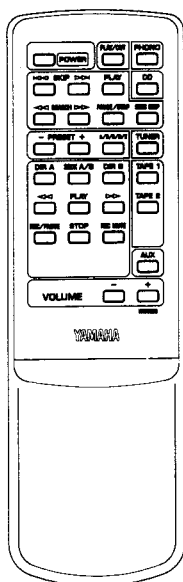
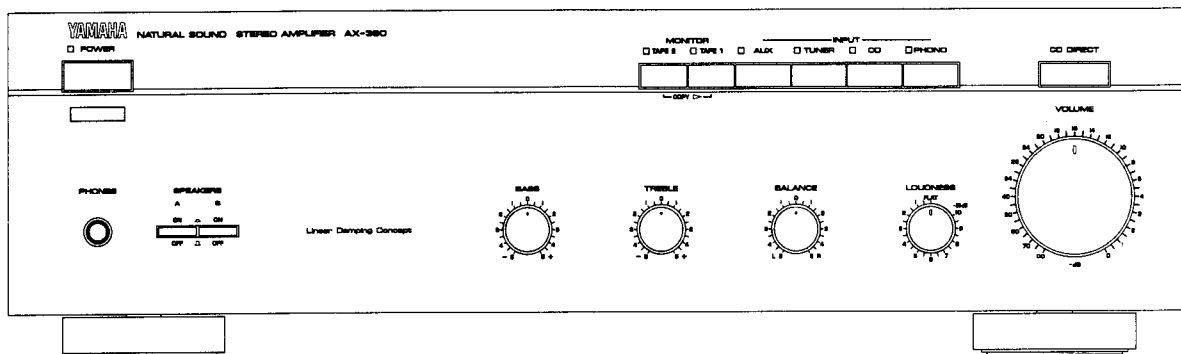


STEREO AMPLIFIER AX-380

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 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 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).

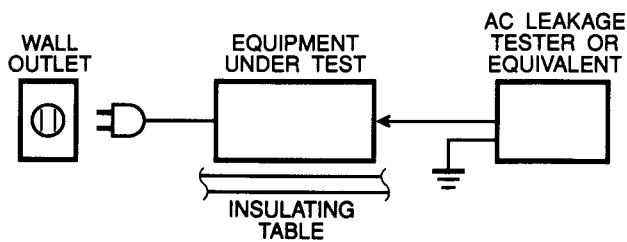
IMPORTANT: Turn the unit OFF during disassembly and part replacement. Recheck all work before you apply power to the unit.

CONTENTS

TO SERVICE PERSONNEL	1	μ-COM DATA	5
REAR PANELS	1	PRINTED CIRCUIT BOARD	6~10
SPECIFICATIONS	2	IC BLOCK	11
BLOCK DIAGRAM	3	SCHEMATIC DIAGRAM	12~15
INTERNAL VIEW	4	PARTS LIST	16~22
DISASSEMBLY PROCEDURES	4	REMOTE CONTROL TRANSMITTER	23

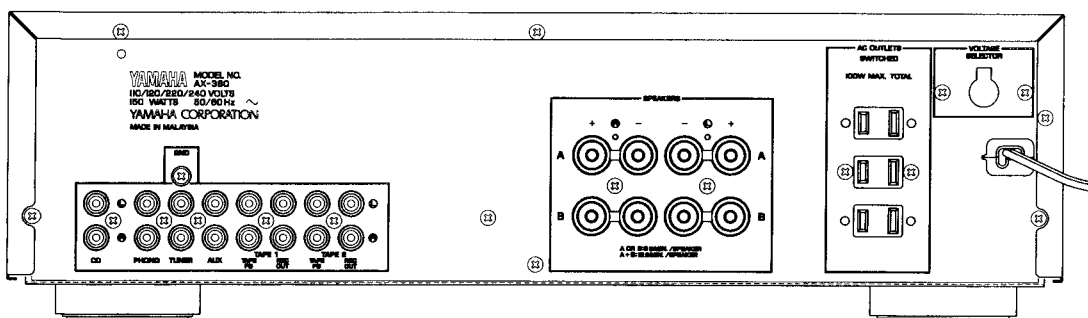
TO SERVICE PERSONNEL

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

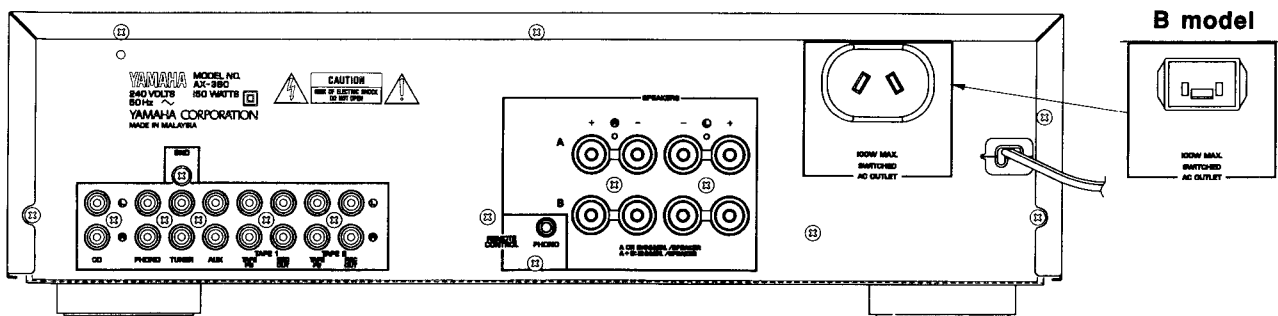


REAR PANELS

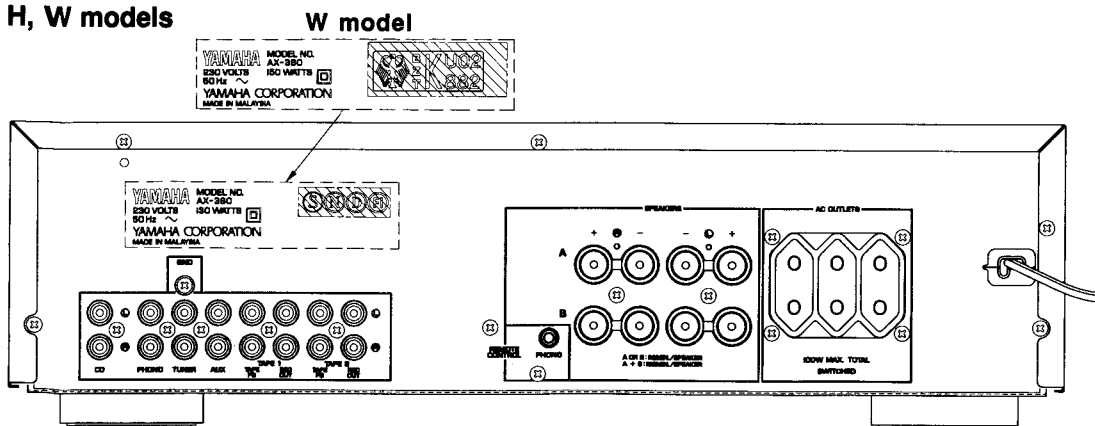
R model



A, B models



H, W models



■ SPECIFICATIONS

■ AUDIO SECTION

Minimum RMS Output Power Per Channel	
8Ω, 20Hz to 20kHz, 0.04% THD	55W
6Ω, 20Hz to 20kHz, 0.06% THD (Except H model)	60W
Dynamic Power per Channel (IHF)	
8/6/4/2Ω	78/90/110/120W
DIN Standard Output Power Per Channel	
1kHz, 0.7% THD, 4Ω (H, W models)	85W
Maximum Power EIAJ	
1kHz, 10% THD, 8/6Ω (R model)	83/94W
IEC Power	
1kHz, 0.04% THD, 8Ω (H, W models)	70W
Power Band Width	
8Ω, 25W, 0.08% THD	10Hz to 40kHz
Damping Factor	
8Ω, 20Hz to 20kHz	100 or more
Input Sensitivity/Impedance	
PHONO MM	2.5mV/47kΩ
CD etc	150mV/47kΩ
Maximum Input Signal Level (1kHz, 0.04% THD)	
PHONO MM	90mV
Output Level/Impedance	
REC OUT	150mV/600Ω
Headphone Jack Rated Output/Impedance	
0.04% THD, RL = 8Ω	0.42V/390Ω
Frequency Response (20Hz to 20kHz)	
CD etc	0±0.5dB
RIAA Equalization Deviation (20Hz to 20kHz)	
PHONO MM	0±0.5dB
Total Harmonic Distortion (20Hz to 20kHz)	
PHONO MM to REC OUT (1V)	0.02%
CD etc to SP OUT (27.5W/8Ω)	0.02%
Signal-to-Noise Ratio (IHF-A Network)	
PHONO MM (5mV Input Shorted)	82dB
CD etc (Shorted)	105dB
Residual Noise (IHF-A Network)	
(CD Direct SW ON)	100μV
Channel Separation (Vol. -30dB)	
PHONO MM (Input Shorted) 1kHz	65dB
CD etc 1kHz (Input 5.1kΩ Terminated)	60dB
Tone Control Characteristics	
BASS : Boost/cut	±10dB (20Hz)
Turnover Frequency	350Hz
TREBLE : Boost/cut	±10dB (20kHz)
Turnover Frequency	3.5kHz
Continuous Loudness Control	
.....	-30dB (1kHz)
(Level related equalization)	

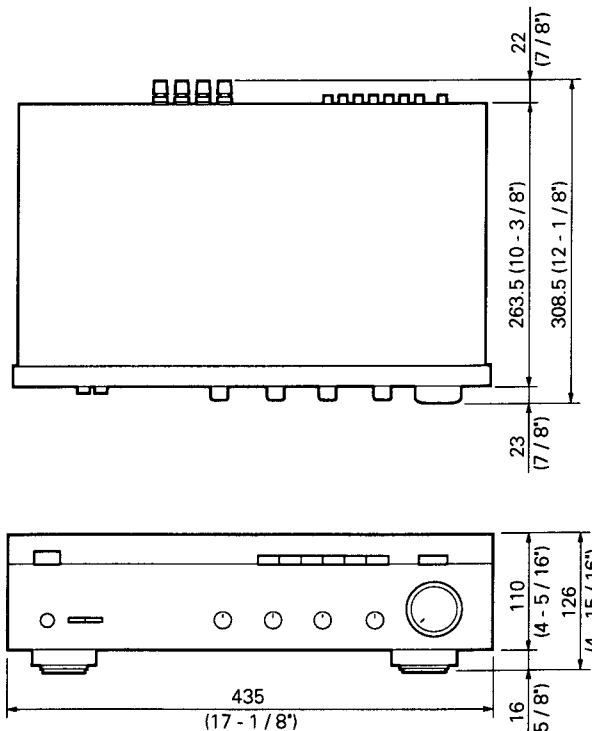
■ GENERAL

Power Supply	
H, W models	AC 230V, 50Hz
A, B models	AC 240V, 50Hz
R model	AC 110/120/220/240V, 60/50Hz
Power Consumption	
H model	130W
Except H model	150W
AC Outlets	
Switched x 3	
H, W, R models	100W max. (Total)
Switched x 1	
A, B models	100W max.
Dimensions (W x H x D)	
.....	435 x 126 x 308.5mm
	(17-1/8" x 4-15/16" x 12-1/8")
Weight	
.....	6.6kg (14 lbs 8 oz)
Accessories	
.....	Remote Control Transmitter x 1
	Battery (size "AA", R06) x 2

* Specifications subject to change without notice.

