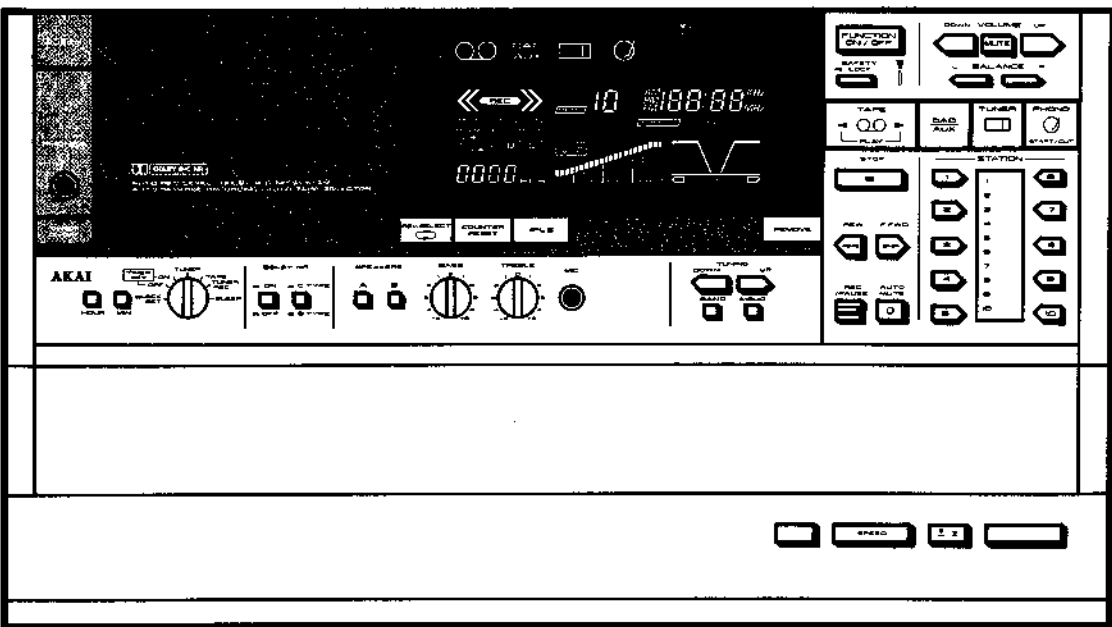


F-7/L
(FD-7/L,
FP-7)

AKAI SERVICE MANUAL



Hi-Fi COMPOSITE SYSTEM

MODEL F-7/L (FD-7/L, FP-7)

This manual is also applicable to the turntable Model FP-7 in the composite system F-5/L.

ABBREVIATIONS FOR SERVICE MANUAL MODEL F-7/L (FD-7/L, FP-7)

ABBREVIATION	EXPLANATION
AF	Audio Frequency
AM	Arm Motor
AR	Anti Recording
CM	Cam Motor
DAD	Digital Audio Disc
EQ	EQualizer
F	Filament
FLD	FLuorescent Display
"H", H	High (referring to voltage)
INH	INHibit
INT	INTerrupt
IPLS	Instant Programme Locating System
"L", L	Low (referring to voltage)
MIN	MINute
MM	Main Motor
NC	No Connection
NP	No Pins
O/C	Open/Close
PLL	Phase Locked Loop
S/C	Start/Cut
SCK	Serial CloCk
SEG	SEGment
SENS	SENSitivity
SI	Serial Input
SO	Serial Output
SW	SWitch



Hi-Fi COMPOSITE SYSTEM

MODEL F-7/L (FD-7/L, FP-7)

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SECTION 2	MODEL FP-7 SERVICE MANUAL.....	27
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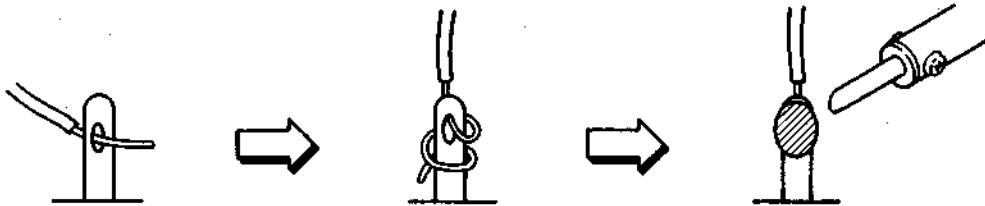
SAFETY INSTRUCTIONS

SAFETY CHECK AFTER SERVICING

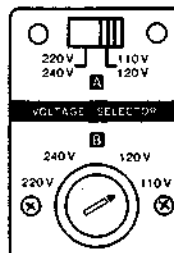
Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 Mohms, but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for **C** or **A**, specified insulation resistance should be more than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

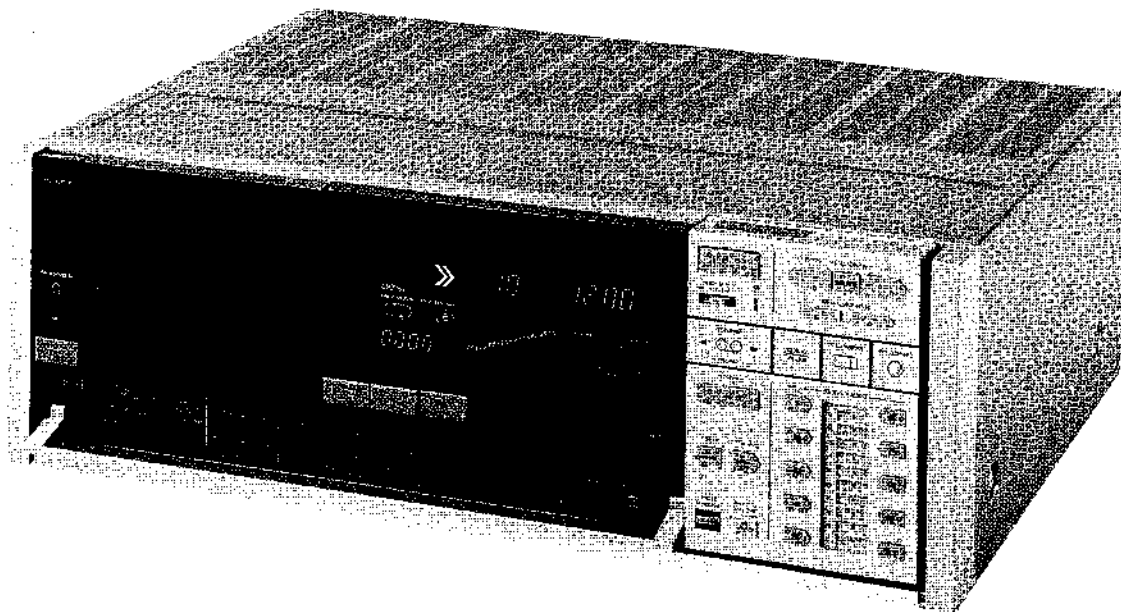
PRECAUTIONS DURING SERVICING

1. Parts identified by the Δ 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 (FD-7/L)
Models for Canada, USA, Europe, UK and Australia are not equipped with this facility. Each machine is preset at the factory according to destination, but some machine can be set to 110V, 120V, 220V or 240V. If your machine's voltage can be converted:
 - 1) Disconnect the power cord.
 - 2) Move the VOLTAGE SELECTOR A and B located on the rear panel with a screwdriver until the correct voltage is indicated.





SECTION 1

SERVICE MANUAL

MODEL FD-7/L

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For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I. SPECIFICATIONS

AMPLIFIER SECTION

RATED POWER OUTPUT (2 channel driven)	45 W per channel, minimum RMS, at 8 ohms from 20 to 20,000 Hz with no more than 0.01% total harmonics distortion 50 W into 8 ohms at 1 kHz, with no more than 0.01% total harmonic distortion
MUSIC POWER	121 W per channel, at 8 ohms
INPUT SENSITIVITY	Phono: 2.5 mV/47 kohms AUX: 230 mV/47 kohms
OUTPUT	REC OUT: 150 mV SPEAKERS A or B 6Ω ~ 16Ω, A + B 12Ω ~ 16Ω

TUNER SECTION

FREQUENCY RANGES	FM 87.4 to 108.1 MHz AM 522 to 1,611 kHz (9k step) or 630 to 1,610 kHz (10k step)	L model FM 87.4 to 108.1 MHz MW 522 to 1,611 kHz LW 146 to 353 kHz
USABLE SENSITIVITY	FM (IHF) 11.2 dBf AM 300 μV/m	FM (IHF) 11.2 dBf MW 300 μV/m LW 300 μV/m
SIGNAL TO NOISE RATIO	FM 75 dB (MONO)/65 dB (STEREO) AM 40 dB	FM 75 dB (MONO)/65 dB (STEREO) MW 40 dB LW 35 dB
STEREO SEPARATION	FM (1 kHz) 45 dB	FM (1 kHz) 45 dB
ANTENNAS	FM: EXT. ANT 75 ohms unbalanced AM: (MW/LW) Loop ANT.	

CASSETTE DECK SECTION

TRACK SYSTEM	4 track 2 channel stereo
MOTORS	Electronically speed controlled DC motor (CAPSTAN) × 1, DC MOTOR (CAM) × 1
FREQUENCY RESPONSE	Metal 30 to 17,000 Hz ±3 dB Chrome 30 to 16,000 Hz ±3 dB Normal 30 to 15,000 Hz ±3 dB
SIGNAL TO NOISE RATIO	56 dB Dolby C type NR ON: Improves up to 15 dB at 500 Hz, 20 dB at 1 kHz to 10 kHz Dolby B type NR ON: Improves up to 5 dB at 1 kHz, 10 dB above 5 kHz
WOW AND FLUTTER	0.05% (WRMS), 0.09% (DIN 45500)
DISTORTION	0.8%
MIC INPUT	1.5 mV

HI-FI COMPOSITE SYSTEM F-7/L

POWER REQUIREMENTS	120 V 60 Hz for U.S.A. and Canada 220 V 50 Hz for European countries except U.K. 240 V 50 Hz for U.K. and Australia 110/120/220/240 V switchable, 50/60 Hz for other countries
DIMENSIONS (FD-7/L+FP-7)	440(W) × 250(H) × 320(D) mm (17.3 × 9.8 × 12.6 inches)
WEIGHT (FD-7/L+FP-7)	18.6 kg (41 lbs)
AMP-TUNER-DECK (FD-7/L) DIMENSIONS WEIGHT	440(W) × 150(H) × 320(D) mm (17.3 × 5.9 × 12.6 inches) 10.6 kg (23.4 lbs)

WIRELESS REMOTE CONTROL (TRANSMITTER)

SYSTEM	Infrared Ray, PCM System
AREA OF OPERATION	7 m (on axis)
DIRECTIVITY	60° (at 4 m)
OPERATION TIME	10,000 times
POWER REQUIREMENT	DC 3V (R6 or AA size dry battery × 2)
DIMENSIONS	100 × 25 × 131 mm
WEIGHT	150 g (without batteries)

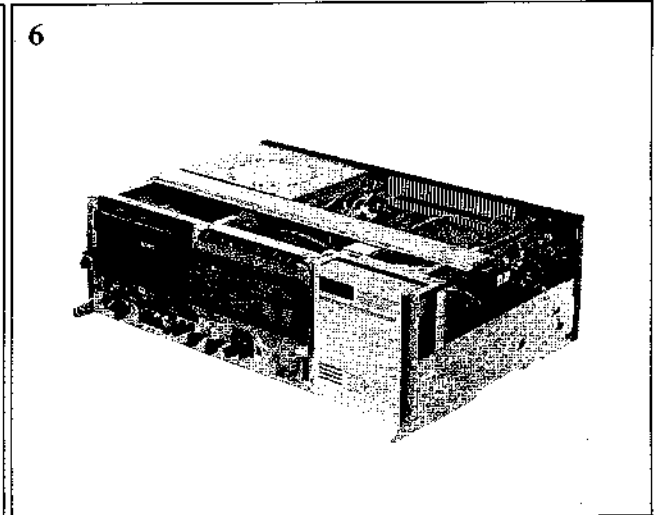
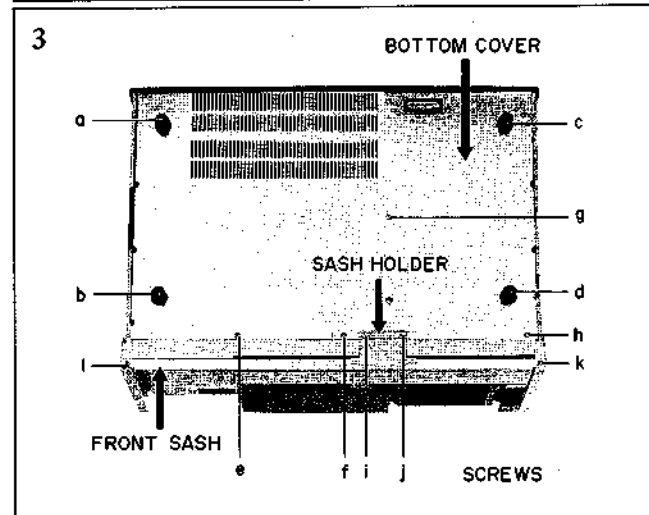
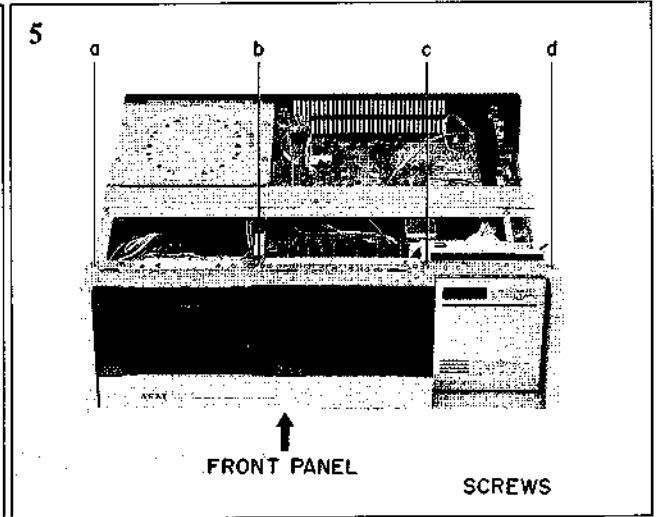
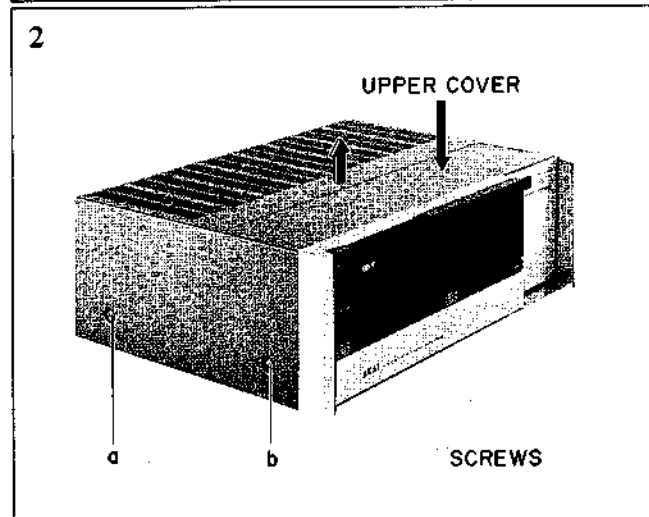
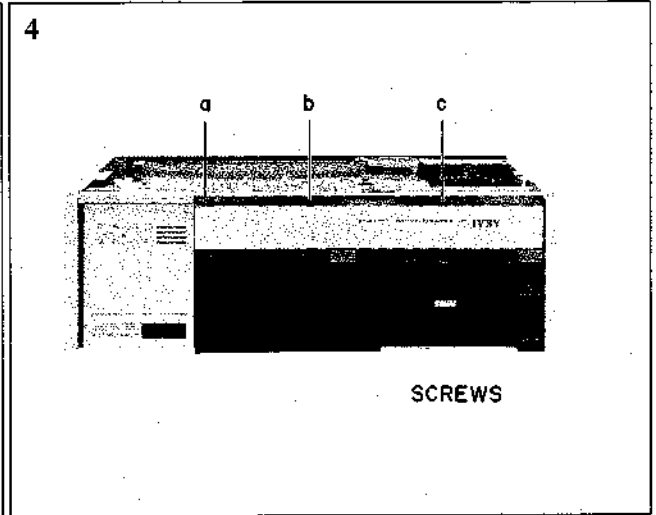
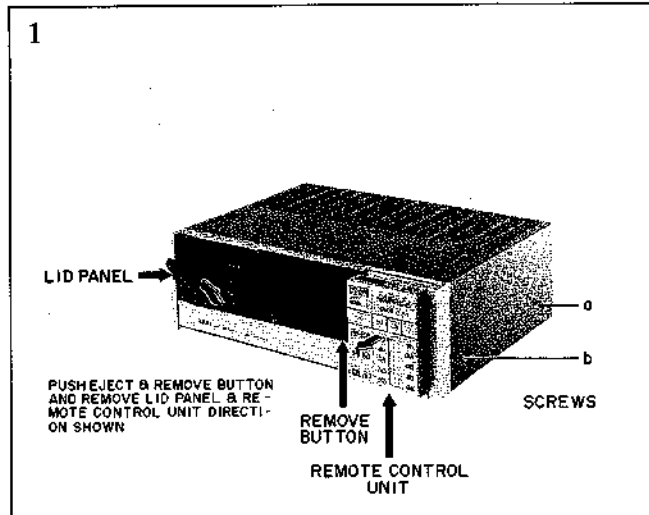
* For improvement purposes, specifications and design are subject to change without notice.

* Noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.

"Dolby" 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.



III. CONTROLS

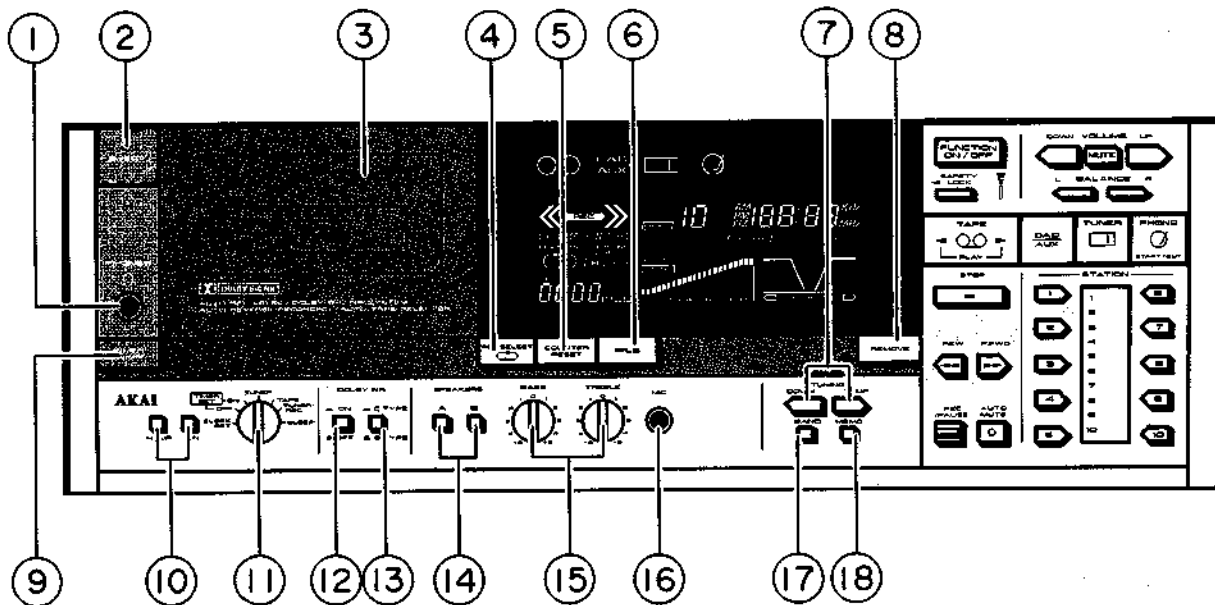


Fig. 3-1 Front View

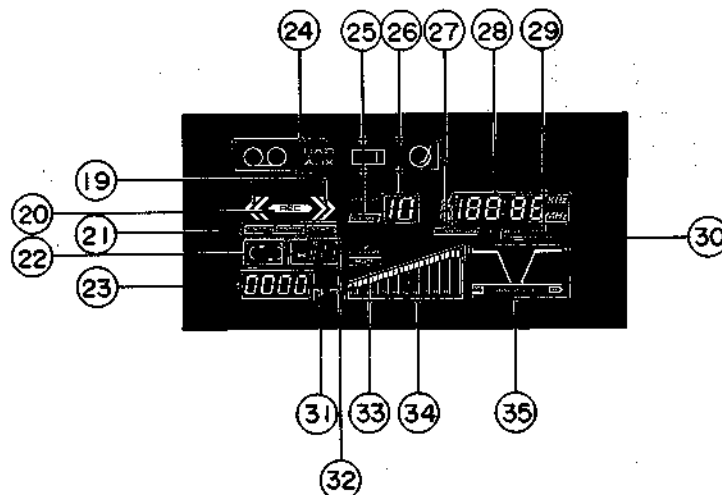


Fig. 3-2 Display

- | | |
|--|---|
| 1. PHONES JACK | 19. TAPE TRAVEL INDICATORS |
| 2. EJECT BUTTON | 20. REC INDICATOR |
| 3. CASSETTE HOLDER | 21. TAPE POSITION INDICATORS |
| 4. REV. MODE SELECTOR
(One-way, One-cycle, Continuous) BUTTON | 22. REV. MODE INDICATOR |
| 5. COUNTER RESET BUTTON | 23. TAPE COUNTER |
| 6. IPLS SWITCH | 24. INPUT SELECTOR INDICATORS |
| 7. TUNING (UP/DOWN) BUTTONS | 25. MEMO INDICATOR |
| 8. REMOVE BUTTON | 26. PRESET STATION INDICATORS |
| 9. TIMER ON/OFF SWITCH | 27. TIMER ON INDICATOR |
| 10. TIMER ADJUSTMENT (HOUR/MIN) BUTTONS | 28. TIME AND TUNER FREQUENCY INDICATORS |
| 11. TIMER MODE SELECTOR | 29. STEREO INDICATOR |
| 12. DOLBY ON/OFF SWITCH | 30. TUNED INDICATOR |
| 13. DOLBY B/C SWITCH | 31. IPLS INDICATOR |
| 14. SPEAKERS (A/B) SELECTOR BUTTONS | 32. DOLBY NR (B/C) INDICATOR |
| 15. TONE CONTROL VOLUMES (BASS/TREBLE) | 33. MUTE INDICATOR |
| 16. MICROPHONE JACK | 34. VOLUME INDICATOR |
| 17. BAND SELECTOR BUTTON | 35. BALANCE INDICATOR |
| 18. TUNING MEMO (MEMORY) BUTTON | |

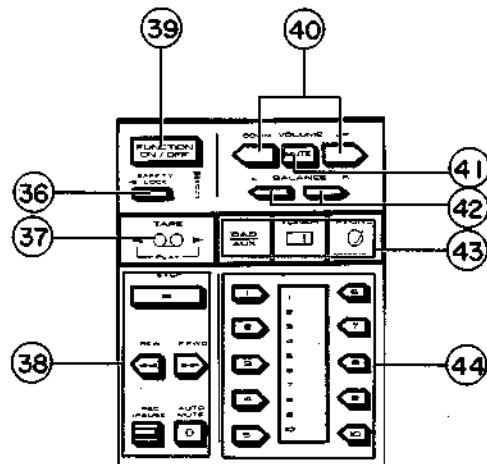


Fig. 3-3 Remote Control Unit

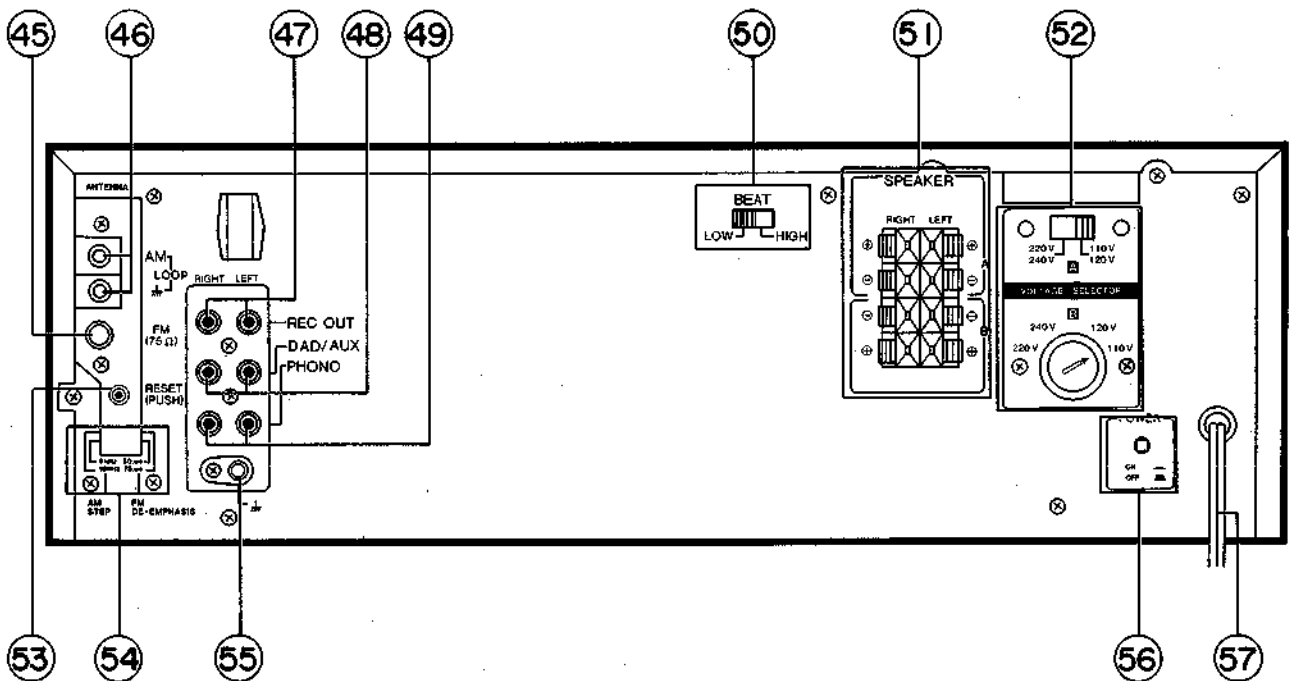


Fig. 3-4 Rear View

- | | |
|--------------------------------------|--|
| 36. SAFETY LOCK SWITCH | 45. FM ANTENNA TERMINAL |
| 37. TAPE PLAY BUTTON | 46. AM ANTENNA TERMINALS |
| 38. CASSETTE DECK OPERATION BUTTONS | 47. REC OUT JACKS |
| 39. FUNCTION (ON/OFF) SWITCH | 48. DAD/AUX JACKS |
| 40. VOLUME CONTROL (UP/DOWN) BUTTONS | 49. PHONO JACKS |
| 41. MUTE BUTTON | 50. BEAT CANCEL (LOW/HIGH) SWITCH |
| 42. BALANCE CONTROL (L/R) BUTTONS | 51. SPEAKER TERMINALS |
| 43. INPUT SELECTOR BUTTONS | 52. VOLTAGE SELECTORS (A/B): U MODEL ONLY |
| 44. PRESET STATION BUTTONS | 53. RESET BUTTON |
| | 54. AM STEP/FM DE-EMPHASIS SELECTOR SWITCH |
| | 55. GROUND TERMINAL |
| | 56. POWER SWITCH |
| | 57. AC POWER CORD |

IV. PRINCIPAL PARTS LOCATION

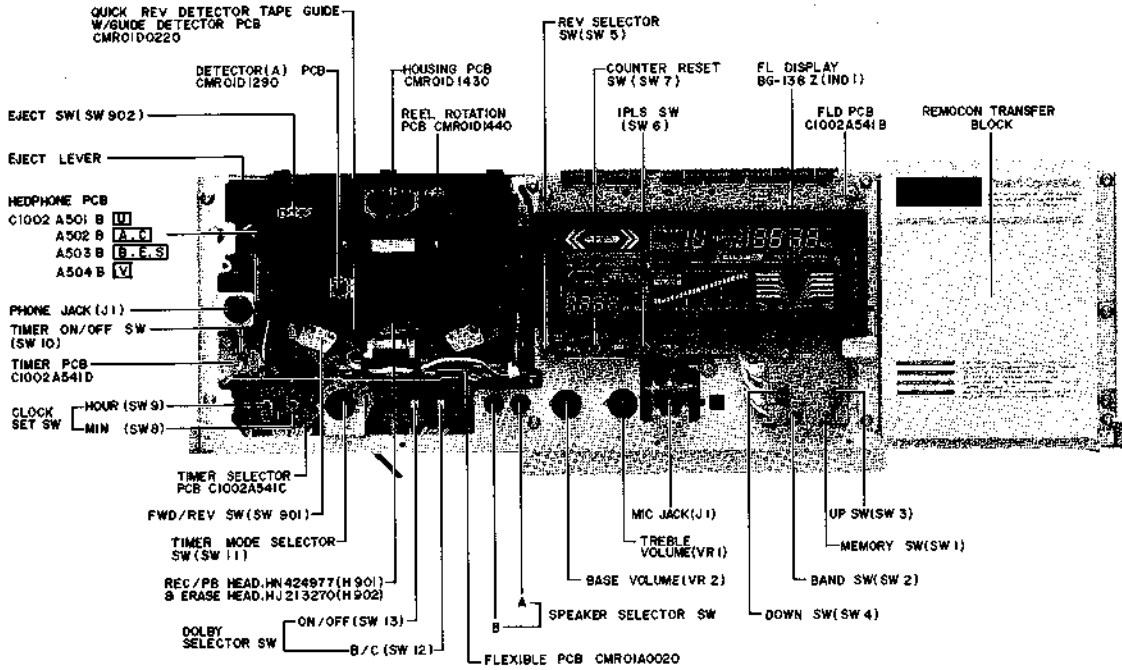


Fig. 4-1 Front View

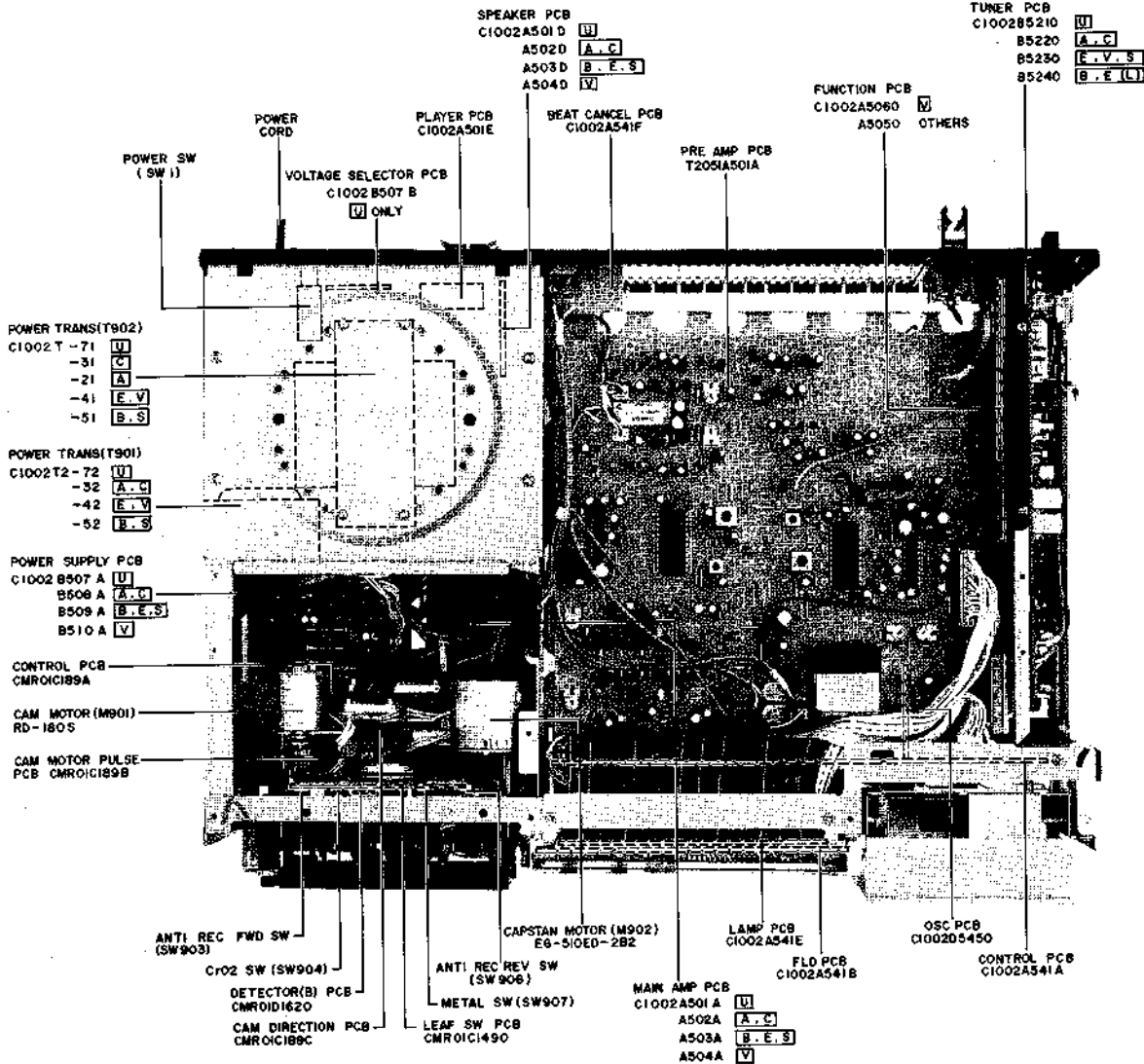


Fig. 4-2 Top View

V. MECHANICAL ADJUSTMENT

5-1 PINCH ROLLER PRESSURE MEASUREMENT (Refer to Fig. 5-1)

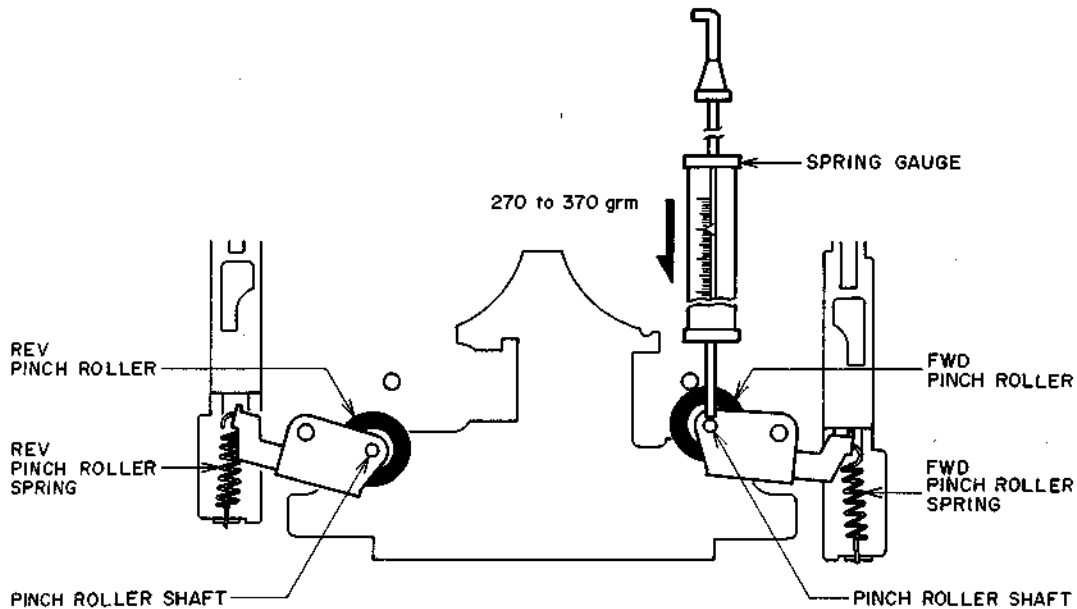


Fig. 5-1

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.

5-2 WINDING TORQUE MEASUREMENT IN EACH MODE (Refer to Fig. 5-2)

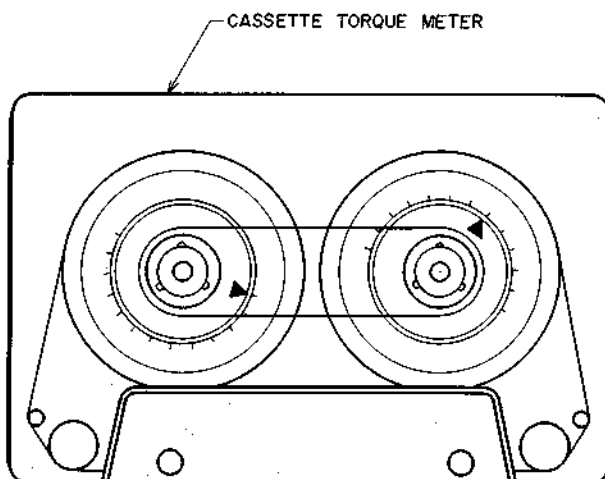


Fig. 5-2

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

5-3 TAPE SPEED ADJUSTMENT (Refer to Fig. 5-3)

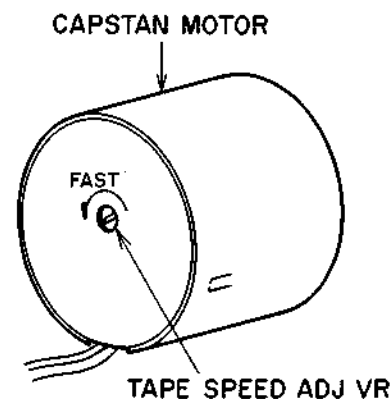


Fig. 5-3 Location of Tape Speed Adjustment Variable Resistor

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.

VI. HEAD ADJUSTMENT

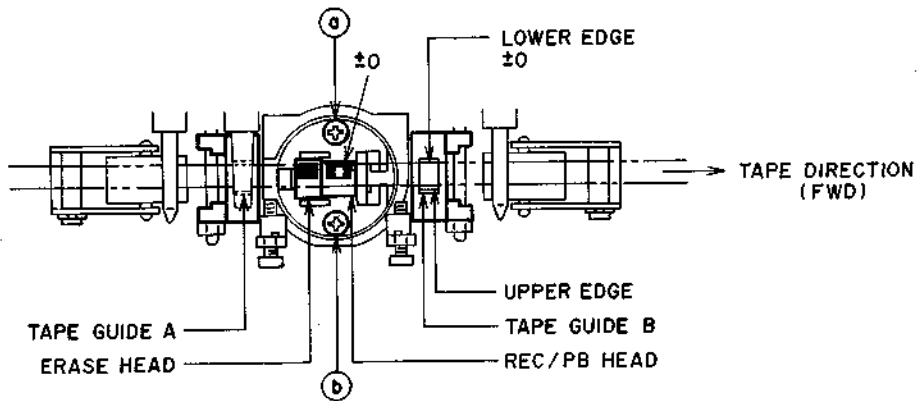


Fig. 6-1

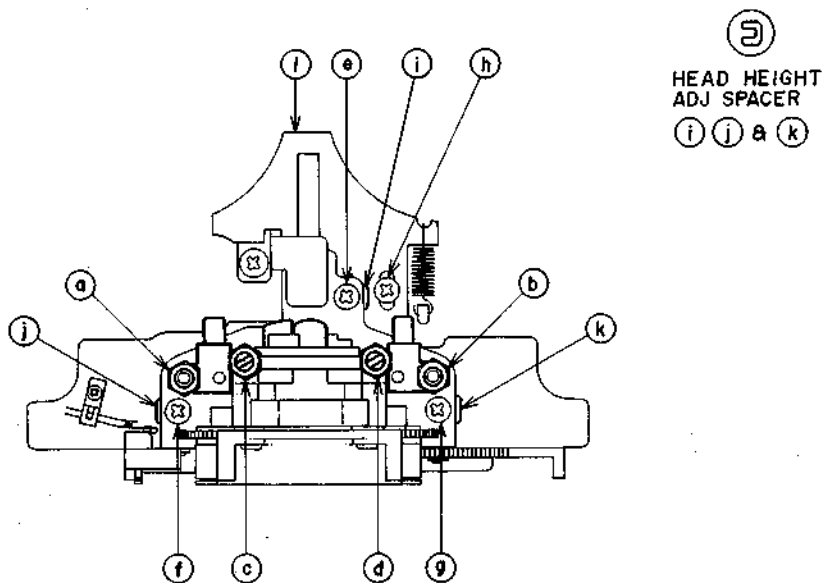


Fig. 6-2

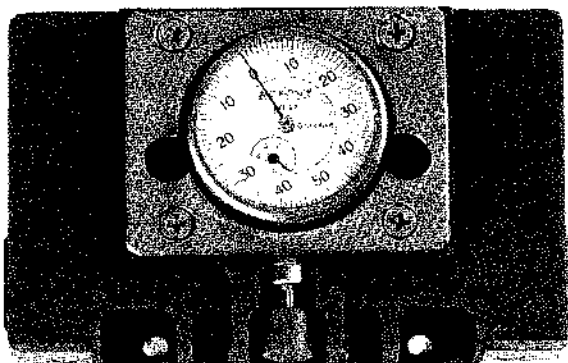


Fig. 6-3 Cassette Head Projection Gauge (AJ-751180)



Fig. 6-4 Mirror Cassette Tape (AJ-751178)

6-1 TAPE GUIDE ADJUSTMENT

(Refer to Figs. 6-1, 6-2 & 6-4)

- 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 (a) and (b) in Fig. 6-2, 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.

6-2 REC/PB HEAD AZIMUTH

ADJUSTMENT (Refer to Fig. 6-2)

Playback a 10 kHz Head Azimuth Adjustment Tape (AT-750778) and adjust the screws (c) (FWD direction) and (d) (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.)

6-3 HEAD HEIGHT ADJUSTMENT

(Refer to Figs. 6-1 & 6-2)

This adjustment is not necessary since this model FD-7/L 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 6-2.
- 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 (a) & (b) (shown Fig. 6-2) 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 (i), (j) & (k). (The thicknesses of these spacers are (i) = 0.45 mm, (j) & (k) = 0.3 mm).
Loosen the screws (e), (f) & (g) 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 (a) & (b) in Fig. 6-1 for easy replacement.

6-4 HEAD BLOCK PROJECTION

ADJUSTMENT (Refer to Figs. 6-2 & 6-3)

Use a Cassette head Projection Gauge (AT-751180) and select FWD or REV play mode.

Loosen the screw (h) and adjust Chassis Head Part (i) so that the gauge indication at the time is $3.2 \pm \begin{matrix} 0.15 \\ 0.05 \end{matrix}$ mm.

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

VII. ELECTRICAL ADJUSTMENT

7-1 SYSTEM CONTROL P.C BOARD ADJUSTMENT (Refer to Figs. 7-1 & 7-2)

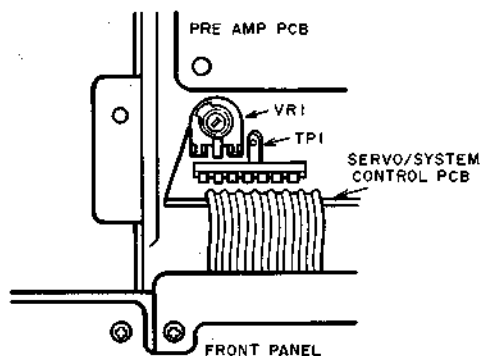


Fig. 7-1

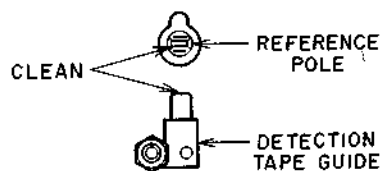


Fig. 7-2

Adjustment Item	Test Tape Supply Signal	Mode	ADJ Parts	Check Point	Results	Remarks
Quick Reverse Sensitivity	White empty Cassette pack (See Note 1)	FWD PLAY	VR1 (1M)	TPI	12V ± 0.5V (See Note 2)	Connect a Digital Voltmeter between TPI and Ground.

- NOTES:**
1. Make a tapeless cassette pack by removing the tape from the white colored cassette tape.
 2. Clean the Reference Pole and the Detector Tape Guide prior to this adjustment. (Refer to Fig. 7-2)
In case of out of adjustment (the voltage does not go up to 12V), remove R80 (1 Mohm) and adjust VR1 so that the voltage is 12V ± 0.5V.
Otherwise, replace the Detection Tape Guide.

