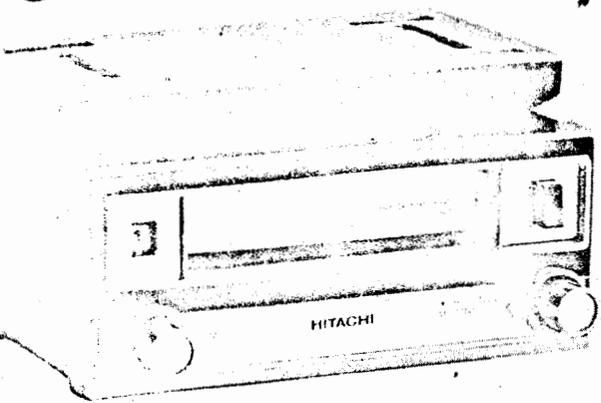




HITACHI
Hitachi, Ltd. Tokyo Japan



8TRACK CAR STEREO

MODEL CS-103

SERVICE MANUAL

No. 166

1968

SPECIFICATIONS

TRANSISTORS	2SC281×4, 2SC458×2	FREQUENCY RESPONSE	50~8,000cp
	2SB337×4, 2SB367×1	OUTPUT POWER.....	5W per channel R.M.S.
THERMISTORS	D-1B×4		10W total
DIODE	TR-9GS×1	OUTPUT IMPEDANCE.....	3.5ohm
TAPE SPEED	3 $\frac{3}{4}$ ips	POWER SUPPLY.....	DC 14.4V (10~16V)
CARTRIDGE	Stereo 8 track	CURRENT CONSUMPTION.....	0.5A
PROGRAM SELECTOR.....	Automatic or manual push button	DIMENSIONS	7 $\frac{1}{8}$ " (W) × 6 $\frac{3}{4}$ " (D) × 2 $\frac{5}{8}$ " (H)
REPRODUCING.....	8track, 4channel	WEIGHT	Approx 6.6 lbs (3kg)

ACCESSORIES

SPEAKER	2	INSTALLATION PARTS	1 set
CONNECTING CORD	1	FUSE	1
CARTRIDGE	1		

DISASSEMBLY

To check, repair and lubricate, disassemble the player in the following manner.

1. Remove the knobs, escutcheon, and channel selector button as shown in Fig. 1.

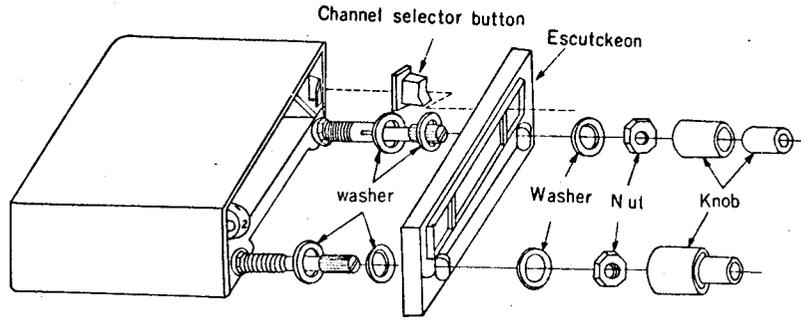


Fig. 1

2. Removal of the top cover

Remove four screws holding top cover shown in Fig. 2.

3. Removal of the bottom plate

Remove four screws holding bottom plate.

Now the motor, belt, flywheel, and electrical parts (printed circuit board, etc.) can be inspected.

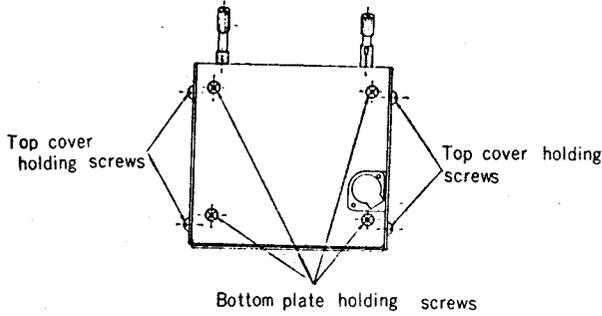


Fig. 2

4. Removal of the printed circuit board (audio amplifier)

Remove the three screws holding circuit board shown in Fig. 3. Remove the volume with the circuit board.

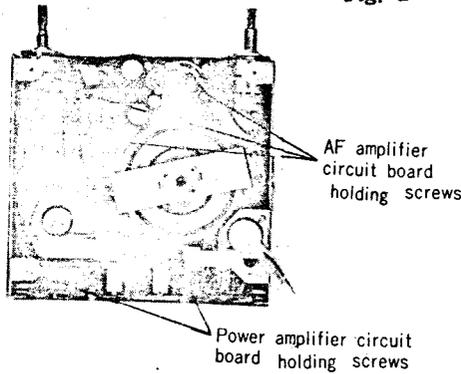


Fig. 3

5. Removal of the power amplifier circuit board and transistor mounting plate

Remove three screws on the output transistor mounting plate, then remove two screws holding power amplifier.

Now electrical parts, such as the zener diode (TR-9GS), can be checked.

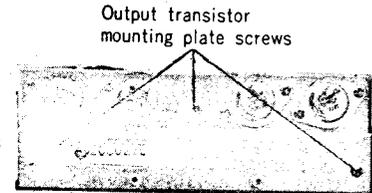


Fig. 4

LUBRICATION

Apply oil as shown in Fig. 5.

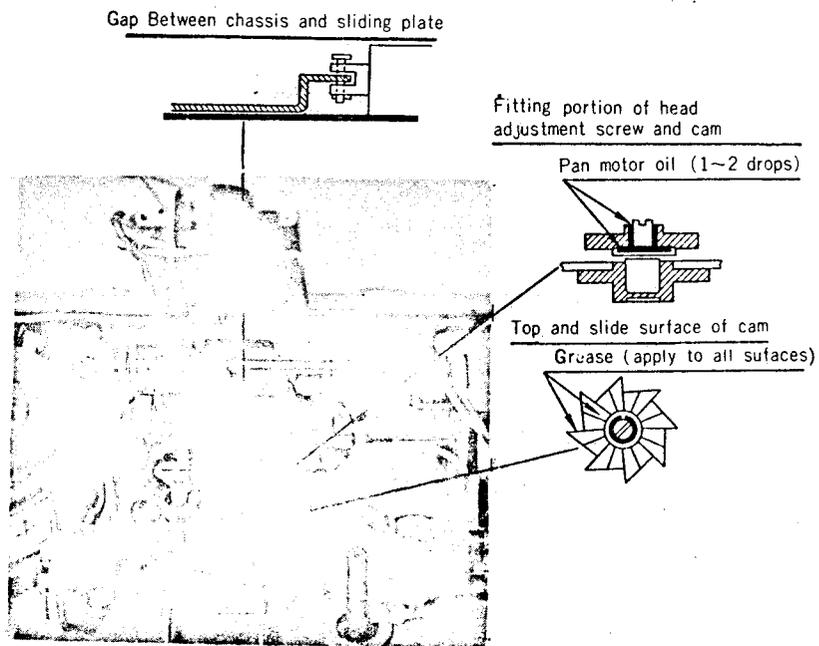


Fig. 5

ADJUSTMENT

Adjusting the Head Height

Height of the reproduction head must coincide exactly with the height of the recorded track (1-8) on the tape. The head height is adjusted by rotating the adjustment screw (shown in Fig. 6) which adjusts height of the cam.

