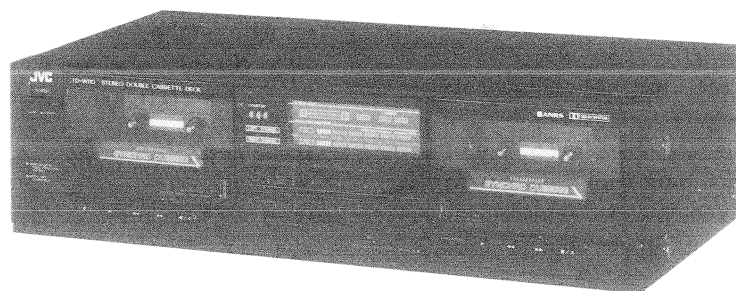


# JVC

## SERVICE MANUAL

### STEREO DOUBLE CASSETTE DECK

MODEL **TD-W110** A/B/C/E/G/J/U



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# 1 Safety Precautions

1. The design of this product contains special hardware. 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 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 schematics and parts list in 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 in 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/or the like to be separated from live parts, high temperature part, 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 they should be confirmed to be returned to normal, after re-assembling.

## 5. Leakage current check

(Safety for electrical shock hazard)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the Products (antenna terminals, knobs, metal cabinet, screw heads, earphone 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.

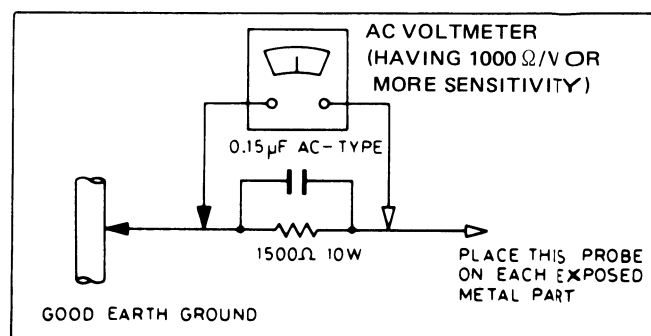
- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current 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 1500  $\Omega$  10 W resistor paralleled by a 0.15  $\mu$ F AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.).

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.).



## 2 Features

1. **Two logic-control deck mechanisms**
  - Double-speed dubbing functions reduces tape editing time by half.
2. **Dolby\* B noise reduction system**
3. **2-color 6-LED peak level indicator**
4. **Synchro start dubbing**

5. **Metal tape compatibility**
6. **Auto tape select mechanism (deck A)**

- \* 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 double cassette deck	Motors	: Electronic governed DC motor for capstan/reel x 1 (For both decks A and B)
Track system	: 4-track, 2-channel	Fast forward/ rewind time	: Approx. 100 sec with C-60 cassette
Tape speed	: 1-7/8 inch/sec (4.8 cm/sec)	Input terminals	
Frequency response		LINE IN x 2	: Min. input level; 80 mV Input impedance; 50 k $\Omega$
(-20 dB recording)	: Metal tape; 30-16,000 Hz (DIN 45500) 40-15,000 Hz ( $\pm$ 3 dB) Chrome tape; 30-16,000 Hz (DIN 45500) 40-15,000 Hz ( $\pm$ 3 dB) Normal tape; 30-15,000 Hz (DIN 45500) 40-14,000 Hz ( $\pm$ 3 dB)	Output terminals	
(0 dB recording)	: Metal tape; 40-11,000 Hz ( $\pm$ 3 dB) Chrome tape; 40-8,000 Hz ( $\pm$ 3 dB) Normal tape; 40-8,000 Hz ( $\pm$ 3 dB)	LINE OUT x 2	: Output level; 300 mV Output impedance; 5 k $\Omega$
S/N ratio	: 58 dB (S = 1 kHz, K3 = 3%, N = A-weighted, Metal tape) The S/N ratio is improved by 5 dB at 1 kHz and 10 dB at above 5 kHz with DOLBY B NR on.	PHONES x 1	: Output level; 0.3 mW/8 $\Omega$ Matching impedance; 8 - 1 k $\Omega$ (TD-W110B/E/G)
Wow and flutter	: 0.08% (WRMS) 0.20% (DIN 45500)	Power requirement	
Crosstalk	: 60 dB (1 kHz)	TD-W110A/B	: AC 240 V, 50/60 Hz
Harmonic distortion	: K3; 0.5%, THD; 1.0% (metal tape, 1 kHz, 0 dB)	TD-W110C/J	: AC 120 V, 60 Hz
Channel separation	: 40 dB (1 kHz)	TD-W110U	: AC 230/127/110 V, 50/60 Hz
Heads	: Deck A; METAPERM head for playback Deck B; METAPERM head for recording/ playback, 2-gap ferrite head for erasure	TD-W110E/G	: AC 220 V, 50/60 Hz
		Power consumption	: with power on; 16 W with power switch standby; 1.6 W
		Dimensions	: 435 mm (17-3/16") W 119 mm (4-11/16") H 220 mm (8-11/16") D
		Weight	: 3.7 kg (8.2 lbs)
		Accessories	: Pin plug cord . . . . . x 2

Design and specifications are subject to change without notice.

## 4 Name of Parts and Their Functions

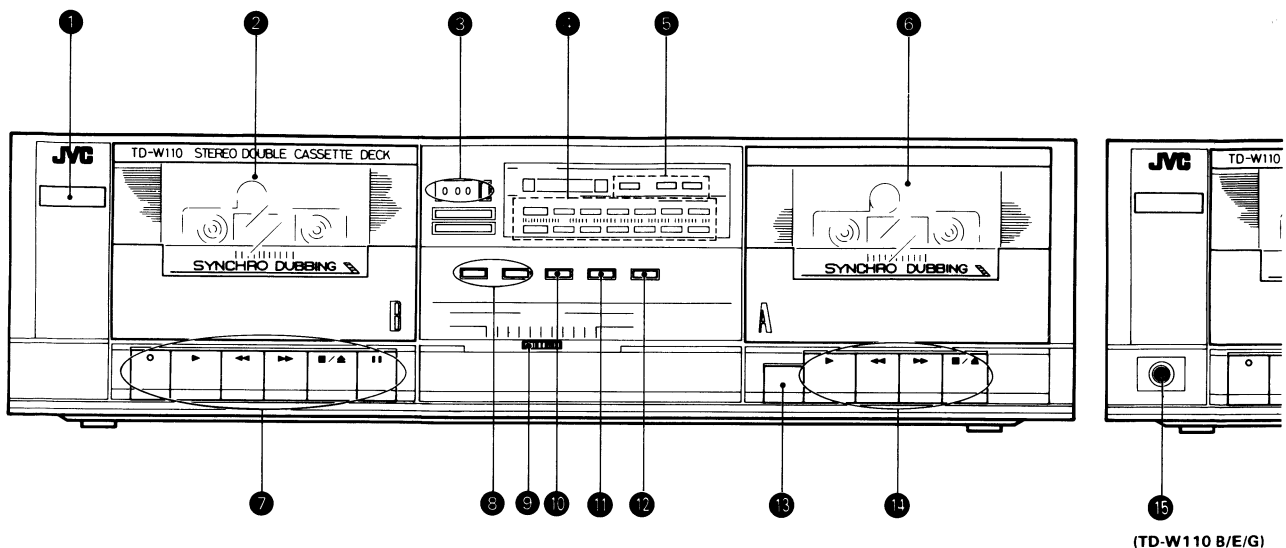


Fig. 4-1

**1 POWER switch**

**2 Cassette holder (deck B)**

**3 TAPE COUNTER and RESET button (deck B)**

**4 PEAK LEVEL INDICATOR**

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 Indicators**

• **REC**

This lights when deck B is in the recording and record-pause mode.

• **HIGH**

This lights when in the double-speed dubbing.

• **DUB**

This lights to indicate that the unit is in the dubbing mode.

**6 Cassette holder (deck A)**

**7 Cassette operation buttons (deck B)**

○ **(record):**

Press to record the tape.

▶ **(play):**

Press to play the tape.

◀◀ **(rewind):**

Press to rewind the tape.

▶▶ **(fast forward):**

Press to fast forward the tape

■/▲ **(stop/eject):**

Press to stop the tape. Pressing this button after the tape stops opens the cassette holder. (The tape automatically stops when it reaches the end.)

|| **(pause):**

Press to temporarily stop the tape in the record or playback mode. Press it again to release the pause mode and restart the tape.

**8 TAPE SELECT switches (deck B)**

When recording or playing back on deck B, select the correct setting according to the type of tape used.

**9 INPUT LEVEL control**

Adjust the recording level with this control.

**10 SPEED switch**

Used to switch the tape speed when dubbing.

(▶) HIGH: For double-speed dubbing.

(◻) NORM: For normal-speed dubbing.

Moreover, this is required when recording from the LINE IN input. Set to this position except during double-speed dubbing.

**11 DUBBING switch**

Set to ON (▶) when dubbing from deck A to deck B.

**12 NR SYSTEM switch**

**13 SYNCHRO PLAY button**

Press this button when performing synchro dubbing. Do not press this button other than for this purpose. (See page 21.)

**14 Cassette operation buttons (deck A)**

▶ **(play):**

Press to play the tape.

◀◀ **(rewind):**

Press to rewind the tape.

▶▶ **(fast forward):**

Press to fast forward the tape

■/▲ **(stop/eject):**

Press to stop the tape. Pressing this button after the tape stops opens the cassette holder. (The tape automatically stops when it reaches the end.)

**15 PHONES jack (B/E/G version only)**

Connect headphones (with an impedance of  $8\Omega$  —  $1k\Omega$ ).

