

Service Manual

Portable Digital Audio Tape Recorder

SV-260

Color

(K)... Black Type

Area

Country Code	Area	Color
(EG)	F.R.G. (West Germany)	(K)

SPECIFICATIONS

Signal format

Recording system: Rotary-head DAT
Sampling frequencies:
Recording; 48 kHz
Playback; 44.1 kHz, 48 kHz
 (automatically switched)
Decoding: 16-bit linear

Audio

Number of channels: 2 (stereo)
Frequency response: 10 Hz–22 kHz, +0.5 dB, -1.5 dB
Dynamic range: More than 87 dB
S/N ratio: More than 88 dB (full scale level)
Total harmonic distortion: Less than 0.05%
 (input level +4 dBm, output level -14 dBs)
Wow & flutter: Unmeasurable

Input/output terminals

Line input:
(attenuator on); +4 dBs
(attenuator off); -10 dBs
Line input impedance: more than 10 k Ω , balanced, transformerless
Mic input:
(attenuator on); -60 dBs
(attenuator off); -74 dBs
Mic input impedance: more than 10 k Ω , balanced, transformerless
Line output: -14 dBs (RCA phono jacks \times 2)
Line output impedance: 1.2 k Ω , unbalanced
Headphone output: 20 mW + 20 mW, 16 Ω load
Digital output: Coaxial 75 Ω , cable supplied

Mechanism section

Head: Amorphous Ferrite mixed type
Cylinder: 15 mm diameter, wrap 180 degrees
Revolution of cylinder: 2000 r.p.m. (record/playback)
Tape speed: 8.15 mm/sec.
 (playback: 8.15/12.225 mm/sec. switched automatically)
Search speed: Approx. 60 times normal speed (maximum)
FF/REW time: Approx. 120 sec. (with 120-minute tape)

General

Power supply: AC 110–120/220–240 V, 50/60 Hz, 20 W (with supplied AC adaptor)
 DC 6 V, approx. 4.3 W (with supplied rechargeable battery pack)
Maximum continuous battery operation (continuous recording and playback): Approx. 2.2 hours (with 8-hour battery charge)
Dimensions: 228 \times 44 \times 137 mm (W \times H \times D)
Weight:
Including battery; 1.45 kg
Without battery; 1.08 kg

Note:

Specifications are subject to change without notice. Weight and dimensions are approximate.

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POWER SUPPLY

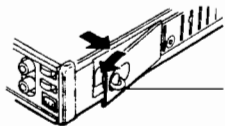
1. Using the rechargeable battery pack

Note:

The rechargeable battery pack of this unit was charged by the manufacturer before shipping. However, during transport and storage it may have discharged.

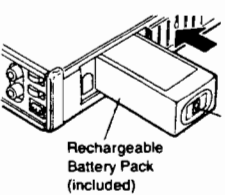
Be sure to recharge the battery pack before using it for the first time.

1 Open the cover on the rear panel of this unit.



Raise the recessed ring and turn it in the direction marked OPEN.

2 Insert the rechargeable battery pack into the battery compartment.



The rechargeable battery pack is marked with arrows indicating the correct direction in which to insert it into the recorder.

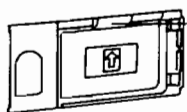
Check the arrows as indicated in the diagram to make sure the rechargeable battery pack is inserted right side up.

3 Close the cover.

Turn the ring in the direction marked CLOSE and return it to its recessed position.

Removing the rechargeable battery pack

Open the cover, press and lift the locking latch, and gently remove the rechargeable battery pack by hand. Tilt the unit slightly to get the rechargeable battery pack out.



Locking latch

Checking the battery capacity

The strength of the charge remaining in the battery is shown on the BATTERY indicator on the right side of the display.

BATTERY

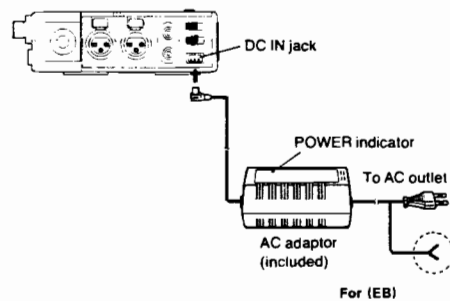
E ■■■■ F — Battery is fully charged.

■ ■ ■ ■ Sufficient power to run the unit but charge is low.

■ ■ ■ ■ Flash on and off When the battery charge indicator begins to flash on and off, the unit will automatically shut itself off after approximately three minutes.

Recharging the battery pack

Connect the AC adaptor to the unit with the battery pack loaded normally. The POWER indicator light on the AC adaptor will go on and recharging will commence.



For (EB)

Fit a suitable plug to the AC power supply cord.

Recharge battery pack with the power OFF.

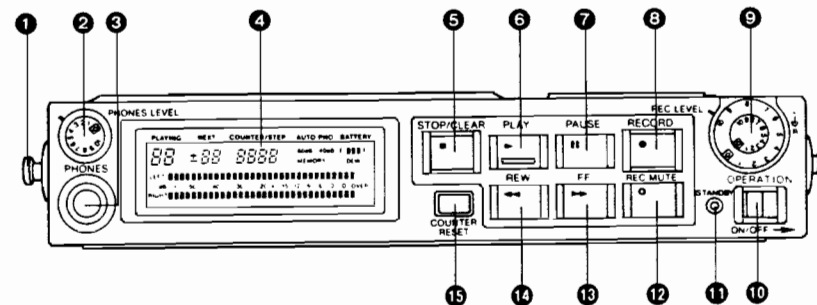
Charging time	Operation time
About 4 hours	About 2.0 hours
About 8 hours	About 2.2 hours

The unit can be powered with the AC adaptor while the battery pack is being recharged.

The POWER indicator light goes off as recharging nears completion; however, leave the unit connected to the AC adaptor for the full time period as given above.

PANEL CONTROLS AND FUNCTIONS

Front panel



1 Carrying belt anchor (on both sides)

2 PHONES LEVEL control

Use this control to adjust the output level to the headphones.

When listening to music with stereo headphones, avoid listening for prolonged periods of time. Hearing experts advise against continuous extended play.

3 PHONES jack

4 Display panel

5 STOP/CLEAR button and indicator (■)

Press to stop tape running. This button also clears the program memory. (Indicator illuminates when in STOP mode. During end search operation or tape loading/unloading, the indicator flashes on and off.)

6 PLAY button and indicator (▶)

Press to initiate recording or playback. This button is also used to record track numbers manually. (Indicator illuminates during playback and recording.)

7 PAUSE button and indicator (⏸)

Press to temporarily interrupt playback or recording. (Indicator illuminates while in PAUSE or recording standby mode.)

8 RECORD button and indicator (●)

Press to put the unit in the record standby mode. When ready to begin recording, press the PLAY button after the RECORD button. (Indicator illuminates during recording and when in recording standby mode.)

9 REC (record) LEVEL controls

Use these controls to adjust the recording level. The outer control adjusts the right channel level and the inner control the left channel level.

10 OPERATION switch

Push to the right to turn the unit on and off.

11 STANDBY indicator

When the unit is left in the STOP or PAUSE mode for approximately 10 minutes, the STANDBY indicator will light up and the unit will automatically go into an energy saving STANDBY mode.
If the unit is left in the STANDBY mode for approximately 30 minutes more, it will automatically turn itself OFF.

12 REC (record) MUTE button (C)

Press to insert a silent section of approximately four seconds.
Press the PLAY button to resume recording.

13 FF (fast-forward) button and indicator (▶▶)

Press to wind the tape rapidly forward. (Indicator illuminates while tape is advancing.)
If this button is pressed when the unit is in the STOP or PAUSE mode, the tape will move at 60 times its normal speed.
When this button is held down during playback, the tape will move at 11 times its normal speed.

14 REW (rewind) button and indicator (◀◀)

Press to wind the tape rapidly backwards. (Indicator illuminates while tape is rewinding.)
If this button is pressed when the unit is in the STOP or PAUSE mode, the tape will rewind at 60 times normal speed.
When this button is held down during playback the tape will rewind at 15 times normal speed.

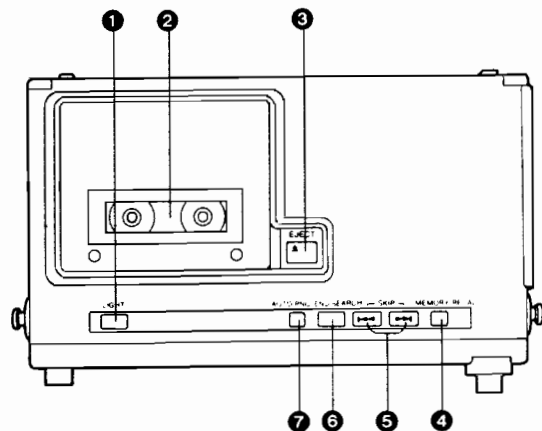
Fast Rewind

If the REW button is pressed while the tape is rewound, you will shift into an even faster rewind mode.
[The rewind indicator (◀◀) flashes on and off during fast rewind operation.]

15 COUNTER RESET button

Press to reset the tape counter to "0000".

Top panel

**1 LIGHT switch**

- Press this switch to light up the display.
- When using the AC adaptor to power of the unit the display will stay lit.
- Under battery power, however, the display will stay lit for about 20 seconds, when this switch is pressed and then goes out as an energy saving measure.

2 Cassette holder**3 EJECT button (▲)**

- Press this button to open the cassette holder.

4 MEMORY/RECALL button

- Used to enter steps in random access programming. When this button is pressed during program play (recall mode), the display will indicate each program step as they were entered.

5 Forward and backward SKIP buttons

(◀◀ • ▶▶)

These buttons are used to specify the desired program number for the following three operations:

1. Program playback
2. Access playback
3. Skip playback

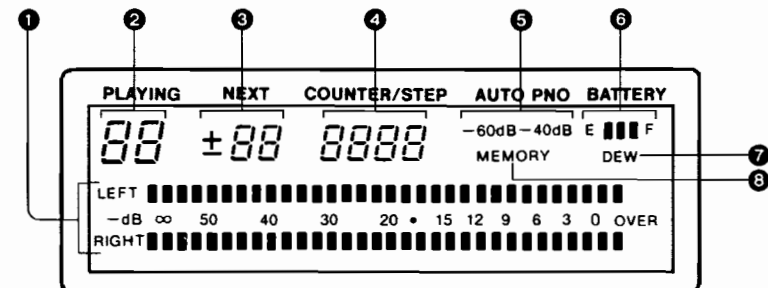
6 END SEARCH button

When this button is pressed, the tape advances rapidly to the last recorded position on the tape and then stops. This is useful when it is desired to continue recording from the last recorded position.

7 AUTO PNO (program number) button

Press this button to have program numbers recorded on the tape automatically during recording, and to set the sensitivity level for trigger a program number increment in auto mode.

Display panel

**1 Recording/playback level meters (peak level)**

- During recording, shows the recording level.
- During playback, shows the playback level.
- The upper meter shows the level of the left channel signal and the lower meter shows the level of the right channel signal.

2 PLAYING display

Shows the program number being played.

3 NEXT display

- During program playback, shows which program number is coming up next.
- When programming, shows the program number.
- During skip play, shows the number of tunes which is being skipped over.

4 COUNTER/STEP display

- The 4-digit tape counter shows the position on the tape. While programming a sequence of tunes, the counter shows the step number of the programmed sequence. (P-01, P-02...P-03).

5 AUTO PNO (program numbering) display

Shows the automatic inter-track gap detection level. For auto program number recording, press the AUTO PNO button to toggle between the -40 dB and -60 dB settings.

6 BATTERY indicator

This indicator gives an approximate indication of the charge level remaining in the batteries.

■ ■ ■ ■ ■ ... Batteries are fully charged.

■ ■ ■ ■ ■ ... Batteries are almost completely discharged. (When the last segment of the battery indicator flashes on and off during recording or playback, the unit will automatically shut itself OFF in approximately three minutes.)

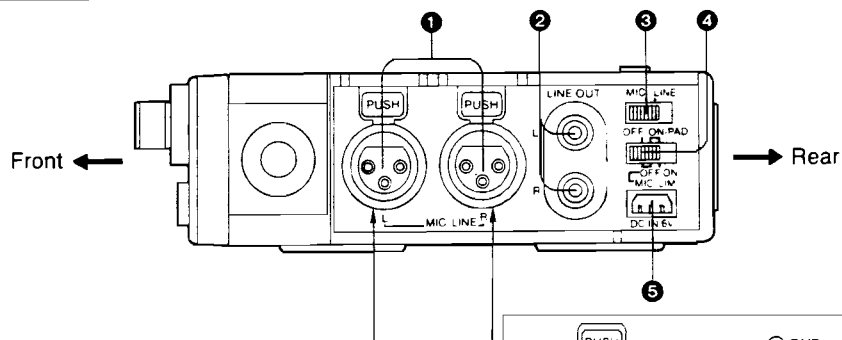
7 DEW indicator

Shows that moisture has condensed inside the unit.

8 MEMORY indicator

Shows that program numbers have been entered in the memory when the MEMORY/RECALL button is pressed for programming.

Right side panel



1 MIC/LINE input terminals (L/R)

- These are balanced XLR analog audio input connectors.
- Connect the microphones or line-level sources for recording.
- Select the input sensitivity by the Input select switch.

2 LINE OUT jacks (L/R)

- These are the audio output terminals for playback.
- Connect to the input terminals of an amplifier.

3 Input select switch (MIC/LINE)

This switch selects input sensitivity of the input preamp circuit.

LINE Use this setting to record from line level sources.

MIC Use this setting to record with microphones.

4 PAD/MIC LIM (limiter) switch (ON/OFF)

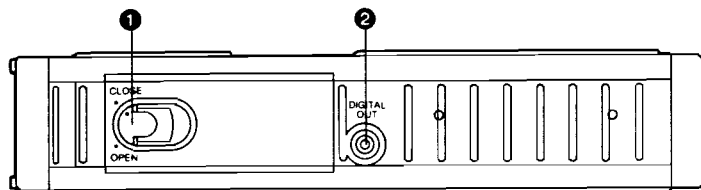
The PAD switch, when turned on, provides an extra 14 dB of attenuation which may be necessary when recording MIC or LINE sources with high output levels.

For microphones recording, the MIC LIM switch can be used with the PAD switch. The MIC LIM switch suppresses distortion caused by high volume sound bursts. The limiter circuit is activated only when there are sudden high power bursts and helps prevent distortion from getting into the recording.

5 DC IN jack (DC IN 6V)

Connect the AC adaptor (included) to this jack for AC outlet use or to recharge the battery pack.

Rear panel



1 Rechargeable battery OPEN/CLOSE knob

This knob turns the latch for opening and closing the battery compartment door.

2 DIGITAL OUT terminal (DIGITAL OUT)

Terminal for digital output
Digital data output from the unit can be input into another device with the appropriate digital input terminals by means of the coaxial cable (included).

SV-260 DAT MAINTENANCE CHART

Regular Maintenance

The purpose of periodic maintenance as recommended is to keep the equipment in the best possible operating condition throughout its useful life.

Observance of this maintenance schedule ensures that maximum performance and reliability is obtained from the machine.

Regular maintenance is necessary because the DAT Recorder is a high-technology piece of equipment, containing DC motors, head cylinder assemblies, and a complex mechanism. These components deteriorate over time.

Dust and dirt can clog the head gap, which affects the sound.

In light of this, it is very important that overall maintenance be performed according to the maintenance chart to avoid problems resulting from heavy usage. Maintenance should also be performed after any repairs on the equipment.

Maintenance is particularly recommended for DAT Recorders used in commercial and broadcast applications for several reasons.

Installation and application are frequently under less than ideal conditions, such as long usage times and poor environmental conditions.

All of this adversely affects the life span and performance of the machine. Regular maintenance assures that the purchaser obtains maximum value for this expenditure.

SV-260 Maintenance Chart

Part Name	Part Number	Using Hours									
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000
Cylinder Ass'y	VEG0504	○	●	○	●	○	●	○	●	○	●
Pinch Roller	1NB0001ZA	○	○	○	○	○	●	○	○	○	○
Roller Post	1DR0008ZA	○	○	○	○	○	○	○	●	○	○
Guide Post	1DR0009ZA	○	○	○	○	○	○	○	●	○	○
Tension Roller	RDR118ZA	○	○	○	○	○	○	○	●	○	○
Reel Table (R)	1DM0019ZA										●
Reel Table (L)	1DM0020ZA										●
Soft Brake Arm	1NL0050ZA								●		
Main Brake (B)	1NL0052ZA								●		
Main Brake (A)	1NL0051ZA								●		
Capstan Ass'y	1JQ0018ZA	○	○	○	○	○	○	○	○	○	●
Plate Spring (GND)	RUS740ZA										●
Main Gear	1NG0016ZA										●
FF Idler Gear	RNG86ZA										●
FF Int. Gear	RNG87ZA										●
Loading Cam Gear	RDR121ZA										●
Cam Gear	RNG88ZA										●
Lock Gear	1NG0012ZA										●
Lock Lever	1NL0058ZA										●
Mode SW	EVQWX001								●		
Mode Motor	1JQ0019ZA								●		
Reel Gear	RNG85ZA										●

Part Name	Part Number	Using Hours									
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000
Detector (L)	EVQWR1001										●
Detector (R)	EVQWR1002										●
Holder SW Open/Close	RSH1A91YA-A										●
Damper	RDG5935ZA										●
Holder Spring	RUD86ZA										●

● Replacement

○ Cleaning

DAT Head and Tape Transport Cleaning




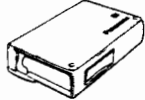

Through normal usage of any tape machine, dirt and debris from the tape accumulates on the heads, which eventually causes performance problems.

By using a cleaning cassette regularly, dirt buildup can be minimized, prolonging the life of the tape heads, and also keeping tape posts, tape guides, and the pinch roller clean.

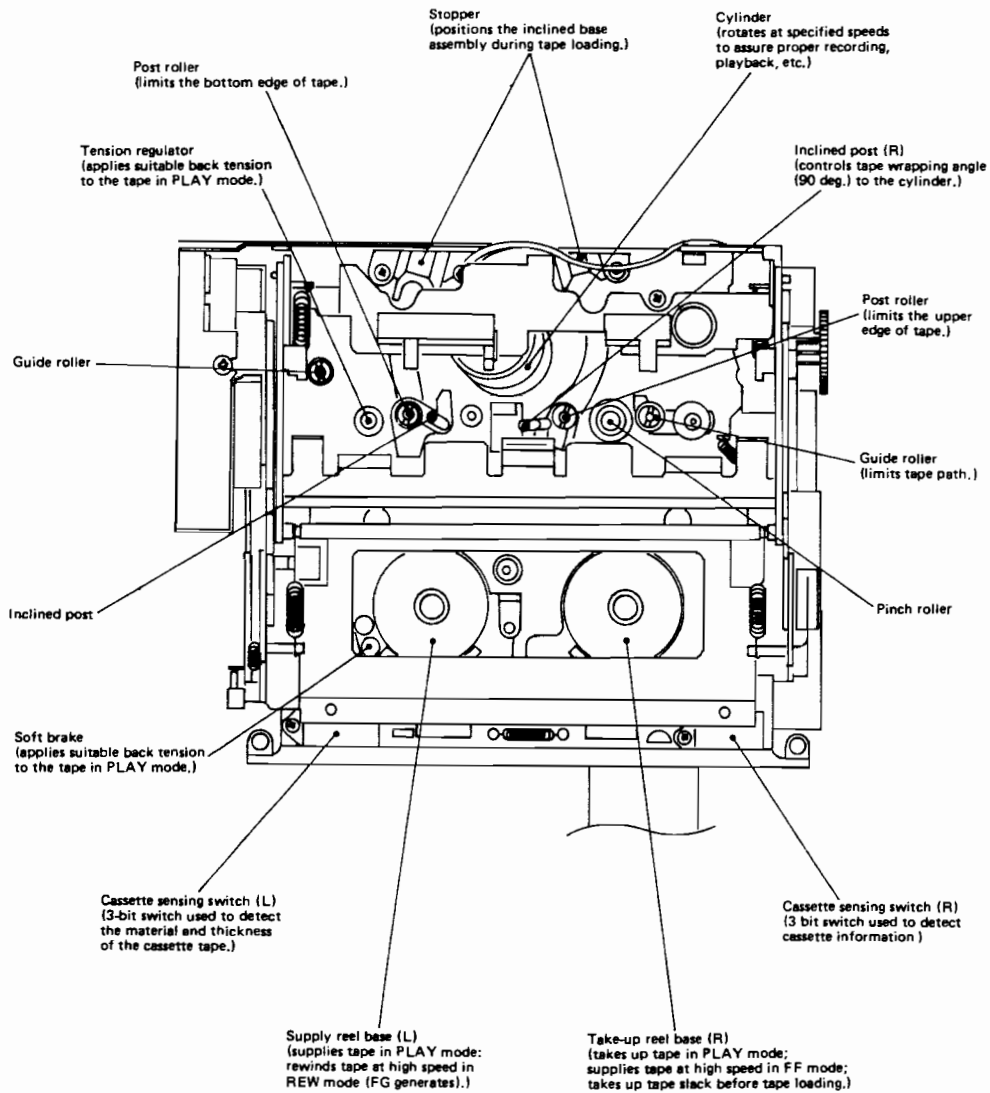
DAILY CLEANING

1. Play the cleaning cassette (Panasonic Part No. RT-RCLP) for 15-20 seconds once a day.
2. Do not use the same part of the cleaning tape more than once.

ACCESSORIES

<ul style="list-style-type: none"> ● Rechargeable battery pack . . . 1 (SH-MB1EY-K) 	<ul style="list-style-type: none"> ● AC adaptor 1 (SH-MA1EY-K) 	<ul style="list-style-type: none"> ● Coaxial cable . . . 1 (RJP0F33ZB-E) 	<ul style="list-style-type: none"> ● Carrying case 1 (RQD253ZA-2) 	<ul style="list-style-type: none"> ● Carrying belt 1 (RQC9024ZA-O) 
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MECHANISM COMPONENT LAYOUT



DISASSEMBLY INSTRUCTIONS

"ATTENTION SERVICER"

Some chassis components may have sharp edges. Be careful when disassembling and servicing.

Ref. No. 1 How to remove the front panel.

Procedure 1

1. Pull and remove the phones level knob, record level knob and knob holder.
2. Unscrew the 5 screws (1 ~ 5) and remove the front panel.

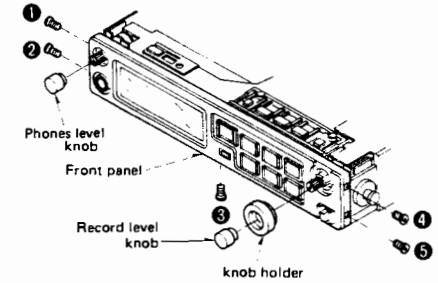


Fig. 1

Ref. No. 2 How to remove the cabinet cover.

Procedure 2

1. Unscrew the 2 screws (1 and 2) and remove the cassette holder lid.
2. Unscrew the 5 screws (3 ~ 7) and pull the cabinet cover in the direction of the arrow.

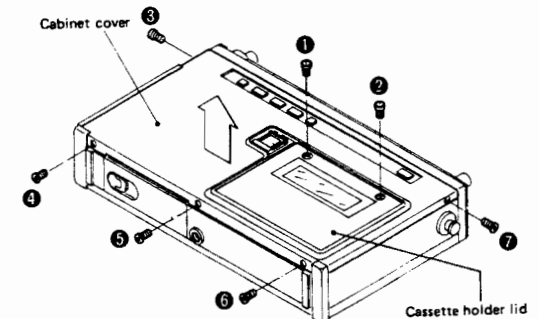


Fig. 2

Ref. No. 3 How to remove the operation key P.C.B.

Procedure 1→2→3

1. Unscrew the 4 screws (1 ~ 4).
2. Remove the 1 connector (CN752).
3. Release the 2 hooks and remove the operation key P.C.B.
4. Unscrew the 4 screws (5 ~ 8).

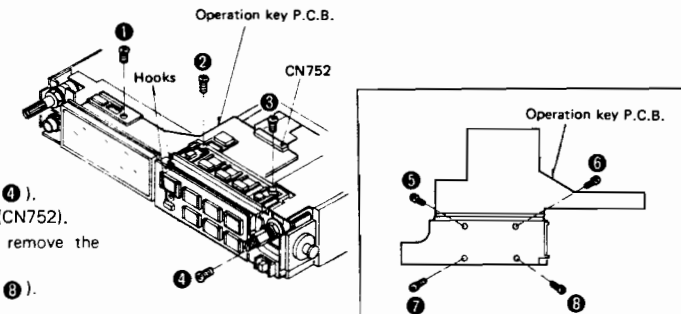


Fig. 3

Ref. No. 4 How to remove the bottom cover.

- Procedure 1→2→4**
1. Unscrew the 4 screws (① ~ ④) as shown in Fig. 4.
 2. Unscrew the 7 screws (⑤ ~ ⑪) as shown in Fig. 5.

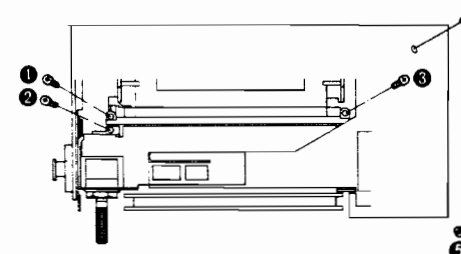


Fig. 4

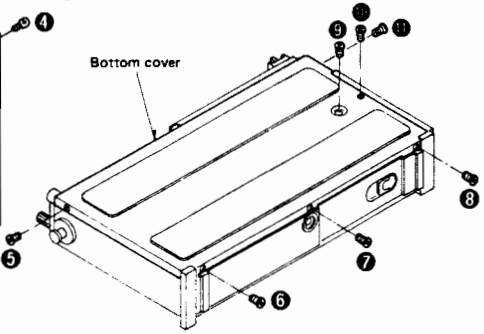


Fig. 5

Ref. No. 5 How to remove the input/output P.C.B.

- Procedure 1→2→3→4→5**
- Note:** Before performing this procedure, remove the battery pack cover and battery pack as shown in Fig. 6.

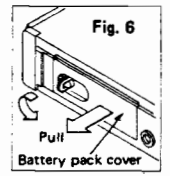


Fig. 6

1. Unscrew the 2 screws (① , ②) and remove the connector cover.
2. Unscrew the 2 screws (③ , ④).

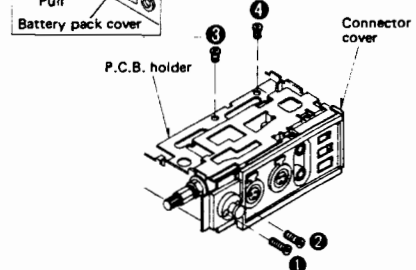


Fig. 7

Ref. No. 6 How to remove the mechanical main unit.

