

CASSETTE CAR STEREO PLAYER

MODEL CS-270

SERVICE MANUAL

No. 755

1975

SPECIFICATIONS

PLAYBACK SYSTEM	4-track 2-channel 2-program (for stereo) 2-track 1-channel 2-program (for monaural)
IC	5
TRANSISTOR.....	1
DIODE	4
TAPE	Compact cassette
TAPE SPEED.....	4.75cm/s
PROGRAM CHANGE SYSTEM	Automatic (Auto reverse) Manual (Push button)
FREQUENCY RANGE	100 ~ 10,000 Hz
AUDIO OUTPUT.....	14W
MOTOR.....	DC motor
POWER SUPPLY.....	DC 14.4V, negative ground (car battery)
DIMENSIONS.....	5.5cm(H)×14cm(W)×18.8cm(D)
WEIGHT	1.7 kg

ACCESSORIES

Connecting cord	1 set
Installation parts.....	1 set
Spare fuse.....	1

BLOCK DIAGRAM

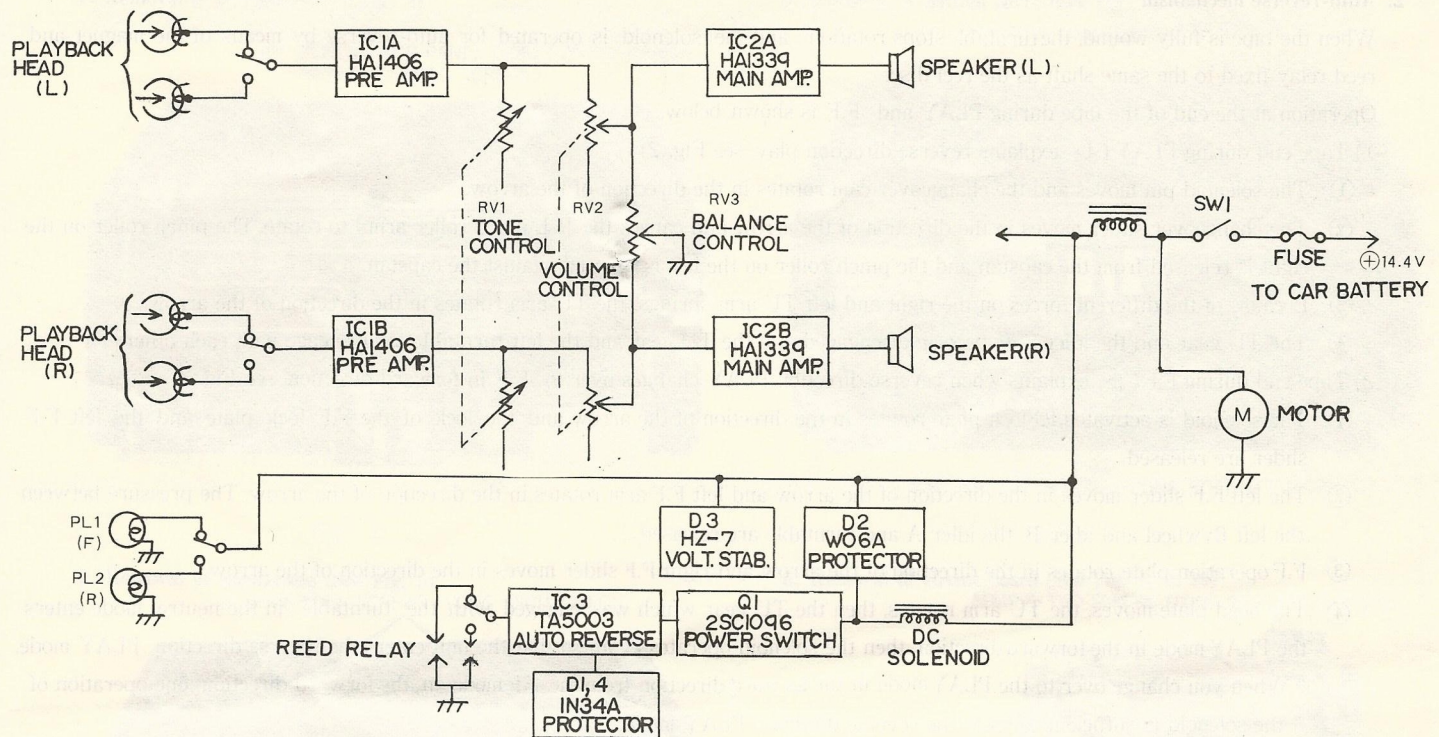


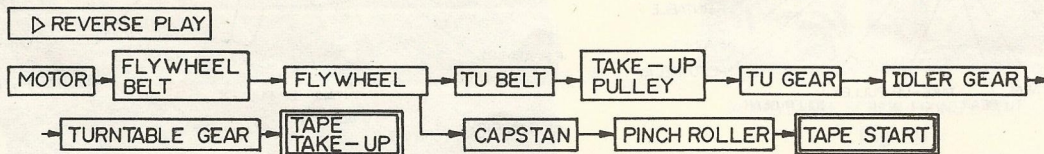
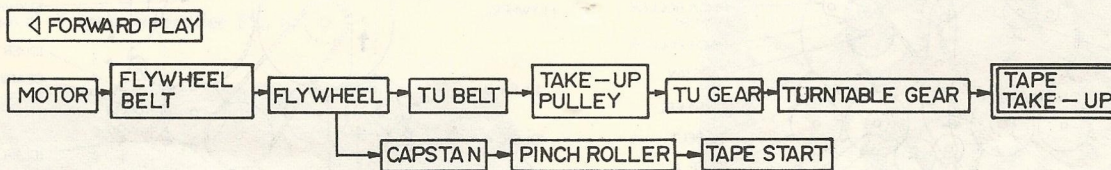
Fig. 1

EXPLANATION OF NEW MECHANISM

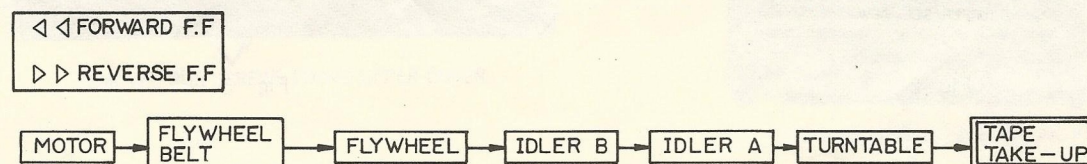
1. Drive system

Instead of using the conventional belt/idler drive, a belt/gear drive is used. The way in which power is transmitted during operations is described below.

1) IN PLAYBACK (See Fig. 2)



2) IN FAST FORWARD (See Fig. 3)



2. Auto-reverse mechanism

When the tape is fully wound, the turntable stops rotation, and the solenoid is operated for auto-reverse by means of the magnet and reed relay fixed to the same shaft as the reel disc.

Operation at the end of the tape during PLAY and F.F is shown below.

1) Tape end during PLAY (▷ explains reverse direction play, see Fig. 2)

- ① The solenoid pin moves and the changeover cam rotates in the direction of the arrow.