## 5 Location of Main Parts

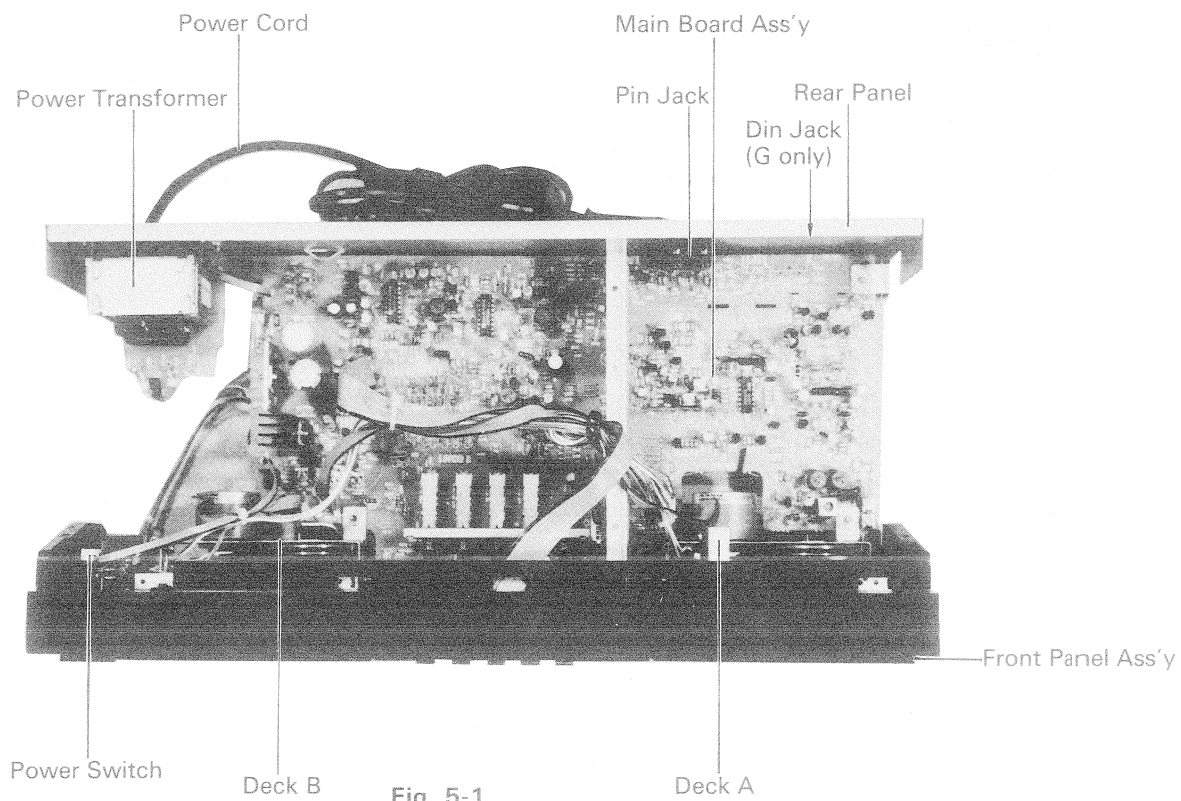


Fig. 5-1

E version

## 6 Removal of Main Parts

### Enclosure Section

#### ■ Removal of Top cover

- 1) Remove six screws retaining the both sides of the top cover.
- 2) Remove two screws retaining the back side of the top cover.

#### ■ Removal of Bottom cover

- 1) Remove four screws retaining the front side of the bottom cover.
- 2) Remove three screws retaining the rear side of the bottom cover.

#### ■ Removal of Rear panel

- 1) Remove four screws ①, ② and ③.
- 2) Remove four screws ④ retaining the power transformer.
- 3) Remove two rivets retaining the DIN jack to the rear panel. (for G version)

#### ■ Removal of Front panel ass'y

- 1) Remove three screws ⑤ retaining the main board to the chassis and bracket. and remove two screws ②.
- 2) If necessary, remove dressed wires and disconnect connectors temporarily.
- 3) Pull out the main board ass'y.

#### ■ Removal of Power switch ass'y

Remove two screws ⑥ retaining the power switch ass'y to the front panel ass'y.

#### ■ Removal of Mechanism ass'y

##### (Deck B)

- 1) Remove the counter belt and engage it with the hook of the FM bracket.
- 2) Remove one screw ⑦ retaining the damper holder ass'y.
- 3) Remove four screws ⑧ retaining the Deck B.
- 4) Open the cassette door by depressing the Stop/Eject button.
- 5) Remove the cassette holder from the mechanism ass'y disengaging its fulcrums on both sides. (See Fig. 6-3.)

**Note:** When reassembling the cassette holder, set the holder spring in the left arm of the holder prior to reassembly.

##### (Deck A)

- 1) Remove one screw ⑦ retaining the damper holder.
- 2) Remove four screws ⑧ retaining the Deck A.
- 3) Open the cassette door by depressing the Stop/Eject button.
- 4) Remove the cassette holder from the mechanism ass'y disengaging its fulcrums on both sides.

**Note:** When reassembling the cassette holder, set the holder spring in the left arm of the holder prior to reassembly.

#### ■ Removal of Tape counter

Remove one screw ⑨.

#### ■ LED Indicator

Remove two pawls ⑩ retaining the indicator board.

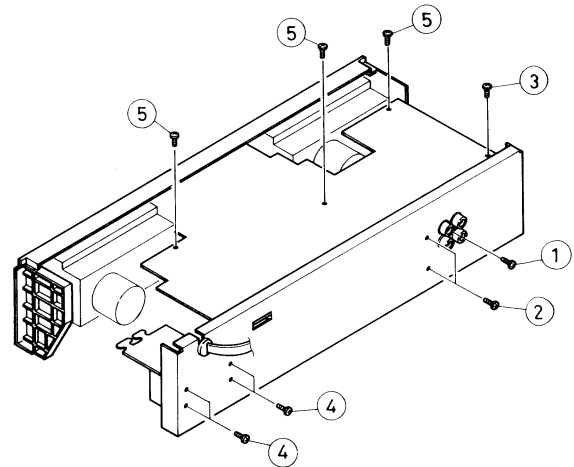


Fig. 6-1

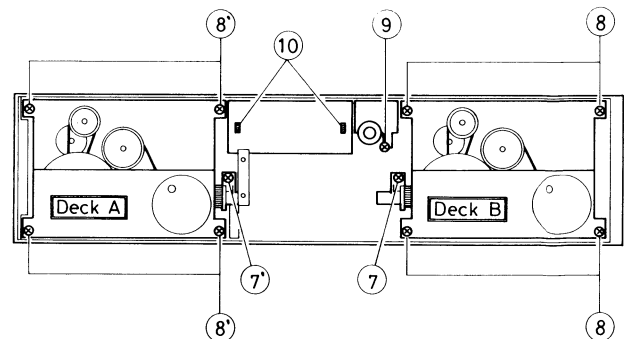
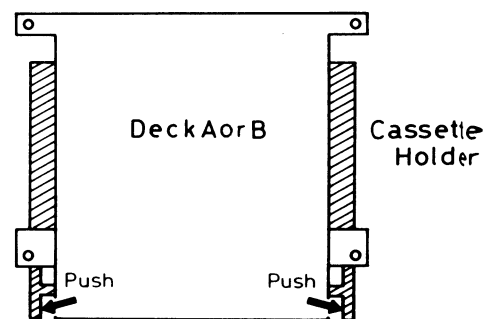


Fig. 6-2



Rear View

Fig. 6-3

## Mechanical parts

- **Rec./PB head (Deck B) PB head (Deck A)**
  - 1) Remove 2 screws (31) for the button assembly.
  - 2) Remove a screw (32).
  - 3) Loosen a screw (33) for adjustment.
- **Erase head (Deck B) Dummy head (Deck A)**
  - 1) Remove a screw (34).
  - 2) Remove a screw (35) for adjustment.
- **Pinch roller arm assembly**
  - 1) Remove a stopper (36) holding its assembly, and pull it off from the shaft.
- **Supply reel disc assembly**
  - 1) Pull out the E ring (37) and remove its disc from the shaft.
- **Take-up reel disc**
  - 1) Pull out the E ring (38) and remove it from the shaft.
- **Motor**
  - 1) Remove three screws (39), (40) and (41) fastening the FM bracket. (When removing the FM bracket (42), remove with the main belt (43) and the RF belt (44).)
  - 2) Remove three screws (45) fastening the motor.
  - 3) Pull out the motor pulley from the motor shaft.

**Note:** Be careful not to stain the main belt and RF belt. (When assembling the motor pulley, adjust the pulley position as next figure.)

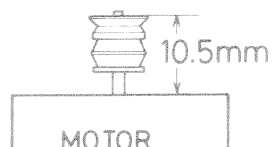


Fig. 6-5

- **Flywheel assembly**  
Pull out the flywheel from the capstan metal.

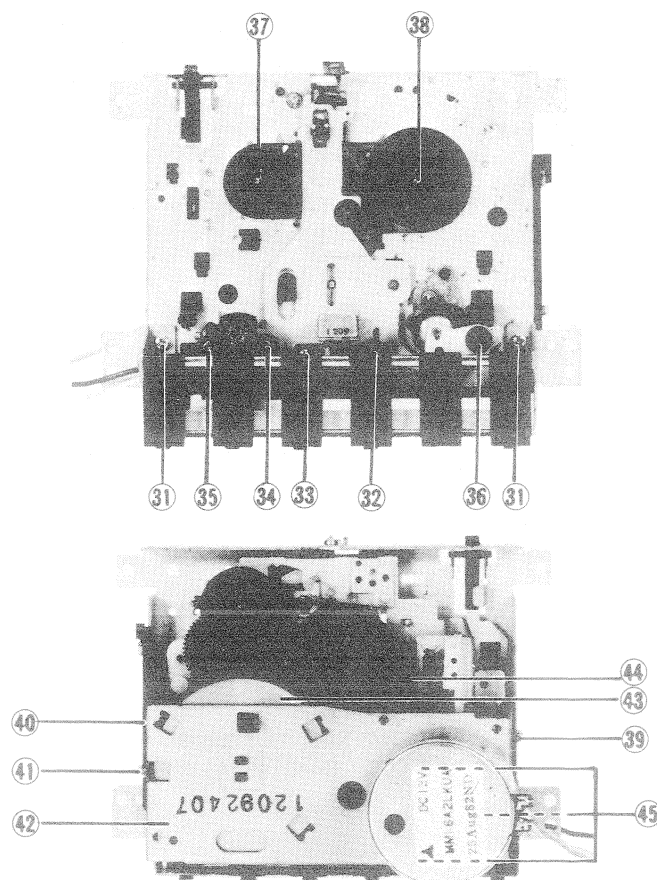


Fig. 6-4

## 7 Main Adjustments

### 1. Equipment and measuring instruments used for adjustments

- |  |  |
|--|--|
| 1) Electronic voltmeter  | 6) Resistor 600 $\Omega$ (for attenuator matching) |
| 2) Audio frequency oscillator (range; 50–20 kHz and output 0 dB with impedance of 600 $\Omega$ ) | 7) Distortion meter (bandpass filter)              |
| 3) Attenuator (impedance; 600 $\Omega$ )   | 8) Torque testing cassette gauge, CGT-N            |
| 4) Standard tapes for REC/PB   | 9) Wow flutter meter                               |
| Maxell UD — Normal (SF) tape — TS9   | 10) Frequency counter                              |
| TDK SA — Chrome (SA) tape — TS6  |  |
| JVC ME — Metal tape — TS7  |  |
| 5) Reference tape for playback (JVC Test Tape)   |  |
| TMT6451 (or VTT656A) (for tape speed, wow flutter adj.)  |  |
| VTT644 (or VTT724) (for playback level)  |  |
| VTT739 (for playback frequency response)   |  |
| TMT7008 (14 kHz) (for head azimuth adj.)   |  |

