SERVICE DATA

MODELS DV888 AND VR781

COMBINATION RADIO PHONOGRAPH AND TELEVISION RECEIVER

MODELS DV888 AND VR781

SPECIFICATIONS

Models DV888 and VR781 are combination radio phonograph and television receivers. The 17" television receiver is similar to the DV884 receiver. The radio receiver is comprised of a 3 tube AM tuner and the two audio tubes of the television sound amplifier.

For service information on the television receiver other than that contained in this manual refer to Philips DV884 Service Manual.

The record player is a Webster Model 100, three speed automatic changer using an Astatic crystal turnover cartridge No. LQD1M. For servicing information on the changer refer to the Model 100 Record Changer Service Manual.

As the phonograph motor is frequency sensitive, this model is designed in both a 25 cycle and a 60 cycle version.

TELEVISION ANTENNA CONNECTIONS

An antenna is built into the cabinet that is reasonably satisfactory for strong local signals in the absence of severe reflections. An external antenna using a 300 ohm transmission line may be connected to the antenna terminals.

To service this receiver satisfactorily a good external antenna installation is needed. Make certain the transmission line is as short as possible, has 300 ohms impedance and is kept clear of all surrounding objects including the antenna mast itself by at least 6 inches. Unless the signal strength in the area of operation is at least 1000 microvolts, it is advisable to use a type of transmission line having very low attenuation.

The antenna itself should be designed to offer a good match to the 300 ohm transmission line, either directly or by transformer coupling.

Disconnect the built-in antenna when using the external antenna.

For lightning protection, the antenna mast should be connected to a good ground, and the transmission line connected to an approved type of lightning arrestor, one terminal of which is grounded.

All electrical joints must be carefully made. A coating of glyptal on each joint exposed to the weather will assist in maintaining trouble-free performance over a long period of time.

The radio receiver is equipped with a loop antenna which provides good reception in most localities. An external antenna is recommended for maximum results. In noisy locations it is advisable to ground the receiver to a cold water pipe or grounding rod.

TUBE COMPLEMENT

V1	6BC5	1st RF Amplifier
V2	6J6	Oscillator Mixer
V101	6CB6	1st Video I-F Amplifier
V102	6CB6	2nd Video I-F Amplifier
V103	6CB6	3rd Video I-F Amplifier
V104	6AL5	Video Detector
V105	6CB6	Video Amplifier
V106	6SN7GT	Sync Amp and Separator
V107	6SN7GT	Sync Clipper and Vertical Osc.
V108	6S4	Vertical Amplifier
V109	6AU6	Audio I-F Amplifier
V110	6AL5	FM Detector
V111	6AT6	1st Audio Amplifier
V112	6AQ5	Audio Output
V113	6AX5GT	LV Rectifier
V114	5U4G	LV Rectifier
V115	6SN7GT	Horizontal Oscillator
V116	6AU5GT	Horizontal Amplifier
V117	6W4GT	Damper
V118	1B3GT	HV Rectifier
V119	17BP4A	17" Black Picture Tube
V201	6BA6	R-F Amplifier (A.M. Radio)
V202	6BE6	Converter (A.M. Radio)
V203	6BA6	I-F Amplifier (A.M. Radio)

INTERMEDIATE FREQUENCIES: Video 26.25 Mc; Sound, 21.75; A.M. Radio, 455 kc.

INTERCARRIER: Sound System, 4.5 Mc.

SCANNING: 525 lines, interlaced.

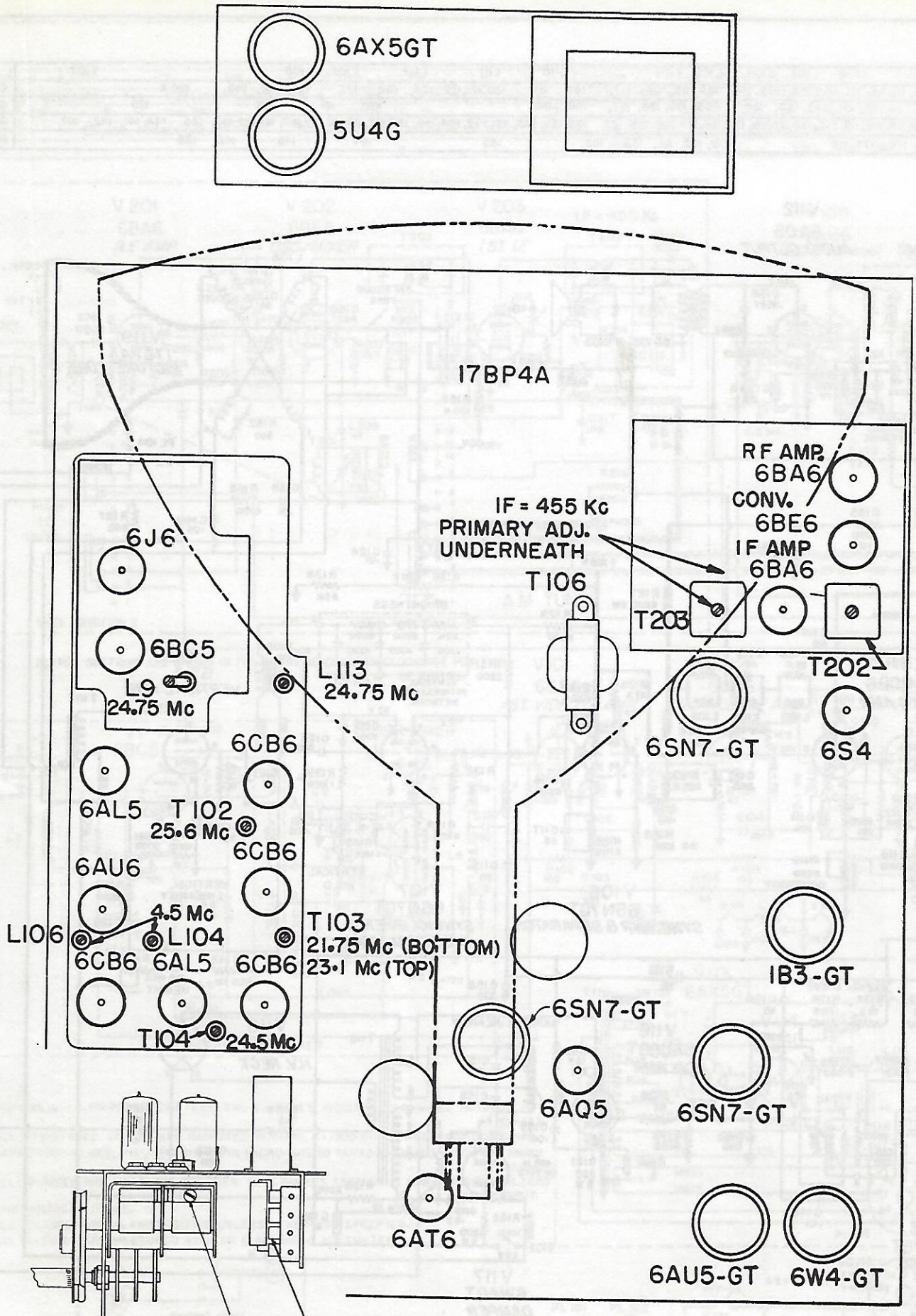
VERTICAL SCANNING FREQUENCY: 60 c. (field frequency).