7-2 PRE-AMP P.C BOARD ADJUSTMENT

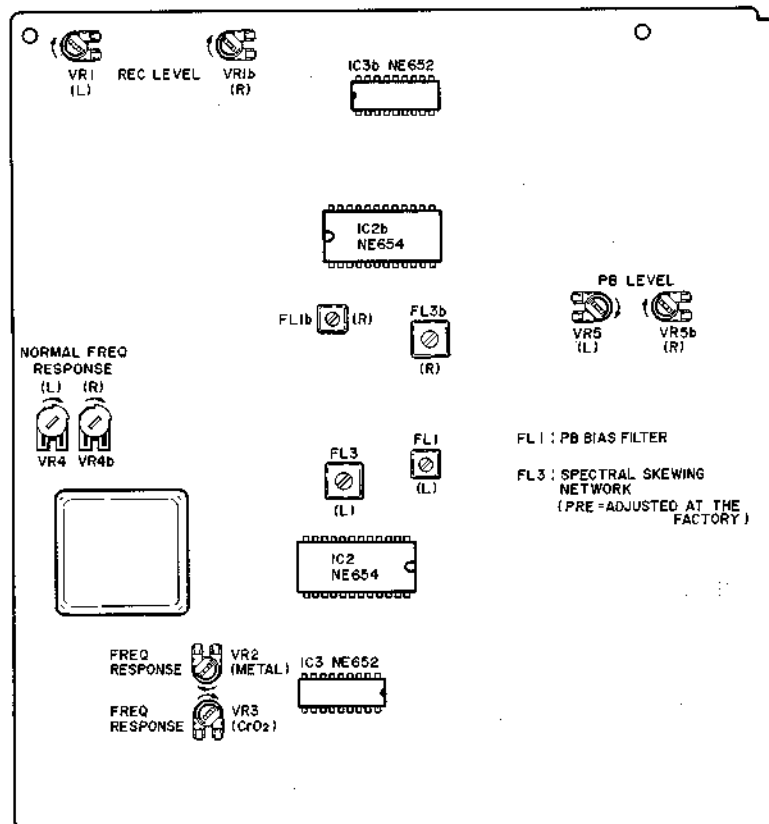


Fig. 7-3 Pre-Amp PCB ADJ Points

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)	-6.0 dBm \pm 0.2 dBm (385 mV) -5.5 dBm \pm 0.2 dBm (410 mV)	-6.1 dBm \pm 1.0 dBm at REV mode -5.5 dBm \pm 1.0 dBm 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 \pm 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 \pm 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 \pm 0.5 dBm	
5	REC Level	Normal Blank Tape 1 kHz, -5.5 dBm	FWD REC/PB	VR1 (20K)	-5.5 dBm \pm 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

- NOTES:**
1. Above adjustments except for Step 6 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
 CrO₂ Tape: TDK SA C-60
 METAL Tape: TDK MA C-60
 4. Refer to Fig. 7-3 for above adjustments.

VIII. DC RESISTANCE OF VARIOUS COILS

Parts	Name	DC Resistance
REC/PB HEAD (H901-1, 2)	COMBO HEAD HD425804RVJ	360 ohms \pm 25%
ERASE HEAD (H902)		3.5 ohms
RELAY (RL1-PRE AMP)	LAB2NS	1000 ohms
RELAY (RL1-POWER)	G2R-1112-PFD-V	275 ohms \pm 10%
RELAY (RL1-MAIN AMP)	G4Z-2282P	800 ohms \pm 10%

IX. CLASSIFICATION OF VARIOUS P.C BOARDS

9-1 P.C BOARD TITLES and IDENTIFICATION NUMBERS

P.C Board Title		P.C Board Number	Destination	Model
Main Amp	P.C Board	C1002A501A	U	FD-7
Main Amp	P.C Board	C1002A502A	C, A	FD-7
Main Amp	P.C Board	C1002A503A	E, S	FD-7
Main Amp	P.C Board	C1002A504A	V	FD-7
Main Amp	P.C Board	C1002A505A	E, B	FD-7/L
Pre Amp	P.C Board	T2051A501A (3ED)	All	FD-7/L
Tuner	P.C Board	C1002B5210	U	FD-7
Tuner	P.C Board	C1002B5220	C, A	FD-7
Tuner	P.C Board	C1002B5230	E, V, S	FD-7
Tuner	P.C Board	C1002B5240	E, B	FD-7/L
Control	P.C Board	C1002A541A	All	FD-7/L
FLD	P.C Board	C1002A541B	All	FD-7/L
Function	P.C Board	C1002A5050 (2ED)	U, C, A, E, S	FD-7/L
Function	P.C Board	C1002A5060 (2ED)	V	FD-7
Power Supply	P.C Board	C1002B507A	U	FD-7
Power Supply	P.C Board	C1002B508A	C, A	FD-7
Power Supply	P.C Board	C1002B509A	E, B, S	FD-7/L
Power Supply	P.C Board	C1002B510A	V	FD-7
Voltage Selector	P.C Board	C1002B507B	U	FD-7
Beat Cancel	P.C Board	C1002A541F	All	FD-7/L
Timer Selector	P.C Board	C1002A541C	All	FD-7/L
Timer	P.C Board	C1002A541D	All	FD-7/L
Lamp	P.C Board	C1002A541E	All	FD-7/L
Mic	P.C Board	C1002A501C	All	FD-7/L
Head Phone	P.C Board	C1002A501B	U	FD-7
Head Phone	P.C Board	C1002A502B	C, A	FD-7
Head Phone	P.C Board	C1002A503B	E, B, S	FD-7/L
Head Phone	P.C Board	C1002A504B	V	FD-7
Speaker	P.C Board	C1002A501D	U	FD-7
Speaker	P.C Board	C1002A502D	C, A	FD-7
Speaker	P.C Board	C1002A503D	E, B, S	FD-7/L
Speaker	P.C Board	C1002A504D	V	FD-7
TR	P.C Board	C1002A501F	All	FD-7/L
OSC	P.C Board	C1002D5450	All	FD-7/L
Control	P.C Board	CMR01C189A	All	FD-7/L
Cam Motor Pulse	P.C Board	CMR01C189B	All	FD-7/L
Cam Direction	P.C Board	CMR01C189C	All	FD-7/L
Reel Rotation	P.C Board	CMR01D1440	All	FD-7/L

P.C Board Title		P.C Board Number	Destination	Model
Detector (A)	P.C Board	CMR01D1290	All	FD-7/L
Detector (B)	P.C Board	CMR01D1620	All	FD-7/L
Leaf Switch	P.C Board	CMR01C1490	All	FD-7/L
Housing	P.C Board	CMR01D1430	All	FD-7/L
Guide Detector	P.C Board	CMR01D0220	All	FD-7/L
Flexible	P.C Board	CMR01A0020	All	FD-7/L

9-2. COMPOSITION OF VARIOUS P.C BOARD

1) CONTROL P.C BOARD C1002A541A and OSC P.C BOARD C1002D5450

LOCATION OF COMPONENTS

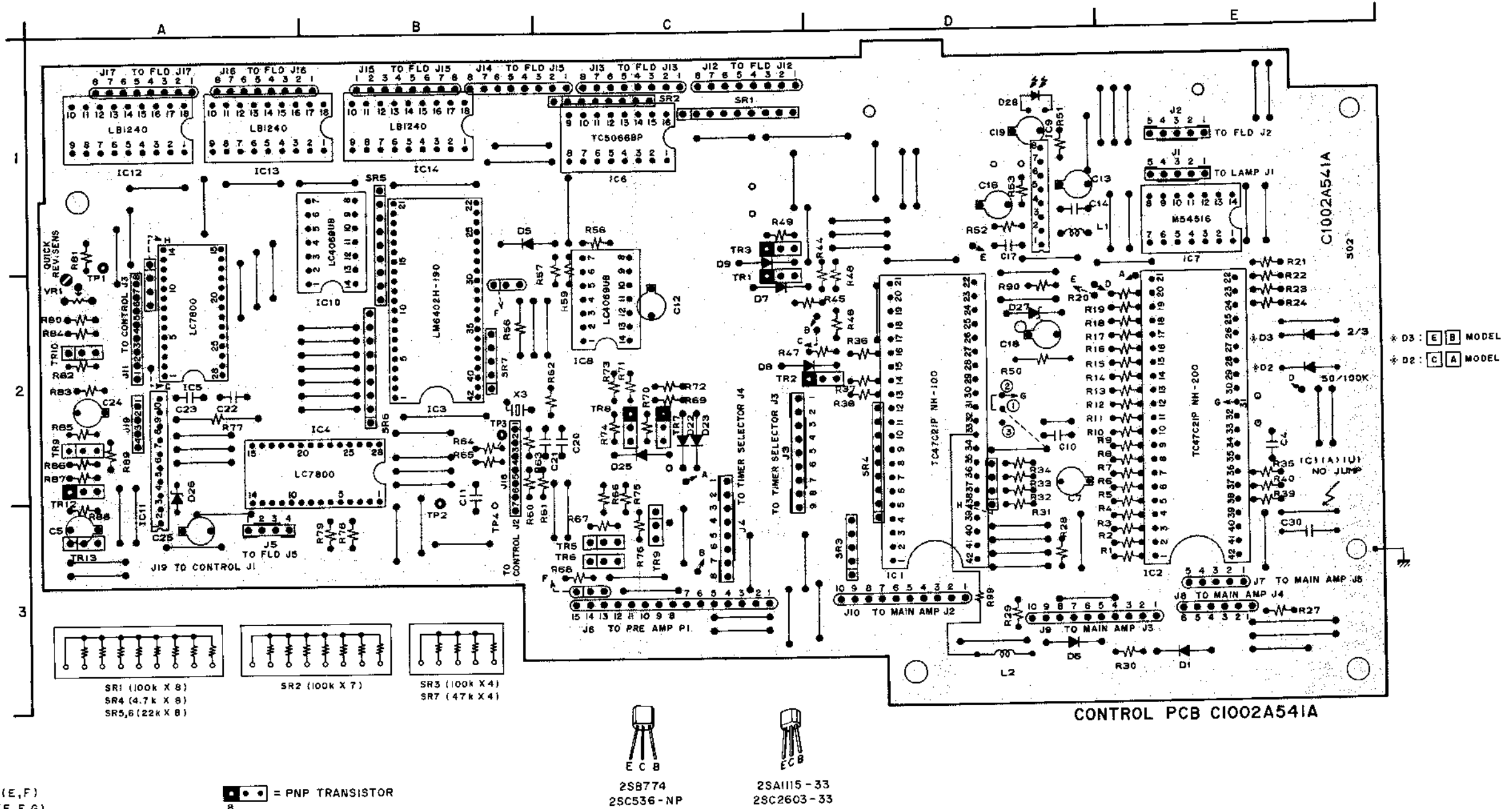
TR
 TR1.....C2
 TR2.....D2
 TR3.....C1
 TR5,6,9.....C3
 TR7.....C2
 TR10 to 12.....A2
 TR13.....A3

IC
 IC1.....D2
 IC2.....E2
 IC3,4.....B2
 IC5.....A2
 IC6.....C1
 IC7.....E1
 IC8.....C2
 IC9.....D1
 IC10.....B1
 IC11.....A2
 IC12,13.....A1
 IC14.....B1

TERMINALS
 J1,2.....E1
 J3.....C2
 J4.....C3
 J5.....A3
 J6.....C3
 J7,8.....E3
 J9,10.....D3
 J11.....A2
 J12,13.....C1
 J14,15.....A2
 J16,17.....A1
 J18.....B2
 J19.....A2
 1 to 3.....D2

TR1,2,3,7,12 --- 2SA115-33 (E,F)
 TR5,6 --- 2SC536NP (E,F,G)
 TR8 --- 2SB774 (Q,R,S)
 TR9,10,11,13 --- 2SC2603-33 (F,G)

● = PNP TRANSISTOR
 ○ = NPN TRANSISTOR



9-2. COMPOSITION OF VARIOUS P.C BOARD

1) CONTROL P.C BOARD C1002A541A and OSC P.C BOARD C1002D5450

LOCATION OF COMPONENTS

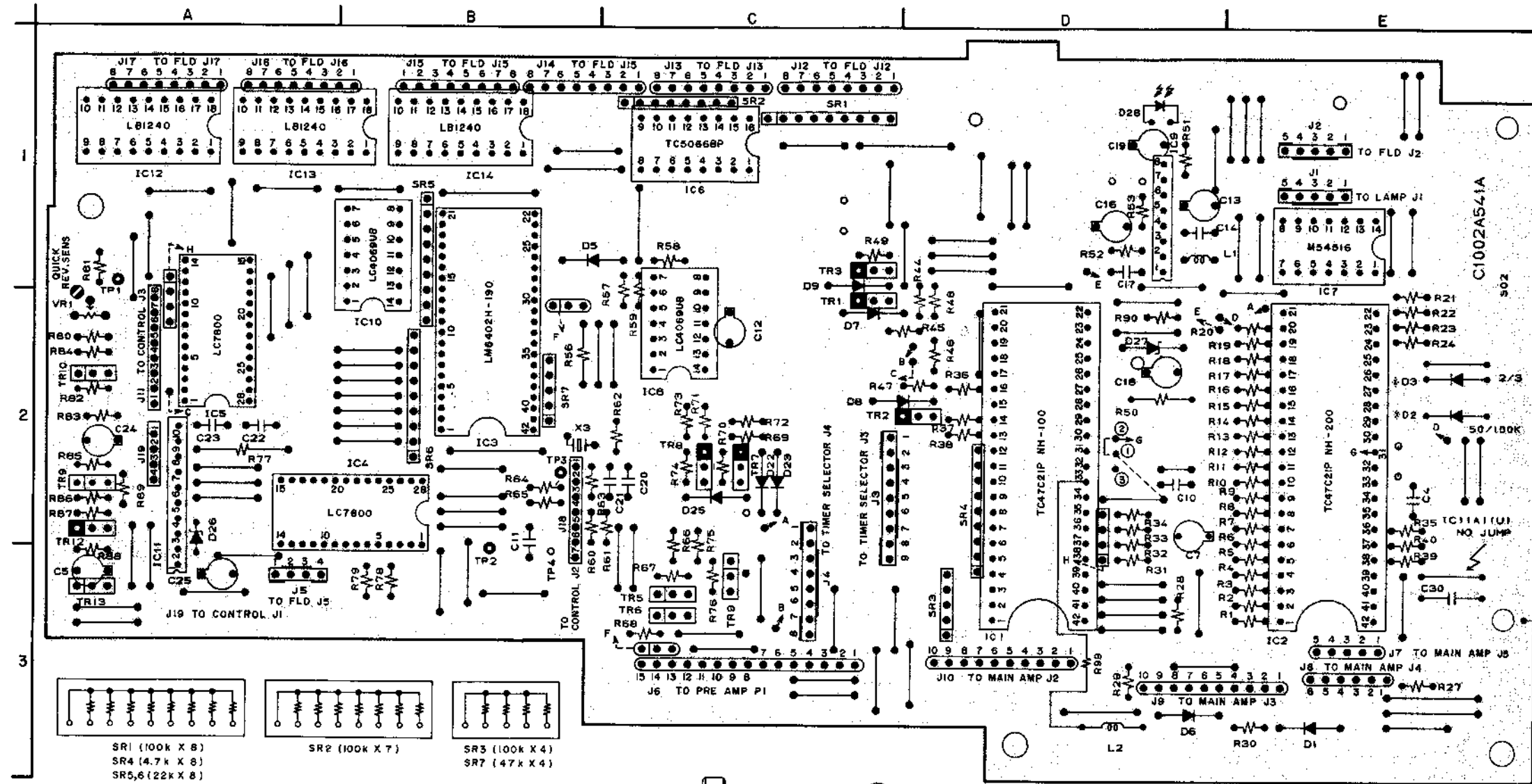
TR
 TR1.....C2
 TR2.....D2
 TR3.....C1
 TR5,6,9.....C3
 TR7.....C2
 TR10 to 12.....A2
 TR13.....A3

IC
 IC1.....D2
 IC2.....E2
 IC3,4.....B2
 IC5.....A2
 IC6.....C1
 IC7.....E1
 IC8.....C2
 IC9.....D1
 IC10.....B1
 IC11.....A2
 IC12,13.....A1
 IC14.....B1

TERMINALS
 J1,2.....E1
 J3.....C2
 J4.....C3
 J5.....A3
 J6.....C3
 J7,8.....E3
 J9,10.....D3
 J11.....A2
 J12,13.....C1
 J14,15.....A2
 J16,17.....A1
 J18.....B2
 J19.....A2
 1 to 3.....D2

TR1,2,3,7,12 --- 2SA1115-33 (E,F)
 TR5,6 --- 2SC536NP (E,F,G)
 TR8 --- 2SB774 (Q,R,S)
 TR9,10,11,13 --- 2SC2603-33 (F,G)

● = PNP TRANSISTOR
 ○ = NPN TRANSISTOR



CONTROL PCB C1002A541A

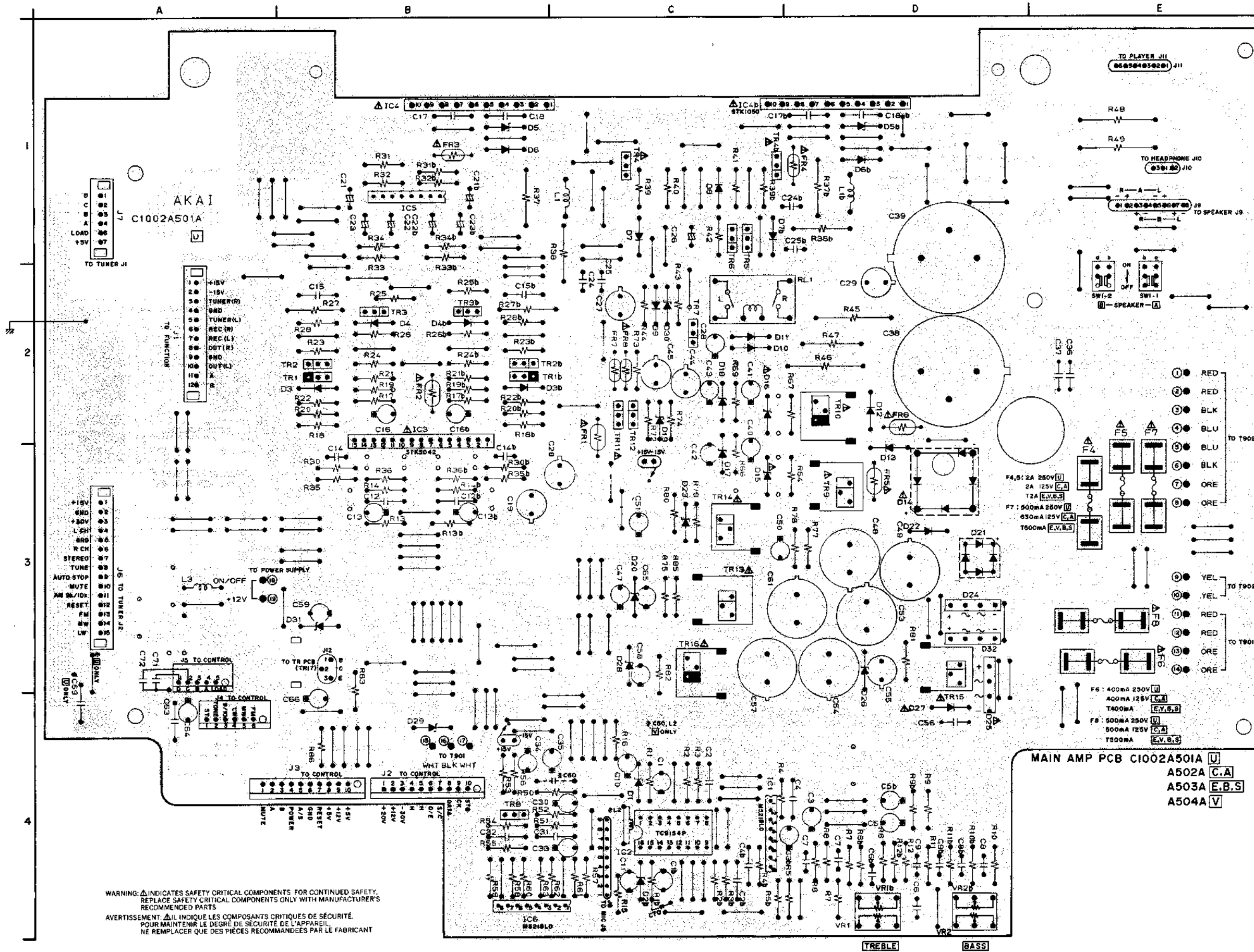


2SB774
 2SC536-NP



2SA1115-33
 2SC2603-33

2) MAIN AMP P.C BOARD C1002A501A, C1002A502A, C1002A503A and C1002A504A



LOCATION OF COMPONENTS

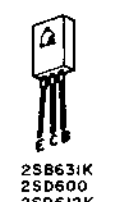
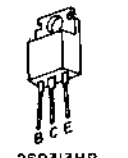
- TR
 TR1,1b, 2,2b,3,3b....B2
 TR4,4b,5,5b....C1
 TR7.....C2
 TR8.....B4
 TR9.....D3
 TR10.....D2
 TR11,12.....C2
 TR13,14,16.....C3
 TR15.....D3

- IC
 IC1,2.....C4
 IC3.....B2
 IC4.....B1
 IC4b.....D1
 IC5.....B1
 IC6.....B4

- TERMINALS
 J1.....A2
 J2,3.....B4
 J4.....A4
 J5,6.....A3
 J7.....A1
 J8.....C4
 J9 to 11.....E1
 J12.....B3
 1 to 5.....E2
 6 to 14.....E3

- TR1.....2SA970 (GR,BL)
 TR2to6,8.....2SC2240 (GR,BL)
 TR7.....2SD863 (E,F)
 TR9,13.....2SD600K (E,F)
 TR10,16.....2SB631K (E,F)
 TR11,12.....2SC536KNP (E,F)
 TR14.....2SD313HP (E,F)
 TR15,17.....2SD612K (E,F)

- ① RED
 ② RED
 ③ BLK
 ④ BLU
 ⑤ BLU
 ⑥ BLK
 ⑦ ORE
 ⑧ ORE
 ⑨ YEL
 ⑩ YEL
 ⑪ RED
 ⑫ RED
 ⑬ ORE
 ⑭ ORE



MAIN AMP PCB C1002A501A U
 A502A C.A
 A503A E.B.S
 A504A V

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

3) PRE AMP P.C BOARD T2051A501A (2ED)

LOCATION OF COMPONENTS

IC

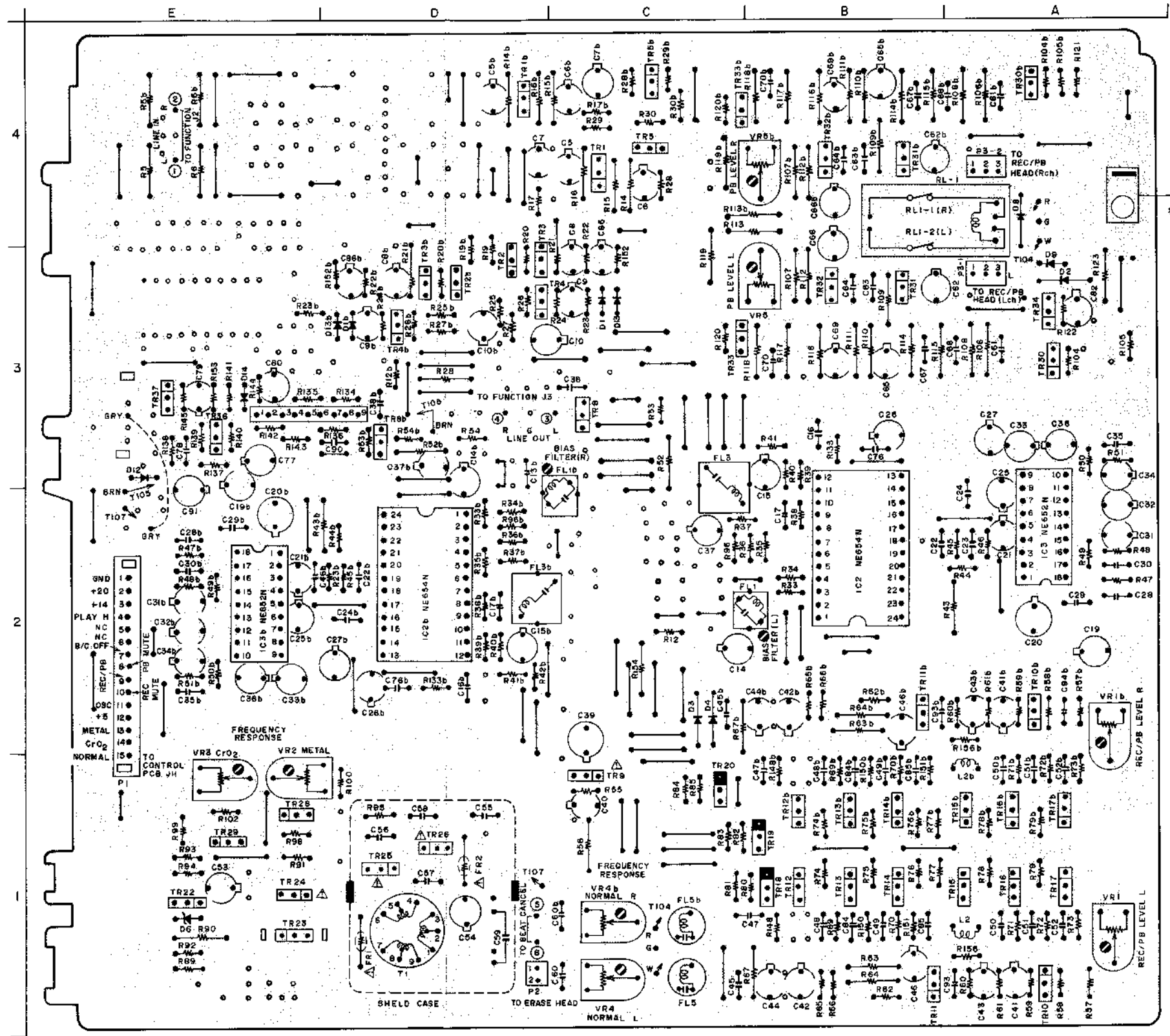
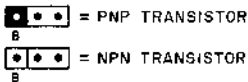
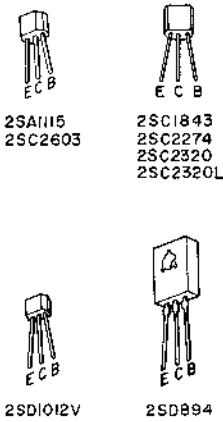
- IC2 ----- B2
- IC2b ----- D2
- IC3 ----- A2
- IC3b ----- E2
- IC5 ----- E3

TR

- | | |
|------------------|--------------|
| TR1 ----- C4 | TR19 --- B1 |
| TR1b ----- D4 | TR20 --- C1 |
| TR2, 2b ----- D3 | TR22 --- E1 |
| TR3, 3b ----- D3 | TR23 --- E1 |
| TR4, 4b ----- D3 | TR24 --- E1 |
| TR5, 5b ----- C4 | TR25 --- D1 |
| TR8 ----- C3 | TR26 --- D1 |
| TR8b ----- D3 | TR29 --- E1 |
| TR9 ----- C1 | TR29 --- E1 |
| TR10 ----- A1 | TR30 --- A3 |
| TR10b ----- A2 | TR30b --- A4 |
| TR11 ----- B1 | TR31 --- B3 |
| TR11b ----- B2 | TR31b --- B4 |
| TR12, 12b --- B1 | TR32 --- B3 |
| TR13, 13b --- B1 | TR32b --- B4 |
| TR14, 14b --- B1 | TR33 --- C3 |
| TR15, 15b --- A1 | TR33b --- C4 |
| TR16, 16b --- A1 | TR34 --- A3 |
| TR17, 17b --- A1 | TR36 --- E3 |
| TR18 ----- B1 | TR37 --- E3 |

TERMINAL

- P1 ----- E2
- P2 ----- D1
- P3-1 ----- A3
- P3-2 ----- A4



- | | |
|---|---|
| TR1, 32 --- 2SC2320L (F, G) | TR18 to 20 --- 2SA1115 (E, F) |
| TR2 ----- 2SC2320 (G) | TR22, 23, 29, 29, 34, 36, 37 --- 2SC2603 (E, F) |
| TR3, 4 ----- 2SC2320 (F, G) | TR24 ----- 2SC2274K (E, F) |
| TR5, 6, 11 to 17, 33 --- 2SC2320 (E, F) | TR25, 26 --- 2SC2274K (E) |
| TR9 ----- 2SD894 | TR30 ----- 2SD1012V (E, G) |
| TR10 ----- 2SD1012V (E, F) | TR31 --- 2SC1843 (E, F) |

PRE AMP PCB T2051A501A

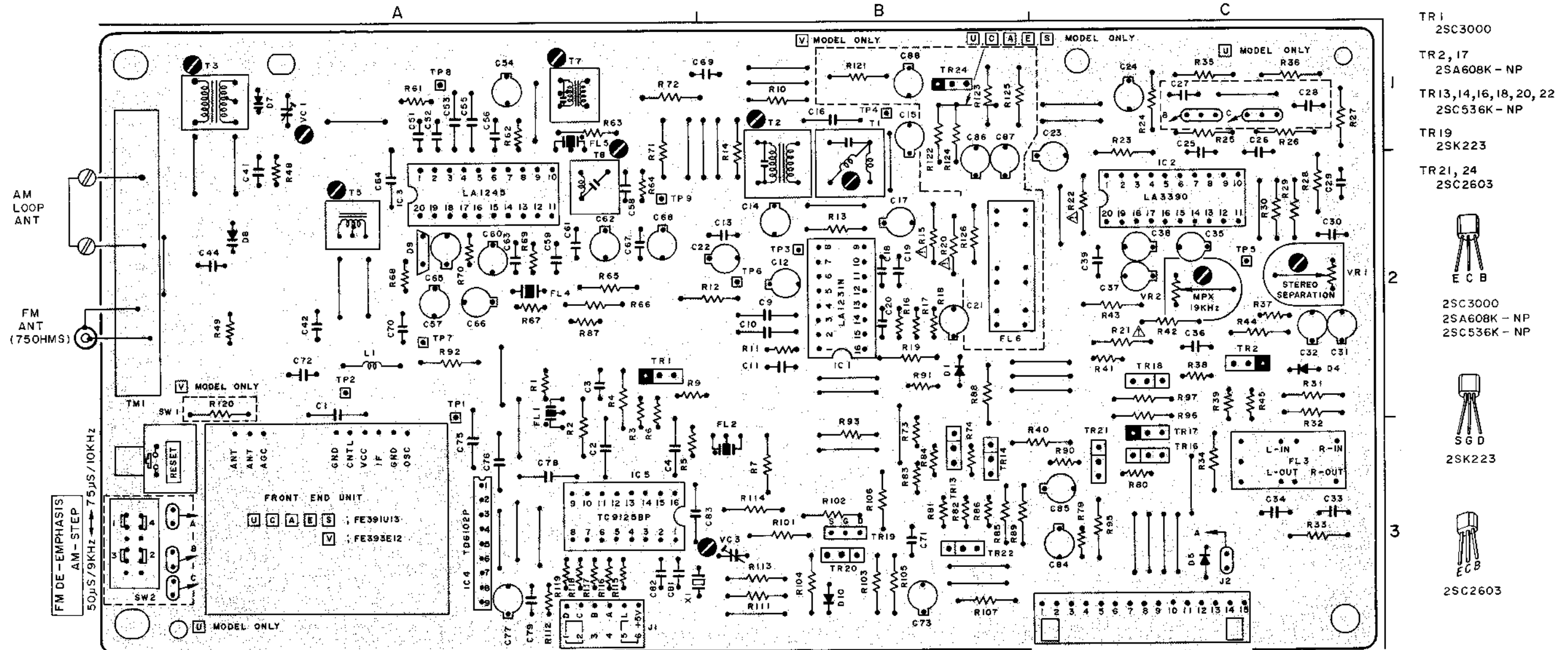
WARNING: Δ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.
 AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

4) TUNER P.C BOARD C1002B5210, C1002B5220 and C1002B5230 (FD-7)

TP1	FM OSC	T1	FM CENTER VOLTAGE DISTORTION
TP2	CONTROL VOLTAGE	T2	MW SENS (LOW)
TP3	FM CENTER	T3	MW OSC
TP4	FM CENTER	T5	AM IF
TP5	19KHZ	T7	MW SENS (HIGH)
TP6	FM MONO (TO GND)	T8	FM OSC
TP7	AM OSC	VC1	
TP8	AM IN	VC3	
TP9	AM OUT		

LOCATION OF COMPONENTS

IC	TR	TERMINAL
IC 1-----2B	TR 1-----2A	J1---3A
IC 2-----2C	TR 2, 18-----2C	J2---3C
IC 3-----2A	TR13, 14, 19, 20, 22---3B	
IC 4, 5---3A	TR16, 17, 21-----3C	
	TR24-----1B	



TUNER PCB C1002B5210 **U**
 C1002B5220 **A.C**
 C1002B5230 **E.V.S**

+15V
 GND
 +30V
 L CH
 GND
 R CH
 STEREO
 TUN
 STOP
 MUTE
 AM9/10K
 RESET
 FM
 NC
 NC

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

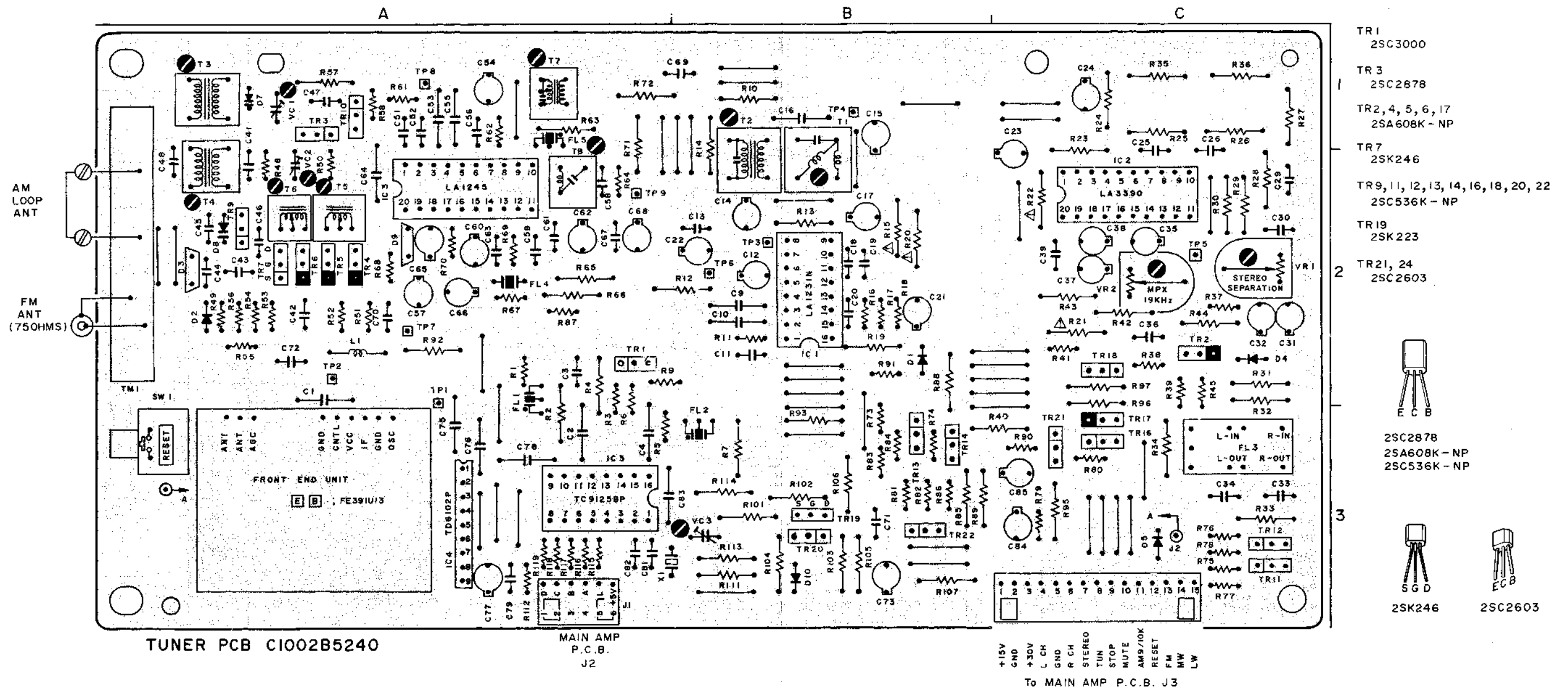
- TR 1
2SC3000
- TR 2, 17
2SA608K - NP
- TR 13, 14, 16, 18, 20, 22
2SC536K - NP
- TR 19
2SK223
- TR 21, 24
2SC2603
- ECB
- 2SC3000
2SA608K - NP
2SC536K - NP
- SGD
2SK223
- ECB
2SC2603

5) TUNER P.C BOARD C1002B5240 (FD-7L)

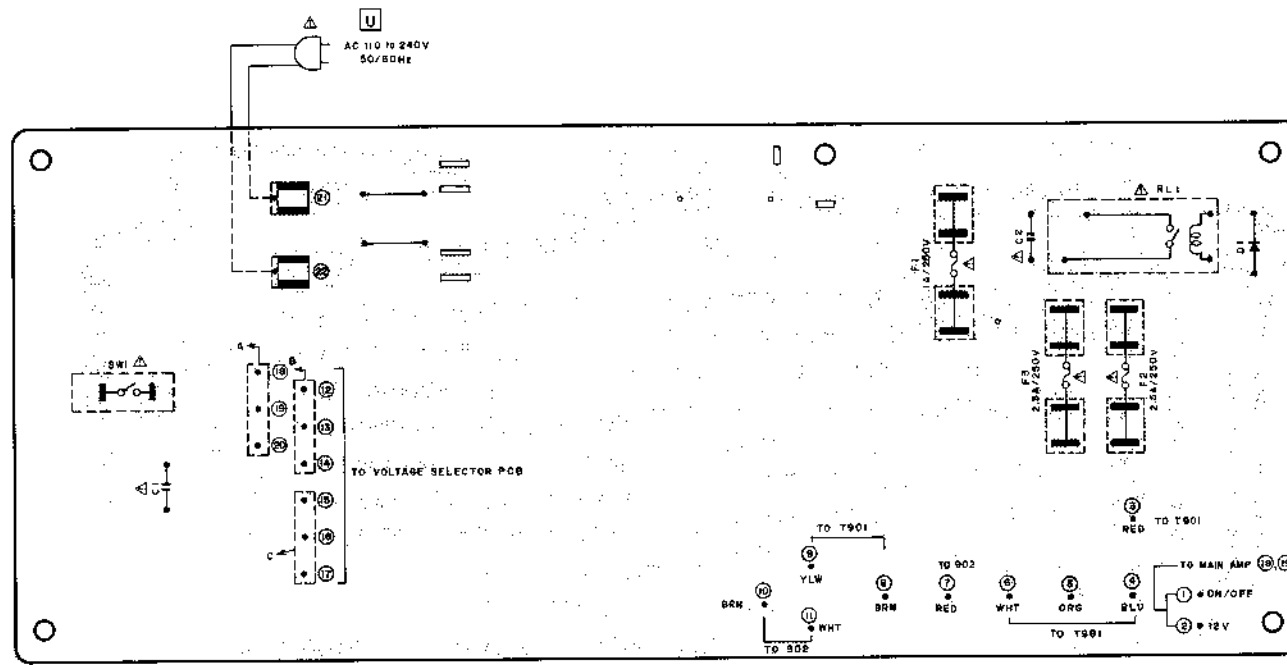
T1	FM CENTER VOLTAGE	TP1	FM OSC
T2	DISTORTION	TP2	CONTROL VOLTAGE
T3	MW SENS (LOW)	TP3	FM CENTER
T4	LW SENS (LOW)	TP4	FM CENTER
T5	MW OSC	TP5	19kHz
T6	LW OSC	TP6	FM MONO (TO GND)
T7	AM IF	TP7	AM OSC
T8		TP8	AM IN
VC1	MW SENS (HIGH)	TP9	AM OUT
VC2	LW SENS (HIGH)		
VC3	FM OSC		

LOCATION COMPONENTS

IC	TR	TERMINAL
IC 1 ---- 2B	TR 1, 4 to 7, 9 ---- 2A	J1 ---- 3A
IC 2 ---- 2C	TR 3, 10 ---- 1A	J2 ---- 3C
IC 3 ---- 2A	TR 2, 18 ---- 2C	
IC 4, 5 ---- 3A	TR 13, 14, 19, 20, 22 ---- 3B	
	TR 11, 12, 16, 17, 21 ---- 3C	

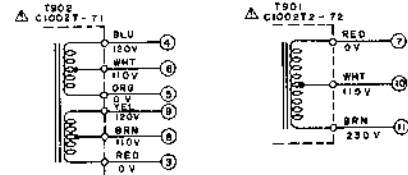


6) POWER SUPPLY P.C BOARD C1002B507A, VOLTAGE SELECTOR P.C BOARD C1002B511B

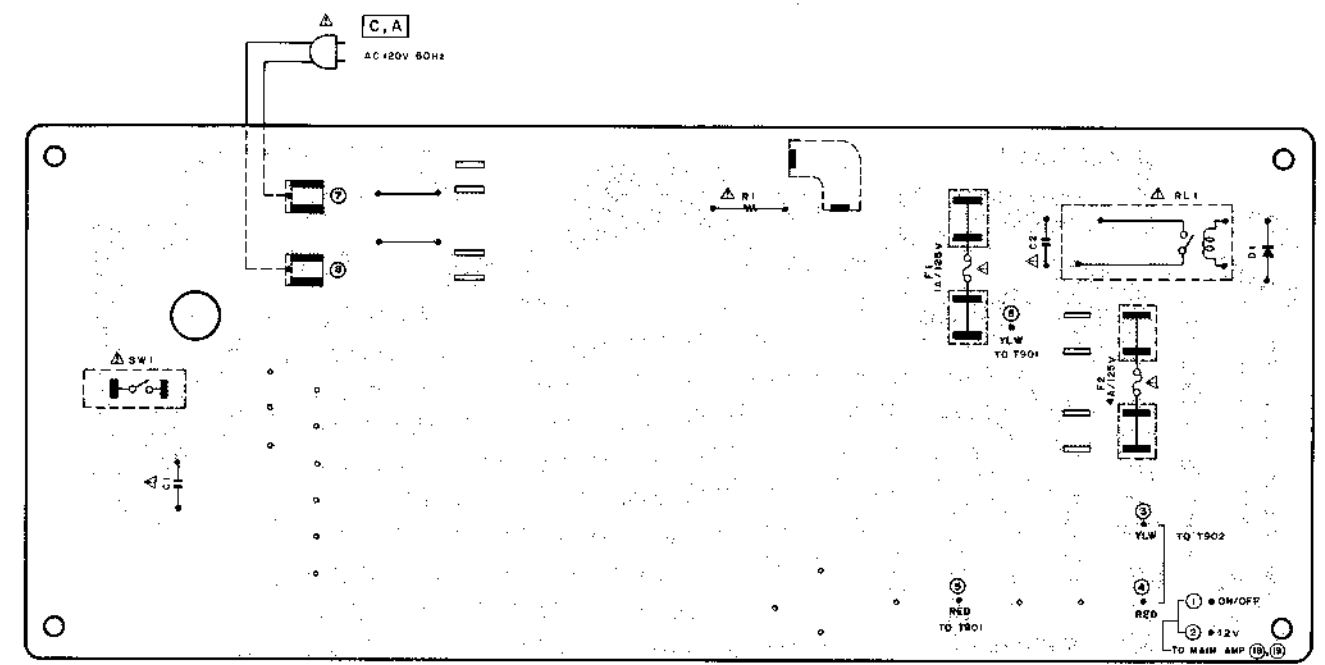


POWER SUPPLY PCB C1002B507A U

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

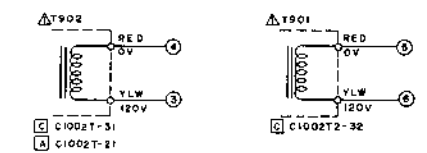


7) POWER SUPPLY P.C BOARD C1002B508A

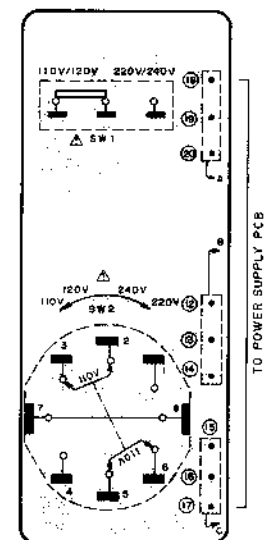


POWER SUPPLY PCB C1002B508A C, A

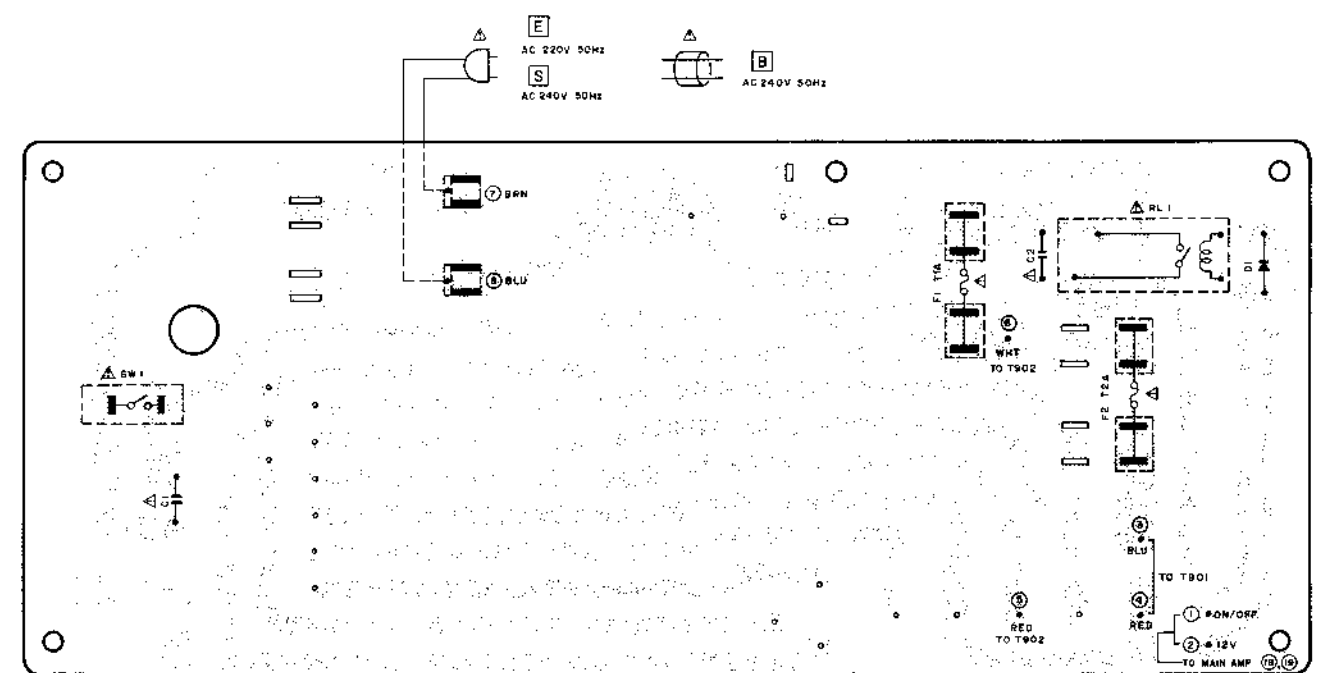
WARNING: Δ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.
 AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.



