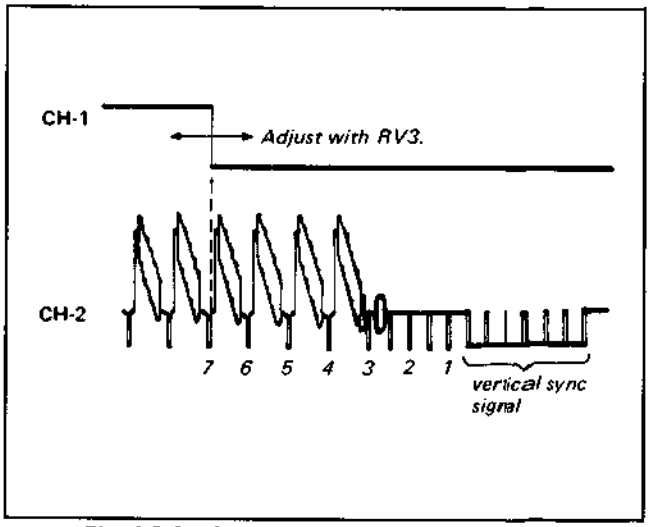


Fig. 4-3-6. Record-servo lock phase adjustment

4. Picture Search (High-Speed Picture) (AS-6 board)

(1) Record a video signal.

(2) Play back the recorded segment.

(3) Connect the oscilloscope to pin 10 of IC5 on the YC-6 board.

(4) Position the positive-going edge of the waveform at the exact center of the oscilloscope scale. (See Fig. 4-3-7.)

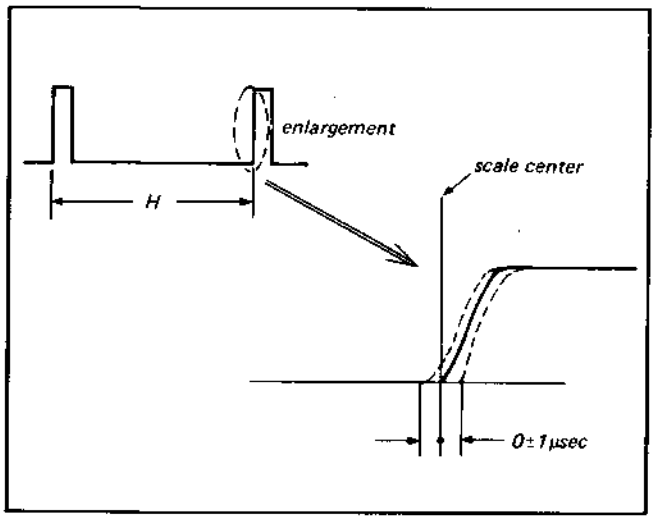


Fig. 4-3-7. Picture search free speed adjustment

(5) Set up the CUE mode.

(6) Adjust RV11 so that the fluctuation of the rising of the waveform is within 0 ± 1 μsec. for the scale center.

(7) Set up the REVIEW mode.

(8) Adjust RV12 so that the fluctuation of the rising of the waveform is within 0 ± 1 μsec. for the scale center.

4-3-2. Capstan Servo System Alignment

1. Capstan Free Speed Adjustment (AS-6 board)

(1) Play back the colour bar segment of the alignment tape.

(2) Connect the oscilloscope as follows.
CH-1 . . . . . pin 19 of IC2
CH-2 . . . . . pin 20 of IC2

(3) Adjust RV8 for the phase lock shown in Fig. 4-3-8.)

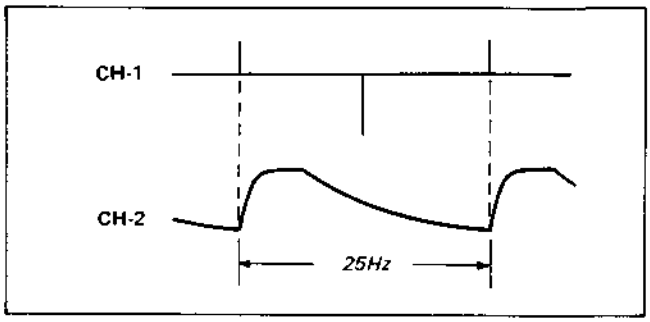


Fig. 4-3-8. Phase lock

(4) Connect the oscilloscope to TP4.
Input range: DC range

(5) Adjust RV8 for 5.5 ± 0.3 Vdc.

2. Tracking Control Center Adjustment (AS-6 board)

(1) Set the TRACKING knob to the center detent position.

(2) Play back the colour bar signal segment of the alignment tape.

(3) Connect the oscilloscope as follows.
CH-1 . . . . . TP11
CH-2 . . . . . TP6

(4) Adjust RV4 so that the phases of the falling sections of the waveforms become the same. (See Fig. 4-3-9.)

