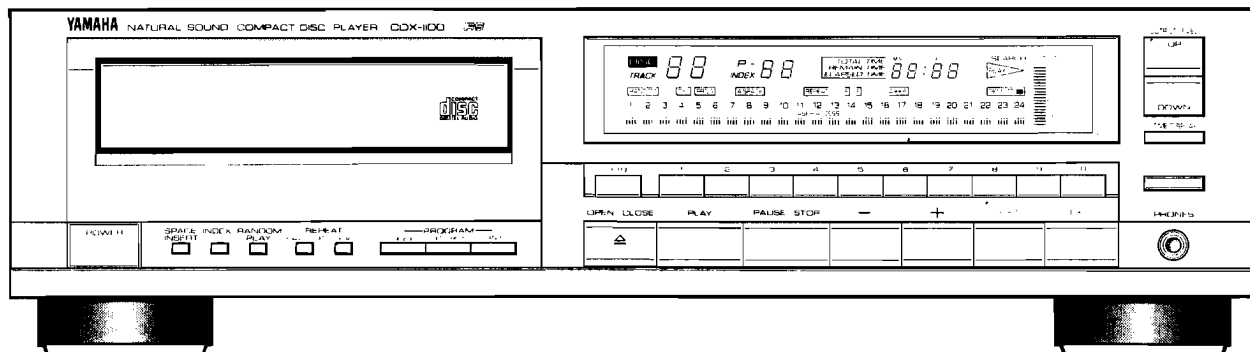
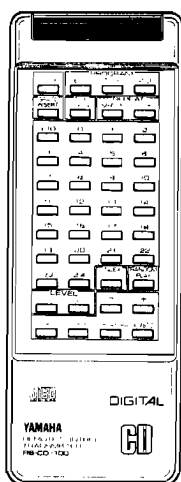


CDX-1100/CDX-1100U

SERVICE MANUAL



• RS-CD100



IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers 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 users, and have therefore not been restated.

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 all 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 wires connect to this buss).

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

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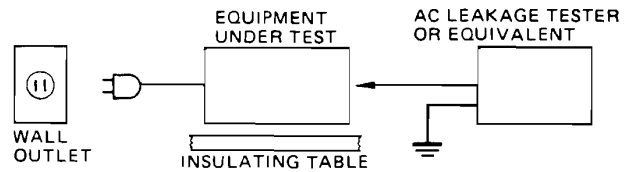


■ TO SERVICE PERSONNEL

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 Model Only).
When service has been completed, it is imperative that you 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.

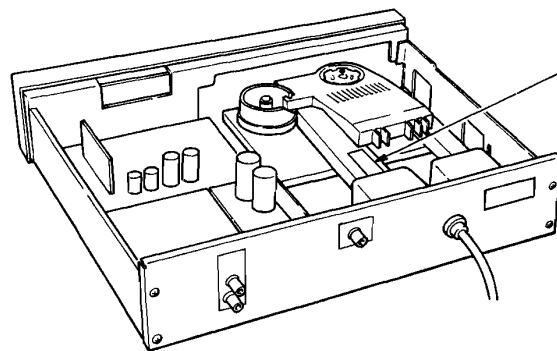
■ POLARIZATION (U, C models only)

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, 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.



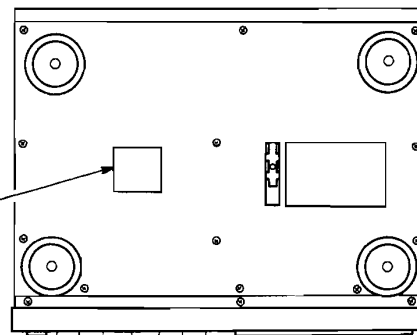
U.S.A. model

DANGER—Invisible laser radiation when open and interlock failed or defeated.
AVOID DIRECT EXPOSURE TO BEAM. (CA08537-1)

Canadian model

CAUTION HAZARDOUS LASER AND ELECTROMAGNETIC RADIATION WHEN OPEN AND INTERLOCK DEFEATED
ATTENTION RAYONNEMENT LASER ET ELECTROMAGNETIQUE DANGEREUX SI OUVERT AVEC L'ENCLANCHEMENT DE SECURITE ANNULE (186-4-6)

BOTTOM SIDE



THIS PRODUCT COMPLIES WITH OHHS RULES 21 CFR SUBCHAPTER J APPLICABLE AT DATE OF MANUFACTURE.

MANUFACTURED BY
NIPPON GAKKI CO., LTD.
10-1 NAKAZAWA-CHO.
HAMAMATSU-SHI.
SHIZUOKA-KEN, JAPAN

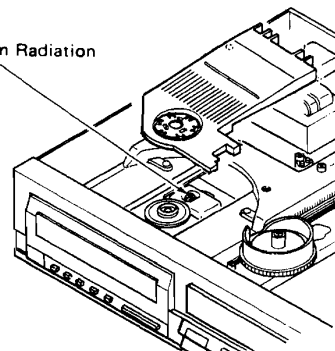
MANUFACTURED:



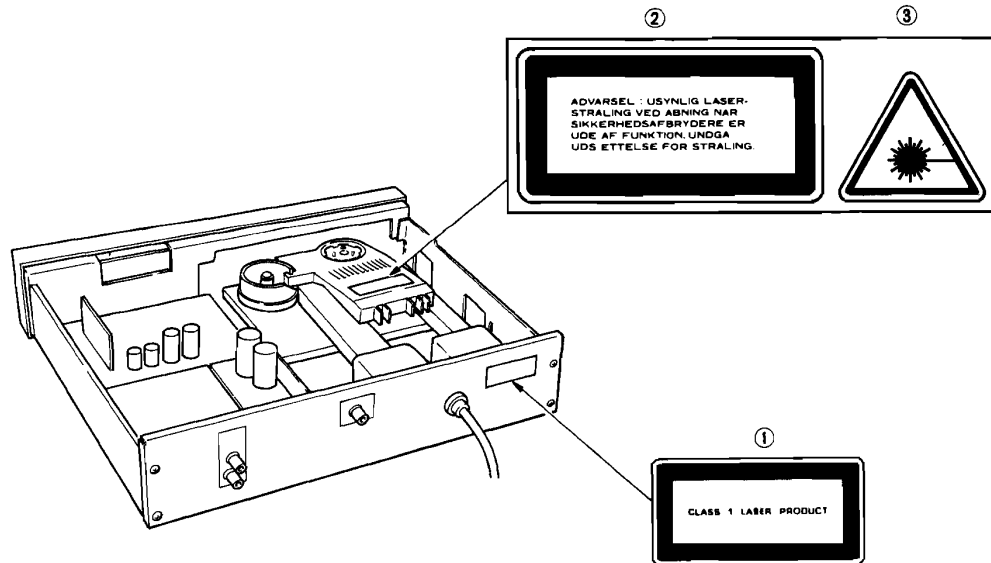
LASER BEAM RADIATION SPOT

Laser Diode Properties
Material: Ga-Al-As
Wavelength: 755 — 805 nm (25°C)
Laser Output: Continuous Wave max. 5 mW

Laser Beam Radiation



European model

*English*

- ① THIS LABEL IS ATTACHED AT THE PLACE ILLUSTRATED TO INFORM THAT THE APPARATUS CONTAINS A LASER COMPONENT.
- ② THIS LABEL IS ATTACHED IN THE POSITION SHOWN IN THE ILLUSTRATION TO WARN THAT ANY FURTHER PROCEDURE WILL BRING THE USER INTO EXPOSURE WITH THE LASER BEAM.
- ③ THE WARNING LABEL INFORMING OF RADIATION 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 LASER PRODUCTS OF CLASS 1.

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 YTTRENGREPP I APPARATEN. MATERIELEN INNEHÅLLER EN LASERKOMPONENT SOM AVGER LASERSTRÅLNING ÖVERSTIGANDE GRÄNSEN FÖR LASERKLASS 1.

VARNING—INGREPP I APPARATEN BÖR ENDAST FÖRETAS AV FACKMAN 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 INDGEB I APPARATET. APPARATET INDEHOLDER ET LASERKOMPONENT SOM AVGIVER LASESTRÅLING DER OVERSTIGER GÆNSEVERDIEN FOR LASERKLASSE 1.

ADVARSEL! INDGEB 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."

INTERLOCK OPERATION

The Digital Compact Disc Player reads the disc signals by laser beam detection. It must be avoided for the human body to be directly exposed to the laser beam. Human eyes are especially badly affected by the laser beam. This unit is therefore equipped with an interlock to prevent unnecessary laser output.

Laser output is controlled by the injection or cutoff of the constant voltage source to the laser diode at Pin 38 (LS) of IC119 (M50753), and also by Automatic Laser Power Control Circuit. When Pin 38 is in "H" (High) level, the laser emits the beam. When Pin 38 is in "L" (Low) level, the laser does not emit the beam.

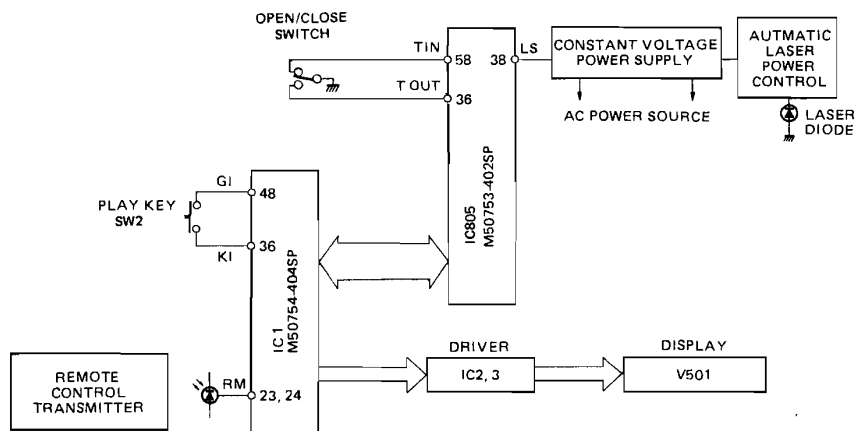
Pin 38 is set in "H" level when the unit is loaded with the disc and it reads the index signals or when the unit is set in the play mode after that. When the unit reads the index signals and the

following two conditions are met, the laser emits the beam.

- 1) When the Open/Close Switch is set in "TIN" side. (The disc tray is closed.)
- 2) The pickup is located at the area of the minimum internal circumference.

After the above conditions are met and the index signals have been read, the laser emits the beam when the following two conditions are met.

- 1) when the PLAY key (SW2) or that of Remote Control Transmitter is pressed.
- 2) when the **PLAY** display is ON.



SPECIFICATIONS

AUDIO SECTION

Frequency Response	DC - 20kHz $\pm$ 0.3dB
Harmonic Distortion + Noise	0.002% (1kHz)
S/N Ratio	115dB
Dynamic Range	100dB
Wow & Flutter	Unmeasurable
Output Voltage	2V $\pm$ 0.1V
Output Impedance	47 Ω
Headphone Output	3V/150 Ω

INTERNAL SYSTEMS

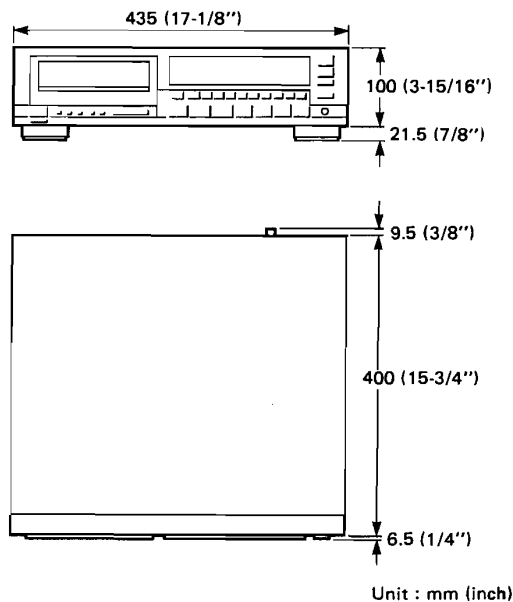
Optical Pick-up	3 beam laser
Error Correction System	CIRC
D/A Conversion	18 bit floating (L, R twin)
Filter	High bit digital filter and 5th order new active filter

GENERAL

Power Requirements	
U.S.A. and Canadian models	120V AC, 60Hz
European model	220 - 240V AC, 50Hz
Australian and U.K. models	240V AC, 50Hz
General model	110 - 130/220 - 240V AC, 50/60Hz
Power Consumption	
30W	
Dimensions (W x H x D)	
435 x 121.5 x 416 mm (17-1/8" x 4-13/16" x 16-3/8")	
Weight	
14 kg (30 lbs 14 oz)	
Accessories	
Pin plug cord: X2	
Remote control transmitter (RS-CD100)	
Dry Cell: X2 (Size "AA", "R06")	

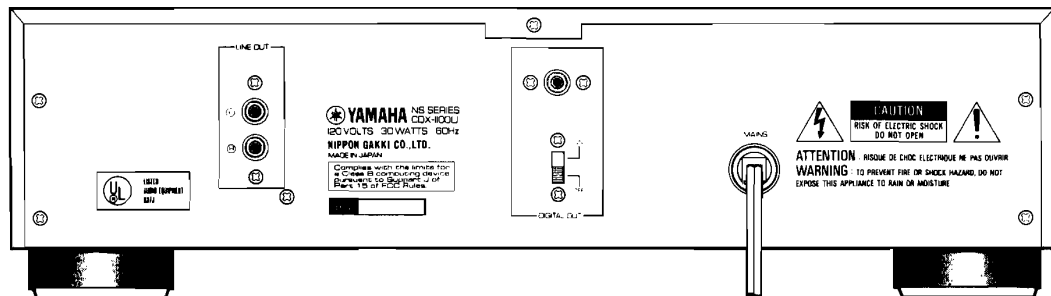
*Specification subject to change without notice.

(U) U.S.A. model (B) U.K. model
 (G) European model (A) Australian model
 (C) Canadian model (R) General model

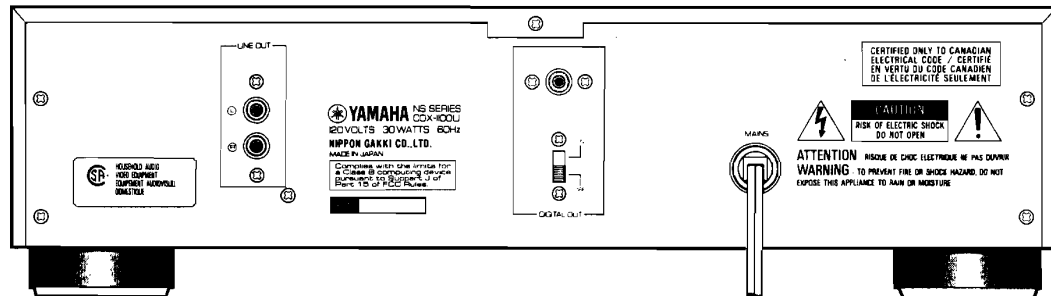


REAR PANELS

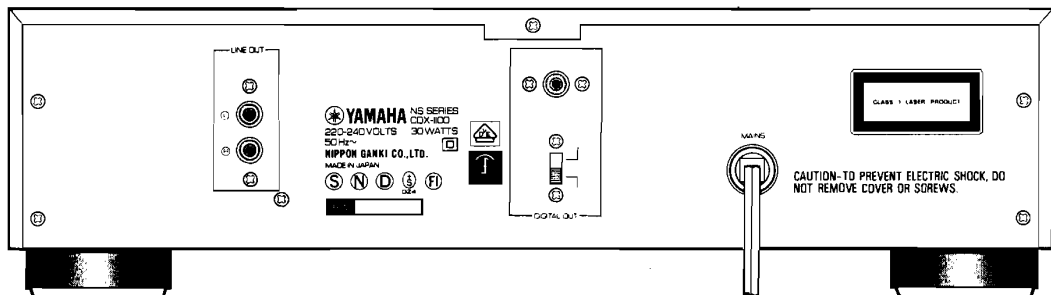
▼ U model



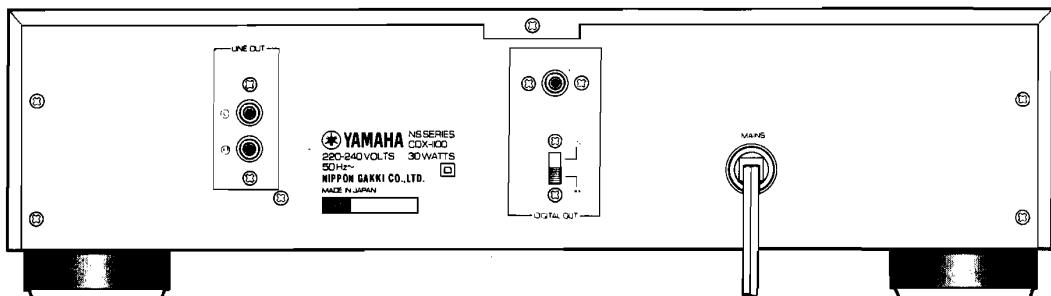
▼ C model



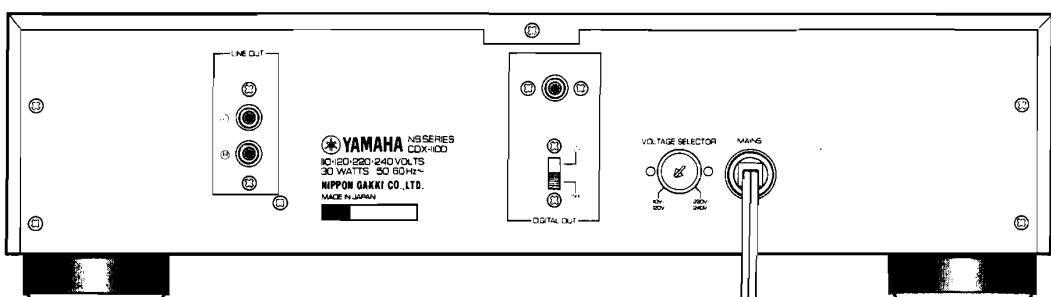
▼ G, B models

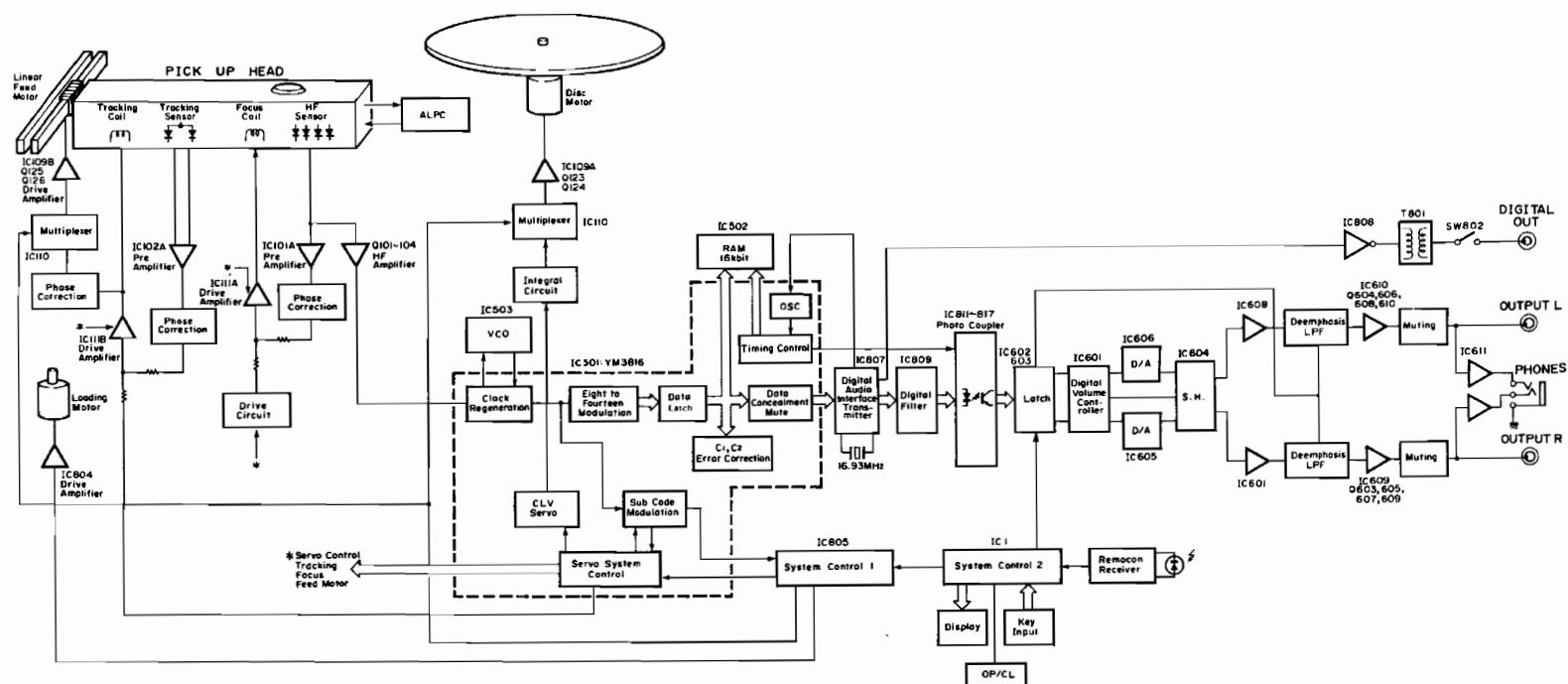


▼ A model



▼ R model

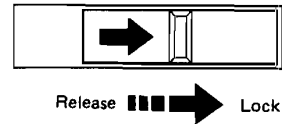




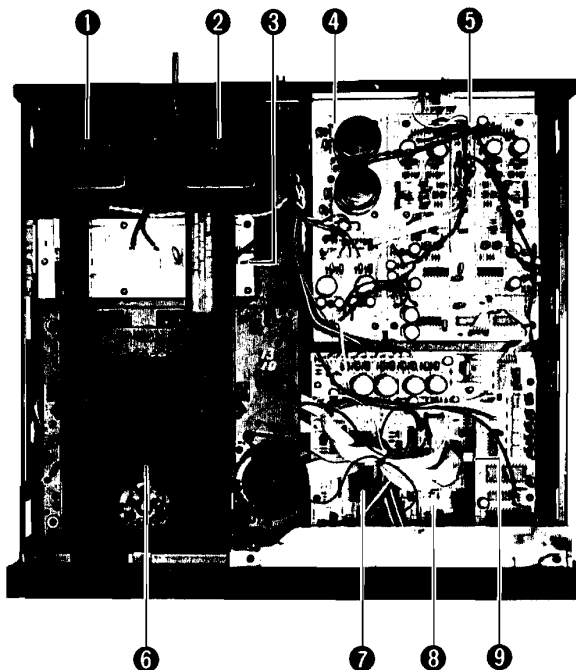
■ PROTECTION LEVER FOR TRANSPORTATION

When transporting the unit, take out the disc and lock the pick-up head by moving the lever in the opposite direction of the arrow while lifting the rear panel side.

*Unless the pick-up head has been locked in place, it may not operate properly even when it is released. It may also fail to operate properly even when the front panel side is lifted with the lever released. In such case, turn OFF the power once and then turn it ON again.



■ INTERNAL VIEW



- ① POWER TRANSFORMER (Analog section)
U, C models: XC731001
A, G, B models: XC730001
R model: XC045001 (Analog/Digital)
- ② POWER TRANSFORMER (Digital section)
U, C models: XC046001
A, G, B models: XC047001
- ③ DIGITAL CIRCUIT BOARD (2)
- ④ MAIN CIRCUIT BOARD (2)
- ⑤ MAIN CIRCUIT BOARD (1)
- ⑥ DISC MECHANISM UNIT
- ⑦ 8 bit μ -COM: M50753-402SP
- ⑧ DIGITAL CIRCUIT BOARD (1)
- ⑨ SPC CIRCUIT BOARD

DISASSEMBLY PROCEDURES

1. Removal of Top Cover

Remove 5 screws (①) in Fig. 1, and then slide the Top Cover to back side.

2. Removal of Bottom Cover

Remove 12 screws (②) in Fig. 1.

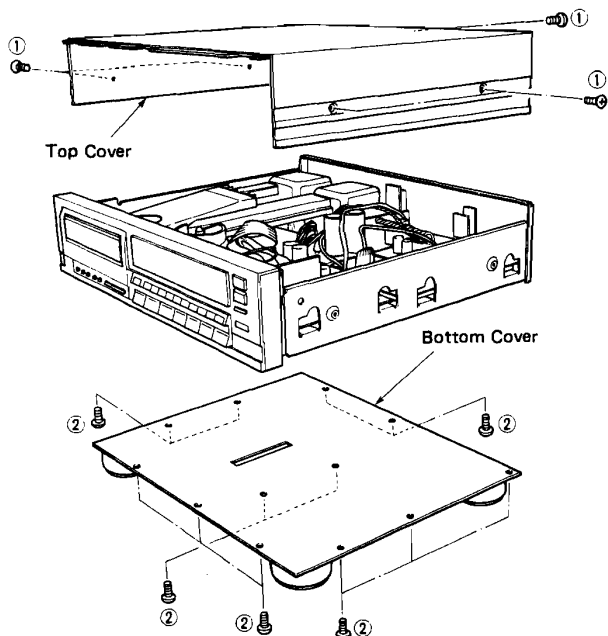


Fig. 1

3. Removal of Disc Tray Ass'y

- Lift the flapper and pull out the disc tray ass'y in Fig. 2.
- Push the hook on the DM unit with a slotted screwdriver or the like inserted into the tray hole in Fig. 3, and the disc tray ass'y can be removed.

4. Removal of Disc Mechanism Unit

Remove 4 screws (③) in Fig. 4, and lift the Disc Mechanism Unit gradually.

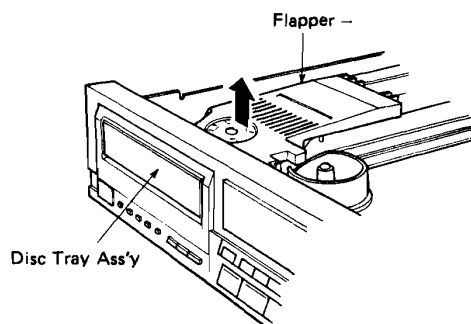


Fig. 2

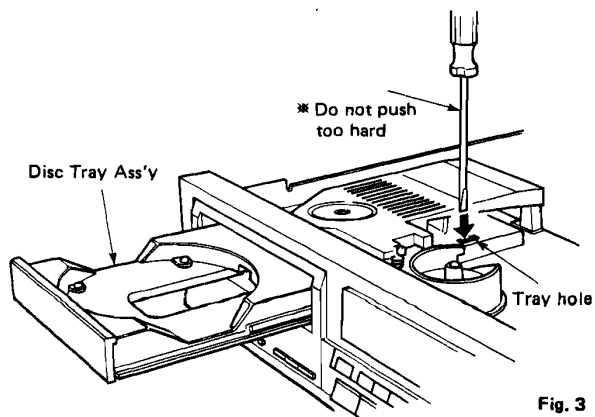


Fig. 3

5. Removal of Flapper

Push the hook fixing the flapper in Fig. 5, and remove the flapper. (Remove the spring, too.)

*Make sure not to forget the spring when reinstalling it.

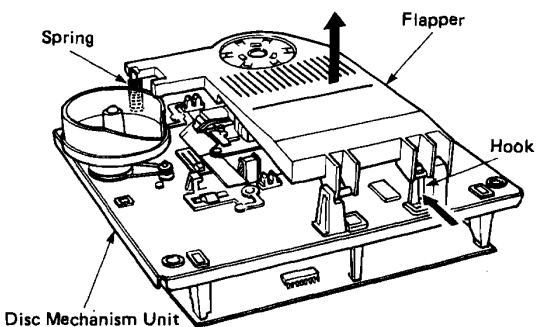


Fig. 5

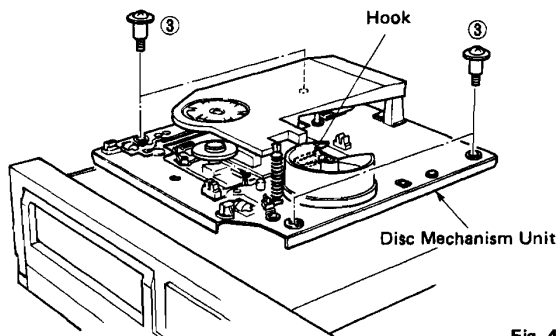


Fig. 4

■ CHIP COMPONENTS DESCRIPTION

1. KIND OF CHIP DEVICE

We have five kinds of chip devices:

- Thick film chip resistor
- Multi-layer ceramic chip capacitor
- Mini-mould (Chip) transistor
- Mini-mould (Chip) diode
- Mini-mould (Chip) IC

2. IDENTIFICATION OF FOUR KINDS OF CHIP DEVICES

Since four kinds of chip devices have similar shape and size, it is quite difficult to identify them at a glance, but basically, following identification is available:

a. Resistor/Jumper resistor

All chip resistors have a 3 digit indication of the value of resistance.

