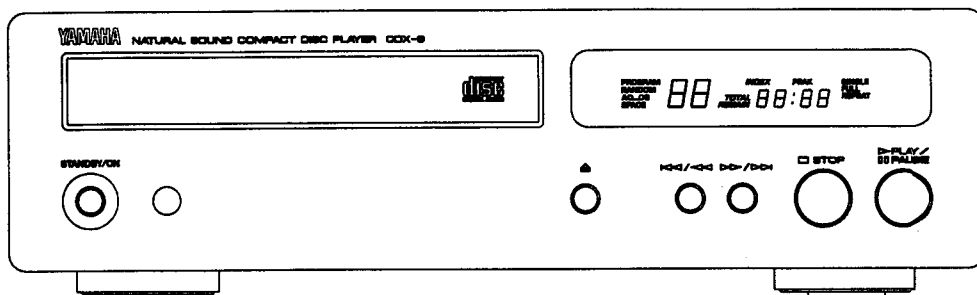
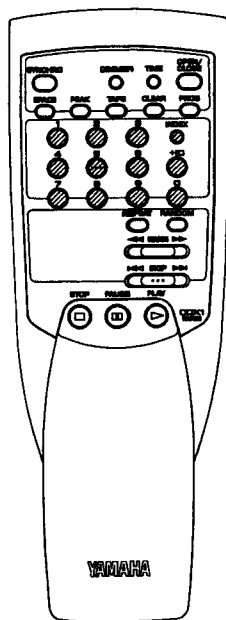


COMPACT DISC PLAYER

CDX-9



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 any service required should be performed by an authorized YAMAHA Retailer or the appointed service representative.

IMPORTANT: The presentation or sale of this manual to any individual of 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 part replacement. Recheck all work before you apply power to the unit.

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■ TO SERVICE PERSONNEL

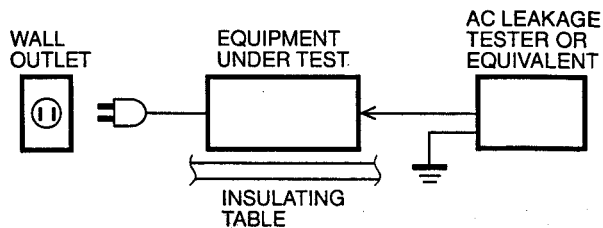
1. Critical Components Information.

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

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

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

- Meter impedance should be equivalent to 1500 ohm shunted by 0.15 μ F.



- Leakage current must not exceed 0.5mA.
- Be sure to test for leakage with the AC plug in both polarities.

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

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

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

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

1. Laser Diode Properties

- Material : GaAlAs
- Wavelength : 780 nm
- Emission Duration: Continuous
- Laser Output : max. 44.6 μ W*

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

* This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.

WARNING: CHEMICAL CONTENT NOTICE!

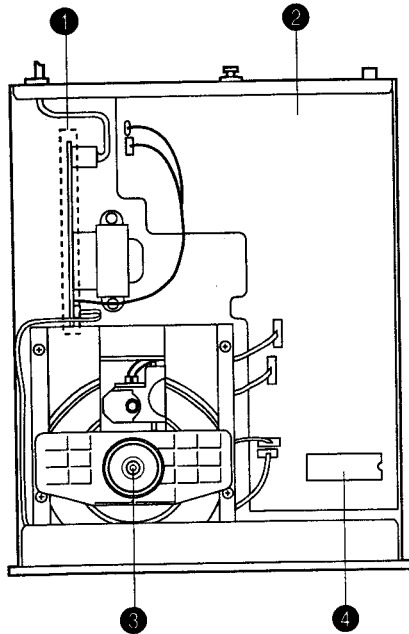
The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHATSOEVER!

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

INTERNAL VIEW



- ① P.C.B. MAIN (5)
- ② P.C.B. MAIN (1)
- ③ CDX MECHANISM UNIT
- ④ 4BIT μ-COM (IC12)

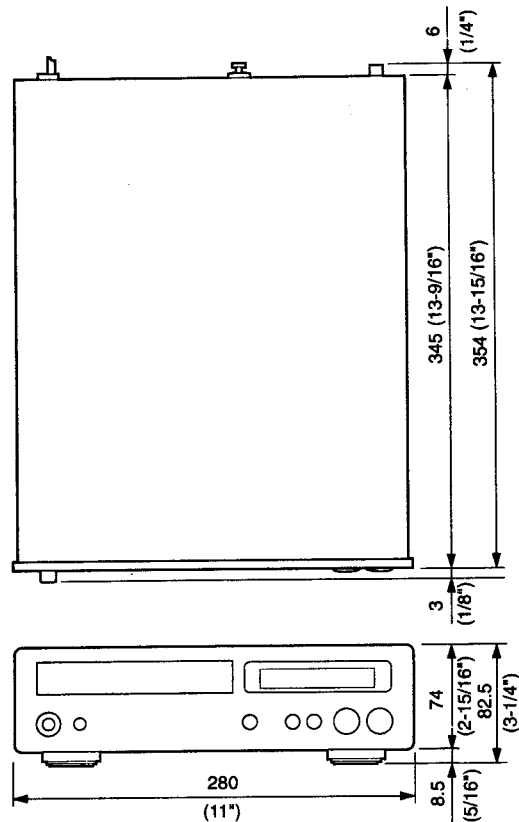
SPECIFICATIONS

Output Level	
1kHz, 0dB	2.0±0.5Vrms
Signal to Noise Ratio (EIAJ)	118dB
Dynamic Range	98dB
Harmonic Distortion+Noise (1kHz)	0.0022%
Frequency Response	
2Hz — 20kHz	±0.3dB
Power Requirements	
U model	120V AC 60Hz
R model	110/120/220/240V AC 50/60Hz
B, G models	230V AC 50Hz
Power Consumption	15W
Dimensions (W x H x D)	280 x 82.5 x 354mm (11" x 3-1/4" x 13-15/16")
Weight	3.8kg (8 lbs 6 oz)
Accessories	Pin plug code Remote control transmitter (Dry-cell : x 2: Size "AA", R06)

* Specifications are subject to change without notice.

U U.S.A. model
 R General model
 B British model
 G European model

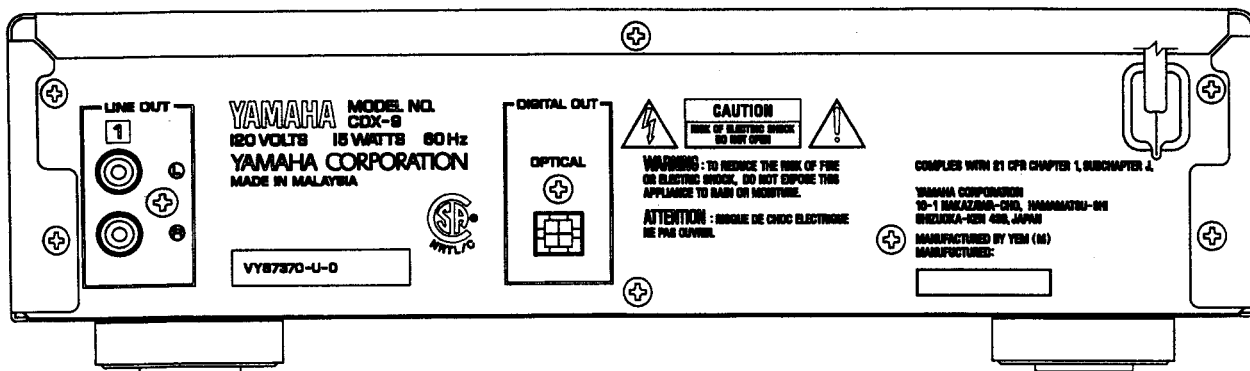
DIMENSION



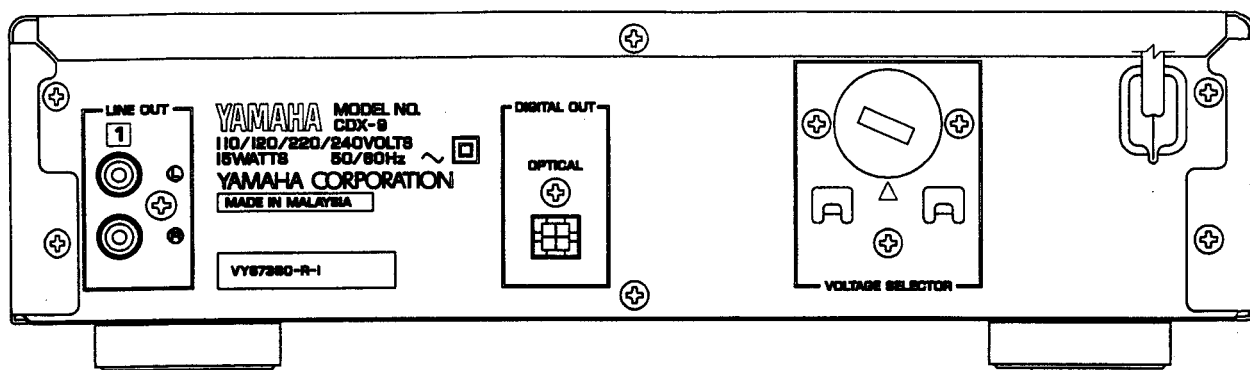
Unit : mm (inch)

■ REAR PANELS

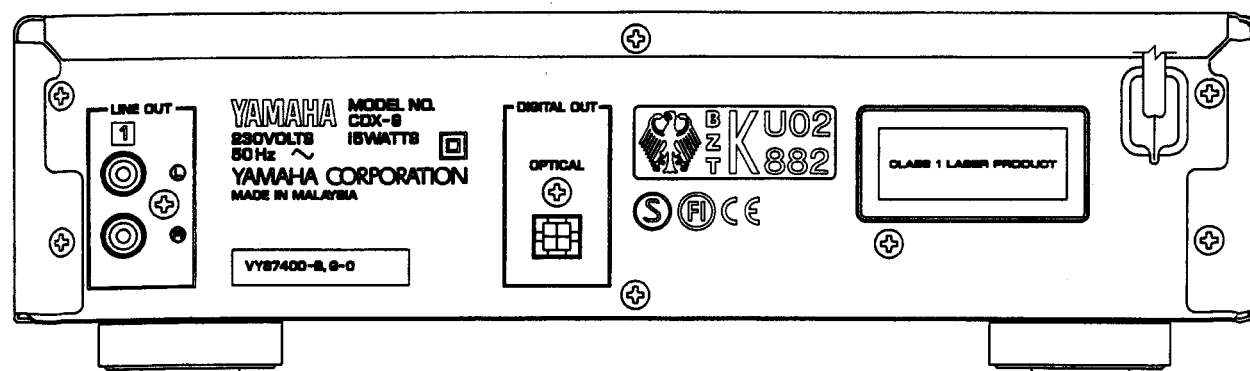
▼ U model



▼ R model



▼ B and G models



■ MEMORY BACKUP

After the Power is turned OFF, some functions are kept in memory.

Functions kept in memory are :

- | | | |
|---------------|--------------|----------|
| • FULL REPEAT | • TIME MODE | • DIMMER |
| • RANDOM MODE | • AUTO SPACE | |

■ DISASSEMBLY PROCEDURES

(Remove parts in disassembly order as numbered.)

1. Removal of Top Cover

- Remove 2 screws (①) and 3 screws (②) in Fig. 1.
- Lift the Top Cover to the back side and move it rearward slantingly.

2. Removal of Front Panel

- Remove 3 connectors. (#6, #411, #413)
- Remove 6 screws (③) in Fig. 1.
- Remove the Front Panel forward.

3. Removal of CDX Mechanism Unit

- Remove 2 rivet (④) and then remove the Frame/Top in Fig. 1.
- Remove 4 connectors (#2, #3, #4, #5).
- Remove 5 screws (⑤) in Fig. 1.

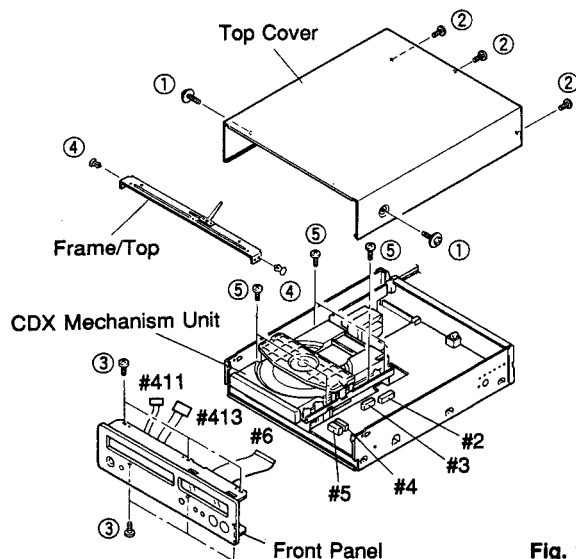


Fig. 1

4. Removal of Tray Unit

- Remove 2 screws (⑥) and then remove the Chucking Unit in Fig. 2.
- Remove 1 hook and then remove the Stopper Pin in Fig. 2.
- Rotate the Drive Gear and then open the Tray Unit in Fig. 2.
- Detach the Stoppers on both sides and then pull out the Tray in Fig. 2.

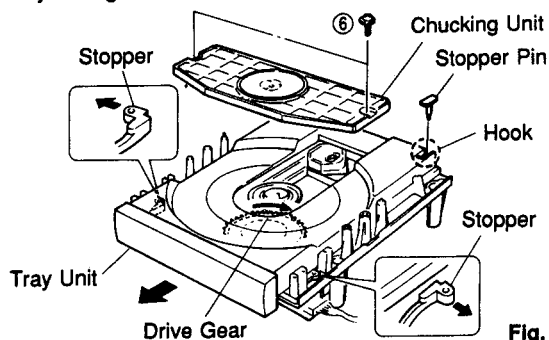


Fig. 2

5. Removal of Pick-up Head

- Remove 2 screws (⑦) in Fig. 3.
- Remove 4 screws (⑧) and then remove the Drive Unit in Fig. 3.

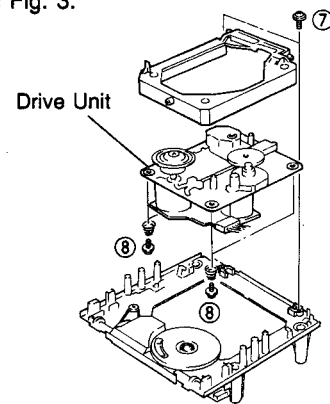


Fig. 3

- Remove the gear A in Fig. 4.
- Pull out the Sled Shaft in Fig. 4.
- Remove the Pick-up Head.

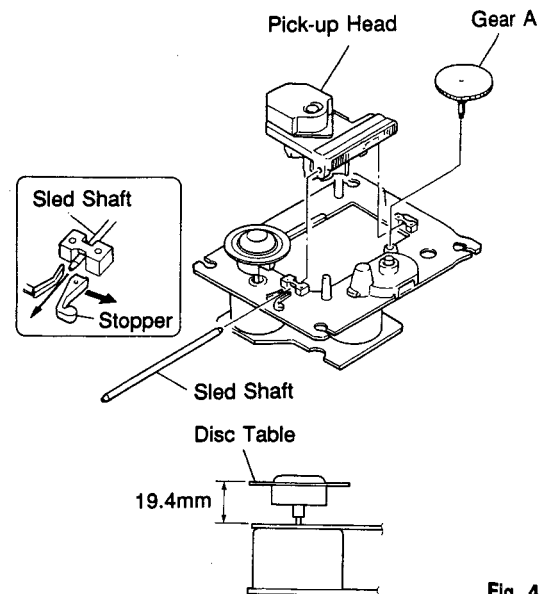
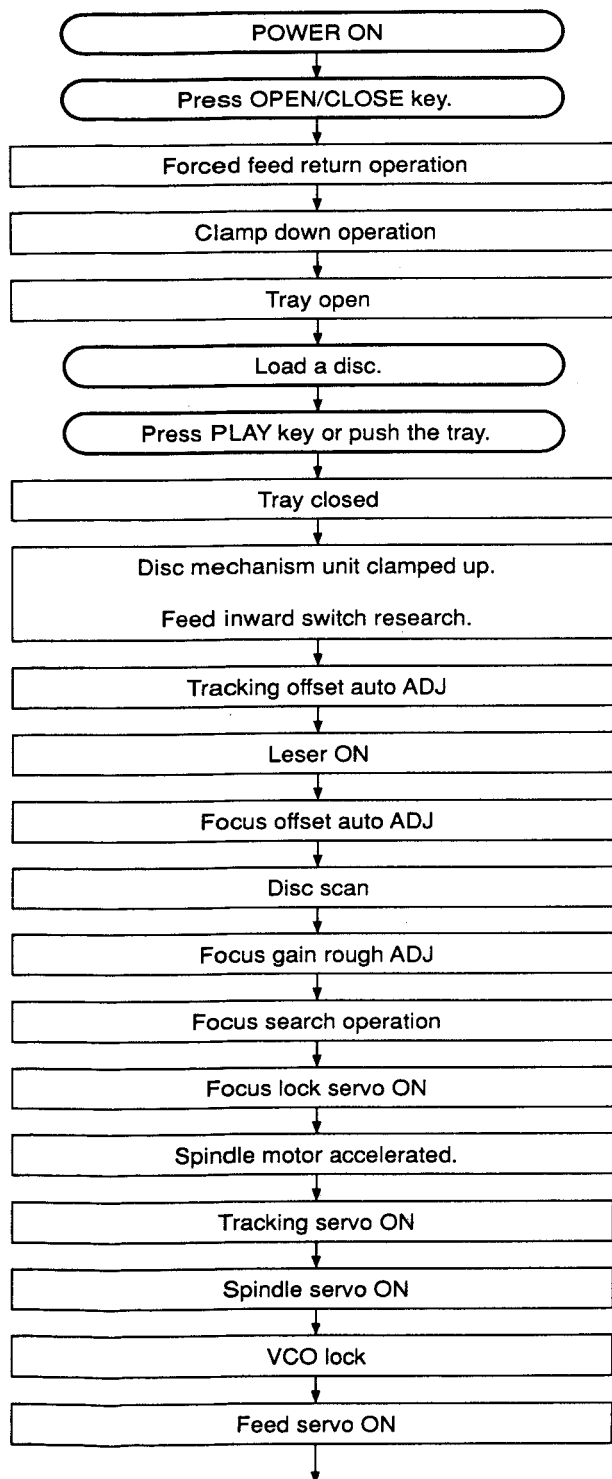


Fig. 4

■ STANDARD OPERATION CHART



If a disc is not loaded, "0:00" appears in the time indicator.

