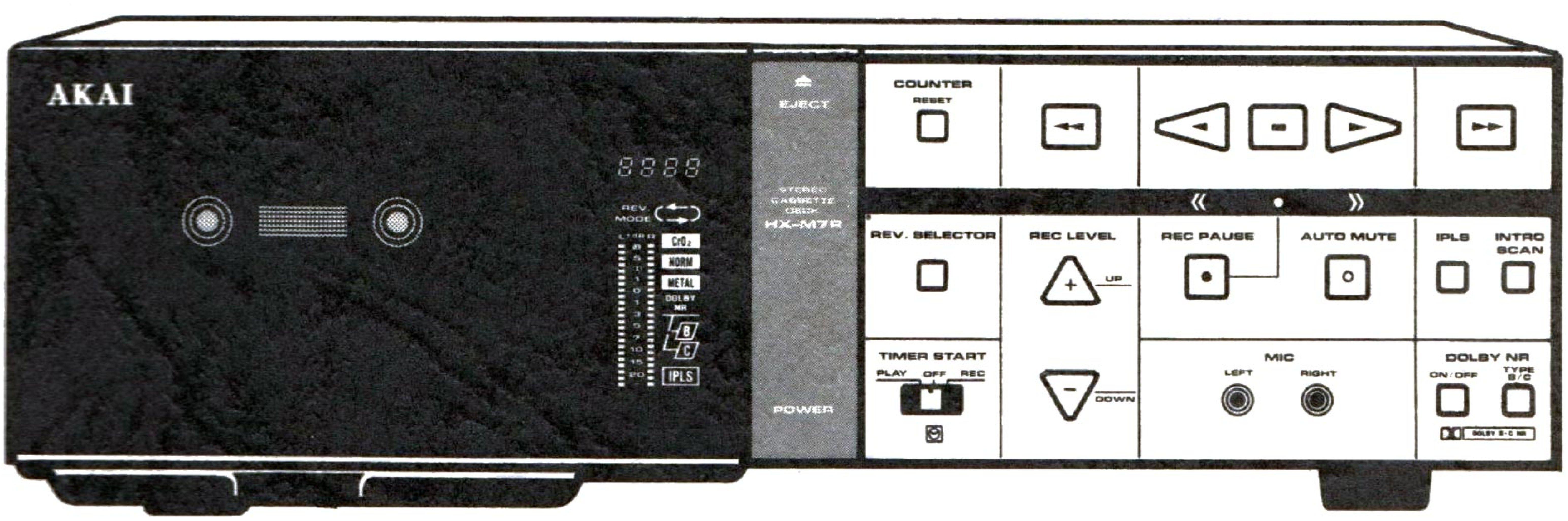
AKAI SERVICE MANUAL



STEREO CASSETTE DECK

MODEL **HX-M7R**

ABBREVIATIONS FOR SERVICE MANUAL
MODEL HX-M7R

ABBREVIATIONS	EXPLANATION
AC	ACcumulator
AC	Alternating Current
ALU	Arithmetic and Logic Unit
A-SW	Analogue SWitch
BSS	Blank Search System
BUF	BUFfer
C	Carry
CONTI	CONTInuous
CH	CHannel
CV	Control Voltage
DC	Direct Current
DET	DETector
DP	Data Pointer
EQ	EQualizer
EXT	EXTernal
FF	Fast Forward
FLD	FLuorescent Display
FWD	ForWarD
G	Grid
GND	GrouND
"H"	High (referring to voltage)
HLS	High Level Stage
IC	Integrated Circuit
INH	INHibit
IPLS	Instant Programme Locating System
L	Left
"L"	Low (referring to voltage)
LLS	Low Level Stage
MIC	MICrophone
MI-COM	MIcro-COMputer
NC	Not Connected (No Connection)
NORM	NORMal
NP	No Pins
OSC	OSCillator
PB	Play Back
PC	Programme Counter
PLA	Programmable Logic Array
R	Right
RAM	Random Access Memory
ROM	Read Only Memory
RL	ReLay
REC	RECord
REF	REFerence
REV	REVerse
RWD	ReWinD
SEG	SEGment
SENS	SENSitivity
STO	STOre
SW	SWitch
SYSCON	SYStem CONtrol
TP	Test Point
VOL	VOLume
VR	Variable Resistor
XTAL	CrysTAL

STEREO CASSETTE DECK

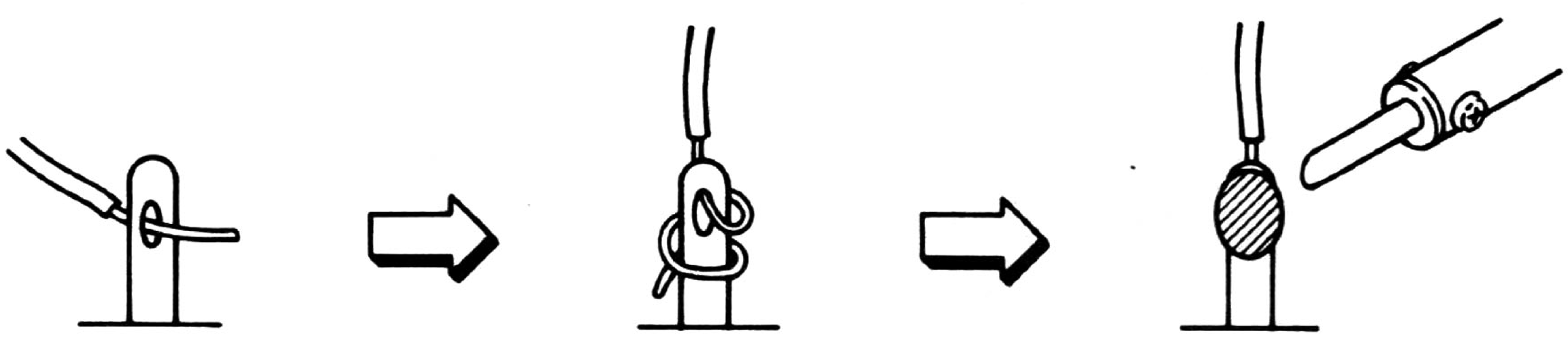
MODEL HX-M7R

SAFETY CHECK AFTER SERVICING

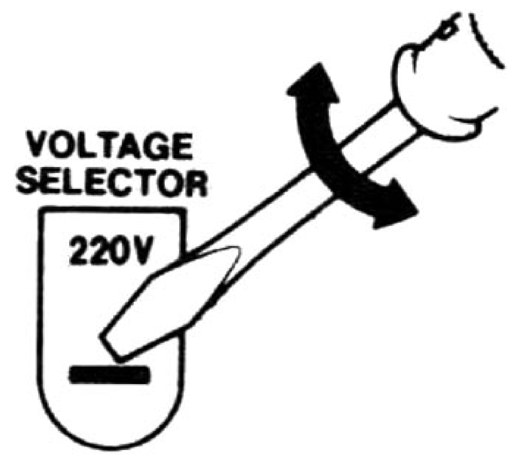
Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 Mohms, but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for $\boxed{C}$ or $\boxed{A}$, specified insulation resistance should be more than 2.2 Mohms (ground terminals, microphone jacks, headphone jacks, line-in out jacks etc.).

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ symbol parts are critical for safety.
   Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.
10. Voltage Conversion
    1) Models for Japan, Canada, USA, Europe, UK and Australia are not equipped with this facility.
       Each machine is preset at the factory according to destination, but some machines can be set to 110V, 120V, 220V or 240V as required.
       If VOLTAGE CHANGE is necessary, this can be accomplished as follows:
       1-1) Disconnect power cord.
       1-2) Turn the VOLTAGE SELECTOR located on the rear panel with a screwdriver until the correct voltage is indicated.



    2) Cycle Conversion
       Cycle conversion is not necessary since HX-M7R uses DC motors.

SECTION 1

SERVICE MANUAL

TABLE OF CONTENTS

I. SPECIFICATIONS

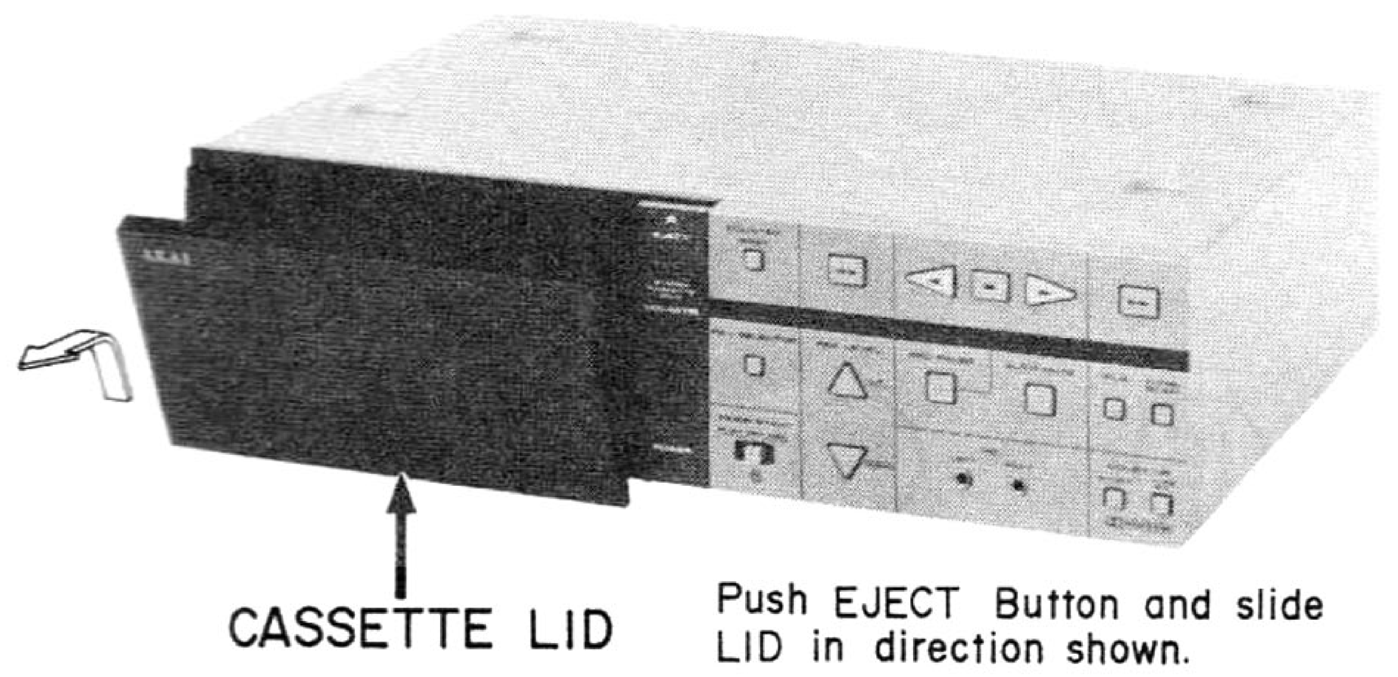
Tape	Philips type cassette
Track	4 Track 2 Channel stereo
Heads	Erase Head × 1 High Density Head of REC/PB × 1
Motors	Electronically speed controlled DC Motor for cpastan drive × 1, DC motor for Cam drive × 1
Wow & Flutter	0.13% (DIN) 0.05% (W. RMS) ±0.07% W. PEAK (EIAJ)
S/N Ratio	58 dB (Measured via tape with peak recording level, Metal Tape) 56 dB (EIAJ) DOLBY B ON: Improves up to 5 dB 1 kHz, 10 dB above 5 kHz DOLBY C ON: Improves up to 15 dB at 500 Hz, 20 dB at 1 kHz to 10 kHz
Distortion	0.75% (METAL)
Frequency Response	NORMAL: 30 to 15,000 Hz ±3 dB (–20 VU) CrO_2: 30 to 16,000 Hz ±3 dB (–20 VU) METAL: 30 to 17,000 Hz ±3 dB (–20 VU)
Input	LINE: 410 mV/47 kohms MIC: 2.5 mV/5 kohms
Output	410 mV/Less than 2.2 Kohms
Power Requirements	100V, 50/60 Hz 120V, 60 Hz for USA and Canada 220V, 50 Hz for Europe except UK 240V, 50Hz for UK and Australia 110V/120V/220V/240V, 50/60 Hz switchable for other countries
Power Consumption	JPN Model: 16W AAL, CSA, U/T Models: 13W
Dimensions	350 (W) × 98 (H) × 267 (D) mm (13.8 × 3.9 × 10.5 inches)
Weight	4.5 kg (9.9 lbs)

* For improvement purposes, specifications and design are subject to change without notice.
* Noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "Dolbv" and the Double-D symbol are trade marks of Dolby Laboratories Licensing Corporation.

II. DISMANTLING OF UNIT

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs.
Reassemble in reverse order.

1



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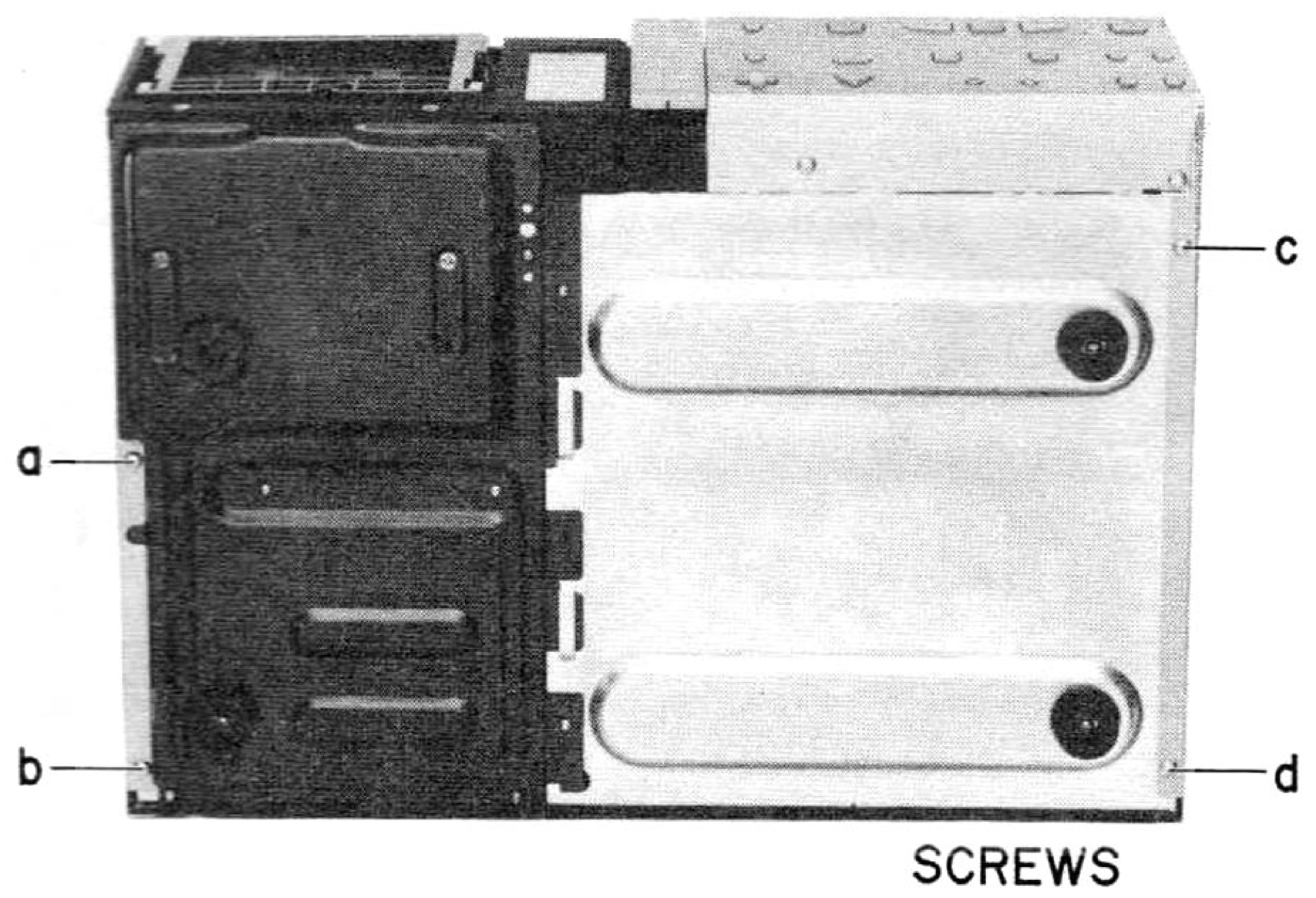

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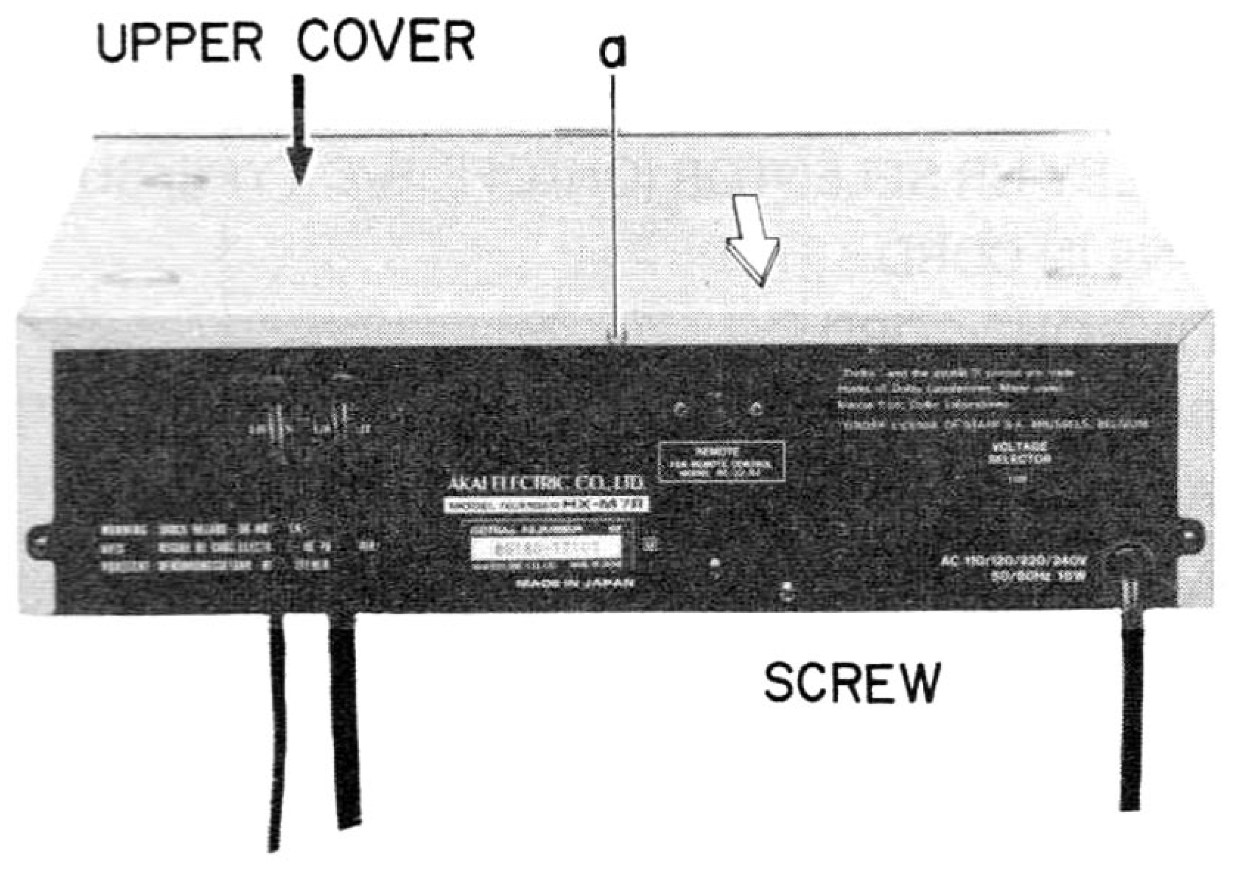

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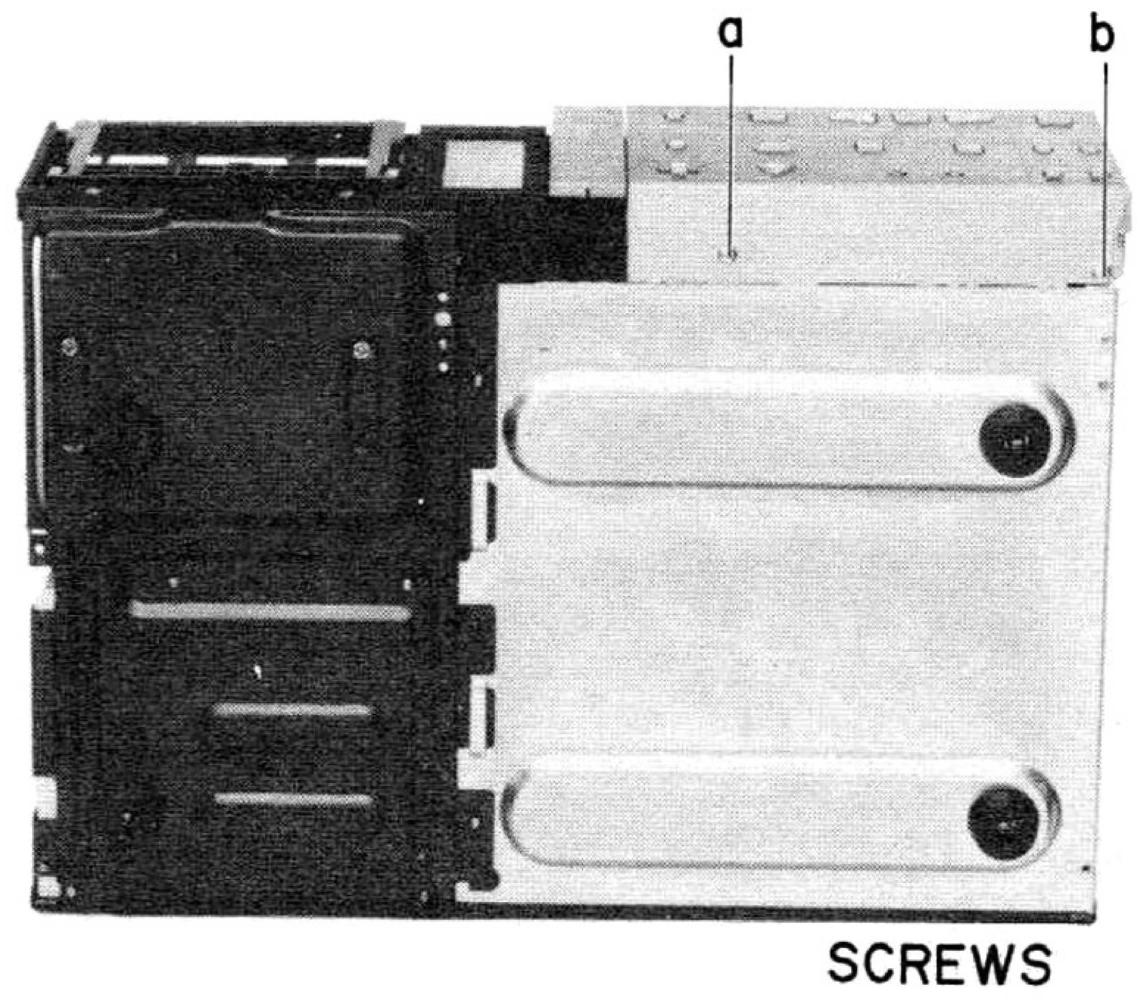

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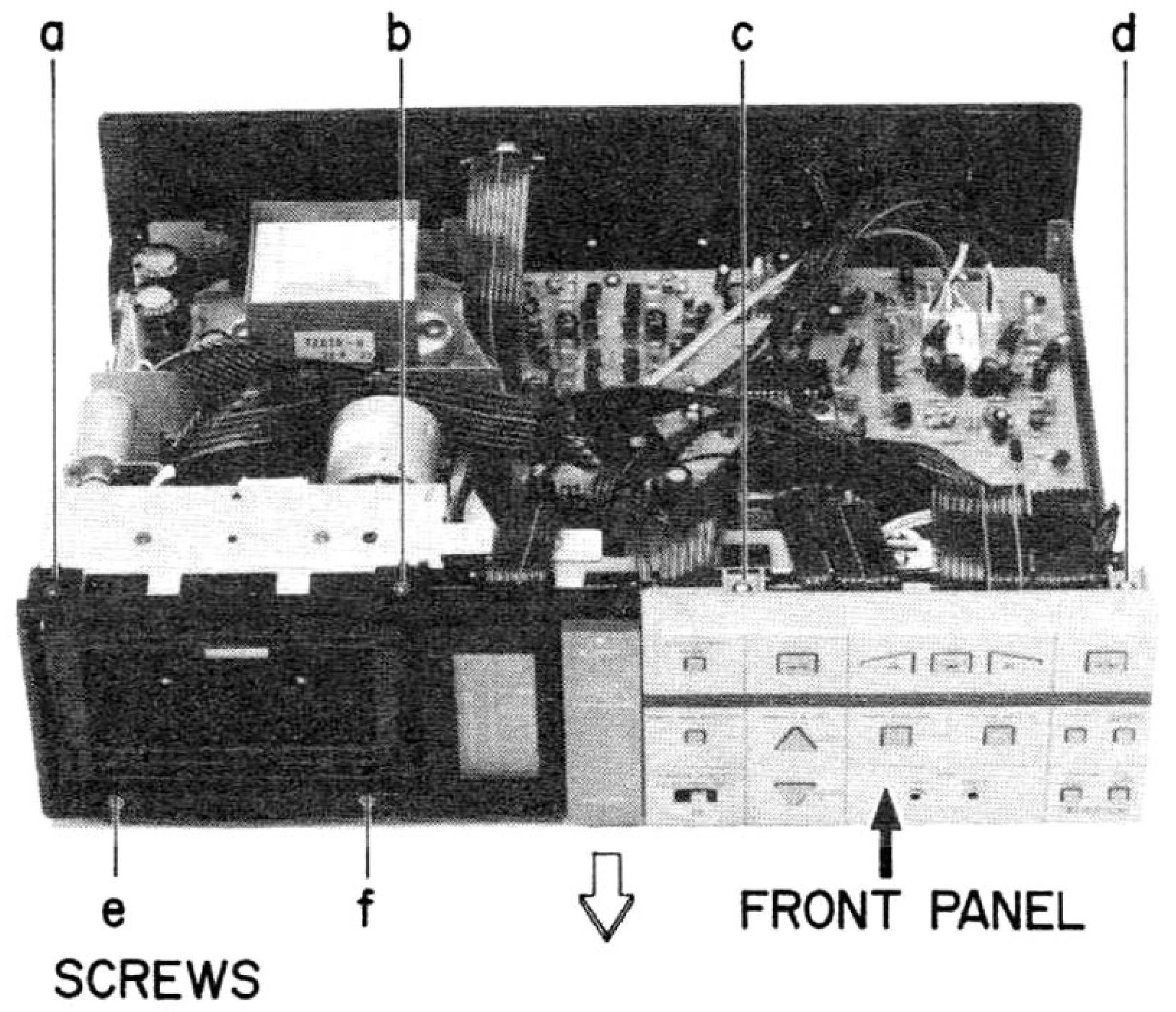

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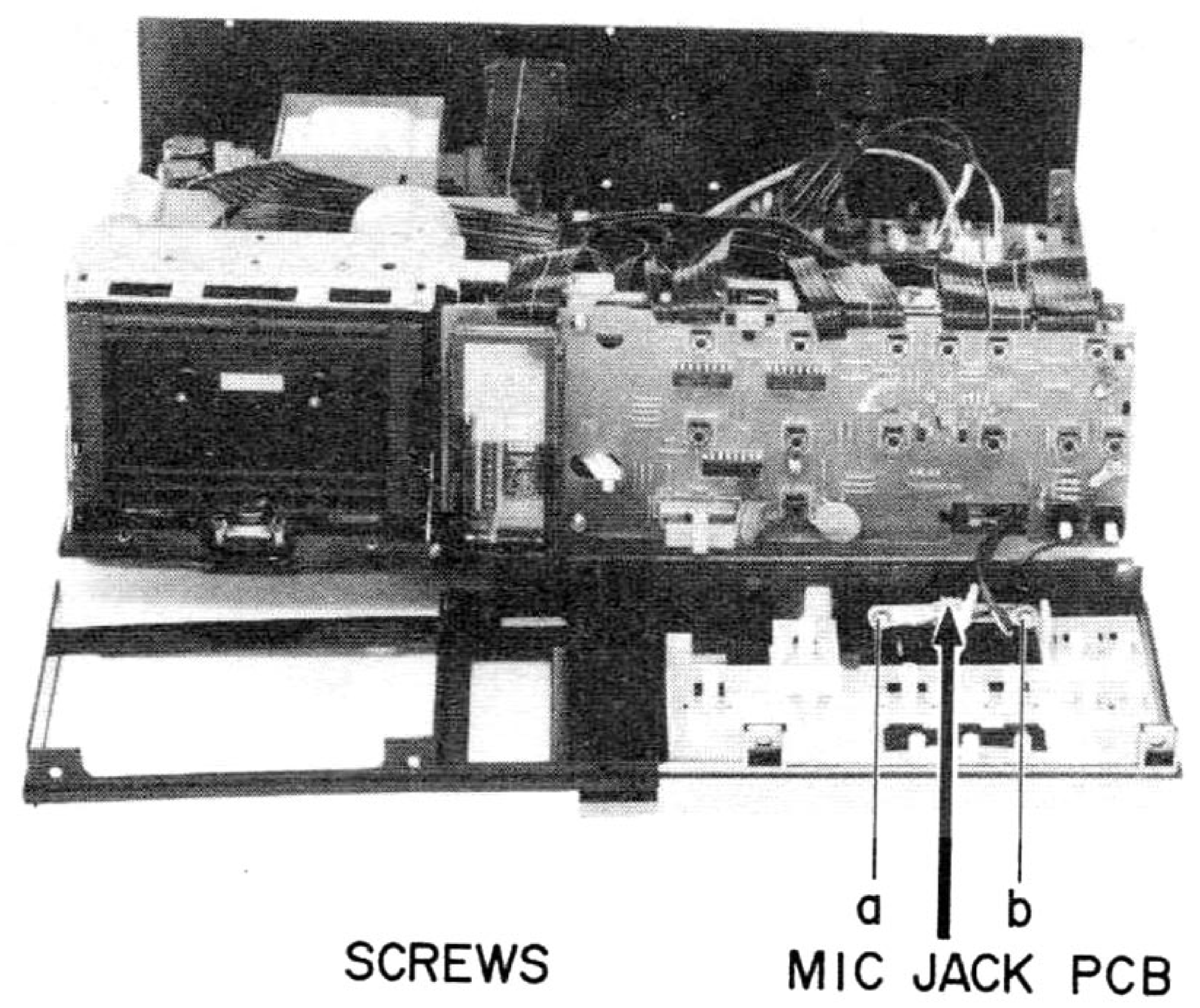

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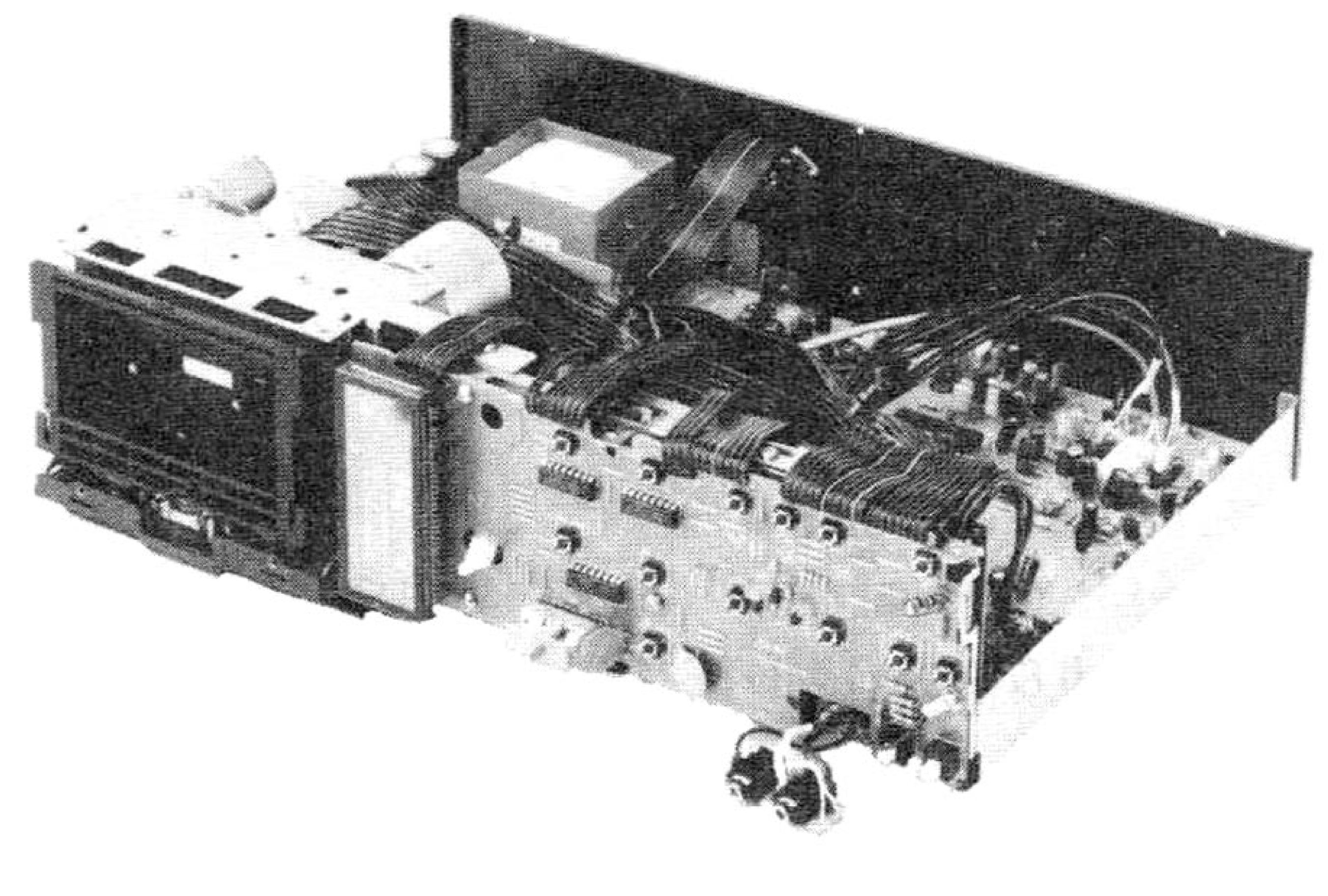
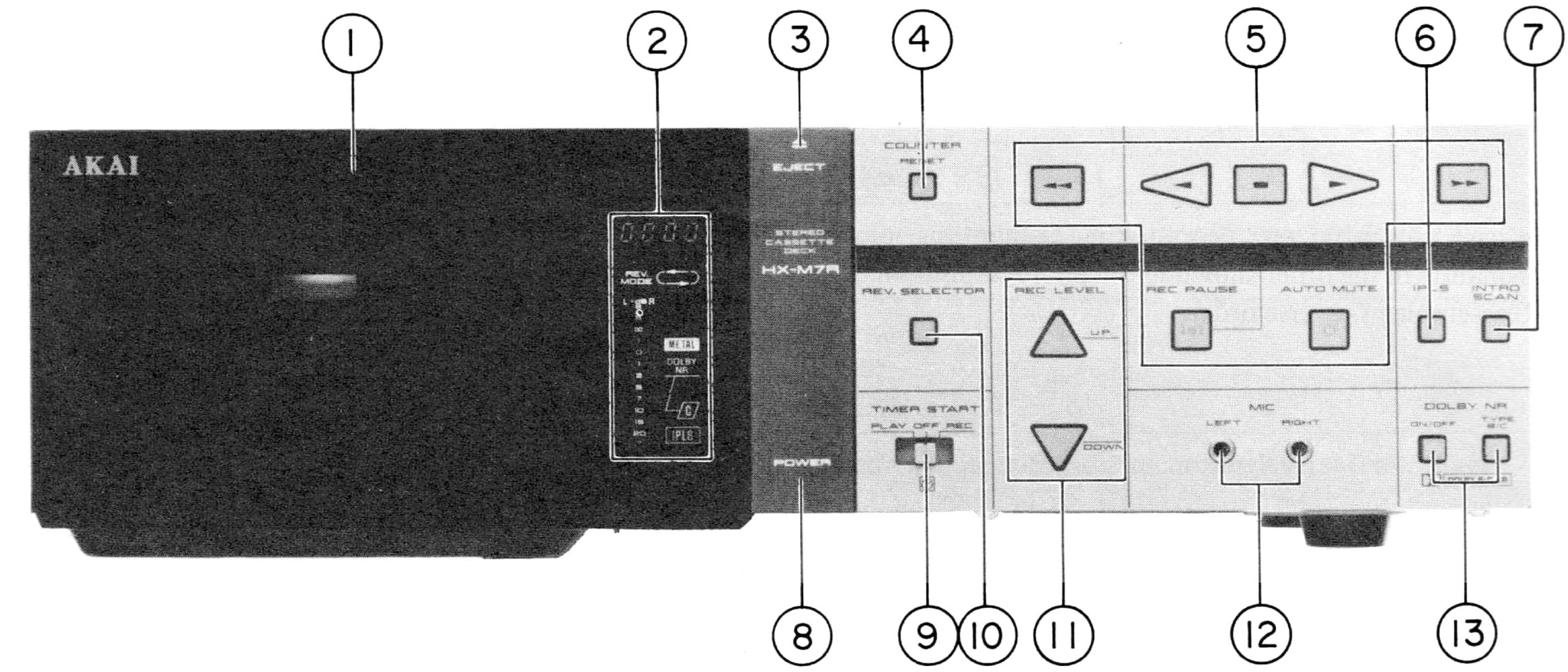


