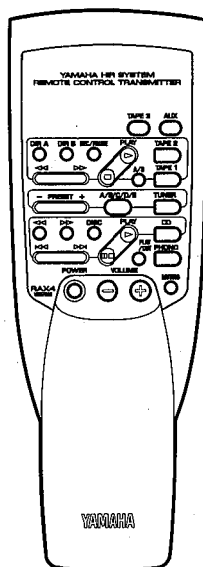


SERVICE MANUAL



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.

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.

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.

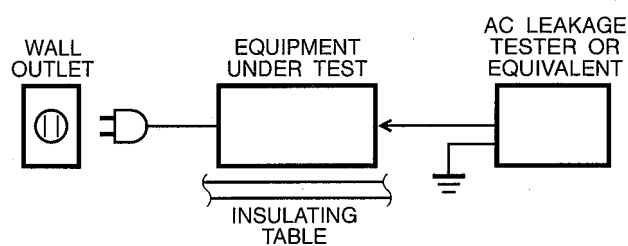
μ-COM DATA	5
PRINTED CIRCUIT BOARD	6~16
BLOCK DIAGRAM	17
SCHEMATIC DIAGRAM	18~19
PARTS LIST	20~31
REMOTE CONTROL TRANSMITTER	32

YAMAHA
YAMAHA CORPORATION
P.O. Box 1, Hamamatsu, Japan
☐ (3) Printed in Japan '96. 6

■ TO SERVICE PERSONNEL

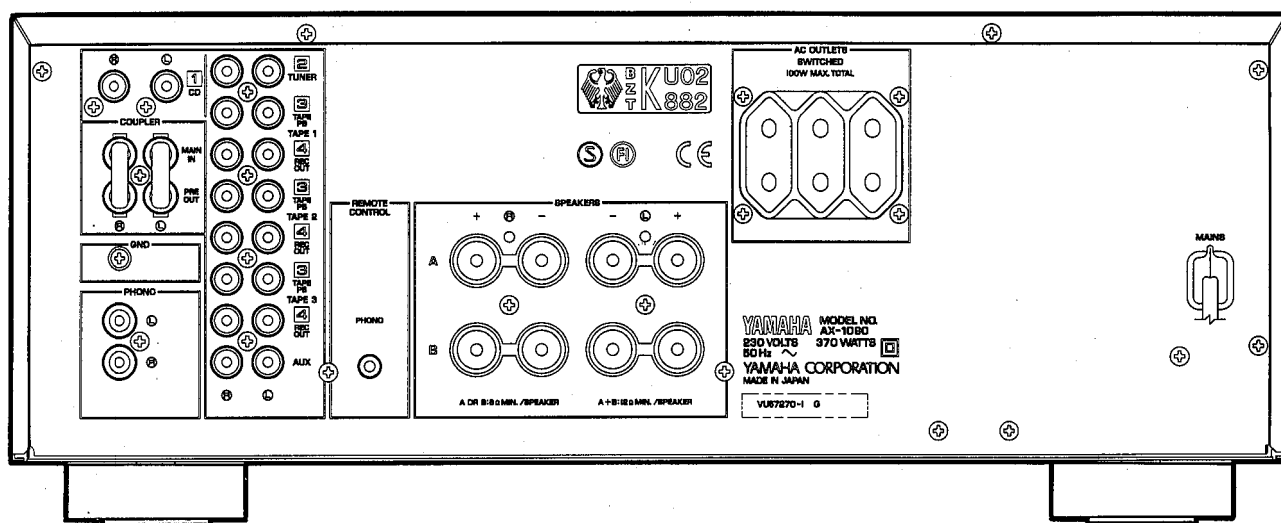
Critical Components Information.

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

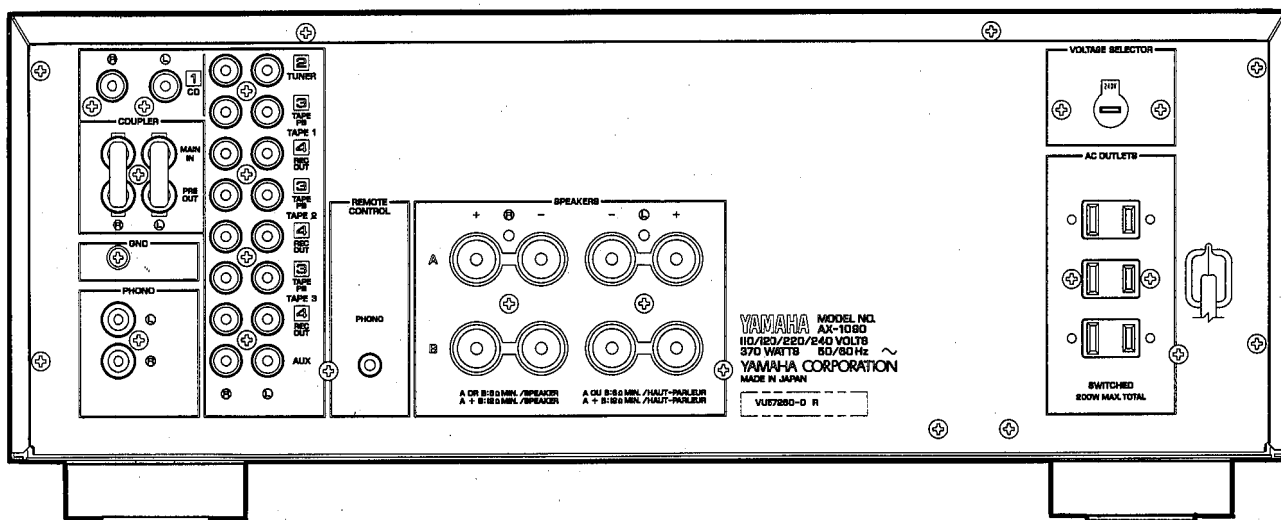


■ REAR PANELS

▼ G model



▼ R model



SPECIFICATIONS

AUDIO SECTION

Minimum RMS Output Power Per Channel	
8Ω, 20Hz to 20kHz, 0.01% THD	145W
6Ω, 20Hz to 20kHz, 0.02% THD	185W
Dynamic Power Per Channel (IHF)	
8/6/4/2Ω	220/290/360/460W
DIN Standard Output Power Channel	
1kHz, 0.7% THD, 4Ω (G model)	250W
Dynamic Headroom	
8/4Ω (R model)	1.81/1.95dB
IEC Power	
1kHz, 0.01% THD, 8Ω (G model)	170W
Power Band Width	
8Ω, 72.5W, 0.03% THD	10Hz to 50kHz
Damping Factor	
8Ω, 20Hz to 20kHz	350 or more
Input Sensitivity/Impedance	
PHONO MC	160μV/220Ω
PHONO MM	2.5mV/47kΩ
CD etc	150mV/47kΩ
MAIN IN	1V/47kΩ
Maximum Input Signal Level (1kHz, 0.01% THD)	
PHONO MC	13.5mV
PHONO MM	170mV
Output Level/Impedance	
REC OUT	150mV/2.2kΩ
PRE OUT	1V/1.8kΩ
Maximum Voltage Output	
20Hz to 20kHz, 0.02% THD	6.5V
Headphone Jack Rated Output/Impedance	
0.015% THD, RL= 8Ω	1.05V/220Ω
Frequency Response (20Hz to 20kHz)	
CD etc	±0.5dB
MAIN IN	±0.5dB
RIAA Equalization Deviation (20Hz to 20kHz)	
PHONO MC	±0.5dB
PHONO MM	±0.3dB
Total Harmonic Distortion (20Hz to 20kHz)	
PHONO MC to REC OUT (3V)	0.007%
PHONO MM to REC OUT (3V)	0.003%
CD etc to PRE OUT (1V)	0.004%
CD etc to SP OUT (72.5W/8Ω)	0.007%
MAIN IN to SP OUT (72.5W/8Ω)	0.005%
Signal-to-Noise Ratio (IHF-A Network)	
(Pure Direct SW ON)	
PHONO MC (500μV Input Shorted)	75dB
PHONO MM (5mV Input Shorted)	92dB
CD (Shorted) (Pure Direct SW ON)	110dB
Except CD (Shorted)	106dB
Residual Noise (IHF-A Network)	
CD (Pure Direct SW ON)	40μV
Except CD	80μV
Channel Separation (Vol. -30dB)	
PHONO MM-MC (Input Shorted) 1kHz/10kHz	70dB/55dB
CD etc 1kHz/10kHz (Input 5.1kΩ Terminated)	65dB/50dB
Tone Control Characteristics	
BASS : Boost/cut	±10dB (20Hz)
Turnover Frequency	200Hz, 400Hz

TREBLE : Boost/cut	±10dB (20kHz)
Turnover Frequency	2.5kHz, 5kHz

Filter Characteristics

Subsonic	15Hz, -18dB/oct
----------	-----------------

Continuous Loudness Control

-40dB (1kHz)

(Level related equalization)

Audio Muting

-20dB

Gain tracking error (0dB to -60dB)

2dB

GENERAL

Power Supply

G model	AC 230V, 50Hz
R model	AC 110/120/220/240V, 60/50Hz

Power Consumption

370W

AC Outlets

Switched x 3

R model	200W max. (Total)
G model	100W max. (Total)

Dimensions (W x H x D)

435 x 171 x 448mm

(17-1/8" x 6-3/4" x 17-5/8")

Weight

18.3 Kg (40 lbs 5 oz)

Accessories

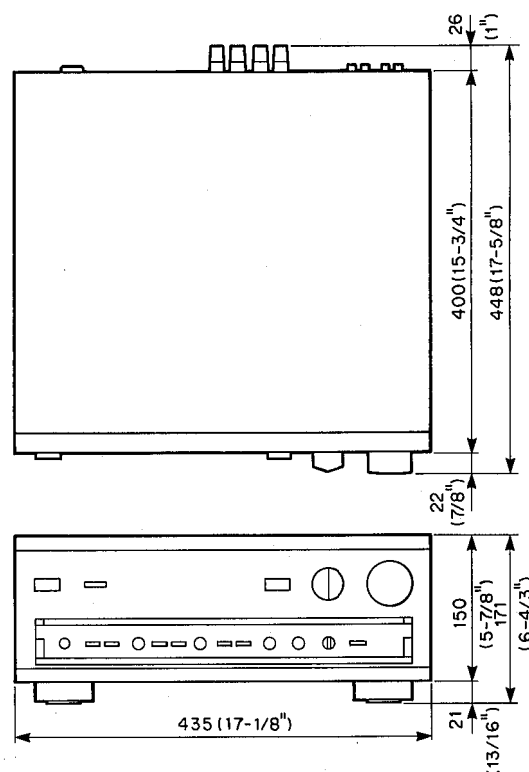
Remote Control Transmitter x 1
Battery (size "AA", R06) x 2

* Specifications subject to change without notice.

G European model

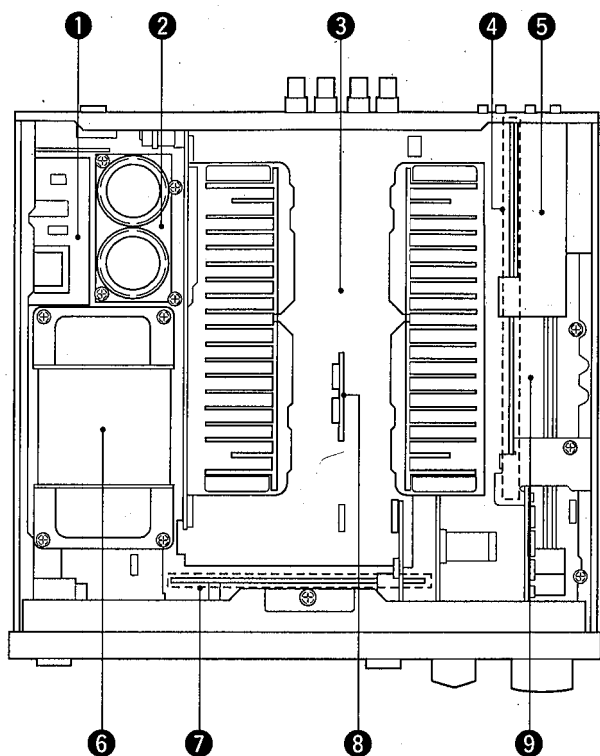
R General model

DIMENSIONS



Units : mm (inch)

INTERNAL VIEW



- ① P.C.B. SUB TRANS (1)
- ② P.C.B. MAIN (2)
- ③ P.C.B. MAIN (1)
- ④ P.C.B. FUNCTION (1)
- ⑤ P.C.B. TONE-CON (6)
- ⑥ POWER TRANSFORMER
- ⑦ P.C.B. TONE-CON (1)
- ⑧ P.C.B. MAIN (5)
- ⑨ P.C.B. FUNCTION (3)

DISASSEMBLY PROCEDURES (Remove parts in the order as numbered.)

1. Removal of Top Cover

Remove 7 screws (①) in Fig. 1.

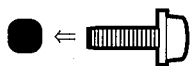
2. Removal of Bottom Cover

- a. Remove 6 screws (②) in Fig. 1.
- b. Remove 6 screws (③) in Fig. 1.
- c. Remove 5 screws (④) in Fig. 1.

3. Removal of Front Panel

- a. Remove 7 knobs in Fig. 1.
- b. Remove 3 screws (⑤) in Fig. 1.