FRAME FREQUENCY: 30 c. (picture repetition rate).

TELEVISION CONTROL

Function	Location	Description
A-M Tuning	Front Panel	Outer Knob ⎫ Dual Knob
Phono, A-M, TV Switch	" "	Inner Knob ⎭
Contrast	" "	Outer Knob ⎫ Dual Knob
Off-Volume	" "	Inner Knob ⎭
Tone	" "	Outer Knob ⎫ Dual Knob
Brightness	" "	Inner Knob ⎭
Vertical Hold	" "	Outer Knob ⎫ Dual Knob
Horizontal Hold	" "	Inner Knob ⎭
Fine Tuning	" "	Outer Knob ⎫ Dual Knob
Channel Selector	" "	Inner Knob ⎭

Function	Location	Description
Vertical Linearity	Rear of Chassis	Slotted Stud
High Low Voltage	Rear of Chassis	Switch
Height	Rear of Chassis	Slotted Stud
Horizontal Range	Rear of Chassis	Slotted Core
Horizontal Drive	Rear of Chassis	Slotted Stud
Horizontal Lock	Rear of Chassis	Slotted Core
Horizontal Linearity	Rear of Chassis	Slider
Horizontal Width	Rear of Chassis	Slider
Focus Control	On Yolk Assembly	Slotted Shaft
Centering Control	On Yolk Assembly	Shaft with Flat



ALIGNMENT POINTS AND TUBE LOCATION DIAGRAM

HIGH VOLTAGE WARNING

Operation of the receiver chassis outside of the cabinet involves a shock hazard. An interlock in the line cord disconnects the power when the back cover is removed. The high voltage supply, while of low current capacity, operates at a 12,500 volt potential. Exercise all normal HIGH VOLTAGE precautions while working on this equipment.

AM TUNER ALIGNMENT

Connect the VTVM across R-215 at the terminal strip on the under side of the chassis. Set the SELECTOR SWITCH to the AM position. Follow the steps in the chart below using just enough signal generator output to give a useful indication on the VTVM (approximately 2 volts).

Step	Dummy Ant.	Signal Generator Coupling To	Signal Generator Frequency (AM Modulated 30%)	Radio Dial Setting	Adjust	Remarks
1	.01 Mfd. Capacitor	Pin No. 7 of the 6BE6 Converter Tube	455 KC	1000 KC	T203 (Top and Bottom) T202 (Top and Bottom)	Adjust for maximum indication on the VTVM
2	Same	Stator of C-202A	455 KC	1000 KC	C207	Adjust for maximum indication on the VTVM
3	200 mmf. Capacitor	Loop Antenna Center Terminal	1600 KC	1600 KC	C201B C213	Adjust for maximum indication on the VTVM

REPLACEMENT PARTS LIST

For dependable repairs always use genuine replacement parts. When ordering always give model number of receiver and description and part number of parts required.

