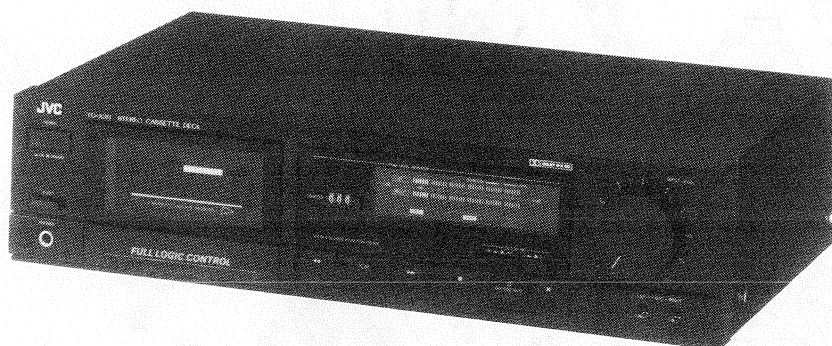


JVC

SERVICE MANUAL

STEREO CASSETTE DECK

TD-X311BKX G



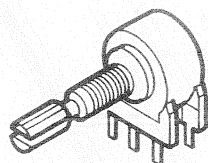
Since the model TD-X311BKX G is a secondary product of the model TD-X311 G, they are about the same in the specifications.

For servicing the TD-X311BKX G, refer to the service manual for the TD-X311 G, No. 4291.

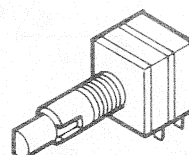
Alteration in Main Parts

The type of the input volume control is changed as follows:

- from : Single shaft, dual coils
- to : Double shafts, dual coils



TD-X311 G



TD-X311BKX G

Contents

	Page		Page
1 Exploded View of Enclosure Assembly	2	3 Location of P. C. Board Parts	6
Enclosure Assembly Parts List	3	4 Wiring	7
2 Standard Schematic Diagram	4		

1 Exploded View of Enclosure Assembly

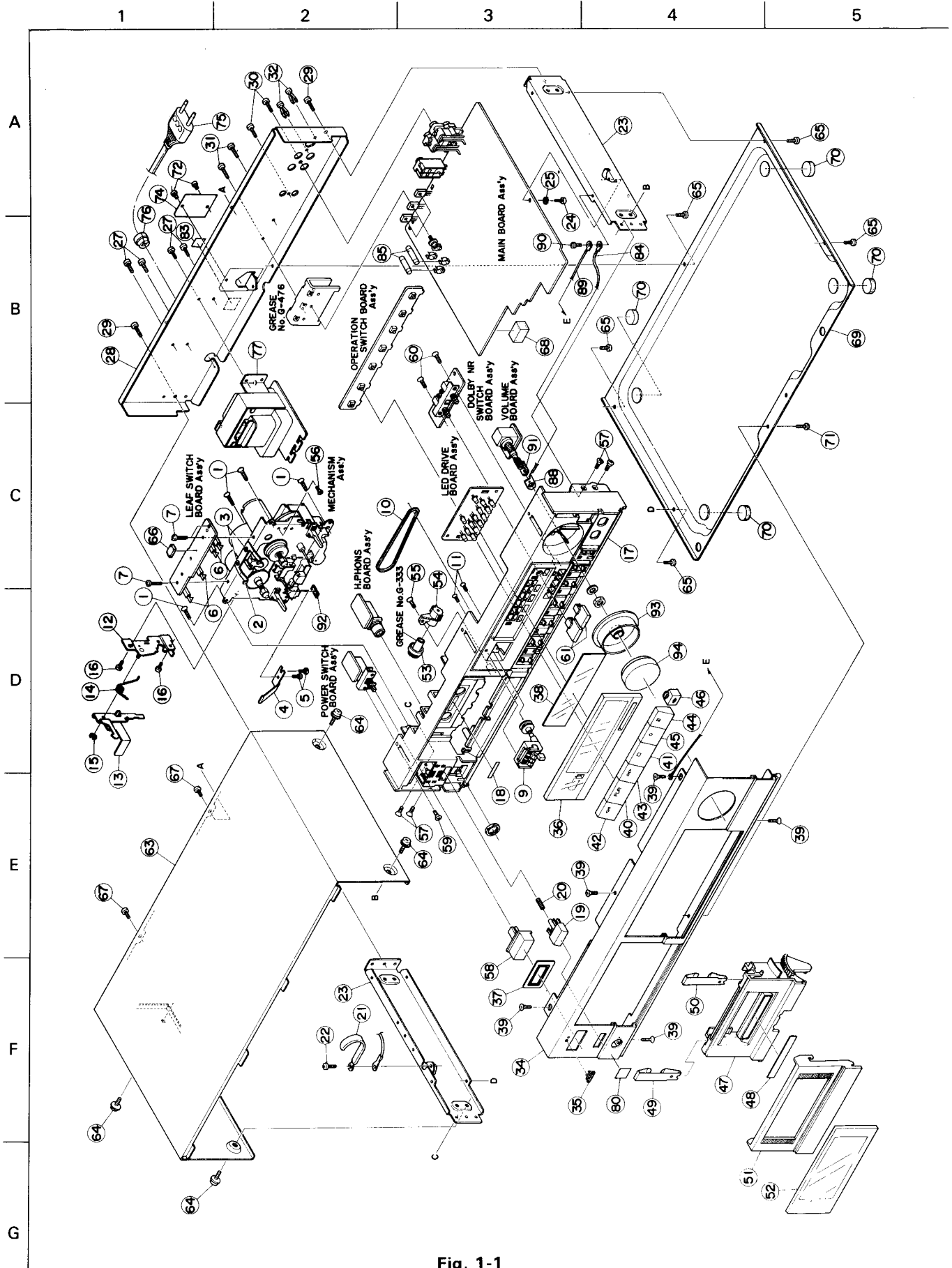


Fig. 1-1

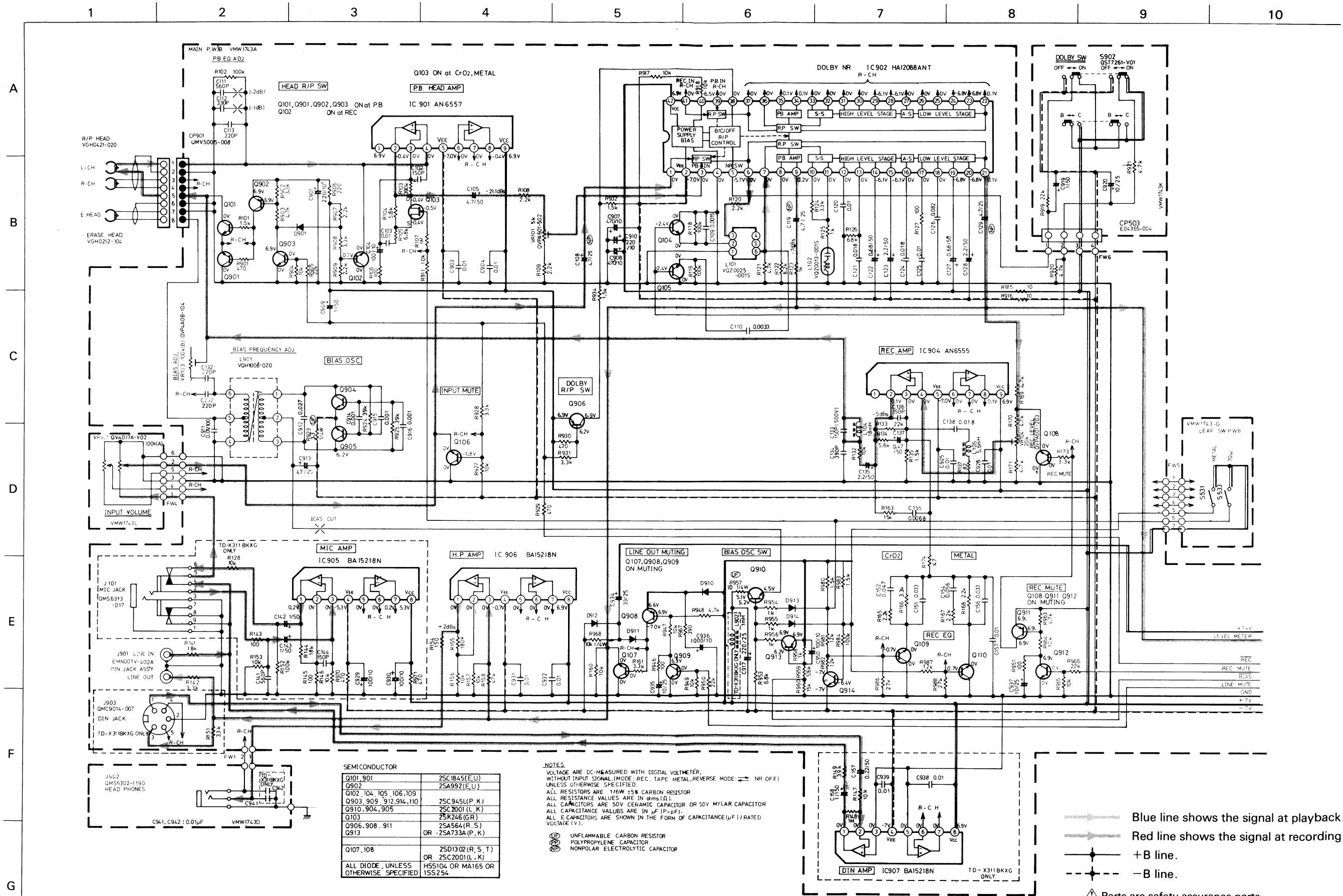
△ Parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

Enclosure Assembly Parts List

△ REF.	PARTS NO.	PARTS NAME	REMARKS	QTY
1	SSSF3010Z	SCREW	MECHA+F.PANEL	4
2	VKY4279-001	PACK SPRING		1
3	SDST2604Z	SCREW		2
4	VKY4497-001	HOLDER SPRING	MECHA	1
5	SDST2603Z	SCREW	H.SPRING	2
6	VSH1140-002	LEAF SWITCH	MECHA	4
7	SDST2608Z	SCREW	LEAF SW PWB	3
9	VKC5189-001T	TAPE COUNTER		1
10	VKB3000-053	COUNTER BELT		1
11	SSSF2606Z	SCREW	TAPE COUNTER	2
12	VKL6066-00A	EJECT BKT ASS'Y		1
13	VKM3124-001	EJECT LEVER		1
14	VKW4643-001	TORSION SPRING		1
15	REE2500	E.RING		1
16	SDST2605Z	SCREW		2
17	VJC1688-002	FRONT PANEL		1
18	VJD4024-001	REFLECTION PLAT		1
19	VXP4349-00A	PUSH BUTTON		1
20	VKW3001-063	COMP.SPRING		1
21	VKZ4001-011	WIRE HOLDER		1
22	SDST3006Z	SCREW		2
23	VKL3817-003	SIDE CHASSIS		2
24	SDST3006Z	SCREW	P.W.B	1
25	WBS3000N	WASHER		1
26	SSST3008Z	SCREW	F.PANEL	1
27	SDST3006M	SCREW	P.TRANS	4
28	VJC2266-007	REAR PANEL		1
29	SDST3006M	SCREW	R.PANEL+C.CHASSIS	2
30	SDSF3008M	SCREW	P.JACK+DCS	2
31	SDSF3008M	SCREW	HEAT SINK	2
32	E48729-002	PLASTIC RIVET		2
34	VJC1689-007	FRONT PLATE		1
35	E72968-001	JVC MARK		1
36	VJK3430-004	FINDER		1
37	E73878-002	P.BUTTON ESCUTC		1
38	VJD5119-002	LED PLATE		1
39	SSSF3010Z	SCREW	F.PANEL+F.PLATE	5
40	VXP3221-007	MECHA BUTTON	PLAY	1
41	VXP3221-008	MECHA BUTTON	STOP	1
42	VXP3221-009	MECHA BUTTON	REW	1
43	VXP3221-010	MECHA BUTTON	FF	1
44	VXP3221-011	MECHA BUTTON	PAUSE	1
45	VXP3221-012	MECHA BUTTON	REC/REC MUTE	1
46	VXP4686-001	PUSH BUTTON	DIRECTION	1
47	VJT2177-001	CASSETTE HOLDER		1
48	VJD5143-002	HOLDER PLATE		1
49	VKY4382-007	CASSETTE SPRING		1
50	VKY4382-008	CASSETTE SPRING		1
51	VJT3242-002	CASSETTE LID		1
52	VJT4149-001	CASSETTE FINDER		1
53	VYH5033-002	DAMPER HOLDER		1
54	VYH4769-002	GEAR		1
55	SBSF3010Z	SCREW		1
56	SSSF3010Z	SCREW		1
57	SSST3006Z	SCREW		4

△ REF.	PARTS NO.	PARTS NAME	REMARKS	QTY
58	E73877-001	PUSH BUTTON	POWER	1
59	SSSP3008Z	SCREW		1
60	SSSF3010Z	SCREW		2
61	E71268-002	PUSH KNOB	INPUT	2
63	VJC2101-008	TOP COVER		1
64	VKZ3001-004	SPECIAL SCREW		4
65	SDST3006Z	SCREW		5
66	VYSR103-022	SPACER		1
67	SDST3006M	SCREW		2
68	VYSH115-004	SPACER	P.C.B.	1
69	VJC1590-002	BOTTOM COVER		1
70	VJF4003-002	FOOT		4
71	SDSF3010Z	TAP.SCREW		1
72	SDST3006M	SCREW		2
74	VYN2235-008KK	NAME PLATE		1
△ 75	QMP3900-200	POWER CORD		1
△ 76	QHS3876-162	S.R.BUSHING		1
△ 77	VTP54C3-061B	POWER TRANS		1
80	VNC5004-001	MARK STICKER		1
83	VND4037-002	F MARK		1
84	VWE350-10A2NT	WIRE WITH LUG		1
△ 85	QMF51A2-R80	FUSE	F1,F2	2
88	VMA4383-001	EARTH PLATE		1
89	VWE350-08NTNT	LUG WIRE		1
90	SDST3006Z	SCREW		1
91	VYSA1R2-008	SPACER		1
92	VYSR103-028	SPACER		1
93	VXL4325-001	KNOB (A)		1
94	VXL4326-001	KNOB (B)		1

2 Standard Schematic Diagram



SEMICONDUCTOR

Q101, 901	25C1845(E,U)
Q902	25A992(E,U)
Q102, 104, 105, 106, 109	
Q903, 909, 912, 914, 110	25C945L(P, K)
Q910, 904, 905	25C2001(L, K)
Q103	25K246(GR)
Q906, 908, 911	25A564(R, S)
Q913	OR 25A733A(P, K)
Q107, 108	25D1302(R, S, T)
	OR 25C2001(L, K)
ALL DIODE, UNLESS OTHERWISE SPECIFIED	H5S104 OR MA165 OR 15S254

- NOTES.**
 VOLTAGE ARE DC-MEASURED WITH DIGITAL VOLTMETER, WITHOUT INPUT SIGNAL (MODE: REC, TAPE METAL, REVERSE MODE: NR OFF) UNLESS OTHERWISE SPECIFIED.
 ALL RESISTORS ARE 1/6W ±5% CARBON RESISTOR
 ALL RESISTANCE VALUES ARE IN ΩMS (Ω, K, M)
 ALL CAPACITORS ARE 50V CERAMIC CAPACITOR OR 50V MYLAR CAPACITOR
 ALL CAPACITANCE VALUES ARE IN μF (P=PF).
 ALL E-CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE (μF) / RATED VOLTAGE (V).
 (C) INFLAMMABLE CARBON RESISTOR
 (P) POLYPROPYLENE CAPACITOR
 (N) NONPOLAR ELECTROLYTIC CAPACITOR

Fig. 2-1 4 (No. 4291B)

Blue line shows the signal at playback.
 Red line shows the signal at recording.
 +B line.
 -B line.
 ⚠ Parts are safety assurance parts.
 When replacing those parts, make sure to use the specified one.