### 2. Mechanism adjustment procedure

Item	Adjustment	Adjusting point	Standard value	Remarks
Adjusting motor speed	1. Connect a frequency counter to the LINE OUT terminals. 2. Play back the test tape (VTT712). 655A) test tape. 3. Adjust for deck [A]: Adjust VRM01 for normal speed at 3000 Hz, and VRM02 for high speed at 6000 Hz. Adjust for deck [B]: Adjust VRM03 for normal speed at 3000 Hz, and VRM04 for high speed at 6000 Hz.	Deck [A]: Normal; VRM01 High; VRM02 Deck [B]: Normal; VRM03 High; VRM04	Normal speed: Deck [A]: 3000 Hz $\pm$ 15 Hz Deck [B]: 3000 Hz $\pm$ 15 Hz High speed: Deck [A]: 6000 Hz $\pm$ 20 Hz Deck [B]: 6000 Hz $\pm$ 20 Hz	For adjusting high speed, HI-SPEED test point should be grounded. Adjust high speed after perform normal speed.
Checking wow and flutter	Connect a wow and flutter meter to LINE OUT terminals and Play back the test tape (VTT712). Check to see if the reading of the meter is within 0.24% (CCIR WTD)		0.24% (OCIR WTD)	If the reading becomes moving value even if confirming to the standard, a re-claim 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.		35–75 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.		More than 70 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.		More than 70 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.



Item	Adjustment	Adjusting point	Standard value	Remarks
Checking auto-stop operation	Play back the tape. In playback mode, check that the tape run stops within 3 sec at the end of the tape. In fastforward or rewind mode, check that the tape stops within 5 sec at the tape end.		Play mode: within 3 sec FF/REW mode: within 5 sec	
Adjusting REC/PB head azimuth	<ol style="list-style-type: none"> <li>1. Connect an electronic voltmeter to the LINE OUT terminals.</li> <li>2. Play back the VTT653 test tape.</li> <li>3. Adjust the head angle with the screw A until the reading of the electronic voltmeter becomes maximum for both channels.</li> <li>4. After adjusting, set the screw with screw bond.</li> </ol>	Screw A (left side) each Deck <span style="border: 1px solid black; padding: 0 2px;">A</span> Deck <span style="border: 1px solid black; padding: 0 2px;">B</span>	Maximum	<p>If the head is worn, disconnected or exceedingly magnetized so as not to provide the necessary characteristics, replace it with a new one.</p> <p>After replacement, the head position adjustment as well as the playback level adjustment, the bias current adjustment and the recording level adjustment are all necessary.</p> <p>If the output difference between the left and right channels exceeds 3–4dB, the head is defective. Replace it with a new one.</p>

### 3. Electrical adjustments location

● Main Amp P. W. Board (parts assembly side view)

(Turning in the direction of the arrow increases the level.)

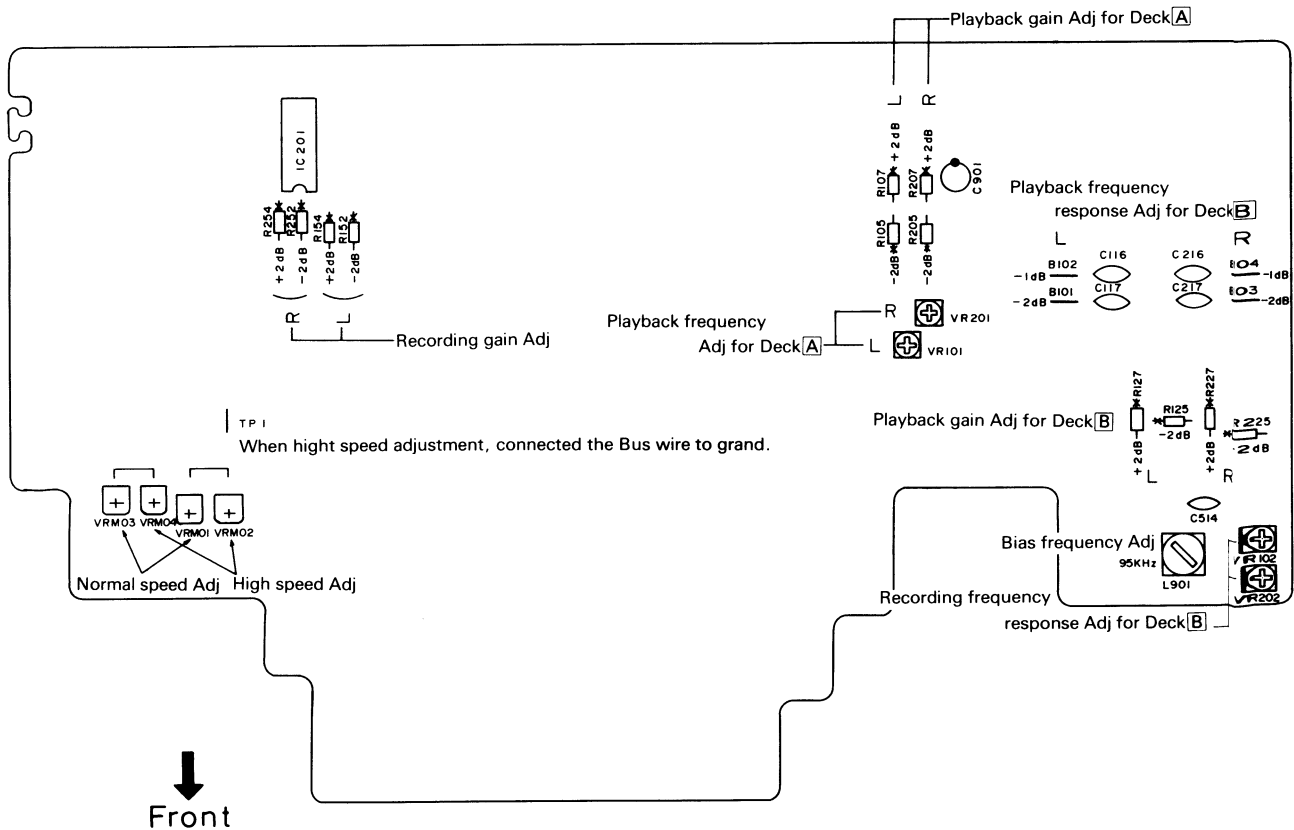


Fig. 7-1

#### 4. Electrical circuit adjustment procedure

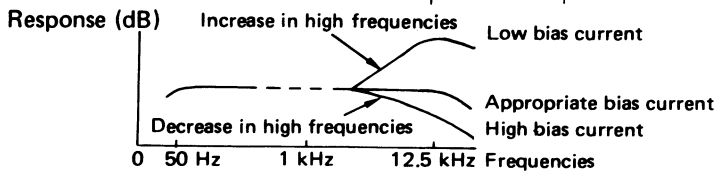
Perform the tape transport checks and head azimuth adjustment before following checks and adjustments.

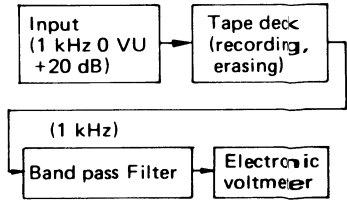
Adjustment should be performed in the order of alignment steps.

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
*2	Confirming playback gain	Play back VTT724, then confirm that the level at LINE OUT is <b>A</b> $-8\text{dB} \pm 2\text{dB}$ , <b>B</b> $-8\text{dB} \pm 2\text{dB}$ .	Deck A L:R105,R107 R:R205,R207 Deck B L:R125,R127 R:R225,R227	<b>A</b> $-8 \pm 2\text{dB}$ <b>B</b> $-8 \pm 2\text{dB}$	When the head is replaced, adjust playback gain level. Deck A L:R107 cut by +1.5dB R105 cut by -1.5dB R:R207 cut by +1.5dB R205 cut by -1.5dB Deck B L:R127 cut by +1.5dB R125 cut by -1.5dB R:R227 cut by +1.5dB R225 cut by -1.5dB
*3	Playback frequency response	Deck A: Play back VTT739, then confirm that the level of 1 kHz and 10 kHz signals is $0.5 \pm 0.5\text{ dB}$ . Deck B: disconnect B101, B102(L-ch) and B103, B104 (R-ch) so that the outputs of 1 kHz and 10 kHz signals are flat.	DeckA L:VR101 R:VR201 DeckB L:B101,B102 L:B103,B104	Deck A: $0.5 \pm 0.5\text{dB}$ Deck B: $0 \pm 1\text{ dB}$	B102 cut by $-1\text{dB}$ B101 cut by $-2\text{dB}$ B104 cut by $-1\text{dB}$ B103 cut by $-2\text{dB}$ Deck <b>A</b> :Tape selected automatically. Deck <b>B</b> :Tape selected manually.
*4	Adjusting bias frequency	Connect the frequency counter to the C514 Lead through a $1.2\text{ M}\Omega$ resistor, then adjust L901 so that the counter reads 95 kHz.	L901	95 kHz $\pm 10\%$	METAL Position
*5	Recording frequency response	1) NR switch: OFF 2) Record a 1 kHz signal at an input reference level of $-20\text{ dB}$ , then record 50 Hz and 12.5 kHz signals and play them back. At this time, adjust VR102 and VR202 so that the deviation of 50 Hz and 12.5 kHz outputs satisfy the standard values with respect to 1 kHz output.	For Normal tape: L:VR102 R:VR202	With respect to 1 kHz reference: At 50 Hz, $0 \pm 3\text{ dB}$ ; At 12.5 kHz, $0 \pm 3\text{ dB}$	CrO <sub>2</sub> 50Hz $0 \pm 3\text{dB}$ 12.5kHz $0 \pm 4\text{dB}$ Metal 50Hz $0 \pm 3\text{dB}$ 12.5kHz $+1 \pm 4\text{dB}$ Deck <b>A</b> :Tape selected automatically. Deck <b>B</b> :Tape selected manually.



