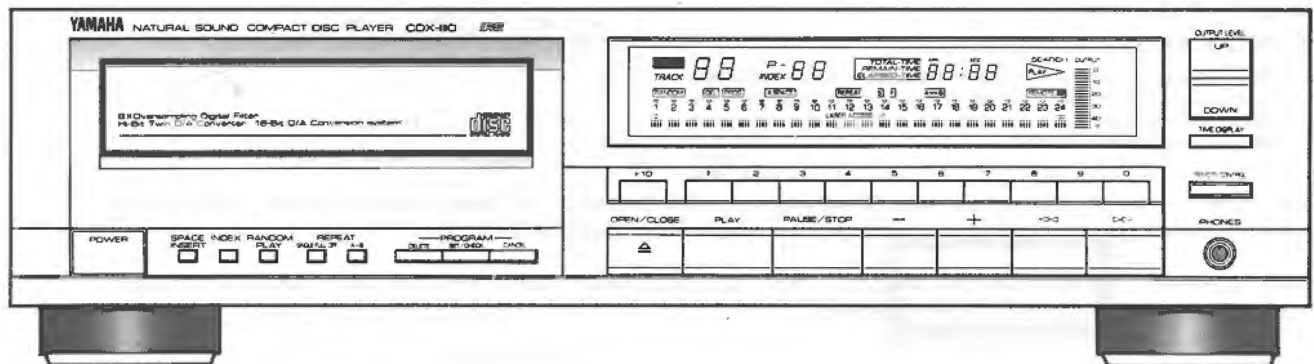


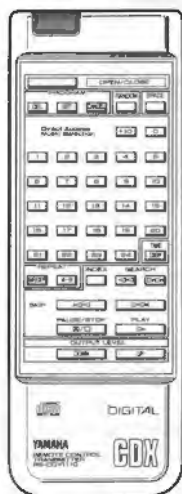
COMPACT DISC PLAYER

CDX-1110/CDX-1110U

SERVICE MANUAL



• RS-CDX1110



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.

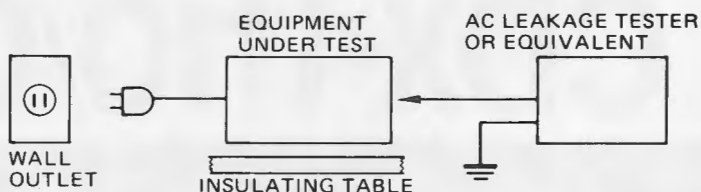
2. Leakage Current Measurement (For 120V Model Only).

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.

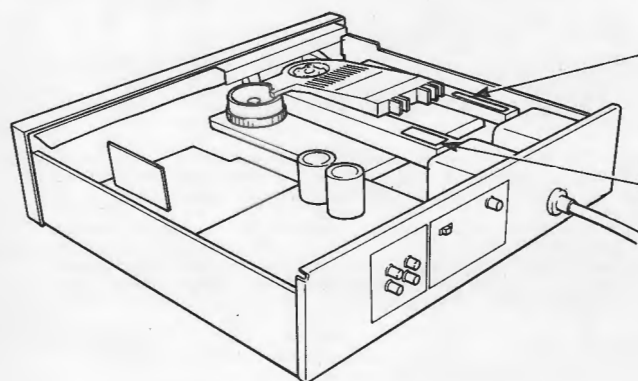
■ POLARIZATION (U, C models only)

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.



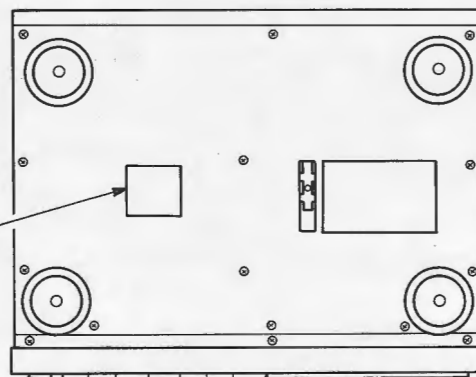
U.S.A. model

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'ENCLenchement DE SECURITE ANNULE (CB62478)

BOTTOM SIDE



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

MANUFACTURED BY
YAMAHA CORPORATION.
10-1 NAKAZAWA-CHO.
HAMAMATSU-SHI.
SHIZUOKA-KEN, JAPAN

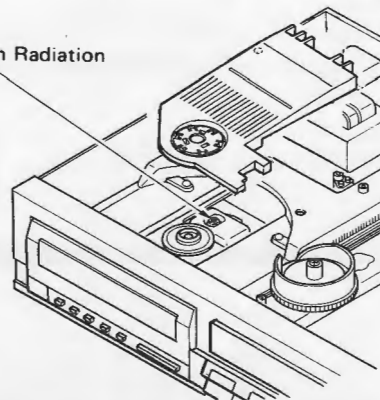
MANUFACTURED:



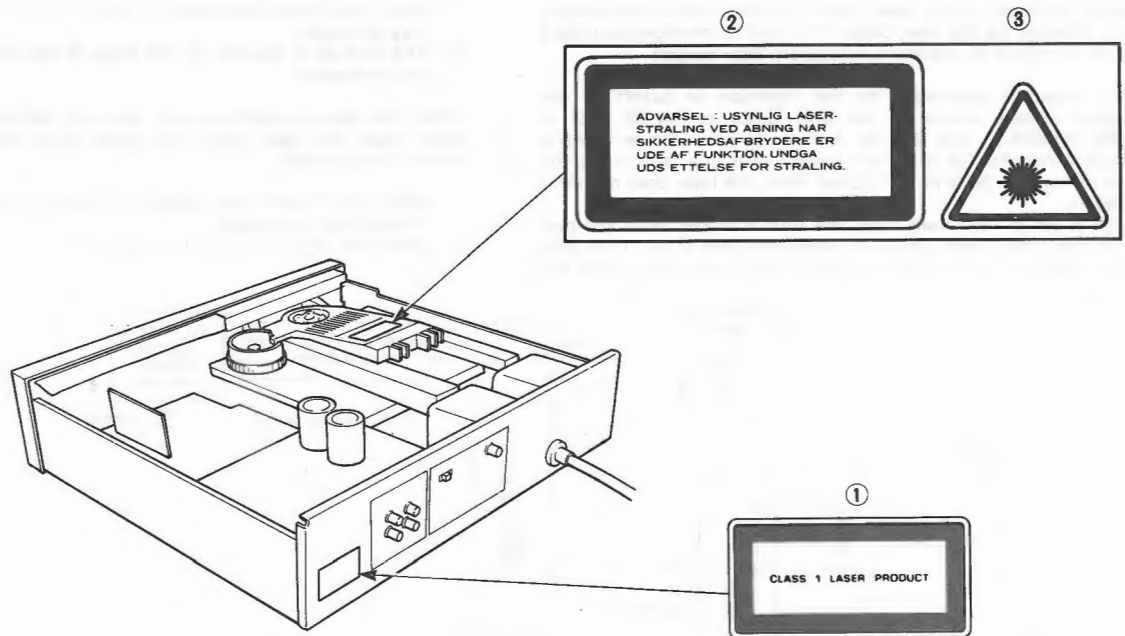
LASER BEAM RADIATION SPOT

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

Laser Beam Radiation



G, B models

**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 YTTERLIGARE INGREPP 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 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."

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 IC805 (M50943), 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.

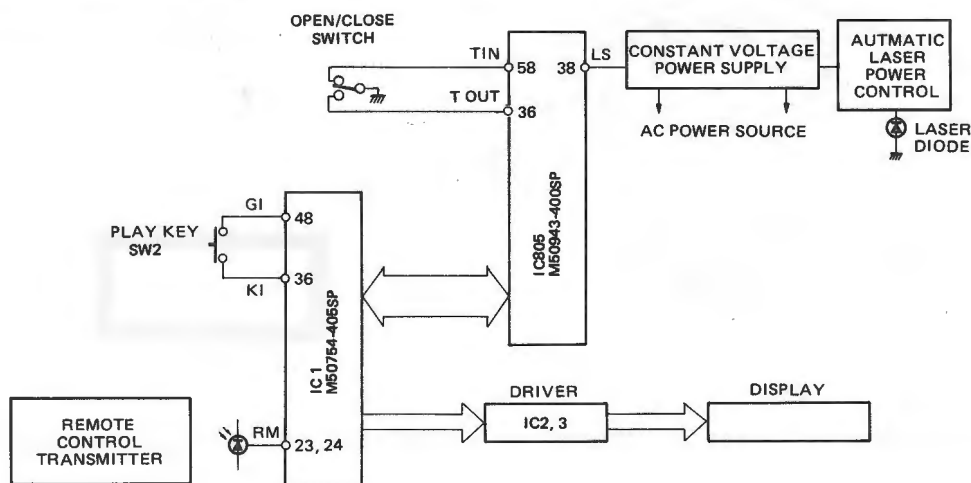
Pin 38 is set in "H" level when the unit is loaded with the disc and it reads the index signals or when the unit is set in the play mode after that. When the unit reads the index signals and the

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	2Hz - 20kHz $\pm$ 0.3dB
Harmonic Distortion + Noise	0.002% (1kHz)
S/N Ratio	118dB (EIAJ)
Dynamic Range	100dB (EIAJ)
Wow & Flutter	Unmeasurable
Output Voltage	2V (EIAJ)
Output Impedance	47 Ω
Headphone Output	3V/150 Ω

INTERNAL SYSTEMS

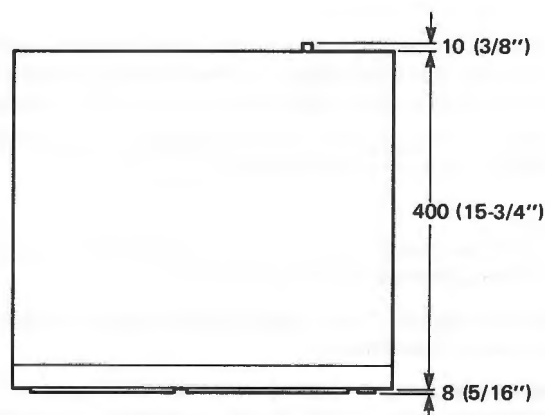
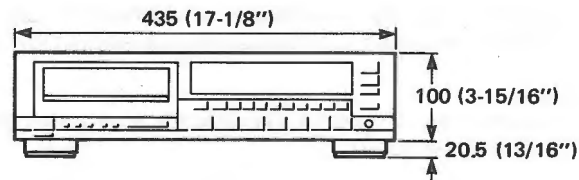
Optical Pick-up	3 beam laser
Error Correction System	CIRC
D/A Conversion	18 bit floating (L, R twin)
Filter	High bit digital filter and 5th order new active filter

GENERAL

Power Requirements	
U.S.A. and Canadian models	120V AC, 60Hz
European, Australian and U.K. models	220 - 240V AC, 50Hz
General model	110 - 120/220 - 240V AC, 50/60Hz
Power Consumption	30W
Dimensions (W x H x D)	435 x 120.5 x 418 mm (17-1/8" x 4-3/4" x 16-7/16")
Weight	14.2 kg (31 lbs 5 oz)
Accessories	Pin plug cord: X2
	Remote control transmitter (RS-CDX1110)
	Dry Cell: X2 (Size "AA", "R06")

*Specification subject to change without notice.

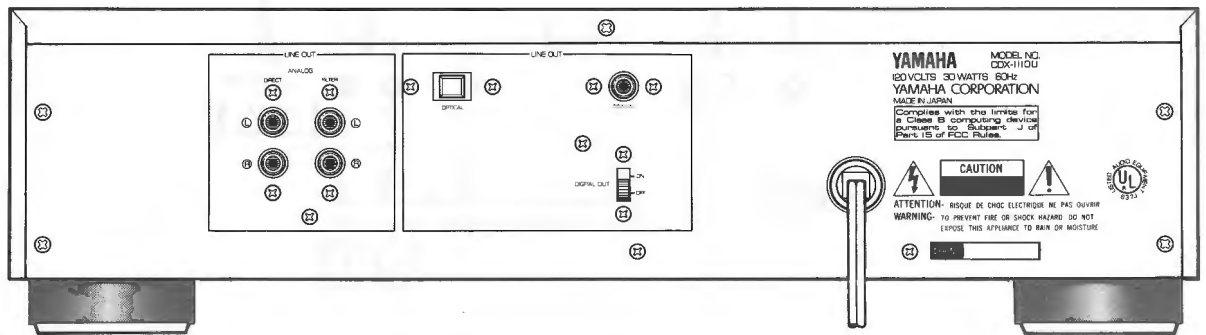
(U) U.S.A. model (B) U.K. model
(G) European model (A) Australian model
(C) Canadian model (R) General model



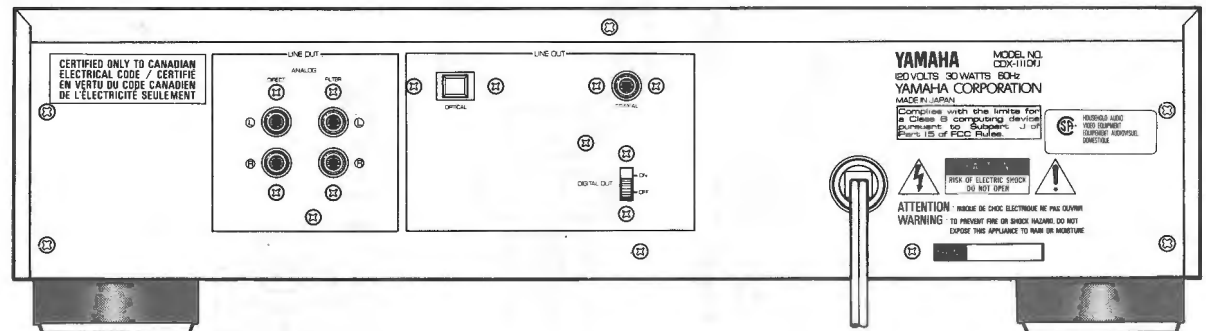
Unit : mm (inch)

REAR PANELS

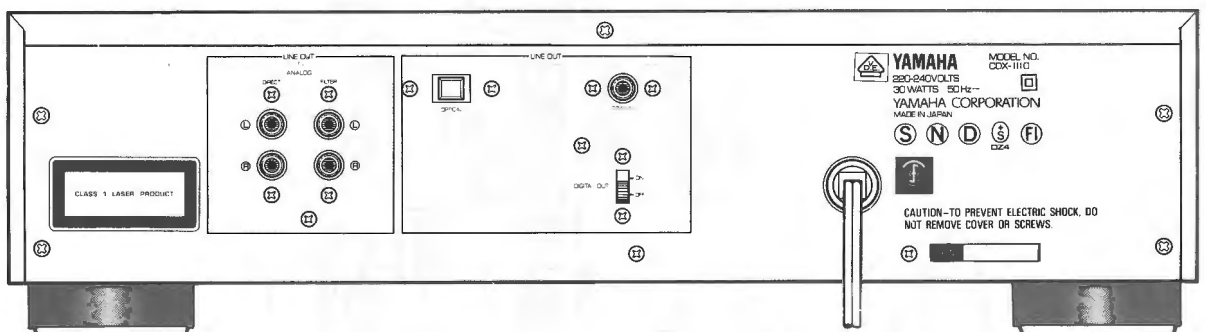
▼ U model



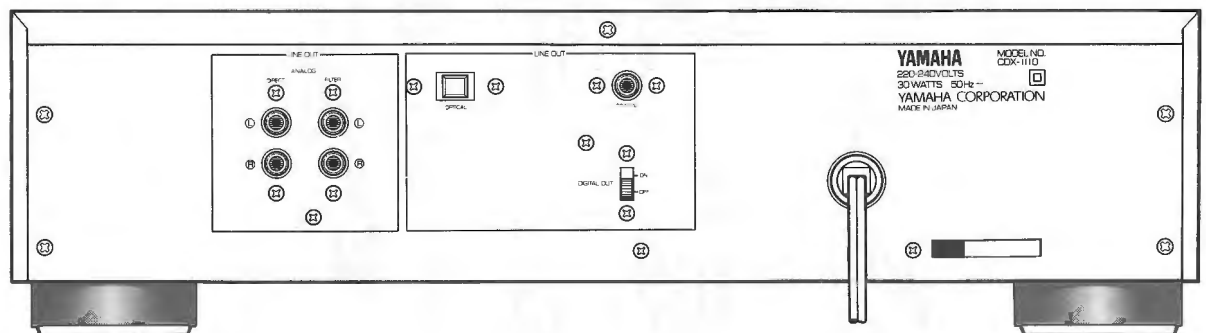
▼ C model



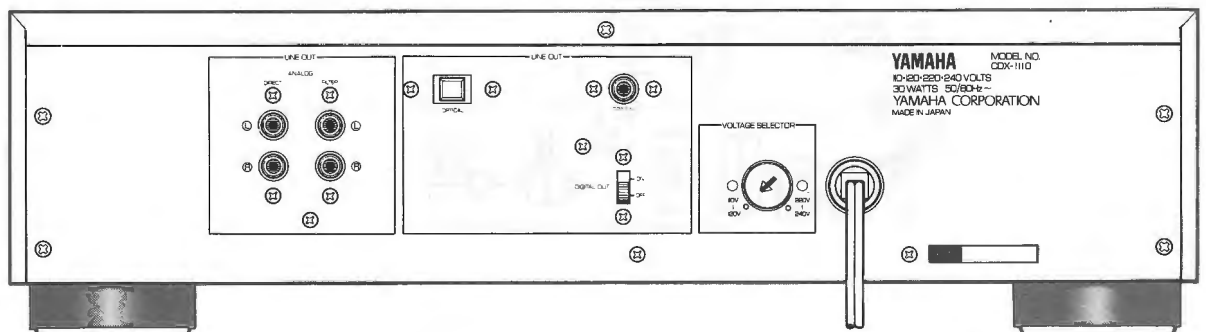
▼ G, B models



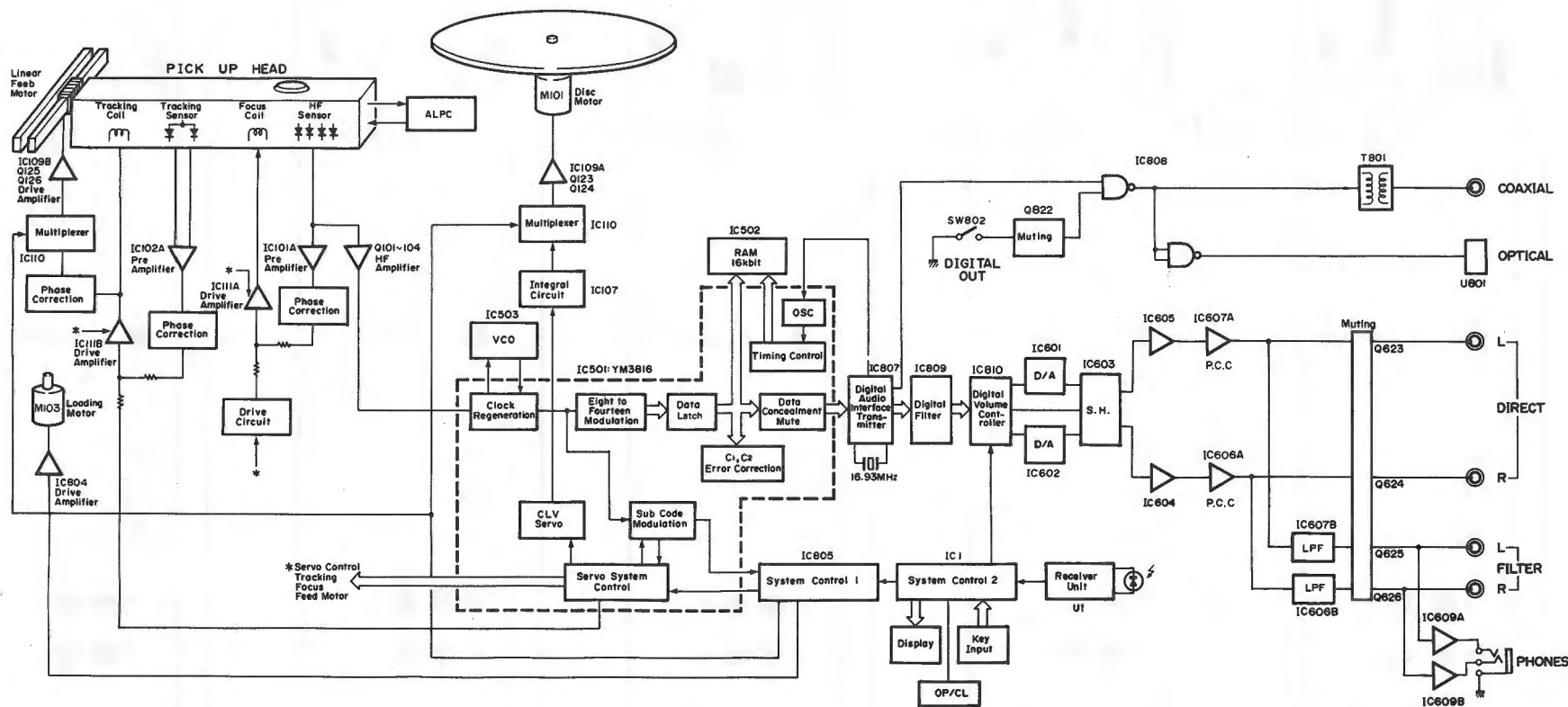
▼ A model



▼ R model



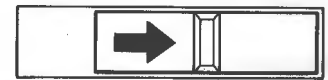
BLOCK DIAGRAM



■ PROTECTION LEVER FOR TRANSPORTATION

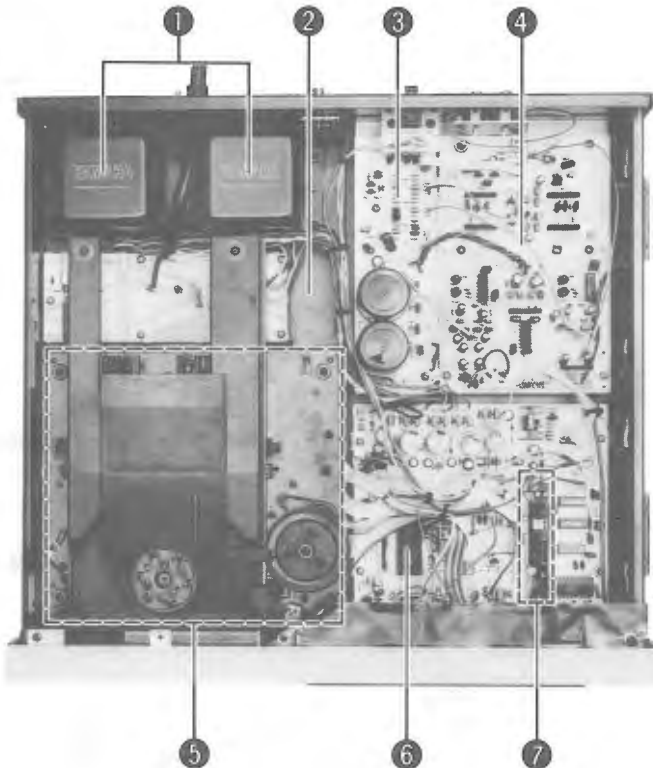
When transporting the unit, take out the disc and lock the pick-up head by moving the lever in the opposite direction of the arrow while lifting the rear panel side.

*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.



Lock ■■■ ➡ Release

■ INTERNAL VIEW



- ① POWER TRANSFORMER
- ② DIGITAL CIRCUIT BOARD (2)
- ③ MAIN CIRCUIT BOARD (2)
- ④ MAIN CIRCUIT BOARD (1)
- ⑤ DISC MECHANISM UNIT
- ⑥ 8 bit μ -COM: M50943-400SP
- ⑦ 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.

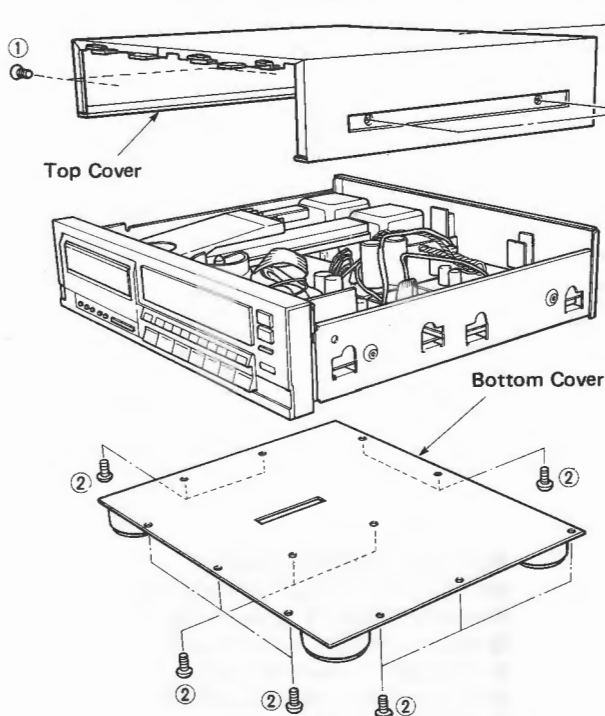


Fig. 1

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.

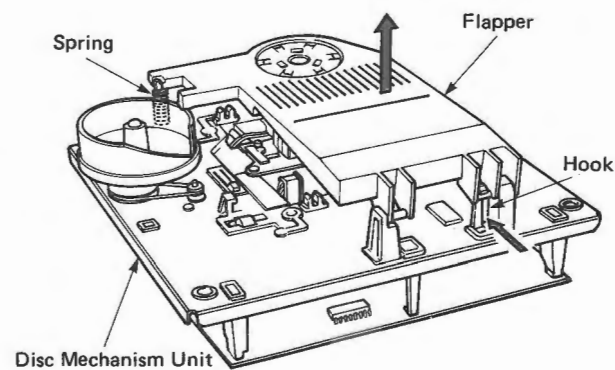


Fig. 5

3. Removal of Disc Tray Ass'y

a. Lift the flapper and pull out the disc tray ass'y in Fig. 2.

b. 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.

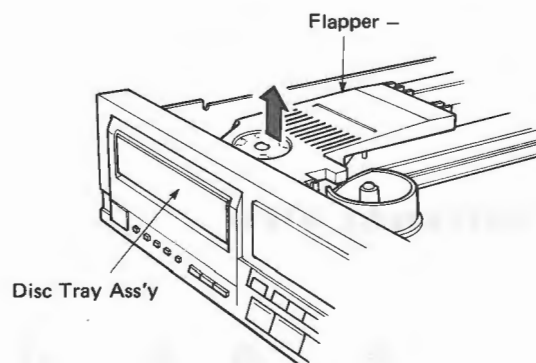


Fig. 2

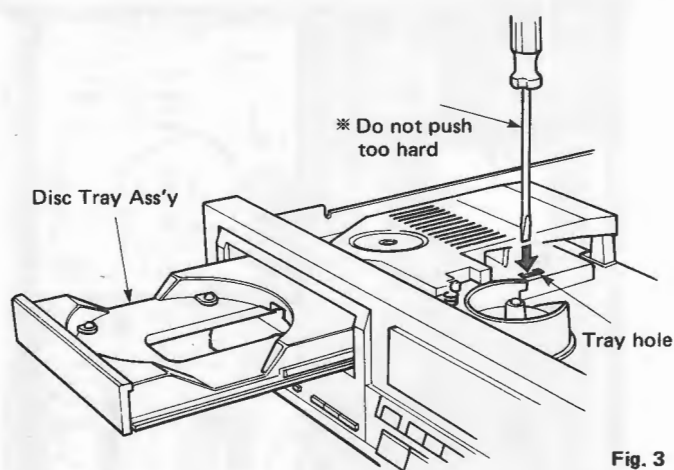


Fig. 3

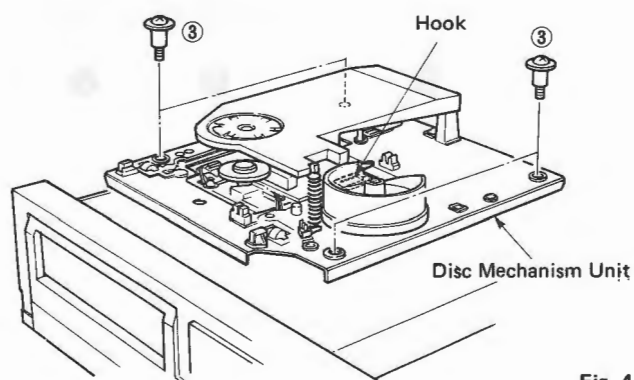


Fig. 4

■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.

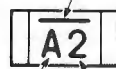
For example, "472" stands for 4.7k ohms and "000" stands for the jumper resistor.

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

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



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

• 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	O	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

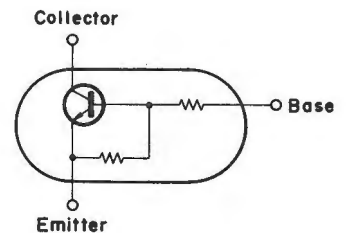
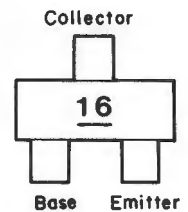
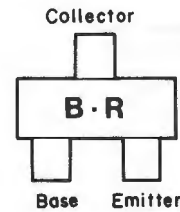
The transistors can be identified by their identification codes of 2 to 4 alphabet letters assigned to each of them. Given below is a cross reference table of identification codes and transistors.

Use it to identify each transistor from its code.

Indication	Parts No.	Description	HFE rank
FQ	iA103700	Transistor 2SA1037	Q-rank
FR	"	"	R-rank
FS	"	"	S-rank
AQ	iB070900	" 2SB709	Q-rank
AR	"	"	R-rank
AS	"	"	S-rank
BQ	iC241200	" 2SC2412	Q-rank
BR	"	"	R-rank
BS	"	"	S-rank
YQ	iD060100	" 2SD601	Q-rank
YR	"	"	R-rank
YS	"	"	S-rank

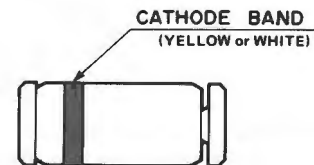
Ex. Transistor: 2SC2412(R)

Ex. Digital Transistor DTA144EK

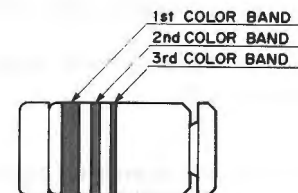


d. Diode and Zener Diode

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.

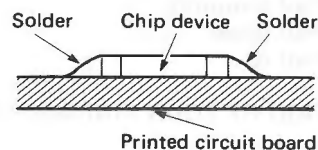
b. For heat

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.



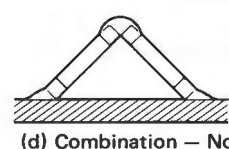
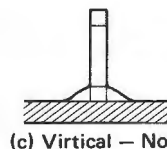
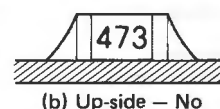
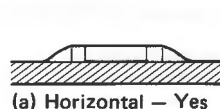
d. Soldering iron

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

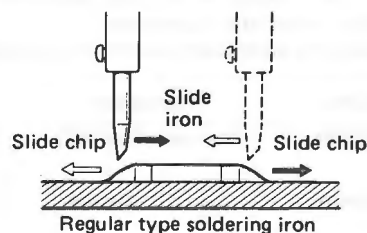
- Set chip devices as close as possible onto the surface of printed circuit board. Do not apply unnecessary pressure to chip devices in order to make it close to the surface of printed circuit board. Try to keep distance between chip device and surface of printed circuit board less than 0.5mm.
- Do not 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

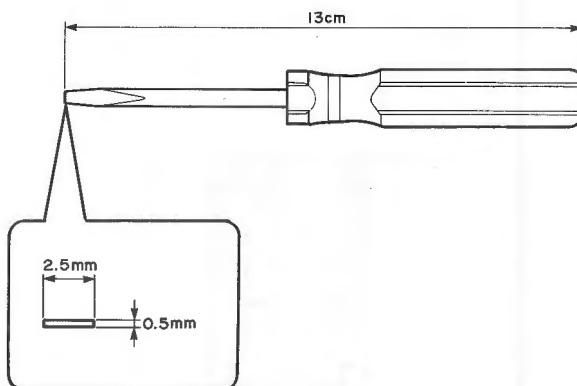
- Oscilloscope : x 2
(At least one shall have a bandwidth of 50 MHz or more)
- Audio frequency oscillator (A.F. OSC): x 1
- Laser power meter : x 1
(LEADER LPM-8000 P/No. TX915140 or equivalent)
- AC voltmeter (ACVM) : x 2
(One dual channel or two single channel meters)
- DC voltmeter (DCVM) : x 1
- 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 and 11)
- DM unit adjusting tool : x 1
(P/No. TX911740)

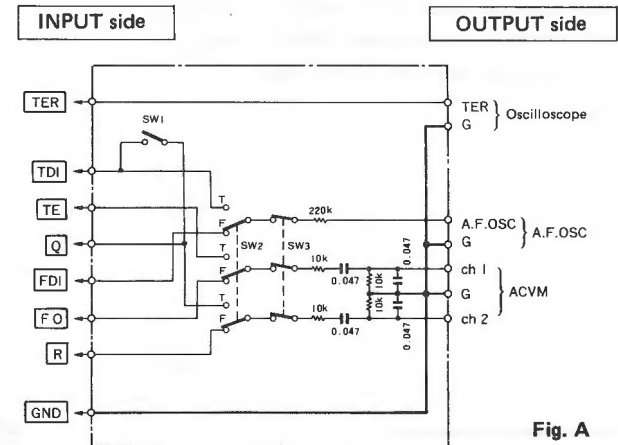
Tools

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



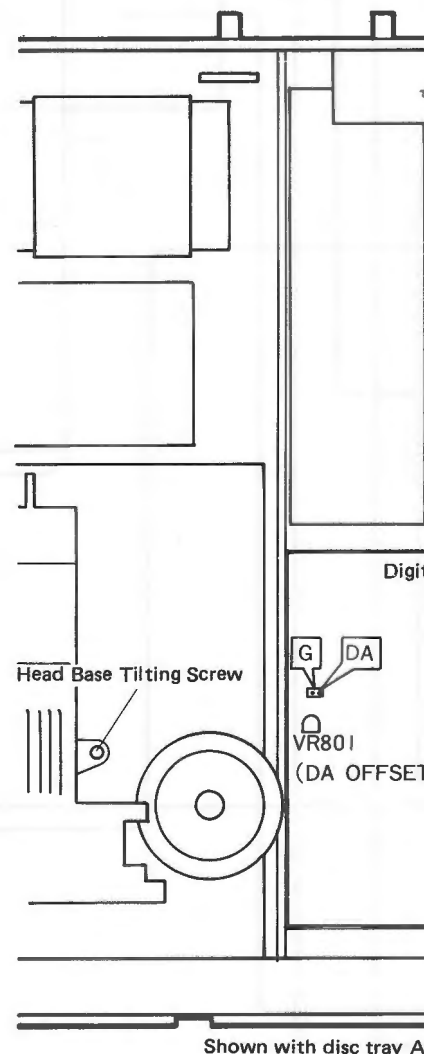
• Adjustment jig (with internal filter)

Connect the filter in Fig. A before measurement.