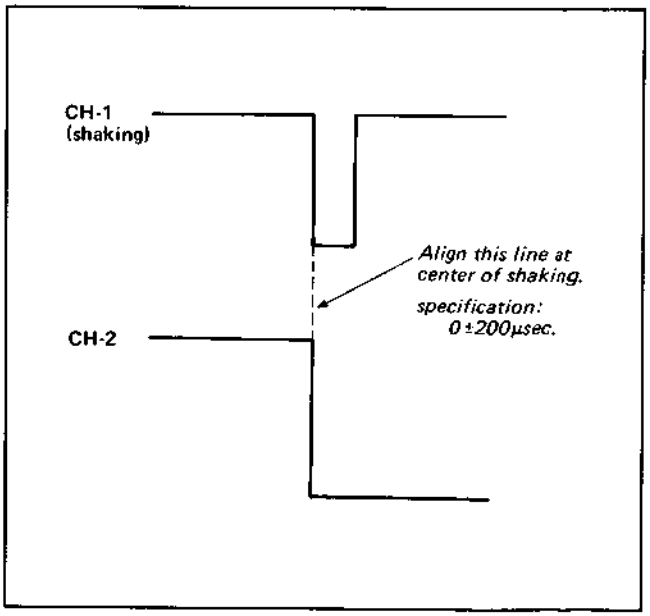


Fig. 4-3-9. Tracking control center adjustment

4-4. VIDEO SYSTEM ALIGNMENT (YC-6, and RF-2 boards)

The adjustment sequence for each circiit board is shown below. The colour video signal used for the video system alignment should satisfy the specification shown in the [Setup for Alignment].

[YC-6 Board]

1. SYNC AGC Preset Adjustment

   (1) Supply the VTR with the monoscope (W/B) signal and set up the E-E mode.

   (2) Check the following points with the oscilloscope.
   IC1 Pin 3 ...Sync ..... Approx. 6 Vp-p
   Pin 4 ...Burst flag ..... Approx. 5 Vp-p
   Pulse width: Approx. 4 μsec
   Pin 5 ... AGC CONT ..... Approx. 1.4 Vdc
   Pin 17 ..MONO ..... Approx. 0 Vdc

   (3) Connect the oscilloscope to pin 24 of IC1.

   (4) Adjust RV1 for the sync signal level of 300mV ± 12mVp-p. (See Fig. 4-4-1.)

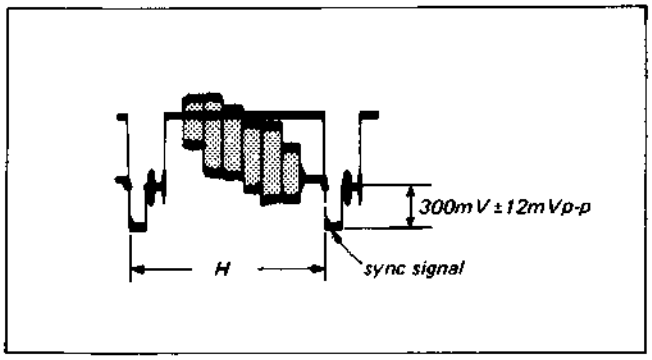


Fig. 4-4-1. Lebel adjustment of sync signal

2. Colour E-E Level Adjustment

   (1) Supply the VTR with the colour bar signal and set up the E-E mode.

   (2) Connect the oscilloscope to pin 22 of IC1.

   (3) Adjust RV14 for the sync signal level of 300 mV ± 15 mVp-p. (See Fig. 4-4-2.)

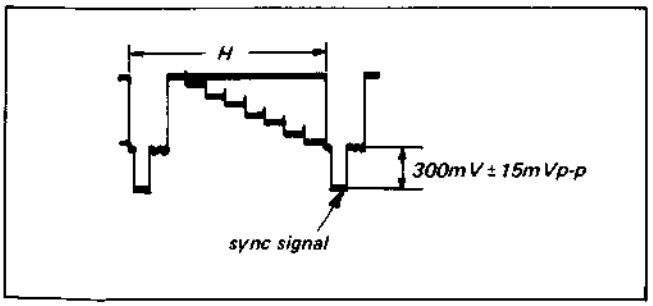


Fig. 4-4-2. Level adjustment of sync signal

3. Peak AGC (E-E Video Output Level) Adjustment

   (1) Supply the VTR with the colour bar signal and set up the E-E mode.

   (2) Connect the oscilloscope to pin 24 of IC1.

   (3) Adjust RV1 for maximum output level of the video signal and then adjust RV8 so that the output level of the video signal becomes 1.1 V ± 0.05 Vp-p. (See Fig. 4-4-3.)

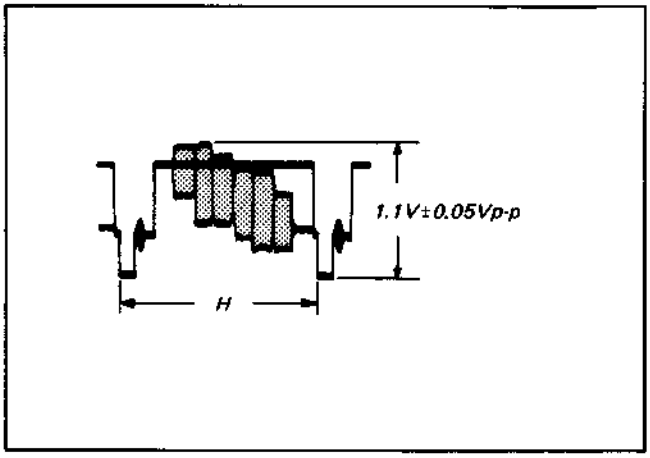


Fig. 4-4-3. Peak AGC adjustment

4. SYNC AGC Adjustment

   (1) Supply the VTR with the colour bar signal and set up the E-E mode.

   (2) Connect the oscilloscope to pin 24 of IC1.

   Note: The voltage at pin 17 of IC1 is approximately 0 Vdc

   (3) Adjust RV1 so that the sync signal level is 300 mV ± 12 mVp-p. (See Fig. 4-4-4.)

