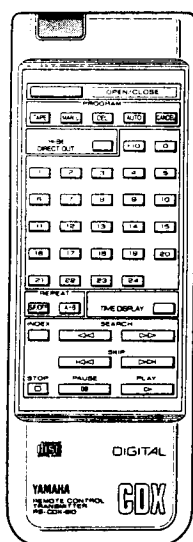
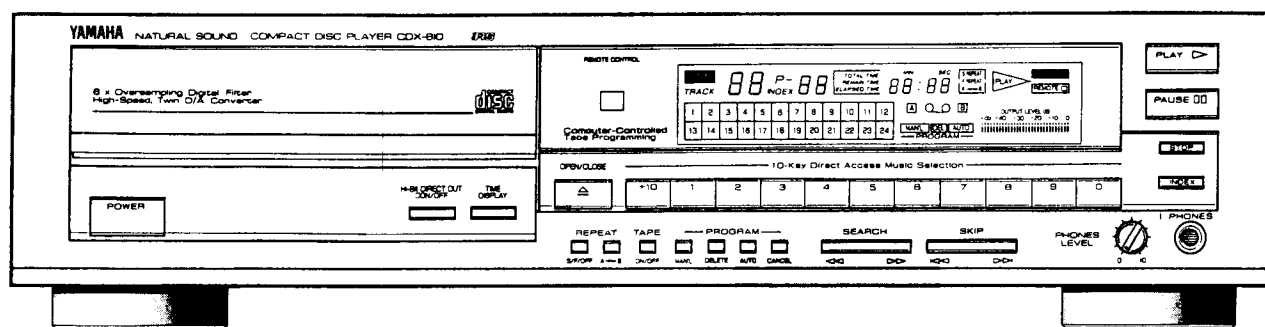


COMPACT DISC PLAYER CDX-810/U

SERVICE MANUAL



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.

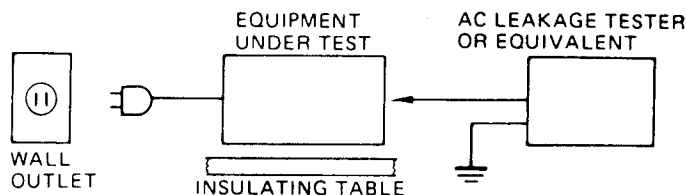
2. Leakage Current Measurement (For 120V Model Only).

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 $0.15\mu\text{F}$
- Leakage current must not exceed 0.5mA.
- Be sure to test for leakage with the AC plug in both polarities.

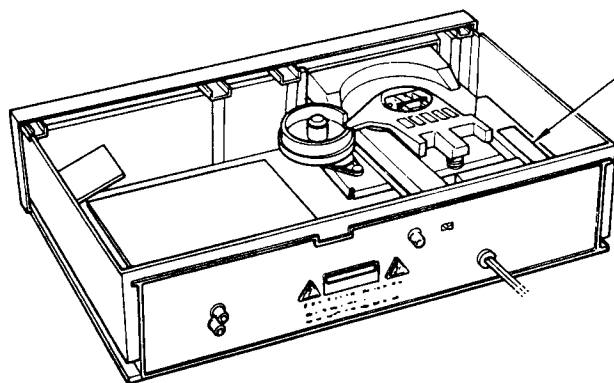
• POLARIZATION (U. C models)

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



CAUTION – USE OF CONTROLS, 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.



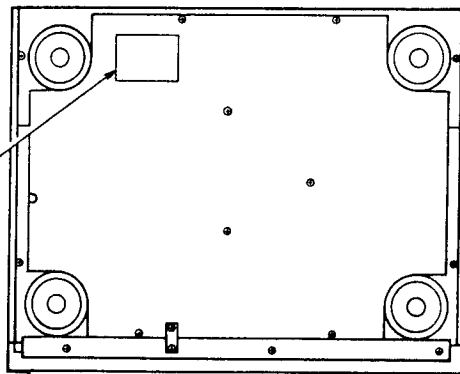
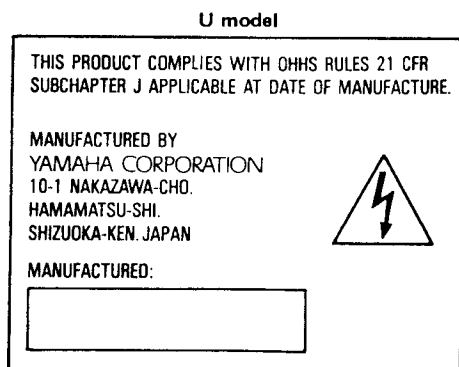
U model

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

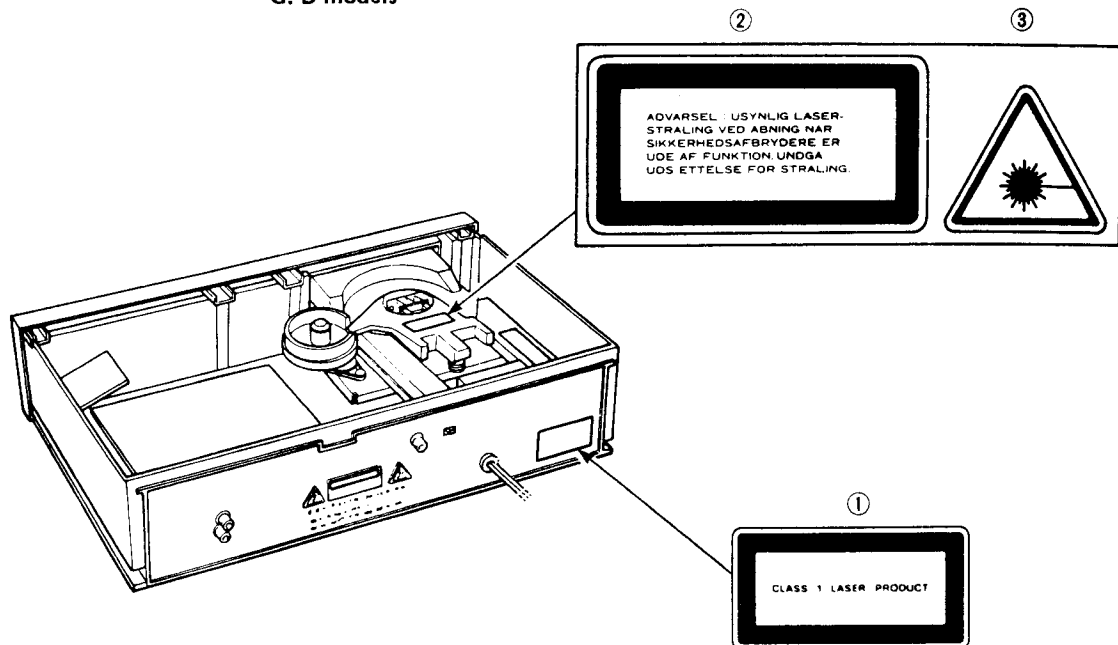
C model

CAUTION HAZARDOUS LASER AND ELECTROMAGNETIC RADIATION WHEN OPEN AND INTERLOCK DEFEATED
ATTENTION RAYONNEMENT LASER ET ELECTROMAGNETIQUE DANGEREUX SI OUVERT AVEC L'ENCLICHEMENT DE SECURITE ANNULE (08547)

BOTTOM SIDE



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 YTTRELLIGARE 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 INDENI APPARATET, SOM VIST I ILLUSTRATIONEN, SOM EN ADVARSEL OM YDERLIGERE INDGREG I APPARATET. APPARATET INDEHOLDER ET LASERKOMPONENT SOM AVGIVER LASESTRÅLING DER OVERSTIGER GÆNSEVERDIEN FOR LASERKLASSE 1.

ADVARSEL! INDGREG 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.

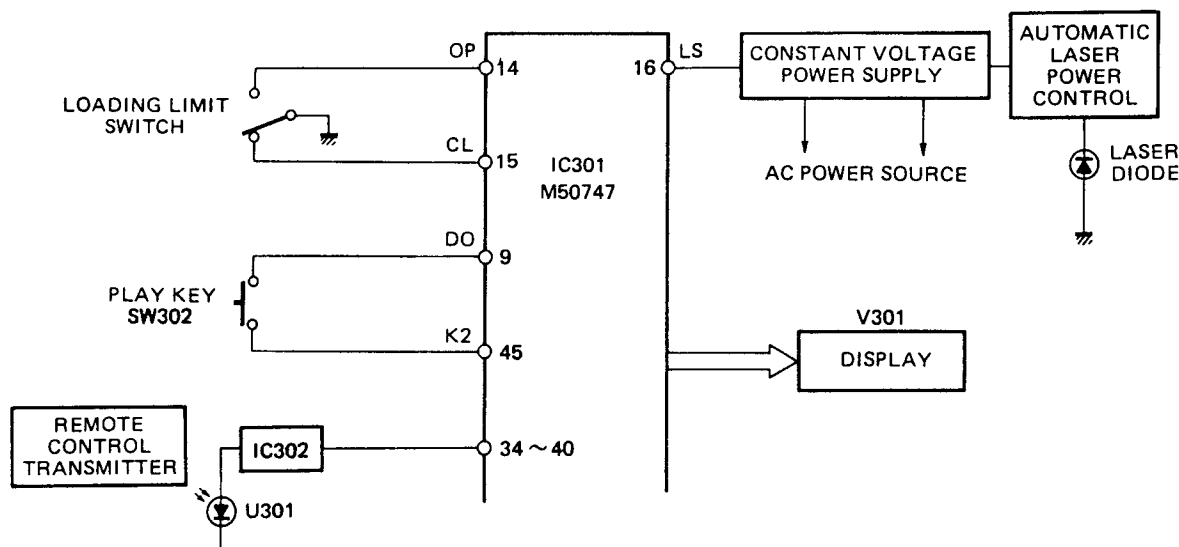
Laser output is controlled by the injection or cutoff of the constant voltage source to the laser diode at Pin 16 (LS) of IC301 (M50747), and also by Automatic Laser Power Control Circuit. When Pin 16 is in "H" (High) level, the laser emits the beam. When Pin 16 is in "L" (Low) level, the laser does not emit the beam.

Pin 16 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 Loading Limit Switch is set in "CL" side. (The disc tray is closed.)
- 2) The pickup is located at the area of minimum internal circumference.

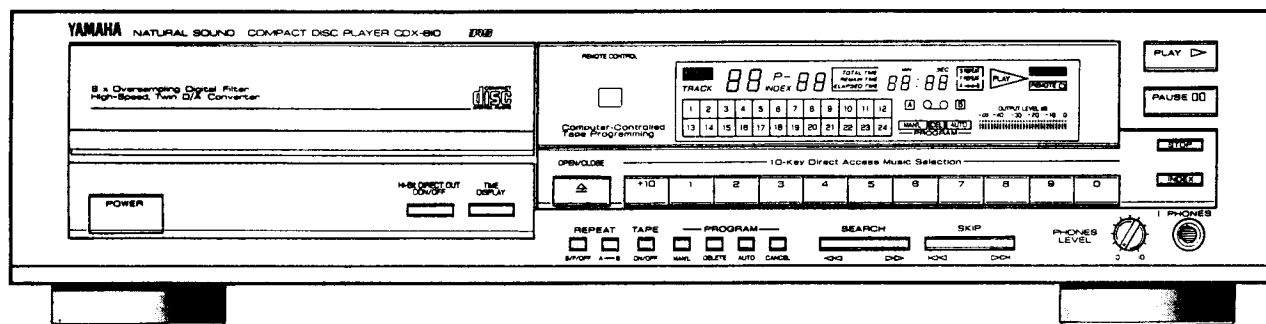
After the above conditions are met and the index signals have been read, the laser emits the beam when the following two conditions are met.

- 1) when the PLAY key (SW302) or that of Remote Control Transmitter is pressed.
- 2) when the **PLAY** display is ON.

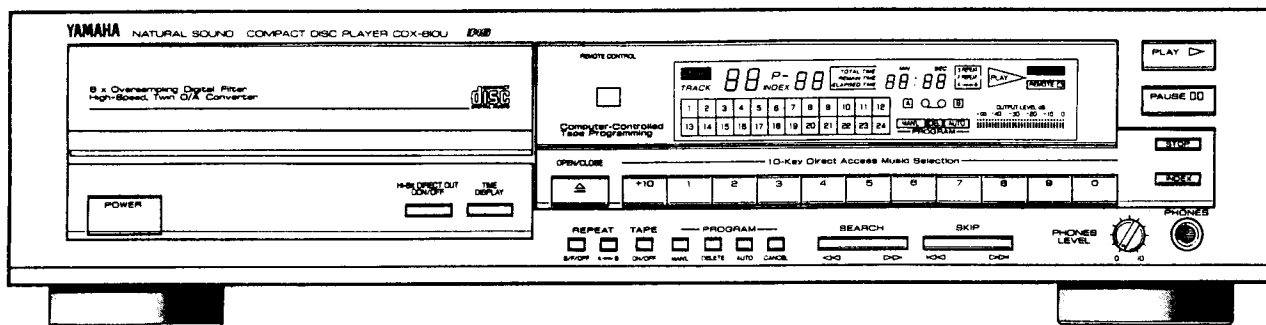


FRONT PANELS

CDX-810

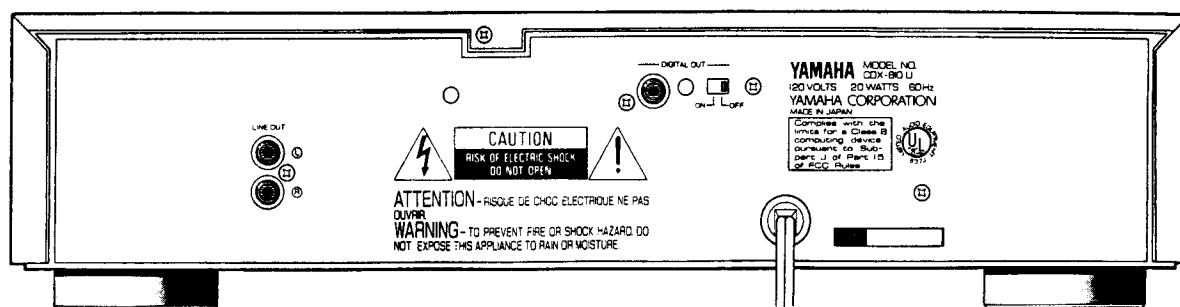


CDX-810U

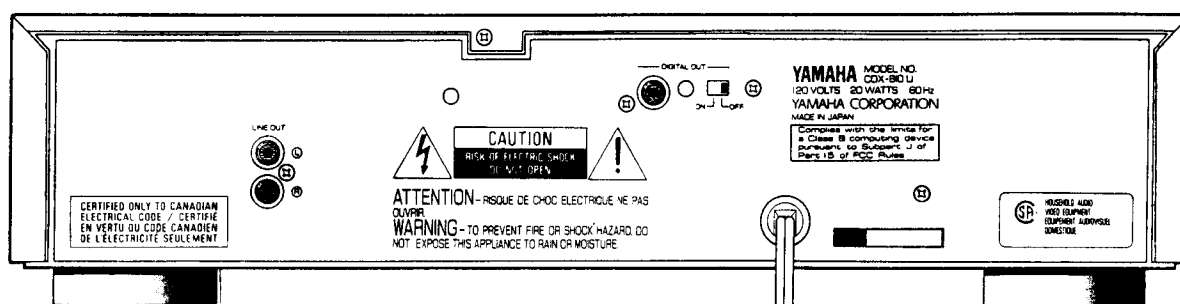


REAR PANELS

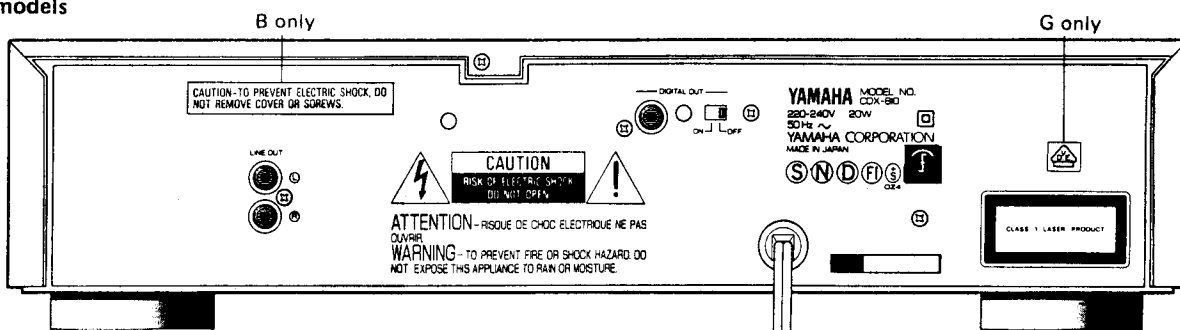
▼ U model



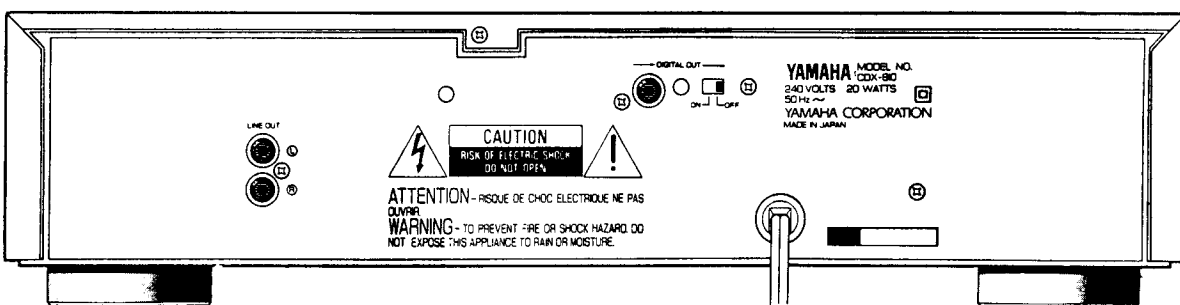
▼ C model



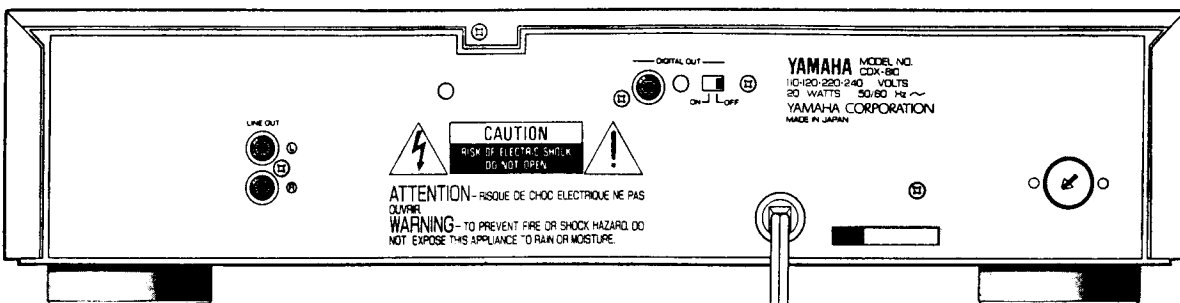
▼ G, B models



▼ A model



▼ R model



SPECIFICATIONS

AUDIO SECTION

Frequency Response	2Hz ~ 20kHz ± 0.3 dB
De-Emphasis Equalization	± 0.3 dB (EIAJ)
Harmonic Distortion + Noise	Less than 0.003%, 1kHz (EIAJ)
S/N Ratio	106dB (EIAJ)
Dynamic Range	More than 100dB (EIAJ)
Wow & Flutter	Unmeasurable
Channel Separation	More than 96dB, 1kHz (EIAJ)
Output Voltage	2V (EIAJ)
Output Impedance	2.2k Ω
Headphone Output	450mV/150 Ω (-20dB)

INTERNAL SYSTEMS

Optical Pick-up	3-beam laser
Error Correction System	CIRC, dual error correction system
D/A Conversion	16 bit floating (L, R twin)
Filter	Digital filter and 3rd order new active filter

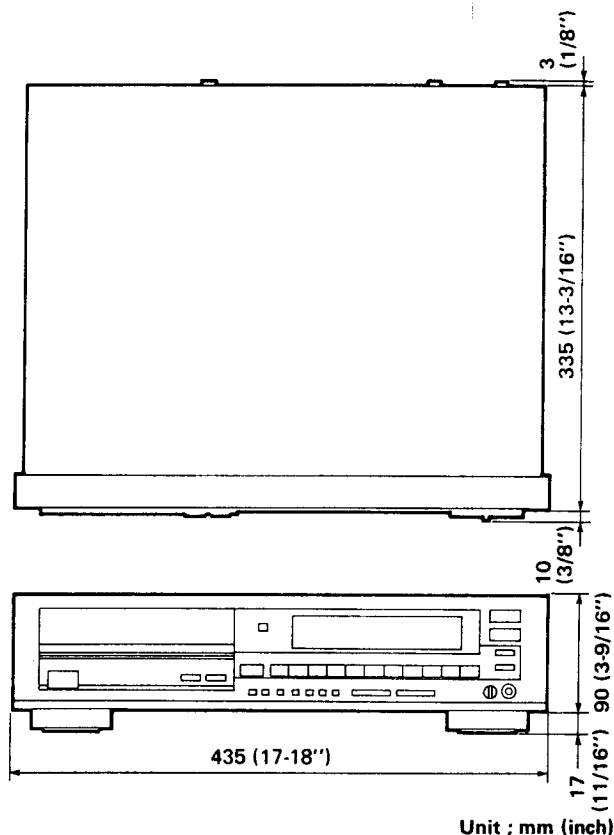
GENERAL

Power Requirements	
U, C models	120V AC, 60Hz
G, B models	220-240V AC, 50Hz
A model	240V AC, 50Hz
R model	110-120/220-240V AC, 50/60Hz
Power Consumption	20W
Dimensions (W x H x D)	435 x 107 x 348 mm (17-1/8" x 4-3/16" x 13-11/16")
Weight	5.5 kg (12 lbs 2 oz.)
Accessories	Pin plug cord Remote control transmitter (RS-CDX810) Dry-cell: X2 (Size "AA", "R06")

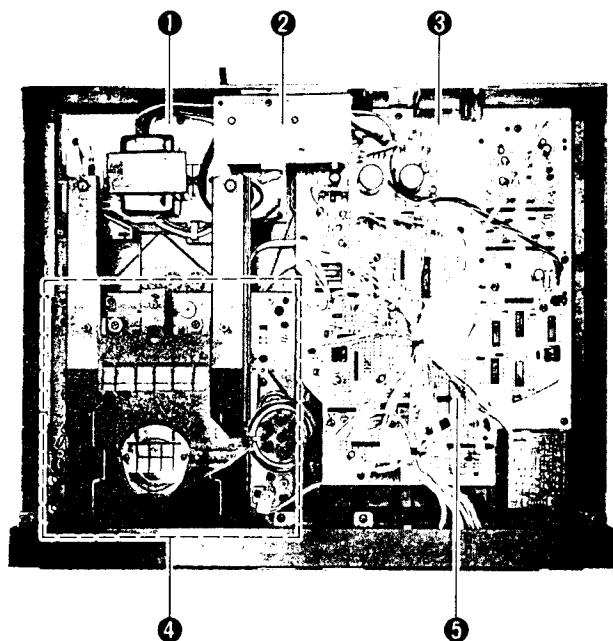
* Specification subject to change without notice.

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

DIMENSION

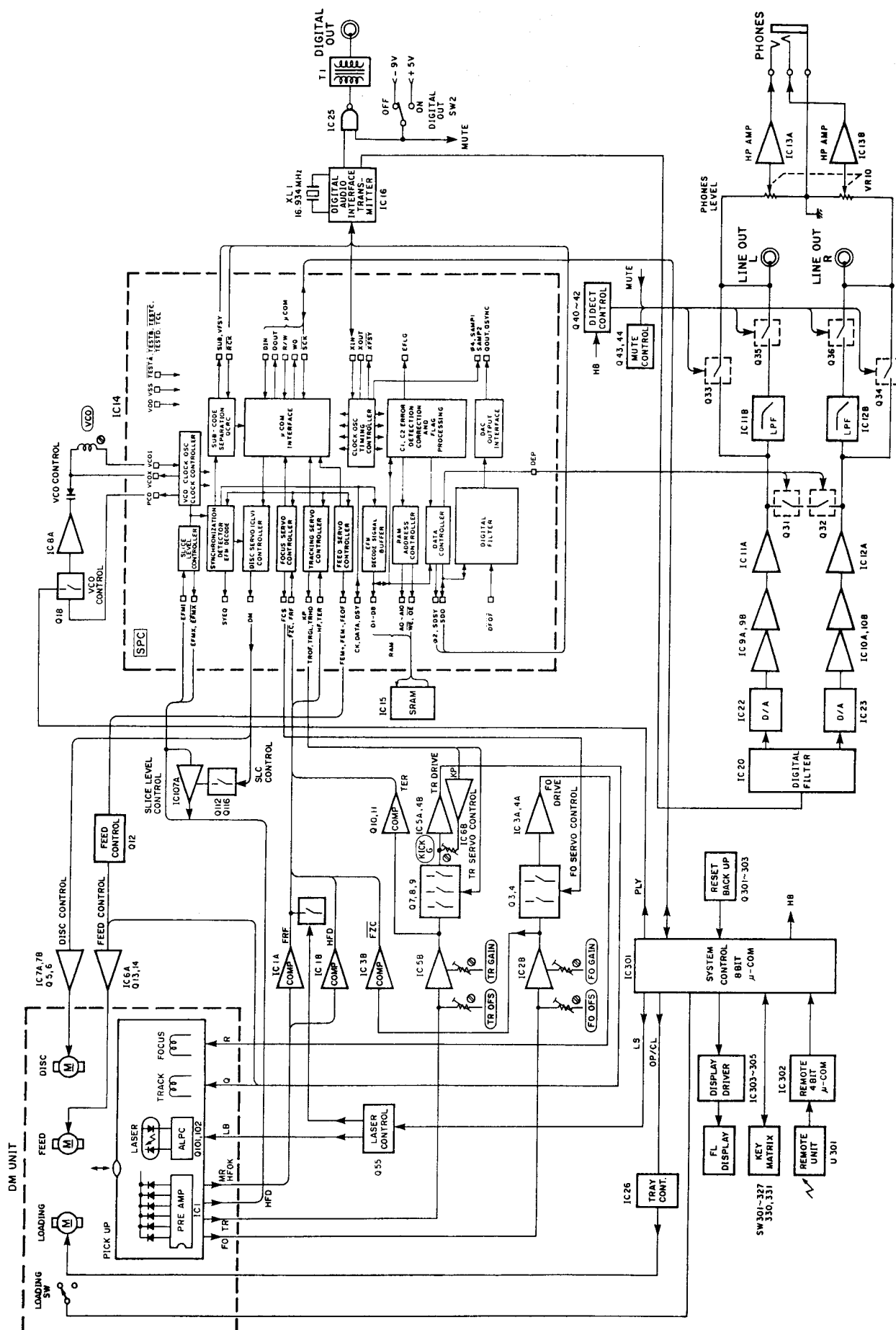


INTERNAL VIEW



- ① POWER SUPPLY UNIT
- ② MAIN CIRCUIT BOARD (2)
- ③ MAIN CIRCUIT BOARD (1)
- ④ DISC MECHANISM UNIT
- ⑤ IC16 : YM3613B
(Digital Audio Interface Transmitter)

BLOCK DIAGRAM



■ DISASSEMBLY PROCEDURES

(Remove parts in disassembly order as numbered.)

1. Removal of Top Cover

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

2. Removal of Front Panel

- Remove 9 screws (②) in Fig. 1, and pull the Front Panel forward.

3. Removal of Bottom Cover

- Remove 12 screws (③) in Fig. 1.