" : " appears in the TIME indicator.

"TRV" signal is output until detection of LIMIT switch.

Stop after detection of LOADING switch.

Proceeds to next step after detection of LOADING switch.

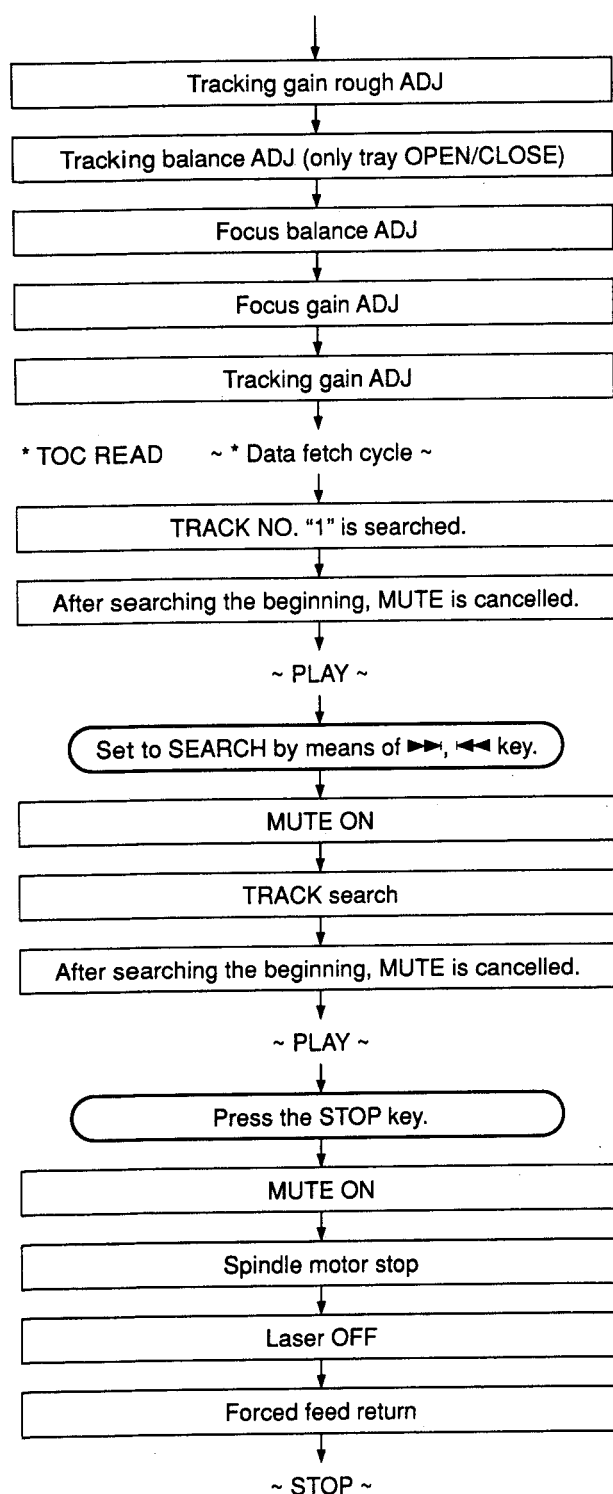
if FLSW = L, (IC12, 28 pin)
Proceeds To Next Step.

LSON = "H" (IC1, 3 pin)

$\overline{\text{FLOCK}}$ = "H" → "L" (IC12, 11 pin)

$\overline{\text{TLOCK}}$ = "H" → "L" (IC12, 12 pin)

CRC = "H" (IC11, 67 pin)



: MUTE OFF = "H" → "L" (Q7 Collector)
"0:00" appears in the time indicator.

: MUTE OFF = "L" → "H"

: MUTE OFF = "H" → "L"
"0:00" appears in the time indicator.

: LSON = "H" → "L" (IC1, 3 pin)

■ TEST MODE

(1) Turning ON the POWER while pressing the keys **OPEN/CLOSE** and **STOP** will set to the TEST mode. (When the TEST mode is set, all indicators light for 1 second.)

(2) Shown below are the panel keys and remote control transmitter in the TEST mode.

● Function List of Panel keys

Note) "traverse servo" means the same as "feed servo".

PANEL KEY	FUNCTION
OPEN/CLOSE	Tray open/close.
PLAY/PAUSE	FOON, TRON, SPON, TVON (FEON)
STOP	All stop. (Focus, spindle, feed, laser, tray, etc.) Initializes FL display
◀◀	Inner circumference traverse servo.
▶▶	Outer circumference traverse servo.

● Function List of Remote Control Transmitter

CUSTOM CODE = (79)x

CODE	KEY	FUNCTION
01	OPEN/CLOSE	Tray open/close.
02	PLAY	PLAY (FOON, TRON, TVON(FEON), SPON)
04	◀◀ SKIP	Inner circumference traverse servo.
05	◀◀ SEARCH	Inner 10 tracks kick continuously.
06	▶▶ SEARCH	Outer 10 tracks kick continuously.
07	▶▶ SKIP	Outer circumference traverse servo.
08	REPEAT S/F	FOON, TROF (Enter focus search if focus servo is off.)
0A	TIME	Checks FL display. (All lamps → 888888 → goes out.)
0B	INDEX	FOON, TROF, TVOF (EFOF) (Enter focus search if focus servo is off.)
0C	PROG	Rotates or accelerates spindle.
0D	CLEAR	Decelerates spindle. (checking EFM pattern and reflected STAT)
0F	SPACE	FOOF, TROF, TVOF (EFOF)
10	0	150 TRACK KICK + continuously
11	1	Returns to product mode. (tray inoperative.) (Coefficient set up mode : lower digit up)
12	2	Auto adjustment mode 1 (TR-off set, FO-off set, FO-rough gain adjustment)
13	3	Auto adjustment mode 2 (TR-balance, TR-rough gain adjustment)
14	4	Auto adjustment mode 3 (FO-fine gain, TR-fine gain, FO-balance adjustment)
15	5	1 TRACK KICK – continuously (Coefficient set up mode : address down)
16	6	1 TRACK KICK + continuously (Coefficient set up mode : address up)
17	7	30 TRACK KICK – continuously (Coefficient set up mode : upper digit down)
18	8	30 TRACK KICK + continuously (Coefficient set up mode : upper digit up)
19	9	150 TRACK KICK – continuously (Coefficient set up mode : lower digit down)
1A	+10	Rotating the mode of coefficients.
1B	RANDOM	SPON (Spindle servo on.)
1E	DIMMER	Checks FL display. (Test pattern → All lamps → goes out.)
55	PAUSE	FOON, TROF, TVOF(EFOF) (Enter focus search if focus servo is off.)
56	STOP	All stop. (Focus, spindle, traverse, laser, tray, etc.)
57	TAPE	Spindle free (off)
58	SYNCHRO	TV(Feed) REV
5D	PEAK	—

■ ERROR MESSAGE

- (1) When operation is terminated in an abnormal condition (stop or open), pressing STOP on the remote control while pressing STOP on the panel will set to the error message display enable mode.
- (2) This function stays effective till the power is turned OFF. (It is cleared at OFF.)
- (3) Listed in the table below are error messages.

● Error Messages List

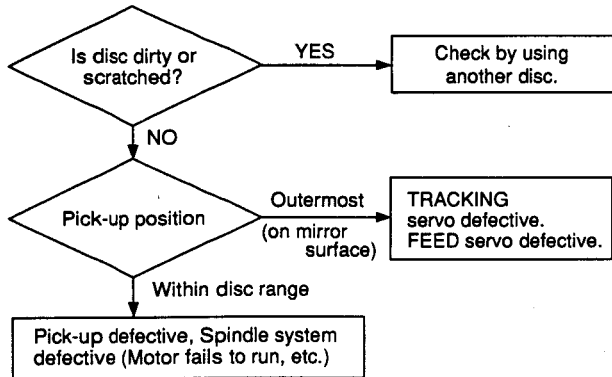
ERROR MESSAGES	DESCRIPTION
E - X 0	Data cannot be read after finishing search.
E - X 1	Data cannot be read during PLAY(X=0), PAUSE(X=4), or SCAN(X=3).
E - 7 1	At the start, tracking servo is not effective.
E - 7 2	At the start, spindle servo PLL is not effective.
E - 7 3	At the start, data can never read.
E - 9 4	Close switch does not work with tray closed.
E - - 5	Open switch does not work with tray open.
E - X 7	Traverse(Feed) inner circumference switch does not work.
E - X 8	Recovery action fails after focus drop.
E r r	MN66271 does not give response of SENSE, with resetting by the unit's microcomputer.

*No. for each state (meaning of "X")

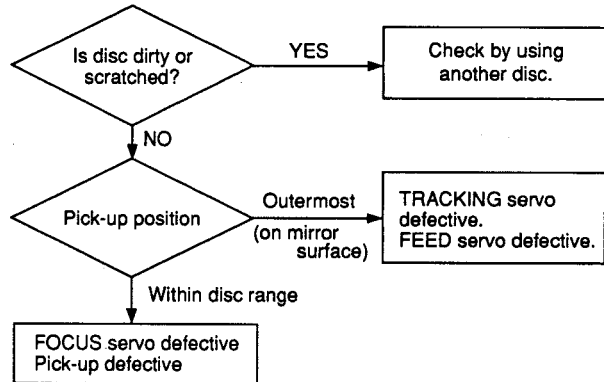
- PLAYX="0"
- SCANX="2"
- PAUSEX="3"
- PEAK SEARCHX="4"
- SEARCHX="5"
- INTRO SCANX="6"
- STARTX="7"
- STOPX="8"
- DISC SEARCHX="9"
- OPENX="-"
- NO DISCX="C"

1) Error Code Troubleshooting

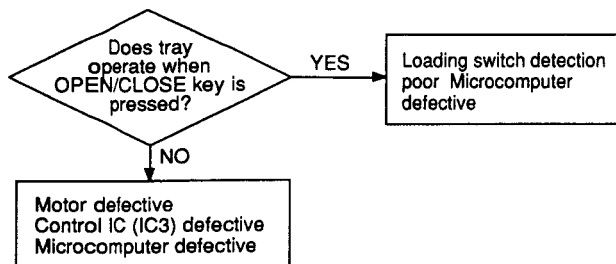
Error code **X0** , **X1** , **73** Data cannot be read.



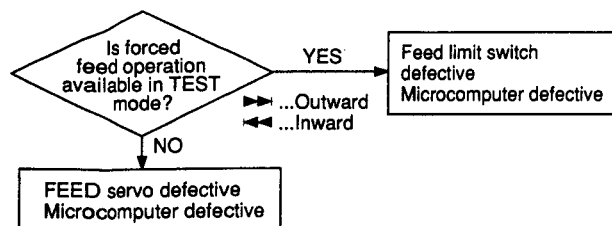
Error code **X8** Focus drops.



Error codes **94** , **-5** Poor tray loading operation.

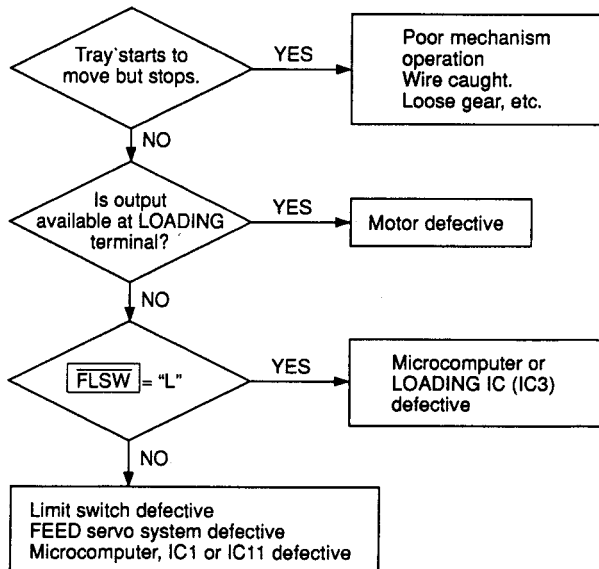


Error code **X7** FEED operation defective. (Limit switch fails)



2) Troubleshooting from System Malfunctions

a) Tray fails to come out/go in.

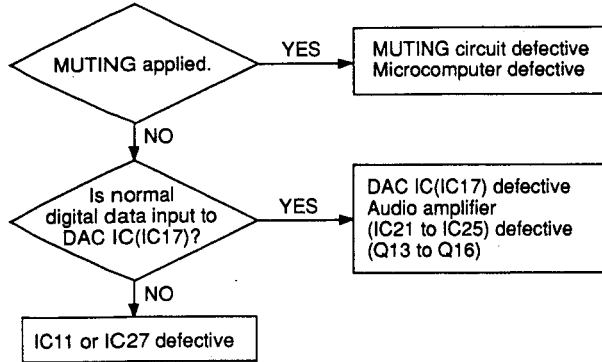


When tray fails to close completely (when it stops midway)

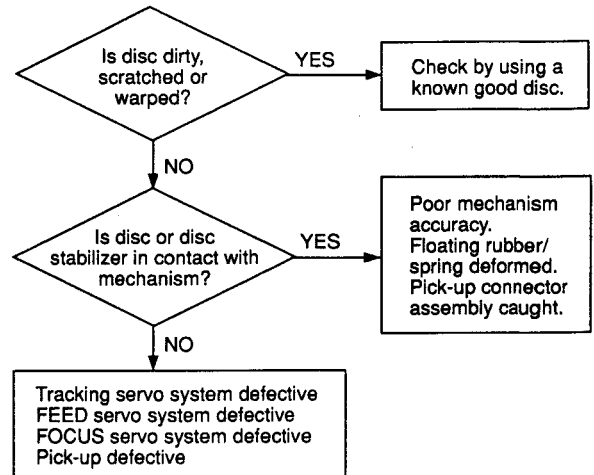
[Corrective measure]

- 1) Turn ON the power and open the tray.
 - * If it failed to open (head and tray contacting each other), open it after removing the chucking unit.
- 2) Turn OFF the power and force the tray to go in fully and close.
- 3) With the power turned ON, open and close the tray to check if the tray close completely.

