

5/9

RADIO VALVE

AMERICAN AND
BRITISH VALVES
WITH WORKING
CHARACTERISTICS
CURVES
AND DATA



MANUAL

EQUIVALENTS AND
ALTERNATIVES
BASE WIRING
DIAGRAMS
CHARTS
ETC.

BERNARDS (Publishers), LTD.
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AMERICAN TYPE VALVE CLASSIFICATION CHART.

Heater or Filament VOLTAGE.	DIODE DETECTORS AND RECTIFIERS.										DIODE DETECTORS WITH AMPLIFIERS.								
	DETECTORS.			RECTIFIERS.							Rectifier Doublers	ONE DIODE.				TWO DIODES.			
	Single	Twin	Half-Wave.	Half-Wave Mercury	Half-Wave with Beam Power Amplifier	Half-Wave with Power Pentode	Half-Wave Gas COLD Cathode	FULL WAVE.				With High-Mu Triode	With High-Mu Triode and R.F. Pentode	With High-Mu Triode and Power Pentode	With Pentode	With Power Pentode	With Medium-Mu Triode	With High-Mu Triode	With Pentode
							Vacuum.	Mercury	Gas COLD Cathode										
0-0625																			
1-1																			
1-25																			
1-4	1A3, 12 ⁰ A.												1H5G, 1LH4.	3A8CT.	1D8CT.	1S5, 1LD5, 1SB6.	1N5C.		
2-0																	1B5, 1H6.		1F6, 1F7.
2-5		2S/4S	2V3, 2W3, 2X2, 2Y2, 2Z2, 879.					82.									55.	2A6.	2B7
3-0																			
3-3	900S.																		
4-0																			
5-0									5T4, 5U4, 5W4, 5X4, 5Z4, 5W4, 5Y3, 5Z3, 5Y4, 83-V, 5X3, 80.	83									
6-3	6H4, 90C4.	6HA.	1V, 6Y3, 6Z3, 12O3, 96, AD.	1.					84, 6Z4, 6X5, 6Y5, 6Z5, 6ZY5, 6W5.			6Q6.	6MB.				6SR7, 6R7, 6ST7, 6V7, 6C7, 85.	6SQ7, 6Q7, 6B6, 6T7, 75.	6B7, 6B8, 6SF7.
7-0		7A6							7Y4, 7Z4.								7E6.	7B6, 7C6, 7K7.	7E7, 7R7.
7-5			8I																
12-6		12H6.	12Z3.			12A7.													
14-0			14Z3						14Y4.										
20-0																			
21-0																			
25-0			25Y4, 25Z3, 25Z4.			25A7.						25Z6, 25Z8, 25Y5, 25X6.		250B.					
30-0																			
32-5						32L7													
35-0			35Z3, 35Z4, 35Z5, 35Y4.										35Z6.						
40-0			40Z5.																
45-0			45Z3, 45Z5.																
50-0												50Y6, 50Z7, 50Z6.							
70-0						70L7.													
117-0			117Z4.			117H7, 117R7, 117L7, 117M7.							117Z6.						

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CON- NEC- TION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS	GRID BIAS VOLTS	A C PLATE RESIST- ANCE OHMS	AMPLI- FICATION FACTOR	TRANS- CONDUCT- ANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS
			VOLTS	AMP.	C.T.											
00-A	6	DETECTOR TRIODE	5.0	0.25	D.C. F	GRID-LEAK DETECTOR	45	1.5	GRID RETURN TO (-) FILAMENT		30000	20	666	—	—	
01-A	6	DETECTOR AMPLIFIER	5.0	0.25	D.C. F	CLASS A AMPLIFIER	90 135	2.5 3.0	—	—	-4.5 -9.0	11000 10000	8.0 8.0	725 800	—	
0A4-G	14	GAS-TRIODE			COLD	RELAY SERVICE	PEAK CATHODE CURRENT, 100 MAX. MA. D.C. CATHODE CURRENT, 25 MAX. MA. DROP, 60 APPROX. VOLTS. ANODE DROP, 70 APPROX. VOLTS.									
0Z3	36	FULL-WAVE GAS RECTIFIER			COLD	RECTIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE OZ4.									
OZ4 (G)	13	FULL-WAVE GAS RECTIFIER			COLD	RECTIFIER	STARTING-SUPPLY VOLTAGE PER PLATE, 300 MIN. PEAK VOLTS. PEAK PLATE CURRENT, 200 MAX. MA. D.C. OUTPUT CURRENT, 75 MAX. 30 MIN MA. D.C. OUTPUT VOLTAGE, 300 MAX. VOLTS.									
1	9	HALF-WAVE RECTIFIER	6.3	0.3	HTR.	RECTIFIER	MAX. A.C. VOLTAGE PER PLATE, 350. MAX. D.C. OUTPUT IN MA., 50. MAX. INVERSE PEAK VOLTS, 1000. MAX. PEAK CURRENT, 400 MA.									
1A3	163	H.F. DIODE	1.4	0.15	FIL.	DETECTOR	MAX. A.C. VOLTAGE PER PLATE -117. MAX. OUTPUT CURRENT -0.5 MA.									
1A4-P	12	SUPER-CONTROL R.F. AMPLIFIER PENTODE	2.0	0.06	D.C. F	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 1D5-GP									
1A4-T	10	SUPER-CONTROL R.F. AMPLIFIER TETRODE	2.0	0.06	D.C. F	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 1D5-GT									
1A5-GT/G	75	POWER AMPLIFIER PENTODE	1.4	0.05	D.C. F	CLASS A AMPLIFIER	85 90	3.5 4.0	85 90	0.7 0.8	-4.5 -4.5	300000 300000	—	860 850	25000 25000	0.100 0.115
1A6	68	PENTAGRID CONVERTER (8)	2.0	0.06	D.C. F	CONVERTER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 1D7-G.									
1A7-G (GT)	113	PENTAGRID CONVERTER (8)	1.4	0.05	D.C. F	CONVERTER	90	0.55	45 (14)	0.6	0	600000	ANODE GRID (#2): 90 MAX. VOLTS. 1.2 MA. OSCILLATOR GRID (#1) RESISTOR, 0.2 MEG. CONVERSION TRANSCOND., 250 MICROMHOS.			
1B4-P	12	R.F. AMPLIFIER PENTODE	2.0	0.06	D.C. F	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 1E5-GP.									
1B5/25S	69	DUPLEX-DIODE TRIODE	2.0	0.06	D.C. F	TRIODE UNIT AS AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 1H6-G.									
1B7-G	113	PENTAGRID CONVERTER	1.4	0.10	D.C. F	OSCILLATOR-AMPLIFIER CONVERTER	90	1.5	45	GRID RETURNS THRU 200000 Ω RESISTOR TO (-) F		350000	—	350	GRID No. 2, 90 VOLTS, 1.6 MA.	
1B8-GT	128	MULTI-PURPOSE	1.4	0.10	D.C. F	DIODE-TRIODE BEAM AMPLIFIER	90 90	0.15 6.3	90	1.4	TRIODE, 0 BEAM AMP., -6	240000	—	275 1150	1400	210 MW
1C4	12	SUPER-CONTROL R.F. AMPLIFIER PENTODE	2.0	0.12	D.C. F	AMPLIFIER	180	2.5	67.5	0.9	0	1000000	1000	1000	—	—
1C5-GT/G	75	POWER AMPLIFIER PENTODE	1.4	0.10	D.C. F	CLASS A AMPLIFIER	83 90	7.0 7.5	83 90	1.6 1.6	-7.0 -7.5	110000 115000	—	1500 1550	9000 8000	0.20 0.24
1C6	68	PENTAGRID CONVERTER (8)	2.0	0.12	D.C. F	CONVERTER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 1C7-G.									
1C7-G	113	PENTAGRID CONVERTER (8)	2.0	0.12	D.C. F	CONVERTER	135 180	1.3 1.5	67.5 67.5	2.5 2.0	-3.0 -3.0	600000 700000	ANODE GRID (#2): 180 (8) MAX VOLTS, 4.0 MA. OSCILLATOR-GRID (#1) RESISTOR, CONVERSION TRANSCOND., 325 MICROMHOS. (19)			
1D4	28	POWER AMPLIFIER PENTODE	2.0	0.24	D.C. F	CLASS A AMPLIFIER	180	9.5	180	2.3	-6.0	137000	330	—	15000	0.75

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS.	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS.	GRID BIAS VOLTS	A.C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS. CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS
			VOLTS	AMP.	C.T.											
1D5-GP	41	SUPER-CONTROL R.F. AMPLIFIER PENTODE	2.0	0.06	D.C. F	CLASS A AMPLIFIER	90 180	2.2 2.3	67.5 67.5	0.9 0.8	{ -3.0 MIN. }	600000 1000000	425 750	720 750	—	—
1D5-GT	184	SUPER-CONTROL R.F. AMPLIFIER TETRODE	2.0	0.06	D.C. F	AMPLIFIER	135 180	2.2 2.2	67.5 67.5	0.7 0.7	-3.0 -3.0	350000 600000	—	625 659	—	—
1D7-G	113	PENTAGRID CONVERTER (8)	2.0	0.06	D.C. F	CONVERTER	135 180	1.2 1.3	67.5 67.5	2.5 2.4	{ -3.0 MIN. }	460000 500000	ANODE-GRID (#2) : 180 (3) MAX. VOLTS 2.3 MA. OSCILLATOR-GRID (#1) RESISTOR. CONVERSION TRANSCOND., 300 MICROMHOS. (19)			
1D8-GT	120	DIODE-TRIODE POWER AMPLIFIER PENTODE	1.4	0.1	D.C. F	CLASS A AMPLIFIER	45	1.6	45	0.3	-4.5	300000	—	650	20000	0.035
							90	5.0	90	1.0	-9.0	200000	—	925	12000	0.200
1E4-G	38	GENERAL PURPOSE TRIODE	1.4	0.05	D.C. F	AMPLIFIER	45	0.3	—	—	0	77000	25	325	—	—
							90	1.1	—	—	—	43500	25	575	—	—
1E5-GP	41	R.F. AMPLIFIER PENTODE	2.0	0.06	D.C. F	CLASS A AMPLIFIER	90 180	1.6 1.7	67.5 67.5	0.7 0.6	-3.0 -3.0	1000000 1500000	550 1000	600 650	—	—
1E7-G	135	TWIN-PENTODE POWER AMPLIFIER	2.0	0.24	D.C. F	PUSH-PULL CLASS A AMPLIFIER	135	7.0	135	2.0	-7.5	260000	—	1425	24000	0.575 (36)
1F4	33	POWER AMPLIFIER PENTODE	2.0	0.12	D.C. F	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 1F5-G.									
1F5-G	75	POWER AMPLIFIER PENTODE	2.0	0.12	D.C. F	CLASS A AMPLIFIER	90	4.0	90	1.1	-3.0	240000	—	1400	20000	0.11
							135	8.0	135	2.4	-4.5	200000	—	1700	16000	0.31
1F6	74	DUPLEX-DIODE PENTODE	2.0	0.06	D.C. F	PENTODE UNIT AS AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 1F7-GV.									
							180	2.2	67.5	0.7	-1.5	1000000	—	650	—	—
1F7-G (GV)	82	DUPLEX-DIODE PENTODE	2.0	0.06	D.C. F	PENTODE UNIT AS R.F. AMPLIFIER	180	2.2	67.5	0.7	-1.5	1000000	—	650	—	—
							135 (18)	—	—	—	-2.0	SCREEN SUPPLY, 135 VOLTS APPLIED THROUGH 0.8-MEGOHM RESISTOR GRID RESISTOR (10) 1.0 MEGOHM. VOLTAGE GAIN, 46.				
1G4-GT/G	38	DETECTOR AMPLIFIER TRIODE	1.4	0.05	D.C. F	CLASS A AMPLIFIER	90	2.3	—	—	-6.0	10700	8.8	825	—	—
1G5-G	75	POWER AMPLIFIER PENTODE	2.0	0.12	D.C. F	CLASS A AMPLIFIER	90	8.5	90	2.5	-6.0	133000	—	1500	8500	0.25
							135	8.7	135	2.5	-13.5	160000	—	1550	9000	0.55
1G6-GT/G	80	TWIN-TRIODE AMPLIFIER	1.4	0.10	D.C. F	CLASS B AMPLIFIER	90	2.0	—	—	0	—	—	12000	0.675 (36)	
1H4-G	38	DETECTOR AMPLIFIER TRIODE (1)	2.0	0.06	D.C. F	CLASS A AMPLIFIER	90	2.5	—	—	-4.5	11000	9.3	850	—	—
							135	3.0	—	—	-9.0	10300	9.3	900	—	—
							180	3.1	—	—	-13.5	10300	9.3	900	—	—
1H5-G (GT)	42	DIODE HIGH-MU TRIODE	1.4	0.05	D.C. F	TRIODE UNIT AS CLASS A AMPLIFIER	90	0.15	—	—	0	240000	65	275	—	—
							157.5	1.0 (13)	—	—	-15.0	—	—	8000	2.1 (12)	
1H6-G	79	DUPLEX-DIODE TRIODE	2.0	0.06	D.C. F	TRIODE UNIT AS CLASS A AMPLIFIER	135	0.8	—	—	-3.0	35000	20	575	—	—
1J5-G	75	POWER AMPLIFIER PENTODE	2.0	0.12	D.C. F	CLASS A AMPLIFIER	135	7.0	135	1.8	-16.5	125000	125	1600	13500	0.450
1J6-G	80	TWIN-TRIODE AMPLIFIER	2.0	0.24	D.C. F	CLASS B AMPLIFIER	135	—	—	—	0	—	—	—	10000	2.1
							135	(37) 5.0	—	—	-3.0	—	—	10000	1.9	

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CON-NEC-TION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS	GRID BIAS VOLTS	A.C. PLATE RESIST-ANCE OHMS	AMPLI-FICATION FACTOR	TRANS-CONDUCT-ANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS			
			VOLTS	AMP.	C.T.														
1L4	50	R.F. PENTODE AMPLIFIER	1.4	0.05	F	CLASS A AMPLIFIER	90	4.5	90	2.0	0	350000	—	1025	—	—			
1LA4	23	POWER AMPLIFIER PENTODE	1.4	0.05	D.C. F	CLASS A AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 1A5-GT/1A5-G												
1LA6	86	PENTAGRID CONVERTER	1.4	0.05	D.C. F	CONVERTER	90	0.55	45	0.0	0	750000	—	250	OSC. GRID THRU 200000 Ω TO -F, ANODE GRID 90 V., 1.2 MA.				
1LB4 (G)	23	POWER AMPLIFIER PENTODE	1.4	0.05	D.C. F	CLASS A AMPLIFIER	90	5.0	90	1.0	-9.0	200000	—	925	12000	0.20			
1LB6-GL	129	PENTAGRID CONVERTER	1.4	0.05	D.C. F	CONVERTER	90	0.4	67.5	2.2	0	2000000	—	100	ANODE GRID 67.5 V., 1.2 MA.				
1LC5	89	R.F. AMPLIFIER PENTODE	1.4	0.5	D.C. F	AMPLIFIER	90	1.15	45	0.2	0	1500000	—	775	—	—			
1LC6	86	PENTAGRID CONVERTER (8)	1.4	0.05	D.C. F	CONVERTER	45	0.7	35	1.4	0	300000	ANODE-GRID (#2) : 45 MAX. VOLTS, 1.4 MA. OSCILLATOR-GRID, (#1) RESISTOR, 0.2 MEG. CONVERSION TRANSCOND., 250 MICROMHOS.						
1LD5	55	DIODE-PENTODE	1.4	0.05	D.C. F	PENTODE UNIT AS AMPLIFIER	90	0.6	45	0.1	0	750000	—	575	—	—			
1LE3-GL	1	TRIODE	FOR OTHER CHARACTERISTICS, REFER TO TYPE 1E4G																
1LH4	25	DIODE HIGH-MU TRIODE	1.4	0.05	D.C. F	TRIODE UNIT AS CLASS A AMPLIFIER	90	0.15	—	—	0	240000	65	275	—	—			
1LNS	89	R.F. AMPLIFIER PENTODE	1.4	0.05	D.C. F	FOR OTHER CHARACTERISTICS, REFER TO TYPE 1N5-G													
1N5-G (GT)	41	R.F. AMPLIFIER PENTODE	1.4	0.05	D.C. F	CLASS A AMPLIFIER	90	1.2	90	0.3	0	1500000	—	750	—	—			
1N6-G (GT)	88	DIODE-POWER AMPLIFIER PENTODE	1.4	0.05	D.C. F	PENTODE UNIT AS A.F. AMPLIFIER	90	3.1	90	0.6	-4.5	300000	—	800	25000	0.10			
1P5-G (GT)	41	R.F. AMPLIFIER PENTODE	1.4	0.05	D.C. E	CLASS A AMPLIFIER	90	2.3	90	0.7	0	800000	640	750	—	—			
1Q5-GT/G	48	BEAM POWER AMPLIFIER	1.4	0.10	D.C. F	CLASS A AMPLIFIER	90	9.5	90	1.6	-4.5	—	—	2100	8000	0.27			
1R5	92	PENTAGRID CONVERTER	1.4	0.05	D.C. F	CONVERTER	45 90	0.7 0.8	45 45	1.9 1.8	0 0	600000 750000	GRID #1 RESISTOR, 100000 OHMS. CONVERSION TRANSCOND., 250 UMHOS						
1S4	94	POWER AMPLIFIER PENTODE	1.4	0.10	D.C. F	CLASS A AMPLIFIER	45	3.8	45	0.8	-4.5	100000	—	1250	8000	0.065			
1S5	53	DIODE-PENTODE	1.4	0.05	D.C. F	PENTODE UNIT AS CLASS A AMPLIFIER	PLATE SUPPLY, 41 VOLTS APPLIED THROUGH 1 MEGOHM RESISTOR. SCREEN SUPPLY, 41 VOLTS. GRID BIAS, 0 VOLTS, GRID RESISTOR, 10 MEGOHMS. VOLTAGE GAIN, 30 APPROXIMATELY.										(17)	—	—
1SA6-GT	58	R.F. AMPLIFIER PENTODE	1.4	0.05	D.C. F	AMPLIFIER	90	2.45	67.5	0.68	0	800000	—	970	—	—			
1SB6-GT	59	DIODE-PENTODE	1.4	0.05	D.C. F	PENTODE UNIT AS AMPLIFIER	90	1.45	67.5	0.38	0	700000	—	665	—	—			
1T4	50	SUPER-CONTROL R.F. AMPLIFIER PENTODE	1.4	0.05	D.C. F	CLASS A AMPLIFIER	45 90	1.9 2.0	45 45	0.7 0.65	0 0	350000 800000	—	799 750	—	—			
1T5-GT	75	BEAM POWER AMPLIFIER	1.4	0.05	D.C. F	CLASS A AMPLIFIER	90	6.5	90	1.4	-6.0	—	—	1150	14000	0.17			
1-V	9	HALF-WAVE RECTIFIER	6.3	0.3	H	WITH CONDENSER-INPUT FILTER	MAX. A.C. PLATE VOLTS (RMS) 325 MAX. D.C. OUTPUT MA., 45				MINIMUM TOTAL EFFECTIVE PLATE-SUPPLY IMPEDANCE: UP TO 117 VOLTS, 0 OHMS, AT 150 VOLTS, 30 OHMS; AT 325 VOLTS, 75 OHMS								