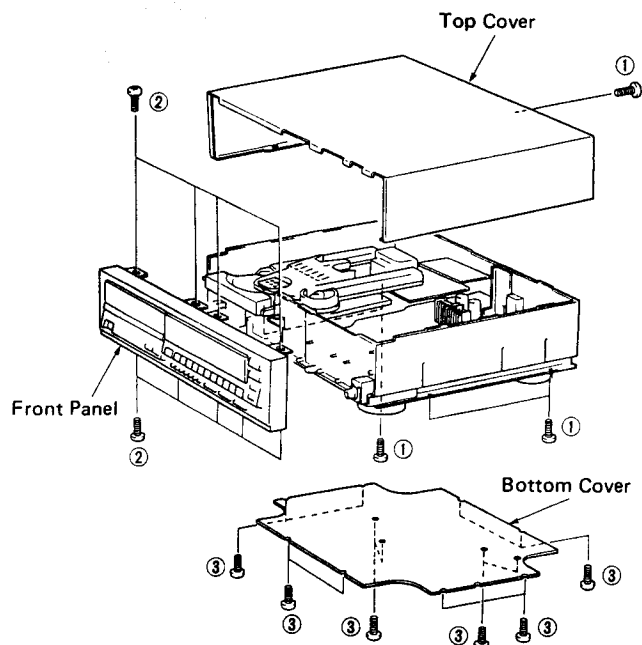


Fig. 1

4. Removal of Disc Tray Ass'y

- Pull out the Disc Tray Ass'y by turning the loading cam and remove it by pressing the hook.

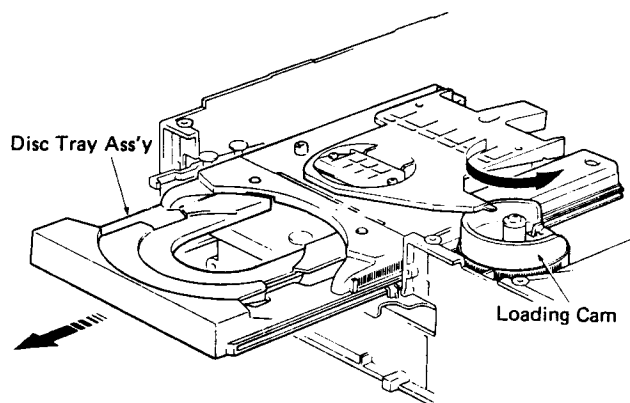


Fig. 2

5. Removal of Disc Mechanism Unit

- Remove 4 screws (④) in Fig. 4.

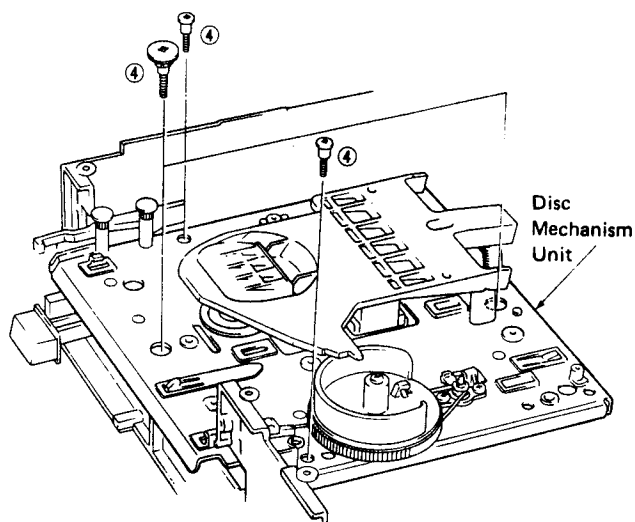


Fig. 4

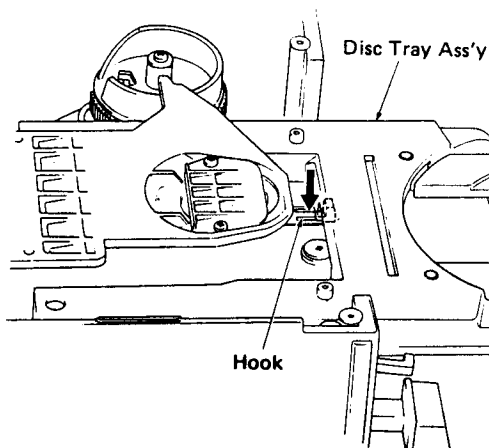


Fig. 3

6. Removal of Disc Motor

- a. Remove 2 screws (⑤) fixing Flapper in Fig. 5 and then remove the flapper.

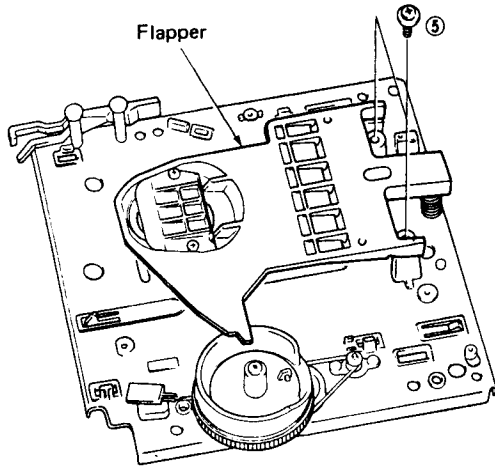


Fig. 5

- b. Pull off the disc table and remove 2 screws (⑥) in Fig. 6.

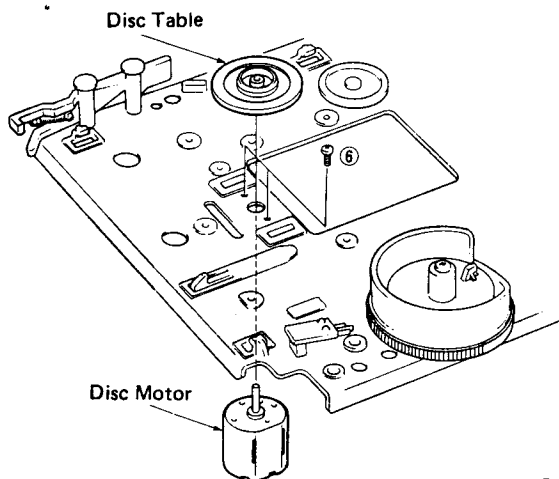
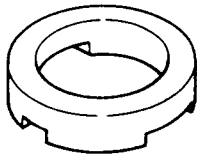


Fig. 6

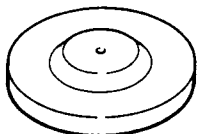
● Installation of disc table

※ The following tools are necessary for installation.

Height adjustment gauge (TX913130)



Disc table installer (TX913140)



- a. Install the height adjustment gauge as shown in Fig. 7.

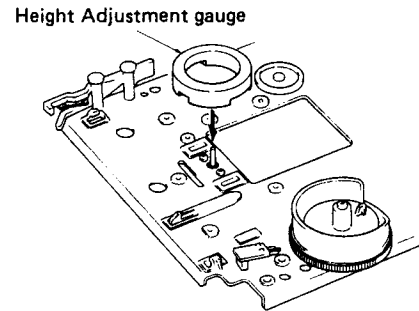


Fig. 7

- b. Carefully apply a small amount of anaerobic glue to motor shaft (Loc-Tite # 638).
c. Install turntable onto motor shaft with disc table installer as shown in Fig. 8.
d. Clean excess glue from top of turntable.
e. Allow 5 minutes for glue to cure before removing disc table installer and height gauge.

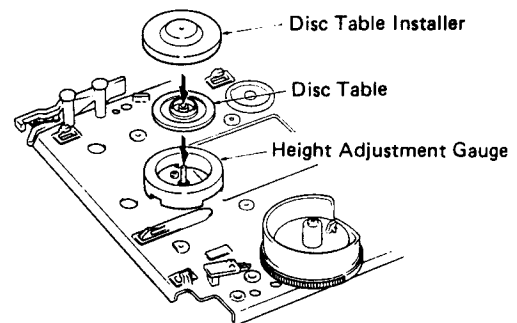


Fig. 8

- f. Check that the disc table height is as specified below.

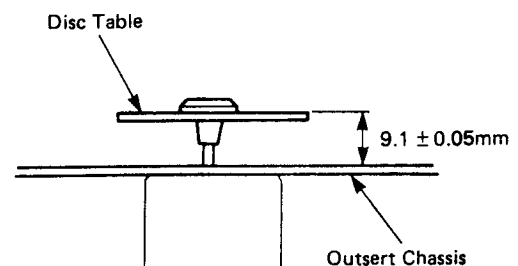


Fig. 9

■ 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/N 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/N TX911730, YEDS-7 P/N TX911320 or Philips test sample disc)	
Filter (See Fig. A)	: x 1
Shorting cord	: x 1

Tools

Screwdriver	: x 1
(For Pre-Set Potentiometer adjustment)	
Core screwdriver	: x 1

• Adjustment jig (with internal filter)

Connect the filter in Fig. A before measurement.

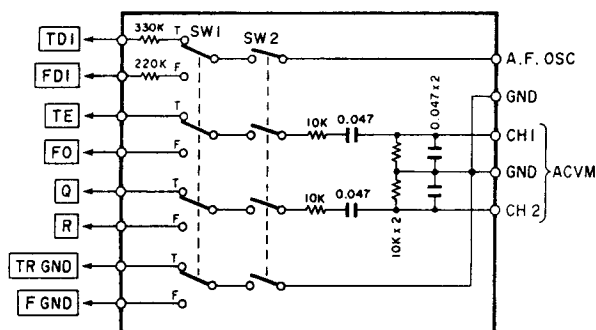


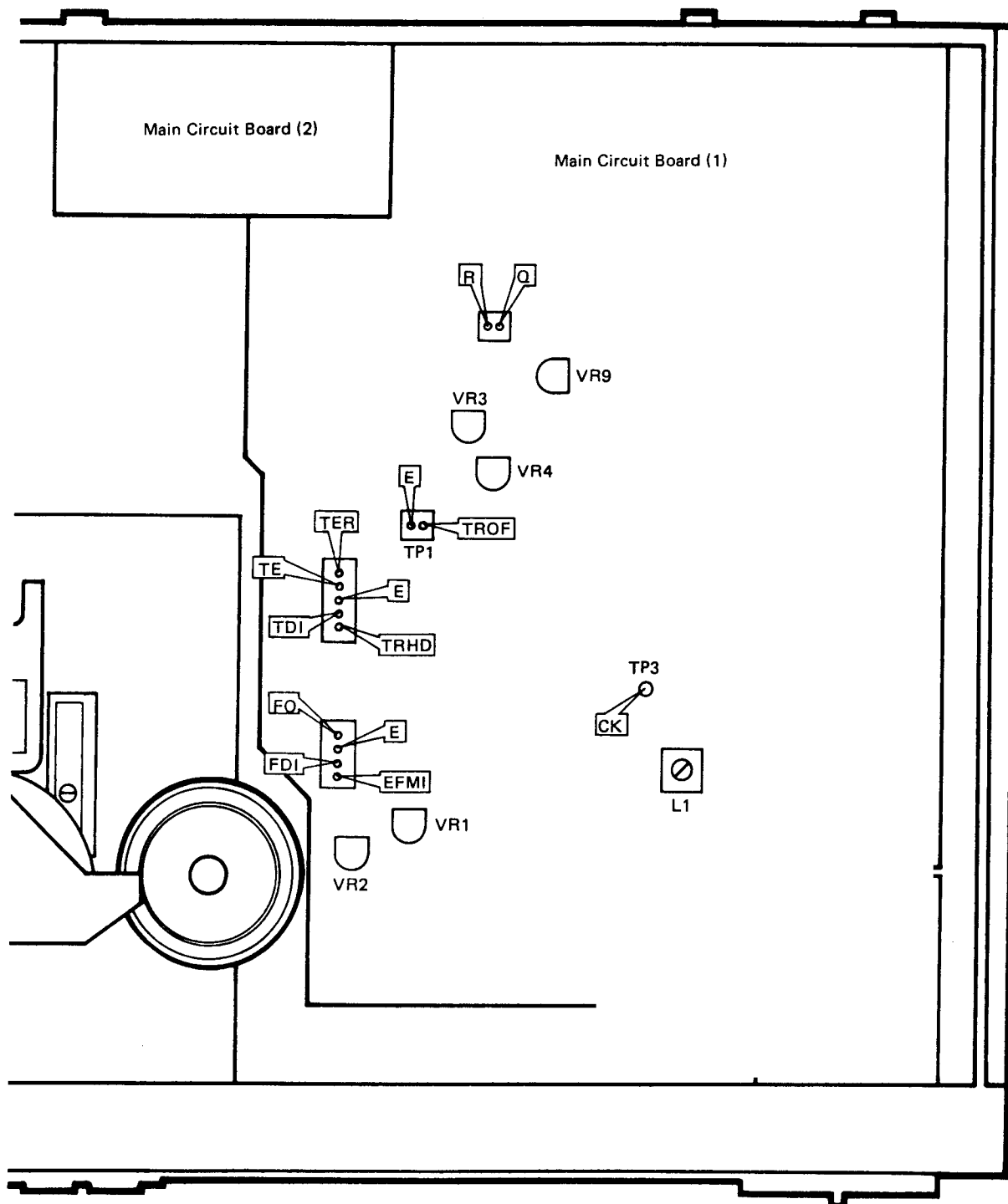
Fig. A

SW1 : FOCUS gain and TRACKING gain switching
SW2 : Filter ON/OFF switch

• Precautions or Special Notes

1. Measure the output level at the output terminal of the AF oscillator.
2. When disc tray has been removed from the mechanism, make sure the position of the loading cam and the leaf switch are correct.
3. The unit should always be in a horizontal position while performing adjustments.

- Test Point



★ Carry out following adjustments in order as numbered.

Step 1. Confirmation of Laser Output.

Step 2. Confirmation of Focus Actuator Operation.

Step 3. Adjustment of VCO.

Step 4. Adjustment of Tracking Gain

Step 5. Adjustment of Focus Gain

Step 6. Adjustment of Tracking Offset

Step 7. Adjustment of Focus Offset

Step 8. Adjustment of Kick Gain

Step 9. Confirmation of Jitter

Step 10. Confirmation of Skip Search Operation

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 Press POWER key. (POWER ON)

⑥ Measure the laser output during the 5 seconds of FOCUS search mode.

Rating: Laser output = 0.1mW to 0.5mW

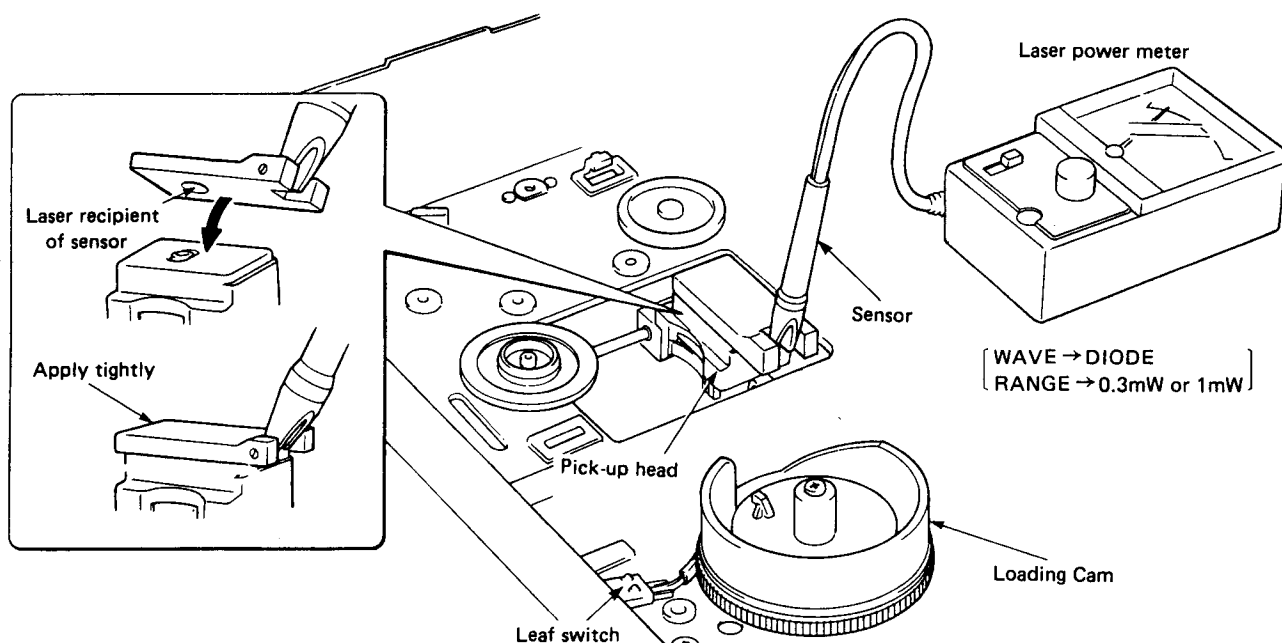


Fig. B

Precautions in handling pick-up head

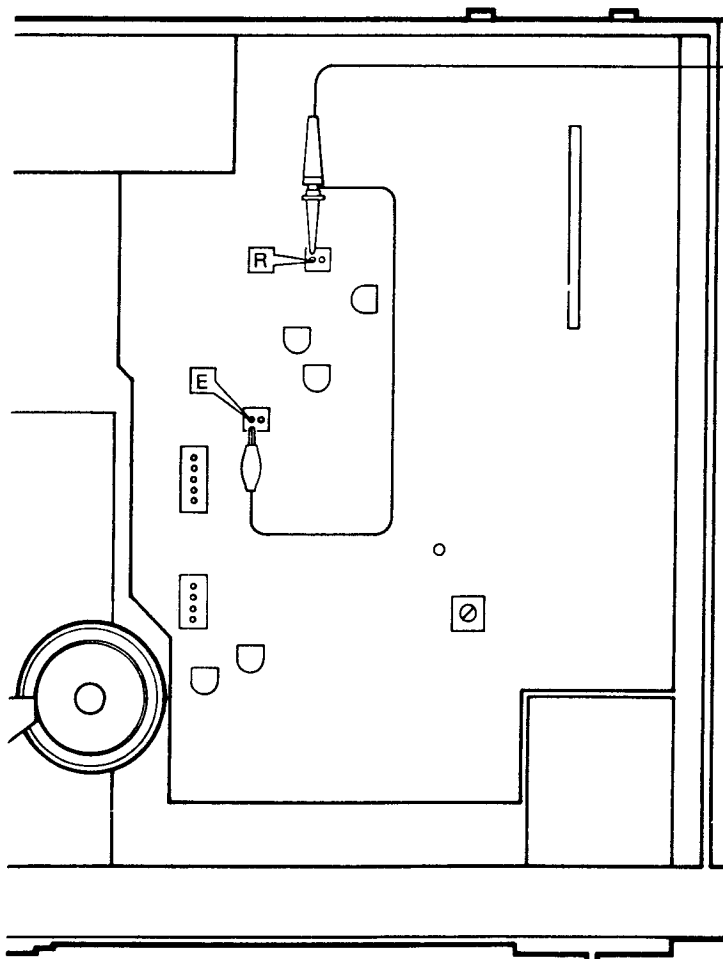
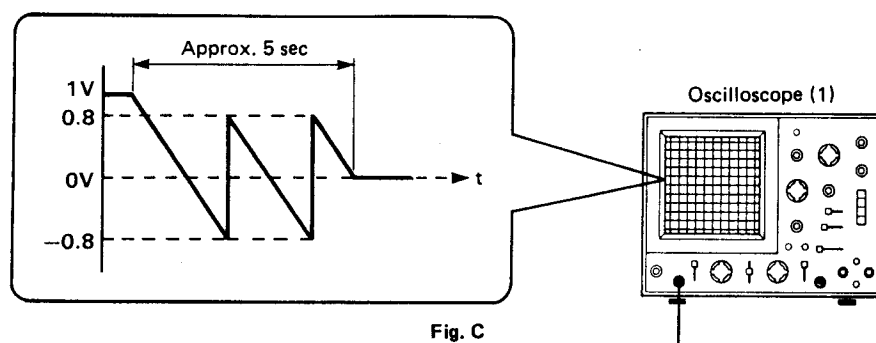
- (1) No soldering necessary for the unit.
- (2) Since laser light is near-infrared, visual confirmation is difficult. While light is emitted, for safety make sure your eyes are at least 30 cm away from the objective lens.
- (3) Do not disassemble it.
- (4) Do not drop or apply shock to it.
- (5) Do 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)
(0.1/div when 10:1 probe is used)
- 0.5 sec/div time (Horizontal)

- ① Do not load a disc.
- ② Connect the oscilloscope (1) to **R** and **E** terminals.
- ③ Press POWER key. (POWER ON)
- ④ After confirming that loading cam position is correct press OPEN/CLOSE key for CLOSE operation.
- ⑤ During 5 seconds of FOCUS search, confirm that the waveform is as shown in Fig. C.
- ⑥ Confirm that the pick-up head's objective lens moves smoothly between the lowest and highest points.



Adjustment of VCO (Step 3)

- ① Connect the shorting cord and measuring instruments, as shown in Fig. D.
- ② Do not load a disc.
- ③ Press POWER key. (POWER ON)
- ④ While observing the frequency counter indication (FVCO), adjust L1 so that it satisfies the rating.
Rating: $F_{VCO} = 4.3218 \text{ MHz} \pm 10 \text{ kHz}$

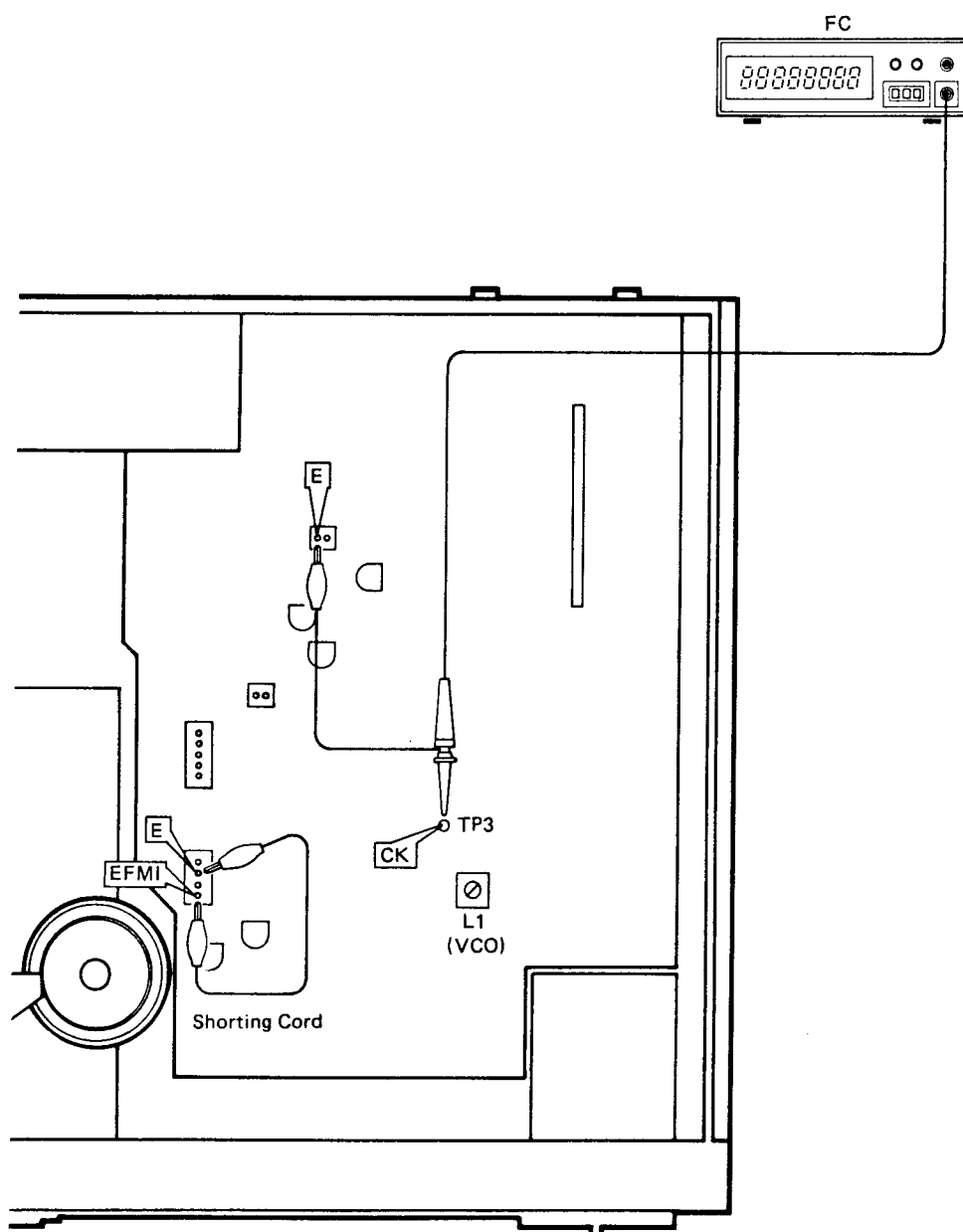


Fig. D

Adjustment of Tracking Gain (Step 4)

* 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. E.

Apply a 800 Hz, 100 mVrms signal from the AF oscillator to **TDI** terminal via the resistor (330 kilohms) in the filter.

- ② Set SW2 to OFF.
- ③ Set SW1 to T (TRACKING).
- ④ Press POWER key. (POWER ON)
- ⑤ Load the test disc.
- ⑥ Press PLAY key.

- ⑦ Set SW2 to ON.

- ⑧ While observing the indications of the AC voltmeters (CH1: E_{TE} , CH2: E_Q), adjust VR3 (TRACKING GAIN) so that they satisfy the rating.

Rating: $E_{TE} - E_Q = 17\text{dB}$

Example [0dBV = 1V]

$E_Q = -30\text{dBV}$ (30mV)

$E_{TE} = -13\text{dBV}$ (223mV)

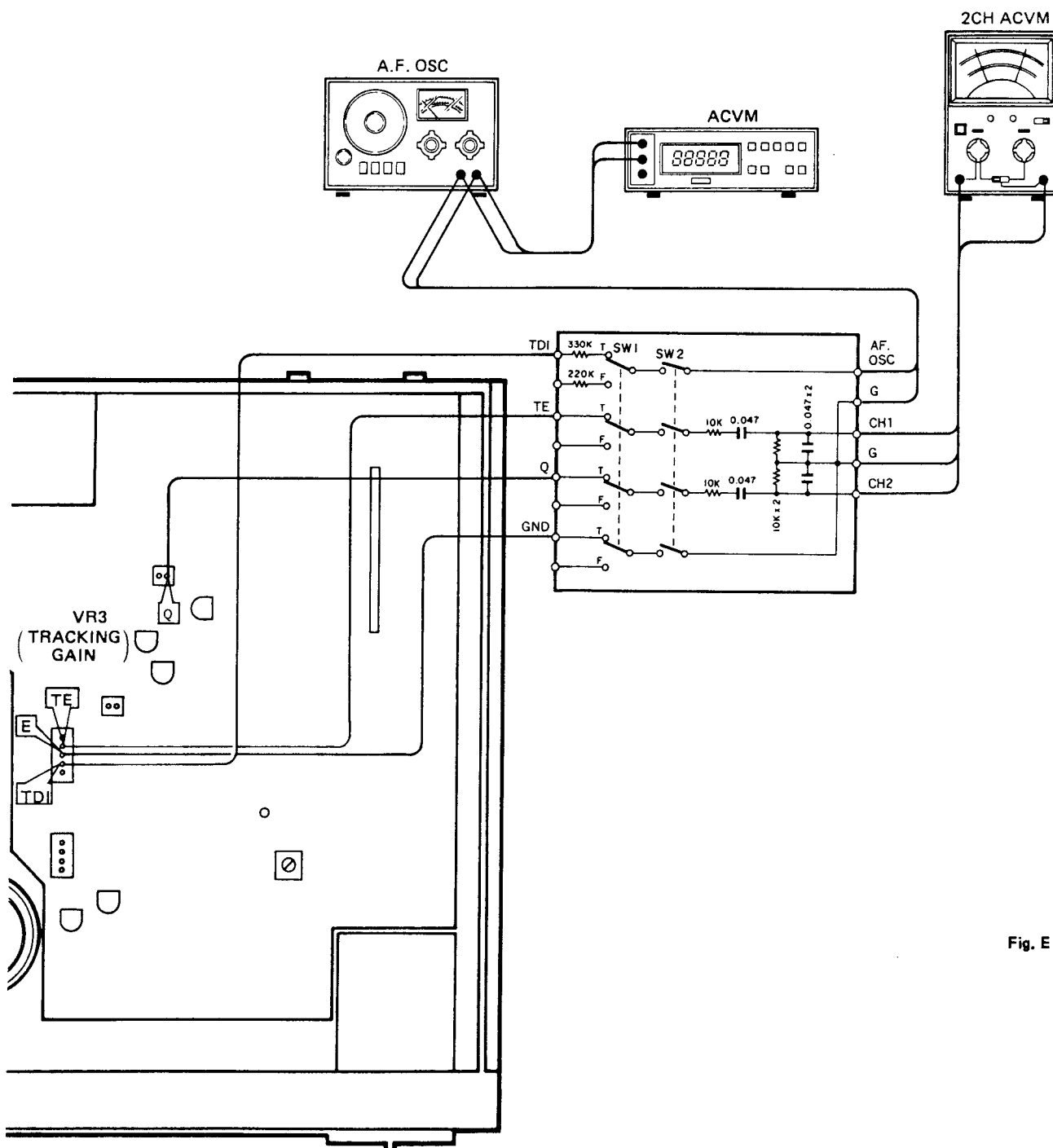


Fig. E

Adjustment of Focus Gain (Step 5)

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

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

Apply an 800 Hz, 4.5 Vrms signal from the AF oscillator to **[FDI]** terminal via the resistor (220 kilohms) in the filter.