CAPACITORS

Symbol	Value	Rating	Description	Part No.
C1	5 mmf	500V	Ceramic	
C2	.5-3 mmf		Trimmer	
C3	.001 mf	400V	Tubular	
C4	120 mmf	500V	Ceramic	
C5	.5-3 mmf		Trimmer	
C6	.001 mf	400V	Tubular	
C7	10 mmf	500V	Ceramic	
C8	100 mmf	500V	Ceramic	Part of
C9	20 mmf	500V	Ceramic	RF Tuner 130-117
C10			Fine Tuning	
C11	.5-3 mmf		Trimmer	
C12	.5-3 mmf		Trimmer	
C13	.001 mf	400V	Tubular	
C14	10 mmf	500V	Ceramic	
C15	300 mmf	500V	Ceramic	
C16	.005 mf	500V	Ceramic Disc	
C101	.005 mf	500V	Ceramic Disc	514-011
C102	.005 mf	500V	Ceramic Disc	514-011
C103	.005 mf	500V	Ceramic Disc	514-011
C104	.005 mf	500V	Ceramic Disc	514-011
C105	68 mmf	500V	Ceramic	514-314
C106	.005 mf	500V	Ceramic Disc	514-011
C107	.005 mf	500V	Ceramic Disc	514-011
C108	10 mmf*	500V	Ceramic	514-304
C109	.5 mf	50V	Tubular	515-013
C110	.5 mf	50V	Tubular	515-013
C111	100 mf	10V	Electrolytic	516-053
C112	2.2 mmf	500V	Ceramic	517-973
C113	47 mmf	500V	Ceramic	514-312
C114	220 mmf*	500V	Mica	512-429
C115	.05 mf	600V	Tubular	517-620
C116	2200 mmf	500V	Ceramic	514-382
C117	68 mmf	500V	Ceramic	514-314
C118A	10 mf	450V	Dual Electrolytic	516-054
C118B	10 mf	450V		
C119	120 mmf*	500V	Mica	512-426
C120	.5 mf	200V	Tubular	517-230
C121	.005 mf	500V	Ceramic Disc	314-011
C122	1000 mmf	500V	Ceramic	514-378
C123	6800 mmf*	300V	Mica	512-447
C124	.01 mf	600V	Tubular	515-563
C125	.047 mf	600V	Tubular	515-851
C126A	75 mf	50V	Triple Electrolytic	516-543
C126B	60+40 mf	450V		
C127	.1 mf	600V	Tubular	515-575
C128	47 mmf	500V	Ceramic	514-312
C129A	.004 mf	500V	Ceramic Dual	514-020
C129B	.004 mf	500V		
C130	.01 mf	200V	Tubular	515-463
C131	.01 mf	600V	Tubular	515-563
C132	5 mf	50V	Electrolytic	516-055
C133	330 mmf*	500V	Ceramic	514-322
C134	.01 mf	600V	Tubular	515-563
C135A	20 mf	25V		
C135B	40 mf	450V	4 Sect. Electrolytic	515-544
C135C	40+40 mf	250V		

Symbol	Value	Rating	Description	Part No.
C136	.0047 mf	600V	Tubular	515-559
C137	.1 mf	200V	Tubular	515-475
C138	.01 mf	600V	Tubular	515-563
C139	56 mmf	500V	Mica	514-313
C140	.05 mf	600V	Tubular	517-620
C141	.01 mf	600V	Tubular	515-847
C143	.05 mf	600V	Tubular	517-620
C144	.5 mf	200V	Tubular	517-230
C145	.02 mf	600V	Tubular	517-616
C146	.05 mf	600V	Tubular	517-620
C147	330 mmf	500V	Mica	512-431
C148	.01 mf	400V	Tubular	515-827
C149	10-100 mmf		Horizontal Lock Trimmer	511-050
C150	82 mmf	500V	Mica	512-424
C151	82 mmf	500V	Mica	512-424
C152	820 mmf	500V	Mica	512-436
C153	4700 mmf	500V	Mica	512-077
C154	5 mf	50V	Electrolytic	516-055
C155	.05 mf	600V	Tubular	517-620
C156	330 mmf	500V	Mica	512-431
C157	.03 mf	600V	Tubular	517-618
C158	.1 mf	600V	Tubular	515-575
C159	.03 mf	600V	Tubular	517-618
C160	8 mf	475V	Electrolytic	516-052
C161	.1 mf	600V	Tubular	515-575
C162	500 mmf	20,000V	High Voltage Type	519-020
C163	.005 mf	450V	Ceramic Disc	514-011
C164	.005 mf	450V	Ceramic Disc	514-011
C165	50+50 mf	350V	Dual Electrolytic	516-542
C166	40+40 mf	450V	Dual Electrolytic	516-512
C168	.0033 mf	600V	Tubular	515-557
C169	.047 mf	1000V	Tubular Plastic	515-871
C201B			Oscillator Trimmer	
C202A			Ant. Section of Gang	510-049
C202B			Osc. Section of Gang	
C203	270 mmf*	500V	Ceramic	514-321
C204	.005 mf	500V	Ceramic Disc	514-011
C205	.005 mf	500V	Ceramic Disc	514-011
C206	.005 mf	500V	Ceramic Disc	514-011
C207	4-50 mmf		Trimmer	511-051
C208	270 mmf*	500V	Ceramic	514-321
C209	47 mmf*	500V	Ceramic	514-312
C210	.02 mf	600V	Tubular	517-616
C211	.005 mf	500V	Ceramic Disc	514-011
C212	270 mmf*	500V	Ceramic	514-321
C213	2.5-18 mmf		Loop Trimmer	511-015
C214	.005 mf	500V	Ceramic Disc	514-011
C215	.005 mf	500V	Ceramic Disc	514-011
C216	10 mmf*	500V	Ceramic	514-304
C217	.05 mf	200V	Tubular	517-220
C218	100 mmf		Part of CR201	
C219	100 mmf			
C220	.1 mf	200V	Tubular	515-475
C221	22 mmf*	500V	Ceramic	514-511
C222	6.8 mmf ±1 mmf	500V	Ceramic	514-505

* Tolerance = ±10%

REPLACEMENT PARTS (Continued)