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

• Test point (1)



Shown with disc tray A

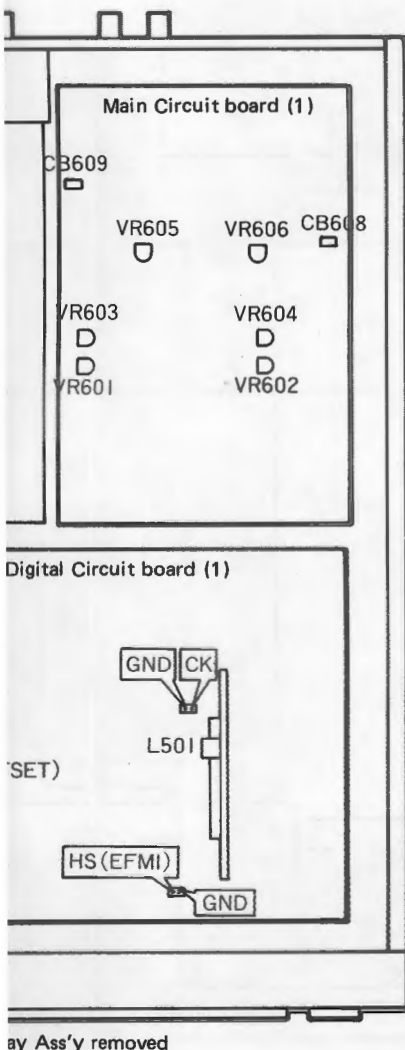
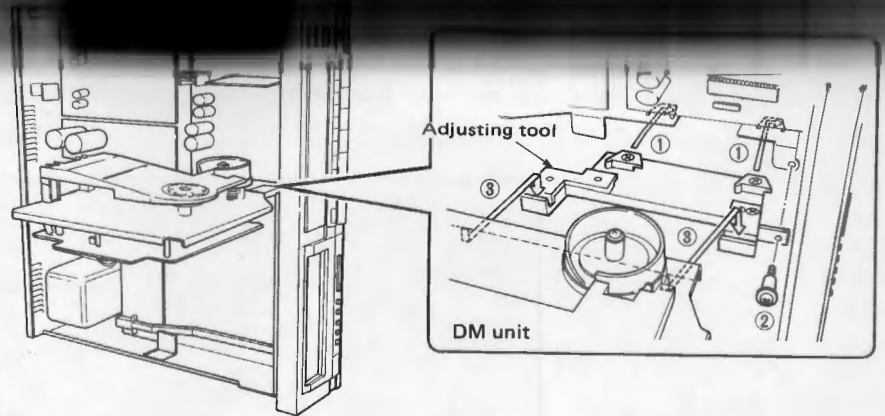
● Precautions or Special Notes

1. Measure the output level at the output terminal of the AF 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

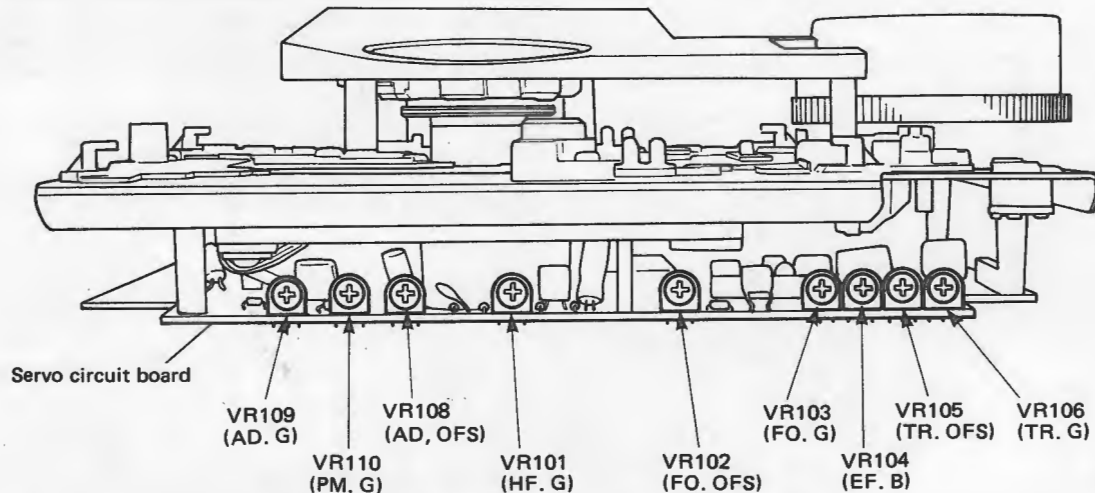
* DM unit adjusting tool: P/No. TX911740

- 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.



● Adjustment wiring diagram/test points (2)

(Before adjustment, solder input leads of filter to facilitate.)



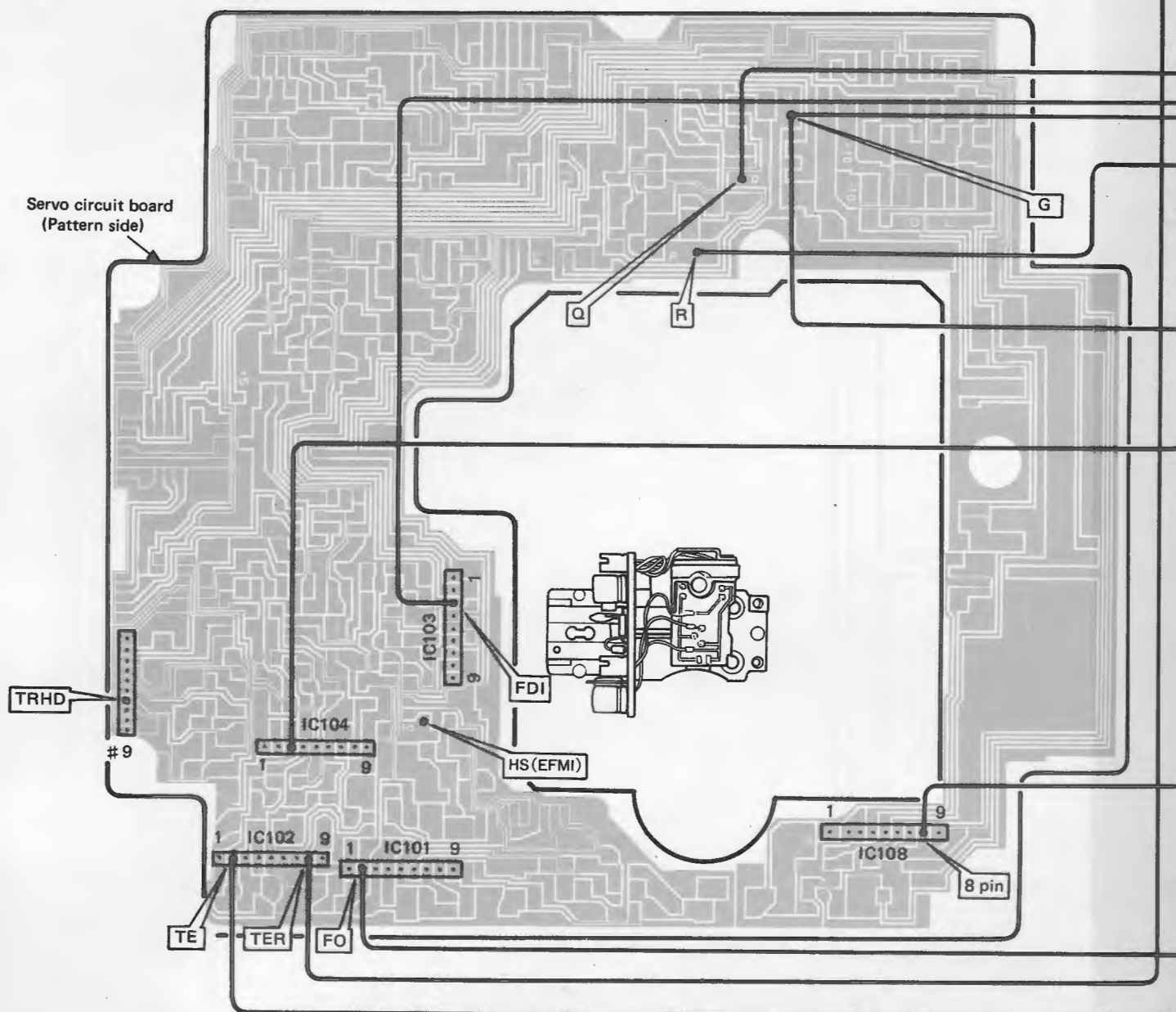
★ BEFORE

① Setting

Before adjust

On the power

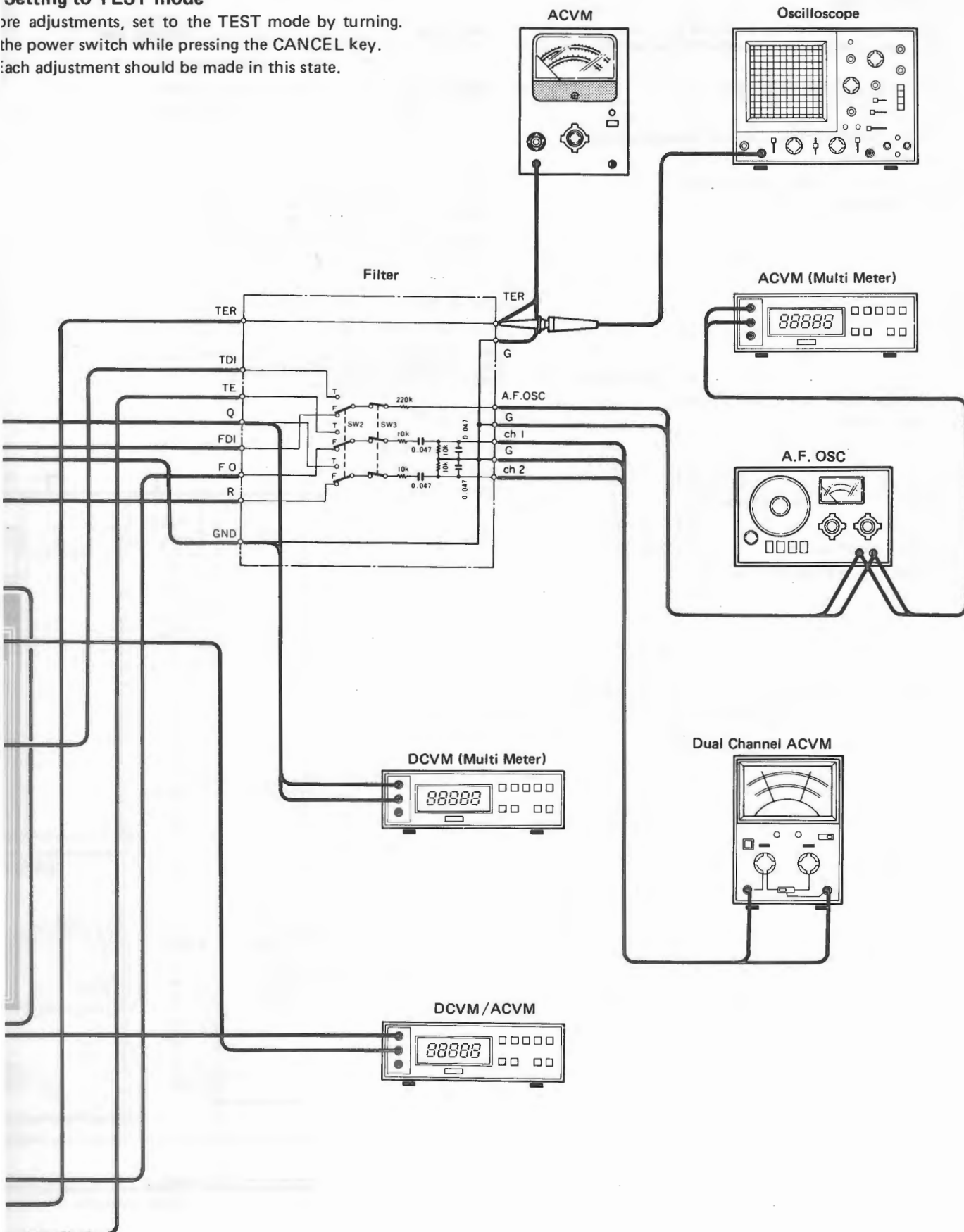
* Each adjust



BEFORE ADJUSTMENTS

Setting to TEST mode

Before adjustments, set to the TEST mode by turning the power switch while pressing the CANCEL key. Each adjustment should be made in this state.



● Discription of test mode keys

OPEN/CLOSE : Focus start
 PLAY : Play
 STOP : Stop, Focus OFF
 "—" : -10 Kick
 "+" : +10 Kick
 ◀◀ : -1 Kick
 ▶▶ : +1 Kick

REPEAT : Feed foward
 A↔B : Feed return
 "2" : Tracking servo OFF
 (Fixed toward inner circumference at the feed center)
 "0" : DAC output for feed
 "1" : DAC output for feed

② Adjustments

Carry out following adjustments in the order as numbered.

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

Confirmation of Laser Output (Step 1)

- ① Do not load the disc.
- ② Remove the disc tray.
- ③ Remove the flapper.
- ④ Set to the TEST mode.
- ⑤ Apply the laser power meter's sensor to the pick-up head as shown in Fig. B.
- ⑥ Measure the laser output during the 5 seconds.
 Rating: Laser output = 0.1mW to 0.5mW

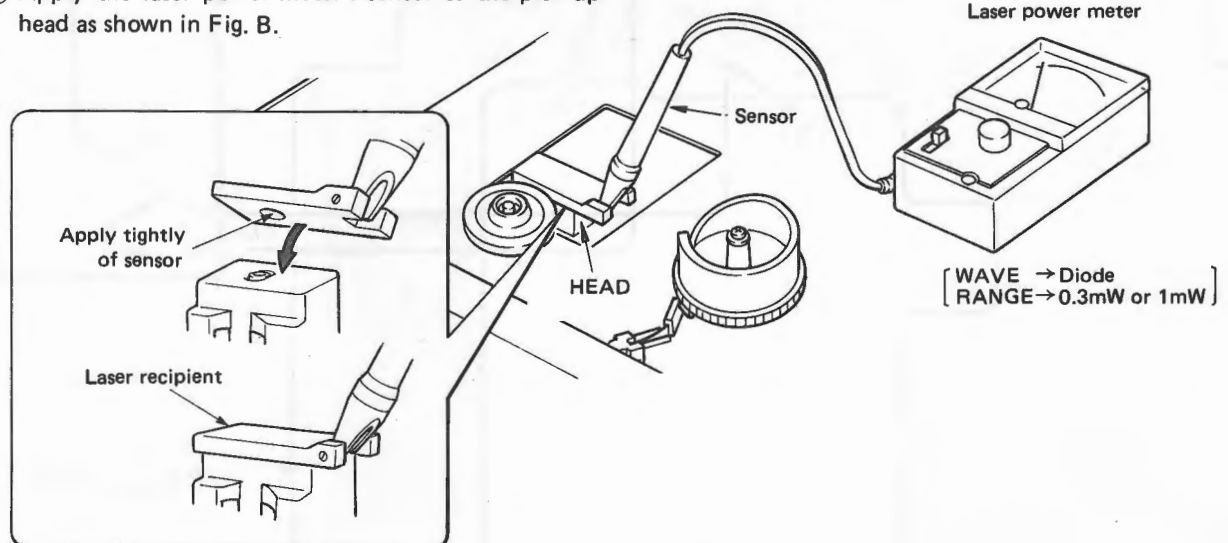


Fig. B

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.

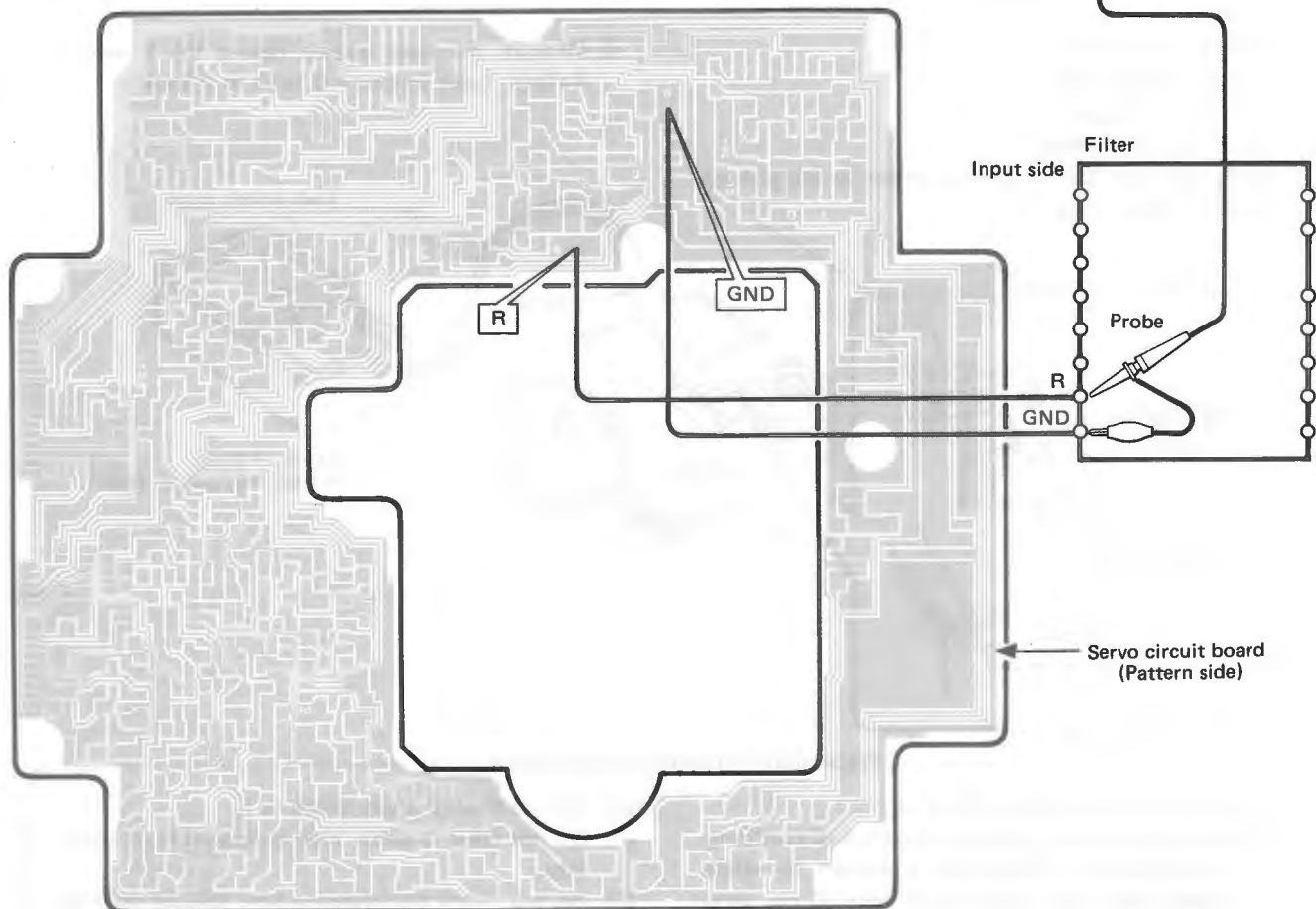
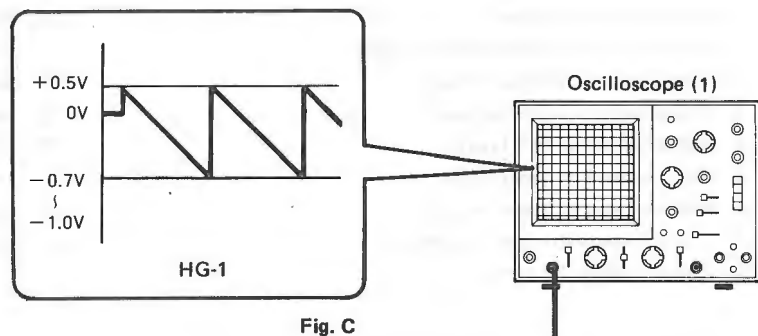
Confirmation of Focus Actuator Operation (Step 2)

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 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.



Adjustment of VCO (Step 3)

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

* 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 STOP mode.

- ④ Wait for longer than a minute after the POWER switch is turned ON and while observing the frequency counter indication, adjust L501 core so that it satisfies the rating.

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

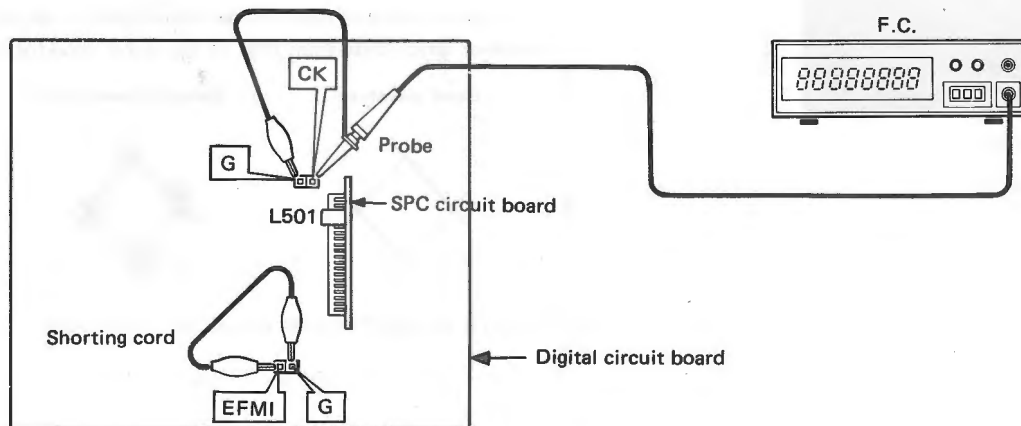


Fig. D

Adjustment of Jitter (Step 4)

Oscilloscope (2) Settings

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

- ① Remove the disc tray.
- ② Connect the oscilloscope (2) to EFMI terminal.
- ③ Load the specified disc YEDS-18.
- ④ The POWER switch is turned ON.

- 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.

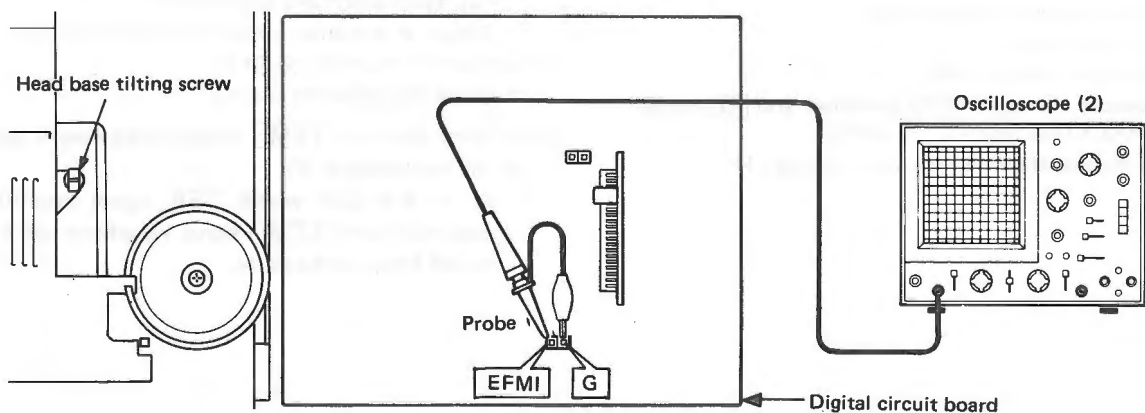
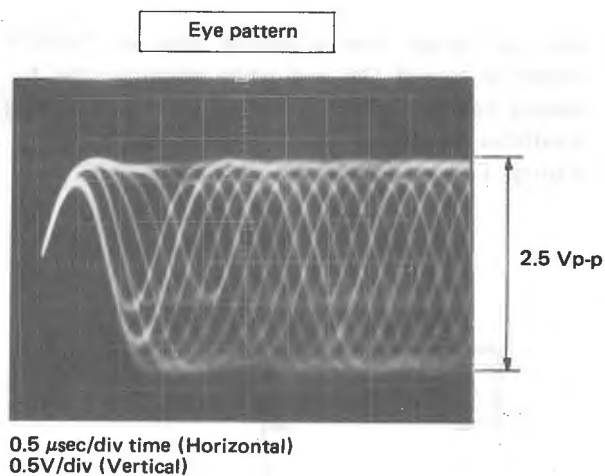
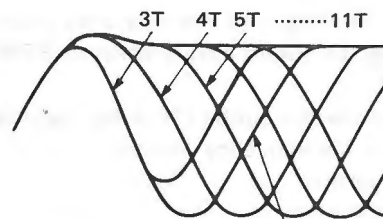


Fig. E

Oscilloscope (2)



Waveforms 3T – 11T.



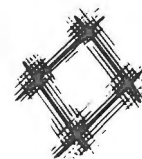
This portion is referred to as the eye pattern.

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.

Adjustment of Diffraction Grating (Step 5)

* 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)

Oscilloscope (2) setting conditions

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

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

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

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

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

② Load the specified disc YEDS-18.

③ The POWER switch is turned ON.

④ Press the PLAY key.

⑤ Set SW1 in the filter to ON.

(Short-circuit between **TDI** terminal and **Q** terminal. (TRACKING SERVO → OFF))

⑥ Observe the waveform on the oscilloscope (1).

⑦ Using the $\ominus$ screwdriver (See Pg. 10), adjust the diffraction grating screw so that the **TER** signal amplitude becomes maximum and satisfies the rating.

Rating: $E_{TER} \geq 150mV_{p-p}$

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

* Adjust at the inner circumference of the disc.

⑧ Set SW1 in the filter to OFF.

(TRACKING SERVO → ON)

⑨ 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.

Oscilloscope (1)

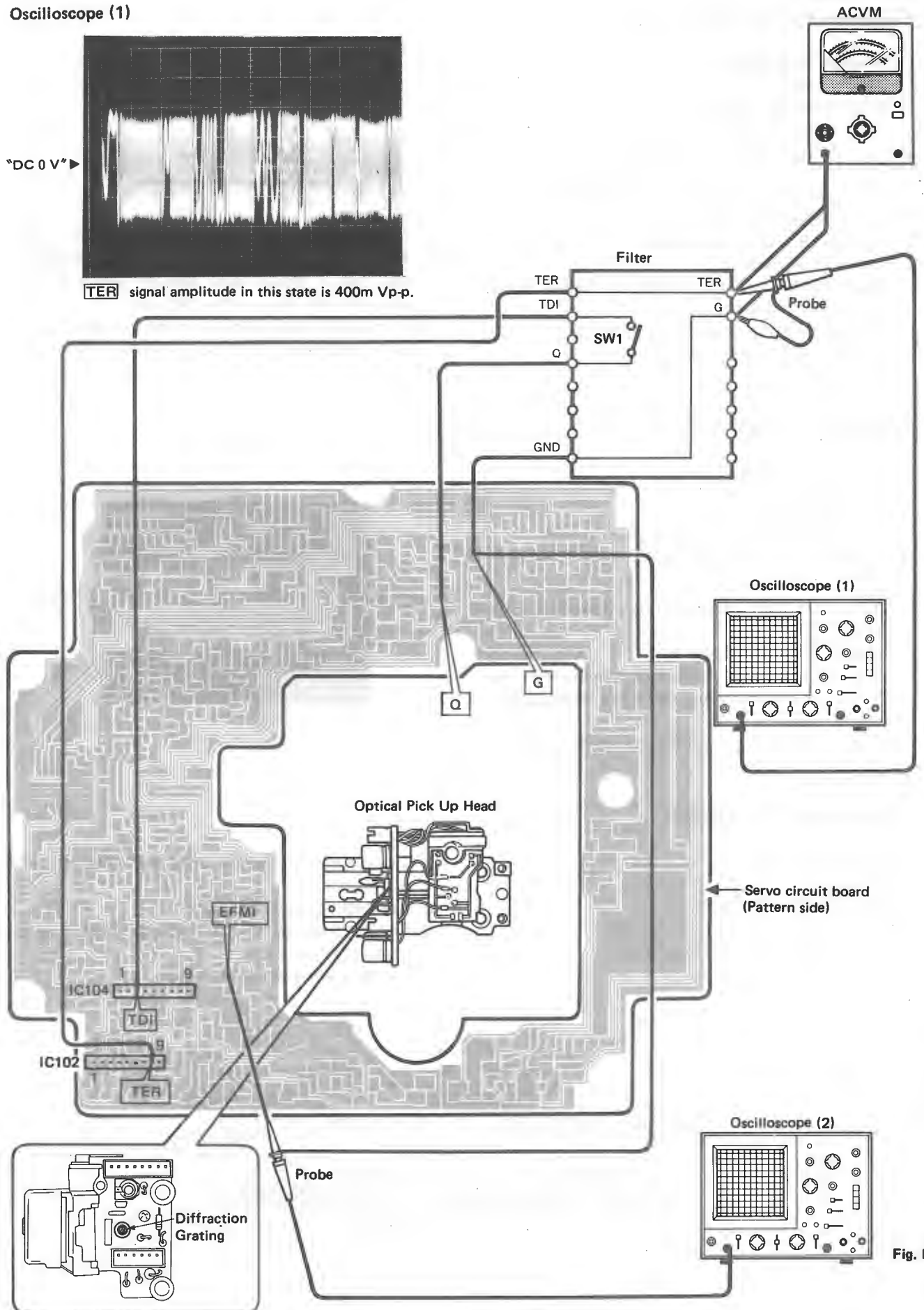
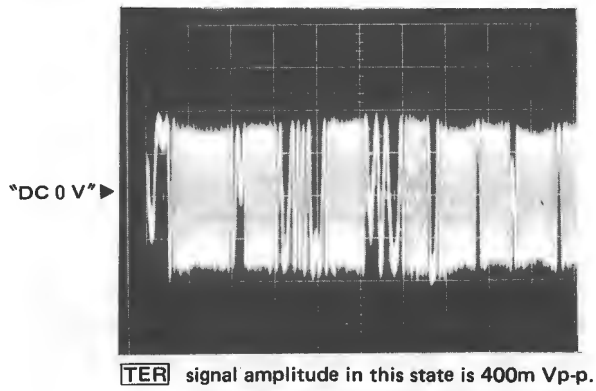


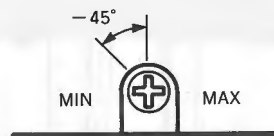
Fig. F

Adjustment of Focus Offset (Step 6)

Oscilloscope (2) Settings

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

- ① Connect an oscilloscope (2) to the **EFMI** terminal.
- ② Load the specified disc YEDS-18.
- ③ The POWER switch is turned ON.
- ④ Press the PLAY key.
- ⑤ Adjust VR102 (FOFS) so that the **EFMI** signal (eye pattern) becomes clear.
 - * Be sure to adjust at the center of the disc.
 - * Adjust VR102 within the $+0^\circ$ to -45° range.



If the best adjusted position is not available within 0° to -45° , turn VR102 back to the center position and turn it toward MIN again to obtain the best possible EFMI signal within that range.

- ⑥ After adjustment, check to make sure that there is nothing abnormal in FOCUS search operation.

Adjustment of EF Balance (Step 7)

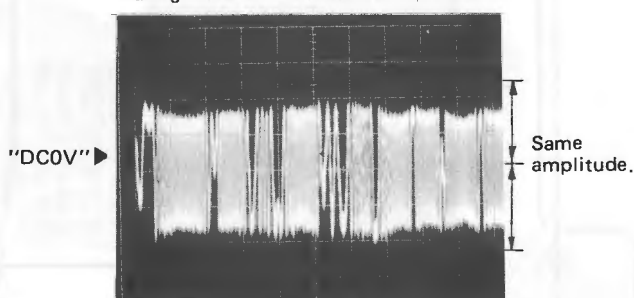
Oscilloscope (1) settings

- 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 5.
- ② Carry out ② to ⑥ of Step 5.
- ③ 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 $\rightarrow$ Less than ± 10 mV.



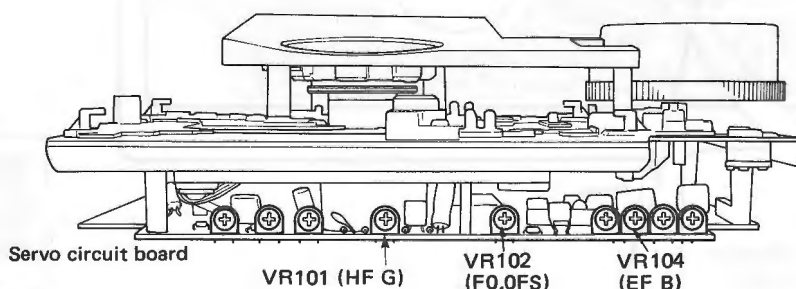
This shows DC 0V state.

Adjustment of HF Level (Step 8)

Oscilloscope (2) setting

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

- ① Connect the oscilloscope (2) to the **EFMI** terminal as in Step 5.
- ② Carry out ② to ④ of Step 6.
- ③ Adjust VR101 (HF G) so that the **EFMI** level becomes 2.5 Vp-p.
 - * Adjust at the center of the disc.



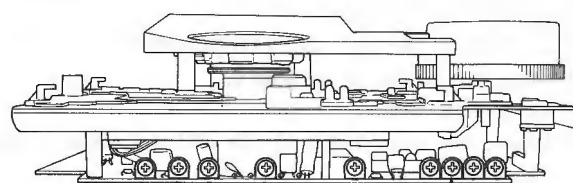
Adjustment of Focus Gain (Step 9)

* 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. 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 Carry out ② to ④ of Step 6.