- ② Set SW2 to OFF.
③ Set SW1 to F (FOCUS).
④ Press POWER key. (POWER ON)
⑤ Load the test disc.

- ⑥ Press PLAY Key.

- ⑦ Set SW2 to ON.

- ⑧ Read the indications of the AC voltmeters (CH1: E_{FO} , CH2: E_R), adjust VR2 (FOCUS GAIN) so that they satisfy the rating.

Rating: $E_{FO} - E_R = 8\text{dB}$

Example [0dBV = 1V]
 $E_{FO} = -16\text{dBV}$ (160mV)
 $E_R = -24\text{dBV}$ (63mV)

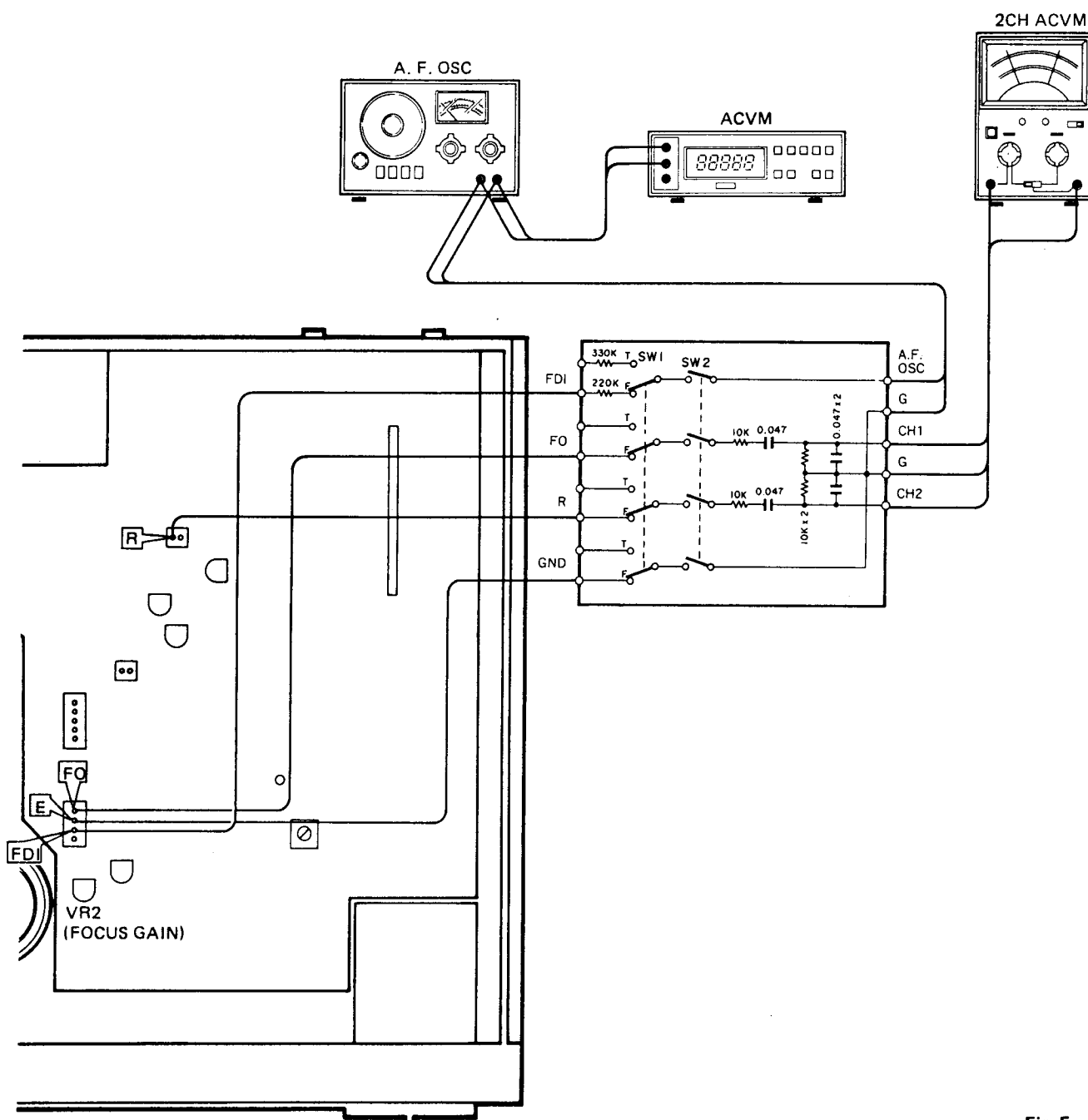


Fig. F

Adjustment of Tracking Offset (Step 6)

- ① Connect a DC voltmeter to **Q** and **E** terminals.
- ② Press POWER key. (POWER ON)
- ③ Press STOP key.
- ④ Short between the **TROF** and **E** terminals. (Laser OFF)
- ⑤ While observing the indication (E_Q) of the DC voltmeter, adjust VR4 (TRACKING OFFSET) so that it satisfies the rating.

Rating: $E_Q = 0 \text{ V DC} \pm 25 \text{ mV DC}$

Adjustment of Focus Offset (Step 7)

- ① Connect a DC voltmeter to **R** and **E** terminals.
- ② Press POWER key. (POWER ON)
- ③ Press STOP key.
- ④ Short between the **TROF** and **E** terminals. (Laser OFF)
- ⑤ While observing the indication (E_R) of the DC voltmeter, adjust VR1 (FOCUS OFFSET) so that it satisfies the rating.

Rating: $E_R = 0 \text{ V DC} \pm 25 \text{ mV DC}$

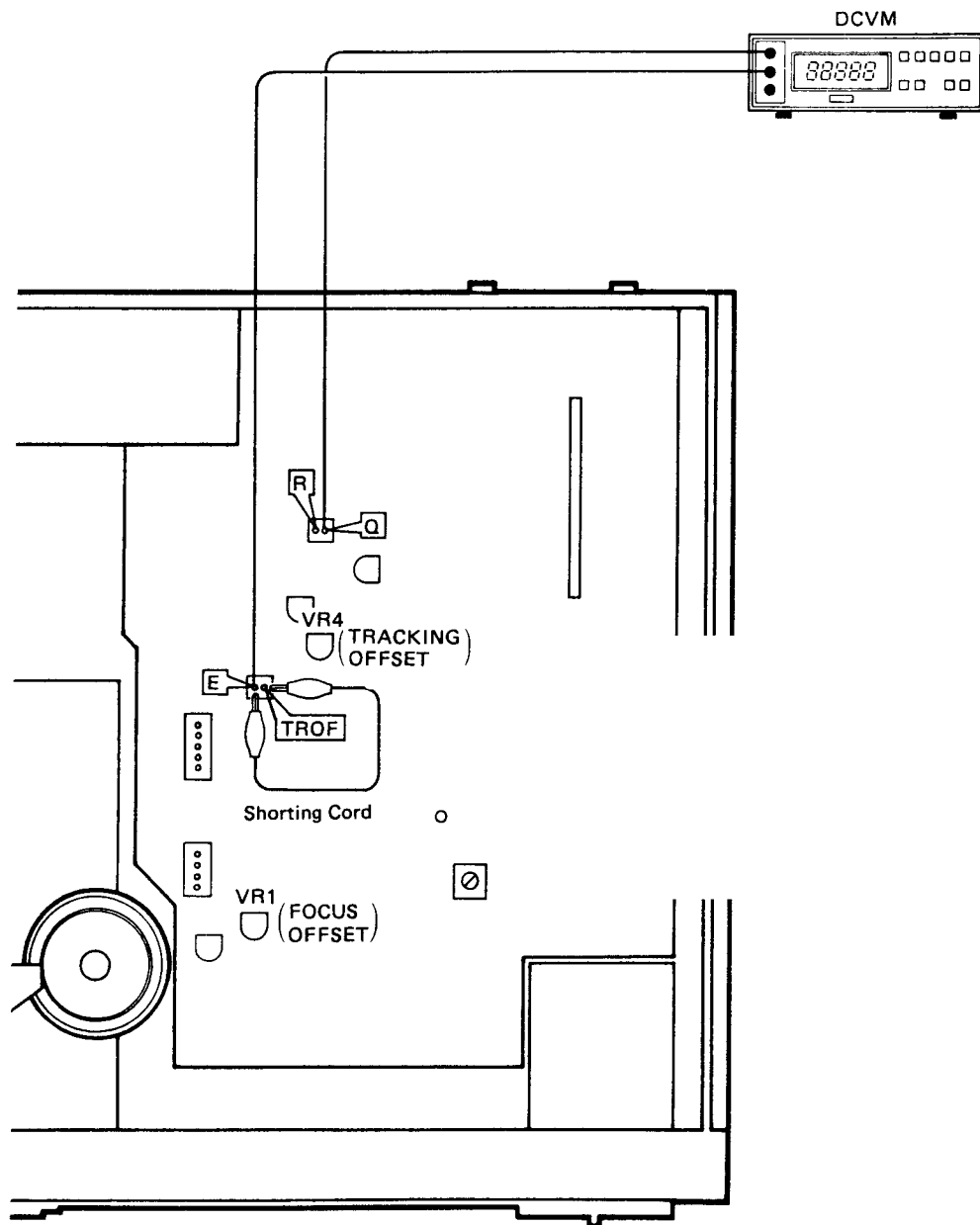


Fig. G

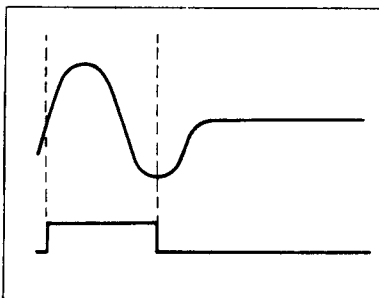
Adjustment of Kick Gain (Step 8)

Oscilloscope (1) (2-ch oscilloscope) Settings

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

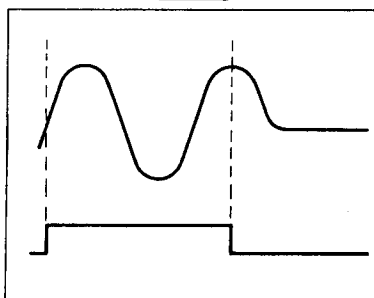
- ① Connect the measuring instruments, as shown in Fig. H.
- ② Press POWER key. (POWER ON)
- ③ Load the test disc.
- ④ Press PLAY key.
- ⑤ Observe waveform while pressing Fast Forward mode key (▶▶) for 3 seconds.
- ⑥ Adjust VR9 (KICK GAIN) so that the **TER** signal cycle is 1.0 when **TRHD** signal level is High.
* Adjust at the inner circumference of the disc.
- ⑦ Press Reverse mode key (◀◀) for 3 seconds and confirm that **TER** signal cycle is within the above specification but in reverse phase.

NG



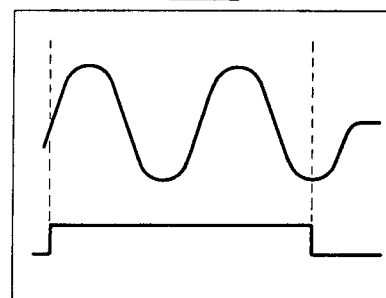
This shows about 0.75 cycle which is incorrect

OK



This shows about 1.25 cycle which is within specification.

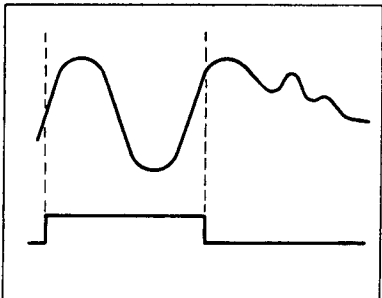
NG



This shows about 1.75 cycle which is incorrect

* The TER waveform after the TRHD rise should converge gently.

NG



Not converging gently

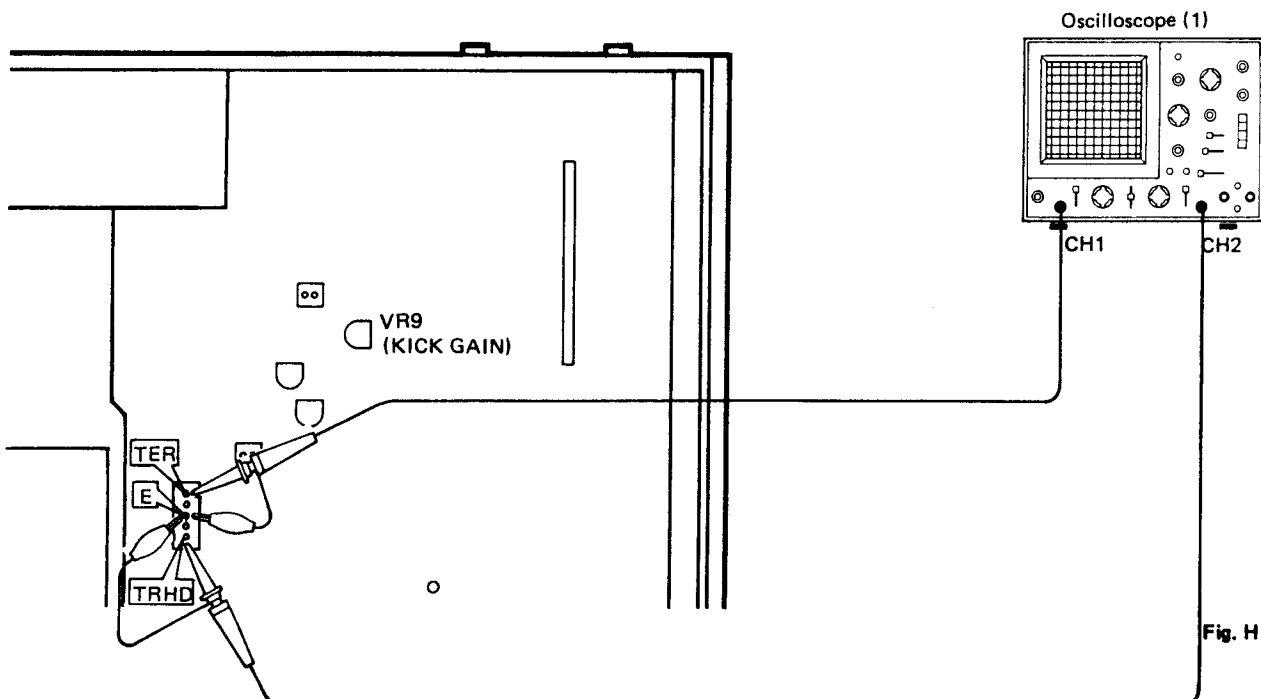


Fig. H

Confirmation of Jitter (Step 9)

Oscilloscope (2) Settings

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

- ① Connect oscilloscope (2) to **EFMI** terminal, as shown in Fig. F.
 - ② Press POWER key. (POWER ON)
 - ③ Load the test disc.
 - ④ Press PLAY key.
 - ⑤ Confirm that the **EFMI** signal (eye-pattern) waveform is distinct and clear.
- * Confirm at the center of the disc.

Oscilloscope (2)

Eye pattern

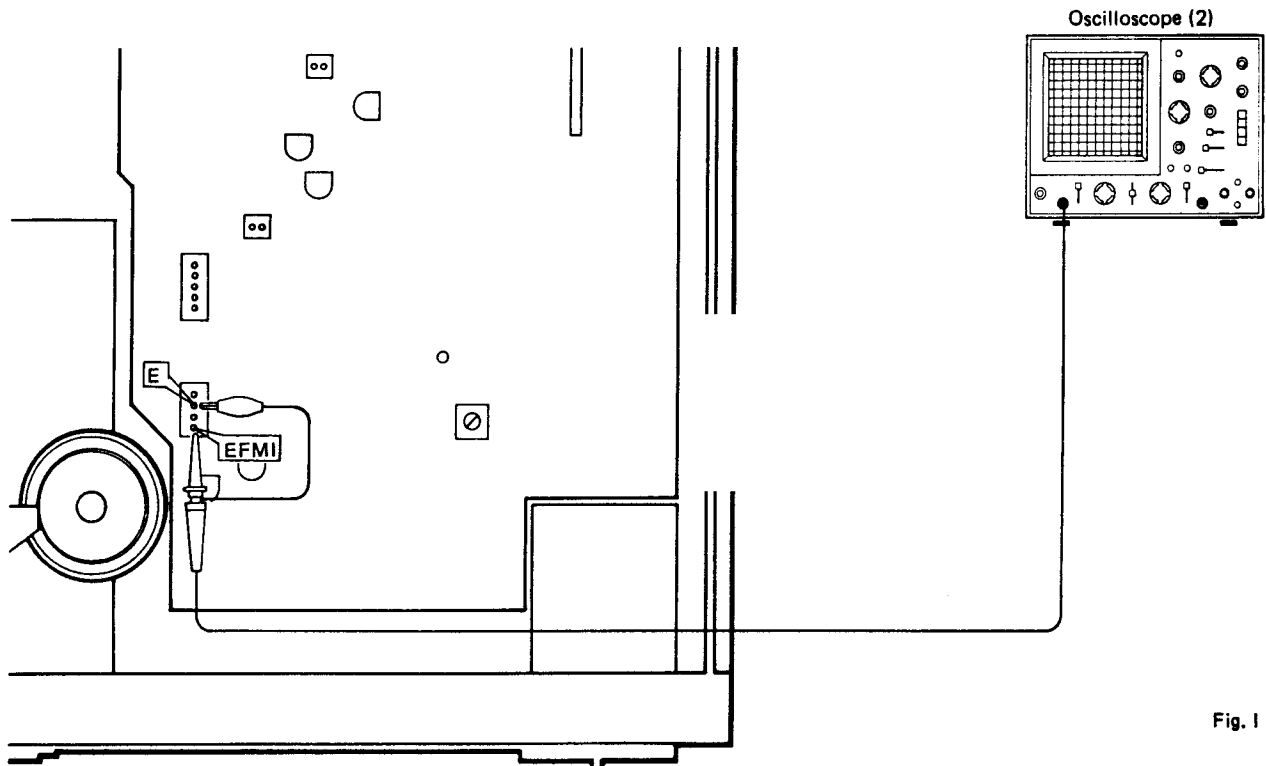
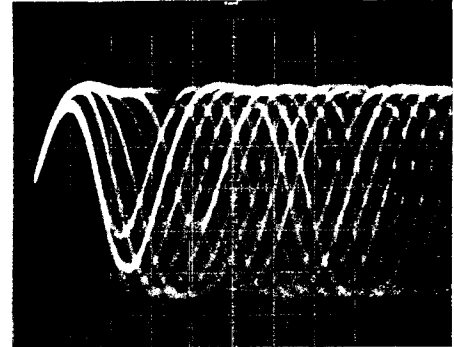
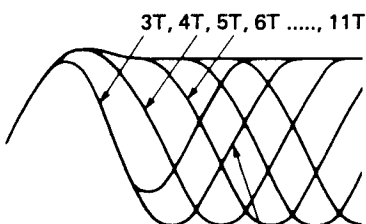


Fig. I

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

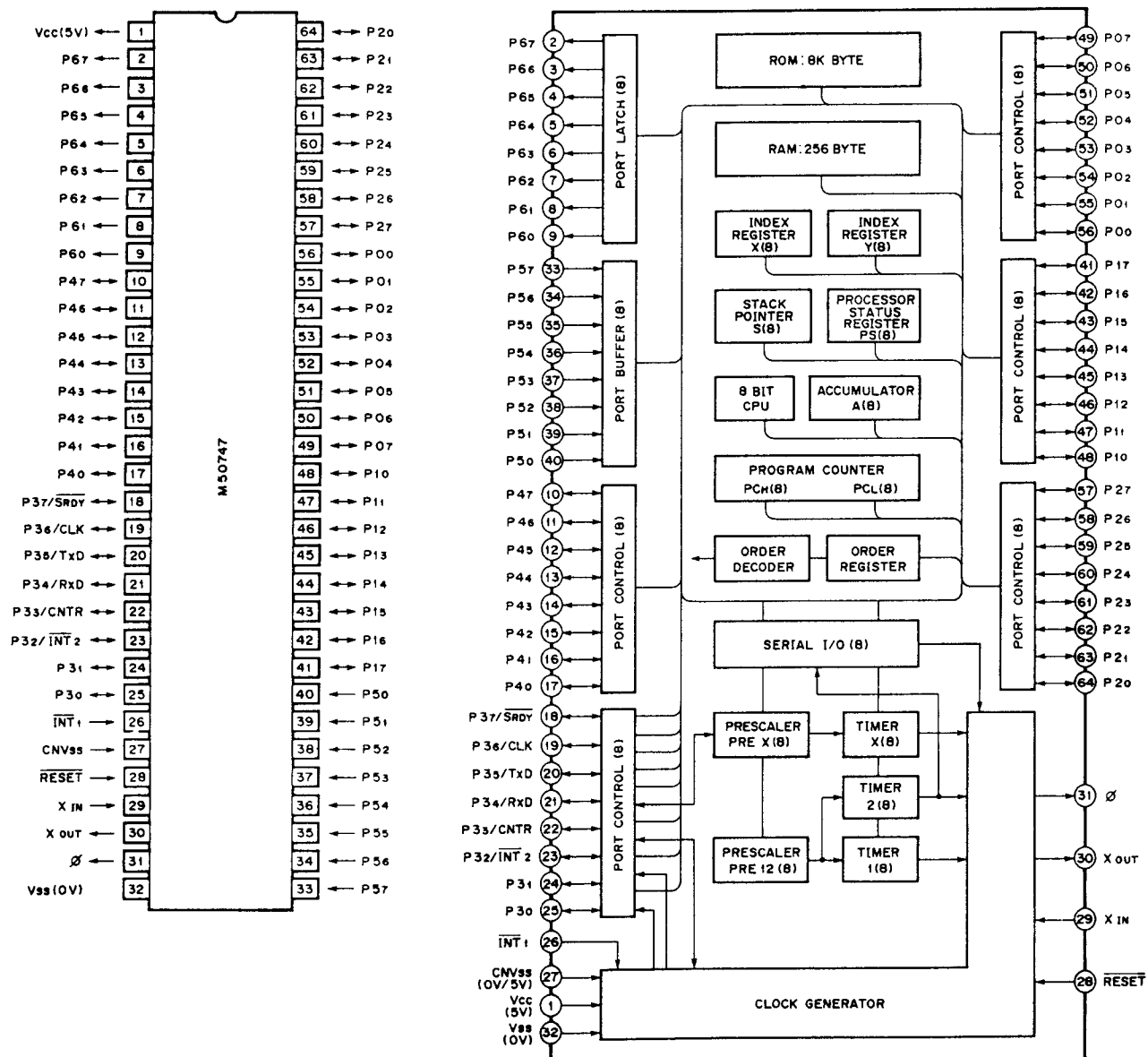


Confirmation of Skip Search Operation (Step 10)

- ① Load the disc.
- ② Press the PLAY key.
- ③ Press the skip key ($\gg$) or 10 key to start searching.
- ④ Confirm that the skip is searched properly.