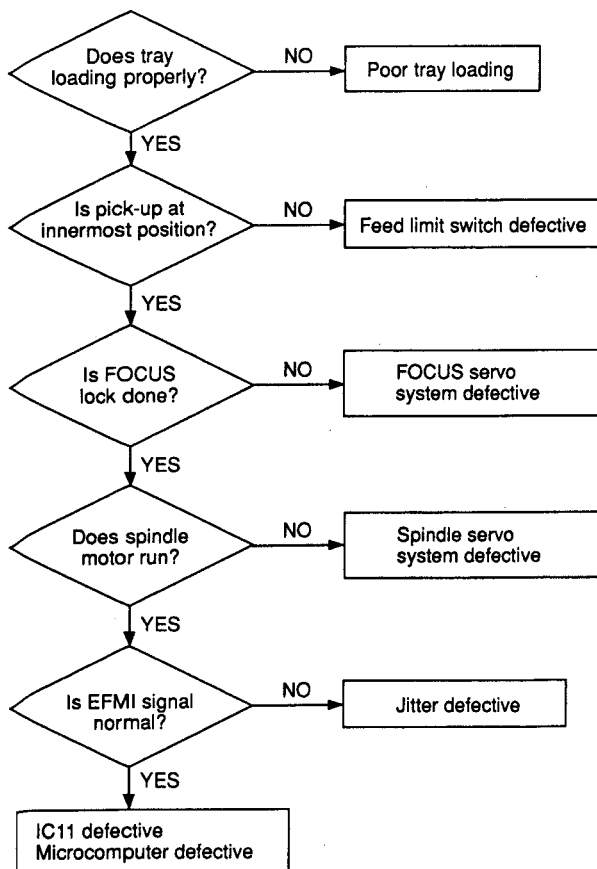
**b) No sound generated, Sound cut during play.
(but time display advances properly)**



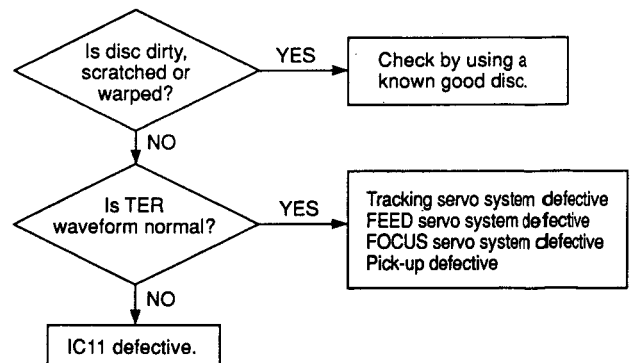
**d) Sound skips.
(Time display fails to advance properly)**



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

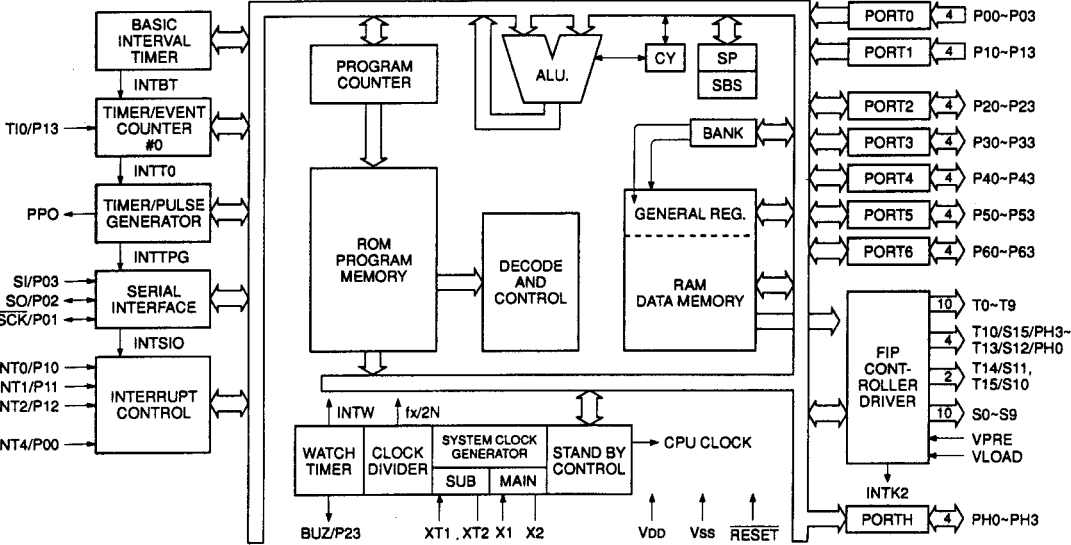
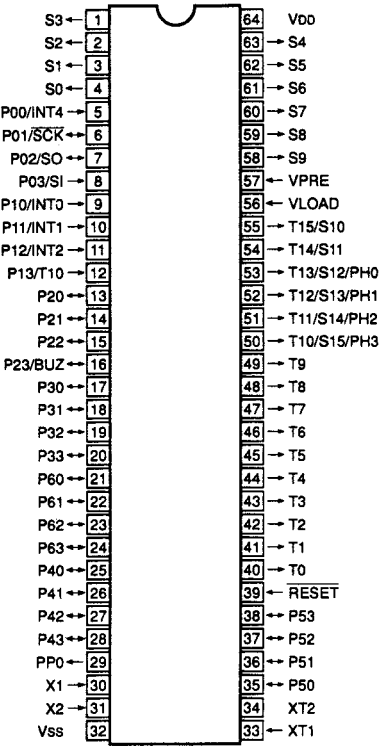


e) No search provided. (Sound skipped after search)



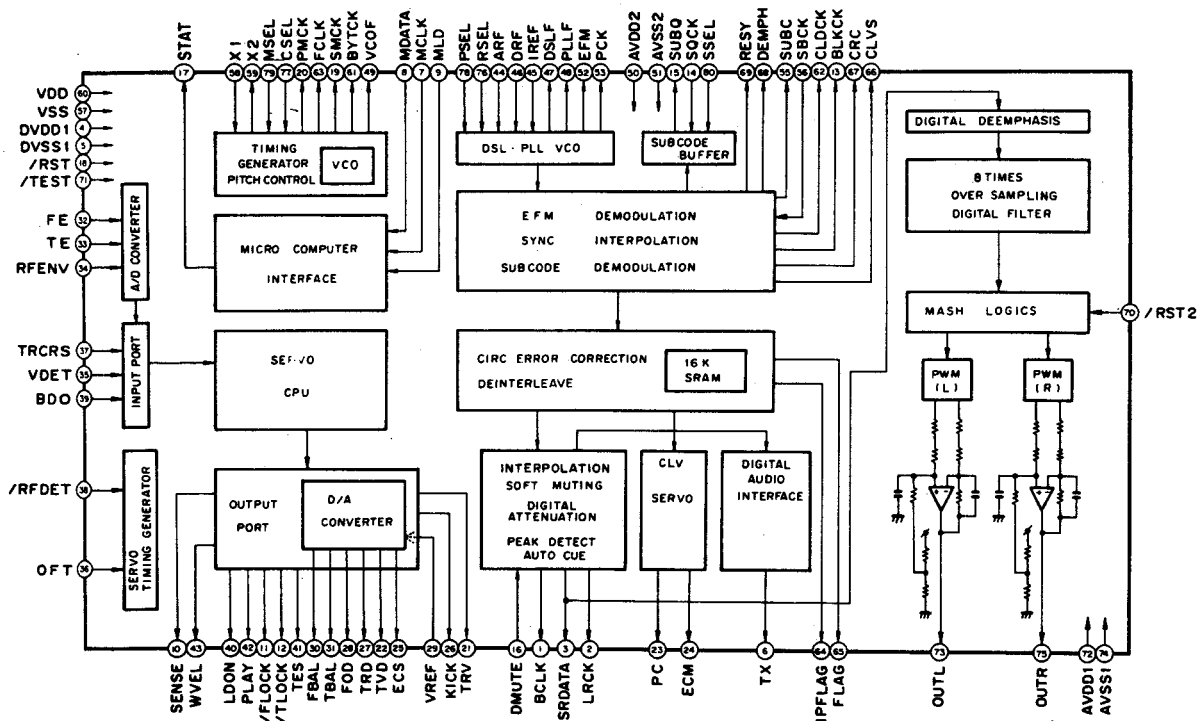
IC DATA

IC12 : μ PD75217CW
System Controller (4bit μ -COM)



Pin No.	Pin Name	Description	Function
1	S3	S3	Fluorescent character display tube anode drive signal
2	S2	S2	
3	S1	S1	
4	S0	S0	
5	P00	D/A	N.C
6	P01	SCK	Serial clock output to MN66271
7	P02	SO	Serial data output to MN66271
8	P03	SI	Serial data input from MN66271
9	P10	REM	Input from remote control beam receiving unit
10	P11	BLKICK	Synchronous clock input for Q-code RCV from MN66271 (Fine pulse at RCV, normally LO)

Pin No.	Pin Name	Description	Function
11	P12	FLOCK	FOCUS lock signal input from MN66271 (LO at LOCK)
12	P13	TLOCK	Tracking lock signal input from MN66271 (HI at LOCK)
13	P20	MLD	Read signal output for transmitting command from MN66271 (After command transmission, LO pulse at LOAD TIMING)
14	P21	COMMAND	Serial I/F switching signal output (switching at 74HC125) Q CODE received at HI
15	P22	QCODE	Serial I/F switching signal output (switching at 74HC125) CMD transmit/receive selection
16	P23	DMUTE	Digital mute signal output (HI at MUTE)
17	P30	STAT	STAT signal input
18	P31	MNRESET	RESET signal output (LO at RESET)
19	P32	SCL	Serial clock signal with X24C01
20	P33	SDA	Serial data signal with X24C01
21	P60	MUTE	Analog mute signal output (LO at MUTE)
22	P61	—	Open
23	P62	—	Open
24	P63		MODEL selection ("H")
25	P40		MODEL selection ("H")
26	P41	OPSW	Open state of tray sensing switch input Open state at "L"
27	P42	CLSW	Closed state of tray sensing switch input Closed state at "L"
28	P43	FELTSW	Feed origin switch input Feed origin at "L"
29	PP0	LED	LED ON/OFF signal (AUTO DISPLAY OFF) N.C.
30	X1	X1	] Crystal oscillator Oscillation terminal (4.19MHz)
31	X2	X0	
32	VSS	VSS	GND
33	XT1	—	Open
34	XT2	—	Open
35	P50	K3	] Key matrix input
36	P51	K2	
37	P52	K1	
38	P53	K0	
39	RESET	RESET	Reset input
40	T0	T0/9G	] Fluorescent character display tube grid drive signal
41	T1	T1/8G	
42	T2	T2/7G	
43	T3	T3/6G	
44	T4	T4/5G	
45	T5	T5/4G	
46	T6	T6/3G	
47	T7	T7/2G	
48	T8	T8/1G	
49	T9	—	Open
50	T10	OPEN	Opening of tray at OP "H" and CL "L"
51	T11	CLOSE	Closing of tray at CL "H" and OP "L"
52	T12	VLUP	Volume motor drive signal (UP) N.C.
53	T13	VLDN	Volume motor drive signal (DOWN) N.C.
54	T14	S11	] Fluorescent character display tube anode drive signal N.C.
55	T15	S10	
56	V LOAD	—VP	—20V
57	V PRE	GND	GND
58	S9	S9	] Fluorescent character display tube anode drive signal
59	S8	S8	
60	S7	S7	
61	S6	S6	
62	S5	S5	
63	S4	S4	
64	VDD	+5	+5V

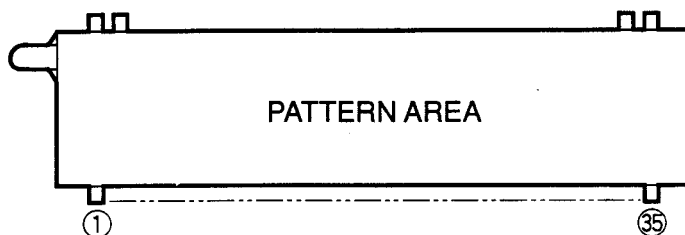
IC11 : MN66271RA
Signal Processor & Controller


Pin No.	Pin Name	I/O	FUNCTION
1	BCLK	O	Bit clock output for SR DATA
2	LRCK	O	L/R identification signal output
3	SRDATA	O	Serial data output
4	DVDD1	I	Power supply for digital circuit
5	DVSS1	I	GND for digital circuit
6	TX	O	Digital, audio, interface output signal
7	MCLK	I	Microprocessor command clock signal input (data latched at leading edge)
8	MDATA	I	Microprocessor command data input
9	MLD	I	Microprocessor command load signal input L : LOAD
10	SENSE	O	Sense signal output
11	FLOCK	O	Focus servo drawing signal (L : when drawn)
12	TLOCK	O	Tracking servo drawing signal (L : when drawn)
13	BLKCK	O	Sub code block clock signal
14	SQCK	I	Clock input for sub-code Q register
15	SUBQ	O	Sub-code Q code output
16	DMUTE	I	Muting input H : MUTE
17	STAT	O	Status signal
18	RST	I	Reset input L : RESET
19	SMCK	O	8.4672MHz clock signal output when MSEL = H 4.2336MHz clock signal output when MSEL = L
20	PMCK	O	88.2KHz clock signal output
21	TRV	O	Traverse (Feed) forced feed output
22	TVD	O	Traverse (Feed) drive output
23	PC	O	Spindle motor ON signal L : ON
24	ECM	O	Spindle motor drive signal (forced mode output) 3-State
25	ECS	O	Spindle motor drive signal (servo error signal output)
26	KICK	O	Kick pulse output

Pin No.	Pin Name	I/O	FUNCTION
27	TRD	O	Tracking drive output
28	FOD	O	Focus drive output
29	VREF	I	Reference voltage for DA output block
30	FBAL	O	Focus balance adjustment output
31	TBAL	O	Tracking balance adjustment output
32	FE	I	Focus error signal input (analog input)
33	TE	I	Tracking error signal input (analog input)
34	RFENV	I	RF envelope signal input (analog input)
35	VDET	I	Oscillation detect signal input (H : DETECT)
36	OFT	I	Off track signal input (H : OFF TRACK)
37	TRCRS	I	Track cross signal input
38	RFDET	I	RF detect signal input (L : DETECT)
39	BDO	I	Drop out signal input (H : DROP OUT)
40	LDON	O	Laser ON signal output (H : ON)
41	TES	O	Tracking error shunt signal output (H : SHUNT)
42	PLAY	O	Play signal output (H : PLAY)
43	WVEL	O	Double speed status signal output
44	ARF	I	RF signal input
45	IREF	I	Reference current input terminal
46	DRF	I	Bias terminal for DSL
47	DSL	I/O	Loop filter terminal for DSL
48	PLL	I/O	Loop filter terminal for PLL
49	VCO	I/O	Loop filter terminal for VCO
50	AVDD2	I	Power supply for analog circuit (for DSL, PLL, OA output blocks)
51	AVSS2	I	GND for analog circuit (for DSL, PLL, DA output blocks)
52	EFM	O	EFM signal output
53	PCK	O	PLL extract clock output (f PCK = 4.321MHz)
54	PDO	O	EFM signal to PCK signal phase comparison signal output
55	SUBC	O	Sub-code serial output data output
56	SBCK	I	Clock input for sub-code serial output
57	VSS	I	GND for oscillation circuit
58	X1	I	Crystal oscillation circuit input terminal (f = 16.9344MHz)
59	X2	O	Crystal oscillation circuit output terminal (f = 16.9344MHz)
60	VDD	I	Power supply for oscillation circuit
61	BYTCK	O	Byte clock output
62	CLDCK	O	Sub-code frame clock signal output (f CLDCK = 7.35kHz)
63	FCLK	O	Crystal frame clock output (f FCLK = 7.35kHz)
64	IPFLAG	O	Interpolation flag output H : INTERPOLATION
65	FLAG	O	Flag output H : CLV
66	CLVS	O	Spindle servo phase synchronous status signal out H : CLV L : ROUGH SERVO
67	CRC	O	Sub-code CRC check result output H : OK , L : NG
68	DEMPH	O	Deemphasis detect signal output H : ON
69	RESY	O	Re-synchronous signal output of frame synchronization H : SYNCHRONOUS L : ASYNCHRONOUS
70	RST2	I	Reset terminal for stop after MASH circuit (L : RESET)
71	TEST	I	Test terminal (Normal : H)
72	AVDD1	I	Power supply for analog circuit (for audio output section (used for both L and R channels))
73	OUTL	O	L channel output
74	AVSS1	I	GND for analog circuit (for audio output section (used for both L and R channels))
75	OUTR	O	R channel output
76	RSEL	I	RF signal polarity specifying terminal RSEL = H when Bright level is at "H" RSEL = L when Bright level is at "L"
77	CSEL	I	Crystal oscillation frequency specifying terminal (Normal : L)
78	PSEL	I	Test terminal (Normal : L)
79	MSEL	I	SMCK terminal Output frequency switch terminal H : SMCK = 8.4672MHz , L : SMCK = 4.2336 MHz
80	SSEL	I	SUBQ terminal Output mode switch terminal H : Q code buffer use mode

■ DISPLAY DATA (VS049900)

● V401 : 9-MT-139GK



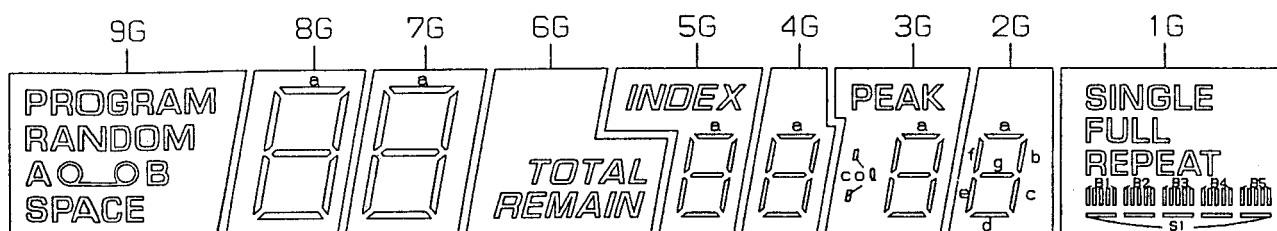
PIN CONNECTION

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
CONNECTION	F1	F1	NP	9G	8G	7G	6G	5G	4G	3G	2G	1G	NC	NC	NC	NC	NC	NC