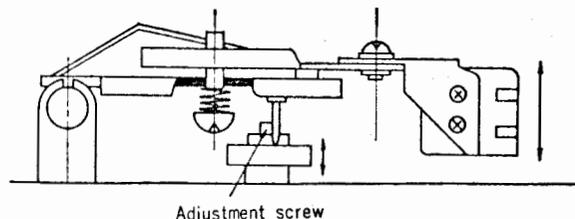


Fig. 6

Perform this adjustment when volume from both the left and right channels seems somewhat insufficient, sounds of two channels are unbalanced, or reproduced sound is somewhat distorted. Set the adjustment screw at an optimum point (maximum volume and best tone). After adjustment is completed, lock the screw with screw-lock or another substance.

CHECK AND REPAIR

(1) Principal parts which require servicing or replacement during check and repair are as follows:

Table1

	Nomenclature	Cause
1	Tape head	Abrasions
2	Motor	Deterioration of governor contacts and carbon brushes
3	Flywheel	Slip due to abraded capstan
4	Bearing	Abrasions, or oil expended
5	Belt	Abrasions or breaks
6	Escutcheon and other exterior parts	Stained or broken
7	Zenner diode and other electrical parts	Irregular voltage or malconnection in power supply

NOTE: Life of the tape head exceeds 500 hours (average life 700~800 hours; that of the motor is over 1,000 hours. Estimated life of other parts exceeds 2,000 hours.

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I Troubles of tapes or irregular conditions due to user's careless operation are classified as listed in the following table.

Table 2

Trouble	Cause	Checking method
1 Crosstalk	Recorded sound track width of tape exceeds the rated maximum value (0.05mm); or relative position of tracks (1-8) is not accurate.	Replace the cartridge with two or three other cartridges, and check for crosstalk. If normal performance is obtained with other cartridges, the initial cartridge is faulty.
2 Tape jamming	Tape manually pulled out jams in the cartridge. Tape is fed by capstan, but is not taken up in reel, jamming around the capstan.	If the tape is wound slack, tape slack can be absorbed in the reel. If the tape is manually pulled out 5cm or more from the reel, the reel cannot take up the jammed tape.
3 Flutter due to deformed pinch roller	Cartridge has been inserted in the set and left for a long time. Car was left with power source cut by engine key, but without removing the cartridge from player. Pinch roller deformation is apt to occur when ambient temperature is high.	Deformation of pinch roller is caused naturally; with continuous use of approximately 100 hours. However, the period depends on the cartridge manufacturer.
4 Malconnection in installation	1) If the power voltage is connected in reversed polarity, the fuse will blow immediately. 2) Induced noise Noise is induced in the set if the set's power cable is connected to the car's motor generator instead of the battery terminal.	Be especially careful of power polarity when the set is used in a positive grounded car. Check the power connection. It is better to connect the cable in common with that of the car radio.
5 Tone	Noise is caused due to faulty installation of speaker.	Check installation screws or other parts.

III Defects in principal parts and replacement procedure

1. Defective zener diode

The zener diode TR-9GS used in the power supply circuit for the motor may become defective if irregular impact pulses are applied.

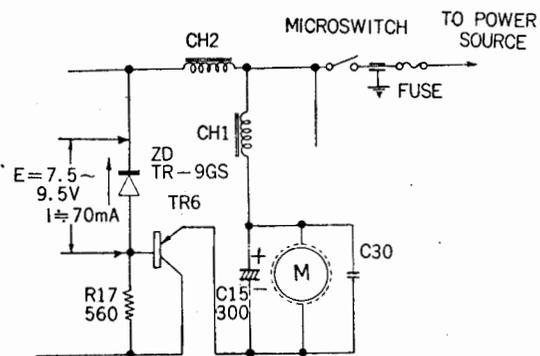


Fig. 7

Table 3

Item	Symptoms	Possible causes	Remedy
1	Excessive motor noise (pulsating sound) and faster tape speed.	Zener diode in the voltage regulator circuit is disconnected (opened), and power voltage is fed directly to motor.	Replace zener diode. A defective zener diode may subsequently cause a breakdown of the transistor 2SB367.
2	Motor does not run; normal voltage in other circuit.	Zener diode is shortcircuited, and transistor TR6 (2SB367) is shut off. This trouble may subsequently cause the trouble described in 1, above.	Replace zener diode.

2. Motor defects

Table 4

Item	Symptoms	Possible causes	Remedy
1	Motor speed varied	<ul style="list-style-type: none"> ◦ Governor is defective. ◦ Governor is defective. ◦ Brush contact resistance increased. ◦ Metal abraded due to long, continuous use. ◦ Governor or brush contact is unstable. 	Replace motor
	1) Speed is faster than normal.		Replace motor
	2) Speed is slower than normal.		Replace motor
	3) Speed fluctuates.		Replace motor
2	Flutter increased.	<ul style="list-style-type: none"> ◦ Governor or brush contact is obviously unstable. ◦ Metal abraded due to long, continuous use. 	Replace motor
3	Power consumption increased.	<ul style="list-style-type: none"> ◦ Friction increased due to abrasion of metal. 	Replace motor

3. Testing the motor

The motor is the power source which feeds the tape; consequently, irregular motor operation and its power transmission cause the tape to run irregularly. Power transmission system in the set is simplified (shown in Fig. 8), different from that of a conventional tape recorder.

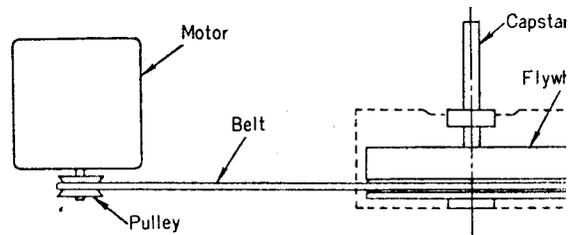


Fig. 8

When an irregularity in speed or wow is observable in tape reproduction, remove the belt and check the motor speed and stability. Rated motor speed is $2,450 \pm 50$ rpm with a load of 15gr-cm. Check motor rotation with a stroboscope. Unstable motor rotation increases wow. Variation of the speed retards or quickens the tape speed (rated as 9.5cm/sec). Now check the motor current. Average value of motor current is 55mA without load. A defective motor may increase the player acoustic and electric noise.

