

MONITOR SPEAKER MSP10

SERVICE MANUAL



■ CONTENTS

SPECIFICATIONS	.....	3
PANEL LAYOUT	.....	4
BLOCK DIAGRAM	.....	4
CIRCUIT BOARD LAYOUT	.....	4
DIMENSIONS	.....	4
DISASSEMBLY PROCEDURE	.....	5
CIRCUIT BOARD	.....	6
INSPECTIONS	.....	7/9
OVERALL CIRCUIT DIAGRAM		
PARTS LIST		

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 IWare 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 all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

IMPORTANT : This presentation or sale of this manual to any individual or firm does not constitute authorization certification, recognition of any applicable technical capabilities, or establish a principal-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 changes in specification 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 parts replacement. Recheck all work before you apply power to the unit.

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 WHAT SO EVER!

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.

■ WARNING

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

■ SPECIFICATIONS

General specifications

Type..... Amplified 2Way Bass Reflex Powered Speaker (Bi-Amp.)
 Crossover Frequency 2.0 kHz, 30 dB/oct
 Frequency Range 40 Hz to 40 kHz (-10 dB)
 Sensitivity -10 dB at -6 dB position (for 100 dB/SPL, 1 m on Axis)
 Maximum Output Level 110 dB (1 m on Axis)
 Dimensiones (W × H × D)..... 265 × 420 × 329 mm
 Weight..... 20 kg

Speaker unit

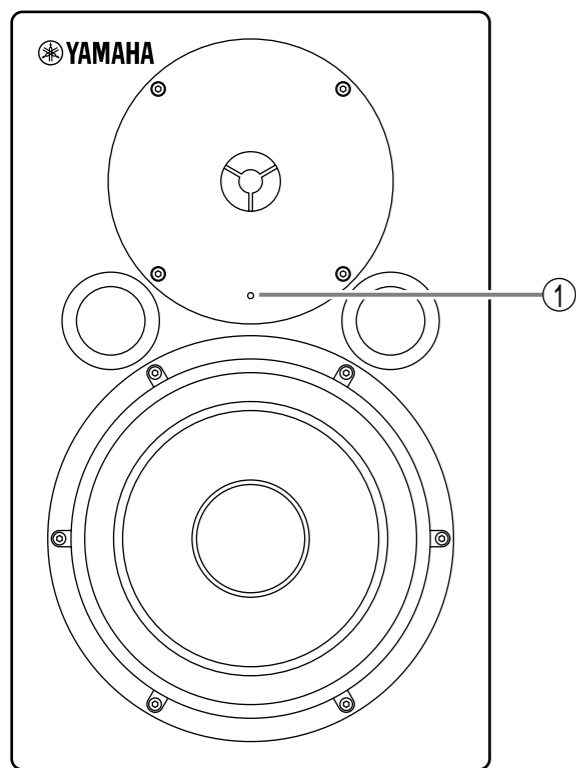
Speaker Unit LF: 20 cm Cone (4Ω, magnetic shielded)
 HF: 2.5 cm Titan Dome (8Ω, magnetic shielded)
 Enclosure Type: Bass Reflex

Amp.unit

Maximum Output Power..... LF: 120 W at 400 Hz, THD= 0.02%, RL= 4 Ω
 HF: 60 W at 10 kHz, THD= 0.02%, RL= 8 Ω
 Input Sensitivity/Impedance -6 dB to +4 dB/10 kΩ
 Hum & Noise..... ≤-67 dBu (Volume= Min) DIN Audio filter
 Signal to Noise Ratio..... ≥98 dB (IEC-A Weighting)
 Controls TRIM Switch
 LOW: 3 positions (0 dB, -1.5 dB, -3 dB at 50 Hz)
 HIGH: 3 positions (+1.5 dB, 0 dB, -1.5 dB at 10 kHz)
 LOW CUT Switch: ON/OFF
 SENSITIVITY Control
 POWER Switch: ON/OFF
 Connectors Input XLR-3-31
 Power Indicator/Clip Indicator ... Green/Red LED
 Power Requirement..... USA and Canada: AC 120 V, 60 Hz
 Europe: AC 230 V, 50 Hz
 Others: AC 240 V, 50 Hz
 Power Consumption..... 150 W
 Option Wall mounting bracket BWS251-300

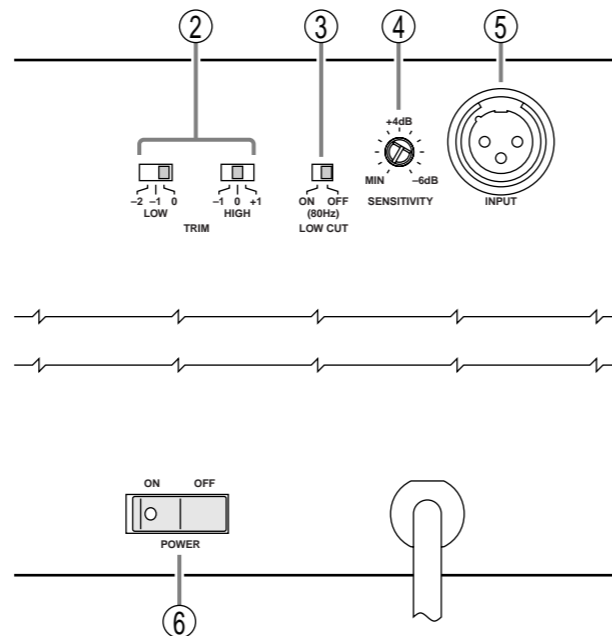
PANEL LAYOUT

• Front panel

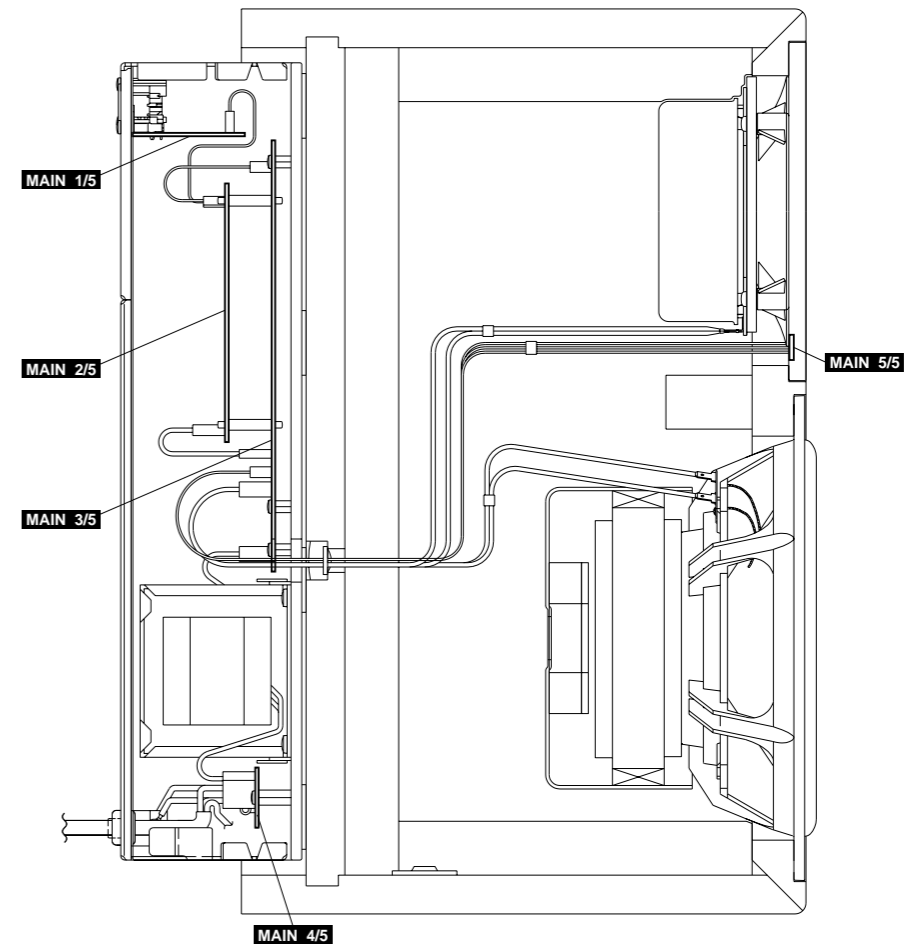


- ① Power/Clip indicator
- ② TRIM switches
- ③ LOW CUT switch
- ④ SENSITIVITY control
- ⑤ INPUT jack
- ⑥ POWER switch

