Service Manual

Pioneer

ORDER NO.
PET99020

POWERED SUBWOOFER

HTP305-SW KUCXC

CONTENTS

PIONEER CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8655, Japan
PIONEER ELECTRONICS SERVICE, INC. P.O.Box 1760, Long Beach, CA 90801-1760, U.S.A.

1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly preformed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not a qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5). When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

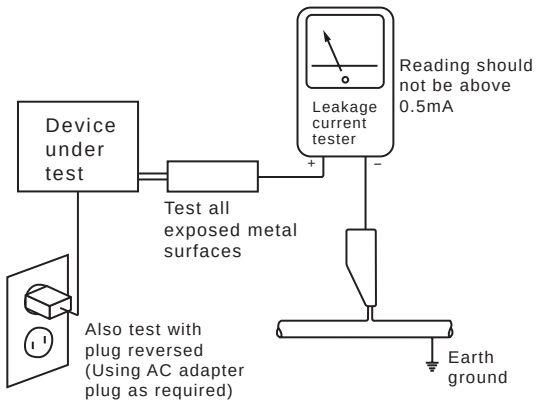
NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS
The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK
Measure leakage current to a know earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must no exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENT NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RERTURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE
Many electrical and mechanical parts in the appliance have special safety related characteristic. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a D on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create sock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. DISASSEMBLY

• POWER AMP SECTION

• Remove the 12 screws from the power amplifier.
• Remove the polyswitch assembly.
• Remove the connector lead, etc.

• GRILLE SECTION

• The grill is attached to the cabinet by its bosses applied with adhesive. To detach it, pry it open by inserting a flate blad screwdriver between the cabinet and the grille.

• SPEAKER

• Remove each of the 4 screws.

3. PACKING, EXPLODED VIEWS AND PARTS LIST

NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by " ◉ " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

3.1 PACKING

Parts List

Mark	Description	Parts No.
	Operating Instructions	268206
	RCA Cable Accessory Pack	255245
	Corner Pad Assy	264333
	Poly Bag	266953
	Packing Case	267218

3.2 EXTERIOR SECTION
Parts List

Mark	No.	Description	Parts No.
NSP	1	Cabinet Enclosure	264506
NSP	2	Amplifier Assembly	264571
	3	Grille Assembly	264353
NSP	4	Paper Port Tube	256946
NSP	5	Front Port Ring	254306
NSP	6	Rear Port Ring	254346
NSP	7	Label FTC Sticker	268286
NSP	8	UL-CUL Label	268197
	9	Transducer	264724
	10	Screw (for Amplifier and Trans)	221904