RESISTORS

Symbol	Value	Rating	Description	Part No.
R1	3900 ohms*	½ w	Part of RF Tuner	130-117
R2	47,000 ohms*	½ w	Part of RF Tuner	130-117
R3	10,000 ohms*	½ w	Part of RF Tuner	130-117
R4	2200 ohms*	½ w	Part of RF Tuner	130-117
R5	4700 ohms*	½ w	Part of RF Tuner	130-117
R6	220,000 ohms*	½ w	Part of RF Tuner	130-117
R7	10,000 ohms*	½ w	Part of RF Tuner	130-117
R8	4700 ohms*	½ w	Part of RF Tuner	130-117
R9	15,000 ohms*	½ w	Part of RF Tuner	130-117
R101	4700 ohms*	½ w		501-633
R102	100 ohms*	½ w		501-613
R103	150 ohms*	½ w		501-615
R104	47 ohms*	½ w		501-609
R105	12000 ohms*	½ w		501-638
R106	150 ohms*	½ w		501-615
R107	47 ohms*	½ w		501-609
R108	100 ohms*	½ w		501-613
R109	12000 ohms*	½ w		501-638
R110	100 ohms*	½ w		501-613
R111	100 ohms*	½ w		501-613
R112	150 ohms*	½ w		501-615
R113	6800 ohms*	½ w	Part of L101	
R114	2200 ohms*	½ w	Part of L102	
R115	1 Megohm	½ w		501-761
R116	3300 ohms*	½ w		501-631
R117	220,000 ohms	½ w		501-753
R118	150 ohms*	½ w		501-615
R119	2500 ohms		Contrast Control Part of	506-027
R120	15000 ohms*	½ w	Part of L103	
R121	2200 ohms*	½ w	Part of L105	
R122	10,000 ohms*	½ w		501-637
R123	220,000 ohms	½ w		501-753
R124	2.2 Megohms	½ w		501-765
R125	270,000 ohms*	½ w		501-654
R126	47,000 ohms*	½ w		501-645
R127	5600 ohms	2 w		503-334
R128	820,000 ohms*	½ w		501-660
R129	2200 ohms*	½ w		501-629
R131	2200 ohms*	½ w		501-629
R132	47,000 ohms*	½ w		501-645
R133	15,000 ohms	2 w		503-339
R134	4700 ohms*	½ w		501-633
R135	1500 ohms*	1 w		502-627
R136	50,000 ohms		Brightness Control Part of	506-028
R137	10,000 ohms*	½ w		501-637
R138	33,000 ohms*	½ w		501-643
R139	1 Megohm*	½ w		501-661
R140	1 Megohm		Vertical Hold Control Part of	506-025
R141	5000 ohms		Vertical Linearity Control	505-055
R142	8200 ohms*	½ w		501-636
R143	1 Megohm	1 w		502-761
R144	1000 ohms*	1 w		502-625
R145	1 Megohm	½ w		501-761
R146	2.5 Megohms		Height Control	505-054
R147	150 ohms*	½ w		501-615
R148	22,000 ohms*	½ w		501-641
R149	270 ohms*	½ w		501-618
R150	33,000 ohms*	½ w		501-643
R151	10,000 ohms ±5%	½ w		501-807
R152	10,000 ohms ±5%	½ w		501-807
R153	10 Megohms	½ w		501-773
R154	1 Megohm		Volume Control Part of	506-027
R155	270 ohms*	1 w		502-618
R156	15000 ohms*	10 w	Wire Wound	504-051
R157	100,000 ohms	½ w		501-749
R158	1000 ohms*	5 w	Wire Wound	504-050
R159	2 Megohms		Tone Control Part of	506-028
R160	560 ohms*	½ w		501-622
R161	1000 ohms*	½ w		501-625
R162	560 ohms*	½ w		501-622
R163	4700 ohms*	½ w		501-633
R165	3900 ohms*	½ w		501-632
R166	120,000 ohms*	1 w		502-650
R167	330,000 ohms*	½ w		501-655
R168	820,000 ohms*	½ w		501-660
R169	82,000 ohms*	1 w		502-648
R170	330,000 ohms ±5%	1 w		502-019
R171	50,000 ohms		Horizontal Hold Control	506-025
R172	68,000 ohms*	½ w		501-647
R173	150,000 ohms*	½ w		501-651
R174	10,000 ohms*	½ w		501-637
R175	8200 ohms*	½ w		501-636
R176	50,000 ohms*		Horizontal Drive Control	505-057
R177	330,000 ohms*	½ w		501-655
R178	47,000 ohms*	1 w		502-645
R179	470,000 ohms*	½ w		501-757
R180	47 ohms*	½ w		501-609
R181	220 ohms ±5%	3 w	Wire Wound	504-049
R182	200 ohms*	5 w	Wire Wound	504-052
R183	2200 ohms*	1 w		502-629
R184	3.3 ohms	½ w		501-824
R185	1 Megohm	1 w		502-761
R186	150,000 ohms	½ w		501-751
R187	680 ohms	½ w		501-723
R188	39,000 ohms*	½ w		501-644
R190	1000 ohms*	5 w	Wire Wound	504-050
R201	1 Megohm	½ w		501-761
R202	68 ohms*	½ w		501-611
R203	56,000 ohms*	½ w		501-646
R204	8200 ohms*	½ w		501-636
R205	1000 ohms	½ w		501-725
R206	1 Megohm	½ w		501-761
R207	22,000 ohms*	½ w		501-641
R208	27,000 ohms*	1 w		502-642
R209	1 Megohm	½ w		501-761
R210	68 ohms*	½ w		501-611
R211	56,000 ohms*	½ w		501-646
R212	1000 ohms	½ w		501-725
R213	1 Megohm	½ w		501-761
R214	47,000 chms	½ w	Part of CR201	
R215	470,000 ohms	½ w		501-757
R216	560,000 ohms	½ w		501-658

* Tolerance = ±10%

TRANSFORMERS AND COILS

Symbol	Description	Part No.
L1, L2	Antenna Coils	Part of R-F Tuner 130-117
L3	Filament Choke	Part of R-F Tuner 130-117
L4, L5, L6	Converter Choke	Part of R-F Tuner 130-117
L7	Filament Choke	Part of R-F Tuner 130-117
L8	R-F Choke Coil	Part of R-F Tuner 130-117
L9	24.75 Mc I-F Choke	Part of R-F Tuner 130-117
L101	Video Peaking Coil	070-219
L102	Video Peaking Coil	070-218
L103	Video Peaking Coil	070-220
L104	4.5 Mc Trap, Limiter Grid Adj.	060-151
L105	Video Peaking Coil	070-217
L106	4.5 Mc Trap, Limiter Grid Adj.	060-151
L108	Deflection Yoke	060-156
L110	Horizontal Linearity Coil	060-152
L111	Width Control Coil	060-153
L112	Filament Choke	060-157
L113	I-F Mixer Coil 24.75 Mc	060-155
L114	Filter Choke	050-107
L115	Filter Choke	050-107
L116	Filter Choke	050-104
L201	Loop Antenna (Radio)	121-052
L202	Coil, 455 kc	070-228
T102	1st Video I-F Transformer	060-148
T103	2nd Video I-F Transformer	060-149
T104	3rd Video I-F Transformer	060-150
T106	Vertical Oscillator Transformer	050-174
T107	Vertical Output Transformer	050-176
T108	Ratio Detector Transformer	060-146
T109	Audio Output Transformer	050-177
T110	Power Transformer	050-186
T111	Horizontal Oscillator Transformer	060-147
T112	Horizontal Output Transformer	050-175
T201	Oscillator Coil (A.M.)	070-227
T202	1st I-F Transformer, 455 kc	060-106
T203	2nd I-F Transformer, 455 kc	060-106

