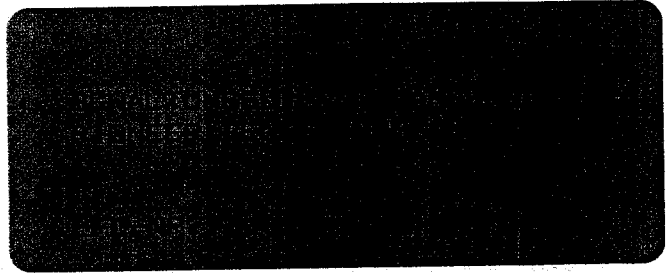
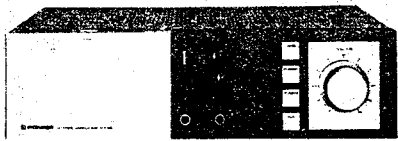


# Service Manual



## REPAIR & ADJUSTMENTS



**ORDER NO. ARP-023-0**

### STEREO AMPLIFIER

# A-X30

MODEL A-X30 COMES IN THREE VERSIONS DISTINGUISHED AS FOLLOWS:

Type	Voltage	Remarks
NE	AC 220V only	Europe model
YB	AC 240V only	United Kingdom model
S	AC 110V, 120V, 220V and 240V (Switchable)	General export model

- This service manual is applicable to the NE type. When repairing the YB type, please see page 15. When repairing the S type, please see the additional service manual <ARP-024-0>.
- For the circuit description, please refer to the model A-X50 service manual <ARP-048-0>.

## CONTENTS

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1105

# 1. SPECIFICATIONS

## Amplifier Section

Continuous Average Power Output is 17 watts\* per channel, min., at 8 ohms from 40 Hertz to 20,000 Hertz with no more than 0.5% total harmonic distortion.

Continuous Power Output at 1kHz (both channels driven)  
 T.H.D. 1%, 8 ohms . . . . . 18 watts per channel  
 Total Harmonic Distortion (40 hertz to 20,000 hertz, 8 ohms, from AUX)

continuous rated power output . . . No more than 0.5%  
 10 watts per channel power output . . . No more than 0.1%

Intermodulation Distortion (50 hertz: 7,000 hertz = 4:1, 8 ohms, from AUX)

continuous rated power output . . . No more than 0.3%  
 10 watts per channel power output . . . No more than 0.1%

Damping Factor (1,000 hertz, 8 ohms) . . . . . 35  
 Input (Sensitivity/Impedance)

PHONO . . . . . 2.5mV/50 kilohms  
 TUNER, AUX, TAPE PLAY . . . . . 150mV/50 kilohms  
 MIC . . . . . 2mV/50 kilohms

Phono Overload Level (T.H.D. 0.1%, 1,000Hz)

PHONO . . . . . 80mV

Output Level  
 TAPE REC . . . . . 150mV

Frequency Response  
 PHONO (RIAA Equalization) . . . . .

30Hz to 20,000Hz ±0.3dB

TUNER, AUX, TAPE PLAY . . . . .  
 10Hz to 100,000Hz  $\begin{matrix} +0 \\ -3 \end{matrix}$ dB

Tone Control (Volume control set at -30dB position)  
 Low Boost . . . . . +6dB (100Hz)  
 High Boost . . . . . +6dB (10kHz)  
 Low and High Boost . . . +6dB (100Hz), +6dB (10kHz)

Hum and Noise (IHF, short circuited A network)  
 PHONO . . . . . 69dB  
 TUNER, AUX, TAPE PLAY . . . . . 95dB

Hum and Noise (DIN, continuous rated power output/50mW)

PHONO . . . . . 69dB/68dB  
 TUNER, AUX, TAPE PLAY . . . . . 84dB/68dB

## Miscellaneous

Power Requirements . . . . . AC 220V, 50Hz  
 Power Consumption . . . . . 120W

Dimensions . . . . . 320(W) x 98(H) x 227(D) mm  
 12-5/8(W) x 3-7/8(H) x 8-15/16(D) in

Weight (without package) . . . . . 3.6kg (7 lb 15 oz)

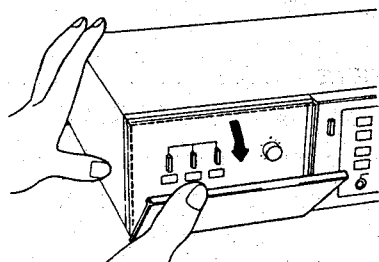
## Furnished Parts

Operating Instructions . . . . . 1

\* Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier.

NOTE:  
 Specifications and design subject to possible modification without notice.

# 3. FRONT PANEL FACILITIES



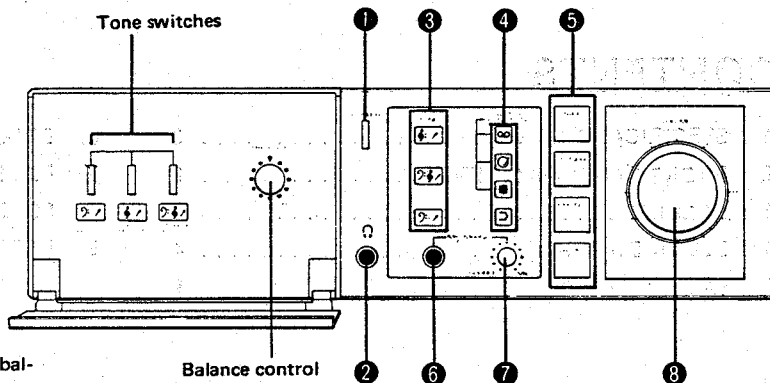
Open the door as shown above to expose the tone and balance controls.

## TONE SWITCHES

**LOW BOOST:** Depress this switch to boost the low frequency range (bass).

**HIGH BOOST:** Depress this switch to boost the high frequency range (treble).

**LOW/HIGH BOOST:** Depress this switch to boost both the low and high frequency ranges.



NOTE:  
 These switches can be used together. For example, both LOW/HIGH BOOST and LOW BOOST can be depressed at the same time to place extra emphasis on the low frequency range while boosting the high frequency range in the normal manner.

**BALANCE CONTROL**

Turn to the right ( ⤴ ) to raise the volume of the right speaker system and turn to the left ( ⤵ ) to raise the volume of the left speaker system.

**NOTE:**

When the BALANCE control is turned all the way to the right or left, no sound at all will come from the opposite speaker.

**1 POWER SWITCH**

Depress to turn power on and depress once more to turn power off.

**NOTE:**

When the A-X30 is used with the one-touch auto play system, the power cord should be plugged into the power socket on the F-X50L. Then leave the A-X30 power switch in the ON position and turn power on and off using the F-X50L power switch.

**2 HEADPHONES JACK**

Use this jack when listening to music through a set of stereo headphones. Be sure the headphone plug is inserted all the way into the jack. The speakers are automatically turned off when the headphone jack is used.

**NOTE:**

Always turn the volume down before plugging in a set of headphones to protect your ears from a volume level mistakenly set too high.

**3 TONE INDICATORS**

These indicators light to show which of the TONE switches has been depressed.

**4 FUNCTION INDICATORS**

These indicators light to show which of the function switches has been depressed. The indicators are TAPE, PHONO, TUNER and AUX from top to bottom.

**NOTE:**

When the A-X30 is used with one-touch auto play components, function switching is performed automatically as each component is operated. When power is turned on, the A-X30 will be set to the TUNER function.

**5 MANUAL FUNCTION SWITCHES**

Use these switches when the A-X30 is not used with Pioneer components compatible with the one-touch auto play system such as the F-X50L, CT-X50, and PL-X50.

**TAPE:** Depress to listen to the tape deck connected to the rear panel TAPE jacks.

**PHONO:** Depress to listen to the turntable connected to the rear panel PHONO jacks.

**TUNER:** Depress to listen to the tuner connected to the rear panel TUNER jacks.

**AUX:** Depress to listen to audio component connected to the rear panel AUX jacks.

**6 MICROPHONE JACK**

Use this jack to use a microphone with the A-X30. The mic volume is controlled by the MIC MIXING control. This jack accepts all standard (ϕ6mm) mic plugs.

**7 MIC MIXING CONTROL**

Use this control when performing mic mixing operations. Turn to the right ( ⤴ ) to increase mic volume. When this control is turned all the way to the right, the program source will no longer be heard and only the mic signal will be heard through the speakers.

**NOTE:**

Always turn this control all the way to the left when not performing mic mixing operations. If the MIC MIXING control is turned all the way to the right, no sound will be heard even when the volume level is raised with the VOLUME CONTROL.

**8 VOLUME CONTROL**

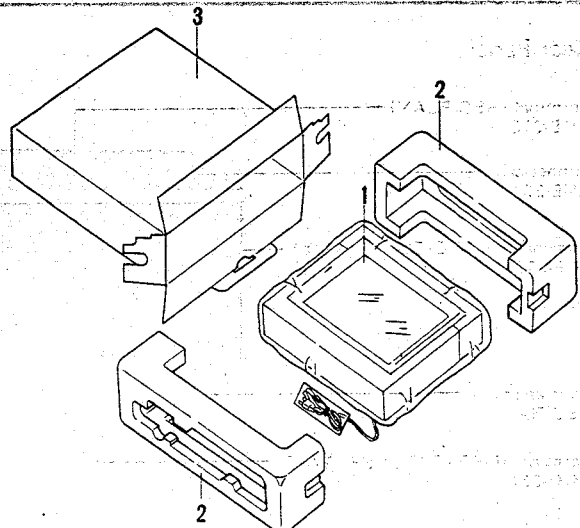
Turn this control to the right (clockwise) to raise the volume level of the speakers and headphones.