- Procedure 1→2→3→4→6**
- Note:** Before performing this procedure, remove the battery pack cover and battery pack as shown in Fig. 6.

1. Remove the 2 flat cables from the 2 connectors (① and ②).
2. Unscrew the 2 screws (③ , ④).
3. Unscrew the 6 screws (⑤ ~ ⑩).
4. Release the connector (⑪) and remove the mechanical main unit.

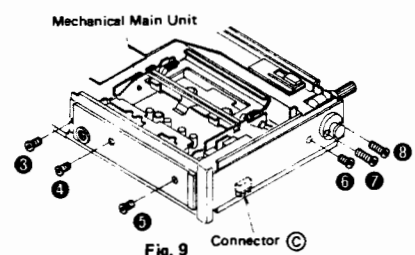


Fig. 9

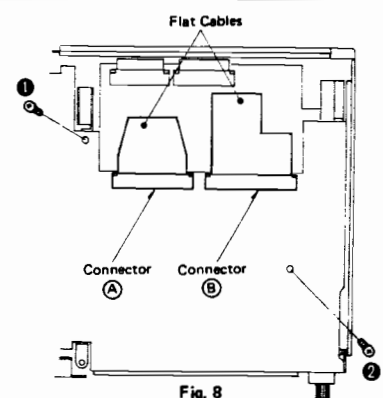


Fig. 8

Ref. No. 7 How to remove the mechanism P.C.B. and the cylinder ass'y.

- Procedure 6→7**

1. Remove the mechanism ass'y.
 2. Remove the 2 screws (① , ②) and remove the barrier angle board (Fig. 11).
 3. Remove the 3 connection F.P.C. cords from the servo P.C.B. (Fig. 12).
 4. Remove the spacer post and then remove the servo P.C.B. from the mechanism.
 5. Remove the screw (③) and remove the brush (Fig. 13).
 6. Remove the magnet plate from the stator (Fig. 14).
- Note:** Be careful not to damage the F.G. coil.

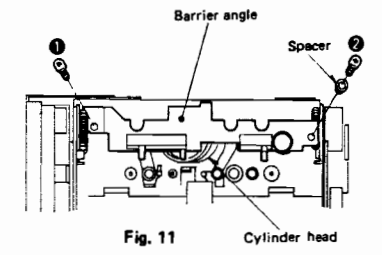


Fig. 11

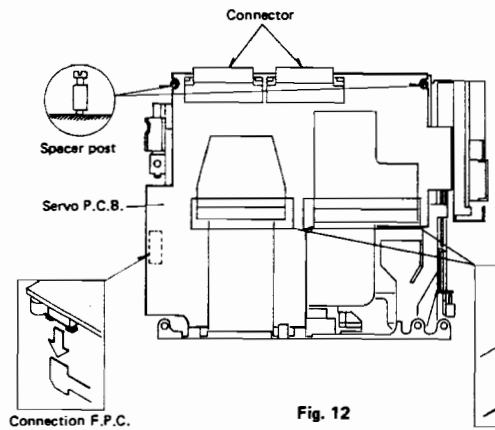


Fig. 12

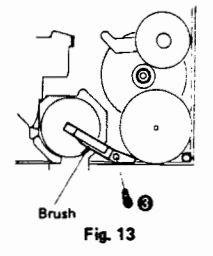


Fig. 13

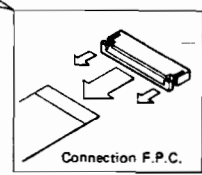


Fig. 14

7. Remove the 3 screws (④ ~ ⑥) and remove the F.G. coil ass'y (stator) from the mechanism base (Fig. 15).
8. Remove the 2 screws (⑦ , ⑧) and remove the stator housing from the mechanism base (Fig. 16).

9. With a hex wrench (0.71mm: HOZAN W-100), remove the 2 screws securing the rotor and the motor shaft (Fig. 17).
- Note:** When reinstalling the 2 screws, alternately turn them until they are driven in place.

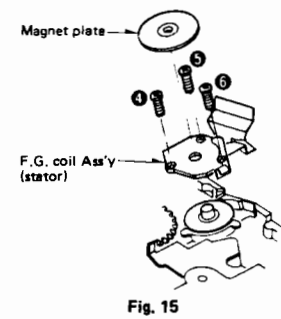


Fig. 15

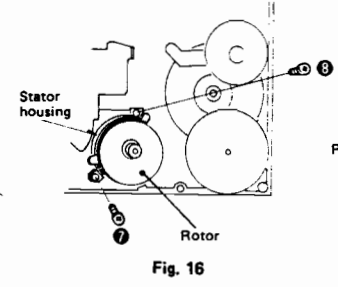


Fig. 16

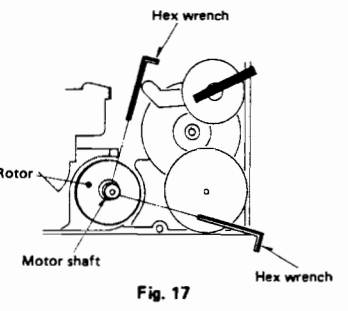


Fig. 17

10. Remove the 3 screws (⑨ , ⑩ , ⑪) and remove the F.G. coil Ass'y (Fig. 18).
11. Remove the 3 screws (⑫ , ⑬ , ⑭) securing the cylinder (Fig. 18).

Note: Gap filter spacer (RFE6031ZA) is installed in same units.

Note: Spacer is installed under the mechanism base if this part is not thick enough. Please note that spacer is not installed in all units. Therefore, during ressembly make sure to reinstall the spacer in the unit in which they are installed.

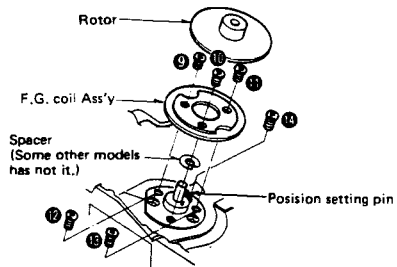


Fig. 18

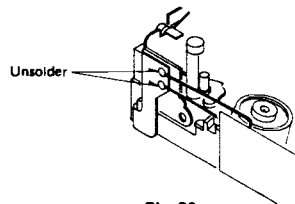
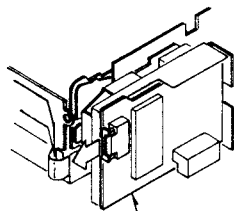


Fig. 20

13. Remove the RF P.C.B. shield case and then remove the cylinder head connection F.P.C. cord (Fig. 22).



RF P.C.B.
Fig. 22

12. Remove the solder and the 2 screws (⑮ , ⑯) from the RF P.C.B. shield case (Figs 19 ~ 21).

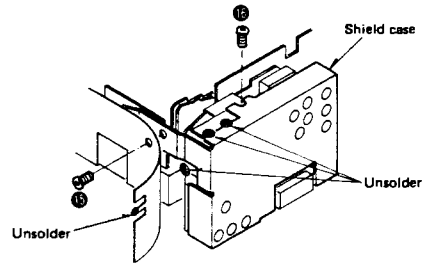


Fig. 19

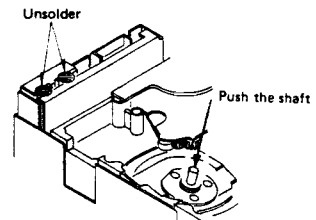
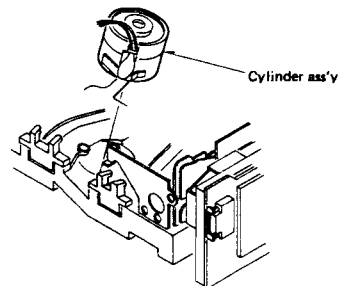


Fig. 21



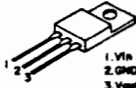

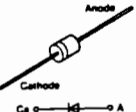
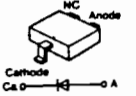
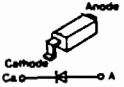
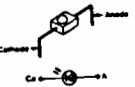
14. Gently push down the motor shaft to remove the cylinder ass'y from the mechanism base (Figs 21 and 23).

Note: Do not touch the upper cylinder when removing the cylinder ass'y.



Cylinder ass'y
Fig. 23

TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

	TC7S00FTX	5 Pin	MN74HC085	14 Pin	SVIPC555HP	24 Pin
	TC4S81FTX		MN74HC04S		SRM20256LM10	28 Pin
	TC4S69FTX	6 Pin	MN74HC393S	MN86081	32 Pin	
	TC4S01FTW		SN74LS624NS	AN8285S		
	TL712CPS	8 Pin	UPD74HC164G	AN7031S	42 Pin	
	NJM4560MT		MN40668S	AN7033S		
	TK10681MT		MN40428C	AN7030S		
	AN1393S		UPD40538GT	AN7032S		
	AN6612S	10 Pin	TA8401FST	20 Pin		
	NJM4193MT		M5290FP			
	NJM5532MT		LA4530MT			
	AN4250S		UPD74HC273G			
	MN66181	42 Pin	MN52080SDE	64 Pin	SAQ0001-2	96 Pin
	AN8320F	48 Pin	SAQ0003-1	80 Pin	UPD65031G241	100 Pin
	MN15845RRF	64 Pin	SAQ0002-1	96 Pin	MN188322RRG	
 <p>1. V_{in} 2. GND 3. V_{out}</p>	M5236MLT	3 Pin				
	SCI7700YTA					
	SCI7710Y8A					
	2SD1328TTW, 25C3937TW, 25D1819STW, 25C3929TTW, 25C3931DTW, 25D1328STW, UN5213TW, UN5113TW, 25B1218STW, 25D1820STW,	258970STW, 25B956RTW, UN5219TW, UN5216TW, 25D813R7W, 25D1819RTW, 25B1219STW, 25D1478RTW, 25B1219RTW, 25D1820RTW	 <p>Anode Cathode Ca 0 — A</p>	 <p>NC Anode Cathode Ca 0 — A</p>	MA141WK7W, MA142WK7W, MA151WA, MA3033L7W, MA3056MTW, RVDRLS73 MA141WA7W, MA143TW, MA157ATW, MA3039L7W, RVDFC52M,	
						RVDERC81004V
 <p>Anode Cathode Ca 0 — A</p>	 <p>Anode Cathode Ca 0 — A</p>	MA701TW	LN1261CALTR			

MEASUREMENTS AND ADJUSTMENTS

Equipment and Tools

- 2-channel 30 MHz oscilloscope (with external trigger and delay sweep) (with a 10 : 1 probe).
- Frequency counter
- DC power supply
- Digital voltmeter
- Standard test tape: RD-ER01, RD-PG01
- Blank tape for recording and playback (commercially available blank tape).

1. Equivalent Circuit Adjustment

1. Load the playback reference tape (RD-ER01) and operate the operation buttons so that the error rate is displayed in the tape counter display. (Refer to the "Error Rate Display Procedure" below.)
2. Turn **VR5**, **VR6**, **VR7** and **VR8** each a little at a time in order to adjust so that the error rate value decreases (the objective is an error rate value of 50 or below).

Error Rate Display Procedure

1. Switch on the power.
 2. Load either the error rate measurement portion of the playback reference tape (RD-ER01) or a pre-recorded tape.
 3. Press the LIGHT key.
 4. Within 20 seconds of performing Step (3), simultaneously press the STOP + REW + SKIP FORWARD + SKIP BACKWARD keys.
 5. While continuing to press the STOP key, release the other three keys.
 6. Release the STOP key.
 7. Press the PLAY key. (Playback of the tape will begin.)
- Performing the above procedure will cause the error rate to be displayed in the liquid crystal display. If skipping noise occurs or there are clicking noises during playback of a music tape, simple troubleshooting is possible in accordance with the error rate value displayed at that time as follows.

Possible Cause According to the Error Rate

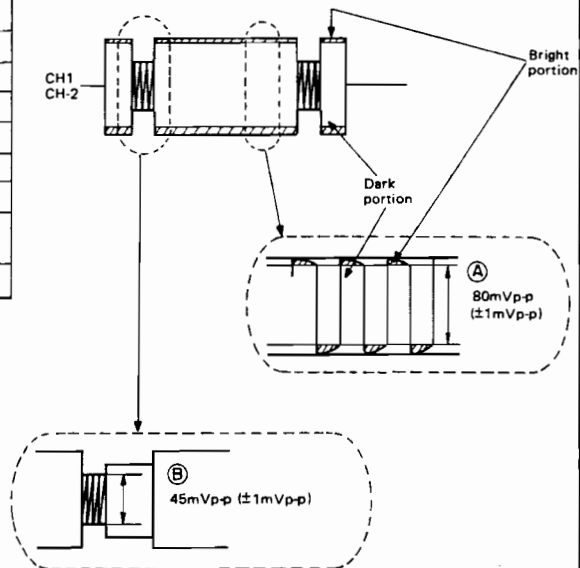
Error rate	Possible cause
0 ~ 1000	It can be assumed that there are no problems with the mechanism, heads, or tape transport. An incorrect adjustment or a malfunction in the amplifier circuit can be suspected.
1001 ~ 5000	Clean the heads; refer to the Instruction Manual for the cleaning procedure. If the problem persists, a malfunction in the circuitry can be suspected.
5001 ~ 9999	Dirty or damaged heads can be suspected.

- * To cancel the error rate display, either press the LIGHT key once again or switch off the power.

2. RF Recording Level Adjustment

- Load a blank tape for recording and set the recorder for "REC-PLAY".
- Set up the oscilloscope and connect as shown in the table below.

	CH-1	CH-2
Test Point	TP1	TP2
Volts/Div.	50 mV	5 mV
Time/Div.	5 msec.	
Delay	0.2 msec.	
Trig	—	
AC. GND. DC	AC	AC
Adjustment Point	VR1, 2	VR1, 3
GND	TP3	

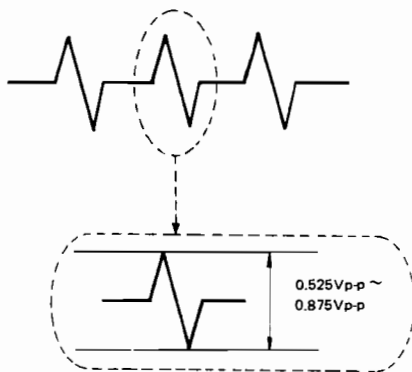


- Set the delay time of the oscilloscope to 0.1 msec to enlarge the waveform. Adjust VR2 (CH-1) and VR3 (CH-2) so that (B) in the figure is 45 mVp-p.
- Next, adjust VR1 so that (A) in the figure is 80 mVp-p.

3. ATF Play Adjustment

- Play the error rate measurement portion of the standard test tape (RD-ER01 : 2.35 MHz).
- Set up the oscilloscope and connect as shown in the table below.

	CH-1 (CH-2)
Test Point	TP4 (CN J15 PIN)
Volts/Div.	1V
Time/Div.	0.2 msec.
Delay	—
Trig	—
AC. GND. DC	AC
Adjustment Point	VR100



- After completing the settings, adjust VR100 so that the amplitude of the waveform on the oscilloscope is within 0.525 to 0.875 Vp-p.

4. Adjustment of the battery check voltage

- Connect TP5 to ground. (TP5: IC610 ② Pin).
 - Connect a DC power supply to the DC IN jack and connect a digital voltmeter to TP6.
 - Set the DC power supply so that the voltage of TP6 is $5.40V \pm 20 mV$.
 - Switch on the power without loading a tape.
 - Adjust VR601 so that the value displayed in the liquid crystal display is 121.
- Note:** If the display will not remain constant at 121, adjust so that the value changes between 120 and 121.

5. Adjustment of the dew sensor

- Connect a DC power supply to the DC IN jack and connect a digital voltmeter to TP7.
- Set the DC power supply so that the voltage of TP7 is 6 mV.
- Adjust VR651 so that the voltage of TP8 is $3.54V \pm 15 mV$.

6. Adjustment of the loading time

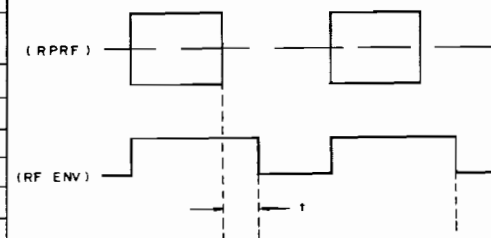
- Insert a tape (no specific tape) and switch on the power so that the tape is loaded.
- Use a stopwatch to measure the time from when the power is switched on to when the tape is loaded.
- If the time is not within the specifications, turn VR604 to adjust.

Specification: 3.0 ± 0.2 sec.

7. Envelope Adjustment

- Play the error rate measurement portion of the standard test tape (RD-ER01).
- Set up the oscilloscope and connect as shown in the table below.

	CH-1	CH-2
Test Point	TP9 (CN K12 PIN)	TP10 (CN K13 PIN)
Volts/Div.	50 mV	0.5 V
Time/Div.	2 msec.	
Delay	—	
Trig	CH-2	
AC. GND. DC	AC	DC
Adjustment Point	VR101	



3. Connect **TP11** to **TP12**. (**TP11**: CN **K** ① PIN, **TP12**: CN **K** ② PIN)
4. Compare the RP RF and RF ENV waveforms on the oscilloscope screen and adjust **VR101** so that $t = 1.5 \pm 0.2$ msec.
5. Repeat the short (ON) and remove (OFF) procedure of Step (3) to confirm that the changes in waveform t are within the specifications.
6. Disconnect the connections made in Step (3).


8. Adjustment of the offset voltage


1. Connect **TP13** to **TP14**. (**TP13**: CN ① ② PIN, **TP14**: CN ① ① PIN)
2. Load the blank tape, set to REC PAUSE, and confirm that the indication of the meter indication are stable.
3. Adjust **VR551** so that the indication of the R CH level meter is within two dots.
4. Adjust **VR552** so that the indication of the L CH level meter is within two dots.
5. After completing the adjustment, remove the short between **TP13** and **TP14**, and then confirm that indication of the meter segments are within two dots.

Note:

- * The lowermost two dots of the meters are always lit.
- * The meter indications change in two-dot units.

(LEVEL METER)

L CH 

R CH 

9. Adjustment of the VCO

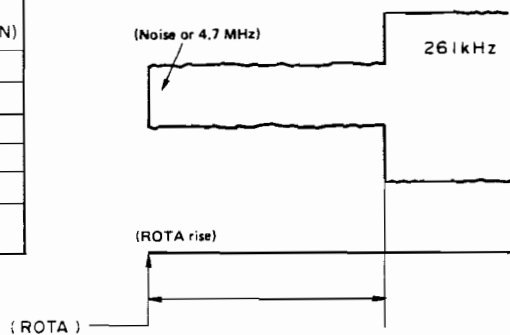
1. Connect the frequency counter to **TP15**.
2. Set the power switch to ON mode.
3. While observing the frequency counter, adjust **VR102** so that the indication is 10 MHz.

Specification: 10 MHz \pm 5 kHz

10. PG Phase Adjustment

1. Play the PG reference test tape (RD-PG01).
2. Set up the oscilloscope and connect as shown in the table below.

	CH-1	CH-2
Test Point	TP16 (CN J ③ PIN)	TP11 (CN K ① PIN)
Volts/Div.	50 mV	0.5 V
Time/Div.	5 msec.	
Delay	0.1 μ sec.	
Trig	CH-2	
AC. GND. DC	AC	DC
Adjustment Point	VR801	



3. While observing the waveform on the oscilloscope, adjust **VR801** so that $t =$ double the set time \pm 30 μ sec. (The set time is indicated on the back of the test tape).
- Note:** The cassette setting time listed on the back of the test tape is based on a head cylinder diameter of 30mm. Since the SV-260 head cylinder is 15mm, it must be adjusted to double the setting time.
- Example:** For a cassette setting time of 0.192 msec, adjust the PG phase to a time of 0.384 msec.

11. Power Supply Adjustment

11-1. Adjustment of the system control power supply

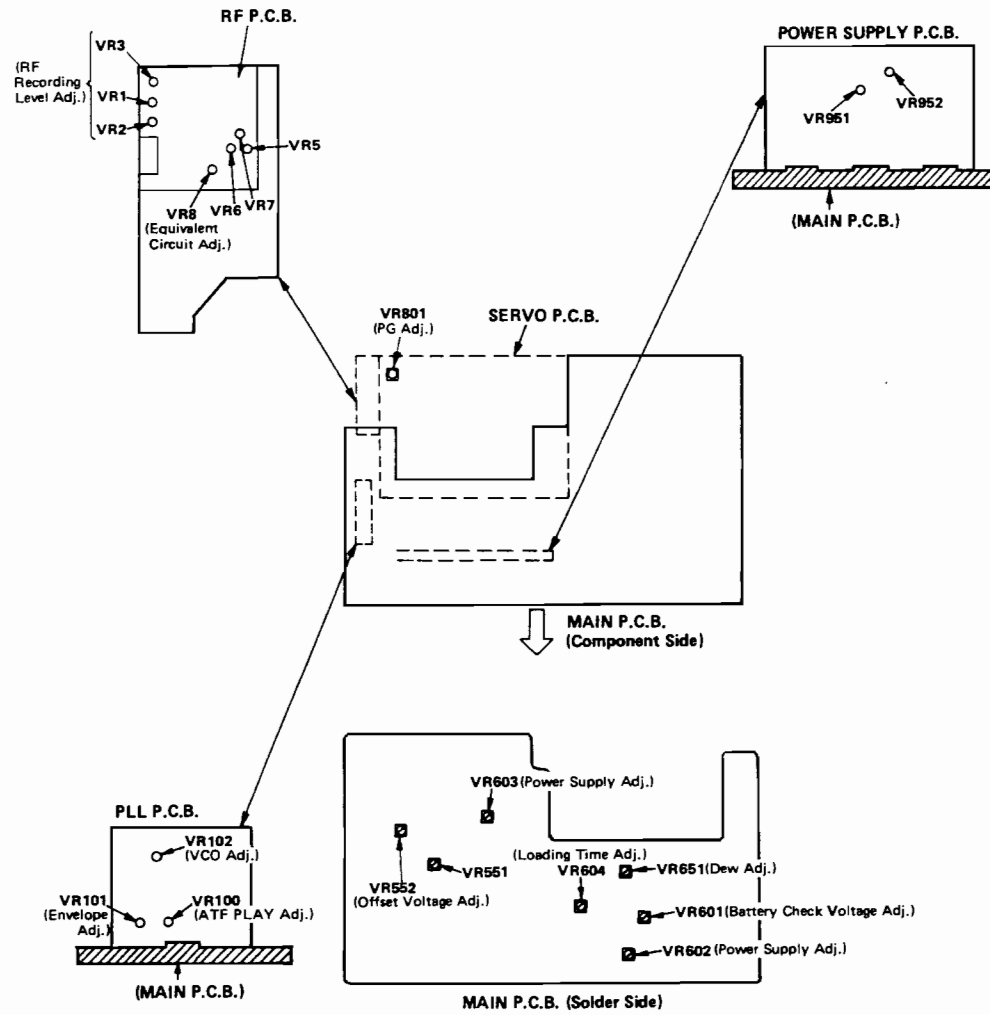
1. Connect the digital voltmeter to **TP18**.
2. Connect a DC power supply to the DC IN jack. (DC6.5V)
3. Set the power switch to ON mode.
4. Adjust **VR602** so that the voltage at the test point above is 5V.

11-2. Adjustment of the signal processing power supply

1. Connect the digital voltmeter to **TP19**.
2. Connect a DC power supply to the DC IN jack. (DC6.5V)
3. Set the power switch to ON mode.
4. Adjust **VR603** so that the voltage at the test point above is 5V.

LOCATION OF ADJUSTMENT POINTS

* Please refer to Printed Circuit Board for test point locations. (See page 63 ~ 72).



■ TERMINAL FUNCTION OF IC

● IC402 (SAQ0002-1) : DEM

Pin No.	Mark	I/O	Function
1	DIG-1	I	This terminal inputs the digital signal.
2	SIDSH	I	This terminal inputs the shift clock signal for the sub-code ID.
3	SIDOA	I/O	This terminal inputs and outputs the serial data for sub-code ID.
4	MID-S	I	This terminal inputs the shift clock signal for the main ID.
5	MID-D	I/O	This terminal inputs and outputs the serial data for the main ID data.
6	MICONW	I	Not used, connected to GND.
7	MICONR	I	Not used, connected to GND.
8 9 10 11	PO0 PD3	I/O	These are buses of the PACK data for the computer.
12	GND	I	For ground connection.
13 14 15 16	PD4 PD7	I/O	These are buses of the PACK data for the computer.
17 18 19 20 21 22 23 24 25 26	ADR0 AOR9	O	Not used, open.
27	R-WE	O	
28	R-OE	O	
29	NC	-	
30 31 32 33 34 35 36 37	MD7 MD0	I/O	These are buses of the sub-code RAM.
38	GND	I	For ground connection
39	CIFLAG	I	This terminal inputs the C1 flag for calculating error rate.
40 41 42 43 44 45 46 47	IDB7 IDB0	I	These are internal buses of ECC.
48	ORB	I	Not used, connected to GND.
49	ORA	I	This terminal inputs the latch pulse of output port A.
50	NEXTP	I	Inputs the next page increment signal for calculating the syndrome of the sub-code.
51	SND-S	I	Inputs a signal for starting the syndrome calculating for the sub-code.
52	DIRQT	O	Outputs the data of the main ID during recording. Outputs the writing request signal of the demodulated data during playback.
53	DEMDAT	O	Outputs a signal to latch calculated syndrome results for the sub-code during recording. Outputs the demodulated data of pins 8 ~ 10 during playback.
54	DREST	O	Outputs a signal to clear the register for the syndrome calculation of the sub-code during recording. Outputs a signal to clear the data symbol counter in the block during playback.
55	ADLOAD	O	Outputs a signal to reset the ECC address counter of the sub-code during recording. Outputs a signal to load the block number of the playing data during playback.
56	MLACH	O	Outputs the clock signal for syndrome calculation of the sub-code during recording. Outputs the latch clock signal of 8 bits of playing data during playback.

