



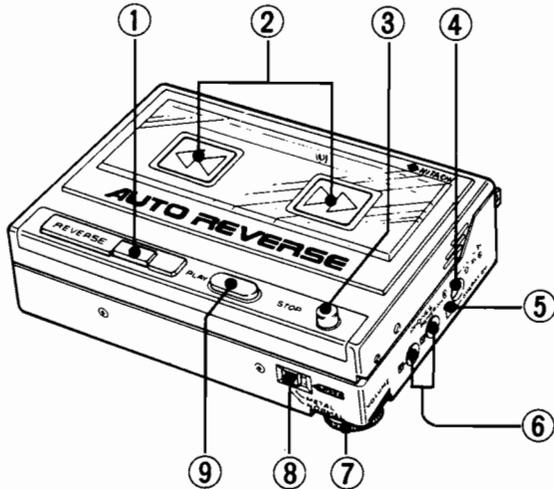
# HITACHI

## SERVICE MANUAL

TK

No. 1883E

# CP-7EX



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### KEY TO ILLUSTRATIONS

- |                              |                             |
|------------------------------|-----------------------------|
| ① REVERSE BUTTON             | ⑥ HEADPHONES SOCKETS (A, B) |
| ② FAST FORWARD/REWIND BUTTON | ⑦ VOLUME CONTROL            |
| ③ STOP BUTTON                | ⑧ TAPE SELECTOR             |
| ④ DC IN 3V SOCKET            | ⑨ PLAY BUTTON               |
| ⑤ OPERATION INDICATOR        |                             |

### SPECIFICATIONS

Semiconductors :	ICs : 2 Transistors : 9 Diodes : 3 LED : 1	Frequency Response :	Normal : 40—12,000 Hz Metal : 40—16,000 Hz
Power Supply :	DC : 3V [IEC R6 ("AA" cell)×2 or equivalent] IEC R14 ("C" cell)×2 or equivalent...Use carrying case AC : Use optional AC adaptor (3V)	Signal to Noise Ratio :	50 dB
Power Consumption :	145mA (with no signal)	Wow and Flutter :	0.2% (WRMS)
Power Output :	50mW (25mW+25mW)... THD10%	Crosstalk :	Between tracks : 70 dB Between channels : 50 dB
Tape :	Cassette tape	Output Load Impedance :	Headphone : 33 ohms (8—100 ohms suitable)
Track System :	4 track 2 channel stereo	Distortion :	3%
Tape Speed :	4.75cm/s	Motor :	Electronically controlled DC motor
		Fast Forward or Rewind Time :	135 sec. (using C-60)
		Dimensions :	108(W)×77(H)×28.5(D)mm
		Weight :	290g (with batteries)

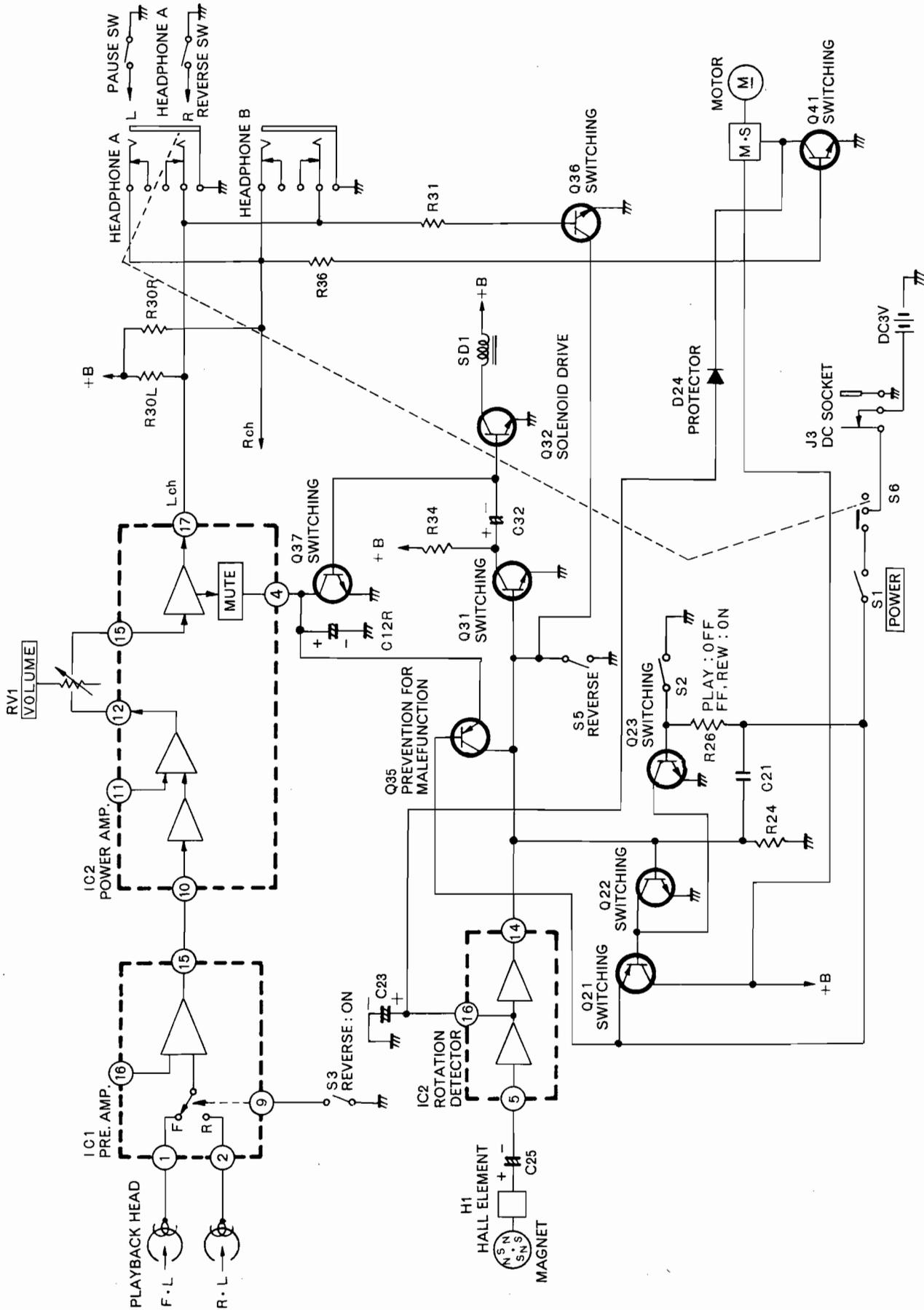
SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

## STEREO CASSETTE PLAYER

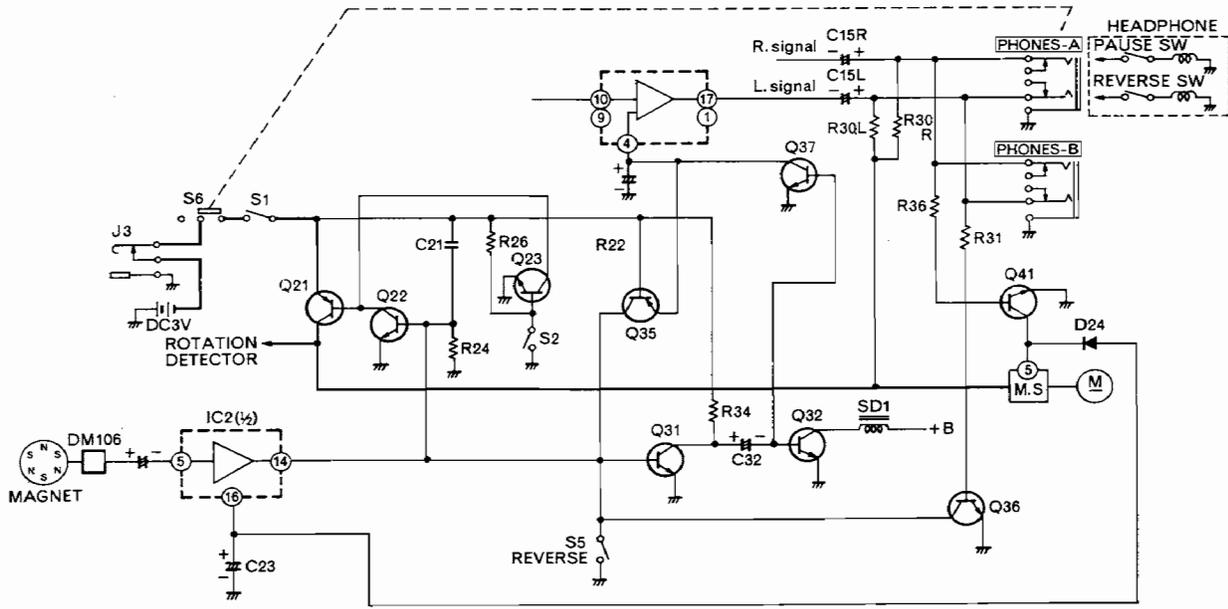
February 1983

TOKAI WORKS

BLOCK DIAGRAM



## DESCRIPTION OF NEW CIRCUIT



## 1. Power circuit

S6 and S1 are turned on when the headphone plug is inserted into the PHONES-A jack and an operation button (PLAY, FF, REW) is pressed. +B is applied to the base of Q23 via R26 during play, so the base of Q21 becomes Lo potential and Q21 turns ON.