8) POWER SUPPLY P.C BOARD C1002B509A

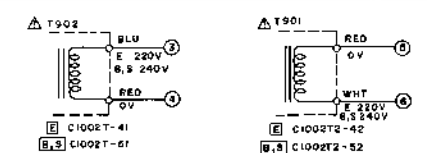


VOLTAGE SELECTOR PCB C1002B511B ONLY U

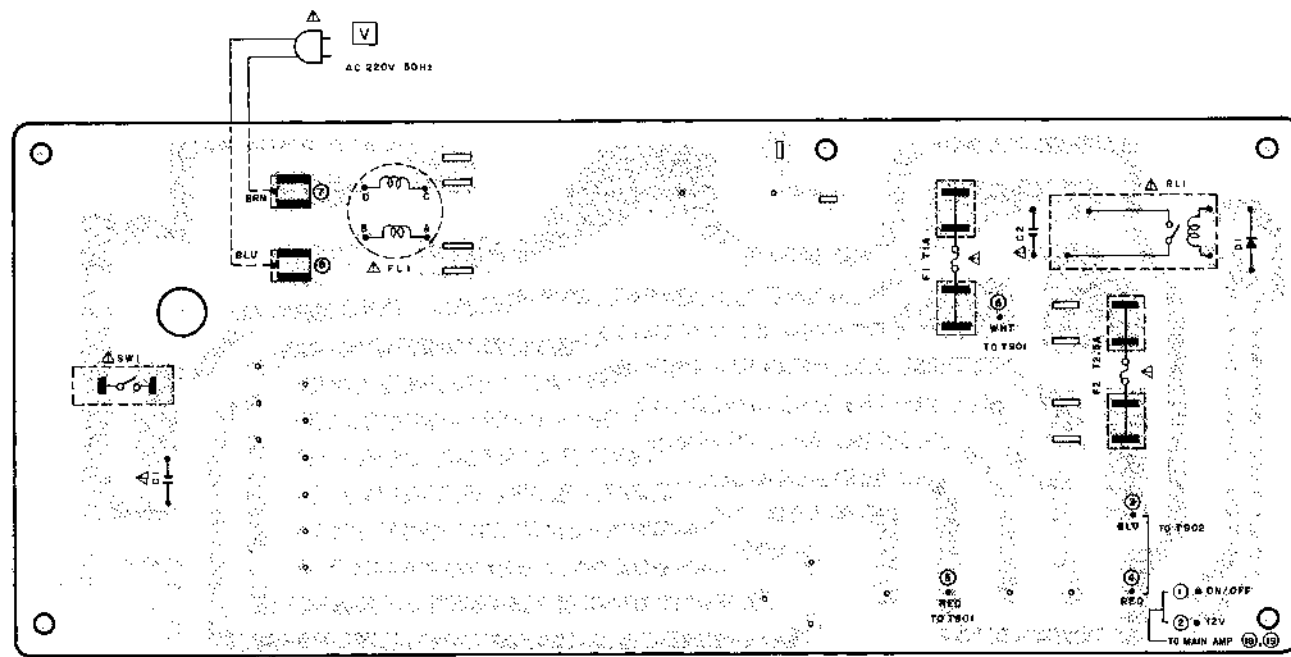


POWER SUPPLY PCB C1002B509A E, B, S

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

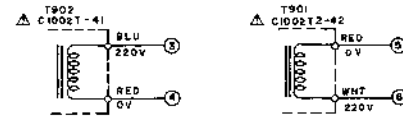


9) POWER SUPPLY P.C BOARD C1002B510A

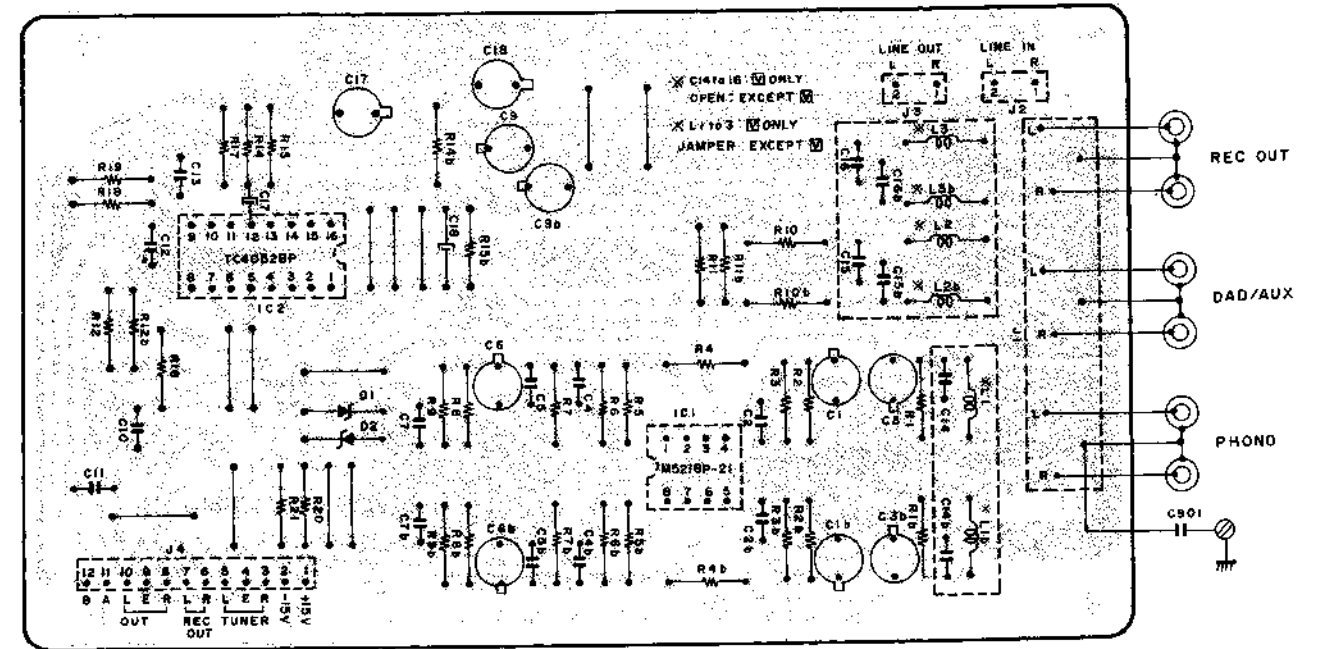


POWER SUPPLY PCB C1002B510A

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

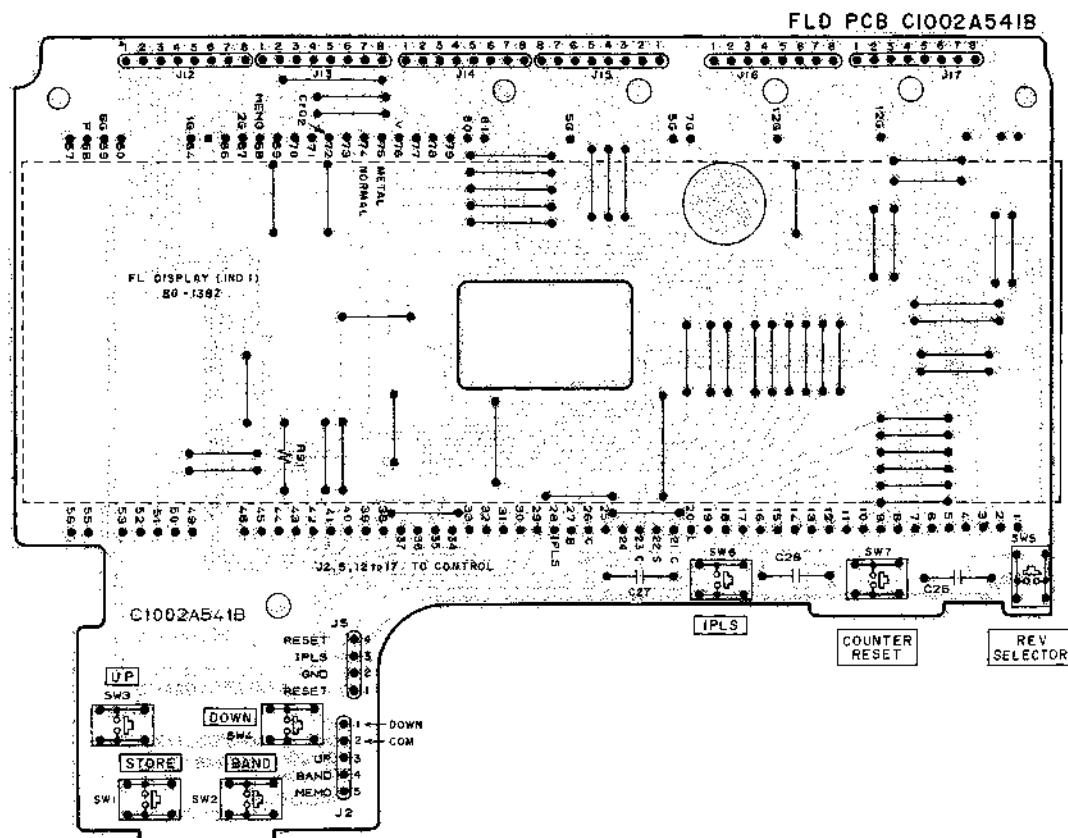


11) FUNCTION P.C BOARD C1002A5050 and C1002A5060

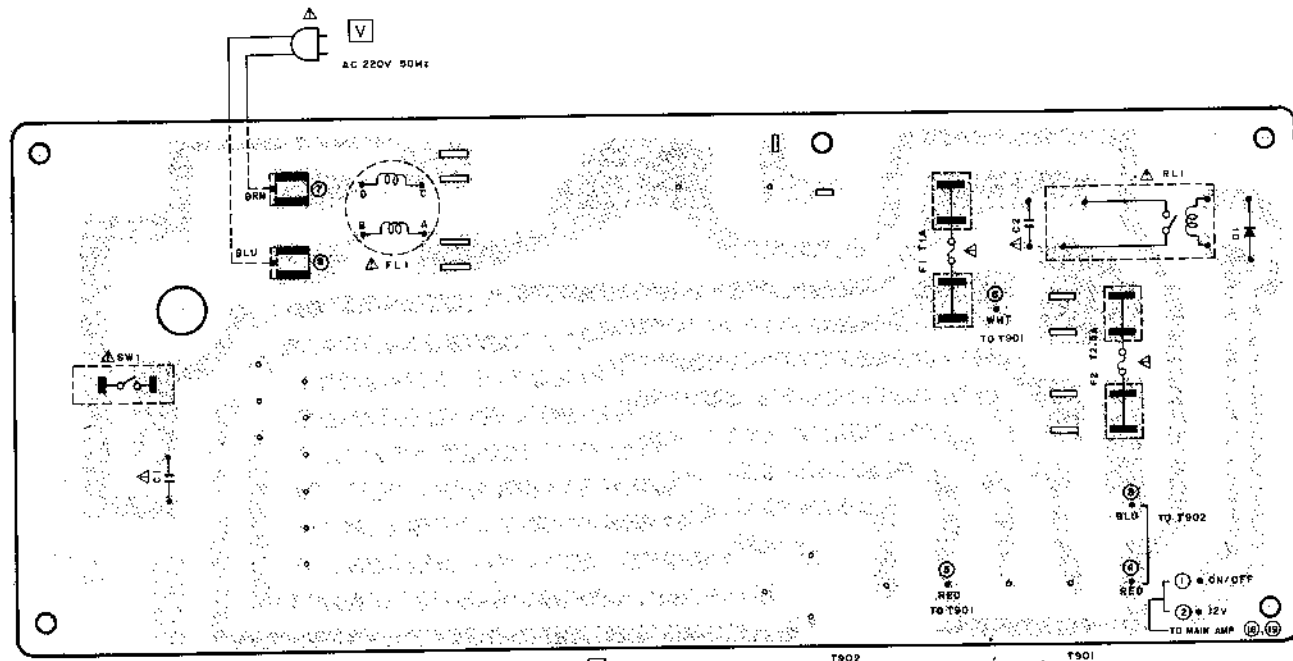


FUNCTION PCB (2ED)
 C1002A5050 U C A E S B
 C1002A5060 V

10) FLD P.C BOARD C1002A541B

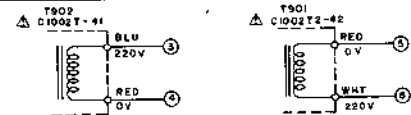


9) POWER SUPPLY P.C BOARD C1002B510A

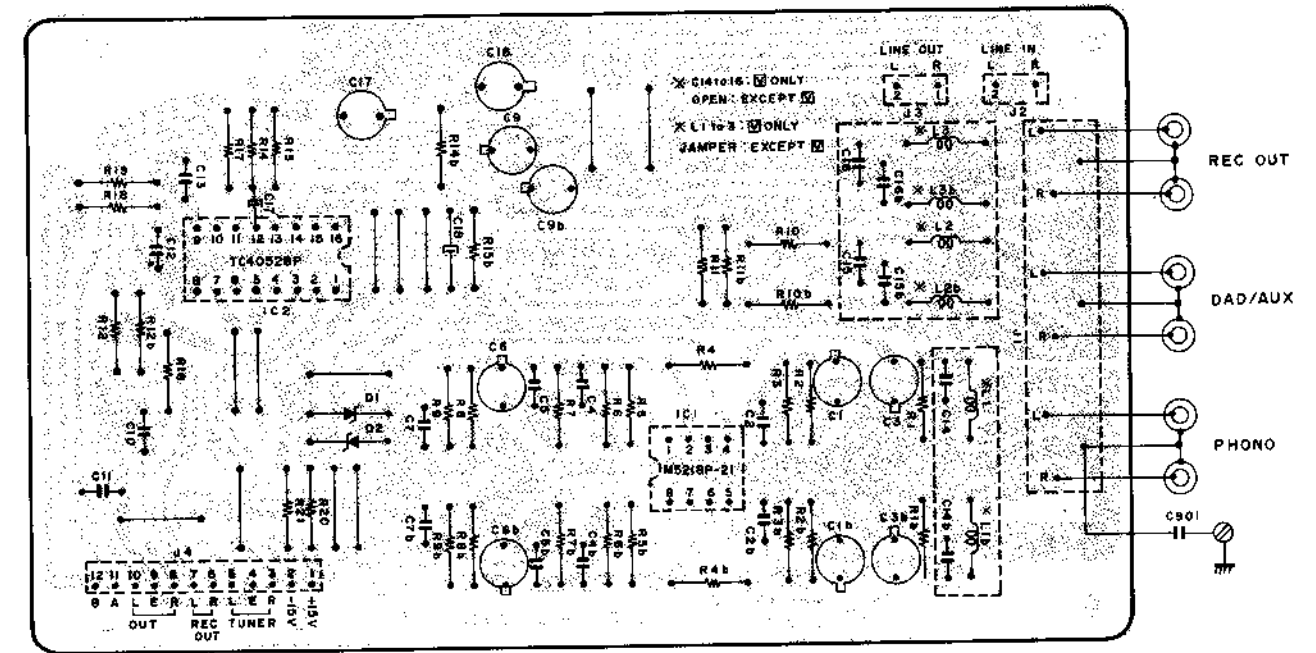


POWER SUPPLY PCB C1002B510A

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

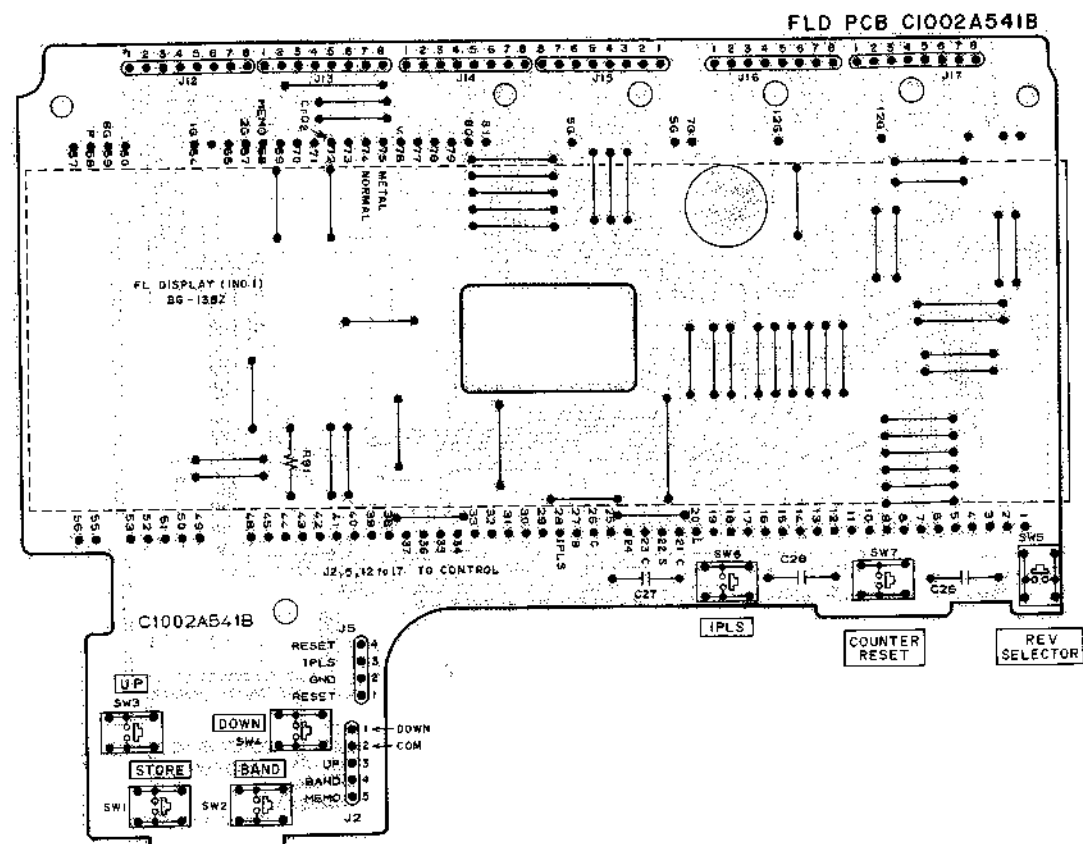


11) FUNCTION P.C BOARD C1002A5050 and C1002A5060

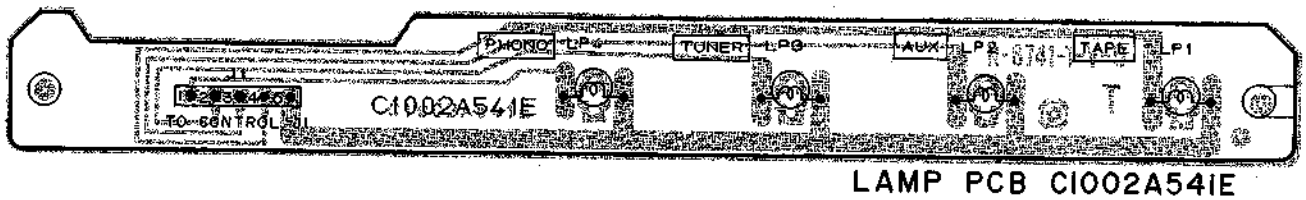
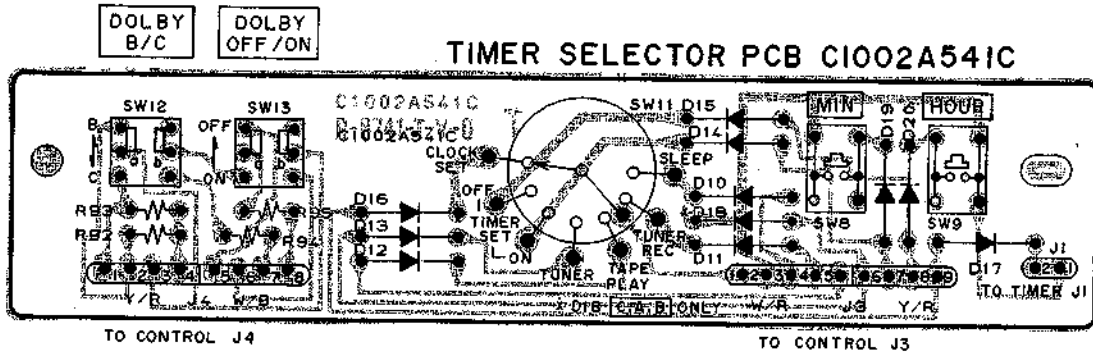
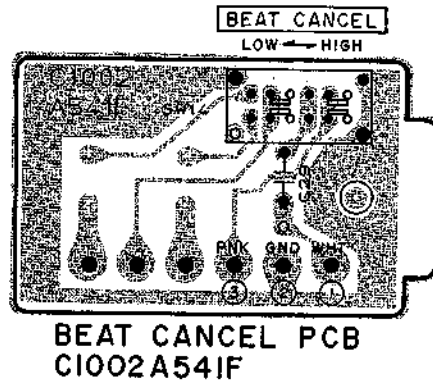
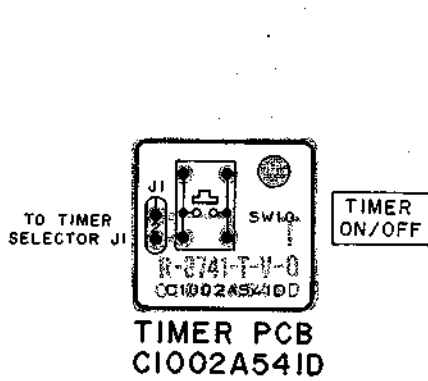


FUNCTION PCB (2ED)
 C1002A5050 U C A E S B
 C1002A5060 V

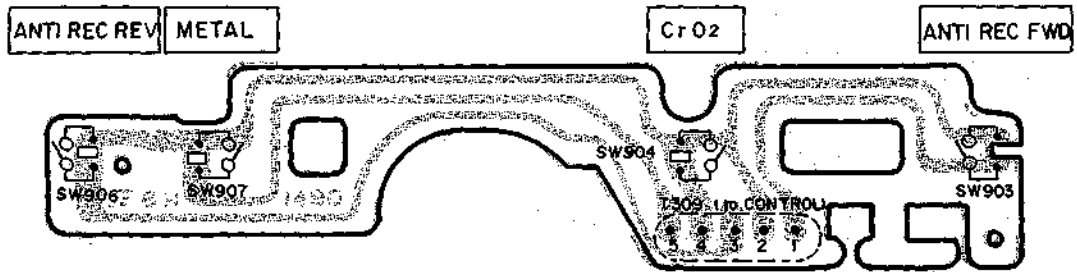
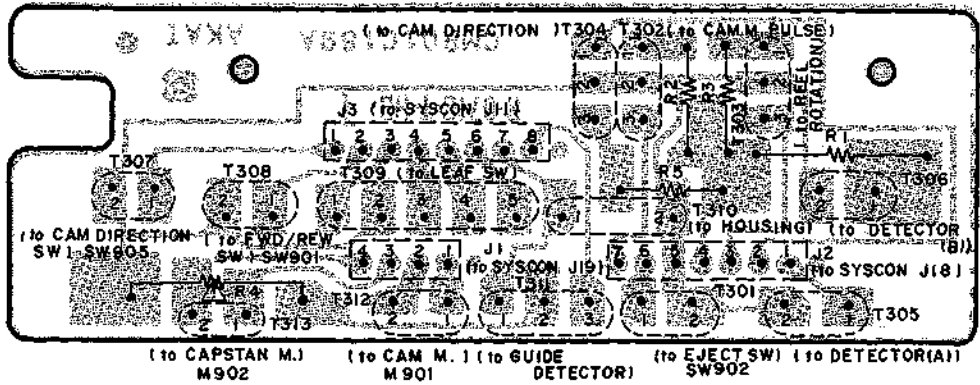
10) FLD P.C BOARD C1002A541B



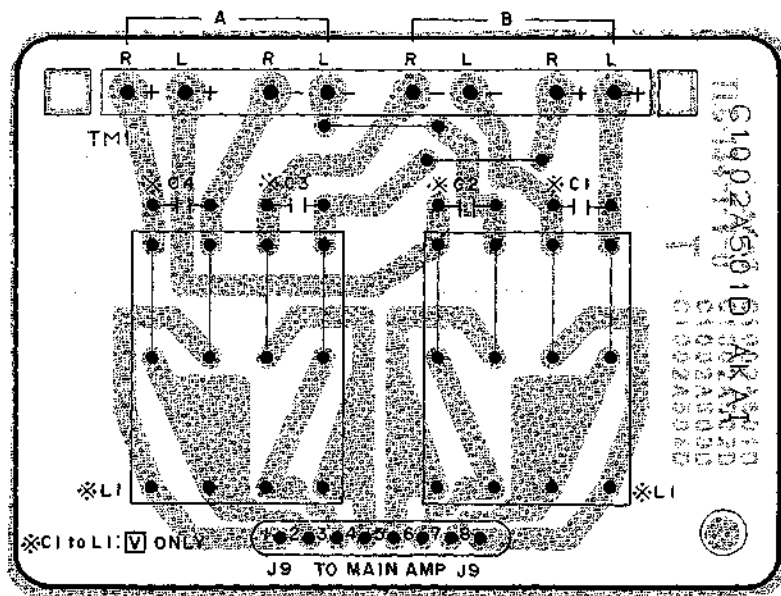
12) OTHER P.C BOARDS



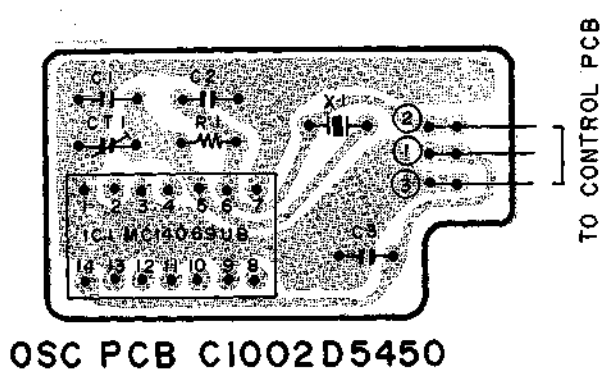
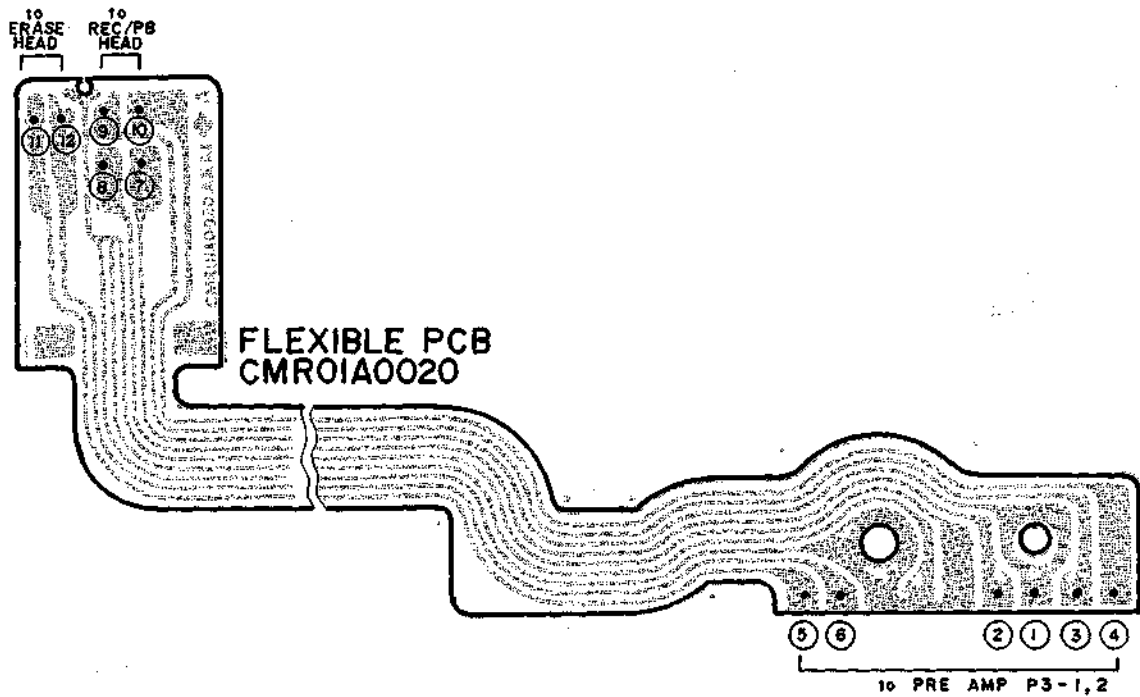
CONTROL PCB CMRO1C189A



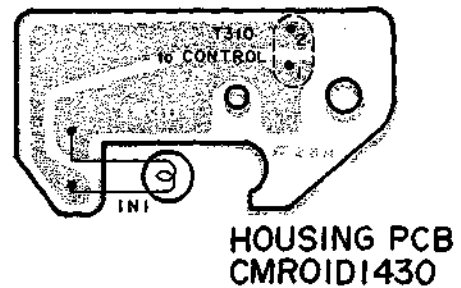
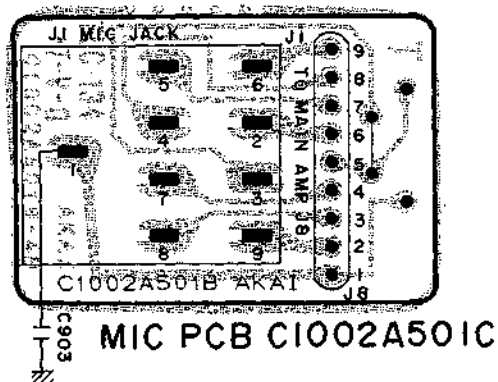
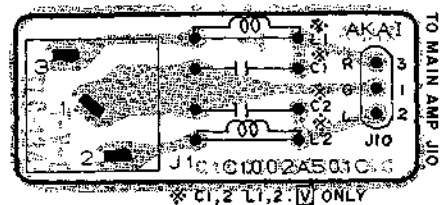
LEAF SWITCH PCB CMRO1C1490

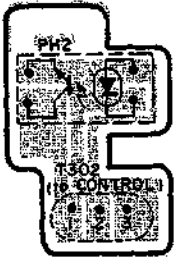


SPEAKER PCB C1002A501D
 U
 A502D C.A
 A503D E.B.S
 A504D V

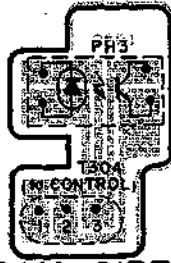


HEAD PHONE PCB C1002A501B U
A502B S,A
A503B E,B,S
A504B V

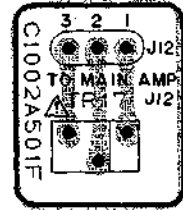




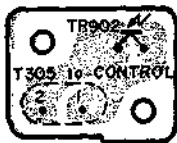
CAM MOTOR
PULSE PCB
CMROIC189B



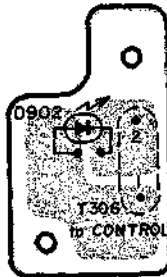
CAM DIRECTION
PCB
CMROIC189C



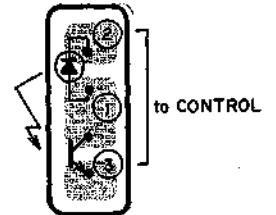
TR PCB CI002A50IF



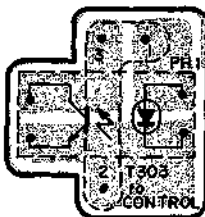
DETECTOR(A) PCB
CMROID1290



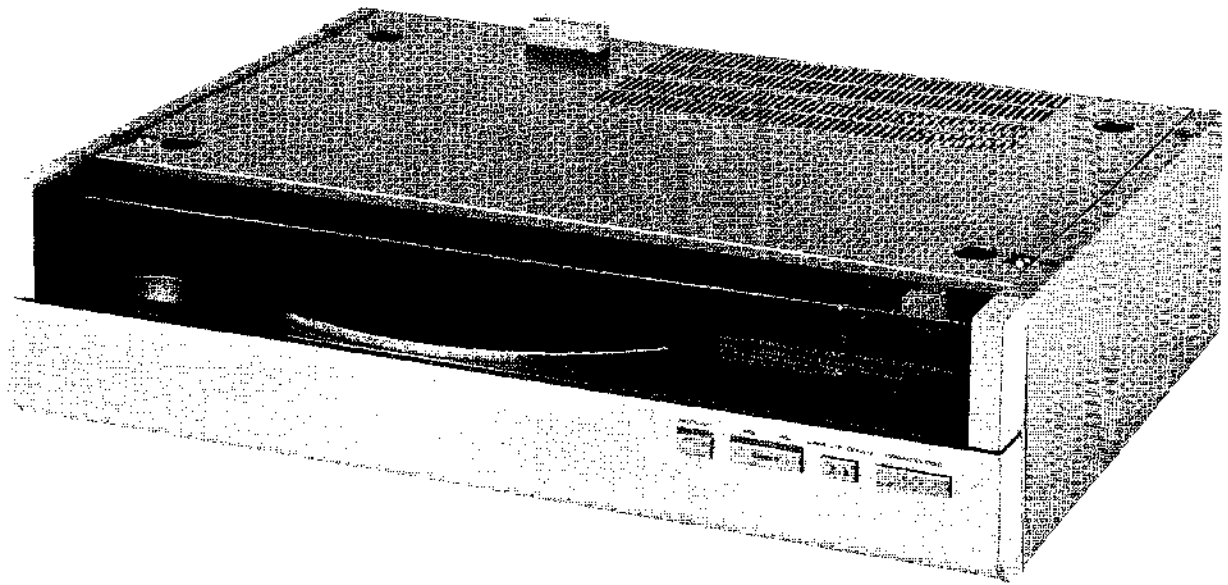
DETECTOR(B) PCB
CMROID1620



GUIDE DETECTOR
PCB CMROID0220



REEL ROTATION
PCB CMROID1440



SECTION 2

SERVICE MANUAL

MODEL FP-7

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8-2. COMPOSITION OF VARIOUS P.C BOARDS	35

For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

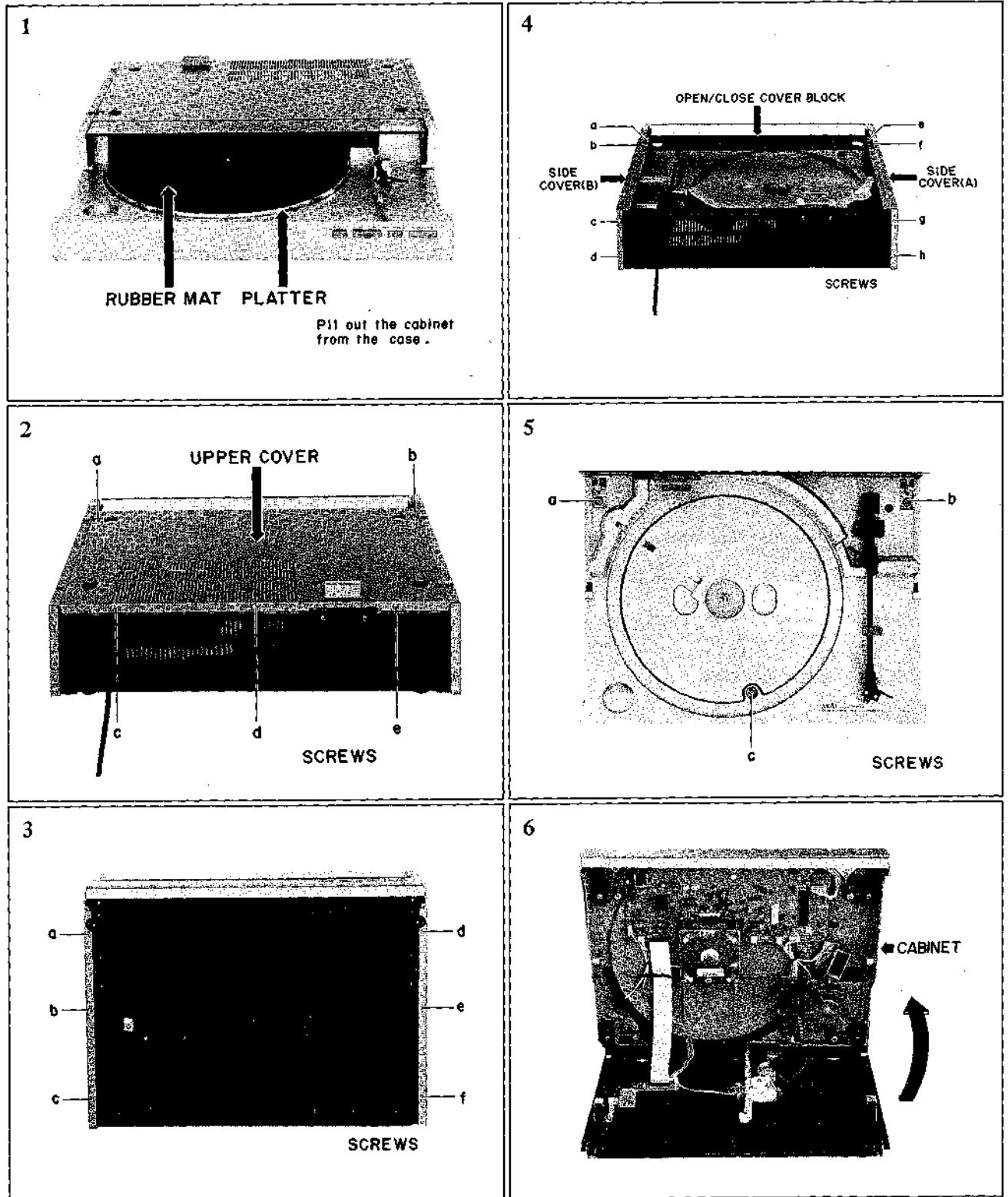
I. SPECIFICATIONS

DRIVE SYSTEM & MECHANISM	Direct Drive, Full Automatic, Front Loading system
TURNTABLE (PLATTER)	297 mm Aluminum Alloy Diecast
MOTORS	DC Servo motor × 1 DC motor for Loading system × 1 DC linear motor for Arm system × 1
SPEED	33-1/3 rpm & 45 rpm
WOW & FLUTTER	0.03% (WRMS)
RUMBLE	73 dB (DIN B)
TONEARM	Static Balanced type
EFFECTIVE ARM LENGTH	220 mm
ARM LIFTER	Oil Damped
OVERHANG	17.5 mm
CARTRIDGE	IM type (PC-84)
OUTPUT VOLTAGE	2.8 mV (1 kHz, 5 cm/sec)
CHANNEL SEPARATION	More than 18 dB
OPTIMAL STYLUS PRESSURE	2 g
REPLACEMENT STYLUS	RS-84
POWER REQUIREMENT	±17V DC from models FD-7 or FD-3
DIMENSIONS (W/FD-7)	440(W) × 100(H) × 320(D) mm (17.3 × 3.9 × 12.6 inches)
WEIGHT	8 kg (17.6 lbs)

* For improvement purposes, specifications and design are subject to change without notice.

II. DISMANTLING OF UNIT

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



III. CONTROLS

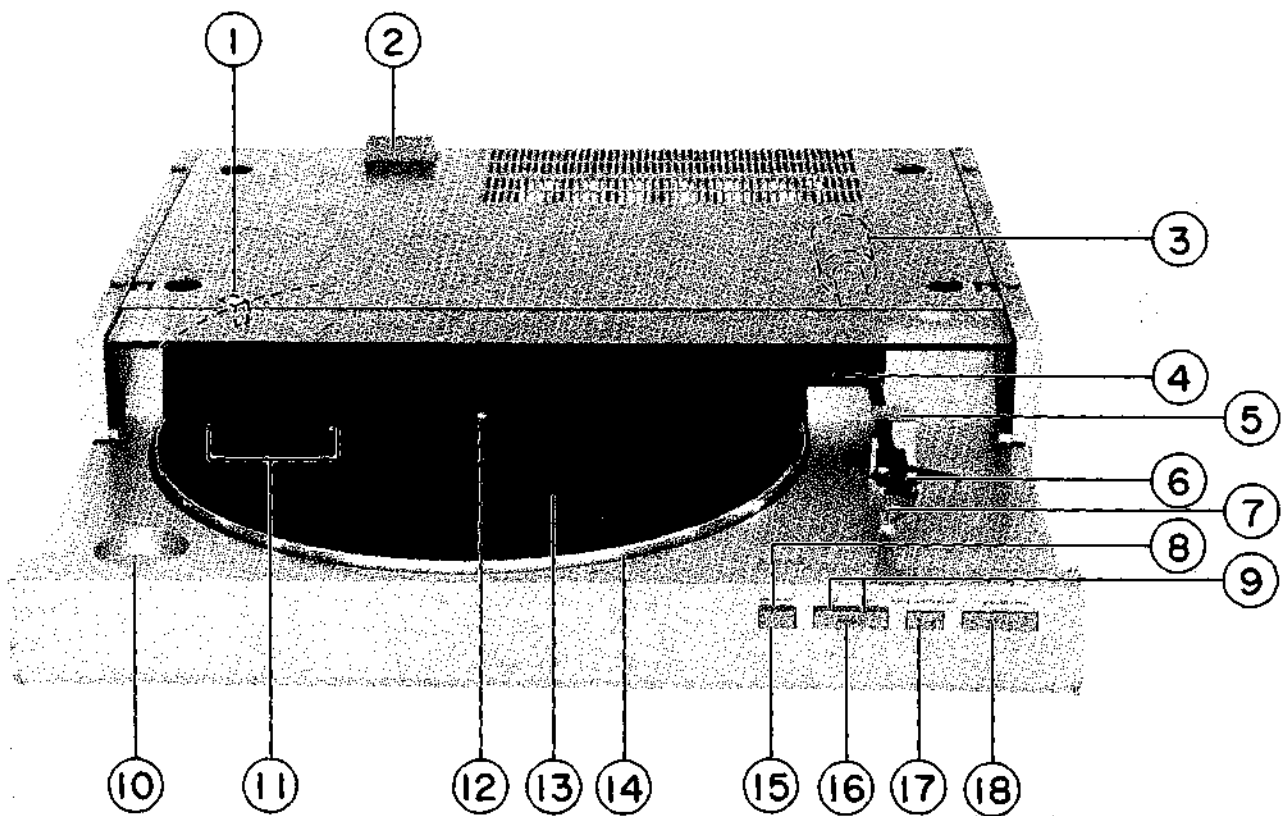


Fig. 3-1

1. SENSOR ILLUMINATOR
2. EXTERNAL POWER CONNECTOR
3. MAIN WEIGHT (FIXED TYPE)
4. TONE ARM LIFTER
5. TONE ARM REST & CLAMP
6. HEAD SHELL
7. CARTRIDGE (PC-84) W/STYLUS (RS-84)
8. REPEAT INDICATOR
9. 33-1/3 / 45 rpm SPEED INDICATORS
10. 45 rpm ADAPTER HOLDER
11. RECORD SENSING HOLES
12. SPINDLE
13. RUBBER MAT
14. PLATTER
15. REPEAT BUTTON
16. SPEED SELECTOR BUTTON
17. ARM UP/DOWN BUTTON
18. OPEN/CLOSE BUTTON

IV. PRINCIPAL PARTS LOCATION

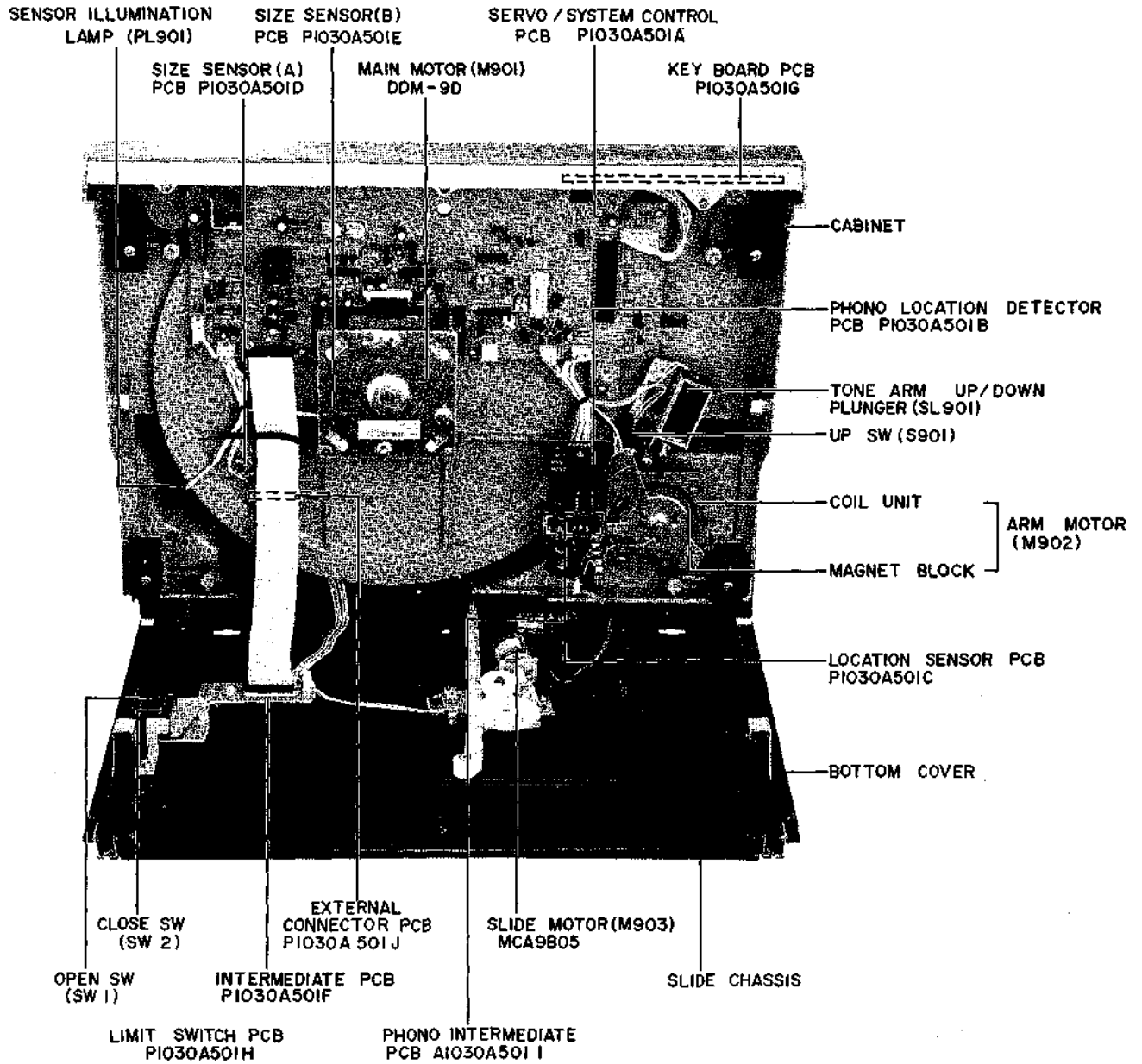


Fig. 4-1 Inside View

V. MECHANICAL ADJUSTMENT

5-1 TONE ARM HEIGHT ADJUSTMENT (Refer to Figs. 5-1 & 5-2)

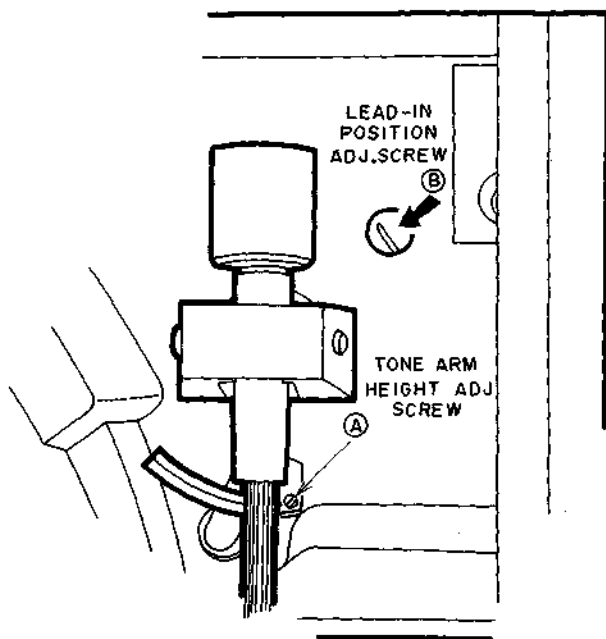


Fig. 5-1

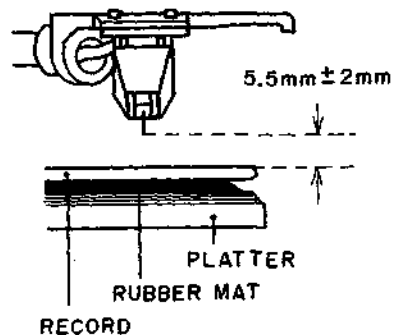


Fig. 5-2 Tone Arm Height Adjustment

- 1) Take off the Upper Cover by loosening five screws.
- 2) Turn on the power and open the cabinet.
- 3) Place a 30 cm record on the platter and bring the Tone Arm above the record.
- 4) Adjust the Tone Arm Height by turning the screw **(A)** so that the distance between the tip of the stylus and the record is $5.5 \text{ mm} \pm 2 \text{ mm}$.

