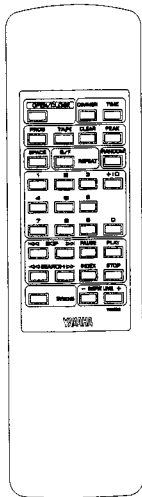
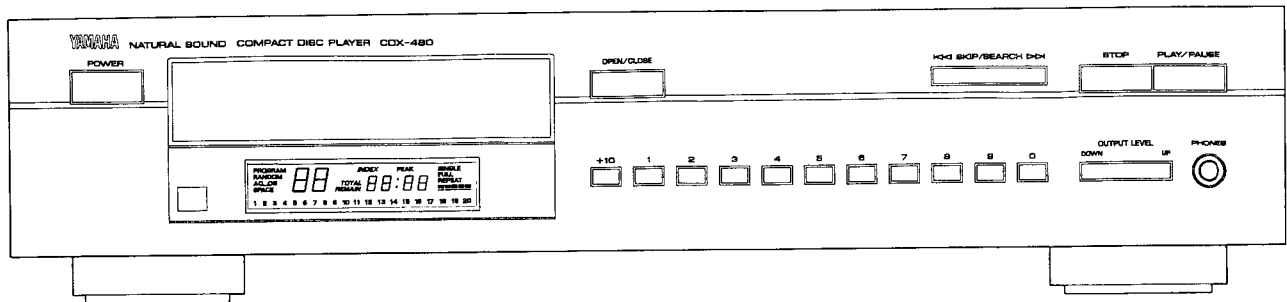


COMPACT DISC PLAYER CDX-480

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.

CDX-480

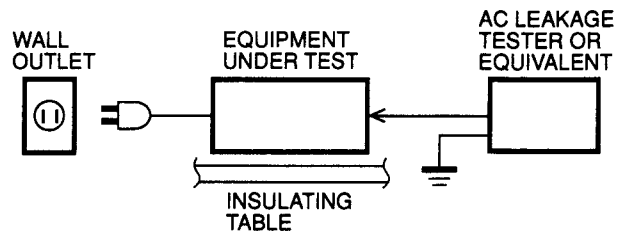
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■ TO SERVICE PERSONNEL

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.

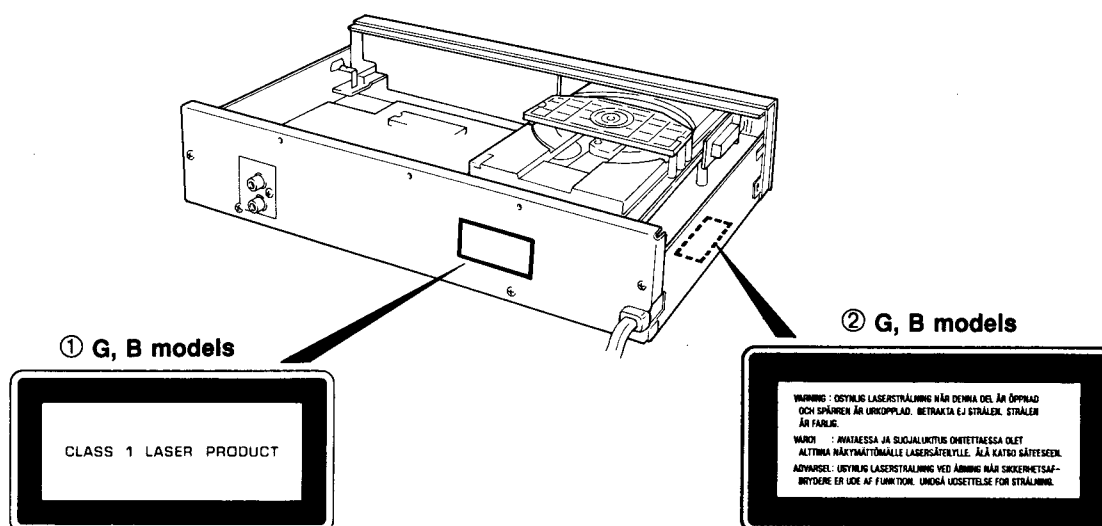
WARNING: CHEMICAL CONTENT NOTICE!

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.



English

- ① THIS LABEL (SEE POSITION SHOWN IN THE ILLUSTRATION) INFORMS THE USER THAT THE APPARATUS CONTAINS A LASER COMPONENT.
- ② THIS LABEL (SEE POSITION SHOWN IN THE ILLUSTRATION) WARNS THAT ANY FURTHER PROCEDURE WILL BRING THE USER INTO EXPOSURE WITH THE LASER BEAM.

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

Swedish

- ① DENNA MÄRKNING (SE FIGUR) UPPLYSER OM ATT DET I APPARATEN INGÅR EN LASERKOMPONENT AV TYP KLASS 1.
- ② VARNINGSMÄRKNING (SE FIGUR) FÖR STRÅLNING. INGREPP I APPARATEN BÖR ENDAST FÖRETAGAS AV FACKMAN MED KÄNNEDOM OM LASER. APPARATEN INNEHÅLLER EN LASERKOMPONENT SOM AVGER STRÅLNING ÖVERSTIGANDE GRÄNSEN FÖR LASERKLASS 1.

VARNING : OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD: BETRakta EJ STRÅLEN.

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.

ADVARSEL : INDGREB BOR KUN FORETAGES AF EN FAGMAND DA DER ER RISIKO FOR RADIAKTIV STRÅLING.

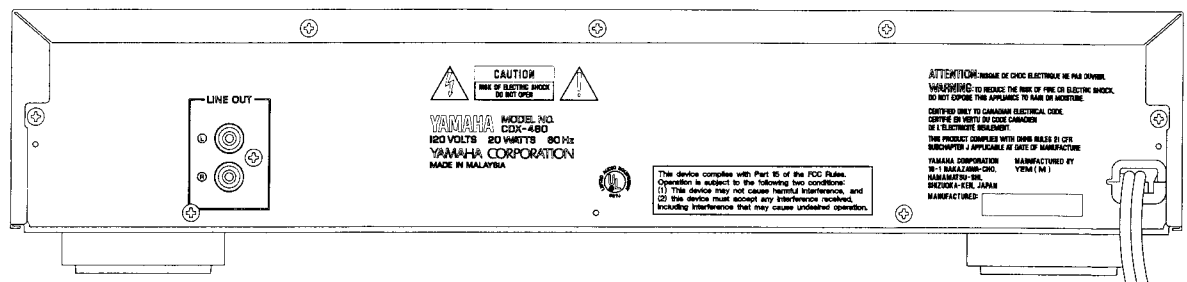
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING.
UNDGÅ UDSAETTEELSE FOR STRÅLING.

Finnish

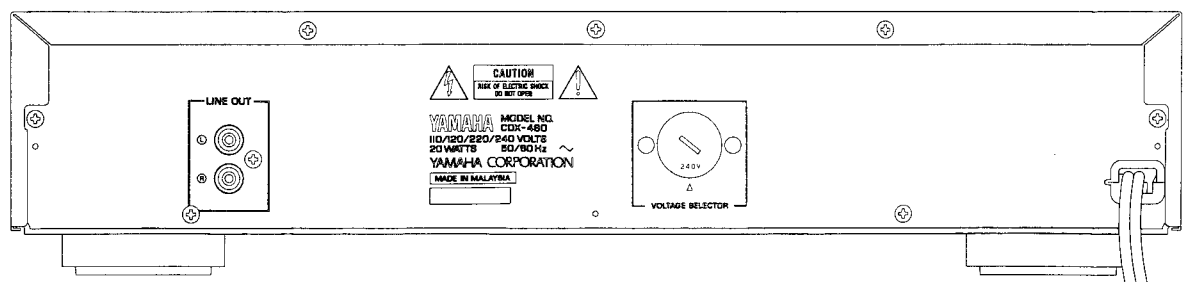
VAROIT :
AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

REAR PANELS

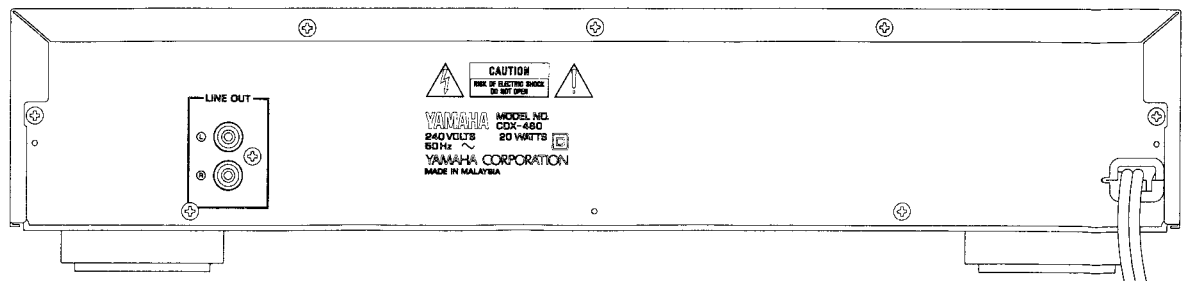
U, C models



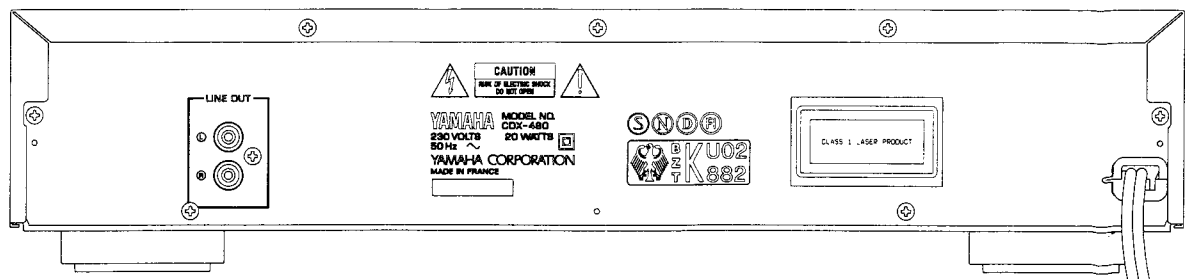
R model



A, B models



G model



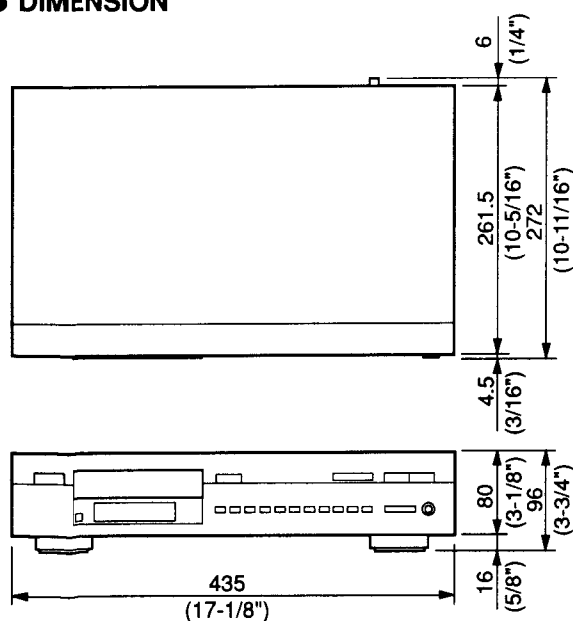
SPECIFICATIONS

Output Level 1kHz, 0dB	2.0±0.5Vrms
Signal to Noise Ratio (EIAJ)	105dB
Dynamic Range	95dB
Harmonic Distortion+Noise (1kHz)	0.003%
Frequency Response 2Hz — 20kHz	±0.5dB
Headphone Output 150Ω, 1kHz, -20dB Input	200mV±40mV
Power Requirements	
U, C models	120V AC 60Hz
G model	230V AC 50Hz
A, B models	240V AC 50Hz
R models	110/120/220/240V AC 50/60Hz
Power Consumption	20W
Dimensions (W x H x D)	435 x 96 x 272mm (17-1/8" x 3-3/4" x 10-11/16")
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 A Australian model
C Canadian model G European model
B British model R General model

DIMENSION



Unit : mm (Inch)

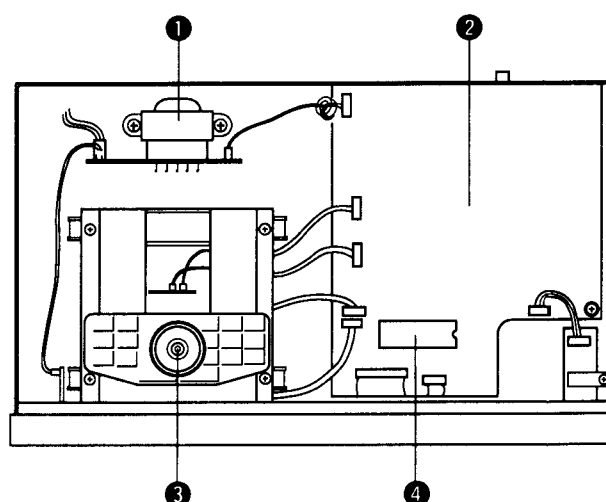
MEMORY BACKUP

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

Functions kept in memory are :

- OUTPUT LEVEL
- DIMMER
- FULL REPEAT
- RANDOM MODE
- TIME MODE
- AUTO SPACE

INTERNAL VIEW



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

■ DISASSEMBLY PROCEDURES

(Remove parts in disassembly order as numbered.)

1. Removal of Top Cover

- Remove 4 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 4 connectors (#407, #410, #411, #413) in Fig. 2.
- Remove 3 screws (③), 2 screws (④) and 1 screw (⑤) in Fig. 1.
- Remove 2 hooks and then pull the Front Panel forward.

3. Removal of CDX Mechanism Unit

- Remove 4 connectors (#416, #417, #418, #419) in Fig. 2.
- Remove 5 screws (⑥) in Fig. 1.

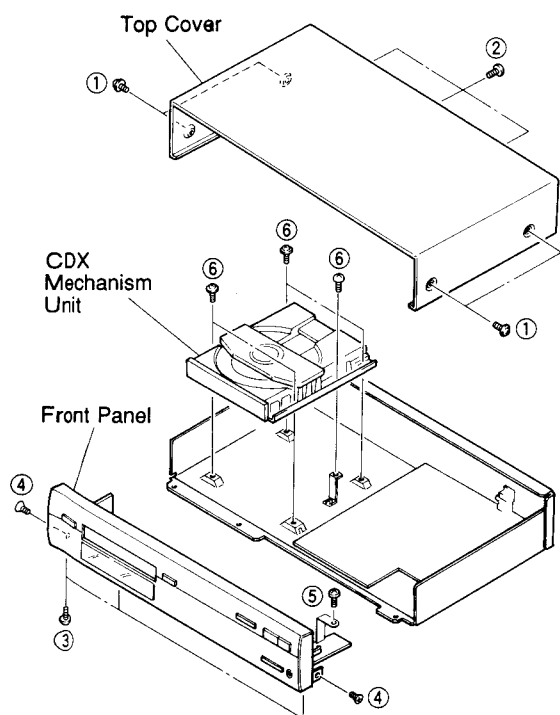


Fig. 1

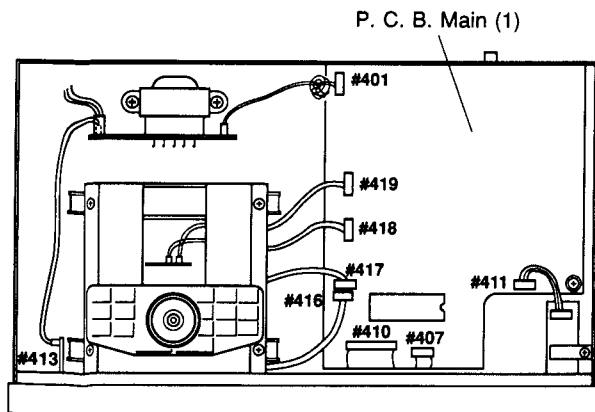


Fig. 2

4. Removal of Tray Unit

- Remove 2 screws (⑦) and then remove the Chucking Unit in Fig. 3.
- Remove 1 hook and then remove the Stopper Pin in Fig. 3.
- Rotate the Drive Gear and then open the Tray Unit in Fig. 3.
- Detach the Stoppers on both sides and then pull out the Tray in Fig. 3.