PIN NO.	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
CONNECTION	NC	NC	NC	NC	P10	P9	P8	P7	P6	P5	P4	P3	P2	P1	NP	F2	F2

NOTE 1) F1, F2 Filament
 2) NP No pin
 3) NC No connection
 4) P1~P10 Datum Line
 5) 1G~9G Grid

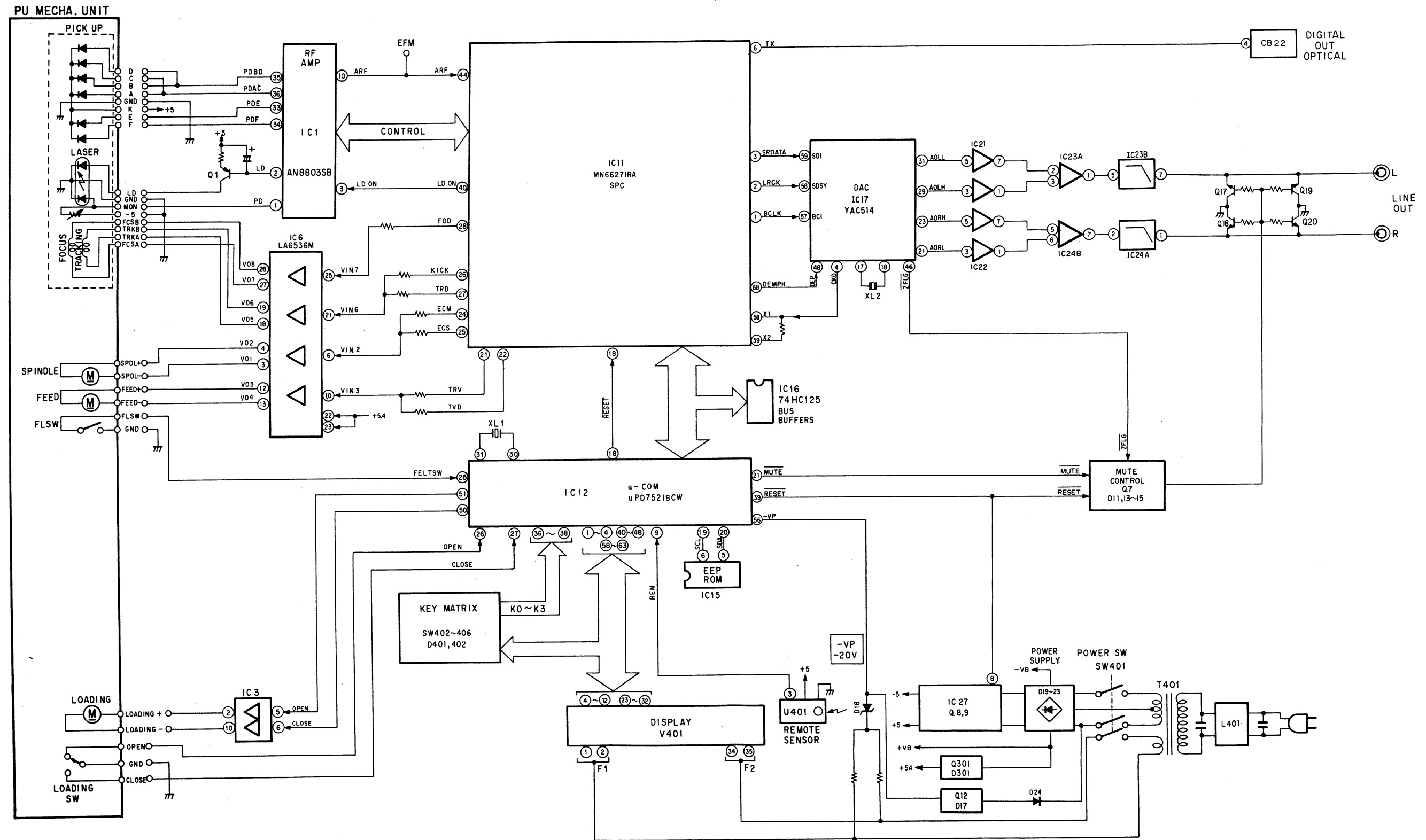
● GRID ASSIGNMENT



ANODE CONNECTION

	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	PROGRAM	a	a	TOTAL	a	a	a	a	SINGLE
P2	RANDOM	b	b	REMAIN	b	b	b	b	FULL
P3	A	c	c	—	c	c	c	c	REPEAT
P4	LOO	d	d	—	d	d	d	d	B1
P5	B	e	e	—	e	e	e	e	B2
P6	SPACE	f	f	—	f	f	f	f	B3
P7	—	g	g	—	g	g	g	g	B4
P8	—	—	—	—	—	—	col	—	B5
P9	—	—	—	—	—	—	—	—	S1
P10	—	—	—	—	INDEX	—	PEAK	—	—

■ BLOCK DIAGRAM / ブロックダイアグラム

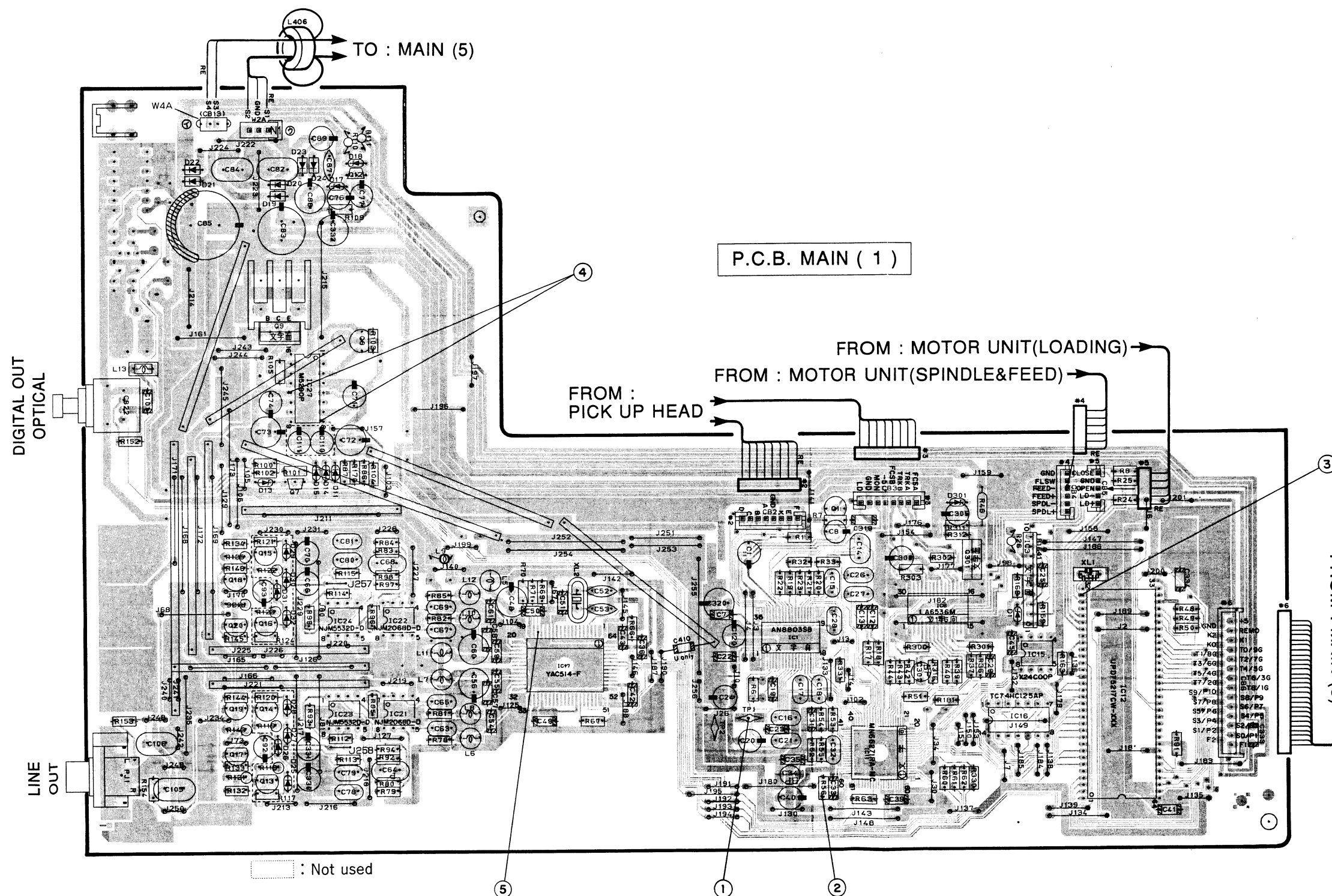


■ PRINTED CIRCUIT BOARD (Foil side) / シート図 (パターン側)

① to ⑤ : TEST POINT WAVEFORMS (See page 23)
① ~ ⑤ : 波形ポイント (21ページ参照)

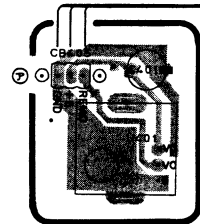
● Semiconductor Location

Ref. No.	Location
IC 1	D4
IC 3	F4
IC 6	E4
IC 11	E5
IC 12	F5
IC 15	F5
IC 16	F5
IC 17	C5
IC 21	C5
IC 22	C5
IC 23	B5
IC 24	B4
IC 27	B3
Q 1	E4
Q 7	B4
Q 8	C3
Q 9	B3
Q 12	C2
Q 17	B5
Q 18	B4
Q 19	B5
Q 20	B4
Q 301	E4

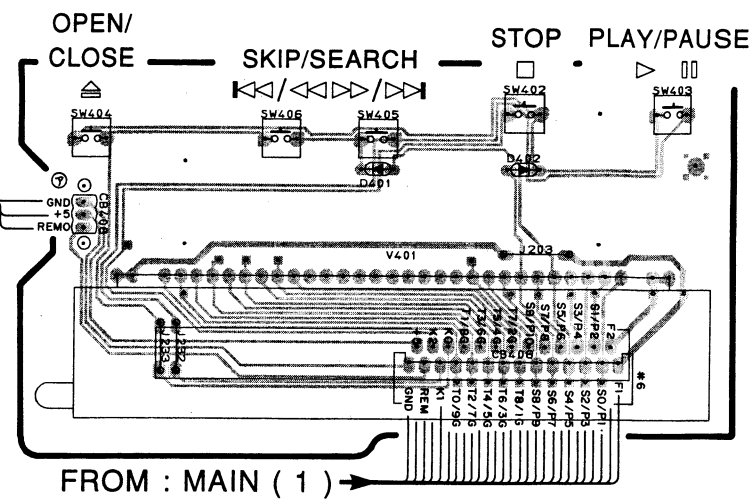


■ PRINTED CIRCUIT BOARD (Foil side) / シート図 (パターン側)

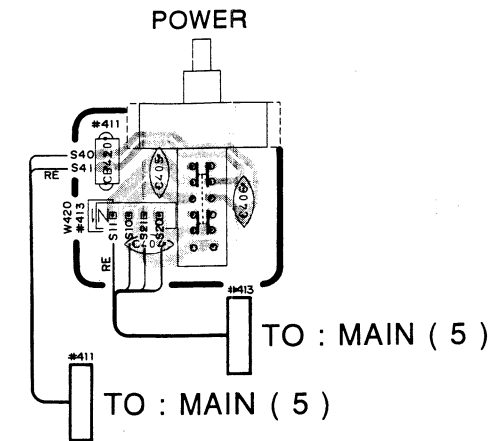
P.C.B. MAIN (2)



P.C.B. MAIN (3)



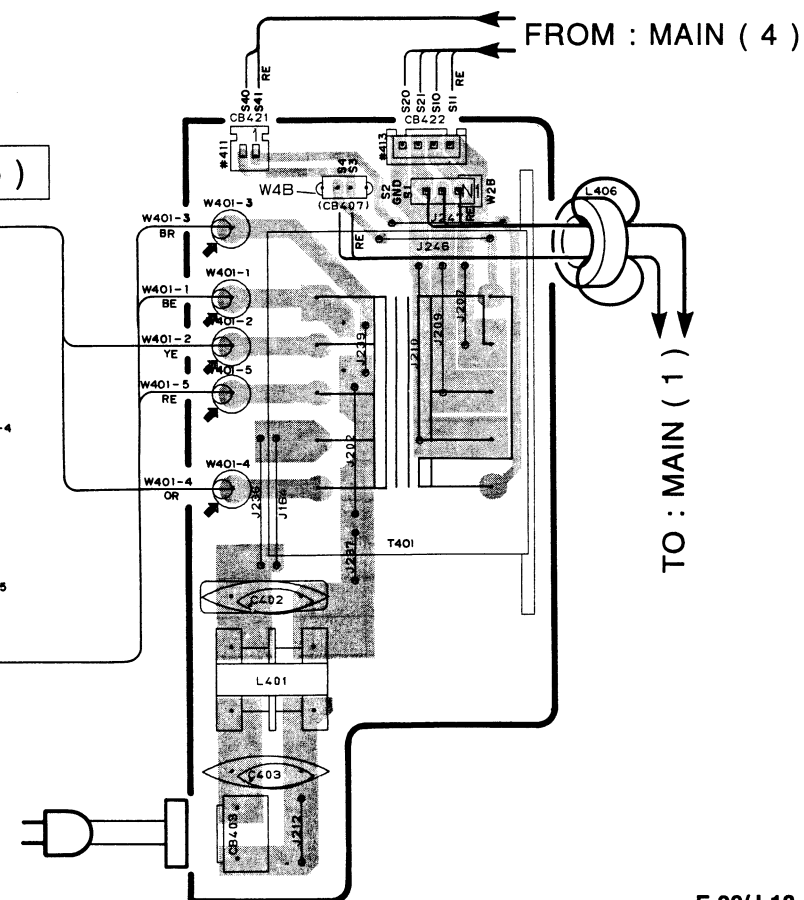
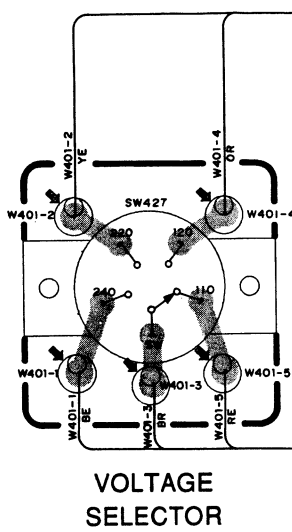
P.C.B. MAIN (4)



● R model

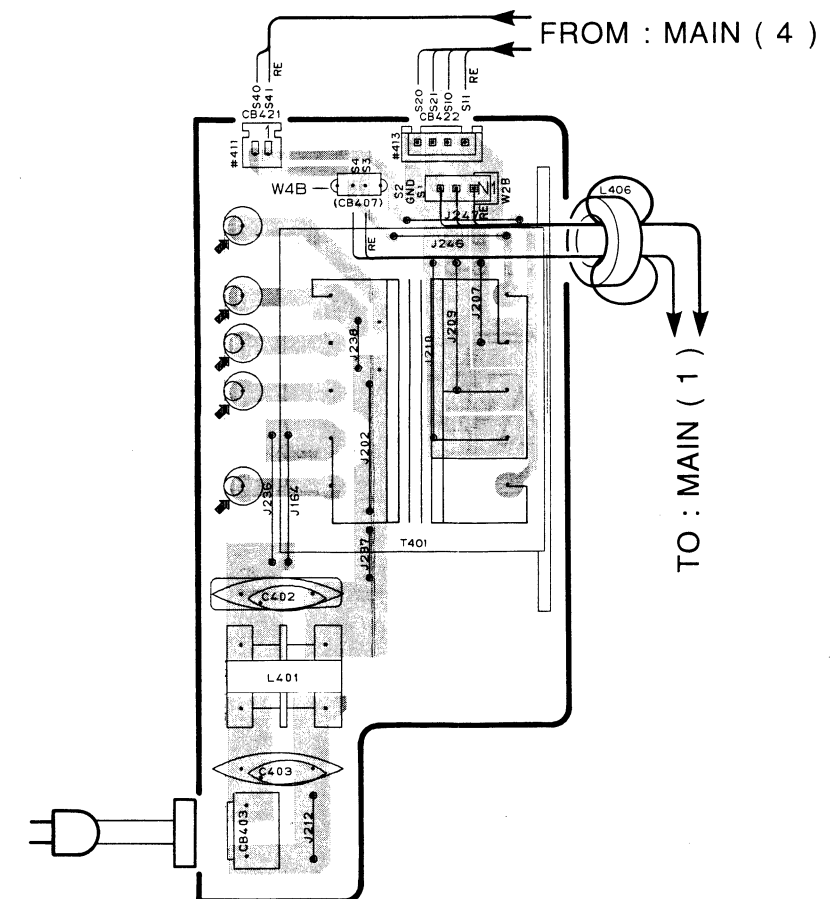
P.C.B. MAIN (5)

