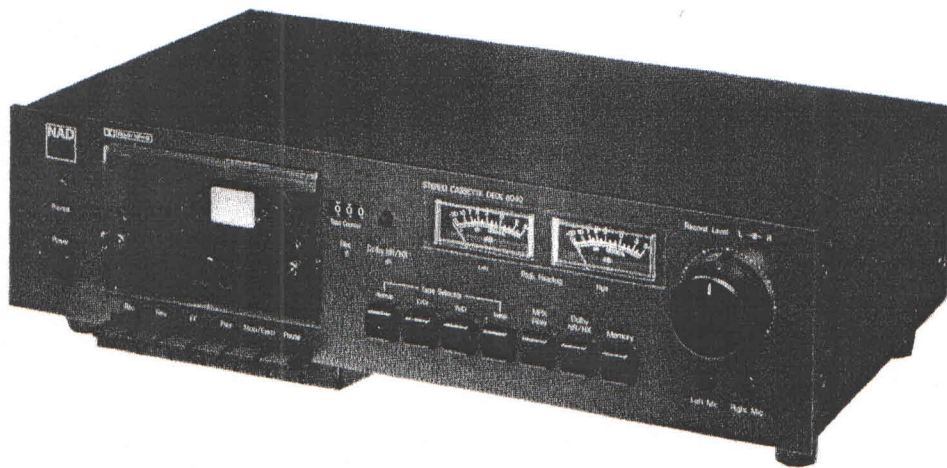


SERVICE MANUAL

NAD 6040

STEREO CASSETTE TAPE DECK



SPECIFICATIONS

Mechanical Section

Tape speed variation: 4.75 cm/sec. $\pm 1\%$
 WOW & Flutter: (JIS WTD) 0.1% (MTT-111)
 FF. & REW. time: 110sec. (C-60)

Electrical Section

Output PLAY:
 REC/PB: -2dB 400Hz = 0 dB
 0dB = 0.65V
 (-2dB = DOLBY LEVEL)
 -2dB (MTT-150)
 0dB (SONY-NORMAL)
 0dB (SONY-CrO₂)
 0dB (SONY-FeCr)
 0dB (SONY-METAL)

Distortion
 REC/PB: -2dB 333Hz
 * DOLBY NR/HX ON
 1.4% (SONY-NORMAL)
 2% (SONY-CrO₂)
 1% (SONY-FeCr)
 2% (SONY-METAL)

Signal to Noise Ratio
 REC/PB: -2dB 400Hz
 50dB (SONY-NORMAL)
 52dB (SONY-CrO₂)
 52dB (SONY-FeCr)
 52dB (SONY-METAL)

Dolby-NR Effect
 with CCIR Filter:
 9.5dB (SONY-NORMAL)
 9.0dB (SONY-CrO₂)
 9.0dB (SONY-FeCr)
 9.0dB (SONY-METAL)

Channel Separation
 with bandpass filter: 45dB L-R (SONY-NORMAL)
 REC/PB: -2dB , 1kHz 45dB R-L (SONY-NORMAL)

Crosstalk Ratio
 with bandpass filter:
 REC/PB: -2dB , 1kHz 70dB (SONY-NORMAL)

Erasing Ratio
 with bandpass filter:
 REC/PB: $+8\text{dB}$, 1kHz 70dB (SONY-METAL)

Frequency Response
 REC/PB: -25 INPUT
 DOLBY LEVEL
 400Hz = 0 dB
 40Hz-13 kHz (SONY-NORMAL) ± 4 dB
 40Hz-14kHz (SONY-CrO₂)
 (SONY-FeCr) ± 4 dB

Power Consumption: 15W
 Dimension (W x H x D): 420 x 120 x 260 (mm)
 Weight: 5.5kg

* "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

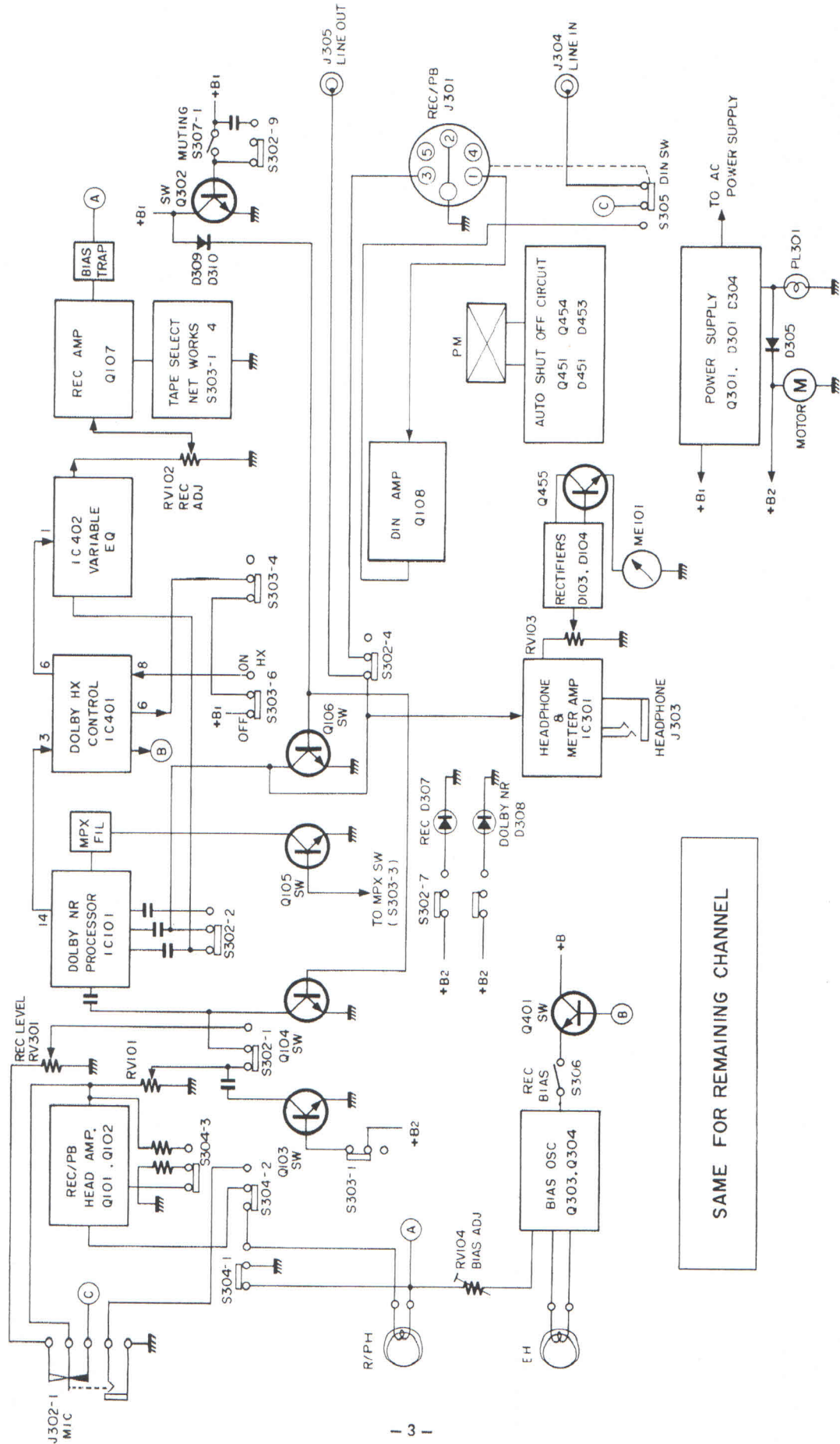
* Noise reduction system manufactured under license from Dolby Laboratories.

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Block Diagram

SECTION 1
OUTLINE

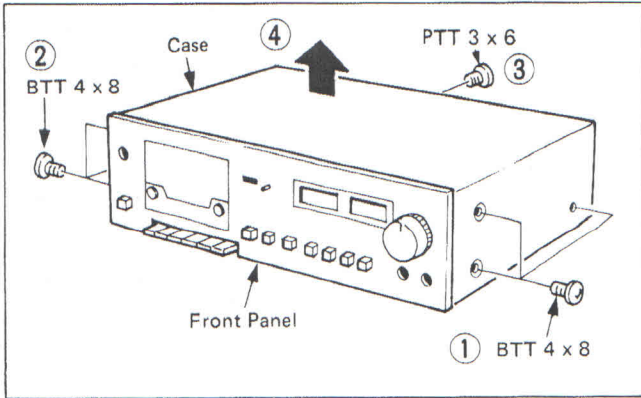


SECTION 2 DISASSEMBLY

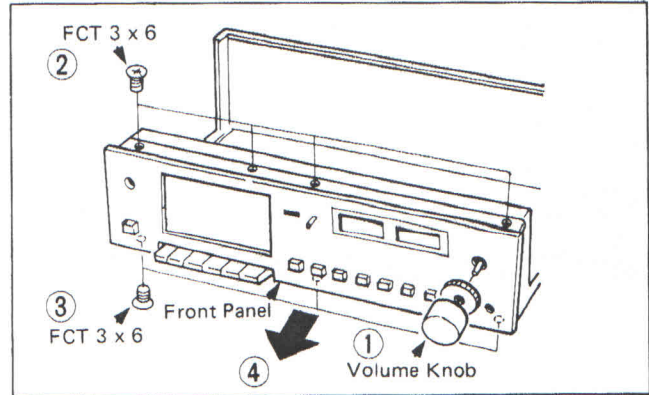
Removal

Note: Follow the disassembly procedure in the numerical order given.

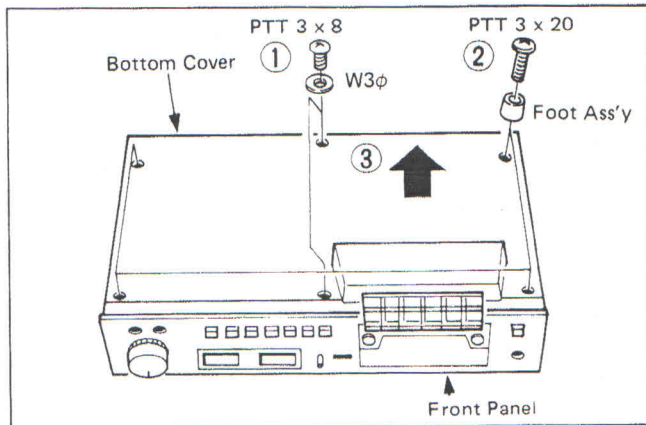
a. Case Removal



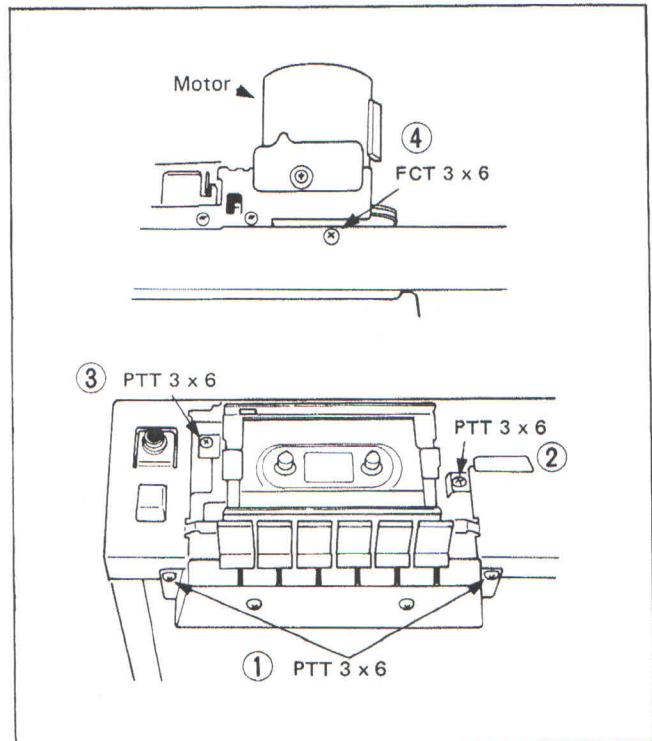
d. Front Panel Removal



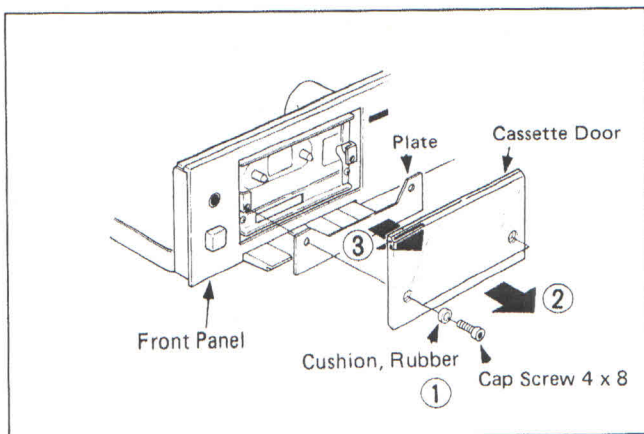
b. Bottom Cover Removal



e. Mecha. Deck Removal



c. Cassette Door Removal



SECTION 3 MECHANICAL ADJUSTMENT

a. Contact Pressure of Pinch Roller against Capstan

1. Depress the play push button.
2. Use a spring balance to measure contact pressure. (*Fig. 3-1*)
3. The measured value must be within a range from 400 to 650g. If required, adjust with the Spring or replace it.