This causes +B to be supplied to the motor and amplifier via Q21. When the unit enters the fast feed mode (forward or reverse direction), S2 is set to ON, Q23 is OPEN, instantaneous current flows to C21 and a Hi potential is applied to the base of Q22 to set Q22 and Q21 to ON to turn the motor. When the motor starts, Hi potential is output from IC2 pin (14) which is applied to the base of Q22 and the power supply mode continues.

## 2. Reverse circuit

◦ When the tape reaches the end with the auto-reverse function set, Lo potential is output from IC2 pin (14), so Q31 is set open, the positive pulse is applied to the base of Q32 by means of the differential circuit (R34, C32), solenoid SD1 is operated and auto-reverse is performed mechanically. The pulse at this time is applied to the base of Q37 to mute the track switching noise when reversing.

◦ For the manual reverse, S5 is turned ON to set the base of Q31 to Lo potential to perform the same operation as in the auto-reverse. By operating the reverse switch of the headphones, the branched voltage applied to the base of Q36 via R30L is made greater to set Q36 to ON. By this, the same state as when S5 is set to ON is obtained and the reverse operation is performed.

## 3. Pause circuit

By operating the pause switch of the headphones, the branched voltage applied to the base of Q41 via R30R gets greater, Q41 is set to ON, pin (5) of the motor servo is set to Lo potential and the motor stops. IC2 pin (16) is connected to the collector of Q41 via D24 to maintain the Hi potential of IC2 pin (14) so that the tape transport direction is not changed (reverse operation) during pause.

\* C23 repeats charging and discharging and pin (14) outputs Hi potential while the magnet is turning. When the magnet stops rotating, the voltage at pin (16) gets higher (1.5V or more) and pin (14) outputs Lo potential.

DISASSEMBLY

1. Cassette lid

Remove 3 fixing screws (A).

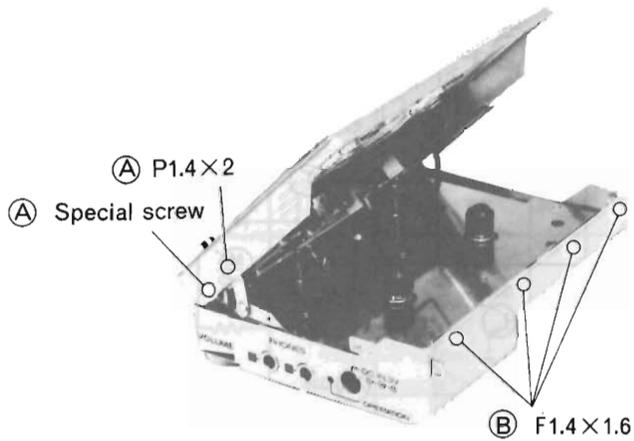


Fig. 1

3. Rear case

Remove 5 fixing screws (C) shown in Figs. 2, 4 and remove the volume control knob fixing special screw. Then push the knob stopper in the direction of the arrow as shown in Fig. 5 using tweezers to release it and remove the tape select knob.

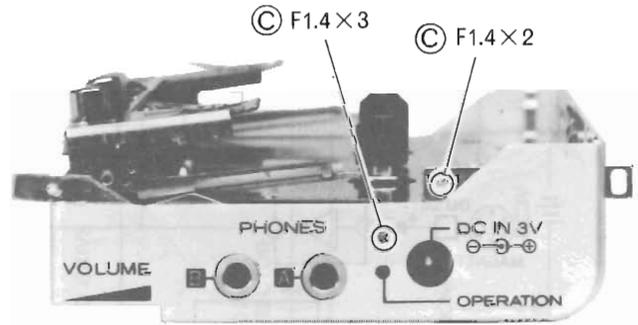


Fig. 4

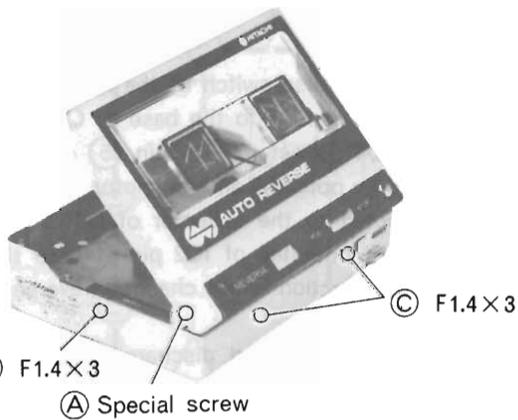


Fig. 2

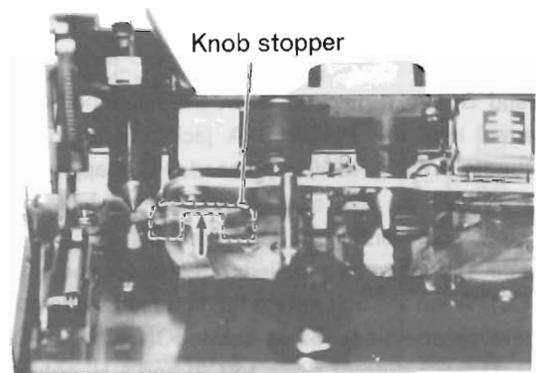


Fig. 5

2. Cassette support plate

Remove 10 fixing screws (B) shown in Figs. 1, 3.

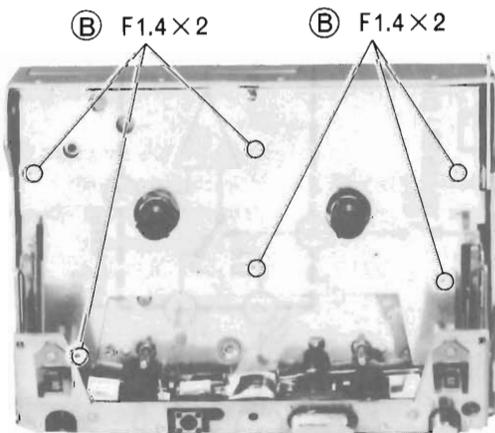


Fig. 3

4. Cassette holder

Remove fixing screw (D) and pull the cassette holder in the direction of the arrow.

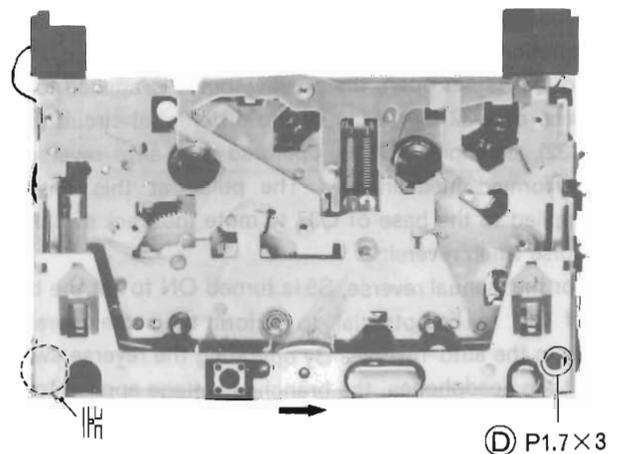


Fig. 6

**5. Main, motor PC Board**

Remove 5 fixing screws (E) and remove the PC Board in the direction of the arrow.

Assemble the PC Board so that 3 leaf switches (F) do not touch the switch lever of the cassette chassis.

\* Cut off the electrolytic capacitor leads after replacing the electrolytic capacitor so that the rear case and the soldered leads of the electrolytic capacitor do not come into contact.

**6. Flywheel supporter**

Remove 3 fixing screws (G).