**NOTE:**

When not performing mic mixing, turn the mic mixing control 7 all the way to the left (counterclockwise). If the mic mixing control is turned to the right, no sound will be heard even when the volume control is turned up.

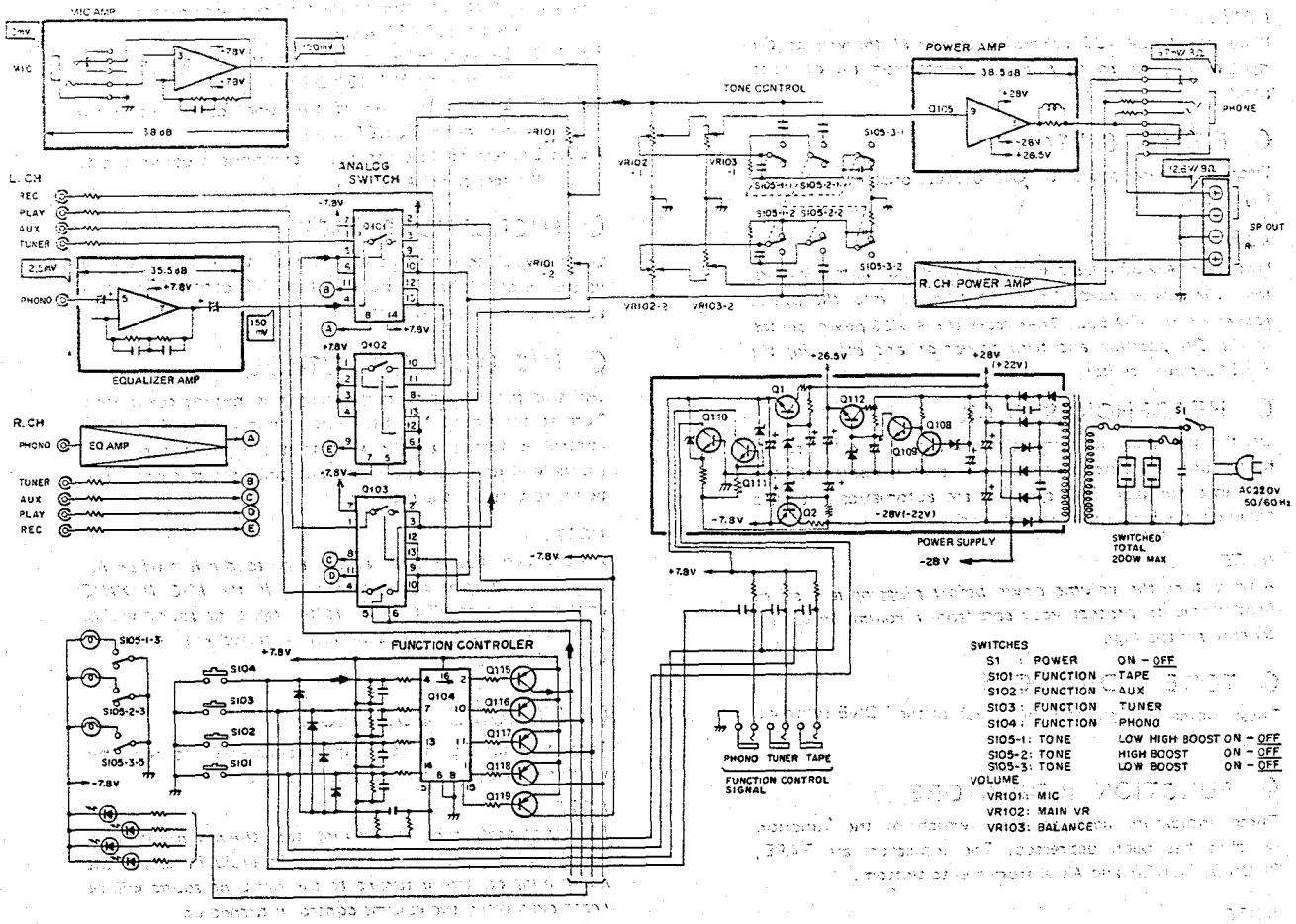
**2. PACKING**

Mark	No.	Part No.	Symbol & Description
	1.	ARE-012	Operating instructions (English/German/French/Italian)
	2.	AHA-284	Protector
	3.	AHD-966	Packing case





# 4. BLOCK DIAGRAM



- SWITCHES**
- S1 POWER ON - OFF
  - S101 FUNCTION TAPE
  - S102 FUNCTION AUX
  - S103 FUNCTION TUNER
  - S104 FUNCTION PHONO
  - S105-1: TONE LOW HIGH BOOST ON - OFF
  - S105-2: TONE HIGH BOOST ON - OFF
  - S105-3: TONE LOW BOOST ON - OFF
- VOLUME**
- VR101: MIC
  - VR102: MAIN VR
  - VR103: BALANCE

## Rear Panel

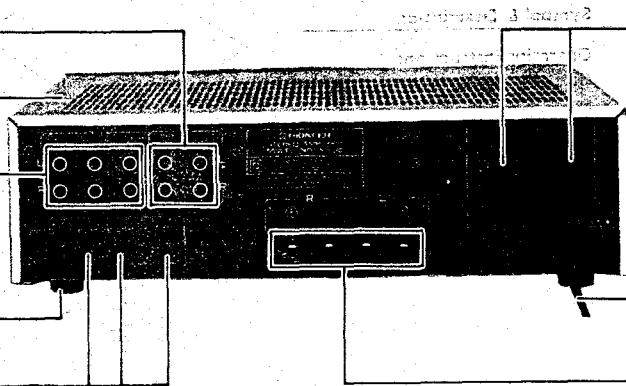
Terminal (REC/PLAY) AKB-078

Bonnet case ANE-354

Terminal (PHONO/TUNER/AUX) AKB-079

Foot assembly AEC-784

Terminal (PHONO, TUNER, TAPE) AKN-034



S. PACKING

AC socket (AC OUTLETS) AKP-026

AC power cord ADG-041

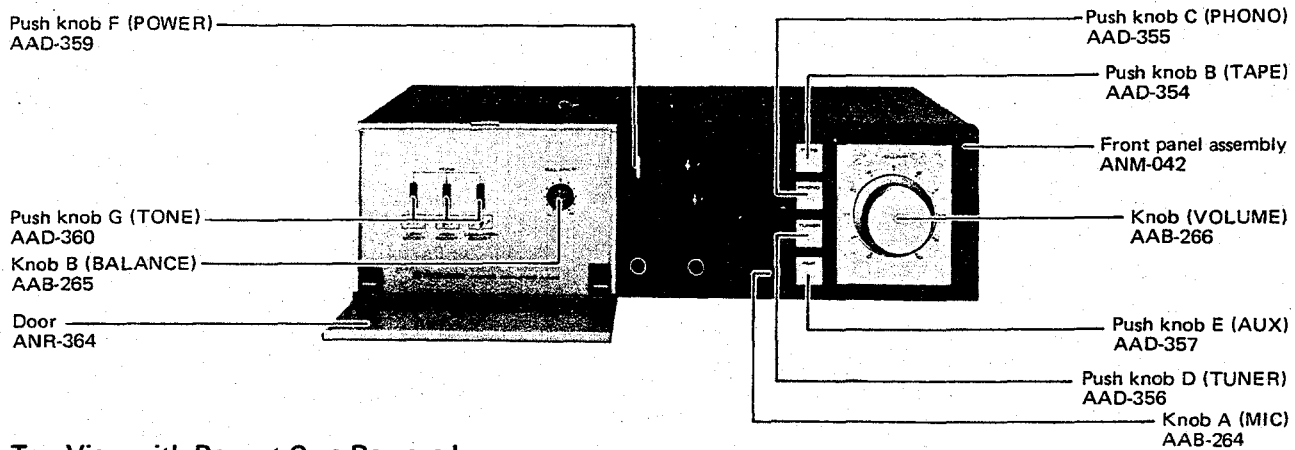
Terminal (SPEAKERS) AKE-048

## 5. PARTS LOCATION

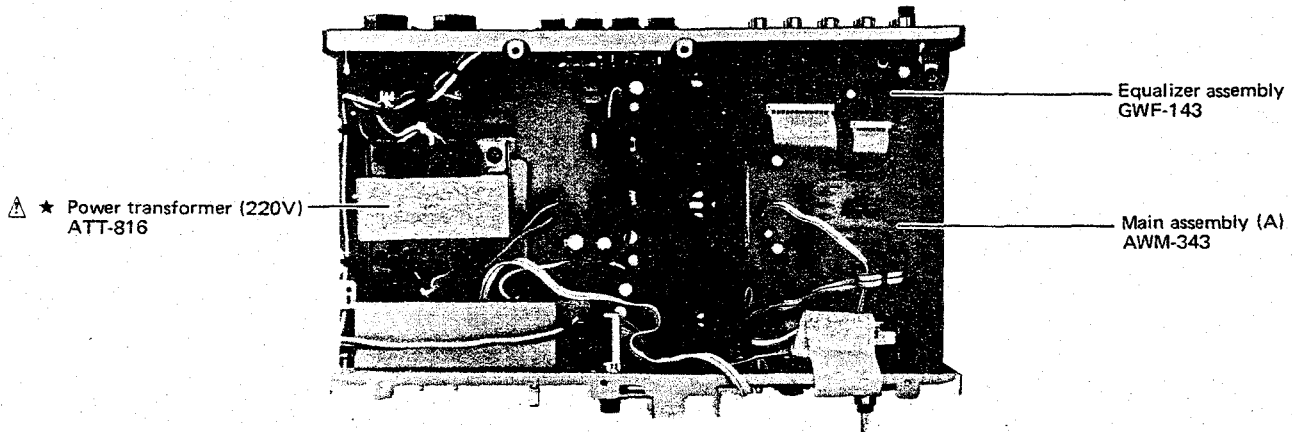
**NOTES:**

- The  $\Delta$  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.
- For your Parts Stock Control, the fast moving items are indicated with the marks **\*\*** and **\***.  
**\*\* GENERALLY MOVES FASTER THAN \***.  
 This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

