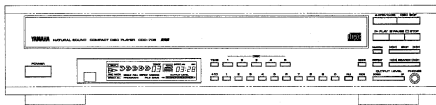


COMPACT DISC PLAYER

CDC-705

SERVICE MANUAL



IMPORTANT NOTICE

This manual has been provided for the use of authorized YAMAHA Retailer and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically YAMAHA Products, are already known and understood by the user, and have therefore not been repeated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components, and failure of the product to perform as specified. For these reasons, we advise all YAMAHA product owners that any service required should be performed by an authorized YAMAHA Retailer or the appointed service representative.

IMPORTANT: The presentation or sale of this manual to any individual or firm does not constitute authorization, certification or recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of YAMAHA are continually striving to improve YAMAHA products. Modifications are, therefore, inevitable and specifications are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wire connect to this buss).

IMPORTANT: Turn the unit OFF during disassembly and part replacement. Recheck all work before you apply power to the unit.

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■ TO SERVICE PERSONNEL

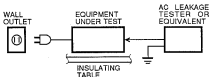
1. Critical Components Information.

Components having special characteristics are marked and must be replaced with parts having specifications equal to those originally installed.

2. Leakage Current Measurement (For 120V Models Only).

When service has been completed, it is imperative to verify that all exposed conductive surfaces are properly insulated from supply circuits.

- Meter impedance should be equivalent to 1500 ohm shunted by 0.15 μ F.
- Leakage current must not exceed 0.5mA.
- Be sure to test for leakage with the AC plug in both polarities.



• POLARIZATION (U, C models)

This CD player product is equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature.

CAUTION: USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

THE COMPACT DISC PLAYER SHOULD NOT BE ADJUSTED OR REPAIRED BY ANYONE EXCEPT PROPERLY QUALIFIED SERVICE PERSONNEL.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

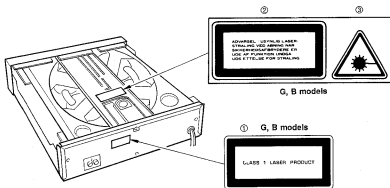
This set employs a laser. Therefore, be sure to carefully follow the instructions below when servicing.

1. Laser Diode Properties

- Material : GaAlAs
 - Wavelength : 780 nm
 - Emission Duration : Continuous
 - Laser Output : max. 44.6 μ W*
- * This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.

2. When servicing, do not take the Optical Pick-up Block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including the laser diode), replace the entire Optical Pick-up Block (including the APC board).

3. When checking the laser diode emission, keep your eyes more than 30cm away from the objective lens.



English

- ① THIS LABEL (SEE POSITION SHOWN IN THE ILLUSTRATION) INFORMS THE USER THAT THE APPARATUS CONTAINS A LASER COMPONENT.
- ② THIS LABEL (SEE POSITION SHOWN IN THE ILLUSTRATION) WARNS THAT ANY FURTHER PROCEDURE WILL BRING THE USER INTO EXPOSURE WITH THE LASER BEAM.
- ③ THE RADIATION WARNING LABEL IS PLACED INSIDE THE UNIT AS SHOWN IN THE ILLUSTRATION, TO WARN AGAINST FURTHER MEASURES ON THE UNIT. THE EQUIPMENT CONTAINS A LASER COMPONENT RADIATING LASER RAYS EXCEEDING THE LIMIT OF CLASS 1 LASER PRODUCTS.
- CAUTION-USE OF CONTROLS, ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN, MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

Swedish

- ① PÅSKRIFTEN SITTE PÅ APPARATEM SOM VISAS SOM EN UPPMANING OM ATT APPARATEN OMFATTAR EN INBYGGD LASERKOMPONENT.
- ② TEXTSKYLTEN FÖR LASERN ÄR PLACERAD PÅ APPARATEN SOM EN UPPMANING OM ATT APPARATEN INNEHÅLLER EN LASERKOMPONENT.
- ③ VARNINGSSKYLTEN FÖR STRÅLNING HAR PLACERATS I APPARATEN, SOM BILDEN VISAR, SOM EN VARNING OM YTERLIGARE INGREPP I APPARATEN. MATERIELEN INNEHÅLLER EN LASERKOMPONENT SOM AVGER LASERSTRÅLNING ÖVERSTIGANDE GRÄNSEN FÖR LASERKLASS 1.
- VARNING-INGREPP I APPARATEN BÖR ENDAST FÖRETAS AV FÄCKMAN MED KUNSKAP OM ATT RISK FÖRELIGGER FÖR RADIOAKTIV STRÅLNING.

Danish

- ① DETTE MÆRKAT ER ANBRAGT SOM VIST I ILLUSTRATIONEN FOR AT ADVARE BRUGEREN OM AT APPARATET INDEHOLDER EN LASERKOMPONENT.
- ② DETTE MÆRKAT OM LASEREN ER ANBRAGT PÅ APPARATET SOM EN OPLYSNING OM AT APPARATET INDEHOLDER ET LASERKOMPONENT.
- ③ ADVARSELSKILTET OM STRÅLING ER PLACERET INDEN I APPARATET, SOM VIST I ILLUSTRATIONEN, SOM EN ADVARSEL OM YDERLIGERE INDGREB I APPARATET. APPARATET INDEHOLDER ET LASERKOMPONENT SOM AVGIVER LASESTRÅLING DER OVERSTIGER GÆNSEVERDIEN FOR LASERKLASSE 1.
- ADVARSEL! INDGREB BØR KUN FORETAGES AF EN FAGMAND DA DER ER RISIKO FOR RADIOAKTIV STRÅLING.

Finnish

- ③ "VAROITUS! LAITE SISÄLTÄÄ LASERDIODIN, JOKA LÄHETTÄÄ (NÄKYMÄTÖNTÄ) SILMILLE VAARALLISTA LASERSÄTEILYÄ."

■ SPECIFICATIONS

■ AUDIO SECTION

Frequency Response	20Hz-20KHz±0.5dB
De-Emphasis Equalization	±0.5dB
Harmonic Distortion+Noise	Less than 0.0035%, (1kHz)
S/N Ratio	105dB
Dynamic Range	More than 95dB
Wow & Flutter	Unmeasurable
Channel Separation	More than 85dB, (1kHz)
Output Voltage	2.0±0.5V
Headphone Output (-20dB)	200±40mV/150Ω

■ INTERNAL SYSTEM

Optical Pick-up	3-beam laser
Error Correction System	CIRC
D/A Conversion	1-bit 4-DAC system
Filter	Hi bit-3rd order noise shaping Digital Filter

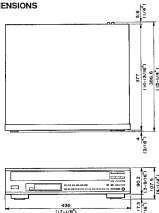
■ GENERAL

Power Requirements	
U, C models	120V AC 60Hz
G, B models	220-240V AC 50Hz
A model	240V AC 50Hz
R model	110-120/220-240V AC 50/60Hz
Power Consumption	20W
Dimensions (W x H x D)	435 x 107.5 x 386.6 mm (17-1/8" x 4-1/4" x 15-1/4")
Weight	6.2kg (13 lbs 10 oz)
Accessories	Pin plug cord Remote control transmitter Dry-cell: x2 (Size "AAA", R03)

* Specifications subject to change without notice.

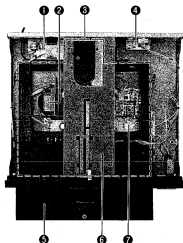
U USA model
C Canadian model
B British model
A Australian model
G European model
R General model

● DIMENSIONS



Unit : mm (inch)

■ INTERNAL VIEW



- ① POWER SUPPLY CIRCUIT BOARD (1) (R model only)
- ② POWER TRANSFORMER
- ③ CM-90 UNIT
- ④ MAIN CIRCUIT BOARD (4)
- ⑤ TRAY ASS'Y
- ⑥ SHUTTER ASS'Y
- ⑦ MAIN CIRCUIT BOARD (1)

DISASSEMBLY PROCEDURES

(Remove parts in the order as numbered.)

Precaution for disassembly: Note that use of any screws other than specified ones may cause a radio wave interruption which will prevent the unit from maintaining its performance.

1. Removal of Top Cover

- Remove 4 screws (①) and also 1 screw (②) as shown in Fig. 1.

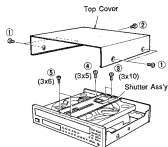
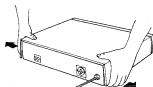


Fig. 1

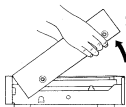
- Pull the bottom edges of the Top Cover till they get disengaged as shown in Fig. 2. (About 5 mm at both sides)



Pull toward outside till the bottom edges are disengaged. (by about 5 mm at both sides)

Fig. 2

- Keep lifting up the Top Cover till it opens about 45° as shown in Fig. 3.



Open the Top Cover to about 45°.

Fig. 3

- Pull off the Top Cover diagonally as shown in Fig. 4.
* When pulling off the Top Cover, be careful not to allow the plastic rivet fixing the front panel to come off.

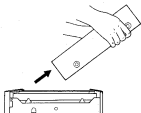


Fig. 4

2. Installation of Top Cover.

- Fit the hooks of the Top Cover (at its front) between the front panel and sub-panel as shown in Fig. 5.
- Pull the bottom edges of the Top Cover toward outside with both hands and lower it as shown in Fig. 5.

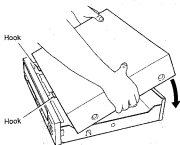
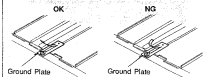


Fig. 5

Note

When installing the Top Cover, make sure the Ground Plate fixed to the front panel with screws in close contact with the Top Cover.



3. Removal of Shutter Ass'y

- a. Remove 4 screws (③ , ④) and also 2 screws (⑤) as shown Fig. 1.

4. Removal of Tray Ass'y

- a. Turn the stopper/tray pin (⑥) counterclockwise by 90° degrees to pull it out as shown in Fig. 6.
- b. Remove a plastic rivet (⑦) and then remove the Support.
- c. Slowly remove the Tray Ass'y as shown in Fig. 6.

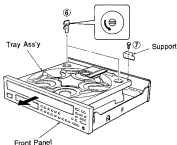


Fig. 6

5. Removal of CM-90 Unit

- a. Remove 4 screws (⑧) as shown in Fig. 7.
- b. Take out the CM-90 Unit out slowly as shown in Fig. 7.

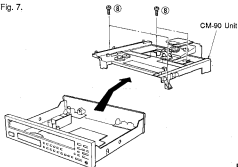


Fig. 7

6. Removal of Front Panel

- a. Remove 5 screws , (⑨ , ⑩) and also 1 screw (⑪) as shown in Fig. 8.
- b. Take off the Front Panel Unit slowly as shown in Fig. 8.

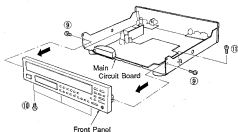


Fig. 8

Check and Parts Replacement of Main Circuit Board (1)

1. Turn OFF the POWER switch.
2. Remove the Top Cover
3. Remove the Shutter Ass'y.
4. Remove the Tray Ass'y.
5. Set to TEST mode.
(See page 13 for TEST mode explanation)
6. Press the "0" key. (DISC Clumper up)
7. Turn OFF the POWER switch.
8. Remove the CM-90 Unit.
9. Remove connectors CB6, 7, 8 and 9 (Fig. 9) from the Main Circuit Board and also remove 5 binding ties from both sides of the Chassis.
10. Place the CM-90 Unit upright and fix it with gummed tape. (Fig. 10) Also, remove the connector as necessary.

11. Connect the following connectors which are the minimum requirements to the Main Circuit Board.

- 1) CB2
- 2) CB1
- 3) CB7, CB9
- 4) CB13, CB14
- 5) CB3, CB4, CB5

Note : That CB3 and CB4 are both the same 8 pins.

CB3 : Blue

CB4 : Red

12. Now the Main Circuit Board is ready for checking. When it is necessary to check the back side (foil side) of the main Circuit Board, remove 4 PCB Supports and place it upright as shown in Fig. 11.
13. To make adjustment, install the Main Circuit Board to the PCB support and place the CM-90 Unit as shown in Fig. 12.