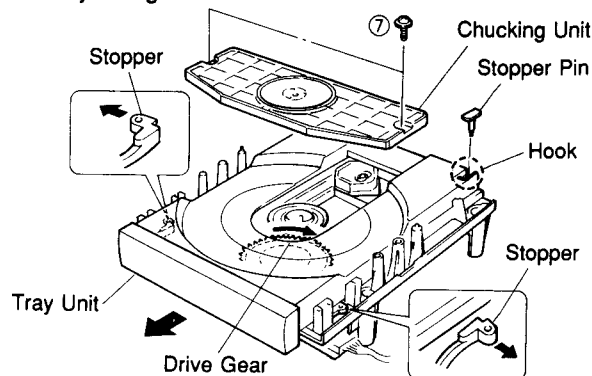


Fig. 3

5. Removal of Pick-up Head

- Remove 2 screws (⑧) in Fig. 4.
- Remove 4 screws (⑨) and then remove the Drive Unit in Fig. 4.

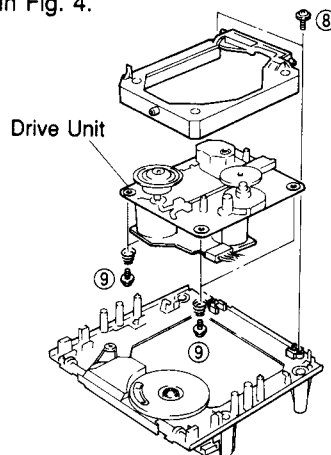


Fig. 4

- Remove the gear A in Fig. 5.
- Pull out the Sled Shaft in Fig. 5.
- Remove the Pick-up Head.

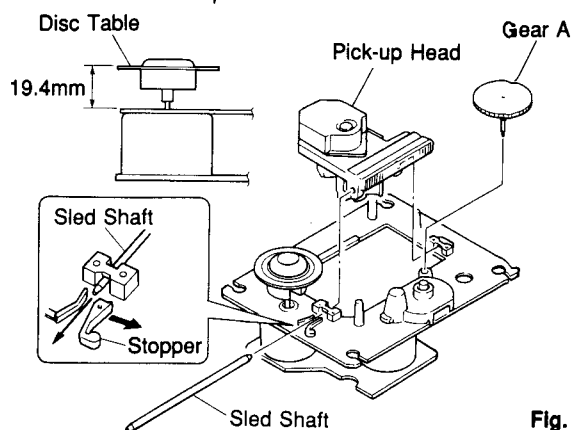
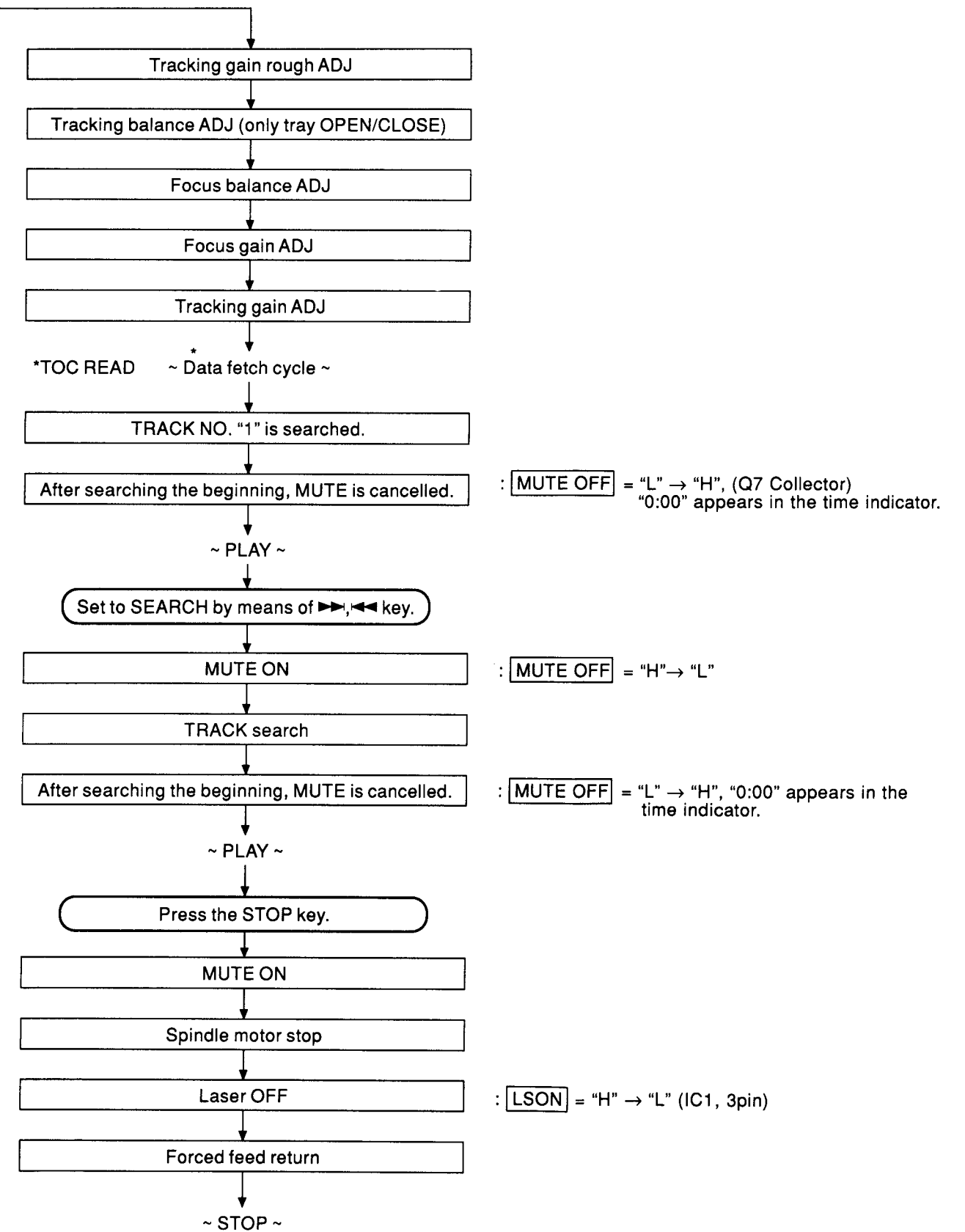
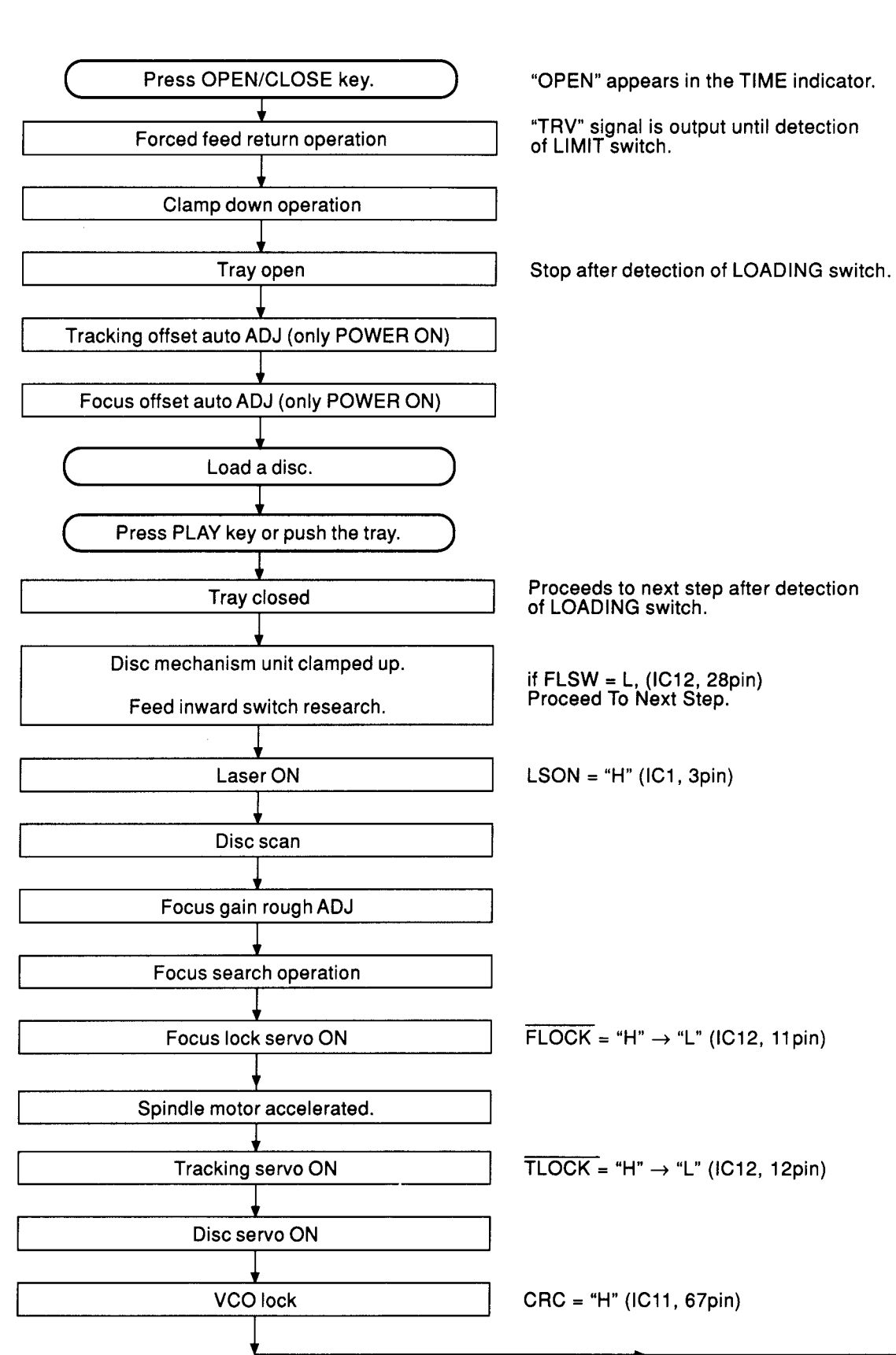


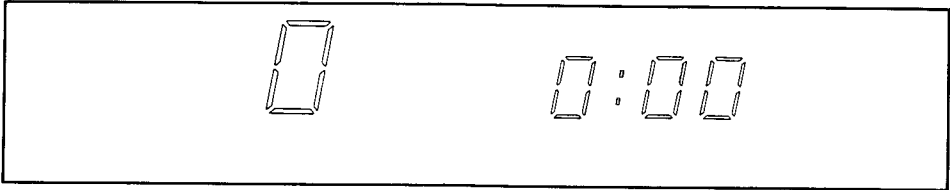
Fig. 5

■ STANDARD OPERATION CHART



■ TEST MODE

(1) Turning ON the POWER while pressing the keys “4” and “7” 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 sa “feed servo”.

PANEL KEY	FUNCTION
OPEN/CLOSE	Tray open/close.
PLAY/PAUSE	Plays if focus servo is effective. TRON, MUTEOFF, and VCOL.
STOP	All stop. (Focus, spindle, feed, laser, tray, etc.) Initializes FL display
◀◀	Inner circumference traverse servo.
▶▶	Outer circumference traverse servo.
◀◀	Inner 10 tracks kick continuously.
▶▶	Outer 10 tracks kick continuously.
OUTPUT LEVEL DOWN	Move output level down.
OUTPUT LEVEL UP	Move output level up.
+10	Rotating the mode of coefficients. (Coefficient mode → Coefficient setting → product mode) Pressing twice will set to the product mode.
1	Returns to product mode.
2	Auto adjustment mode 1 (TR-off set, FO-off set, FO-rough gain adjustment)
3	Auto adjustment mode 2 (TR-balance, TR-rough gain adjustment)
4	Auto adjustment mode 3 (FO-fine gain, TR-fine gain, FO-balance adjustment)
5	1 TRACK KICK – continuously (Coefficient set up mode : address down)
6	1 TRACK KICK + continuously (Coefficient set up mode : address up)
7	30 TRACK KICK – continuously (Coefficient set up mode : upper digit down)
8	30 TRACK KICK + continuously (Coefficient set up mode : upper digit up)
9	150 TRACK KICK – continuously (Coefficient set up mode : lower digit down)
0	150 TRACK KICK + continuously (Coefficient set up mode : lower digit up)

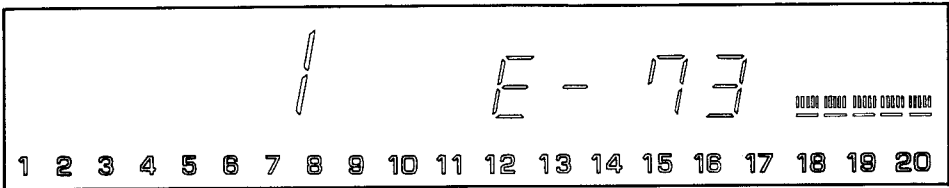
● Function List of Remote Control Transmitter

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(FEOF) (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.)
1C	OUTPUT LEVEL–	Move output level down.
1D	OUTPUT LEVEL+	Move output level up.
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) Shown below is an example of display. ("E-73" as an example)



- (3) This function stays effective till the power is turned OFF. (It is cleared at OFF.)
- (4) Listed in the table below are error messages.

● Error Messages List

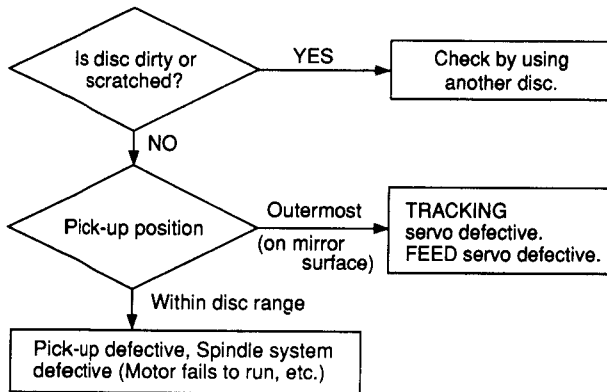
ERROR MESSAGES	DESCRIPTION
E - X 0	Data cannot be read after finishing search.
E - X 1	Data cannot be read during PLAY(X=0), PAUSE(X=4), or SCAN(X=3).
E - 7 1	At the start, tracking servo is not effective.
E - 7 2	At the start, spindle servo PLL is not effective.
E - 7 3	At the start, data can never 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")

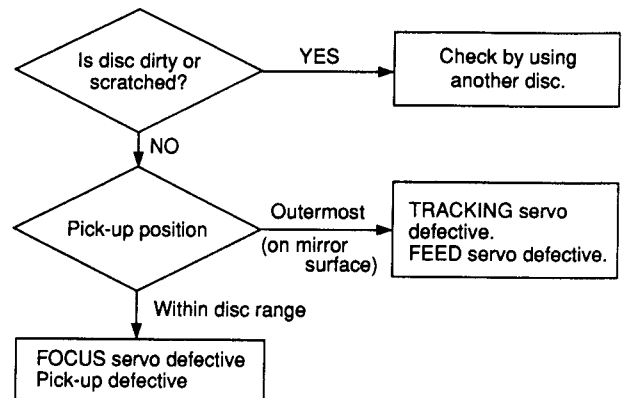
PLAY	X="0"
SCAN	X="2"
PAUSE	X="3"
PEAK SEARCH	X="4"
SEARCH	X="5"
INTRO SCAN	X="6"
START	X="7"
STOP	X="8"
DISC SEARCH	X="9"
OPEN	X="-"
NO DISC	X="C"

1) Error Code Troubleshooting

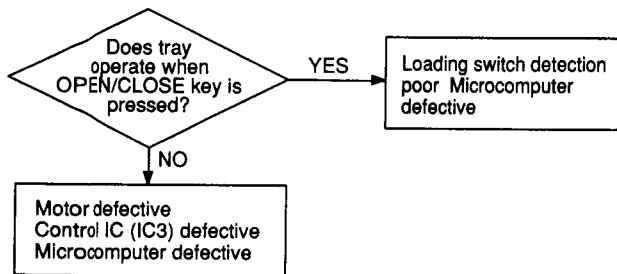
Error code **X0**, **X1**, **73** Data cannot be read.