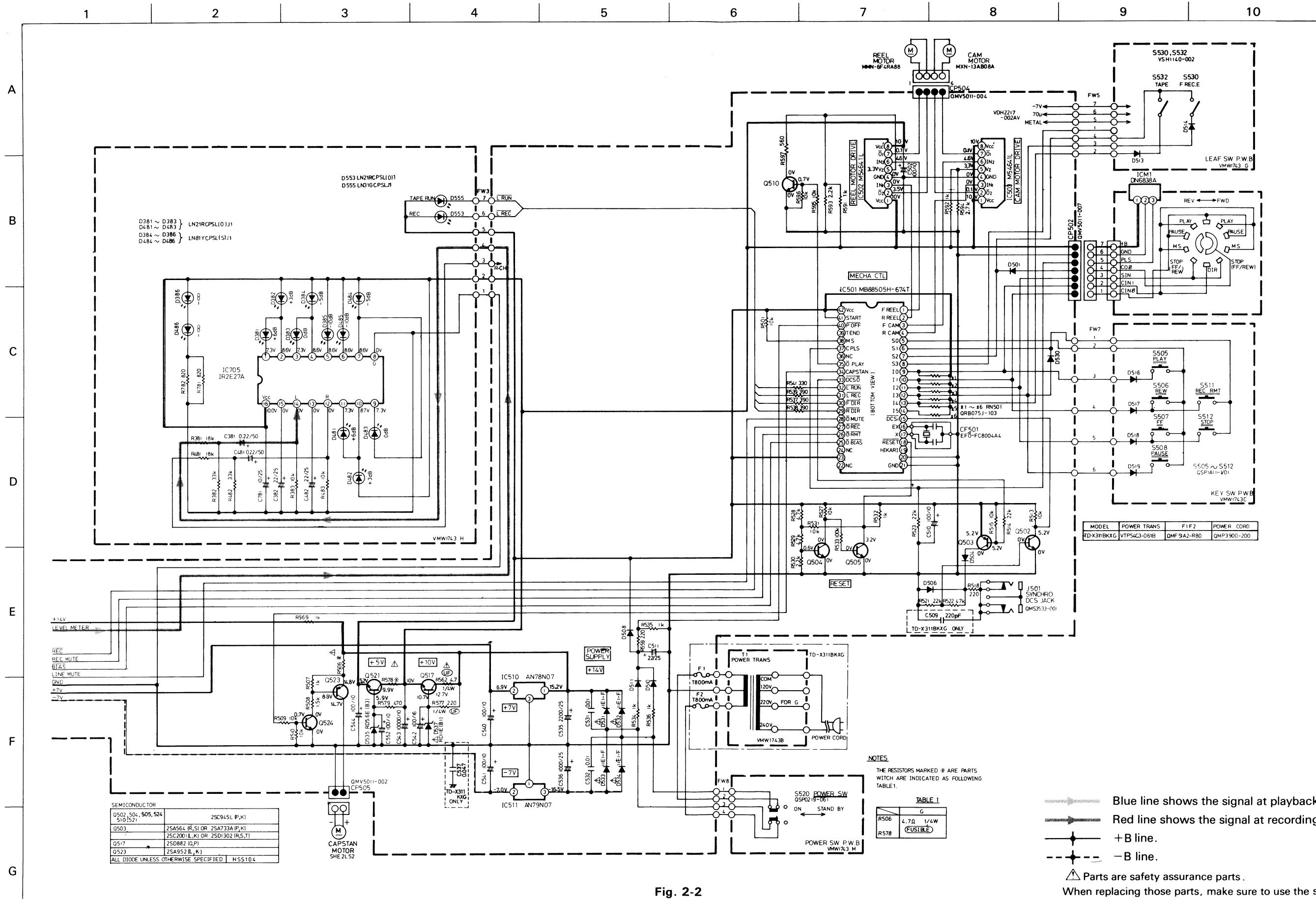


Fig. 2-2

3 Location of P. C. Board Parts

1 2 3 4 5 6 7 8 9 10

A
B
C
D
E
F
G

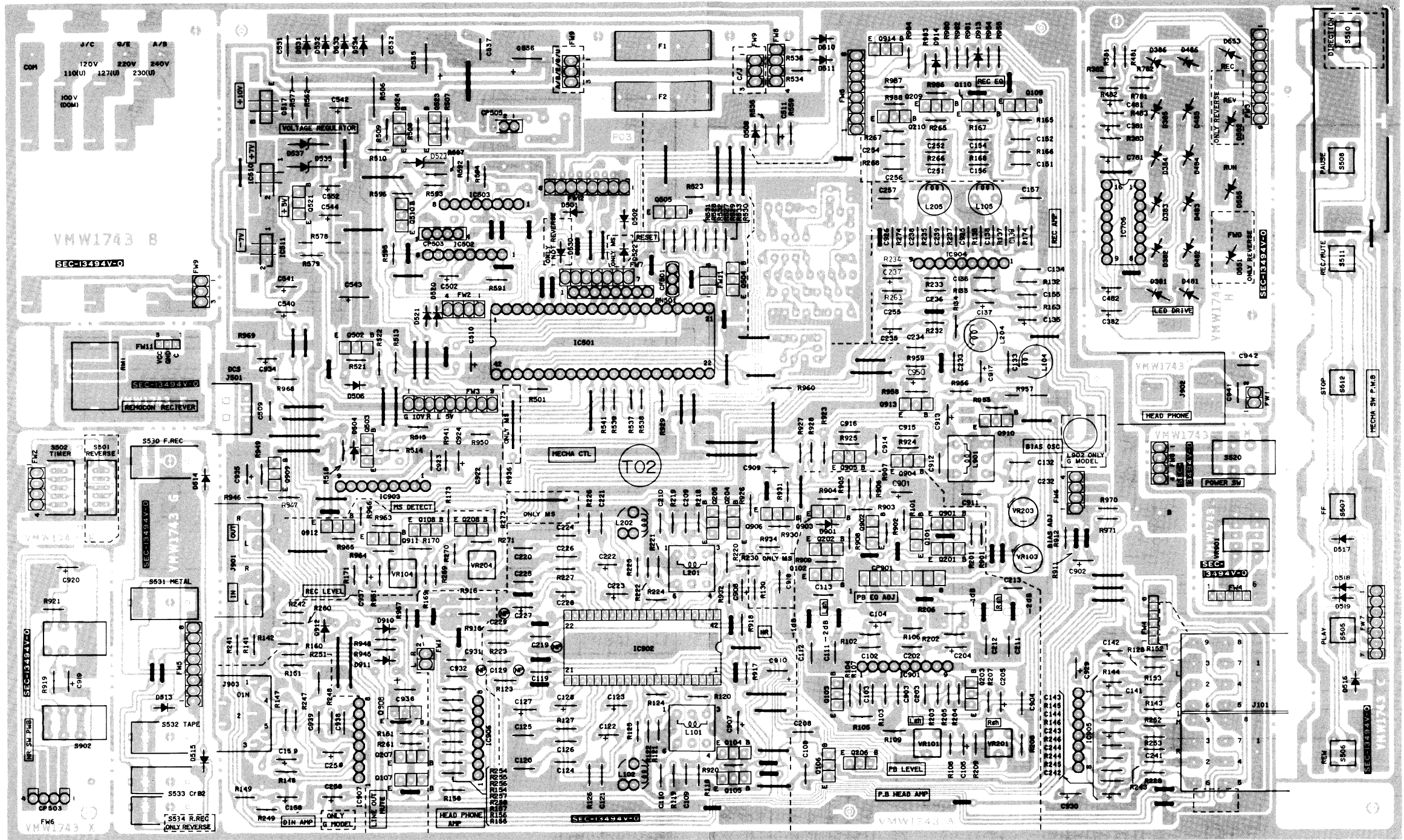
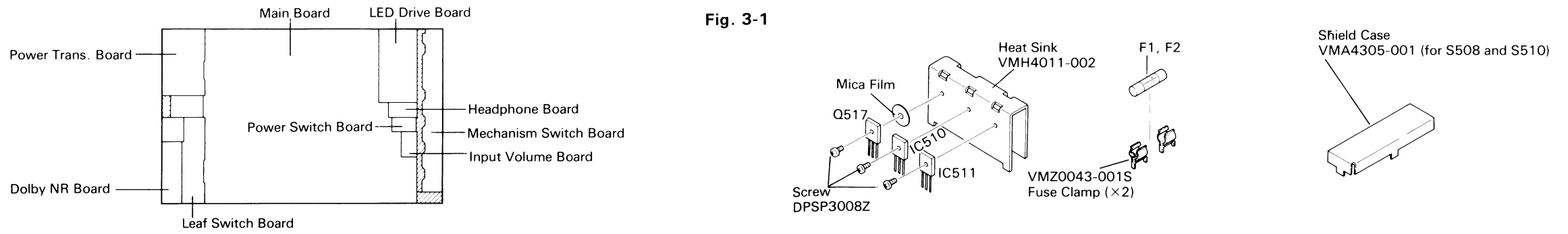


Fig. 3-1



4 Wiring

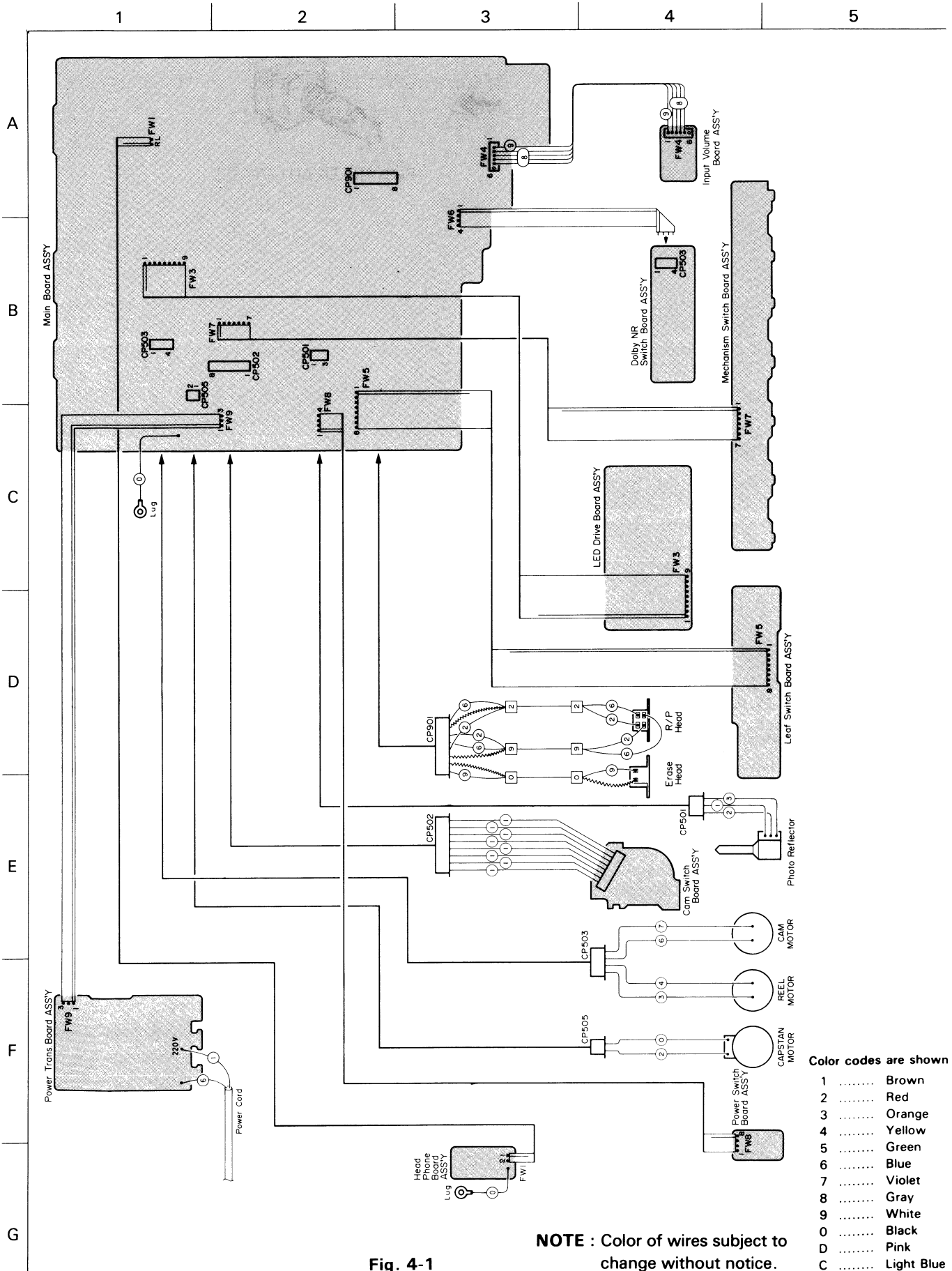
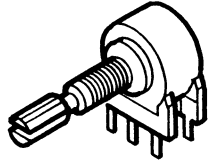


Fig. 4-1

NOTE : Color of wires subject to change without notice.

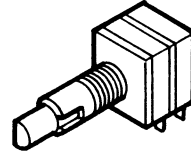
VR901



Parts No. QVD7A7A-015V



VR901



Parts No. QVAD17A-V02

JVC

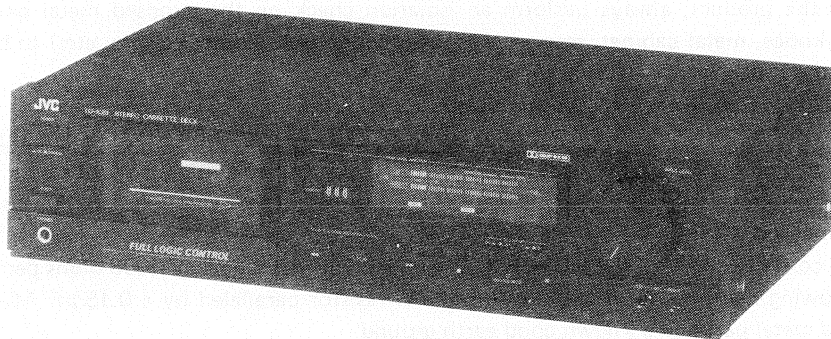
VICTOR COMPANY OF JAPAN, LIMITED.
AUDIO PRODUCTS DIVISION MAEBASHI PLANT 10-1, 1-chome, Ohwatari-cho, Maebashi-city 371, Japan

JVC

SERVICE MANUAL

STEREO CASSETTE DECK

TD-X311 A/B/C/E/G/J/U



Area suffix

A	.....	Australia
B	.....	U.K.
C	.....	Canada
E	.....	Continental Europe
G	.....	W. Germany
J	.....	U.S.A.
U	.....	Other Areas

Contents

	Page		Page
1 Safety Precautions	2	8 Main Adjustments	10
2 Features	3	9 Standard Schematic Diagram	12
3 Specifications	3	10 Wiring Connections	14
4 Name of Controls and Their Functions	4	11 Location of P.C. Board Parts and Parts List	
5 Location of Main Parts	5	Main P.C. Board	15
6 Removal of Main Parts		12 Exploded View of Mechanism Assembly	18
Enclosure Section	6	13 Exploded View of Enclosure Assembly	20
Deck Section	7	14 Packing	23
7 Block Diagram	9	15 Accessories	Back Cover

1 Safety Precautions

1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the product have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by (\triangle) on the Schematic Diagram and Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
5. Leakage current check (Electrical shock hazard testing)
After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

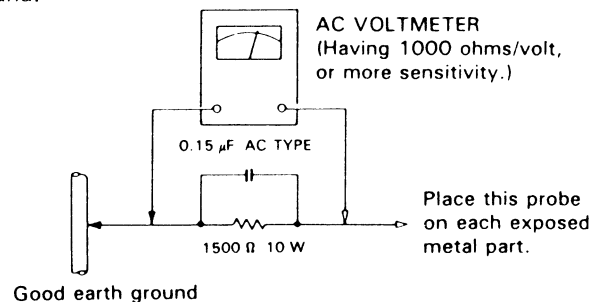
Do not use a line isolation transformer during this check.

- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5 mA AC (r.m.s.).
- Alternate check method

Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500 Ω 10 W resistor paralleled by a 0.15 μ F AC-type capacitor between an exposed metal part and a known good earth ground.

Measure the AC voltage across the resistor with the AC voltmeter.

Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning


1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

2 Features

1. 2-motor full logic mechanism
2. Dolby* B/C noise reduction system
3. 2-color 6-LED peak level indicator
4. Auto tape selection mechanism
5. COMPU LINK-1/SYNCHRO terminal

COMPU LINK Control System

COMPU LINK control system is the convenient system using COMPU LINK-1/SYNCHRO terminals on the rear panel. (See pages 10 and 25.)

- * Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
- * "Dolby" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

3 Specifications

Type	: Stereo cassette deck	LINE IN	: Min. input level; 80 mV
Track system	: 4-track, 2-channel	(x 1 circuit)	Input impedance; 50 k Ω
Tape speed	: 1-7/8 inch/sec (4.8 cm/sec)	MIC x 2	: Max. sensitivity; 0.4 mV (–60 dBV)
Frequency response	: Metal tape; 20–17,000 Hz	(TD-X311A/B/E/	Matching impedance; 600 Ω – 10 k Ω
(–20 dB recording)	30–16,000 Hz (\pm 3 dB)	G/U)	
	Chrome tape; 20–16,000 Hz	Output terminals	
	30–15,000 Hz (\pm 3 dB)	LINE OUT	: Output level; 300 mV
	Normal tape; 20–16,000 Hz	(x 1 circuit)	Output impedance; 5 k Ω
	30–15,000 Hz (\pm 3 dB)	PHONES x 1	: Output level; 0.3 mW/8 Ω
S/N ratio	: 58 dB (S = 1 kHz, K3 = 3%, N = A-weighted, Metal tape)		Matching impedance; 8 Ω – 1 k Ω
	The S/N is improved by about 15 dB at 500 Hz and by max. 20 dB at 1 kHz ~ 10 kHz with Dolby C NR on and improved by 5 dB at 1 kHz and by 10 dB at above 5 kHz with Dolby B NR on.	DIN jack	: Min. input level; 0.1 mV/k Ω
Improvement of MOL: 4 dB at 10 kHz with Dolby C NR on.		(TD-X311G)	Input impedance; 10k Ω
Wow and flutter	: 0.08% (WRMS)		Output level; 300mV
Channel separation	: 40 dB (1 kHz)		Output impedance; 5k Ω
Crosstalk	: 60 dB (1 kHz)	Other terminals	: COMPU LINK-1/SYNCHRO x 2
Harmonic distortion	: K3; 0.5%, THD; 1.0% (Metal tape, 1 kHz 0 VU)	Power requirement	
Heads	: METAPERM head for recording/playback x 1,	TD-X311A/B	: AC 240 V, 50/60 Hz
	2-gap ferrite head for erasure x 1	TD-X311C/J	: AC 120 V, 60 Hz
Motors	: Electronic governed DC motor for capstan x 1	TD-X311E/G	: AC 220V, 50/60Hz
	DC motor for reel x 1	TD-X311U	: AC 230/127/110 V, 50/60 Hz
	DC motor for mechanism drive x 1	Power consumption	: With power switch on; 14 W
Fast forward/			With power switch standby; 1.2 W
Rewind time	: Approx. 100 sec. with C-60 cassette	Dimensions	: 435 x 112 x 290 mm
Input terminals		(W x H x D)	(17-3/16" x 4-7/16" x 11-7/16")
		Weight	: 3.8 kg (8.4 lbs)
		Accessories	: Pin plug cord 2
			Remote cable 1

Design and specifications are subject to change without notice.

