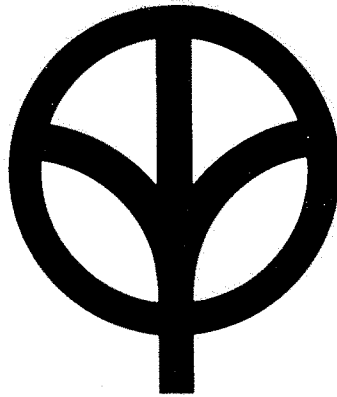
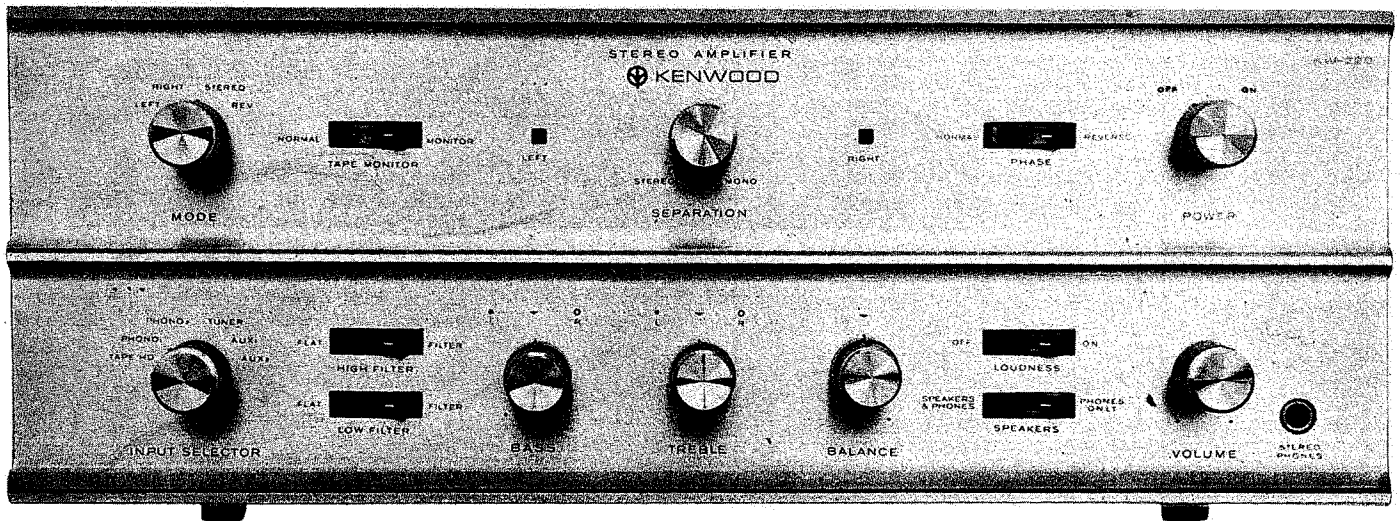