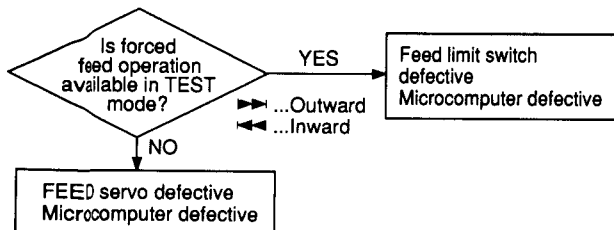
Error code **X8** Focus drops.



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

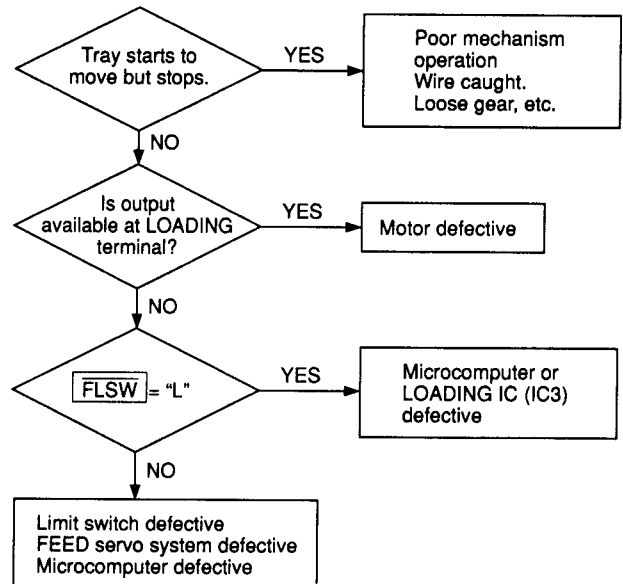


Error code **X7** FEED operation defective. (Limit switch fails)

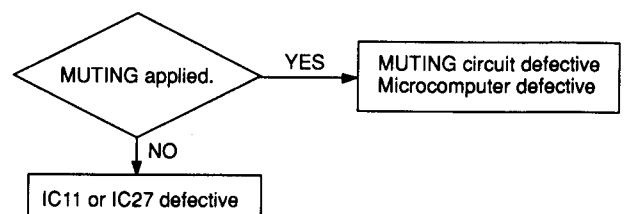


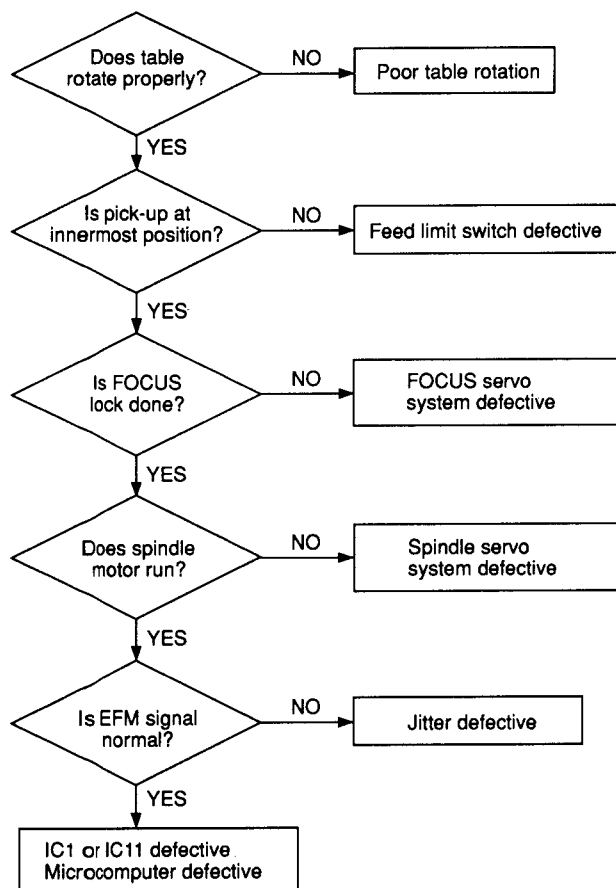
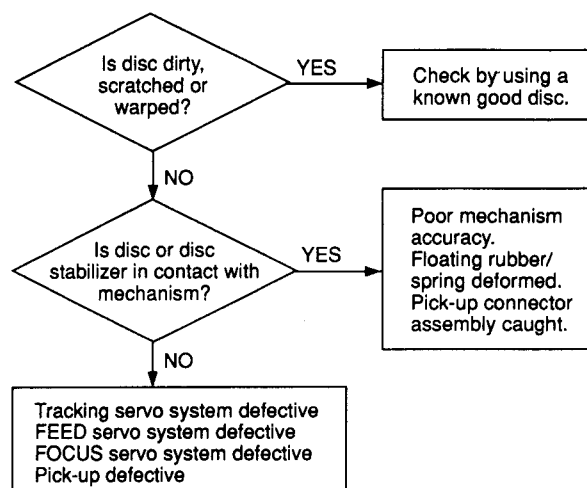
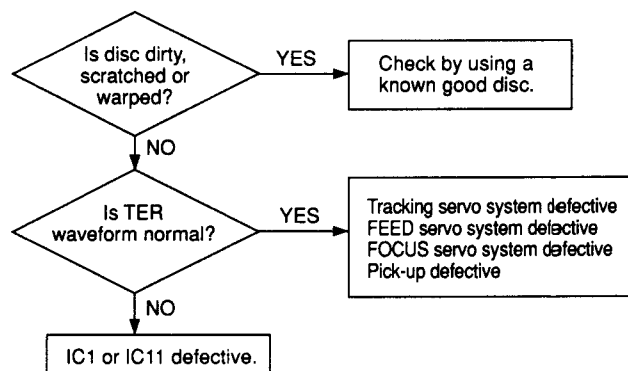
2) Troubleshooting from System Malfunctions

a) Tray fails to come out/go in.



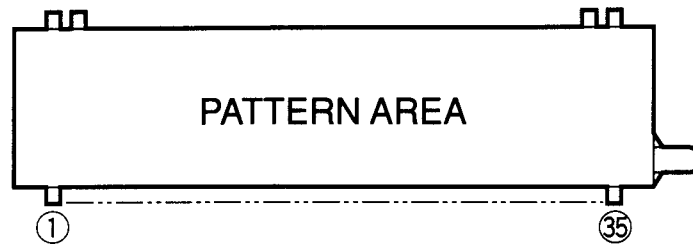
b) No sound generated, Sound cut during play. (but time display advances properly)



c) Operates as if no disc loaded. (although loaded)**d) Sound skips. (Time display fails to advance properly)****e) No search provided. (Sound skipped after search)**

■ DISPLAY DATA (VR061600)

V401 : 9-MT-133GK



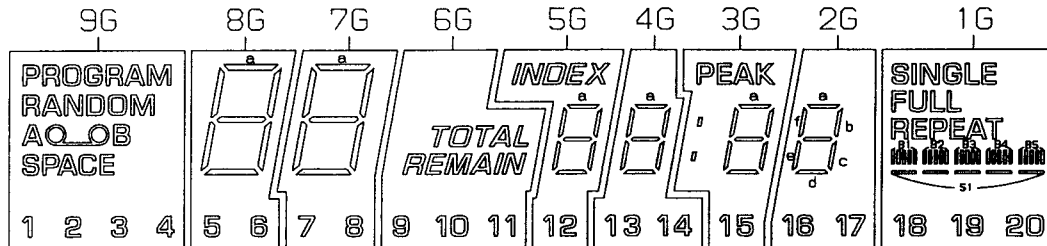
PIN CONNECTION

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	P12	P11	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) DL Datum Line
 5) 1G~9G Grid

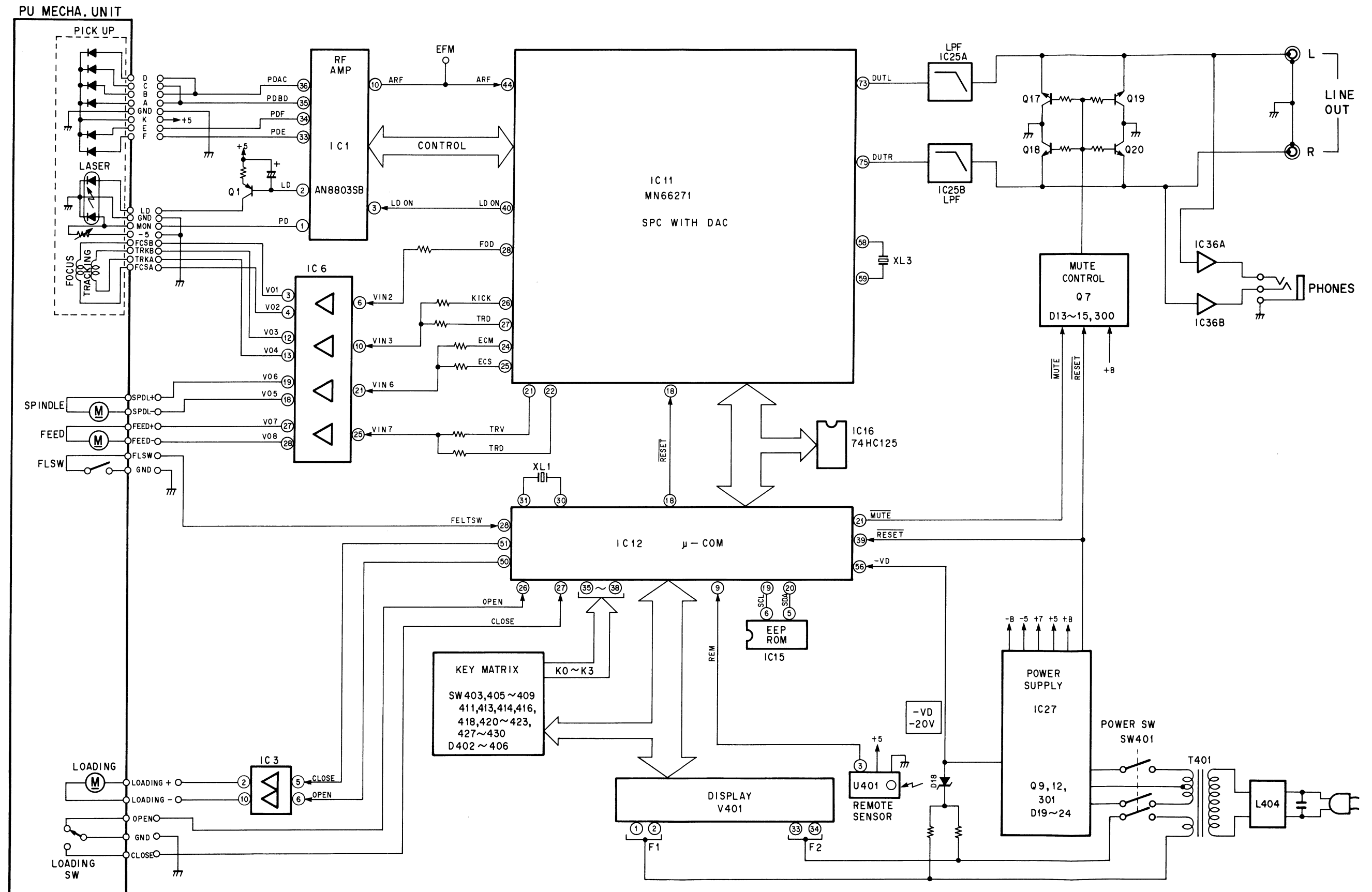
GRID ASSIGNMENT



ANODE CONNECTION

	9G	7G	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	AO	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	—	—	—	—	—	—	:	—	B5
P9	1	5	7	9	12	13	15	16	S1
P10	2	6	8	10	INDEX	14	PEAK	17	18
P11	3	—	—	11	—	—	—	—	19
P12	4	—	—	—	—	—	—	—	20

BLOCK DIAGRAM



① to ④ : TEST POINT WAVEFORMS (See page 20)

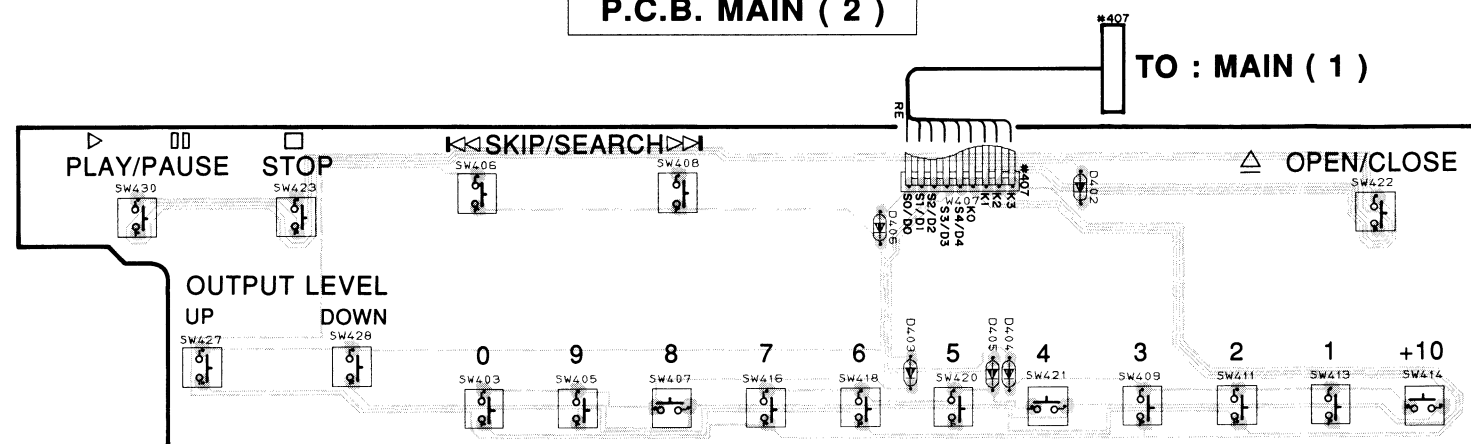
P.C.B. MAIN (1)

Ref. No.	Location
IC 1	D3
IC 3	F3
IC 6	E3
IC11	E3
IC12	F3
IC15	F3
IC16	F3
IC25	D4
IC27	C3
IC36	E5
Q 1	E2
Q 7	C4
Q 9	C3
Q 12	C2
Q 17	D4
Q 18	D5
Q 19	D4
Q 20	D5
Q301	D2

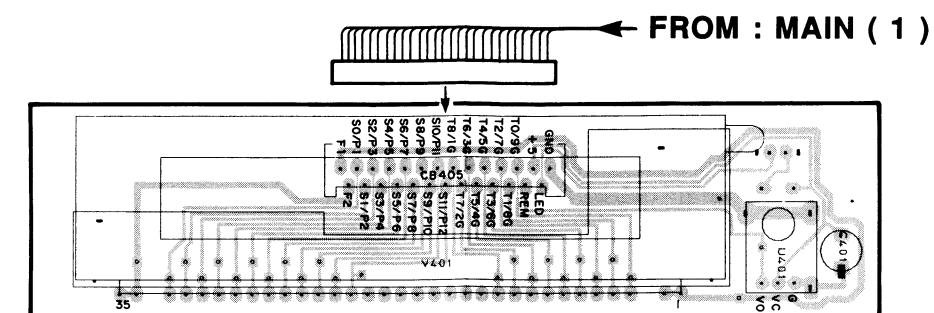


PRINTED CIRCUIT BOARD (Foil side)

P.C.B. MAIN (2)