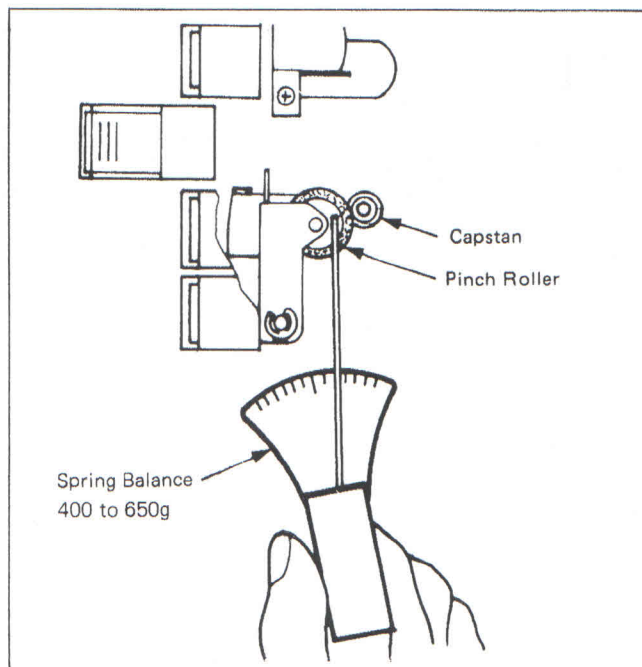


Fig. 3-1

c. Play Torque Adjustment Play Mode

1. Engage a Torque Driver or Torque Meter to the Take-up Reel spindle as shown in *Fig. 3-3*.
2. Run the tape deck in playback mode and read the playback torque it should be 40-70g/cm.
3. If the reading is out of specified values, adjust the torque adjustment spring catch provided on the take-up reel base as shown in *Fig. 3-4*. Rotate the spring catch in the arrow direction until the specified torque is obtained, using a small driver or pincette.

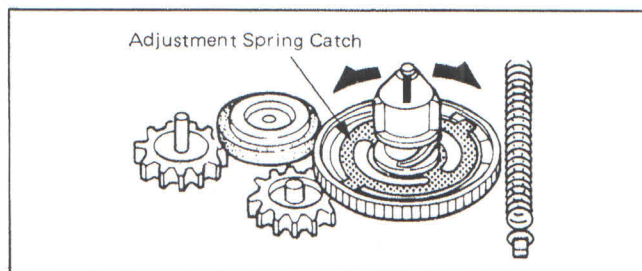


Fig. 3-4

d. FF and REW Torque Adjustment

1. Engage a Torque Driver or Torque Meter to the Take-up (or Supply) reel spindle.
2. Run the tape deck in FF (or REW) mode of operation, and read the torque. It should be 60 to 150g/cm.
3. If the reading is out of the specified values, adjust the torque adjustment spring catch provided under the deck chassis (refer to *Fig. 3-5*). Move the spring catch in the arrow direction until the specified torque is obtained, using a small driver or pincette.

b. Flywheel Thrust Play Adjustment

1. Thrust play of the Flywheel or clearance between the Flywheel shaft and bearing area on the Bracket (*Fig. 3-2*) must be within a range from 0.1 to 0.2mm.

If required, adjust it with the Adjusting Screw; the play must be measured with a thickness gauge.

Note: After adjustment, the Bracket and the Flywheel face must be parallel with each other.

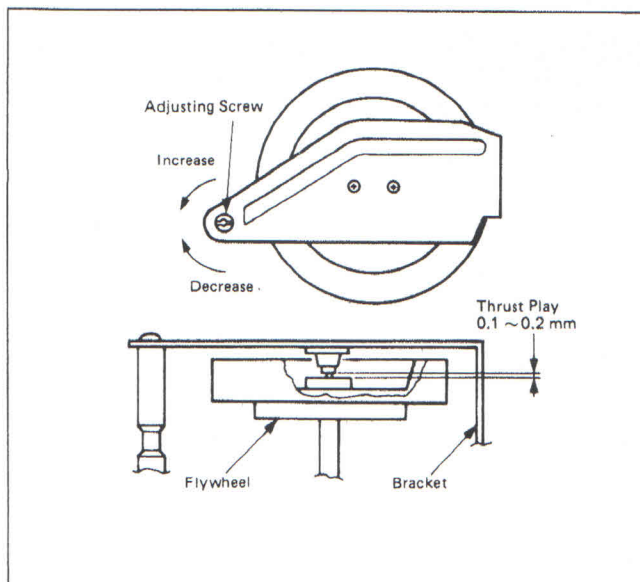


Fig. 3-2

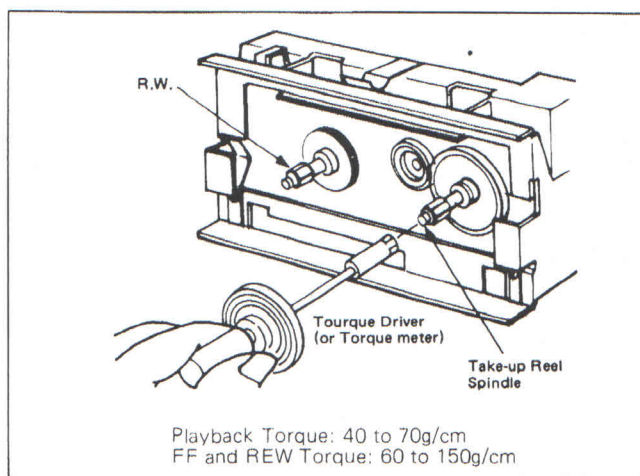


Fig. 3-3

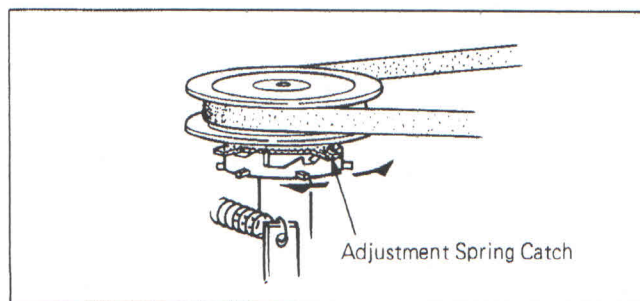


Fig. 3-5

e. Head Azimuth Adjustment

1. Set the test equipments as shown in Fig. 3-8.
2. Playback the test tape MTT-113 and adjust the azimuth adjusting screw (Fig. 3-6) for the maximum output on the VTVM for both L and R channels. (Fig. 3-8)
3. After the adjustment, assure the mode by the in-phase pattern on the oscilloscope (Fig. 3-7).

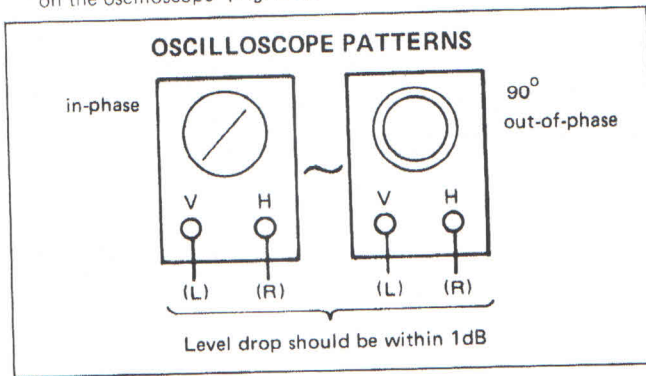


Fig. 3-7

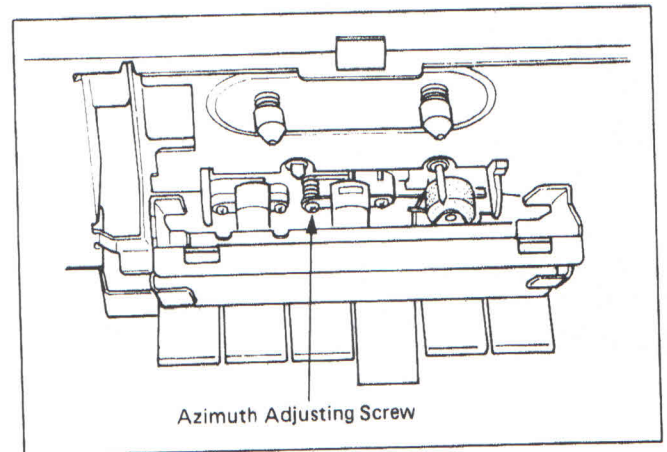


Fig. 3-6

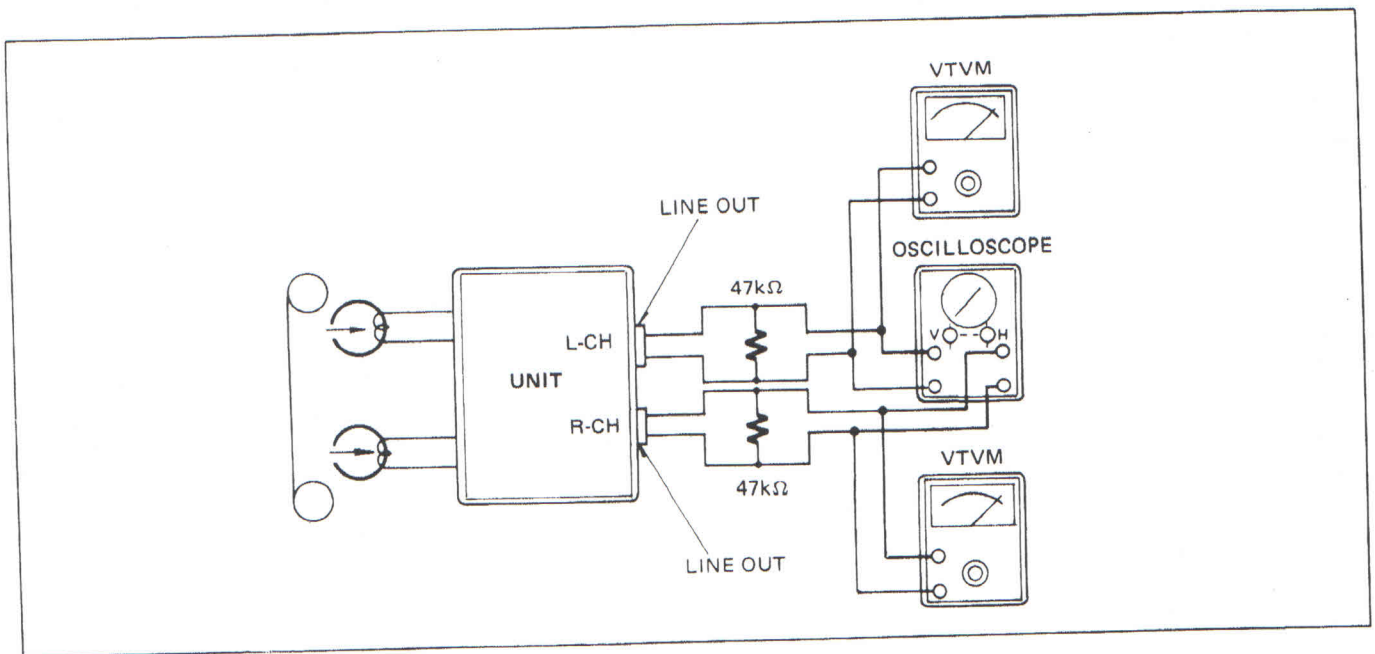


Fig. 3-8

f. Tape Speed Adjustment

1. Set the test equipments as shown in Fig. 3-9.
2. Playback the test tape MTT-111 and observe the frequency counter indication.
3. If indication deviates excessively from the normal value (2985-3015Hz), correct the speed by adjusting the semifixed resistor of the motor. (Fig. 3-10)

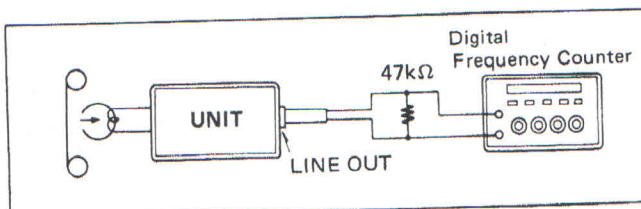


Fig. 3-9

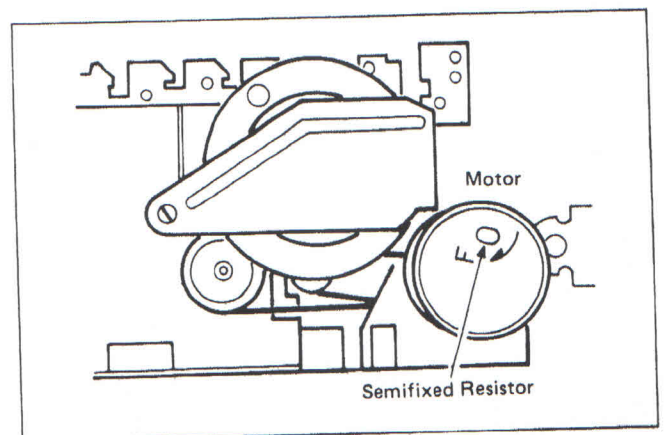


Fig. 3-10

SECTION 4 ELECTRICAL ADJUSTMENT

PRECAUTION

- Clean the following parts with an alcohol moistened bud:
 - * record/playback head
 - * erase head
 - * capstan
 - * pinch roller
 - * rubber belt
 - * idler
- Demagnetize record/playback head with a head demagnetizer.
- Do not use magnetized screwdriver for adjustments.
- After adjustments, apply a small amount of a locking compound to the parts adjusted.
- The adjustments should be performed in the order arranged in this service manual.
- The adjustments and the measurements should be performed for both L-CH and R-CH with rated power supply voltage unless otherwise specified.
- The record and playback level adjustments should be carefully performed.
- Tapes required:
 - Blank tapes (completely erased with bulk eraser)
 - SONY HF (BHF)
 - SONY CrO₂ (JHF) with extra holes
 - SONY FeCr (DUAD)
 - SONY METAL (METALIC)
 - MTT-113 (6.3kHz) for Azimuth
 - MTT-150 (400Hz) for Playback level
 - MTT-111 (3kHz) for Tape speed
- The switches and the controls should be set as follows unless otherwise specified:
 - DOLBY NR/HX: OFF
 - TAPE SELECT switches: NORMAL

- Normal Input Level 0 dBs = 0.775V

	MIC	LINE IN	REC/PB
source impedance	600Ω	600Ω	470kΩ
input level	-60dBs (0.77mV)	-18dBs (100mV)	-4.3dBs (470mV)

- Normal Output Level

	LINE OUT	REC/PB
load impedance	47kΩ	47kΩ
output level	-4dBs (0.49V)	-4dBs (0.49V)

a. Playback Level Adjustment

- Set the test equipments as shown in Fig. 4-1.
- Set the unit in playback mode using the test tape MTT-150.
- Adjust RV101, RV201 to obtain -4dBs (0.49V) on the VTVM. (Fig. 4-5).