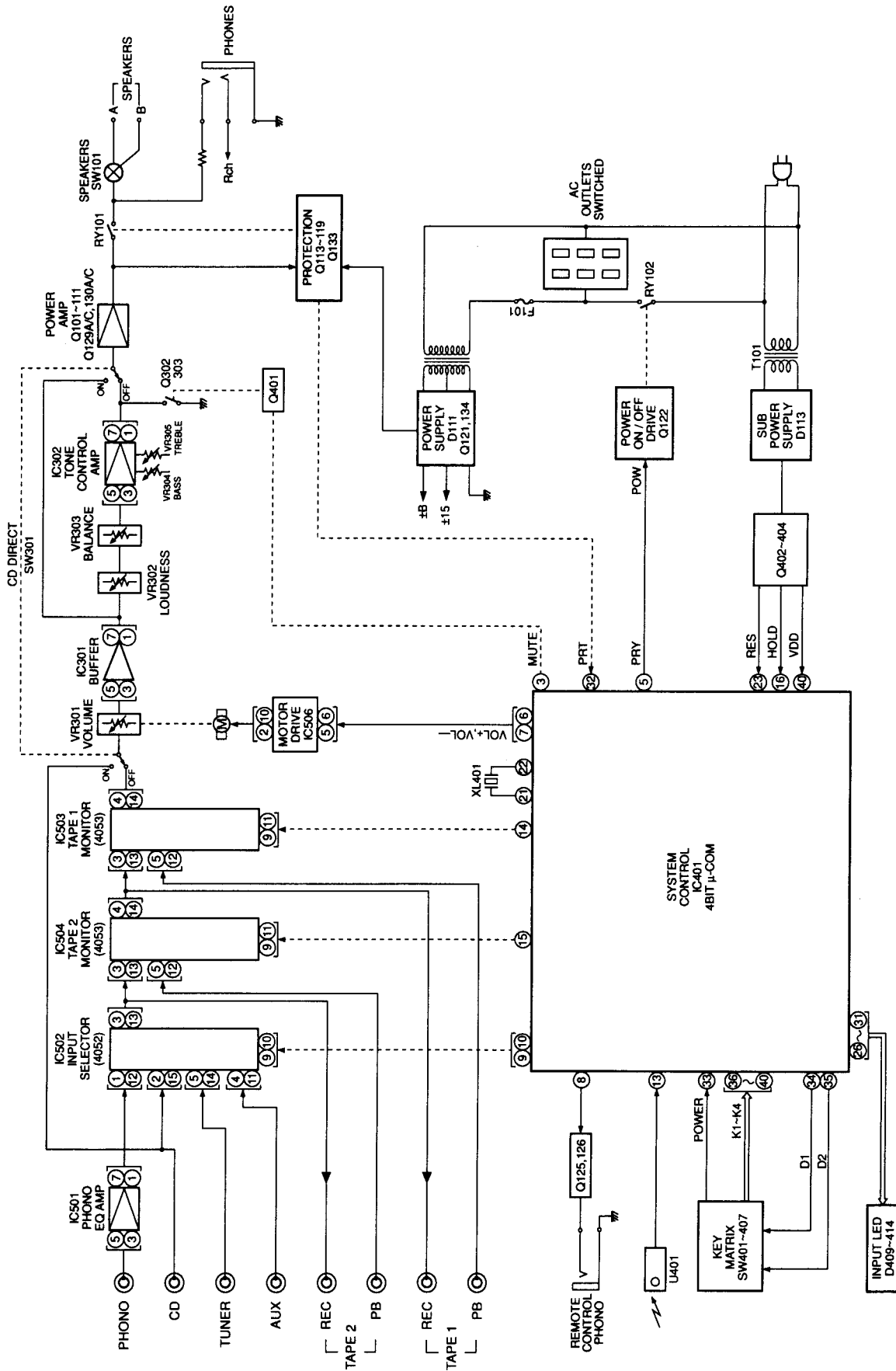
H European model B British model
 W German model R General model
 A Australian model

● DIMENSIONS

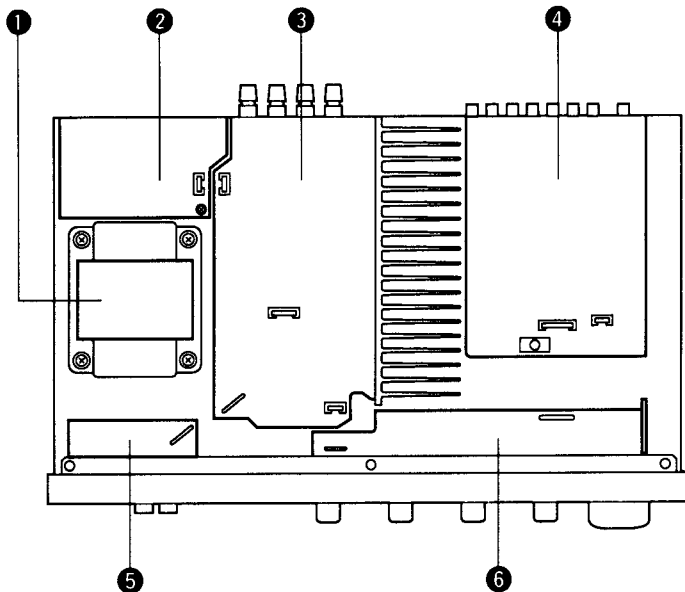


Units : mm (Inch)

■ BLOCK DIAGRAM



INTERNAL VIEW



- ① POWER TRANSFORMER
- ② P.C.B. MAIN (2)
- ③ P.C.B. MAIN (1)
- ④ P.C.B. INPUT
- ⑤ P.C.B. MAIN (3)
- ⑥ P.C.B. OPERATION (1)

DISASSEMBLY PROCEDURES

(Remove parts in the order as numbered.)

1. Removal of Top Cover

Remove 4 screws (①) and 3 screws (②) in Fig. 1.

2. Removal of Front Panel

- a. Remove 5 knobs.
- b. Remove 6 screws (③) in Fig. 1.

3. Removal of Rear Panel

Remove 13 screws (④) in Fig. 2.

* The P.C.B. MAIN & INPUT can be removed in this state.

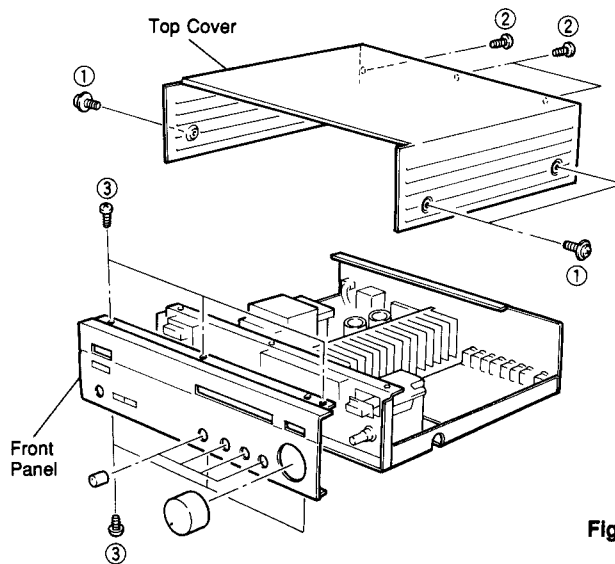


Fig. 1

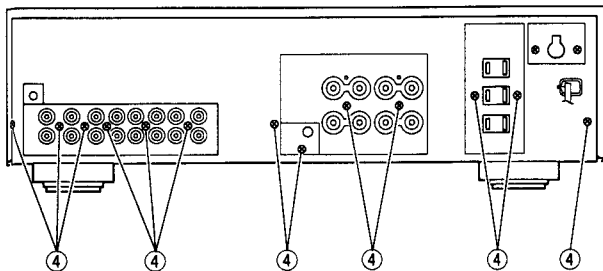
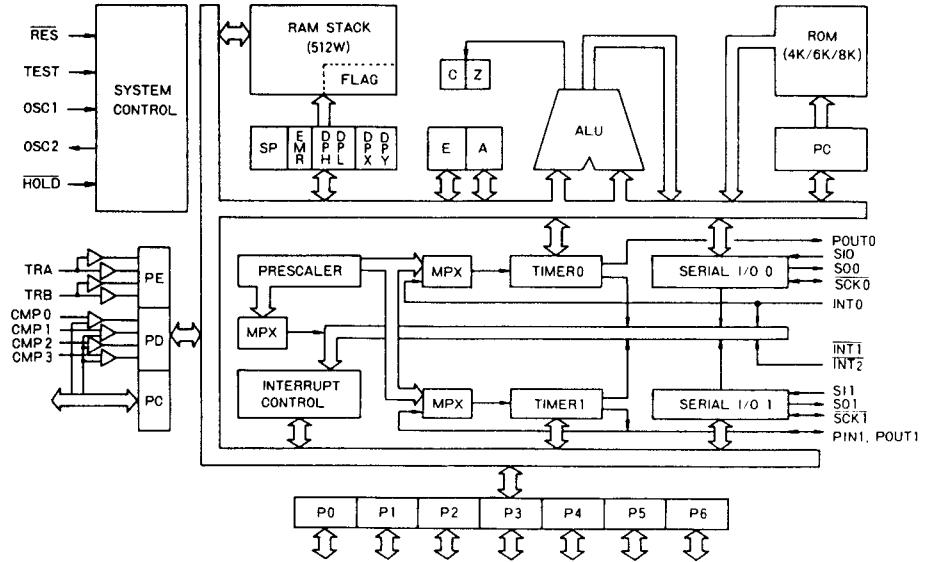
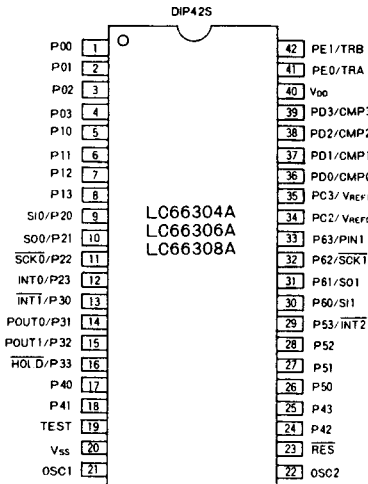


Fig. 2

AX-380

μ-COM DATA

IC401 : LC66304
4bit μ-COM

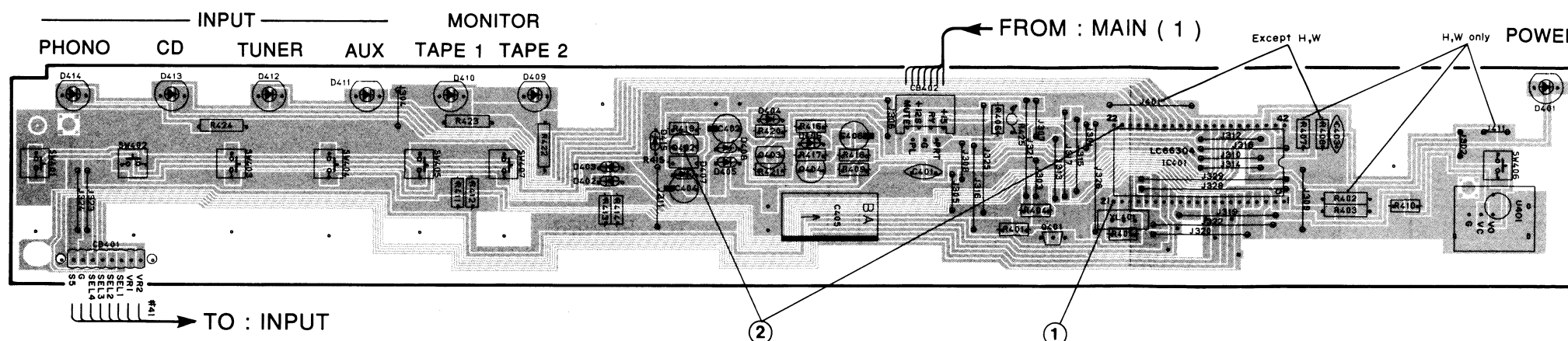


No.	Port	I/O	Name	Function	No.	Port	I/O	Name	Function
1	P00		—	N. C.	22	OSC2	O	OSC2	Clock (4MHz)
2	P01	I	IPSEL	Model Detect	23	RES	I	RES	Reset Input
3	P02	O	MUTE	Mute	24	P42		—	N. C.
4	P03		—	N. C.	25	P43		—	
5	P10	O	PRY	Power Relay	26	P50	O	PHLED	Input LED drive
6	P11	O	VM+	Main Volume Up Down	27	P51	O	CDLED	
7	P12	O	VM-		28	P52	O	TULED	
8	P13	O	PL	Player Control	29	P53/INT2	O	AUXLED	
9	SIO/P20	O	4052B	Input Selector	30	P60/SI1	O	T1LED	
10	SO0/P21	O	4052A		31	P61/SO1	O	T2LED	
11	SCK0/P22		—	N. C.	32	P62/SCK1	I	PRT	Protection
12	INT0/P23		—		33	P63/PIN1	I	PSW	Power Switch
13	INT1/P30	I	REM	Remote Control	34	PC2/VREF0	O	D1	Key Digit
14	POUT0/P31	O	TMON1	Tape 1 Monitor	35	PC3/VREF1	O	D2	
15	POUT1/P32	O	TMON2	Tape 2 Monitor	36	PD0/CMP0	I	K1	Key Input
16	HOLD/P33	I	HOLD	Hold	37	PD1/CMP1	I	K2	
17	P40	O	PLED	Power LED	38	PD2/CMP2	I	K3	
18	P41	O	STBY	Standby LED	39	PD3/CMP3	I	K4	
19	TEST		TEST	GND	40	VDD		VDD	+5V
20	Vss		Vss		41	PE0/TRA	I	G/NOTG	Market Detect
21	OSC1	I	OSC1	Clock (4MHz)	42	PE1/TRB			Model Detect

PRINTED CIRCUIT BOARD (Foil side)

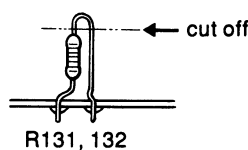
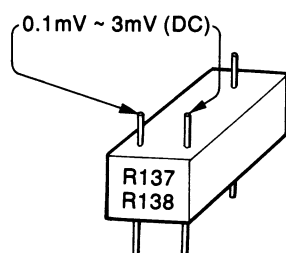
① and ② : TEST POINT WAVEFORMS (See page 14)

P.C.B. OPERATION (4)