Step	Item	Adjustment	Adjusting point	Standard value	Remarks
*6	Recording gain	1) Apply a 1kHz signal to the LINE IN terminals, record a 1kHz signal at 0 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 $-8$ dBs with peak level indicator reading 0. Then adjust VR901 (Input Level control) so that LINE OUT terminal level becomes $-8$ dBs.	For Normal tape: L: R152 R154  R: R252 R254	$-8 \pm 2.0$ dB  (CrO <sub>2</sub> $-8 \pm 2.5$ dB Metal $-8 \pm 2.5$ dB)	Perform the adjustment using a normal tape. Level difference between recording and playback for VX/CrO <sub>2</sub> and metal tapes should be less than 1.5 dB, and that between left and right channels should also be less than 1 dB.  L: R154 cut by +2dB R152 cut by -2dB  R: R254 cut by +2dB R252 cut by -2dB
*7	Checking record/playback distortion	1) Record a 1 kHz, $-8$ dB signal to LINE IN terminals and perform recording with the peak level indicator reading 0. 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 <sub>2</sub> tape: Less than 3% Metal tape: Less than 2% (THD)	Be sure to perform this checking following bias current and recording level checking.
8	Checking signal to noise ratio in recording/playback	1) Record a 1 kHz, 0 dB signal. 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 <sub>2</sub> & 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.
9	Checking erasing coefficient	1) Apply a 1 kHz signal to the LINE IN terminals. Adjust the recording level controls until the peak level indicator reads 0 dB. 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 65 dB	For the measurement using a metal tape, connect a band pass filter between the deck and the electronic voltmeter.  <pre>           graph LR             Input["Input (1 kHz 0 VU +20 dB)"] --&gt; Deck["Tape deck (recording, erasing)"]             Deck --&gt; Filter["Band pass Filter (1 kHz)"]             Filter --&gt; Voltmeter["Electronic voltmeter"]           </pre>