CAUTION-USE ONLY COPPER COLORED SCREWS (3X10 ø8) FOR SQUARE HOLES ON BOTTOM COVER.



COPPER COLORED SCREW

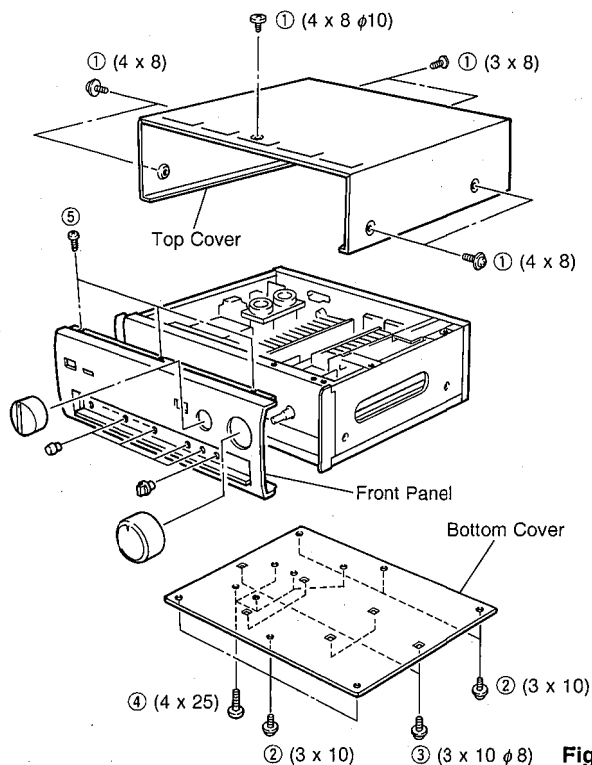


Fig. 1

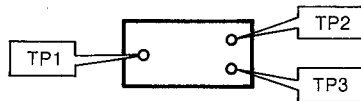
■ ADJUSTMENTS

● IDLING CURRENT ADJUSTMENT

- When replacing the power and drive transistors, adjust idling current.
- After the power has been turned on, age about 10 minutes in non loaded condition.
- Adjust VR601 (Lch) and VR602 (Rch) so that the voltage across the terminals of R683 and R697 comes to 10mV±4mV DC.

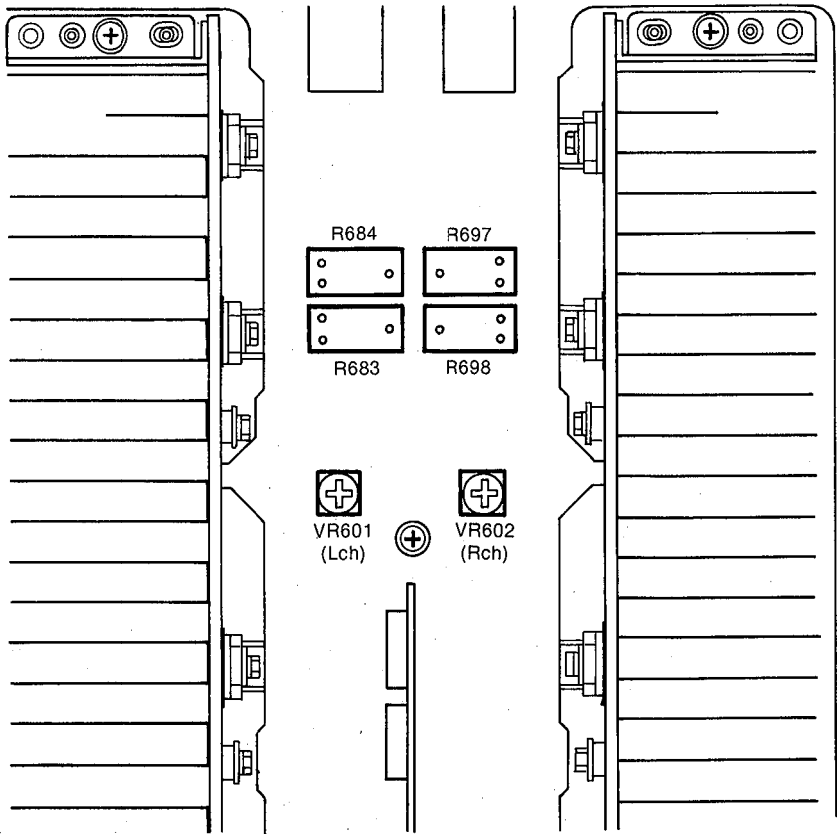
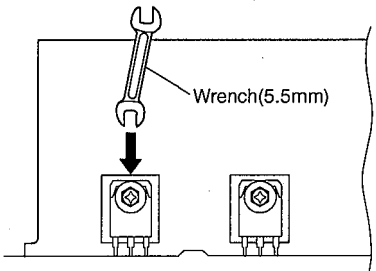
	Test Points	Adjustment Points	Rating
Lch	Across the terminals of R683 or R684 (TP1 ↔ TP2 or TP1 ↔ TP3)	VR601	10mV ± 4mV DC
Rch	Across the terminals of R697 or R698 (TP1 ↔ TP2 or TP1 ↔ TP3)	VR602	10mV ± 4mV DC

(R683, R684, R697, R698)



● Removal of Power Transistor

- Use a 5.5mm wrench or a small size adjustable wrench.
- Using the above tool, remove the screw fixing the Power Transistor.

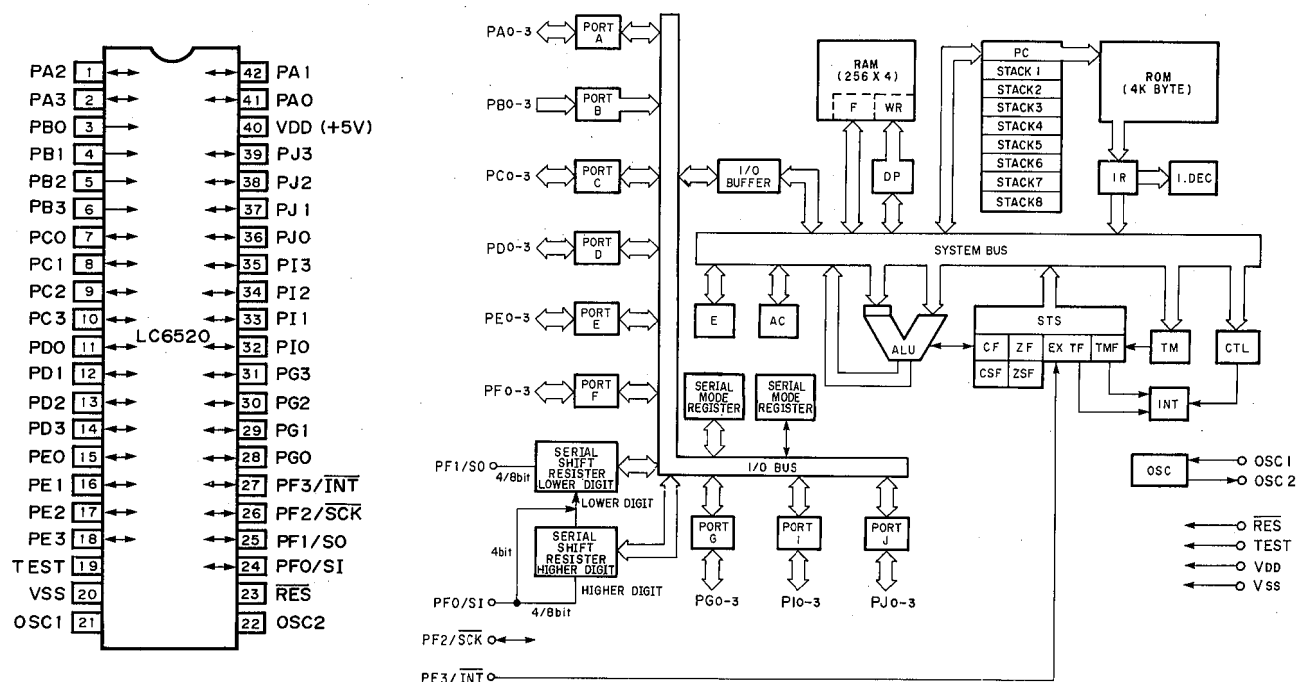


FRONT
PANEL

μ-COM DATA

IC106 : LC6520H

4bit μ-COM



Pin No.	Pin. Name	I/O	Function	Pin No.	Pin. Name	I/O	Function
1	PA2	I/O	Not used	22	OSC2	I	4MHz
2	PA3	I/O	Not used (H)	23	RESET	I	Reset input
3	PB0	I	S1 : Selector position data	24	PF0	—	Not used
4	PB1	I	S2 : Selector position data	25	PF1	—	Not used
5	PB2	I	S3 : Selector position data	26	PF2	I	Power Remote (H : ON, L : OFF)
6	PB3	I	S4 : Selector position data	27	PF3	I	Remote control Data input
7	PC0	I	S5 : Selector position data	28	PG0	I	Power SW ON/OFF
8	PC1	I	S6 : Selector position data	29	PG1	I	Power control (H : ON, L : OFF)
9	PC2	I	S7 : Selector position data	30	PG2	O	Power out
10	PC3	I	S8 : Selector position data	31	PG3	O	STBY out
11	PD0	I	CAM : Cam position data	32	PI0	O	Volume control signal 2 (UP : H)
12	PD1	I	Input (channel) set (H : 7ch set)	33	PI1	O	Volume control signal 1 (DOWN : L)
13	PD2	I	Not used (GND)	34	PI2	O	Selector control signal 2
14	PD3	O	PLAY/CUT (Player control)	35	PI3	O	Selector control signal 1
15	PE0	I	Market (H : G model)	36	PJ0	I	Power on → A. Mute (H : ON, L : OFF)
16	PE1	I	Power down (Back up mode)	37	PJ1	O	Audio muting LED control
17	PE2	—	Not used	38	PJ2	O	Audio muting control signal (H : ON)
18	PE3	I	Input selector operation mode (L:STOP, H:NONSTOP)	39	PJ3	O	Muting control signal
19	TEST	—	GND	40	VDD	—	+5V
20	VSS	—	GND	41	PA0	—	Not used
21	OSC1	I	4MHz	42	PA1	O	CD relay control signal (H : ON)

* When in the BACK-UP mode. (i.e., when the AC plug has been unplugged), the state before unplugging the AC plug (POWER ON/OFF, AUDIO MUTE (−20dB) ON/OFF) is kept in memory.

6



1

2

3

4

5

6



A

B

5KH:

200Hz

SUBSONIC

BASS

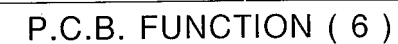
2.5KHz

TREBLE — FILTER

MODE

BALANCE

LOUDNESS



TO: _____
FUNCTION(5) _____

TO:
FUCTION(3)

REMOTE CONTROL

← FROM:SUB-TRANS(2)

← FROM:SUB-TRANS(1)

■ PRINTED CIRCUIT BOARD (Foil side)

P.C.B. MAIN (1)

TO:FUNCTION(3)

TO:MAIN(2)

IDLING CURRENT
ADJ. (Rch)

IDLING CURRENT
ADJ. (Lch)

P.C.B. MAIN (5)

TO:MAIN(3)

FROM:TONE-CON(5)

TO:MAIN(2)

P.C.B. MAIN (3)

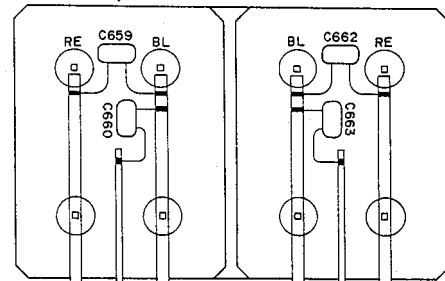
TO:MAIN(3)

TO:MAIN(2)

TO:MAIN(1)

