

Service Manual

ORDER NO.
RRV1598

AUDIO/VIDEO STEREO RECEIVER

VSX-405

VSX-295

VSX-425

501007

● Refer to the service manual RRV1467 for VSX-405/KUXJ.

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model			Power Requirement	The voltage can be converted by the following method.
	VSX-405	VSX-295	VSX-425		
SDXJ	○	○	-	AC110V/120-127V/220V/240V	With the voltage selector
HLXJ	-	-	○	AC220-230V	AC240V, *
YPWXJ	-	-	○	AC240V	

*: Alter the wiring of the Power-supply block at the primary winding of power transformer referring to the "Line Voltage Selection" described in Service Manual.

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VSX-405, VSX-295, VSX-425

1. CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The Δ 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.
- 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%).

560 Ω $\rightarrow 56 \times 10^1 \rightarrow 561$ RD1/4PU 561 J
 47 k Ω $\rightarrow 47 \times 10^3 \rightarrow 473$ RD1/4PU 473 J
 0.5 Ω $\rightarrow 0R5$ RN2H 0R5 K
 1 Ω $\rightarrow 1R0$ RS1P 1R0 K

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

5.62 k Ω $\rightarrow 562 \times 10^1 \rightarrow 5621$ RN1/4PC 5621 F

■ CONTRAST OF VSX-405/SDXJ, VSX-295/SDXJ, VSX-425/HLXJ, YPWXJ AND VSX-405/KUXJ
 VSX-405/SDXJ, VSX-295/SDXJ, VSX-425/HLXJ, YPWXJ and VSX-405/KUXJ have the same construction except for the following:

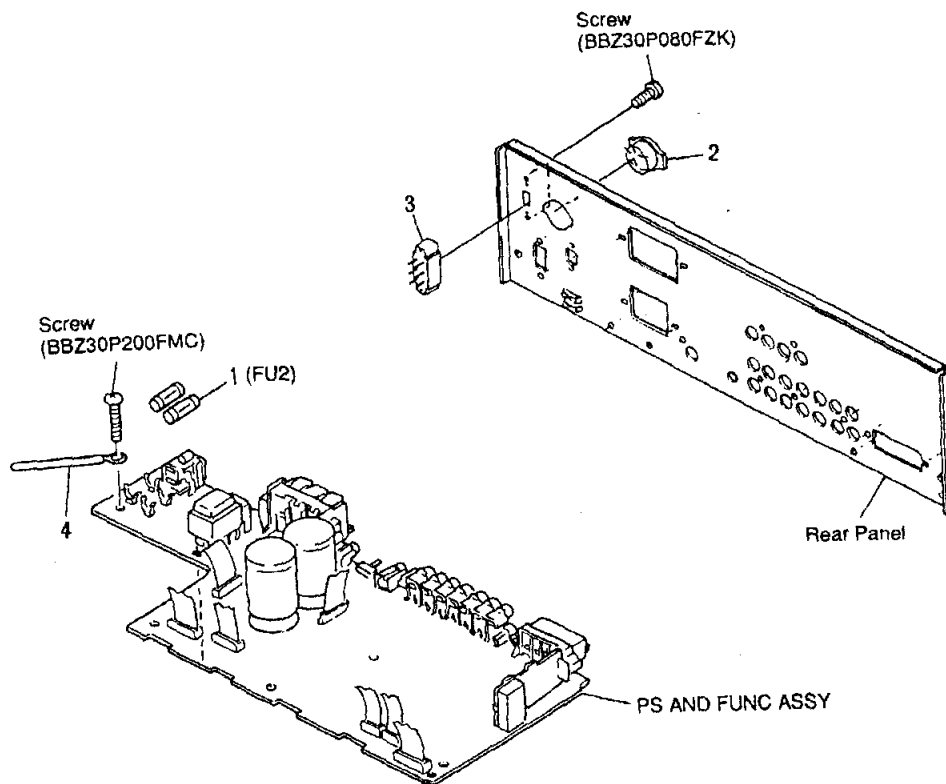
VSX-405/SDXJ, VSX-295/SDXJ, VSX-425/HLXJ, YPWXJ and VSX-405/KUXJ have the same construction							
Mark	Symbol & Description	Part No.					Remarks
		VSX-405		VSX-295	VSX-425		
		KUXJ	SDXJ	SDXJ	HLXJ	YPWXJ	
NSP	MAIN Assy	AWK7228	AWK7246	AWK7249	AWK7247	AWK7247	
	— MOTHER Assy	AWZ8053	AWZ8054	AWZ8059	AWZ8055	AWZ8055	
	— FL AND UCOM Assy	AWZ8060	AWZ8060	AWZ8064	AWZ8373	AWZ8373	
	— VIDEO Assy	AWZ8066	AWZ8380	AWZ8380	AWZ8380	AWZ8380	
	— SP. SW AND H.P Assy	AWZ8068	AWZ8068	AWZ8068	AWZ8376	AWZ8376	
NSP	— PRIMARY Assy	AWZ8368	Not used	Not used	AWZ8368	AWZ8368	
NSP	AMP AND VOL. Assy	AWK7232	AWK7250	AWK7253	AWK7251	AWK7251	
	— AMP Assy	AWZ8074	AWZ8074	AWZ8077	AWZ8372	AWZ8372	
	— VOL. Assy	AWZ8078	AWZ8078	AWZ8081	AWZ8078	AWZ8078	
NSP	— PRIMARY Assy	Not used	AWZ8375	AWZ8375	Not used	Not used	
	PACKING						
	Operating instructions (English)	ARB7065	ARB7065	ARB7065	Not used	ARB7066	
	Operating Instructions (English/Chinese)	Not used	Not used	Not used	ARE7061	Not used	
	Operating Instructions (Chinese/Spanish)	Not used	ARC7105	ARC7105	Not used	Not used	
	Remote Control Unit (CU-VSX105)	AXD7083	AXD7083	Not used	AXD7083	AXD7083	
	Remote Control Unit (CU-VSX110)	Not used	Not used	AXD7088	Not used	Not used	
	Packing Case	AHD7268	AHD7274	AHD7272	AHD7275	AHD7275	
NSP	Warranty Card	ARY1051	Not used	Not used	Not used	PRY1003	
	Caution 220V Label	Not used	ARR1003	ARR1003	Not used	Not used	
	EXTERIOR						
Δ	Power Transformer (AC120V)	ATS7108	Not used	Not used	Not used	Not used	
Δ	Power Transformer (AC110V/120-127V/220V/240V)	Not used	ATS7110	ATS7110	Not used	Not used	
Δ	Power Transformer (AC220-230V/240V)	Not used	Not used	Not used	ATS7111	ATS7111	
Δ	Fuse (1A, FU3, FU4)	REK1075	REK1075	REK1075	Not used	Not used	
Δ	Fuse (T1A, FU3, FU4)	Not used	Not used	Not used	AEK1054	AEK1054	
Δ	Fuse (6.3A, FU1)	REK1085	Not used	Not used	Not used	Not used	
Δ	Fuse (3.15A, FU1, FU2)	Not used	REK1081	REK1081	Not used	Not used	
Δ	Fuse (T2.5A, FU1)	Not used	Not used	Not used	AEK1058	AEK1058	
Δ	Voltage Selector S1	Not used	AKX-507	AKX-507	Not used	Not used	
Δ	Voltage Selector S2	Not used	AKX1004	AKX1004	Not used	Not used	
						No. 1	
						No. 2	
						No. 3	

VSX-405, VSX-295, VSX-425

Mark	Symbol & Description	Part No.					Remarks
		VSX-405		VSX-295	VSX-425		
		KUXJ	SDXJ	SDXJ	HLXJ	YPWXJ	
▲	AC Power Cord	PDG1015	ADG1157	ADG1157	ADG1153	ADG1159	No. 4
	Rear Panel	ANC7341	ANC7349	ANC7346	ANC7350	ANC7352	
	Cord Stopper	CM-22C	CM-22B	CM-22B	CM-22B	CM-22B	
	Front Panel	AMB7334	AMB7340	AMB7336	AMB7338	AMB7338	
	FL Panel	AAK7237	AAK7237	AAK7239	AAK7237	AAK7237	
	Insulator	Not used	PNW1912	PNW1912	PNW1912	PNW1912	
	Insulator ASSY	Not used	Not used	Not used	Not used	DXA1490	
	Foot	AEC1505	AEC1505	AEC1505	AEC1505	Not used	
	Binder	Not used	RNE1277	RNE1277	RNE1277	RNE1277	
	POWER BLOCK						
▲	Transistor (Q3, Q4)	2SA1943(P)	2SA1943(P)	2SA1943(P)	2SA1940(P)	2SA1940(P)	
▲	Transistor (Q13, Q14)	2SA1943(P)	2SA1943(P)	Not used	2SA1940(P)	2SA1940(P)	
▲	Transistor (Q1, Q2)	2SC5200(P)	2SC5200(P)	2SC5200(P)	2SC5197(P)	2SC5197(P)	
▲	Transistor (Q11, Q12)	2SC5200(P)	2SC5200(P)	Not used	2SC5197(P)	2SC5197(P)	

