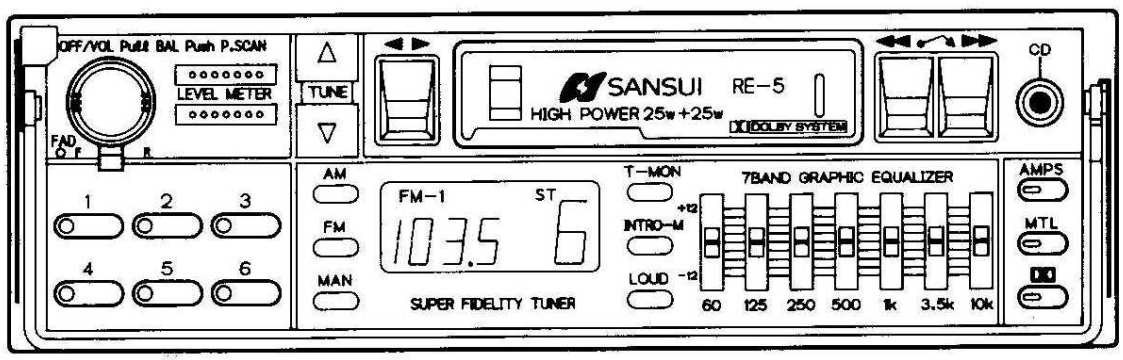
SANSUI

SERVICE MANUAL

RE-5

COMPU-EQUALIZER/SPECTRUM ANALIZER CASSETTE RECEIVER



•SPECIFICATIONS

Audio section

Maximum output power.. 25 watts per channel into 4 ohms (1 kHz)
Rated output power ..... 16 watts per channel into 4 ohms (1 kHz, 1% total harmonic distortion)
Load impedance..... 4 ohms
Total harmonic distortion less than 0.05% at 5 watts
Circuit system ..... OCL-BTL system
Input sensitivity
CD IN ..... 800 mV
Signal to noise ratio
(A network) ..... 80 dB
Frequency response..... 20 to 20,000 Hz ± 3 dB
Equalizer frequency ..... 60 Hz, 125 Hz, 250 Hz, 500 Hz, 1 kHz, 3.5 kHz, 10 kHz
Level variation range..... ±12 dB
LOUDNESS..... +8 dB at 100 Hz
+6 dB at 10 kHz
(VOLUME: —30 dB)

Tape section

Track format..... 4-track/2-channel system
Tape speed..... 4.8 cm/sec.
Play back head ..... Hard permalloy, 4-track
Wow/flutter ..... 0.12% max. (WRMS)
Frequency response
Normal (LH) tape ..... 30 to 14,000 Hz ± 3 dB
Metal tape..... 30 to 15,000 Hz ± 3 dB
Signal-to-noise ratio (with metal tape, A network)
Dolby NR on..... Better than 65 dB (5 kHz)

Tuner section

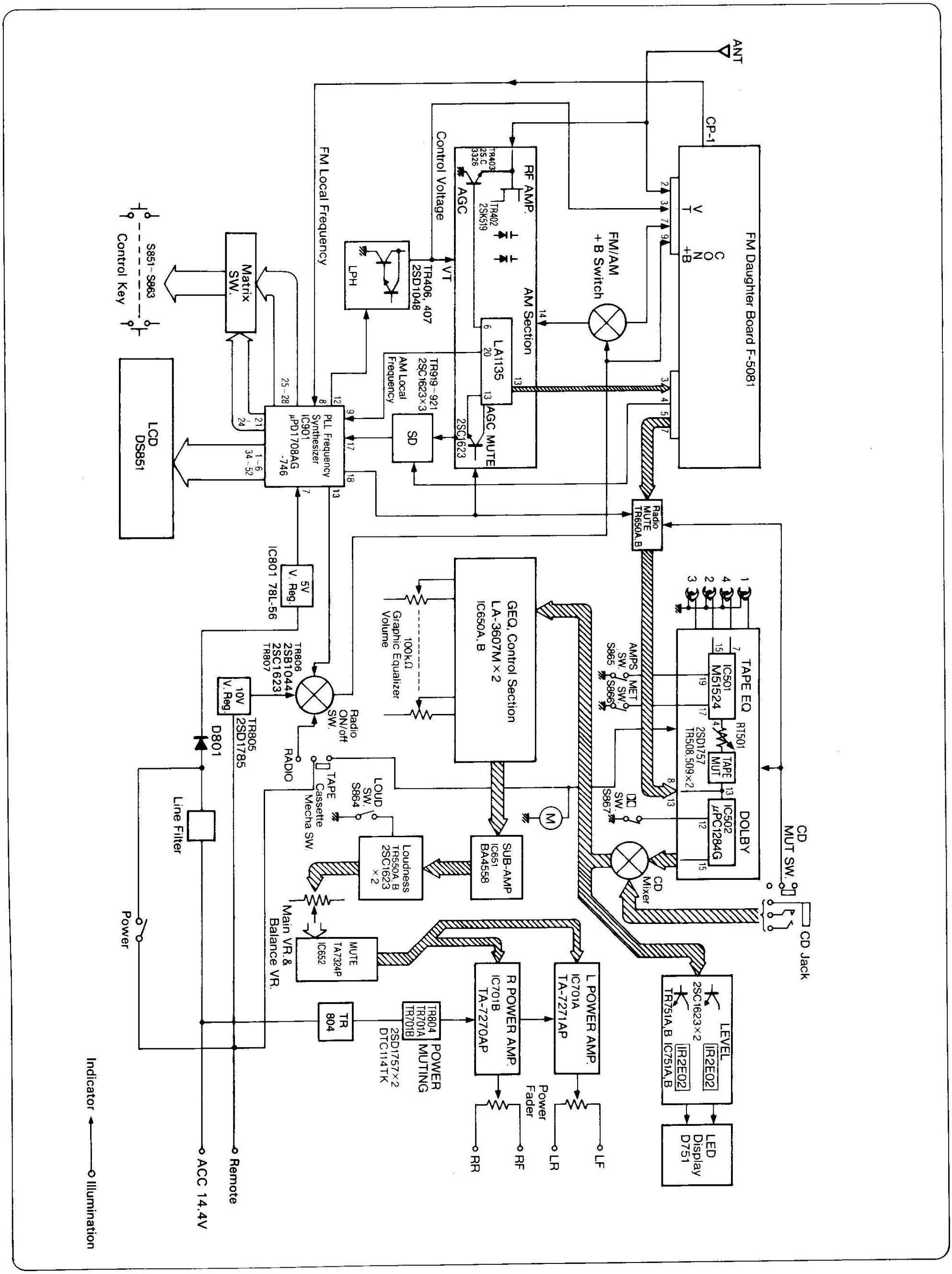
(FM)
Tuning range..... 88 to 108 MHz
Usable sensitivity
Mono IHF ..... 12.0 dBf (1.1 μV/75 ohms)
50 dB quieting sensitivity
Stereo ..... 16.2 dBf (1.8 μV/75 ohms)
Signal to noise ratio (at 65 dBf)
Stereo/mono..... 65 dB/70 dB
(AM)
Tuning range..... 531 to 1,600 kHz
Usable sensitivity ..... 30 dB/μV
(75 ohms at 1,000 kHz)

General

Power requirements ..... DC 12.0V/Rated: 14.4V
(Usable: 10.8 ~ 15.6V)
negative ground
Current consumption ..... 5A Maximum
Dimensions ..... 189 mm (7-1/2″) W
57 mm (2-1/4″) H
154 mm (6-1/8″) D
Chassis size ..... 182 mm (7-1/8″) W
53 mm (2-1/8″) H
145.5 mm (5-3/4″) D
Weight (net) ..... 1.58 kg (3.5 lbs)

*** Design and specifications subject to changes without notice for improvements.**

1. BLOCK DIAGRAM



2. ADJUSTMENTS

2-1. FM Adjustment

Note: 1. FM Switch..... ON
2. Graphic equalizer VR..... Center
3. Connect as shown Fig. 1.
4. Refer to Fig. 2, 7 for ADJUSTMENT Points.

Fig. 2

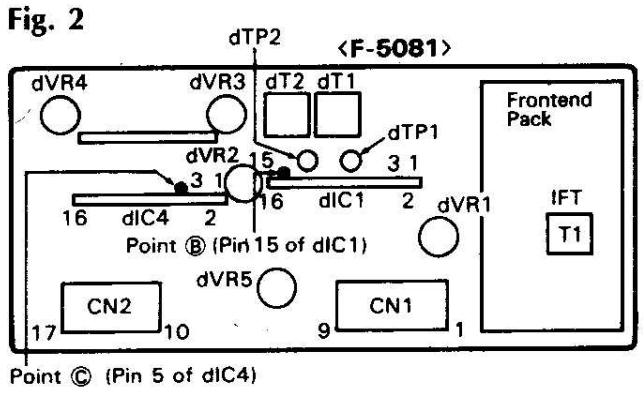
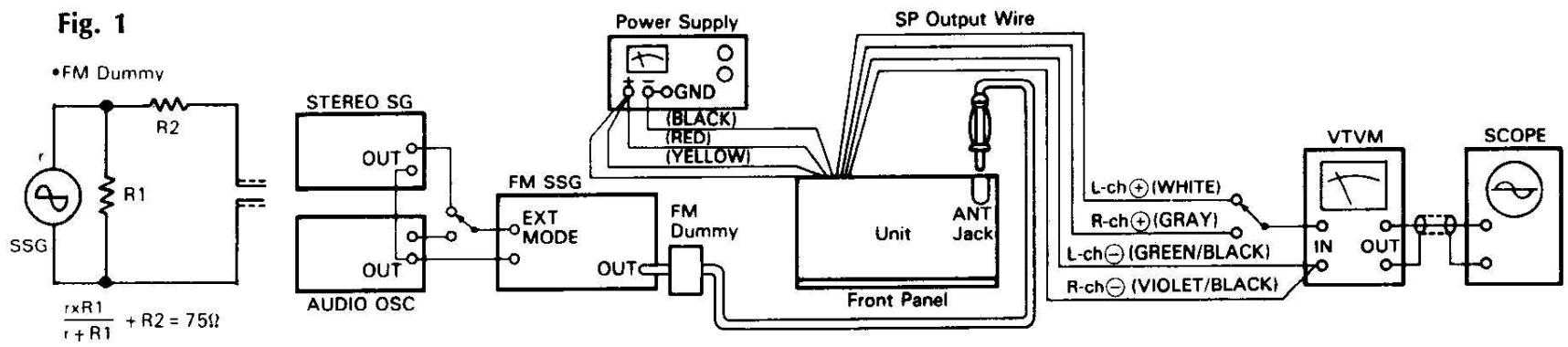


Fig. 1



STEP	SUBJECT		FEED SIGNAL FROM	FEED SIGNAL TO	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1.	IF Coil Adj.		98MHz 20dBf (14.8dB), 1kHz (100% MOD.), FM SSG	ANT Jack or Point Ⓐ	Between Point Ⓑ (Pin 15 of dIC1) & GND, (F-5081) DC Volt Meter	IFT Coil T1 <Frontend Pack>, (F-5081)	Max. DC Volt	
2.	Discriminator Coil Adj.	①	No Input	——	Between TP-1 & TP-2, DC Volt Meter (F-5081)	dT1 (F-5081)	DC 0V ± 50mV	•Repeat procedures as stated in subject ① & ②.
		②	98MHz 65dBf (59.8dB), 1kHz (100% MOD.), FM SSG	ANT Jack or Point Ⓐ	L or R-CH SP-OUT, Dist Meter	dT2 (F-5081)	Min. THD	
3.	Pilot Cancelling Adj.		98MHz 65dBf (59.8dB.), FM SSG, Pilot 19kHz (9% MOD.), STEREO SG.	Same as above	Between Point Ⓒ (Pin 5 of dIC4) & GND, SCOPE & VTVM	dVR4 (F-5081)	Min. 19kHz Pilot signal level	
4.	Separation Adj.		98MHz 65dBf (59.8dB) FM SSG, Pilot 19kHz (9% MOD.), L MODE 1kHz + Pilot (100% MOD.) STEREO SG.	Same as above	L-CH SP-OUT, VTVM & Scope	——	Read this indication on VTVM	
					R-CH SP-OUT, VTVM & Scope	dVR3 (F-5081)	−26 ~ −35dB from the indication above.	Confirm R-CH→L-CH
5.	Auto Noise Control Level Adj.		98MHz 45dBf (39.8dB), FM SSG, Pilot 19kHz (9% MOD.), L MODE 1kHz + Pilot (100% MOD.), STEREO SG.	Same as above	L-CH SP-OUT, VTVM & Scope	——	Read this indication on VTVM	
					R-CH SP-OUT, VTVM & Scope	dVR2 (F-5081)	−15dB from the indication above.	Confirm R-CH→L-CH
6.	Auto stop Level Adj.		98MHz ANT Input 26dBf (20.8dB) 1kHz (100% MOD.), FM SSG	Same as above	Digital Display 98MHz	dVR5 (F-5081)	Tune the tuner to 98MHz by using the automatic search tuning operation.	

◆Technical Hint for FM Adjustment

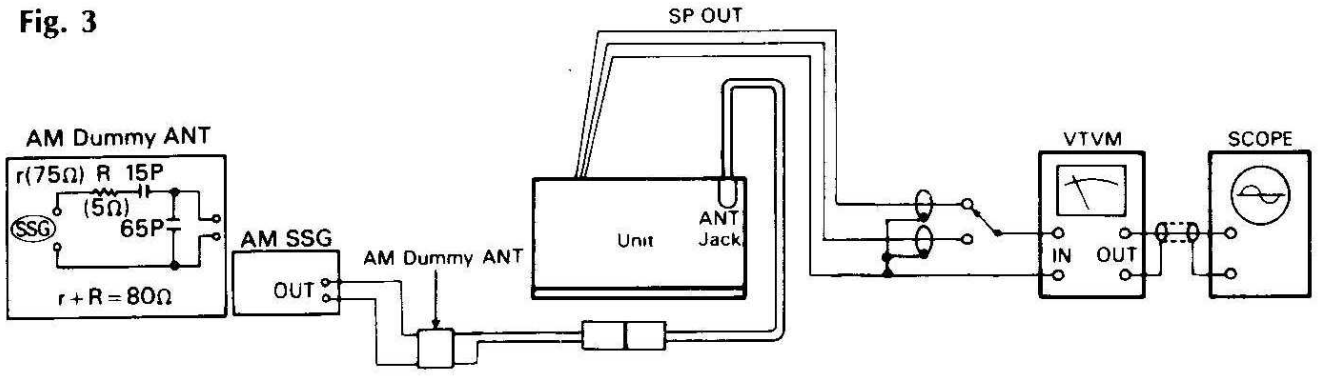
- The impedance of FM antenna terminal is 75Ω. Therefore, connect coaxial cable (3C-2V etc.) between FM SG and antenna terminal when wiring.
- There are two kind in indication of FM SG output attenuator
  1. Attenuator with marking of 75Ω open ... open indication type.
  2. Attenuator with marking of 75Ω load or close ... load or close indication type.
- FM SG output level in this FM adjustment are described as open indication type. The right table shows relations among FM SG attenuator indication (dB), available power ratio (dBf) and antenna terminal voltalge (dB/μV) in each indication type.
  close indication type.

	FM SG Attenuator Indication	Available Power Ratio	Antenna Terminal Voltage
Open indication type	0 dB 60 dB	5.2 dBf 65.2 dBf	6 dB/μV 66 dB/μV
Load or close indication type	0 dB 54 dB	11.2 dBf 65.2 dBf	12 dB/μV 66 dB/μV

2-2. AM Adjustment

Note: 1. AM Switch ..... ON
2. Connect as shown Fig. 3.
3. Refer to Fig. 7 for ADJUSTMENT Points.

Fig. 3



STEP	SUBJECT	FEED SIGNAL FROM	FEED SIGNAL TO	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1.	Tuning Voltage Adj.	Tune the tuner to 522kHz	—	Between TP401 & GND, DC Volt Meter	T403	0.8~0.9V	Repeat two adjustments.
		Tune the tuner to 1629kHz	—	Between TP401 & GND, DC Volt Meter	CT402	7.9~8.1V	
2.	IF Adj.	999kHz ANT Input 30dB 400Hz (30% MOD.)	ANT Jack or Point Ⓐ	SP Output Scope, VTVM	T404, T405	Max Output	
3.	RF Adj.	612kHz ANT Input 30dB 400Hz (30% MOD.), AM SSG.	Same as above	Same as above	T401, T402	Same as above	Repeat two adjustments.
		1403kHz ANT Input 30dB 400Hz (30% MOD.), AM SSG.	Same as above	Same as above	CT401, CT403	Same as above	
4.	Scan Stop Adj.	999kHz, 35dB 400Hz (30% MOD.), AM SSG	Same as above	Display	RT401	Tune the tuner to 999kHz by using the scan stop operation.	

2-3. Cassette Deck Adjustment

Note: 1. Before this adjustment, clean P.B. head surface.
2. For this adjustment, use SANSUI Test Tape SCT-F10K, SCT-L400.
3. DOLBY NR Switch..... OFF
4. VOLUME..... MAX
5. BALANCE VOLUME, GRAPHIC EQUALIZER ..... Center
6. Connect as shown Fig. 4.
7. Refer to Fig. 5, 6, 7 for ADJUSTMENT Points.