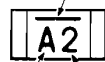
For example, "472" stands for 4.7k ohms and "000" stands for the jumper resistor.

$$47 \times 10^2 = 4700\Omega \\ = 4.7k\Omega$$

b. Ceramic capacitor

Some chip capacitors have a 2 digit indication of the value of capacitance. For example, "A2" stands for 100pF. Some chip capacitors have no indication.

(Example) Special mark



$$1.0 \times 10^2 = 100pF$$

Alphabet Number

● Contents of indication

Alphabet The numerical value of electrostatic capacity.

Number The value of the multiplier.

Special mark Temperature characteristic.

● Electrostatic capacity

(Alphabet)

Alphabet	A	B	C	D	E	F	G	H	J	K	L	M
Numerical value	1.0	1.1	1.2	1.3	1.5	1.6	1.8	2.0	2.2	2.4	2.7	3.0

Alphabet	N	P	D	R	S	T	U	V	W	X	Y	Z
Numerical value	3.3	3.6	3.9	4.3	4.7	5.1	5.6	6.2	6.8	7.5	8.2	9.1

Alphabet	a	b	d	e	f	m	n	t	y
Numerical value	2.5	3.5	4.0	4.5	5.0	6.6	7.6	8.0	9.0

(Number)

Number	0	1	2	3	4	5	6	7	8	9
figures value	10^0	10^1	10^2	10^3	10^4	10^5	10^6	10^7	10^8	10^1

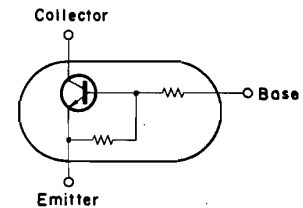
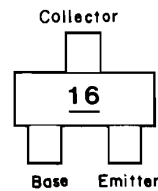
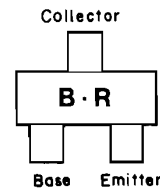
c. Transistor

The transistors can be identified by their identification codes of 2 to 4 alphabet letters assigned to each of them. Given below is a cross reference table of identification codes and transistors.

Use it to identify each transistor from its code.

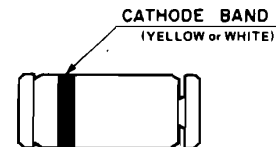
Indication	Parts No.	Description	HFE rank
FQ	IA103700	Transistor 2SA1037K	Q-rank
FR	"	"	R-rank
FS	"	"	S-rank
BQ	IC241200	" 2SC2412	Q-rank
BR	"	"	R-rank
BS	"	"	S-rank
DAQY	VB494100	" 2SD1664	R-rank
ID-R	ID132800	" 2SD1328	R-rank
ID-S	"	"	S-rank
ID-T	"	"	T-rank
13	VC123900	Digital Transistor DTA143EK	
16	VC124000	Digital Transistor DTA144EK	
26	VC124100	Digital Transistor DTC144EK	

Ex. Transistor: 2SC2412(R) Ex. Digital Transistor DTA144EK

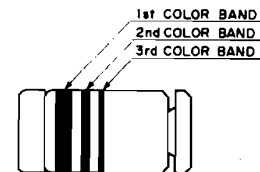


d. Diode and Zener Diode

Each diode has a yellow or white band (cathode band) on its cathode side as shown below.



The zener diode has three color bands as shown below.



The 1st and 2nd color bands indicate the model as a number is assigned to each color as listed in Table 1. Referring to Table 1, read the code number by converting the colors of bands into the corresponding numbers and then find the model code in Table 2. The number in the model code indicates the zener voltage. The 3rd color band on the zener diode indicates the subdivision of the zener voltage.

COLOR	1st color band 1st number in code	2nd color band 2nd number in code	3rd color band Zener voltage Subdivision
Black	0	0	—
Brown	1	1	—
Red	2	2	—
Orange	3	3	—
Yellow	4	4	A
Green	5	5	B
Blue	6	6	C
Purple	7	7	—
Gray	8	8	—
white	9	9	D

Table 1

RLZ Series Zener Code No. and Model Code Cross Reference Table

Zener Code No.	Model Code
07	RLZ3.6
08	RLZ3.9
09	RLZ4.3
10	RLZ4.7
11	RLZ5.1
12	RLZ5.6
13	RLZ6.2
14	RLZ6.8
15	RLZ7.5
16	RLZ8.2
17	RLZ9.1
18	RLZ10
19	RLZ11
20	RLZ12
21	RLZ13
22	RLZ15
23	RLZ16
24	RLZ18
25	RLZ20
26	RLZ22
27	RLZ24
28	RLZ27
29	RLZ30
30	RLZ33
31	RLZ36
32	RLZ39

Table 2

As explained above you can identify chip devices tentatively, but actual identification should be made by referring to the parts layout drawing in the service manual.

3. SPECIAL NOTICE FOR HANDLING CHIP DEVICES

Chip devices are not heatproof and shockproof. Use caution when handling them.

a. For shock

Chip devices are made of ceramic or plastic moulding, please do not subject them to direct shock.

- Set chip device flat onto printed circuit board.
- Do not apply unnecessary stress to the chip device. When soldering two terminals of chip device, soldering is done one by one. Sometimes, when one terminal is soldered, the other unsoldered terminal is slightly lift. In such case, do not try to push down the lifted terminal using the tip of the soldering iron. In such a case, you may crack the chip device or may break the terminals.

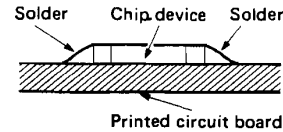
b. For heat

Do not apply high temperature to chip devices for long periods. Soldering should be done quickly.

c. Soldering

- Chip devices can not withstand rapid heating or cooling. Do not heat the chip itself, heat the terminals of chip devices.
- Solder quickly, excessive soldering time will cause damage to chip device.

- Try to reduce amount of solder when soldering. Amount of solder will effect the strength of the chip bending against the printed circuit board. Refer to amount of solder as shown below.



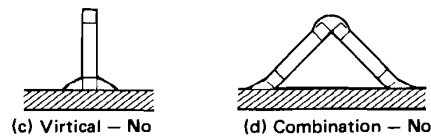
d. Soldering iron

When soldering chip devices, use the right soldering iron.

- Soldering iron
Power of soldering iron should be less than 30 watts.
Diameter of iron chip should be about 2 mm.
- Temperature of iron tip.
Temperature of soldering iron tip should be less than 536°F. (280°C.)

e. Mounting chip device onto printed circuit board

- Set chip devices as close as possible onto the surface of printed circuit board.
Do not apply unnecessary pressure to chip devices in order to make it close to the surface of printed circuit board.
Try to keep distance between chip device and surface of printed circuit board less than 0.5mm.
- Do not connect (solder) wire or terminal of other-parts to terminal of chip device.
- Do not mount chip devices incorrectly, such as (b), (c) and (d).

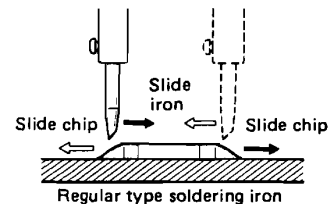


f. Removal of defective device for repair

When removing chip devices with a forked tip iron, heat the chip device with the fork tip and slide.

When you are going to remove chip devices using regular tip iron, heat two terminals of chip device repeatedly about 2 or 3 times and slide the chip device.

Slide chip device only in the direction specified as shown below.



ADJUSTMENTS

Necessary items

Measuring instruments

Oscilloscope	: x 2
(At least one shall have a bandwidth of 50 MHz or more)	
Audio frequency oscillator (A.F. OSC):	x 1
Laser power meter	: x 1
(LEADER LPM-8000 P/No. TX915140 or equivalent)	
AC voltmeter (ACVM)	: x 2
(One dual channel or two single channel meters)	
DC voltmeter (DCVM)	: x 1
Frequency counter (FC)	: x 1

Jigs

Test disc	: x 1
(YEDS-18 P/No. TX911730, or YEDS-7 P/No. TX911320)	
Filter (See Fig. A)	: x 1
Shorting cord	: x 1 (Step 3)

Tools

⊕ Screwdriver	: x 1
(For-Pre-Set Potentiometer adjustment)	
Core screwdriver	: x 1 (Step 3)
⊖ Screwdriver	: x 1 (Step 5)

Adjustment jig (with internal filter)

Connect the filter in Fig. A before measurement.

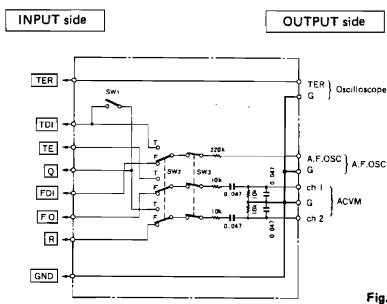


Fig. A

SW1: For diffraction grating and EF balance adjustments
SW2: FOCUS gain and TRACKING gain switching
SW3: Filter ON/OFF switch

Precautions or Special Notes

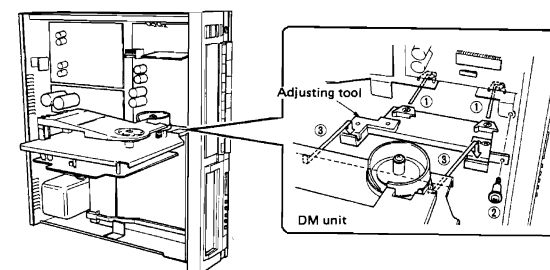
1. Measure the output level at the output terminal of the A.F. oscillator.
2. The unit should always be in a horizontal position while performing adjustments.
3. Solder the servo circuit board-to-filter wires to facilitate adjustments.

Installation of Adjusting Tool

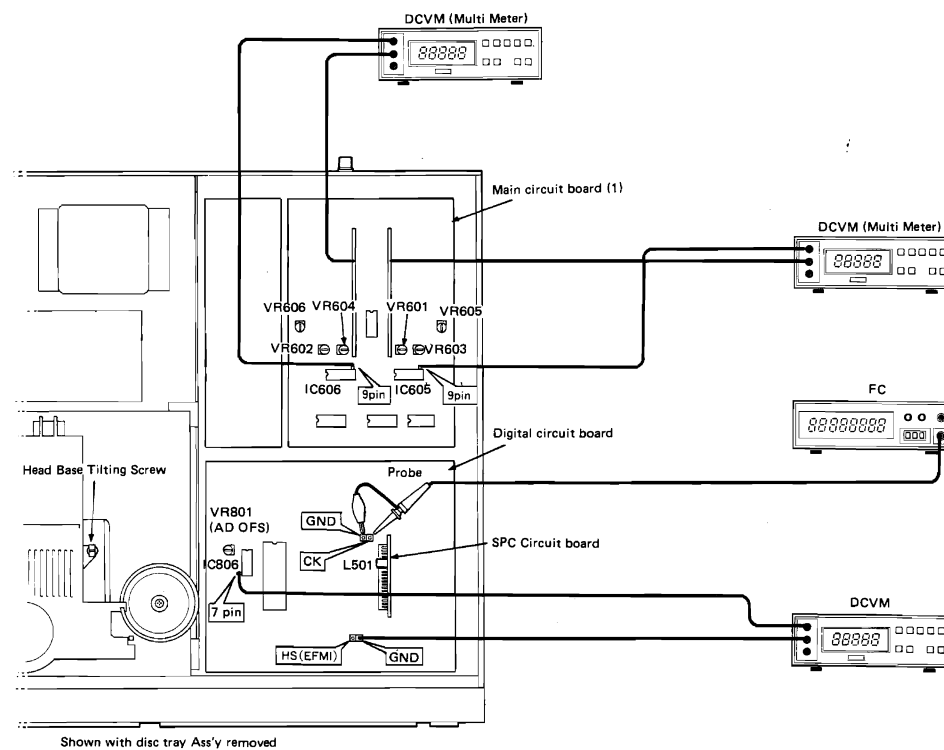
- DM unit adjusting tool: P/No. TX911740

- a. With the unit placed vertically as shown, fit the adjusting tool into the cuts in the frame (where the digital circuit board (1) is installed) as indicated with (1) in the figure.

- b. Fasten the frame and the adjusting tool as shown with the screw (2) used to fix the DM unit.
- c. Fit the DM unit chassis into the grooves of the adjusting tool as indicated with (3) in the figure.



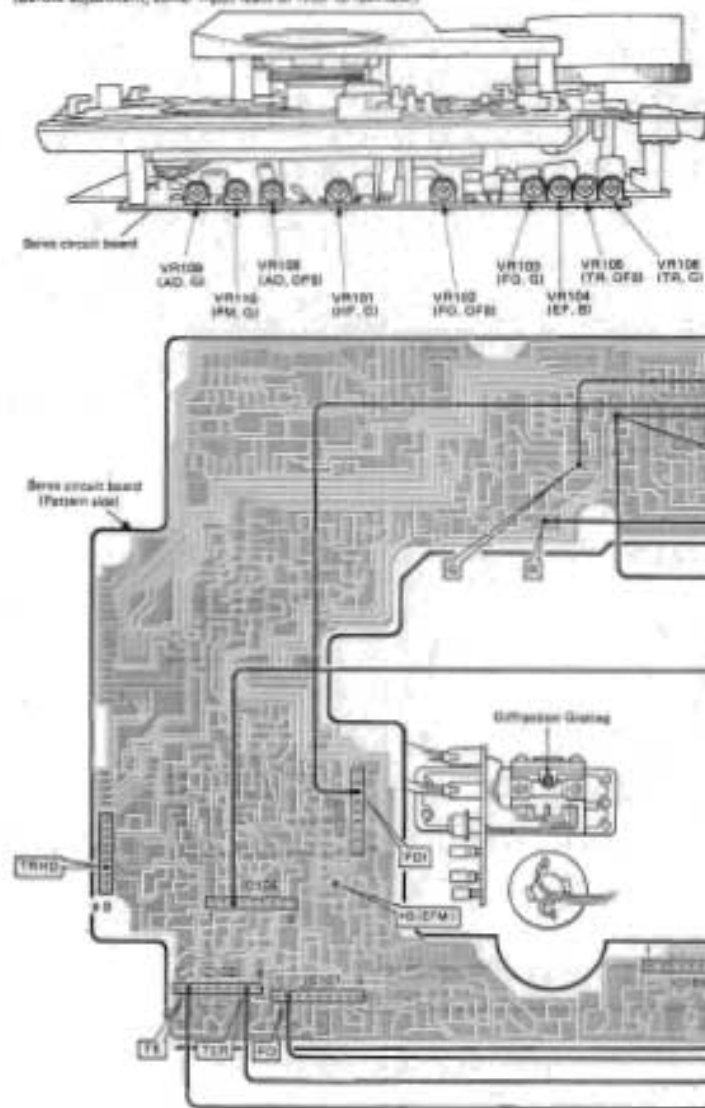
Test point (1)



Shown with disc tray Ass'y removed

- Adjustment wiring diagram/test points (2)

(Before adjustment, smaller input leads of time to facilitate.)

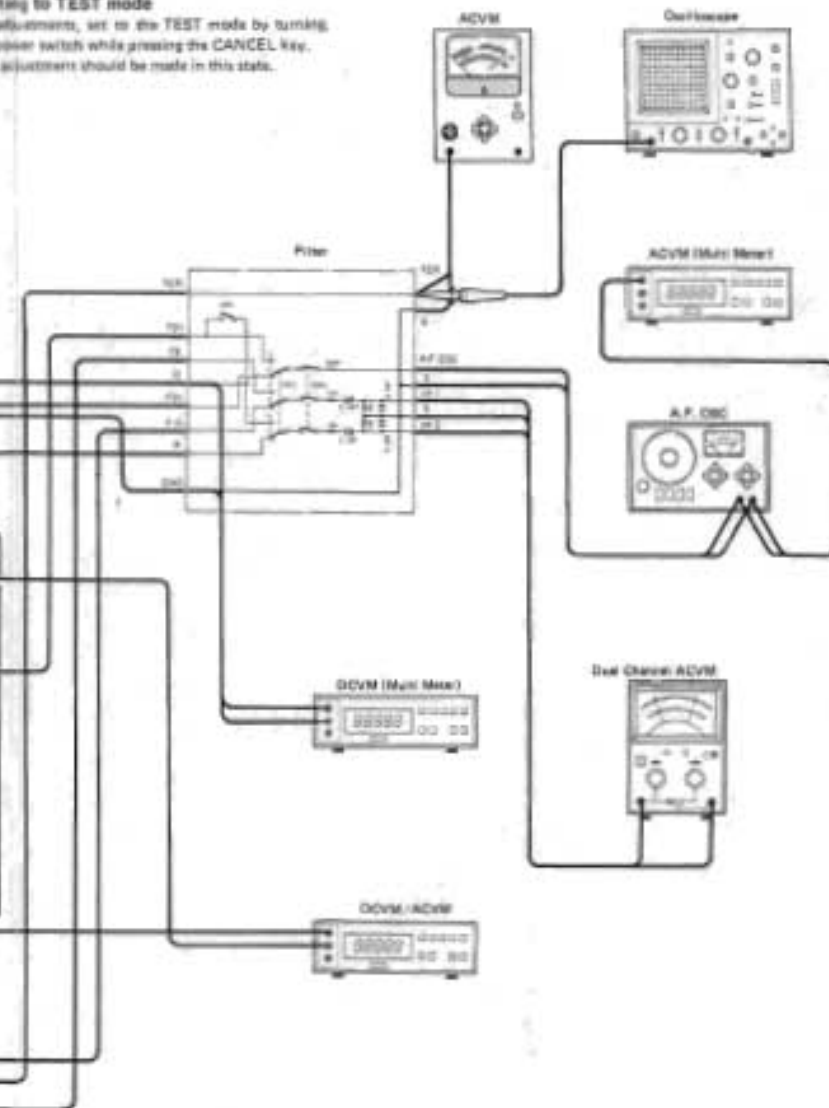


* BEFORE ADJUSTMENTS

① Setting to TEST mode

Before adjustments, set to the TEST mode by turning, On the power switch while pressing the CANCEL key.

² Each adjustment should be made in this state.



2 Adjustments

Carry out following adjustments in the order as numbered.

1. Confirmation of laser output
2. Confirmation of focus actuator operation
3. Adjustment of VCO
4. Adjustment of diffraction grating
5. Adjustment of jitter and focus offset
6. Adjustment of EF balance
7. Adjustment of HF level
8. Adjustment of focus gain
9. Adjustment of tracking gain
10. Adjustment of tracking offset
11. Confirmation of jitter
12. Adjustment of kick gain
13. Confirmation of search mode
14. Adjustment of AD offset
15. Adjustment of DAC offset (digital circuit board)
16. Adjustment of PM gain
17. Adjustment of AD gain
18. Adjustment of DAC offset (main circuit board)
19. Adjustment of DAC distortion
20. Adjustment of output offset

Confirmation of Laser Output (Step 1)

- ① Do not load the disc.
- ② Remove the disc tray.
- ③ Remove the flapper.
- ④ Apply the laser power meter's sensor to the pick-up head as shown in Fig. B.
- ⑤ Set to the TEST mode.
- ⑥ Press OPEN/CLOSE key. (Focus search mode)
- ⑦ Measure the laser output during the 5 seconds of FOCUS search mode.
Rating: Laser output = 0.1mW to 0.5mW

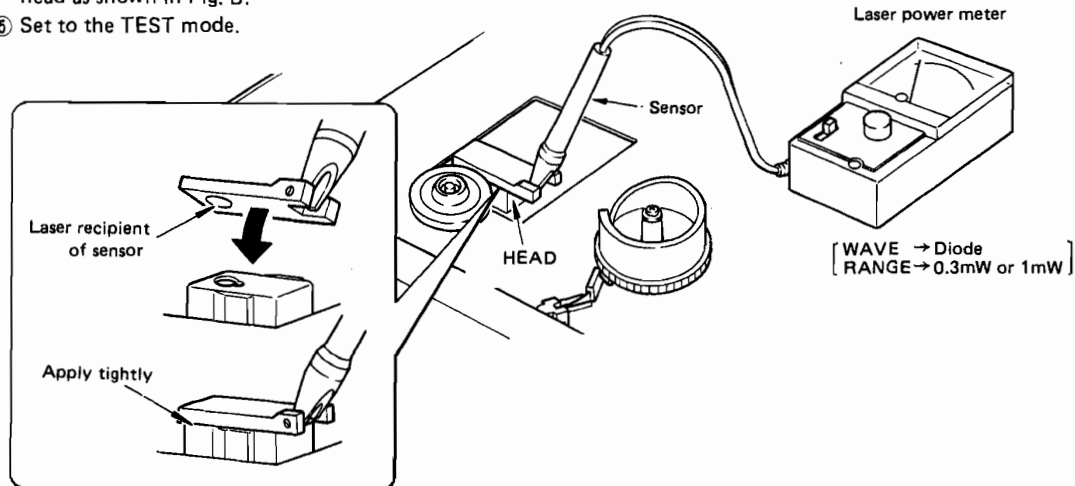


Fig. B

Precautions in handling pick-up head

- (1) No soldering necessary for unit.
- (2) Since laser light is near-infrared, visual confirmation is difficult. While light is emitted, for safety make sure your eyes are at least 30 cm away from the objective lens.
- (3) Do not disassemble it.
- (4) Do not drop or apply shock to it.
- (5) Do not leave it under high temperature or humidity.
- (6) Do not touch the objective lens. Should there be dirt on the lens, clean using a blower for cameras.

Confirmation of Focus Actuator Operation (Step 2)

Oscilloscope (1) setting

- DC coupling
- 1V/div range (Vertical)
(0.1V/div when 10:1 probe is used)
- 0.5 sec/div or 1 msec/div time (Horizontal)

- ① Do not load the disc.
- ② Connect the oscilloscope (1) to **R** terminal.
- ③ Set to the TEST mode.
- ④ Press OPEN/CLOSE key. (Focus search mode)
- ⑤ During 5 seconds of FOCUS search mode, confirm that the waveform is as shown in Fig. C.
- ⑥ Confirm that the pick-up head's objective lens moves smoothly from the lowest point to the highest point.

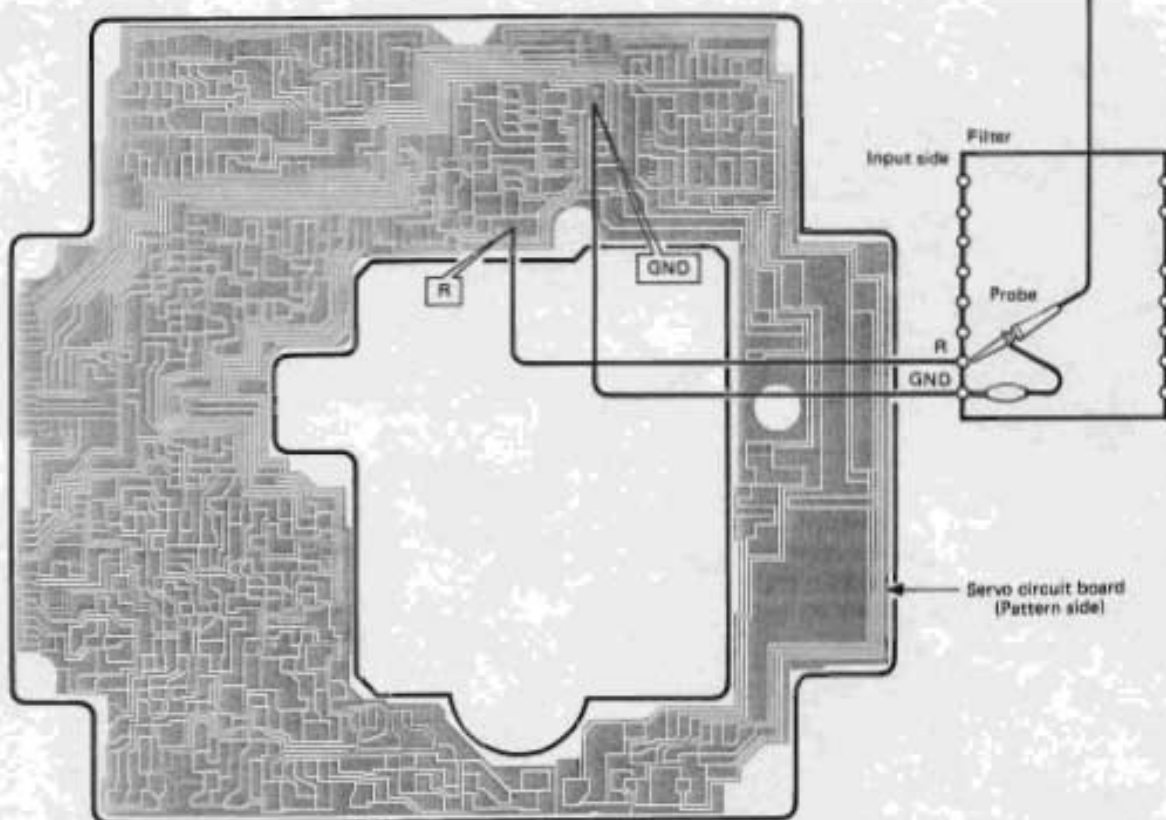
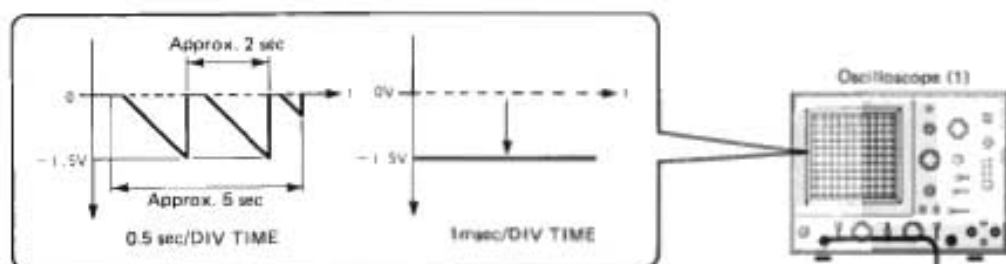


Fig. C

Adjustment of VCO (Step 3)

1. Connect the shorting cord and frequency counter as shown in Fig. D. (Short-circuit between EPMI and QND.)

* Be sure to use the probe (10:1 for oscilloscope) for input to the frequency counter.

2. Do not load the disc.
3. Set to the TEST mode.

4. Press the STOP key.

5. Wait for longer than a minute after the POWER switch is turned ON and while observing the frequency counter indication, adjust LS01 core so that it satisfies the rating.

Rating: $F_{VCO} = 4.3218 \text{ MHz} \pm 10 \text{ kHz}$

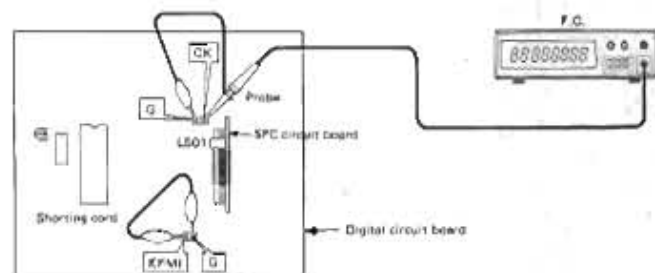


Fig. D

Adjustment of Diffraction Grating (Step 4)

* This adjustment requires use of 2 oscilloscopes.

Oscilloscope (1) setting conditions

- DC coupling
- 0.1V/div range (Vertical)
(10mV/div when 10:1 probe is used)
- 20 msec/div time (Horizontal)

1. Connect the filter and measuring instruments as shown in Fig. E.

1) Connect the oscilloscope (1) to **TER** terminal.

2) Connect the oscilloscope (2) to **EFMI** terminal.

2. Set to the TEST mode.

3. Load the disc.

4. Press the OPEN/CLOSE key.

5. Press the PLAY key.

6. Press the "2" key.

7. Set SW1 in the filter to ON.

(Short-circuit between **TD** terminal and **Q** terminal. TRACKING SERVO = OFF)

8. Observe the waveform on the oscilloscope (1).

Oscilloscope (2) setting conditions

- AC coupling
- 0.5V/div range (Vertical)
(50 mV/div when 10:1 probe is used)
- 0.2 ~ 0.5 $\mu\text{s}/\text{div}$ time (Horizontal)

* Oscilloscope (2), should have frequency response of 50MHz or greater.