- ② The changeover slider moves in the direction of the arrow and causes the R.L pinch roller arms to rotate. The pinch roller on the right is released from the capstan and the pinch roller on the left is pressed against the capstan.
- ③ Because of the different forces on the right and left TU arm springs, the TU arm rotates in the direction of the arrow.
- ④ The TU gear and the idler gear become disengaged and the TU gear and the left turntable gear engage with each other.

2) Tape end during F.F (▷ explains when reverse direction PLAY changes over to F.F in forward direction, see Fig. 3)

- ① The solenoid is activated, F.F lock plate rotates in the direction of the arrow and the lock of the F.F lock plate and the left F.F slider are released.
- ② The left F.F slider moves in the direction of the arrow and left F.F arm rotates in the direction of the arrow. The pressure between the left flywheel and idler B, the idler A and turntable are released.
- ③ F.F operation plate rotates in the direction of the arrow and right F.F slider moves in the direction of the arrow.
- ④ The head plate moves, the TU arm rotates, then the TU gear which was engaged with the turntable in the neutral mode enters the PLAY mode in the forward direction, then the solenoid operates again so that the unit enters the reverse direction PLAY mode.

※ When you change over to the PLAY mode in the forward direction from the FF mode in the forward direction, one operation of the solenoid is sufficient to enter the reverse direction PLAY mode.