Fig. 4

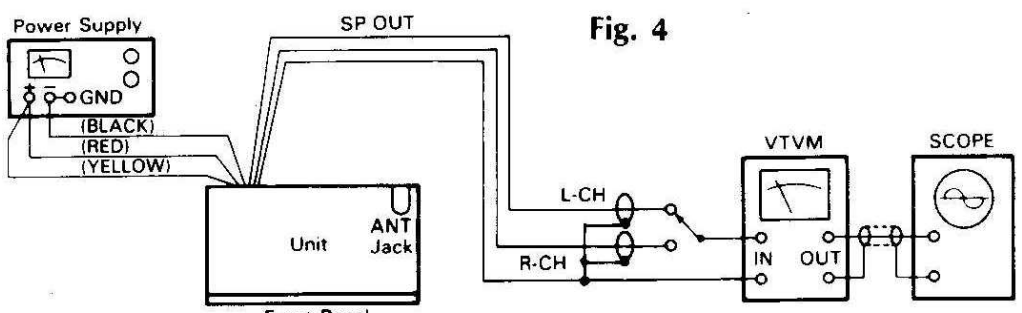
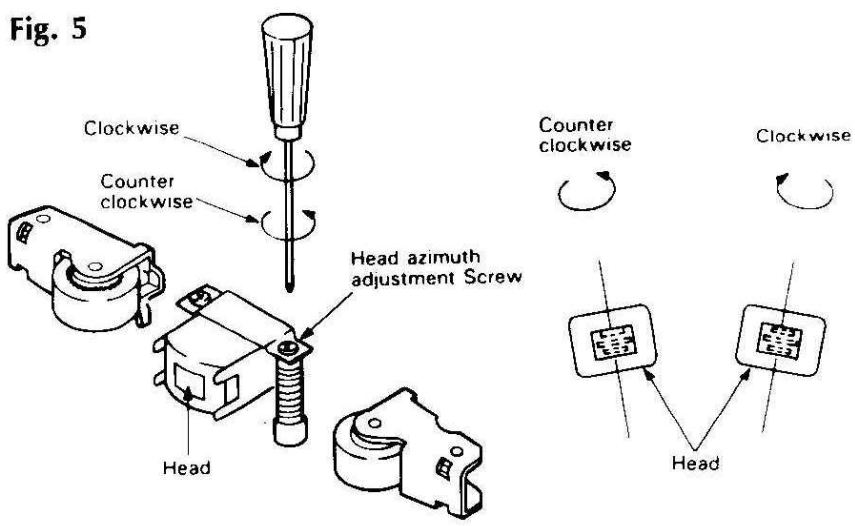


Fig. 5



STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	P.B. Head Adj.	TPL (L-CH) TPR (R-CH) VTVM and Scope	Playback (FWD & REV) the TEST TAPE SCT-F10K	Adjust the azimuth adjusting screw in (Fig. 5).	MAX. Output both channels on FWD and REV PLAY	After this adjustment, lock the screw with paint.
2.	Playback Level Adj.	Same as above	Playback (FWD & REW) the TEST TAPE SCT-L400	Adjust RT501 for L-CH and RT502 for R-CH (Fig. 6)	450mV±2dB both channels on FWD and REV PLAY	See Fig. 6.

Fig. 6 PCB-998 Tape Deck Board

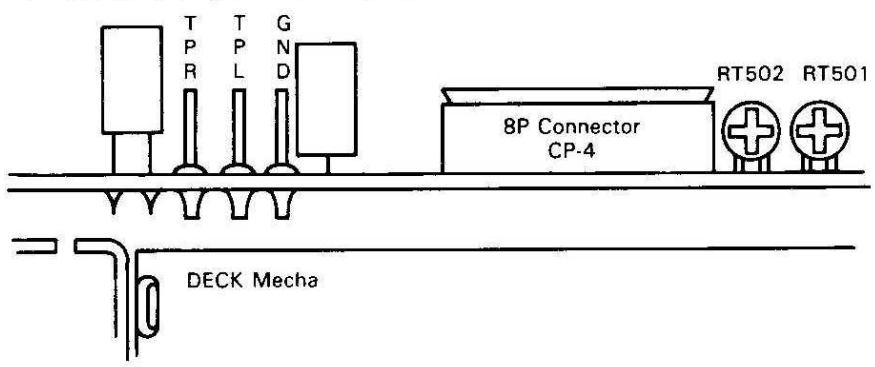
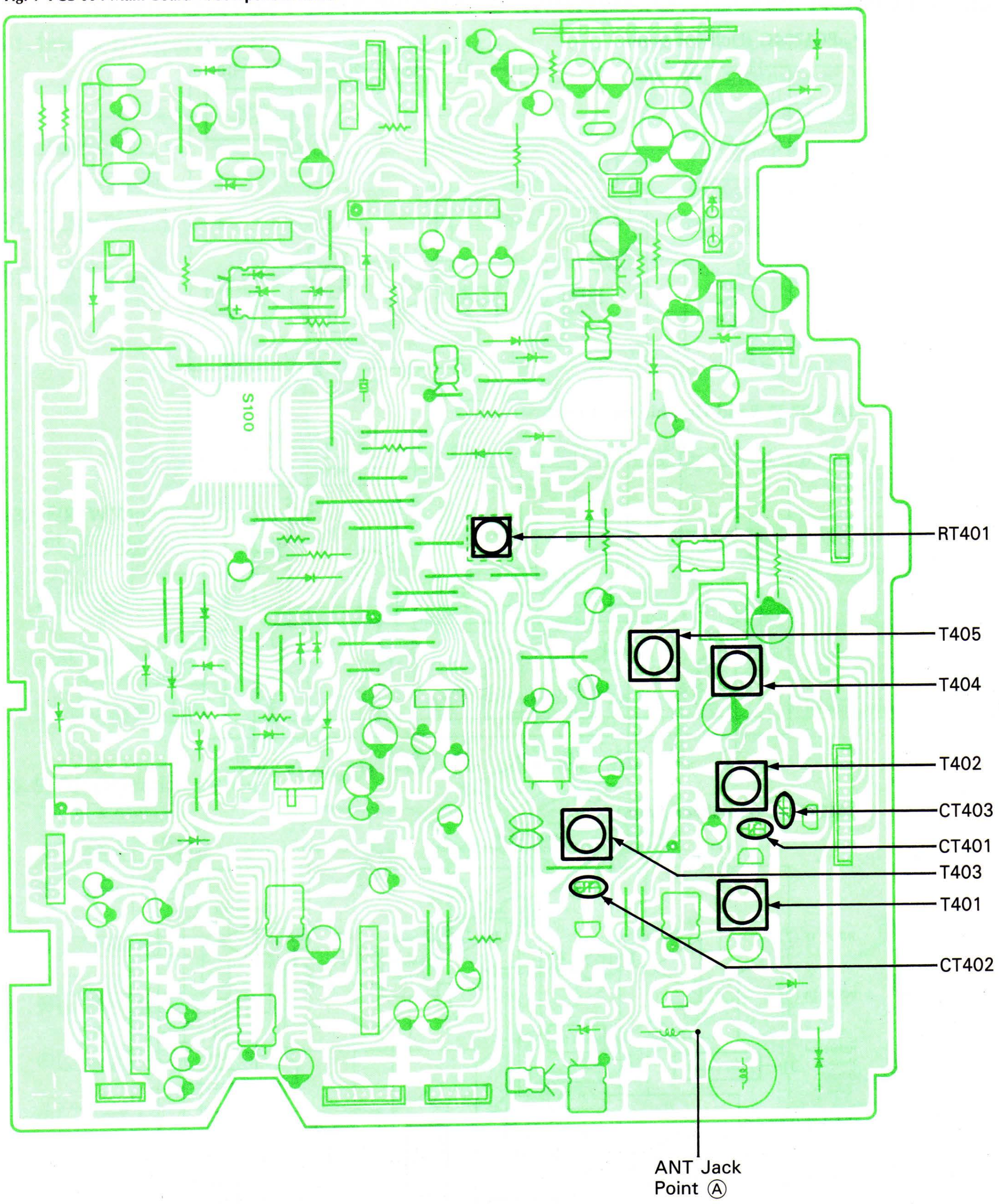
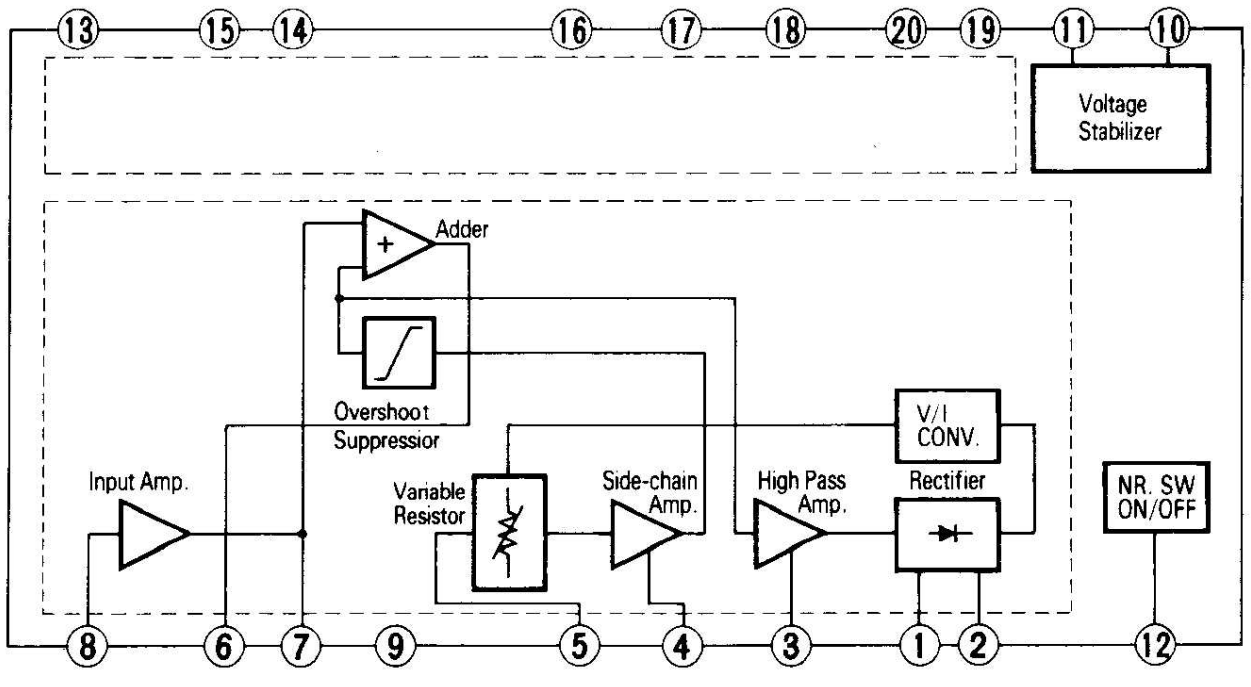


Fig. 7 PCB-994 Main Board <Component Side>

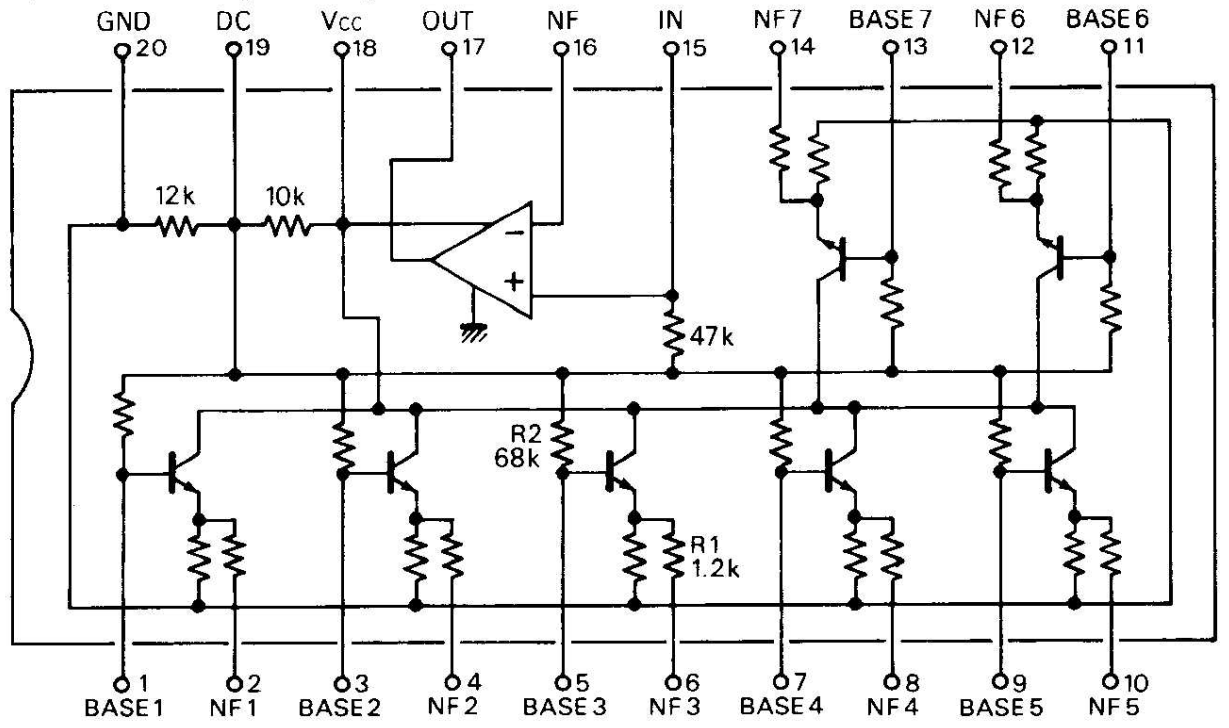


3. INTERIOR BLOCK DIAGRAM & TERMINAL FUNCTION OF IC

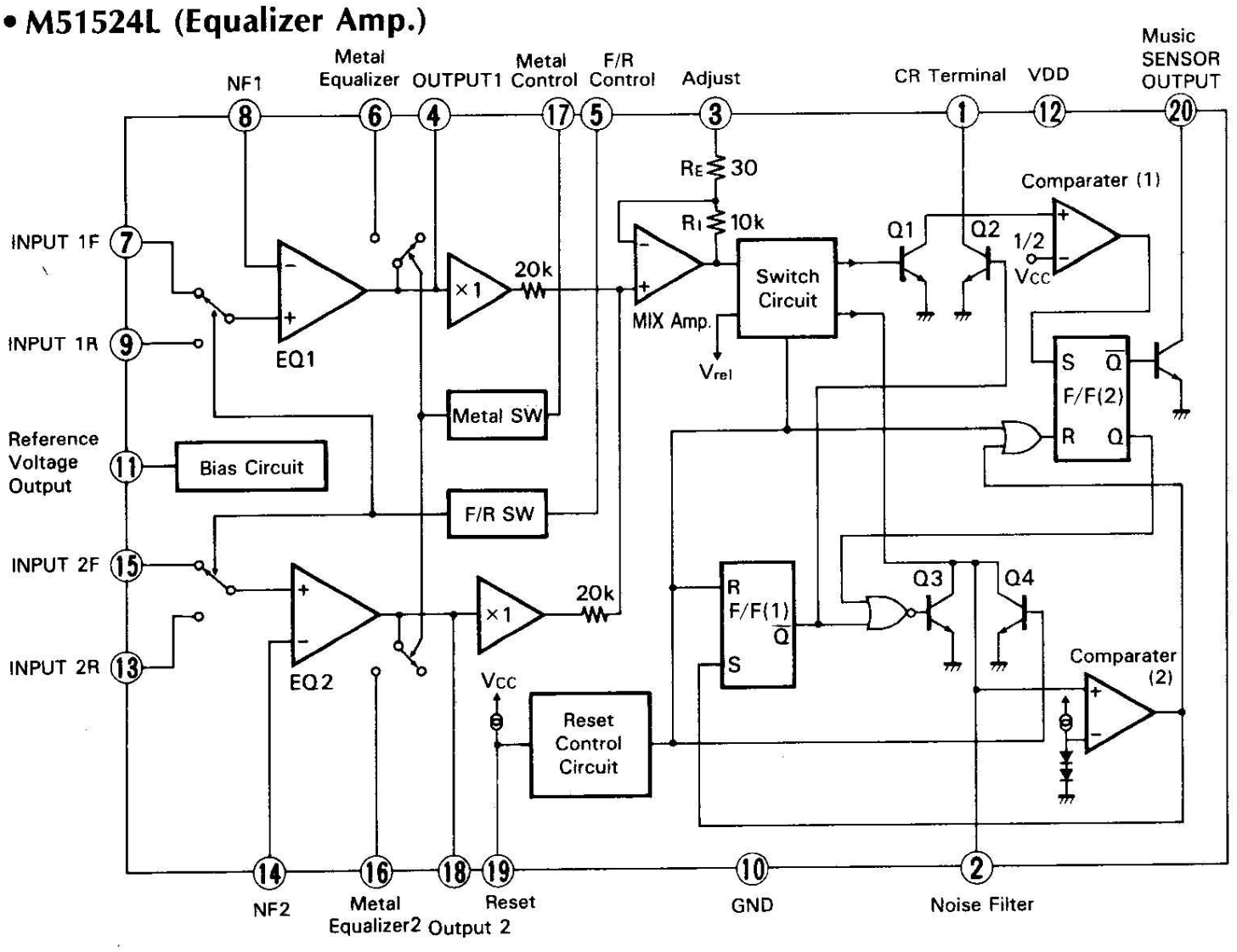
• μPC1284G (Dolby B type)



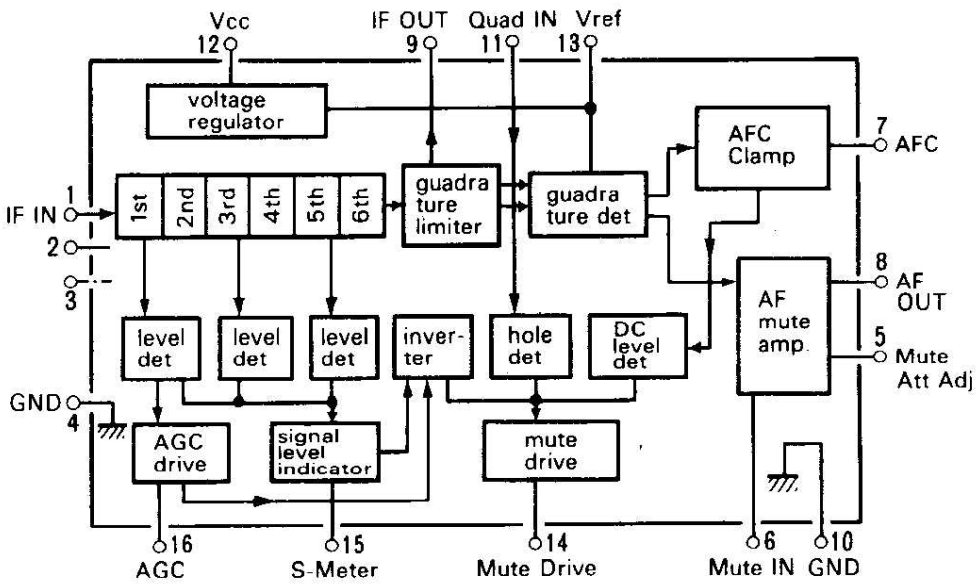
• LA3607 (7 Band Graphic Equalizer)



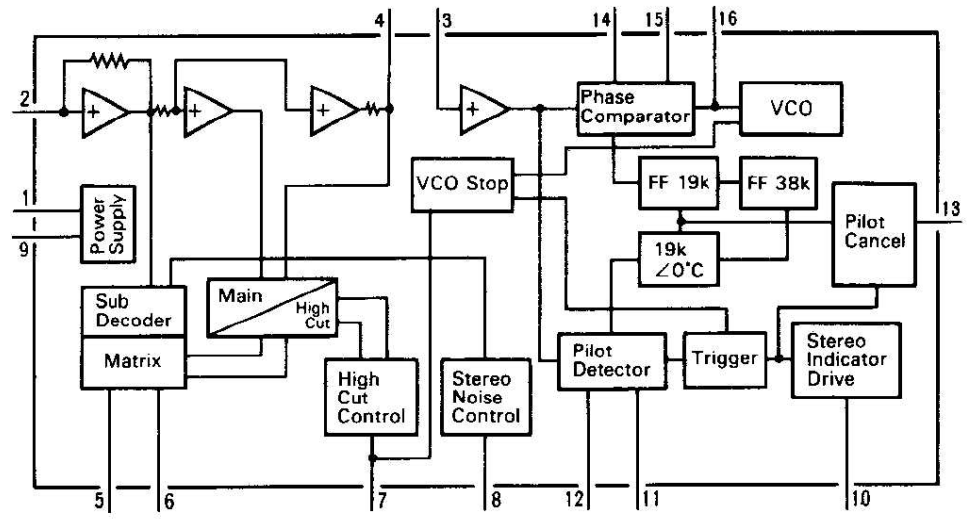
• M51524L (Equalizer Amp.)



