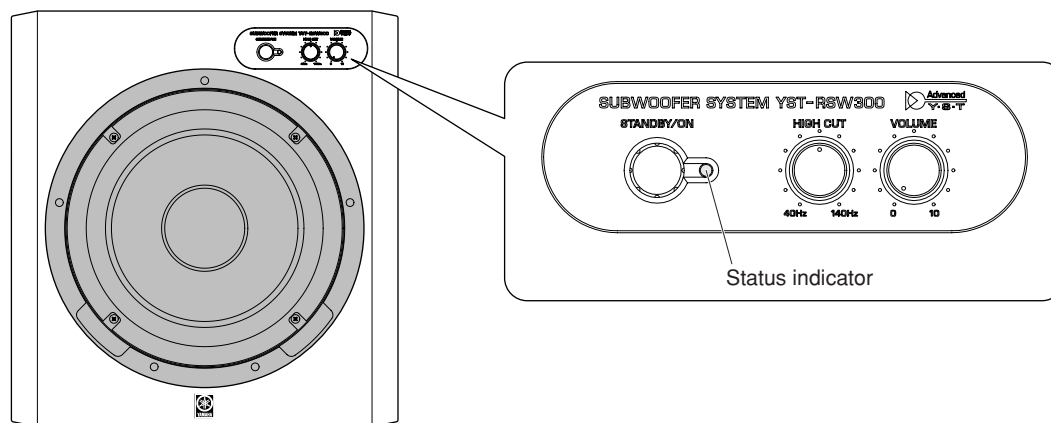


SUBWOOFER SYSTEM YST-RSW300

YST-RSW300

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	2
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This Service Manual uses recycled paper.

101052

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YAMAHA

YAMAHA CORPORATION
P.O.Box 1, Hamamatsu, Japan

'07.04

■ TO SERVICE PERSONNEL

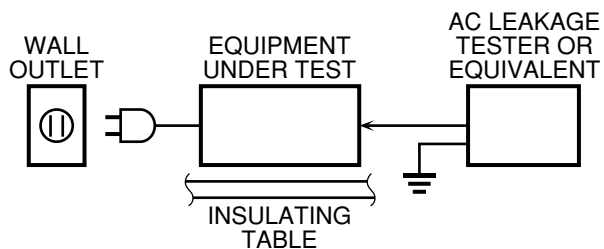
1. Critical Components Information

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 ohms 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.



For U model

“CAUTION”

“F1: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 6A, 125V FUSE.”

For C model

CAUTION

F1: REPLACE WITH SAME TYPE 6A, 125V FUSE.

ATTENTION

F1: UTILISER UN FUSIBLE DE RECHANGE DE MÊME TYPE DE 6A, 125V.

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.

About lead free solder

All of the P.C.B.s installed in this unit and solder joints are soldered using the lead free solder.

Among some types of lead free solder currently available, it is recommended to use one of the following types for the repair work.

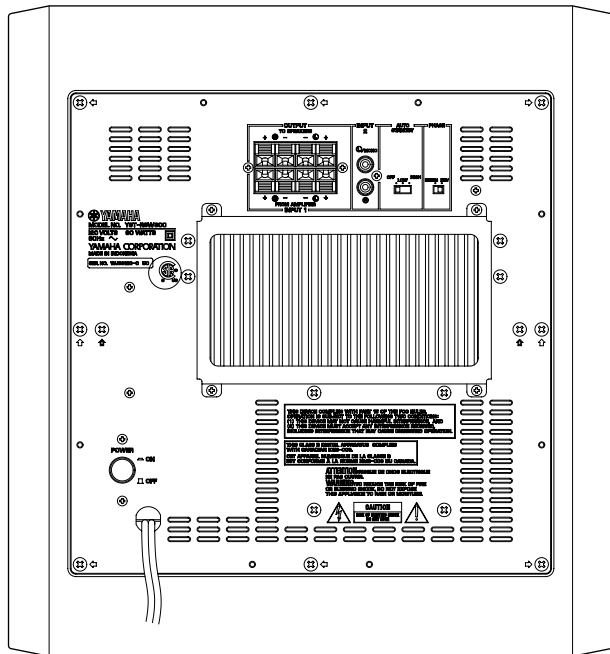
- Sn + Ag + Cu (tin + silver + copper)
- Sn + Cu (tin + copper)
- Sn + Zn + Bi (tin + zinc + bismuth)

Caution:

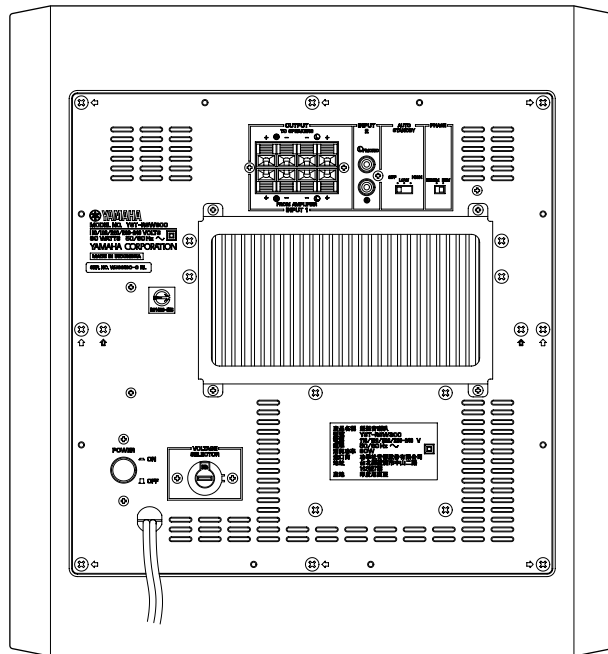
As the melting point temperature of the lead free solder is about 30°C to 40°C (50°F to 70°F) higher than that of the lead solder, be sure to use a soldering iron suitable to each solder.

REAR PANELS

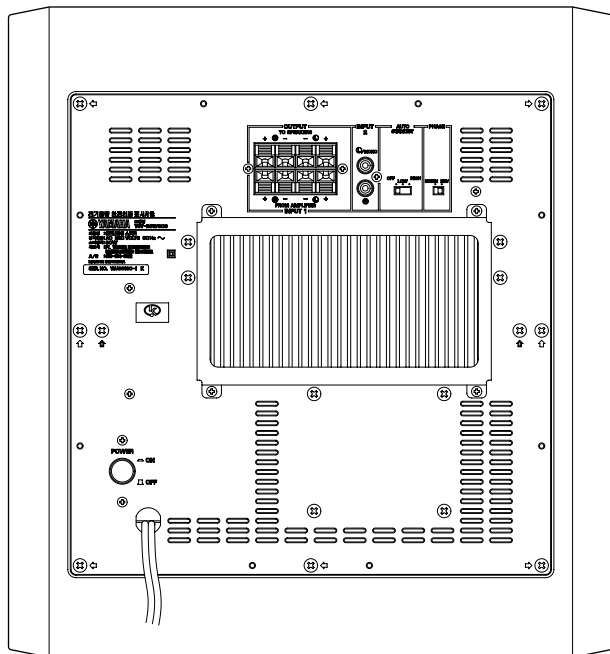
U, C models



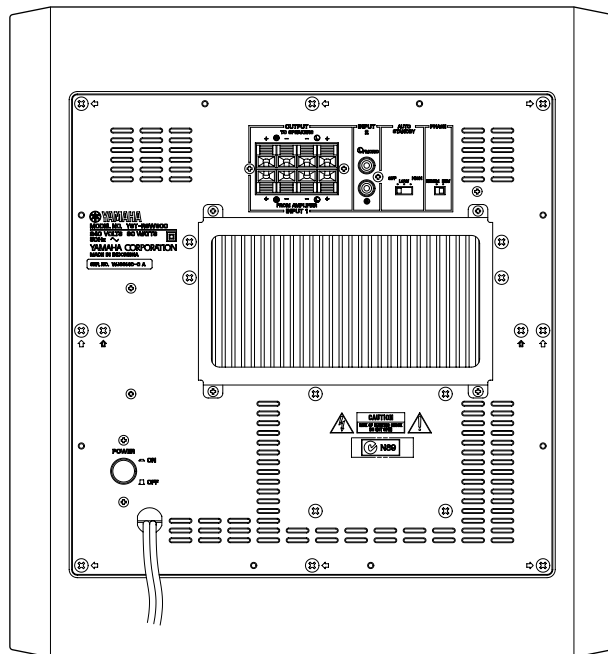
R model



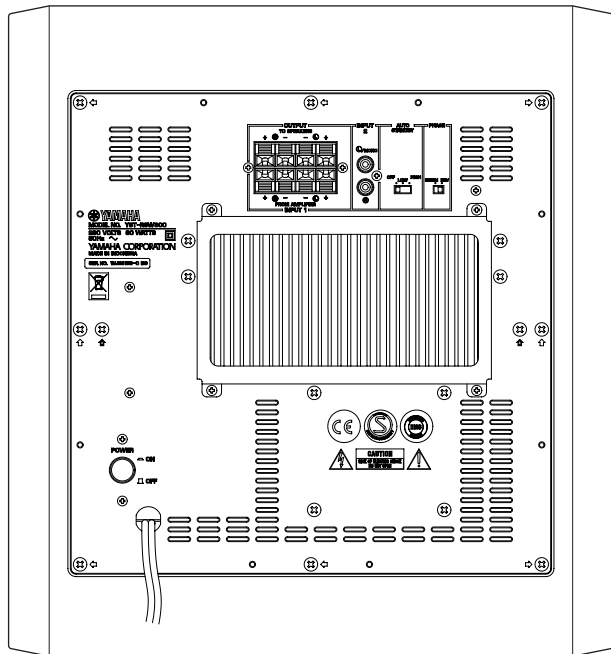
K model



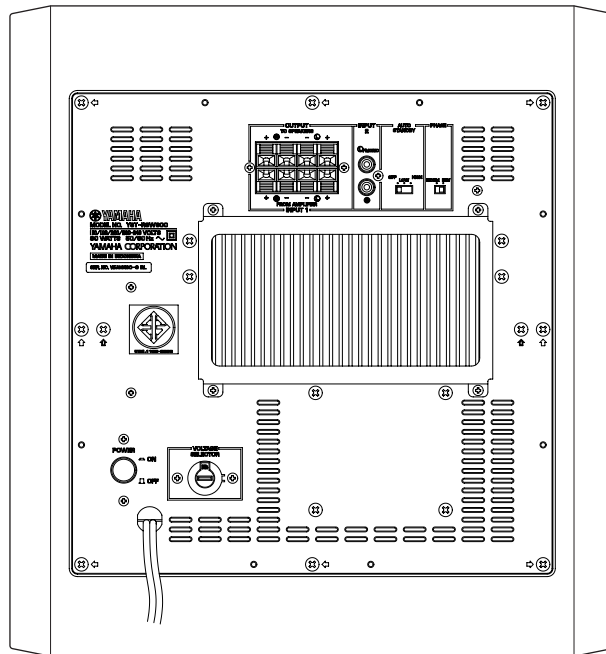
A model



B, G models



L model



SPECIFICATIONS

Type Advanced Yamaha Active Servo Technology II

Output Power (100 Hz, 5 ohms, 10% T.H.D.) 250 W

Dynamic Power (5 ohms) 270 W

Input Sensitivity (50 Hz, 250 W/5 ohms, L+R)