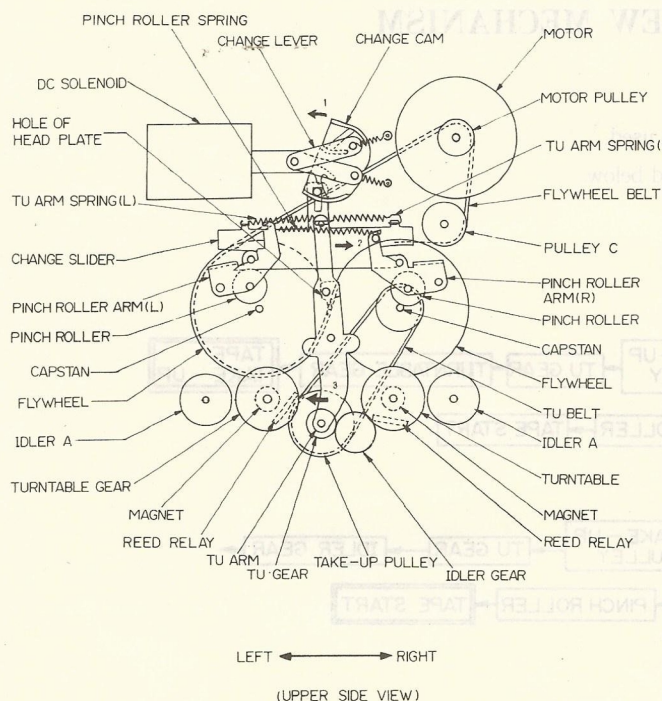


Fig. 2

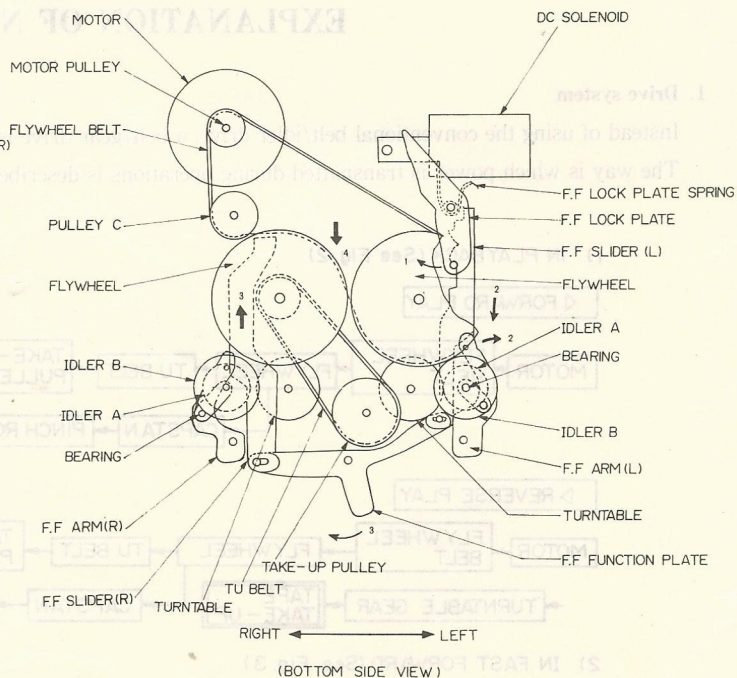


Fig. 3

DISASSEMBLY

1. Removal of sub panel (See Fig. 4)

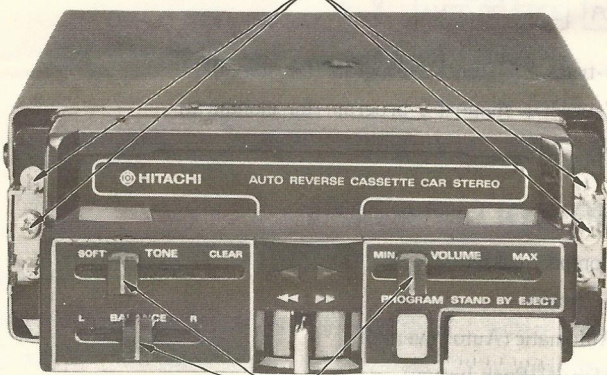
REMOVE SUB PANEL DIRECTION OF ARROW.
(WITHOUT FIXING SCREW)



Fig. 4

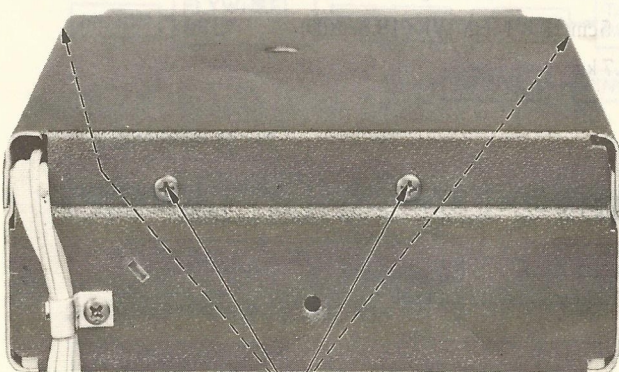
2. Removal of escutcheon (See Fig. 5)

REMOVE FOUR SCREWS FIXING ESCUTHEON.