3. Adjust the diffraction grating screw so that the **TER** signal amplitude becomes maximum and satisfies the rating.

Rating: $E_{TER} = 200\text{mVp-p}$

* When the disc has stopped rotating, press PLAY key again and make adjustment.

* Adjust at the inner circumference of the disc.

10. Set SW1 in the filter to OFF.

(TRACKING SERVO = ON)

11. Confirm that the **EFMI** signal (eye-pattern) appears on the oscilloscope (2).

* Set to the point where **TER** signal amplitude is maximum and **EFMI** signal waveform can be observed finely and clearly.

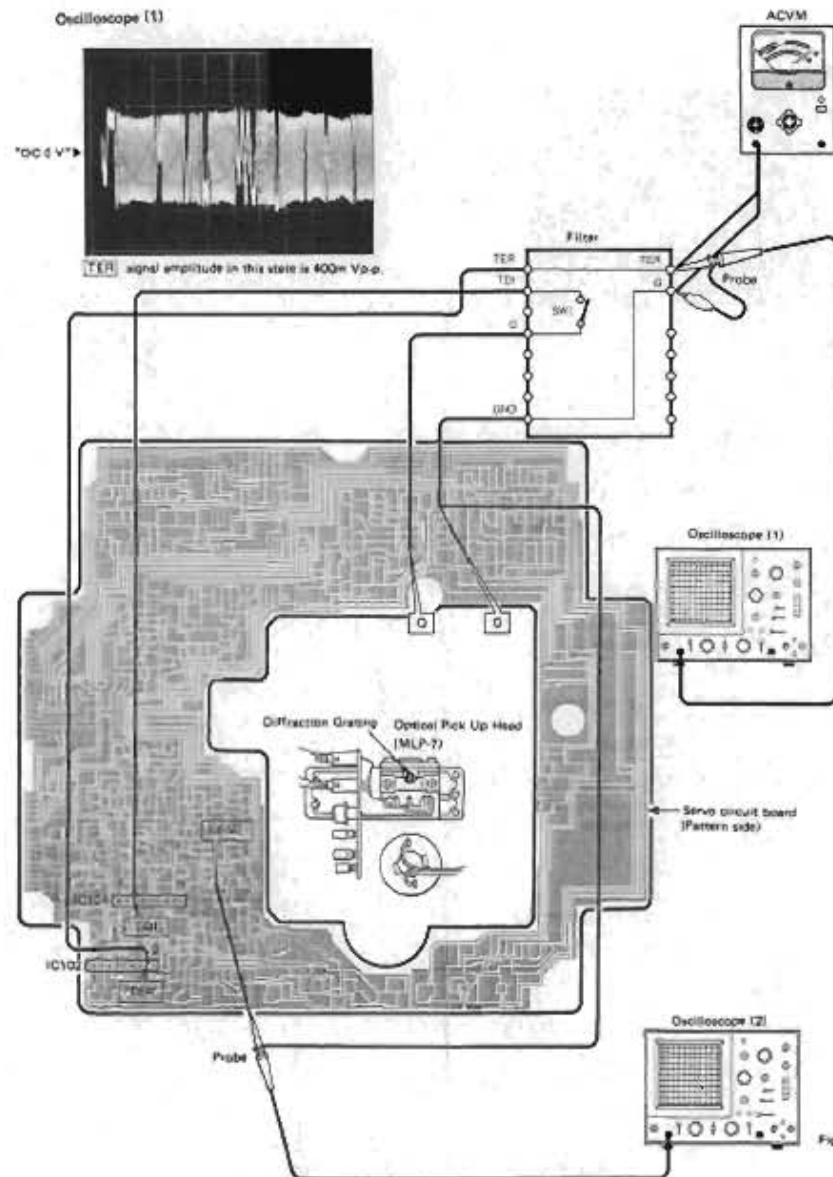
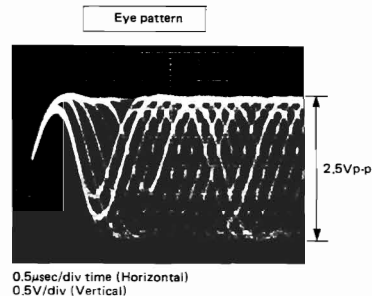


Fig. E

Oscilloscope (2)

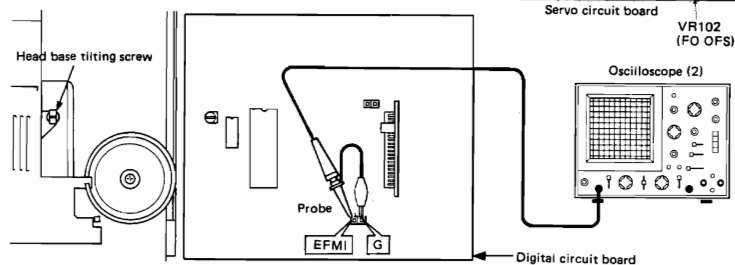


Adjustment of Jitter and Focus Offset (Step 5)

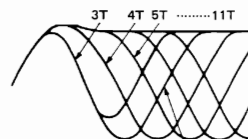
Oscilloscope (2) Settings

- AC coupling
- 0.5 V/div range (Vertical)
(50 mV/div when 10:1 probe is used)
- 0.2 ~ 0.5 μsec/div time (Horizontal)

- 1 Remove the disc unit.
- 2 Connect the oscilloscope (2) to [EFMI] terminal.
- 3 Set to the TEST mode.
- 4 Load the specified disc YEDS-18.
- 5 Press the PLAY key.
- 6 Adjust the head base tilting screw so that the [EFMI] signal (eye-pattern) becomes distinct and clear.
 - * Adjust at the center of the disc.



Waveforms 3T ~ 11T.



This portion is referred to as the eye pattern.

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

Good waveform

Abnormal waveform



Adjust so that the good waveform is obtained.

- 7 Adjust VR102 (FO OFS) in the same manner as the above step.
 - * Adjust VR102 within the range of $\pm 45^\circ$.
- 8 After adjustment, check the FOCUS search for proper operation.

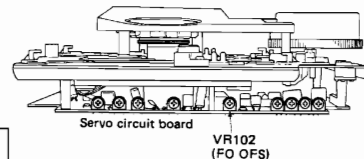


Fig. F

Adjustment of EF Balance (Step 6)

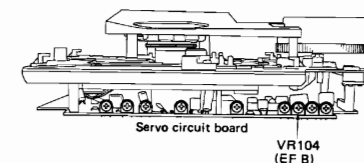
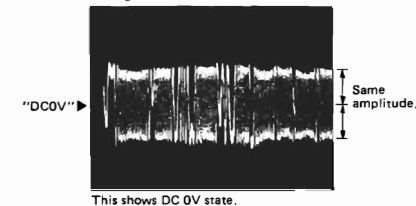
Oscilloscope (1) settings

- DC coupling
- 0.1 V/div range (Vertical)
(10mV/div when 10:1 probe is used)
- 20 msec/div time (Horizontal)

- 1 Connect the filter and measuring instruments as in Step 4.
- 2 Set to the TEST mode.
- 3 Load the disc.
- 4 Press the OPEN/CLOSE key.
- 5 PRESS the PLAY key.
- 6 Press the "2" key.
- 7 Set SW1 in the filter to ON.
(Short-circuit [TDI] terminal and [Q] terminal.
TRACKING SERVO → OFF)
- 8 Observe the waveform on the oscilloscope (1).
- 9 Adjust VR104 (EF B) so that the amplitude of the [TER] signal becomes equal above and below DC 0V position.
 - * Adjust at the inner circumference of the disc.

Good

Rating DC offset → Less than $\pm 10\text{mV}$.

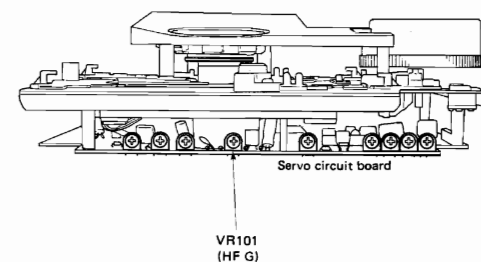


Adjustment of HF Level (Step 7)

Oscilloscope (2) setting

- AC coupling
- 0.5 V/div range (Vertical)
(50 mV/div when 10:1 probe is used)
- 0.2 ~ 0.5 μsec/div time (Horizontal)

- 1 Connect the oscilloscope (2) to the [EFMI] terminal as in Step 5.
- 2 Set to the TEST mode.
- 3 Load the specified disc YEDS-18.
- 4 Press the PLAY key.
- 5 Adjust VR101 (HF G) so that the [EFMI] level becomes 2.5 Vp-p.
 - * Adjust at the center of the disc.



Adjustment of Focus Gain (Step 8)

* This adjustment requires use of two single channel AC voltmeters or one dual channel AC voltmeter.

- ① Connect the filter and measuring instruments as shown in Fig. G.
- Apply an 800 Hz, 4.5 Vrms signal from the AF oscillator to the [FDI] terminal via the resistor (220 k Ω).
- ② Set SW3 in the filter to OFF.
- ③ Set SW2 in the filter to F (FOCUS).
- ④ Set to the TEST mode.
- ⑤ Load the disc.
- ⑥ Press the PLAY key.
- ⑦ Set SW3 to ON.
- ⑧ Read the indications of the AC voltmeters (CH1: E_{FO} , CH2: E_R).

- ⑨ Adjust VR103 (FO G) so that AC voltmeter indications satisfy the rating.

Rating: $E_{FO} - E_R = 10\text{dB}$ $0\text{dBV} = 1\text{V}$

Reference $E_{FO} - 16\text{ dBV (160mV)}$
 $E_R - 26\text{ dBV (50mV)}$

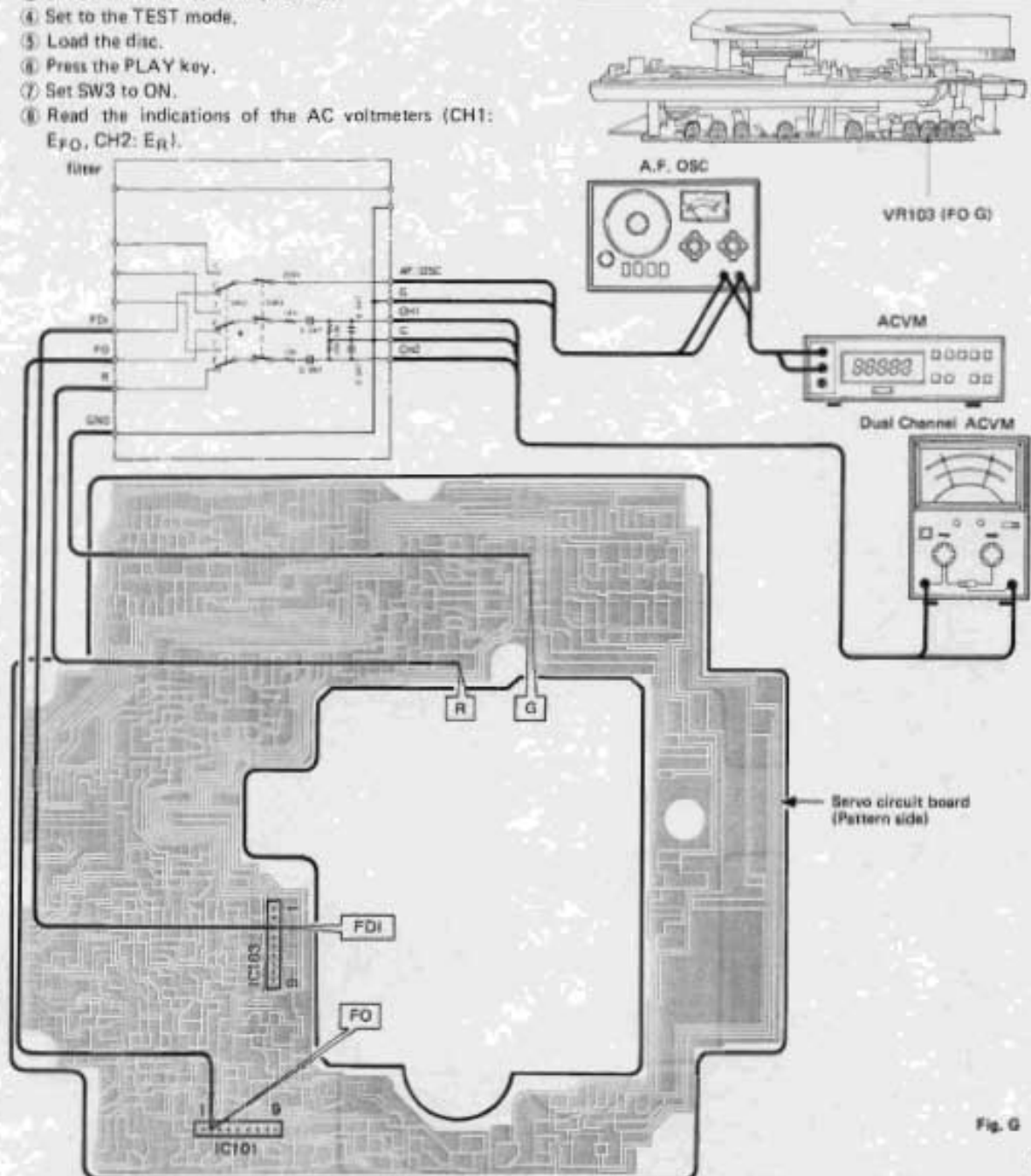
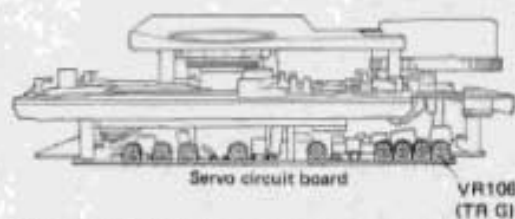


Fig. G

Adjustment of Tracking Gain (Step 9)

* This adjustment requires use of two single channel AC voltmeters or one dual channel AC voltmeter.

- ① Connect the filter and measuring instruments as shown in Fig. H.
- Apply an 800 Hz, 100 mVrms signal from the AF oscillator to the [TDI] terminal via the resistor (220 k Ω).
- ② Set SW3 in the filter to OFF.
- ③ Set SW2 in the filter to T (TRACKING).
- ④ Set to the TEST mode.
- ⑤ Load the disc.
- ⑥ Press the PLAY key.
- ⑦ Set SW3 to ON.
- ⑧ Read the indications of the AC voltmeters (CH1: E_{TE} , CH2: E_Q).



- 9 Adjust VR106 (TR G) so that AC voltmeter indications satisfy the rating.

Rating: $E_{TE} - E_Q = 15\text{dB}$ $0\text{dBV} = 1\text{V}$

Reference $E_Q = -30\text{ dBV}$ (30mV)
 $E_{TE} = -15\text{ dBV}$ (131mV)

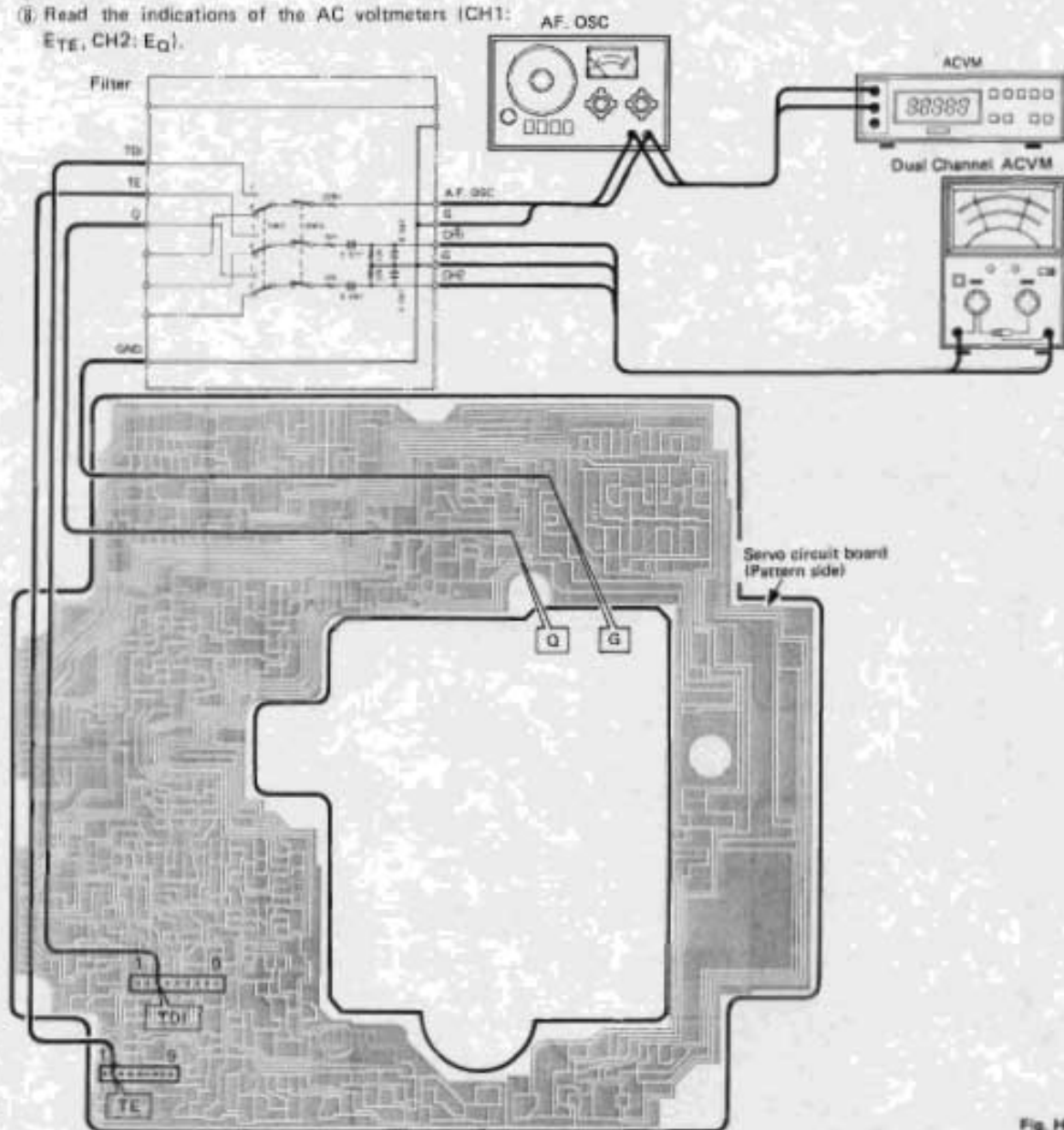


Fig. H

Adjustment of Tracking Offset (Step 10)

- ① Connect the DC voltmeter to the **Q** terminal.
- ② Set to the TEST mode.
- ③ Press the STOP key.
- ④ Adjust VR105 (TR OFS) so that the DC voltmeter indication satisfies the rating.
Rating: $E_Q = 0V \pm 25mV$

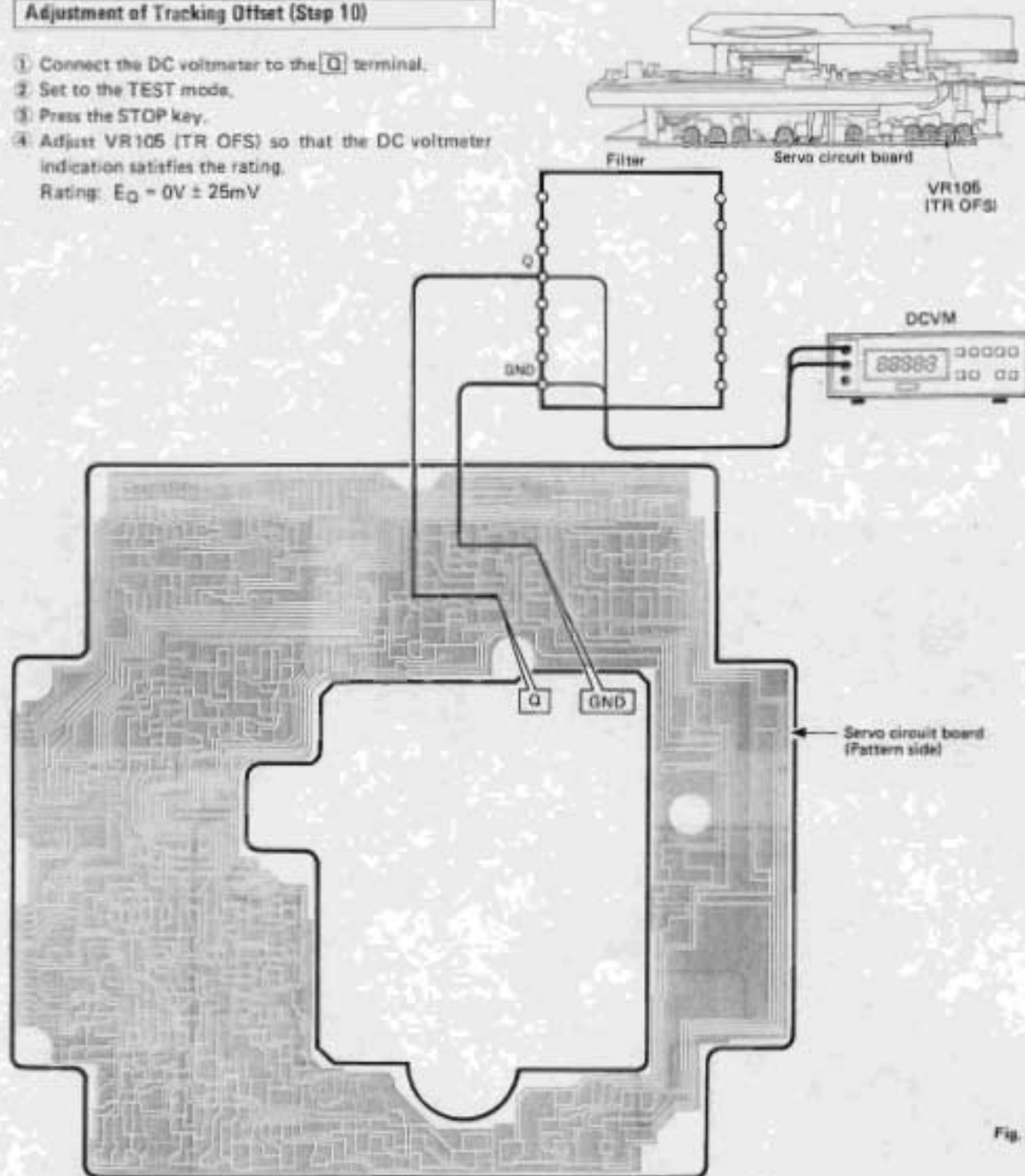


Fig. 1

Confirmation of Jitter (Step 11)

- ① Confirm the jitter rating as in ⑧ of Step 5.
- ② When the tilting screw has been readjusted, go back to Step 5 and carry out adjustments all over from there.

Adjustment of Kick Gain (Step 12)

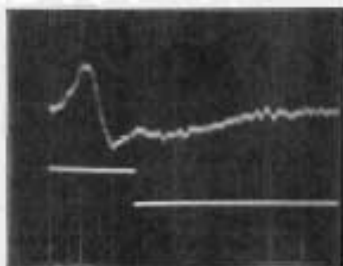
Oscilloscope (1) (2-ch oscilloscope) Settings

- DC coupling
- CH1 → **TER** terminal: 0.1 V/div (Vertical)
(10 mV/div when 10:1 probe is used)
- CH2 → **TRHD** terminal: 5 V/div (Vertical)
(0.5 V/div when 10:1 probe is used)
- TRIGGER MODE: 2 CH
- 0.2 msec/div time (Horizontal)

- Connect the filter and measuring instruments as shown in Fig. J.
- Set to the TEST mode.
- Load the disc.
- Press the PLAY key.
- Press the FF mode key (▶▶) and check the waveform.
- Adjust VR107 (KICK G) so that the **TER** signal cycle becomes 1.5 ± 0.5 while the **TRHD** signal level is high.
- Confirm that in the Reverse mode, the **TER** signal cycle satisfies the rating given in ⑥ but in the reverse phase.

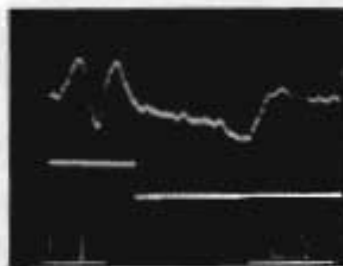
* Adjust at the inner circumference of the disc.

Incorrect



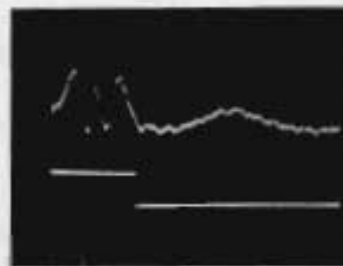
This shows about 0.9 cycle which is incorrect

Good



This shows about 1.7 cycle which is within specification.

Incorrect



This shows about 2.5 cycle which is incorrect

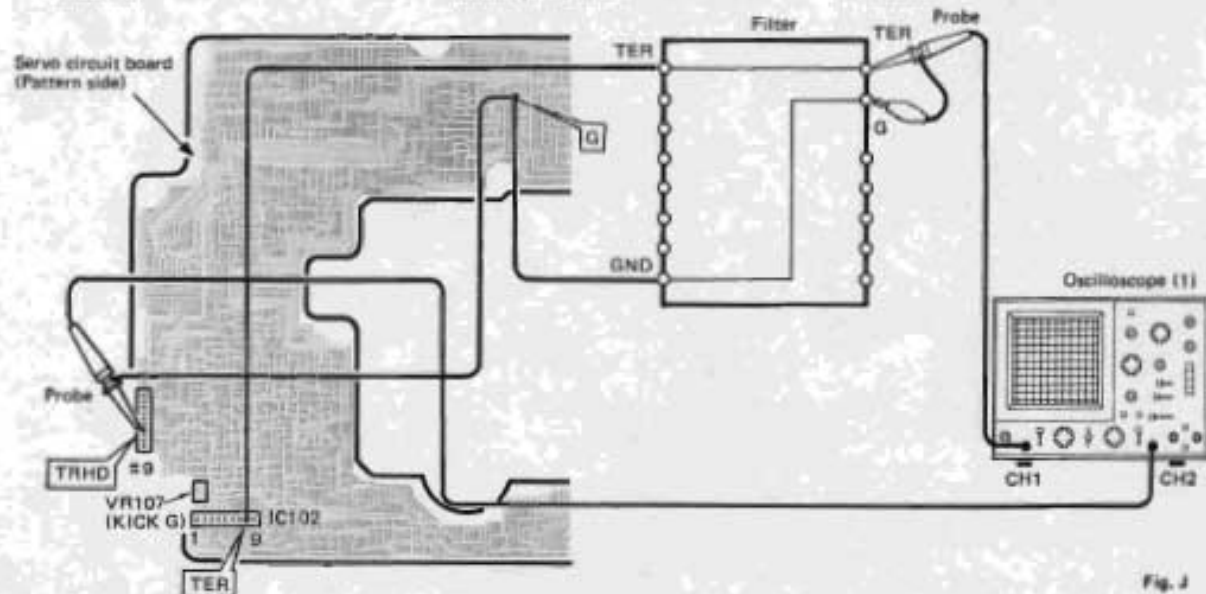


Fig. J

Confirmation of Search Mode (Step 13)

- ① Load the disc.
- ② Press the PLAY key.
- ③ Press the Fast Forward mode key (▶▶) and confirm that the displayed time advances smoothly.
- ④ The displayed time should advance accurately and smoothly in both Fast Forward (▶▶) and Reverse (◀◀) modes.