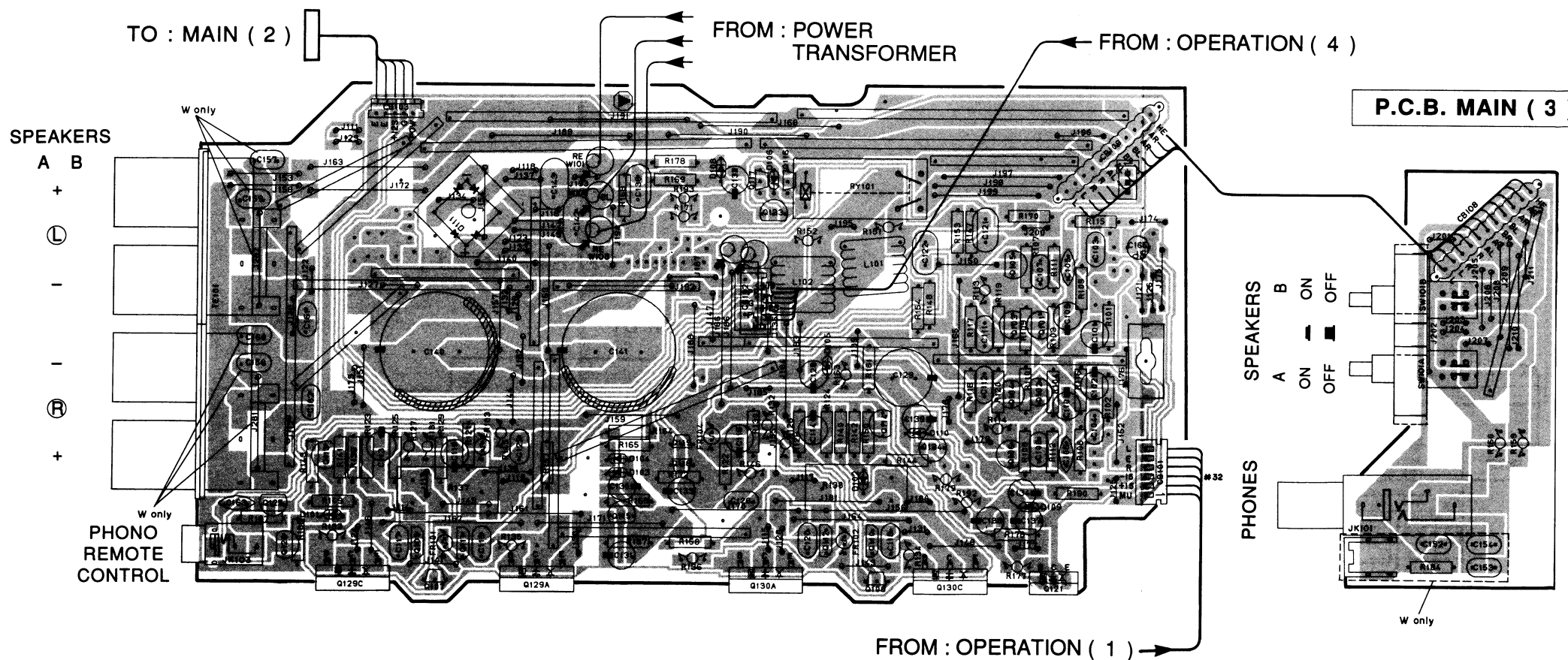


P.C.B. MAIN (1)

● **Confirmation of idling Current**
 After Power is turned on, confirm that the voltage across R137 (L ch), R138 (R ch) is between 0.1mV to 3mV. If it exceeds 3.1mV, open (cut off) R131 (L ch) or R132 (R ch), and reconfirm it.



● Q107 and Q108 are transistors for temperature correction. Apply silicone grease to the contact surface with the heat sink.

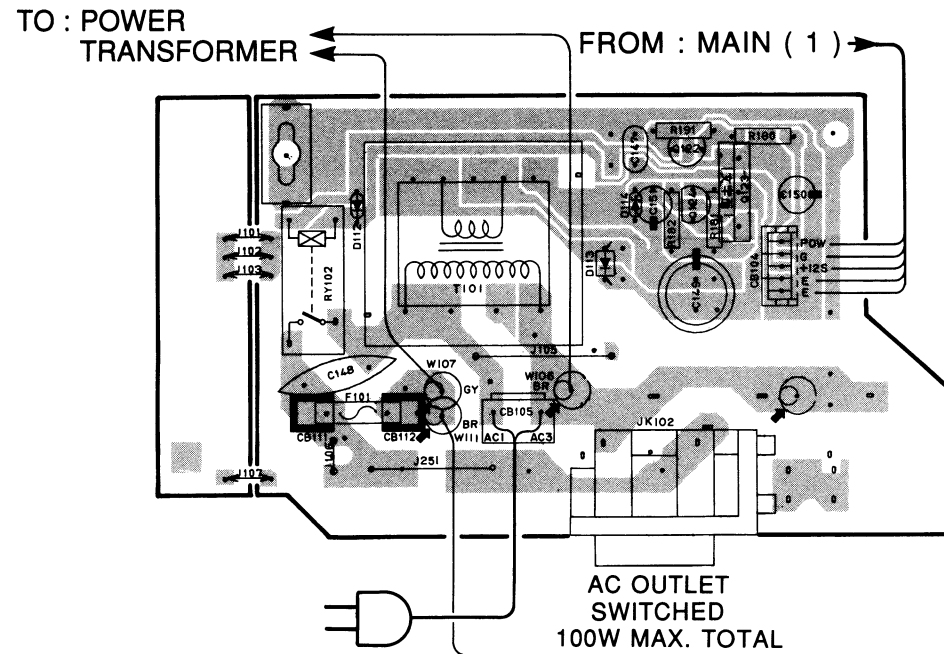


P.C.B. MAIN (3)

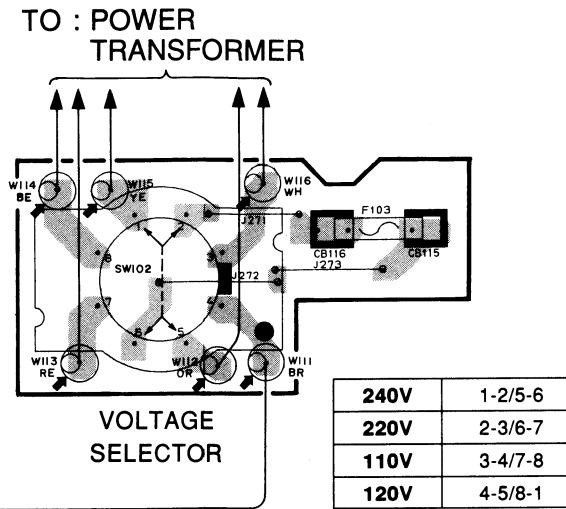
PRINTED CIRCUIT BOARD (Foil side)

R model

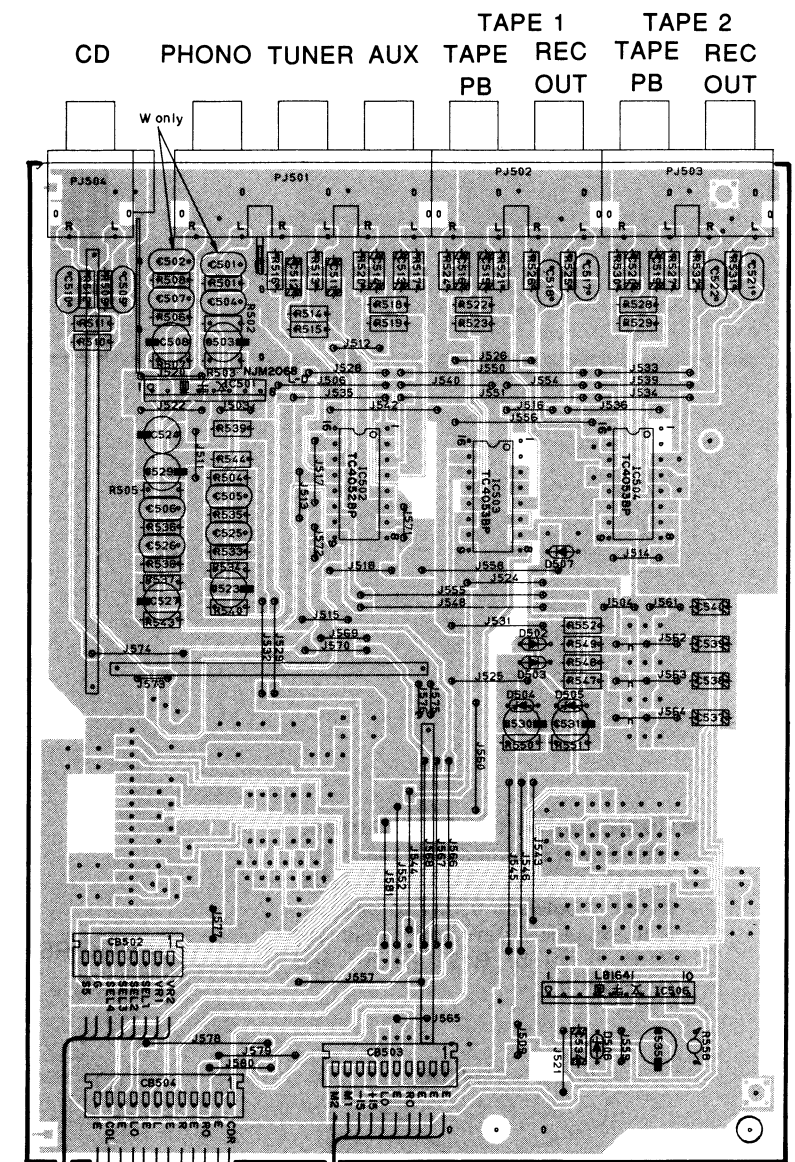
P.C.B. MAIN (2)



P.C.B. MAIN (4)

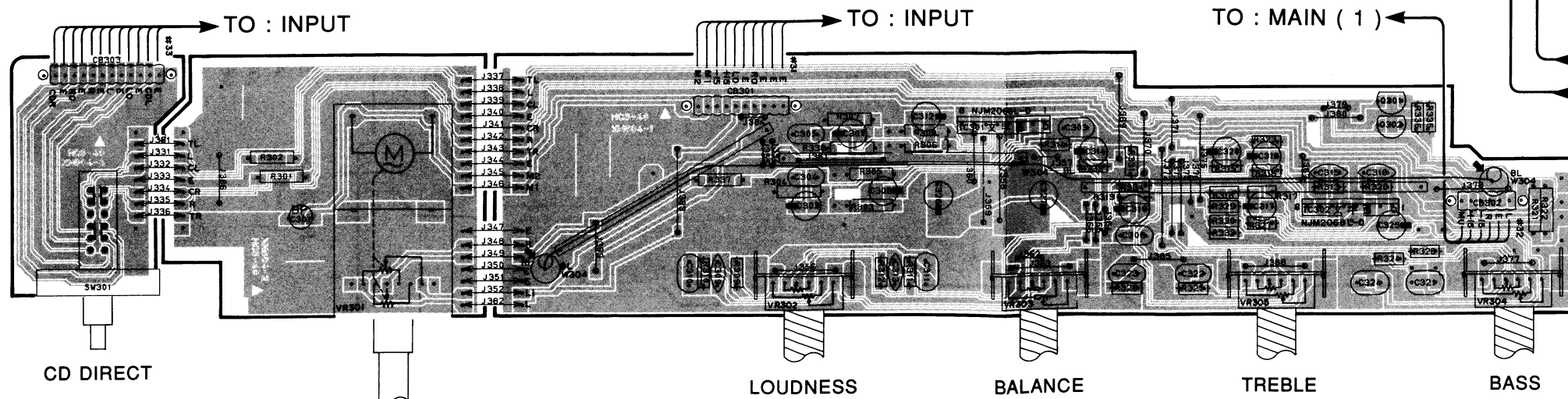


P.C.B. INPUT



P.C.B. OPERATION (2)

P.C.B. OPERATION (1)



P.C.B. OPERATION (3)

FROM : OPERATION (1)

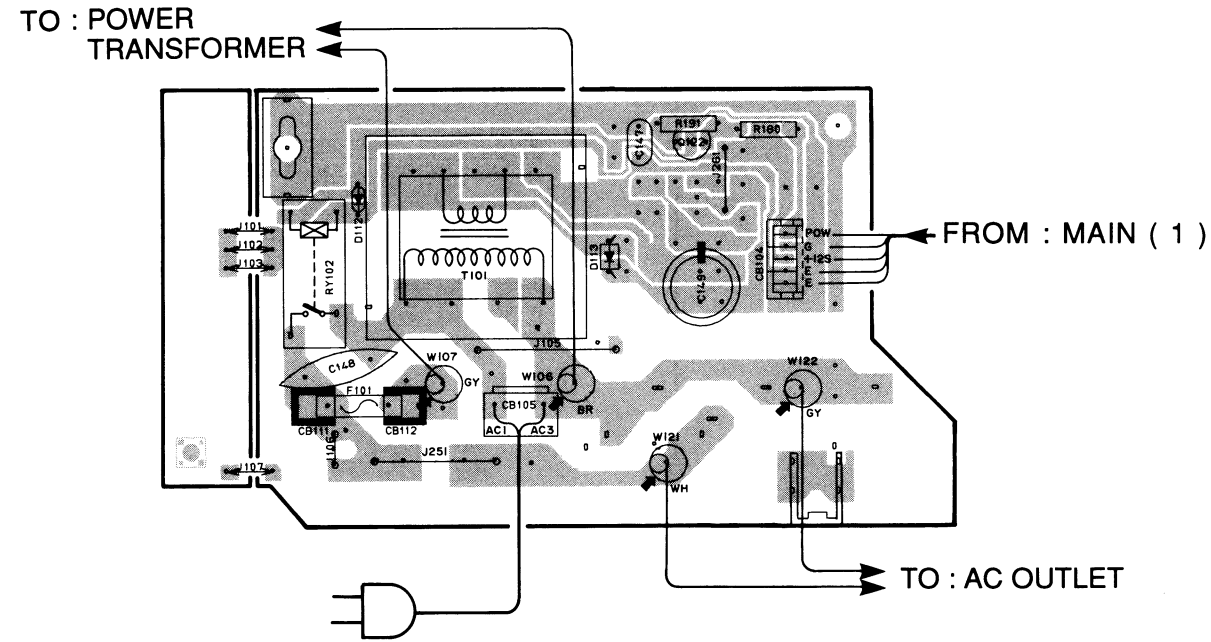
FROM : OPERATION (3)