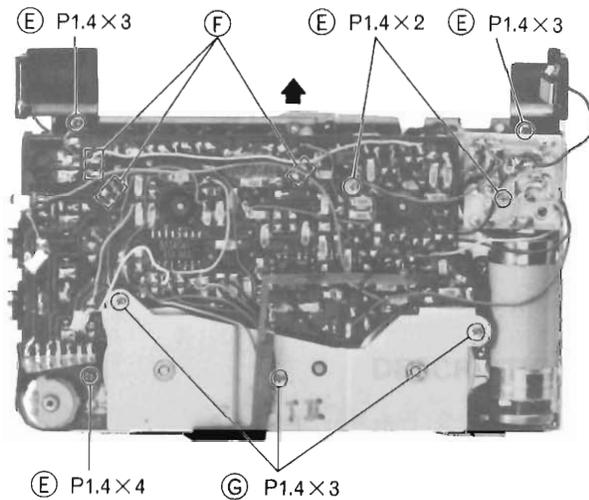


Fig. 7

**7. Cautions after replacing variable resistor (RV1) and reverse switch (S5)**

The gap between the soldered section and the mechanism chassis is too small after replacing the variable resistor and reverse switch, so grind off excess solder using a file (to set to approx. 0.5mm).

[Example]

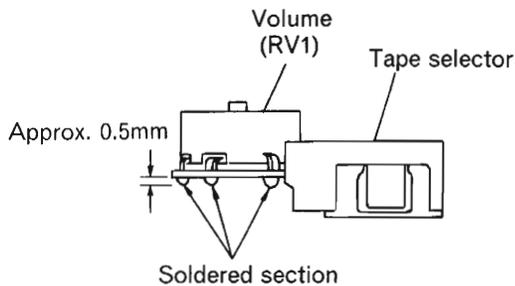


Fig. 8

**8. Playback head**

Remove the head plate ass'y fixing E ring and the pressure roller spring, lift the head plate ass'y towards you to remove it and then remove 2 head fixing screws (H). Apply the pressure roller spring to the head plate ass'y, arrange the wiring of the head as shown in the Fig. 10 and then install the head so that the wiring does not get caught between the rear case and cassette chassis.

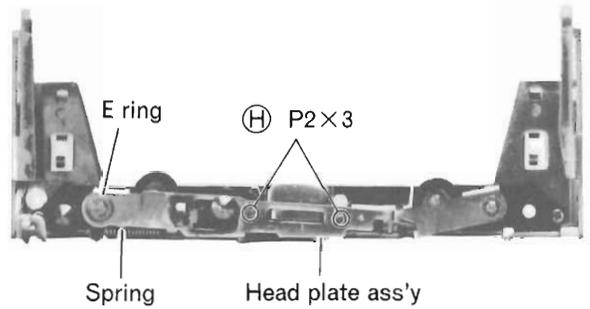


Fig. 9

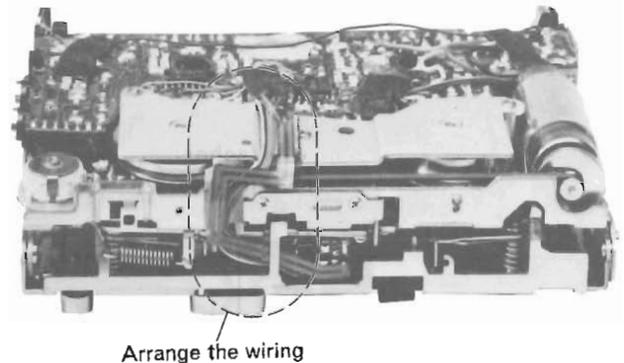
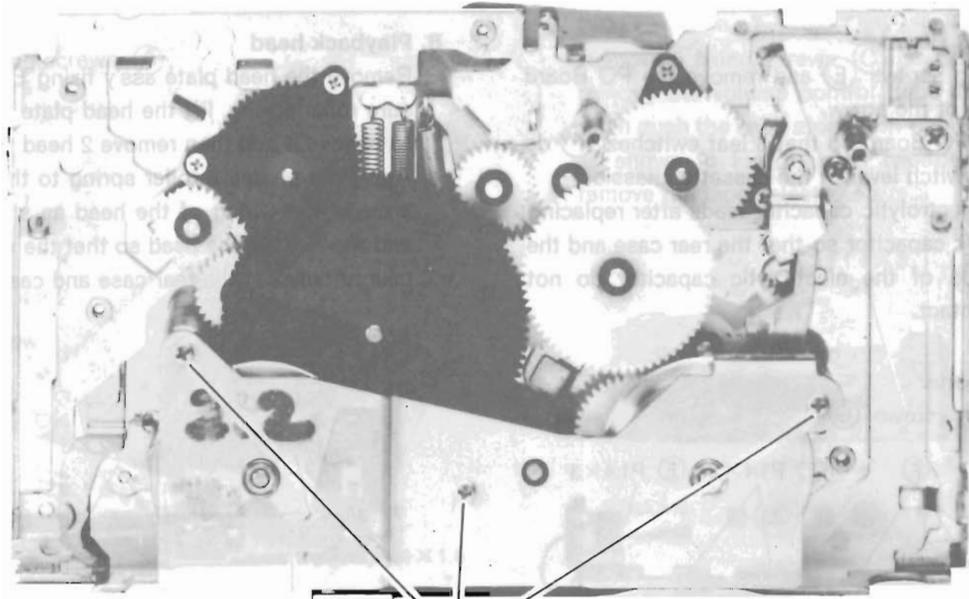
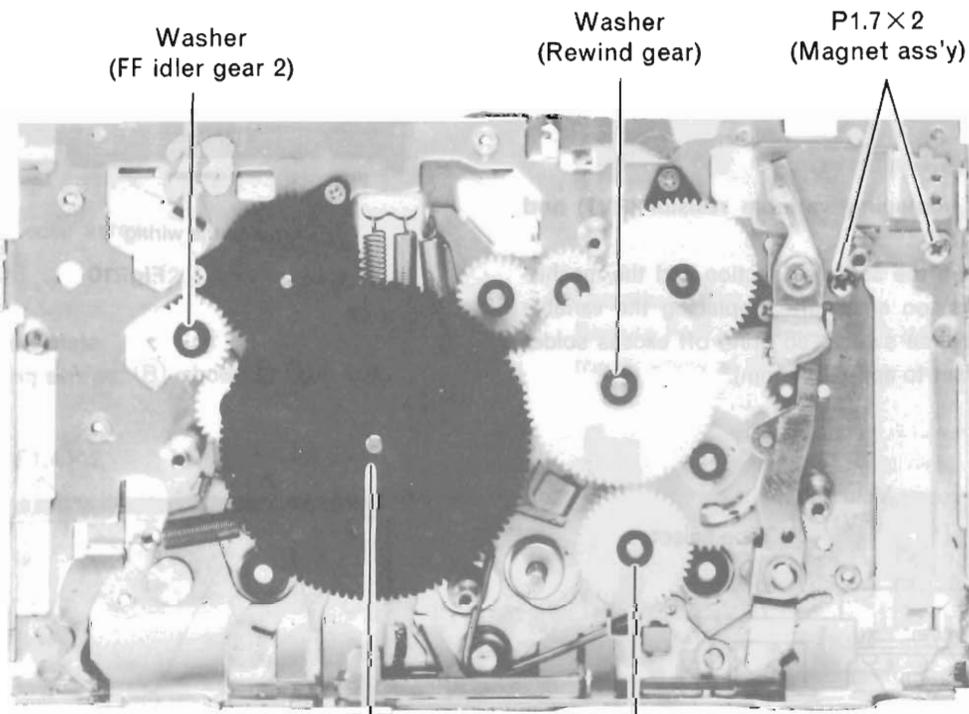


Fig. 10



P1.4×3  
(Flywheel supporting plate)

Fig. 11



Washer  
(FF idler gear 2)

Washer  
(Rewind gear)

P1.7×2  
(Magnet ass'y)

Washer  
(Take-up gear)

Washer  
(Power assist idler gear)