RESISTOR-CAPACITOR NETWORK

CR101	Vertical Integrating Network	519-503
CR102	Audio Coupling Network	519-504
CR201	Audio Filter Network	519-505

REPLACEMENT PARTS (Continued)

MISCELLANEOUS ELECTRICAL PARTS

Part No.	Description
070-216	Silver Vortex Antenna
121-052	Loop Antenna Assembly, Radio
571-072	Antenna Terminal Panel, TV
571-106	Antenna-Ground Terminal Panel, Radio
570-033	C.R.T. Socket Assembly
110-398	C.R.T. Clamping Strap 17"
303-270	C.R.T. Rubber Cushion Strap
120-933	Deflection Yoke and Focus Magnet Assembly
060-156	Deflection Yoke
595-003	Dial Cord 21"
310-052	Dial Cord Spring
110-405	Dial Pulley and Bushing Assembly
110-410	Dial Pulley Stop and Sleeve Assembly
130-124	Focus Magnet Assembly
120-930	Hi Voltage Socket Assembly
570-032	Hi Voltage Socket
130-118	Ion Trap Magnet
100-036	Line Cord and Plug Interlock
571-226	Line Cord Receptacle
120-982	Power Interlock and Antenna Bracket Assembly
120-932	Power Socket and Mounting Plate Assembly
571-177	Plug, 9 Prong Male
570-015	Socket, 9 Prong Female

Part No.	Description
041-133	Speaker, 8" PM (Z = 3.2 ohms)
041-134	Speaker Cone and Voice Coil Assembly
301-339	Spring Clip Coil Guide
080-050	Switch, SPST Hi Low
080-125	Switch, TV-AM-Phono
	Switch, On-Off, Part of R154
130-117	Standard Coil Tuner
570-001	Tube Socket, Octal
570-031	Tube Socket, Octal Low Loss
570-030	Tube Socket, 9 Pin Min. Low Loss
570-009	Tube Socket, 7 Pin Min.
090-171	Phono Changer, Model 100—25 cycle
090-172	Phono Changer, Model 100—60 cycle
090-143	Phono Changer Motor, 25 cycle
090-134	Phono Changer Motor, 60 cycle
090-144	Phono Pickup Cartridge LQD1M
100-052	Phono Power Cable Assembly
350-106	Phono Slide Assembly
571-135	Phono Power Socket
571-106	Phono Connector, Female
571-107	Phono Connector, Male
090-127	Phono Needle—Standard (.003")
090-128	Phono Needle—Micro (.001")