P.C.B. MAIN (6)



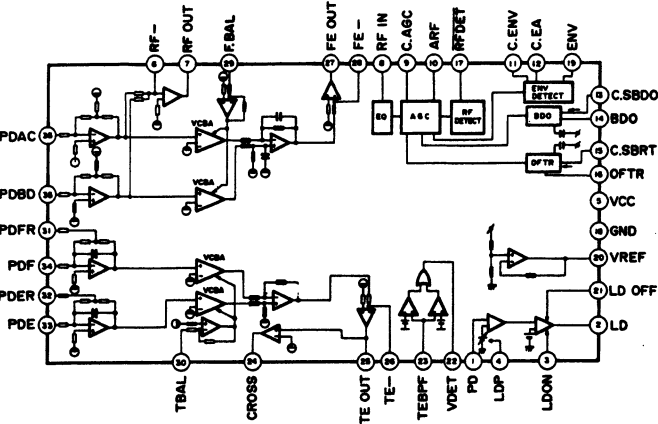
● Except R model

P.C.B. MAIN (5)

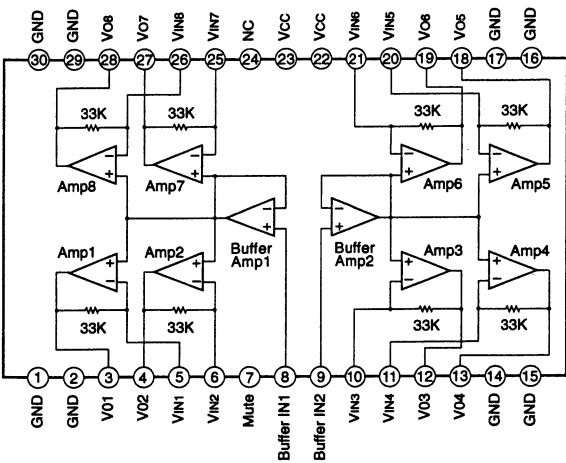


IC BLOCK / ICブロック

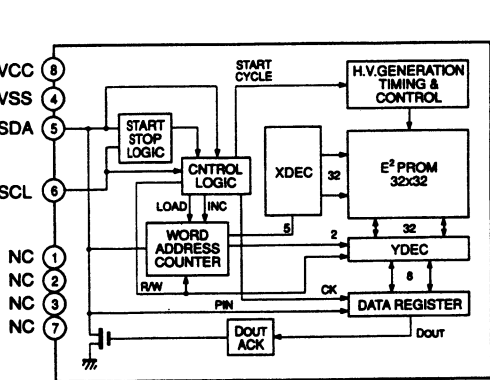
IC1 : AN8803SB
Digital Servo Head Amp



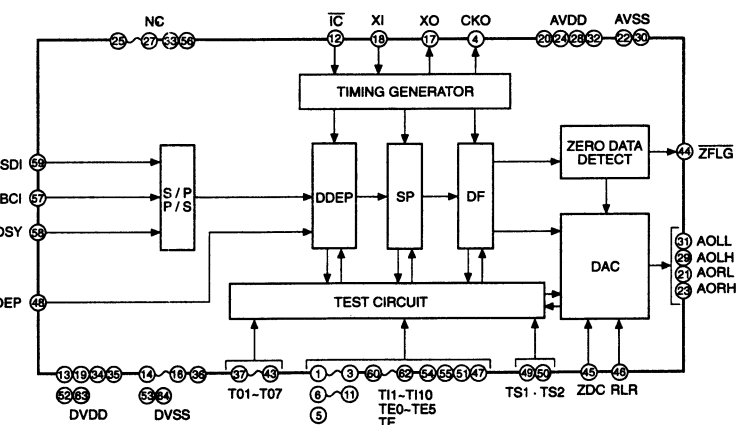
IC6 : LA6536M
4 Channel BTL Driver



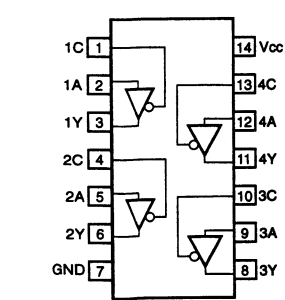
IC15 : X24C00P
Electrically Erasable PROM



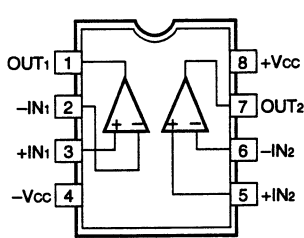
IC17 : YAC514
D/A Converter



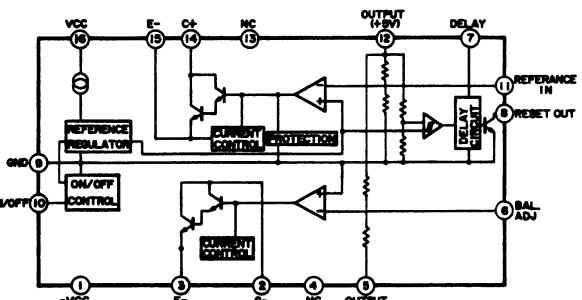
IC16 : TC74HC125AP
Quad 3 State Bus Buffers



IC21, 22 : NJM2068D-D
IC23, 24 : NJM5532D-D
Dual OP-Amp



IC27 : M5290P
Constant-Voltage Tracking Supply with Reset

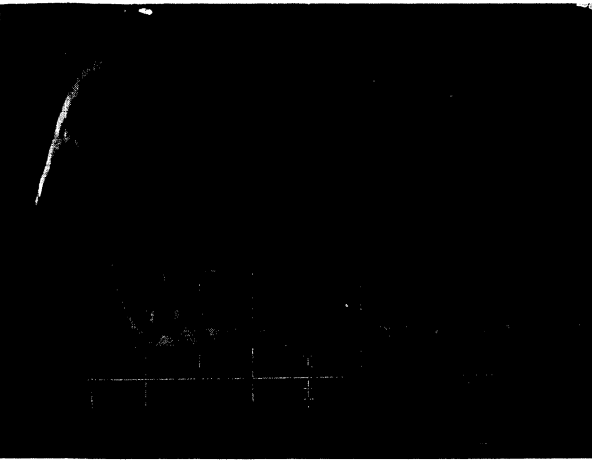


Other ICs

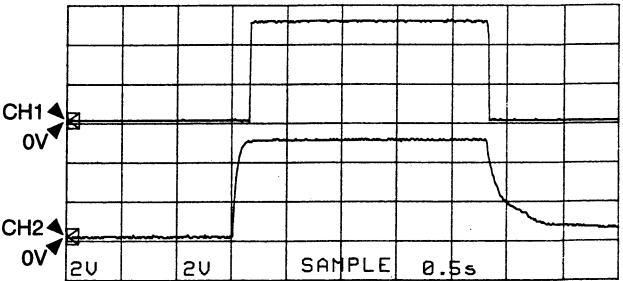
IC11 : MN66271RA → See page 13/ 11ページ参照
IC12 : ∞PD75218CW → See page 11/ 9ページ参照

TEST POINT WAVEFORMS / 波形ポイント

Point ①
TP1 (EFM)
V: 0.2V/div H: 0.5μsec/div
AC range 1:1 probe

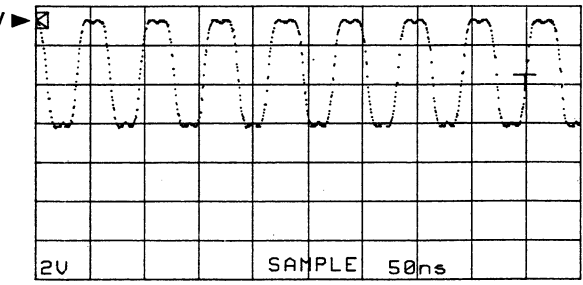


Point ④
(CH 1: Pin 18 of IC12)
(CH 2: Pin 54 of IC12)
V: 2V/div
H: 0.5sec/div
DC range 1:1 probe

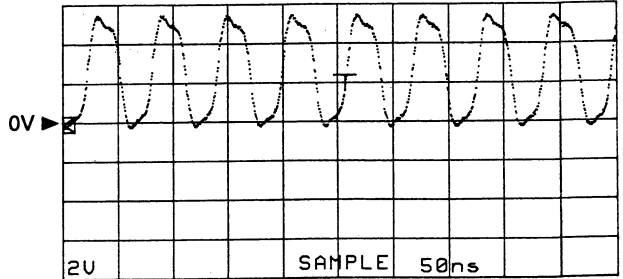


With the POWER switch turned ON, connect the power cord to the AC outlet.
Disconnect the power cord from the AC outlet.
(This waveform is not available by pushing the power switch ON and OFF.)

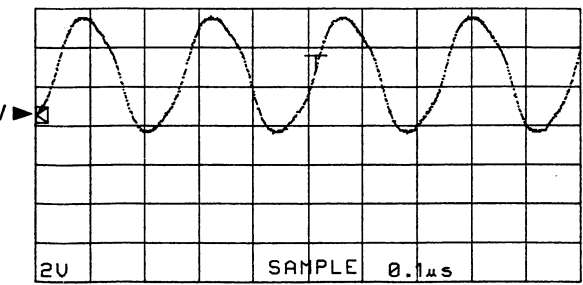
Point ②
(Pin 59 of IC11)
V: 2V/div H: 50nsec/div
DC range 1:1 probe



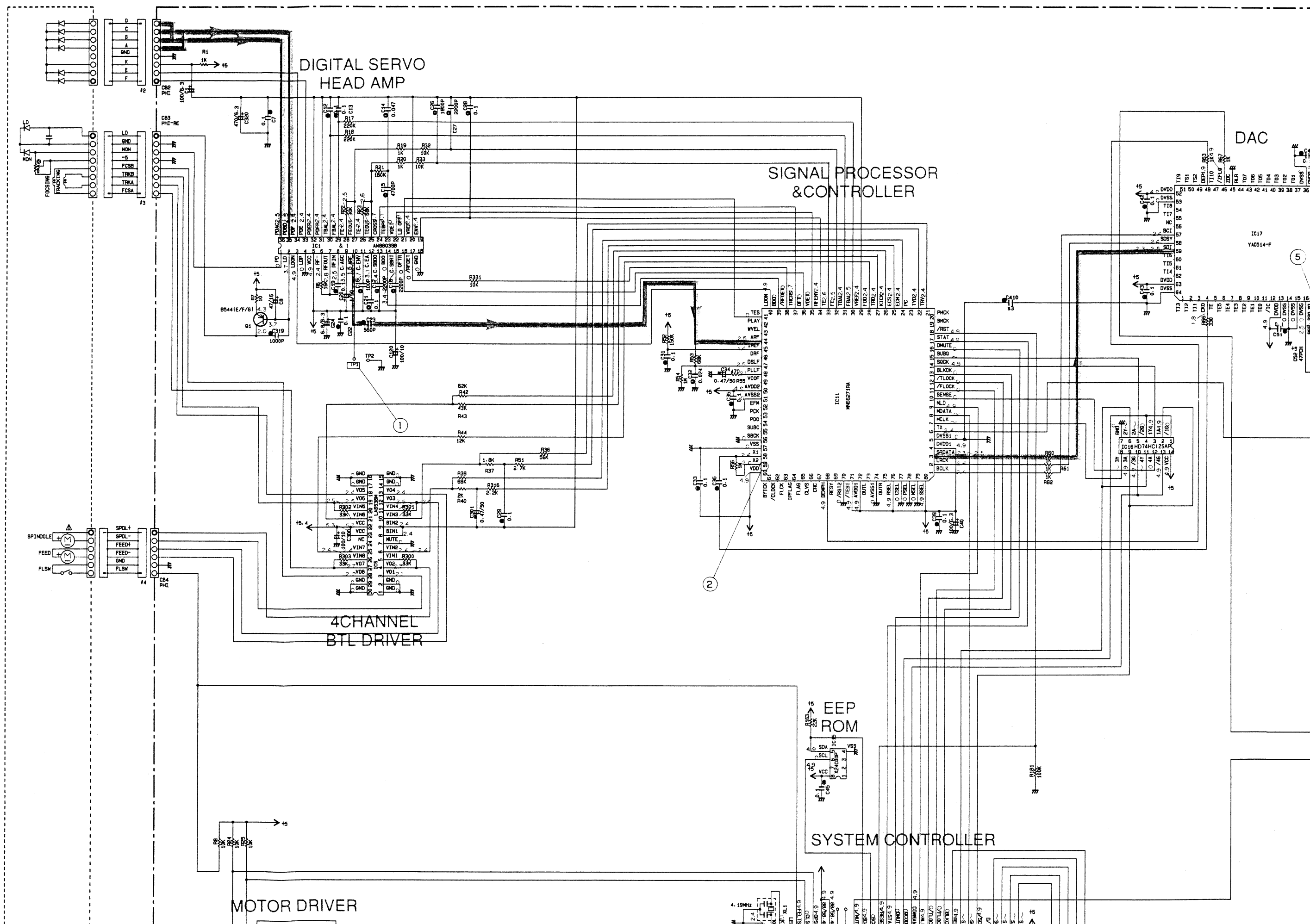
Point ⑤
(Pin 17 of IC17)
V: 2V/div H: 50nsec/div
DC range 1:1 probe

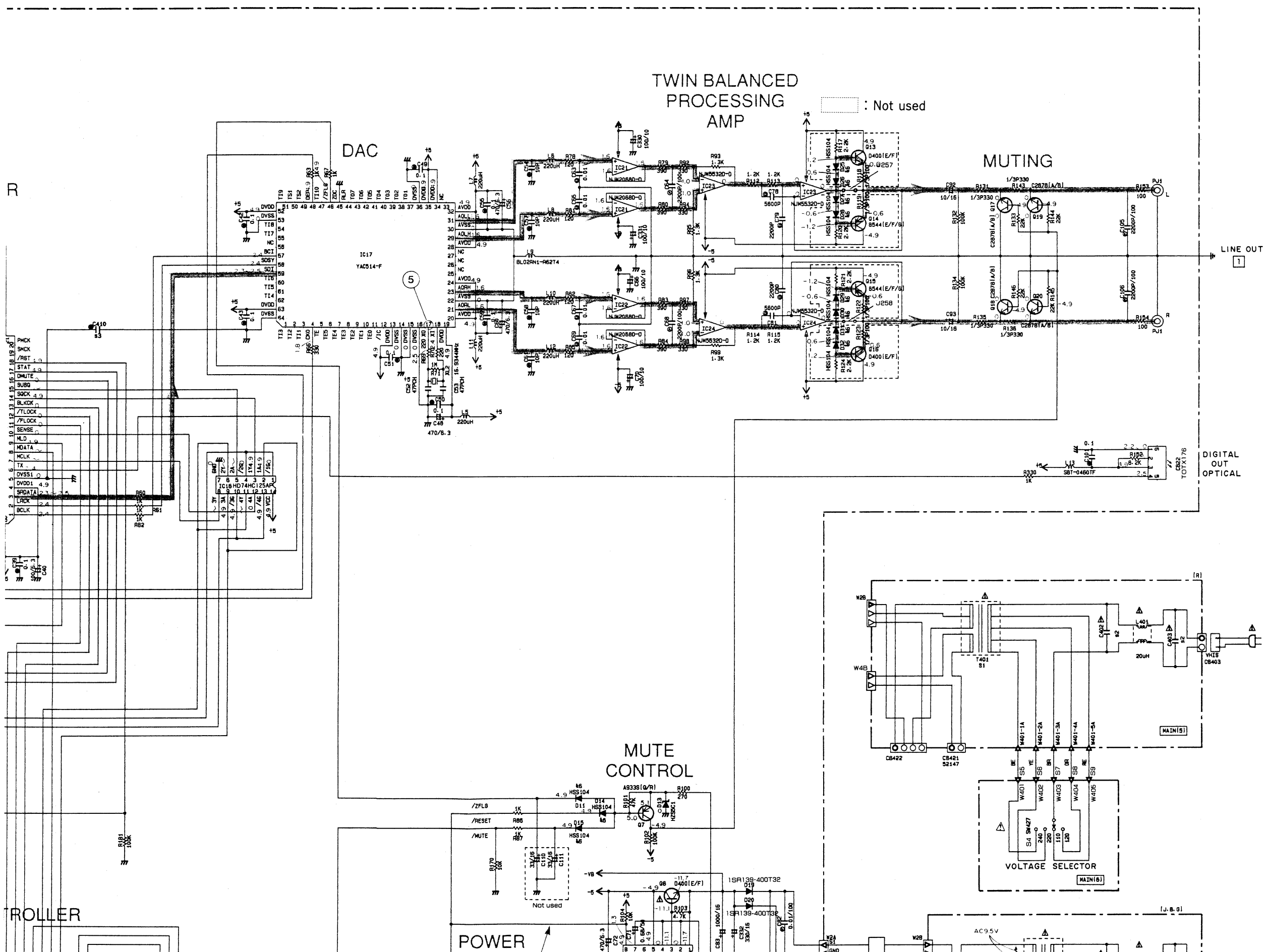


Point ③
(Pin 31 of IC12)
V: 2V/div H: 0.1μsec/div
DC range 1:1 probe

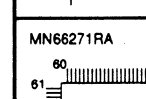
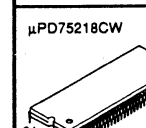
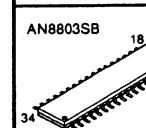
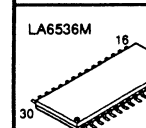
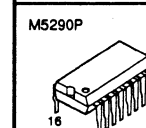
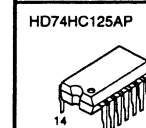
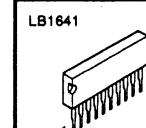
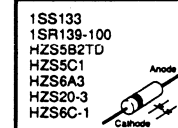
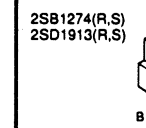
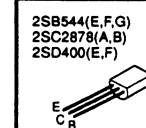
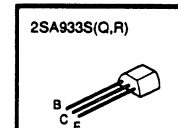