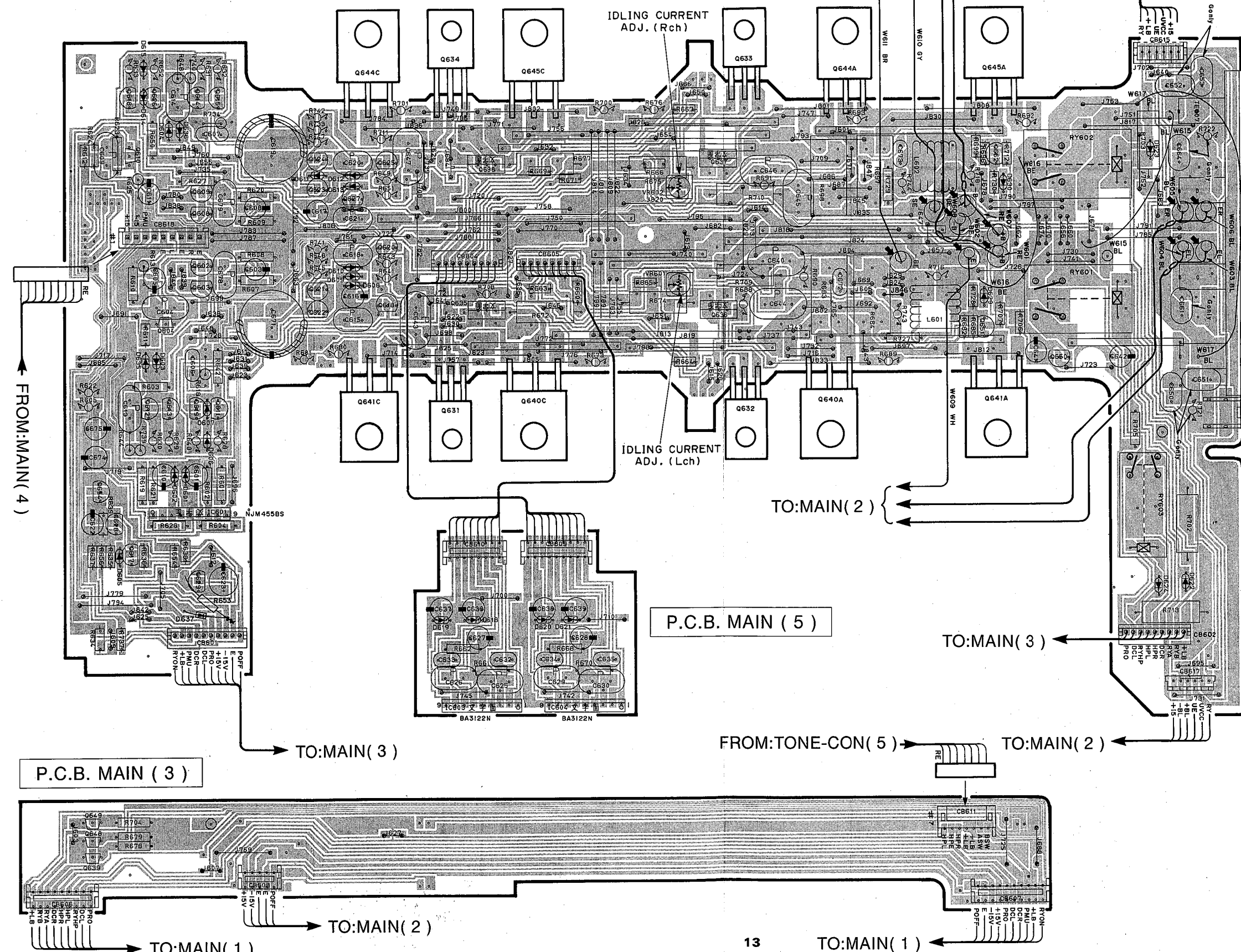
TO:MAIN(1)

G model only



A
+
B
-
L
+
B
A

SPEAKERS



■ PRINTED CIRCUIT BOARD (Foil side)

- R model

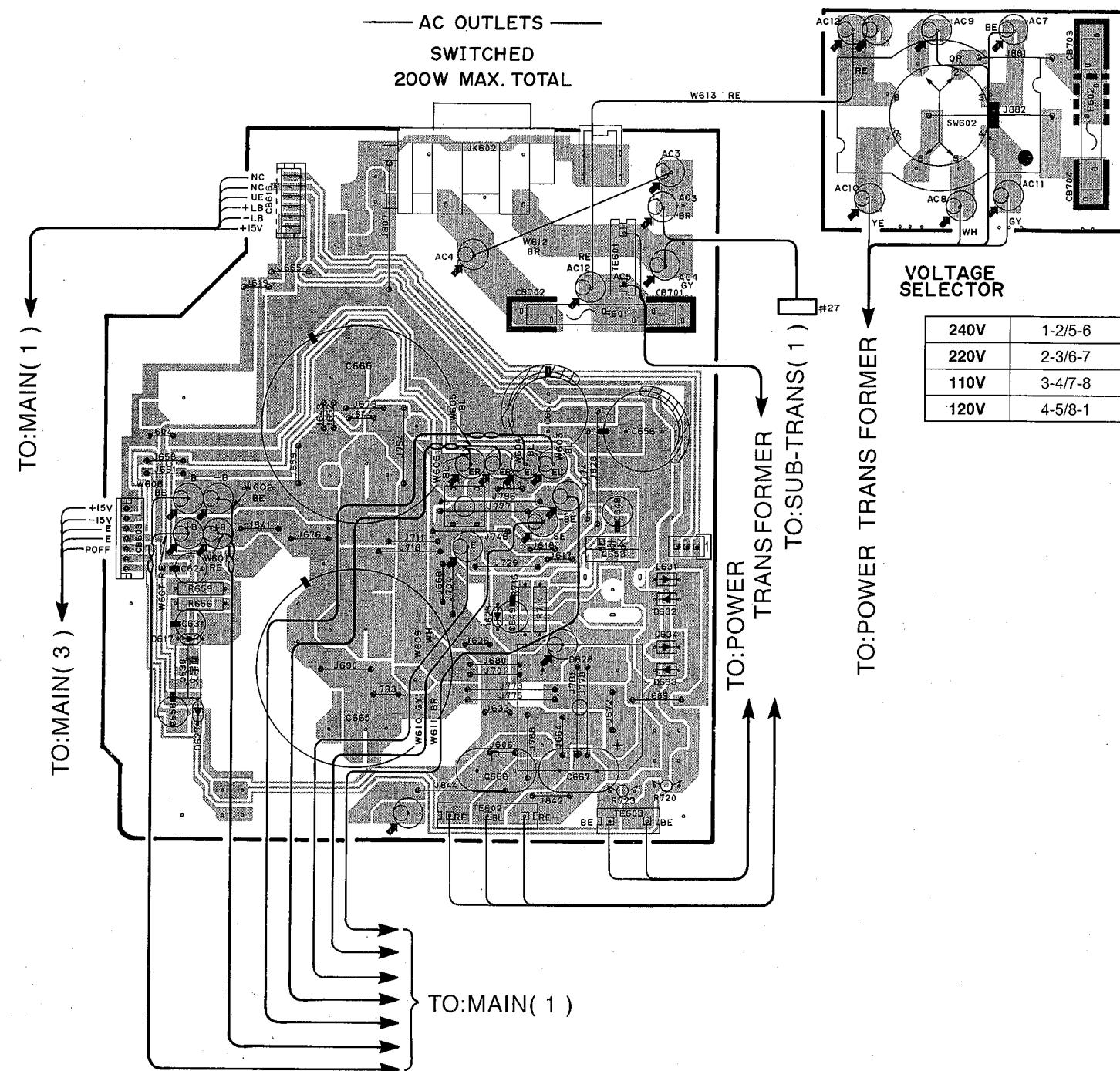
P.C.B. MAIN (2)

P.C.B. MAIN (6)

- G model

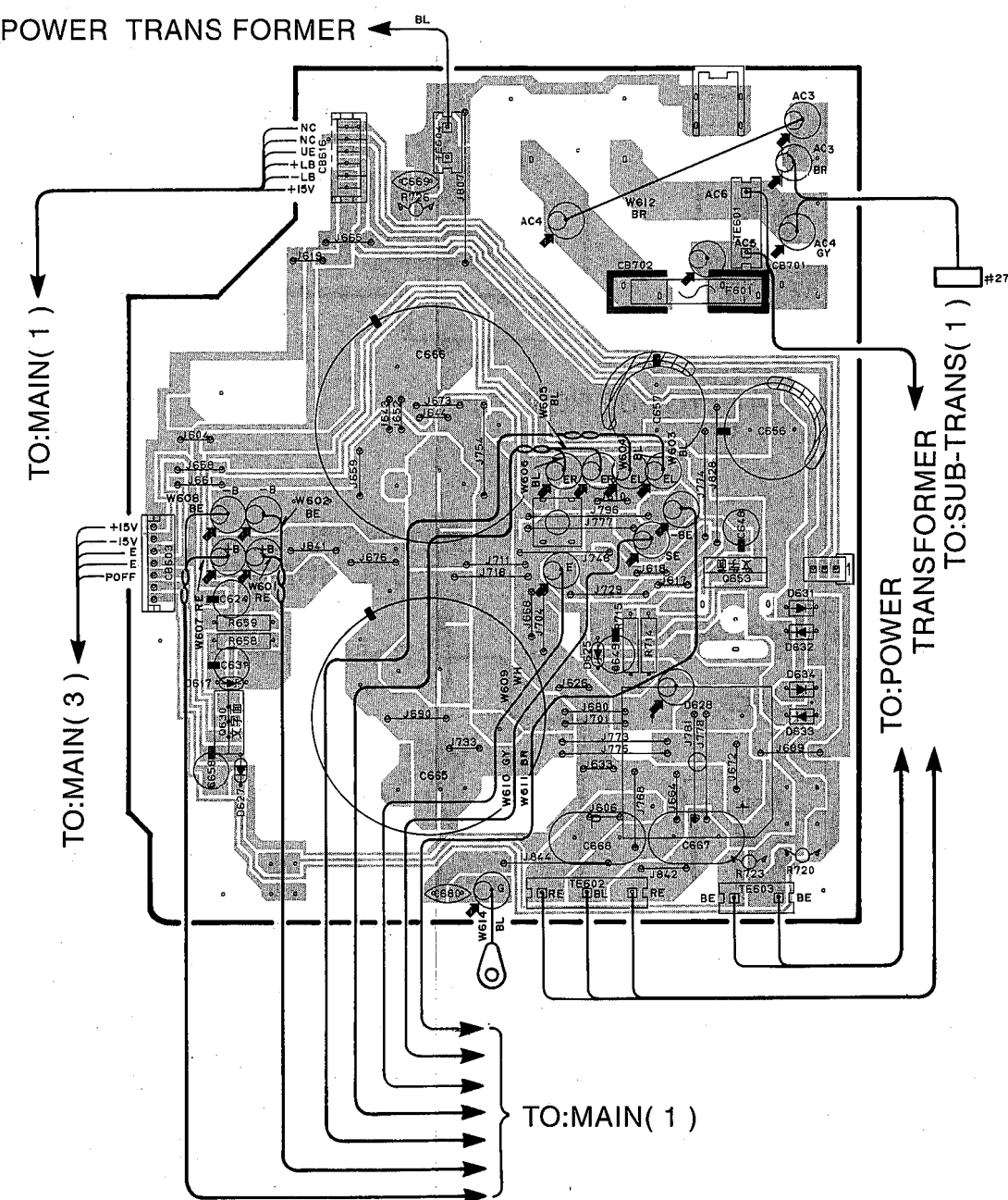
P.C.B. MAIN (2)

———— AC OUTLETS ————
SWITCHED
200W MAX. TOTAL



VOLTAGE SELECTOR	
240V	1-2/5-6
220V	2-3/6-7
110V	3-4/7-8
120V	4-5/8-1

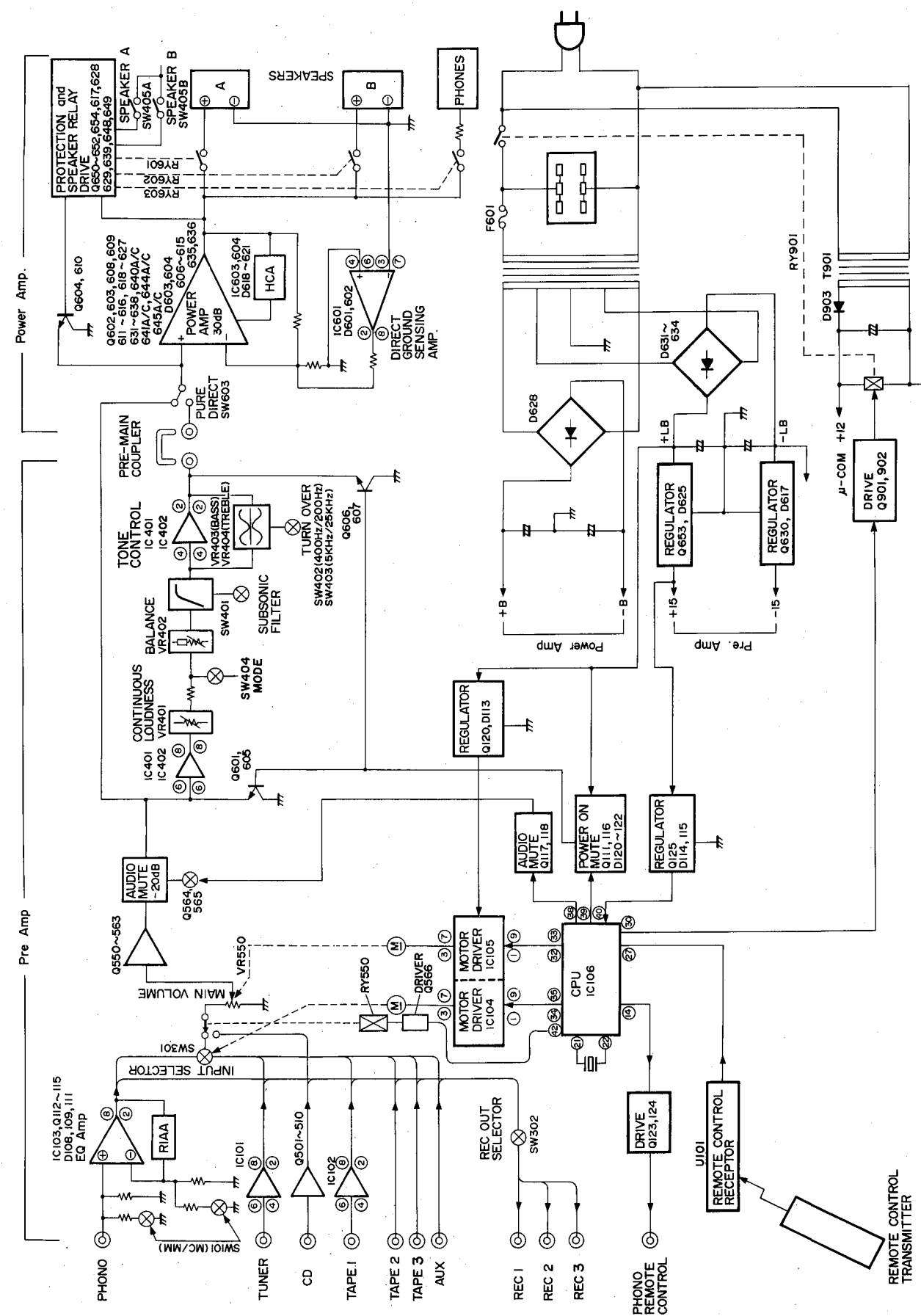
TO:POWER TRANS FORMER



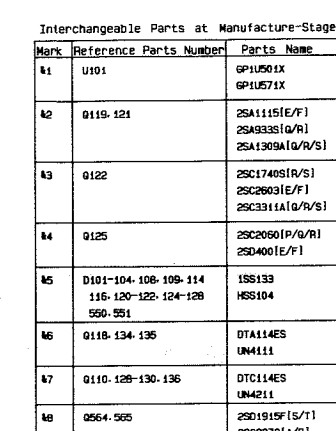
6



17



1	
2	
3	
4	
5	
6	
7	
8	
9	
10	



25A970 (GR, BL)
25A101 (Y)
25B060 (E)
25C1815 (Y)
25C2060 (P, Q, R)
25C440 (E)
25C2240 (GR, BL)
25C2438 (E, F)