■ IC DATA

IC301 : M50747
8 bit μ -COM



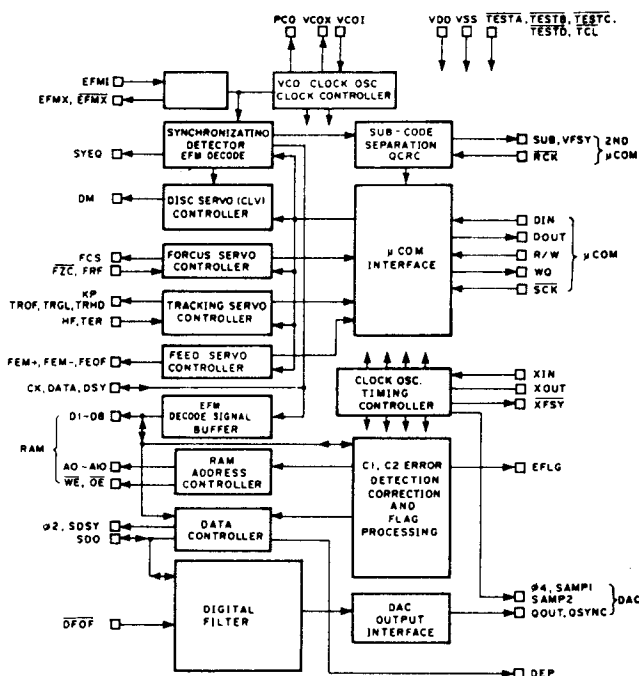
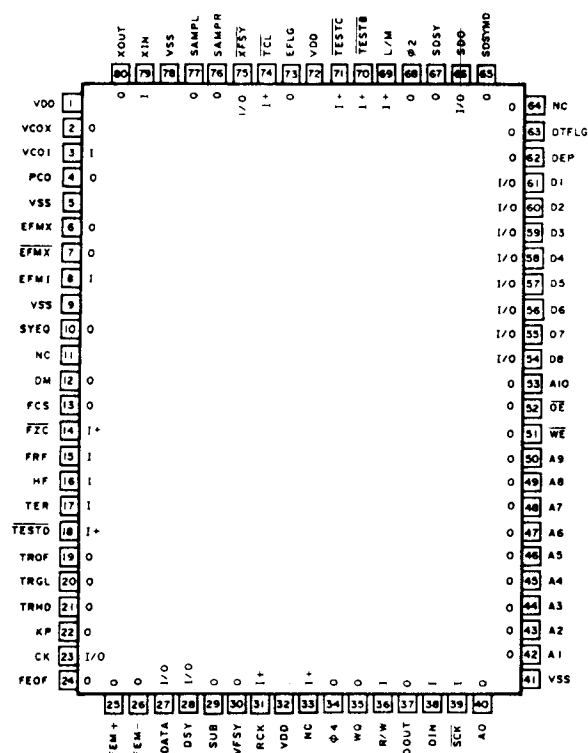
Pin No.	Pin Name	Description	I/O	Active	Function
1	Vcc				5V
2	P67 (O)				N. C.
3	P66 (O)	Sg	O	H	FLT segment n
4	P65 (O)	Sf	O	H	" m
5	P64 (O)	Se	O	H	" l
6	P63 (O)	Sd	O	H	" k
7	P62 (O)	Sc	O	H	" j
8	P61 (O)	Sb	O	H	" i
9	P60 (O)	Sa	O	H	" h
10	P47	D2	O	H	Digit line D2
11	P46	D1	O	H	" D1
12	P45	D0	O	H	" D0
13	P44	BAK	O	H	Back-up DET
14	P43	OPEN	O	H	Open switch
15	P42	CLOSE	O	H	Close switch
16	P41	LASER	O	H	Laser switch
17	P40	PLAY	O	H	PLAY mode output
18	P37/SRDY				N. C.
19	P36/CLK		I/O		SPC Interface
20	P35/TXD	SOUT	O		
21	P34/RXD	SIN	I		
22	P33/CNTR	R_W	O		
23	P32/INT2	MODE	I	H/L	Mode switch
24	P30	WQ	I		SPC Interface
25	P31	CLK	O		
26	INT1				N. C.
27	CNVSS				GND
28	RESET		I		Reset
29	XIN		I		8 MHz Clock
30	XOUT		O		
31	ϕ		O		Timing output
32	VSS				GND
33	P57 (I)	CD_STOP	I	L	System input
34	P56 (I)	CD_PLAY	I	L	
35	P55 (I)	QUICKRV	I	H	
36	P54 (I)	RM4	I		Remote control interface
37	P53 (I)	RM3	I		
38	P52 (I)	RM2	I		
39	P51 (I)	RM1	I		
40	P50 (I)	RM0	I		
41	P17	K7	I		Key input line
42	P16	K6	I		
43	P15	K5	I		
44	P14	K4	I		
45	P13	K3	I		
46	P12	K2	I		
47	P11	K1	I		
48	P10	K0	I		
49	P07	CLOSESW	O	L	END switch (close)
50	P06	OPENSW	O	L	END switch (open)
51	P05	Su	O	H	FLT segment u
52	P04	St	O	H	" t
53	P03	Ss	O	H	" s
54	P02	Sr	O	H	" r
55	P01	Sg	O	H	" g
56	P00	Sp	O	H	" p
57	P27	So	O	H	" o
58	P26	Sn	O	H	" g
59	P25	Sm	O	H	" f
60	P24	Sl	O	H	" e
61	P23	Sk	O	H	" d
62	P22	Sj	O	H	" c
63	P21	Si	O	H	" b
64	P20	Sh	O	H	" a

IC14 : YM3616

Signal Processor & Controller

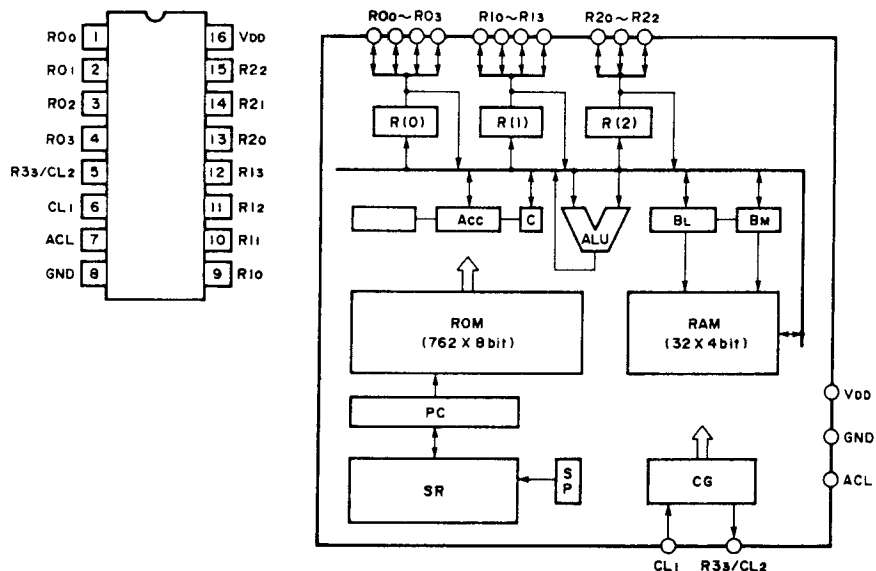
YM3616 is a CMOS LSI for signal processing and servo control of the compact disc player.

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.



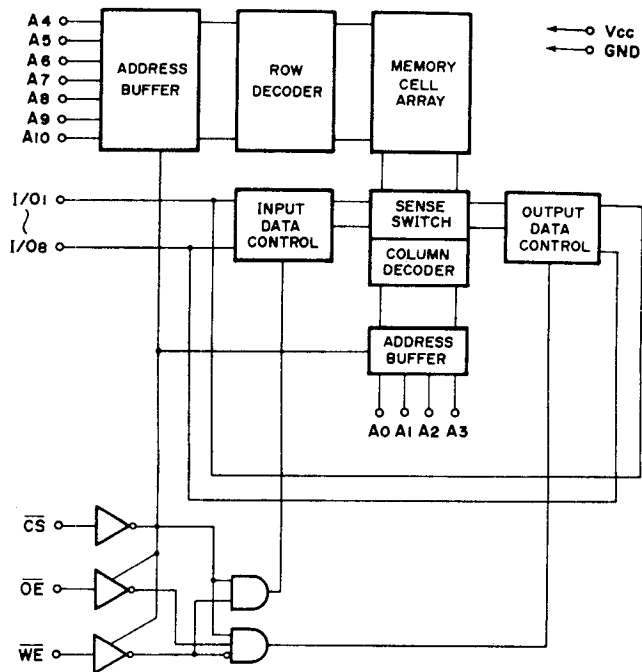
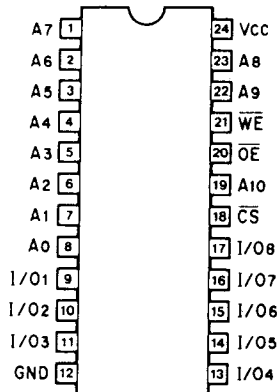
Pin No.	Pin Name	I/O	Function
1	VDD		Power Supply
2	VCOX	O	Clock Playback Circuit 4PCO
3	VCOI	I	
4	PCO	O	
5	VSS		GND
6	EFMX	O	EFM Signal External Circuit
7	EFMX	O	
8	EFMI	I	
9	VSS		GND
10	SYEQ	O	Synchronized Uniform Signal
11	N.C.		Not Use
12	DM	O	Disc Servo { LOW (0V): FORWARD OPEN (2.5V): STOP HIGH (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	TRGF	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	Data Control Circuit Board Serial Signal Output
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	Digrich 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	

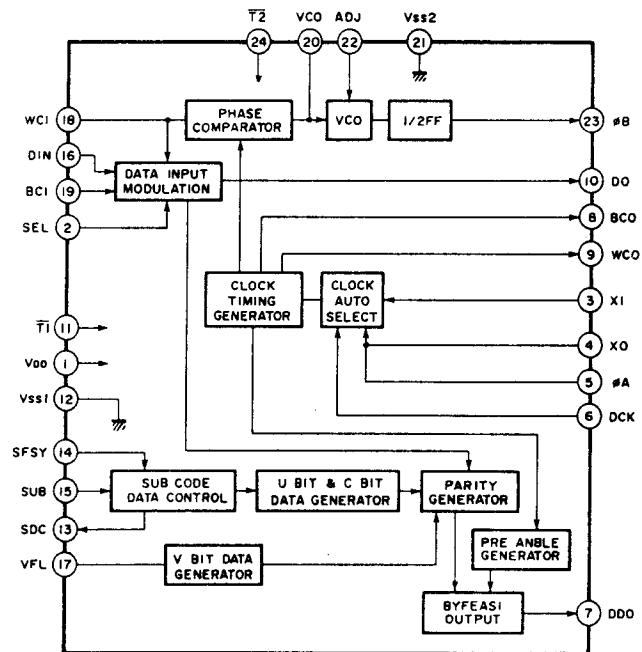
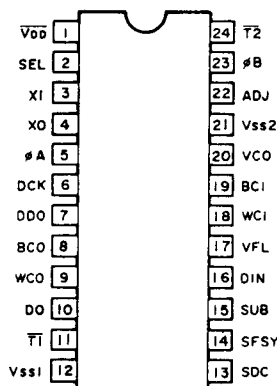
IC302: LU59521
4 bit μ -COM


FUNCTION	CONTROL CODE								FUNCTION	CONTROL CODE									
		0	1	2	3	4	5	6		7		0	1	2	3	4	5	6	7
OPEN / CLOSE	01	1	0	0	0	0	0	0	0	10	20	0	0	0	0	0	1	0	0
PLAY	02	0	1	0	0	0	0	0	0	11	21	1	0	0	0	0	1	0	0
⏮	04	0	0	1	0	0	0	0	0	12	22	0	1	0	0	0	1	0	0
⏪	05	1	0	1	0	0	0	0	0	13	23	1	1	0	0	0	1	0	0
⏩	06	0	1	1	0	0	0	0	0	14	24	0	0	1	0	0	1	0	0
⏭	07	1	1	1	0	0	0	0	0	15	25	1	0	1	0	0	1	0	0
REPEAT S/F	08	0	0	0	1	0	0	0	0	16	26	0	1	1	0	0	1	0	0
REPEAT A—B	09	1	0	0	1	0	0	0	0	17	27	1	1	1	0	0	1	0	0
TIME DISP	0A	0	1	0	1	0	0	0	0	18	28	0	0	0	1	0	1	0	0
INDEX	0B	1	1	0	1	0	0	0	0	19	29	1	0	0	1	0	1	0	0
PROGRAM MAN'L	0C	0	0	1	1	0	0	0	0	20	2A	0	1	0	1	0	1	0	0
“ CANCEL	0D	1	0	1	1	0	0	0	0	21	2B	1	1	0	1	0	1	0	0
“ DEL	0E	0	1	1	1	0	0	0	0	22	2C	0	0	1	1	0	1	0	0
0	10	0	0	0	0	1	0	0	0	23	2D	1	0	1	1	0	1	0	0
1	11	1	0	0	0	1	0	0	0	24	2E	0	1	1	1	0	1	0	0
2	12	0	1	0	0	1	0	0	0	PAUSE	1E	0	1	1	1	1	0	0	0
3	13	1	1	0	0	1	0	0	0	STOP	1F	1	1	1	1	1	0	0	0
4	14	0	0	1	0	1	0	0	0	PROGRAM TAPE	0F	1	1	1	1	0	0	0	0
5	15	1	0	1	0	1	0	0	0	Hi - Bit	38	0	0	0	1	1	1	0	0
6	16	0	1	1	0	1	0	0	0										
7	17	1	1	1	0	1	0	0	0										
8	18	0	0	0	1	1	0	0	0										
9	19	1	0	0	1	1	0	0	0										
+10	1A	0	1	0	1	1	0	0	0										
PROGRAM AUTO	1B	1	1	0	1	1	0	0	0										

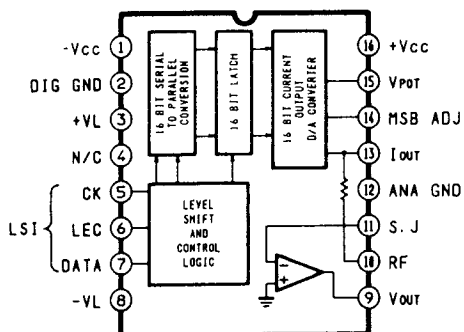
IC15: μ PD4016-CX, LC3517A-15, TMM2015BP,
TMM2016BP, CXK5816SP, CXK5816PS or
CXK5816PN
2048-Word x 8 bit Static RAM



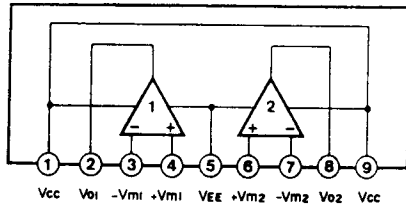
IC16: YM3613B
Digital Audio Interface Transmitter (DIT)



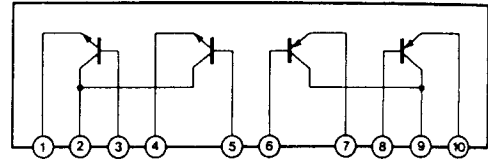
IC22, 23: PCM56J
D/A Converter



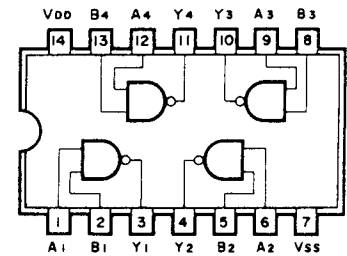
IC1, 8: NJM2043S
 IC2, 3, 5 ~ 7: NJM4558S
 IC9, 10: NJM2068S
 IC11, 12: NJM2068S or μ PC4570HA
 IC13: NJM4556S
 Dual Ope-amp



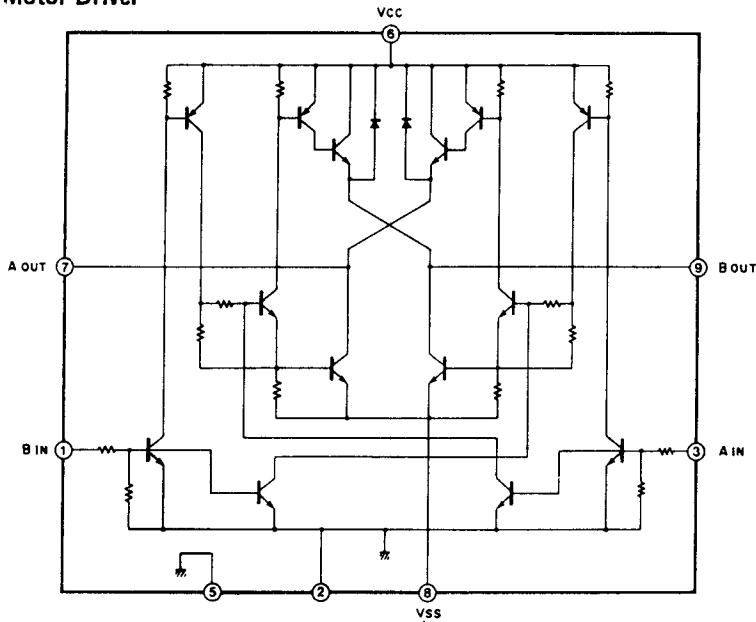
IC4: STA451C
 Transistor Array



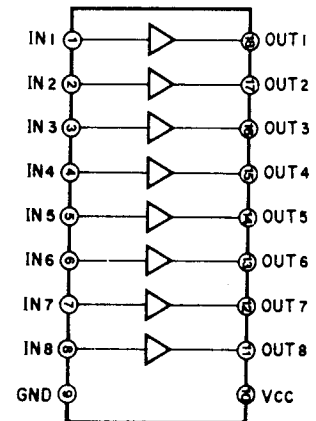
IC25: TC74HC00P
 Quad 2-Input NAND Gate



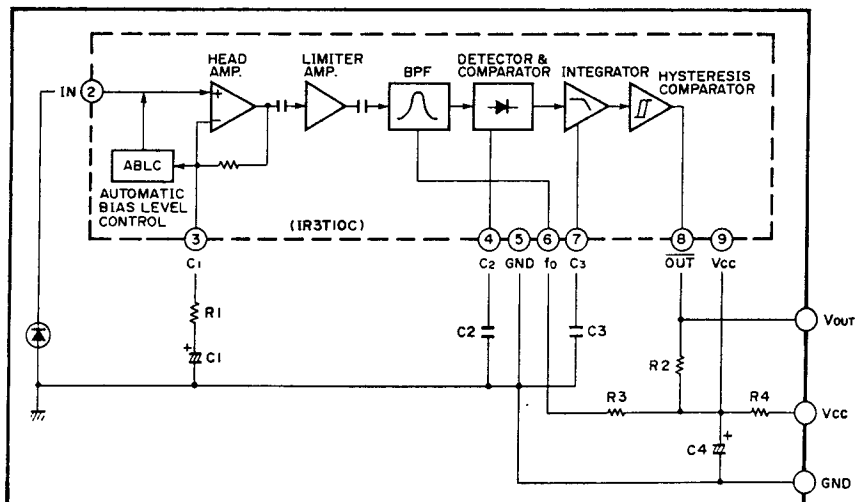
IC26: BA6218
 Motor Driver



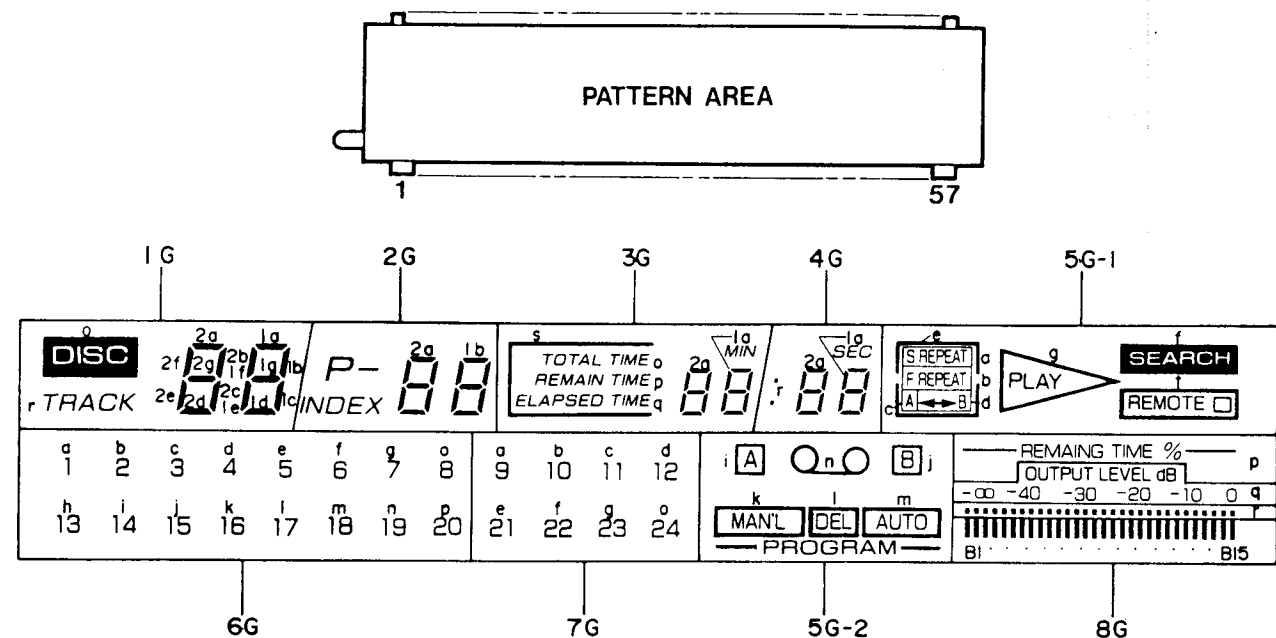
IC303 ~ 305: M54564P
 LED Driver



U301: GP1U501



■ DISPLAY DATA (V301:FV210G)



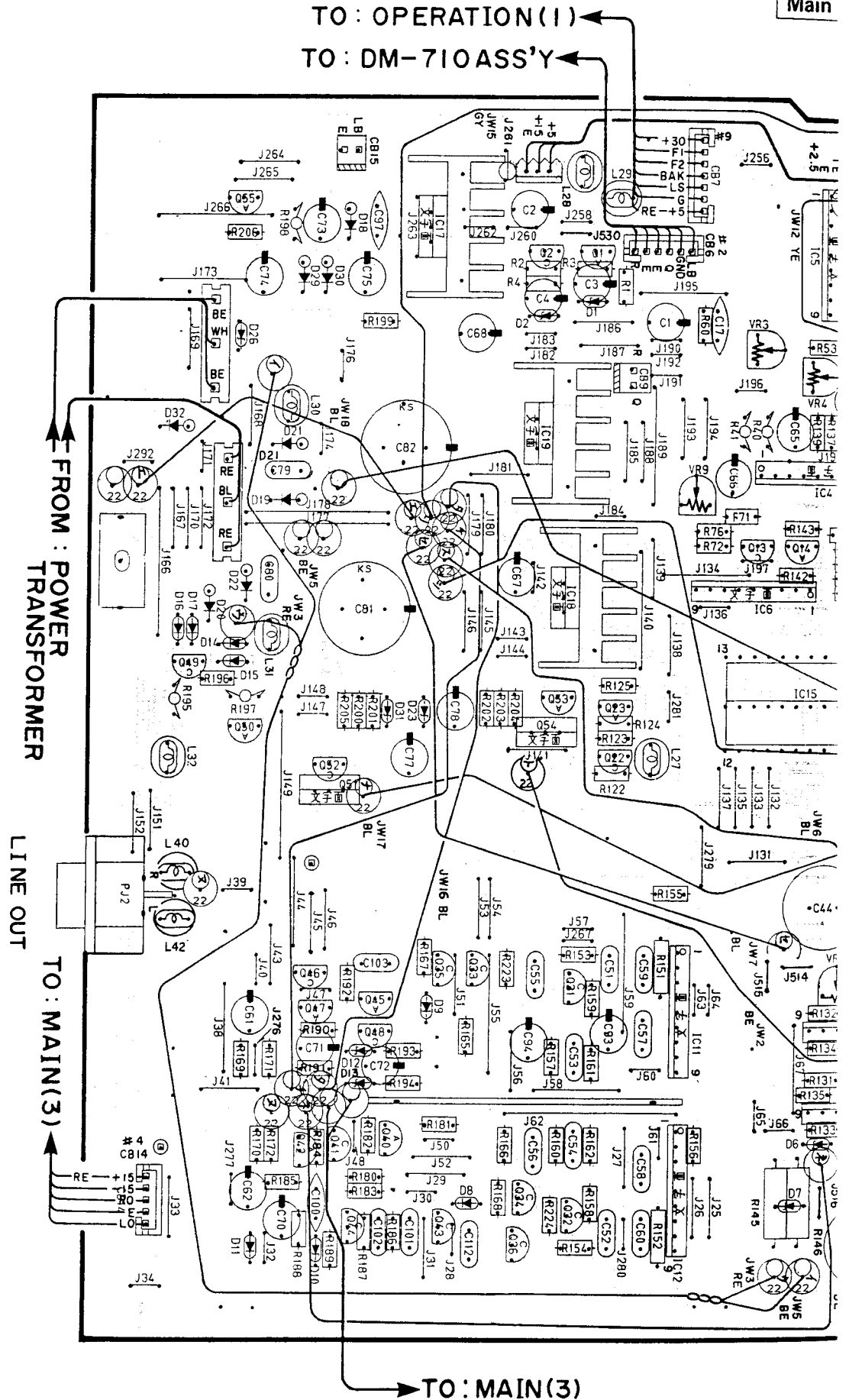
PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
CONNECTION	F	F	N P	7 G	6 G	N C	4 G	3 G	2 G	1 G	N P	N P	a	b	c	d	N P	e	f	g	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P

PIN NO.	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58
CONNECTION	h	N P	i	j	k	5 G	ℓ	m	8 G	n	N P	o	p	N P	q	r	s	t	N P	N P	N P	F	F

	8G	7G	6G	5G-2	5G-1	4G	3G	2G	1G
a	B7	9	1	—	S REPEAT	1a	1a	1a	1a
b	B6	10	2	—	F REPEAT	1b	1b	1b	1b
c	B3	11	3	—	A	1c	1c	1c	1c
d	B1	12	4	—	↔ B	1d	1d	1d	1d
e	B2	21	5	—		1e	1e	1e	1e
f	B5	22	6	—	SEARCH	1f	1f	1f	1f
g	B4	23	7	—	PLAY	1g	1g	1g	1g
h	B15	—	13	—		2a	2a	2a	2a
i	B14	—	14	A	—	2b	2b	2b	2b
j	B11	—	15	B	—	2c	2c	2c	2c
k	B9	—	16	MAN'L	—	2d	2d	2d	2d
l	B10	—	17	DEL	—	2e	2e	2e	2e
m	B13	—	18	AUTO	—	2f	2f	2f	2f
n	B12	—	19	○ ○	—	2g	2g	2g	2g
o	B8	24	8	—	—	—	TOTAL TIME	P —	DISC
p	p	—	20	—	—	—	REMAIN TIME	INDEX	—
q	q	—	—	—	—	—	ELAPSED TIME	—	—
r	r	—	—	—	—	SEC	MIN	—	TRACK
s	—	—	—	—	—	—		—	—
t	—	—	—	—	REMOTE	—	—	—	—

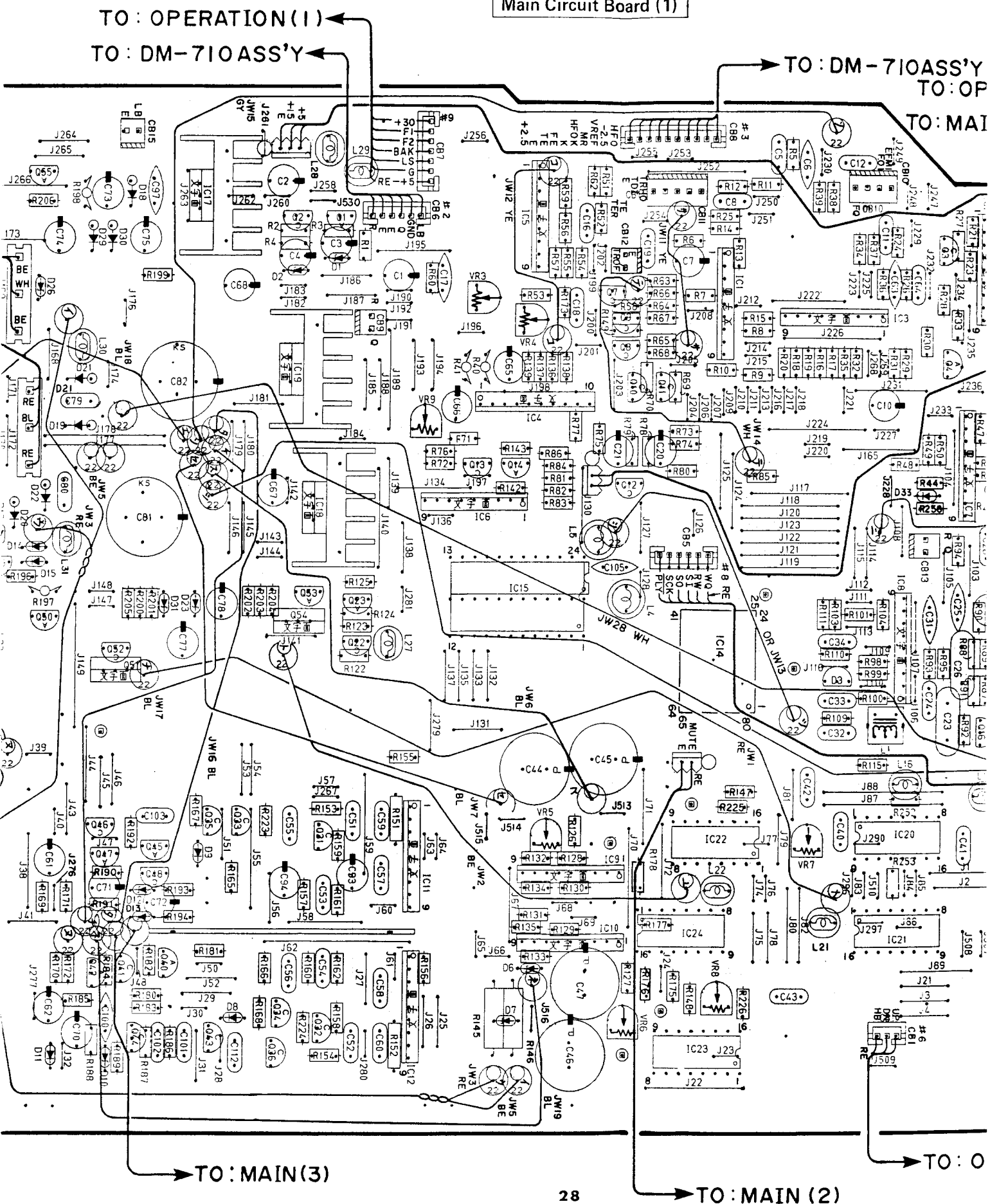
PRINTED CIRCUIT BOARD (Pattern side)

Note) 文字面 : Component side



IT BOARD (Pattern side)