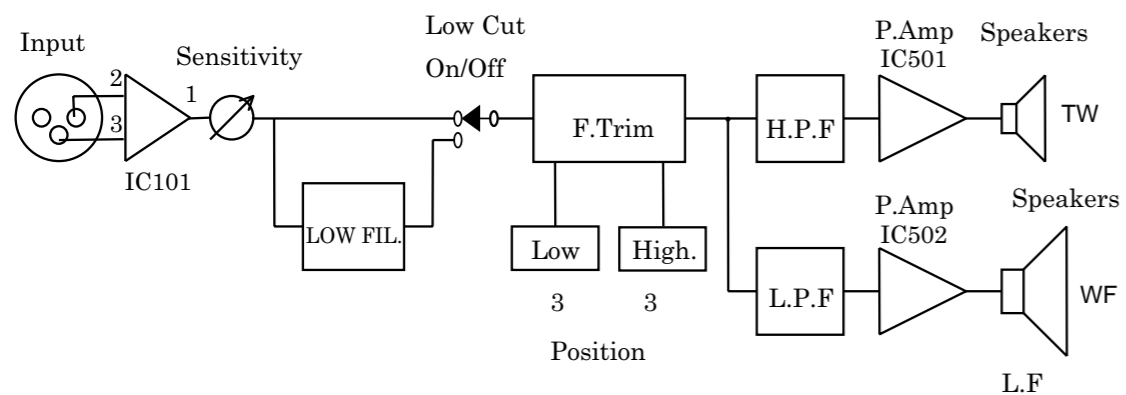
• Rear panel



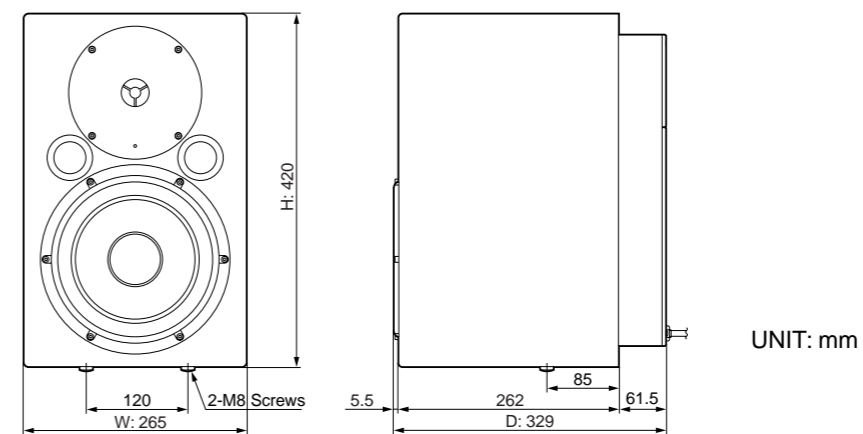
CIRCUIT BOARD LAYOUT



BLOCK DIAGRAM



DIMENSIONS



UNIT: mm

DISASSEMBLY PROCEDURE

1. **Woofers**
Remove the six (6) screws marked [110a]. The woofers can then be removed. (Fig. 1)
2. **Tweeter**
Remove the four (4) screws marked [110b]. The tweeter can then be removed. (Fig. 1)
3. **Control Panel**
Remove the four (4) screws marked [A170]. The control panel can then be removed. (Fig. 2)
4. **Rear Panel**
Remove the six (6) screws marked [130]. The rear panel can then be removed. (Fig. 2)
5. **MAIN 1/5 Circuit Board**
 - 5-1 Remove the control panel. (See procedure 3.)
 - 5-2 Remove the three (3) screws marked [A130]. The MAIN 1/5 circuit board can then be removed. (Fig. 2)
6. **MAIN 2/5 Circuit Board**
 - 6-1 Remove the control panel. (See procedure 3.)
 - 6-2 Remove the rear panel. (See procedure 4.)
 - 6-3 Remove the four (4) spacer supports from the MAIN 2/5 circuit board. (Fig. 3)
7. **MAIN 3/5 Circuit Board**
 - 7-1 Remove the MAIN 2/5 circuit board. (See procedure 6.)
 - 7-2 Remove the eight (8) screws marked [A150]. The TR press metal A marked [A70] and the TR press metal B marked [A80] can then be removed. (Fig. 3)
 - 7-3 Remove the all transistor that stick to the thermally conductive sheets.
 - 7-4 Remove the four (4) screws marked [A140a]. The MAIN 3/5 circuit board can then be removed. (Fig. 3)
8. **MAIN 4/5 Circuit Board**
 - 8-1 Remove the rear panel. (See procedure 4.)
 - 8-2 Remove the two (2) screws marked [A140b]. The MAIN 4/5 circuit board can then be removed. (Fig. 3)
9. **MAIN 5/5 Circuit Board**
 - 9-1 Remove the tweeter. (See procedure 2.)
 - 9-2 Remove the two screws marked [150]. The MAIN 5/5 circuit board can then be removed. (Fig. 4)
10. **Power Transformer**
 - 10-1 Remove the rear panel. (See procedure 4.)
 - 10-2 Remove the four (4) screws marked [A160]. The power transformer can then be removed. (Fig. 3)