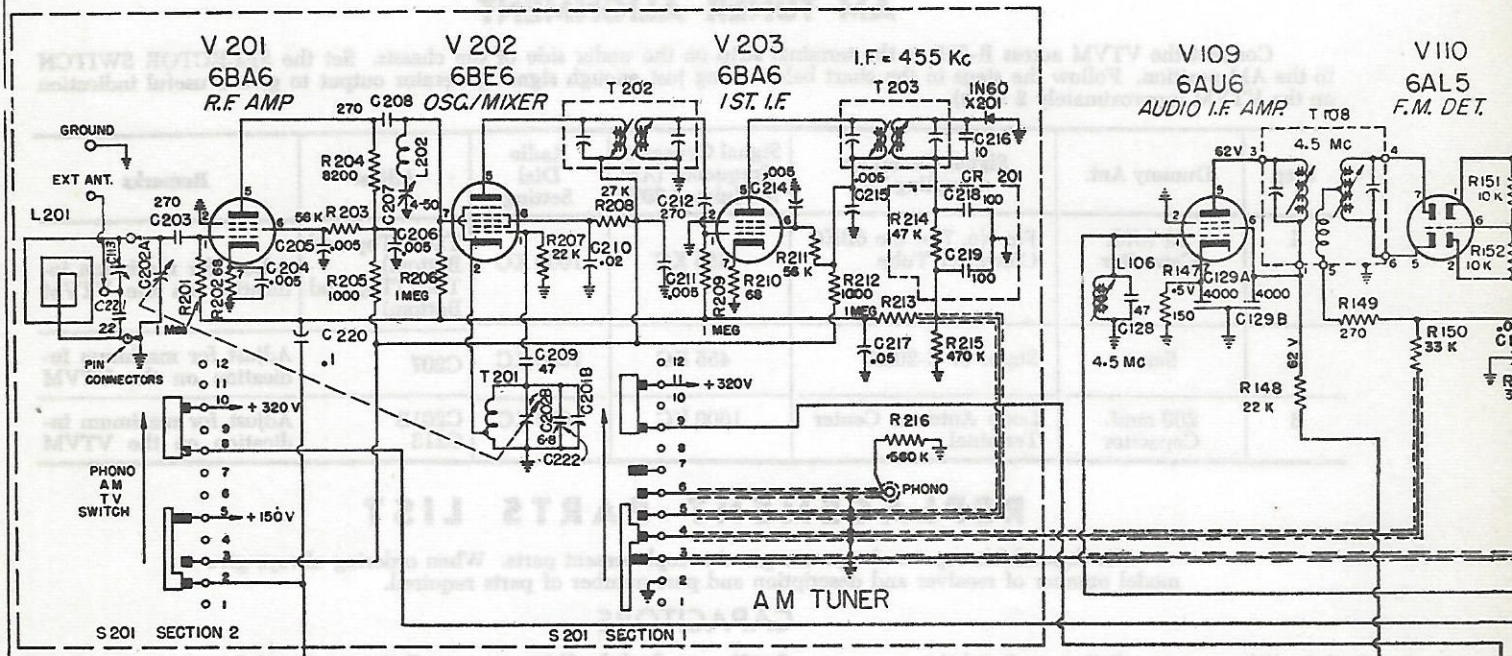
CABINET PARTS FOR MODEL DV888

030-299	Walnut Cabinet, DV888
030-300	Mahogany Cabinet, DV888
030-301	Blonde Cabinet, DV888
627-044	Grille Cloth, 12" x 19"
303-273	Cabinet Back Cover Only
120-957	Cabinet Back Cover Assembly
303-284	Cabinet Back Cover Phono Section
350-128	Door Pull
572-159	Knob, Plain, Inner
572-160	Knob, Plain, Outer
572-166	Knob, TV-Radio-Phono
572-174	Knob, Radio Tuning
572-164	Knob, Channel Indicator
572-165	Knob, Fine Tuning
332-661	Knob, Escutcheon
332-655	C.R.T. Escutcheon
332-656	C.R.T. Escutcheon Mask
332-657	C.R.T. Window

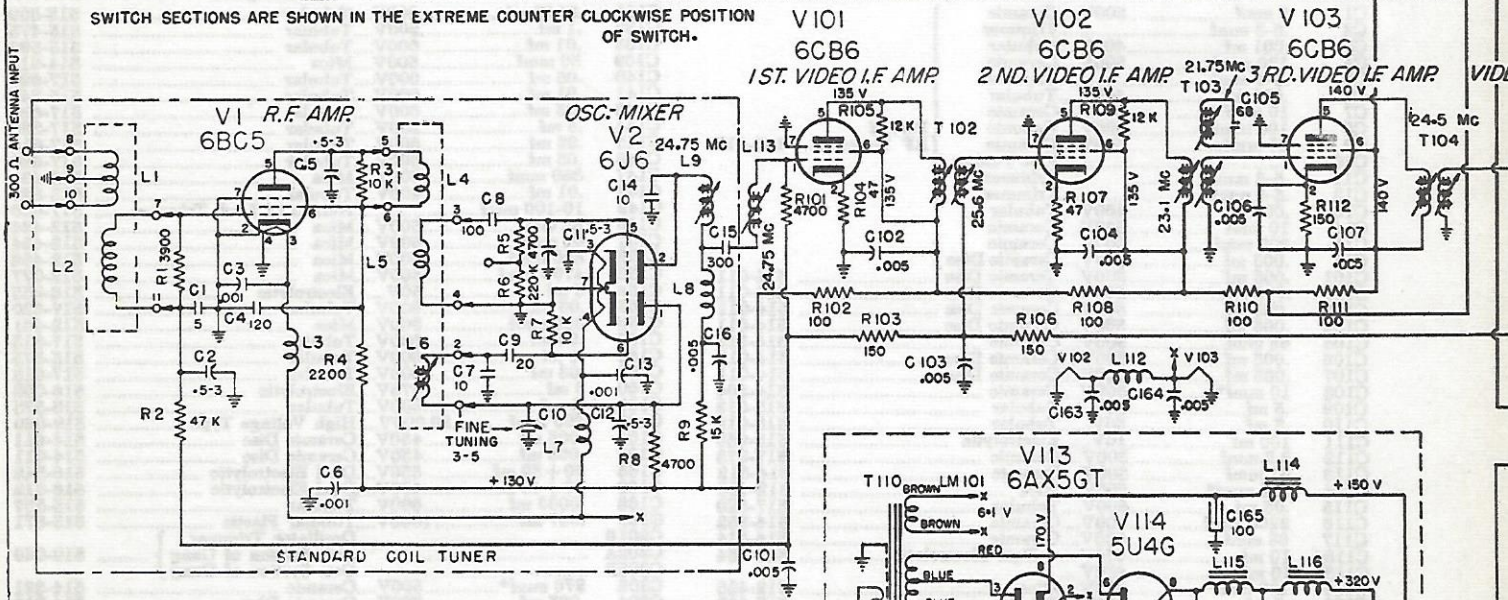
CABINET PARTS FOR MODEL VR781

030-296	Walnut Cabinet, VR781
030-297	Mahogany Cabinet, VR781
030-298	Blonde Cabinet, VR781
627-043	Grille Cloth, 13" x 31"
303-273	Cabinet Back Cover Only
120-957	Cabinet Back Cover Assembly
303-284	Cabinet Back Cover Phono Section
350-125	Door Pull, Large
350-126	Door Pull, Small
572-159	Knob, Plain, Inner
572-160	Knob, Plain, Outer
572-166	Knob, TV-Radio-Phono
572-174	Knob, Radio Tuning
572-164	Knob, Channel Indicator
572-165	Knob, Fine Tuning
332-660	Knob, Escutcheon
332-655	C.R.T. Escutcheon
332-656	C.R.T. Escutcheon Mask
332-657	C.R.T. Window

L, T	L1, L2, L201 L3 L202, L4, L5 L6 T201 L7, T202 L8, L9, L113 T110, T203, T102 L112, T103, L106, L114, L115, L116, T108, T104
C	201A, 202A, 203, 1 3 4 5, 204, 205, 206, 207, 208, 209, 8 9, 210, 201B, 11, 14, 202B, 211, 15, 16, 212, 214, 215, 102, 216, 217, 218, 219, 104, 128, 129A, 129B, 105, 106, 107 108, 130, 131, 132,
C	221 2 6, 220 7 10 222 12, 13 101 103 141, 163 164 169 165, 166, 135C, 126B, 143, 144, 14
R	1 201, 202, 203, 204, 205, 206 3 207, 5 6 7, 208, 209, 210, 211, 212, 213, 101, 214, 102, 103, 104, 105, 215 106, 107, 108, 109, 110, 111, 112, 147, 148, 149, 150, 151, 152, 153,
R	2 4 8 9 216 185 186, 165, 166, 167, 168, 169, 170,



SWITCH SECTIONS ARE SHOWN IN THE EXTREME COUNTER CLOCKWISE POSITION OF SWITCH.