Main Circuit Board (1)

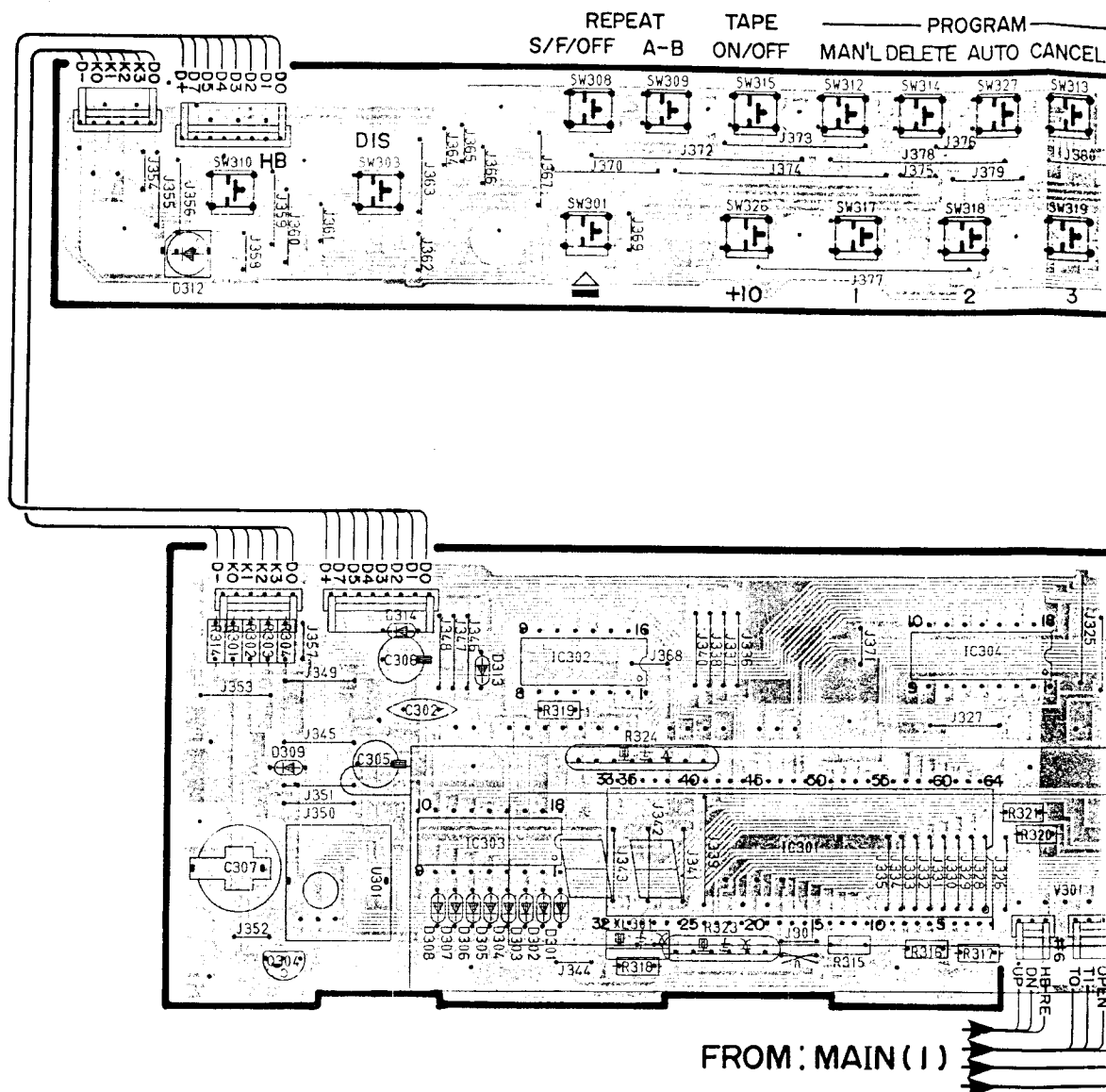




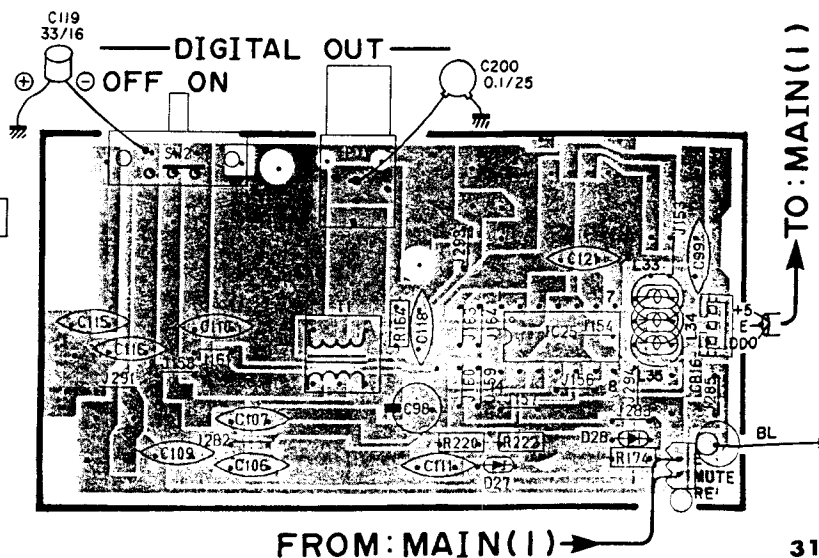
PRINTED CIRCUIT BOARD (Pattern side)

Note) 文字面 : Component side

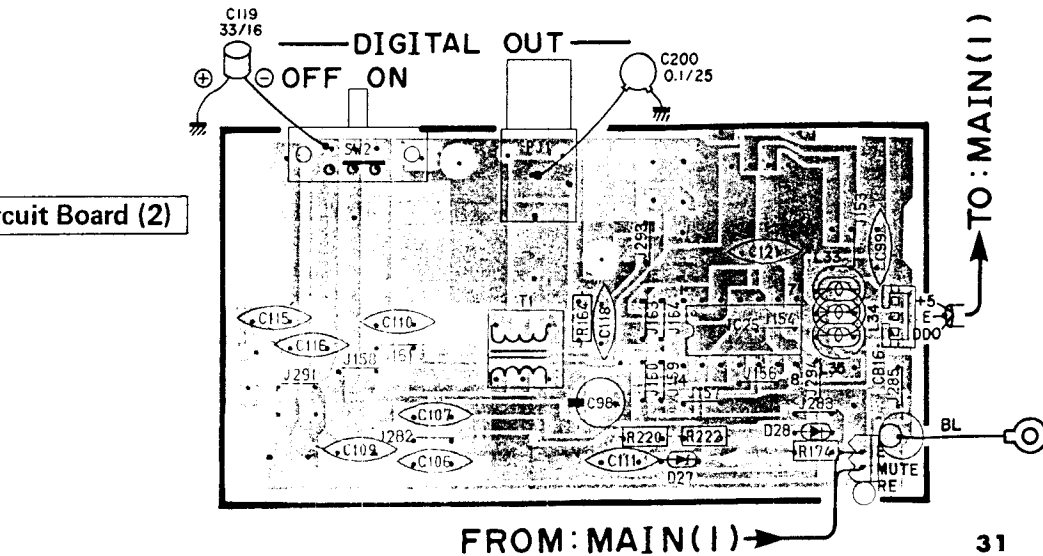
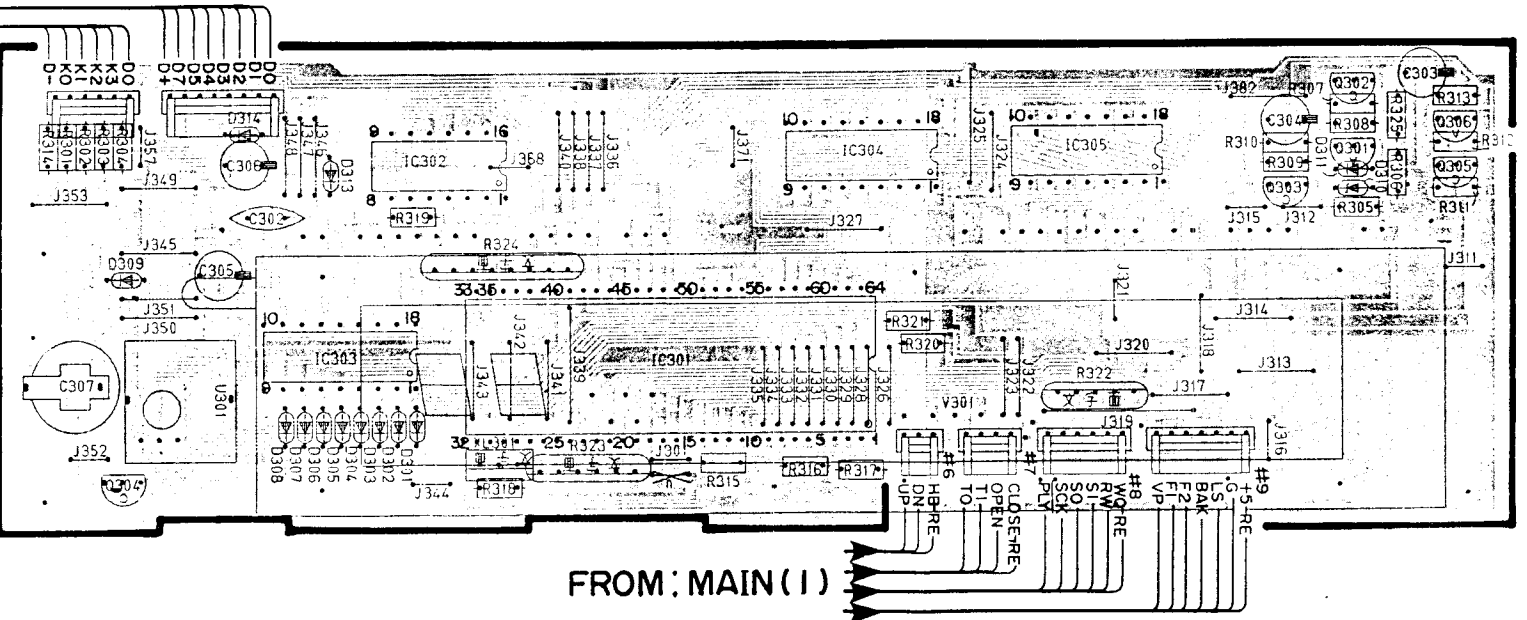
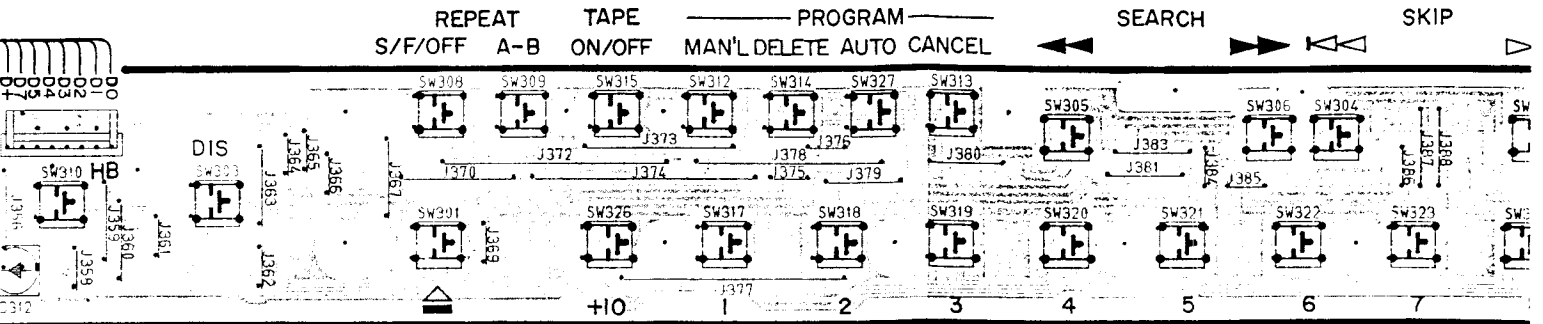
Operation Circuit Board (1)



Main Circuit Board (2)

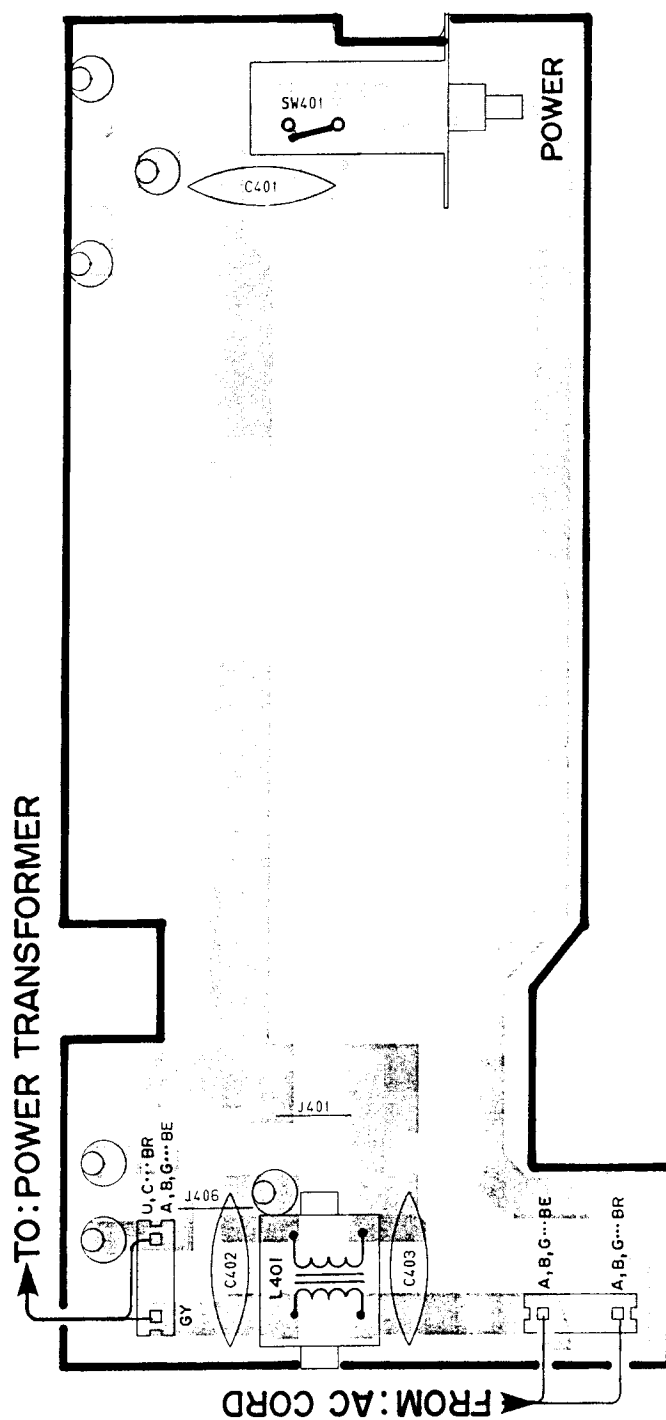


Operation Circuit Board (1)



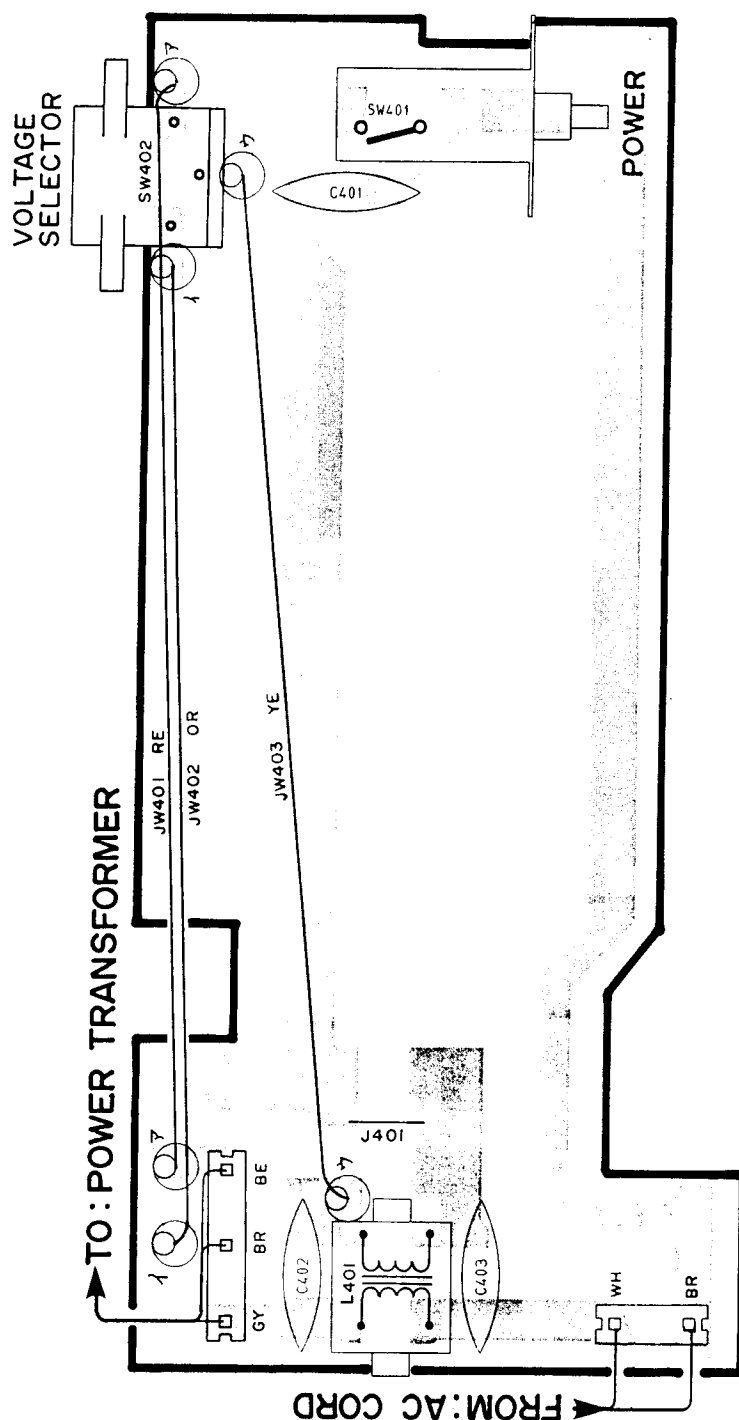
■ PRINTED CIRCUIT BOARD(Pattern side)

Power Circuit Board U, C, A, B, G models



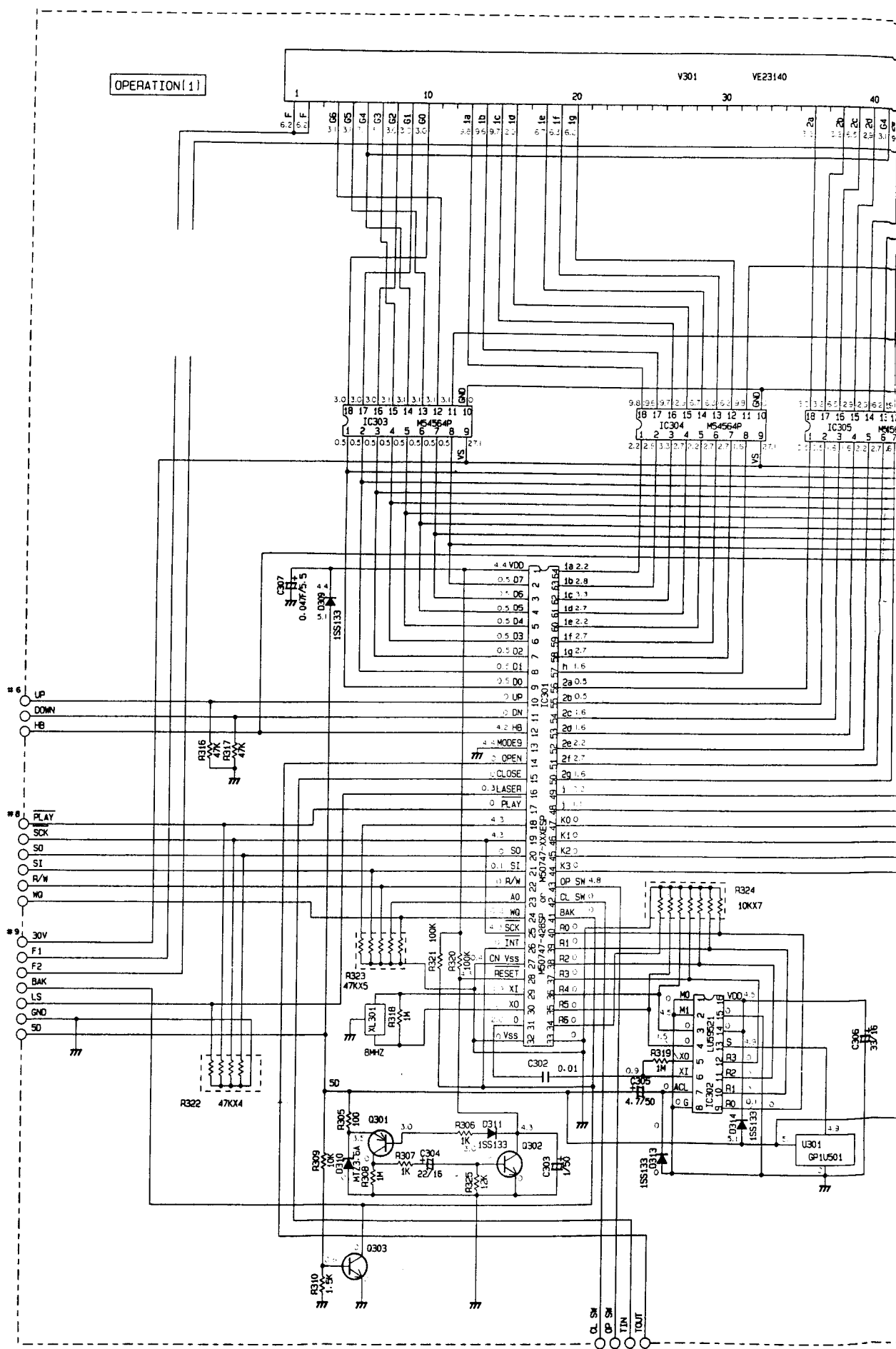
■ PRINTED CIRCUIT BOARD (Pattern side)

Power Circuit Board R model

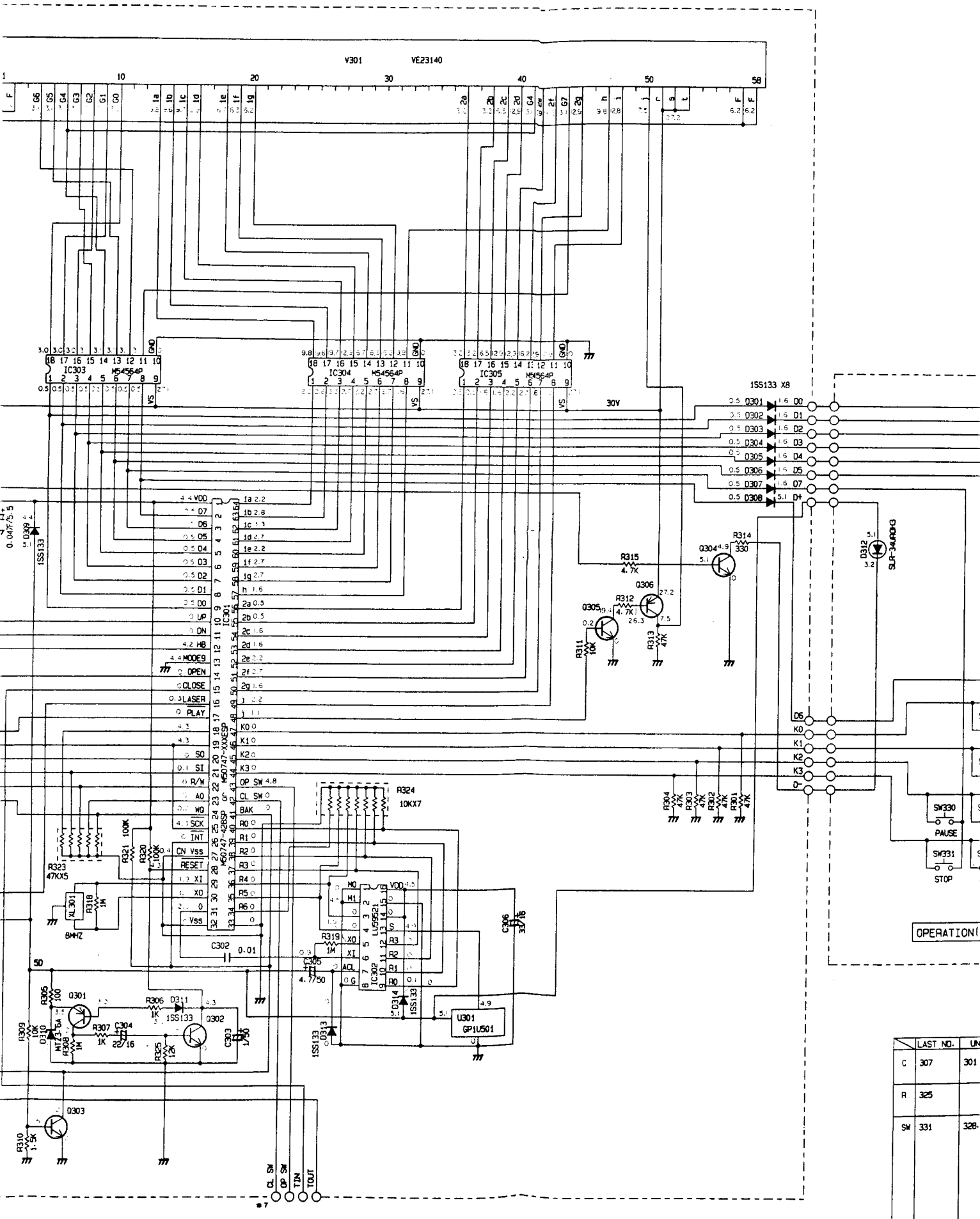


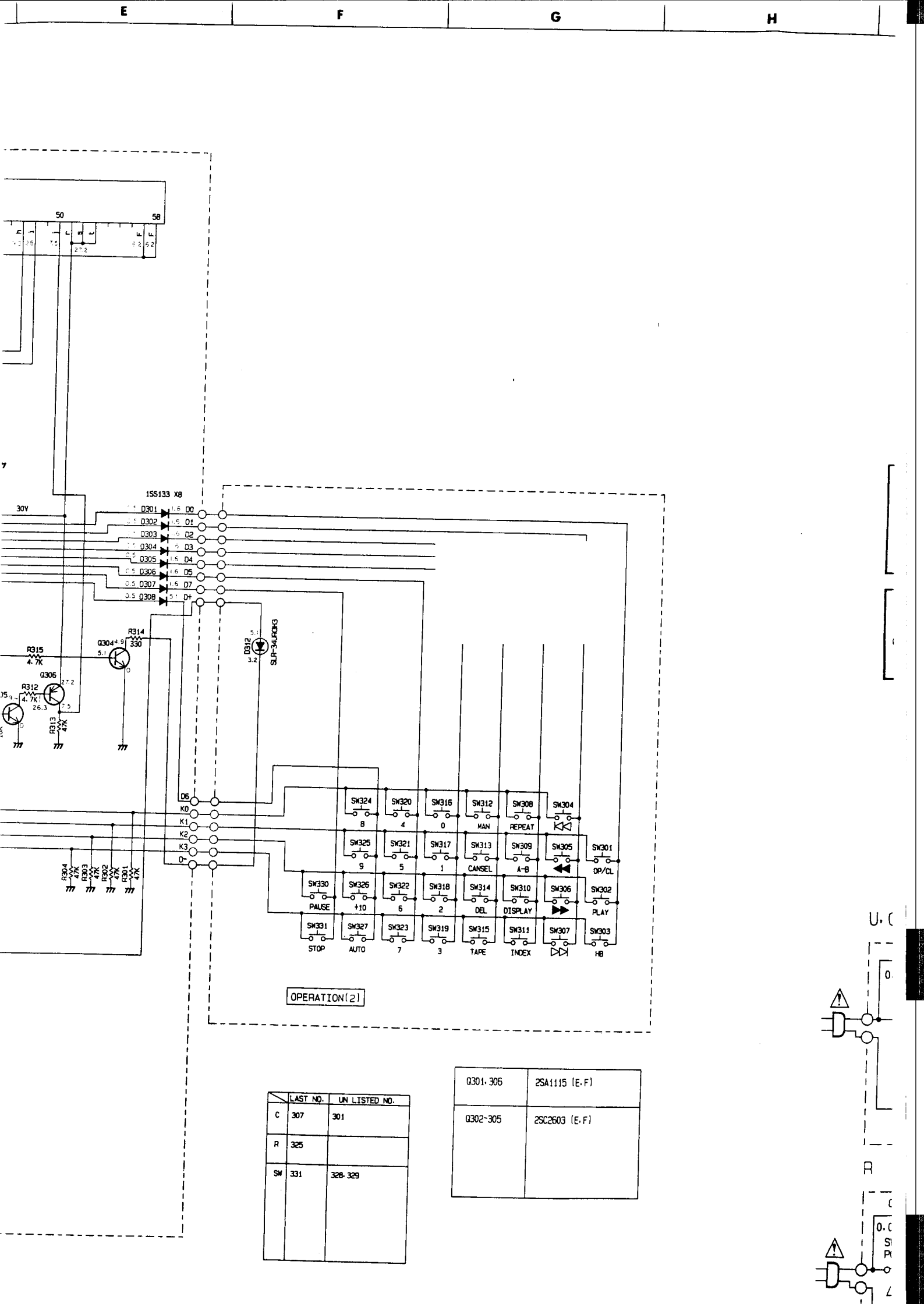
R model

SCHEMATIC DIAGRAM (1/2)