5-2 LEAD-IN/LEAD-OUT POSITION ADJUSTMENT (Refer to Fig. 5-1)

- 1) Use a 17 cm record for this adjustment.
- 2) Play a record in AUTO mode and confirm that the stylus descends onto the proper Lead-in position.
- 3) If it is improper, the proper Lead-in position can be obtained by turning the Lead-in Position Adjustment Screw **(B)** clockwise (to make the Tone Arm drops later) or counter-clockwise (to make the Tone Arm drops sooner) with a screwdriver.

NOTE: Adjusting the proper Lead-in position will automatically adjust the proper Lead-out position.

5-3 CABINET OPEN/CLOSE SLIDE ADJUSTMENT (Refer to Fig. 5-3)

- 1) Loosen the screw **(A)** and adjust the position of LIMIT SW BLOCK by sliding it so that the Mask Cover closes completely at CLOSE mode, and opens all the way at OPEN mode.
- 2) Tighten the screw **(A)** and apply paint-lock after the adjustment.

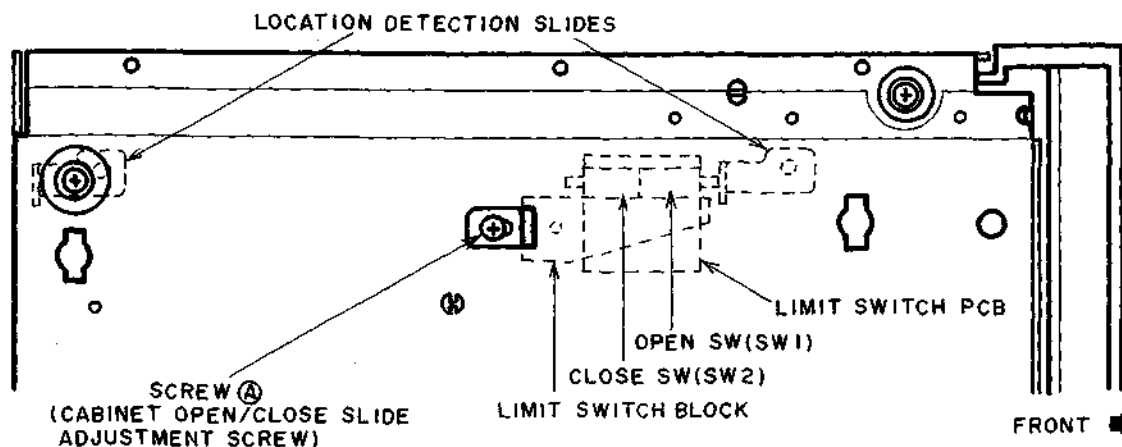


Fig. 5-3 Bottom View

VI. ELECTRICAL ADJUSTMENT

6-1 SERVO/SYSTEM CONTROL P.C BOARD ADJUSTMENT POINTS

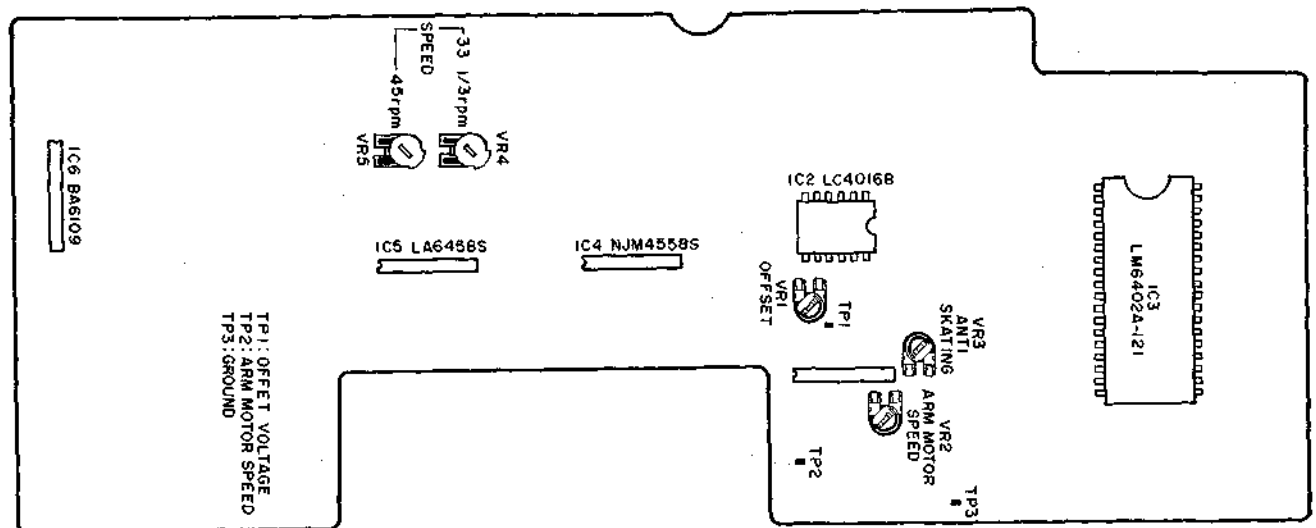


Fig. 6-1 Servo/System Control P.C Board Adjustment Points

6-2 MAIN MOTOR SPEED ADJUSTMENT

(Refer to Fig. 6-1)

- 1) Turn on the power and depress the OPEN/CLOSE button to open.
- 2) Set the Speed Selector to 33 1/3 rpm.
- 3) Bring the Tone Arm above the record by hand and play a Test Record (33 1/3 rpm, 1,000 Hz).
- 4) Adjust VR4 (3K) so that the speed is 1,000 Hz \pm 5 Hz.
- 5) Set the Speed Selector to 45 rpm.
- 6) Play a Test Record (45 rpm, 1,000 Hz).
- 7) Adjust VR5 (20K) so that the speed is 1,000 Hz \pm 5 Hz.

NOTES: 1. When using a strobo plate, adjust VR4 and VR5 so that the strobo for your area stays still.
2. Only this adjustment in electrical adjustments can be accomplished through the holes on the slide chassis without dismantling the unit.

6-3 ARM MOTOR OFF-SET VOLTAGE

(Refer to Fig. 6-1)

- 1) Lock the Tone Arm in rest and clamp position.
- 2) Connect a digital voltmeter (DC 20V RANGE) to TP1 (IC1 pin ⑧).
- 3) Adjust VR1 (100K) so that the meter reads 0V \pm 50 mV.

6-4 ARM MOTOR SPEED ADJUSTMENT

(Refer to Fig. 6-1)

- 1) Lock the Tone Arm in rest and clamp position.
- 2) Connect a digital voltmeter to TP2.
- 3) Turn on the power and depress the PHONO (START/CUT) button twice to obtain the CUT operation mode.
- 4) Adjust VR2 (30K) so that the meter reads +6 V \pm 0.1 V during this CUT operation mode.

NOTE: Be careful that this voltage can be read only for a few seconds.

6-5 ANTI SKATING ADJUSTMENT

(Refer to Fig. 6-1)

- 1) Turn on the power and open the cabinet.
- 2) Turn off the power and connect a digital voltmeter to TP2.
- 3) Turn on the power and bring the Tone Arm above the record by hand.
- 4) Depress the ARM UP/DOWN button to be down.
- 5) Measure the voltage at 3 seconds later the action in item 4), and adjust VR3 (1K) so that the voltage is 0.4V \pm 50 mV.

VII. DC RESISTANCE OF VARIOUS COILS

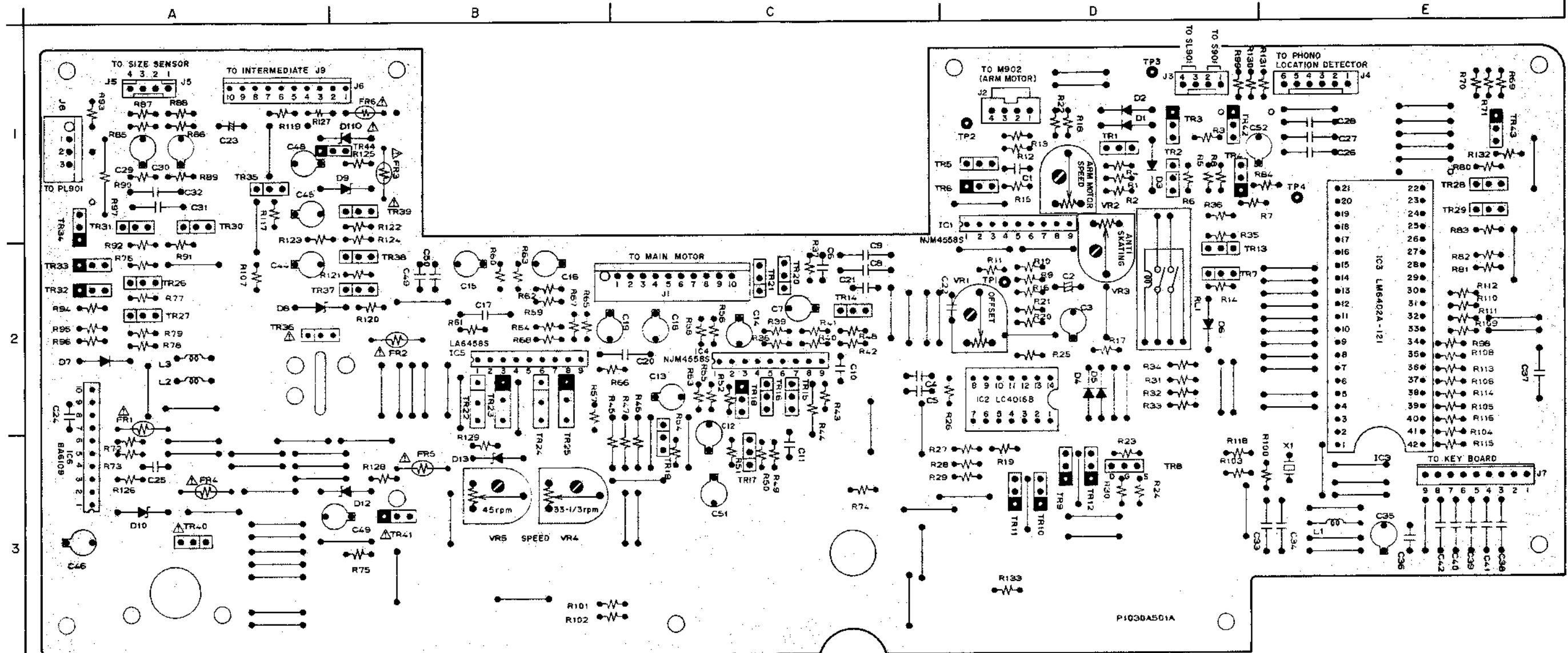
Parts	Name	DC Resistance
RELAY (RL1)	LAB2NS 2NO 5V	200 ohms
PLUNGER SOLENOID (SL901)	TDS-09SL-513 22V	113 ohms $\pm 10\%$
MOTOR (M901)	DDM-9D	37.5 ohms $\begin{matrix} +7 \\ -3 \end{matrix} \%$
MOTOR (M902)	COIL UNIT	30 ohms $\pm 10\%$
MOTOR (M903)	MCA 9B05	45 ohms $\pm 10\%$

VIII. CLASSIFICATION OF VARIOUS P.C BOARDS

8-1 P.C BOARD TITLES and IDENTIFICATION NUMBERS

P.C Board Title		P.C Board Number
Servo/System Control	P.C Board	P1030A501A
Phono Location Detector	P.C Board	P1030A501B
Location Sensor	P.C Board	P1030A501C
Size Sensor (A)	P.C Board	P1030A501D
Size Sensor (B)	P.C Board	P1030A501E
Intermediate	P.C Board	P1030A501F
Key Board	P.C Board	P1030A501G
Limit Switch	P.C Board	P1030A501H
Phono Intermediate	P.C Board	P1030A501I
External Connector	P.C Board	P1030A501J

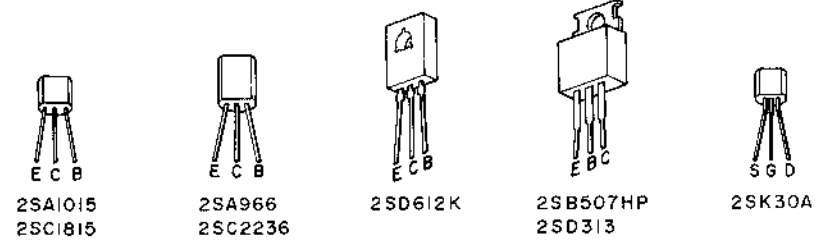
8-2 COMPOSITION OF VARIOUS P.C BOARDS
 1) SERVO/SYSTEM CONTROL P.C BOARD P1030A501A



SERVO/SYSTEM CONTROL PCB P1030A501A

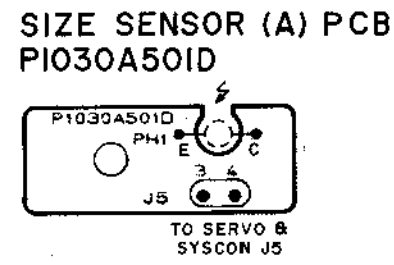
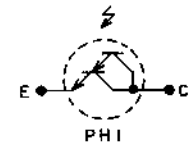
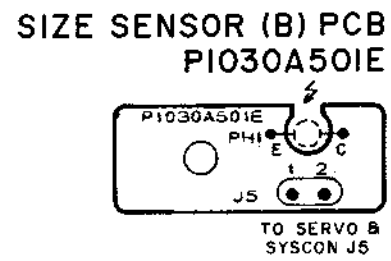
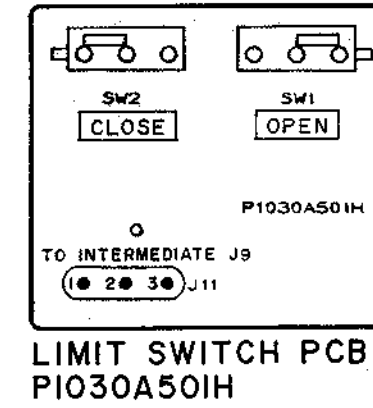
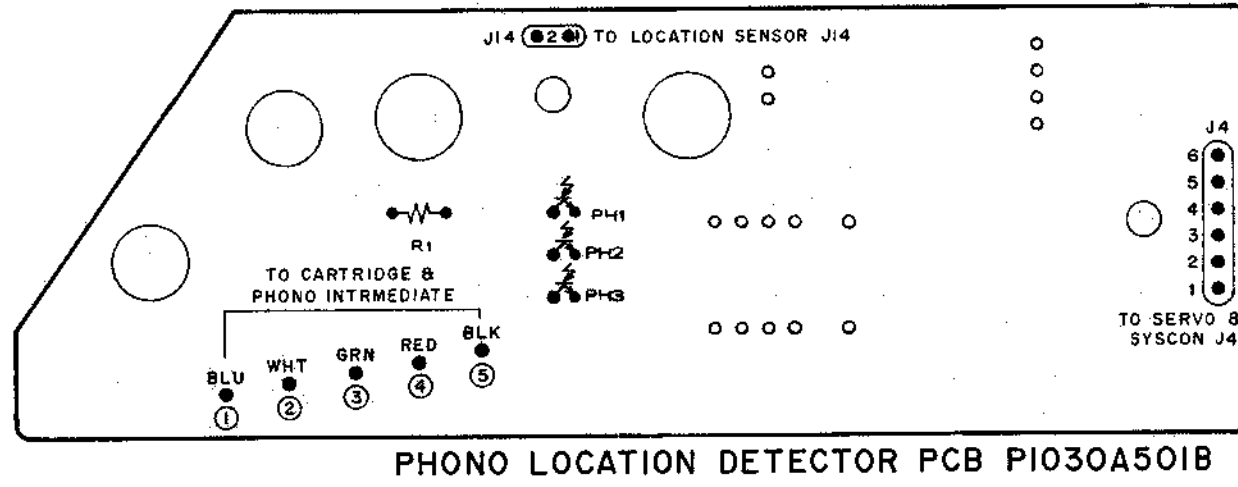
LOCATION OF COMPONENTS

TR	TR41.....B3	TR1, 2, 5, 22, 24.....2SC2236 (O, Y)
TR1 to 6.....D1	TR42.....D1	TR3, 4, 9 to 12,
TR7.....D2	TR43.....E1	18, 32 to 34, 42, 43.....2SA1015 (O, Y)
TR8 to 12.....D3	TR44.....B1	TR6, 23, 25, 44.....2SA966 (O, Y)
TR13.....D2		TR7, 13 to 17, 19 to 21,
TR14 to 16.....C2	IC	26 to 31, 35, 37, 38.....2SC1815 (Y, GR)
TR17.....C3	IC1.....D1	TR8.....2SK30A (R)
TR18.....C2	IC2.....D2	TR36, 40.....2SD313 (E, F)
TR19.....C3	IC3.....E2	TR39.....2SD612K (E, F)
TR20, 21.....C2	IC4.....C2	TR41.....2SB507HP (E, F)
TR22 to 25.....B2	IC5.....B2	
TR26, 27.....A2	IC6.....A3	
TR28, 29.....E1		
TR30, 31.....A1	TERMINALS	
TR32, 33.....A2	J1.....C2	
TR34, 35.....A1	J2, 3.....D1	
TR36.....A2	J4.....E1	
TR37, 38.....B2	J5, 6.....A1	
TR39.....B1	J7.....E3	
TR40.....A3	J8.....A1	

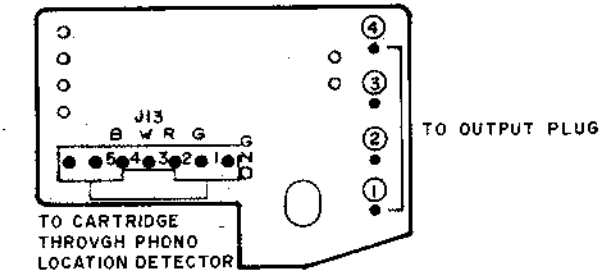


WARNING: Δ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.
 AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL. NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

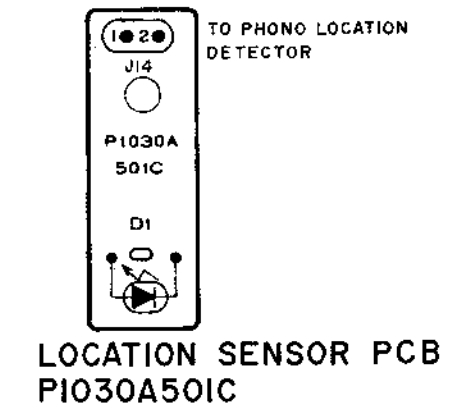
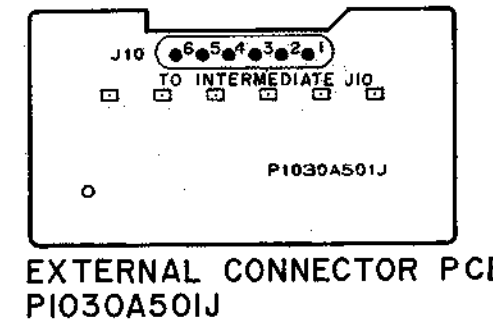
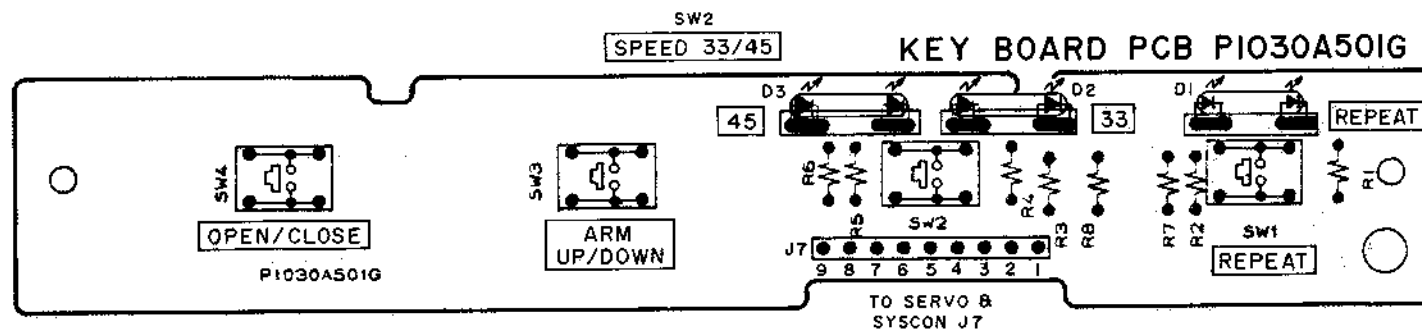
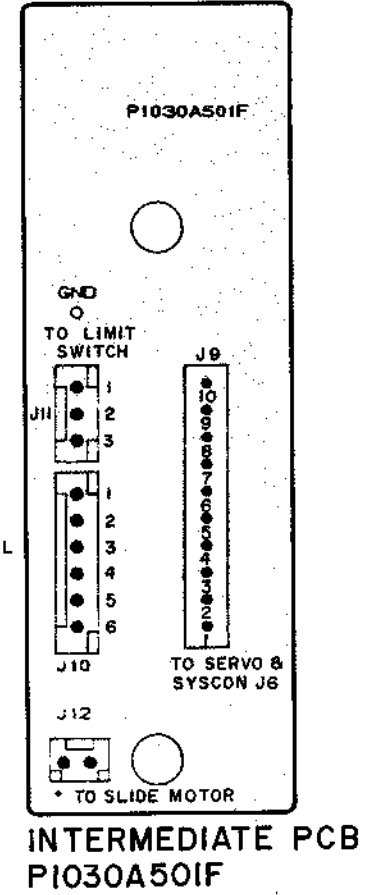
2) OTHER P.C BOARDS



PHONO INTERMEDIATE PCB P1030A501I



TO EXTERNAL CONNECTOR



SECTION 3

PARTS LIST

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Resistor and Capacitor which is not listed in this parts list, please refer to COMMON LIST FOR SERVICE PARTS.

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
 - b) P.C Board 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

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 SURETE POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL. NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

I. MODEL FD-7/L

RECOMMENDED SPARE PARTS

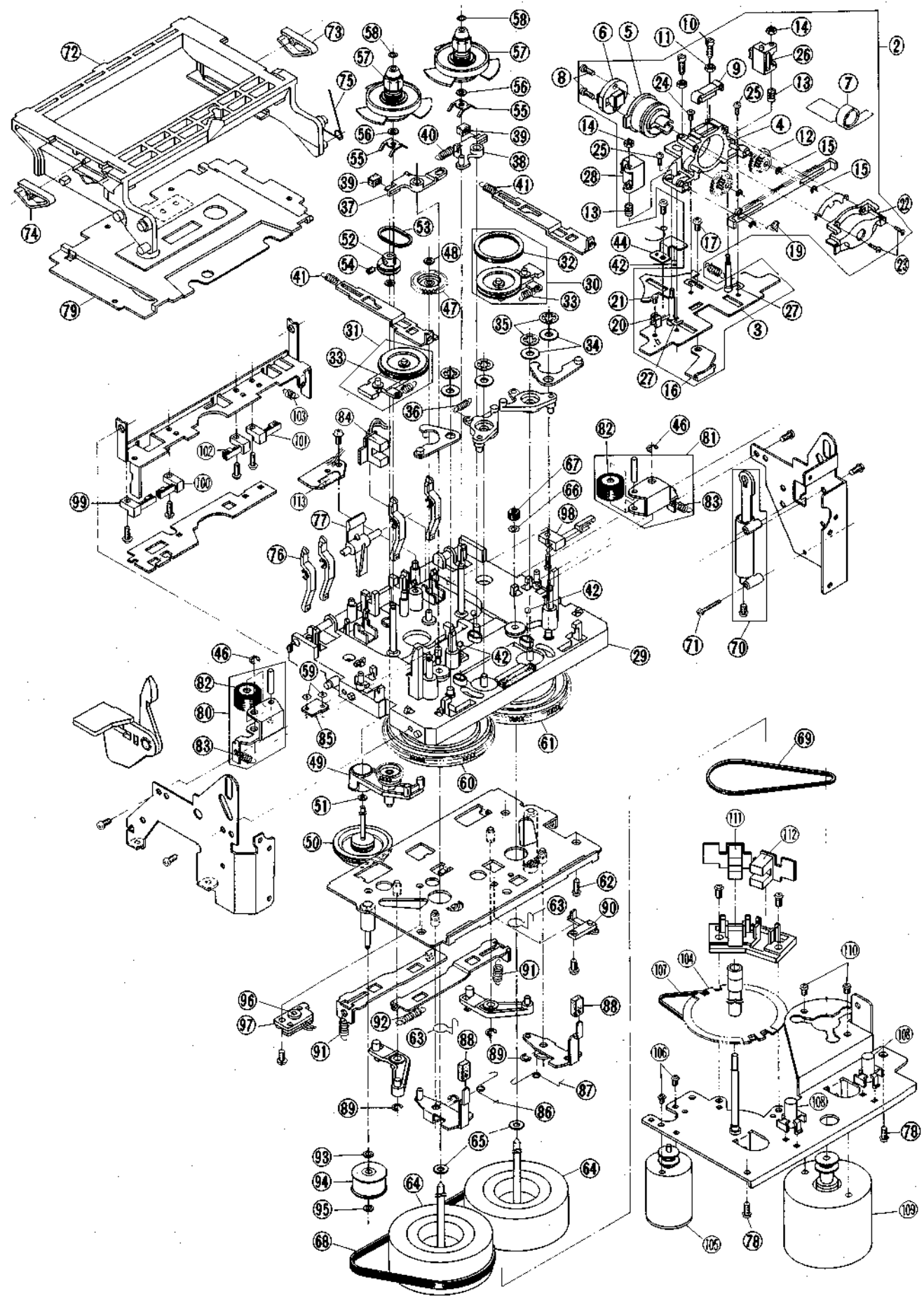
Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

NO.	PARTS NO.	DESCRIPTION
1	BF-344029	FLYWHEEL
2	BM-B604491	MOTOR (PULLEY) PART EG-510ED 2B2
3	BM-B604490	MOTOR OPERATION (PULLEY) PART
4	BT-347450	Δ TRANS POWER C1002T-21 (A)
5	BT-347449	Δ TRANS POWER C1002T-31 (C)
6	BT-347451	Δ TRANS POWER C1002T-41 (E,V)
7	BT-347452	Δ TRANS POWER C1002T-51 (S,B)
8	BT-347448	Δ TRANS POWER C1002T-71 (U)
9	BT-347466	Δ TRANS POWER C1002T2-32(C,A)
10	BT-347467	Δ TRANS POWER C1002T2-42(E,V)
11	BT-347468	Δ TRANS POWER C1002T2-52(S,B)
12	BT-347465	Δ TRANS POWER C1002T2-72 (U)
13	BZ-T2045A020D	MECHA CMR01 BLK FD-7
14	EC-330692	C S-FIX H TZ03R200E 4.2-20
15	ED-200749	D SILICON DBA60-K15 400/6.0A
16	ED-324912	D SILICON 1D4B41 200/1.0A
17	ED-224526	D SILICON 10D1 100/1.0A
18	ED-347612	D SILICON 2D4B41
19	ED-346576	D ZENER H HZ24L 1
20	ED-308952	D GERMA V 1K34A-LR F07
21	ED-705414	D LED SE303A INFRARED
22	ED-348990	D SILICON H DS446
23	ED-337153	D SILICON H DS446FA5 F10
24	ED-301911	D SILICON H DS448
25	ED-200469	D SILICON H DS448 FA5 F10
26	ED-344280	D SILICON H GMA-01-FY2 F05
27	ED-337575	D SILICON H GMA-01-4-BT T26
28	ED-348205	D SILICON V MC931 DOUBLE
29	ED-224526	D SILICON 10D1 100/1.0A
30	ED-337605	D VARACTOR SVC333(A) DOUBLE
31	ED-323057	D VARISTOR MV12
32	ED-346561	D ZENER H HZ12L C1
33	ED-346564	D ZENER H HZ15L 1
34	ED-330219	D ZENER H HZ20L 2
35	ED-346528	D ZENER H HZ6L C1
36	ED-307690	D ZENER H HZ7L A1
37	ED-325115	D ZENER H 05Z15 X
38	ED-346157	D ZENER H 05Z3.3 Y
39	ED-344153	D ZENER H 05Z30 Y
40	ED-347149	D ZENER H 05Z8.2 Y
41	ED-347963	D ZENER H 1Z6.2
42	ED-348012	D ZENER V HZ3C-1S1
43	ED-338454	D ZENER V HZ9C-2S1
44	EF-668474	Δ FUSE SEMKO T 250V 0.40A (F6) (E,B,S,V)
45	EF-593706	Δ FUSE SEMKO T 250V 0.50A (F8) (E,B,S,V)
46	EF-593706	Δ FUSE SEMKO T 250V 0.50A (F7) (E,B,S,V)
47	EF-623103	Δ FUSE SEMKO T 250V 1.00A (F1) (E,B,S,V)
48	EF-601301	Δ FUSE SEMKO T 250V 2.00A (F4) (E,B,S,V)
49	EF-601301	Δ FUSE SEMKO T 250V 2.00A (F2) (E,B,S,V)
50	EF-601301	Δ FUSE SEMKO T 250V 2.00A (F5) (E,B,S,V)
51	EF-309389	Δ FUSE TSC A 250V 0.40A (F6) (U)
52	EF-327103	Δ FUSE TSC A 250V 0.50A (F7) (U)
53	EF-327103	Δ FUSE TSC A 250V 0.50A (F8) (U)
54	EF-309387	Δ FUSE TSC A 250V 1.00A (F1) (U)
55	EF-306950	Δ FUSE TSC A 250V 2.00A (F4) (U)
56	EF-306950	Δ FUSE TSC A 250V 2.00A (F5) (U)
57	EF-306951	Δ FUSE TSC A 250V 2.50A (F2) (U)
58	EF-306951	Δ FUSE TSC A 250V 2.50A (F3) (U)
59	EF-308848	Δ FUSE TSC 125V 0.40A (F6) (C,A)
60	EF-309390	Δ FUSE TSC 125V 0.50A (F8) (C,A)
61	EF-305703	Δ FUSE TSC 125V 0.63A (F7) (C,A)

NO.	PARTS NO.	DESCRIPTION
62	EF-310229	Δ FUSE TSC 125V 1.00A (F1) (C,A)
63	EF-306954	Δ FUSE TSC 125V 2.00A (F5) (C,A)
64	EF-306954	Δ FUSE TSC 125V 2.00A (F4) (C,A)
65	EF-306957	Δ FUSE TSC 125V 4.00A (F2) (C,A)
66	EH-749948	FILTER CE CSB455C
67	EI-343390	IC STK1050
68	EI-330352	IC BA6109
69	EI-322248	IC LA1231N
70	EI-202218	IC LA1245
71	EI-343349	IC LA3390
72	EI-336761	IC LA6458S
73	EI-336794	IC LB1240
74	EI-338171	IC LC4069UB
75	EI-337008	IC LC7800
76	EI-348465	IC LM6402H-190
77	EI-337228	IC M5218L0
78	EI-344764	IC M5218P-21
79	EI-332258	IC M54516
80	EI-337835	IC NE652
81	EI-323563	IC STK3042
82	EI-332259	IC TC4052BP
83	EI-346966	IC TC47C20P NH-201
84	EI-346965	IC TC47C21P NH-101
85	EI-315379	IC TC5066BP
86	EI-336717	IC TC9125BP
87	EI-343371	IC TC9154P
88	EI-315381	IC TD6102P
89	EI-330226	IC μPC1373H
90	EI-749983	IC μPD1943G
91	EI-337017	OSC CE CSB800A 0.800000MHZ
92	EI-347434	OSC X'TAL HC-18/U 4.194304MHZ
93	EI-327074	OSC X'TAL HC-18/U 9.000000MHZ
94	EL-348214	PL LEAD 28.0V 24MA
95	EL-347456	PL MINI BASE 14.0V 50MA
96	EM-347435	IND FL BG-138Z DOUBLE
97	EP-337067	RELAY LEAD LAB2NS 2NO 18V
98	EP-347611	RELAY POWER G2R-1112PFD-V INO 12V
99	EP-337159	RELAY SIGNAL G4Z-2282P 2NO 24V
100	ER-348873	Δ R FUSE ERD2FC S10 1/4W
101	ER-326169	Δ R FUSE ERD2FC S10 1/4W 22R0G
102	ER-337756	Δ R FUSE ERD2FC S10 1/4W 4700G
103	ER-331188	Δ R FUSE ERD2FC S10 1/4W 8R2J
104	ER-328520	Δ R FUSE ERD2FC 1/4W 1000G
105	ER-331619	Δ R FUSE ERD2FC 1/4W 39R0G
106	ER-337327	FILTER CE BFU459C4N 0.459MHZ (EXCEPT C)
107	ER-337328	FILTER CE BFU460C4N 0.46MHZ(C)
108	ER-338338	FILTER CE MS3GKY-A 10.700MHZ (V,E)
109	ER-336804	FILTER CE SFE10.7MA8 10.7MHZ (EXCEPT V,E)
110	ER-345729	FILTER CE SFE10.7MZ1KA 10.7MHZ (L,E ONLY)
111	ER-343352	FILTER CE SFU459B9 0.459MHZ (EXCEPT C)
112	ER-343353	FILTER CE SFU460B9 0.460MHZ (C)
113	ER-337695	FILTER DB 201AK-005 100KHZ
114	ER-336830	FILTER LC LP BL-34HD (V)
115	ER-341654	FILTER LC LP 42W-1001
116	ER-315407	FILTER CE SFE10.7MMKA 10.7MHZ (EXCEPT L,E)
117	ES-344104	SW LEAF BSW-191 01-1 NO
118	ES-336814	SW LEAF MSW-1150NBK 01-1 NO
119	ES-344253	SW LEAF MSW-1418J 01-1 NO
120	ES-344257	SW LEAF MSW-1418L 01-1 NO
121	ES-347966	SW PUSH ESB-649 91-2-2 N
122	ES-347616	SW PUSH I-K1121#01 2THROW
123	ES-337902	SW PUSH SDLD1P 01-1
124	ES-347436	SW ROTARY SRM1017 1-01-07S
125	ES-347617	SW SELECTOR 0240#02 01-4 (U ONLY)
126	ES-749947	SW SLIDE
127	ES-348463	SW SLIDE X012B11Y 01-2 (U ONLY)
128	ES-344439	SW SLIDE 00420451 2-04-02
129	ES-344445	SW TACT EVQ-QHR12B
130	ES-336780	SW TACK KHH10902

NO.	PARTS NO.	DESCRIPTION
131	ET-301165	TR 2SB631K E,F
132	ET-316171	TR 2SC536K-NP E,F
133	ET-452531	TR 2SD313HP E,F
134	ET-300931	TR 2SD600K E,F
135	ET-310148	TR 2SD612K E,F
136	ET-344102	PHOTO SENSOR GP-1S04
137	ET-330717	PHOTO SENSOR NJL1644L
138	ET-310341	PHOTO SENSOR PT350 T
139	ET-311977	PHOTO SENSOR SPI-201
140	ET-330588	TR FET 2SK19 O,Y
141	ET-336937	TR FET 2SK223 E,F
142	ET-337604	TR FET 2SK246 Y
143	ET-200558	TR 2SA1115 E,F
144	ET-322778	TR 2SA608K-NP E,F,G
145	ET-332311	TR 2SA608SP D,E,F,G
146	ET-305463	TR 2SA970 GR,BL
147	ET-332422	TR 2SB774 Q,R,S
148	ET-337258	TR 2SC1843 E,F
149	ET-302502	TR 2SC2001 K
150	ET-307195	TR 2SC2240 GR,BL
151	ET-309353	TR 2SC2274K E,F
152	ET-328578	TR 2SC2320 E,F
153	ET-344275	TR 2SC2320L F,G
154	ET-330464	TR 2SC2603 D,E
155	ET-200505	TR 2SC2603 E,F
156	ET-200985	TR 2SC2603 F,G
157	ET-308141	TR 2SC2603 G
158	ET-338410	TR 2SC2878 A,B
159	ET-336935	TR 2SC3000 E,F
160	ET-322775	TR 2SC536K-NP E,F,G
161	ET-621235	TR 2SC536NP E,F,G
162	ET-246846	TR 1SC536NP E,F,G,H
163	ET-398788	TR 2SC945L R
164	ET-328437	TR 2SD1012-V F,G
165	ET-328440	TR 2SD863-V8 E,F
166	ET-201580	TR 2SD894
167	EV-315414	R S-FIX H D8 3P 203
168	EV-322413	R S-FIX H D8 3P 302
169	EV-337995	R S-FIX H RVF8P01 3P 103
170	EV-337993	R S-FIX H RVF8P01 3P 203
171	EV-336785	R S-FIX H TM8KV2-1S 3P 0.50W 104
172	EV-347615	VR ROTARY 16P20x3A C104
173	EV-347614	VR ROTARY 16P20x3B C104
174	HR-344103	HEAD COMBO HD425804RVJ
175	MB-344088	BELT CAM
176	MB-344041	BELT CAPSTAN
177	MB-344042	BELT WIND (A)
178	MP-336153	PINCH ROLLER (A)
179	TA-347458	FRONT END FE391U13 88-108MHZ (EXCEPT V)
180	TA-347458	FRONT END FE393E12 88-108MHZ (V)

MECHA CMR01 BLK



PARTS LIST FD-7/L

1. MECHA CMR01 BLK

REF. NO.	PARTS NO.	DESCRIPTION
1-1	BZ-T2045A020D	MECHA CMR01 BLK FD-7
	HEAD BLOCK	
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	CTS20x06STL BNI
1-9	HZ-344011	GUIDE ROTARY HEAD
1-10	ZS-344001	SCREW AZIMUTH
1-11	ZW-272734	N20BRS N13 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	PAN26x04STL 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	BID14x03STL BNI
1-22	HZ-344015	COVER HOUSING
1-23	ZS-345773	BID17x06STL BNI
1-24	ZS-524812	CTS20x04STL CMT
1-25	ZS-608095	PAN20x05STL 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 (I) 0.50MM
1-28	BZ-T2045A040A	GUIDE DETECTION BLK HX-R5
	MECHA CMR01 BLOCK	
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	PW31x080x030STL 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 T1-042
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-336613	PT PAN26x06STL CMT
1-46	ZW-270088	RING E 190SUP CMT
1-47	MZ-344036	GEAR WIND (B)
1-48	ZW-343120	PW17x040x025PSL
1-49	ML-344096	ARM REWIND ASSY
1-50	TC-344097	WIND ASSY
1-51	ZW-305546	PW21x040x025PSL
1-52	MR-344037	PULLEY WIND
1-53	MB-344043	BELT WIND (B)
1-54	ZS-345314	-SET20x03STL CMT HP
1-55	ZG-344031	SP PLATE BT
1-56	ZW-381644	PW21x040x013PSL
1-57	BR-344098	REEL TABLE (A) ASSY
1-58	ZW-343120	PW17x040x025PSL
1-59	ZW-349046	WASHER FIXATION
1-60	MZ-344019	CAM WHEEL (L)
1-61	MZ-344020	CAM WHEEL (R)
1-62	ZS-336613	PT PAN26x06STL CMT

REF. NO.	PARTS NO.	DESCRIPTION
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 PAN20x12STL 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-344058B	SP TORSION LID (L)
1-76	ML-344286	LEVER DETECTION (A)
1-77	ML-344053	LEVER DETECTION (B)
1-78	ZS-321194	ST PAN26x05STL CMT
1-79	BD-B344049B	LID DECORATION (B) 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	PHOTO SENSOR 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 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	PW21x040x025PSL
1-94	MR-B344076	PULLEY MIDDLE PART
1-95	ZW-343120	PW17x040x025PSL
1-96	ED-310340	D LED GL350 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	PAN20x03STL 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	PAN26x03STL CMT
1-111	ET-344102	PHOTO SENSOR GP-1S04 (PH2)
1-112	ET-344102	PHOTO SENSOR GP-1S04 (PH3)
1-113	EL-348214	PL LEAD 28.0V 24MA (IN1)