INPUT1 (SP) 1.0 V

INPUT2 (PJ) 50 mV

Input Impedance

INPUT1 (SP) 2.2 k-ohms

INPUT2 (PJ) 12 k-ohms

Frequency Response 20 Hz to 160 Hz

Driver 25 cm (10") cone woofer,
Magnetic shielding type

Input Section

INPUT1 Speaker terminal

INPUT2 RCA pin jack

Operation Section

Front panel STANDBY/ON key
VOLUME control
HIGH CUT control

Status indicator

Rear panel POWER ON/OFF key

AUTO STANDBY (HIGH / LOW / OFF) key

PHASE (NORM / REV) key

VOLTAGE SELECTOR key (R, L models)

Power Supply

U, C models AC 120 V, 60 Hz

R, L models AC 110/120/220/230-240 V, 50/60 Hz

K model AC 220 V, 60 Hz

A model AC 240 V, 50 Hz

B, G models AC 230 V, 50 Hz

Power Consumption 80 W

Standby Power Consumption

..... 0.5 W (Reference data)

Dimensions (W x H x D)

..... 372 x 400 x 428.2 mm (14-5/8" x 15-3/4" x 16-7/8")

Weight 20 kg (44 lbs. 1 oz.)

Finish

Cherry color U, C, R, K, A, B, G, L models

Black color U, C, R, K, A, B, G, L models

Accessories Nonskid pad x 4

* Specifications are subject to change without notice due to product improvements.

U **U.S.A. model**

C **Canadian model**

R **General model**

K **Korean model**

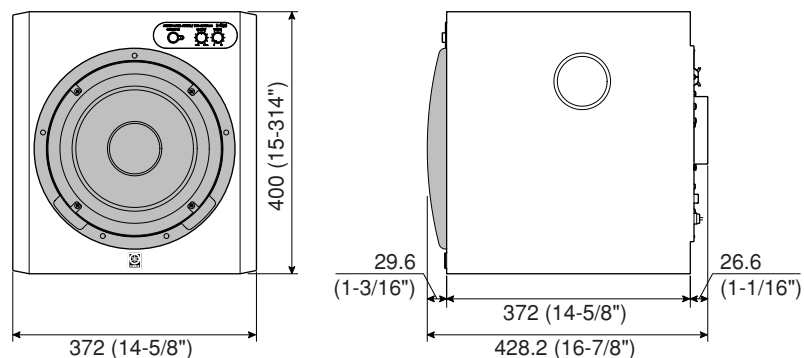
A **Australian model**

B **British model**

G **European model**

L **Singapore model**

• DIMENSIONS



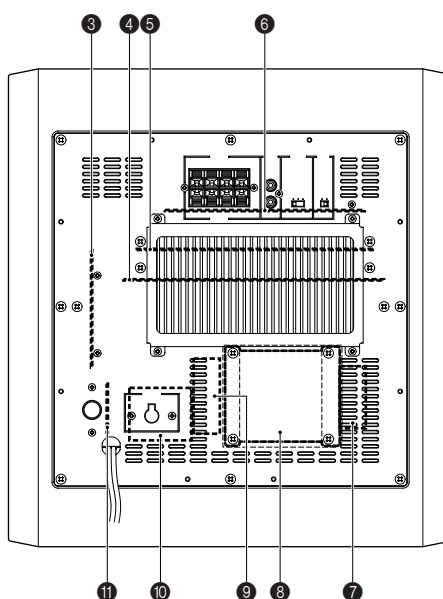
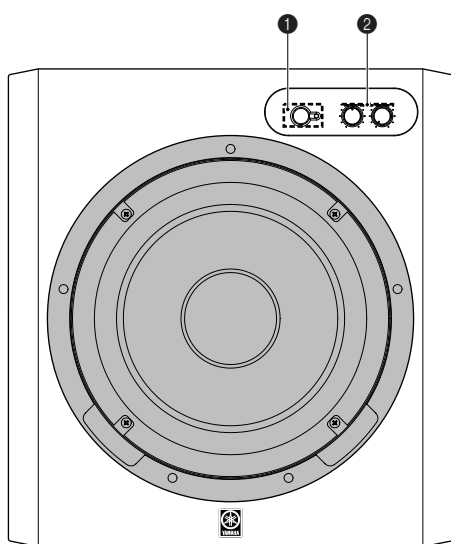
Unit: mm (inch)



Advanced YST II

Advanced Yamaha Active Servo Technology II is a unique system to let the speaker unit have a perfectly linear motion by the speaker and amplifier combination.

■ INTERNAL VIEW



- ① MAIN (8) P.C.B.
- ② MAIN (4) P.C.B.
- ③ MAIN (2) P.C.B.
- ④ MAIN (1) P.C.B.
- ⑤ MAIN (10) P.C.B.
- ⑥ MAIN (3) P.C.B.
- ⑦ MAIN (6) P.C.B.
- ⑧ POWER TRANSFORMER
- ⑨ MAIN (11) P.C.B.
(U, C, K, A, B, G models)
- ⑩ MAIN (9) P.C.B.
(R, L models)
- ⑪ MAIN (5) P.C.B.

■ DISASSEMBLY PROCEDURES

(Remove parts in the order as numbered.)

Disconnect the power cable from the AC outlet.

Spread a rubber sheet and cloth, then place the main unit upside down on it.

1. Removal of Front Grille Ass'y

* The front grille ass'y is fixed to the cabinet with dowels at 5 locations.

As a flatblade screwdriver is used for removal, use special care not to cause damage to the cabinet ass'y.

- Using the flatblade screwdriver inserted in the gap between the front grille ass'y and the cabinet ass'y (bottom side first), push up the front grille ass'y. (Fig. 1)
- Remove the front grille ass'y by lifting a metalblade up. (Fig. 1)

* When installing the front grille ass'y, apply quick-drying bond or the like to dowels and then fit them into dowel holes for secure installation. (The front grille ass'y will come off easily if its dowels are fitted into dowel holes without applying quickdrying bond or the like.)

2. Removal of Driver

- Remove 4 screws (①) and then remove the driver. (Fig. 1)
- Disconnect the connector connected to the terminal of the driver. (Fig. 1)