1/2)

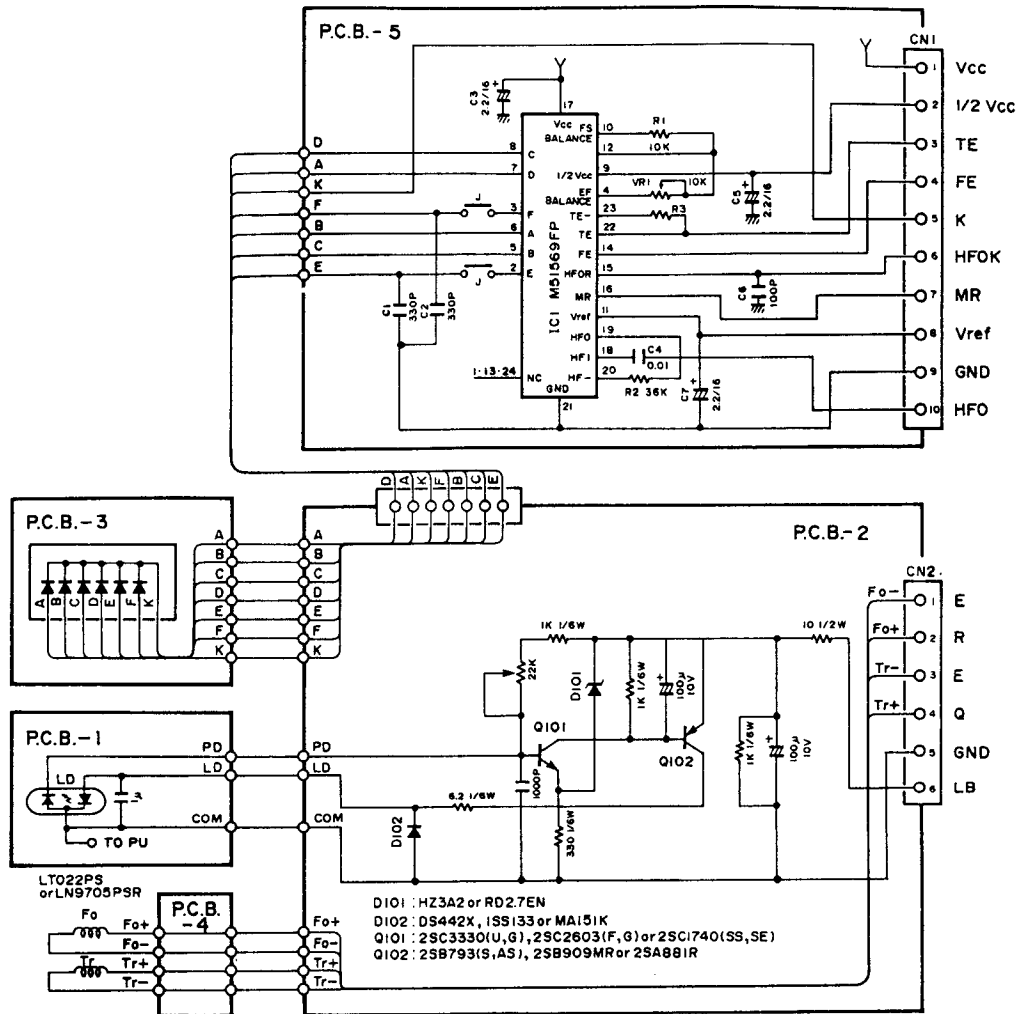




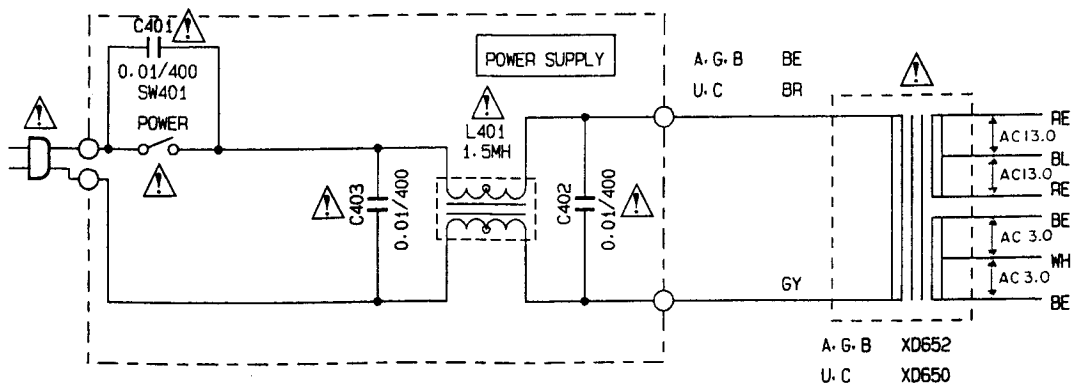
	LAST NO.	UN LISTED NO.
C	307	301
R	325	
SW	331	328-329

Q301-306	2SA1115 (E.F)
Q302-305	2SC2603 (E.F)

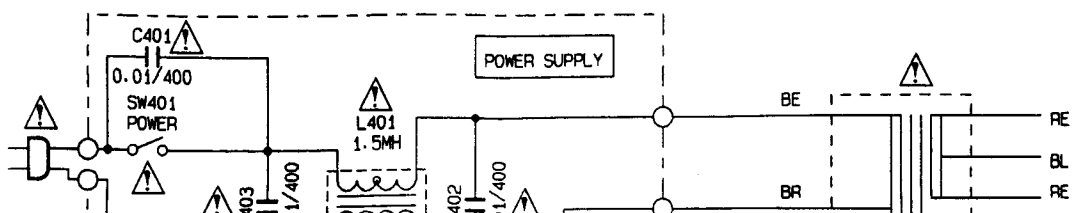
OPTICAL PICKUP HEAD (TAOHS-JP3)



U.C.A.B.G



R



3

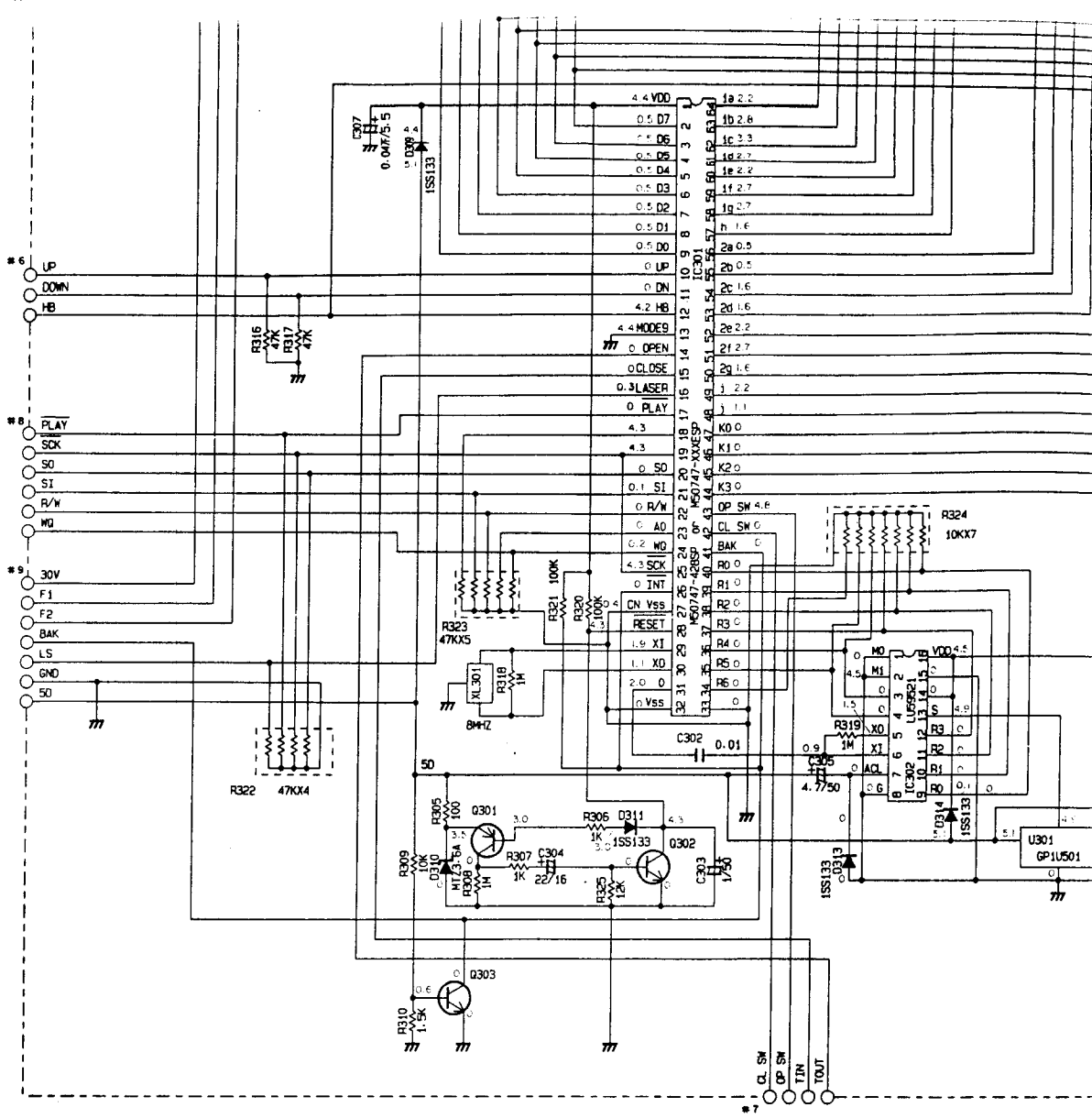
4

5

6

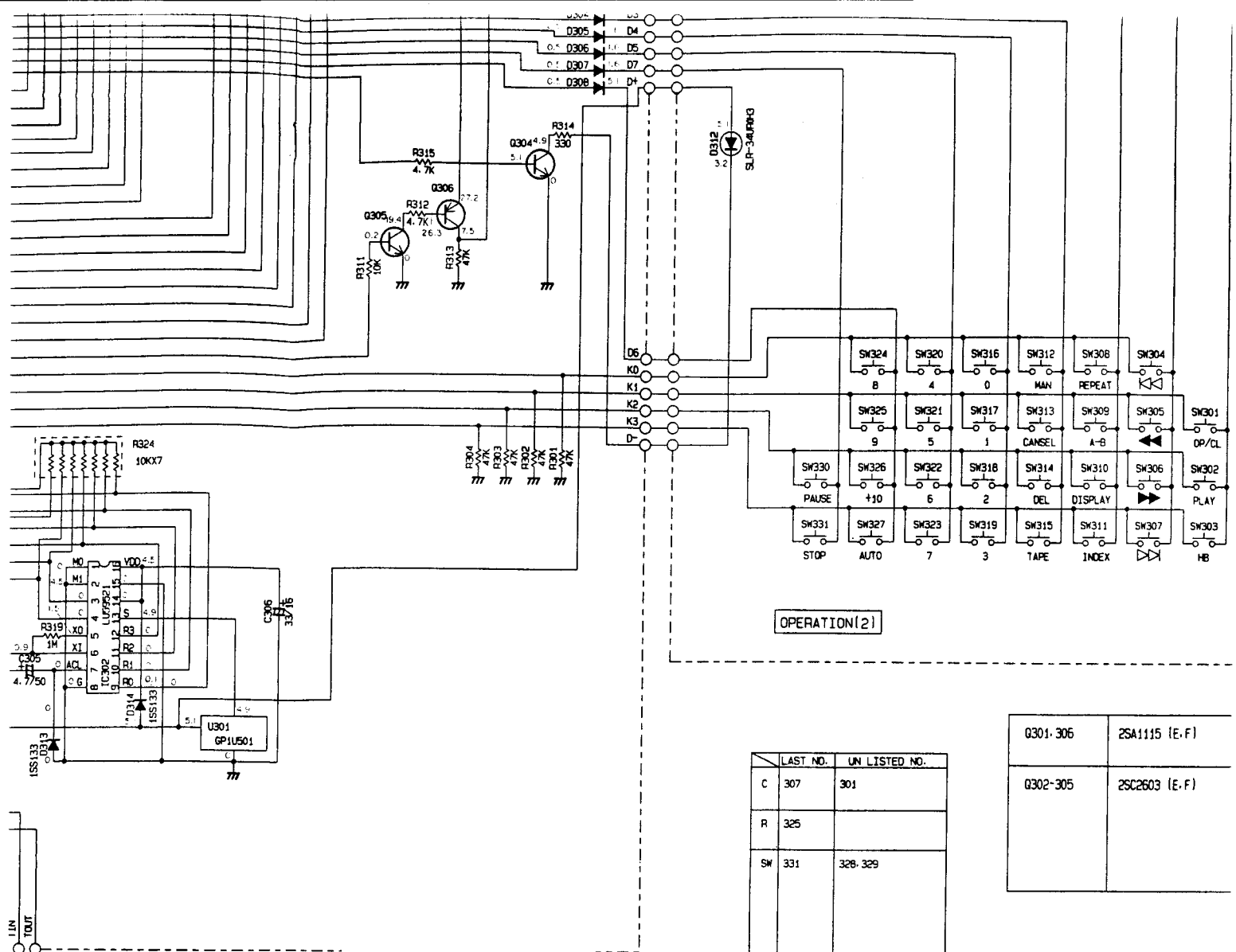
7

8



PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICS.

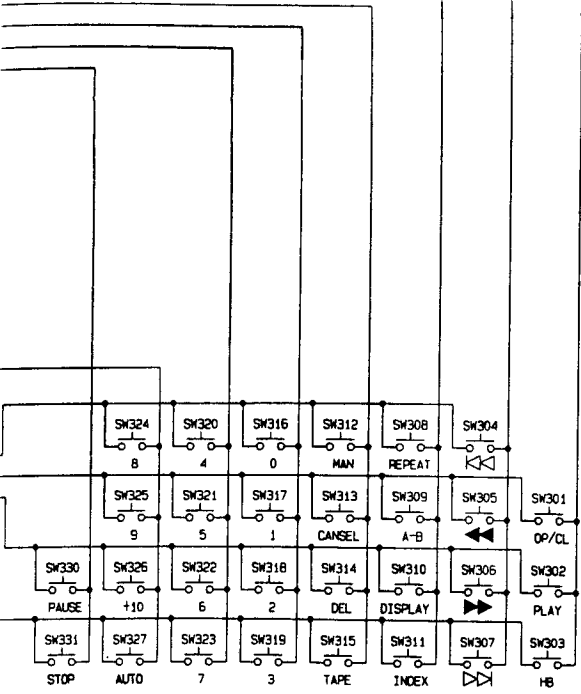
2SA933S (Q, R) 2SA1115 (E, F) 2SA1310 (R, S, T) 2SA934 2SB544 2SB1274 (Q, R, S) 2SB1375 2SC1740S (S, R) 2SC2603 (E, F) 2SC3312 (R, S, T)	2SC2060 2SD400 2SD1913 (R, S) 2SD2012 2SC2878 (A, B) 2SC3327 2SD1915 2SC1983 2SD1985 (P, O)	ISR35-100AT-93X ISS133 MTZ12A MTZ6.2A MTZ7.5A MTZ9.1C MTZ5.6C MA4030-L MTZ3.9A MTZ3.6A	ISV55 SVC211	NJM7809FA AN7809F NJM78M05A NJM7909FA AN7909F	NJM4558S NJM4556S NJM2043S NJM2068S μPC4570HA	BA6218
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	LAST NO.	UN LISTED NO.
C	307	301
R	325	
SW	331	328-329

Q301-306	2SA1115 (E,F)
Q302-305	2SC2603 (E,F)

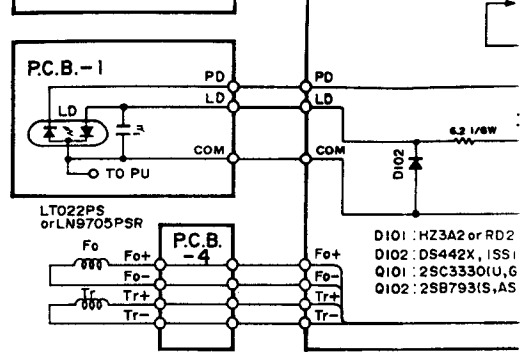
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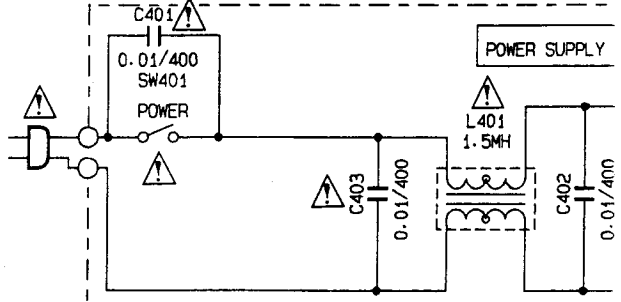
OPERATION(2)

LAST NO.	UN LISTED NO.
307	301
325	
331	328-329

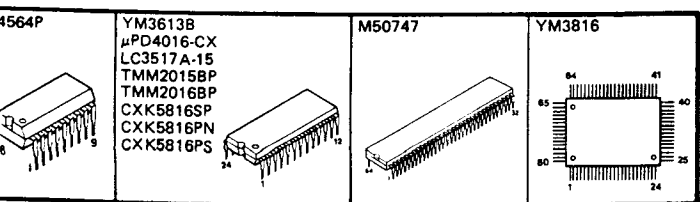
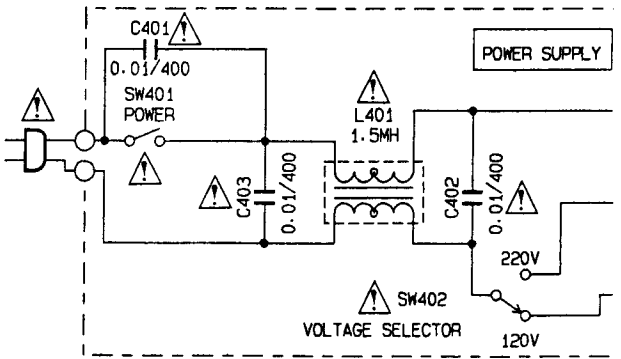
Q301-306	2SA1115 (E.F)
Q302-305	2SC2603 (E.F)



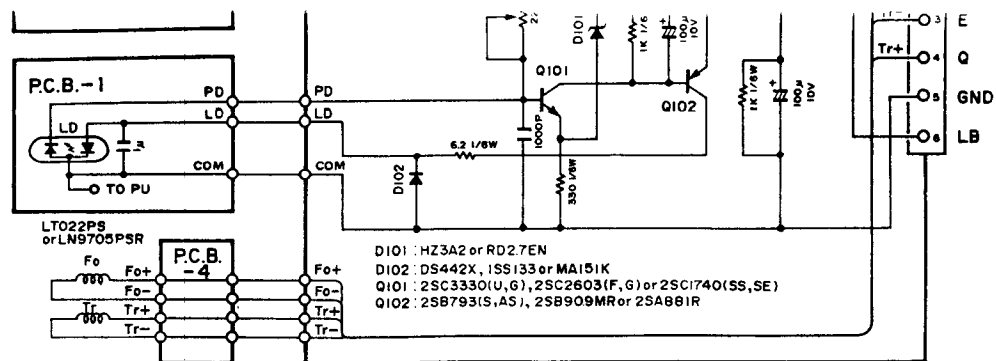
U, C, A, B, G



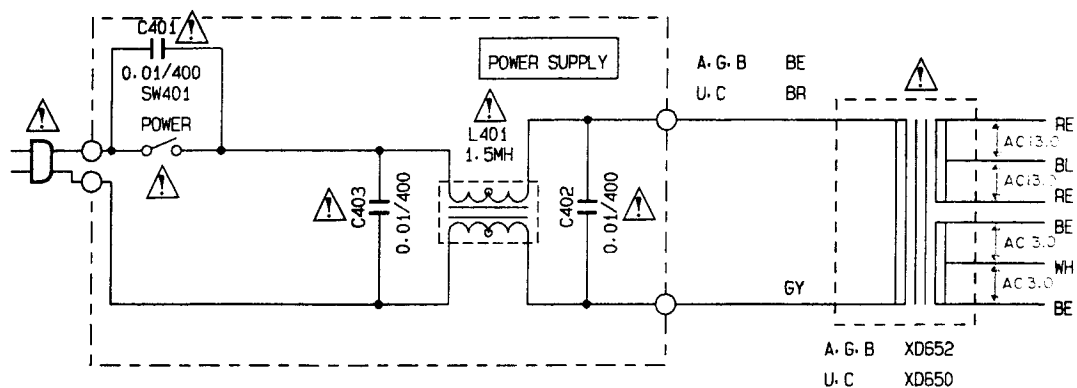
R



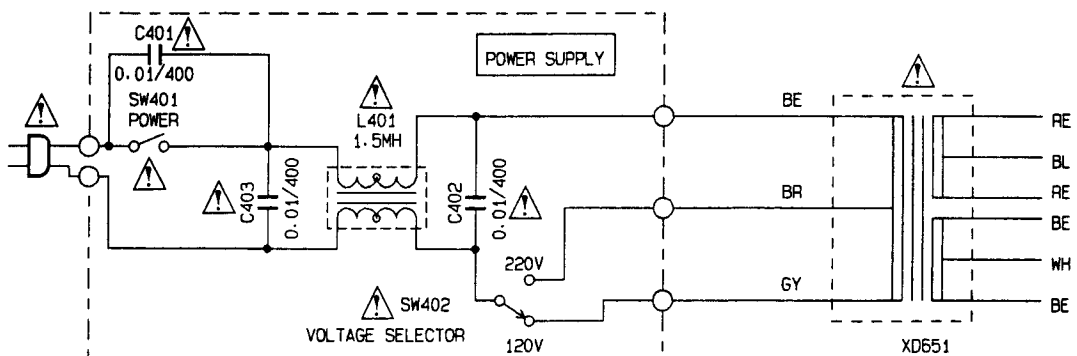
- All voltages
- Component replaced wit
- Schematic o