● Connector Diagram

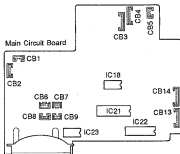


Fig. 9

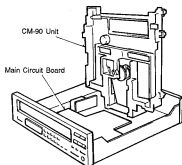


Fig. 10

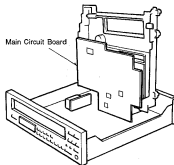


Fig. 11

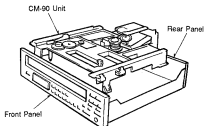
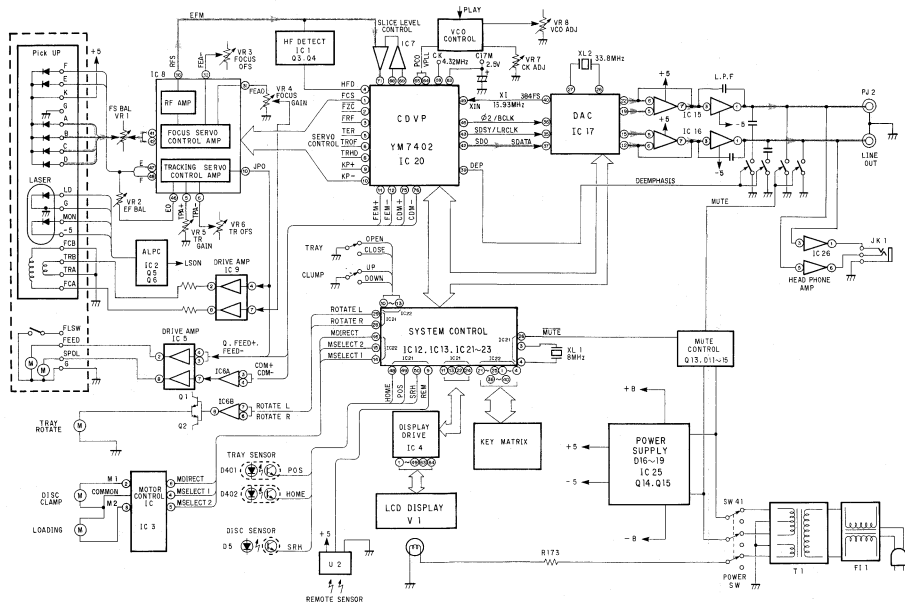


Fig. 12

■ BLOCK DIAGRAM



■ ADJUSTMENTS

● Note

- 1) Removal of the Top Cover only is not enough for repair or adjustment. The Shutter and Tray Assy also must be removed.
(Refer to Steps 3 and 4 of DISASSEMBLY PROCEDURES for its removal.)
- 2) Before adjustment, be sure to perform the necessary work at each test point including clipping or soldering test-lead wires.

● Necessary Equipment

Measuring Instruments

Oscilloscope	: x 1
(Bandwidth of 50MHz or more)	
AC voltmeter (ACVM)	: x 1
DC voltmeter (DCVM)	: x 1
Frequency counter (FC)	: x 1
Low frequency oscillator	: x 1

Test disc

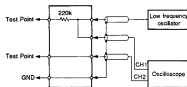
SONY YEDS-18 (P/No. TX911730),
A-BEX TCD-782 or PHILIPS 5

Tools

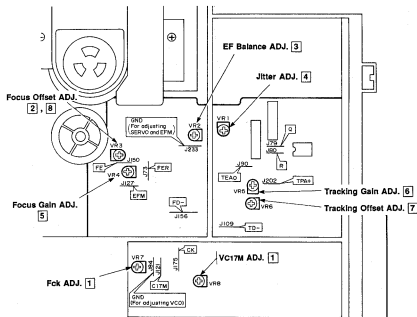
Screwdriver : x 1
(For Pre-set Potentiometer adjustment)

● Junction Circuit

Used for focus gain and tracking gain adjustment.



● TEST POINTS



● Before Adjustment

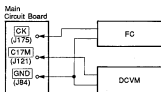
Starting Test Mode

While pressing both the "4" and "7" keys, turn ON the power switch. Take fingers off both keys, and all the display segments will light for about 1 second and the operation mode is then set to TEST mode. (See page 13 for TEST mode explanation)

★ Carry out following adjustments in order as numbered.

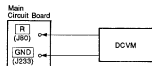
1. VCO free-run adjustment
2. Focus offset adjustment
3. EF balance adjustment
4. Jitter adjustment
5. Focus gain adjustment
6. Tracking gain adjustment
7. Tracking offset adjustment
8. Focus offset adjustment

1 VCO free-run adjustment



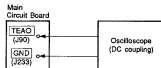
- ① Set to TEST mode.
- ② Press the "2" key.
- ③ Measure the voltage at the [C17M] terminal and adjust VR8 so that the specified voltage is obtained.
VC17M = 2.5V±100mV, -50mV (DC)
- ④ Connect a frequency counter to the [CK] terminal.
* Be sure to use a probe (10:1 type for oscilloscope) for frequency counter input.
- ⑤ Adjust VR7 so that the specified frequency is obtained.
FCk = 4.3218MHz±0.02MHz
- ⑥ Repeat ③ and ⑤ until no further improvement is noticed.

2 Focus offset adjustment

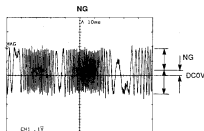
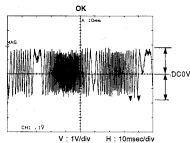


- ① Set to TEST mode.
- ② Press the "2" key.
- ③ Measure the voltage at the [R] terminal and adjust VR3 so that the specified voltage is obtained.
VR = 0V±100mV (DC)

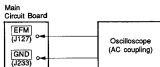
3 EF balance adjustment



- ① Load a test disc.
- ② Set to TEST mode.
- ③ Press the "1" key.
- ④ Press the "3" key.
- ⑤ Connect an oscilloscope to the [TEAO] terminal.
* Be sure to use a probe (10:1 type)
- ⑥ Adjust VR2 so that the amplitude becomes equal on both sides (upper and lower) of DC 0V in the waveform at the [TEAO] terminal.
Rating : DC offset → 0V±50mV

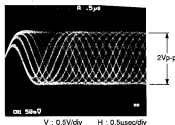


4 Jitter adjustment

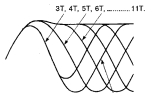


- ① Load the test disc.
- ② Set to TEST mode.
- ③ Press the "4" key.
- ④ Play track 1 (0:00-0:30).
- ⑤ Adjust VR1 so that a clear EFM signal (eye pattern) is obtained at the [EFM] terminal.
*Set VR1 at the center unless there is any change.

Eye pattern



Waveforms 3T—11T.



This portation is referred to as the eye pattern.

An abnormal eye pattern has less distinct lines and smaller amplitude than that of a good waveform.

Good waveform

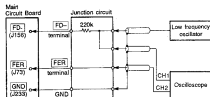


Abnormal waveform



5 Focus gain adjustment

- ① Connect an oscilloscope and a low frequency oscillator to the [FD-] terminal and the [FER] terminal as shown below.

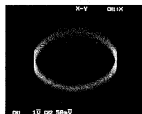


- ② Load the test disc.
- ③ Set to TEST mode.
- ④ Press the "4" key.
- ⑤ Apply a 2.0Vrms sine wave from the low frequency oscillator to the [FD-] terminal through a 220kΩ resistance as follows : *

Test disc	Frequency
YEDS-18	600Hz
TCD-782	600Hz
Philips 5	630Hz

- ⑥ Adjust VR4 so that the phase difference between the [FD-] terminal and the [FER] terminal is 90°.

OK



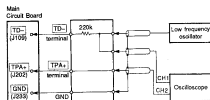
90°

NG



6 Tracking gain adjustment

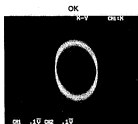
- ① Connect an oscilloscope and a low frequency oscillator to the **TD-** terminal and the **TPA+** terminal as shown below.



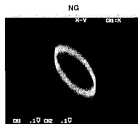
- ② Load the test disc.
 ③ Set to TEST mode.
 ④ Press the "4" key.
 ⑤ Apply a 100mVrms sine wave from the low frequency oscillator to the **TD-** terminal through a 220kΩ resistance as follows : *

Test disc	Frequency
YEDS-1B	650Hz
TCD-782	750Hz
Philips 5	700Hz

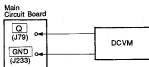
- *
 ⑥ Adjust VR5 so that the phase difference between the **TD-** terminal and the **TPA+** terminal is 90°.



90°

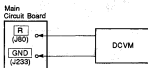


7 Tracking offset adjustment



- ① Set to TEST mode.
 ② Press the "5" key.
 ③ Measure the voltage at the **Q** terminal and adjust VR6 so that the specified voltage is obtained.
 VQ = 0V±50mV (DC)

8 Focus offset adjustment



- ① Set to TEST mode.
 ② Press the "5" key.
 ③ Measure the voltage at the **R** terminal and adjust VR3 so that the specified voltage is obtained.
 VR = 0V±100mV (DC)

Note : To cancel the TEST mode, switch the power OFF.

■ TEST MODE

● Starting TEST mode

While pressing both the "4" and "7" keys, turn ON the POWER switch.

Take fingers off both keys, and all the display segments will light for about 1 second and the operation mode is then set to TEST mode.

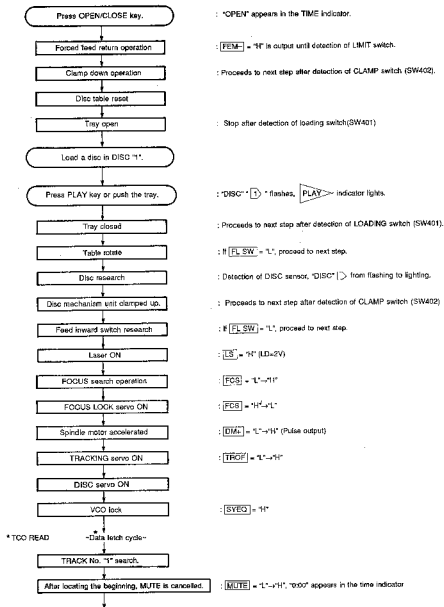
● TEST mode key descriptions

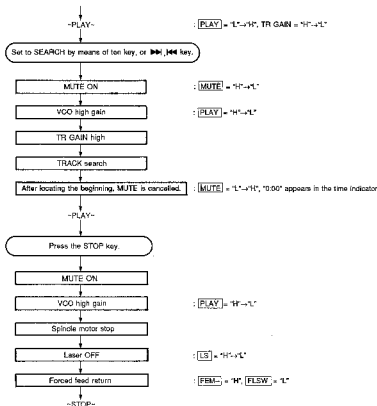
KEY	DESCRIPTION									
OPEN/CLOSE	Tray OPEN/CLOSE operation is executed according to the conditions of SW401 (Loading limit switch). <table><tr><th>Operation</th><th>Open</th><th>Close</th></tr><tr><td>Open</td><td>H</td><td>L</td></tr><tr><td>Close</td><td>L</td><td>H</td></tr></table> Operation (open or close) remains unchanged unless the condition of SW401 is changed.	Operation	Open	Close	Open	H	L	Close	L	H
Operation	Open	Close								
Open	H	L								
Close	L	H								
DISC SKIP	The disc skip operation is executed once. (Clockwise) (Effective only when the tray is open or the clamper is lowered all way down.)									
PLAY	• If focus servo is applied, VCO is drawn in and operation mode is set to PLAY mode. (A play command is sent to CDVP.) Regardless of the above state, a MUTE signal is output to cancel MUTE. • Tracking servo ON, Tracking gain "L".									
PAUSE	Focus search is executed once. Focus lock effective if a disc is loaded.									
STOP	For stopping whatever is set by any command within TEST mode. (motor, laser, etc.)									
RANDOM	Tracking ON, Tracking gain "H".									
←	Forced feed return is executed. Press the PLAY or STOP key for cancellation. When returned to the innermost position, FLSW = "L" is detected and operation is automatically stopped.									
→	Outward forced feed is executed. Press the PLAY or STOP key for cancellation.									
←	Inward 10 track kick is executed. Press the PLAY or STOP key for cancellation.									
→	Outward 10 track kick is executed. Press the PLAY or STOP key for cancellation.									
REPEAT	Tracking OFF.									
MODE	Turntable starts to turn and its speed increases.									
PROG	Turntable speed decreases to a stop.									
OUTPUT LEVEL DOWN/UP	Output level increases / decreases.									
TIME	For testing LCD lighting. (1, 2, 3, ..., 9, 10) → (All ON) → (OFF)									
DISC 1	VCO gain switched. High gain									
DISC 2	VCO gain switched. Low gain									
DISC 3	Analog mute OFF.									
DISC 4	Analog mute ON.									
DISC 5	150 track kick output continuously.									
+10	Laser ON.									
1	Return to product mode. Neither tray nor table operates.									
2	For adjusting VCO, and focus offset.									
3	For adjusting EF balance.									
4	For adjusting tracking gain, focus gain, and focus.									
5	For adjusting tracking offset, and confirming focus offset.									
6	"PLAY" mode for checking circuit board.									
7	Turntable spins counterclockwise. Press the STOP key for cancellation. Note : When the TEST mode has been canceled, the table position is not set accurately. Therefore, be sure to execute DISC SKIP once before cancellation. (When operating the table, first confirm that the Disc Clamper is lowered.)									
8	Turntable spins clockwise. Press the STOP key for cancellation. As described in 7 above, it is necessary to note operation conditions before cancellation.									
9	Disc clamper lowered.									
0	Disc clamper raised.									
FILE	RAM TEST mode for checking circuit board. OK: MUTE = "L", NG: MUTE = "H"									