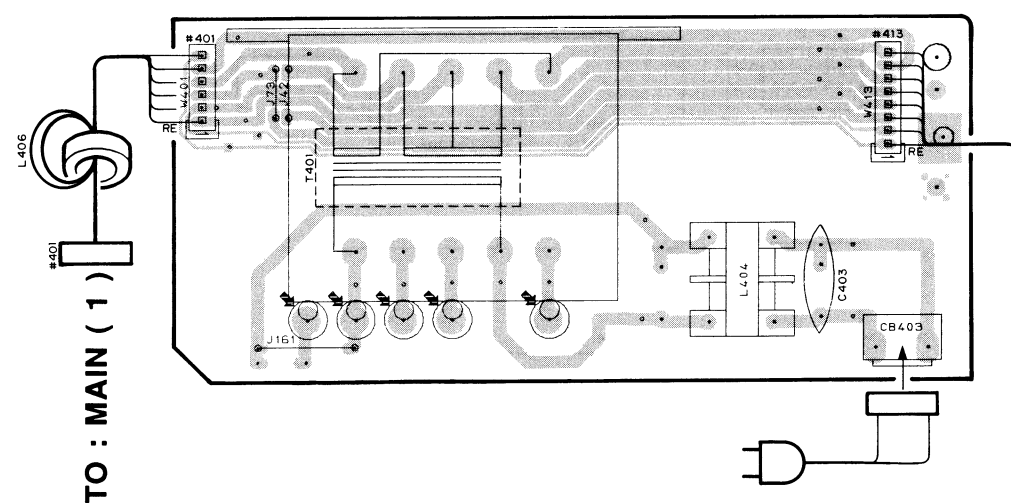


P.C.B. MAIN (3)

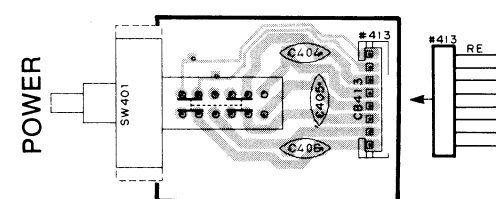


● Except R model

P.C.B. MAIN (4)

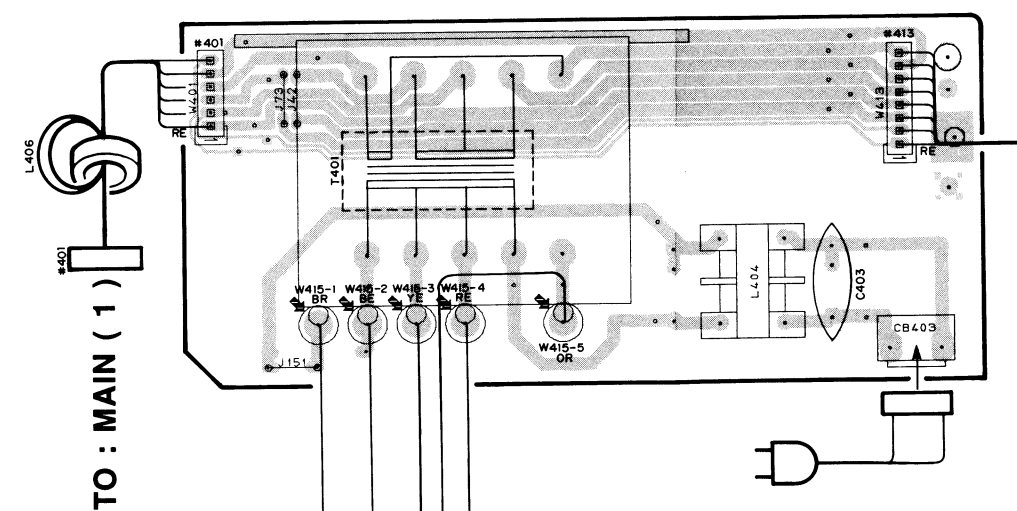


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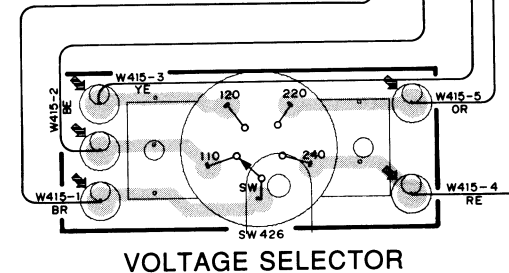


● R model

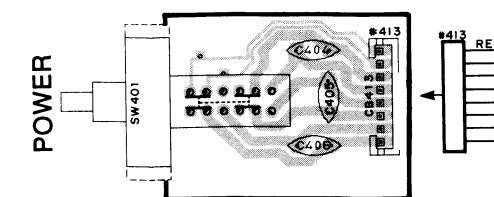
P.C.B. MAIN (4)



P.C.B. MAIN (7)

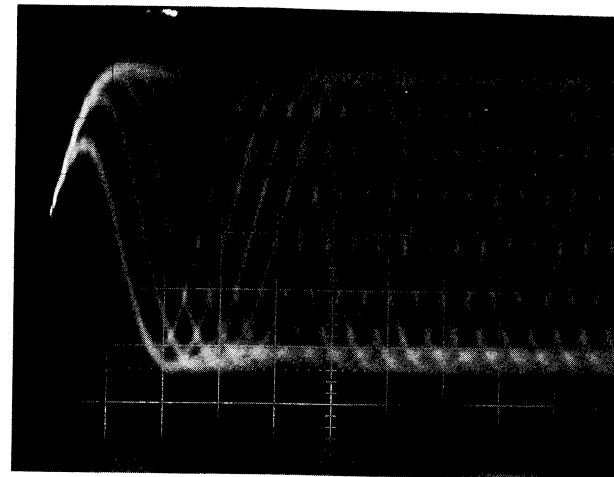


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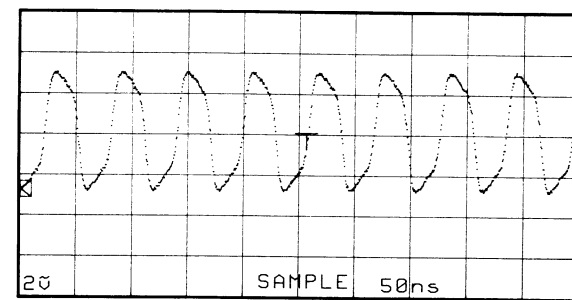


■ TEST POINT WAVEFORMS

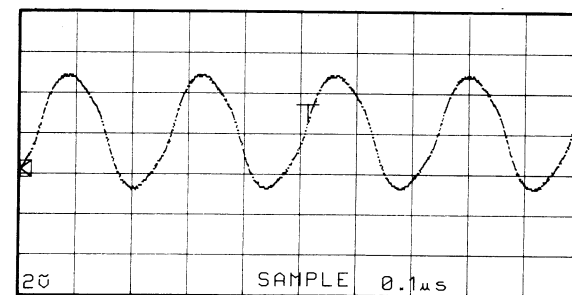
Point ①
TP1 (EFM)
V: 0.2V/div **H : 0.5μsec/div**
AC range **1 : 1 probe**



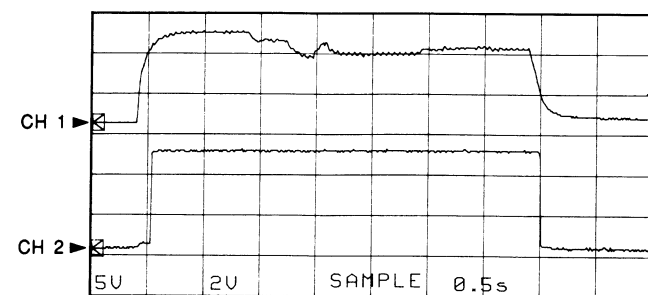
Point ②
(Pin 59 of IC11)
V: 2V/div H : 50nsec/div
DC range 1 : 1 probe



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



Point ④
 (CH 1 : Collector of Q9)
 (CH 2 : Pin 8 of IC27)
 V: 5V/div ... CH1
 V: 2V/div ... CH2
 H : 0.5sec/div
 DC range 1 : 1 probe

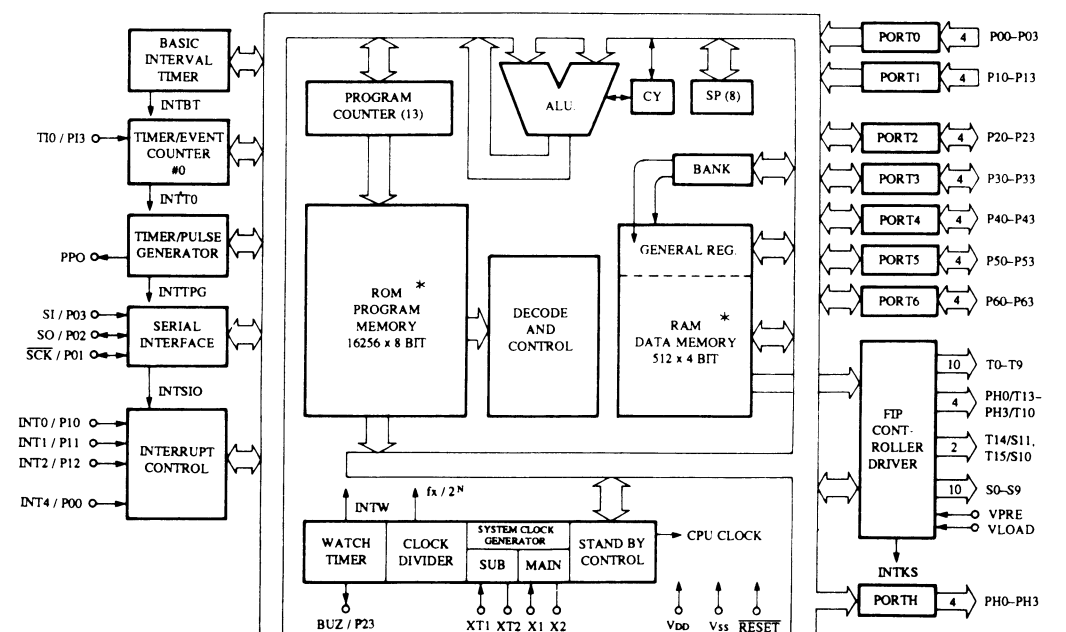
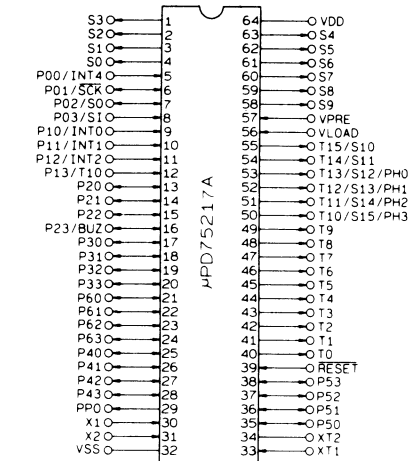


With the POWER switch turned ON, connect the power cord to the AC outlet.

Disconnect the power cord from the AC outlet.

■ IC DATA

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

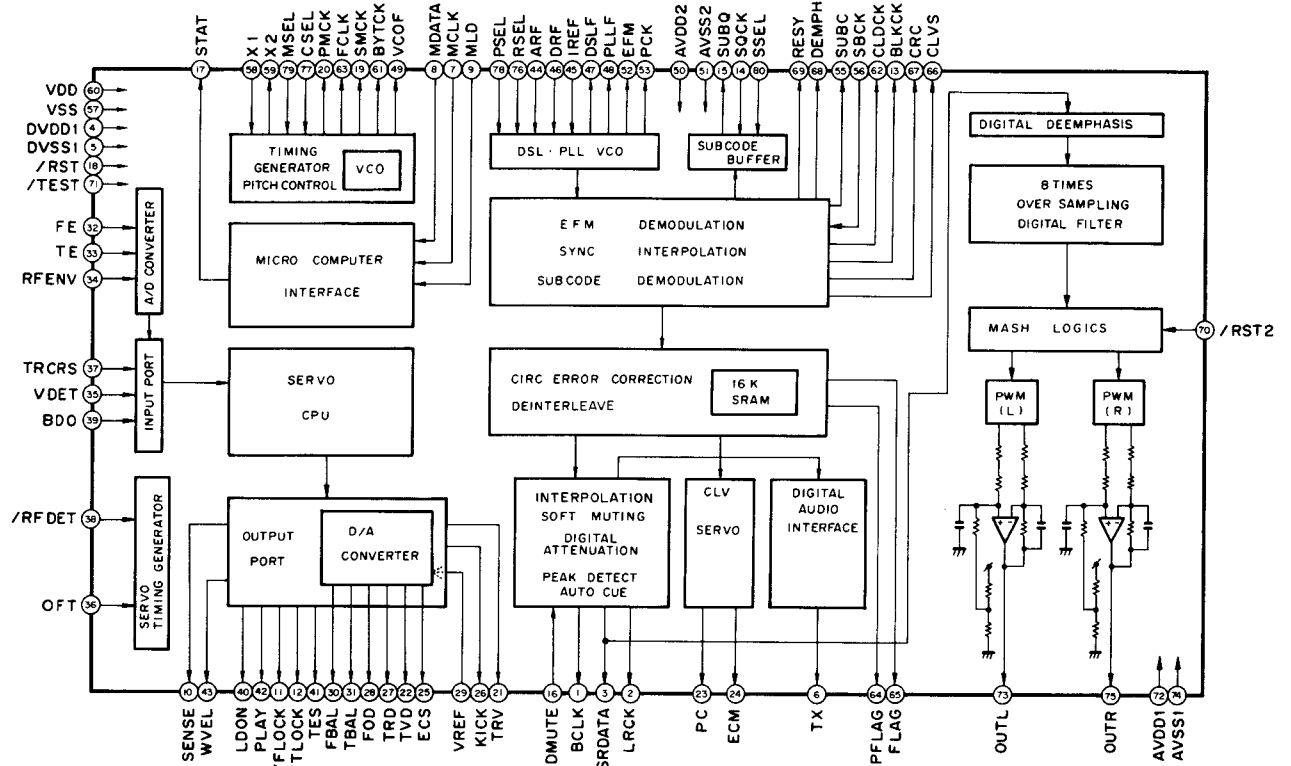


Pin No.	Pin Name	Description	Function
1	S3	S3	Fluorescent character display tube anode drive signal
2	S2	S2	
3	S1	S1	
4	S0	S0	
5	PO0	D/A	N.C
6	PO1	$\overline{\text{SCK}}$	Serial clock output to MN66271
7	PO2	SO	Serial data output to MN66271
8	PO3	SI	Serial data input from MN66271
9	P10	REM	Input from remote control beam receiving unit
10	P11	BLKICK	Synchronous clock input for Q-code RCV from MN66271 (Fine pulse at RCV, normally LO)
11	P12	$\overline{\text{FLOCK}}$	FOCUS lock signal input from MN66271 (LO at LOCK)

Pin No.	Pin Name	Description	Function
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 swithing signal output (switching at 74HC125) Q CODE received at HI
15	P22	QCODE	Serial I/F swithing 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 CDX-480/580 = "L" , CDX-880 = "H"
25	P40		MODEL selection CDX-580 = "L" , CDX-480/880 = "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)
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)
53	T13	VLDN	Volume motor drive signal (DOWN)
54	T14	S11	] Fluorescent character display tube anode drive signal
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-MC

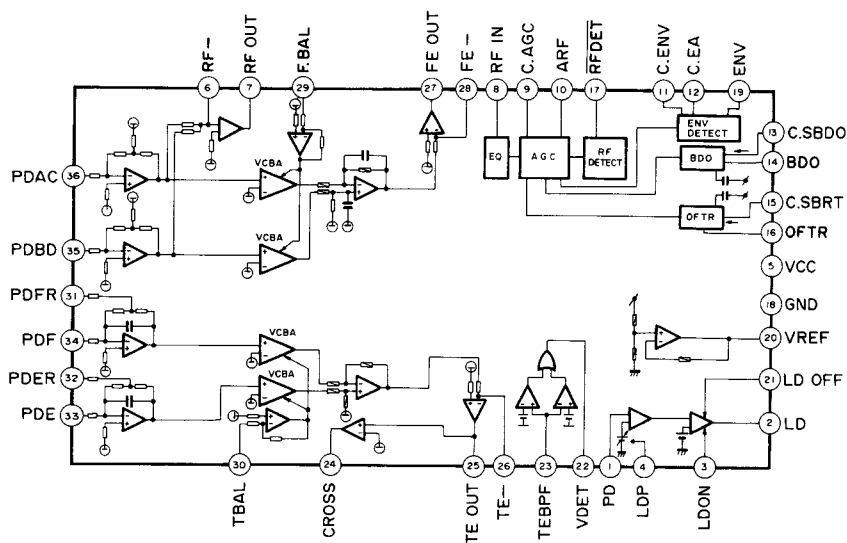
Signal Processor & Controller



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)

Pin No.	Pin Name	I/O	FUNCTION
26	KICK	O	Kick pulse output
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 F	I/O	Loop filter terminal for DSL
48	PLL F	I/O	Loop filter terminal for PLL
49	VCO F	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 = 4.2336MHz
80	SSEL	I	SUBQ terminal Output mode switch terminal H : Q code buffer use mode

IC1 : AN8803SB
Digital Servo Head Amp



Pin diagram of the AD633 precision centred multiplier. The chip has 8 pins. Pin 1 is OUT1, Pin 2 is -IN1, Pin 3 is +IN1, Pin 4 is -Vcc, Pin 5 is +IN2, Pin 6 is -IN2, Pin 7 is OUT2, and Pin 8 is +Vcc. The internal circuit shows two op-amp-like blocks with '+' and '-' inputs and feedback loops.