REMOVE THREE KNOBS.
Fig. 5

3. Removal of upper cover (See Fig. 6)

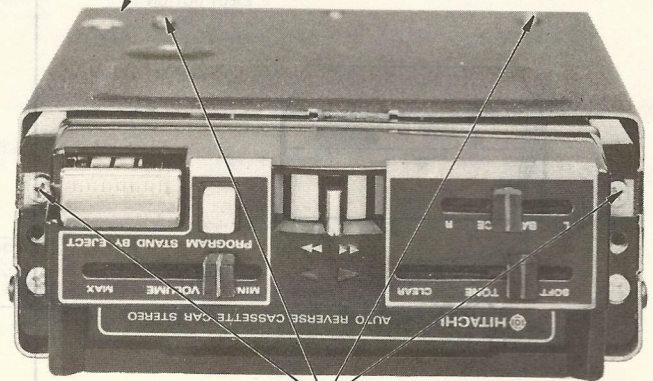


REMOVE FOUR SCREWS FIXING UPPER COVER.

Fig. 6

4. Removal of bottom cover (See Fig. 7)

REMOVE ONE SCREW FIXING CORD HOLDER.



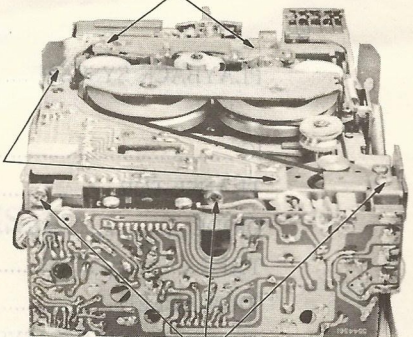
REMOVE FOUR SCREWS FIXING BOTTOM COVER.

Fig. 7

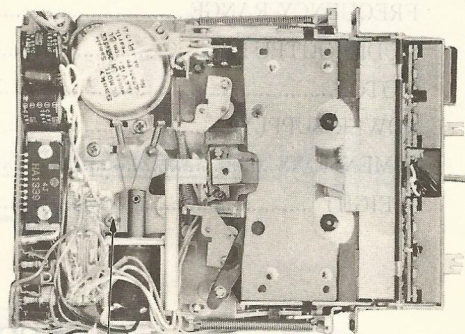
5. Removal of circuit board (See Fig. 8, 9, 10)

REMOVE TWO SCREWS FIXING READ RELAY P.W.B.

REMOVE TWO SCREWS
FIXING CONTROL P.W.B.

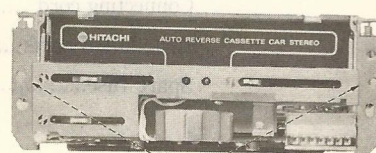


REMOVE THREE SCREWS FIXING MAIN P.W.B.
Fig. 8



REMOVE ONE SCREW FIXING SWITCH P.W.B.

Fig. 9



REMOVE TWO SCREWS FIXING VOLUME P.W.B.

Fig. 10

LUBRICATION

Before lubrication, thoroughly clean shafts and metallic parts of turning mechanisms. During lubrication, be careful not to accidentally oil the tape contacting face of pressure roller and capstan, and the rubber portion of belts and idler.

- (H) : Hitasol MO-138 or equivalent
- (W) : White grease or equivalent
- (P) : Pan motor oil or equivalent