FROM : OPERATION (4)

1 ■ PRINTED CIRCUIT BOARD (Foil side)

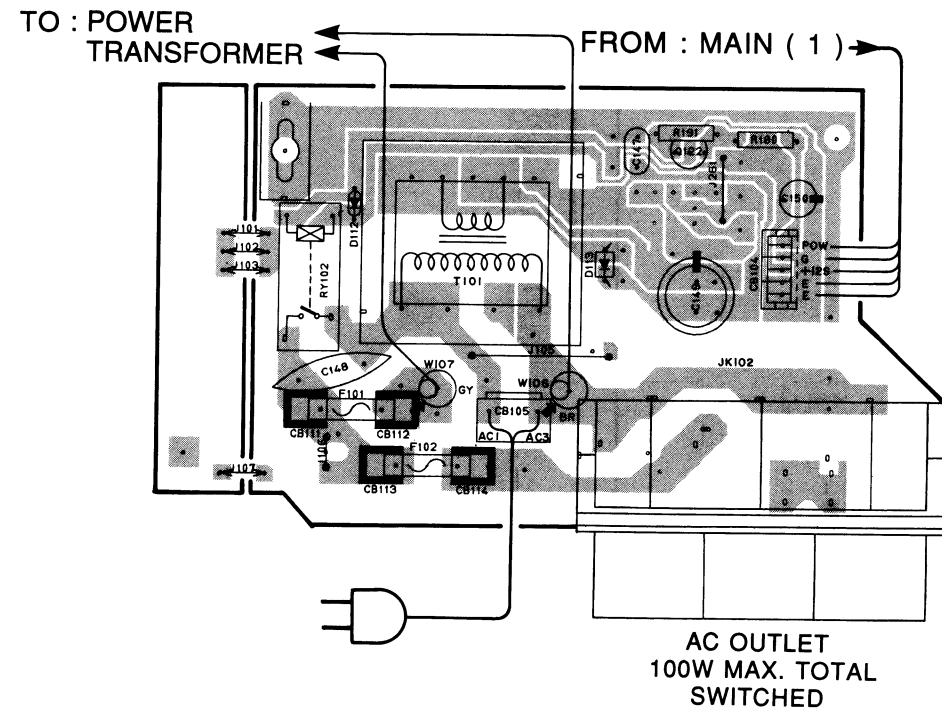
● A, B models

P.C.B. MAIN (2)



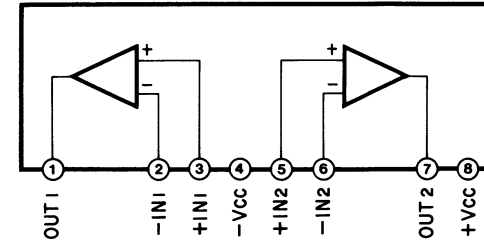
● H, W models

P.C.B. MAIN (2)

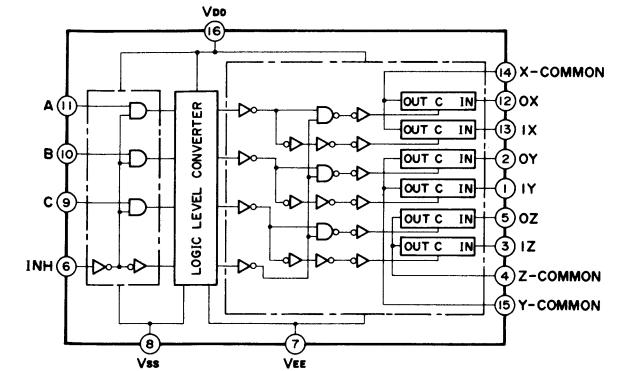


■ IC BLOCK

IC301, 302, 501 : NJM2068L-D
Dual OP-Amp



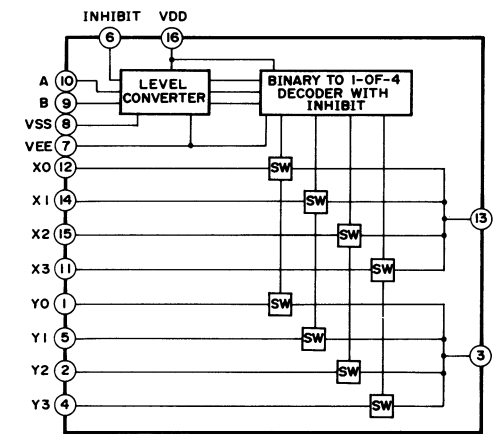
IC503, 504 : TC4053BP
Triple 2-Channel Multiplexer/Demultiplexer



CONTROL INPUTS				"ON" CHANNEL		
INHIBIT (Pin 6)	C (Pin 9)	B (Pin 10)	A (Pin 11)	0X (Pin 12), 0Y (Pin 2), 0Z (Pin 5)	1X (Pin 13), 1Y (Pin 1), 1Z (Pin 3)	
L	L	L	L		0X, 0Y, 0Z	
L	L	L	H		1X, 0Y, 0Z	
L	L	H	L		0X, 1Y, 0Z	
L	L	H	H		1X, 1Y, 0Z	
L	H	L	L		0X, 0Y, 1Z	
L	H	L	H		1X, 0Y, 1Z	
L	H	H	L		0X, 1Y, 1Z	
L	H	H	H		1X, 1Y, 1Z	
H	*	*	*		NONE	

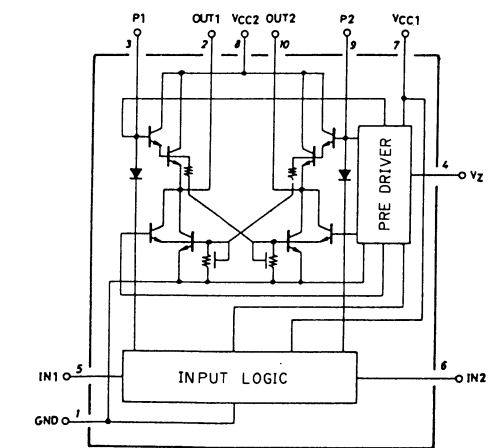
* Don't Care

IC502 : TC4052BP
Dual 4 Channel Analog Multiplexers/Demultiplexers



INHIBIT	B	A	Output
0	0	0	0x, 0y
0	0	1	1x, 1y
0	1	0	2x, 2y
0	1	1	3x, 3y
1	X	X	NONE

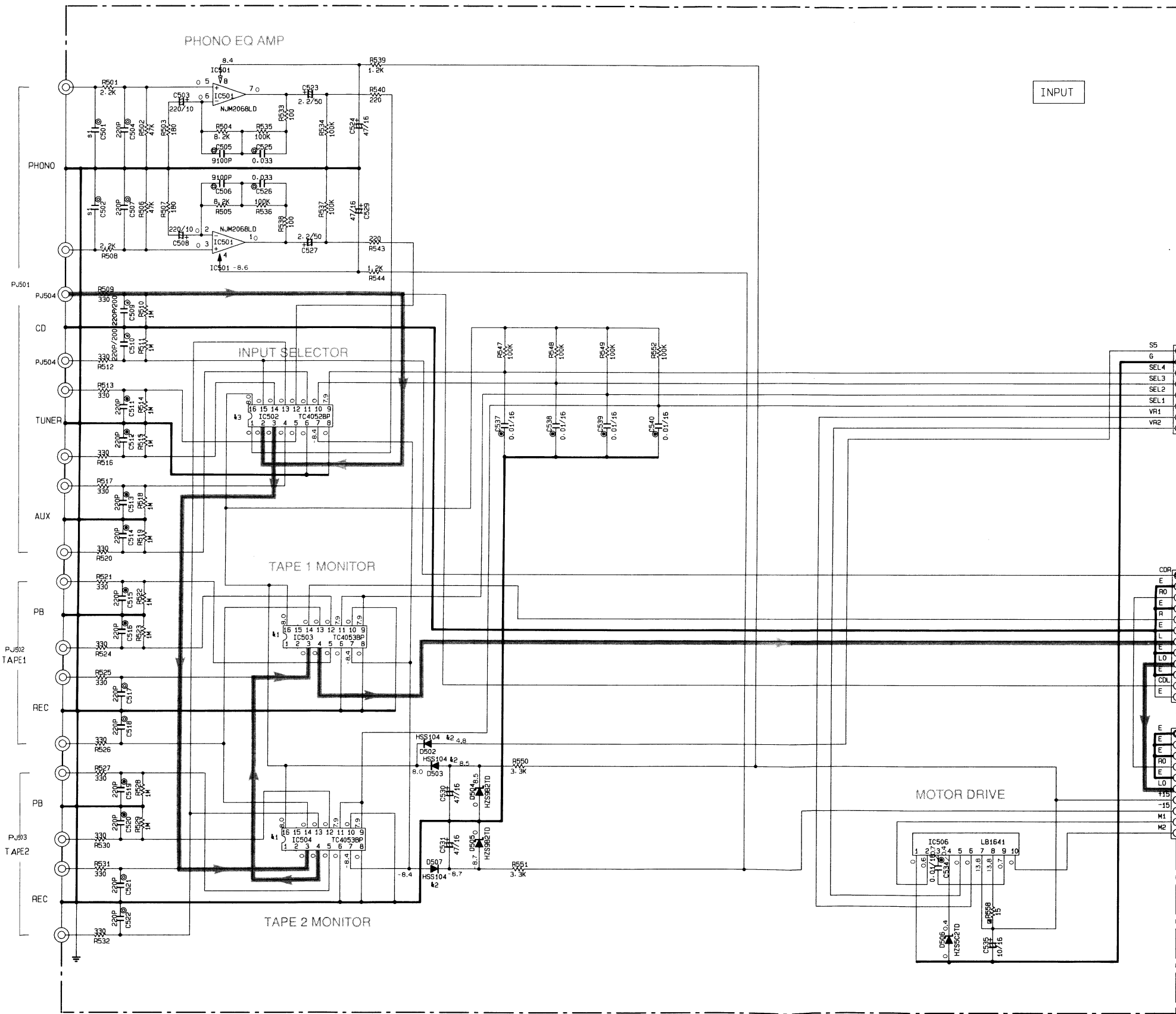
IC506 : LB1641
Motor Driver



● Other IC
IC401 : LC66304
See page 5

7

SCHEMATIC DIAGRAM (INPUT)



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

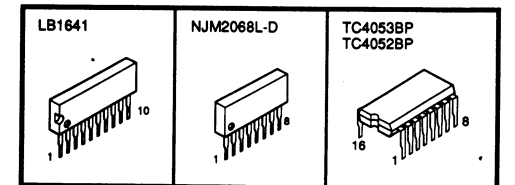
REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
⊗	TANTALUM CAPACITOR
NO MARK	CERAMIC CAPACITOR
⊙	CERAMIC TUBULAR CAPACITOR
⊖	POLYESTER FILM CAPACITOR
○	POLYSTYRENE FILM CAPACITOR
Ⓜ	MICA CAPACITOR
⊕	POLYPROPYLENE FILM CAPACITOR
●	SEMICONDUCTIVE CERAMIC CAPACITOR

Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
41	IC503-504	TC4053BP UPD4053BC
42	D502-503-507	HSS104 1SS133 1SS176
43	IC502	TC4052BP UPD4052BC

	J. R. A. B. H	M
51	C501-502	X 220P

PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICS.



* All voltage are measured with a 10MΩ/V DC electric volt meter.
* Schematic diagram is subject to change without notice.