4. Replacing the motor

- 1) Remove the pulley belt and disconnect the two lead wires from the motor.
- 2) Mounting structure of the motor is illustrated in Fig. 9. Loosen the mounting screw and remove the top shield cover. By slightly pushing on the pulley, the motor can be removed. The pulley is replaced together with the motor.
- 3) A new motor is mounted in the manner reverse to that of removal.

Hold the motor unit firmly with shield plates, tightening the mounting screws. Shield plates and the rubber sheet around the unit absorb vibration and motor noise; thus, confirm that they are placed in the shield case.

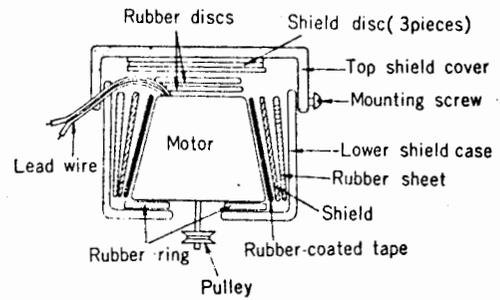


Fig. 9

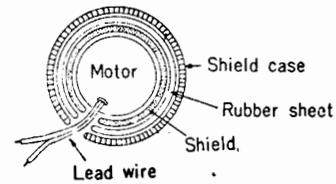


Fig. 10

5. Defects in bearing

The following troubles require replacement of the flywheel bearings.

Table 5

Item	Symptoms	Possible causes	Remedy
1	Excessive rumbling sound	1) Dust or other foreign matter is mixed between the bearing balls.	Replace bearing
		2) Abraded inner or outer ring or ball bearing causes rumbling.	Replace bearing
		3) Excessive shock applied to the bearing causes rumbling.	Replace bearing
2	Excessive wow and flutter	1) Bearing rotation is not smooth, due to infiltrated foreign matter.	Replace bearing
		2) Bearing rotation is not smooth; grease in inner or outer ring or ball expended due to use exceeding the guaranteed period.	Replace bearing
		3) Excessive load applied to the bearing is causing wear in bearing portion; rotation of bearing balls is not smooth.	Replace bearing

When excessive wow and flutter remain, even after the bearing is replaced based on items 1 and 2, above, check the belt, motor, and flywheel.

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3	Tape speed is retarded.	1) Grease in the bearing congealed, due to use exceeding guaranteed bearing life Retards ball rotation and increases loss-torque, thereby slowing down flywheel rotation.	Replace bearing.
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When tape speed is still slow, even after the bearing is replaced based on items 1,2 and 3, above, check the belt and motor.

6. Replacing the bearing

- 1) Remove three 3mm ϕ tapping screws (1) and take off the flywheel holder (2).
- 2) Remove the 2mm ϕ belt (6), and remove three 2.6mm ϕ pan-head screws(4). Slowly remove the flywheel (3), paying attention not to bend the flywheel shaft.
- 3) Remove three 2.6mm ϕ pan-head screws (4), and remove the bearing (5). Since the bearing is fitted to the shaft, remove the bearing by pulling it slowly straight upward.

Clean that portion of the shaft with alcohol which contacts with the bearing inner ring, assembling it with a new bearing.

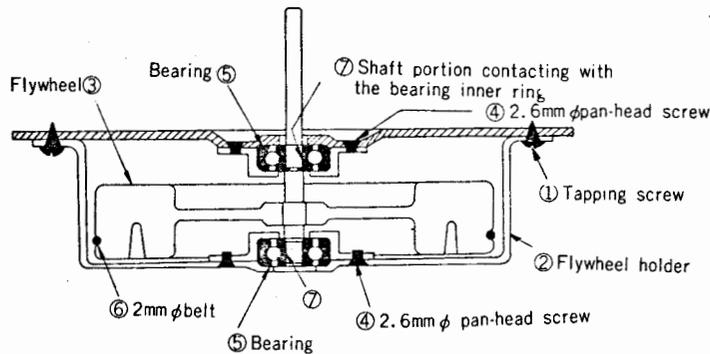


Fig. 11

7. Defect in belt

When the following troubles occur, clean or replace the belt.

Table 6

Item	Symptoms	Possible causes	Remedy
1	Flywheel does not rotate (with power switch set to ON).	Flywheel does not rotate when a cartridge is properly inserted in the set, and the power switch is turned ON; or transmission power is insufficient to feed the tape. 1) Belt is broken, or motor does not rotate 2) Belt is out of position, or a flaw in the belt has elongated it, causing a slip between the belt and pulley. (A silicon rubber belt is apt to weaken if a flaw in it occurs.)	Replace belt. Replace belt.

2	Tape speed is retarded.	1) Dust or oil adhered to the belt surface causes slip between the pulley and belt. 2) Elongation of the belt causes slip between the pulley and belt.	Clean the belt with alcohol, not with benzine.
3	Excessive wow and flutter.	1) Fluctuating flywheel rotation due to unstable slip between the pulley and belt on which surface dust or other foreign matter is adhered.	Clean belt with alcohol.

When tape speed is still retarded or flutter exists, even after the belt has been replaced or cleaned, check the bearing, motor, and flywheel.

8. Replacing the belt

Remove the 2mmφ belt(6) after removing three 3mmφ tapping screws (1) and the flywheel holder (2). Clean a new belt with alcohol and check it for wear before assembling.

9. Defective flywheel.

When the following trouble occurs, clean or replace the flywheel.

Table 7

Item	Symptom	Possible causes	Remedy
1	Excessive wow and flutter	1) Ferromagnetic powder dropped from the tape has adhered on the flywheel shaft surface, varying pinch roller rotation. 2) Eccentric shaft rotation. External shock has deformed the shaft.	Clean shaft surface with alcohol. Replace flywheel

10. Replacing the flywheel

Remove three 3mmφ tapping screws (1), flywheel holder (2), and 2mmφ belt (6) in the same manner shown in Fig. 11. Remove and replace the flywheel (3). Be careful not to deform or bend the shaft.

INSTALLING THE CAR STEREO SET

- Hang this player from the right side of the car's instrument panel, using two mounting plates. Attach the rear of the set to the dashboard by using a mounting plate.
- * Secure the set tightly. At least one mounting plate must be fixed to a metallic portion of car in order to form an electrical connection with the car body.