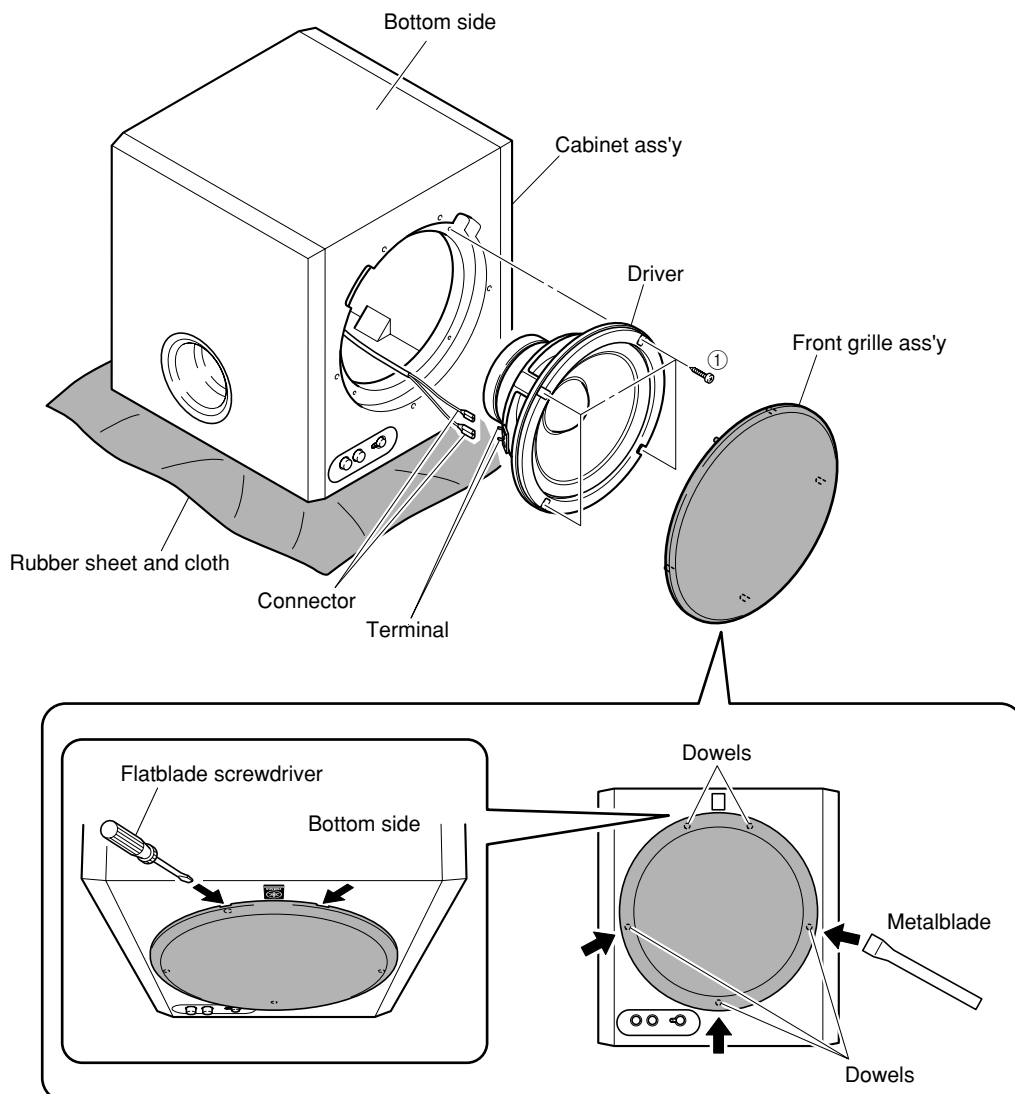


Fig. 1

3. Removal of Rear Panel Ass'y

- Remove 8 screws (②). (Fig. 2)
* Screws (②) are identified with arrow marks (↖).
- Pull out the rear panel ass'y together with the cover. (Fig. 2)
- Remove bush. (Fig. 2)
* The bush once removed cannot be reused. Be sure to use a new bush for replacement.
- Remove 2 screws (③). (Fig. 2)
* Screws (③) are identified with arrow marks (↗).
- Remove the cover. (Fig. 2)
- Disconnect the connectors (CB9 and CB10). (Fig. 2)

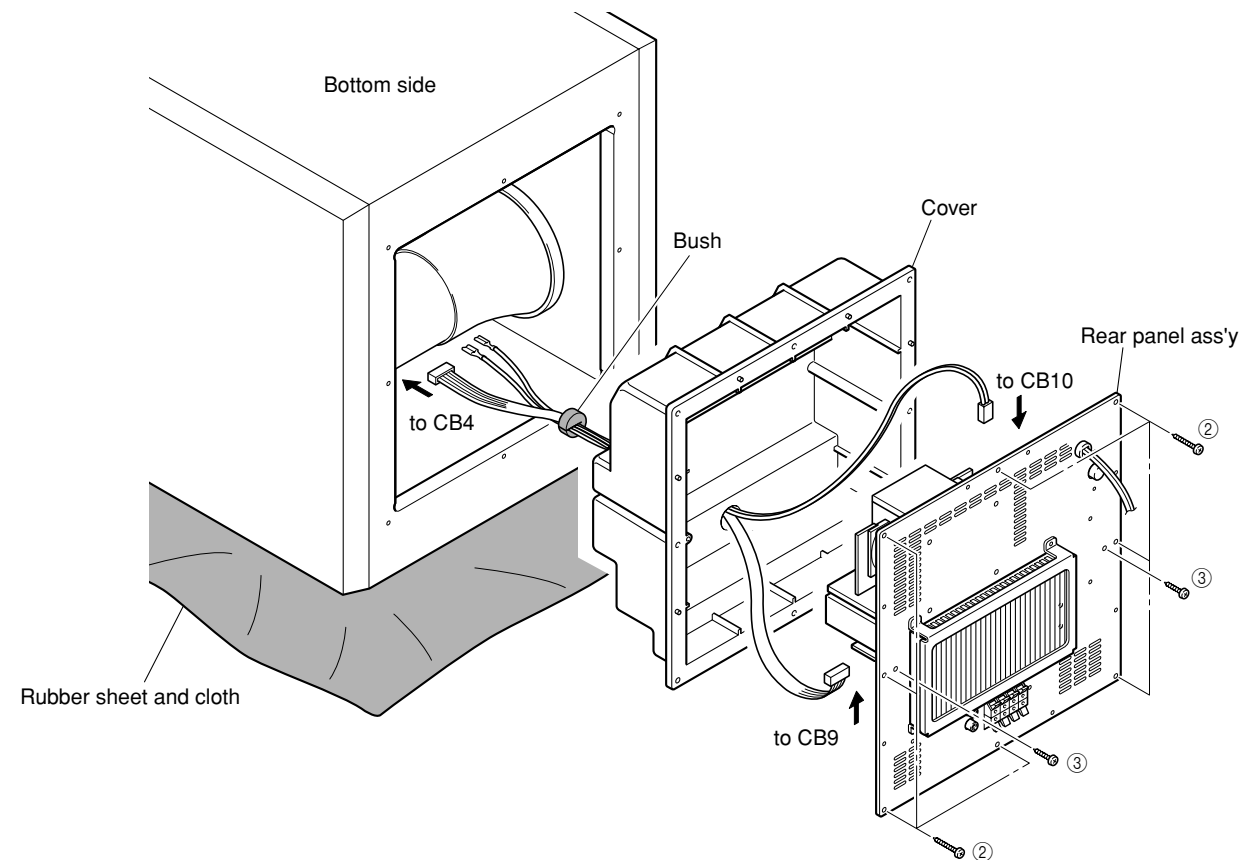


Fig. 2

4. Removal of Front Panel Ass'y

- Remove 2 knobs (④). (Fig. 3)
* The front panel once removed cannot be reused. Be sure to use a new front panel for replacement. Before installing the new front panel, be sure to remove the double sided adhesive tape remaining from the old front panel completely.
- Insert L-shaped metal parts or the like into the volume knob hole and high-cut knob hole in the front panel and pull the panel gradually away from the cabinet to remove it.
- Remove 2 screws (⑤). (Fig. 3)
- Pull out the switch cover ass'y. (Fig. 3)
- Remove bush. (Fig. 3)
* The bush once removed cannot be reused. Be sure to use a new bush for replacement.
- Remove the switch cover ass'y together with the cable/ CB9. (Fig. 3)

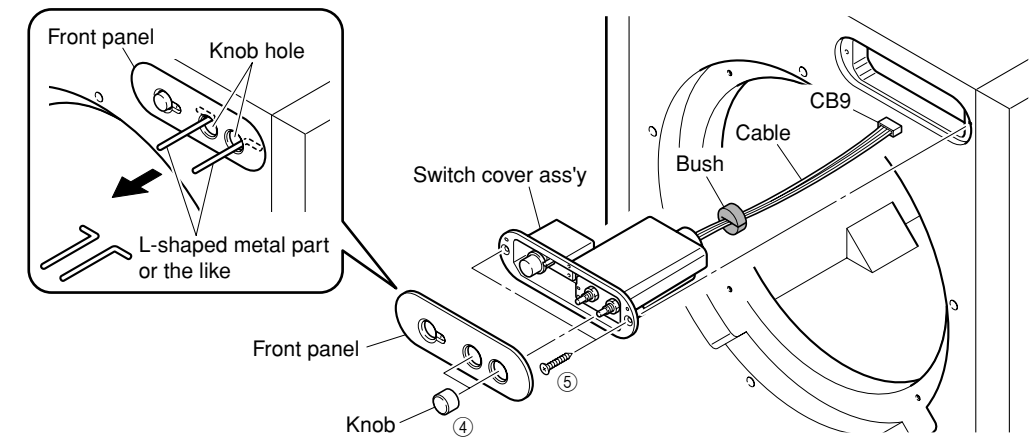


Fig. 3

When Checking the P.C.B.:

- Connect all the connectors removed during disassembly back to the original positions.
- Spread cloth first and place the rear panel ass'y and switch cover ass'y on it. (Fig. 4)

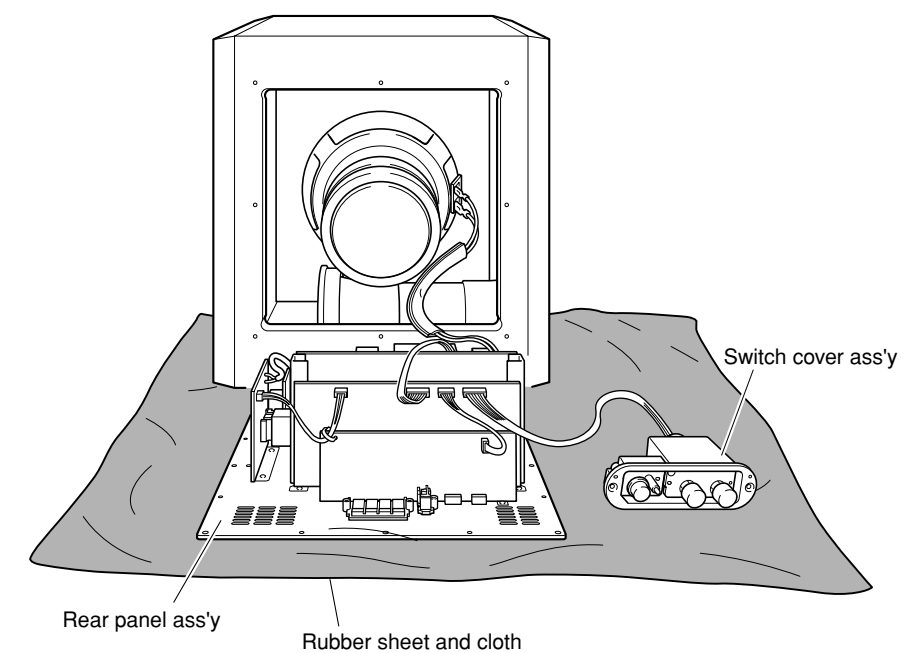


Fig. 4

CHECKS AND ADJUSTMENTS

Confirmation of power amplifier operation

For the power amplifier which has been repaired, it is absolutely necessary to confirm that a correct waveform is obtained at points indicated by A and B in the schematic diagram according to the following procedure.

Devices required

- Signal generator
- 8-ohm or 6-ohm load resistor
- Oscilloscope (dual trace type)

Connection

- 1) Connect the output signal from the signal generator to the input terminal of the main unit.
 - 2) Disconnect the connector terminal connected to the speaker unit and reconnect it to the load resistor.
 - 3) Connect the HOT side of the oscilloscope CH1 probe to the point A or B indicated in the figure and the GND side to the GND of the main unit. (Fig. 1)
 - 4) Connect the oscilloscope CH2 input to the red side of the connector cable, which is connected with the load resistor.
- At this time, the GND terminal of CH2 must be left unconnected.