1
2
3
4
5
6

SCHEMATIC DIAGRAM (OPERATION)

1

2

3

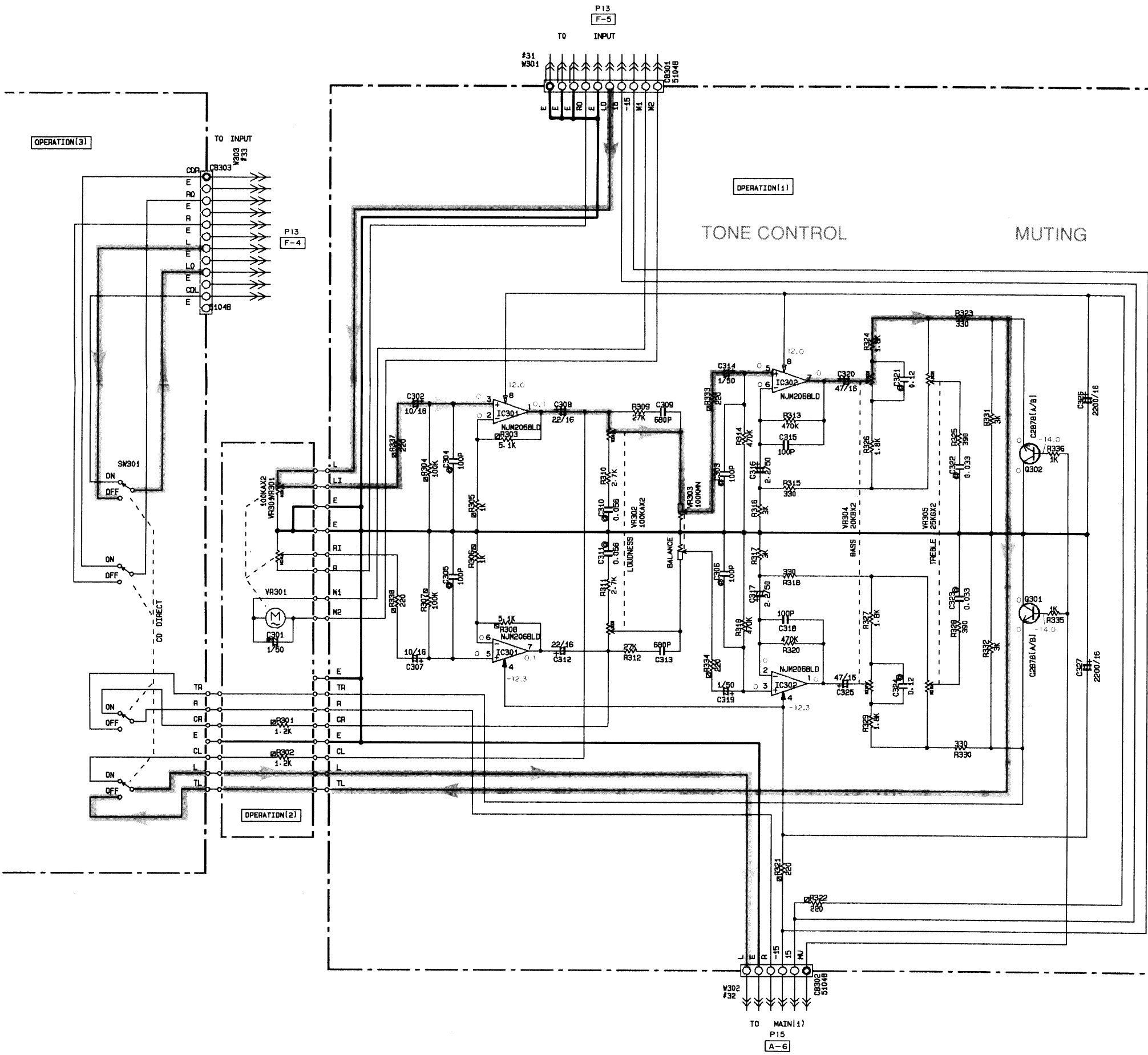
4

5

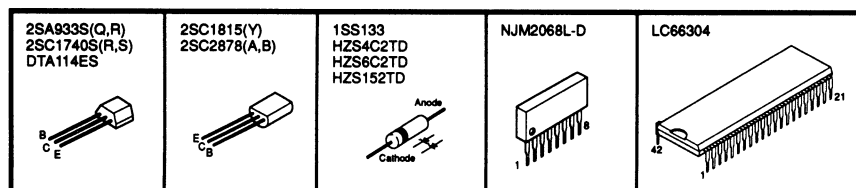
6

7

8



PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICs.



RESISTOR

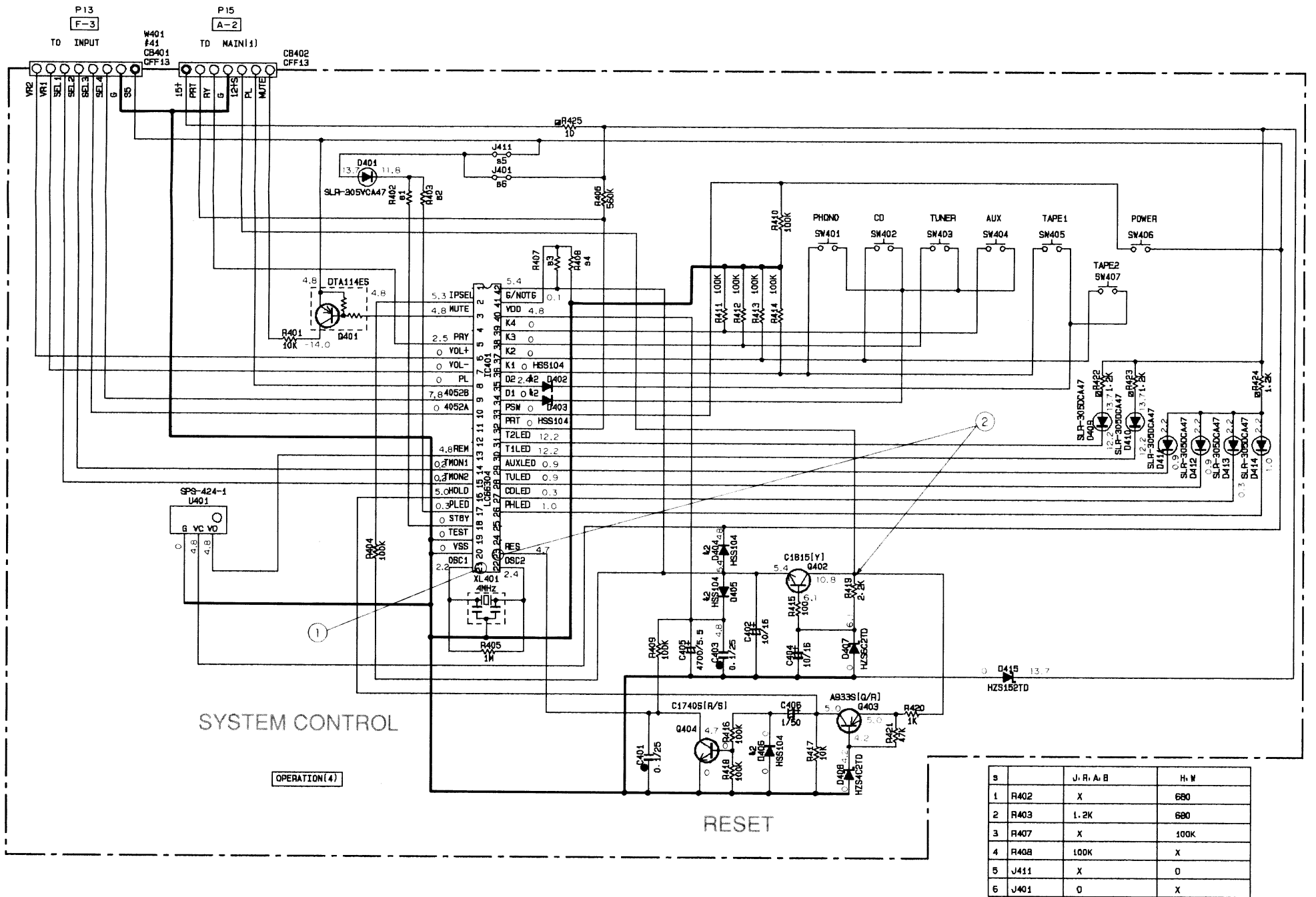
REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
□	CARBON FILM RESISTOR (P=10)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
■	FIRE PROOF CARBON FILM RESISTOR
□	CEMENT MOLDED RESISTOR
⊙	SEMI VARIABLE RESISTOR
■	CHIP RESISTOR

CAPACITOR

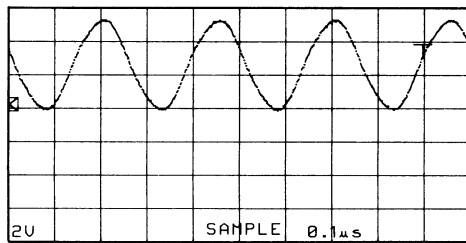
REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
⊗	TANTALUM CAPACITOR
NO MARK	CERAMIC CAPACITOR
⊙	CERAMIC TUBULAR CAPACITOR
⊖	POLYESTER FILM CAPACITOR
○	POLYSTYRENE FILM CAPACITOR
⊕	MICA CAPACITOR
⊖	POLYPROPYLENE FILM CAPACITOR
●	SEMICONDUCTIVE CERAMIC CAPACITOR

Interchangeable Parts at Manufacture-Stage

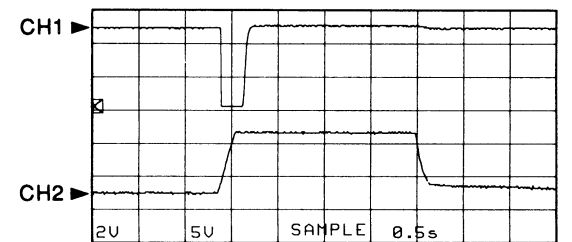
Mark	Reference Parts Number	Parts Name
41		
42	D402-406	HSS104 1SS133 1SS176
43		



Point ①
(Pin 21 of IC401)
V : 2V/div H : 0.1μsec/div
DC range 1 : 1 probe



Point ②
(CH1 : Pin 23 of IC401)
(CH2 : Collector of Q402)
V : 2V/div (CH1)
V : 5V/div (CH2)
H : 0.5sec/div
DC range 1 : 1 probe

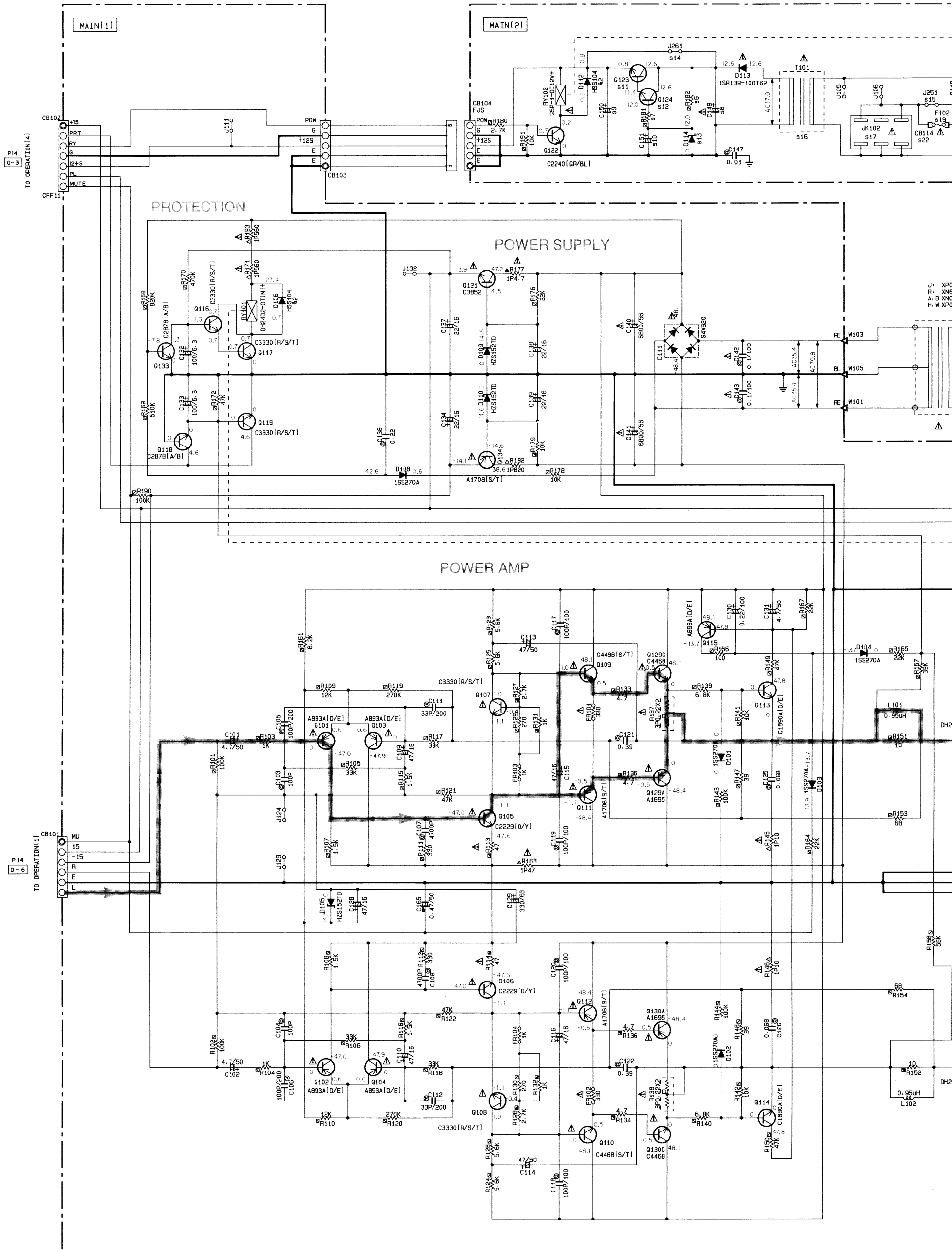


With the POWER switch turned ON, connect the power cord to the AC outlet. Disconnect the power cord from the AC outlet.