- ⑤ Set SW3 to ON.
- ⑥ Read the indications of the AC voltmeters (CH1: E_{FO} , CH2: E_R).
- ⑦ Adjust VR103 (FO G) so that AC voltmeter indications satisfy the rating.
Rating: $E_R - E_{FO} = 5\text{dB}$ $0\text{dBV} = 1\text{V}$

Reference E_R -21 dBV (89mV)
 E_{FO} -26 dBV (50mV)



VR103 (FO G)

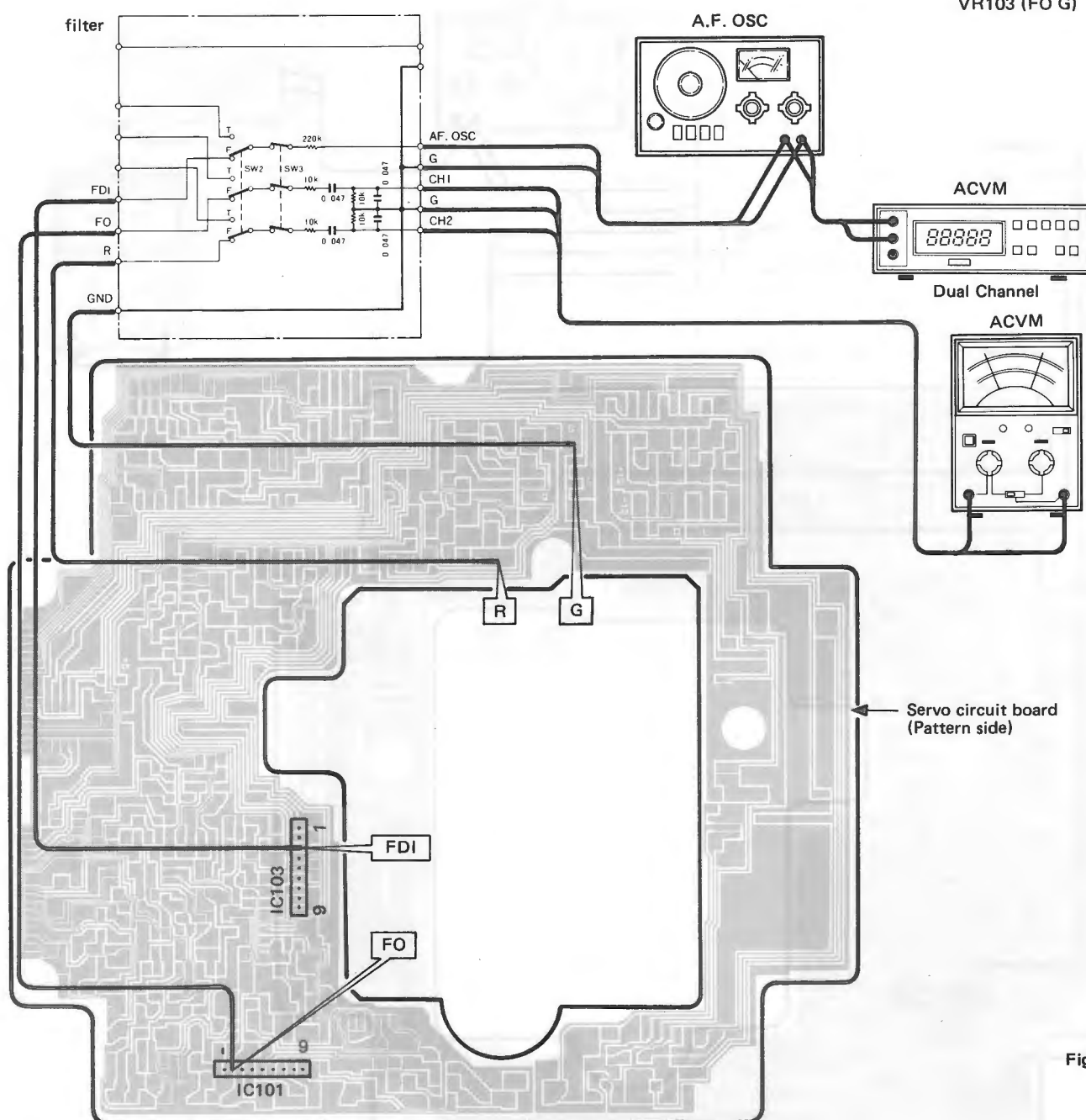
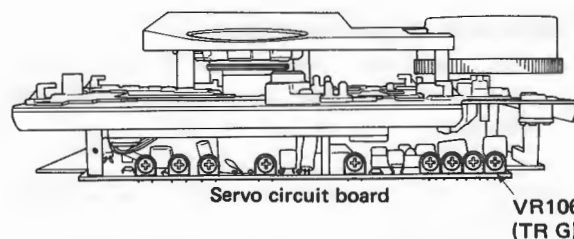


Fig. G

Adjustment of Tracking Gain (Step 10)

* 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 mV_{rms} 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 Carry out ② to ④ of Step 6.
- ⑤ Set SW3 to ON.
- ⑥ Read the indications of the AC voltmeters (CH1: E_{TE}, CH2: E_O).



- ⑦ Adjust VR106 (TR G) so that AC voltmeter indications satisfy the rating.

Rating: $E_{TE} - E_Q = 20\text{dB}$ $0\text{dBV} = 1\text{V}$

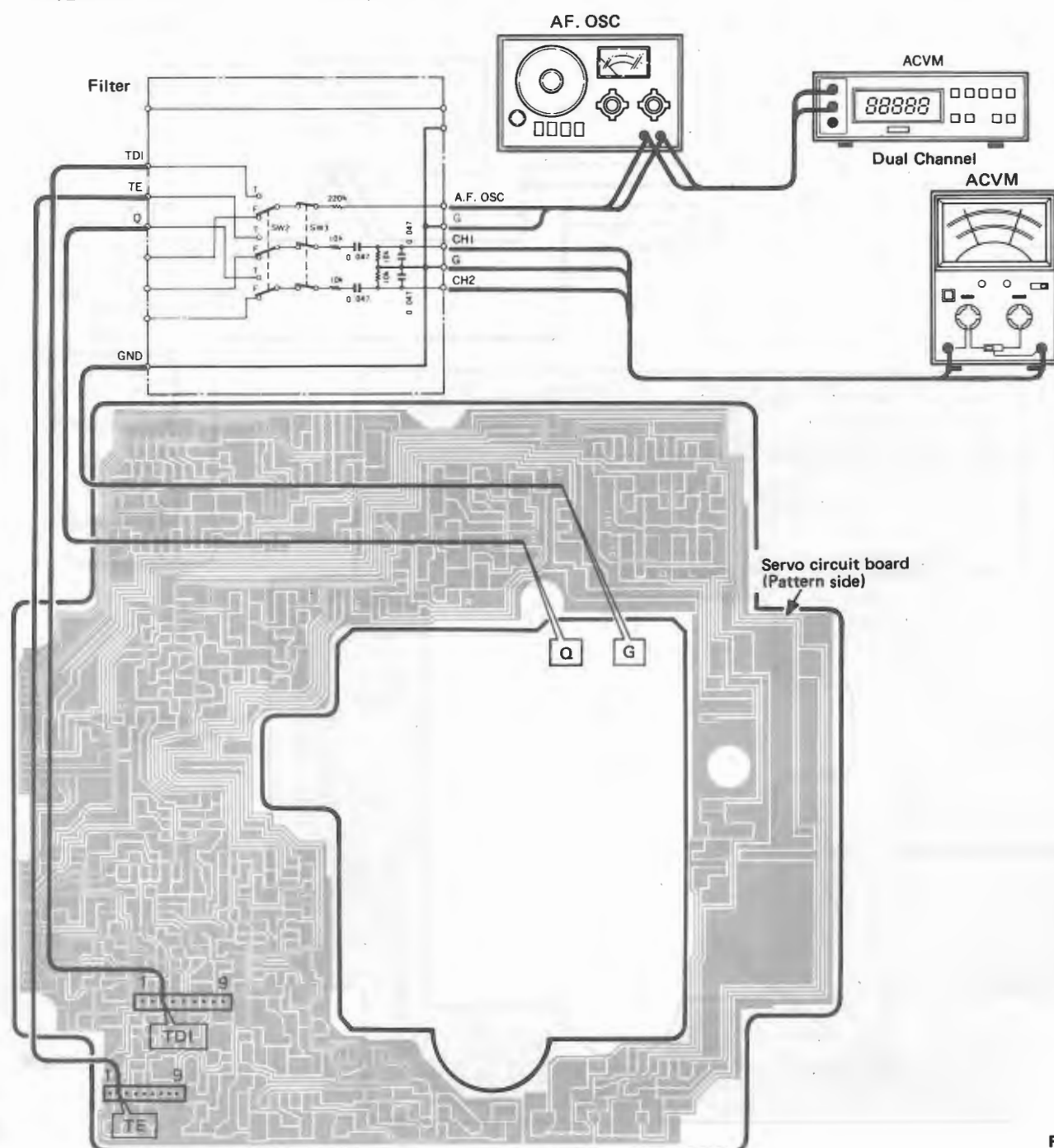
Reference E_Q -30 dBV (30mV) $E_{TF} = -10 \text{ dBV (316mV)}$ 

Fig. H

Adjustment of Tracking Offset (Step 11)

- ① Connect the DC voltmeter to the **Q** terminal.
- ② Short between the **TROF** (base of Q116) and ground.
- ③ The POWER switch is turned ON.
- ④ Press the STOP key.
- ⑤ Adjust VR105 (TR OFS) so that the DC voltmeter indication satisfies the rating.
Rating: $E_Q = 0V \pm 25mV$

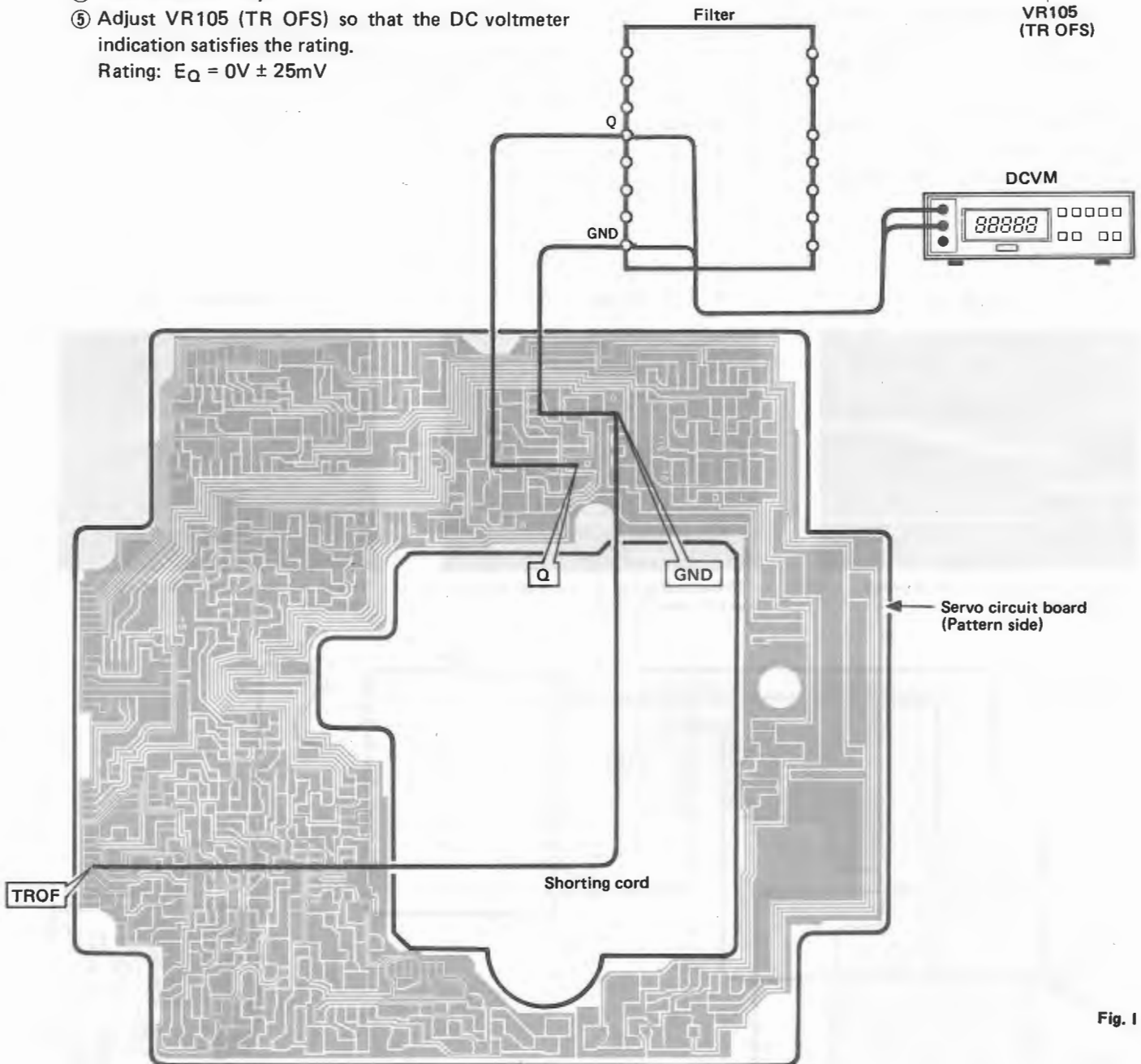
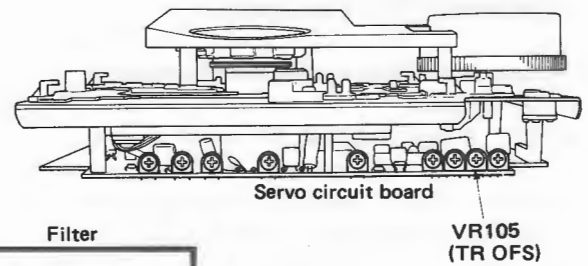


Fig. 1

Confirmation of Jitter (Step 12)

- ① Confirm the jitter rating as in ⑥ of Step 4.
- ② When the tilting screw has been readjusted, go back to Step 4 and carry out adjustments all over from there.

Adjustment of Kick Gain (Step 13)

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)

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

② Carry out ② to ④ of Step 6.

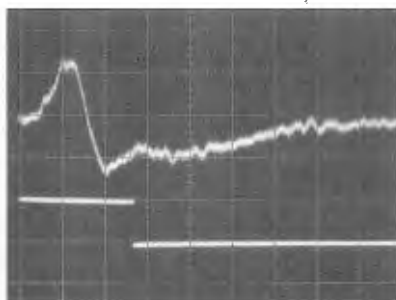
③ Press the FF mode key (**▶▶**) and check the waveform.

④ Adjust VR107 (KICK G) so that the **TER** signal cycle becomes 1.5 ± 0.5 while the **TRHD** signal level is high.

* Adjust at the inner circumference of the disc.

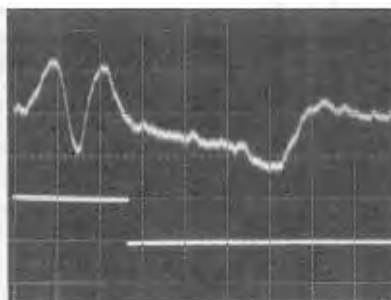
⑤ Confirm that in the Reverse mode, the **TER** signal cycle satisfies the rating given in ③ but in the reverse phase.

Incorrect



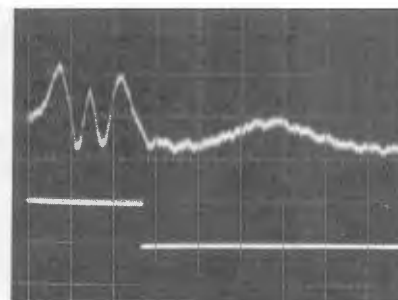
This shows about 0.9 cycle which is incorrect

Good



This shows about 1.7 cycle which is within specification.

Incorrect



This shows about 2.5 cycle which is incorrect

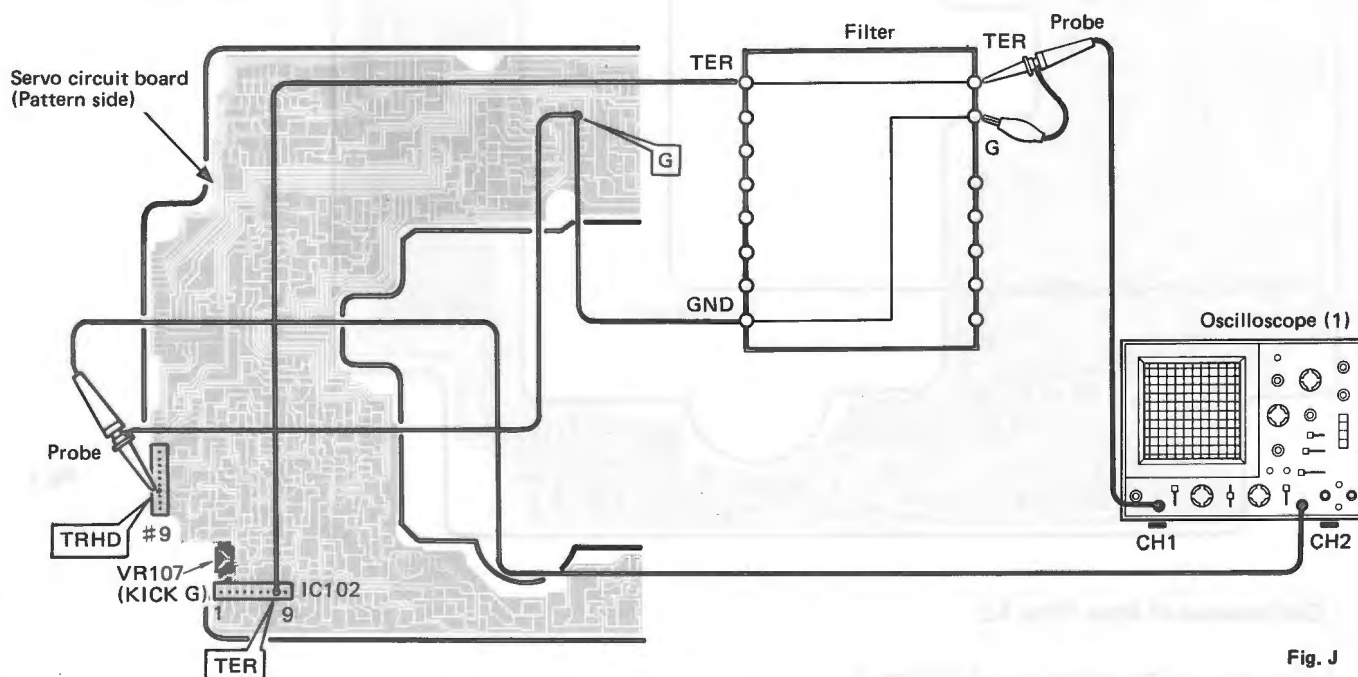


Fig. J

Confirmation of Search Mode (Step 14)

- 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 15)

- ① Connect the DC voltmeter to the 2 pin of IC108.
- ② Set to the Test mode.
- ③ Press the REPEAT key.
- ④ Press the "1" key.
- ⑤ Adjust VR108 (AD OFS) so that the specified rating is obtained.

Rating: $E = 0V \begin{smallmatrix} +0 \\ -100 \end{smallmatrix} mV$

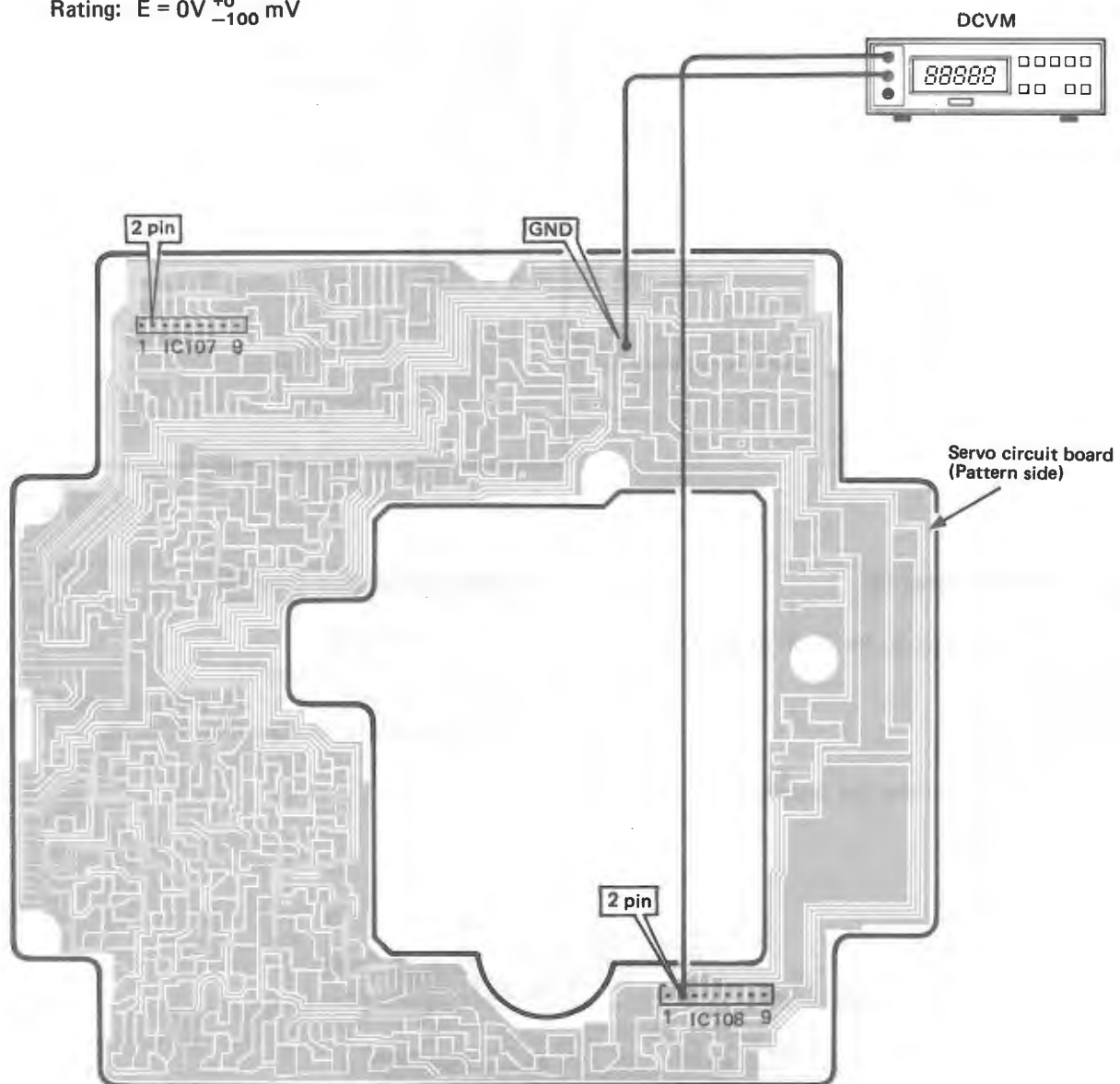
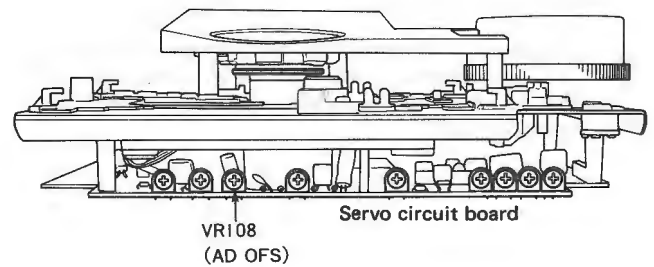


Fig. K

Adjustment of DA Offset (Step 16)

- ① Do not load the disc.
- ② Connect the DC voltmeter to **DA** terminal.
- ③ Set to the TEST mode.
- ④ Carry out ③ and ④ of Step 15.
- ⑤ Adjust VR801 (DA OFS) so that the specified Rating: $E = 0V_{-10}^{+0} \text{ mV}$
- ⑥ In the same way as in step 15, confirm the AD offset. If "SEC" on display is less than FB (for example FB, FC, Fd, FE, FF.), perform the adjustment as described in step 15 again.

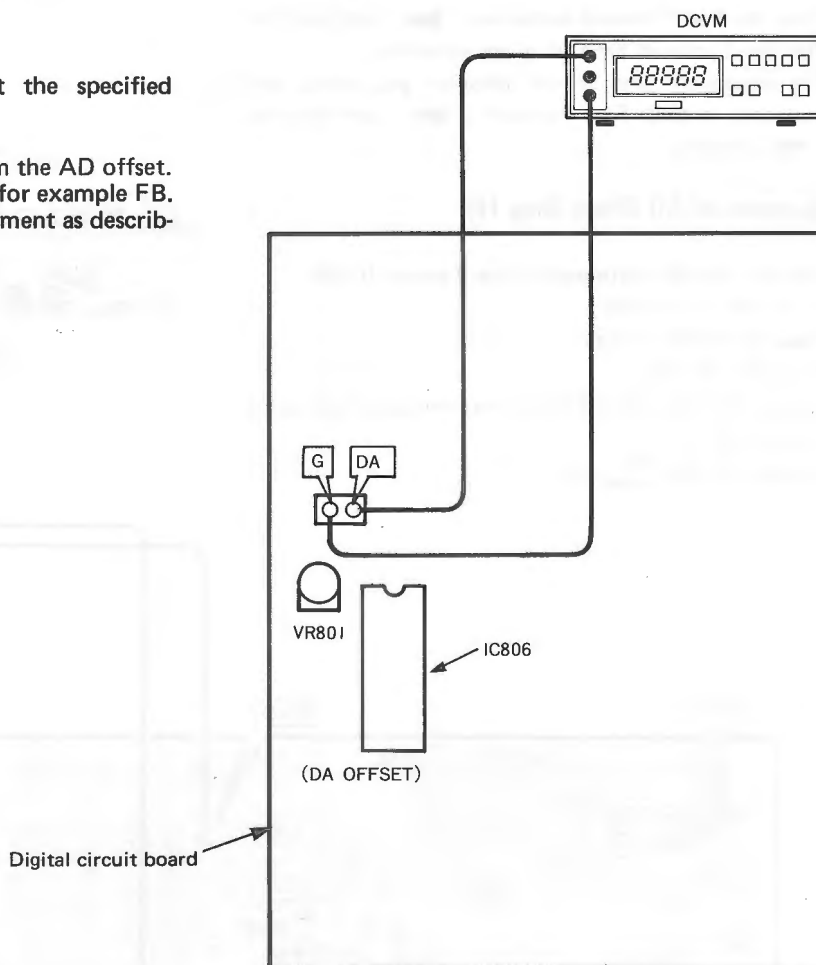


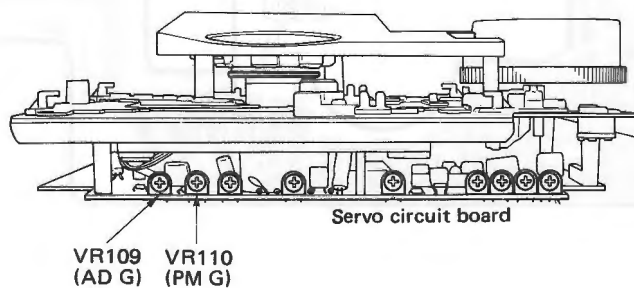
Fig. L

Adjustment of PM Gain (Step 17)

- 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 A ↔ B key.
- ④ Press the "0" key.
- ⑤ Adjust VR110 (PM G) so that the specified rating is obtained.
Rating: $E = 0 \pm 100 \text{ mV}$

Adjustment of AD Gain (Step 18)

- ① Set to the TEST mode.
- ② Carry out ③ and ④ of Step 17.
- ③ Adjust VR109 (AD G) to the position where the "SEC" of the display changes from 01 to 00.



Adjustment of DAC Offset (Step 19)

- ① Connect the DC voltmeter to the 9 pin of IC601 and 8 pin of IC605 (L ch).
- ② Connect the DC voltmeter to the 9 pin of IC602 and 8 pin of IC604 (R ch).
- ③ Adjust VR603 (L ch) and VR604 (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 voltmeter to the output terminal of IC606 (R ch) and IC607 (L ch) respectively. (Test pin available: CB609 for L ch and CB608 for R ch)
- ② Load the disc.
- ③ Maximize the OUTPUT LEVEL.
- ④ In the STOP mode, adjust VR605 (L ch) and VR606 (R ch) so that the specified rating is obtained.
Rating: $0\text{V} \pm 1\text{mV}$

Adjustment of DAC Distortion (Step 21)

- ① Connect the distortion meter to the LINE OUT terminal.
- ② Load the disc.
- ③ Press the PLAY key.
- ④ Maximize the OUTPUT LEVEL.
- ⑤ Adjust VR601 (L ch) and VR602 (R ch) so that the distortion of 1kHz, 0dB output becomes minimum (less than 0.003%).

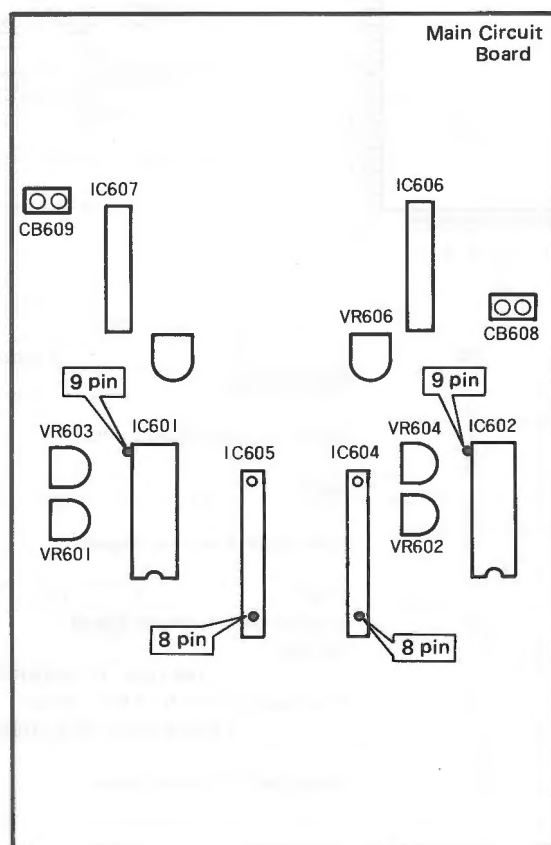


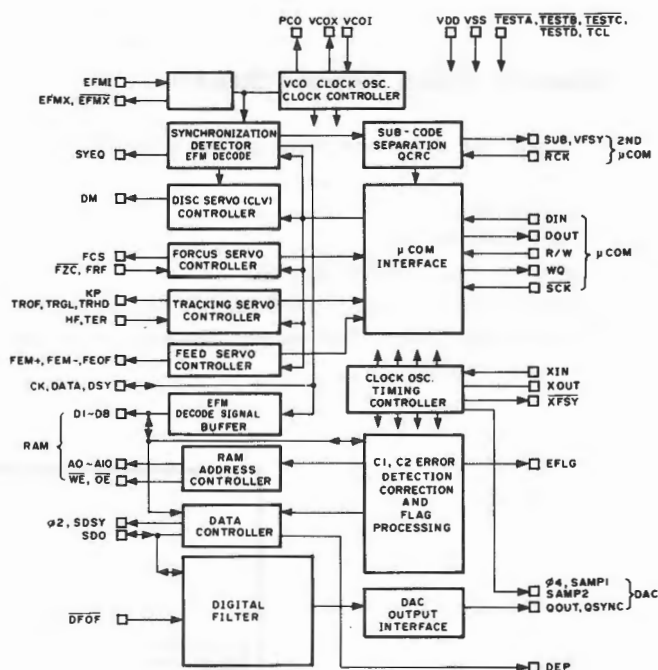
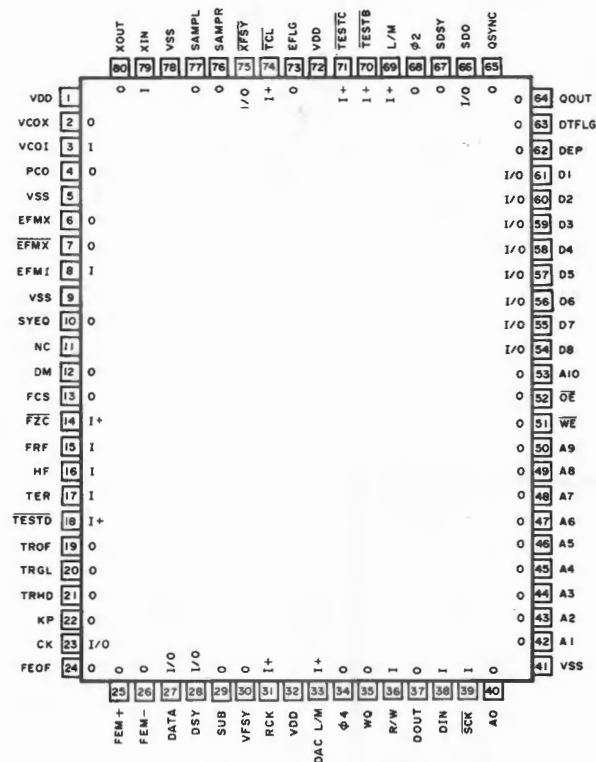
Fig. M

LSI DATA

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

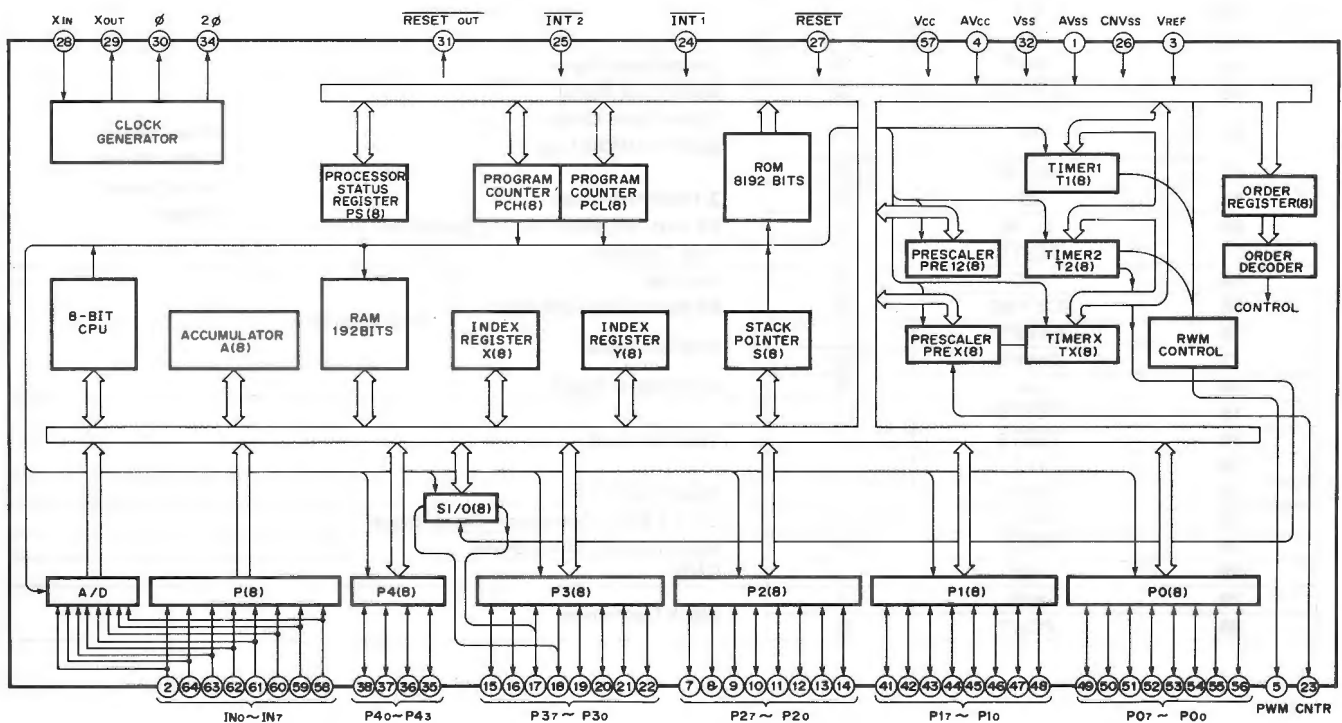
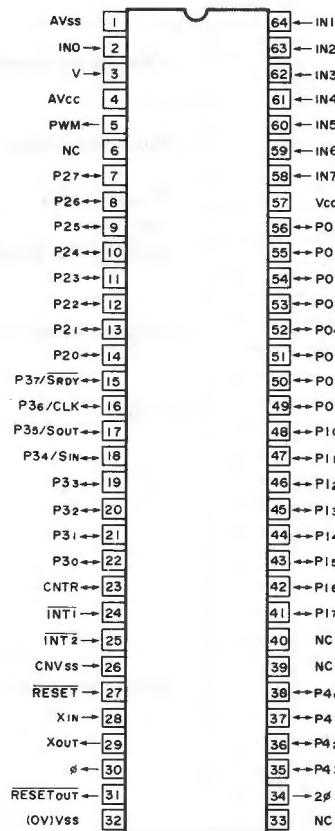
YM-3816 is a CMOS LSI for signal processing and servo control of the compact disc player.