Note : The numbers in the remarks column correspond to the numbers on the exploded diagram.
Refer to "EXPLODED VIEWS".

EXPLODED VIEWS



VSX-405, VSX-295, VSX-425

■ CONTRAST OF PCB ASSEMBLIES

MOTHER ASSY

AWZ8054, AWZ8059, AWZ8055 and AWZ8053 have the same construction except for the following:

Mark	Symbol & Description	Part No.				Remarks
		AWZ8053	AWZ8054	AWZ8059	AWZ8055	
IC1101		NJW1102FG1	NJW1102FG1	Not used	NJW1102FG1	
IC1102		NJU9702D	NJU9702D	Not used	NJU9702D	
Q405		DTC124ES	DTC124ES	Not used	DTC124ES	
Q406		2SC1740S	2SC1740S	Not used	2SC1740S	
Q407		DTC143ES	DTC143ES	Not used	Not used	
Q409		2SA965	2SA965	Not used	2SA965	
Q410		2SC2235	2SC2235	Not used	2SC2235	
D401		D5SBA20	D5SBA20	Not used	D5SBA20	
D402		D5SBA20	D5SBA20	Not used	Not used	
D410, D422		1SS252	1SS252	Not used	1SS252	
D411		1SS252	1SS252	Not used	Not used	
D412, D413		MTZJ5.6C	MTZJ5.6C	Not used	MTZJ5.6C	
RY402		ASR7001	ASR7001	Not used	ASR7001	
RY403		ASR7009	ASR7009	Not used	Not used	
S401		Not used	ASH1027	ASH1027	Not used	*
C165, C166		CFTXA153J50	CFTXA123J50	CFTXA123J50	CFTXA103J50	
C401, C402		ACH7018	ACH7019	ACH7019	ACH1105	
C407, C408, C1104, C1160		CEAS470M25	CEAS470M25	Not used	CEAS470M25	
C412		ACG1005	ACG1005	Not used	ACG1005	
C413		ACG1005	ACG1005	ACG1005	Not used	
C415		ACG1030	Not used	Not used	Not used	
C422		Not used	ACE7004	ACE7004	ACE7004	*
C1010, C1011, C1132		CEAS101M25	CEAS101M25	Not used	CEAS101M25	
C1012, C1152		CGCYX104M16	CGCYX104M16	Not used	CGCYX104M16	
C1101, C1102, C1129		CEAS100M50	CEAS100M50	Not used	CEAS100M50	
C1103		CEANL220M25	CEANL220M25	Not used	CEANL220M25	
C1105		CQMA472J50	CQMA472J50	Not used	CQMA472J50	
C1106		CEAS220M25	CEAS220M25	Not used	CEAS220M25	
C1107, C1110		CQMA681J50	CQMA681J50	Not used	CQMA681J50	
C1108, C1109, C1111, C1112, C1116-C1119, C1136, C1158, C1159		CFTXA104J50	CFTXA104J50	Not used	CFTXA104J50	
C1113, C1114, C1134		CFTXA473J50	CFTXA473J50	Not used	CFTXA473J50	
C1115, C1120		CFTXA223J50	CFTXA223J50	Not used	CFTXA223J50	
C1121, C1123, C1124, C1126		CFTXA224J50	CFTXA224J50	Not used	CFTXA224J50	
C1122, C1125, C1137, C1138, C1153		CEAS4R7M50	CEAS4R7M50	Not used	CEAS4R7M50	
C1130, C1155, C1162		CQMA561J50	CQMA561J50	Not used	CQMA561J50	
C1131		CQMA102J50	CQMA102J50	Not used	CQMA102J50	
C1133, C1156		CQMA562J50	CQMA562J50	Not used	CQMA562J50	
C1135		CFTXA684J50	CFTXA684J50	Not used	CFTXA684J50	
C1139		CEAS221M10	CEAS221M10	Not used	CEAS221M10	
C1157, C1161		CFTXA683J50	CFTXA683J50	Not used	CFTXA683J50	
C1163		CQMA222J50	CQMA222J50	Not used	CQMA222J50	
C1179		CKPUYB102K50	CKPUYB102K50	Not used	CKPUYB102K50	
C1180		CKPUYB151K50	CKPUYB151K50	Not used	CKPUYB151K50	
R405, R1105, R1108		RD1/6PM473J	RD1/4PU473J	Not used	RD1/4PU473J	
R406, R1010, R1012, R1013, R1123, R1128		RD1/6PM103J	RD1/4PU103J	Not used	RD1/4PU103J	
R407, R408		RD1/6PM681J	RD1/4PU681J	Not used	RD1/4PU681J	
R413, R414		RD1/6PM513J	RD1/4PU513J	Not used	RD1/4PU513J	
R415		RD1/6PM393J	RD1/4PU393J	Not used	RD1/4PU393J	
R416		RD1/6PM821J	RD1/4PU821J	Not used	RD1/4PU182J	
R1011		RD1/6PM472J	RD1/4PU472J	Not used	RD1/4PU472J	