IC11 : MN66271RA-MC → See page 23
IC12 : μ PD75217CW → See page 21

SCHEMATIC DIAGRAM

① to ④ : TEST POINT WAVEFORMS (See page 20)

1

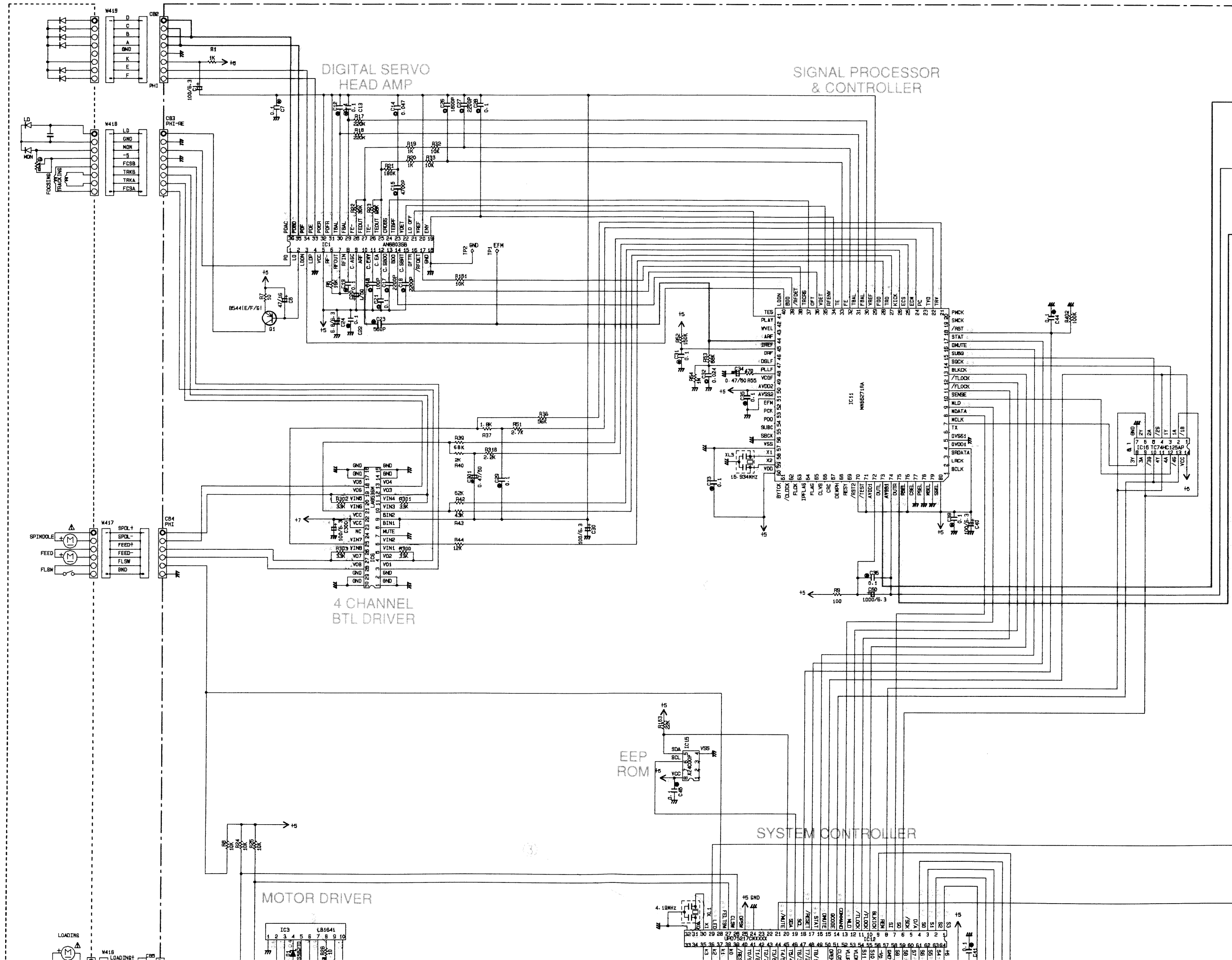
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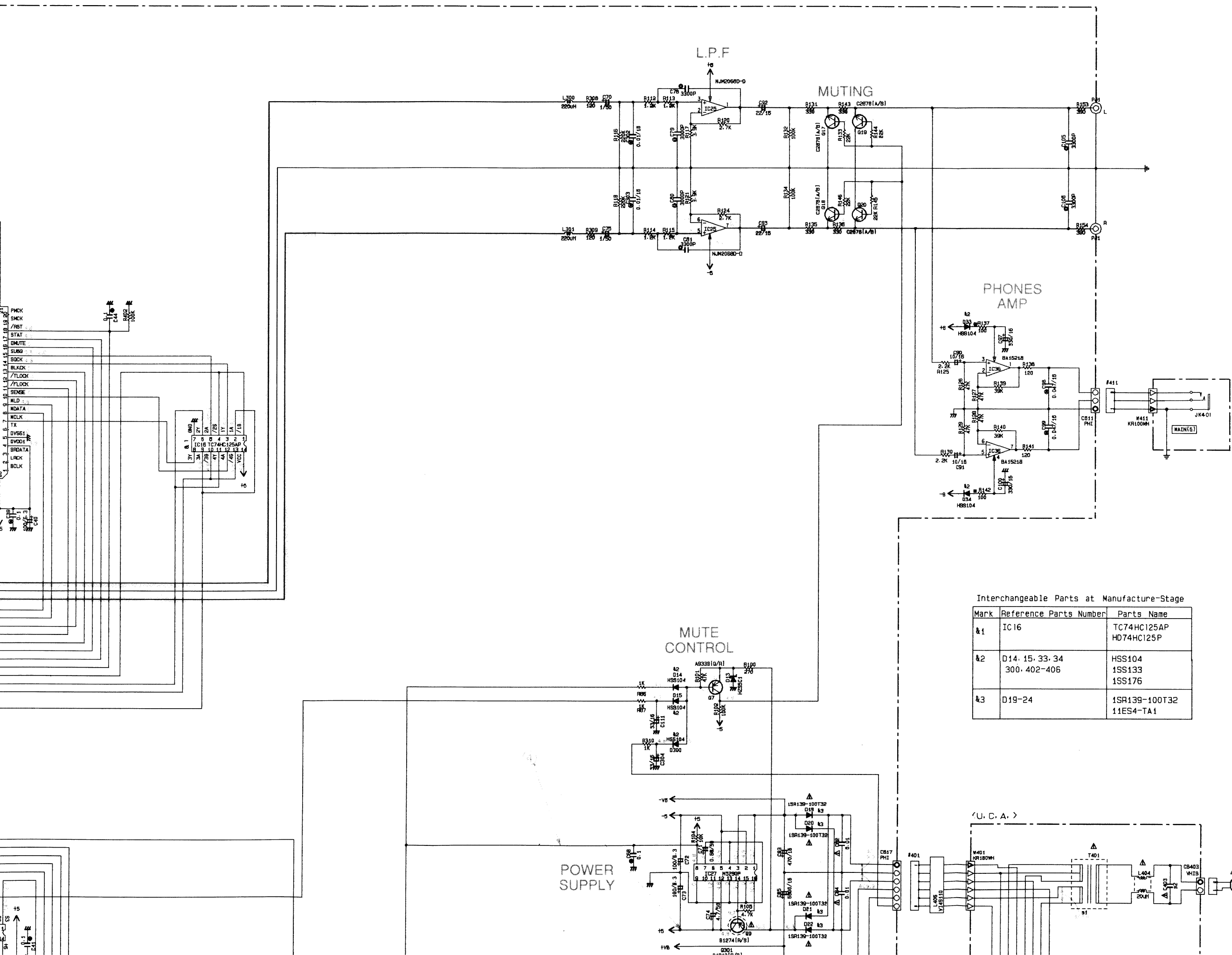
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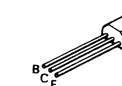
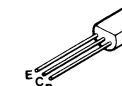
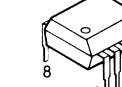
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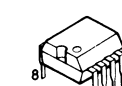


PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICS.

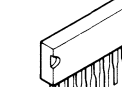
2SA933S (Q, R)

2SB544 (E, F, G)
2SD1915 (F) S, T2SB1274 (R, S)
2SD1913 (R, S)1SS133
1SR139-100
MTZJ4.7C
MTZJ5.1B
MTZJ5.6B
MTZJ6.2A
MTZJ22.0ANUM2068D
X24C00P

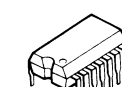
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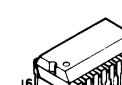
LB1641



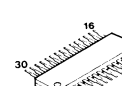
TC74HC125AP



M5290P



LA6536M



AN8803SB



μPD75217CW



MN66271RA-MC



Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
Ⓐ1	IC16	TC74HC125AP HD74HC125P
Ⓐ2	D14, 15, 33, 34 300, 402-406	HSS104 1SS133 1SS176
Ⓐ3	D19-24	1SR139-100T32 11ES4-TA1