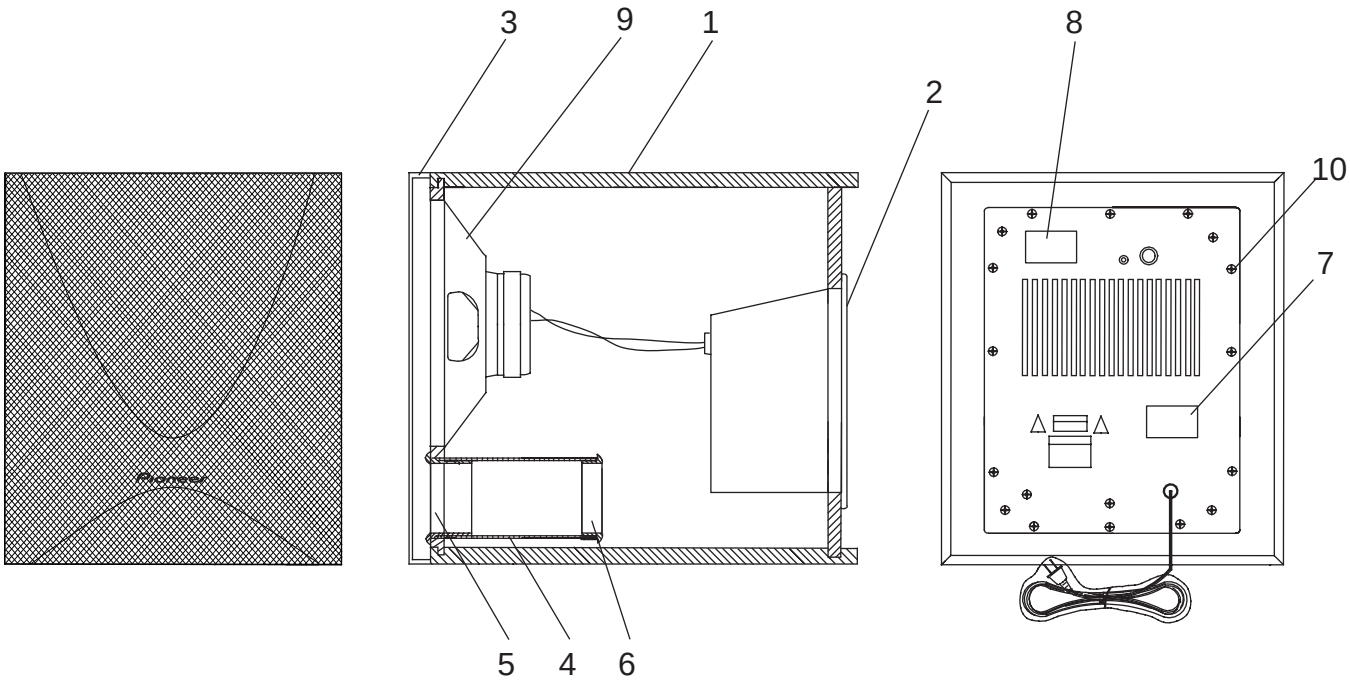


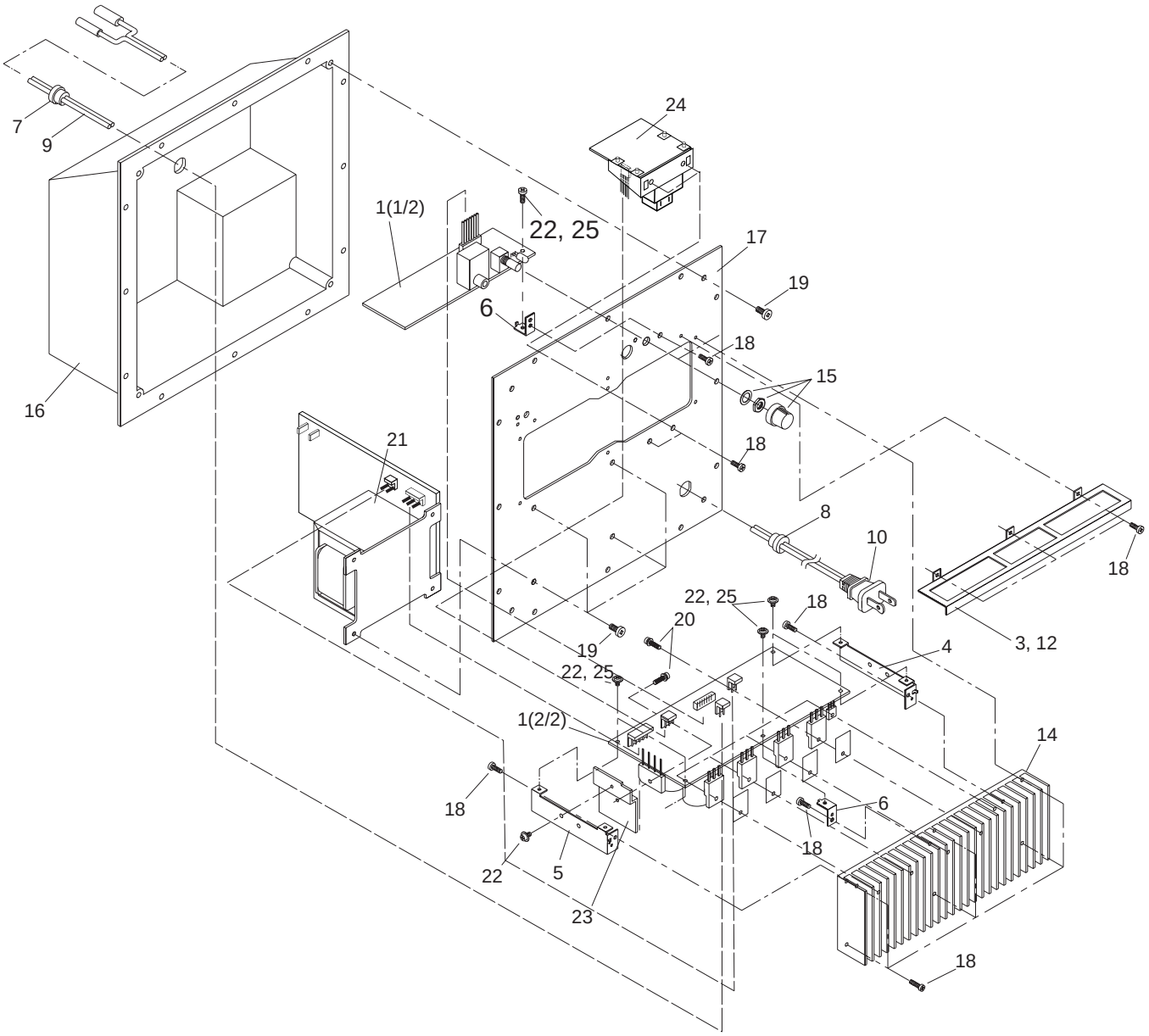
Fig. 1 HTP305-SW

3.3 POWER AMP SECTION

Parts List

Mark	No.	Description	Parts No.
NSP	1	Main+Cont. Assy	047379
	2	Nylon Binder	080558
	3	BRKT Cover Heatsink	085424
	4	BRKT PCB A	077860
	5	BRKT PCB D	077878
	6	BRKT PCB C	077876
	7	Cushion Gasket	078786
	8	Cushion Stopper	078519
	9	2P Cord	077365
⚠	10	AC Cord	046947
	11	Wire-Kit	047424
	12	Cushion 3x200	078829
	13	BRKT Trans Backup	046984

Mark	No.	Description	Parts No.
	14	Heatsink Main	064592
	15	Knob VR	072992
	16	Mold Case	080267
	17	Panel Rear Assy	047003
	18	Screw (M3X10 BL)	075640
	19	Screw (M4X10 BL)	075659
	20	Screw (M3x12 BL)	075461
⚠	21	Trans Power	074919
	22	Screw (3x6 ZC)	075153
	23	Heatsink Diode	064596
⚠	24	Trans Backup	047073
	25	Washer (3.2x6.5xt0.5)	075818



4. SCHEMATIC AND PCB CONNTCTION DIAGRAMS

NOTE FOR SCHEMATIC DIAGRAMS (Type 1A)

1. When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".

2. Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.

3. RESISTORS:
Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.
Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.

4. CAPACITORS:
Unit: p:pF or μF unless otherwise noted.
Ratings: capacitor (μF)/voltage(V) unless othrewise noted.
Rated voltage: 50V except for electrolytic capacitors.

5. COILS:
Unit: m:mH or μH unless otherwise noted.

6. VOLTAGE AND CURRENT:
V : Signal voltage at rated output.
or ← V:
DC voltage (V) at no input signal unless otherwise noted.
Value in ( ) is DC voltage at rated power.
⇦ mA or ← mA:
DC current at no input signal unless otherwise noted.