III. CONTROLS



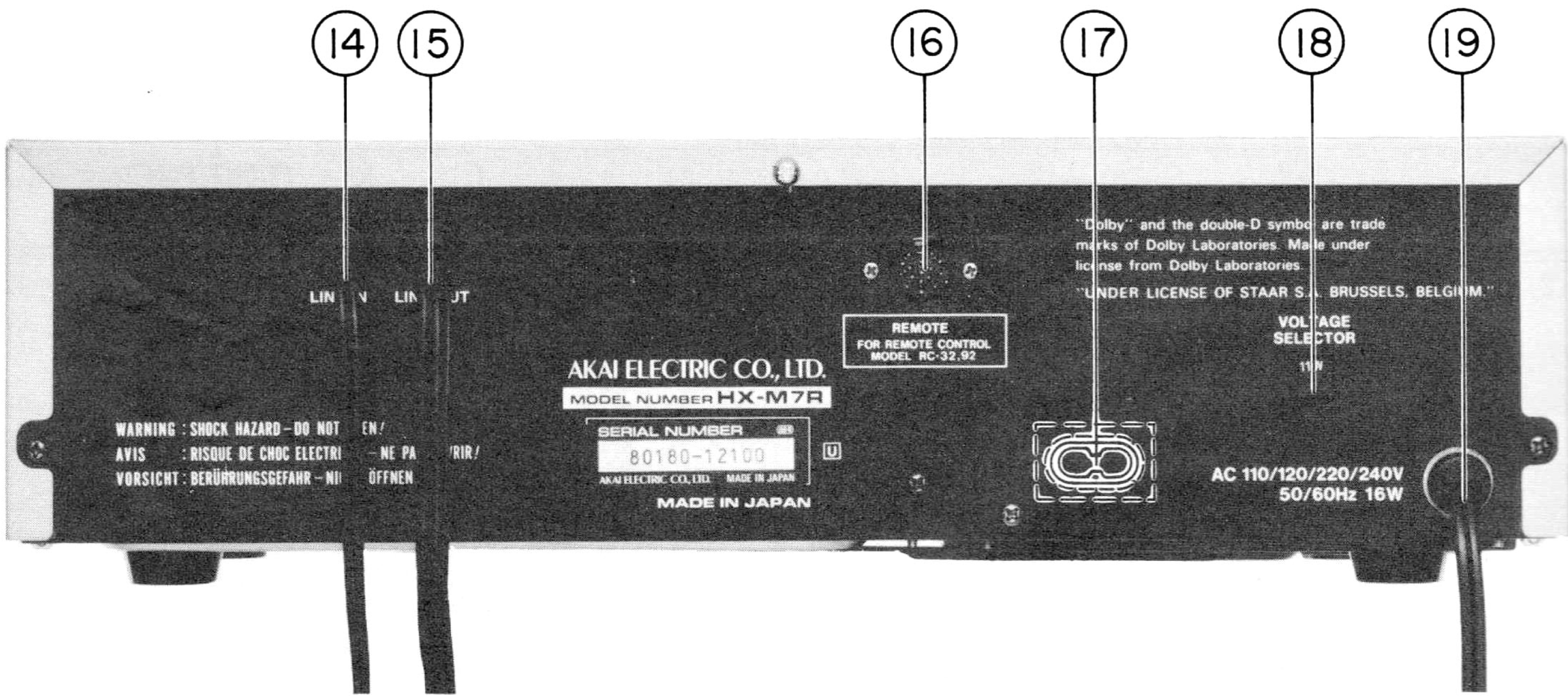


Fig. 3-1

1. CASSETTE LID
2. FL DISPLAY
   (DISPLAY FOR COUNTER, REV MODE, TAPE SELECTED, DOLBY B/C, IPLS & BAR LEVEL METER)
3. EJECT BUTTON
4. COUNTER RESET BUTTON
5. OPERATION BUTTONS
   FWD (▶), STOP (■), REV (◀), FF (▶▶), RWD (◀◀), REC PAUSE (|●|) & AUTO MUTE (▢)
6. IPLS BUTTON
7. INTRO SCAN BUTTON
8. POWER SWITCH
9. TIMER START SWITCH
   (PLAY-OFF-REC)
10. REVERSE SELECTOR BUTTON
    (NON, ONCE & CONTINUOUS)
11. REC LEVEL UP/DOWN BUTTONS
12. MIC JACKS (LEFT & RIGHT)
13. DOLBY NR SELECTOR (ON/OFF, B/C TYPE) BUTTONS
14. LINE IN CORD
15. LINE OUT CORD
16. REMOTE CONTROL JACK (FOR RC-32, 92)
17. AC INLET
    [E][V][B][S] MODELS ONLY
18. VOLTAGE SELECTOR (110V, 120V, 220V or 240V)
    [U] MODEL ONLY
19. POWER CORD
    [J][U][A][C] MODELS ONLY

IV. PRINCIPAL PARTS LOCATION

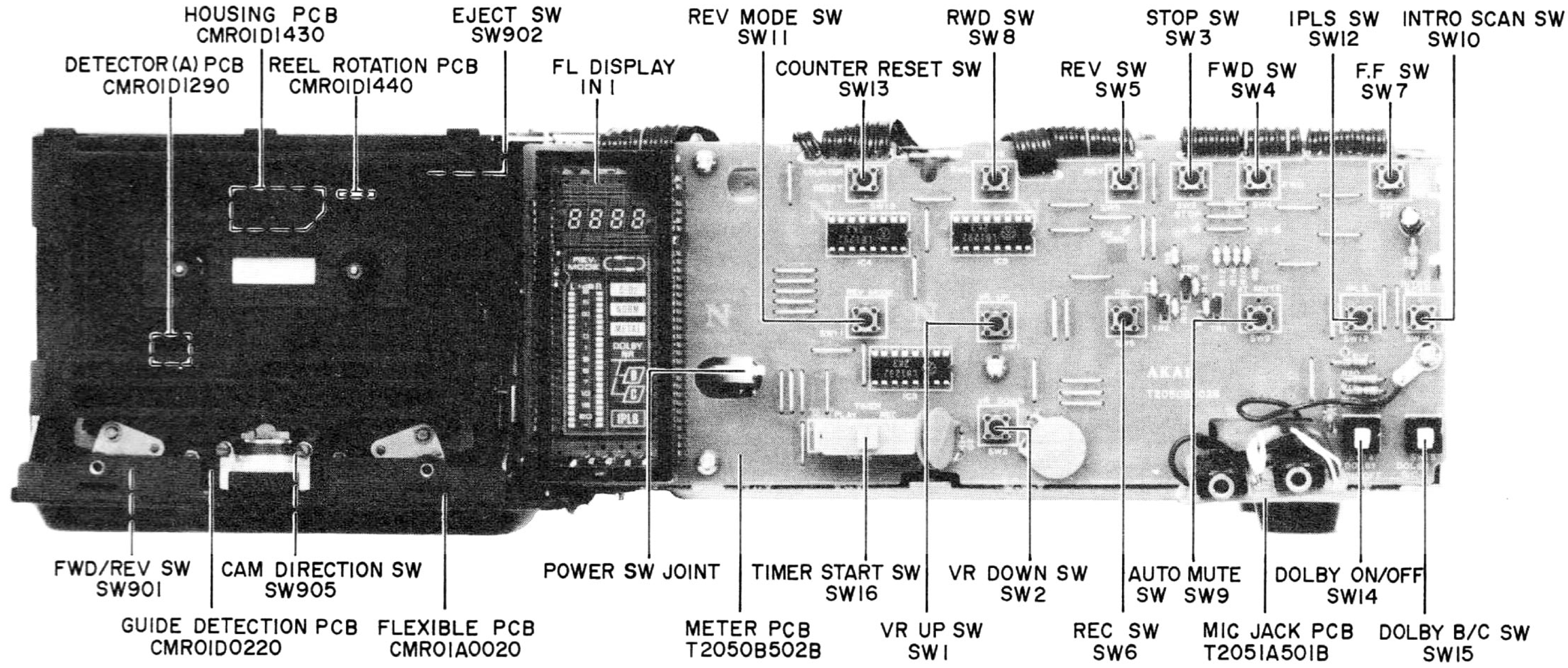


Fig. 4-1

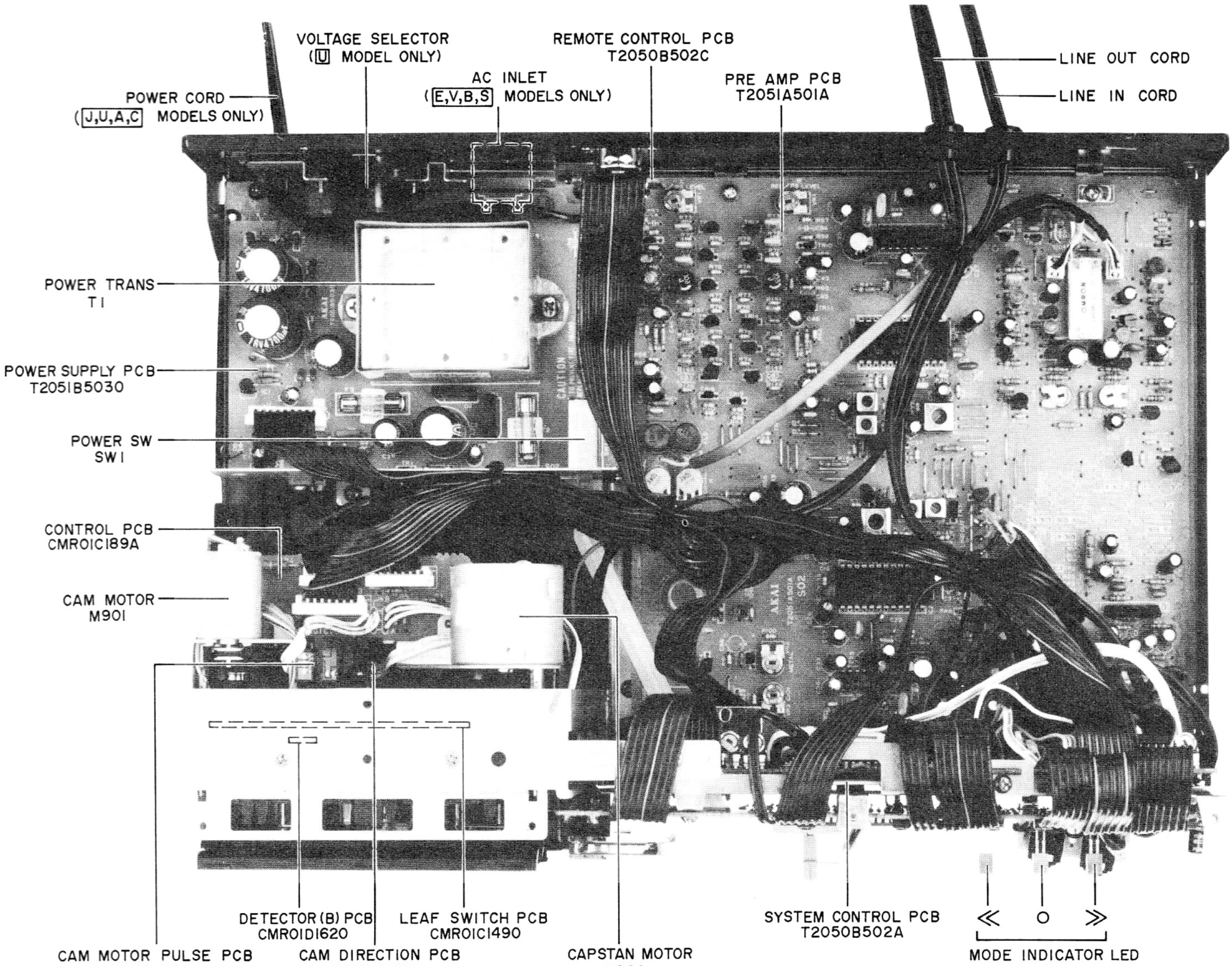


Fig. 4-2

V. CIRCUIT OPERATION DESCRIPTION

5-1. PRE-AMP BLOCK DIAGRAM

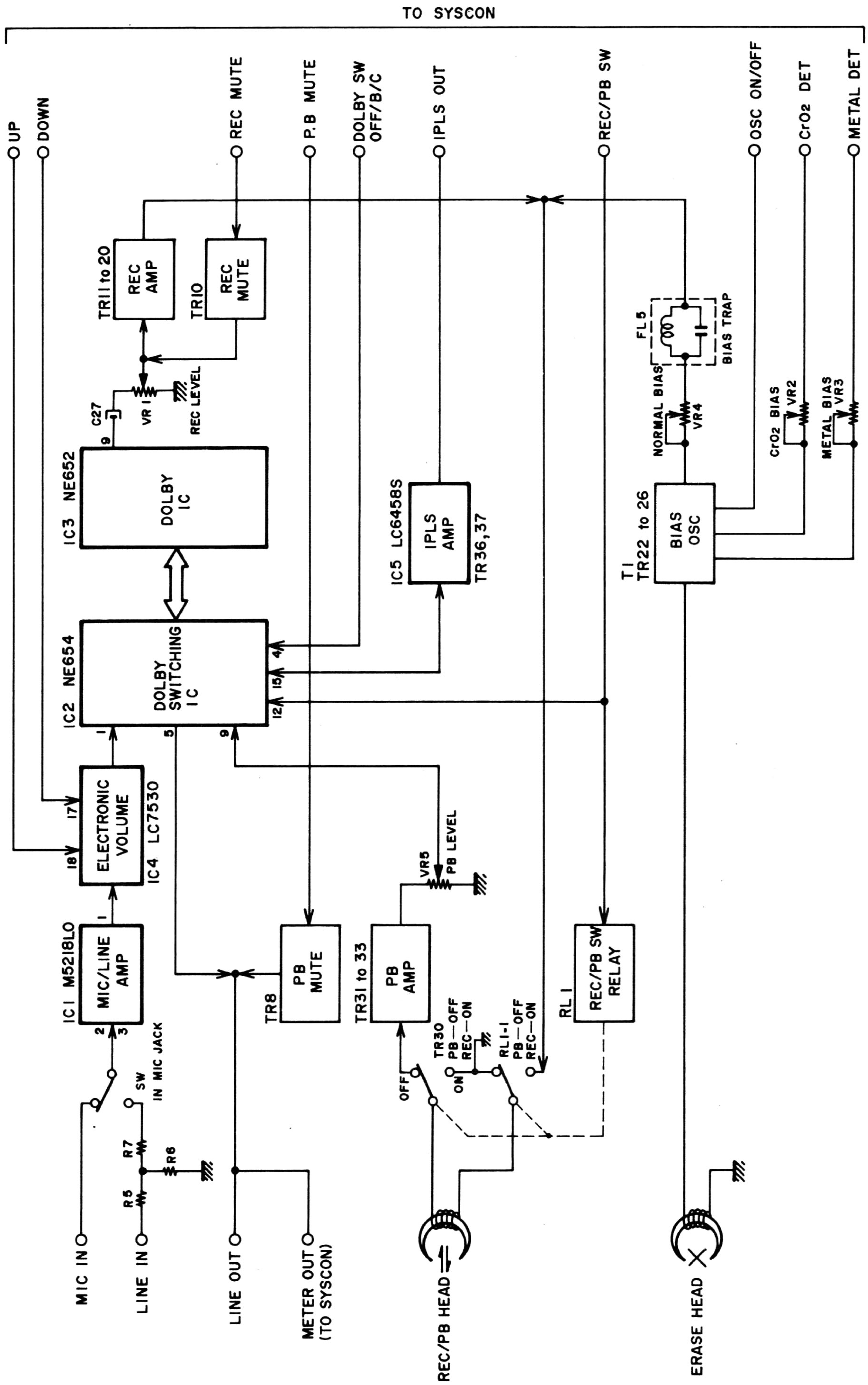


Fig. 5-1

5-2. SYSCON BLOCK DIAGRAM AND THE PERIPHERAL CIRCUIT OF MI-COM IC4 (LC6402H-190)

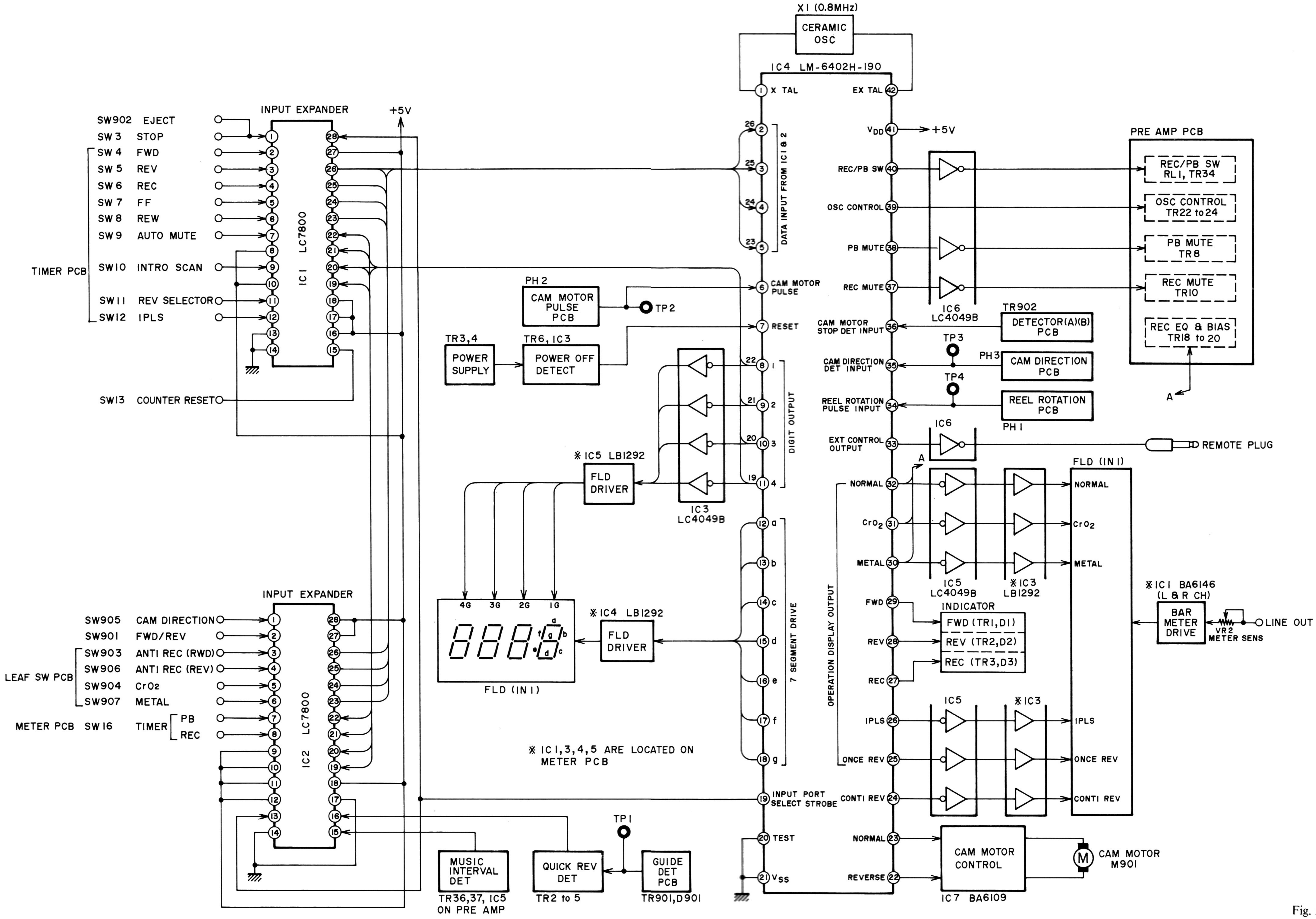


Fig. 5-2

5-3. ELECTRONIC VOLUME

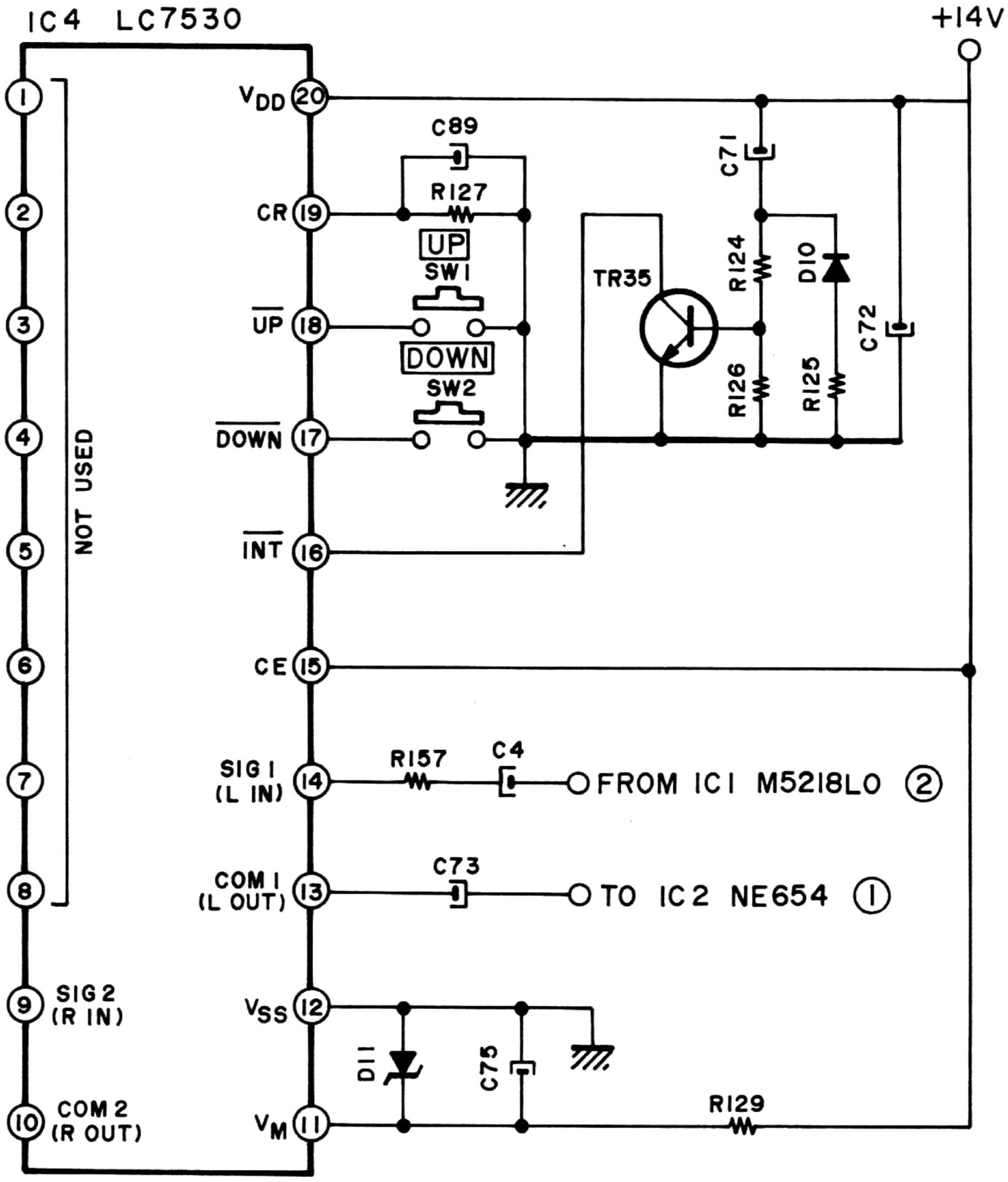
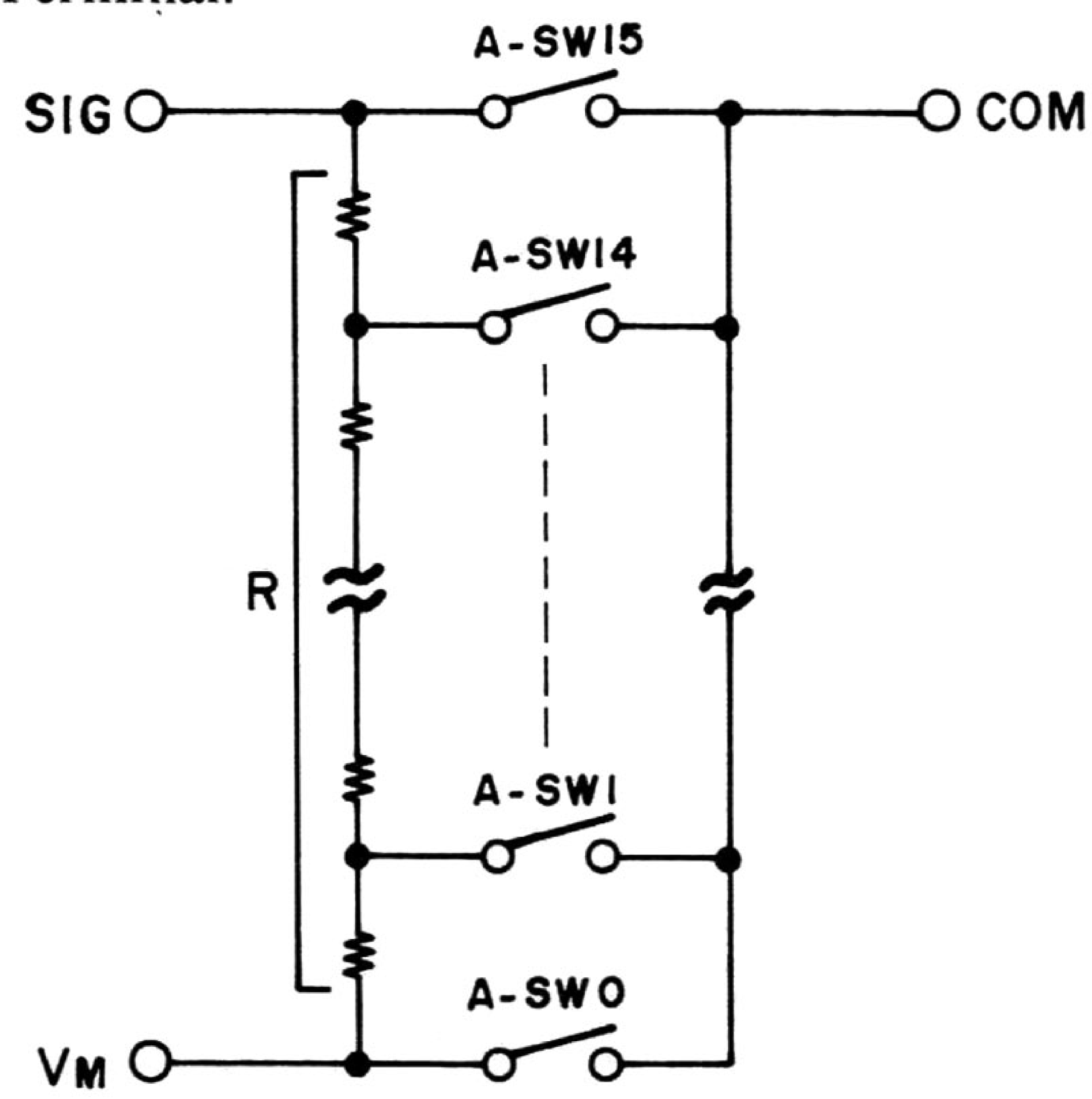


Fig. 5-3

Model HX-M7R employs Electronic Volume instead of Mechanical REC Volume, and uses an IC (LC7530) for both channels.
Refer to the description of IC (LC7530) for the details.

<table>
<tr><th>Pin No.</th><th>Symbol</th><th>Description</th></tr>
<tr><td>1
≀
8</td><td>IND1
≀
IND8</td><td>Not used.</td></tr>
<tr><td>9
10
13
14</td><td>SIG2
COM2
COM1
SIG1</td><td>RCH Signal Input Terminal.
RCH Signal Output Terminal.
LCH Signal Output Terminal.
LCH Signal Input Terminal.


<table>
<tr><th>Attenuation Step</th><th>Attenuation (dB)</th></tr>
<tr><td>0</td><td>0</td></tr>
<tr><td>1</td><td>–1.0</td></tr>
<tr><td>2</td><td>–2.0</td></tr>
<tr><td>3</td><td>–3.4</td></tr>
<tr><td>4</td><td>–5.1</td></tr>
<tr><td>5</td><td>–7.1</td></tr>
<tr><td>6</td><td>–9.3</td></tr>
<tr><td>7</td><td>–11.7</td></tr>
<tr><td>8</td><td>–14.1</td></tr>
<tr><td>9</td><td>–16.5</td></tr>
<tr><td>10</td><td>–18.8</td></tr>
<tr><td>11</td><td>–21.1</td></tr>
<tr><td>12</td><td>–24.5</td></tr>
<tr><td>13</td><td>–28.8</td></tr>
<tr><td>14</td><td>–34.0</td></tr>
<tr><td>15</td><td>–80.0</td></tr>
</table>
This attenuator shown above is made up of diffused resistors R (50 kohms) and analogue switches (SW0 ~ 15), and it attenuates 0 dB to 80 dB in 16 steps (step 0 to 15).</td></tr>
<tr><td>11</td><td>VM</td><td>Center Bias Terminal.
Connected to the ground of signal line.</td></tr>
<tr><td>12</td><td>VSS</td><td>Connected to ground.</td></tr>
<tr><td>15</td><td>CE</td><td>Back-up Control Terminal. Back-up mode at "L".</td></tr>
<tr><td>16</td><td>$\overline{\text{INT}}$</td><td>Attenuator (step 9) Set Up Terminal, active at "L".</td></tr>
<tr><td>17

18</td><td>$\overline{\text{DOWN}}$

$\overline{\text{UP}}$</td><td>Attenuator Countrol Signal Input Terminal.
(Increases attenuation)
Attenuator Control Signal Input Terminal.
(Decreases attenuation)
$\overline{\text{DOWN}}$ → Establishing "L" level at this terminal activates the internal oscillator, and Attenuation is increased one step each time at the rising edge of oscillation wave.
Keeping this terminal at "L" level continues attenuation rise until the attenuation rise and oscillation stop at the sixteenth step. (Attenuation of 80 dB)
$\overline{\text{UP}}$ → Attenuation decreases in the same manner as above.</td></tr>
<tr><td>19</td><td>CR</td><td>Capacitor and Resistor Terminal for Internal Clock Oscillator.</td></tr>
<tr><td>20</td><td>VDD</td><td>Power Supply Terminal (+20V).</td></tr>
</table>

Chart 5-1

5-4. DESCRIPTION OF THE MECHANISM DRIVEN BY CAM WHEEL (L) & (R)

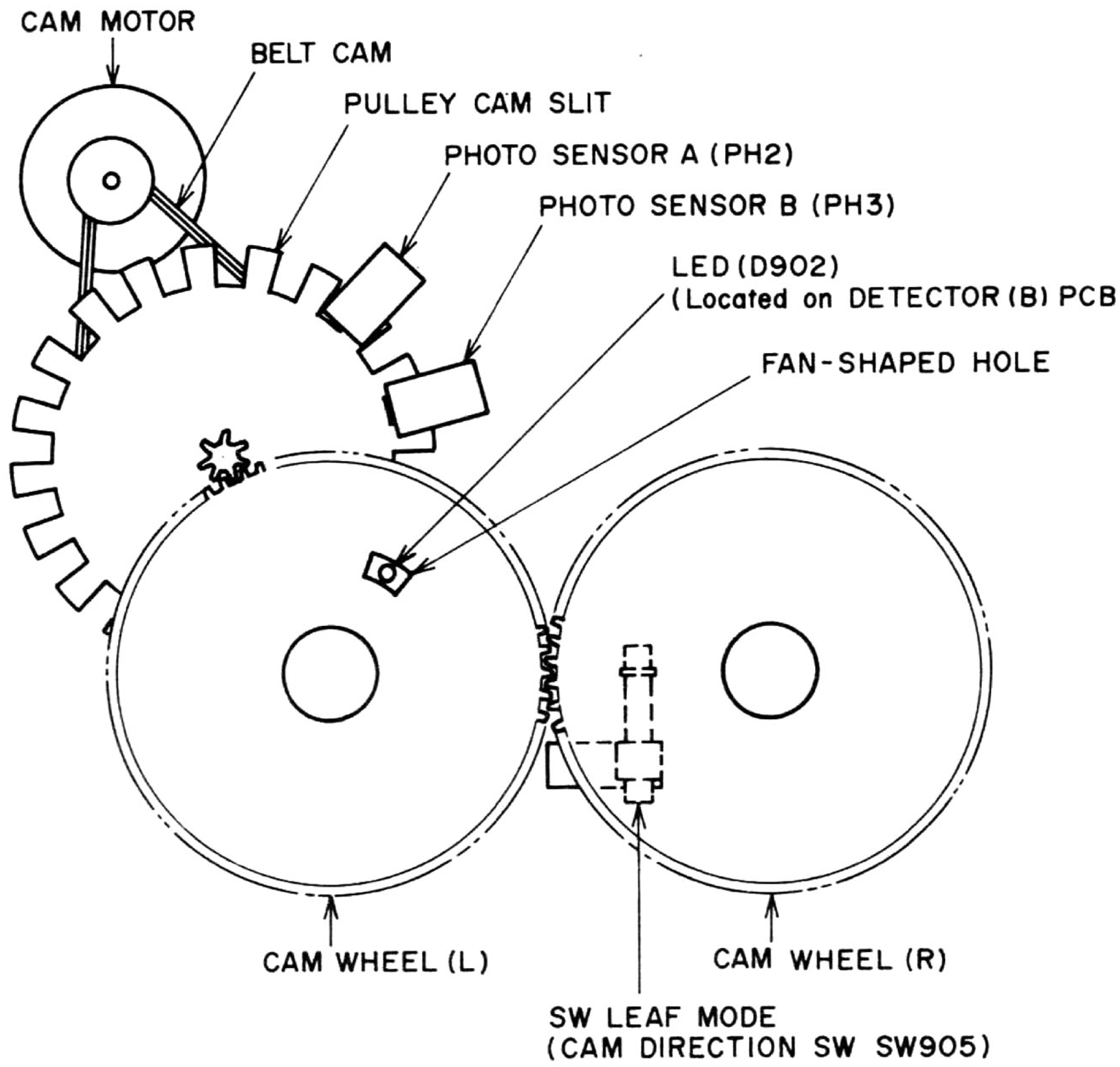


Fig. 5-4 Cam Wheel (L) & (R) Drive Mechanism (Front View)

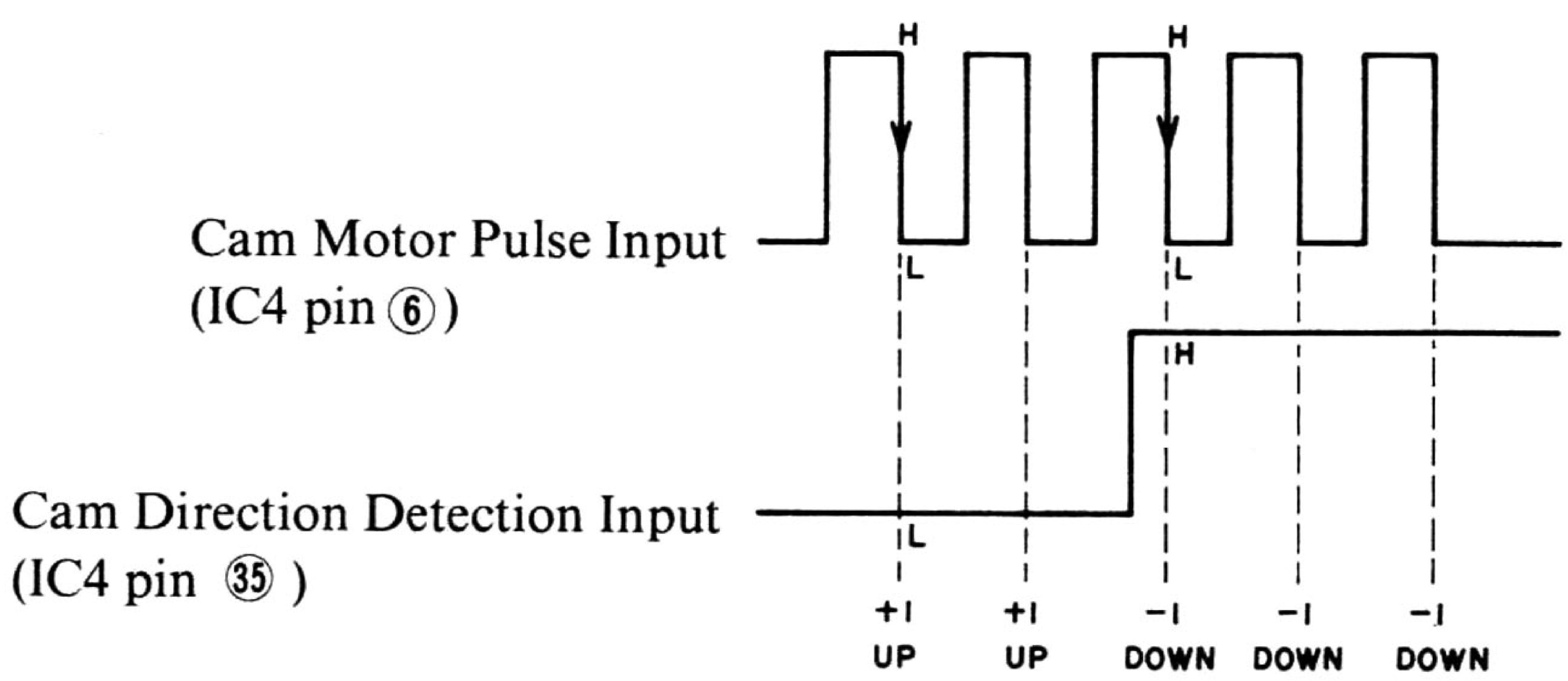


Fig. 5-5

5-4-1. The sequence of this transmission is as follows. (Refer to Fig. 5-4)
CAM MOTOR → BELT CAM → PULLEY CAM SLIT → CAM WHEEL (L) → CAM WHEEL (R)

5-4-2. CAM MOTOR is driven by IC7 (BA6109) on SYSCON PCB and this IC7 is controlled by the various control signals from various detectors and switches through the action of MI-COM IC4 (LM6402H-190).