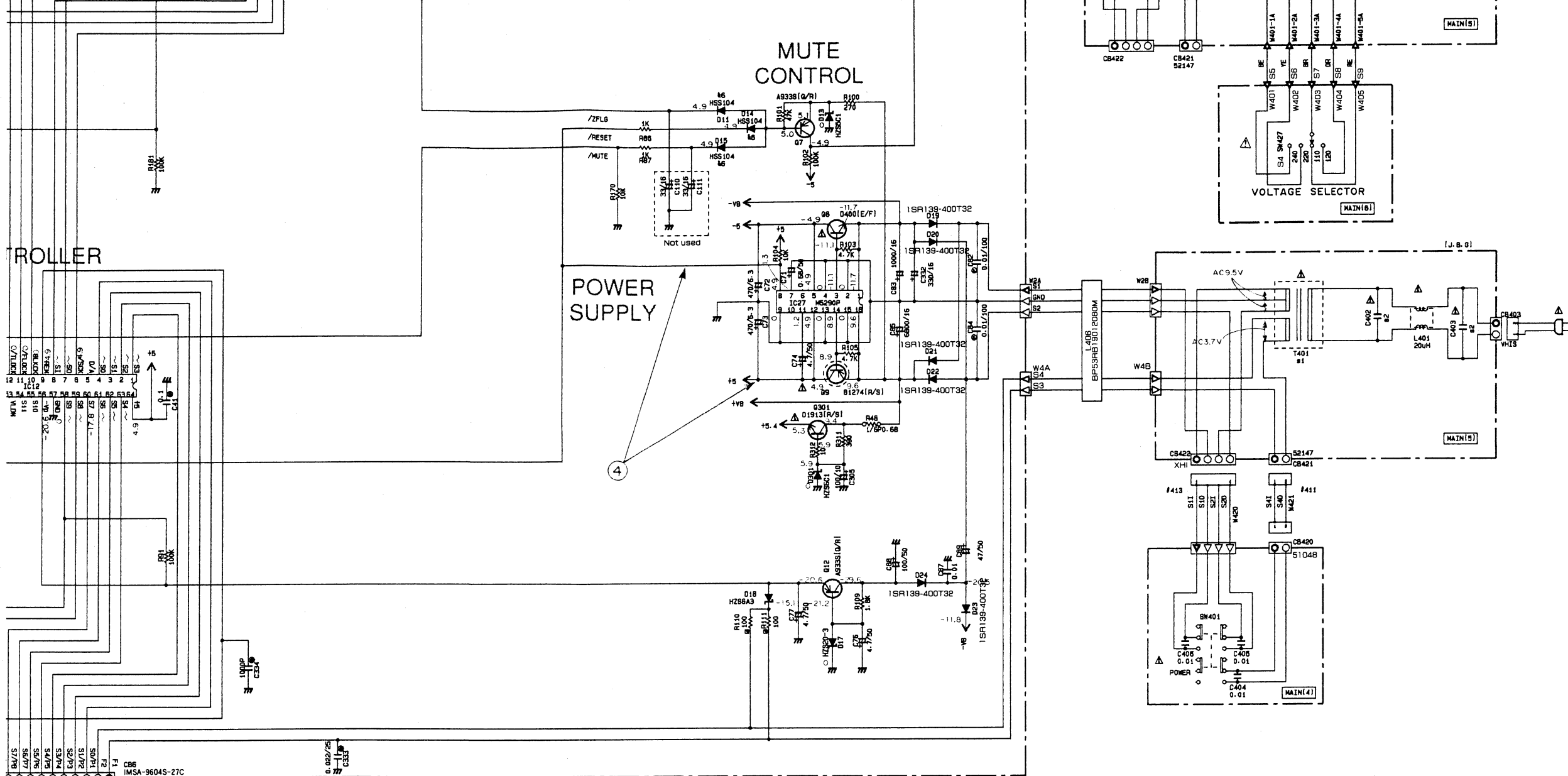
SCHEMATIC DIAGRAM / 総回路図



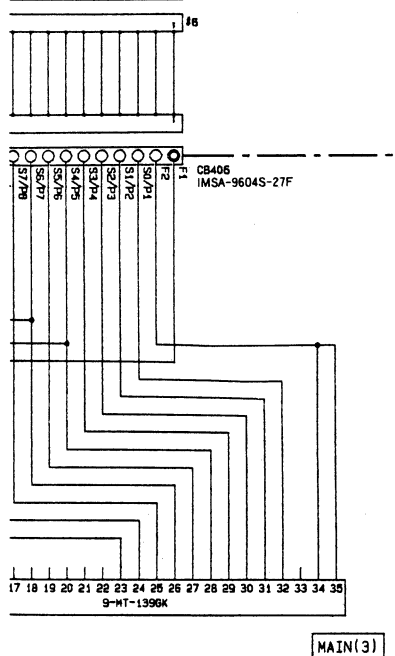
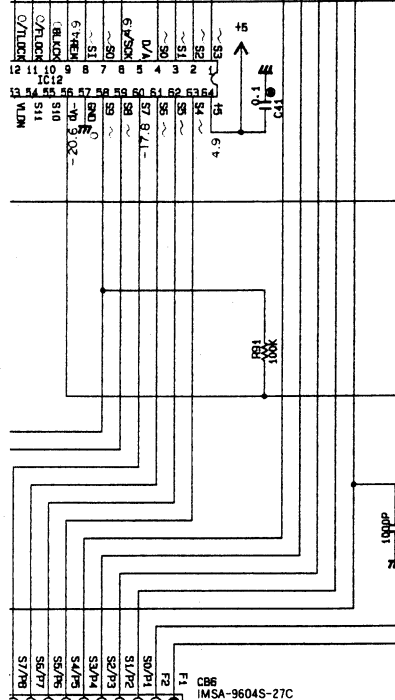


PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICS.





ROLLER



S	J	U	R	B	G
1 T401	XS069	XN392	XN394	XN393	XN393
2 C402, 403	0.01/250	0.01/400	0.01/250	0.01/250	0.01/250
3 C410	X	0.047/16	X	X	X
4 SW427	X	X	VL90800	X	X
5 W401	X	X	MH08018	X	X
6 W402	X	X	MH04018	X	X
7 W403	X	X	MH01018	X	X
8 W404	X	X	MH03018	X	X
9 W405	X	X	MH02018	X	X

Mark	Reference Parts Number	Parts Name
S1	IC1	AN8803SB AN8806SB
S6	D11, 14, 15, 401, 402	1SS133 HSS104 1SS178

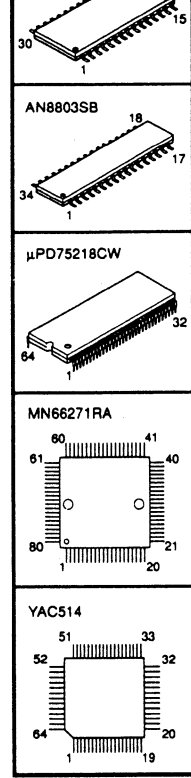
REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
⊗	TANTALUM CAPACITOR
NO MARK	CERAMIC CAPACITOR
⊙	CERAMIC TUBULAR CAPACITOR
⊖	POLYESTER FILM CAPACITOR
○	POLYSTYRENE FILM CAPACITOR
①	MICA CAPACITOR
②	POLYPROPYLENE FILM CAPACITOR
●	SEMICONDUCTIVE CERAMIC CAPACITOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
⊗	CARBON FILM RESISTOR (P=10)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
⊖	METAL PLATE RESISTOR
⊕	FIRE PROOF CARBON FILM RESISTOR
⊖	CEMENT MOLDED RESISTOR
⊕	SEMI VARIABLE RESISTOR
■	CHIP RESISTOR

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

★ All voltages are measured with a 10MΩ/V 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.

● 電圧は、内部抵抗 10M Ω の電圧計で測定したものです。
● △印のある部品は、安全性確保部分を示しています。部品の交換が必要な場合、パーツリストに記載されている部品を使用してください。
● 本回路図は、標準回路図です。改良のため予告なく変更することがあります。



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 part Nos. of the carbon resistores, refer to the last page.

ABBREVIATIONS IN THIS LIST ARE AS FOLLOWS:

C. A. EL. CHP : CHIP ALUMI. ELECTROLYTIC CAP
 C. CE : CERAMIC CAP
 C. CE. ARRAY : CERAMIC CAP ARRAY
 C. CE. CHP : CHIP CERAMIC CAP
 C. CE. ML : MULTILAYER CERAMIC CAP
 C. CE. M. CHP : CHIP MULTILAYER CERAMIC CAP
 C. CE. SAFTY : RECOGNIZED CERAMIC CAP
 C. CE. TUBLR : CERAMIC TUBULAR CAP
 C. CE. SMI : SEMI CONDUCTIVE CERAMIC CAP
 C. EL : ELECTROLYTIC CAP
 C. MICA : MICA CAP
 C. ML. FLM : MULTILAYER FILM CAP
 C. MP : METALLIZED PAPER CAP
 C. MYLAR : MYLAR FILM CAP
 C. MYLAR. ML : MULTILAYER MYLAR FILM CAP
 C. PAPER : PAPER CAPACITOR
 C. PLS : POLYSTYRENE FILM CAP
 C. POL : POLYESTER FILM CAP
 C. POLY : POLYETHYLENE FILM CAP
 C. PP : POLYPROPYLENE FILM CAP
 C. TNTL : TANTALUM CAP
 C. TNT. CHP : CHIP TANTALUM CAP
 C. TRIM : TRIMMER CAP
 CN : CONNECTOR
 CN. BS. PIN : CONNECTOR, BASE PIN
 CN. CANNON : CONNECTOR, CANNON
 CN. DIN : CONNECTOR, DIN
 CN. FLAT : CONNECTOR, FLAT CABLE
 CN. POST : CONNECTOR, BASE POST
 COIL. MX. AM : COIL, AM MIX
 COIL. AT. FM : COIL, FM ANTENNA
 COIL. DT. FM : COIL, FM DETECT
 COIL. MX. FM : COIL, FM MIX
 COIL. OUTPT : OUTPUT COIL
 DIOD. ARRAY : DIODE ARRAY
 DIODE. BRG : DIODE BRIDGE
 DIODE. CHP : CHIP DIODE
 DIODE. VAR : VARACTOR DIODE
 DIOD. Z. CHP : CHIP ZENER DIODE
 DIODE. ZENR : ZENER DIODE
 DSCR. CE : CERAMIC DISCRIMINATOR
 FER. BEAD : FERRITE BEADS
 FER. CORE : FERRITE CORE
 FET. CHP : CHIP FET
 FL. DPLY : FLUORESCENT DISPLAY
 FLTR. CE : CERAMIC FILTER
 FLTR. COMB : COMB FILTER MODULE
 FLTR. LC. RF : LC FILTER, EMI
 GND. MTL : GROUND PLATE
 GND. TERM : GROUND TERMINAL
 HOLDER. FUS : FUSE HOLDER
 IC. PRTCT : IC PROTECTOR
 JUMPER. CN : JUMPER CONNECTOR
 JUMPER. TST : JUMPER, TEST POINT
 L. DTCT : LIGHT DETECTING MODULE
 L. EMIT : LIGHT EMITTING MODULE

LED. DPLY : LED DISPLAY
 LED. INFRD : LED, INFRARED
 MODUL. RF : MODULATOR, RF
 PHOT. CPL : PHOTO COUPLER
 PHOT. INTR : PHOTO INTERRUPTER
 PHOT. RFLCT : PHOTO REFLECTOR
 PIN. TEST : PIN, TEST POINT
 PLST. RIVET : PLASTIC RIVET
 R. ARRAY : RESISTOR ARRAY
 R. CAR : CARBON RESISTOR
 R. CAR. CHP : CHIP RESISTOR
 R. CAR. FP : FLAME PROOF CARBON RESISTOR
 R. FUS : FUSABLE RESISTOR
 R. MTL. CHP : CHIP METAL FILM RESISTOR
 R. MTL. FILM : METAL FILM RESISTOR
 R. MTL. OXD : METAL OXIDE FILM RESISTOR
 R. MTL. PLAT : METAL PLATE RESISTOR
 RSNR. CE : CERAMIC RESONATOR
 RSNR. CRYST : CRYSTAL RESONATOR
 R. TW. CEM : TWIN CEMENT FIXED RESISTOR
 R. WW : WIRE WOUND RESISTOR
 SCR. BND. HD : BIND HEAD B-TITE SCREW
 SCR. BW. HD : BW HEAD TAPPING SCREW
 SCR. CUP : CUP TITE SCREW
 SCR. TERM : SCREW TERMINAL
 SCR. TR : SCREW, TRANSISTOR
 SUPRT. PCB : SUPPORT, P. C. B.
 SURG. PRTCT : SURGE PROTECTOR
 SW. TACT : TACT SWITCH
 SW. LEAF : LEAF SWITCH
 SW. LEVER : LEVER SWITCH
 SW. MICRO : MICRO SWITCH
 SW. PUSH : PUSH SWITCH
 SW. RT. ENC : ROTARY ENCODER
 SW. RT. MTR : ROTARY SWITCH WITH MOTOR
 SW. RT : ROTARY SWITCH
 SW. SLIDE : SLIDE SWITCH
 TERM. SP : SPEAKER TERMINAL
 TERM. WRAP : WRAPPING TERMINAL
 THRMST. CHP : CHIP THERMISTOR
 TR. CHP : CHIP TRANSISTOR
 TR. DGT : DIGITAL TRANSISTOR
 TR. DGT. CHP : CHIP DIGITAL TRANSISTOR
 TRANS : TRANSFORMER
 TRANS. PULS : PULSE TRANSFORMER
 TRANS. PWR : POWER TRANSFORMER ASS'y
 TUNER. AM : TUNER PACK, AM
 TUNER. FM : TUNER PACK, FM
 TUNER. PK : FRONT-END TUNER PACK
 VR : ROTARY POTENTIOMETER
 VR. MTR : POTENTIOMETER WITH MOTOR
 VR. SW : POTENTIOMETER WITH ROTARY SW
 VR. SLIDE : SLIDE POTENTIOMETER
 VR. TRIM : TRIMMER POTENTIOMETER

Note) Those parts marked with "#" are not included in the P. C. B. Ass'y.