2. MAIN AMP P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1U	BA-C1002A070A	PC MAIN BLK FD-7 (U)
2-1C	BA-C1002A070B	PC MAIN BLK FD-7 (C) (C,A)
2-1E	BA-C1002A070C	PC MAIN BLK FD-7 (E)
2-1V	BA-C1002A070D	PC MAIN BLK FD-7 (V)
MAIN AMP P.C BOARD		
2-IC1	EI-337228	IC M5218L0
2-IC2	EI-343371	IC TC9154P
2-IC3	EI-323563	IC STK3042
2-IC4	EI-343390	Δ IC STK1050
2-IC5,6	EI-337228	IC M5218L0
2-TR1	ET-305463	TR 2SA970 GR,BL
2-TR2,3	ET-307195	TR 2SC2240 GR,BL
2-TR4	ET-307195	Δ TR 2SC2240 GR,BL
2-TR5,6	ET-307195	TR 2SC2240 GR,BL
2-TR7	ET-328440	TR 2SD863-V8 E,F
2-TR8	ET-307195	TR 2SC2240 GR,BL
2-TR9	ET-300931	Δ TR 2SD600K E,F
2-TR10	ET-301165	Δ TR 2SB631K E,F
2-TR11	ET-316171	Δ TR 2SC536K-NP E,F
2-TR12	ET-316171	TR 2SC536K-NP E,F
2-TR13	ET-300931	Δ TR 2SD600K E,F
2-TR14	ET-452531	Δ TR 2SD313HP E,F
2-TR15	ET-310148	Δ TR 2SD612K E,F
2-TR16	ET-301165	Δ TR 2SB631K E,F
2-TR17	ET-310148	Δ TR 2SD612K E,F
2-D1,2	ED-346528	D ZENER H HZ6L C1
2-D3,4	ED-301911	D SILICON H DS448
2-D5	ED-346157	D ZENER H 05Z3.3 Y
2-D6,7	ED-337153	D SILICON H DS446FA5 F10
2-D8	ED-348990	D SILICON H DS446
2-D9,10	ED-337153	D SILICON H DS446FA5 F10
2-D11	ED-301911	D SILICON H DS448
2-D12,13	ED-337153	Δ D SILICON H DS446FA5 F10
2-D14	ED-200749	Δ D SILICON DBA60-K15 400/6.0A
2-D15,16	ED-346576	Δ D ZENER H HZ24L 1
2-D17,18	ED-346561	D ZENER H HZ12L C1
2-D19	ED-344153	D ZENER H 05Z30 Y
2-D20	ED-330219	D ZENER H HZ20L 2
2-D21	ED-347612	Δ D SILICON 2D4B41
2-D22	ED-301911	D SILICON H DS448
2-D23	ED-346564	D ZENER H HZ15L 1
2-D24,25	ED-324912	Δ D SILICON 1D4B41 200/1.0A
2-D26	ED-346528	D ZENER H HZ6L C1
2-D27	ED-224526	Δ D SILICON 10D1 100/1.0A
2-D28	ED-344153	D ZENER H 05Z30 Y
2-D29	ED-347963	D ZENER H 1Z6.2
2-D30	ED-325115	D ZENER H 05Z15 X
2-D31	ED-346528	D ZENER H HZ6L C1
2-D32	ED-324912	Δ D SILICON 1D4B41 200/1.0A
2-R20	ER-325269	Δ R CB H S10 FS RDS 1/4W 222J
2-R22	ER-325269	Δ R CB H S10 FS RDS 1/4W 222J
2-R24	ER-325269	Δ R CB H S10 FS RDS 1/4W 222J
2-R26	ER-325269	Δ R CB H S10 FS RDS 1/4W 222J
2-R27	ER-337773	Δ R OMF H S15 FS 1W 222J
2-R37,38	ER-308875	Δ R CB H S15 FS RDS 1/2W 100J
2-R45	ER-333067	Δ R OMF H S20 FS 2W 821J
2-R46	ER-333044	Δ R OMF H S20 FS 2W 152J
2-R47	ER-308875	Δ R CB H S15 FS RDS 1/2W 100J
2-R48,49	ER-305722	Δ R OMF H SNP FS 2W 221J
2-R64	ER-326838	Δ R CB H S10 FS RDS 1/4W 272J
2-R66	ER-333663	Δ R CB H S15 FS RDS 1/2W 391J
2-R67	ER-326838	Δ R CB H S10 FS RDS 1/4W 272J

REF. NO.	PARTS NO.	DESCRIPTION
2-R69	ER-333663	Δ R CB H S15 FS RDS 1/2W 391J
2-R72	ER-200944	Δ R CB H S10 FS RDS 1/4W 152J
2-R75	ER-324186	Δ R CB H S10 FS RDS 1/4W 681J
2-R79	ER-327197	Δ R CB H S10 FS RDS 1/4W 391J
2-R81	ER-323074	Δ R CB H S10 FS RDS 1/4W 102J
2-R82	ER-323075	Δ R CB H S10 FS RDS 1/4W 472J
2-R83	ER-327198	Δ R CB H S10 FS RDS 1/4W 122J
2-R85	ER-200940	Δ R CB H S10 FS RDS 1/4W 561J
2-R86	ER-322787	Δ R CB H S10 FS RDS 1/4W 100J
2-FR1,2	ER-328520	Δ R FUSE ERD2FC 1/4W 1000G
2-FR3,4	ER-337756	Δ R FUSE ERD2FC S10 1/4W 4700G
2-FR5,6	ER-331619	Δ R FUSE ERD2FC 1/4W 39R0G
2-FR7	ER-326169	Δ R FUSE ERD2FC S10 1/4W 22R0G
2-FR8	ER-348873	Δ R FUSE ERD2FC S10 1/4W
2-L1	EO-337880	COIL FIX 2 202AK-018 2.20UH
2-L2	EO-338420	COIL FIX 2 FL12R202E 2.00MH (V)
2-L3	EO-336934	COIL FIX 1 LAL03KH 2.20UH M
2-SW1	ES-347616	SW PUSH J-K1121#01 2THROW
2-VR1	EV-347614	VR ROTARY 16P20x3B C104
2-VR2	EV-347615	VR ROTARY 16P20x3A C104
2-RL1	EP-337159	RELAY SIGNAL G4Z-2282P 2NO 24V

MIC P.C BOARD

2-J1B	EJ-347618	PHONE JACK JL3A 9P
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HEADPHONE P.C BOARD

2-J1C	EJ-347619	PHONE J 3P HLJ0606-20 6.3
2-L1C,2C	EO-336934	COIL FIX 1 LAL03KH 2.20UH M (V)

SPEAKER P.C BOARD

2-L1D	EO-342936	COIL BALUN (V)
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PLAYER P.C BOARD

2-J8E	EJ-347474	SOCKET POWER M1674 6P
2-F4U	EF-306950	Δ FUSE TSC A 250V 2.00A (U)
2-F4C	EF-306954	Δ FUSE TSC 125V 2.00A (C,A)
2-F4E	EF-601301	Δ FUSE SEMKO T 250V 2.00A (E,B,S,V)
2-F5U	EF-306950	Δ FUSE TSC A 250V 2.00A (U)
2-F5C	EF-306954	Δ FUSE TSC 125V 2.00A (C,A)
2-F5E	EF-601301	Δ FUSE SEMKO T 250V T250V 2.00A (E,B,S,V)
2-F6U	EF-309389	Δ FUSE TSC A 250V 0.40A (U)
2-F6C	EF-308848	Δ FUSE TSC 125V 0.40A (C,A)
2-F6E	EF-668474	Δ FUSE SEMKO T 250V 0.40A (E,B,S,V)
2-F7U	EF-327103	Δ FUSE TSC A 250V 0.50A (U)
2-F7C	EF-305703	Δ FUSE TSC 125V 0.63A (C,A)
2-F7E	EF-593706	Δ FUSE SEMKO T 250V 0.50A (E,B,S,V)
2-F8U	EF-327103	Δ FUSE TSC A 250V 0.50A (U)
2-F8C	EF-309390	Δ FUSE TSC 125V 0.50A (C,A)
2-F8E	EF-593706	Δ FUSE SEMKO T 250V 0.50A (E,B,S,V)

3. PRE AMP P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
3-1	BA-C1002A100A	PC PRE AMP BLK FD-7
3-IC2	EI-344291	IC NE654
3-IC3	EI-337835	IC NE652
3-IC5	EI-336761	IC LA6458S
3-TR1	ET-344275	TR 2SC2320L, F,G
3-TR2	ET-308141	TR 2SC2603 G
3-TR3,4	ET-200985	TR 2SC2603 F,G
3-TR5	ET-328578	TR 2SC2320 E,F
3-TR8	ET-328578	TR 2SC2320 E,F
3-TR9	ET-201580	TR 2SD894
3-TR10	ET-328437	TR 1SD1012-V F,G
3-TR11to17	ET-328578	TR 2SC2320 E,F
3-TR18to20	ET-200558	TR 2SA1115 E,F
3-TR22,23	ET-200505	TR 2SC2603 E,F
3-TR24	ET-309353	TR 2SC2274K E,F
3-TR25	ET-310833	TR 2SC2274K E
3-TR26	ET-310833	TR 2SC2274K E
3-TR28,29	ET-200505	TR 2SC2603 E,F
3-TR30	ET-328437	TR 2SD1012-V F,G
3-TR31	ET-337258	TR 2SC1843 E,F
3-TR32	ET-344275	TR 2SC2320L F,G
3-TR33	ET-328578	TR 2SC2320 E,F
3-TR34	ET-200985	TR 2SC2603 F,G
3-TR36,37	ET-200505	TR 2SC2603 E,F
3-D1	ED-337575	D SILICON H GMA-01-4-BT T26
3-D2to4	ED-301911	D SILICON H DS448
3-D6	ED-348012	D ZENER V HZ3C-1S7
3-D8	ED-200469	D SILICON H DS448 FA5 F10
3-D9	ED-308952	D GERMA V 1K34A-1R F07
3-D12	ED-344280	D SILICON H GMA-01-FY2 F05
3-D13	ED-337575	D SILICON H GMA-01-4-BT T26
3-D14	ED-344280	D SILICON H GMA-01-FY2 F05
3-VR1	EV-315414	R S-FIX H D8 3P 203
3-VR2	EV-322413	R S-FIX H D8 3P 302
3-VR3	EV-315414	R S-FIX H D8 3P 203
3-VR4	EV-336785	R S-FIX H TM8KV2-1S 3P 0.50W 104
3-VR5	EV-315413	R S-FIX H D8 3P 503
3-L2	EO-347162	COIL FIX 1 L-8 10MHZ J
3-T1	EO-345760	COIL OSC 1 32-5009-12 100KHZ
3-FL1	ER-7695	FILTER DB 201AK-005 100KHZ
3-FL3	EO-336738	COIL TUN 1 102AK-004 19.80KHZ
3-FL5	EO-315758	COIL TUN 1 100S-431 100.00KHZ
3-RL1	EP-337067	RELAY LEAD LAB2NS 2NO 18V
3-FR1,2	ER-331188	Δ R FUSE ERD2FC S10 1/4W 8R2J
3-C13	EC-314992	C STY V F05 CQF09 681J 50DC
3-C59	EC-337777	C PP V F10 ECQ-F 272J 630DC
3-C61	EC-314993	C STY V SNP CQFS 751J 50DC
3-C63	EC-302265	C STY V F05 CQF09 271J 50DC
3-C67	EC-314990	C STY V SNP CQFS 101J 50DC
3-C78	EC-314992	C STY V F05 CQF09 681J 50DC

4. CONTROL P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
4-1U	BA-C1002A030A	PC CONTROL BLK FD-7 (U)
4-1C	BA-C1002A030B	PC CONTROL BLK FD-7 (C) (C,A)
4-1E	BA-C1002A030C	PC CONTROL BLK FD-7 (E) (E,S,V)
4-1LE	BA-C1002A030D	PC CONTROL BLK FD-7L
4-1LB	BA-C1002A030E	PC CONTROL BLK FD-7L

CONTROL P.C BOARD

4-IC1	EI-346965	IC TC47C21P NH-101
4-IC2	EI-346966	IC TC47C20P NH-201
4-IC3	EI-348465	IC LM6402H-190
4-IC4,5	EI-337008	IC LC7800
4-IC6	EI-315379	IC TC5066BP
4-IC7	EI-332258	IC M54516
4-IC8	EI-338171	IC LC4069UB
4-IC9	EI-330226	IC μPC1373H
4-IC10	EI-338171	IC LC4069UB
4-IC11	EI-330352	IC BA6109
4-IC12to14	EI-336794	IC LB1240
4-TR1to3	ET-200558	TR 2SA1115 E,F
4-TR5	ET-621235	TR 2SC536NP E,F,G
4-TR6	ET-621235	TR 2SC536NP E,F,G
4-TR7	ET-200558	TR 2SA1115 E,F
4-TR8	ET-332422	TR 2SB774 Q,R,S
4-TR9to11	ET-200985	TR 2SC2603 F,G
4-TR12	ET-200558	TR 2SA1115 E,F
4-TR13	ET-200985	TR 2SC2603 F,G
4-D1	ED-301911	D SILICON H DS448
4-D2	ED-200469	D SILICON H DS448 FA5 F10
4-D4	ED-200469	D SILICON H DS448 FA5 F10
4-D5	ED-301911	D SILICON H DS448
4-D6	ED-224526	D SILICON 10D1 100/1.0A
4-D7	ED-323057	D VARISTER MV12
4-D8	ED-301911	D SILICON H DS448
4-D9	ED-301911	D SILICON H DS448
4-D10to17	ED-301911	D SILICON H DS448
4-D19,20	ED-301911	D SILICON H DS448
4-D22,23	ED-301911	D SILICON H DS448
4-D25	ED-301911	D SILICON H DS448
4-D26	ED-338454	D ZENER V HZ9C-2S7
4-D27	ED-347149	D ZENER H 05Z8.2 Y
4-D28	ET-330717	PHOTO SENSOR NJL1644L
4-VR1	EV-522652	R S-FIX V V8K1-1 3P 105
4-L1	EO-330719	COIL FIX1 187LY-103K 10.00MH K

4-L2	EO-336934	COIL FIX 1 LAL03KH 2.20UH M
4-X1,2	EI-347434	OSC X'TAL HC-18/U

4-X3	EI-337017	OSC CE CSB800A 0.800000MHZ
4-R50	ER-328067	Δ R CB H S10 FS RDS 1/4W 331J

4-R77	ER-337754	Δ R OMF H S15 FS 1W 100J
4-SR1	ER-347437	R COMP EXB-P88 104K
4-SR2	ER-347438	R COMP EXB-P87104K
4-SR3	ER-343420	R COMP EXB-P84104K
4-SR4	ER-347688	R COMP EXB-P88 472K
4-SR5,6	ER-347164	R COMP RKC 1/8 B8 223J
4-SR7	ER-347439	R COMP EXB-P84 473K
4-TC1	EC-330692	C S-FIX H TZ03R200E 4.2-20

FLD P.C BOARD

4-SW1Bto7B	ES-336780	SW TACT KHH10902
4-IND1B	EM-347435	IND FL BG-138Z DOUBLE

TIMER SELECTOR P.C BOARD

4-SW8C,9C	ES-336780	SW TACT KHH10902
4-SW11Cto13C	ES-336780	SW TACT KHH10902

TIMER P.C BOARD

4-SW10D	ES-336780	SW TACT KHH10902
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LAMP P.C BOARD

4-LP1Eto4E	EL-347456	PL MINI BASE 14.0V 50MA
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REF. NO.	PARTS NO.	DESCRIPTION
	BEAT CANCEL P.C BOARD	
4-SW14F	ES-344439	SW SLIDE 00420451 2-04-02
4-C29F	EC-346690	C STY V S05 CQFS 222J 250DC

5. TUNER P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
5-1U	BA-C1002A090A	PC TUNER BLK FD-7 (U)
5-1C	BA-C1002A090B	PC TUNER BLK FD-7 (C) (C,A)
5-1E	BA-C1002A090C	PC TUNER BLK FD-7 (E)
5-1V	BA-C1002A090D	PC TUNER BLK FD-7 (V)
5-1S	BA-C1002A090E	PC TUNER BLK FD-7 (S)
5-1LE	BA-C1002A090F	PC TUNER BLK FD-7L (E)
5-1LB	BA-C1002A090G	PC TUNER BLK FD-7L (B)
5-IC1	EI-322248	IC LA1231N
5-IC2	EI-343349	IC LA3390
5-IC3	EI-202218	IC LA1245
5-IC4	EI-315381	IC TD6102P
5-IC5	EI-336717	IC TC9125BP
5-TR1	ET-336935	TR 2SC3000 E,F
5-TR2	ET-332311	TR 2SA608SP D,E,F,G
5-TR3	ET-338410	TR 2SC2878 A,B (L ONLY)
5-TR4to6	ET-322778	TR 2SA608K-NP E,F,G(L ONLY)
5-TR7	ET-337604	TR FET 2SK246 Y (L ONLY)
5-TR9	ET-322775	TR 2SC536K-NP E,F,G(L ONLY)
5-TR10	ET-330588	TR FET 2SK19 O,Y (L ONLY)
5-TR11,12	ET-322775	TR 2SC536K-NP E,F,G(L ONLY)
5-TR13,14	ET-246846	TR 2SC536NP E,F,G,H
5-TR16	ET-246846	TR 2SC536NP E,F,G,H
5-TR17	ET-322778	TR 2SA608K-NP E,F,G
5-TR18	ET-246846	TR 2SC536NP E,F,G,H
5-TR19	ET-336937	TR FET 2SK223 E,F
5-TR20	ET-246846	TR 2SC536NP E,F,G,H
5-TR21	ET-330464	TR 2SC2603 D,E
5-TR22	ET-246846	TR 2SC536NP E,F,G,H
5-TR24	ET-200505	TR 2SC2603 E,F (V ONLY)
5-D1	ED-337575	D SILICON H GMA-01-4-BT T26
5-D2	ED-344280	D SILICON H GMA-01-FY2 F05 (L ONLY)
5-D3	ED-348205	D SILICON V MC931 DOUBLE (L ONLY)
5-D4,5	ED-337575	D SILICON H GMA-01-4-BT T26
5-D7,8	ED-337605	D VARACTOR SVC333 (A) DOUBLE
5-D9	ED-348205	D SILICON V MC931 DOUBLE
5-D10	ED-337575	D SILICON H GMA-01-4-BT T26
5-SW1	ES-344445	SW TACT EVQ-QHR12B
5-SW2	ES-344439	SW SLIDE 00420451 2-04-02 (U)
5-VR1	EV-337993	R S-FIX H RVF8P01 3P 203
5-VR2	EV-337995	R S-FIX H RVF8P01 3P 103
5-L1	EO-345904	COIL FIX 1 LAL03KH 1.50UH M
5-T1	EO-336878	COIL DET 2 78-1049
5-T2	EO-336879	COIL DET 2 78-1050
5-T3	EO-337598	COIL VARI 2 25A-1353-01
5-T4	EO-337599	COIL VARI 2 25A-1354-03 (L ONLY)
5-T5	EO-202215	COIL OSC 2 7NR-6721Y 100.0UH
5-T6	EO-307786	COIL OSC 2 7NR-6722Y 580.0UH (L ONLY)
5-T7	EO-343351	COIL IFT PEGK0008B-01 455.0KHZ
5-T8	EO-202216	COIL IFT 7MC-6733C 460.0KHZ

REF. NO.	PARTS NO.	DESCRIPTION
5-FL1U	ER-315407	FILTER CE SFE10.7MMKA 10.7MHZ (EXCEPT L,E)
5-FL1L	ER-345729	FILTER CE SFE10.7MZ1KA 10.7MHZ (L,E ONLY)
5-FL2U	ER-336804	FILTER CE SFE10.7MA8 10.7MHZ (EXCEPT V,E)
5-FL2L	ER-338338	FILTER CE MS3GKY-A 10.700MHZ (V,E)
5-FL3	ER-341654	FILTER LC LP 42W-1001
5-FL4U	ER-343352	FILTER CE SFU459B9 0.459MHZ (EXCEPT C)
5-FL4C	ER-343353	FILTER CE SFU460B9 0.460MHZ (C)
5-FL5U	ER-337327	FILTER CE BFU459C4N 0.459MHZ (EXCEPT C)
5-FL5U	ER-337327	FILTER CE BFU459C4N 0.459MHZ (EXCEPT C)
5-FL5C	ER-337328	FILTER CE BFU460C4N 0.46MHZ (C)
5-FL6V	ER-336830	FILTER LC LP BL-34HD (V)
5-X1	EI-327074	OSC X'TAL HC-18/U 9.000000MHZ
5-VC1to3	EC-330692	C S-FIX H TZ03R200E 4.2-20
5-R7	ER-324184	Δ R CB H S10 FS RDS 1/4W 121J
5-R15	ER-324337	Δ R CB H S10 FS RDS 1/4W 560J
5-R20to22	ER-324337	Δ R CB H S10 FS RDS 1/4W 560J
5-R63	ER-324185	Δ R CB H S10 FS RDS 1/4W 221J
5-R65	ER-324184	Δ R CB H S10 FS RDS 1/4W 121J
5-R92,93	ER-324480	Δ R CB H S10 FS RDS 1/4W 470J
5-R107	ER-324480	Δ R CB H S10 FS RDS 1/4W 470J
5-R113	ER-324934	Δ R CB H S10 FS RDS 1/4W 220J
5-R114	ER-324184	Δ R CB H S10 FS RDS 1/4W 121J
5-C25U	EC-344486	C PP V F05 PP 391J 50DC (EXCEPT C)
5-C25C	EC-344478	C PP V F05 PP 561J 50DC (C)
5-C26U	EC-344486	C PP V F05 PP 391J 50DC (EXCEPT C)
5-C26C	EC-344478	C PP V F05 PP 561J 50DC (C)
5-C27,28	EC-344482	C PP V F05 PP 161J 50DC (U)
5-C36	EC-344483	C PP V F05 PP 102J 50DC
5-C42	EC-344481	C PP V F05 PP 4700G 50DC
5-C43	EC-344482	C PP V F05 PP 161J 50DC (L ONLY)
5-2	TA-347458	FRONT END FE391U13 88-108MHZ (EXCEPT V)
5-2V	TA-347459	FRONT END FE393E12 88-108MHZ (V)
5-TM1	EJ-344423	TERMINAL W/SCREW YKD31-0133 P 2P

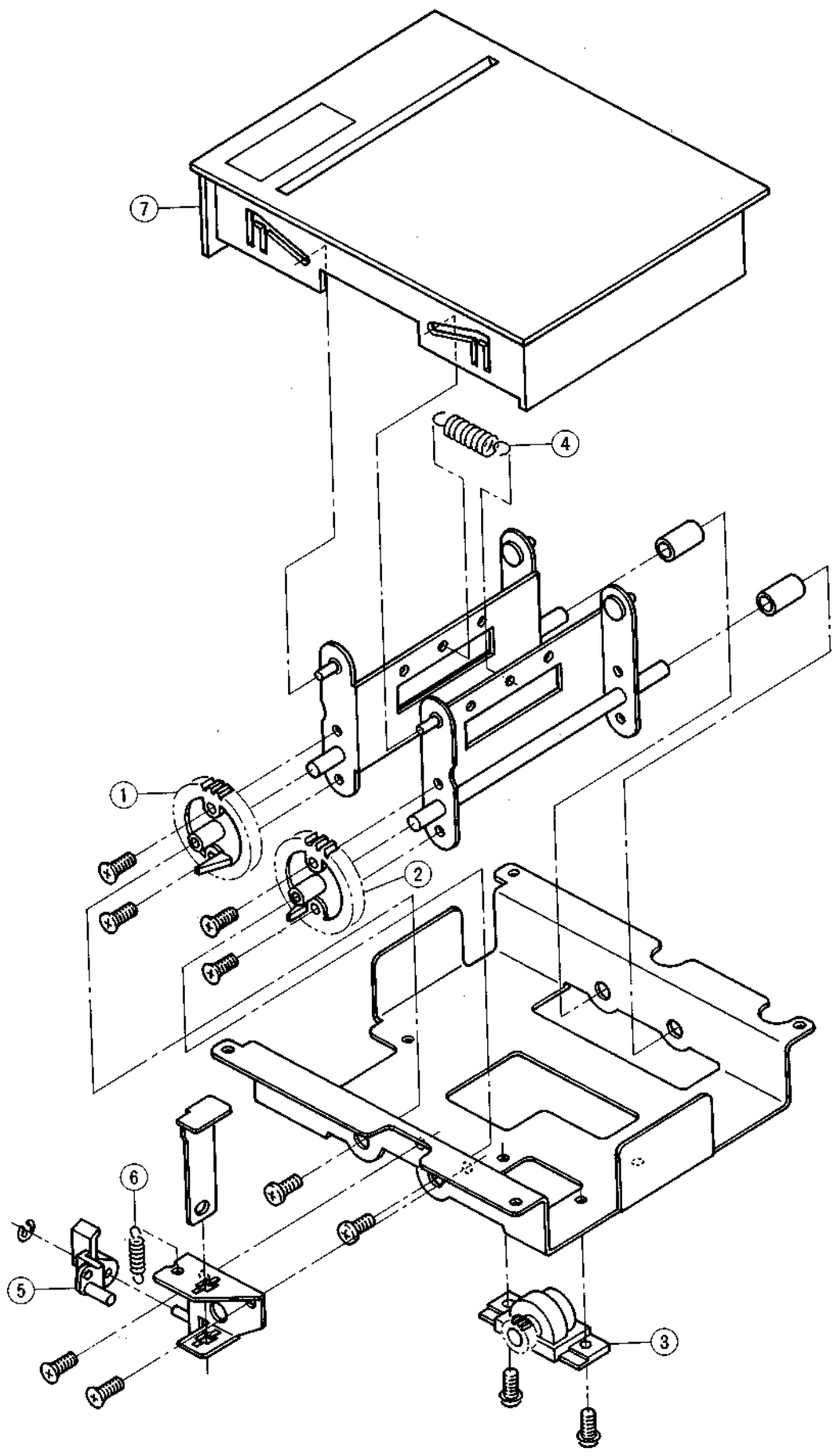
6. FUNCTION P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-IC1	EI-344764	IC M5218P-21
6-IC2	EI-332259	IC TC4052BP
6-D1,2	ED-307690	D ZENER H HZ7L A1
6-J1	EJ-336904	PIN J AJC-036-ACB P 6P
6-L1	EO-338420	COIL FIX 2 FL12R202E 2.00MH (L ONLY)
6-L2,3	EO-336934	COIL FIX 1 LAL03KH 2.20UH M (L ONLY)
6-R20,21	ER-323074	Δ R CB H S10 FS RDS 1/4W 102J
6-1	EJ-329610	TERMINAL W/SCREW UB-0067 L 1P

7. POWER SUPPLY P.C BOARD

REF. NO.	PARTS NO.	DESCRIPTION
POWER SUPPLY P.C BOARD		
7-D1	ED-200469	D SILICON H DS448 FA5 F10
7-SW1A	ES-337902	SW PUSH SDDL1P 01-1
7-RL1A	EP-347611	RELAY POWER G2R-1112PPFD-V 1NO 12V
7-FL1	EO-338409	COIL LF FKOB160MH02 250UH (V ONLY)
7-C1U	EC-320548	Δ C CE V F 103Z 250AC (U)
7-C1C	EC-314688	Δ C CE V FZ 103P 125AC (C,A)
7-C1E	EC-338577	Δ C CE V F 472M 400AC (E,V,S)
7-C2U	EC-320548	Δ C CE V F 103Z 250AC (U)
7-C2C	EC-314688	Δ C CE V FZ 103P 125AC (C,A)
7-C2E	EC-338577	Δ C CE V F 472M 400AC (E,V,S)
VOLTAGE SELECTOR P.C BOARD		
7-SW1B	ES-348463	SW SLIDE 00120297 01-2 (U ONLY)
7-SW2B	ES-347617	SW SELECTOR 0240#02 01-4 (U ONLY)
7-F1U	EF-309387	Δ FUSE TSC A 250A 1.00A (U)
7-F1C	EF-310229	Δ FUSE TSC 125V 1.00A (C,A)
7-F1E	EF-623103	Δ FUSE SEMKO T 250V 1.00A (E,B,S,V)
7-F2U	EF-306951	Δ FUSE TSC A 250V 2.50A (U)
7-F2C	EF-306957	Δ FUSE TSC 125V 4.00A (C,A)
7-F2E	EF-601301	Δ FUSE SEMKO T 250V 2.00A (E,B,S,V)
7-F3	EF-306951	Δ FUSE TSC A 250V 2.50A (U)

REMO. CON. TRANSFER BLOCK



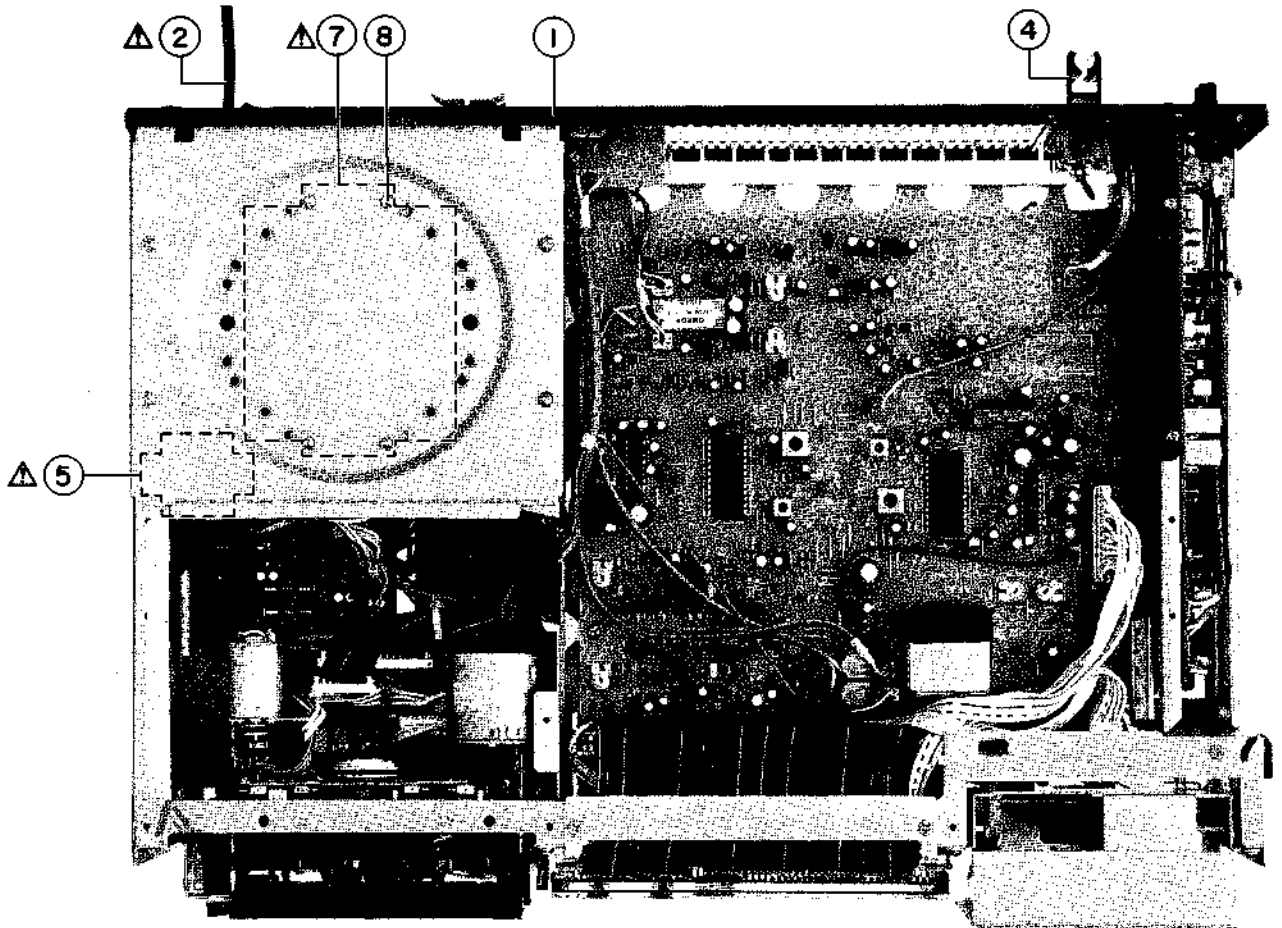
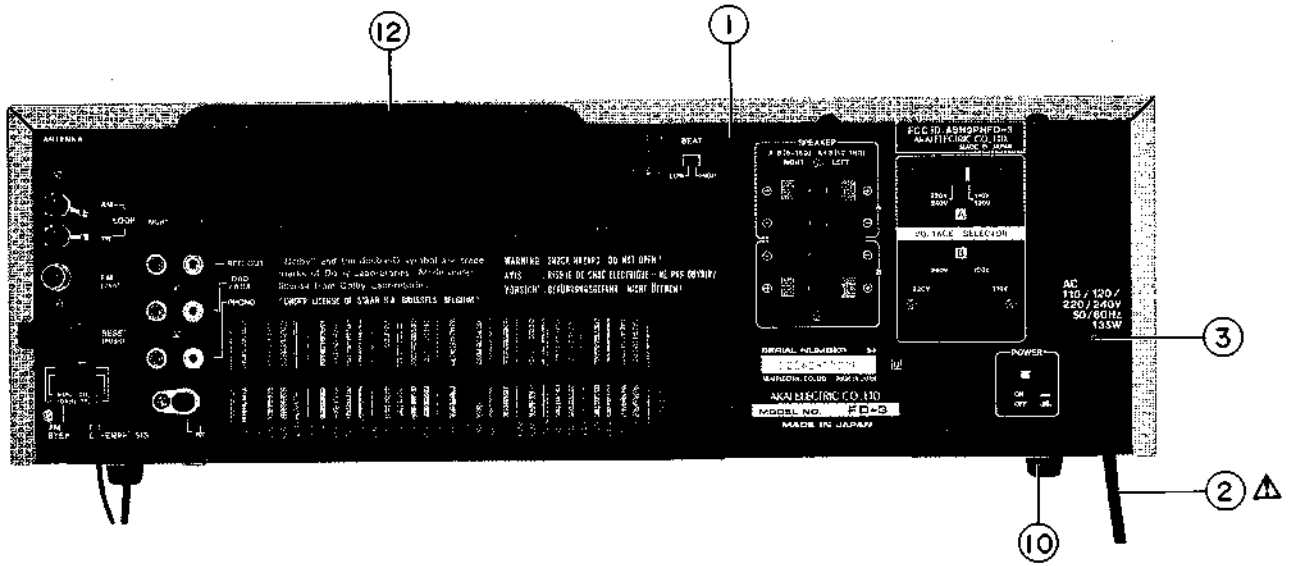
8. REMO. CON. TRANSFER BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
8-1	MZ-344850	GEAR TRANSFER (A)
8-2	MZ-347146	GEAR TRANSFER (B)
8-3	MZ-347620	DUMPER ASSY 3734-A-A-999-02
8-4	ZG-348994	SP PULL REMOCON TRANSFER
8-5	MZ-344853	CAM STOPPER
8-6	ZG-312943	SP T1-3.2/0.29-11.2 T1-059
8-7	SE-344873	ESCUTCHEON TRANSFER
8-7P	SE-344873B	ESCUTCHEON TRANSFER-P

9. REMOTE CONTROL BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
9-1	AX-347464	REMOCON UNIT FD-7
9-1P	AX-349152	REMOCON UNIT SFA10A002 NEW (P)
9-2	SP-749998	COVER BATTERY FD-3
9-2P	SP-749999	COVER BATTERY FD-3-P
9-3	TA-344883	STATION CARDS (EXCEPT L-B)
9-4	TA-344883B	STATION CARDS (B) (L-B ONLY)
9-ICZ01	EI-749983	IC μ PD1943G
9-Q01	ET-302502	TR 2SC2001 K
9-Q02	ET-398788	TR 2SC945L R
9-LED02	ED-705414	D LED SE303A INFRARED
9-LED03	ED-322247	D LED SLP151D RED
9-SL-SW	ES-749947	SW SLIDE
9-S011to15	ES-336780	SW TACT KHH10902
9-S17to28	ES-336780	SW TACT KHH10902
9-X01	EH-749948	FILTER CE CSB455C

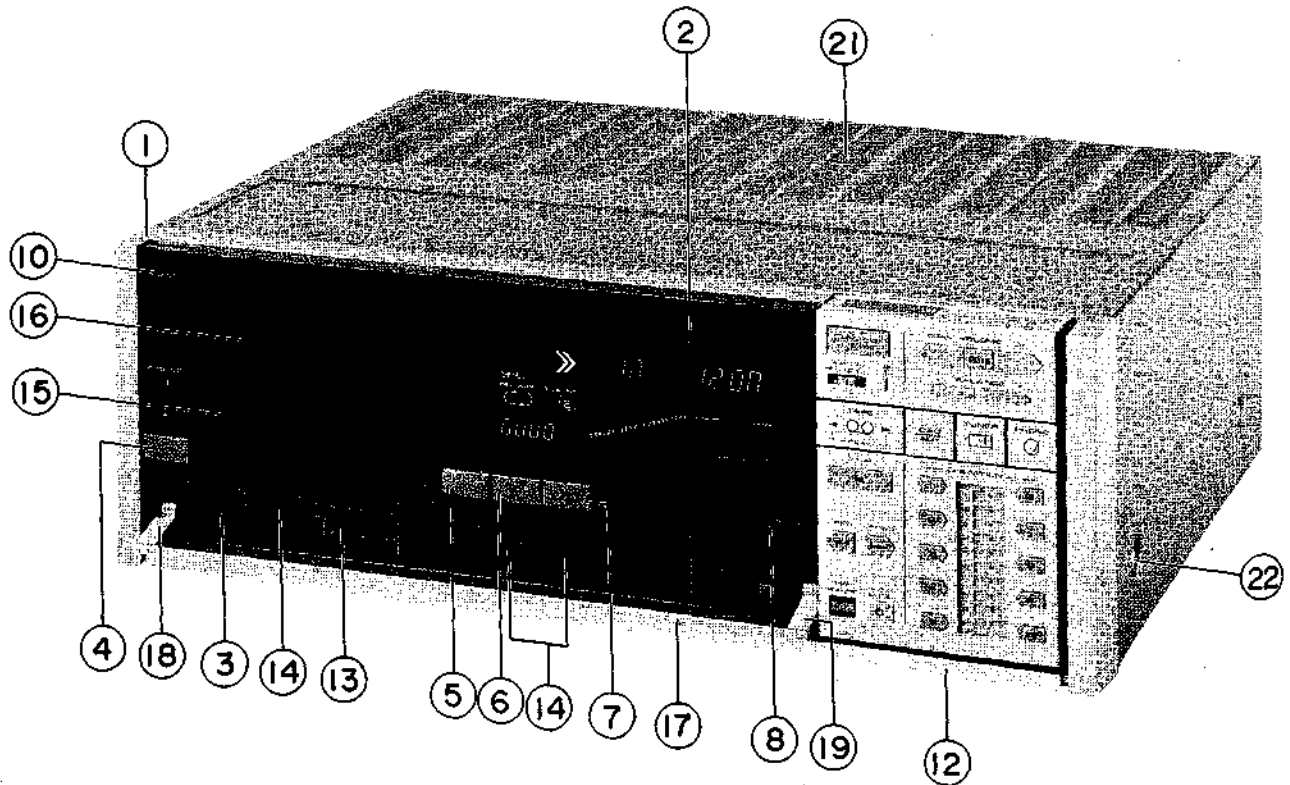
ASSEMBLY BLOCK



10. ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
10-1U	SP-344875A	PANEL REAR (A) FD-7 (U)
10-1C	SP-344875B	PANEL REAR (B) FD-7 (U,A)
10-1E	SP-344875C	PANEL REAR (B) FD-7 (E,V)
10-1S	SP-344875D	PANEL REAR (B) FD-7 (S)
10-1LE	SP-344875E	PANEL REAR (B) FD-7L (E)
10-1LB	SP-344875F	PANEL REAR (B) FD-7L (B)
10-2U	EW-306428	△ AC CORD 2 CORES KP-700A, VFF U/T (U)
10-2C	EW-343363	△ AC CORD 2 CORES KP-8, SPT-2 105C UC (C)
10-2A	EW-305691	△ AC CORD 2 CORES KP-8, SPT-1 UC (A)
10-2E	EW-336923	△ AC CORD 2 CORES KP-419C, LTCE-2 F EV (E,V)
10-2S	EW-336924	△ AC CORD 2 CORES KP-560, LTSA-2F S (S)
10-2B	EW-347025	△ AC CORD 2 CORES LTBS-2F B (B)
10-3	EZ-631945	STRAIN RELIEF SR-4N-4
10-4	SZ-332739	HOLDER ANTENNA
10-5U	BT-347465	△ TRANS POWER C1002T2-72 (U)
10-5C	BT-347466	△ TRANS POWER C1002T2-32 (C,A)
10-5E	BT-347467	△ TRANS POWER C1002T2-42 (E,V)
10-5S	BT-347468	△ TRANS POWER C1002T2-52 (S,B)
10-6x	ZS-315511	ST PAN30x06STL CMT CUP
10-7U	BT-347448	△ TRANS POWER C1002T-71 (U)
10-7C	BT-347449	△ TRANS POWER C1002T-31 (C)
10-7A	BT-347450	△ TRANS POWER C1002T-21 (A)
10-7E	BT-347451	△ TRANS POWER C1002T-41(E,V)
10-7S	BT-347452	△ TRANS POWER C1002T-51(S,B)
10-8	ZS-301398	ST BID40x08STL CMT
10-9x	ML-344857	JOINT
10-10	SA-347145	FOOT
10-11x	ZS-344914	ST PAN30x12STL CMT CUP
10-12	EE-337976	ANT LOOP LA-200A
10-13x	ZW-305013	RV POP32 (A)

FINAL ASSEMBLY BLOCK



11. FINAL ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
FRONT PANEL BLOCK		
11-1	BD-C1002A110A	PANEL FRONT BLK FD-7
11-1P	BD-C1002A110B	PANEL FRONT BLK FD-7P
11-2	SE-344863	WINDOW FLD
11-3	SK-344871	KNOB (4)-B
11-4	SK-344868A	KNOB (2)-A
11-4P	SK-344868F	KNOB (2)-A-P
11-5	SK-344868B	KNOB (2)-B
11-5P	SK-344868G	KNOB (2)-D-P
11-6	SK-344868C	KNOB (2)-C
11-6	SK-344868H	KNOB (2)-C-P
11-7	SK-344868D	KNOB (2)-D
11-7P	SK-344868J	KNOB (2)-D-P
11-8	SK-344868E	KNOB (2)-E
11-9x	ZG-347622	SP PUSH KNOB (2)
11-10	SK-344869	KNOB (3)
11-11x	ZG-322189	SP (B)
FINAL ASSEMBLY BLOCK		
11-12	SP-344862	SASH FRONT
11-12P	SP-344862B	SASH FRONT-P
11-13	SK-344870	KNOB (4)-A
11-14	SK-332534D	KNOB ROTARY (D)
11-15	BD-344865	LID FRAME FD-7
11-16	BD-344864	LID
11-17	SP-344872C	PANEL DOOR FD-7
11-17P	SP-344872G	PANEL DOOR FD-7-P
11-17L	SP-344872D	PANEL DOOR FD-7L
11-17LP	SP-344872H	PANEL DOOR FD-7L-P
11-18	TP-344879A	HINGE DOOR PANEL (L)
11-19	TP-344879B	HINGE DOOR PANEL (R)
11-20x	ZS-341962	PT BR23x10STL CMT
11-21	BC-344859	COVER
11-22	ZS-322570	ST BID40x08STL NI3

II. MODEL FP-7

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.