Fig. 12

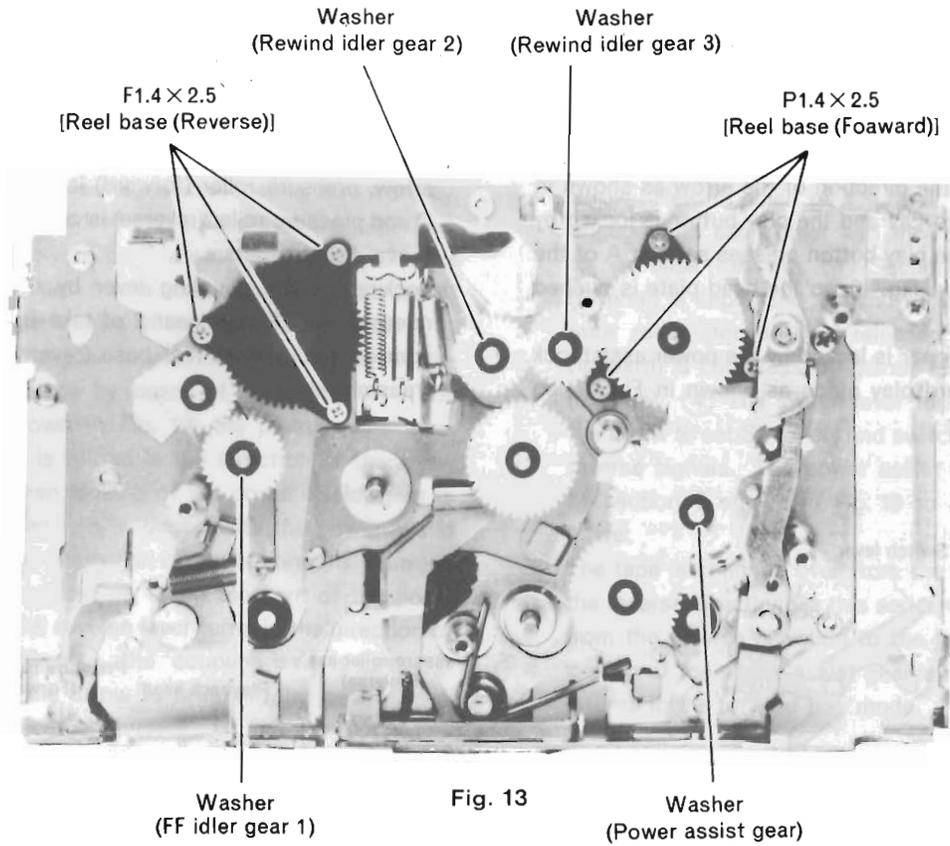


Fig. 13

**DESCRIPTION OF NEW MECHANISM**

**1. Main motive power transmission system**

Motor rotation is transmitted to the flywheel (forward), take-up gear ass'y and FF idler 1 via the flywheel belt. At the same time, it is transmitted to the flywheel (reverse) and the power assist idler gear.

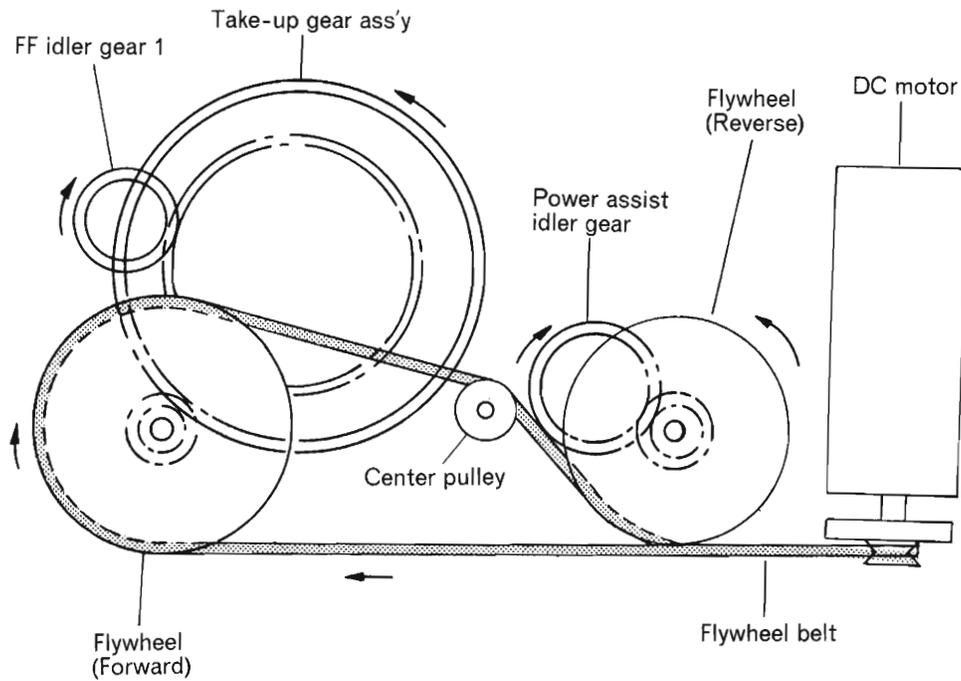


Fig. 14

2. Forward (▶▶) play mode

When the play button is pushed in, the switch lever and lock lever turn in the direction of the arrow as shown in Fig. 15 to set S2 to ON and the play button is locked by the lock lever. The play button presses section A of the play lever shown in Fig. 16, so the head plate is pushed up at section B.

The power assist gear is locked by the power assist lock lever in the forward play mode as shown in Fig. 17, so

the reverse lever stops rotating in the direction of the arrow, pressure roller (forward) is depressed by section D and pressure roller (reverse) is compressed against the forward side capstan.

Locking of the coupling lever by the reverse lever is released, so FF idler gear 2 of take-up lever (forward) is compressed against reel base (reverse) and rotation is transmitted.

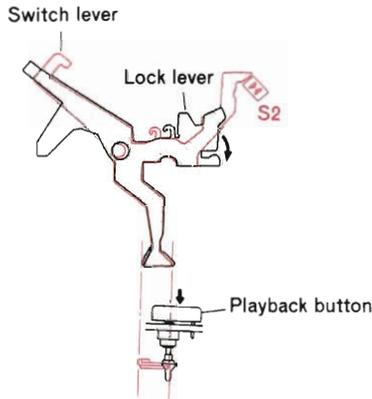


Fig. 15

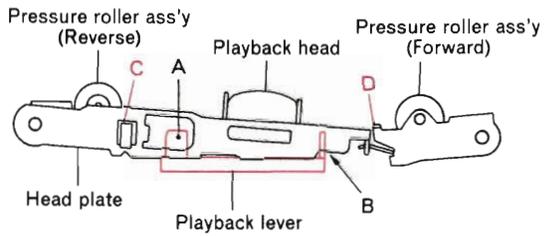


Fig. 16

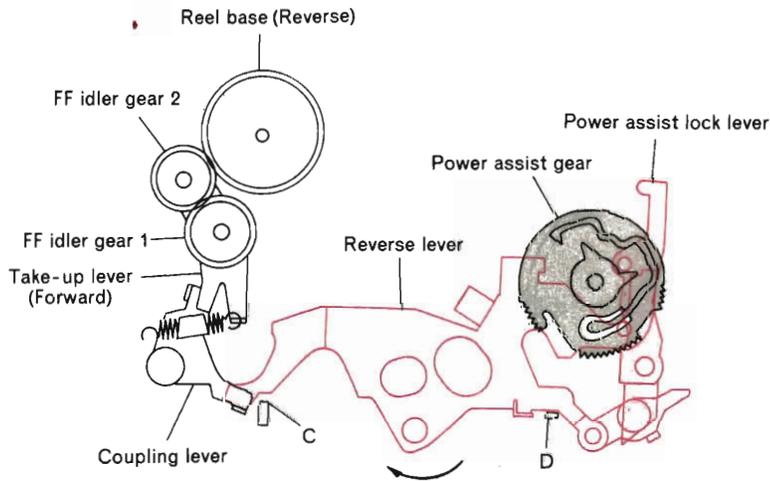


Fig. 17

3. Reverse (◀◀) play mode

The magnet lever shown in Fig. 18 is attracted by the solenoid (iron core is magnetized) during forward play, but power is supplied to the solenoid at the tape end, magnetism of the iron core is neutralized, the iron core turns in the direction of the arrow, and the power assist lock lever releases locking of the power assist gear.

The power assist gear is provided with torque in the direction of the arrow by means of the projection of the reverse lever shown in Fig. 19, the power assist gear shown in Fig. 18 is turned in the direction of the arrow by the torque when locking of the power assist gear is released, and then it is engaged with the power assist idler gear, and the projection of the continuously turning reverse lever is pushed up along the cam of the power assist gear, so the reverse lever turns in the direction of the arrow. By this, ① the coupling lever is turned in the direction of the arrow to bring FF idler gear 1 away from reel base (reverse).