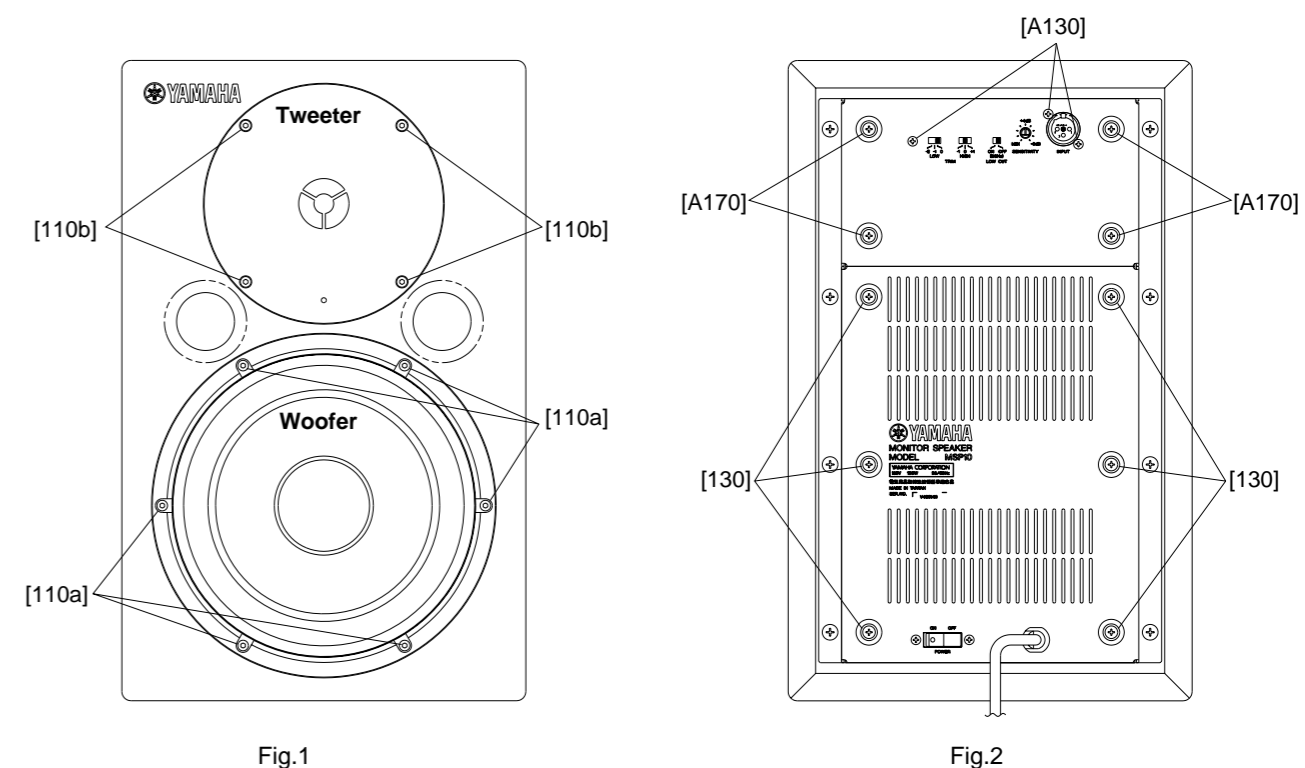


Fig.1

Fig.2

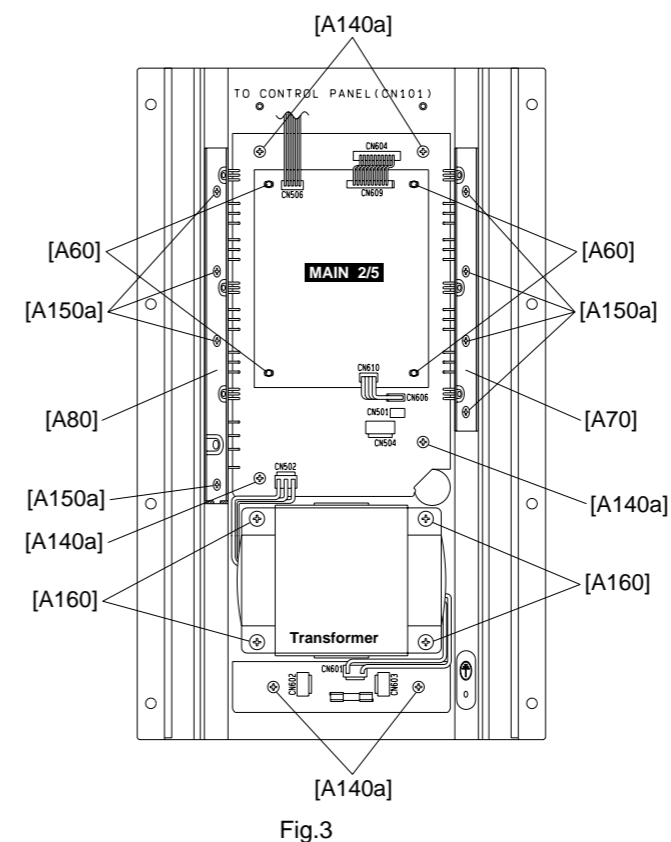


Fig.3

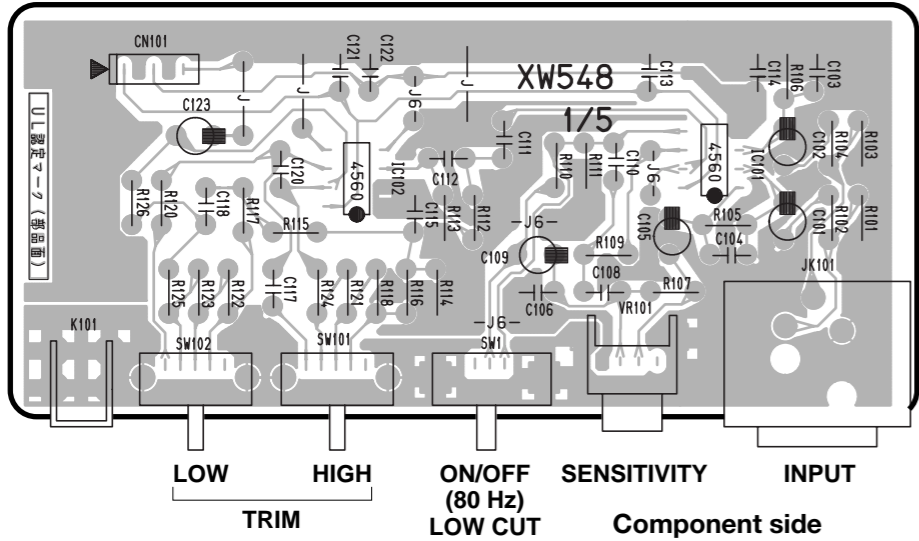
Fig.4

CIRCUIT BOARD

● MAIN Circuit Board

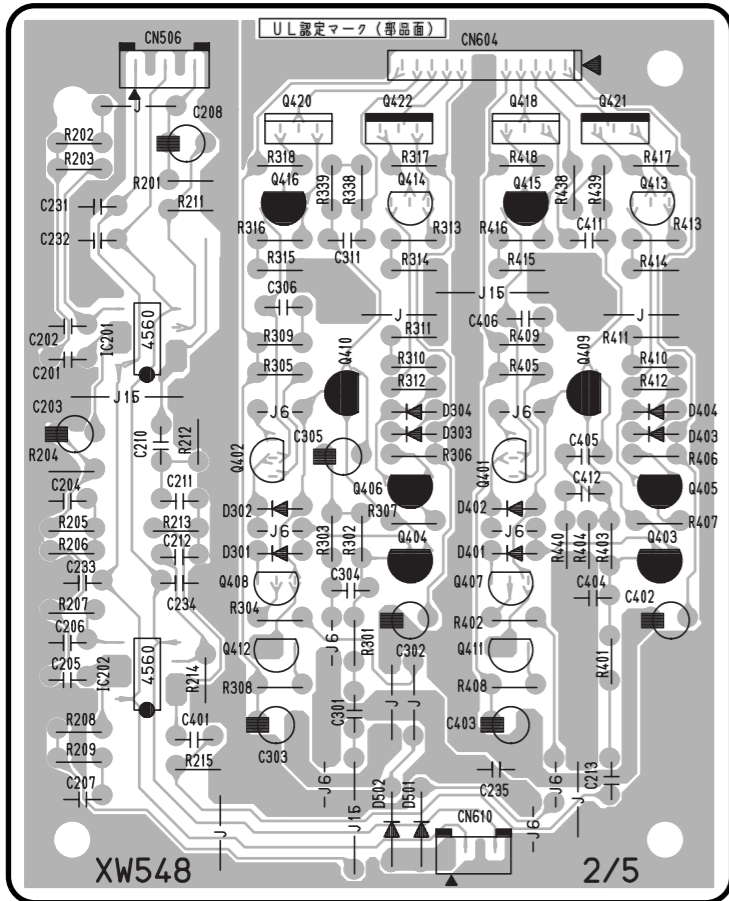
MAIN 1/5

CN101: to MA2/5-CN506



MAIN 2/5

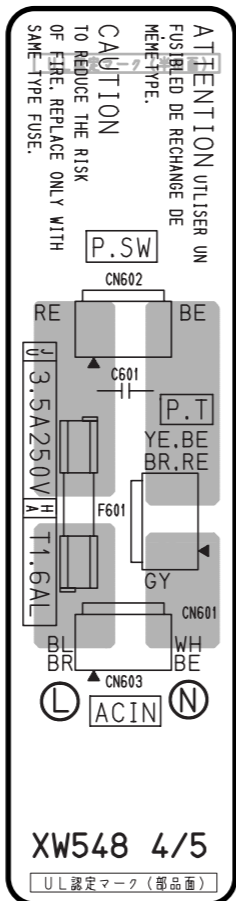
CN506: to MA1/5-CN101 CN604: to MA3/5-CN609