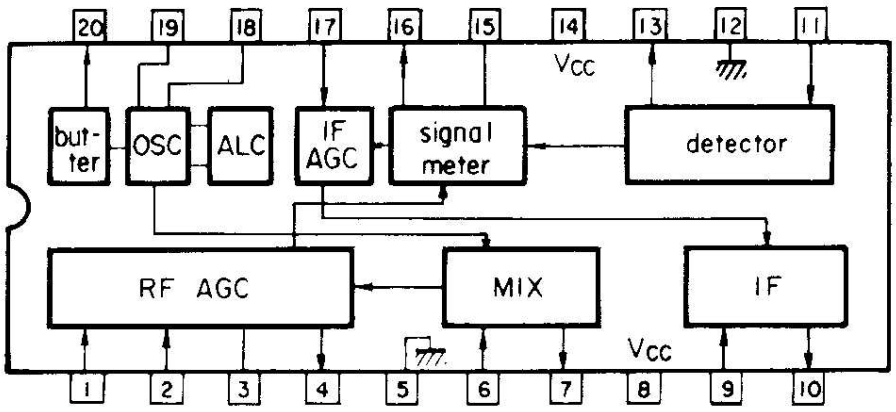
• LA1140 (FM IF Amp. Quardrature Detector)



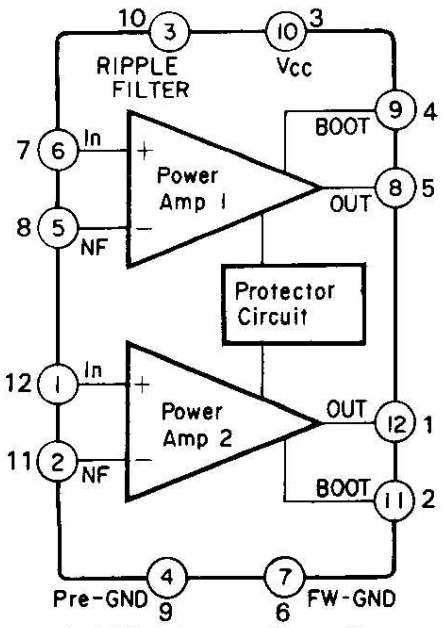
• LA3430 (FM Stereo MPX)



• LA1135 (AM Tuner)



• TA7270P/7271P (Power Amp.)



TA7270P ..... ① ~ ⑫
TA7271P ..... 1 ~ 12

• μPD1708AG-746

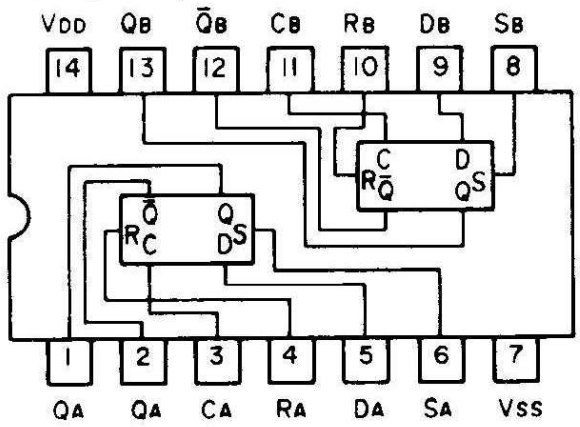
< PLL Frequency Synthesizer and Controller >

Terminal No.	Name	Description
37 ~ 52	LCD Segment Output	Output terminals of segment signals to LCD panel. 46-dot display is enabled at maximum on matrix of COM1 and COM2. **Note:** An "L" level signal is automatically output (Display-off mode) when power is turned on (V_{DD} changes from "L" to "H") and when CKSTP instruction is being executed.
5, 6	LCD Common Output	Output terminals of common signals to LCD panel. 46-dot display is enabled at maximum on matrix of LCD1 to LCD23. Three voltage signals GND, 1/2V_{DD}, V_{DD} (5ms intervals) are outputted at 50Hz. Segments having a potential difference $\pm V_{DD}$ between these terminals and LCD1 to LCD23 come on. **Note:** An "L" level signal is automatically output (Display-off mode) when power is turned on (V_{DD} changes from "L" to "H") and when CKSTP instruction is being executed.
7 ~ 33	Power Supply	A voltage of 5V ± 10% is supplied to these terminals to activate the device. When a voltage of 0 to 4.5V is supplied, the device is reset and program starts from address No. 0.
8	Local Oscillation Signal Input	A local oscillation output (VCO output) from 10 to 150MHz (0.5Vp-p MIN) is input. A fixed 1/2-frequency division prescaler and a 1/32—1/33 two-modulus prescaler are incorporated.
9	Local Oscillation Signal Input	A local oscillation output (VCO output) from 0.6 to 50MHz (0.3Vp-p MIN) is input. This terminal is selected and activated when HF instruction is executed in direct frequency division method or pulse swallow method. The upper limit of the input frequency and the lower limit of the division ratio are different between the two frequency division methods.

Division method	Input voltage (MIN)	Input frequency	Division ratio
Direct division	0.1Vp-p	0.59 ~ 20MHz	16 ~ (2^{12}-1)
Pulse swallo (HF instruction execution)	0.1Vp-p	0.6 ~ 40MHz	1024 ~ (2^{12}-1)
	0.3Vp-p	0.6 ~ 50MHz	

11, 12	Error Outputs	PLL error output terminals. An "H" level is outputted from these terminals when divided local oscillator frequency (VCO output) is higher than the reference frequency, and an "L" level is outputted when lower than the reference frequency. A floating is obtained when VCO output frequency matches the reference frequency. This output is applied to a varactor diode via an external low pass filter.
13	Chip Enable	An "H" level is applied to activate the device and an "L" level is applied to deactivate the device. When the CE terminal is changed from "L" to "H", the device is reset to start program beginning from address No. 0. Further, in this status, 1/0 port (Port A) is set to and input mode.
15, 16	X'tal	A 4.5MHz crystal is connected.
17 ~ 20	Port A	4-bit input/output port.
21 ~ 24	Key Return Signal Inputs	4-bit input ports. Ordinarily used as a key matrix input terminals. When a KIN instruction or K1 instruction is executed, the level of these terminals are read into data memory (RAM) designated by the operand.
25 ~ 28	Port B	4-bit output ports. Usable as key return signal source for key matrix.
29 ~ 32	Port C	4-bit output ports.

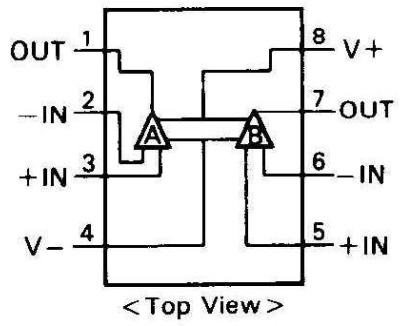
• TC4013BP (Flip-Flop)



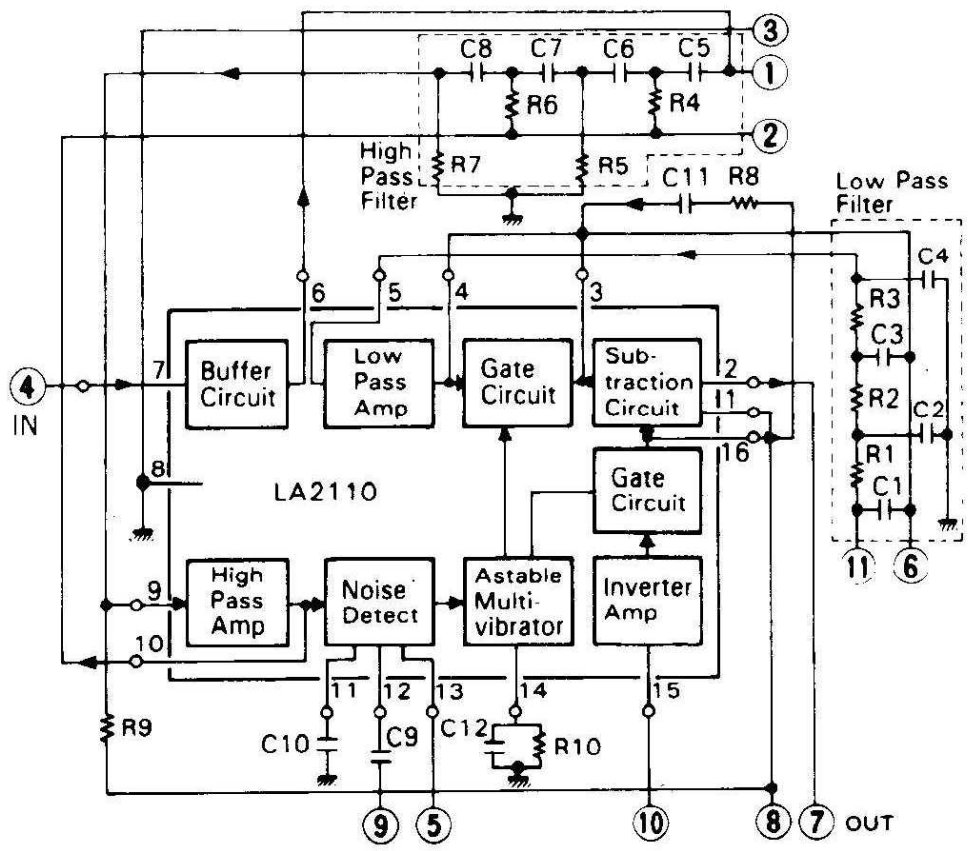
Input				Output	
CLOCK	DATA	SET	RESET	Qn+1	$\bar{Q}n+1$
⌐¯	L	L	L	L	H
⌐¯	H	L	L	H	L
¯⌐	X	L	L	Qn	$\bar{Q}n$
X	X	L	H	L	H
X	X	H	L	H	L
X	X	H	H	L	L

H : High
L : Low
X : H or L
Qn : Output signal before clock pulse
Qn+1 : Output signal after clock pulse

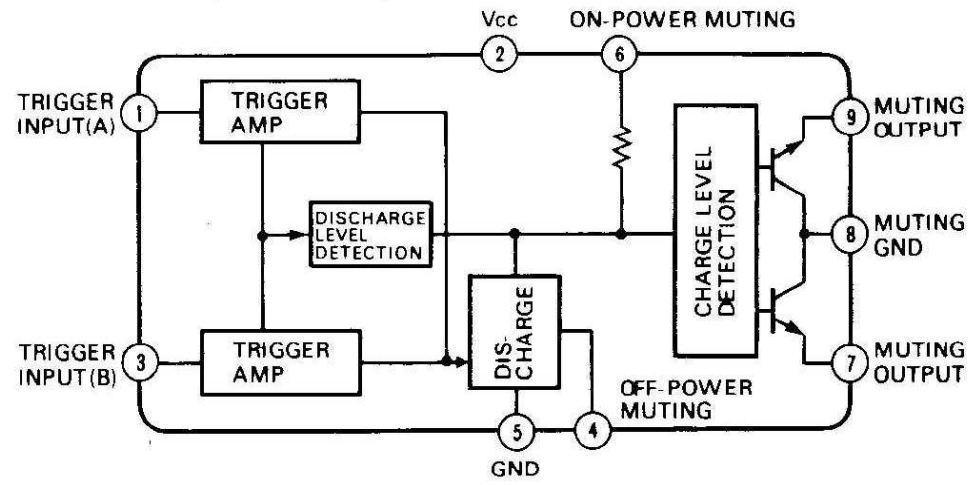
• BA4558F (Operating Amp.)



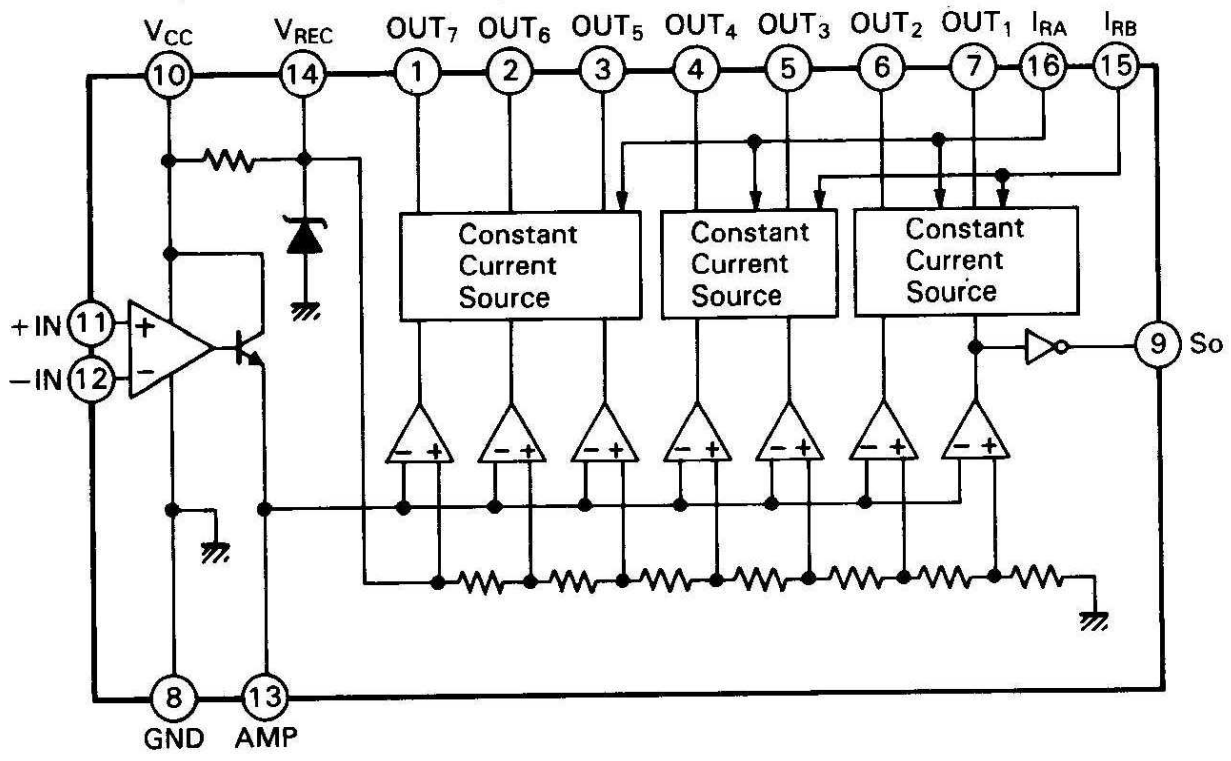
• NC3S301 (FM Noise Canceller)



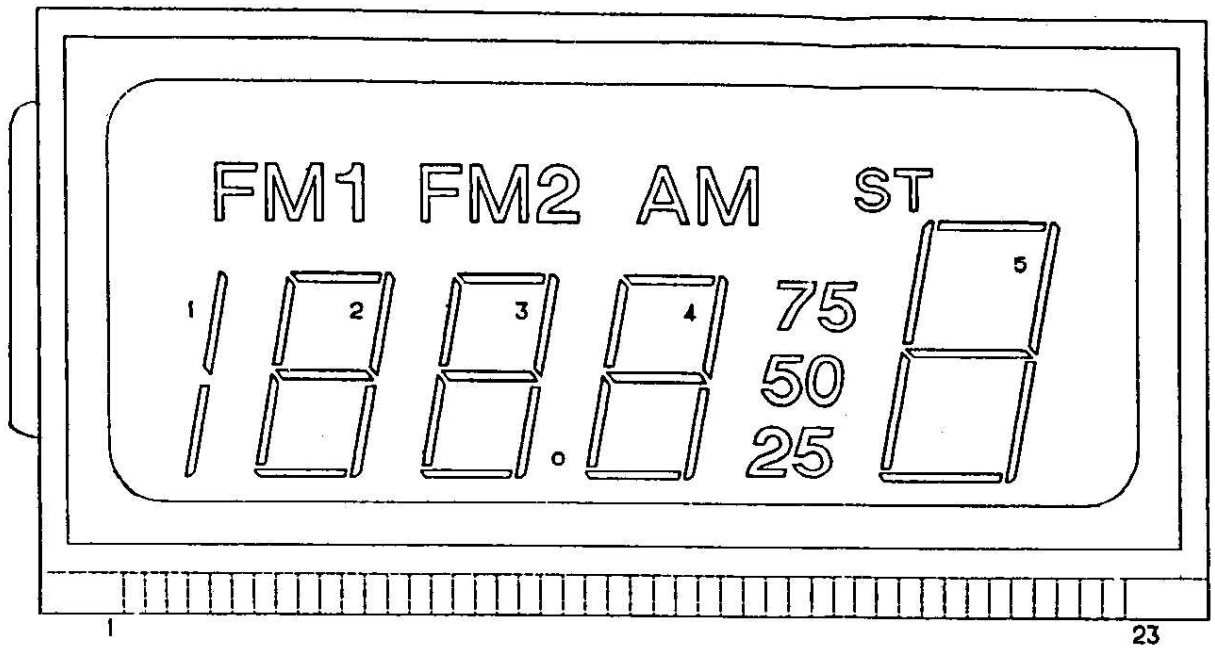
• TA7324P (Protector)