② Take-up lever (reverse) turns in the direction of the arrow, Rewind idler gear 1 and Rewind idler gear 2 engage with each other and the rotation is transmitted to reel base (forward). ③ Section C of pressure roller (reverse) is depressed, locking of the section D of pressure roller (forward) is released, and pressure roller (forward) is compressed against the capstan of flywheel (reverse). ④ The switch lever turns in the direction of the arrow to set S3 to ON and switches over the forward/reverse signals. The power assist gear is finally locked by section E shown in Fig. 18 to maintain the reverse mode.

The tape is changed over from the forward direction to the reverse direction via this series operation. To switch from the reverse direction to the forward direction, the locking of the power assist gear is released and the unit returns to the forward play mode.

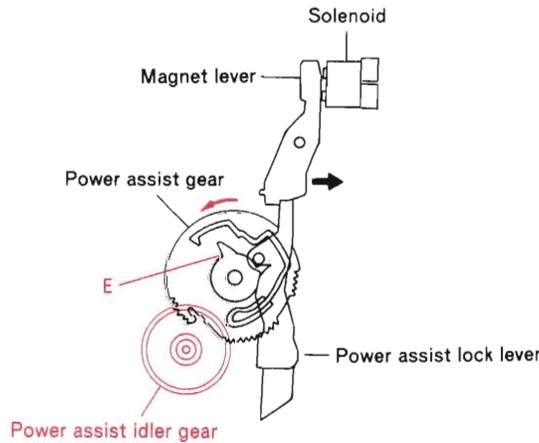


Fig. 18

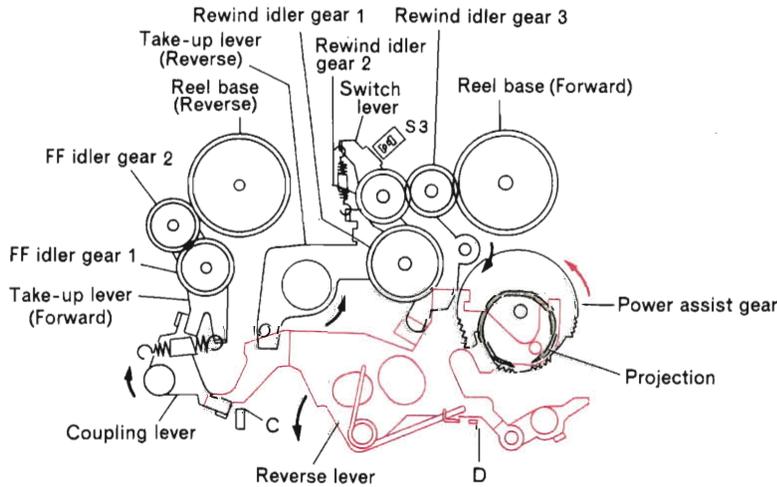


Fig. 19

4. Fast feed mode

1. Forward direction

When reel base (reverse) shown in Fig. 20 is pushed in, ① the lock lever and the switch lever turn in the direction of arrow 1 to release the locking of the play button and S1 (power switch) is set to ON. ② Reel base (reverse) is locked by the lock lever. ③ The fast forward/rewind switch lever turns in the direction of arrow 2 to turn the take-up release lever in the direction of arrow 3 to bring the FF idler gear 2 of take-up lever (forward) shown in Figs. 20, 21 away from reel base (reverse). Next, the inner gear of reel base (reverse) engages with the take-up gear ass'y and the unit enters the fast feed mode in the forward tape running direction.

2. Reverse direction

When reel base (forward) shown in Fig. 20 is pushed in, ① the lock lever and the switch lever turn in the direction of arrow 1 to release the locking of the play button and S1 (power switch) is set to ON. ② Reel base (forward) is locked by the lock lever ③ The fast forward/rewind switch lever shown in Fig. 22 turns in the direction of the arrow, so rewind idler gear 1 of the take-up lever (reverse) is brought away from rewind idler gear 2 shown in Fig. 19. ④ The inner gear of reel base (forward) engages with the rewind gear and the unit enters the fast feed mode in the reverse tape running direction.

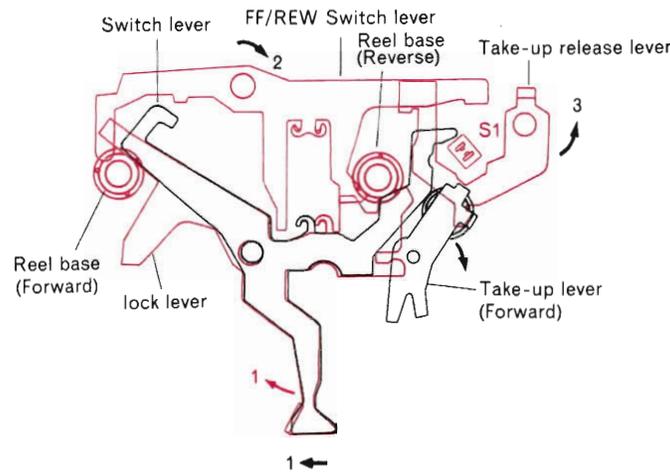


Fig. 20

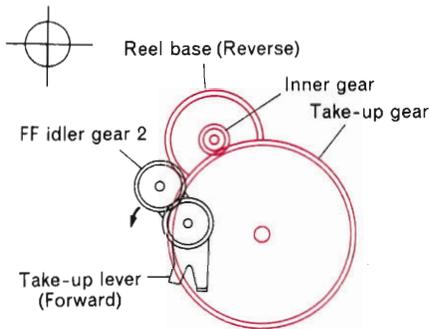


Fig. 21

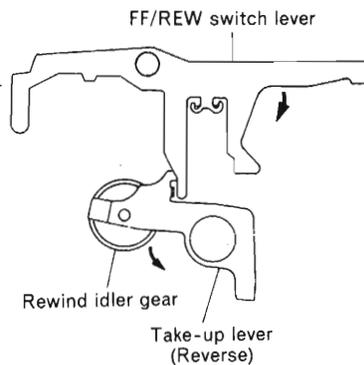


Fig. 22

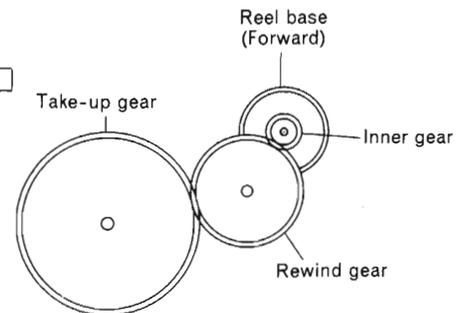


Fig. 23

**5. Stop mode**

When the stop button is pressed, the stop lever turns in the direction of the arrow to turn the lock lever in the direction of the arrow to release locking of the play button and the switch lever sets S1 to OFF. Since the locking of the play button is released, the head plate shown in Fig. 24 descends and the pressure roller moves away from the capstan. When the unit enters the play mode in the stop mode, the same play mode (forward or

reverse) as before, the unit enters the stop mode. This is because the power assist gear mechanically maintains the tape running direction (forward or reverse) just before the unit enters the stop mode. When the cassette lid is opened, the projection F of the cassette holder ass'y presses the lock lever in the direction of arrow G to release locking and the unit enters the stop mode.

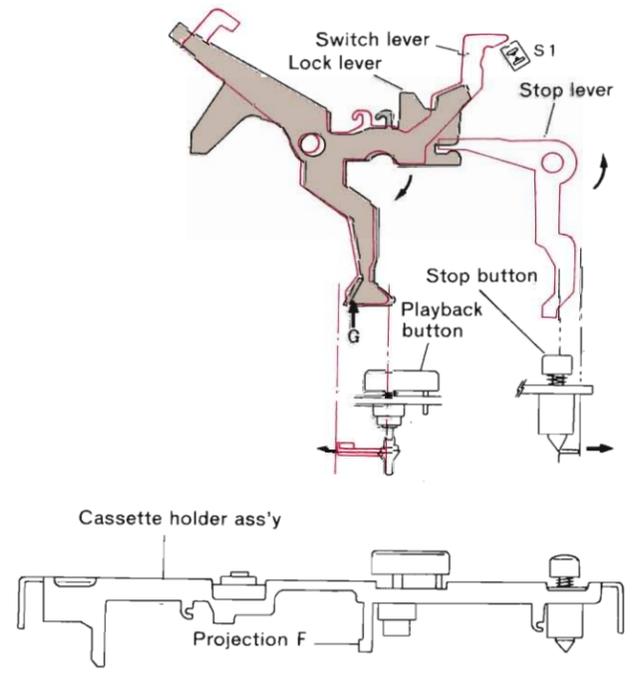


Fig. 24

**ADJUSTMENT**

Perform the following adjustments in the sequence stated after cleaning the head, pressure roller, and capstan with a head cleaning stick moistened in alcohol.