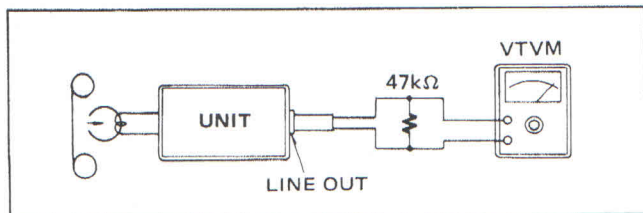


Fig. 4-1

b. 19kHz Filter Adjustment

- Set the test equipment as shown in Fig. 4-2.
- Under the standard recording condition, feed the 19kHz, -10dBs signal through LINE IN Jack.
- Adjust L102 and L202 (Fig. 4-5) to obtain the minimum output (less than -30dB) on the VTVM. (Fig. 4-2)

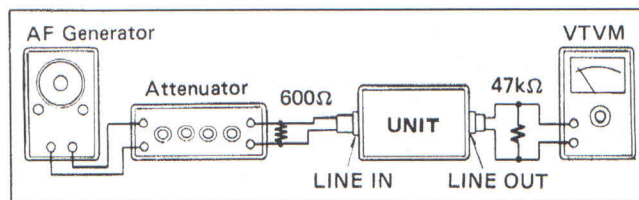


Fig. 4-2

c. VU (Peak Reading) Meters Adjustment

- Set the test equipment as shown in Fig. 4-2.
- Under the standard recording condition, feed the 400Hz signal through LINE IN Jack.
- Adjust RV103, RV203 (Fig. 4-5) so that the VU meter indicates -2dB (DOLBY LEVEL) on the VU meters. (Fig. 4-3)

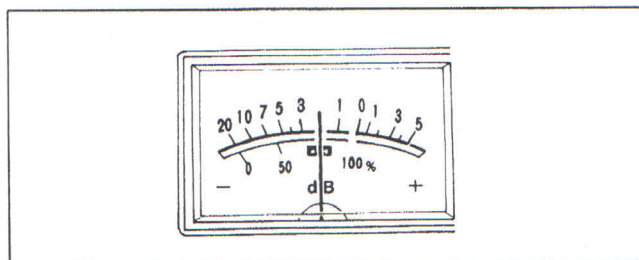


Fig. 4-3

d. Record Level Adjustment

- Under the standard recording condition, record the 333Hz signal on the blank tape HF with the TAPE SELECT switch placed in NORMAL position. Next, adjust attenuator by 10dB down so that -14dBs LINE OUTPUT is obtained.
- Connect the VTVM as shown in Fig. 4-1, and playback the tape just recorded.
- Adjust RV102, RV202 (Fig. 4-5) to obtain -14dBs on the VTVM.
- Perform the procedures 1 and 2, using a blank tape of CrO₂, FeCr, and METAL with the TAPE SELECT switch placed in its corresponding position.
- The LINE OUT levels should be as follows:

Tape	LINE OUT Level
SONY CrO ₂ (JHF)	-14dBs ±1dB
SONY HF (BHF)	
SONY FeCr (DUAD)	
SONY METAL (METALIC)	

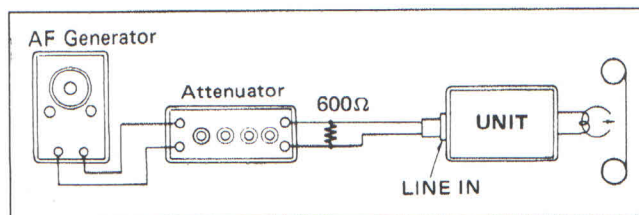


Fig. 4-4

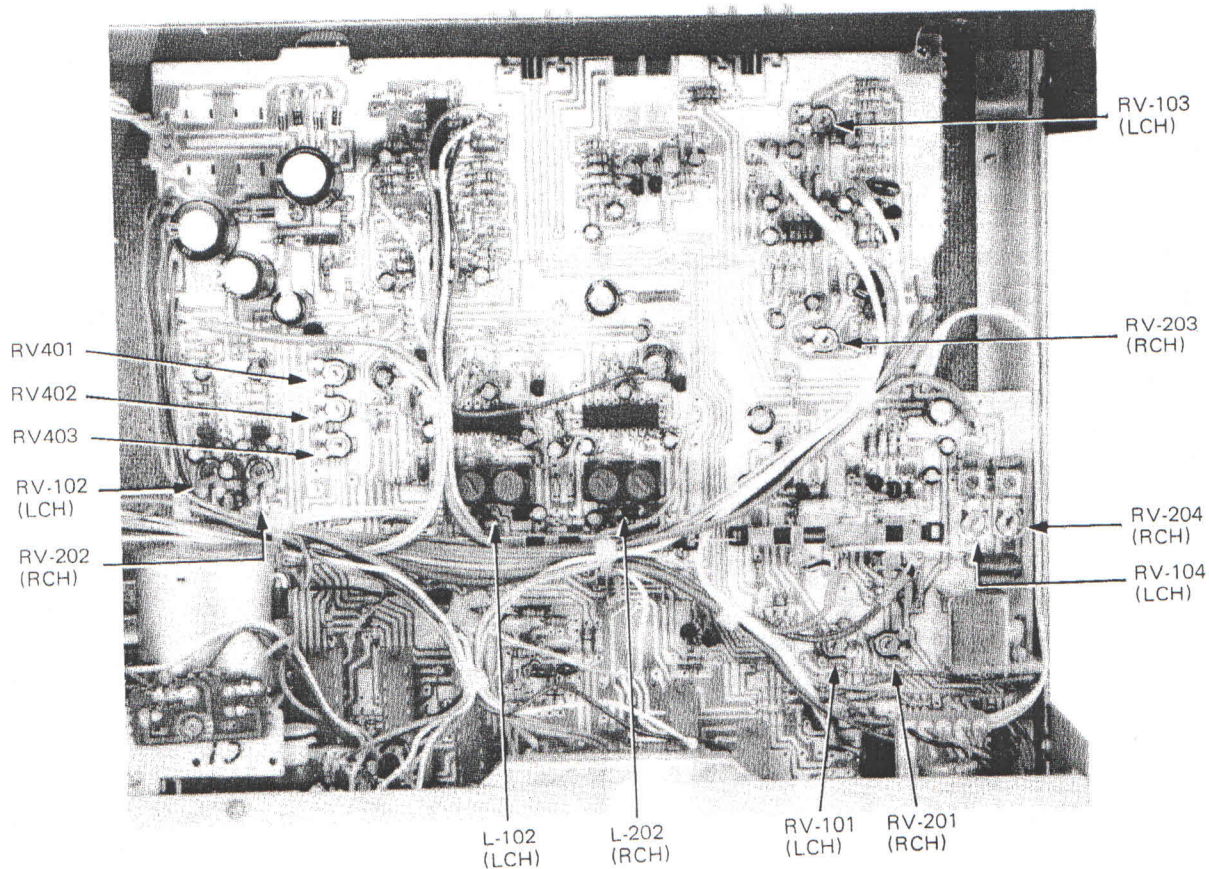


Fig. 4-5

e. Overall Frequency Characteristic Adjustment

1. Using the blank tape CrO₂, set the unit in recording mode with the TAPE SELECT switch placed in CrO₂ position.
2. Feed -18dBs input signal to the LINE IN jack and adjust REC LEVEL control so that -4dBs output is obtained at the LINE OUT jack. Then reduce the input signal level by 30dB.
3. Record the 333Hz and 10kHz signals in turn on the tape.
4. Connect the VTVM as shown in Fig. 4-1, and playback the tape just recorded.
5. Adjust RV104, RV204 (Fig. 4-5) so that the level at 10kHz should be the same referred to the 333Hz signal.

f. Overall Signal-to-Noise Ratio Measurement

1. Under the standard recording condition, record the 333Hz signal. Then continue the recording with no signal. (Fig. 4-4)
2. Connect the VTVM as shown in Fig. 4-1, and playback the recorded tape.
3. Measure the outputs and obtain the ratio of the level with signal to that without signal.
4. The ratio should be more than 46dB with Normal, 49dB with CrO₂ and FeCr tapes.

g. DOLBY NR Effect Measurement

1. Set the DOLBY NR switch to ON and record no signal on the blank tape FeCr. (Fig. 4-4)
2. Connect the VTVM as shown in Fig. 4-6 and playback the recorded tape with DOLBY NR switch ON and OFF.
3. Measure the level difference between DOLBY NR ON and OFF. The difference should -8.5dB with DOLBY NR ON referred to OFF.