SERVICE MANUAL



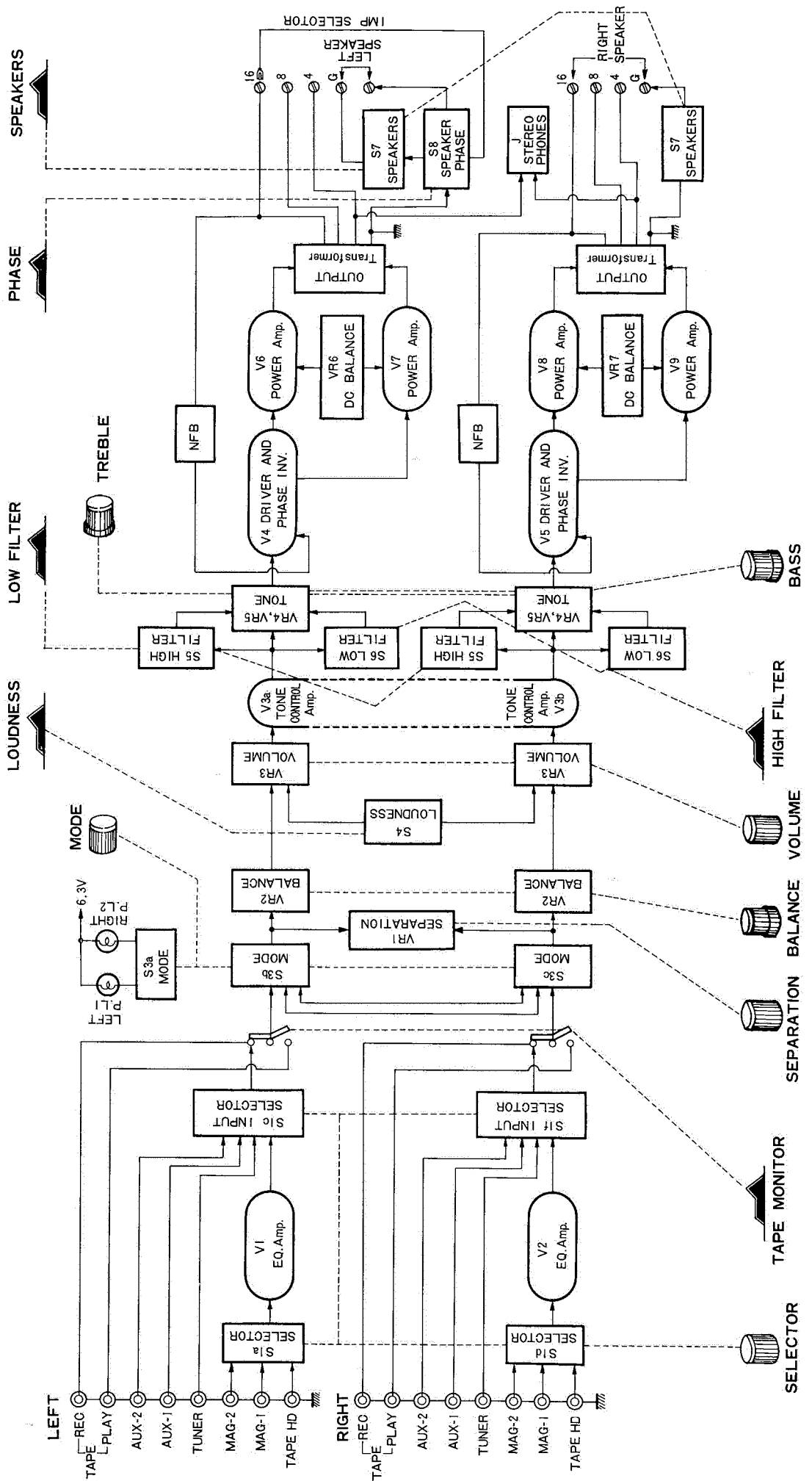
KENWOOD



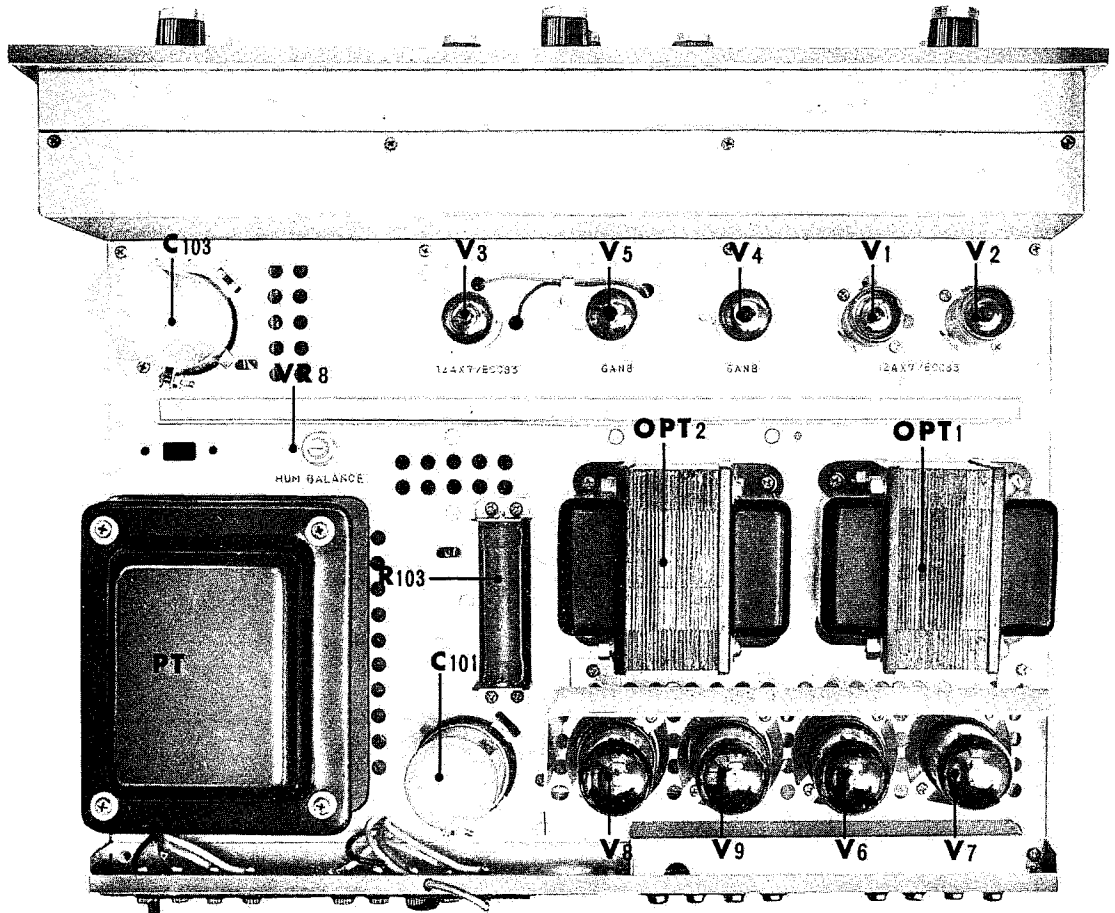
MODEL KW-220

INTEGRATED STEREO AMPLIFIER

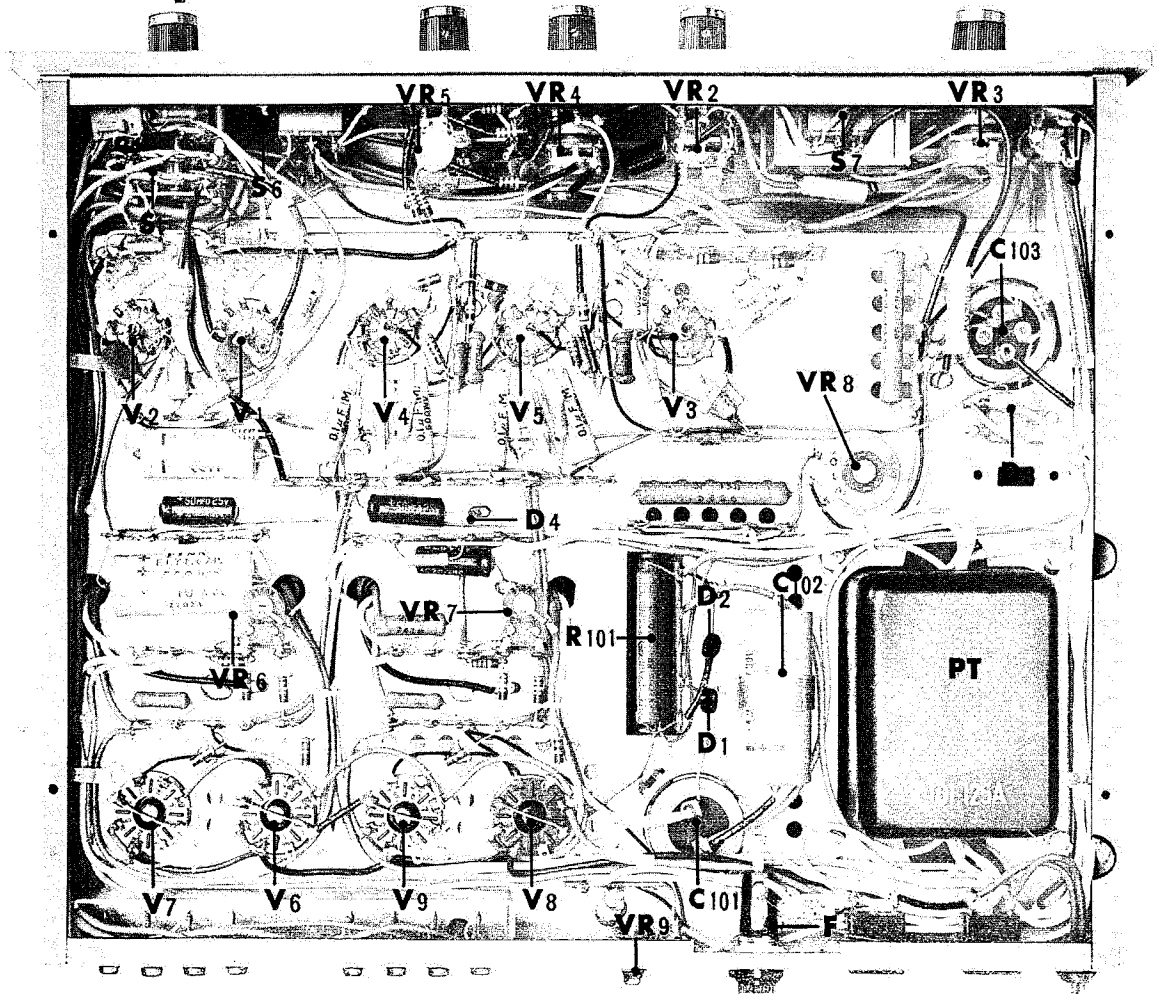
BLOCK DIAGRAM



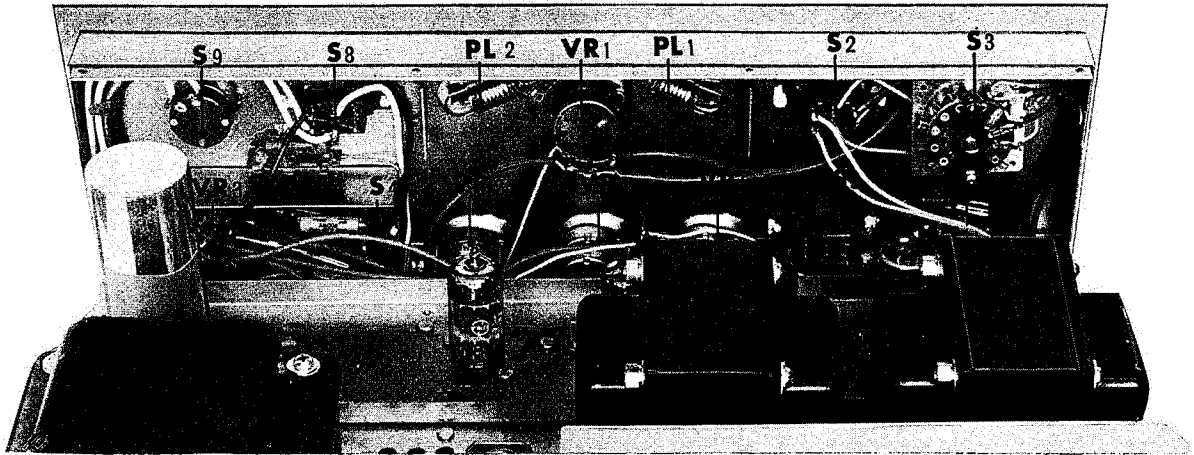
CHASSIS-TOP VIEW



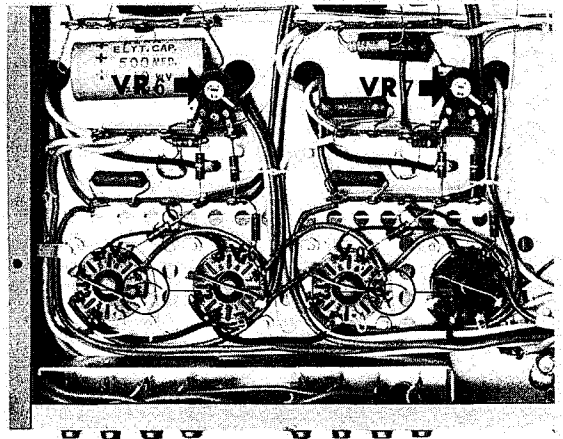
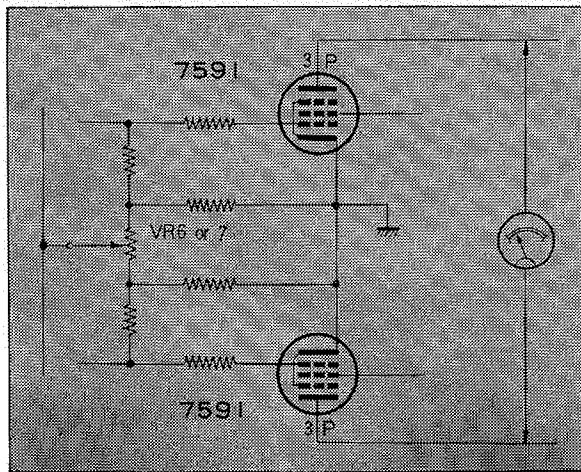
CHASSIS-BOTTOM VIEW



■ CHASSIS TOP VIEW



■ DC BALANCE ADJUSTMENT



DC Balance Adjustment

Set the tester or ammeter at about 10 milliamperes range to measure the current between the two 7591 plates. Adjust VR6 for zero reading; however a reading of 3 milliamperes or less is satisfactory.