Step	Adjustment Item	Measuring Instrument and connection			Check Tape	Mode	Adjusted Position	Adjusted Value	Remarks
		Measuring Instrument	Input Terminal	Output Terminal					
1	Tape speed	• Frequency counter	—	Headphone sockets	Tape speed adjustment tape(3 kHz)	Playback	Semivariable resistor in the motor PC board	3kHz <sup>+30</sup> / <sub>-10</sub> Hz	Note 1
2	Head azimuth	• VTVM	—	Headphone sockets	Head azimuth adjustment tape(10 kHz)	Playback	Azimuth adjusting screw	Output Max.	Note 2

**Note :**

1. Adjust within 30 sec. after heat-running for more than 20 minutes.
2. When the maximum values of both channels are different, adjust to the maximum value of the L channel. In this case, the difference between the maximum values of both channels should be within 2 dB.

**INSPECTION OF MECHANISM**

Item	Checking item	Reference value	Remarks
1	Pressure of pressure roller	160~240g	Note 1
2	Tape driving force	80g·cm or more	Fig. 25
3	Take-up torque	30~60g·cm	
4	Fast forward torque	55g·cm or more	
5	Rewind torque	55g·cm or more	
6	Back tension torque	Take-up	4g·cm or less
		Supply	4g·cm or less
		Play button	1.0kg or less
		Fast forward button	0.6kg or less
7	Button operation force	Rewind button	0.6kg or less
		Stop button	0.5kg or less
			During play to stop
8	Flywheel thrust gap	0.1~0.2mm	

**Note :**

1. Set this unit in the playback mode and press the pressure roller in the direction of the arrow using a fan type tension gauge, and measure the pressure when the pressure roller is released from the capstan.

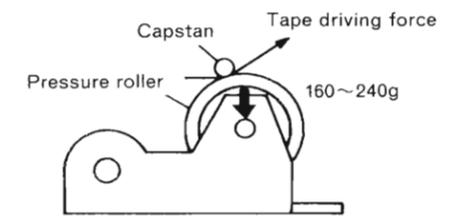


Fig. 25

**LUBRICATION**

Lubricate one or two drops of oil to rotating point or lubricate grease to sliding point. Lubricate the respective parts listed once every 1000 hours or once a year under normal conditions of use. Avoid oiling them excessively, or rotation may become irregular because of oil splashes.

Lubrication point		Oil or Grease
Rotary section	Metal and metal	Pan motor oil (10W-40)
	Mold and metal	Sonic slider oil (#1600)
Sliding section	Metal and metal	Hitasol (MO-138)
	Mold and mold Mold and metal	White grease (FL-LUBE-A)
Spring resonance prevention		Floil (GB-TS-1)

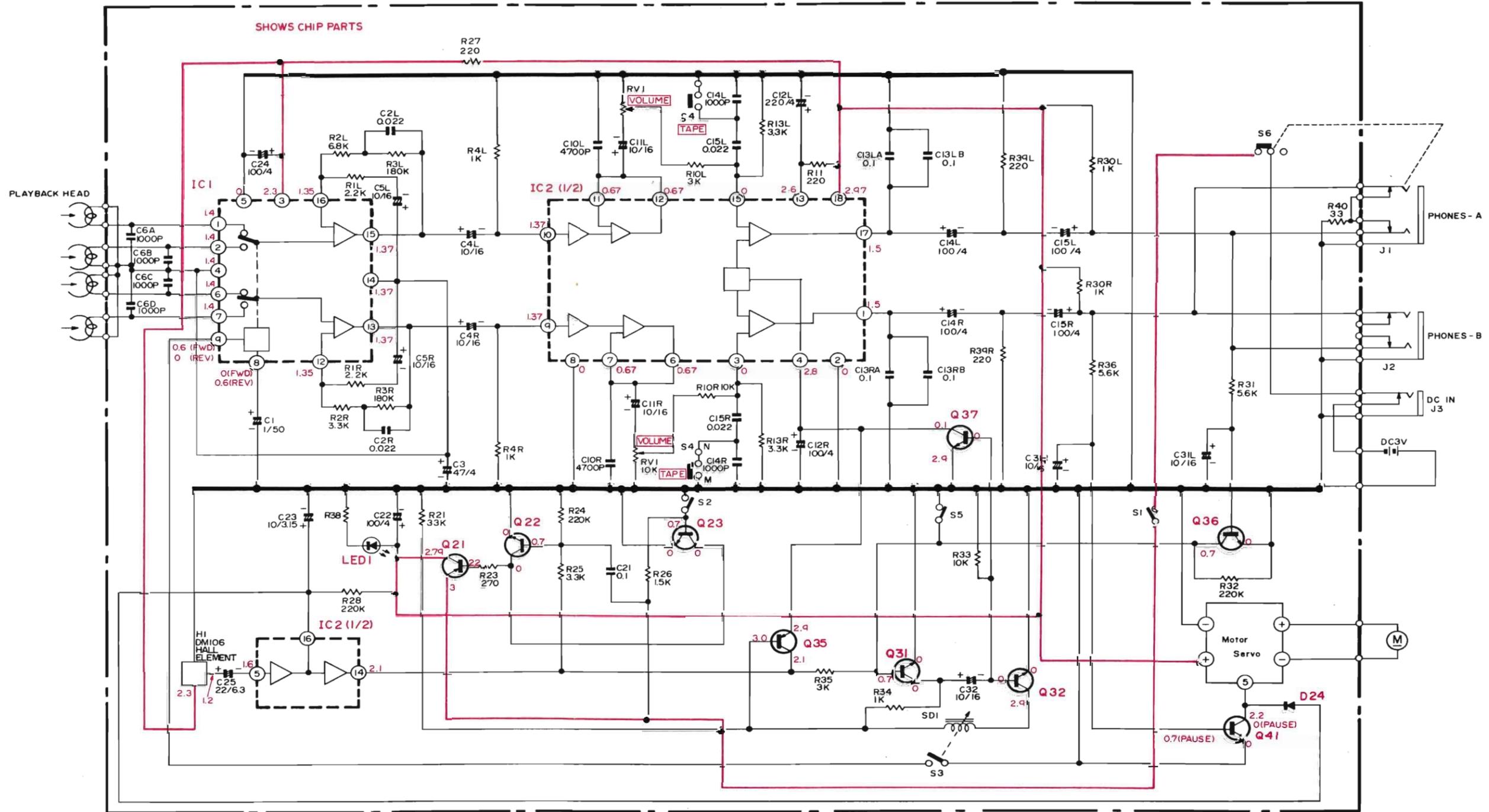
SCHMATIC DIAGRAM

Note

1. Voltage measured at base of chassis with minimum volume control and no signal.
2. Nomenclature of Resistors and Capacitors.