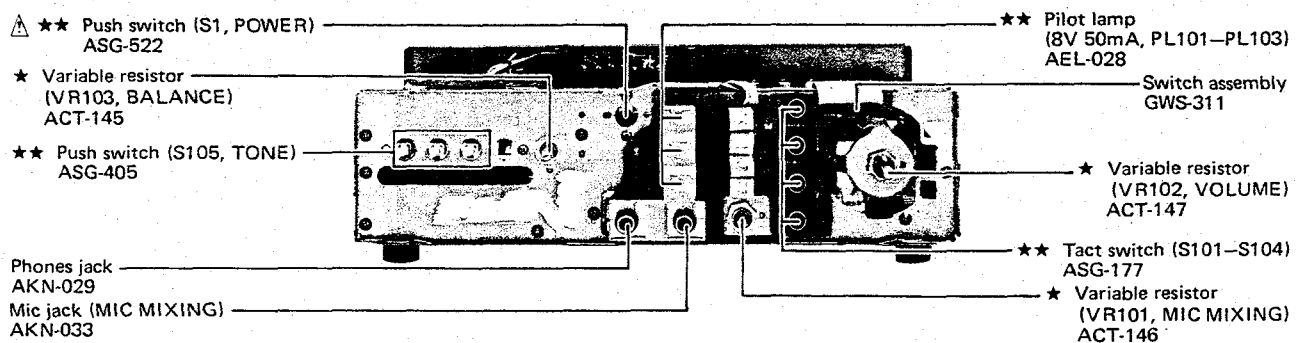
### Front Panel



### Top View with Bonnet Case Removed

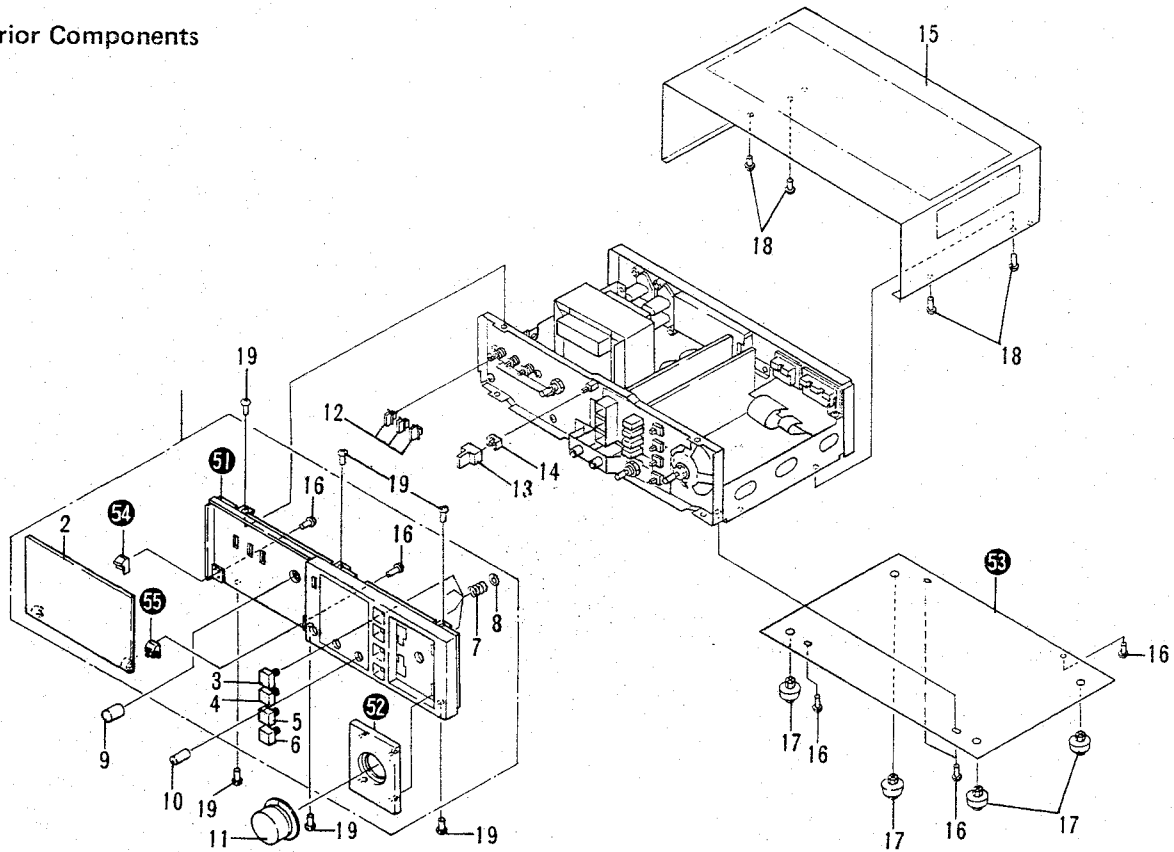


### Front View with Panel Removed



## 6. EXPLODED VIEWS

### Exterior Components



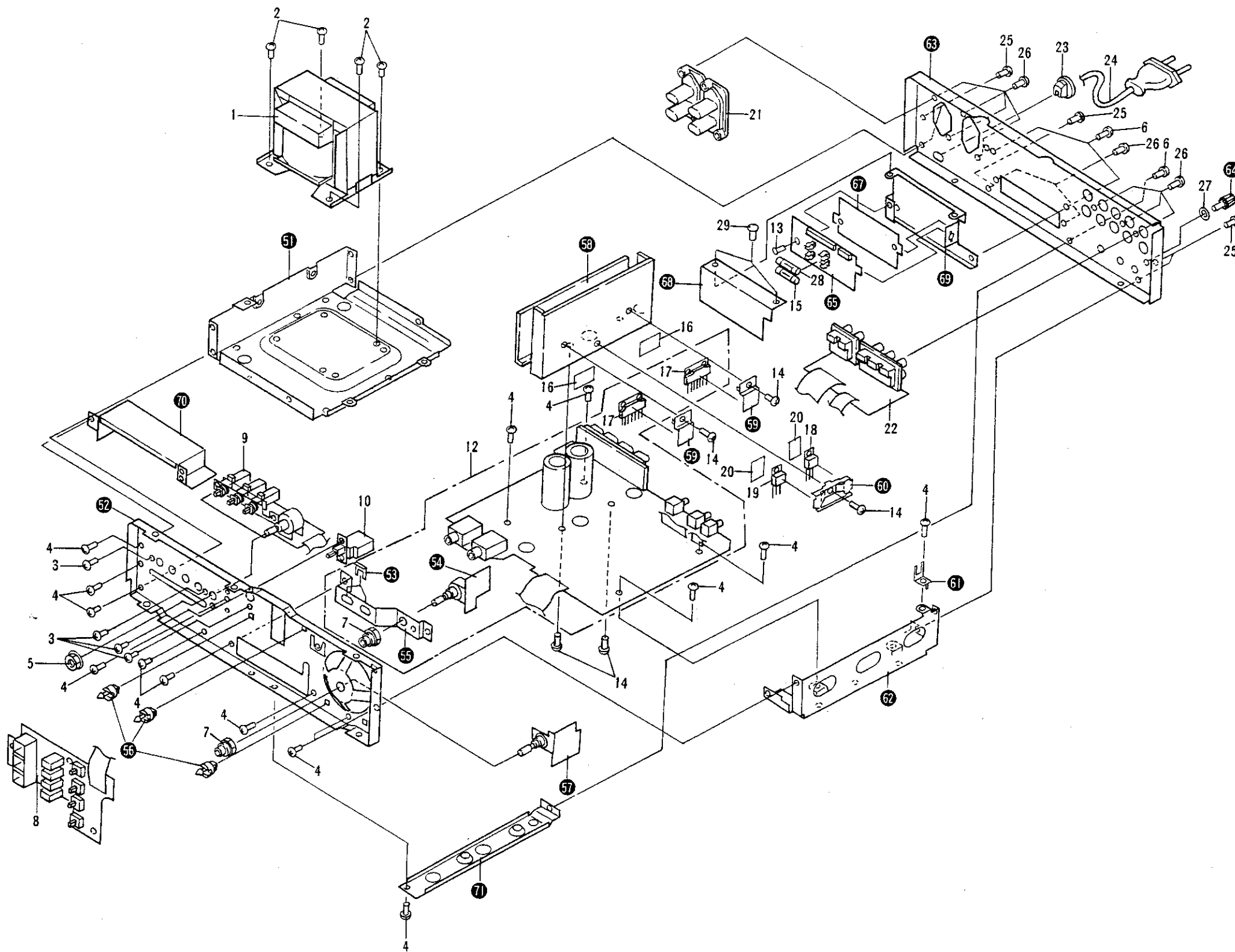
**NOTES:**

- Parts without part number cannot be supplied.
- The  $\Delta$  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.
- For your Parts Stock Control, the fast moving items are indicated with the marks **★★** and **★**.  
**★★ GENERALLY MOVES FASTER THAN ★.**  
*This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.*