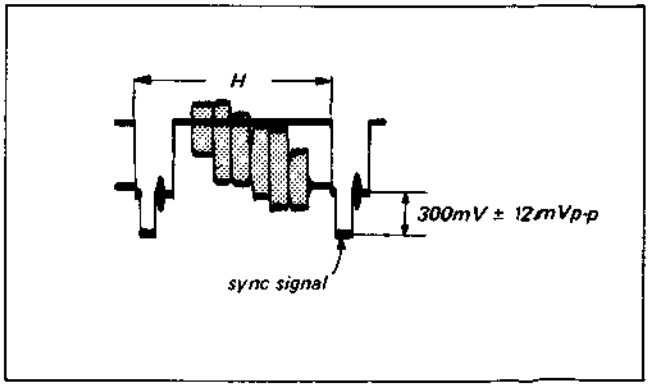


Fig. 4-4-4. Sync AGC adjustment

5. Compress Adjustment

(1) Do not supply the VTR with any signal and set up the E-E mode.

(2) Connect the digital voltmeter to the points shown in Fig. 4-4-5.

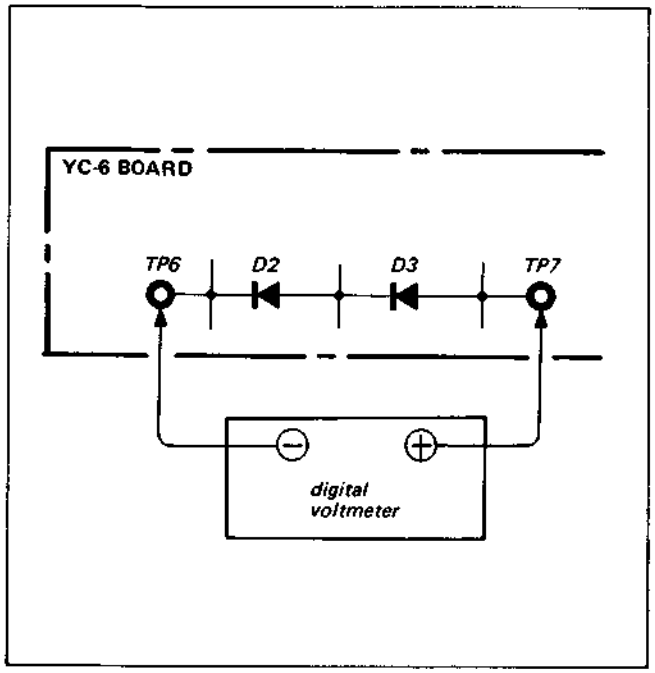


Fig. 4-4-5. Measurement points

(3) Adjust RV4 for 0.454 Vdc.

6. White Clip Adjustment

(1) Supply the VTR with the colour bar signal and set up the E-E mode.

(2) Connect the oscilloscope to TP4 (collector of Q8).

(3) Adjust RV5 so that the signal tip (white peak) is 220% ± 5%. (See Fig. 4-4-6.)

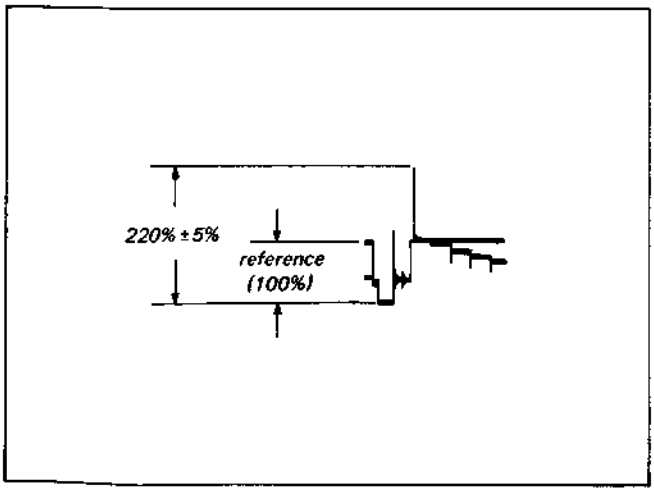


Fig. 4-4-6. White clip adjustment

7. Dark Clip Adjustment

(1) Supply the VTR with the colour bar signal and set up the E-E mode.

(2) Connect the oscilloscope to TP4 (collector of Q8).

(3) Adjust RV6 so that the signal tip (dark peak) is 170% ± 5%. (See Fig. 4-4-7.)

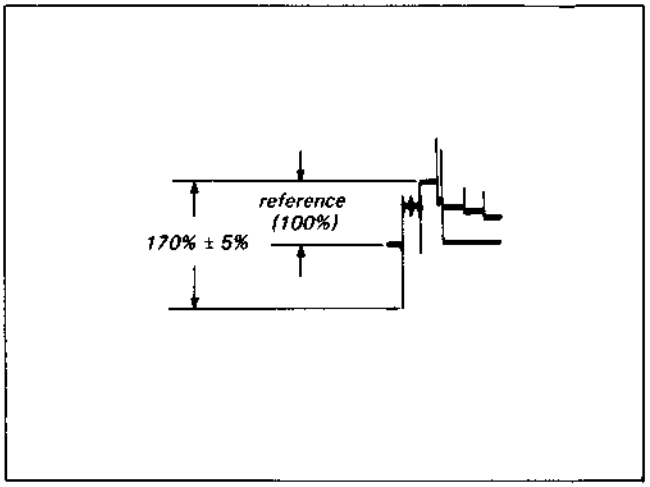


Fig. 4-4-7. Dark clip adjustment

8. Expand Adjustment

(1) Do not supply the VTR with any signal and set up the E-E mode.