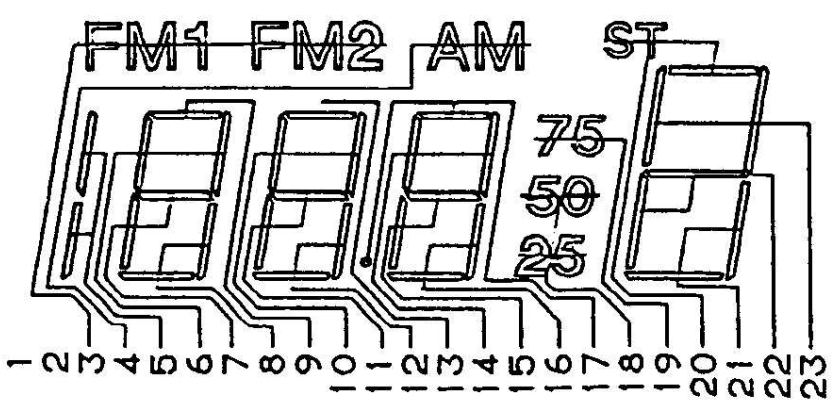


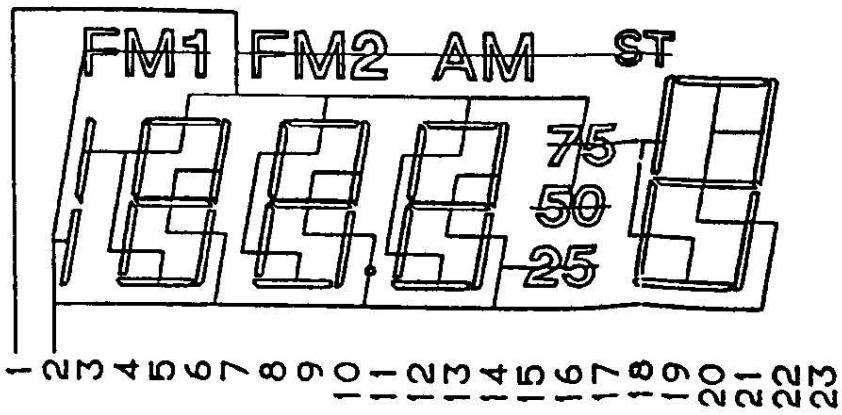
• IR2E02 (7 Dot LED Driver)



• **LCD9471JP Terminal Location**





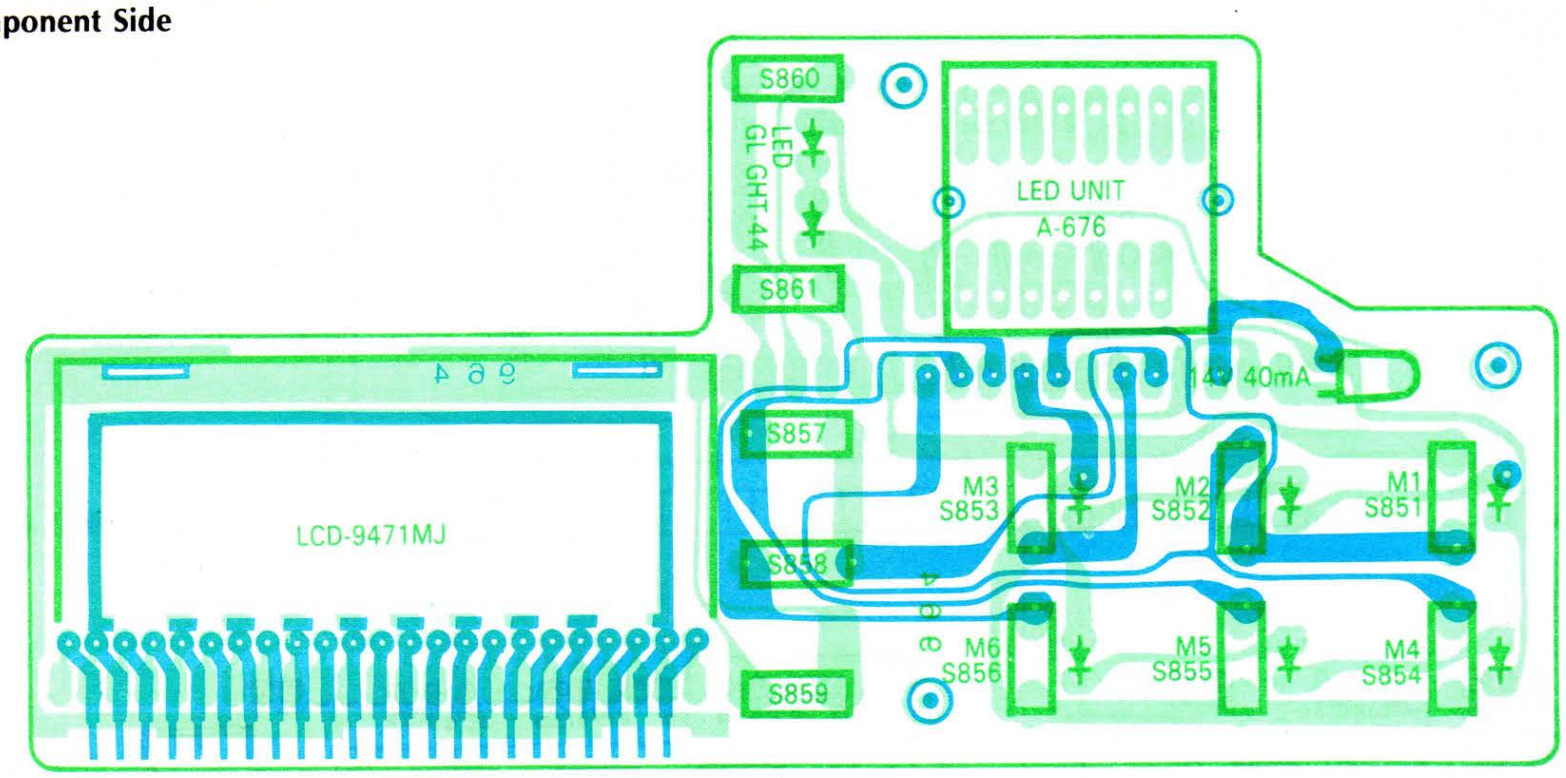


NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
COM1	COM	—	FM1	AM	1b	2f	2e	2d	2a	3f	3e	3d	3a	4f	4e	4d	4a	50	75	ST	5d	5e	5f
COM2	—	COM	FM2	—	1c	2b	2g	2c	—	3b	3g	3c	—	4b	4g	4c	COL	25	—	5a	5c	5g	5b

4. PARTS LOCATION OF CIRCUIT BOARD

4-1. PCB-964 Switch Board

Component Side

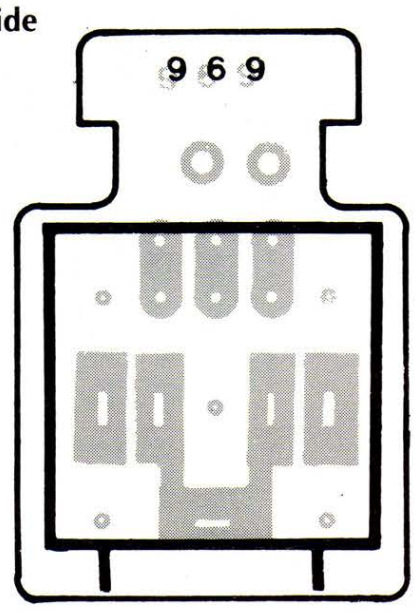


4-2. RV-0167 Volume Board

Component Side

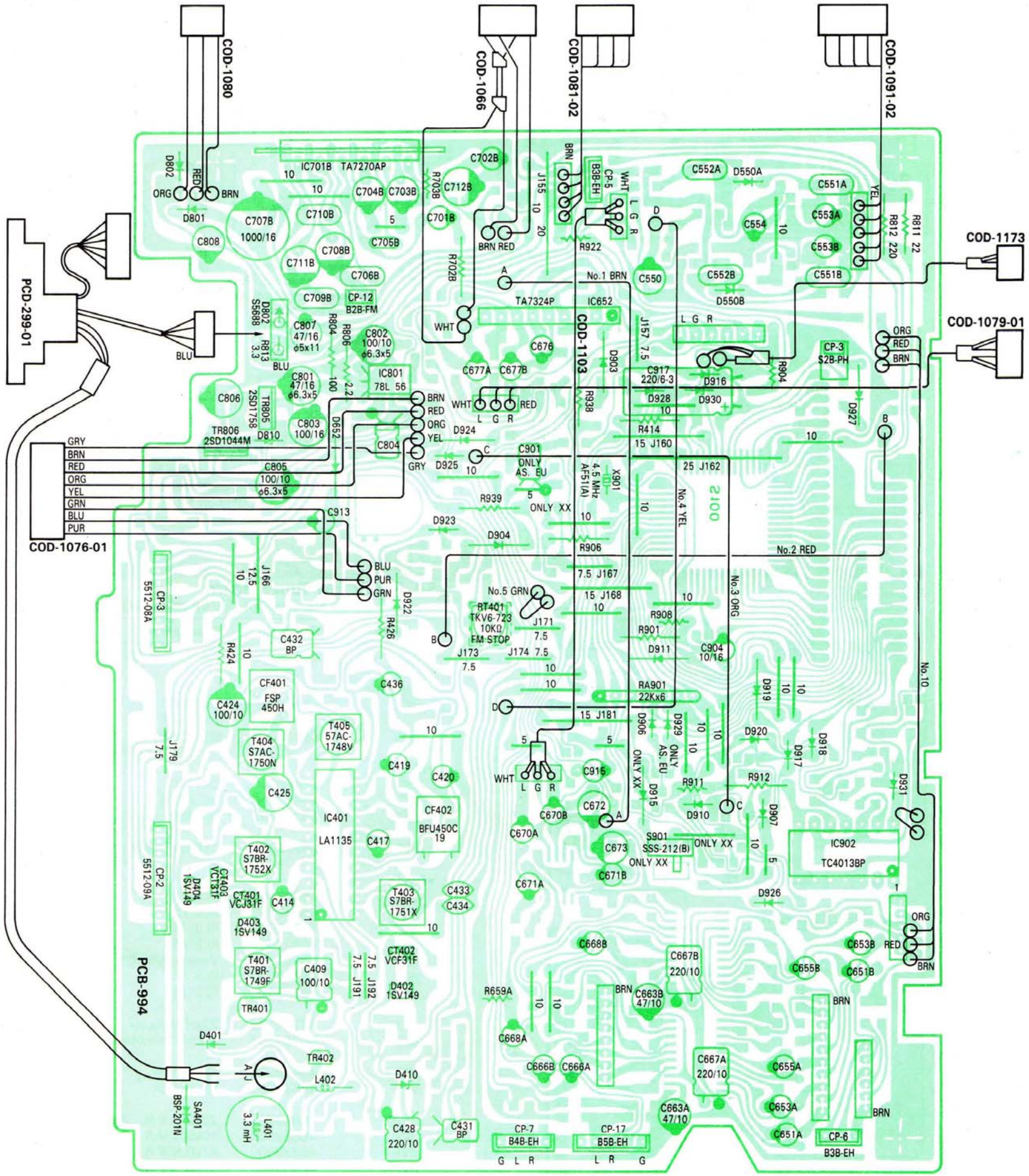
4-3. PCB-969 CD Jack Board

Component Side

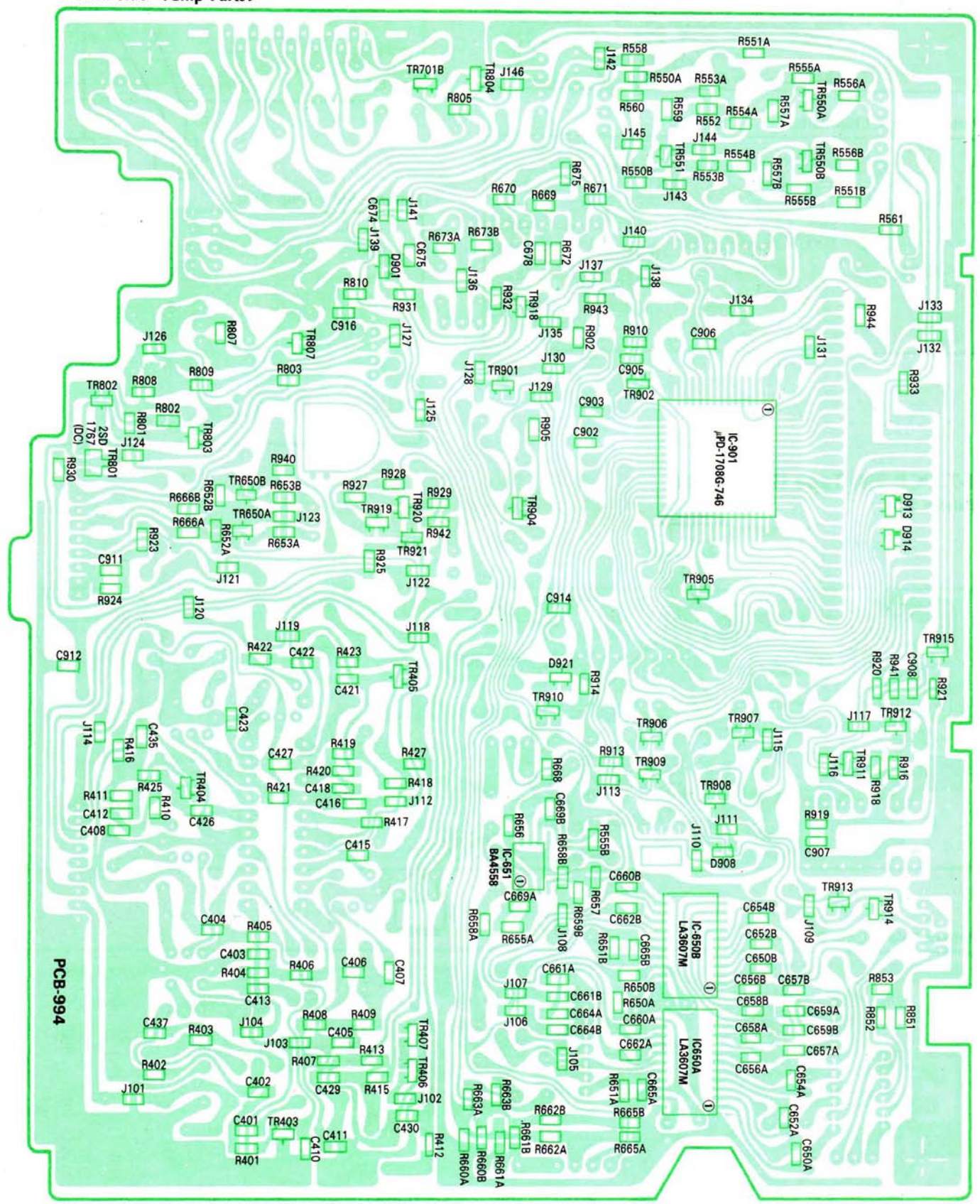


4-4. PCB-994 Main Board

Pattern Side

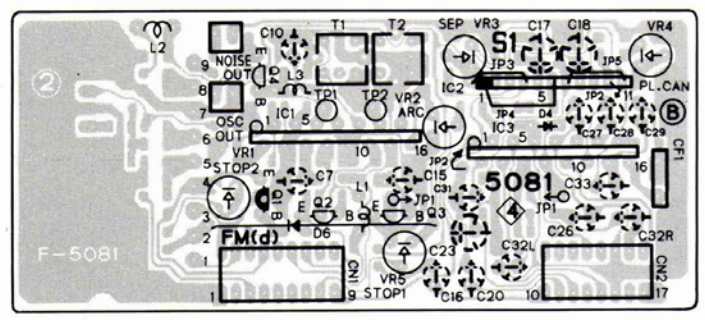


Pattern Side <Chip Parts>



4-5. F-5081 FM Tuner Board

Pattern Side



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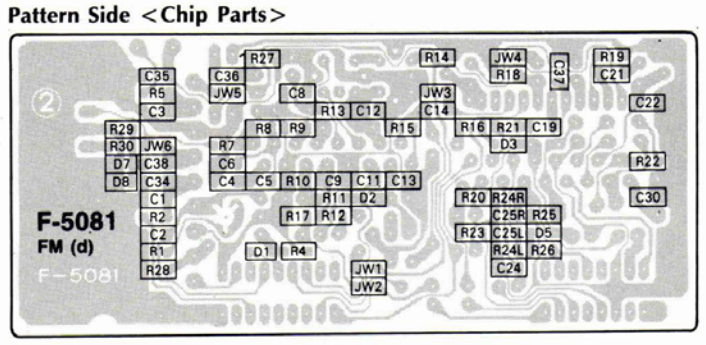
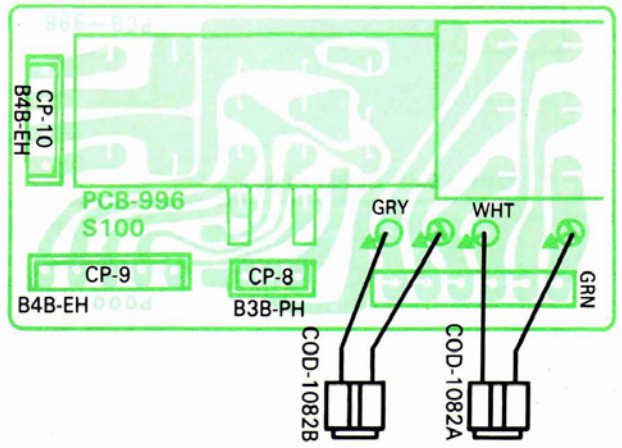