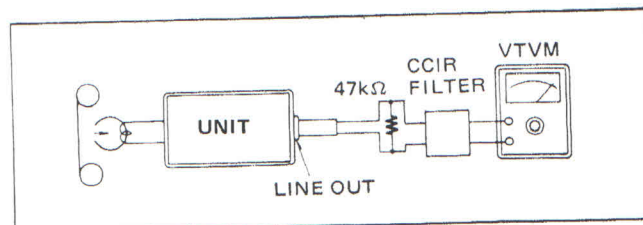


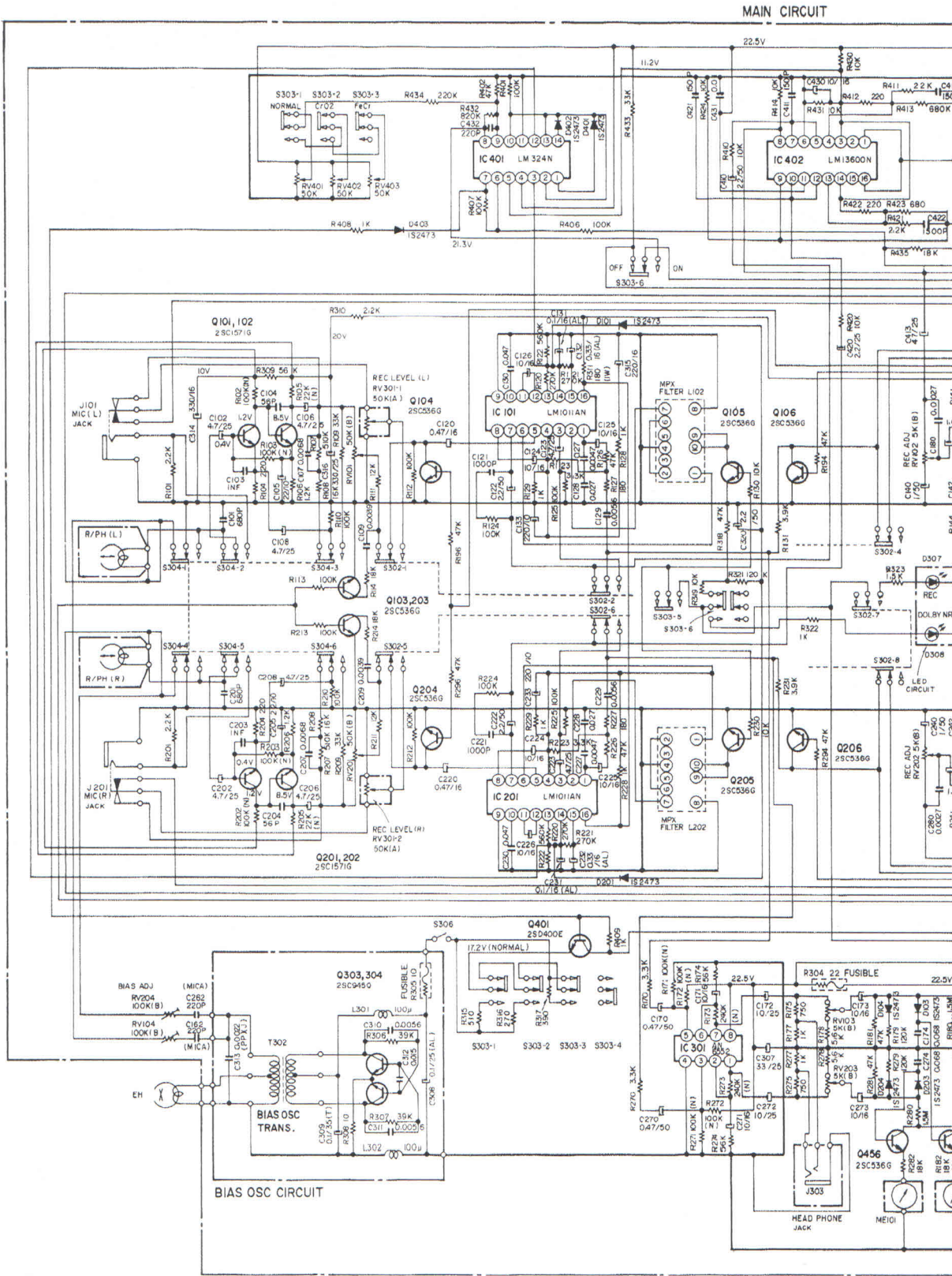
Fig. 4-6

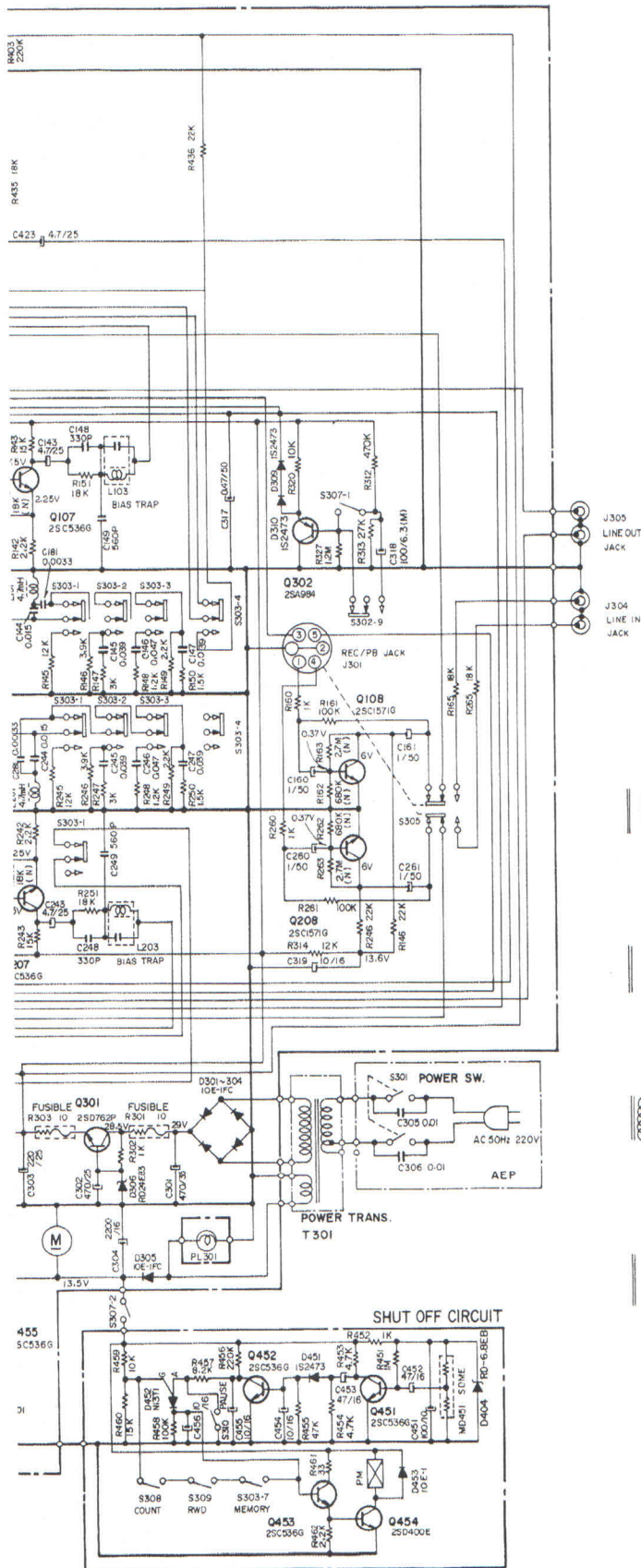
h. Dolby HX Effect Adjustment

1. Feed 10kHz, -28dBs signal to the LINE IN jack, and set the deck into record mode of operation. Adjust REC LEVEL control to obtain -14dBs audio output at the LINE OUT jack (Fig. 4-4).
2. Record above signal with Dolby HX switch placed in OFF position first (for a brief period of time) then place the switch in ON position and proceed the recording.
3. Playback the tape just recorded: when the tape recorded with Dolby HX switch in OFF position is played back, place the Dolby HX switch in OFF position; and when the tape recorded with the HX switch in ON position place the switch in ON position. Note the playback output levels for each tape. Adjust RV401 (Normal), RV402 (CrO₂), and RV403 (FeCr) so that the playback output level obtained for the tape recorded with HX ON is within 0-+2dB referred to the level obtained for the tape recorded with HX OFF. (Fig. 4-5) (Fig. 4-1)
4. Repeat the steps 2 and 3 until no further improvement is obtained.

DOLBY HX EFFECT: Normal: more than 5dB
 (with DOLBY Level CrO₂/FeCr: more than 3dB
 at 10kHz)

5-1: Schematic Diagram





- 1 (SW) POWER SW
- S301 REC/PB SW
- S302 REC/PB SW
- S303-1 TAPE SELECTOR (NORMAL)
- S303-2 TAPE SELECTOR (CrO2)
- S303-3 TAPE SELECTOR (FeCr)
- S303-4 TAPE SELECTOR (METAL)
- S303-5 MPX FILTER SW
- S303-6 DOLBY NR/HX SW
- S303-7 MEMORY REW SW
- S304 REC/PB SW
- S306 INPUT (DIN-LINE)
- S306 REC BIAS SW
- S307-1 MUTING SW
- S307-2 SHUT OFF CIRCUIT SW
- S308 COUNTER SW
- S309 REW SW

2, RESISTANCE
ALL RESISTANCE VALUES ARE
IN Ω 1/4W, UNLESS OTHERWISE NOTED
K=1000 OHM M=1000 KOHM

3, (L R)
LOW LEAKAGE CAPACITANCE

4, (N)
LOW NOISE RESISTANCE

5, CAPACITANCE
ALL CAPACITANCE VALUES ARE IN
MICROFARAD UNLESS OTHERWISE NOTED
N=10³ MICROFARAD, P=10⁶ MICROFARAD
DENOMINATORS OF CAPACITANCE INDICATED
AT FRACTIONS ARE WORKING VOLTAGE

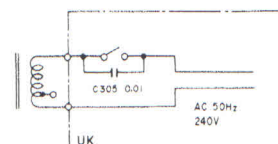
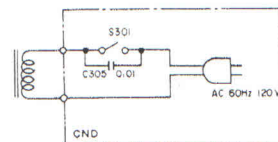
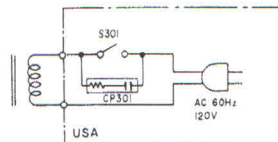
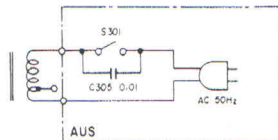
6, (PP)
POLYPROPYLENE FILM CAPACITOR

7, (MICA)
DIPPED SILVERED MICA CAPACITOR

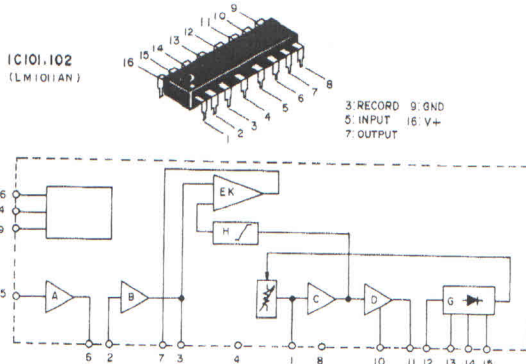
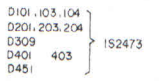
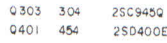
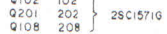
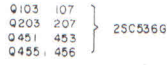
8, (J) ±5%

9, (M) ±20%

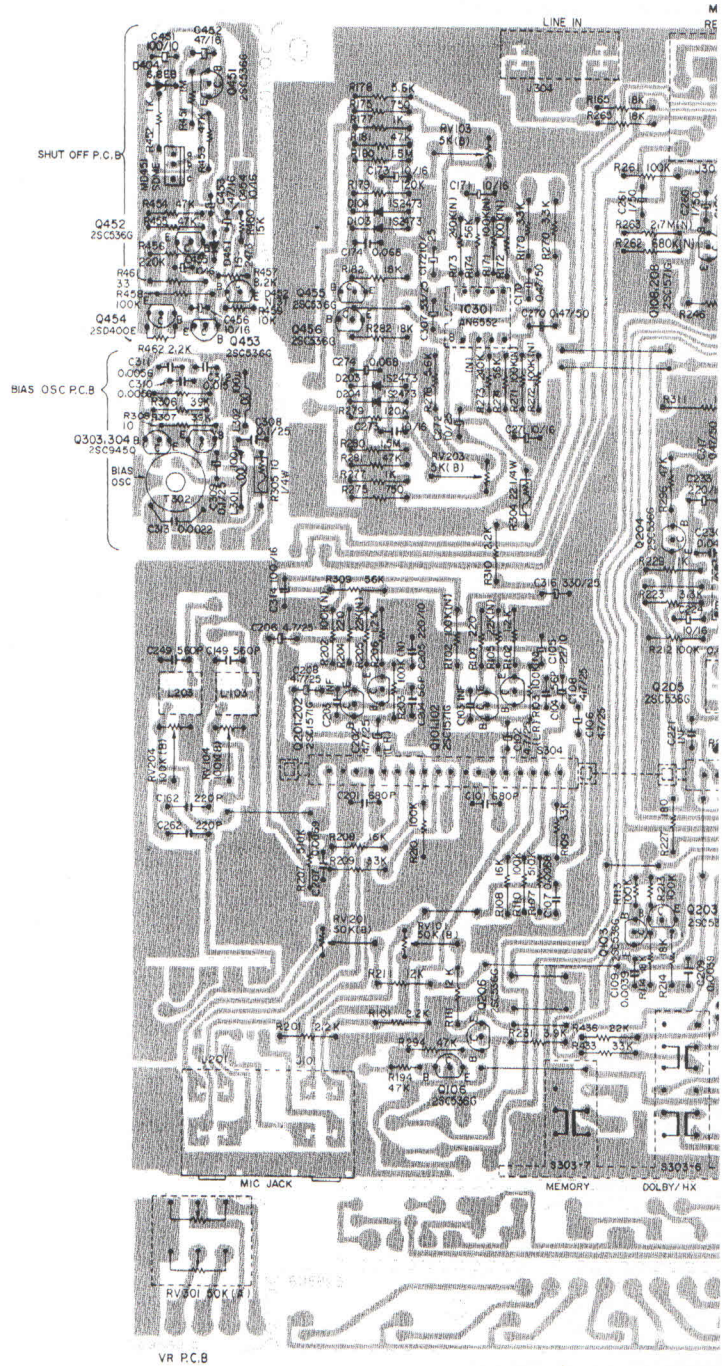
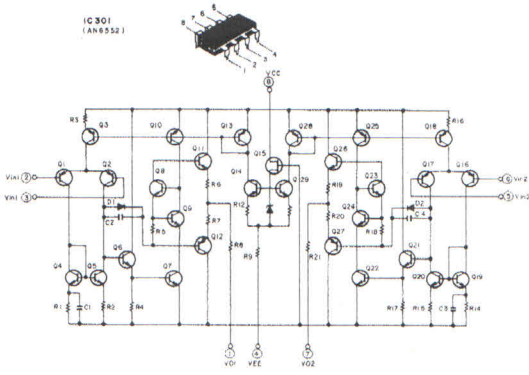
10, (AL)
ALUMINIUM SOLID
ELECTROLYTIC CAPACITOR

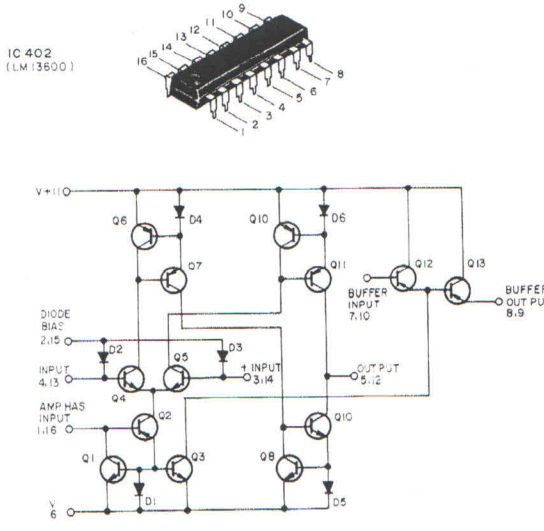
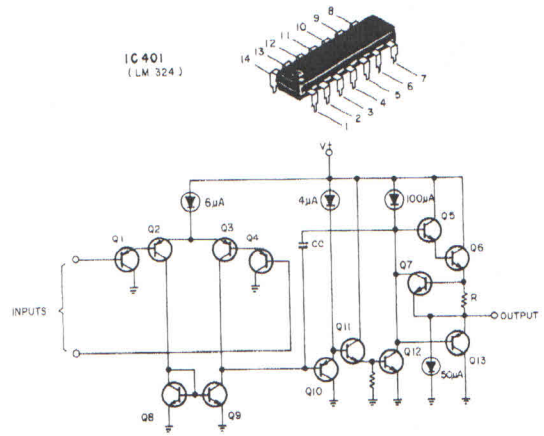
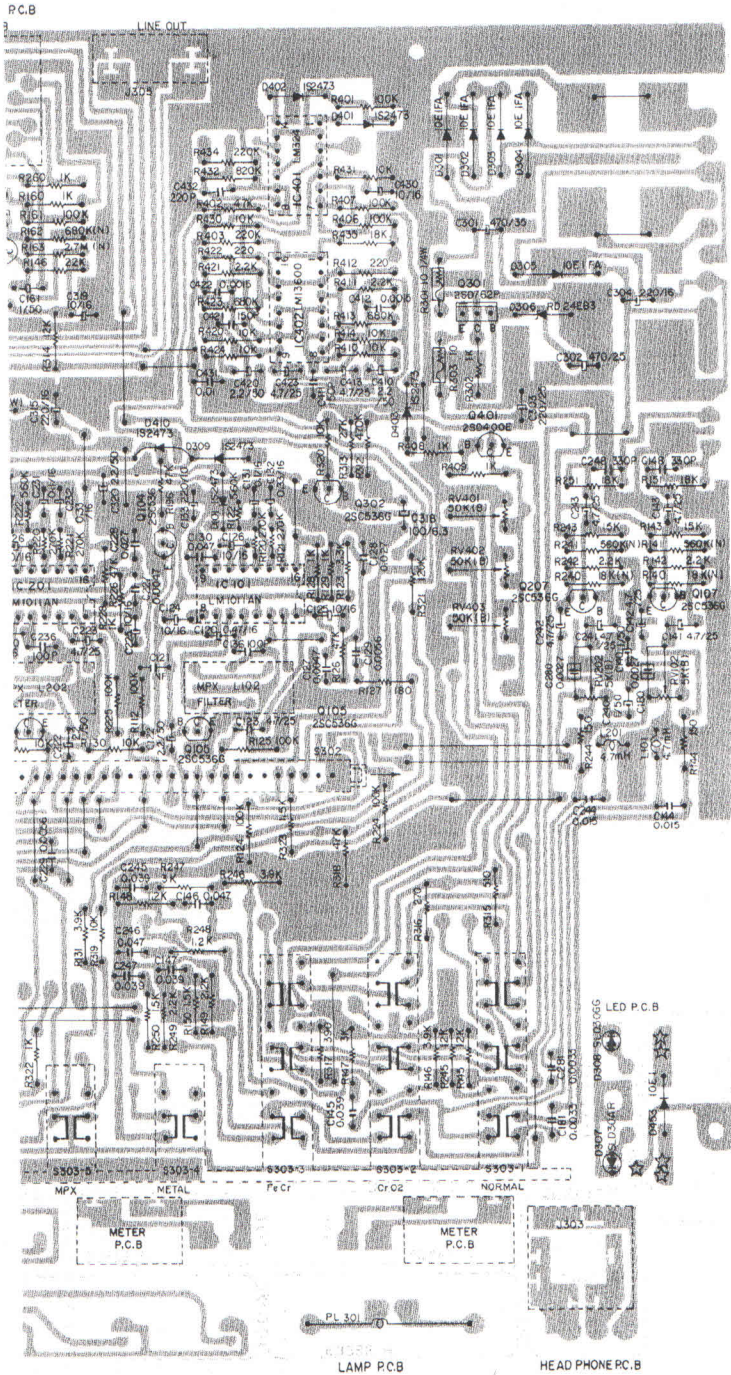
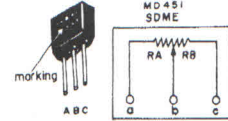
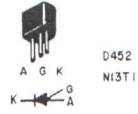
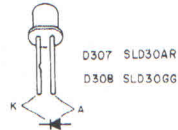
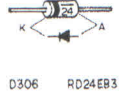
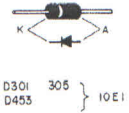