(2) Connect the digital voltmeter to the points shown in Fig. 4-4-8.

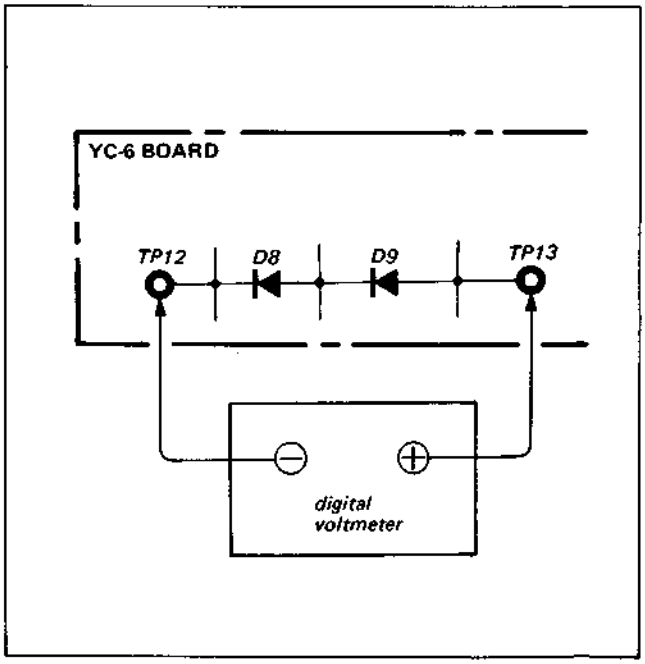


Fig. 4-4-8. Measurement points

(3) Adjust RV10 for 0.57 Vdc.

9. AFC Adjustment

(1) Supply the VTR with a video signal and set up the E-E mode.

(2) Connect the oscilloscope to TP19 (pin 4 of IC1, H.Sync).
TRIG: EXT (IC1-4 pin, H.Sync)

(3) Adjust RV21 so that the lock point is the center of the trapezoidal waveform. (See Fig. 4-4-9.)

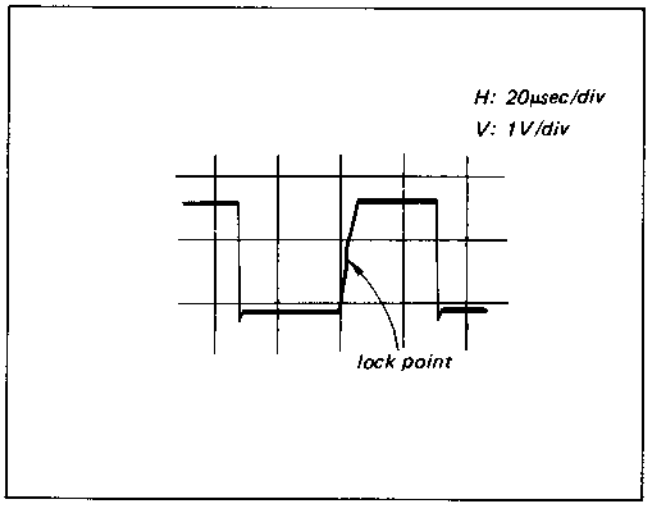


Fig. 4-4-9. AFC adjustment

10. AFC Offset Adjustment

(1) Supply the VTR with the video signal and set up the RECORD mode.

(2) Connect the oscilloscope to TP19 (pin 5 of IC6).
TRIG: EXT (TP3, RF SW PULSE, on RF-2 board)

(3) Adjust RV22 so that the lock points of the A-CH and the B-CH are at the points shown in Fig. 4-4-10.

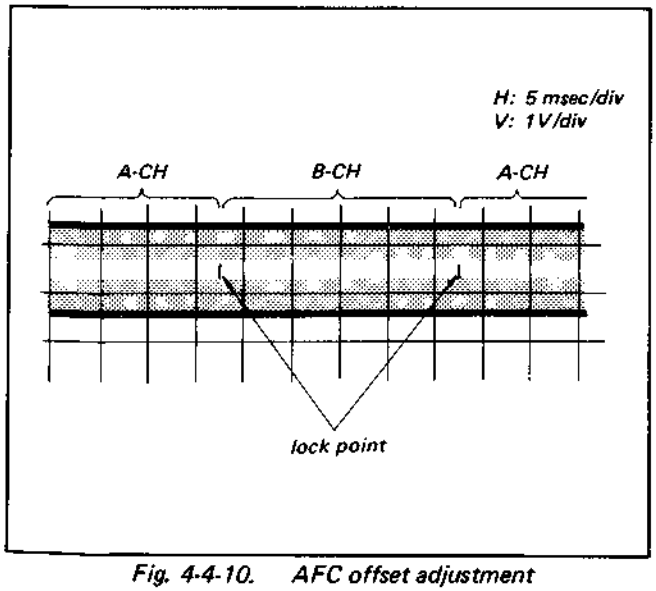


Fig. 4-4-10. AFC offset adjustment

11. Comb Filter Adjustment

(1) Supply the VTR with the colour bar signal and set up the E-E mode.