**Parts List**

Mark	No.	Part No.	Symbol & Description	Mark	No.	Part No.	Symbol & Description
	1.	ANM-042	Front panel assembly	51.			Front panel
	2.	ANR-364	Door	52.			VR escutcheon
	3.	AAD-354	Push knob B (TAPE)	53.			Bottom plate
	4.	AAD-355	Push knob C (PHONO)	54.			Hinge L
	5.	AAD-356	Push knob D (TUNER)	55.			Hinge R
	6.	AAD-357	Push knob E (AUX)	16.		VBZ30P060FMC	Screw 3x6
	7.	ABH-073	Coil spring	17.		AEC-784	Foot assembly
	8.	ABE-069	Washer	18.		ABA-140	Screw 3x6
	9.	AAB-265	Knob B (BALANCE)	19.		BBZ30P060FZK	Screw 3x6
	10.	AAB-264	Knob A (MIC)				
	11.	AAB-266	Knob (VOLUME)				
	12.	AAD-360	Push knob G (TONE)				
	13.	AAD-359	Push knob F (POWER)				
	14.	AEC-743	Flexible joint				
	15.	ANE-354	Bonnet case				

Interior Components

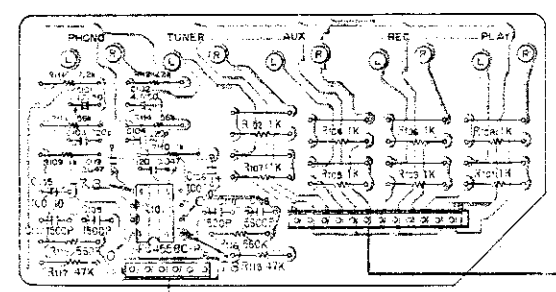


Parts List

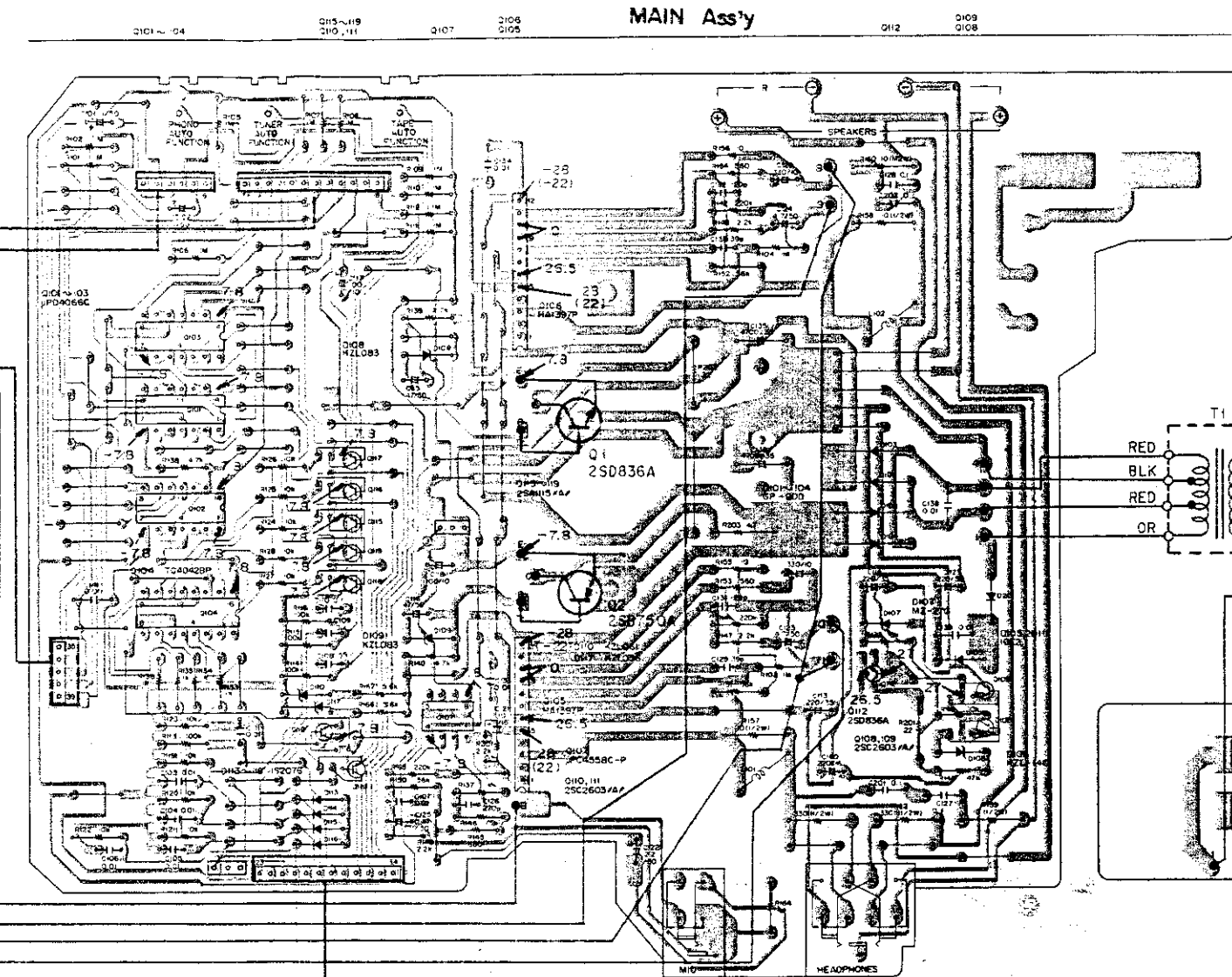
Mark	No.	Part No.	Symbol & Description
⚠	★	1. ATT-816	Power transformer (T1, 220V)
		2. VTZ40P080FMC	Screw 4x8
		3. VMZ30P060FMC	Screw 3x6
		4. VBZ30P060FMC	Screw 3x6
		5. ABN-024	Nut M9
		6. BBZ30P060FZK	Screw 3x6
		7. ABN-046	Union nut
		8. GWS-311	Switch assembly
		9. GWG-155	Tone control assembly
⚠	★★	10. ASG-522	Push switch (S1, POWER)
		11. ....	
		12. AWM-343	Main assembly (A)
		13. AEC-510	Nylon rivet
		14. VBZ30P080FMC	Fuse (FU1, 500mA)
⚠	★★	15. AEK-401	Fuse (FU1, 500mA)
		16. AEC-739	Mica wafer
	★★	17. HA1397P	IC (Q105, Q106)
	★★	18. 2SD836A	Transistor (Q1)
	★★	19. 2SB750A	Transistor (Q2)
		20. AEC-248	Mica wafer
⚠		21. AKP-026	AC socket (AC OUTLETS)
		22. GWF-143	Equalizer assembly
⚠		23. AEC-327	Strain relief
		24. ADG-041	AC power cord
		25. ABA-140	Screw 3x6
		26. BTZ30P080FZK	Screw 3x8
		27. WA35F100N080	Washer
⚠	★★	28. AEK-402	Fuse (FU100, 1A)
		29. AEC-471	Nylon rivet
		51.	Side frame L
		52.	Front frame
		53.	Mounting plate
		54.	Mic volume assembly
		55.	P.C. Board holder
		56.	P.C. Board holder
		57.	Main volume assembly
		58.	Heat sink
		59.	Plate
		60.	Plate
		61.	Terminal strip 2-P
		62.	Side frame R
		63.	Rear panel
		64.	Terminal (GND)
		65.	Fuse assembly
		66.	.....
		67.	PVC sheet
		68.	PVC spacer
		69.	Fuse P.C. Board holder
		70.	Shield case
		71.	Sub frame