PARTS DESCRIPTION LIST

■ CAPACITORS

SYMBOL NO.	DESCRIPTION
C1, 11, 19, 51, 61, 69	Electrolytic Tubular 25mfd. 10V
C2, 52	Ceramic 0.01mfd. +100-0%
C3, 53, 109	Paper Tubular 0.01mfd. ±20%
C4, C54	Ceramic 0.002mfd. ±20%
C7, 57	Metalized Paper 0.1mfd. ±20%
C8, 16, 58, 66	Ceramic 560mmfd. ±20%
C9, 15, 21, 24, 59, 65	Ceramic 100mmfd. ±10%
71, 74	" "
C10, 60	Paper Tubular 0.02mfd. ±20%
C12, 62	Paper Tubular 0.05mfd. ±20%
C13, 14, 63, 64	Ceramic 0.001mfd. ±20%
C17, 67	Ceramic 730mmfd. ±20%
C18, 68	Ceramic 0.003mfd. ±20%
C20, C70	Electrolytic Tubular 1mfd. 150V
C22, 23, 72, 73	Paper Tubular 0.1mfd. ±20%
C101, 102	Electrolytic Tubular 100mfd. 250V
C103	Electrolytic 3-Section 40mfd. 450V
C104	Electrolytic Tubular 40mfd. 150V
C105, 107, 108	Electrolytic Tubular 50mfd. 25V
C106	Electrolytic Tubular 500mfd. 10V

■ RESISTORS

SYMBOL NO.	DESCRIPTION
R1, 51	Dep. Carbon 47K ±10% ½W
R2, 52	Dep. Carbon 1.5K ±10% ½W
R3, 53	Dep. Carbon 2.2K ±10% ½W
R4, 23, 54, 73	Dep. Carbon 270K ±10% ½W
R5, 8, 55, 58	Dep. Carbon 3.3M ±20% ½W
R6, 56	Dep. Carbon 68K ±10% ½W
R7, 57	Dep. Carbon 33K ±10% ½W
R10, 60	Dep. Carbon 1M ±20% ½W
R11, 18, 61, 68, 106	Composition 68K ±10% ½W
R12, 31, 32, 62, 81, 82	Composition 33K ±10% ½W
R13, 63	Dep. Carbon 3.3K ±10% ½W
R14, 64	Dep. Carbon 100K ±10% ½W
R15, 16, 65, 66	Composition 4.7M ±20% ½W
R17, 67	Composition 330K ±10% ½W
R19, 69	Composition 150K ±10% ½W
R20, 70	Dep. Carbon 1.2K ±10% ½W
R21, 71	Composition 100ohm ±10% ½W
R22, 72	Composition 1M ±20% ½W
R24, 74	Dep. Carbon 4.7K ±10% ½W
R25, 26, 75, 76	Dep. Carbon 56K ±10% ½W
R27, 28, 77, 78	Composition 220K ±10% ½W
R29, 30, 79, 80	Composition 1.5K ±20% ½W
R33, 83	Dep. Carbon 5.6K ±10% ½W
R34, 84	Wirewound 56ohm ±5% 4W
R35, 85	Wirewound 56ohm ±5% 2W
R38, 88	Composition 10K ±10% ½W
R101	Wirewound 5ohm ±5% 8W
R102	Wirewound 1K ±5% 8W
R103	Wirewound 10K ±5% 20W
R104	Dep. Carbon 8.2K ±10% 1W
R105	Composition 22K ±20% ½W
R107	Wirewound 15ohm ±5% 8W
R108	Composition 4.3K ±5% ½W