Pin No.	Mark	I/O	Function
57	OCF	O	Outputs the shift clock signal of the main ID during recording. Outputs the shift clock signal of the playing data during playback.
58	CDCP	O	Outputs the data of the digital IN during recording. Outputs the shift clock signal of ID code during playback.
59	Vcc	I	For connection to +5V.
60	GND	I	For ground connection.
61	TEST	I	Inputs the control signal of external access to the sub-code RAM.
62	PCMAO	I	Inputs the window signal to calculate C1 of the sub-code.
63	SUBOE	I	Input the latch signals of sub-code datas SD7 ~ SD0 during recording.
64 65 66 67 68 69 70 71	SD7 SD0	O	These are data buses of the sub-code (LSB ~ MSB).
72	DEMCOD	I	Inputs the NPZI-demodulated playback signal by PLL.
73	PLCP	I	Input the shift clock signal of the DEM code.
74	D-DATA	I	Inputs the data for D/A.
75	D-SIFT	O	Outputs the shift clock signals for D/A and A/D.
76	O-LOAD	O	Outputs the load clock signals for D/A and A/D.
77	LR2	O	Outputs the double-length clock signal of L/R channels (96 kHz).
78	LSRR	O	Outputs the switching signal of L or R channel (48 kHz). At "High" level left channel At "Low" level right channel
79	LR4	O	Not used, open.
80	D-FLAG	I/O	This terminal is for output and input of the error flag of digital signal.
81	H-SW	I	Inputs the PG of the drum.
82	FS-SIF	I	Inputs the shift clock signal of the FS-DAT.
83	FS-SYN	I	For identification of the FS-DAT. At "Low" level Control data At "High" level Level meter data
84	FS-DAT	I/O	Inputs the control data (recording or playback and so on) and outputs the level meter data.
85	GND	I	For ground connection.
86	CXA1	I/O	Crystal terminal (12.188MHz)
87	CXAO		
88	CXBI	I/O	Crystal terminal (11.2896 MHz)
89	CXBO		
90	VCOIN	I	Not used, connected to GND.
91	VCOA	O	Not used, open.
92	VCOB	O	Not used, open.
93	DIG-O	O	Outputs the digital signal.
94	FRAME	O	Not used, open.
95	MSYNC	O	Outputs the synchronous detection signal of the playback signal.
96	IDP	O	Outputs a signal for the parity check of the ID code.

● IC403 (SAQ0001-2) : DSP

Pin No.	Mark	I/O	Function
1 8	SD0 SD7	I	Inputs the data of the sub-code.
9	SUBOE	O	Outputs the latch clock signal of the sub-code data.
10	SUBMAD	O	Outputs the window signal to calculate C1 of the sub-code.
11	FCH	O	Output a signal of 9.408 MHz.
12	GND	I	For ground connection.
13	CDCP	I	Inputs the digital data during recording. Inputs the shift clock signal of the ID code during playback.
14	DCP	I	Inputs the shift clock signal of the main ID during recording. Inputs the shift clock signal of the playing data during playback.
15	ADRLOA	I	This is a block address and inputs the load signal of the ID code.
16	DEMDAT	I	Outputs the serial data of 8 bits of playing data.
17	DIRQT	I	Inputs the serial data of the main ID during recording. Inputs the write request signal of the playing data.
18 25	IDB7 IDB0	I	These are internal buses of ECC (LSB ~ MSB).
26 33	DB7 DB0	I/O	Data buses (LSB ~ MSB).
34	QRBCP	I	Inputs the latch clock signal of ECC output port B.
35	ORACP	I	Inputs the latch clock signal of ECC output port A.
36	WRQT	I	Inputs the write request signal from the GLU.
37	RRQT	I	Inputs the read request signal from the GLU.
38	GND	I	For ground connection.
39	TEST	I	This is the terminal for IC test. Normally this is for ground connection.
40	NEXT	I	For syndrome calculation. Inputs the page increment signal.
41	SNDSTT	I	Inputs a signal to start syndrome calculation.
42	PQKIR	O	Outputs the switching signals of the C1 and C2.
43	MUTEIN	I	Inputs the muting signal of the digital data. (Not used, connected to +5V)
44	GLUR	O	Outputs a signal to reset the ECC program counter.
45	HFCH	O	Outputs the system clock signal of the ECC.
46	SSHIF	O	Outputs the clock signal for the syndrome calculation.
47	SLATCH	O	Outputs the latch clock signal for the results of the syndrome calculation.
48	PQRST	O	Outputs the reset pulse of the syndrome register.
49	INACP	O	Outputs the latch signal for input port A.
50 58	A0 A8	O	These are the output terminals for memory addresses.

Pin No.	Mark	I/O	Function
59	Vcc	I	To be connected to +5V.
60	GND	I	For ground connection.
61	RAMWE	O	Outputs the write enable signal for memory.
62 64	A9 A11	O	These are the output terminals for memory addresses.
65	RAMOE	O	Outputs the output enable signal for memory.
66 67	A12 A13	O	These are output terminals for memory addresses.
68	VCOPL	I	Not used, open.
69	PLL4	O	Not used, open.
70	PLL3	O	
71	PLL2	O	
72	PLL1	O	Not used, open.
73	PLLD	O	
74	PLLC	I	Not used, open.
75	EXOR	O	Outputs the PLL phase comparison signal for the master clock.
76	CK28M	I	Inputs a signal of 28.224 MHz generated by PLL.
77	HEACH	O	Not used, open.
78	PBSG	I	Not used, open.
79	RCSG	O	Outputs the recording signal.
80	TSCK	O	Outputs the drum PG synchronization signal of 33.33 Hz.
81	LEVDA	I/O	Inputs the serial control data and outputs the serial level meter data.
82	LEVSX	I	Inputs the enable signal of the control data.
83	LEVSF	I	Inputs the shift clock signal of the control data.
84	HSW	I	Inputs the drum PG signal.
85	GND	I	For ground connection.
86	ATFMAD	O	Outputs the ATF ID signal of 130 kHz.
87	SEGCP	O	Outputs the segment clock signal of 66.66 Hz.
88	DFLAG	I/O	This is the terminal for error flag of digital signal.
89	MUTE	O	Not used, open.
90	ADDAT	I	Inputs the A/D data.
91	LR	I	Outputs the switching signal to L or R channel.
92	DLOAD	I	Outputs the data load clock signals for D/A and A/D.
93	DSIFT	I	Outputs the data shift clock signals for D/A and A/D.
94	DADAT	O	Outputs the D/A data.
95	PLLC	O	Not used, open.
96	DEMCOD	O	

● IC404 (SAQ0003-1) : ECC

Pin No.	Mark	I/O	Function
1 } 8	IDB0 } IDB7	I/O	These are for ECC internal busses (LBS ~ MSB).
9	GND	I	For ground connection.
10	GND		
11	NC	—	No connection.
12	S-RST	I	This is the input terminal to reset the program counter of the sub-code.
13	S-DF1	I	Inputs the done flag 1 signal of the sub-code.
14	S-DF2	I	Inputs the done flag 2 signal of the sub-code. (Not used, connected to +5V)
15	S-CLR	I	This is the input terminal to clear the syndrome register of the sub-code.
16	S-LACT	I	Inputs the latch clock signal for the results of the syndrome calculation of the sub-code.
17	S-SCLK	I	Inputs the clock signal for syndrome calculation of the sub-code.
18 } 25	SDB0 } SDB7	I	Input the sub-code data. (Not used, connected to GND)
26	SST1	O	For output of the ST-1 signal of the sub-code. (Not used, open)
27 } 30	TD0 } TD3	O	For output test. (Not used, open)
31 } 38	TD4 } TD11	O	For output test. (Not used, open)
39	TEST	O	For IC test (these are normally for ground connection).
40	TDS-A		
41	TDS-B		
42	NC	—	No connection.
43 } 44 } 45 } 46 } 47	IBS-A } IBS-B } IBS-C } IBS-D } IBS-E	O	For output test of the internal bus select signal. (Not used, open)
48	PQ2	I	Inputs the recording and playback signals.
49	Vcc	I	To be connected to +5V.
50	GND	I	For ground connection.
51	GND		
52	SUB1	I	Inputs the select signal of the sub code.
53	SUB2	I	Normally to be connected to +5V or for input of the select signal of the sub-code.
54	PQ1	I	Inputs C1 area signal of the sub-code.
55	PG	I	Normally to be connected to +5V or for input the gate control signal for the parity calculation.

Pin No.	Mark	I/O	Function
56	INA-CP	I	Inputs the latch pulse to input port A.
57	CLR	I	This is the input terminal to reset the register for the syndrome calculation.
58	LATC	I	Inputs the latch signal for the results of the syndrome calculation.
59	SCLK	I	Inputs the clock signal for the syndrome calculation.
60	CK	I	Inputs the system clock signal.
61	RST	I	This is the input terminal to reset the ECC program counter.
62	OF-1	I	Inputs the termination signal of the syndrome calculation.
63	DF-2	I	Inputs the C1 and C2 switching signals.
64	ST0	O	This is the output terminal to start the syndrome calculation.
65	ST1	O	This is the output terminal for the page increment of the syndrome calculation.
66	ST2	O	Outputs the memory read request signal.
67	ST3	O	Outputs the memory write request signal.
68	ST4	—	Not used, open.
69	ST5	O	Outputs the results of C1 check.
70	ORA	O	Outputs the latch clock signal of output port A.
71	ORB	O	Outputs the latch clock signal of output port B.
72	ORC	O	Outputs the latch clock signal of output port C. (Not used, open)
73 } 80	O80 } DB7	I	Input the data of LSB ~ MSB.

● IC502 (MN66181) : Digital Filter

Pin No.	Mark	I/O	Function
1	————	—	————
2	D012	O	16-bit parallel data output.
3	D011/SCK	O	16-bit parallel data output/serial output bit clock.
4	D010/SOUT	O	16-bit parallel data output/serial output data.
5	GND	I	GND terminal.
6	D09	O	16-bit parallel data.
7	————	—	————
8	D08	O	16-bit parallel data.
9	D07	O	16-bit parallel data.
10	————	—	————
11	————	—	————
12	D06	O	16-bit parallel data.
13	D05	O	16-bit parallel data.

Pin No.	Mark	I/O	Function
14	D04	O	16-bit parallel data.
15	D03/ZRLCK	O	16-bit parallel data/RL signal.
16	————	—	————
17	————	—	————
18	D02/WCK	O	16-bit parallel data/serial output word clock.
19	D01	O	16-bit parallel data.
20	D00	O	16-bit parallel data (LSB)
21	MDATA	I	Command data input. (Not used, connected to GND)
22	————	—	————
23	MCLK	I	Command clock input. (Not used, connected to GND)
24	MLD	I	Command load input. (Not used, connected to GND)
25	————	—	————
26	RST	I	Reset signal input (reset at "L").
27	VDD	I	Power supply. (Not used, open)
28	LRCK	I	R/L signal.
29	————	—	————
30	SFT	I	Serial data input clock.
31	SIN	I	Serial data input.
32	————	—	————
33	X OUT	O	Clock output. (Not used, open)
34	X IN	I	Clock input (16.9344 MHz).
35	OSEL	I	DA output parallel/serial selection. (Parallel at "L")
36	LDGL	O	L channel deglitch signal. (Not used, open)
37	RDGL	O	R channel deglitch signal. (Not used, open)
38	VDD	I	Power supply (connected to +5V).
39	D015	O	16-bit parallel data (MSB).
40	D014	O	16-bit parallel data.
41	————	—	Connected to +5V.
42	D013	O	16-bit parallel data.

• IC610 (MN188322RRG) : SYSTEM CONTROL

Pin No.	Mark	I/O	Function
1	COBUS5	O	Outputs the digital mute signal.
2	COBUS4	O	Outputs the digital emphasis signal.
3	COBUS3	O	Outputs the digital copy inhibit signal.
4	COBUS2	O	Outputs the head mask signal.
5	COBUS1	O	Outputs the D/A mute signal.
6	COBUS0	O	Outputs the rec mute signal.
7	NCYLOK	I	Inputs the capstan lock signal.
8	NCYLOK	I	Inputs the cylinder lock signal.
9	CAPER	I	Inputs commands for the rotation direction of the capstan. (Not used, connected to GND)
10	TRK	I	Inputs the ATF synchronization data.
11	HSW	I	Inputs the head switching signal.
12	NDCIN1	I	DC IN power supply detection signal.
13	NDCIN2	I	
14	MECAKEY	I	Not used, connected to GND.
15	PPRDY	I	Inputs the ready signal from the panel control.
16	BLKB	I	Inputs the signal that detects the signalless mode.
17	ENVL	I	Inputs the RF envelope signal.
18	ROT	I	Inputs the ROT signal. (Not used, connected to +5V)
19	————	—	(Not used, connected to +5V)
20	————	—	(Not used, connected to +5V)
21	TESTAD	I	This is the test terminal.
22	NDEW	I	Inputs the detection signal for the dew condensation.
23	EXI	I	Connected to GND.
24	EXO	O	Not used. (open)
25	NRST	I	Inputs the reset signal.
26	TAPLED	O	Outputs the signal for tape end and beginning detection LED display.
27	MDML	O	Outputs the mode motor load signal.
28	MDMUL	O	Output the mode motor un-load signal.
29	SOL	O	Outputs the solenoid drive signal.
30	TP	O	Outputs the track pitch signal. (Not used, open)
31	PREC	O	Outputs the ATF shift servo signal.
32	KLIMIT	O	Outputs the limiter switching signal. (Not used, open)
33	PPSTB	O	Outputs the strobe signal from the panel control.
34	NRDY	I	For input test (normally for ground connection.)
35	7MCK	I	Clock OSC terminal 1.
36	OSC2	O	

Pin No.	Mark	I/O	Function
37	Vss	I	For ground connection.
38	X1	I	Not used, connected to GND.
39	X0	O	
40	VDD	I	To be connected to +5V.
41	IRQ2	I	Not used, connected to +5V.
42	RLFGTU	I	Inputs the FG pulse of the take-up reel.
43	RLFGSU	I	Inputs the FG pulse of the supply reel.
44 } 48	TPHL1 } TPHL5	I	Inputs the tape hole detection signal.
49 } 51	MMOD2 } MMOD0	I	Inputs the tape mode switching signal.
52	HOLDSW	I	Inputs the cassette holder lock detection signal.
53	CDSW	I	Inputs the cassette detection signal.
54	TAPBA	I	Inputs the tape beginning detection signal.
55	TAPEA	I	Inputs the tape end detection signal.
56	TRCLK	I/O	Inputs and outputs the clock signal of the serial data.
57	RXDT	I	Inputs the serial data.
58	TXDT	O	Outputs the serial data.
59	DISPSF	O	Outputs the LED shift signal.
60	DISPRST	O	Outputs the reset signal. (Not used, open)
61	NSTBY	O	Outputs the stand-by signal.
62	HOOK	O	Outputs the data of the PCM playback.
63	PLLDT	I	Inputs the PLL serial data.
64	LEVDT	I/O	For input and output of the LEVEL/SYSTEM data.
65	SIDDT	I/O	Input and output of the SUB ID serial data.
66	MIDDT	I/O	Input and output of the PCM ID serial data.
67	LIGHT	O	Outputs the LCD display control signal.
68	8LEV1	O	Outputs the switching signal of the non-recorded segment level.
69	NREW	O	Outputs signals to control the rotation speed. (Not used, open)
70	MODSET	O	Outputs the data for LED display.
71	SER	O	Outputs signal to control direction of mode (FF/REW).
72	FLGSF	O	Outputs the flag counter shift pulse. (Not used, open)
73	FLGDT	O	Outputs the flag counter serial data. (Not used, open)
74	DSCP	O	Outputs the muting latch pulse.
75	LEVSYs	O	Outputs the switching signal level and system data.
76	LEVsf	O	Outputs the LEVEL/SYSTEM data shift clock pulse.
77	PLLSF	O	Outputs the PLL shift clock pulse.

Pin No.	Mark	I/O	Function
78	SIDSF	O	Outputs the SUB ID shift clock pulse.
79	MIDSF	O	Outputs the PCM ID shift clock pulse.
80	—	—	—
81	MICATT	O	Outputs the mic attenuator switching signal. (Not used, open)
82	ARNP	O	Outputs the recording/playback switch signal of the amplifier.
83	DEEMP	O	Outputs the deemphasis switching signal.
84	SELsG	O	Outputs the LINE/MIC switching signal. (Not used, open)
85	NSGMUTE	O	Outputs the muting signal.
86	ALVC	O	Outputs the digital power supply control signal.
87	RST2	O	Outputs the resets signal.
88	D5SYS	I	To be connected to +5V.
89	D5SYS	I	This is the input terminal for the power supply of A/D converter circuit.
90	GND	I	For ground connection.
91	AOREF	I	This is the input terminal to set the standard voltage.
92 } 94	NC	—	Not used. (connected to GND)
95	BATIN	I	This is the input test terminal to battery check.
96	SHC	O	This is the output terminal for A/D sample hold capacitor.
97	Vss	I	For ground connection.
98	AVss		
99	CAPSL	O	Outputs the latch signal for the capstan servo.
100	RELSL	O	Outputs the latch signal for the reel servo.

● IC701 (MN15845RRF) : PANEL CONTROL

Pin No.	Mark	I/O	Function
1	VDD	I	To be connected to +5V.
2	OSC1	I	Clock OSC terminal (3.0 MHz)
3	OSC2	O	
4	X1	I	Not used, connected to GND.
5	X0	O	Not used, open.
6	NRST	I	Inputs the reset signal.
7	SYNC	O	Outputs the synchronizing signal. (Not used, open)
8	IRQ	I	Inputs the test terminal.
9	SIRQ	I	Not used, connected to GND.
10	TXDT	I	Inputs the serial data.
11	RXDT	O	Outputs the serial data.

Pin No.	Mark	I/O	Function
12	TRCLK	I/O	Inputs and outputs the clock signal of the serial data.
13	PPSTB	I	Inputs the strobe signal.
14	NDCIN	I	Inputs the DC IN power supply detection signal.
15	DCOFF	I	Inputs the DC power supply off detection signal.
16	TEST	I	This is the test terminal.
17	KPAD	I	Inputs the PAD switch signal. (Not used, open)
18	KTIMER	I	Inputs the timer switching signal. (Not used, open)
19	KMIC	I	Inputs the LINE/MIC switching signal. (Not used, open)
20	KLIMIT	I	Inputs the limiter switching signal. (Not used, open)
21 ∧ 24	KRO ∧ KR3	I	Input the key-return signal.
25 ∧ 28	KS0 ∧ KS3	O	Output the key-scan signal.
29	RST1	O	Outputs the reset signal for the system control.
30	PPRDY	O	Outputs the ready signal.
31	RLYOFF	O	Outputs the relay off mode signal.
32	RLYON	O	Outputs the relay on mode signal.
33 ∧ 35	VLCD1 ∧ VLCD3	I	Inputs the bias voltage for LCD (display tube).
36 ∧ 39	COM0 ∧ COM3	O	Outputs the common signal for the LCD (display tube).
40 ∧ 63	SEG0 ∧ SEG23	O	Outputs the segment signal for the LCD (display tube).
64	GND	—	For ground connection.

● IC801 (MN52080SDE) : MAIN SERVO

Pin No.	Mark	I/O	Function
1	Vss	I	For ground connection.
2	X1	—	Not used, open.
3	SVCLK	I	Inputs the system clock signal of 9.408 MHz.
4	ROT	I	Inputs the RQT of 66.66 Hz.
5	SVSYNC	I	Inputs the synchronizing signal.
6	NROTSW	O	Not used, open.
7	NTSTEM	—	Not used, open.
8	VDD	I	To be connected to +5V.
9	Vss	I	For ground connection.
10	COBUS 0	I	Inputs the rec mute signal.

Pin No.	Mark	I/O	Function
11	COBUS 1	I	Inputs the D/A mute signal.
12	COBUS 2	I	Inputs the head mask signal.
13	COBUS 3	I	Inputs the digital copy inhibit signal.
14	COBUS 4	I	Inputs the digital emphasis signal.
15	COBUS 5	I	Inputs the digital mute signal.
16	VDD	I	To be connected to +5V.
17	Vss	I	For ground connection.
18	CAPSL	I	Inputs the latch signal for the capstan servo.
19	RELSL	I	Inputs the latch signal for the reel servo.
20	NSTBY	I	Inputs the stand-by signal.
21	NRST2	I	Inputs the reset signal.
22	HOOK	I	Inputs the data of the PCM playback.
23	A	O	Outputs the capstan motor control signal.
24	Vss	I	For ground connection.
25	VDD	I	To be connected to +5V.
26	CAPFG	I	Inputs the capstan FG signal.
27	RLFSG	I	Inputs the supply reel FG signal.
28	RLFGT	I	Inputs the take up reel FG signal.
29	CYLFG	I	Inputs the cylinder FG signal.
30	CYLPG	I	Inputs the cylinder PG signal.
31	B	—	Not used, open.
32	VDD	I	To be connected to +5V.
33	Vss	I	For ground connection.
34	CYLED	O	Outputs the command for the rotation direction of the cylinder.
35	CAPED	O	Outputs the command for the rotation direction of the capstan motor.
36	Rcc	O	Outputs the capstan motor switching signal.
37	TL	O	Outputs the torque limit signal of the capstan motor.
38	CAPD	O	Outputs the capstan motor drive.
39	CYLD	O	Outputs the cylinder drive.
40	Vss	I	For ground connection.
41	VDD	I	To be connected to +5V.
42	FIL	O	Outputs the control signal for capstan motor driving.
43	ATF ON	O	This is the output terminal to connect with the ATF circuit.
44	SP1	O	Outputs the sample hold control signal.
45	SP2	O	
46	C	O	Outputs the capstan motor control signal.

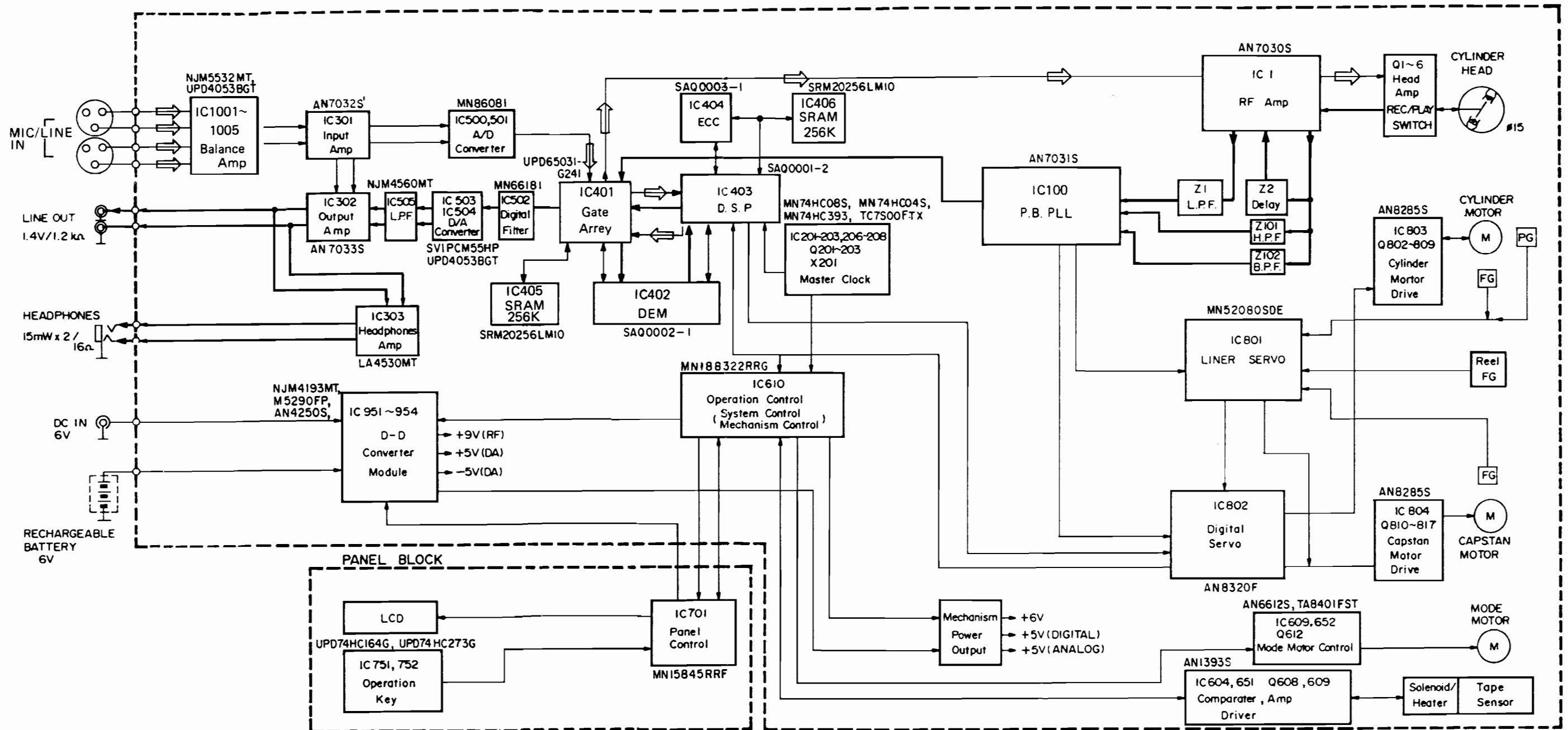
Pin No.	Mark	I/O	Function
47	SPE	O	Outputs the sample hold control signal.
48	VDD	I	To be connected to +5V.
49	Vss	I	For ground connection.
50	ATFWND	O	Outputs the data of the ATF area.
51	NCAPOK	O	Outputs the capstan lock signal.
52	NCYLOK	O	Outputs the cylinder lock signal.
53	RLFGTU	O	Outputs the FG pulse of the take-up reel.
54	RLFGSU	O	Outputs the FG pulse of the supply reel.
55	TRK	O	Outputs the ATF synchronization data.
56	VDD	I	To be connected to +5V.
57	Vss	I	For ground connection.
58	HSW	O	Outputs the head switching signal.
59	NTRRST	-	} Not used, open.
60	NTSEL 0	-	
61	NTSEL 1	-	
62	NTSEL 2	-	
63	X2	O	Outputs the capstan motor control signal.
64	VDD	I	To be connected to +5V.

• IC802 (AN8320) : SUB-SERVO & ATF

Pin No.	Mark	I/O	Function
1	CAPFG1	O	Outputs the capstan FG signal.
2	CAPFG	I	Inputs the capstan FG signal (230 pulses/rev).
3	NFC	I	This is the input terminal to connect with the capacitor of the NF.
4	CYLDPG	O	Outputs the cylinder PG signal (1 pulse/rev).
5	PGWA	I	This is the input terminal to connect with the VT for adjustment of the pulse width of the PD signal.
6	CYLPG	I	Inputs the cylinder PG signal (1 pulse/rev).
7	GND	I	For ground connection.
8	SVRF	I	Inputs the envelope detection signal.
9	CDD	I	This is the input terminal for connection with the detection circuit for the pilot signal's peak.
10	PD0	O	Outputs the detection signal for the pilot signal's peak.
11	PD1	I	Inputs the detection signal for the pilot signal's peak.
12	SP1	I	Inputs the sample hold control signal.
13	SP2		
14	Vspe	I	Inputs the standard voltage for the detection circuit of the difference of the pilot voltages.
15	SPE	I	Inputs the sample hold control signal.