NO.	PARTS NO.	DESCRIPTION
1	BM-P1030A090A	Δ MAIN MOTOR BLK FP-7
2	BM-347046	Δ MOTOR MCA9B05
3	EC-309115	C COMP V AWS 104J 50DC
4	ED-337379	D LED NJL1102EH INFRARED
5	ED-332244	D LED SLP471D YLW
6	ED-557447	D SILICON H 1S1588
7	ED-306724	D SILICON S5277B 100/1.0A
8	ED-346615	D ZENER H HZ12 A2
9	ED-329058	D ZENER H HZ5 C1
10	ED-309069	D ZENER H HZ6 B2
11	EI-330352	IC BA6109
12	EI-338390	IC LA6458S-AKAI
13	EI-337903	IC LC4016B
14	EI-347036	IC LM6402A-121
15	EI-201940	IC NJM4558S
16	EI-349010	IC NJM4558S-B
17	EL-347033	PL CORD 16.0V 80MA 230/230
18	EO-345922	COIL FIX 1 LAL03KH 47.00UH K
19	EO-669273	COIL FIX 2 FL5R200 18UH
20	EP-337896	Δ SOLENOID TDS-09SL-513 22V
21	EP-322437	RELAY LEAD LAB2NS 2NO 5V
22	ER-318647	Δ R FUSE ERD2FC S10 1/4W 4R7J
23	ES-337895	SW LEAF MSW-0094NBK 01-1 NO
24	ES-347048	SW PUSH SCL101P 1-01-02N
25	ES-336780	SW TACT KHH10902
26	ET-347026	Δ TR 2SB507HP E,F
27	ET-336941	Δ TR 2SD313 E,F
28	ET-310148	Δ TR 2SD612K E,F
29	ET-348326	PHOTO SENSOR NJL7201E C
30	ET-337891	PHOTO SENSOR PH101
31	ET-336816	TR FET 2SK30A R
32	ET-325501	TR 2SA1015 O,Y
33	ET-306720	TR 2SA966 O,Y
34	ET-307234	TR 2SC1815 Y,GR
35	ET-306719	TR 2SC2236 O,Y
36	EV-336852	R S-FIX H KVSF807U 3P 102
37	EV-336854	R S-FIX H KVSF807U 3P 104
38	EV-336843	R S-FIX H KVSF807U 3P 303
39	EV-306007	R S-FIX H TM8KV2-1S 3P 0.50W 203
40	EV-341233	R S-FIX H TM8KV2-1S 3P 0.50W 302
41	EZ-348409	OSC CE CSB400P 0.4 MHZ

I. SERVO/SYS. CON. P.C BOARD BLOCK

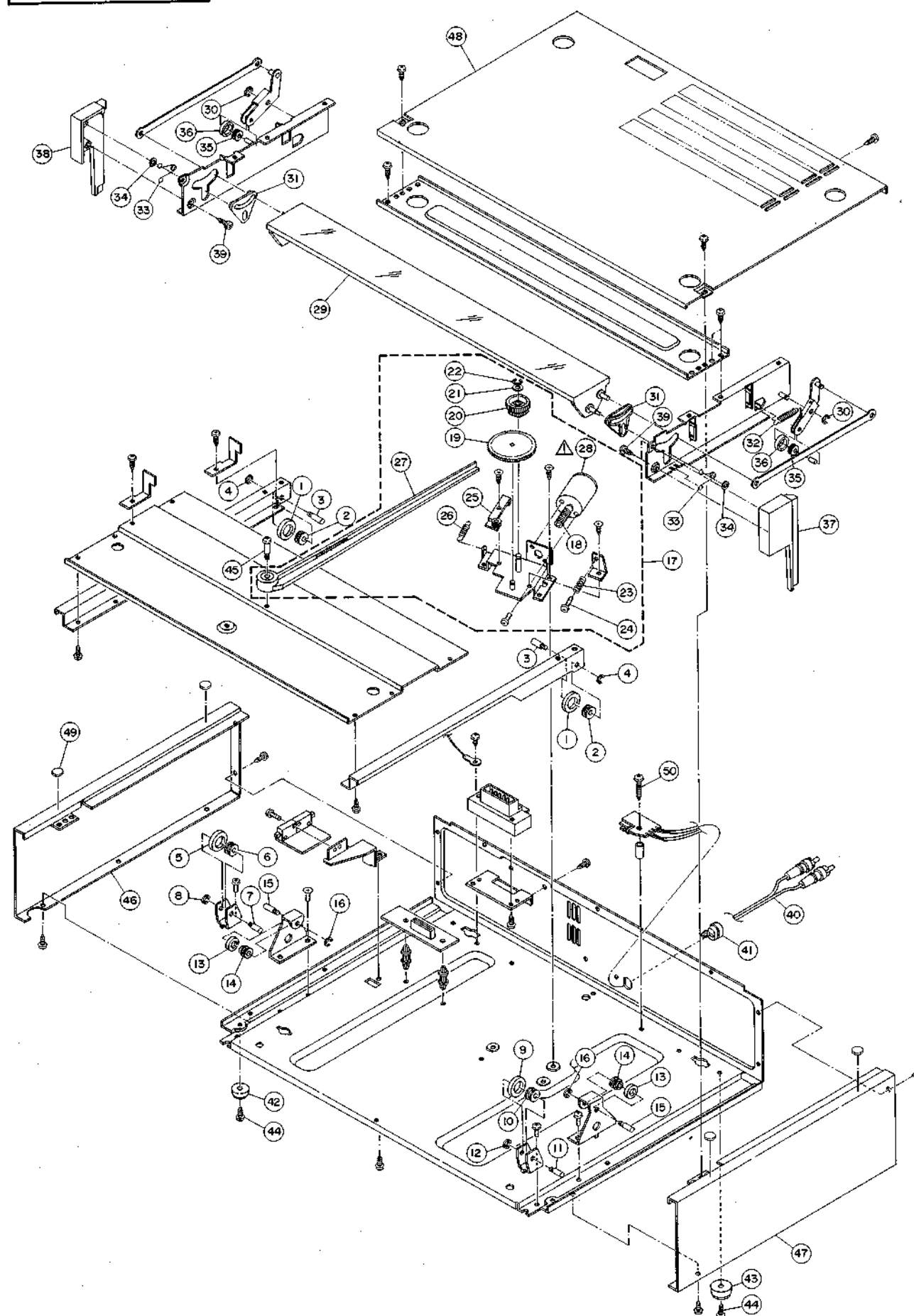
REF. NO.	PARTS NO.	DESCRIPTION
1-1	BA-P1030A080A	PC SERVO SYSCON BLK FP-7
SERVO/SYSCON P.C BOARD		
1-IC1A	EI-349010	IC NJM4558S-B
1-IC2A	EI-337903	IC LC4016B
1-IC3A	EI-347036	IC LM6402A-121
1-IC4A	EI-201940	IC NJM4558S
1-IC5A	EI-338390	IC LA6458S-AKAI
1-IC6A	EI-330352	IC BA6109
1-TR1A,2A	ET-306719	TR 2SC2236 O,Y
1-TR3A,4A	ET-325501	TR 2SA1015 O,Y
1-TR5A	ET-306719	TR 2SC2236 O,Y
1-TR6A	ET-306720	TR 2SA966 O,Y
1-TR7A	ET-307234	TR 2SC1815 Y,GR
1-TR8A	ET-336816	TR FET 2SK30A R
1-TR9Ato12A	ET-325501	TR 2SA1015 O,Y
1-TR13Ato17A	ET-307234	TR 2SC1815 Y,GR
1-TR18A	ET-325501	TR 2SA1015 O,Y
1-TR19Ato21A	ET-307234	TR 2SC1815 Y,GR
1-TR22A	ET-306719	TR 2SC2236 O,Y
1-TR23A	ET-306720	TR 2SA966 O,Y
1-TR24A	ET-306719	TR 2SC2236 O,Y
1-TR25A	ET-306720	TR 2SA966 O,Y
1-TR26Ato31A	ET-307234	TR 2SC1815 Y,GR
1-TR32Ato34A	ET-325501	TR 2SA1015 O,Y
1-TR35A	ET-307234	TR 2SC1815 Y,GR
1-TR36A	ET-336941	Δ TR 2SD313 E,F
1-TR37A,38A	ET-307234	TR 2SC1815 Y,GR
1-TR39A	ET-310148	Δ TR 2SD612K E,F
1-TR40A	ET-336941	Δ TR 2SD313 E,F
1-TR41A	ET-347026	Δ TR 2SB507HP E,F
1-TR42A,43A	ET-325501	TR 2SA1015 O,Y
1-TR44A	ET-306720	Δ TR 2SA966 O,Y
1-D1Ato3A	ED-306724	D SILICON S5277B 100/1.0A
1-D4Ato7A	ED-557447	D SILICON H 1S1588
1-D8A,9A	ED-309069	D ZENER H HZ6 B2
1-D10A	ED-346615	D ZENER H HZ12 A2
1-D11A	ED-309069	D ZENER H HZ6 B2
1-D12A	ED-346615	D ZENER H HZ12 A2
1-D13A	ED-329058	D ZENER H HZ5 C1
1-J6A	EJ-348328	SOCKET FLEX MBLB10R-1J 10P
1-VR1A	EV-336854	R S-FIX H KVSF807U 3P 104
1-VR2A	EV-336843	R S-FIX H KVSF807U 3P 303
1-VR3A	EV-336852	R S-FIX H KVSF807U 3P 102
1-VR4A	EV-341233	R S-FIX H TM8KV2-1S 3P
		0.50W 302
1-VR5A	EV-306007	R S-FIX H TM8KV2-1S 3P
		0.50W 203
1-RL1A	EP-322437	RELAY LEAD LAB2NS 2NO 5V
1-L1A	EO-345922	COIL FIX 1 LAL03KH
		47.00UH K
1-L2A,3A	EO-669273	COIL FIX 2 FL5R200 18UH
1-X1A	EZ-348409	OSC CE CSB400P 0.4 MHZ
1-R44A	ER-336820	R MF H F10 1/4W 4703F
1-R45A	ER-318337	R MF H F10 1/4W 6801F
1-R46A	ER-318319	R MF H F10 1/4W 1092F
1-R47A	ER-318318	R MF H F10 1/4W 9101F
1-R97A	ER-333607	Δ R CB H S15 FS RDS 1/2W
		121J
1-FR1Ato6A	ER-318647	Δ R FUSE ERD2FC S10 1/4W
		4R7J
1-C11A	EC-309115	C COMP V AWS 104J 50DC
PHONO LOCATION DETECTOR P.C BOARD		
1-C23A	EC-323260	C EC V F05 NP LP 100M 16DC
1-PH1Bto3B	ET-348326	PHOTO SENSOR NJL7201E C
LOCATION SENSOR P.C BOARD		
1-D1C	ED-337379	D LED NJL1102EH INFRARED
SIZE SENSOR (A) P.C BOARD		
1-PH1D	ET-337891	PHOTO SENSOR PH101

REF. NO.	PARTS NO.	DESCRIPTION
SIZE SENSOR (B) P.C BOARD		
1-PH1E	ET-337891	PHOTO SENSOR PH101
INTERMEDIATE P.C BOARD		
1-J9F	EJ-348328	SOCKET FLEX MBLB10R-1J 10P
KEYBOARD P.C BOARD		
1-SW1Gto4G	ES-336780	SW TACT KHH10902
1-D1Gto3G	ED-332244	D LED SLP471D YLW
PHONO INTERMEDIATE P.C BOARD		
1-SW1H,2H	ES-347048	SW PUSH SCL101P 1-01-02N
EXTERNAL P.C BOARD		
1-P10J	EJ-346330	PLUG POWER M1673 6P

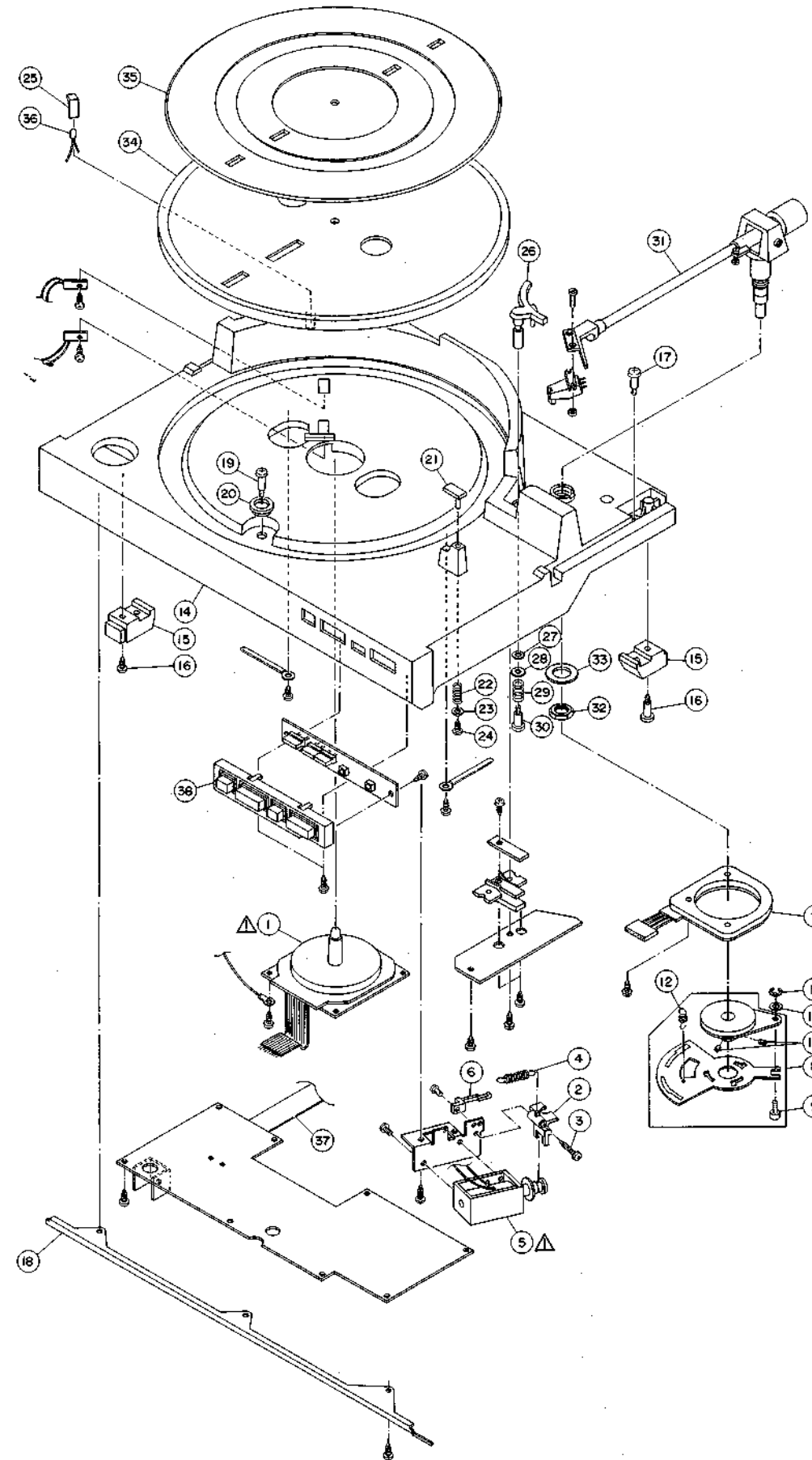
2. ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
SLIDE CHASSIS BLOCK		
2-1	MR-346345	ROLLER (A)
2-2	SA-346346	ROLLER RUBBER (A)
2-3	MS-346347	PROP-2 SHAFT PIN (A)
2-4	ZW-410051	RING E 250SUP CMT
ROLLER (A) L BLOCK		
2-5	MR-346345	ROLLER (A)
2-6	SA-346346	ROLLER RUBBER (A)
2-7	MS-346347	PROP-2 SHAFT PIN (A)
2-8	ZW-410051	RING E 250SUP CMT
ROLLER (A) R BLOCK		
2-9	MR-346345	ROLLER (A)
2-10	SA-346346	ROLLER RUBBER (A)
2-11	MS-346347	PROP-2 SHAFT PIN (A)
2-12	ZW-410051	RING E 250SUP CMT
ROLLER (B) BLOCK		
2-13	MB-346359	ROLLER (B)
2-14	SA-346360	ROLLER RUBBER (B)
2-15	MS-346347	PROP-2 SHAFT PIN (A)
2-16	ZW-410051	RING E 250SUP CMT
SLIDE MOTOR (2) BLOCK		
2-17	BM-P1030A130A	SLIDE MOTOR (2) BLK FP-7
2-18	MZ-346352	GEAR WORM (D)
2-19	MZ-346350	GEAR (A)
2-20	MZ-346351	GEAR (B)
2-21	ZW-259773	PW41x070x050NYL
2-22	ZW-270101	RING E300SUP CMT
2-25	MR-346353	ROLLER RACK
2-26	ZG-313041	SP T1-5.0/0.55-16.0 T1-154
2-27	MZ-346305	GEAR RACK
2-28	BM-347046	Δ MOTOR MCA9B05
COVER OPENER MECHA. BLOCK		
2-29	SP-346320	COVER
2-30	ZW-270101	RING E300SUP CMT
2-31	SP-346356	COVER GUIDE
2-32	ZG-312998	SP T1-4.0/0.4-18.0 T1-112
2-33	ZG-346321	SP TORSION COVER
2-34	ZW-340648	RING CS190STL PKR
2-35	MR-346353	ROLLER RACK
2-36	SA-346361	ROLLER RUBBER (C)
2-37	SP-346303A	COVER HOLD (A)
2-37P	SP-346303C	COVER HOLD (A)-P
2-38	SP-346303B	COVER HOLD (B)
2-38P	SP-346303D	COVER HOLD (B)-P
2-39	ZS-302699	T2PAN23x06STL BNI
ASSEMBLY BLOCK		
2-40	EW-347030	CORD 2P AUDIO
2-40A	EW-347031	CORD UL 2P AUDIO
2-41	EZ-631945	STRAIN RELIEF SR-4N-4
2-42	SA-346315	RUBBER FOOT (B)
2-43	SA-301770	TRAN LEG (J)
2-44	ZS-325495	T2BR30x06STL CMT
2-45	MS-302757	STOPPER SHAFT
2-46	SP-346308A	COVER SIDE (A)
2-47	SP-346308B	COVER SIDE (B)
2-48	SP-346319	COVER UPPER
2-49	MB-346363	CUSHION

ASSEMBLY BLOCK



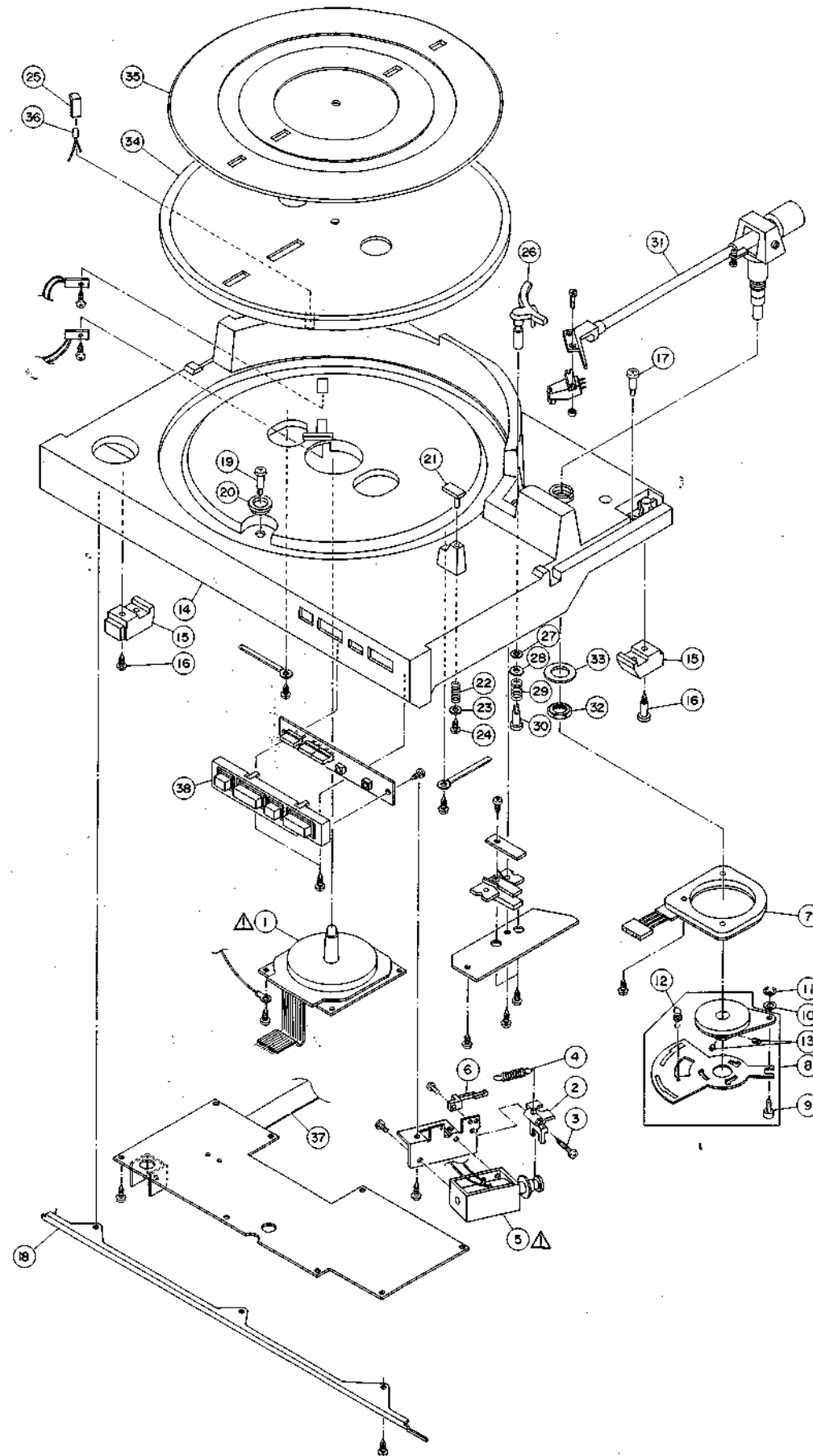
FINAL ASSEMBLY BLOCK



3. FINAL ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
MAIN MOTOR BLOCK		
3-1	BM-P1030A090A	MAIN MOTOR BLK FP-7
SOLENOID BLOCK		
3-2	TP-343044	ANGLE LIFTER
3-3	ZS-302767	SHAFT SCREW
3-4	ZG-345747	SP FULL RETURN
3-5	EP-337896	Δ SOLENOID TDS-09SL-513 22V
3-6	ES-337895	SW LEAF MSW-0094NBK 01-1 NO
COIL UNIT BLOCK		
3-7	TP-P1030A110A	COIL UNIT BLK FP-7
MAGNET BLOCK		
3-8	TP-P1030A120A	MAGNET BLK FP-7
3-9	TP-336273	CAM ADJUST
3-10	ZW-601075	PW41x070x010PBR
3-11	ZW-342350	RING E 030 SPECIAL
3-12	ZG-312994	SP T1-4.0/0.4-10.0 T1-107
3-13	ZS-356804	6SET30x040SCM PKR HP
FINAL ASSEMBLY BLOCK		
3-14	BC-346334	CABINET
3-14P	BC-346334B	CABINET-P
3-15	SA-346324	RUBBER FOOT
3-16	ZS-325426	TAPPING ROLLER SCREW
3-17	MS-302757	STOPPER SHAFT
3-18	SE-346300	MASK FRONT
3-18P	SE-346300B	MASK FRONT-P
3-19	ZS-346325	SCREW STOPPER
3-20	TP-346323	COVER STOPPER
3-21	TP-343059C	CLAMPER ARM-C
3-21P	TP-343059D	CLAMPER ARM-P
3-22	ZG-313183	SP C-4.5/0.4-8.0 C-030
3-23	ZW-623687	PW23x060x040STL CMT
3-24	ZS-669104	T2PAN23x06STL CMT
3-25	TP-343060	INDICATOR LAMP
3-26	TP-B343058X1	ARM ELEVATION (1) PART
3-27	ZW-515586	PW30x080x050STL CMT
3-28	ZW-439604	PW42x090x050STL CMT
3-29	ZG-313181	SP C-4.5/0.35-16.0 C-028
3-30	MS-302757	STOPPER SHAFT
3-31	TP-749956	TONE ARM (C-LESS) ARM-FP7
3-32	ZW-325521	N120x170x30STL CMT P100
3-33	ZW-336398	PW130x200x050STL CMT
3-34	TP-343042	PLATTER
3-35	TP-3430648	TABLE SHEET (B)
3-36	EL-347033	PL CORD 16.0V 80MA 230/230
3-37	EW-348210	CORD FLEXIBLE SML2CD 10P
3-38	SK-346317	KNOB SW
3-38P	SK-346317B	KNOB SW-P

FINAL ASSEMBLY BLOCK



3. FINAL ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
MAIN MOTOR BLOCK		
3-1	BM-P1030A090A	MAIN MOTOR BLK FP-7
SOLENOID BLOCK		
3-2	TP-343044	ANGLE LIFTER
3-3	ZS-302767	SHAFT SCREW
3-4	ZG-345747	SP PULL RETURN
3-5	EP-337896	Δ SOLENOID TDS-09SL-513 22V
3-6	ES-337895	SW LEAF MSW-0094NBK 01-1 NO
COIL UNIT BLOCK		
3-7	TP-P1030A110A	COIL UNIT BLK FP-7
MAGNET BLOCK		
3-8	TP-P1030A120A	MAGNET BLK FP-7
3-9	TP-336273	CAM ADJUST
3-10	ZW-601075	PW41×070×010PBR
3-11	ZW-342350	RING E 030 SPECIAL
3-12	ZG-312994	SP T1-4.0/0.4-10.0 T1-107
3-13	ZS-356804	6SET30×040SCM PKR HP
FINAL ASSEMBLY BLOCK		
3-14	BC-346334	CABINET
3-14P	BC-346334B	CABINET-P
3-15	SA-346324	RUBBER FOOT
3-16	ZS-325426	TAPPING ROLLER SCREW
3-17	MS-302757	STOPPER SHAFT
3-18	SE-346300	MASK FRONT
3-18P	SE-346300B	MASK FRONT-P
3-19	ZS-346325	SCREW STOPPER
3-20	TP-346323	COVER STOPPER
3-21	TP-343059C	CLAMPER ARM-C
3-21P	TP-343059D	CLAMPER ARM-P
3-22	ZG-313183	SP C-4.5/0.4-8.0 C-030
3-23	ZW-623687	PW23×060×040STL CMT
3-24	ZS-669104	T2PAN23×06STL CMT
3-25	TP-343060	INDICATOR LAMP
3-26	TP-B343058X1	ARM ELEVATION (1) PART
3-27	ZW-515586	PW30×080×050STL CMT
3-28	ZW-439604	PW42×090×050STL CMT
3-29	ZG-313181	SP C-4.5/0.35-16.0 C-028
3-30	MS-302757	STOPPER SHAFT
3-31	TP-749956	TONE ARM (C-LESS) ARM-FP7
3-32	ZW-325521	N120×170×30STL CMT P100
3-33	ZW-336398	PW130×200×050STL CMT
3-34	TP-343042	PLATTER
3-35	TP-3430648	TABLE SHEET (B)
3-36	EL-347033	PL CORD 16.0V 80MA 230/230
3-37	EW-348210	CORD FLEXIBLE SML2CD 10P
3-38	SK-346317	KNOB SW
3-38P	SK-346317B	KNOB SW-P

INDEX

1. MODEL FD-7

PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.
AX-347464	9-1	ED-301911	2-D22	EF-308848	2-F6C	EO-338420	2-L2
AX-349152	9-1P	ED-301911	3-D2	EF-309387	7-F1U	EO-338420	6-L1
BA-C1002A030A	4-1U	ED-301911	3-D3	EF-309389	2-F6U	EO-342936	2-L1D
BA-C1002A030B	4-1C	ED-301911	3-D4	EF-309390	2-F6C	EO-343351	5-T7
BA-C1002A030C	4-1E	ED-301911	4-D25	EF-310229	7-F1C	EO-345760	3-T1
BA-C1002A030D	4-1LE	ED-301911	4-D15	EF-327103	2-F7U	EO-345904	5-L1
BA-C1002A030E	4-1LB	ED-301911	4-D23	EF-327103	2-F8U	EO-347162	3-L2
BA-C1002A070A	2-1U	ED-301911	4-D20	EF-593706	2-F7E	EP-337067	3-RL1
BA-C1002A070B	2-1C	ED-301911	4-D19	EF-593706	2-F8E	EP-337159	2-RL1
BA-C1002A070C	2-1E	ED-301911	4-D9	EF-601301	2-F4E	EP-347611	7-RL1A
BA-C1002A070D	2-1V	ED-301911	4-D10	EF-601301	2-F5E	ER-200940	2-R85
BA-C1002A090A	5-1U	ED-301911	4-D11	EF-601301	7-F2E	ER-200944	2-R72
BA-C1002A090B	5-1C	ED-301911	4-D12	EF-623103	7-F1E	ER-305722	2-R48
BA-C1002A090C	5-1E	ED-301911	4-D13	EF-668474	2-F6E	ER-305722	2-R49
BA-C1002A090D	5-1V	ED-301911	4-D14	EH-749948	9-X01	ER-308875	2-R37
BA-C1002A090E	5-1S	ED-301911	4-D17	EI-202218	5-IC3	ER-308875	2-R38
BA-C1002A090F	5-1LE	ED-301911	4-D22	EI-315379	4-IC6	ER-308875	2-R47
BA-C1002A090G	5-1LB	ED-301911	4-D16	EI-315381	5-IC4	ER-315407	5-FL1U
BA-C1002A100A	3-1	ED-301911	4-D1	EI-322248	5-IC1	ER-322787	2-R86
BC-344859	11 21	ED-301911	4-D5	EI-323563	2-IC3	ER-323074	2-R81
BD-B344049B	1-79	ED-301911	4-D8	EI-327074	5-X1	ER-323074	6-R20
BD-C1002A110A	11-1	ED-307690	6-D2	EI-330226	4-IC9	ER-323074	6-R21
BD-C1002A110B	11-1P	ED-307690	6-D1	EI-330352	4-IC11	ER-323075	2-R82
BD-344864	11-16	ED-308952	3-D9	EI-332258	4-IC7	ER-324184	5-R7
BD-344865	11-15	ED-310340	1-96	EI-332259	6-IC2	ER-324184	5-R114
BF-344029	1-64	ED-322247	9-LED03	EI-336717	5-IC5	ER-324184	5-R65
BH-T2045A030A	1-2	ED-323057	4-D7	EI-336761	3-IC5	ER-324185	5-R63
BL-T2045A050A	1-80	ED-324912	2-D24	EI-336794	4-IC12	ER-324186	2-R75
BL-T2045A060A	1-81	ED-324912	2-D25	EI-336794	4-IC13	ER-324337	5-R22
BM-B604490	1-105	ED-324912	2-D32	EI-336794	4-IC14	ER-324337	5-R20
BM-B604491	1-109	ED-325115	2-D30	EI-337008	4-IC5	ER-324337	5-R15
BR-344098	1-57	ED-330219	2-D20	EI-337008	4-IC4	ER-324337	5-R21
BT-347448	10-7U	ED-337153	2-D6	EI-337017	4-X3	ER-324480	5-R107
BT-347449	10-7C	ED-337153	2-D7	EI-337228	2-IC1	ER-324480	5-R93
BT-347450	10-7A	ED-337153	2-D9	EI-337228	2-IC5	ER-324480	5-R92
BT-347451	10-7E	ED-337153	2-D10	EI-337228	2-IC6	ER-324934	5-R113
BT-347452	10-7S	ED-337153	2-D12	EI-337835	3-IC3	ER-325269	2-R20
BT-347465	10-5U	ED-337153	2-D13	EI-338171	4-IC8	ER-325269	2-R22
BT-347466	10-5C	ED-337575	3-D1	EI-338171	4-IC10	ER-325269	2-R24
BT-347467	10-5E	ED-337575	3-D13	EI-343349	5-IC2	ER-325269	2-R26
BT-347468	10-5S	ED-337575	5-D1	EI-343371	2-IC2	ER-326269	2-FR7
BZ-T2045A020D	1-1	ED-337575	5-D5	EI-343390	2-IC4	ER-326838	2-R64
BZ-T2045A040A	1-28	ED-337575	5-D10	EI-344291	3-IC2	ER-326838	2-R67
EA-343156	1-7	ED-337575	5-D4	EI-344764	6-IC1	ER-327197	2-R79
EC-302265	3-C63	ED-337605	5-D8	EI-346965	4-IC1	ER-327198	2-R83
EC-314688	7-C2C	ED-337605	5-D7	EI-346966	4-IC2	ER-328067	4-R50
EC-314688	7-C1C	ED-338454	4-D26	EI-347434	4-X2	ER-328520	2-FR2
EC-314990	3-C67	ED-344153	2-D19	EI-347434	4-X1	ER-328520	2-FR1
EC-314992	3-C13	ED-344153	2-D28	EI-348465	4-IC3	ER-331188	3-FR1
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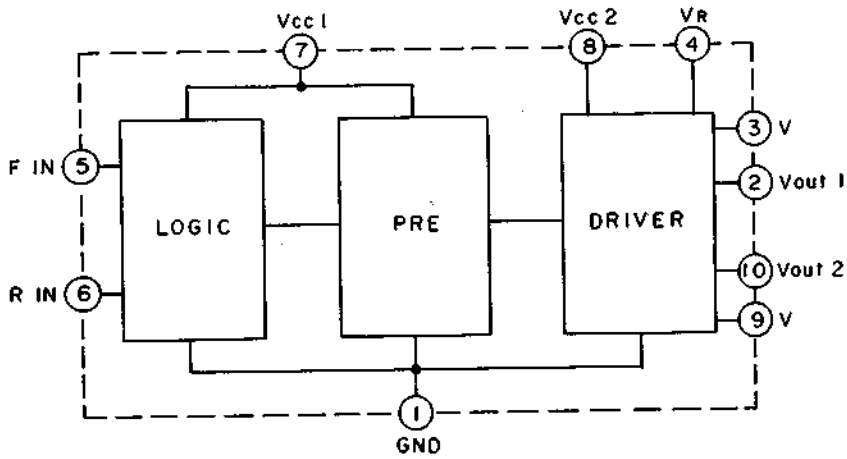
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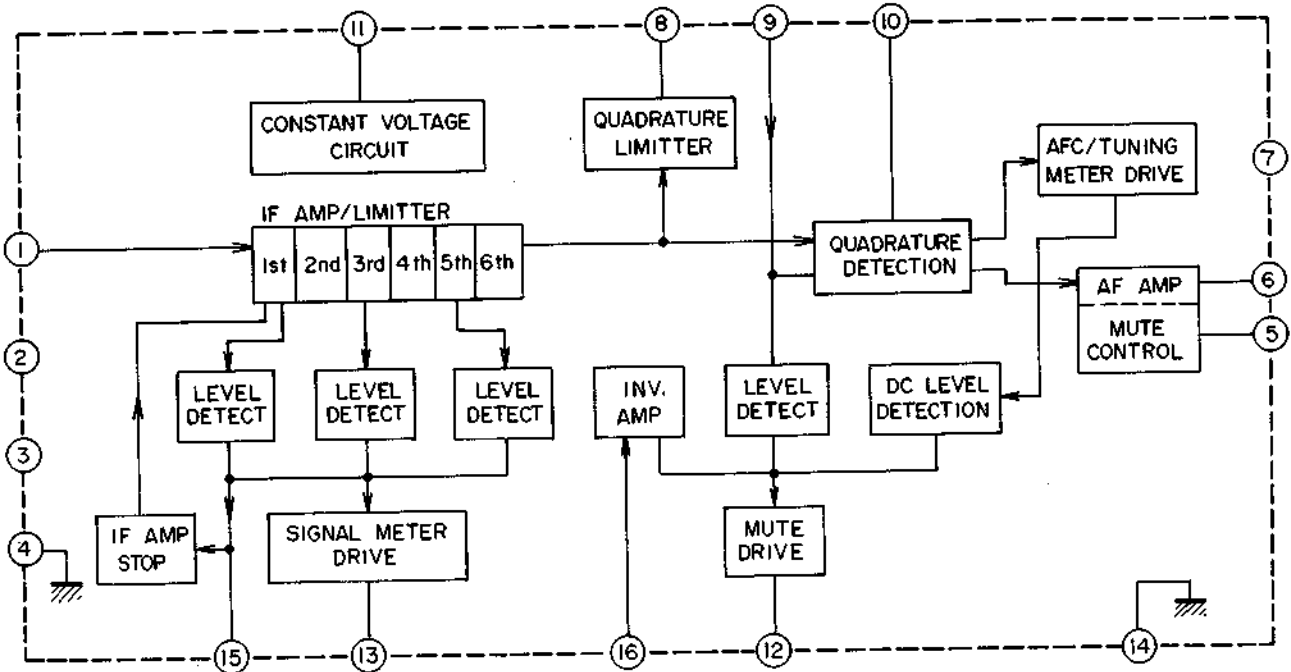
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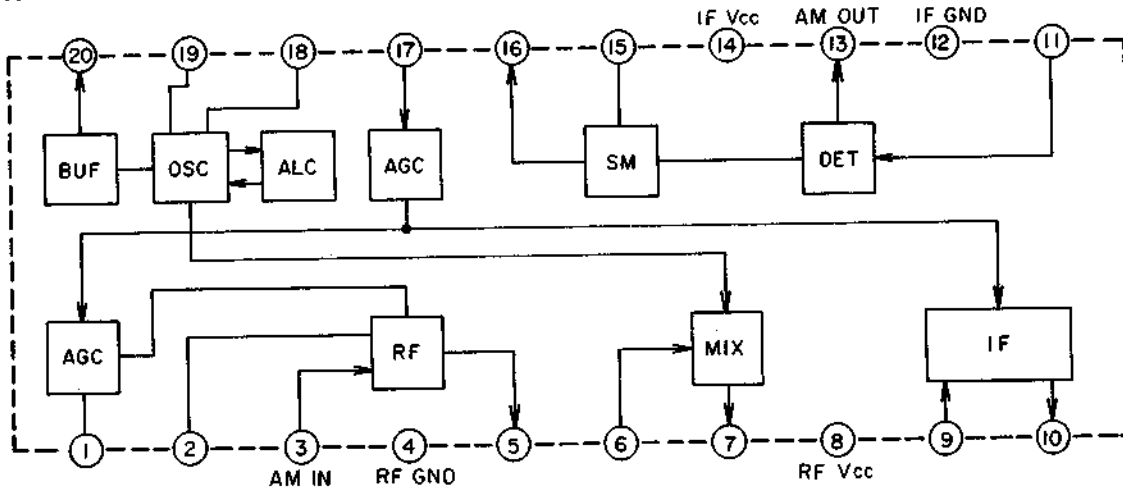
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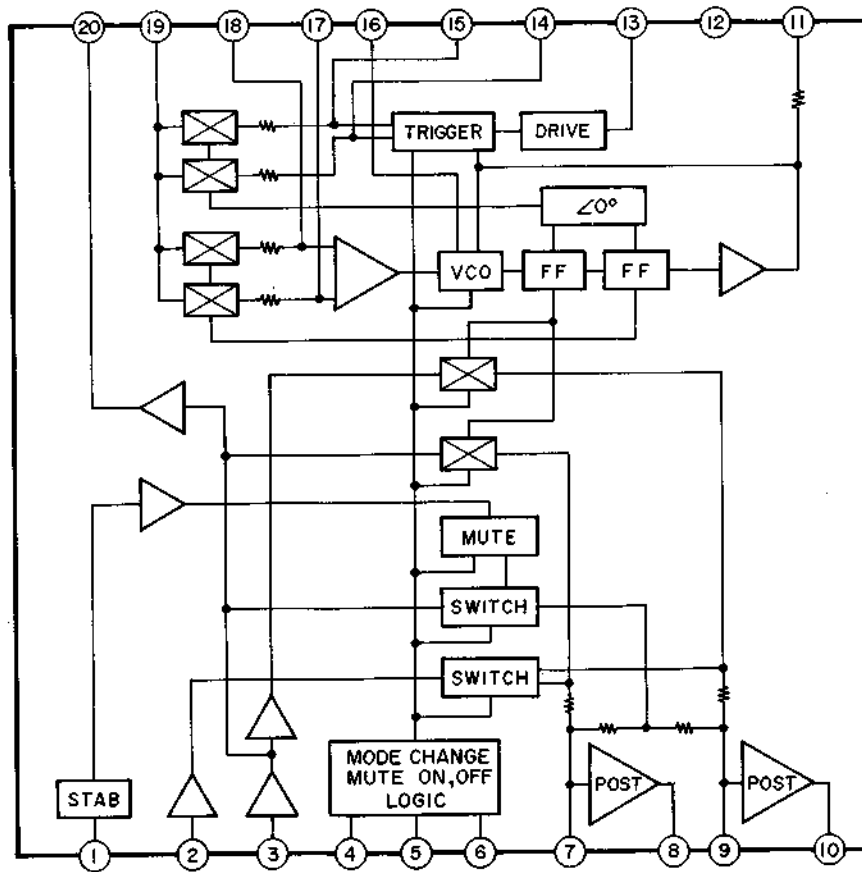
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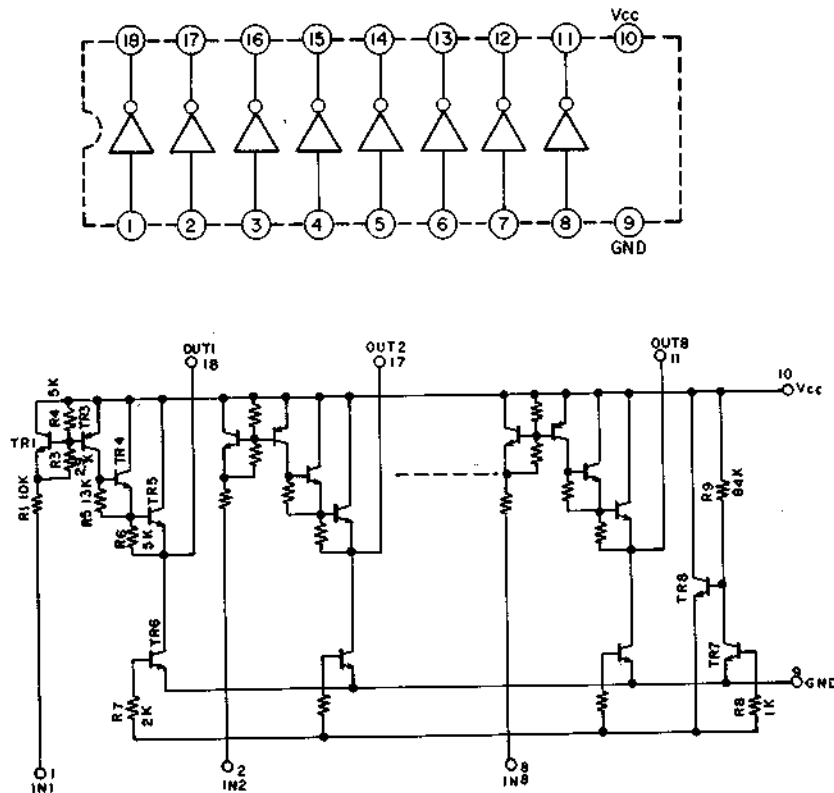
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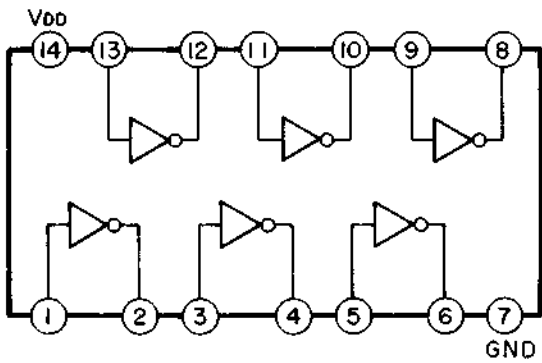
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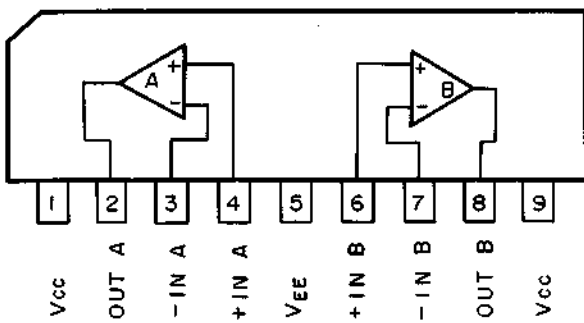
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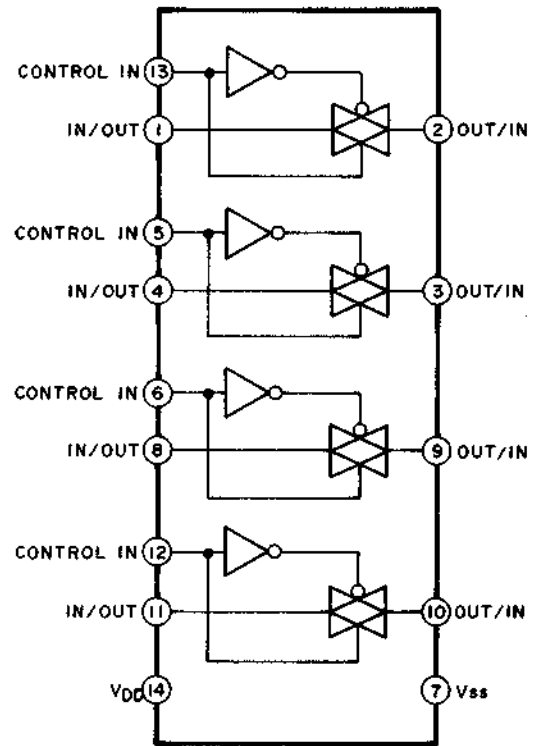
LC4069UB, MC14069UB



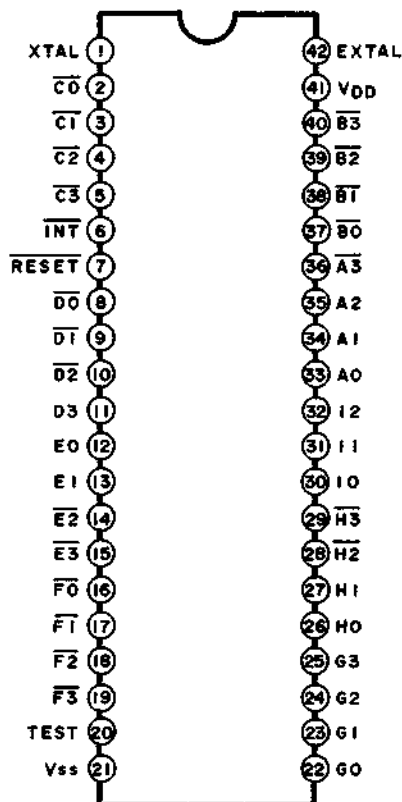
LC6458S



LC4016B



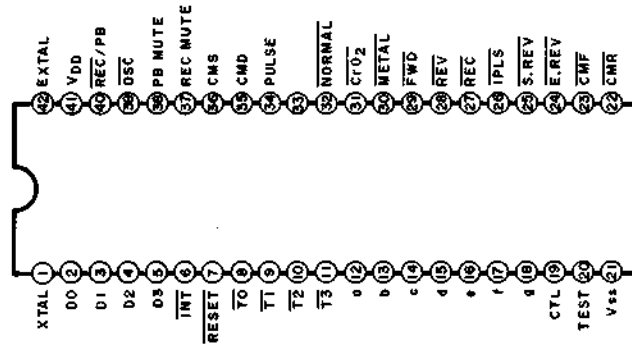
LM6402A-121



LM6402A-121

Pin No.	Symbol	Description	
1	X TAL	400 kHz Crystal Oscillator input	
2	$\overline{C0}$	ANTI SKATING, Active at "L"	
3	$\overline{C1}$	LOW VOLTAGE } TONE ARM UP/DOWN PLUNGER DRIVE HIGH VOLTAGE } Active at "L" (HIGH DRIVE → 3 SEC)	
4	$\overline{C2}$		
5	$\overline{C3}$	RECORD SENSOR ILLUMINATOR LAMP DRIVE, Active at "L"	
6	INT	Initialize terminal, Initialize at "L"	
7	RESET	Reset terminal, Reset at "L"	
8	$\overline{D0}$	SPEED SERVO } ARM MOTOR CONTROL signal output D0, 1, 2: Active at "L" D3 : Active at "H"	
9	$\overline{D1}$		FWD
10	$\overline{D2}$		REV
11	D3		SLOW
12	E0	MAIN MOTOR SPEED (33-1/3 / 45 rpm) control output, 33 at "L", 45 at "H"	
13	E1	MAIN MOTOR ON/OFF (PLAY/STOP) signal output, ON at "L", OFF at "H"	
14	$\overline{E2}$	SLIDE MOTOR DRIVE (OPEN) output } Active at "L" SLIDE MOTOR DRIVE (CLOSE) output }	
15	$\overline{E3}$		
16	$\overline{F0}$	33-1/3 } LED DRIVE output, Active at "L" 45 rpm } REPEAT }	
17	$\overline{F1}$		
18	$\overline{F2}$		
19	$\overline{F3}$	DISK END signal output, END at "H"	
20	TEST	} Connected to ground	
21	Vss		
22	G0	} Not used (open)	
23	G1		
24	G2		
25	G3		
26	H0		
27	H1	Not used (Connected to ground)	
28	$\overline{H2}$	17 cm Record Size Detection input } Active at "L" 30 cm Record Size Detection input }	
29	$\overline{H3}$		
30	I0	Arm Location Sensor 1 input } Active at "H" Arm Location Sensor 2 input } Arm Location Sensor 3 input }	
31	I1		
32	I2		
33	A0	CABINET Location Detection (OPEN) input } Active at "H" CABINET Location Detection (CLOSE) input }	
34	A1		
35	A2	Arm UP/DOWN Detection input, UP at "H", DOWN at "L"	
36	$\overline{A3}$	CABINET OPEN/CLOSE signal input, Active at "L"	
37	$\overline{B0}$	START/CUT signal input, Active at "L"	
38	$\overline{B1}$	CUE (ARM UP/DOWN) signal input, Active at "L"	
39	$\overline{B2}$	REPEAT signal input, Active at "L"	
40	$\overline{B3}$	SPEED (33/45) Selection signal input, Active at "L"	
41	VDD	+5 V	
42	EX TAL	400 kHz Crystal Oscillator input	

LM6402H-155



LM6402H-155, 190

Pin No.	Symbol	Description
1	X TAL	Crystal oscillator terminal
2	D0	} CONTROL DATA INPUT
3	D1	
4	D2	
5	D3	
6	INT	Cam Motor Rotation Pulse input
7	RESET	Reset terminal
8	T0	} FLD Digit Designation output & Matrix Digit output
9	T1	
10	T2	
11	T3	
12	a	} 7 Segment Data output
13	b	
14	c	
15	d	
16	e	
17	f	
18	g	
19	CTL	Input IC selection signal output
20	TEST	} Connected to ground
21	V _{SS}	
22	CMR	} Cam Motor control output, Active at "L"
23	CMF	
24	E. REV	} FLD Drive output, Active at "L"
25	S. REV	
26	IPLS	
27	REC	
28	REV	
29	FWD	Forward
30	METAL	} FL Display Drive output & PRE AMP EQ Control output Active at "L"
31	CrO ₂	
32	NORMAL	

Pin No.	Symbol	Description
33		
34	PULSE	Reel Rotation Pulse input
35	CMD	Cam Motor Direction signal input
36	CMS	Cam Motor STOP Detection signal input
37	REC MUTE	Recording Mute at "H"
38	PB MUTE	Playback Mute at "H"
39	$\overline{\text{OSC}}$	Oscillator Drive at "L"
40	$\overline{\text{REC/PB}}$	Recording at "L", Playback at "H"
41	VDD	+5 V
42	EXTAL	Crystal Oscillator terminal

KEY MATRIX (INPUT EXPANDER)

IC3 (LM6402H) Symbol			T3	T2	T1	T0	CTL
IC3 Pin No.			11	10	9	8	19
IC4, 5 (LC7800) Pin No.			19	20	21	22	27
D3	5	23	EJECT (STOP) ①			COUNTER RESET ⑮	H
D2	4	24	FWD	REW			H
D1	3	25	REV	AUTO MUTE	REV SELECT ⑩		H
D0	2	26	REC	REC CANCEL	IPLS ⑫		H

* ○ = IC4 Pin No.