Setting

- 1) Set the signal generator to the sine wave, 100 Hz and minimum output level settings.
- 2) Set the volume of the main unit to the minimum position.
- 3) Turn on the power to the main unit.
- 4) Adjust the output level of the signal generator and the volume of the main unit so that the output level observed at oscilloscope CH2 is 26 Vp-p to 28 Vp-p.

Waveform observation

With the settings made as described above, observe the waveform obtained at CH1 for judgment.

Idling adjustment

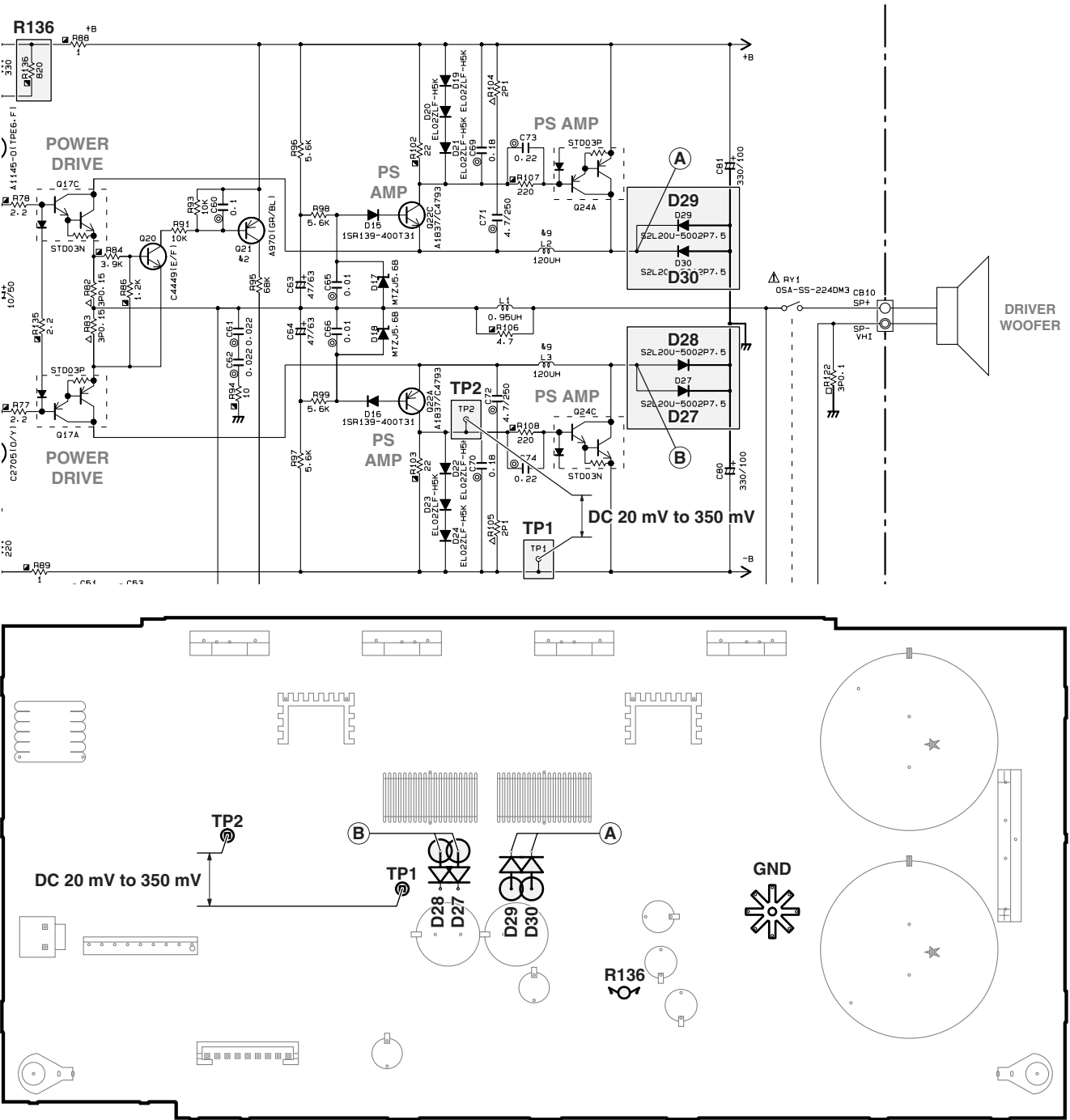
To stabilize operation of the amplifier, turn ON the power with no input signal and wait for 2 to 3 minutes in non loaded condition before the adjustment.

Confirm that the voltage across the terminals TP1 and TP2 is 20 mV to 350 mV.
If it exceeds 350 mV, open (cut off) R136.

Attention:

If the idling current exceeds 350 mV after a power amplifier repair, check for a defective component before cutting the resistor.

MAIN (1) P.C.B.

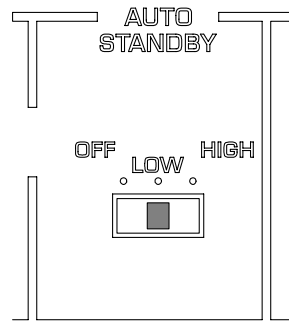


● Confirmation of AUTO STANDBY operation setting

- 1) Turn off the "POWER ON/OFF" key located on the rear panel.
- 2) In order to shorten the time required for operation check; connect a 10 k-ohms resistor at both ends of R45 on the MAIN (2) P.C.B.. (Fig. 2)
- 3) Connect the output signal from the signal generator to the INPUT 2 / L/MONO terminal of the main unit.
- 4) Set the signal generator for the sine wave of 100 Hz, 8 mV.
- 5) Turn on the "POWER ON/OFF" key located on the rear panel.

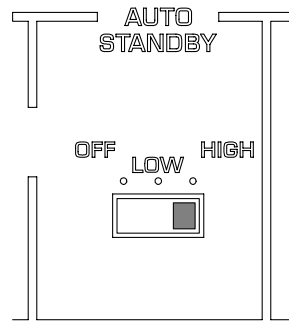
Confirmation

- 1) Set the "AUTO STANDBY" key to the LOW position.



- 2) Turn on the "STANDBY/ON" key.
The status indicator lights up (green) and its color changes to red after 2 to 8 seconds.
- 3) Turn off the "STANDBY/ON" key.
The status indicator goes off.

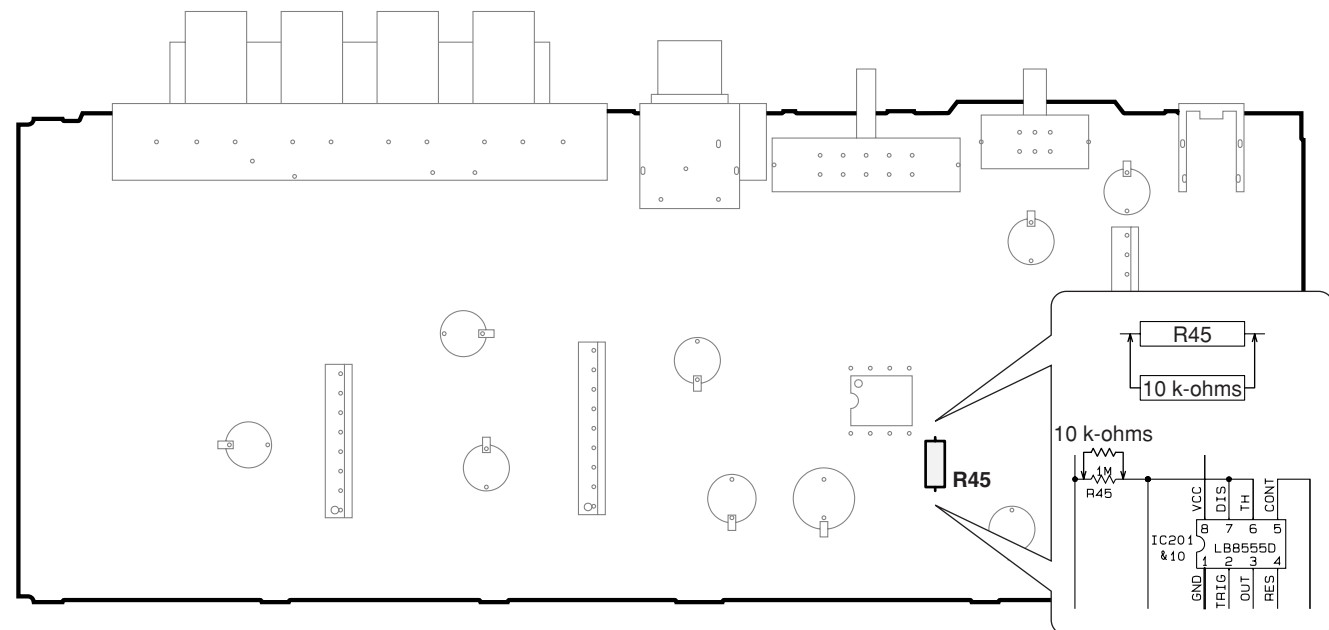
- 4) Set the "AUTO STANDBY" key to the HIGH position.