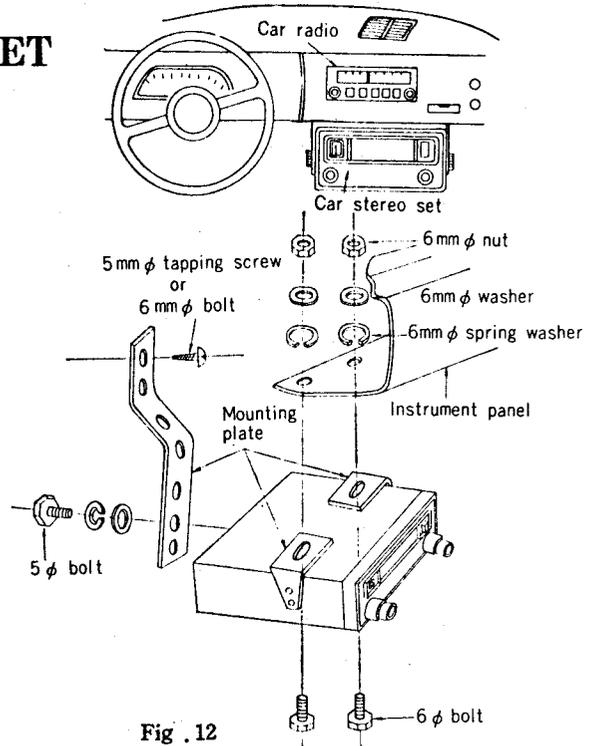


Fig. 12

INSTALLING THE SPEAKERS

- When installed on the car sides
Select a proper position so that the installed speakers do not interfere with the brake or accelerator operation.

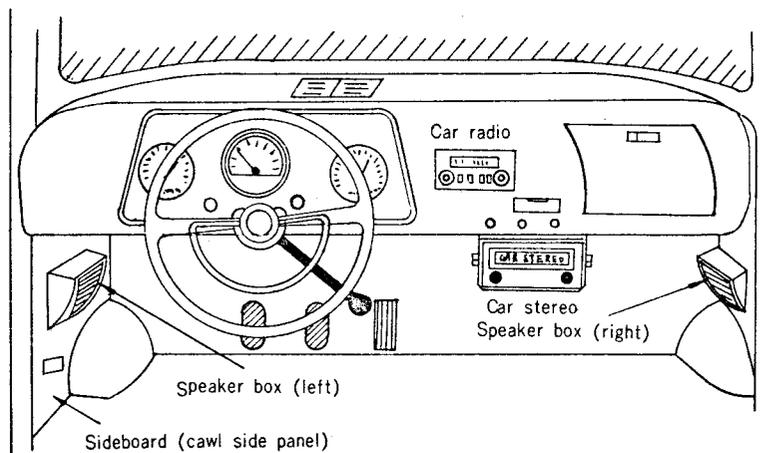


Fig. 13

DISASSEMBLED SPEAKER BOX

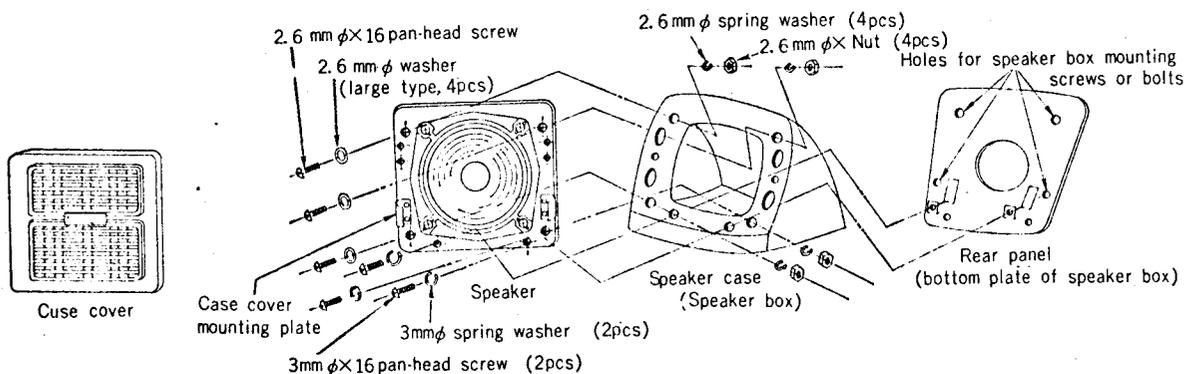


Fig. 14

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◦ When installed on doors

Remove the inner wall of both doors and bore holes to accommodate the speakers. Select a mounting position where the window glass elevator handle and door handle do not touch the speakers.

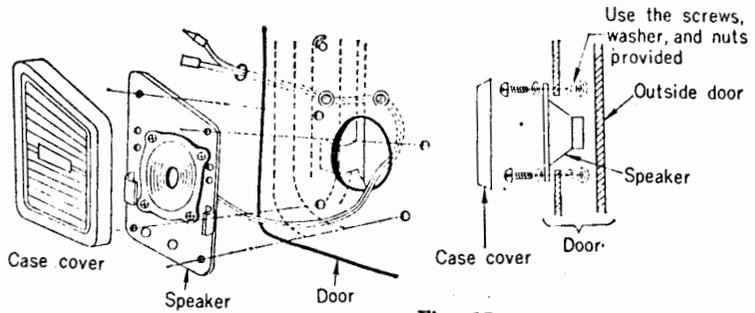


Fig. 15

◦ When installed behind rear seat

Bore speaker holes on the package tray (rear shelf) and mount the speakers. Speakers may be placed on the rear shelf (use this method for rear-engine cars).

* Run the speaker cables and connection cable under the seats.

* Male and female connectors are used in order to avoid a misconnection of speaker polarity.