5-2: Mounting Diagrams

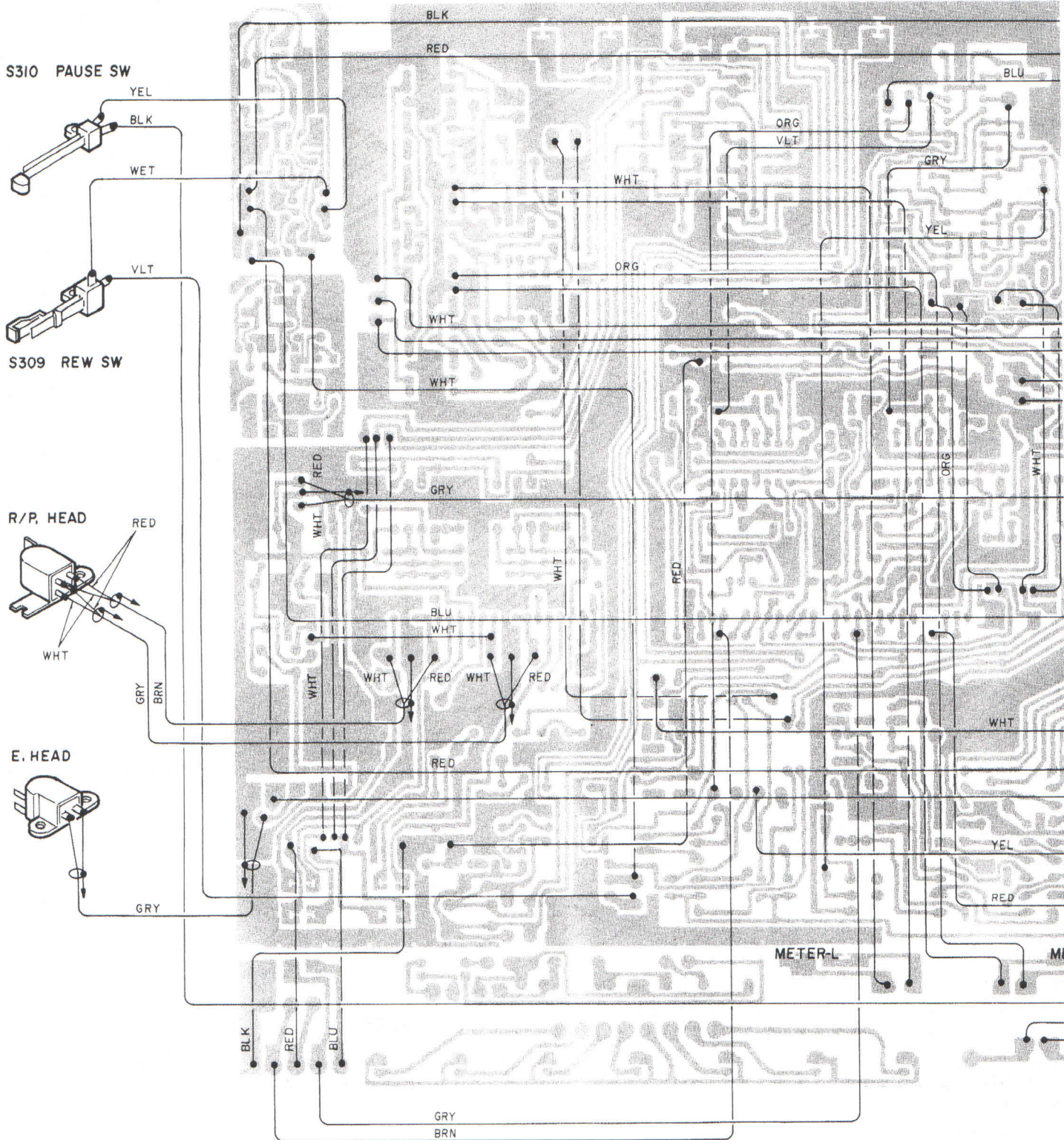


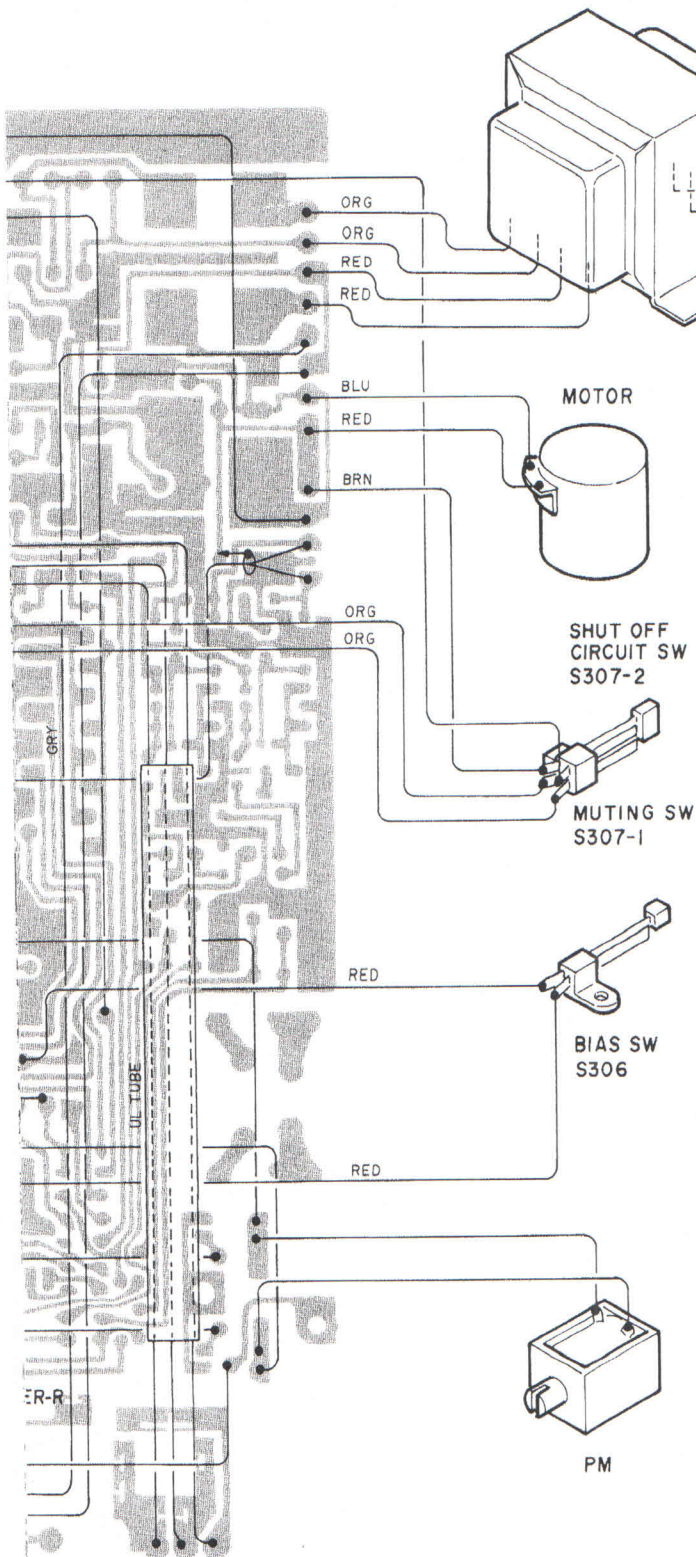
IC 301
(AN6552)



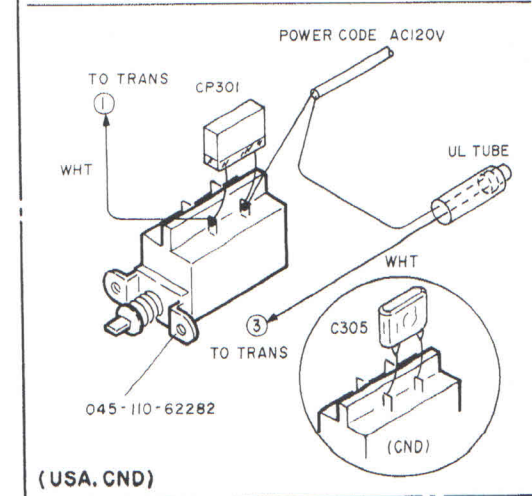
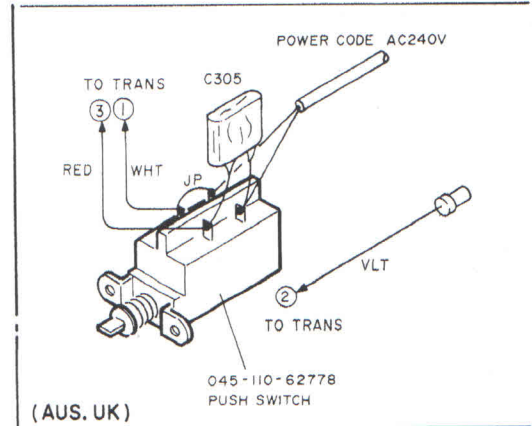
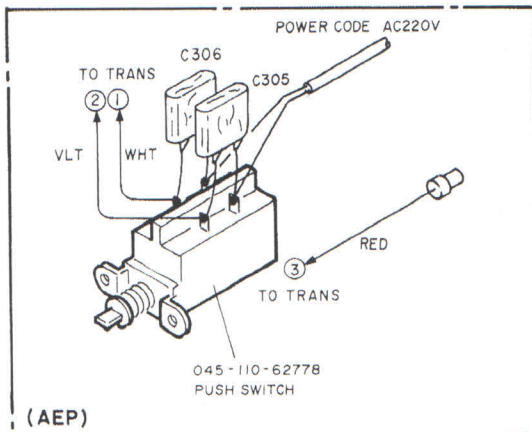