● μ -COM operation for each key

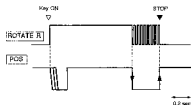
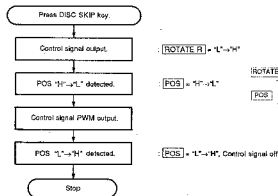
	LS	FCS	TROF	TRGL	PLAY	MUTE	FEOF	REMARKS
STOP	L	L	H		L		H	
PAUSE	H	H 	H		L		H	Follow the focus search chart.
PLAY	—	—	L	H	H	H	L	
RANDOM	—	—	L	L	—	—	L	
REPEAT	—	—	H	—	—	—	—	
	—	—					H	FE- 
	—	—					H	FE+ 
				L				KP- 
				L				KP+ 
MODE								DM+ 
PROG								DM- 
TIME	H							
DISC 1								
DISC 2								
DISC 3					L			
DISC 4					H			
DISC 5				L				KP+ 

■ STANDARD OPERATION CHART





● Tray Operation

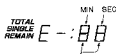


■ ERROR MESSAGES

If operation has stopped due to some fault, error messages can be used to investigate the fault.

● How to get an error message displayed

With the unit stopped as it is, press the STOP key of the remote controller while pressing the STOP key on the main unit, and an error message will be displayed in the time display segment as shown below.



Error message (in 2 figures)

● Error message and meaning

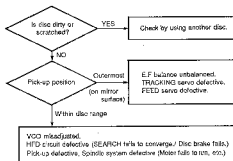
Error message	Meaning
X 0	No data reading executed after search.
X 1	Data reading failed in the midst of operation.
7 3	No data reading executed at start.
X 4	Tray closed but SW401 CLOSE SW failed to turn ON.
X 5	Tray opened but SW401 OPEN SW failed to turn OFF.
X 6	No table rotation.
X 7	Inward feed SW failed to turn ON.
X 8	Focus dropped and could not be restored even when retried.
X 9	Clamp lowered but SW402 DOWN SW failed to turn ON.
X A	Clamp raised but SW402 UP SW failed to turn ON.

Note : "X" represents one of the states below.

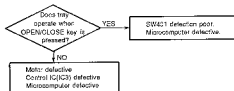
- 0 PLAY
- 3 SCAN
- 4 PAUSE
- 5 SEARCH
- 7 START
- 9 STOP
- 9 DISC SEARCH
- A EJECT
- C NO DISC

1) Error Code Troubleshooting

Error code **X0**, **X1**, **73** Data cannot be read.



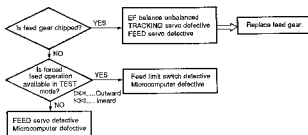
Error codes **X4**, **X5** Poor tray loading operation.



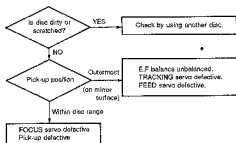
Error code **X5** Poor table rotation.



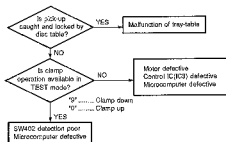
Error code **X7** FEED operation defective. (Limit switch fails)



Error code **X8** Focus drops.

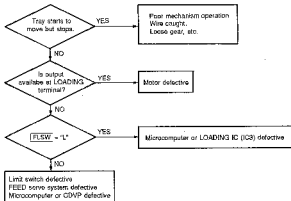


Error code **X9** , **XA** Poor Clamp operation.

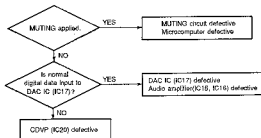


2) Troubleshooting from System Malfunctions

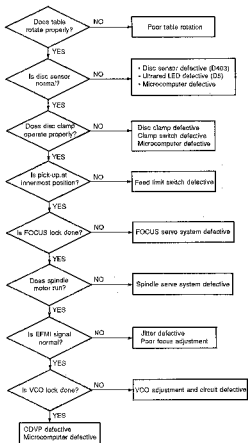
a) Tray fails to come out/go in.



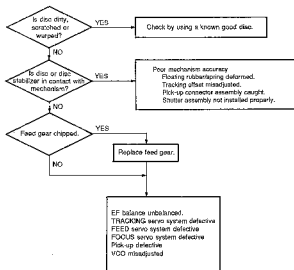
b) No sound generated, Sound cut during play. (but time display advances properly)



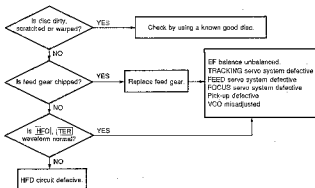
c) Operates as if no disc loaded. (although loaded)



d) Sound skips. (Time display fails to advance properly)

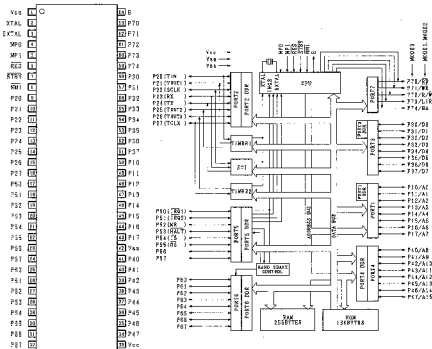


e) No search provided. (Sound skipped after search)



■ IC DATA

IC21 : HD63BO1Y (XH778B0)
8 bit μ -COM



Pin No.	Pin Name	I / O	Active	Function
1	VSS			GND
2	XTAL			XTAL
3	E XTAL			External clock. (8MHz)
4	MP0	I	H	Sets μ -COM mode for built-in ROM and external RAM.
5	MP1	I	H	
6	RESET	I		Option starts at and stops at . (POWER ON $\Rightarrow$ H)
7	STBY	I	H	
8	NMI	I	H	Unused.
9	REM	I		Input from remote control signal.
10	R/W	O		Serial data of YM7402, MN6474 and LC7582.
11	SCK	O		
12	SI	I		
13	SO	O		
14	WO	I		BUSY signal input from YM7402.
15	BUSY	I		
16	TER	I		TER (Track count signal) input.

Pin No.	Pin Name	I/O	Active	Function
17	CHECK			Unused.
18	ST RECO			
19	ST DATA			
20	HALT		H	
21	ST CK			
22	TRH	I	L	LCD Display driver. LCD goes off at "L".
23	FE SW	I	L	Feed in/extend detect switch. Switch ON at "L".
24	LCD	O	H	LCD Display driver (LC7582) chip select.
25	PLAY	O	H	VCO gain L at "H" (during play). VCO gain H at "L" (other than during play)
26	MUTE	O	L	Sound output mute at "L".
27	LCD			LC7582 chip select.
28	ROTATE R	O	H	Table rotate R. (Clockwise)
29	ROTATE L	O	H	Table rotate L. (Counterclockwise)
30	DEO			YM6104 chip select.
31	MASH	O	H	MN8474 chip select.
32	CDVP	O	L	YM7402 chip select.
33	VDD			+5V
34	OPEN	O		A15
35	CLOSE	O		A14
36	DISC DOWN	O		A13
37	DISC UP	O		A12
38	LS ON	O		A11
39	M DIRECT	O		A10
40	M SELECT 2	O		A9
41	M SELECT 1	O		A8
42				GND
43	K4	O		Address output to 82C55 and LC3517BL-15.
44	K3	O		
45	K2	O		
46	K1	O		
47	K0	O		
48	HOME	O		
49	POS	O		
50	DISC SRH	O		
51	D7	O		Data output to 82C55 and LC3517BL-15.
52	D6	O		
53	D5	O		
54	D4	O		
55	D3	O		
56	D2	O		
57	D1	O		
58	D0	O		
59				N. C.
60				
61				N. C.
62	WR			
63	RD			Write timing signal to 82C55 and LC3517BL-15.
64	E			Read timing signal to 82C55 and LC3517BL-15.
				N. C.

IC22 : MSM82C55A-2RS, MSM82C55AP-2 or μ PD71055C
 Programmable Peripheral Interface

Pin No.	Pin Name	I/O	Active	Function
1	KD3	O		Key digit signal.
2	KD2	O		
3	KD1	O		
4	KD0	O		
5	RD	I		Read timing signal from μ -COM.
6	CS1	I	L	Chip select "L" when selected from μ -COM.
7				GND
8	AI	I		Port address at input/output from μ -COM.
9	AO	I		
10	OPEN	I	L	Tray open limit switch, ON at "L".
11	CLOSE	I	L	Tray close limit switch, ON at "L".
12	DISC DOWN	I	L	PU unit down limit switch, ON at "L".
13	DISC UP	I	L	PU unit up limit switch, ON at "L".
14	M SELECT 1	O		Clamp and Tray motor control. (Table 1)
15	M SELECT 2	O		
16	M DIRECT	O		
17	LS ON	O	H	Laser diode light at "H".
18	DISC SRH	O		Detection of disc existence/nonexistence.
19	TRAY POS	I		Sensor to detect each table stop position : 1, 2, 3, 4 or 5.
20	TRAY HOME	I		Sensor to detect table home position.
21	K0	I		Key matrix input.
22	K1	I		
23	K2	I		
24	K3	I		
25	K4	I		
26	VDD			+5V
27	D7	I		Data from μ -COM.
28	D6	I		
29	D5	I		
30	D4	I		
31	D3	I		
32	D2	I		
33	D1	I		
34	D0	I		
35	RESET	I		For resetting at power ON.
36	WR	I		Write timing from μ -COM.
37	KD7	O		Key digit output.
38	KD6	O		
39	KD5	O		
40	KD4	O		

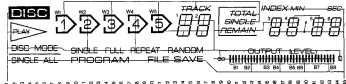
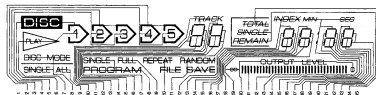
Table 1

	M DIRECT	M SELECT 2	M SELECT 1
Tray Out	I	I	O
Tray In	O	I	O
PU unit Up	I	O	I
PU unit Down	O	O	I

Pin No.	Pin Name	I / O	Function
25	RMT0		For testing internal RAM
26	RMT1		
27	RMT2		
28	RMT3		
29	RMT4		
30	RMT5		
31	RMT6		For testing internal RAM
32	VDD		
33	RMT7		
34	RMT8		
35	RMT9		Audio data output
36	RMT10		
37	VL UP	I	
38	VL DW	I	
39	DEP	O	
40	DIF	O	
41	FLG	O	
42	SDO	O	
43	SOSY	O	
44	ANLS	I	
45	Q2	O	
46	VDD		XTAL system +5V
47	Q16	O	System lock output
48	X OUT	O	For connecting quartz oscillator (16.9344MHz)
49	X IN	I	
50	Vss		XTAL system GND
51	TCL	I	Test signal input
52	XFSY	O	Frame synchronous signal output (7.55kHz)
53	TSTI		For testing
54	TSTE		
55	RCK	I	Clock input for reading sub-code
56	SBSY	O	Sub-code output
57	SFSY	O	
58	SUB	O	
59	CK	O	VCO system clock output (4.3218MHz)
60	SYEQ	O	Synchronous coincidence monitor (H : EFM pattern and internal counter are synchronized.)
61	VDD		VCO system -5V
62	C16M	I/O	For VCO control
63	C17M	I/O	For VCO adjusted voltage
64	VPLL		For VCO power supply
65	POO	O	Clock reproduction system phase error output
66	Vss		EFM, VCO system GND
67	SLVL	O	Slide level output
68	EFMX	O	Signal output after limiting amplitude of EFM signal input (normal phase)
69	EFMX	O	Signal output after limiting amplitude of EFM signal input (reverse phase)
70	LEFMi	I	LD mode EFM signal input
71	CEFMi	I	CD mode EFM signal input
72	VDD		+5V
73	LXT+	O	VCO frequency up signal output (only in LD mode)
74	LXT-	O	VCO frequency down signal output (only in LD mode)
75	CDM+	O	Disc motor acceleration signal output (only in CD mode)
76	CDM-	O	Disc motor deceleration signal output (only in CD mode)
77	DSV	O	For system expansion
78	PLL	O	PLL operation monitor (L : Spindle control is PLL operated.)
79	FG	I	FG signal input
80	JMPTM	I	Trigger input to start sequence control