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS.	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS.	GRID BIAS VOLTS	A.C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS-CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS	
			VOLTS	AMP.	C.T.												
2A3	6	POWER AMPLIFIER TRIODE	2.5	2.5	F	CLASS A AMPLIFIER	250	60.0	—	—	-45.0	800	4.2	5250	25000	3.5	
						PUSH-PULL CLASS AB ₁ AMPLIFIER	300	80.0 (13)	CATHODE BIAS, 780 OHMS		—	—	—	—	—	—	—
2A4-G	38	ARGON-FILLED THYRATRON	2.5	2.5	F	CONTROL TUBE	200	AVERAGE ANODE CURRENT, 100 MA. PEAK ANODE CURRENT, 1.25 AMP. TUBE DROP, 15 VOLTS. COLD STARTING TIME, 2 SECONDS.								3000	15.0 (12)
2A5	56	POWER AMPLIFIER PENTODE	2.5	1.75	H	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6F6.										
2A6	64	DUPLEX-DIODE HIGH-MU TRIODE	2.5	0.8	H	TRIODE UNIT AS AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6SQ7.										
2A7 (S)	99	PENTAGRID CONVERTER (8)	2.5	0.8	H	CONVERTER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6A8.										
2B6	—	SPECIAL POWER AMPLIFIER	2.5	2.25	H	AMPLIFIER	250	40	—	—	-24	5150	18	3500	5000	4.0	
2B7	100	DUPLEX-DIODE PENTODE	2.5	0.8	H	PENTODE UNIT AS AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6B8-G.										
2E5	71	ELECTRON-RAY TUBE	2.5	0.8	H	TUNING INDICATOR	FOR OTHER CHARACTERISTICS REFER TO TYPE 6E5.										
2G5	71	ELECTRON-RAY TUBE	2.5	0.8	H	VISUAL INDICATOR	250	—	TARGET 250	—	-22 FOR 0° SHADOW ANGLE	PLATE VOLTAGE SUPPLIED THROUGH 1 MEG. RESISTOR					
2V3-G	17	HALF-WAVE RECTIFIER	2.5	5.0	F	RECTIFIER	MAX. PEAK INVERSE PLATE VOLTS, 16500. MAX. PEAK PLATE CURRENT, 12 MA. AVERAGE PLATE CURRENT, 2 MA.										
2W3 (GT)	16	HALF-WAVE RECTIFIER	2.5	1.5	F	MAXIMUM A.C. VOLTAGE 350 VOLTS, RMS MAXIMUM D.C. OUTPUT CURRENT 55 MILLIAMPERES											
2X2/870	2	HALF-WAVE RECTIFIER	2.5	1.75	H	RECTIFIER	MAX. A.C. PLATE VOLTS (RMS), 4500. MAX. D.C. OUTPUT MA., 7.5. MAX. PEAK INVERSE VOLTS, 12500. MAX. PEAK PLATE MA., 100.										
2X3 (G)	16	HALF-WAVE RECTIFIER (4)	2.5	2.0	F	WITH CONDENSER-INPUT FILTER	MAX. A.C. PLATE VOLTS (RMS), 350	MAX. D.C. OUTPUT MA., 125	MIN. TOTAL EFFECTIVE SUPPLY IMPEDANCE, 10 OHMS								
						WITH CHOKE-INPUT FILTER	MAX. A.C. PLATE VOLTS (RMS), 500	MAX. D.C. OUTPUT MA., 125	MINIMUM VALUE OF INPUT CHOKE, 5 HENRIES								
2Y2	2	HALF-WAVE RECTIFIER	2.5	1.75	H	MAXIMUM A.C. VOLTAGE 4500 VOLTS, RMS MAXIMUM D.C. OUTPUT CURRENT 5.0 MILLIAMPERES											
2Z2/G84	4	HALF-WAVE RECTIFIER	2.5	1.50	F	RECTIFIER	MAX. A.C. PLATE VOLTS (RMS), 350- MAX. D.C. OUTPUT CURRENT, 50 MA.										
3A4	168	POWER AMPLIFIER PENTODE	1.4	0.2	FIL.	CLASS A AMPLIFIER	135	90	2.6	-7.5	90000	—	1900	8000	0.6		
			2.8	0.1			150	13.3	90	2.2	-8.4	100000	—	—	—	0.7	
3A5	173	H.F. TWIN TRIODE	1.4	0.22	FIL.	CLASS A AMPLIFIER	90	3.7	—	—	-2.5	8.300	15	1800	—	—	
			2.8	0.11			—	—	—	—	—	—	—	—	—	—	
3A8-GT	125	DIODE-TRIODE R.F. PENTODE	1.4	0.1	D.C. F	TRIODE UNIT AS CLASS A AMPLIFIER	90	0.2	—	—	0	200000	65	325	—	—	
			2.8	0.05			PENTODE UNIT AS CLASS A AMPLIFIER	90	1.5	90	0.5	0	800000	—	750	—	—
3B5-GT	90	BEAM POWER AMPLIFIER	1.4	0.10	D.C. F	CLASS A AMPLIFIER		67.5	6.7	67.5	0.5	-7.0	100000	—	1500	5000	0.18
			2.8	0.05			—	—	—	—	—	—	—	—	—	—	
3C5-GT	82	POWER AMPLIFIER PENTODE	1.4	0.10	D.C. F	POWER AMPLIFIER PENTODE	90	0.0	—	—	-9.0	—	—	1450	10000	0.25	
			2.8	0.05			—	—	—	—	—	—	—	—	—	—	
3LE4	57	POWER AMPLIFIER PENTODE	2.8	0.05	D.C. F	CLASS A AMPLIFIER	90	9.0	90	1.8	-9.0	110000	—	1600	6000	0.30	

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS.	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS.	GRID BIAS VOLTS	A.C. PLATE		AMPLIFICATION FACTOR	TRANS-CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS
			VOLTS	AMP.	C.T.							RESISTANCE OHMS	PLATE CURRENT MA.				
3Q4	98	POWER AMPLIFIER PENTODE	1.4 2.8	0.10 0.05	D.C. F	CLASS A AMPLIFIER	90 90	9.5 7.7	90 90	2.1 1.7	-4.5 -4.5	100000 120000	—	2150 2000	10000 10000	0.27 0.24	
3Q5-GT	91	BEAM POWER AMPLIFIER	1.4 2.8	0.10 0.05	D.C. F	CLASS A AMPLIFIER	93 90	9.5 7.5	90 90	1.6 1.0	-4.5 -4.5	100000 110000	—	2100 1800	8000 8000	0.27 0.25	
3S4	98	POWER AMPLIFIER PENTODE	1.4 2.8	0.10 0.05	D.C. F	CLASS A AMPLIFIER	90 90	7.4 6.1	67.5 67.5	1.4 1.1	-7.0 -7.0	100000 100000	—	1575 1425	8000 8000	0.27 0.235	
4A6-G	141	TWIN-TRIODE POWER AMPLIFIER	2.0 4.0	0.12 0.06	D.C. F	CLASS B AMPLIFIER	90				-1.5'	ZERO-SIGNAL PLATE CURRENT, 11 MA. MAX. SIGNAL PLATE CURRENT, 10.8 MA		8000	1.0		
5T4	39	FULL-WAVE RECTIFIER	5.0	2.0	F	WITH CONDENSER INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 450 MAX. PEAK INVERSE VOLTS, 1550			MAX. D.C. OUTPUT MA., 225 MAX. PEAK PLATE MA., 675		MIN. TOTAL EFFECTIVE SUPPLY IMPEDANCE PER PLATE, 150 OHMS					
						WITH CHOKE INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 550 MAX. PEAK INVERSE VOLTS, 1550			MAX. D.C. OUTPUT MA., 225 MAX. PEAK PLATE MA., 675		MINIMUM VALUE OF INPUT CHOKE, 3 HENRIES					
5U4-G	39	FULL-WAVE RECTIFIER	5.0	3.0	F	WITH CONDENSER INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 450 MAX. PEAK INVERSE VOLTS, 1550			MAX. D.C. OUTPUT MA., 225 MAX. PEAK PLATE MA., 675		MIN. TOTAL EFFECTIVE SUPPLY IMPEDANCE PER PLATE, 75 OHMS					
						WITH CHOKE INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 550 MAX. PEAK INVERSE VOLTS, 1550			MAX. D.C. OUTPUT MA., 225 MAX. PEAK PLATE MA., 675		MINIMUM VALUE OF INPUT CHOKE, 3 HENRIES					
5V4-G	34	FULL-WAVE RECTIFIER	5.0	2.0	H	WITH CONDENSER INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 375 MAX. PEAK INVERSE VOLTS, 1400			MAX. D.C. OUTPUT MA., 175 MAX. PEAK PLATE MA., 525		MIN. TOTAL EFFECTIVE SUPPLY IMPEDANCE PER PLATE, 65 OHMS					
						WITH CHOKE INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 500 MAX. PEAK INVERSE VOLTS, 1400			MAX. D.C. OUTPUT MA., 175 MAX. PEAK PLATE MA., 525		MINIMUM VALUE OF INPUT CHOKE, 4 HENRIES					
5W4-GT G	39	FULL-WAVE RECTIFIER	5.0	1.5	F	WITH CONDENSER INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 350 MAX. PEAK INVERSE VOLTS, 1400			MAX. D.C. OUTPUT MA., 100 MAX. PEAK PLATE MA., 300		MIN. TOTAL EFFECTIVE SUPPLY IMPEDANCE PER PLATE, 25 OHMS					
						WITH CHOKE INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 500 MAX. PEAK INVERSE VOLTS, 1400			MAX. D.C. OUTPUT MA., 100 MAX. PEAK PLATE MA., 300		MINIMUM VALUE OF INPUT CHOKE, 6 HENRIES					
5 X 3	5	FULL-WAVE RECTIFIER	5.0	2.0	F	RECTIFIER	MAX. A.C. VOLTS PER PLATE (RMS), 400 MAX. D.C. OUTPUT MA., 110										
5 X 4-G	185	FULL-WAVE RECTIFIER	5.0	3.0	F	FOR OTHER RATINGS, REFER TO TYPE 5U4-G											
5Y3-GT 5Y3-G	39	FULL-WAVE RECTIFIER	5.0	2.0	F	WITH CONDENSER INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 350 MAX. PEAK INVERSE VOLTS, 1400			MAX. D.C. OUTPUT MA., 125 MAX. PEAK PLATE MA., 375		MIN. TOTAL EFFECTIVE SUPPLY IMPEDANCE PER PLATE, 10 OHMS					
						WITH CHOKE INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 500 MAX. PEAK INVERSE VOLTS, 1400			MAX. D.C. OUTPUT MA., 125 MAX. PEAK PLATE MA., 375		MINIMUM VALUE OF INPUT CHOKE, 5 HENRIES					
5Y4-G	185	FULL-WAVE RECTIFIER	5.0	2.0	F	FOR OTHER RATINGS, REFER TO TYPE 5Y3-G											
5Z3	5	FULL-WAVE RECTIFIER	5.0	3.0	F	FOR OTHER RATINGS, REFER TO TYPE 5U4-G											
5Z4	34	FULL-WAVE RECTIFIER	5.0	2.0	H	WITH CONDENSER INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 350 MAX. PEAK INVERSE VOLTS, 1400			MAX. D.C. OUTPUT MA., 125 MAX. PEAK PLATE MA., 375		MIN. TOTAL EFFECTIVE SUPPLY IMPEDANCE PER PLATE, 30 OHMS					
						WITH CHOKE INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 500 MAX. PEAK INVERSE VOLTS, 1400			MAX. D.C. OUTPUT MA., 125 MAX. PEAK PLATE MA., 375		MINIMUM VALUE OF INPUT CHOKE, 5 HENRIES					
6A3	6	POWER AMPLIFIER TRIODE	6.3	1.0	F	POWER AMPLIFIER TRIODE	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6B4-G										
6A4 LA	28	POWER AMPLIFIER PENTODE	6.3	0.3	F	CLASS A AMPLIFIER	100	9.0	100	1.6	-6.5	83250	1200	11000	0.31		
							180	22.0	180	3.9	-12.0	45560	2300	8900	1.40		
6A5-G	73	POWER AMPLIFIER TRIODE	6.3	1.25	H	POWER OUTPUT AMPLIFIER	60.0	60.0		-68.0 FIXED BIAS	800	4.2	5250	2500	1 TUBE 3.75		
							40.0	40.0		-80.0 FIXED BIAS	—	—	—	PP 3000	15		
							40.0	40.0	850 OHMS SELF-BIAS RESISTOR	—	—	—	—	PP 5000	10		

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMP.	SCREEN VOLTS	SCREEN CURRENT MILLIAMP.	GRID BIAS VOLTS	A.C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS-CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR POWER OUTPUT OHMS	POWER OUTPUT WATTS	
			VOLTS	AMP.	C.T.												
6A5	97	TWIN-TRIODE AMPLIFIER	6.3	0.8	H	CLASS B AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6N7-G.										
6A7	99	PENTAGRID CONVERTER (8)	6.3	0.3	H	CONVERTER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6A8.										
6A8(G) (CT)	114	PENTAGRID CONVERTER (8)	6.3	0.3	H	CONVERTER	100 250	1.1 3.5	50 100	1.3 2.7	-1.5 -3.0	600000 360000	ANODE-GRID (#2) : 250(8) MAX. VOLTS 4.0 MA. OSCILLATOR-GRID (#1) RESISTOR (15) CONVERSION TRANSCOND., 550 UMHOS				
6AB5/6N5	71	ELECTRON-RAY TUBE	6.3	0.15	H	VISUAL INDICATOR	PLATE & TARGET SUPPLY = 135 VOLTS. TRIODE PLATE RESISTOR = 0.25 MEG. TARGET CURRENT = 2.0 MA GRID BIAS, -10.0 VOLTS; SHADOW ANGLE, 0°; BIAS, 0 VOLTS; ANGLE, 90°; PLATE CURRENT, 0.5 MA.										
6AB6(G)	93	DIRECT-COUPLED POWER AMPLIFIER	6.3	0.5	H	AMPLIFIER	250 250	4.0 34.0	—	—	0	VALUES FOR INPUT TRIODE VALUES FOR OUTPUT TRIODE		8000	3.5		
6AB7/1853	142	TELEVISION AMPLIFIER PENTODE	6.3	0.45	H	CLASS A AMPLIFIER	300	12.5	200	3.2	-3.0	700000	—	5000	—	—	
6AC5-GT/G	70	HIGH-MU POWER AMPLIFIER TRIODE	6.3	0.4	H	CLASS B AMPLIFIER	250	5.0 (15)	—	—	0	—	—	—	10000	8.0 (12)	
						DYNAMIC COUPLED AMPLIFIER WITH TYPE 6P5-G DRIVER	250	BIAS FOR BOTH 6AC5-G AND 6P5-G IS DEVELOPED IN COUPLING CIRCUIT, AVERAGE PLATE CURRENT OF DRIVER = 5.5 MILLIAMPERES AVERAGE PLATE CURRENT OF 6AC5-G = 32 MILLIAMPERES									7000	3.7
6AC6-G(GT)	112	TRIPLE-TWIN POWER AMPLIFIER	6.3	1.1	H	POWER AMPLIFIER	180	OUTPUT 45 INPUT 7	—	—	0	19000	54	3000	3500	3.6	
6AC7/1852	142	TELEVISION AMPLIFIER PENTODE	6.3	0.45	H	CLASS A AMPLIFIER	300	10.0	150	2.5	CATHODE BIAS	750000	—	9000	CATHODE-BIAS RESISTOR 150 OHMS		
6AD5-G	70	HIGH-MU TRIODE	6.3	0.3	H	HIGH-MU TRIODE AMPLIFIER	250	0.9	—	—	-2.0	66000	100	—	—	—	
6AD6-G	83	ELECTRON-RAY TUBE	6.3	0.15	H	VISUAL INDICATOR	TARGET VOLTAGE 150 - 100	—	—	—	RAY CONTROL VOLTAGE 0 TO -50	—	—	—	—	—	
6AD7-G	130	TRIODE A.F. POWER PENTODE	6.3	0.85	H	TRIODE UNIT AS CLASS A AMPLIFIER	250	4.0	—	—	-25.0	19000	6.0	325	—	—	
						PENTODE UNIT AS CLASS A AMPLIFIER	PENTODE UNIT IS IDENTICAL WITH TYPE 6P6-G 6P6-G AND 6AD7-G MAY BE USED TOGETHER AS COMBINED PHASE INVERTER AND PUSH-PULL POWER AMPLIFIER										
6AE5-GT/G	70	AMPLIFIER TRIODE	6.3	0.3	H	CLASS A AMPLIFIER	95	7.0	—	—	-15.0	3500	4.2	1200	—	—	
6AE6-G	84	TWIN-PLATE CONTROL-TUBE	6.3	0.15	H	SHARP-CUTOFF TRIODE	250 250	4.5 0.01	—	—	-1.5 -9.5	35000	33.0	950	CONTROL TUBE FOR TWIN-ELECTRON-RAY INDICATOR TUBES, SUCH AS 6AF6-G		
						REMOTE CUTOFF TRIODE	250 250	6.5 0.01	—	—	-1.5 -35.0	25000	25.0	1000			
6AE7-GT	95	DOUBLE-DRIVER TRIODE	6.3	0.5	H	DRIVER	250	5.0	—	—	-13.5 (28)	9300	14	1500	—	—	
6AF5-G(GT)	70	AMPLIFIER TRIODE	6.3	0.3	H	CLASS A AMPLIFIER	180	7.0	—	—	-18.0	4900	7.4	1500	—	—	
6AF6-G	83	ELEC-RAY TUBE TWIN-INDL-TYPE	6.3	0.15	H	VISUAL INDICATOR	TARGET VOLTAGE, 100 VOLTS. CONTROL ELECTRODE VOLTAGE, 0 VOLTS; SHADOW ANGLE, 100°; TARGET CURRENT 0.9 MA., CONTROL-ELECTRODE VOLTAGE, 60 VOLTS; ANGLE 0°.										
							TARGET VOLTAGE, 135 VOLTS. CONTROL ELECTRODE VOLTAGE, 0 VOLTS; SHADOW ANGLE, 100°; TARGET CURRENT 1.5 MA., CONTROL-ELECTRODE VOLTAGE, 81 VOLTS; ANGLE, 0°.										

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS.	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS.	GRID BIAS VOLTS	A.C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS-CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS
			VOLTS	AMP	C.T.											
6AF7-G	119	ELEC. RAY TUBE TWIN-INDI. TYPE	6.3	0.3	H	VISUAL INDICATOR										
6AG6 (G)	108	POWER AMPLIFIER PENTODE	6.3	1.25	H	CLASS A AMPLIFIER	250	32	250	6.0	-6.0	—	—	10000	8500	3.75
6AG7	152	VIDEO POWER AMPLIFIER PENTODE	6.3	0.65	H	CLASS A AMPLIFIER	300	28.0	125	7.0	-2.0	100000	—	7700	3500	PEAK-TO-PEAK VOLTS OUTPUT 140 APPROX.
6AH7-GT	134	TWIN-TRIODE AMPLIFIER	5.3	0.3	H	AMPLIFIER	250	12	—	-9.0	6800	16	2400	—	—	
6AL6-G	49	BEAM POWER AMPLIFIER	6.3	0.9	H	CLASS A AMPLIFIER	250	72.0	250	5.0	-14.0	22500	—	6000	2500	6.5
6B4-G	38	POWER AMPLIFIER	6.3	1.0	F	CLASS A AMPLIFIER	325 325	80.0 (13) 80.0 (13)	CATHODE BIAS 850 OHMS -68 VOLTS, FIXED BIAS (13) (15)			—	—	—	5000 5000	10.0 (12) 15.0 (12)
6B5	51	DIRECT-COUPLED POWER AMPLIFIER	6.3	0.8	H	CLASS A AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6N6-G.									
6B6-G	111	DUPLEX-DIODE HIGH-MU TRIODE	6.3	0.3	H	TRIODE UNIT AS AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 69Q7.									
6B7	100	DUPLEX-DIODE PENTODE	6.3	0.3	H	PENTODE UNIT AS AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6B3-G.									
6B8 (G)	136	DUPLEX-DIODE PENTODE	6.3	0.3	H	PENTODE UNIT AS R.F. AMPLIFIER	100	5.8	100	1.7	-3.0	300000	—	950	—	—
							250	9.0	125	2.3	-3.0	600000	—	1125	—	—
						PENTODE UNIT AS A.F. AMPLIFIER	90 (16)	CATHODE BIAS, 3500 OHMS. SCREEN RESISTOR=1.1 MEG. }				GRID RESISTOR, (10) 0.5 MEGOHM		GAIN PER STAGE=55 GAIN PER STAGE=79.		
							300 (16)	CATHODE BIAS, 1600 OHMS. SCREEN RESISTOR=1.2 MEG. }								
6C4	166	TRIODE AMPLIFIER	6.3	0.15	H	CLASS A AMPLIFIER	250	10.5	—	—	-6.5	7700	1.7	2200	—	—
6C5 (G)(GT)	70	DETECTOR AMPLIFIER TRIODE (1)	6.3	0.3	H	CLASS A AMPLIFIER	250	8.0	—	—	-8.0	10000	20	2000	—	—
							250	BIAS DETECTOR -17.0 APPROXIMATE PLATE CURRENT TO BE ADJUSTED TO 0.2 MILLIAMPERE WITH NO SIGNAL.								
6C6	63	TRIPLE-GRID DETECTOR AMPLIFIER	6.3	0.3	H	AMPLIFIER DETECTOR	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6J7.									
6C7	103	DUPLEX-DIODE TRIODE	6.3	0.3	H	TRIODE UNIT AS AMPLIFIER	250	5.5	—	—	-9.0	—	20	1250	—	—
6C8-G	138	TWIN-TRIODE AMPLIFIER	6.3	0.3	H	EACH UNIT AS AMPLIFIER	250	3.2	—	—	-4.5	22500	36	1600	—	—
6D6	63	TRIPLE-GRID SUPER CONTROL AMPLIFIER	6.3	0.3	H	AMPLIFIER MIXER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6U7-G.									
6D7	104	TRIPLE-GRID DETECTOR AMPLIFIER	6.3	0.3	H	AMPLIFIER DETECTOR	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6J7.									
6D8-G	114	PENTAGRID CONVERTER (8)	6.3	0.15	H	CONVERTER	135	—	67.5	—	-3.0	600000	ANODE-GRID (# 2): 250 (5) MAX. VOLTS, 4.3 MA. OSCILLATOR-GRID (# 1) RESISTOR (19) CONVERSION TRANSCONDUCTANCE, 550 UMHOS.			
							250	—	100	—	-3.0	400000				