VSX-405, VSX-295, VSX-425

Mark	Symbol & Description	Part No.				Remarks
		AWZ8053	AWZ8054	AWZ8059	AWZ8055	
Δ	R1101, R1102, R1113	RD1/6PM223J	RD1/4PU223J	Not used	RD1/4PU223J	*
	R198	RD1/4PU102J	Not used	Not used	Not used	
	R417	Not used	RD1/4PU102J	RD1/4PU102J	Not used	
	R418	ACN-208	Not used	Not used	Not used	
	R1103	RD1/6PM475J	RD1/4PU475J	Not used	RD1/4PU475J	
	R1104	RD1/6PM104J	RD1/4PU104J	Not used	RD1/4PU104J	
	R1106, R1109, R1112, R1115,	RD1/6PM153J	RD1/4PU153J	Not used	RD1/4PU153J	
	R1122, R1124, R1127	RD1/6PM752J	RD1/4PU752J	Not used	RD1/4PU752J	
	R1107, R1110	RN1/6PQ1003F	RN1/6PQ1003F	Not used	RN1/6PQ1003F	
	R1111	RD1/6PM334J	RD1/4PU334J	Not used	RD1/4PU334J	
Δ	R1116	RD1/6PM105J	RD1/4PU105J	Not used	RD1/4PU105J	*
	R1121	RD1/6PM300J	RD1/4PU300J	Not used	RD1/4PU300J	
	R1126	RD1/6PM433J	RD1/4PU433J	Not used	RD1/4PU433J	
	R1129	RD1/6PM102J	RD1/4PU102J	Not used	RD1/4PU102J	
	R1181, R1182, R1183	AKP1060	AKP1060	AKP1060	Not used	
	451 (AC Socket 1P)	AKB7042	AKB7026	AKB7026	AKB7026	
	CN432	AKE7005	AKE7005	Not used	AKE7005	
	CN434	Not used	AKC1016	AKC1016	Not used	
	CN452, CN453	Not used	AKR1004	AKR1004	Not used	
	H403, H404	Not used	DB825EB0	DB825EB0	Not used	
Δ	J22	ATT1223	ATT1193	ATT1193	ATT1193	*
	T401	ASS7011	ASS7011	Not used	ASS7011	
	X1101 (2.00MHz)					

Note * : Refer to SCH-2F.

FL AND UCOM ASSY

AWZ8064, AWZ8373 and AWZ8060 have the same construction except for the following:

Mark	Symbol & Description	Part No.			Remarks
		AWZ8060	AWZ8064	AWZ8373	
	R828, R857	RD1/4PU473J	Not used	RD1/4PU473J	
	R852, R898	Not used	RD1/4PU473J	Not used	
	R827	RD1/4PU473J	RD1/4PU473J	Not used	
	R897	Not used	Not used	RD1/4PU473J	

VIDEO ASSY

AWZ8380 and AWZ8066 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ8066	AWZ8380	
	1501 Pin Jack 2P	AKB7016	AKB7017	

SP SW AND HP ASSY

AWZ8376 and AWZ8068 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ8068	AWZ8376	
	R703, R704	Not Used	RS1LMF681J	*

Note * : Refer to SCH-3F.