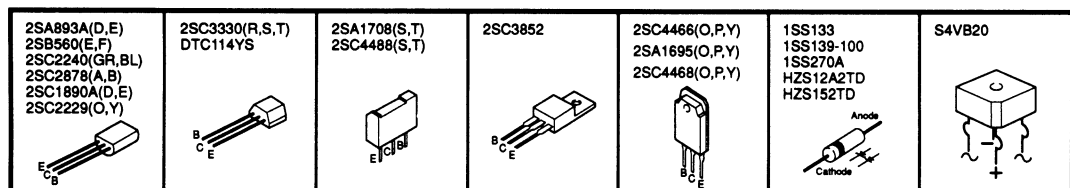
* This waveform is not available by pushing the power switch ON and OFF.

* All voltage are measured with a 10MΩ/V DC electric volt meter.
* Schematic diagram is subject to change without notice.

SCHEMATIC DIAGRAM (MAIN)



PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICs.



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.

P. C. B. MAIN

Schm Ref.	PART NO.	Description
* VR349500	P. C. B.	MAIN (R)
* VR349600	P. C. B.	MAIN (AB)
* VR349700	P. C. B.	MAIN (H)
* VR349800	P. C. B.	MAIN (W)
CB101	VF728300	CN 6P
* CB102	VR357800	CN. BS. PIN 7P
CB103	VP768100	CN. BS. PIN 5P
CB105	VG879900	CN. BS. PIN 2P
* CB108	VQ585300	CN. BS. PIN 11P
* CB109	VQ585300	CN. BS. PIN 11P
CB111	VP206500	HOLDER. FUS EYF-52BC
CB112	VP206500	HOLDER. FUS EYF-52BC
CB113	VP206500	HOLDER. FUS EYF-52BC (HW)
CB114	VP206500	HOLDER. FUS EYF-52BC (HW)
CB115	VP206500	HOLDER. FUS EYF-52BC (R)
CB116	VP206500	HOLDER. FUS EYF-52BC (R)
C101	Vi377400	C. EL 4.7uF 63V
C102	Vi377400	C. EL 4.7uF 63V
C103	UA652100	C. MYLAR 100pF 50V
C104	UA652100	C. MYLAR 100pF 50V
C105	VK533900	C. PP 100pF 200V
C106	VK533900	C. PP 100pF 200V
C107	UA253470	C. MYLAR 4700pF 50V
C108	UA253470	C. MYLAR 4700pF 50V
C109	VG291200	C. EL 47uF 50V
C110	VG291200	C. EL 47uF 50V
C111	VQ245400	C. PP 33pF 200V
C112	VQ245400	C. PP 33pF 200V
C113	VG291200	C. EL 47uF 50V
C114	VG291200	C. EL 47uF 50V
C115	VE742600	C. EL 47uF 25V
C116	VE742600	C. EL 47uF 25V
* C117	VR325000	C. MYLAR 100pF 100V
* C118	VR325000	C. MYLAR 100pF 100V
* C119	VR325000	C. MYLAR 100pF 100V
* C120	VR325000	C. MYLAR 100pF 100V
* C121	VK399200	C. MYLAR. ML 0.39uF 50V
* C122	VK399200	C. MYLAR. ML 0.39uF 50V
C125	UA254680	C. MYLAR 0.068uF 50V
C126	UA254680	C. MYLAR 0.068uF 50V
C128	VG291200	C. EL 47uF 50V
C129	VK699400	C. EL 330uF 63V
C130	UJ895220	C. EL 0.22uF 100V
C131	Vi377400	C. EL 4.7uF 63V
C132	VF760000	C. EL 100uF 10V
C133	VF760000	C. EL 100uF 10V
C134	VG291000	C. EL 22uF 50V
C136	UA655220	C. MYLAR 0.22uF 50V
C137	VG291000	C. EL 22uF 50V
C138	VG291000	C. EL 22uF 50V
C139	VG291000	C. EL 22uF 50V
△* C140	VR024000	C. EL 6800uF 56V
△* C141	VR024000	C. EL 6800uF 56V

* New Parts

Schm Ref.	PART NO.	Description
△* C142	VR325400	C. MYLAR 0.1uF 100V
△* C143	VR325400	C. MYLAR 0.1uF 100V
C147	UA254100	C. MYLAR 0.01uF 50V
C148	Fi514100	C. CE. SAFTY 0.01uF VA-1
△ C149	VG289100	C. EL 330uF 25V (ABHW)
△ C149	VK699400	C. EL 330uF 63V (R)
C150	VG288900	C. EL 100uF 25V (R)
C151	VG290900	C. EL 10uF 50V (R)
C152	UA254100	C. MYLAR 0.01uF 50V (W)
C153	VE324800	C. MYLAR. ML 0.01uF 50V (W)
C154	VE324800	C. MYLAR. ML 0.01uF 50V (W)
C157	VE324800	C. MYLAR. ML 0.01uF 50V (W)
C158	VE324800	C. MYLAR. ML 0.01uF 50V (W)
C159	VE324800	C. MYLAR. ML 0.01uF 50V (W)
C160	VE324800	C. MYLAR. ML 0.01uF 50V (W)
C161	UA254100	C. MYLAR 0.01uF 50V
C162	UA254100	C. MYLAR 0.01uF 50V
C163	FG212470	C. CE 470pF 50V
* C165	UK665470	C. EL 0.47uF 50V
D101	VN008700	DIODE 1SS270A
D102	VN008700	DIODE 1SS270A
D103	VN008700	DIODE 1SS270A
D104	VN008700	DIODE 1SS270A
D105	VM975800	DIODE. ZENR HZS152TD 15V
D106	VD631600	DIODE 1SS133, 176, HSS104
D108	VN008700	DIODE 1SS270A
D109	VM975800	DIODE. ZENR HZS152TD 15V
D110	VM975800	DIODE. ZENR HZS152TD 15V
△ D111	iH001090	DIODE. BRG S4VB20 2.6A 200V
D112	VD631600	DIODE 1SS133, 176, HSS104
△ D113	VH801600	DIODE 1SR139-100
D114	VM975500	DIODE. ZENR HZS12A2TD 12V (R)
△ F101	KB003060	FUSE TL1.6A 250V (ABHW)
△ F101	KB003620	FUSE T4.0A 125V (R)
△ F102	KB000690	FUSE T2.5A 250V (HW)
△ F103	KB003060	FUSE TL1.6A 250V (R)
△ FR101	VK188400	R. FUS 330Ω 1/4W
△ FR102	VK188400	R. FUS 330Ω 1/4W
FR103	VK189000	R. FUS 1KΩ 1/4W
FR104	VK189000	R. FUS 1KΩ 1/4W
JK101	LB301720	JACK. PHONE
△ JK102	Vi327500	OUTLET. AC 3P (R)
△ JK102	VP728600	OUTLET. AC 3P (HW)
JK103	VJ726800	JACK. MNI
* L101	VR906600	COIL 0.95uH
* L102	VR906600	COIL 0.95uH
△* Q101	VP883000	TR 2SA893A D, E
△* Q102	VP883000	TR 2SA893A D, E
△* Q103	VP883000	TR 2SA893A D, E
△* Q104	VP883000	TR 2SA893A D, E
△* Q105	VR325600	TR 2SC2229 O, Y
△* Q106	VR325600	TR 2SC2229 O, Y
△ Q107	VC218900	TR 2SC3330 R, S, T

* New Parts

P. C. B. MAIN & OPERATION

P. C. B. OPERATION & INPUT

Schm Ref.	PART NO.	Description
△ Q108	VC218900	TR 2SC3330 R, S, T
△* Q109	VP872700	TR 2SC4488 S, T
△* Q110	VP872700	TR 2SC4488 S, T
△* Q111	VP872600	TR 2SA1708 S, T
△* Q112	VP872600	TR 2SA1708 S, T
* Q113	VP883100	TR 2SC1890A D, E
* Q114	VP883100	TR 2SC1890A D, E
* Q115	VP883000	TR 2SA893A D, E
Q116	VC218900	TR 2SC3330 R, S, T
Q117	VC218900	TR 2SC3330 R, S, T
Q118	iC287820	TR 2SC2878 A, B
Q119	VC218900	TR 2SC3330 R, S, T
△ Q121	VC938500	TR 2SC3852
Q122	iC224030	TR 2SC2240 GR, BL
Q123	VP768300	TR 2SC4466 O, P, Y(R)
* Q124	VP883100	TR 2SC1890A D, E(R)
* Q125	VR827400	TR. DGT DTC114YS TP
Q126	iB056020	TR 2SB560 E, F
△ Q129A	iX630850	TR 2SA1695 O, P, Y
△ Q129C	iX630860	TR 2SC4468 O, P, Y
△ Q130A	iX630850	TR 2SA1695 O, P, Y
△ Q130C	iX630860	TR 2SC4468 O, P, Y
Q133	iC287820	TR 2SC2878 A, B
△* Q134	VP872600	TR 2SA1708 S, T
△ R113	HV454470	R. CAR. FP 47 Ω 1/4W
△ R114	HV454470	R. CAR. FP 47 Ω 1/4W
R127	HV456270	R. CAR. FP 2.7K Ω 1/4W
R128	HV456270	R. CAR. FP 2.7K Ω 1/4W
R131	HV456100	R. CAR. FP 1K Ω 1/4W
R132	HV456100	R. CAR. FP 1K Ω 1/4W
R133	HV453470	R. CAR. FP 4.7 Ω 1/4W
R134	HV453470	R. CAR. FP 4.7 Ω 1/4W
R135	HV453470	R. CAR. FP 4.7 Ω 1/4W
R136	HV453470	R. CAR. FP 4.7 Ω 1/4W
△ R137	VJ695400	R. WW 0.22 Ω x2 3W
△ R138	VJ695400	R. WW 0.22 Ω x2 3W
△ R145	HL314100	R. MTL. OXD 10 Ω 1W
△ R146	HL314100	R. MTL. OXD 10 Ω 1W
R151	HV454100	R. CAR. FP 10 Ω 1/4W
R152	HV454100	R. CAR. FP 10 Ω 1/4W
R159	VP944500	R. MTL. OXD 390 Ω 1W
R160	VP944500	R. MTL. OXD 390 Ω 1W
△ R163	HL314470	R. MTL. OXD 47 Ω 1W
△ R171	HL315560	R. MTL. OXD 560 Ω 1W
R177	VP939700	R. MTL. OXD 4.7 Ω 1W
R179	HV457100	R. CAR. FP 10K Ω 1/4W
R192	HL315820	R. MTL. OXD 820 Ω 1W
△ R193	HL315560	R. MTL. OXD 560 Ω 1W
△ RY101	VK438300	RELAY DH24D2-OTM-II
△ RY102	VH230800	RELAY G5P-1-DC12V
△ SW101	VJ850200	SW. PUSH PSE021A2KP 2
△ SW102	VA961800	VOLT. SELCT ESE-37247-F(R)
△ T101	XC082A00	TRANS. PWR (R)

* New Parts

Schm Ref.	PART NO.	Description
△ T101	XC084A00	TRANS. PWR (ABHW)
TE101	VC313700	TERM. SP 8P (RABW)
TE101	VK506200	TERM. SP 8P (H)
* W108	VR759400	CN. FLAT 11P 120mm
	VJ828000	PIN IMSA-6024-03E
	BB071360	SCR. TERM 8.3x13 (ABW)
	BB069510	GND. MTL No. 6951
* VR349900	P. C. B.	OPERATION (RAB)
* VR350100	P. C. B.	OPERATION (HW)
CB301	Vi878800	CN. BS. PIN 10P
* CB302	Vi878400	CN. BS. PIN 6P
* CB303	Vi879000	CN. BS. PIN 12P
* CB401	Vi878600	CN. BS. PIN 8P
* CB402	VR361400	CN. BS. PIN 7P
* C301	VG722100	C. EL 1uF 50V
C302	VG290900	C. EL 10uF 50V
C303	UA652100	C. MYLAR 100pF 50V
C304	UA652100	C. MYLAR 100pF 50V
C305	UA652100	C. MYLAR 100pF 50V
C306	UA652100	C. MYLAR 100pF 50V
C307	VG290900	C. EL 10uF 50V
C308	VG291000	C. EL 22uF 50V
C309	FG212680	C. CE 680pF 50V
C310	UA654560	C. MYLAR 0.056uF 50V
C311	UA654560	C. MYLAR 0.056uF 50V
C312	VG291000	C. EL 22uF 50V
C313	FG212680	C. CE 680pF 50V
C314	VG290500	C. EL 1uF 50V
C315	VE551900	C. CE 100pF 50V
C316	VG290600	C. EL 2.2uF 50V
C317	VG290600	C. EL 2.2uF 50V
C318	VE551900	C. CE 100pF 50V
C319	VG290500	C. EL 1uF 50V
C320	VG291200	C. EL 47uF 50V
C321	UA655120	C. MYLAR 0.12uF 50V
C322	UA654330	C. MYLAR 0.033uF 50V
C323	UA654330	C. MYLAR 0.033uF 50V
C324	UA655120	C. MYLAR 0.12uF 50V
C325	VG291200	C. EL 47uF 50V
C326	VG288100	C. EL 2200uF 16V
C327	VG288100	C. EL 2200uF 16V
C401	VD930900	C. CE. SMI 0.1uF 25V
C402	VJ836900	C. EL 10uF 16V
C403	VD930900	C. CE. SMI 0.1uF 25V
C404	VJ836900	C. EL 10uF 16V
* C405	VR357400	C. EL 4700uF 5.5V
C406	VJ839100	C. EL 1uF 50V
D401	VP594000	LED (re) SLR-305VCA47
D402	VD631600	DIODE 1SS133, 176, HSS104
D403	VD631600	DIODE 1SS133, 176, HSS104