# 8 Block Diagrams

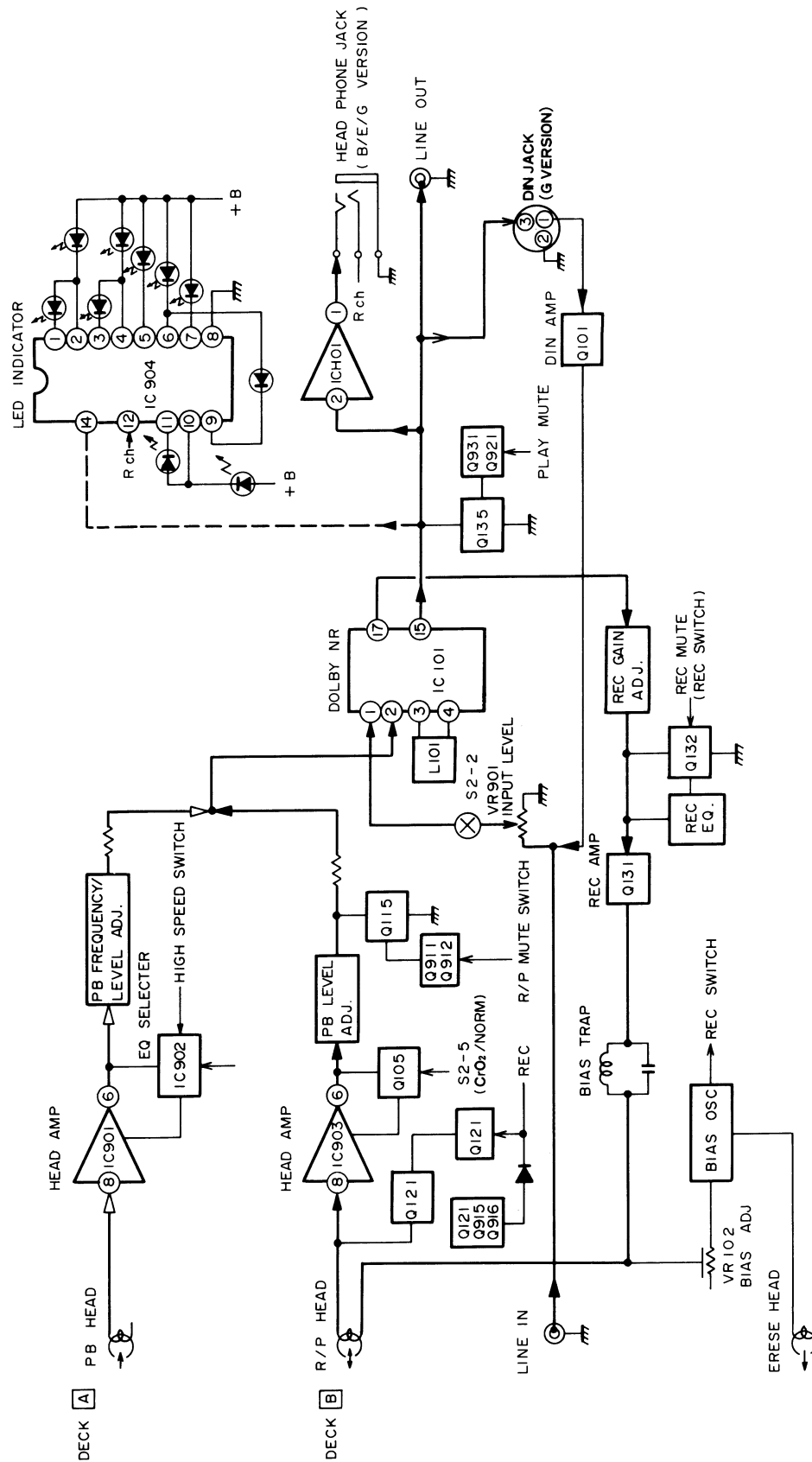


Fig. 8-1

# 9 Standard Schematic Diagrams

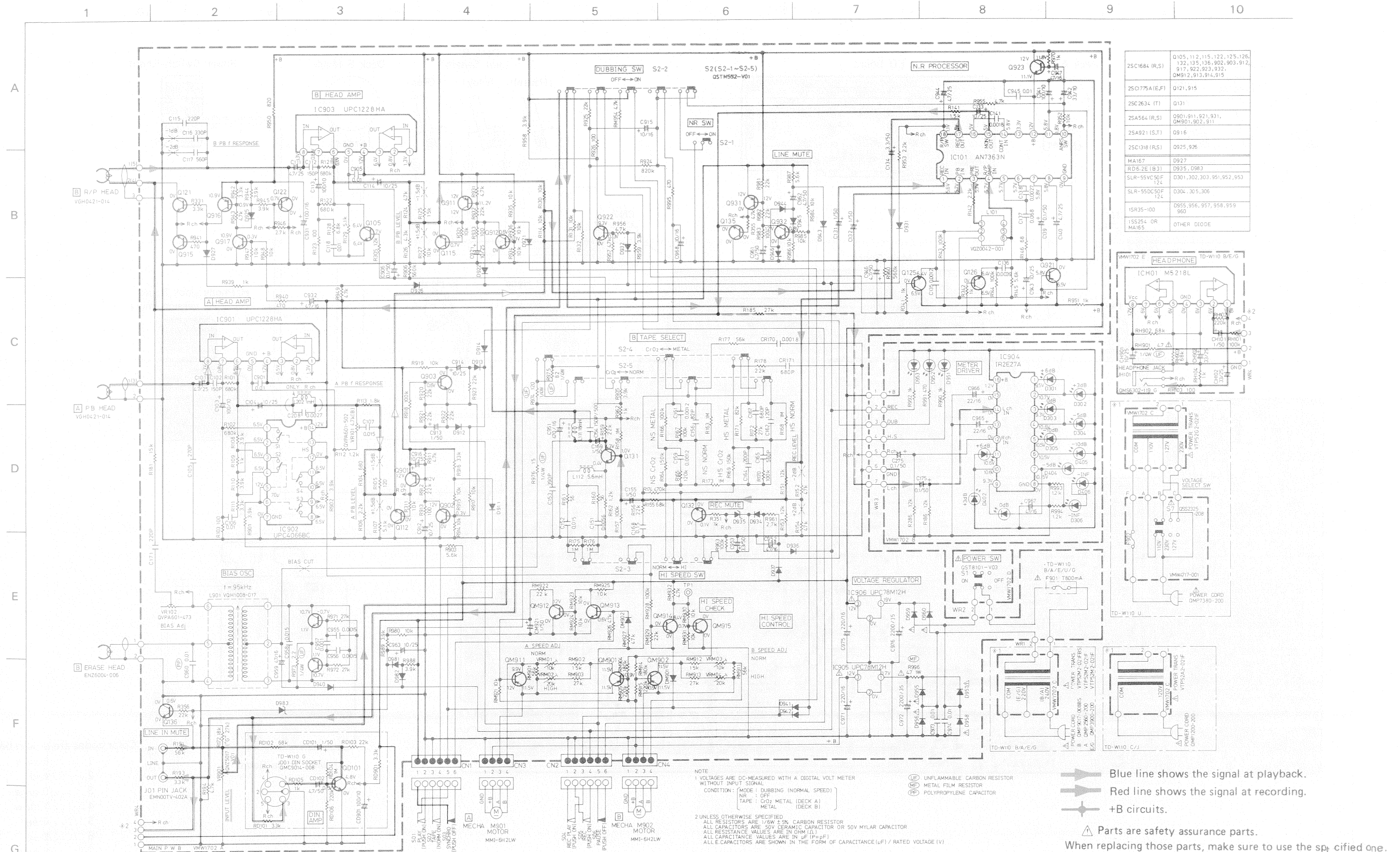
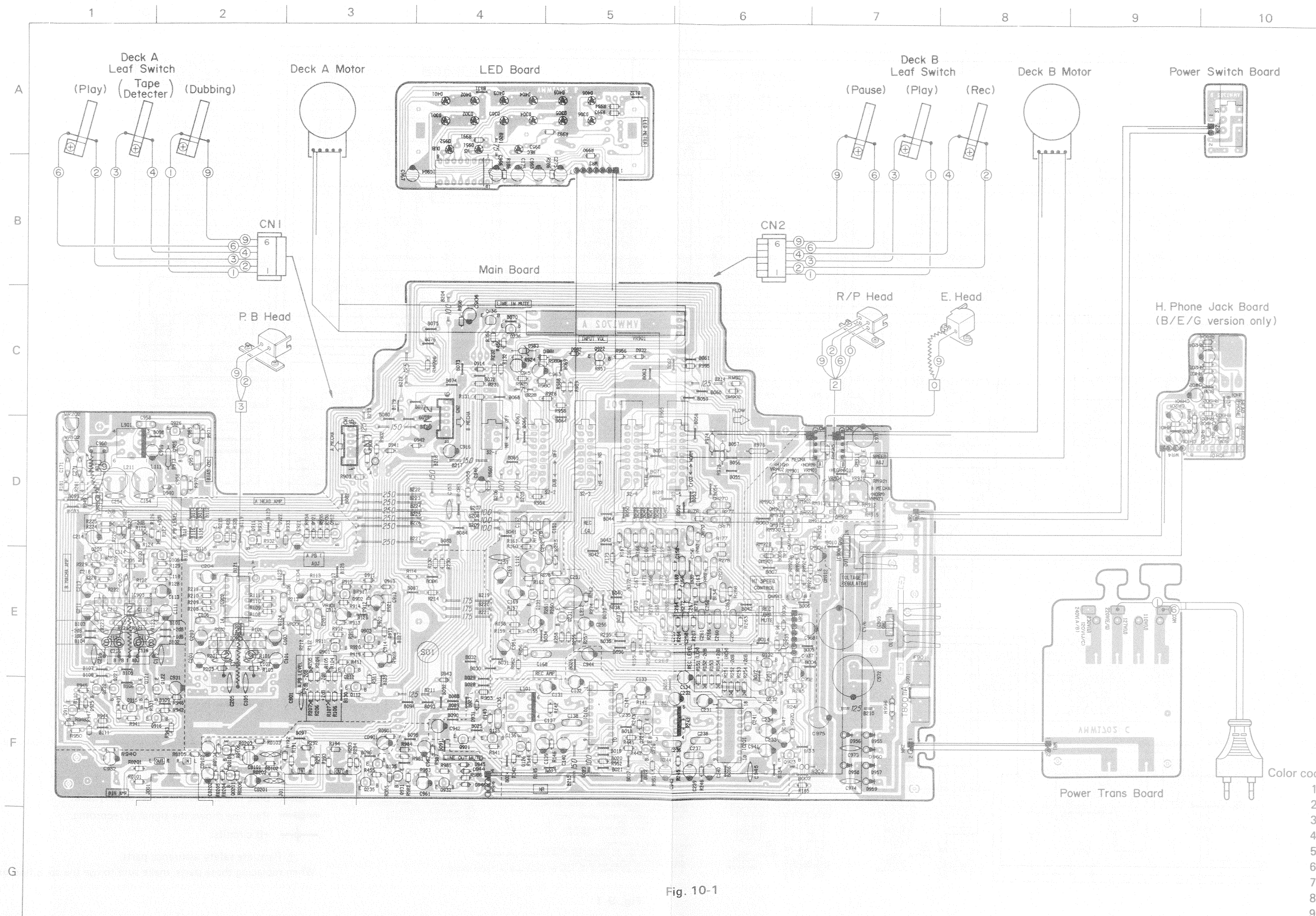


Fig. 9-1

# 10 Wiring Connections



Color codes are shown below.

- 1 . . . . Brown
- 2 . . . . Red
- 3 . . . . Orange
- 4 . . . . Yellow
- 5 . . . . Green
- 6 . . . . Blue
- 7 . . . . Violet
- 8 . . . . Grey
- 9 . . . . White
- 0 . . . . Black

Fig. 10-1







Location of P.C. Board Parts

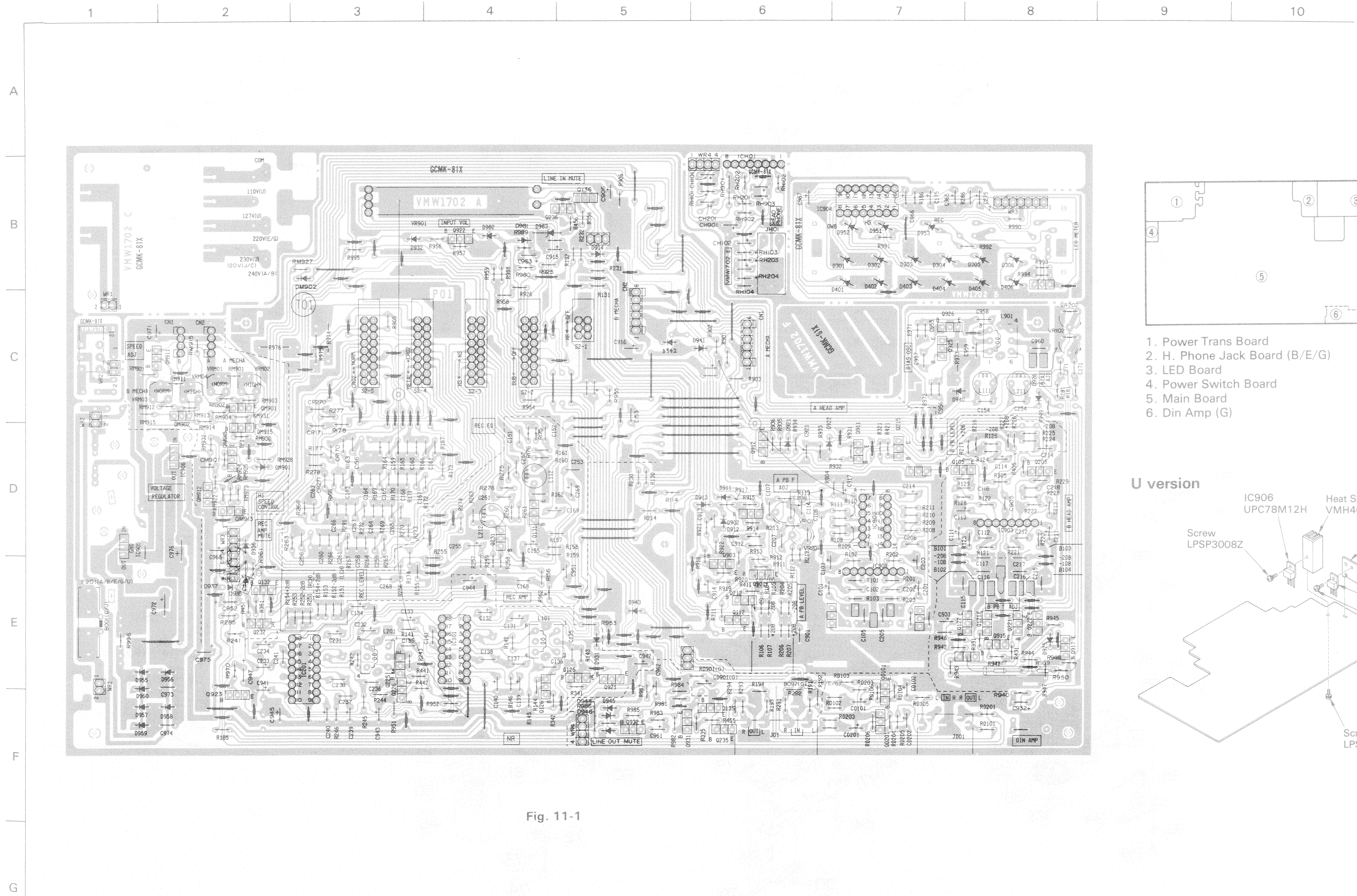
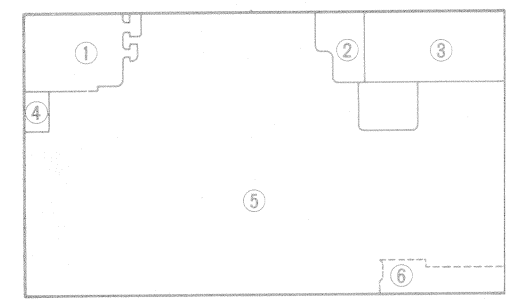
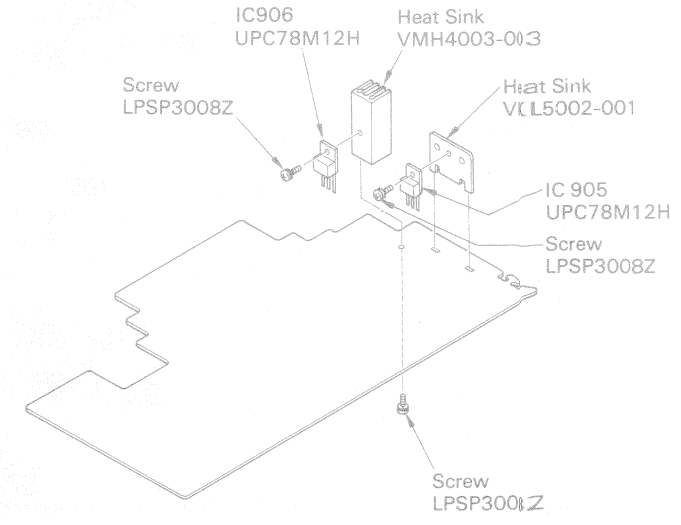