Pin No.	Mark	I/O	Function
16	CSH	I	Input terminal for connection with the capacitor in the detection circuit for the peak voltage of the pilot signal.
17	ATFTER	O	Outputs the ATF control signal.
18	NFC	I	This is the input terminal to connect with the capacitor of the NF.
19	Vcc1	I	To be connected to +5V.
20	SRVDL	I	This is the input terminal to connect with the ATF circuit.
21	Ph Tr Bias	O	Outputs the Ph Tr Bias signal.
22	Vref.	I	This is the input terminal to set the standard voltage.
23	LED1 IN	I	Inputs the capstan motor circuit signal.
24	LED1 OUT	O	Outputs the cylinder motor circuit signal.
25	LED2 IN	I	Inputs the mechanism circuit signal.
26	LED2 OUT	O	Outputs the mechanism circuit signal.
27	CYLDFG	O	Outputs the cylinder FG signal (40 pulses/rev).
28	CYLDFG	I	Inputs the cylinder FG signal (40 pulses/rev).
29	CYLDFG	O	Outputs the cylinder FG signal (40 pulses/rev).
30	CYLFG	I	Inputs the cylinder FG signal (40 pulses/rev).
31	STNDBY	I	To be connected to +5V.
32	RLFGT	I	Inputs the take-up reel FG signal (40 pulses/rev).
33	RLFGT	O	Outputs the take-up reel FG signal (40 pulses/rev).
34	RLFGT	I	Inputs the take-up reel FG signal (40 pulses/rev).
35	RLDFGT	O	Outputs the take-up reel FG signal (40 pulses/rev).
36	RLDFGS	O	Outputs the supply reel FG signal (40 pulses/rev).
37	RLDFGS	I	Inputs the supply reel FG signal (40 pulses/rev).
38	RLFGS	O	Outputs the supply reel FG signal (40 pulses/rev).
39	RLFGS	I	Inputs the supply reel FG signal (40 pulses/rev).
40	Vcc2	I	To be connected to +5V.
41	CAPFG2	O	Outputs the capstan FG signal (250 pulses/rev). (Not used, open)
42	CAPFG2	I	Inputs the capstan FG signal (250 pulses/rev).
43	CAPFG2	O	Outputs the capstan FG signal (250 pulses/rev).
44	CAPFG2	I	Inputs the capstan FG signal (250 pulses/rev). (Not used, open)
45	CAPDFG2	O	Outputs the capstan FG signal (250 pulses/rev). (Not used, open)
46	CAPFIL	I	Inputs the control signal for the capstan motor driving.
47	CAPDFG1	O	Outputs the capstan FG signal (250 pulses/rev).
48	CAPDFG1	I	Inputs the capstan FG signal (250 pulses/rev).

BLOCK DIAGRAM



Note: Playback signal
 Recording signal

SCHEMATIC DIAGRAM

(Parts list on pages 73 ~ 80.)

(This schematic diagram is subject to change without notice.)

Notes:

The voltage values and waveforms in these diagrams are measured by DC voltmeter and oscilloscope referenced to chassis ground. There may be some error depending on impedances and characteristics of the test equipment used.

● Voltages in parentheses are measured during play mode. Other values are measured in stop mode.

(.....) indicates the flow of the record signal.
 (.....) indicates the flow of the play signal.

Important safety notice:

Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

< >..... Voltage values at record mode.
 ()..... Voltage values at play mode.

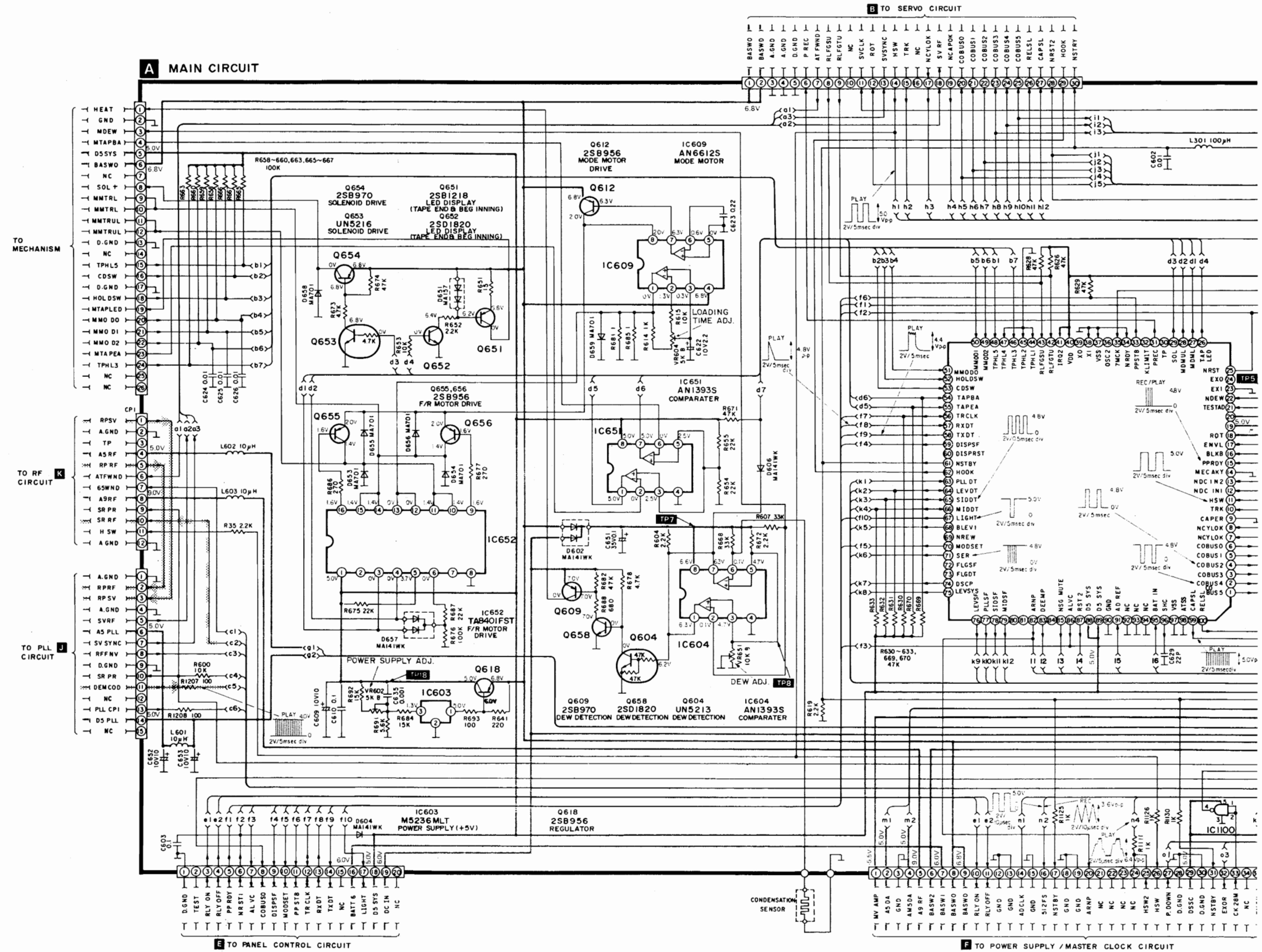
Other values are measured in stop mode.

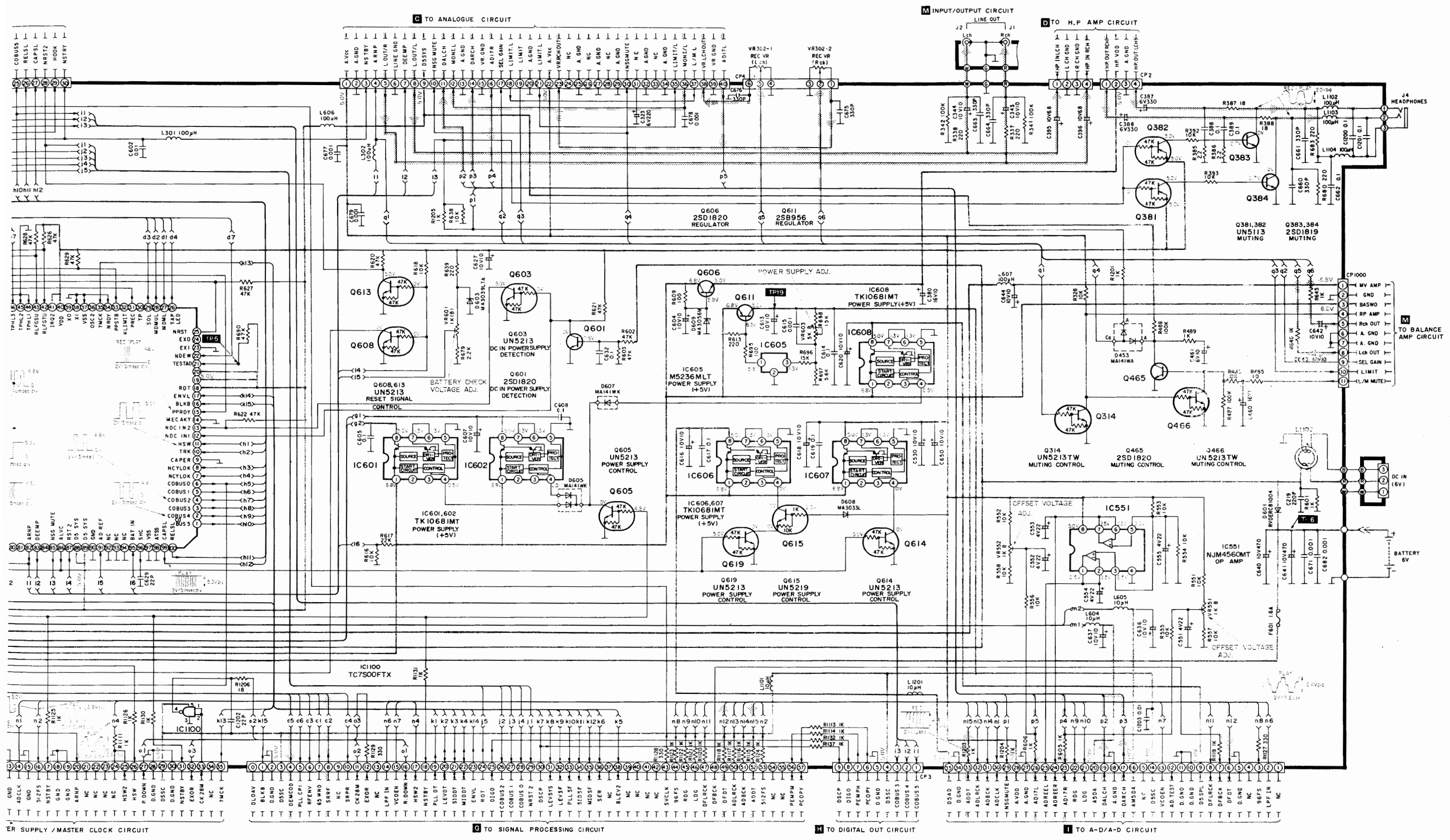
Caution!

IC and LSI are sensitive to static electricity. Secondary trouble can be prevented by taking care during repair.

- Cover parts boxes made of plastic with aluminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the pins of IC or LSI with fingers directly.

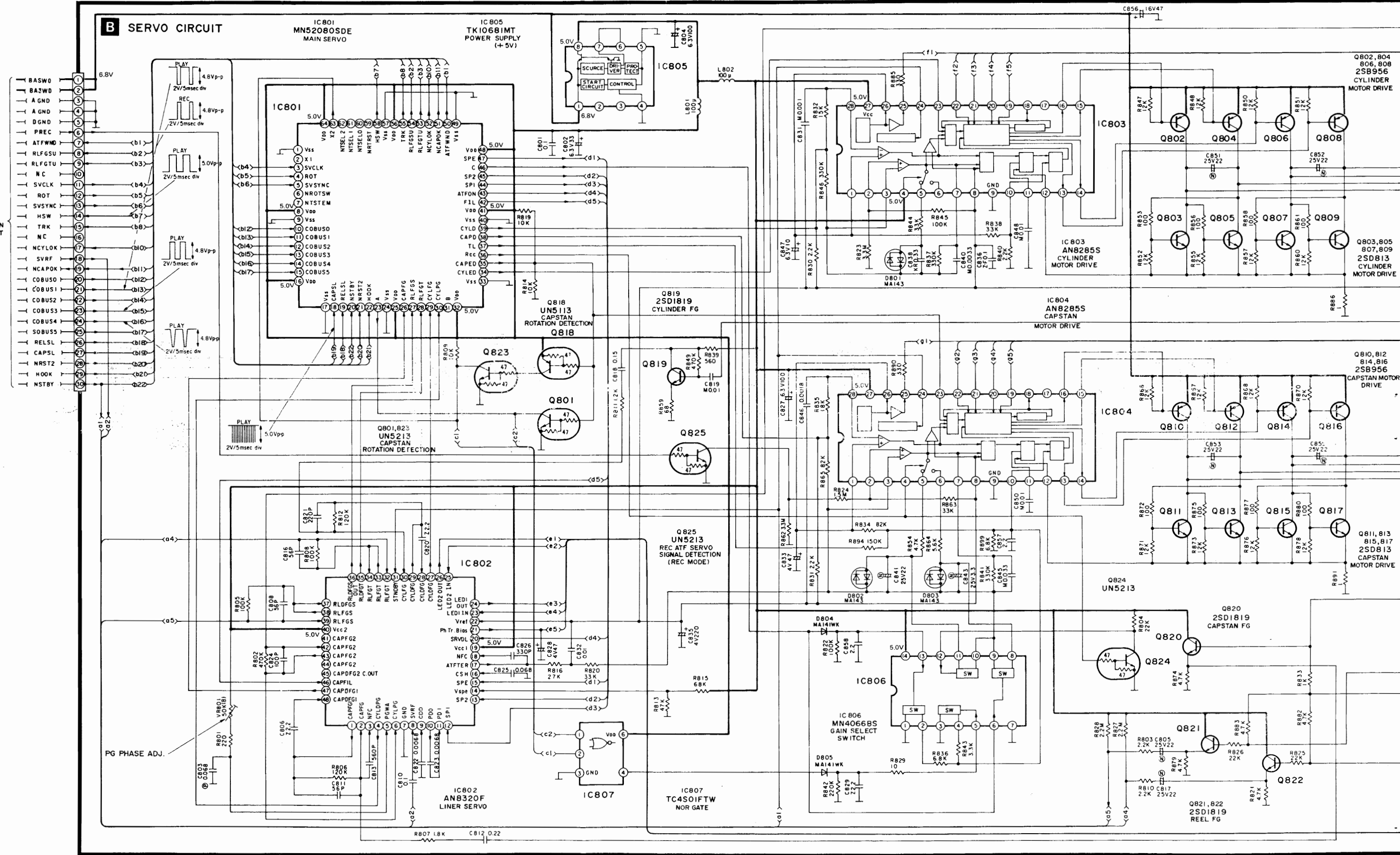
A MAIN CIRCUIT

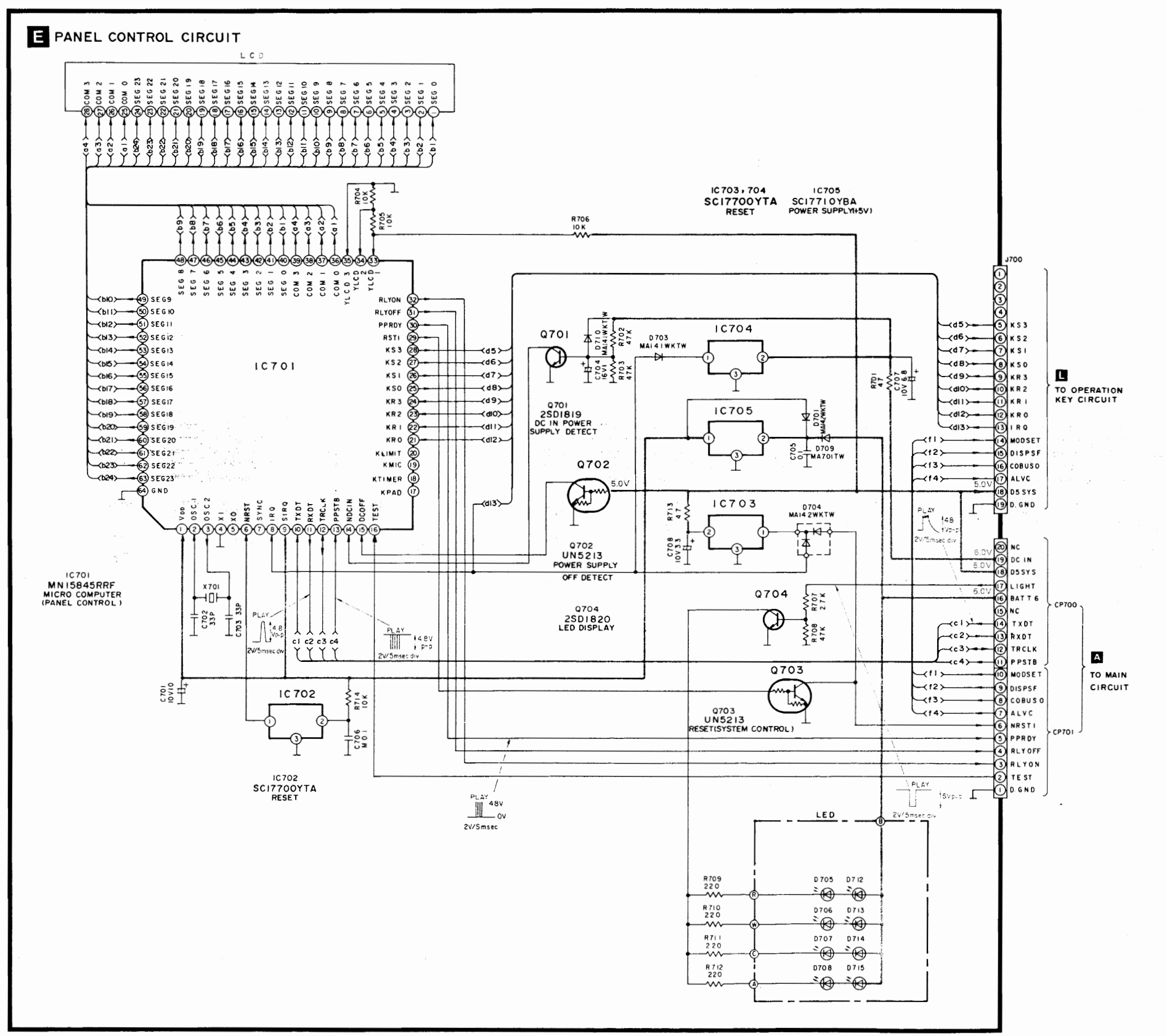
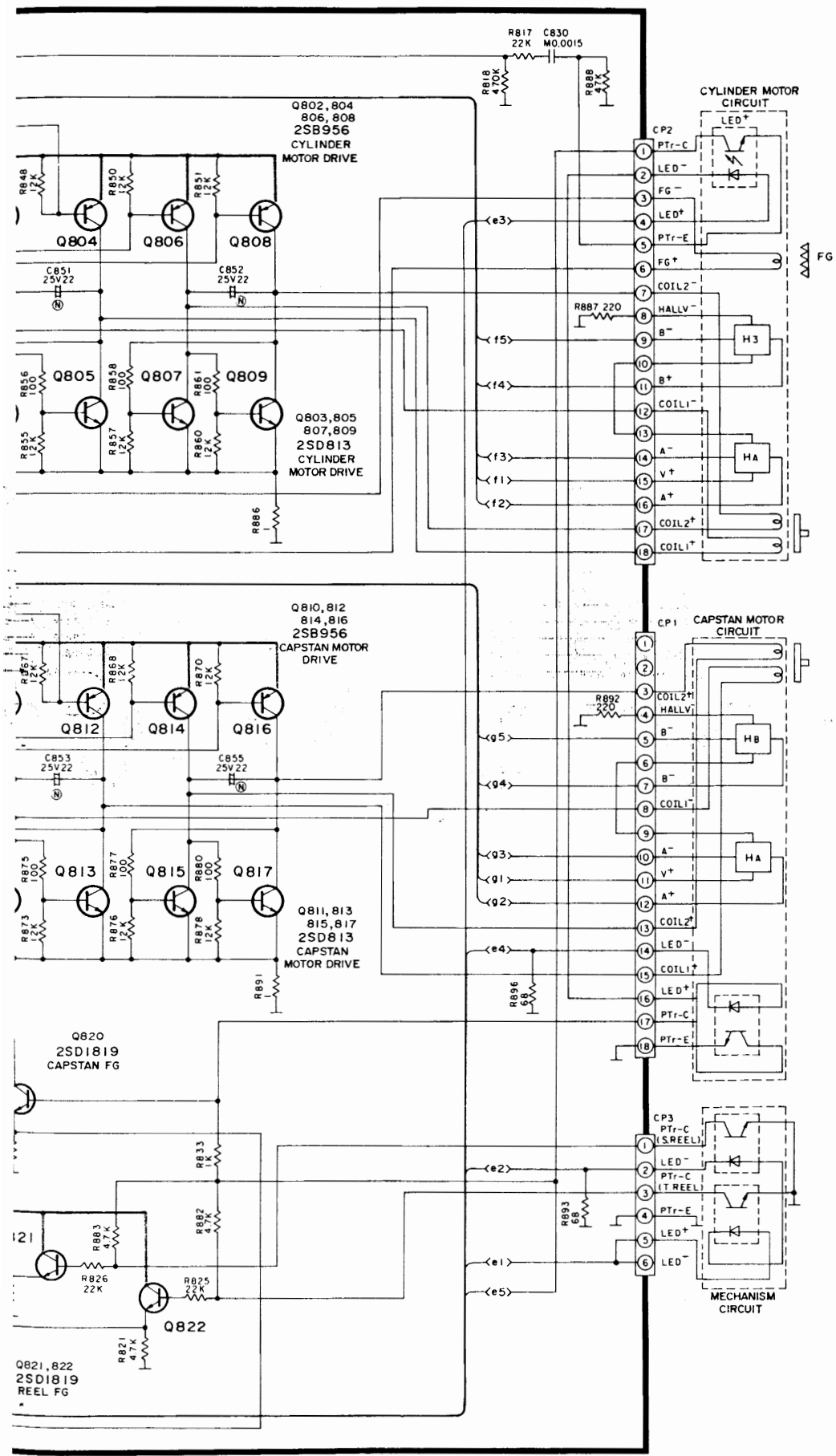




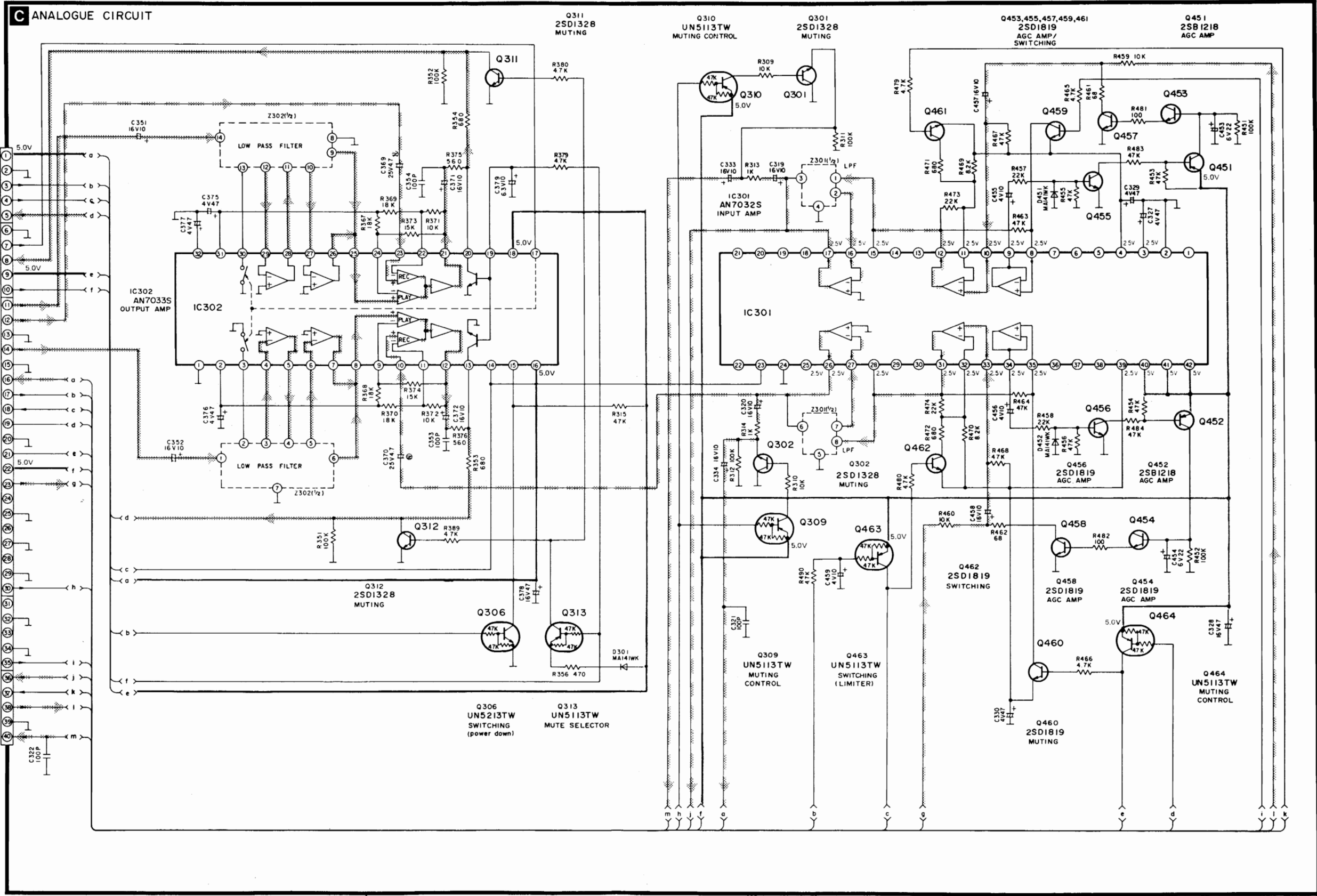
B SERVO CIRCUIT / E PANEL CONTROL CIRCUIT