CN610: to MA3/5-CN606

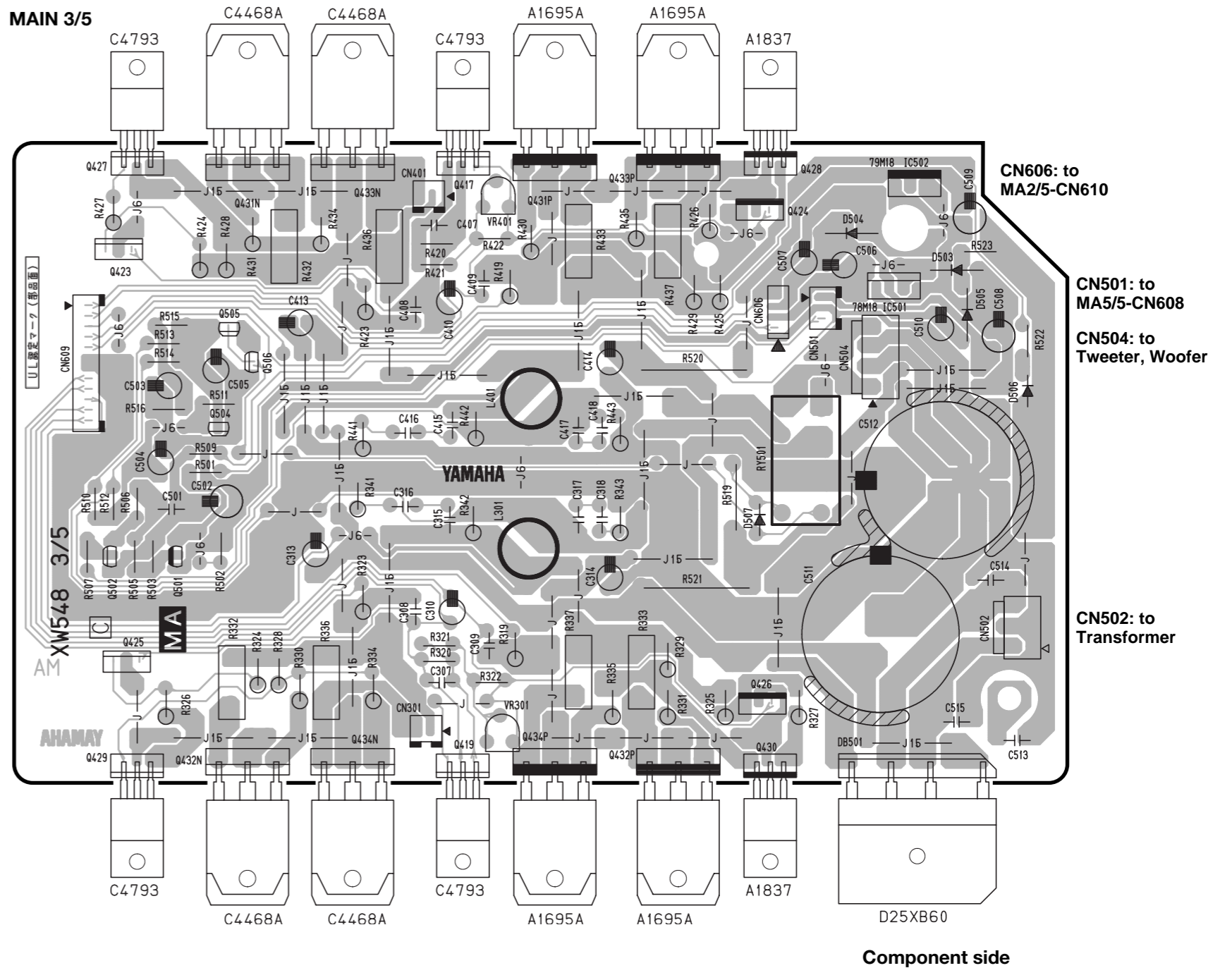
Component side

MAIN 4/5



Component side

MAIN 3/5



CN609: to MA2/5-CN604

CN602: to Power Switch

CN601: to Transformer

CN603: to AC IN

CN606: to MA2/5-CN610

CN501: to MA5/5-CN608

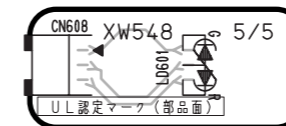
CN504: to Tweeter, Woofer

CN502: to Transformer

Component side

MAIN 5/5

CN608: to MA3/5-CN501



Component side

Note : See parts list for details of circuit board component parts.

INSPECTIONS

A. Preparation

Load resistance	Speaker terminal	Wo (CN504: 4-3PIN)	RL = 4W
		Tw (CN504: 1-2PIN)	RL = 8W
Knob	SENSITIVITY	MAX (-6 dB)	
	TRIM	LOW	0
		HIGH	0
		LOW CUT	OFF

RL: Non-inductive resistance, 200W or more power

B. Inspection and Adjustment

1. Muting Operation

When the power switch is turned on, check that the muting operation is cancelled within 3 ± 1 seconds and that the relay turns on.

2. Idling Current

Adjust the VR 302 and 401 so that the voltage obtained between pins 1 and 2 of CN 301 and 401 is 0.7 ± 0.15 mV respectively.

3. Mid-point Potential

When no signal is applied, check to ensure that the DC voltage between the speaker terminals is less than ± 50 mV.

4. Gain

When a 400 Hz sine wave signal is applied to the input terminal, check that the output level is as described in the following table.

Input terminal		Input level	Speaker LF terminal
LINE IN	XLR balanced	-10 dBu	+16.6 dBu +/- 2 dB

5. Total Harmonic Distortion

When a 400 Hz sine wave signal is applied to the input terminal (LINE1) and the output level at the LF terminal of the speaker is 29.0 dBu, check that the total harmonic distortion (T.H.D.) is less than 0.1%.

Next, change the input signal to 10 kHz and the output at the HF terminal of the speaker will be 29.0 dBu, check that the T.H.D. is less than 0.1%.

6. Noise Level

When the input terminal is connected with 600 ohm, check that the noise level is as described in the table below. Use an IHF-A filter for the noise meter (measurement will not be affected by inductive noise).

Residual noise	SPEAKER LF	less than -76 dBu
	SPEAKER HF	less than -71 dBu
MAX noise	SPEAKER LF	less than -75 dBu
	SPEAKER LF	less than -69 dBu

7. Frequency Response in the Normal State (trim switch at "0")

Use the output voltage obtained at the LF terminal when a 1 kHz, -20 dBu sine wave signal is input as a reference (0dB), and change the input frequency to check that the frequency response at the LF and HF terminals vary accordingly as shown in the table below.

Input frequency (Hz)	Output terminal LF	Output terminal HF
100	+5.5 +/- 1.2 dB	-
1k	0 dB	-
2k	-5.0 +/- 1.0 dB	-5.0 +/- 2.5 dB
10k	-	+5.5 +/- 2.0 dB

8. Variation Response of TRIM

Use the output level when the TRIM (HIGH, LOW) is "0" as reference (0dB) for the speaker terminals LF and HF respectively, check that the output level varies as shown in the table below when 50 Hz and 10 kHz, -20 dBu sine wave signals are applied to LINE IN.

Applied signal	EQ	Switch knob setting			
		+1	0	-1	-2
50Hz	LOW	-	-	+1.5 +/- 1.0 dB	-3.0 +/- 2.0 dB
10kHz	HIGH	+1.5 +/- 1.0 dB	+1.5 +/- 1.0 dB	-	-

9. Low Cut Filter

Use the output voltage at output terminal LF when an 80 Hz, -20 dBu sine wave signal is applied to the input terminal and the low cut filter switch is turned off as reference (0dB), and check that it is -3.0 +/-1.5 dB when the switch is turned on.

10. Stability

When the power voltage varies by +/-10%, or a 100P to 0.002 μ F capacitor is connected to the speaker terminal, check that no abnormal condition such as oscillation occurs.