25A1115 (C, D)
25A9338 (Q, R)
25A13098 (Q, R, S)
25C17405 (R, S)
25C2603 (E, F)
25C3311A (C, R, S)
D7A124ES
D7A14ES
UN4111
D7C114ES
UN4211
D7C124ES
25C1315 (F, G, T)
25C2878 (A, B)

25C3852

15S193
H5S104TD
MTZ4.0A
MTZ4.3A
MTZ4.7A
MTZ4.9A
MTZ6.2C
MTZ6.2B
MTZ7.2C/C

NJM2068S

μPC4570HA
TA7291S

LC6520H

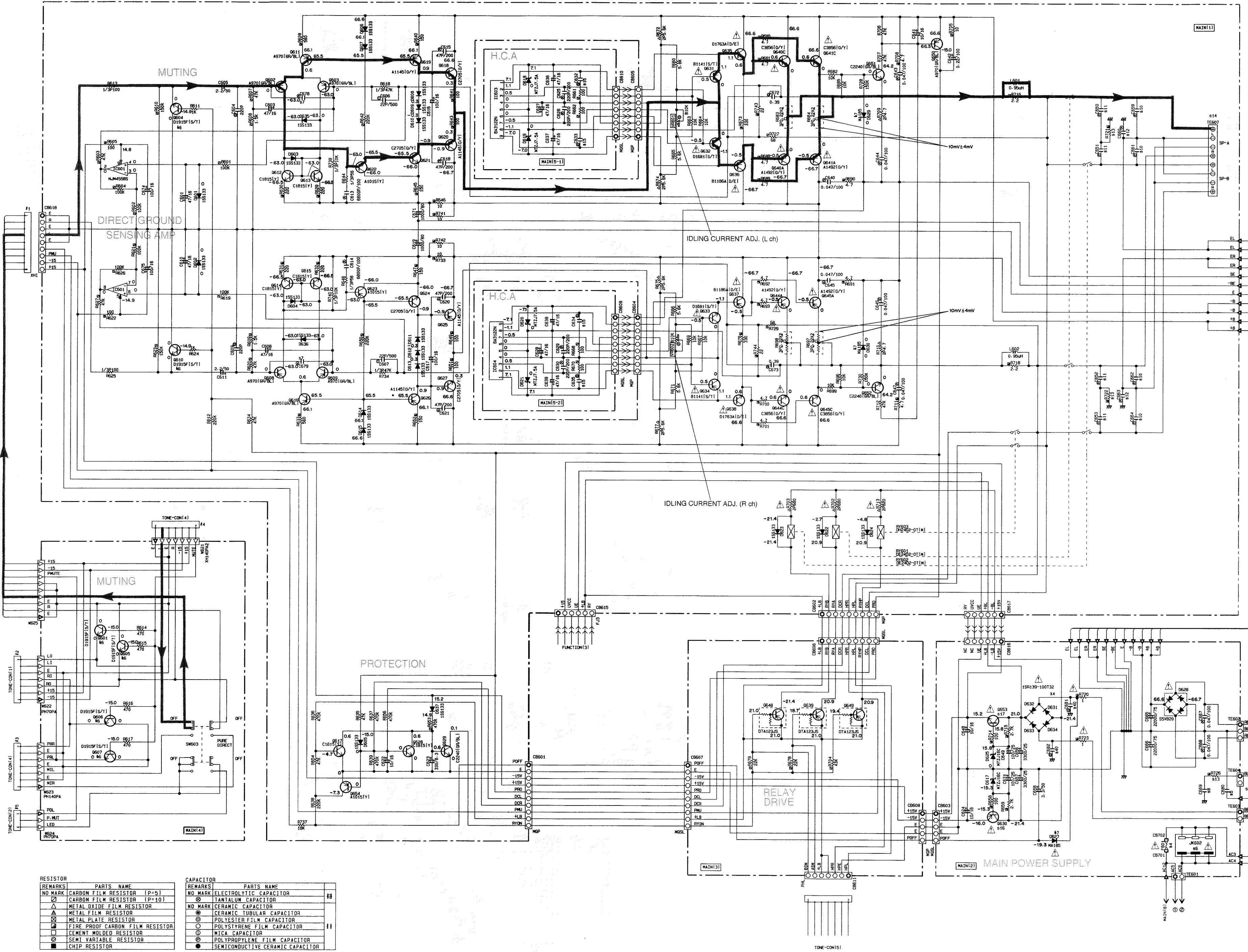
42

Timing diagram showing H1 and H2 signals. H1 is a square wave pulse, and H2 is a square wave pulse with a different timing. The x-axis is labeled 'SAMPLES' and ranges from 0 to 10.

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

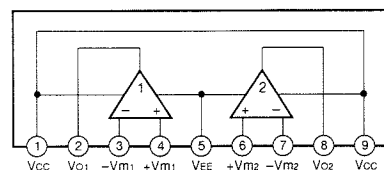
■ SCHEMATIC DIAGRAM (MAIN & SUB-TRANS)

LOW IMPEDANCE DRIVABLE POWER AMP

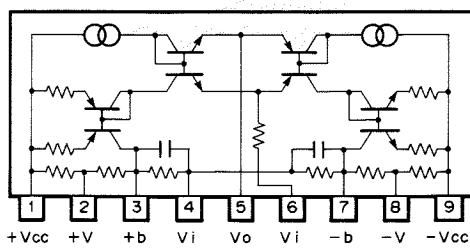


RESISTOR	PARTS NAME	CAPACITOR	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P-5)	NO MARK	ELECTROLYTIC CAPACITOR
□	CARBON FILM RESISTOR (P-10)	⊗	TANTALUM CAPACITOR
△	METAL OXIDE FILM RESISTOR	NO MARK	CERAMIC CAPACITOR
▲	METAL FILM RESISTOR	⊙	CERAMIC TUBULAR CAPACITOR
■	METAL PLATE RESISTOR	○	POLYESTER FILM CAPACITOR
▨	FIRE PROOF CARBON FILM RESISTOR	○	POLYSTYRENE FILM CAPACITOR
□	CEMENT MOLDED RESISTOR	⊖	MICA CAPACITOR
■	SEMI VARIABLE RESISTOR	⊙	POLYPROPYLENE FILM CAPACITOR
■	CHIP RESISTOR	●	SEMICONDUCTIVE CERAMIC CAPACITOR

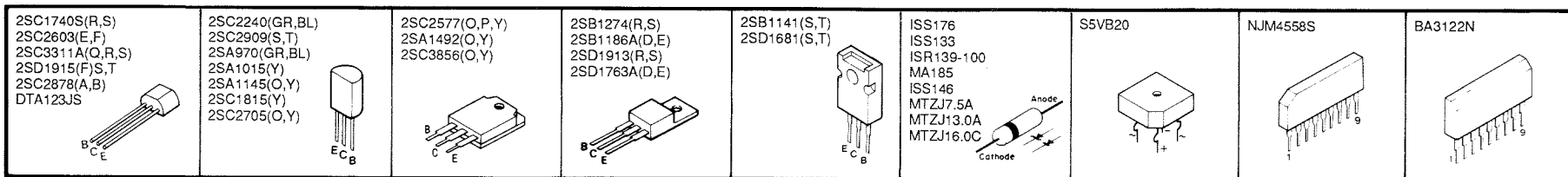
IC601 : NJM4558S
Dual OP-Amp



IC603, 604 : BA3122N
Hyperbolic Conversion Amp

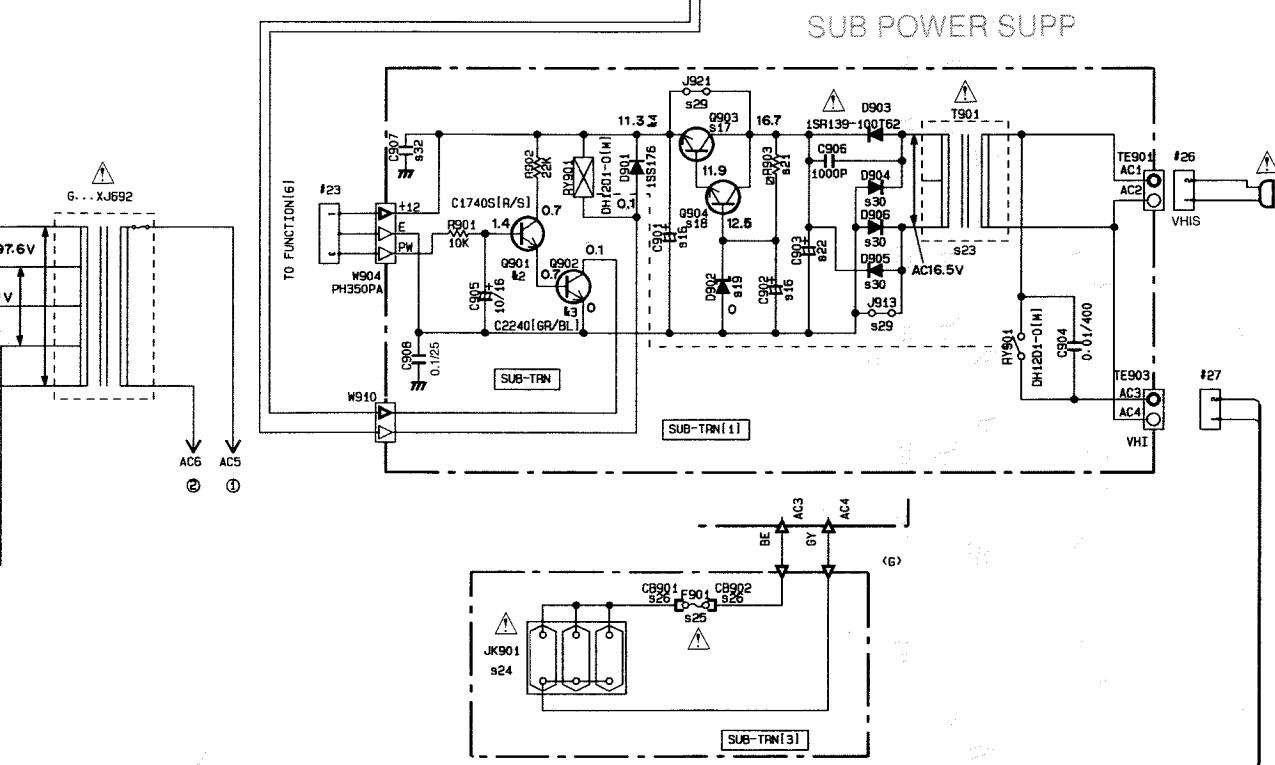
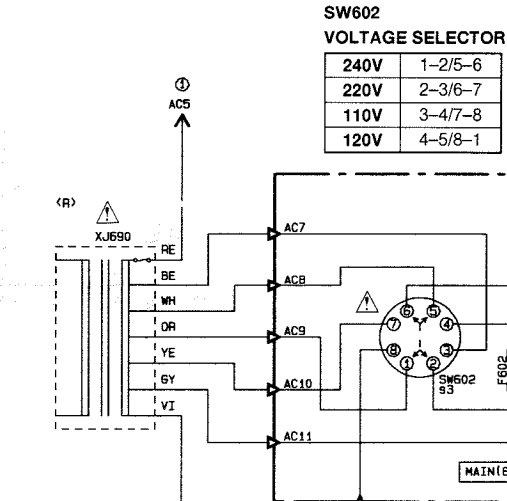


PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICs.