7. OTHERS:
- ⊘ or ⊘ : Adjusting point.
- ◄ : Measurement point.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.

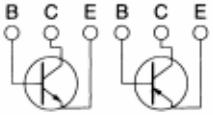
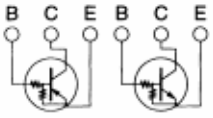
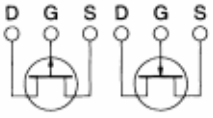
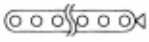
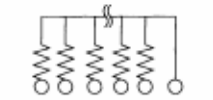
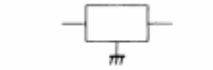
8. SCH-☐ ON THE SCHEMATIC DIAGRAM:
- SCH-☐ indicates the drawing number of the schematic dia gram. (SCH stands for schematic diagram.)

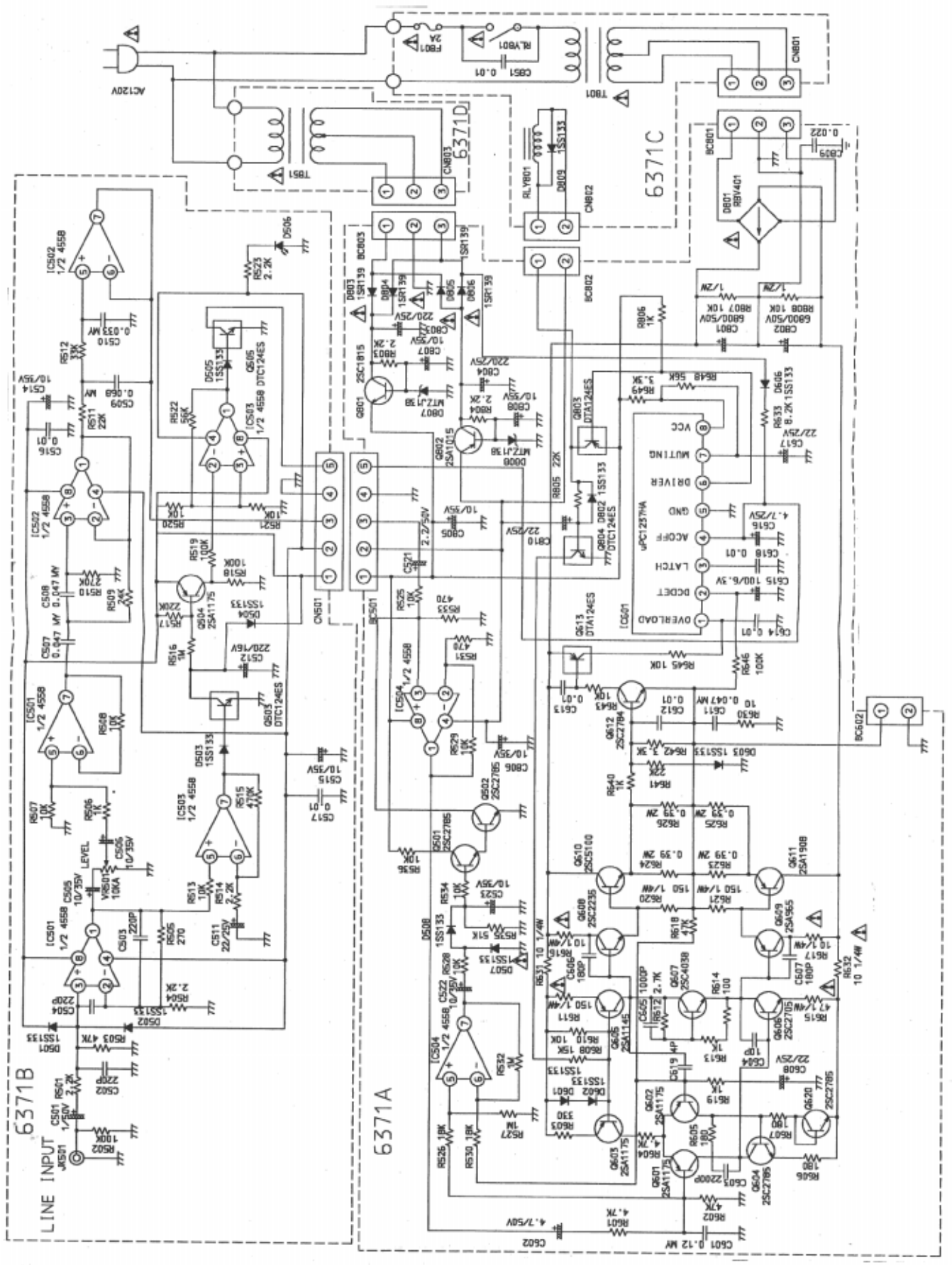
9. SWITCHES (Underline indicates switch position):
- MAIN + CONT. ASSY
  S501 : PHASE Rev / Norm
  S502 : AUTO POWER ON/OFF