5

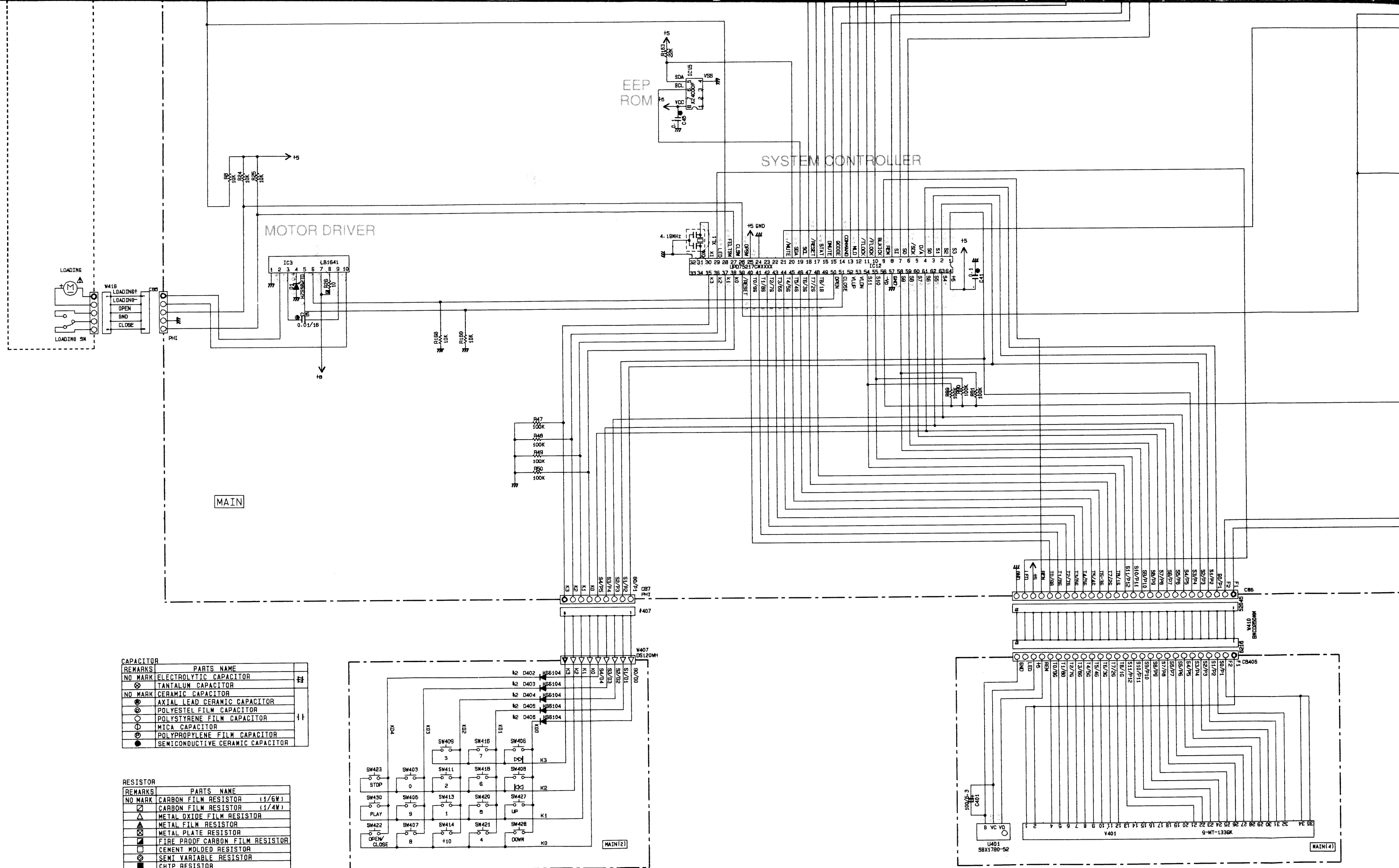
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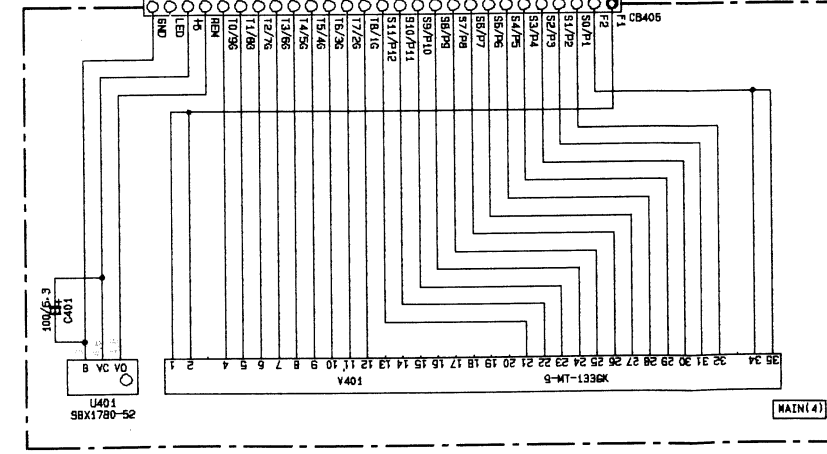
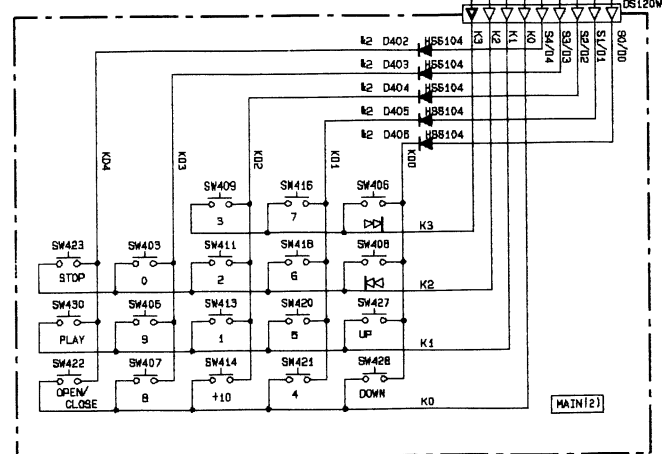
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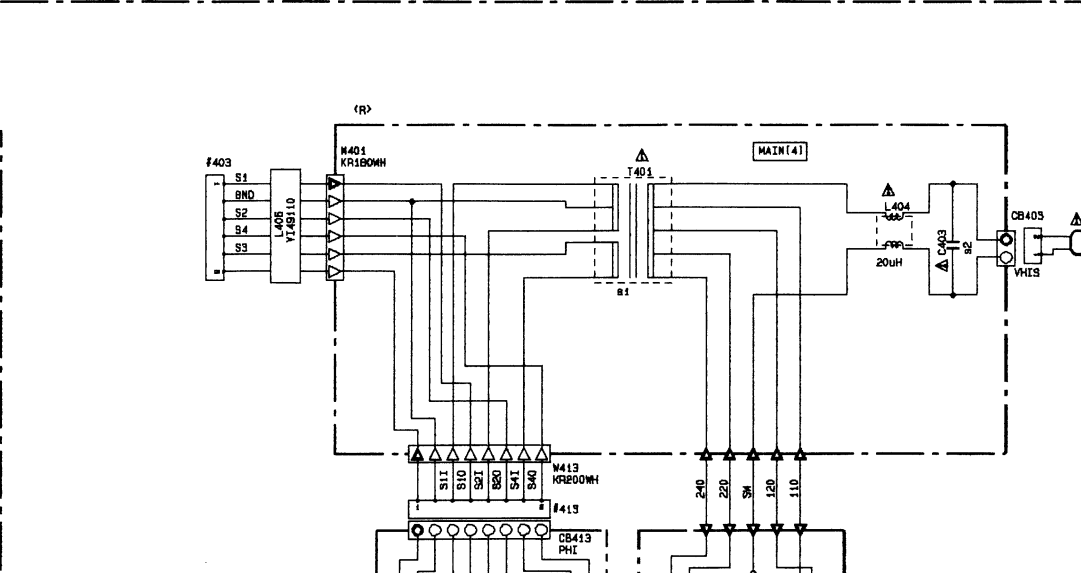
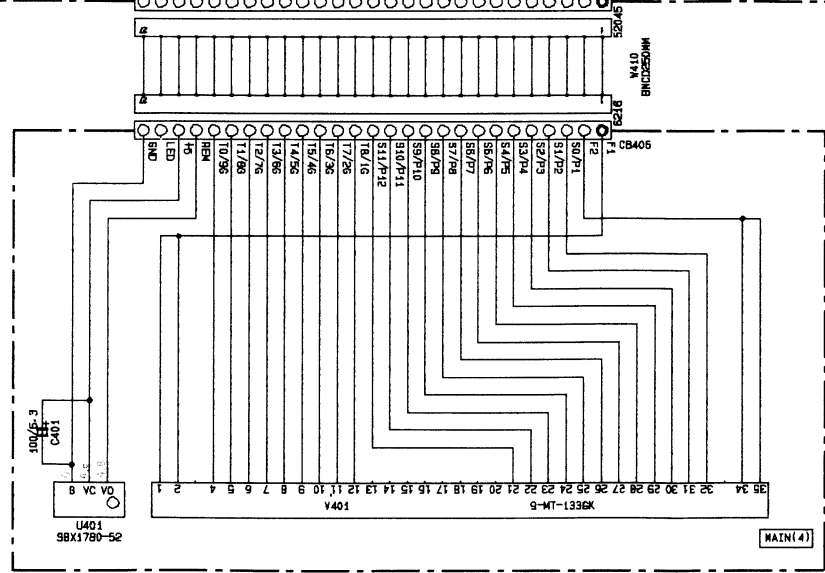
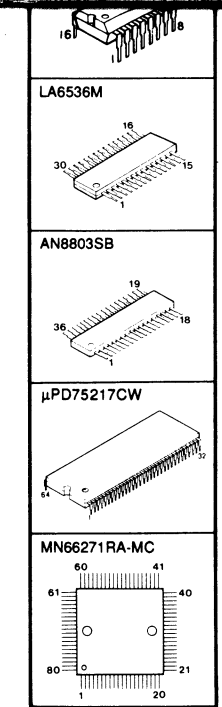
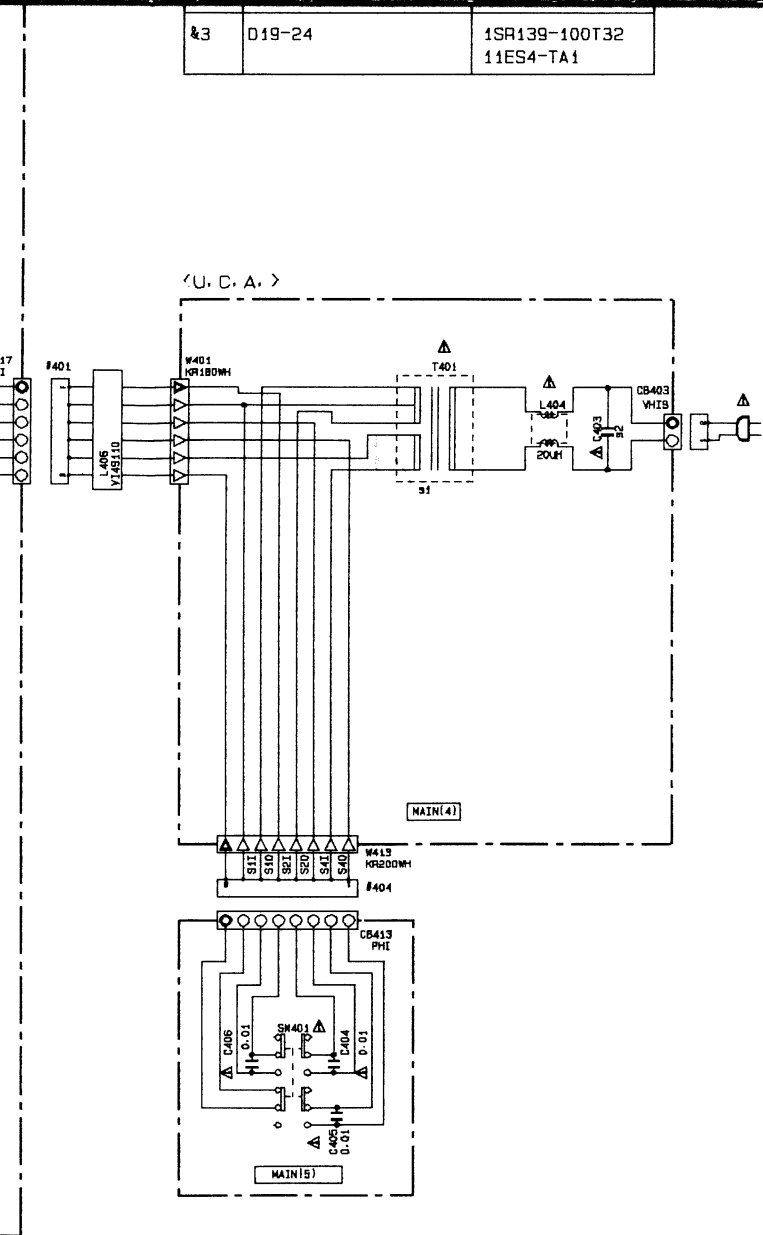
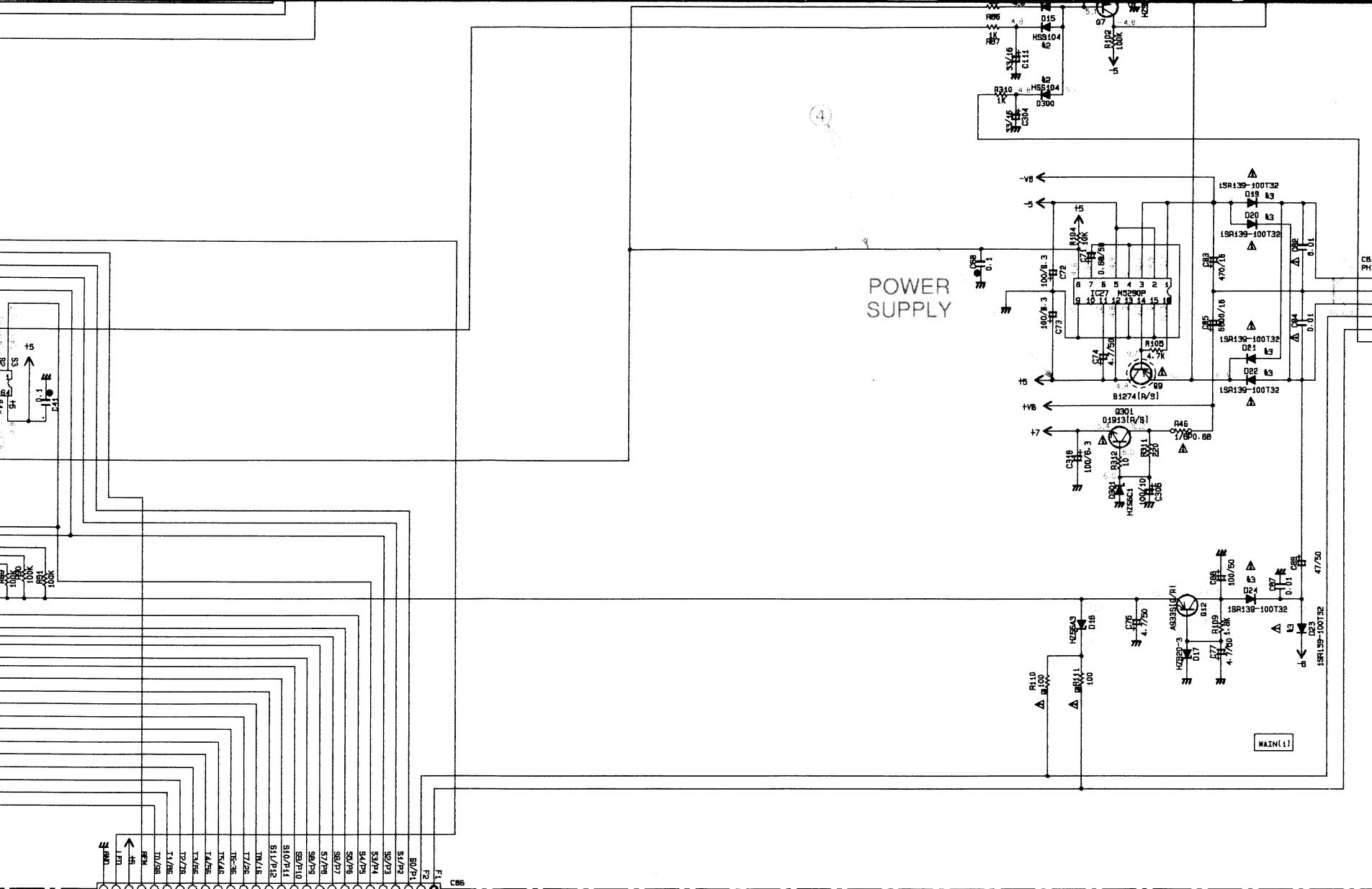
10



REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	100K
NO MARK	TANTALUM CAPACITOR	100K
NO MARK	CERAMIC CAPACITOR	100K
NO MARK	AXIAL LEAD CERAMIC CAPACITOR	100K
NO MARK	POLYESTER FILM CAPACITOR	100K
NO MARK	POLYSTYRENE FILM CAPACITOR	100K
NO MARK	MICA CAPACITOR	100K
NO MARK	POLYPROPYLENE FILM CAPACITOR	100K
NO MARK	SEMICONDUCTIVE CERAMIC CAPACITOR	100K

REMARKS	PARTS NAME	
NO MARK	CARBON FILM RESISTOR (1/6W)	100K
NO MARK	CARBON FILM RESISTOR (1/4W)	100K
NO MARK	METAL OXIDE FILM RESISTOR	100K
NO MARK	METAL FILM RESISTOR	100K
NO MARK	METAL PLATE RESISTOR	100K
NO MARK	FIRE PROOF CARBON FILM RESISTOR	100K
NO MARK	CEMENT MOLDED RESISTOR	100K
NO MARK	SEMI VARIABLE RESISTOR	100K
NO MARK	CHIP RESISTOR	100K





	U-C	R	A	B	G	J
1	T401	XN392	XN394	XN395	XN395	XN396
2	C403	F139410	VE17920	VE17920	VE17920	F132410
3						
4						

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

PARTS LIST

■ ELECTRICAL PARTS

■ WARNING

Components having special characteristics are marked $\triangle$ 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 resistors, refer to last page.

ABBREVIATIONS IN THIS LIST ARE AS FOLLOWS :

C.A.EL.CHP	: CHIP ALUMI. ELECTROLYTIC CAP	L.EMIT	: LIGHT EMITTING MODULE
C.CE	: CERAMIC CAP	LED.DSPLY	: LED DISPLAY
C.CE.ARRAY	: CERAMIC CAP ARRAY	LED.INFRD	: LED, INFRARED
C.CE.CHP	: CHIP CERAMIC CAP	MODUL.RF	: MODULATOR, RF
C.CE.ML	: MULTILAYER CERAMIC CAP	PHOT.CPL	: PHOTO COUPLER
C.CE.M.CHP	: CHIP MULTILAYER CERAMIC CAP	PHOT.INTR	: PHOTO INTERRUPTER
C.CE.SAFTY	: RECOGNIZED CERAMIC CAP	PHOT.RFLCT	: PHOTO REFLECTOR
C.CE.TUBLR	: CERAMIC TUBULAR CAP	PIN.TEST	: PIN, TEST POINT
C.CE.SMI	: SEMI CONDUCTIVE CERAMIC CAP	PLST.RIVET	: PLASTIC RIVET
C.EL	: ELECTROLYTIC CAP	R.ARRAY	: RESISTOR ARRAY
C.MICA	: MICA CAP	R.CAR	: CARBON RESISTOR
C.ML.FLM	: MULTILAYER FILM CAP	R.CAR.CHP	: CHIP RESISTOR
C.MP	: METALLIZED PAPER CAP	R.CAR.FP	: FLAME PROOF CARBON RESISTOR
C.MYLAR	: MYLAR FILM CAP	R.FUS	: FUSABLE RESISTOR
C.MYLAR.ML	: MULTILAYER MYLAR FILM CAP	R.MTL.CHP	: CHIP METAL FILM RESISTOR
C.PAPER	: PAPER CAPACITOR	R.MTL.FLM	: METAL FILM RESISTOR
C.PLS	: POLYSTYRENE FILM CAP	R.MTL.OXD	: METAL OXIDE FILM RESISTOR
C.POL	: POLYESTER FILM CAP	R.MTL.PLAT	: METAL PLATE RESISTOR
C.POLY	: POLYETHYLENE FILM CAP	RSNR.CE	: CERAMIC RESONATOR
C.PP	: POLYPROPYLENE FILM CAP	RSNR.CRYS	: CRYSTAL RESONATOR
C.TNTL	: TANTALUM CAP	R.TW.CEM	: TWIN CEMENT FIXED RESISTOR
C.TNTL.CHP	: CHIP TANTALUM CAP	R.WW	: WIRE WOUND RESISTOR
C.TRIM	: TRIMMER CAP	SCR.BND.HD	: BIND HEAD B-TITE SCREW
CN	: CONNECTOR	SCR.BW.HD	: BW HEAD TAPPING SCREW
CN.BS.PIN	: CONNECTOR, BASE PIN	SCR.CUP	: CUP TITE SCREW
CN.CANNON	: CONNECTOR, CANNON	SCR.TERM	: SCREW TERMINAL
CN.DIN	: CONNECTOR, DIN	SCR.TR	: SCREW, TRANSISTOR
CN.FLAT	: CONNECTOR, FLAT CABLE	SUPRT.PCB	: SUPPORT, P.C.B.
CN.POST	: CONNECTOR, BASE POST	SURG.PRTCT	: SURGE PROTECTOR
COIL.MX.AM	: COIL, AM MIX	SW.TACT	: TACT SWITCH
COIL.AT.FM	: COIL, FM ANTENNA	SW.LEAF	: LEAF SWITCH
COIL.DT.FM	: COIL, FM DETECT	SW.LEVER	: LEVER SWITCH
COIL.MX.FM	: COIL, FM MIX	SW.MICRO	: MICRO SWITCH
COIL.OUTPT	: OUTPUT COIL	SW.PUSH	: PUSH SWITCH
DIOD.ARRAY	: DIODE ARRAY	SW.RT.ENC	: ROTARY ENCODER
DIODE.BRG	: DIODE BRIDGE	SW.RT.MTR	: ROTARY SWITCH WITH MOTOR
DIODE.CHP	: CHIP DIODE	SW.RT	: ROTARY SWITCH
DIODE.VAR	: VARACTOR DIODE	SW.SLIDE	: SLIDE SWITCH
DIOD.Z.CHP	: CHIP ZENER DIODE	TERM.SP	: SPEAKER TERMINAL
DIODE.ZENR	: ZENER DIODE	TERM.WRAP	: WRAPPING TERMINAL
DSCR.CE	: CERAMIC DISCRIMINATOR	THRMST.CHP	: CHIP THERMISTOR
FER.BEAD	: FERRITE BEADS	TR.CHP	: CHIP TRANSISTOR
FER.CORE	: FERRITE CORE	TR.DGT	: DIGITAL TRANSISTOR
FET.CHP	: CHIP FET	TR.DGT.CHP	: CHIP DIGITAL TRANSISTOR
FL.DSPLY	: FLUORESCENT DISPLAY	TRANS	: TRANSFORMER
FLTR.CE	: CERAMIC FILTER	TRANS.PULS	: PULSE TRANSFORMER
FLTR.COMB	: COMB FILTER MODULE	TRANS.PWR	: POWER TRANSFORMER ASS'y
FLTR.LC.RF	: LC FILTER ,EMI	TUNER.AM	: TUNER PACK, AM
GND.MTL	: GROUND PLATE	TUNER.FM	: TUNER PACK, FM
GND.TERM	: GROUND TERMINAL	TUNER.PK	: FRONT-END TUNER PACK
HOLDER.FUS	: FUSE HOLDER	VR	: ROTARY POTENTIOMETER
IC.PRTCT	: IC PROTECTOR	VR.MTR	: POTENTIOMETER WITH MOTOR
JUMPER.CN	: JUMPER CONNECTOR	VR.SW	: POTENTIOMETER WITH ROTARY SW
JUMPER.TST	: JUMPER, TEST POINT	VR.SLIDE	: SLIDE POTENTIOMETER
L.DTCT	: LIGHT DETECTING MODULE	VR.TRIM	: TRIMMER POTENTIOMETER