* Channel color codes:

Gray connection cable left channel

White connection cable right channel

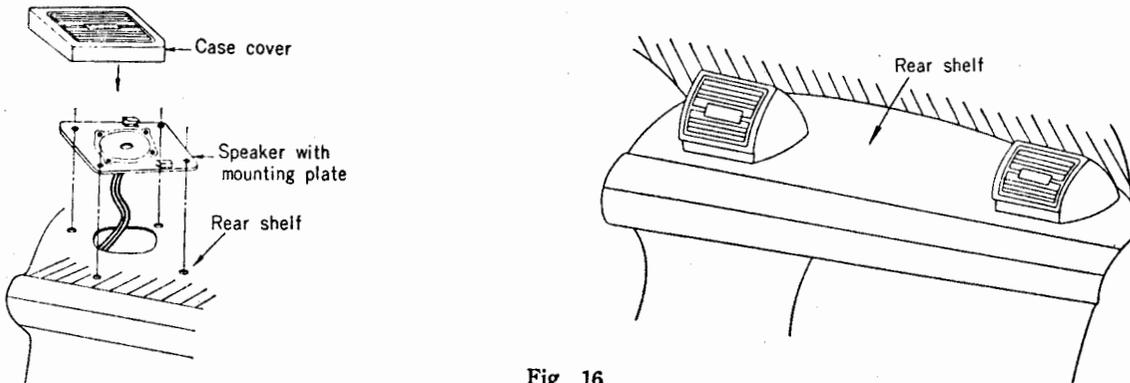


Fig. 16

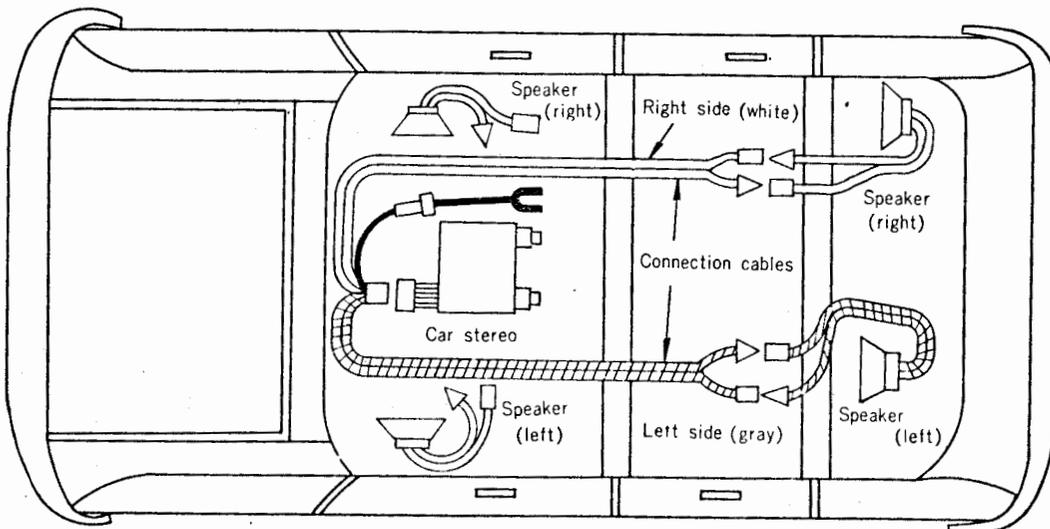
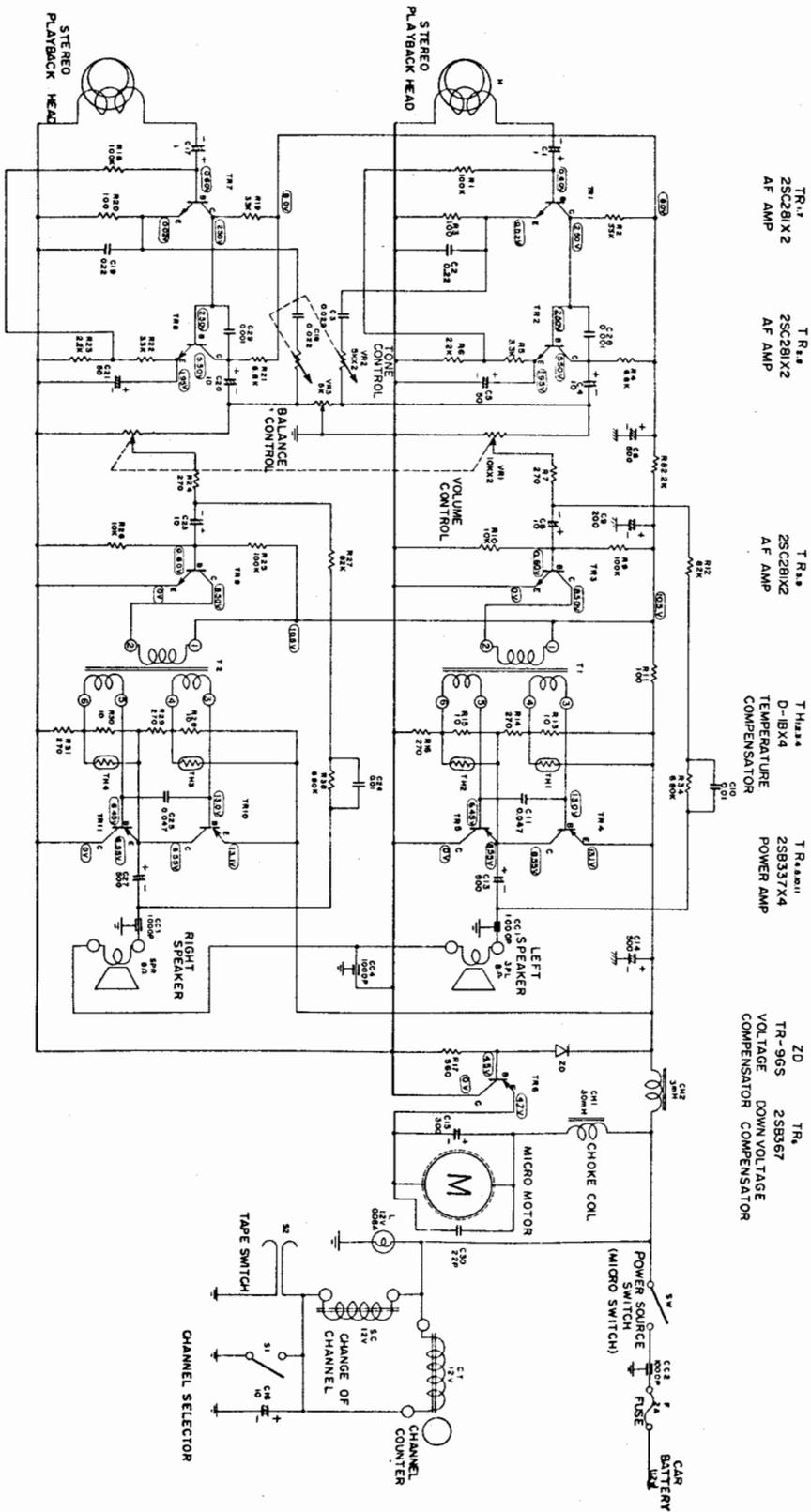