NOTE FOR PCB DIAGRAMS

1. Partnumbers in PCB diagrams match those in the schematic diagrams.

2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator


6371A
6371B
6371C
6371D
LINE INPUT
AC120V
uPC1237HA
VCC
MUTING
DRIVER
GND
ACOFF
LATCH
DCDET
OVERLOAD
LEVEL

5. PCB PARTS LIST

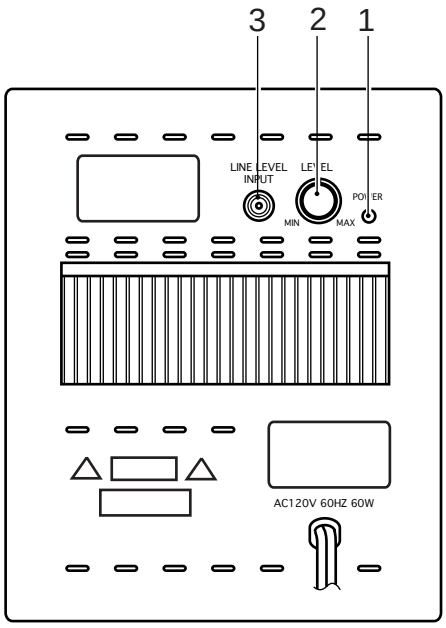
NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC501, IC502, IC503	IC BA4558	070211
	IC504	IC NJM4558D-D	070131
	IC601	IC UPC1237HA	070293
	Q501, Q502, Q604, Q620	TR 2SC2785 KEF T	068806
	Q503, Q505, Q804	TR DTC124ESA T	069297
	Q504, Q601, Q602, Q603	TR 2SA1175 KEF T	068611
	Q605	TR 2SA1145 OY T	068602
	Q606	TR 2SC2705 OY T	068796
	Q608	TR 2SC2235 O	068765
	Q609	TR 2SA965 O	068581
	Q612	TR 2SC2784 EF T	068804
	Q613, Q803	TR DTA124ESA T	069250
	Q801	TR 2SC1815 Y:GR T	068741
	Q802	TR 2SA1015 Y T	068587
	D501, D502, D503, D504, D505, D507, D508, D601, D602, D603, D60	D 1SS133 T-77	069460
	D506	LED BL-B5134 RED	069823
⚠	D801	D RBV401	069590
⚠	D803, D804, D805, D806	D 1SR139-100 T-32	069532
	D807, D808	ZD MTZ13B T	069173
CAPACITORS			
	C501	Electrolytic S 50V 108M T	066329
	C502, C503, C504	Ceramic S YB 50V 221K T	065404
	C505, C506, C514, C515, C522, C523, C805, C806, C807, C808	Electrolytic S 35V 100M T	066288
	C507, C508	PEST S 50V 473J T	065118
	C509	PEST S 50V 683J T	065141
	C510	PEST S 50V 333J T	065092
	C511, C608, C617, C810	Electrolytic S 25V 220M T	066347
	C512	Electrolytic S 16V 221M T	066361
	C516, C517, C612, C613, C614, C618	Ceramic S YF 50V 103Z T	065452
	C521	Electrolytic S 50V 228M T	066377
	C601	PEST S 50V 124K T	065026
	C602	Electrolytic S 50V 478M T	066459
	C603	Ceramic S YB 50V 222K T	065407
	C604	Ceramic S SL 500V 100D	065694
	C605	Ceramic S YB 50V 102K T	065385
	C606, C607	Ceramic S SL 500V 181K	065732
	C611	PEST S 50V 473K T	065123
	C615	Electrolytic S 6.3V 101M T	066296
	C616	Electrolytic S 25V 478M T	066455
	C619	Ceramic S SL 50V 408D T	065784
	C801, C802	Electrolytic SMH 50V 682M 22F	067012
	C803, C804	Electrolytic S 25V 221M T	066364
	C809	Ceramic S YF 50V 223Z T	065457
	C851	PESTM R40KI 275V 103M	065262
RESISTORS			