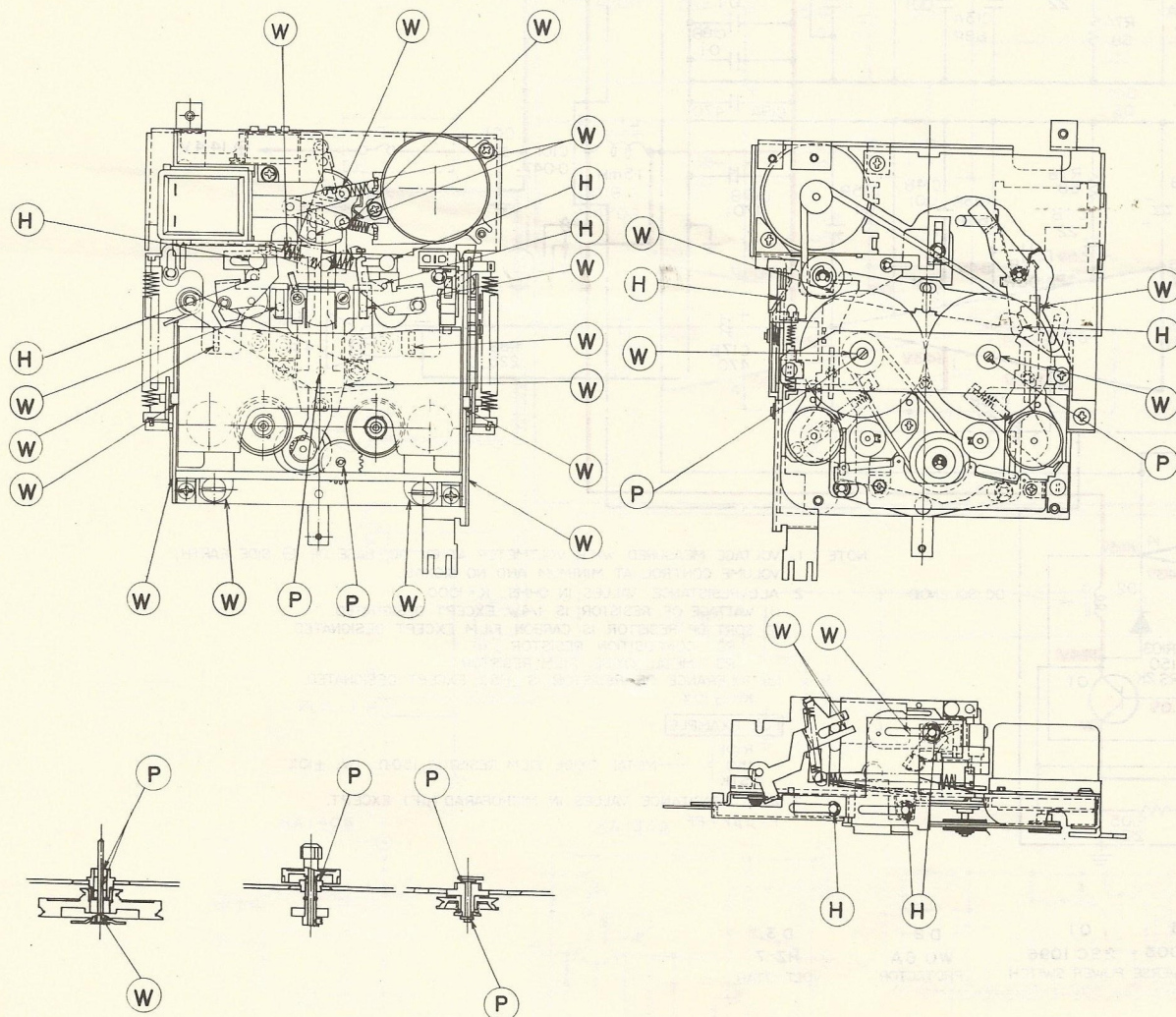
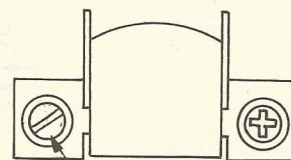


Fig. 11

ADJUSTMENT AND INSPECTION

1. Adjustment of head azimuth

- (1) Tone control knobs position is maximum.
- (2) Balance control knobs position is center.
- (3) Playback the test tape (1kHz, -10dB), and adjust volume control knob so that output may be 250 mV.
- (4) Playback the test tape (10kHz, -10dB), and adjust head azimuth adjustment screw so that output may be maximum.



HEAD AZIMUTH
ADJUSTMENT SCREW

Fig. 12

2. Inspection of pressure and torque

- (1) Pressure of pinch roller.....300~400gr
- (2) Take-up torque.....50~70gr
- (3) Playback back tensionLess than 4 gr·cm
- (4) Fast forward back tensionLess than 4 gr·cm
- (5) Fast forward torqueMore than 60 gr·cm