Fig. 11-1



1. Power Trans Board
2. H. Phone Jack Board (B/E/G)
3. LED Board
4. Power Switch Board
5. Main Board
6. Din Amp (G)

U version



# 12 Exploded View of Mechanism Assembly

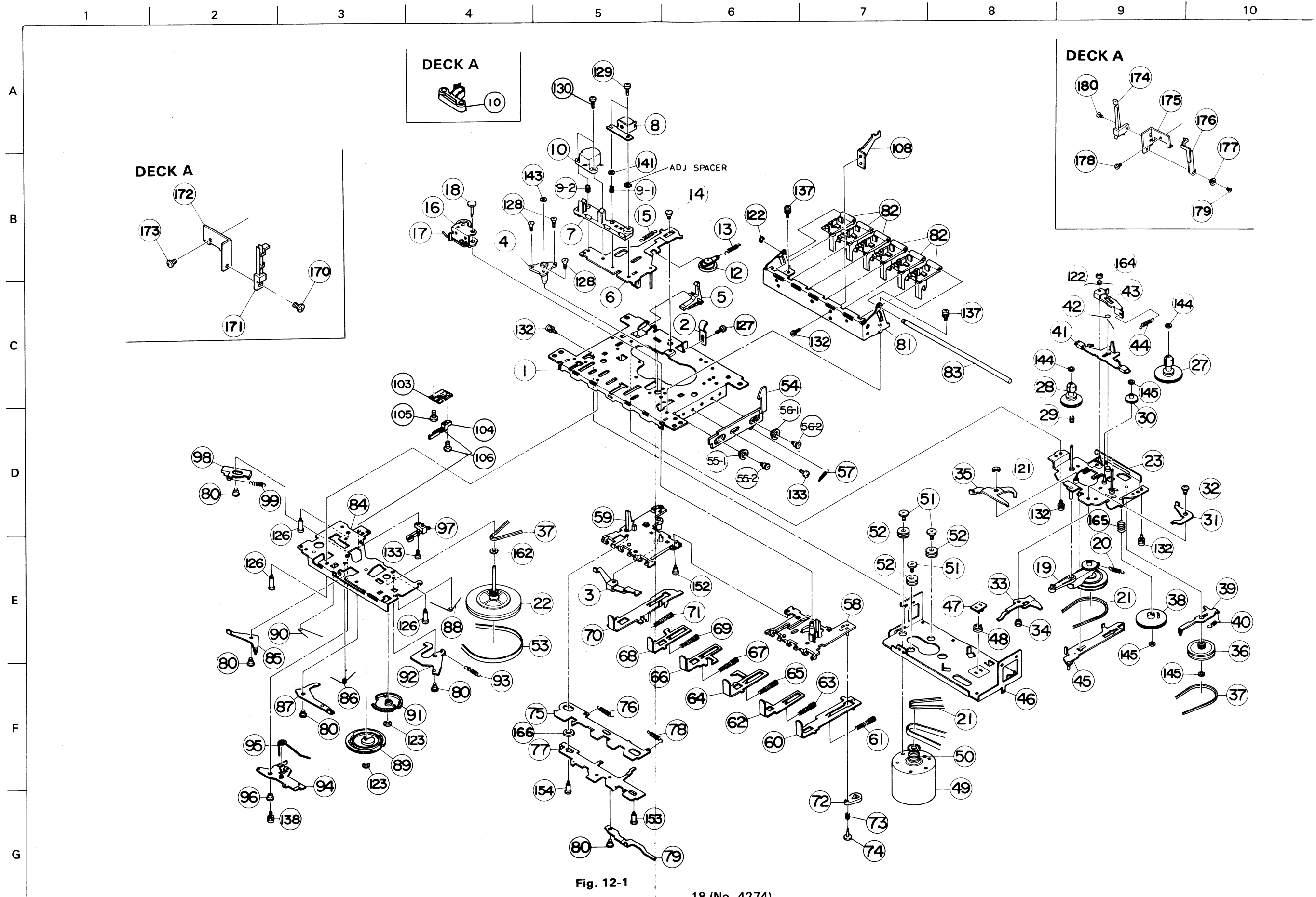


Fig. 12-1

## Mechanism Component 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	18200101T	CHASSIS BASE		1
	2	18200102T	PACK SPRING		1
	3	18200202T	REC.STOPPER		1
	4	18201207T	FLYWHEEL METAL		1
	5	18000201T	REC.S. LEVER		1
	6	182003501ZT	HEAD PANEL		1
	7	18200311T	HEAD BASE		1
	8	VGH0421-014	R/P HEAD		1
	9-1	14400315T	HEAD SPRING	R/P HEAD	1
	9-2	14400312T	HEAD SPRING	ERASER HEAD	1
	10	ENZ6004-006	E HEAD		1
	12	182003301ZT	T-UP ROLLER	PLATE ASS'Y	1
	13	18200312T	SPRING	T-UP ROLLER PLATE	1
	14	18200316T	P.COLLAR SCREW		1
	15	18200302T	SPRING	HEAD PANEL	1
	16	182004303ZT	P.ROLLER ASS'Y		1
	17	18200403T	P.ROLLER SPRING		1
	18	17152015T	STOPPER		1
	19	182007301ZT	RF.CLUTCH ASS'Y		1
	20	18200704T	SPRING	RF.CLUTCH ARM	1
	21	17150606T	RF. BELT		1
	22	182012307ZT	FLYWHEEL ASY		1
	23	182005505ZT	BRACKET ASS'Y	REEL	1
	27	182006316T	REEL ASS'Y	T-UP	1
	28	182006302ZT	REEL ASS'Y	SUPPLY	1
	29	18200613T	BACK T.SPRING		1
	30	18000610T	GEAR	FF	1
	31	18200910T	T.R KICK LEVER		1
	32	18200818T	COLLAR SCREW		1
	33	18200805T	AUTO STOP LEVER		1
	34	18200811T	COLLAR	AUTO STOP LEVER	1
	35	18200911T	KICK LEVER		1
	36	18200801T	PULLEY		1
	37	18200809T	BELT	AUTO STOP	1
	38	18200802T	CAM GEAR		1
	39	18200803AT	DETECT LEVER		1
	40	18200810T	DETECT LEVER SPRING		1
	41	182009301ZT	BRAKE ARM ASS'Y		1
	42	18200902T	BRAKE SPRING		1
	43	18200905T	A.S.G.LEVER		1
	44	18200913T	LEVER SPRING		1
	45	18200903AT	R.F.SLIDE LEVER		1
	46	18201301T	FM BRACKET		1
	47	18201302T	FL.THRUST PLATE		1
	48	18201310T	THRUST SPRING		1
△	49	MMI-6H2LWC1	MOTOR		1
	50	18201344T	MOTOR PULLEY		1
	51	18201305T	COLLAR SCREW	MOTOR	3
	52	18201306T	MOTOR RUBBER	MOTOR	3
	53	18201303T	CAPSTAN BELT		1
	54	18201401T	EJECT LEVER		1
	55-1	18201402T	COLLAR		1
	55-2	90790000T	ASS'Y SCREW		1
	56-1	18201403T	COLLAR		1
	56-2	90390000T	SCREW		1

△ Parts are safety assurance parts.

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

△ REF.	PARTS NO.	PARTS NAME	REMARKS	QTY
57	15590306T	SPRING	EJECT SLIDE LEVER	1
58	18201001AT	BUTTON BASE (L)		1
59	18201002AT	BUTTON BASE (R)		1
60	182010501ZT	LEVER ASS'Y	PAUSE BUTTON	1
61	18000903T	B.LEVER SPRING		1
62	18201022T	LEVER	STOP BUTTON	1
63	18201027T	BUTTON L.SPRING		1
64	18201021T	LEVER	FF BUTTON	1
65	18000903T	B.LEVER SPRING		1
66	18201020T	LEVER	REW BUTTON	1
67	18201026T	LEVER SPRING		1
68	18201019T	LEVER	PLAY BUTTON	1
69	18201026T	LEVER SPRING		1
70	18201018T	LEVER	REC.BUTTON	1
71	18201026T	LEVER SPRING		1
72	18201041T	PAUSE LEVER		1
73	18201034T	LEVER SPRING		1
74	18201032T	STOPPER		1
75	18201042T	BUTTON CAM		1
76	18201052T	STOPER SPRING	BUTTON CAM	1
77	18201010T	SWITCH CAM		1
78	18201031T	SPRING	SWITCH CAM	1
79	18201011T	KICK LEVER		1
80	18200819T	COLLAR SCREW	REC.FUNCTION	1
	18200819T	COLLAR SCREW		1
	18200819T	COLLAR SCREW	PAUSE ARM	1
	18200819T	COLLAR SCREW	M.TRIGGER ARM	1
	18200819T	COLLAR SCREW	P.TRIGGER ARM	1
81	18201015T	BUTTON FRAME		1
82	18201028T	FUNCTION LEVER		6
83	18201016T	LEVER SHAFT		1
84	182011509ZT	CHASSIS BASE		1
85	182011510ZT	ARM ASS'Y		1
86	18201126T	SPRING	M.TRIGGER ARM	1
87	182011503ZT	ARM ASS'Y		1
88	18201126T	SPRING	P.TRIGGER ARM	1
89	18201103T	MAIN GEAR		1
90	18201131T	SPRING	MAIN GEAR	1
91	18201104T	PAUSE GEAR		1
92	182011504ZT	PAUSE ARM ASS'Y		1
93	17000932T	SPRING	PAUSE ARM ASS'Y	1
94	182011505ZT	LIFT ARM ASS'Y		1
95	18201129T	SPRING	LIFT ARM	1
96	18201130T	COLLAR	LIFT ARM	1
97	64010170T	LEAF SWITCH	MSW-1412TNBK	1
98	18201121T	PLATE	REC.FUNCTION	1
99	17001612T	SPRING	REC.FUNCTION PLATE	1
103	18201148T	LEAF SWITCH BRACKET		1
104	MSW-0094CNBKT	LEAF SWITCH		1
105	91160000T	SCREW		1
106	91800000T	SCREW		1
108	18201035T	B.SHAFT STOPPER		1
121	94990000T	E RING	KICK LEVER	1
122	95000000T	E.RING	LEVER SHAFT	1

△ Parts are safety assurance parts.