Mark	Interchange Parts Number	Parts Name
41	0901	2SC1740S(15/S)
42	0902	2SC2609(15/P)
43	0901	1SS133
44	0901	1SS133
45	0901	1SS133
46	0901	1SS133
47	0901	1SS133

Mark	Interchange Parts Number	Parts Name
41	0901	2SC1740S(15/S)
42	0902	2SC2609(15/P)
43	0901	1SS133
44	0901	1SS133
45	0901	1SS133
46	0901	1SS133
47	0901	1SS133



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

PARTS LIST

■ ELECTRICAL PARTS

■ WARNING

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

- Carbon resistors (1/6W or 1/4W) are not included in the ELECTRICAL PARTS List. For the parts No. of the carbon 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. FUNCTION

Schm Ref.	PART NO.	Description	
	VU603300	P.C.B.	FUNCTION(R)
	VU603400	P.C.B.	FUNCTION(GT)
CB101	Vi378300	SOCKET	5P
CB102	Vi378300	SOCKET	5P
CB103	VA252400	CN	12P
CB104	VA252400	CN	12P
CB105	VA252400	CN	12P
CB108	VA252300	CN	5P
CB109	VD005000	CN. BS. PIN	7P
CB110	VL023700	CN	17P
CB111	VD004800	CN. BS. PIN	5P
CB113	VD004500	CN. BS. PIN	2P
CB114	VD004600	CN. BS. PIN	3P
CB115	VD004500	CN. BS. PIN	2P
CB116	VD004600	CN. BS. PIN	3P
C109	VG290900	C. EL	10uF 50V
C110	VK534000	C. PP	220pF 200V
C111	VK534000	C. PP	220pF 200V
C112	VG290900	C. EL	10uF 50V
C113	VG290900	C. EL	10uF 50V
C114	FG212220	C. CE	220pF 50V
C115	FG212220	C. CE	220pF 50V
C116	VG290900	C. EL	10uF 50V
C117	FG212220	C. CE	220pF 50V
C118	FG212220	C. CE	220pF 50V
C119	FG212220	C. CE	220pF 50V
C120	FG212220	C. CE	220pF 50V
C121	FG212220	C. CE	220pF 50V
C122	FG212220	C. CE	220pF 50V
C123	FG212220	C. CE	220pF 50V
C124	FG212220	C. CE	220pF 50V
C125	FG212220	C. CE	220pF 50V
C126	FG212220	C. CE	220pF 50V
C127	FG212220	C. CE	220pF 50V
C128	FG212220	C. CE	220pF 50V
C131	VK534000	C. PP	220pF 200V
C132	VG290900	C. EL	10uF 50V
C133	VG290900	C. EL	10uF 50V
C134	VK534000	C. PP	220pF 200V
C135	FG212220	C. CE	220pF 50V
C136	VG290900	C. EL	10uF 50V
C137	VG290900	C. EL	10uF 50V
C138	FG212220	C. CE	220pF 50V
C141	FG212220	C. CE	220pF 50V
C142	VD930900	C. CE. SMI	0. 1uF 25V
C143	FG212220	C. CE	220pF 50V
C144	VG290900	C. EL	10uF 50V
C145	UA654100	C. MYLAR	0. 01uF 50V
C146	FG212330	C. CE	330pF 50V
C147	UA654100	C. MYLAR	0. 01uF 50V
C148	FG212330	C. CE	330pF 50V
C149	VG290900	C. EL	10uF 50V
C150	UK665470	C. EL	0. 47uF 50V

* New Parts

Schm Ref.	PART NO.	Description	
C151	VG722100	C. EL	1uF 50V
C152	FG212100	C. CE	100pF 50V
C153	UA653270	C. MYLAR	2700pF 50V
C154	UA653270	C. MYLAR	2700pF 50V
C155	FG212100	C. CE	100pF 50V
C156	UA654330	C. MYLAR	0. 033uF 50V
C157	Vi460900	C. EL	2200uF 6. 3V
C158	VG288900	C. EL	100uF 25V
C159	Vi460900	C. EL	2200uF 6. 3V
C160	UA654330	C. MYLAR	0. 033uF 50V
C161	VD930900	C. CE. SMI	0. 1uF 25V
C162	UA653680	C. MYLAR	6800pF 50V
C163	VG291000	C. EL	22uF 50V
C164	VG287800	C. EL	330uF 16V
C165	VG287800	C. EL	330uF 16V
C166	VG291000	C. EL	22uF 50V
C167	UA653680	C. MYLAR	6800pF 50V
C168	UA653330	C. MYLAR	3300pF 50V
C169	UA653330	C. MYLAR	3300pF 50V
C170	VD930900	C. CE. SMI	0. 1uF 25V
C171	VG290900	C. EL	10uF 50V
C172	VG287800	C. EL	330uF 16V
C173	VG290900	C. EL	10uF 50V
C174	VT180400	C. EL	4700uF 5. 5V
C175	VD930900	C. CE. SMI	0. 1uF 25V
C176	VG290500	C. EL	1uF 50V
C179	VG290900	C. EL	10uF 50V
C182	VM758800	C. EL	330uF 25V
C193	UG444100	C. CE	0. 01uF 50V
C194	UG444100	C. CE	0. 01uF 50V
C195	UA653240	C. MYLAR	2400pF 50V
C196	UA653240	C. MYLAR	2400pF 50V
C199	VG287800	C. EL	330uF 16V
C200	FZ005880	C. CE. ML	0. 1uF 25V
D101	iF004600	DIODE	1SS133
D102	iF004600	DIODE	1SS133
D103	iF004600	DIODE	1SS133
D104	iF004600	DIODE	1SS133
D107	VG435800	DIODE. ZENR	MTZJ3. 0A 3. 0V
D108	iF004600	DIODE	1SS133
D109	iF004600	DIODE	1SS133
D110	VG437000	DIODE. ZENR	MTZJ4. 7A 4. 7V
D111	VG438000	DIODE. ZENR	MTZJ6. 2B 6. 2V
D112	VG437500	DIODE. ZENR	MTZJ5. 1C 5. 1V
D113	VG440300	DIODE. ZENR	MTZJ12C 12V
D114	iF004600	DIODE	1SS133
D115	VG438000	DIODE. ZENR	MTZJ6. 2B 6. 2V
D116	iF004600	DIODE	1SS133
D117	VG436800	DIODE. ZENR	MTZJ4. 3B 4. 3V
D118	VF402500	LED(or)	SLR-34DC3H3
D119	Vi013600	LED(re)	SLR-34VC3H3
D120	iF004600	DIODE	1SS133
D121	iF004600	DIODE	1SS133

* New Parts

P.C.B. FUNCTION & TONE CONTROL

Schm Ref.	PART NO.	Description
D122	iF004600	DIODE 1SS133
D124	iF004600	DIODE 1SS133
D125	iF004600	DIODE 1SS133
D126	iF004600	DIODE 1SS133
D127	iF004600	DIODE 1SS133
D128	iF004600	DIODE 1SS133
IC101	XA956A00	IC NJM2068S
IC102	XA956A00	IC NJM2068S
IC103	XB247301	IC uPC4570HA
IC104	XF557A00	IC TA7291S
IC105	XF557A00	IC TA7291S
* IC106	XR895A00	IC LC6520H-XXXX CPU
JK101	VJ726800	JACK. MNI
L101	VF541100	COIL 15uH
L102	VF541100	COIL 15uH
L103	VB056900	COIL 220uH
L104	VB056900	COIL 220uH
PJ103	VJ249500	JACK. PIN 4P
PJ104	VJ249500	JACK. PIN 4P
PJ105	VJ249500	JACK. PIN 4P
PJ106	VJ249500	JACK. PIN 4P
PJ108	VE642400	JACK. PIN 2P
Q109	iA101521	TR 2SA1015 Y
Q110	VD678700	TR. DGT DTC114ES
Q111	iA101521	TR 2SA1015 Y
Q112	iA097000	TR 2SA970 GR, BL
Q113	iA097000	TR 2SA970 GR, BL
Q114	iA097000	TR 2SA970 GR, BL
Q115	iA097000	TR 2SA970 GR, BL
Q116	VG722000	TR. DGT DTC144ES
Q117	VG722000	TR. DGT DTC144ES
Q118	VD678500	TR. DGT DTA114ES
Q119	iA111510	TR 2SA1115 E, F
Q120	VC938500	TR 2SC3852
Q121	iA111510	TR 2SA1115 E, F
Q122	iC174020	TR 2SC1740S R, S
Q123	iB056020	TR 2SB560 E, F
Q124	VF331200	TR. DGT DTC124ES
Q125	iC206010	TR 2SC2060 P, Q, R
Q128	VD678700	TR. DGT DTC114ES
Q129	VD678700	TR. DGT DTC114ES
Q130	VD678700	TR. DGT DTC114ES
Q131	VD678700	TR. DGT DTC114ES
Q132	VH257100	TR. DGT DTA124ES
Q133	VD678700	TR. DGT DTC114ES
Q134	VD678500	TR. DGT DTA114ES
Q135	VD678500	TR. DGT DTA114ES
Q136	VD678700	TR. DGT DTC114ES
R159	HV454100	R. CAR. FP 10Ω 1/4W
R160	HV454100	R. CAR. FP 10Ω 1/4W
R205	HV455100	R. CAR. FP 100Ω 1/4W
R206	HV455100	R. CAR. FP 100Ω 1/4W
R210	HV455100	R. CAR. FP 100Ω 1/4W

* New Parts

Schm Ref.	PART NO.	Description
R211	HV455100	R. CAR. FP 100Ω 1/4W
R214	HV454100	R. CAR. FP 10Ω 1/4W
R218	VL948600	R. ARRAY 47KΩ x9
R233	HV454390	R. CAR. FP 39Ω 1/4W
R254	HV454390	R. CAR. FP 39Ω 1/4W
SW101	VK333500	SW. PUSH SPUN19
U101	VF926500	L. DTCT GP1U501X
W107	VM573200	CN. FLAT 17P 140mm
XL101	VB759100	RSNR. CE 4MHz
	VB966900	CN IMSA-6024
	BB071360	SCR. TERM 8.3x13
* VU603500 P. C. B. TONE CONTROL		
CB306	Vi009100	CN. BS. PIN 17P
CB307	VD004600	CN. BS. PIN 3P
CB308	Vi379200	SOCKET 12P
CB309	Vi379200	SOCKET 12P
CB310	Vi379200	SOCKET 12P
CB401	VB858600	CN. BS. PIN 7P
CB501	VA252300	CN 5P
CB550	VB858600	CN. BS. PIN 7P
CB551	LB919030	CN. BS. PIN 3P
CB552	LB919070	CN. BS. PIN 7P
CB553	VD004500	CN. BS. PIN 2P
CB554	VD005000	CN. BS. PIN 7P
CB555	VB858700	CN. BS. PIN 8P
CB556	VB858400	CN. BS. PIN 5P
C320	VG722100	C. EL 1uF 50V
C401	Vi377400	C. EL 4.7uF 63V
C402	Vi377400	C. EL 4.7uF 63V
C403	VK533900	C. PP 100pF 200V
C404	VK533900	C. PP 100pF 200V
C405	VG288900	C. EL 100uF 25V
C406	VG288900	C. EL 100uF 25V
C407	VG291000	C. EL 22uF 50V
C408	VG291000	C. EL 22uF 50V
C409	Ui765220	C. EL 0.22uF 50V
C410	Ui765220	C. EL 0.22uF 50V
C411	VG290500	C. EL 1uF 50V
C412	VG290500	C. EL 1uF 50V
C413	UA653680	C. MYLAR 6800pF 50V
C414	UA653680	C. MYLAR 6800pF 50V
C415	UA654470	C. MYLAR 0.047uF 50V
C416	UA654470	C. MYLAR 0.047uF 50V
C417	UA654680	C. MYLAR 0.068uF 50V
C418	UA654680	C. MYLAR 0.068uF 50V
C419	UA654680	C. MYLAR 0.068uF 50V
C420	UA654680	C. MYLAR 0.068uF 50V
C421	VG290500	C. EL 1uF 50V
C422	VG290500	C. EL 1uF 50V
C423	VE551900	C. CE 100pF 50V

* New Parts

P.C.B. TONE CONTROL

Schm Ref.	PART NO.	Description
C424	VE551900	C. CE 100pF 50V
C425	VG290500	C. EL 1uF 50V
C426	VG290500	C. EL 1uF 50V
C427	FG212470	C. CE 470pF 50V
C428	FG212470	C. CE 470pF 50V
C429	VG288900	C. EL 100uF 25V
C430	VG288900	C. EL 100uF 25V
C431	UA654750	C. MYLAR 0.075uF 50V
C432	UA654750	C. MYLAR 0.075uF 50V
C433	UA654750	C. MYLAR 0.075uF 50V
C434	UA654750	C. MYLAR 0.075uF 50V
C435	UA654160	C. MYLAR 0.016uF 50V
C436	UA654160	C. MYLAR 0.016uF 50V
C437	UA654160	C. MYLAR 0.016uF 50V
C438	UA654160	C. MYLAR 0.016uF 50V
C439	UA654100	C. MYLAR 0.01uF 50V
C440	UA654100	C. MYLAR 0.01uF 50V
C441	FG214100	C. CE 0.01uF 50V
C442	FG212220	C. CE 220pF 50V
C443	FG212220	C. CE 220pF 50V
C444	FG212220	C. CE 220pF 50V
C445	FG212220	C. CE 220pF 50V
C501	VE742700	C. EL 10uF 50V
C502	VK534000	C. PP 220pF 200V
C503	VK534000	C. PP 220pF 200V
C504	VE742700	C. EL 10uF 50V
C505	UT453100	C. PP 1000pF 100V
C506	VK533800	C. PP 47pF 200V
C507	VK534000	C. PP 220pF 200V
C508	VQ645600	C. MYLAR 100pF 50V
C509	VE742700	C. EL 10uF 50V
C510	VE018700	C. EL 100uF 25V
C511	VE018700	C. EL 100uF 25V
C512	UM049220	C. EL 2200uF 16V
C513	VE742700	C. EL 10uF 50V
C514	VK534000	C. PP 220pF 200V
C515	VQ645600	C. MYLAR 100pF 50V
C516	VK533800	C. PP 47pF 200V
C517	UM049220	C. EL 2200uF 16V
C518	UT453100	C. PP 1000pF 100V
C550	VL883800	C. PP 2200pF 100V
C551	FU450500	C. MICA 5pF 500V
C552	VE742700	C. EL 10uF 50V
C553	VE016800	C. EL 470uF 6.3V
C554	VK533900	C. PP 100pF 200V
C555	VK533900	C. PP 100pF 200V
C556	VE016800	C. EL 470uF 6.3V
C557	VE742700	C. EL 10uF 50V
C558	FU450500	C. MICA 5pF 500V
C559	VL883800	C. PP 2200pF 100V
C560	VE742700	C. EL 10uF 50V
C561	VE742700	C. EL 10uF 50V
C562	VF904800	C. EL 2200uF 16V