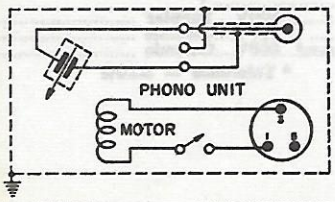


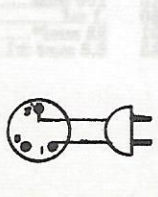
ARROWS ← ON POTENTIOMETERS AND SWITCHES INDICATE CLOCKWISE ROTATION OF SHAFT.

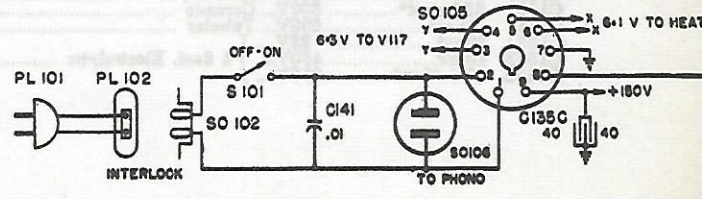
ALL RESISTANCE VALUES ARE INDICATED IN OHMS, K = 1000 OHMS, MEG = 1,000,000 OHMS.
CAPACITOR VALUES, ⊣⊢, SHOWN IN MICRO-MICRO FARADS, ⊣⊢, SHOWN IN MICRO FARADS.

ALL VOLTAGES ARE MEASURED BETWEEN TUBE SOCKET TERMINALS AND CHASSIS WITH ZERO SIGNAL INPUT.

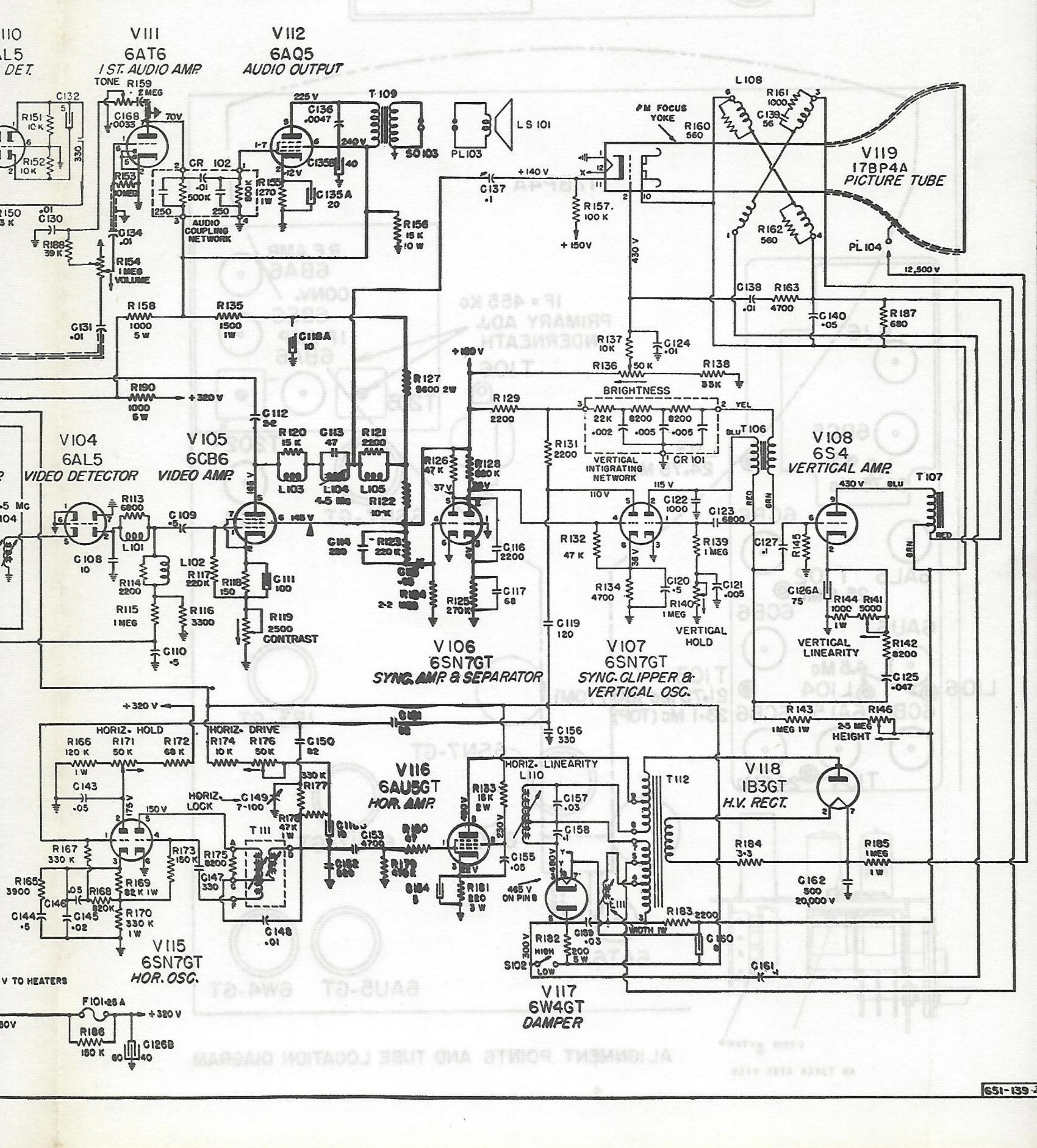
LINE VOLTAGE - 115 A.C.
ALL VOLTAGES ARE D.C. AND POSITIVE UNLESS OTHERWISE SPECIFIED.
D.C. VOLTAGES ARE MEASURED WITH AN ELECTRONIC VOLTMETER.