# 7. P.C.BOARDS CONNECTION DIAGRAM

EQUALIZER Ass'y GWF-143



MAIN Ass'y



A

A

B

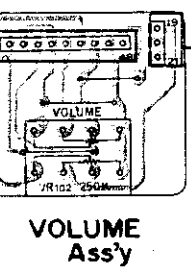
B

C

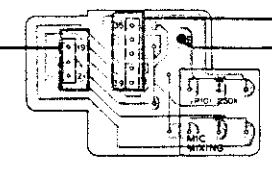
C

D

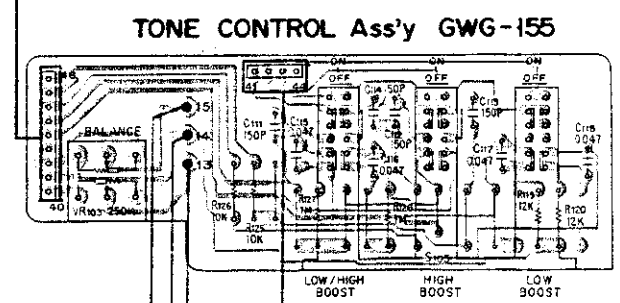
D



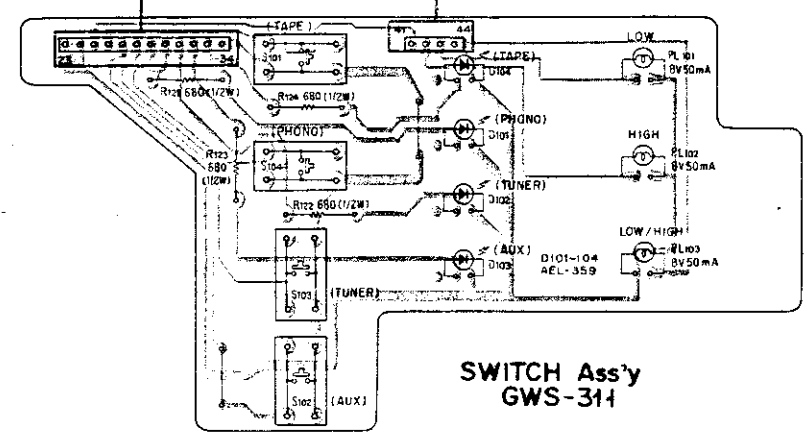
VOLUME Ass'y



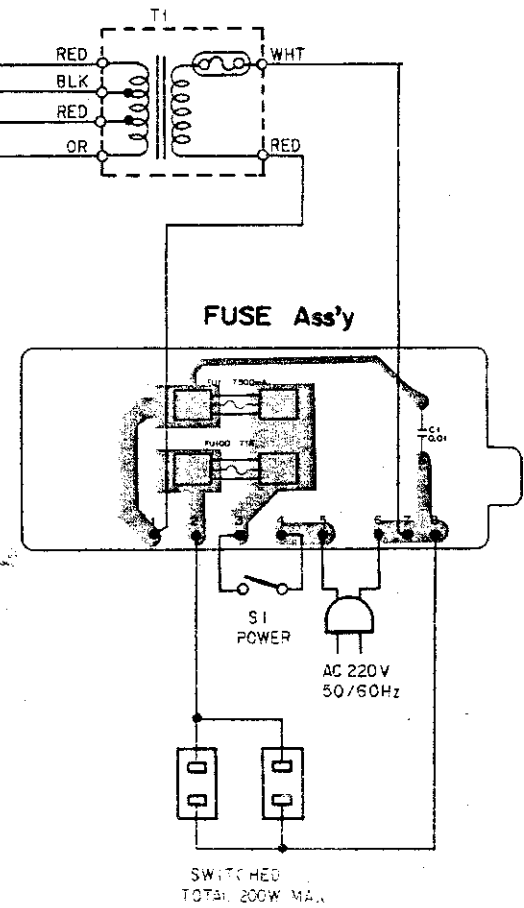
MIC VOLUME Ass'y



TONE CONTROL Ass'y GWG-155



SWITCH Ass'y GWS-311



FUSE Ass'y

1

2

3

4

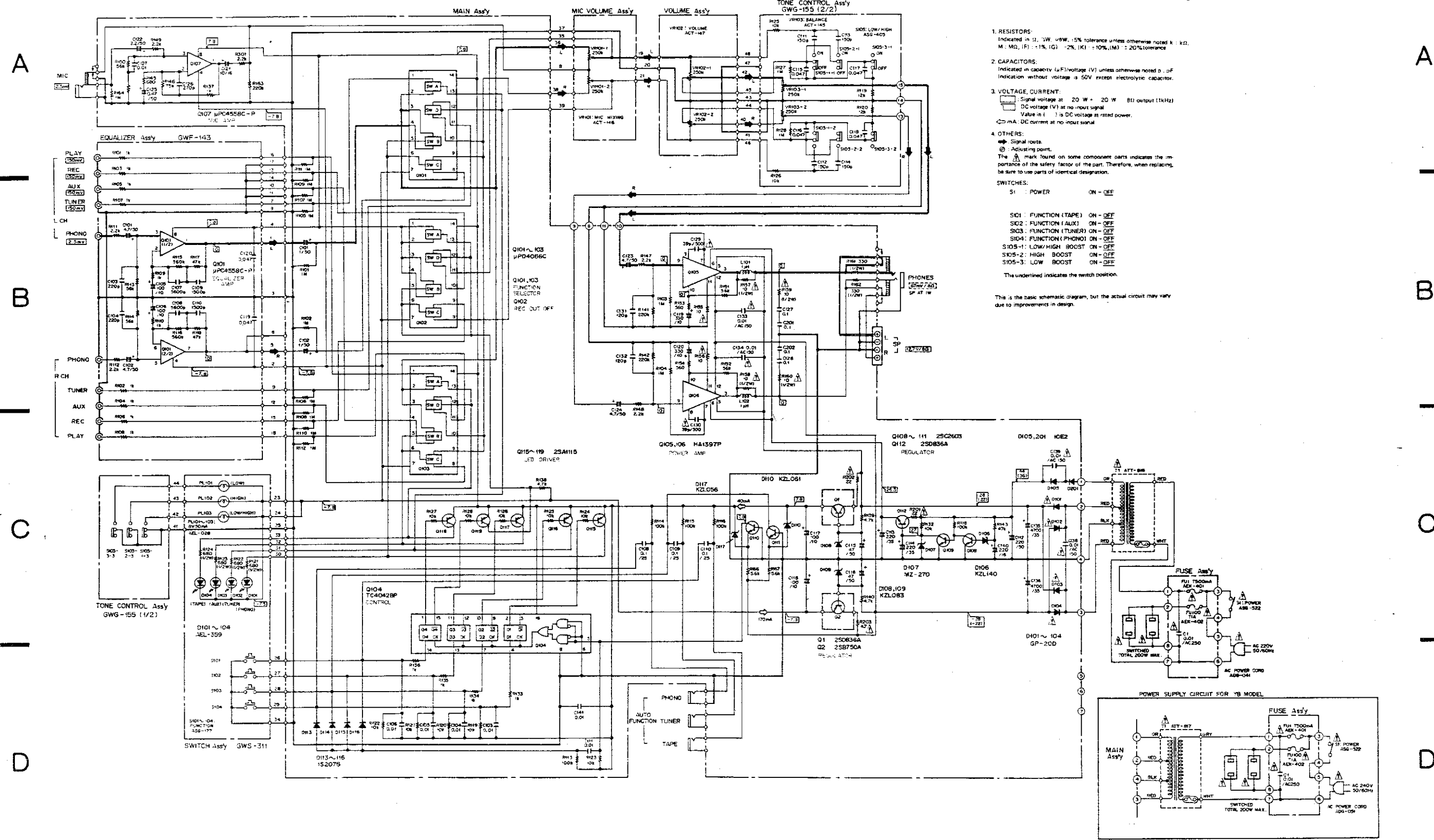
5

6



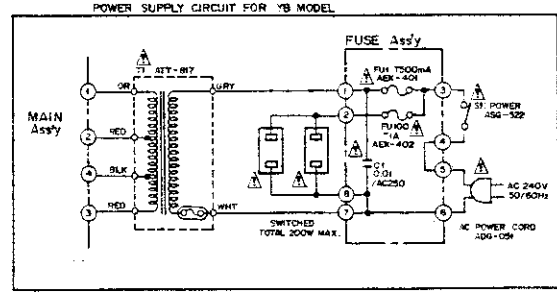
# 8. SCHEMATIC DIAGRAM

**NOTE:**  
 The indicated semiconductors are representative ones only. Other alternative semiconductors may be used and are listed in the parts list.