A
B
C
D
E
F
G

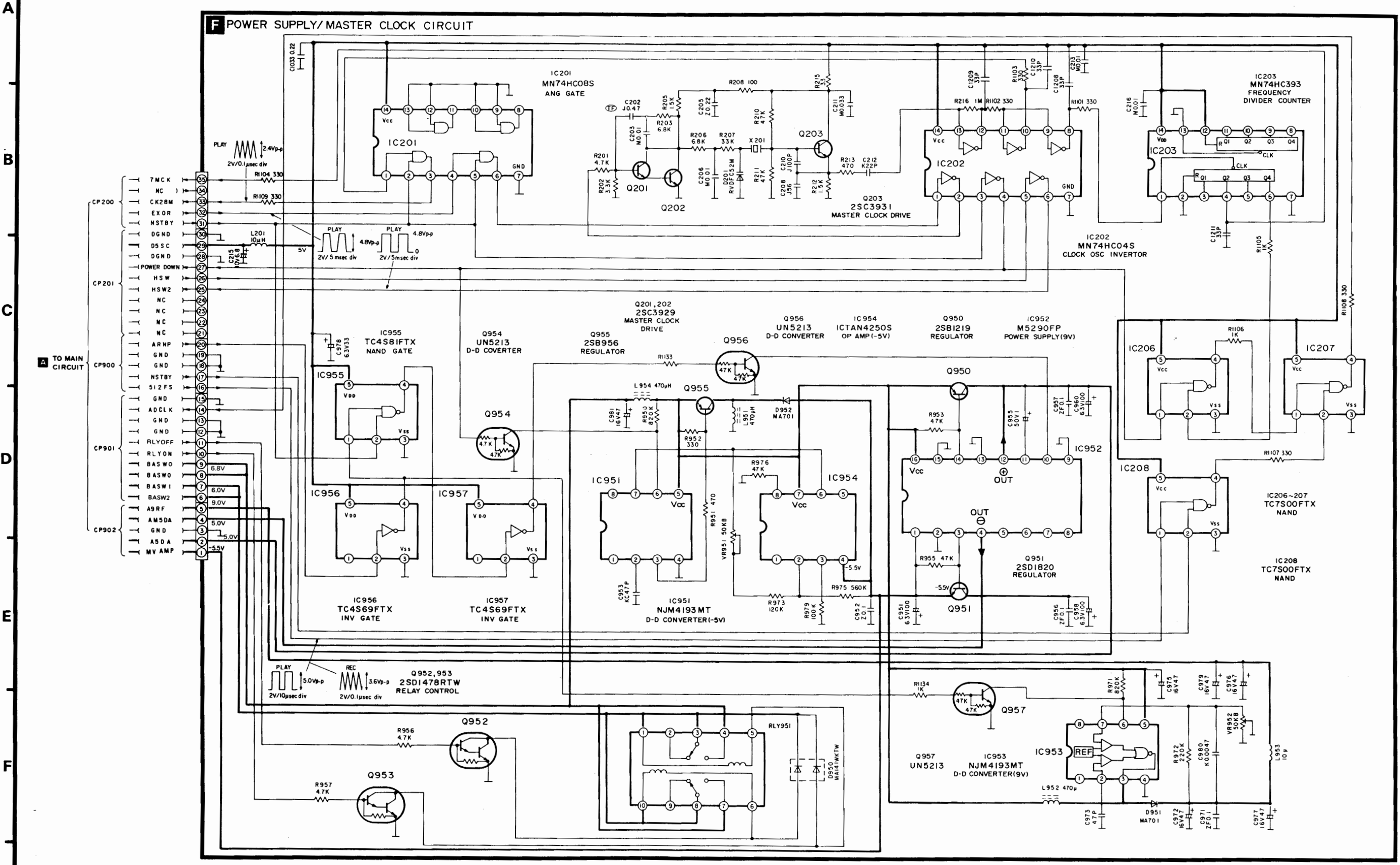




C ANALOGUE CIRCUIT



F POWER SUPPLY/MASTER CLOCK CIRCUIT



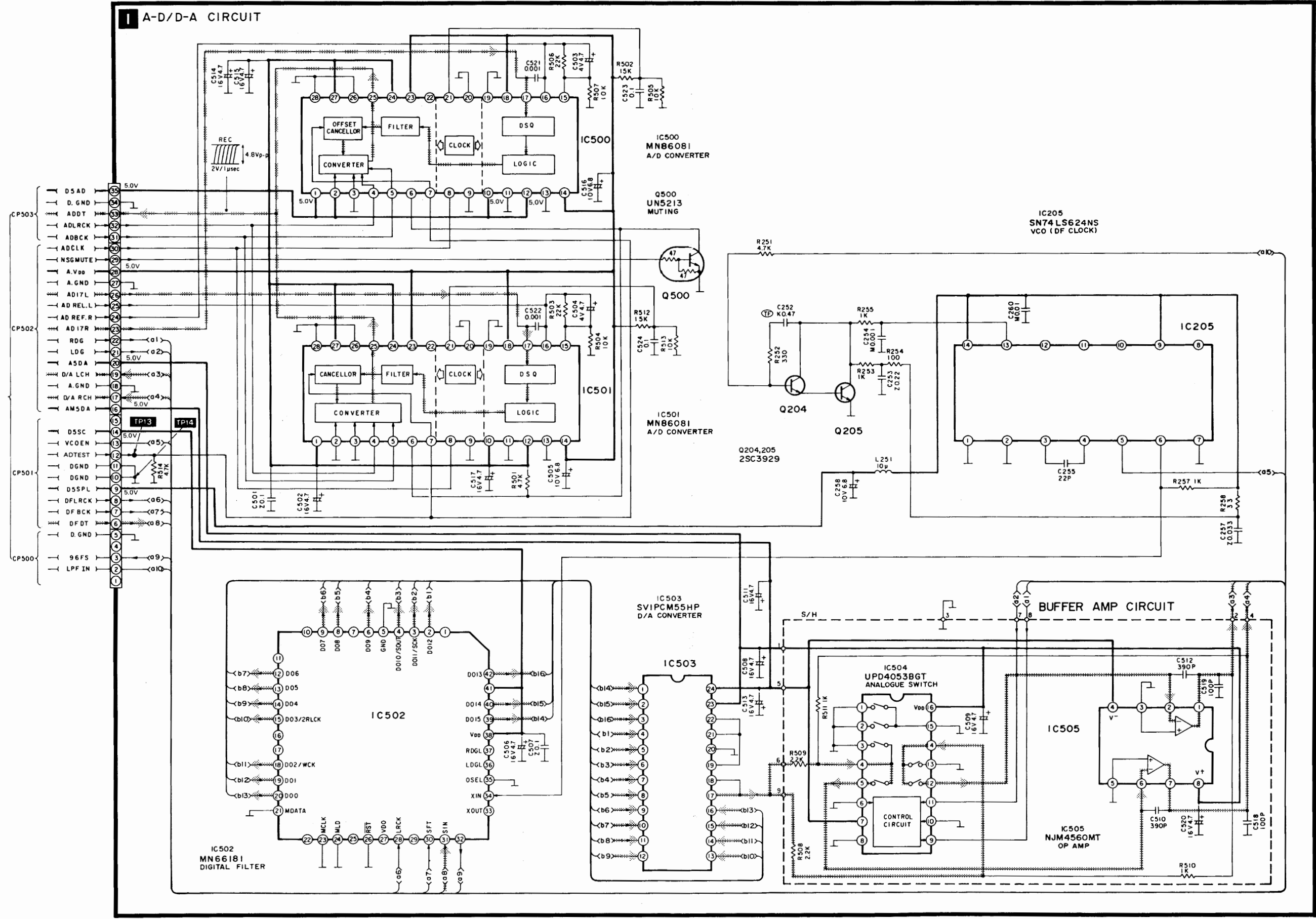
1 2 3 4 5 6 7 8 9

I A-D/D-A CIRCUIT

I A-D/D-A CIRCUIT

A
B
C
D
E
F
G

A
TO MAIN
CIRCUIT



K RF CIRCUIT

A

B

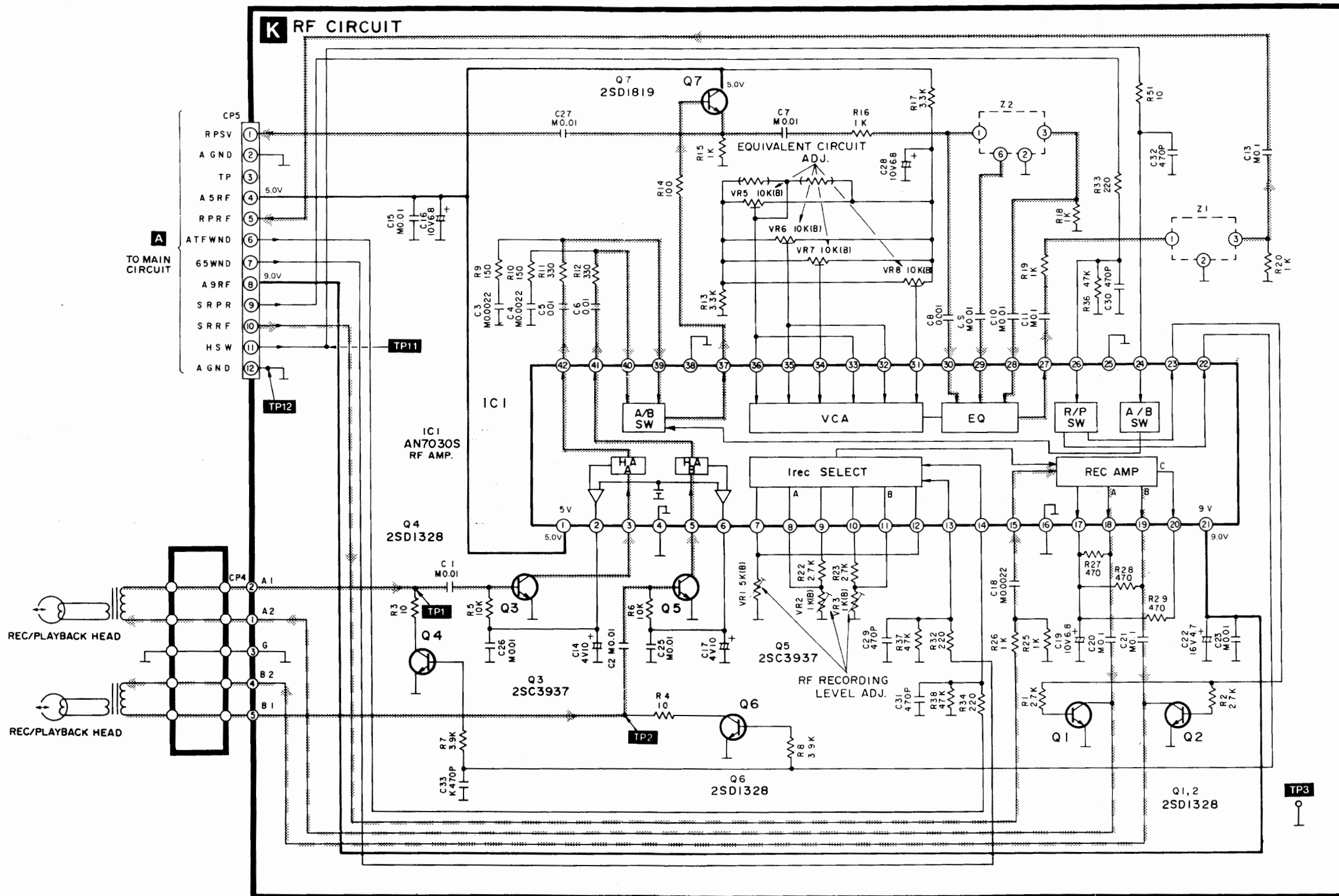
C

D

E

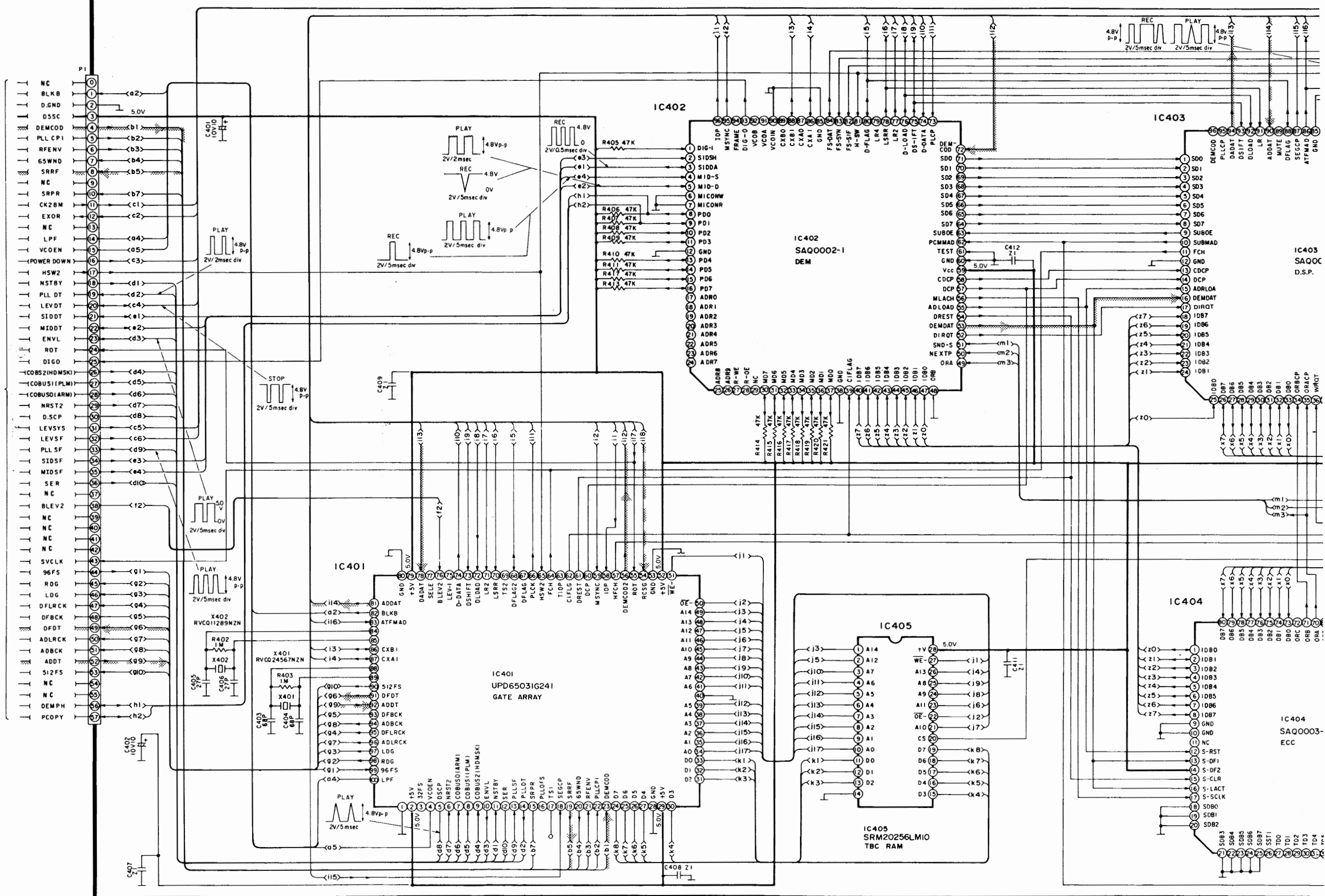
F

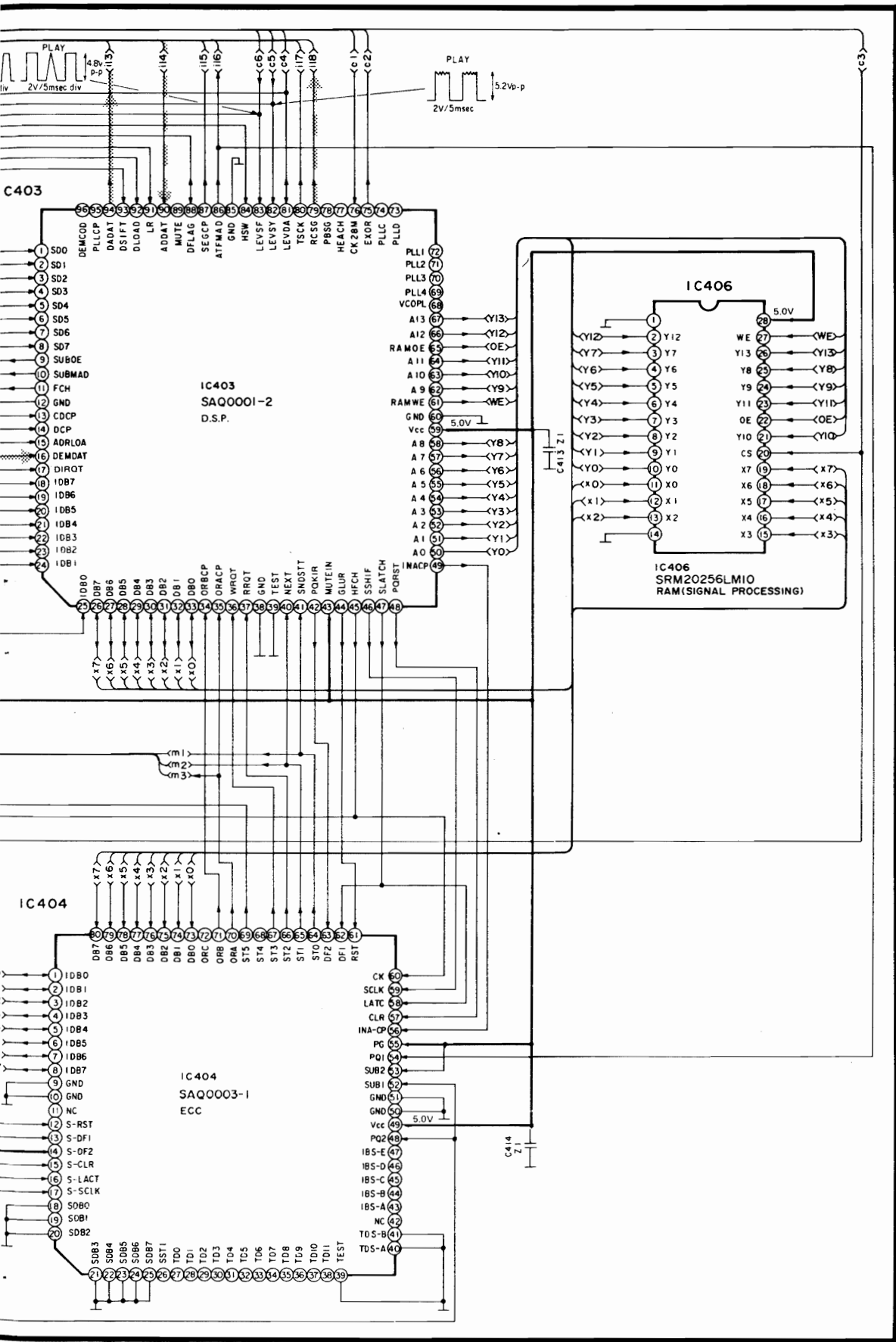
G



G SIGNAL PROCESSING CIRCUIT

G SIGNAL PROCESSING CIRCUIT





H DIGITAL OUT CIRCUIT / **J** PLL CIRCUIT / **D** HEADPHONES AMP CIRCUIT

A

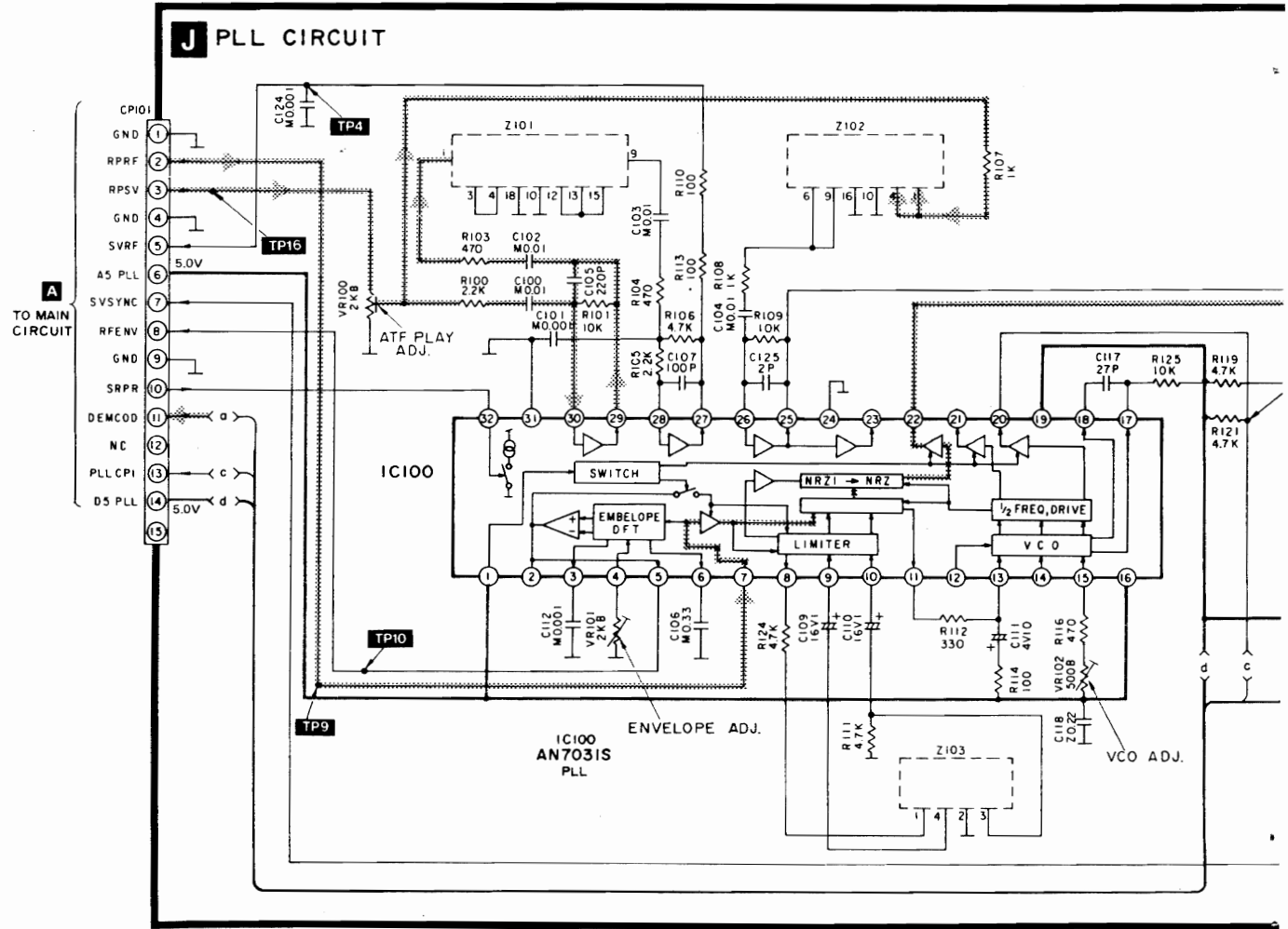
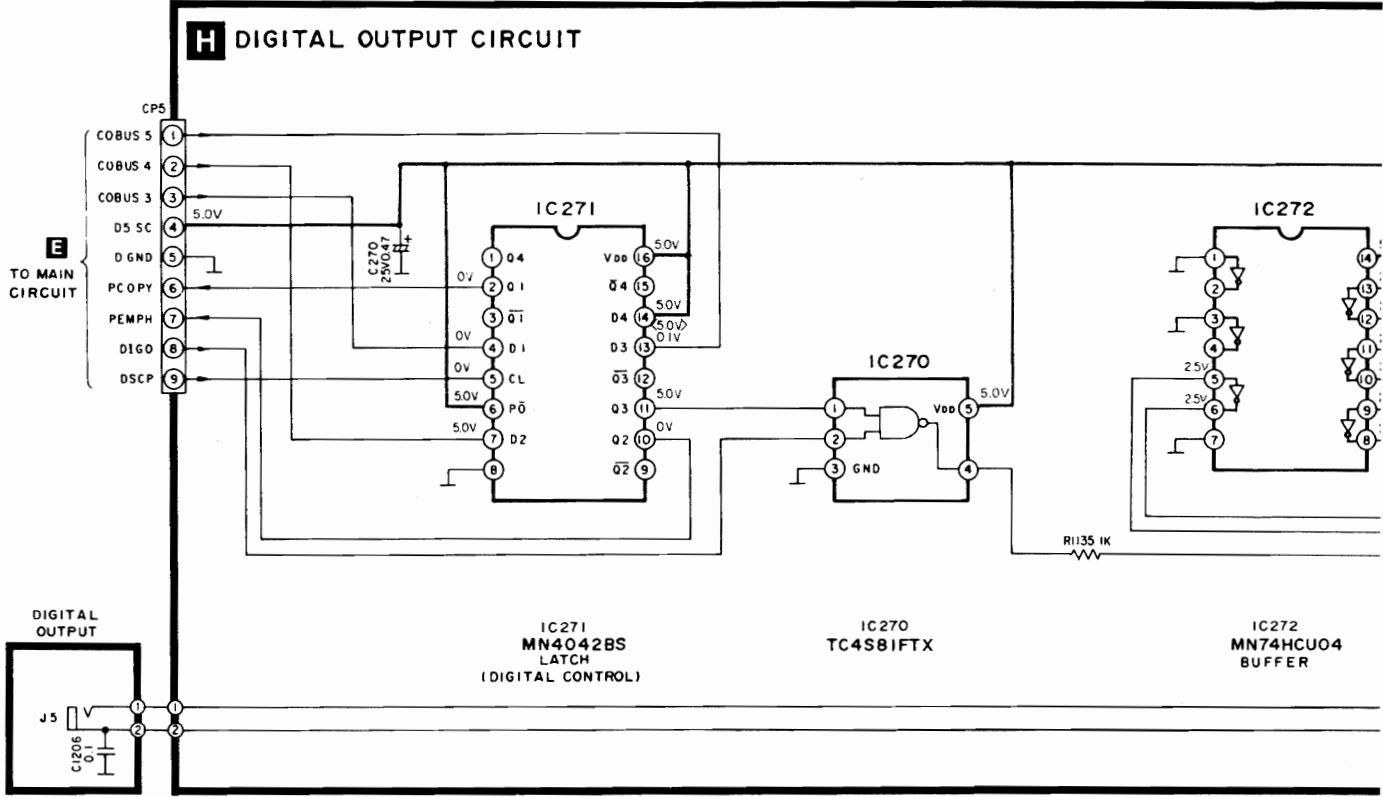
B