5-3: Wiring Diagram

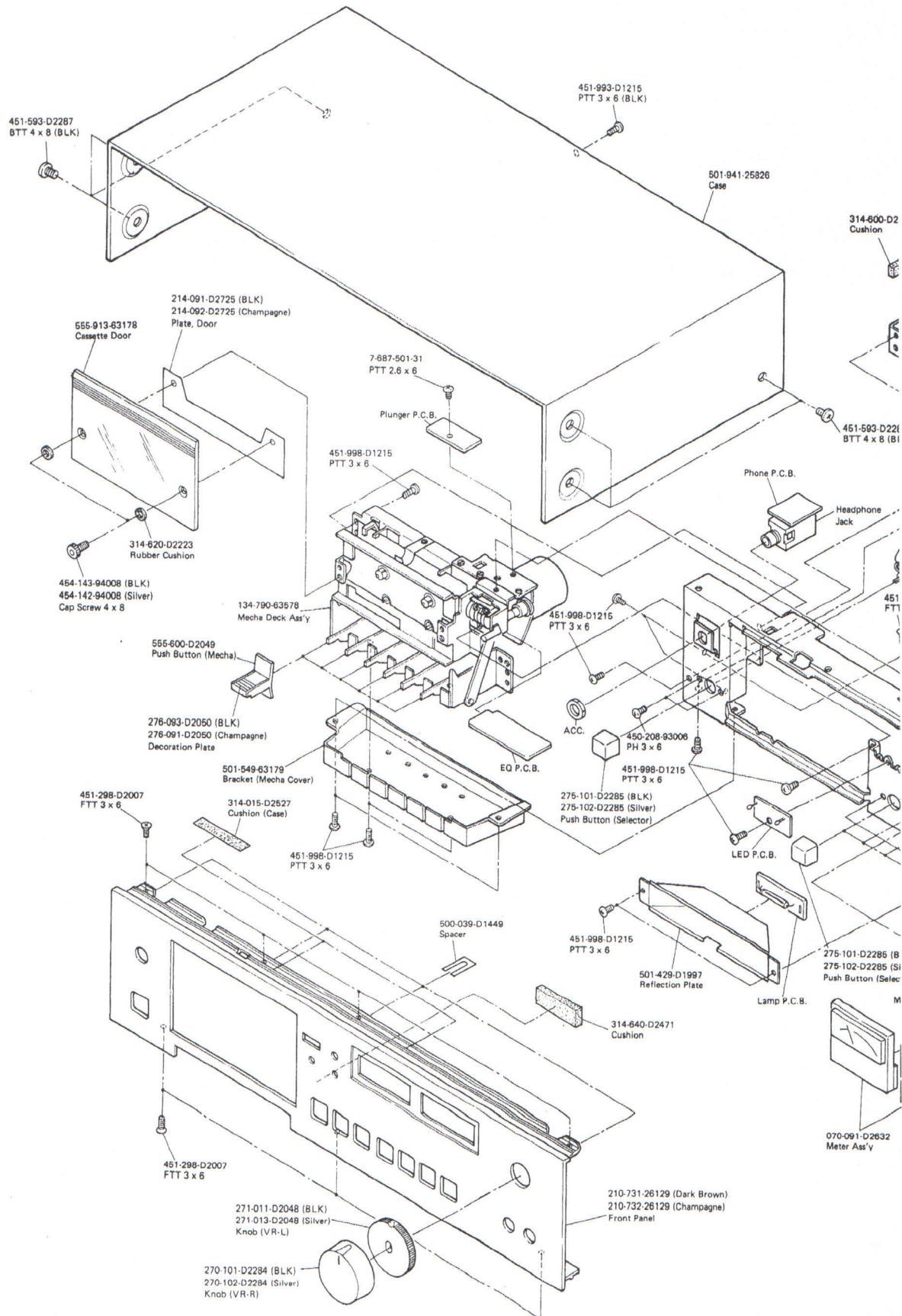




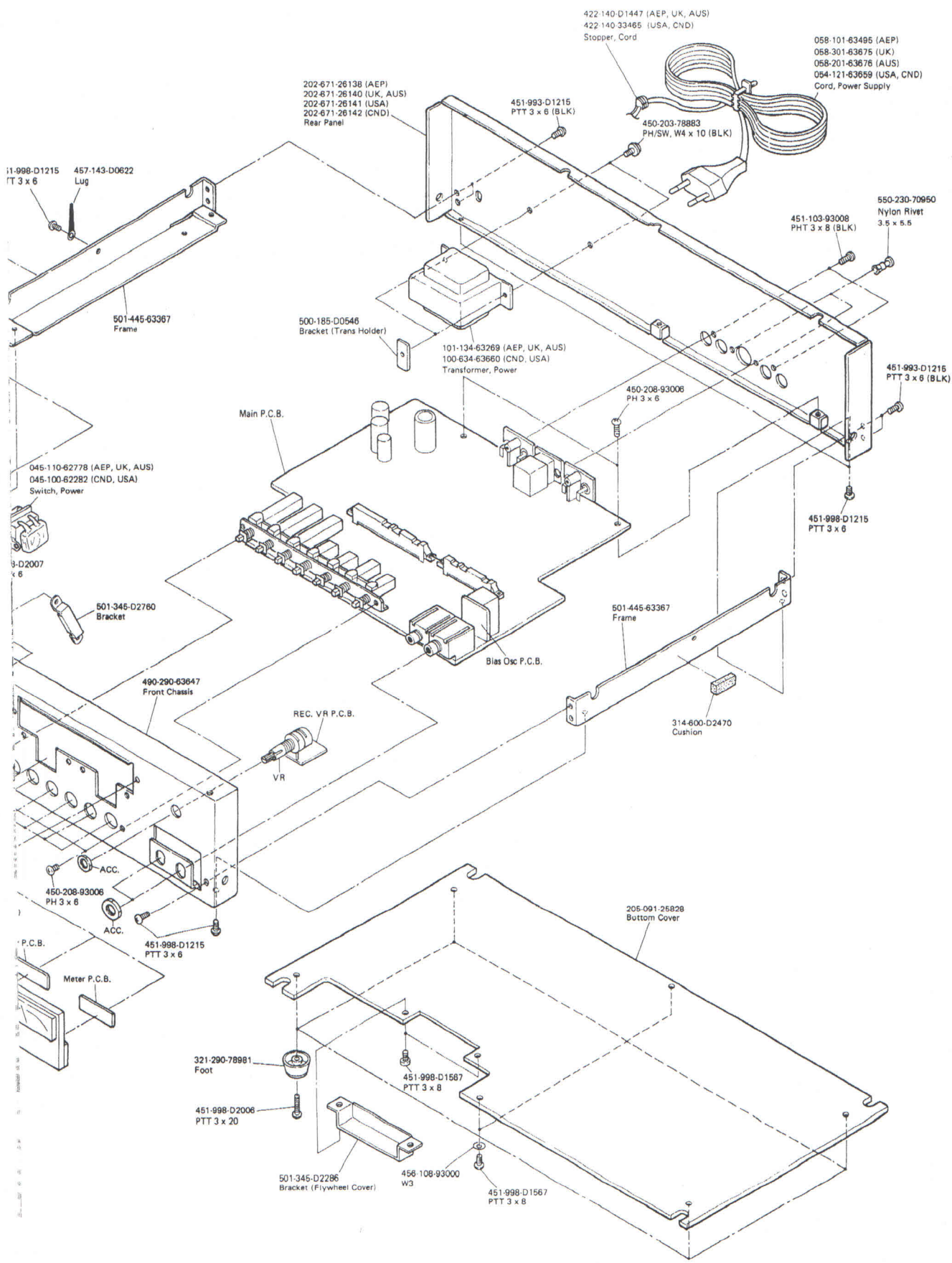
S301. SWITCH, POWER



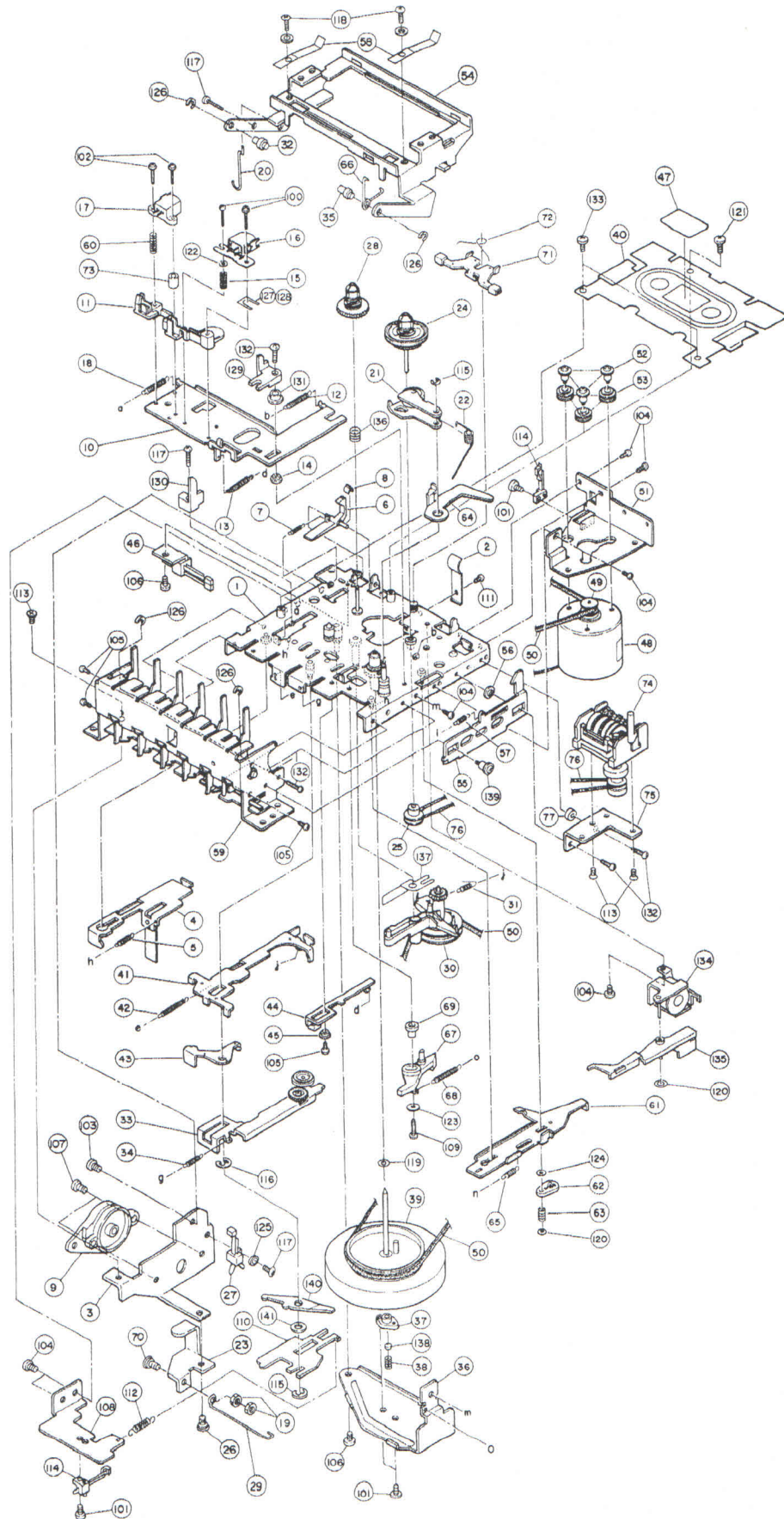
6-1: Exploded View Cabinet



FIGION 6
EXPLODED VIEWS



6-2: Exploded View Mechanism

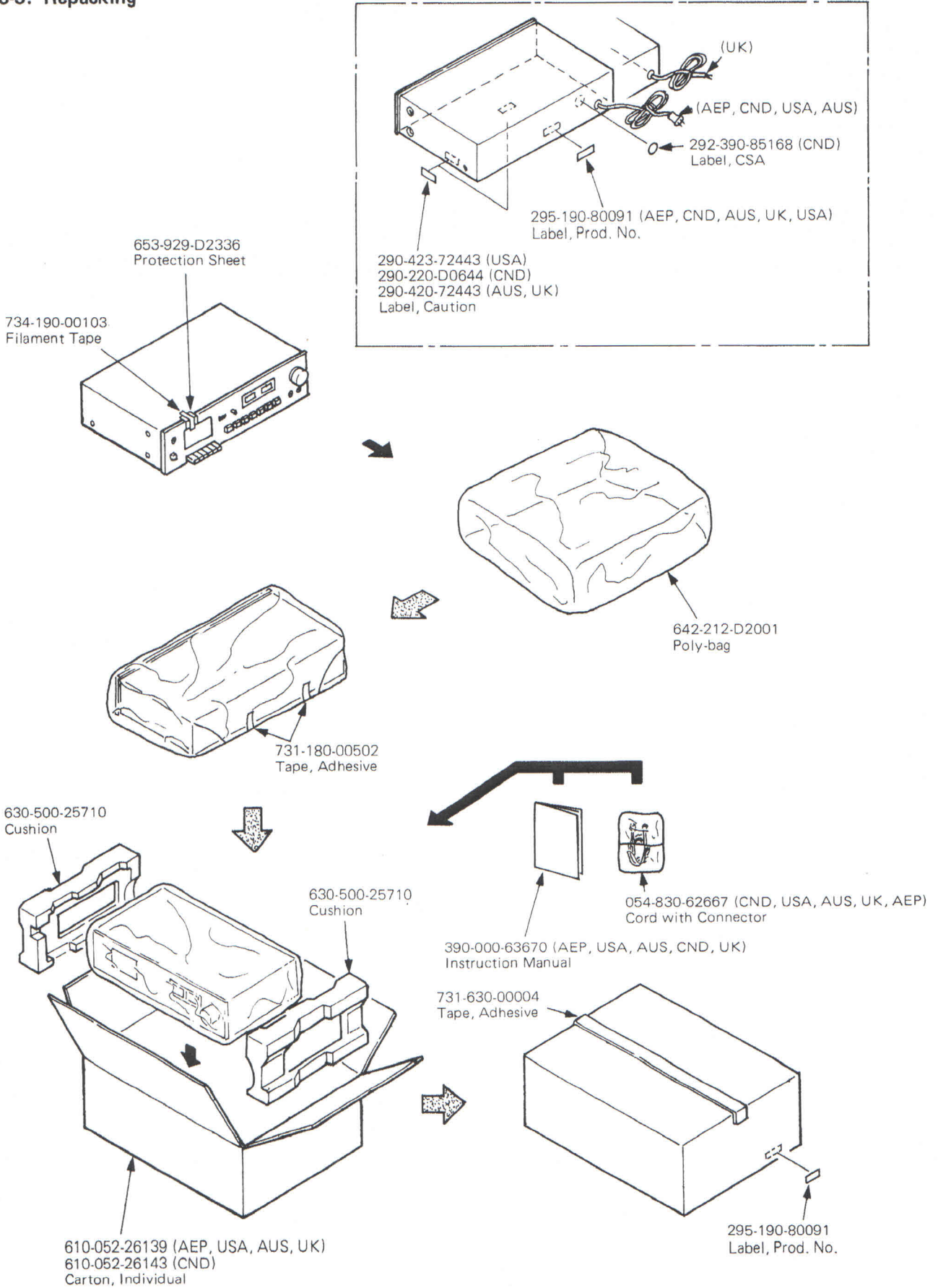


Mechanical Parts List

Illus. No.	Parts No.	Parts Name
1	680-000-00741	Chassis Ass'y
2	680-000-00565	Pack Spring
3	501-459-D2629	Bracket Recorder
4	680-000-00740	Record Slide Lever Ass'y
5	680-000-00567	Spring (Rec Slide)
6	680-000-00568	Record Safety Lever
7	680-000-00569	Spring (Rec Safety)
8	680-000-00570	Record Safety Lever Stopper
9	440-203-D1948	Damper Ass'y
10	680-000-00742	Head Panel
11	680-000-00728	Head Block
12	680-000-00573	Spring (Head Panel)
13	680-000-00574	Spring (RC)
14	680-000-00575	Coller (Head Panel)
15	680-000-00743	Spring (RPH)
16	133-130-26144	R/P Head
17	133-020-26035	Erase Head
18	680-000-00577	Spring (Head Panel L)
19	455-002-93024	Nut 3
20	537-440-D2628	Connecting Wire
21	680-000-00746	Pinch Roller Ass'y
22	680-000-00747	Spring (Pinch Roller)
23	501-259-D1931	Record Link
24	680-000-00748	Take-up Reel Ass'y
25	680-000-00582	Drive Pulley
26	463-208-79275	Special-Screw
27	048-510-39982	Leaf Switch
28	680-000-00749	Supply Reel Ass'y
29	537-490-D1942	Record Wire
30	680-000-00751	RF Clutch Ass'y
31	680-000-00585	Spring RF Clutch
32	513-329-D1943	Coller (L)
33	680-000-00753	F. F. Idler Arm Ass'y
34	680-000-00587	Spring (FF Idler)
35	513-329-D1944	Coller (R)
36	680-000-00713	Flywheel Holder
37	680-000-00714	Flywheel Bearing
38	680-000-00716	Spring
39	680-000-00717	Flywheel Capstan
40	522-521-D2448	Mecha Cover
41	680-000-00592	Main Plate
42	680-000-00754	Spring (Main Plate)
43	680-000-00594	Rewind Arm
44	680-000-00595	Play Slide Lever
45	680-000-00596	Coller (Play Slide Lever)
46	048-520-63665	Leaf Switch
47	336-990-72978	Reflector
48	060-030-25997	Motor
49	680-000-00738	Motor Pulley
50	680-000-00719	Main Belt
51	680-000-00745	Motor Bracket
52	680-000-00602	Coller Screw (S)
53	680-000-00603	Motor Rubber
54	501-759-63112	Cassette Case
55	680-000-00604	Eject Slide Lever
56	680-000-00605	Coller (Eject)
57	680-000-00606	Spring (Eject A)
58	531-129-D1933	Spring (Cassette Case)
59	680-000-00607	Push Button Ass'y
60	680-000-00744	Spring (E/H)
61	680-000-00608	Pause Slide Lever
62	680-000-00609	Pause Lever