	R501, R504, R514, R523, R803, R804	CARBONR H 1/6W 222J T	067155
	R502, R518, R519, R646	CARBONR H 1/6W 104J T	067079
	R503, R602, R618	CARBONR H 1/6W 473J T	067248
	R505	CARBONR H 1/6W 271J T	067175
	R506, R613, R619, R806	CARBONR H 1/6W 102J T	067069
	R507, R508, R513, R520, R521, R525, R528, R529, R534, R536, R610, R643, R645	CARBONR H 1/6W 103J T	067074
	R509	CARBONR H 1/6W 243J T	067171
	R510	CARBONR H 1/6W 274J T	067182
	R511, R641, R805	CARBONR H 1/6W 223J T	067160
	R512	CARBONR H 1/6W 333J T	067207
	R515	CARBONR H 1/6W 474J T	067252
	R516, R527, R532	CARBONR H 1/6W 105J T	067083
	R517	CARBONR H 1/6W 224J T	067163
	R522, R648	CARBONR H 1/6W 563J T	067273
	R526, R530	CARBONR H 1/6W 183J T	067136
	R531, R533	CARBONR H 1/6W 471J T	067240
	R535	CARBONR H 1/6W 513J T	067260
	R601, R604	CARBONR H 1/6W 472J T	067243
	R603	CARBONR H 1/6W 331J T	067200
	R605	CARBONR H 1/6W 181J T	067129
	R606, R607	CARBONR RDF16S 181J T26A	044817
	R608	CARBONR H 1/6W 153J T	067119
⚠	R611, R620, 621	CARBONR FS 1/4W 151T S	067407
	R612	CARBONR H 1/6W 272J T	067179
⚠	R614	CARBONR H 1/6W 101J T	067065
⚠	R615	CARBONR FS 1/4W 470J S	067450
⚠	R616, R617, R631, R632	CARBONR FS 1/4W 100J S	067384
	R623, R624, R625, R626	METALR RSF 2W 399J S	068035
	R630	CARBONR FS 1/2W 100J S	067379
	R633	CARBONR H 1/6W 822J T	067313
	R640, R642, R649	CARBONR H 1/6W 332J T	067203
	R807, R808	CARBONR FS 1/2W 103J	067393
	VR501	VR XVB121PHJN15 10KA	084709
OTHERS			
	Misc	064821	
⚠	Fuse Socket	074193	
	SOCKET FUSE H-0014-1	074193	
⚠	F801	FUSE U ST4 250V 2A	075066
		Screw (3X10 BL)	075640
	CN501	CORD SCN-EH 5P*160	077378
	CN801	CORD ASSY SDN-VH 3P*200	077516
	CN802	CORD ASSY SCN-EH 2P*160	077567
	CN803	CORD SCN-EHR 3P*170	077357
	BC501	5P Connector	081506
	BC602	2P Connector	081661
	BC801	3P Connector	081665
	BC802	Connector B02B-EH	081439
	BC803	3P Connector	081465
	JK501	JACK RCA 1081-01-0300A	047225
	RLY801	Relay	046904

6. PANEL FACILITIES

REAR SECTION



① POWER/STANDBY indicator

Illuminates RED when the power is being supplied.

② Subwoofer LEVEL knob

Volume of subwoofer is adjusted with this knob. Turn this knob clockwise to raise the level.