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS	GRID BIAS VOLTS	A.C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS. CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS
			VOLTS	AMP	C.T.											
6E5	71	ELECTRON-RAY TUBE	6.3	0.3	H	VISUAL INDICATOR	PLATE & TARGET SUPPLY=100 VOLTS, TRIODE PLATE RESISTOR=0.5 MEG. TARGET CURRENT=1.0 MA GRID BIAS, -3.3 VOLTS; SHADOW ANGLE, 0°, BIAS, 0 VOLTS; ANGLE, 90°, PLATE CURRENT, 0.19 MA.									
							PLATE & TARGET SUPPLY = 250 VOLTS, TRIODE PLATE RESISTOR = 1.0 MEG. TARGET CURRENT = 4.0 MA GRID BIAS, -8.0 VOLTS; SHADOW ANGLE, 0° BIAS, 0 VOLTS, ANGLE 90°, PLATE CURRENT, 0.24 MA.									
6E6	97	TWIN TRIODE	6.3	0.6	H	PUSH-PULL CLASS A AMPLIFIER	180 250	11.5 18.0	—	—	-20.0 -27.5	4300 3500	6 6	1400 1700	15000 14000	0.75 1.6
6E7	104	TRIPLE-GRID SUPER-CONTROL AMPLIFIER	6.3	0.3	H	AMPLIFIER MIXER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6U7-G									
6E8 (G)	143	TRIODE-HEXODE CONVERTER	6.3	0.3	H	OSCILLATOR-MIXER	150 250	VALUES FOR TRIODE UNIT		0 -2.0	1250000	—	2800	CONVERSION TRANS CONDUCTANCE 2800 MICROMHOS		
6F5(G)GT	35	HIGH-MU TRIODE	6.3	0.3	H	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6SF5.									
6F6(G)GT	108	POWER AMPLIFIER PENTODE	6.3	0.7	H	PENTODE CLASS A AMPLIFIER	250 285	34.0 38.0	250 285	6.5 7.0	-16.5 -20.0	80000 78000	—	2500 2550	7000 7000	3.2 4.8
						TRIODE CLASS A AMPLIFIER (2)	250	31.0	—	—	-20.0	2600	6.8	2600	4000	0.85
						PENTODE PUSH-PULL CLASS A AMPLIFIER	315 315	62.0 (15) 62.0 (15)	285 285	12.0 (15) 12.0 (15)	CATH. BIAS -24.0	CATH. BIAS RESISTOR, 320 OHMS (15)		10000 10000	10.5 (12) 11.0 (12)	
						PENTODE PUSH-PULL CLASS AB2 AMPLIFIER (2)	375 375	54.0 (15) 34.0 (15)	250 250	8.0 (15) 5.0 (15)	CATH. BIAS -20.0	CATHODE BIAS RESISTOR, 340 OHMS (15)		10000 10000	19.0 (12) 18.5 (12)	
						TRIODE PUSH-PULL CLASS AB2 AMPLIFIER	350 350	50.0 (15) 48.0 (15)	—	—	CATH. BIAS -38.0	CATHODE BIAS RESISTOR 730 OHMS (13)		10000 6000	9.0 (12) 13.0 (12)	
						TRIODE UNIT AS CLASS A AMPLIFIER	100	3.5	—	—	{ -3.0 MIN }	16000	8.0	500	—	—
6F7	101	TRIODE PENTODE	6.3	0.3	H	PENTODE UNIT AS CLASS A AMPLIFIER	100 250	6.3 6.5	100 100	1.6 1.5	{ -3.0 MIN }	290000 850000	—	1050 1100	—	—
						PENTODE UNIT AS MIXER	250	2.8	100	0.6	-10.0	OSCILLATOR PEAK VOLTS=7.0 CONVERSION TRANS CONDUCTANCE=300 MICROMHOS				
						EACH UNIT AS AMPLIFIER	90 250	10.0 9.0	—	—	0 -8.0	6700 7700	20 20	3000 2600	—	—
6F8-G	138	TWIN TRIODE AMPLIFIER	6.3	0.6	H	EACH UNIT AS AMPLIFIER	90 250	10.0 9.0	—	—	0 -8.0	6700 7700	20 20	3000 2600	—	—
6G5/6U5		ELECTRON-RAY TUBE	REFER TO 6U5 DATA													
6G6-G	108	POWER AMPLIFIER PENTODE	6.3	0.15	H	PENTODE CLASS A AMPLIFIER	135 180	11.5 15.0	135 180	2.0 2.5	-6.0 -9.0	170000 175000	—	2100 2300	12000 10000	0.6 1.1
						TRIODE CLASS A AMPLIFIER (2)	180	11.0	—	—	-12.0	4750	9.5	2000	12000	0.25
6H4-GT	24	DIODE	6.3	0.15	H	DETECTOR RECTIFIER	100	4.0	—	—	—	—	—	—	—	—
6H5	71	ELECTRON-RAY TUBE	6.3	0.3	H	VISUAL INDICATOR	PLATE & TARGET SUPPLY=250 VOLTS. TARGET CURRENT=4.5 MA. GRID BIAS, -22.0 VOLTS. SHADOW ANGLE, 0° BIAS, 0 VOLTS, SHADOW ANGLE, 90°									
6H6-GT/ 6H6-G	106	TWIN DIODE	6.3	0.3	H	DETECTOR RECTIFIER	MAXIMUM A.C. VOLTAGE PER PLATE 150 VOLTS, RMS MAXIMUM D.C. OUTPUT CURRENT 8 MILLIAMPERES									

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS.	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS	GRID BIAS VOLTS	A.C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS-CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS	
			VOLTS	AMP	C.T.												
6H8-G	136	DUPLEX-DIODE PENTODE	6.3	0.3	H	PENTODE UNIT AS AMPLIFIER	250	8.5	—	—	-2.0	650000	—	2400	—	—	
6J5 (G) (GT)	70	DETECTOR-AMPLIFIER-TRIODE	6.3	0.3	H	CLASS A AMPLIFIER	99 250	10.0 9.0	—	—	0	6700 7700	20 20	3000 2600	—	—	
6J7 (G) (GT)	107	TRIPLE-GRID DETECTOR AMPLIFIER	6.3	0.3	H	PENTODE CLASS A R.F. AMPLIFIER	100 250	2.0 2.0	100 100	0.5 0.5	-3.0 -3.0	1000000 1000000+	—	1185 1225	—	—	
						PENTODE CLASS A A.F. AMPLIFIER	90 300	(16) (16)	CATHODE BIAS, 2600 OHMS. SCREEN RESISTOR=1.2 MEG. }			GRID RESISTOR (10) / GAIN PER STAGE=85 0.5 MEGOHM (GAIN PER STAGE=140)					
						PENTODE BIAS DETECTOR	250	—	100	CATHODE CURRENT 0.43 MA.	-4.3	—	PLATE RESISTOR, 50000 OHMS GRID RESISTOR, (16) 25000 OHMS				
						TRIODE CLASS A AMPLIFIER (16)	180 250	5.3 6.5	—	—	-5.3 -8.0	11000 10500	20 20	1800 1900	—	—	
6J8-G	139	TRIODE-HEPTODE CONVERTER	6.3	0.3	H	TRIODE SECTION AS OSCILLATOR	100 250	3.0 5.0	—	—	50000Ω 50000Ω	8750	14	1600	—	—	
						HEPTODE SECTION AS MIXER	100 250	1.4 1.3	100 100	3.0 2.9	-3.0 -3.0	900000 4000000	—	250 290	—	—	
6K5-G (GT)	40	HIGH-MU TRIODE	6.3	0.3	H	CLASS A AMPLIFIER	100 250	0.35 1.1	—	—	-1.5 -3.0	78000 50000	70 70	900 1400	—	—	
6K6-GT/G	108	POWER AMPLIFIER PENTODE	6.3	0.4	H	CLASS A AMPLIFIER	100 180 250 315	9.0 18.5 32.0 25.5	100 180 250 250	1.6 3.0 5.5 4.0	-7.0 -13.5 -18.0 -21.0	104000 81000 89000 75000	—	1500 1850 2300 2100	12000 9000 7600 9000	0.35 1.50 3.40 4.50	
						CLASS A AMPLIFIER	90 250	5.4 10.5	80 125	1.3 2.6	-3.0 -3.0	300000 600000	—	1275 1650	—	—	
6K7(G) (GT)	107	TRIPLE-GRID SUPER-CONTROL AMPLIFIER	6.3	0.3	H	MIXER IN SUPERHETERODYNE	250	—	100	—	-10.0	OSCILLATOR PEAK VOLTS=7.0					
						TRIODE UNIT AS OSCILLATOR	100	3.8	TRIODE-GRID RESISTOR 50000Ω			TRIODE GRID & HEXODE-GRID CURRENT=0.15 MA.					
6K8(G) (GT)	140	TRIODE-HEXODE CONVERTER	6.3	0.3	H	HEXODE UNIT AS MIXER	100 250	2.3 2.5	100 100	6.2 6.0	-3.0 -3.0	400000 600000	CONVERSION TRANSCOND., 325 UMHOS CONVERSION TRANSCOND., 350 UMHOS.				
						CLASS A AMPLIFIER	135 250	3.5 8.0	—	—	-5.0 -9.0	11200 9000	17 17	1500 1900	—	—	
6L6 (G)	81	BEAM POWER AMPLIFIER	6.3	0.9	H	SINGLE-TUBE CLASS A AMPLIFIER	250 250	72.0 75.0	250 250	5.0 5.4	-14.0 CATH. BIAS	22500	—	6000	2500 2500	6.5 6.5	
						PUSH-PULL CLASS A AMPLIFIER	270 270	134.0 134.0	(15) (15)	276 270	11.0 11.0	(15) (15) CATH. BIAS	23500	—	5700	5000 5000	17.5 18.5
						PUSH-PULL CLASS AB1 AMPLIFIER	360 360	88.0 88.0	(15) (15)	270 270	5.0 5.0	(15) (15) CATH. BIAS	—	—	—	6600 9000	26.5 24.5
						PUSH-PULL CLASS AB2 AMPLIFIER	360 360	78.0 86.0	(15) (15)	225 270	3.5 5.0	(15) (15) CATH. BIAS	—	—	—	6030 3800	31.0 47.0

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS.	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS.	GRID BIAS VOLTS	A.C. PLATE RESISTANCE OHMS		AMPLIFICATION FACTOR	TRANS-CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS		POWER OUTPUT WATTS
			VOLTS	AMP.	C.T.							1700	8.0			4700	5000		6000
6L6 (G)	81	BEAM POWER AMPLIFIER	6.3	0.9	H	SINGLE TRIODE (21) CLASS A AMPLIFIER	250 250	40.0 40.0	—	—	-20.0 CATH. BIAS	1700	8.0	4700	5000	6000	1.4 1.3	
6L7 (G)	109	PENTAGRID MIXER AMPLIFIER (2)	6.3	0.3	H	MIXER IN SUPERHETERODYNE	250	2.4	100	7.1	-3.0	OSCILLATOR-GRID (# 3), BIAS -10 VOLTS. GRID # 3 PEAK SWING, 12 VOLTS MINIMUM. CONVERSION TRANSCOND., 375 MICROMHOS.					—	
						CLASS A AMPLIFIER	250	5.3	100	6.5	-3.0 (24)	600000	—	1100	—	—		
6M6-G	108	POWER AMPLIFIER PENTODE	6.3	1.2	H	CLASS A AMPLIFIER	250	36.0	250	4.0	-6.0	—	—	9500	7000	4.40		
6M7-G	107	R.F. AMPLIFIER PENTODE	6.3	0.3	H	AMPLIFIER	250	10.5	125	2.8	-2.5	900000	—	3400	—	—		
6M8-G (GT)	126	DIODE-TRIODE PENTODE	6.3	0.6	H	TRIODE UNIT AS A.F. AMPLIFIER	100	0.5	—	—	-1.0	91000	—	1100	—	—		
						PENTODE UNIT AS R.F. AMPLIFIER	100	8.5	—	—	-3.0	200000	—	1900	—	—		
6N5	71	ELECTRON-RAY TUBE	6.3	1.15	H	VISUAL INDICATOR	SUPERSEDED BY TYPE 6AB5/6N5.											
6N6-G	93	DIRECT-COUPLED POWER AMPLIFIER	6.3	0.8	H	CLASS A AMPLIFIER	OUTPUT TRIODE: PLATE VOLTS, 300; PLATE MA., 42; LOAD, 7000 OHMS INPUT TRIODE: PLATE VOLTS, 300; GRID VOLTS, 0; A.F. SIGNAL VOLTS (RMS), 15; PLATE MA., 9.0										4.0	
6N7-GT/G	131	TWIN-TRIODE AMPLIFIER	6.3	0.8	H	CLASS A AMPLIFIER (AS DRIVER) (11)	250 294	6.0 7.0	—	—	-5.0 -6.0	11300 11000	35 35	3100 3200	20000 OR MORE	EXCEEDS 0.4		
						CLASS B AMPLIFIER	300 300	35.0 35.0	—	—	0	POWER OUTPUT IS FOR ONE TUBE AT STATED PLATE-TO-PLATE LOAD.			8000 8000	10.0 10.0		
6P5-GT/G	70	DETECTOR AMPLIFIER TRIODE	6.3	0.3	H	CLASS A AMPLIFIER	100 250	2.5 5.0	—	—	-5.0 -13.5	12000 9500	13.8 13.8	1150 1450	—	—		
						90 300	CATHODE BIAS, 6500 OHMS. CATHODE BIAS, 6400 OHMS.		GRID RESISTOR, (10) 0.25 MEGOHM	GAIN PER STAGE=9 GAIN PER STAGE=10								
						BIAS DETECTOR	250	—	—	-20.0 APPROX.	PLATE CURRENT ADJUSTED TO 0.2 MILLIAMPERE WITH NO SIGNAL.							
6P7-G	110	TRIODE PENTODE	6.3	0.3	H	TRIODE UNIT AS OSCILLATOR	100	2.4	—	—	-3.0	16200	8.5	525	D.C. GRID CURRENT=0.15 MILLIAMPERE			
						PENTODE UNIT AS MIXER	250	2.8	100	0.6	-10.0	2000000	CONVERSION TRANSCOND., 300 UMHOS OSCILLATOR PEAK VOLTS=7.0					
6P8-G	140	TRIODE HEXODE	6.3	0.8	H	TRIODE UNIT AS OSCILLATOR	100	2.2	TRIODE-GRID RESISTOR=50000 Ω			—	—	—	—			
						PENTODE UNIT AS MIXER	250	1.8	75 (26)	1.4	-2.4	—	—	650	—	—		
6Q6-G	76	DIODE-TRIODE	6.3	0.15	H	TRIODE UNIT AS CLASS A AMPLIFIER	250	1.2	—	—	-3.0	—	65	1050	—	—		
6Q7(G)(GT)	111	DUPLEX-DIODE HIGH-MU TRIODE	6.3	0.3	H	TRIODE UNIT AS CLASS A AMPLIFIER	100 250	0.35 1.1	—	—	-1.5 -3.0	87500 58000	70 70	900 1200	—	—		
						90 300	CATHODE BIAS, 7600 OHMS. CATHODE BIAS, 3000 OHMS.		GRID RESISTOR, (10) 0.5 MEGOHM	GAIN PER STAGE=32 GAIN PER STAGE=45								
						(18)												

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS	GRID BIAS VOLTS	A.C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS. CONDUCTANCE (GRID-PLATE) DMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS
			VOLTS	AMP.	C.T.											
6R6-G	54	REMOTE CUTOFF R.F. PENTODE	6.3	0.3	H	CLASS A AMPLIFIER	250	7.0	100	1.7	-3.0	800000	—	1450	—	—
6R7 (G) (CT)	111	DUPLEX-DIODE TRIODE	6.3	0.3	H	TRIODE UNIT AS CLASS A AMPLIFIER	250	9.5	—	—	-9.0	8500	16	1900	—	—
							90 (17) 300 (18)	CATHODE BIAS, 4400 OHMS. CATHODE BIAS, 3800 OHMS. }		GRID RESISTOR, (16) 0.25 MEGOHM		{ GAIN PER STAGE=10 GAIN PER STAGE=10				
6S5	71	ELECTRON-RAY TUBE	6.3	6.3	H	VISUAL INDICATOR	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6X6 (G).									
6S6GT	26	TRIPLE-GRID VARIABLE-MU	6.3	0.45	HTR.	R.F. AMPLIFIER	250	13.0	100	3.0	-2.0	350000	—	4000	—	—
6S7 (G)	107	TRIPLE-GRID AMPLIFIER	6.3	0.15	H	CLASS A AMPLIFIER	135 250	3.7 8.5	67.5 100	0.9 2.0	-3.0 -3.0	1000000 1000000	—	1250 1750	—	—
6SA7 (GT)	145	PENTAGRID CONVERTER (20)	6.3	0.3	H	CONVERTER	100 250	3.3 3.5	100 100	8.5 8.5	—	500000 4000000	GRID #1 RESISTOR, 20000 OHMS. CONVERSION TRANSCOND., 450 UMHOS.			
6SC7	146	TWIN-TRIODE AMPLIFIER	6.3	0.3	H	EACH UNIT AS AMPLIFIER	250	2.0	—	—	-2.0	53000	70	1325	—	—
6SD7-GT	142	R.F. AMPLIFIER PENTODE	6.3	0.3	H	CLASS A AMPLIFIER	250	6.0	100	1.0	-2.0	1000000	—	3600	—	—
6SE7-GT	142	R.F. AMPLIFIER PENTODE	6.3	0.3	H	CLASS A AMPLIFIER	280	4.5	100	1.5	-1.5	1100000	—	3400	—	—
6SF5 (GT)	45	HIGH-MU TRIODE	6.3	0.3	H	CLASS A AMPLIFIER	100 250	0.4 0.9	—	—	-1.0 -2.0	85000 69000	100 100	1150 1500	—	—
							90 (16) 300 (18)	CATHODE BIAS, 8900 OHMS. CATHODE BIAS, 3200 OHMS. }		GRID RESISTOR, (16) 0.5 MEGOHM.		{ GAIN PER STAGE=43 GAIN PER STAGE=63				
6SF7	96	DIODE-SUPER-CONTROL AMPLIFIER PENTODE	6.3	0.3	H	PENTODE UNIT AS CLASS A AMPLIFIER	100 250	12.0 12.4	100 100	3.4 3.6	-1.0 -1.0	200000 700000	—	1975 2050	—	—
6SG7	132	H.F. AMPLIFIER PENTODE	6.3	0.3	H	CLASS A AMPLIFIER	100 250	8.2 9.2	100 150	3.2 3.4	-11.5 -17.5	250000 1000000+	—	4100 4200	—	—
6SH7	181	TRIPLE-GRID AMPLIFIER	6.3	0.3	HTR.	H.F. AMPLIFIER	250	10.8	150	4.1	-1.0	900000	—	4900	—	—
6SJ7 (GT)	142	TRIPLE-GRID DETECTOR AMPLIFIER	6.3	0.3	H	CLASS A AMPLIFIER	100 250	2.9 3.0	100 100	0.9 0.8	-3.0 -3.0	700000 1500000	—	1575 1650	—	—
							90 (16) 300 (18)	CATHODE BIAS, 1700 OHMS. CATHODE BIAS, 860 OHMS. }		GRID RESISTOR (16) 0.5 MEGOHM		{ GAIN PER STAGE=93 GAIN PER STAGE=167				
6SK7 (GT)	142	TRIPLE-GRID AMPLIFIER	6.3	0.3	H	CLASS A AMPLIFIER	100 250	13.0 9.2	100 100	4.0 2.6	-1.0 -3.0	120000 800000	—	2350 2000	—	—
6SL7-GT	133	TWIN-TRIODE AMPLIFIER	6.3	0.3	H	CLASS A AMPLIFIER (20)	250	2.3	—	—	-2.0	44000	70	1600	—	—