VSX-405, VSX-295, VSX-425

AMP ASSY

AWZ8077, AWZ8372 and AWZ8074 have the same construction except for the following:

Mark	Symbol & Description	Part No.			Remarks
		AWZ8074	AWZ8077	AWZ8372	
	Q1301-Q1304 Q1305, Q1306 Q1307, Q1308 Q1309, Q1310 Q1311, Q1312	2SA992 2SA1145 2SC2705 2SC1740S 2SC4793	Not used Not used Not used Not used Not used	2SA992 2SA1145 2SC2705 2SC1740S 2SC4793	
	Q1313, Q1314 Q1315, Q1316 Q1321, Q1322 D305, D306, D311, D312, D1305, D1306, D1311, D1312 D307-D310, D1307-D1310	2SA1837 2SC2240 2SA970 Not used Not used	Not used Not used Not used Not used Not used	2SA1837 2SC2240 2SA970 MTZJ10A 1SS252	* *
	D1301-D1304, D1313-D1316 L1301, L1302 C307, C308 C309, C310, C1309, C1310 C325, C326, C1325, C1326	1SS252 ATH1004 CCCSL120K500 Not used Not used	Not used Not used CCCSL120K500 Not used Not used	1SS252 ATH1004 CCCSL270K500 CCCSL270K500 CFTXA104J50	* *
	C327, C328 C1301, C1302 C1303, C1304 C1305, C1306 C1307, C1308	CFTXA473J50 CEAS2R2M50 CCCSL331J50 CCCSL681J50 CCCSL120K500	CFTXA473J50 Not used Not used Not used Not used	CFTXA104J50 CEAS2R2M50 CCCSL331J50 CCCSL681J50 CCCSL270K50	
	C1313, C1314 C1317, C1318 C1319-C1322 C1323, C1324 C1327, C1328	CEAS101M25 CCCSL050C500 CCCSL101K50 CEANP2R2M50 CFTXA473J50	Not used Not used Not used Not used Not used	CEAS101M25 CCCSL050C500 CCCSL101K50 CEANP2R2M50 CFTXA104J50	
	C1331, C1332 R311, R312 R317, R318 R325-R332 R343, R344	CEAS101M10 RD1/4PM681J RD1/4PMF680J RD1/4PMF101J RD1/4PMF472J	Not used RD1/4PM681J RD1/4PMF680J RD1/4PMF101J RD1/4PMF472J	CEAS101M10 RD1/4PM102J RD1/4PMFL680J RD1/4PMFL101J RD1/4PMFL472J	
	R351, R352 R1301, R1302 R1303, R1304, R1315, R1316 R1305, R1306 R1307, R1308	RD1/4PMF100J RD1/4PU561J RD1/4PU104J RD1/4PU431J RD1/4PU391J	RD1/4PMF100J Not used Not used Not used Not used	RD1/4PMFL100J RD1/4PU561J RD1/4PU104J RD1/4PU431J RD1/4PU391J	
	R1309, R1310 R1311, R1312 R1313, R1314 R1317, R1318 R1319, R1320	RD1/4PU222J RD1/4PM681J RD1/4PM104J RD1/4PMF680J RD1/4PS101J	Not used Not used Not used Not used Not used	RD1/4PU222J RD1/4PM102J RD1/4PM104J RD1/4PMFL680J RD1/4PS101J	
	R1321, R1322 R1323, R1324 R1325-R1332 R1333-R1340 R1341, R1342	RD1/4PU152J RD1/4PU681J RD1/4PMF101J RF1/4PS4R7J ACN7001	Not used Not used Not used Not used Not used	RD1/4PU152J RD1/4PU681J RD1/4PMFL101J RD1/4PS4R7J ACN7001	
	R1343, R1344 R1345, R1346 R1347, R1348 R1349, R1350 R1351, R1352	RD1/4PMF472J RD1/4PU153J RD1/4PU821J RD1/4PU183J RD1/4PMF100J	Not used Not used Not used Not used Not used	RD1/4PMFL472J RD1/4PU153J RD1/4PU821J RD1/4PU183J RD1/4PMFL100J	
	R1353, R1354 R1357, R1358	RS1LMF100J RD1/4PU472J	Not used Not used	RS1LMF100J RD1/4PU472J	

Note * : Refer to SCH-4F.