* New Parts

Schm Ref.	PART NO.	Description
C563	VF904800	C. EL 2200uF 16V
C564	VG722100	C. EL 1uF 50V
C570	VK534000	C. PP 220pF 200V
C571	VK534000	C. PP 220pF 200V
C572	VK534000	C. PP 220pF 200V
C573	VK534000	C. PP 220pF 200V
C580	VL883800	C. PP 2200pF 100V
C581	VL883800	C. PP 2200pF 100V
C582	VL883800	C. PP 2200pF 100V
C583	VL883800	C. PP 2200pF 100V
D550	iF004600	DIODE 1SS133
D551	iF004600	DIODE 1SS133
IC401	XA956A00	IC NJM2068S
IC402	XA956A00	IC NJM2068S
JK401	LB301720	JACK. PHONE
PJ501	VL552500	JACK. PIN 1P
PJ502	VL552500	JACK. PIN 1P
PJ503	LB401030	JACK. PIN 4P
Q501	iC224030	TR 2SC2240 GR, BL
Q502	iC224030	TR 2SC2240 GR, BL
Q503	iA101521	TR 2SA1015 Y
Q504	VP872700	TR 2SC4488 S, T
Q505	iC224030	TR 2SC2240 GR, BL
Q506	VP872600	TR 2SA1708 S, T
Q507	VP872600	TR 2SA1708 S, T
Q508	iC224030	TR 2SC2240 GR, BL
Q509	iA101521	TR 2SA1015 Y
Q510	VP872700	TR 2SC4488 S, T
Q550	VP872700	TR 2SC4488 S, T
Q551	iA101521	TR 2SA1015 Y
Q552	iC224030	TR 2SC2240 GR, BL
Q553	iC224030	TR 2SC2240 GR, BL
Q554	iC1815C0	TR 2SC1815 Y
Q555	iC1815C0	TR 2SC1815 Y
Q556	VP872600	TR 2SA1708 S, T
Q557	VP872600	TR 2SA1708 S, T
Q558	iC1815C0	TR 2SC1815 Y
Q559	iC1815C0	TR 2SC1815 Y
Q560	iC224030	TR 2SC2240 GR, BL
Q561	iC224030	TR 2SC2240 GR, BL
Q562	iA101521	TR 2SA1015 Y
Q563	VP872700	TR 2SC4488 S, T
Q564	VK432900	TR 2SD1915F S, T
Q565	VK432900	TR 2SD1915F S, T
Q566	iC224030	TR 2SC2240 GR, BL
Q567	iC224030	TR 2SC2240 GR, BL
R401	HV455100	R. CAR. FP 100 Ω 1/4W
R402	HV455100	R. CAR. FP 100 Ω 1/4W
R439	HL325220	R. MIL. OXD 220 Ω 2W
R440	HL325220	R. MIL. OXD 220 Ω 2W
R510	HV454470	R. CAR. FP 47 Ω 1/4W
R513	HV454470	R. CAR. FP 47 Ω 1/4W
R528	HV454470	R. CAR. FP 47 Ω 1/4W

* New Parts

P.C.B. TONE CONTROL & MAIN

Schm Ref.	PART NO.	Description
R531	HV454470	R. CAR. FP 47Ω 1/4W
R553	HV454470	R. CAR. FP 47Ω 1/4W
R557	HV454470	R. CAR. FP 47Ω 1/4W
R571	HV454470	R. CAR. FP 47Ω 1/4W
R574	HV454470	R. CAR. FP 47Ω 1/4W
R586	HV455220	R. CAR. FP 220Ω 1/4W
R587	HV455220	R. CAR. FP 220Ω 1/4W
R589	HV454100	R. CAR. FP 10Ω 1/4W
R591	HV454100	R. CAR. FP 10Ω 1/4W
RY550	VM640200	RELAY RY12W-OH-K DC12V
RY551	VM640200	RELAY RY12W-OH-K DC12V
SW301	VT148400	SW. RT SRBAA47
* SW302	VU641500	SW. RT SRRZS6124A
SW401	Vi136400	SW. PUSH SPEC12
SW402	Vi136400	SW. PUSH SPEC12
SW403	Vi136400	SW. PUSH SPEC12
SW404	Vi136400	SW. PUSH SPEC12
SW405	VL545200	SW. PUSH SPUN
VR401	VL573200	VR 30KΩ x2
VR402	VL573300	VR MN50KΩ x2
VR403	VL542500	VR 16KΩ x2
VR404	VL542400	VR 10KΩ x2
* VR550	VU398400	VR A100KΩ
	VB966900	CN IMSA-6024
	CB069250	BIND. TIE BK-1
	BB071360	SCR. TERM 8.3x13
	VP957200	P. C. B. MAIN(R)
	VP957500	P. C. B. MAIN(GT)
CB601	Vi378000	CN. BS. PIN 10P
CB602	VB994900	CN 9P
CB603	VA252300	CN 5P
CB604	VB994900	CN 9P
CB605	Vi377800	CN. BS. PIN 8P
CB606	Vi378700	SOCKET 9P
CB607	Vi378800	SOCKET 10P
CB608	Vi378300	SOCKET 5P
CB609	Vi378700	SOCKET 9P
CB610	Vi378600	SOCKET 8P
CB611	VB858600	CN. BS. PIN 7P
CB618	VL845300	CN. BS. PIN 9P
CB701	LB201880	HOLDER. FUS PC-FH1
CB702	LB201880	HOLDER. FUS PC-FH1
CB703	LB201880	HOLDER. FUS PC-FH1 (R)
CB704	LB201880	HOLDER. FUS PC-FH1 (R)
C601	VE742600	C. EL 47uF 25V
C603	Vi532800	C. EL 47uF 16V
C604	VK984200	C. MYLAR 220pF 50V
C605	Vi536000	C. EL 2.2uF 50V
C606	FU351220	C. MICA 22pF 500V
C607	FU351220	C. MICA 22pF 500V

* New Parts

Schm Ref.	PART NO.	Description
C608	Vi532800	C. EL 47uF 16V
C609	VK984200	C. MYLAR 220pF 50V
C610	VE742600	C. EL 47uF 25V
C611	Vi536000	C. EL 2.2uF 50V
C613	UT653680	C. PP 6800pF 100V
C614	UT653680	C. PP 6800pF 100V
C615	VK533800	C. PP 47pF 200V
C616	VG288900	C. EL 100uF 25V
C617	VG288900	C. EL 100uF 25V
C618	VK533800	C. PP 47pF 200V
C619	VL862800	C. EL 1000uF 80V
C620	VK533800	C. PP 47pF 200V
C621	VK533800	C. PP 47pF 200V
C622	VG290900	C. EL 10uF 50V
C623	VE016700	C. EL 330uF 6.3V
C624	VG290900	C. EL 10uF 50V
C625	VK534000	C. PP 220pF 200V
C626	VK534000	C. PP 220pF 200V
C627	Vi532800	C. EL 47uF 16V
C628	Vi532800	C. EL 47uF 16V
C629	VK534000	C. PP 220pF 200V
C630	VK534000	C. PP 220pF 200V
C631	VG288900	C. EL 100uF 25V
C632	Vi716100	C. MYLAR 3300pF 50V
C633	Vi716100	C. MYLAR 3300pF 50V
C634	Vi716100	C. MYLAR 3300pF 50V
C635	Vi716100	C. MYLAR 3300pF 50V
C636	VG291200	C. EL 47uF 50V
C637	VG291200	C. EL 47uF 50V
C638	VG291200	C. EL 47uF 50V
C639	VG291200	C. EL 47uF 50V
C640	VK534400	C. PP 0.047uF 100V
C641	VG290900	C. EL 10uF 50V
C642	UJ895220	C. EL 0.22uF 100V
C643	VK534400	C. PP 0.047uF 100V
C644	VK534400	C. PP 0.047uF 100V
C645	VK534400	C. PP 0.047uF 100V
C646	VK534400	C. PP 0.047uF 100V
C647	VK534400	C. PP 0.047uF 100V
C648	VG290900	C. EL 10uF 50V
C649	VG288900	C. EL 100uF 25V
C650	UT453390	C. PP 3900pF 100V (GT)
C651	UT453390	C. PP 3900pF 100V (GT)
C652	UT453390	C. PP 3900pF 100V (GT)
C653	UT453390	C. PP 3900pF 100V (GT)
C656	VG289400	C. EL 3300uF 25V
C657	VG289400	C. EL 3300uF 25V
C658	VG290700	C. EL 3.3uF 50V
C659	VM707200	C. PP 0.012uF 100V (GT)
C660	VK534200	C. PP 0.022uF 100V (GT)
C661	VM707200	C. PP 0.012uF 100V (GT)
C662	VM707200	C. PP 0.012uF 100V (GT)
C663	VK534200	C. PP 0.022uF 100V (GT)

* New Parts

P.C.B. MAIN

Schm Ref.	PART NO.	Description
C664	VM707200	C. PP 0.012uF 100V(GT)
C667	VK534400	C. PP 0.047uF 100V
C668	VK534400	C. PP 0.047uF 100V
C669	UG444220	C. CE 0.022uF 25V(GT)
C671	VL862800	C. EL 1000uF 80V
C672	VG744500	C. MYLAR. ML 0.39uF 50V
C673	VG744500	C. MYLAR. ML 0.39uF 50V
C674	VG288900	C. EL 100uF 25V
C675	VG288900	C. EL 100uF 25V
C678	VK533800	C. PP 47pF 200V(R)
C678	VK534000	C. PP 220pF 200V(GT)
C679	VK533800	C. PP 47pF 200V(R)
C679	VK534000	C. PP 220pF 200V(GT)
C680	UG444100	C. CE 0.01uF 50V(GT)
C681	UA655100	C. MYLAR 0.1uF 50V(GT)
C682	UA655100	C. MYLAR 0.1uF 50V(GT)
D601	iF004600	DIODE 1SS133
D602	iF004600	DIODE 1SS133
D603	iF004600	DIODE 1SS133
D604	iF004600	DIODE 1SS133
D605	iF004600	DIODE 1SS133
D606	iF004600	DIODE 1SS133
D607	iF004600	DIODE 1SS133
D608	iF004600	DIODE 1SS133
D609	iF004600	DIODE 1SS133
D610	iF004600	DIODE 1SS133
D611	iF004600	DIODE 1SS133
D612	iF004600	DIODE 1SS133
D613	iF004600	DIODE 1SS133
D614	iF004600	DIODE 1SS133
D615	iF004600	DIODE 1SS133
D617	VG441200	DIODE. ZENR MTZJ16C 16V
D618	VG438500	DIODE. ZENR MTZJ7.5A 7.5V
D619	VG438500	DIODE. ZENR MTZJ7.5A 7.5V
D620	VG438500	DIODE. ZENR MTZJ7.5A 7.5V
D621	VG438500	DIODE. ZENR MTZJ7.5A 7.5V
D622	iF004600	DIODE 1SS133
D623	iF004600	DIODE 1SS133
D624	iF004600	DIODE 1SS133
D625	VG441200	DIODE. ZENR MTZJ16C 16V
△ D627	VC398400	DIODE MA185
△ D628	VM702000	DIODE. BRG S5VB20 3.5A 200V
D629	VC398400	DIODE MA185
D630	VC398400	DIODE MA185
△ D631	VH770800	DIODE 1SR139-100
△ D632	VH770800	DIODE 1SR139-100
△ D633	VH770800	DIODE 1SR139-100
△ D634	VH770800	DIODE 1SR139-100
D635	iF004600	DIODE 1SS133
D636	iF004600	DIODE 1SS133
D637	iF004600	DIODE 1SS133
△ F601	KB001490	FUSE 10A 250V(R)
△ F601	KB003240	FUSE T5.0A 250V(GT)