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS.	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS.	GRID BIAS VOLTS	A.C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS-CONDUCTANCE (GRID-PLATE) UMHOES	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS
			VOLTS	AMP.	C.T.											
6SN7_GT	132	TWIN-TRIODE AMPLIFIER	6.3	0.3	H	CLASS A AMPLIFIER	90 250	10.0 9.0	—	—	0 -9.0 (40)	6700 7700	20 20	3000 2600	—	—
6SQ7_GT/G	144	DUPLEX-DIODE HIGH-MU TRIODE	6.3	0.3	H	TRIODE UNIT AS CLASS A AMPLIFIER	250	0.9	—	—	-2.0	91000	100	1100	—	—
6SR7	144	DUPLEX-DIODE TRIODE	6.3	0.3	H	TRIODE UNIT AS CLASS A AMPLIFIER	250	9.5	—	—	-9.0	8500	16	1900	10000	0.3
6SS7	142	TRIPLE-GRID SUPER-CONTROL AMPLIFIER	6.3	0.15	H	CLASS A AMPLIFIER	100 250	12.2 9.0	100 100	3.1 2.0	-1.0 -3.0	120000 1000000	—	1930 1850	—	—
6ST7	144	DUPLEX-DIODE TRIODE	6.3	0.15	HTR.	CLASS A AMPLIFIER	250	9.5	—	—	-9.0	8500	16	1900	—	—
6T5	SUPERSEDED BY TYPE 6U5/6G5.															
6T6	77	R.F. AMPLIFIER PENTODE	6.3	0.45	H	CLASS A AMPLIFIER	250	10.0	100	2.0	-1.0	1000000	—	5500	—	—
6T7_G	111	DUPLEX-DIODE HIGH-MU TRIODE	6.3	0.15	H	TRIODE UNIT AS CLASS A AMPLIFIER	250	1.2	—	—	-3.0	62000	65	1050	—	—
6U5/6G5	71	ELECTRON-RAY TUBE	6.3	0.3	H	VISUAL INDICATOR	PLATE & TARGET SUPPLY=100 VOLTS. TRIODE PLATE RESISTOR=0.5 MEG. TARGET CURRENT=1.0 MA. GRID BIAS, -8 VOLTS; SHADOW ANGLE, 0°. BIAS, 0 VOLTS; ANGLE, 90°; PLATE CURRENT, 0.19 MA. PLATE & TARGET SUPPLY=250 VOLTS. TRIODE PLATE RESISTOR=1.0 MEG. TARGET CURRENT=4.0 MA. GRID BIAS, -22 VOLTS; SHADOW ANGLE, 0°. BIAS, 0 VOLTS; ANGLE, 90°; PLATE CURRENT, 0.24 MA.									
6U6_GT	81	BEAM POWER AMPLIFIER	6.3	0.75	H	CLASS A AMPLIFIER	200	58.0	135	3.0	-14.0	20000	—	6200	3000	5.5
6U7_G	107	TRIPLE-GRID SUPER-CONTROL AMPLIFIER	6.3	0.3	H	CLASS A AMPLIFIER	100 250	8.0 8.2	100 100	2.2 2.0	-3.0 -3.0	250000 800000	—	1500 1600	—	—
6V6 (GT/G)	81	BEAM POWER AMPLIFIER	6.3	0.45	H	SINGLE-TUBE CLASS A AMPLIFIER	180 315	29.0 34.0	180 225	3.0 2.2	-8.5 -13.0	58000 77000	—	3700 3750	5500 8500	2.0 5.5
6V6 (GT/G)	81	BEAM POWER AMPLIFIER	6.3	0.45	H	PUSH-PULL CLASS AB1 AMPLIFIER	250 300	70.0 78.0 (13)	250 300	5.0 5.0 (13)	-15.0 -20.0	—	—	—	10000 8000	8.5 13.0 (12)
6V7_G	111	DUPLEX-DIODE TRIODE	6.3	0.3	H	TRIODE UNIT AS CLASS A AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 85.									
6W5 (G)	72	FULL-WAVE RECTIFIER	6.3	0.9	H	WITH CONDENSER-INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS) 325					MAX. D.C. OUTPUT MA., 90				
6W5 (G)	72	FULL-WAVE RECTIFIER	6.3	0.9	H	WITH CHOKE INPUT FILTER	MAX. VOLTS PER PLATE (RMS) 450					MAX. D.C. OUTPUT MA., 90				
6W6_GT	81	BEAM POWER AMPLIFIER	6.3	1.25	H	CLASS A AMPLIFIER	135	58.0	135	2.5	-9.5	—	150	9000	2000	3.5

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS.	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS.	GRID BIAS VOLTS	A.C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS. CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS
			VOLTS	AMP.	C.T.											
6W7-G	107	TRIPLE-GRID DETECTOR AMPLIFIER	6.3	0.15	H	CLASS A AMPLIFIER	250	2.0	100	0.5	-3.0	150000	—	1225	—	—
6X5(GT/G)	72	FULL-WAVE RECTIFIER (4)	6.3	0.6	H	WITH CONDENSER INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 325 MAX. PEAK INVERSE VOLTS, 1250			MAX. D.C. OUTPUT MA., 70 MAX. PEAK PLATE MA., 210		MIN. TOTAL EFFECTIVE SUPPLY IMPEDANCE PER PLATE, 150 OHMS				
						WITH CHOKE INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 450 MAX. PEAK INVERSE VOLTS, 1250			MAX. D.C. OUTPUT MA., 70 MAX. PEAK PLATE MA., 210		MIN. VALUE OF INPUT CHOKE, 8 HENRIES				
6X6 (G)	87	ELECTRON-RAY TUBE	6.3	0.3	H	VISUAL INDICATOR	TARGET 250	—	VANE GRID 135	—	-8.0 0	TARGET CURRENT, 0 MA. VALUES FOR 0° ILLUMINATION ANGLE TARGET CURRENT, 2 MA. VALUES FOR 360° ILLUMINATION ANGLE				
6Y3	177	HALF-WAVE RECTIFIER	6.3	0.7	FIL.	RECTIFIER	MAX. A.C. VOLTAGE PER PLATE, 5000. MAX. INVERSE PEAK VOLTS, 14000.					MAX. D.C. OUTPUT IN MA., 7.5. MAX. PEAK CURRENT, 100 MA.				
6Y5	66	FULL-WAVE RECTIFIER (4)	6.3	0.8	H	RECTIFIER	MAX. A.C. VOLTS PER PLATE (RMS), 350 MAX. PEAK INVERSE VOLTS, 1500			MAX. D.C. OUTPUT MA., 50 MAX. PEAK PLATE MA., 200						
6Y6-G(GT)	81	BEAM POWER AMPLIFIER	6.3	1.25	H	SINGLE-TUBE CLASS A AMPLIFIER	135 200	59.0 61.0	135 135	3.5 2.2	-13.5 -14.0	9300 18300	—	7000 7100	2000 2600	3.6 6.0
6Y7-G	131	TWIN-TRIODE AMPLIFIER	6.3	0.6	H	CLASS B. AMPLIFIER	190 250	7.6 10.6	—	—	0 0	—	—	—	7000 14000	5.5 8.0
6Z4/84	REFER TO TYPE 84 DATA.															
6Z5	67	FULL-WAVE RECTIFIER	12.8 6.3	0.4 0.8	H	RECTIFIER	MAX. A.C. VOLTS PER PLATE (RMS), 230. MAX. PEAK INVERSE VOLTS, 1500.			MAX. D.C. OUTPUT MA., 60.						
6Z7-G	131	TWIN-TRIODE AMPLIFIER	6.3	0.3	H	CLASS B AMPLIFIER	135 180	—	—	—	0 0	POWER OUTPUT IS FOR ONE TUBE AT STATED PLATE-TO-PLATE LOAD.			9000 12000	2.5 4.2
6ZV5-G	72	FULL-WAVE RECTIFIER	6.3	0.3	H	WITH CONDENSER-INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 325. MAX. PEAK INVERSE VOLTS, 1250			MAX. D.C. OUTPUT MA., 40 MAX. PEAK PLATE MA., 120		MIN. TOTAL EFFECTIVE SUPPLY IMPEDANCE PER PLATE, 225 Ω				
						WITH CHOKE-INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 450. MAX. PEAK INVERSE VOLTS, 1250			MAX. D.C. OUTPUT MA., 40 MAX. PEAK PLATE MA., 120		MINIMUM VALUE OF INPUT CHOKE, 13.5 HENRIES				
7A4	22	DETECTOR AMPLIFIER TRIODE	6.3	0.3	H	CLASS A AMPLIFIER	90 250	10.0 9.0	—	—	0 -8.0	6700 7700	20 20	3000 2600	—	—
7A5	44	POWER AMPLIFIER PENTODE	6.3	0.75	H	CLASS A AMPLIFIER	110 125	40.0 44.0	110 125	3.0 3.3	-7.5 -9.0	14000 17000	—	5800 6000	2500 2700	1.5 2.2
7A6	85	TWIN DIODE	6.3	0.15	H	DETECTOR RECTIFIER	MAXIMUM A.C. VOLTAGE PER PLATE 150 VOLTS, RMS MAXIMUM D.C. OUTPUT CURRENT 10 MILLIAMPERES									
7A7-LM	149	TRIPLE-GRID SUPER-CONTROL AMPLIFIER	6.3	0.3	H	CLASS A AMPLIFIER	250	8.6	100	2.0	{ -3.0 MIN. }	800000	—	2000	—	—
7A8	148	OCTODE CONVERTER	6.3	0.15	H	CONVERTER	250	3.0	100	3.2	{ -3.0 MIN. }	700000	ANODE-GRID (#2): 200 (3) MAX. VOLTS, 4.2 MA. OSCILLATOR-GRID (#1) RESISTOR, 5000 Ω CONV. TRANSCOND., 550 UMHOS.			
7B4 (9)	22	HIGH-MU TRIODE	6.3	0.3	H	CLASS A AMPLIFIER	100 250	0.5 0.9	—	—	-1.0 -2.0	85000 66000	100 100	1175 1560	—	—
7B5-LT	47	POWER AMPLIFIER PENTODE	6.3	0.4	H	CLASS A AMPLIFIER	100	9.0	100	1.6	-7.0	104000	—	1500	12000	0.35
							250	32.0	250	5.5	-18.0	68000		2300	7600	3.4
							315	25.5	250	4.0	-21.0	75000		2100	9500	4.5

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS.	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS.	GRID BIAS VOLTS	A.C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS-CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR POWER OUTPUT OHMS	POWER OUTPUT WATTS
			VOLTS	AMP.	C.T.											
7B6-LM	150	DUPLEX-DIODE HIGH-MU TRIODE	6.3	0.3	H	TRIODE UNIT AS AMPLIFIER	100 250	0.25 0.9	—	—	-1.0 -2.0	132000 91000	100 100	750 1100	—	—
7B7	149	TRIPLE-GRID SUPER-CONTROL AMPLIFIER	6.3	0.15	H	CLASS A AMPLIFIER	250	8.5	100	2.0	{ -3.0 MIN. }	700000	—	1700	—	—
7B8-LM	151	PENTAGRID CONVERTER	6.3	0.3	H	CONVERTER	100 250	1.1 3.5	50 160	1.3 2.7	-1.5 -3.0	600000 360000	—	380 550	ANODE-GRID (#2), 250 ③ MAX. VOLTS, 4.0 MA OSCILLATOR-GRID (#1) RESISTOR, 50000 OHMS	
7C5-LT	44	BEAM POWER AMPLIFIER	6.3	0.45	H	CLASS A AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6V6									
7C6	150	DUPLEX-DIODE HIGH-MU TRIODE	6.3	0.15	H	TRIODE UNIT AS CLASS A AMPLIFIER	250	1.3	—	—	-1.0	100000	100	1000	—	—
7C7	149	TRIPLE-GRID DETECTOR AMPLIFIER	6.3	0.15	H	CLASS A AMPLIFIER	100 250	1.8 2.0	100 100	0.4 0.5	-3.0 -3.0	1200000 2000000	—	1225 1300	—	—
7D7	124	TRIODE-HEXODE CONVERTER	6.3	0.43	H	OSCILLATOR-MIXER	150 250	3.5	VALUES FOR TRIODE UNIT VALUES FOR HEXODE UNIT		-3.0 -3.0	16800	32	1900	CONV. TRANSCOND. 275 MICROMHOS	
7E6	150	DUPLEX-DIODE TRIODE	6.3	0.3	H	TRIODE UNIT AS CLASS A AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6R7									
7E7	118	DUPLEX-DIODE PENTODE	6.3	0.3	H	PENTODE UNIT AS R.F. OR A.F. AMPLIFIER	100 250	10.0 7.5	100 100	2.7 1.6	-1.0 -3.0	150000 700000	—	1600 1300	—	—
7E7	116	TWIN-TRIODE AMPLIFIER	6.3	0.3	H	EACH UNIT AS AMPLIFIER	250	2.3	—	—	-2.0	44000	70	1600	—	—
7G7/1232	149	TRIPLE-GRID AMPLIFIER	6.3	0.45	H	CLASS A AMPLIFIER	250	6.0	100	2.0	-2.0	800000	—	4500	—	—
7H7	149	R.F. AMPLIFIER PENTODE	6.3	0.29	H	AMPLIFIER	250	9.5	150	3.5	-2.5	800000	—	3800	—	—
7J7	124	TRIODE-HEXODE CONVERTER	6.3	0.3	H	CONVERTER	100 250	1.1 1.3	100 100	3.1 2.9	-3.0 -3.0	300000 1500000	—	280 300	TRIODE PLATE, 250 MAX. VOLTS, 5.4 MA. TRIODE GRID RESISTOR, 50000 Ω. GRID CURRENT, 0.4 MA.	
7K7	182	DUO-DIODE HIGH-MU TRIODE	7.0	0.32	HTR.	CLASS A AMPLIFIER	250	2.3	—	—	-2.0	44000	70	1600	—	—
7L7	149	TRIPLE-GRID AMPLIFIER	6.3	0.3	H	CLASS A AMPLIFIER	100 250	5.5 4.5	100 100	2.4 1.5	-1.0 -1.5	100000 1000000	—	3000 3100	—	—
7N7	116	TWIN-TRIODE AMPLIFIER	6.3	0.6	H	EACH UNIT AS AMPLIFIER	250	9.0	—	—	-8.0	7700	20	2600	—	—
7Q7	121	PENTAGRID CONVERTER	6.3	0.3	H	CONVERTER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6SA7									
7R7	118	DUPLEX-DIODE PENTODE	6.3	0.3	H	PENTODE UNIT AS AMPLIFIER	250	5.7	100	2.1	-1.0	1000000	—	3200	—	—
7S7	124	TRIODE-HEXODE CONVERTER	6.3	0.3	H	OSCILLATOR-MIXER	250 250	5.0 1.7	100	TRIODE UNIT HEXODE UNIT		2.2	2000000	TRIODE GRID CURRENT, 0.4 MA.; RESISTOR, 0.05 MEG. CONV. TRANS., 6000R 2 MICROMHOS (BC3, 2, -22V)		

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMP.	SCREEN VOLTS	SCREEN CURRENT MILLIAMP.	GRID BIAS VOLTS	A.C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS-CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS
			VOLTS	AMP.	C.T.											
7T7	149	TRIPLE-GRID AMPLIFIER	7.0	0.32	HTR.	CLASS A AMPLIFIER	250	10.8	150	4.1	-1.0	900000	—	4900	—	—
7V7	149	R.F. AMPLIFIER PENTODE	6.3	0.43	H	AMPLIFIER	300	9.6	150	3.9	BIAS RESIS. 160 OHMS	300000	—	5800	—	—
7W7	170	TRIPLE-GRID VARIABLE-MU	7.0	0.48	HTR.	CLASS A AMPLIFIER	300	10	150	3.9	-2.2	300000	—	5800	—	—
7Y4	21	FULL-WAVE RECTIFIER	6.3	0.3	H	WITH CONDENSER-INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 325 MAX. PEAK INVERSE VOLTS, 1250.			MAX. D.C. OUTPUT MA., 60 MAX. PEAK PLATE MA., 180		MIN. TOTAL EFFECTIVE SUPPLY IMPEDANCE PER PLATE, 150 OHMS				
						WITH CHOK-INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 450 MAX. PEAK INVERSE VOLTS, 1250.			MAX. D.C. OUTPUT MA., 60 MAX. PEAK PLATE MA., 180		MINIMUM VALUE OF INPUT CHOKE, 10 HENRIES				
7Z4	21	FULL-WAVE RECTIFIER	6.3	0.96	H	WITH CONDENSER-INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 325 MAX. PEAK INVERSE VOLTS, 1250			MAX. PEAK PLATE MA., 300		MIN. TOTAL EFFECTIVE SUPPLY IMPEDANCE PER PLATE, 75 OHMS				
						WITH CHOKE-INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 450 MAX. PEAK INVERSE VOLTS, 1250			MAX. PEAK PLATE MA., 300		MINIMUM VALUE OF INPUT CHOKE, 6 HENRIES				
10	6	POWER AMPLIFIER TRIODE	7.5	1.25	F	CLASS A AMPLIFIER	350 425	16.0 18.0	—	—	-32.0 -40.0	5150 5000	8.0 8.0	1550 1600	11000 10200	0.9 1.6
11 12	8 6	DETECTOR AMPLIFIER TRIODE ①	1.1	0.25	D.C. F	CLASS A AMPLIFIER	90 135	2.5 3.0	—	—	-4.5 -10.5	15500 15000	6.6 6.6	425 440	—	—
12A5	102	POWER AMPLIFIER PENTODE	6.3 12.6	0.6 0.3	H	CLASS A AMPLIFIER	100 180	6.5 14.0	100 180	3.0 8.0	-15.0 -25.0	50000 35000	—	1700 2400	4500 3300	0.8 3.4
12A6	81	BEAM POWER AMPLIFIER	12.6	0.15	H	CLASS A AMPLIFIER	250	30.0	250	3.5	-12.5	70000	—	3000	7500	2.8
12A7	105	RECTIFIER-PENTODE	12.6	0.3	H	PENTODE UNIT AS CLASS A AMPLIFIER	135	9.0	135	2.5	-13.5	102000	—	975	13500	0.55
						HALF-WAVE RECTIFIER	MAXIMUM A.C. PLATE VOLTAGE 125 VOLTS, RMS MAXIMUM D.C. OUTPUT CURRENT 30 MILLIAMPERES									
12A8(G)(GT)	114	PENTAGRID CONVERTER ②	12.6	0.15	H	CONVERTER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6A8-GT									
12AH7-GT	134	TWIN TRIODE AMPLIFIER	12.6	0.15	H	AMPLIFIER	250	12.0	—	—	-9	6600	16	2400	—	—
12B6M	76	DIODE TRIODE	12.6	.15	HTR.	CLASS A AMPLIFIER	250	0.9	—	—	-2.0	91000	100	1100	—	—
12B7	149	TRIPLE-GRID SUPER-CONTROL AMPLIFIER	12.6	0.15	H	CLASS A AMPLIFIER	100 250	8.9 9.2	100 100	2.6 2.4	-3.0 -3.0	250000 800000	—	1900 2000	—	—
						TRIODE UNIT AS CLASS A AMPLIFIER	90 100	2.8 0.6	—	—	0 -1.0	37000 73000	90 110	2400 1500	—	—
12B8-GT	147	TRIODE PENTODE	12.6	0.3	H	PENTODE UNIT AS CLASS A AMPLIFIER	90 100	7.9 8.0	90 100	2.0 2.0	-3.0 -3.0	170000 200000	360 360	1800 2100	—	—
						PENTODE UNIT AS R.F. AMPLIFIER	250	10.0	125	2.3	-3.0	600000	—	1325	—	—
12C6	136	DUPLEX-DIODE PENTODE	12.6	0.15	H	PENTODE UNIT AS A.F. AMPLIFIER	⑨ 90 ⑩ 300	CATHODE BIAS, 3500 OHMS. SCREEN RESISTOR=1.1 MEG. } CATHODE BIAS, 1600 OHMS. SCREEN RESISTOR=1.2 MEG. }					GRID RESISTOR, 0.5 MEGOHM ⑩		GAIN PER STAGE=55 GAIN PER STAGE=79	