4 Name of Controls and Their Functions

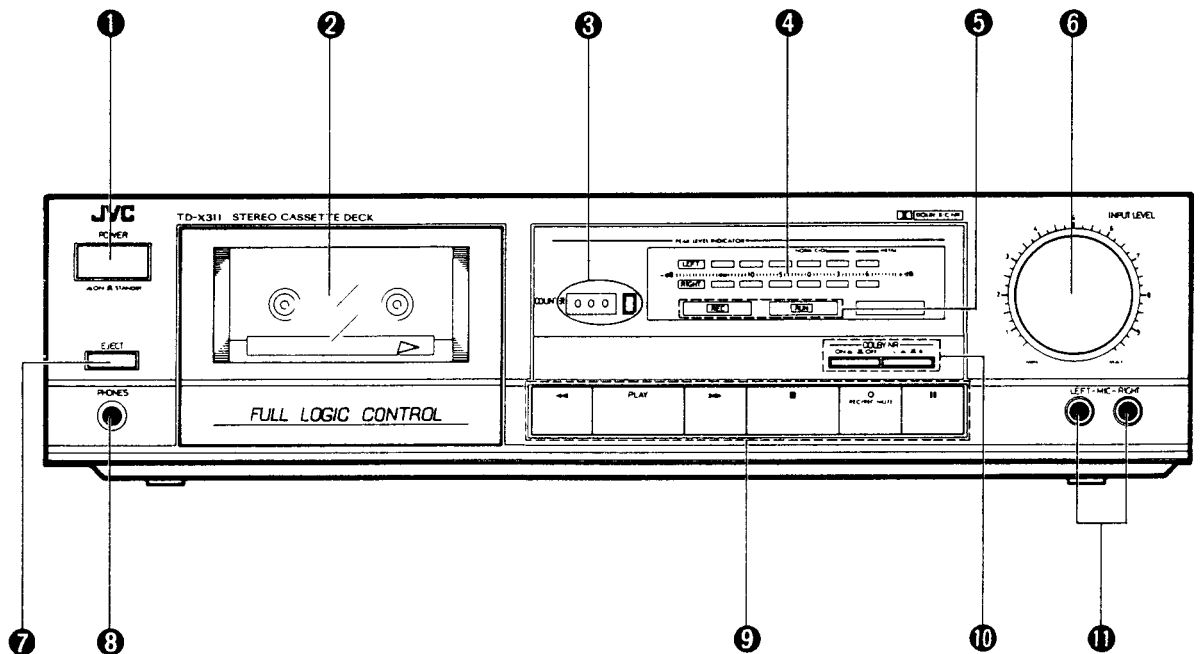


Fig. 4-1

1 POWER switch

2 Cassette holder

3 Tape COUNTER and reset button

4 PEAK LEVEL indicators

These indicate the recording level during recording and output level during playback. The LED indication varies with the signal strength during recording and playback.

5 Operation mode indicators

REC: Lights in the recording and record-pause modes; flashes during record muting.

RUN: Flashes when the tape is running.

6 INPUT LEVEL control

Adjust the recording level with this control.

7 EJECT button

Press to open the cassette holder.

8 PHONES jack

Connect headphones (with an impedance of 8 Ω to 1 k Ω).

9 Cassette operation buttons

◀◀ (rewind): Press to rewind the tape.

▶▶ (fast forward): Press to fast forward the tape.

■ (stop): Press to stop the tape.

○ REC/REC MUTE: Press the PLAY button while pressing this button to start recording, and press to leave an appropriate non-recorded section. (See page 23.)

|| (pause): Press to stop the tape temporarily. Press the PLAY button to release the pause mode. When pressed together with the ○ REC/REC MUTE before recording, the unit will enter the record-pause mode.

10 DOLBY NR switches

The left switch switches on and off noise reduction and the right switch selects which noise reduction system (Dolby B NR or Dolby C NR) is to be used.

11 Mic jacks (LEFT, RIGHT)

(TD-X311A/B/E/G/U)

Connect microphones (with an impedance of 600 Ω to 10 k Ω) to these jacks.

With microphones connected to these jacks, the input to LINE IN (REC) or DIN (for G version) terminals is cut off automatically.

5 Location of Main Parts

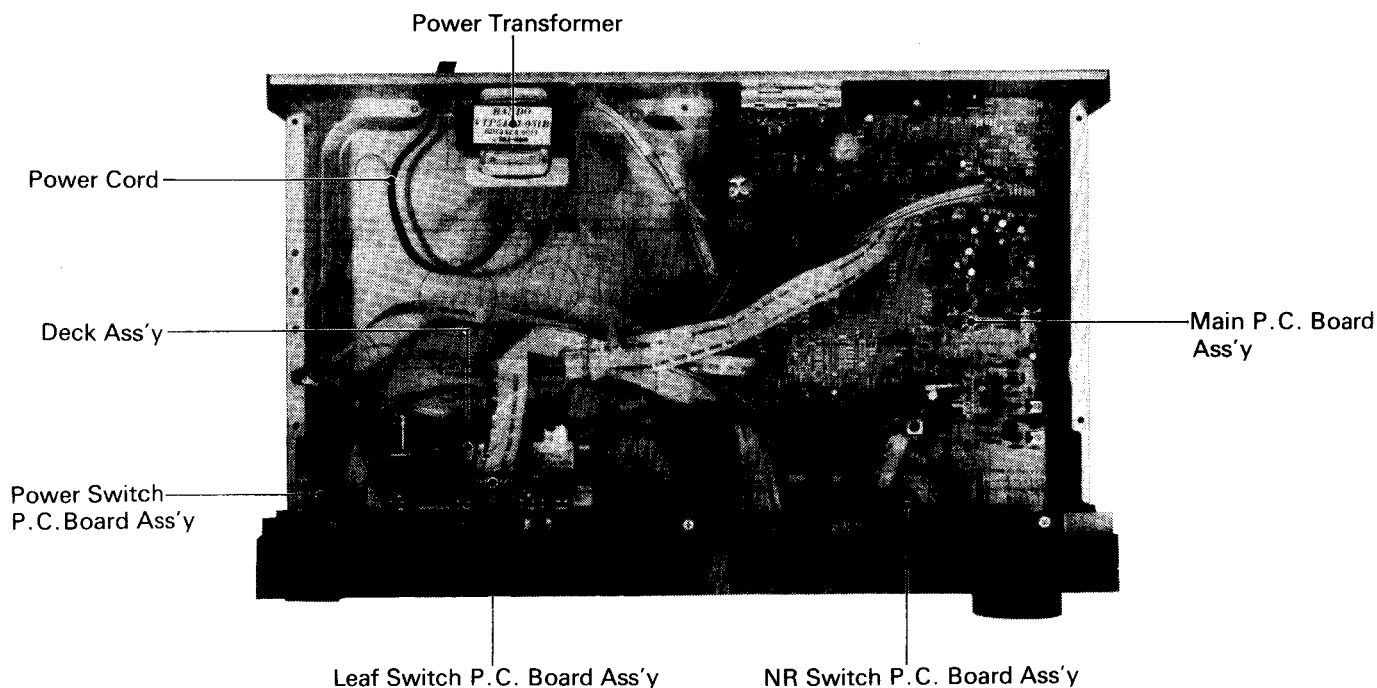


Fig. 5-1

6 Removal of Main Parts

■ Enclosure Section

■ Top cover

1. Remove four screws retaining the both sides of the top cover.
2. Remove two screws retaining the back sides of the top cover.

■ Bottom cover

Remove six screws ① ① retaining the top and bottom side of the bottom cover. (Fig. 6-1)

■ Front plate

Remove five screws ② retaining the top and bottom side of the front plate. (Fig. 6-2)

■ Front panel

1. Remove four screws ③ retaining the both sides of the front panel. (Fig. 6-2)
2. Disconnect connectors CP501, CP502, CP503, CP505 and CP901 of Main board ass'y.
3. If necessary, remove dressed wires temporarily.
4. Pull out the Main board ass'y.

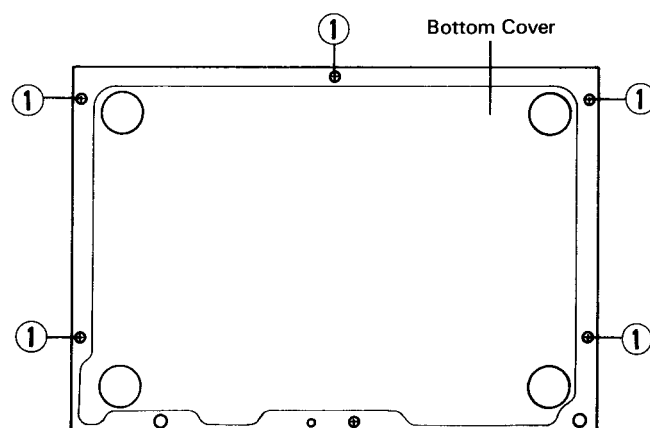


Fig. 6-1

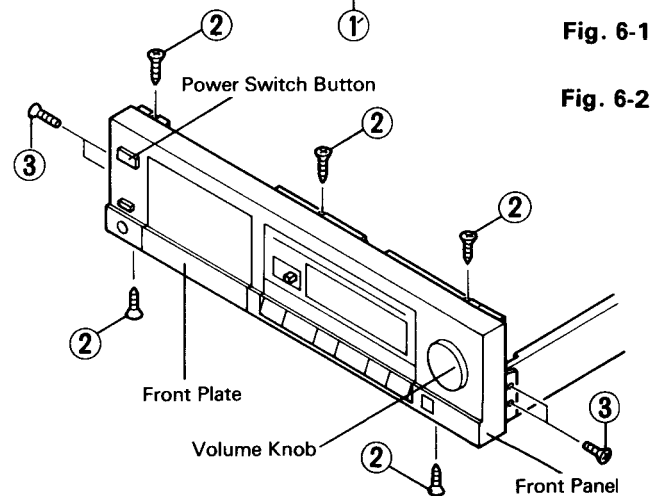


Fig. 6-2

■ Deck Section

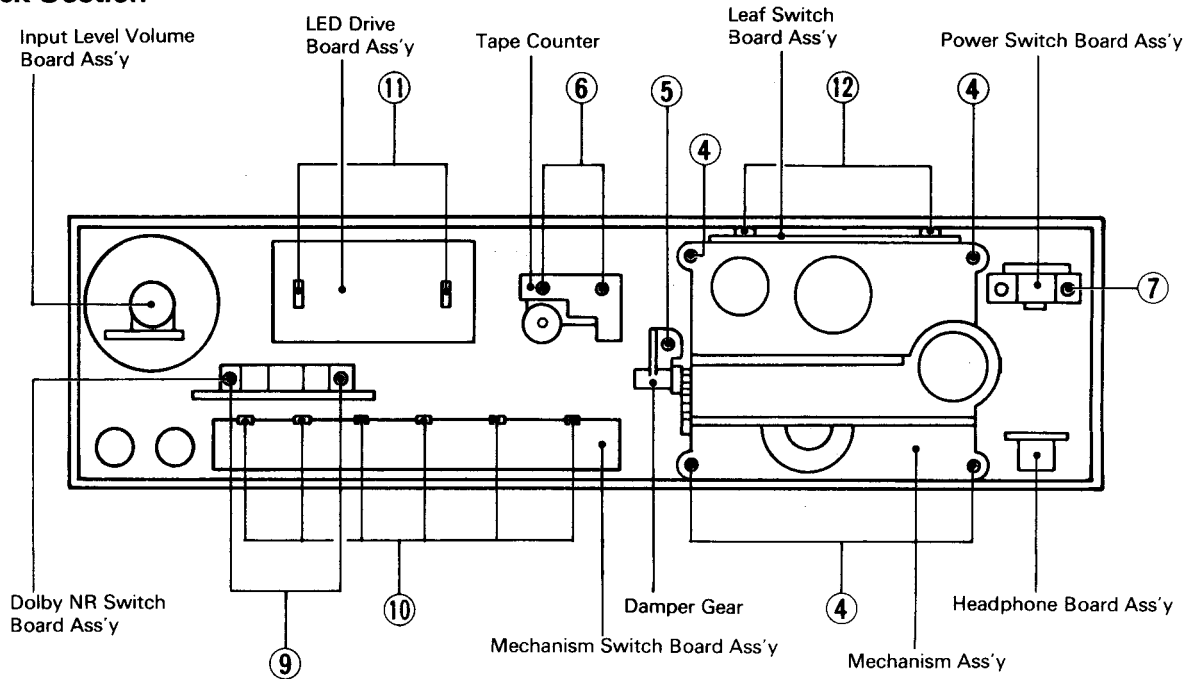


Fig. 6-3

■ Mechanism ass'y

1. Remove the counter belt.
2. Remove four screws ④ retaining the mechanism ass'y. (Fig. 6-3)
3. Press the EJECT button to open the cassette door.
4. Remove two screws ⑫ retaining the leaf switch board ass'y to mechanism ass'y. (Fig. 6-3)

■ Cassette door

1. Remove one screw ⑤ from damper gear. (Fig. 6-3)
2. Remove the cassette cover from the front panel disengaging its fulcrums on both sides and pull it out forward.

■ Tape counter

1. Remove two screws ⑥ retaining the tape counter. (Fig. 6-3)

■ Input level volume board ass'y

1. Pull out the volume knob. (Fig. 6-3)
2. Remove the nut for volume.

■ Power switch board ass'y

1. Pull out the power switch button.
2. Remove one screw ⑦ from power switch.

■ Headphone board ass'y

- Pull out the headphone board ass'y and lift it upward.

■ Dolby NR switch board ass'y

1. Remove two screws ⑨ from the Dolby NR switch. (Fig. 6-3)
2. Remove two buttons.

■ Mechanism switch board ass'y

- Remove six pawls ⑩ retaining the mechanism switch board ass'y. (Fig. 6-3)

■ LED drive board ass'y

- Remove two pawls ⑪ retaining the LED drive board ass'y.

■ Mechanism (Deck) Section

■ REC/PB head ass'y (Fig. 6-4)

1. Remove two screws ① retaining the REC/PB head ass'y (one screw for adjustment).

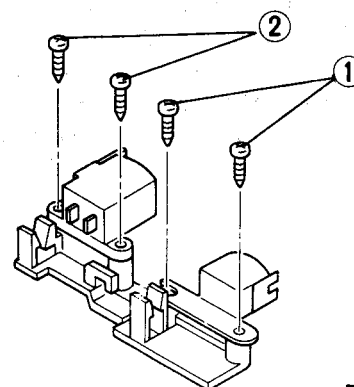


Fig. 6-4

■ Erase head (Fig. 6-4)

1. Remove two screws ② retaining the erase head.

■ Pinch roller ass'y

Push a pawl catching the pinch roller ass'y on the chassis in the direction of the arrow mark (Fig. 6-5) to remove it.

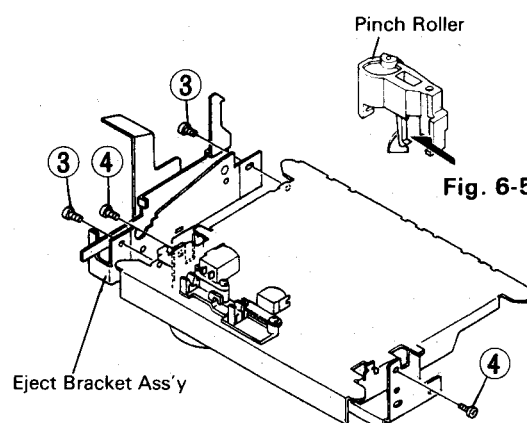


Fig. 6-5

■ Flywheel bracket (FM bracket)

1. Remove two screws ③ securing the eject bracket ass'y. (Fig. 6-6)
 2. Remove two screws ④ securing the flywheel bracket from the both sides. (Fig. 6-6)
- When the FM bracket is removed, the main belt is disengaged at the same time.
 - The capstan motor and flywheel ass'y can be replaced by this procedure. (Fig. 6-7)

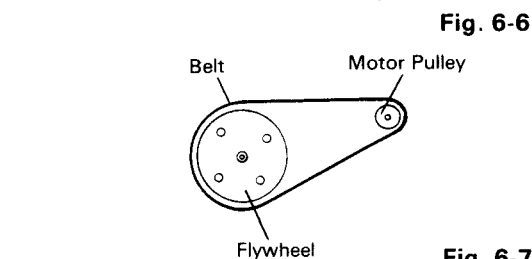


Fig. 6-6

Fig. 6-7

■ Disk base unit

Remove two screws ⑤ and ⑥ securing the disk base unit. (Fig. 6-8, Fig. 6-9)

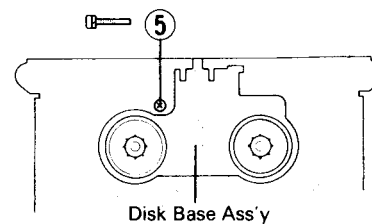


Fig. 6-8

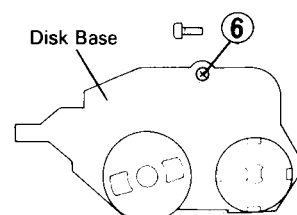


Fig. 6-9

• **Re-assembling of disk base unit**

1. Re-assemble the disk base unit in order of numbers (**A**) to (**E**) shown in Fig. 6-10.
 - a) When setting the cam gear, make sure of its positioning so that the gear's wide side makes a right angle with the disk, while its small side is in parallel with the disk as shown in Fig. 6-11.