Adjustment of AD Offset (Step 14)

- ① Connect the DC voltmeter to the 2 pin of IC108.
- ② Set to the Test mode.
- ③ Press the "1" key.
- ④ Force the Feed to move all the way to the outer circumference and fix it there.
- ⑤ Adjust VR108 (AD OFS) so that the specified rating is obtained.
Rating: $E = 0V \pm 100mV$

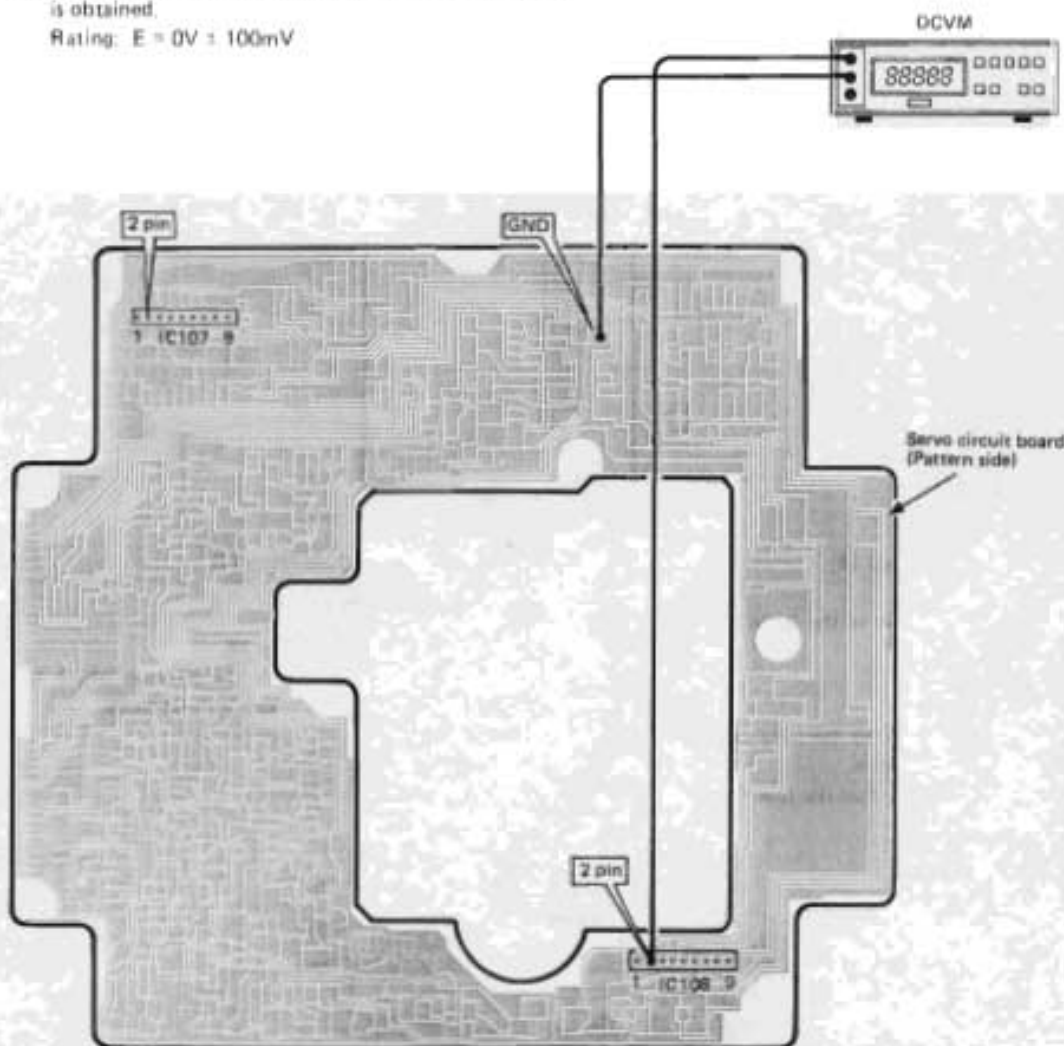
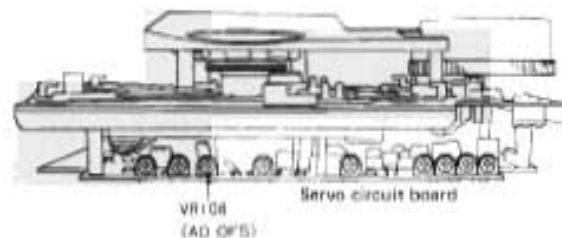


Fig. K

Adjustment of DAC Offset (Step 15)

- ① Do not load the disc.
- ② Connect the DC voltmeter to the 7 pin of IC806.
- ③ Set to the TEST mode.
- ④ Carry out ③ and ④ of Step 14.
- ⑤ Adjust VR801 (DAC OFS) so that the specified rating is obtained.
Rating: $E = 0V \pm 10mV$
- ⑥ Confirm AD offset as described in Step 14. If the display "SEC" indicates FE or more (hexadecimal), set it to FF by adjusting VR108.
If less than FF, move back to Step 14 and readjust.

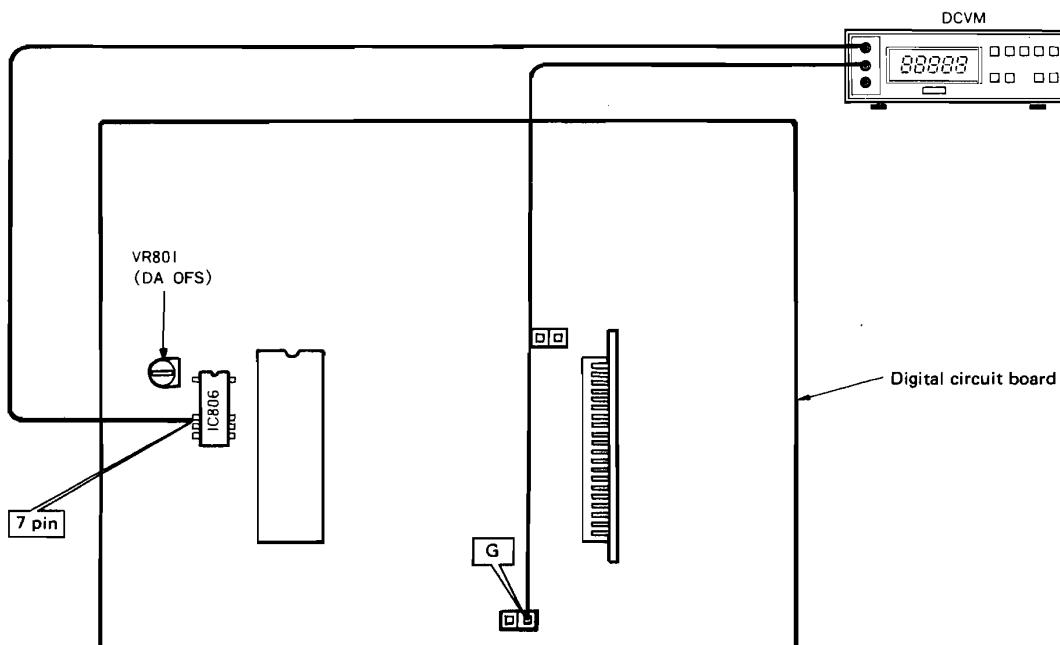


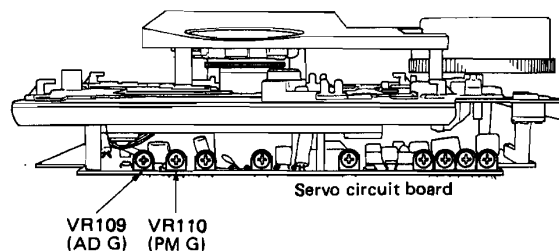
Fig. L

Adjustment of PM Gain (Step 16)

- ① Connect the DC voltmeter to the 2 pin of IC107 as shown in Fig. K.
- ② Set to the TEST mode.
- ③ Press the "0" key.
- ④ Force the Feed to move all the way to the inner circumference and fix it there.
- ⑤ Adjust VR110 (PM G) so that the specified rating is obtained.
Rating: $E = 0 \pm 100mV$

Adjustment of AD Gain (Step 17)

- ① Set to the TEST mode.
- ② Carry out ③ and ④ of Step 16.
- ③ Adjust VR109 (AD G) to the position where the "SEC" of the display changes from 01 to 00.



Adjustment of DAC Offset (Step 18)

- ① Connect the DC voltmeters to the 9 pin of IC606 (L ch) and IC605 (R ch) respectively.
- ② Set to the TEST mode.
- ③ Load the disc.
- ④ Adjust VR602 (L ch) and VR601 (R ch) so that the specified rating is obtained.
Rating: $E = 0 \pm 1\text{mV}$

Adjustment of Output Offset (Step 20)

- ① Connect the DC voltmeter to the LINE OUT terminal.
- ② Set to the TEST mode.
- ③ Load the disc.
- ④ Press the STOP key.
- ⑤ Maximum the OUTPUT LEVEL.
- ⑥ Adjust VR606 (L ch) and VR605 (R ch) so that the specified rating is obtained.
Rating: $E = 0 \pm 1\text{mV}$

Adjustment of DAC Distortion (Step 19)

- ① Connect the distortion meter to the LINE OUT terminal.
- ② Set to the TEST mode.
- ③ Load the disc.
- ④ Press the PLAY key.
- ⑤ Maximum the OUTPUT LEVEL.
- ⑥ Adjust VR604 (L ch) and VR603 (R ch) so that the distortion of 1kHz, 0dB output becomes minimum (less than 0.003%).

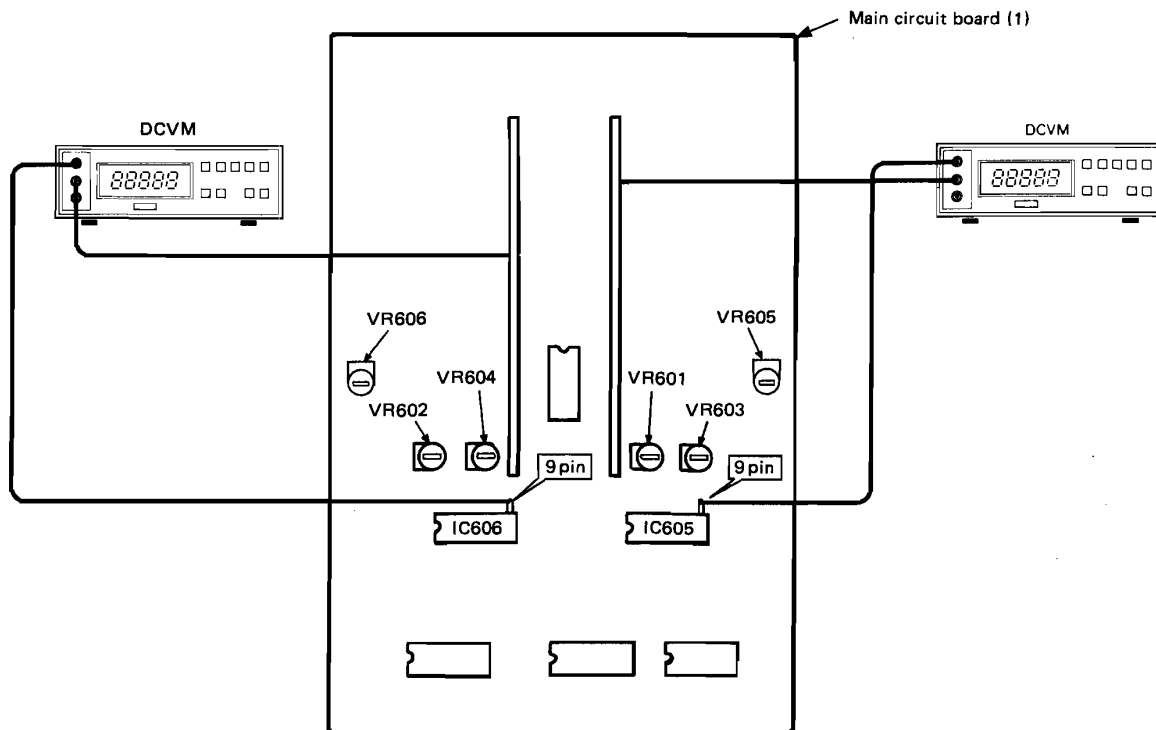
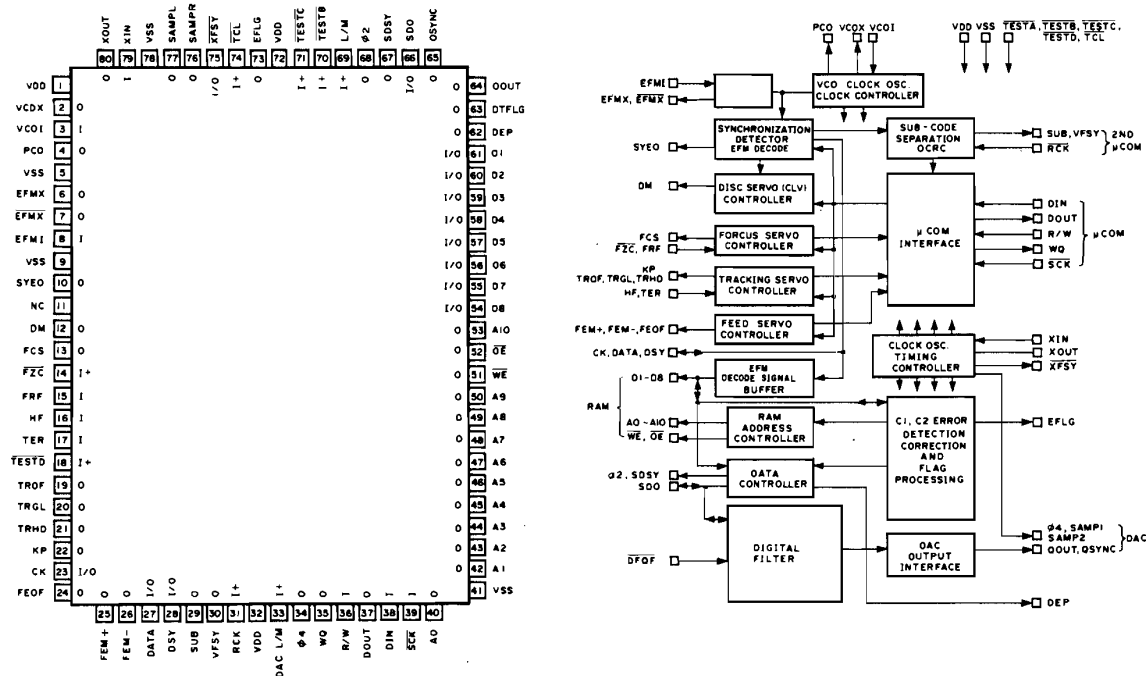


Fig. M

LSI DATA

IC501: YM3816 Signal Processor & Controller for Compact Disc Player (SPC)

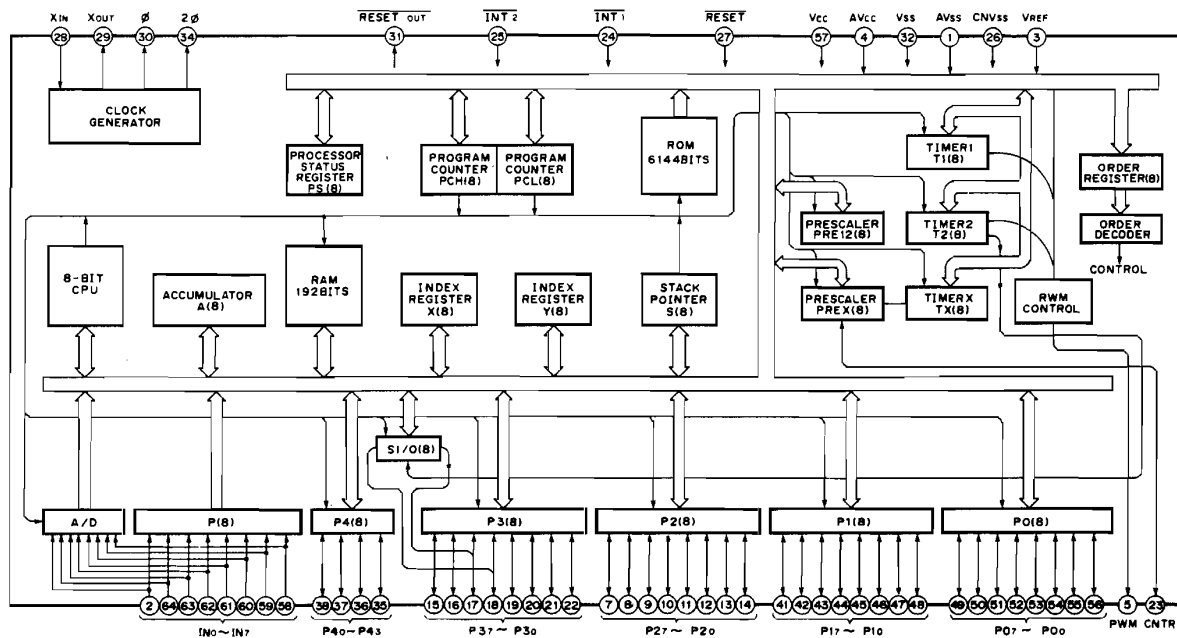
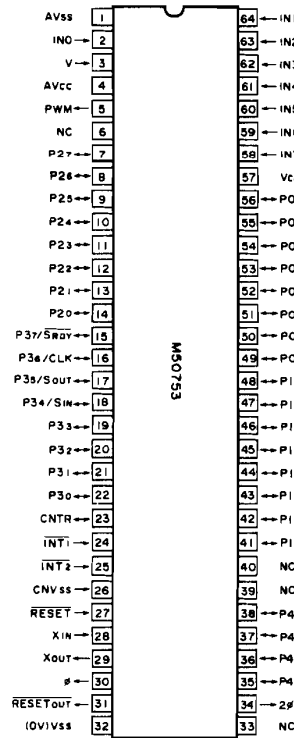
YM-3816 is a CMOS LSI for signal processing and servo control of the compact disc player. It executes such signal processing as demodulation of the EFM signal from the optical pick-up, detection and correction of the erroneous signal and digital filtering which helps to improve the sound quality, as well as such intelligent servo controlling as focus, disc, tracking and feeding.



Pin No.	Pin Name	I/O	Function
1	VDD		Power Supply
2	VCOX	O	
3	VCOI	I	Clock Playback Circuit 4PCO
4	PCO	O	
5	VSS		GND
6	EFMX	O	EFM Signal External Circuit
7	EFMX	O	
8	EFMI	I	GND
9	VSS		
10	SYEQ	O	Synchronized Uniform Signal
11	N.C.		Not Use
12	DM	O	Disc Servo { LOW (0V): FORWARD OPEN (2.5V): STOP HIGH (5V): REVERSE
13	FCS	O	
14	FZC	I	
15	FRF	I	Focus Servo System Input
16	HF	I	
17	TER	I	Tracking Servo System Input
19	TROF	O	
20	TRGL	O	
21	TRHD	O	
22	KP	O	{ LOW (0V): REW OPEN (2.5V): STOP HIGH (5V): FF

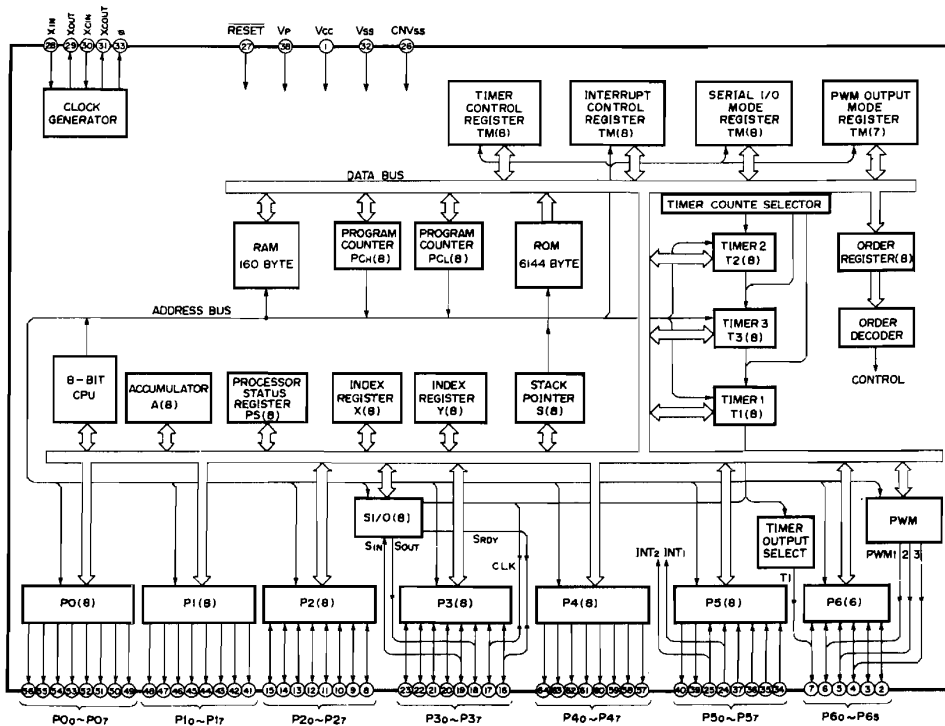
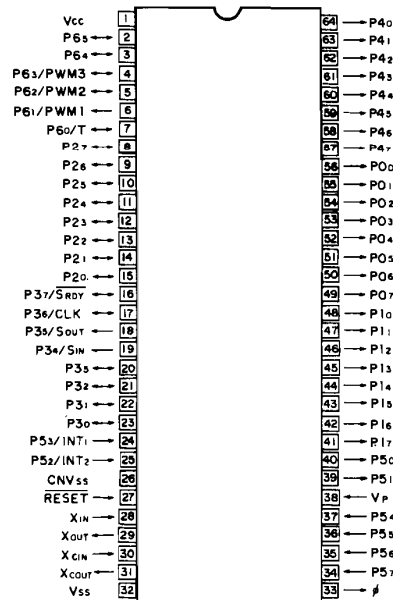
Pin No.	Pin Name	I/O	Function
23	CK		EFM Demodulated Signal Check Output (4.3218MHz, clock)
24	FEOF	O	Feed Servo System
25	FEM+	O	
26	FEM-	O	
23	CK	I/O	EFM Demodulated Signal Check Output (4.3218MHz clock)
27	DATA	I/O	
28	DSY	I/O	
29	SUB	O	Sub-code Output
30	VFSY	O	
31	RCK	I	
32	VDD		Power Supply
33	NC	I	Not Use
34	$\phi 4$		4.3218 MHz Clock
35	WQ	O	Q Code Output System
37	DOUT	O	
36	R/W	I	
39	SCK	I	
38	DIN	I	
41	VSS		GND
40	A0	O	RAM Connections
42	A1	O	
43	A2	O	
44	A3	O	
45	A4	O	
46	A5	O	
47	A6	O	
48	A7	O	
49	A8	O	
50	A9	O	
51	WE	O	
52	OE	O	
53	A10	O	
54	D8	I O	
55	D7	I O	
56	D6	I O	
57	D5	I O	
58	D4	I O	
59	D3	I O	
60	D2	I O	
61	D1	I O	
62	DEP	O	Deemphasis Signal
63	DTFLG	O	Data Error Signal
66	SDO	O	Digital Data Output LSB first/MSB first
67	SDSY	O	2.1659MHz Clock SB first (H)/MSB first (L) Switch for SDO
68	$\phi 2$	O	
69	L M	I	
71	TESTC	I	
64	NC	O	Not Use
65	SDSYMD	O	BB Word Clock for DAC
76	SAMPR	O	Deglitch Signal
77	SAMPL	O	
34	$\phi 4$	O	4.3218MHz Clock
18	TESTD	I	Test Terminal
70	TESTB	I	
74	TCL	I	
72	VDD		Power Supply
73	EFLG	O	C1, C2 Error Correction Check Signal
75	XFSY	I/O	Synchronized Clock Signal
78	VSS		GND
79	XIN	I	Clock Oscillation
80	XOUT	O	

IC805: M50753-402SP (8 bit μ -COM)



Pin No.	Pin Name	I/O	Function
1	AV _{ss}	—	A/D GND
2	INO	I	A/D
3	V	—	A/D Vref 5V
4	AV _{cc}	—	A/D V _{cc} 5V
5	PWM	O	—
6	NC	—	—
7	P2 ₇	I/O	Linear Motor Drive
8	P2 ₆		
9	P2 ₅		
10	P2 ₄		
11	P2 ₃		
12	P2 ₂		
13	P2 ₁		
14	P2 ₀		
15	P3 ₇ /SRDY		DM FG Pulse
16	P3 ₆ /CLK		Serial I/O CLK
17	P3 ₅ /SOUT	I/O	Serial OUT (TO SPC)
18	P3 ₄ /SIN		Serial IN (from SPC)
19	P3 ₃		R/W
20	P3 ₂		WQ
21	P3 ₁		DM Servo select
22	P3 ₀		TR Servo select
23	CNTR		Track Count
24	INT ₁		—
25	INT ₂		—
26	CNV _{ss}	I	—
27	RESET	O	RESET
28	XIN		Clock Input
29	XOUT		—
30	φ		—
31	RESETOUT		—
32	(OV)V _{ss}	—	GND
33	NC	—	—
34	2 φ	O	—
35	P4 ₃	I/O	TRACK Servo Gain Control
36	P4 ₂		LOADING OUT SW
37	P4 ₁		MUTING Output
38	P4 ₀		LASER Output
39	NC	—	—
40	PI ₇	I/O	FLAPPER IN SW Input
41	PI ₆		FLAPPER OUT SW Input
42	PI ₅		DISPLAY DATA CLK Output
43	PI ₄		DISPLAY DATA START Signal output
44	PI ₃		
45	PI ₂		
46	PI ₁		
47	PI ₀		DM — Output
48	PO ₇		DM + Output
49	PO ₆		KP — Output
50	PO ₅		KP + Output
51	PO ₄	I/O	FLAPPER IN Output
52	PO ₃		FLAPPER OUT Output
53	PO ₂		LOADING IN Output
54	PO ₁		LOADING OUT Output
55	PO ₀		—
56	V _{cc}	—	—
57	IN ₇	I	LOADING IN SW Input
58	IN ₆		KEY Input
59	IN ₅		
60	IN ₄		
61	IN ₃		
62	IN ₂		
63	IN ₁		
64	IN ₀		

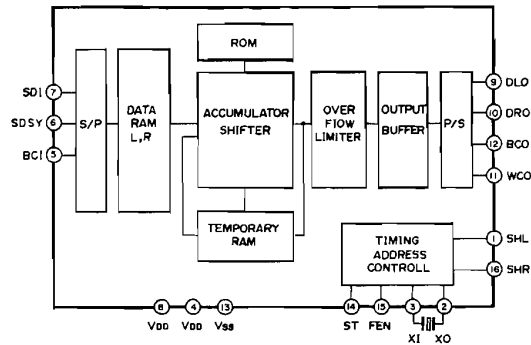
IC1: M50754-404SP (8 bit μ -COM)



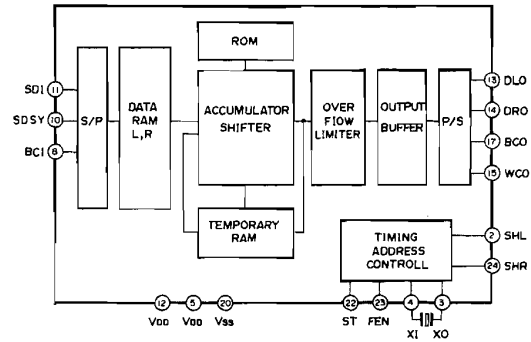
Pin No.	Pin Name	I/O	Function
1	V _{CC}		V _{CC}
2	P6 ₅	I/O	U T } DISPLAY SEGMENT
3	P6 ₄		
4	P6 ₃ /PWM3		
5	P6 ₂ /PWM2		VOLUME UP
6	P6 ₁ /PWM1	O	VOLUME DOWN
7	P6 ₀ /T		S V } DISPLAY SEGMENT
8	P2 ₇	I/O	} DISPLAY DATA INPUT
9	P2 ₆		
10	P2 ₅		
11	P2 ₄		
12	P2 ₃		DISPLAY DATA START Signal output
13	P2 ₂		DISPLAY DATA CLK Signal output
14	P2 ₁		DISPLAY SEGMENT (K,W)
15	P2 ₀		POWER OFF detect
16	P3 ₇ /SRDY		} KEY CODE OUTPUT
17	P3 ₆ /CLK		
18	P3 ₅ /SOUT	O	
19	P3 ₄ /SIN	O	
20	P3 ₃	I/O	} DISPLAY MODE BACKUP ON/OFF
21	P3 ₂		
22	P3 ₁		
23	P3 ₀		} REMOCON INPUT
24	P5 ₃ /INT ₁	I	
25	P5 ₃ /INT ₂		
26	CNV _{SS}		GND
27	RESET	I	RESET
28	XIN		CLOCK INPUT
29	XOUT	O	
30	XCIN	I	
31	XCOUT	O	
32	X _{SS}		GND
33	φ	O	
34	P5 ₇	I	K3 K2 K1 K0 } KEY INPUT
35	P5 ₆		
36	P5 ₅		
37	P5 ₄		
38	V _D		FL DRIVE -30V : VP
39	P5 ₁		DISPLAY SEGMENT : R
40	P5 ₀	O	G8 G9 G7 G6 G5 } DIGIT SIGNAL G4 G3 G2 G1
41	P1 ₇		
42	P1 ₆		
43	P1 ₅		
44	P1 ₄		
45	P1 ₃		
46	P1 ₂		
47	P1 ₁		
48	P1 ₀		Q P } DISPLAY SEGMENT
49	PO ₇		
50	PO ₆		O N M L J I H G F E D C B A } DISPLAY SEGMENT
51	PO ₅		
52	PO ₄		
53	PO ₃		
54	PO ₂		
55	PO ₁		
56	PO ₀		
57	P4 ₇		
58	P4 ₆		
59	P4 ₅		
60	P4 ₄		
61	P4 ₃		
62	P4 ₂		
63	P4 ₁		
64	P4 ₀		