11. Protection Circuit

When the CN601 connector is disconnected from the connector, check that the relay turns off within one second; when the CN601 connector is connected, check that the relay turns on within 5 seconds .

12. Clip Indicator

When 400 Hz or 7 kHz +10 dBu signal is input to the LINE input terminal respectively, check that the LED color changes from green to red.

13. Phase of Speaker

Check that the output of both LF and HF terminals are in phase with respect to the input.

14. Others

Connect the speaker system and the amplifier unit.

When a 40 Hz to 20 kHz sine wave signal or a music signal are applied, check that no abnormality occurs, such as voice coil contact, air leakage and vibration.

(The power amplifier output level is not clipped)

Also, when each knob is moved, check that the sound volume and quality vary smoothly.

MONITOR SPEAKER

MSP10

PARTS LIST


CONTENTS

OVERALL ASSEMBLY	.....	2
ELECTRICAL PARTS	.....	4

Notes : DESTINATION ABBREVIATIONS

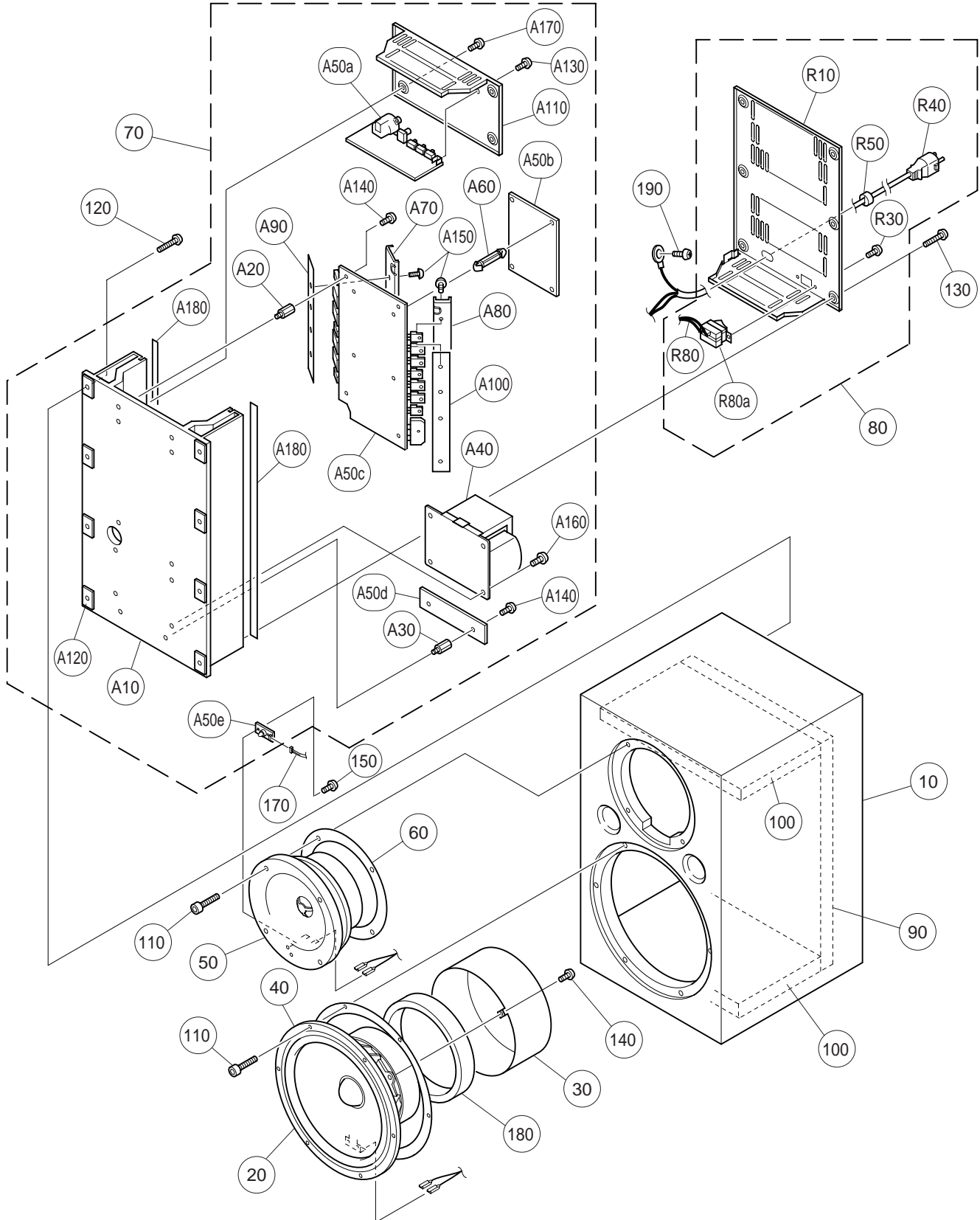
A : Australian model	M: South African model
B : British model	O: Chinese model
C : Canadian model	Q: South-east Asia model
D: German model	T : Taiwan model
E : European model	U: U.S.A. model
F : French model	V : General export model (110V)
H : North European model	W: General export model (220)
I : Indonesian model	N,X : General export model
J : Japanese model	Y : Export model

■ WARNING

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

- The numbers "QTY" show quantities for each unit.
- The parts with "--" in "PART NO." are not available as spare parts.
- This mark "}" in the REMARKS column means these parts are interchangeable.
- The second letter of the shaded (■) part number is O, not zero.
- The second letter of the shaded (■) part number is I, not one.