AMERICAN TYPE VALVES

VALVE NUMBER	BASE C.V. NOTATION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMP.	SCREEN VOLTS	SCREEN CURRENT MILLIAMP.	GRID BIAS VOLTS	A.C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS-CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS
			VOLTS	AMP	C.T.											
12E5-GT	70	AMPLIFIER TRIODE	12.6	0.15	H	CLASS A AMPLIFIER	250	5.0	—	—	-13.5	9500	13.8	1450	—	—
12F5-GT	35	HIGH-MU TRIODE	12.6	0.15	H	CLASS A AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6SF5.									
12G7-G(GT)	111	DUPLEX-DIODE HIGH-MU TRIODE	12.6	0.15	H	TRIODE UNIT AS CLASS A AMPLIFIER	250	—	—	—	-3.0	58000	70	1200	—	—
12H6	106	TWIN DIODE	12.6	0.15	H	DETECTOR RECTIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6H6.									
12J5-GT	70	DETECTOR AMPLIFIER TRIODE	12.6	0.15	H	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6J5.									
12J7-GT	107	TRIPLE-GRID DETECTOR AMPLIFIER	12.6	0.15	H	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6J7.									
12K7-G(GT)	107	TRIPLE-GRID SUPER-CONTROL AMPLIFIER	12.6	0.15	H	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6K7-GT.									
12K8 (GT)	140	TRIODE-HEXODE CONVERTER	12.6	0.15	H	OSCILLATOR MIXER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6K8.									
12Q7-G(GT)	149	DUPLEX-DIODE HIGH-MU TRIODE	12.6	0.15	H	TRIODE UNIT AS AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6Q7-GT.									
12SA7 (GT)	145 117	PENTAGRID CONVERTER ⁽²⁰⁾	12.6	0.15	H	MIXER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6SA7									
12SC7	146	TWIN-TRIODE AMPLIFIER	12.6	0.15	H	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6SC7.									
12SF5 (GT)	45	HIGH-MU TRIODE	12.6	0.15	H	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6SF5									
12SF7	96	DIODE-SUPER-CONTROL AMPLIFIER PENTODE	12.6	0.15	H	PENTODE UNIT AS CLASS A AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6SF7.									
12SG7	132	H.F. AMPLIFIER PENTODE	12.6	0.15	H	CLASS A AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6SG7.									
12SH7	181	H.F. AMPLIFIER PENTODE	12.6	0.15	HTR.	H.F. AMPLIFIER	250	10.8	150	4.1	-1.0	900000	—	4900	—	—
12SJ7 (GT)	142	TRIPLE-GRID DETECTOR AMPLIFIER	12.6	0.15	H	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6SJ7 AND TO TYPE 6SJ7-GT									
12SK7 (GT)	142	TRIPLE-GRID SUPER-CONTROL AMPLIFIER	12.6	0.15	H	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6SK7 AND TO TYPE 6SK7-GT.									
12SL7-GT	58	TWIN-TRIODE AMPLIFIER	12.6	0.15	H	CLASS A AMPLIFIER ⁽³⁰⁾	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6SL7-GT,									
12SN7-GT	58	TWIN-TRIODE AMPLIFIER	12.6	0.3	H	CLASS A AMPLIFIER ⁽³⁰⁾	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6SN7-GT									
12SQ7-GT/G	144	DUPLEX-DIODE HIGH-MU TRIODE	12.6	0.15	H	TRIODE UNIT AS AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6SQ7.									

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMP	SCREEN VOLTS	SCREEN CURRENT MILLIAMP.	GRID BIAS VOLTS	A.C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS-CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS
			VOLTS	AMP.	C.T.											
12SR7	144	DUPLEX-DIODE TRIODE	12.6	0.15	H	TRIODE UNIT AS AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6SR7.									
12Z3	9	HALF-WAVE RECTIFIER	12.6	0.3	H	WITH CONDENSER-INPUT FILTER	MAX. A.C. PLATE VOLTS (RMS), 235 MAX. D.C. OUTPUT MA., 55					MIN. TOTAL EFFECTIVE PLATE-SUPPLY IMPEDANCE: UP TO 117 VOLTS, 0 OHMS; AT 150 VOLTS, 30 OHMS; AT 235 VOLTS, 75 OHMS.				
12Z5	—	VOLTAGE DOUBLING RECTIFIER	12.6	0.3	HTR.	RECTIFIER	MAX. A.C. VOLTAGE PER PLATE, 225. MAX. D.C. OUTPUT IN MA., 60.									
14A4	22	DETECTOR AMPLIFIER TRIODE	12.6	0.15	H	CLASS A AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 7A4.									
14A5	44	BEAM POWER AMPLIFIER	12.6	0.15	H	CLASS A AMPLIFIER	250	30.0	250	3.5	-12.5	50000	—	3000	7500	2.5
14A7/12B7	149	TRIPLE-GRID SUPER-CONTROL AMPLIFIER	12.6	0.15	H	CLASS A AMPLIFIER	100 250	13.0 9.2	100 100	4.0 2.6	-1.0 -3.0	120000 800000	—	2350 2000	—	—
14A7	116	TWIN TRIODE	14.0	0.16	H	CLASS A AMPLIFIER	250	9.0	—	—	-10	7600	16	2100	—	—
14B6	150	DUPLEX-DIODE HIGH MU TRIODE	12.6	0.15	H	TRIODE UNIT AS CLASS A AMPLIFIER	250	0.9	—	—	-2.0	91000	100	1100	—	—
14B8	151	PENTAGRID CONVERTER	12.6	0.15	H	CONVERTER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 7B8-LM.									
14C5	44	BEAM POWER AMPLIFIER	12.6	0.225	H	CLASS A AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6V6.									
14C7	149	R.F. AMPLIFIER PENTODE	12.6	0.15	H	AMPLIFIER	250	2.2	100	0.7	-3.0	1000000	—	1575	—	—
14E6	150	DUPLEX-DIODE TRIODE	12.6	0.15	H	TRIODE UNIT AS CLASS A AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6R7.									
14E7	118	DUPLEX-DIODE PENTODE	12.6	0.15	H	PENTODE UNIT AS R.F. OR A.F. AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 7E7.									
14F7	116	TWIN-TRIODE AMPLIFIER	12.6	0.15	H	EACH UNIT AS AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 7F7.									
14H7	149	R.F. AMPLIFIER PENTODE	12.6	0.14	H	AMPLIFIER	250	9.5	150	3.5	-2.5	800000	—	3800	—	—
14J7	124	TRIODE-HEXODE CONVERTER	12.6	0.15	H	CONVERTER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 7J7.									
14N7	116	TWIN-TRIODE AMPLIFIER	12.6	0.3	H	EACH UNIT AS AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 7N7.									
14Q7	121	PENTAGRID CONVERTER	12.6	0.15	H	CONVERTER	250	3.5	100	8.5	-2.0	1000000	—	450	OSCILLATOR GRID (#1) RESISTOR, 20000 OHMS. OSCILLATOR GRID CURRENT, 0.5 MA.	
14R7	118	DUPLEX-DIODE PENTODE	12.6	0.15	H	PENTODE UNIT AS AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 7R7.									
14S7	172	TRIODE HEPTODE	14.0	0.16	H	OSC. MIXER	250	3.0	100	1.8	-2.0	1250000	—	525	—	—

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CON. NEC-TION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMP	SCREEN VOLTS	SCREEN CURRENT MILLIAMP.	GRID BIAS VOLTS	A.C. PLATE RESIST-ANCE OHMS	AMPLI-FICATION FACTOR	TRANS-CONDUCT-ANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS
			VOLTS	AMP.	C.T.											
14W7	—	PENTODE	14.0	0.24	H	CLASS A AMPLIFIER	300	10.0	150	3.9	-2.2	30000	—	5300	—	—
14Y4	21	FULL-WAVE RECTIFIER	12.6	0.3	H	WITH CONDENSER-INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 325			MAX. D.C. OUTPUT MA., 70		MIN. TOTAL EFFECTIVE SUPPLY IMPEDANCE, 150 OHMS				
						WITH CHOKE-INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 450			MAX. D.C. OUTPUT MA., 70		MAX. PEAK PLATE MA., 210				
14Z3	9	HALF-WAVE RECTIFIER	14.0	0.3	HTR.	RECTIFIER	MAX. A.C. VOLTAGE PER PLATE, 250. MAX. D.C. OUTPUT IN MA., 60.									
15	32	R.F. AMPLIFIER PENTODE	2.0	0.22	D.C. H	CLASS A AMPLIFIER	67.5 135	1.85 1.85	67.5 67.5	0.3 0.3	-1.5 -1.5	63000 80000	450 600	710 750	—	—
RK15	6	TRIODE POWER AMPLIFIER	2.5	1.75	FIL.	AMPLIFIER	CHARACTERISTICS SAME AS TYPE 46 WITH CLASS B CONNECTIONS.									
RK16	19	TRIODE POWER AMPLIFIER	2.5	2.0	HTR.	AMPLIFIER	CHARACTERISTICS SAME AS TYPE 59 WITH CLASS A TRIODE CONNECTIONS.									
RK17	32	PENTODE POWER AMPLIFIER	2.5	2.0	HTR.	AMPLIFIER	CHARACTERISTICS SAME AS TYPE 2A5.									
18	56	POWER AMPLIFIER PENTODE	14.0	0.3	H	CLASS A AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6F6.									
19	60	TWIN-TRIODE AMPLIFIER	2.0	0.26	D.C. F	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 1J6-G									
20	6	POWER AMPLIFIER TRIODE	3.3	0.132	D.C. F	CLASS A AMPLIFIER	90 135	3.0 6.5	—	—	-16.5 -22.5	8000 6300	3.3 3.3	415 525	9600 6500	0.045 0.110
20J8	139	TRIODE-HEPTODE CONVERTER	20.0	0.15	H	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6J8-G.										
21A7	124	TRIODE-HEXODE CONVERTER	21.0	0.16	H	OSCILLATOR-MIXER	150 250	3.5	VALUES FOR TRIODE UNIT		-3.0	16800	—	1800	CONVERSION TRANSCONDUCTANCE 275 MICROMHOS	
									VALUES FOR HEXODE UNIT		-3.0	150000				
KY21	—	GAS TRIODE	2.5	10.0	FIL.	GRID-CONTROLLED RECTIFIER	OPERATING VOLTAGE, 3000. 500 MA OPERATING CURRENT.									
22	10	R.F. AMPLIFIER TETRODE	3.3	0.132	D.C. F	SCREEN-GRID R.F. AMPLIFIER	135 135	1.7 3.7	45 67.5	0.6 1.3	-1.5 -1.5	725000 325000	270 160	375 500	—	—
						SCREEN-GRID R.F. AMPLIFIER	180 250	4.0 4.0	90 90	1.7 1.7	-3.0 -3.0	40000 600000	400 630	1000 1050	—	—
24-A	31	R.F. AMPLIFIER PENTODE	2.5	1.75	H	BIAS DETECTOR	250 (16)	—	20 TO 45	—	{ -5.0 } (APPROX.)	PLATE CURRENT ADJUSTED TO 0.1 MA. WITH NO SIGNAL				
						A.F. CLASS A AMPLIFIER	90 180	4.5 8.0	—	—	-4.5 -13.5	5500 5000	8 8	1450 1600	5900 12000	0.025 0.250
RK-24	6	TRIODE AMPLIFIER OSCILLATOR	2.0	0.12	D.C. F.	R.F. AMPLIFIER OR OSCILLATOR—CLASS C	180	16.5	—	—	-45.0	D.C. GRID CURRENT, 6 MA. PEAK R.F. INPUT VOLTAGE, 92 R.F. DRIVING POWER, 0.5 WATT				2.0
25A6-GT/G	108	POWER AMPLIFIER PENTODE	25.0	0.3	H	CLASS A AMPLIFIER	95	20.0	95	4.0	-15.0	45000	—	2000	4500	0.9
							160	33.0	120	6.5	-18.0	42000	—	2375	5000	2.2

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS	GRID BIAS VOLTS	A. C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS-CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS
			VOLTS	AMP	C T											
25A7-GT/G	137	RECTIFIER-PENTODE	25.0	0.3	H	PENTODE UNIT AS CLASS A AMPLIFIER	100	2045	100	4.0	-15.0	50000	—	1800	4500	0.77
						HALF-WAVE RECTIFIER	MAX. A. C. PLATE VOLTAGE 117 VOLTS, RMS. MAX. D. C. OUTPUT CURRENT 75 MILLIAMPERES.									
25AC5-GT/G	70	HIGH-MU POWER AMPLIFIER TRIODE	25.0	0.3	H	CLASS B AMPLIFIER	180	4.0 (3)	—	—	0	—	—	—	4800	6.0
						DYNAMIC-COUPLED AMP. WITH TYPE 6A85-GT DRIVER	110	BIAS FOR BOTH 25AC5-GT AND 6A85-GT DEVELOPED IN CIRCUIT AVERAGE PLATE CURRENT OF DRIVER=7 MILLIAMPERES AVERAGE PLATE CURRENT OF 25AC5-GT=45 MILLIAMPERES								
25B5	61	DIRECT-COUPLED TRIODES	25.0	0.3	H	AMPLIFIER	IN PLATE 100	IN. PLATE 5.8	OUT. PLATE 180	OUT. PLATE 46	0	—	—	—	4000	3.8
25B6-G	108	POWER AMPLIFIER PENTODE	25.0	0.3	H	CLASS A AMPLIFIER	105 200	48.0 62.0	105 135	2.0 1.8	-16.0 -23.0	15500 18000	—	4800 5000	1700 2500	2.4 7.1
25E8-GT	147	TRIODE-PENTODE	25.0	0.15	H	PENTODE UNIT AS AMPLIFIER	100	7.6	100	2.0	-3.0	185000	—	2000	—	—
						TRIODE UNIT AS AMPLIFIER	100	0.6	—	—	-1.0	75000	112	1500	—	—
25C6-G	81	BEAM POWER AMPLIFIER	25.0	0.3	H	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6Y6-G.										
25D8 GT	183	DIODE TRIODE PENTODE	25.0	0.15	HTR	TRIODE AMPLIFIER	100	0.5	—	—	-1.0	91000	100	1100	—	—
						PENTODE AMPLIFIER	100	8.5	100	2.7	-3.0	200000	—	1900	—	—
25L6-GT/G	81	BEAM POWER AMPLIFIER	25.0	0.3	H	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 50L6-GT.									
25N6 (G)	112	DIRECT-COUPLED TRIODES	25.0	0.3	H	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 25B5.									
25S/1B5	—	DUPLEX-DIODE TRIODE	REFER TO TYPE 1B5 DATA													
25X6-GT	106	FULL-WAVE RECTIFIER	25.0	0.15	H	RECTIFIER	MAX. A. C. VOLTS PER PLATE (RMS), 125. MAX. D. C. OUTPUT CURRENT, 75 MA.									
25Y4-GT	20	HALF-WAVE RECTIFIER	25.0	0.15	H	RECTIFIER	MAX. A. C. PLATE VOLTAGE 125 VOLTS, RMS MAX. D. C. OUTPUT CURRENT 75 MILLIAMPERES									
25Y5	62	RECTIFIER-DOUBLER	25.0	0.3	H	RECTIFIER	MAX. A. C. VOLTS PER PLATE (RMS), 235 MAX. D. C. OUTPUT CURRENT 75 MILLIAMPERES HALF-WAVE OPERATION									
25Z3	9	HALF-WAVE RECTIFIER	25.0	0.3	HTR	RECTIFIER	MAX. A. C. VOLTAGE PER PLATE, 250. MAX. D. C. OUTPUT IN MA., 50									
25Z4-GT	20	HALF-WAVE RECTIFIER	25.0	0.3	H	RECTIFIER	MAX. A. C. PLATE VOLTAGE 125 VOLTS, RMS MAX. D. C. OUTPUT CURRENT 125 MILLIAMPERES									
25Z5	62	RECTIFIER-DOUBLER	25.0	0.3	H	RECTIFIER-DOUBLER	FOR OTHER RATINGS, REFER TO TYPE 25Z6.									

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS	GRID BIAS VOLTS	A.C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS-CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS		
			VOLTS	AMP	C.T.													
2526-GT/G	105	RECTIFIER-DOUBLER	25.0	0.3	H	VOLTAGE DOUBLER	MAX. A.C. VOLTS PER PLATE (RMS), 117 MAX D.C. OUTPUT MA., 75									MIN. TOTAL EFFECTIVE PLATE-SUPPLY IMPEDANCE HALF-WAVE, 30 OHMS; FULL-WAVE, 0 OHMS.		
						HALF-WAVE RECTIFIER	MAX. PLATE VOLTAGE (RMS), 235 MAX. D.C. OUTPUT MA. PER PLATE, 75.									MIN. TOTAL EFFECTIVE SUPPLY IMPEDANCE PER PLATE: UP TO 117 VOLTS, 0 OHMS; AT 150 VOLTS, 40 OHMS, AT 235 VOLTS, 100 OHMS.		
26	6	AMPLIFIER-TRIODE	1.5	1.05	F	CLASS A AMPLIFIER	90 180	2.9 6.2	—	—	-7.0 -14.5	8900 7300	8.3 8.3	935 1150	—	—		
27	19	DETECTOR AMPLIFIER TRIODE ①	2.5	1.75	H	CLASS A AMPLIFIER	135 250	4.5 5.2	—	—	-9.0 -21.0	9000 9250	9.0 9.0	1000 975	—	—		
						BIAS DETECTOR	250	—	—	—	-30.0 APPROX.	PLATE CURRENT ADJUSTED TO 0.2 MILLIAMPERE WITH NO SIGNAL						
30	6	DETECTOR AMPLIFIER TRIODE	2.0	0.06	D.C. F	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 1H4-G.											
31	6	POWER AMPLIFIER TRIODE	2.0	0.13	D.C. F	CLASS A AMPLIFIER	135 180	8.0 12.3	—	—	-22.5 -30.0	4100 3600	3.8 3.8	925 1050	7000 5700	0.185 0.375		
32	10	R.F. AMPLIFIER TETRODE	2.0	0.06	D.C. F.	SCREEN-GRID R.F. AMPLIFIER	135 180	1.7 1.7	67.5 67.5	0.4 0.4	-3.0 -3.0	950000 1200000	—	640 650	—	—		
						BIAS DETECTOR	180 ⑰	—	67.5	—	-6.0 APPROX.	PLATE CURRENT ADJUSTED TO 0.2 MILLIAMPERE WITH NO SIGNAL.						
32L7-GT	153	RECTIFIER-BEAM POWER AMPLIFIER	32.5	0.3	H	H.W. RECTIFIER	MAX. A.C. PLATE VOLTS (RMS), 125. MAX. D.C. OUTPUT CURRENT, 60 MILLIAMPERES.											
						CLASS A AMPLIFIER	110	40.0	110	3.0	-7.5	15000	—	6000	2500	1.5		
33	33	POWER AMPLIFIER PENTODE	2.0	0.26	D.C. F	CLASS A AMPLIFIER	180	22.0	180	5.0	-18.0	55000	—	1700	6000	1.4		
34	12	SUPER-CONTROL R.F. AMPLIFIER PENTODE	2.0	0.06	D.C. F	SCREEN-GRID R.F. AMPLIFIER	135 180	2.8 2.8	67.5 67.5	1.0 1.0	-3.0 MIN.	600000 1000000	—	360 620	—	—		
35/51	31	SUPER-CONTROL R.F. AMPLIFIER TETRODE	2.5	1.75	H	SCREEN-GRID R.F. AMPLIFIER	180 250	6.3 6.5	90.0 90.0	2.5 2.5	-3.0 MIN	300000 400000	305 420	1020 1050	—	—		
35A5-LT	52	BEAM POWER AMPLIFIER	35.0	0.15	H	SINGLE-TUBE CLASS A AMPLIFIER	110	40.0	110	3.0	-7.5	14000	—	5800	2500	1.5		
35L6-GT/G	81	BEAM POWER AMPLIFIER	35.0	0.15	H	SINGLE-TUBE CLASS A AMPLIFIER	110	40.0	110	3.0	-7.5	13800	—	5800	2500	1.5		
35Y4	180	HALF-WAVE RECTIFIER	35.0	0.15	HTR.	RECTIFIER	MAX. A.C. VOLTAGE PER PLATE, 235. MAX. D.C. OUTPUT IN MA., 100 MAX. INVERSE PEAK VOLTS, 700. MAX. PEAK CURRENT, 600 MA.											
35Z3-LT	18	HALF-WAVE RECTIFIER	35.0	0.15	H	WITH CONDENSER-INPUT FILTER	MAX. A.C. PLATE VOLTS (RMS), 235 MAX. D.C. OUTPUT MA., 100									MIN. TOTAL EFFECTIVE PLATE-SUPPLY IMPEDANCE: UP TO 117 VOLTS, 15 OHMS; AT 150 VOLTS, 40 OHMS; AT 235 VOLTS, 100 OHMS.		
35Z4-GT	20	HALF-WAVE RECTIFIER	35.0	0.15	H	WITH CONDENSER-INPUT FILTER	MAX. A.C. PLATE VOLTS (RMS), 250 MAX. PEAK INVERSE VOLTS, 720 ⑳									MAX. D.C. OUTPUT MA., 100 MAX. PEAK PLATE MA., 600		
35Z5-GT/G	46	HALF-WAVE RECTIFIER Heater Tap for Pilot	35.0	0.15	H	WITH CONDENSER-INPUT FILTER	MAX. A.C. PLATE VOLTS (RMS), 235. MIN. TOTAL EFFECTIVE PLATE-SUPPLY IMPEDANCE: UP TO 117 VOLTS, 9 OHMS, AT 235 VOLTS, 45 OHMS. MAX. D.C. OUTPUT MA. WITH PILOT AND NO SHUNT RESISTOR, 60; WITH PILOT AND SHUNT RESISTOR, 100; WITHOUT PILOT, 100.											