C

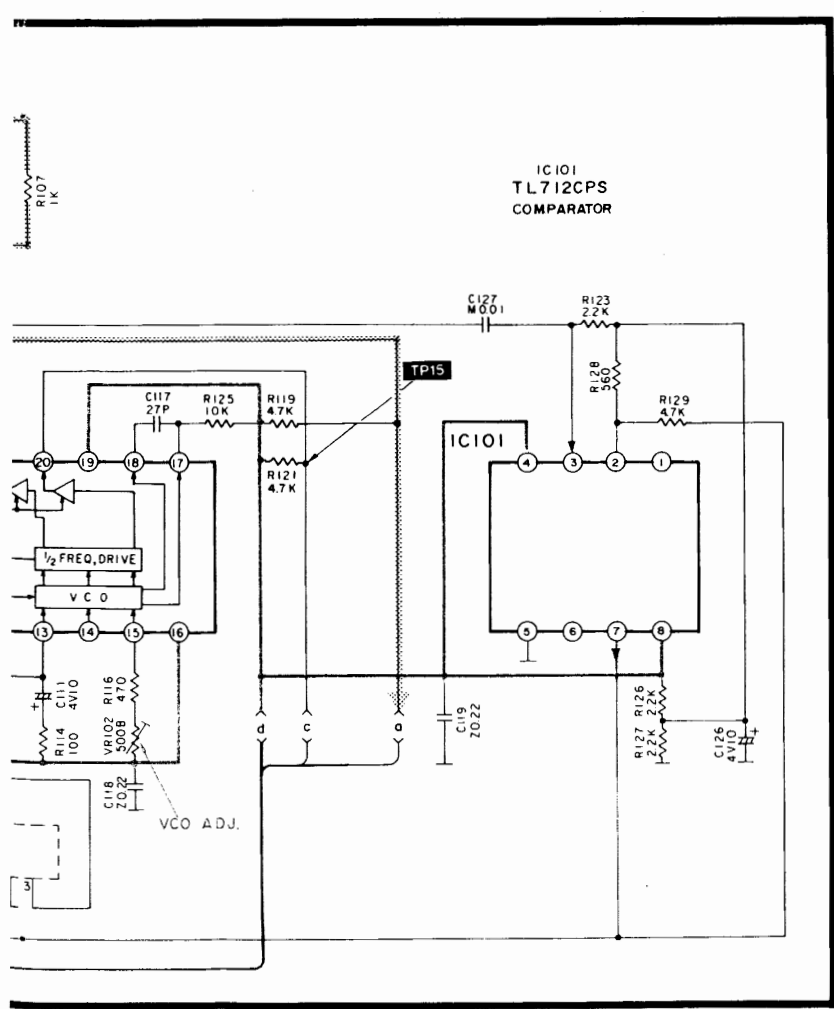
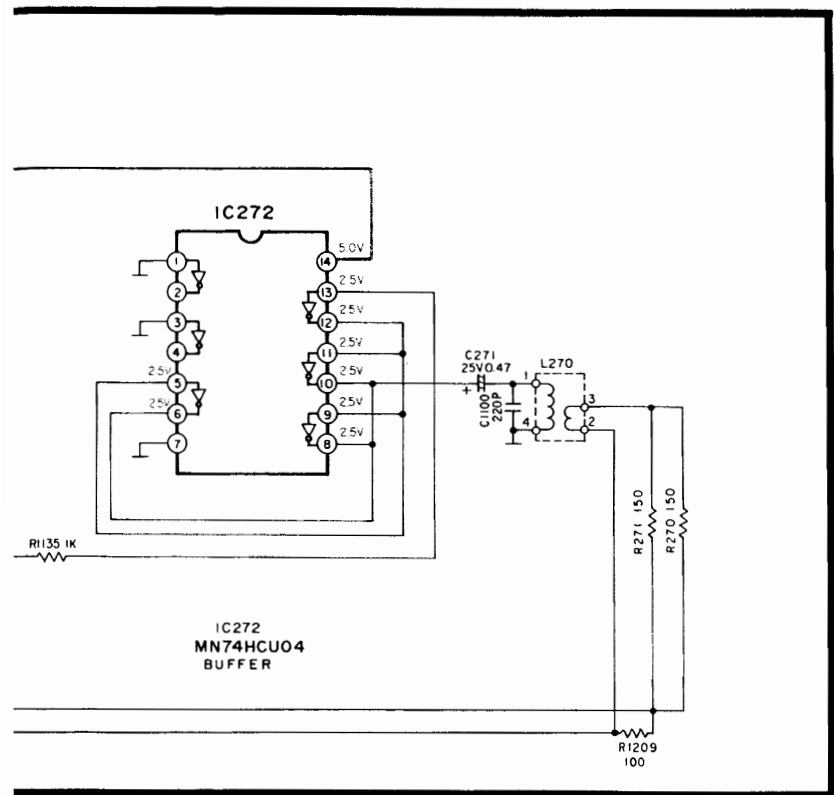
D

E

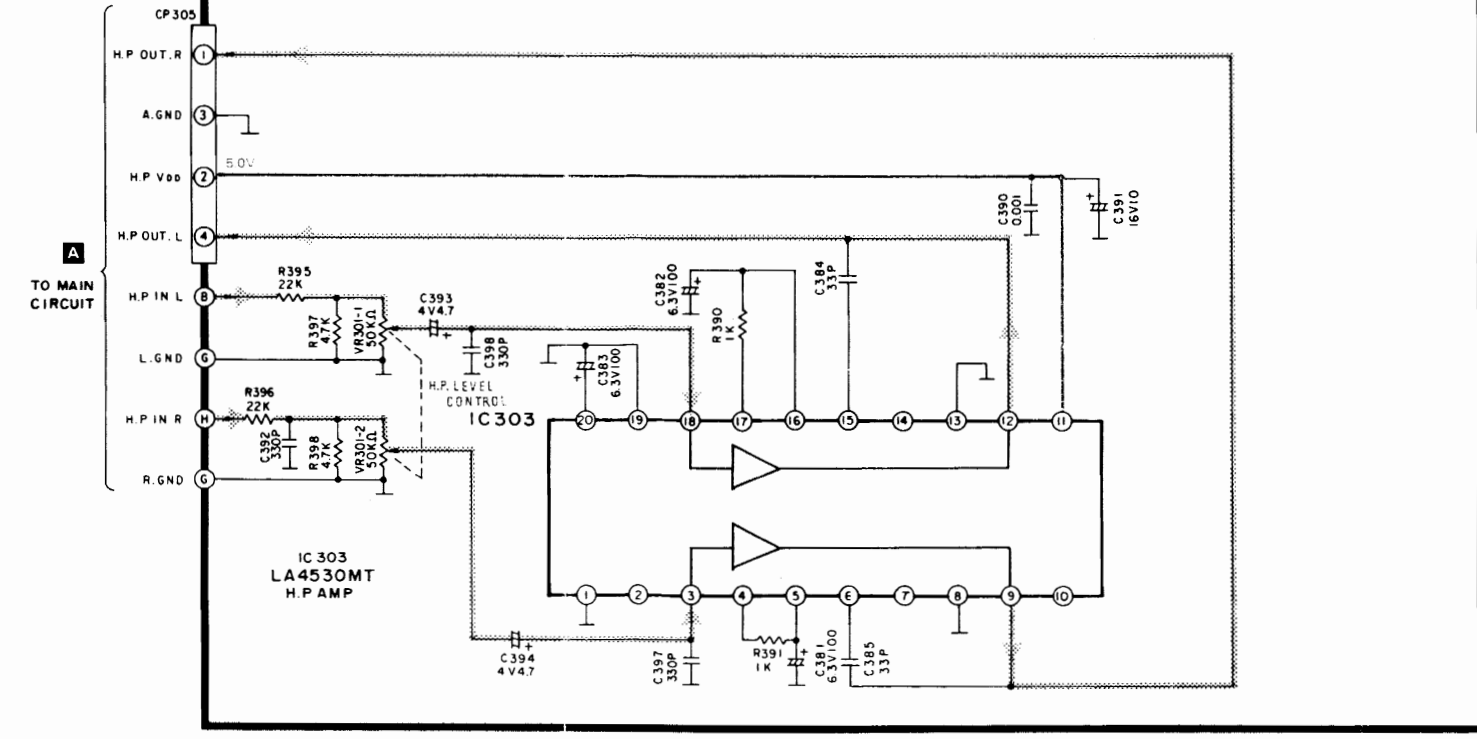
F



ES AMP CIRCUIT / OPERATION KEY CIRCUIT

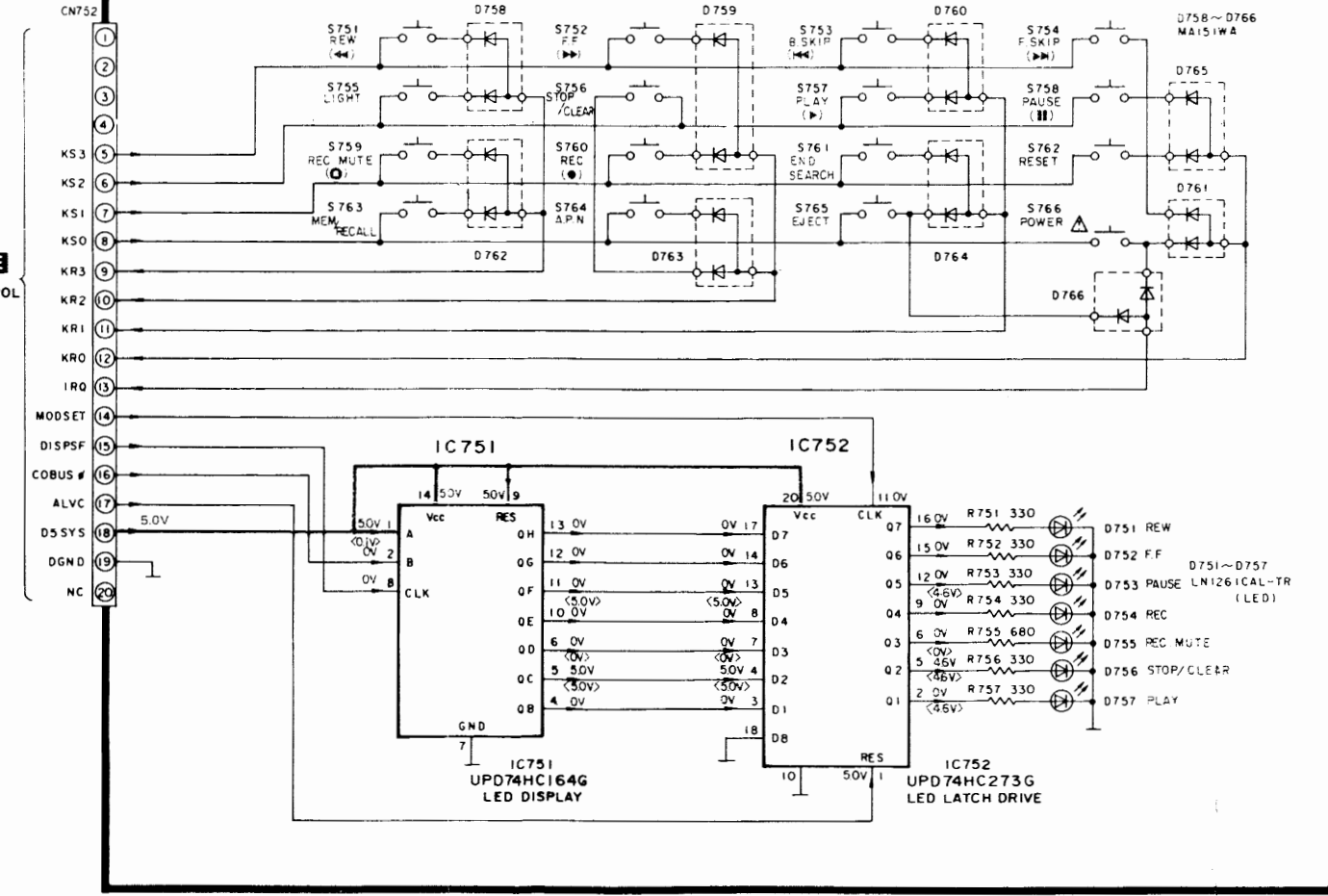


D HEADPHONES AMP CIRCUIT



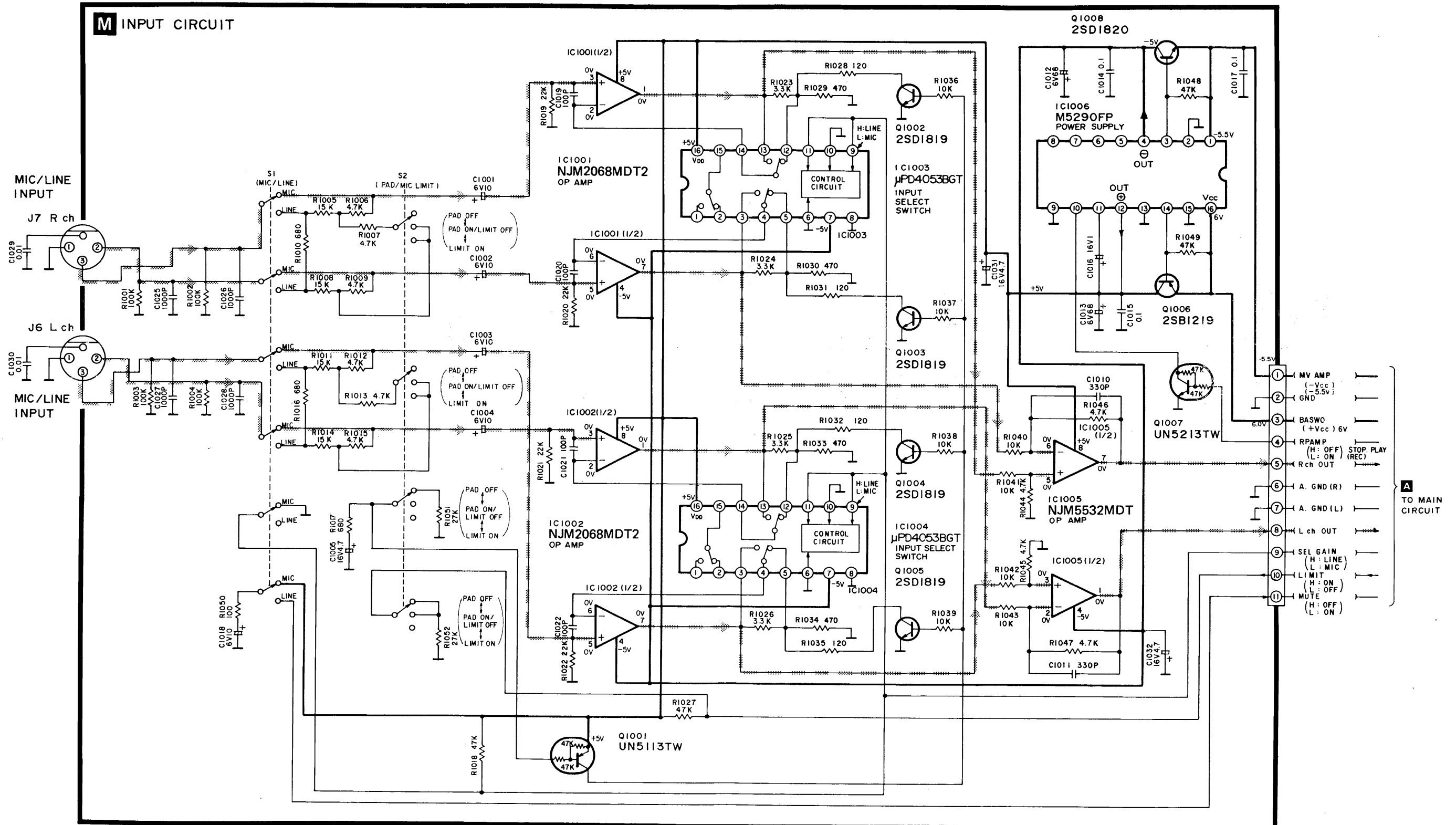
- Notes:
- S751 : Rew. switch.
 - S752 : F.F. switch.
 - S753 : Backward skip switch.
 - S754 : Forward skip switch.
 - S755 : Light switch.
 - S756 : Stop/Clear switch.
 - S757 : Play switch.
 - S758 : Pause switch.
 - S759 : Rec mute switch.
 - S760 : Record switch.
 - S761 : End search switch.
 - S762 : Counter reset switch.
 - S763 : Memory/Recall switch.
 - S764 : Auto program numbering switch.
 - S765 : Eject switch.
 - S766 : Power switch.

L OPERATION KEY CIRCUIT

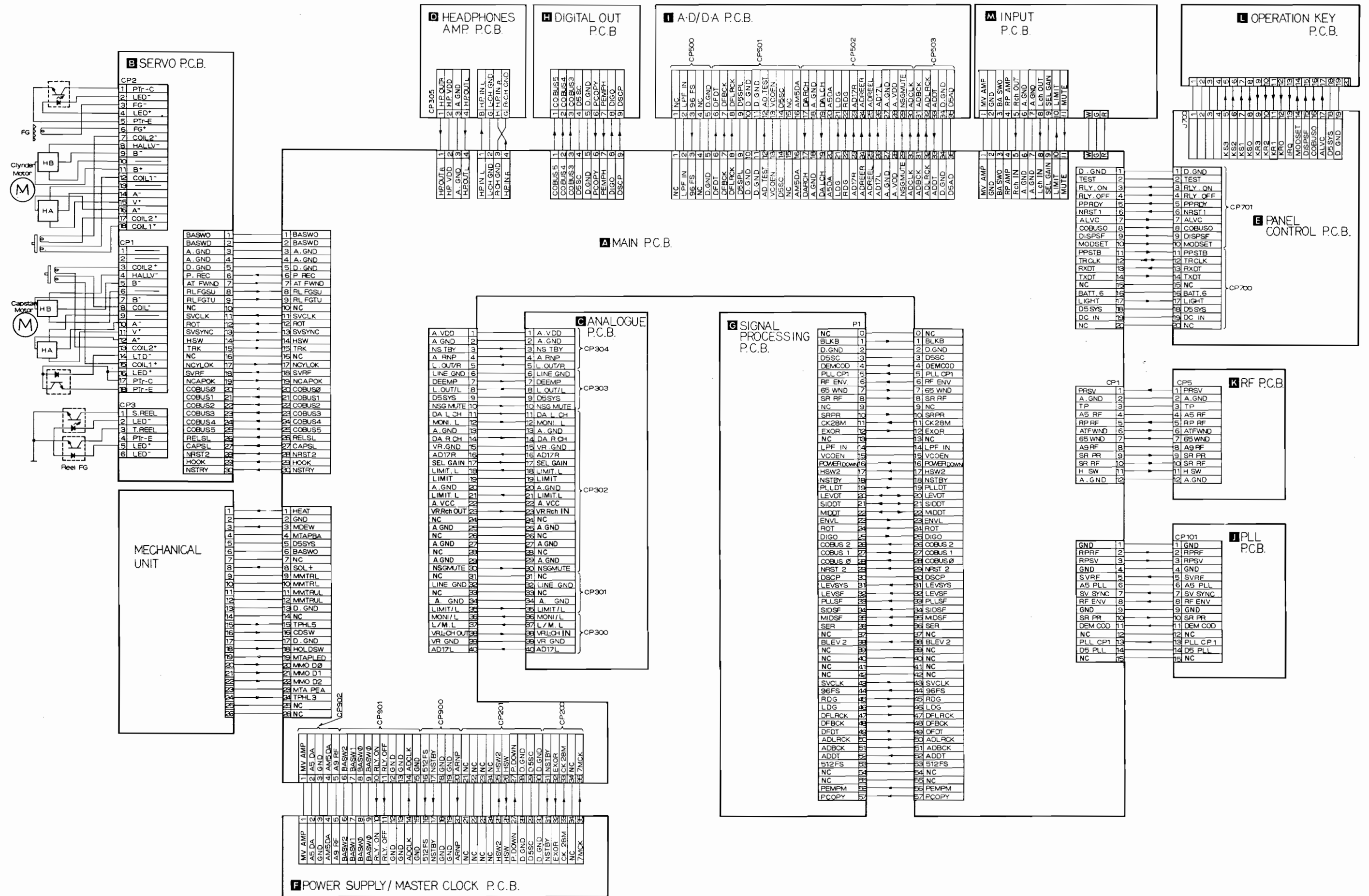


M INPUT CIRCUIT

Notes:
 • S1 : Input selector switch.
 • S2 : PAD/MIC LIM selector switch.



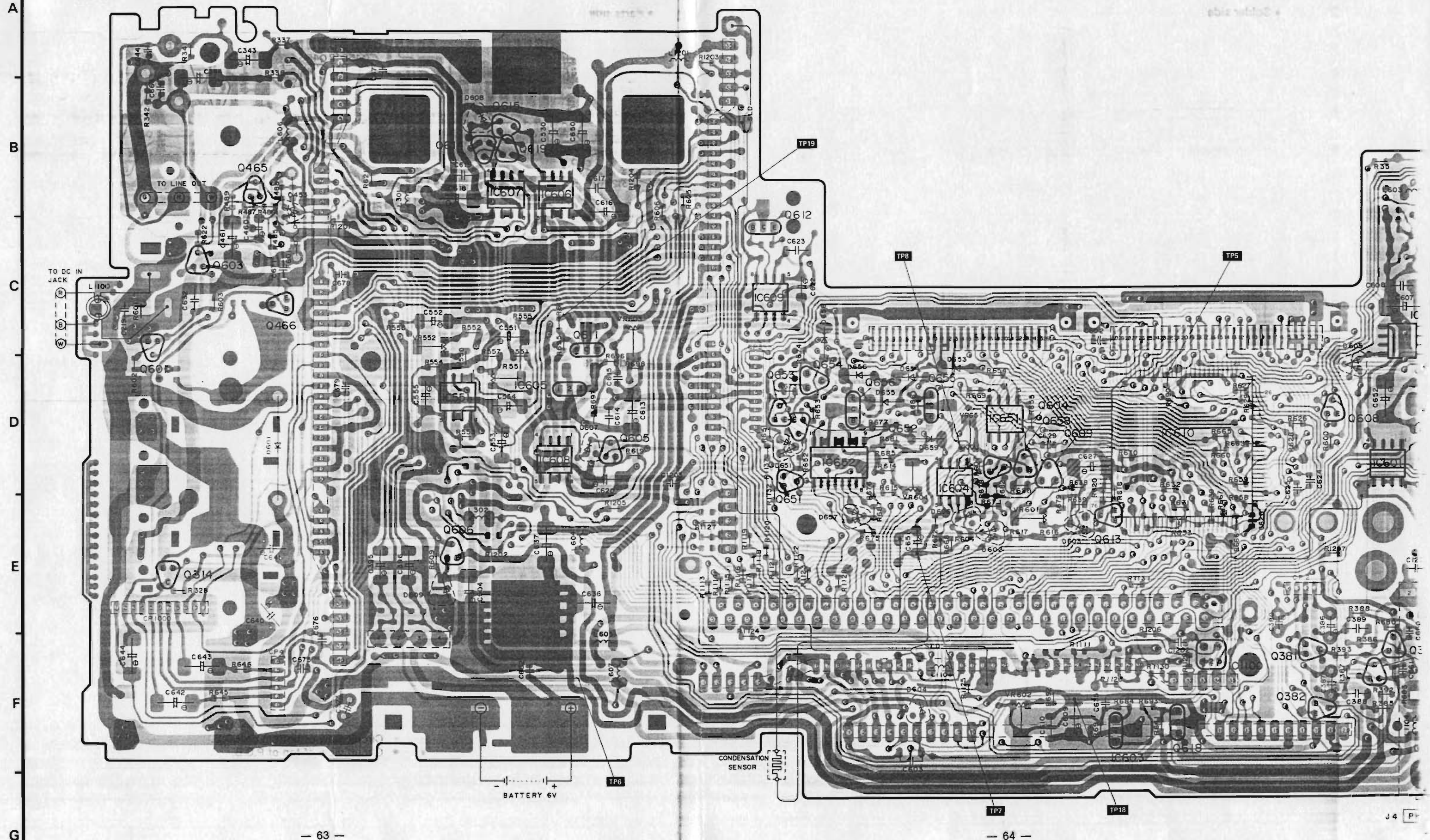
WIRING CONNECTION DIAGRAM



1 2 3 4 5 6 7 8 9 10

PRINTED CIRCUIT BOARDS

A MAIN P.C.B.

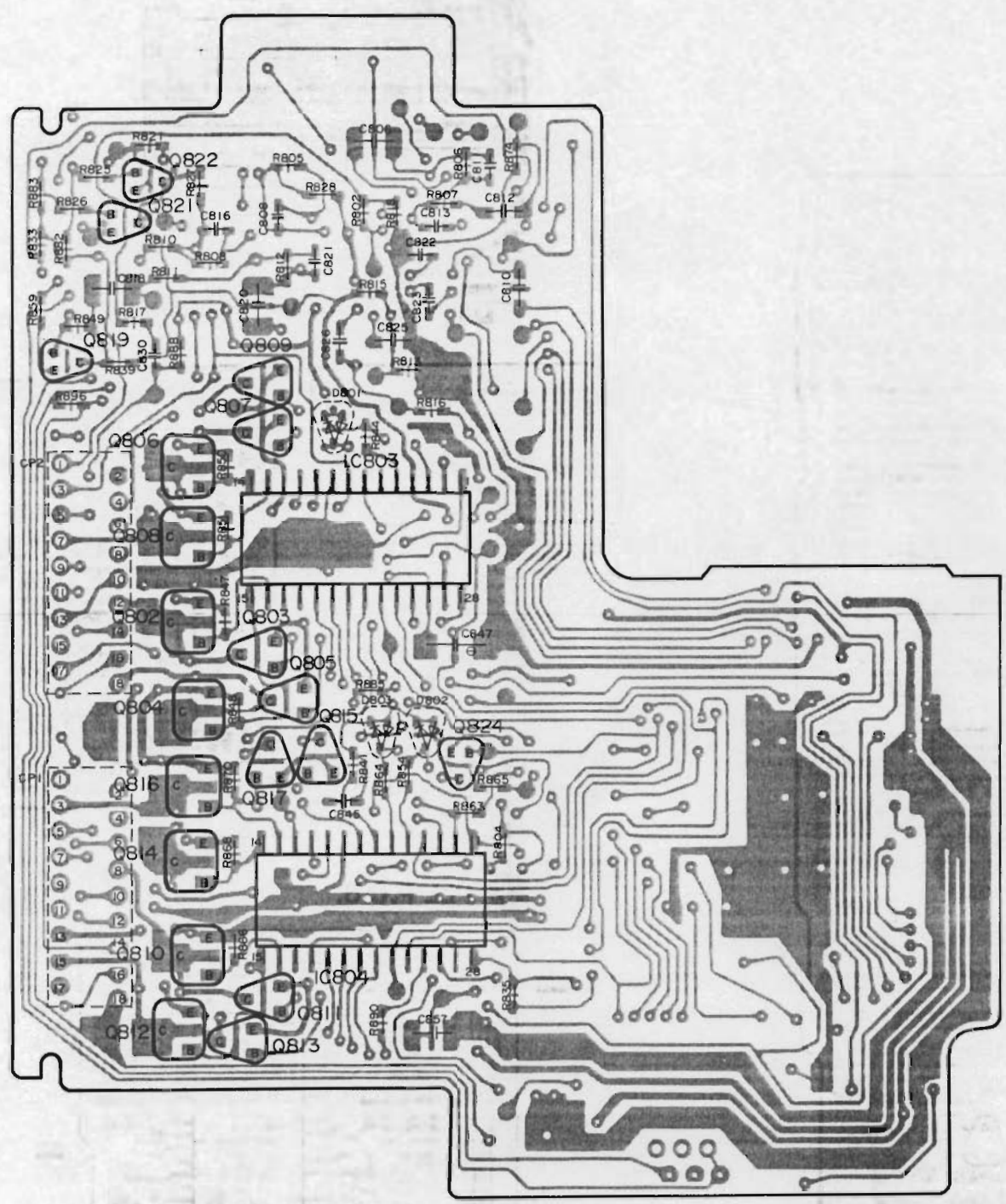


A
B
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G

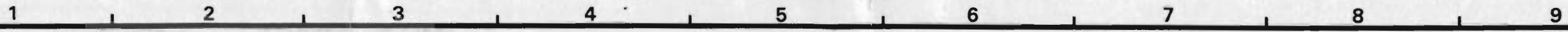
B SERVO P.C.B. HEADPHONE AMP

A • Parts side

B
C
D
E
F

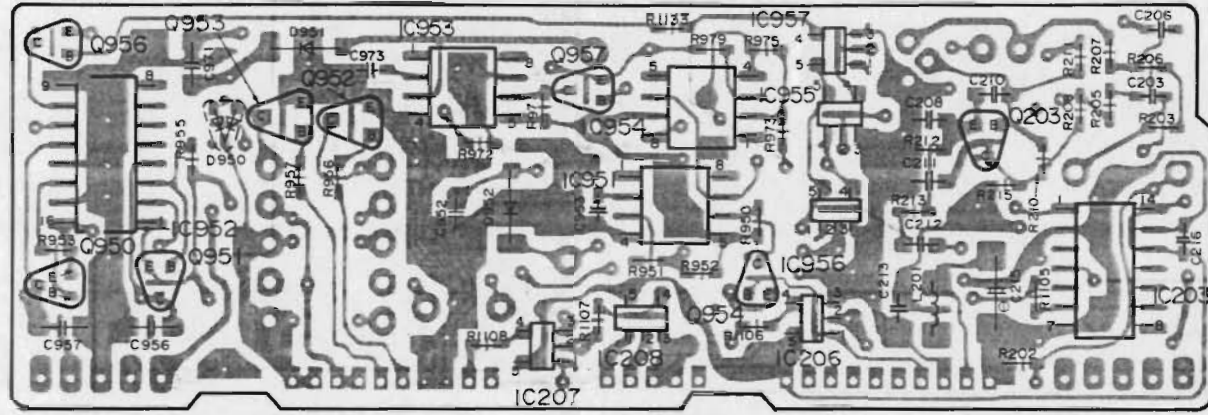


• Circuit view of bottom of P.C.B.
• Circuit view of top of P.C.B.