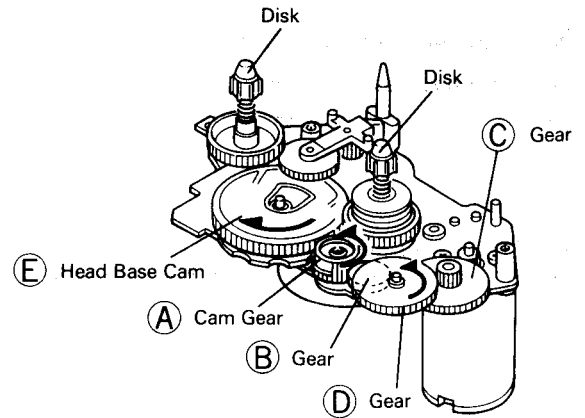


Fig. 6-10

- b) Engage the gears (**B**), (**C**) and (**D**) with each other. (Fig. 6-10)
 - c) When putting back the head base cam (**E**), pay careful attention to positioning it so that big and small concaves are paralleled with the disk. (Fig. 6-12)
2. Turn the gears (**B**), (**D**) in the direction of the arrow mark, and stop turning when the cam gear (**A**) and the head base cam (**E**) are free from each other (slit of the head base cam can be seen on the opposite side).

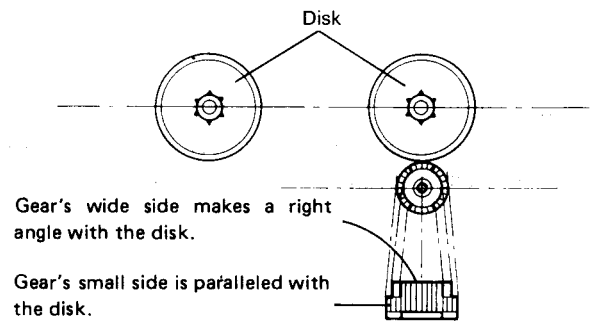


Fig. 6-11

• **Fixing disk base unit to chassis**

Join together the head base cam and the pinch roller cam so as to catch on each other by the slits.(Fig. 6-13)

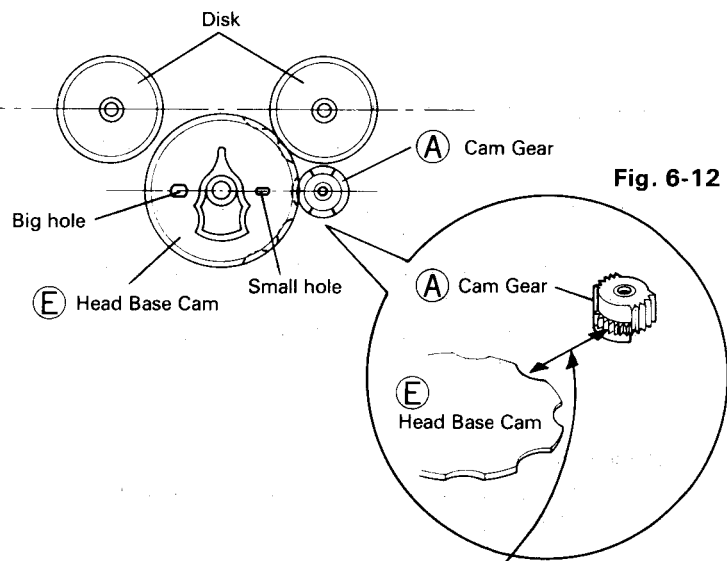


Fig. 6-12

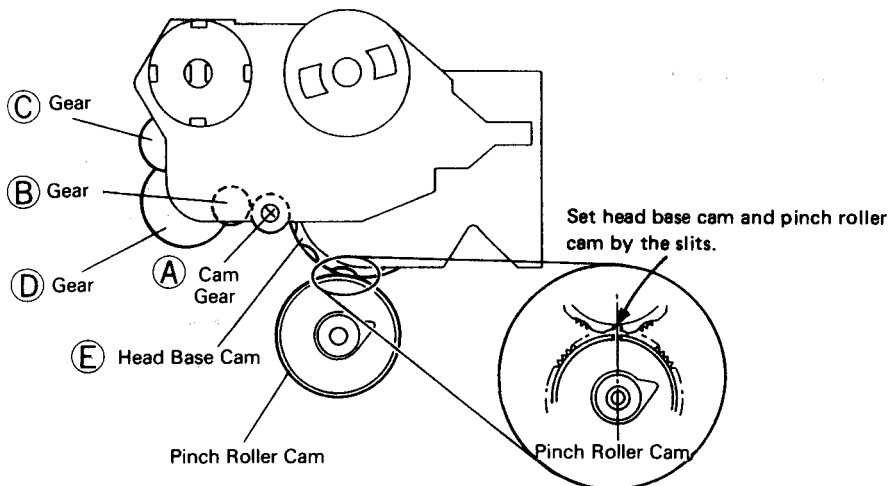


Fig. 6-13

7 Block Diagrams

[LEFT CHANNEL ONLY]

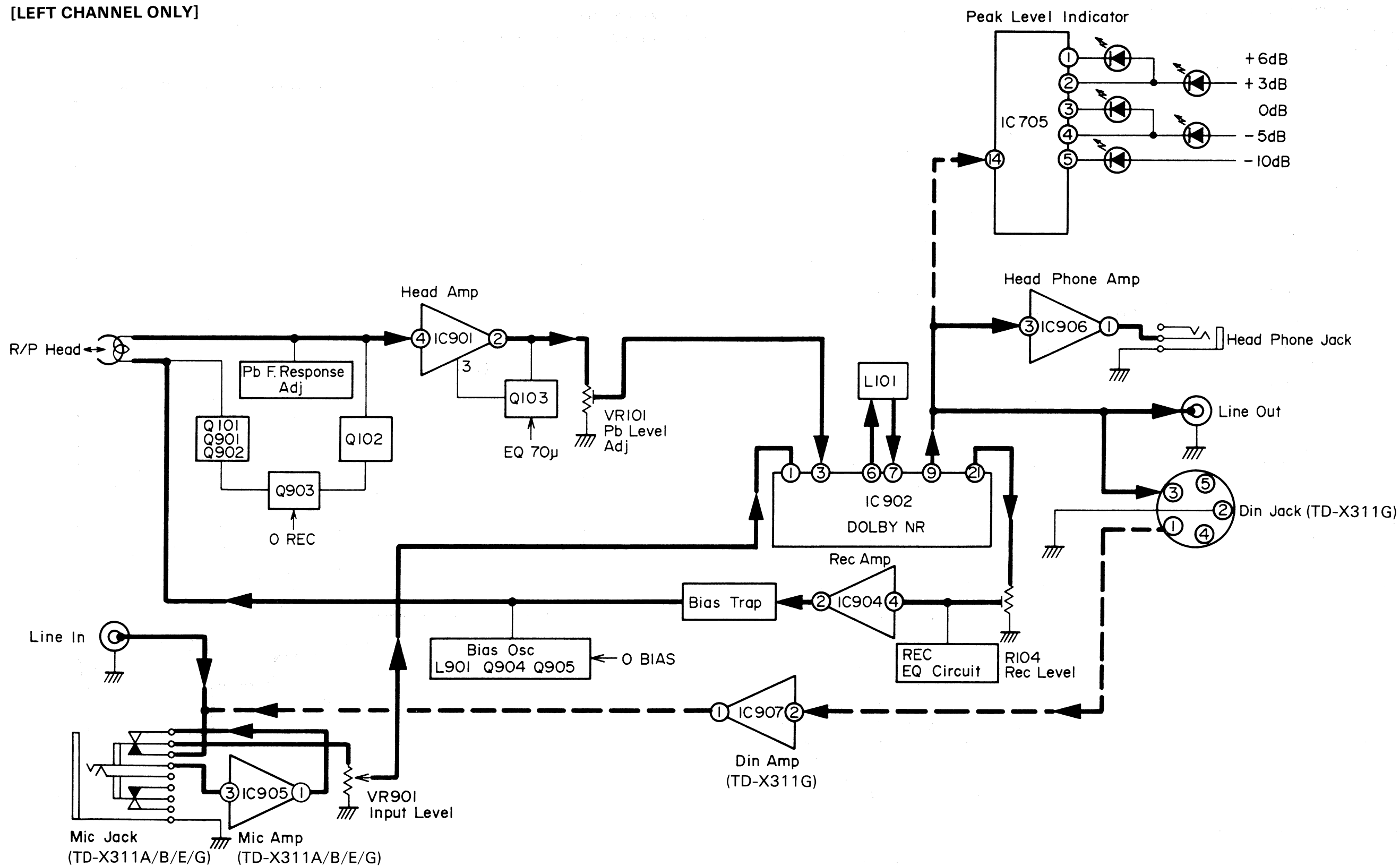


Fig. 7-1

8 Main Adjustments

1. Equipment and measuring instruments used for adjustments

- 1) Electronic voltmeter
- 2) Audio frequency oscillator
(range: 50–20 kHz and output 0 dB with impedance of 600 Ω)
- 3) Attenuator (impedance: 600 Ω)
- 4) Standard tape for REC/PB
Maxell UD1 (TS-9) – Normal (SF) tape
TDK SA – Chroma (SA) tape – or equivalent
JVC ME – Metal tape
- 5) Reference tape for playback (JVC Test Tape)
VTT712 (for tape speed, wow flutter adj.)
VTT724 (for playback level)
VTT739 (for playback frequency response)
VTT703L (10 kHz) (for head azimuth adj.)
- 6) Resistor 600 Ω (for attenuator matching)

- 7) Distortion meter (bandpass filter)
- 8) Wow flutter meter
- 9) Frequency counter



Power sources

Set the line voltage selector switch to 240 V/230 V/220 V/127 V/120 V/110 V according to your local voltage.

- AC 240 V, 50/60 Hz (TD-X311A/B)
- AC 220 V, 50/60 Hz (TD-X311E/G)
- AC 120 V, 60 Hz (TD-X311C/J)
- AC 230 V/127 V/110 V, 50/60 Hz (TD-X311U)

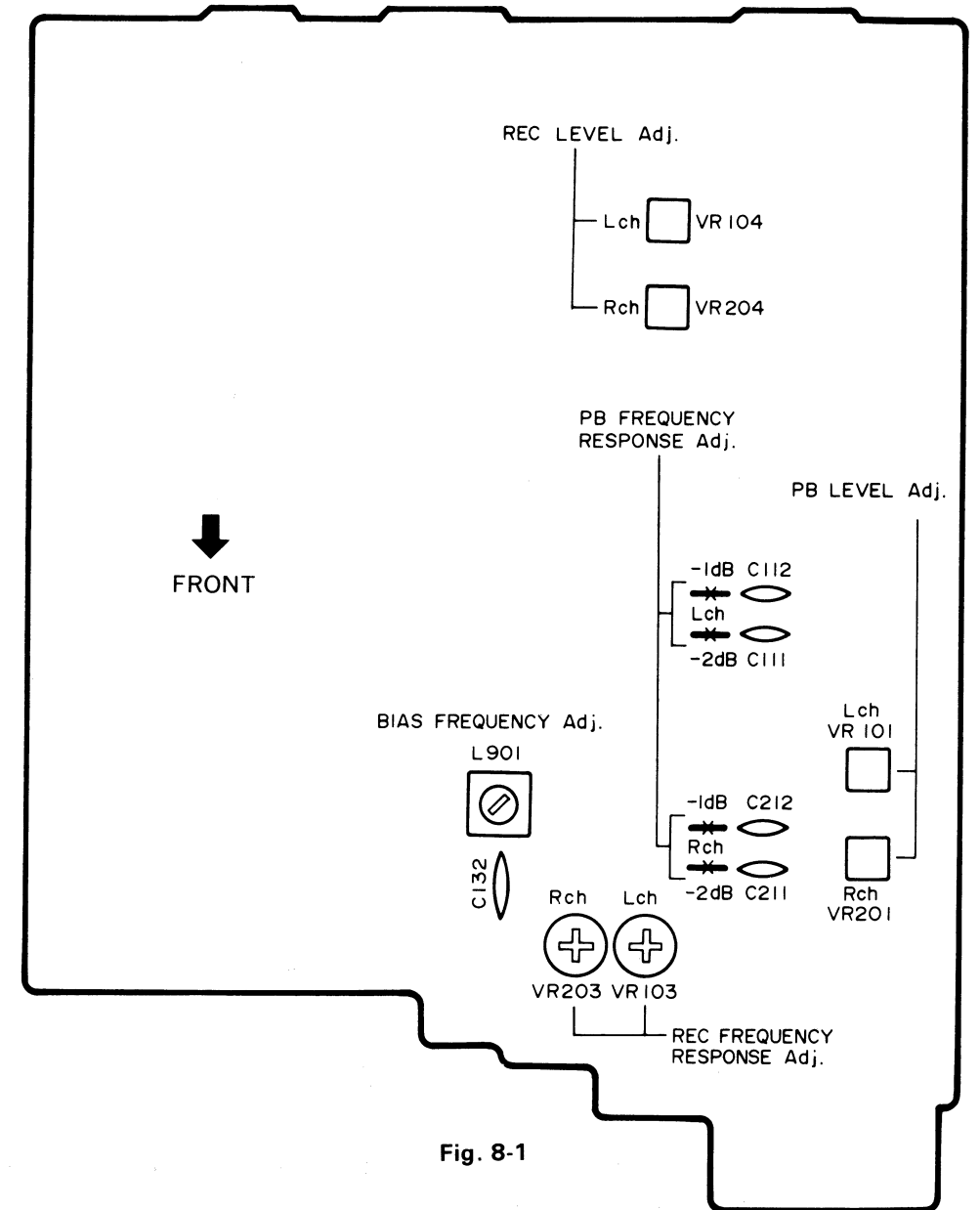
2. Mechanism adjustment procedure

● Notice: 0 dBs = 0.775 (V)

Item	Adjustment	Adjusting point	Standard value	Remarks
Adjusting motor speed	1. Connect a frequency counter to the LINE OUT terminals. 2. Play back the VTT712 test tape. 3. Adjust volume in motor for normal speed at 3000 Hz.	Volume in Motor	Normal speed: 3000 ± 15 Hz	
Checking wow and flutter	Connect a wow and flutter meter to LINE OUT terminals. Play back the VTT712 test tape. Check to see if the reading of the meter is within 0.13% (WRMS).		0.13% (WRMS)	If the reading becomes moving value even if confirming to the standard, a reclaim may be raised. Repairs are necessary.
Checking playback torque	Employ a torque testing cassette tape for the checking, or remove the cassette cover and use a torque gauge.		30–70 gr-cm	If the standard torque is not obtained, replace the take-up disk assembly.
Checking fast forward torque	Measure the torque in the fast forward mode in the same manner as in the above.		70–200 gr-cm	If the standard torque is not obtained, perform the following. 1. Clean the capstan belt, the idler circumference, the motor pulley, the take-up reel disk circumference, the flywheel circumference, etc. 2. Replace the belt and idler.
Checking rewind torque	Measure the torque in the rewind mode in the same manner as in the above.		70–200 gr-cm	If the standard torque is not obtained, clean the capstan belt, idler, motor pulley, flywheel circumference, rewinding idler circumference, left reel disk circumference, etc.
Adjusting Head azimuth	1. Connect an electronic voltmeter to the LINE OUT terminals. 2. Playback the VTT703L test tape. 3. Adjust the head angle with the screw  until the reading of the electronic voltmeter becomes maximum for both channels.	Screw		 Adjust screw (A) (Turn to clockwise)

3. Electrical adjustments location

- Main Amp. P.C. Board (parts assembly side view)



4. Electrical circuit adjustment procedure

Perform the tape transport checks and head azimuth adjustment before following checks and adjustments.

Adjustment should be performed in the order of alignment steps.

In the steps marked with an asterisk (*), adjustment should be performed after replacing the heads.

Perform this adjustment with the NR switch set to OFF.

Step	Item	Adjustment	Adjusting point	Standard value	Remarks
*1	Confirming playback gain	Play back VTT724, then confirm that the level at LINE OUT is $-8 \text{ dB} \pm 0.5 \text{ dB}$. Adjust VR101 (L) and VR201 (R) so that LINE OUT level becomes -8 dB .	L : VR101 R : VR201	$-8 \text{ dB} \pm 1 \text{ dB}$	When the head is replaced, adjust playback gain level. Cheeking : $-24 \pm 2 \text{ dB}$ at headphone output level. $-8 \pm 1 \text{ dB}$ at DIN output level. (TD-X311G)
*2	Playback frequency response	Play back VTT739, then confirm that the level of 1 kHz and 10 kHz signals is $0 \pm 3 \text{ dB}$. Note: Before adjustment, disconnect -1 dB -2 dB (L-ch) and -1 dB -2 dB (R-ch) so that the outputs of 1 kHz and 10 kHz signals are flat.	L : -1 dB -2 dB R : -1 dB -2 dB	$0 \pm 3 \text{ dB}$	L : -1 dB cut by -1 dB (C112) -2 dB cut by -2 dB (C111) R : -1 dB cut by -1 dB (C212) -2 dB cut by -2 dB (C211)
*3	Adjusting bias frequency	Connect the frequency counter to the C132 on body, then adjust L901 so that the counter reads 95 kHz.	L901	$95 \text{ kHz} \pm 3 \text{ kHz}$	METAL Position
*4	Recording frequency response	1) NR switch: OFF 2) Record a 1 kHz signal at an input reference level of -20 dB , then record 12.5 kHz signals and play them back. At this time, adjust VR103 and VR203 so that the deviation of 12.5 kHz outputs satisfy the standard values with respect to 1 kHz output.	For Normal tape L : VR103 R : VR203	With respect to 1 kHz reference: At 12.5 kHz $: 0 \pm 0.5 \text{ kHz}$	
*5	Recording gain	1) Apply a 1 kHz signal to the LINE IN terminals, record a 1 kHz signal at -20 dB input for both (L and R) channels on a normal tape. 2) Play back the recorded part, and adjust the recording level controls so that LINE OUT terminal level becomes -8 dB . Then adjust VR104 and VR204 so that LINE OUT terminal level becomes -8 dB .	For Normal tape: L : VR104 R : VR204	Normal: $-8 \pm 1 \text{ dB}$ CrO ₂ : $-8 \pm 2 \text{ dB}$ Metal: $-8 \pm 2 \text{ dB}$	Perform the adjustment using a normal tape. Level difference between recording and playback for CrO ₂ and metal tapes should be less than 2 dB, and that between left and right channels should also be less than 3 dB.