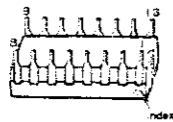
- RESISTORS:**  
 Indicated in Ω, kΩ, MΩ, unless otherwise noted k = 10<sup>3</sup>, M = 10<sup>6</sup>. (F) = 1%, (G) = 2%, (K) = 10%, (M) = 20% tolerance.
  - CAPACITORS:**  
 Indicated in capacity (μF) (voltage (V)) unless otherwise noted p = pF. Indication without voltage is 50V except electrolytic capacitor.
  - VOLTAGE, CURRENT:**  
 □ Signal voltage at 20 W + 20 W 80 output (1kHz)  
 □ DC voltage (V) at no input signal  
 Value in ( ) is DC voltage at rated power.  
 ◁ mA: DC current at no input signal
  - OTHERS:**  
 ● Signal route  
 ⊕ Adjusting point  
 The mark found on some components parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- SWITCHES:**  
 S1: POWER ON - OFF
- S01: FUNCTION (TAPE) ON - OFF  
 S02: FUNCTION (AUX) ON - OFF  
 S03: FUNCTION (TUNER) ON - OFF  
 S04: FUNCTION (PHONO) ON - OFF  
 S05-1: LOW/HIGH BOOST ON - OFF  
 S05-2: HIGH BOOST ON - OFF  
 S05-3: LOW BOOST ON - OFF
- The underlined indicates the switch position.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

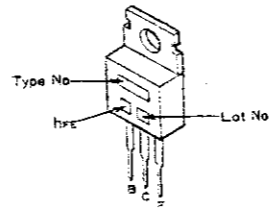


External Appearance of Transistors and ICs

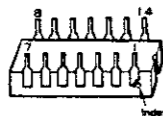
TC40422P  
μPD4042C



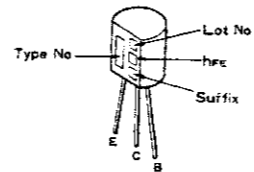
2SD836A  
2SB750A



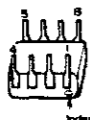
μPD4066C



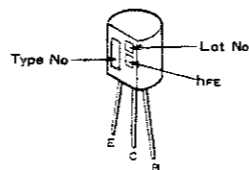
2SA733A  
2SC945A



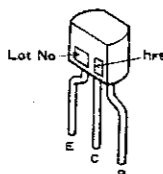
μPC4558C  
NJM4558DX



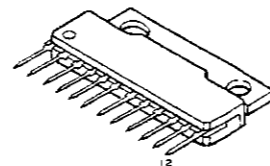
2SC1815  
2SA1015



2SC2603  
2SA1115



HA1397P



9. PARTS LIST

NOTES:

- When ordering resistors, first convert resistance values into code form as shown in the following examples.
  - Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).
    - 560Ω 56 × 10<sup>1</sup> 561 ..... RD¼PS 561J
    - 47kΩ 47 × 10<sup>3</sup> 473 ..... RD¼PS 473J
    - 0.5Ω 0R5 ..... RN2H 0R5K
    - 1Ω 010 ..... RS1P 010K
  - Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).
    - 5.62kΩ 562 × 100 5621 ..... RN¼SR 5621F
- The  $\Delta$  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.
- For your Parts Stock Control, the fast moving items are indicated with the marks **\*\*** and **\***.
  - \*\*** GENERALLY MOVES FASTER THAN **\***.
  - This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

9.1 MISCELLANEOUS PARTS

P.C. BOARD ASSEMBLIES

Mark	Part No.	Symbol & Description
	AWM-343	Main assembly (A)
	GWG-143	Equalizer assembly
	GWG-155	Tone control assembly
	GWS-311	Switch assembly

OTHERS

Mark	Part No.	Symbol & Description
$\Delta$	* ATT-816	T1 Power transformer (220V)
$\Delta$	** AEK-401	FU1 Fuse 500mA
$\Delta$	** AEK-402	FU100 Fuse 1A
	** 2SD836A	Q1 Transistor
	** 2SB750A	Q2 Transistor
$\Delta$	AKP-026	AC socket (AC OUTLETS)
$\Delta$	** ASG-522	S1 Push switch (POWER)
$\Delta$	ADG-041	AC power cord

9.2 MAIN ASSEMBLY (A) (AWM-343)

Main Assembly

CAPACITORS

Mark	Part No.	Symbol & Description
	CEANL 010M 50	C101, C102
	CEA 221M 50L	C112
	CEA 221M 35L	C113, C114
	CEA 470M 50L	C115, C116
	CEA 101M 10L	C117, C118
	CEA 331M 10L	C119, C120
	CEA 221M 16L	C140
	CEANL 100M 16	C121
	CEANL 2R2M 50	C122
	CEANL 4R7M 50	C123, C124
	CEANL R47M 50	C125
	QOMA 103K 50	C107
	QOMA 104K 50	C127, C128, C201, C202
	CKDYX 104M 25	C108, C109, C110
	CCDSL 271J 50	C126
$\Delta$	CCDSL 121J 50	C131, C132
$\Delta$	CCDSL 390K 500	C129, C130
	CKDYB 103K 50	C103-C106, C111
	CKDYF 103Z 50	C141
$\Delta$	ACG-019	C133, C134, C138, C139 (0.01/AC150V)
	ACH-229	C135, C136 (4700/35)

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Part No.	Symbol & Description
	RD¼PS 331J	R161, R162
$\Delta$	RD¼PSF 100J	R157-R160
$\Delta$	RF¼PS □□□J	R201-R203
$\Delta$	RD¼PMF 100J	R155, R156
	RD¼PM □□□J	R101-R116, R118-R128, R132-R143, R145-R154, R163, R164, R166, R167

SEMICONDUCTORS

Mark	Part No.	Symbol & Description
**	μPD4066C	Q101-Q103
**	TC4042BP (μPD4042C)	Q104
**	HA1397P	Q105, Q106
**	μPC4558C-P (NJM4558DX)	Q107
**	2SC2603/A/ (2SC945A) (2SC1815)	Q108-Q111
**	2SA1115/A/ (2SA733A) (2SA1015)	Q112 Q115-Q119
*	GP-200	D101-D104
*	10E2	D105, D201
*	KZL140	D106
*	MZ-270	D107
*	KZL083	D108, D109
*	KZL061	D110
*	1S2076 (US1035)	D113-D116
*	KZL056	D117

OTHERS

Mark	Part No.	Symbol & Description
	AKN-029	Phones jack (PHONES)
	AKN-033	Mic jack (MIC MIXING)
	AKN-034	Terminal (PHONO, TUNER, TAPE)
	AKE-048	Terminal (SPEAKERS)

MIC Volume Assembly

Mark	Part No.	Symbol & Description
*	ACT-146	VR101 Variable resistor 250k-B (MIC)

9.3 FUSE ASSEMBLY

Mark	Part No.	Symbol & Description
$\Delta$	ACG-001	C1 Ceramic capacitor (0.01/AC 250V)

ADDITIONAL

 PIONEER

# Service Manual

ORDER NO.  
ARP-074-0

STEREO AMPLIFIER

# A-X30 NEZ

- This additional service manual is applicable to the A-X30/NEZ type.
- The basic performance of the A-X30/NEZ type is the same as the A-X30/NE type.  
Please refer to the A-X30/NE type service manual <ARP-023-0> with the exception of this supplements.

## 1. SPECIFICATIONS

### Amplifier Section

Continuous Average Power Output is 17 watts\* per channel, min., at 8 ohms from 40 Hertz to 20,000 Hertz with no more than 0.5% total harmonic distortion.

Continuous Power Output at 1kHz (both channels driven)  
 T.H.D. 1%, 8 ohms . . . . . 18 watts per channel  
 Total Harmonic Distortion (40 hertz to 20,000 hertz, 8 ohms, from AUX)

continuous rated power output . . . No more than 0.5%  
 10 watts per channel power output . . . No more than 0.1%

Intermodulation Distortion (50 hertz: 7,000 hertz = 4:1, 8 ohms, from AUX)  
 continuous rated power output . . . No more than 0.3%  
 10 watts per channel power output . . . No more than 0.1%

Damping Factor (1,000 hertz, 8 ohms) . . . . . 20  
 Input (Sensitivity/Impedance)

PHONO . . . . . 2.5mV/50 kilohms  
 TUNER, AUX, TAPE PLAY . . . . . 150mV/50 kilohms  
 MIC . . . . . 2mV/50 kilohms

Phono Overload Level (T.H.D. 0.1%, 1,000Hz)  
 PHONO . . . . . 80mV

Output Level  
 TAPE REC . . . . . 150mV

Frequency Response  
 PHONO (RIAA Equalization) . . . . .  
 30Hz to 20,000Hz ±0.3dB

TUNER, AUX, TAPE PLAY . . . . .  
 10Hz to 60,000Hz  $\begin{matrix} +0 \\ -3 \end{matrix}$ dB

Tone Control (Volume control set at -30dB position)

Low Boost . . . . . +6dB (100Hz)  
 High Boost . . . . . +6dB (10kHz)  
 Low and High Boost . . . +6dB (100Hz), +6dB (10kHz)

Hum and Noise (DIN, continuous rated power output/50mW)

PHONO . . . . . 69dB/68dB  
 TUNER, AUX, TAPE PLAY . . . . . 84dB/68dB

### Miscellaneous

Power Requirements . . . . . AC 220V, 50Hz  
 Power Consumption . . . . . 120W  
 Dimensions . . . . . 320(W) x 98(H) x 227(D) mm  
 12-5/8(W) x 3-7/8(H) x 8-15/16(D) in  
 Weight (without package) . . . . . 3.6kg (7 lb 15 oz)

### Furnished Parts

Operating Instructions . . . . . 1

### NOTE:

Specifications and design subject to possible modification without notice.

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan  
 U.S. PIONEER ELECTRONICS CORPORATION 85 Oxford Drive, Moonachie, New Jersey 07074, U.S.A.  
 PIONEER ELECTRONIC (EUROPE) N.V., Luithagen-Haven 9, 2030 Antwerp, Belgium  
 PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia

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## 2. CONTRAST OF MISCELLANEOUS PARTS

**NOTES:**

- *Parts without part number cannot be supplied.*
- *The  $\Delta$  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.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks **\*\* and \***.*  
**\*\* GENERALLY MOVES FASTER THAN \***  
*This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.*

A-X30/NEZ type is the same as the A-X30/NE type except for following sections.