4-6. PCB-996 Main Volume Board

Pattern Side



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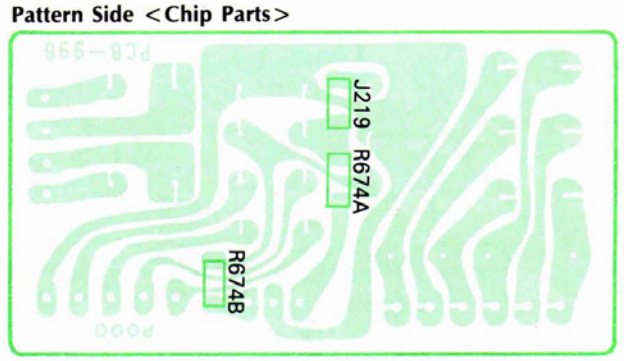
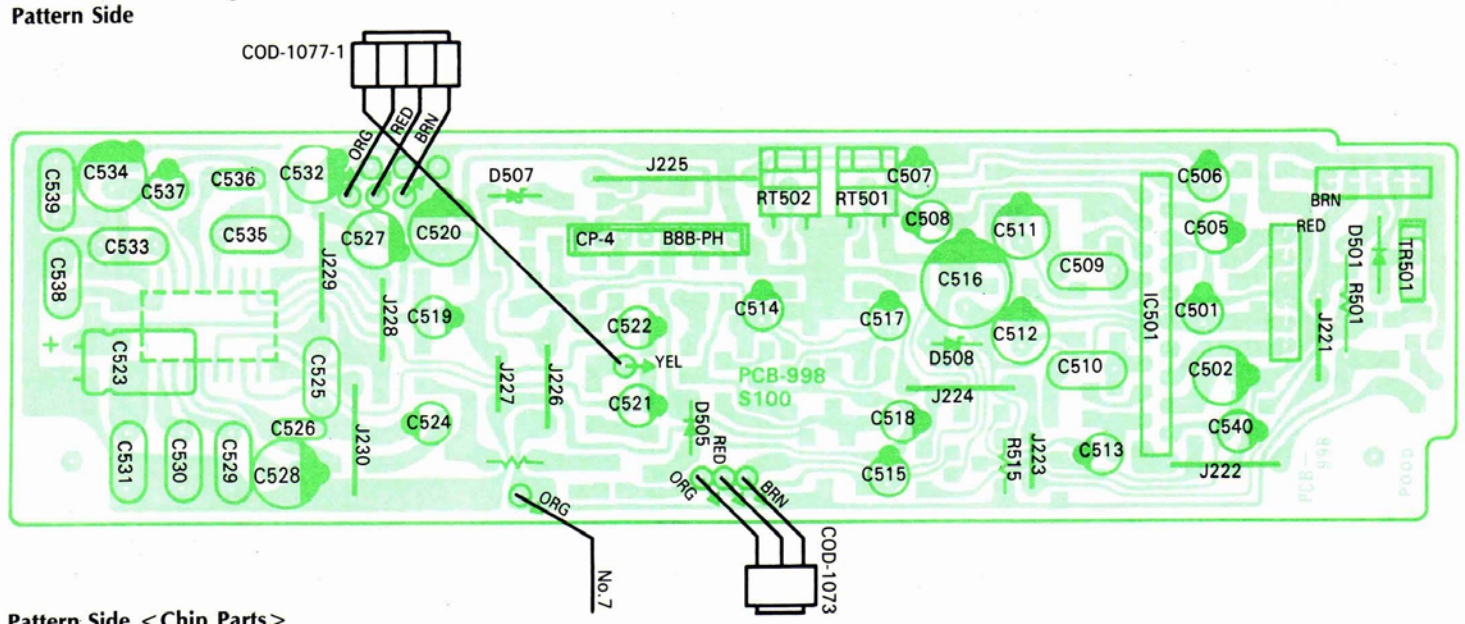
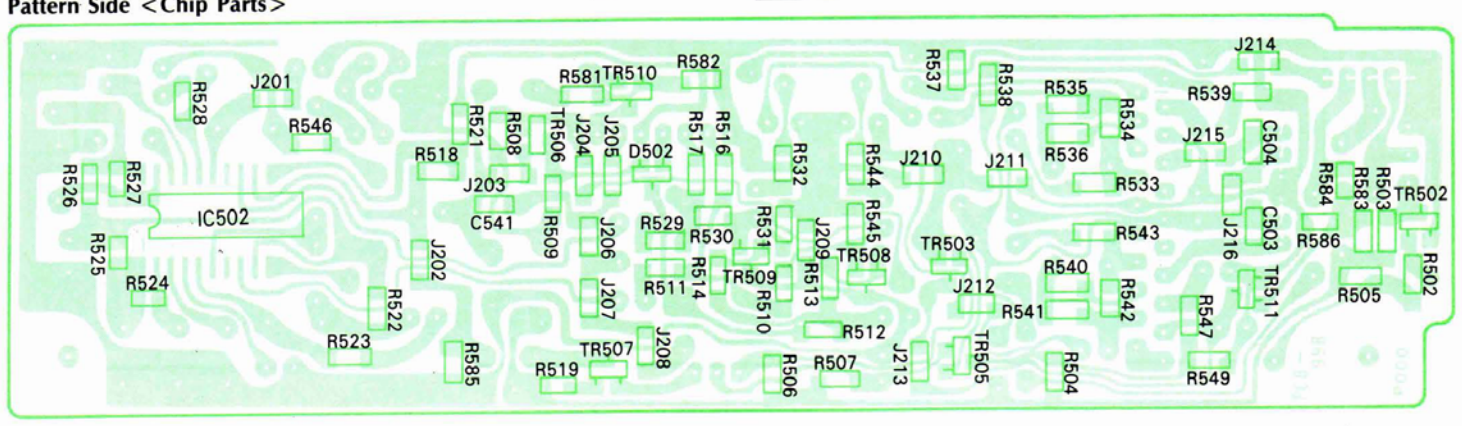


4-7. PCB-998 Tape Deck Board

Pattern Side

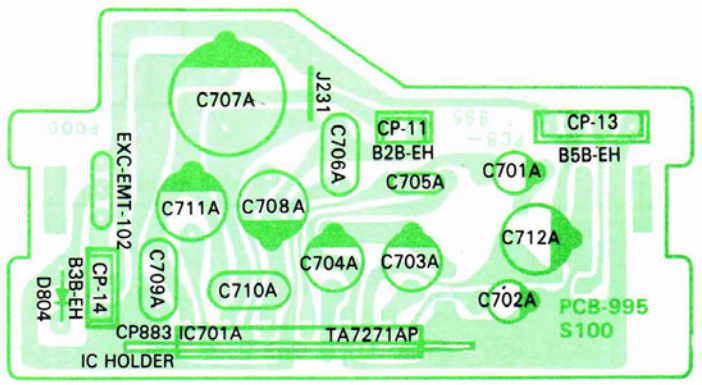


Pattern Side <Chip Parts>

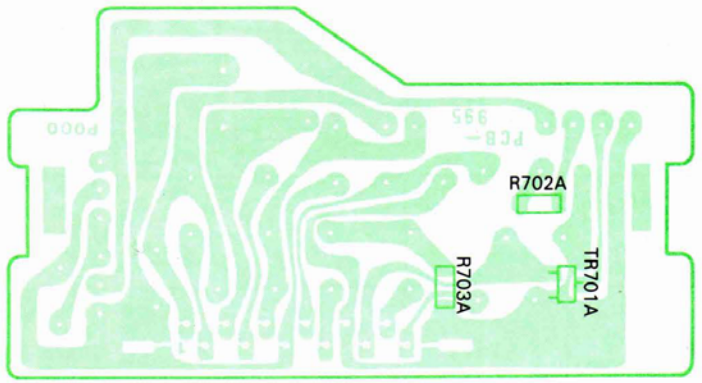


4-8. PCB-995 Power Amp. Board

Pattern Side

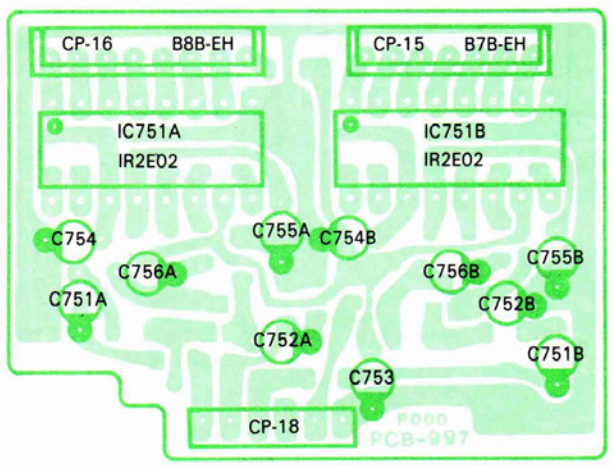


Pattern Side <Chip Parts>

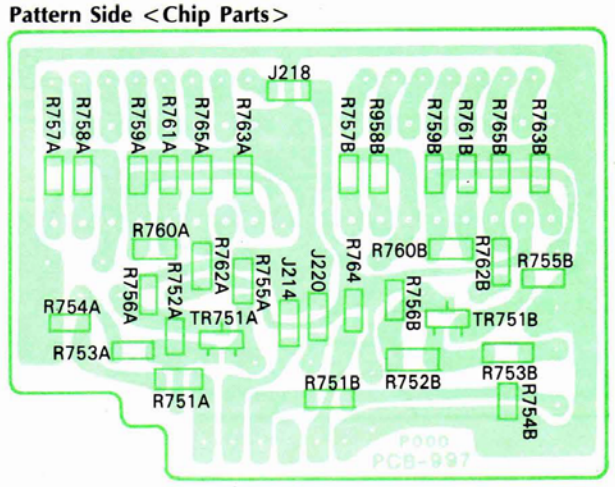


4-9. PCB-997 Level Meter Board

Pattern Side



Pattern Side <Chip Parts>



5. PARTS LIST OF CIRCUIT BOARD

NOTE

1. Since some capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors and resistors, which was issued on June 1987.
2. Abbreviations in this service manual are as follows.

•Abbreviations List

C.R.	: Carbon Resistor	E.B.L.	: Low Leak Bi-Polar Electrolytic Capacitor
S.R.	: Solid Resistor	Ta.C.	: Tantalum Capacitor
Ce.R.	: Cement Resistor	F.C.	: Film Capacitor
M.R.	: Metal Film Resistor	M.P.	: Metalized Paper Capacitor
F.R.	: Fusing Resistor	P.C.	: Polystyrene Capacitor
N.I.R.	: Non-Inflammable Resistor	M.M.C.	: Metalized Mylar Condenser
A.R.	: Array Resistor	A.C.	: Array Capacitor
C.C.	: Ceramic Capacitor	V.R.	: Variable Resistor
C.T.	: Ceramic Capacitor, Temperature Compensation	S.V.R.	: Semi Variable Resistor
E.C.	: Electrolytic Capacitor	SW.	: Switch
E.L.	: Low Leak Electrolytic Capacitor	Chip R.	: Chip Resistor
E.B.	: Bi-Polar Electrolytic Capacitor	Chip C.	: Chip Capacitor

3. The symbols, EU, ASE & XX <EXPORT> on the parts list and the schematic diagram mean followings respectively.
   EU ..... Manufactured for European market.
   ASE ..... Manufactured for Asia market.
   XX <EXPORT> ..... Standard Version.
   NON MARK..... Common Parts.

5-1. F-5081 FM Tuner Board

<Stock No. 01008001=XX/01008005=EU/01008007=ASE>

Parts No.	Stock No.	Description
dZ1	48490500	FM Fronted Pack
•Transistor		
dQ2	46367101	2SC2603
	or 46367301	2SC2458
dQ3	46719900	DTC124ES
•IC		
dIC1	46465000	LA1140
dIC2	48499000	NC3S301
dIC3	48270500	LA3430
dCF1	48272800	CSB456 Ceramic OSC Element
•Diode		
dD2	46852000	RLS-73
dD3	46852000	RLS-73
dD4	46852000	RLS-73
dD5	46852000	RLS-73
dD6	03401700	Varistor MV103
dD7	46852000	RLS-73
dD8	46852000	RLS-73
dL1	48286100	22μH Inductor
dL2	48284900	2.2mH Inductor
dT1	48449000	FM IF Coil
dT2	48449100	FM IF Coil
dVR2	46839700	22kΩ S.V.R., Auto Noise
dVR3	46839600	10kΩ S.V.R., Separation
dVR4	46839800	47kΩ S.V.R., Pilont Canceller
dVR5	46839800	47kΩ S.V.R., Local Auto Stop Level Adj.

5-2. PCB-994 Main Board <Stock No. 58436800 = XX/58439600 = ASE/58439700 = EU>

Parts No.	Stock No.	Description
<FM Section>		
•Transistor		
TR651A, B	58421500	2SD1757K
TR919~921	58421300	2SC1623K
•Diode		
D922	03111600	1S2473
D923	46078000	1SS133
<AM Section>		
•Transistor & FET		
TR401	03068501	2SC1844
TR402	48198601	2SK519
TR403	58437900	2SC3326
TR404	46078801	2SC2458
TR405	58421300	2SC1623K
•IC		
IC401	46669000	LA1135
•Diode		
D401	46078000	1SS133
D402~404	46835100	1SV149
R424, 426	58434700	4.7Ω 1/8W C.R.
RT401	58433200	S.V.R. 10kΩ, Scan Stop
L401	46838300	Choke Coil, 3.3mH
L402	48283200	Choke Coil, 100μH
T401	58425500	RF Coil
T402	58425600	RF Coil
T403	58425900	OSC Coil
T404	58425700	IF Coil
T405	58425800	IF Coil
CF401	58416600	Ceramic Filter
CF402	58087300	Ceramic Filter
CT401~403	46613300	Trimmer Capacitor, 30pF
SA401	58405500	Varistor DSP-201
<LPF Section>		
•Transistor		
TR406, 407	58438000	2SD1048
•IC		
IC652	46273200	TA7324P
•Diode		
D410	48534400	MTZ-10B
<Muting Section>		
•IC		
IC652	46273200	TA7324P
•Diode		
D652	03111600	1S2473K
<Graphic Equalizer Section>		
•IC		
IC650A, B	58423200	LA3607M
IC651	58414400	BA4558F
R659B	46479800	10kΩ 1/6W C.R.
<Loudness Section>		
•Transistor		
TR550A, B, 551	58421300	2SC1623K

Parts No.	Stock No.	Description
•Diode		
D550A, B	46078000	1SS133
C551A, B	48321800	0.0027μF 50V F.C.
C552A, B	48322000	0.0033μF 50V F.C.
<Power Amp. Section>		
•Transistor		
TR701B	58421500	2SD1757K
•IC		
IC701B	58416800	TA7270AP
C705B	48320800	0.001μF 50V F.C.
C706B, 709B	46692300	0.15μF 50V F.C.
R702B	58434800	10kΩ 1/8W C.R.
R703B	46499600	680Ω 1/6W C.R.
<Power Supply Section>		
•Transistor		
TR801	58439500	2SD1767
TR802	58422800	2SA1036K
TR803	58421300	2SC1623K
TR804	58413200	DTC114TK
TR805	58422500	2SD1758
TR806	58439400	2SB1044M
TR807	58421300	2SC1623K
•IC		
IC801	58438100	78L56
•Diode		
D801~802	58422300	S5688
D810	58534400	MTZ-10B
MET-102	58416900	Filter
R803	58434800	10kΩ 1/8W C.R.
R804	00199900	100Ω 1/4W M.R.
R806	00133400	2.2Ω 1/2W M.R.
R811	00132900	22Ω 1/2W M.R.
R812	00133000	220Ω 1/2W M.R.
<Control Section>		
•Transistor		
TR901	58421300	2SC1623K
TR902	58417000	DTA114EK
TR903, 904	58421300	2SC1623K
TR905	58413200	DTC114TK
TR906	58417100	DTA144WK
TR907	58422800	2SA1036K
TR908	58417000	DTA114EK
TR909, 910	58421300	2SC1623K
TR911, 912	58422800	2SA1036K
TR913, 914	58417000	DTA114EK
TR915	58421300	2SC1623K
TR918	58421300	2SC1623K
•IC		
IC901	58438200	μPD-1708G-746
IC902	07107500	TC-4013BP
•Diode		
D901	58416700	DAN202K
D903, 904	03111600	1S2473
D906, 907	46078000	1SS133
D908	58416700	DAN202K
D910	46078000	1SS133
D911	03111600	1S2473
D913, 914	58439100	1SS272
D915	03111600	1S2473 <XX only>

to be continued ►

<PCB-994>

Parts No.	Stock No.	Description
D916~918	46078000	1SS133
D919	03111600	1S2473
D920	46078000	1SS133
D921	58416700	DAN202K
D924	03111600	1S2473
D925, 926	46078000	1SS133
D927	58439200	1SS101
D928	48532200	MTZ5.1A
D929	46078000	1SS133 <XX only>
D930	48532200	MTZ5.1A
AT51A	58417200	X'tall, 4.5MHz
S901	58071800	Slide Switch, 9k/10k <XX only>
C914	00382800	0.022μF 50V C.C.
RA901	58080900	22kΩx6 Resistor Array

5-3. PCB-964 Switch Board <Stock No. 58432500>

Parts No.	Stock No.	Description
9471MJ	58425300	LCD Display
GLHY-44	58424200	LED, GL9HY-44
A-676	58425400	LED Unit
S851	58428500	Tact SW., M1
S852	58428500	Tact SW., M2
S853	58428500	Tact SW., M3
S854	58428500	Tact SW., M4
S855	58428500	Tact SW., M5
S856	58428500	Tact SW., M6
S857	58428500	Tact SW., AM
S858	58428500	Tact SW., FM
S859	58428500	Tact SW., MANU/AUTO
S860	58428500	Tact SW., UP
S861	58428500	Tact SW., DOWN
	58433900	Lamp, 14V 40mA
	58434000	Lamp Cap

5-4. PCB-995 Power Amp Board <Stock No. 58438600>

Parts No.	Stock No.	Description
•Transistor		
TR701A	58421500	2SD1757K
•IC		
IC701A	58418000	TA-7271AP
•Diode		
D804	58422300	S5688G
C705A	48320800	0.001μF 50V F.C.
C706A	46692300	0.15μF 50V F.C.
C709A	46692300	0.15μF 50V F.C.
C710A	48325600	0.1μF 50V F.C.
R702A	46479800	10kΩ 1/6W C.R.
R703A	46499600	680Ω 1/6W C.R.
EMT102	58422100	Filter

5-5. PCB-996 Main Volume Board

<Stock No. 58438800>

Parts No.	Stock No.	Description
RV-R065	58425200	Main Volume

5-6. PCB-997 Level Meter Board <Stock No. 58438700>

Parts No.	Stock No.	Description
•Transistor		
TR751A, B	58421300	2SC1623K
IC751A, B	58422700	IR2E02

5-7. PCB-998 TAPE Deck Board <Stock No. 58438500>

Parts No.	Stock No.	Description
•Transistor		
TR501	58411400	2SC1652
TR502, 503	58421300	2SC1623K
TR505	58421300	2SC1623K
TR506	58413200	DTC114TK
TR507	58421300	2SC1623K
TR508, 509	58421500	2SD1757K
TR510, 511	58421300	2SC1623K
•IC		
IC501	58423500	M51524L
IC502	58423000	μPC1284G
•Diode		
D501	31116000	1S2473
D502	58416700	DAN202K
D505	46078000	1SS133
D508	48534400	MTZ-10B
RT501, 502	58422600	S.V.R., 22kΩ, Play Level
R501	46402800	47Ω 1/2W M.R.
R515	58435200	100Ω 1/8W C.R.