* New Parts

Schm Ref.	PART NO.	Description
△ F602	KB000400	FUSE T5.0A 250V(R)
IC601	iG076800	IC NJM4558S
IC603	XG609A00	IC BA3122N
IC604	XG609A00	IC BA3122N
△ JK602	Vi327500	OUTLET. AC 3P(R)
L601	VC664100	COIL 0.95uH
L602	VC664100	COIL 0.95uH
Q601	VK432900	TR 2SD1915F S, T
Q602	iA097000	TR 2SA970 GR, BL
Q603	iA097000	TR 2SA970 GR, BL
Q604	VK432900	TR 2SD1915F S, T
Q605	VK432900	TR 2SD1915F S, T
Q606	VK432900	TR 2SD1915F S, T
Q607	VK432900	TR 2SD1915F S, T
Q608	iA097000	TR 2SA970 GR, BL
Q609	iA097000	TR 2SA970 GR, BL
Q610	VK432900	TR 2SD1915F S, T
Q611	iA097000	TR 2SA970 GR, BL
Q612	iC1815C0	TR 2SC1815 Y
Q613	iC1815C0	TR 2SC1815 Y
Q614	iC1815C0	TR 2SC1815 Y
Q615	iC1815C0	TR 2SC1815 Y
Q616	iA097000	TR 2SA970 GR, BL
Q617	iC1815C0	TR 2SC1815 Y
Q618	VE198800	TR 2SC2705 O, Y
Q619	VE198700	TR 2SA1145 O, Y
Q620	VE198700	TR 2SA1145 O, Y
Q621	VE198800	TR 2SC2705 O, Y
Q622	iA101521	TR 2SA1015 Y
Q623	iA101521	TR 2SA1015 Y
Q624	VE198800	TR 2SC2705 O, Y
Q625	VE198700	TR 2SA1145 O, Y
Q626	VE198700	TR 2SA1145 O, Y
Q627	VE198800	TR 2SC2705 O, Y
Q628	iC1815C0	TR 2SC1815 Y
Q629	iC224030	TR 2SC2240 GR, BL
△ Q630	VC614000	TR 2SB1274 Q, R, S
△# Q631	VE912800	TR 2SB1141 S, T
△# Q632	VE912900	TR 2SD1681 S, T
△# Q633	VE912900	TR 2SD1681 S, T
△# Q634	VE912800	TR 2SB1141 S, T
Q635	VL582600	TR 2SD1763A D, E
Q636	VL582500	TR 2SB1186A D, E
Q637	VL582500	TR 2SB1186A D, E
Q638	VL582600	TR 2SD1763A D, E
Q639	VL542700	TR. DGT DTA123JS
△# Q640A	iX606460	TR 2SA1492 O, P, Y
△# Q640C	iX606470	TR 2SC3856 O, P, Y
△# Q641A	iX606460	TR 2SA1492 O, P, Y
△# Q641C	iX606470	TR 2SC3856 O, P, Y
△# Q644A	iX606460	TR 2SA1492 O, P, Y
△# Q644C	iX606470	TR 2SC3856 O, P, Y
△# Q645A	iX606460	TR 2SA1492 O, P, Y

* New Parts

P.C.B. MAIN & SUB TRANS

Schm Ref.	PART NO.	Description
△# Q645C	iX606470	TR 2SC3856 O,P,Y
Q648	VL542700	TR. DGT DTA123JS
Q649	VL542700	TR. DGT DTA123JS
Q650	iA097000	TR 2SA970 GR, BL
Q651	iC224030	TR 2SC2240 GR, BL
Q652	iC224030	TR 2SC2240 GR, BL
△ Q653	VC407900	TR 2SD1913 R, S
Q654	iA101521	TR 2SA1015 Y
R605	HV455100	R. CAR. FP 100Ω 1/4W
R622	HV455100	R. CAR. FP 100Ω 1/4W
R628	HV455560	R. CAR. FP 560Ω 1/4W
△ R629	HV455220	R. CAR. FP 220Ω 1/4W
△ R630	HV455220	R. CAR. FP 220Ω 1/4W
△ R631	HV455220	R. CAR. FP 220Ω 1/4W
△ R632	HV455220	R. CAR. FP 220Ω 1/4W
△ R633	HV455560	R. CAR. FP 560Ω 1/4W
R640	HV455150	R. CAR. FP 150Ω 1/4W
R641	HV455100	R. CAR. FP 100Ω 1/4W
R643	HV455100	R. CAR. FP 100Ω 1/4W
R645	HV455150	R. CAR. FP 150Ω 1/4W
△ R646	HV454100	R. CAR. FP 10Ω 1/4W
R647	HV455150	R. CAR. FP 150Ω 1/4W
R649	HV455100	R. CAR. FP 100Ω 1/4W
R651	HV455100	R. CAR. FP 100Ω 1/4W
R652	HV455150	R. CAR. FP 150Ω 1/4W
R658	HV455100	R. CAR. FP 100Ω 1/4W
R659	HV456270	R. CAR. FP 2.7KΩ 1/4W
R672	HL326560	R. MIL. OXD 5.6KΩ 2W
R673	HV455330	R. CAR. FP 330Ω 1/4W
R674	HL326560	R. MIL. OXD 5.6KΩ 2W
R675	HL326560	R. MIL. OXD 5.6KΩ 2W
R676	HV455330	R. CAR. FP 330Ω 1/4W
R677	HL326560	R. MIL. OXD 5.6KΩ 2W
R680	HV453470	R. CAR. FP 4.7Ω 1/4W
R681	HV453470	R. CAR. FP 4.7Ω 1/4W
R683	VJ695400	R. WW 0.22Ωx2 3W
R684	VJ695400	R. WW 0.22Ωx2 3W
R688	HV453470	R. CAR. FP 4.7Ω 1/4W
R689	HV453470	R. CAR. FP 4.7Ω 1/4W
R690	HV453470	R. CAR. FP 4.7Ω 1/4W
R691	HV453470	R. CAR. FP 4.7Ω 1/4W
R692	HV453470	R. CAR. FP 4.7Ω 1/4W
R693	HV453470	R. CAR. FP 4.7Ω 1/4W
R697	VJ695400	R. WW 0.22Ωx2 3W
R698	VJ695400	R. WW 0.22Ωx2 3W
R700	HV453470	R. CAR. FP 4.7Ω 1/4W
R701	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R702	HL325680	R. MIL. OXD 680Ω 2W
△ R703	HL325680	R. MIL. OXD 680Ω 2W
R708	HV453470	R. CAR. FP 4.7Ω 1/4W
R709	HL323470	R. MIL. OXD 4.7Ω 2W
R710	HL323470	R. MIL. OXD 4.7Ω 2W
R711	HV453470	R. CAR. FP 4.7Ω 1/4W

* New Parts

Schm Ref.	PART NO.	Description
△ R713	HL425820	R. MIL. OXD 820Ω 2W
R714	HV455100	R. CAR. FP 100Ω 1/4W
R715	HV456270	R. CAR. FP 2.7KΩ 1/4W
R716	HV453220	R. CAR. FP 2.2Ω 1/4W
R718	HV453220	R. CAR. FP 2.2Ω 1/4W
△ R720	HV453100	R. CAR. FP 1Ω 1/4W
R721	HV453220	R. CAR. FP 2.2Ω 1/4W(GT)
R722	HV453220	R. CAR. FP 2.2Ω 1/4W(GT)
△ R723	HV453100	R. CAR. FP 1Ω 1/4W
R726	HV453220	R. CAR. FP 2.2Ω 1/4W(GT)
△ R733	HV454100	R. CAR. FP 10Ω 1/4W
△ R741	HV454100	R. CAR. FP 10Ω 1/4W
△ R742	HV454100	R. CAR. FP 10Ω 1/4W
△ R743	HV454220	R. CAR. FP 22Ω 1/4W
R744	HV454220	R. CAR. FP 22Ω 1/4W
RY601	VK879300	RELAY DE2TU24VDC
RY602	VK879300	RELAY DE2TU24VDC
RY603	VK438300	RELAY DH24D2-OTM-
SW602	VA961800	VOLT. SELECT ESE-37247-F(R)
SW603	VL544900	SW. PUSH SPUL
TE601	LA002140	TERM. WRAP 2P
TE602	LA002320	TERM. WRAP 3P
TE603	LA002000	TERM. WRAP 2P
TE604	LA002110	TERM. WRAP 2P(GT)
TE607	VL920100	TERM. SP 8P(R)
TE607	VL920200	TERM. SP 8P(GT)
VR601	VJ693600	VR. TRIM B10KΩ
VR602	VJ693600	VR. TRIM B10KΩ
	VB966900	CN IMSA-6024
	BB071360	SCR. TERM 8.3x13
	VE808500	SCR. TERM D4
	VL890500	HEAT. SINK T220N31-30
	EX602250	SCR. BND. HD 3x12 ZMC2-BL
* * *	VU603700	P.C.B. SUB TRANS(R)
* * *	VU603800	P.C.B. SUB TRANS(GT)
CB901	LB201880	HOLDER. FUS PC-FH1 (GT)
CB902	LB201880	HOLDER. FUS PC-FH1 (GT)
C901	VG290900	C. EL 10uF 50V(R)
C902	VG290900	C. EL 10uF 50V(R)
C903	VG289200	C. EL 470uF 25V(GT)
C903	VO030500	C. EL 220uF 63V(R)
C904	VU466300	C. CE. SAFTY 0.01uF 400V
C905	VG290900	C. EL 10uF 50V
C906	FG213100	C. CE 1000pF 50V
C907	FZ005880	C. CE. ML 0.1uF 25V(GT)
C908	FZ005880	C. CE. ML 0.1uF 25V
D901	VB236300	DIODE 1SS176
D902	VG440400	DIODE. ZENR MTZJ13A 13V(R)
D903	VH801600	DIODE 1SR139-100
△ D904	VH770800	DIODE 1SR139-100(R)

* New Parts

P.C.B. SUB TRANS

Schm Ref.	PART NO.	Description
D905	VH770800	DIODE 1SR139-100(R)
D906	VH770800	DIODE 1SR139-100(R)
△ F901	KB000690	FUSE T2.5A 250V(GT)
△ JK901	VP728600	OUTLET. AC 3P(GT)
Q901	iC174020	TR 2SC1740S R, S
Q902	iC224030	TR 2SC2240 GR, BL
Q903	iC257700	TR 2SC2577 O, P, Y
Q904	iC174020	TR 2SC1740S R, S(R)
△ RY901	VE568900	RELAY DH12D1-QM
SW901	VQ121000	SW. PUSH SPUL
△ T901	XC082A00	TRANS. PWR (R)
△ T901	XC084A00	TRANS. PWR (GT)
TE901	VG879900	CN. BS. PIN 2P
TE903	VG879900	CN. BS. PIN 2P
	VN985700	GND. LUG MEP10359 #12E07

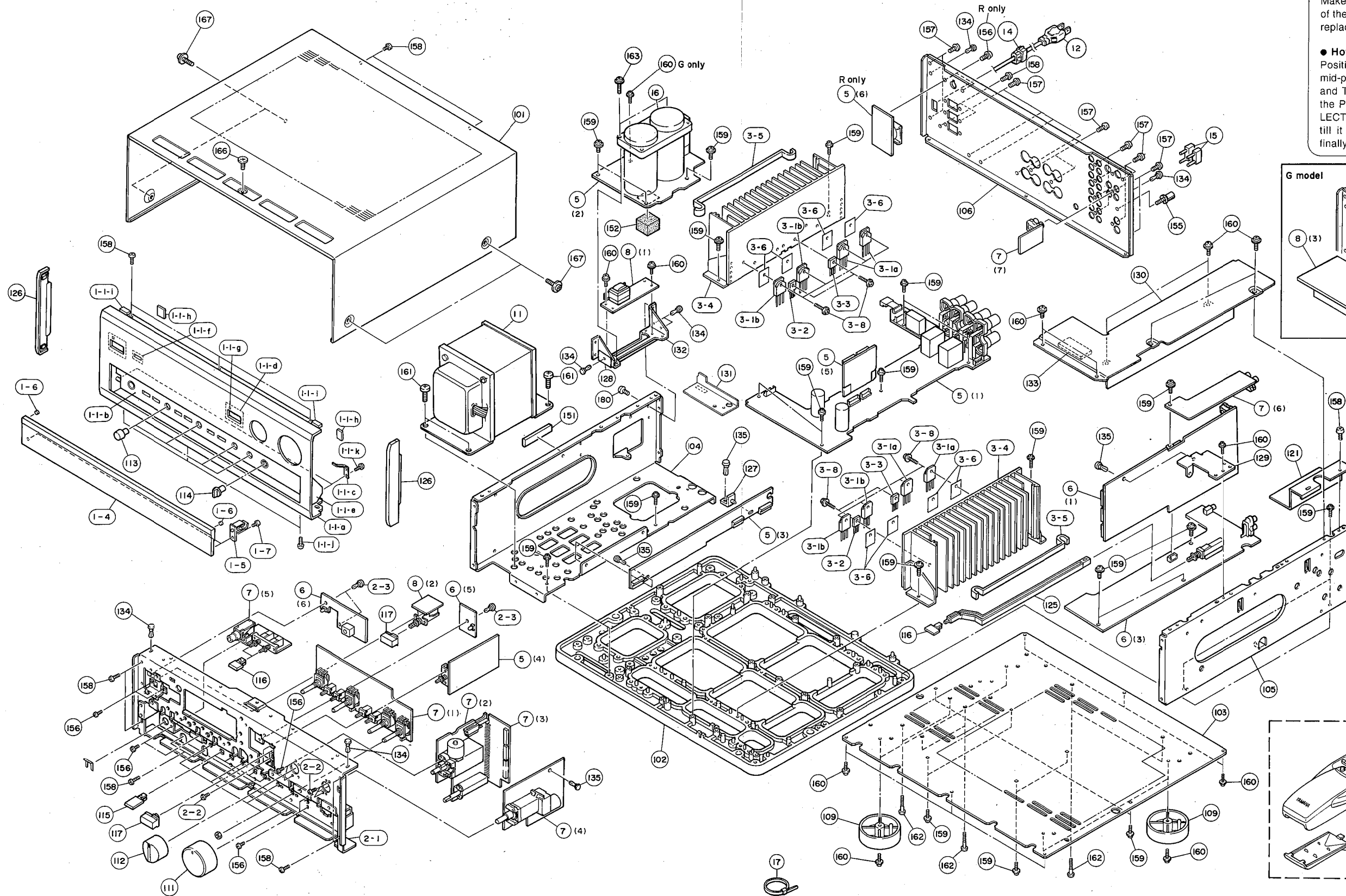
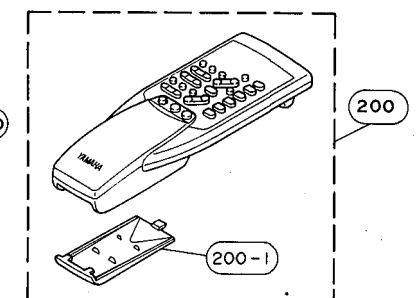
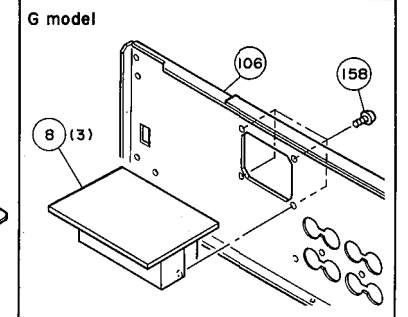
* New Parts

EXPLODED VIEW

Precautions for Replacement
of input Selector Switch

Make sure to perform initial setting
of the input selector switch after its
replacement.