(2) Check that the chroma signal level at TP22 (pin 8 of IC2) is approximately 1.5 Vp-p. (See Fig. 4-4-11.)

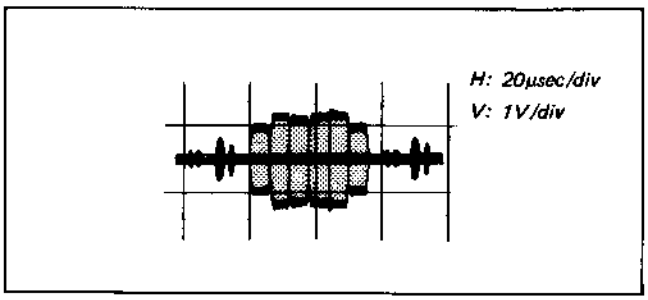


Fig. 4-4-11. Level check of chroma signal

(3) Connect the oscilloscope to TP21 (junction of R191 and R192).

(4) Adjust LV1 and RV19 alternately for minimum level of the chroma signal. (See Fig. 4-4-12.)

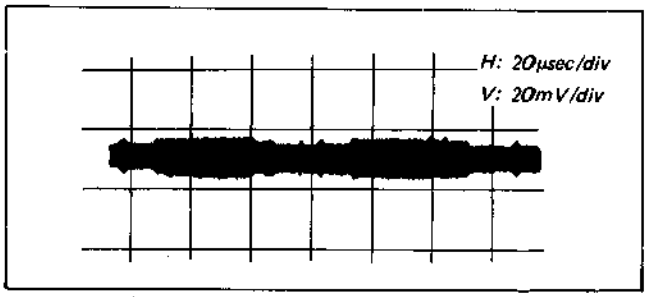


Fig. 4-4-12. Comb filter adjustment

(5) Check that the difference in the signal levels at TP21 and TP22 is more than 26 dB after the adjustment.

12. ACC Adjustment

(1) Supply the VTR with the colour bar signal and set up the E-E mode.

(2) Connect the oscilloscope to TP22 (pin 8 of IC2).

(3) Adjust T5 for minimum output level.

(4) Adjust RV16 for 1.5 V ± 0.1 Vp-p. (See Fig. 4-4-13.)

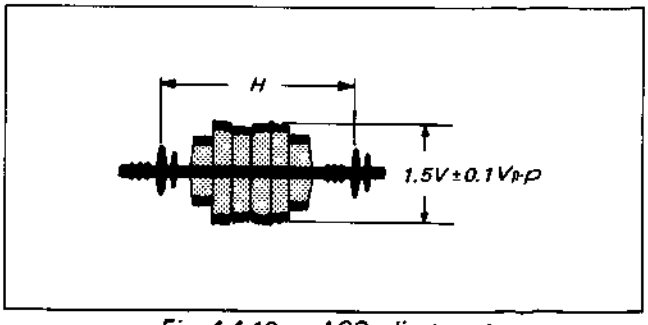


Fig. 4-4-13. ACC adjustment

13. X'tal Oscillation Adjustment

(1) Set up the PLAY mode.

(2) Connect the frequency counter to TP24 (emitter of Q57).

(3) Adjust T7 for an oscillating frequency of 4.433619 MHz.

(4) Check that the output level is 0.5 V ± 0.05 Vp-p. (See Fig. 4-4-14.)

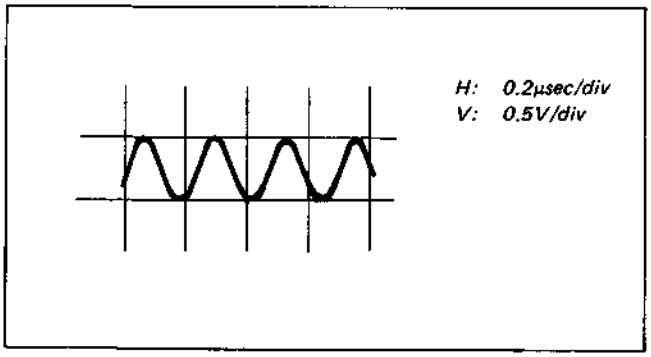


Fig. 4-4-14. Output level check

14. VXO Oscillating Frequency Adjustment

(1) Do not supply the VTR with any signal and set up the E-E mode.

(2) Connect the frequency counter to TP24 (emitter of Q57).

(3) Adjust T8 so that the oscillating frequency is 4.433619 MHz ± 5 Hz.

(4) Check that the output level is 0.7 V ± 0.2 Vp-p. (See Fig. 4-4-15.)

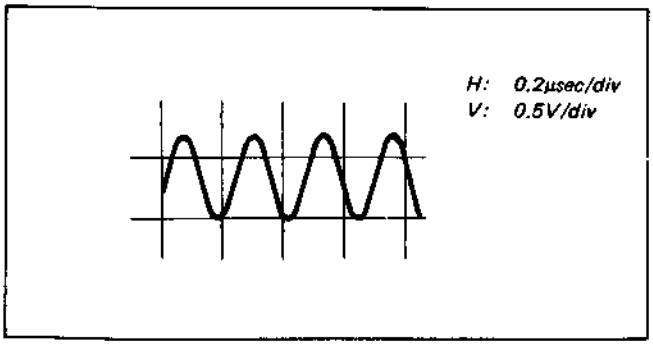


Fig. 4-4-15. Output level check

15. Pilot Burst Adjustment

(1) Supply the VTR with the colour bar signal and set up the E-E mode.