OVERALL ASSEMBLY



REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	--	OVERALL ASSEMBLY		MSP10		
	--	Overall Assembly	J	J (V434980)		
	--	Overall Assembly	U	U, V (V435000)		
	--	Overall Assembly	H	H, W (V435010)		
	--	Overall Assembly	B	B (V435410)		
	--	Overall Assembly	A	A (V435030)		
* 10	V4350500	Cabinet Assembly	J			
* 20	XW556A00	Speaker	200mm			
30	--	Magnetic Shield Cover	J	(V435150)		
40	--	Gasket	Woffer	(V435070)		
50	XW555A00	Speaker	25mm			
60	--	Gasket	Tweeter	(V435080)		
70	--	AMP Assembly	J	J (V435110)		
70	--	AMP Assembly	U V	U, V (V435230)		
70	--	AMP Assembly	H	H, W, B (V435260)		
70	--	AMP Assembly	A	A (V435430)		
80	--	Rear Panel Assembly	J	J (V435120)		
80	--	Rear Panel Assembly	U	U, V (V435240)		
80	--	Rear Panel Assembly	H	H, W (V435250)		
80	--	Rear Panel Assembly	B	B (V435340)		
80	--	rear Panel Assembly	A	A (V435440)		
90	--	Felt		(V435090)		
100	--	Felt		(V435100)		
* 110	V4352000	Cap Screw	4X25		2	10
120	VB664500	Bind Head Screw	5.0X30 MFZN2BL		8	8
130	VJ254100	Bonding Tapping Screw-B	4.0X10 MFZN2BL		6	6
140	EG340190	Bind Head Tapping Screw-B	4.0X8 MFZN2BL		2	2
150	EP600190	Bind Head Tapping Screw-B	3.0X8 MFZN2BL		2	2
170	--	Connector Assembly	C&F	(V435780)		
180	--	Spacer	RUBBER SPONGE	(V441130)		
190	VC688800	Bind Head Tapping Screw-B	A 4.0X8 MFZN2BL	U, H, B, A, V, W		
	--	AMP Assembly	J	J (V435110)		
	--	AMP Assembly	U V	U, V (V435230)		
	--	AMP Assembly	H	H, W, B (V435260)		
	--	AMP Assembly	A	A (V435430)		
* A10	V4348100	Heat Sink				
A20	VV086500	Support	H=7.4 B=5.5		4	
A30	V2437700	Support	H=15.0 B=7.0 M4/M3		2	
A40	XW540A00	Power Transformer	A	J		
A40	XW541A00	Power Transformer	UC A(B)	U, V		
A40	XW542A00	Power Transformer	CEE H	H, W, B		
A40	XW543A00	Power Transformer	A A	A		
A50a	AA08840	Circuit Board	MAIN 1/5			
A50b	AA08850	Circuit Board	MAIN 2/5			
A50c	AA08860	Circuit Board	MAIN 3/5			
A50d	AA08870	Circuit Board	MAIN 4/5 J UC	J, U, V		
A50d	AA08880	Circuit Board	MAIN 4/5	H, W, B, A		
A50e	AA08890	Circuit Board	MAIN 5/5			
A60	--	Spacer Support	KCA-20 PIN GOO	(V434820)	4	
A70	--	TR Press Metal A		(V434850)		
A80	--	TR Press Metal B		(V434860)		
* A90	V4348700	Thermally Conductive Sheet	UNISHEET T=0.15			
* A100	V4348800	Thermally Conductive Sheet	UNISHEET T=0.15			
* A110	V4348900	Control Panel				
A120	--	Stopper Rubber	CR	(V435040)	8	
A130	VN413300	Bonding Tapping Screw-B	3.0X8 MFZN2BL		3	
A140	EG330360	Bind Head Screw	3.0X6 MFZN2BL		6	
A150	VQ074600	Bind Head Tapping Screw-B	3.0X12 MFZN2BL		9	
* A160	V4349000	Bind Head Screw	4.0X6 MFZN2BL		4	
A170	VJ254100	Bonding Tapping Screw-B	4.0X10 MFZN2BL		4	
A180	--	Heat Insulating Sheet		H, W, B (V466130)	2	
	--	Rear Panel Assembly	J	J (V435120)		
	--	Rear Panel Assembly	U	U, V (V435240)		
	--	Rear Panel Assembly	H	H, W (V435250)		
	--	Rear Panel Assembly	B	B (V435340)		
	--	Rear Panel Assembly	A	A (V435440)		
* R10	V4351400	Rear Panel	J	J		
* R10	V4354600	Rear Panel	UV	U, V		
* R10	V4354700	Rear Panel	HWB	H, W, B		
* R10	V4354800	Rear Panel	A	A		
R30	EG330360	Bind Head Screw	3.0X6 MFZN2BL		2	
R40	V3277000	AC Cord	J VCTF 2X0.75 12A	J		
R40	VV205600	AC Cord	UC SJT 3X#18 10A	U, V		
R40	V3277100	AC Cord	E H05VV-F3X0.7510A	H, W, A		
R40	VV058300	AC Cord	BS H05VV-F3X0.75	B		
R50	VV103100	Cord Strain Relief	SR-6P1			
R80	--	Connector Assembly	PSW	(V434610)		
R80a	VM744600	Switch	SDDTA1-A-1 J.U.C.H	POWER		

* New Parts

RANK : Japan only

ELECTRICAL PARTS

REF NO.	PART NO.	DESCRIPTION	REMARKS	QTY	RANK
		ELECTRICAL PARTS	MSP10		
*	AA08840	Circuit Board	MAIN 1/5 (XW548C0)		
*	AA08850	Circuit Board	MAIN 2/5 (XW548C0)		
*	AA08860	Circuit Board	MAIN 3/5 (XW548C0)		
*	AA08870	Circuit Board	MAIN 4/5 J UC (XW548C0)		
*	AA08880	Circuit Board	MAIN 4/5 (XW548C0)		
*	AA08890	Circuit Board	MAIN 5/5 (XW548C0)		
*	AA08840	Circuit Board	MAIN 1/5 (XW548C0)		
*	AA08850	Circuit Board	MAIN 2/5 (XW548C0)		
*	AA08860	Circuit Board	MAIN 3/5 (XW548C0)		
*	AA08870	Circuit Board	MAIN 4/5 J UC (XW548C0)		
*	AA08880	Circuit Board	MAIN 4/5 (XW548C0)		
*	AA08890	Circuit Board	MAIN 5/5 (XW548C0)		
	VV319600	Fuse Holder	CQ-05CT		01
	VV291400	Jumper Wire	0.6		01
CN101	--	Connector Assembly	B&C 5P#24L70 (V434580)		
CN301	VV066200	Connector Base Post	M2426XX 2P TE		01
CN401	VV066200	Connector Base Post	M2426XX 2P TE		01
CN501	VV066300	Connector Base Post	M2426XX 3P TE		01
CN502	LB932030	Base Post Connector	VH- 3P TE		01
CN504	LB932040	Base Post Connector	VH- 4P TE		01
CN506	VV066500	Connector Base Post	M2426XX 5P TE		01
CN601	VG879900	Base Post Connector	VA- 2P TE		01
-603	VG879900	Base Post Connector	VA- 2P TE		01
CN604	--	Connector Assembly	B&C 12P#24L60 (V434600)		
CN606	--	Connector Assembly	B&C 4P #24L80 (V434590)		
CN608	VV067700	Connector Base Post	M2426XXR 3P SE		01
CN609	VV067200	Connector Base Post	M2426XX 12P TE		01
CN610	VV066400	Connector Base Post	M2426XX 4P TE		01
D301	VD631600	Diode	1SS133,176,HSS104		01
-304	VD631600	Diode	1SS133,176,HSS104		01
D401	VD631600	Diode	1SS133,176,HSS104		01
-404	VD631600	Diode	1SS133,176,HSS104		01
D501	IF005560	Diode	1SS82TD		01
D502	IF005560	Diode	1SS82TD		01
D503	VU801600	Diode	1N4004L 26		01
D504	VU801600	Diode	1N4004L 26		01
D505	IF005560	Diode	1SS82TD		01
D506	VD631600	Diode	1SS133,176,HSS104		01
D507	VD631600	Diode	1SS133,176,HSS104		01
DB501	VR149900	Diode Stack	D25XB60 25.0A 600V		06
* F601	VV070900	Fuse	TDS 3.5A 250V JUC	JUV	
* F601	VV071400	Fuse	TSD 1.6A 250V SEMK	HWBA	01
IC101	IG040000	IC	NJM4560D	OP AMP	04
IC102	IG040000	IC	NJM4560D	OP AMP	04
IC201	IG040000	IC	NJM4560D	OP AMP	04
IC202	IG040000	IC	NJM4560D	OP AMP	04
* IC501	XJ605A00	IC	NJM78M18	REGULATOR +18V	
* IC502	XD522A00	IC	NJM79M18	REGULATOR -18V	
JK101	VS133800	XLM Connector	NC3FAH1-0	INPUT	04
K101	VV075700	Terminal Plate			01
* L301	V4911800	Coil	RZ-001 4.5T		
* L401	V4911800	Coil	RZ-001 4.5T		
* LD601	V4814900	LED	L-115VSRSGW-CA	Power/clip	
Q401	IC224030	Transistor	2SC2240 GR,BL		01
Q402	IC224030	Transistor	2SC2240 GR,BL		01
Q403	IA097030	Transistor	2SA970 GR,BL		01
-406	IA097030	Transistor	2SA970 GR,BL		01
Q407	IC224030	Transistor	2SC2240 GR,BL		01
Q408	IC224030	Transistor	2SC2240 GR,BL		01
Q409	IA097030	Transistor	2SA970 GR,BL		01
Q410	IA097030	Transistor	2SA970 GR,BL		01
Q411	IC224030	Transistor	2SC2240 GR,BL		01
Q412	IC224030	Transistor	2SC2240 GR,BL		01
Q413	IC1815M0	Transistor	2SC1815 Y,GR		01
Q414	IC1815M0	Transistor	2SC1815 Y,GR		01
Q415	IA101590	Transistor	2SA1015 O,Y		01
Q416	IA101590	Transistor	2SA1015 O,Y		01
Q417	VQ547300	Transistor	2SC4793 (HFE)		03