÷ Starting with “MIN“, turn this knob and raise the volume slowly. If the unit is turned on with the volume set too high, it could cause hearing and/or speaker damage. Do not turn the volume up excessively high. The low frequency sound is apt to be raised too high since it is less disturbing and harder to detect than high frequencies. Caution must be taken here since the amplifier and speaker of the HTP702-SW, HTP202/302-SW will be clipped when the output of the amplifier or receiver is increased with the subwoofer level set to “MAX“.

③ Subwoofer input terminal (LINE LEVEL INPUT)

Connect SUBWOOFER OUTPUT terminal of the receiver to this terminal with the accessory RCA cord.

If the output of the amplifier (receiver) connected to this unit is high or if the output has a low range boosted by the Bass control, Bass boost, or other means, there may be some sound distortion even if the level of the unit is lowered. In this case, lower the output level (Volume, Bass control, Bass boost) on the amplifier (or receiver) side.

7. SPECIFICATIONS

		HTP305-SW
Cabinet		A floor, bass-reflex type, with a built-in amplifier having a PVC-sheet finishing with a wood pattern.
Speaker		20cm (8 inch)
Power Amplifier		**Continuous Average Power Output is 100 Watts* min, at 4 ohms from 30 Hertz to 200 Heltz with no more than 1%** total harmonic distortion.**
Input (Sensitivity at 100 Hz/impedance)	Line level input (Pin - jack)	550 mV / 33kΩ
Turn over Frequency		120 Hz
Outline Demension (W x H x D)		291 x 361 x 330 mm 11-9/16 x 14-9/16 x 13 inch
Weight (without package)		10.6 kg (23 lb 6 oz)
Power Requirements		120 VAC 60 Hz
Power Consumption		120 W
Accessories		RCA cord (10ft) x 1 Operating instructions x 1

Note: *Specifications and design subject to possible modification without notice due to improvements.*

* *Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifiers.*
** *Measured by Audio Spectrum Analyzer.*

Dear Customer:

Selecting fine audio equipment such as the unit you've just purchased is only the start of your musical enjoyment. Now it's time to consider how you can maximize the fun and excitement your equipment offers. This manufacturer and the Electronic Industries Association's Consumer Electronics Group want you to get the most out of your equipment by playing it at a safe level. One that lets the sound come through loud and clear without annoying blaring or distortion-and, most importantly, without affecting your sensitive hearing.

Sound can be deceiving. Over time your hearing "comfort level" adapts to higher volumes of sound. So what sounds "normal" can actually be loud and harmful to your hearing. Guard against this by setting your equipment at a safe level BEFORE your hearing adapts.

To establish a safe level:
÷ Start your volume control at a low setting.
÷ Slowly increase the sound until you can hear it comfortably and clearly, and without distortion.

Once you have established a comfortable sound level:
÷ Set the dial and leave it there.

Taking a minute to do this now will help to prevent hearing damage or loss in the future. After all, we want you listening for a lifetime.

We Want You Listening For A Lifetime

Used wisely, your new sound equipment will provide a lifetime of fun and enjoyment. Since hearing damage from loud noise is often undetectable until it is too late, this manufacturer and the Electronic Industries Association's Consumer Electronics Group recommend you avoid prolonged exposure to excessive noise. This list of sound levels is included for your protection.

Decibel Level	Example
30	Quiet library, soft whispers
40	Living room, refrigerator, bedroom away from traffic
50	Light traffic, normal conversation, quiet office
60	Air conditioner at 20 feet, sewing machine
70	Vacuum cleaner, hair dryer, noisy restaurant
80	Average city traffic, garbage disposals, alarm clock at two feet.

THE FOLLOWING NOISES CAN BE DANGEROUS UNDER CONSTANT EXPOSURE

90	Subway, motorcycle, truck traffic, lawn mower
100	Garbage truck, chain saw, pneumatic drill
120	Rock band concert in front of speakers, thunderclap
140	Gunshot blast, jet plane
180	Rocket launching pad

Information courtesy of the Deafness Research Foundation.

NOTES