■ DISPLAY DATA

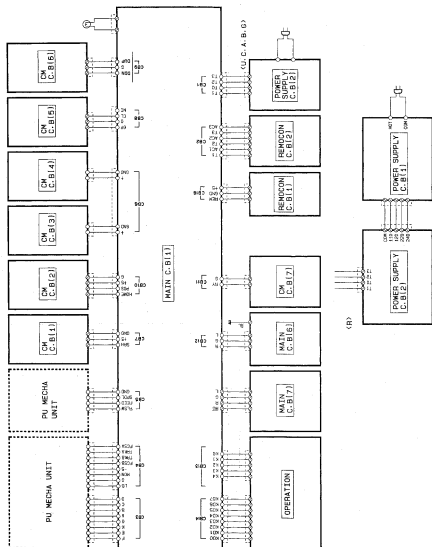
VC1 : LCD8122B1JP



	COM 1	COM 2	COM 1	COM 2	COM 1	COM 2
1	COM	—	16	2g	2d	31
2	W4	W5	17	2b	2c	32
3	4	5	18	SINGLE	PROGRAM	33
4	W2	W3	19	FULL	—	34
5	2	3	20	REPEAT	FILE	35
6	DISC	W1	21	RANDOM	SAVE	36
7	PLAY	1	22	3a	INDEX	37
8	DISC MODE	SINGLE	23	3f	3e	38
9	—	ALL	24	3g	3d	39
10	1a	TRACK	25	3b	3c	40
11	1f	1e	26	4a	—	41
12	1g	1d	27	4f	4e	42
13	1b	1c	28	4g	4d	43
14	2a	—	29	4b	4c	44
15	2f	2e	30	1)	—	45
						COM

- 1) : — ∞ OUTPUT LEVEL 0
2) : MIN. SEC. COLON

■ INTERCONNECT WIRING DIAGRAM



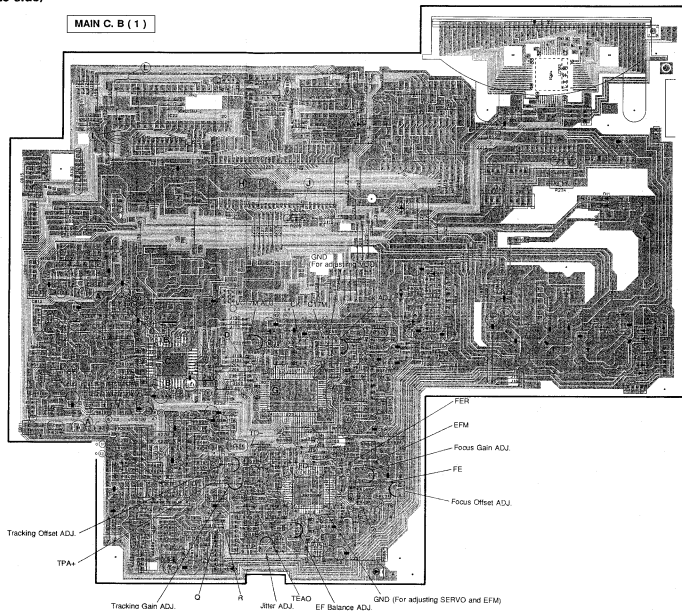
■ PRINTED CIRCUIT BOARD (Parts side)

Note) 文字面 : Component side

MAIN C. B (1)

① to ④ : WAVEFORM OF TEST POINT (See page 38)

- : The voltages are IC8 (LA9200NM)
■ : The voltages are IC17 (MN6474)
■ : The voltages are IC20 (YM7402)

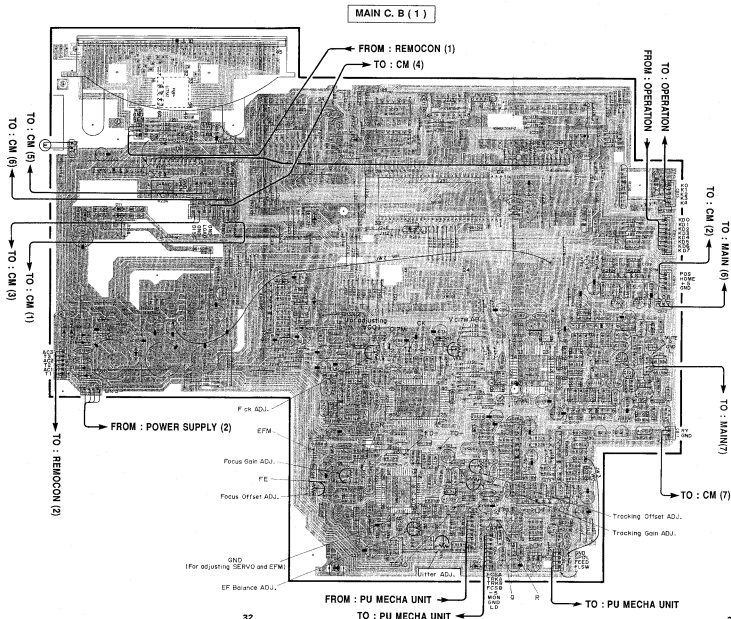


■ PRINTED CIRCUIT BOARD (Foil side)

(Note) 文字面 : Component side

● Semiconductor Location

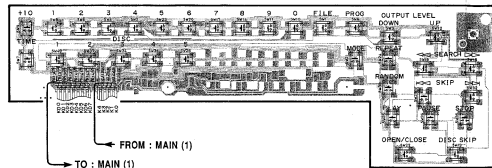
Xet. No	Location
0 1	03
0 2	03
0 3	E4
0 4	F6
0 5	E9
0 6	F4
0 7	E2
0 8	C4
0 9	C3
0 10	C4
0 11	C3
0 12	C3
0 13	C4
0 14	C4
0 15	C3
0 16	C4
0 17	C4
0 18	C4
0 19	C4
0 20	E3
0 21	C4
10 1	03
10 2	F6
10 3	C2
10 4	C2
10 5	F5
10 6	F5
10 7	E4
10 8	E5
10 9	F5
10 10	F2
10 11	E2
10 12	E2
10 13	E2
10 14	E4
10 15	E4
10 16	E4
10 17	F6
10 18	F6
10 19	F6
10 20	E2
10 21	E2
10 22	E2
10 23	E2
10 24	E2
10 25	E2
10 26	E2
10 27	E2
10 28	E2
10 29	E2
10 30	E2
10 31	E2
10 32	E2
10 33	E2
10 34	E2
10 35	E2
10 36	E2
10 37	E2
10 38	E2
10 39	E2
10 40	E2
10 41	E2
10 42	E2
10 43	E2
10 44	E2
10 45	E2
10 46	E2
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10 56	E2
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10 59	E2
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10 61	E2
10 62	E2
10 63	E2
10 64	E2
10 65	E2
10 66	E2
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10 69	E2
10 70	E2
10 71	E2
10 72	E2
10 73	E2
10 74	E2



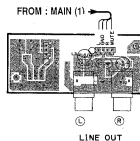
PRINTED CIRCUIT BOARD (Foil side)

Note) 文字面 : Component side

OPERATION C. B

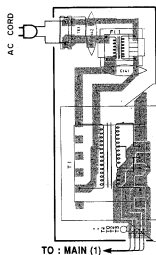


MAIN C. B (7)



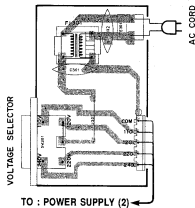
POWER SUPPLY C. B (2)

..... U, C, A, B, G models



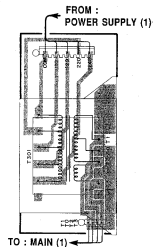
POWER SUPPLY C. B (1)

..... R model only



POWER SUPPLY C. B (2)

..... R model only



■ PRINTED CIRCUIT BOARD (Foil side)

Note) 文字面 : Component side

CM C. B (1)

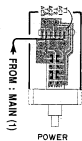


REMOCON C. B (1)

TO : MAIN (1)



REMOCON C. B (2)



CM C. B (2)

FROM : MAIN (1)



DAS, ADDRESS-DET

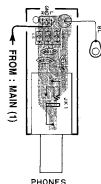
CM C. B (5)

LOADING LIMIT SW

FROM : MAIN (1)



MAIN C. B (6)

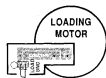


CM C. B (3)

FROM : MAIN (1)



CM C. B (4)



FROM : MAIN (1)

CM C. B (6)

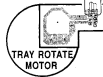
CLAMP-UP/DOWN SW

FROM : MAIN (1)



CM C. B (7)

FROM : MAIN (1)



TRAY ROTATE MOTOR

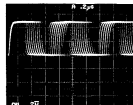
WAVEFORM OF TEST POINT

- The waveform are measured by TEST mode at PLAY

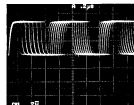
Point (A)
(Pin 2 of IC15 or Pin 2 of IC16)
V : 2V/div H : 50μsec/div



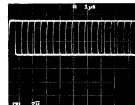
Point (B)
(Pin 12 of IC17 or Pin 22 of IC17)
V : 2V/div H : 0.2μsec/div



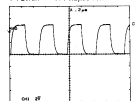
Point (C)
(Pin 15 of IC17 or Pin 19 of IC17)
V : 2V/div H : 0.2μsec/div



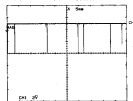
Point (D)
(Pin 42 of IC20)
V : 2V/div H : 1μsec/div



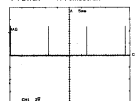
Point (E)
(Pin 45 of IC20)
V : 2V/div H : 0.2μsec/div



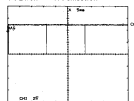
Point (H)
(Pin 11 of IC21)
V : 2V/div H : 5msec/div



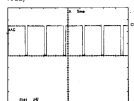
Point (J)
(Pin 24 of IC21)
V : 2V/div H : 5msec/div



Point (I)
(Pin 13 of IC21)
V : 2V/div H : 5msec/div

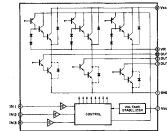


Point (L)
(Pin 1 to 4 of IC22 or Pin 37 to 40 of IC22)
V : 2V/div H : 5msec/div

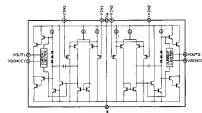


IC BLOCK

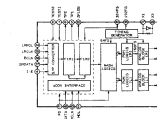
IC3 : AN6652 or MS4649L
Motor Control



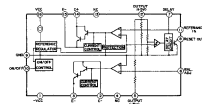
IC5, 9 : LA6510
Dual Power Operational Amp



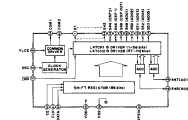
IC17 : MN6474
D/A Converter with Digital Filter



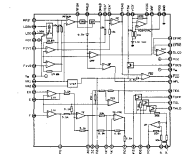
IC25 : M5290P
Constant-Voltage Tracking Supply with Reset



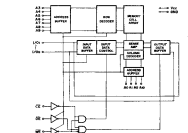
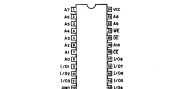
IC4 : LC7582
LCD Driver