● How to perform initial setting
Position the selector switch at the
mid-point between the CD position
and TUNER position and turn ON
the POWER switch. Then the SE-
LECTOR switch turns automatically
till it stops at the "CD" position
finally.



■ MECHANICAL PARTS

Ref. No.	PART NO.	Description	Remarks	Markets
* 1-1-a	VU572400	FRONT PANEL	BL	
* 1-1-a	VU572500	FRONT PANEL	TI	
1-1-b	VP931700	PLATE, SEALING	BL	
1-1-b	VP931800	PLATE, SEALING	TI	
1-1-c	VJ888200	SPRING		
1-1-d	VH816700	BUTTON GUIDE	10x25 BL	
1-1-d	VH816800	BUTTON GUIDE	10x25 TI	
1-1-e	VL216900	CASE, SUB PANEL	BL	
1-1-e	VL217000	CASE, SUB PANEL	TI	
1-1-f	VH897500	LENS		
1-1-g	VH897700	LENS	2. 2Lx2. 2	
1-1-h	VE798200	CUSHION		
1-1-i	VE222600	CUSHION		
1-1-j	EX600310	BIND HEAD P-TITE SCREW	3x8 FCRM3-BL	
1-1-k	EX601280	PW HEAD P-TITE SCREW	3x8-8 FCRM3-BL	
* 1-4	VU572200	SUB PANEL, LID	BL	
* 1-4	VU572300	SUB PANEL, LID	TI	
1-5	VJ888000	STOPPER	TI	
1-5	VJ888100	STOPPER	BL	
1-6	CB621930	DAMPER	BL	
1-6	VE798100	DAMPER	TI	
1-7	ED330066	BIND HEAD SCREW	3x6 FCRM3-BL	
2-1	VL213300	SUB CHASSIS		
2-2	ED330066	BIND HEAD SCREW	3x6 FCRM-3BL	
2-3	CB605620	PLASTIC RIVET	No. 1781	
△ 3-1a	ix606460	TRANSISTOR	2SA1492 O, P, Y	Q640A, 641A, 644A
△ 3-1a	ix606460	TRANSISTOR	2SA1492 O, P, Y	, 645A
△ 3-1b	ix606470	TRANSISTOR	2SC3856 O, P, Y	Q640C, 641C, 644C
△ 3-1b	ix606470	TRANSISTOR	2SC3856 O, P, Y	, 645C
△ 3-2	VE912800	TRANSISTOR	2SB1141 S, T	Q631, 634
△ 3-3	VE912900	TRANSISTOR	2SD1681 S, T	Q632, 633
3-4	VL212300	RADIATOR ASS'Y		
3-5	VK706700	DAMPER	FIN	
3-6	VK195900	SHEET	19x24	
3-8	VK173200	SCREW, TRANSISTOR	3x15 SP FCM3	
5	VP957200	P. C. B. ASS'Y	MAIN	(R)
5	VP957500	P. C. B. ASS'Y	MAIN	(GT)
* 6	VU603300	P. C. B. ASS'Y	FUNCTION	(R)
* 6	VU603400	P. C. B. ASS'Y	FUNCTION	(GT)
* 7	VU603500	P. C. B. ASS'Y	TONE CONTROL	
* 8	VU603700	P. C. B. ASS'Y	SUB TRANS	(R)
* 8	VU603800	P. C. B. ASS'Y	SUB TRANS	(GT)
△ 11	XJ690A00	POWER TRANSFORMER		(R)
△ 11	XJ692A00	POWER TRANSFORMER		(GT)
△ 12	VL238900	POWER CORD ASS'Y		(GT)
△ 12	VQ458400	POWER CORD ASS'Y		(R)
14	VD375900	CORD STOPPER	No. 2271	
15	LB101890	SHORT PLUG		
16	VL715100	ELECTROLYTIC CAP	22000uF 75V	
17	CB069250	BINDING TIE	BK-1	
101	VL212800	TOP COVER	BL	
101	VL213000	TOP COVER	TI	
102	VL213100	CHASSIS, ART BASE		

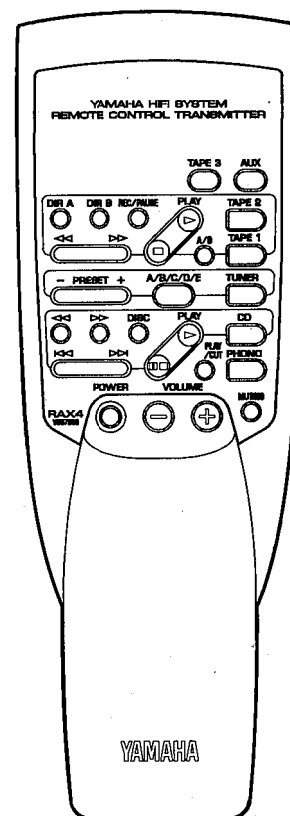
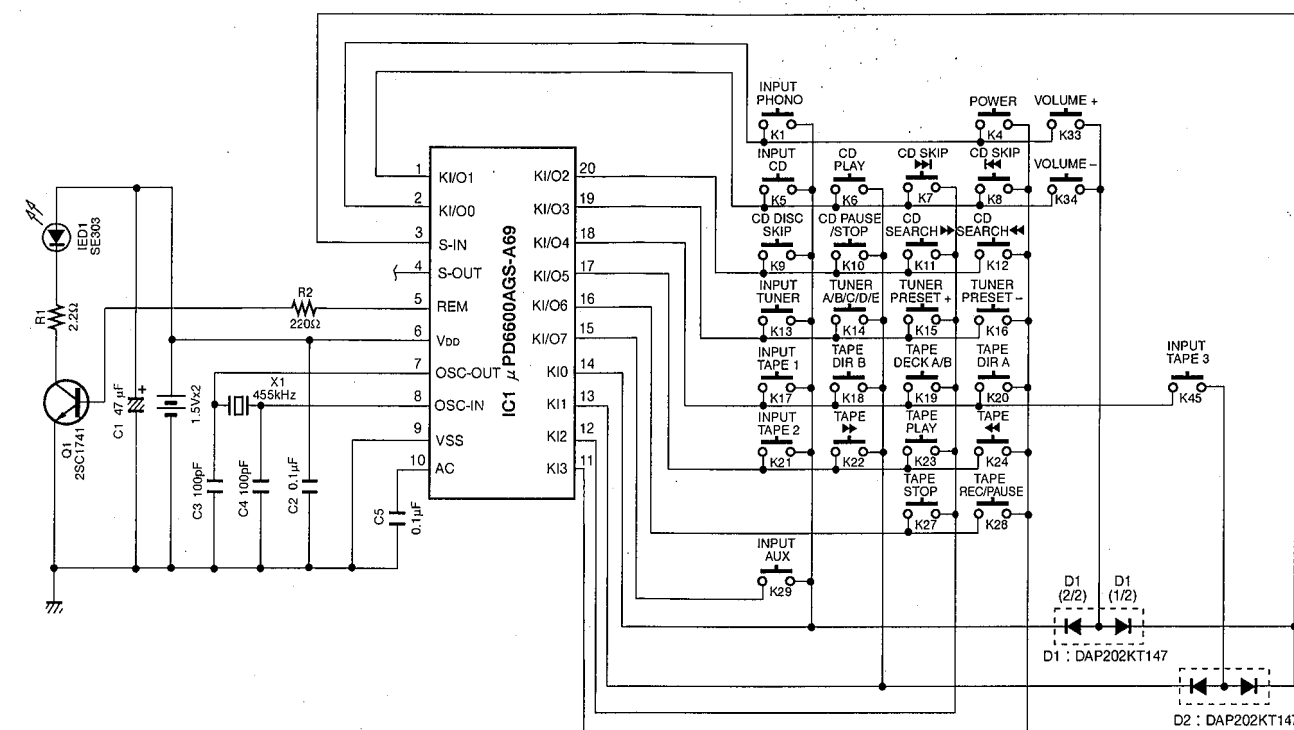
* New Parts

Ref. No.	PART NO.	Description	Remarks	Markets
103	VL213600	BOTTOM COVER		
104	VL213700	FRAME	SIDE L	
105	VL213800	FRAME	SIDE R	
* 106	VU572600	REAR PANEL		(R)
* 106	VU572700	REAR PANEL		(GT)
109	VS025000	LEG	D60xH21	
111	VK015100	KNOB, LED	D45	BL
* 111	VU025400	KNOB, LED	D45	TI
112	VK219900	KNOB, LED	D32	BL
* 112	VU573000	KNOB, LED	D32	TI
113	VS757200	KNOB, P	D12	BL
113	VS757300	KNOB, P	D12	TI
114	VT275100	KNOB	D12R	BL
114	VT275200	KNOB	D12R	TI
115	VL215200	BUTTON	3x14-L	BL
* 115	VU573400	BUTTON	3x14-L	TI
116	VH816000	BUTTON	3x14	BL
* 116	VU573300	BUTTON	3x14	TI
117	VL819700	BUTTON		BL
* 117	VU573200	BUTTON	10x25	TI
121	VQ090200	SHIELD PLATE R		
125	VL250600	EXTENSION BAR		
126	VJ833000	SIDE COVER		TI
126	VJ833100	SIDE COVER		BL
127	CB091290	SUPPORT, P. C. B.	No. 1645	
128	VQ084800	SHIELD PLATE		
129	VL215000	FRAME	PCB2	
130	VL250300	FRAME	COVER	
131	VV016100	SHET		
132	VQ084700	FRAME, SUB TRANSFORMER		
133	VL896600	DAMPER	25x50	
134	CB068880	PLASTIC RIVET	No. 1027	
135	CB605620	PLASTIC RIVET	No. 1781	
* 151	VQ758300	CUSHION, L		
152	VQ758100	DAMPER		
155	AA627310	GROUND TERMINAL		
156	ED330066	BIND HEAD SCREW	3x6 FCRM3-BL	
157	EN301010	BIND HEAD BONDING TAP. SCREW	3x8 FCRM3-BL	
158	Ei330086	BIND HEAD B-TITE SCREW	3x8 FCRM3-BL	
159	VB770200	PW HEAD P-TITE SCREW	3x10-8 FCM3	
160	EX602240	BW HEAD TAPPING SCREW	3x10	
161	EN330060	BIND HEAD B-TITE SCREW	4x16 FCRM3-BL	
162	Ei340256	BIND HEAD TAPPING SCREW	4x25 ZMC2-BL	
163	EL300600	PW HEAD TAPPING SCREW	3x18-10 FCRM3-BL	
166	EX601850	SPECIAL SCREW S-TITE	4x8-10 FCRM3-BL	BL
166	EX601860	SPECIAL SCREW S-TITE	4x8-10 FNM3-BL	TI
167	EK365090	PW HEAD S-TITE SCREW	4x8-10 FCRM3-BL	BL
167	EX601150	BW HEAD S-TITE SCREW	4x8-10 FNM3-BL	TI
* 180	EC030110	FLAT HEAD SCREW	3x10 MFC2BL	
		ACCESSORIES		
* 200	VU572800	REMOTE CONTROL TRANSMITTER		
200-1	CX679050	LID	74x34BLALPS	
		BATTERY, MANGANESE	SUM-3, AA, R06	

* New Parts

AX-1090 REMOTE CONTROL TRANSMITTER

■ SCHEMATIC DIAGRAM



Key No.	Function	HEX	
		CUSTOM	DATA
1	INPUT PHONO	7A	14
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
27	TAPE STOP	7A	03
28	TAPE REC/PAUSE	7A	04
29	INPUT AUX	7A	17
33	VOLUME +	7A	1A
34	VOLUME -	7A	1B
45	INPUT TAPE 3	7A	54

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			