5-4-3. PULLEY CAM SLIT is driven by BELT CAM and drives CAM WHEEL (L), and the slits on PULLEY CAM SLIT are used for the detection of CAM MOTOR PULSE and CAM DIRECTION.

5-4-4. CAM WHEELS (L) (R) contain grooves to shift 8 mechanical parts shown in Figs. 5-8 & 5-9, which execute all the operations such as;

1) Shifting Head block up and down.
2) Shifting Pinch Rollers up and down.
3) Rotation of Reel Tables.
4) Rotation of Head (for FWD & REV modes)

5-4-5. SW LEAF MODE is used for the detection of the current CAM WHEEL position. It is "ON" during REV/FF modes and "OFF" during FWD/REW modes.

5-4-6. DETECTORS A, B are used for the detection of STOP mode. TR902 is "ON" during STOP mode.

5-4-7. PHOTO-SENSOR A (PH2) is used for the detection of CAM MOTOR PULSES, and together with PHOTO-SENSOR B, its count sets up the position of the CAM WHEELS.

5-4-8. PHOTO SENSOR B (PH3) is used for the detection of CAM direction. That part of the CAM MOTOR PULSE in which the pulse changes from "H" to "L" is used for counting up (+) and down (–) as indicated in Fig. 5-5 to set up CAM WHEELS (L) & (R).

5-4-9. Mechanical Operations in each mode

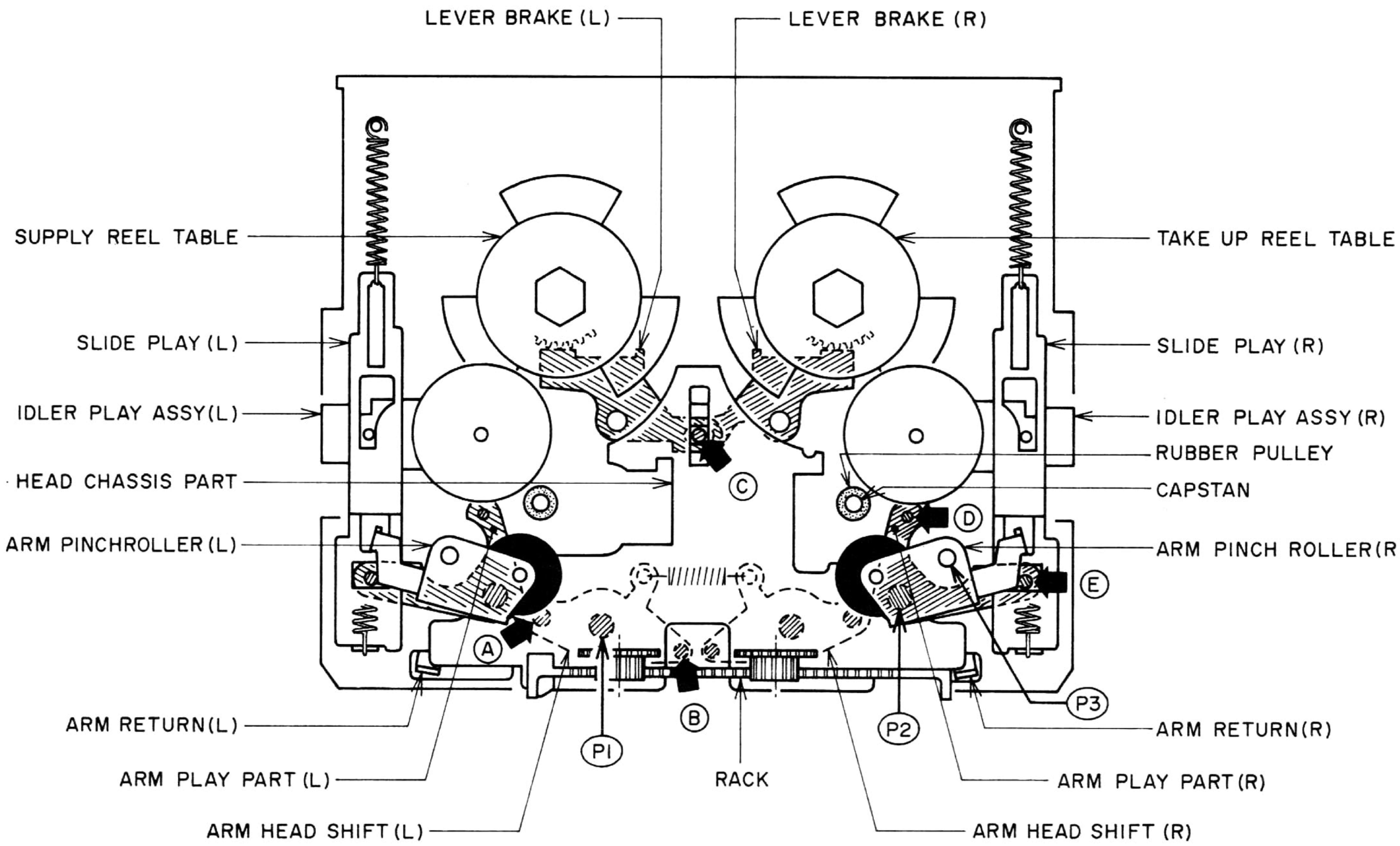


Fig. 5-6 The Mechanism for FWD/REV Mode

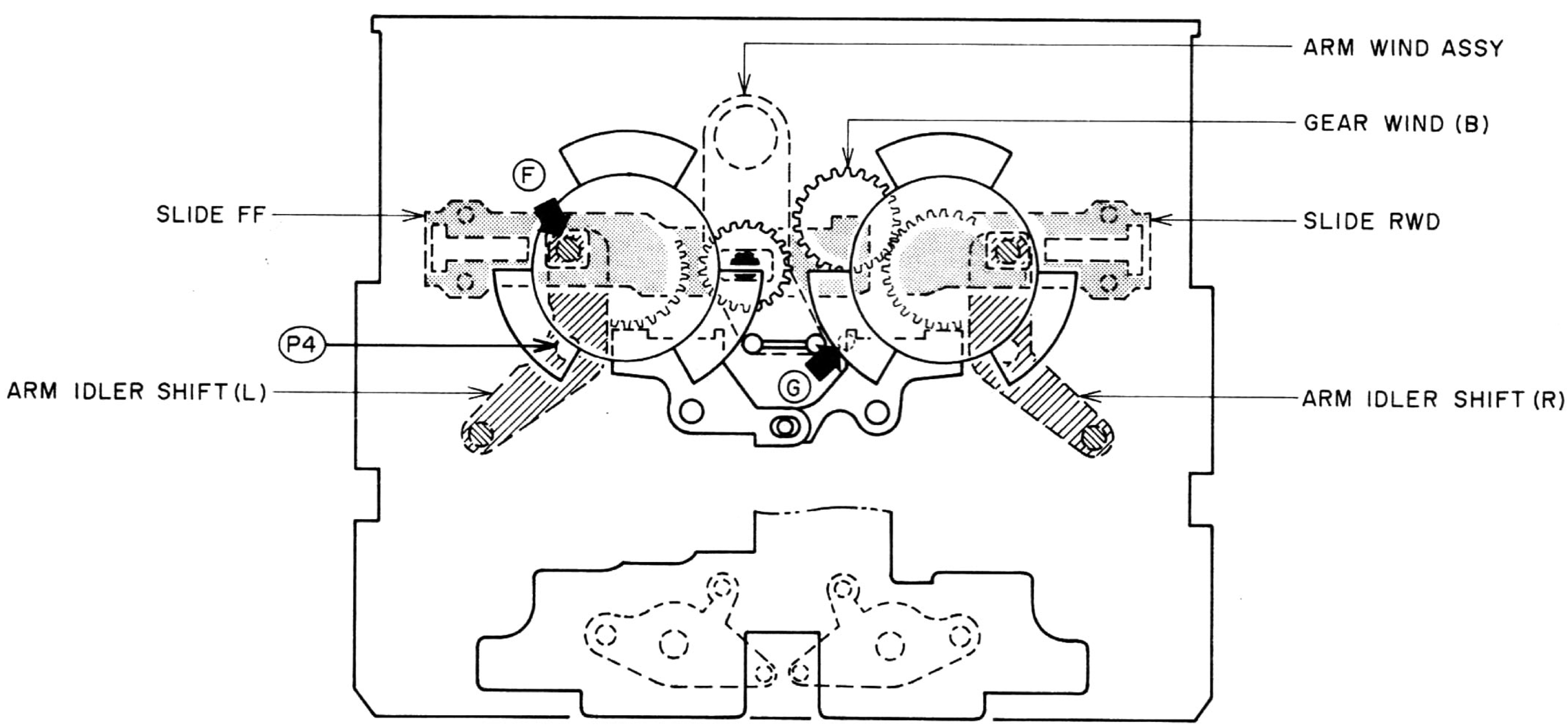


Fig. 5-7 The Mechanism for FF/RWD (includes IPLS & Intro Scan)

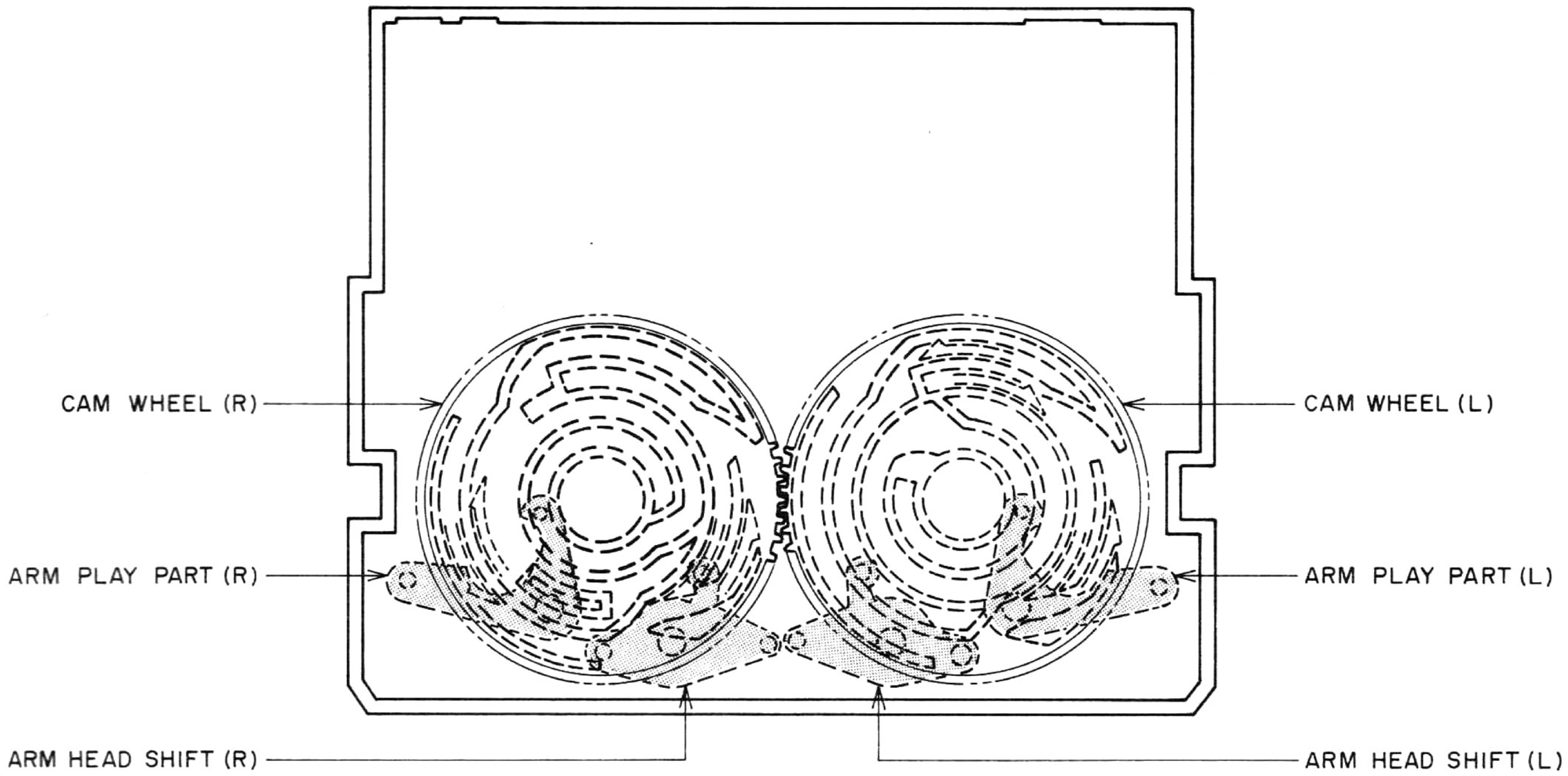


Fig. 5-8 The Location of Arm Head Shift & Arm Play (Inside View)

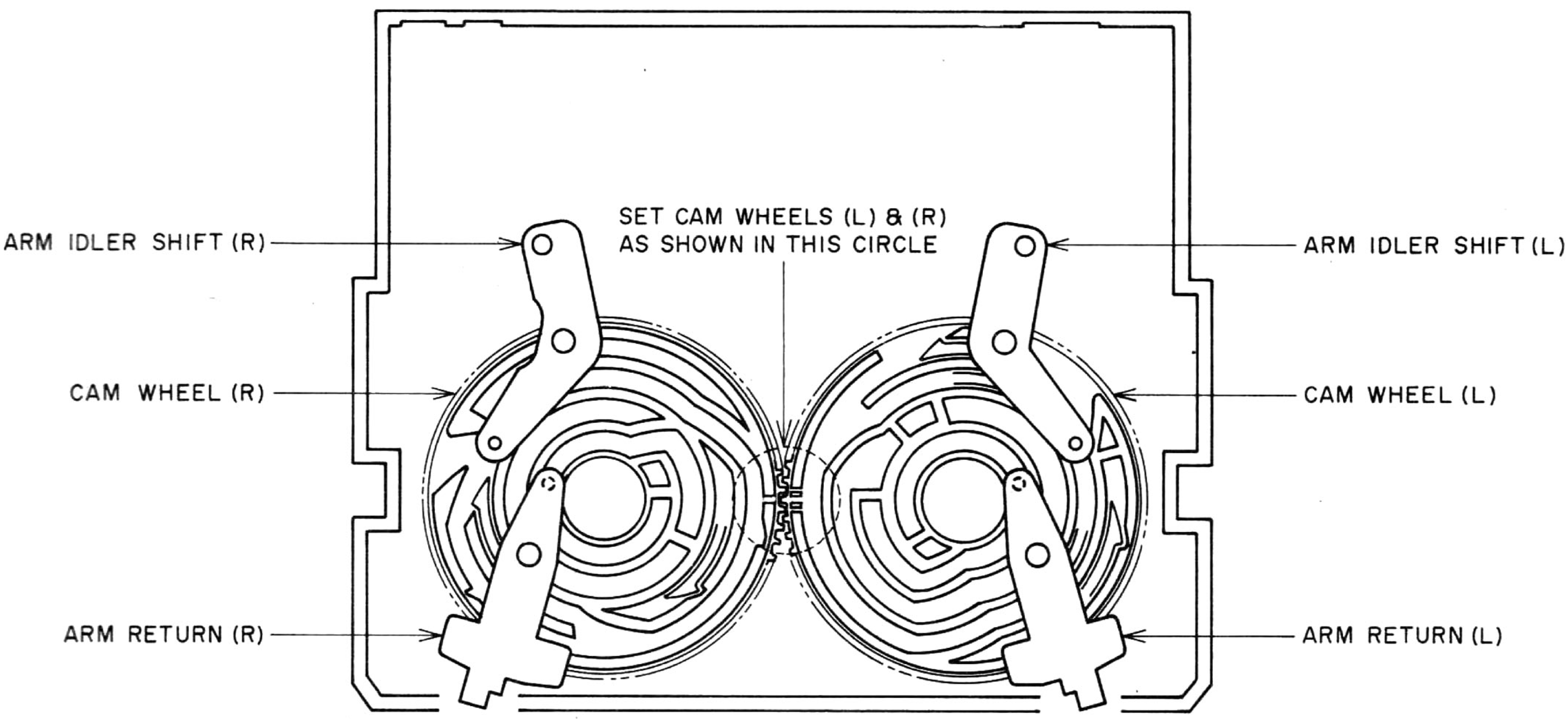


Fig. 5-9 The Location of Arm Idler Shift & Arm Return (Inside View)

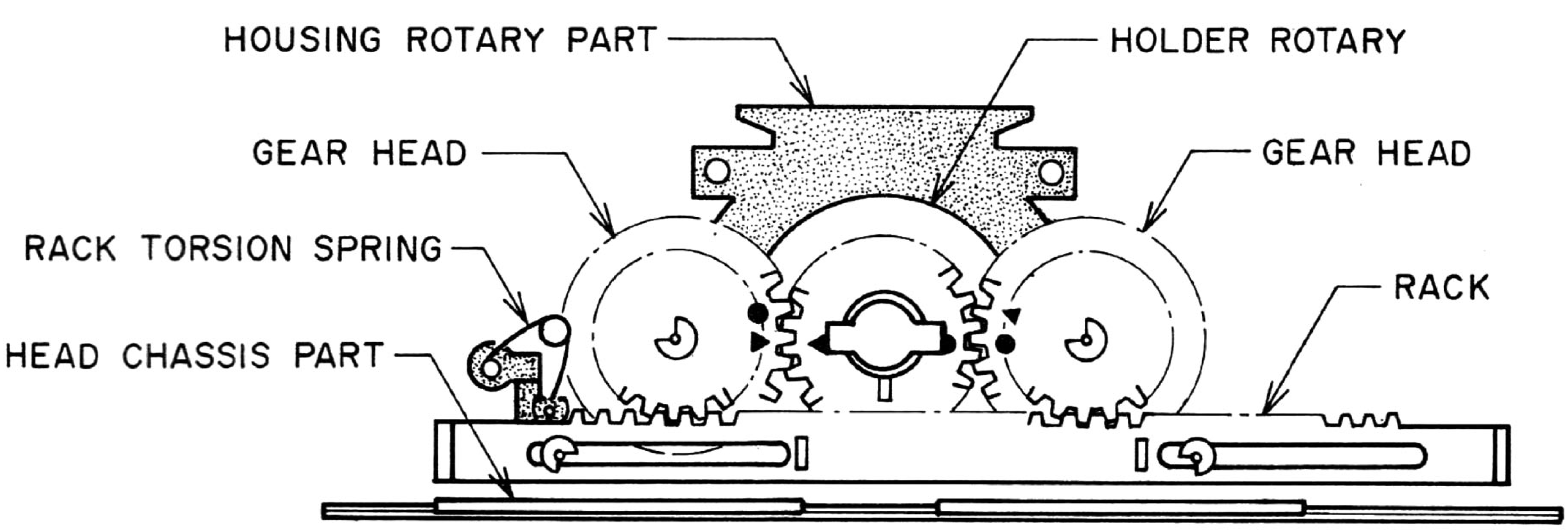


Fig. 5-10 The Bottom View of Rotary Head Mechanism (FWD Mode)

1) FWD mode (Refer to Fig. 5-6)
Cam Wheels (L) & (R) turn clockwise (L) and counter-clockwise (R) for +91 counts in each direction, and put on the brake for 20m sec. (All the other modes end with the brake operating for 20m sec as well.)
The mechanical operations in the meantime are as follows.
   a) Arm Return (L) moves to the right and pushes Rack in the same direction so that the Rotary head turns into the FWD position.
   b) Arm Head Shift (L) turns on its pivot P1 so Part A moves downwards and Part B moves upwards. (Part B) → pushes Head Chassis up to the position for play mode.
   → pushes Lever Brake (Part C) up and release the brake.
   c) Arm Play (R) turns on its pivot P2 so Part D moves to the right, and Part E moves downwards and pushes Slide Play (R) down so that Idler Play Assy (R) moves to the left and transmits the rotation of the Capstan to the Take-up Reel Table.
   At the same time, Arm Pinch Roller (R) turns clockwise on its Pivot P3 and Pinch Roller (R) comes up for Play mode.

2) REV mode (Refer to Fig. 5-6)
Cam Wheels (L) & (R) turn counter-clockwise (L) and clockwise (R) for the same counts as FWD mode.
The mechanical operations in REV mode can be obtained from the description of FWD mode in item 1) by interchanging left (L) and right (R).

3) FF mode (Refer to Fig. 5-7)
   a) Cam Wheels (L) & (R) turn counter-clockwise (L) and clockwise (R) for 43 counts and turn the other way (clockwise (L), counter-clockwise (R)) until the count is reduced to 25.
   b) In FF & RWD modes, only Arm Idler Shift (L), (R) are involved.
   Arm Idler Shift (L) turns on its pivot P4 so Part F moves to the right which pushes the Slide FF to the right → Arm Wind Assy moves to the right, engages Gear Wind (B) and transmits the rotation of Arm Wind Assy to Take-up Reel Table.
   → Pushes Lever Brake (R) (Part G) to release the brake.

4) RWD mode (Refer to Fig. 5-7)
   a) Cam Wheels (L) & (R) turn clockwise (L) and counter-clockwise (R) for the same counts as FF mode.
   b) The mechanical operations in RWD mode can be obtained from the description of the FF mode in item 1) by interchanging left (L) and right (R).

5) FF Search (IPLS, Intro Scan)
   a) Cam Wheels turn in the same directions as in FF mode for 51 counts and for the reduction of 25 counts.
   b) The mechanical operations in this mode are the same as in FF mode, except that the Arm Head Shift (L) pushes up the Chassis Head Part which raises the Head Block to the FF Search mode position.

6) RWD Search (IPLS, Intro Scan)
   a) Cam Wheels turn in the same directions as in RWD mode for the same counts as in FF search mode.
   b) The mechanical operations in this mode are the same as in REW mode, except that the Arm Head Shift (R) pushes up the Chassis Head Part which raises the Head Block to the RWD Search mode position.

5-4-10. How to install Cam Wheel (L) and (R). (Refer to Fig. 5-9)
Set Cam Wheels (L) and (R) as indicated in Fig. 5-9.
The color of Cam Wheel (L) is black and (R) is white, and they rotate around the fulcrum provided by the Capstan Holder Part on the Chassis Mech Part.

5-4-11. The bottom view of Rotary head mechanism.
Refer to Fig. 5-10 when the assembly of this machanism is necessary.

5-4-12. The relation between each mode and five mechanical parts.
Refer to Chart. 5-2.

PARTS \ MODES		FWD	REV	FF	RWD	FF SEARCH (IPLS, INTRO SCAN)	RWD SEARCH (IPLS, INTRO SCAN)
ARM HEAD SHIFT	(L)	○	×	×	×	○	×
	(R)	×	○	×	×	×	○
ARM PLAY	(L)	×	○	×	×	×	×
	(R)	○	×	×	×	×	×
ARM RETURN	(L)	○	×	×	×	×	×
	(R)	×	○	×	×	×	×
ARM IDLER SHIFT	(L)	×	×	○	×	○	×
	(R)	×	×	×	○	×	○
CAM WHEEL	(L)	+91	-91	-43 -25	+25 +43	-51 -25	+25 +51
	(R)						

Chart 5-2

○ : Related (Involved).

× : Not Related (There might be some movements but not related to any operations).

+91 : Rotation Direction Clockwise for +91 counts.

-91 : Counter-clockwise for –91 counts.

+25 +43 : Clockwise for +43 counts and Counter-clockwise to +25 counts.

-51 -25 : Counter-clockwise for –51 counts and Clockwise to –25 counts.

* All the mode conditions are indicated relative to the Stop mode.

VI. MECHANICAL ADJUSTMENT

6-1. PINCH ROLLER PRESSURE MEASUREMENT (Refer to Fig. 6-1)

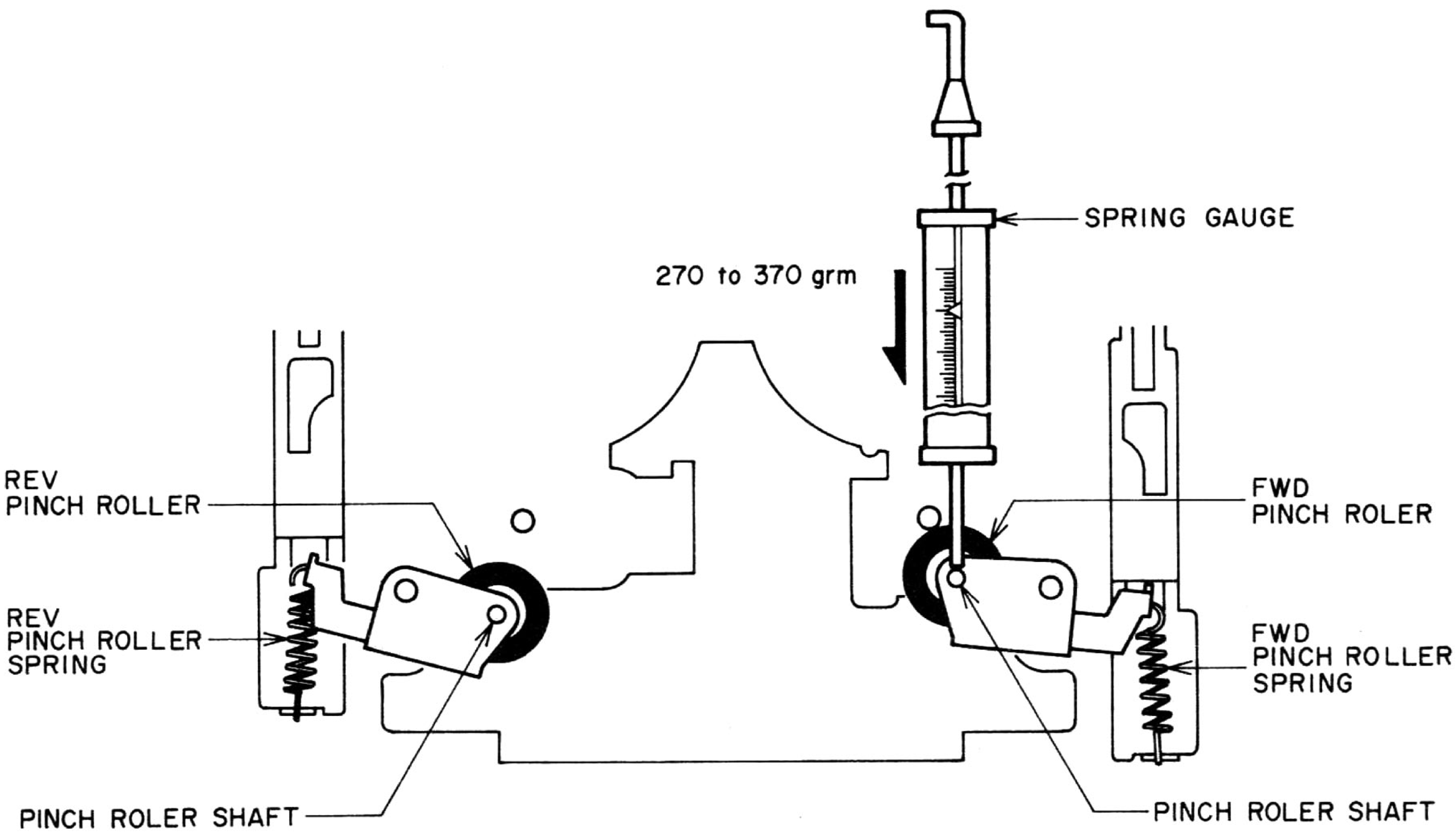


Fig. 6-1

Put in FWD PLAY Mode. Push pinch roller shaft down with the spring gauge, and push the pinch roller 1 to 2 mm away from the capstan and release slowly.
Read the spring gauge at the moment the pinch roller touches the capstan and begins to rotate. Specified contact pressure measurement is 270 to 370 grams.
If the correct measurement is not obtained, replace the pinch roller spring. Do the same for the reverse side.

6-2. WINDING TORQUE MEASUREMENT IN EACH MODE (Refer to Fig. 6-2)

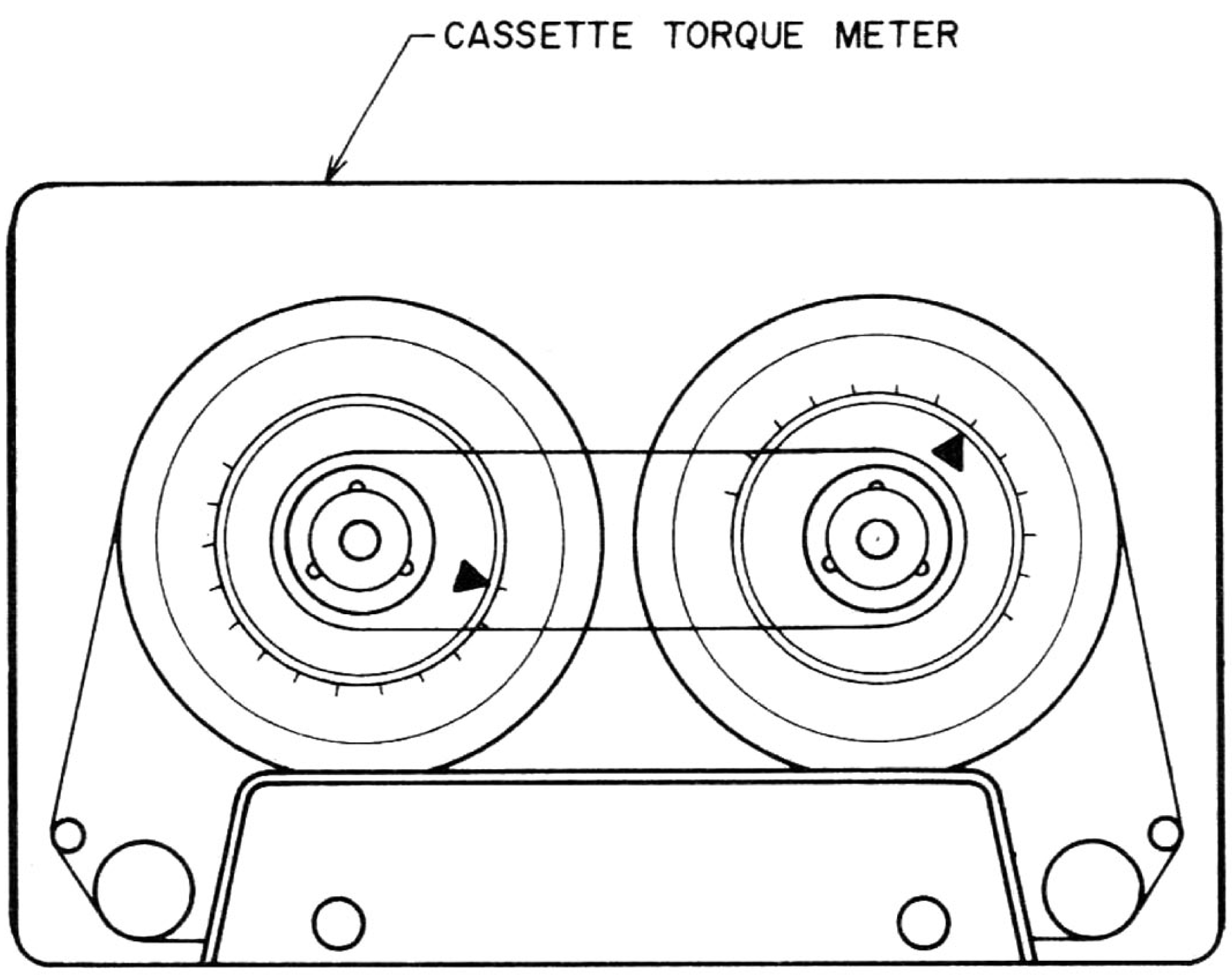


Fig. 6-2

Insert a cassette torque meter (AJ-751179) and measure in each mode.
For Fast Forward and Rewind, measure at the end of the tape when the tape has stopped running.
Forward or Reverse mode
 Take up Torque: 25 to 45 g-cm
 Back Tension Torque: 2 to 5 g-cm
Fast Forward or Rewind mode
 Take up Torque: 70 to 150 g-cm

6-3. TAPE SPEED ADJUSTMENT (Refer to Fig. 6-3)

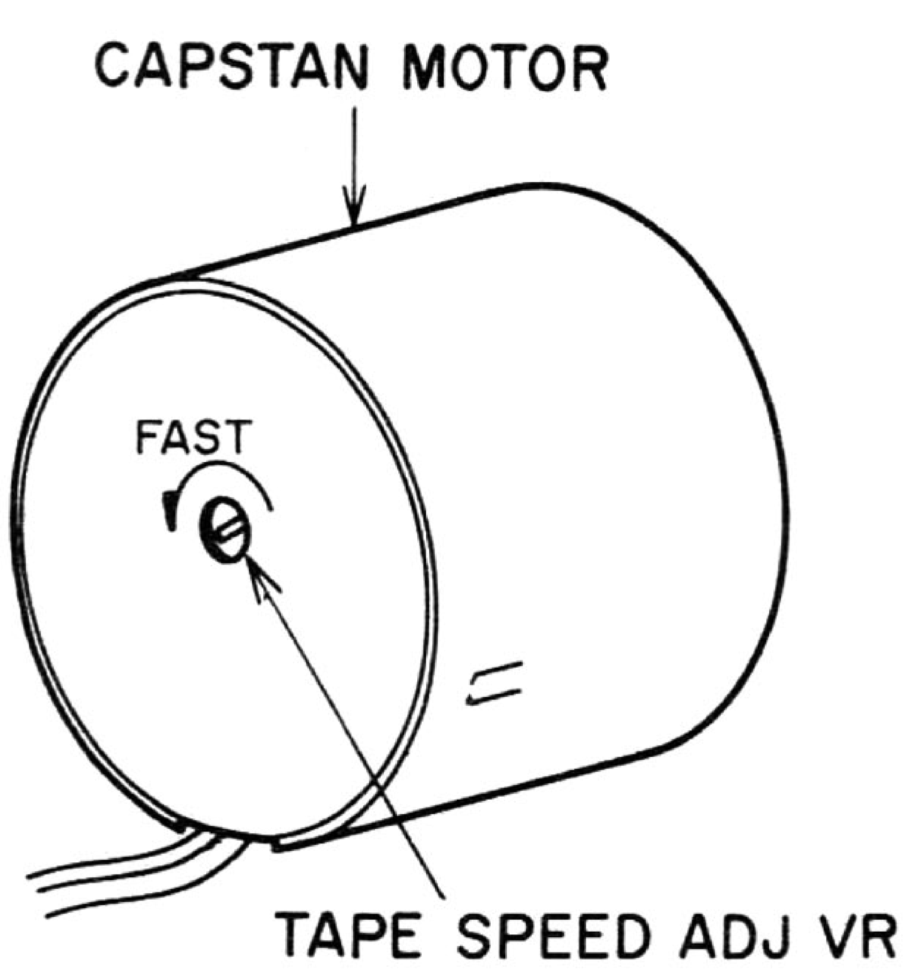


Fig. 6-3 Location of Tape Speed Adjustment Variable Resistor

Connect a frequency counter to Line Output terminal. Playback a 1,000 Hz pre-recorded Test Tape (AT-750744), or 3,150 Hz pre-recorded Test Tape (AT-751263), and adjust the Tape Speed Adjustment Variable Resistor to obtain a tape speed of 1002 ±3 Hz, or 3155 ±10 Hz.