* New Parts

RANK : Japan only

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
Q418	VR152900	Transistor	2SC3790 E,F			02
Q419	VQ547300	Transistor	2SC4793 (HFE)			03
Q420	VR152900	Transistor	2SC3790 E,F			02
Q421	VR152800	Transistor	2SA1480 E,F			02
Q422	VR152800	Transistor	2SA1480 E,F			02
Q423	VR152900	Transistor	2SC3790 E,F			02
Q424	VR152800	Transistor	2SA1480 E,F			02
Q425	VR152900	Transistor	2SC3790 E,F			02
Q426	VR152800	Transistor	2SA1480 E,F			02
Q427	VQ547300	Transistor	2SC4793 (HFE)			03
Q428	VQ547200	Transistor	2SA1837 (HFE)			03
Q429	VQ547300	Transistor	2SC4793 (HFE)			03
Q430	VQ547200	Transistor	2SA1837 (HFE)			03
Q501	V2797600	Transistor	2SA1993 E,F			01
Q502	V2797700	Transistor	2SC5395 E,F			01
-506	V2797700	Transistor	2SC5395 E,F			01
Q431N	V2950000	Pair Transistor	A1695/C4468(Z)	} Pair		01
Q431P						
Q432N	V2950000	Pair Transistor	A1695/C4468(Z)	} Pair		01
Q432P						
Q433N	V2950000	Pair Transistor	A1695/C4468(Z)	} Pair		01
Q433P						
Q434N	V2950000	Pair Transistor	A1695/C4468(Z)	} Pair		01
Q434P						
RY501	VV315400	Relay	DC OSA-SH-224DM3M			06
* SW001	V4256700	Slide Switch	SSSF122S06S1	LOW CUT		
* SW101	V4256900	Slide Switch	SSSF123S06S1	TRIM HIGH		
* SW102	V4256900	Slide Switch	SSSF123S06S1	TRIM LOW		
* VR101	V4257100	Rotary Variable Resistor	A2 5.0K RK11K11	SENSITIVITY		
VR301	VA787500	Trimmer Potentiometer	B 470 3P RHEOA	idling		01
VR401	VA787500	Trimmer Potentiometer	B 470 3P RHEOA	idling		01
	VV059800	Mylar Capacitor	1000P 50V J	C:206		08
	VV060000	Mylar Capacitor	1200P 50V J	C:401		01
	VV060100	Mylar Capacitor	1500P 50V J	C:306,406		08
*	VV060400	Mylar Capacitor	2700P 50V J	C:202,212		
	VV060900	Mylar Capacitor	4700P 50V J	C:412		01
	VV061500	Mylar Capacitor	0.012 50V J	C:204		01
	VV061800	Mylar Capacitor	0.015 50V J	C:201		01
	VV062000	Mylar Capacitor	0.022 50V J	C:110,205,211		01
	VV062200	Mylar Capacitor	0.033 50V J	C:210		01
	VV062400	Mylar Capacitor	0.047 50V J	C:108,501		01
	VV062600	Mylar Capacitor	0.068 50V J	C:301		01
	VV062800	Mylar Capacitor	0.1 50V J	C:111,112		01
*	VV063200	Mylar Capacitor	0.22 50V J	C:118		
*	V4414200	Mylar Capacitor	0.1 100V J	C:315,316,415,416,514,515		
*	V4639800	Mylar Capacitor	1100P 50V J	C:213		
*	V4640000	Mylar Capacitor	0.062 50V J	C:405		
*	VV063900	Monolithic Mylar Capacitor	0.33 50V J	C:115		
*	VV064100	Monolithic Mylar Capacitor	0.47 50V J	C:207		02
*	UT352220	Polypropylene Capacitor	220P 50V J	C:117		
	VZ012200	Ceramic Capacitor-B	0.001 500V K	C:317,318,417,418		01
	VZ352700	Ceramic Capacitor-SL	10P 50V J	C:120		01
	VZ353200	Ceramic Capacitor-SL	47P 50V J	C:103,104,106		01
	VZ353500	Ceramic Capacitor-SL	100P 50V J	C:304,404		01
	VZ354000	Ceramic Capacitor-F	0.01 50V Z	C:113,114,121,122, 231-234,307,407		01
	VZ354600	Monolithic Ceramic Cap.	0.1 50V Z	C:513		01
	UJ847100	Electrolytic Cap.	10.00 25.0V	C:310,410		01
	UJ847470	Electrolytic Cap.	47.00 25.0V	C:505-507		01
	UJ848100	Electrolytic Cap.	100.00 25.0V	C:502		01
	UJ866470	Electrolytic Cap.	4.7 50.0V	C:109		01
	UJ867100	Electrolytic Cap.	10.00 50.0V	C:503,504		01
	UJ867470	Electrolytic Cap.	47.00 50.0V	C:508,509		01
	UJ877100	Electrolytic Cap.	10.00 63.0V	C:302,303,402,403		01
	UJ896470	Electrolytic Cap.	4.7 100.0V	C:313,314,413,414		01
*	V2728700	Electrolytic Cap.-VX	10 50.0V	C:208		
*	V2728800	Electrolytic Cap.-VX	22 50.0V	C:101,102,105,123,203,305		
	VJ866220	Electrolytic Cap.-VX	2.2 50.0V	C:510		
	VK574500	Electrolytic Cap.	8200 63.0V	C:511,512		06
	FU451100	Mica Capacitor	10P 500V D	C:311,411		01