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

△	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY
	123	95000000T	E.RING		1
		95020000T	E.RING		1
		95020000T	E.RING		1
	126	18201137T	COLLAR SCREW		3
	127	92000000T	TH.TAP.SCREW	PACK SPRING	1
	128	95620000T	MINI SCREW	FL METAL	3
	129	92120000T	PM.SCREW	R/P HEAD	2
	130	92120000T	PM.SCREW	ERASER HEAD	2
	132	90770000T	SCREW		1
		90770000T	SCREW	RELL BRACKET	2
	133	90770000T	SCREW		1
		90020000T	SCREW	FM BRACKET	1
		90020004T	SCREW		1
	137	90960000T	SCREW		2
	138	90980000T	ASS'Y SCREW		1
	141	93160000T	WASHER		1
	143	93720000T	NYLON WASHER	OIL CUT	1
	144	94970000T	E.RING		1
		94970000T	E.RING	T-UP REEL	1
	145	94210000T	POLY.WASHER	PULLEY	1
		94210000T	POLY.WASHER	CAM GEAR	1
		94210000T	POLY.WASHER	FF GEAR	1
	152	18201025T	COLLAR SCREW		1
	153	18201029BT	COLLAR SCREW		1
	154	18201030T	COLLAR SCREW		1
	162	97880000T	POLYS WASHER	THRUST	1
	164	18200914T	A.S G.LEVER SP.		1
	165	18200821T	CAM GEAR SPRING		1
	166	18201068T	SPACER		1
	170	91160000T	SCREW		1
	171	64010172T	LEAF SWITCH		1
	172	18201140T	SWICH BRACKET		1
	173	90770000T	SCREW		1

#### COMPARISON TABLE

Ref. No.	Parts Name	Parts No.	
		Deck B	Deck A
10	E. Head	ENZ6004-006	VKS4710-001
31	TR Kick Lever	18200910T	—
32	Collar Screw	18200818T	—
35	Kick Lever	18200911T	—
72	Pause Lever	18201041T	—
73	Pause Lever Spring	18201034T	—
74	Stopper	18201032T	—
84	Sub Chassis Ass'y	182011509ZT	182011527ZT
80	Collar Screw	18200819T	18201137T
87	Play Trigger Arm Ass'y	182011503ZT	—
88	Play Trigger Arm Spring	18201127T	—
80	Collar Screw	18200819T	—
91	Pause Gear	18201104T	—
92	Pause Arm Ass'y	182011504ZT	—
93	Pause Arm Spring	17000932T	—
98	Rec. Function Plate	18201121T	—
99	Spring	17001612T	—
103	Switch Bracket	18201148T	—
104	Leaf Switch	MSW-0094CNBKT	—
105	Screw	91160000T	—

Ref. No.	Parts Name	Parts No.	
		Deck B	Deck A
106	Screw	91800000T	—
121	E. Ring	94990000T	—
123	E. Ring	95020000T	—
171	Leaf Switch	64010172T	—
172	Switch Bracket	18201140T	—
174	Leaf Switch	—	64050117 T
175	Switch Bracket	—	18201117 T
176	Switch Arm	—	18201117 T
177	Collar	—	1820080 T
178	Screw	—	9077000 T
179	Screw	—	9566000 T
180	Screw	—	9116000 T

# 13 Exploded View of Enclosure Assembly

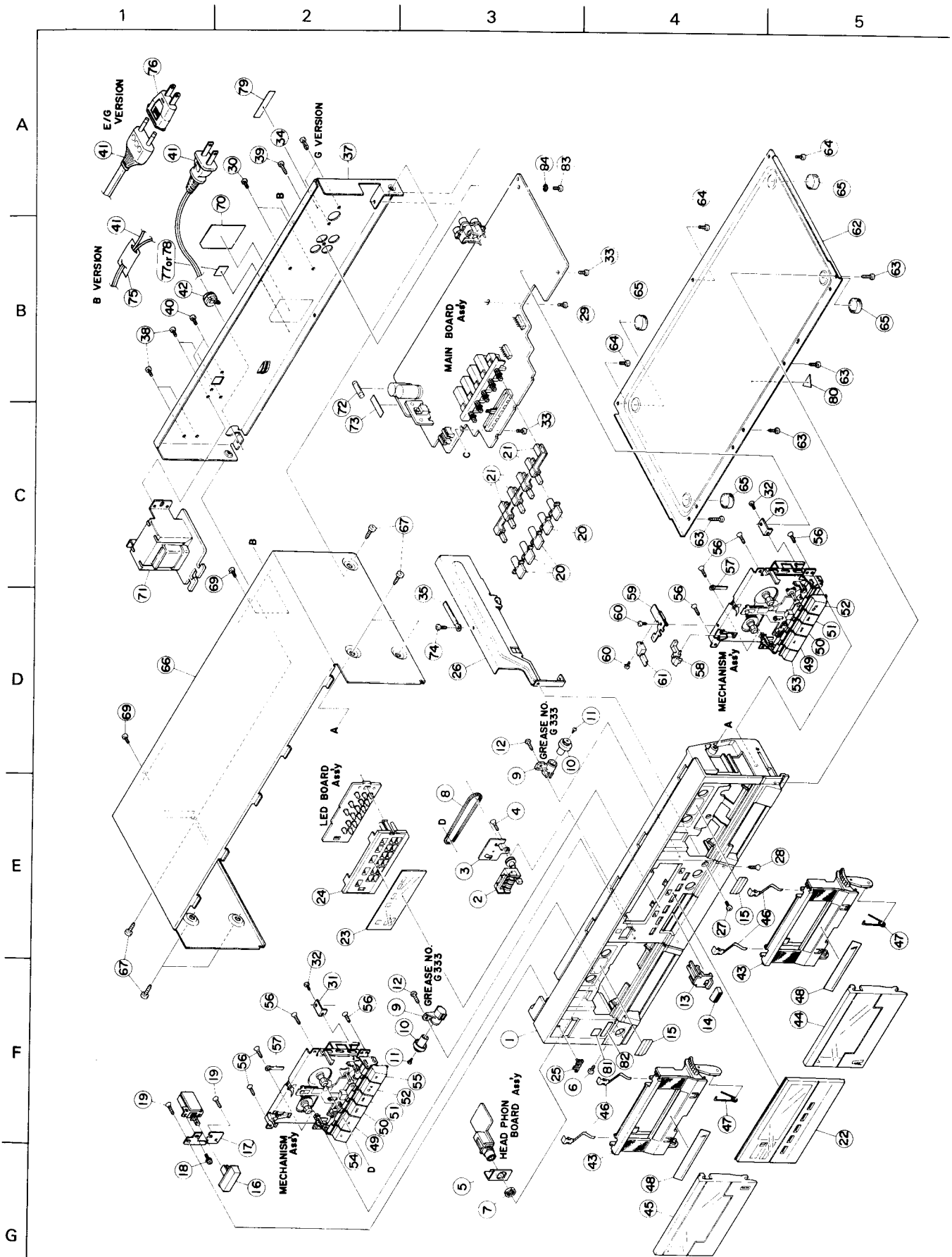


Fig. 13-1

## Enclosure Component 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	VJC1572-001UL	FRONT PANEL	TD-W110J	1
		VJC1572-002	FRONT PANEL	TD-E110A/C/U	1
		VJC1572-005	FRONT PANEL	TD-W110B/E/G	1
	2	VKC5183-001T	TAPE COUNTER		1
	3	VKL5900-001	COUNTER BRACKET		1
	4	SSSF3010Z	SCREW	FOR COUNTER BRACKET	1
	5	VKL6144-001	JACK BRACKET	TD-W110B/E/G	1
	6	SDST3006Z	SCREW	TD-W110B/E/G	1
	7	VKZ4150-001	SPECIAL NUT	TD-W110B/E/G	1
	8	VKB3000-083	BELT	FOR COUNTER	1
	9	VYH5033-002	DAMPER HOLDER	GREASE NO.G333	2
	10	VYH4769-002	GEAR		2
	11	SBSB2004Z	SCREW		2
	12	SDSF3010Z	SCREW	FOR DAMPER	2
	13	VKS4968-001	SLIDER	FOR VOLUME	1
	14	VXS4225-002	SLIDE KNOB	FOR INPUT LEVEL	1
	15	VJD4005-003	REFLECTION PLAT		2
	16	E72789-001	POWER KNOB	FOR POWER	1
	17	VKL6118-001	POWER BRACKET		1
	18	LPSP3006Z	SCREW	FOR POWER SWITCH	1
	19	SSSF3010Z	SCREW	FOR P.BRACKET	2
	20	VXP4309-002	PUSH BUTTON		5
	21	VKS4970-001	REMOTE BAR	FOR MODE SELECT	5
	22	VJK3376-001	FINDER		1
	23	VJD5036-001	LED PLATE		1
	24	VKS3309-001	LED HOLDER		1
	25	E72968-001	JVC MARK		1
	26	VKL3857-001	CENTER CHASSIS		1
	27	SSST3006Z	SCREW	FRONT+C.CHASSIS	1
	28	SSST3006Z	SCREW	F.BOTTOM+C.CHASSIS	1
	29	SDST3006Z	SCREW	C.CHASSIS+P.C.BOARD	1
	30	SDST3006Z	SCREW	C.CHASSIS+REAR PANEL	2
	31	VKL6116-001	AMP BRACKET		2
	32	SDST2604Z	SCREW	A.BRACKET+M.BRACKET	2
	33	SDST3006Z	SCREW	A.BRACKET+P.C.BOARD	2
	34	E48729-002	RIVET	TD-W110G	2
	35	VKZ4001-011	WIRE HOLDER		1
	37	VJC2277-010	REAR PANEL	TD-W110A/B/C/E/J	1
		VJC2277-002	REAR PANEL	TD-W110G	1
		VJC2277-003	REAR PANEL	TD-W110U	1
	38	SDST3006Z	SCREW	FOR POWER TRANS.	4
	39	SDSF3008Z	SCREW	FOR PIN JACK	1
	40	SDSP3006Z	SCREW	TD-W110U	2
△	41	QMP1200-200	POWER CORD		1
△		QMP1200-200	POWER CORD	TD-W110C/J	1
△		QMP2560-200	POWER CORD	TD-W110A	1
△		QMP3900-200	POWER CORD	TD-W110E/G	1
△		QMP7380-200	POWER CORD	TD-W110U	1
△		QMP9017-008BS	POWER CORD	TD-W110B	1
△	42	QHS3876-162	S.R.BUSHING	TD-W110A/C/E/G/J/U	1
△		QHS3876-162BS	S.R.BUSHING	TD-W110B	1
	43	VJT2143-001	CASSETTE HOLDER		2
	44	VJT2144-001	CASSETTE LID	DACK A	1
	45	VJT2144-002	CASSETTE LID	DACK B	1
	46	VKY4180-001	CASSETTE SPRING		4

△ Parts are safety assurance parts.