VII. HEAD ADJUSTMENT

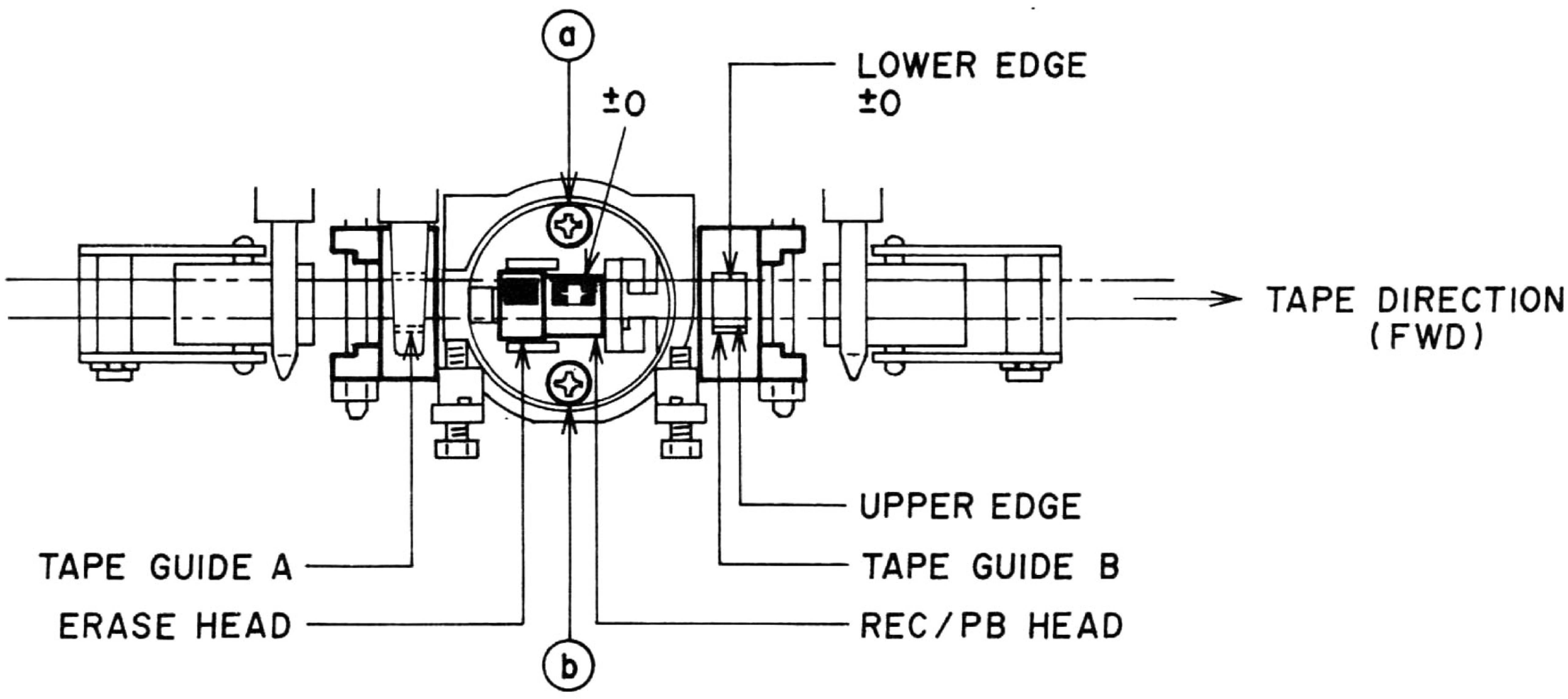


Fig. 7-1

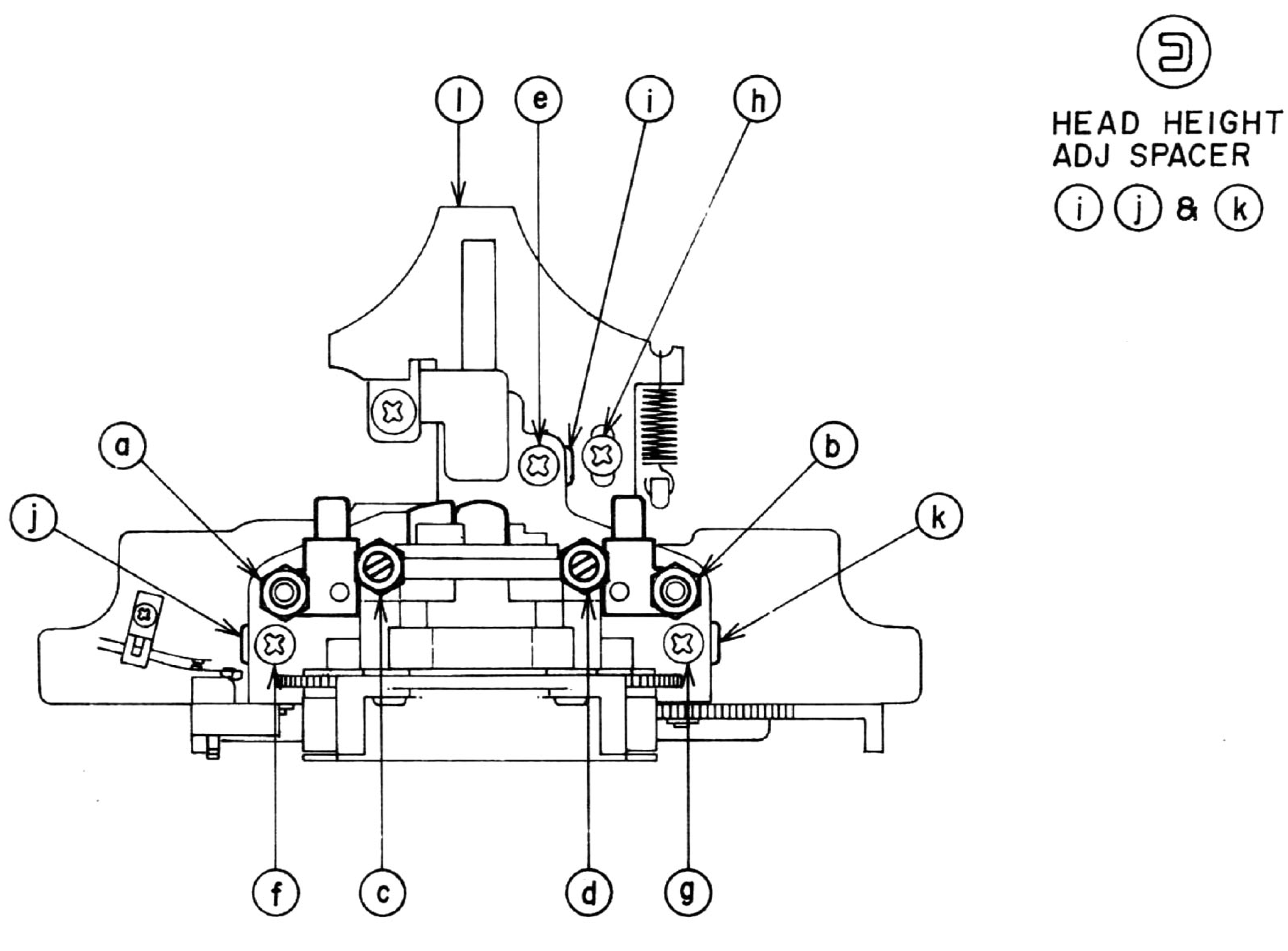


Fig. 7-2

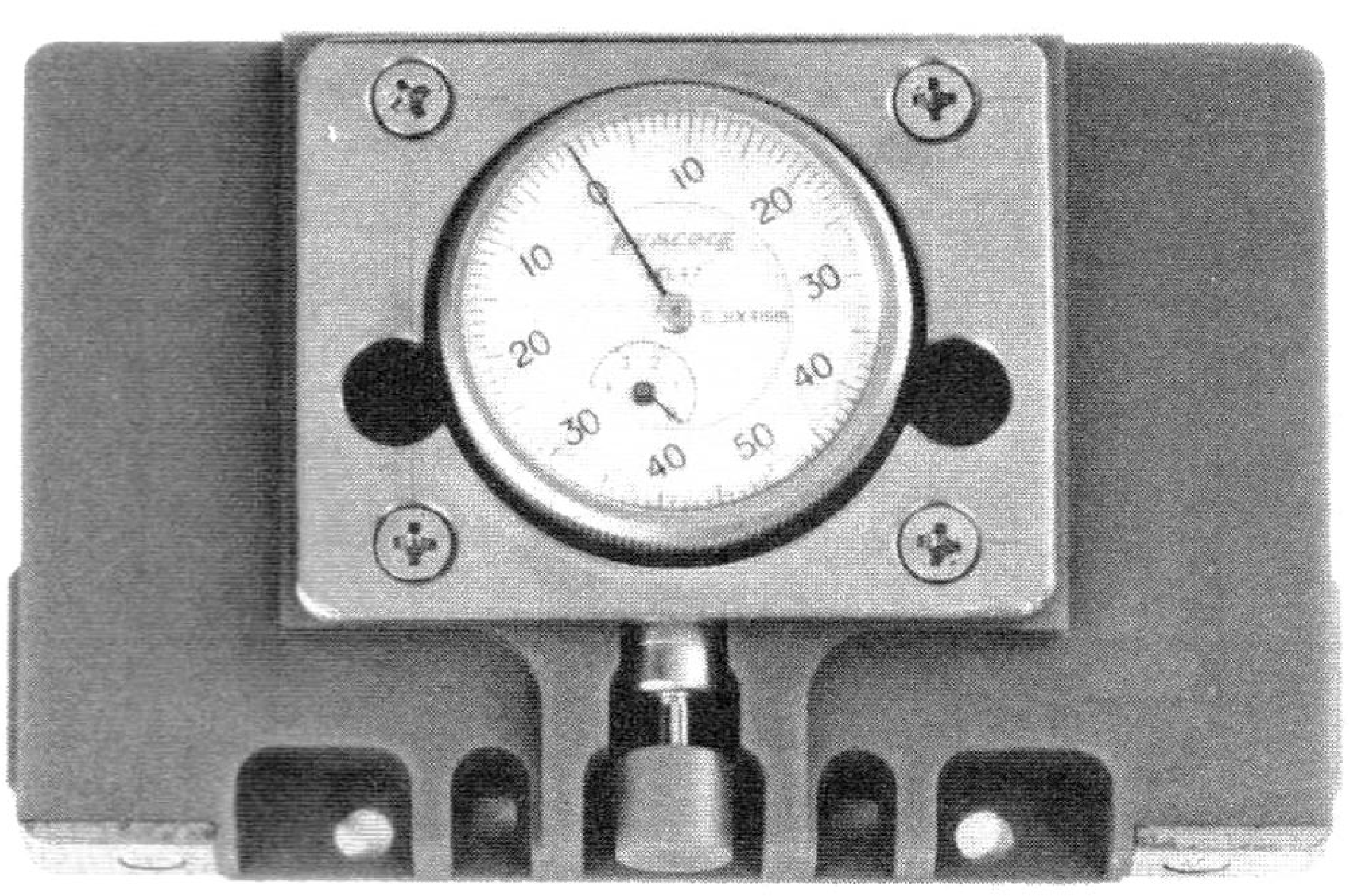


Fig. 7-3 Cassette Head Projection Gauge (TF-111CJ)

Fig. 7-4 Mirror Cassette Tape (MC-112C)

7-1. TAPE GUIDE AJUDSTMENT (Refer to Figs. 7-1, 7-2 & 7-4)

1) Use a Mirror Cassette Tape (AT-751178) for better visibility of the head area, and select PLAY mode.
2) Adjust the tape guides A and B by turning the tape guide height adjustment nuts ⓐ and ⓑ in Fig. 7-2, so that the upper edge of the tape runs smoothly by the adjacent edge of both tape guides, and the tape is not hitched by those tape guides.

7-2. REC/PB HEAD AZIMUTH ADJUSTMENT (Refer to Fig. 7-2)

Playback a 10 kHz Head Azimuth Adjustment Tape (AT-750778) and adjust the screws ⓒ (FWD direction) and ⓓ (REV direction),so that the levels of both channels are maxima. (Note: Avoid turning the screws too far as other false maxima exist further away on both sides of the correct position.)

7-3. HEAD HEIGHT ADJUSTMENT (Refer to Figs. 7-1 & 7-2)

This adjustment is not necessary since this model HX-M7R is equipped with Rotary Head System (with Erase & REC/PB combination head). However, the confirmation of head height is necessary and it can be done as follows.

1) Confirm the azimuth in item 7-2.
2) Playback a 315 Hz (or 333 Hz) PB level Adjustment Tape (AT-750773) in FWD Play mode, and adjust the PB level Adjuster (VR5 on Pre Amp PCB) so that the LINE OUT level of left channel is –5.5 dBm.
   Then, check the level of the same channel in REV mode. The difference in level between FWD and REV modes should be within ±1 dBm. (–4.5 dBm to –6.5 dBm)
3) If the difference is more than ±1 dBm in item 2), adjust the tape guides A & B by turning both Tape Guide Height Adjustment screws ⓐ & ⓑ in the same direction by 1/4 turn (±0.1 mm), so that difference is within ±1 dBm.
4) The Head Height Adjustment is necessary if still the difference could not be corrected by above adjustment. It can be done by changing the Head Height Adjustment Spacers ⓘ ⓙ & ⓚ. (The thicknesses of these spacers are ⓘ= 0.45 mm, ⓙ & ⓚ= 0.3 mm).
   Loosen the screws ⓔ ⓕ & ⓖ for the spacer replacement.
   If the level is lower in REV mode, it means that the head is too high, therefore replace the spacers by thinner ones. When the level is higher in REV mode, replace them by thicker ones.
   After the replacement of those spacers, do the same adjustment in item 1) and check the level of LINE OUT is –5.5 dBm ±1 dBm.
   For the further confirmation, playback a 4 Track head Height Adjustment Tape (1 kHz/4 Track, AT-750775). Line Output level of both channels should be more than –8 dBm and the difference in level between FWD and REV modes should be within ±1 dBm. Otherwise do the fine adjustment in the same manner as item 3) & 4).
5) When the head replacement is necessary, loosen only the screws ⓐ & ⓑ in Fig. 7-1 for easy replacement.

7-4. HEAD BLOCK PROJECTION ADJUSTMENT (Refer to Figs. 7-2 & 7-3)

Use a Cassette head Projection Gauge (AT-751180) and select FWD or REV play mode.
Loosen the screw ⓗ and adjust Chassis Head Part ⓛ so that the gauge indication at the time is $3.2 \pm {}^{0.15}_{0.05}$ mm.

After the adjustment, apply paint-lock on the screw ⓗ.

VIII. ELECTRICAL ADJUSTMENT

8-1. SYSCON P.C BOARD ADJUSTMENT

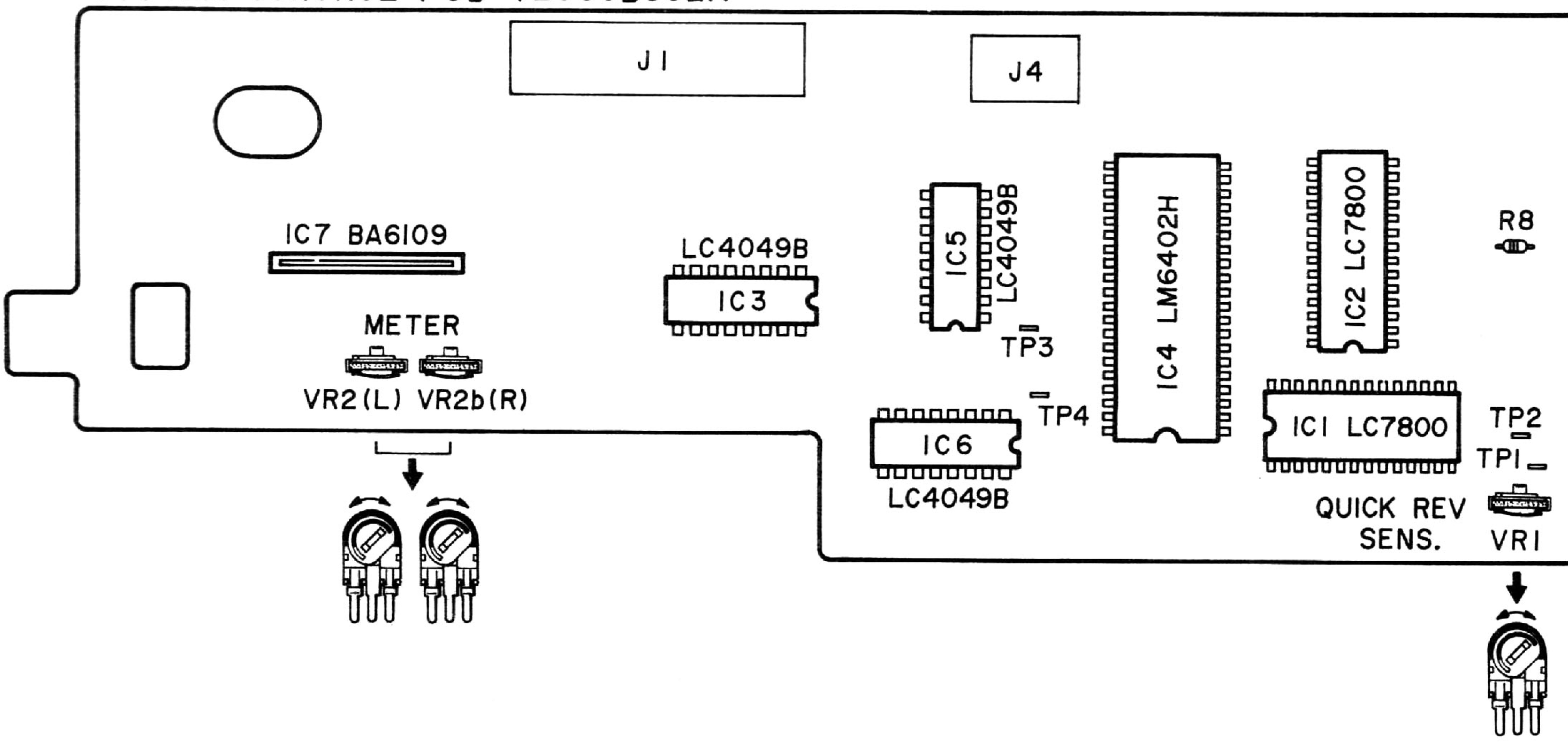


Fig. 8-1 Syscon PCB Adjustment Points

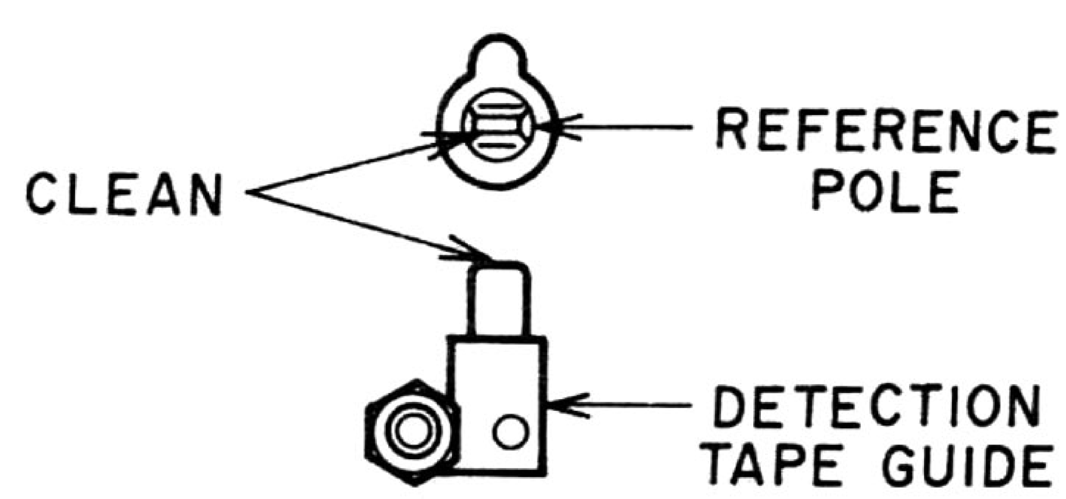


Fig. 8-2

Step	Adjustment Item	Test Tape Supply Signal	Mode	ADJ Parts	Check Point	Results	Remarks
1	Meter Sensitivity	1 kHz to Line In	REC/ PAUSE	VR2 (50K)	Line Out	+1VU extinguishes at −5.2 dBm	Confirm that 0VU indication at −5.8 dBm
2	Quick Reverse Sensitivity	White empty Cassette pack (See Note 2)	FWD PLAY	VR1 (1M)	TP1	12V±0.5V (See Note 3)	Connect a Digital Volt-meter between TP1 and Ground

Notes:
1. Refer to Figs. 8-1 & 8-2 for these adjustments.
2. Make a tapeless cassette pack by removing the tape from the white colored cassette tape.
3. Clean the Reference Pole and the Detector Tape Guide prior to this adjustment. (Refer to Fig. 8-2)
   In case Step 2 is out of adjustment (the voltage does not go up to 12V), remove R8 (1 Mohm) and adjust VR1 so that the voltage is 12V ±0.5V.
   Otherwise, replace the Detection Tape Guide.

8-2. PRE-AMP P.C BOARD ADJUSTMENT

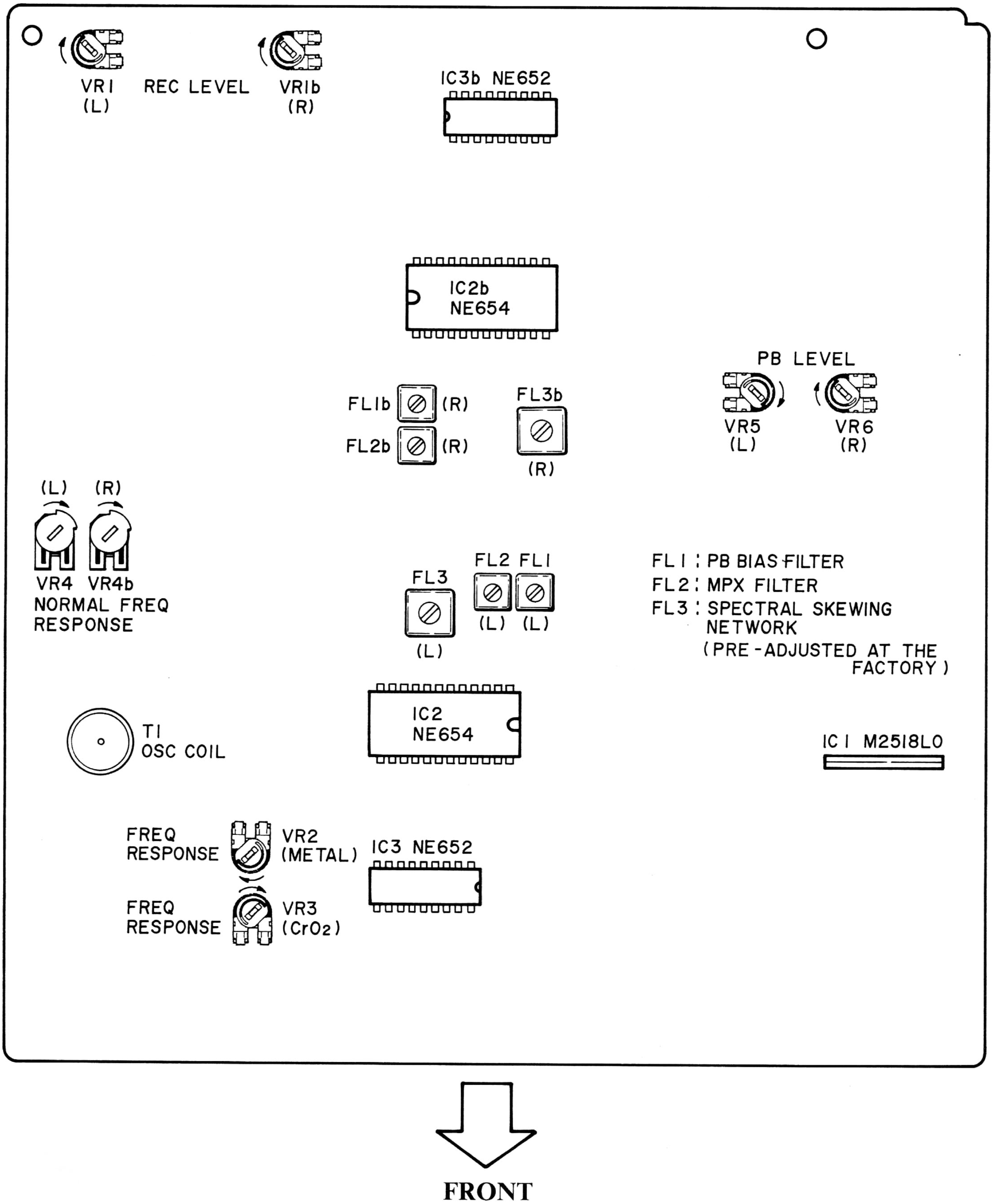


Fig. 8-3 Pre-Amp PCB ADJ Points

Step	Adjustment Item	Test Tape & Supply Signal	Mode	ADJ. Parts	Results	Remarks
1	PB Level	333 Hz (AT-750773) or 315 Hz (AT-750773)	FWD PLAY	VR5 (50K)	−6.1 dBm ± 0.2 dBm (385 mV) −5.5 dBm ± 0.2 dBm (410 mV)	−6.1 dBm ± 1.0 dBm at REV mode −5.5dBm ± 1.0dBm at REV mode (See Note 1)
2	Normal Position Frequency Response	Normal Blank Tape 1 kHz, 10 kHz −25.5 dBm	FWD REC/PB	VR4 (100K)	1 kHz, 10 kHz Flat ± 0.5 dBm	
3	CrO_2 Position Frequency Response	CrO_2 Blank Tape 1 kHz, 10 kHz −25.5 dBm	FWD REC/PB	VR3 (20K)	1 kHz, 10 kHz Flat ± 0.5 dBm	
4	Metal Position Frequency Response	Metal Blank Tape 1 kHz, 10 kHz −25.5 dBm	FWD REC/PB	VR2 (3K)	1 kHz, 10 kHz Flat ± 0.5 dBm	
5	REC Level	Normal Blank Tape 1 kHz, −5.5 dBm	FWD REC/PB	VR1 (20K)	−5.5 dBm ± 0.3 dBm (410 mV)	
6	Bias Filter	Metal Blank Tape No Signal Input	REC/ PLAY or REC/ PAUSE	FL1	Minimum Output	Set REC LEVEL to maximum, Connect a 600 ohm dummy to MIC Jack
7	MPX Filter	19 kHz From Oscillator	REC/ PLAY or REC/ PAUSE	FL2	Minimum Output	

Notes:

1. Above adjustments except for Step 6, 7 are all at FWD mode, and these adjustments at REV mode are not necessary, but the confirmation of each step at REV mode should be made.
2. Adjustment should be made with Dolby N.R. at OFF position.
3. Use only the tapes recommended for each adjustment.
   NORMAL Tape: MAXELL UD C-60
   CrO_2 Tape: TDK SA C-60
   METAL Tape: TDK MA C-60
4. Refer to Fig. 8-3 for above adjustments.

IX. DC RESISTANCE OF HEADS

DESCRIPTION	DC RESISTANCE
REC/PB HEAD	360 ohms ±25%
ERASE HEAD	3.5 ohms

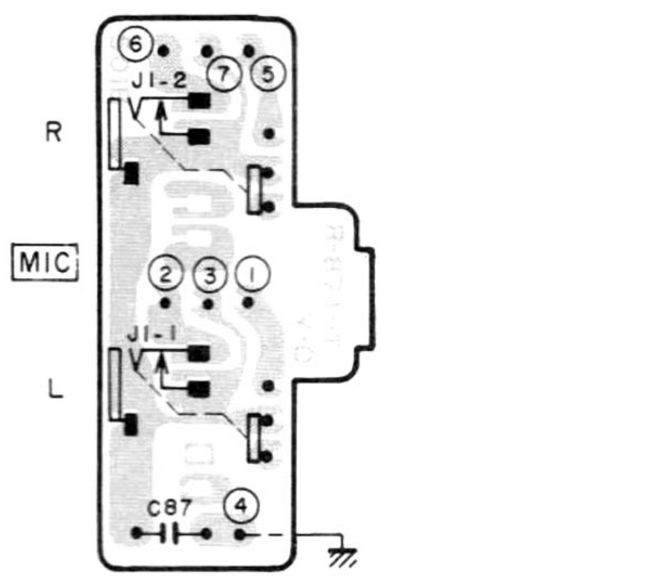
X. CLASSIFICATION OF VARIOUS P.C BOARDS

10-1. P.C BOARD TITLES AND IDENTIFICATION NUMBERS

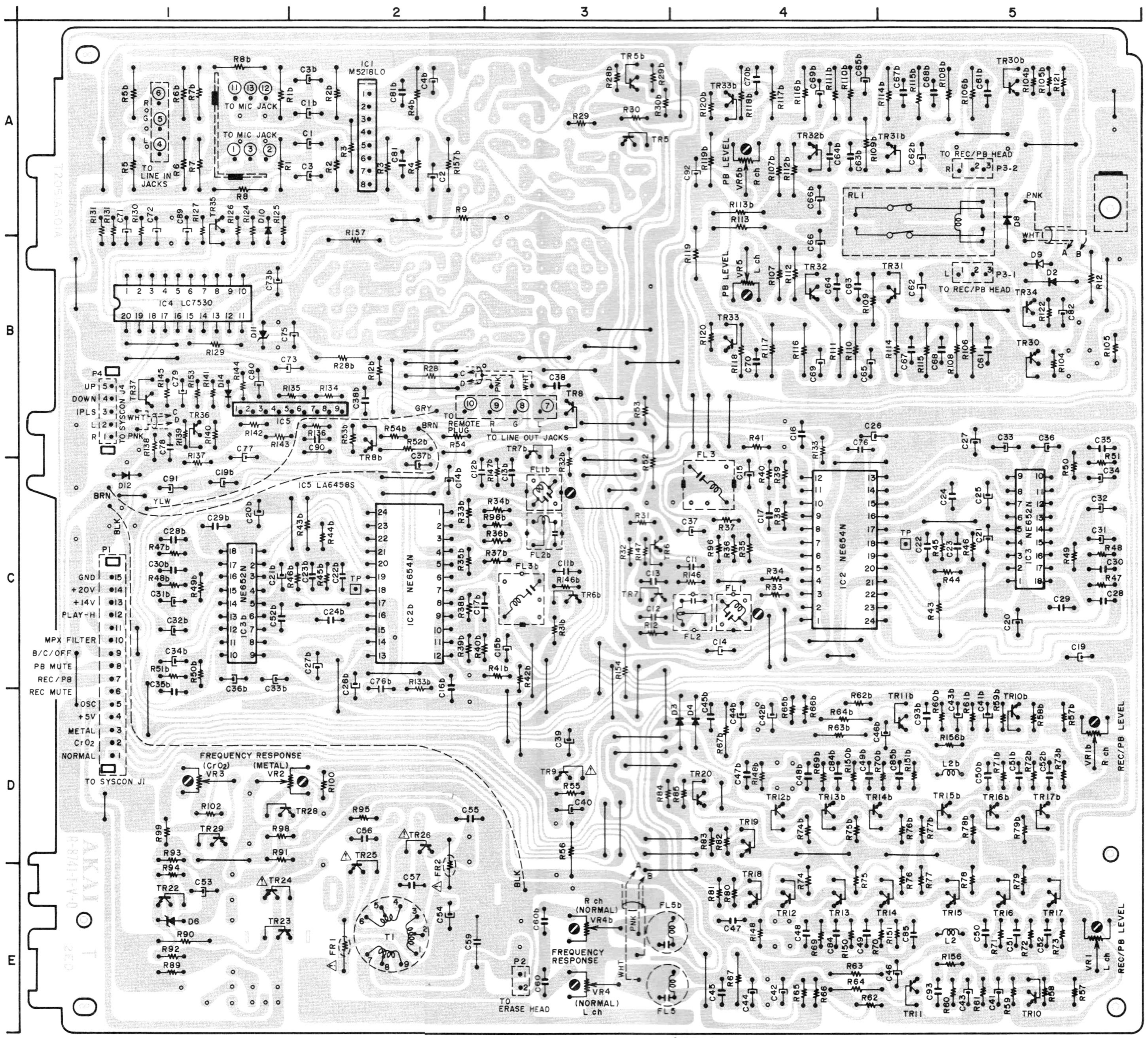
P.C BOARD TITLE		P.C BOARD NUMBER
PRE-AMP	P.C Board	T2051A501A (2ED)
MIC JACK	P.C Board	T2051A501B
METER	P.C Board	T2050B502B (3ED)
SYSTEM CONTROL	P.C Board	T2050B502A (3ED)
POWER SUPPLY	P.C Board	T2051B5030
CONTROL	P.C Board	CMR01C189A
LEAF SWITCH	P.C Board	CMR01C1490
FLEXIBLE	P.C Board	CMR01A0020
CAM MOTOR PULSE	P.C Board	CMR01C189B
CAM DIRECTION	P.C Board	CMR01C189C
REEL ROTATION	P.C Board	CMR01D1440
DETECTOR (A)	P.C Board	CMR01D1290
DETECTOR (B)	P.C Board	CMR01D1620
GUIDE DETECTOR	P.C Board	CMR01D0220
REMOTE CONTROL	P.C Board	T2050B502C
HOUSING	P.C Board	CMR01D1430

10-2. COMPOSITION OF VARIOUS P.C BOARD

1) PRE-AMP P.C BOARD T2051A501A (2ED) · MIC JACK P.C BOARD T2051A501B



MIC JACK PCB T2051A501B



PRE AMP PCB T2051A501A(2ED)

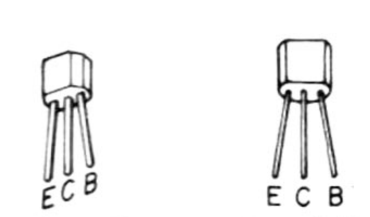
TR5to8, 11to17...........2SC2320(E,F)
TR9......................2SD894
TR10.....................2SD10/2V(E,F)
TR18to20.................2SA1115(E,F)
TR22,23,28,29, 35to37....2SC2603(E,F)
TR24.....................2SC2274K(E,F)
TR25,26..................2SC2274K(E)
TR30.....................2SD1012V(F,G)
TR31.....................2SC1843(E,F)
TR32.....................2SC2320L(F,G)
TR33.....................2SC2320(F,G)
TR34.....................2SC2603(F,G)

LOCATION OF IC, TR & PIN CONNECTORS

IC1....A2	
IC2....C4	IC2b....C2
IC3....C5	IC3b....C1
IC4....B1	IC5.....B2
TR5....A3	TR5b....A3
TR8....B3	TR8b....B2
TR9....D3	
TR10...E5	TR10b...D5
TR11...E5	TR11b...D5
TR12...E4	TR12b...D4
TR13...E4	TR13b...D4
TR14...E5	TR14b...D5
TR15...E5	TR15b...D5
TR16...E5	TR16b...D5
TR17...E5	TR17b...D5
TR18...E4	
TR19...D4	
TR20...D4	TR6....C3
TR22...E1	TR6b...C3
TR23...E1	TR7....C3
TR24...E1	TR7b...B3
TR25...E2	TR35...A1
TR26...E2	TR36...B1
TR28...D1	TR37...B1
TR29...D1	
TR30...B5	TR30b...A5
TR31...B5	TR31b...A5
TR32...B4	TR32b...A4
TR33...B4	TR33b...A4
TR34...B5	

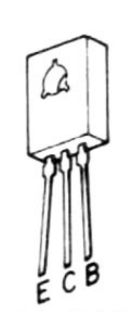
1 to 6.....A1
7 to 10....B3
11 to 13...A1

J1.........C1
P2.........E3
P3-1.......B5
P3-2.......A5



2SA1115
2SC2603
2SD1012V

2SC1843
2SC2274K
2SC2320
2SC2320L

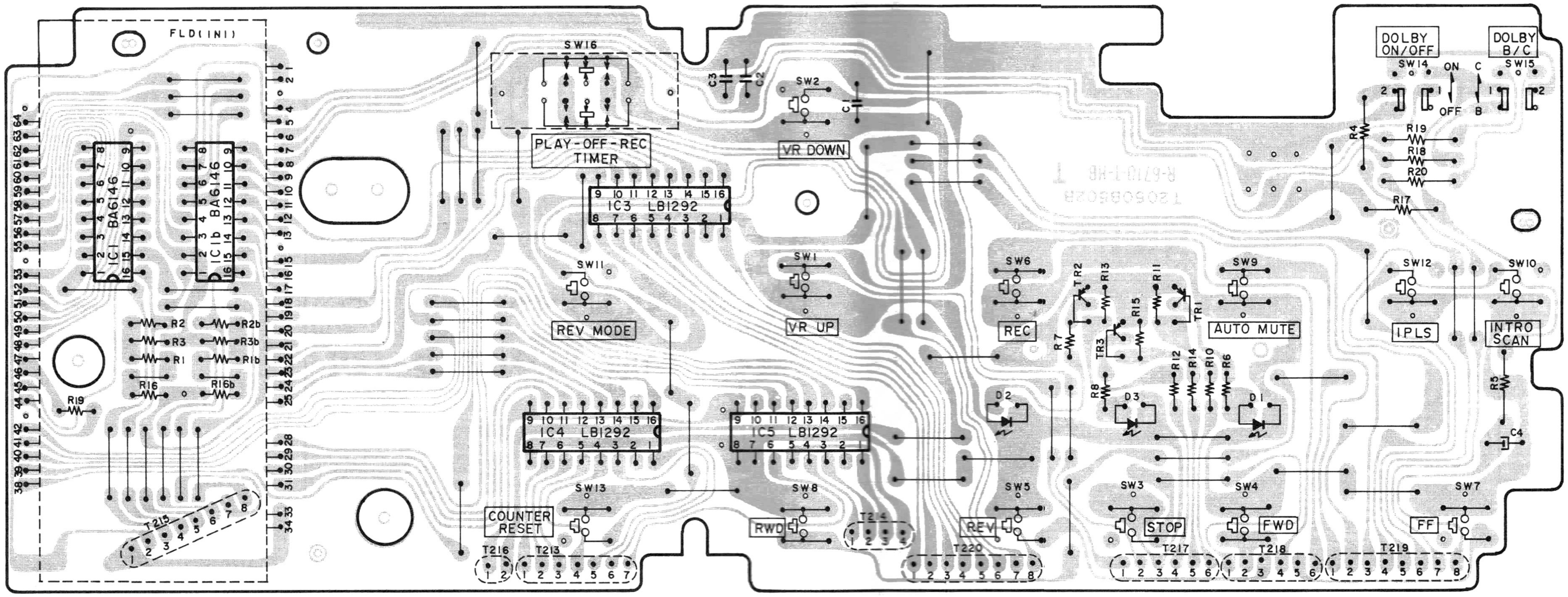


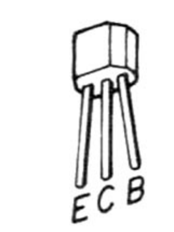
2SD894

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

2) METER P.C BOARD T2050B502B (3ED) · SYSTEM CONTROL P.C BOARD T2050B502A (3ED)





TR1 to 3 ······ 2SA1115(E, F)