IC809: YM3404DF or YM3619DF (16 bit over sampling digital filter)

● YM3404DF



● YM3619DF



YM3619 Pin No.	YM3404 Pin No.	Pin-Name	I/O	Function
11	7	SDI	I	Encoded digital signal serial input
10	6	SDSY	I	Distinction between Lch and Rch, Data input timing
8	5	BCI	I	Bit clock input for input data
4	3	XI	I	Clock OSC. 196 fs = 17.2872MHz or 192 fs = 16.9344 MHz
3	2	XO	O	
22	14	ST	I	1DAC = "L" 2DAC = "H" Switch input
23	15	FEN	I	System clock switch input 196 fs = "L" 192 fs = "H"
13	9	DLO	O	1DAC: L, Rch Data input 2DAC: Lch Data input
14	10	DRO	O	Rch Data output
15	11	WCO	O	Word clock for output data (DLO, DRO)
17	12	BCO	O	Bit clock for output data and system clock output for SPC II 98 fs = 8.6436MHz or 96 fs = 8.4672MHz
2	1	SHL	O	1DAC: Lch deglitch signal output 2DAC: L, Rch deglitch signal output
24	16	SHR	O	1 DAC: Rch deglitch signal output
12	8	VDD ₁		Power supply +5V for digital signal
5	4	VDD ₂		Power supply for clock and deglitch signal
20	13	VSS		GND

■ IC BLOCK

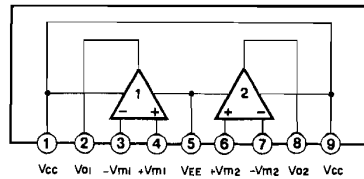
IC101, 103 ~ 109: AN6551, NJM4558S, TA75558S or BA715

IC102: NJM4560S

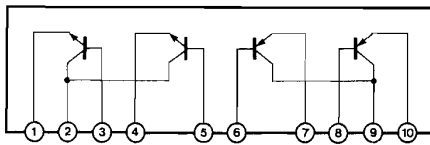
IC607 ~ 610: NJM5532S

IC611: NJM4556S

(Dual Ope-Amp)

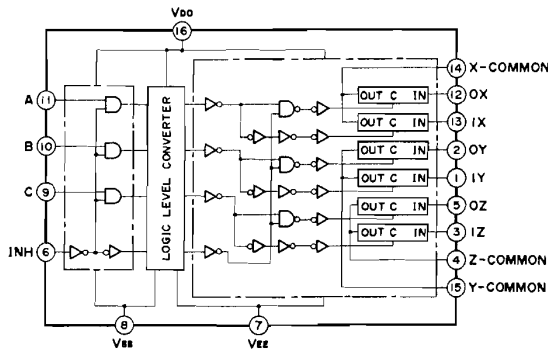


IC111: STA451C (Transistor Array)



IC110: TC4053BP, μ PD4053, HD14053 or MN4053BP

(Triple-2 channel Multiplexer/Demultiplexer)

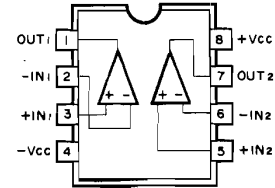


CONTROL INPUTS				"ON" CHANNEL
INHIBIT (Pin 6)	C (Pin 9)	B (Pin 10)	A (Pin 11)	0X (Pin 12), 0Y (Pin 2), 0Z (Pin 5) 1X (Pin 13), 1Y (Pin 1), 1Z (Pin 3)
L	L	L	L	0X, 0Y, 0Z
L	L	L	H	1X, 0Y, 0Z
L	L	H	L	0X, 1Y, 0Z
L	L	H	H	1X, 1Y, 0Z
L	H	L	L	0X, 0Y, 1Z
L	H	L	H	1X, 0Y, 1Z
L	H	H	L	0X, 1Y, 1Z
L	H	H	H	1X, 1Y, 1Z
H	*	*	*	NOTE

* Don't Care

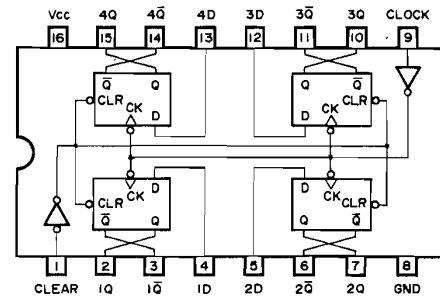
IC503: NJM2043M (T1) or AN6558S

(Dual Ope-Amp)



IC602: TC74HC175P or MC74HC175N

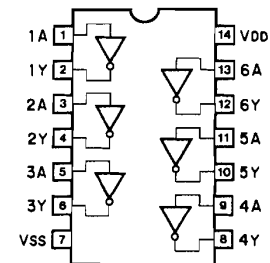
(Quad D-Type Flip-Flop with Clear)



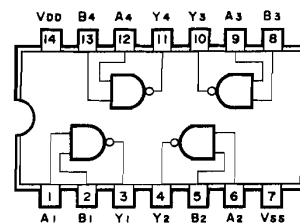
IC603, 810: TC74HC04P or MC74HC04N

IC803: TC4069B

(Hex Inverter)

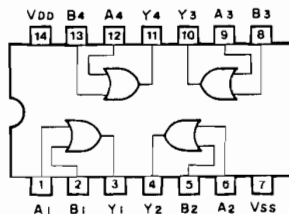


IC808: TC74HC00P
(Quad 2 Input NAND)



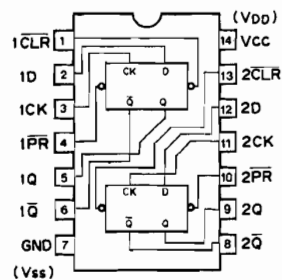
IC801: TC4071BP

(Quadruple 2-Input OR Gate)

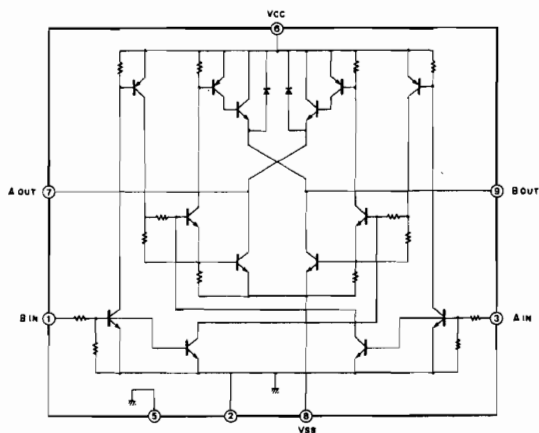


IC802: TC74HC74P

(Dual D Flip-Flop with Preset and Clear)



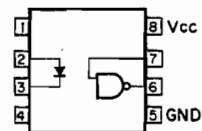
IC804: BA6218 (Motor Driver)



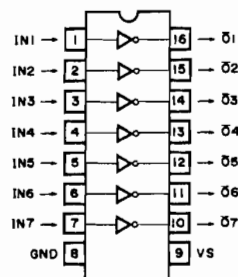
IC811 ~ 814: PC910J

IC815 ~ 817: TLP552

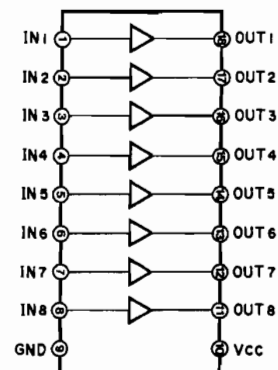
(Photo Coupler)



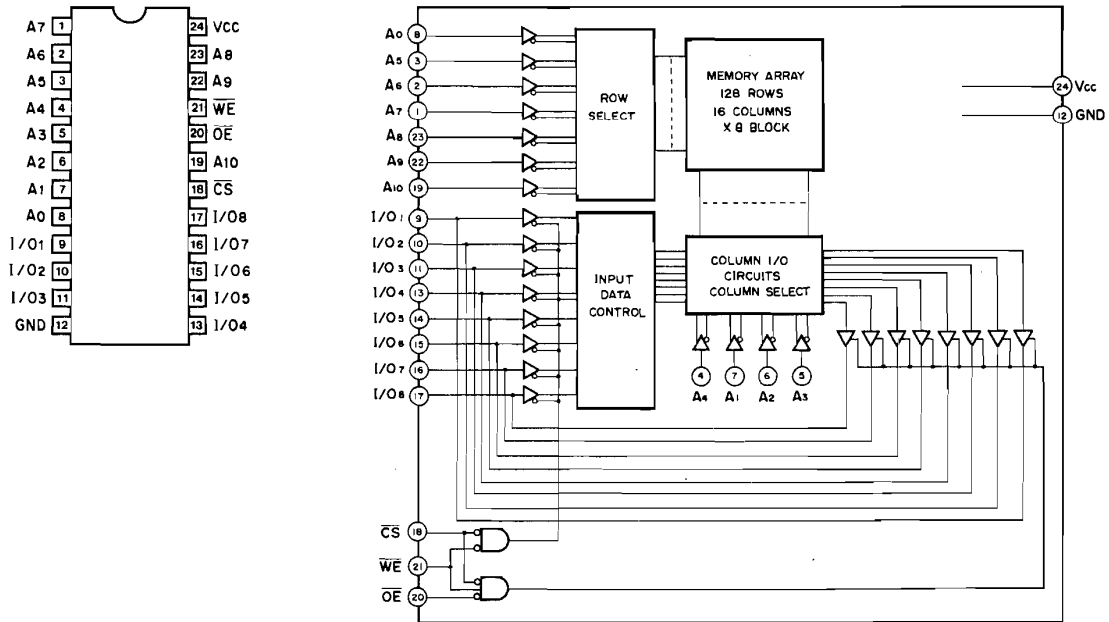
IC2: M54580P (LED Driver)



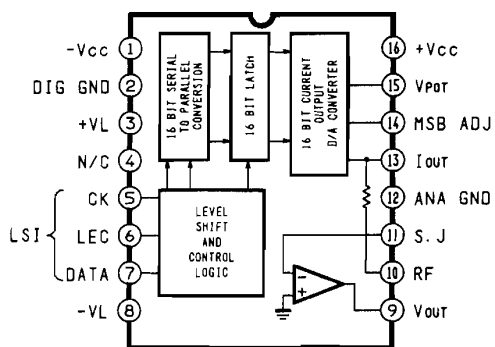
IC3: M54564P (LED Driver)



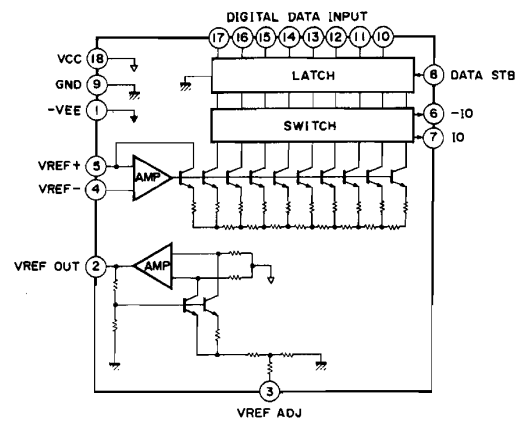
IC502: MSM5128-20GS, HM6116FP-4 or CXK5816M
(RAM)



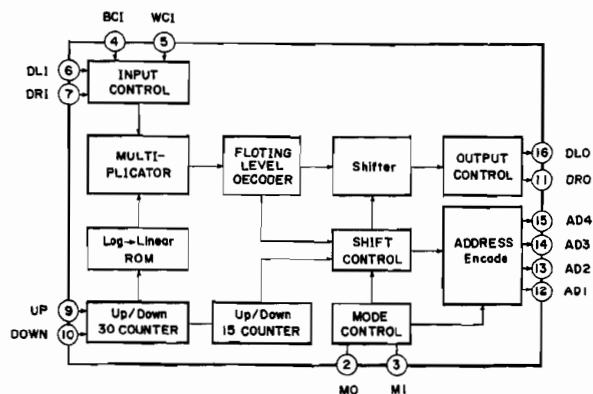
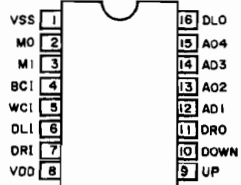
IC605, 606: PCM56P-K (D/A Converter)



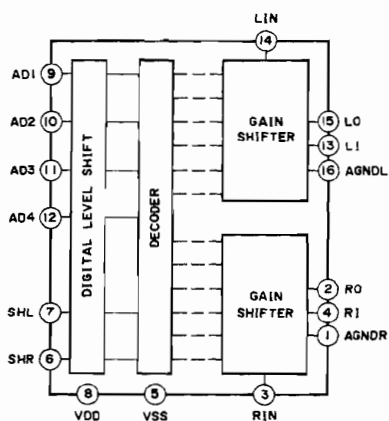
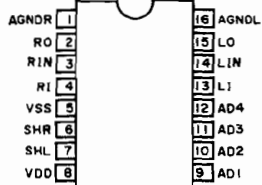
IC806: BA9201 (8 bit D/A Converter)



IC601: YM3615 (Digital Volume Controller)

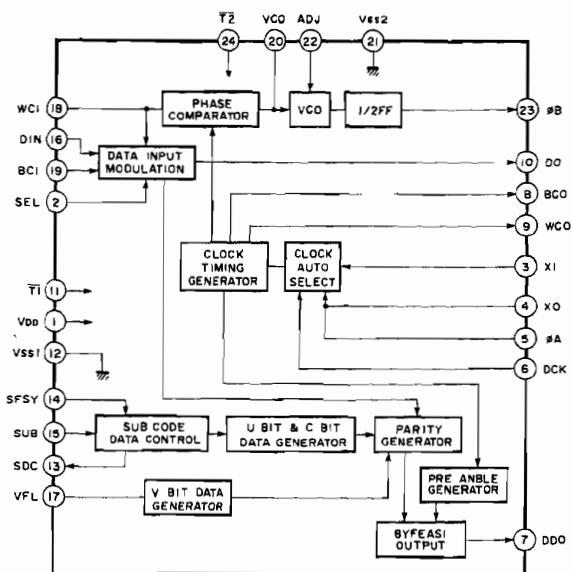
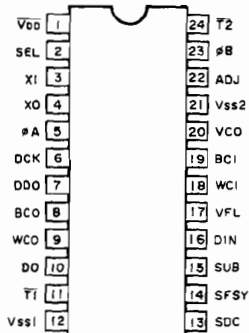


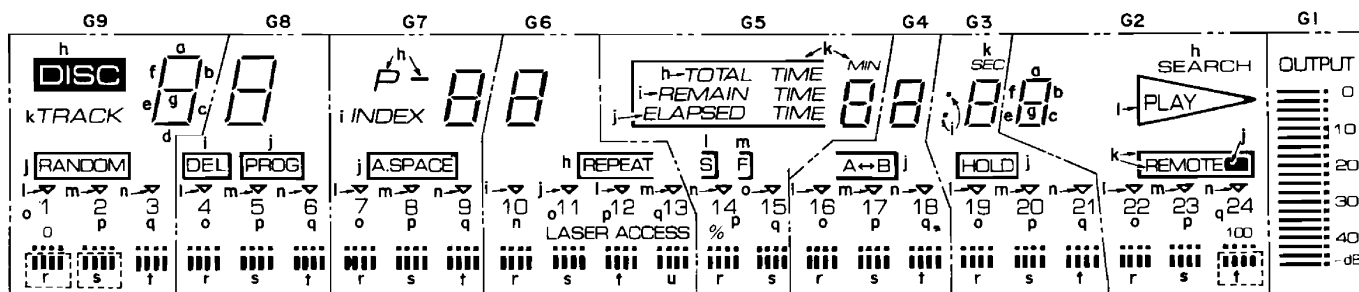
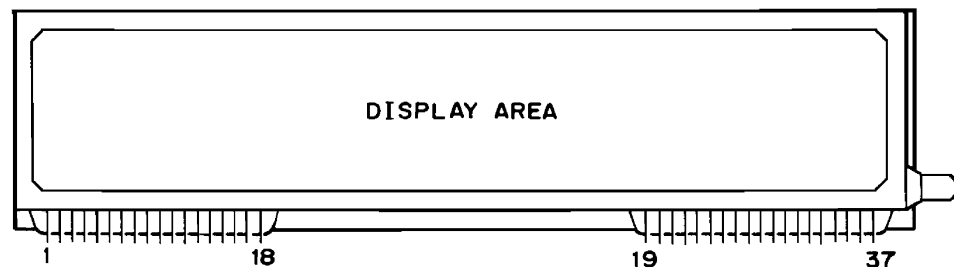
IC604: YM3023 (Gain Shifter)



IC807: YM3613

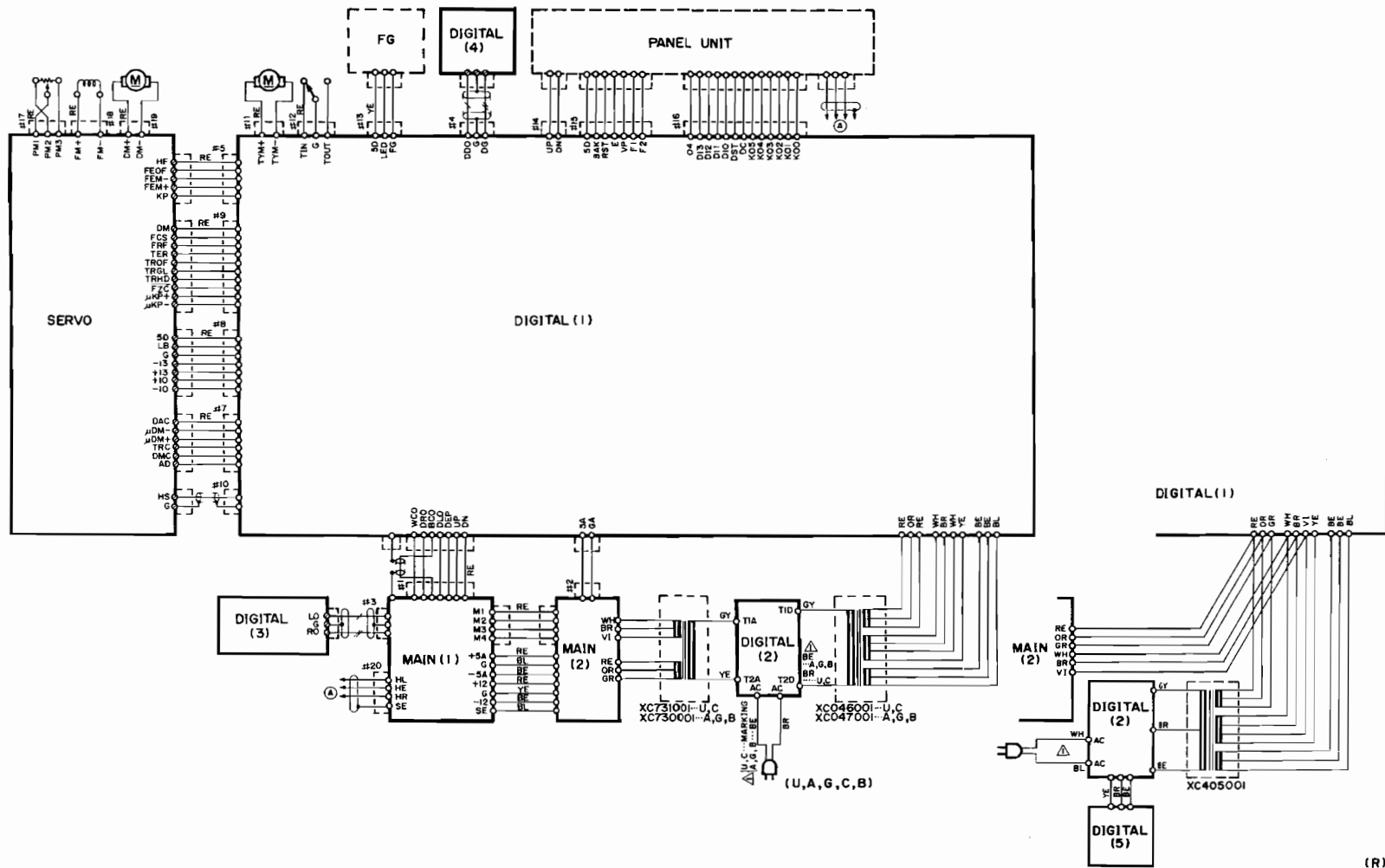
(Digital Audio Interface Transmitter)





Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Assignment	F	F	Pk	Ph	Pl	Pm	Pn	Po	Pp	Pq	Pv	Pr	Ps	G9	G8	Pt	G7	G6	G5	G4
Pin No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37			
Assignment	G3	Pu	G2	Pj	Gl	Pk	Pd	Pc	Pi	Pw	Pe	Pg	Pf	Pb	Pa	F	F			

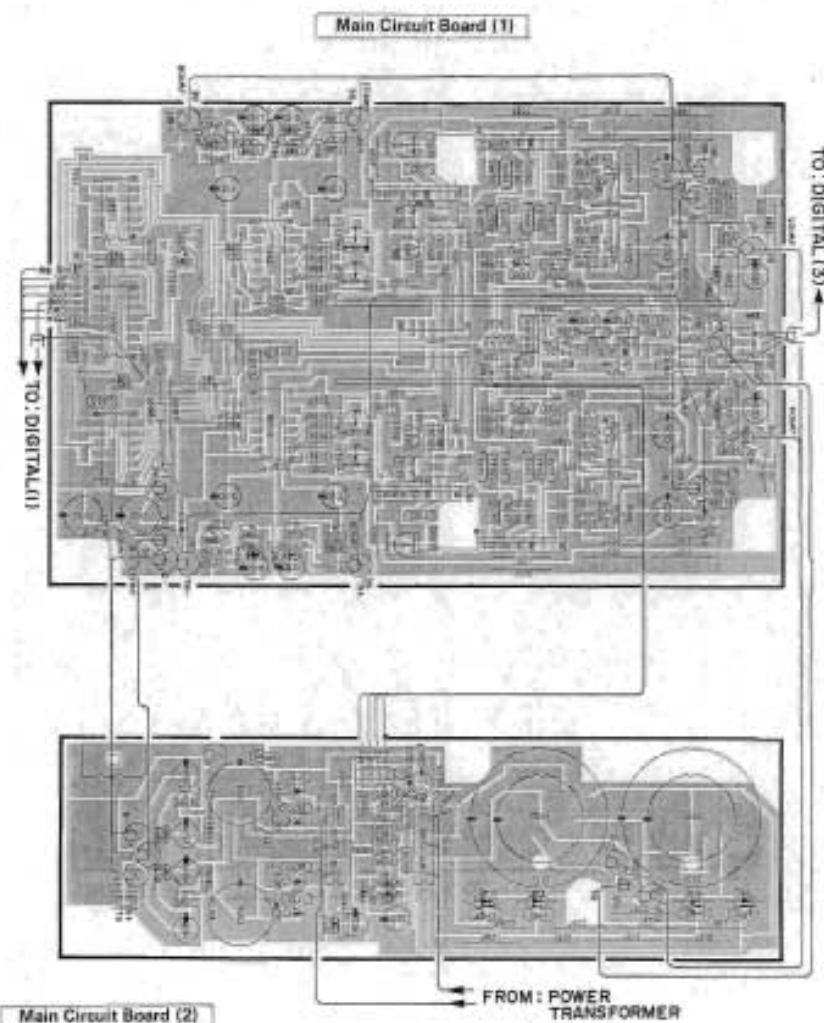
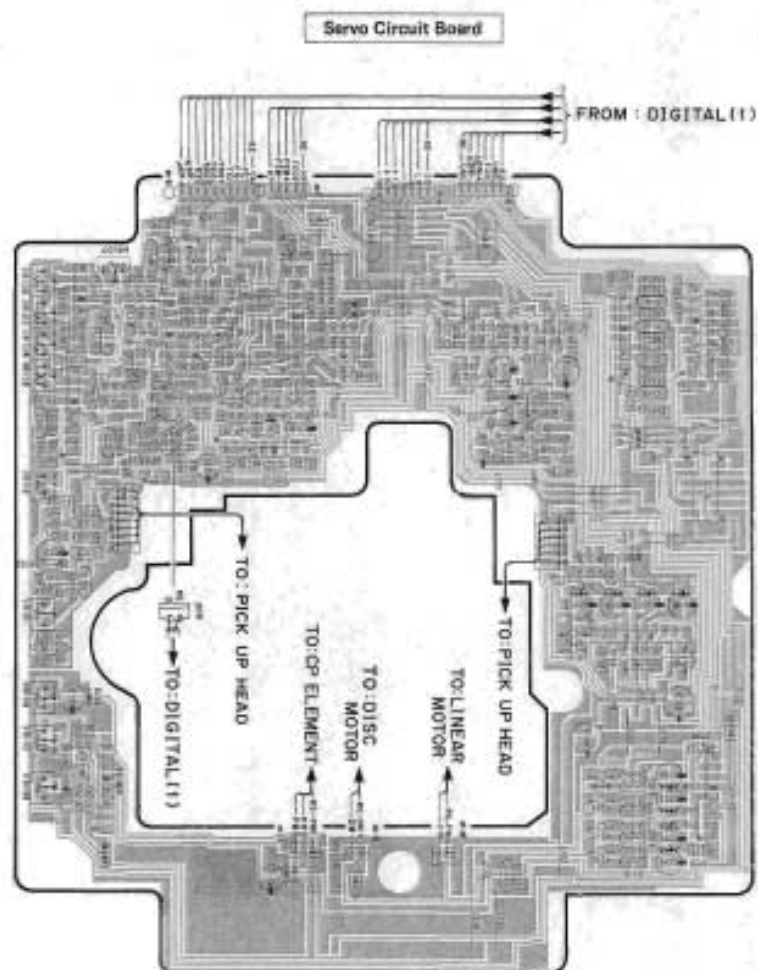
WIRING



(R)

■ PRINTED CIRCUIT BOARD (Pattern side)

※ 実字面 : Component side

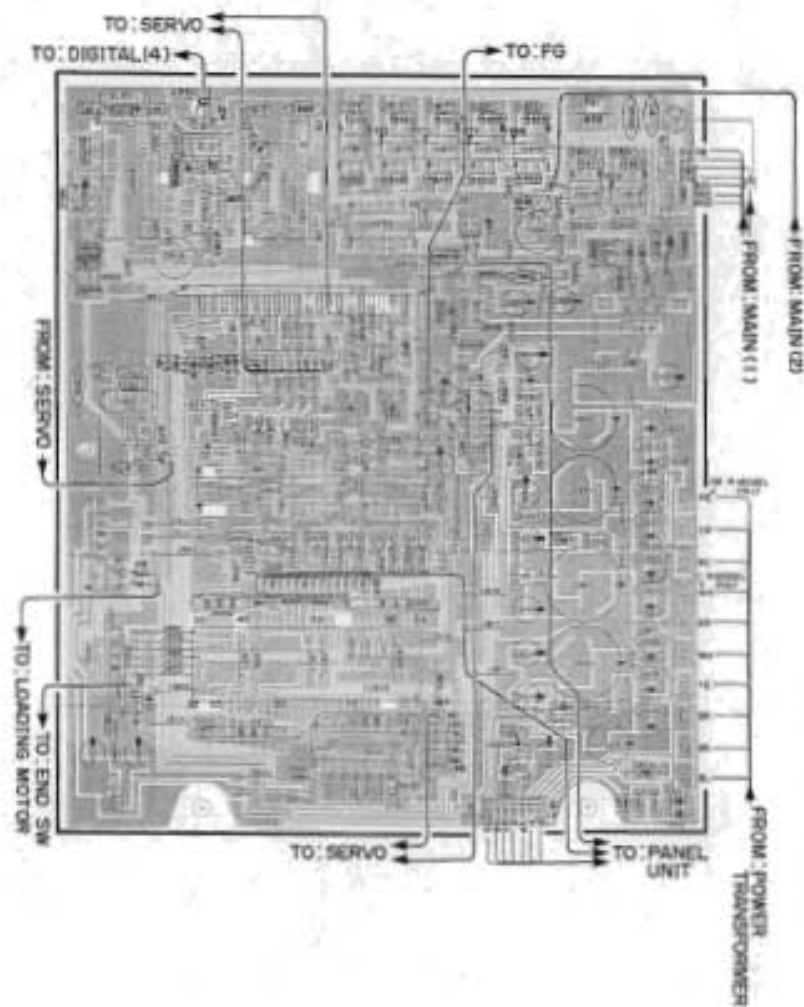


CDX-1100/CDX-1100U

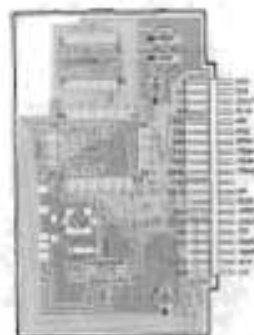
■ PRINTED CIRCUIT BOARD (Pattern side)