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.

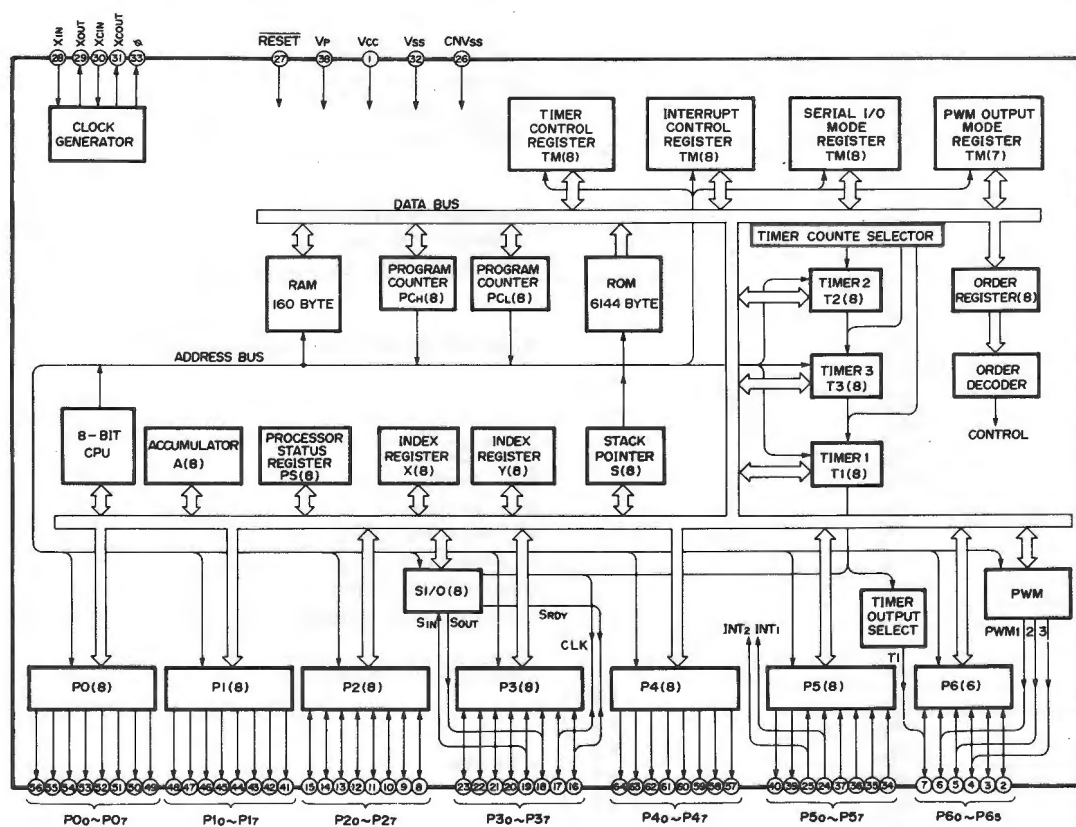
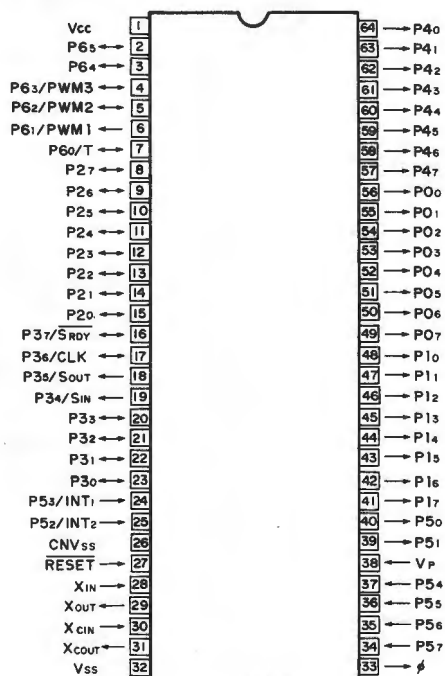


Pin No.	Pin Name	I/O	Function
1	VDD		Power Supply
2	VCOX	O	Clock Playback Circuit 4PCO
3	VCOI	I	
4	PCO	O	
5	VSS		GND
6	EFMX	O	EFM Signal External Circuit
7	EFMX	O	
8	EFMI	I	
9	VSS		GND
10	SYEQ	O	Synchronized Uniform Signal
11	N.C.		Not Use
12	DM	O	Disc Servo { LOW (0V): FORWARD OPEN (2.5V): STOP HIGH (5V): REVERSE
13	FCS	O	Focus Servo System Input
14	FZC	I	
15	FRF	I	
16	HF	I	Tracking Servo System Input
17	TER	I	
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	FE0F	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	Test Terminal
64	NC	O	Not Use
65	SDSYMD	O	BB Word Clock for DAC
76	SAMPR	O	Degitch Signal
77	SAMPL	O	4.3218MHz Clock
34	$\phi 4$	O	
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	

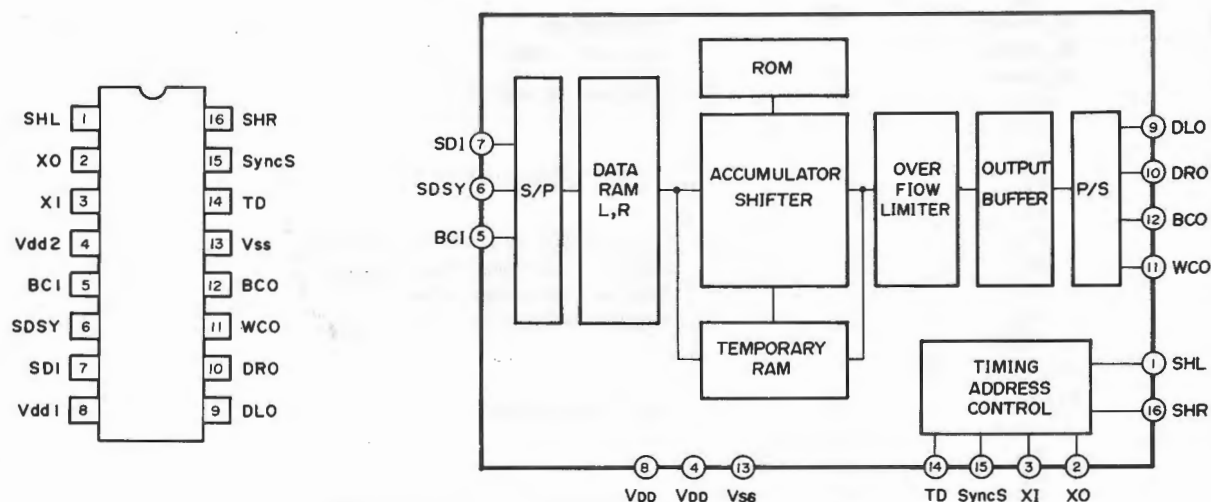
IC805: M50943-400SP (8 bit μ -COM)

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	I/O	DM FG Pulse
16	P3 ₆ /CLK		Serial I/O CLK
17	P3 ₅ /SOUT		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	I	Track Count
24	INT ₁		—
25	INT ₂		—
26	CNV _{ss}		—
27	RESET		RESET
28	XIN		Clock Input
29	XOUT	O	—
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	NC	—	—
41	PI ₇	I/O	FLAPPER IN SW Input
42	PI ₆		FLAPPER OUT SW Input
43	PI ₅		DISPLAY DATA CLK Output
44	PI ₄		DISPLAY DATA START Signal output
45	PI ₃		
46	PI ₂		
47	PI ₁		
48	PI ₀		DM — Output
49	PO ₇		DM + Output
50	PO ₆		KP — Output
51	PO ₅		KP + Output
52	PO ₄		FLAPPER IN Output
53	PO ₃		FLAPPER OUT Output
54	PO ₂		LOADING IN Output
55	PO ₁		LOADING OUT Output
56	PO ₀		—
57	V _{cc}	—	—
58	IN ₇	I	LOADING IN SW Input
59	IN ₆		KEY Input
60	IN ₅		
61	IN ₄		
62	IN ₃		
63	IN ₂		
64	IN ₁		

IC1: M50754-405SP (8 bit μ -COM)

Pin No.	Pin Name	I/O	Function	
1	V _{cc}		V _{cc}	
2	P6 ₅	I/O	U } DISPLAY SEGMENT	
3	P6 ₄			
4	P6 ₃ /PWM3		VOLUME UP	
5	P6 ₂ /PWM2		VOLUME DOWN	
6	P6 ₁ /PWM1	O	S } DISPLAY SEGMENT	
7	P6 ₀ /T			
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	O	} KEY CODE OUTPUT	
17	P3 ₆ /CLK			
18	P3 ₅ /SOUT			
19	P3 ₄ /SIN	O		
20	P3 ₃	I/O		
21	P3 ₂			
22	P3 ₁		DISPLAY MODE BACKUP ON/OFF	
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 } KEY INPUT	
35	P5 ₆			K2
36	P5 ₅			K1
37	P5 ₄			K0
38	V _p		FL DRIVE -30V : V _p	
39	P5 ₁	O	DISPLAY SEGMENT : R	
40	P5 ₀		G8 } DIGIT SIGNAL	
41	PI ₇			G9
42	PI ₆			G7
43	PI ₅			G6
44	PI ₄			G5
45	PI ₃			G4
46	PI ₂			G3
47	PI ₁			G2
48	PI ₀			G1
49	PO ₇		Q } DISPLAY SEGMENT	
50	PO ₆			P
51	PO ₅		O } DISPLAY SEGMENT	
52	PO ₄			N
53	PO ₃			M
54	PO ₂			L
55	PO ₁			J
56	PO ₀			I
57	P4 ₇			H
58	P4 ₆			G
59	P4 ₅			F
60	P4 ₄			E
61	P4 ₃			D
62	P4 ₂			C
63	P4 ₁			B
64	P4 ₀			A

IC809: YM3414 (16 bit over sampling digital filter)



Pin Name	Pin No.	I/O	Description of function
SHL	1	O	At 1DAC (TD = 'L') : Deglitcher signal of Lch (when four-fold) At 2DAC (TD = 'H') : Deglitcher signal of L/Rch (when eight-fold)
XO	2	O	Generates quarts oscillation between XI and XO.
XI	3	I	16.934MHz (Direct input into XI from the external source is also possible.)
Vdd2	4		+5V power source for quarts oscillation and deglitcher signal
BCI	5	I	Input terminal for bit clock of input data
SDSY	6	I	Clock to indicate L/Rch distinction of input data and input timing
SDI	7	I	Data input terminal
Vdd1	8		+5V power source for digital signal system
DLO	9	O	At 1DAC (TD = 'L') : L and R ch data output terminal (when four-fold) At 2DAC (TD = 'H') : L ch data output terminal (when eight-fold)
DRO	10	O	R ch data output terminal
WCO	12	O	Word clock of output data DLO, DRO
BCO	12	O	Bit clock of output data
Vss	13		GND terminal
TD	14	I	1DAC/2DAC select terminal 1DAC (four-fold) = 'L' 2DAC (eight-fold) = 'H'
Sync S	15	I	Synchronous signal to absorb jitter in unsynchronous input (Syncs = 'H' : fully synchronous input = 'L' : SDSY prohibited)
SHR	16	O	R ch deglitcher signal at 1DAC

IC BLOCK

IC101, 103, 105, 107 ~ 109: AN6551, NJM4558S, TA7558S or BA715

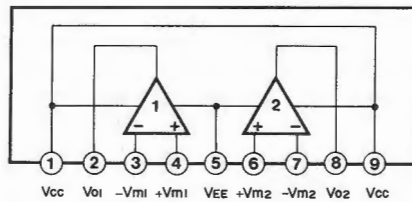
IC102: NJM4560S

IC106: NJM4558S

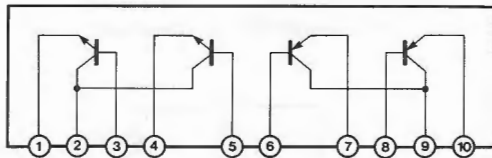
IC604 ~ 607: NJM5532S

IC609: NJM4556S

(Dual Ope-Amp)

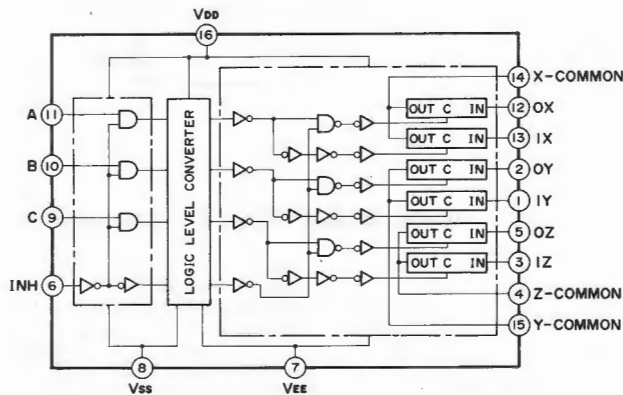


IC111: STA451C (Transistor Array)



IC110: TC4053BP, μ PD4053, HD14053 or MN4053BP

(Triple-2 channel Multiplexer/Demultiplexer)

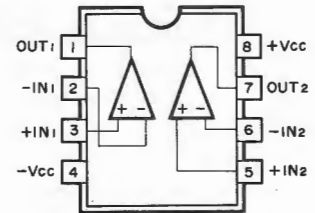


CONTROL INPUTS				"ON" CHANNEL
INHIBIT (Pin 6)	C (Pin 9)	B (Pin 10)	A (Pin 11)	OX (Pin 12), OY (Pin 2), OZ (Pin 5) IX (Pin 13), IY (Pin 1), IZ (Pin 3)
L	L	L	L	OX, OY, OZ
L	L	L	H	IX, OY, OZ
L	L	H	L	OX, IY, OZ
L	L	H	H	IX, IY, OZ
L	H	L	L	OX, OY, IZ
L	H	L	H	IX, OY, IZ
L	H	H	L	OX, IY, IZ
L	H	H	H	IX, IY, IZ
H	*	*	*	NOTE

* Don't Care

IC503: NJM2043M (T1) or AN6558S

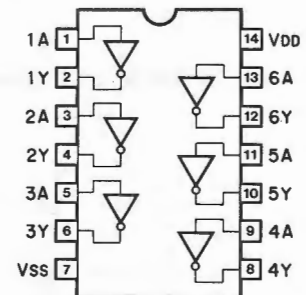
(Dual Ope-Amp)



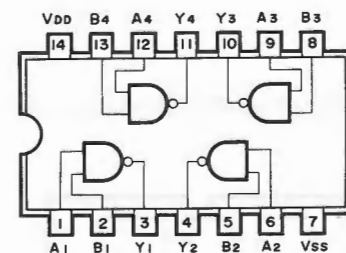
IC603: TC74HC04P or MC74HC04N

IC803: TC4069B

(Hex Inverter)

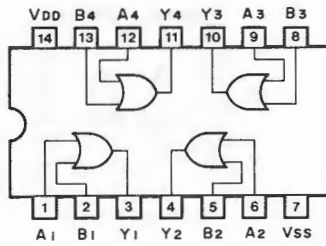


IC808: TC74HC00P
(Quad 2 Input NAND)

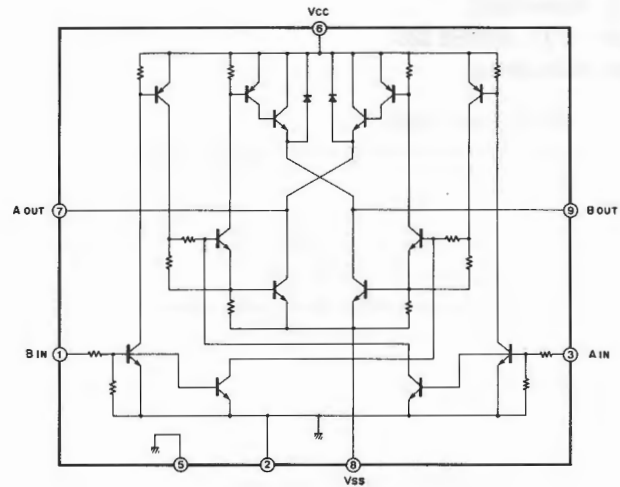


IC801: TC4071BP

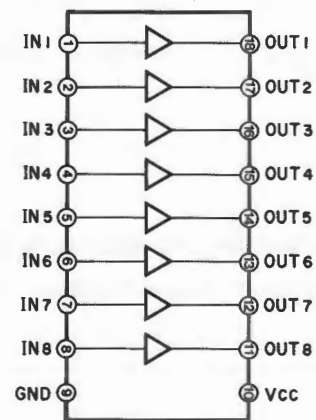
(Quadruple 2-Input OR Gate)



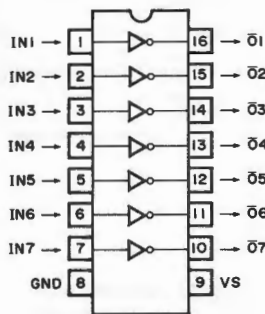
IC804: BA6218 (Motor Driver)



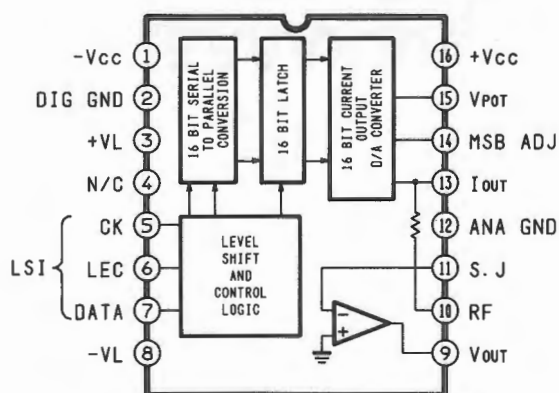
IC3: M54564P (LED Driver)



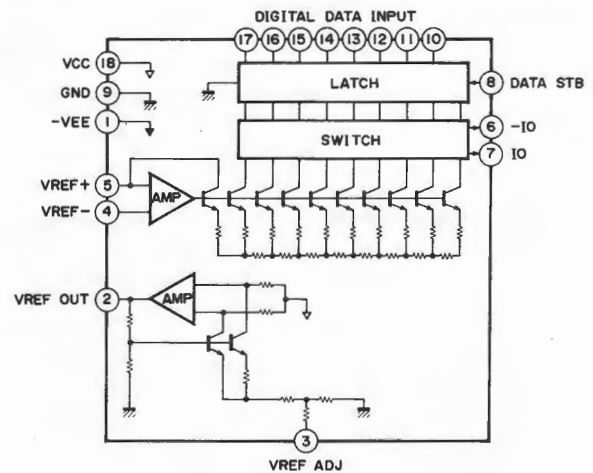
IC2: M54580P (LED Driver)



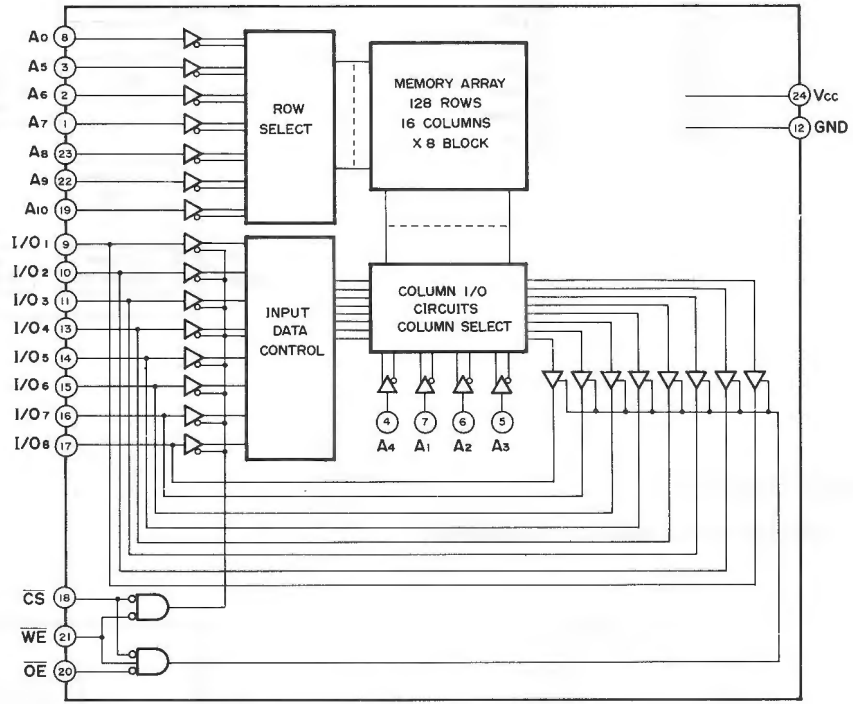
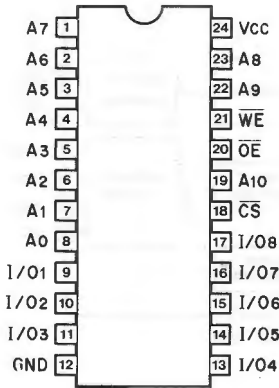
IC601, 602: PCM56P-K (D/A Converter)



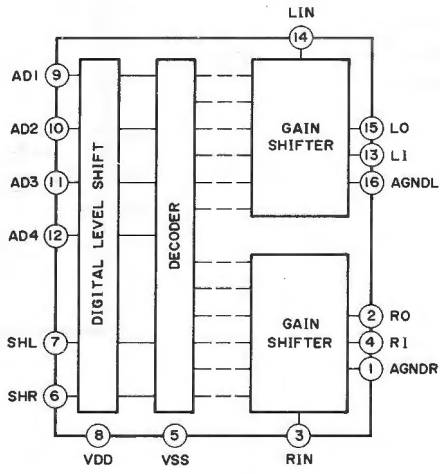
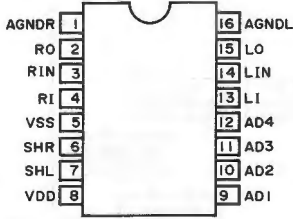
IC806: BA9201 (8 bit D/A Converter)



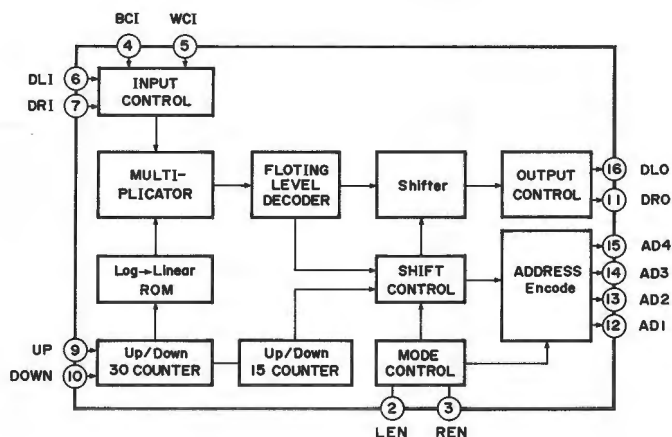
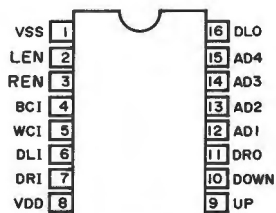
IC502: MSM5128-20GS, HM6116FP-4 or CXK5816M
(RAM)



IC603: YM3023 (Gain Shifter)

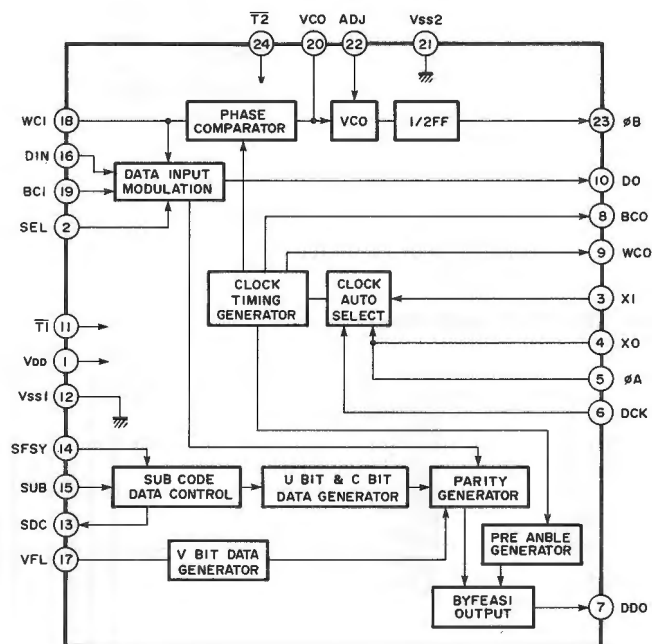
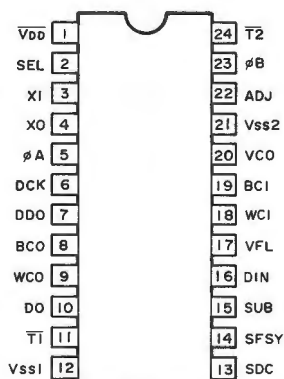


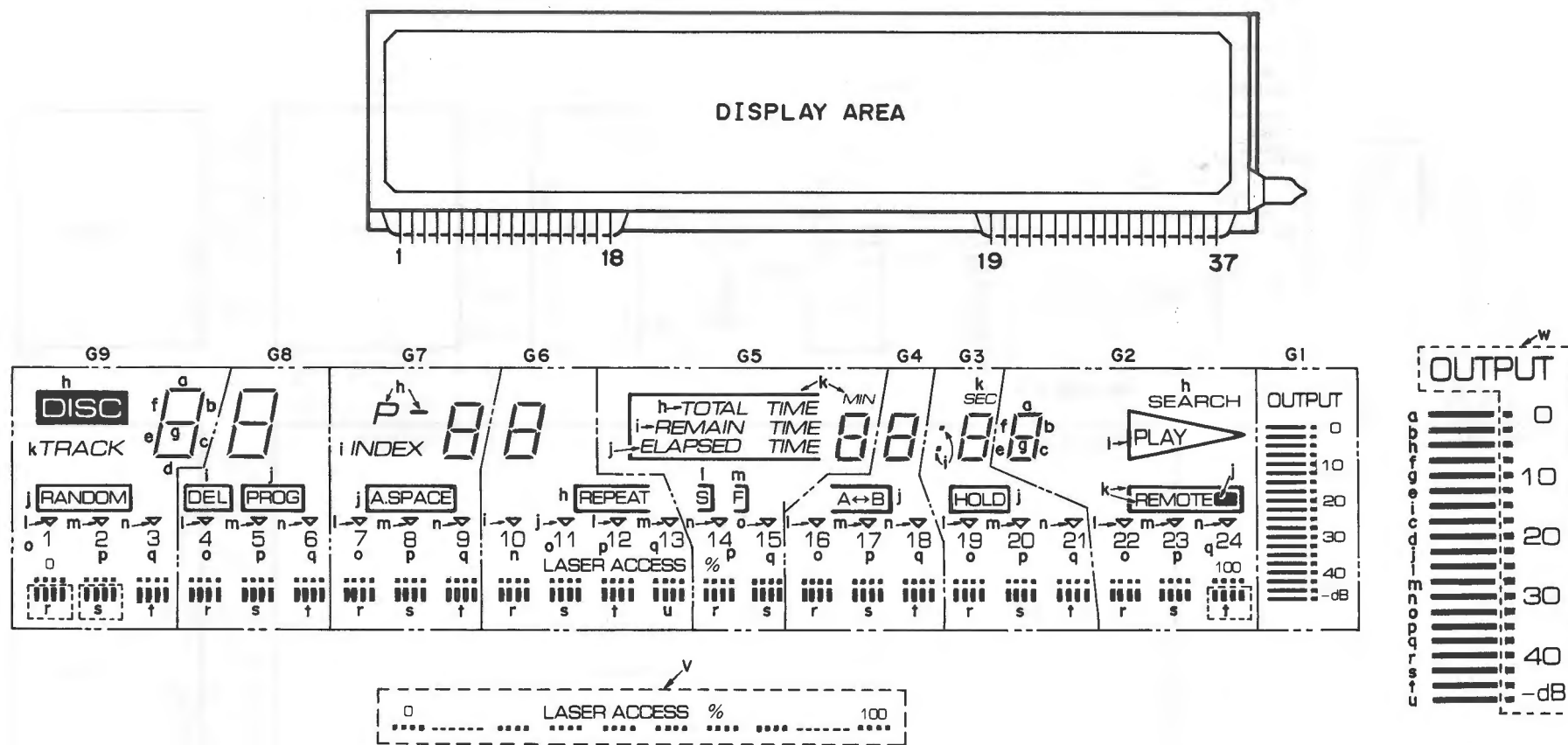
IC810: YM6013 (Digital Volume Controller)