Step	Item	Adjustment	Adjusting point	Standard value	Remarks
*6	Checking record/playback distortion	1) Record a 1 kHz, -8 dB signal to LINE IN terminals. 2) Play back the recorded part. Check the output with a distortion meter to see if the value conforms to the standard value.		Normal tape: Less than 2% CrO ₂ tape: Less than 3% Metal tape: Less than 2% (THD)	Be sure to perform this checking following bias current and recording level checking.
7	Checking signal to noise ratio in recording/playback	1) Record a 1 kHz, -20 dB signal to LINE IN terminals. Stop the input by disconnecting from the terminal to perform non-signal recording. 2) Play back the recorded part. Measure the 0 dB recording output and the non-signal recording output for comparison using an electronic voltmeter. Check to see if the value conforms to the standard value.		Normal, CrO ₂ & Metal tapes: More than 42 dB	Apply an input level to LINE IN terminals with the recording level controls set to maximum so that the peak level indicator reads 0 dB.
8	Checking erasing coefficient	1) Apply a 1 kHz, 0 dB signal to the LINE IN terminals. 2) Perform recording with the signal enhanced by 20 dB. 3) Erase a part of the recording. 4) Measure the output difference between the erased part and non-erased part to compare with an electronic voltmeter.		More than 60dB	<p>For the measurement using a metal tape, connect a band pass filter between the deck and the electronic voltmeter.</p>
9	Checking minimum input level	1) Apply a 1 kHz signal to the LINE IN terminals, check the LINE OUT terminals level at -8 dB with attenuator to see if the value confirms to the standard value.		LINE IN : $-20 \pm 3 \text{ dB}$ MIC IN : $-66 \pm 3 \text{ dB}$ (TD-X311A/B/E/G/U) DIN IN : $-24 \pm 3 \text{ dB}$ (TD-X311G)	Level difference between left and right channels should also be less than 3 dB.

9 Standard Schematic Diagrams

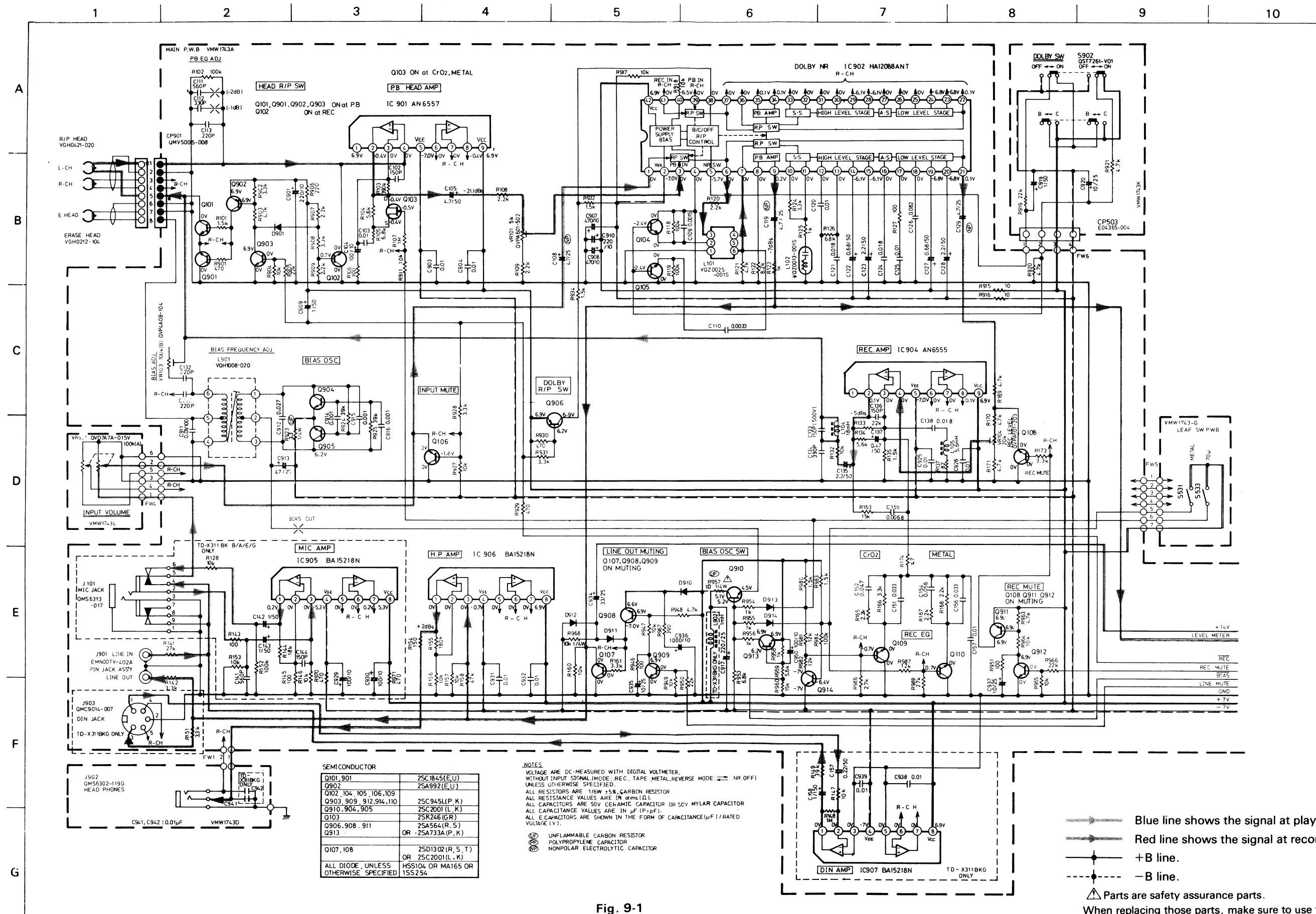


Fig. 9-1

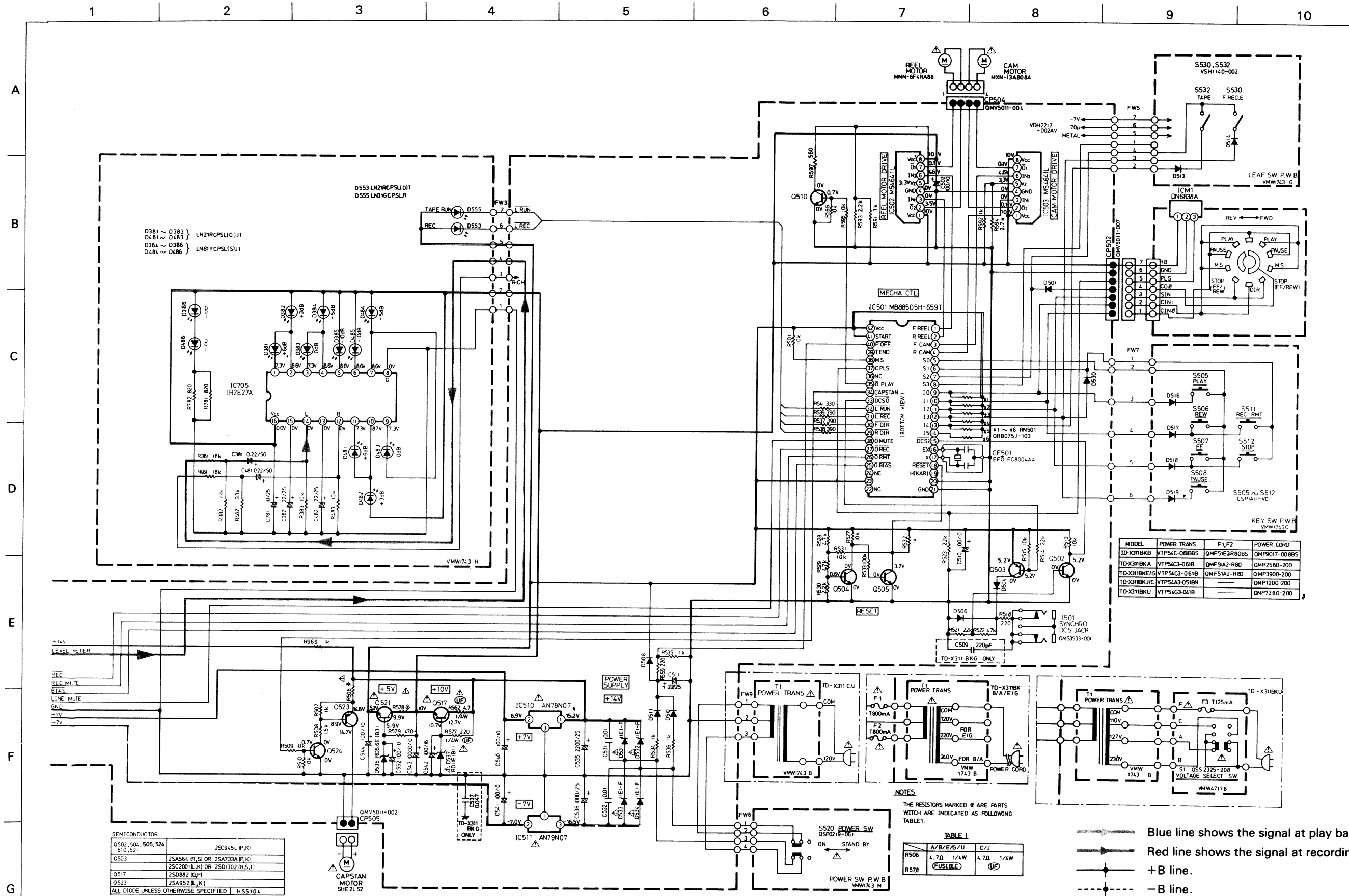


Fig. 9-2

Blue line shows the signal at playback.
 Red line shows the signal at recording.
 +B line.
 -B line.
 ⚠ Parts are safety assurance parts.
 When replacing those parts, make sure to use the specified one.

10 Wiring Connections

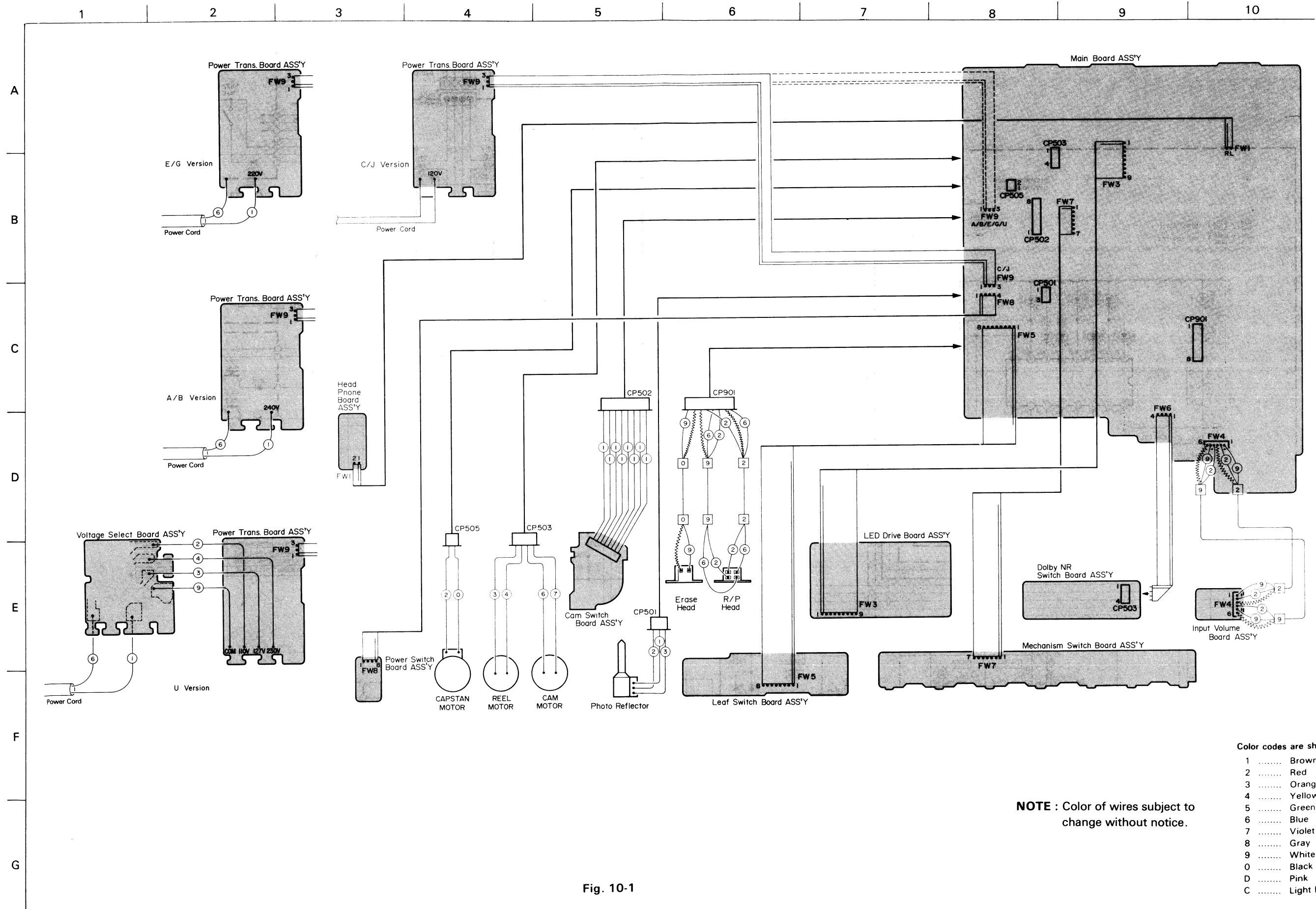


Fig. 10-1

Color codes are shown below.

- 1 Brown
- 2 Red
- 3 Orange
- 4 Yellow
- 5 Green
- 6 Blue
- 7 Violet
- 8 Gray
- 9 White
- 0 Black
- D Pink
- C Light Blue

NOTE : Color of wires subject to change without notice.

11 Location of P.C. Board Parts and Parts List

1 2 3 4 5 6 7 8 9 10

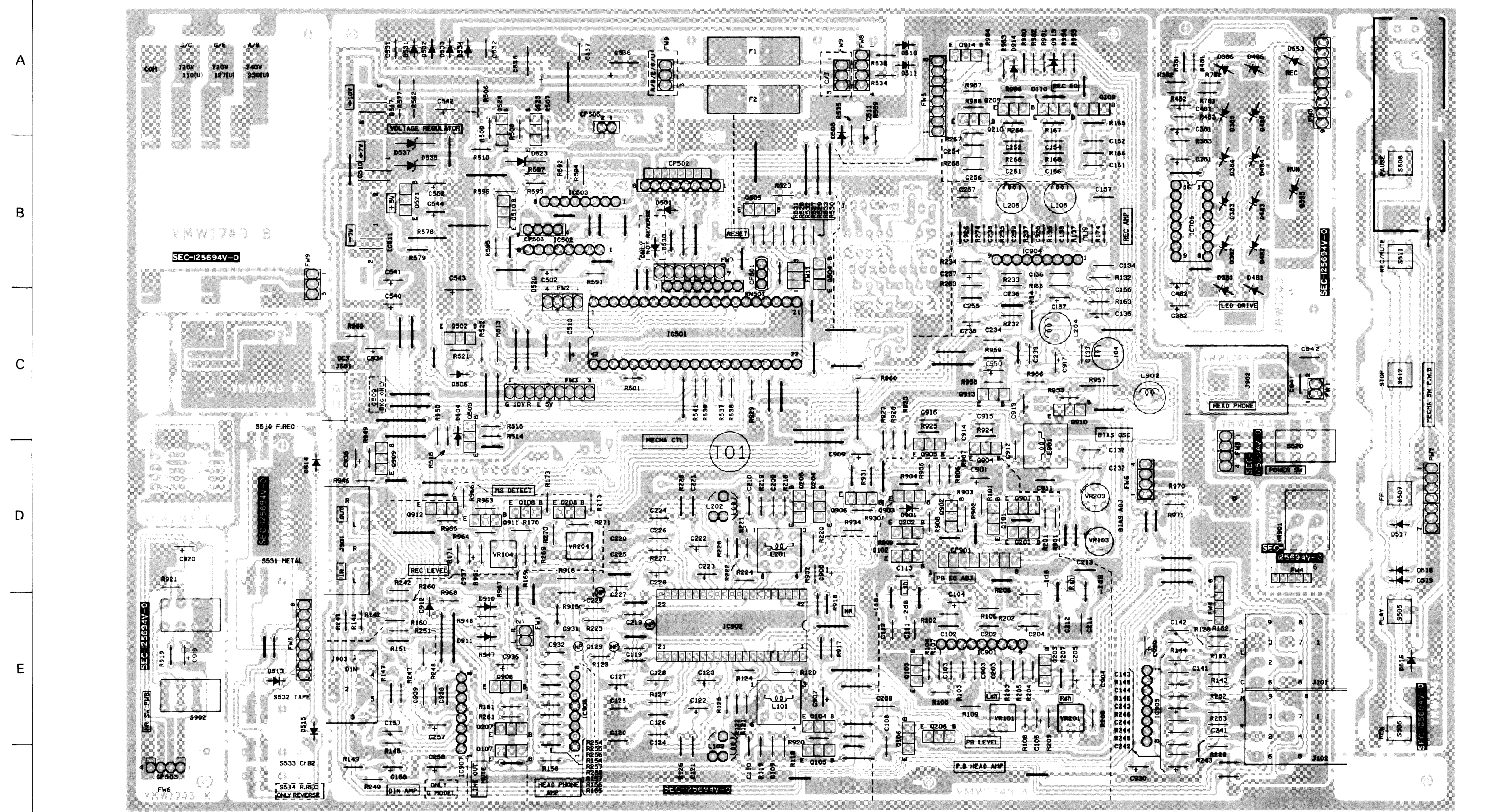
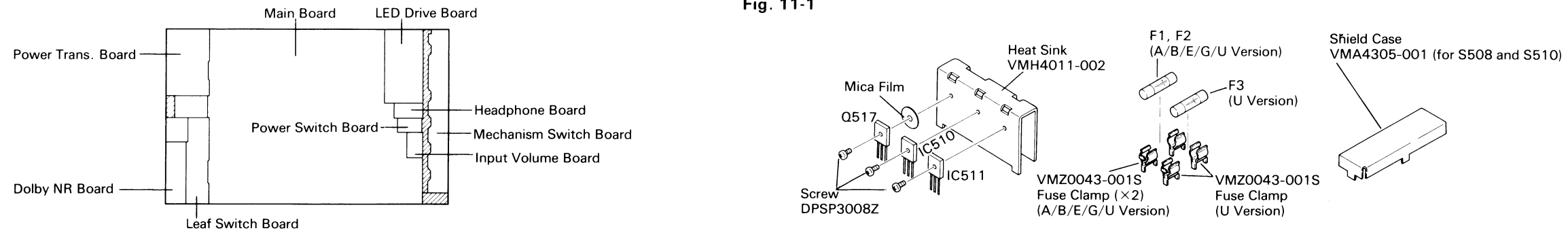