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

△	REF.	PARTS NO.	PARTS NAME	REMARKS	QTY
	47	VKW4584-001	HOLDER SPRING		2
	48	VJD4895-006	HOLDER PLATE		2
	49	VXP3190-002	MECHA BUTTON	FOR PLAY	1
		VXP3190-002	MECHA BUTTON	FOR PLAY	1
	50	VXP3190-003	MECHA BUTTON	FOR REWIND	1
		VXP3190-003	MECHA BUTTON	FOR REWIND	1
	51	VXP3190-004	MECHA BUTTON	FOR FAST FORWARD	1
		VXP3190-004	MECHA BUTTON	FOR FAST FORWARD	1
	52	VXP3190-005	MECHA BUTTON	STOP/EJECT	1
		VXP3190-005	MECHA BUTTON	FOR STOP/EJECT	1
	53	VXP4627-001	MECHA BUTTON	FPR SYNCRO START	2
	54	VXP3190-001	MECHA BUTTON	FOR RECORD	1
	55	VXP3190-006	MECHA BUTTON	FOR PAUSE	1
	56	SSSF3010Z	SCREW		8
	57	VKZ4001-007	WIRE CLAMP		2
	58	VKS4833-001	ACTUATOR		1
	59	VKL5945-001	SWITCH BRACKET		1
	60	SDST2605Z	SCREW		2
	61	VSH1141-001	LEAF SWITCH		1
	62	VJC2259-003	BOTTOM COVER		1
	63	SDSF3008Z	SCREW	FOR B.FRONT SIDE	4
	64	SDST3006Z	SCREW	FOR B.REAR SIDE	3
	65	VJF4003-005	FOOT		4
	66	VJC2287-001	TOP COVER		1
	67	SDSB4008M	SCREW	FOR TOP COVER	4
		SDSB4008M	SCREW	FOR TOP COVER	2
	69	SDST3006Z	SCREW	FOR T.COVER	2
	70	VYN2191-023PA	NAME PLATE	TD-W110B	1
		VYN2191-003PA	NAME PLATE	TD-W110A	1
		VYN2191-004PA	NAME PLATE	TD-W110C	1
		VYN2191-005PA	NAME PLATE	TD-W110E	1
		VYN2191-006PA	NAME PLATE	TD-W110J	1
		VYN2191-007PA	NAME PLATE	TD-W110U	1
		VYN2191-008PA	NAME PLATE	TD-W110G	1
△	71	VTP52A2-021F	P.TRANSFORMER	TD-W110C/J	1
△		VTP52G2-021F	P.TRANSFORMER	TD-W110U	1
△		VTP52M2-021F	P.TRANSFORMER	TD-W110A/E/G	1
△		VTP52M2-021FBS	P.TRANSFORMER	TD-W110B	1
△	72	QMF51A2-R125	FUSE	TD-W110U	1
△		QMF51A2-R80	FUSE	TD-W110A/C/E/G	1
△		QMF51E2-R80BS	FUSE	TD-W110B	1
△	73	VND4003-046	FUSE LABEL	TD-W110U	1
	74	SDST3006Z	SCREW		1
△	75	QZL1002-003	WARNING LABEL	TD-W110B	1
△	76	V04062-001	SIEMENS PLUG	TD-W110U	1
	77	T44362-001	CSA LABEL	TD-W110C	1
	78	VND4037-002	F MARK	TD-W110G	1
	79	VNC5004-001	MARK STICKER	TD-W110E/G	1
	80	VND4113-001	G.CAUTION CARD	TD-W110B	1
	81	VNC5004-001	MARK STICKER	TD-W110B/E/G	1
	82	TJL000420-01	CAUTION LABEL	TD-W110B	1
	83	SDST3006Z	SCREW		1
	84	WBS3000	WASHER		1
	1,15,22,25	ZCTDW110□-FBK	FRONT PANEL A'SSY		1
	43,48	ZCTDW110□-CH	CASSETTE HOLDER A'SSY		1



# 14 Packing and Parts List

Positions of Controls and Switch  
Knobs at Renewed Packing

POWER Switch : OFF  
 NR SYSTEM Switch : OFF  
 TAPE SELECT Switch : MIN  
 INPUT LEVEL Volume Control : MAX  
 TAPE COUNTER : 000  
 Mechanism Operation Button : OFF  
 DUBBING Switch : OFF  
 SPEED Switch : NORM

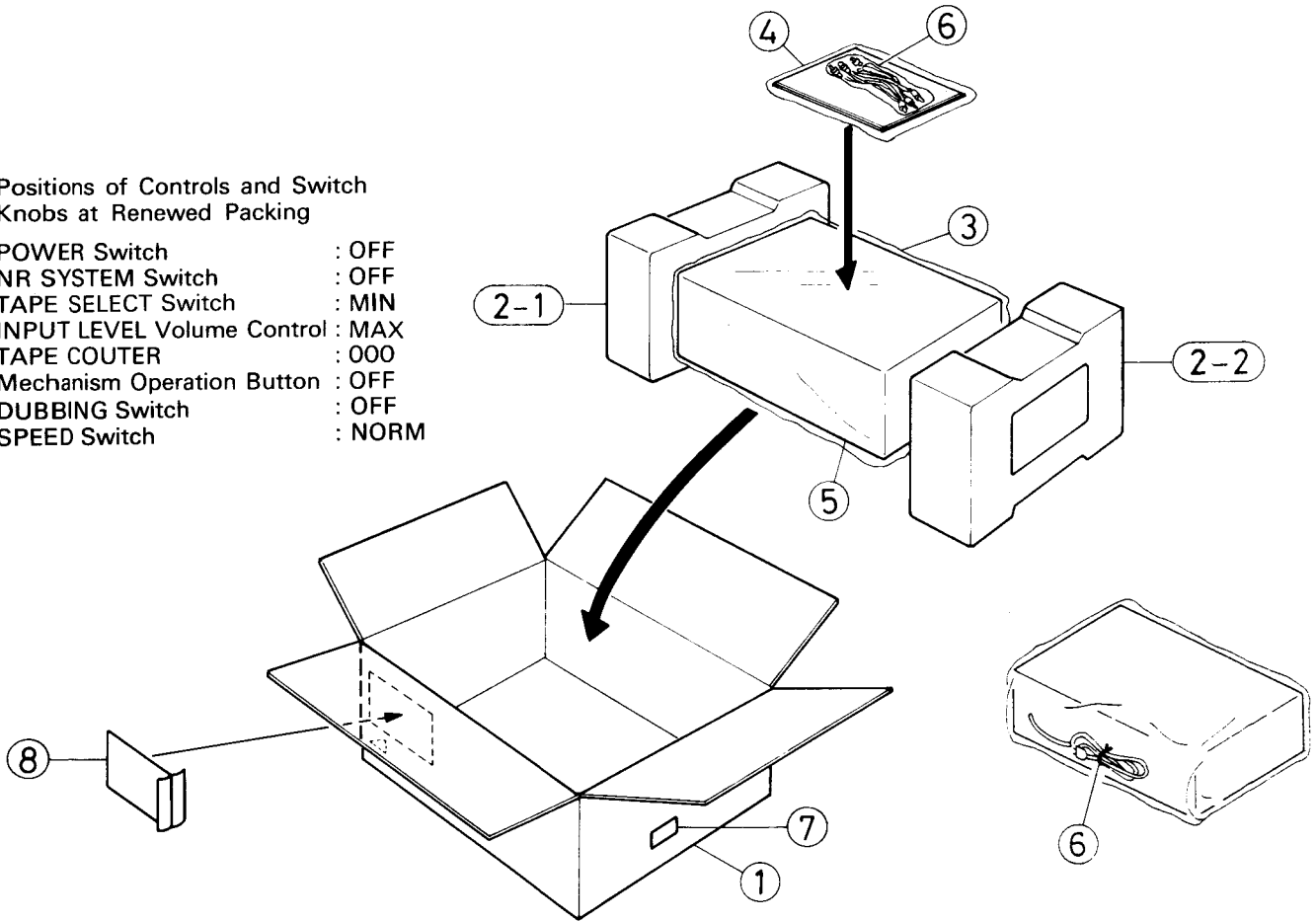


Fig. 14-1

## 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	VPC2191-002	Carton	TD-W110B	1
	"	" -003	"	TD-W110A	1
	"	" -004	"	TD-W110C	1
	"	" -005	"	TD-W110E	1
	"	" -006	"	TD-W110J	1
	"	" -007	"	TD-W110U	1
	"	" -008	"	TD-W110G	1
	2-1	VPH2297-001	Cushion	Left side	1
	2-2	VPH2298-001	"	Right side	1
	3	VPE3005-026	Poly Bag	for Unit	1
	4	VPE3005-007	"	for Instruction Book	1
	5	TKS000501-08	Sheet	for Unit	1
	6	Q04141H	Wire Clamp	for Power Cord	1
	7	VPZ4001-001	Serial Ticket		1
	8	E66416-003	Envelope	TD-W110J/U (for PX, EES)	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
	VNN2191-652S	Instruction Book		1
	BT20060	Warranty Card	TD-W110B	1
	BT20029C	"	TD-W110A	1
	BT20066	"	TD-W110B/G (for JED)	1
	BT20025H	"	TD-W110C	1
	BT20047C	"	TD-W110J/U (for PX, EES)	1
	BT20064	"	TD-W110G (for JED)	1
	BT20046C	Special Reply Card	TD-W110J (for PX, EES)	1
	BT20044E	Safety Guide	TD-W110J	1
	BT20071A	SVC Center List	TD-W110C	1
	VNC2200-019	Copyright Law Warning	TD-W110A/B/C/E/U	1
	VNC5311-203	Caution Card	TD-W110U (for EES)	1
	" -204	"	TD-W110U	1
	VMP0039-00B	Pin Cord		1

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