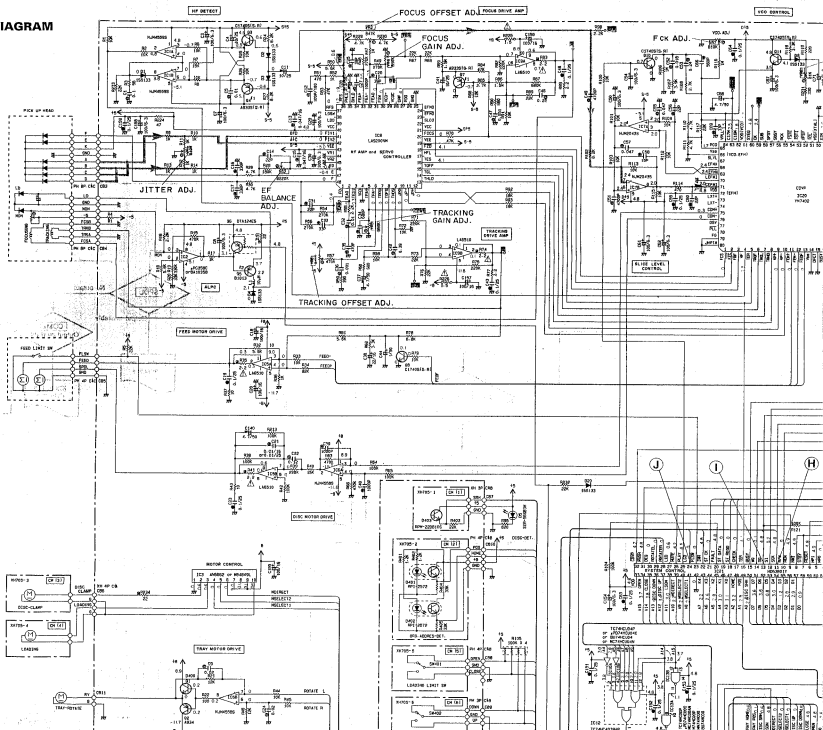
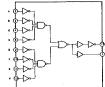
IC8 : LA9200NM
RF Amp & Servo Controller

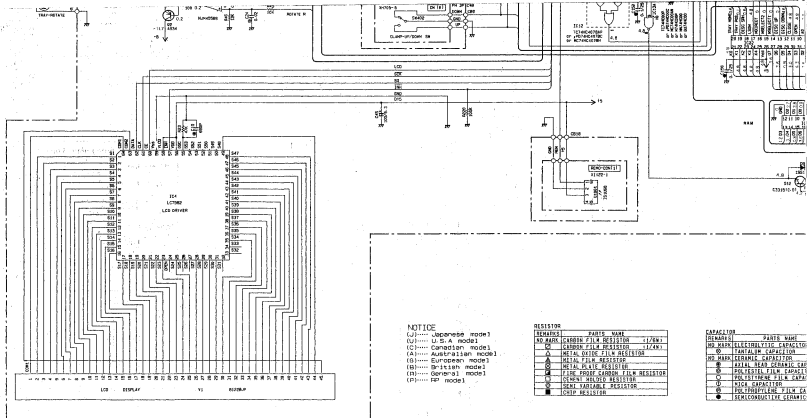


IC23 : LC3517BL-15
2048-Word x 8 bit Static RAM



IC13 : TC74HC00P,
μPD74HC00C,
MC74HC00AN,
M74HC00P.





NOTICE
(J)..... Japanese model
(U)..... U.S.A model
(C)..... Canadian model
(A)..... Australian model
(E)..... European model
(B)..... British model
(R)..... General model
(P)..... RP model

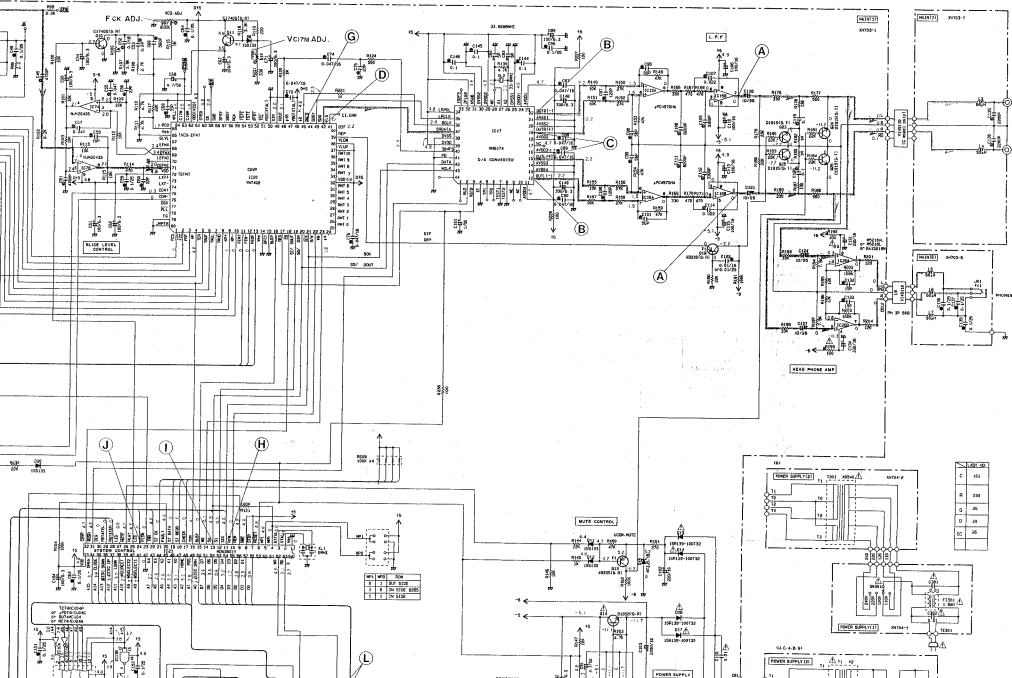
REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (1/8W)
⊙	CARBON FILM RESISTOR (1/4W)
△	METAL OXIDE FILM RESISTOR
⊙	METAL FILM RESISTOR
⊙	METAL PLATE RESISTOR
⊙	FINE PROBE CARBON FILM RESISTOR
⊙	TEMP. MEASD RESISTOR
⊙	SEMI VARIABLE RESISTOR
■	CHIP RESISTOR

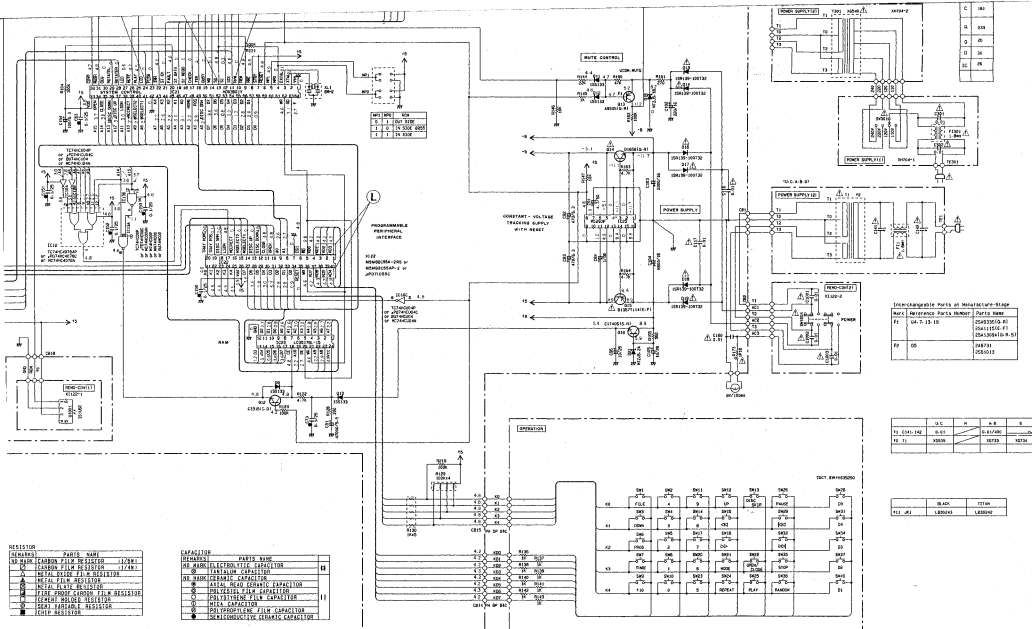
CAPACITOR	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
⊙	TANTALUM CAPACITOR
NO MARK	CERAMIC CAPACITOR
⊙	AXIAL LEAD CERAMIC CAP
⊙	POLYESTER FILM CAPACIT
○	POLYSTYRENE FILM CAPAC
⊙	NICK CAPACITOR
⊙	POLYPROPYLENE FILM CAP
●	SEMICONDUCTIVE CERAMIC

28A935(Q, R)	28D409	28B1357T114(R, F)
28A1115(I, F)	DTA124ES(TP)	
28A1309A(Q, R, S)	28C3315(C, D)	
28A994		
28S731		
28B1013		
28C1740S(R, S)		
28D1915(S, T)		
28D1815(Q, R)		



VED CONTROL





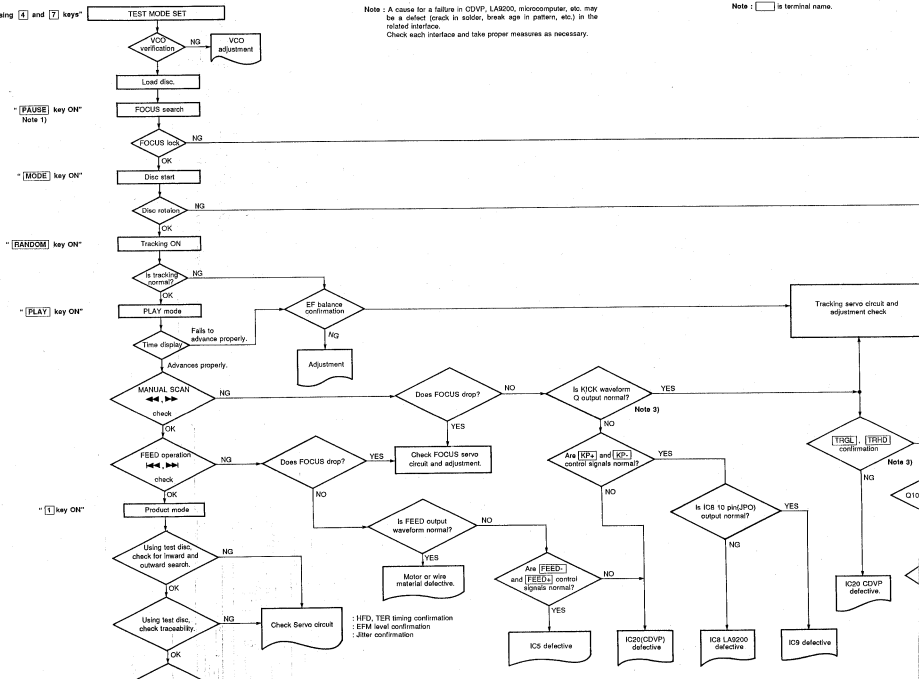
(A) to (L): WAVEFORM OF TEST POINT (See page 38)

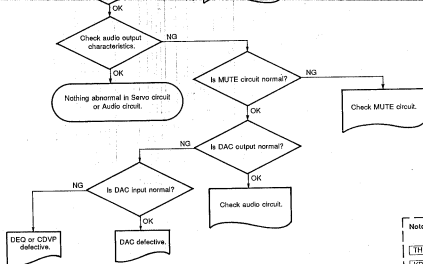
* The voltages are measured by TEST mode at PLAY.

- * All voltage are measured with a 10M Ω /DC electric volt meter.
- * Components having special characteristics are marked Δ and must be replaced with parts having specifications to those originally installed.
- * Schematic diagram is subject to change without notice.