Fig. 11-1



Main Board Parts List

△ Parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

REF. NO	PARTS NO.	PARTS NAME
CF501	EFO-FC8004A4	CERA LOCK
CP502	QMV5011-007	CONNECTOR
CP503	E04365-004S	CONNECTOR
CP504	QMV5011-004	CONNECTOR
CP505	QMV5011-002	CONNECTOR
CP901	QMV5005-008	CONNECTOR
C102	QCS31HJ-151Z	C. CAPACITOR
C103	QFV71HJ-103ZM	TF. CAPACITOR
C104	QETC1AM-107ZN	E. CAPACITOR
C105	QETC1HM-475ZN	E. CAPACITOR
C108	QEN61EM-475Z	NP. E. CAPACITOR
C109	QFN31HJ-152Z	M. CAPACITOR
C110	QFN31HJ-332Z	M. CAPACITOR
C111	QCS31HJ-561Z	C. CAPACITOR
C112	QCS31HJ-331Z	C. CAPACITOR
C113	QCS31HJ-221Z	C. CAPACITOR
C119	QEN61EM-475Z	NP. E. CAPACITOR
C120	QFV71HJ-103ZM	TF. CAPACITOR
C121	QFV71HJ-183ZM	TF. CAPACITOR
C122	QETC1HM-684ZN	E. CAPACITOR
C123	QETC1HM-225ZN	E. CAPACITOR
C124	QFV71HJ-183ZM	TF. CAPACITOR
C125	QFV71HJ-103ZM	TF. CAPACITOR
C126	QFV71HJ-823ZM	TF. CAPACITOR
C127	QETC1HM-684ZN	E. CAPACITOR
C128	QETC1HM-225ZN	E. CAPACITOR
C129	QEN61EM-475Z	NP. E. CAPACITOR
C132	QCS31HJ-221Z	C. CAPACITOR
C133	QCS32HJ-151ZV	C. CAPACITOR
C134	QCS31HJ-391Z	C. CAPACITOR
C135	QETC1HM-225ZN	E. CAPACITOR
C136	QCS31HJ-151Z	C. CAPACITOR
C137	QETC1HM-474ZM	E. CAPACITOR
C138	QFV71HJ-183ZM	TF. CAPACITOR
C141	QCS31HJ-561Z	C. CAPACITOR
C142	QETC1HM-105ZN	E. CAPACITOR
C143	QETC1HM-105ZN	E. CAPACITOR
C144	QCS31HJ-151Z	C. CAPACITOR
C151	QFV71HJ-333ZM	TF. CAPACITOR
C152	QFV71HJ-473ZM	TF. CAPACITOR
C154	QFV71HJ-563ZM	TF. CAPACITOR
C155	QFN31HJ-682Z	M. CAPACITOR
C156	QFV71HJ-333ZM	TF. CAPACITOR
C157	QFV71HJ-103ZM	TF. CAPACITOR
C158	QETC1HM-105ZN	E. CAPACITOR
C202	QCS31HJ-151Z	C. CAPACITOR
C203	QFV71HJ-103ZM	TF. CAPACITOR
C204	QETC1AM-107ZN	E. CAPACITOR
C205	QETC1HM-475ZN	E. CAPACITOR
C208	QEN61EM-475Z	NP. E. CAPACITOR
C209	QFN31HJ-152Z	M. CAPACITOR
C210	QFN31HJ-332Z	M. CAPACITOR
C211	QCS31HJ-561Z	C. CAPACITOR
C212	QCS31HJ-331Z	C. CAPACITOR
C213	QCS31HJ-221Z	C. CAPACITOR
C219	QEN61EM-475Z	NP. E. CAPACITOR
C220	QFV71HJ-103ZM	TF. CAPACITOR
C221	QFV71HJ-183ZM	TF. CAPACITOR
C222	QETC1HM-684ZN	E. CAPACITOR
C223	QETC1HM-225ZN	E. CAPACITOR
C224	QFV71HJ-183ZM	TF. CAPACITOR
C225	QFV71HJ-103ZM	TF. CAPACITOR
C226	QFV71HJ-823ZM	TF. CAPACITOR
C227	QETC1HM-684ZN	E. CAPACITOR
C228	QETC1HM-225ZN	E. CAPACITOR
C229	QEN61EM-475Z	NP. E. CAPACITOR
C232	QCS31HJ-221Z	C. CAPACITOR
C233	QCS32HJ-151ZV	C. CAPACITOR
C234	QCS31HJ-391Z	C. CAPACITOR
C235	QETC1HM-225ZN	E. CAPACITOR

REF. NO	PARTS NO.	PARTS NAME
C236	QCS31HJ-151Z	C. CAPACITOR
C237	QETC1HM-474ZM	E. CAPACITOR
C238	QFV71HJ-183ZM	TF. CAPACITOR
C241	QCS31HJ-561Z	C. CAPACITOR
C242	QETC1HM-105ZN	E. CAPACITOR
C243	QETC1HM-105ZN	E. CAPACITOR
C244	QCS31HJ-151Z	C. CAPACITOR
C251	QFV71HJ-333ZM	TF. CAPACITOR
C252	QFV71HJ-473ZM	TF. CAPACITOR
C254	QFV71HJ-563ZM	TF. CAPACITOR
C255	QFN31HJ-682Z	M. CAPACITOR
C256	QFV71HJ-333ZM	TF. CAPACITOR
C257	QFV71HJ-103ZM	TF. CAPACITOR
C258	QETC1HM-105ZN	E. CAPACITOR
C381	QETC1HM-224ZN	E. CAPACITOR
C382	QETC1EM-226ZN	E. CAPACITOR
C481	QETC1HM-224ZN	E. CAPACITOR
C482	QETB1EM-226	E. CAPACITOR
C502	QETC1AM-107ZN	E. CAPACITOR
C509	QCS31HJ-221Z	C. CAPACITOR
C510	QETC1AM-107ZN	E. CAPACITOR
C511	QETC1EM-226ZN	E. CAPACITOR
C531	QCF31HP-103Z	C. CAPACITOR
C532	QCF31HP-103Z	C. CAPACITOR
C535	QETB1EM-228N	E. CAPACITOR
C536	QET51ER-108N	E. CAPACITOR
C537	QCF31HP-473Z	C. CAPACITOR
C540	QETC1AM-107ZN	E. CAPACITOR
C541	QETC1AM-107ZN	E. CAPACITOR
C542	QETB1CM-107N	E. CAPACITOR
C543	QETB1AM-109N	E. CAPACITOR
C544	QETC1AM-107ZN	E. CAPACITOR
C552	QETC1AM-107ZN	E. CAPACITOR
C781	QETC1EM-106ZN	E. CAPACITOR
C901	QETB1AM-227	E. CAPACITOR
C903	QCF31HP-103Z	C. CAPACITOR
C904	QCF31HP-103Z	C. CAPACITOR
C907	QETC1AM-477ZN	E. CAPACITOR
C908	QETC1AM-477ZN	E. CAPACITOR
C909	QETC1HM-105ZN	E. CAPACITOR
C910	QETA1AM-227N	E. CAPACITOR
C911	QFP82AJ-103	P. P. CAPACITOR
C912	QFV71HJ-273ZM	TF. CAPACITOR
C913	QETB1EM-476N	E. CAPACITOR
C914	QFN31HJ-102Z	M. CAPACITOR
C915	QFN31HJ-102Z	M. CAPACITOR
C916	QFN31HJ-102Z	M. CAPACITOR
C917	QETB1EM-227N	E. CAPACITOR
C919	QETC1HM-105ZN	E. CAPACITOR
C920	QETC1EM-106ZN	E. CAPACITOR
C925	QCF31HP-103Z	C. CAPACITOR
C926	QCF31HP-103Z	C. CAPACITOR
C929	QETC1AM-107ZN	E. CAPACITOR
C930	QETC1AM-107ZN	E. CAPACITOR
C931	QCF31HP-103Z	C. CAPACITOR
C932	QCF31HP-103Z	C. CAPACITOR
C934	QETC1EM-336ZN	E. CAPACITOR
C935	QETC1EM-106ZN	E. CAPACITOR
C936	QETB1AM-108N	E. CAPACITOR
C937	QETC1EM-106ZN	E. CAPACITOR
C938	QCF31HP-103Z	C. CAPACITOR
C939	QCF31HP-103Z	C. CAPACITOR
C941	QCF31HP-103Z	C. CAPACITOR
C942	QCF31HP-103Z	C. CAPACITOR
C950	QETC1AM-107ZN	E. CAPACITOR
D381	LN21RCPSL(O)J1	LED
D382	LN21RCPSL(O)J1	LED
D383	LN21RCPSL(O)J1	LED
D384	LN81YCPSL(S)J1	LED
D385	LN81YCPSL(S)J1	LED

REF. NO	PARTS NO.	PARTS NAME
D386	LN81YCPSL(S)J1	LED
D481	LN21RCPSL(O)J1	LED
D482	LN21RCPSL(O)J1	LED
D483	LN21RCPSL(O)J1	LED
D484	LN81YCPSL(S)J1	LED
D485	LN81YCPSL(S)J1	LED
D486	LN81YCPSL(S)J1	LED
D501	HSS104TJ	SI DIODE
D504	HSS104TJ	SI DIODE
D506	HSS104TJ	SI DIODE
D508	HSS104TJ	SI DIODE
D510	HSS104TJ	SI DIODE
D511	HSS104TJ	SI DIODE
D513	HSS104TJ	SI DIODE
D514	HSS104TJ	SI DIODE
D515	HSS104TJ	SI DIODE
D516	HSS104TJ	SI DIODE
D517	HSS104TJ	SI DIODE
D518	HSS104TJ	SI DIODE
D519	HSS104TJ	SI DIODE
D530	HSS104TJ	SI DIODE
D531	11E1-TB2	SI DIODE
D532	11E1-TB2	SI DIODE
D533	11E1-TB2	SI DIODE
D534	11E1-TB2	SI DIODE
D535	RD5.6E(B3)	ZENER DIODE
D537	RD11E(B1)	Z DIODE
D538	LN21RCPSL(O)J1	LED
D555	LN31GCPSLJ1	LED
D901	HSS104TJ	SI DIODE
D910	HSS104TJ	SI DIODE
D911	HSS104TJ	SI DIODE
D912	HSS104TJ	SI DIODE
D913	HSS104TJ	SI DIODE
D914	HSS104TJ	SI DIODE
IC501	MB88505H-674T	IC(CPU)
IC502	M54641L	IC
IC503	M54641L	IC
IC510	AN78N07	I.C
IC511	AN79N07	I.C
IC705	IR2E27A	I.C
IC901	AN6557	I.C
IC902	HA12088ANT	DOLBY NR I.C
IC904	AN6555	I.C
IC905	BA15218N	IC
IC906	BA15218N	IC
IC907	BA15218N	IC
J101	QMS6313-017	JACK
J201	QMS6313-017	JACK
J501	QMS3533-001	JACK
J901	EMN00TV-402A	PIN JACK
J902	QMS6302-119G	JACK
J903	QMC9014-007	DIN SOCKET
L101	VQZ0025-001S	FILTER
L102	VQZ0013-001S	FILTER
L104	VQP0001-183S	INDUCTOR
L105	VQP0001-562S	INDUCTOR
L201	VQZ0025-001S	FILTER
L202	VQZ0013-001S	FILTER
L204	VQP0001-183S	INDUCTOR
L205	VQP0001-562S	INDUCTOR
L901	VQH1008-020	OSC COIL(BIAS)
L902	QWY124-S.0Y	BUS WIRE
Q101	2SC1845(E,U)-T	TRANSISTOR
Q102	2SC945L(P,K)-T	TRANSISTOR
Q103	2SK246(GR)E2	FET
Q104	2SC945L(P,K)-T	TRANSISTOR
Q105	2SC945L(P,K)-T	TRANSISTOR
Q106	2SC945L(P,K)-T	TRANSISTOR
Q107	2SC2001(L,K)-T	TRANSISTOR

REF. NO	PARTS NO.	PARTS NAME
Q108	2SC2001(L,K)-T	TRANSISTOR
Q109	2SC945L(P,K)-T	TRANSISTOR
Q110	2SC945L(P,K)-T	TRANSISTOR
Q201	2SC1845(E,U)-T	TRANSISTOR
Q202	2SC945L(P,K)-T	TRANSISTOR
Q203	2SK246(GR)E2	FET
Q204	2SC945L(P,K)-T	TRANSISTOR
Q205	2SC945L(P,K)-T	TRANSISTOR
Q206	2SC945L(P,K)-T	TRANSISTOR
Q207	2SC2001(L,K)-T	TRANSISTOR
Q208	2SC2001(L,K)-T	TRANSISTOR
Q209	2SC945L(P,K)-T	TRANSISTOR
Q210	2SC945L(P,K)-T	TRANSISTOR
Q502	2SC945L(P,K)-T	TRANSISTOR
Q503	2SA564(R,S)TA	TRANSISTOR
Q504	2SC945L(P,K)-T	TRANSISTOR
Q505	2SC945L(P,K)-T	TRANSISTOR
Q510	2SC945L(P,K)-T	TRANSISTOR
Q517	2SD882(Q,P)	TRANSISTOR
Q521	2SC945L(P,K)-T	TRANSISTOR
Q523	2SA952(L,K)-T	TRANSISTOR
Q524	2SC945L(P,K)-T	TRANSISTOR
Q901	2SC1845(E,U)-T	TRANSISTOR
Q902	2SA992(E,U)-T	TRANSISTOR
Q903	2SC945L(P,K)-T	TRANSISTOR
Q904	2SC2001(L,K)-T	TRANSISTOR
Q905	2SC2001(L,K)-T	TRANSISTOR
Q906	2SA564(R,S)TA	TRANSISTOR
Q908	2SA564(R,S)TA	TRANSISTOR
Q909	2SC945L(P,K)-T	TRANSISTOR
Q910	2SC2001(L,K)-T	TRANSISTOR
Q911	2SA564(R,S)TA	TRANSISTOR
Q912	2SC945L(P,K)-T	TRANSISTOR
Q913	2SA564(R,S)TA	TRANSISTOR
Q914	2SC945L(P,K)-T	TRANSISTOR
RN501	QRBO75J-103	NETWORK RESIST
R101	QRD161J-152Y	CARBON RESISTOR
R102	QRD161J-104Y	CARBON RESISTOR
R103	QRD161J-394Y	CARBON RESISTOR
R104	QRD161J-562Y	CARBON RESISTOR
R105	QRD161J-682Y	CARBON RESISTOR
R106	QRD161J-101Y	CARBON RESISTOR
R107	QRD161J-105Y	CARBON RESISTOR
R108	QRD161J-222Y	CARBON RESISTOR
R109	QRD161J-222Y	CARBON RESISTOR
R118	QRD161J-104Y	CARBON RESISTOR
R119	QRD161J-104Y	CARBON RESISTOR
R120	QRD161J-222Y	CARBON RESISTOR
R121	QRD161J-472Y	CARBON RESISTOR
R122	QRD161J-822Y	CARBON RESISTOR
R123	QRD161J-102Y	CARBON RESISTOR
R124	QRD161J-332Y	CARBON RESISTOR
R125	QRD161J-102Y	CARBON RESISTOR
R126	QRD161J-683Y	CARBON RESISTOR
R127	QRD161J-101Y	CARBON RESISTOR
R128	QRD161J-103Y	CARBON RESISTOR
R132	QRD161J-103Y	CARBON RESISTOR
R133	QRD161J-223Y	CARBON RESISTOR
R134	QRD161J-562Y	CARBON RESISTOR
R135	QRD161J-152Y	CARBON RESISTOR
R137	QRD161J-820Y	CARBON RESISTOR
R141	QRD161J-273Y	CARBON RESISTOR
R142	QRD161J-332Y	CARBON RESISTOR
R143	QRD161J-101Y	CARBON RESISTOR
R144	QRD161J-183Y	CARBON RESISTOR
R145	QRD161J-101Y	CARBON RESISTOR
R146	QRD161J-103Y	CARBON RESISTOR
R147	QRD161J-103Y	CARBON RESISTOR
R148	QRD161J-105Y	CARBON RESISTOR
R149	QRD161J-393Y	CARBON RESISTOR