(2) Connect the oscilloscope to TP26 (emitter of Q56).

(3) Adjust RV18 so that the level of the chroma signal becomes equal to the one of the burst signal. (See Fig. 4-4-16.)

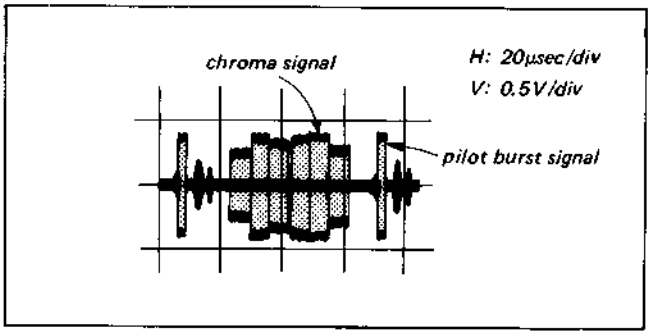


Fig. 4-4-16. Pilot burst adjustment

16. Chroma Record Current Adjustment

(1) Supply the VTR with the colour bar signal and set up the E-E mode.

(2) Connect the oscilloscope to TP26 (emitter of Q56).

(3) Adjust RV20 for a chroma signal level of 0.35 V ± 0.05 Vp-p. (See Fig. 4-4-17.)

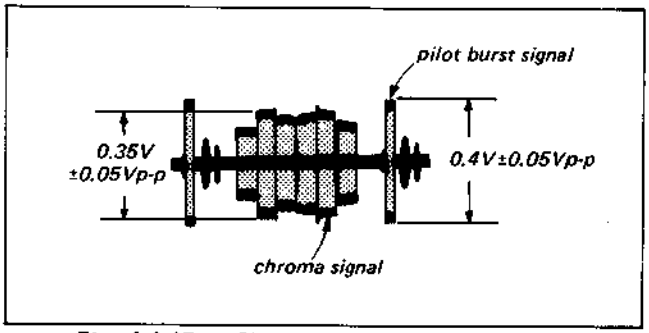


Fig. 4-4-17. Chroma record current adjustment

(4) Check that the level of the pilot burst signal is 0.4V ± 0.05 Vp-p. (See Fig. 4-4-17.) If not, adjust RV18.

17. Test Signal Frequency Adjustment

[Adjustment with Frequency Counter]

(1) Turn on the TEST SIG switch.

(2) Connect the frequency counter to TP27 (collector of Q78).

(3) Adjust RV24 for 15.625 kHz ± 100 Hz.

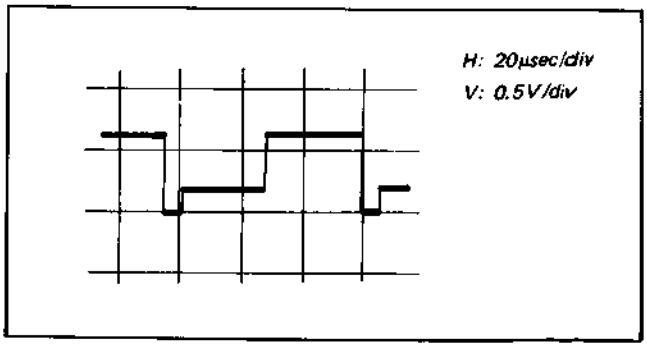


Fig. 4-4-18. Output waveform

[Adjustment by Observing Monitor TV]

(1) Turn on the TEST SIG switch.

(2) Adjust RV24 so that the monitor TV picture becomes as shown in Fig. 4-4-19.

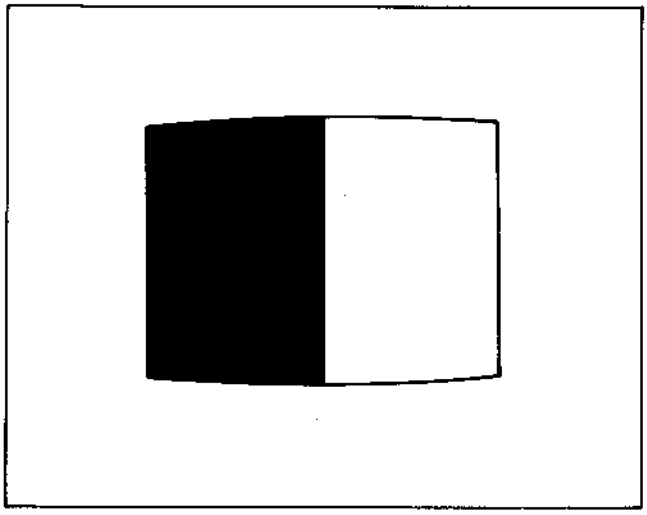


Fig. 4-4-19. Test signal adjustment

[RF-2 Board]

18. Record Current Adjustment

(1) Set up the no-signal input state and set up the RECORD mode.

(2) Connect the oscilloscope to TP1 and the GND probe to TP2.

Note: Since TP2 is the REC $\overline{\text{PAUSE}}$ 12V line, do not connect the GND probe to the points other than TP2.

(3) Adjust RV6 for a signal level of 130 mVp-p. (See Fig. 4-4-20.)