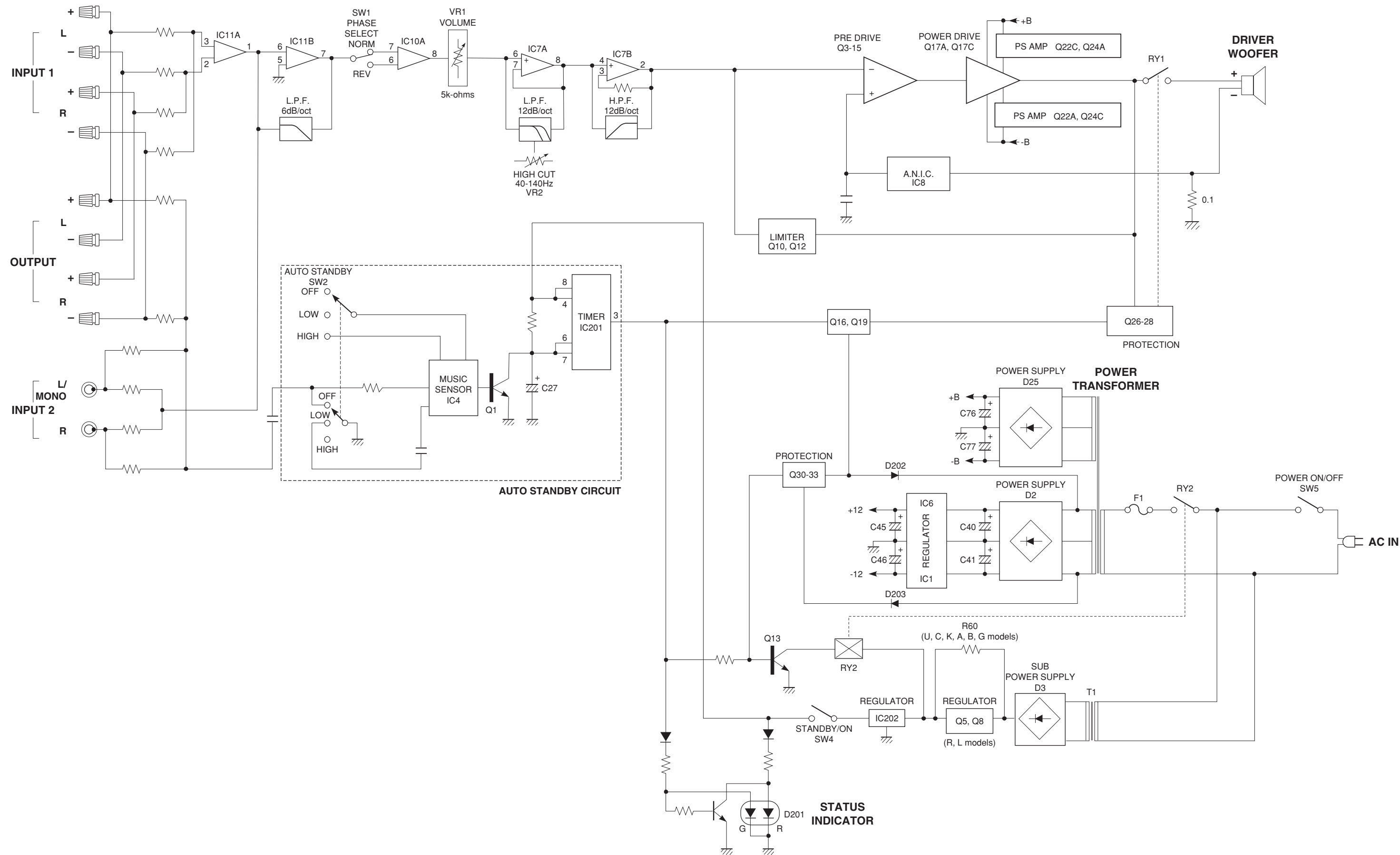
- 5) Turn on the "STANDBY/ON" key.
The status indicator lights up (green) and its color remains unchanged even after time have elapsed.
- 6) Turn off the "STANDBY/ON" key.
The status indicator goes off.

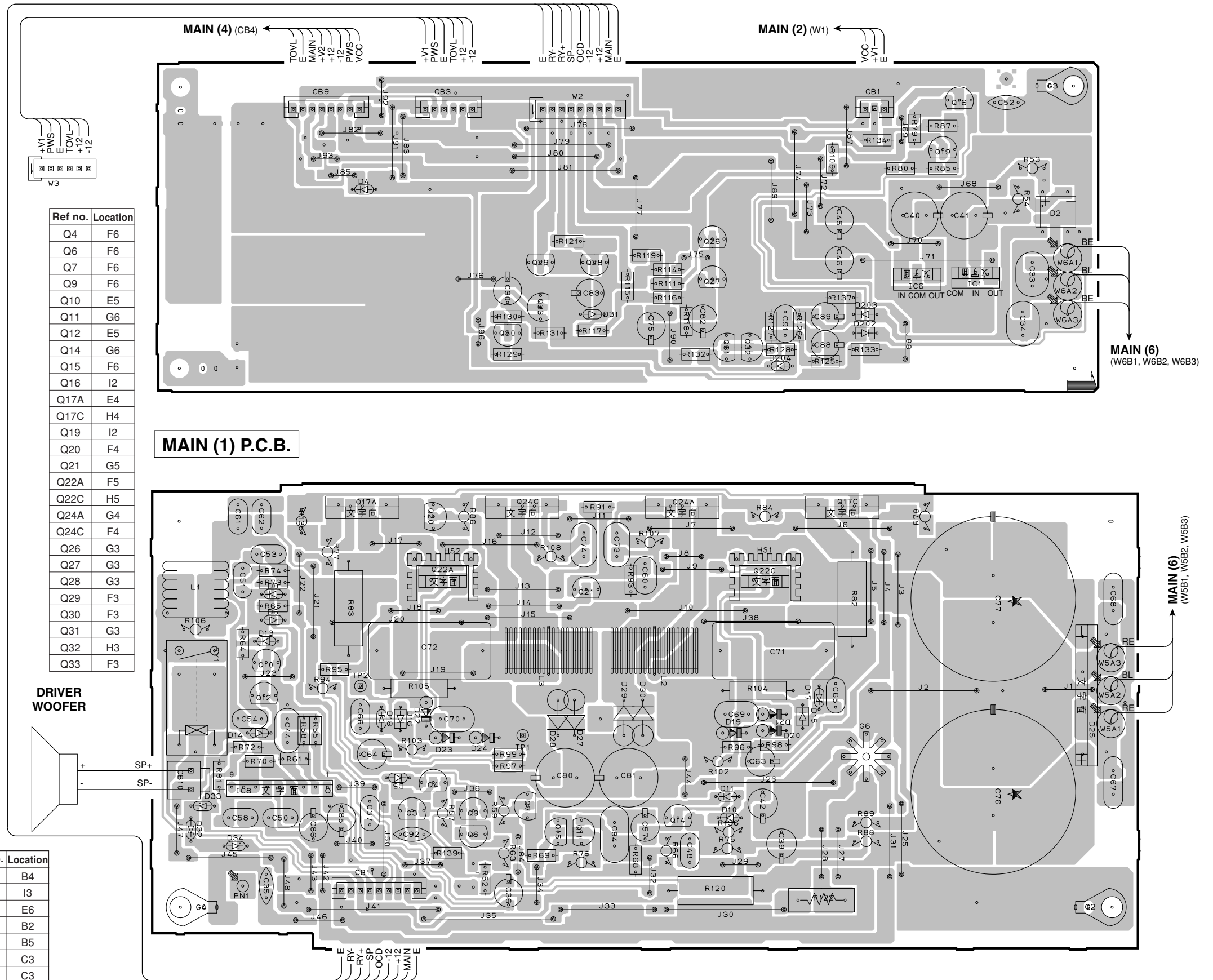
After confirmation

- 1) Turn off the "POWER ON/OFF" key.
- 2) Disconnect the 10 k-ohms resistor connected to both ends of R45.