Illus. No.	Parts No.	Parts Name
63	680-000-00610	Spring (Pause Lever)
64	680-000-00611	Arm Lever
65	680-000-00612	Spring (Pause Lever Slide)
66	537-459-D1947	Spring (Eject B)
67	680-000-00613	Auto-Stop Lever
68	680-000-00755	Spring (Auto Lever)
69	680-000-00615	Coller (Auto Lever)
70	450-308-93025	Screw KPH 3 x 25
71	680-000-00616	Brake Arm Ass'y
72	680-000-00617	Spring (Blake)
73	680-000-00733	Erase Head Coller
74	680-000-00739	Counter
75	501-350-D2631	Counter Bracket
76	680-000-00618	Counter Belt
77	680-000-00619	Coller (Counter)
100	450-208-92011	Cap Screw PH 2 x 11
101	450-208-92005	Screw PH 2 x 4
102	450-208-92012	Cap Screw PH 2 x 12
103	450-208-76908	Screw FT 2.5 x 5
104	450-208-92604	Screw PH 2.6 x 4
105	450-208-92605	Screw PH 2.6 x 5
106	450-608-92605	Screw (Bind) 2.6 x 5
107	450-208-73510	Screw FT 2.5 x 6
108	680-000-00759	SW. Bracket
109	450-208-92610	Screw PH 2.6 x 10
110	680-000-00760	Memory SW. Plate
111	450-208-92604	Screw PH 2.6 x 4
112	680-000-00761	Spring
113	450-308-93005	F. H. Screw 3 x 5
114	680-000-00762	Switch
115	459-002-92500	E Ring 2.5
116	459-002-94000	E Ring 4
117	450-208-92008	Screw PH 2 x 8
118	450-202-73404	Screw PH/SW 2.6 x 4
119	456-108-92000	Washer 2.3 x 4.3 x 0.4
120	680-000-00629	Nylon Washer 1.8 x 5 x 0.5
121	450-203-92605	Screw PH 2.6 x 5
122	456-108-92000	Washer 2.3 x 4.3 x 0.4
123	456-108-92600	Washer 2.6 x 8 x 0.5
124	680-000-00757	Nylon Washer
125	456-471-92000	Spring Washer 2
126	459-002-93000	E Ring 3
127	3-513-237-01	Head Height Adjust
128	3-513-237-11	Head Height Adjust
129	680-000-00729	Cassette Guide (R)
130	680-000-00730	Cassette Guide (L)
131	680-000-00734	Cassette Guide Coller
132	7-685-793-01	Screw PTT 2.6 x 8
133	7-685-102-29	Screw PTP 2 x 4
134	680-000-00763	Bracket Ass'y
135	680-000-00764	Kick Lever Ass'y
136	680-000-00750	Back Tension Sp.
137	680-000-00752	REW. Spring
138	680-000-00715	Metal
139	680-000-00756	Collar Screw (E)
140	680-000-00735	FF. REW Stopper
141	680-000-00758	Collar

6-3: Repacking



SECTION 7 PARTS LIST

7-1: Electrical Parts List

Ref. No.	Parts No.	Description
SEMICONDUCTORS		
- Transistors -		
Q101	161-711-91571	2SC1571G
Q102	161-711-91571	2SC1571G
Q103	161-063-90536	2SC536G
Q104	161-063-90536	2SC536G
Q105	161-063-90536	2SC536G
Q106	161-063-90536	2SC536G
Q107	161-063-90536	2SC536G
Q108	161-711-91571	2SC1571G
Q201	161-711-91571	2SC1571G
Q202	161-711-91571	2SC1571G
Q203	161-063-90536	2SC536G
Q204	161-063-90536	2SC536G
Q205	161-063-90536	2SC536G
Q206	161-063-90536	2SC536G
Q207	161-063-90536	2SC536G
Q208	161-711-91571	2SC1571G
Q301	161-441-63489	2SD762P
Q302	161-063-90536	2SC536G
Q303	161-521-90945	2SC945Q
Q304	161-521-90945	2SC945Q
Q401	163-041-90400	2SD400E
Q451	161-063-90536	2SC536G
Q452	161-063-90536	2SC536G
Q453	161-063-90536	2SC536G
Q454	163-041-90400	2SD400E
Q455	161-063-90536	2SC536G
Q456	161-063-90536	2SC536G
- ICs -		
IC101	167-LM1-011AN	LM1011AN
IC101	167-LM1-011N	LM1011N
IC201	167-LM1-011AN	LM1011AN
IC201	167-LM1-011N	LM1011N
IC301	167-999-63494	AN6552
IC401	167-999-63579	LM324
IC402	167-999-63580	LM13600
- Diode -		
D101	164-119-92473	Silicon, 1S2473
D103	164-119-92473	Silicon, 1S2473
D104	164-119-92473	Silicon, 1S2473
D201	164-119-92473	Silicon, 1S2473
D203	164-119-92473	Silicon, 1S2473
D204	164-119-92473	Silicon, 1S2473
D301	165-123-63501	Rectifier, 10E-1FA
D302	165-123-63501	Rectifier, 10E-1FA
D303	165-123-63501	Rectifier, 10E-1FA
D304	165-123-63501	Rectifier, 10E-1FA
D305	165-123-63501	Rectifier, 10E-1FA
D306	166-092-63511	Zenor, RD24EB3
D307	166-699-D1046	LED (RED) SLD30AR
D308	166-600-D1199	LED (GREEN) SLD30GG
D309	164-119-92473	Silicon, 1S2473
D310	164-119-92473	Silicon, 1S2473
D401	164-119-92473	Silicon, 1S2473

Ref. No.	Parts No.	Description	
D402	164-119-92473	Silicon, 1S2473	
D403	164-119-92473	Silicon, 1S2473	
D404	166-002-90068	Zenor, RD6.8EB	
D451	164-119-92473	Silicon, 1S2473	
D452	169-001-9N13T	PUT, N13T1	
D453	165-123-90001	Rectifier, 10E-1	
- Coil, Transformer, Filter -			
L101	000-290-79716	Coil, Choke, 4.7mH	
L102	008-990-63476	Coil, MPX	
L103	008-990-63474	Coil, Trap, Bias	
L201	000-290-79716	Coil, Choke, 4.7mH	
L202	008-990-63476	Coil, MPX	
L203	008-990-63474	Coil, Trap, Bias	
L301	1-408-129-11	Inductor, Micro, 100 μ H	
L302	1-408-129-11	Inductor, Micro, 100 μ H	
T301	100-634-63660	Transformer, Power (CND, USA)	
T301	101-134-63269	Transformer, Power (AEP, UK, AUS)	
T302	008-290-63475	Coil, Osc.	
RESISTORS			
<i>All resistance values are in Ω, $\pm 5\%$, 1/4W and carbon film type unless otherwise indicated.</i>			
<i>N : Noiseless H : Horizontal type V : Vertical type</i>			
RV101	017-965-62013	50K-B Type Adjustable	
RV102	017-915-61935	5K-B Type Adjustable	
RV103	017-915-61935	5K-B Type Adjustable	
RV104	1-226-931-11	100K-B Type Adjustable	
RV201	017-965-62013	50K-B Type Adjustable	
RV202	017-915-61935	5K-B Type Adjustable	
RV203	017-915-61935	5K-B Type Adjustable	
RV204	1-226-931-11	100K-B Type Adjustable	
RV301	014-160-62750	50K-A Type Adjustable, Carbon	
RV401	017-965-62013	50K-B Type Adjustable	
RV402	017-965-62013	50K-B Type Adjustable	
RV403	017-965-62013	50K-B Type Adjustable	
R101	119-245-92201	2.2k	H
R102	119-545-91003	100k	N
R103	119-545-91003	100k	N
R104	119-245-92200	220	H
R105	119-545-92202	22k	N
R106	119-245-91201	1.2k	H
R107	119-545-95103	510k	N
R108	119-245-91602	16k	H
R109	119-245-93302	33k	H
R110	119-245-91003	100k	H
R111	119-245-91202	12k	H
R112	119-245-91003	100k	H
R113	119-245-91003	100k	H
R114	119-245-91802	18k	H
R120	119-145-92703	270k	V
R121	119-145-92703	270k	V
R122	119-145-95603	560k	V
R123	119-245-93301	3.3k	H
R124	119-245-91003	100k	H
R125	119-245-91003	100k	H
R126	119-245-94702	47k	H

Ref. No.	Parts No.	Description	
R127	119-245-91800	180	H
R128	119-245-91001	1k	H
R129	119-245-91001	1k	H
R130	119-245-91002	10k	H
R131	119-245-93901	3.9k	H
R140	119-545-91802	18k	N
R141	119-545-95603	560k	N
R142	119-245-92201	2.2k	H
R143	119-245-91502	15k	H
R144	119-245-91500	150	H
R145	119-245-91202	12k	H
R146	119-245-93901	3.9k	H
R147	119-245-93001	3k	H
R148	119-245-91201	1.2k	H
R149	119-245-92201	2.2k	H
R150	119-245-91501	1.5k	H
R151	119-245-91802	18k	H
R160	119-245-91001	1k	H
R161	119-245-91003	100k	H
R162	119-545-96803	680k	N
R163	119-545-92704	2.7M	N
R164	119-245-92202	22k	H
R165	119-245-91802	18k	H
R170	119-245-93301	3.3k	H
R171	119-545-91003	100k	N
R172	119-545-91003	100k	N
R173	119-545-92403	240k	N
R174	119-245-95602	56k	H
R175	119-245-97500	750	H
R177	119-245-91001	1k	H
R178	119-245-95601	5.6k	H
R179	119-245-91203	120k	H
R180	119-245-91504	1.5M	H
R181	119-245-94702	47k	H
R182	119-245-91802	18k	H
R194	119-145-94702	47k	V
R196	119-245-94702	47k	H
R201	119-245-92201	2.2k	H
R202	119-545-91003	100k	N
R203	119-545-91003	100k	N
R204	119-245-92200	220	H
R205	119-545-92202	22k	N
R206	119-245-91201	1.2k	H
R207	119-545-95103	510k	N
R208	119-245-91602	16k	H
R209	119-245-93302	33k	H
R210	119-245-91003	100k	H
R211	119-245-91202	12k	H
R212	119-245-91003	100k	H
R213	119-145-91003	100k	V
R214	119-245-91802	18k	H
R220	119-145-92703	270k	V
R221	119-145-92703	270k	V
R222	119-145-95603	560k	V
R223	119-245-93301	3.3k	H
R224	119-245-91003	100k	H
R225	119-245-91003	100k	H
R226	119-245-94702	47k	H
R227	119-245-91800	180	H

Ref. No.	Parts No.	Description	
R228	119-245-91001	1k	H
R229	119-245-91001	1k	H
R230	119-245-91002	10k	H
R231	119-245-93901	3.9k	H
R240	119-545-91802	18k	N
R241	119-545-95603	560k	N
R242	119-245-92201	2.2k	H
R243	119-245-91502	15k	H
R244	119-245-91500	150	H
R245	119-245-91202	12k	H
R246	119-245-93901	3.9k	H
R247	119-245-93001	3k	H
R248	119-245-91201	1.2k	H
R249	119-245-92201	2.2k	H
R250	119-245-91501	1.5k	H
R251	119-245-91802	18k	H
R260	119-245-91001	1k	H
R261	119-245-91003	100k	H
R262	119-545-96803	680k	N
R263	119-545-92704	2.7M	N
R264	119-245-92202	22k	H
R265	119-245-91802	18k	H
R270	119-245-93301	3.3k	H
R271	119-545-91003	100k	N
R272	119-545-91003	100k	N
R273	119-545-92403	240k	N
R274	119-245-95602	56k	H
R277	119-245-91001	1k	H
R278	119-245-95601	5.6k	H
R279	119-245-91203	120k	H
R280	119-245-91504	1.5M	H
R281	119-245-94702	47k	H
R282	119-245-91802	18k	H
R294	119-245-94702	47k	H
R295	119-245-97500	750	H
R296	119-245-94702	47k	H
R301	118-245-D2499	10	Fusible
R302	119-245-91001	1k	H
R303	118-245-D2499	10	Fusible
R304	118-245-D2117	22	Fusible
R305	118-245-D2499	10	Fusible
R306	119-245-93902	39k	H
R307	119-245-93902	39k	H
R308	119-245-90100	10	H
R309	119-245-95602	56k	H
R310	119-245-92201	2.2k	H
R311	118-165-91800	180	1W Non-flammable
R312	119-245-94703	470k	H
R313	119-245-92702	27k	H
R314	119-245-91202	12k	H
R315	119-245-95100	510	H
R316	119-245-92700	270	H
R317	119-245-93900	390	H
R318	119-245-94702	47k	H
R319	119-245-91002	10k	H
R320	119-245-91002	10k	H
R321	119-245-91203	120k	H
R322	119-245-91001	1k	H
R323	119-245-91501	1.5k	H