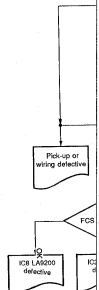
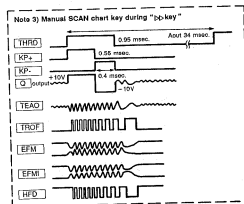
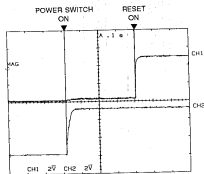
■ OPERATING CONFIRMATION TROUBLE SHOOTING

"Power ON while pressing [4] and [7] keys"

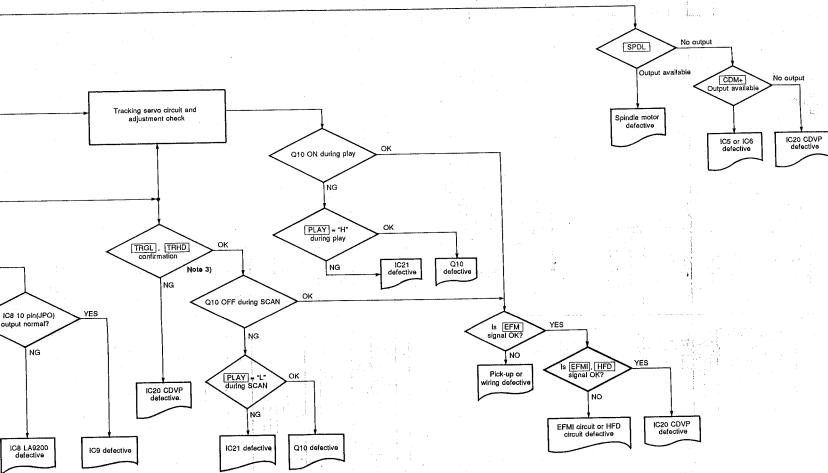


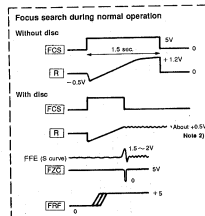
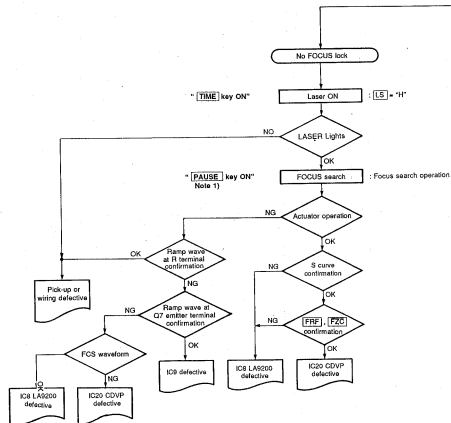
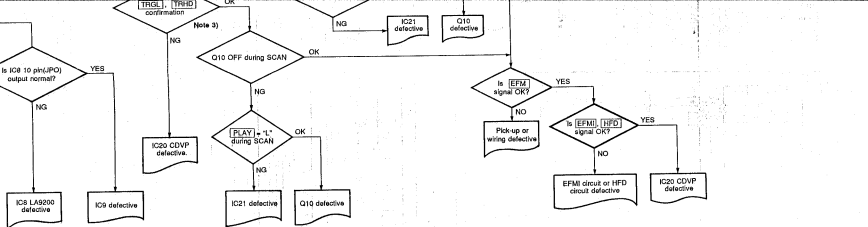


- Reset waveform of μ -COM (IC21) when POWER switch is on.
 CH1 : Pin 6 (RESET) of IC21
 CH2 : Pin 33 (VDD) of IC21



Note : is terminal name.





Note 1) When executing focus search by using the "PAUSE" key, do it only once with the key ON.

Note 2) There is a variation of -0.3 to +0.8 range depending on the amount of the disc surface deflection.

PARTS LIST

CDC-705

ELECTRICAL PARTS

WARNING

Components having special characteristics are marked Δ , and must be replaced with parts having specifications equal to those originally installed.

Carbon resistors (1/8W or 1/4W) are not included in the ELECTRICAL PARTS List. For the part No. of the carbon resistors, refer to P. 52.

Ref. No.	PART NO.	Description	部品名	Remarks	Markets	999
	W0200020	WALL CIRCUT BOARD	ウォールサーキット	BE		
	W0200030	WALL CIRCUT BOARD	ウォールサーキット	BE		
	W0201000	MYLAR FILM CAP	マイラークオン	C27		
	W0202000	MYLAR FILM CAP	マイラークオン	C135, 137		
	W0203000	MYLAR FILM CAP	マイラークオン	C109, 112		
	W0204000	MYLAR FILM CAP	マイラークオン	D40, 51		
	W0205000	MYLAR FILM CAP	マイラークオン	C105, 111		
	W0206000	MYLAR FILM CAP	マイラークオン	C5, 32		
	W0207000	MYLAR FILM CAP	マイラークオン	C32		
	W0208000	MYLAR FILM CAP	マイラークオン	C9, 24		
	W0209000	MYLAR FILM CAP	マイラークオン	C107, 114		
	W0210000	MYLAR FILM CAP	マイラークオン	C55, 57		
	W0211000	MYLAR FILM CAP	マイラークオン	C47		
	W0212000	MYLAR FILM CAP	マイラークオン	C35		
	W0213000	MYLAR FILM CAP	マイラークオン	C1, 119, 120		
	W0214000	MYLAR FILM CAP	マイラークオン	C22		
	W0215000	MYLAR FILM CAP	マイラークオン	C40		
	W0216000	MYLAR FILM CAP	マイラークオン	C33		
	W0217000	MYLAR FILM CAP	マイラークオン	C42		
	W0218000	POLYPROPYLENE FILM CAP	プロトン	C12		
	W0219000	CERAMIC CAP	セラコン	C105, 117, 159		
	W0220000	SEMI-CONDUCTIVE CERAMIC CAP	半導体セラコン	C10, 23, 43, 45, 50, 61, 64, 73, 86, 137~139, 180~183, 210		
	W0221000	CERAMIC CAP	円筒セラコン	C59, 132, 133		
	W0222000	CERAMIC CAP	円筒セラコン	C16, 31, 56, 58		
	W0223000	CERAMIC CAP	円筒セラコン	C75		
	W0224000	CERAMIC CAP	円筒セラコン	C33, 69		
	W0225000	CERAMIC CAP	円筒セラコン	C26, 28		
	W0226000	CERAMIC CAP	円筒セラコン	C50, 58, 99, 101		
	W0227000	CERAMIC CAP	円筒セラコン	C97, 100		
	W0228000	CERAMIC CAP	円筒セラコン	C16, 17		
	W0229000	CERAMIC CAP	円筒セラコン	C35		
	W0230000	CERAMIC CAP	円筒セラコン	C55		
	W0231000	CERAMIC CAP	円筒セラコン	C10, 34		
	W0232000	CERAMIC CAP	円筒セラコン	C35, 43		
	W0233000	CERAMIC CAP	円筒セラコン	C21, 122		
	W0234000	CERAMIC CAP	円筒セラコン	C15, 16, 72, 74, 76, 87~90		
	W0235000	CERAMIC CAP	円筒セラコン	C144~146		
	W0236000	CERAMIC CAP	セラコン	C52, 83		
	W0237000	ELECTROLYTIC CAP	タリコン	C3, 7, 8, 29, 30, 45, 50, 54, 61, 62, 67, 71, 85, 154, 155		
	W0238000	ELECTROLYTIC CAP	タリコン	C145, 146		
	W0239000	ELECTROLYTIC CAP	タリコン	C52, 83		
	W0240000	ELECTROLYTIC CAP	タリコン	C35		
	W0241000	ELECTROLYTIC CAP	タリコン	C137, 138		
	W0242000	ELECTROLYTIC CAP	タリコン	C18, 20, 106, 110, 112, 115, 155~157		
	W0243000	ELECTROLYTIC CAP	タリコン	C102		
	W0244000	ELECTROLYTIC CAP	タリコン	C4, 47, 55, 155		

*New Parts (新部品)

ラング : Japan only

Ref. No.	PART NO.	Description	部 品 名	Remarks	Markets	229
	4H140109	ELECTROLYTIC CAP	10F 50V	タニコン	C41, 84, 151	
	4H96479	ELECTROLYTIC CAP	4.7uF 50V	タニコン	C88, 91	
	4G248100	ELECTROLYTIC CAP	2200uF 10V	タニコン	C100	
	4J378400	ELECTROLYTIC CAP	5000uF 10V	タニコン	C104	
	4J279300	ELECTROLYTIC CAP	10uF 25V	B-Pタニコン	C41, 116, 121, 124, 127	
	4K106333	ELECTROLYTIC CAP	2.2uF 50V	B-Pタニコン	C28	
	4H160430	ELECTROLYTIC CAP	4.7uF 50V	B-Pタニコン	C27, 140	
	4J271200	ELECTROLYTIC CAP	47000uF 5.5V	バックアップタニコン	C81	
	4B100266	CHIL	10uH EL6000MA	固定コイル	L1	
	4G473700	CHIL	0.5uH SMT-04007	コイル	L5~7	
	4J401100	FERRITE CORE	BPS3R110010000	フェライトコア	L8	
	4H433220	FLAME PROOF CARBON RESISTOR	2.2Q 1/4W	不燃化カーボン抵抗	R25, 41, 74, 83	△
	4H454220	FLAME PROOF CARBON RESISTOR	22R 1/4W	不燃化カーボン抵抗	R31, 234	
	4H455100	FLAME PROOF CARBON RESISTOR	100Q 1/4W	不燃化カーボン抵抗	R102, 109	△
	4J234100	METAL OXIDE RESISTOR	18Q 1W	酸化金属薄膜抵抗	R173	△
	4J183400	VRABLE RESISTOR	1.5R 1/4W	ヒューズ抵抗	R225, 228	
	4H721500	RESISTOR ARRAY	100RQx4 KYL24J104	抵抗アレイ	R105, 120, 209	
	4J234400	RESISTOR ARRAY	1KQx5	抵抗アレイ	R136	
	4Q247001	IC	uPC45700A	IC	R15, 19	
	4H947400	IC	LA0510	IC	R25, 9	
	4H837400	IC	BA1405A	IC	R22	
	4X201001	IC	MS201P	IC	R25	
	4H839400	IC	LM2000M	IC	R28	
	4H452001	IC	AM9552	IC	R33	
	4H836400	IC	MB474	IC	R37	
	4H417001	IC	LC7552	IC	R38	
	4H778396	IC	MS3D31Y	IC	R21	
	1R040001	IC	TC74HC00P	IC	R13, 15	
	1G142220	IC	uP274KCD04C	IC	R30	
	1R407000	IC	TC74HC4070AP	IC	R12	
	4H820001	IC	MSM6255A-283	IC	R22	
	4H550400	IC	LC35175L-15	IC	R23	
	4G431400	IC	YK7402	IC	R29	
	1J075000	IC	BJM45583	IC	R1, 6	
	1G080200	IC	BJM20433	IC	R7	
	4H838400	IC	BA15238H	IC	R26	
	4J205400	LCD	61225JP	LCD表示器	V1	
	4B352436	PHONES JACK		ホーンジャック	J41 (R)	
	4B302420	PHONES JACK		ホーンジャック	J41 (T)	
	4H045500	BASE PIN	PH 3P TE	ベースピン	C011	
	4H045800	BASE PIN	PH 3P TE	ベースピン	C01, 12, 18	
	4H047000	BASE PIN	PH 4P TE	ベースピン	C01, 5, 8, 10	
	4H046000	BASE PIN	PH 5P TE	ベースピン	C015	
	4H044900	BASE PIN	PH 6P TE	ベースピン	C02	
	4H045100	BASE PIN	PH 8P TE	ベースピン	C05, 4, 14	
	1J075000	BASE PIN	PH 3P TE	ベースワイドポスト	C07	
	1J075000	BASE PIN	PH 4P TE	ベースワイドポスト	C08	
	4J528000	QUARTZ CRYSTAL UNIT	33.4638MHz	水晶共振子	X12	
	4E222400	CERAMIC RESONATOR	8MHz 50V-PC000	セラミック共振子	X13	
	4H811100	PKE-SET POTENTIOMETER	51KQ	可変VR	V03	

*New Parts (新規部品)