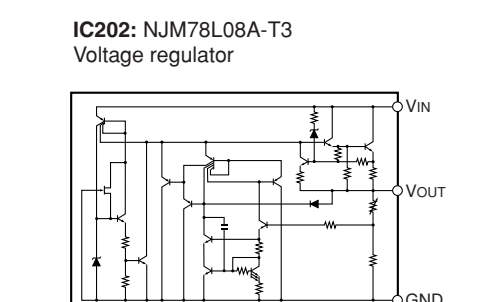
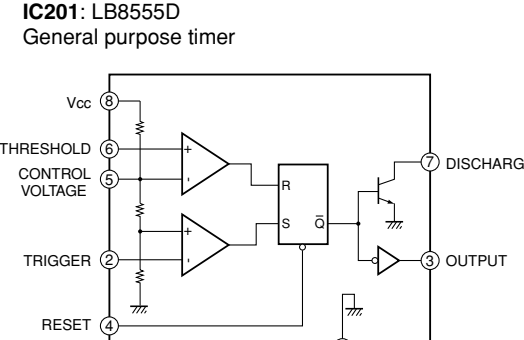
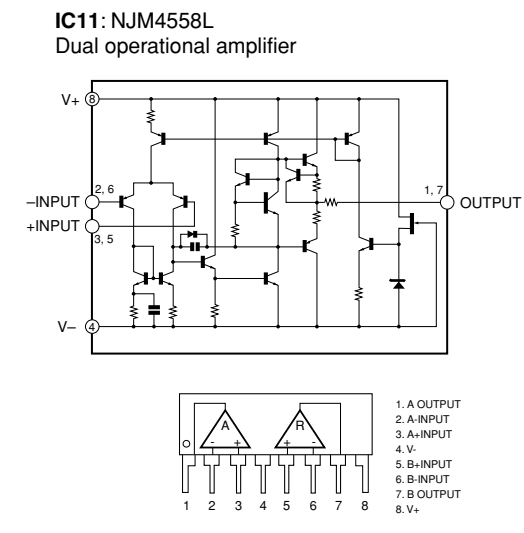
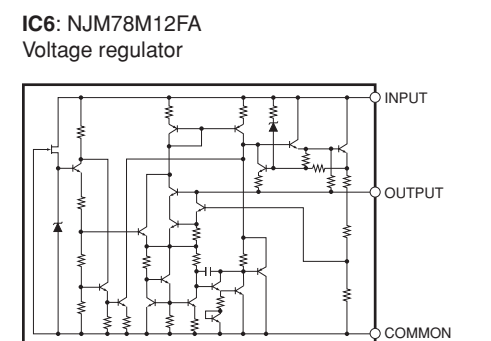
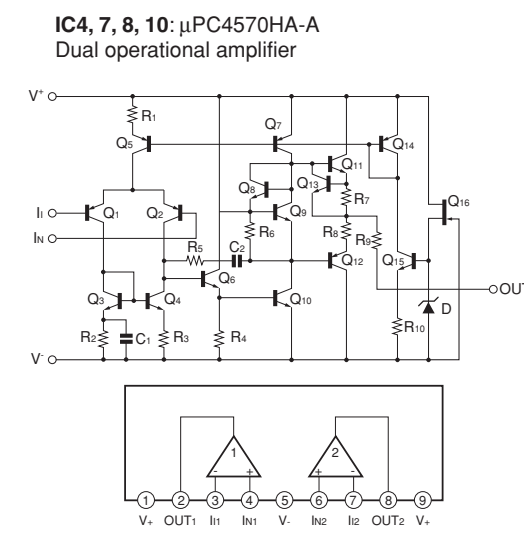
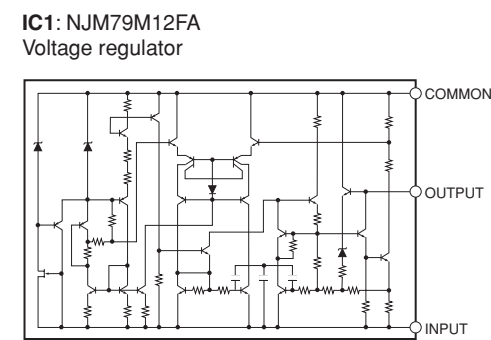
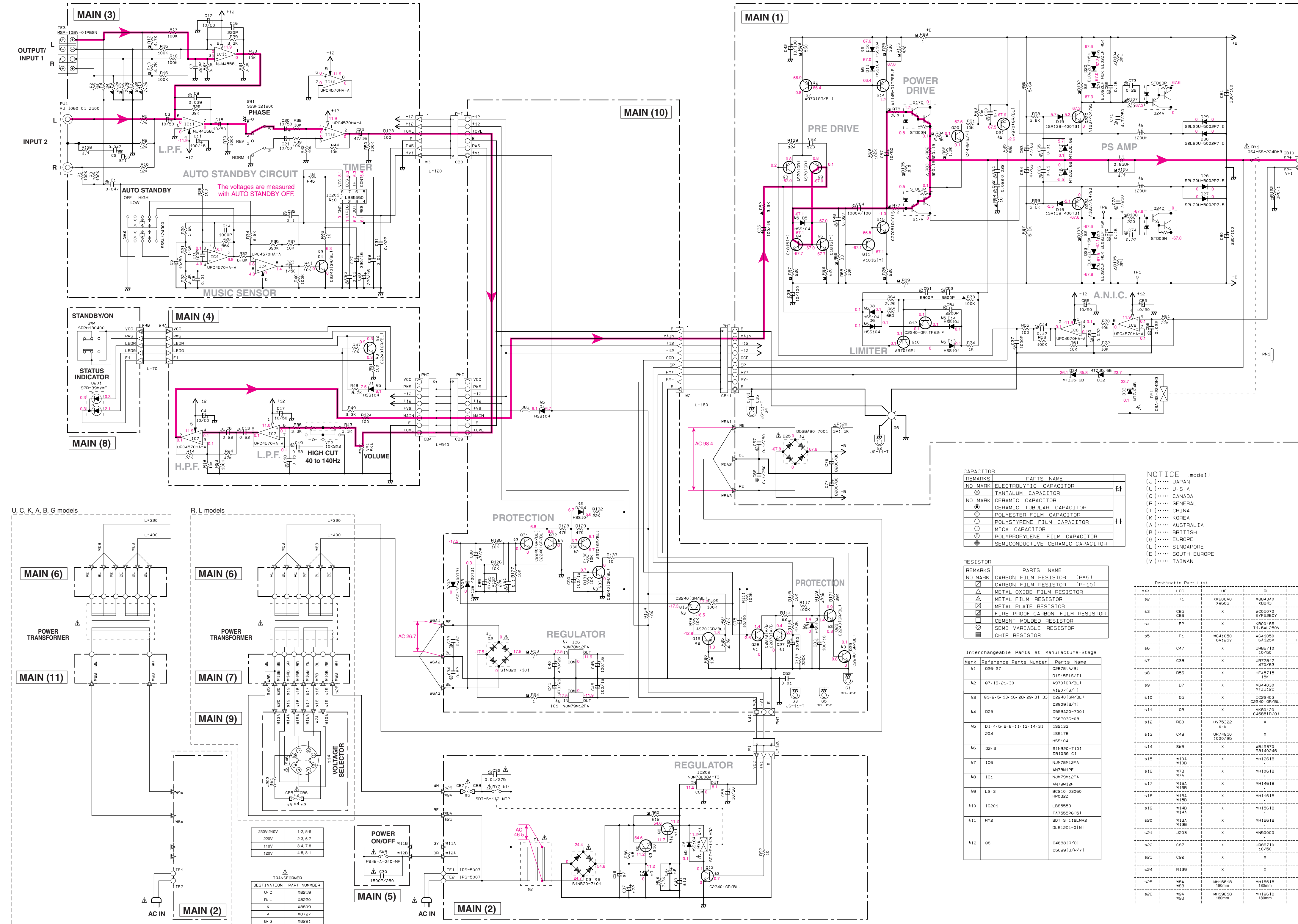
■ BLOCK DIAGRAM



MAIN (10) P.C.B.

Ref no.	Location	Ref no.	Location	Ref no.	Location	Ref no.	Location	Ref no.	Location
D2	I3	D14	E6	D22	F6	D31	G3	IC4	B4
D4	E3	D15	H6	D23	F6	D32	E6	IC6	I3
D5	F6	D16	F6	D24	F6	D33	E6	IC8	E6
D6	E5	D17	H5	D25	J5	D34	E6	IC10	B2
D8	E5	D18	F6	D27	G6	D202	H3	IC11	B5
D10	H6	D19	H6	D28	G6	D203	H3	IC201	C3
D11	H6	D20	H6	D29	G6	D204	H3	Q1	C3
D13	E5	D21	H6	D30	G6	IC1	I3	Q3	F6

SCHEMATIC DIAGRAM MAIN

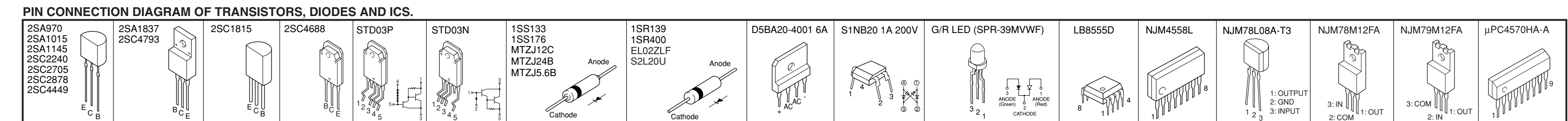


REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
⊗	TANTALUM CAPACITOR
NO MARK	CERAMIC CAPACITOR
⊙	CERAMIC TUBULAR CAPACITOR
⊖	POLYESTER FILM CAPACITOR
○	POLYSTYRENE FILM CAPACITOR
□	MICA CAPACITOR
●	POLYPROPYLENE FILM CAPACITOR
⦿	SEMICONDUCTIVE CERAMIC CAPACITOR

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
□	CEMENT MOLDED RESISTOR
⦿	SEMI VARIABLE RESISTOR
⦿	CHIP RESISTOR

Mark	Reference Parts Number	Parts Name
K1	Q26-27	C2878(A/B) D1915F(S/T)
K2	Q7-19-21-30	A970(GR/BL) A1201(S/T)
K3	Q1-2-5-13-16-28-29-31-33	C2240(GR/BL) C2909(S/T)
K4	D25	D558A20-7001 T56P035-08
K5	D1-4-5-6-9-11-13-14-31 204	1S5133 1S5176 HSS104
K6	D2-3	S1NB20-7101 DB1030 C1
K7	IC5	NJM78M12FA AN78M12P
K8	IC1	NJM79M12FA AN79M12P
K9	L2-3	BCS10-03060 HP0322
K10	IC201	LB8555D 1A79566(S)
K11	RY2	SDT-S-112LWR2 DL51201-01M
K12	GB	C468B(R/O) CS0991(G/P/Y)

Destination Part List	UC	RL	K460
S2	T1	XW6040 XW6040	XW6040 XW6040
S3	C86	X	X
S4	F2	X	X
S5	F1	WS41050 6A125V	WS41050 6A125V
S6	C47	X	X
S7	C38	X	X
S8	R56	X	X
S9	D7	X	X
S10	G5	X	X
S11	GB	X	X
S12	R60	HY75322 2-2	HY75322 2-2
S13	C49	UR14910 1000/25	UR14910 1000/25
S14	SW6	X	X
S15	M10A	X	X
S16	M7B	X	X
S17	M15A	X	X
S18	M16B	X	X
S19	M14B	X	X
S20	M13A	X	X
S21	J203	X	X
S22	CB7	X	X
S23	C82	X	X
S24	R139	X	X
S25	M8A	X	X
S26	M8B	X	X



★ All voltages are measured with a 10M Ω /V DC electronic voltmeter.
★ Components having special characteristics are marked 1, and must be replaced with parts having specifications equal to those originally installed.
★ Schematic diagram is subject to change without notice.