■ PRINTED CIRCUITS

SYMBOL NO.	DESCRIPTION	PART NO.
PC1	R9, 68K, C5, 0.001mfd. C6, 0.003mfd Equalization	R15-09
PC2	R59, 68K, C55, 0.001mfd. C56 0.003mfd. Equalization	R15-09

■ TUBES / DIODES

SYMBOL NO.	DESCRIPTION
V1	12AX7/ECC83 Channel L EQ. Amp.
V2	12AX7/ECC83 Channel R EQ. Amp.
V3	12AX7/ECC83 Channel L ·R Tone Control
V4	6AN8 Channel L DRIVER & PHASE INV
V5	6AN8 Channel R DRIVER & PHASE INV
V6,7	7591 Channel L POWER Amp.
V8,9	7591 Channel R POWER Amp.
D1,2	FR 1K B+ Rect.
D3,	KO1, 30% VI, 2 Heater DC Rect.
D4	SM-150S DC Bias Rect.

■ POTENTIOMETERS

SYMBOL NO.	DESCRIPTION	PART NO.
VR1	Dual, 1M (C) SEPARATION	R02-0139
VR2	Dual, 1M (A · C) BALANCE	R02-0134
VR3	Dual, 1M (B) VOLUME	R02-2112
VR4	Dual, 1M (A) TREBLE	R04-0201
VR5	Dual, 1M (A) BASS	R04-0201
VR6	1K, (B) DC Balance	R10-06
VR7	1K, (B) DC Balance	R10-06
VR8	100ohm (B) HUM BALANCE TYPE H30	R10-01
VR9	100ohm (B) HUM BALANCE TYPE H30	R10-01

■ SWITCHES

SYMBOL NO.	DESCRIPTION	PART NO.
S1 a~f	Rotary, INPUT SELECTOR Y-3 · 6 · 6	S03-536
S2	See Saw, TAPE MONITOR	S10-22V
S3 a~f	Rotary, MODE Y-2 · 5 · 4	S03-310
S4	See Saw, LOUDNESS	S10-22V
S5	See Saw, HIGH FILTER	S10-22V
S6	See Saw, LOW FILTER	S10-22V
S7	See Saw, SPEAKERS	S10-22V
S8	See Saw, PHASE	S10-22V
S9	POWER	S12-16V