Fig. 17

CIRCUIT DIAGRAM

PRINTED CIR



TR1, TR2
2SC281X2
AF AMP

TR3, TR4
2SC281X2
AF AMP

TR5
2SC281X2
AF AMP

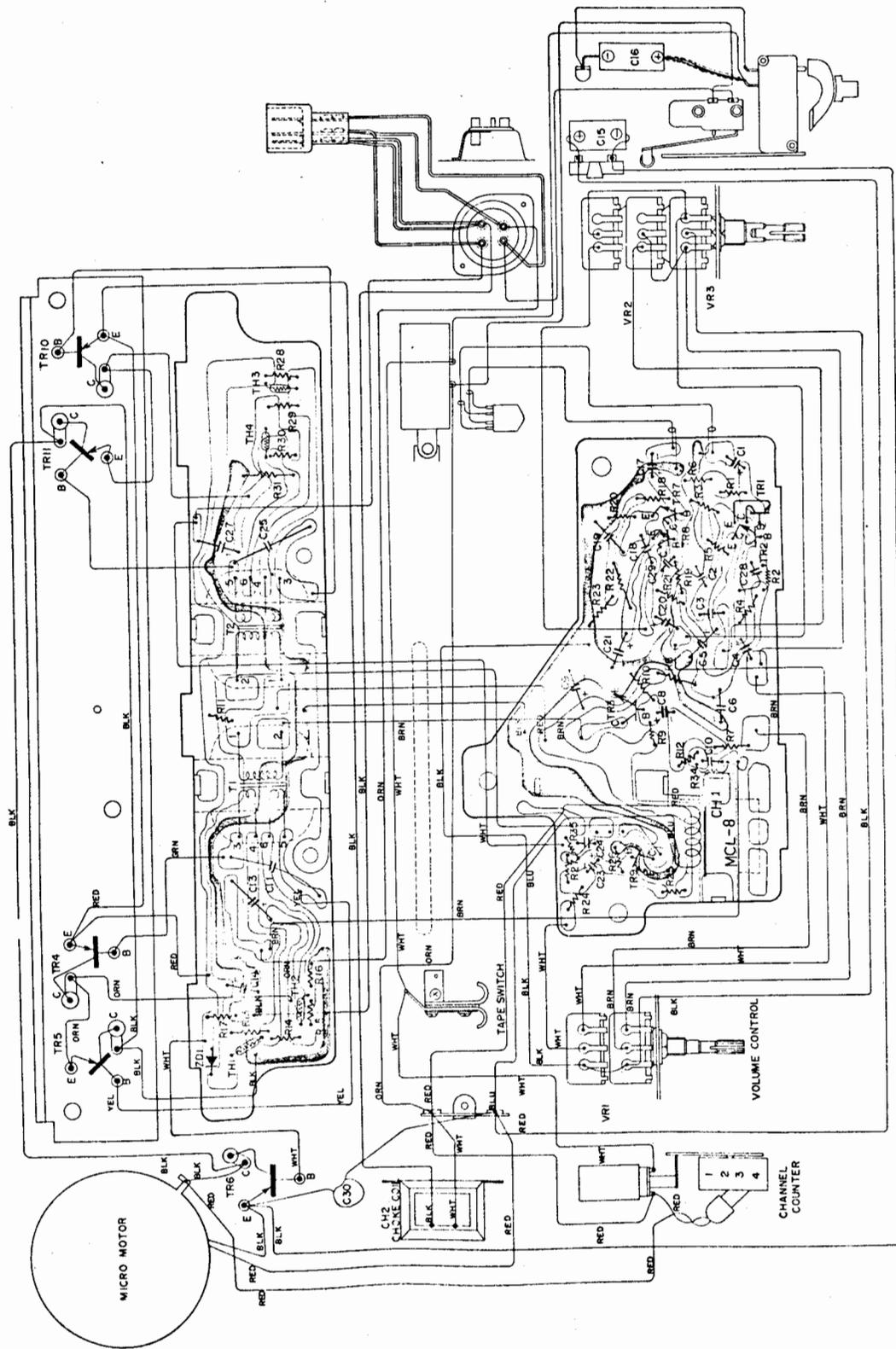
T1
D-18X4
TEMPERATURE
COMPENSATOR

TR3, TR4
2SB337X4
POWER AMP

ZD
TR-965
VOLTAGE
COMPENSATOR

TR5
2SB337
DOWN VOLTAGE
COMPENSATOR

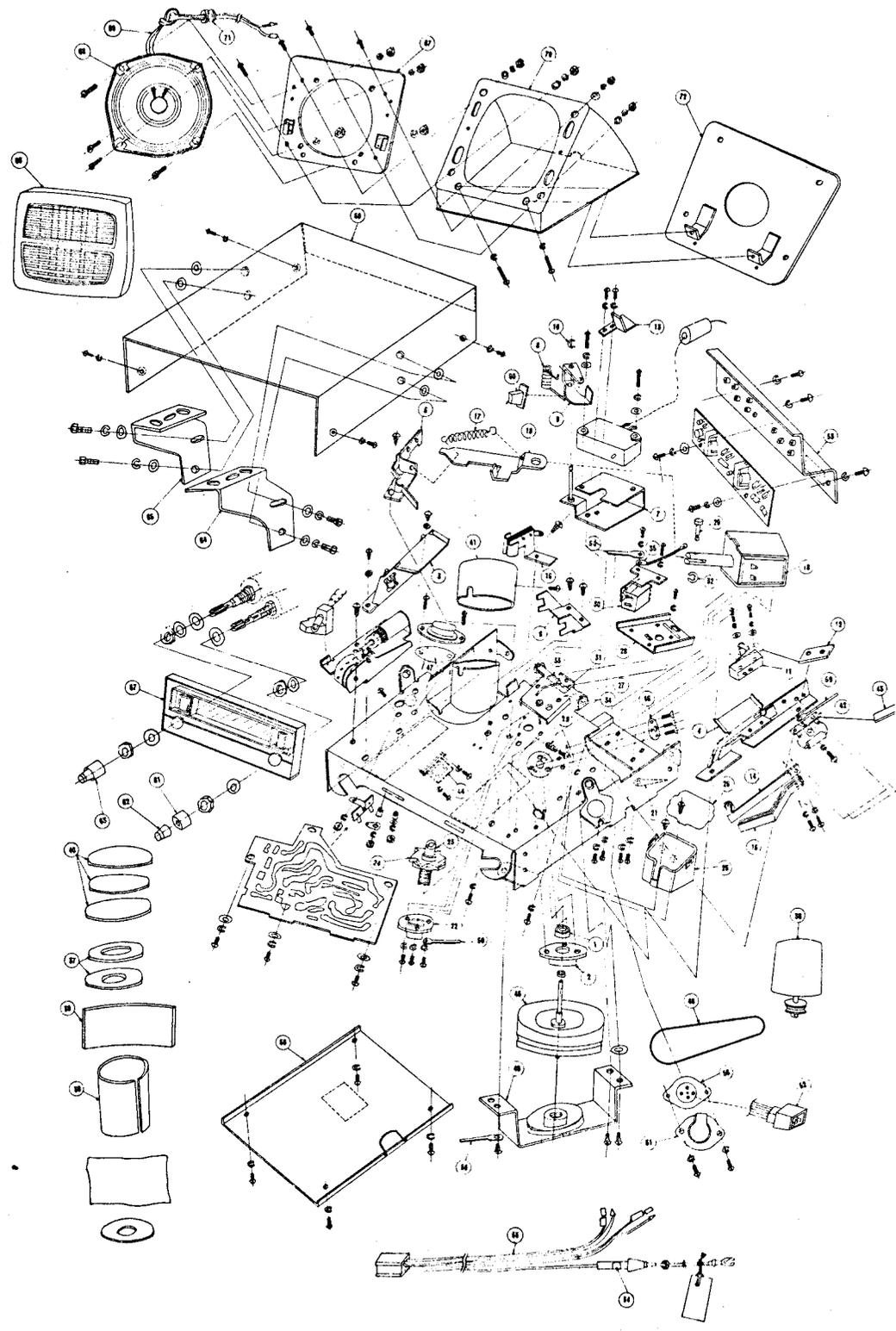
PRINTED CIRCUIT BOARD DIAGRAM



DISASSEMBLED DIAGRAM

MODEL CS-103 SERVICE MANUAL

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REPLACEMENT PARTS

Symbol NO.	Stock NO.	Description			Symbol NO.	Stock NO.	Description		
CAPACITORS:					VR 1	0156088	Variable	10KΩW×2	
C 1	0252311	Electrolytic	1μF	10WV	VR 2	0156089	Variable	5KΩB×5.2KW	
C 2	0276113	Mylar	2.22μF±20%	50WV	VR 3				
C 3	0275113	Mylar	0.022μF±20%	50WV	TRANSISTORS:				
C 4	0252321	Electrolytic	10μF	10WV	TR 1	0573066		2SC281 (C)	
C 5	0252125	Electrolytic	50μF	3WV	TR 2	0573481		2SC458 (C)	
C 6	0252335	Electrolytic	500μF	10WV	TR 3	0573066	Same as TR1		
C 8	0252121	Electrolytic	10μF	3WV	TR 4	0573040		2SB337 (B) P	
C 9	0252532	Electrolytic	200μF	15WV	TR 5	0573040		2SB367 (A)	
C 10	0275111	Mylar	0.01μF±20%	50WV	TR 6	0573030			
C 11	0275115	Mylar	0.047μF±20%	50WV	TR 7	0573066	Same as TR1		
C 13	0252535	Electrolytic	500μF	15WV	TR 8	0573481	Same as TR2		
C 14	0252535	Same as C13			TR 9	0573066	Same as TR1		
C 15	0256003	Electrolytic	1000μF	10WV	TR 10	0573040	Same as TR4, 5		
C 16	0251621	Electrolytic	10μF	25WV	TR 11				
C 17	0252311	Same as C1			TH 1	0576028	Thermistor		
C 18	0275113	Same as C3			TH 2	0576028	Same as TH1		
C 19	0276113	Same as C2			TH 3	0576028	Same as TH1		
C 20	0252321	Same as C4			TH 4	0576028	Same as TH1		
C 21	0252125	Same as C5			ZD	0575052	Zenner diode		
C 23	0252121	Same as C8			TRANSFORMERS:				
C 24	0275111	Same as C10			T 1	0441058	Driver		
C 25	0275115	Same as C11			T 2	0441058	Same as T1		
C 27	0252535	Same as C13			COILS:				
C 28	0274111	Mylar	0.001μF±20%	50WV	CH 2	0423029	Choke		
C 29	0274111	Same as C28			MISCELLANEOUS:				
C 30	0248708	Ceramic, discal	22pF±10%		for Chassis assembly				