■ REPLACEMENT PARTS LIST

• ELECTRICAL COMPONENT PARTS

WARNING

- Components having special characteristics are marked  and must be replaced with parts having specifications equal to those originally installed.
- The chip resistor is not supplied as a replacement part.
* When a chip resistor is necessary, use the following part.
AAX60720: CHIP RESISTOR SAMPLE BOOK

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.CEMENT	: CEMENT RESISTOR
C.TRIM	: TRIMMER CAP	SCR.BND.HD	: BIND HEAD B-TIGHT SCREW
CN	: CONNECTOR	SCR.BW.HD	: BW HEAD TAPPING SCREW
CN.BS.PIN	: CONNECTOR,BASE PIN	SCR.CUP	: CUP TIGHT 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-ENDTUNER 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

P.C.B. MAIN

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*
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Ref. No.	Part No.	Description		Markets
	WK224400	P.C.B.	MAIN	UC
	WK224500	P.C.B.	MAIN	RL
	WK224600	P.C.B.	MAIN	KABG
CB1	VB389900	CN.BS.PIN	3P	RL
CB3	VB390200	CN.BS.PIN	6P	
CB4	VB390400	CN.BS.PIN	8P	
CB5-6	WC050700	CL.IP.FUSE	EYF-52BCY	
CB7-8	WC050700	CL.IP.FUSE	EYF-52BCY	
CB9	VB390400	CN.BS.PIN	8P	
CB10	LB932020	CN.BS.PIN	2P	
CB11	VB390500	CN.BS.PIN	9P	
C1	UA654470	C.MYLAR	0.047uF 50V J	
C2	UA654470	C.CE	0.047uF 50V	
C3-5	UR867100	C.EL	10uF 50V	
C6	VE326400	C.MYLAR	0.22uF 50V	RL
C7	FG612220	C.CE	220pF 50V	
C8	FG644100	C.CE	0.01uF 50V	
C9	UA654390	C.MYLAR	0.039uF 50V J	
C10	FG652100	C.CE	100pF 50V	
C11	UR838100	C.EL	100uF 16V	
C12	UR867100	C.EL	10uF 50V	
C13	VE326400	C.MYLAR	0.22uF 50V	
C14	FG613100	C.CE	1000pF 50V	
C15	UR867100	C.EL	10uF 50V	
C16	FG612220	C.CE	220pF 50V	
C17	UR867100	C.EL	10uF 50V	RL
C18	VE326200	C.MYLAR	0.15uF 50V	
C19	VE327000	C.MYLAR	0.68uF 50V	
C20-21	UR867100	C.EL	10uF 50V	
C22	VE326000	C.MYLAR	0.1uF 50V	
C23	UR866100	C.EL	1uF 50V	
C25	UR837470	C.EL	47uF 16V	
C26	UA654100	C.MYLAR	0.01uF 50V J	
C27	UR838330	C.EL	330uF 16V	
C28	UR838220	C.EL	220uF 16V	
C29	FG644100	C.CE	0.01uF 50V	RL
C30	V7682500	C.CE.SAFETY	1500pF 250V	
C31	FG644220	C.CE	0.022uF 50V	
C32	V6185300	C.CE.SAFETY	0.01uF 275V	
C33-34	UA655820	C.MYLAR	0.82uF 50V J	
C35	FG644100	C.CE	0.01uF 50V	
C36	UR838100	C.EL	100uF 16V	
C37	UA653100	C.MYLAR	1000pF 50V J	
C38	UR778470	C.EL	470uF 63V	
C39	UR897100	C.EL	10uF 100V	
C40-41	UR848470	C.EL	470uF 25V	RL
C42	UR897100	C.EL	10uF 100V	
C44	VE326800	C.MYLAR	0.47uF 50V	
C45-46	UR838100	C.EL	100uF 16V	
C47	UR867100	C.EL	10uF 50V	
C48	UA654270	C.MYLAR	0.027uF 50V J	
C49	UR749100	C.EL	1000uF 25V	
C50	UA654220	C.MYLAR	0.022uF 50V J	UCKABG
C51	UA653680	C.MYLAR	6800pF 50V J	

* New Parts

Ref. No.	Part No.	Description		Markets
C52	FG644100	C.CE	0.01uF 50V	RL
C53	UA653680	C.MYLAR	6800pF 50V J	
C54	UA653220	C.MYLAR	2200pF 50V J	
C55	UR867100	C.EL	10uF 50V	
C57	UR867100	C.EL	10uF 50V	
C58	UA654220	C.MYLAR	0.022uF 50V J	
C60	VE326000	C.MYLAR	0.1uF 50V	
C61-62	UA654220	C.MYLAR	0.022uF 50V J	
C63-64	UR877470	C.EL	47uF 63V	
C65-66	UA654100	C.MYLAR	0.01uF 50V J	
C67-68	WB540200	C.POL.MTL	0.1uF 250V	RL
C69-70	VE326300	C.MYLAR	0.18uF 50V	
C71-72	V5058000	C.MYLAR	4.7uF 250V	
C73-74	VE326400	C.MYLAR	0.22uF 50V	
C75	UR867100	C.EL	10uF 50V	
C76-77	V6092500	C.EL	8200uF 80V	
C80-81	UR798330	C.EL	330uF 100V	
C82	UR867220	C.EL	22uF 50V	
C83	UR838100	C.EL	100uF 16V	
C84	WE101700	C.PP	1000pF 100V	
C85-86	UR867100	C.EL	10uF 50V	KABG
C87	UR867100	C.EL	10uF 50V	
C88-89	UR847470	C.EL	47uF 25V	
C90	UR838100	C.EL	100uF 16V	
C91	VE326000	C.MYLAR	0.1uF 50V	
C92	FG613100	C.CE	1000pF 50V	
D1	VD631600	DIODE	1SS133, 176	RL
D2-3	VR253700	DIODE.BRG	S1NB20 1A 200V	
D4-6	VD631600	DIODE	1SS133, 176	
D7	VG440300	DIODE.ZENR	MTZJ12C 12V	
D8-11	VD631600	DIODE	1SS133, 176	
D13-14	VD631600	DIODE	1SS133, 176	
D15-16	VU264100	DIODE	1SR139, 400	
D17-18	VG437700	DIODE.ZENR	MTZJ5.6B 5.6V	
D19-24	V6934100	DIODE	EL02ZLF-H5K	
D25	VQ111400	DIODE.BRG	D5SBA20-4001 6A	
D27-30	VP779200	DIODE	S2L20U	UCRL KABG RL
D31	VD631600	DIODE	1SS133, 176	
D32	VG437700	DIODE.ZENR	MTZJ5.6B 5.6V	
D33	VG442500	DIODE.ZENR	MTZJ24B 24V	
D34	VG437700	DIODE.ZENR	MTZJ5.6B 5.6V	
D201	VS079300	LED	RED/GREEN	
D202-203	VU264100	DIODE	1SR139, 400	
D204	VD631600	DIODE	1SS133, 176	
F1	WG410500	FUSE	6A 125V	
F1	KB001660	FUSE	T1.6A 250V	
F2	KB001660	FUSE	T1.6A 250V	UCRL KABG RL
G2-4	V7235100	CN.GND	JG-11-T	
G6	V5995800	PLATE.GND		
IC1	XD343A00	IC	NJM79M12FA	
IC4	XB247A00	IC	uPC4570HA-A	
IC6	XJ602A00	IC	NJM78M12FA	
IC7-8	XB247A00	IC	uPC4570HA-A	
IC10	XB247A00	IC	uPC4570HA-A	

* New Parts

P.C.B. MAIN

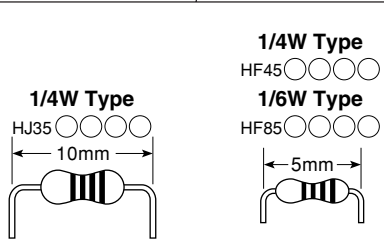
Carbon Resistors

Ref. No.	Part No.	Description		Markets	Ref. No.	Part No.	Description		Markets
IC11	XM922A00	IC	NJM4558L	RL	R136	HV755820	R. CAR. FP	820Ω 1/4W	RL UC RL KABG
IC201	X2020A00	IC	LB8555D		RY1	VU161600	RELAY	DC 0SA-SS-224DM3	
IC202	X4472A00	IC	NJM78L08A-T3		RY2	V6017400	RELAY	DC SDT-S-112LMR2	
PJ1	V6415800	JACK. PIN	2P		ST1	V4040500	SCR. TERM	M3	
PN1	WB543700	PIN	WB54370 L=70 #18		SW1	VQ545800	SW. SLIDE	SSSF04	
Q1-2	iC224030	TR	2SC2240 GR,BL		SW2	VD179500	SW. SLIDE	SSSU12	
Q3	iA097040	TR	2SA970 GR		SW4	VS066500	SW. PUSH	SPPH13-W	
Q4	iC181510	TR	2SC1815 Y		SW5	WG803400	SW. PUSH	PS4E-A-040-NP	
Q5	iC224030	TR	2SC2240 GR,BL		SW6	WB493700	VOLT. SELECT	R8140246	
Q6	iC181510	TR	2SC1815 Y		T1	XW606A00	TRANS. PWR		
Q7	iA097030	TR	2SA970 GR,BL	RL	* T1	X8843A00	TRANS		RL KABG
Q8	VK801200	TR	2SC4688 R, O		T1	XW608A00	TRANS. PWR		
Q9-10	iA097040	TR	2SA970 GR		TE1-2	VT658100	TERM. WRAP	352-TX119	
Q11	iA101510	TR	2SA1015 Y		TE3	V9065900	TERM. SP	MSP-108V-01 PBSN	
Q12	WF612700	TR	2SC2240 GR		TP1-2	VT969000	PIN. TEST	IRS-2049	
Q13	iC224030	TR	2SC2240 GR,BL		VR1	WC595500	VR	A 5KΩ	
Q14	VE198700	TR	2SA1145 O, Y		* VR2	WK126500	VR	C 10kΩ	
Q15	VE198800	TR	2SC2705 O, Y		* WK126700	HOLDER. LED	LDT-142G		
Q16	iC224030	TR	2SC2240 GR,BL		WE983600	SCR. BND. HD	3x8	MFZN2B3	
* Q17	WK192900	TR. PAIR	STD03P/STD03N	RL					RL KABG
Q19	iA097030	TR	2SA970 GR,BL						
Q20	V5876900	TR	2SC4449 E, F						
Q21	iA097030	TR	2SA970 GR,BL						
Q22	VQ116600	TR. PAIR	2SA1837/C4793 O, Y						
* Q24	WK192900	TR. PAIR	STD03P/STD03N						
Q26-27	iC287820	TR	2SC2878 A, B						
Q28-29	iC224030	TR	2SC2240 GR,BL						
Q30	iA097030	TR	2SA970 GR,BL						
Q31-33	iC224030	TR	2SC2240 GR,BL						
R5-11	HV756220	R. CAR. FP	2. 2KΩ 1/4W	RL					RL KABG
R12-13	HV756470	R. CAR. FP	4. 7KΩ 1/4W						
R52	HB026390	R. MTL. FLM	3. 9KΩ 1/4W						
R53-54	HV753100	R. CAR. FP	1Ω 1/4W						
R57	HV755220	R. CAR. FP	220Ω 1/4W						
R59	HV755560	R. CAR. FP	560Ω 1/4W						
R60	HV753220	R. CAR. FP	2. 2Ω 1/4W						
R63	HV755220	R. CAR. FP	220Ω 1/4W						
R66	HV754330	R. CAR. FP	33Ω 1/4W						
R73	HB028100	R. MTL. FLM	100KΩ 1/4W						
R75	HV755330	R. CAR. FP	330Ω 1/4W	RL					RL KABG
R76	HV755220	R. CAR. FP	220Ω 1/4W						
R77-78	HV753220	R. CAR. FP	2. 2Ω 1/4W						
R82-83	VG730500	R. MTL. OXD	0. 15Ω 3W						
R84	HV756390	R. CAR. FP	3. 9KΩ 1/4W						
R86	HV756120	R. CAR. FP	1. 2KΩ 1/4W						
R88-89	HV753100	R. CAR. FP	1Ω 1/4W						
R94	HV754100	R. CAR. FP	10Ω 1/4W						
R102-103	HV754220	R. CAR. FP	22Ω 1/4W						
R104-105	VC753800	R. MTL. OXD	1Ω 2W						
R106	HV753470	R. CAR. FP	4. 7Ω 1/4W	RL					RL KABG
R107-108	HV755220	R. CAR. FP	220Ω 1/4W						
* R120	VR860900	R. MTL. OXD	1. 5kΩ 3W						
* R122	WK542600	R. WW	0. 1Ω 3W						
R135	HV753220	R. CAR. FP	2. 2Ω 1/4W						