* New Parts

RANK : Japan only

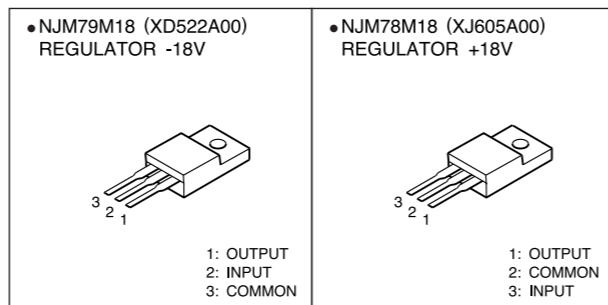
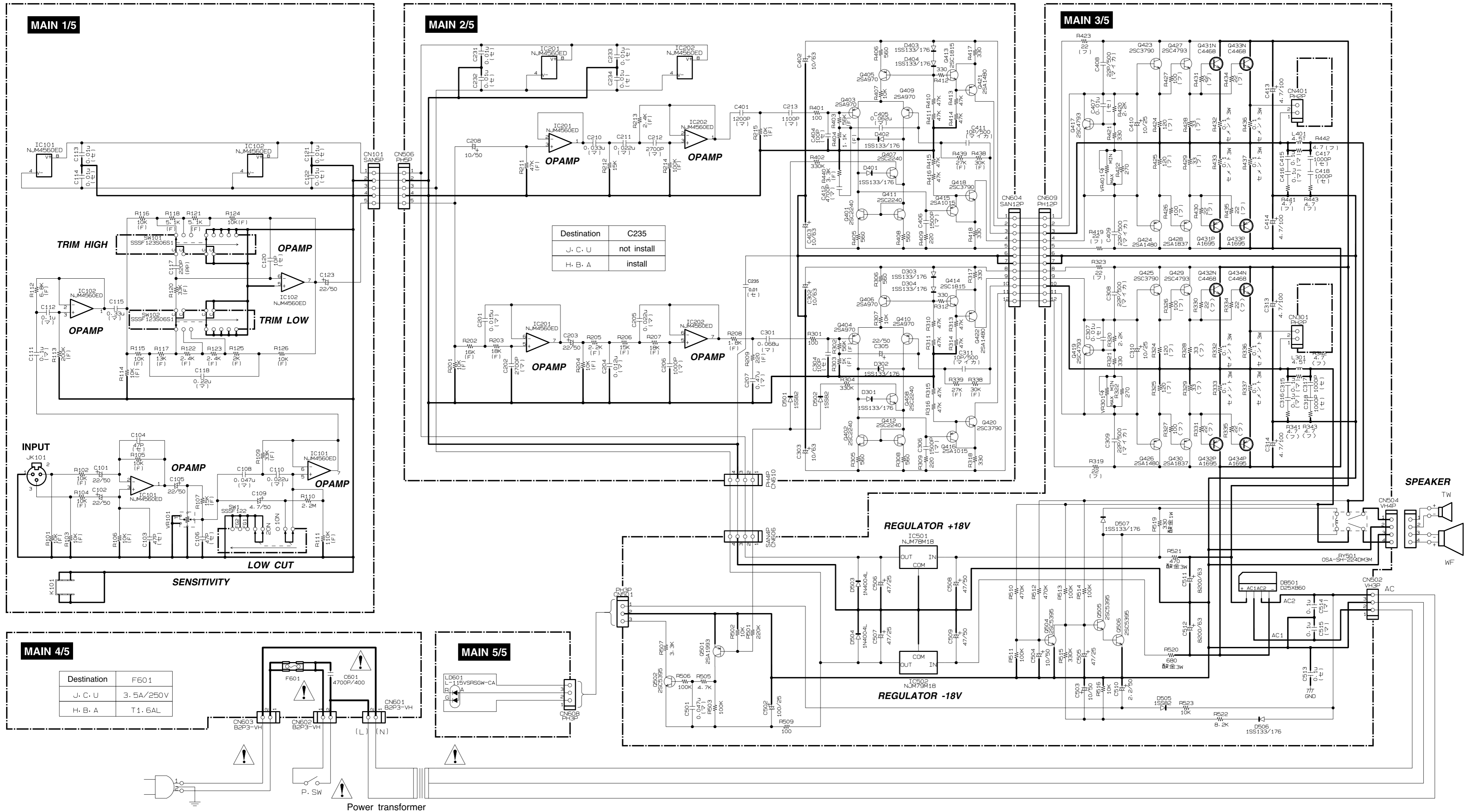
REF NO.	PART NO.	DESCRIPTION	REMARKS	QTY	RANK
	FU451220	Mica Capacitor	22P 500V J	C:308,309,408,409	01
	VY704000	Capacitor	4700P 400V J.U.C.S	C:601	01
	HF455100	Carbon Resistor	100.0 1/4 J	R:301,401,509	01
	HF455220	Carbon Resistor	220.0 1/4 J	R:309,409	01
	HF455270	Carbon Resistor	270.0 1/4 J	R:322,422	01
	HF455330	Carbon Resistor	330.0 1/4 J	R:312,317,318,321,412, 417,418,421	01
	HF455560	Carbon Resistor	560.0 1/4 J	R:305,306,308,405,406,408	01
	HF456220	Carbon Resistor	2.2K 1/4 J	R:320,420	01
	HF456330	Carbon Resistor	3.3K 1/4 J	R:507	01
	HF456470	Carbon Resistor	4.7K 1/4 J	R:505	01
	HF456820	Carbon Resistor	8.2K 1/4 J	R:522	01
	HF457100	Carbon Resistor	10.0K 1/4 J	R:307,407,502,516,523	01
	HF457470	Carbon Resistor	47.0K 1/4 J	R:310,311,313-316,410, 411,413-416	01
	HF458100	Carbon Resistor	100.0K 1/4 J	R:503,506,511,513,514	01
	HF458220	Carbon Resistor	220.0K 1/4 J	R:501	01
	HF458330	Carbon Resistor	330.0K 1/4 J	R:304,402,515	01
	HF458470	Carbon Resistor	470.0K 1/4 J	R:510,512	01
	HF459220	Carbon Resistor	2.2M 1/4 J	R:110	01
	VV276700	Flame Proof C. Resistor	4.7 1/4 J	R:341-343,441-443	01
	VV276800	Flame Proof C. Resistor	100 1/4 J	R:326,327,426,427	01
	VZ008500	Flame Proof C. Resistor	120.0 1/4 J	R:324,325,424,425	01
	VZ008800	Flame Proof C. Resistor	22.0 1/4 J	R:319,323,330,331,334, 335,419,423,430,431, 434,435	01
	VZ009100	Flame Proof C. Resistor	33.0 1/4 J	R:328,329,428,429	01
	V2336300	Metal Film Resistor	1.8K 1/4 F	R:208	01
	V2348100	Metal Film Resistor	30K 1/4 F	R:338,438	01
	V2348400	Metal Film Resistor	1.5K 1/4 F	R:213	01
	V2348800	Metal Film Resistor	100K 1/4 F	R:214	01
	V2440200	Metal Film Resistor	2.4K 1/4 F	R:122,123	01
	V2440500	Metal Film Resistor	27K 1/4 F	R:339,439	01
*	V2730000	Metal Film Resistor	110K 1/4 F	R:111	01
*	V2961300	Metal Film Resistor	16K 1/4 F	R:202	01
	V3028900	Metal Film Resistor	56K 1/4 F	R:302,403	01
	V3029000	Metal Film Resistor	1.0K 1/4 F	R:303	01
*	V4164000	Metal Film Resistor	470 3W J	R:521	01
*	V4164200	Metal Film Resistor	680 3W J	R:520	01
*	V4403500	Metal Film Resistor	220 1/4 F	R:209	01
*	V4404000	Metal Film Resistor	3.3K 1/4 F	R:440	01
*	V4413700	Metal Film Resistor	330 1W J	R:519	01
*	V4640100	Metal Film Resistor	1.1K 1/4 F	R:404	01
*	V4660200	Metal Film Resistor	13K 1/4 F	R:117	01
*	V4660300	Metal Film Resistor	2K 1/4 F	R:125	01
*	V4660400	Metal Film Resistor	200K 1/4 F	R:113	01
	VV065100	Metal Film Resistor	2.2K 1/4 F	R:205	01
	VV065300	Metal Film Resistor	6.8K 1/4 F	R:112	01
	VV065500	Metal Film Resistor	10K 1/4 F	R:101-106,114-116,124, 126,201,204,215	01
	VV065700	Metal Film Resistor	18K 1/4 F	R:203,207	01
	VV065900	Metal Film Resistor	24K 1/4 F	R:340	01
	VV066000	Metal Film Resistor	33K 1/4 F	R:109,120	01
	VV066100	Metal Film Resistor	47K 1/4 F	R:211	01
	VZ009900	Metal Film Resistor	15K 1/4 F	R:107,206,212	01
	VZ010300	Metal Film Resistor	5.1K 1/4 F	R:118,121	01
*	V4579300	Wire Wound Resistor	0.1 3W K	R:332,333,336,337,432, 433,436,437	01
	XW556A00	Speaker	200mm		
*	XW555A00	Speaker	25mm		
⚠	XW540A00	Power Transformer	A	J	
⚠	XW541A00	Power Transformer	UC A(B)	U, V	
⚠	XW542A00	Power Transformer	CEE H	H, W, B	
⚠	XW543A00	Power Transformer	A A	A	
⚠	V3277000	AC Cord	J VCTF 2X0.75 12A	J	05
⚠	VV205600	AC Cord	UC SJT 3X#18 10A	U, V	06
⚠	V3277100	AC Cord	E H05VV-F3X0.7510A	H, W, A	06
⚠	VV058300	AC Cord	BS H05VV-F3X0.75	B	08
⚠	VM744600	Switch	SDDTA1-A-1 J.U.C.H	POWER	06

* New Parts

RANK : Japan only

■MSP-10 OVERALL CIRCUIT DIAGRAM

MSP-10



- (マイカ) : Mica Capacitor
- (マ) : Mylar Capacitor
- (セ) : Ceramic Capacitor
- (F) : Metal Film Resistor
- (フ) : Flame Proof C. Resistor
- セメント : Wire Wound Resistor
- 酸金 : Metal Film Resistor

Note : See parts list for details of circuit board component parts.

KEC-92376