VOL. ASSY

AWZ8081 and AWZ8078 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ8078	AWZ8081	
	IC602 Q661, Q662 C661, C662 C663, C664 C665, C666 R661, R662, R671, R672 R667, R668 R663, R665, R666 R664 VR601 VR602	UPC4570C 2SC2878 CEAS4R7M50 CEAS2R2M50 CCCSL681J50 RD1/4PU473J RD1/4PU102J RD1/4PU222J RD1/4PU122J ACX7005 Not used	Not used Not used Not used Not used Not used Not used Not used Not used Not used ACX7021	*

Note * : Refer to SCH-3F.

PRIMARY ASSY

AWZ8375 and AWZ8368 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ8368	AWZ8375	
	J21 LEAD WIRE UNIT J22 LEAD WIRE UNIT J23 LEAD WIRE UNIT J25 LEAD WIRE UNIT J24 LEAD WIRE UNIT J28 LEAD WIRE UNIT J27 LEAD WIRE UNIT J26 LEAD WIRE UNIT	DB015NB0 DB815NB0 Not used Not used Not used Not used Not used Not used	DB020EB0 Not used DB120EB0 DB220EB0 DB420EB0 DB520EB0 DB820EB0 DB920EB0	 * * * * * *

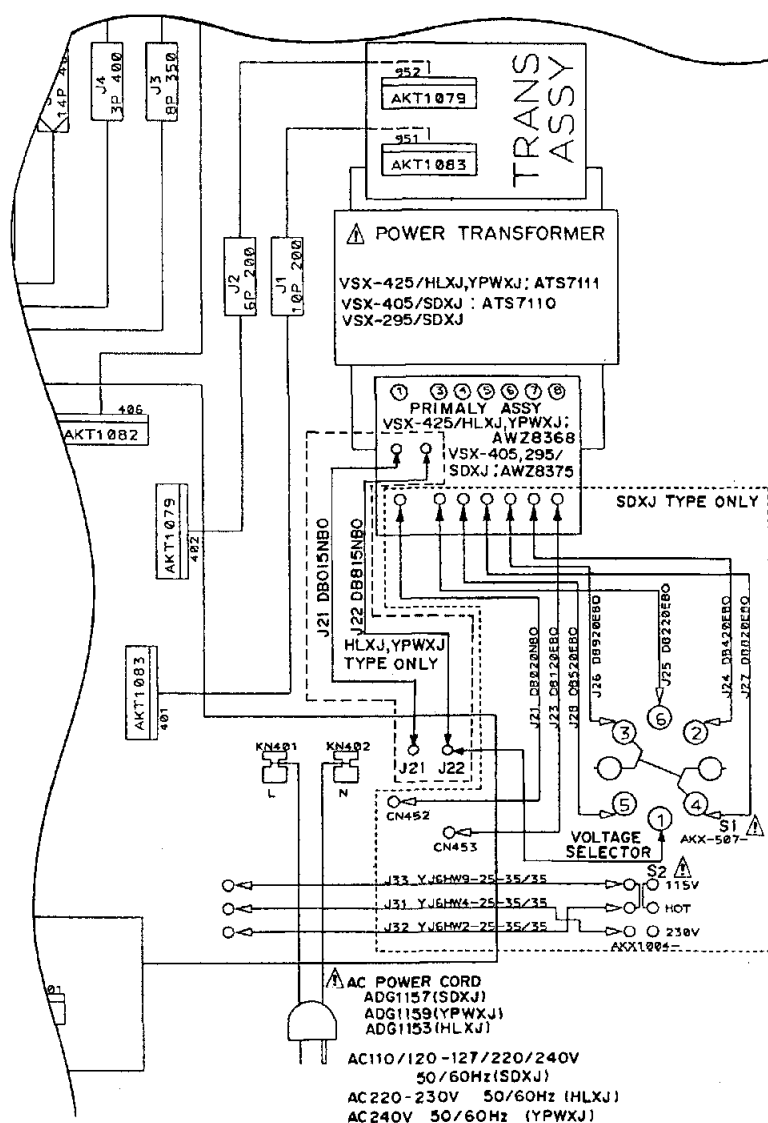
Note * : Refer to SCH-1F.