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

Schm Ref.	PART NO.	Description
* CB2	VR097100	P. C. B. MAIN(UC)
* CB3	VR097200	P. C. B. MAIN(R)
* CB4	VR097300	P. C. B. MAIN(A)
* CB5	VR099600	P. C. B. MAIN(B)
* CB6	VR099700	P. C. B. MAIN(G)
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	VQ047800	CN. BS. PIN 27P
CB7	VB390500	CN. BS. PIN 9P
CB11	VD004600	CN. BS. PIN 3P
CB17	VD004900	CN. BS. PIN 6P
CB403	VG879900	CN. BS. PIN 2P
* CB405	VR062400	CN. BS. PIN 27P
CB413	VD005100	CN. BS. PIN 8P
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	UA654470	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
C30	VF760000	C. EL 100uF 10V
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
C44	VH053100	C. CE. TUBLR 0.1uF 50V
C45	VH053100	C. CE. TUBLR 0.1uF 50V
C60	VF637900	C. EL 1000uF 10V
C68	VH053100	C. CE. TUBLR 0.1uF 50V
C70	VJ839100	C. EL 1uF 50V
C71	UJ865680	C. EL 0.68uF 50V

* New Parts

Schm Ref.	PART NO.	Description
C72	VF760000	C. EL 100uF 10V
C73	VF760000	C. EL 100uF 10V
C74	UM416470	C. EL 4.7uF 50V
C75	VJ839100	C. EL 1uF 50V
C76	UM416470	C. EL 4.7uF 50V
C77	UM416470	C. EL 4.7uF 50V
C78	UA653330	C. MYLAR 3300pF 50V
C79	UA653300	C. MYLAR 3000pF 50V
C80	UA653300	C. MYLAR 3000pF 50V
C81	UA653330	C. MYLAR 3300pF 50V
C82	UG444100	C. CE 0.01uF 50V
C83	UJ638470	C. EL 470uF 16V
C84	UG444100	C. CE 0.01uF 50V
C85	VH507200	C. EL 6800uF 16V
C87	UG444100	C. CE 0.01uF 50V
C88	UJ668100	C. EL 100uF 50V
C89	UJ667470	C. EL 47uF 50V
C90	VJ836900	C. EL 10uF 16V
C91	VJ836900	C. EL 10uF 16V
C92	UM407220	C. EL 22uF 25V
C93	UM407220	C. EL 22uF 25V
C97	UJ638330	C. EL 330uF 16V
C98	VJ599000	C. CE. TUBLR 0.047uF 16V
C99	VJ599000	C. CE. TUBLR 0.047uF 16V
C100	UJ638330	C. EL 330uF 16V
C105	UA653330	C. MYLAR 3300pF 50V
C106	UA653330	C. MYLAR 3300pF 50V
C111	UM397330	C. EL 33uF 16V
C300	VF760000	C. EL 100uF 10V
* C301	UK665470	C. EL 0.47uF 50V
C302	VF467300	C. CE. TUBLR 0.01uF 16V
C303	VF467300	C. CE. TUBLR 0.01uF 16V
C304	UM397330	C. EL 33uF 16V
C305	VF760000	C. EL 100uF 10V
C318	VF760000	C. EL 100uF 10V
C319	VF467000	C. CE. TUBLR 1000pF 50V
C401	VF760000	C. EL 100uF 10V
C403	Fi384100	C. CE. SAFTY 0.01uF 400V(UC)
C403	VE179200	C. CE. SAFTY 0.01uF 400V(RABG)
C404	UG444100	C. CE 0.01uF 50V
C405	UG444100	C. CE 0.01uF 50V
C406	UG444100	C. CE 0.01uF 50V
D1	VG437200	DIODE. ZENR MTZJ4.7C 4.7V
D13	VG437400	DIODE. ZENR MTZJ5.1B 5.1V
D14	iF004600	DIODE 1SS133
D15	iF004600	DIODE 1SS133
D17	VG442000	DIODE. ZENR MTZJ22A 22V
D18	VG437700	DIODE. ZENR MTZJ5.6B 5.6V
D19	VH770800	DIODE 1SR139-100
D20	VH770800	DIODE 1SR139-100
D21	VH770800	DIODE 1SR139-100
D22	VH770800	DIODE 1SR139-100
D23	VH770800	DIODE 1SR139-100

* New Parts

Schm Ref.	PART NO.	Description
△ D24	VH770800	DIODE 1SR139-100
D33	iF004600	DIODE 1SS133
D34	iF004600	DIODE 1SS133
D300	iF004600	DIODE 1SS133
D301	VG437900	DIODE. ZENR MTZJ6. 2A 6.2V
D402	iF004600	DIODE 1SS133
D403	iF004600	DIODE 1SS133
D404	iF004600	DIODE 1SS133
D405	iF004600	DIODE 1SS133
D406	iF004600	DIODE 1SS133
* IC1	XM571A00	IC AN8803SB
IC3	XF494A00	IC LB1641
* IC6	XN105A00	IC LA6536M
IC11	XN481A00	IC MN6627ORB
* IC12	XN443A00	IC uPD75217CW-230
* IC15	XM683A00	IC X24C00P
IC16	iR012500	IC TC74HC125AP
IC25	XA987001	IC NJM2068D-D
IC27	XD201A00	IC M5290P
IC36	Xi249A00	IC BA15218
JK401	VR422500	JACK. PHONE
L300	Vi546100	COIL 220uH
L301	Vi546100	COIL 220uH
△ L404	VH227500	FLTR 20uH SU10VD-10020
L406	Vi491100	FER. CORE BP53RB19012080M
PJ1	VJ898400	JACK. PIN 2P
Q1	iB054430	TR 2SB544 D, E, F, G
Q7	iA093320	TR 2SA933S Q, R
△ Q9	VC614000	TR 2SB1274 Q, R, S
Q12	iA093320	TR 2SA933S Q, R
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	VC407900	TR 2SD1913 R, S
R26	HV454100	R. CAR. FP 10 Ω 1/4W
△ R46	Vi868300	R. FUS 0.68 Ω 1/6W
△ R110	HV455100	R. CAR. FP 100 Ω 1/4W
△ R111	HV455100	R. CAR. FP 100 Ω 1/4W
R137	HV455100	R. CAR. FP 100 Ω 1/4W
R142	HV455100	R. CAR. FP 100 Ω 1/4W
△ SW401	Vi272700	SW. PUSH
SW403	VG392900	SW. TACT SKHVAA
SW405	VG392900	SW. TACT SKHVAA
SW406	VG392900	SW. TACT SKHVAA
SW407	VG392900	SW. TACT SKHVAA
SW408	VG392900	SW. TACT SKHVAA
SW409	VG392900	SW. TACT SKHVAA
SW411	VG392900	SW. TACT SKHVAA
SW413	VG392900	SW. TACT SKHVAA
SW414	VG392900	SW. TACT SKHVAA
SW416	VG392900	SW. TACT SKHVAA
SW418	VG392900	SW. TACT SKHVAA

* New Parts

Schm Ref.	PART NO.	Description
SW420	VG392900	SW. TACT SKHVAA
SW421	VG392900	SW. TACT SKHVAA
SW422	VG392900	SW. TACT SKHVAA
SW423	VG392900	SW. TACT SKHVAA
△ SW426	VL908000	VOLT. SELCT ESE-370 (R)
SW427	VG392900	SW. TACT SKHVAA
SW428	VG392900	SW. TACT SKHVAA
SW430	VG392900	SW. TACT SKHVAA
△ * T401	XN392A00	TRANS. PWR (UC)
△ * T401	XN393A00	TRANS. PWR (G)
△ * T401	XN394A00	TRANS. PWR (R)
△ * T401	XN395A00	TRANS. PWR (AB)
TP1	VL448600	JUMPER. TST
TP2	VL448600	JUMPER. TST
* U401	VQ395300	L. DETCT SBX1780-52
* V401	VR061600	FL. DSPLY 9-MT-133GK
XL1	VJ677200	RSNR. CE 4.19MHz
* XL3	VR197300	RSNR. CE 16.93MHz
	VB966900	CN IMSA-6024
	VB966900	CN IMSA-6024 (R)
*	VQ713200	GND. MTL
*	VQ713000	SUPRT FL
*	VQ948800	SHEET FL
	Vi835500	HEAT. SINK PH-0124S-B

* New Parts

A

B

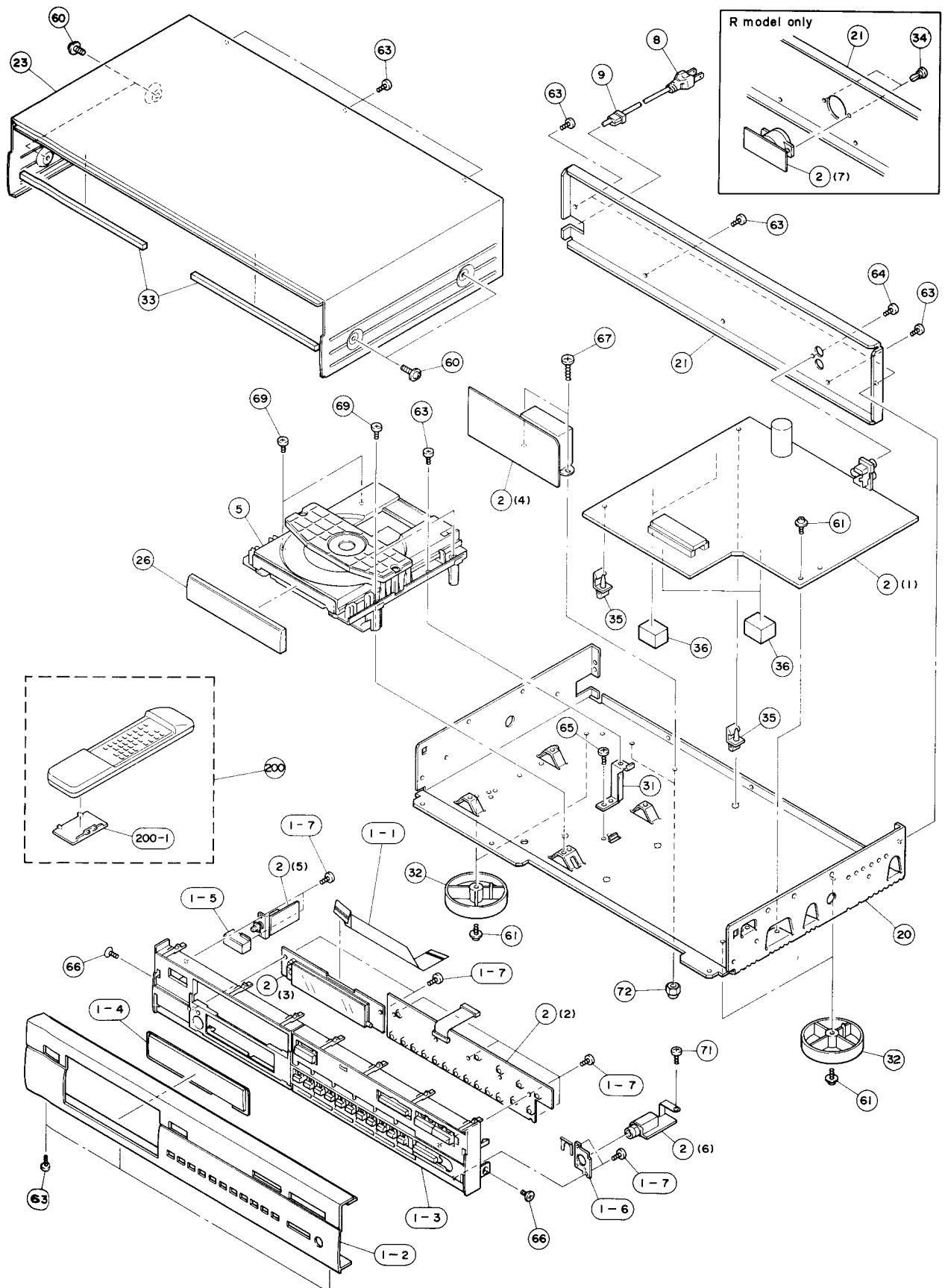
C

D

E

CDX-480

EXPLODED VIEW



MECHANICAL PARTS

Ref. No.	PART NO.	Description	Remarks	Markets
* 1-1	VR119100	CONNECTOR, FLAT CABLE	27P 250mm	
* 1-2	VQ708600	FRONT PANEL	BL	
* 1-2	VQ708700	FRONT PANEL	TI	
* 1-3	VQ708800	SUB PANEL	BL	
* 1-3	VQ708900	SUB PANEL	TI	
* 1-4	VQ710700	WINDOW PANEL		
* 1-5	VQ780000	BUTTON	BL	
* 1-5	VQ780100	BUTTON	TI	
* 1-6	VQ890600	SUPPORT	HP	
* 1-7	EP600290	BIND HEAD P-TITE SCREW	3x6 ZMC2-Y	
* 2	VR097100	P.C.B. ASS'Y, MAIN		(UC)
* 2	VR097200	P.C.B. ASS'Y, MAIN		(R)
* 2	VR097300	P.C.B. ASS'Y, MAIN		(A)
* 2	VR099600	P.C.B. ASS'Y, MAIN		(B)
* 2	VR099700	P.C.B. ASS'Y, MAIN		(G)
* 5	VQ905800	CD MECHANISM UNIT	KSL-210ABM	
△ * 8	VN804500	POWER CORD ASS'Y		(B)
△ * 8	VQ508400	POWER CORD ASS'Y		(UC)
△ * 8	VQ508500	POWER CORD ASS'Y		(R)
△ * 8	VQ508600	POWER CORD ASS'Y		(A)
△ * 8	VQ508700	POWER CORD ASS'Y		(G)
9	VN158600	CORD STOPPER	No. 2104	
* 11	VR207400	CONNECTOR ASS'Y	8P 150mm	
* 12	VM987900	CONNECTOR ASS'Y	8P 160mm	
* 20	VQ709000	CHASSIS		
* 21	VQ710000	REAR PANEL		(B)
* 21	VQ710100	REAR PANEL		(G)
* 21	VQ710200	REAR PANEL		(UC)
* 21	VQ710300	REAR PANEL		(R)
* 21	VQ710400	REAR PANEL		(A)
* 23	VQ709200	TOP COVER	BL	
* 23	VQ709300	TOP COVER	TI	
* 26	VQ710900	LID	BL	
* 26	VQ711000	LID	TI	
* 31	VQ789400	GROUND PLATE		
* 32	VQ780300	LEG	D60xH16	
* 33	VQ861300	CUSHION	TOP	
* 34	VR189100	PUSH RIVET	P3055-B	
* 35	VA772900	SUPPORT, P.C.B.	No. 2127	
* 36	VQ861500	CUSHION	SHEET	
60	EL300470	BW HEAD S-TITE SCREW	4x8-10 FCRM3-BL	BL
60	EX601150	BW HEAD S-TITE SCREW	4x8-10 FNM3-BL	TI
61	EK930010	BW HEAD TAPPING SCREW	3x8-8 FCRM3-BL	
63	EN301010	BIND HEAD BONDING TAP. SCREW	3x8 FCRM3-BL	
64	EX602710	BIND HEAD BONDING P-T. SCREW	3x8 FCRM3-BL	
65	EN340030	BIND HEAD BONDING B-T. SCREW	3x6 FCRM3-BL	
66	EO030066	FLAT HEAD SCREW	3x6 ZMC2-Y	
67	EK396010	BIND HEAD S-TITE SCREW	4x8 FCRM3-BL	
69	Ei330086	BIND HEAD B-TITE SCREW	3x8 FCRM3-BL	
71	EX602860	BIND HEAD B-TITE SCREW	3x8 FCM3-CU	
72	EX601580	HEXAGONAL BLIND NUT	4mm FCRM3-BL	