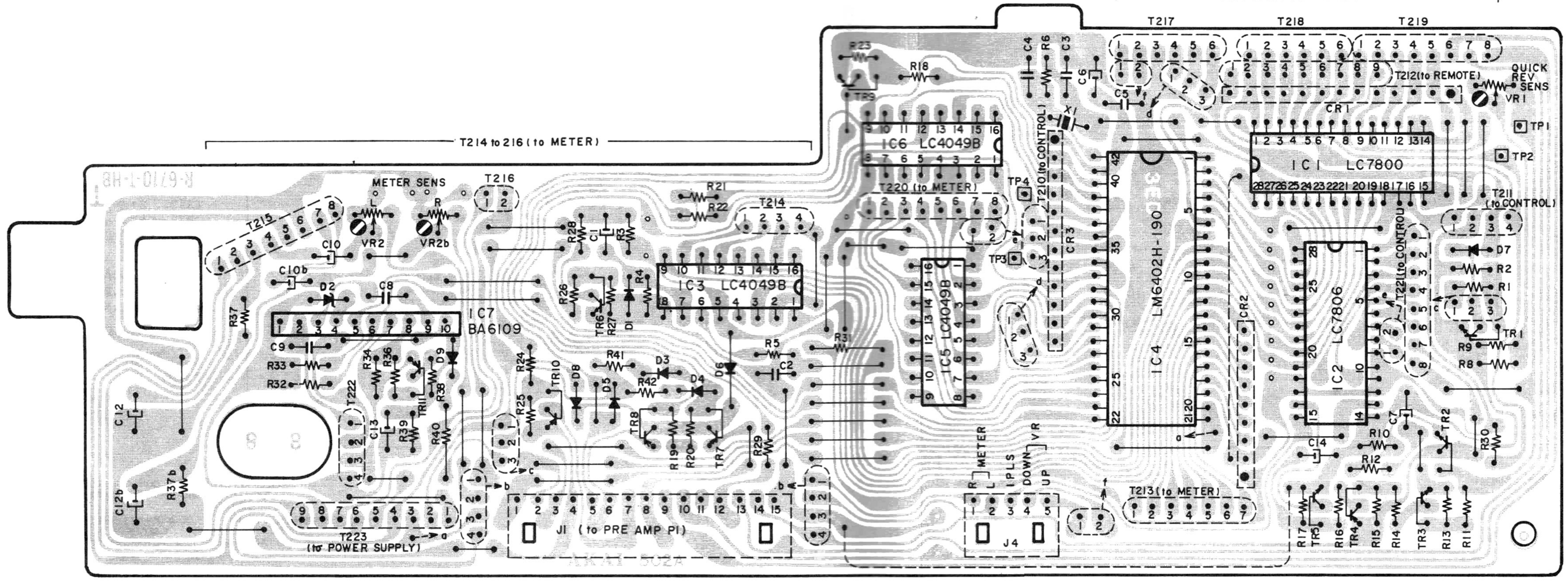
T213, 215, 216 (to SYSCON)

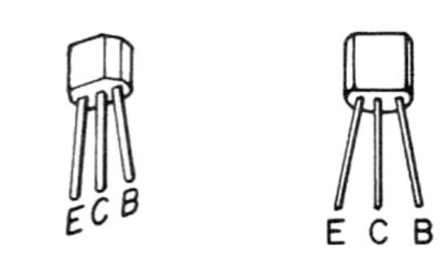
T214, 217 to 220 (to SYSCON)

METER PCB T2050B502B(3ED)

T217 to 219 (to METER)

T214 to 216 (to METER)

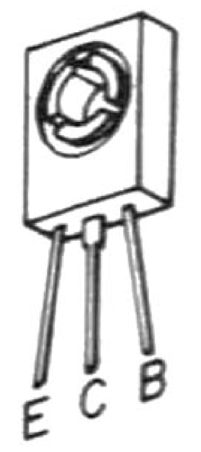




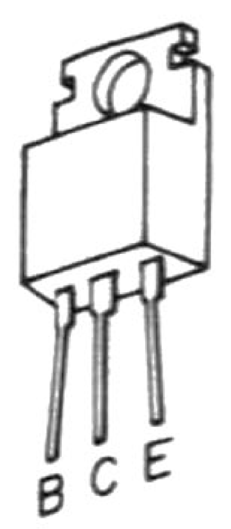
TR1 to 3, 5, 6, 9 ······· 2SC2603(E, F)
TR4, 8, 10, 11 ········· 2SA1115(E, F)
TR7 ················ 2SB774(Q, R, S)

SYSTEM CONTROL PCB T2050B502A(3ED)

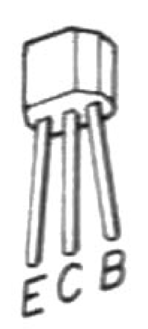
3) POWER SUPPLY P.C BOARD T2051B5030 (U MODEL)



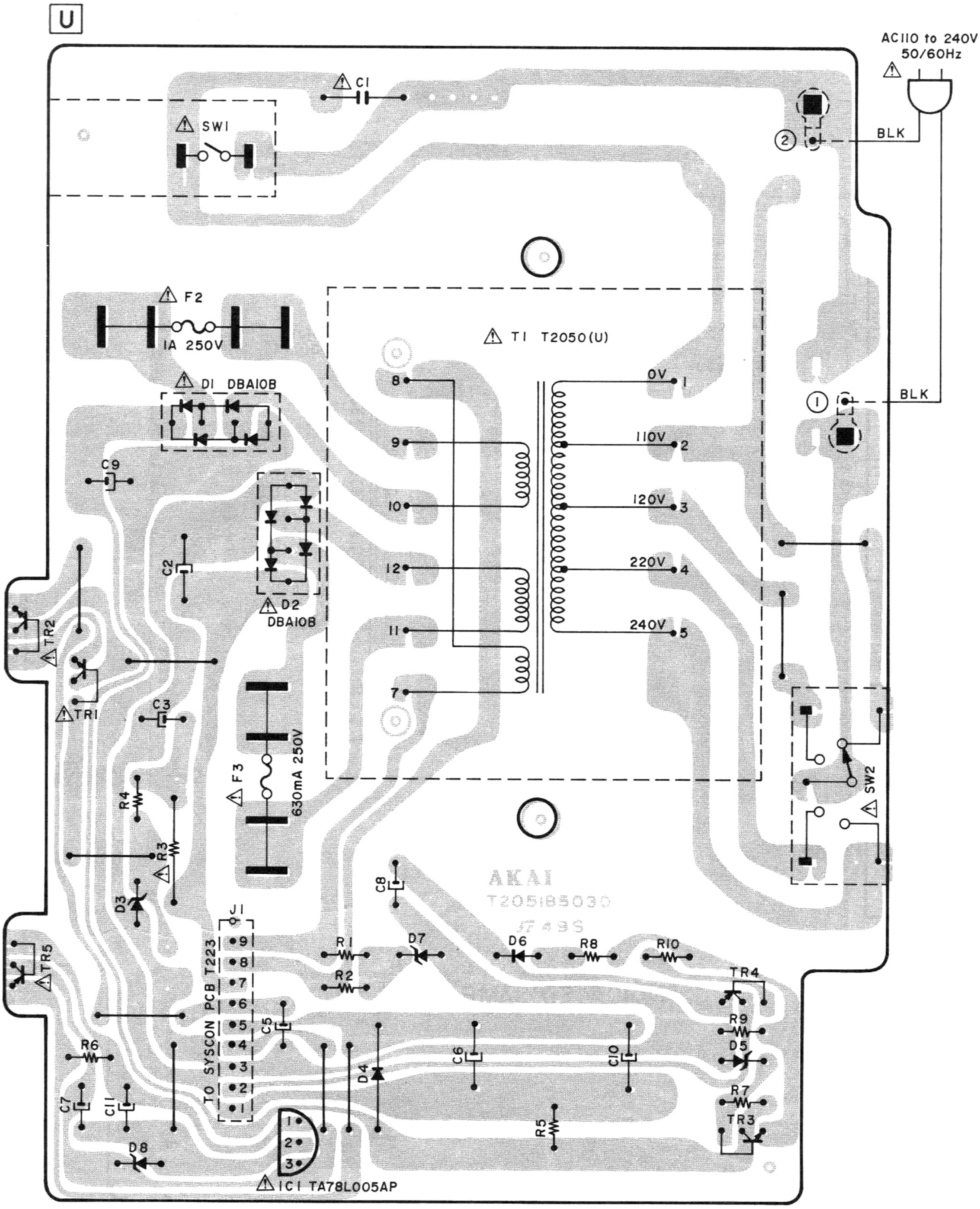
2SB744



2SD313



2SA1115
2SC2603



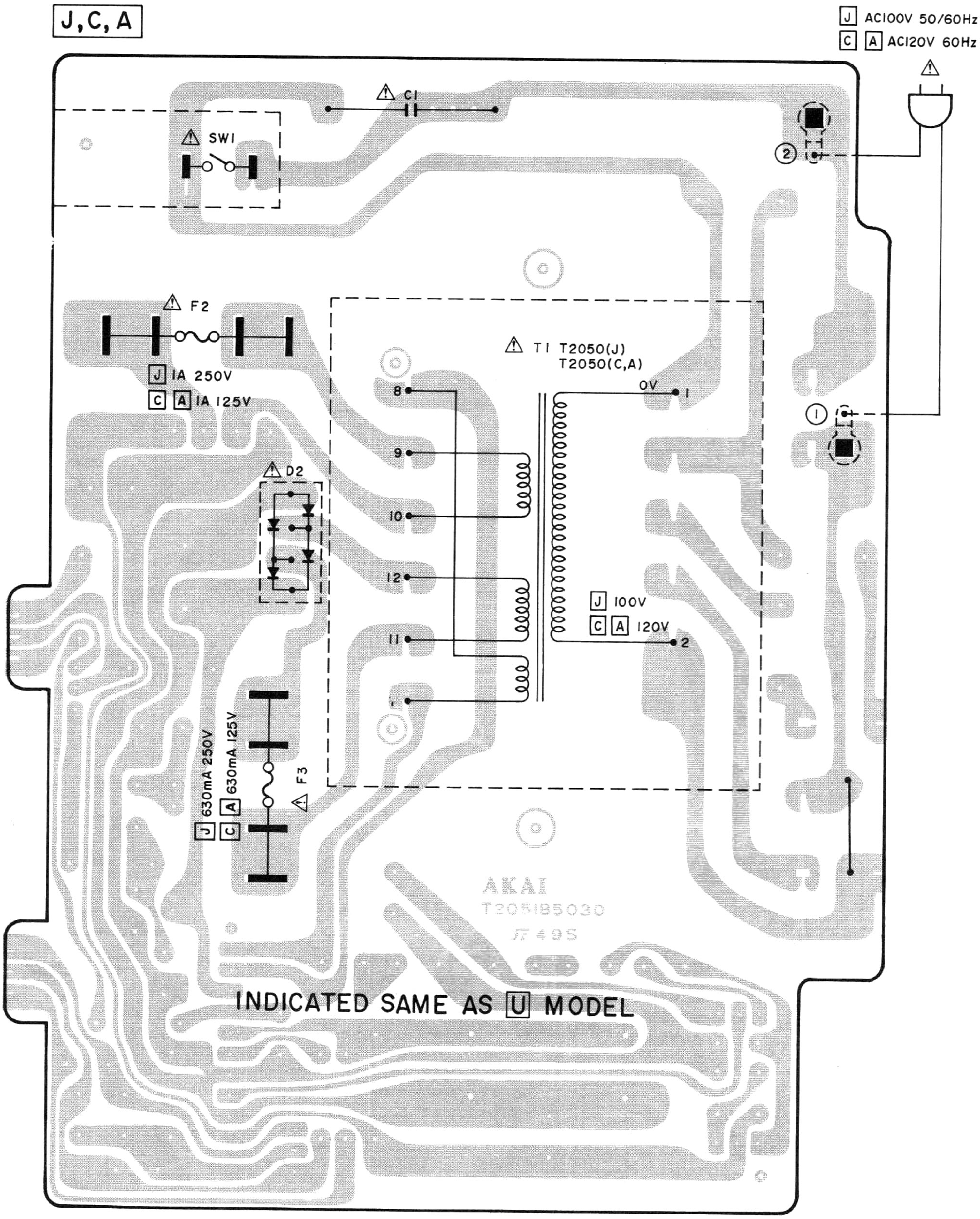
POWER PCB T2051B5030

TR1,3 ----- 2SC2603(E,F)
TR2 ----- 2SD313(E,F)
TR4 ----- 2SA1115(E,F)
TR5 ----- 2SB744(P,Q)

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

4) POWER SUPPLY P.C BOARD T2051B5030 (J, C, A MODEL)

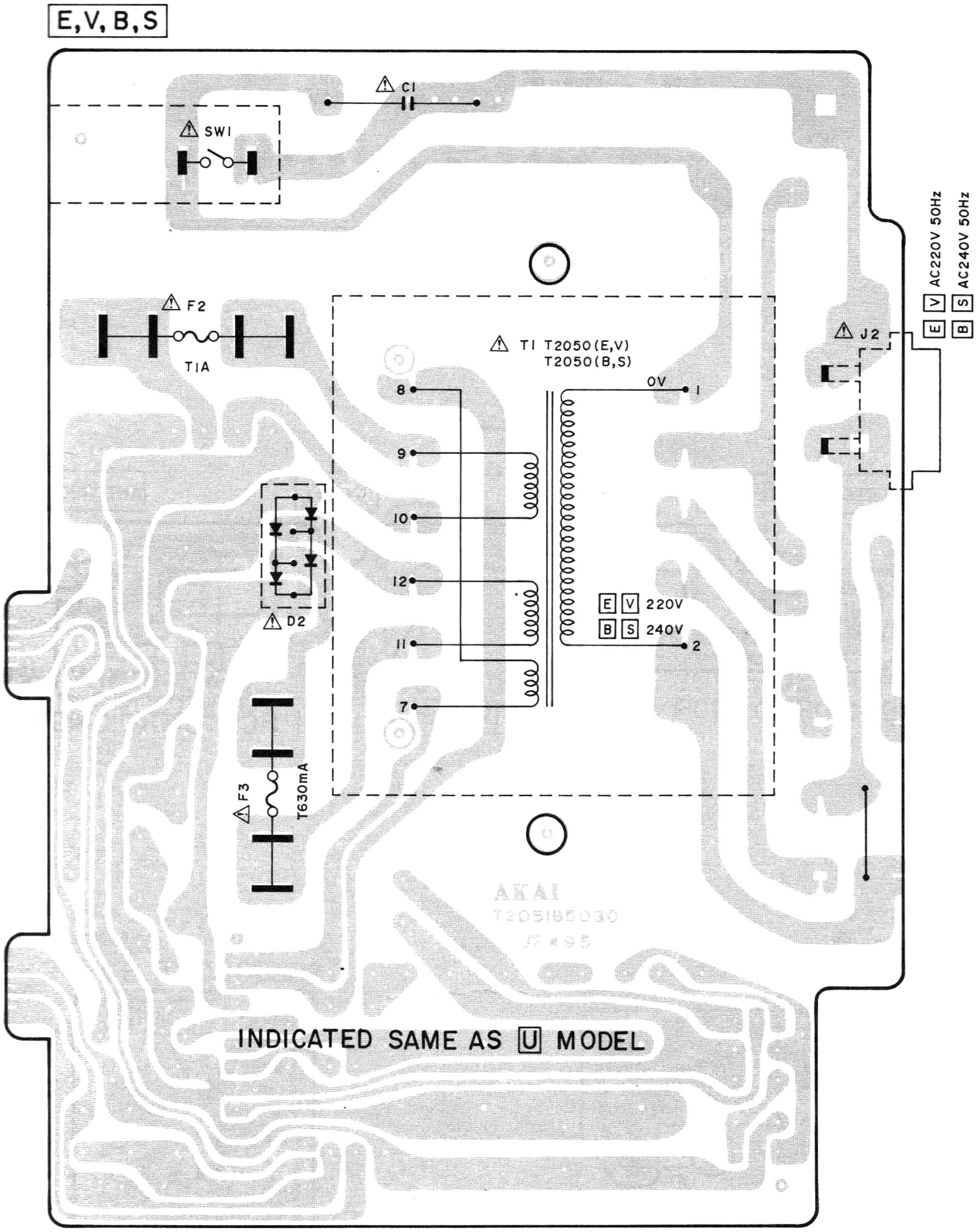


POWER PCB T2051B5030

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

5) POWER SUPPLY P.C BOARD T2051B5030 (E, V, B, S MODEL)

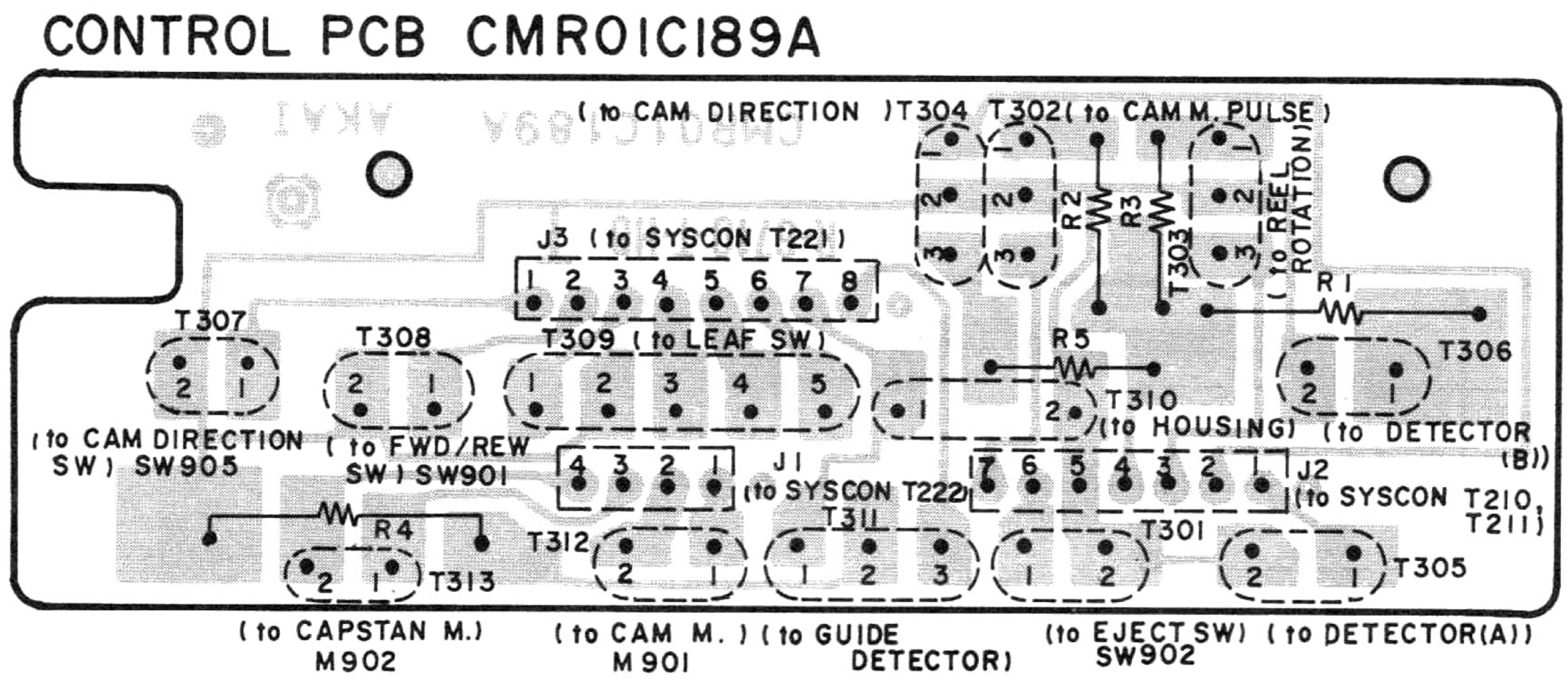


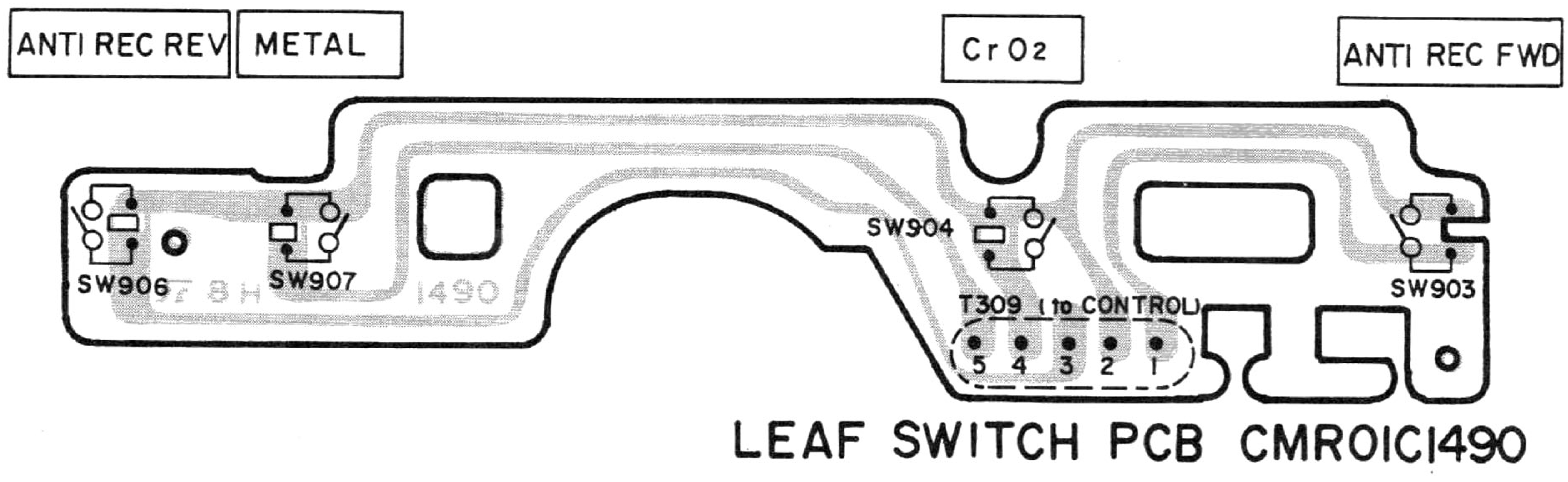
POWER PCB T2051B5030

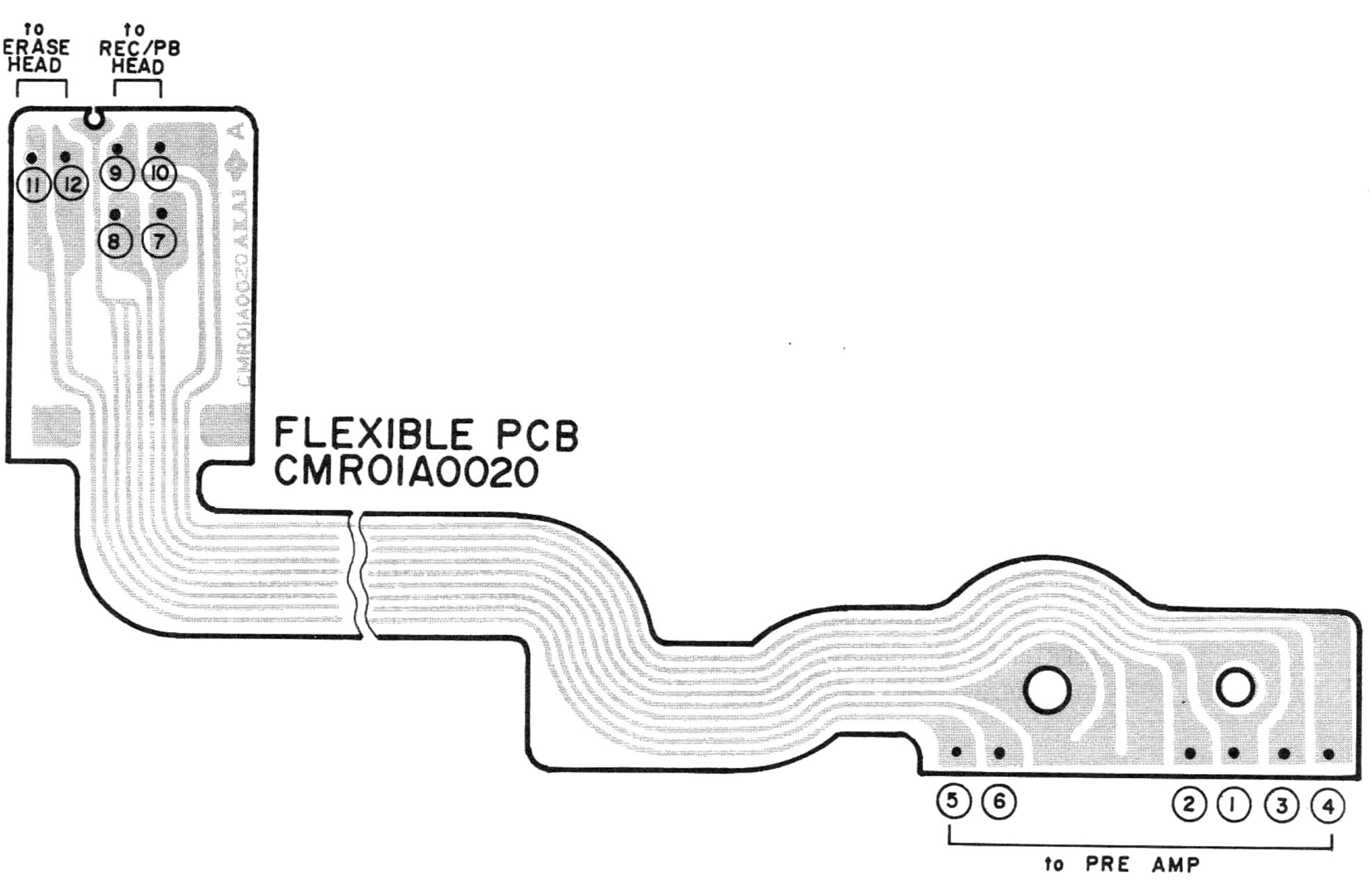
WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

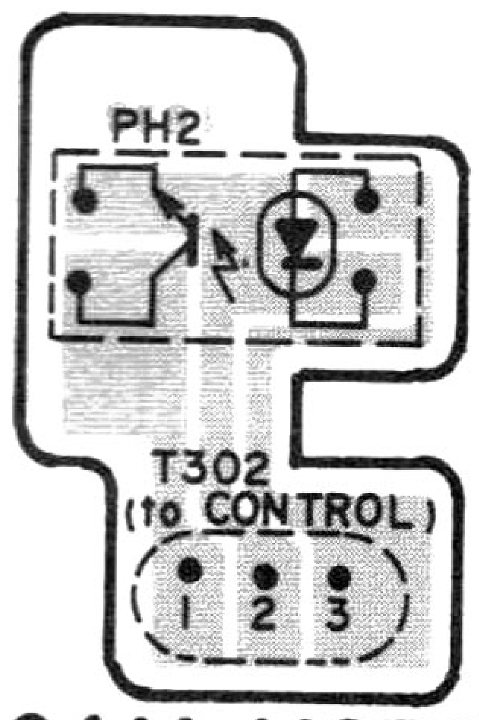
AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