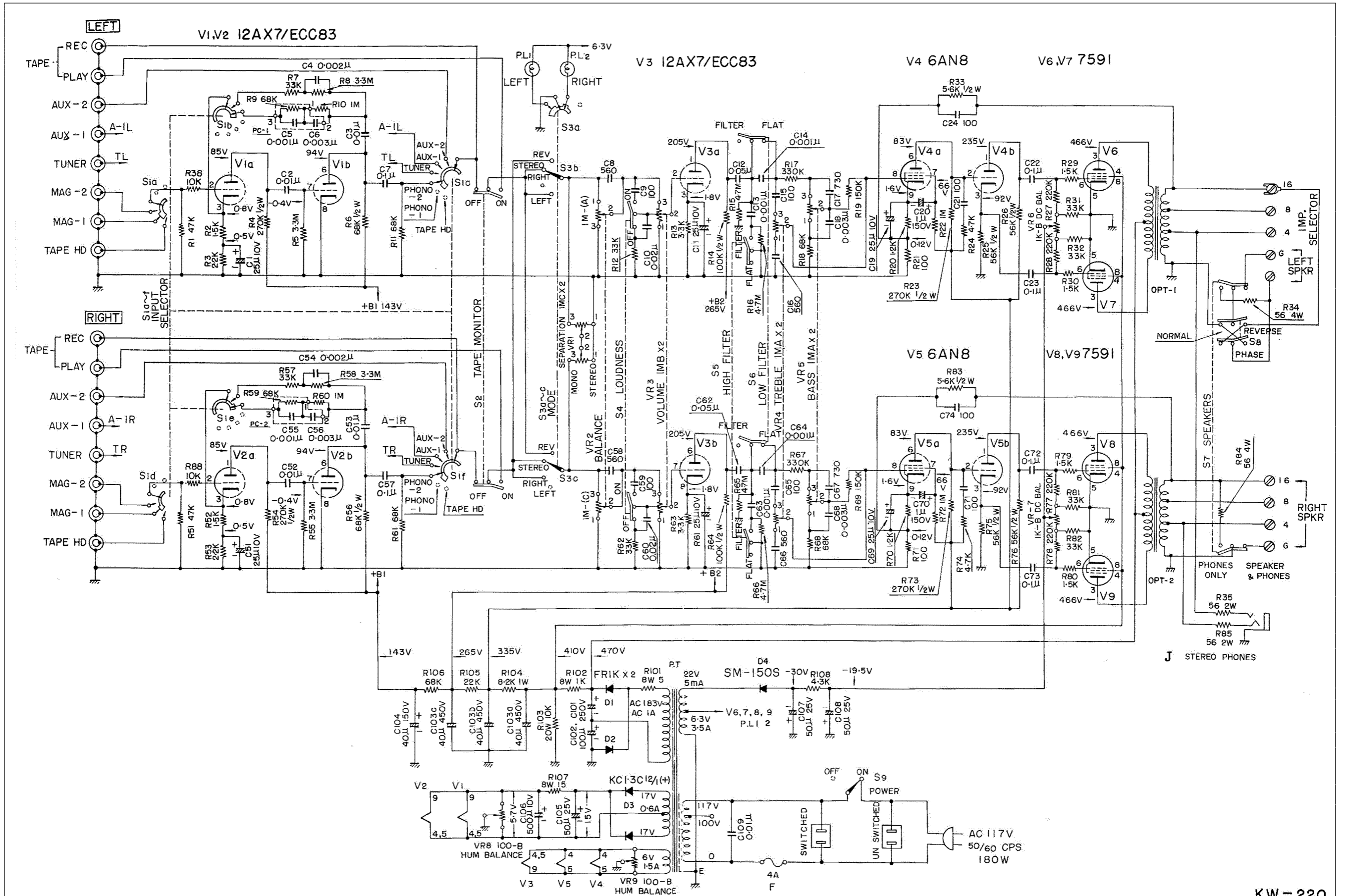
■ TRANSFORMERS

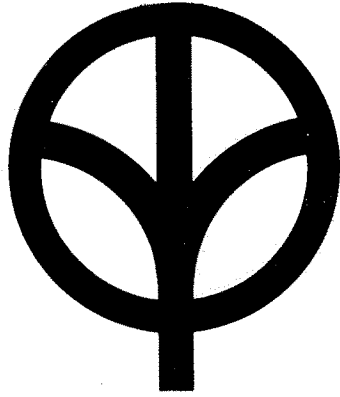
SYMBOL NO.	DESCRIPTION	PART NO.
OPT1	Channel L OUTPUT	T02-49
OPT2	Channel R OUTPUT	T02-49
PT	Power	T01-125A

■ MISCELLANEOUS

SYMBOL NO.	DESCRIPTION	PART NO.
PL1	6~8V 0.15A	S16-01
PL2	6~8V 0.15A	S16-01
F	4Amp.	S17-04
—	Jewel Red X2	A53-13
J	Stereo Phone Jack	E16-08
—	Knob, INPUT SELECTOR, MODE, SEPARATION POWER, VOLUME	S14-174
—	Knob, BASS, TREBLE Dual Front	S14-173
—	Knob, BASS, TREBLE Dual Back	S14-175
—	Knob, BALANCE Dual Front	S14-173
—	Knob, BALANCE Dual Back	S14-176

SCHEMATIC DIAGRAM





KENWOOD

KENWOOD ELECTRONICS, INC.

NEW YORK

LOS ANGELES