REPLACEMENT PARTS

Symbol No.	Stock No.	Description				Symbol No.	Stock No.	Description		
CAPACITORS :						D 1	0575001	Diode	1N34A	
C 1A, B	0249521	Ceramic, disc	470pF±10%		D 2	5330341	Diode	WO6A		
C 2A, B	0252615	Electrolytic	4.7μF	25V	D 3	5330311	Diode	HZ7A		
C 3A, B	0252231	Electrolytic	100μF	6.3V	D 4	0575001	Diode	1N34A		
C 4A, B	0256071	Electrolytic	10μF	16V	Q 1	5321231	Transistor	2SC1096		
C 5A, B	0248711	Ceramic, disc	30pF±10%		COILS :					
C 6A, B	0275111	Mylar	0.01μF±20%		L 1	5220001	AFC	1.5mH		
C 7A, B	0256071	Electrolytic	10μF	16V	for Final assembly					
C 8A, B	0275115	Mylar	0.047μF±20%							
C 9A, B	0275611	Electrolytic	1μF	25V						
C 10A, B	0252525	Electrolytic	47μF	16V						
C 11A, B	0252322	Electrolytic	22μF	10V						
C 12A, B	0248724	Ceramic, disc	100pF±10%			0591208	Fuse (2.5A)			
C 13A, B	0248720	Ceramic, disc	68pF±10%			5741455	Speaker cord			
C 14A, B	0275111	Mylar	0.01μF±20%			8821117	Nut 5mmφ	(3 req'd)		
C 15A	0276113	Mylar	0.22μF±20%			8813117	Spring washer 5mmφ	(4 req'd)		
C 15B	0276111	Mylar	0.1μF±20%			8811117	Washer 5mmφ	(4 req'd)		
C 16A, B	0252525	Electrolytic	47μF	16V		7778251	Bolt 5mmφ×7mm	(1 req'd)		
C 17A, B	0256083	Electrolytic	470μF	16V		8832116	Bolt 5mmφ×16mm	(3 req'd)		
C 18A, B	0276111	Mylar	0.1μF±20%			8785720	Tapping screw-5mmφ×20mm	(3 req'd)		
C 19A, B	0256083	Electrolytic	470μF	16V			for Set mounting screw			
C 20A, B	0275111	Mylar	0.01μF±20%			7206831	Support strap			
C 21	0275113	Mylar	0.022μF±20%		for Chassis assembly					
C100	0252332	Electrolytic	220μF	10V						
C101	0275115	Mylar	0.047μF±20%		①	6219193	Sub panel			
C102	0252611	Electrolytic	1μF	25V	②	7275891	Holder			
C103	0252223	Electrolytic	33μF	6.3V		8711612	Pan head screw-4mmφ×12mm	(2 req'd)		
C104	0252615	Electrolytic	4.7μF	25V	③	6241243	Escutcheon assembly			
C105	0252525	Electrolytic	47μF	16V	④	6259111	Program button			
RESISTORS :					⑤	6295162	Slide knob			
RV 1, 2	5020041	Variable			⑥	6298241	F.F/Rew Knob			
RV 3	5027001	Variable				8813111	Spring washer 2mmφ			
SEMI-CONDUCTOR :						8811231	Washer 2mmφ			
IC 1A, B	5350251	IC	HA1406			8715105	Pan head screw-2mmφ×5mm			
IC 2A, B	5350321	IC	HA1339				for F.F/Rew Knob mounting			
IC 3	5356221	IC	TA5003		⑦	6259102	Eject button			
					⑧	6097141	Cassette lid			