6) OTHER P.C BOARDS

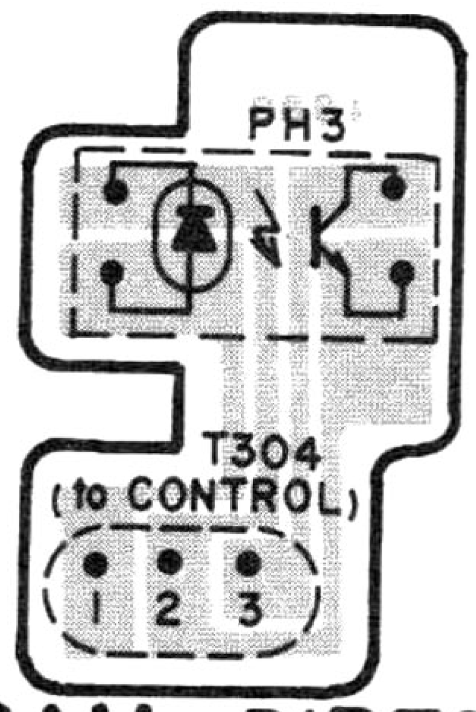




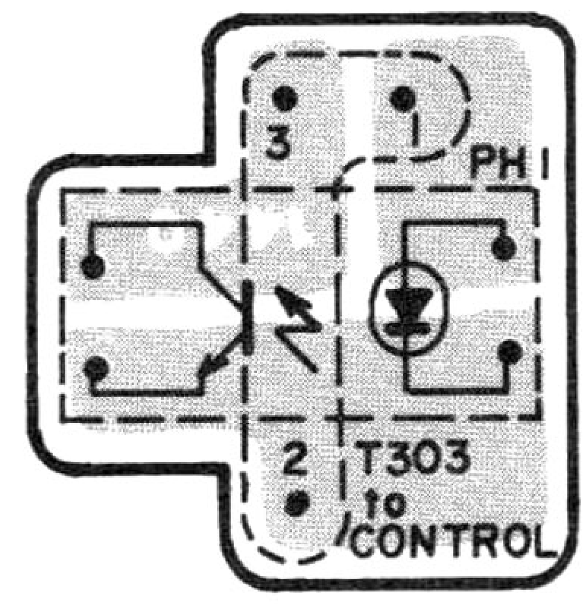




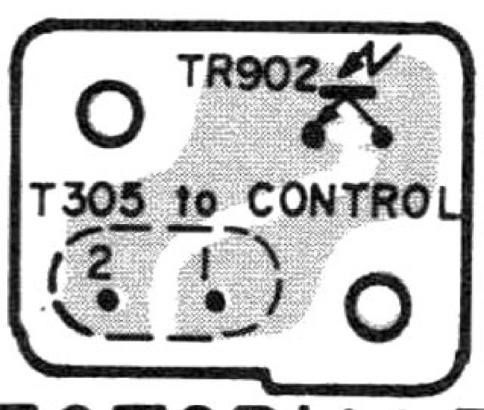
CAM MOTOR
PULSE PCB
CMR01C189B



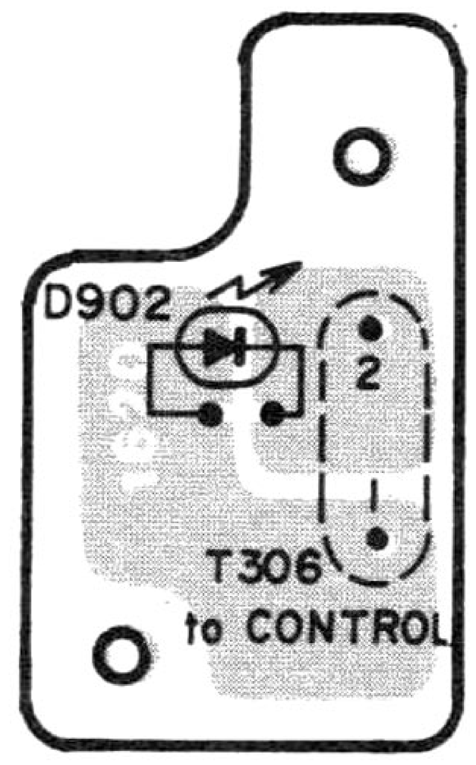
CAM DIRECTION
PCB
CMR01C189C



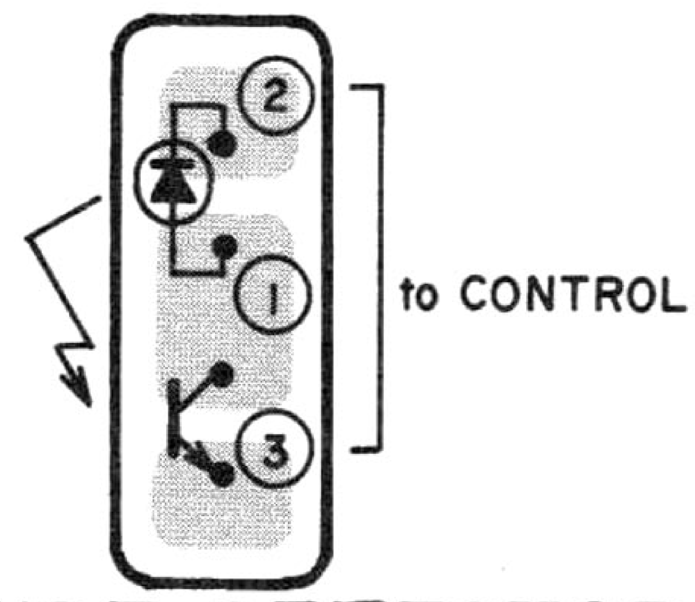
REEL ROTATION
PCB CMR01D1440



DETECTOR(A) PCB
CMR01D1290

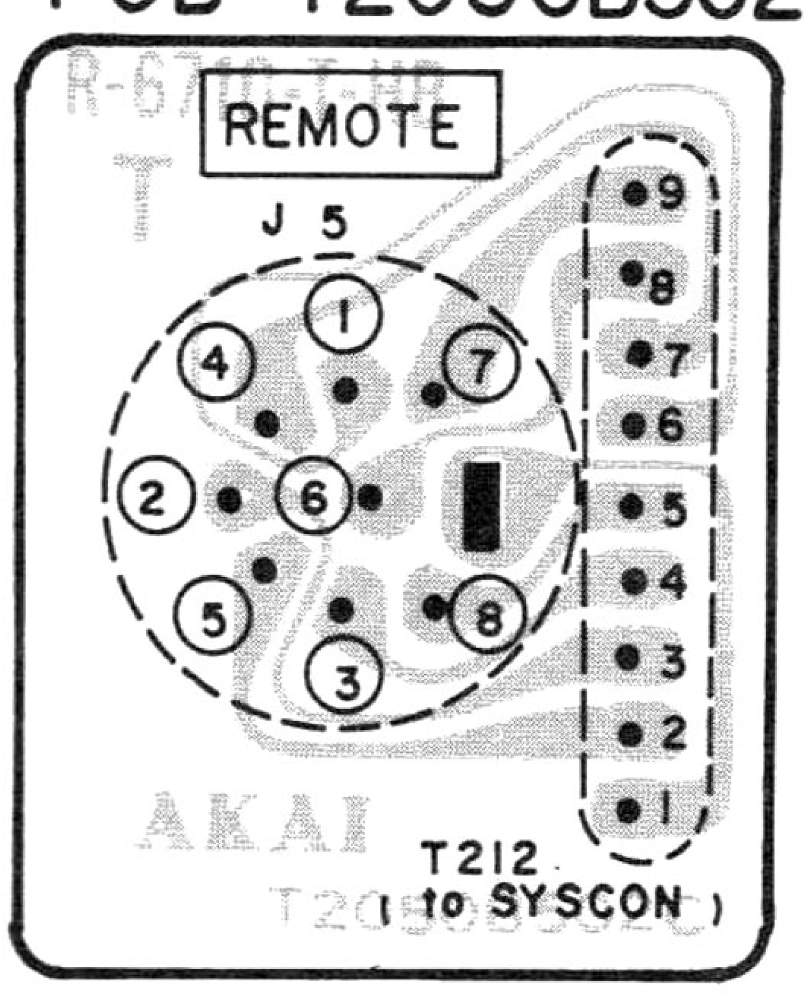


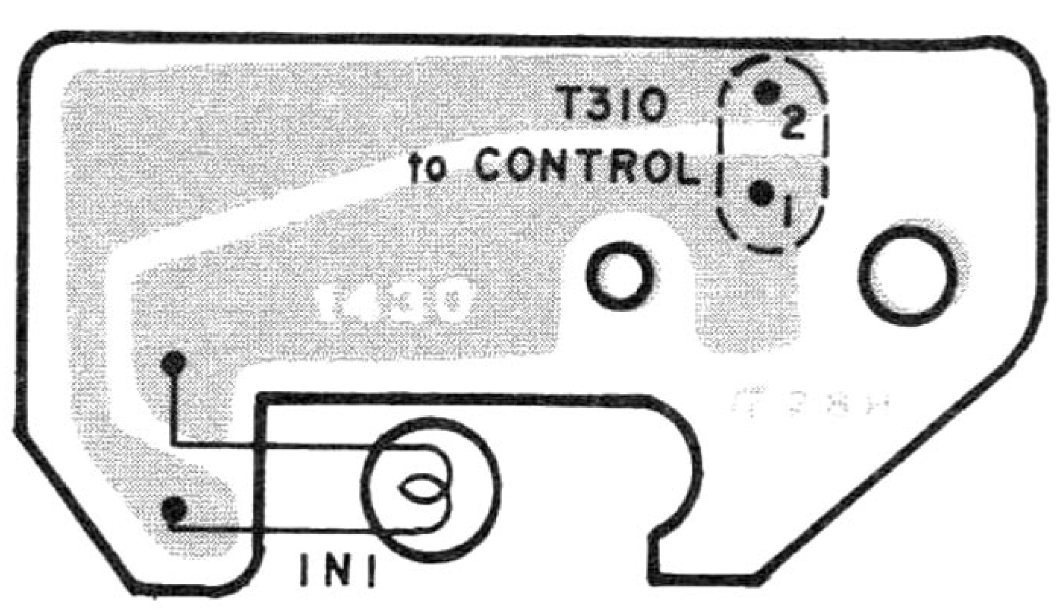
DETECTOR(B) PCB
CMR01D1620



GUIDE DETECTOR
PCB CMR01D0220

REMOTE CONTROL
PCB T2050B502C





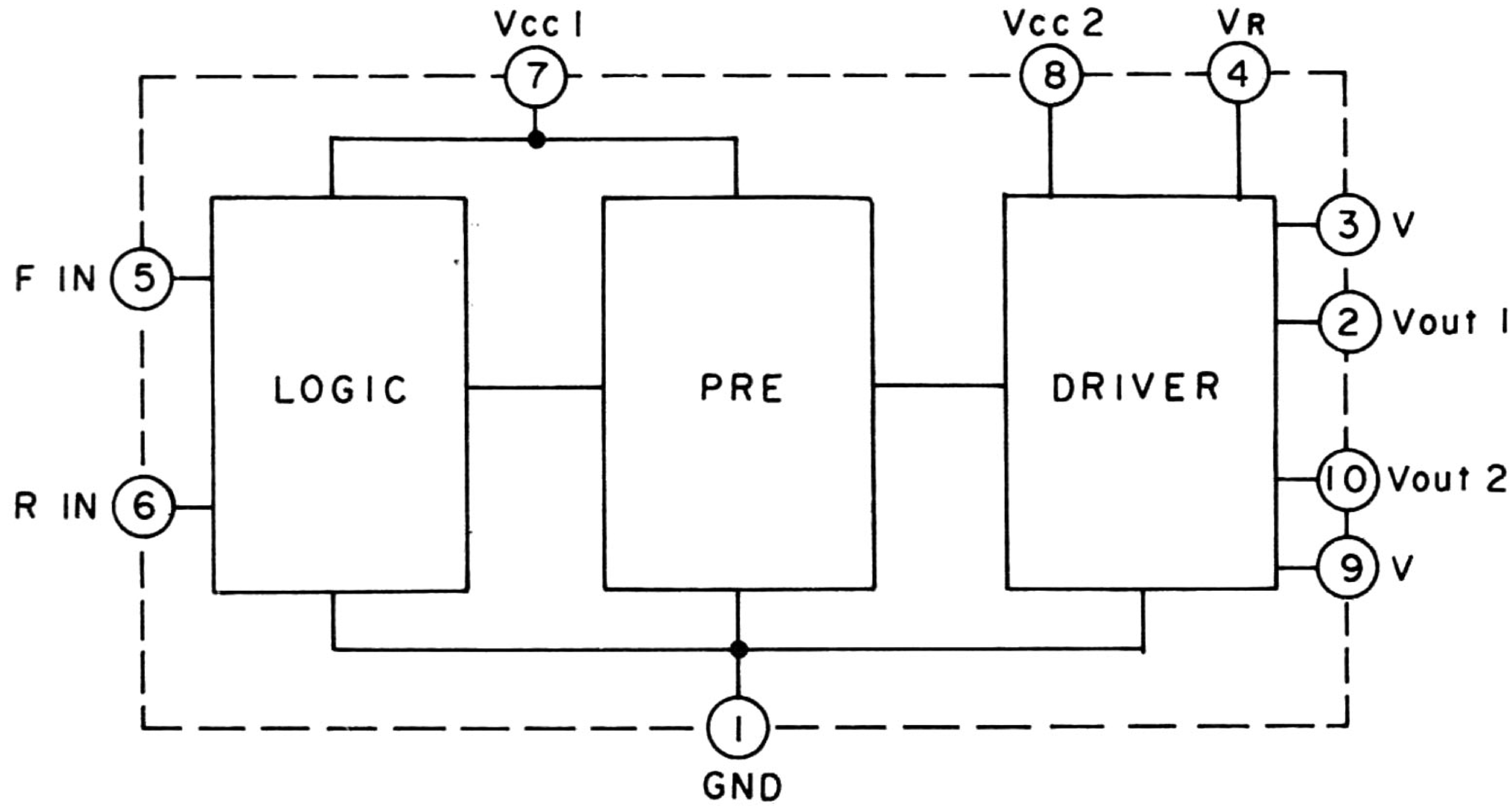
HOUSING PCB
CMR01D1430

SECTION 3

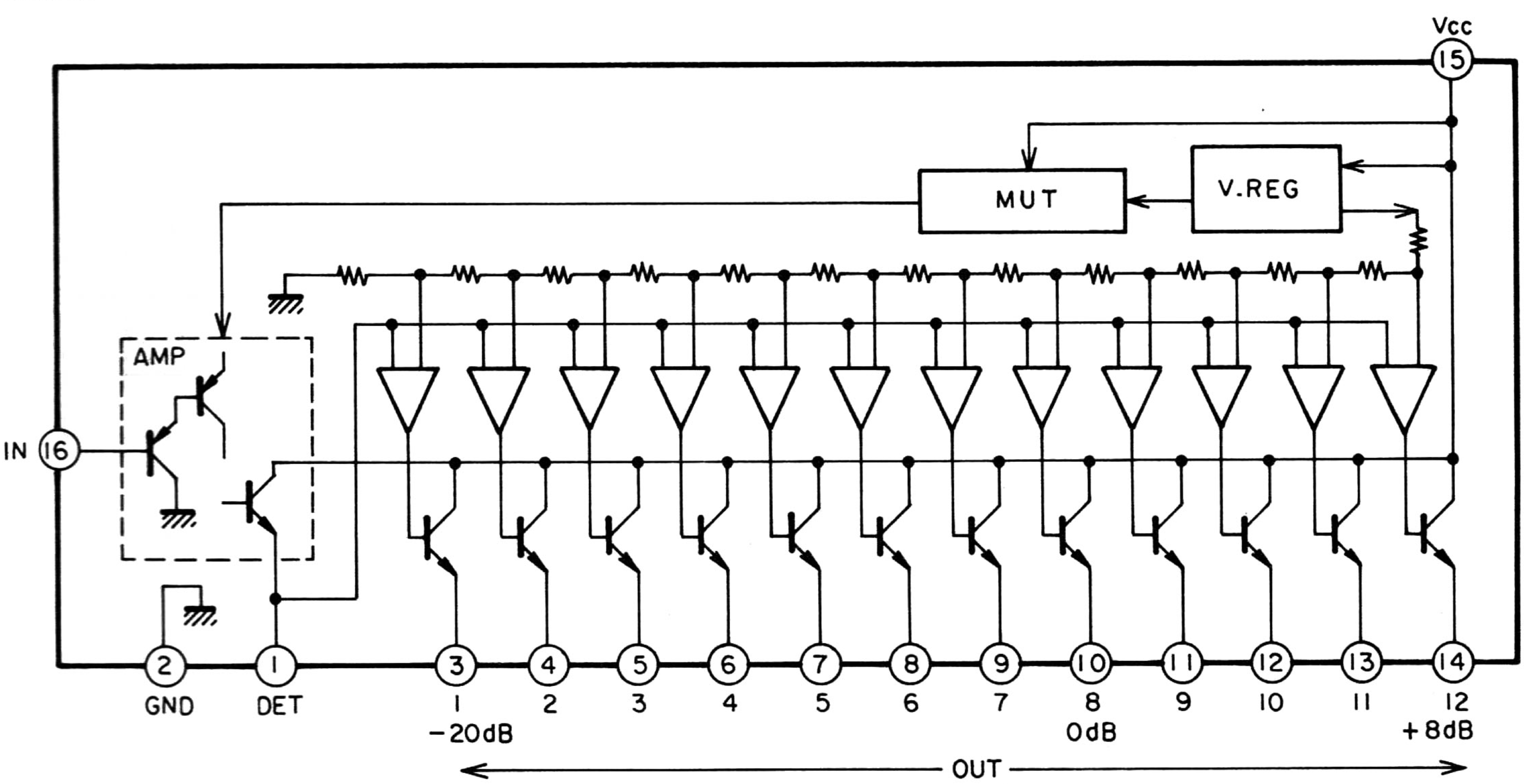
SCHEMATIC DIAGRAM

TABLE OF CONTENTS

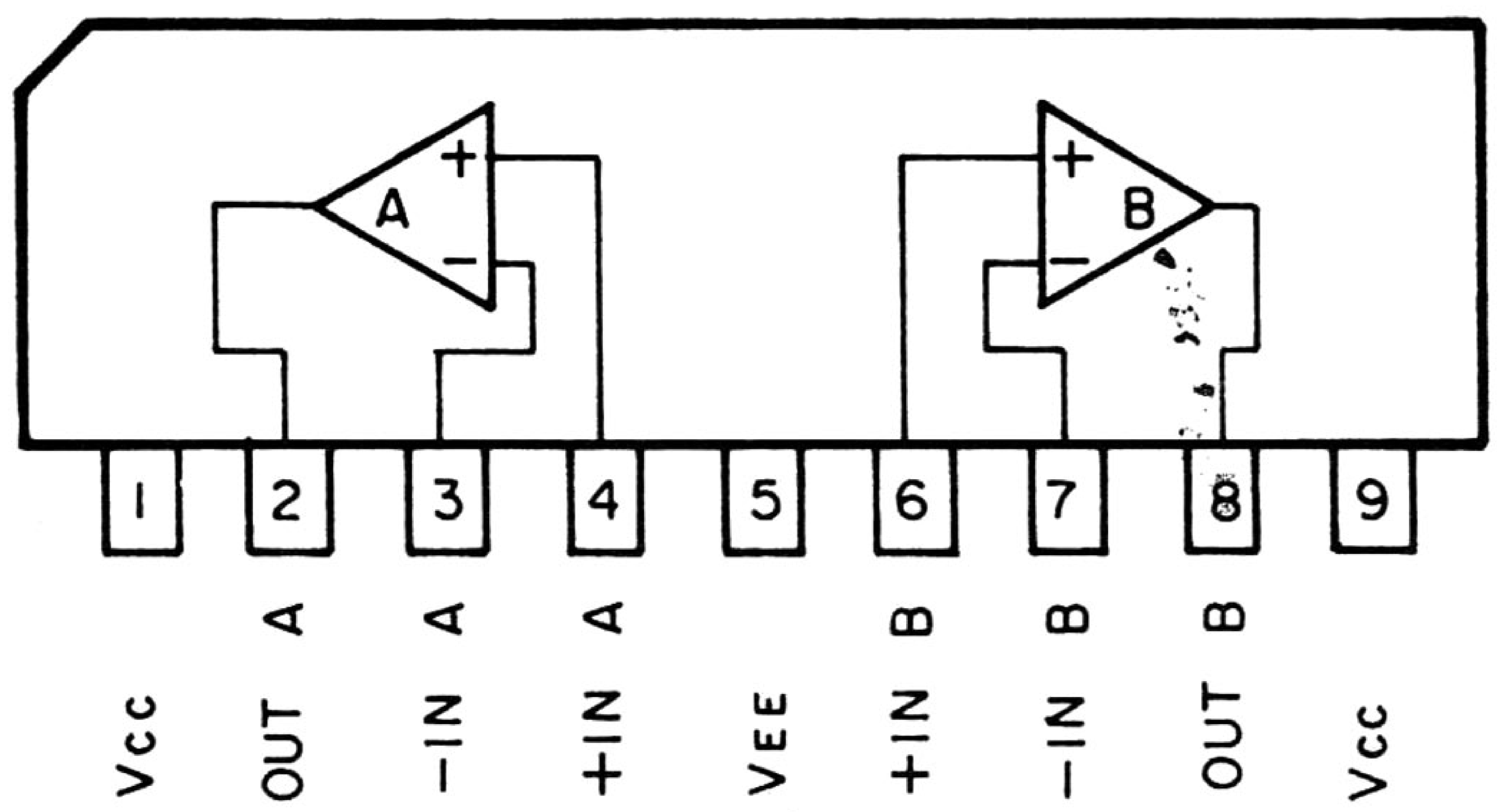
BA6109



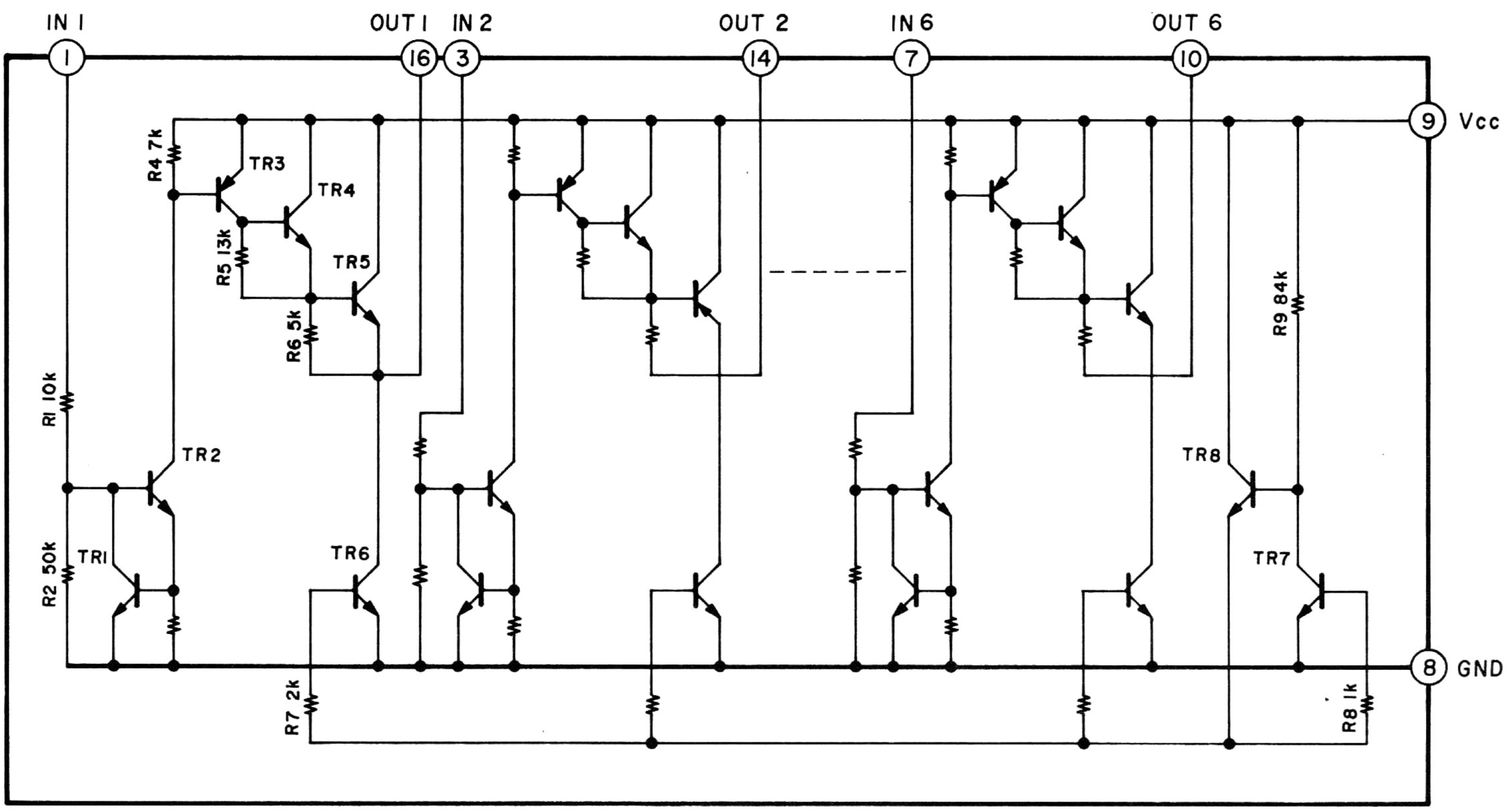
BA6146

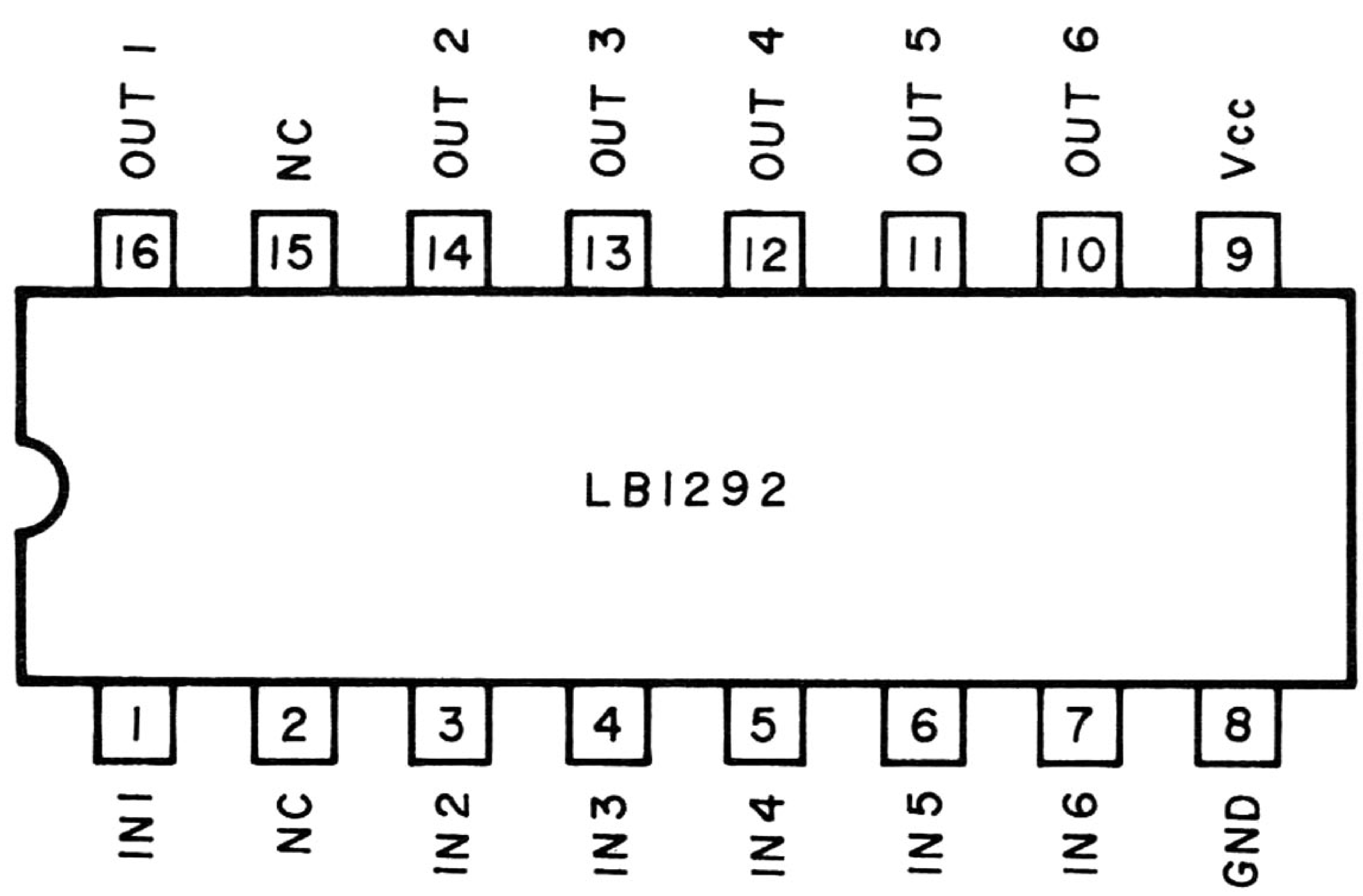


LA6458S



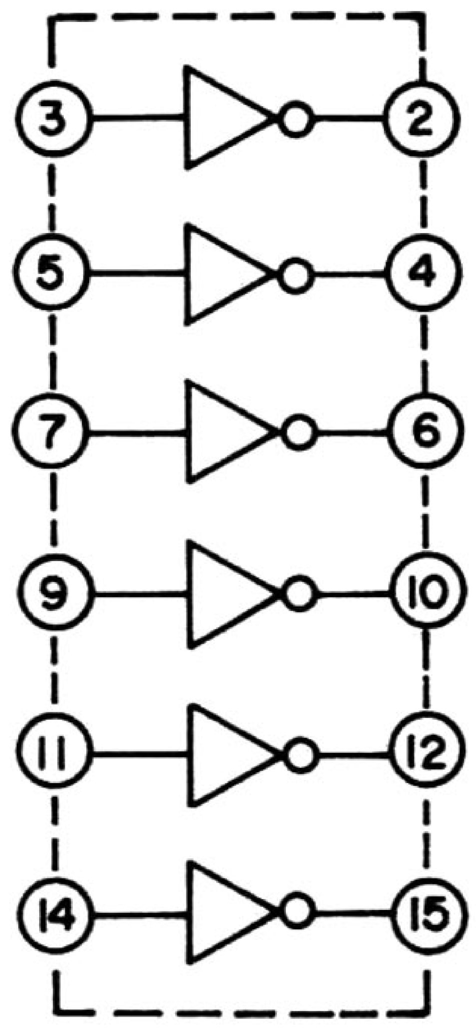
LB1292





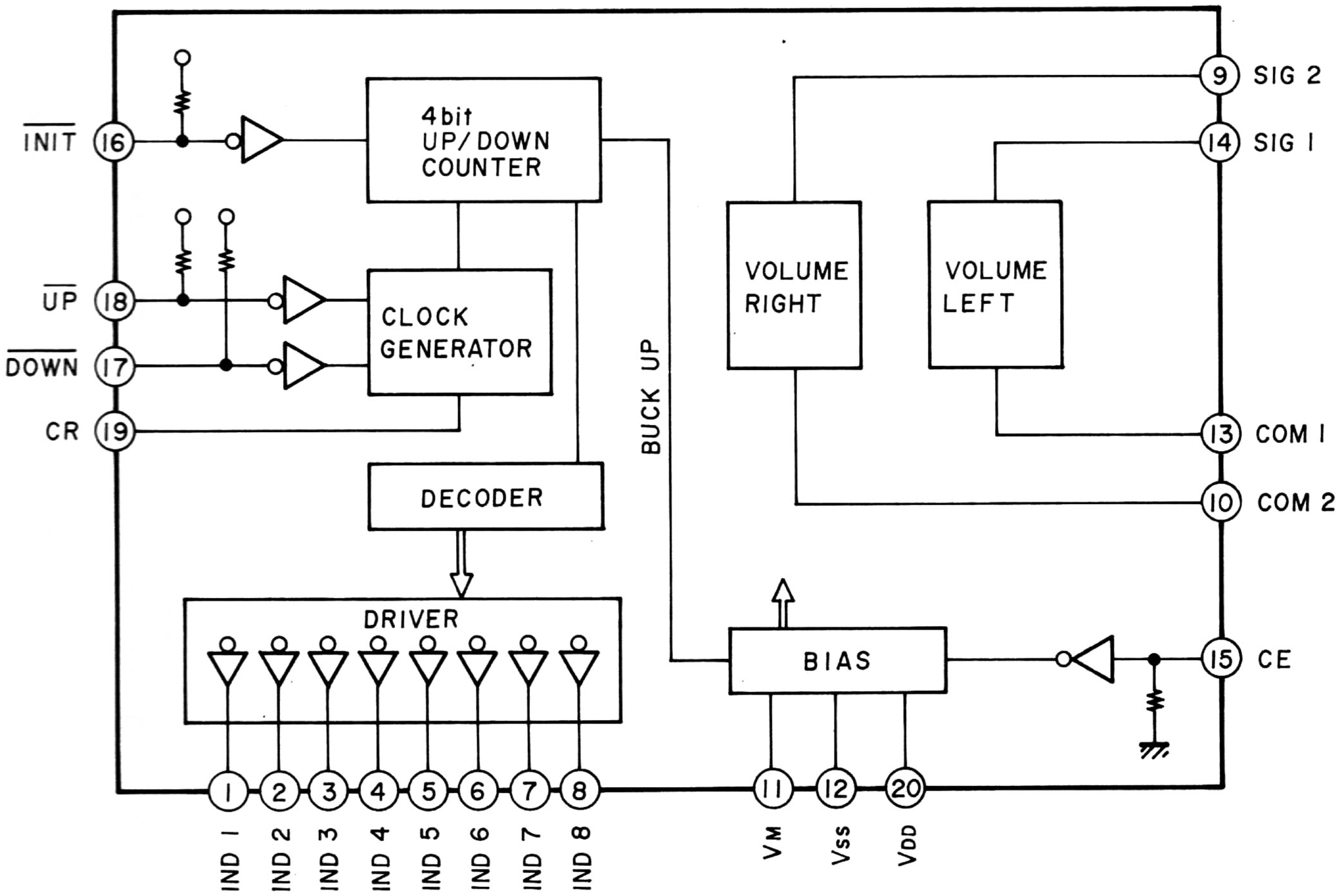
(Top View)

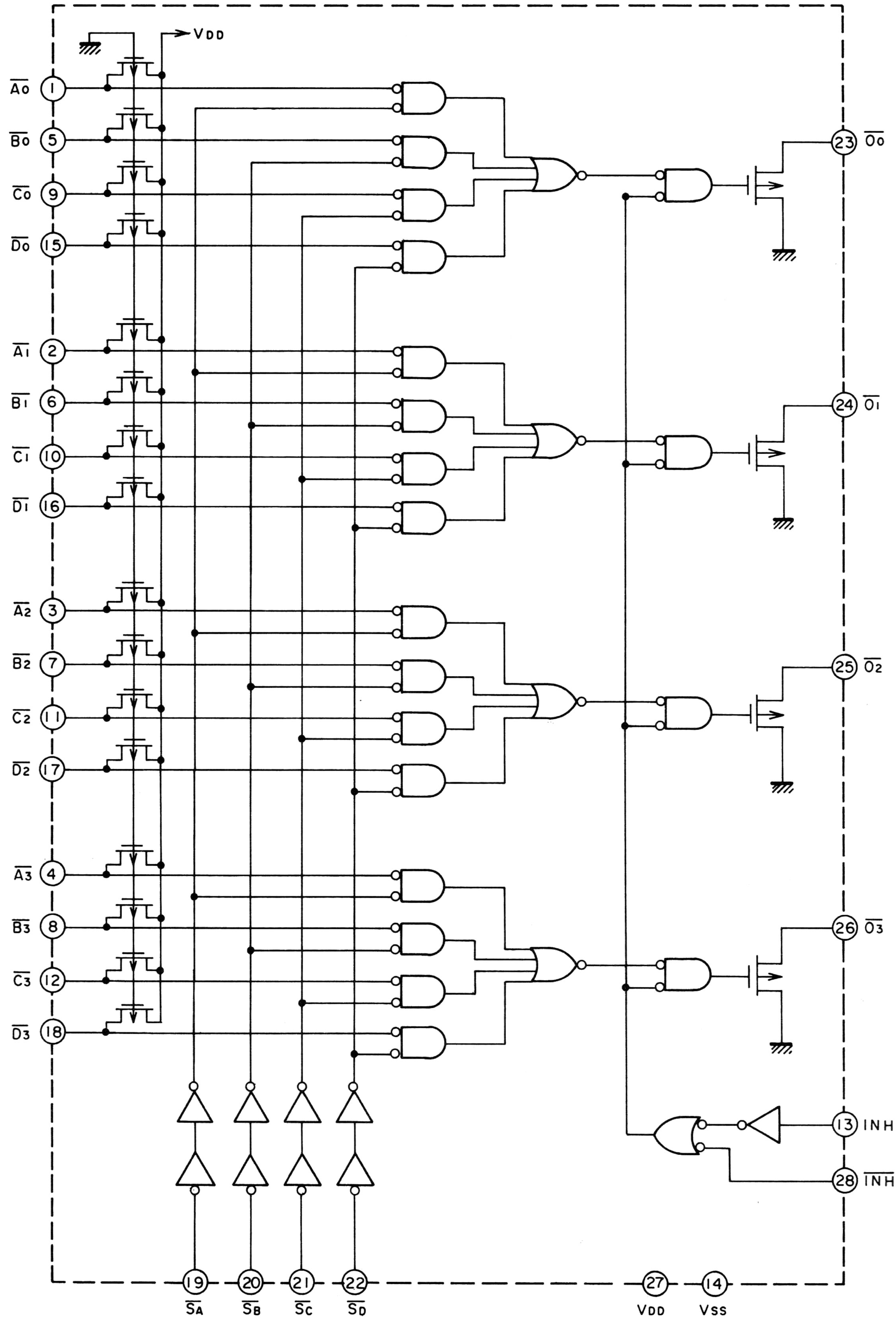
LC4049



NC= Pin 13.16
VSS= Pin 8
VCC= Pin 1

VC7530

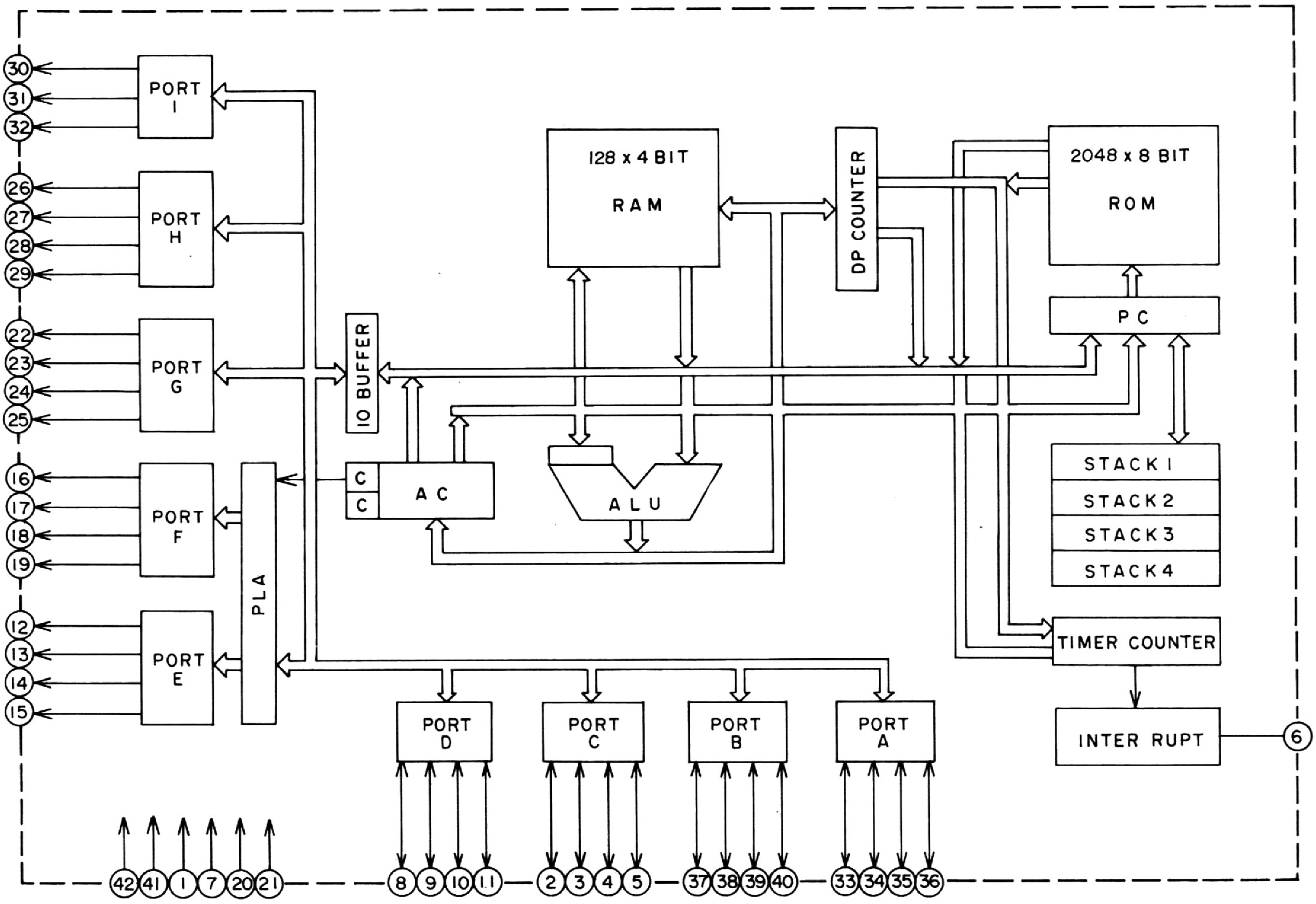



VDD
$\overline{A0}$ 1
$\overline{B0}$ 5
$\overline{C0}$ 9
$\overline{D0}$ 15
$\overline{A1}$ 2
$\overline{B1}$ 6
$\overline{C1}$ 10
$\overline{D1}$ 16
$\overline{A2}$ 3
$\overline{B2}$ 7
$\overline{C2}$ 11
$\overline{D2}$ 17
$\overline{A3}$ 4
$\overline{B3}$ 8
$\overline{C3}$ 12
$\overline{D3}$ 18
23 $\overline{O0}$
24 $\overline{O1}$
25 $\overline{O2}$
26 $\overline{O3}$
13 INH
28 $\overline{INH}$
19 $\overline{SA}$
20 $\overline{SB}$
21 $\overline{SC}$
22 $\overline{SD}$
27 VDD
14 VSS

Connection of each terminal of IC (LC7800) for expanding IC4 (LM6402H-190) Input Port.

Pin No.	Symbol	Items connected to IC1	Items connected to IC2
1	A0	Stop SW	Cam roation direction SW
2	A1	FWD SW	FWD/REV SW
3	A2	REV SW	Anti REC FWD SW
4	A3	REC SW	Anti REC REV SW
5	B0	FF SW	CrO_2 SW
6	B1	REW SW	Metal SW
7	B2	Auto Mute SW	Timer SW (REC)
8	B3	+5V	Timer SW (PLAY)
9	C0	Intro Scan SW	+5V
10	C1	+5V	+5V
11	C2	Reverse Selector SW	+5V
12	C3	IPLS SW	+5V
13	INH	GND	IC 4 Pin 19
14	VSS	GND	GND
15	D0	Counter Reset SW	Music Interval Detector (IPLS)
16	D1	+5V	Quick Reverse Detector
17	D2	+5V	+5V
18	D3	+5V	+5V
19	SA	Data Selection Input Active at "L" to IC4 Pin 11 (D3)	Electronic Counter 1 to 4 Digit Output.
20	SB	IC4 Pin 10 (D2)	
21	SC	IC4 Pin 9 (D1)	
22	SD	IC4 Pin 8 (D0)	
23	00	Data output to IC4 Pin 5 (C3)	Data Input
24	01	IC4 Pin 4 (C2)	
25	02	IC4 Pin 3 (C1)	
26	03	IC4 Pin 2 (C0)	
27	VDD	+5V	+5V
28	$\overline{INH}$	IC4 Pin 19	+5V

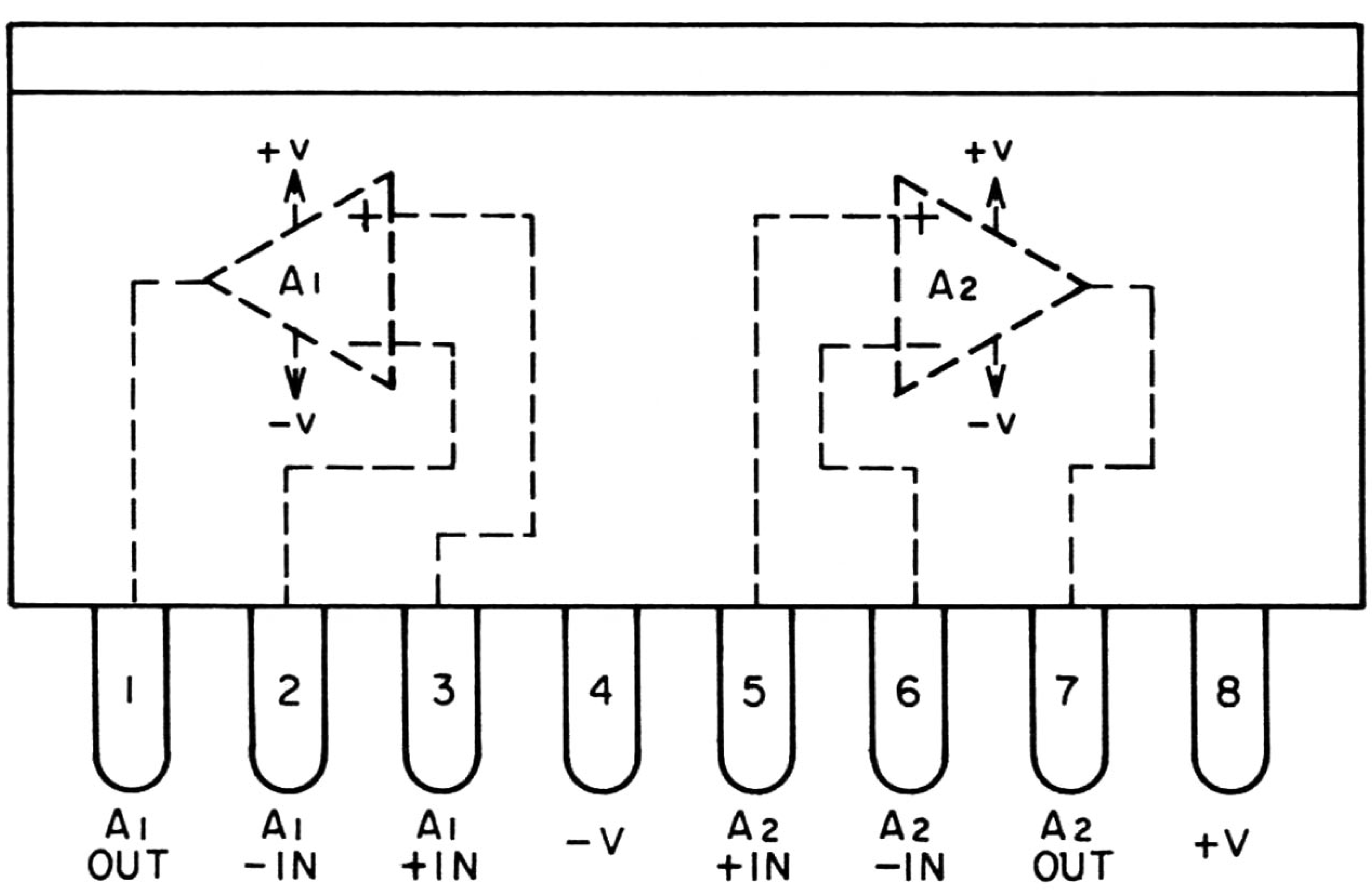
LM6402H-190



Pin No.	Symbol	Description
1	XTAL	Ceramic OSC Input
2	C0	Data Input 1
3	C1	Data Input 2
4	C2	Data Input 3
5	C3	Data Input 4
6	$\overline{\text{INT}}$	Cam Motor Pulse Input
7	$\overline{\text{RES}}$	Reset
8	D0	Electronic Counter 1 Digit Drive Output
9	D1	Electronic Counter 2 Digit Drive Output
10	D2	Electronic Counter 3 Digit Drive Output
11	D3	Electronic Counter 4 Digit Drive Output
12	E0	7 Segment Drive Output a
13	E1	7 Segment Drive Output b — 7 segments light at "L" when synchronized with D0 ~ D3. (pins 8–19)
14	E2	7 Segment Drive Output c
15	E3	7 Segment Drive Output d
16	F0	7 Segment Drive Output e
17	F1	7 Segment Drive Output f
18	F2	7 Segment Drive Output g
19	F3	Strobe for Input Port Select.
20	TEST	GND
21	VSS	GND
22	G0	Reverse — Cam Motor Control Output.
23	G1	Forward — Cam Motor Control Output.