* New Parts

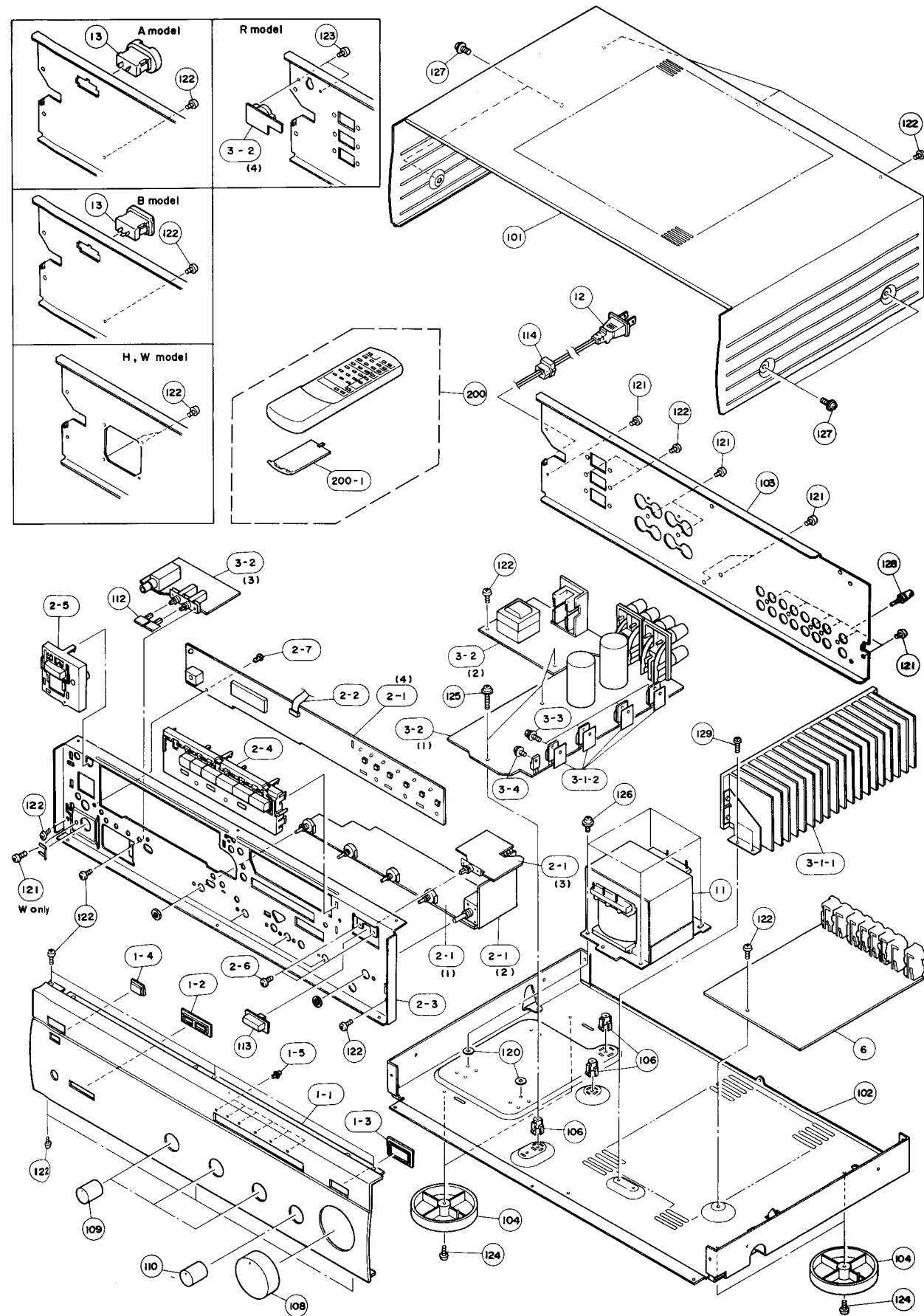
Schm Ref.	PART NO.	Description
D404	VD631600	DIODE 1SS133, 176, HSS104
D405	VD631600	DIODE 1SS133, 176, HSS104
D406	VD631600	DIODE 1SS133, 176, HSS104
D407	VM974500	DIODE. ZENR HZS6C2TD 6.0V
D408	VM973900	DIODE. ZENR HZS4C2TD 4.0V
D409	VP593800	LED (or) SLR-305DCA47
D410	VP593800	LED (or) SLR-305DCA47
D411	VP593800	LED (or) SLR-305DCA47
D412	VP593800	LED (or) SLR-305DCA47
D413	VP593800	LED (or) SLR-305DCA47
D414	VP593800	LED (or) SLR-305DCA47
D415	VM975800	DIODE. ZENR HZS152TD 15V
IC301	XM356A00	IC NJM2068LD
IC302	XM356A00	IC NJM2068LD
* IC401	XN563A00	IC LC66304
Q301	iC287820	TR 2SC2878 A, B
Q302	iC287820	TR 2SC2878 A, B
Q401	VD678500	TR. DGT DTA114ES
Q402	iC1815C0	TR 2SC1815 Y
Q403	iA093320	TR 2SA933S Q, R
Q404	iC174020	TR 2SC1740S R, S
R425	HV454100	R. CAR. FP 10 Ω 1/4W
* SW301	VR402500	SW. PUSH PSK01-AF
SW401	VG392900	SW. TACT 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
SW407	VG392900	SW. TACT SKHVAA
* U401	VR023400	L. DETCT SPS-424-1
* VR301	VR710500	VR. MTR A100K Ω
* VR302	VP700700	VR A100K Ω
* VR303	VP742000	VR MN50K Ω
* VR304	VP741800	VR B20K Ω
* VR305	VP741900	VR G25K Ω
* W401	VR759300	CN. FLAT 8P 200mm
* XL401	VD827600	RSNR. CE 4MHz
	VR316500	BIND. TIE CV-70
* VR350200	P. C. B.	INPUT (RABH)
* VR350300	P. C. B.	INPUT (W)
* CB502	VK025200	CN. BS. PIN 8P
* CB503	VF728200	CN. BS. PIN 10P
* CB504	VK025600	CN. BS. PIN 12P
C501	UA652220	C. MYLAR 220pF 50V(W)
C502	UA652220	C. MYLAR 220pF 50V(W)
C503	VG286900	C. EL 220uF 10V
C504	UA652220	C. MYLAR 220pF 50V
C505	UA653910	C. MYLAR 9100pF 50V
C506	UA653910	C. MYLAR 9100pF 50V

* New Parts

Schm Ref.	PART NO.	Description
C507	UA652220	C. MYLAR 220pF 50V
C508	VG286900	C. EL 220uF 10V
C509	VK534000	C. PP 220pF 200V
C510	VK534000	C. PP 220pF 200V
C511	VG278400	C. CE. TUBLR 220pF 50V
C512	VG278400	C. CE. TUBLR 220pF 50V
C513	VG278400	C. CE. TUBLR 220pF 50V
C514	VG278400	C. CE. TUBLR 220pF 50V
C515	VG278400	C. CE. TUBLR 220pF 50V
C516	VG278400	C. CE. TUBLR 220pF 50V
C517	UA652220	C. MYLAR 220pF 50V
C518	UA652220	C. MYLAR 220pF 50V
C519	VG278400	C. CE. TUBLR 220pF 50V
C520	VG278400	C. CE. TUBLR 220pF 50V
C521	UA652220	C. MYLAR 220pF 50V
C522	UA652220	C. MYLAR 220pF 50V
C523	VG290600	C. EL 2.2uF 50V
C524	VG291200	C. EL 47uF 50V
C525	UA654330	C. MYLAR 0.033uF 50V
C526	UA654330	C. MYLAR 0.033uF 50V
C527	VG290600	C. EL 2.2uF 50V
C529	VG291200	C. EL 47uF 50V
C530	VG291200	C. EL 47uF 50V
C531	VG291200	C. EL 47uF 50V
C534	VF467300	C. CE. TUBLR 0.01uF 16V
C535	VG290900	C. EL 10uF 50V
C537	VF467300	C. CE. TUBLR 0.01uF 16V
C538	VF467300	C. CE. TUBLR 0.01uF 16V
C539	VF467300	C. CE. TUBLR 0.01uF 16V
C540	VF467300	C. CE. TUBLR 0.01uF 16V
C541	VH053100	C. CE. TUBLR 0.1uF 50V(W)
C542	VF466800	C. CE. TUBLR 100pF 50V(W)
C543	VH053100	C. CE. TUBLR 0.1uF 50V(W)
C545	VH053100	C. CE. TUBLR 0.1uF 50V(W)
D502	VD631600	DIODE 1SS133, 176, HSS104
D503	VD631600	DIODE 1SS133, 176, HSS104
D504	VM975000	DIODE. ZENR HZS9B2TD 9.0V
D505	VM975000	DIODE. ZENR HZS9B2TD 9.0V
D506	VM974200	DIODE. ZENR HZS5C2TD 5.0V
D507	VD631600	DIODE 1SS133, 176, HSS104
IC501	XM356A00	IC NJM2068LD
IC502	XA053A00	IC TC4052BP
IC503	iG055100	IC TC4053BP
IC504	iG055100	IC TC4053BP
IC506	XF494A00	IC LB1641
* PJ501	VS022100	JACK. PIN 6P
PJ502	VJ696200	JACK. PIN 4P
PJ503	VJ696200	JACK. PIN 4P
* PJ504	VR765100	JACK. PIN 2P
* R558	HV454150	R. CAR. FP 15 Ω 1/4W
	VR435100	PLATE W16

* New Parts

EXPLODED VIEW



MECHANICAL PARTS Note) Ø : Diameter

Ref. No.	PART NO.	Description	Remarks	Markets
* 1-1	VQ793100	FRONT PANEL		BL
* 1-1	VQ793200	FRONT PANEL		TI
* 1-2	VQ793400	BUTTON GUIDE		SPEAKERS BL
* 1-2	VQ793500	BUTTON GUIDE		SPEAKERS TI
* 1-3	VQ793600	BUTTON GUIDE		POWER BL
* 1-3	VQ793700	BUTTON GUIDE		POWER TI
* 1-4	VQ853400	LENS, FILTER		
1-5	VH897700	LENS	2.2Lx2.2	
* 2-1	VR349900	P. C. B. ASS'Y	OPERATION	(RAB)
* 2-1	VR350100	P. C. B. ASS'Y	OPERATION	(HW)
* 2-2	VR417000	CONNECTOR, FLAT CABLE	7P 200mm	
* 2-3	VQ794100	SUB CHASSIS		
* 2-4	VQ860700	BUTTON		INPUT BL
* 2-4	VQ860800	BUTTON		INPUT TI
* 2-5	VR011500	BUTTON		POWER BL
* 2-5	VR011600	BUTTON		POWER TI
2-6	ED330066	BIND HEAD SCREW	3x6 FCRM3-BL	
* 2-7	VQ368600	PUSH RIVET	P3555-B	
* 3-1-1	VQ967700	HEAT SINK ASS'Y		
3-1-2	VK195900	SHEET	19x24	
* 3-2	VR349500	P. C. B. ASS'Y	MAIN	(R)
* 3-2	VR349600	P. C. B. ASS'Y	MAIN	(AB)
* 3-2	VR349700	P. C. B. ASS'Y	MAIN	(H)
* 3-2	VR349800	P. C. B. ASS'Y	MAIN	(W)
3-3	VK173200	SCREW, TRANSISTOR	3x15 SP FCM3	
3-4	EK930010	BW HEAD TAPPING SCREW	3x8-8 FCRM3-BL	
* 6	VR350200	P. C. B. ASS'Y	INPUT	(RABH)
* 6	VR350300	P. C. B. ASS'Y	INPUT	(W)
△ * 11	XN672A00	POWER TRANSFORMER		(R)
△ * 11	XN673A00	POWER TRANSFORMER		(AB)
△ * 11	XP023A00	POWER TRANSFORMER		(HW)
△ * 12	VL238900	POWER CORD ASS'Y		(HW)
△ * 12	VN804500	POWER CORD ASS'Y		(B)
△ * 12	VQ508500	POWER CORD ASS'Y		(R)
△ * 12	VQ508600	POWER CORD ASS'Y		(A)
△ 13	VJ775000	AC OUTLET	2P	(B)
△ 13	VP418700	AC OUTLET	2P	(A)
* 101	VQ793800	TOP COVER		BL
* 101	VQ793900	TOP COVER		TI
* 102	VQ794000	CHASSIS		
* 103	VQ798300	REAR PANEL		(R)
* 103	VQ798400	REAR PANEL		(AB)
* 103	VQ798500	REAR PANEL		(H)
* 103	VQ798600	REAR PANEL		(W)
* 104	VQ780300	LEG	D60xH16	
* 106	VR264400	SPACER, H8		
108	VQ945600	KNOB	φ 42	VOLUME TI
* 108	VR021500	KNOB	φ 42	VOLUME BL
* 109	VQ779200	KNOB	φ 16	BASS TRE. BL
* 109	VQ779300	KNOB	φ 16	BASS TRE. TI
* 110	VQ779500	KNOB	φ 16L	LOUDNESS BL
* 110	VQ779600	KNOB	φ 16L	LOUDNESS TI
* 112	VQ779000	BUTTON	3x14	SPEAKERS BL