L101, L102 T111 L103, L104, L105, T109 L110 L111 T112 T106, L108 T107	L, T
, 132, 33, 134, 168 109, 110, 111, 112, 113, 114, 135A, 135B, 136, 118A, 115, 116, 117, 137 119 120, 121, 122, 123, 124, 127, 138, 139, 140, 126 A	C
143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 118B, 155, 156, 157, 158, 159, 160, 161 162 125	C
1, 152, 153, 154, 158, 159, 113, 114, 115, 116, 117, 118, 119, 135, 155, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 156, 131, 132, 134, 136, 137, 157, 139, 140, 138, 160, 161, 162, 163; 145, 144, 141, 142, 187	R
, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178 179, 180, 181, 133, 182, 183 184 143 146 185	R



651-139-3

L114, L115, L116, T108, T104 L101, L102 T111 L103, L104, L105, T109 L110 L111 T112 T106, L108

29A, 129B, 105, 106, 107 108, 130, 131, 132. 33, 134, 168 109, 110, 111, 112, 113, 114, 135A, 135B, 136, 118A, 115, 116, 117, 137 119 120, 121, 122, 123, 124, 127, 138, 139, 140, 126 A

64 169 165, 166, 135C, 126B, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 118B, 155, 156, 157, 158, 159, 160, 161 162

09, 110, 111, 112, 147, 148, 149, 150, 151, 152, 153, 154, 158, 159, 113, 114, 115, 116, 117, 118, 119, 135, 155, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 156, 131, 132, 134, 136, 137, 157, 139, 140, 138, 160, 161, 162, 163; 145,

188 186, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178 179, 180, 181, 133, 182, 183 184 143 146 185

V109 6AU6 UDIO I.F. AMP.

V110 6AL5 F.M. DET.

V111 6AT6 1ST. AUDIO AMP.

V112 6AQ5 AUDIO OUTPUT

T108 4.5 MC

TONE R159 2 MEG

T109

LS 101

PL103

SO103

L108

FM FOCUS YOKE

R160 560

R161 1000

C139 56

R162 560

C138 .01

R163 4700

C140 .05

R157. 100 K

+150 V

C137 .1

AUDIO COUPLING NETWORK

CR 102

R156 15 K 10 W

R154 1 MEG VOLUME

R153 10 MEG

R155 1270 11W

C135A 20

C135B 40

C136 .0047

C134 .01

C130 .01

C131 .01

R188 39 K

R148 22 K

R149 270

R150 33 K

R147

C129A 4000

C129B 4000

R151 10 K

R152 10 K

C132

R158 1000 5 W

R135 1500 1W

C118A 10

R190 1000 5W

+320 V

R127 3600 2W

R129 2200

R136 50 K

R138 33 K

BRIGHTNESS

R137 10 K

C124 .01

R131 2200

22 K .002

8200 .005

8200 .005

VERTICAL INTIGRATING NETWORK

GR 101

T106

V103 6CB6 3RD. VIDEO I.F. AMP.

T103 21.75 Mc

T104 24.5 Mc

C105 68

C106 .005

R112 150

C107 .005

R110 100

R111 100

V104 6AL5 VIDEO DETECTOR

V105 6CB6 VIDEO AMP.

R113 6800

C109 .5

C108 10

L101

L102

R117 220 K

R114 2200

R115 1 MEG

R116 3300

C110 .5

C111 100

R119 2500 CONTRAST

C112 22

R120 15 K

C113 47

R121 2200

L103

L104 4.5 Mc

L105

R122 10 K

C114 220

R123 220 K

R124 2.2 MEG

R126 47 K

R128 680 K

C116 2200

C117 68

R125 270 K

C119 120

V106 6SN7GT SYNC. AMP. & SEPARATOR

V107 6SN7GT SYNC. CLIPPER & VERTICAL OSC.

R132 47 K

R134 4700

C120 .5

R140 1 MEG

VERTICAL HOLD

R139 1 MEG

C121 .005

C122 1000

C123 6800

R133 15 K 2W

C157 .03

C158 .1

C155 .05

R181 820 3W

465 V ON PIN 8

R182 HIGH LOW

S102

C139 .03

R183 2200

WIDTH

C160

C161

V116 6AU5GT HOR. AMP.

HORIZ. LINEARITY L110

T112

V118 1B3GT H.V. RECT.

R184 3.3

C162 500 20,000 V

V108 6S4 VERTICAL

C127 .1

R145

C126A 75

R144 1000 1W

VERTICAL LINEARITY

R143 1 MEG 1W

2.5 MEG HEIGH

C156 330

HORIZ. HOLD

R166 120 K 1W

R171 50 K

R172 68 K

C143 .05

HORIZ. DRIVE

R174 10 K

R176 50 K

C150 82

330 K

R177

HORIZ. LOCK

C149 7-100

R178 47 K 1W

C153 4700

R180 82

C154 .5

C152 .05

R167 330 K

R173 150 K

R175 8200

C147 330

R165 3900

C146 .05

R168 820 K

R169 82 K 1W

C144 .5

C145 .02

R170 330 K 1W

C148 .01

T111

V115 6SN7GT HOR. OSC.

L114

+150 V

C165 100

L115

L116

+320 V

C166 40 40

C169 .047 1000V

PL105

SO105

6.3 V TO HEATERS

TO V117

F101 .25 A

+320 V

+150 V

R186 180 K

C135C 40 40

C126B 40

SO106

TO PHONO

V117 6W4GT DAMPER