Schm Ref	PART NO.	Description	
* V2218800	P.C.B.	MAIN(U)	
* V2218800	P.C.B.	MAIN(F)	
* V2218800	P.C.B.	MAIN(BG)	
CB2	VD005100	CN.BS.PIN	8P
CB3	VK506300	CN.BS.PIN	8P
CB4	VD004900	CN.BS.PIN	6P
CB5	VD004800	CN.BS.PIN	5P
CB6	VU272700	CN	27P
CB22	Vi623600	L.EMIT	TOTX176
CB403	VG879900	CN.BS.PIN	2P
CB405	Vi878100	CN.BS.PIN	3P
CB406	VU282700	CN	27P
CB408	Vi878100	CN.BS.PIN	3P
CB420	Vi878000	CN.BS.PIN	2P
CB421	VK024600	CN.BS.PIN	2P
CB422	VL844800	CN.BS.PIN	4P
C1	VF760000	C.EL	100uF 10V
C7	VH053100	C.CE.TUBLR	0.1uF 50V
C8	VJ837200	C.EL	47uF 16V
C12	VH053100	C.CE.TUBLR	0.1uF 50V
C13	VH053100	C.CE.TUBLR	0.1uF 50V
C14	UA254470	C.MYLAR	0.047uF 50V
C15	UA653470	C.MYLAR	4700pF 50V
C16	UA652100	C.MYLAR	100pF 50V
C17	UA653220	C.MYLAR	2200pF 50V
C18	UA653220	C.MYLAR	2200pF 50V
C19	VH053100	C.CE.TUBLR	0.1uF 50V
C20	VJ839100	C.EL	1uF 50V
C21	UA655100	C.MYLAR	0.1uF 50V
C22	VH053100	C.CE.TUBLR	0.1uF 50V
C23	VG278800	C.CE.TUBLR	560pF 50V
C24	VR498100	C.EL	6.8uF 6.3V
C25	VF467300	C.CE.TUBLR	0.01uF 16V
C26	UA653180	C.MYLAR	1800pF 50V
C27	UA653220	C.MYLAR	2200pF 50V
C28	UA655100	C.MYLAR	0.1uF 50V
C29	VH053100	C.CE.TUBLR	0.1uF 50V
C31	VH053100	C.CE.TUBLR	0.1uF 50V
C32	UA654240	C.MYLAR	0.024uF 50V
C33	VH053100	C.CE.TUBLR	0.1uF 50V
C34	UK665470	C.EL	0.47uF 50V
C35	VH053100	C.CE.TUBLR	0.1uF 50V
C36	VH053100	C.CE.TUBLR	0.1uF 50V
C39	VH053100	C.CE.TUBLR	0.1uF 50V
C40	VF760000	C.EL	100uF 10V
C41	VH053100	C.CE.TUBLR	0.1uF 50V
C42	VH053100	C.CE.TUBLR	0.1uF 50V
C43	VH053100	C.CE.TUBLR	0.1uF 50V
C45	VH053100	C.CE.TUBLR	0.1uF 50V
C48	VG287100	C.EL	470uF 10V
C49	VH053100	C.CE.TUBLR	0.1uF 50V
C50	VH053100	C.CE.TUBLR	0.1uF 50V
C51	VH053100	C.CE.TUBLR	0.1uF 50V

* New Parts

Schm Ref	PART NO.	Description	
C52	VA761400	C.CE	47pF 50V
C53	VA761400	C.CE	47pF 50V
C54	VF466600	C.CE.TUBLR	10pF 50V
C55	VH053100	C.CE.TUBLR	0.1uF 50V
C56	VG287100	C.EL	470uF 10V
C57	VF466600	C.CE.TUBLR	10pF 50V
C58	VF466600	C.CE.TUBLR	10pF 50V
C59	VH053100	C.CE.TUBLR	0.1uF 50V
C60	VG287100	C.EL	470uF 10V
C61	VF466600	C.CE.TUBLR	10pF 50V
C63	UA654100	C.MYLAR	0.01uF 50V
C64	VP847100	C.PP	2200pF 100V
C65	UA654100	C.MYLAR	0.01uF 50V
C66	VE017200	C.EL	100uF 10V
C67	UA654100	C.MYLAR	0.01uF 50V
C68	VP847100	C.PP	2200pF 100V
C69	UA654100	C.MYLAR	0.01uF 50V
C70	VE017200	C.EL	100uF 10V
C71	UJ865680	C.EL	0.68uF 50V
C72	VG287100	C.EL	470uF 10V
C73	VG287100	C.EL	470uF 10V
C74	UM416470	C.EL	4.7uF 50V
C76	UM416470	C.EL	4.7uF 50V
C77	UM416470	C.EL	4.7uF 50V
C78	Vi716400	C.MYLAR	5600pF 50V
C79	Vi715900	C.MYLAR	2200pF 50V
C80	Vi715900	C.MYLAR	2200pF 50V
C81	Vi716400	C.MYLAR	5600pF 50V
C82	VK534100	C.PP	0.01uF 100V
C83	VN137400	C.EL	1000uF 16V
C84	UT454100	C.PP	0.01uF 100V
C85	VR420400	C.EL	6800uF 16V
C87	FG214100	C.CE	0.01uF 50V
C88	UJ668100	C.EL	100uF 50V
C89	UJ667470	C.EL	47uF 50V
C92	VQ082700	C.EL	10uF 16V
C93	VQ082700	C.EL	10uF 16V
C101	VH053100	C.CE.TUBLR	0.1uF 50V
C105	VL883800	C.PP	2200pF 100V
C106	VL883800	C.PP	2200pF 100V
C120	VF760000	C.EL	100uF 10V
C300	VF760000	C.EL	100uF 10V
C301	UK665470	C.EL	0.47uF 50V
C305	VF760000	C.EL	100uF 10V
C319	VF467000	C.CE.TUBLR	1000pF 50V
C320	VG287100	C.EL	470uF 10V
C330	VE017200	C.EL	100uF 10V
C331	VE017200	C.EL	100uF 10V
C332	VG287800	C.EL	330uF 16V
C333	VG280100	C.CE.TUBLR	0.022uF 25V
C334	VF467000	C.CE.TUBLR	1000pF 50V
C401	VF760000	C.EL	100uF 10V
C402	Fi384100	C.CE.SAFETY	0.01uF 400V(U)

△

* New Parts

Schm Ref	PART NO.	Description
△ C402	VZ518900	C.CE.SAFTY 0.01uF 250V(RBG)
△ C403	Fi384100	C.CE.SAFTY 0.01uF 400V(U)
△ C403	VZ518900	C.CE.SAFTY 0.01uF 250V(RBG)
C404	FG214100	C.CE 0.01uF 50V
C405	FG214100	C.CE 0.01uF 50V
C406	FG214100	C.CE 0.01uF 50V
C410	VJ599000	C.CE.TUBLR 0.047uF 16V(U)
D1	VM974100	DIODE.ZENR HZS5B2TD 5.0V
D11	VD631600	DIODE 1SS133,176,HSS104
D13	VP642400	DIODE.ZENR HZS5C1 5.0V
D14	VD631600	DIODE 1SS133,176,HSS104
D15	VD631600	DIODE 1SS133,176,HSS104
D17	VP642600	DIODE.ZENR HZS20-3 20V
D18	VP642500	DIODE.ZENR HZS6A3 6.0V
D19	VU264100	DIODE 1SR139-400
D20	VU264100	DIODE 1SR139-400
D21	VU264100	DIODE 1SR139-400
D22	VU264100	DIODE 1SR139-400
D23	VU264100	DIODE 1SR139-400
D24	VU264100	DIODE 1SR139-400
D301	VQ592700	DIODE.ZENR HZS6C1 6.0V
D401	VD631600	DIODE 1SS133,176,HSS104
D402	VD631600	DIODE 1SS133,176,HSS104
IC1	XM571A00	IC AN8803SB
IC3	XF494A00	IC LB1641
IC6	XN105A00	IC LA6536M
IC11	XN481A00	IC MN66270RB
IC12	XP721A00	IC uPD75217CW-XXX
IC15	XM683A00	IC X24C00P
IC16	iR012510	IC HD74HC125P
IC17	XM911A00	IC YAC514-F
IC21	XA987001	IC NJM2068D
IC22	XA987001	IC NJM2068D
IC23	XA673A00	IC NJM5532D-D
IC24	XA673A00	IC NJM5532D-D
IC27	XD201A00	IC M5290P
L5	VB056900	COIL 220uH
L6	VB056900	COIL 220uH
L7	VB056900	COIL 220uH
L8	VB056900	COIL 220uH
L9	VP133800	FER.BEAD BL02RN1-R62T4
L10	VB056900	COIL 220uH
L11	VB056900	COIL 220uH
L12	VB056900	COIL 220uH
L13	VD473700	COIL 60uH
L401	VH227500	FLTR 20uH SU10VD-10020
L406	Vi491100	FER.CORE BP53RB19012080M
PJ1	VF645900	JACK.PIN 2P
Q1	iB054430	TR 2SB544 D,E,F,G
Q7	iA093320	TR 2SA933S Q,R
△ Q8	iD040040	TR 2SD400
△ Q9	VS883300	TR 2SB1565 E,F
Q12	iA093320	TR 2SA933S Q,R

* New Parts

Schm Ref	PART NO.	Description
Q17	iC287820	TR 2SC2878 A,B
Q18	iC287820	TR 2SC2878 A,B
Q19	iC287820	TR 2SC2878 A,B
Q20	iC287820	TR 2SC2878 A,B
△ Q301	VS883400	TR 2SD2394 E,F
△ R26	HV454100	R.CAR.FP 10Ω 1/4W
R46	Vi868300	R.FUS 0.68Ω 1/6W
R110	HV455100	R.CAR.FP 100Ω 1/4W
R111	HV455100	R.CAR.FP 100Ω 1/4W
△ SW401	Vi272700	SW.PUSH SKHVAA
SW402	VG392900	SW.TACT SKHVAA
SW403	VG392900	SW.TACT SKHVAA
SW404	VG392900	SW.TACT SKHVAA
SW405	VG392900	SW.TACT SKHVAA
SW406	VG392900	SW.TACT SKHVAA
△ SW427	VL908000	VOLT.SELCT ESE-370(R)
△ T401	XN392A00	TRANS.PWR (U)
△ T401	XN393A00	TRANS.PWR (BG)
△ T401	XN394A00	TRANS.PWR (R)
TP1	VL448600	JUMPER.TST
TP2	VL448600	JUMPER.TST
U401	VR860700	L.DTCT SPS-422-1
V401	VS049900	FL.DSPLY 9-MT-139GK
XL1	VJ677200	RSNR.CE 4.19MHz
XL2	VJ719800	RSNR.CRYS 16.9344MHz
	VB966900	CN IMSA-6024
	CB644670	COVER.CAP (RBG)
	VS885600	TUBE 20mm D.3.5(R)
	VU590000	BIND.TIE CBTD001B(R)
	Vi835500	HEAT.SINK PH-0124S-B
	VR110000	HEAT.SINK UOT-16CS25
	BB071360	SCR.TERM 8.3x13
	VS055300	SHEET.FLTR
	VR380100	SPACER FL-T6

* New Parts

■ EXPLODED VIEW

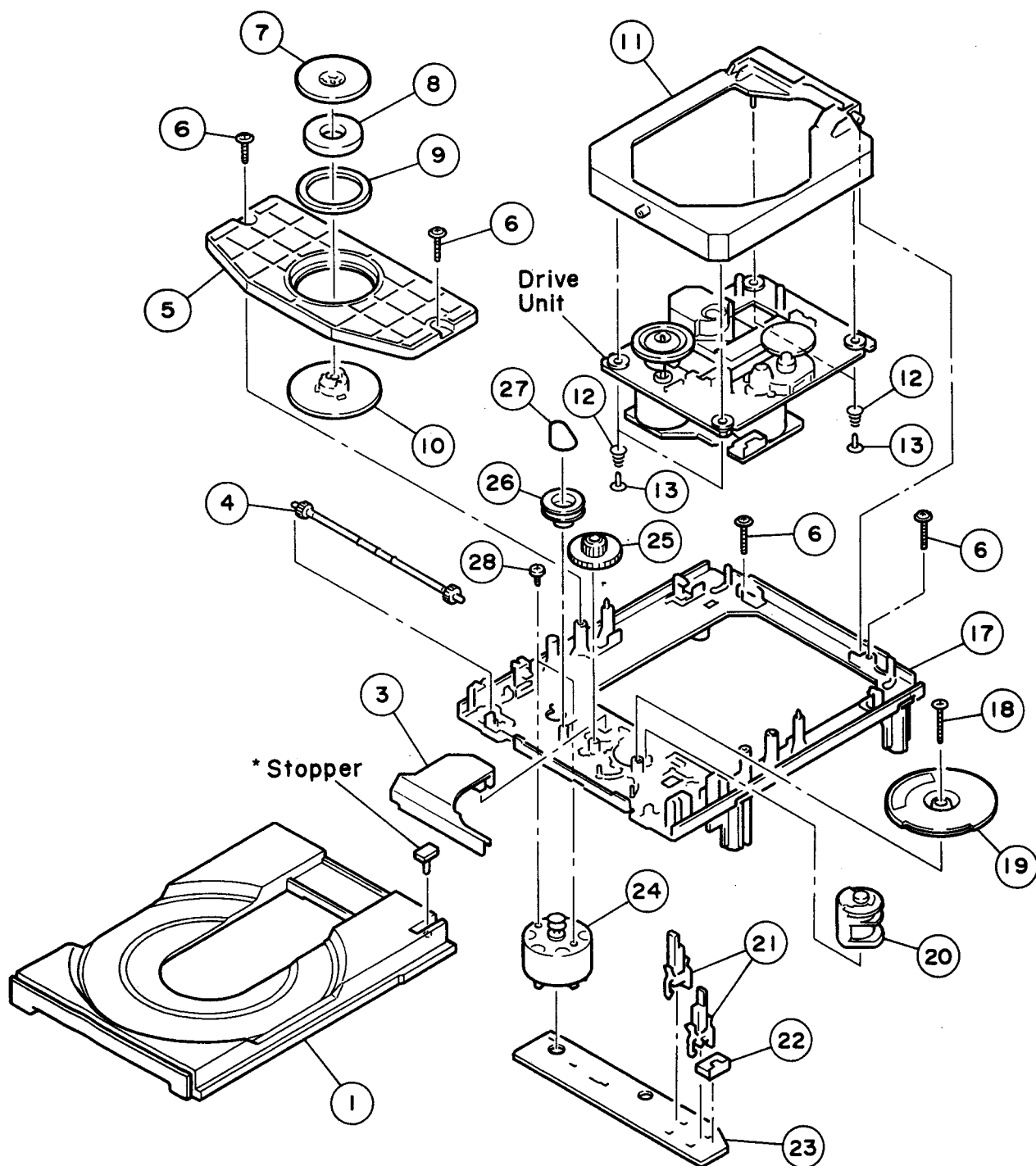


MECHANICAL PARTS

Ref. No.	PART NO.	Description	Remarks	Markets
* 1-1	VZ208600	FRONT PANEL	TI	
* 1-1	VZ208700	FRONT PANEL	BL	
1-2	VS047300	BUTTON	BL	
1-2	VS047400	BUTTON	CD	
1-3	VS048100	BUTTON GUIDE	TI	
1-4	VS049200	WINDOW PANEL	BL	
1-5	VS049500	LENS, FILTER		
1-6	VQ368600	PUSH RIVET	P3555-B	
* 5	VZ213900	P.C.B. ASS'Y	MAIN	
* 5	VZ214000	P.C.B. ASS'Y	MAIN	
* 5	VZ214100	P.C.B. ASS'Y	MAIN	
6	VQ905800	PICK UP MECHA. UNIT	KSL-2101ABM	
△ 8	VL238100	POWER CORD ASS'Y		
△ 8	VN363700	POWER CORD ASS'Y		
△ 8	VV437200	POWER CORD ASS'Y		
△ 8	VV437300	POWER CORD ASS'Y		
* 11	MF505100	CRIMPING ASS'Y	5P 100mm	
* 12	MF506100	CRIMPING ASS'Y	6P 100mm	
13	VR207400	CONNECTOR ASS'Y	8P 150mm	
14	VM987900	CONNECTOR ASS'Y	8P 160mm	
15	MF127160	FLEXIBLE FLAT CABLE	27P 160mm	
* 51	VY873700	REAR PANEL		
* 51	VY873800	REAR PANEL		
* 51	VY874000	REAR PANEL		
53	VS044000	TOP COVER	BL	
53	VS044100	TOP COVER	TI	
55	VS044300	CHASSIS		
57	VP984800	LEG	D41xH12.5	
61	VS047100	FRAME, TOP		
63	VS044800	CHASSIS, CD		
65	VS194300	GROUND PLATE		
67	VQ775900	GROUND PLATE		
69	VS257300	PLATE, R		
* 71	VY874300	LID	TI	
* 71	VY874400	LID	BL	
73	VS048300	BUTTON	BL	
73	VS048400	BUTTON	TI	
75	VS933900	DAMPER, TOP		
77	VQ861500	CUSHION	SHEET	
81	VN158600	CORD STOPPER	No.2104	
82	VA772900	SUPPORT, P.C.B.	No.2127	
84	VQ368500	PUSH RIVET	P3545-B	
121	EI330086	BIND HEAD B-TITE SCREW	3x8 FCRM3-BL	
123	VN413300	BIND HEAD BONDING B-T. SCREW	3x8 MFZN2-BL	
124	VT669300	PW HEAD B-TITE SCREW	3x8-8 MFC2	
129	EP630220	BIND HEAD P-TITE SCREW	3x8 ZMC2-BL	
131	EP600140	BIND HEAD B-TITE SCREW	3x10 MFZN2-BL	
136	EK396010	BIND HEAD S-TITE SCREW	4x8 FCRM3-BL	
137	EK365090	PW HEAD S-TITE SCREW	4x8-10 FCRM3-BL	BL
137	EX601150	BW HEAD S-TITE SCREW	4x8-10 FNM3-BL	TI
		ACCESSORIES		
* 200	VZ170300	REMOTE CONTROL TRANSMITTER	SBGH20025A CDX1	
200-1	CX679050	LID	74x34BLALPS	
	VS381600	PIN-PLUG CORD	2P 1.0m	
		BATTERY, MANGANESE	SUM-3,AA,R06	