* New Parts

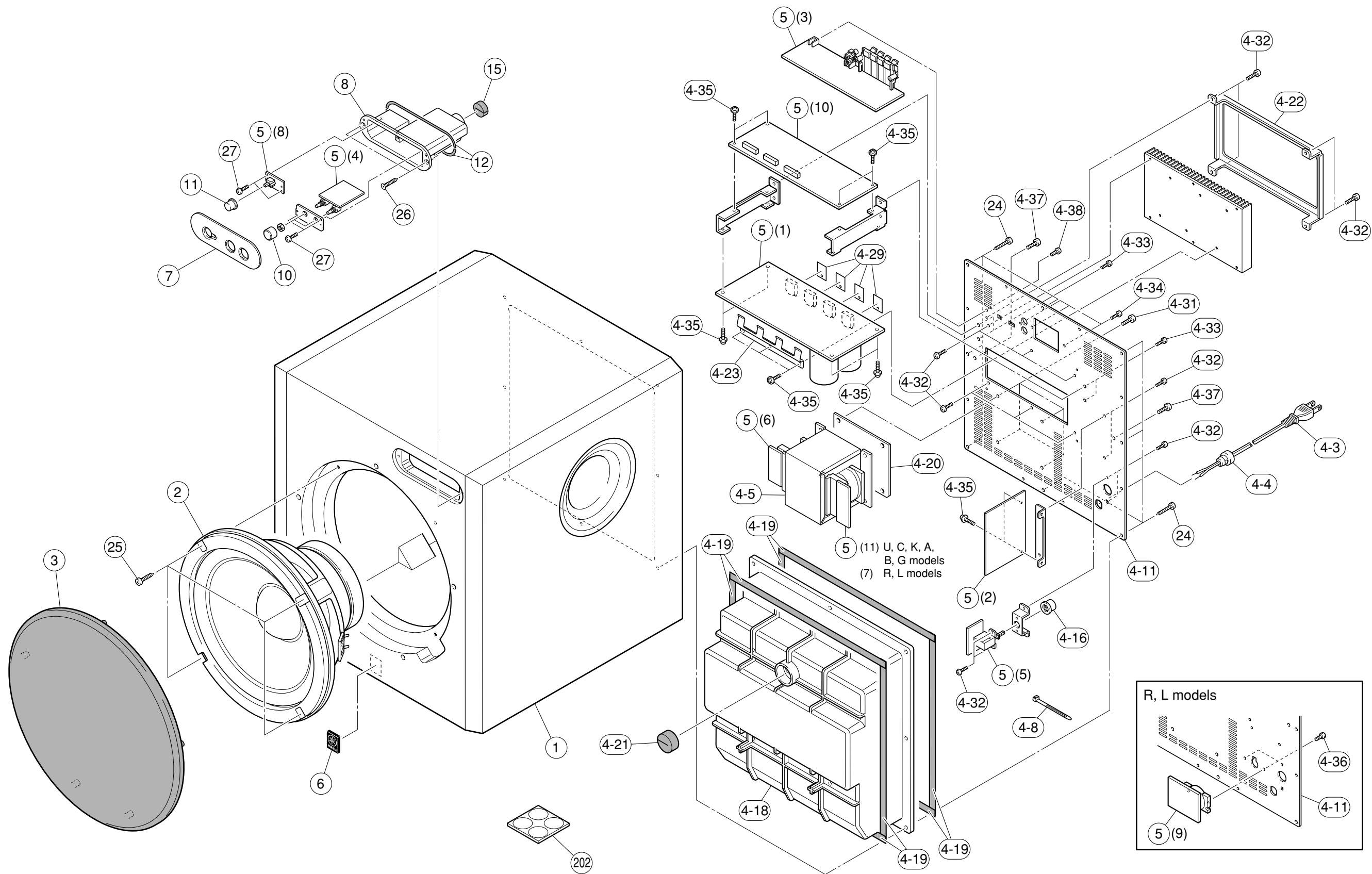
* New Parts

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			



* : Not available

• OVERALL ASS'Y



	Ref. No.	Part No.	Description		Remarks	Markets
*	1	WK217100	CABINET ASS'Y		CH	
*	1	WK217000	CABINET ASS'Y		BL	
	2	X4457D00	DRIVER WOOFER	25cm 6Ω	2564B	
	3	WH695000	FRONT GRILLE ASS'Y			
⚠	4-3	V9436300	POWER CABLE	2m		UC
⚠	4-3	WD042000	POWER CABLE	2m		R
⚠	4-3	V8012900	POWER CABLE	2m		K
⚠	4-3	WC883100	POWER CABLE	2m		A
⚠	4-3	WC906500	POWER CABLE	2m		B
⚠	4-3	V9436400	POWER CABLE	2m		GL
	4-4	CB072750	CORD STOPPER	SR-4N-4		
* ⚠	4-5	X8219A00	POWER TRANSFORMER			UC
* ⚠	4-5	X8220A00	POWER TRANSFORMER			RL
* ⚠	4-5	X8809A00	POWER TRANSFORMER			K
* ⚠	4-5	X8727A00	POWER TRANSFORMER			A
* ⚠	4-5	X8221A00	POWER TRANSFORMER			BG
	4-8	WG886600	BINDING TIE	CT-100		
*	4-11	WJ991200	REAR PANEL			UC
*	4-11	WJ991300	REAR PANEL			RL
*	4-11	WJ991600	REAR PANEL			K
*	4-11	WJ991400	REAR PANEL			A
*	4-11	WJ991500	REAR PANEL			BG
	4-16	WA217100	POWER KNOB			
	4-18	WB249900	COVER			
	4-19	WB377300	PACKING	276x6 t=1		
	4-20	WB377400	PACKING E	100x85 t=2		
	4-21	WC690300	BUSH			
	4-22	WB279400	REAR COVER			
*	4-23	WJ951100	SUPPORT TRANSISTOR	4P		
	4-29	VV849300	RADIATION SHEET	19x24		
	4-31	WE994800	BIND HEAD S-TIGHT SCREW	4x8 MFZN2B3		
	4-32	WE774400	BIND HEAD B-TIGHT SCREW	3x8 MFZN2B3		
	4-33	WE962000	BIND HEAD B-TIGHT SCREW	4x8 MFZN2B3		
	4-34	WF268000	BIND HEAD P-TIGHT SCREW	3x10 MFZN2B3		
	4-35	WF002600	PW HEAD B-TIGHT SCREW	3x8 MFZN2W3		
	4-36	WE983600	BIND HEAD SCREW	3x8 MFZN2B3		RL
	4-37	WE981100	BIND HEAD P-TIGHT SCREW	4x12 MFZN2B3		
	4-38	WF303900	BIND HEAD BONDING SCREW	3x6 MFZN2B3		
*	5	WK224400	P.C.B. ASS'Y	MAIN		UC
*	5	WK224500	P.C.B. ASS'Y	MAIN		RL
*	5	WK224600	P.C.B. ASS'Y	MAIN		KABG
	6	V9467400	EMBLEM			
*	7	WJ956100	FRONT PANEL	BLACK	CH	
*	7	WK175600	FRONT PANEL	SILVER	BL	
*	8	WJ955800	SWITCH COVER			
*	10	WJ981900	VOLUME/HIGH CUT KNOB	BLACK	CH	
*	10	WK175400	VOLUME/HIGH CUT KNOB	SILVER	BL	
*	11	WJ981600	POWER KNOB	BLACK	CH	
*	11	WK175500	POWER KNOB	SILVER	BL	
*	12	WK235100	PACKING	145x3 t=1.0		

* New Parts

Ref. No.	Part No.	Description		Remarks	Markets
15	WC736000	BUSH			
24	WG405400	BIND HEAD TAPPING SCREW	4x35 MFZN2B3		
25	WF459800	BIND HEAD TAPPING SCREW #1	4x25 MFZN2B3		
26	WF683300	FLAT HEAD WOOD SCREW	3.1x16 MFZN2W3		
27	WF268000	BIND HEAD P-TIGHT SCREW	3x10 MFZN2B3		
		ACCESSORY			
202	WB365800	NONSKID PAD	M32 t2 4pcs/set		

* New Parts

YST-RSW300