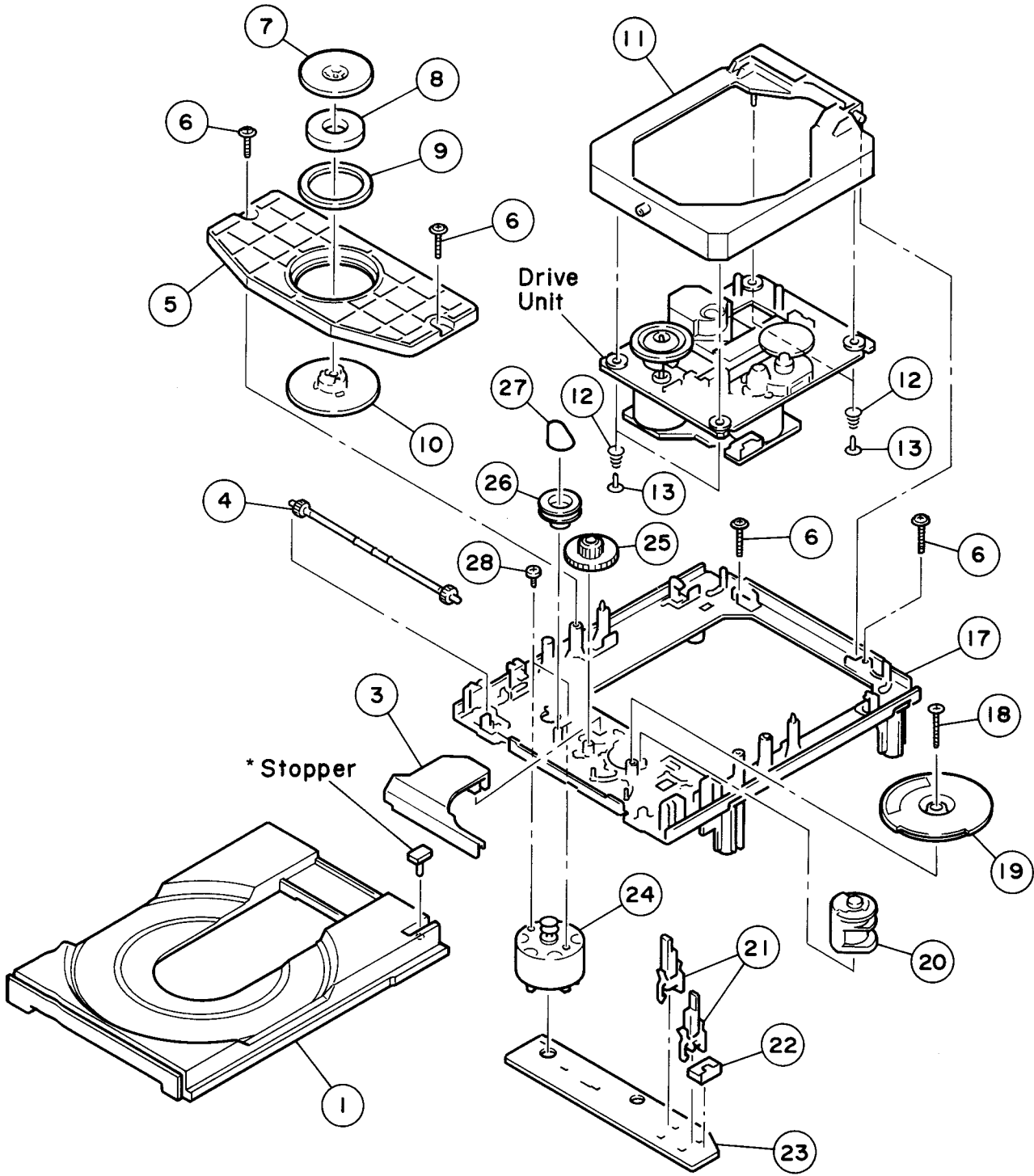
*New Parts

Ref. No.	PART NO.	Description	Remarks	Markets
* 200	VQ950100	ACCESSORIES		
200-1	CX675150	REMOTE CONTROL TRANSMITTER		
	VN159900	LID	54x32.9BLALPS	
		PIN-PLUG CORD	2P 1.0m	
		BATTERY, MANGANESE	SUM-3, AA, R06	

* New Parts

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EXPLODED VIEW (CD Macha. Unit)



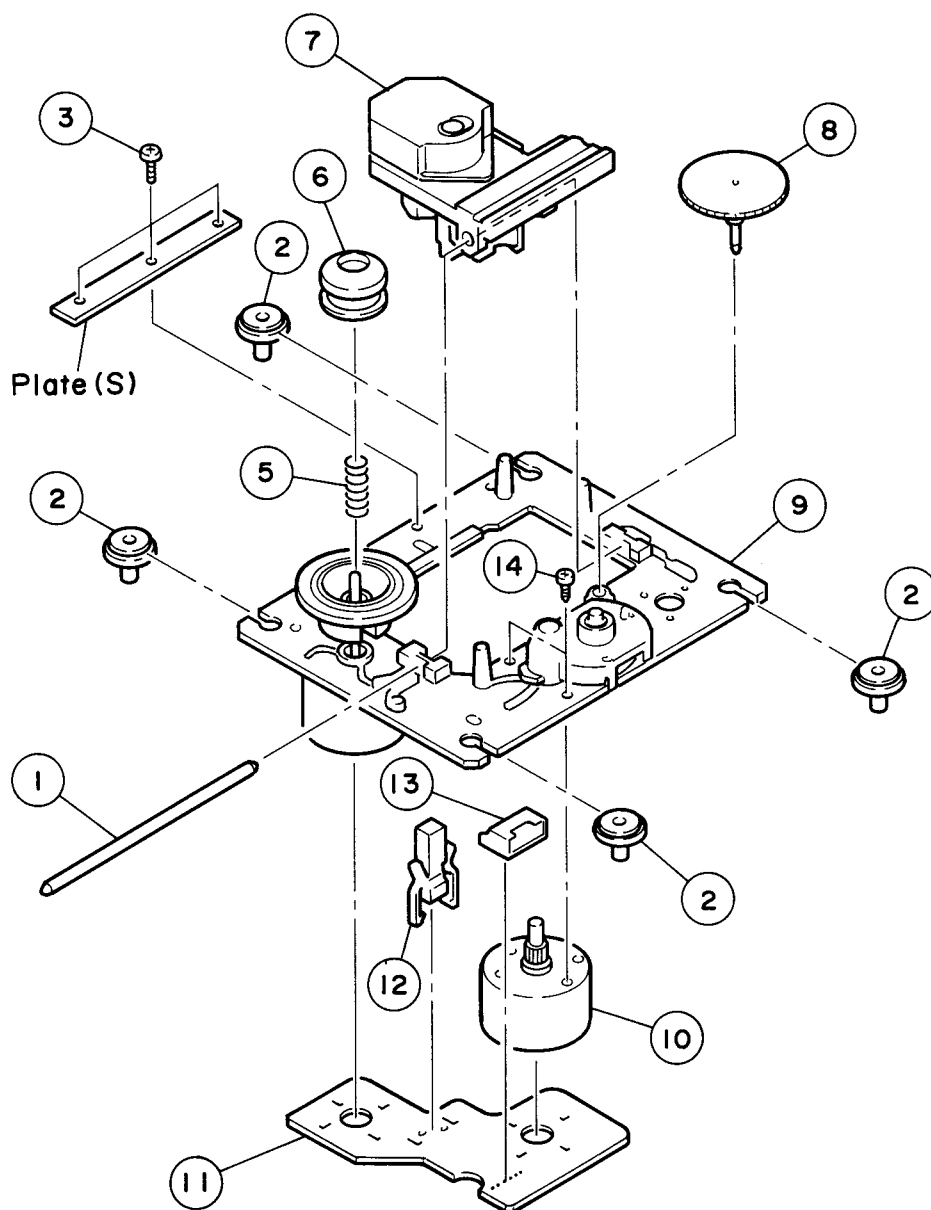
*The stopper is not supplied with the tray as a spare part.
When replacing the tray, keep the removed stopper and reuse it.

MECHANICAL PARTS (CD Macha. 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	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	331950151	
* 19	CX675270	DRIVE GEAR (S)	262554703	
* 20	CX675260	CONTROL CAM (S)	262554504	
* 21	KX604180	LEAF SWITCH	157208611	
* 22	LX608390	CONNECTOR PIN	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	262527901	

* New Parts

EXPLODED VIEW (Drive Unit)



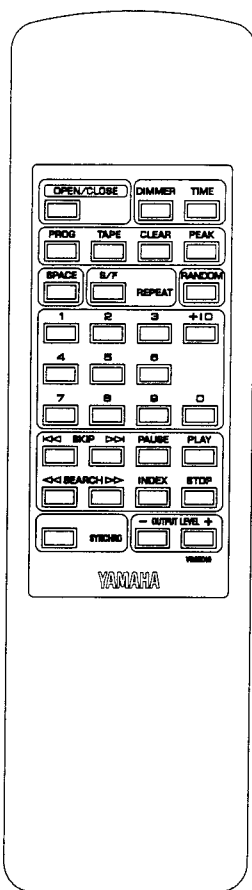
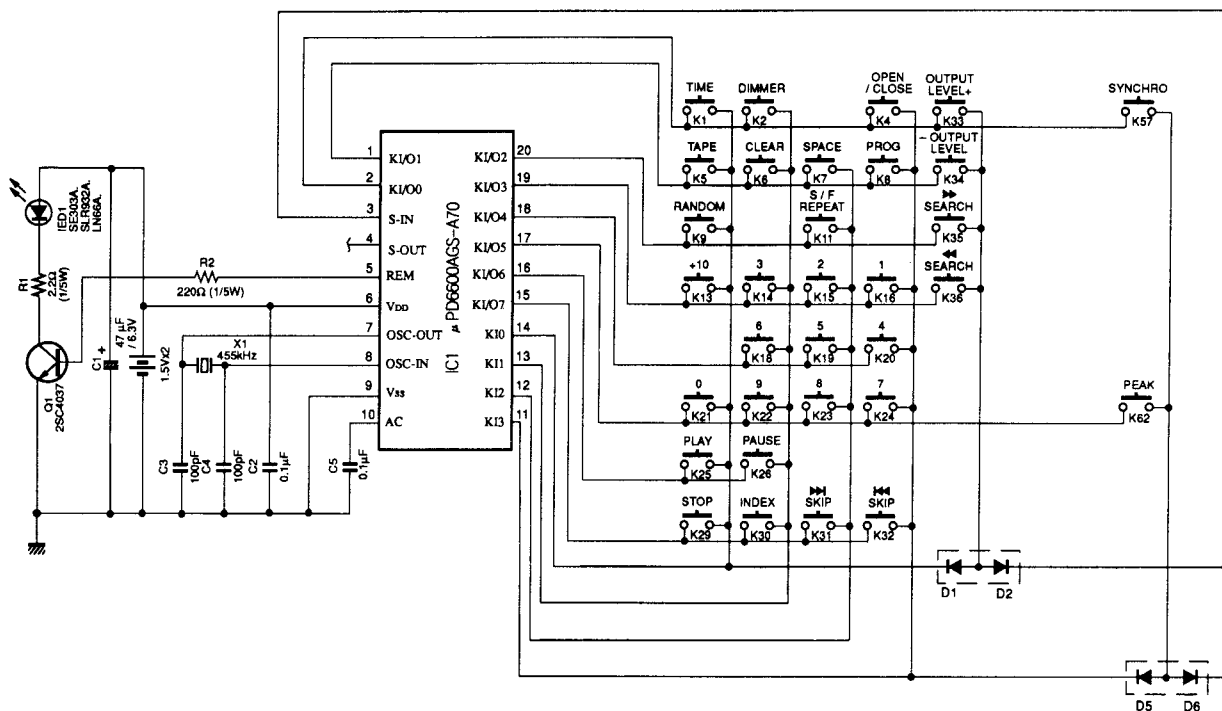
Ref. No.	PART NO.	Description	Remarks	Markets
* 1	AX619110	SLED SHAFT (S)	262546401	
* 2	CX675230	INSULATOR (S)	262553801	
3	AX607540	SPECIAL SCREW	2641386	
* 5	AX619120	COIL SPRING (S)	262546501	
* 6	AX619130	CENTER RING, LO (S)	262547701	
7	PX600431	LASER PICK UP	8848127	
* 8	CX675190	GEAR, A (S)	262546201	
9	NX610600	CHASSIS ASS'Y, T.T.	X26251332	
10	NX610610	MOTOR GEAR ASS'Y	X26251321	
* 11	NX613040	PWB, MOTOR	163967813	
12	KX603720	LEAF SWITCH	157208512	
* 13	LX608400	CONNECTOR	1564722	
14	EA020036	PAN HEAD SCREW	762125515	

* New Parts

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REMOTE CONTROL TRANSMITTER

■ SCHEMATIC DIAGRAM

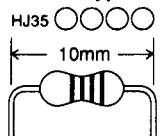


KEY No.	FUNCTION	CUSTOM CODE (HEX)	REVERSE CUSTOAOM CODE (HEX)	DATA CODE (HEX)	REMARKS D0 D7
K1	TIME	79	86	0A	01010000
K2	DIMMER	79	86	1E	01111000
K4	OPEN/CLOSE	79	86	01	10000000
K5	TAPE	79	86	57	11101010
K6	CLEAR	79	86	0D	10110000
K7	SPACE	79	86	0F	11110000
K8	PROG	79	86	0C	00110000
K9	RANDOM	79	86	1B	11011000
K11	S/F REPEAT	79	86	08	00010000
K13	+10	79	86	1A	01011000
K14	3	79	86	13	11001000
K15	2	79	86	12	01001000
K16	1	79	86	11	10001000
K18	6	79	86	16	01101000
K19	5	79	86	15	10101000
K20	4	79	86	14	00101000
K21	0	79	86	10	00001000
K22	9	79	86	19	10011000
K23	8	79	86	18	00011000
K24	7	79	86	17	11101000
K25	PLAY	79	86	02	01000000
K26	PAUSE	79	86	55	10101010
K29	STOP	79	86	56	01101010
K30	INDEX	79	86	0B	11010000
K31	SKIP >>>	79	86	07	11100000
K32	<<< SKIP	79	86	04	00100000
K33	OUTPUT LEVEL +	79	86	1D	10111000
K34	- OUTPUT LEVEL	79	86	1C	00111000
K35	SEARCH >>>	79	86	06	01100000
K36	<<< SEARCH	79	86	05	10100000
K57	SYNCHRO	79	86	58	00011010
K62	PEAK	79	86	5D	10111010

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 4470	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

HJ35 

1/4W Type

HF45 

1/6W Type

HF85 