Note) 実寸図 : Component side

Digital Circuit Board (1)

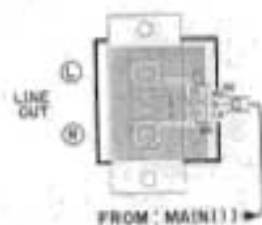


SPC Circuit Board Parts

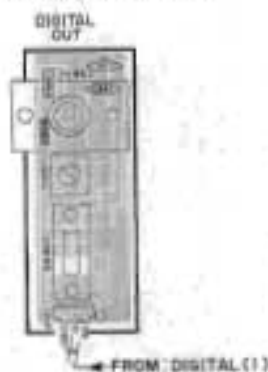


■ PRINTED CIRCUIT BOARD (Pattern side)

Digital Circuit Board (3)

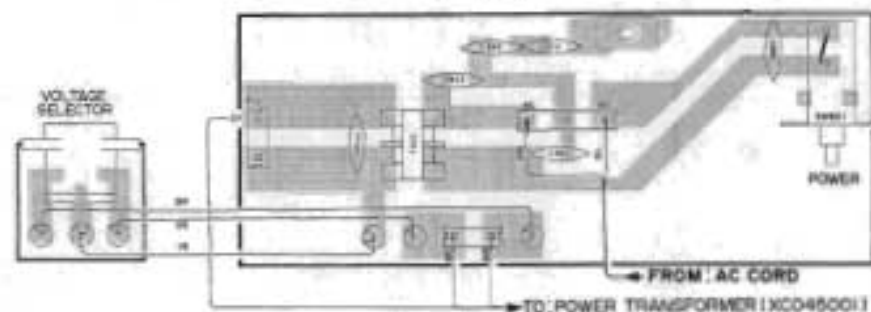


Digital Circuit Board (4)

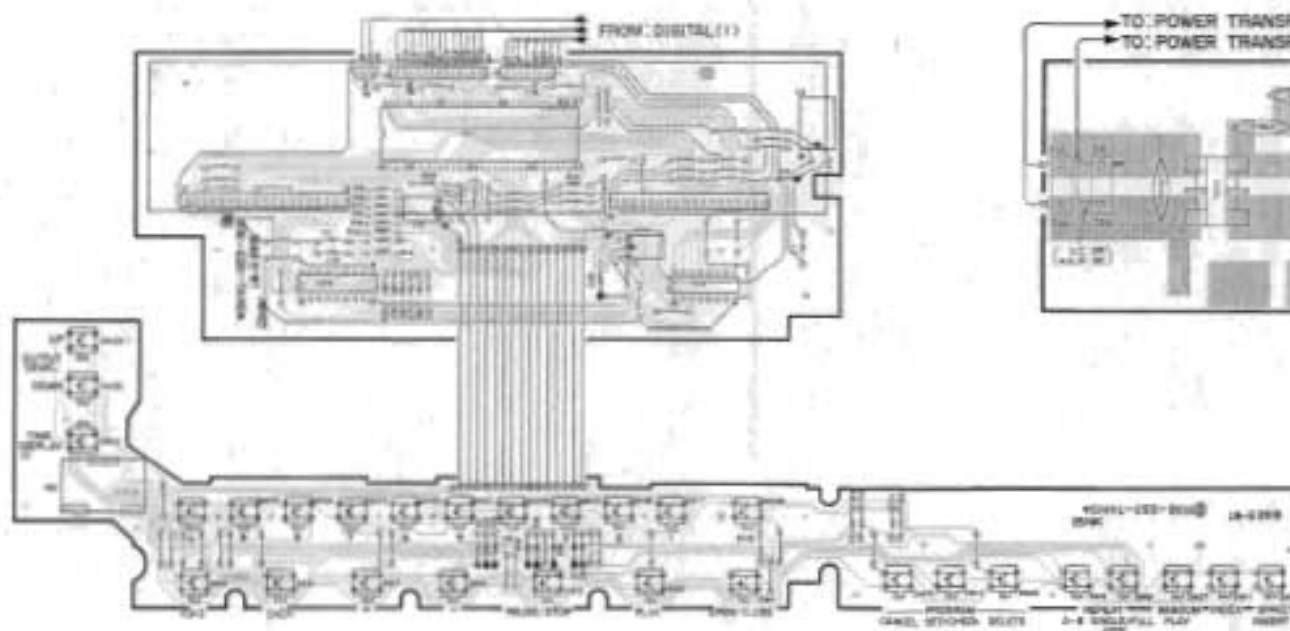


Digital Circuit Board (2)

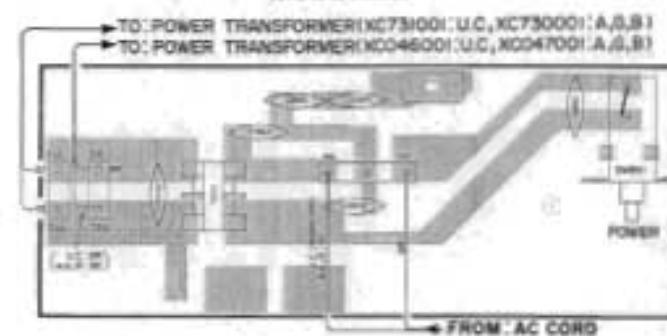
R model



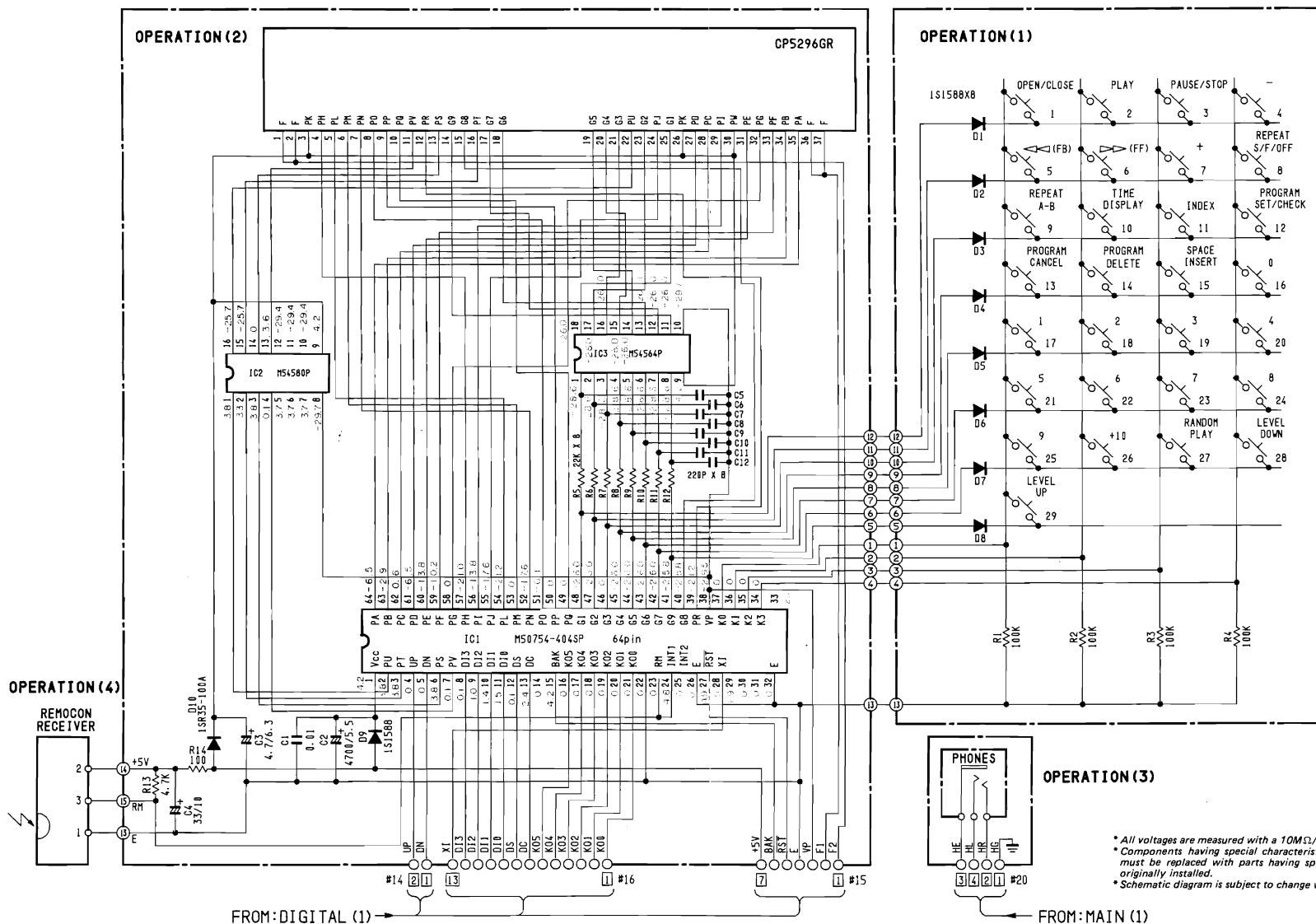
Operation Circuit Board



U, A, G, C, S models

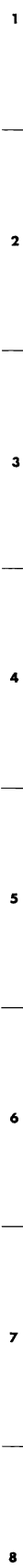


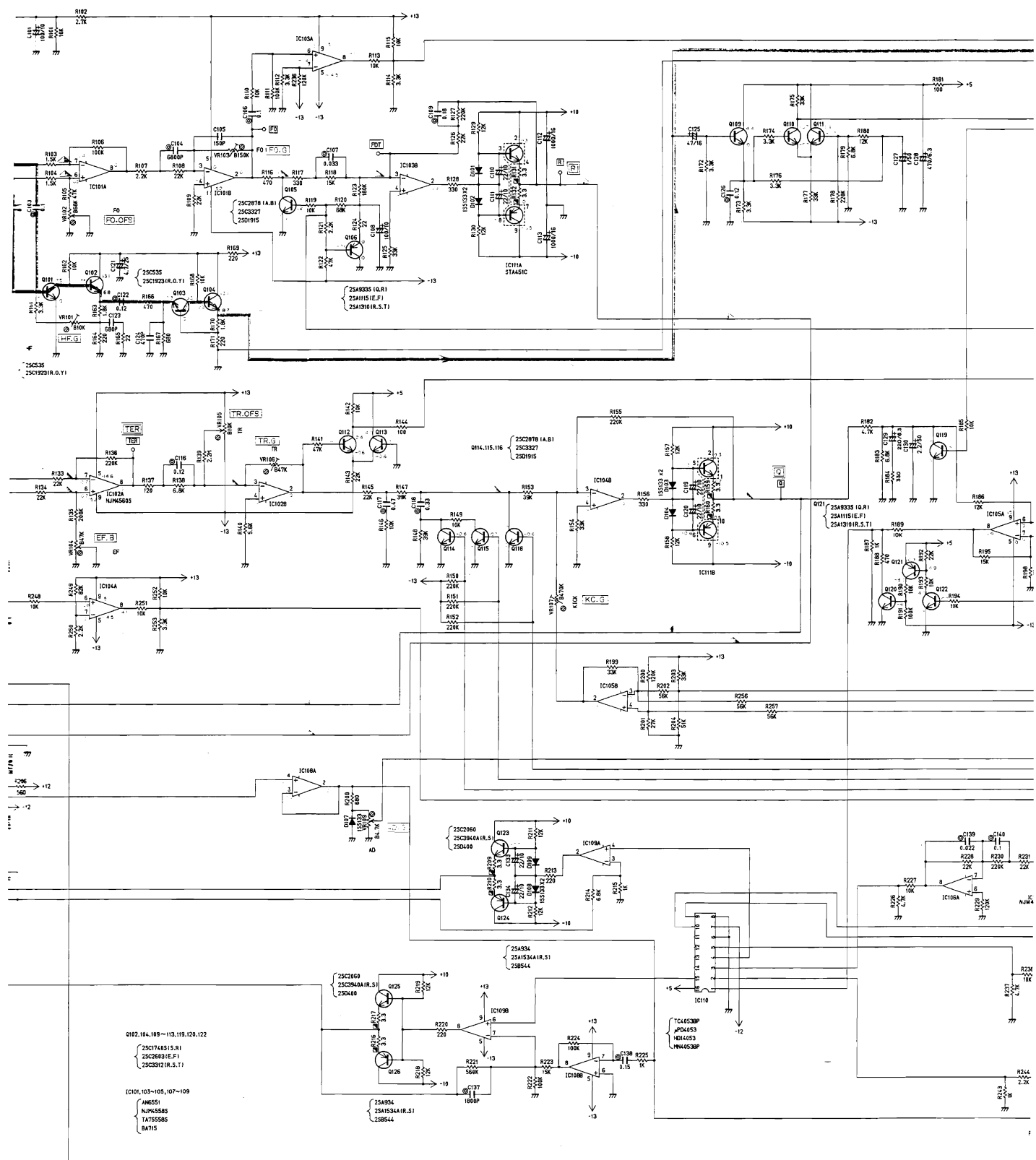
SCHEMATIC DIAGRAM (1/4)

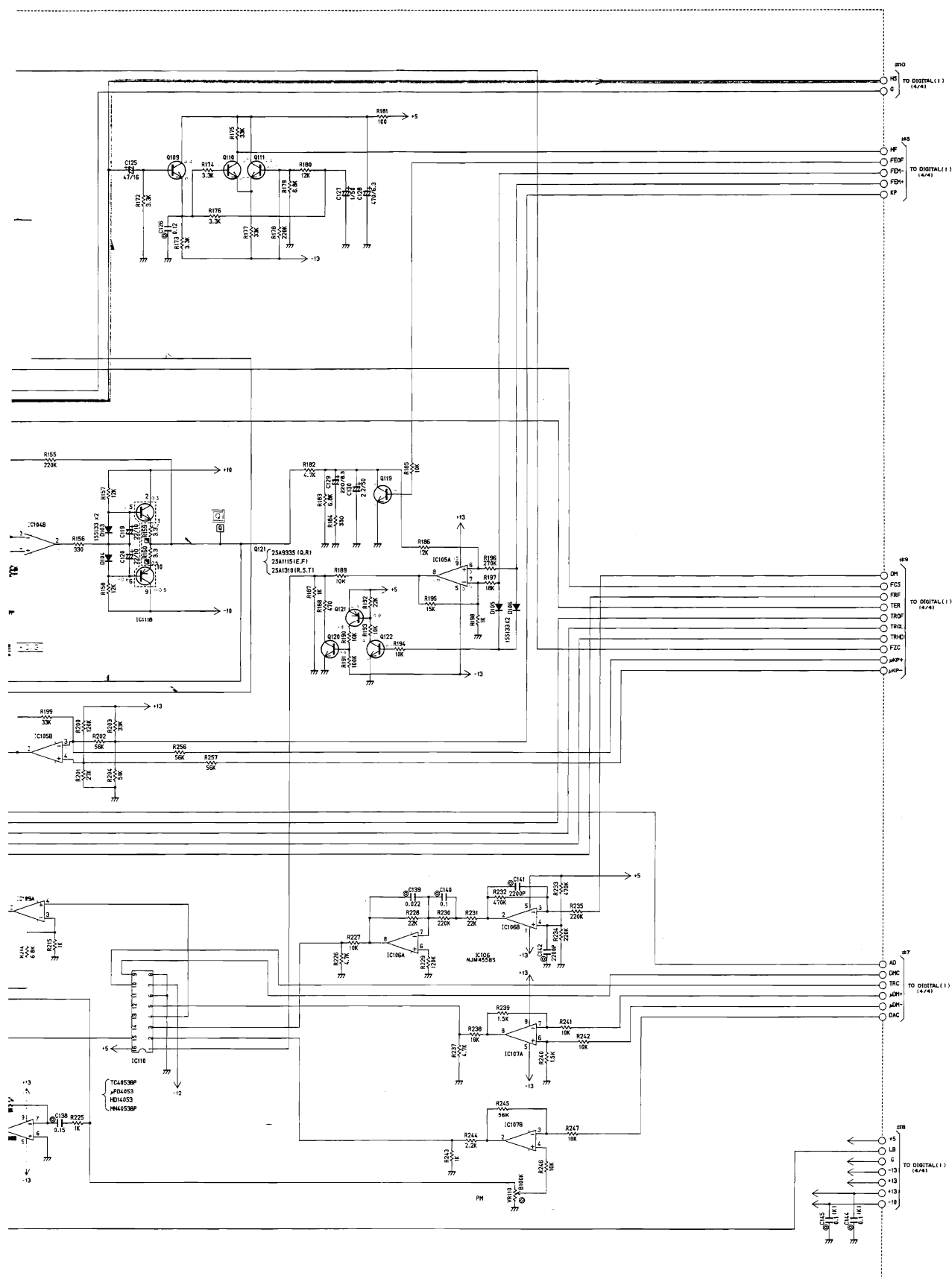


* All voltages are measured with a 10MΩ/DC electric volt meter.
 * Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
 * Schematic diagram is subject to change without notice.

A	B	C	D	E
---	---	---	---	---







Signal Flow
 ➔ DISC SIGNAL
 ▲ FOCUS SERVO
 ▲ TRACKING SERVO

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

■ SCHEMATIC DIAGRAM (3/4)

•RESISTOR

REMARKS	PARTS NAME
NO MARK CARBON FILM RESISTOR	
□ CARBON FILM RESISTOR (1/5W)	
△ METAL OXIDE FILM RESISTOR	
▲ METAL FILM RESISTOR	
▢ METAL PLATE RESISTOR	
■ FIRE PROOF CARBON FILM RESISTOR	
□ CEMENT MOLDED RESISTOR	
⊗ SEMI VARIABLE RESISTOR	

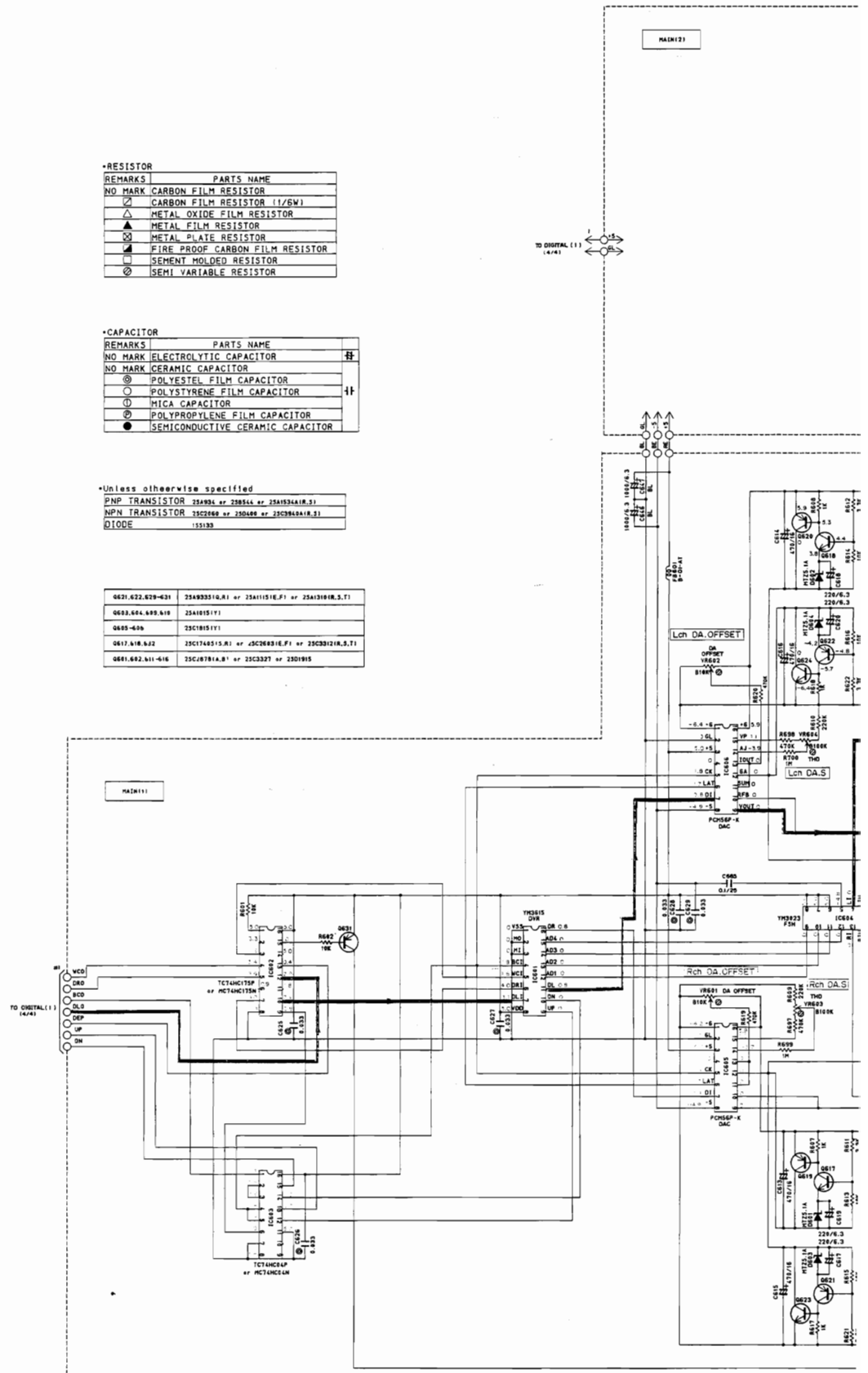
•CAPACITOR

REMARKS	PARTS NAME
NO MARK ELECTROLYTIC CAPACITOR	⊕
NO MARK CERAMIC CAPACITOR	
⊙ POLYESTER FILM CAPACITOR	⊕
○ POLYSTYRENE FILM CAPACITOR	
① MICA CAPACITOR	
⊙ POLYPROPYLENE FILM CAPACITOR	
● SEMICONDUCTIVE CERAMIC CAPACITOR	

•Unless otherwise specified

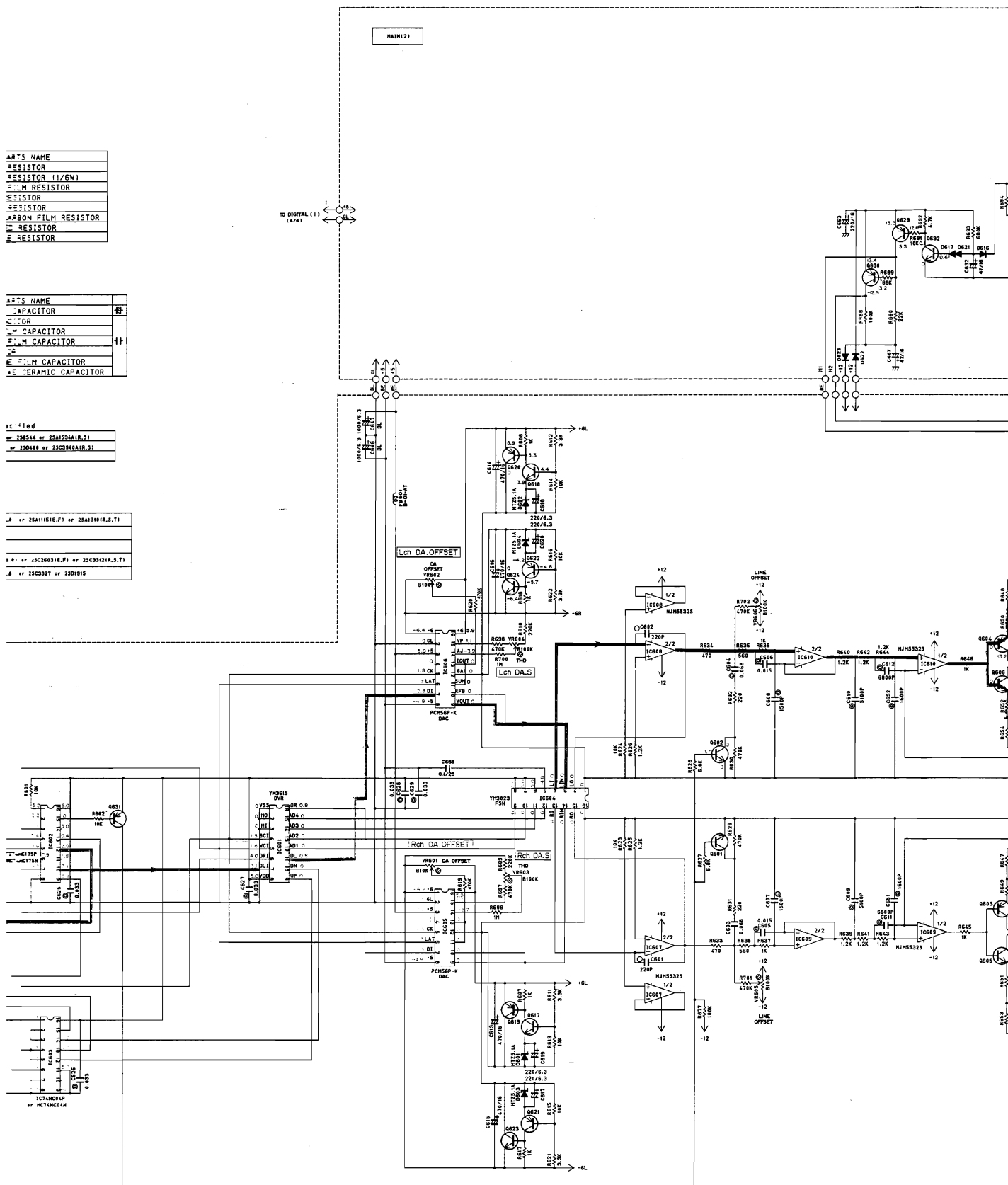
PNP TRANSISTOR	2SA494 or 2SB44 or 2SA1344A(1R.3)
NPN TRANSISTOR	2SC2680 or 2SD480 or 2SC3940A(1R.3)
DIODE	1SS135

0621,622,629-631	2SA9303(1R.3) or 2SA1151E(F) or 2SA1310(1R.3,T)
0622,624,629,610	2SA1051(F)
0625-626	2SC1815(F)
0617,618,622	2SC1745(1R.3) or 2SC2683(E,F) or 2SC3121R(3,T)
0621,622,621-616	2SC1815A(B) or 2SC3327 or 2SD1915