Symbol No.	Stock No.	Description	Symbol No.	Stock No.	Description
(9)	7532264	Cartridge shaft	(33)	6381262	F.Farm assembly (L)
(10)	6307222	Door spring		7538571	Lock screw for FF arm assembly
(11)	6144051	Bottom cover	(34)	7275382	F.F slider (L)
(12)	6144042	Upper cover	(35)	7275371	F.F slider (R)
	8648405	Bind screw-3mm ϕ ×5mm (3 req'd) for upper cover & bottom cover mounting	(36)	7778843	Poly slider washer (2 req'd) for F.F slider L.R mounting
	8641405	Bind screw-3mm ϕ ×5mm (2 req'd) for bottom cover & volumeholder mounting		7230901	Ering 2mm ϕ
(13)	7207052	Cord holder		7778394	Ering 1.5mm ϕ
	7780192	Bind screw-3mm ϕ ×4mm for cord holder mounting	(37)	7277061	Head plate
	8744405	Bind screw-3mm ϕ ×5mm for Chassis mounting	(38)	6307202	Lock plate spring for head plate
(14)	7150613	Support strap	(39)	7275433	F.F lock plate assembly
	7778251	Bolt 5mm ϕ ×7mm		7230901	Ering 2mm ϕ
	8813117	Spring washer 5mm ϕ	(40)	6307194	Spring for F.F lock plate
	8811117	Washer 5mm ϕ for support strap mounting	(41)	7275313	Eject slider assembly
(15)	7632741	Blind		7230901	Ering 2mm ϕ
for Chassis assembly (M)			(42)	6319481	Spring for pause lever
(16)	6327831	Plate spring	(43)	7276363	Cassette holder assembly
	8741105	Bind screw for plate spring mounting	(44)	7275332	Eject rod assembly
(17)	5762037	Lamp	(45)	6323761	Spring for lock for eject rod mounting
(18)	6575122	Lamp holder	(46)	6329451	Spring for plate
	8721104	Flat screw-2mm ϕ ×4mm (3 req'd) for RV. 1. 2. 3 mounting		8641405	Bind screw-3mm ϕ ×5mm
(19)	5680871	Point piece	(47)	6971932	Eject arm
	8641405	Bind screw-3mm ϕ ×5mm for cord assembly mounting	(48)	6307181	Spring for eject arm for eject arm mounting
	7780193	Bind screw-3mm ϕ ×4mm for M.P.W.B assembly mounting	(49)	6411871	Take up gear assembly
	8641405	Bind screw-3mm ϕ ×5mm for M.P.W.B assembly mounting		7778855	Poly slider washer
for Chassis assembly				7778394	Ering 1.5mm ϕ
(20)	7275486	Head plate assembly	(50)	7275611	Take up arm assembly
(21)	7275501	Pressure roller arm assembly (L)	(51)	6300082	Spring for brake plate for take up arm spring (L)
(22)	7275511	Pressure roller arm assembly (R)		6324811	Spring for switch lever for take up arm spring (R)
	6300731	Spring for pressure roller arm		7230901	Ering 2mm ϕ for take up arm assembly mounting
	7778395	Ering 2mm ϕ for pressure roller arm mounting	(52)	6354221	Flywheel belt
(23)	5444171	Playback head	(53)	6354231	Take up belt
	7780554	Screw-2mm ϕ ×8mm	(54)	6348431	Take up idler
	8653105	Screw-2mm ϕ ×5mm	(55)	6411882	Turn table assembly
	8811231	Washer 2mm ϕ for head mounting	(56)	7538811	Magnet assembly
(24)	6327791	Spring for cassette holder		7778852	Washer
(25)	6321734	Spring for head		6320731	Back tension spring
(26)	0948492	Ball 2mm ϕ	(57)	0638564	Lock screw-2mm ϕ ×3mm
(27)	6300712	Spring for head plate		6372351	Flywheel assembly
	7230901	Ering 2mm ϕ		7778852	Poly slider washer
(28)	6329441	Spring for head plate holder	(58)	5642143	Solenoid assembly
(29)	6329442	Spring for head plate holder	(59)	7275593	Change-over lever assembly (A)
	8741405	Bind screw-3mm ϕ ×5mm for head plate holder spring mounting	(60)	7275603	Change-over lever assembly (B)
(30)	0948275	Ball 3mm ϕ		8650406	Spring washer with screw-3mm ϕ ×6mm for solenoid mounting
(31)	6323763	F.F arm spring for F.F arm spring mounting		6323735	Spring for stop lever for change-over lever mounting
(32)	6381252	F.F arm assembly (R)	(61)	7786213	Washer
				6735374	Change-over cam
				8811114	Washer 3mm ϕ for DC solenoid mounting
				7778395	Ering 2mm ϕ
			(62)	7275531	Switch change-over lever assembly
			(63)	7275542	Switch change-over slider
			(64)	5632411	Point piece change-over switch for power switch, pause mounting
			(65)	5572292	DC Motor assembly
				7778395	Ering 2mm ϕ for pulley C mounting
			(66)	6342791	Pulley C

Symbol No.	Stock No.	Description	Symbol No.	Stock No.	Description
⑥7	7778853	Washer for pulley C mounting	⑥9 SW 4 ⑦0 SW 5	5641091	Reed relay
	6735733	Pause look piece		5641092	Reed relay
for P.W.B assembly			⑦1 ⑦2 ⑦3	5070171	Cylindric assembly
⑥8 SW 2	5621151	Slide switch		5748111	Power cord
				5740576	Speaker cord (R)
				5740224	Speaker cord (L)