U, C, A, B, G

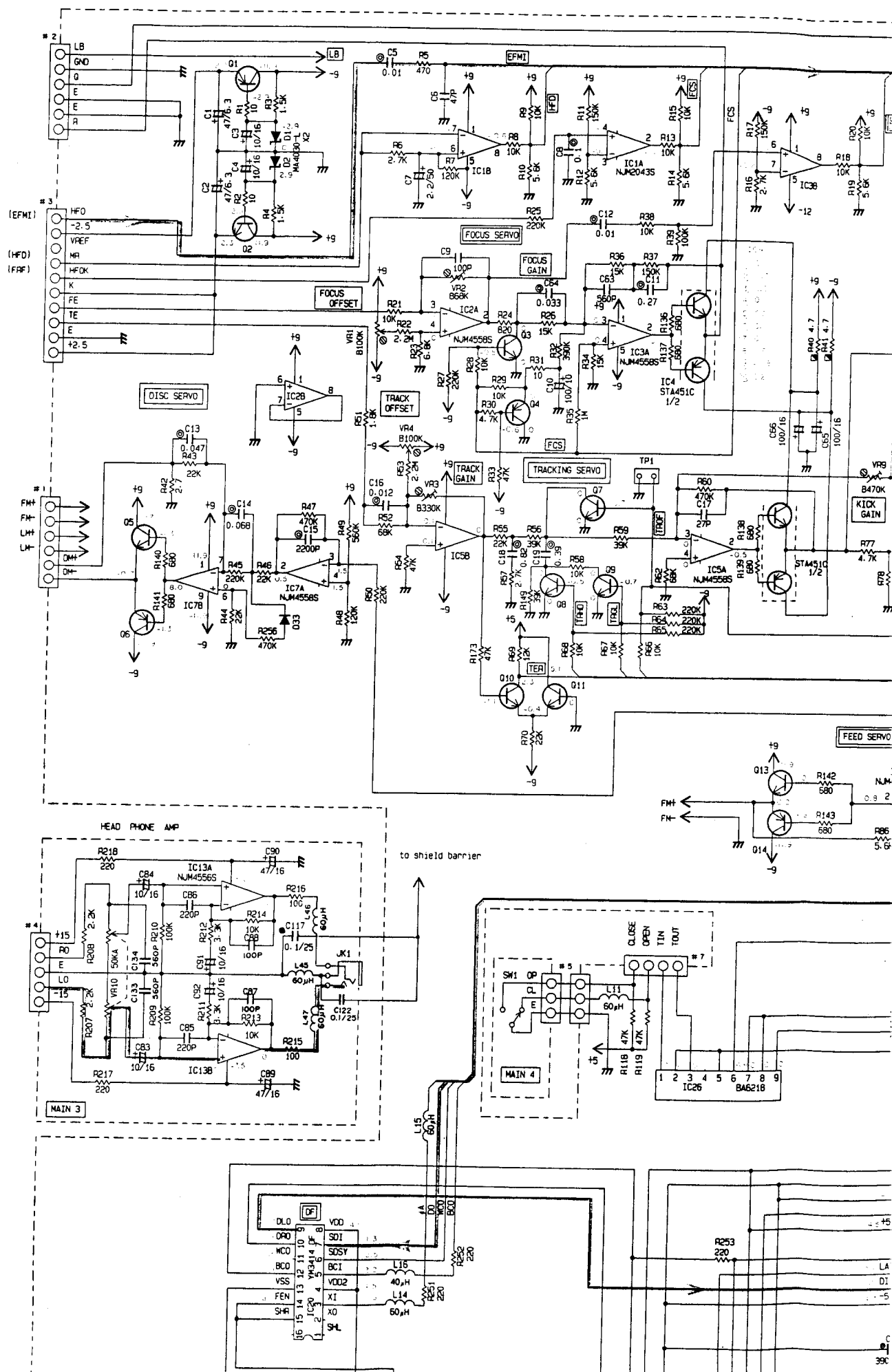


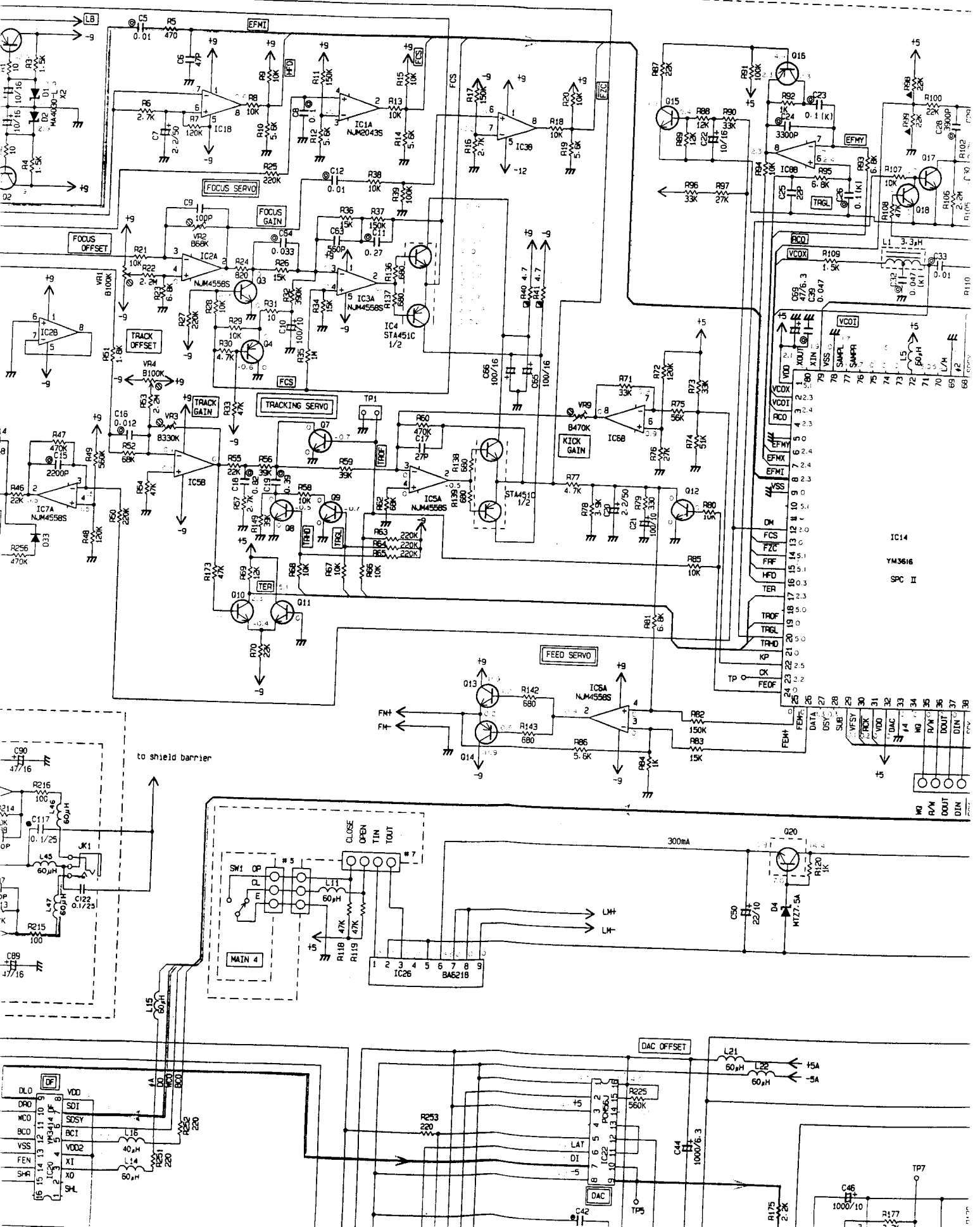
R

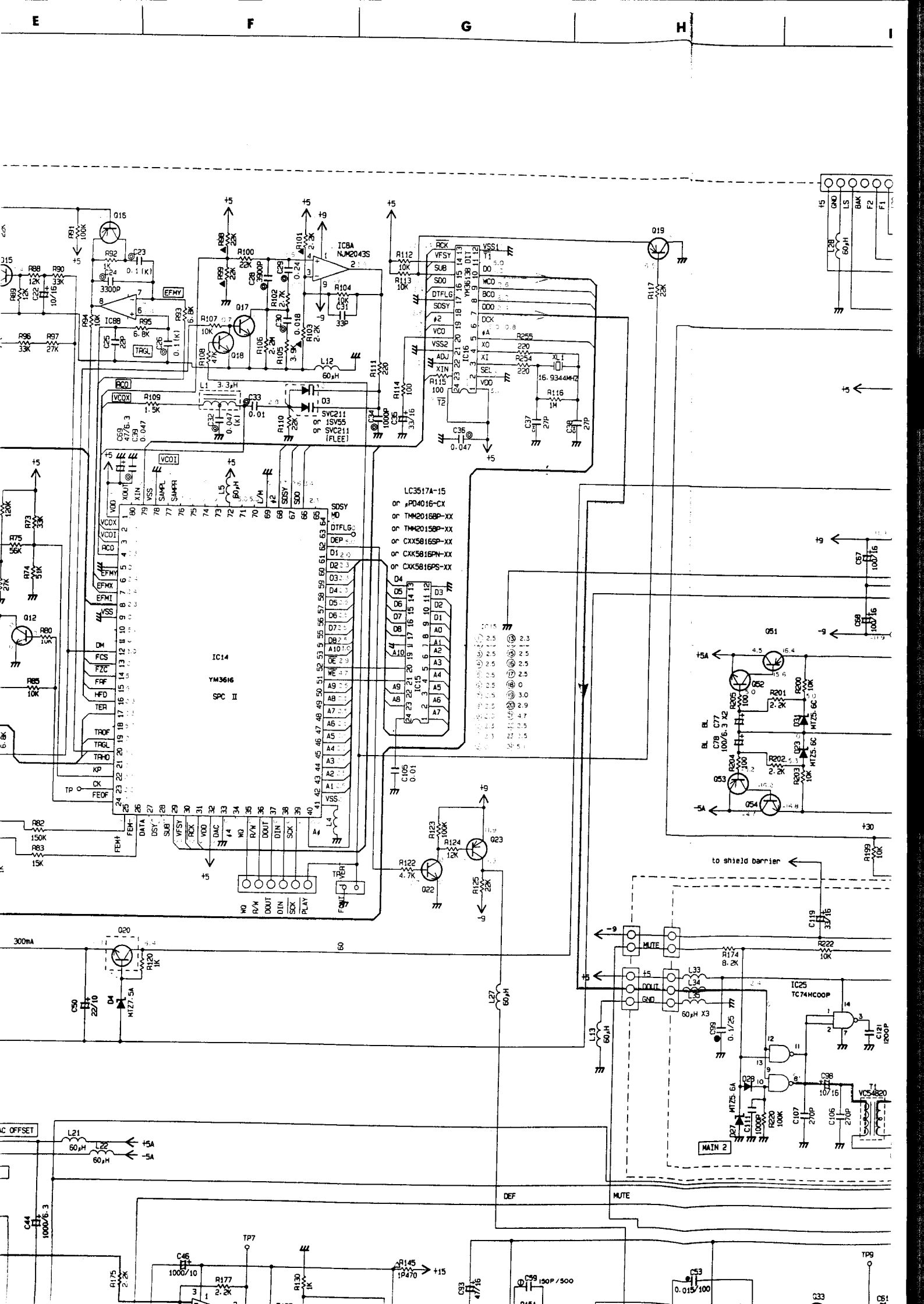


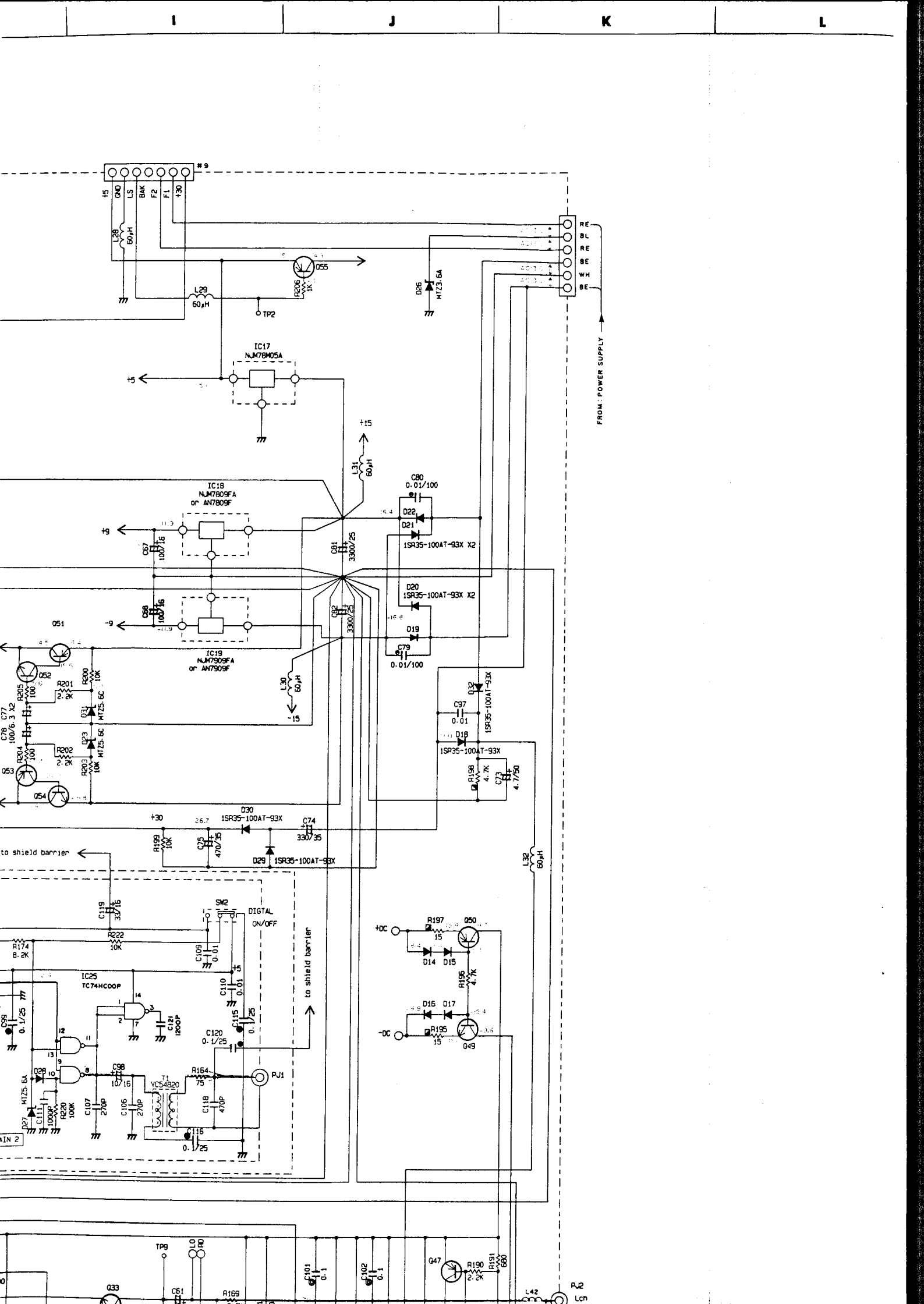
- All voltages are measured with a 10M Ω /V DC electric volt meter.
- Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
- Schematic diagram is subject to change without notice.

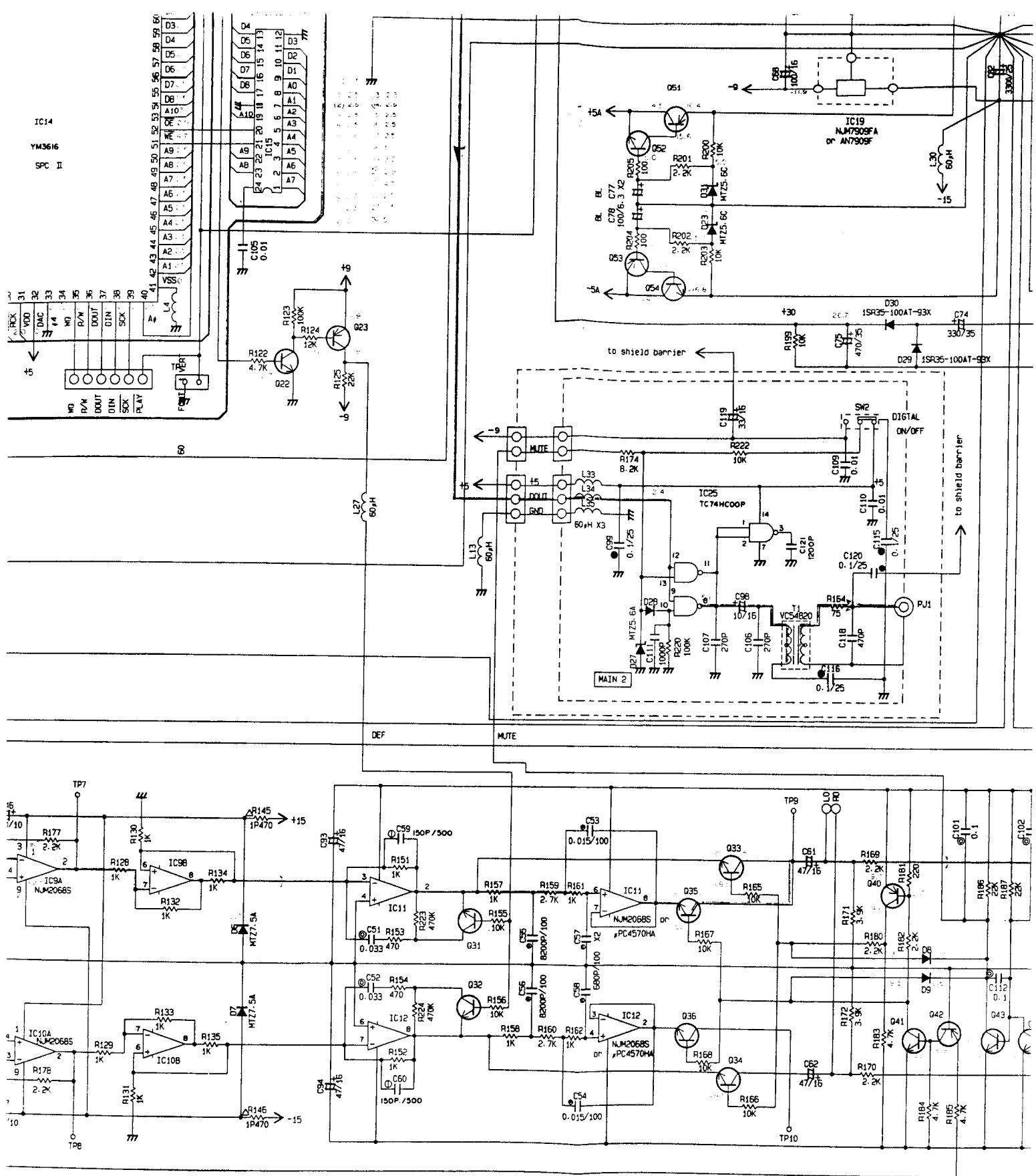
SCHEMATIC DIAGRAM (2/2)





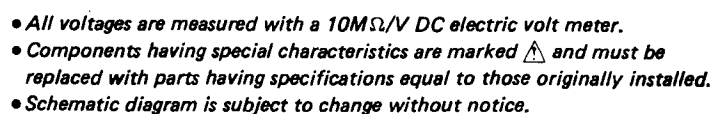




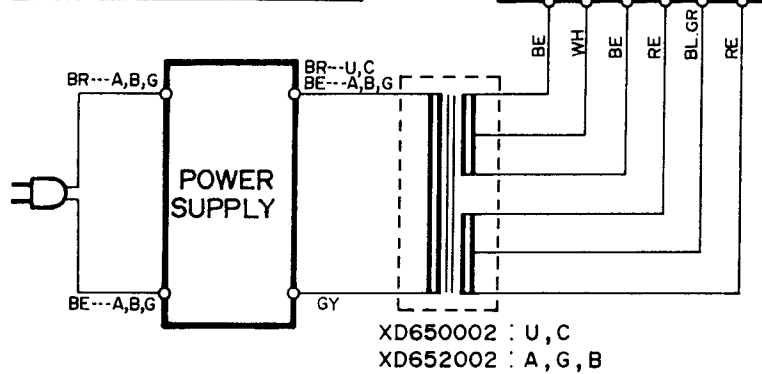
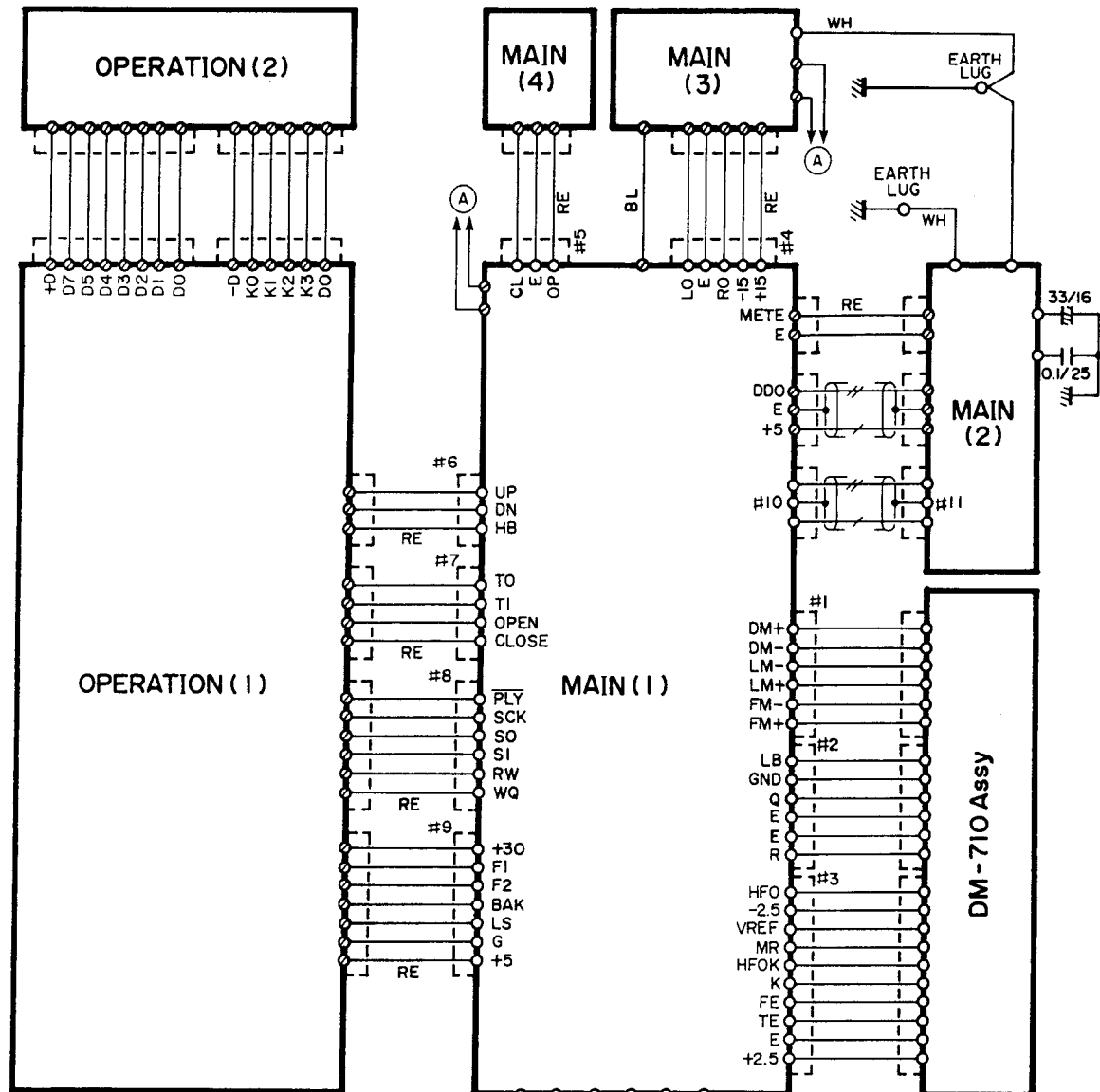


CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	11
NO MARK	CERAMIC CAPACITOR	11
⊙	POLYESTER FILM CAPACITOR	11
○	POLYSTYRENE FILM CAPACITOR	11
⊖	MICA CAPACITOR	11
⊕	POLYPROPYLENE FILM CAPACITOR	11
●	SEMICONDUCTIVE CERAMIC CAPACITOR	11

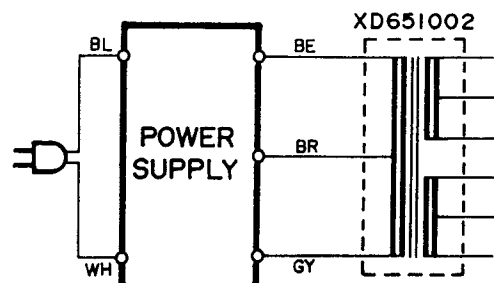


WIRING



U,C,A,B,G MODEL

R MODEL



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.48.

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	NA 09 64 70	Operation Circuit Board	オペレーションシート	Black	CDX-910	J	
※	NA 09 65 20	"	"	Silver, Black		U,C,R,A,G,B	
※	NA 09 76 40	"	"	Titan	CDX-910	J	
	FG 24 41 00	Ceramic Cap.	セラコン	C302			
※	VE 63 28 00	Electrolytic Cap.	スーパーキャパシタ	C307			
	UM 39 72 20	"	ケミコン	C304			
	UM 39 73 30	"	"	C306			
	UM 21 61 00	"	"	C303			
	UJ 16 64 70	"	"	C305			
※	VE 47 83 00	Resistor Array	抵抗アレイ	R322			
	VE 35 56 00	"	"	R323			
	HZ 00 45 40	"	"	R324			
	iA 11 15 10	Transistor	トランジスタ	Q301,306			
	iC 26 03 10	"	"	Q302~305			
	iF 00 34 50	Diode	ダイオード	D301~309,311,313,314			
	iF 00 87 30	LED (Red)	LED	D312			
	iF 00 88 00	Zener Diode	ツェナーダイオード	D310			
	XC 25 00 01	IC	I C	IC303~305			
	XD 49 00 01	"	"	IC302			
※	XD 55 50 01	"	"	IC301			
※	VE 23 14 00	Display Unit	蛍光表示管	V301			
	VE 22 24 00	Ceramic Resonator	セラミック発振子	XL301			
	KA 90 63 80	Switch	ライトタッチスイッチ	SW301~327,330,331			
	VD 85 31 00	Receiver Unit	受光ユニット	U301			
※	VE 31 18 00	Support, FL	サポートFL				
※	VE 31 19 00	Sheet, Filter	シートフィルター	Titan		J	
※	VE 85 88 00	"	"	Silver, Black			
※	NA 09 65 10	Power Circuit Board	電源シート		CDX-910	R	
※	NA 09 71 20	"	"			J,U,C,A,B,G	
	VE 17 92 00	Ceramic Cap.	セラコン	C401~403			Δ
	VA 77 84 00	Line Filter	ラインフィルタ	L401			Δ
	VC 09 79 00	Push Switch	プッシュスイッチ	SW401			Δ
	LA 00 58 10	Voltage Selector	電圧切換器	SW402		R	Δ
	LA 00 21 40	Lapping Terminal	P=10 2P i-Type i型ラッピング端子板				
	LA 00 21 50	"	P=10 3P i-Type "			R	

※New Parts (新規部品) NR

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	NA 09 65 30	Main Circuit Board	メ イ ン シ ー ト	Black		J	
※	NA 09 65 40	"	"	"		U,C,R,A,B	
※	NA 09 65 50	"	"	"		G	
※	NA 09 69 10	"	"	Silver		U,C,R,A,B	
※	NA 09 69 20	"	"	"		G	
※	NA 09 69 40	"	"	Titan		J	
	FA 15 31 00	Mylar Cap.	1000pF 50V	マ イ ラ ー コ ン	C34		
	FA 15 32 20	"	2200pF 50V	"	C15		
	FA 15 33 30	"	3300pF 50V	"	C24		
	FA 15 33 90	"	3900pF 50V	"	C28		
	FA 15 41 00	"	0.01μF 50V	"	C5, 12, 33		
	FA 15 41 20	"	0.012μF 50V	"	C16		
	FA 15 41 80	"	0.018μF 50V	"	C30		
	FA 15 43 30	"	0.033μF 50V	"	C51, 52, 64		
	FA 15 44 70	"	0.047μF 50V	"	C13, 36, 39		
	FA 15 46 80	"	0.068μF 50V	"	C14		
	FA 15 51 00	"	0.1μF 50V	"	C8, 101~103, 112		
	FA 15 53 90	"	0.39μF 50V	"	C19		
	FA 15 52 70	"	0.27μF 50V	"	C11		
	FA 15 52 40	"	0.24μF 50V	"	C29		
	FA 15 58 20	"	0.82μF 50V	"	C18		
	FC 36 51 00	"	0.1μF 50V	銅リードマイラーコン	C23, 26		
	FZ 00 55 80	"	0.047μF 50V	"	C32		
	FU 35 21 50	Mica Cap.	150pF 500V	F E マ イ カ コ ン	C59, 60		
	FZ 00 41 30	Semi-Conductive Ceramic Cap.	0.1μF 25V	半 導 体 セ ラ コ ン	C99, 115, 116		
	FZ 00 41 30	"	0.1μF 25V	"	C117	U,C,R,A,B,G	
	FG 21 12 70	Ceramic Cap.	27pF 50V (CH)	セ ラ コ ン	C37, 38		
	FG 21 12 20	"	22pF 50V	"	C25		
	FG 21 12 70	"	27pF 50V	"	C17		
	FG 21 13 30	"	33pF 50V	"	C31		
	FG 21 14 70	"	47pF 50V	"	C6		
	FG 21 21 00	"	100pF 50V	"	C9, 87, 88		
	FG 21 22 20	"	220pF 50V	"	C85, 86, 100		
	FG 21 24 70	"	470pF 50V	"	C118	U,C,R,A,B,G	
	FG 21 25 60	"	560pF 50V	"	C63, 133, 134	U,C,R,A,B,G	
	FG 24 41 00	"	0.01μF 50V	"	C97, 105, 109, 110		
	FG 21 22 70	"	270pF 50V	"	C106, 107		
	FG 21 28 20	"	820pF 50V	"	C135, 136	G	
	FG 21 31 00	"	1000pF 50V	"	C111		
	FG 71 31 20	"	1200pF 50V	"	C121	U,C,R,A,B,G	
	UJ 11 74 70	Electrolytic Cap.	47μF 6.3V	ケ ミ コ ン	C1, 2, 69		
	UJ 13 72 20	"	22μF 16V	"	C50		
	UJ 12 81 00	"	100μF 10V	"	C10, 21		
	UJ 13 71 00	"	10μF 16V	"	C3, 4, 22, 83, 84, 91, 92, 98		
	UJ 13 73 30	"	33μF 16V	"	C35		
	UJ 13 74 70	"	47μF 16V	"	C70, 89, 90, 93, 94		
	UJ 13 81 00	"	100μF 16V	"	C65~68		
	UJ 16 62 20	"	2.2μF 50V	"	C7, 20		
	UJ 16 64 70	"	4.7μF 50V	"	C73		
※	VE 70 88 00	"	47μF 16V	ケミコンDUOREX	C61, 62, 71, 72		
	UJ 45 83 30	"	330μF 35V	ケ ミ コ ン	C74		
	UJ 15 84 70	"	470μF 35V	"	C75		
	FZ 00 62 70	"	1000μF 6.3V	ブラックゲートコン	C44, 45		
※	VE 70 90 00	"	3300μF 25V	ケミコンDUOREX	C81, 82		
※	VE 94 58 00	"	1000μF 10V	ブラックゲートコン	C46, 47		
	FZ 00 54 10	"	100μF 6.3V	"	C77, 78		