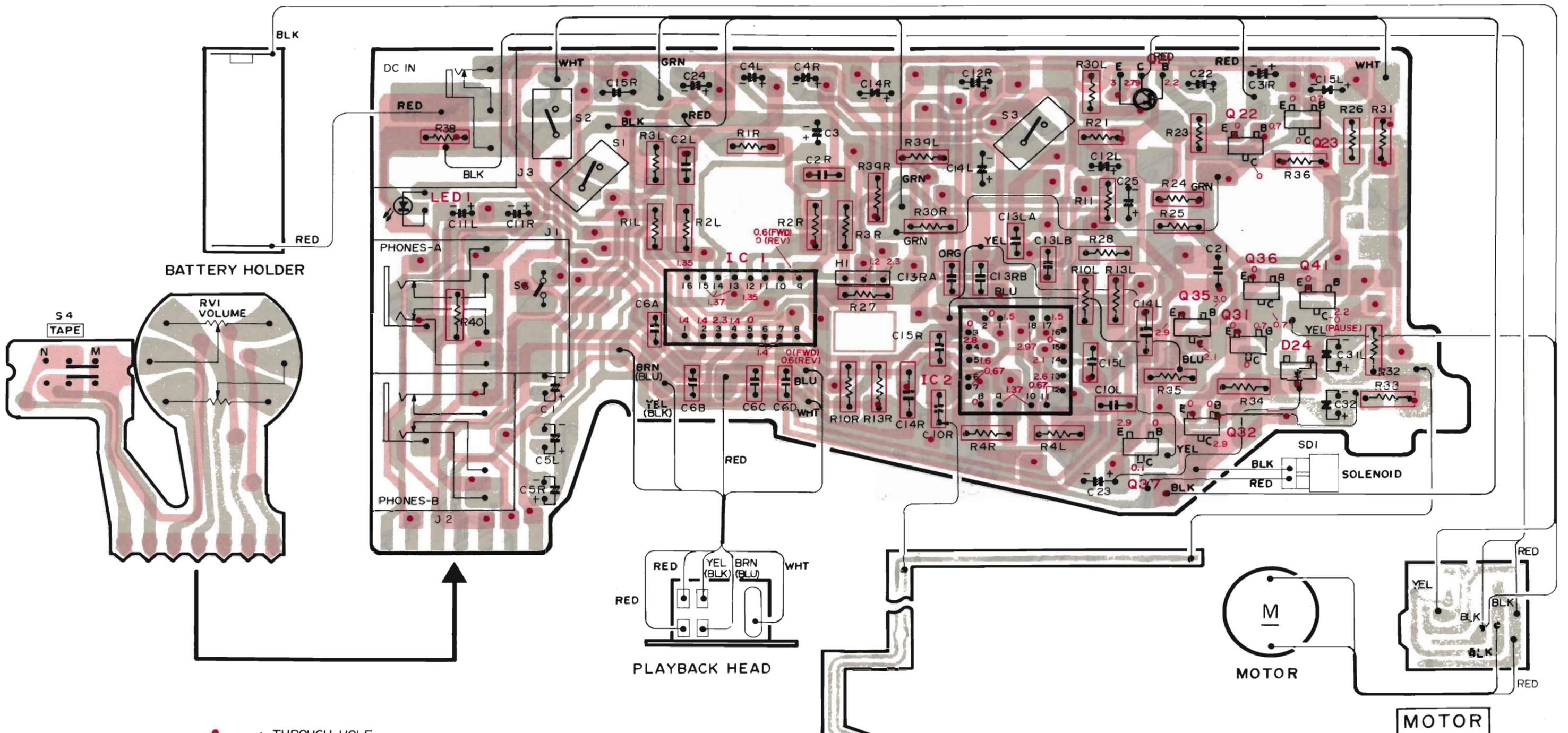
Resistor		Capacitor	
Circuit No.		Circuit No.	
Value	No indicated Ω(Ohm) M : 1000 kΩ	Value	No indicated μF P : PF
Tolerance	No indicated ±5% K : ±10% M : ±20%	Tolerance	No indicated ±10% J : ±5% M : ±20% Z : +80% -20% D : ±0.5pF C : ±0.25pF
Wattage	No indicated ¼W	Sort	Ceramic Electrolytic Mylar Polyester Styrol
Sort	No indicated Carbon film RC : Composition RW : Wire wound RS : Oxide metal film RN : Fixed metal film	Voltage	No indicated 50WV

3. Be sure to make your orders of resistors and capacitors with value, voltage, tolerance and sort.
4. When replacing capacitors marked with \*, use specified ones stated on parts list since required temperature characteristics.



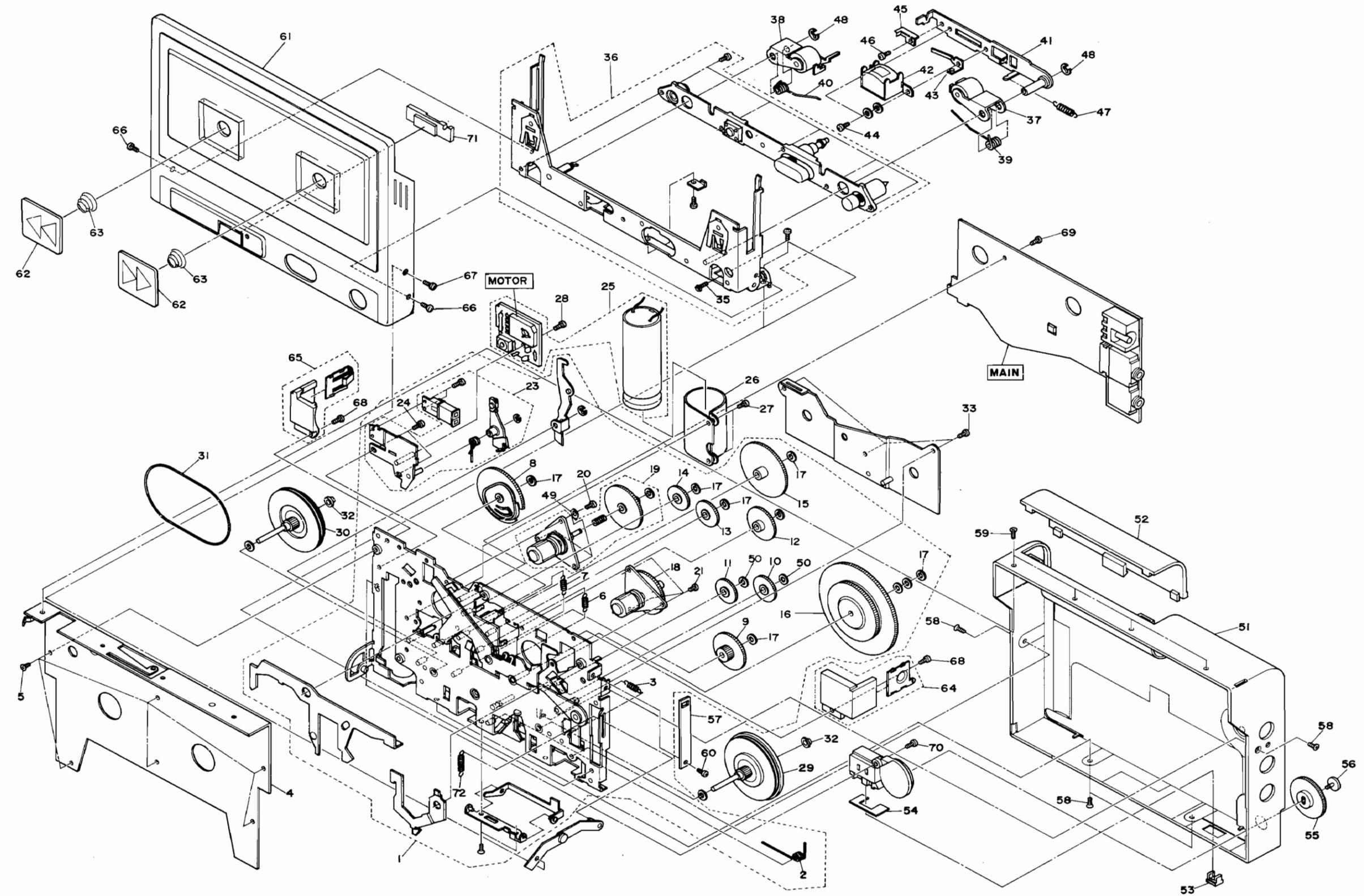
IC 1	IC 2	Q 21	Q 22	Q 23	Q 35	Q 31	Q 32	Q 37	Q 36	D 24	Q 41	LED1
BA3404F	HA12052	2SB1001	2SC1623(L5-6)	2SC1623(L5-6)	2SA812	2SC1623(L5-6)	2SC2618	2SC1623(L5-6)	2SC1623(L5-6)	MA151K	2SD1306(L5-6)	SLP148
PRE AMP	POWER AMP	SWITCHING	SWITCHING	SWITCHING	PROTECTOR	SWITCHING	SOLENOID DRIVE SWITCHING	SWITCHING	SWITCHING	PROTECTOR PAUSE SWITCHING	PAUSE SWITCHING	OPERATION INDI.

CIRCUIT BOARD DIAGRAM



- : THROUGH HOLE
  - : CHIP RESISTOR
  - : CHIP CAPACITOR
  - : CHIP TRANSISTOR
  - : CHIP DIODE
- Cathode
- Anode

EXPLODED VIEW



Note : Components marked without numbers in this drawing are not specified as replacement parts.