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS	GRID BIAS VOLTS	A. C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS-CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS	
			VOLTS	AMP	C.T.												
35Z6-G	106	RECTIFIER-DOUBLER	35.0	0.3	H	RECTIFIER-DOUBLER	MAX. A.C. VOLTS PER PLATE (RMS), 235 MAX. D.C. OUTPUT MA., 110										
36	31	R.F. AMPLIFIER TETRODE	6.3	0.3	H	SCREEN-GRID R.F. AMPLIFIER	100 250	1.8 3.2	55 90	— 1.7 (27)	-1.5 -3.0	55000 55000	470 595	850 1060	—	—	
						BIAS DETECTOR	100 250	(16) (16)	—	55 90	—	-5.0 -8.0	GRID-BIAS VALUES ARE APPROXIMATE. PLATE CURRENT ADJUSTED TO 0.1 MILLIAMPERE WITH NO SIGNAL.				
37	19	DETECTOR AMPLIFIER TRIODE (1)	6.3	0.3	H	CLASS A AMPLIFIER	90 250	2.5 7.5	—	—	-6.0 -18.0	11500 8400	9.2 9.2	800 1100	—	—	
						BIAS DETECTOR	90 250	—	—	—	-10.0 -28.0	GRID BIAS VALUES ARE APPROXIMATE. PLATE CURRENT ADJUSTED TO 0.2 MILLIAMPERE WITH NO SIGNAL.					
38	32	POWER AMPLIFIER PENTODE	6.3	0.3	H	CLASS A AMPLIFIER	100 250	7.0 22.0	100 250	1.2 3.8	-9.0 -25.0	140000 100000	—	875 1200	15000 10000	0.27 2.50	
39/44	32	SUPER-CONTROL R.F. AMPLIFIER PENTODE	6.3	0.3	H	CLASS A AMPLIFIER	90 250	5.6 5.8	90 90	1.6 1.4	-3.0 MIN	375000 1000000	360 1050	960 1050	—	—	
40	6	VOLTAGE AMPLIFIER TRIODE	5.0	0.25	D.C. F	CLASS A AMPLIFIER	135 (18)	0.2	—	—	-1.5	150000	30	200	—	—	
							180 (19)	0.2	—	—	-3.0	150000	30	200	—	—	
40Z5 GT	46	HALF-WAVE RECTIFIER	40	0.15	HTR.	RECTIFIER	MAX. A.C. VOLTAGE PER PLATE, 125. MAX. D.C. OUTPUT IN MA., 100										
41	56	POWER AMPLIFIER PENTODE	6.3	0.4	H	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6K6-G.										
42	56	POWER AMPLIFIER PENTODE	6.3	0.7	H	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6F6.										
RK-42	6	TRIODE AMPLIFIER OSCILLATOR	1.5	0.06	D.C. F	CLASS A AMPLIFIER	180	3.9	—	—	-13.5	10300	8.2	800	—	—	
43	56	POWER AMPLIFIER PENTODE	25.0	0.3	H	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 25A6.										
RK-43	60	TWIN-TRIODE POWER AMPLIFIER OSCILLATOR	1.5	0.12	D.C. F	CLASS A AMPLIFIER	135	3.0	—	—	-4.5	14500	13	900	VALUES FOR ONE TRIODE.		
						CLASS B AMPLIFIER	135	4.0	—	—	-6.0	—	—	—	24000	0.85 (32)	
						R.F. AMPLIFIER	135	14.0	D.C. GRID CURRENT, 3 MA.		-20.0	TRIODES CONNECTED IN PUSH-PULL				1.25	
44	—	SUPER-CONTROL R.F. AMPLIFIER PENTODE	REFER TO TYPE 39/44 DATA.														
45	6	POWER AMPLIFIER TRIODE	2.5	1.5	F	CLASS A AMPLIFIER	180 275	31.0 36.0	—	—	-31.5 -56.0	1650 1700	3.5 3.5	2125 2050	2700 4600	0.82 2.0	
						PUSH-PULL CLASS AB2 AMPLIFIER	275 275	36.0 28.0	(12) (13)	CATHODE BIAS, 775 OHMS -68.0 VOLTS, FIXED BIAS (15)		—	—	—	5050 3200	12.0 18.0 (18) (18)	
						MAX. A.C. PLATE VOLTAGE (RMS), 117 VOLTS MAX. P.E.A.K INVERSE VOLTAGE, 350 VOLTS MAX. D.C. OUTPUT MA., 65 MAX. P.E.A.K PLATE MA., 390 MIN. TOTAL EFFECTIVE SUPPLY IMPEDANCE, 15 OHMS											
45Z3	27	HALF-WAVE RECTIFIER	45.0	0.075	H	WITH CONDENSER-INPUT FILTER	MAX. A.C. PLATE VOLTAGE (RMS), 250 (22)				MAX. D.C. OUTPUT MA., 60				MAX. P.E.A.K PLATE MA., 600 MAX. D.C. OUTPUT MA., 100		
45Z5	46	HALF-WAVE RECTIFIER Heater Tap for Pilot	45.0	0.15	H	WITHOUT PILOT	MAX. A.C. PLATE VOLTS (RMS), 250 (22)				MAX. D.C. OUTPUT MA., 60						
						WITH PILOT	MAX. A.C. PLATE VOLTS (RMS), 250 (22)				MAX. D.C. OUTPUT MA., 60						

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS.	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS.	GRID BIAS VOLTS	A.C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS-CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS						
			VOLTS	AMP.	C.T.																	
46	29	DUAL-GRID POWER AMPLIFIER	2.5	1.75	F	CLASS A AMPLIFIER ⁽²¹⁾	250	22.0	—	—	-33.0	2380	5.5	2350	6400	1.25						
						CLASS B AMPLIFIER ⁽²⁹⁾	300 400	8.0 12.0	(13) (13)	— —	0 0	— —	— —	— —	— —	5200 5800	16.0 20.0	(12) (12)				
47	28	POWER AMPLIFIER PENTODE	2.5	1.75	F	CLASS A AMPLIFIER	250	31.0	250	6.0	-16.5	60000	150	2500	7000	2.7						
48	43	POWER AMPLIFIER TETRODE	30.0	0.4	D.C. H	TETRODE	96	52.0	95	9.0	-19.0	—	—	3800	1500	2.0						
						CLASS A AMPLIFIER	125	56.0	100	9.5	-20.0	—	—	3900	1500	2.5						
						TETRODE PUSH-PULL CLASS A AMPLIFIER	125	100	(13)	100	—	-20.0	—	—	—	3000	5.0	(12)				
49	29	DUAL-GRID POWER AMPLIFIER	2.0	0.12	D.C. F	CLASS A AMPLIFIER ⁽²¹⁾	135	6.0	—	—	-20	4175	4.7	1125	11000	0.17						
						CLASS B AMPLIFIER ⁽²⁹⁾	180	4.0	(13)	—	—	0	—	—	—	12000	3.5	(12)				
50	6	POWER AMPLIFIER TRIODE	7.5	1.25	F	CLASS A AMPLIFIER	300 400 450	35.0 55.0 55.0	—	—	-54.0 -70.0 -84.0	2000 1800 1800	3.8 3.8 3.8	1900 2100 2100	4600 3670 4350	1.6 3.4 4.6						
						50A5	44	BEAM POWER AMPLIFIER	50.0	0.15	H	CLASS A AMPLIFIER	200	50.0	110	1.5	-8.0	35000	—	8250	3000	4.7
						50C6-G	81	BEAM POWER AMPLIFIER	50.0	0.15	H	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6Y6-G.									
50L6-GT	81	BEAM POWER AMPLIFIER	50.0	0.15	H	SINGLE-TUBE	110	40.0	110	4.0	-7.5	10000	—	8200	1500	2.1						
						CLASS A AMPLIFIER	110	49.0	110	4.0	-7.5	10000	—	8200	2000	2.2						
50Y6-GT	106	RECTIFIER DOUBLER	50.0	0.3	H	VOLTAGE DOUBLER	MAX. A.C. VOLTS PER PLATE (RMS), 117 MAX. D.C. OUTPUT MA., 75				MIN. TOTAL EFFECTIVE PLATE-SUPPLY IMPEDANCE: HALF-WAVE, 30 OHMS; FULL-WAVE, 15 OHMS.											
						HALF-WAVE RECTIFIER	MAX. PLATE VOLTAGE (RMS), 235. MAX. D.C. OUTPUT MA. PER PLATE, 75				MIN. TOTAL EFFECTIVE SUPPLY IMPEDANCE PER PLATE: UP TO 117 VOLTS, 15 OHMS; AT 150 VOLTS, 40 OHMS; AT 235 VOLTS, 100 OHMS.											
50Z6-G	106	FULL-WAVE RECTIFIER	50.0	0.3	H	RECTIFIER	MAX. A. C. PLATE VOLTS (RMS), 250 MAX. D.C. OUTPUT MA., 250															
50Z7-G	122	RECTIFIER DOUBLER	50.0	0.15	H	RECTIFIER DOUBLER	MAX. A.C. PLATE VOLTS (RMS), 117. MAX. D.C. OUTPUT CURRENT WHEN USED WITH 2.9-VOLT 0.17-AMP. PANEL LAMP, 65 MILLIAMPERES.															
51		SUPER-CONTROL R.F. AMPLIFIER TETRODE	REFER TO TYPE 35/51 DATA.																			
52	29	DUAL-GRID POWER AMPLIFIER	6.3	0.3	F	CLASS A AMPLIFIER ⁽²¹⁾	110	43.0	—	—	0	1750	5.2	3000	2000	1.5						
						CLASS B AMPLIFIER ⁽²⁹⁾	180	3.0	(13)	—	—	0	—	—	—	10000	5.0	(12)				
53	97	TWIN-TRIODE AMPLIFIER	2.5	2.0	H	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6N7.															
M-54	TINNED LEADS	TETRODE POWER AMPLIFIER	0.025	0.04	D.C. F	AMPLIFIER	45	0.8	45	0.1	-4.0	1300	—	—	35000	0.005						
55	64	DUPLEX-DIODE TRIODE	2.5	1.0	H	TRIODE UNIT AS AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 65.															

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS.	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS.	GRID BIAS VOLTS	A.C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS-CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS
			VOLTS	AMP.	C.T.											
56	19	DETECTOR AMPLIFIER TRIODE (1)	2.5	1.0	H	AMPLIFIER DETECTOR	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6P5-G.									
57	63	TRIPLE-GRID DETECTOR AMPLIFIER	2.5	1.0	H	AMPLIFIER DETECTOR	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6J7.									
58	63	TRIPLE-GRID SUPER-CONTROL AMPLIFIER	2.5	1.0	H	AMPLIFIER MIXER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6U7-G.									
59	78	TRIPLE-GRID POWER AMPLIFIER	2.5	2.0	H	TRIODE (6) CLASS A AMPLIFIER	250	26.0	—	—	-28.0	2300	6.0	2600	5000	1.25
						PENTODE (5) CLASS A AMPLIFIER	250	35.0	250	9.0	-18.0	40000	—	2500	6000	3.0
						TRIODE (7) CLASS B AMPLIFIER	300 400	20.0 26.0	(15) (13)	—	—	0 0	—	—	—	4600 6000	15.0 20.0	(12) (12)
RK-62	6	GAS TRIODE DET. THYRATRON	1.4	0.05	F	SUPER-REGEN.-DETECTOR CONTROL-TUBE	45	1.5	—	—	RELAY RESISTANCE, 5000 TO 10000 OHMS. AVERAGE ANODE DROP, 30 VOLTS.					
M64	TINNED LEADS	TETRODE VOLTAGE AMPLIFIER	0.625	0.02	F	CLASS A AMPLIFIER	30	0.03	—	—	0	200000	25	110	—	—
70A7-GT	136	RECTIFIER-BEAM POWER AMPLIFIER Heater Tap for Pilot	70	0.3	H	HALF-WAVE RECTIFIER	MAX. A.C. PLATE VOLTS (RMS), 125. MAX. D.C. OUTPUT CURRENT, 60 MA.									
						CLASS A AMPLIFIER	110	40.0	110	3.0	-7.5	—	80	5800	2500	1.5
70L7-GT	115	RECTIFIER-BEAM POWER AMPLIFIER	70	0.15	H	HALF-WAVE RECTIFIER	MAX. A.C. PLATE VOLTS (RMS), 117. MAX. D.C. OUTPUT CURRENT, 70 MA.									
						CLASS A AMPLIFIER	110	43.0	110	3.0	-7.5	15000	—	7500	2000	1.8
71-A	6	POWER AMPLIFIER TRIODE	5.0	0.25	F	CLASS A AMPLIFIER	90 180	10.0 20.0	—	—	-16.5 -40.5	2170 1750	3.0 3.0	1400 1700	3000 4800	0.125 0.790
						CLASS A AMPLIFIER	45	0.34	22.5	0.07	0	500000	63	125	—	—
M-74	TINNED LEADS	TETRODE VOLTAGE AMPLIFIER	0.625	0.02	D.C. F	AMPLIFIER	45	0.34	22.5	0.07	0	500000	63	125	—	—
75	64	DUPLEX-DIODE HIGH-MU TRIODE	6.3	0.3	H	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6SQ7.									
VR75-30	15	GAS-FILLED REGULATOR			COLD	VOLTAGE REGULATOR	MIN. STARTING VOLTAGE, 105 VOLTS. OPERATING VOLTAGE, 75 VOLTS. OPERATING CURRENT: MINIMUM, 5 MA.; MAXIMUM, 30 MA.									
76	19	DETECTOR AMPLIFIER TRIODE (1)	6.3	0.3	H	AMPLIFIER DETECTOR	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6P5-G.									
77	63	TRIPLE-GRID DETECTOR AMPLIFIER	6.3	0.3	H	CLASS A AMPLIFIER	100 250	1.7 2.3	60 100	0.4 0.5	-1.5 -3.0	600000 1000000+	—	1100 1250	—	—
						BIAS DETECTOR	250	—	50	CATHODE CURRENT 0.65 MA.	-1.95	—	PLATE RESISTOR, 250000 OHMS. GRID RESISTOR, (10) 250000 OHMS.			

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS	GRID BIAS VOLTS	A. C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS-CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS		
			VOLTS	AMP.	C.T.													
78	63	TRIPLE-GRID SUPER-CONTROL AMPLIFIER	6.3	0.3	H	AMPLIFIER MIXER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6K7.											
79	65	TWIN-TRIODE AMPLIFIER	6.3	0.6	H	CLASS B AMPLIFIER	180 250	7.6 10.6	—	—	0 0	POWER OUTPUT IS FOR ONE TUBE AT STATED PLATE-TO-PLATE LOAD		7000 14000	5.5 8.0			
80	5	FULL-WAVE RECTIFIER	5.0	2.0	F	RECTIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 5Y3-G.											
81	4	HALF-WAVE RECTIFIER	7.5	1.25	F	WITH CONDENSER-INPUT FILTER	MAX. A.C. PLATE VOLTS (RMS), 700. MAX. PEAK INVERSE VOLTS, 2000.			MAX. D.C. OUTPUT MA., 85. MAX. PEAK PLATE MA., 500.								
82	5	FULL-WAVE RECTIFIER (4)	2.5	3.0	F	WITH CONDENSER-INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 450 MAX. PEAK INVERSE VOLTS, 1550.			MAX. D.C. OUTPUT MA., 115 MAX. PEAK PLATE MA., 345.		MIN. TOTAL EFFECTIVE SUPPLY IMPEDANCE PER PLATE, 50 OHMS.						
						WITH CHOKE-INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 550 MAX. PEAK INVERSE VOLTS, 1550.			MAX. D.C. OUTPUT MA., 115 MAX. PEAK PLATE MA., 345.		MINIMUM VALUE OF INPUT CHOKES, 6 HENRIES.						
83	5	FULL-WAVE RECTIFIER (4)	5.0	3.0	F	WITH CONDENSER-INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 450. MAX. PEAK INVERSE VOLTS, 1550.			MAX. D.C. OUTPUT MA., 225. MAX. PEAK PLATE MA., 675.		MIN. TOTAL EFFECTIVE SUPPLY IMPEDANCE PER PLATE, 50 OHMS.						
						WITH CHOKE-INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 550. MAX. PEAK INVERSE VOLTS, 1550.			MAX. D.C. OUTPUT MA., 225 MAX. PEAK PLATE MA., 675.		MINIMUM VALUE OF INPUT CHOKES, 3 HENRIES.						
83-V	11	FULL-WAVE RECTIFIER	5.0	2.0	H	FOR OTHER RATINGS, REFER TO TYPE 5V4-G.												
84/624	30	FULL-WAVE RECTIFIER	6.3	0.5	H	WITH CONDENSER-INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 325. MAX. PEAK INVERSE VOLTS, 1250.			MAX. D.C. OUTPUT MA., 60. MAX. PEAK PLATE MA., 180.		MIN. TOTAL EFFECTIVE SUPPLY IMPEDANCE PER PLATE, 65 OHMS.						
						WITH CHOKE-INPUT FILTER	MAX. A.C. VOLTS PER PLATE (RMS), 450. MAX. PEAK INVERSE VOLTS, 1250.			MAX. D.C. OUTPUT MA., 60. MAX. PEAK PLATE MA., 180.		MINIMUM VALUE OF INPUT CHOKES, 10 HENRIES						
G84	—	HALF-WAVE RECTIFIER	REFER TO TYPE 22Z/G84 DATA															
85	64	DUPLEX-DIODE TRIODE	6.3	0.3	H	TRIODE UNIT AS CLASS A AMPLIFIER	135 250	3.7 8.0	—	—	-10.5 -20.0	11000 7500	8.3 8.3	750 1100	25000 20000	0.075 0.350		
85 AS	64	DUPLEX-DIODE TRIODE	6.3	0.3	H	CLASS A AMPLIFIER	250	5.5	—	—	-9.0	—	20.0	1250	—	—		
89	63	TRIPLE-GRID POWER AMPLIFIER	6.3	0.4	H	AS TRIODE (6)	160 250	17.0 32.0	—	—	-20.0 -31.0	3300 2600	4.7 4.7	1425 1800	7000 5500	0.30 0.90		
						AS PENTODE (5)	100 250	9.5 32.0	100 250	1.6 5.5	-10.0 -25.0	104000 70000	— —	1200 1800	10700 6750	0.33 3.40		
						AS TRIODE (7)	180	6.0 (13)	—	—	0	—	—	—	—	13600 9400	2.50 3.50	(12)
						CLASS B AMPLIFIER												
VR90	178	VOLTAGE REGULATOR	—	—	—	VOLTAGE REGULATOR	MIN. STARTING VOLTAGE, 125 VOLTS. OPERATING VOLTAGE, 90 VOLTS. OPERATING CURRENT: MINIMUM, 10 MA.; MAXIMUM, 30 MA.											
VR90-30	15	GAS-FILLED	—	—	COLD	VOLTAGE REGULATOR	MIN. STARTING VOLTAGE, 125 VOLTS. OPERATING VOLTAGE, 90 VOLTS. OPERATING CURRENT: MINIMUM, 10 MA.; MAXIMUM, 30 MA.											
V-99 X-99	7 6	DETECTOR AMPLIFIER TRIODE (1)	3.3	0.063	D.C. P	CLASS A AMPLIFIER	90	2.5	—	—	-4.5	15500	6.6	425	—	—		