REF. NO	PARTS NO.	PARTS NAME
R151	QRD161J-332Y	CARBON RESISTOR
R152	QRD161J-104Y	CARBON RESISTOR
R153	QRD161J-103Y	CARBON RESISTOR
R154	QRD161J-151Y	CARBON RESISTOR
R155	QRD161J-184Y	CARBON RESISTOR
R156	QRD161J-103Y	CARBON RESISTOR
R157	QRD161J-103Y	CARBON RESISTOR
R158	QRD161J-473Y	CARBON RESISTOR
R160	QRD161J-103Y	CARBON RESISTOR
R161	QRD161J-332Y	CARBON RESISTOR
R163	QRD161J-153Y	CARBON RESISTOR
R165	QRD161J-222Y	CARBON RESISTOR
R166	QRD161J-332Y	CARBON RESISTOR
R167	QRD161J-222Y	CARBON RESISTOR
R168	QRD161J-222Y	CARBON RESISTOR
R169	QRD161J-472Y	CARBON RESISTOR
R170	QRD161J-472Y	CARBON RESISTOR
R171	QRD161J-472Y	CARBON RESISTOR
R173	QRD161J-332Y	CARBON RESISTOR
R174	QRD161J-470Y	CARBON RESISTOR
R201	QRD161J-152Y	CARBON RESISTOR
R202	QRD161J-104Y	CARBON RESISTOR
R203	QRD161J-394Y	CARBON RESISTOR
R204	QRD161J-562Y	CARBON RESISTOR
R205	QRD161J-682Y	CARBON RESISTOR
R206	QRD161J-101Y	CARBON RESISTOR
R207	QRD161J-105Y	CARBON RESISTOR
R208	QRD161J-222Y	CARBON RESISTOR
R209	QRD161J-222Y	CARBON RESISTOR
R218	QRD161J-104Y	CARBON RESISTOR
R219	QRD161J-104Y	CARBON RESISTOR
R220	QRD161J-222Y	CARBON RESISTOR
R221	QRD161J-472Y	CARBON RESISTOR
R222	QRD161J-822Y	CARBON RESISTOR
R223	QRD161J-102Y	CARBON RESISTOR
R224	QRD161J-332Y	CARBON RESISTOR
R225	QRD161J-102Y	CARBON RESISTOR
R226	QRD161J-683Y	CARBON RESISTOR
R227	QRD161J-101Y	CARBON RESISTOR
R228	QRD161J-103Y	CARBON RESISTOR
R232	QRD161J-103Y	CARBON RESISTOR
R233	QRD161J-223Y	CARBON RESISTOR
R234	QRD161J-562Y	CARBON RESISTOR
R235	QRD161J-152Y	CARBON RESISTOR
R237	QRD161J-820Y	CARBON RESISTOR
R241	QRD161J-273Y	CARBON RESISTOR
R242	QRD161J-332Y	CARBON RESISTOR
R243	QRD161J-101Y	CARBON RESISTOR
R244	QRD161J-183Y	CARBON RESISTOR
R245	QRD161J-101Y	CARBON RESISTOR
R246	QRD161J-103Y	CARBON RESISTOR
R247	QRD161J-103Y	CARBON RESISTOR
R248	QRD161J-105Y	CARBON RESISTOR
R249	QRD161J-393Y	CARBON RESISTOR
R251	QRD161J-332Y	CARBON RESISTOR
R252	QRD161J-104Y	CARBON RESISTOR
R253	QRD161J-103Y	CARBON RESISTOR
R254	QRD161J-151Y	CARBON RESISTOR
R255	QRD161J-184Y	CARBON RESISTOR
R256	QRD161J-103Y	CARBON RESISTOR
R257	QRD161J-103Y	CARBON RESISTOR
R258	QRD161J-473Y	CARBON RESISTOR
R260	QRD161J-103Y	CARBON RESISTOR
R261	QRD161J-332Y	CARBON RESISTOR
R263	QRD161J-153Y	CARBON RESISTOR
R265	QRD161J-222Y	CARBON RESISTOR
R266	QRD161J-332Y	CARBON RESISTOR
R267	QRD161J-222Y	CARBON RESISTOR
R268	QRD161J-222Y	CARBON RESISTOR
R269	QRD161J-472Y	CARBON RESISTOR

REF. NO	PARTS NO.	PARTS NAME
R270	QRD161J-472Y	CARBON RESISTOR
R271	QRD161J-472Y	CARBON RESISTOR
R273	QRD161J-332Y	CARBON RESISTOR
R274	QRD161J-470Y	CARBON RESISTOR
R381	QRD161J-183Y	CARBON RESISTOR
R382	QRD161J-333Y	CARBON RESISTOR
R383	QRD161J-103Y	CARBON RESISTOR
R481	QRD161J-183Y	CARBON RESISTOR
R482	QRD161J-333Y	CARBON RESISTOR
R483	QRD161J-103Y	CARBON RESISTOR
R501	QRD161J-103Y	CARBON RESISTOR
R506	QRD149J-4R7S	CARBON RESISTOR
R507	QRD161J-102Y	CARBON RESISTOR
R508	QRD161J-152Y	CARBON RESISTOR
R509	QRD161J-103Y	CARBON RESISTOR
R510	QRD161J-103Y	CARBON RESISTOR
R513	QRD161J-103Y	CARBON RESISTOR
R514	QRD161J-223Y	CARBON RESISTOR
R515	QRD144J-103S	CARBON RESISTOR
R518	QRD161J-221Y	CARBON RESISTOR
R521	QRD161J-223Y	CARBON RESISTOR
R522	QRD161J-473Y	CARBON RESISTOR
R523	QRD161J-223Y	CARBON RESISTOR
R527	QRD161J-103Y	CARBON RESISTOR
R528	QRD161J-472Y	CARBON RESISTOR
R529	QRD161J-472Y	CARBON RESISTOR
R530	QRD161J-222Y	CARBON RESISTOR
R531	QRD161J-103Y	CARBON RESISTOR
R532	QRD161J-102Y	CARBON RESISTOR
R533	QRD161J-104Y	CARBON RESISTOR
R534	QRD161J-102Y	CARBON RESISTOR
R535	QRD161J-102Y	CARBON RESISTOR
R536	QRD161J-102Y	CARBON RESISTOR
R537	QRD161J-391Y	CARBON RESISTOR
R538	QRD161J-391Y	CARBON RESISTOR
R539	QRD161J-391Y	CARBON RESISTOR
R541	QRD161J-331Y	CARBON RESISTOR
R559	QRD161J-221Y	CARBON RESISTOR
R562	QRD149J-4R7S	CARBON RESISTOR
R577	QRD149J-221S	CARBON RESISTOR
R578	QRD149J-4R7S	CARBON RESISTOR
R579	QRD161J-471Y	CARBON RESISTOR
R591	QRD161J-102Y	CARBON RESISTOR
R592	QRD161J-102Y	CARBON RESISTOR
R593	QRD161J-222Y	CARBON RESISTOR
R594	QRD161J-272Y	CARBON RESISTOR
R595	QRD161J-103Y	CARBON RESISTOR
R596	QRD161J-103Y	CARBON RESISTOR
R597	QRD161J-561Y	CARBON RESISTOR
R781	QRD161J-821Y	CARBON RESISTOR
R782	QRD161J-821Y	CARBON RESISTOR
R901	QRD161J-471Y	CARBON RESISTOR
R902	QRD161J-332Y	CARBON RESISTOR
R903	QRD161J-472Y	CARBON RESISTOR
R904	QRD161J-103Y	CARBON RESISTOR
R905	QRD161J-223Y	CARBON RESISTOR
R906	QRD161J-221Y	CARBON RESISTOR
R907	QRD161J-222Y	CARBON RESISTOR
R908	QRD161J-332Y	CARBON RESISTOR
R909	QRD161J-222Y	CARBON RESISTOR
R911	QWY124-5.0Y	BUS WIRE
R915	QRD161J-100Y	CARBON RESISTOR
R916	QRD161J-100Y	CARBON RESISTOR
R917	QRD161J-103Y	CARBON RESISTOR
R918	QRD161J-103Y	CARBON RESISTOR
R919	QRD161J-223Y	CARBON RESISTOR
R920	QRD161J-472Y	CARBON RESISTOR
R921	QRD161J-472Y	CARBON RESISTOR
R923	QRD149J-3R3S	CARBON RESISTOR
R924	QRD161J-393Y	CARBON RESISTOR

△ Parts are safety assurance parts

When replacing those parts, make sure to use the specified one.

REF. NO	PARTS NO.	PARTS NAME
R925	QRD161J-393Y	CARBON RESISTOR
R927	QRD161J-103Y	CARBON RESISTOR
R928	QRD161J-332Y	CARBON RESISTOR
R929	QRD161J-471Y	CARBON RESISTOR
R930	QRD161J-471Y	CARBON RESISTOR
R931	QRD161J-332Y	CARBON RESISTOR
R932	QRD161J-152Y	CARBON RESISTOR
R934	QRD161J-152Y	CARBON RESISTOR
R946	QRD161J-101Y	CARBON RESISTOR
R947	QRD161J-103	CARBON RESISTOR
R948	QRD161J-472Y	CARBON RESISTOR
R949	QRD161J-103Y	CARBON RESISTOR
R950	QRD144J-223S	CARBON RESISTOR
R951	QRD161J-101Y	CARBON RESISTOR
R953	QRD161J-682Y	CARBON RESISTOR
R954	QRD161J-102Y	CARBON RESISTOR
R955	QRD161J-102Y	CARBON RESISTOR
R956	QRD161J-102Y	CARBON RESISTOR
R957	QRD149J-100S	CARBON RESISTOR
R958	QRD161J-102Y	CARBON RESISTOR
R959	QRD161J-562Y	CARBON RESISTOR
R960	QRD161J-153Y	CARBON RESISTOR
R963	QRD161J-472Y	CARBON RESISTOR
R964	QRD161J-103Y	CARBON RESISTOR
R965	QRD161J-103Y	CARBON RESISTOR
R966	QRD161J-223Y	CARBON RESISTOR
R967	QRD161J-391Y	CARBON RESISTOR
R968	QRD144J-103S	CARBON RESISTOR
R969	QRD161J-102Y	CARBON RESISTOR
R970	QRD161J-471Y	CARBON RESISTOR
R971	QRD161J-471Y	CARBON RESISTOR
R980	QRD161J-152Y	CARBON RESISTOR
R981	QRD161J-123Y	CARBON RESISTOR
R982	QRD161J-123Y	CARBON RESISTOR
R983	QRD161J-152Y	CARBON RESISTOR
R984	QRD161J-104Y	CARBON RESISTOR
R986	QRD161J-273Y	CARBON RESISTOR
R987	QRD161J-123Y	CARBON RESISTOR
R988	QRD161J-273Y	CARBON RESISTOR
S505	QSP1A11-V01	TACT SWITCH
S506	QSP1A11-V01	TACT SWITCH
S507	QSP1A11-V01	TACT SWITCH
S508	QSP1A11-V01	TACT SWITCH
S511	QSP1A11-V01	TACT SWITCH
S512	QSP1A11-V01	TACT SWITCH
S520	QSP0219-061	PUSH SWITCH
S902	QST7261-V01	PUSH SW
VR101	QVPA601-502	V.RESISTOR
VR103	QVP4A0B-104	V.RESISTOR
VR104	QVPA601-203	POTENTIOMETER
VR201	QVPA601-502	V.RESISTOR
VR203	QVP4A0B-104	V.RESISTOR
VR204	QVPA601-203	POTENTIOMETER
VR901	QVD7A7A-015V	V.RESISTOR
S1	QSS2325-208	SLIDE SWITCH
C157	QETC1HM-224ZN	E. CAPACITOR (DIN AMP)
C257	QETC1HM-224ZN	E. CAPACITOR (DIN AMP)

12 Exploded View of Mechanism Assembly

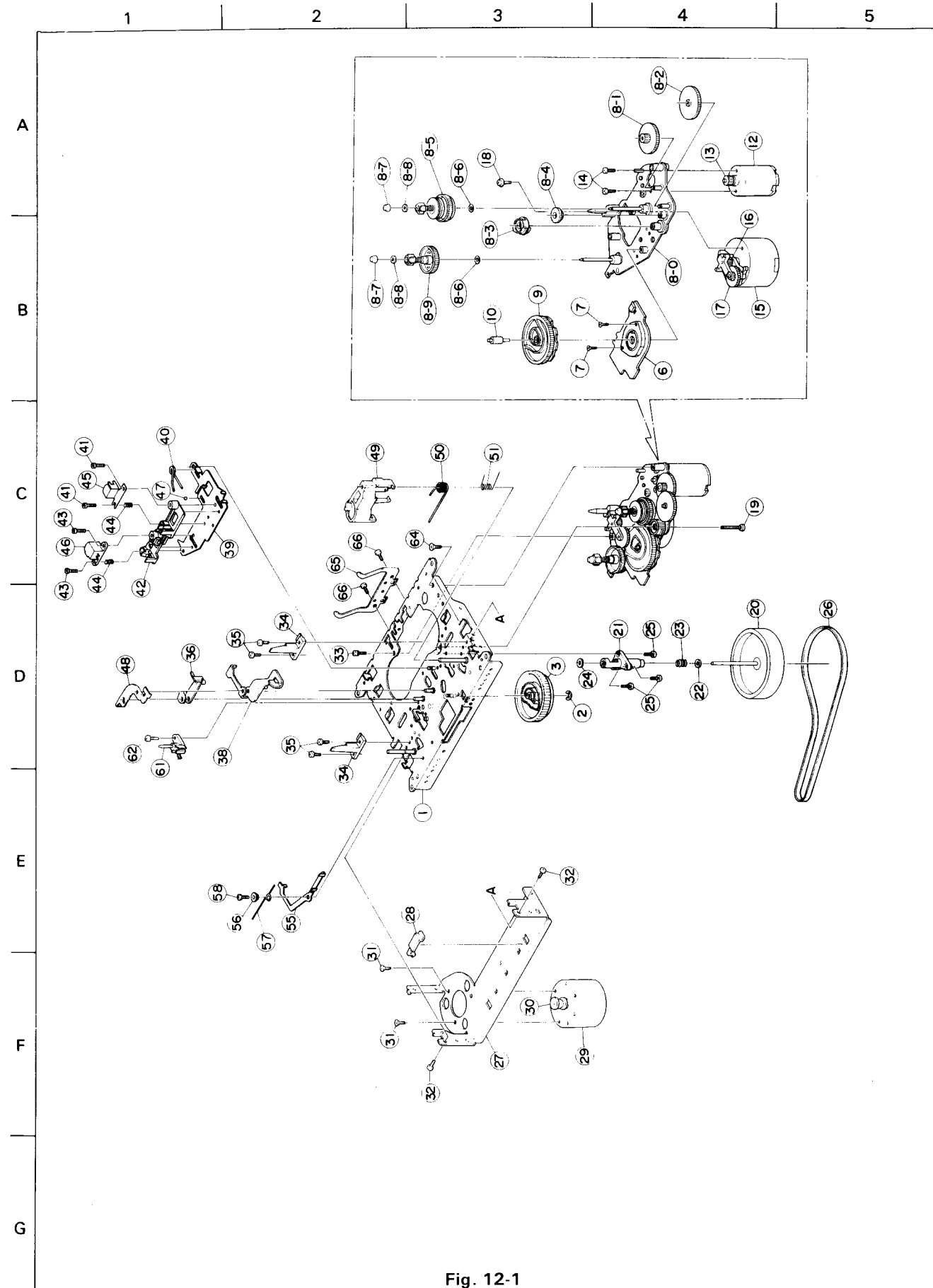


Fig. 12-1

Mechanism Assembly Parts List

△ Parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

△ REF.	PARTS NO.	PARTS NAME	REMARKS	QTY
1	VKL2389-00A	CHASSIS BASE		1
2	REE2000X	E.RING		1
3	VKS2186-002	P.ROLLER CAM		1
6	VKZ3152-00C	CAM SWITCH ASY.	CAM SWITCH ASS'Y	1
7	SSST2006Z	TAP.SCREW		2
8-0	VKL2375-00A	DISK BASE		1
8-1	VKR4527-001	HELICAL GEAR		1
8-2	VKR3001-002	GEAR(2)		1
8-3	VKR3145-002	CAM GEAR		1
8-4	VKR4516-001	GEAR		1
8-5	VKR4517-00A	REEL DISK ASS'Y		1
8-6	VKZ4003-010	FELT	BACK TENSION	2
8-7	VKS4131-001	REEL STOPPER		2
8-8	VKR4170-001	RING		2
8-9	VKR4518-00A	REEL DISK ASS'Y		1
9	VKS2188-002	HEAD BASE CAM		1
10	VKH3004-068	FLANGE SHAFT(A)		1
△ 12	MXN-13AB08A	D.C.MOTOR	CAM	1
13	VKR4528-001	MOTOR GEAR	CAM MOTOR	1
14	SPSP3005Z	SCREW	CAM MOTOR	2
△ 15	MMN-6F4RA88	D.C.MOTOR	REEL	1
16	VKR3000-003	GEAR(1)	REEL MOTOR	1
17	VKS4503-00D	F/R.ARM ASS'Y		1
18	SWSP2608Z	SCREW	REEL MOTOR	1
19	SDSR2610Z	SCREW	D.BASE UNIT	1
20	VKF3149-00B	FLYWHEEL ASS'Y		1
21	VKF4122-00E	CAPSTAN METAL		1
22	VKZ4035-010	WASHER	TAKE-UP	1
23	VKW3001-241	SPRING THRUST		1
24	VKZ4035-009	WASHER		1
25	SDST2605Z	SCREW		3
26	VKB3001-037	BELT	CAPSTAN	1
27	VKL3682-001	F.M.BRACKET		1
△ 28	VKS4437-001	THRUST PLATE		1
△ 29	SHE2L52	D.C.MOTOR	CAPSTAN	1
30	VKR4384-001	MOTOR PULLEY		1
31	SSSP2604Z	SCREW	CAPSTAN MOTOR	2
32	SDST2606Z	SCREW	F.M.BRACKET	2
33	LPSP2614Z	SCREW	REEL MOTOR	1
34	VKS4901-002	CASSETTE GUIDE		2
35	SDST2606Z	SCREW	CASSETTE GUIDE	4
36	VKL5316-00E	H.BASE ARM ASSY		1
38	VKL3421-00B	P.R.LEVER ASS'Y		1
39	VKL3685-003	H.BASE		1
40	VKW4467-001	TORSION SPRING		1
41	SPSX2011N	SCREW		2
42	VKS2123-001	HEAD MOUNT BASE		1
43	SPSX2012N	SCREW		2
44	VKW3001-080	SPRING		2
45	VGHO421-020	R / P HEAD	A-MECHA	1
46	VGHO212-104	ERASER HEAD		1
47	T41615-004	STEEL BALL		1
48	VKY4425-002	SPRING PLATE		1