Ref. No.	Parts No.	Description	
R326	119-245-91003	100k	H
R327	119-245-91204	1.2M	H
R401	119-245-91003	100k	H
R402	119-245-94702	47k	H
R403	119-245-92203	220k	H
R406	119-245-91003	100k	H
R407	119-245-91003	100k	H
R408	119-245-91001	1k	H
R409	119-245-91001	1k	H
R410	119-245-91002	10k	H
R411	119-245-92201	2.2k	H
R412	119-245-92200	220	H
R413	119-245-96803	680k	H
R414	119-245-91002	10k	H
R420	119-245-91002	10k	H
R421	119-245-92201	2.2k	H
R422	119-245-92200	220	H
R423	119-245-96803	680k	H
R424	119-245-91002	10k	H
R430	119-245-91002	10k	H
R431	119-245-91002	10k	H
R432	119-245-98203	820k	H
R433	119-245-93302	33k	H
R434	119-245-92203	220k	H
R435	119-245-91802	18k	H
R436	119-245-92202	22k	H
R451	119-245-91004	1M	H
R452	119-245-91001	1k	H
R453	119-245-94701	4.7k	H
R454	119-245-94701	4.7k	H
R455	119-245-94702	47k	H
R456	119-245-92203	220k	H
R457	119-245-98201	8.2k	H
R458	119-245-91003	100k	H
R459	119-245-91002	10k	H
R460	119-245-91002	10k	H
R461	119-245-90330	33	H
R462	119-245-92201	2.2k	H

CAPACITORS

All capacitance values are in μF , $\pm 5\%$, 50V and ceramic type unless otherwise indicated.

MP: Metalized Film Capacitor T : Tantalum
SM: Silvered Mica PP : Polypropylene
ST : Styrol EC : Electrolytics Capacitor
LR: Low Leakage E.C. My: Mylar
P : μF AL : Aluminium

C101	122-110-96800	680P			ST
C102	1-121-915-11	4.7	$\pm 20\%$	25V	EC
C103	125-613-91001	1N			
C104	125-613-90560	56P			
C105	123-130-92205	22	$\frac{+100\%}{-10}$	10V	EC
C106	123-141-94704	4.7	$\frac{+150\%}{-10}$	25V	EC
C107	121-310-96801	0.0068			My
C108	123-141-94704	4.7	$\frac{+150\%}{-10}$	25V	EC
C109	121-310-93901	0.0039			My

Ref. No.	Parts No.	Description			
C120	124-636-94703	0.47	$\pm 20\%$	16V	AL
C121	125-613-91001	1N			
C122	123-161-92204	2.2	$\frac{+150\%}{-10}$		EC
C123	123-141-94704	4.7	$\frac{+150\%}{-10}$	25V	EC
C124	123-130-91005	10	$\frac{+100\%}{-10}$	16V	EC
C125	123-130-91005	10	$\frac{+100\%}{-10}$	16V	EC
C126	123-130-91005	10	$\frac{+100\%}{-10}$	16V	EC
C127	121-310-94701	0.0047			My
C128	121-310-92702	0.027			My
C130	121-310-94702	0.047			My
C131	124-636-91003	0.1	$\pm 20\%$	16V	AL
C132	124-636-93303	0.33	$\pm 20\%$	16V	AL
C133	123-130-92206	220	$\frac{+100\%}{-10}$	10V	EC
C136	125-614-91000	100P	$\pm 10\%$		
C140	123-161-91004	1	$\frac{+150\%}{-10}$		EC
C141	123-141-94704	4.7	$\frac{+150\%}{-10}$	25V	EC
C142	123-141-94704	4.7	$\frac{+150\%}{-10}$	25V	EC
C143	123-141-94704	4.7	$\frac{+150\%}{-10}$	25V	EC
C144	121-310-91502	0.015			My
C145	121-310-93902	0.039			My
C146	121-310-94702	0.047			My
C147	121-310-93902	0.039			My
C148	125-614-93300	330P	$\pm 10\%$		
C149	125-614-95600	560P	$\pm 10\%$		
C160	123-161-91004	1	$\frac{+150\%}{-10}$		EC
C161	123-161-91004	1	$\frac{+150\%}{-10}$		EC
C162	126-403-92200	220P	$\pm 10\%$	100V	SM
C170	123-161-94703	0.47	$\frac{+150\%}{-10}$		EC
C171	123-130-91005	10	$\frac{+100\%}{-10}$	16V	EC
C172	123-140-91005	10	$\frac{+100\%}{-10}$	25V	EC
C173	123-130-91005	10	$\frac{+100\%}{-10}$	16V	EC
C174	121-310-96802	0.068			My
C180	121-310-92701	0.0027			My
C181	121-310-93301	0.0033			My
C201	122-110-96800	680P			ST
C202	1-121-915-11	4.7	$\pm 20\%$	25V	LR
C203	125-613-91001	1N			
C204	125-613-90560	56P			
C205	123-120-92205	22	$\frac{+100\%}{-10}$	10V	EC
C206	123-141-94704	4.7	$\frac{+150\%}{-10}$	25V	EC

Ref. No.	Parts No.	Description			
C207	121-310-96801	0.0068			My
C208	123-141-94704	4.7	+150% -10	25V	EC
C209	121-310-93901	0.0039			My
C220	124-636-94703	0.47	±20%	16V	AL
C221	125-613-91001	1N			
C222	123-161-92204	2.2	+150% -10		EC
C223	123-141-94704	4.7	+150% -10	25V	EC
C224	123-130-91005	10	+100% -10	16V	EC
C225	123-130-91005	10	+100% -10	16V	EC
C226	123-130-91005	10	+100% -10	16V	EC
C227	121-310-94701	0.0047			My
C228	121-310-92702	0.027			My
C230	121-310-94702	0.047			My
C231	124-636-91003	0.1	±20%	16V	AL
C232	124-636-93303	0.33	±20%	16V	AL
C233	123-120-92206	220	+100% -10	10V	EC
C236	125-614-91000	100P	±10%		
C240	123-161-91004	1	+150% -10		EC
C241	123-141-94704	4.7	+150% -10	25V	EC
C242	123-141-94704	4.7	+150% -10	25V	EC
C243	123-141-94704	4.7	+150% -10	25V	EC
C244	121-310-91502	0.015			My
C245	121-310-93902	0.039			My
C246	121-310-94702	0.047			My
C247	121-310-93902	0.039			My
C248	125-614-93300	330P	±10%		
C249	125-614-95600	560P	±10%		
C260	123-161-91004	1			EC
C261	123-161-91004	1	+150% -10		EC
C262	126-403-92200	220P	±10%	100V	SM
C270	123-161-94703	0.47	+150% -10		EC
C271	123-130-91005	10	+150% -10	16V	EC
C272	123-140-91005	10	+150% -10	25V	EC
C273	123-130-91005	10	+150% -10	16V	EC
C274	121-310-96802	0.068			My
C280	121-310-92201	0.0027			My
C281	121-310-93301	0.0033			My
C301	123-150-94706	470	+100% -10	35V	EC
C302	123-140-94706	470	+100% -10	25V	EC
C303	123-140-92206	220	+100% -10	25V	EC
C304	123-130-92207	2200	+100% -10	16V	S-EC
C305	120-097-63313	0.01	±10%	125V	MP (CND)
















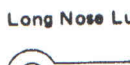




















Ref. No.	Parts No.	Description			
C305	120-930-D2412	0.01	±10%	250V	MP (AUS, UK, AEP)
C306	120-930-D2412	0.01	±10%	250V	MP (AEP)
C307	123-140-93305	33	+100% -10	25V	EC
C308	124-656-91003	0.1	±20%	25V	AL
C309	124-361-91003	0.1	±20%	35V	T
C310	121-311-95601	0.0056	±10%		My
C311	121-311-95601	0.0056	±10%		My
C312	121-311-91502	0.015	±10%		My
C313	127-121-D1205	0.0022	±10%	630V	PP
C314	123-130-91006	100	+100% -10	16V	EC
C315	123-130-92206	220	+100% -10	16V	EC
C316	123-140-93306	330	+100% -10	25V	EC (Small type)
C317	123-161-94703	0.47	+150% -10		EC
C318	123-113-91006	100	±20%	6.3V	EC
C319	123-130-91005	10	+100% -10	16V	EC
C320	123-161-92204	2.2	+150% -10		EC
C410	123-161-92204	2.2	+150% -10		EC
C411	125-613-91500	150P			
C412	121-310-91501	0.0015			My
C413	123-141-94704	4.7	+150% -10	25V	EC
C420	123-161-92204	2.2	+150% -10		EC
C421	125-613-91500	150P			CE
C422	121-310-91501	0.0015			My
C423	123-141-94704	4.7	+150% -10	25V	EC
C430	123-130-91005	10	+100% -10	16V	EC
C431	121-310-91002	0.01	±20%		My
C432	125-613-92200	220P			
C451	123-120-91006	100	+100% -10	10V	EC
C452	123-130-94705	47	+100% -10	16V	S-EC
C453	123-130-94705	47	+100% -10	16V	EC
C454	123-130-91005	10	+100% -10	16V	EC
C455	123-130-91005	10	+100% -10	16V	EC
C456	123-130-91005	10	+100% -10	16V	EC
OTHERS					
S301	045-100-62282	Switch, Power (CND, USA)			
S301	045-110-62778	Switch, Power (AEP, UK, AUS)			
S302	043-900-63491	Switch, Slide			
S303	046-790-63581	Switch, Push			
S304	043-400-61249	Switch, Slide			
J101	050-813-63378	Jack, 6.3φ			MIC
J201	050-813-63378	Jack, 6.3φ			MIC
J301	051-953-63488	Jack, DIN	REC/PB		

Ref. No.	Parts No.	Description
J303	050-813-63379	Jack, 6.3 Headphone
J304	051-423-62628	Jack, Pin Line in
J305	051-423-62628	Jack, Pin Line out
PL301	140-306-D1972	Lamp 12V/100mA
CP301	117-000-62630	Combination Parts (USA)
MD451	166-900-63128	SDME DM-101A
	054-121-63659	Cord, Power Supply (CND, USA)
	058-201-63676	Cord, Power Supply (AUS)
	058-301-63675	Cord, Power Supply (UK)
	058-101-63495	Cord, Power Supply (AEP)
	422-140-33465	Stopper, Cord (CND, USA)
	422-140-D1447	Stopper, Cord (AEP, UK, AUS)
	425-410-D2493	Plate, Shield
	3-701-748-01	Clamper, Wire

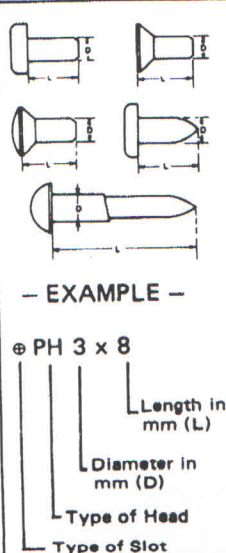
Ref. No.	Parts No.	Description
	070-091-D2632	Meter
	056-010-44395	Wire Nut
	427-320-D2531	Sheet, Isolation
	470-939-77032	Lead Pin
	150-000-63582	PC Board
	1-535-143-61	Wire, Jumper P=5mm
	1-535-143-11	Wire, Jumper P=10mm
	1-535-143-31	Wire, Jumper P=15mm
	1-535-143-51	Wire, Jumper P=20mm
	056-990-D0579	Wire, Jumper P=25mm
	1-153-149-11	Wire, Jumper P=30mm
	457-143-D0622	Lug (Wire Clamper)
	451-998-D1215	Screw, PTT 3x6
	536-020-D1188	Spring (S302~S304)

7-2: Hardware Nomenclature

All screws are phillips type (cross recess type) unless otherwise indicated. (-): slotted head.

Binding Head Screw  BH	Pan Head Tapping Screw  A-type PHT  B-type	Pan Head Screw with Washer  PH/W	Hexagon Nut  HN	Terminal Lug  TL
Oval Countersunk Head Screw  OCH	Oval Countersunk Tapping Screw  A-type OCT  B-type	Pan Head Screw with Washer & Spring Washer  PH/SWW	Flange Nut  FN	Earth Lug  EL
Flat Countersunk Head Screw  FCH		Set Screw  SS	Wave Washer  WW	Long Nose Lug  LNL
Round Head Screw  RH	Pan Head Screw with Washer  PHW	Round Head Wood Screw  RHW	Speed Nut  SN	
Pan Head Screw  PH	Pan Head Tapping Screw with Washer  A-type PHTW  B-type	Flat Countersunk Wood Screw  FCW	Spring Washer  SW	
Truss Head Screw  TH		Oval Countersunk Wood Screw  OCW	Toothed Washer  External TW  Internal TW  Double Toothed	
Binding Head Tapping Screw  A-type BHT  B-type	Pan Head Screw with Spring Washer  PH/SW	Metal Washer  W TW: Teflon Washer FW: Fiber Washer NW: Nylon Washer PW: Poly Slider Washer	Powerful Stop Ring  PSR  E-Washer EW	

- EXAMPLE -



PH 3 x 8
 Length in mm (L)
 Diameter in mm (D)
 Type of Head
 Type of Slot