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS.	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS.	GRID BIAS VOLTS	A.C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS. CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS
			VOLTS	AMP.	C.T.											
RK-100	43	MERCURY VAPOR TRIODE	6.3	0.6	HTR	AMPLIFIER	100	CATHODE (G1) CURRENT 250 MA.			—	—	50	20000	—	—
VR105-30	15	GAS-FILLED REGULATOR			COLD	VOLTAGE REGULATOR	MIN. STARTING VOLTAGE, 137 VOLTS. OPERATING VOLTAGE, 105 VOLTS. OPERATING CURRENT: MINIMUM, 5 MA.; MAXIMUM, 30 MA.									
112-A	6	DETECTOR AMPLIFIER TRIODE (L)	5.0	0.25	D.C. F	CLASS A AMPLIFIER	90 180	5.0 7.7	—	—	-4.5 -13.5	5400 4700	8.5 8.5	1575 1800	5000 10650	0.035 0.285
HY-113	SPECIAL	MINIATURE TRIODE	1.4	0.70	D.C. F	OSCILLATOR DETECTOR	45	0.4	—	—	-4.5	25000	6.3	250	—	—
HY-114	SPECIAL	TRIODE	1.4	0.12	D.F. F	U.H.F. OSCILLATOR DETECTOR AMPLIFIER	180	15.0	OSCILLATOR GRID CURRENT, 3 MA.			20000	20	1000	—	—
HY-115	SPECIAL	MINIATURE PENTODE (S)	1.4	0.70	D.F. F	VOLTAGE AMPLIFIER	45	0.03	22.5	0.008	-1.5	5200000	300	58	—	—
117L7-GT/ 117M7-GT	123	RECTIFIER-BEAM POWER AMPLIFIER Heater Tap for Pilot	117	0.09	H	HALF-WAVE RECTIFIER	MAX. A.C. PLATE VOLTS (RMS), 117. MAX. D.C. OUTPUT CURRENT, 75 MA.									
						CLASS A AMPLIFIER	105	43.0	105	4.0	-5.2	17000	—	5300	4000	0.85
117N7-GT	127	RECTIFIER-BEAM POWER AMPLIFIER	117	0.09	H	HALF-WAVE RECTIFIER	MAX. A.C. PLATE VOLTS (RMS), 117. MAX. D.C. OUTPUT CURRENT, 75 MA.									
						CLASS A AMPLIFIER	100	51.0	100	5.0	-6.0	16000	—	7000	3000	1.2
117P7-GT	127	RECTIFIER-BEAM POWER AMPLIFIER	117	0.09	H	HALF-WAVE RECTIFIER	MAX. A.C. PLATE VOLTS (RMS), 117. MAX. D.C. OUTPUT CURRENT, 75 MA.									
						CLASS A AMPLIFIER	105	43.0	105	5.5	-5.2	17000	—	5300	4000	0.85
117Z4-GT	20	HALF-WAVE RECTIFIER	117	0.04	H	RECTIFIER	MAX. A.C. PLATE VOLTS (RMS), 117. MAX. PEAK INVERSE VOLTS, 350.			MAX. D.C. OUTPUT MA., 90. MAX. PEAK PLATE MA., 540			MIN. TOTAL EFFECTIVE SUPPLY IMPEDANCE, 30 OHMS.			
117Z6-GT/G	106	RECTIFIER DOUBLER	117	0.075	H	VOLTAGE DOUBLER	MAX. A.C. VOLTS PER PLATE (RMS), 117. MAX. D.C. OUTPUT MA., 60.			MIN. TOTAL EFFECTIVE POWER SUPPLY IMPEDANCE HALF-WAVE, 30 OHMS; FULL-WAVE, 15 OHMS.						
						HALF-WAVE RECTIFIER	MAX. A.C. VOLTS PLATE (RMS), 235. MAX. D.C. OUTPUT MA., PER PLATE, 60.			MIN. TOTAL EFFECTIVE POWER SUPPLY IMPEDANCE PER PLATE: UP TO 117 VOLTS, 15 OHMS; AT 150 VOLTS, 40 OHMS; AT 235 VOLTS, 100 OHMS.						
HY-125	SPECIAL	MINIATURE PENTODE (S)	1.4	0.70	D.C. F	A.F. OUTPUT AMPLIFIER	45	0.9	45	0.2	-3.0	—	225	—	50000	0.0115
VR150-30	15	GAS-FILLED REGULATOR			COLD	VOLTAGE REGULATOR	MIN. STARTING VOLTAGE, 180 VOLTS. OPERATING VOLTAGE, 150 VOLTS. OPERATING CURRENT; MINIMUM, 5 MA.; MAXIMUM, 30 MA.									
182B/482B	6	TRIODE AMPLIFIER	5.0	1.25	FIL.	CLASS A AMPLIFIER	250	18.0	—	—	-35.0	—	5.0	1500	—	—
183/483	6	POWER TRIODE	5.0	1.25	FIL.	CLASS A AMPLIFIER	250	25.0	—	—	60.0	18000	3.2	1800	4500	2.0
RM208	—	PERMATRON	2.5	5.0	FIL.	CONTROLLED RECTIFIER	7500 PEAK ANODE VOLTS. 1 AMPERE MAX. ANODE CURRENT.					TUBE VOLTAGE DROP, 15.				

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMP	SCREEN VOLTS	SCREEN CURRENT MILLIAMP	GRID BIAS VOLTS	A. C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS. CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS
			VOLTS	AMP.	C.T.											
RM209	—	PERMATRON	5.0	10.0	FIL.	CONTROLLED RECTIFIER	7500 PEAK ANODE VOLTS.			5 AMPERES MAX. ANODE CURRENT.			TUBE VOLTAGE DROP, 15.			
HY-245	162	PENTODE VOLTAGE AMPLIFIER	1.25	0.028	D.C. F	CLASS A AMPLIFIER	45	0.4	45	0.2	0	1000000	—	375	—	
HY-255	162	PENTODE POWER AMPLIFIER	1.25	0.028	D.C. F	CLASS A AMPLIFIER	45	1.1	45	0.35	-1.5	—	—	450	—	
257	28	POWER PENTODE	5.0	0.3	FIL.	CLASS A AMPLIFIER	110	20.0	110	7.0	21.5	41000	53	1350	6000	0.8
485	19	TRIODE	3.0	1.30	HTR.	CLASS A AMPLIFIER	180	6.0	—	—	9.0	9300	12.5	1350	—	—
CK-501 (X)	³² SPECIAL	MINIATURE PENTODE ³¹	1.25	0.033	D.C. F	VOLTAGE AMPLIFIER	30 45	0.3 0.3	30 45	0.06 0.06	0 -1.25	1000000 1500000	—	325 300	—	—
CK-502 (X)	³² SPECIAL	MINIATURE PENTODE ⁵¹	1.25	0.033	D.C. F	A.F. OUTPUT AMPLIFIER ⁵³	30 45	0.55 0.6	30 45	0.06 0.06	0 -1.25	500000 700000	—	400 500	60000 80000	0.0035 0.011
CK-503 (X)	³² SPECIAL	MINIATURE PENTODE ³¹	1.25	0.033	D.C. F	A.F. OUTPUT AMPLIFIER ⁵³	30	1.5	30	0.35	0	150000	—	600	20000	0.007
CK-504 (X)	³² SPECIAL	MINIATURE PENTODE ⁵¹	1.25	0.033	D.C. F	A.F. OUTPUT AMPLIFIER ⁵³	30	0.4	30	0.09	0	500000	—	350	60000	0.0045
CK-505 (X)	³² SPECIAL	MINIATURE PENTODE ⁵¹	0.625	0.03	D.C. F	IMPEDANCE-COUPLED VOLTAGE AMPLIFIER	30 45	0.17 0.2	30 40	0.07 0.08	0 -1.25	1100000 2000000	—	140 150	—	—
						RESISTANCE-COUPLED VOLTAGE AMPLIFIER	30	0.02	30	0.007	0	GAIN PER STAGE = 15.				
HY-615	SPECIAL	TRIODE	6.3	0.15	H	U.H.F. OSCILLATOR DETECTOR AMPLIFIER	300	20	OSCILLATOR GRID CURRENT, 3 MA.			20000	22	2200	—	4.0
840	—	R.F. PENTODE	2.0	0.13	FIL.	CLASS A AMPLIFIER	180	1.0	67.5	0.7	-3.0	1000000	400	400	—	—
864	6	NON-MICROPHONIC TRIODE	1.1	0.25	D.C. F	CLASS A AMPLIFIER	90 135	2.9 3.5	—	—	-4.5 -9.0	13500 12700	8.2 8.2	610 645	—	—
886	MOGUL	CURRENT REGULATOR				CURRENT REGULATOR	OPERATING VOLTAGE, 40-60. 2.05 MA. OPERATING CURRENT.									
KY866	—	MERCURY VAPOR TRIODE	2.5	5.0	FIL.	GRID-CONTROLLED RECTIFIER	PEAK ANODE VOLTS, 10000. ANODE CURRENT, 1 AMPERE.					STARTING VOLTAGE, -100, -150.				
874	186	GAS-FILLED REGULATOR			COLD	VOLTAGE REGULATOR	MINIMUM STARTING VOLTAGE, 125 VOLTS. OPERATING VOLTAGE, 90 VOLTS. OPERATING CURRENT: MINIMUM, 10 MA.; MAXIMUM, 50 MA.									
878	2	HALF-WAVE RECTIFIER	2.5	5.0	F	RECTIFIER	MAX. PEAK INVERSE PLATE VOLTS, 20000. MAX. A.C. PLATE VOLTAGE (RMS), 7100. MAX. D.C. OUTPUT CURRENT, 5 MA.									
879	—	HALF-WAVE RECTIFIER					REFER TO TYPE 2X2/879 DATA.									

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS.	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS.	GRID BIAS VOLTS	A.C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS-CONDUCTANCE (GRID-PLATE) UMHO	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS	
			VOLTS	AMP.	C.T.												
884 885	70 19	GAS TRIODE	6.3	0.6	H	SWEEP OSCILLATOR	INSTANTANEOUS ANODE VOLTS, 300. MAX. PEAK ANODE CURRENT, 300 MA. AVERAGE ANODE CURRENT: 2-3 MA.										
			2.5	1.4	H	GRID-CONTROLLED RECTIFIER	MAX. PEAK VOLTAGE BETWEEN ANY TWO ELECTRODES, 350 VOLTS. MAX. PEAK ANODE CURRENT, 300 MA. MAX. AVERAGE ANODE CURRENT, 75 MA. GRID RESISTOR: LESS THAN 1000 OHMS PER INSTANTANEOUS GRID VOLT.										
950	28	PENTODE POWER AMPLIFIER	2.0	0.12	FIL.	CLASS A AMPLIFIER	135	7.0	1.35	2.0	-16.5	100000	100	1000	13500	0.45	
954	158	ACORN PENTODE DETECTOR-AMPLIFIER	6.3	0.15	H	CLASS A AMPLIFIER	90 250	1.2 2.0	90 100	0.5 0.7	-3.0 -3.0	1000000 1500000+	1100 2000+	1100 1400	—	—	
955	159	ACORN TRIODE DETECTOR-AMPLIFIER-OSCILLATOR	6.3	0.15	H	CLASS A AMPLIFIER	90 135 180	2.5 3.5 4.5	—	—	-2.5 -3.75 -5.0	14700 13200 12500	25 25 25	1700 1900 2000	—	20000	0.135
						CLASS C AMP.-OSC.	180	8, MAX.	MAX.GRID CURRENT, 2MA	-35, APPROX.	—	—	—	—	—	—	—
956	158	ACORN SUPER-CONTROL R.F. AMPLIFIER PENTODE	6.3	0.15	H	CLASS A-AMPLIFIER	250	5.5	100	1.8	-3.0	800000	1440	1800	—	—	—
						MIXER IN SUPERHETERODYNE	100 250	—	100 100	—	-10.0 -10.0	OSCILLATOR PEAK VOLTS=7.0.					
957	160	ACORN TRIODE DETECTOR-AMPLIFIER-OSCILLATOR	1.25	0.05	D.C. F	CLASS A AMPLIFIER	135	2.0	—	—	-5.0	24000	16	650	—	—	
958	160	ACORN TRIODE A.F. AMPLIFIER OSCILLATOR	1.25	0.10	D.C. F	CLASS A AMPLIFIER	135	3.0	—	—	-7.5	10000	12	1200	—	—	
959	161	ACORN PENTODE DETECTOR-AMPLIFIER	1.25	0.05	D.C. F	CLASS A AMPLIFIER	135	1.7	67.5	0.4	-3.0	800000	480	600	—	—	
967	—	MERCURY VAPOUR TRIODE	2.5	5.0	FIL.	GRID-CONTROLLED RECTIFIER	PEAK ANODE VOLTS, 2500. MAX. ANODE CURRENT, 500 MA. MINIMUM STARTING VOLTAGE, -5. VALVE VOLTAGE DROP, 10-24.										
991	RAYONET CANDEL ADEA.	GAS-FILLED REGULATOR	—	—	COLD	VOLTAGE REGULATOR	MINIMUM STARTING VOLTAGE, 87 VOLTS. OPERATING VOLTAGE, 48 TO 67 VOLTS. OPERATING CURRENT: MINIMUM, 0.5 MA.; MAXIMUM, 2 MA										
1201	167	U.H.F. TRIODE	6.3	0.15	HTR.	CLASS A AMPLIFIER	180	5.5	—	—	-3	1200	36	—	—	—	
1203	165	U.H.F. DIODE	6.3	0.15	HTR.	RECTIFIER	MAX. R.M.S. VOLTAGE-150. MAX. D.C. OUTPUT CURRENT-8 MA.										
1204	171	U.H.F. PENTODE	6.3	0.15	HTR.	CLASS A AMPLIFIER	250	1.75	100	0.6	-2	800000	—	1200	—	—	
1221 1223	63 107	NON-MICROPHONIC PENTODE	6.3	0.3	H	CLASS A AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6J7.										

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS	GRID BIAS VOLTS	A.C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS-CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS
			VOLTS	AMP.	C.T.											
1231	149	TRIPLE-GRID AMPLIFIER	6.3	0.45	H	USED AS PENTODE (5) CLASS A AMPLIFIER	300	10.0	150	2.5	200 Ω CATH. RESISTOR	700000	3850	5500	—	—
						USED AS TRIODE (9) CLASS A AMPLIFIER	300	12.0	150	0.5	200 Ω CATH. RESISTOR	540000	3500	6500	—	—
						USED AS TRIODE (6) CLASS A AMPLIFIER	250	13.0	—	—	400 Ω CATH. RESISTOR	5200	33	6300	—	—
1232		TRIPLE-GRID AMPLIFIER	REFER TO TYPE 7G7/1232 DATA													
1284	169	U.H.F. PENTODE	12.6	0.15	H	CLASS A AMPLIFIER	250	9.0	100	2.5	-3.0	800000	—	2000	—	—
1291	175	U.H.F. TWIN TRIODE	1.4	0.22	FIL.	CLASS A AMPLIFIER	90	5.2	—	—	0	11350	21	1850	—	—
1293	165	U.H.F. TRIODE	1.4	0.11	FIL.	CLASS A AMPLIFIER	90	4.7	—	—	0	10750	14	1300	—	—
1294	164	U.H.F. DIODE	1.4	0.15	FIL.	RECTIFIER	MAX. R.M.S. VOLTAGE PER PLATE -30. MAX. D.C. OUTPUT CURRENT -340 U.A.									
1299	—	U.H.F. TETRODE	1.4	0.22	FIL.	CLASS A AMPLIFIER	135	5.7	90	0.7	-6	—	—	2200	13000	0.5
1602	6	NON-MICROPHONIC A.F. AND R.F. TRIODE	7.5	1.25	F	CLASS A AUDIO AMPLIFIER	250 350 425	10 16 18	—	—	-23.5 -32.0 -40.0	6000 5150 5000	—	1330 1550 1600	13000 11000 10200	0.4 0.9 1.6
						CLASS B AUDIO AMPLIFIER	250 350 425	8.0 (13) 8.0 8.0 (13)	(17)	—	—	-28.0 -40.0 -50.0	—	—	4000 6900 8000	13.0 (12) 26.0 25.0 (12)
1603	63	NON-MICROPHONIC TRIPLE-GRID DETECTOR AMPLIFIER	6.3	0.3	H	DETECTOR-AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6J7									
1609	28	PENTODE AMPLIFIER	1.1	0.25	FIL.	CLASS A AMPLIFIER	135	2.5	67.5	0.65	2.5	400000	300	725	—	—
1611	108	POWER AMPLIFIER PENTODE	6.3	0.7	H	RELAY CONTROL TUBE	FOR CHARACTERISTICS, REFER TO TYPE 6F6.									
1612	109	NON-MICROPHONIC PENTAGRID MIXER-AMPLIFIER	6.3	0.3	H	MIXER OR CLASS A AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6L7.									
1620	107	NON-MICROPHONIC TRIPLE-GRID DETECTOR-AMPLIFIER	6.3	0.3	H	AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6J7									

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS.	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS.	GRID BIAS VOLTS	A.C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS-CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS
			VOLTS	AMP.	C.T.											
1621	108	CONTINUOUS-SERVICE POWER AMPLIFIER PENTODE	6.3	0.7	H	USED AS TRIODE PUSH-PULL CLASS A1 AMPLIFIER (21)	327.5	55.0 (13)	—	—	500Ω CATH. RESISTOR	—	—	—	5000	2.0 (12)
						USED AS PENTODE PUSH-PULL CLASS A1 AMPLIFIER	300	38.0 (13)	300	6.5 (17)	-30.0	—	—	—	4000	5.0 (12)
1622	81	CONTINUOUS-SERVICE BEAM POWER AMPLIFIER	6.3	0.9	H	PUSH-PULL CLASS A1 AMPLIFIER	300	86.0 (13)	250	4.0 (13)	-20.0	—	—	—	4000	10.0 (12)
1629	154	ELECTRON-RAY TUBE	12.6	0.15	H	VISUAL INDICATOR	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6E5.									
1631	80	BEAM POWER AMPLIFIER	12.6	0.45	H	AMPLIFIER	FOR APPLICATIONS CRITICAL AS TO UNIFORMITY OF CHARACTERISTICS. FOR OTHER CHARACTERISTICS, REFER TO TYPE 6L6. OPERATING DATA APPLY WITHIN LIMITATION OF MAX. PLATE-DISSIPATION RATING.									
1632	81	BEAM POWER AMPLIFIER	12.6	0.6	H	AMPLIFIER	FOR APPLICATIONS CRITICAL AS TO UNIFORMITY OF CHARACTERISTICS, REFER TO TYPE 25L6. OPERATING DATA APPLY WITHIN PLATE VOLTAGE AND DISSIPATION LIMITATIONS.									
1633	133	TWIN-TRIODE AMPLIFIER	25	0.15	H	AMPLIFIER	FOR APPLICATIONS CRITICAL AS TO MATCHING OF THE TWO TRIODE UNITS. FOR OTHER CHARACTERISTICS, REFER TO TYPE 12SN7-GT.									
1634	146	TWIN-TRIODE AMPLIFIER	12.6	0.15	H	AMPLIFIER	FOR APPLICATIONS CRITICAL AS TO MATCHING OF THE TWO TRIODE UNITS. FOR OTHER CHARACTERISTICS, REFER TO TYPE 12SC7.									
1635	131	TWIN-TRIODE AMPLIFIER	6.3	0.6	HTR.	CLASS B AMPLIFIER	400	10/63	—	—	-0	—	—	—	14000	0.17
1642	174	TWIN-TRIODE AMPLIFIER	6.3	0.6	HTR.	CLASS A AMPLIFIER	250	8.3	—	—	-16.5	7600	10.4	1375	—	—
1644	176	TWIN PENTODE	12.6	0.15	H	CLASS A AMPLIFIER	180	13	180	2.8/4.6	-9.0	160000	—	2150	10000	1.0
1851	107	TELEVISION AMPLIFIER PENTODE	6.3	0.45	H	CLASS A AMPLIFIER	FOR OTHER CHARACTERISTICS, REFER TO TYPE 6AC7/1852.									
1852	—	TELEVISION AMPLIFIER PENTODE	REFER TO TYPE 6AC7/1852 DATA.													
1853	—	TELEVISION AMPLIFIER PENTODE	REFER TO TYPE 6AB7/1853 DATA.													
2050	155	GAS TETRODE	6.3	0.6	H	GRID-CONTROLLED RECTIFIER	MAX. PEAK FORWARD ANODE VOLTAGE, 650 VOLTS. MAX. PEAK ANODE CURRENT, 500 MA. MAXIMUM AVERAGE ANODE CURRENT, 100 MA. SHIELD GRID (# 2) VOLTAGE, 0 VOLTS. MAX. PEAK INVERSE ANODE VOLTAGE, 1500 VOLTS.									
2051	155	GAS TETRODE	6.3	0.6	H	GRID-CONTROLLED RECTIFIER	MAX. PEAK FORWARD ANODE VOLTAGE, 350 VOLTS. MAX. PEAK ANODE CURRENT, 375 MA. MAXIMUM AVERAGE ANODE CURRENT, 75 MA. SHIELD GRID (# 2) VOLTAGE, 0 VOLTS. MAX. PEAK INVERSE ANODE VOLTAGE, 700 VOLTS.									
7000	107	LOW-NOISE AMPLIFIER	6.3	0.3	HTR.	CLASS A AMPLIFIER	CLASS A AMPLIFIER CHARACTERISTICS SAME AS 6J7.									