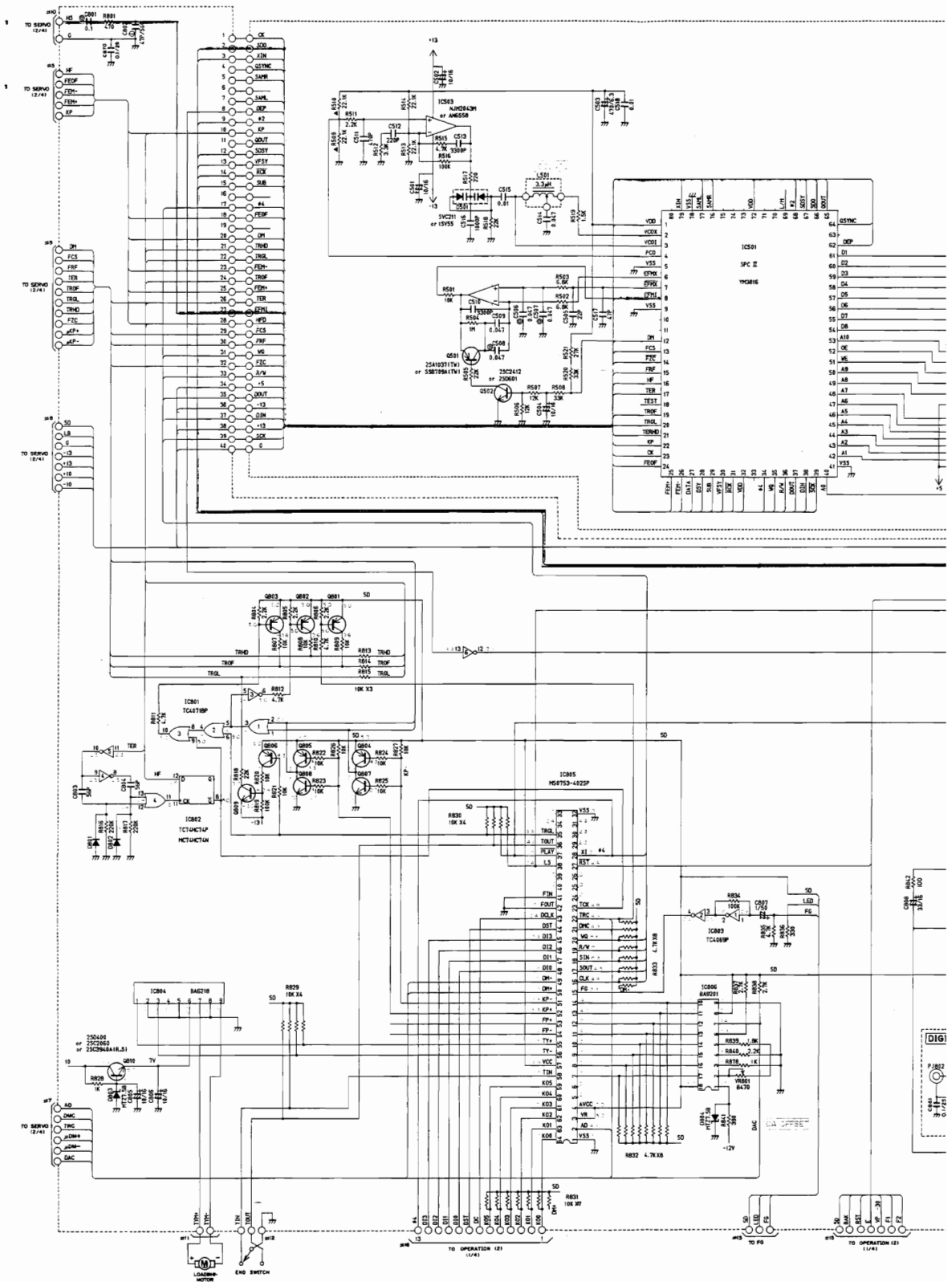


A or 25A1115(E,F) or 25A1310(R,S,T)

 B or 25C2603(E,F) or 25C3312(R,S,T)
 A or 25C3327 or 25D1015

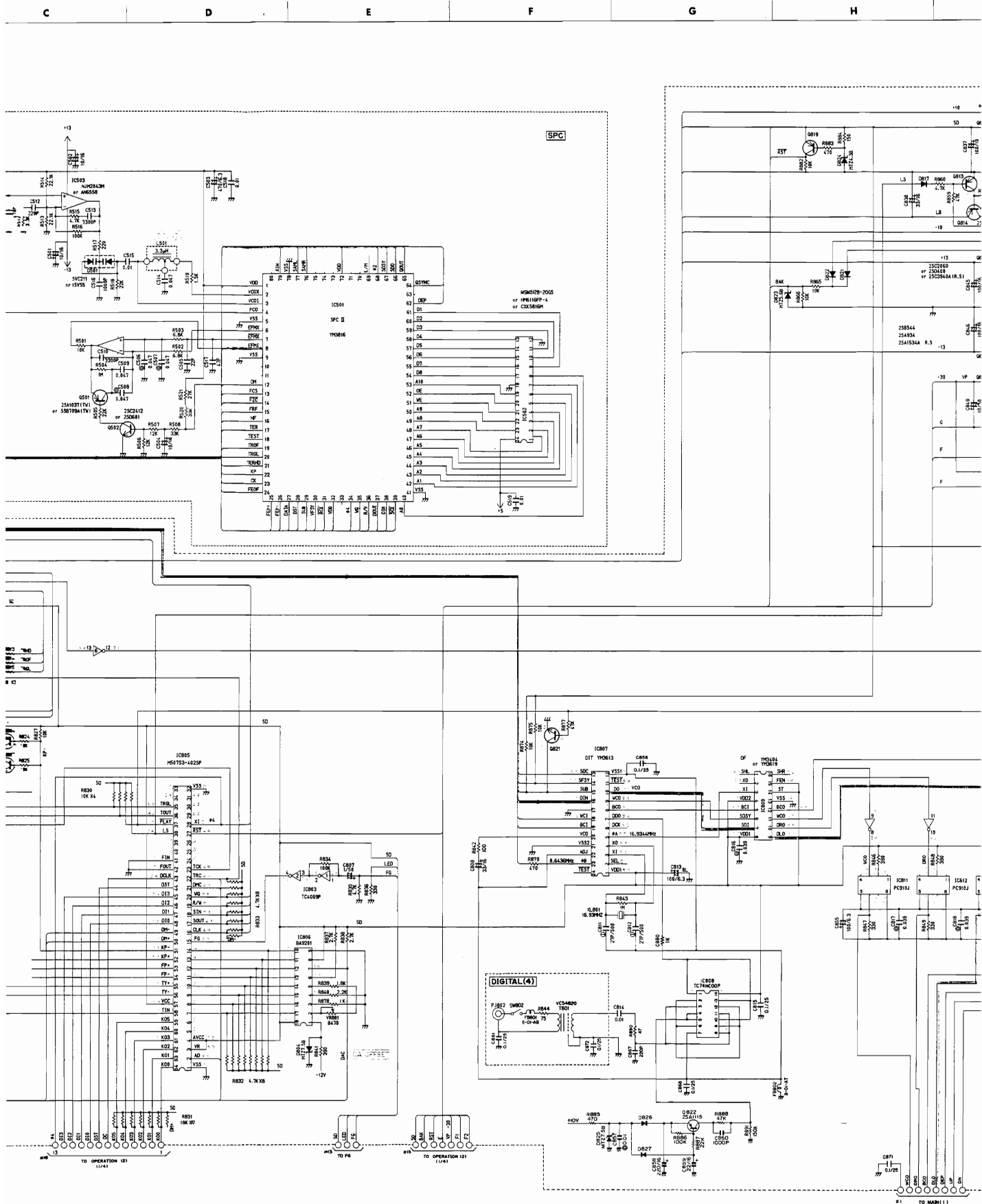


■ SCHEMATIC DIAGRAM (4/4)

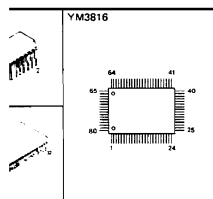


PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICs.

2SC2878 (A, B) 2SC3327 2SD1915 2SC538 2SC1923 (R, O, Y) 2SA934 2SB544 2SA1534A (R, S) 2SC9335 (O, R) 2SA1115 (E, F) 2SA1310 (R, S, T) 2SC2060 2SD400	2SC3940A (R, S) 2SC1740S (S, R) 2SC2603 (E, F) 2SC3312 (R, S, T) 2SA1015 (Y) 2SC1815 (Y)	1SS133 1SR35-100AT-93X V11J MTZ5.6B MTZ1.5B MTZ15A MTZ4.3B MTZ30C	MA2051A MTZ5.1A	NJM5532S NJM4556S ANG551 NJM4558S TA7555BS BA715 NJM4560S	NJM2043M (T1) AN6558S	MC74HC04N TC74HC04P TC74HC14P TC4071BP TC4069P	MS4564P BA9201	YM3619 YM3813 YM3023
2SA1037 (TW) 2SB709A (TW) 2SC2412 2SD601	1SV55 SVC211	BA6218	STA451C	PC910J TLP552	MS4580P uPD4053 YM3404 YM3615 TC4053BP HD14053 TC74HC175P MCT74HC175N PCM56P-K	MSM512B-20GS HM6116FP-4 CXK5816M	M50754-402S M50753-402S	



W42051A W725.1A	NJM5532S NJM4555S AN6551 NJM4558S TA7558S BA715 NJM4560S	NJM2043M (T1) AN6558S	MC74HC04N TC74HC04P TC74HC17P TC4069P	M54564P BA9201	YM3619 YM3613 YM3023	YM3616
BA6218	STA451C	PC910J TLPS52	M54580P YM3404 YM3615 TC4053BP HD14053 MC74HC175P PCM56P-K	μPD4053 MN4053BP	MSM5128-20GS HMS116FP-4 CXK5816M	M50754-402SP M50753-402SP

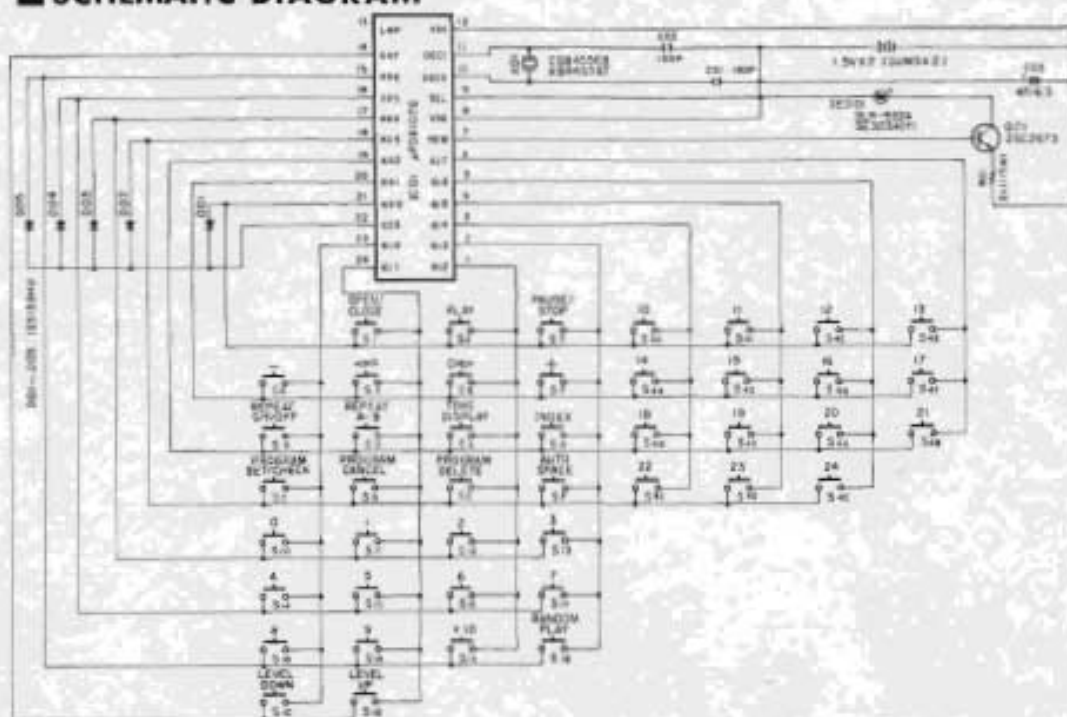


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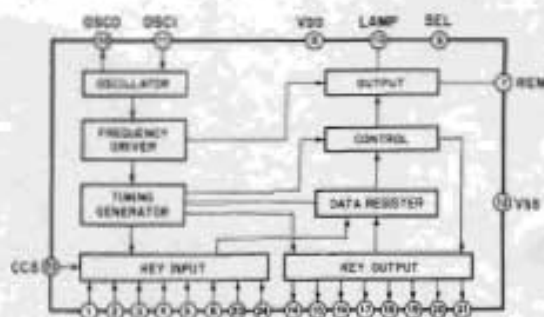
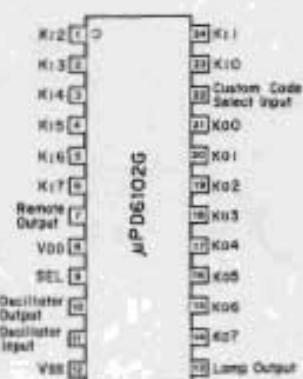
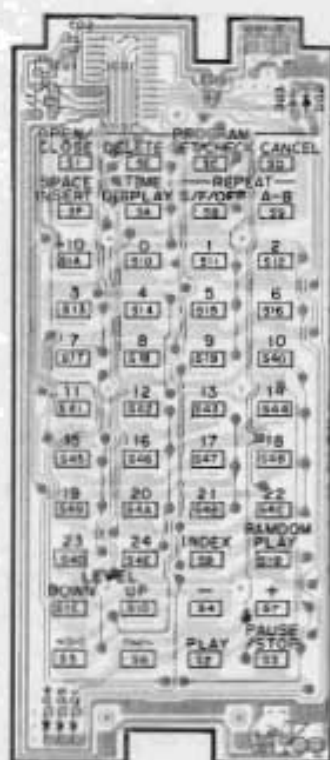
REMOTE CONTROL TRANSMITTER

CDX-1100/CDX-1100U

■ SCHEMATIC DIAGRAM



■ PRINTED CIRCUIT BOARD(Pattern side)



PARTS LIST

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 (1/6W or 1/4W) are not included in the ELECTRICAL PARTS list. For the parts No. of the carbon resistor, refer to p. 67.

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	NA 09 46 20	Digital Circuit Board	デ ジ タ ル シ ー ト			R	
※	NA 09 46 30	"	"			U.A.G.C.B	
	FC 34 41 00	Mylar Cap.	0.01 μ F 50V	マ イ ラ ー コ ン	C824~832		
	FC 34 43 90	"	0.039 μ F 50V	"	C816~822,853,854		
	FA 15 41 00	"	0.01 μ F 50V	"	C857		
	FG 21 15 60	Ceramic Cap.	56pF 50V	セ ラ コ ン	C803,804		
	VA 98 54 00	"	0.01 μ F 250V	"	C850,852		
※	VD 79 92 00	"	220pF 400V	"	C862,863		
※	VD 79 93 00	"	470pF 400V	"	C864,865		
	FG 21 22 20	"	220pF 50V	"	C867		
	FG 44 41 00	"	0.01 μ F 50V	"	C814		
	FG 41 31 00	"	1000pF 50V	"	C860		
	FU 35 12 70	Mica Cap.	27pF 500V	マ イ カ コ ン	C811,812		
	FU 35 14 70	"	47pF 500V	"	C802		
	FZ 00 49 40	Mylar Cap.	0.1 μ F 50V	銅 リード マイ ラ ー コ ン	C801		
	FZ 00 41 30	Semiconductive Ceramic Cap.	0.1 μ F 25V	半 導 体 セ ラ コ ン	C815,856,861,868~872		
※	UW 94 93 30	Electrolytic Cap.	3300 μ F 25V	オ ー ディ オ ケ ミ コ ン	C841,842		
※	Ui 93 92 20	"	2200 μ F 16V	"	C833,834		
	UJ 12 81 00	"	100 μ F 10V	ケ ミ コ ン	C837		
	UJ 13 71 00	"	10 μ F 16V	"	C805,806		
	Ui 23 72 20	"	22 μ F 16V	"	C859		
	UJ 13 73 30	"	33 μ F 16V	"	C808,838		
	UJ 13 81 00	"	100 μ F 16V	"	C843~846		
	UJ 13 82 20	"	220 μ F 16V	"	C835,836,858		
	UJ 16 61 00	"	1 μ F 50V	"	C807		
	UJ 16 71 00	"	10 μ F 50V	"	C849		
	UJ 16 81 00	"	100 μ F 50V	"	C848		
	UJ 46 83 30	"	330 μ F 50V	"	C847		
	FZ 00 54 10	"	100 μ F 6.3V	ブ ラ ッ ク ゲ ー ト コ ン	C813		
	UM 02 82 20	"	220 μ F 6.3V	オ ー ディ オ ケ ミ コ ン	C855		
	VA 77 84 00	Line Filter	1.5mH	ラ イ ン フ ィ ル タ	T802		
※	VC 54 82 00	Pulse Transformer		バ ル ス ト ラ ン ス	T801		
	VD 78 25 00	Inductor	B-01-AT	ビ ー ズ イ ン ダ ク タ	FB801,802		
	HZ 00 47 40	Resistor Array	4.7k Ω ×8	抵 抗 ア レ イ	R832,833		
	HZ 00 45 30	"	10k Ω ×4	"	R829,830		
	HZ 00 45 40	"	10k Ω ×7	"	R831		
	VB 86 10 00	Pre-Set Potentiometer	B470 Ω	半 固 定 抵 抗	VR801		
	iF 00 34 50	Diode	ISS133	ダ イ オ ード	D801,802,817,821,822,826,827		
	iH 00 14 30	"	ISR35-100A	"	D805~813		
	iX 60 41 10	Zener Diode	MTZ5.6B	ツ ェ ナ ー ダ イ オ ード	D815,823		
	iF 00 64 70	"	MTZ7.5B	"	D803,804,816,825		
	iX 60 23 70	"	MTZ15A	"	D818,819		
	iF 01 06 30	"	MTZ4.3B	"	D824		
	iF 00 91 70	"	MTZ30C	"	D820		
	VC 68 63 00	"	MA2051A	"	D814		
	iA 09 34 00	Transistor	2SA934	ト ラ ン ジ ス タ	Q814,816	Inter-changeable	
	iB 05 44 10	"	2SB544	"	"		

※New Parts (新規部品)

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	VC 46 67 00	Transistor	2SA1534A(R,S)	ト ラ ン ジ ス タ	Q817		
	iA 09 33 00	//	2SA933S(Q,R)	//	Q801~806,813,819,822	Inter-changeable	
	iA 11 15 10	//	2SA1115(E,F)	//	//		
	iX 60 31 70	//	2SA1310(R,S,T)	//	//		
	iC 20 60 00	//	2SC2060	//	Q810,815	Inter-changeable	
	iD 04 00 10	//	2SD400	//	//		
	iC 17 40 70	//	2SC1740S(S,R)	//	Q807~809,821	Inter-changeable	
	iC 26 03 10	//	2SC2603(E,F)	//	//		
	iX 60 31 80	//	2SC3312(R,S,T)	//	//		
	iC 19 83 00	//	2SC1983	//	Q812	Inter-changeable	
	iD 08 80 00	//	2SD880(O,Y)	//	//		
※	iG 00 14 40	IC	TC4071BP	I C	IC801		
	iG 00 17 20	//	TC4069P	//	IC803		
	iG 15 35 00	//	BA6218	//	IC804		
※	XB 98 00 01	//	BA9201	//	IC806		
	XC 02 90 01	//	M50753-402SP	//	IC805		
※	VD 02 57 00	Photo Coupler	PC910J	フ ォ ト カ プ ラ ー	IC811~814		
※	iK 00 04 70	//	TLP552	//	IC815~817		
	iR 00 00 00	IC	TC74HC00P	I C	IC808		
	iR 00 04 00	//	TC74HC04P	//	IC810		
	iR 00 74 00	//	TC74HC74P	//	IC802		
※	XB 70 00 01	//	YM3619	//	IC809	Inter-changeable	
※	XB 70 10 01	//	YM3404	//	//		
※	XB 70 20 01	//	YM3613	//	IC807		
※	VC 39 88 00	Quartz Crystal Unit	16.93MHz	水 晶 振 動 子	XL801		
	VC 09 79 00	Power Switch	ESB82102V-F	パ ワ ー ス イ ッ チ	SW801		
	KA 40 09 40	Slide Switch	SSB-022	ス ラ イ ド ス イ ッ チ	SW802 DIGITAL OUT		
※	VD 02 85 00	Pin Jack	1P	ピ ン ジャ ッ ク	PJ802		
※	VC 52 37 00	//	2P	//	PJ801		
	LA 00 21 40	Lapping Terminal	P=10 2P i-Type	i 型ラッピング端子板			
	LA 00 23 20	//	P=7.5 3P i-Type	//		U,A,G,C,B	
	LA 00 25 70	//	P=7.5 3P i-Type	//		R	
	LA 00 23 30	//	P=7.5 4P i-Type	//			
	LB 20 13 90	Base Pin	2P i-Type	N H ベ ー ス ピ ン			
	VB 21 89 00	//	2P i-Type	P H ベ ー ス ピ ン			
	VB 21 90 00	//	3P i-Type	//			
	VB 21 92 00	//	5P i-Type	//			
	VB 21 93 00	//	6P i-Type	//			
	VB 21 94 00	//	7P i-Type	//			
	VB 22 18 00	//	10P i-Type	//			
	LA 00 21 50	Lapping Terminal	P=10 3P i-Type	i 型ラッピング端子板			
	LB 91 80 20	Base Pin	2P i-Type	X H ベ ー ス ピ ン			
	LB 91 80 30	//	3P i-Type	//			
	BA 09 29 70	Heat Sink		放 熱 板			
	ED 33 00 86	Binding Head Screw	3×8 FCRM3-BI	バ イ ン ド 小 ネ ジ	PACK		
	BB 06 95 10	Ground Plate		ラ ン ド 金 具			
	VD 17 17 00	Plain Washer		平 座 金			
※	NA 09 25 70	SPC Circuit Board		S P C シ ー ト			

※New Parts (新規部品)

CDX-1100/CDX-1100U

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
	LA 00 58 10	Voltage Selector	電 圧 切 換 器			R	△
※	NA 09 25 70	SPC Circuit Board	S P C シ ー ト				
	UD 11 33 30	Chip Ceramic Cap.	3300pF 50V チ ッ プ セ ラ コ ン	C510,513			
	UD 11 41 00	//	0.01μF 50V //	C515,518,519			
	UD 11 44 70	//	0.047μF 50V //	C506~509,514			
	VB 37 18 00	//	22pF 50V //	C505			
	VB 37 26 00	//	47pF 50V //	C517			
	VB 37 38 00	//	220pF 50V //	C512			
	VB 37 42 00	//	470pF 50V //	C511			
	VB 37 46 00	//	1000pF 50V //	C516			
	UJ 11 84 70	Electrolytic Cap.	470μF 6.3V ケ ミ コ ン	C503			
	UJ 13 71 00	//	10μF 16V //	C501,502,504			
	GE 90 20 00	OSC Coil	3.3μH 発 振 コ イ ル	L501			
	VB 36 97 00	Chip Jamper	チ ッ プ ジ ャ ン パ ー	J501			
	VB 35 88 00	Chip Resistor	220Ω 1/8W チ ッ プ 抵 抗	R517			
	VB 36 08 00	//	1.5kΩ 1/8W //	R519			
	VB 36 12 00	//	2.2kΩ 1/8W //	R511			
	VB 36 16 00	//	3.3kΩ 1/8W //	R512			
	VB 36 21 00	//	4.7kΩ 1/8W //	R515			
	VB 36 25 00	//	6.8kΩ 1/8W //	R502,503			
	VB 36 29 00	//	10kΩ 1/8W //	R501			
	VB 36 31 00	//	12kΩ 1/8W //	R506,507			
	VB 36 37 00	//	22kΩ 1/8W //	R505,518			
	VB 36 39 00	//	27kΩ 1/8W //	R521			
	VC 31 66 00	Chip Metal Film Resistor	22.1kΩ 1/8W チ ッ プ 金 属 皮 膜 抵 抗	R509,510,513,514			
	VB 36 41 00	Chip Resistor	33kΩ 1/8W チ ッ プ 抵 抗	R508,520			
	VB 36 53 00	//	100kΩ 1/8W //	R516			
	VB 40 27 00	//	1MΩ 1/8W //	R504			
	iA 10 37 00	Chip Transistor	2SA1037 チ ッ プ ト ラ ン ジ ス タ	Q501	Inter-changeable		
	iB 07 09 10	//	2SB709A //	//			
	iC 24 12 00	//	2SC2412 //	Q502	Inter-changeable		
	iD 06 01 00	//	2SD601 //	//			
	iF 00 49 10	Varactor Diode	ISV55 F M バ ラ ク タ ダイ オ ード	D501	Inter-changeable		
	iF 00 49 20	//	SVC211 //	//			
	iG 15 75 00	IC	HM6116FP-4 I C	IC502			
	iG 15 71 10	//	NJM2043M(T1) //	IC503			
※	XB 69 80 01	//	YM3816(SPC II) //	IC501			
※	VB 97 27 00	Connector	40pin コ ネ ク タ ー				

※New Parts (新規部品)

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	NA 09 53 60	Main Circuit Board	メ イ ン シ ー ト				
	FC 44 41 00	Mylar Cap.	0.01 μ F 50V	マ イ ラ ー コ ン	C638~645, 666		
	FC 36 46 80	//	0.068 μ F 50V	//	C661, 662		
	FF 09 22 20	Polystyrene Film Cap.	220pF	銅 ハ ク ス チ コ ン	C601, 602		
	FC 36 51 00	Mylar Cap.	0.1 μ F 50V	マ イ ラ ー コ ン	C657~660		
	FC 34 43 30	//	0.033 μ F 50V	//	C625~629		
※	VD 03 27 00	//	1500pF 50V	銅リードマイラーコン	C607, 608		
	VB 05 70 00	//	1600pF 50V	//	C651, 652		
※	VD 03 28 00	//	5100pF 50V	//	C609, 610		
	VD 03 29 00	//	6800pF 50V	//	C611, 612		
	VD 03 30 00	//	0.015 μ F 50V	//	C605, 606		
	VD 03 31 00	//	0.068 μ F 50V	//	C603, 604		
	UJ 13 71 00	Electrolytic Cap.	10 μ F 16V	ケ ミ コ ン	C633		
	Ui 93 82 20	//	220 μ F 16V	//	C663		
	UM 04 92 20	//	2200 μ F 16V	オーディオケミコン	C653, 654		
	UH 23 74 70	//	47 μ F 16V	ケ ミ コ ン	C632, 667		
※	UM 09 93 30	//	3300 μ F 35V	//	C655, 656		
	UJ 11 74 70	//	47 μ F 6.3V	オーディオケミコン	C649, 650		
	UM 02 82 20	//	220 μ F 6.3V	//	C617~620		
	UM 04 81 00	//	100 μ F 16V	//	C630, 631, 634~637		
	UM 04 84 70	//	470 μ F 16V	//	C613~616		
	UJ 13 91 00	//	1000 μ F 16V	//	C621~624		
	FZ 00 62 70	//	1000 μ F 6.3V	ブラックゲートコン	C646, 647		
	FZ 00 41 30	Semiconductive Ceramic Cap.	0.1 μ F 25V	半 導 体 セ ラ コ ン	C664, 665		
	VD 78 25 00	Inductor	B-01-AT	ビーズインダクタ	FB601		
	VB 81 79 00	Coil	SBT-0440T	S B コ イ ル	FB602		
	HV 45 32 20	Flame Proof Carbon Resistor	2.2 Ω 1/4W	不燃化カーボン抵抗	R655~658		
	HV 45 51 50	//	150 Ω 1/4W	//	R675, 676		
	VB 86 15 00	Pre-Set Potentiometer	B10k Ω	半 固 定 抵 抗	VR601, 602		
	VB 86 19 00	//	B100k Ω	//	VR603~606		
	iA 09 33 00	Transistor	2SA933S(Q,R)	ト ラ ン ジ ス タ	Q621, 622, 629~631	Inter-changeable	
	iA 11 15 10	//	2SA1115(E,F)	//	//		
	iX 60 31 70	//	2SA1310(R,S,T)	//	//		
	iA 09 34 00	//	2SA934	//	Q619, 620, 625, 628	Inter-changeable	
	iB 05 44 10	//	2SB544	//	//		
	iA 10 15 21	//	2SA1015(Y)	//	Q603, 604, 609, 610		
	iC 17 40 70	//	2SC1740S(S,R)	//	Q617, 618, 632	Inter-changeable	
	iC 26 03 10	//	2SC2603(E,F)	//	//		
	iX 60 31 80	//	2SC3312(R,S,T)	//	//		
	iC 18 15 20	//	2SC1815(Y)	//	Q605~608		
	iC 20 60 00	//	2SC2060	//	Q623, 624, 626, 627	Inter-changeable	
	iD 04 00 10	//	2SD400	//	//		
	iX 60 42 00	//	2SC2878(A,B)	//	Q601, 602, 611~616	Inter-changeable	
	iC 33 27 00	//	2SC3327	//	//		
	iF 00 96 20	Diode	V11J	ダ イ オ ード	D612~615		
	iF 00 34 50	//	ISS133	//	D616~618, 621~623		
	iH 00 14 30	//	ISR35-100A	//	D608~611		
	iX 60 41 10	Zener Diode	MTZ5.6B	ツェナーダイオード	D619, 620		

※New Parts (新規部品)

i

※New Parts (新規部品)