5-8. RV-016 Graphic Equalizer Board

Parts No.	Stock No.	Description
RV-S016	58432600	Graphic Equalizer VR., 100kΩ 8x7
S862	58428500	Tact SW., T. MONI
S863	58428500	Tact SW., MEMO
S864	58072000	Push SW., LOUD
S865	58072000	Push SW., AMPS
S866	58072000	Push SW., METAL
S867	58072000	Push SW., DOLBY
	58432900	LED, PR4524K
	58070300	Lamp 14V 40mA
	58406700	Lamp Cap, Yellow

5-9. PCB-969 CD Jack Board

Parts No.	Stock No.	Description
	58430600	CD Mini Jack

6. OPERATION OF CASSETTE DECK MECHANISM

6-1. Torque Transporation Flowchart of Motor (Fig. 6-2)

① Gear Pully (Motor Ass'y)

- ② Capstan Belt → ③ Flywheel (Capstan) → ④ FF Idler Gear → ⑤ Reel Ass'y-F or R — FF or REW Operation
- ② Gear-A → ③ Gear-B → ④ Gear-F → ⑤ Play Idler Gear → ⑤ Gear-R → ⑥ Play Idler Gear → Reel Ass'y-F or R — PLAY Operation
- ② Gear-A → ③ Gear-B → ④ Gear-F → ⑤ Gear-R → ⑥ Cam Gear — Common Operation

6-2. PLAY Operation (Fig. 6-5)

① Cassette Catch
② OFF Arm
③ Eject P Roller
④ Cassette Holder
⑤ Head Plate
⑥ Pinch Roller

6-3. FF/REW Operation (Fig. 6-3)

① FF or REW Lever
② Head Plate
③ FF or REW IG Lever & Ff Idler Gear
④ Reel Sss'y-F or R

6-4. PROGRAM CHANGE Operation (Fig. 6-4, 6-5)

MANUAL	AUTO
① Program Lever	Ⅰ Sensor Rear Lever When tape running terminates, so Pin Ⓟ1 of sensor lever strike a nail Ⓝ of sensor rear lever
② Lock Link	
③ Change Gear	Ⅱ Cam Gear While the tape is running, the Pin Ⓟ2 pass by A-way. When the running terminates, the Pin Ⓟ2 pass by B-way.
④ CH. Plate	
⑤ Pinch Roller & Head SW. are Changed	Ⅲ Sensor Lever

6-5. STOP Operation (Fig. 6-1)

① FF & REW Lever
② Select P Ass'y
③ Eject P Roller
④ Head Plate
⑤ Pinch Roller
⑥ Cassette Holder
⑦ OFF Arm
⑧ Cassette Catch

Fig. 6-1

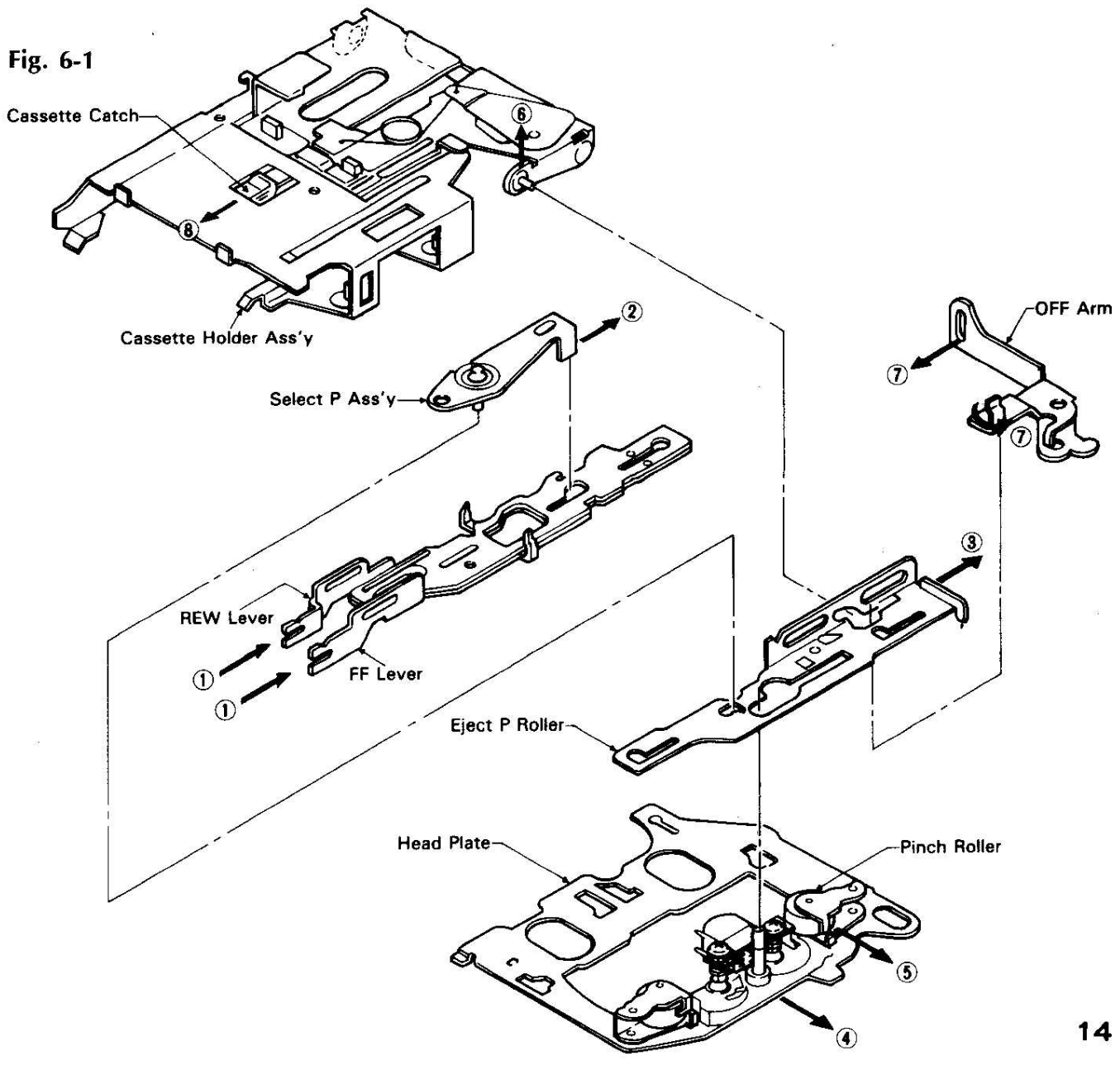


Fig. 6-2

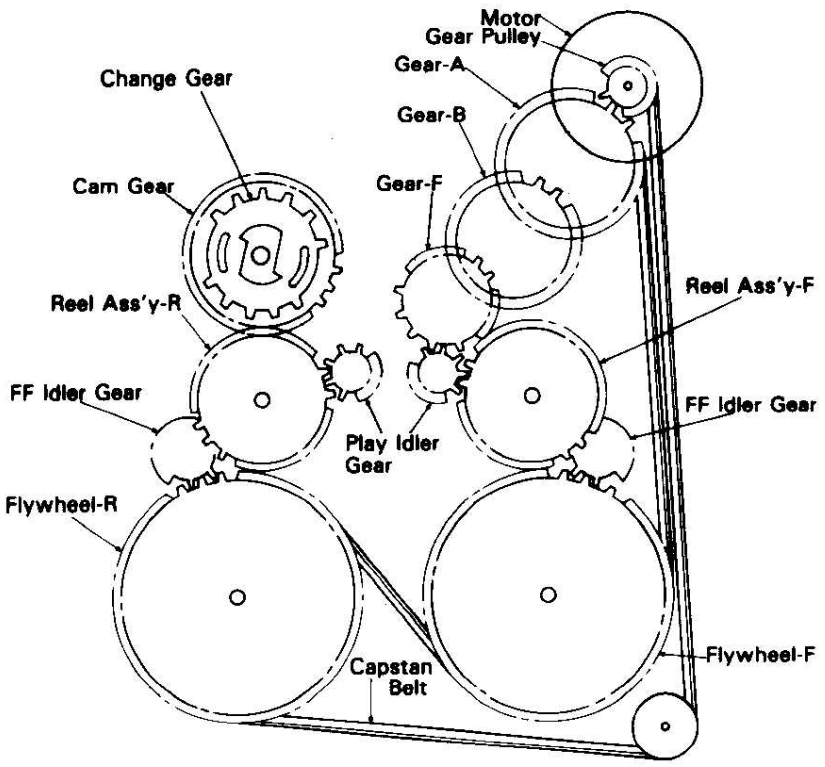
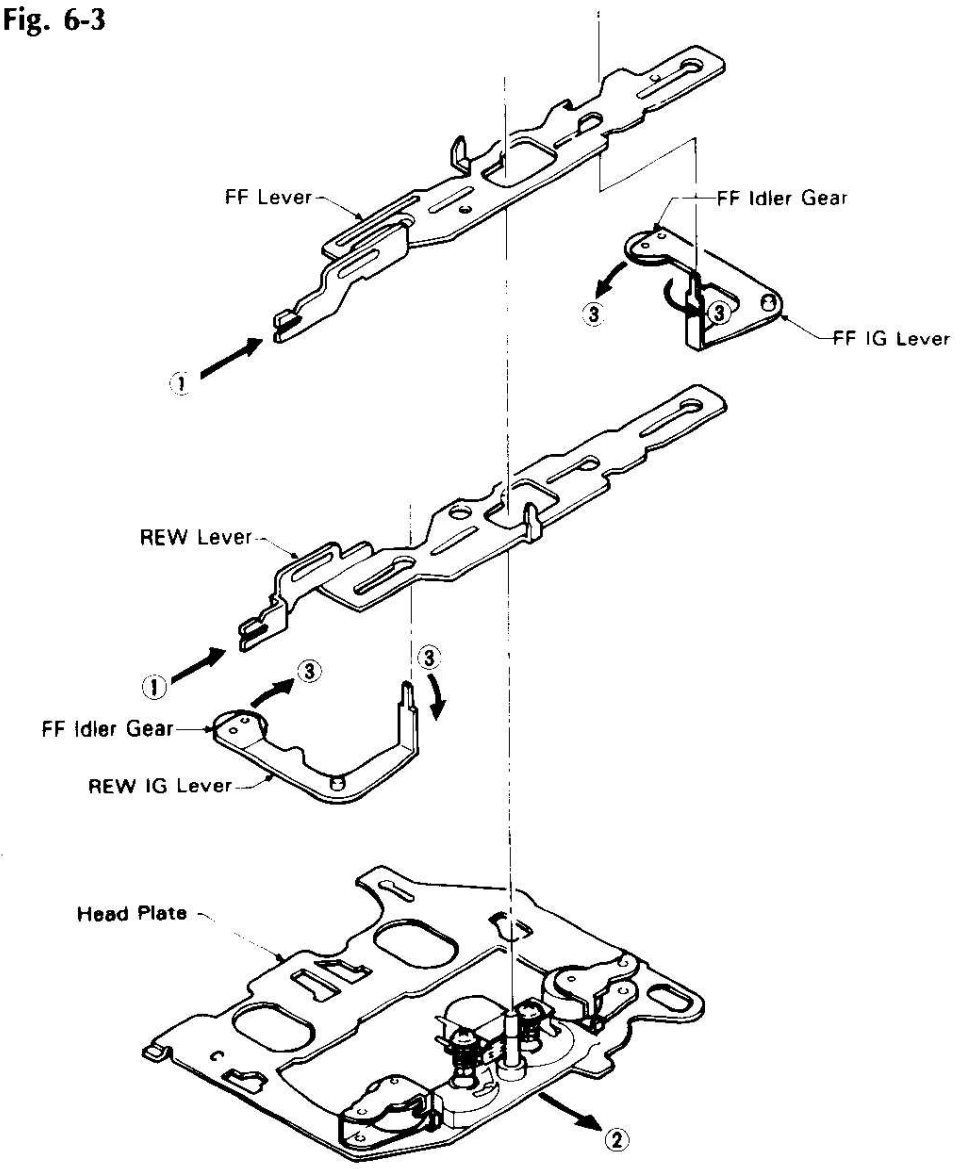


Fig. 6-3



• Sensor Plate in the Modes of FWD PLAY & STOP (THE END of TAPE)

Fig. 6-4

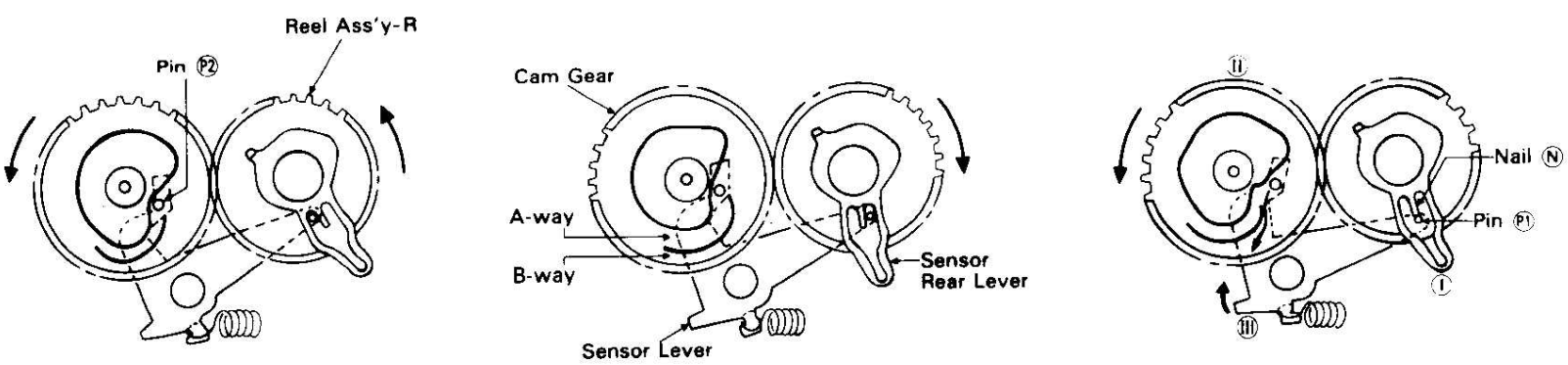


Fig. 6-5

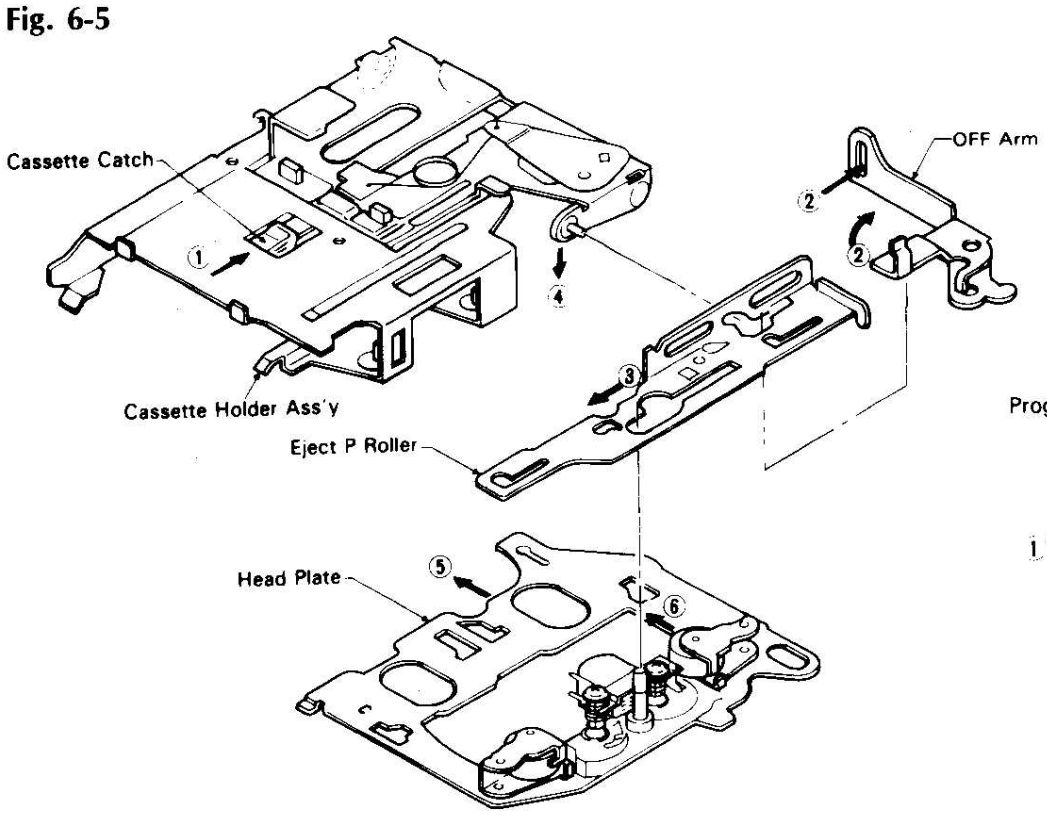
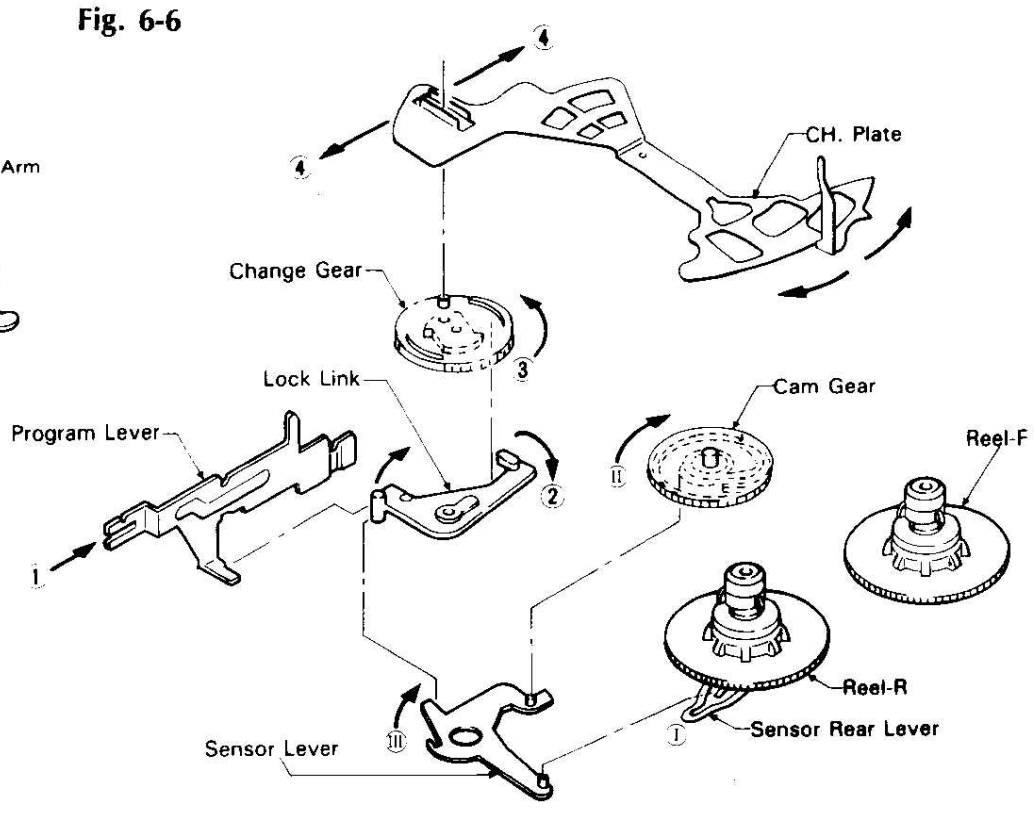
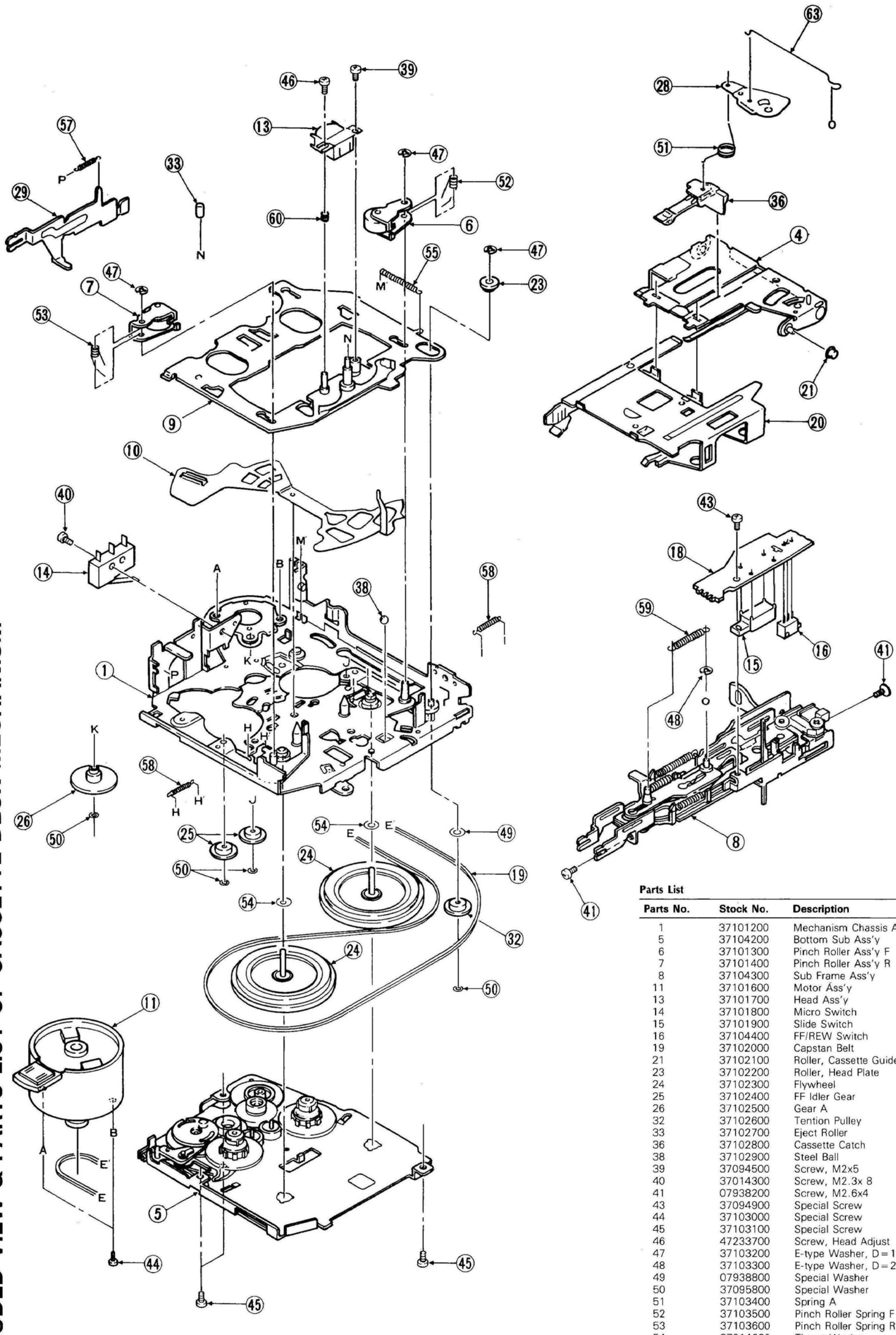