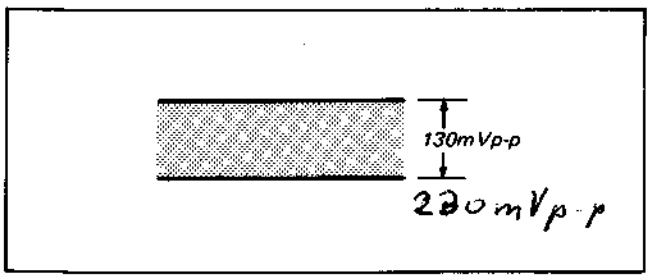


Fig. 4-4-20. Record current frequency characteristic adjustment

19. Playback Amplifier Frequency Characteristic Adjustment

(1) Play back the RF sweep signal segment of the alignment tape.

(2) Connect the oscilloscope to TP5.
TRIG: EXT (TP3, RF SW PULSE)
TRIG SLOPE { + ... CH-B / − ... CH-A

(3) Adjust the TRACKING knob for maximum signal level.

(4) Make the signal level from 1 MHz to 5.2 MHz flat.

A-CH RV1
B-CH RV2

(See Fig. 4-4-21.)

(5) Adjust RV3 so that the signal levels between 1 MHz and 2 MHz are all the same in the A-CH and B-CH.

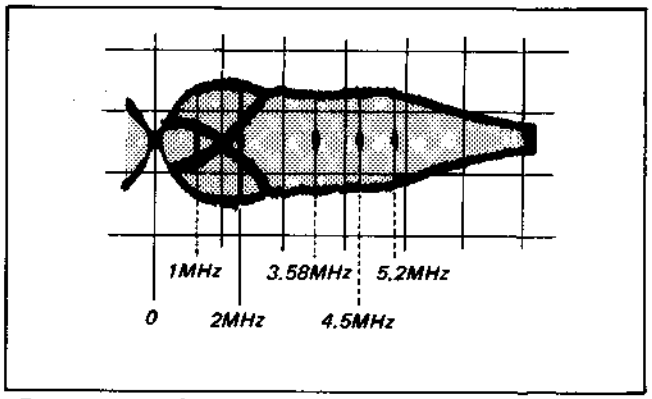


Fig. 4-4-21. Playback amplifier frequency characteristic adjustment

20. Dropout Compensation Adjustment

(1) Play back a blank tape.

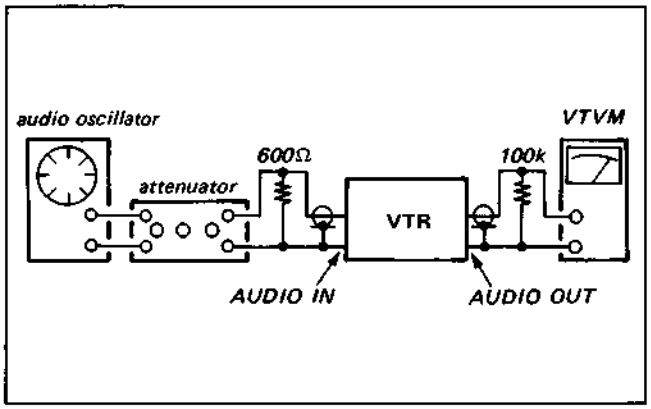
(2) Connect the oscilloscope to pin 2 of IC1.
INPUT: DC range

(3) Set RV4 to the point where the voltage at pin 2 of IC1 changes to 0.6 Vdc from 0 Vdc.

(4) Play back a recorded tape which has dropouts and check that the dropouts are compensated.

4-5. AUDIO SYSTEM ALIGNMENT (AS-6 Board)

[Connection of Relative Equipment]



[Adjustment Sequence]

1. Audio Head Adjustment
2. Playback Frequency Characteristic Adjustment
3. Playback Output Level Adjustment
4. Bias Oscillator Check
5. Bias Trap Adjustment
6. Record Bias Adjustment
7. Record Level Adjustment
8. Audio Dubbing Bias Adjustment
9. Overall Frequency Characteristic Check
10. Overall S/N Ratio Check
11. Overall Distortion Check

1. Audio Head Adjustment (Refer to the Section 3-19)
2. Playback Frequency Characteristic Adjustment
   (1) Play back the 333 Hz and 5 kHz segments of the alignment tape.
   (2) Adjust RV404 so that the output level difference between 333 Hz and 5 kHz is within +1.5 ± 1 dB.
3. Playback Output Level Adjustment
   (1) Play back the 333 Hz segment of the alignment tape.
   (2) Adjust RV403 so that the output level is within −25 ± 1 dB.
4. Bias Oscillator Check
   (1) Insert the cassette and set up the RECORD mode.
   (2) Connect a pickup coil (approx. 33mH) to the frequency counter and move the counter to T401 (in the shield case).
   (3) Check that the oscillating frequency is 65 kHz ± 6.5 kHz.
5. Bias Trap Adjustment
   (1) Set the input signal level to zero. (Set the audio oscillator output to zero and the attenuator to maximum.)
   (2) Connect the oscilloscope to the collector of Q406.
   (3) Adjust LV401 for minimum bias leak.
   Value: minimum level below 1 Vp-p.
6. Record Bias Adjustment