REPLACEMENT PARTS LIST

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
MECHANISM (CR-1)					
1	7130131	SUB CHASSIS ASSEMBLY	48	777R394	E RING 1.5MMD
2	6548922	SPRING	49	7787633	WASHER
3	6543511	SPRING	50	7787572	C WASHER
4	7354163	CASSETTE SUPPORT PLATE	MISCELLANEOUS		
5	8722004	FALT SCREW-1.4MMDX2MM	51	603F503	REAR CASE ASSEMBLY
6	6543521	SPRING	52	6172442	BATTERY LID
7	6543521	SPRING	53	6295661	SLIDE KNOB (TAPE)
8	6432903	POWER ASSIST GEAR	54	7355971	KNOB STOPPER
9	6432951	POWER ASSIST IDLER GEAR	55	6293922	VOLUME KNOB
10	6432972	FF IDLER GEAR (1)	56	7783021	SPACIAL SCREW
11	6432981	FF IDLER GEAR (2)	57	7354632	STRAP HOLDER
12	6432991	REWIND IDLER GEAR (1)	58	8722023	FALT SCREW-1.4MMDX3MM
13	6433001	REWIND IDLER GEAR (2)	59	8722002	FLAT SCREW-1.4MMDX1.6MM
14	6433011	REWIND IDLER GEAR (3)	60	8722004	FLAT SCREW-1.4MMDX2MM
15	6432942	REWIND GEAR	61	6094547	CASSETTE LID ASSEMBLY
16	6432894	TAKE-UP GEAR ASSEMBLY	62	6059091	FF/REWIND BUTTON
17	7787739	WASHER	63	6521481	BUTTON SPRING
18	6414834	REEL BASE ASSEMBLY (FORWARD)	64	7354702	BATTERY TERMINAL ASSEMBLY(+)
19	6414884	REEL BASE ASSEMBLY (REVERSE)	65	7354712	BATTERY TERMINAL ASSEMBLY(-)
20	8722022	FLAT SCREW-1.4MMDX2.5MM	66	7723031	SPECIAL SCREW
21	8712022	FLAT SCREW-1.4MMDX2.5MM	67	8712023	PAN HEAD SCREW-1.4MMDX2MM
23	5643131	MAGNET ASSEMBLY	68	8712024	PAN HEAD SCREW-1.4MMDX3MM
24	7780902	PAN HEAD SCREW-1.7MMDX2MM	69	8712023	PAN HEAD SCREW-1.4MMDX2MM
25	5577721	DC MOTOR	70	8712025	PAN HEAD SCREW-1.4MMDX4MM
26	7354243	MOTOR BAND	71	6591211	REVERSE BUTTON
27	7730903	PAN HEAD SCREW-1.7MMDX3MM	72	6543535	LID SPRING
28	8712003	PAN HEAD SCREW-1.4MMDX2MM	CAPACITORS		
29	6374452	FLYWHEEL ASSEMBLY (FORWARD)	C 1	0256151	ELECTROLYTIC 1.0MF,50V
30	6374471	FLYWHEEL ASSEMBLY (REVERSE)	C 2LR	0247065	CERAMIC CHIP 0.022MF+-10%
31	6355854	FLYWHEEL BELT	C 3	0256391	TANTALUM ELECTROLYTIC 22MF,3.15V
32	7599031	FLYWHEEL BEARING	C 4LR	0256155	ELECTROLYTIC 10MF,16V
33	8712024	PAN HEAD SCREW-1.4MMDX3MM	C 5LR	0256155	ELECTROLYTIC 10MF,16V
35	7780903	PAN HEAD SCREW-1.7MMDX3MM	C 6APCD	0247003	CERAMIC CHIP 1000PF+-20%
36	7354263	CASSETTE HOLDER ASSEMBLY	C10LR	0247061	CERAMIC CHIP 4700PF+-10%
37	6383991	PRESSURE ROLLER ASSEMBLY (FORWARD)	C11LR	0256155	ELECTROLYTIC 10MF,16V
38	6384005	PRESSURE ROLLER ASSEMBLY (REVERSE)	C12LR	0256167	ELECTROLYTIC 100MF,4V
39	6549191	SPRING	C13LR	0247069	CERAMIC CHIP 0.1MF+80-20%
40	6549174	SPRING	C14LR	0247003	CERAMIC CHIP 1000PF+-20%
41	7354073	HEAD PLATE ASSEMBLY	C14LR	0256167	ELECTROLYTIC 100MF,4V
42	5447312	HEAD	C15LR	0247065	CERAMIC CHIP 0.022MF+-10%
43	6536722	HEAD SPRING	C15LR	0256162	ELECTROLYTIC 220MF,4V
44	8711103	PAN HEAD SCREW-2MMDX3MM	C21	0247069	CERAMIC CHIP 0.1MF+80-20%
45	7355961	HEAD PLATE HOLDER	C22	0256167	ELECTROLYTIC 100MF,4V
46	8712023	PAN HEAD SCREW-1.4MMDX2MM	C23	0256166	ELECTROLYTIC 47MF,4V
47	6543534	HEAD PLATE SPRING	C24	0256167	ELECTROLYTIC 100MF,4V
			C25	0256161	ELECTROLYTIC 22MF,6.3V
			C31LR	0256384	TANTALUM 6.8MF,6.3V
			C32	0256155	ELECTROLYTIC 10MF,16V

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
RESISTORS					
R 1LR	0127939	CHIP RESISTOR 2.2KOHM+-5%	IC 1	5369961	IC BA3404F
R 2LR	0127941	CHIP RESISTOR 3.3KOHM+-5%	IC 2	5369921	IC HA12052
R 3LR	0127962	CHIP RESISTOR 180KOHM+-5%	LED1	5380881	LED SLP-114B
R 4LR	0127935	CHIP RESISTOR 1KOHM+-5%	Q21	5329681	MICRO PACKAGE TRANSISTOR 25B10C1
R10LR	0127947	CHIP RESISTOR 10KOHM+-5%	Q22, Q23	5329043	MICRO PACKAGE TRANSISTOR 25C1623(L5-6)
R11	0127923	CHIP RESISTOR 100OHM+-5%	Q31	5329043	MICRO PACKAGE TRANSISTOR 25C1623(L5-6)
R12LR	0127944	CHIP RESISTOR 5.6KOHM+-5%	Q32	5329201	MICRO PACKAGE TRANSISTOR 25C2618
R13LR	0127941	CHIP RESISTOR 3.3KOHM+-5%	Q35	5329061	MICRO PACKAGE TRANSISTOR 25A812M5.6
R21	0127953	CHIP RESISTOR 33KOHM+-5%	Q36, Q37	5329043	MICRO PACKAGE TRANSISTOR 25C1623(L5-6)
R22	0127947	CHIP RESISTOR 10KOHM+-5%	Q41	5329043	MICRO PACKAGE TRANSISTOR 25C1623(L5-6)
R23	0127928	CHIP RESISTOR 270OHM+-5%	MISCELLANEOUS		
R24	0127963	CHIP RESISTOR 220KOHM+-5%		5920331	SWITCH CONNECTOR P.C.B
R25	0127941	CHIP RESISTOR 3.3KOHM+-5%		5952181	VOLUME P.C.B ASSEMBLY
R26	0127937	CHIP RESISTOR 1.5KOHM+-5%	J 1 (S6)	5673531	JACK-3.5MMD (HEADPHONE A)
R27	0127927	CHIP RESISTOR 220OHM+-5%	J 2	5673361	JACK-3.5MMD (HEADPHONE-B)
R28	0127963	CHIP RESISTOR 220KOHM+-5%	J 3	5677341	DC JACK
R30LR	0127935	CHIP RESISTOR 1KOHM+-5%	S 1	5603681	LEAF SWITCH (POWER)
R31	0127944	CHIP RESISTOR 5.6KOHM+-5%	S 2	5603681	LEAF SWITCH (PLAY/FF,REW.)
R32	0127963	CHIP RESISTOR 220KOHM+-5%	S 3	5603681	LEAF SWITCH (FORWARD/REVERSE)
R33	0127947	CHIP RESISTOR 10KOHM+-5%	S 4	5622561	SLIDE SWITCH (TAPE)
R34	0127935	CHIP RESISTOR 1KOHM+-5%	S 5	5633952	PUSH SWITCH (REVERSE)
R35	0127941	CHIP RESISTOR 3.3KOHM+-5%	FOR ACCESSORIES		
R36	0127944	CHIP RESISTOR 5.6KOHM+-5%		5732112	HEADPHONE (HD-7P)
R37	0127947	CHIP RESISTOR 10KOHM+-5%		7753453	SHOULDER BELT
R38	0127947	CHIP RESISTOR 10KOHM+-5%		6037721	CARRYING CASE
R39LR	0127927	CHIP RESISTOR 220OHM+-5%		5792311	BATTERY CASE ASSEMBLY
SEMI-CONDUCTORS					
H1	5391082	DM106A		6776471	SHOULDER BELT HOLDER ASSEMBLY
D24	5329321	MICRO PACKAGE DIODE MA151A			

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