IC807: YM3613B

(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			



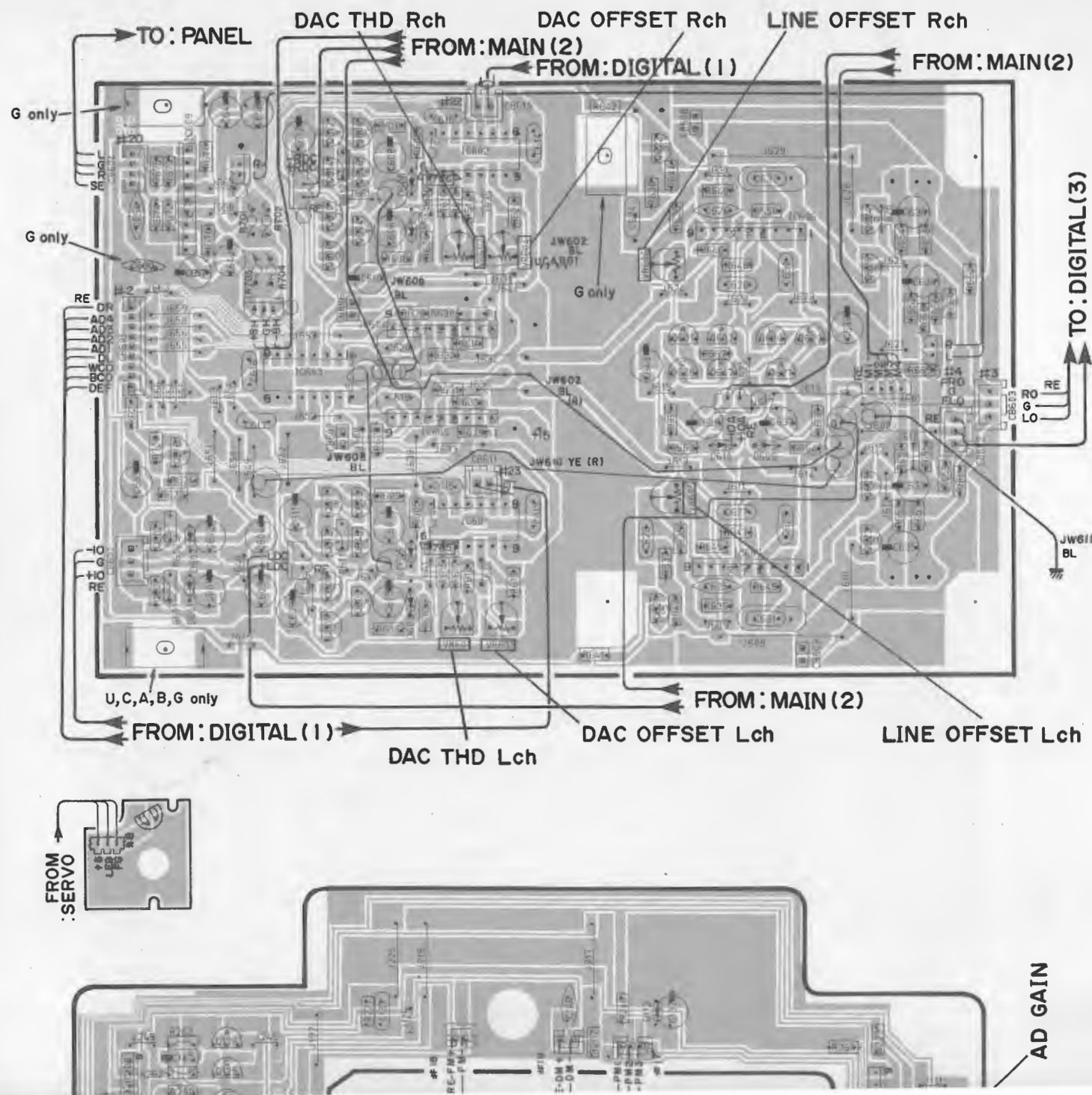
Note) 文字面 : Component side

6



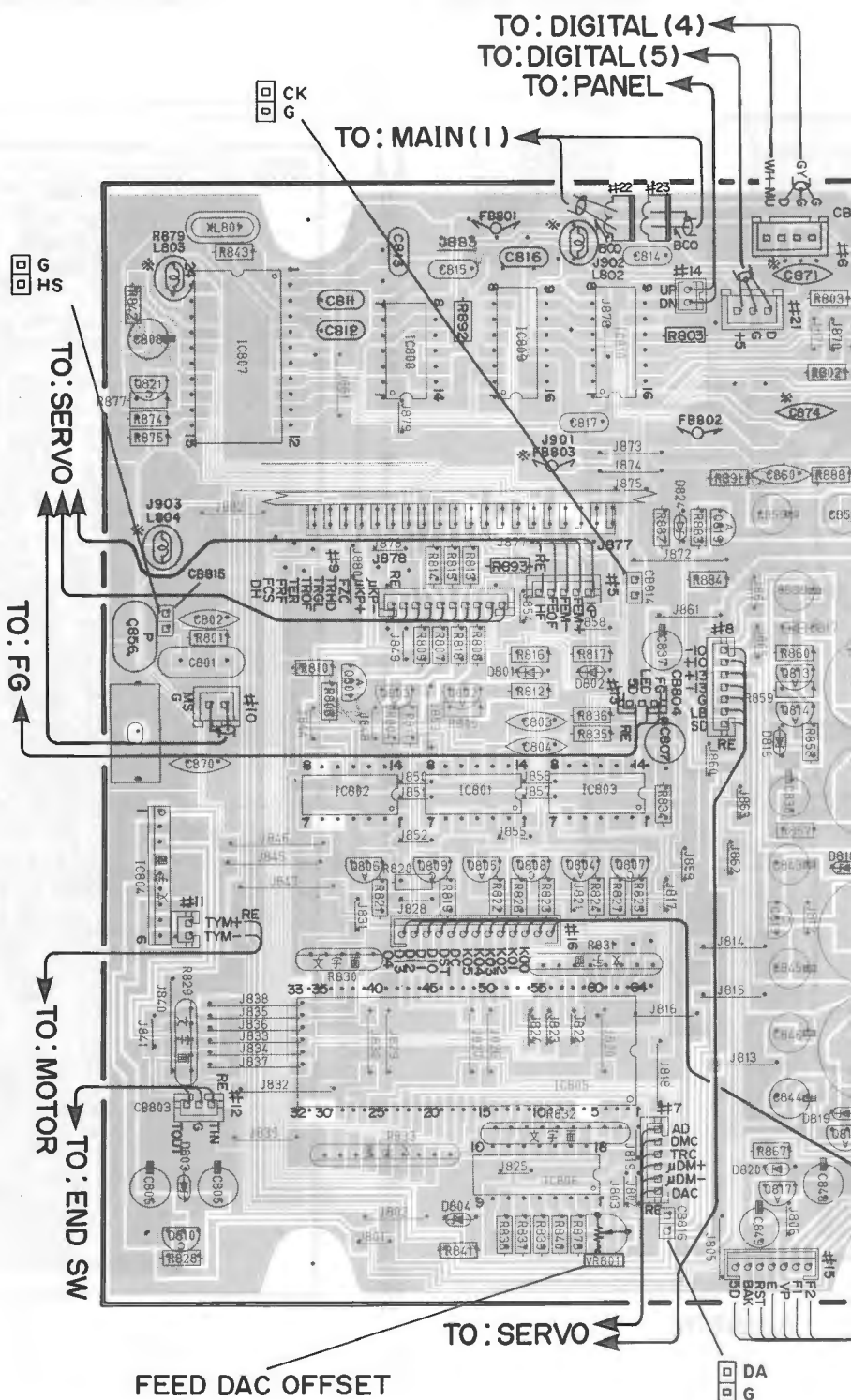
FG Circuit Board

Main Circuit Board (1)

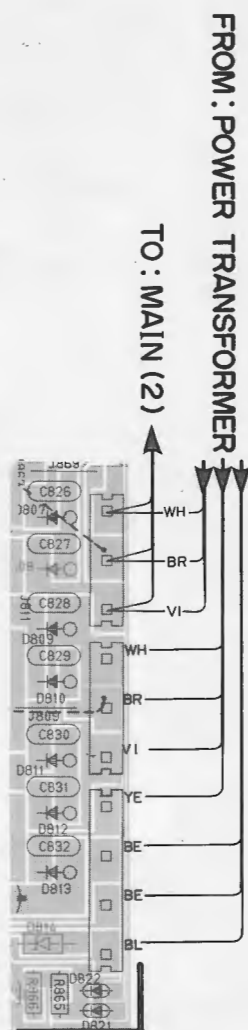
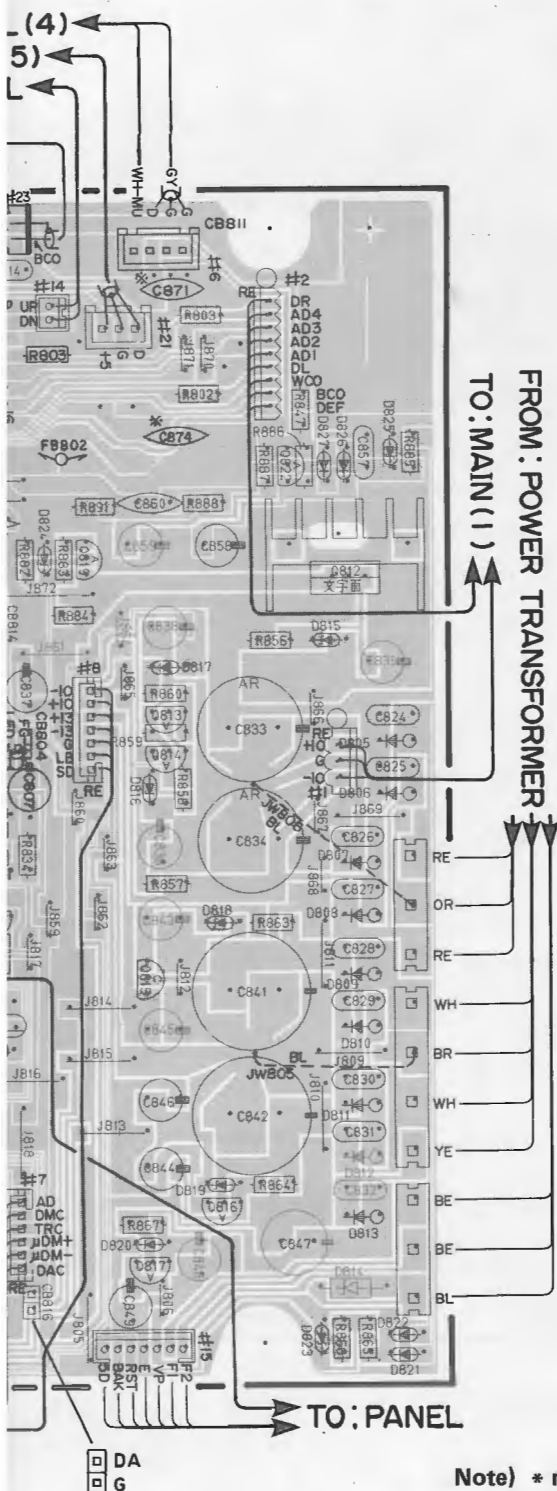


Digital Circuit Board

Main Circuit Board (2)



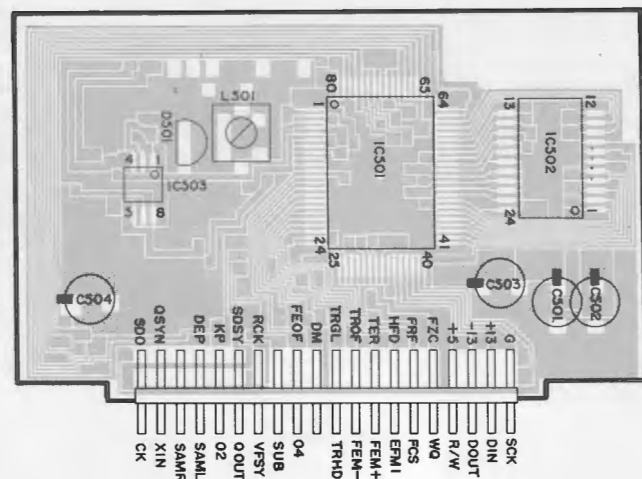
SPC Circuit Board Parts



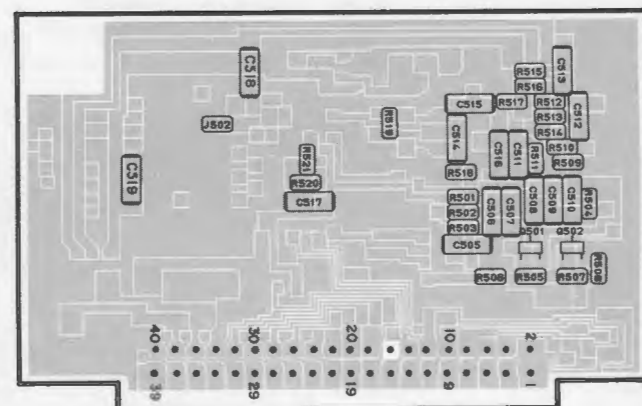
R model

Note) * marked

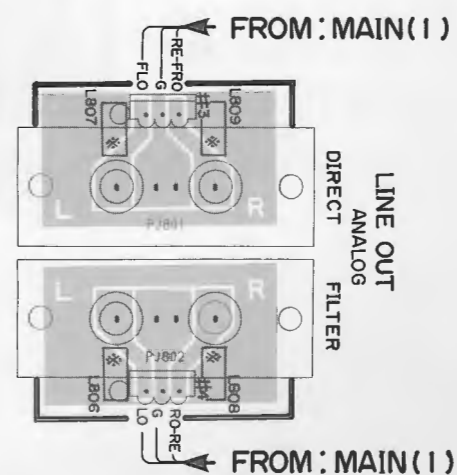
	R, U, C, A, B	G
C874	OPEN	100P
FB803	SHORT	B-01-RTF
L802, 804	SHORT	3.3μH
L803	470	3.3μH
L806~809	SHORT	60μH



SPC Circuit Board . . . Chip



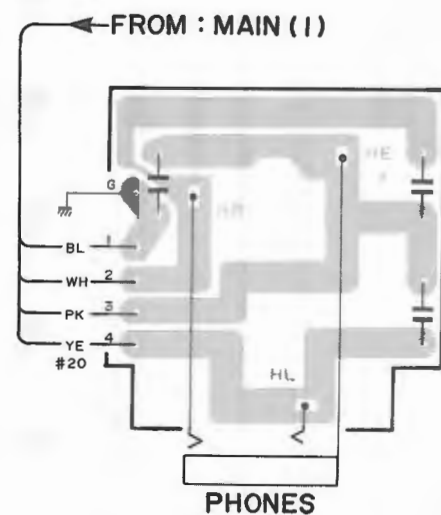
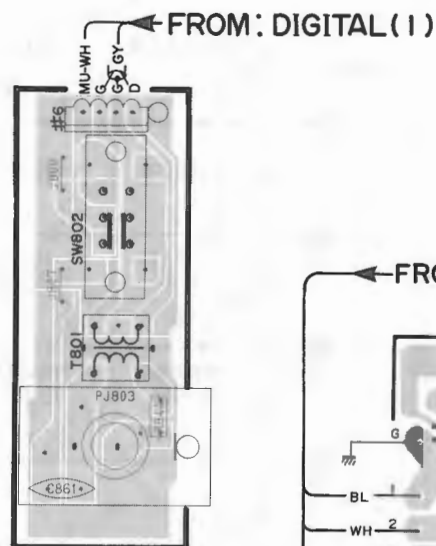
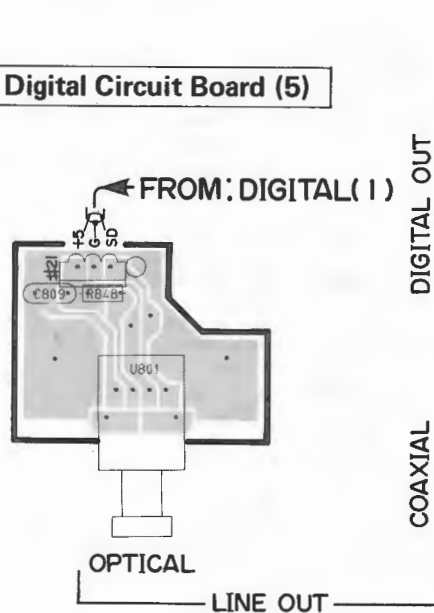
Digital Circuit Board (3)



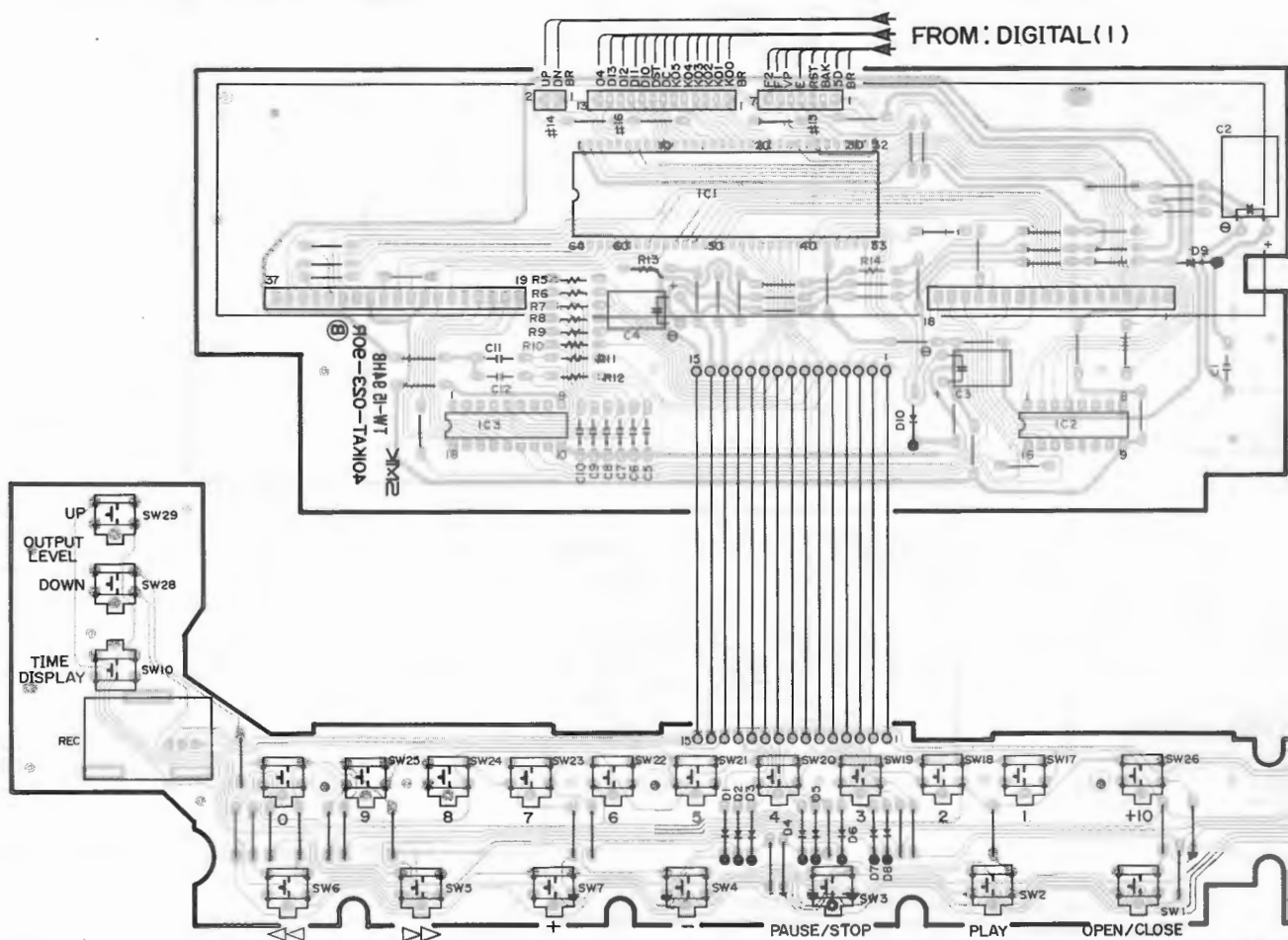
PRINTED CIRCUIT BOARD (Pattern side)

Digital Circuit Board (4)

Digital Circuit Board (5)

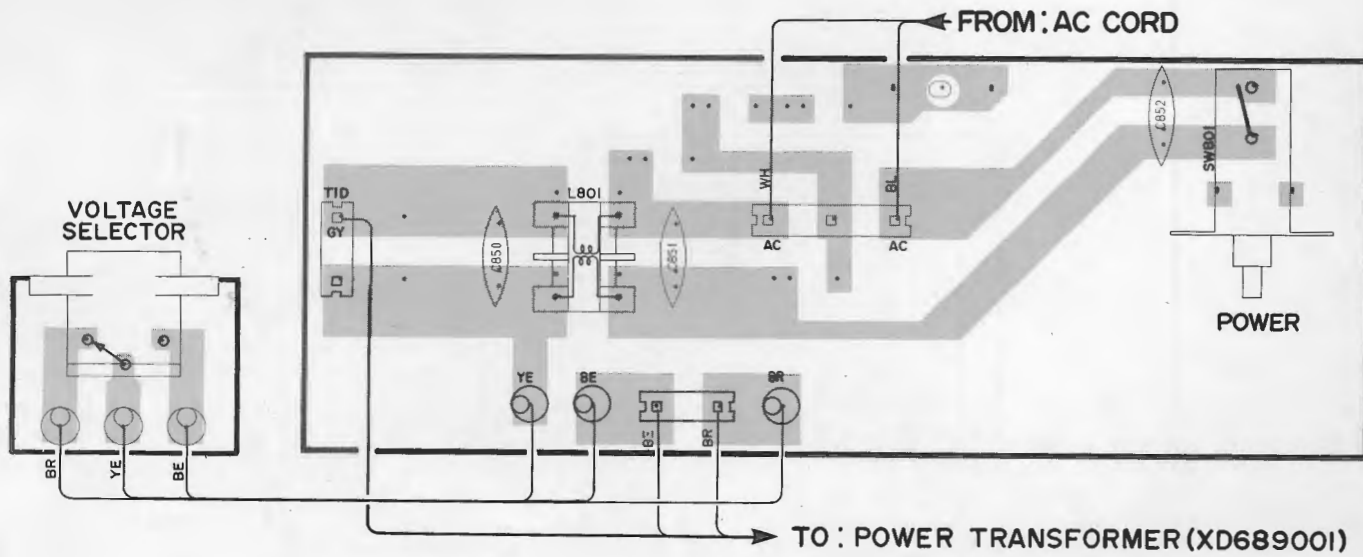


Operation Circuit Board

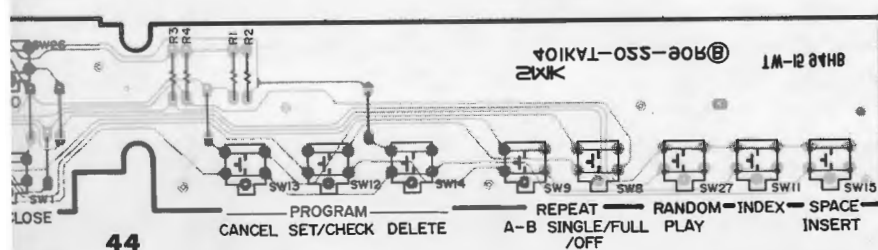
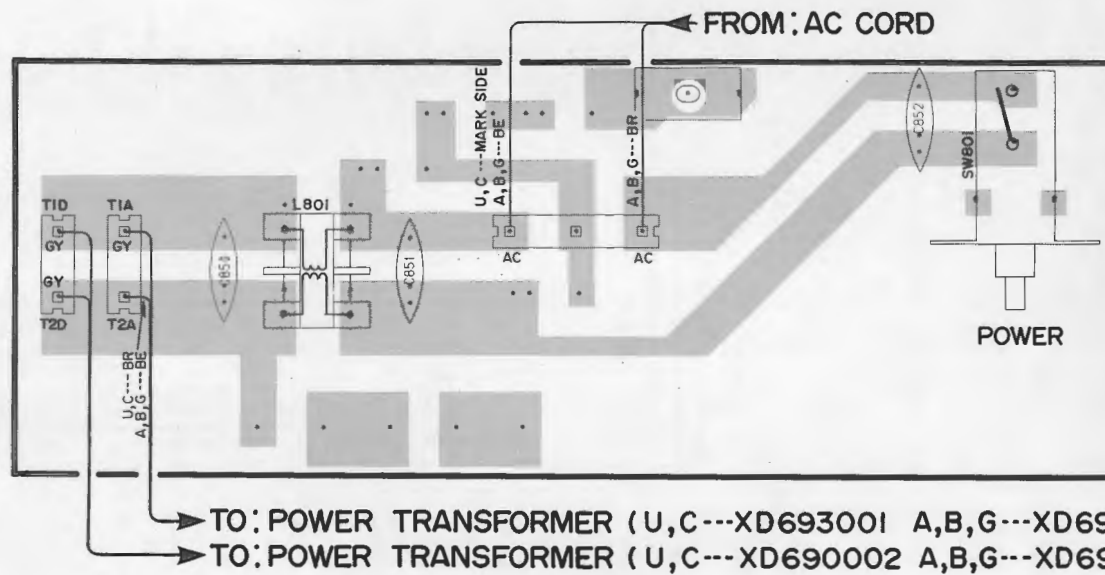


Digital Circuit Board (2)

R model

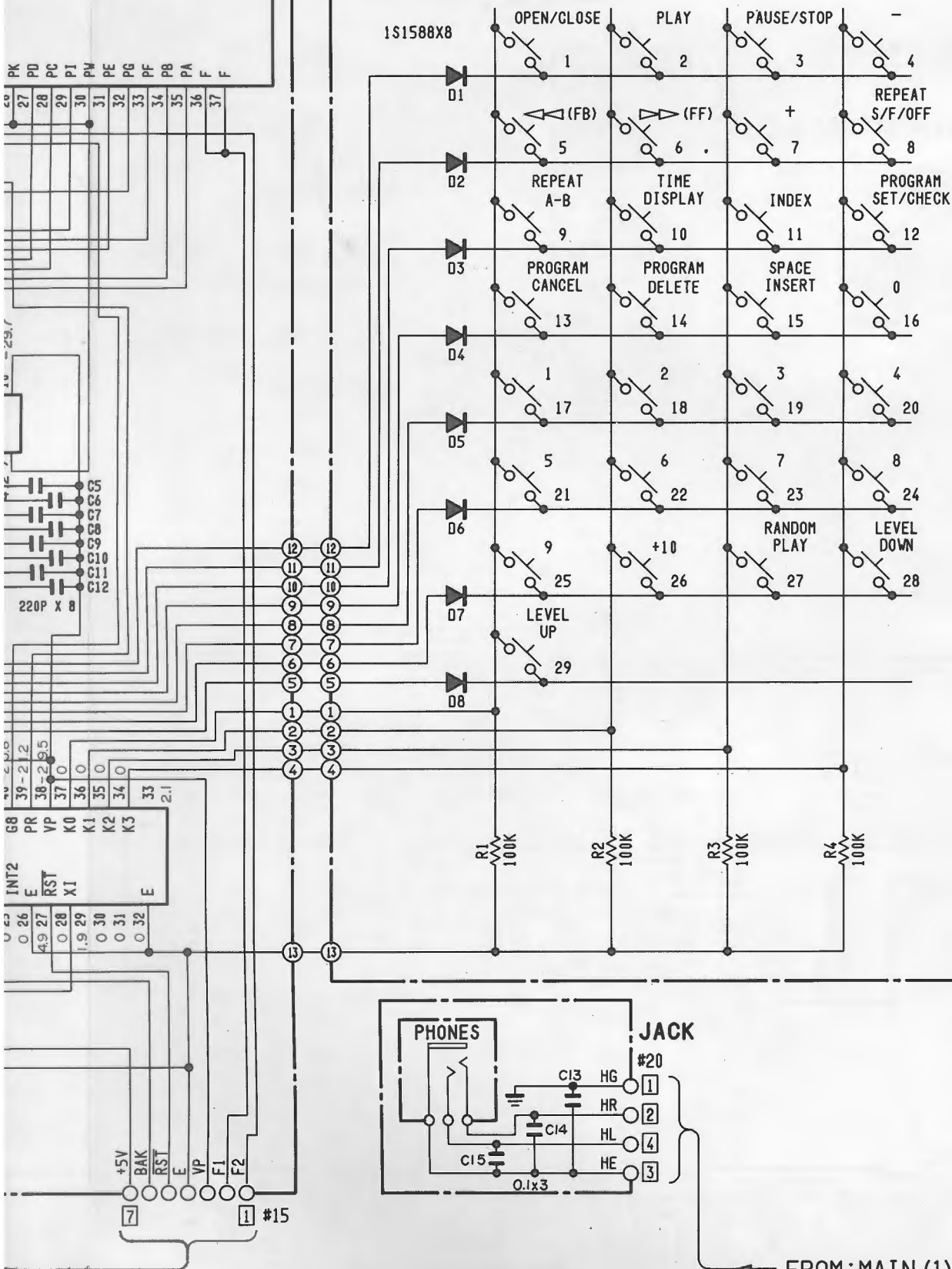


U, A, G, C, B models



CP5296GR

OPERATION (A)



- * 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.

FROM:MAIN (1)

SCHEMATIC DIAGRAM (2/4)

Servo

E

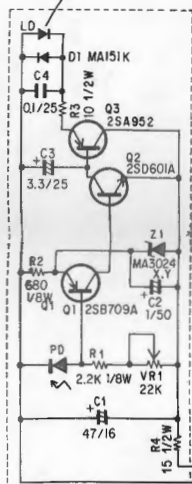
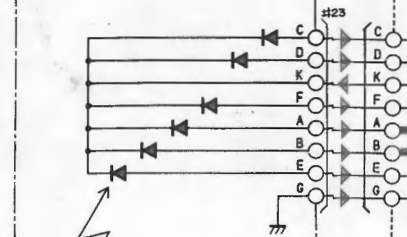
C B
D A