IC3 (LM6402H) Symbol			T3	T2	T1	T0	CTL
IC3 Pin No.			11	10	9	8	19
IC4, 5 (LC7800) Pin No.			19	20	21	22	13
D3	5	23	CAM DIRECTION ①	CrO ₂ ⑤	* ⑨	IPLS ⑮	L
D2	4	24	FWD/REV ②	METAL ⑥	* ⑩	QUICK REV ⑯	L
D1	3	25	A.R FWD ③	TIMER PLAY	* ⑪		L
D0	2	26	A.R REV ④	TIMER REC	* ⑫		L

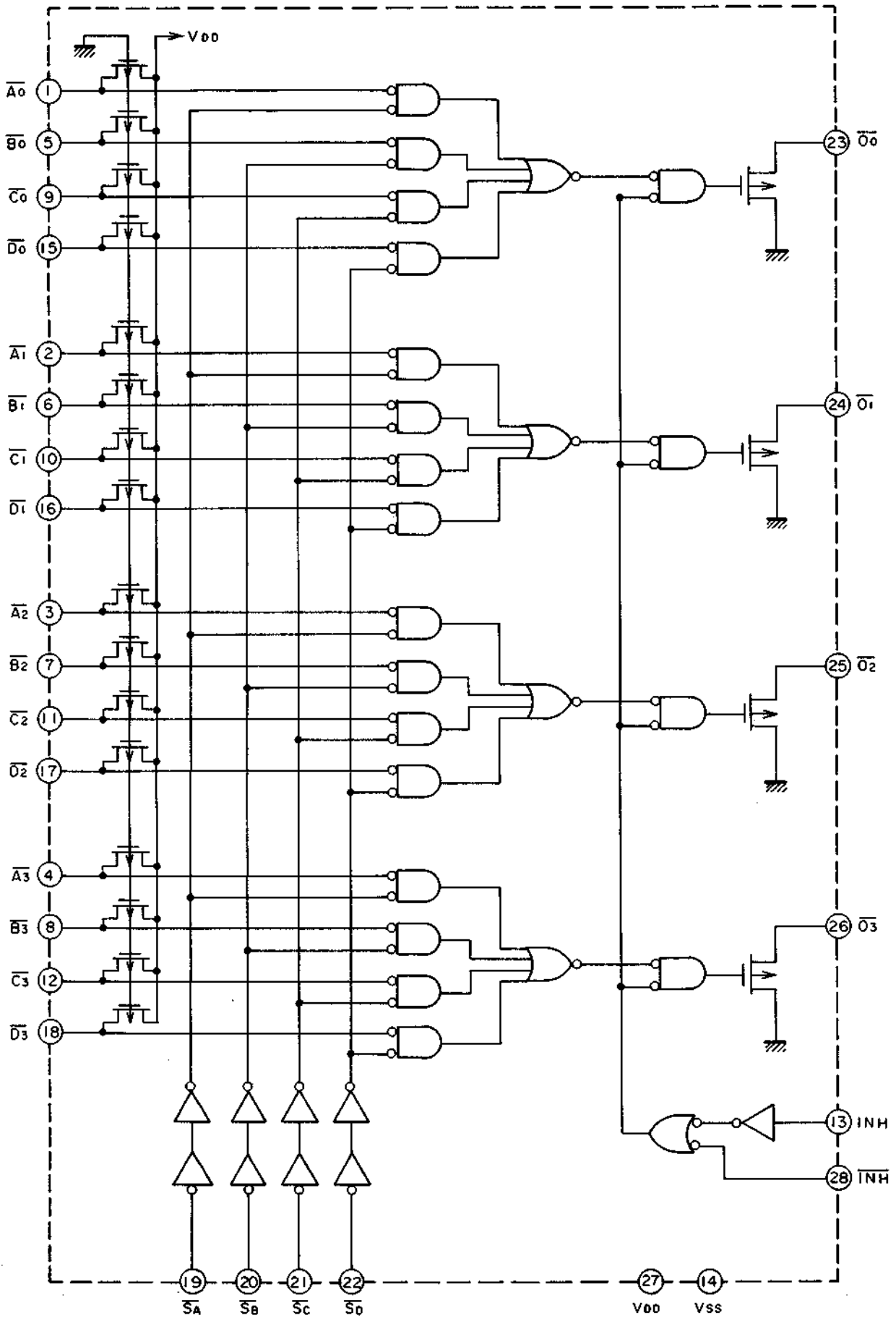
* OPERATION DATA = Refer to CONTROL DATA chart indicated next.

* ○ = IC5 Pin No.

CONTROL DATA

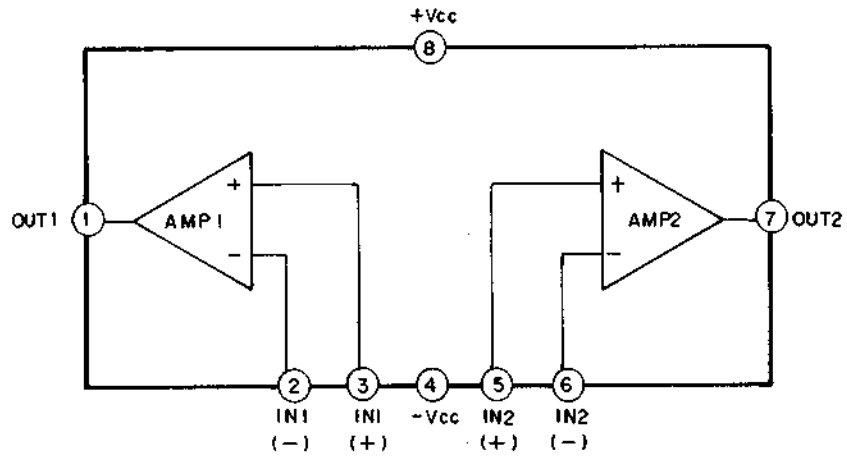
Mode	Control Data Input				Mode	Control Data Input			
	D3	D2	D1	D0		D3	D2	D1	D0
STOP	0	0	0	0	AUTO MUTE	0	1	0	1
FF	0	0	0	1	REC FWD	0	1	1	0
REW	0	0	1	0	REV	1	0	1	1
FWD	0	0	1	1	REC REV	1	1	1	0
REC	0	1	0	0	NO OPERATION	1	1	1	1

LC7800

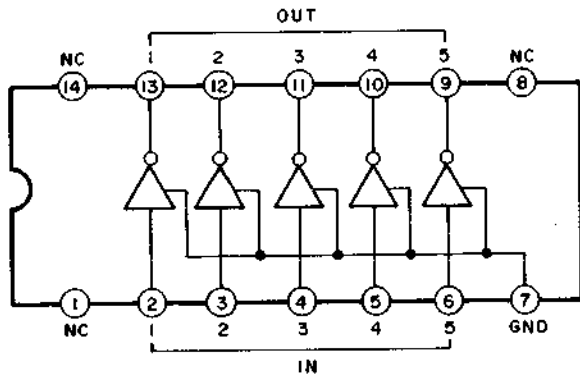


SCHEMATIC DIAGRAM FD-7/L, FP-7

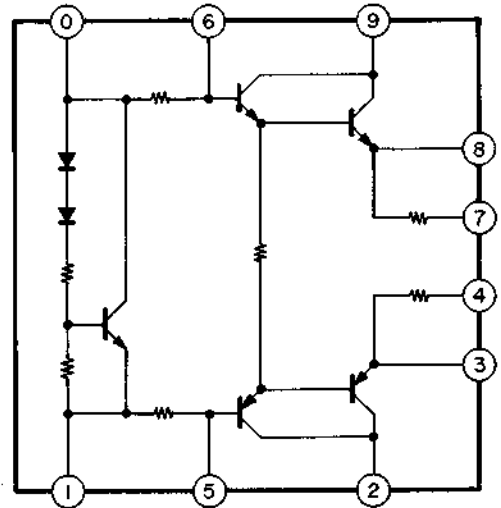
M5218LO, M5218P-21



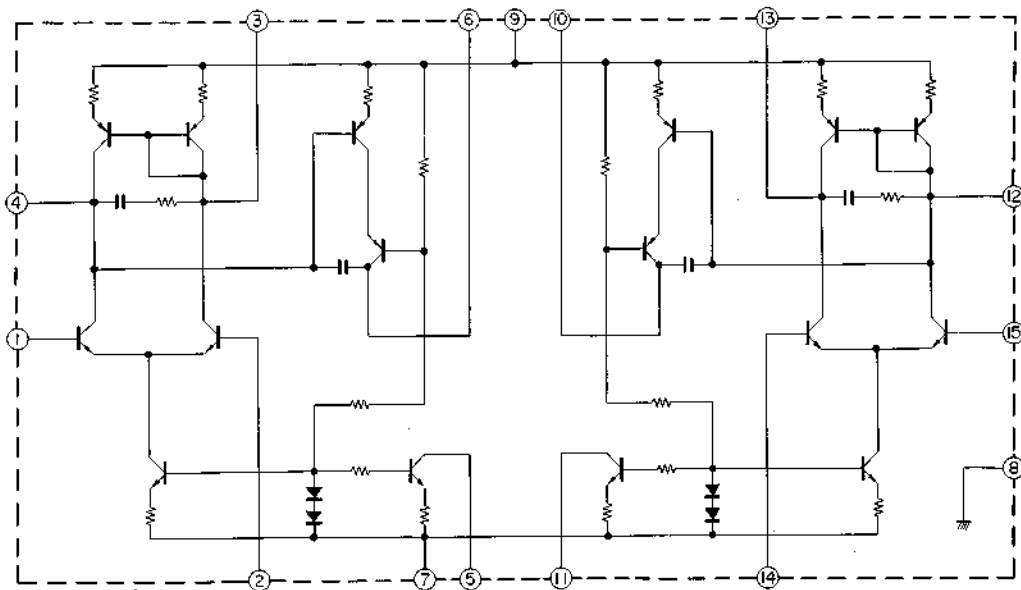
M54516



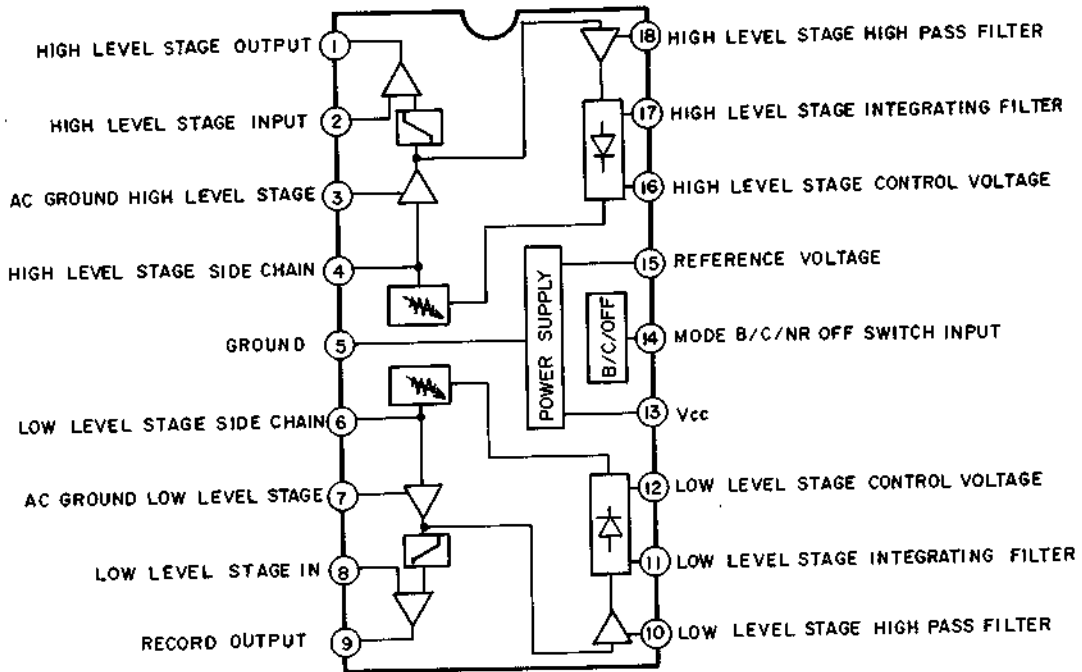
STK1050



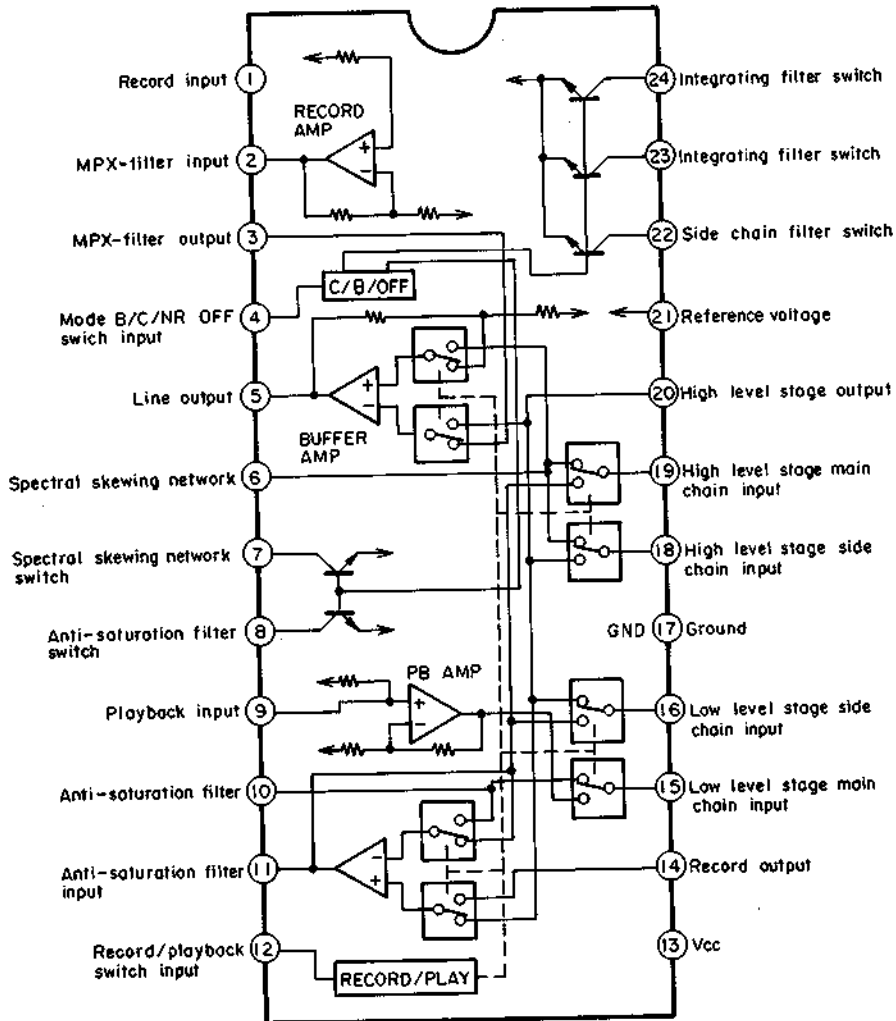
STK3042



NE652

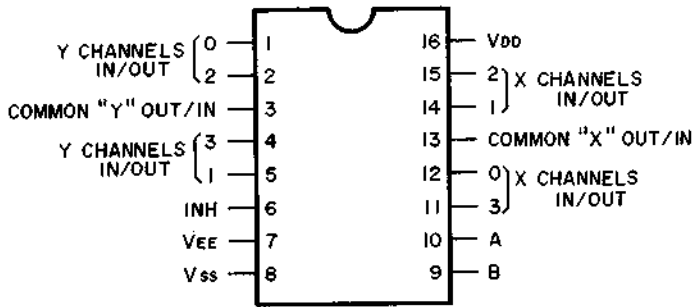


NE654



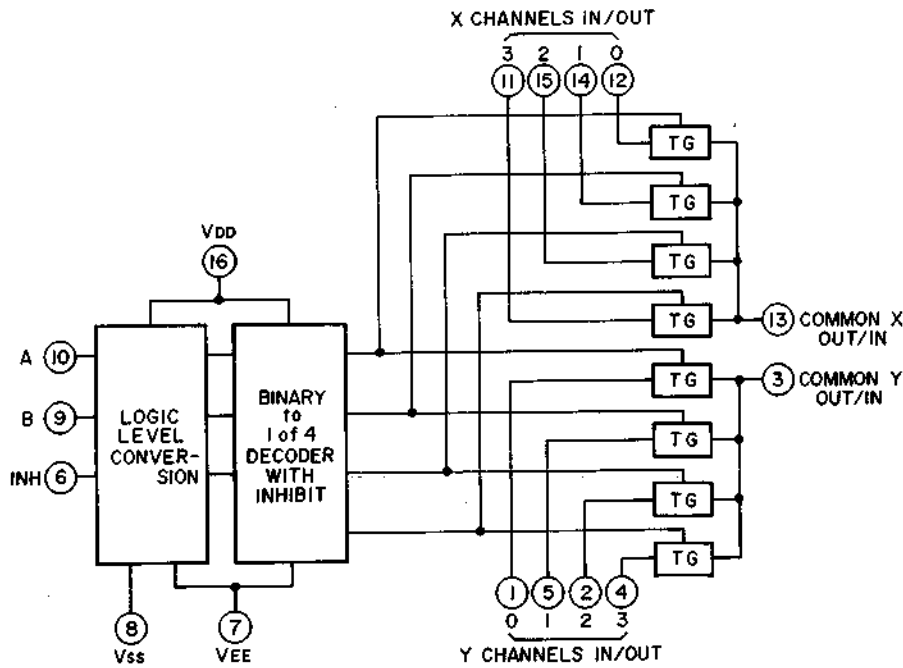
SCHEMATIC DIAGRAM FD-7/L, FP-7

TC4052BP



INHIBIT (6)	A (10)	B (9)	"ON" CHANNEL
L	L	L	0X, 0Y
L	H	L	1X, 1Y
L	L	H	2X, 2Y
L	H	H	3X, 3Y
H	X	X	NONE

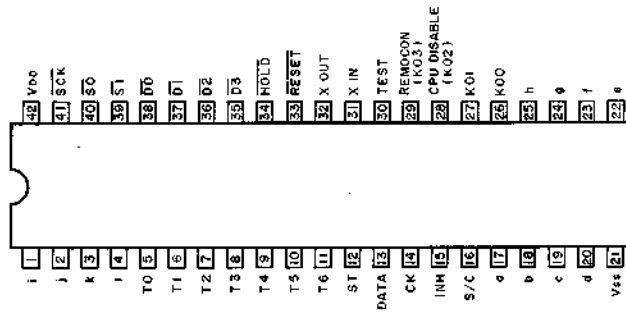
X=DON'T CARE



FUNCTION (Analogue SW IC TC4052BP) Selection Signal

Function	Output	
	A	B
PHONO	1	0
TUNER	0	1
AUX	1	1
TAPE	0	0

TC47C21P (NH-100)



TERMINAL DESCRIPTION OF IC1 TC47C21P (NH-100)

Pin No.	Symbol	Description	
1	i	} FLD Segment Data output	
2	j		
3	k		
4	l		
5	T0	} FLD Digit Designation output & Matrix Digit output	
6	T1		
7	T2		
8	T3		
9	T4		
10	T5		
11	T6	7G	
12	ST	Strobe Pulse	} for Electronic Volume (IC2: TC9154P) Control
13	DATA	Data Pulse	
14	CK	Clock Pulse	
15	INH	Key Input Inhibit signal input	
16	S/C	START/CUT, produces a pulse when PHONO button is depressed.	
17	a	} FLD 7 Segment Data output	
18	b		
19	c		
20	d		
21	Vss	Connected to ground	
22	e	} FLD 7 Segment Data output	
23	f		
24	g		
25	h	FLD Segment Data	
26	K00	} Key Matrix input	
27	K01		
28	DISABLE (K02)	Key Input Inhibit signal output for IC2 TC47C20P (NH-20D)	
29	REMOCON (K03)	Remote Control Data Pulse input	
30	TEST	Connected to ground	
31	XIN	} X'tal oscillator (X1: 4.2 MHz) terminals	
32	XOUT		

Pin No.	Symbol	Description	
33	$\overline{\text{RESET}}$	Reset terminal	
34	$\overline{\text{HOLD}}$	Back up Detection input	
35	$\overline{\text{D3}}$	Control Data output for IC3 LM6402H-155, 190	
36	$\overline{\text{D2}}$		
37	$\overline{\text{D1}}$		
38	$\overline{\text{D0}}$		
39	$\overline{\text{SI}}$	Input Output Clock	Serial Data between IC2 TC47C20P (NH-200)
40	$\overline{\text{SO}}$		
41	$\overline{\text{SCK}}$		
42	VDD	+5 V	

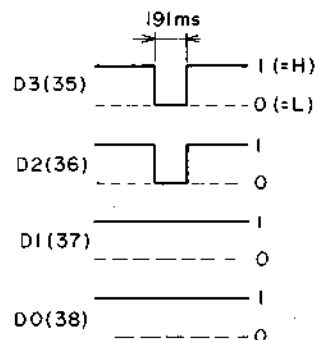
KEY INPUT MATRIX (FLD DIGIT Designation & Matrix Digit output)

Symbol (Pin No.) \ Symbol (Pin No.)	T6 (11)	T5 (10)	T4 (9)	T3 (8)	T2 (7)	T1 (6)	T0 (5)
K0 (26)	REC/PB	DISK END	FWD/REV	24h/12h	MIN	HOUR	TIMER ON/OFF
K1 (27)	SLEEP	TUNER REC	TAPE PLAY	TUNER PLAY	ON TIMER-SET	OFF TIMER-SET	CLOCK SET

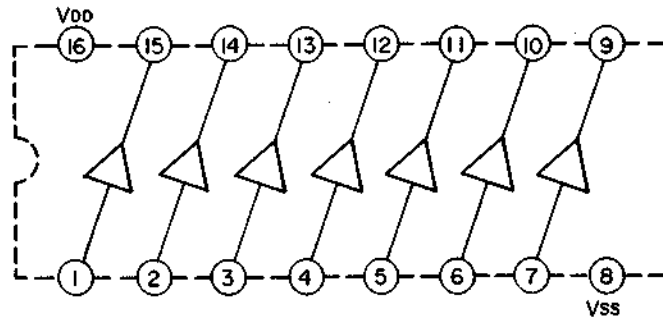
CONTROL DATA for IC3 LM6402H-155, 190

Function \ IC Pin & Symbol	35 D3	36 D2	37 D1	38 D0
STOP	0	0	0	0
FF	0	0	0	1
RWD	0	0	1	0
FWD	0	0	1	1
REC	0	1	0	0
REC MUTE	0	1	0	1
REC PWD	0	1	1	0
REV	1	0	1	1
REC REV	1	1	1	0

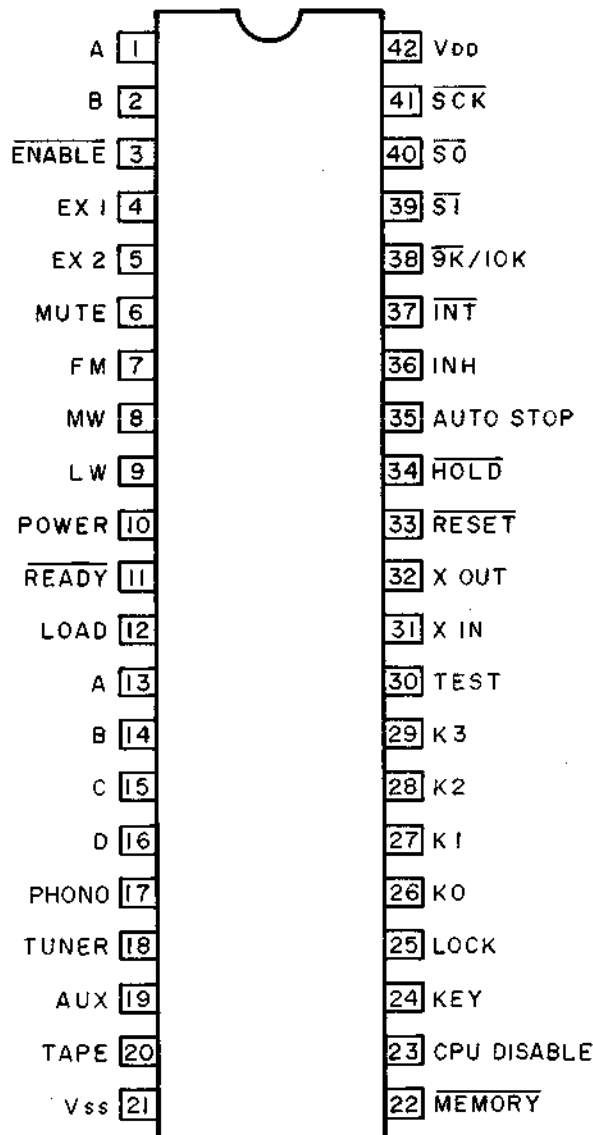
(ex) FWD



TC5066BP



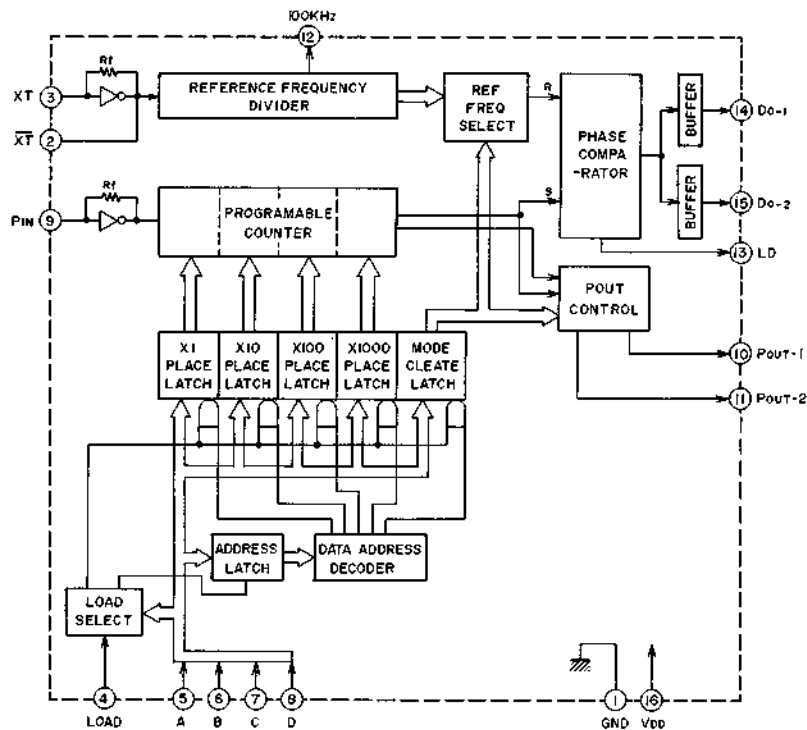
TC47C21P (NH-200)



TERMINAL DESCRIPTION OF IC2 TC47C20P (NH-200)

Pin No.	Symbol	Description	
1	A	} Function (Analogue SW) Selection signal output for IC2 (TC4052BP)	
2	B		
3	$\overline{\text{ENABLE}}$	Not used and connected to +5 V line	
4	EX1	} Not used and connector to +5 V line	
5	EX2		
6	MUTE	Tuner Section Audio Mute output, active at "H"	
7	FM	} Band Selection Data output, active at "H"	
8	MW		
9	LW		
10	POWER	Power Relay (RL1) Drive output, active at "H"	
11	$\overline{\text{READY}}$	Not used and connected to +5 V line	
12	LOAD	PLL Data Write signal (PLL Load signal)	
13	A	} PLL Frequency Data output for PLL IC (IC5: TC9125BP)	
14	B		
15	C		
16	D		
17	PHONO	} Function Display, lit at "H"	
18	TUNER		
19	AUX		
20	TAPE		
21	VSS	Connected to ground	
22	$\overline{\text{MEMORY}}$	MEMORY (FLD) Display Drive, lit at "L"	
23	DISABLE	Key Input inhibit signal output for IC1 TC47C21P (NH-101) active at "H"	
24	KEY	Key Input Common signal output	
25	LOCK	Key Input Lock [K0 (2/3 Band), K2 (FM Band Upper/Lower), K3 (FM Step 50kHz/100kHz)]	
26	K0	DOWN	} Key Input, active at "H"
27	K1	UP	
28	K2	BAND	
29	K3	MEMORY	
30	TEST	Connected to ground	
31	XIN	} X'tal oscillator terminals	
32	XOUT		
33	$\overline{\text{RESET}}$	Reset terminal	
34	$\overline{\text{HOLD}}$	Back-up Detection	
35	AUTO STOP	AUTO STOP Detection input, AUTO STOP at "H"	
36	INH	Key Input inhibit signal input, active "H"	
37	$\overline{\text{INT}}$	Connected to 5V line	
38	$\overline{9K/10K}$	AM 9 kHz/10 kHz STEP Selection input, 9 kHz at "L" & 10 kHz at "H"	
39	$\overline{\text{SI}}$	Input	} Serial Data between IC1 TC47C21P (NH-100)
40	$\overline{\text{SO}}$	Output	
41	$\overline{\text{SCK}}$	Clock	
42	VDD	+5 V	

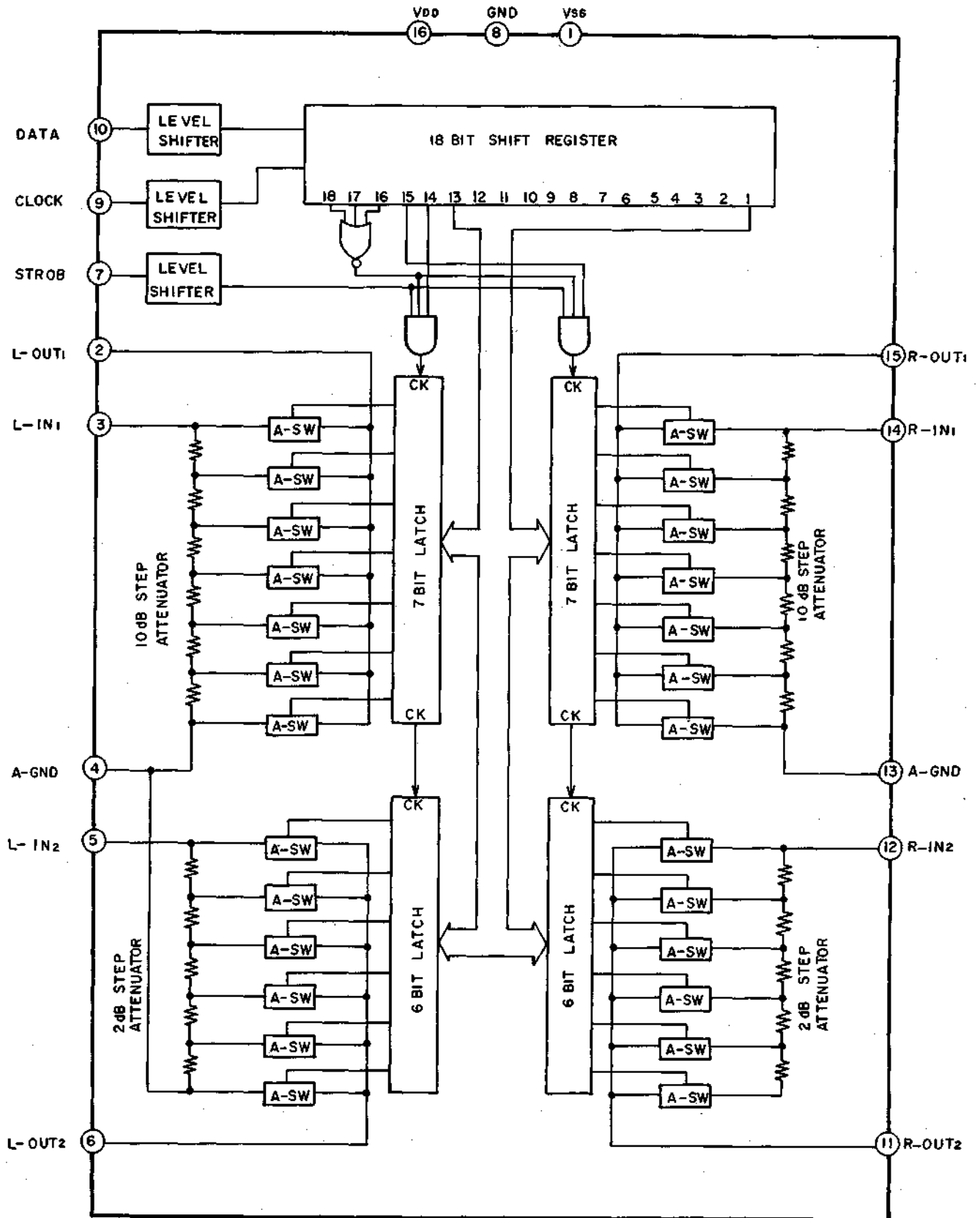
TC9125BP



TERMINAL DESCRIPTION OF IC5 TC9125BP

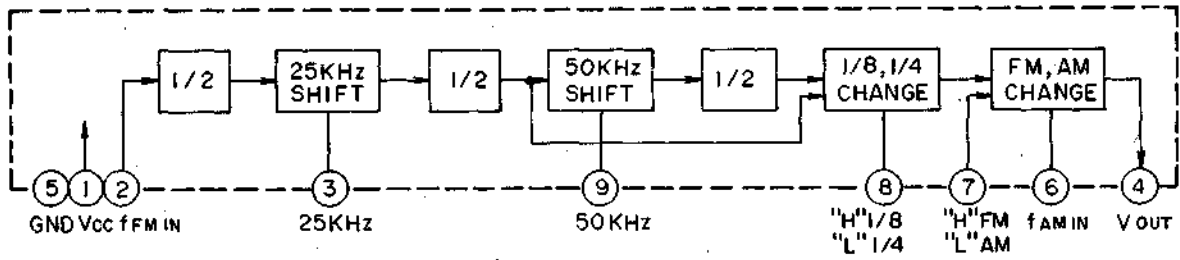
Pin No.	Symbol	Designation of terminal	Description of functions and operations
1	GND	Earth terminal	
2	XT	Crystal oscillator connection terminal	Connection of 9.0MHz crystal oscillator.
3	XT		
4	LOAD	Load input terminal	Data reading instruction input terminal for A, B, C and D. Data is read when this terminal is at "H" level, but when at "L" level, the previous data is held regardless of other inputs.
5	A	Program/data input terminals	Input terminal for reference frequency selection data and programmable counter division digit data.
6	B		
7	C		
8	D		
9	PIN	Programmable counter input terminals	
10	POUT-1	Programmable counter output terminal	To be connected to the prescaler TD6102P for fine adjustment of IF frequency in FM or for 50 kHz shift in Europe. The signal of Pout-1 and Pout-2 is output at the point of different phase. * Pout-2 is not used (No connection)
11	POUT-2		
12	100 kHz	100 kHz clock output terminal	Not used (No connection)
13	LD	Lock-out detection terminal	Not used (No connection)
14	Do-1	Phase comparator output terminal	To be connected to low-pass filter.
15	Do-2		
16	VDD	Power terminal	+5 V

TC9154P

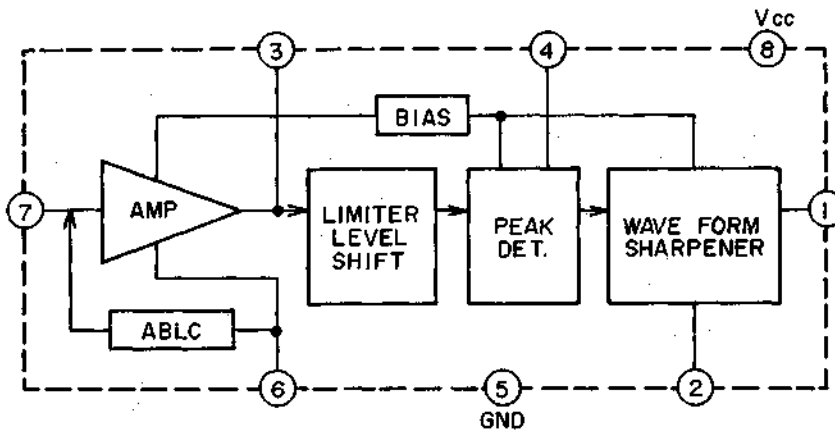


SCHEMATIC DIAGRAM FD-7/L, FP-7

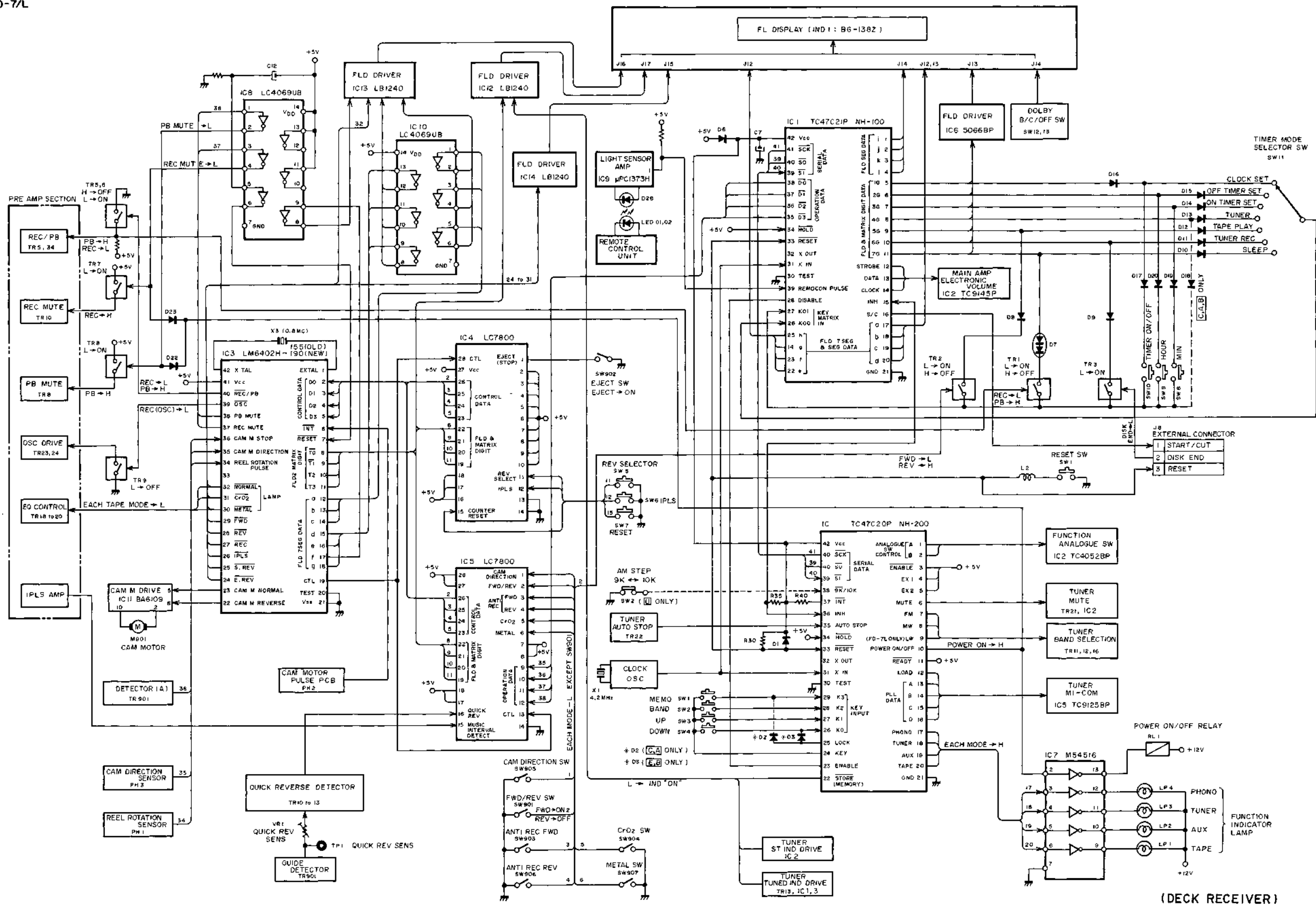
TD6102P



μPC1373H

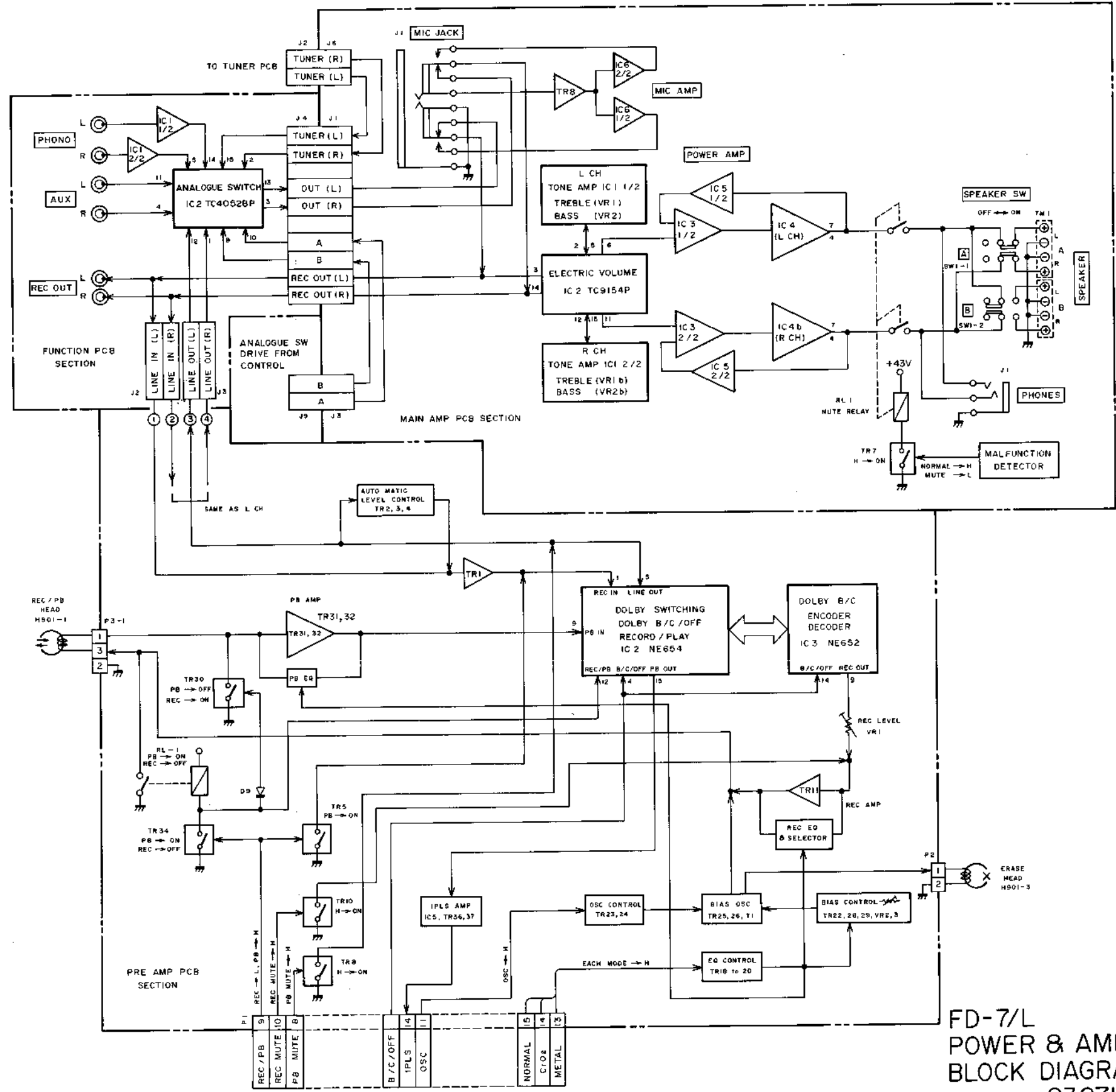
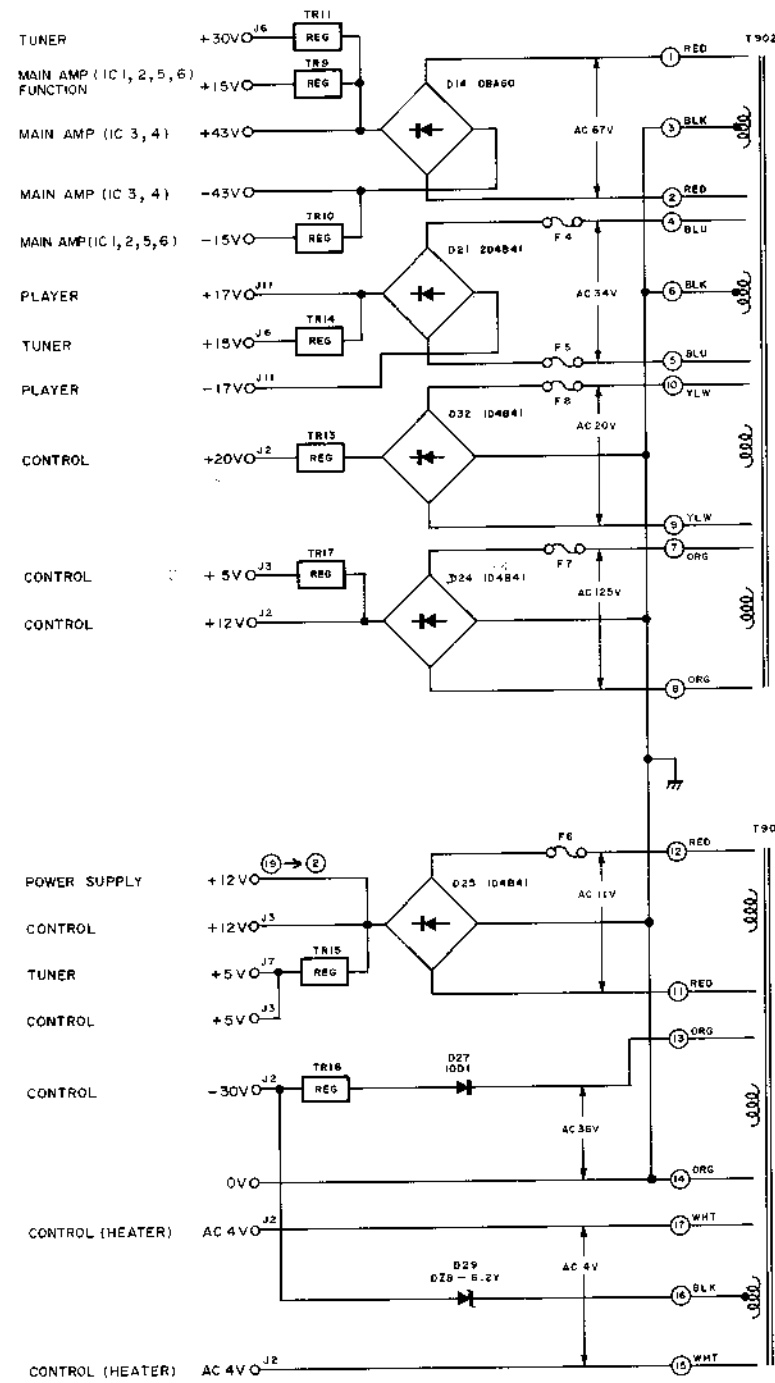