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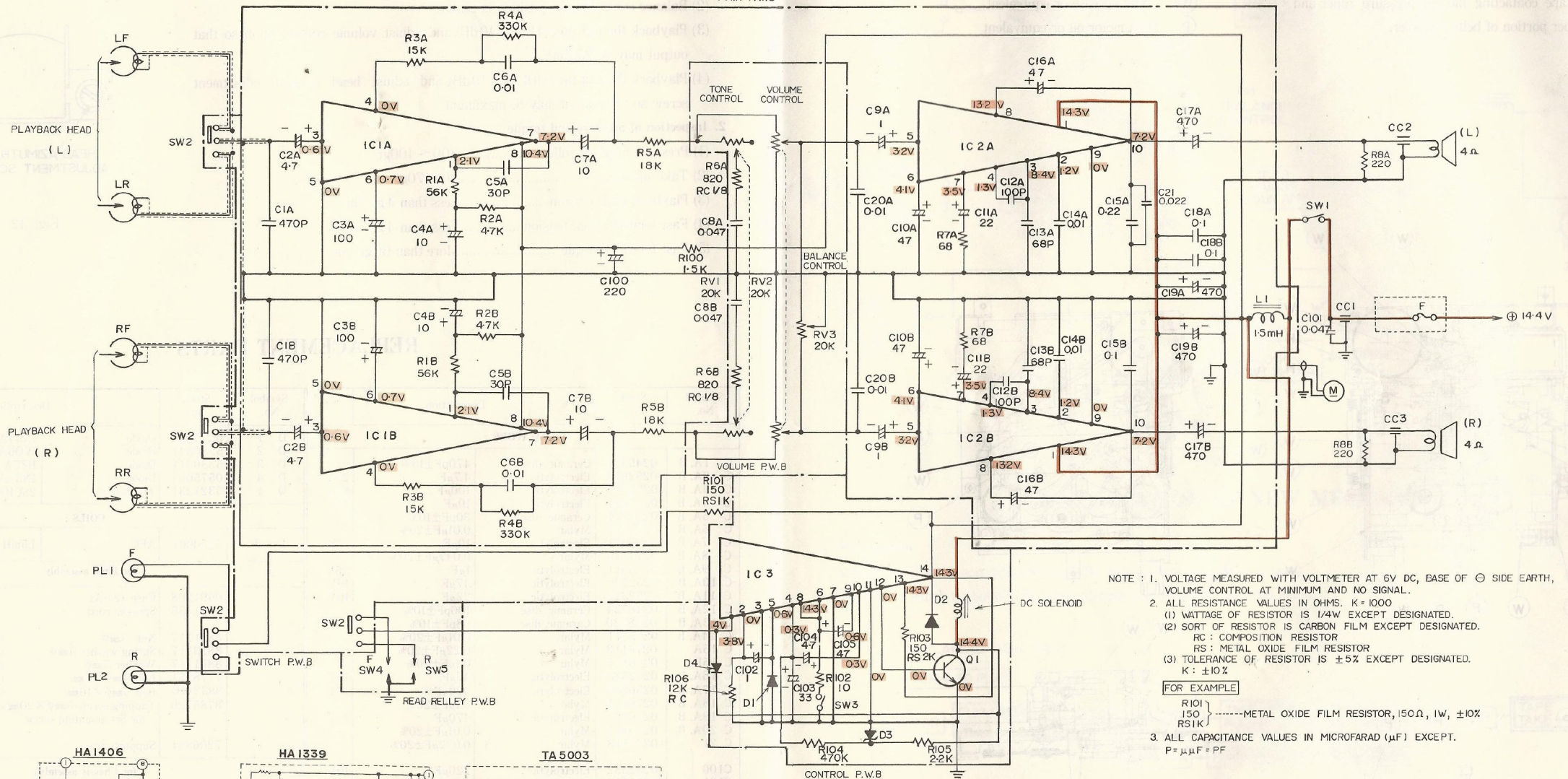
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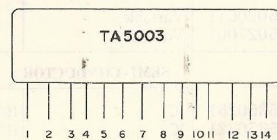
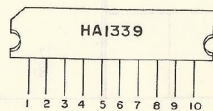
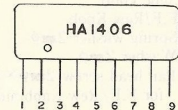
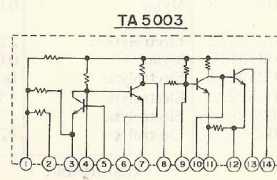
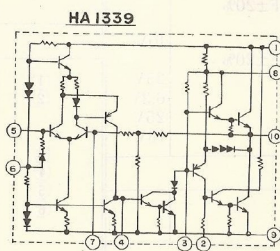
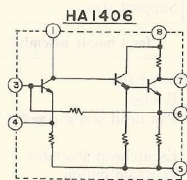
IC1 A, B
HA 1406
PRE AMP

IC2 A, B
HA 1339
MAIN AMP

MAIN P.W.B



- NOTE : 1. VOLTAGE MEASURED WITH VOLTMETER AT 6V DC, BASE OF \ominus SIDE EARTH, VOLUME CONTROL AT MINIMUM AND NO SIGNAL.
2. ALL RESISTANCE VALUES IN OHMS. K = 1000.
(1) WATTAGE OF RESISTOR IS 1/4W EXCEPT DESIGNATED.
(2) SORT OF RESISTOR IS CARBON FILM EXCEPT DESIGNATED.
RC : COMPOSITION RESISTOR
RS : METAL OXIDE FILM RESISTOR
(3) TOLERANCE OF RESISTOR IS $\pm 5\%$ EXCEPT DESIGNATED.
K : $\pm 10\%$
FOR EXAMPLE
R10I } -----METAL OXIDE FILM RESISTOR, 150 Ω , 1W, $\pm 10\%$
150
RS1K
3. ALL CAPACITANCE VALUES IN MICROFARAD (μ F) EXCEPT.
P = μ F = PF



D1, D4
IN 34A
PROTECTOR

IC 3
TA 5003
AUTO REVERSE POWER SWITCH

D2
W0 6A
PROTECTOR

D3
HZ-7
VOLT. STAB.

CIRCUIT BOARD DIAGRAM