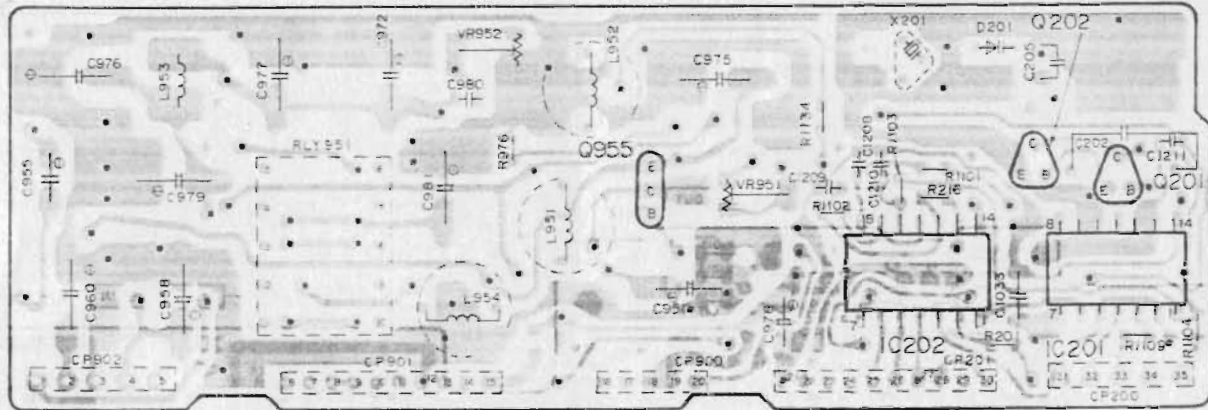


F POWER SUPPLY/MASTER CLOCK P.C.B.

• Parts side

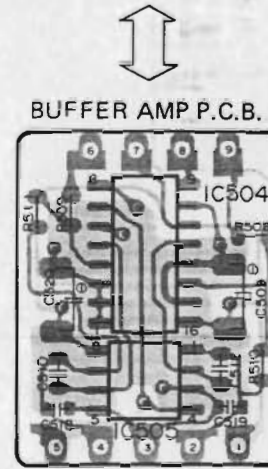
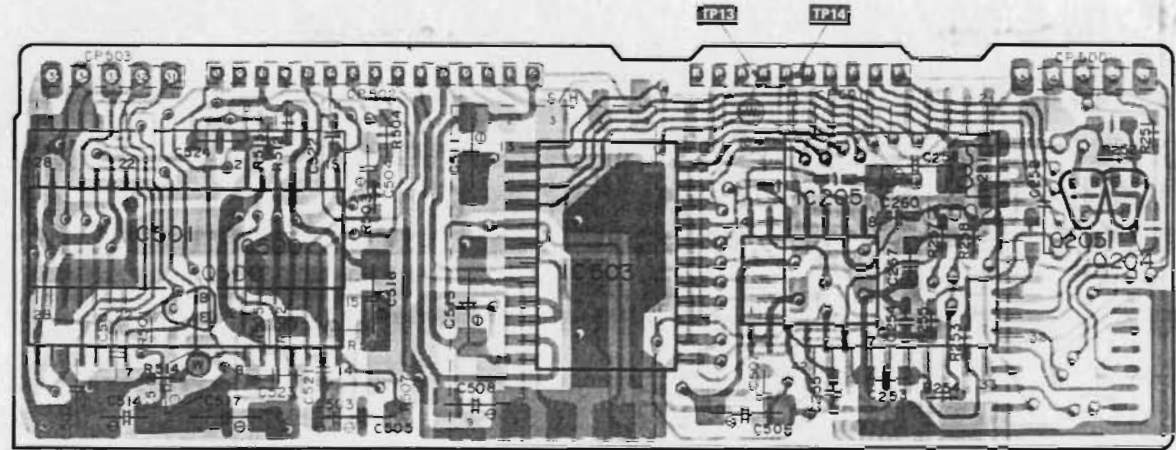


• Solder side

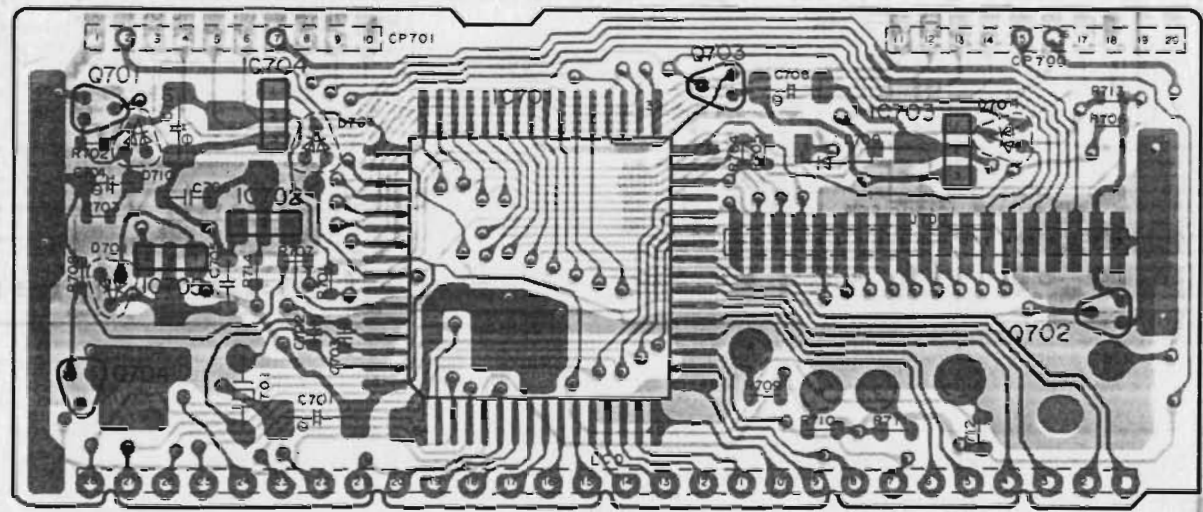


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I A-D/D-A P.C.B.



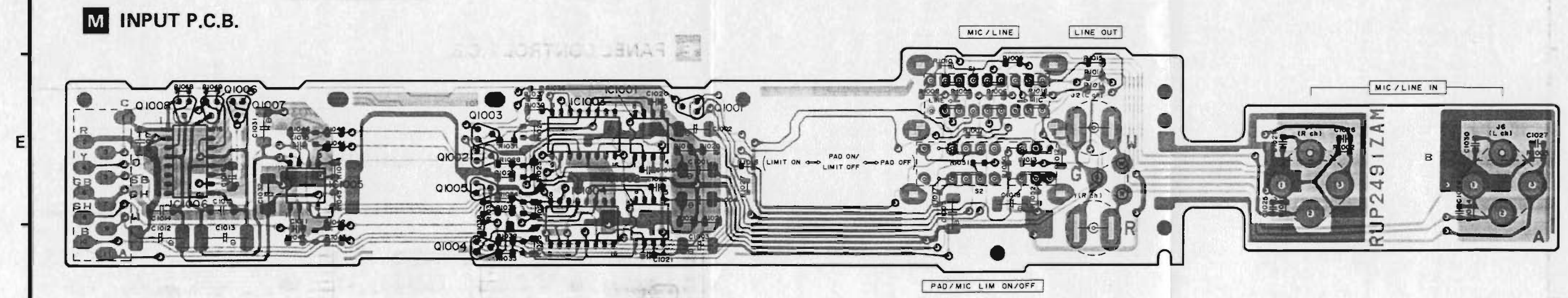
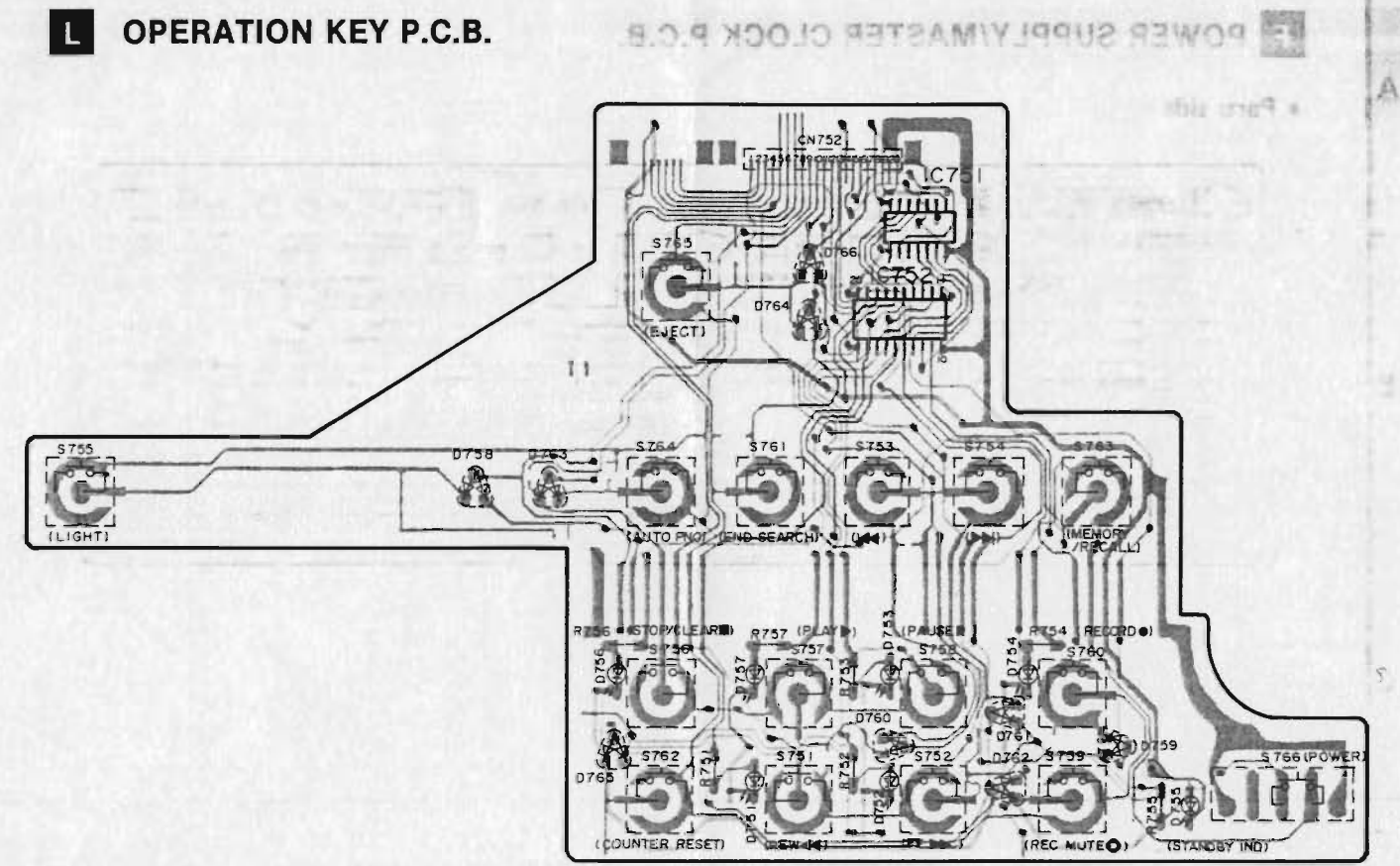
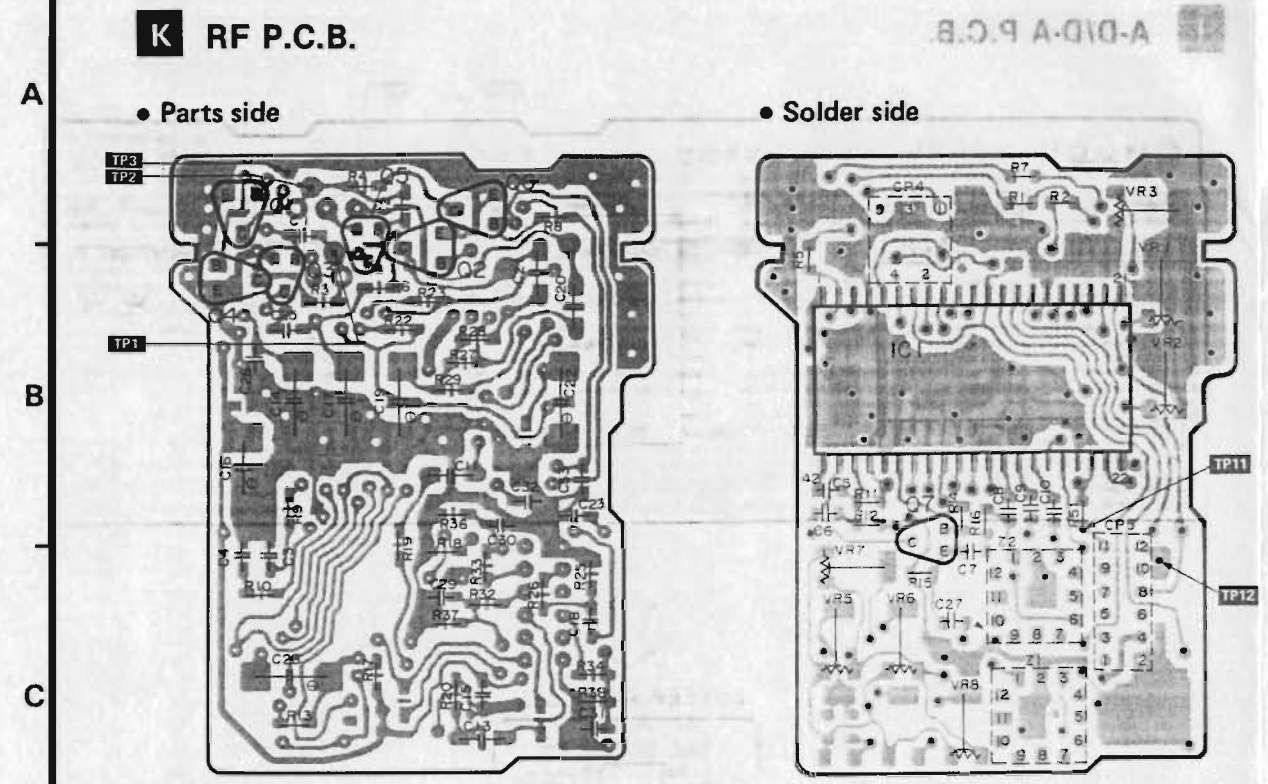
E PANEL CONTROL P.C.B.



⋯ Circuit view of bottom of P.C.B.
— Circuit view of top of P.C.B.

⋯ Circuit view of bottom of P.C.B.
— Circuit view of top of P.C.B.

G



• • Circuit view of bottom of P.C.B.
 • • Circuit view of top of P.C.B.

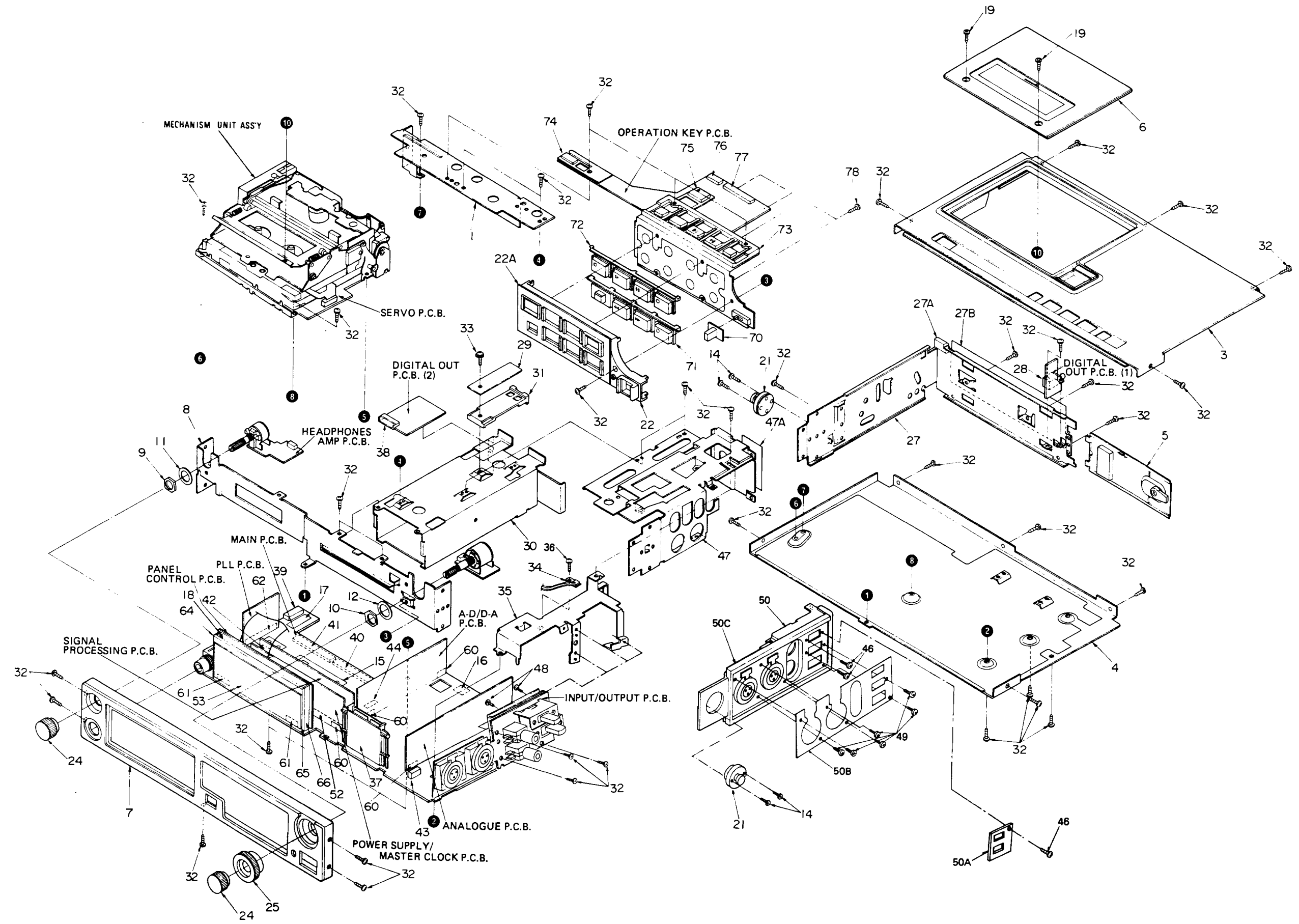
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
Q806	2S8956RTW	TRANSISTOR	D763	MA151WA	DIODE
Q807	2SD813RTW	TRANSISTOR	D764	MA151WA	DIODE
Q808	2S8956RTW	TRANSISTOR	D765	MA151WA	DIODE
Q809	2SD813RTW	TRANSISTOR	D766	MA151WA	DIODE
Q810	2S8956RTW	TRANSISTOR	D801	MA143TW	DIODE, SI
Q811	2SD813RTW	TRANSISTOR	D802	MA143TW	DIODE, SI
Q812	2S8956RTW	TRANSISTOR	D803	MA143TW	DIODE, SI
Q813	2SD813RTW	TRANSISTOR	D804	MA141WKTW	DIODE, SI
Q814	2S8956RTW	TRANSISTOR	D805	MA141WKTW	DIODE, SI
Q815	2SD813RTW	TRANSISTOR	D950	MA141WKTW	DIODE, SI
Q816	2S8956RTW	TRANSISTOR	D951	MA701TX	DIODE
Q817	2SD813RTW	TRANSISTOR	D952	MA701TX	DIODE
Q818	UN5113TW	TRANSISTOR			
Q819	2SD1819RTW	TRANSISTOR			VARIABLE RESISTORS
Q820	2SD1819STW	TRANSISTOR	VR1	EVM7QX00853	V.R. RF RECORDING LEVEL
Q821	2SD1819RTW	TRANSISTOR	VR2	EVM7QX00813	V.R. RF RECORDING
Q822	2SD1819RTW	TRANSISTOR	VR3	EVM7QX00813	V.R. RF RECORDING
Q823	UN5213TW	TRANSISTOR	VR5	EVM7QX00814	V.R. EQUIVALENT CIRCUIT
Q824	UN5213TW	TRANSISTOR	VR6	EVM7QX00814	V.R. EQUIVALENT CIRCUIT
Q825	UN5213TW	TRANSISTOR	VR7	EVM7QX00814	V.R. EQUIVALENT CIRCUIT
Q950	2SB1219STW	TRANSISTOR	VR8	EVM7QX00814	V.R. EQUIVALENT CIRCUIT
Q951	2SD1820STW	TRANSISTOR	VR100	EVM7QX00823	V.R. ATF PLAY ADJ.
Q952	2SD1478RTW	TRANSISTOR	VR101	EVM7QX00823	V.R. ENVELOPE ADJ.
Q953	2SD1478RTW	TRANSISTOR	VR102	EVM7QX00852	V.R. VCO ADJ.
Q954	UN5213TW	TRANSISTOR	VR301	EVJRCAP20A54	V.R. H.P. LEVEL CONTROL
Q955	2S8956RTW	TRANSISTOR	VR302	EWJSJAF03A14	V.R., REC LEVEL CONTROL
Q956	UN5213TW	TRANSISTOR	VR551	EVM7QX00813	V.R. OFFSET VOLTAGE ADJ.
Q957	UN5213TW	TRANSISTOR	VR552	EVM7QX00813	V.R. OFFSET VOLTAGE ADJ.
Q1001	UN5113TW	TRANSISTOR	VR601	EVM7QX00813	V.R. BATTERY CHECK
Q1002	2SD1819STW	TRANSISTOR	VR602	EVM7QX00853	V.R. POWER SUPPLY ADJ.
Q1003	2SD1819STW	TRANSISTOR	VR603	EVM7QX00853	V.R. POWER SUPPLY ADJ.
Q1004	2SD1819STW	TRANSISTOR	VR604	EVM7QX00853	V.R. LOADING TIME ADJ.
Q1005	2SD1819STW	TRANSISTOR	VR651	EVM7QX00814	V.R. DEW ADJ.
Q1006	2SB1219RTW	TRANSISTOR	VR801	EVM7QX00854	V.R. PG PHASE ADJ.
Q1007	UN5213TW	TRANSISTOR	VR951	EVM7QX00854	V.R. AD POWER SUPPLY +5V
Q1008	2SD1820RTW	TRANSISTOR	VR952	EVM7QX00854	V.R. RF POWER SUPPLY(9V)
					COILS AND TRANSFORMERS
			L201	ELJFA100KF	COIL
			L251	ELJFA100KF	COIL
			L270	RL1960060-0	COIL
			L301	ELJFA101KF	COIL
			L302	ELJFA101KF	COIL
			L601	ELJFA100KF	COIL
			L602	ELJFA100KF	COIL
			L603	ELJFA100KF	COIL
			L604	ELJFA100KF	COIL
			L605	ELJFA100KF	COIL
			L606	ELJFA101KF	COIL
			L607	ELJFA101KF	COIL
			L801	RLQZQ101KTWA	COIL
			L802	RLQZQ101KTWA	COIL
			L951	RLQZZ471K-Z	COIL
			L952	RLQZZ471K-Z	COIL
			L953	RLQZW101KT-W	COIL
			L954	RLQZZ471K-Z	COIL
			L1100	RL1800050-0	COIL
			L1101	ELJFA100KF	COIL
			L1102	ELJFA100KF	COIL
			L1103	ELJFA100KF	COIL
			L1104	ELJFA100KF	COIL
			L1201	ELJFA100KF	COIL
					COMPONENT COMBINATIONS
			X201	SVQLT283-F	COMBINATION PART
			X401	RVCQ24576NZN	COMBINATION PART
			X402	RVCQ11289NZN	COMBINATION PART
			X701	RVBCSA3R00MG	COMBINATION PART
			Z1	RXA50L3R00DL	COMBINATION PART
			Z2	RXA50DR4001Z	COMBINATION PART
			Z101	RLM9A2T-T	COMBINATION PART
			Z102	RLM9A1T-T	COMBINATION PART
			Z103	RXA50DR1001L	COMBINATION PART
			Z301	RXACLP2233-L	COMBINATION PART
			Z302	RXACLP2235-L	COMBINATION PART
					FUSES
			F601	XB01A16NA1	CURRENT FUSE