* New Parts

EXPLODED VIEW (CD Mecha. Unit)



* Stopper

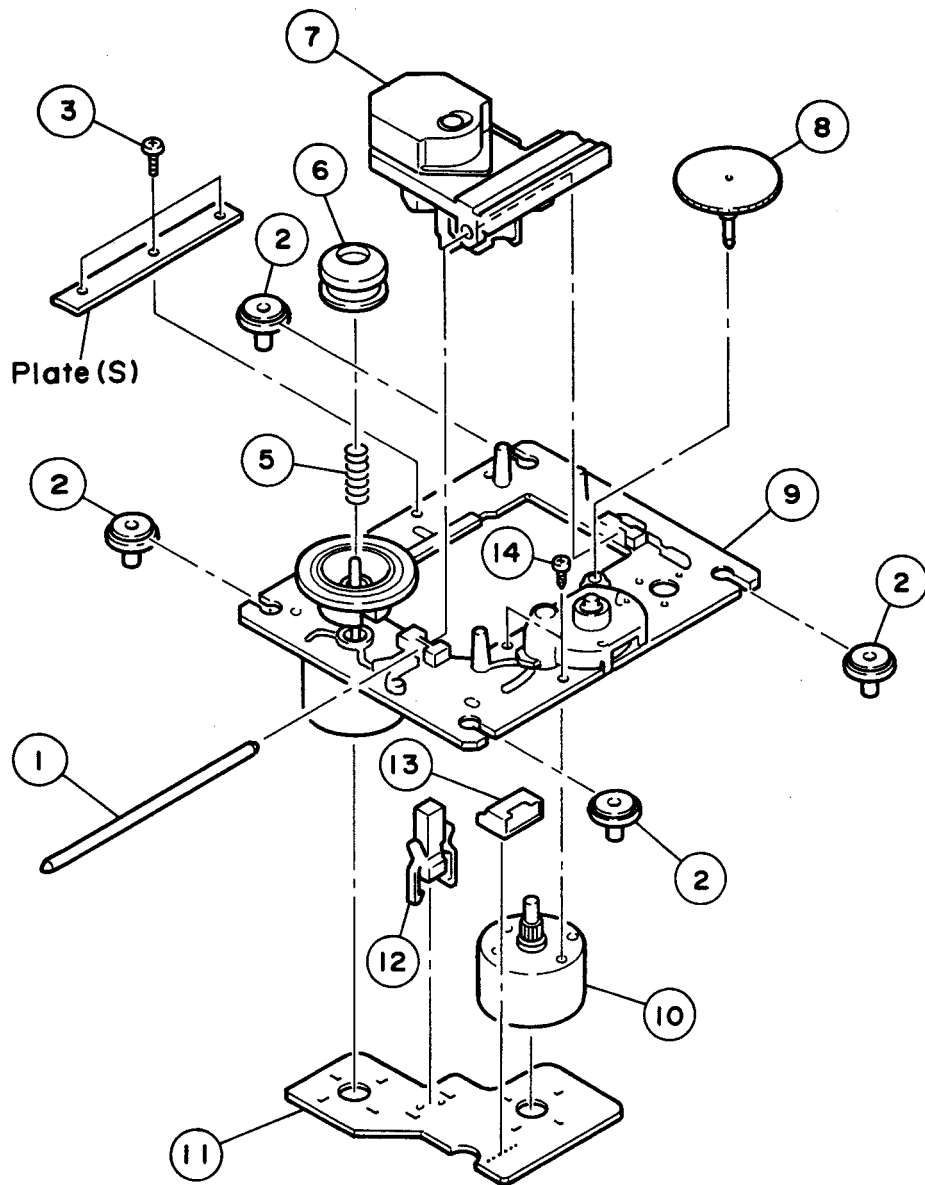
*The stopper is not supplied with the tray as a spare part.
When replacing the tray, keep the removed stopper and reuse it.

■ MECHANICAL PARTS (CD Mecha. Unit)

Ref. No.	PART NO.	Description		Remarks	Markets
	VQ905800	CD MECHANISM UNIT	KSL-2101ABM		
1	CX675290	TRAY (S)		262555003	
3	CX675250	GEAR COVER (S)		262554402	
4	CX675210	TRAY GEAR (S)		262553501	
5	AX619150	CHUCKING PLATE (S)		262554601	
6	EX602890	BW HEAD P-TITE SCREW	2.6x7	262629401	
7	BX602660	CHUCKING YOKE (S)		262553701	
8	NX610570	MAGNET ASS'Y		145249321	
9	CX675240	DAMPER (S)		262554102	
10	CX675280	CHUCKING PULLEY (S)		262554802	
11	NX613060	SUB CHASSIS ASS'Y (S)		X26252272	
12	AX619140	SPRING (S)		262553901	
13	AX619180	SCREW WITH WASHER		262573001	
17	AX619160	MAIN CHASSIS (S), OUTSERT		262555206	
18	VH554700	BW HEAD P-TITE SCREW	2.6x16	331950151	
19	CX675270	DRIVE GEAR (S)		262554703	
20	CX675260	CONTROL CAM (S)		262554504	
21	KX604180	LEAF SWITCH		157208611	
22	LX608390	CONNECTOR PIN	5P	156472111	
23	NX613050	PWB, LOADIND (S)		164052312	
△ 24	JX601470	LOADING MOTOR		X26251171	
25	CX675200	CENTER GEAR (S)		262553402	
26	CX675220	LOADING PULLEY (S)		262553602	
27	CX672840	BELT, LOADING MOTOR		365338701	
28	EX602880	SCREW	2.6x2.5	262527901	

* New Parts

■ EXPLODED VIEW (Drive Unit)

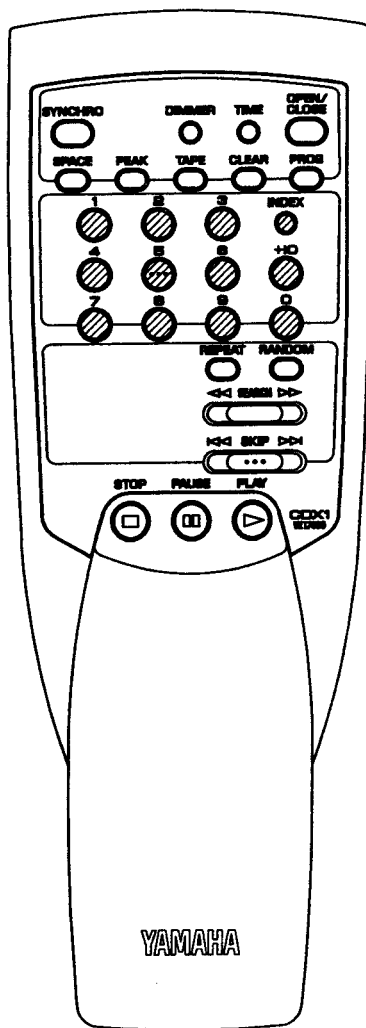
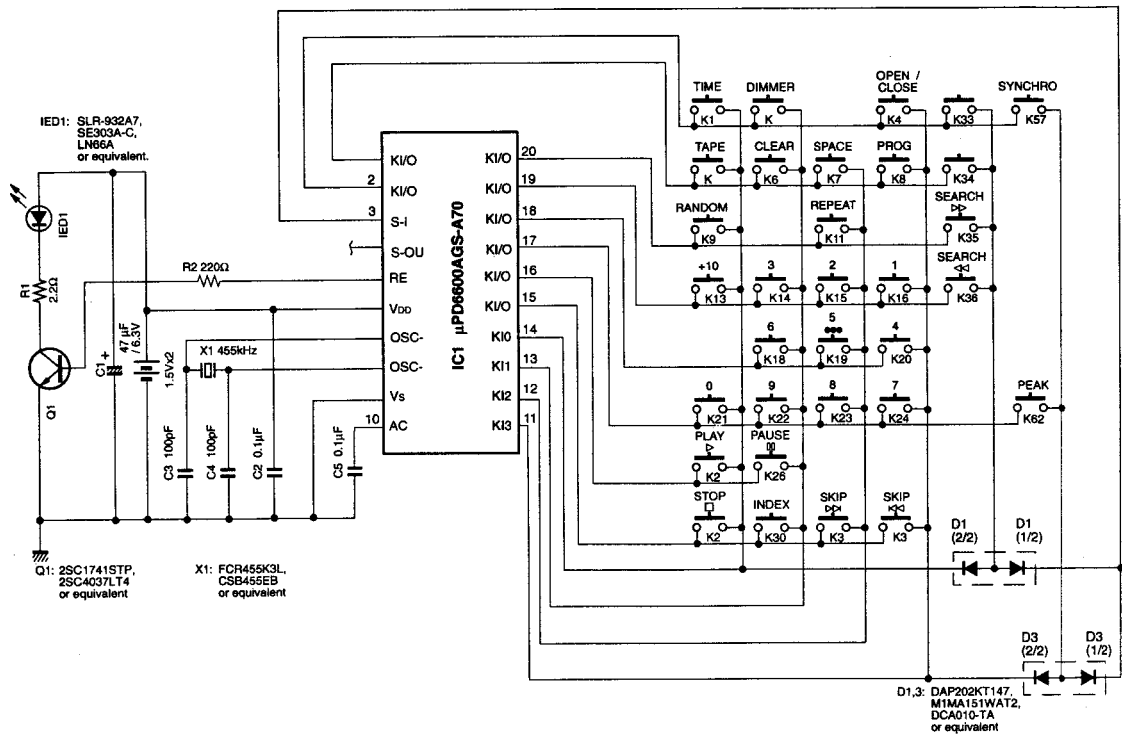


Ref. No.	PART NO.	Description		Remarks	Markets
1	AX619110	SLED SHAFT (S)		262546401	
2	CX675230	INSULATOR (S)		262553801	
3	AX607540	SPECIAL SCREW	2x5	2641386	
5	AX619120	COIL SPRING (S)		262546501	
6	AX619130	CENTER RING, L0 (S)		262547701	
7	PX600431	LASER PICK UP	KSS-210A	8848127	
8	CX675190	GEAR, A (S)		262546201	
9	NX610600	CHASSIS ASS'Y, T. T.		X26251332	
10	NX610610	MOTOR GEAR ASS'Y		X26251321	
11	NX613040	PWB, MOTOR	6P	163967813	
12	KX603720	LEAF SWITCH		157208512	
13	LX608400	CONNECTOR	6P	1564722	
14	EX603840	SCREW, P-TITE	2x3	762125515	

* New Parts

REMOTE CONTROL TRANSMITTER

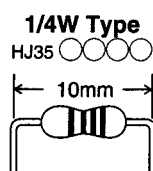
SCHEMATIC DIAGRAM



Key No.	Function	HEX	
		CUSTOM	DATA
1	TIMER	79	0A
2	DIMMER	79	1E
4	OPEN/CLOSE	79	01
5	TAPE	79	57
6	CLEAR	79	0D
7	SPACE	79	0F
8	PROG	79	0C
9	RANDOM	79	1B
11	REPEAT	79	08
13	+10	79	1A
14	3	79	13
15	2	79	12
16	1	79	11
18	6	79	16
19	5(000)	79	15
20	4	79	14
21	0	79	10
22	9	79	19
23	8	79	18
24	7	79	17
25	PLAY>	79	02
26	PAUSE	79	55
29	STOP	79	56
30	INDEX	79	0B
31	SKIP >>	79	07
32	SKIP <<	79	04
35	SEARCH >>	79	06
36	SEARCH <<	79	05
57	SYNCHRO	79	58
62	PEAK	79	5D

Parts List for Carbon Resistors

Value	1/4W Type Part No.	1/6W Type Part No.	Value	1/4W Type Part No.	1/6W Type Part No.
1.0 Ω	HJ35 3100	HF85 3100	10 k Ω	HF45 7100	HF45 7100
1.8 Ω	HJ35 3180	*	11 k Ω	HF45 7110	HF45 7110
2.2 Ω	HJ35 3220	HF85 3220	12 k Ω	HJ35 7120	HF85 7120
3.3 Ω	HJ35 3330	HF85 3330	13 k Ω	HF45 7130	HF45 7130
4.7 Ω	HJ35 3470	HF85 3470	15 k Ω	HF45 7150	HF45 7150
5.6 Ω	HJ35 3560	HF85 3560	18 k Ω	HF45 7180	HF45 7180
10 Ω	HF45 4100	HF45 4100	22 k Ω	HF45 7220	HF45 7220
15 Ω	HJ35 4150	HF85 4150	24 k Ω	HF45 7240	HF45 7240
22 Ω	HF45 4220	HF45 4220	27 k Ω	HJ35 7270	HF85 7270
27 Ω	HJ35 4270	HF85 4270	30 k Ω	HF45 7300	HF45 7300
33 Ω	HF45 4330	HF45 4330	33 k Ω	HF45 7330	HF45 7330
39 Ω	HJ35 4390	HF85 4390	36 k Ω	HF45 7360	HF45 7360
47 Ω	HF45 4470	HF45 4470	39 k Ω	HF45 7390	HF45 7390
56 Ω	HF45 4560	HF45 4560	47 k Ω	HF45 7470	HF45 7470
68 Ω	HF45 4680	HF45 4680	51 k Ω	HF45 7510	HF45 7510
75 Ω	HF45 4750	HF45 4750	56 k Ω	HF45 7560	HF45 7560
82 Ω	HF45 4820	HF45 4820	62 k Ω	HF45 7620	HF45 7620
91 Ω	HF45 4910	HF45 4910	68 k Ω	HF45 7680	HF45 7680
100 Ω	HF45 5100	HF45 5100	82 k Ω	HF45 7820	HF45 7820
110 Ω	HJ35 5110	HF85 5110	91 k Ω	HF45 7910	HF45 7910
120 Ω	HF45 5120	HF45 5120	100 k Ω	HF45 8100	HF45 8100
150 Ω	HF45 5150	HF45 5150	110 k Ω	HF45 8110	HF45 8110
160 Ω	HJ35 5160	*	120 k Ω	HF45 8120	HF45 8120
180 Ω	HF45 5180	HF45 5180	150 k Ω	HF45 8150	HF45 8150
200 Ω	HF45 5200	HF45 5200	180 k Ω	HF45 8180	HF45 8180
220 Ω	HF45 5220	HF45 5220	220 k Ω	HJ35 8220	HF85 8220
270 Ω	HF45 5270	HF45 5270	270 k Ω	HF45 8270	HF45 8270
330 Ω	HF45 5330	HF45 5330	300 k Ω	HF45 8300	HF45 8300
390 Ω	HF45 5390	HF45 5390	330 k Ω	HF45 8330	HF45 8330
430 Ω	HF45 5430	HF45 5430	390 k Ω	HJ35 8390	HF85 8390
470 Ω	HF45 5470	HF45 5470	470 k Ω	HF45 8470	HF45 8470
510 Ω	HF45 5510	HF45 5510	560 k Ω	HJ35 8560	HF85 8560
560 Ω	HF45 5560	HF45 5560	680 k Ω	HJ35 8680	HF85 8680
680 Ω	HF45 5680	HF45 5680	820 k Ω	HJ35 8820	HF85 8820
820 Ω	HF45 5820	HF45 5820	1.0 M Ω	HF45 9100	HF45 9100
910 Ω	HF45 5910	HF45 5910	1.2 M Ω	HJ35 9120	*
1.0 k Ω	HF45 6100	HF45 6100	1.5 M Ω	HJ35 9150	HF85 9150
1.2 k Ω	HF45 6120	HF45 6120	1.8 M Ω	HJ35 9180	HF85 9180
1.5 k Ω	HF45 6150	HF45 6150	2.2 M Ω	HJ35 9220	HF85 9220
1.8 k Ω	HF45 6180	HF45 6180	3.3 M Ω	HJ35 9330	HF85 9330
2.0 k Ω	HJ35 6200	HF85 6200	3.9 M Ω	HJ35 9390	*
2.2 k Ω	HF45 6220	HF45 6220	4.7 M Ω	HJ35 9470	HF85 9470
2.4 k Ω	HJ35 6240	HF85 6240			
2.7 k Ω	HF45 6270	HF45 6270			
3.0 k Ω	HF45 6300	HF45 6300			
3.3 k Ω	HF45 6330	HF45 6330			
3.6 k Ω	HJ35 6360	HF85 6360			
3.9 k Ω	HF45 6390	HF45 6390			
4.7 k Ω	HF45 6470	HF45 6470			
5.1 k Ω	HF45 6510	HF45 6510			
5.6 k Ω	HF45 6560	HF45 6560			
6.8 k Ω	HF45 6680	HF45 6680			
8.2 k Ω	HF45 6820	HF45 6820			
9.1 k Ω	HF45 6910	HF45 6910			



1/4W Type
HF45 ○○○○
1/6W Type
HF85 ○○○○