ラック : Japan only

Ref. No.	PART NO.	Description	部 品 名	Remarks	Markets	注
	V861500	PRE-SET POTENTIOMETER	8104Ω	半固定 V R	V81.4.7	
	V861800	PRE-SET POTENTIOMETER	847Ω	半固定 V R	V83.5	
	V812500	PRE-SET POTENTIOMETER	868Ω	半固定 V R	V85	
	V862000	PRE-SET POTENTIOMETER	8204Ω	半固定 V R	V82	
	V861370	TRANSISTOR	254033 G.R	トランジスタ	04.7, 13, 19	
	V863400	TRANSISTOR	254034	トランジスタ	Q2	
	V855500	TRANSISTOR	2581307 E.F	トランジスタ	Q15	
	V1015200	TRANSISTOR	2581013	トランジスタ	Q5	
	SC176070	TRANSISTOR	25817405 R.S	トランジスタ	Q3, 8, 10, 11, 16	
	V8529400	TRANSISTOR	2581015 G.D	トランジスタ	Q12	
	V8502100	TRANSISTOR	2581015 S.T	トランジスタ	Q23-28	
	V8818400	TRANSISTOR	2501456 G.R	トランジスタ	Q14	
	V8640000	TRANSISTOR	259400	トランジスタ	Q1	
	V8571000	DIGITAL TRANSISTOR	DTA11402	デジタル	Q6	
	JF040000	DIODE	15S133	ダイオード	D1-4, 8-12, 20	
	V8707000	DIODE	15R120-100T32	ダイオード	D13, 14, 16-19	
	V8427400	ZENKER DIODE	WZL8. 18	ツェナーダイオード	D15	
	V8437900	ZENKER DIODE	WZL8. 2A	ツェナーダイオード	D21	
	V8700100	LED	5SR-50SR3H	発光ダイオード	D5	
	AJ250500	LAMP ASS'y	150mA 8V	ランプ A S S Y		
	V8606000	PIN	DMS4-0024	スタイルピン		
	AJ820800	FERRITE, MAIN ASS'y		メインフェライト A S S Y		
	V8110100	HEAT SINK		ヒートシンク		
	V8235800	REFLECTOR		リフレクター		
	V8614200	SHIELD/OFFSET DOW		シールド/デフェュジョン		
	CR805620	PLASTIC RINGET		プラスチックリング		
	V8444500	LAMP CAP	AG-4015	ランプキャップ		

New Parts (新規部品)

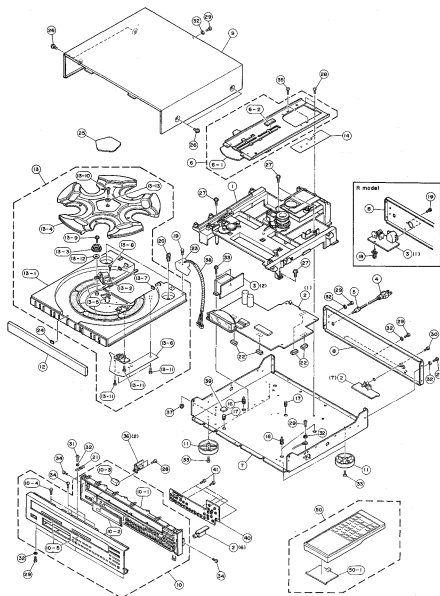
ラント: Japan only

Ref. No.	PART NO.	Description	部 品 名	Remarks	Markets	注
	V8608500	OPERATION CIRCUIT BOARD		オペレーションシート		
	VE827300	PISS SWITCH	0H-W800	タクトSW	SW1-15, 17, 18, 20-26, 28, 29, 31, 32, 34, 35, 37, 38, 40	
	V8279400	CERAMIC CAP	2200pF 10V	円筒セラコン	C185, 136	
	V8698100	COIL	0.6mH LAL907B300E	コイル	L3.4	
	V8484000	PIN JACK		ピンジャック	F22	
	X8008500	POWER CIRCUIT BOARD		電源シート		
	V8276000	POWER CIRCUIT BOARD		電源シート		
	X8008550	POWER CIRCUIT BOARD		電源シート		
	X8008500	POWER CIRCUIT BOARD		電源シート		
	F1344100	CERAMIC CAP	0.01μF 400V	積層固定コン	C141, 142	
	F1344100	CERAMIC CAP	0.01μF 400V	積層固定コン	C301, 302	
	V8176000	CERAMIC CAP	0.01μF 400V	積層固定コン	C141, 142	
	X8030000	POWER TRANSFORMER		電源トランス	T1	
	X8540000	POWER TRANSFORMER		電源トランス	T301	
	X8723000	POWER TRANSFORMER		電源トランス	T1	
	X8734000	POWER TRANSFORMER		電源トランス	T1	
	V8800700	LINE FILTER	1.8mH ELF180250V	ラインフィルタ	F11	
	V8800700	LINE FILTER	1.8mH ELF180250V	ラインフィルタ	F1301	
	V8388100	VOLTAGE SELECTOR	HW0244	電圧切替器	SW303	
	LA002140	LAPPING TERMINAL	2P 1-TYPE P=10	ラッピング端子	TEL	
	V8225700	BASE PIN	2P P=7.5	ベースポスト	T301	
	V8225700	BASE PIN	2P P=7.5	ベースポスト	TEL	
	CR8644070	CAP, CAPACITOR		コンデンサーカバー		
	V7030000	REMOTE CONTROL CIRCUIT BOARD		リモコンシート		
	F1554100	CERAMIC CAP	0.01μF 50V	セラコン	C1001-1003	
	V11272700	PISS SWITCH		タクトSW	SW1801 POWER	
	V7928500	LIGHT DETECTING MODULE	OP1501X	リセコン受光ユニット	F1001	
	V8279100	CR CIRCUIT BOARD		CRシート		
	V1204000	SWITCH LEVER	SSC721	レバーSW	SW401, 402	
	VJ544400	PHOTO INTERRUPTER	RF1-5572	フォトインタラプタ	D401, 402	
	VJ544100	PHOTO TRANSISTOR	RFM-2200105	フォトランジスタ	D403	

New Parts (新規部品)

ラント: Japan only

■ EXPLODED VIEW



■ MECHANICAL PARTS Note) ∅ : Diameter

Ref. NO.	PART NO.	Description	部 品 名	Remarks	Marking	Unit
1	V2354300	DISC CHANGER MECHA. UNIT	チェンジャーメカユニット			
2	X0608250	MAIN CIRCUIT BOARD	メインシート	BL		
3	X0608250	MAIN CIRCUIT BOARD	メインシート	T		
4	X0508540	POWER CIRCUIT BOARD	電源シート		UC	
5	V4278060	POWER CIRCUIT BOARD	電源シート		R	
6	X0508550	POWER CIRCUIT BOARD	電源シート		AB	
7	X0608220	POWER CORD	電源コード		UC	
8	V0222900	POWER CORD ASS'y	パワーコードASSY		R	
9	V0222900	POWER CORD ASS'y	パワーコードASSY		A	
10	V0431100	POWER CORD ASS'y	パワーコードASSY		B	
11	V0431100	POWER CORD ASS'y	パワーコードASSY		G	
12	C0620100	CORD STOPPER	コードストッパー		UC	
13	C0620100	CORD STOPPER	コードストッパー		BARO	
14	V1365750	SHUTTER ASS'y	シャッターASSY			
15-1	V1557000	PLATE/SHUTTER	プレート/シャッター			
16-2	V1067300	DAMPER/SHUTTER	ダンパー/シャッター			
17	V1067300	MAIN CHASSIS	シャーシ/メイン			
18	V1014400	REAR PANEL	リヤパネル		U	
19	V1014400	REAR PANEL	リヤパネル		C	
20	V1014400	REAR PANEL	リヤパネル		R	
21	V1014400	REAR PANEL	リヤパネル		AO	
22	V1014400	REAR PANEL	リヤパネル		G	
23	V1000110	TOP COVER	トップカバー	BL		
24	V1000110	TOP COVER	トップカバー	T		
25	V0431100	FRONT PANEL ASS'y	フロントパネルASSY	BL		
26	V0431100	FRONT PANEL ASS'y	フロントパネルASSY	T		
27-1	V1079000	SIB PANEL	フロントパネル/サブ	BL		
28-1	V1079000	SIB PANEL	フロントパネル/サブ	T		
29-2	V1080110	WINDOW	ウインドウ			
30-2	V1080000	WINDOW	ウインドウ	T		
31-3	V1041800	BUTTON	ボタン	BL	POWER	
32-3	V1042000	BUTTON	ボタン	T	POWER	
33-4	C0609200	PLASTIC KEYSET	プラスチックキーセット			
34-5	V1058000	SHIRT	シャツ			
35	V0304000	LEG ASS'y	レッグASSY	BL		
36	V1031000	LEG ASS'y	レッグASSY	T		
37	V1212000	LID	リッド	BL		
38	V1212000	LID	リッド	T		
39	V1212000	TRAY ASS'y	トレイASSY	BL		
40	V1212000	TRAY ASS'y	トレイASSY	T		
41	V1212000	TRAY	トレイ	BL		
42	V1212000	TRAY	トレイ	T		
43	V1212000	TRAY	トレイ	BL		
44	V1212000	TRAY	トレイ	T		
45	V1212000	TRAY	トレイ	BL		
46	V1212000	TRAY	トレイ	T		
47	V1212000	TRAY	トレイ	BL		
48	V1212000	TRAY	トレイ	T		
49	V1212000	TRAY	トレイ	BL		
50	V1212000	TRAY	トレイ	T		
51	V1212000	TRAY	トレイ	BL		
52	V1212000	TRAY	トレイ	T		
53	V1212000	TRAY	トレイ	BL		
54	V1212000	TRAY	トレイ	T		
55	V1212000	TRAY	トレイ	BL		
56	V1212000	TRAY	トレイ	T		
57	V1212000	TRAY	トレイ	BL		
58	V1212000	TRAY	トレイ	T		
59	V1212000	TRAY	トレイ	BL		
60	V1212000	TRAY	トレイ	T		
61	V1212000	TRAY	トレイ	BL		
62	V1212000	TRAY	トレイ	T		
63	V1212000	TRAY	トレイ	BL		
64	V1212000	TRAY	トレイ	T		
65	V1212000	TRAY	トレイ	BL		
66	V1212000	TRAY	トレイ	T		
67	V1212000	TRAY	トレイ	BL		
68	V1212000	TRAY	トレイ	T		
69	V1212000	TRAY	トレイ	BL		
70	V1212000	TRAY	トレイ	T		
71	V1212000	TRAY	トレイ	BL		
72	V1212000	TRAY	トレイ	T		
73	V1212000	TRAY	トレイ	BL		
74	V1212000	TRAY	トレイ	T		
75	V1212000	TRAY	トレイ	BL		
76	V1212000	TRAY	トレイ	T		
77	V1212000	TRAY	トレイ	BL		
78	V1212000	TRAY	トレイ	T		
79	V1212000	TRAY	トレイ	BL		
80	V1212000	TRAY	トレイ	T		
81	V1212000	TRAY	トレイ	BL		
82	V1212000	TRAY	トレイ	T		
83	V1212000	TRAY	トレイ	BL		
84	V1212000	TRAY	トレイ	T		
85	V1212000	TRAY	トレイ	BL		
86	V1212000	TRAY	トレイ	T		
87	V1212000	TRAY	トレイ	BL		
88	V1212000	TRAY	トレイ	T		
89	V1212000	TRAY	トレイ	BL		
90	V1212000	TRAY	トレイ	T		
91	V1212000	TRAY	トレイ	BL		
92	V1212000	TRAY	トレイ	T		
93	V1212000	TRAY	トレイ	BL		
94	V1212000	TRAY	トレイ	T		
95	V1212000	TRAY	トレイ	BL		
96	V1212000	TRAY	トレイ	T		
97	V1212000	TRAY	トレイ	BL		
98	V1212000	TRAY	トレイ	T		
99	V1212000	TRAY	トレイ	BL		
100	V1212000	TRAY	トレイ	T		
101	V1212000	TRAY	トレイ	BL		
102	V1212000	TRAY	トレイ	T		
103	V1212000	TRAY	トレイ	BL		
104	V1212000	TRAY	トレイ	T		
105	V1212000	TRAY	トレイ	BL		
106	V1212000	TRAY	トレイ	T		
107	V1212000	TRAY	トレイ	BL		
108	V1212000	TRAY	トレイ	T		
109	V1212000	TRAY	トレイ	BL		
110	V1212000	TRAY	トレイ	T		
111	V1212000	TRAY	トレイ	BL		
112	V1212000	TRAY	トレイ	T		
113	V1212000	TRAY	トレイ	BL		
114	V1212000	TRAY	トレイ	T		
115	V1212000	TRAY	トレイ	BL		
116	V1212000	TRAY	トレイ	T		
117	V1212000	TRAY	トレイ	BL		
118	V1212000	TRAY	トレイ	T		
119	V1212000	TRAY	トレイ	BL		
120	V1212000	TRAY	トレイ	T		
121	V1212000	TRAY	トレイ	BL		
122	V1212000	TRAY	トレイ	T		
123	V1212000	TRAY	トレイ	BL		
124	V1212000	TRAY	トレイ	T		
125	V1212000	TRAY	トレイ	BL		
126	V1212000	TRAY	トレイ	T		
127	V1212000	TRAY	トレイ	BL		
128	V1212000	TRAY	トレイ	T		
129	V1212000	TRAY	トレイ	BL		
130	V1212000	TRAY	トレイ	T		
131	V1212000	TRAY	トレイ	BL		
132	V1212000	TRAY	トレイ	T		
133	V1212000	TRAY	トレイ	BL		
134	V1212000	TRAY	トレイ	T		
135	V1212000	TRAY	トレイ	BL		
136	V1212000	TRAY	トレイ	T		
137	V1212000	TRAY	トレイ	BL		