FD-7/L



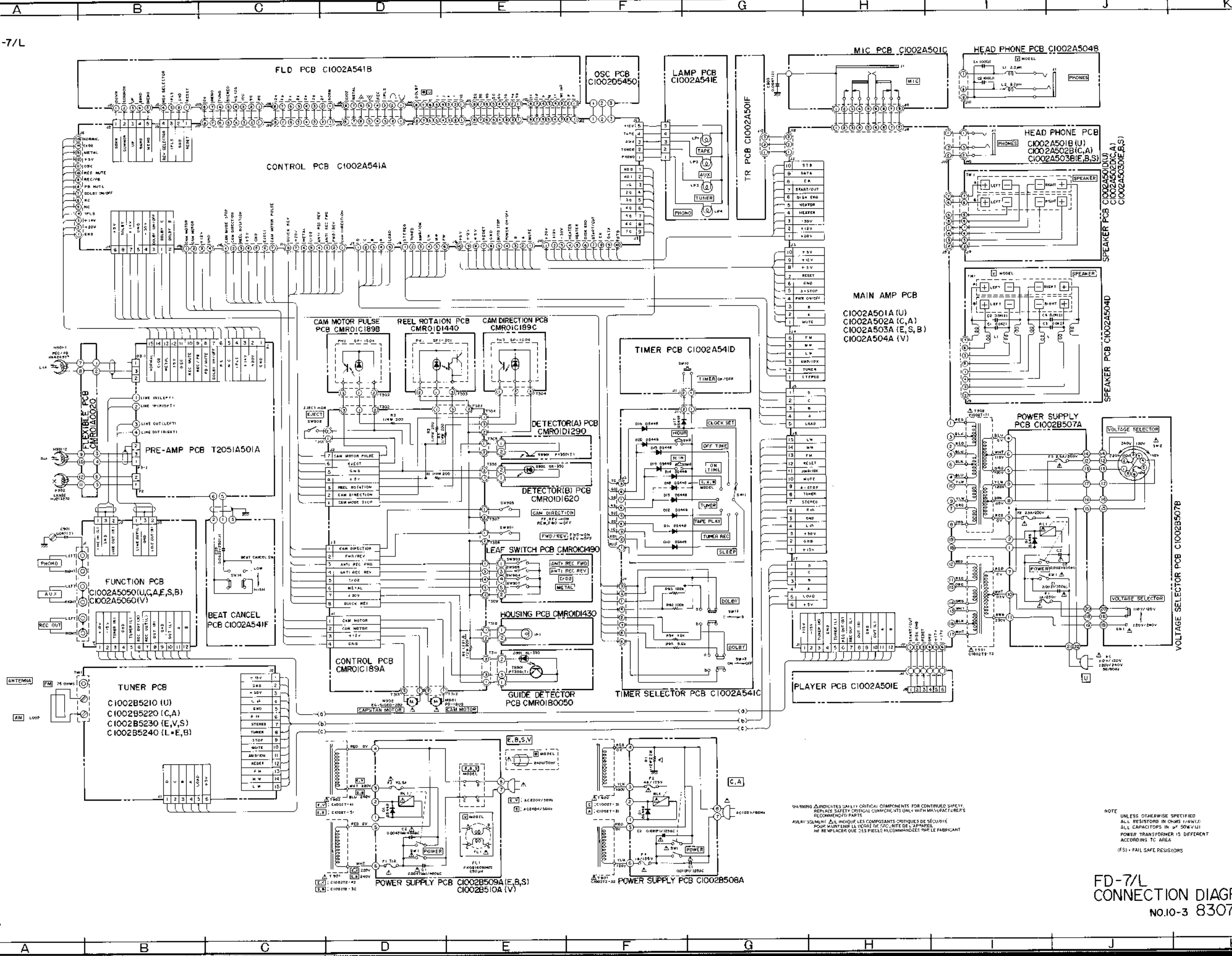
(DECK RECEIVER)
 FD-7/L SYSCON
 BLOCK DIAGRAM
 NO.10-1 83071IA

FD-7/L



FD-7/L
POWER & AMP
BLOCK DIAGRAM
No.10-2 830712A

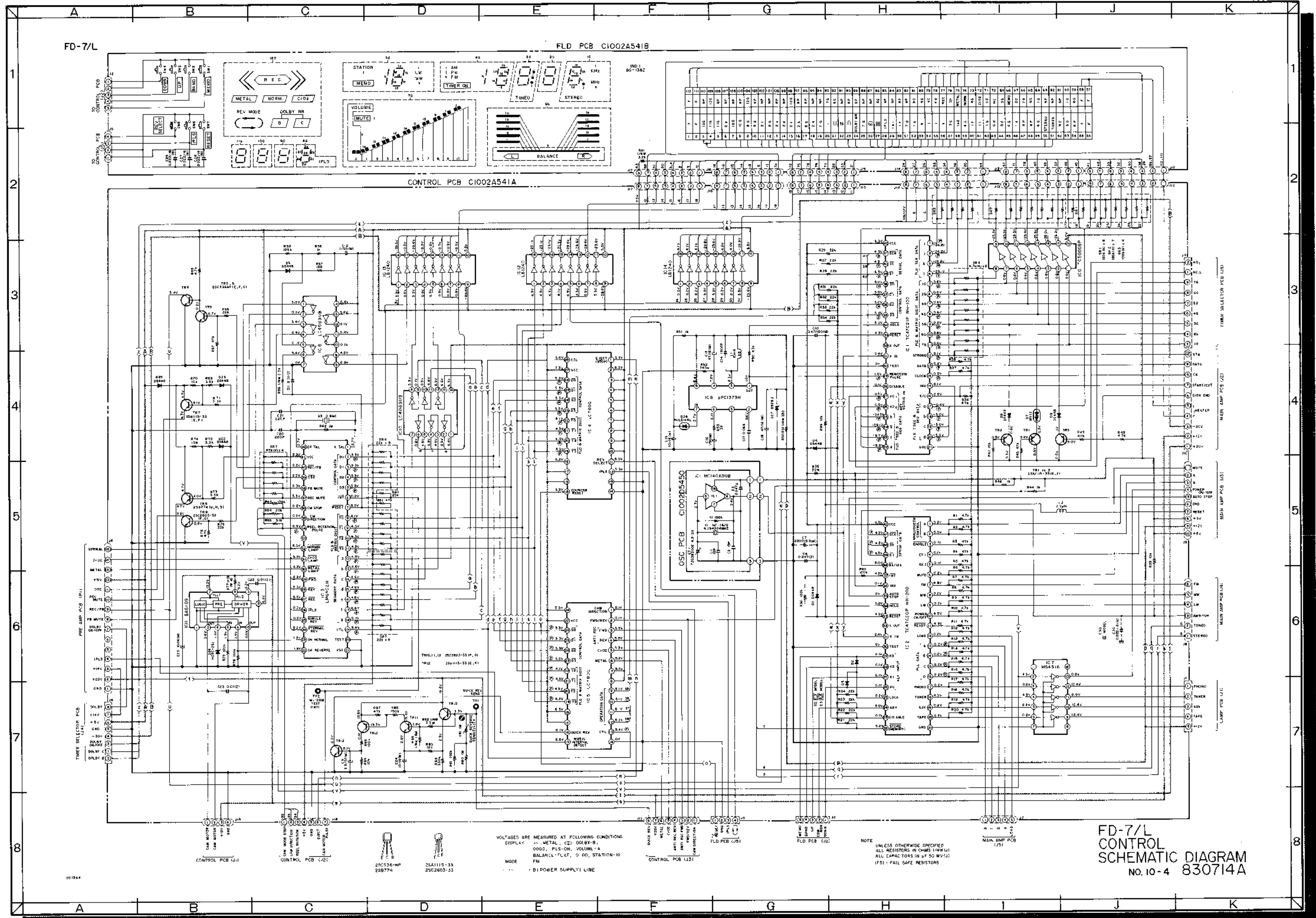
FD-7/L



WARNING: INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.
 AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. REMPLACEZ SEULEMENT LES DÉTAILS DE SÉCURITÉ DE LA FAÇON RECOMMANDÉE PAR LE FABRICANT.

NOTE: UNLESS OTHERWISE SPECIFIED ALL RESISTORS IN OHMS (4W/1/2) ALL CAPACITORS IN μF (50WV/1) POWER TRANSFORMER IS DIFFERENT ACCORDING TO AREA (FS) = FAIL SAFE RESISTORS

FD-7/L
 CONNECTION DIAGRAM
 NO.10-3 830713A



FD-7/L

FLD PCB C1002A541B

CONTROL PCB C1002A541A

OSC PCB C1002A540

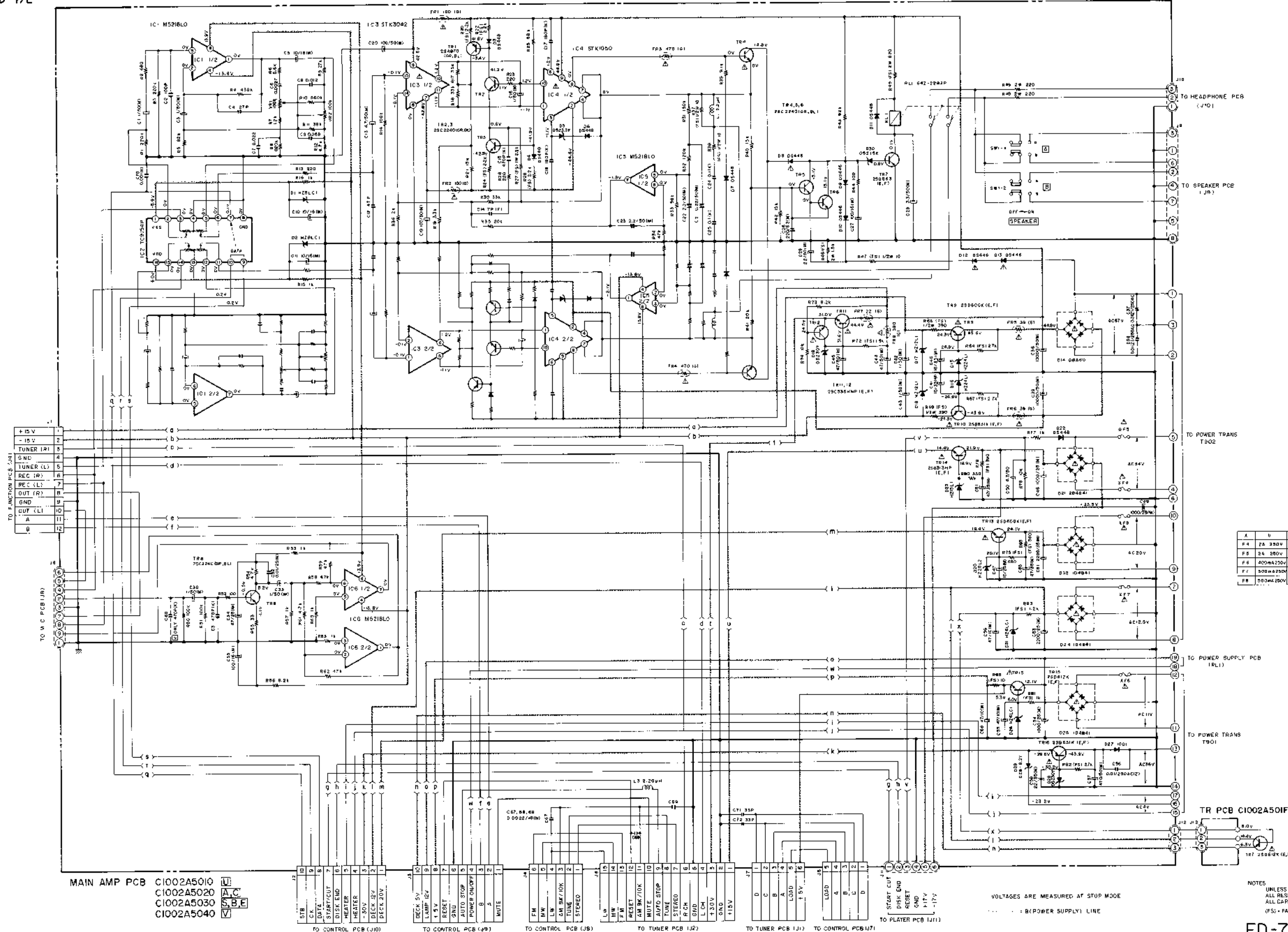
FD-7/L
CONTROL
SCHEMATIC DIAGRAM
NO. 10-4 830714A

VOLTAGES ARE MEASURED AT FOLLOWING CONDITIONS:
 DISPLAY: METAL, (C) DOLBY-B,
 0000, PLS-ON, VOLUME-A
 BALANCE-FLAT, 0, STATION-10
 MODE: FM
 --- B1 POWER SUPPLY LINE

NOTE
 UNLESS OTHERWISE SPECIFIED
 ALL RESISTORS IN OHMS (AWW/L)
 ALL CAPACITORS IN P.F. MV/100
 1F51 = FAIL SAFE RESISTORS

00124

FD-7/L



NOTES
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W/1%
ALL CAPACITORS IN μ F 50 VV (J)
(FS) - FULL SAFE RESISTORS

FD-7/L MAIN AMP
SCHEMATIC DIAGRAM
NO.10-5 830715A

VOLTAGES ARE MEASURED AT STOP MODE
--- (POWER SUPPLY) LINE

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 REMPLACEZ QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

FD-7/L

FLEXIBLE PCB 1/2
CMR01A0020

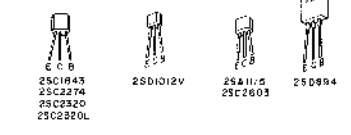
REC/PB COMB HEAD
HD425004R2V2

FLEXIBLE PCB 2/2
CMR01A0020

TO CONTROL
J6

NO 02158

PRE-AMP PCB T205IA501A (3ED)



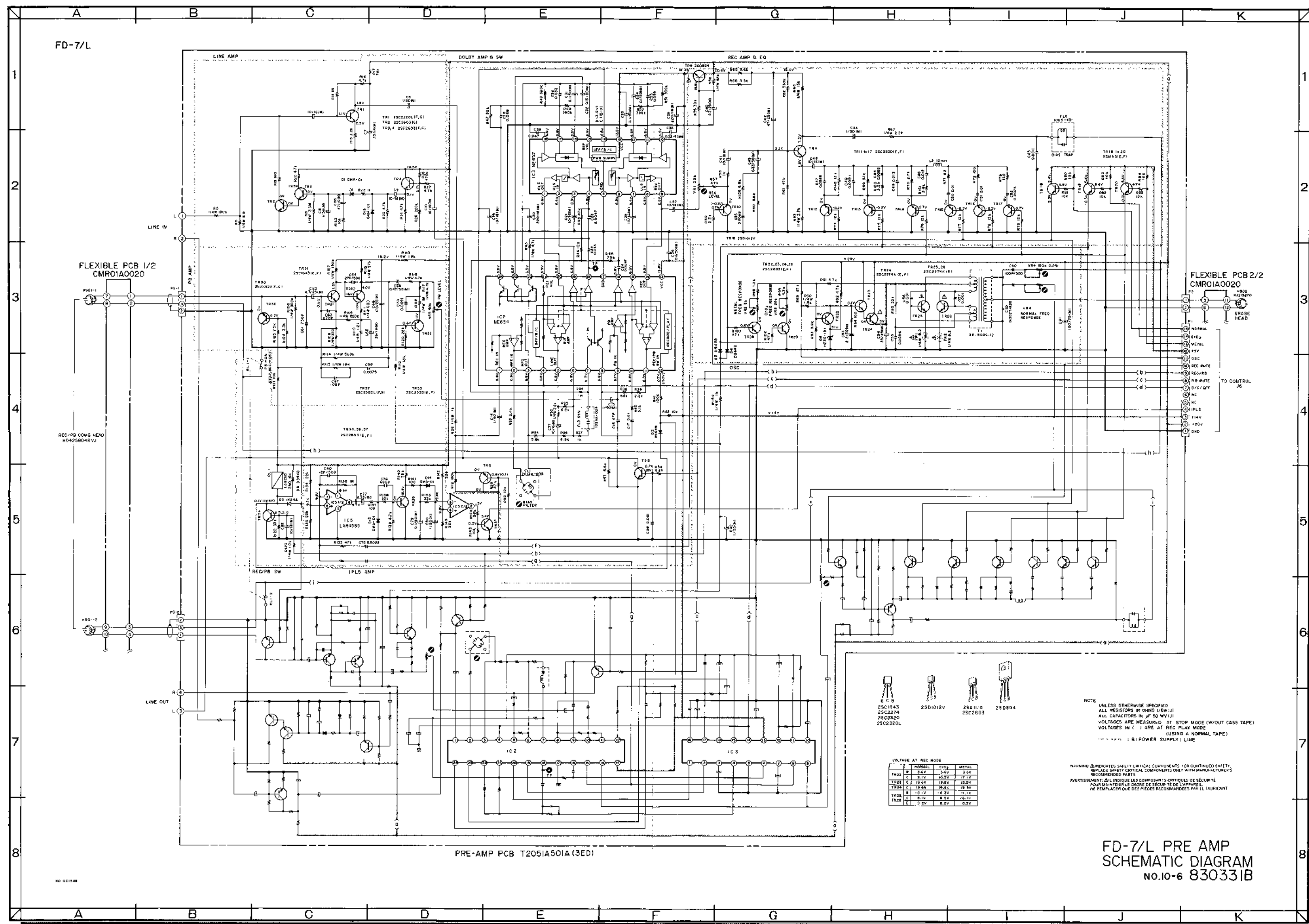
VOLTAGE AT REC MODE

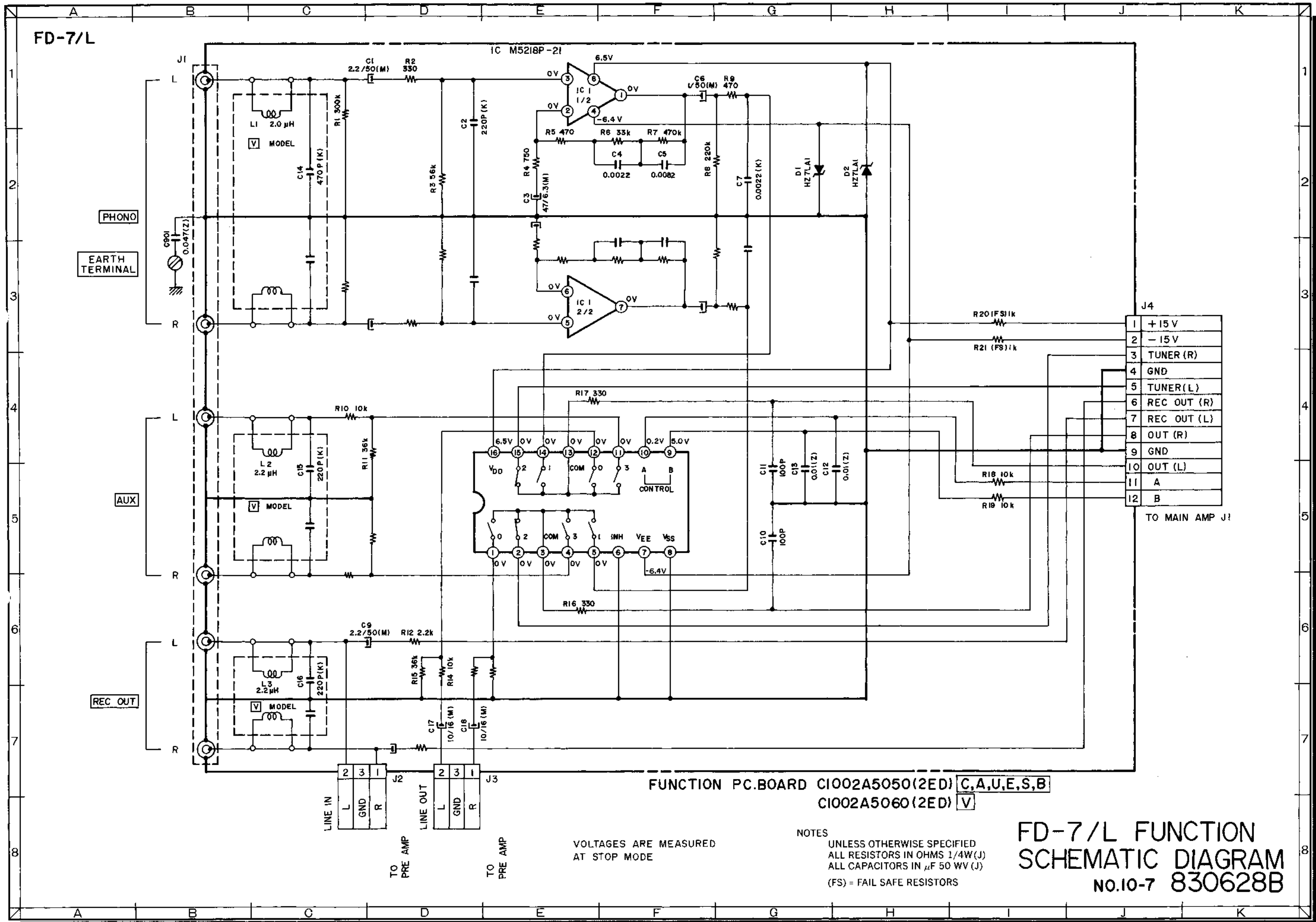
POINT	NORMAL	STOP	METAL
TR22	3.6V	3.6V	3.6V
TR23	5.1V	2.5V	17.1V
TR24	19.6V	19.6V	28.8V
TR25	19.6V	19.6V	19.6V
TR26	-0.1V	-0.3V	-1.1V
TR28	0.1V	0.3V	-6.1V
TR29	0.2V	0.2V	0.3V

NOTE
 UNLESS OTHERWISE SPECIFIED
 ALL RESISTORS IN OHMS (Ω/W)
 ALL CAPACITORS IN μF 50 WV(1)
 VOLTAGES ARE MEASURED AT STOP MODE (W/OUT CASSTAPE)
 VOLTAGES IN () ARE AT REC PLAY MODE
 (USING A NORMAL TAPE)
 (1) = 8 POWER SUPPLY LINE

WARNING: INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.
 REPLACES SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
 RECOMMENDED PARTS.
 AVERTISSEMENT: IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ
 SEULS LES PIÈCES RECOMMANDÉES PAR LE FABRICANT
 NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

FD-7/L PRE AMP
 SCHEMATIC DIAGRAM
 NO.10-6 830331B





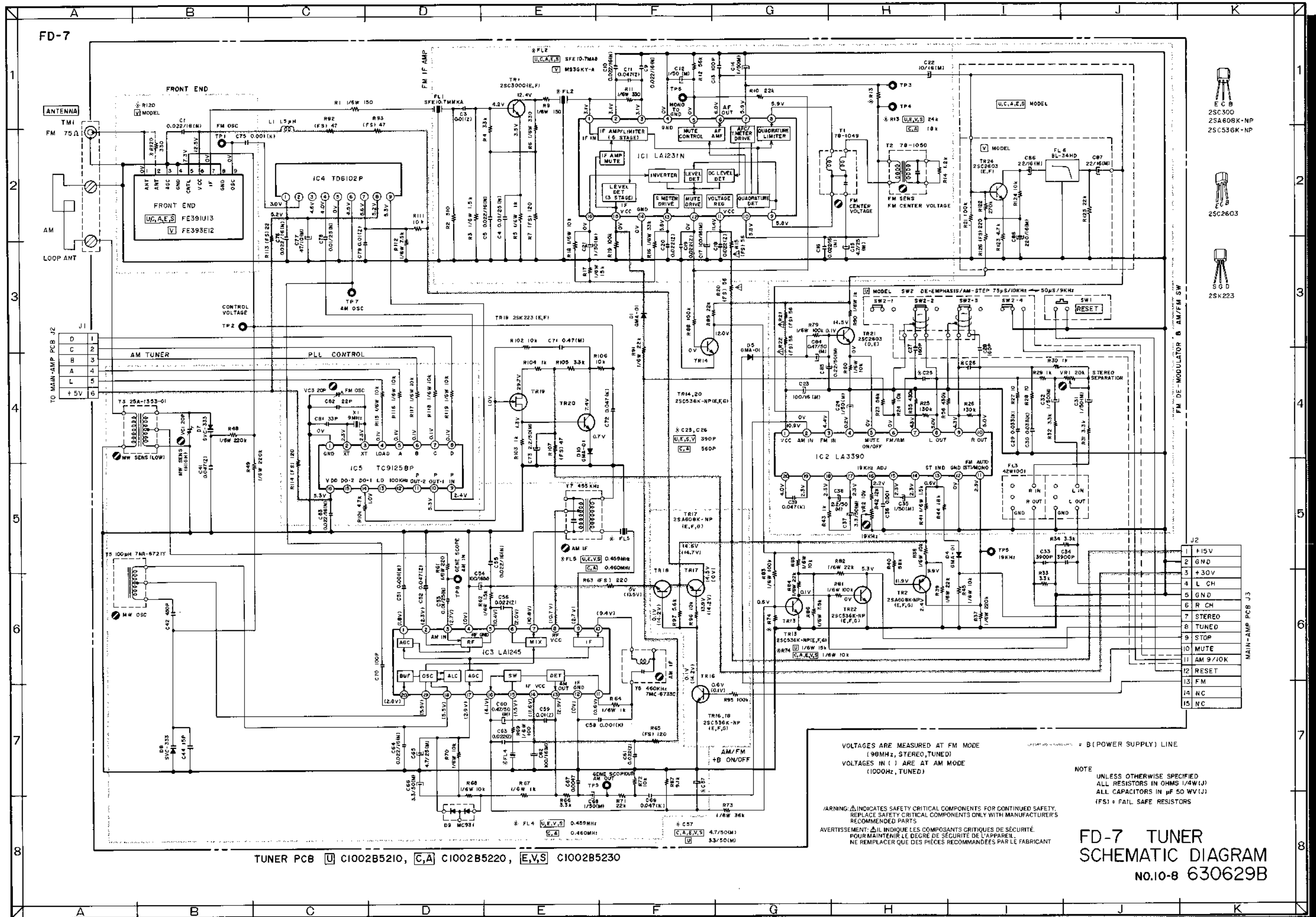
1	+15V
2	-15V
3	TUNER (R)
4	GND
5	TUNER (L)
6	REC OUT (R)
7	REC OUT (L)
8	OUT (R)
9	GND
10	OUT (L)
11	A
12	B

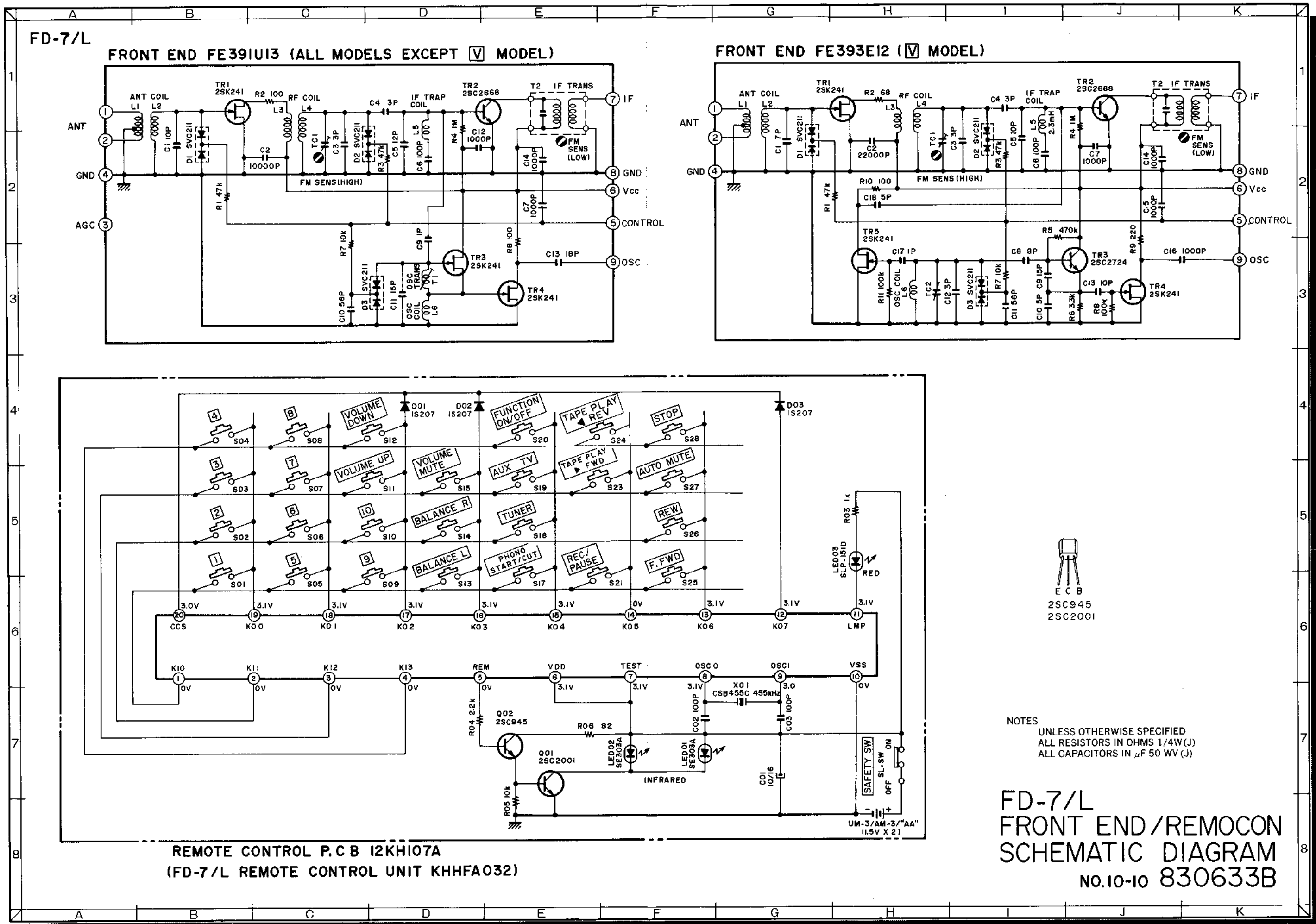
FUNCTION PC BOARD C1002A5050(2ED) C,A,U,E,S,B
 C1002A5060(2ED) V

VOLTAGES ARE MEASURED AT STOP MODE

NOTES
 UNLESS OTHERWISE SPECIFIED
 ALL RESISTORS IN OHMS 1/4W(J)
 ALL CAPACITORS IN μ F 50 WV (J)
 (FS) = FAIL SAFE RESISTORS

FD-7/L FUNCTION SCHEMATIC DIAGRAM
 NO.10-7 830628B





FD-7/L

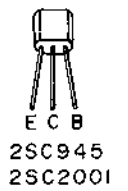
FRONT END FE391UI3 (ALL MODELS EXCEPT V MODEL)

FRONT END FE393E12 (V MODEL)

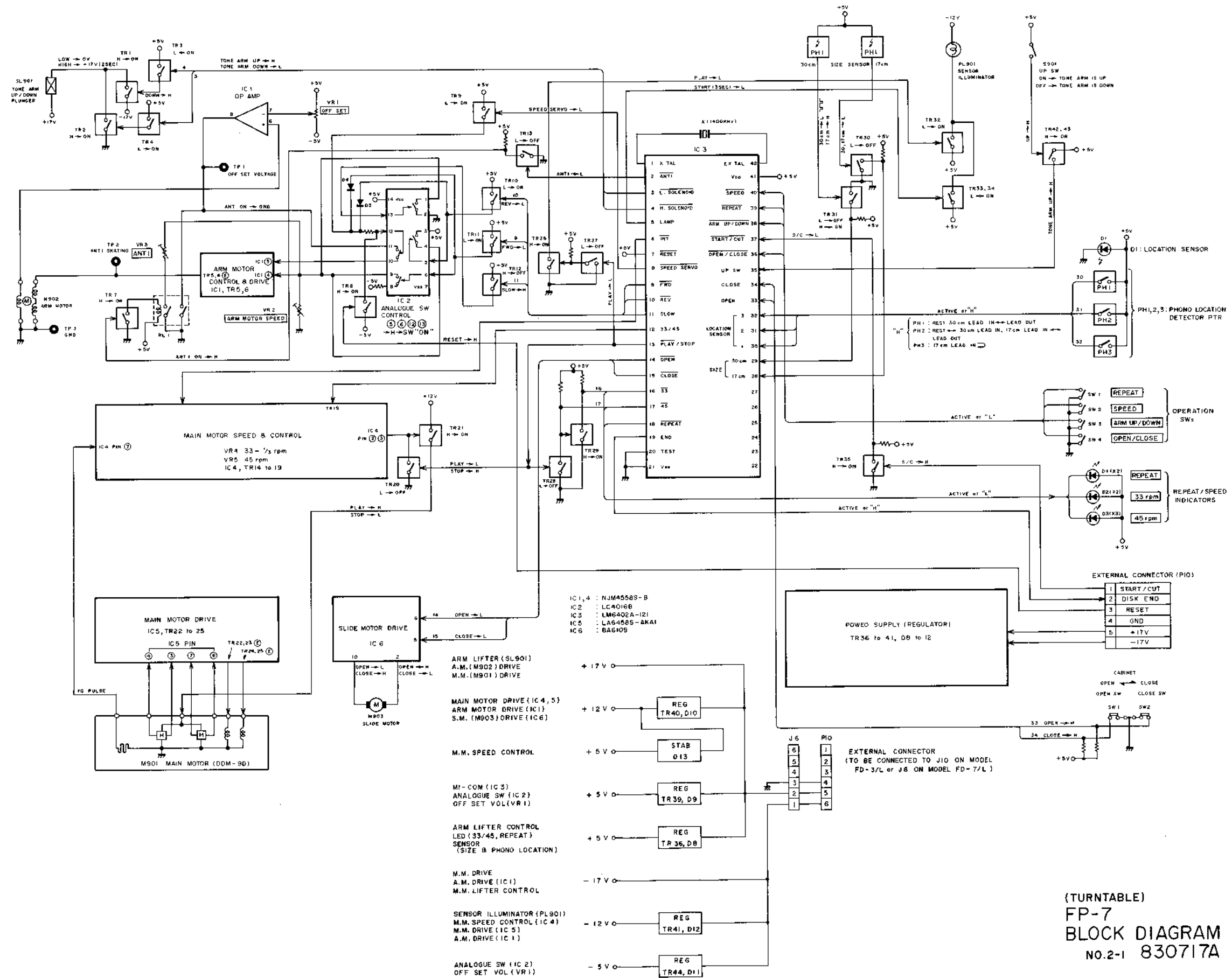
REMOTE CONTROL P.C B I2KH107A
(FD-7/L REMOTE CONTROL UNIT KHHFA032)

FD-7/L
FRONT END/REMOCON
SCHEMATIC DIAGRAM
No.10-10 830633B

NOTES
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50 WV (J)

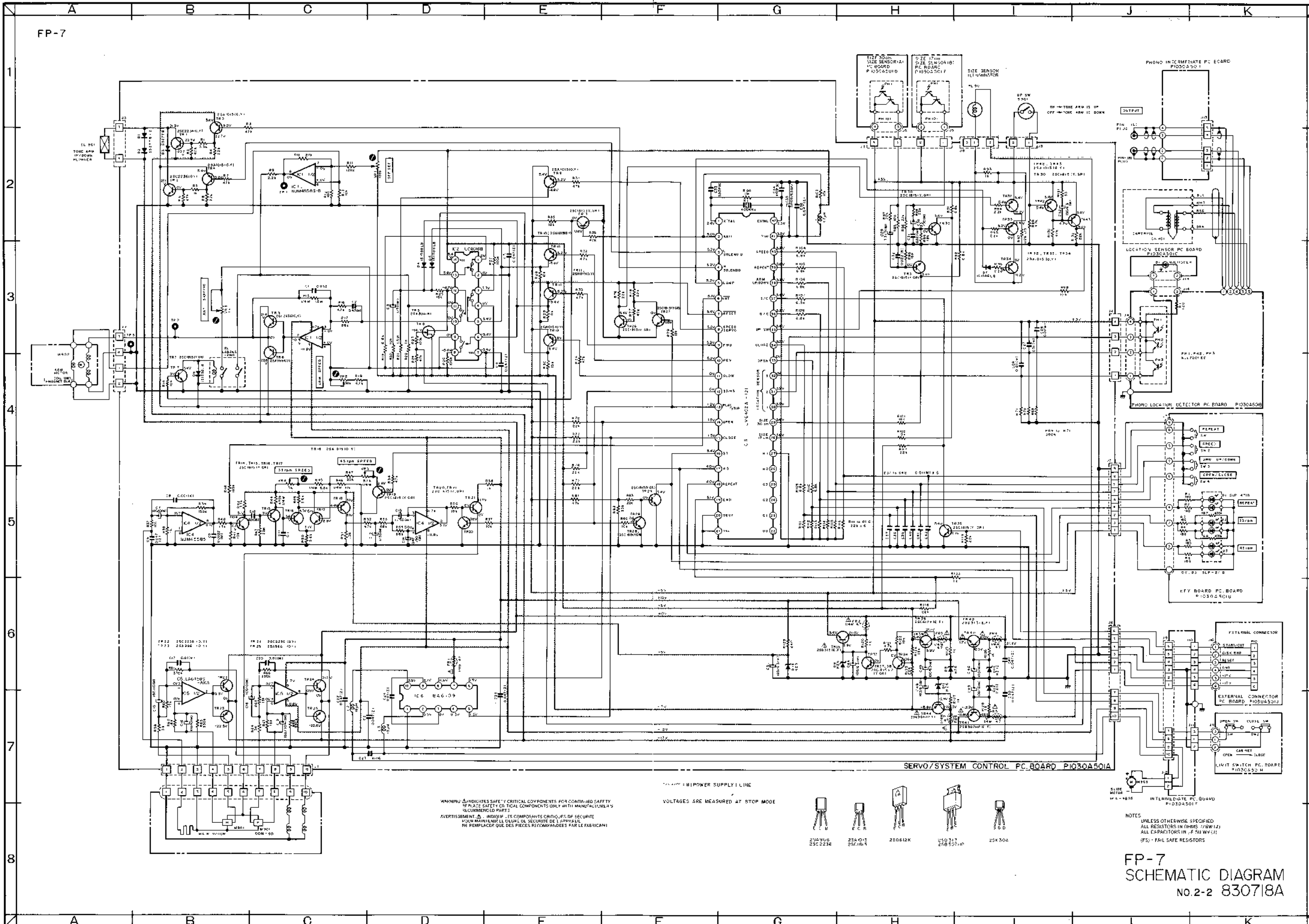


FP-7



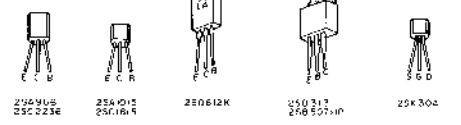
(TURNTABLE)
FP-7
BLOCK DIAGRAM
NO.2-1 830717A

FP-7



WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY OF PLACES SAFETY OR OTHER COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.
 AVERTISSEMENT: ⚠ INDICIF LES COMPOSANTS CRITIQUES DE SECURITE POUR REMPLACER QUE DES PIECES RECOMMANDEES PAR LE FABRICANT.

VOLTAGES ARE MEASURED AT STOP MODE



NOTES:
 UNLESS OTHERWISE SPECIFIED
 ALL RESISTORS IN OHMS (Ω/BW/Ω)
 ALL CAPACITORS IN .F 50 WV/50
 (FS) - FAIL SAFE RESISTORS

FP-7
 SCHEMATIC DIAGRAM
 No.2-2 830718A