Three spotted (six-
division) photo diodes

F

PICK UP HEAD

SERVO

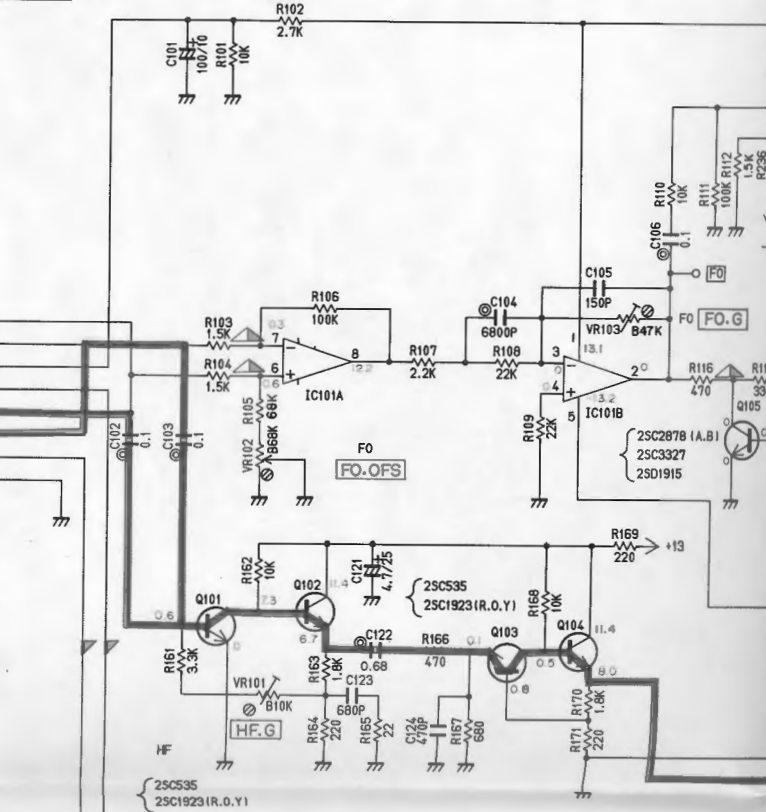


TRACKING

FOCUS

CP ELEMENT

DISC MOTOR



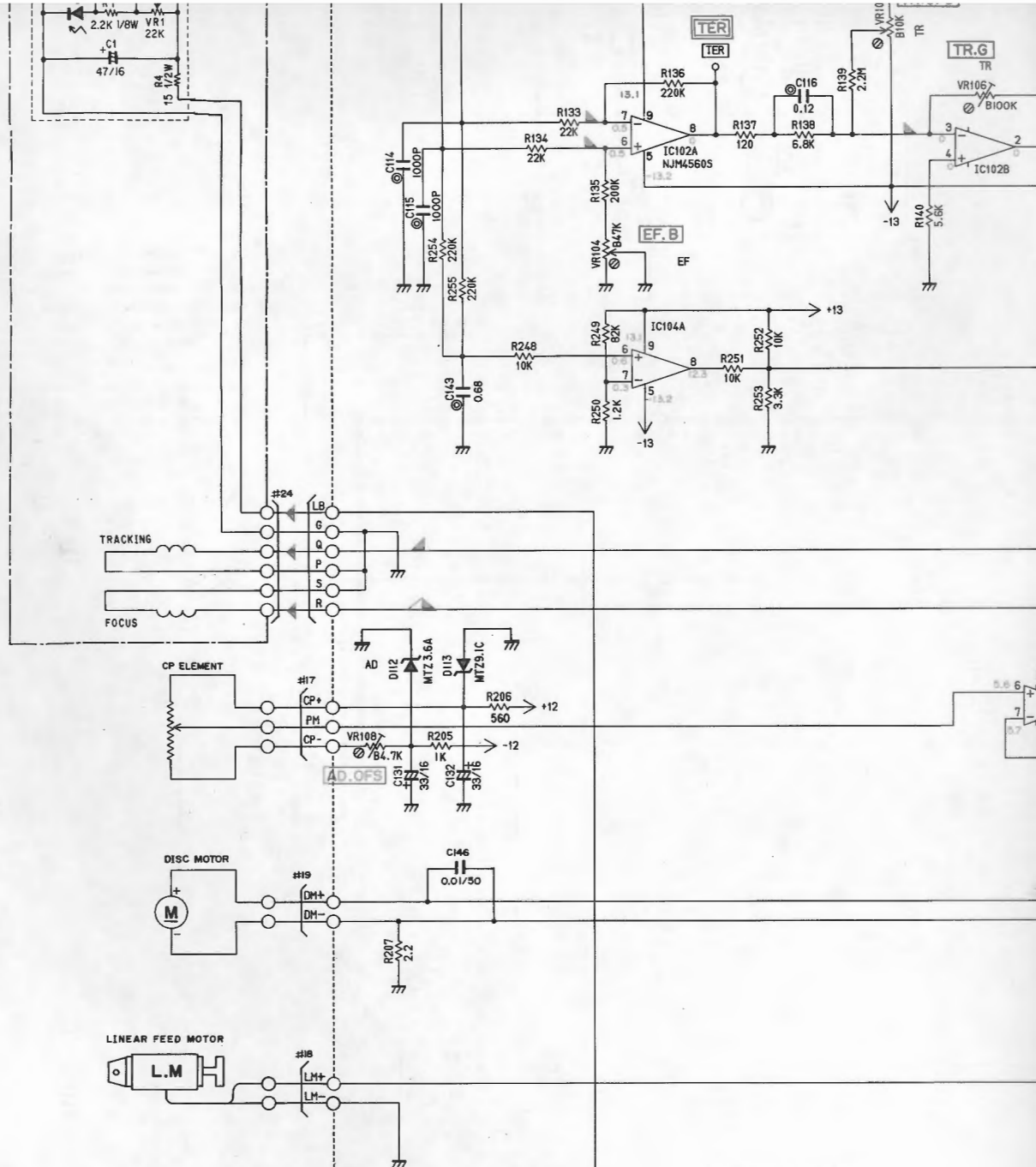
4

5

6

7

8

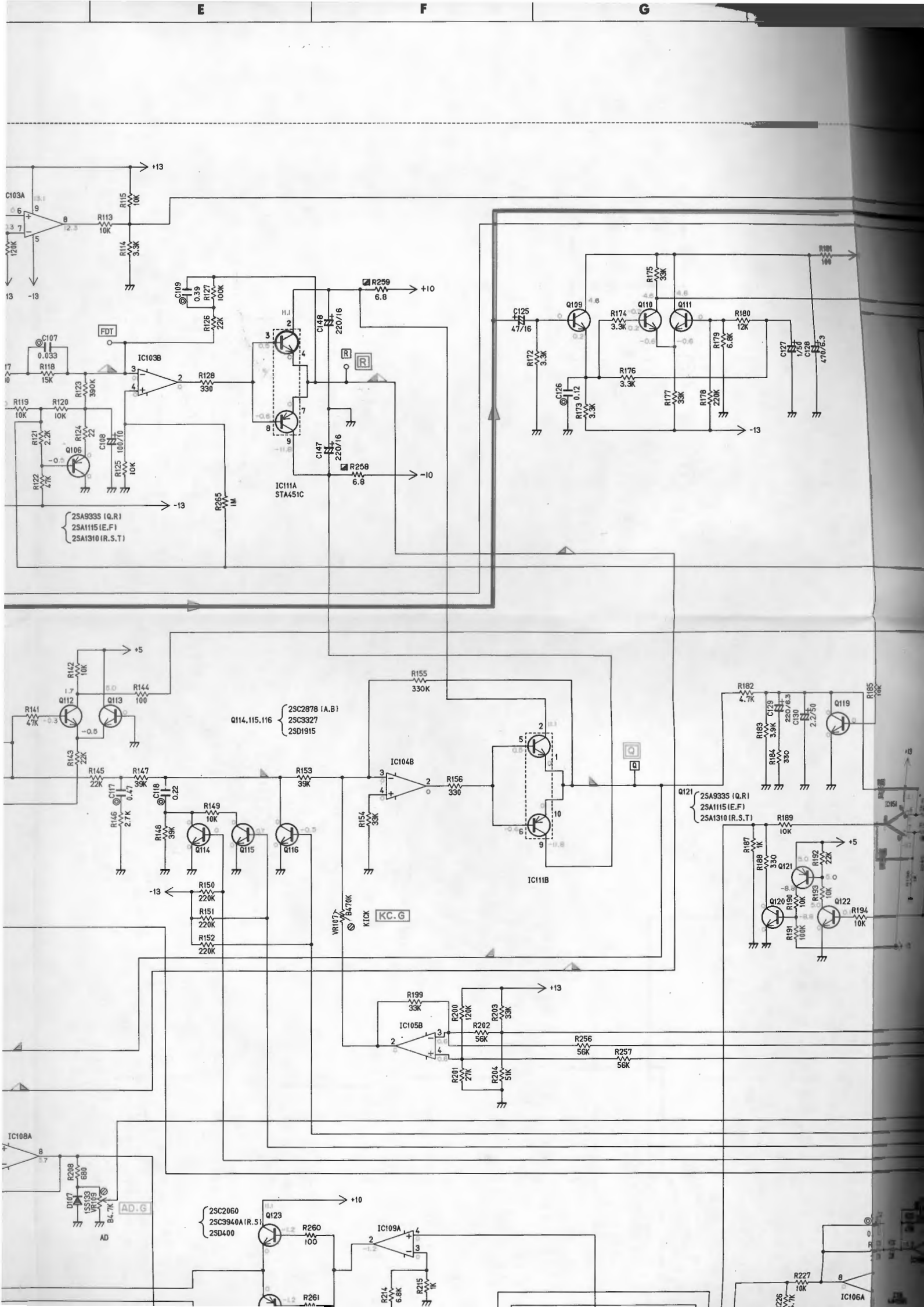


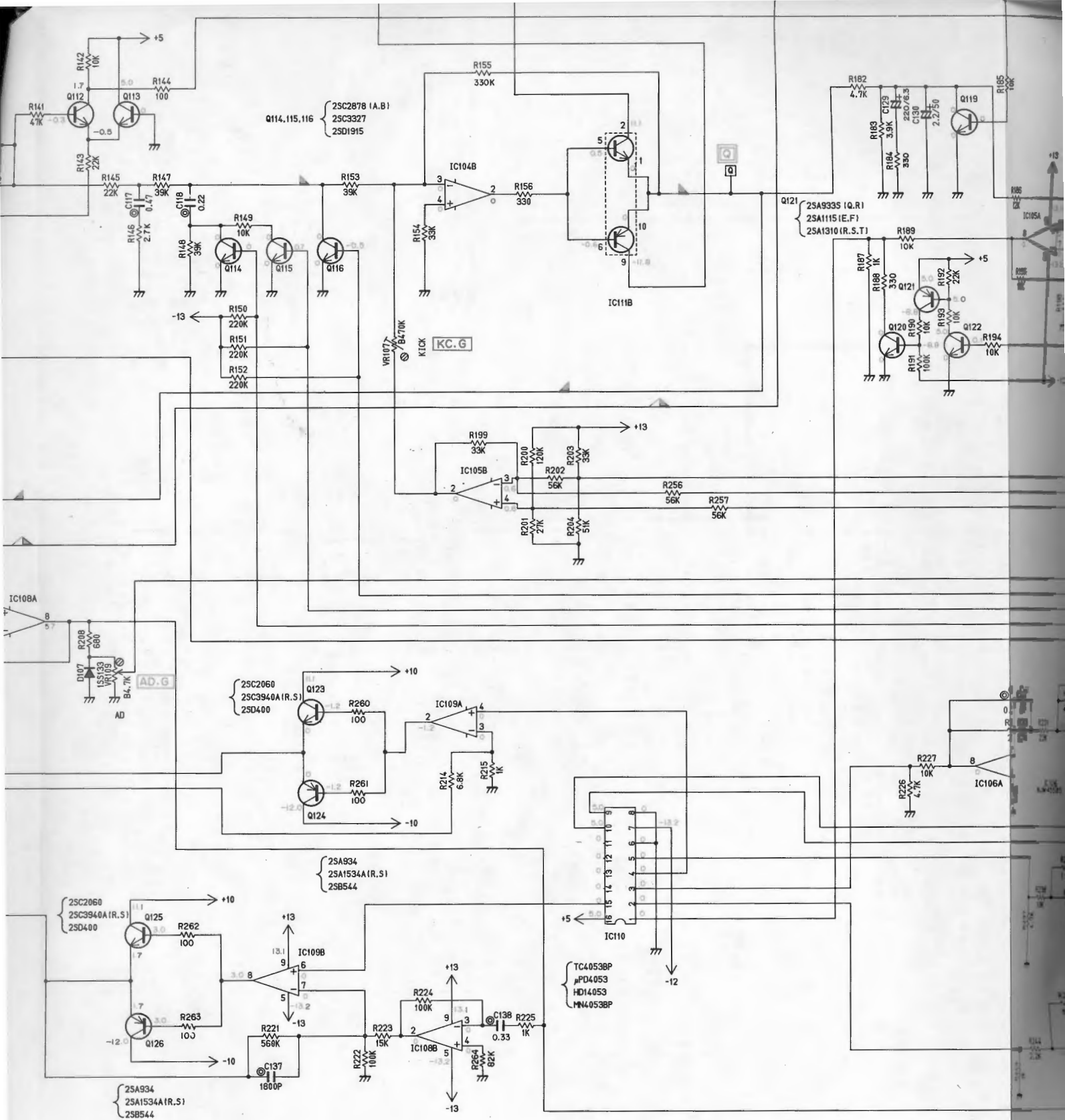
Q102,104,109~113,119,120,122

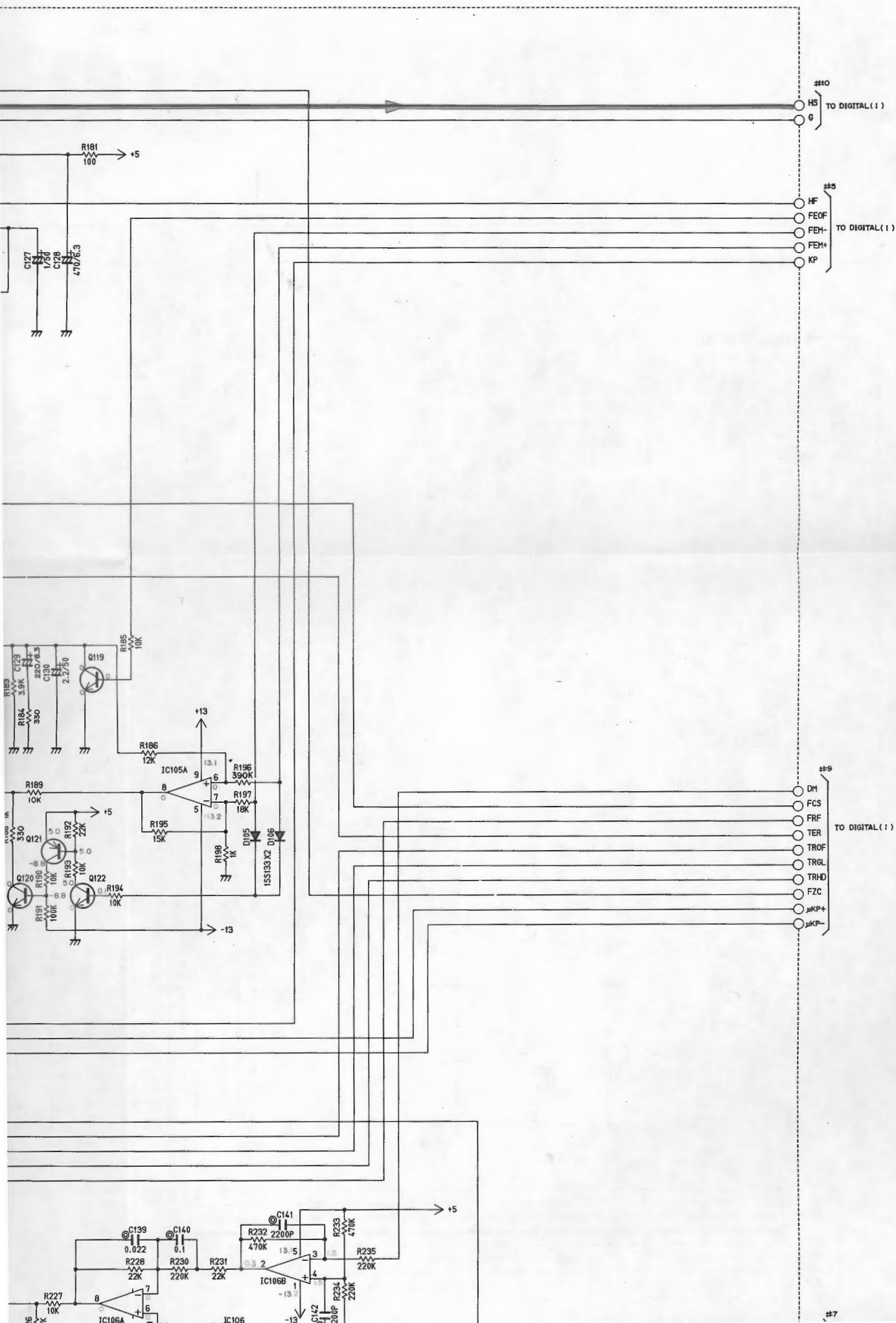
2SC1740S1(S.R)
 2SC26031(E.F)
 2SC33121(R.S.T)

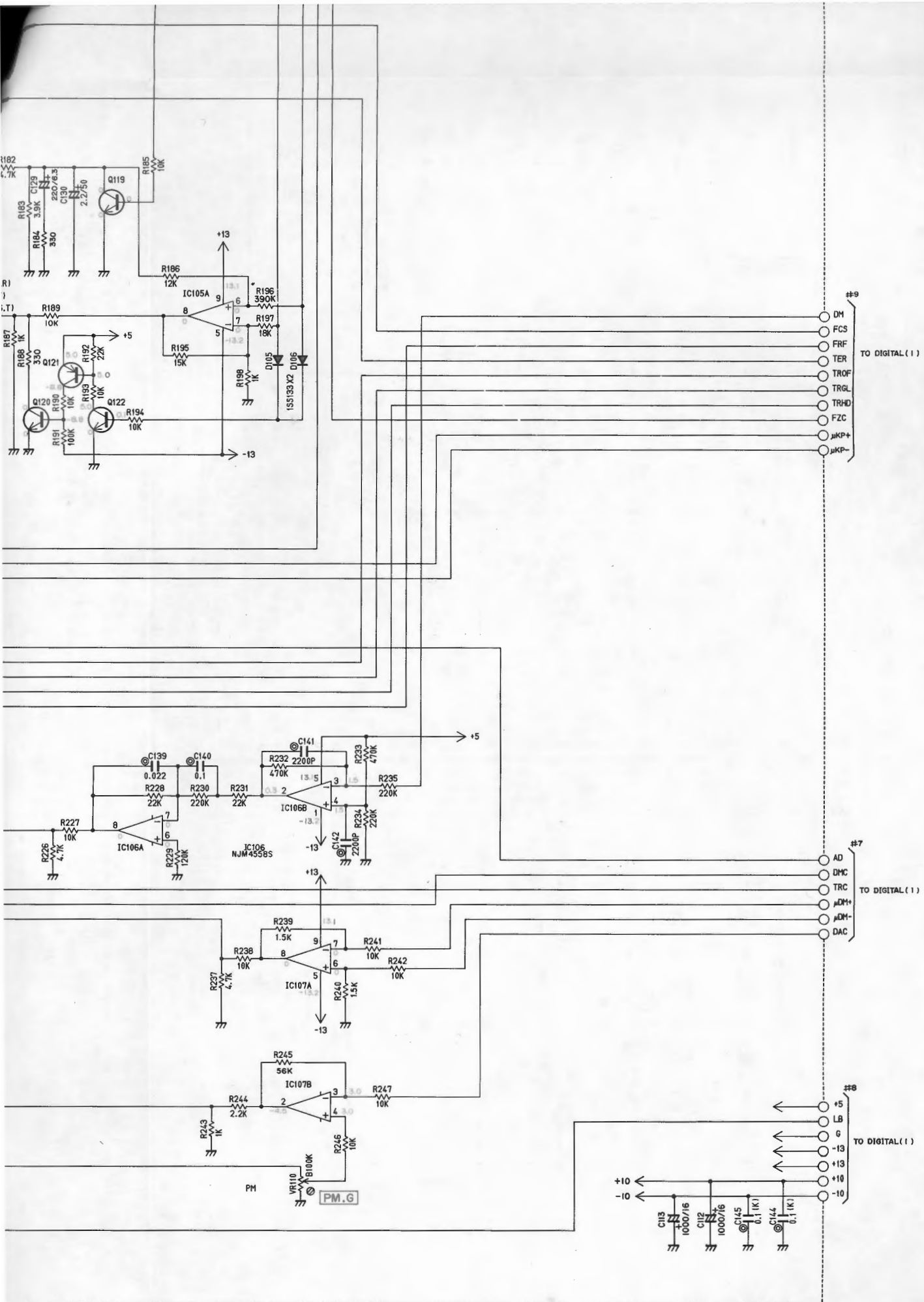
IC101, 103~105, 107~109

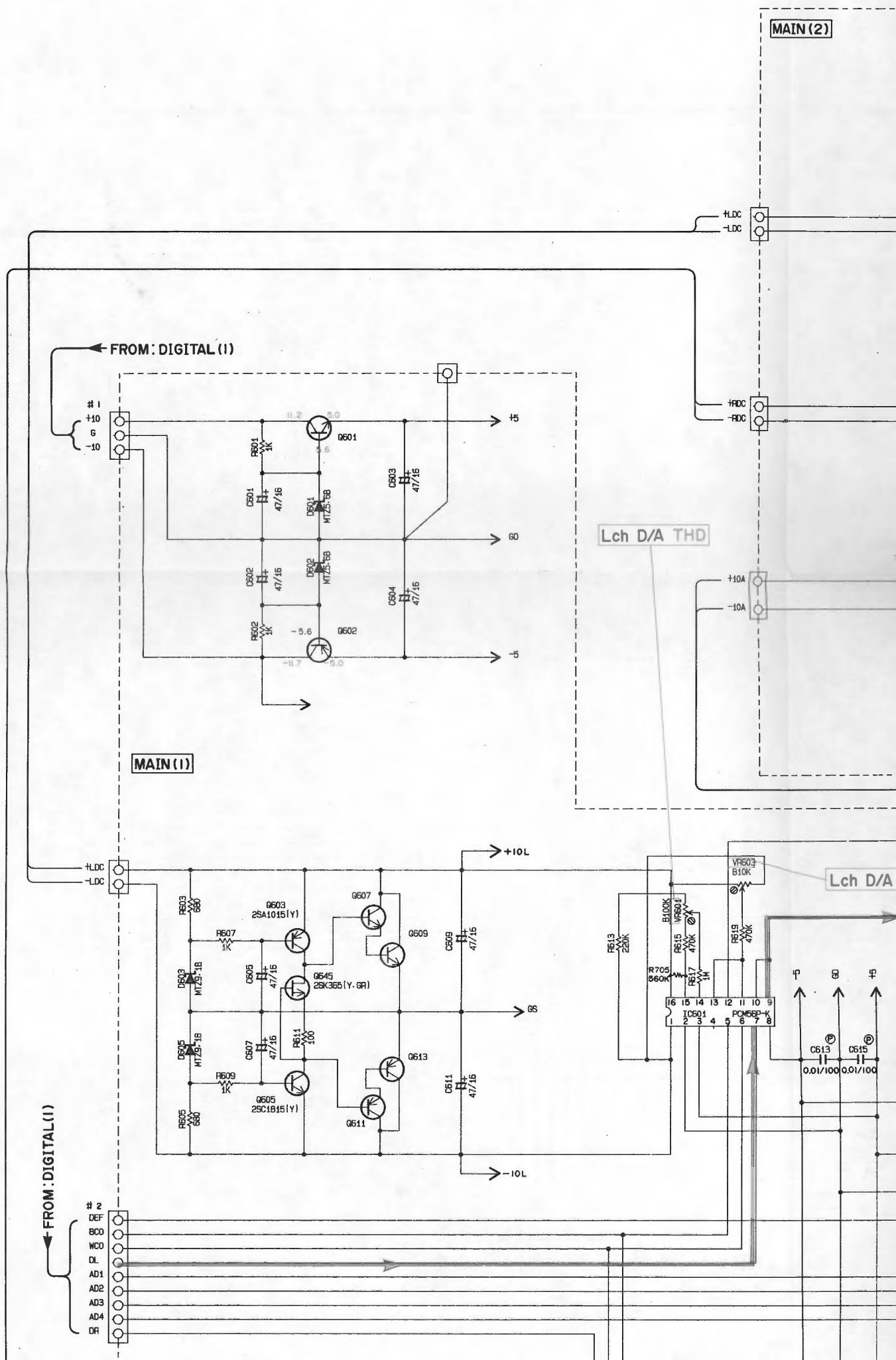
AN6551
 NJM4558S
 TA75558S
 BA715











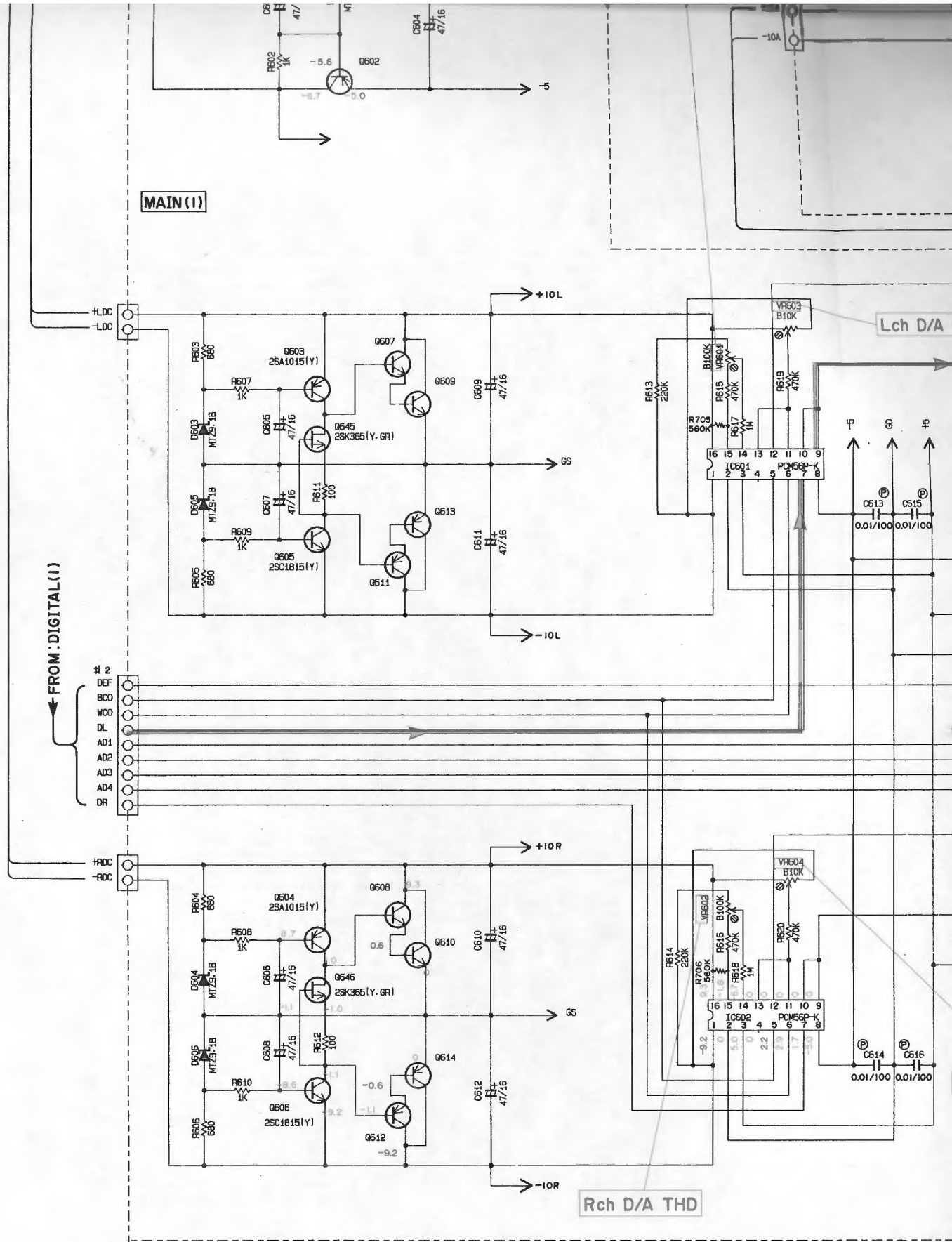
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5

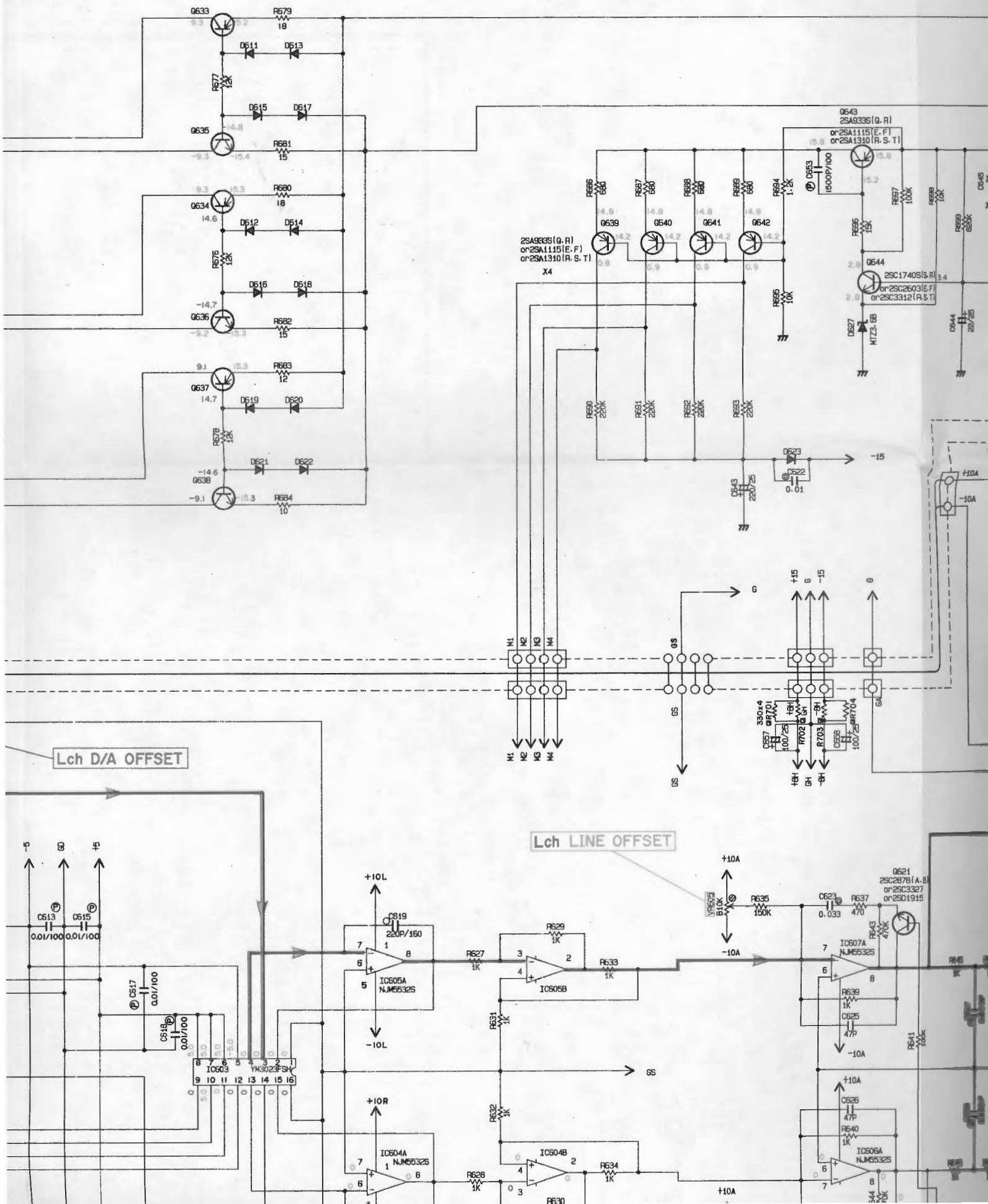
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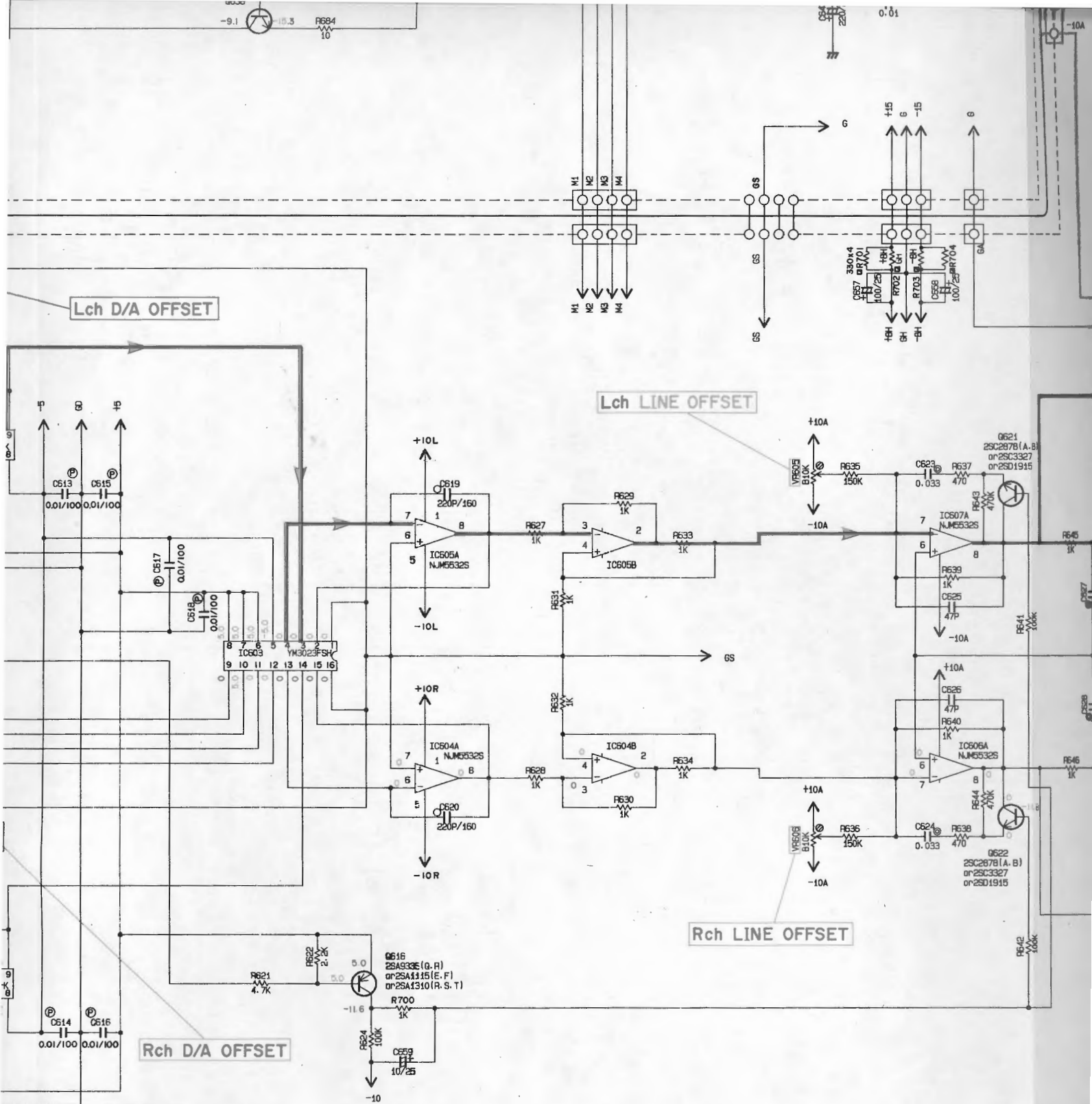
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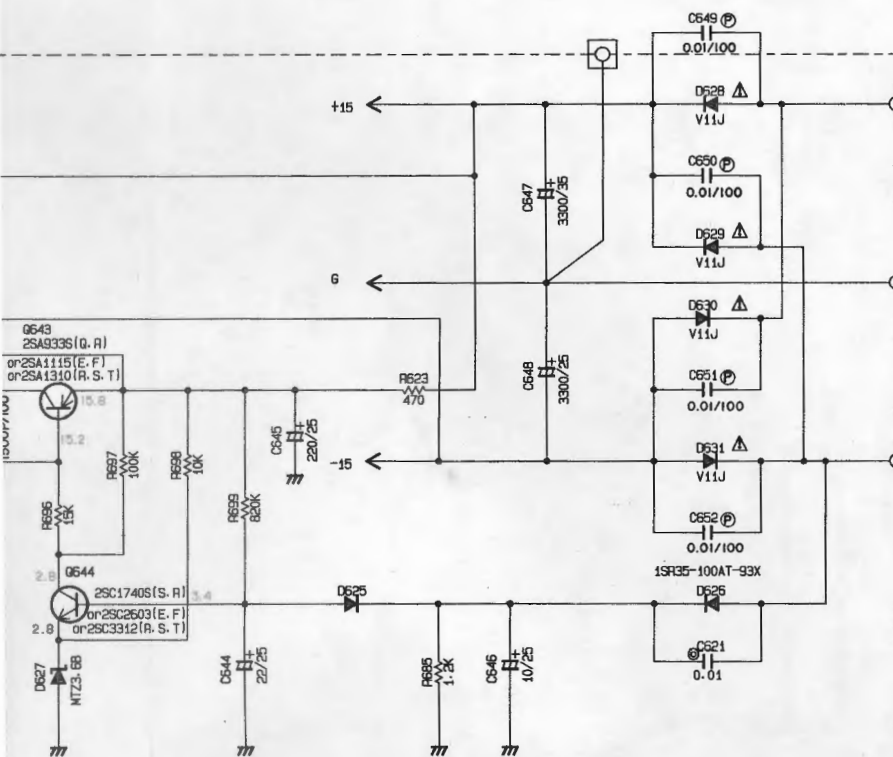
8



MAIN(2)





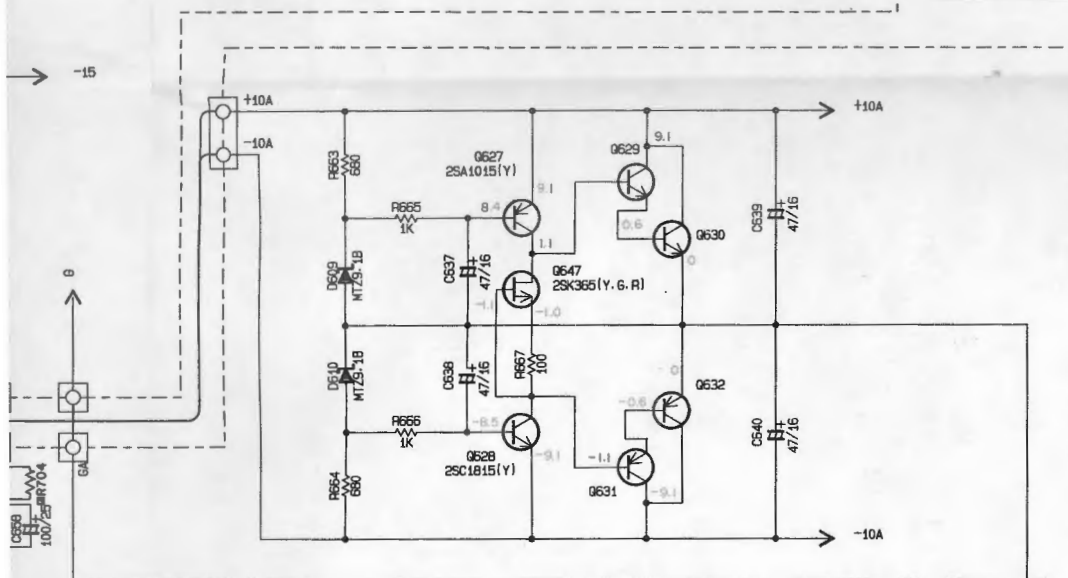


RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR
□	CARBON FILM RESISTOR (1/6W)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
■	FIRE PROOF CARBON FILM RESISTOR
□	SEMENT MOLDED RESISTOR
⊗	SEMI VARIABLE RESISTOR