Pin No.	Symbol	Description
24	G2	CONTI. REV
25	G3	ONCE REV
26	H0	IPLS
27	H1	REC
28	H2	REV — FLD Drive Output, Lights at "L".
29	H3	FWD
30	I0	Metal
31	I1	CrO_2
32	I2	Normal
33	A0	External Control output. "L" at FWD/REV Play mode.
34	A1	Reel Rotation Pulse Input. +1 COUNT ("H" → "L") at FWD, –1 COUNT ("L" → "H") at REV.
35	A2	Cam Direction Detector Input. "H" → Down, "L" → Up.
36	A3	Cam Mode Stop Detector Input. "H" at Stop mode, "L" at Others.
38	B1	REC MUTE — Output, activates at "H".
38	B1	PB MUTE
39	B2	O.S.C. Control output, activates at "L".
40	B3	REC/PB Control, "H" → PB, "L" → REC.
41	VDD	+5V
42	EXTAL	Ceramic OSC Input.

M5218LO



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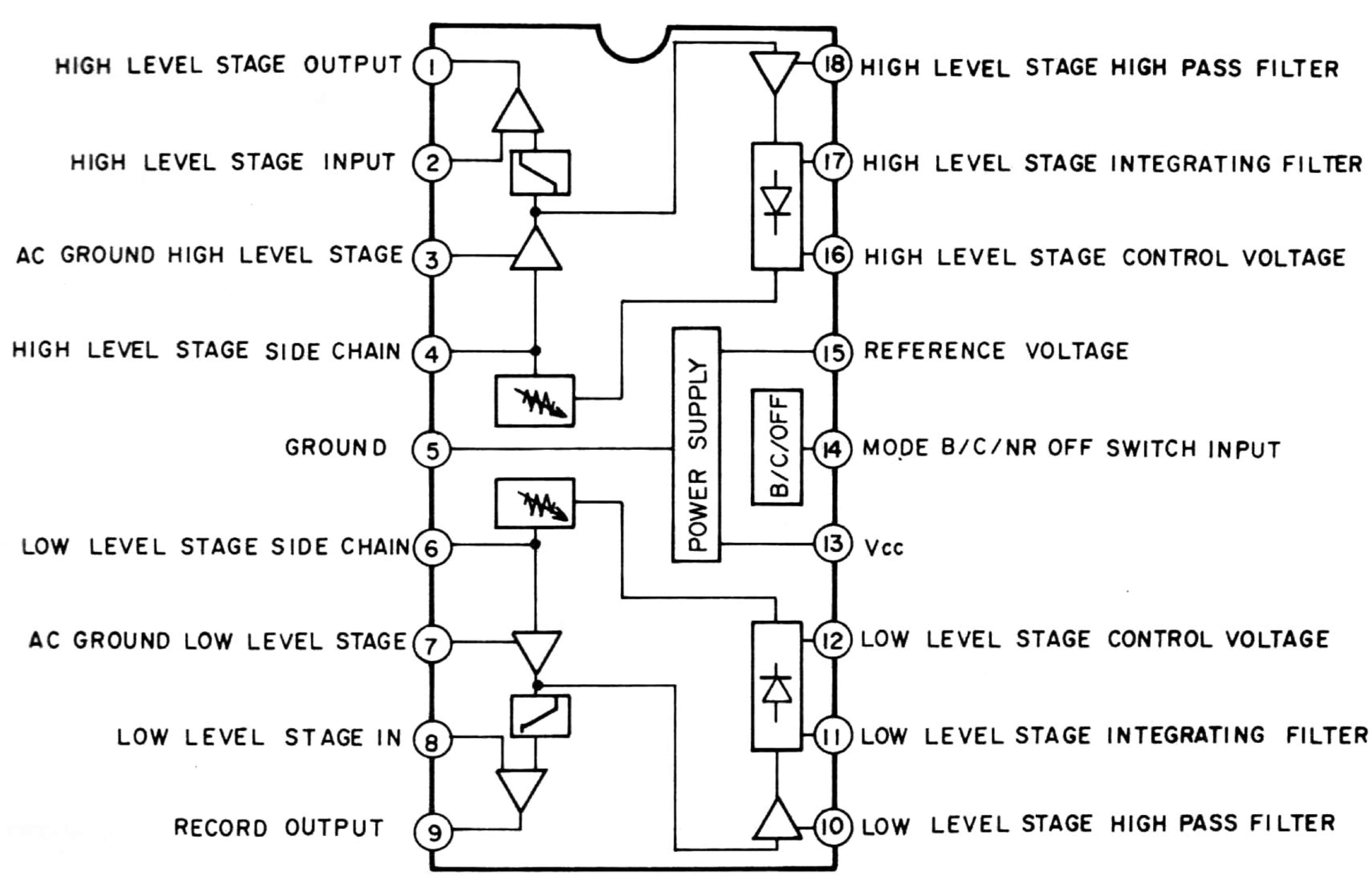

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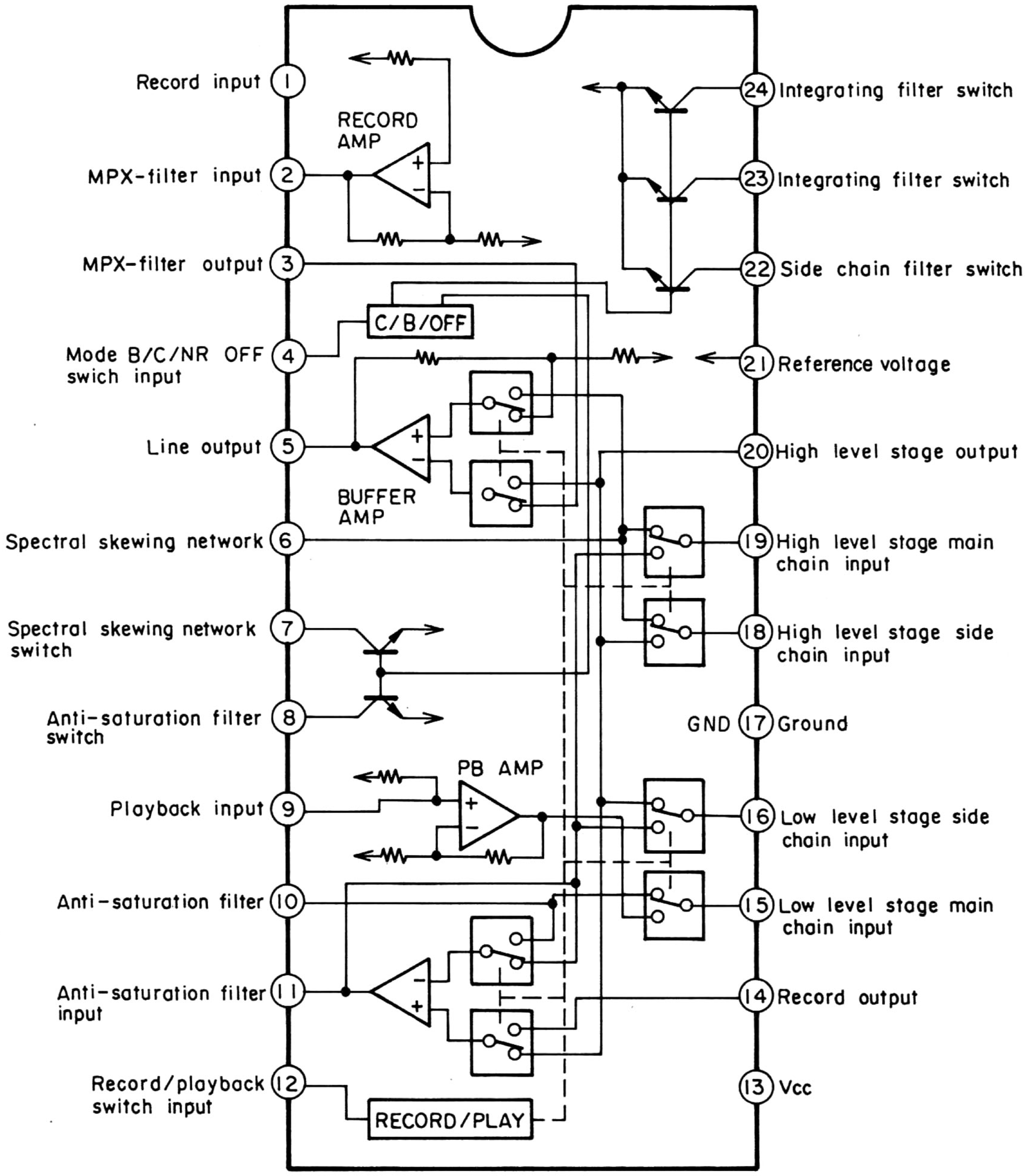
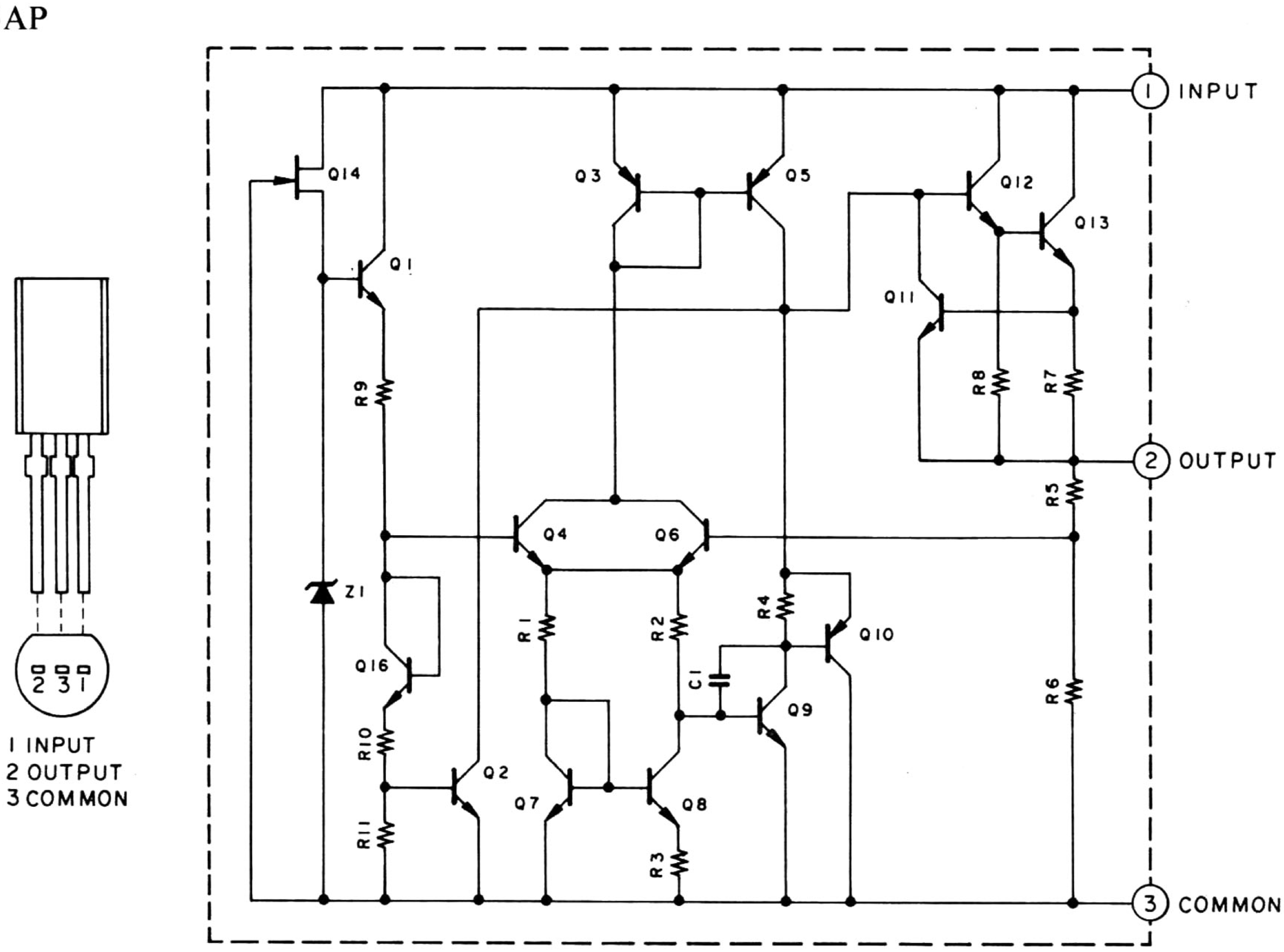
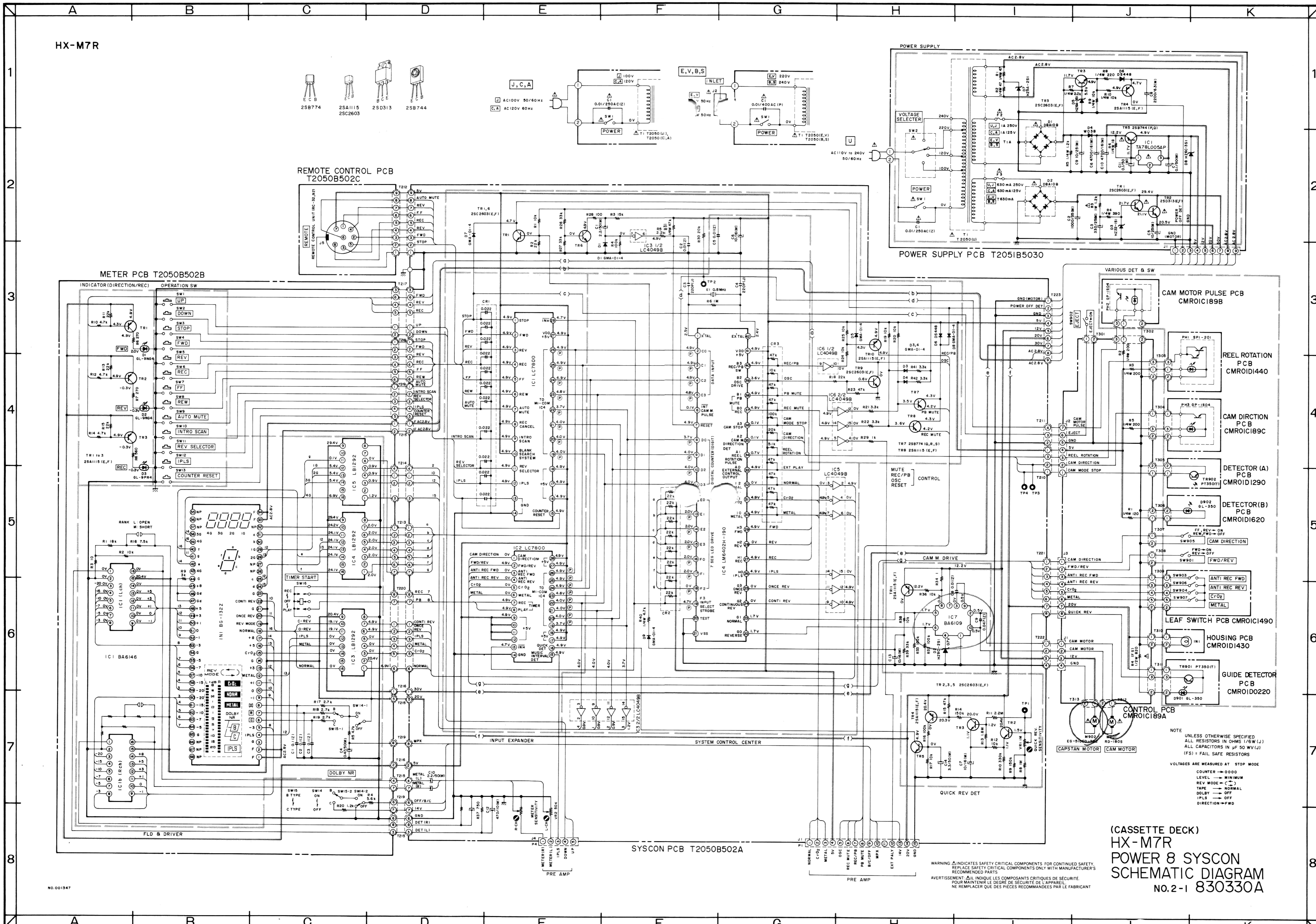
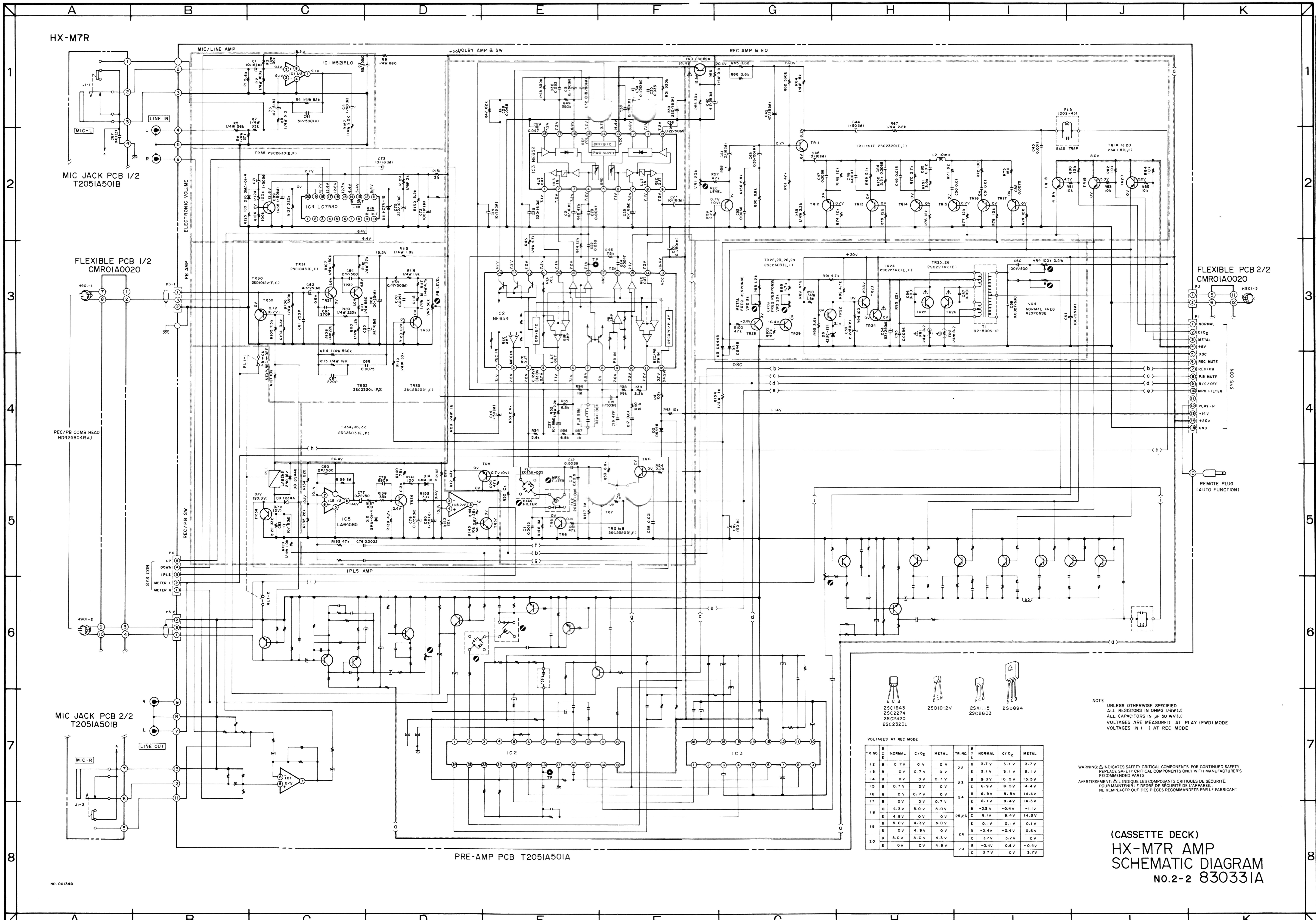


TA78L005AP




HX-M7R
2SB774
2SA1115
2SC2603
2SD313
2SB744
J,C,A
E,V,B,S
POWER
POWER SUPPLY
VOLTAGE SELECTER
POWER SUPPLY PCB T2051B5030
REMOTE CONTROL PCB
T2050B502C
METER PCB T2050B502B
INDICATOR(DIRECTION/REC)
OPERATION SW
UP
DOWN
STOP
FWD
REV
REC
FF
REW
AUTO MUTE
INTRO SCAN
REV SELECTOR
IPLS
COUNTER RESET
IC1 LC7800
IC5 LB1292
IC4 LB1292
IC3 LB1292
IC2 LC7800
IC4 LM6402H-190
IC1 BA6146
TIMER START
DOLBY NR
FLD & DRIVER
INPUT EXPANDER
SYSTEM CONTROL CENTER
SYSCON PCB T2050B502A
PRE AMP
VARIOUS DET & SW
CAM MOTOR PULSE PCB CMR01C189B
REEL ROTATION PCB CMR01D1440
CAM DIRCTION PCB CMR01C189C
DETECTOR (A) PCB CMR01D1290
DETECTOR(B) PCB CMR01D1620
LEAF SWITCH PCB CMR01C1490
HOUSING PCB CMR01D1430
GUIDE DETECTOR PCB CMR01D0220
CONTROL PCB CMR01C189A
CAM M. DRIVE
QUICK REV DET
CAPSTAN MOTOR
CAM MOTOR
MUTE
REC/PB
OSC
RESET
CONTROL
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W (J)
ALL CAPACITORS IN μF 50 WV(J)
(FS) : FAIL SAFE RESISTORS
VOLTAGES ARE MEASURED AT STOP MODE
WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.
AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL. NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT
(CASSETTE DECK)
HX-M7R
POWER & SYSCON
SCHEMATIC DIAGRAM
NO.2-1 830330A
NO.001347



VOLTAGES AT REC MODE

TR. NO.	B C E	NORMAL	CrO_2	METAL	TR. NO.	B C E	NORMAL	CrO_2	METAL
12	B	0.7 V	0 V	0 V	22	B	3.7 V	3.7 V	3.7 V
13	B	0 V	0.7 V	0 V		E	3.1 V	3.1 V	3.1 V
14	B	0 V	0 V	0.7 V	23	B	9.3 V	10.5 V	15.5 V
15	B	0.7 V	0 V	0 V		E	6.9 V	8.5 V	14.4 V
16	B	0 V	0.7 V	0 V	24	B	6.9 V	8.5 V	14.4 V
17	B	0 V	0 V	0.7 V		E	8.1 V	9.4 V	14.3 V
18	B	4.3 V	5.0 V	5.0 V	25,26	B	-0.3 V	-0.4 V	-1.1 V
	E	4.9 V	0 V	0 V		C	8.1 V	9.4 V	14.3 V
19	B	5.0 V	4.3 V	5.0 V		E	0.1 V	0.1 V	0.1 V
	E	0 V	4.9 V	0 V	28	B	-0.4 V	-0.4 V	0.6 V
20	B	5.0 V	5.0 V	4.3 V		C	3.7 V	3.7 V	0 V
	E	0 V	0 V	4.9 V	29	B	-0.4 V	0.6 V	-0.4 V
						C	3.7 V	0 V	3.7 V

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN μF 50 WV(J)
VOLTAGES ARE MEASURED AT PLAY (FWD) MODE
VOLTAGES IN ( ) AT REC MODE

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

(CASSETTE DECK)

HX-M7R AMP SCHEMATIC DIAGRAM

NO.2-2 83033IA

SECTION 2

PARTS LIST

TABLE OF CONTENTS

Please refer to COMMON LIST FOR SERVICE PARTS, for Resistor and Capacitor which are not listed in this list.

ATTENTION

1. When placing an order for parts, be sure to list the parts no. model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because parts number and parts unit supply in the Preliminary Parts List may be partially changed, please use this parts list for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List shows the parts that are considered necessary for repairs. Other parts, such as resistors and capacitors, are shown in the "Common List for Service Parts". Select and order such parts from the "Common List for Service Parts".
2. The Recommended Spare Parts shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not be supplied in principle.
4. How to read list

a) Mechanism Block

2. HEAD BASE BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1x	BH-T2023A320A	HEAD BASE BLOCK GX-F66R
2-2	HP-H2206A010A	HEAD R/P PR4-8FU C
2-3	ZS-477876	PAN20x03STL CMT
2-4	ZS-536488	BID20x08STL CMT
2-5	ZG-402895	CS ANGLE ADJUST SPRING

SP (Service Parts) Classification

A small "x" indicates the inability to show that particular part in the Photo or Illustration.

This number corresponds with the individual parts index number in that figure

This number corresponds with the Figure Number

b) P.C Board Block

6. SYS. CON. P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-1	BA-T2034A070A	PC SYS CON BLK GX-F44R
6-IC1	EI-324536	IC HD14049BP
6-IC2	EI-336801	IC MB8841-564M
6-IC3	EI-331661	IC SN7405N
6-IC4	EI-336725	IC M54527P
6-TR1to4	ET-200985	TR 2SC2603 F,G
6-TR5to28	ET-554657	TR 2SA733A P,Q
6-D1	ED-318292	D SILICON H 1S2473T-77 T26
6-D2to4	ED-308952	D GERMA V 1K34A-LR F07
6-D5to10	ED-318292	D SILICON H 1S2473T-77 T26
6-X1	EI-318384	OSC X'TAL NC-18C 3.579545MHZ

SP (Service Parts) Classification

This reference numbers corresponds with symbol numbers of Schematic Diagrams.

5. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List. It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index.

WARNING

⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT

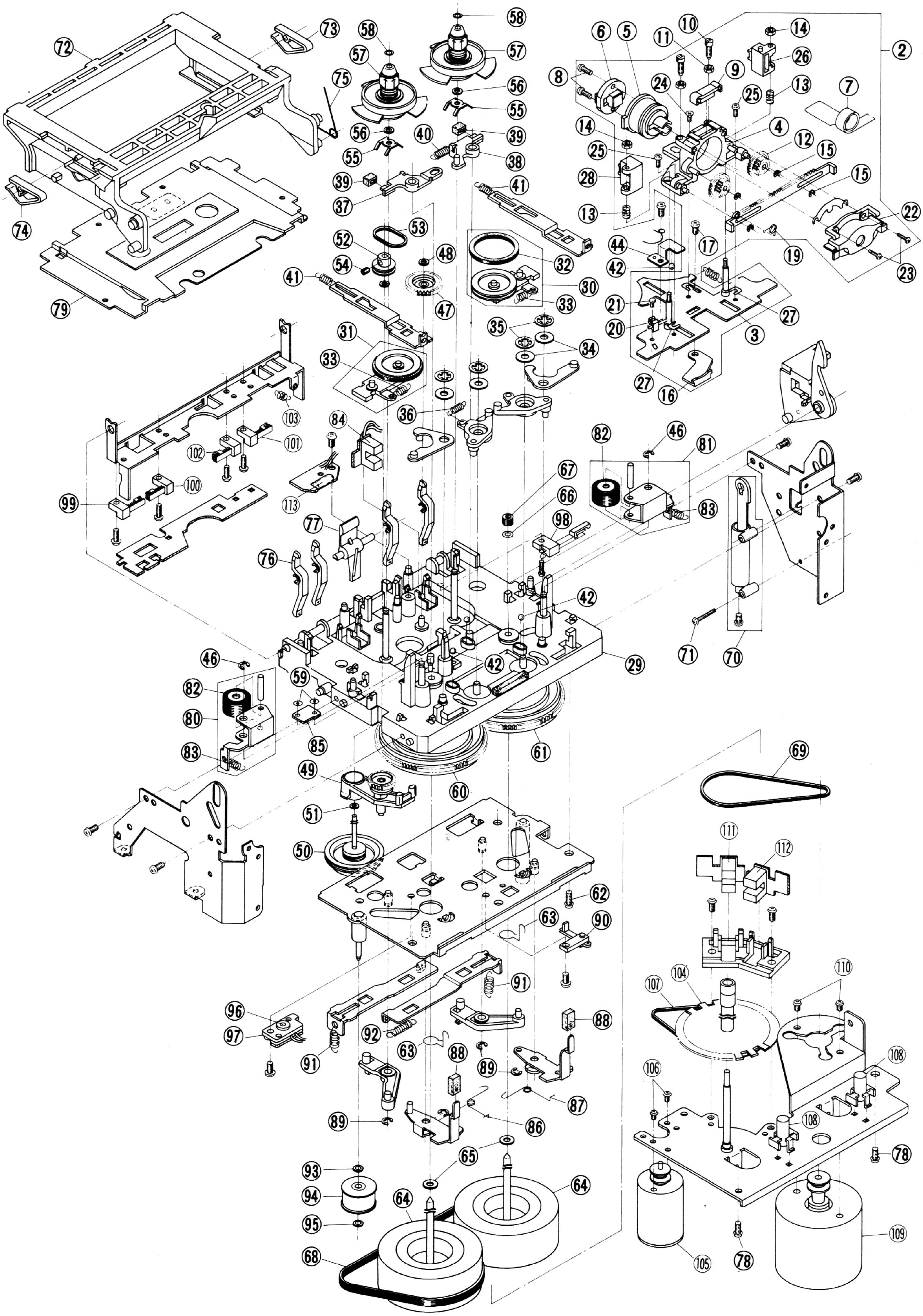
⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

RECOMMENDED SPARE PARTS

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

REF. NO.	PARTS NO.	DESCRIPTION
1	BF-344029	FLYWHEEL
2	BH-T2045A030A	HEAD BLK HX-R5
3	BL-T2045A050A	ARM PINCH ROLLER (L) BLK HX-R5
4	BL-T2045A060A	ARM PINCH ROLLER (R) BLK HX-R5
5	BM-B604491	MOTOR (PULLEY) PART EG-510ED 2B2
6	BM-B604490	MOTOR OPERATION (PULLEY) PART
7	BR-344098	REEL TABLE(A) ASSY
8	BT-345762	⚠ TRANS POWER T2050 (J)
9	BT-345754	⚠ TRANS POWER T2050 (B,S)
10	BT-345753	⚠ TRANS POWER T2050 (E,V)
11	BT-345761	⚠ TRANS POWER T2050 (U)
12	BZ-T2045A040A	GUIDE DETECTION BLK HX-R5
13	EC-338341	C COMP 05-0034
14	EC-337017	OSC CE CSB800A 0.8MHz
15	ED-330319	⚠ D SILICON DBA10B 100/1.0A
16	ED-308952	D GERMA V 1K34A-LR F07
17	ED-310340	D LED GL-350 INFRARED RAY
18	ED-337093	D LED GL-9NG4 GRN
19	ED-328791	D LED GL-9PR4 RED
20	ED-301911	D SILICON H DS448
21	ED-337575	D SILICON H GMA-01-4-BT T26
22	ED-200468	D SILICON V DS448-VB6
23	ED-306109	D SILICON W03B 100/1.0A
24	ED-338316	D ZENER V HZ22-1S1
25	ED-348012	D ZENER V HZ3C-1S1
26	ED-343958	D ZENER V HZ5A-2S1
27	ED-337259	D ZENER V HZ6A-3S1
28	ED-345822	D ZENER V HZ6C-3S1
29	ED-345821	D ZENER V HZ7A-1S1
30	ED-338454	D ZENER V HZ9C-2S1
31	EF-601942	⚠ FUSE SEMKO T 250V 0.63A
32	EF-623103	⚠ FUSE SEMKO T 250V 1A
33	EF-306124	⚠ FUSE TSC A 250V 0.63A
34	EF-309387	⚠ FUSE TSC A 250V 1A
35	EF-305703	⚠ FUSE TSC 125V 0.63A
36	EF-310229	⚠ FUSE TSC 125V 1A
37	EI-337529	⚠ IC TA78L005AP
38	EI-330391	⚠ IC T4050BP
39	EI-330352	IC BA6109
40	EI-337845	IC BA6146 M
41	EI-336761	IC LA6458S
42	EI-345765	IC LB1292
43	EI-337009	IC LC4049B
44	EI-345759	IC LC7530
45	EI-337008	IC LC7800
46	EI-345758	IC LM6402H-155
47	EI-337228	IC M5218L0
48	EI-337835	IC NE652
49	EI-344291	IC NE654
50	EI-337017	OSC CE CSB800A 0.8MHz
51	EL-348214	PL LEAD 28.0V 24MA
52	EM-345764	IND FL BG-132Z DOUBLE
53	EO-347162	COIL FIX 1 L-8 10MHz J
54	EO-345760	COIL OSC 1 32-5009-12 100kHz
55	EO-315758	COIL TUN 1 100S-431 100kHz
56	EO-336738	COIL TUN 1 102AK-004 19.8kHz
57	EP-337067	RELAY LEAD LAB2NS 2NO 18V
58	ER-331188	⚠ R FUSE ERD2FC F10 1/4W 8R2J
59	ER-346801	⚠ R FUSE ERD2FC 1/4W 18R0G
60	ER-337695	FILTER DB 201AK-005 100kHz
61	ER-337696	FITER DB 201AK-006 19kHz
62	ER-347164	R COMP RKC 1/8 B8 223J
63	ER-345757	R COMP 01-0517
64	ES-337902	⚠ SW PUSH SDLD1P 01-1
65	ES-344274	⚠ SW SELECTOR HXW0244-01-060 01-4
66	ES-344104	SW LEAF BSW-191 01-1 NO
67	ES-344101	SW LEAF MD-1003 01-1 NO
68	ES-336814	SW LEAF MSW-1150NBK 01-1 NO
69	ES-344253	SW LEAF MSW-1418J 01-1 NO
70	ES-344257	SW LEAF MSW-1418L 01-1 NO
71	ES-337843	SW PUSH ESB-64501 02-2
72	ES-344281	SW SLIDE SSY023
73	ES-336780	SW TACT KHH10902
74	ET-337188	⚠ TR 2SB774 P,Q
75	ET-336941	⚠ TR 2SD313 E,F
76	ET-311977	PHOTO SENSOR SPI-201
77	ET-310341	TR PHOTO PT350 T
78	ET-344102	TR PHOTO GP-1S04
79	ET-200558	TR 2SA1115 E,F
80	ET-332422	TR 2SB774 Q,R,S
81	ET-337258	TR 2SC1843 E,F
82	ET-309353	TR 2SC2274K E,F
83	ET-328578	TR 2SC2320 E,F
84	ET-344275	TR 2SC2320L F,G
85	ET-200505	TR 2SC2603 E,F
86	ET-328437	TR 2SD1012-V F,G
87	ET-201580	TR 2SD894
88	EV-315414	R S-FIX H D8 3P 203
89	EV-322413	R S-FIX H D8 3P 302
90	EV-315413	R S-FIX H D8 3P 503
91	EV-336785	R S-FIX H TM8KV2-1S 3P 0.50W 104
92	EV-522652	R S-FIX V V8K1-1 3P 105
93	EV-464264	R S-FIX V V8K1-1 3P 503
94	HR-344103	HEAD COMBO HD425804RVJ
95	MB-344088	BELT CAM
96	MB-344041	BELT CAPSTAN
97	MB-344042	BELT WIND (A)
98	MB-344043	BELT WIND (B)
99	MB-344028	PULLEY RUBBER
100	MI-344095	IDLER PLAY (L) ASSY
101	MI-344094	IDLER PLAY (R) ASSY