**P.C. BOARD ASSEMBLIES**

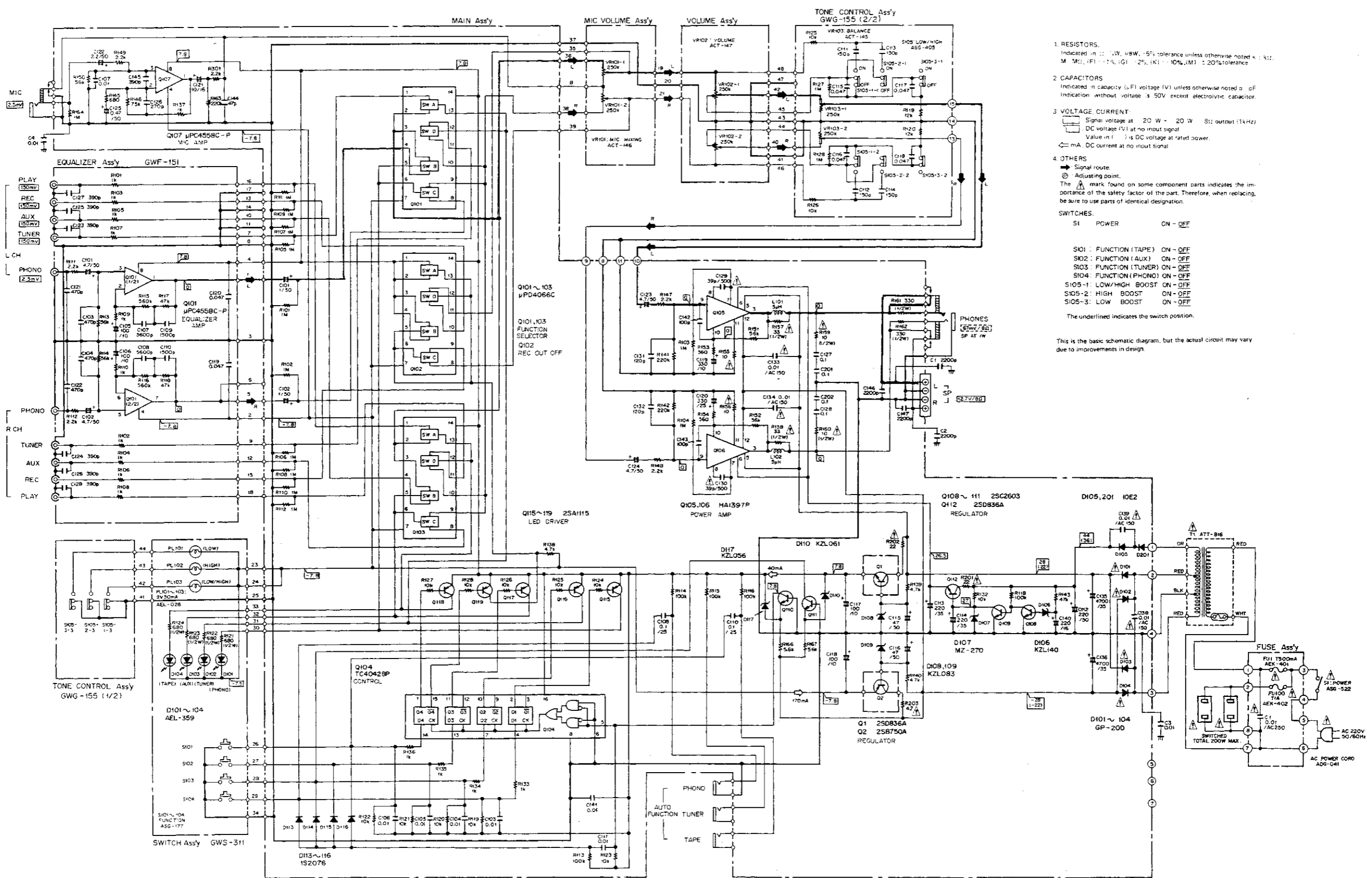
Mark	Symbol & Description	Part No.		Remarks
		NE type	NEZ type	
	Main assembly (A) Equalizer assembly	AWM-343 GWF-143	AWM-389 GWF-151	(Main assembly (B))

**MISCELLANEOUS PARTS**

Mark	Symbol & Description	Part No.		Remarks
		NE type	NEZ type	
	C1, C2 Capacitor	.....	CKDYB 222K 50	
	C3, C4 Capacitor	.....	CKDYB 103K 50	
	Operating instructions (English/German/French/ Italian)	ARE-012	.....	
	Operating instructions (German)	.....	ARC-002	

### 3. SCHEMATIC DIAGRAM

NOTE:  
The indicated semiconductors are representative ones only. Other alternative semiconductors may be used and are listed in the parts list.



- 1. RESISTORS:**  
Indicated in Ω, kΩ, MΩ, uW, 5% tolerance unless otherwise noted. k: kΩ, M: MΩ, Ω: Ω, 1K: 1k, 10K: 10k, 100K: 100k, 1M: 1M, 20% tolerance.
- 2. CAPACITORS:**  
Indicated in capacity (pF) voltage (V) unless otherwise noted. p: pF, indication without voltage is 50V except electrolytic capacitor.
- 3. VOLTAGE CURRENT:**  
Signal voltage at 20 W - 20 W 8Ω output (1kHz)  
DC voltage (V) at no input signal  
Value in I is DC current at rated power.  
mA: DC current at no input signal
- 4. OTHERS:**  
Signal route  
Adjusting point  
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.
- SWITCHES:**  
S1 POWER ON - OFF  
ON - OFF
- S101: FUNCTION (TAPE) ON - OFF  
S102: FUNCTION (AUX) ON - OFF  
S103: FUNCTION (TUNER) ON - OFF  
S104: FUNCTION (PHONO) ON - OFF  
S105-1: LOW/HIGH BOOST ON - OFF  
S105-2: HIGH BOOST ON - OFF  
S105-3: LOW BOOST ON - OFF
- The underlined indicates the switch position.
- This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