Fig. 6-6



7. EXPLODED VIEW & PARTS LIST OF CASSETTE DECK MECHANISM

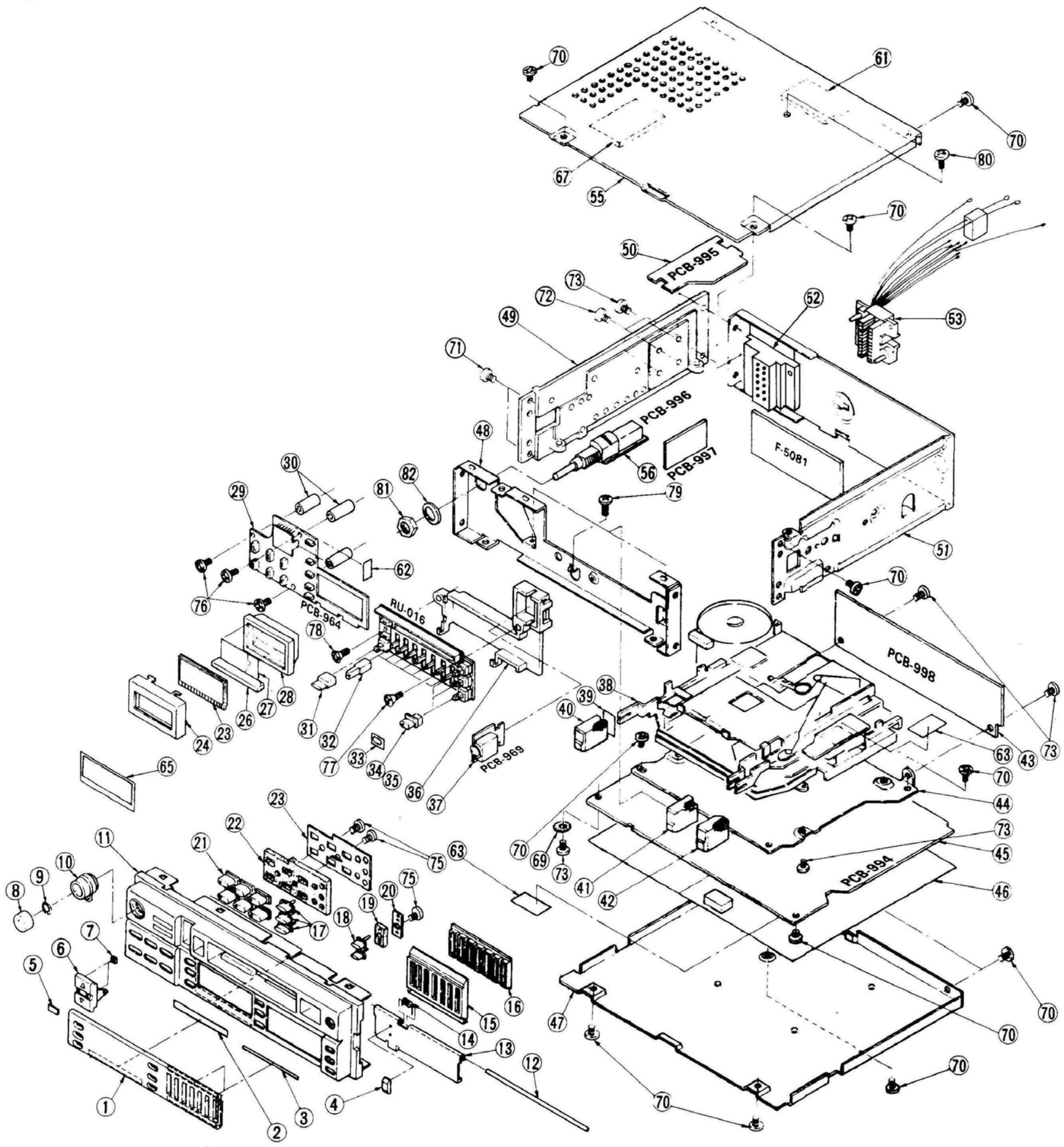


• **Though every part included in mechanism ass'y is numbered in exploded view, parts unlisted in parts list are not supplied.**

Parts List

Parts No.	Stock No.	Description
1	37101200	Mechanism Chassis Ass'y
5	37104200	Bottom Sub Ass'y
6	37101300	Pinch Roller Ass'y F
7	37101400	Pinch Roller Ass'y R
8	37104300	Sub Frame Ass'y
11	37101600	Motor Ass'y
13	37101700	Head Ass'y
14	37101800	Micro Switch
15	37101900	Slide Switch
16	37104400	FF/REW Switch
19	37102000	Capstan Belt
21	37102100	Roller, Cassette Guide
23	37102200	Roller, Head Plate
24	37102300	Flywheel
25	37102400	FF Idler Gear
26	37102500	Gear A
32	37102600	Tention Pulley
33	37102700	Eject Roller
36	37102800	Cassette Catch
38	37102900	Steel Ball
39	37094500	Screw, M2x5
40	37014300	Screw, M2.3x 8
41	07938200	Screw, M2.6x4
43	37094900	Special Screw
44	37103000	Special Screw
45	37103100	Special Screw
46	47233700	Screw, Head Adjust
47	37103200	E-type Washer, D=1.5
48	37103300	E-type Washer, D=2.0
49	07938800	Special Washer
50	37095800	Special Washer
51	37103400	Spring A
52	37103500	Pinch Roller Spring F
53	37103600	Pinch Roller Spring R
54	37014600	Thrust Washer
55	37103700	Head Plate Spring
57	37103800	Program Lever Spring
58	37103900	FF Gear Spring
59	37104000	Click Spring
60	07939300	Spring
63	37104100	Eject Arm

8. EXPLODED VIEW & PARTS LIST OF UNIT ASS'Y



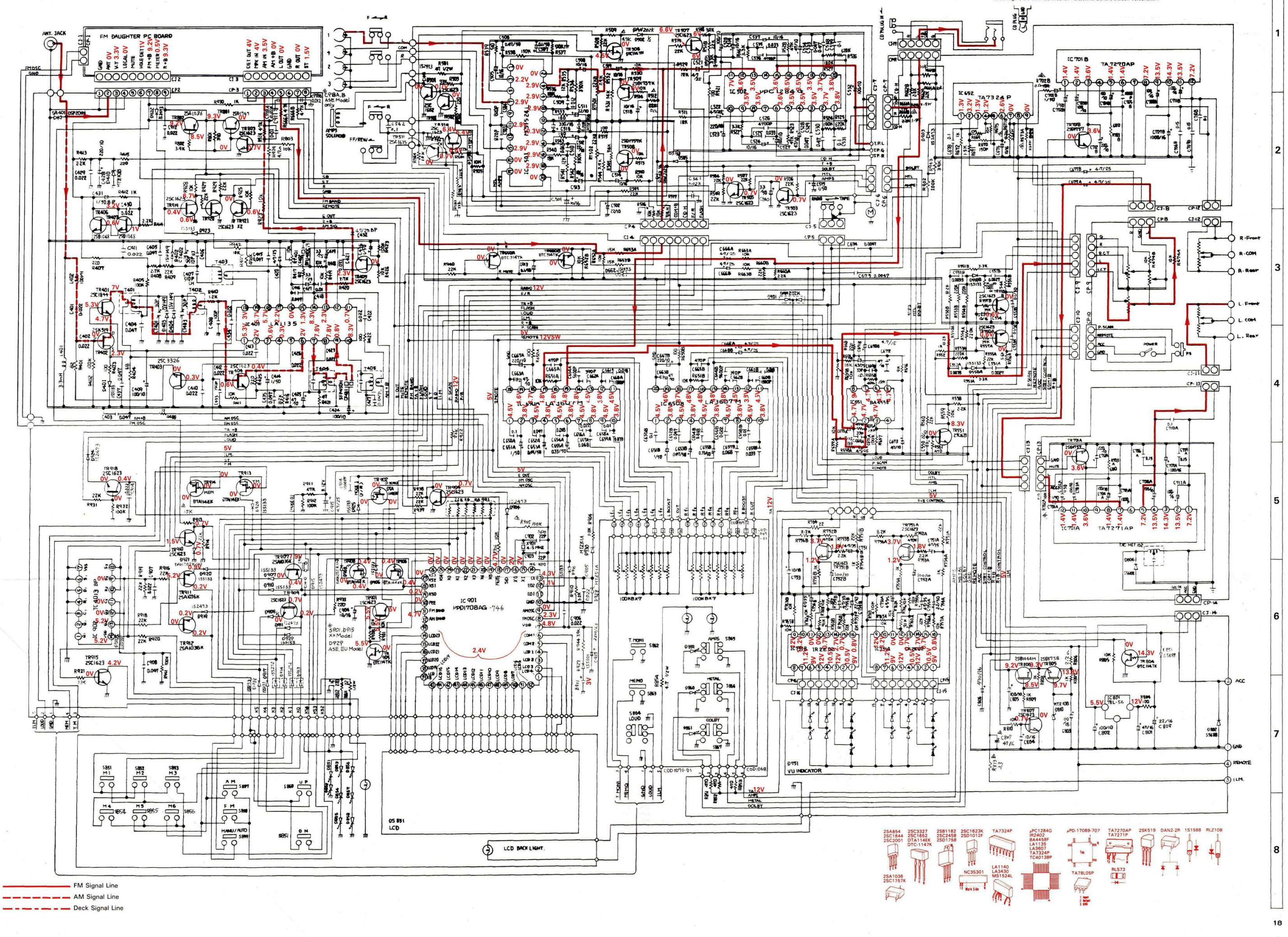
Parts List

Parts No.	Stock No.	Description
(1~7, 11~23, 60, 65)	58436500	Front Panel Ass'y
(4, 13)	58436600	Door Ass'y
(5, 6, 7)	58433800	TUNE Button Ass'y
8	58428600	Knob, VOLUME
9	58428700	Knob spring
10	58428800	Knob, FADER
12	58428900	Door Shaft
14	58401100	Door Spring
17	58429000	BAND Button
18	58429110	SELECT Button
19	58429200	Cushion, S
20	58429310	Button Plate, S
21	58419600	PRESET Button
22	58429400	Cushion, P
23	58429500	Button Plate, P
24	58429600	LCD Window
25	58425300	LCD 9471MJ
26	58429700	LCD Packin
27	58429800	Diffusion Sheet
28	58429900	Display Case
29	58432500	Switch Board
30	58430000	Spacer
31	58430100	Button, LOUDNESS
32	58430200	Knob, GRAPHIC EQUALIZER
33	58430300	Masking Sheet, Metal Button
34	58430400	Metal Button
35	58434600	Graphic Equalijer Board
36	58430500	SV Block Holder
37	58430600	CD Jack
38	———	Deck Mechanism Ass'y
39	58430700	Masking Sheet, Program Knob
40	58402600	Knob, PROGRAM
41	58402400	Knob, REW
42	58402300	Knob, FF
43	58432400	Deck Board
45	58431900	Main Board
46	58430810	Isolation Sheet <ASE, EU>
	58437200	Botton Cover <XX>
47	58421100	Botton Cover <ASE, EU>
50	58432100	Power Amp Board
52	58438400	26P Connector Plug Ass'y
53	58437700	26P Connector Cord Ass'y
55	58437100	Top Cover
56	58425200	VOLUME
61	58431100	PCB Cushion
63	58431200	Isolation Sheet (B)
66	58431300	Board Stopper
67	58431400	Cushion (D)
<Screw & Washer>		
69	58415500	3ϕ Washer
70	13115800	Tapping Screw, M3x5
71	00454400	Tapping Screw, M3x6
72	00422100	Binding Screw, M3x10
73	08322000	Binding Screw, M3x5
74	00421800	Binding Screw, M3x4
75	58433500	Tapping Screw, M2x4
76	00436600	Binding Screw, M2x16
77	00433900	Flat Head Screw, M2x12
78	00433800	Flat Head Screw, M2x10
79	13030800	Binding Screw, M2x5
80	58421200	Transist Screw
81	58083800	M9 Nut
82	58083900	9ϕ Flat Washer

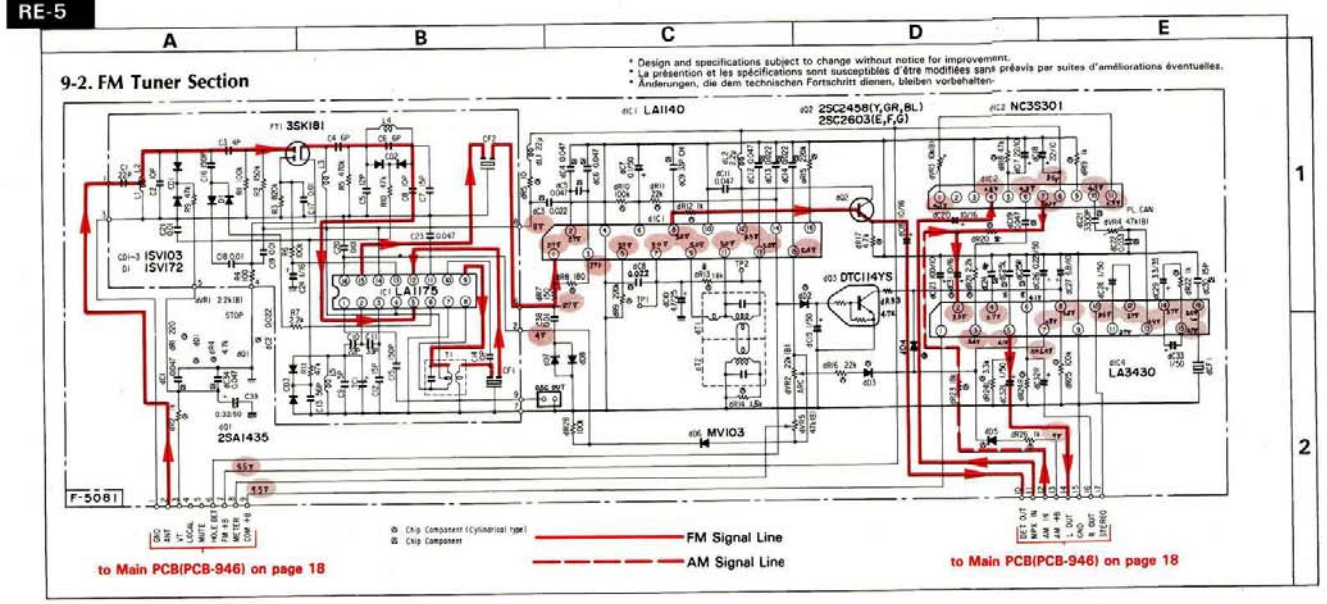
9. SCHEMATIC DIAGRAM

9-1. AM Tuner, Amp. and Deck Section

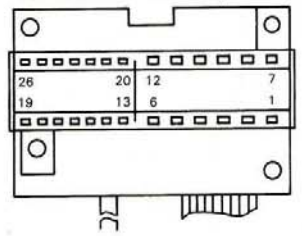
* Design and specifications subject to change without notice for improvement.
* La présention et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
* Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