VSX-405, VSX-295, VSX-425

2. SCHEMATIC DIAGRAMS

2.1 OVERALL SCHEMATIC DIAGRAM

SCH-1F



NOTE FOR SCHEMATIC DIAGRAMS

(Type 1A)

- When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".
- Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.
- RESISTORS:**
Unit: k: k Ω , M: M Ω , or Ω unless otherwise noted.
Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
Tolerance: (F): $\pm 1\%$, (G): $\pm 2\%$, (K): $\pm 10\%$, (M): $\pm 20\%$ or $\pm 5\%$ unless otherwise noted.
- CAPACITORS:**
Unit: p: pF or μ F unless otherwise noted.
Ratings: capacitor (μ F)/ voltage (V) unless otherwise noted.
Rated voltage: 50V except for electrolytic capacitors.
- COILS:**
Unit: m: mH or μ H unless otherwise noted.
- 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.
- OTHERS:**
• $\odot$ or $\ominus$: Adjusting point.
• Δ : Measurement point.
• The Δ 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.
- SCH-□ ON THE SCHEMATIC DIAGRAM:**
• SCH-□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)

Line Voltage Selection

Line Voltage can be changed by the following modification:

- Disconnect the AC power cord.
- Remove the cover.
- Change the connection of the power transformer primary taps.
- Stick a line voltage label on the rear panel.

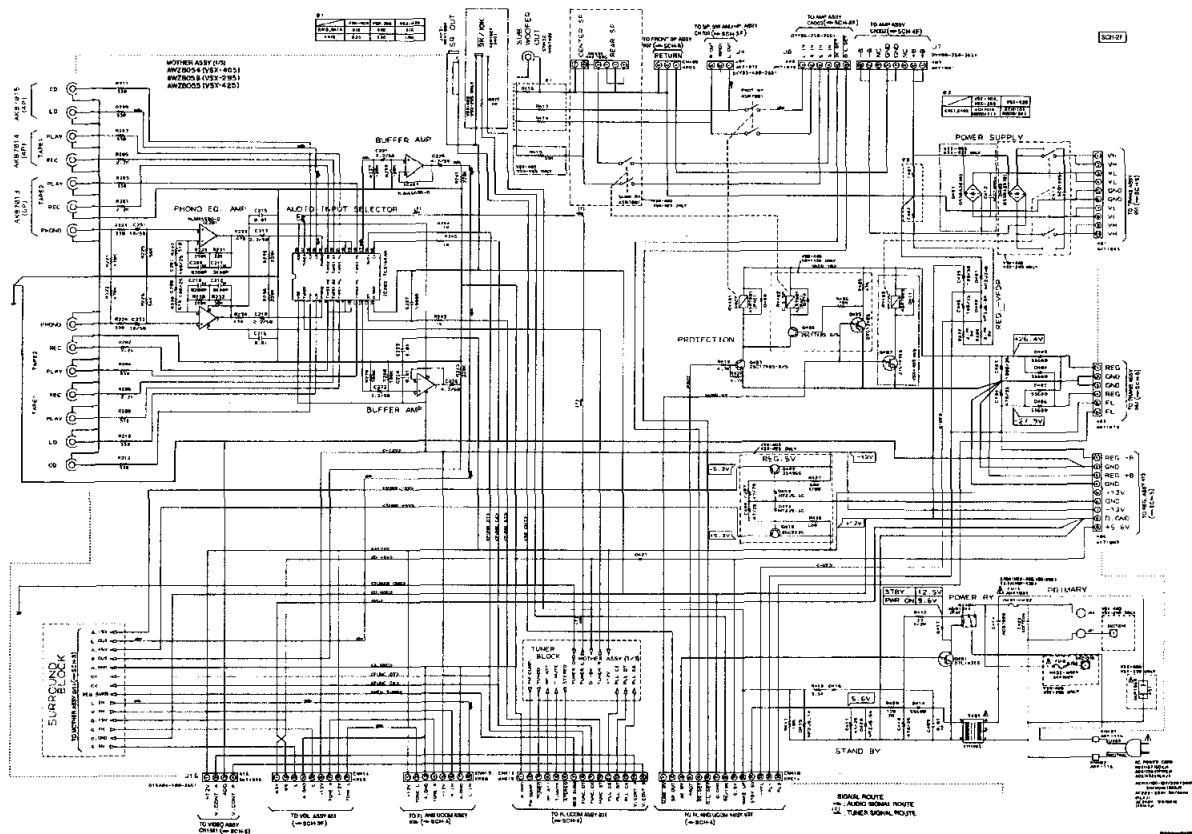
Part No.	Description
AAX-193	220V label
AAX-192	240V label