New Parts (新機部品)

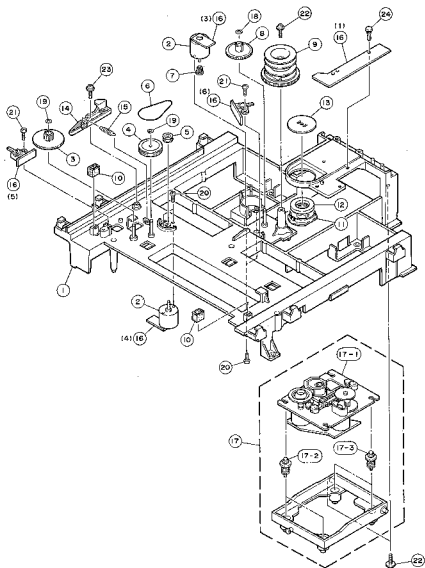
Rank : Japan only

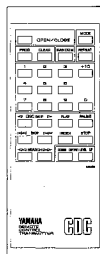
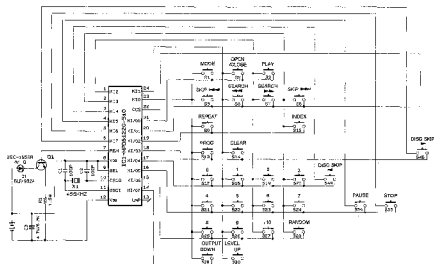
Ref. NO.	PART NO.	Description	部 品 名	Remarks	Notes	ラック
13-8	E0601530	BIND HEAD P-TITE SCREW	2.6x6 FERN-BL	バインドドタイトネジ		
13-9	E0601600	BW HEAD P-TITE SCREW	2.6x10 FERN-BL	BWヘッドタッピングネジ		
13-10	E0330140	FLAT HEAD P-TITE SCREW	3x14 ZMC2-BL	BWヘッドタッピングネジ		
13-11	E1326006	BIND HEAD P-TITE SCREW	2.6x6 FERN-BL	バインドタッピングネジ	PACK	
13-12	W0380800	SPACER		スベラー/ギア2		
13-13	E1560070	PLAT WASHER	4x10x0.8 FERN-BL	平板金とゴキマル		
14	VJ710790	CORNER		コーナー		
16	C0803730	P.C.B SUPPORT		基板サポート		
17	VJ513700	P.C.B SUPPORT		基板サポート		
18	VJ354200	P.C.B SUPPORT		基板サポート		
19	C0809280	PLASTIC RIVET		プラスチックリベット		
20	W0414400	STOPPER		ストッパー/トレイ		
21	W0071170	GROUND PLATE		アースプレート		
22	VJ582500	SHIRT		シャツ/ダンパー		
23	E0219300	SUPPORT		サポート/線材2		
24	VJ613000	CUSHION		クッション/シヤッター		
25	VJ105000	PLATE		プレート	BL	
26	VJ103000	PLATE		プレート	BL	
28	E0205000	BW HEAD SCREW	4x8-10 FERN-BL	BWヘッド小ネジ	BL	
29	E0301000	BW HEAD SCREW	4x8-10 FERN-BL	BWヘッド小ネジ	IT	
27	E0205200	BW HEAD SCREW	4x10 FERN-BL	BWヘッド小ネジ		
28	E0603000	BIND HEAD P-TITE SCREW	3x10 ZMC2-Y	バインドPタイトネジ		
29	E1230000	BIND HEAD TAPPING SCREW	3x6 FERN-BL	バインドBタイトネジ	PACK	
30	E0375000	BIND HEAD BONDING TAP. SCREW	3x10 FERN-BL	ボンディングPタイトネジ		
31	E0330000	BIND HEAD SCREW	3x6 FERN-BL	バインジ小ネジ		
32	E0413036	TOOTH LOCKED WASHER	33 FERN-BL	歯付金	PACK	
33	E0330010	BW HEAD TAPPING SCREW	3x8-6 FERN-BL	BWヘッドBタイトネジ		
34	E0603000	FLAT HEAD SCREW	3x6 ZMC2-Y	平小ネジ		
35	E1030000	BIND HEAD TAPPING SCREW	3x5 ZMC2-Y	バインドタッピングネジ	PACK	
36	VJ733000	REMOTE CONTROL CIRCUIT BOARD		リモコンカート		
37	E0701500	HEXAGONAL BLIND NUT	W4 FERN-BL	六角盲ナット		
38	W0204000	CORNER		コーナー/線材		
39	W0411100	SPACER		スベラー/コルク		
40	VJ281200	OPERATION CIRCUIT BOARD		オペレーションシート		
41	E1020000	BIND HEAD TAPPING SCREW	2x6 FERN-BL	バインドタッピングネジ	PACK	
	E0809250	BINDING TIE	KK-1	束縛止め		
		ACCESSORIES		付属品		
50	VJ154200	REMOTE CONTROL TRANSMITTER		リモコントランスミッター		
50-1	C0611300	LED		電球素子		
	V0716700	PIR FILM CORD	0.5x	ビンプワグコード		
		DRY CELL	800, 9H-4	マンガン電池		

※New Parts (新規部品)

ラック : Japan only

■ EXPLODED VIEW (CM-90)





CUSTOM CODE

CUSTOM CODE		C0	C1	C2	C3	C4	C5	C6	C7	
		1	0	0	1	1	1	1	1	0
KEY No.	DATA CODE									FUNCTION
1	D0	D1	D2	D3	D4	D5	D6	D7		MODE
2	1	0	0	0	0	0	0	0	0	OPEN/CLOSE
3	0	0	1	0	0	0	0	0	0	PLAY
4	0	0	0	1	0	0	0	0	0	SKIP
5	1	0	1	0	0	0	0	0	0	SEARCH
7	0	1	0	1	0	0	0	0	0	SEARCH
8	1	1	1	0	0	0	0	0	0	SKIP
9	0	0	0	0	1	0	0	0	0	REPEAT
12	1	1	0	0	1	0	0	0	0	INDEX
13	0	0	0	1	1	0	0	0	0	PHOTO
14	1	0	0	1	1	0	0	0	0	CLEAR
17	0	0	0	0	0	1	0	0	0	0
18	1	0	0	0	0	1	0	0	0	1
19	0	1	0	0	0	1	0	0	0	0
20	1	1	0	0	0	1	0	0	0	3
21	0	0	0	1	0	1	0	0	0	4
22	1	0	0	1	0	1	0	0	0	5
23	0	0	0	1	0	1	0	0	0	6
24	1	1	1	1	0	1	0	0	0	7
25	0	0	0	0	1	1	0	0	0	8
26	1	0	0	0	0	1	0	0	0	9
27	0	0	0	0	1	1	0	0	0	10
28	1	1	0	1	1	1	0	0	0	RANDOM
29	0	0	1	1	1	1	0	0	0	OUTPUT LEVEL DOWN
30	1	0	1	1	1	1	0	0	0	OUTPUT LEVEL UP
45	1	1	1	1	1	0	1	1	0	DISC STOP
49	0	0	0	0	0	1	0	1	0	WDR STOP
51	1	0	0	1	0	0	1	0	0	PAUSE
55	0	1	1	0	0	0	1	0	0	STOP

Parts List for Carbon Resistors

Value	1/4W Type Part No.	1/6W Type Part No.	Value	1/4W Type Part No.	1/6W Type Part No.
1.0 Ω	HJ35 3100	HF35 3100	12 K Ω	HJ35 7120	HF35 7120
1.8 Ω	HJ35 3180	*	15 K Ω	HJ35 7150	HF35 7150
2.2 Ω	HJ35 3220	HF35 3220	18 K Ω	HJ35 7180	HF35 7180
3.3 Ω	HJ35 3330	HF35 3330	22 K Ω	HJ35 7220	HF35 7220
4.7 Ω	HJ35 3470	HF35 3470	27 K Ω	HJ35 7270	HF35 7270
5.6 Ω	HJ35 3560	HF35 3560	33 K Ω	HJ35 7330	HF35 7330
10 Ω	HJ35 4100	HF35 4100	39 K Ω	HJ35 7390	HF35 7390
15 Ω	HJ35 4150	HF35 4150	47 K Ω	HJ35 7470	HF35 7470
22 Ω	HJ35 4220	HF35 4220	56 K Ω	HJ35 7560	HF35 7560
27 Ω	HJ35 4270	HF35 4270	68 K Ω	HJ35 7680	HF35 7680
33 Ω	HJ35 4330	HF35 4330	82 K Ω	HJ35 7820	HF35 7820
39 Ω	HJ35 4390	HF35 4390	91 K Ω	HJ35 7910	HF35 7910
47 Ω	HJ35 4470	HF35 4470	100 K Ω	HJ35 8100	HF35 8100
56 Ω	HJ35 4560	HF35 4560	120 K Ω	HJ35 8120	HF35 8120
68 Ω	HJ35 4680	HF35 4680	150 K Ω	HJ35 8150	HF35 8150
82 Ω	HJ35 4820	HF35 4820	180 K Ω	HJ35 8180	HF35 8180
100 Ω	HJ35 5100	HF35 5100	220 K Ω	HJ35 8220	HF35 8220
110 Ω	HJ35 5110	HF35 5110	270 K Ω	HJ35 8270	HF35 8270
120 Ω	HJ35 5120	HF35 5120	330 K Ω	HJ35 8330	HF35 8330
150 Ω	HJ35 5150	HF35 5150	390 K Ω	HJ35 8390	HF35 8390
160 Ω	HJ35 5160	*	470 K Ω	HJ35 8470	HF35 8470
180 Ω	HJ35 5180	HF35 5180	560 K Ω	HJ35 8560	HF35 8560
220 Ω	HJ35 5220	HF35 5220	680 K Ω	HJ35 8680	HF35 8680
270 Ω	HJ35 5270	HF35 5270	820 K Ω	HJ35 8820	HF35 8820
330 Ω	HJ35 5330	HF35 5330	1.0 M Ω	HJ35 9100	HF35 9100
390 Ω	HJ35 5390	HF35 5390	1.2 M Ω	HJ35 9120	*
470 Ω	HJ35 5470	HF35 5470	1.5 M Ω	HJ35 9150	HF35 9150
510 Ω	*	HF35 5510	1.8 M Ω	HJ35 9180	HF35 9180
560 Ω	HJ35 5560	HF35 5560	2.2 M Ω	HJ35 9220	HF35 9220
680 Ω	HJ35 5680	HF35 5680	3.3 M Ω	HJ35 9330	HF35 9330
820 Ω	HJ35 5820	HF35 5820	3.9 M Ω	HJ35 9390	*
910 Ω	HJ35 5910	HF35 5910	4.7 M Ω	HJ35 9470	HF35 9470
1.0 K Ω	HJ35 6100	HF35 6100			
1.2 K Ω	HJ35 6120	HF35 6120			
1.5 K Ω	HJ35 6150	HF35 6150			
1.8 K Ω	HJ35 6180	HF35 6180			
2.0 K Ω	HJ35 6200	HF35 6200			
2.2 K Ω	HJ35 6220	HF35 6220			
2.4 K Ω	HJ35 6240	HF35 6240			
2.7 K Ω	HJ35 6270	HF35 6270			
3.0 K Ω	HJ35 6300	HF35 6300			
3.3 K Ω	HJ35 6330	HF35 6330			
3.6 K Ω	HJ35 6360	HF35 6360			
3.9 K Ω	HJ35 6390	HF35 6390			
4.7 K Ω	HJ35 6470	HF35 6470			
5.1 K Ω	HJ35 6510	HF35 6510			
5.6 K Ω	HJ35 6560	HF35 6560			
6.8 K Ω	HJ35 6680	HF35 6680			
8.2 K Ω	HJ35 6820	HF35 6820			
9.1 K Ω	HJ35 6910	HF35 6910			
10 K Ω	HJ35 7100	HF35 7100			

1/4W Type

HJ35 ○○○○



1/6W Type

HF35 ○○○○