9-2. FM Tuner Section

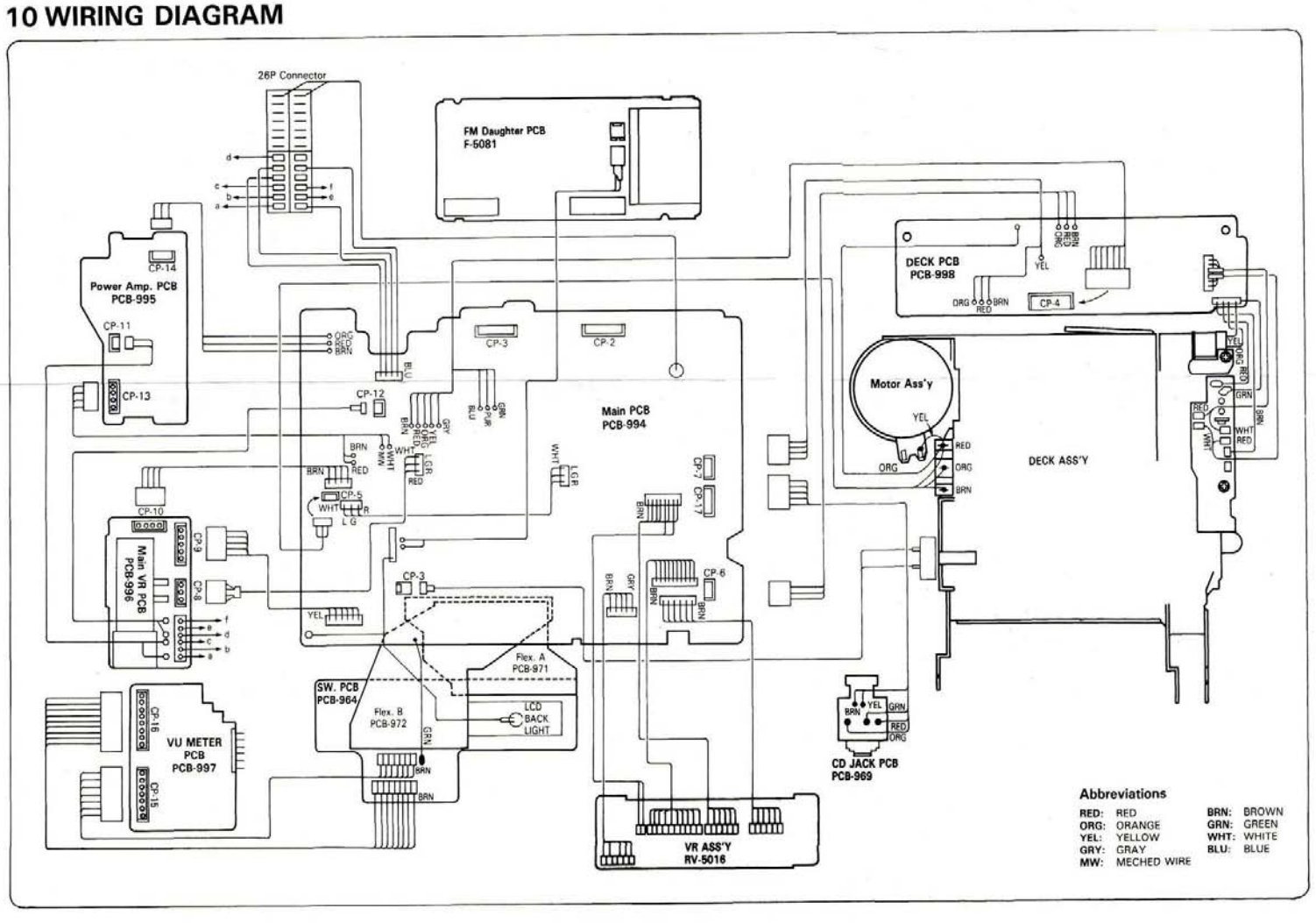


• 26P Connector Cord Ass'y Pin Function



Pin No.	Function	Pin No.	Function
1	4SP Rea L ⊖/2SP L ⊖	8	4SP Front R ⊖
2	4SP Front L ⊖	9	4SP Front R ⊕/2SP R ⊕
3	4SP Front L ⊕/2SP L⊕	11	Power Antenna Lead
4	DC+12V to ACC	19	ANTENNA
5	ILLUMINATION Lead	10, 12, 13~18 20~25	No Connected
6	4SP Rear R ⊖/2SP R ⊖		
7	GND (Long)		

10 WIRING DIAGRAM

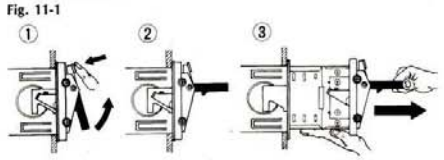


11. MAIN PARTS REPLACEMENT (Refer to exploded view of cassette deck mechanism chassis on page 16.)

A. Removing the unit

1) Press the push lever located at the top left of the front panel and replease the lock.
2) Pull up the grip until it is horizontal.
3) Remove the unit carefully so that you will not make any contact with the heat sink area.

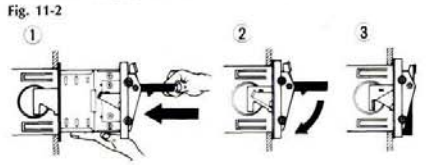
Fig. 11-1



• Installation

1) Grasp the handle of the unit and install it in the detachable case.
2) Pull the unit's grip down toward the front panel.

Fig. 11-2



B. Cassette Deck Mechanism Ass'y (See Fig. 11-4)

1) Loosen for screws Ⓐ to remove the bonnet (Ⓑ is transist screws).
2) Loosen five screws Ⓒ to remove bottom plate (See Fig. 11-4).
3) Remove knobs of volume and balance volume next unhook three portion at top side and two portion at bottom side.
4) Pull front panel toward you.
5) Loosen three screws ⑬ fixing deck bracket ⑭ and chassis.
6) Take off thirteen wires from mechanism Ass'y.
7) Loosen four screws Ⓔ fixing deck bracket and chassis.

C. Sub Frame Ass'y ⑧, Guide Arm Ass'y ④ and Pack Guide ⑳

1) Remove the mechanism chassis from unit.
2) Remove the click spring ⑮.
3) Remove the E-type washer ⑨.
4) Remove the eject arm ⑩.

Note: Don't lose the swing plate ⑭.

5) Unlock two points Ⓐ & Ⓑ to remove the slide switch board ⑫. (See Fig. 11-5 & 11-6)
6) Loosen one screw ⑪ to remove the board ⑬.
7) Loosen two screws Ⓕ to remove the sub frame ass'y ⑧.
8) Take off the guide arm ass'y ④.

Note: Don't lose the cassette guide roller ㉑ and eject roller ⑪.

9) Take off the pack guide ⑳.

• Mount of Sub Frame Ass'y (See Fig. 11-6)

1) Set the sub frame ass'y to eject state.
2) Assemble the pack guide ⑳ and the guide arm ass'y ④.

Note: Confirm that they are spring A ⑰ and swing arm ⑱ where they were.

3) Set the cassette guide roller ㉑ at the pin of guide arm ass'y ④.
4) Insert pin of guide arm ass'y into the position of sub frame ass'y ⑧ where it was, and bar ring dowel of sub frame ass'y ⑧ into the right side hole of guide arm ass'y ④ while taking care not to drop the roller ㉑.

Note: Confirm that it is a nail Ⓝ of sub frame ass'y ⑧ on the pack guide ⑳. (See Fig. 11-5)

5) Engage the left side hole of guide arm ass'y ④ with bar ring dowel of mechanism chassis while holding step 4) state. (See Fig. 11-6)
6) Slide the head P ass'y ⑨ to the arrow direction and put the sub frame ass'y where it was. (See Fig. 11-5)

Note: Confirm that it is actuater portion of CH plate ⑯ in hole of slide switch ⑬. (See Fig. 11-5)

7) Install the sub frame ass'y by two screws ⑪.
8) Resolde five head wires at the change switch board ⑫ and two points. (Refer to overall wiring diagram on page 19.)
9) Set the eject arm ⑩, E-type washer ⑨ and click spring ⑮.

D. P.B. Head ⑬

1) Remove the sub frame ass'y ⑧, guide arm ass'y ④ and pack guide ⑳ from mechanism chassis.
2) Loosen two screws ㉒ ㉓ to remove the P.B. head ⑬.

Note: Don't lose the spring ⑯.

3) Remove five head wires at P.B. head terminal by soldering iron.

E. Pinch Roller Ass'y F ⑥ and Pinch Roller Ass'y R ⑦

1) Remove the sub frame ass'y ⑧, guide arm ass'y ④ and pack guide ⑳ from mechanism chassis.
2) Remove E-type washer ㉕ to take off pinch roller ass'y F ⑥ or R ⑦.

F. Bottom Sub Ass'y ⑤, Capstan Belt ⑲, Flywheel ㉔, Gear-A ㉖, Motor Ass'y ⑪, Tension Pulley ㉜ and FF Idler Gear ㉕

1) Remove the mechanism chassis from unit.
2) Loosen three screws ㉔ to remove it ⑤.
3) Take off capstan belt ⑲ and flywheel ㉔.

Note: Take care not to twist the belt when setting it.
Don't lose the thrust washer ㉙ when inserting the flywheel ㉔.

4) In case of gear-A ㉖, tension pulley ㉜ and FF Idler gear ㉕, remove the washer with cut ㉘.
5) In case of motor ass'y ⑪, remove two wires at motor terminal by soldring iron and loosen two screws ㉔.

• Mount of Bottom Sub Ass'y (See Fig. 11-3)

1) Set the mechanism to eject state.
2) Sure to insert shaft Ⓒ to hole Ⓒ.
3) Slide gear ass'y ⑬ Ⓔ to inside while holding step 2) state, because of inserting pins ⑬ Ⓔ to holes Ⓓ Ⓔ.
4) Slide the CH plate ass'y to fit the pin Ⓕ and hole Ⓕ.
5) Confirm that it is fitting the Ⓓ Ⓔ Ⓕ positions and fit the Ⓐ Ⓑ Ⓒ holes.
6) Install the bottom sub ass'y by three screws ㉔.

Fig. 11-3

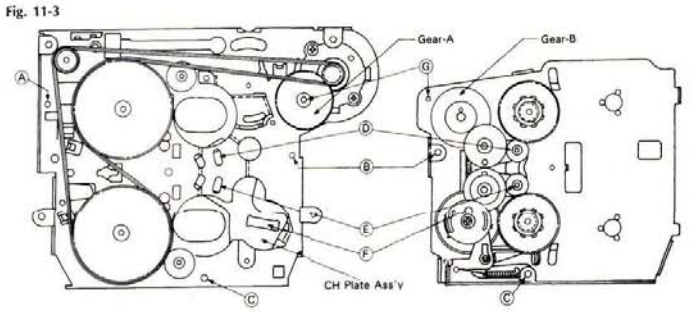


Fig. 11-4

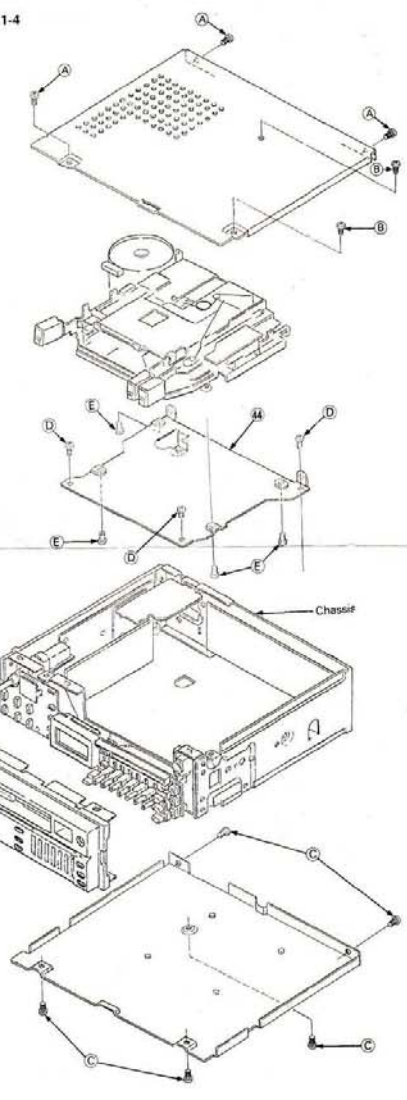


Fig. 11-5

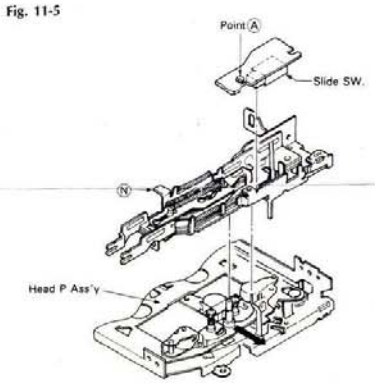
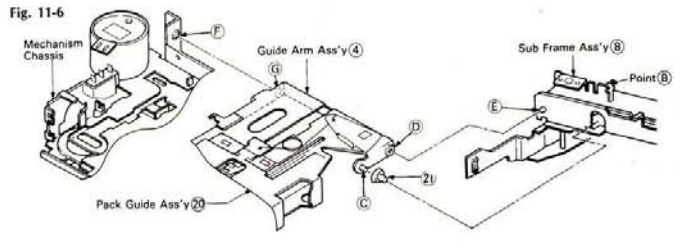
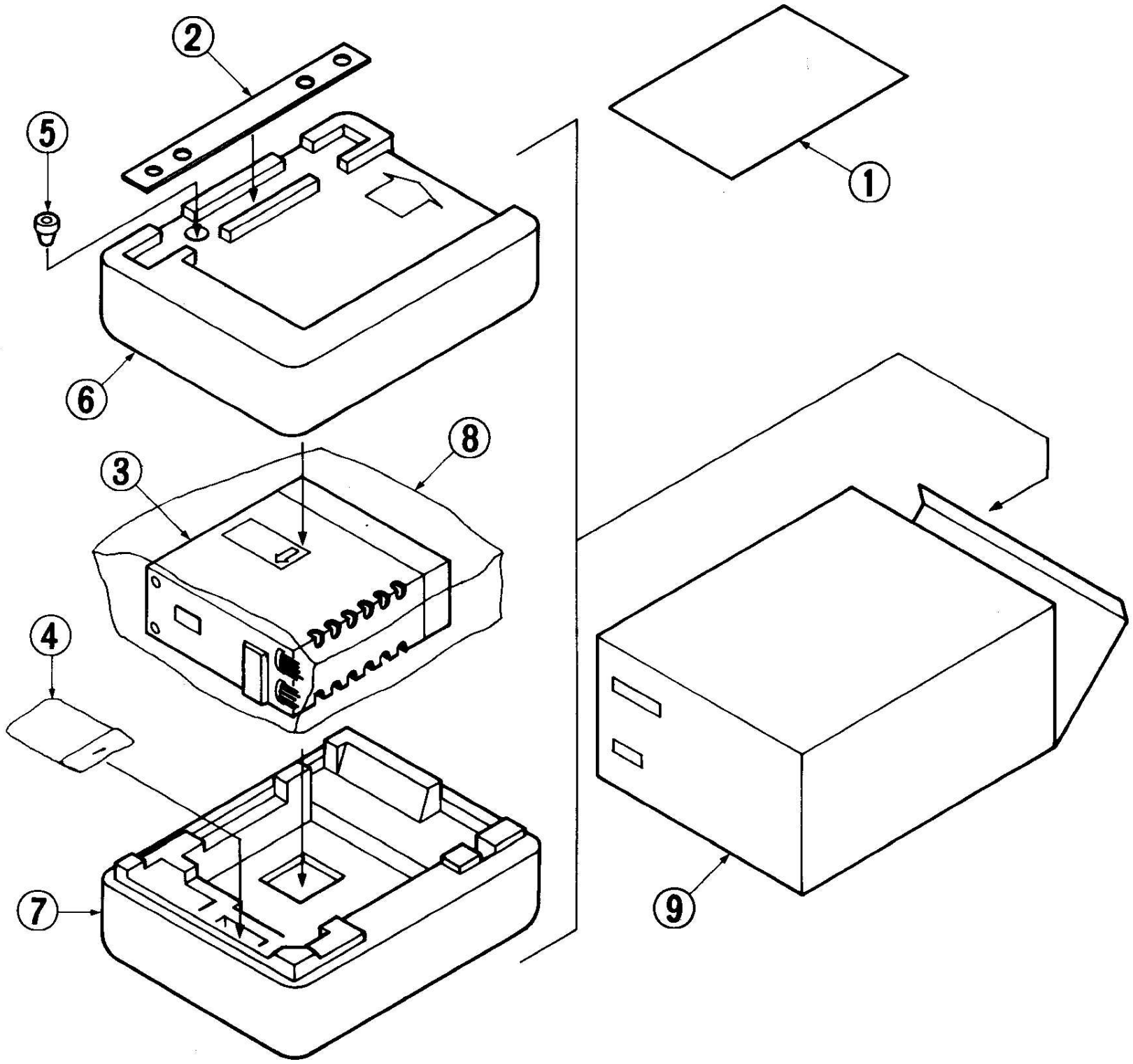


Fig. 11-6



12. PACKING & ACCESSORY PARTS LIST



Parts List

Parts No.	Stock No.	Description
1	49039400	Operating Instruction
2	58073800	Metal Mounting Strap
3	67074810	Detachable Case
4	58436700	Screw Kit
		Tapping Screw 5x2 1
		Hex Nut 5ϕ 1
		Spring Washer 5ϕ 1
		Special Screw 1
5	47387700	Rubber Space
6	67075500	Styrofoam Packing, Top Side
7	67075600	Styrofoam Packing, Bottom Side
8	67039900	Vinyl Bag
9	58437800	Carton Case

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