CC1~4	0234413	Cylindric. ceramic	1000pF ^{+100%} _{-0%}	500WV	1	0944764	Bearing (4-13)		
RESISTORS:					2	7500192	Holder-bearing holder		
R 1	0137951	Carbon film	100KΩ±10%	SRD¼SD	Screw-2.6mmφ×4mm flat screw (3 req'd) for bearing holder mounting				
R 2	0137907	Carbon film	33KΩ±10%	SRD¼SD	3	0942149	Cartridge guide assembly (1)		
R 3	0137801	Carbon film	100Ω±10%	SRD¼SD	4	7161101	Cartridge guide assembly (2)		
R 4	0137861	Carbon film	6.8KΩ±10%	SRD¼SD	Nut-2.6mmφ nut				
R 5	0137857	Carbon film	3.3KΩ±10%	SRD¼SD	Washer-2.6mmφ spring washer				
R 6	0137855	Carbon film	2.2KΩ±10%	SRD¼SD	Washer-2.6mmφ washer				
R 7	0137806	Carbon film	270Ω±10%	SRD¼SD	Screw-2.6mmφ×16mm pan head screw (2 req'd) for cartridge guide (1) mounting				
R 8	0137855	Same as R6			Screw-3mmφ×5mm pan head screw				
R 9	0137951	Same as R1			Washer-3mmφ washer				
R 10	0137901	Carbon film	10KΩ±10%	SRD¼SD	Washer-3mmφ spring washer (2 req'd) for cartridge guide mounting				
R 11	0137801	Carbon film	100Ω±10%	SRD¼SD	5	0942058	Adjusting spring assembly		
R 12	0137912	Carbon film	82KΩ±10%	SRD¼SD	Screw-3mmφ×6mm tapping screw for adjusting spring mounting				
R 13	0137759	Carbon film	10Ω±10%	SRD¼SD	6	7160983	Guide-tape guide		
R 14	0134366	Composition	270Ω±10%	RC½GF	Screw-3mmφ×6mm tapping screw (2 req'd) for tape guide				
R 15	0137759	Carbon film	10Ω±10%	SRD¼SD	7	0930133	Switch plate assembly		
R 16	0134366	Same as R14			8	0948895	Spring-switch spring		
R 17	0134370	Composition	560Ω±10%	RC½GF					
R 18	0137951	Same as R1							
R 19	0137907	Same as R2							
R 20	0137801	Same as R3							
R 21	0137861	Same as R4							
R 22	0137857	Same as R5							
R 23	0137855	Same as R6							
R 24	0137806	Same as R7							
R 25	0137951	Same as R1							
R 26	0137901	Same as R10							
R 27	0137912	Same as R12							
R 28	0137759	Same as R13							
R 29	0134366	Same as R14							
R 30	0137759	Same as R13							
R 31	0134366	Same as R14							
R 34	0131811	Composition	680KΩ±10%	RC¼GF					
R 35	0131811	Same as R34							
R 36	0134361	Composition	100Ω±10%	RC¼GT					