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
			J1	RJF1106YA	TERMINAL BOARD
			J2	RJF1106ZA	TERMINAL BOARD
			J3	SJSD13	CONNECTOR
			J4	RJJE3S2ZA-C	SOCKET
			J5	RJJ1C7ZA-H	SOCKET
			J6	RJS3D4ZA	JACK
			J7	RJS3D4ZA	JACK

1 2 3 4 5 6 7 8 9

CABINET PARTS LOCATION

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REPLACEMENT PARTS LIST

Notes : * Important safety notice :

Components identified by Δ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

A

B

C

D

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
CABINET AND CHASSIS			36	XQN2+AJ3	SCREW
1	3UAAMD1ZA	CHASSIS	37	1JBAMD1ZA	BATTERY TERMINAL
3	1KMA260ZA	UPPER CASE	38	RJP9G32ZA	CONNECTOR
4	1KFA260ZA	BOTTOM CASE	39	RJS12M6ZA	CONNECTOR
5	1KKA250ZA	BATTERY COVER	40	RJS26Q12ZA	CONNECTOR
6	1KGA260ZA	CASSETTE LID	41	RJS30Q12ZA	CONNECTOR
7	1GPA260ZA	FRONT PANEL ASS'Y	42	RJEZ78YA-D	CONNECTOR
8	RUAB17ZA	CHASSIS	43	RJE280YA-D	CONNECTOR
9	XNS7D	NUT	44	RJE281YA-D	CONNECTOR
10	XNS9D	NUT	46	XQN26+A4	SCREW
11	XWS7AW	WASHER	47	RUAB19YA	CHASSIS
12	XWS9AW	WASHER	47A	RHG1198ZA-0	RUBBER
14	XQS2+A8FZ	SCREW	48	XQN2+AM5	SCREW
15	RHR2176ZA	HOLDER	49	XQN26+A9FZ	SCREW
16	RHR3323ZA	HOLDER	50	RUAB73ZA	CHASSIS
17	RHR2174ZA	HOLDER	50A	RHS776ZA	SHEET
18	RHR2196ZA	SPACER	50B	RGK1384ZA	PLATE
19	RHE5166ZA	SCREW	50C	RGPI238ZA	PANEL
21	RKT149ZA-0	BELT HOLDER	52	RJT1123ZA	TERMINAL
22	RYPQ250KM	CONTROL PANEL	53	EDD084ZE0A4P	DISPLAY
22A	RGK1364ZA-0	PLATE	60	RJT1117ZA	CONNECTOR
24	RBNS006ZA-0	KNOB, REC(L)	61	RJT1118ZA	CONNECTOR
25	RBNS007ZA-0	KNOB, REC(R)	62	RJT1119ZA	CONNECTOR
27	RZU1V250KM	CHASSIS	64	RHR2186ZA	HOLDER
27A	RGPI188ZA-0	PANEL	65	RHR352ZA	HOLDER
27B	RHG1199ZA-0	RUBBER	66	LN0811CP4	DIODE
28	RUL1056ZA	ANGLE	70	TM488	KNOB
29	RUS760ZA	SPRING	71	BT483	CONTROL KEY
30	RWBV250KM	BATTERY CASE	72	BT482	CONTROL KEY
31	RME463ZA	HOLDER	73	BT485	CONTROL KEY
32	XQN2+AM3FZ	SCREW	74	BT487	CONTROL KEY
33	RHE5179ZA	SCREW	75	BT486	CONTROL KEY
34	EYH-S78D	HALL ELEMENT	76	SDXS21030611	CONNECTOR
35	RUL1116ZA	ANGLE	77	SDXS21032011	CONNECTOR
			78	XTB2+5G	SCREW

E

F

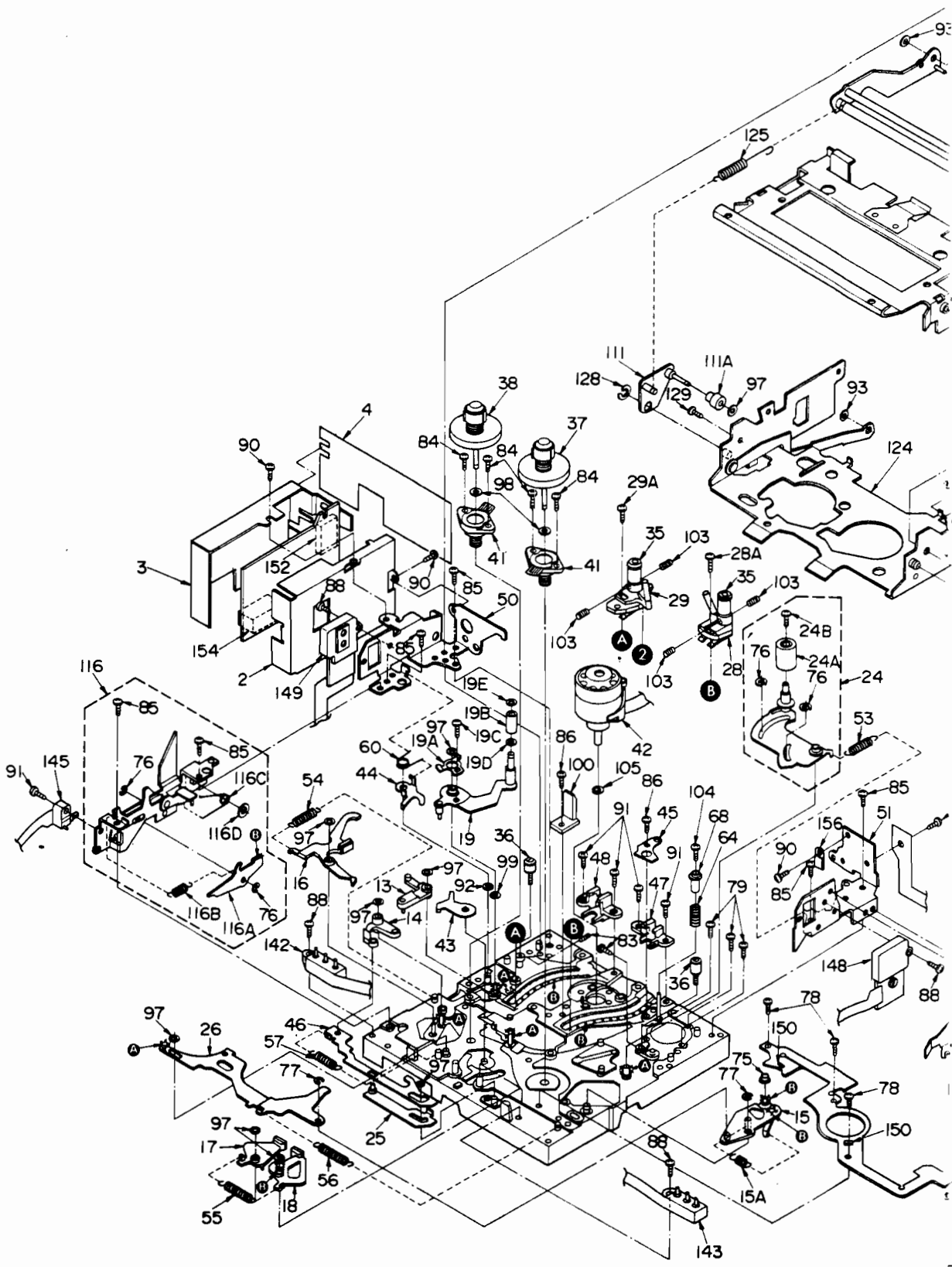
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MECHANICAL PARTS LOCATION

< TOP VIEW >

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REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
CASSETTE DECK			59	RUW133ZA	SPRING
1	RUL1021ZA	ANGLE	60	RUW134ZA	SPRING
2	RMC1182ZA	SHIELD PLATE	61	RUS740ZA	COIL SPRING
3	RMC1183ZA	SHIELD PLATE	62	RUQ85ZA	SPRING
4	RMC1217ZA	SHIELD PLATE	63	RUQ86ZA	SPRING
5	XQN16+A3	SCREW	64	RUQ88ZA	SPRING
7	RHR1363ZA	SCREW	65	RUE9003ZA	ANGLE
8	1JQ0018ZA	MOTOR	66	RNN262ZA	SHAFT
9	1JQ0019ZA	MOTOR	67	RNN301ZA	SHAFT
9B	RUL988ZA	ANGLE	68	RNS44ZA	SHAFT
9C	RUW135ZA	SPRING	69	RNG84ZA	GEAR
9D	RNG89ZA	GEAR	70	RNG85ZA	GEAR
9E	RNG91ZA	GEAR	71	RNG87ZA	GEAR
9F	XQN14+A16FZ	SCREW	72	RNG88ZA	GEAR
9G	QBW2081A	WASHER	73	RNG90ZA	GEAR
9H	RHR3176ZA	HOLDER	74	RNG92ZA	GEAR
9I	PKN7EB04A	MOTOR	75	RDR121ZA	ROLLER
9J	1UL0053ZA	ANGLE	76	XUC12FP	RETAINING RING
10	RWEVMD1KN	FG FPC	77	XUC15FP	RETAINING RING
12	RFU149ZA	CHASSIS	78	XQN14+A12	SCREW
13	1NL0040ZA	LEVER	79	XQN14+A3	SCREW
14	1NL0041ZA	LEVER	80	XQN14+C25	SCREW
15	1NL0049ZA	LEVER	81	XQN14+C28Y	SCREW
15A	RUD98ZA	SPRING	82	XQN14+C4Y	SCREW
16	1NL0050ZA	LEVER	83	XQN16+A2FZ	SCREW
17	1NL0051ZA	LEVER	84	XQN16+A22	SCREW
18	1NL0052ZA	LEVER	85	XQN16+A25FZ	SCREW
19	1NL0053ZA	ARM	86	XQN16+A3	SCREW
19A	RNL139ZA	LEVER	88	XQN16+A4	SCREW
19B	RDR118ZA	ROLLER	89	XQN16+A4Y	SCREW
19C	RHE5194ZA	SCREW	90	XQN2+A2	SCREW
19D	QBW2010	WASHER	91	XQN2+A45	SCREW
19E	QBW2081A	WASHER	92	QBW2033	WASHER
20	1NL0055ZA	LEVER	93	QBW2008	WASHER
20A	RUQ83ZA	SPRING	94	QBW2012	WASHER
20B	RNG86ZA	GEAR	95	QBK92014	WASHER
20C	QBW2008	WASHER	97	QBW2081A	WASHER
21	1NL0056ZA	LEVER	98	QBW2122	WASHER
22	1NL0057ZA	LEVER	99	QBW2010	WASHER
23	1NL0058ZA	LEVER	100	RHR3165ZA	HOLDER
24	1NL0060ZA	LEVER	101	RHE5116Z	SCREW
24A	1NB0001ZA	ROLLER	102	RHE5178ZA	SCREW
24B	RHE7040ZA	SCREW	103	RHE5181ZA	SCREW
25	1NR0027ZA	ROD ASS'Y	104	RHE5182ZA	SCREW
26	1NR0028ZA	ROD ASS'Y	105	RHE5196ZA	WASHER
28	1UG005ZA	GUIDE	106	RHE5198ZA	SCREW
28A	XQN14+A16FZ	SCREW	107	1NL0054ZA	LEVER
29	1UG006ZA	GUIDE	108	1NG0011ZA	GEAR
29A	XQS14+A3	SCREW	109	RUD101ZA	SPRING
32	1NG0012ZA	GEAR	110	1NL0061ZA	LEVER
33	1NG0014ZA	GEAR	110A	RNN216ZA	SHAFT
34	1NG0016ZA	GEAR	111	1NL0062ZA	LEVER
35	1DR0008ZA	PULLEY ASS'Y	111A	RNN216ZA	SHAFT
36	1DR0009ZA	PULLEY ASS'Y	112	RNL141YA	LEVER
37	1DM0019ZA	REEL ASS'Y	113	RDG5935ZA	GEAR
38	1DM0020ZA	REEL ASS'Y	114	XQN16+A55	SCREW
39	1DE0003ZA	COUNTER	115	1NL0067ZA	LEVER
40	1DE0004ZA	COUNTER	116	1NR0029ZA	ROD ASS'Y
41	1HM0012ZA	SPACER	116A	RNL136ZA	LEVER
42	VEG0504	MAGNETIC HEAD	116B	RUD87ZA	SPRING
43	RNL125ZA	LEVER	116C	RUW127ZA	SPRING
44	RNL138ZA	LEVER	116D	RNW240ZA	WASHER
45	RNL140ZA	LEVER	117	RUL973YA	ANGLE
46	RNR64ZA	ROD	118	RHE5195ZA	SCREW
47	RUG9006ZA	STOPPER	119	RHR3162ZA	HOLDER
48	RUG9007ZA	GUIDE	120	RHR3318YA	HOLDER
49	RUL966ZA	ANGLE	121	1UL0054ZA	ANGLE
50	RUL971YA	ANGLE	122	1UL0055ZA	ANGLE
51	RUL972YA	ANGLE	123	1UL0056ZA	HOLDER
52	RUL989ZA	PLATE	124	1UL0057ZA	ANGLE
53	RUD100ZA	SPRING	125	RUD85ZA	SPRING
54	RUD95ZA	SPRING	126	RUD86ZA	SPRING
55	RUD96ZA	SPRING	127	RNG99ZA	GEAR
56	RUD97ZA	SPRING	128	XUC25FZ	RETAINING RING
57	RUD98ZA	SPRING	129	XQS14+A2	SCREW
58	RUW132ZA	SPRING	141	RL800050-0	COIL
			142	EVQWR1001	VARIABLE RESISTOR

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
143	EVQWR1002	SW	153	RJS18Q15YA	CONNECTOR
144	EVQWXC001	MODE SW	154	RJP12G30ZA	CONNECTOR
145	RSH1A91YA-A	PUSH SWITCH	155	RJS6Q11YA	CONNECTOR
148	EVQWA0003	SW	156	EYH-S78G1	HALL ELEMENT
149	EVQWA0004	SW	157	RSE234ZA	MAGNET
150	0N2170SFS	PHOTO INTERRUPTER	159	XQN16+A2	SCREW
152	RJS5Q15ZA	CONNECTOR	160	XQN16+A14	SCREW
			161	RHM274ZA	BRACKET

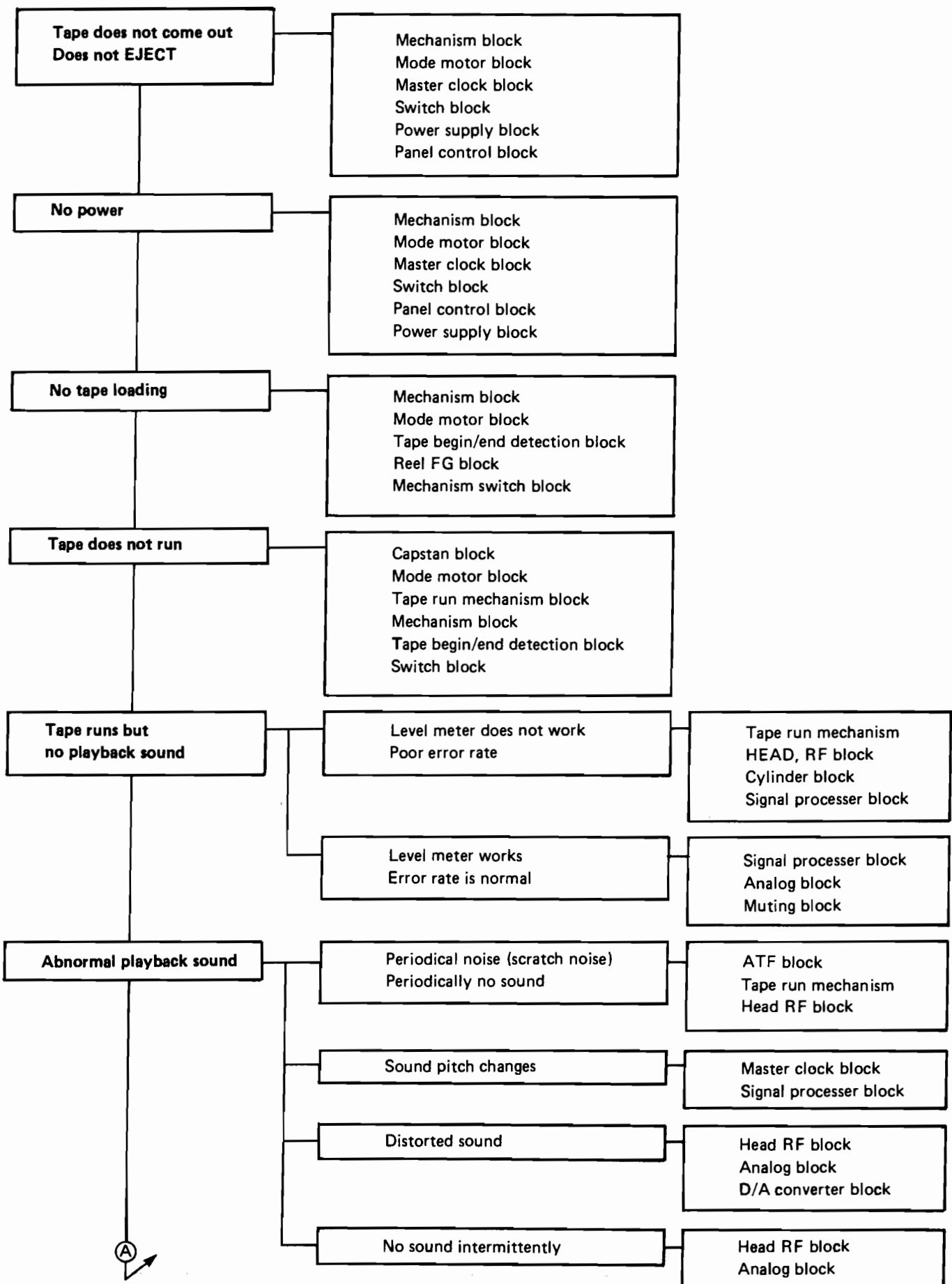
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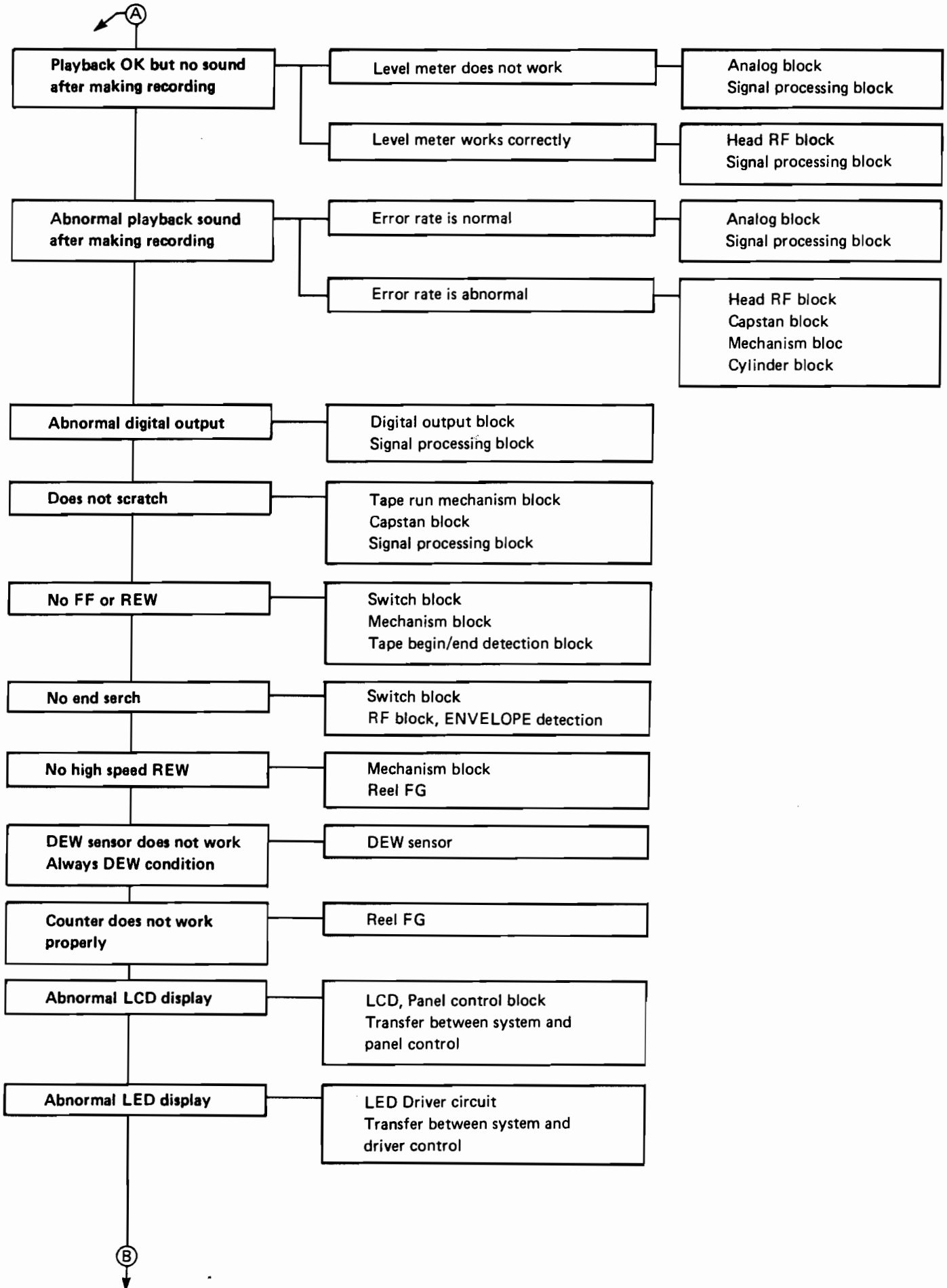
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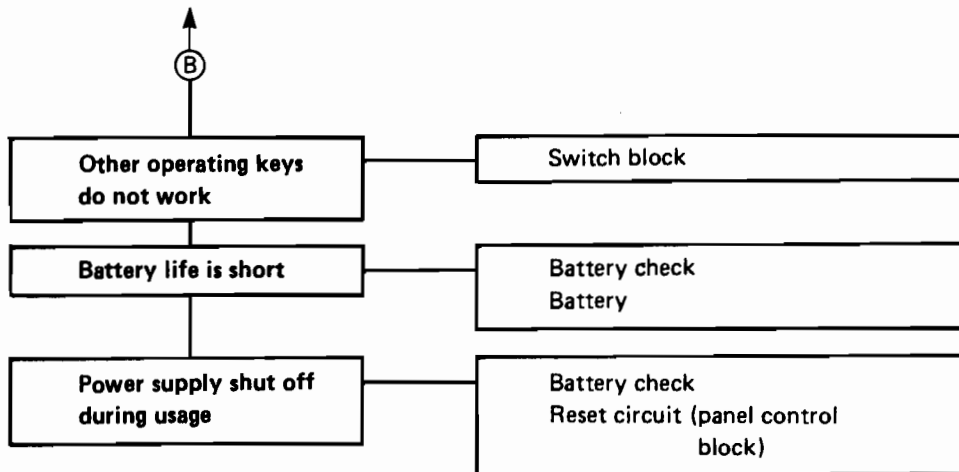
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
PACKING MATERIAL			P8	XZB10X15A04	PROTECTION COVER
P2	RPN626ZA	PROTECTION BAG	ACCESSORIES		
P3	RPN5463YA	CUSHION	A1	Δ RJP0F33ZB-E	PLUG
P4	RPK0036	CARTON BOX	A2	Δ SH-MA1EY-K	AC ADAPTOR
P5	XZB20X30A04	PROTECTION COVER	A3	SH-MB1EY-K	BATTERY
P6	RPE75ZA	PAD	A5	RQT0047E	INSTRUCTION MANUAL
P7	RPN5500ZA	PAD	A7	RQD253ZA-2	CARRYING CASE
			A8	RQC9024ZA-0	SHOULDER BELT

■ TROUBLESHOOTING GUIDE

SV-260 Troubleshooting







SV-260 key points for troubleshooting

Mechanism block

Loading mechanism

Post roller
Tension regulator
Pinch roller
Brake lever

Brake mechanism

Brake lever
Solenoid
Solenoid driver

Mechanism switch block

Tape hole detection switch
Cassette detection switch
Holder switch

Reel FG block

Detection photo transistor
Detection LED
Reel FG AMP (servo PCB)

FPC & FPC connector

Mode motor block

Mode motor
Mode switch
FPC & FPC connector
Mode motor driver circuit
Mode motor control circuit

Master clock block

28 MHz (Signal name : CK28M)
7 MHz (Signal name : 7MCK)
9.4 MHz (Signal name : SVCLK)

Switch block

FPC & FPC connector
Switch

HEAD, RF block

Head FPC & FPC connector
Head dirty
Head cracked or damaged
RF recording current
Playback eye pattern

Tape begin/end detection block

Begin/end detection photo transistor
 Begin/end detection LED
 Comparator circuit
 FPC & FPC connector

Power supply block

Power supply regulator output
 Fuse
 Power supply diode (D601)
 Relay & relay driver

Capstan block

Capstan FG
 FG AMP.
 Motor driver output
 Motor current

Cylinder block

Cylinder FG
 Cylinder PG
 FG AMP.
 PG AMP.
 Motor driver output
 Motor current

ATF block

RF ATF output
 ATF SYNC output

Signal processing block

Data & clock to DA
 Data & clock to AD
 All clocks

Digital output block

Digital output PB

Panel control block

Panel control clock
 Panel/system control transfer
 Panel control reset

Analog block

Input amplifier
 Output amplifier
 Muting circuit
 AD converter
 DA converter

Concerning the error rate

If the error rate is functioning correctly, it can be judged that all operations up to signal processing are functioning correctly, in other words, that there is no problem in the transport system.

Thus, when there is a problem with the playback sound, if the error rate is functioning correctly, the problem can be assumed to exist in the analog system.

Concerning the level meter

If the level meter is functioning correctly during playback, it indicates that the mechanism, head, and RF sections are all functioning correctly. In addition, if the level meter is functioning correctly during recording, it indicates that the analog system (input amplifier and AD) is functioning correctly.

Error indication and problem location

The SV-260 displays error indications from E-01 to E-07.

Although the error indications generally indicate problems with the tape, they will also be displayed for the following problems.

E-01	Mode motor related Mechanism related
E-02	Related to the beginning and end sensors
E-03	Reel FG related
E-04	Capstan related
E-05	Mechanism transport related
E-06	Mechanism related Reel FG related Related to the beginning and end sensors
E-07	Mechanism transport related Signal processing related Cylinder related