13 Exploded View of Enclosure Assembly

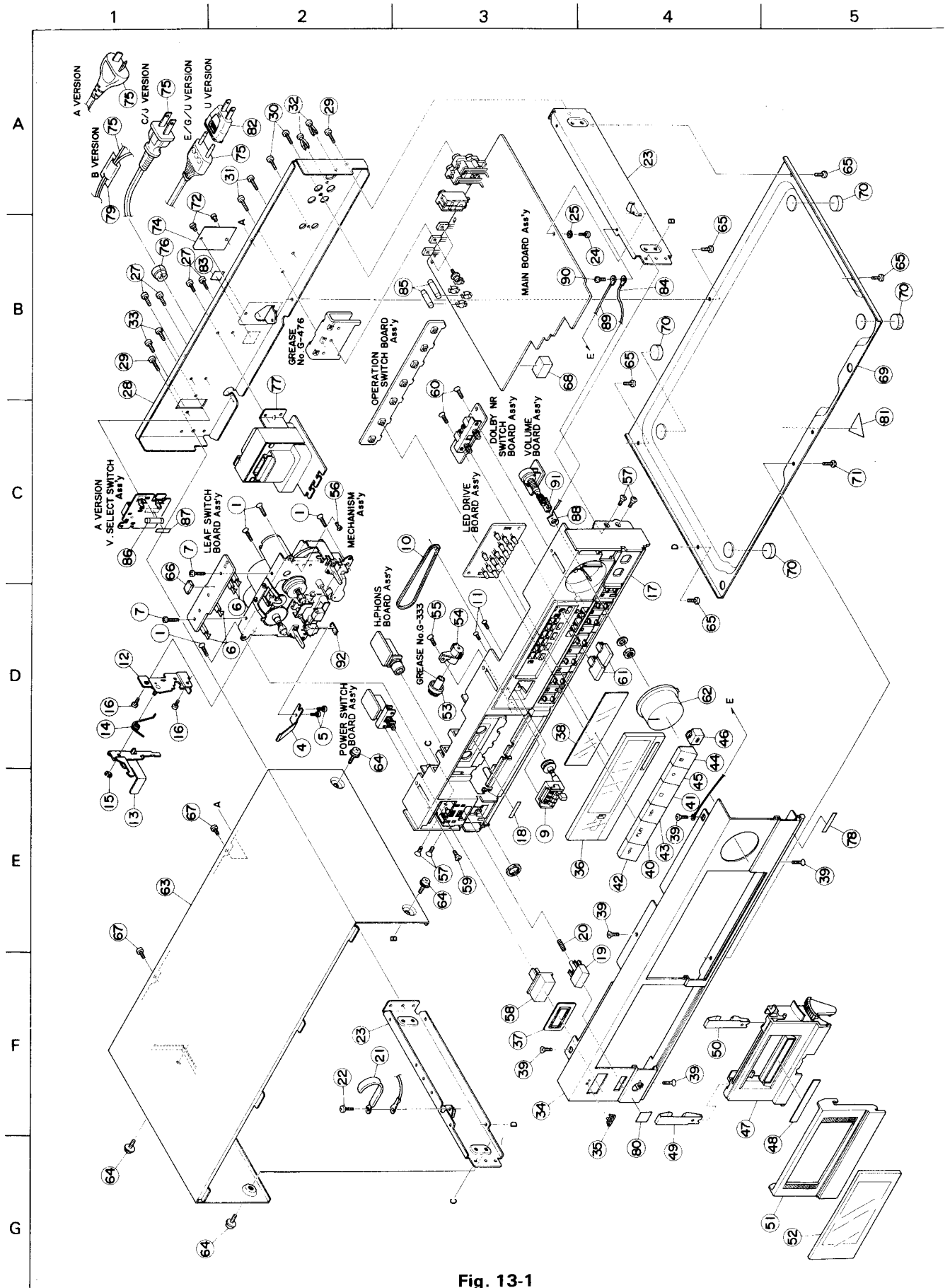


Fig. 13-1

△ Parts are safety assurance parts.

Enclosure Assembly Parts List

When replacing those parts, make sure to use the specified one.

△	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY
	1	SSSF3010Z	SCREW	MECHA+F.PANEL	4
	2	VKY4279-001	PACK SPRING		1
	3	SDST2604Z	SCREW		2
	4	VKY4497-001	HOLDER SPRING	MECHA	1
	5	SDST2603Z	SCREW	H.SPRING	2
	6	VSH1140-002	LEAF SWITCH	MECHA	4
	7	SDST2608Z	SCREW	LEAF SW PWB	2
	9	VKC5189-001T	TAPE COUNTER		1
	10	VKB3000-053	COUNTER BELT		1
	11	SSSF2606Z	SCREW	TAPE COUNTER	2
	12	VKL6066-00A	EJECT BKT ASS'Y		1
	13	VKM3124-001	EJECT LEVER		1
	14	VKW4643-001	TORSION SPRING		1
	15	REE2500	E.RING		1
	16	SDST2605Z	SCREW		2
	17	VJC1688-001	FRONT PANEL		1
	18	VJD4024-001	REFLECTION PLAT		1
	19	VXP4349-00A	PUSH BUTTON		1
	20	VKW3001-063	COMP.SPRING		1
	21	VKZ4001-011	WIRE HOLDER		1
	22	SDST3006Z	SCREW		1
	23	VKL3817-003	SIDE CHASSIS		2
	24	SDST3006Z	SCREW	P.W.B	1
	25	WBS3000N	WASHER		1
	27	SDST3006M	SCREW	P.TRANS	4
	28	VJC2266-006	REAR PANEL	TD-X311A/B/C/E/J(BK)	1
		VJC2266-007	REAR PANEL	TD-X311G(BK)	1
		VJC2266-008	REAR PANEL	TD-X311U(BK)	1
	29	SDST3006M	SCREW	R.PANEL+C.CHASSIS	2
	30	SDSF3008M	SCREW	P.JACK+DCS	2
	31	SDSF3008M	SCREW	HEAT SINK	2
	32	E48729-002	PLASTIC RIVET	TD-X311G(BK)DIN JACK	2
	33	SDSP3008M	SCREW	TD-X311U(BK)V.SELECT	2
	34	VJC1689-003	FRONT PLATE	TD-X311A/B/E/U(BK)	1
		VJC1689-004	FRONT PLATE	TD-X311C/J(BK)	1
	35	E72968-001	JVC MARK		1
	36	VJK3430-004	FINDER		1
	37	E73878-002	P.BUTTON ESCUTC		1
	38	VJD5119-002	LED PLATE		1
	39	SSSF3010Z	SCREW	F.PANEL+F.PLATE	5
	40	VXP3221-007	MECHA BUTTON	MECHA	1
	41	VXP3221-008	MECHA BUTTON	EJECT	1
	42	VXP3221-009	MECHA BUTTON		1
	43	VXP3221-010	MECHA BUTTON		1
	44	VXP3221-011	MECHA BUTTON		1
	45	VXP3221-012	MECHA BUTTON		1
	46	VXP4686-001	PUSH BUTTON		1
	47	VJT2177-001	CASSETTE HOLDER		1
	48	VJD5143-002	HOLDER PLATE		1
	49	VKY4382-007	CASSETTE SPRING		1
	50	VKY4382-008	CASSETTE SPRING		1
	51	VJT3242-002	CASSETTE LID		1
	52	VJT4149-001	CASSETTE FINDER		1
	34, 35, 37	ZCTDX311J-FBK	Front Plate Ass'y	J. ONLY	1
		ZCTDX311K-FBK	Front Plate Ass'y	Except J Version	1
	47~50	ZCTDX311K-CH	Cassette Holder Ass'y		1
	51, 52	ZCTDX311K-CLBK	Cassette Lid Ass'y		1

△ Parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

△	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY
	53	VYH4769-002	GEAR		1
	54	VYH5033-002	DAMPER HOLDER		1
	55	SBSF3010Z	TAPPING SCREW		1
	56	SSSF3010Z	SCREW		4
	57	SSST3006Z	SCREW		1
	58	E73877-001	PUSH BUTTON	POWER	1
	59	SSSP3008Z	SCREW		1
	60	SSSF3010Z	SCREW		2
	61	E71268-002	PUSH KNOB	INPUT	2
	62	E304768-001	VOL. KNOB		1
	63	VJC2101-008	TOP COVER		1
	64	VKZ3001-004	SPECIAL SCREW		4
	65	SDST3006Z	SCREW		5
	66	VYSR103-022	SPACER		1
	67	SDST3006M	SCREW		2
	68	VYSH115-004	SPACER		1
	69	VJC1590-002	BOTTOM COVER		1
	70	VJF4003-002	FOOT		4
	71	SDSF3010Z	TAP.SCREW		1
	72	SDST3006M	SCREW		2
	74	VYN2217-002KA	NAME PLATE	TD-X311A/B(BK)	1
		VYN2217-004KK	NAME PLATE	TD-X311C(BK)	1
		VYN2217-005KA	NAME PLATE	TD-X311E(BK)	1
		VYN2217-006KA	NAME PLATE	TD-X311J(BK)	1
		VYN2217-007KA	NAME PLATE	TD-X311U(BK)	1
		VYN2217-008KA	NAME PLATE	TD-X311G(BK)	1
△	75	QMP1200-200	POWER CORD	TD-X311C/J(BK)	1
△		QMP2560-200	POWER CORD	TD-X311A(BK)	1
△		QMP3900-200	POWER CORD	TD-X311E/G(BK)	1
△		QMP7380-200	POWER CORD	TD-X311U(BK)	1
△		QMP9017-008BS	POWER CORD	TD-X311B(BK)	1
△	76	QHS3876-162	S.R.BUSHING	TD-X311A/C/E/J/U(BK)	1
△		QHS3876-162BS	S.R.BUSHING	TD-X311B(BK)	1
△	77	VTP54A3-051BN	POWER TRANS	TD-X311C/J(BK)	1
△		VTP54C3-061B	POWER TRANS	TD-X311A/E/G(BK)	1
△		VTP54C3-061BBS	POWER TRANS	TD-X311B(BK)	1
△		VTP54G3-041B	POWER TRANS	TD-X311U(BK)	1
	78	TJL000420-01	CAUTION LABEL	TD-X311B(BK)	1
	79	QZL1002-003	WARNING LABEL	TD-X311B(BK)	1
	80	VNC5004-001	MARK STICKER	TD-X311B/E/G(BK)	1
	81	VND4113-001	G.CAUTION CARD		1
	82	V04062-001	CONTI.PLUG	TD-X311U(BK)	1
	83	VND4037-002	F MARK	TD-X311G(BK)	1
	84	VWE350-10A2NT	WIRE WITH LUG		1
△	85	QMF51A2-R80	FUSE	F1,F2 TD-X311A/E/G/U	2
△		QMF51E2-R80BS	FUSE	F1,F2 TD-X311B	2
△	86	QMF51A2-R125	FUSE	F3 TD-X311U(BK)	1
	87	VND4003-046	FUSE LABEL	TD-X311U(BK)	1
	88	TAZ336499-02	VOLUME LUG		1
	89	VWE350-08NTNT	LUG WIRE		1
	90	SDST3006Z	SCREW		1
	91	VYSA1R2-008	SPACER		1
	92	VYSR103-028	SPACER		1

14 Packing

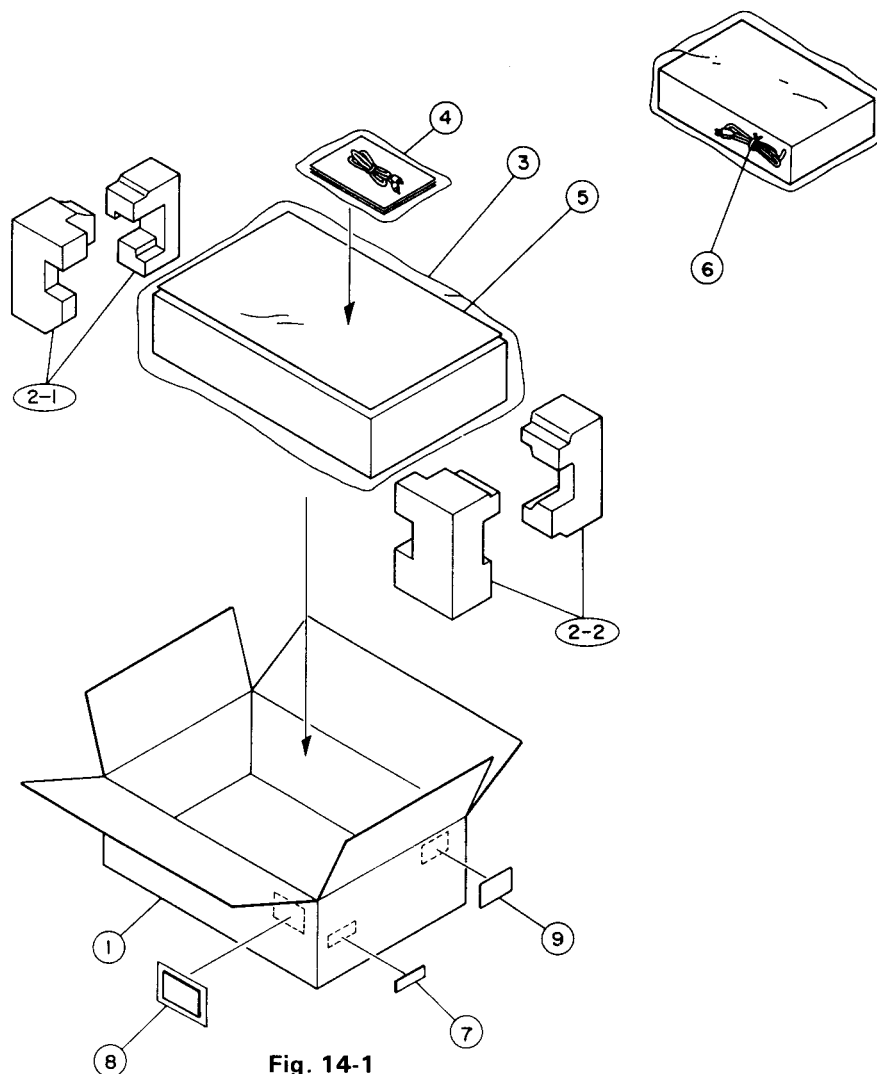


Fig. 14-1

Packing Parts List

⚠ Parts are safety assurance parts

When replacing those parts, make sure to use the specified one.

⚠	Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	1	VPC2217-002A	Carton		1
	2-1	VPH3125-002	Cushion	Left Side	1
	2-2	VPH3126-002	Cushion	Right Side	1
	3	VPE3005-025	Poly Bag	for Set	1
	4	VPE3005-007	Envelope	for Instruction Book	1
	5	VPK4002-006	Sheet	for Set	1
	6	Q04141H	Wire Clamp		1
	7	VND4909-001	Voltage Label	TD-X311U	1
	8	E66416-003	Envelope	TD-X311J/U for Warranty Card	1
	9	VND3044-004	Serial Label	TD-X311B	1
		VND3044-001	Serial Label	TD-X311A/U	1
		VND3044-001	Serial Label	TD-X311C	2
		VND3044-003	Serial Label	TD-X311E	1
		VND3044-002	Serial Label	TD-X311J	2
		VND3044-005	Serial Label	TD-X311G	1

15 Accessories

⚠ Parts are safety assurance parts.

When replacing those parts, make sure to use the specified one.

⚠	Parts No.	Parts Name	Remarks	Q'ty
	VPM0039-00D	Pin Cord		1
	EWP805-001E	Remote Cable		1
	VNN2217-661	Instruction Book		1
	BT20025J	Warranty Card	TD-X311C	1
	BT20029C	Warranty Card	TD-X311A	1
	BT20047C	Warranty Card	TD-X311J/U	1
	BT20060	Guarranty Card	TD-X311B	1
	BT20064A	Warranty Card	TD-X311G	1
	BT20066	Warranty Card	TD-X311B/G	1
	BT20098	Warranty Card	TD-X311A	1
	BT20071A	Service Network	TD-X311C	1
	BT20044E	Safety Instruction	TD-X311J	1
	VNC5311-203	Caution Card	TD-X311U	1
	VNC5311-204	Caution Card	TD-X311U	1
	VNC2200-019	Copyright Law Warning	TD-X311A/B/C/E/U	1
	BT20046C	Special Reply Card	TD-X311J/U	1



VICTOR COMPANY OF JAPAN, LIMITED.

AUDIO PRODUCTS DIVISION MAEBASHI PLANT 10-1, 1-chome, Ohwatari-cho, Maebashi-city 371, Japan