# 4. P.C. BOARD PATTERNS

## MAIN ASSEMBLY (A) (AWM-389)

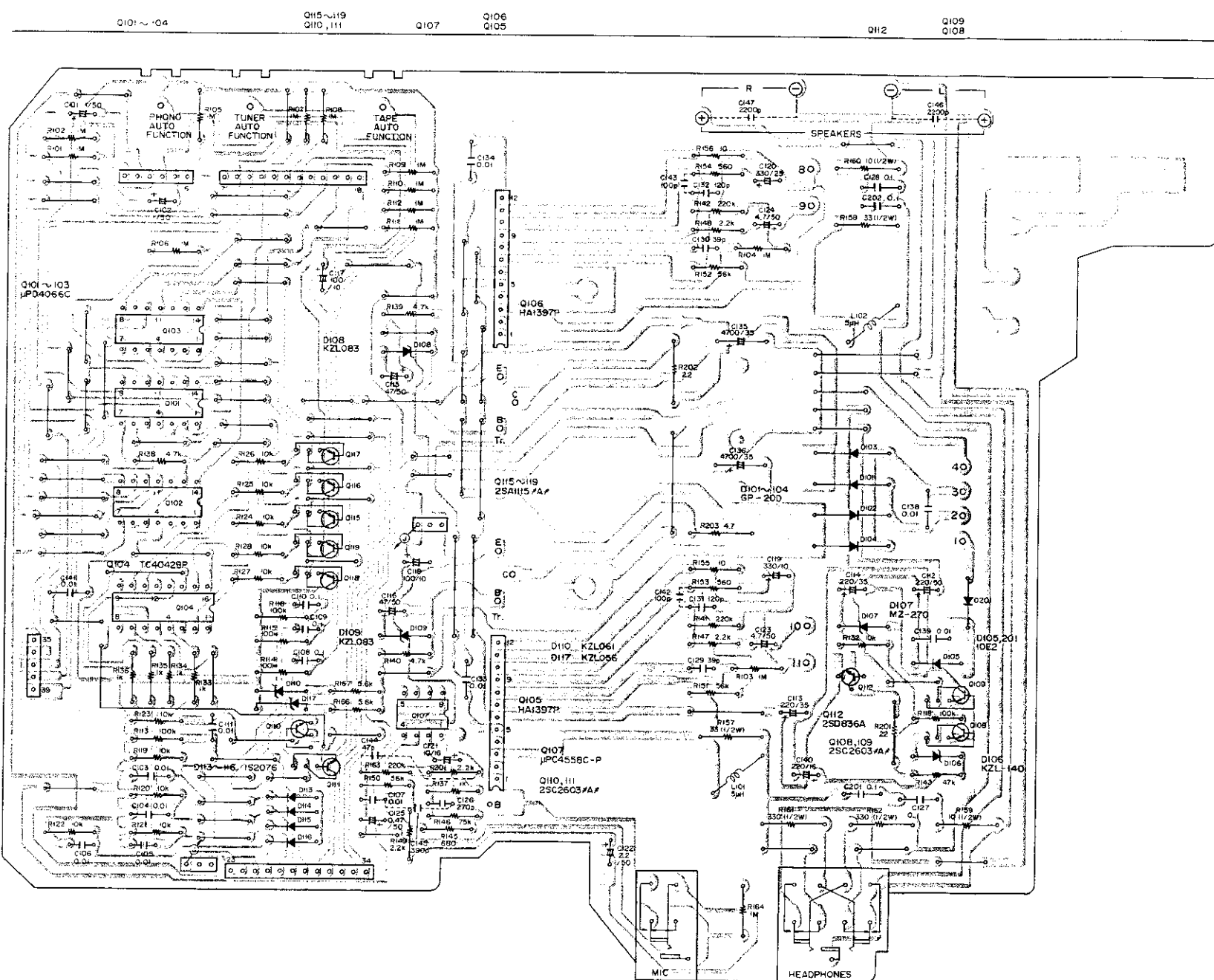
### Main Assembly

A

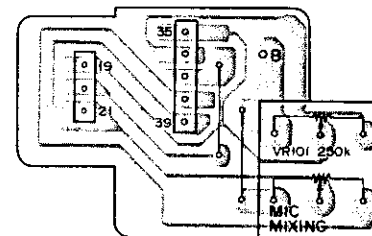
B

C

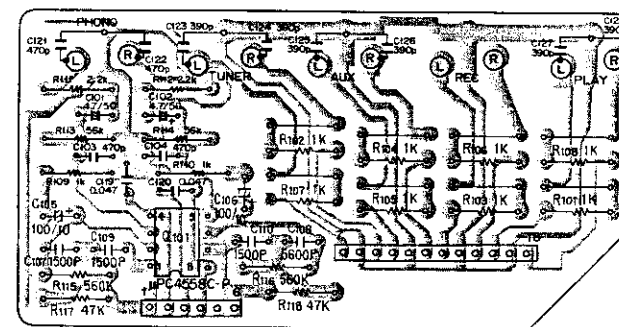
D



### MIC Volume assembly



### MAIN ASSEMBLY (B) Equalizer Assembly (GWF-151)



A

B

C

D

# 5. PARTS LIST

**NOTES:**

- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	56 × 10 <sup>1</sup>	561	RD½PS	561J
47kΩ	47 × 10 <sup>3</sup>	473	RD½PS	473J
0.5Ω	0R5		RN2H	0R5K
1Ω	010		RS1P	010K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	562 × 10 <sup>1</sup>	5621	RN½SR	5621F
--------	-----------------------	------	-------	-------

- The  $\Delta$  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.
- For your Parts Stock Control, the fast moving items are indicated with the marks **★★** and **★**.  
**★★ GENERALLY MOVES FASTER THAN ★.**  
 This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

## MAIN ASSEMBLY (A) (AWM-389)

### Nut

Mark	Part No.	Symbol & Description
	ABN-046	Union nut

Mark	Part No.	Symbol & Description
$\Delta$	ACG-019	C133, C134, C138, C139 (0.01/AC150V)
	ACH-229	C135, C136 (4700/35)

### Main Assembly

#### CAPACITORS

Mark	Part No.	Symbol & Description
	CEANL 010M 50	C101, C102
	CEA 221M 50L	C112
	CEA 221M 35L	C113, C114
	CEA 470M 50L	C115, C116
	CEA 101M 10L	C117, C118
	CEA 331M 10L	C119
	CEA 221M 16L	C140
	CEA 331M 25L	C120
	CEANL 100M 16	C121
	CEANL 2R2M 50	C122
	CEANL 4R7M 50	C123, C124
	CEANL R47M 50	C125
	CQMA 103K 50	C107
	CQMA 104K 50	C127, C128, C201, C202
	CKDYX 104M 25	C108, C110
	CCDSL 271J 50	C126
	CCDSL 121J 50	C131, C132
	CCDSL 101J 50	C142, C143
$\Delta$	CCDSL 390K 500	C129, C130
	CKDYB 391K 50	C145
	CKDYB 103K 50	C103-C106, C111
	CKDYB 222K 50	C146, C147
	CKDYF 103Z 50	C141
	CCDSL 470J 50	C144

#### RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Part No.	Symbol & Description
$\Delta$	RD½PSF □□□J	R157-R160
	RD½PS 331J	R161, R162
$\Delta$	RD½PMF 100J	R155, R156
$\Delta$	RF½PS □□□J	R201-R203
	RD½PM □□□J	R101-R116, R118-R128, R132-R143, R145-R154, R163, R164, R166, R167, R301

#### SEMICONDUCTORS

Mark	Part No.	Symbol & Description
★★	μPD4066C	Q101-Q103
★★	TC4042BP	Q104
	(μPD4042C)	
★★	HA1397P	Q105, Q106
★★	μPC4558C-P (NJM4558DX)	Q107
★★	2SC2603/A/ (2SC945A)	Q108-Q111
	(2SC1815)	
★★	2SD836A	Q112
	2SA1115/A/ (2SA733A)	Q115-Q119
	(2SA1015)	

Mark	Part No.	Symbol & Description
★	GP-20D	D101—D104
★	10E2	D105, D201
★	KZL140	D106
★	MZ-270	D107
★	KZL083	D108, D109
★	KZL061	D110
★	1S2076 (US1035)	D113—D116
★	KZL056	D117

**OTHERS**

Mark	Part No.	Symbol & Description
	AKB-078	Terminal (REC/PLAY)
	AKB-079	Terminal (PHONO/TUNER/ AUX)

**OTHERS**

Mark	Part No.	Symbol & Description
	AKN-029	Phones jack (PHONES)
	AKN-033	Mic jack (MIC MIXING)
	AKN-034	Terminal (PHONO, TUNER, TAPE)
	AKE-048	Terminal (SPEAKERS)

**MIC Volume Assembly**

Mark	Part No.	Symbol & Description
★	ACT-146	VR101 Variable resistor 250K-B (MIC)

**MAIN ASSEMBLY (B)****Equalizer Assembly (GWF-151)****CAPACITORS**

Mark	Part No.	Symbol & Description
	CEANL 4R7M 50	C101, C102
	CKDYB 471K 50	C103, C104, C121, C122
	CEA 101M 10L	C105, C106
	CQMA 562J 50	C107, C108
	CQMA 152J 50	C109, C110
	CKDYF 473Z 50	C119, C120
	CKDYB 391K 50	C123, C124
	CKDYB 391K 50	C125—C128

**RESISTORS**

*Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.*

Mark	Part No.	Symbol & Description
	RD¼PM □□□J	R101—R118

**SEMICONDUCTORS**

Mark	Part No.	Symbol & Description
★★	μPC4558C-P (NJM4558DX)	Q101



**9.4 MAIN ASSEMBLY (B)**

**Equalizer Assembly (GWF-143)**

**CAPACITORS**

Mark	Part No.	Symbol & Description
	CEANL 4R7M 50	C101, C102
	CCDSL 221J 50	C103, C104
	CEA 101M 10L	C105, C106
	CQMA 562J 50	C107, C108
	CQMA 152J 50	C109, C110
	CKDYF 473Z 50	C119, C120

**RESISTORS**

*Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.*

Mark	Part No.	Symbol & Description
	RD4PM 000 J	R101-R118

**SEMICONDUCTORS**

Mark	Part No.	Symbol & Description
★★	μPC 4558C-P (NJM4558DX)	Q101

**OTHERS**

Mark	Part No.	Symbol & Description
	AKB-078	Terminal (REC/PLAY)
	AKB-079	Terminal (PHONO/TUNER/AUX)

**Tone Control Assembly (GWG-155)**

**CAPACITORS**

Mark	Part No.	Symbol & Description
	CCDSL 151J 50	C111-C114
	CQMA 473J 50	C115-C118

**RESISTORS**

*Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.*

Mark	Part No.	Symbol & Description
	RD4PM 000 J	R119, R120, R125-R128

**OTHERS**

Mark	Part No.	Symbol & Description
★	ACT-145	VR103 Variable resistor 250k-B (BALANCE)
★★	ASG-405	S105 Push switch (TONE)

**Switch Assembly (GWS-311)**

**RESISTORS**

Mark	Part No.	Symbol & Description
	RD4PS 681J	R121-R124

**SEMICONDUCTORS**

Mark	Part No.	Symbol & Description
★	AEL-359	D101-D104

**OTHERS**

Mark	Part No.	Symbol & Description
★★	ASG-177	S101-S104 Tact switch
★★	AEL-028	PL101-PL103 Pilot lamp 8V50mA

**Main Volume Assembly**

**RESISTOR**

Mark	Part No.	Symbol & Description
★	ACT-147	VR102 Variable resistor 250k-B (VOLUME)

**10. FOR YB TYPES**

Model A-X30 YB type is the same as the A-X30 NE type with the exception of following sections.

**CONTRAST OF MISCELLANEOUS PARTS**

Mark	Symbol & Description	Part No.		Remarks
		NE type	YB type	
★	T1 Power transformer (220V)	ATT-816	.....	
★	T1 Power transformer (240V)	.....	ATT-817	
	AC socket (AC OUTLETS)	AKP-026	AKP-044	
	AC power cord	ADG-041	ADG-051	
	Operating instructions (English/German/ French/Italian)	ARE-012	.....	
	Operating instructions (English)	.....	ARB-444	