SCH-1F

OVERALL
SCHEMATIC
DIAGRAM

OVERALL
SCHEMATIC
DIAGRAM

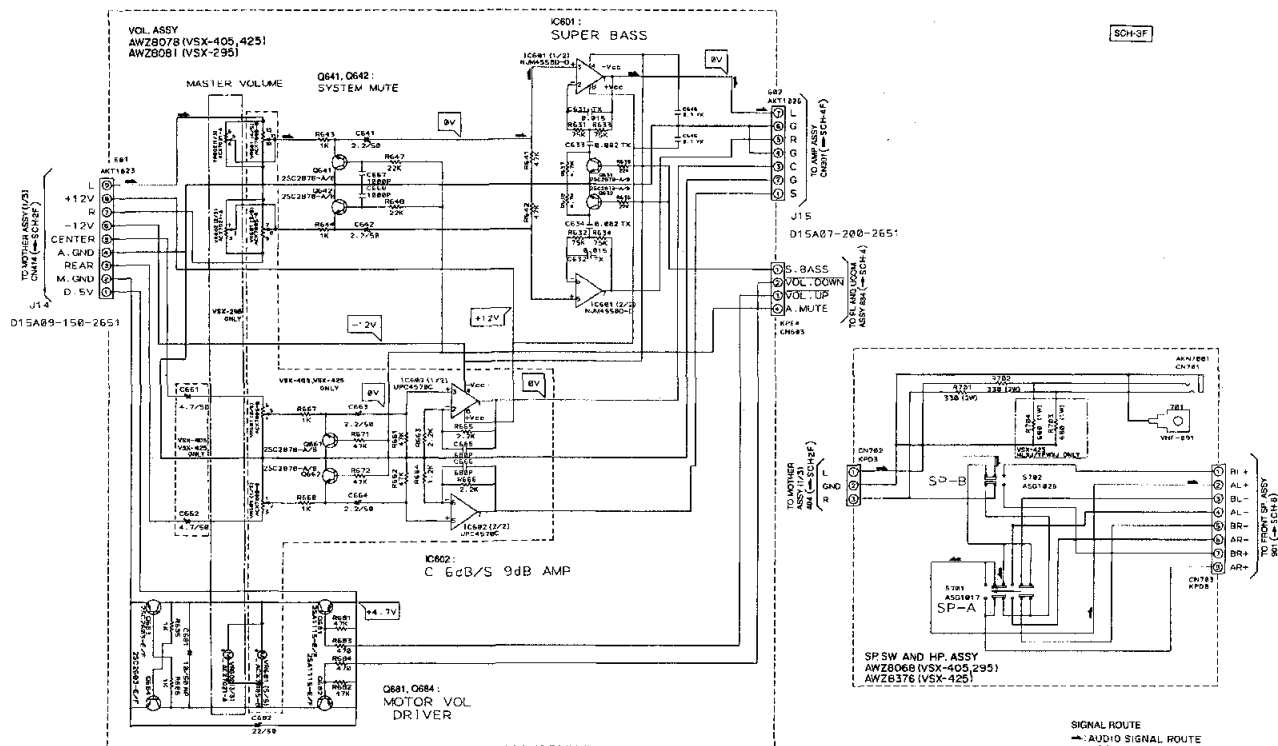
SCH-1F



SCH-2F

MOTHER ASSY (1/3)

SCH-2F



SCH-3F

SP, SW AND HP, ASSY,
VOL ASSY

SCH-3F

SP, SW AND HP, ASSY,
VOL ASSY



1 AMP ASSY

AMP ASSY

SCH-4F