NA 09:29:80	Servo Circuit Board		サーボシート	
FG:21:21:50	Ceramic Cap.	150pF	50V	セラコン C105
FG:21:24:70	//	470pF	50V	// C124
FG:21:26:80	//	680pF	50V	// C123
FG:44:41:00	//	0.01μF	50V	// C146
UA:55:54:70	Mylar Cap.	0.47μF	50V	マイラーコン C117
FA:15:31:50	//	1500pF	50V	// C114,115
FA:15:31:80	//	1800pF	50V	// C137
FA:15:32:20	//	2200pF	50V	// C141,142
FA:15:36:80	//	6800pF	50V	// C104
FA:15:43:30	//	0.033μF	50V	// C107
FA:15:42:20	//	0.022μF	50V	// C139
FA:15:51:00	//	0.1μF	50V	// C102,103,106,140,143
FA:15:51:20	//	0.12μF	50V	// C116,122,126
FA:15:51:50	//	0.15μF	50V	// C138
FA:15:51:80	//	0.18μF	50V	// C109
FA:15:53:30	//	0.33μF	50V	// C118
FZ:00:49:40	//	0.1μF	50V	銅リードマイラーコン C144,145
UH:13:91:00	Electrolytic Cap.	1000μF	16V	ケミコン C112,113
UJ:11:84:70	//	470μF	6.3V	// C128
UJ:11:82:20	//	220μF	6.3V	// C129
UJ:13:72:20	//	22μF	10V	// C116,111,119,120,133~136
UJ:12:81:00	//	100μF	10V	// C101,108
UJ:13:73:30	//	33μF	16V	// C131,132
UJ:13:74:70	//	47μF	16V	// C125
UJ:14:64:70	//	4.7μF	25V	// C121
UJ:16:61:00	//	1μF	50V	// C127
UJ:16:62:20	//	2.2μF	50V	// C130
HW:45:33:30	Flame Proof Carbon Resistor	3.3Ω	1/4W	不燃化カーボン抵抗 R131,132,159,160,209,210,216,217
VB:85:97:00	Pre-Set Potentiometer	B4.7kΩ	半固定抵抗	VR108,109
VB:85:98:00	//	B10kΩ	//	VR101,105
VB:86:01:00	//	B47kΩ	//	VR104,106
VB:86:02:00	//	B100kΩ	//	VR110
VB:86:05:00	//	B470kΩ	//	VR107
VC:68:58:00	//	B56kΩ	//	VR102
VC:68:59:00	//	B150kΩ	//	VR103
IA:09:33:00	Transistor	2SA933S(Q,R)	トランジスタ	Q106,121
IA:11:15:10	//	2SA1115(E,F)	//	// } Inter-changeable
IX:60:31:70	//	2SA1310(R,S,T)	//	// } Inter-changeable
IA:09:34:00	//	2SA934	//	Q124,126 } Inter-changeable
IB:05:44:10	//	2SB544	//	// } Inter-changeable
IC:17:40:70	//	2SC1740S(S,R)	//	Q102,104,109~113,119,120,122 } Inter-changeable
IC:26:03:10	//	2SC2603(E,F)	//	// } Inter-changeable
IX:60:31:80	//	2SC3312(R,S,T)	//	// } Inter-changeable
IX:60:42:00	//	2SC2678(A,B)	//	Q105,114~116 } Inter-changeable
IC:33:27:00	//	2SC3327	//	// } Inter-changeable
IC:20:60:00	//	2SC2060	//	Q123,125 } Inter-changeable
ID:04:00:10	//	2SD400	//	// } Inter-changeable
IC:05:35:00	//	2SC535	//	Q101,103 } Inter-changeable
IC:19:23:00	//	2SC1923(R,O,Y)	//	// } Inter-changeable

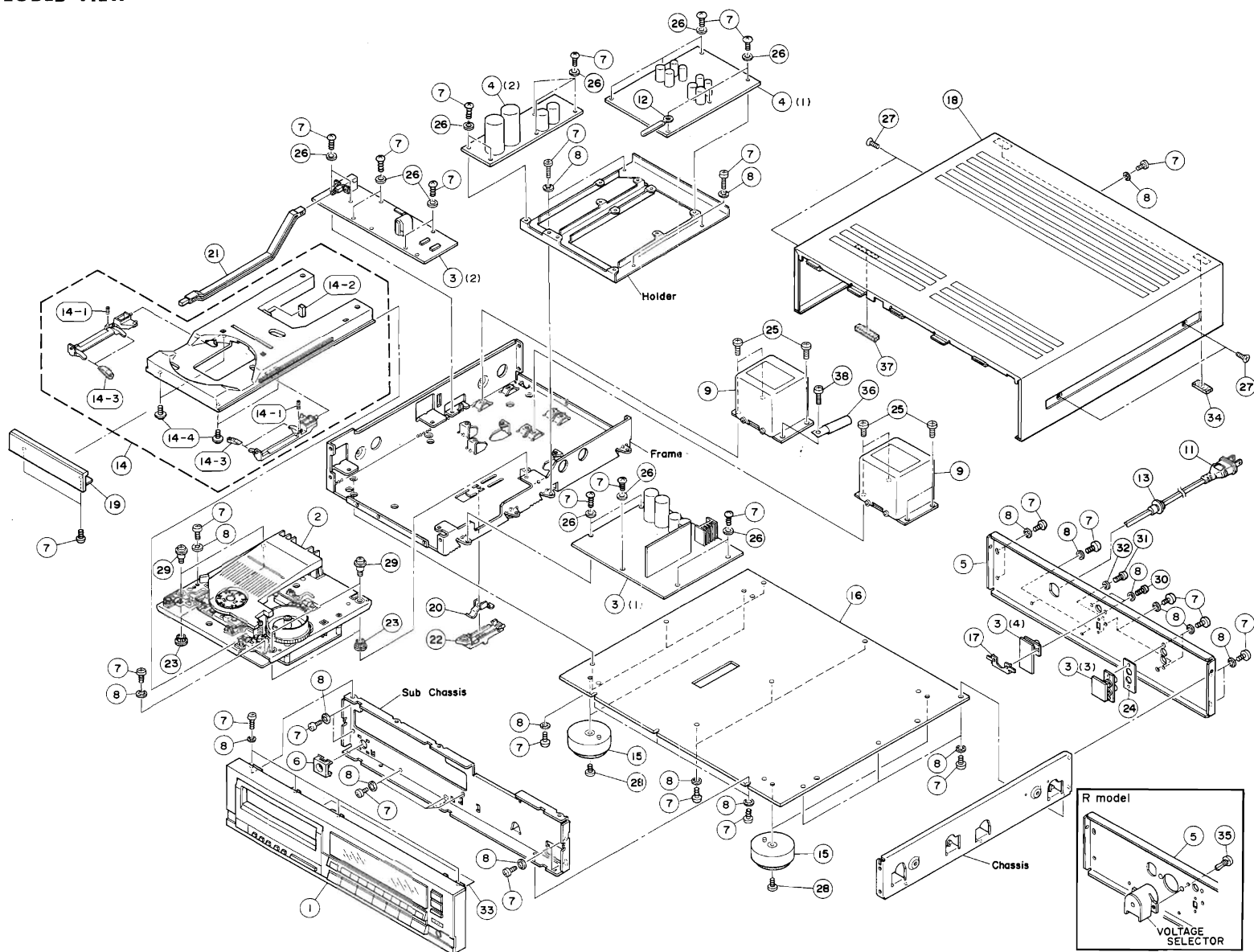
※New Parts (新規部品)

IF	00:88:00	Zener Diode	MTZ3.5A	ツェナーダイオード	D112	
IF	01:08:70	//	MTZ9.1C	//	D113	
IF	00:34:50	Diode	1SS133	ダイオード	D101~111	
IG	03:47:00	IC	AN6551	I	C	IC101,103~105,107~109
IG	07:68:00	//	NJM4558S	//	//	Inter-changeable
IG	13:22:00	//	BA715	//	//	
IG	12:18:00	//	NJM4560S	//	IC102	
IG	11:94:00	//	STA451C	//	IC111	
IG	05:51:00	//	TC4053BP	//	IC110	Inter-changeable
IG	10:59:00	//	μPD4053	//	//	
IG	07:68:00	//	NJM4558S	//	IC106	
VB	21:89:00	Base Pin	2P	i-Type	P H ベースピン	
VB	21:90:00	//	3P	i-Type	//	
VB	85:85:00	//	6P	L-Type	//	
VB	85:87:00	//	8P	L-Type	//	

※New Parts (新規部品)

CDX-1100/CDX-1100U

EXPLODED VIEW

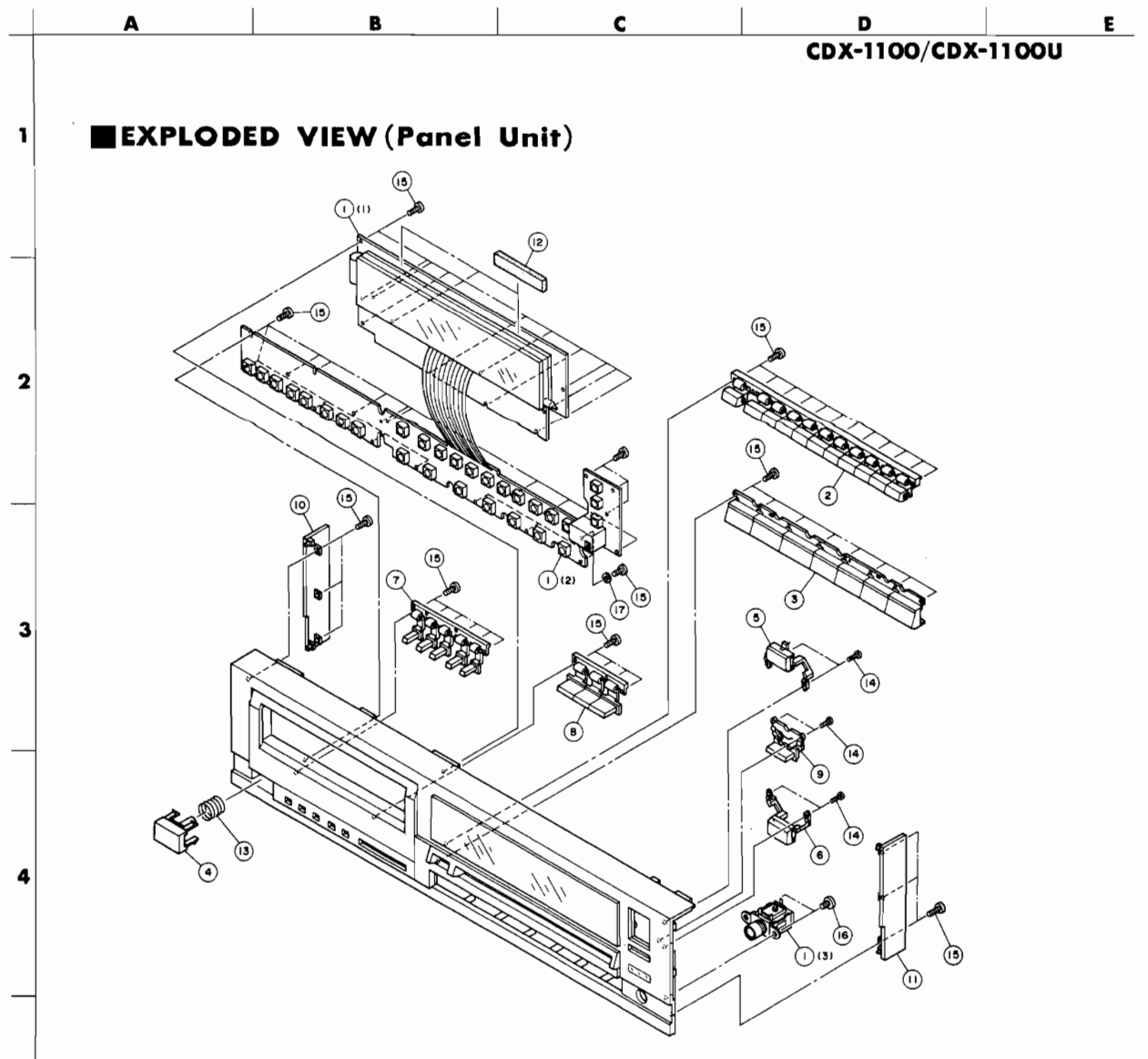


MECHANISM PARTS

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※ 1	VD 03 82 00	Panel Unit	パ ネ ル ユ ニ ッ ト			A, G, B	
※ //	VD 03 83 00	//	//			U, C	
※ //	VD 77 70 00	//	//			R	
※ 2	VC 54 39 00	Disc Mechanism Unit DM-2200	D M ユ ニ ッ ト				
※ 3	NA 09 46 20	Digital Circuit Board	デ ジ タ ル シ ー ト			R	
※ //	NA 09 46 30	//	//			U, A, G, C, B	
※ 4	NA 09 53 60	Main Circuit Board	メ イ ン シ ー ト				
※ 5	AA 63 18 10	Rear Panel	リ ア パ ネ ル			R	
※ //	AA 63 18 20	//	//			U, C	
※ //	AA 63 18 30	//	//			G, B	
※ //	AA 63 18 00	//	//			A	
※ 6	CB 66 09 60	Guide, Button	ボ タ ン ガ イ ド				
7	Ei 33 00 86	Binding Head Tapping Screw	3×8 FCRM3-BI バインドタッピングネジ	PACK			
8	EV 41 30 36	Toothed Lock Washer	φ3 FCRM3-BI 歯 付 座 金	PACK			
※ 9	XC 73 00 01	Power Transformer	電 源 ト ラ ン ス	Analog section		A, G, B	△
※ //	XC 73 10 01	//	//	//		U, C	△
※ 10	XC 04 50 01	//	//			R	△
※ //	XC 04 60 01	//	//	Digital section		U, C	△
※ //	XC 04 70 01	//	//	//		A, G, B	△
11	MG 00 16 30	Power Cord	6A 250V 2m 電 源 コ ー ド			R	△
※ //	MG 00 22 20	//	10A125V 2m //			U, C	△
※ //	MG 00 09 20	//	7.5A250V 2.5m //	} Inter-changeable		A	△
※ //	MG 00 23 10	//	7.5A250V 2m //			A	△
※ //	MG 00 23 30	//	300/300V 2m //			B	△
※ //	MG 00 16 20	//	2.5A250V 2m //	} Inter-changeable		G	△
※ //	MG 00 23 20	//	2.5A250V 2m //			G	△
12	VC 38 02 00	Wire Stopper	側 線 止 メ				
13	CB 62 01 90	Cord Stopper	CM-22B コ ー ド ス ト ッ パ ー			R, A, G, B	
※ //	CB 62 02 00	//	CM-22C //			U, C	
※ 14	VC 53 20 00	Tray Ass'y	ト レ イ Ass'y				
14-1	VC 54 63 00	Spring	ス プ リ ン グ				
14-2	CB 65 60 20	Disc Pad	デ ィ ス ク パ ッ ド				
14-3	CB 62 79 60	Cushion Rubber	ク ャ シ ョ ン ゴ ム				
14-4	EX 60 02 40	BW Head Tapping Screw	3×8(φ10)FCRM3-BI BWヘッドタッピングネジ				
※ 15	VC 53 25 00	Isolator Ass'y	アイソレーター Ass'y				
※ 16	AA 63 15 70	Bottom Cover	ボ ト ム カ バ ー				
17	VC 55 27 00	Washer	ワ ッ シ ャ ー				
※ 18	AA 63 23 60	Top Cover	ト ッ プ カ バ ー				
※ 19	BA 09 59 90	Plate	ブ レ ー ト				
※ 20	BB 07 14 00	Spring	ス プ リ ン グ				
※ 21	CB 66 12 10	Rod	ロ ッ ド				
※ 22	CB 66 10 10	Knob	ツ マ ミ				
23	CB 65 70 60	Damper	ダ ン パ ー		CDX-5000		
24	CB 66 17 80	Plate	ブ レ ー ト		//		
25	Ei 34 00 66	Binding Head Tapping Screw	4×6 FCRM3-BI バインドタッピングネジ	PACK			
26	EV 20 30 36	Plain Washer	φ3 FCRM3-BI 平 座 金	PACK			
27	EC 34 00 86	Truss Head Screw	4×8 FCRM3-BI ト ラ ス 小 ネ ジ	PACK			
28	Ei 34 00 86	Binding Head Tapping Screw	4×8 FCRM3-BI バインドタッピングネジ	PACK			
29	VC 56 83 00	Special Screw	段 付 ネ ジ				
30	Ei 33 00 66	Binding Head Tapping Screw	3×6 FCRM3-BI バインドタッピングネジ	PACK			
31	ED 32 60 36	Binding Head Screw	2.6×3 FCRM3-BI バ イ ン ド 小 ネ ジ	PACK			
32	EV 41 32 66	Toothed Lock Washer	φ2.6 FCRM3-BI 歯 付 座 金	PACK			
※ 33	VD 41 53 00	Shielding Plate	シ ー ル ド 板				

※New Parts (新規部品)

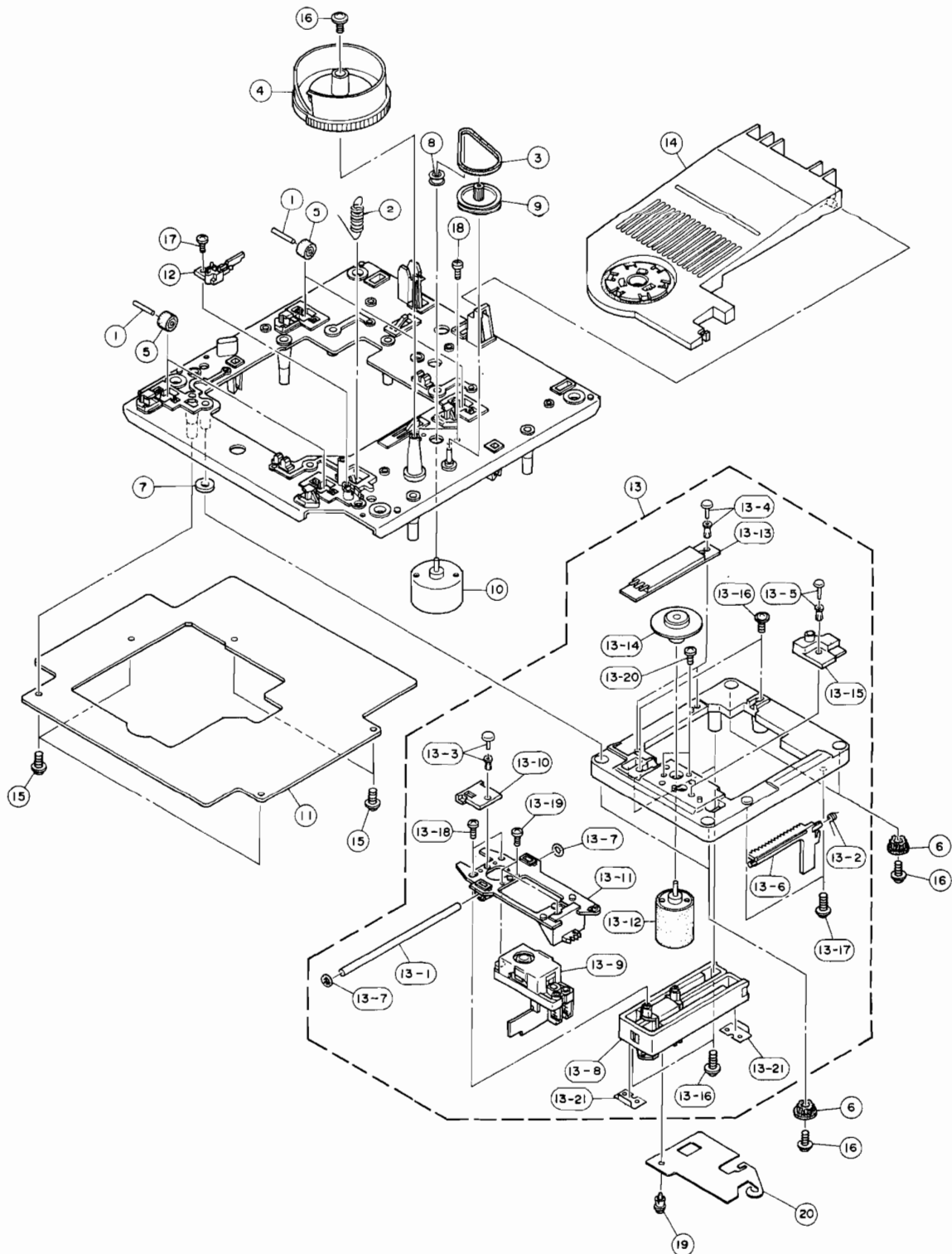
※New Parts (新規部品)



Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	VD 03 82 00	Panel Unit	パネ ル ユ ニ ッ ト			R,A,G,B	
※	VD 03 83 00	"	"			U,C	
※	1 NX 60 04 20	Operation Circuit Board	オ ペ レ ー シ ョ ン シ ー ト				
※	2 BX 60 00 60	Key Top Set A	キ ー ト ッ プ セ ッ ト A	1~10, +10			
※	3 BX 60 00 70	" B	" B	OPERATION			
※	4 BX 60 00 80	" C	" C	POWER			
※	5 BX 60 00 90	" D	" D	UP			
※	6 BX 60 01 00	" D	" D	DOWN			
※	7 CX 60 06 30	Key Top A	キ ー ト ッ プ A	SPACE, INDEX, RANDOM, REPEAT			
※	8 CX 60 06 40	" B	" B	PROGRAM			
※	9 CX 60 06 50	" C	" C	TIME DISPLAY			
※	10 CX 60 06 60	Cover A	カ バ ー A				
※	11 CX 60 06 70	" B	" B				
※	12 CX 60 06 80	Cushion	ク ッ シ ョ ン				
※	13 AX 60 02 30	Spring	コ イ ル ス プ リ ン グ				
※	14 EX 60 05 30	Pan Head Tapping Screw	ナベ タ ッ ピ ン グ ネ ジ	1.7×5 ZMC2-BI			
	15 EJ 02 00 66	"	"	2×6 ZMC2-Y			
	16 EJ 03 00 56	"	"	3×5 ZMC2-Y			
※	17 CX 60 06 90	Spacer	ス ペ ー サ				

※New Parts (新規部品)

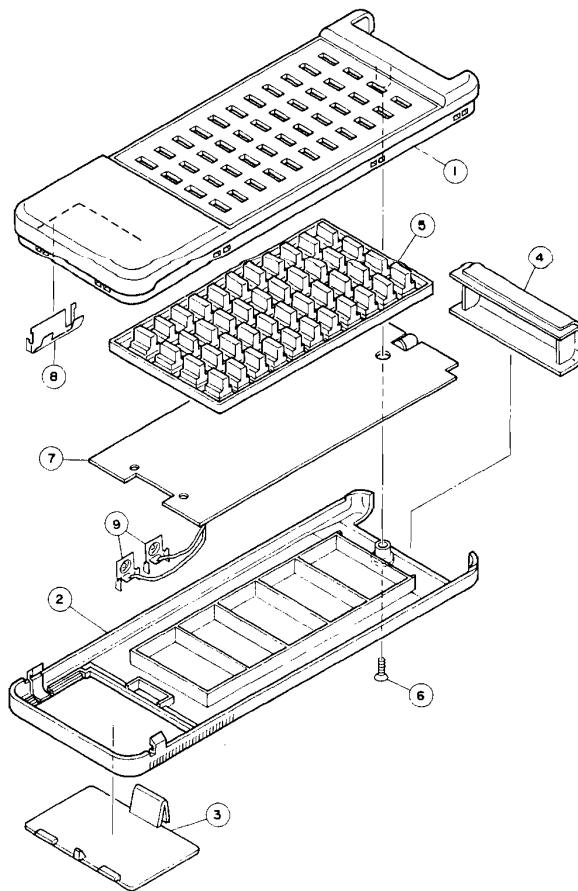
1 ■ EXPLODED VIEW(Disc Mechanism Unit)



[illegible]

65

1 ■EXPLODED VIEW (RS-CD100)



Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	VC 14 82 00	Remote Control Transmitter	RS-CD100	リモートコントロールトランスミッター			
※	1 CX 60 06 10	Case (A) Ass'y	ケース (A) A s s 'y				
	2 XX 67 77 20	Case (B)	ケ ー ス (B)				
	3 XX 67 77 30	Case (C)	ケ ー ス (C)				
	4 XX 67 16 40	Filter	フ ィ ル タ ー				
※	5 CX 60 06 20	Rubber, Contact	ゴ ム 接 点				
	6 XX 67 16 60	Flat Head Screw	皿 小 ネ ジ				
※	7 NX 60 04 10	P.C Board Ass'y	プリント基板 A s s 'y				
	8 XX 67 16 80	Dry Cell Terminal A	電 池 電 極 板 A				
※	NX 60 04 10	P.C Board Ass'y	プリント基板 A s s 'y				
	IX 60 70 40	IC	μPD6102G	I C IC01			
	QX 60 00 40	Ceramic Resonator	KBR455BT	セラミック振動子	X01		
	FG 21 21 00	Ceramic Cap.	100pF 50V	セ ラ コ ン	C01,02		
	UJ 11 74 70	Electrolytic Cap.	47μF 6.3V	ケ ミ コ ン	C03		
	iX 60 36 00	IED	SLR-932A	I E D IED01			
	iC 26 73 00	Transistor	2SC2673	ト ラ ン ジ ス タ	Q01		
	HX 60 14 00	Carbon Resistor	2Ω 1/4W	カーボン抵抗	R01		
	iF 00 34 50	Diode	ISS133	ダイオード	D01~05		
	9 XX 67 16 90	Dry Cell terminal B	電 池 電 極 板 B				

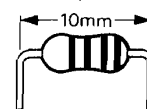
※New Parts (新規部品)

Parts List for Carbon Resistor

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	HJ353100	*	12K Ω	HJ357120	HF857120
1.8 "	HJ353180	*	15 "	HJ357150	HF857150
2.2 "	HJ353220	HF853220	18 "	HJ357180	HF857180
3.3 "	HJ353330	HF853330	22 "	HJ357220	HF857220
4.7 "	HJ353470	HF853470	27 "	HJ357270	HF857270
5.6 "	HJ353560	HF853560	33 "	HJ357330	HF857330
10 "	HJ354100	HF854100	39 "	HJ357390	HF857390
15 "	HJ354150	HF854150	47 "	HJ357470	HF857470
22 "	HJ354220	HF854220	56 "	HJ357560	HF857560
27 "	HJ354270	HF854270	68 "	HJ357680	HF857680
33 "	HJ354330	HF854330	82 "	HJ357820	HF857820
39 "	HJ354390	HF854390	91 "	HJ357910	HF857910
47 "	HJ354470	HF854470	100 "	HJ358100	HF858100
56 "	HJ354560	HF854560	120 "	HJ358120	HF858120
68 "	HJ354680	HF854680	150 "	HJ358150	HF858150
82 "	HJ354820	HF854820	180 "	HJ358180	HF858180
100 "	HJ355100	HF855100	220 "	HJ358220	HF858220
110 "	HJ355110	HF855110	270 "	HJ358270	HF858270
120 "	HJ355120	HF855120	330 "	HJ358330	HF858330
150 "	HJ355150	HF855150	390 "	HJ358390	HF858390
160 "	HJ355160	*	470 "	HJ358470	HF858470
180 "	HJ355180	HF855180	560 "	HJ358560	HF858560
220 "	HJ355220	HF855220	680 "	HJ358680	HF858680
270 "	HJ355270	HF855270	820 "	HJ358820	HF858820
330 "	HJ355330	HF855330	1.0M Ω	HJ359100	HF859100
390 "	HJ355390	HF855390	1.2 "	HJ359120	*
470 "	HJ355470	HF855470	1.5 "	HJ359150	HF859150
510 "	*	HF855510	1.8 "	HJ359180	HF859180
560 "	HJ355560	HF855560	2.2 "	HJ359220	HF859220
680 "	HJ355680	HF855680	3.3 "	HJ359330	HF859330
820 "	HJ355820	HF855820	3.9 "	HJ359390	*
910 "	HJ355910	HF855910	4.7 "	HJ359470	*
1.0K Ω	HJ356100	HF856100			
1.2 "	HJ356120	HF856120			
1.5 "	HJ356150	HF856150			
1.8 "	HJ356180	HF856180			
2.0 "	HJ356200	HF856200			
2.2 "	HJ356220	HF856220			
2.4 "	HJ356240	HF856240			
2.7 "	HJ356270	HF856270			
3.0 "	HJ356300	HF856300			
3.3 "	HJ356330	HF856330			
3.6 "	HJ356360	HF856360			
3.9 "	HJ356390	HF856390			
4.7 "	HJ356470	HF856470			
5.1 "	HJ356510	HF856510			
5.6 "	HJ356560	HF856560			
6.8 "	HJ356680	HF856680			
8.2 "	HJ356820	HF856820			
9.1 "	HJ356910	HF856910			
10 "	HJ357100	HF857100			

1/4W Type

HJ35



1/6W Type

HF85