MECHA CMR01 BLOCK



1. MECHA CMR01 BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
1-1	BZ-T2045A020C	MECHA CMR01 BLK HX-M7R
1-2	BH-T2045A030A	HEAD BLK HX-R5
1-3	MZ-B344008	CHASSIS HEAD PART
1-4	HZ-B344009	HOUSING ROTARY PART
1-5	HZ-B344006	HOLDER ROTARY PART
1-6	HR-344103	HEAD COMBO HD425804RVJ
1-7	EA-343156	PC HEAD FLEXIBLE CMR01A0020
1-8	ZS-245147	CTS20 × 06STL BNI
1-9	HZ-344011	GUIDE ROTARY HEAD
1-10	ZS-344001	SCREW AZIMUTH
1-11	ZW-273734	N20BRS NI3 1
1-12	MZ-344004	GEAR HEAD
1-13	ZG-344012	SP PUSH GUIDE TAPE
1-14	ZW-618884	N20STL CMT 1
1-15	ZW-391397	RING E120SUP CMT
1-16	MZ-344002	PLATE ADJUST
1-17	ZS-432843	PAN26×04 STL CMT
1-18	MZ-344007	RACK
1-19	ZG-344013	SP TORSION RACK
1-20	ES-344104	SW LEAF BSW-191 01-1 NO (SW901)
1-21	ZS-343125	BID14×03STL BNI
1-22	HZ-344015	COVER HOUSING
1-23	ZS-345773	BID17×06STL BNI
1-24	ZS-524812	CTS20×04STL CMT
1-25	ZS-608095	PAN20×05STL CMT
1-26	HZ-344093	GUIDE TAPE
1-27	ZW-344639A	SPACER ADJUST (A) 0.10MM
1-27	ZW-344639B	SPACER ADJUST (B) 0.15MM
1-27	ZW-344639C	SPACER ADJUST (C) 0.20MM
1-27	ZW-344639D	SPACER ADJUST (D) 0.25MM
1-27	ZW-344639E	SPACER ADJUST (E) 0.30MM
1-27	ZW-344639F	SPACER ADJUST (F) 0.35MM
1-27	ZW-344639G	SPACER ADJUST (G) 0.40MM
1-27	ZW-344639H	SPACER ADJUST (H) 0.45MM
1-27	ZW-344639J	SPACER ADJUST (J) 0.50MM
1-28	BZ-T2045A040A	GUIDE DETECTION BLK HX-R5
1-29	MZ-B344018	CHASSIS MECHA PART
1-30	MI-344094	IDLER PLAY (R) ASSY
1-31	MI-344095	IDLER PLAY (L) ASSY
1-32	MB-345139	WHEEL RUBBER
1-33	ZG-343195	SP PULL IDLER
1-34	ZW-268222	PW31×080×030STL CMT
1-35	ZW-329422	RING CS0300
1-36	ZG-312923	SP T1-3.2/0.2-11.2 T1-040
1-37	ML-344032	LEVER BRAKE (L)
1-38	ML-344033	LEVER BRAKE (R)
1-39	MB-344034	BRAKE RUBBER
1-40	ZG-312925	SP T1-3.2/0.2-14.0 T042
1-41	ZG-349016	SP PULL SLIDE
1-42	MV-666887	STEEL BALL D2.5
1-43	ZG-343193	SP PULL HEAD CHASSIS RETURN
1-44	MZ-344039	PLATE HEAD HOLD
1-45	ZS-343136	PT PAN26 ×05STL CMT
1-46	ZW-270088	RING E 190SUP CMT
1-47	MZ-344036	GEAR WIND (B)
1-48	ZW-343120	PW17×040×025PSL
1-49	ML-344096	ARM REWIND ASSY
1-50	TC-344097	WIND ASSY
1-51	ZW-305546	PW21×040×025PSL
1-52	MR-344037	PULLEY WIND
1-53	MB-344043	BELT WIND (B)
1-54	ZS-345314	–SET20×03STL CMT HP
1-55	ZG-344031	SP PLATE BT
1-56	ZW-381644	PW21 × 040 × 013PSL
1-57	BR-344098	REEL TABLE (A) ASSY
1-58	ZW-343120	PW17×040×025PSL
1-59	ZW-349046	WASHER FIXATION
1-60	MZ-344019	CAM WHEEL (L)
1-61	MZ-344020	SP PULL EARTH
1-62	ZS-336613	PT PAN26×06STL CMT
1-63	ZG-344064	SP PULL EARTH
1-64	BF-344029	FLYWHEEL
1-65	ZW-344047	SPACER FLYWHEEL
1-66	ZW-349047	WASHER OIL STOPPER
1-67	MB-344028	PULLEY RUBBER
1-68	MB-344041	BELT CAPSTAN
1-69	MB-344042	BELT WIND (A)
1-70	MZ-344099	DUMPER ASSY
1-71	ZS-343113	ST PAN20×12STL CMT
1-72	SP-344057	LID CASE
1-73	ZG-336615	SP PLATE CASSETTE HOLDER (B)
1-74	ZG-344939	SP PLATE CASSETTE HOLDER
1-75	ZG-344058A	SP TORSION LID (R)
1-76	ML-344286	LEVER DETECTION(A)
1-77	ML-344053	LEVER DETECTION (B)
1-78	ZS-321194	ST PAN26×05STL CMT
1-79	BD-B344049A1	LID DECORATION (A)-1 PART
1-80	BL-T2045A050A	ARM PINCH ROLLER (L) BLK HX-R5
1-81	BL-T2045A060A	ARM PINCH ROLLER (R) BLK HX-R5
1-82	MP-336153	PINCH ROLLER (A)
1-83	ZG-344089	SP PULL PINCH ROLLER
1-84	ET-311977	PHOTO SENSOR SPI-201
1-85	ET-310341	TR PHOTO PT350 T
1-86	ZG-345660	SP TORSION RETURN (L)
1-87	ZG-345661	SP TORSION RETURN (R)
1-88	MB-349019	RUBBER ARM RETURN
1-89	ZW-270088	RING E 190SUP CMT
1-90	ES-344101	SW LEAF MD-1003 01-1 NO (SW905)
1-91	ZG-344090	SP PULL DRIVE ARM
1-92	ZG-312945	SP T1-3.2/0.29-14.0 T1-061
1-93	ZW-305546	PW21×040×025PSL
1-94	MR-B344076	PULLEY MIDDLE PART
1-95	ZW-343120	PW17×040×025PSL
1-96	ED-310340	D LED GL-350 INFRARED RAY (D902)
1-97	TC-344062	HOLDER STOP SENSOR
1-98	ES-336814	SW LEAF MSW-1150NBK 01-1 NO (SW902)
1-99	ES-344257	SW LEAF MSW-1418L 01-1 NO (SW903)
1-100	ES-344253	SW LEAF MSW-1418J 01-1 NO (SW904)
1-101	ES-344257	SW LEAF MSW-1418L 01-1 NO (SW906)
1-102	ES-344253	SW LEAF MSW-1418J 01-1 NO (SW907)
1-103	ZG-344091	SP PULL HOLDER
1-104	MR-344080	PULLEY CAM SLIT
1-105	BM-B604490	MOTOR OPERATION (PULLEY) PART
1-106	ZS-477876	PAN20×03STL CMT
1-107	MB-344088	BELT CAM
1-108	MZ-344083	HOLDER THRUST
1-109	BM-B604491	MOTOR (PULLEY) PART EG-510ED 2B2
1-110	ZS-592378	PAN26×03STL CMT
1-111,112	ET-344102	TR PHOTO GP-1S04
1-113	EL-348214	PL LEAD 28.0V 24MA (IN1)

2. PRE-AMP P.C BOARD BLOCK

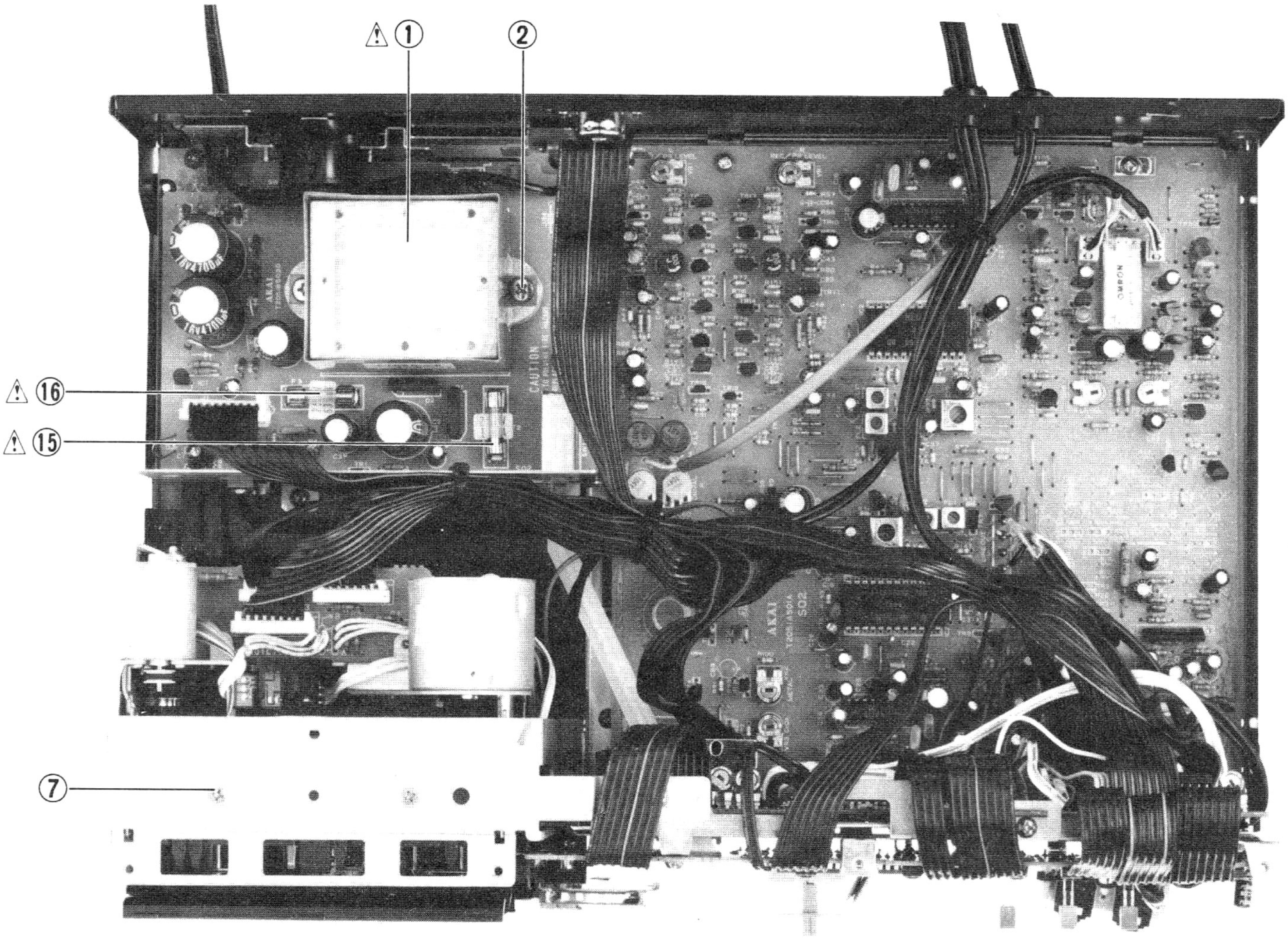
REF. NO.	PARTS NO.	DESCRIPTION
2-1	BA-T2050A020A	PC PRE-AMP BLK HX-M7R
	PRE-AMP P.C BOARD	
2-IC1A	EI-337228	IC M5218L0
2-IC2A	EI-344291	IC ME654
2-IC3A	EI-337835	IC NE652
2-IC4A	EI-345759	IC LC7530
2-IC5A	EI-336761	IC LA6458S
2-TR5A to 8A	ET-328578	TR 2SC2320 E,F
2-TR9A	ET-201580	TR 2SD894
2-TR10A	ET-328437	TR 2SD1012-V F,G
2-TR11A to 17A	ET-328578	TR 2SC2320 E,F
2-TR18A to 20A	ET-200558	TR 2SA1115 E,F
2-TR22A, 23A	ET-200505	TR 2SC2603 E,F
2-TR24A	ET-309353	TR 2SC2274K E,F
2-TR25A, 26A	ET-310833	TR 2SC2274K E
2-TR28A, 29A	ET-200505	TR 2SC2603 E,F
2-TR30A	ET-328437	TR 2SD1012-V F,G
2-TR31A	ET-337258	TR 2SC1843 E,F
2-TR32A	ET-344275	TR 2SC2320L F,G
2-TR33A	ET-328578	TR 2SC2320 E,F
2-TR34A to 37A	ET-200505	TR 2SC2603 E,F
2-D2A to 4A	ED-301911	D SILICON H DS448
2-D6A	ED-348012	D ZENER V HZ3C-1S1
2-D8A	ED-301911	D SILICON H DS448
2-D9A	ED-308952	D GERMA V 1K34A-LR F07
2-D10A	ED-337575	D SILICON H GMA-01-4-BT T26
2-D11A	ED-345821	D ZENER V HZ7A-1S1
2-D12A, 14A	ED-337575	D SILICON H GMA-01-4-BT T26
2-VR1A	EV-315414	R S-FIX H D8 3P 203
2-VR2A	EV-322413	R S-FIX H D8 3P 302
2-VR3A	EV-315414	R S-FIX H D8 3P 203
2-VR4A	EV-336785	R S-FIX H TM8KV2-1S 3P 0.50W 104
2-VR5A	EV-315413	R S-FIX H D8 3P 503
2-RL1A	EP-337067	RELAY LEAD LAB2NS 2NO 18V
2-T1A	EO-345760	COIL OSC 1 32-5009-12 100kHz
2-FL1A	ER-337695	FILTER DB 201AK-005 100kHz
2-FL2A	ER-337696	FILTER DB 201AK-006 19kHz
2-FL3A	EO-336738	COIL TUN 1 102AK-004 19.8kHz
2-FL4A	EO-347162	COIL FIX 1 L-8 10MHz J
2-FL5A	EO-315758	COIL TUN 1 100S-431 100kHz
2-FR1A, 2A	ER-331188	⚠ R FUSE ERD2FC F10 1/4W 8R2J
2-R9A	ER-326616	R OMF H SNP FS 1W 681J
2-R57A	ER-315973	R CB V CUT RDS 1/4W 472J
2-C59A	EC-337777	C PP V F10 ECQ-F 272J 630DC
2-C61A	EC-334230	C STY V T05 CQT09 751J 50DC
2-C63A	EC-334198	C STY V T05 CQT09 271J 50DC
2-C67A	EC-314991	C STY V F05 CQF09 221J 50DC
2-C78A	EC-321971	C STY V T05 CQT09 681J 50DC
	MIC JACK P.C BOARD	
2-J1B	EJ-344276	PHONE J 3P HSJ1063-450 3.5

3. METER AND SYSTEM CONTROL P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
3-1	BA-T2050A040A	PC METER SYSCON BLK HX-M7R
	SYSTEM CONTROL P.C BOARD	
3-IC1A, 2A	EI-337008	IC LC7800
3-IC3A	EI-337009	IC LC4049B
3-IC4A	EI-345758	IC LM6402H-155
3-IC5A, 6A	EI-337009	IC LC4049B
3-IC7A	EI-330352	IC BA6109
3-TR1A to 3A	ET-200505	TR 2SC2603 E,F
3-TR4A	ET-200558	TR 2SA1115 E,F
3-TR5A, 6A	ET-200505	TR 2SC2603 E,F
3-TR7A	ET-332422	TR 2SB774 Q,R,S
3-TR8A	ET-200558	TR 2SA1115 E,F
3-TR9A	ET-200505	TR 2SC2603 E,F
3-TR10A, 11A	ET-200558	TR 2SA1115 E,F
3-D1A	ED-337575	D SILICON H GMA-01-4-BT T26
3-D2A	ED-338454	D ZENER V HZ9C-2S1
3-D3A to 5A	ED-337575	D SILICON H GMA-01-4-BT T26
3-D6A	ED-301911	D SILICON H DS448
3-D7A to 9A	ED-337575	D SILICON H GMA-01-4-BT T26
3-VR1A	EV-522652	R S-FIX V V8K1-1 3P 105
3-VR2A	EV-464264	R S-FIX V V8K1-1 3P 503
3-CR1A	EC-338341	C COMP 05-0034
3-CR2A	ER-347164	R COMP RKC 1/8 B8 223J
3-CR3A	ER-345757	RCOMP 01-0517
3-X1A	EI-337017	OSC CE CSB800A 0.8MHz
	METER P.C BOARD	
3-IC1B	EI-337845	IC BA6146 M
3-IC3B to 5B	EI-345765	IC LB1292
3-TR1B to 3B	ET-200558	TR 2SA1115 E,F
3-D1B, 2B	ED-337093	D LED GL-9NG4 GRN
3-D3B	ED-328791	D LED GL-9PR4 RED
3-SW1B to 13B	ES-336780	SW TACT KHH10902
3-SW14B, 15B	ES-337843	SW PUSH ESB-64501 02-2
3-SW16B	ES-344281	SW SLIDE SSY023
3-IN1B	EM-345764	IND FL BG-132Z DOUBLE
	REMOTE CONTROL P.C BOARD	
3-J5C	EJ-344282	DIN J TCS1891-01-1011 P 8P

4. POWER SUPPLY P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
4-IC1	EI-337529	⚠ IC TA78L005AP
4-TR1	ET-200505	⚠ TR 2SC2603 E,F
4-TR2	ET-336941	⚠ TR 2SD313 E,F
4-TR3	ET-200505	TR 2SC2603 E,F
4-TR4	ET-200558	TR 2SA1115 E,F
4-TR5	ET-337188	⚠ TR 2SB774 P,Q
4-D1	EI-330391	⚠ IC TC4050BP
4-D2	ED-330319	⚠ D SILICON DBA10B 100/1.0A
4-D3	ED-338316	D ZENER V HZ22-1S1
4-D4	ED-306109	D SILICON W03B 100/1.0A
4-D5	ED-337259	D ZENER V HZ6A-3S1
4-D6	ED-200468	D SILICON V DS448-VB6
4-D7	ED-343958	D ZENER V HZ5A-2S1
4-D8	ED-345822	D ZENER V HZ6C-3S1
4-SW1	ES-337902	⚠ SW PUSH SDLD1P 01-1
4-SW2	ES-344274	⚠ SW SELECTOR HXW0244-01-060 01-4 (U)
4-R3	ER-343959	⚠ R OMF HN S12 FS 1W 122J
4-FR1	ER-346801	⚠ R FUSE ERD2FC 1/4W 18R0G
4-C1U	EC-320548	⚠ C CE V F 103Z 250AC (U,J,C,A)
4-C1E	EC-338411	⚠ C CE V FZ 103P 400AC (E,V,B,S)
4-C6,10	EC-201761	C EC V CUT USM 472M 16.0DC



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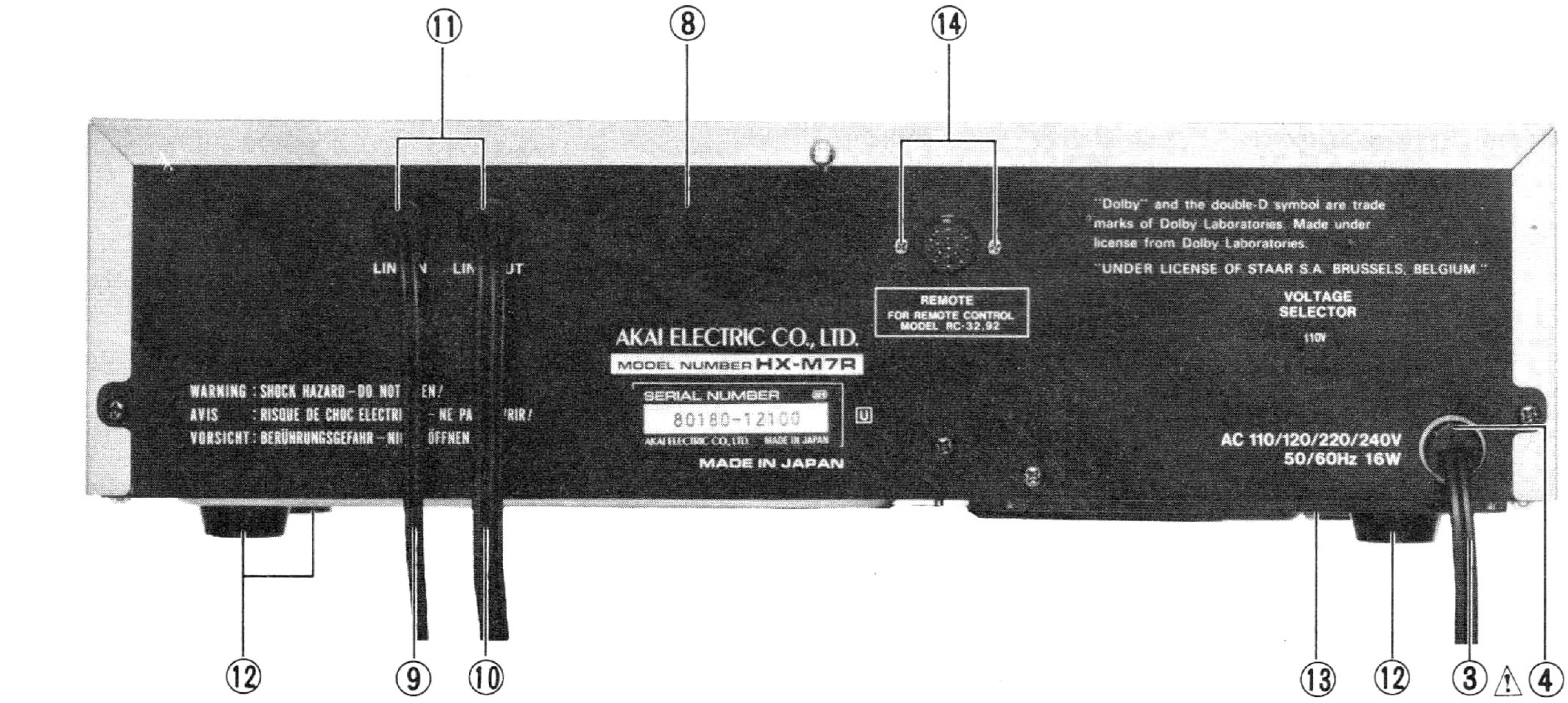

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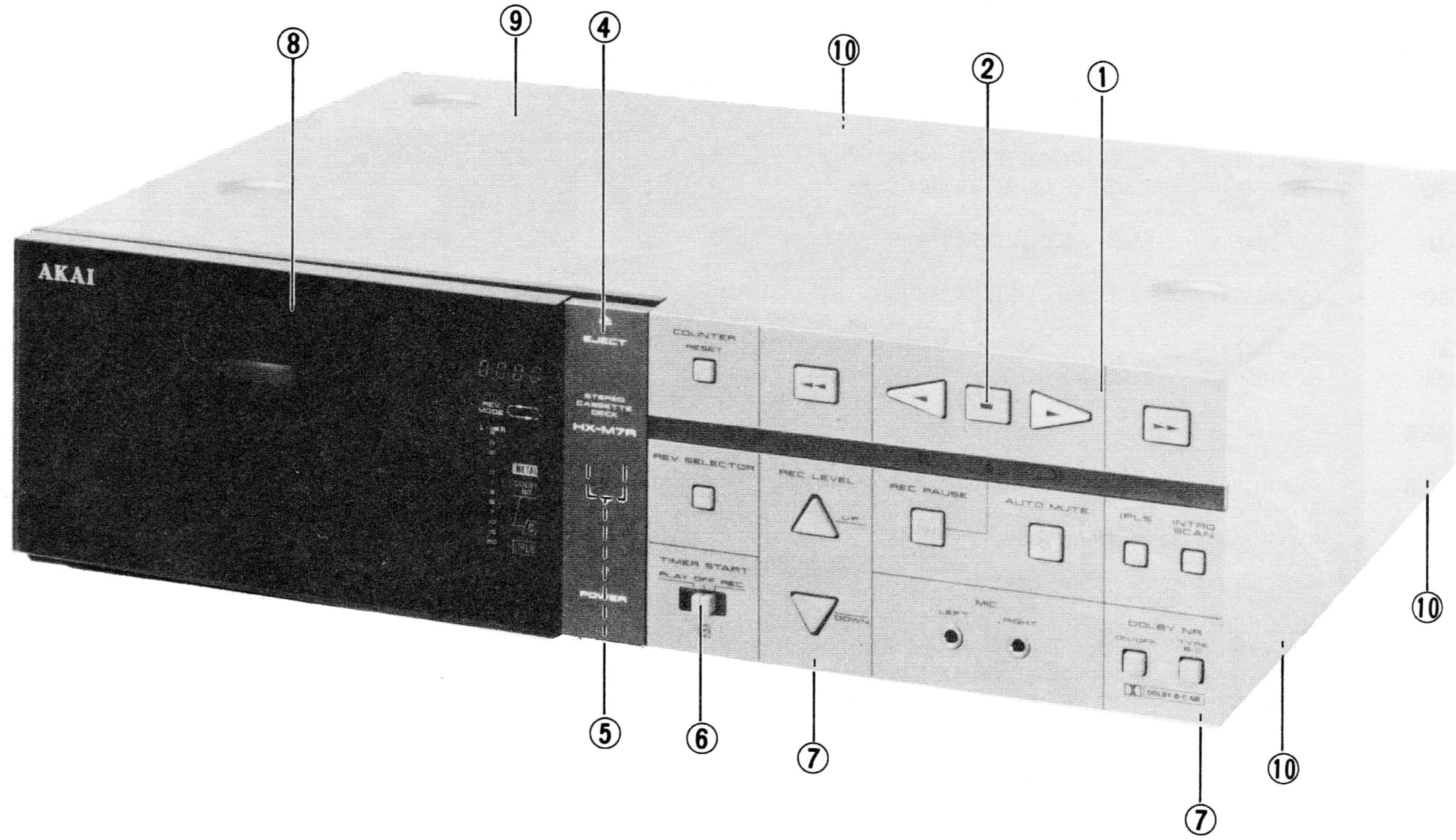
REMOTE
FOR REMOTE CONTROL MODEL RC-32,92
VOLTAGE SELECTOR
AKAI ELECTRIC CO., LTD.
MODEL NUMBER HX-M7R
SERIAL NUMBER
80180-12100
MADE IN JAPAN
AC 110/120/220/240V
50/60Hz 16W
⑫ ⑨ ⑩ ⑬ ⑫ ③ ④

5. ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
5-1U	BT-345761	⚠ TRANS POWER T2050 (U) (T1)
5-1J	BT-345762	⚠ TRANS POWER T2050 (J) (T1)
5-1A	BT-345763	⚠ TRANS POWER T2050 (A,C) (T1)
5-1E	BT-345753	⚠ TRANS POWER T2050 (E,V) (T1)
5-1B	BT-345754	⚠ TRANS POWER T2050 (B,S) (T1)
5-2	ZS-312116	ST BID40×20STL CMT
5-3U	EW-374894	⚠ AC CORD 2 CORES VM-0129A J (U)
5-3J	EW-524845	⚠ AC CORD 2 CORES VM1165B J (J)
5-3C	EW-305691	⚠ AC CORD 2 CORES KP-8, SPT-1 UC (C,A)
5-4	SZ-344264	BUSH CORD KF-41 (U,J,C,A)
5-5x	EJ-310567	⚠ SOCKET INLET 0378PC-GS E 2P (J2)(E,V,B,S)
5-6XE	EW-638144	⚠ AC CORD 2CORE VM0364/VM0305 E (E,V)
5-6XB	EW-302995	⚠ AC CORD 2 CORES VM-0112 B (B)
5-6XS	EW-322401	⚠ AC CORD 2 CORES KP-560/S-15 S (S)
5-7	ZS-337783	PT CTS30×08STL CMT
5-8U	SP-343089H	PANEL REAR HX-M7R (U)
5-8J	SP-343089J	PANEL REAR HX-M7R (J)
5-8C	SP-343089K	PANEL REAR HX-M7R (C)
5-8A	SP-343089L	PANEL REAR HX-M7R (A)
5-8E	SP-343089M	PANEL REAR HX-M7R (E)
5-8V	SP-343089N	PANEL REAR HX-M7R (V)
5-8B	SP-343089P	PANEL REAR HX-M7R (B,S)
5-9	EW-345766	CORD DEC-002 PIN×2
5-10	EW-345768	CORD SAE-032 3P AUDIO
5-11	SZ-344264	BUSH CORD KF-41
5-12	SA-202118	FOOT
5-13	SA-336217B	FOOT (B)
5-14	ZS-608185	PAN26×04STL BNI
5-15U	EF-309387	⚠ FUSE TSC A 250V 1A (U,J)
5-15C	EF-310229	⚠ FUSE TSC 125V 1A (C,A)
5-15E	EF-623103	⚠ FUSE SEMKO T 250V 1A (E,V,B,S)
5-16U	EF-306124	⚠ FUSE TSC A 250V 0.63A (U,J)
5-16C	EF-305703	⚠ FUSE TSC 125V 0.63A (C,A)
5-16E	EF-601942	⚠ FUSE SEMKO T 250V 0.63A (E,V,B,S)
5-17x	ZW-305013	RV POP32 (A)



6. FINAL ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-1	BD-T2050A050B	PANEL FRONT BLK HX-M7R (A)
6-2	SK-343149B	RUBBER BUTTON SHEET OPERATION
6-3x	SE-343148	BUTTON SHEET ESCUTCHEON
6-4	SK-343096B	KNOB POWER HX-M7R
6-5	ZG-313182	SP C-4.5/0.35-25.0 C-029
6-6	SK-343090	KNOB SLIDE
6-7	ZS-336351	T2BR30 × 08STL N13
6-8	BD-B343092	LID PART
6-9	BC-343094	COVER UPPER
6-10	ZS-343159	T2BR30×06STL NI3

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PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.
BA-T2050A020A	2-1	EI-344291	2-IC2A	ET-310341	1-85	SK-343090	6-6
BA-T2050A040A	3-1	EI-345758	3-IC4A	ET-310833	2-TR25A	SK-343096B	6-4
BC-343094	6-9	EI-345759	2-IC4A	ET-310833	2-TR26A	SK-343149B	6-2
BD-B343092	6-8	EI-345765	3-IC3B	ET-311977	1-84	SP-343089H	5-8U
BD-B344049A1	1-79	EI-345765	3-IC4B	ET-328437	2-TR10A	SP-343089J	5-8J
BD-T2050A050B	6-1	EI-345765	3-IC5B	ET-328437	2-TR30A	SP-343089K	5-8C
BF-344029	1-64	EJ-310567	5-5X	ET-328578	2-TR6A	SP-343089L	5-8A
BH-T2045A030A	1-2	EJ-344276	2-J1B	ET-328578	2-TR7A	SP-343089M	5-8E
BL-T2045A050A	1-80	EJ-344282	3-J5C	ET-328578	2-TR8A	SP-343089N	5-8V
BL-T2045A060A	1-81	EL-348214	1-113	ET-328578	2-TR12A	SP-343089P	5-8B
BM-B604490	1-105	EM-345764	3-IN1B	ET-328578	2-TR14A	SP-344057	1-72
BM-B604491	1-109	EO-315758	2-FL5A	ET-328578	2-TR15A	SZ-344264	5-11
BR-344098	1-57	EO-336738	2-FL3A	ET-328578	2-TR16A	SZ-344264	5-4
BT-345753	5-1E	EO-345760	2-T1A	ET-328578	2-TR17A	TC-344062	1-97
BT-345754	5-1B	EO-347162	2-FL4A	ET-328578	2-TR5A	TC-344097	1-50
BT-345761	5-1U	EP-337067	2-RL1A	ET-328578	2-TR13A	ZG-312923	1-36
BT-345762	5-1J	ER-315973	2-R57A	ET-328578	2-TR33A	ZG-312925	1-40
BT-345763	5-1A	ER-326616	2-R9A	ET-328578	2-TR11A	ZG-312945	1-92
BZ-T2045A020C	1-1	ER-331188	2-FR1A	ET-332422	3-TR7A	ZG-313182	6-5
BZ-T2045A040A	1-28	ER-331188	2-FR2A	ET-336941	4-TR2	ZG-336615	1-73
EA-343156	1-7	ER-337695	2-FL1A	ET-337188	4-TR5	ZG-343193	1-43
EC-201761	4-C10	ER-337696	2-FL2A	ET-337258	2-TR31A	ZG-343195	1-33
EC-201761	4-C6	ER-343959	4-R3	ET-344102	1-111	ZG-344012	1-13
EC-314991	2-C67A	ER-345757	3-CR3A	ET-344102	1-112	ZG-344013	1-19
EC-320548	4-C1U	ER-346801	4-FR1	ET-344275	2-TR32A	ZG-344031	1-55
EC-321971	2-C78A	ER-347164	3-CR2A	EV-315413	2-VR5A	ZG-344058A	1-75
EC-334198	2-C63A	ES-336780	3-SW13B	EV-315414	2-VR1A	ZG-344064	1-63
EC-334230	2-C61A	ES-336780	3-SW9B	EV-315414	2-VR3A	ZG-344089	1-83
EC-337777	2-C59A	ES-336780	3-SW5B	EV-322413	2-VR2A	ZG-344090	1-91
EC-338341	3-CR1A	ES-336780	3-SW1B	EV-336785	2-VR4A	ZG-344091	1-103
EC-338411	4-C1E	ES-336780	3-SW2B	EV-464264	3-VR2A	ZG-344939	1-74
ED-200468	4-D6	ES-336780	3-SW3B	EV-522652	3-VR1A	ZG-345660	1-86
ED-301911	2-D2A	ES-336780	3-SW4B	EW-302995	5-6XB	ZG-345661	1-87
ED-301911	2-D3A	ES-336780	3-SW6B	EW-305691	5-3C	ZG-349016	1-41
ED-301911	2-D4A	ES-336780	3-SW7B	EW-322401	5-6XS	ZS-245147	1-8
ED-301911	2-D8A	ES-336780	3-SW8B	EW-345766	5-9	ZS-312116	5-2
ED-301911	3-D6A	ES-336780	3-SW10B	EW-345768	5-10	ZS-321194	1-78
ED-306109	4-D4	ES-336780	3-SW11B	EW-374894	5-3U	ZS-336351	6-7
ED-308952	2-D9A	ES-336780	3-SW12B	EW-524845	5-3J	ZS-336613	1-62
ED-310340	1-96	ES-336814	1-98	EW-638144	5-6XE	ZS-337783	5-7
ED-328791	3-D3B	ES-337843	3-SW15B	HR-344103	1-6	ZA-343113	1-71
ED-330319	4-D2	ES-337843	3-SW14B	HZ-B344006	1-5	ZS-343125	1-21
ED-337093	3-D1B	ES-337902	4-SW1	HZ-B344009	1-4	ZS-343136	1-45
ED-337093	3-D2B	ES-344101	1-90	HZ-344011	1-9	ZS-343159	6-10
ED-337259	4-D5	ES-344104	1-20	HZ-344015	1-22	ZS-344001	1-10
ED-337575	2-D10A	ES-344253	1-100	HZ-344093	1-26	ZS-345314	1-54
ED-337575	2-D12A	ES-344253	1-102	MB-344028	1-67	ZS-345773	1-23
ED-337575	2-D14A	ES-344257	1-99	MB-344034	1-39	ZS-432843	1-17
ED-337575	3-D1A	ES-344257	1-101	MB-344041	1-68	ZS-477876	1-106
ED-337575	3-D3A	ES-344274	4-SW2	MB-344042	1-69	ZS-524812	1-24
ED-337575	3-D4A	ES-344281	3-SW16B	MB-344043	1-53	ZS-592378	1-110
ED-337575	3-D5A	ET-200505	2-TR23A	MB-344088	1-107	ZS-608095	1-25
ED-337575	3-D8A	ET-200505	2-TR22A	MB-345139	1-32	ZS-608185	5-14
ED-337575	3-D9A	ET-200505	2-TR28A	MB-349091	1-88	ZW-268222	1-34
ED-337575	3-D7A	ET-200505	2-TR29A	MI-344094	1-30	ZW-270088	1-46
ED-338316	4-D3	ET-200505	2-TR36A	MI-344095	1-31	ZW-270088	1-89
ED-338454	3-D2A	ET-200505	2-TR37A	ML-344032	1-37	ZW-273734	1-11
ED-343958	4-D7	ET-200505	2-TR35A	ML-344033	1-38	ZW-305013	5-17x
ED-345821	2-D11A	ET-200505	2-TR34A	ML-344053	1-77	ZW-305546	1-51
ED-345822	4-D8	ET-200505	3-TR1A	ML-344096	1-49	ZW-305546	1-93
ED-348012	2-D6A	ET-200505	3-TR2A	ML-344286	1-76	ZW-329422	1-35
EF-305703	5-16C	ET-200505	3-TR3A	MP-336153	1-82	ZW-343120	1-95
EF-306124	5-16U	ET-200505	3-TR5A	MR-B344076	1-94	ZW-343120	1-48
EF-309387	5-15U	ET-200505	3-TR6A	MR-344037	1-52	ZW-343120	1-58
EF-310229	5-15C	ET-200505	3-TR9A	MR-344080	1-104	ZW-344047	1-65
EF-601942	5-16E	ET-200505	4-TR3	MV-666887	1-42	ZW-344639A	1-27
EF-623103	5-15E	ET-200505	4-TR1	MZ-B344008	1-3	ZW-344639B	1-27
EI-330352	3-IC7A	ET-200558	2-TR18A	MZ-B344018	1-29	ZW-344639C	1-27
EI-330391	4-D1	ET-200558	2-TR19A	MZ-344002	1-16	ZW-344639D	1-27
EI-336761	2-IC5A	ET-200558	2-TR20A	MZ-344004	1-12	ZW-344639E	1-27
EI-337008	3-IC1A	ET-200558	3-TR11A	MZ-344007	1-18	ZW-344639F	1-27
EI-337008	3-IC2A	ET-200558	3-TR10A	MZ-344019	1-60	ZW-344639G	1-27
EI-337009	3-IC3A	ET-200558	3-TR1B	MZ-344020	1-61	ZW-344639H	1-27
EI-337009	3-IC6A	ET-200558	3-TR2B	MZ-344036	1-47	ZW-344639J	1-27
EI-337009	3-IC5A	ET-200558	3-TR3B	MZ-344039	1-44	ZW-349046	1-59
EI-337017	3-X1A	ET-200558	3-TR8A	MZ-344083	1-108	ZW-349047	1-66
EI-337228	2-IC1A	ET-200558	3-TR4A	MZ-344099	1-70	ZW-381644	1-56
EI-337529	4-IC1	ET-200558	4-TR4	SA-202118	5-12	ZW-391397	1-15
EI-337835	2-IC3A	ET-201580	2-TR9A	SA-336217B	5-13	ZW-618884	1-14
EI-337845	3IC1B	ET-309353	2-TR24A	SE-343148	6-3X		