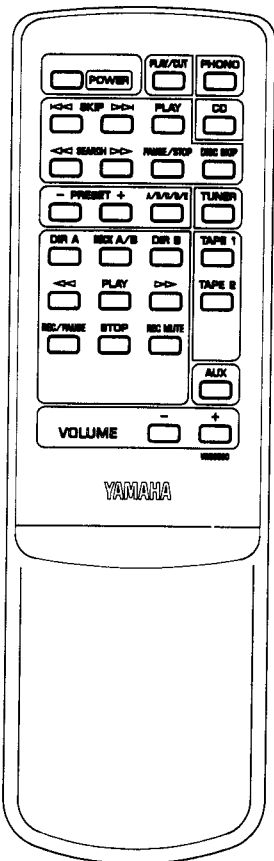
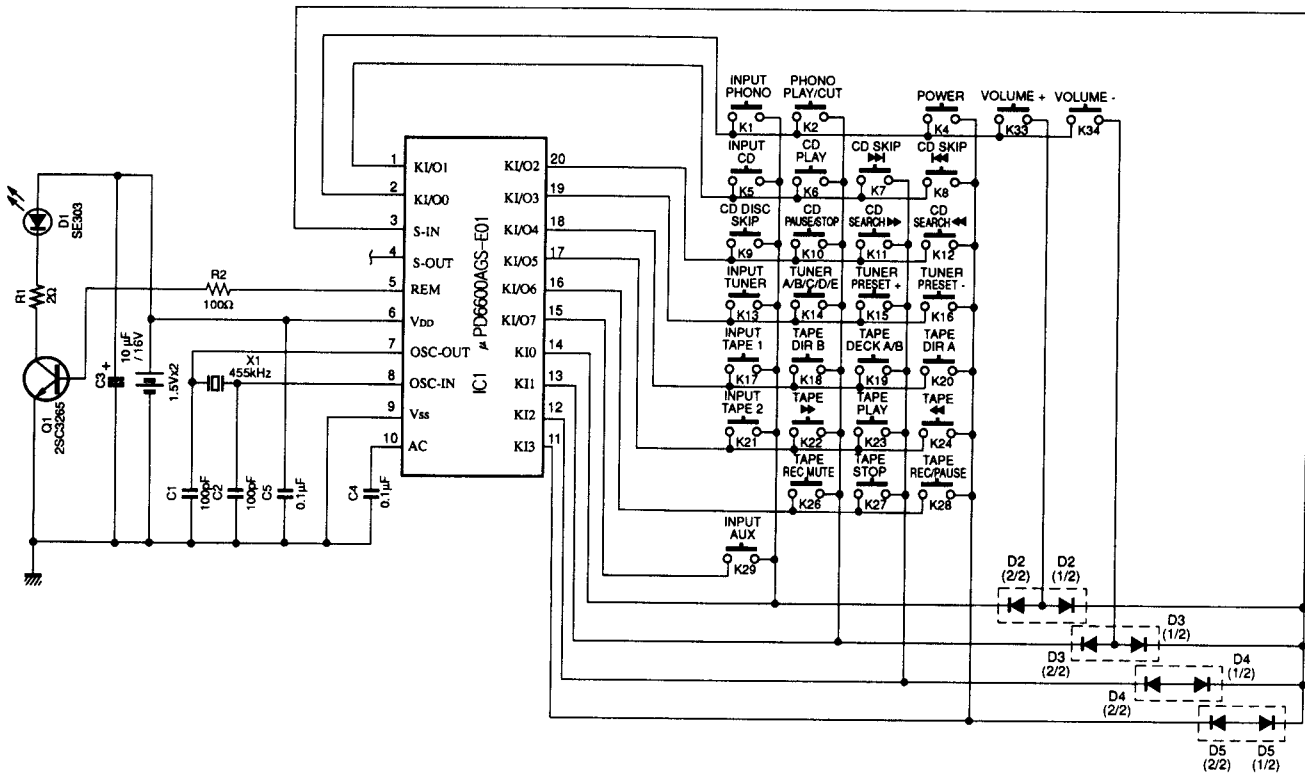
* New Parts

Ref. No.	PART NO.	Description	Remarks	Markets
* 112	VQ779100	BUTTON	3x14	SPEAKERS TI
* 113	VQ864000	BUTTON	8x25	CD DIR. BL
* 113	VQ864100	BUTTON	8x25	CD DIR. TI
114	VN158600	CORD STOPPER	No. 2104	
* 120	VSO69500	SPACER, T2		(HW)
121	EN301010	BIND HEAD BONDING TAP. SCREW	3x8 FCRM3-BL	
122	Ei330086	BIND HEAD B-TITE SCREW	3x8 FCRM3-BL	
123	ED330066	BIND HEAD SCREW	3x6 FCRM3-BL	
124	EK930010	BW HEAD TAPPING SCREW	3x8-8 FCRM3-BL	
125	EL300480	BW HEAD B-TITE SCREW	3x15-8 FCRM3-BL	
126	EK365020	BW HEAD SCREW	4x6 FCRM3-BL	(RAB)
126	EL300470	BW HEAD S-TITE SCREW	4x8-10 FCRM3-BL	(W)
127	EL300470	BW HEAD S-TITE SCREW	4x8-10 FCRM3-BL	BL
127	EX601150	BW HEAD S-TITE SCREW	4x8-10 FNM3-BL	TI
128	AA627310	GROUND TERMINAL		
129	Ei030046	BIND HEAD TAPPING SCREW	3x4 ZMC2-Y	
* 200	VR505900	ACCESSORIES REMOTE CONTROL TRANSMITTER		
* 200-1	CX675300	LID BATTERY, MANGANESE	70x31BLSMK SUM-3, AA, R06	103RRS-028-01MR

* New Parts

REMOTE CONTROL TRANSMITTER

■ SCHEMATIC DIAGRAM



Key No.	Function	HEX	
		CUSTOM	DATA
1	INPUT PHONO	7A	14
2	PHONO PLAY/CUT	7A	0E
4	POWER	7A	1F
5	INPUT CD	7A	15
6	CD PLAY	7A	08
7	CD SKIP ►►	7A	0A
8	CD SKIP ◄◄	7A	0B
9	CD DISC SKIP	7A	4F
10	CD PAUSE/STOP	7A	09
11	CD SEARCH ►►	7A	0C
12	CD SEARCH ◄◄	7A	0D
13	INPUT TUNER	7A	16
14	TUNER A/B/C/D/E	7A	12
15	TUNER PRESET +	7A	10
16	TUNER PRESET -	7A	11
17	INPUT TAPE 1	7A	18
18	TAPE DIR B	7A	40
19	TAPE DECK A/B	7A	06
20	TAPE DIR A	7A	07
21	INPUT TAPE 2	7A	19
22	TAPE ►►	7A	02
23	TAPE PLAY	7A	00
24	TAPE ◄◄	7A	01
26	TAPE REC MUTE	7A	05
27	TAPE STOP	7A	03
28	TAPE REC/PAUSE	7A	04
29	INPUT AUX	7A	17
33	VOLUME +	7A	1A
34	VOLUME -	7A	1B

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 kΩ	HF45 7100	HF45 7100
1.8 Ω	HJ35 3180	*	11 kΩ	HF45 7110	HF45 7110
2.2 Ω	HJ35 3220	HF85 3220	12 kΩ	HJ35 7120	HF85 7120
3.3 Ω	HJ35 3330	HF85 3330	13 kΩ	HF45 7130	HF45 7130
4.7 Ω	HJ35 3470	HF85 3470	15 kΩ	HF45 7150	HF45 7150
5.6 Ω	HJ35 3560	HF85 3560	18 kΩ	HF45 7180	HF45 7180
10 Ω	HF45 4100	HF45 4100	22 kΩ	HF45 7220	HF45 7220
15 Ω	HJ35 4150	HF85 4150	24 kΩ	HF45 7240	HF45 7240
22 Ω	HF45 4220	HF45 4220	27 kΩ	HJ35 7270	HF85 7270
27 Ω	HJ35 4270	HF85 4270	30 kΩ	HF45 7300	HF45 7300
33 Ω	HF45 4330	HF45 4330	33 kΩ	HF45 7330	HF45 7330
39 Ω	HJ35 4470	HF85 4390	36 kΩ	HF45 7360	HF45 7360
47 Ω	HF45 4470	HF45 4470	39 kΩ	HF45 7390	HF45 7390
56 Ω	HF45 4560	HF45 4560	47 kΩ	HF45 7470	HF45 7470
68 Ω	HF45 4680	HF45 4680	51 kΩ	HF45 7510	HF45 7510
75 Ω	HF45 4750	HF45 4750	56 kΩ	HF45 7560	HF45 7560
82 Ω	HF45 4820	HF45 4820	62 kΩ	HF45 7620	HF45 7620
91 Ω	HF45 4910	HF45 4910	68 kΩ	HF45 7680	HF45 7680
100 Ω	HF45 5100	HF45 5100	82 kΩ	HF45 7820	HF45 7820
110 Ω	HJ35 5110	HF85 5110	91 kΩ	HF45 7910	HF45 7910
120 Ω	HF45 5120	HF45 5120	100 kΩ	HF45 8100	HF45 8100
150 Ω	HF45 5150	HF45 5150	110 kΩ	HF45 8110	HF45 8110
160 Ω	HJ35 5160	*	120 kΩ	HF45 8120	HF45 8120
180 Ω	HF45 5180	HF45 5180	150 kΩ	HF45 8150	HF45 8150
200 Ω	HF45 5200	HF45 5200	180 kΩ	HF45 8180	HF45 8180
220 Ω	HF45 5220	HF45 5220	220 kΩ	HJ35 8220	HF85 8220
270 Ω	HF45 5270	HF45 5270	270 kΩ	HF45 8270	HF45 8270
330 Ω	HF45 5330	HF45 5330	300 kΩ	HF45 8300	HF45 8300
390 Ω	HF45 5390	HF45 5390	330 kΩ	HF45 8330	HF45 8330
430 Ω	HF45 5430	HF45 5430	390 kΩ	HJ35 8390	HF85 8390
470 Ω	HF45 5470	HF45 5470	470 kΩ	HF45 8470	HF45 8470
510 Ω	HF45 5510	HF45 5510	560 kΩ	HJ35 8560	HF85 8560
560 Ω	HF45 5560	HF45 5560	680 kΩ	HJ35 8680	HF85 8680
680 Ω	HF45 5680	HF45 5680	820 kΩ	HJ35 8820	HF85 8820
820 Ω	HF45 5820	HF45 5820	1.0 MΩ	HF45 9100	HF45 9100
910 Ω	HF45 5910	HF45 5910	1.2 MΩ	HJ35 9120	*
1.0 kΩ	HF45 6100	HF45 6100	1.5 MΩ	HJ35 9150	HF85 9150
1.2 kΩ	HF45 6120	HF45 6120	1.8 MΩ	HJ35 9180	HF85 9180
1.5 kΩ	HF45 6150	HF45 6150	2.2 MΩ	HJ35 9220	HF85 9220
1.8 kΩ	HF45 6180	HF45 6180	3.3 MΩ	HJ35 9330	HF85 9330
2.0 kΩ	HJ35 6200	HF85 6200	3.9 MΩ	HJ35 9390	*
2.2 kΩ	HF45 6220	HF45 6220	4.7 MΩ	HJ35 9470	HF85 9470
2.4 kΩ	HJ35 6240	HF85 6240			
2.7 kΩ	HF45 6270	HF45 6270			
3.0 kΩ	HF45 6300	HF45 6300			
3.3 kΩ	HF45 6330	HF45 6330			
3.6 kΩ	HJ35 6360	HF85 6360			
3.9 kΩ	HF45 6390	HF45 6390			
4.7 kΩ	HF45 6470	HF45 6470			
5.1 kΩ	HF45 6510	HF45 6510			
5.6 kΩ	HF45 6560	HF45 6560			
6.8 kΩ	HF45 6680	HF45 6680			
8.2 kΩ	HF45 6820	HF45 6820			
9.1 kΩ	HF45 6910	HF45 6910			