REPLACEMENT PARTS

Symbol NO.	Stock NO.	Description	Symbol NO.	Stock NO.	Description
9	0930122	Plate-switch function plate	37	0971200	Plate-rubber plate
10	0637443	Washer- "E" type retaining washer	38	0941647	Shield plate
		Screw-2.6mmφ×6mm pan head screw }	39	0971203	Rubber plate for motor
		Washer-2.6mmφ spring washer }	40	0941659	Motor shield plate
		(2 req'd) for switch plate mounting	41	0941634	Cover-motor cover
11	0539121	Switch-micro switch			Screw-3mmφ×5mm pan head screw
		Screw-2.6mmφ×16mm pan head screw }	35	0544408	Terminal-lug terminal
		Washer-2.6mmφ washer }	42	0544402	Terminal-2P terminal
		Washer-2.6mmφ spring washer }			Screw-3mmφ×12mm pan head screw }
		(2 req'd) for micro switch mounting			Washer-3mmφ washer }
12	0948821	Insulating sheet			Washer-3mmφ spring washer }
		Washer-2mmφ washer }			Nut-3mmφ nut }
		Washer-2mmφ spring washer }			(2 req'd) for transistor (TR6) mounting
		Screw-2mmφ×10mm pan head screw }	43	0948483	Staple
		(2 req'd)	44	0620693	Transformer mounting plate
13	7161031	Switch spring plate			Screw-3mmφ×5mm pan head screw }
14	0942154	Pressure roller assembly			Washer-3mmφ spring washer }
15	0942156	Sub pressure spring			(2 req'd)
		Screw-3mmφ×8mm pan head screw }			Screw-3mmφ×8mm pan head screw }
		Washer-3mmφ spring washer }			Nut-3mmφ nut }
		(2 req'd) for pressure roller, spring mounting			Washer-3mmφ spring washer }
16	0941662	Track switch assembly	45	0930128	Flywheel assembly
		Screw-3mmφ×6mm tapping screw for track switch	46	0948578	Washer-nylon washer
17	0662192	Spring-spring for push plate	47	7500104	Spacer
18	0539129	Solenoid-DC solenoid	48	0971123	Belt-2mmφ belt
19	0942054	Plate-push plate	49	7160893	Bearing holder assembly
20	0944763	Shaft-push plate shaft			Screw-3mmφ×8mm tapping screw (3 req'd) }
		Screw-3mmφ×5mm pan head screw }			Washer-4mmφ washer }
		Washer-3mmφ spring washer }			for bearing holder mounting
		(4 req'd) for solenoid mounting			Washer-8mmφ washer }
21	0923972	Staple	50	0638651	Staple
22	0945061	Cam bearing	51	0941648	Cover-cord cover
		Screw-3mmφ×5mm pan head screw }			Washer-3mmφ washer }
		Washer-3mmφ spring washer }			Screw-3mmφ×5mm pan head screw }
		(3 req'd) for installation of bearing			Washer-3mmφ spring washer }
23	0944899	Screw-head adjusting screw			(3 req'd)
24	6340202	Head shifting cam	52	5740211	Connector assembly
25	0948815	Holder-tape holder			Screw-3mmφ×5mm pan head screw }
26	0948816	Cover-tape holder cover			Washer-3mmφ spring washer }
		Screw-3mmφ×6mm tapping screw(2 req'd) for tape holder mounting			(2 req'd) for cord cover mounting
27	7160463	Head shifting assembly	53	0941656	Radiator assembly
28	0941681	Holder-head holder			Screw-3mmφ×5mm pan head screw }
		Screw-3mmφ×10mm pan head screw			Washer-3mmφ washer }
29	0948154	Spring-tape guide spring			Washer-3mmφ spring washer }
		Screw-3mmφ×8mm pan head screw for head holder mounting			(2 req'd)
30	0513288	Head			Screw-3mmφ×5mm pan head screw }
		Screw-3mmφ×5mm pan head screw }			Washer-3mmφ spring washer }
		Washer-3mmφ spring washer }			(3 req'd) for radiator mounting
		(2 req'd) for head mounting			for Final assembly
31	0944752	Shaft-head shifting shaft	54	0591138	Fuse-2A fuse
32	0637443	Washer- "E" type retaining washer	55	0549041	Cord-connector cord
33	0662191	Spring			
34	0638551	Washer-fibber washer			
35	0544408	Terminal-lug terminal			
36	0514050	Motor assembly			

REPLACEMENT PARTS

Symbol NO.	Stock NO.	Description	Symbol NO.	Stock NO.	Description
56	0642588	Support strap Bolt-5mmφ bolt Washer-5mmφ washer Washer-5mmφ spring washer Bolt-6mmφ bolt (3 req'd) Washer-6mmφ washer (3 req'd) Washer-6mmφ spring washer (3 req'd) Nut-9mmφ nut (3 req'd) Screw-5mmφ×20mm tapping screw installation parts Screw-4mmφ×16mm pan head screw Washer-4mmφ washer Washer-4mmφ spring washer Nut-4mmφ nut (8 req'd) speaker box installation parts for Case assembly	65	7160472	Hanger Bolt-5mmφ bolt Washer-5mmφ washer Washer-5mmφ spring washer Washer-hanger washer (4 req'd) for hanger mounting for Speaker box assembly
57	6210124	Escutcheon assembly	66	6700522	Speaker grill assembly
58	0044007	Back case assembly Screw-3mmφ×5mm pan head screw Washer-3mmφ spring washer (4 req'd) back case mounting	67	7161762	Speaker plate assembly
59	6110451	Case lid assembly Screw-3mmφ×5mm pan head screw Washer-3mmφ spring washer (4 req'd) for case lid mounting	68	0524601	Speaker
60	0018109	Button-select button	69	0593360	Cord-cord with relay terminal Screw-4mmφ×8mm binding screw Washer-4mmφ spring washer Nut-4mmφ nut (4 req'd) for speaker mounting
61	0013020	Knob-balance control knob	70	0018111	Speaker box
62	0013021	Tone control knob assembly	71	0026313	Bush-rubber bush Screw-2.6mmφ×16mm pan head screw Washer-2.6mmφ washer Washer-2.6mmφ washer Nut-2.6mmφ nut (4 req'd) for speaker box mounting
63	0013023	Volume control knob assembly	72	7161402	Speaker box plate assembly Screw-3mmφ×16mm pan head screw Washer-3mmφ spring washer (2 req'd) for speaker box plate mounting
64	7160471	Hanger			