   Check that the playback frequency characteristic adjustment has been completed.
   (1) Connect TP402 and TP403 (GND) with a jumper so as to turn off the AGC operation.
   (2) Set the oscillator frequency to 333 Hz and adjust the AUDIO OUT terminal level with the attenuator for −25 dB.
   (3) Record the signal.
   (4) Change the audio signal to 7 kHz at −25 dB.
   (5) Record the signal.
   (6) Play back the recorded signals.
   (7) Ensure that the output level of 7 kHz is within ±1 dB against the one of 333 Hz.
   (8) If not, adjust RV402 and repeat Steps (2) through (7) until the specification is satisfied.
   (9) Remove the jumper connected to TP402.
7. Record Level Adjustment
   (1) Connect TP402 and TP403 (GND) with a jumper so as to turn off the AGC operation.
   (2) Set the oscillator frequency to 333 Hz and adjust the AUDIO OUT terminal level with the attenuator for −5 dB.
   (3) Record the signal.
   (4) Play back the recorded signal.
   (5) Ensure that the output level is within −5 ± 1 dB.
   (6) If not, adjust RV401 and repeat Steps (2) through (5) until the specification is satisfied.
   (7) Remove the jumper connected to TP402.
8. Audio Dubbing Bias Adjustment
   (1) Connect TP402 and TP403 (GND) with a jumper so as to turn off the AGC operation.
   (2) Set the oscillator frequency to 333 Hz and adjust the AUDIO OUT terminal level with the attenuator for −25 dB.
   (3) Set up the AUDIO DUB mode.
   (4) Change the oscillator signal to 7 kHz, −25 dB and set up the AUDIO DUB mode.
   (5) Play back the signals.
   (6) Ensure that the output level of 7 kHz is 0 ± 1 dB against the one of 333 Hz.

(7) If not, adjust LV402 and repeat Steps (2) through (6) until the specification is satisfied.

(8) Remove the jumper connected to TP402.

9. Overall Frequency Characteristic Check

(1) Set the oscillator frequency to 333 Hz and adjust the AUDIO terminal level with the attenuator for −25 dB.

(2) Record the signal.

(3) Change the oscillator signal to 50 Hz, 100 Hz, 333 Hz, 3 kHz, 5 kHz and 10 kHz.

(4) Record the signals.

(5) Play back the recorded signals.

(6) Ensure that the output levels are within the specified values. (See Fig. 4-5-1.)

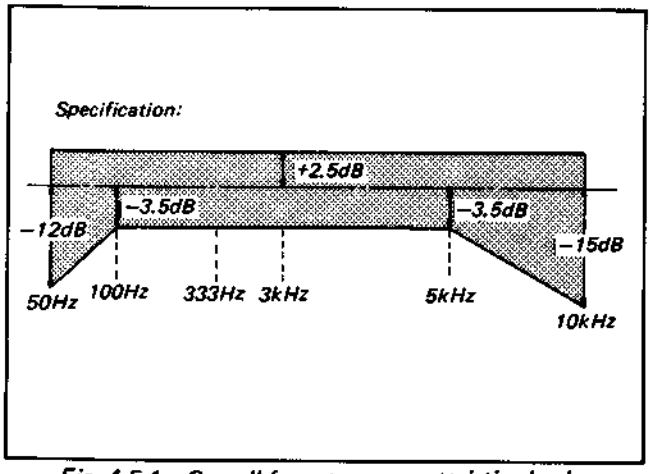


Fig. 4-5-1. Overall frequency caracteristic check

10. Overall S/N Ratio Check

(1) Terminate the AUDIO IN terminal.
(no signal input)

(2) Insert the cassette and set up the record mode.

(3) Open the AUDIO IN terminal and supply the 333 Hz at −10 dB signal to AUDIO IN terminal.

(4) Record the signal

(5) Play back the two segments.

(6) Ensure that the output level difference between two segments is more than 40 dB.

11. Overall Distortion Check

(1) Set the oscillator frequency to 400 Hz and adjust the AUDIO OUT terminal level with the attenuator for −10 dB.

(2) Record the signal.

(3) Connect the distortion meter to the AUDIO OUT terminal.

(4) Play back the recorded signal and ensure that the distorition is less than 4%.

4-6. TUNER BLOCK SYSTEM ALIGNMENT

1. 112V Adjustment (TU-19 board)
(1) Receive the any telecast signal.
(2) Connect the digital voltmeter to pin 7 of CN8104.
(3) Adjust RV101 for 112 ± 0.5 V dc.

2. 9V Adjustment (CH-6 board)
(1) Receive the any telecast signal.
(2) Connect the VOM to emitter of Q403.
(3) Adjust RV401 for 9 ± 0.1 V dc.

3. VIF AGC Adjustment (IF-10 board)
(1) Receive the colour bar signal (including 100% white, 65 dB/75Ω open ±5 dB) at the ANT terminal from the colour bar genelator or equivalent.
(2) Fine-tune the local adjustment.
(3) Connect the oscilloscope to emitter of Q502.
(4) Adjust RV501 for 2.8 Vp-p.

4. TU AGC Adjustment (IF-10 board)
(1) Receive the colour bar signal (71 dB/75Ω open ±2 dB) at the ANT terminal from the colour bar generator or equivalent.
(2) Fine-tune the local adjustment.
(3) Connect the oscilloscope to pin 5 of IC501.
Input range: DC
(4) Adjust RV502 for 8.5 ± 0.1 V dc.

4-7. TIMER SYSTEM ALIGNMENT

1. Clock OSC Adjustment (TM-14 board)
(1) Connect the frequency counter to TP2 (pin 18 of IC101).

Note: The input impedance of the frequency counter should be more than 10 MΩ.

(2) Adjust RV101 for 333 kHz.