CAPACITOR

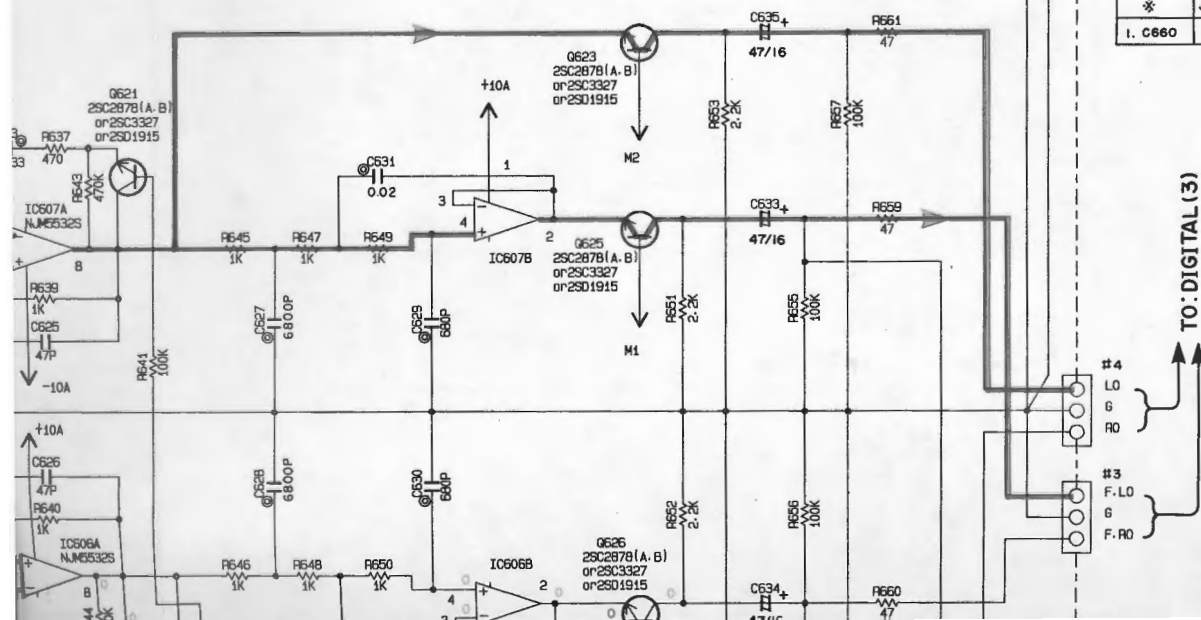
REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
NO MARK	CERAMIC CAPACITOR
⊙	POLYESTER FILM CAPACITOR
○	POLYSTYRENE FILM CAPACITOR
⊖	MICA CAPACITOR
⊕	POLYPROPYLENE FILM CAPACITOR
●	SEMICONDUCTIVE CERAMIC CAPACITOR

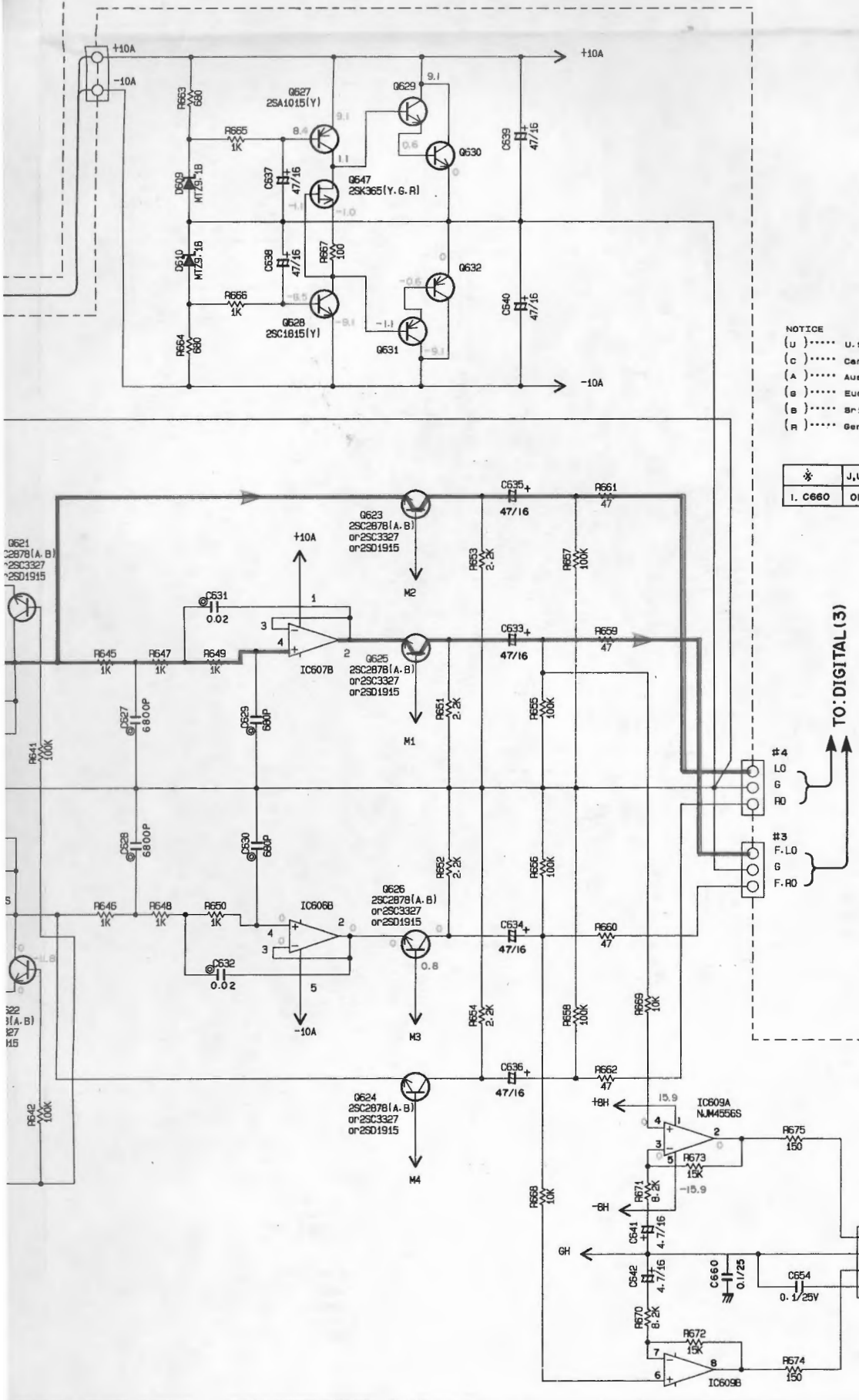


NOTICE

(U)		U.S.A	model
(C)		Canadian	model
(A)		Australian	model
(E)		European	model
(B)		British	model
(R)		General	model

*	J, U, C, A, B	R	G
I, C660	OPEN	→	0.1/25





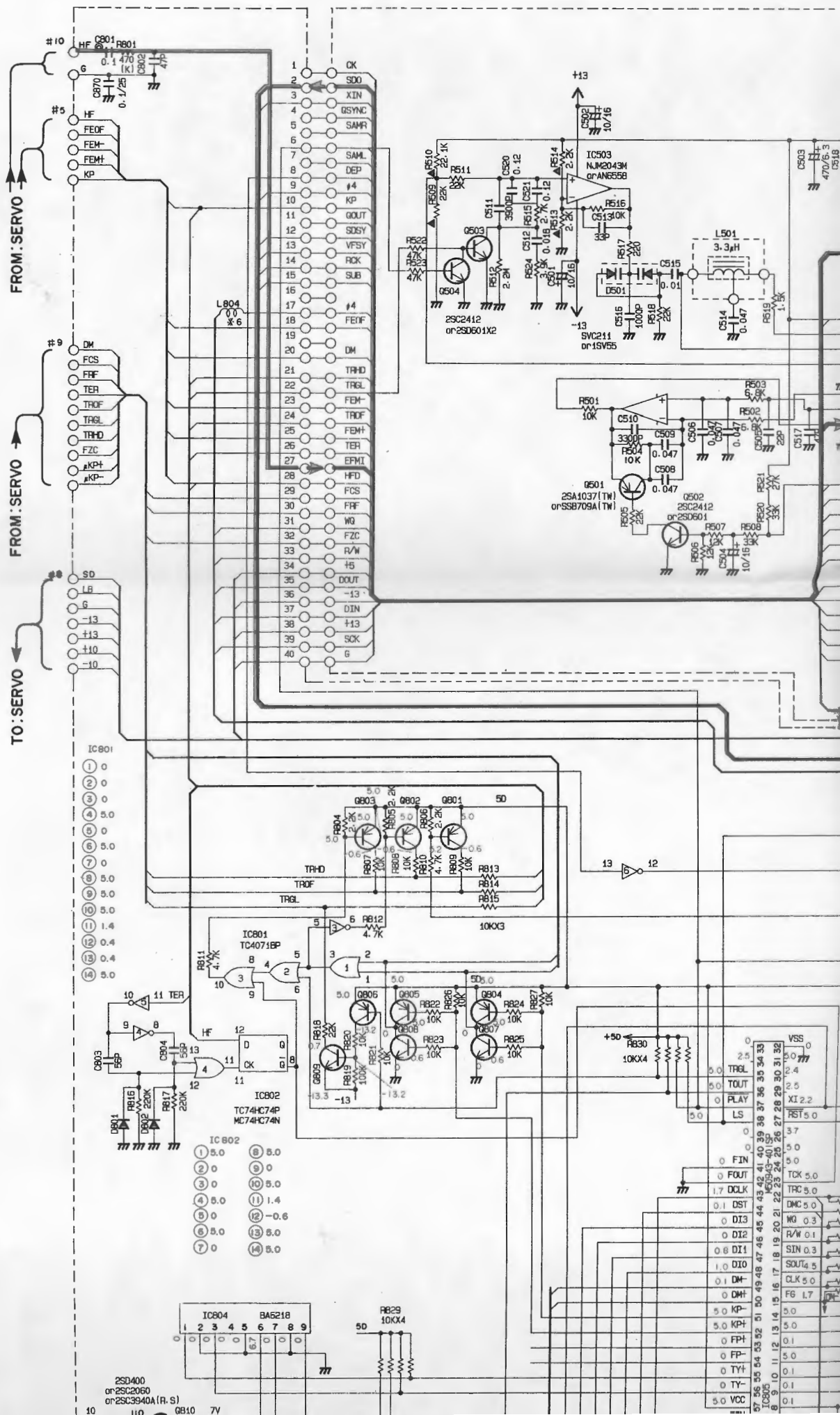
NOTICE
(U)..... U.S.A. model
(C)..... Canadian model
(A)..... Australian model
(E)..... European model
(B)..... British model
(R)..... General model

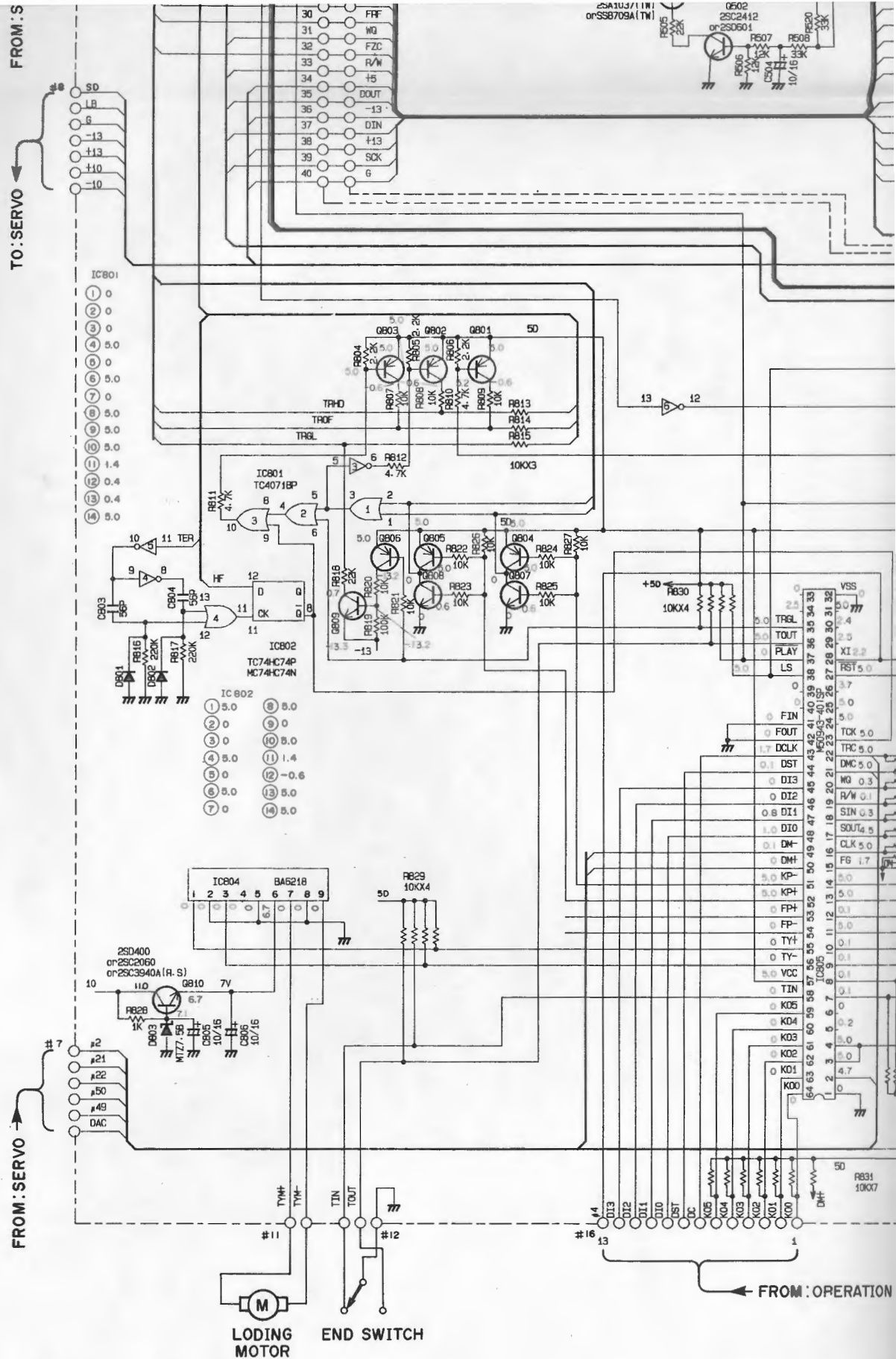
✱	J, U, C, A, B	R	G
1. C660	OPEN	→	0.1/25

Unless otherwise specified	
PNP TRANSISTOR	2SA934 or 2SB544 or 2SA1534A (R.S.)
NPN TRANSISTOR	2SC2060 or 2SD400 or 2SC3940A (R.S.)
DIODE	1SS133

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

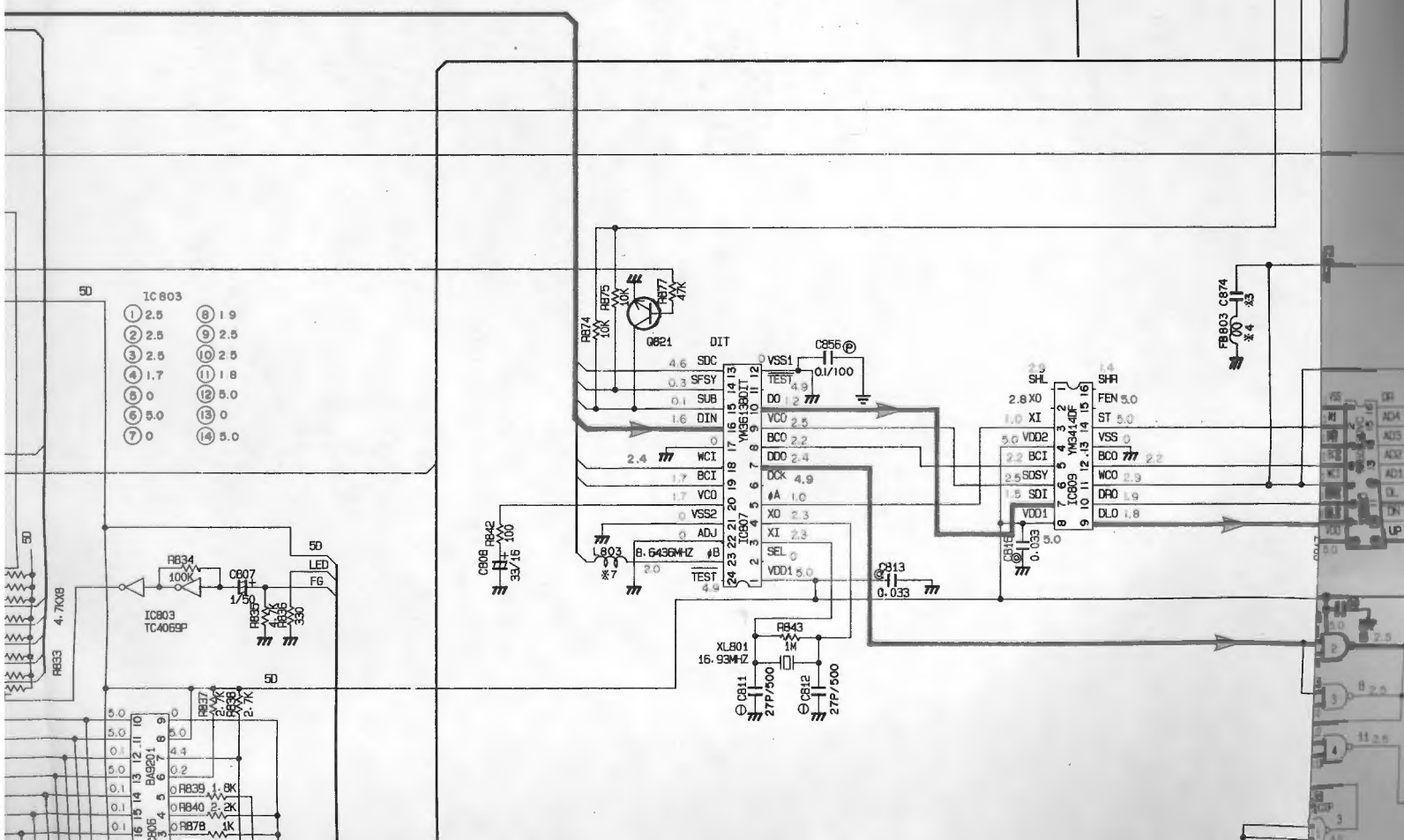
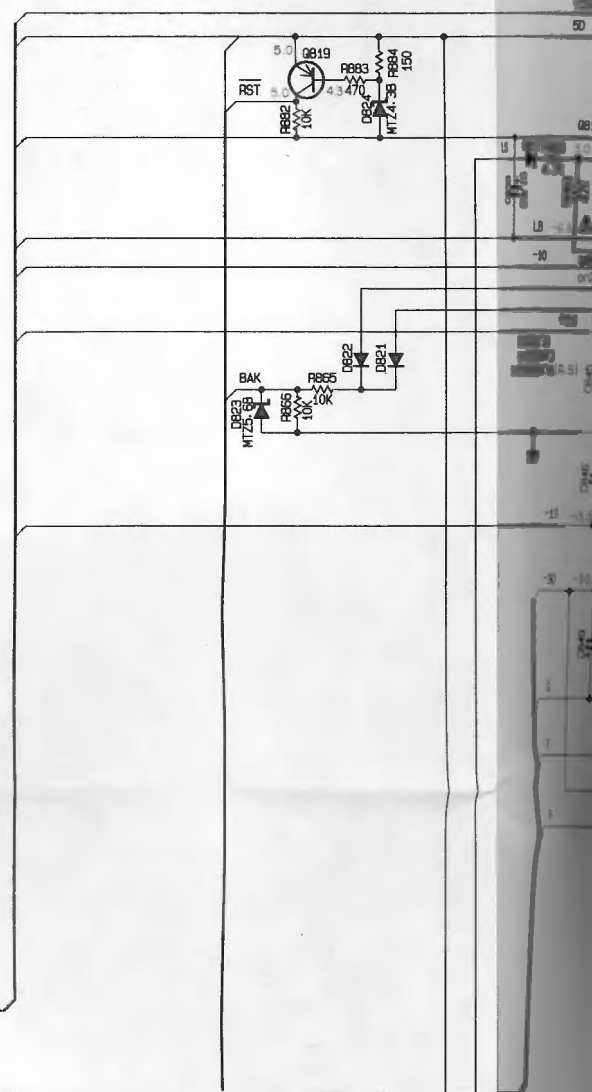
Digital

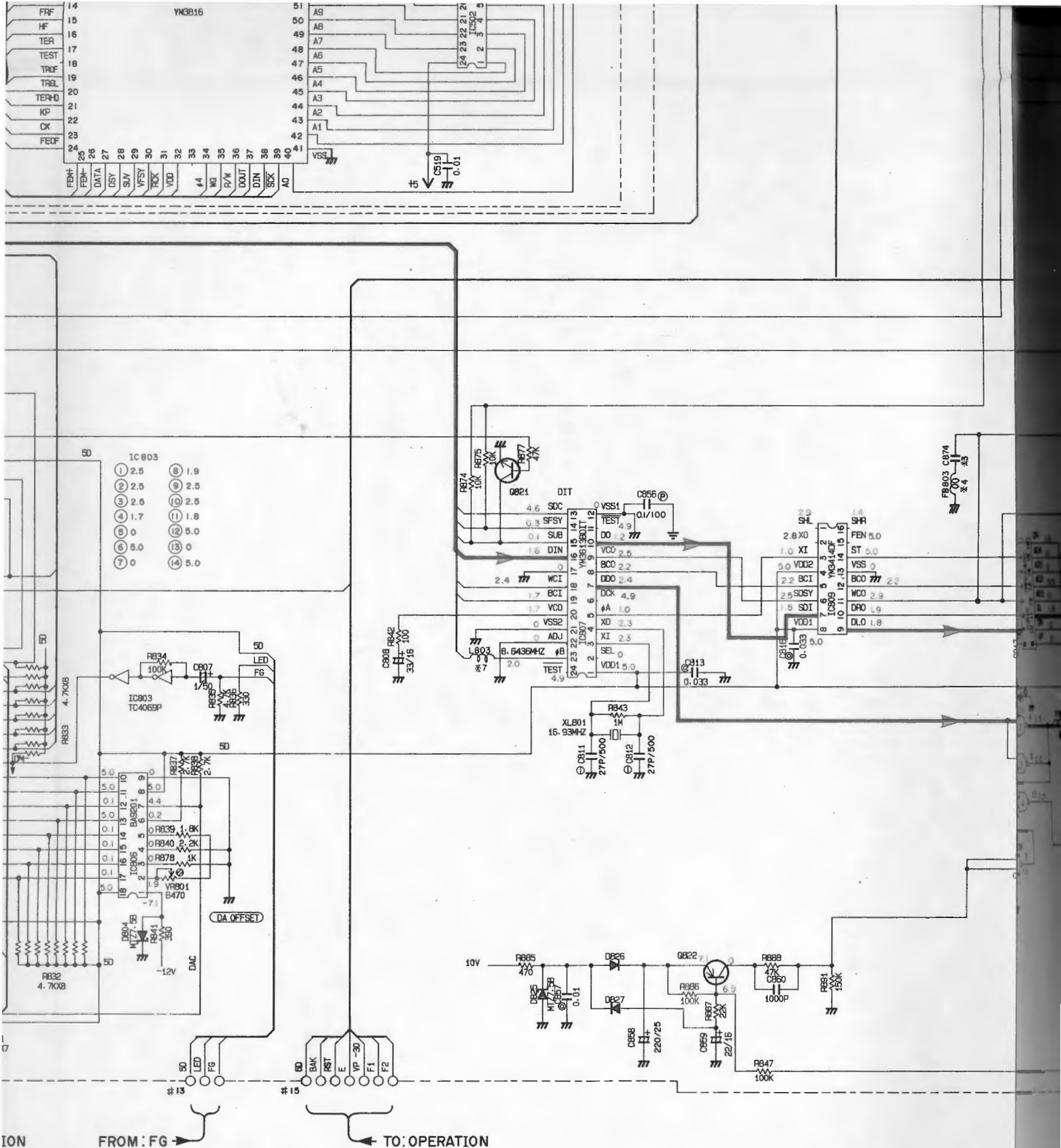




PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICs.

2SC2878 (A, B) 2SC3327 2SD1915 2SC535 2SC1923 (R, O, Y) 2SA934 2SB544 2SA1534A (R, S) 2SC933S (Q, 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)	2SC1983 2SD800 (O, Y) 2SD1505	1SR35-100AT-93X 1SS133 1S1588 MTZ3.6A MTZ3.6B MTZ9.1B MTZ9.1C MTZ5.6B	MTZ7.5B MTZ15A MTZ4.3B MTZ30C MA2051A V11J MTZ5.1A	NJM5532S NJM4556S AN6551 NJM4558S TA75558S BA715 NJM4560S
2SK365 (Y, GR)	2SA1037 (TW) 2SB709A (TW) 2SC2412 2SD601	1SV55 SVC211	BA6218	STA45	





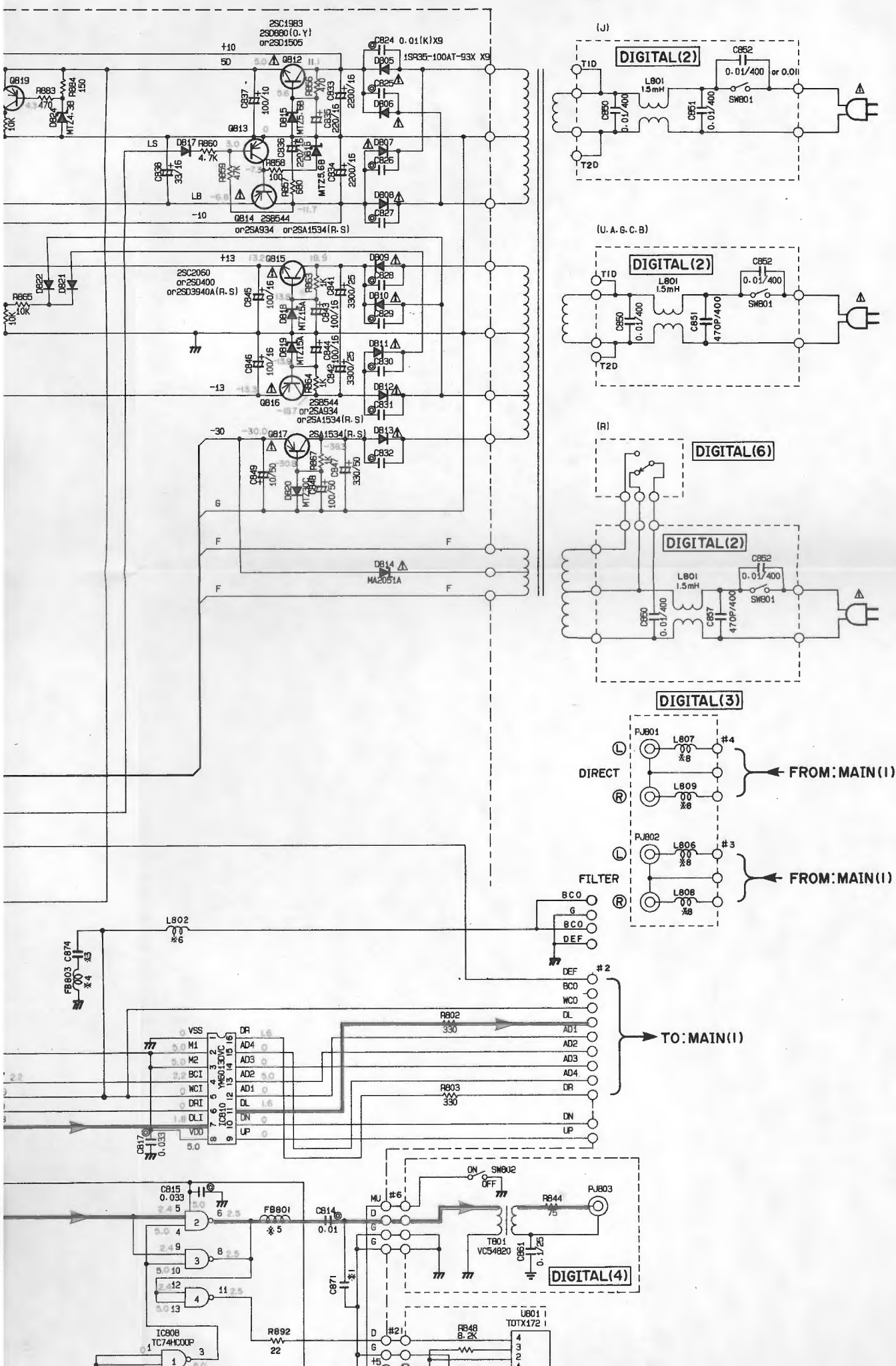
ION FROM: FG TO: OPERATION

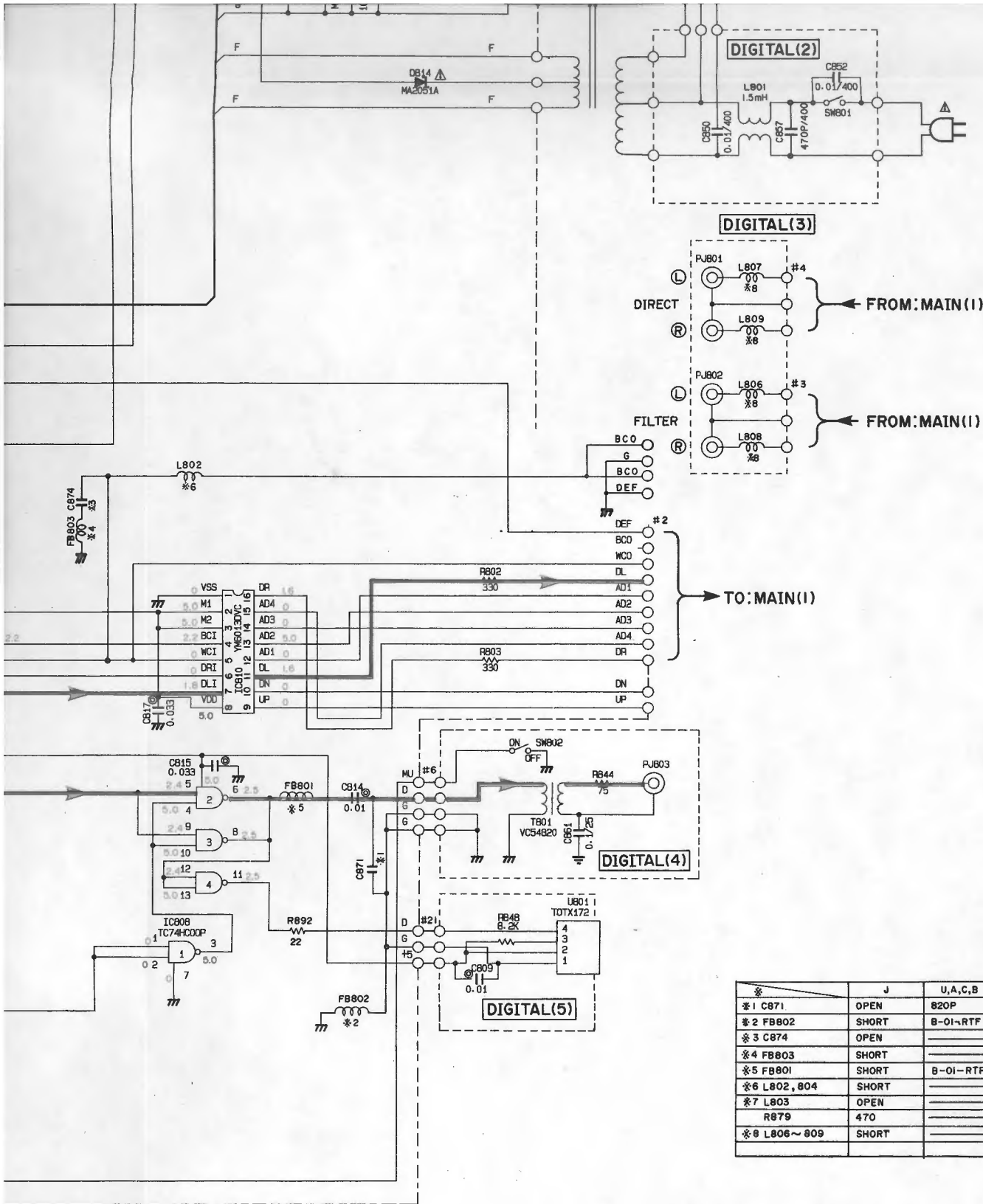
NJM2043M (T1) AN6558S	TC74HC00P MC74HC74N TC74HC74P TC4071BP TC4069P	M54564P BA9201	YM3613B YM3023	YM3816
STA451C	M54580P TC4053BP HD14053 YM3414 YM6013 PCM56P-K	MSM5128-20GS HM6116FP-4 CXK5816M	M50943-400SP M50754-405SP	

RESISTOR

REMARKS	
NO MARK	CARBON
☒	CARBON
☐	METAL OXIDE
☐	METAL FILM
☐	METAL PASTE
☐	FIRE PROOF
☐	SEMENT
☐	SEMI-VA

PNP TRANSISTOR	2SA933A
NPN TRANSISTOR	2SC1740
DIODE	1SS133





	J	U,A,C,B	R	G
*1 C871	OPEN	820P	→	1200P
*2 FB802	SHORT	B-01-RTF	→	→
*3 C874	OPEN	→	→	100P
*4 FB803	SHORT	→	→	B-01-RTF
*5 FB801	SHORT	B-01-RTF	→	B-02-R
*6 L802,804	SHORT	→	→	3.3μH
*7 L803	OPEN	→	→	3.3μH
R879	470	→	→	OPEN
*8 L806~809	SHORT	→	→	60μH

NOTICE
 (U)..... U.S.A model
 (C)..... Canadian model
 (A)..... Australian model
 (S)..... European model
 (B)..... British model
 (R)..... General model

RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR
☑	CARBON FILM RESISTOR (1/6W)
△	METAL OXIDE FILM RESISTOR
▲	METEL FILM RESISTOR
⊠	METEL PLATE RESISTOR
▣	FIRE PROOF CARBON FILM RESISTOR
□	SEMENT MOLDED RESISTOR
⊗	SEMI-VARIABLE RESISTOR

CAPACITOR

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

Unless otherwise specified

PNP TRANSISTOR	2SA933S(G,R) or 2SA1115(E,F) or 2SA1310(R,S,T)
NPN TRANSISTOR	2SC1740S(R,S) or 2SC2603(E,F) or 2SC3312(R,S,T)
DIODE	1SS133

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

PARTS LIST

■WARNING

CDX-1110/CDX-1110U

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. 68.