※New Parts (新規部品) NR

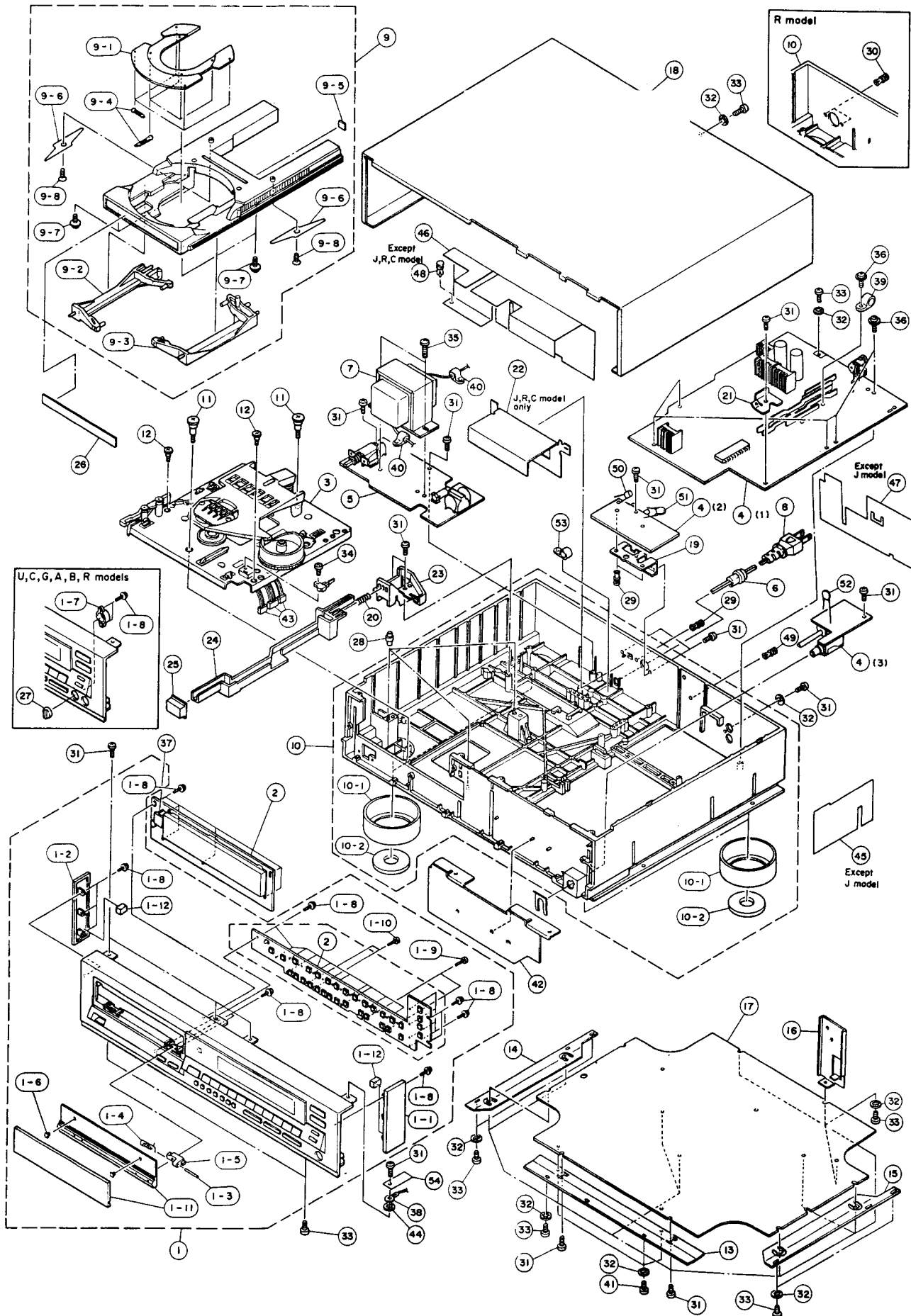
Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	UT 65 38 20	Polypropylene Film Cap.	8200pF 100V	ポリプロコン	C55,56		
※	UT 45 41 50	//	0.015μF 100V	//	C53,54		
	UT 45 22 20	//	220pF 100V	//	C48,49	J	
	UT 45 26 80	//	680pF 100V	//	C57,58		
	UT 45 33 90	//	3900pF 100V	//	C40~43		
	UT 45 41 00	//	0.01μF 100V	//	C79,80		
	VC 54 82 00	Pulse Trans		パルストランス	TI		
	GE 90 20 00	OSC Coil	3.3μH	発振コイル	LI		
※	VD 47 37 00	Micro Inductor	60μH	マイクロインダクター	L4,5		
※	VB 81 79 00	//	40μH	//	LI6	U,C,R,A,B,G	
※	VD 47 37 00	//	60μH	//	LI1~15, 21, 22, 27~35, 40, 42, 45~47	U,C,R,A,B,G	
	HL 31 54 70	Metal Oxide Film Resistor	470Ω 1W	酸金抵抗	RI45,146		
	HV 45 41 50	Flame Proof Carbon Resistor	15Ω 1/4W	不燃化カーボン抵抗	RI95,197		
	HV 45 34 70	//	4.7Ω 1/4W	//	R40,41		
	HV 45 64 70	//	4.7kΩ 1/4W	//	RI98		
	HJ 35 61 00	Carbon Resistor	1kΩ 1/4W	カーボン抵抗	RI51,152		
※	VF 45 91 00	Metal Film Resistor	2.2kΩ 1/6W	金属被膜抵抗	RI01,103		
※	VF 45 92 00	//	22kΩ 1/6W	//	R98,99		
	VB 86 15 00	Pre-Set Potentiometer	B10kΩ	半固定抵抗	VR7,8		
	VB 86 19 00	//	B100kΩ	//	VR5,6		
	VB 86 19 00	//	B100kΩ	//	VR1,4		
	VB 86 22 00	//	B470kΩ	//	VR9		
	VC 61 25 00	//	B68kΩ	//	VR2		
※	VB 86 21 00	//	B330kΩ	//	VR3		
	VC 50 93 00	Rotary Volume	50KA×2	ロータリボリューム	VR10	U,C,R,A,B,G	
	iA 09 33 70	Transistor	2SA933S(Q,R)	トランジスタ	Q1,4,16,23,40,42,47, 53,55	Inter-changeable	
	iA 11 15 10	//	2SA1115(E,F)	//	//		
	iX 60 31 70	//	2SA1310(R,S,T)	//	//		
	iA 09 34 00	//	2SA934	//	Q6,14,45,50	Inter-changeable	
	iB 05 44 10	//	2SB544	//	//		
	VC 61 40 00	//	2SB1274(Q,R,S)	//	Q51		
	iC 17 40 70	//	2SC1740S(S,R)	//	Q2,10~12,15,17~19, 22,41,48,52	Inter-changeable	
	iC 26 03 10	//	2SC2603(E,F)	//	//		
	iX 60 31 80	//	2SC3312(R,S,T)	//	//		
	iC 20 60 00	//	2SC2060	//	Q5,13,46,49	Inter-changeable	
	iD 04 00 00	//	2SD400	//	//		
	VC 40 79 00	//	2SD1913(R,S)	//	Q54		
	iX 60 42 00	//	2SC2878(A,B)	//	Q3,7~9,31,32,43,44	Inter-changeable	
	iC 33 27 00	//	2SC3327	//	//		
	VC 50 21 00	//	2SD1915	//	//		
	iC 19 83 00	//	2SC1983	//	Q20		
※	VF 83 51 00	//	2SD1915(T)	//	Q33,34,35,36		
	iF 00 84 80	Diode	1SR35-100A	ダイオード	D18~22,29,30,32		
	iF 00 34 50	//	ISS133	//	D8,9,11,14~17,28,33		
	iF 00 88 50	Zener Diode	MTZ12A	ツェナーダイオード	D10		
	iF 01 07 90	//	MTZ7.5A	//	D4,6,7		
	iF 01 08 70	//	MTZ9.1C	//	D12,13		
	iF 01 07 20	//	MTZ5.6C	//	D23,31		

*New Parts (新規部品) NR

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
*	VE 50 71 00	Zener Diode	MA4030-L	ツェナーダイオード	D1,2		
	iF 00 88 00	//	MTZ3.6A	//	D26		
	iF 01 07 10	//	MTZ5.6A	//	D27		
	iF 00 49 10	Varactor Diode	ISV55	F M バラクターダイオード	D3	} Inter-changeable	
	iF 00 49 20	//	SVC211	//	//		
	XB 69 80 01	IC	YM3616	I C	IC14		
	XC 85 30 01	//	YM3613B	//	IC16		
	XD 71 20 01	//	YM3414	//	IC20		
	XD 71 10 01	//	YM6013	//	IC21	J	
	XB 70 30 01	//	YM3023	//	IC24	J	
	XD 70 60 01	//	NJM7809FA	//	IC18		
	iG 07 68 00	//	NJM4558S	//	IC2,3,5~7		
	iG 07 74 00	//	NJM4556S	//	IC13		
	iG 08 02 00	//	NJM2043S	//	IC1,8		
	iG 11 94 00	//	STA451C	//	IC4		
	iG 15 35 00	//	BA6218	//	IC26		
	iG 07 56 00	//	NJM78M05A	//	IC17		
	XD 70 70 01	//	NJM7909FA	//	IC19		
	iR 00 00 00	//	TC74HC00P	//	IC25		
*	XD 89 70 01	//	PCM56P-J	//	IC22,23		
	iG 11 92 00	//	μPD4016-CX	//	IC15	} Inter-changeable	
	XD 84 30 01	//	TMM2016BP	//	//		
	XA 95 60 01	//	NJM2068S	//	IC9~12		
*	VC 39 88 00	Crystal Resonator	I6.9344MHz	水 晶 振 動 子	XL1		
	LB 30 24 20	Phone Jack	Gray	ホ ー ン ジャ ッ ク	JK1	Silver	
	LB 30 24 30	//	Black	//	//	Black	
	VA 31 63 00	//		//	//	Titan	J
	LB 20 26 10	Pin Jack	2P	ピ ン ジャ ッ ク	PJ2		J
	VF 09 65 00	//	2P	//	//		U,C,R,A,B,G
	VD 76 02 00	//	1P	//	PJ1		
	KA 90 63 70	Switch	MSW-1485	エ ン ド ス イ ッ チ	SW1		
	KA 40 14 30	Slide Switch		ス ラ イ ド ス イ ッ チ	SW2		
	LB 20 13 90	Base Pin	TEB2P-SHF	2. 5 ピ ッ チ ベ ー ス ピ ン	CB9,12,13,15		
	LB 40 05 70	//	TEB4P-SHF	//	CB10		
	LB 50 02 50	//	TEB5P-SHF	//	CB11		
	VD 00 46 00	//	3P i-Type	P H ベ ー ス ピ ン	CB1,2,16,17		
	VD 00 47 00	//	4P i-Type	//	CB3		
	VD 00 49 00	//	6P i-Type	//	CB4~6		
	VD 00 50 00	//	7P i-Type	//	CB7		
	VD 00 53 00	//	10P i-Type	//	CB8		
	VD 00 48 00	//	5P i-Type	//	CB14		
*							
	LA 00 23 20	Lapping Terminal	P=7.5 3P i-Type	i 型 ラ ッ ピ ン ぐ 端 子 板			
	LA 00 25 70	//	P=7.5 3P i-Type	//			
	LA 00 41 20	Test Point Pin	1P	テ ス ト ポ イ ン ト ピ ン			
	BB 06 95 10	Ground Plate		ラ ン ド 金 具			
	BB 07 04 10	Bus Bar	55mm	バ ス バ ー			
	BA 09 29 70	Heat Sinck		放 熱 板			
	ED 33 00 86	Binding Head Screw	3×8 FCRM3-BI	バ イ ン ド 小 ネ ジ	PACK		
	VD 78 28 00	Firrite Core	ESD-R-16	フ ェ ラ イ ト コ ア			
	VF 37 64 00	//	ESDR19D	//			

*New Parts (新規部品) NR

EXPLODED VIEW



MECHANISM PARTS

Note) ϕ : Diameter

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	リンク
※ 1	VE 56 16 00	Front Panel Ass'y	フ ロ ン ト パ ネ ル Ass'y	Black		R, A, B, G	
※ //	VE 56 14 00	//	//	//		U, C	
※ //	VE 56 17 00	//	//	Silver		R, A, B, G	
※ //	VE 56 15 00	//	//	//		U, C	
※ //	VE 56 13 00	//	//	Titan		J	
※ //	VE 56 11 00	//	//	Black		J	
※ 1-1	VE 02 46 00	Panel, Side L	パ ネ ル サ イ ド L	Black			
※ //	VE 31 07 00	//	//	Silver		U, C, R, A, B, G	
※ //	VE 43 39 00	//	//	Titan		J	
※ 1-2	VE 22 71 00	Panel, Side R	パ ネ ル サ イ ド R	Black			
※ //	VE 31 08 00	//	//	Silver		U, C, R, A, B, G	
※ //	VE 43 41 00	//	//	Titan		J	
※ 1-3	VC 50 52 00	Shaft, Lid	シャフト / リッド				
※ 1-4	VE 02 60 00	Spring, Lid	スプリング / リッド				
※ 1-5	VE 02 57 00	Fulcrum, Lid	リ ッ ド 支 点				
※ 1-6	VE 02 58 00	Cushion, Lid	クッションリッド				
※ 1-7	VE 22 72 00	Knob Guid	ノ ブ ガ イ ド	Black		U, C, R, A, B, G	
※ //	VE 35 65 00	//	//	Silver		U, C, R, A, B, G	
※ 1-8	EX 60 08 40	BW Head Tapping Screw	2×6(ϕ 5.5)FCRM3-BI BWヘッドタッピングネジ				
※ 1-9	Ei 02 00 66	Binding Head Tapping Screw	2×6 ZMC2-Y バインドタッピングネジ	PACK			
※ 1-10	EJ 02 00 66	Pan Head Tapping Screw	2×6 ZMC2-Y ナベタッピングネジ	PACK			
※ 1-11	NX 60 11 80	Lid Ass'y	リ ッ ド Ass'y	Black		U, C, R, A, B, G	
※ //	NX 60 11 90	//	//	Silver		U, C, R, A, B, G	
※ //	NX 60 12 20	//	//	Titan		J	
※ //	NX 60 12 00	//	//	Black		J	
※ 1-12	VE 97 64 00	Damper	ダンパ / サイド				
※ 2	NA 09 64 70	Operation Circuit Board	オペレーションシート	Black	CDX-910	J	
※ //	NA 09 65 20	//	//	Silver, Black		U, C, R, A, B, G	
※ //	NA 09 76 40	//	//	Titan	CDX-910	J	
※ 3	VE 30 59 00	Disc Mechanism Unit	DM-710 D M ユ ニ ッ ト				
※ 4	NA 09 65 30	Main Circuit Board	メ イ ン シ ー ト	Black		J	
※ //	NA 09 65 40	//	//	//		U, C, R, A, B	
※ //	NA 09 65 50	//	//			G	
※ //	NA 09 69 10	//	//	Silver		U, C, R, A, B	
※ //	NA 09 69 20	//	//	//		G	
※ //	NA 09 69 40	//	//	Titan		J	
※ 5	NA 09 65 10	Power Circuit Board	電 源 シ ー ト		CDX-910	R	
※ //	NA 09 71 20	//	//			J, U, C, A, B, G	
※ 6	CB 61 68 10	Cord Stopper	CM-22A コードストッパー			J	
※ //	CB 62 01 90	//	CM-22B //			R, A, B, G	
※ //	CB 62 02 00	//	CM-22C //			U, C	
※ 7	XD 64 90 02	Power Transformer	電 源 ト ラ ン ス			J	△
※ //	XD 65 00 02	//	//			U, C	△
※ //	XD 65 10 02	//	//			R	△
※ //	XD 65 20 02	//	//			A, B, G	△
※ 8	MG 00 22 90	Power Cord	7A 125V 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	△
※ 9	VE 26 97 00	Tray Ass'y	ト レ イ Ass'y	Black	CDX-910		
※ //	VE 30 62 00	//	//	Silver	//	U, C, R, A, B, G	

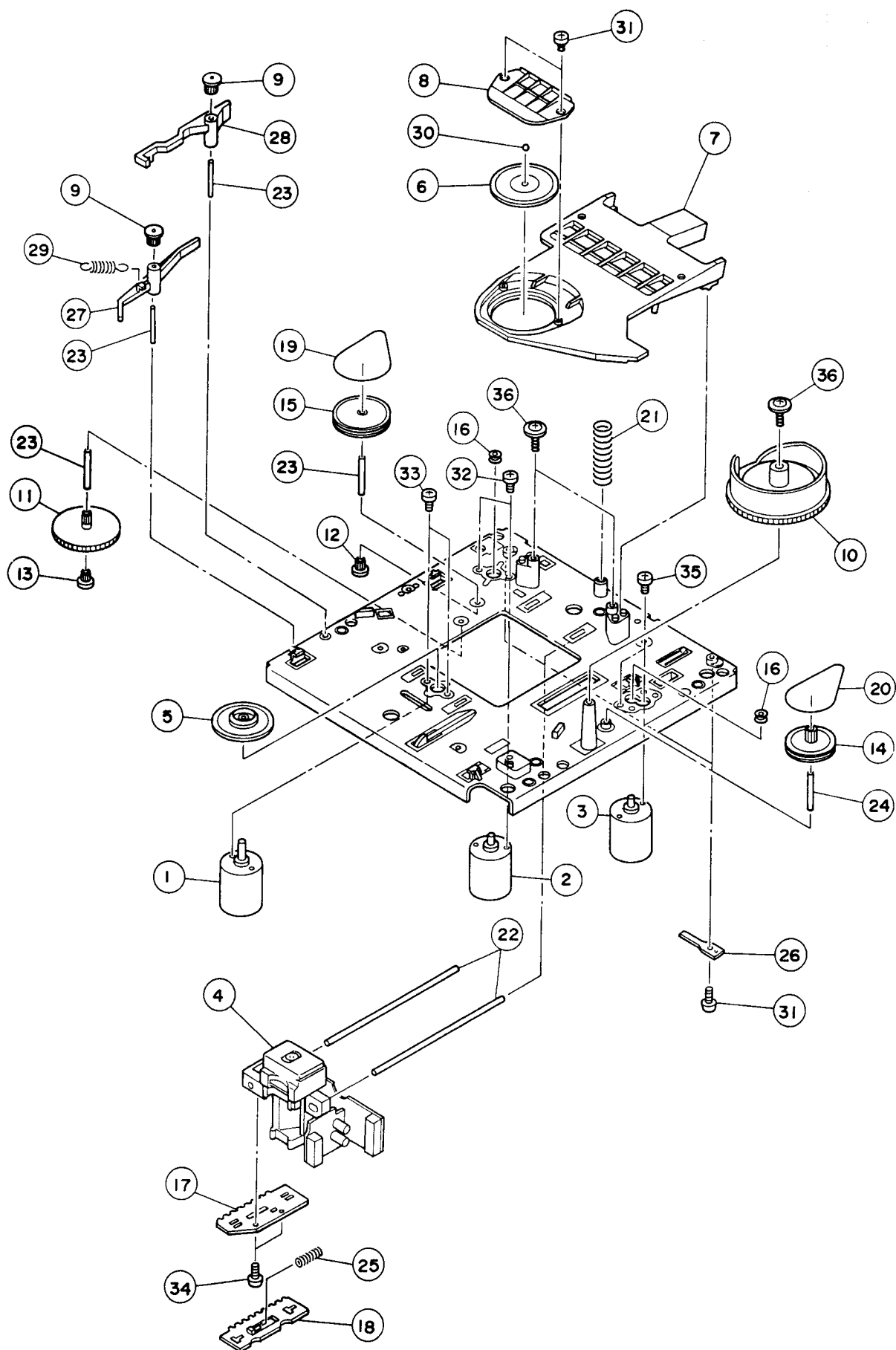
※New Parts (新規部品) NR

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※ 9	VE 45 37 00	Tray Ass'y	ト レ イ Ass'y	Titan	CDX-910	J	
※ 9-1	VE 04 12 00	Tray, Disc	ト レ イ / デ ィ ス ク	Black			
※ //	VE 30 63 00	//	//	Silver		U,C,R,A,B,G	
※ //	VE 45 34 00	//	//	Titan		J	
※ 9-2	VE 26 98 00	Lifter Ass'y(L)	リ フ タ Ass'y (L)	Black			
※ //	VE 65 86 00	//	//	Silver		U,C,R,A,B,G	
※ //	VE 65 87 00	//	//	Titan		J	
※ 9-3	VE 26 99 00	Lifter Ass'y(R)	リ フ タ Ass'y (R)	Black			
※ //	VE 65 88 00	//	//	Silver		U,C,R,A,B,G	
※ //	VE 65 89 00	//	//	Titan		J	
※ 9-4	VE 04 16 00	Pad, Disc	パ ッ ド / デ ィ ス ク				
※ 9-5	CB 62 79 60	Cushion Rubber	ク ッ シ ョ ン ゴ ム				
※ 9-6	VE 04 18 00	Spring	ス プ リ ン グ				
9-7	EX 60 02 40	BW Head Tapping Screw	3×8(φ10) FCRM3-BI B Wヘッドタッピングネジ				
9-8	EO 33 00 86	Flat Head Tapping Screw	3×8 FCRM3-BI 皿タッピングネジ	PACK			
※ 10	VE 30 88 00	Main Chassis Ass'y	メ イン シャ ー シ Ass'y			J	
※ //	VF 70 29 00	//	//			U,C	
※ //	VF 51 59 00	//	//			G	
※ //	VE 30 89 00	//	//			A,B	
※ //	VE 30 90 00	//	//			R	
10-1	VD 49 11 00	Leg Cap.	レ ッ グ キャ ッ プ			J	
10-2	VC 96 54 00	Pad	パ ッ ド				
11	NB 63 83 90	Spacial Screw Ass'y	段 付 ネ ジ Ass'y		CDX-305		
12	VC 32 03 00	Spacial Screw	2.6×8 ZMC2-BI 段 付 ネ ジ				
※ 13	VE 85 72 00	Ground Plate (F)	ア ー ス プ レ ー ト (F)			J	
※ 14	VE 83 11 00	// (L)	// (L)			J	
※ 15	VE 83 12 00	// (R)	// (R)			J	
16	AA 63 12 30	Ground Plate	ア ー ス 金 具				
17	AA 63 12 10	Bottom Cover	ボ ト ム カ バ ー			J	
※ //	VE 95 55 00	//	//			U,C,R,A,B,G	
※ 18	VE 43 58 00	Top Cover	ト ッ プ カ バ ー	Silver		U,C,R,A,B,G	
※ //	VE 43 26 00	//	//	Black			
※ //	VE 43 51 00	//	//	Titan		J	
19	VD 49 08 00	Support	サ ポ ー ト				
20	VB 95 81 00	Spring	ス プ リ ン グ				
※ 21	VE 76 46 00	Support	サ ポ ー ト			J	
※ 22	VE 85 73 00	Shield Pl.	シ ー ル ド プ レ ー ト			J,R,C	
23	CB 65 91 50	Holder	ホ ル ダ ー				
※ 24	VE 02 52 00	Rod	ロ ッ ド		CDX-910		
※ 25	VE 02 37 00	Button	ボ タ ン	Black POWER	//		
※ //	VE 30 93 00	//	//	Silver //	//	U,C,R,A,B,G	
※ //	VE 43 30 00	//	//	Titan //	//	J	
※ 26	VE 30 60 00	Plate	プ レ ー ト	Black	//		
※ //	VE 30 61 00	//	//	Silver	//	U,C,R,A,B,G	
※ //	VE 45 36 00	//	//	Titan	//	J	
27	CB 65 91 00	Knob	ツ マ ミ	Black PHONES		U,C,R,A,B,G	
※ //	VC 51 70 00	//	//	Silver //		U,C,R,A,B,G	
※ 28	VE 30 92 00	Damper	ダ ン パ ー		CDX-910		
29	CB 06 88 80	Plastic Rivet	プ ラ ス チ ッ ク リ ベ ッ ト				
30	CB 65 77 50	//	//			R	
31	Ei 33 01 06	Binding Head Tapping Screw	3×10 ZMC2-BI バ イ ン ド タ ッ ピ ン グ ネ ジ	PACK			
32	EV 41 30 36	Toothed Lock Washer	φ3 FCRM3-BI 歯 付 座 金	PACK			
33	Ei 33 01 26	Binding Head Tapping Screw	3×12 FCRM3-BI バ イ ン ド タ ッ ピ ン グ ネ ジ	PACK			

※New Parts (新規部品) NR

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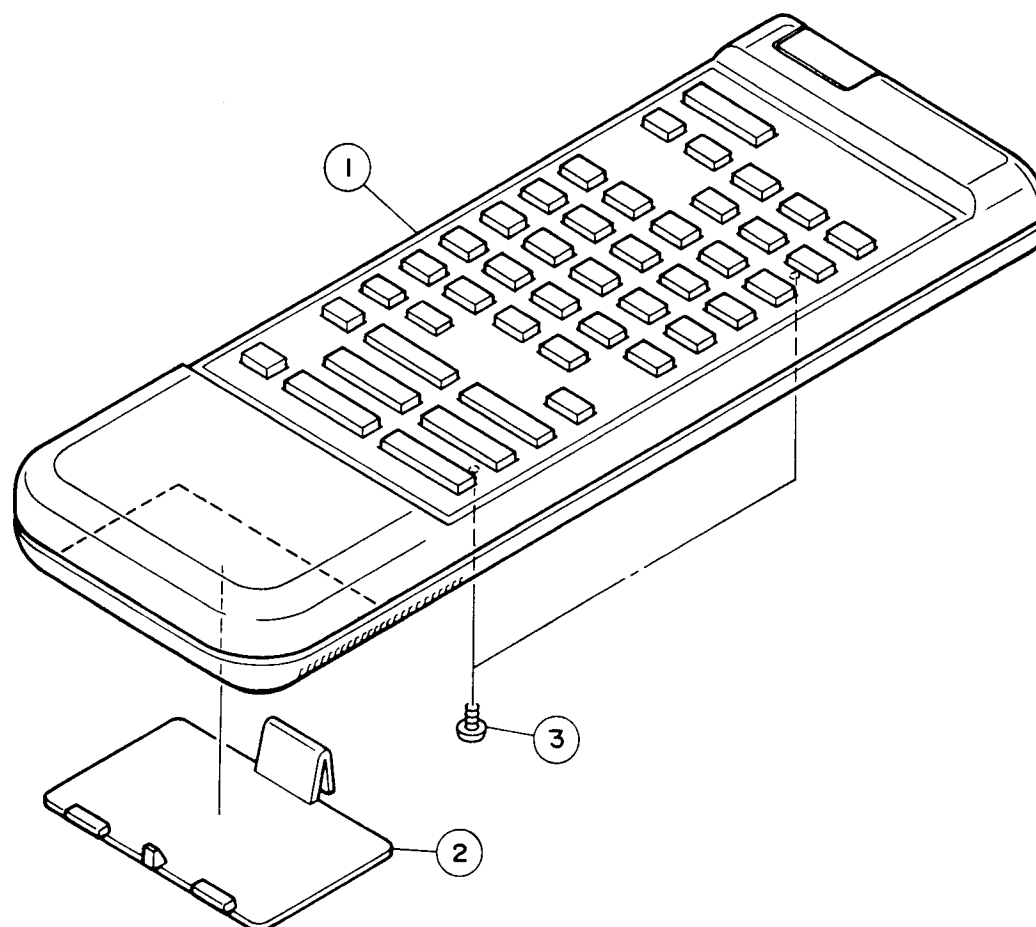
■EXPLODED VIEW (DM-710)



Note) ϕ : Diameter

※New Parts (新規部品) NR

■EXPLODED VIEW (RS-CDX810)

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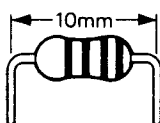
※New Parts (新規部品) NR

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	HF853100	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	HF859470
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○○○○