■ELECTRICAL PARTS

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	NA 09 73 80	Digital Circuit Board	デ ジ タ ル シ ー ト	CDX-2000		J	
※	NA 09 73 90	"	"	CDX-1110		U,C,A,B	
※	NA 09 74 00	"	"	"		G	
※	NA 09 74 10	"	"	"		R	
	FC 44 41 00	Mylar Cap.	0.01 μ F 50V	マ イ ラ ー コ ン	C824~832		
	FU 35 12 70	Mica Cap.	27pF 500V	マ イ カ コ ン	C811,812		
	FG 21 15 60	Ceramic Cap.	56pF 50V	セ ラ コ ン	C803,804		
	FG 21 14 70	"	47pF 50V	"	C802		
	FG 21 21 00	"	100pF 50V	"	C874	G	
	FG 21 31 00	"	1000pF 50V	"	C860		
	VD 79 92 00	"	220pF 400V	"	C862,863	U,C,R,A,B,G	
	VD 79 93 00	"	470pF 400V	"	C864,865	U,C,R,A,B,G	
	FG 21 28 20	"	820pF 50V	"	C871	U,C,R,A,B	
	FG 71 31 20	"	1200pF 50V	"	"	G	
	Fi 51 41 00	"	0.01 μ F 400V	"	C851	J	
	VD 79 93 00	"	470pF 400V	"	"	U,C,R,A,B,G	
※	VE 17 92 00	"	0.01 μ F 400V	"	C850,852	U,C,R,A,B,G	
	Fi 51 41 00	"	0.01 μ F 400V	"	"	J	
	FA 15 41 00	Mylar Cap.	0.01 μ F 50V	マ イ ラ ー コ ン	C809,814,857		
	FA 15 43 30	"	0.033 μ F 50V	"	C813,815~817		
	FZ 00 49 40	"	0.1 μ F 50V	"	C801		
	FZ 00 41 30	Semiconductive Ceramic Cap.	0.1 μ F 25V	半 導 体 セ ラ コ ン	C861,870		
※	VE 70 90 00	Electrolytic Cap.	3300 μ F 25V	ケ ミ コ ン	C841,842		
	UJ 13 92 20	"	2200 μ F 16V	"	C833,834		
	UJ 12 81 00	"	100 μ F 10V	"	C837		
	UJ 13 71 00	"	10 μ F 16V	"	C805,806		
	UJ 13 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		
	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		
	UJ 14 82 20	"	220 μ F 25V	"	C858		
	UT 46 51 00	Polypropylene Film Cap.	0.1 μ F 100V	ポ リ プ ロ コ ン	C856		
	VC 54 82 00	Coil		バ ル ス ト ラ ン ス	T801		
	VA 77 84 00	Line Filter	1.5mH	ラ イン フィ ル タ ー	L801		
	VD 47 37 00	SB Coil	60 μ H	S B コ イ ル	L806~809	G	
※	VE 92 52 00	Inductor	3.3 μ H	イ ン ダ ク タ	L802~804	G	
※	VE 92 56 00	Ferrite Bead	B-02-R	フ ェ ラ イ ト ビ ー ズ	FB801	G	
※	VE 79 55 00	"	B-01-RTF	"	"	U,C,R,A,B	
※	VE 79 55 00	"	B-01-RTF	"	FB802	U,C,R,A,B,G	
※	VE 79 55 00	"	B-01-RTF	"	FB803	G	
	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	} Inter- changeable	
	HZ 00 28 70	"	10k Ω ×4	"	"		
	HZ 00 45 40	"	10k Ω ×7	"	R831		

※New Parts (新規部品) NR

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
	VB 86 10 00	Pre-Set Potentiometer	B470Ω	半 固 定 抵 抗	VR801		
	iF 00 34 50	Diode	ISS133	ダ イ オ ー ド	D801,802,817,821,822,826,827		
	iF 00 84 80	//	ISR35-100A	//	D805~813		
	iF 00 64 60	Zener Diode	MTZ5.6B	ツェナーダイオード	D815,823		
	iF 00 64 70	//	MTZ7.5B	//	D803,804,825		
	iF 00 63 10	//	MTZ15A	//	D818,819		
	iF 01 06 30	//	MTZ4.3B	//	D824		
	iF 00 91 70	//	MTZ30C	//	D820		
	VC 68 63 00	//	MA2051A	//	D814		
	iF 00 62 90	//	MTZ5.6B	//	D816		
	iA 09 34 00	Transistor	2SA934	ト ラ ン ジ ス タ	Q814,816		
	iB 05 44 00	//	2SB544(E,F)	//	//	Inter-changeable	
	VC 46 67 00	//	2SA1534A(R,S)	//	//		
	VC 46 67 00	//	2SA1534A(R,S)	//	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(R,S)	//	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	//	//		
	iD 15 05 00	//	2SD1505	//	//		
	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		
	XD 57 00 02	//	M50943-401SP	//	IC805		
	iR 00 00 00	//	TC74HC00P	//	IC808		
	iR 00 74 00	//	TC74HC74P	//	IC802		
	XC 85 30 01	//	YM3613B	//	IC807		
	XD 71 10 01	//	YM6013	//	IC810		
	XD 71 20 01	//	YM3414	//	IC809		
	VC 39 88 00	Quartz Crystal Unit	16.93MHz	水 晶 振 動 子	XL801		
	VC 09 79 00	Switch	ESB82102V-F	パ ワ ー ス イ ッ チ	SW801	Inter-changeable	
	VC 40 97 00	//	ESB82101V-F	//	//		
	KA 40 09 40	//	SSB-022	ス ラ イ ド ス イ ッ チ	SW802		
	VD 02 85 00	Pin Jack	1P	ピ ン ジャ ッ ク	PJ803		
	VE 94 23 00	//	2P	//	PJ801,802		
	VD 98 21 00	Optical Module	TOTX172	光 伝 送 モ ジ ュ ー ル	U801		
	LB 20 13 90	Base Pin	TEB2P-SHF i-Type	N H ベ ー ス ピ ン	CB814~816		
	VD 00 45 00	//	2P i-Type	P H ベ ー ス ピ ン	CB802		
	VD 00 46 00	//	3P i-Type	//	CB803,804		

※New Parts (新規部品) NR

[illegible]

※New Parts (新規部品) NR

※New Parts (新規部品) NR

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	NA:09:73:00	Servo Circuit Board	サーボシート				
	FG:21:21:50	Ceramic Cap.	セラコン	C105			
	FG:21:24:70	//	//	C124			
	FG:21:26:80	//	//	C123			
	FG:24:41:00	//	//	C146			
	FA:15:54:70	Mylar Cap.	マイラーコン	C117			
	FA:15:31:00	//	//	C114,115			
	FA:15:31:80	//	//	C137			
	FA:15:32:20	//	//	C141,142			
	FA:15:36:80	//	//	C104			
	FA:15:43:30	//	//	C107			
	FA:15:42:20	//	//	C139			
	FA:15:51:00	//	//	C102,103,106,140			
	FA:15:56:80	//	//	C143			
	FA:15:51:20	//	//	C116,126			
	FA:15:46:80	//	//	C122			
	FA:15:53:30	//	//	C138			
	FA:15:53:90	//	//	C109			
	FA:15:52:20	//	//	C118			
	FZ:00:49:40	//	銅リードマイラーコン	C144,145			
	UH:13:91:00	Electrolytic Cap.	ケミコン	C112,113			
	UJ:11:84:70	//	//	C128			
	UJ:11:82:20	//	//	C129			
	UJ:12:81:00	//	//	C101,108			
	UJ:13:73:30	//	//	C131,132			
	UJ:13:74:70	//	//	C125			
	UJ:13:82:20	//	//	C147,148			
	UJ:14:64:70	//	//	C121			
	UJ:16:61:00	//	//	C127			
	UJ:16:62:20	//	//	C130			
	HV:45:36:80	Flame Proof Carbon Resistor	不燃化カーボン抵抗	R258,259			
	VB:85:97:00	Pre-Set Potentiometer	半固定抵抗	VR108,109			
	VB:85:98:00	//	//	VR101,105			
	VB:86:01:00	//	//	VR104			
	VB:86:02:00	//	//	VR106			
	VB:86:02:00	//	//	VR110			
	VB:86:05:00	//	//	VR107			
	VC:68:58:00	//	//	VR102			
	VB:86:01:00	//	//	VR103			
	iA:09:33:70	Transistor	トランジスタ	Q106,121	Inter-changeable		
	iA:11:15:10	//	//	//			
	iX:60:31:70	//	//	//			
	iA:09:34:00	//	//	Q124,126	Inter-changeable		
	iB:05:44:10	//	//	//			
	iC:17:40:70	//	//	Q102,104,109~113,119,120,122	Inter-changeable		
	iC:26:03:10	//	//	//			
	iX:60:31:80	//	//	//			
	iX:60:42:00	//	//	Q105,114~116	Inter-changeable		
	iC:33:27:00	//	//	//			

※New Parts (新規部品) NR

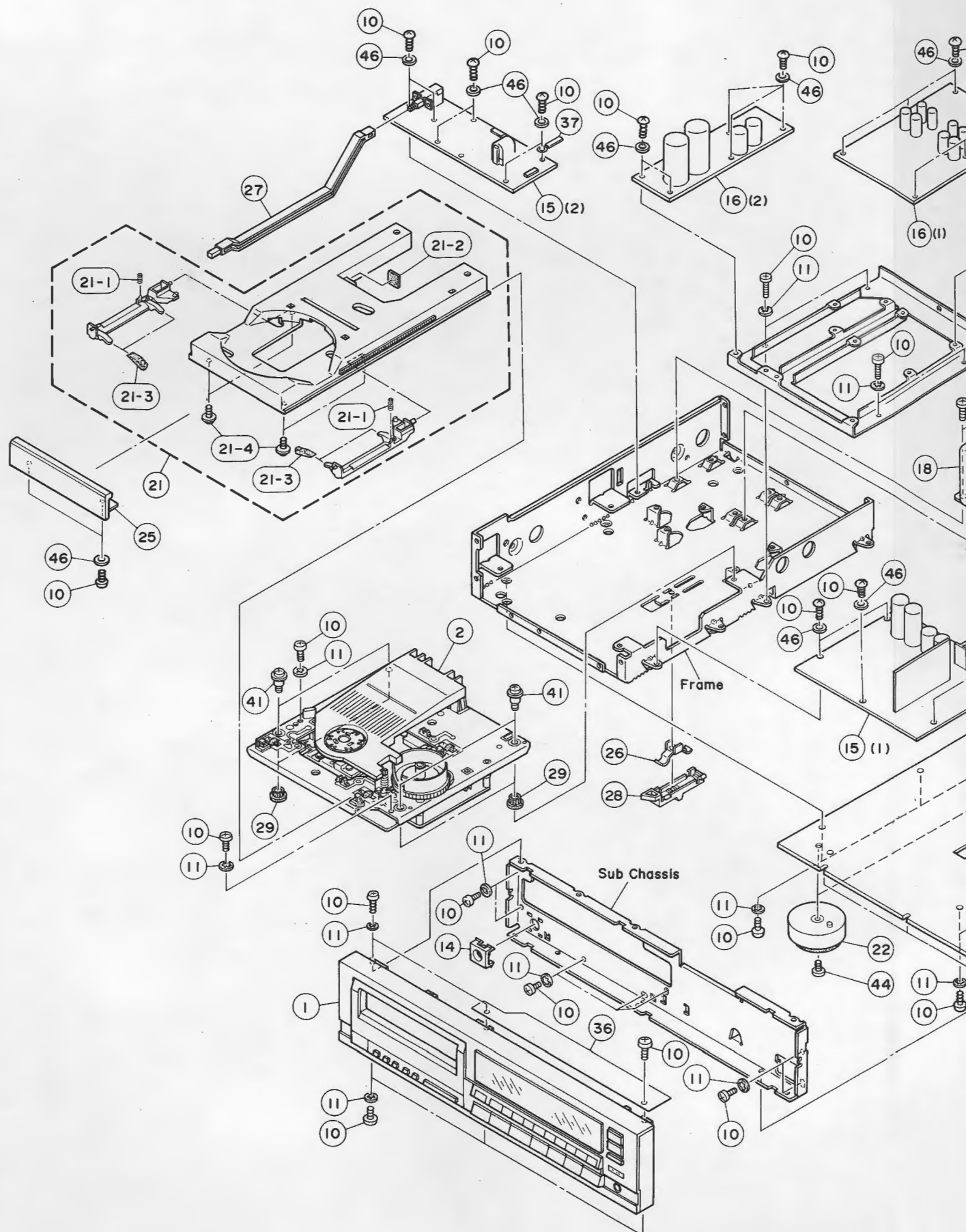
※New Parts (新規部品) NR

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	リンク
	NA 09 25 71	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	//	0.01 μ F 50V	//	C515,518,519		
	UD 11 44 70	//	0.047 μ F 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.	470 μ F 6.3V	ケ ミ コ ン	C503		
	UJ 13 71 00	//	10 μ F 16V	//	C501,502,504		
	GE 90 20 00	OSC Coil	3.3 μ H	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	220 Ω 1/8W	チ ッ プ 抵 抗	R517		
	VB 36 08 00	//	1.5k Ω 1/8W	//	R519		
	VB 36 12 00	//	2.2k Ω 1/8W	//	R511		
	VB 36 16 00	//	3.3k Ω 1/8W	//	R512		
	VB 36 21 00	//	4.7k Ω 1/8W	//	R515		
	VB 36 25 00	//	6.8k Ω 1/8W	//	R502,503		
	VB 36 29 00	//	10k Ω 1/8W	//	R501		
	VB 36 31 00	//	12k Ω 1/8W	//	R506,507		
	VB 36 37 00	//	22k Ω 1/8W	//	R505,518		
	VB 36 39 00	//	27k Ω 1/8W	//	R521		
	VC 31 66 00	Chip Metal Film Resistor	22.1k Ω 1/8W	チップ金属皮膜抵抗	R509,510,513,514		
	VB 36 41 00	Chip Resistor	33k Ω 1/8W	チ ッ プ 抵 抗	R508,520		
	VB 36 53 00	//	100k Ω 1/8W	//	R516		
	VB 40 27 00	//	1M Ω 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	//	2SC2412VB	//	Q502	} inter-changeable	
	iD 06 01 00	//	2SD601	//	//		
	iF 00 49 10	Varactor Diode	1SV55	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(SPCII)	//	IC501		
	VB 97 27 00	Connector	40pin	コ ネ ク タ ー			

※New Parts (新規部品)

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EXPLODED VIEW



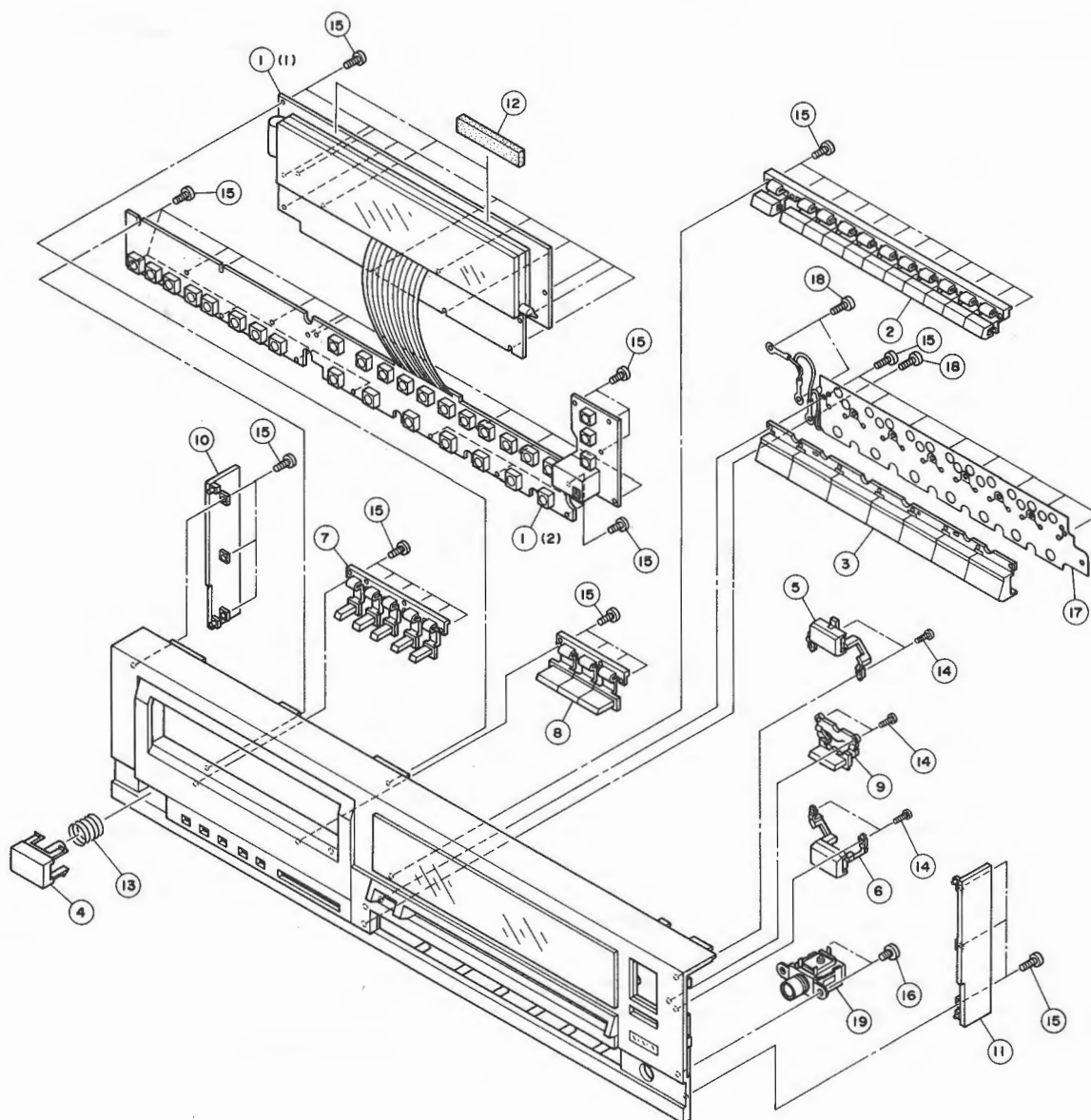
MECHANISM PARTS

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※ 1	VE 20 74 00	Panel Unit	パ ネ ル ユ ニ ッ ト			J	
※ //	VE 45 83 00	//	//			U,C	
※ //	VE 45 84 00	//	//			R	
※ //	VE 45 86 00	//	//			A,B,G	
※ 2	VE 83 07 00	Disc Mechanism Unit	D M ユ ニ ッ ト	DM-2200L			
※ 3	VE 20 77 00	Top Cover, Front	ト ッ プ カ バ ー (前)			J	
※ 4	VE 20 78 00	Top Cover, Rear	ト ッ プ カ バ ー (後)			J	
※ 5	VE 20 85 00	Side Cover, Wood	サ イ ド カ バ ー / ウ ッ ド			J	
6	BA 09 46 50	Damper, Lid	ダ ン パ ー / リ ッ ド		CD-2000	J	
7	CB 66 15 50	Damper, Top	ダ ン パ ー / ト ッ プ		CDX-5000	J	
8	CB 66 22 20	Damper, Top A	ダ ン パ ー / ト ッ プ A		CDX-1100	J	
※ 9	VE 20 87 00	Damper	ダ ン パ ー			J	
10	Ei 33 00 86	Binding Head Tapping Screw	3×8 FCRM3-BI	バ イ ン ド タ ッ ピ ン グ ネ ジ	PACK		
11	EV 41 30 36	Toothed Lock Washer	φ3 FCRM3-BI	内 歯 付 座 金	PACK		
12	EQ 03 11 06	Round Head Wood Screw	3.1×10 ZMC2-Y	丸 木 ネ ジ	PACK	J	
※ 13	VE 20 80 00	Rear Panel	リ ャ パ ネ ル			J	
※ //	VE 32 76 00	//	//			R	
※ //	VE 32 77 00	//	//			U	
※ //	VE 32 78 00	//	//			B,G	
※ //	VE 32 79 00	//	//			A	
※ //	VE 85 77 00	//	//			C	
14	CB 66 09 60	Guide, Button	ボ タ ン ガ イ ド		CDX-1100		
※ 15	NA 09 73 80	Digital Circuit Board	デ ジ タ ル シ ー ト			J	
※ //	NA 09 73 90	//	//			U,C,A,B	
※ //	NA 09 74 00	//	//			G	
※ //	NA 09 74 10	//	//			R	
※ 16	NA 09 60 20	Main Circuit Board	メ イ ン シ ー ト			J,U,C,A,B	
※ //	NA 09 80 70	//	//			G	
※ //	NA 09 79 00	//	//			R	
※ 17	XD 68 80 02	Power Transformer	電 源 ト ラ ン ス			J	△
※ //	XD 69 00 02	//	//			U,C	△
※ //	XD 69 10 02	//	//			A,B,G	△
※ 18	XD 69 20 01	//	//			J	△
※ //	XD 69 30 01	//	//			U,C	△
※ //	XD 68 90 01	//	//			R	△
※ //	XD 69 40 01	//	//			A,B,G	△
19	VC 55 26 00	Power Cord	電 源 コ ー ド			J	△
//	MG 00 22 20	//	10A 125V	//		U,C	△
//	MG 00 16 30	//	6A 250V	//		R	△
//	MG 00 23 10	//	7.5A 250V	//		A	△
//	MG 00 23 30	//	300/300V	//		B	△
//	MG 00 23 20	//	2.5A 250V	//		G	△
20	CB 62 01 90	Cord Stopper	CM-22B	コ ー ド ス ト ッ パ ー		R,A,B,G	
//	CB 62 02 00	//	CM-22C	//		U,C	
21	VC 53 20 00	Tray Ass'y	ト レ イ Ass'y		CDX-1100		
21-1	VC 54 63 00	Spring	ス プ リ ン グ				
21-2	CB 65 60 20	Disc Pad	デ ィ ス ク パ ッ ド				
21-3	CB 62 79 60	Cushion Rubber	ク ッ シ ョ ン ゴ ム				
21-4	EX 60 02 40	BW Head Tapping Screw	3×8(φ10)FCRM3-B	B W ヘ ッ ド タ ッ ピ ン グ ネ ジ			
22	VC 53 25 00	Isolator	ア イ ソ レ ー タ ー		CDX-1100		
※ 23	VE 20 75 00	Bottom Cover	ボ ト ム カ バ ー			J	
//	AA 63 15 70	//	//		CDX-1100	U,C,R,A,B,G	
24	VC 55 27 00	Washer	ワ ッ シ ャ ー		CDX-1100		

※New Parts (新規部品) NR

※New Parts (新規部品) NR

■EXPLODED VIEW (Panel Unit)

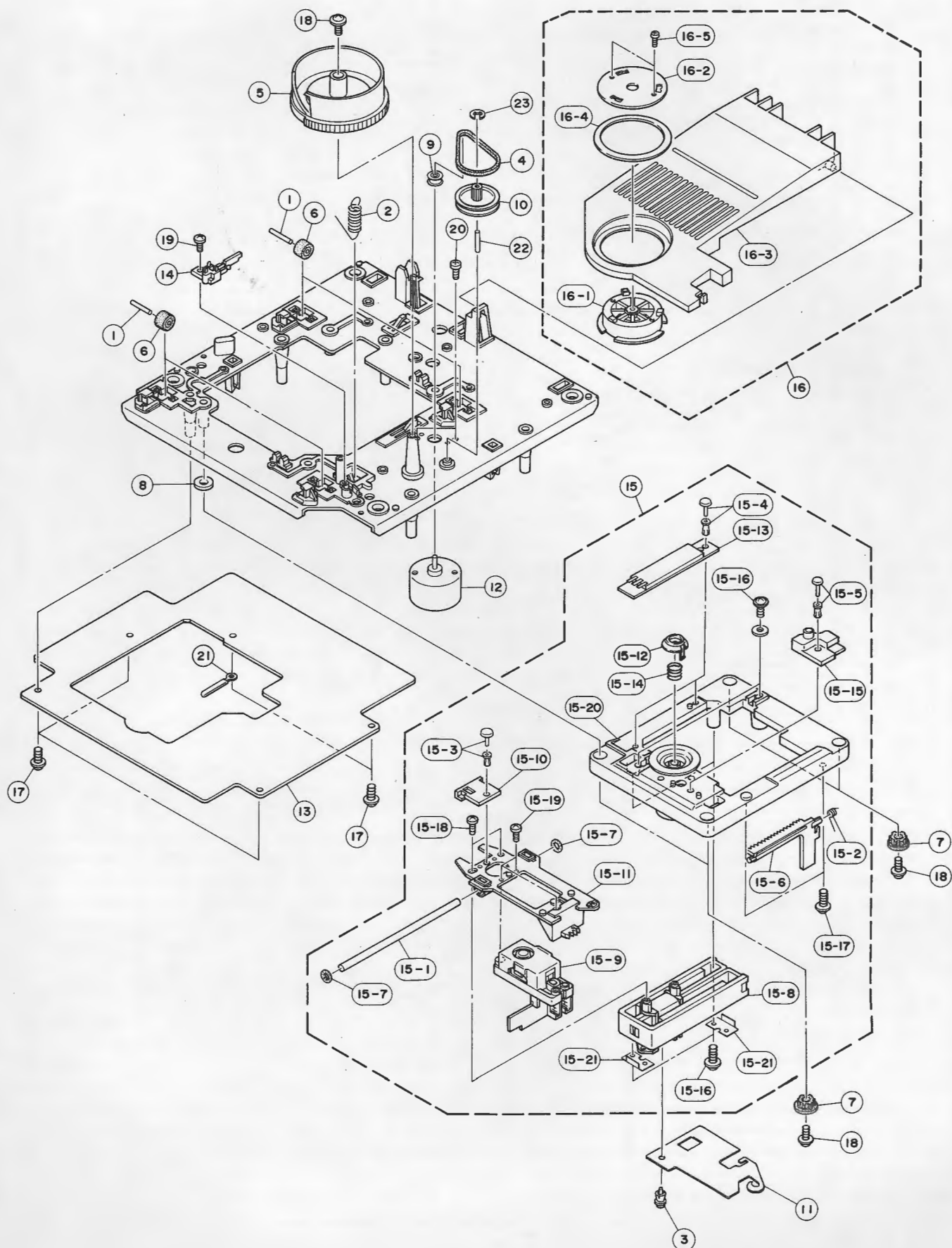


MECHANISM PARTS (Panel Unit)

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※New Parts (新規部品) NR

EXPLODED VIEW(Disc Mechanism Unit)



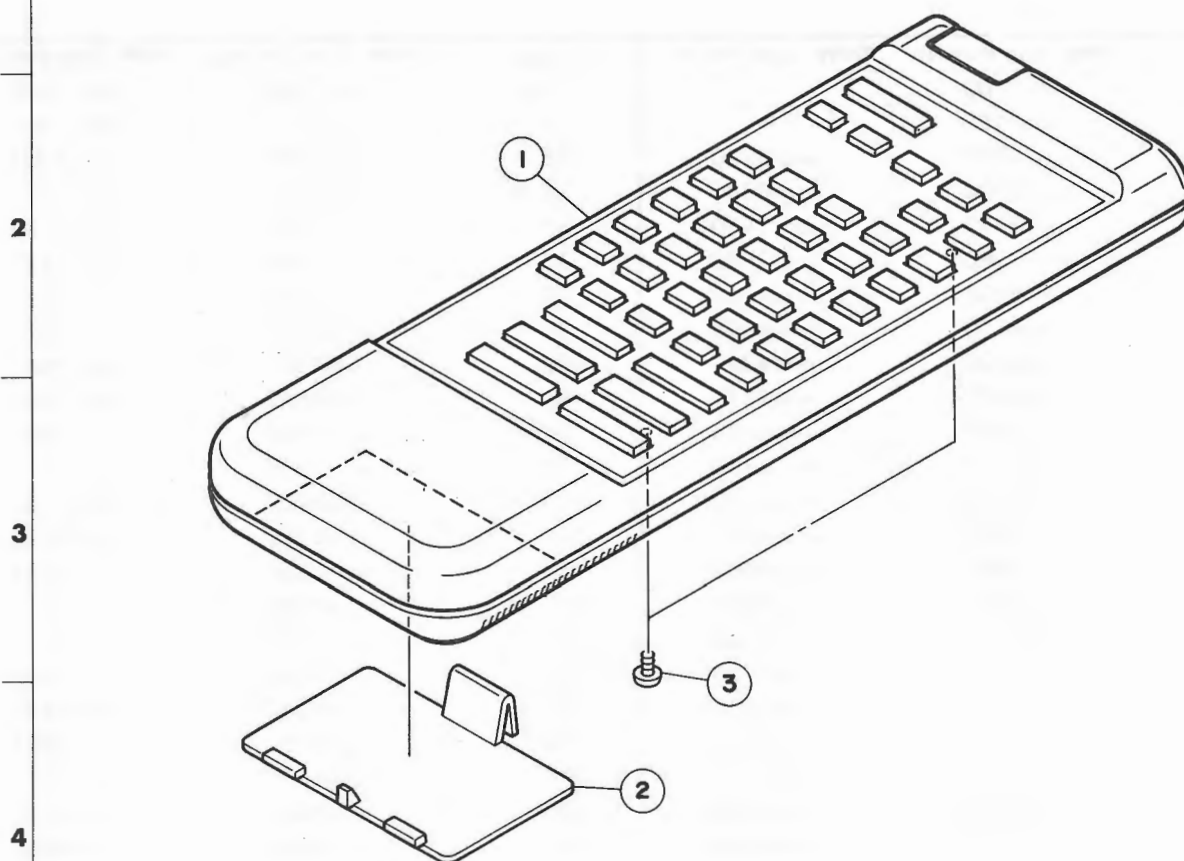
MECHANISM PARTS(Disc Mechanism Unit)

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	VE 83 07 00	Disc Mechanism Unit	DM-2200L	D M ユ ニ ッ ト			
1	AA 63 14 60	Pin	φ2×14.6	ピ ン	DM-IX		
2	VC 54 67 00	Spring(TE)		スプリング (T E)	DM-2200		
3	CB 09 96 00	Plastic Rivet		プラスチックリベット			
4	CB 63 78 30	V-Belt		V ベ ル ト			
5	CB 65 61 30	Loading Cam		ローディングカム	DM-2200		
6	CB 65 67 40	Roller		ロ ー ラ ー	DM-IX		
7	CB 65 70 60	Damper		ダ ン パ ー	DM-IX		
8	CB 65 71 80	//		ピックダンパー	DM-2200		
9	CB 65 85 10	P.Pulley		P ブ ー リ ー	DM-X5		
10	CB 65 85 20	Idle Pulley		アイドルプーリー	DM-X5		
※	11	VE 78 46 00	Guide Wire	線 材 ガ イ ド A			
12	VC 40 61 00	Motor		モ ー タ ー	DM-IX		
※	13	NA 09 73 00	Servo Circuit Board	サーボシート			
14	KA 90 63 70	Switch	MSW-1485	エンドスイッチ	DM-IX		
※	15	VE 83 08 00	Disc Mechanism	ディスクメカユニット			
15-1	AA 63 11 50	Shaft	φ4×100	シ ャ フ ト	DM-IX		
15-2	AA 63 17 40	Spring(TO)		ス プ リ ン グ	DM-IX		
15-3	CB 09 96 00	Plastic Rivet	φ3.5×4.5	プラスチックリベット			
15-4	CB 60 88 10	//	φ3.5×5.5	//			
15-5	CB 03 27 50	//	φ3.5×7	//			
15-6	CB 65 56 00	Lever		レ バ ー	DM-IX		
15-7	VD 39 56 00	Ring		O リ ン グ	DM-IX		
15-8	VB 81 76 00	Linear Motor	TDS-LOC-02	リニアモーター	DM-IX		
※	15-9	VE 72 03 00	Optical Pick Up Head	HG-1	光ピックアップヘッド		
15-10	VC 47 45 00	CP Brush		C P ブ ラ シ	DM-IX		
15-11	NB 63 72 80	PU Base Ass'y		P U ベ ー ス Ass'y	DM-IX		
※	15-12	VE 20 68 00	Disc Table, Inner	ディスクテーブル/インナー			
15-13	VC 54 34 00	CP Element Ass'y		C P エ レ メ ン ト Ass'y	DM-2200		
※	15-14	VE 25 33 00	Spring	スプリング/ディスクプーリー			
15-15	VC 56 74 00	FG Circuit Board Ass'y		F G シ ー ト Ass'y	DM-2200		
15-16	EK 33 00 10	BW Head Tapping Screw	3×12 FCRM3-BI	B W ヘッドタッピングネジ			
15-17	EK 33 00 30	//	3×10 FCRM3-BI	//			
15-18	Ei 32 60 86	Binding Head Tapping Screw	2.6×8 FCRM3-BI	バインドタッピングネジ	PACK		
15-19	ED 32 60 66	Binding Head Screw	2.6×6 FCRM3-BI	バ イ ン ド 小 ネ ジ	PACK		
※	15-20	VE 96 07 00	Sub Disc Mechanism Ass'y	サブディスクメカ Ass'y	With DISC Motor		
15-21	VD 83 17 00	Washer		マグネットワッシャー			
15-22	CB 66 09 80	//		ワ ッ シ ャ			
※	16	VE 20 66 00	Flapper Ass'y	フ ラ ッ パ ー Ass'y			
※	16-1	VE 20 71 00	Stabilizer, Magnet	スタビライザー/マグネット			
※	16-2	VE 20 72 00	Stabilizer, Metal	スタビライザー/金具			
16-3	CB 65 61 10	Flapper		フ ラ ッ パ ー			
16-4	VC 54 65 00	Damper, Rubber		ダンパーゴム B			
16-5	ED 02 00 46	Binding Head Screw	2×4 ZMC2-Y	バ イ ン ド 小 ネ ジ	PACK		
17	EK 33 00 30	BW Head Tapping Screw	3×10 FCRM3-BI	B W ヘッドタッピングネジ			
18	EX 60 02 40	//	3×8 FCRM3-BI	//			
19	Ei 32 61 06	Binding Head Tapping Screw	2.6×10FCRM3-BI	バインドタッピングネジ	PACK		
20	ED 32 60 36	Binding Head Screw	2.6×3 FCRM3-BI	バ イ ン ド 小 ネ ジ	PACK		
21	VC 38 02 00	Stopper, Wire		束 線 止 め	CDX-5000		
22	AA 62 79 70	Shaft		シ ャ フ ト G			
23	EV 50 11 56	E-Ring	φ1.5 FNM3-3G	E リ ン グ	PACK		
	CB 06 92 50	Binding Tie	BK-1	インシュロックタイ			

※New Parts (新規部品) NR

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■ **EXPLODED VIEW (RS-CDX1110)**

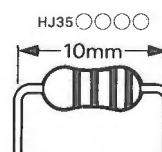
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※New Parts (新規部品) NR

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



1/6W Type