AMERICAN TYPE VALVES

VALVE NUMBER	BASE CONNECTION	CLASS	CATHODE TYPE AND RATING			FOR USE AS	ANODE VOLTS	ANODE CURRENT MILLIAMPS	SCREEN VOLTS	SCREEN CURRENT MILLIAMPS	GRID BIAS VOLTS	A.C. PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	TRANS-CONDUCTANCE (GRID-PLATE) UMHOS	LOAD FOR STATED POWER OUTPUT OHMS	POWER OUTPUT WATTS	
			VOLTS	AMP.	C.T.												
7700	63	TRIPLE-GRID AMPLIFIER	6.3	0.3	HTR.	CLASS A AMPLIFIER	250	2.0	100	0.5	-3.0	1.5 MEG.	1500	1225	—	—	
9001	156	DETECTOR AMPLIFIER PENTODE	6.3	0.15	H	CLASS A AMPLIFIER	90 250	1.2 2.0	90 100	0.5 0.7	-3.0 -3.0	1000000 1000000+	—	1100 1400	—	—	
						MIXER IN SUPERHETERODYNE	100 250	—	100 100	—	-5.0 -5.0	—	—	CONVERSION TRANSCONDUCTANCE 550 MICROMHOS	—	—	
9902	157	DETECTOR AMPLIFIER TRIODE	6.3	0.15	H	CLASS A AMPLIFIER	90 180 250	2.5 4.5 6.3	—	—	-2.5 -5.0 -7.0	14700 12800 11400	25 25 25	1700 2000 2200	—	—	
						MIXER IN SUPERHETERODYNE	100 250	—	100 100	—	-10.0 -10.0	—	—	CONVERSION TRANSCONDUCTANCE 600 MICROMHOS	—	—	
9003	156	SUPER-CONTROL AMPLIFIER PENTODE	6.3	0.15	H	CLASS A AMPLIFIER	250	6.7	100	2.7	-3.0	700000	—	1800	—	—	
						MIXER IN SUPERHETERODYNE	100 250	—	100 100	—	-10.0 -10.0	—	—	CONVERSION TRANSCONDUCTANCE 600 MICROMHOS	—	—	
9004	ACORN BASE SOCKET	U.H.F. DIODE	6.3	0.15	HTR.	DETECTOR	MAX. A.C. VOLTAGE -117. MAX. D.C. OUTPUT CURRENT >5 MA.									—	—
9005	ACORN BASE	U.H.F. DIODE	3.5	0.185	HTR.	DETECTOR	MAX. A.C. VOLTAGE >117. MAX. D.C. OUTPUT CURRENT >1 MA.									—	—
BA	179	FULL-WAVE RECTIFIER			COLD	RECTIFIER	MAX. A.C. VOLTAGE PER PLATE, 350. MAX. D.C. OUTPUT IN MA., 350.									—	—
BH	179	FULL-WAVE RECTIFIER			COLD	RECTIFIER	MAX. A.C. VOLTAGE PER PLATE, 350. MAX. D.C. OUTPUT IN MA., 125.									—	—
BR	179	HALF-WAVE RECTIFIER			COLD	RECTIFIER	MAX. A.C. VOLTAGE PER PLATE, 300. MAX. D.C. OUTPUT IN MA., 50.									—	—
XXD	116	TWIN TRIODE	12.6	0.15	HTR.	CLASS A AMPLIFIER	250	9.0	—	—	-10.0	—	16	2160	—	—	
XXL	22	TRIODE OSCILLATOR	7.0	0.32	HTR.	OSCILLATOR	250	8.0	—	—	-8.0	—	20	2300	—	—	

FOOTNOTE REFERENCES FOR RECEIVING VALVES

1. For grid leak detection, plate volts 45, grid return to plus filament.
2. Either a.c. or d.c. may be used on the filament or heater, except as specifically noted. For use of d.c. on filament types, decrease stated grid volts by half of filament voltage.
3. Supply voltage applied through 20,000-ohm dropping resistor.
4. Mercury vapour type.
5. Grid No. 1 is control grid; grid No. 2 is screen; grid No. 3 is tied to cathode.
6. Grid No. 1 is control grid. Grids Nos. 2 and 3 tied to plate.
7. Grids Nos. 1 and 2 connected together; grid No. 3 connected to plate.
8. Grids Nos. 3 and 5 are screen. Grid No. 4 is control grid (input).
9. Grids Nos. 2 and 4 are screen. Grid No. 1 is control grid (input).
10. For grid of following valve.
11. Both grids connected together; likewise both plates.
12. Power output is for two valves at stated plate-to-plate load.
13. For two valves.
14. Preferably obtained by using 70,000-ohm dropping resistor in series with 90-volt supply.
15. Grids Nos. 2 and 3 tied to plate.
16. Applied through plate resistor of 250,000 ohms or 500-hy. choke shunted by 250,000-ohm resistor.
17. Applied through plate resistor of 100,000 ohms.
18. Applied through plate resistor of 250,000 ohms.
19. 50,000 ohms.
20. Requires different socket from small 7 pin.
21. Grid No. 3 tied to plate.
22. Plate voltages greater than 125 volts r.m.s. require 100-ohm (min.) series plate resistor.
23. Applied through plate resistor of 150,000 ohms.
24. For signal input control grid. Grid No. 3 bias, minus 3 volts.
25. Applied through 200,000-ohm plate resistor.
26. Grids Nos. 2 and 4 are screen. Grid No. 3 is control grid.
27. Maximum.
28. Megohms.
29. Grids Nos. 1 and 2 tied together.
30. Grids Nos. 2 and 3 tied together.
31. Designed especially for hearing aid use.
32. "X" types have removable octal base.
33. Operates into crystal earphone.
34. Operates into magnetic reproducer.
35. Unless otherwise specified, values are for the two units.
36. Power output is for one valve at stated plate-to-plate load.
37. Per plate.
38. Two sections have common plate; value is for each triode.
39. Values are for each unit.
40. D.C. resistance in grid circuit should not exceed 1.0 megohm under maximum rated conditions per unit.
41. Values are for two valves with filaments in series; equivalent to one type 5Y3—GT/5Y3—C.

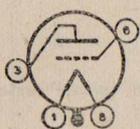
Subscript 1 on class of amplifier service shows that grid current does not flow on any part of input cycle.

Subscript 2 on class of amplifier service shows that grid current flows on some part of input cycle.

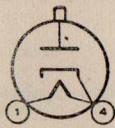
DETAILS OF BRITISH VALVES INCLUDED IN THIS BOOKLET HAVE BEEN SUPPLIED WITH THE KIND CO-OPERATION OF MEMBERS OF THE B.V.A. WHERE DETAILS OF A PARTICULAR MANUFACTURER'S VALVES ARE MISSING, IT IS ENTIRELY DUE TO THE INFORMATION NOT BEING AVAILABLE; THE TABLE OF DIFFERENT MANUFACTURERS' EQUIVALENTS WILL, HOWEVER, GIVE ALL THE NECESSARY DETAILS THAT ARE REQUIRED.

IT WILL ALSO BE NOTED THAT NO DETAILS ARE SHOWN OF THE CHARACTERISTICS, ETC., OF AMERICAN TYPE VALVES MADE BY BRITISH MANUFACTURERS AS IN ALL CASES THESE CHARACTERISTICS ARE ABSOLUTELY IDENTICAL TO THOSE GIVEN IN THE ACTUAL TABLE OF AMERICAN VALVES.

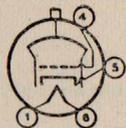
AMERICAN VALVE BASES



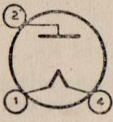
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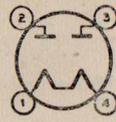
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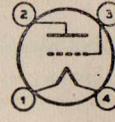
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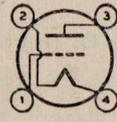
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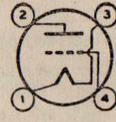
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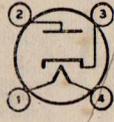
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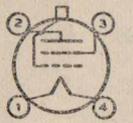
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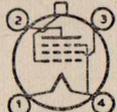
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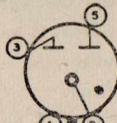
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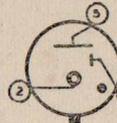
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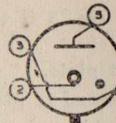
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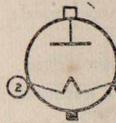
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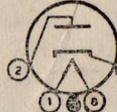
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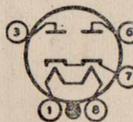
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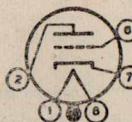
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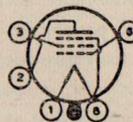
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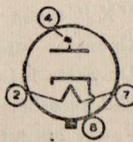
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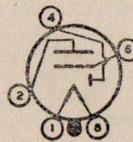
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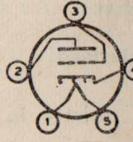
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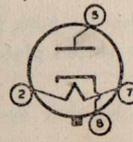
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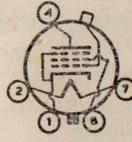
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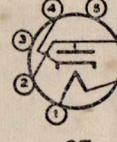
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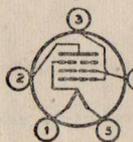
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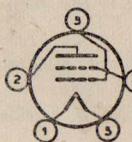
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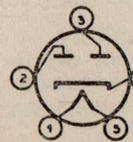
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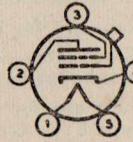
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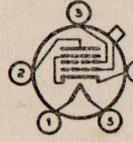
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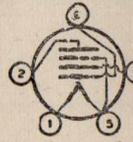
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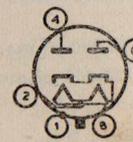
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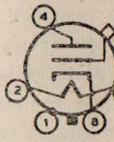
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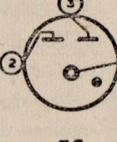
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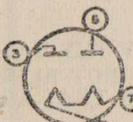
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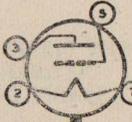
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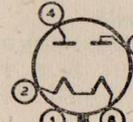
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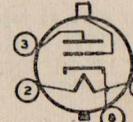
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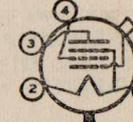
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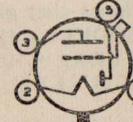
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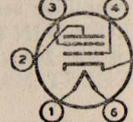
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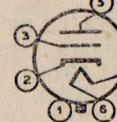
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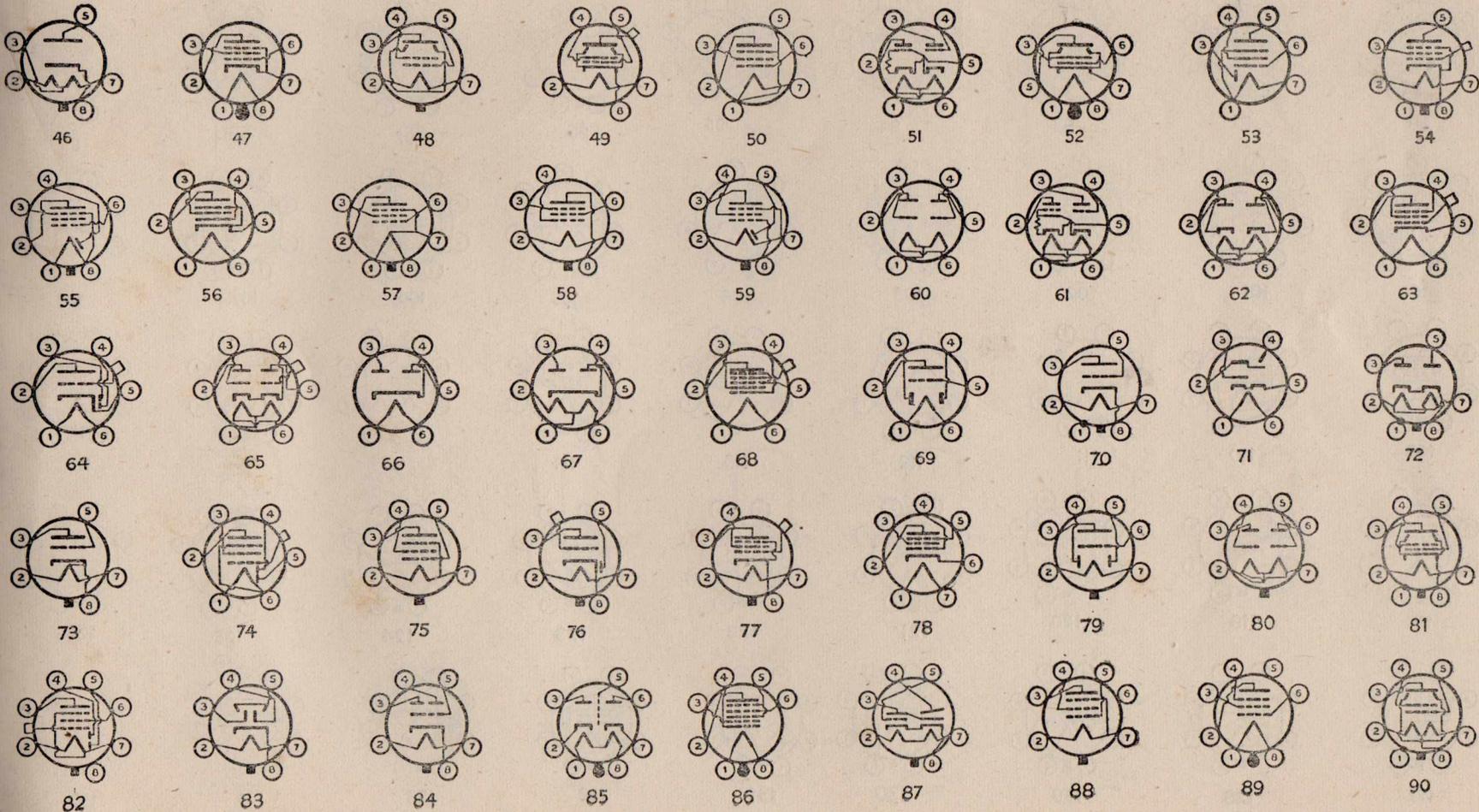


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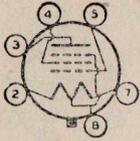


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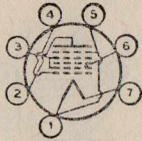
AMERICAN VALVE BASES



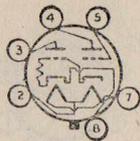
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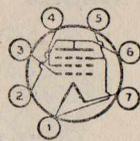
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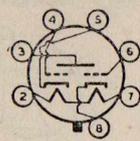
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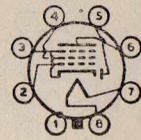
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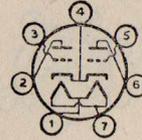
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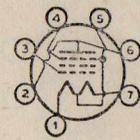
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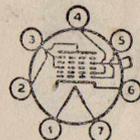
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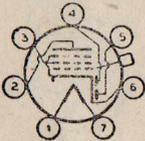
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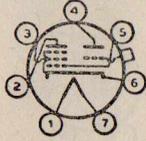
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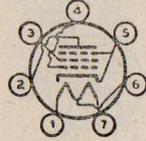
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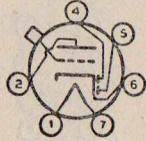
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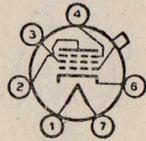
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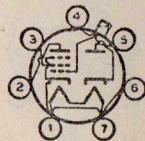
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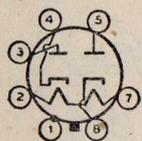
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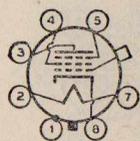
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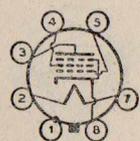
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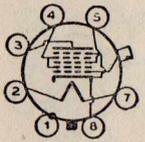
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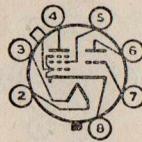
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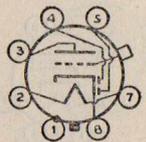
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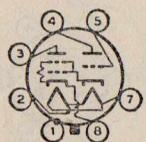
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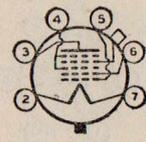
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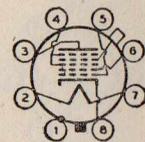
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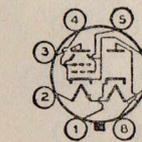
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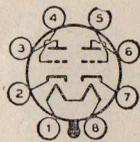
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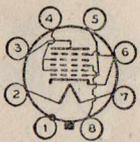
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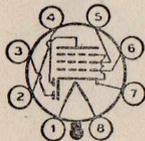
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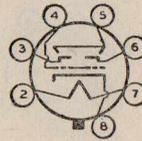
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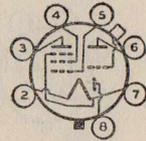
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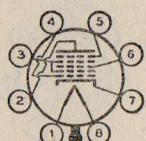
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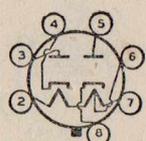
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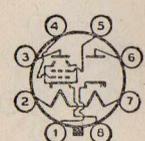
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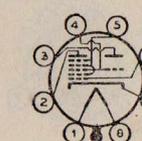
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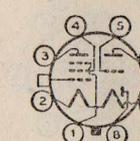
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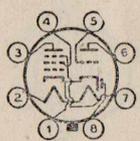
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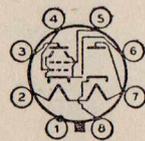
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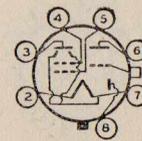
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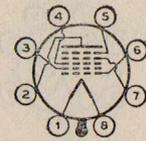
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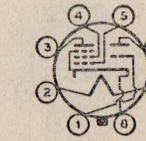
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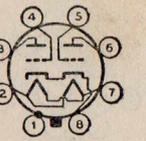
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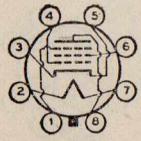
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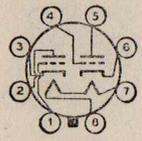
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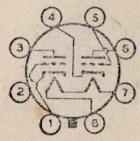
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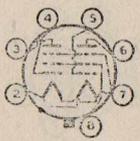
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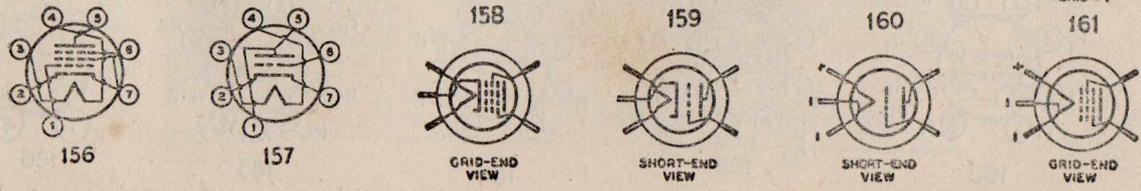
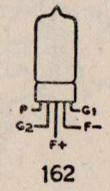
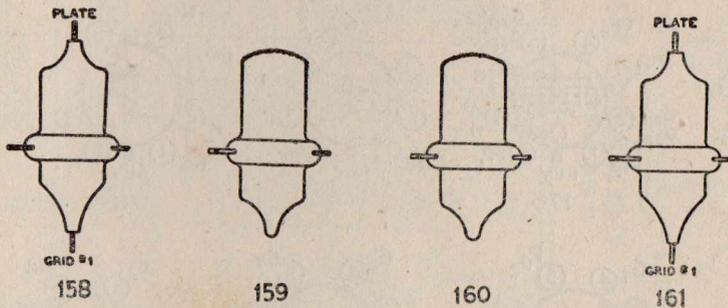
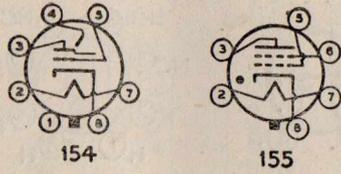
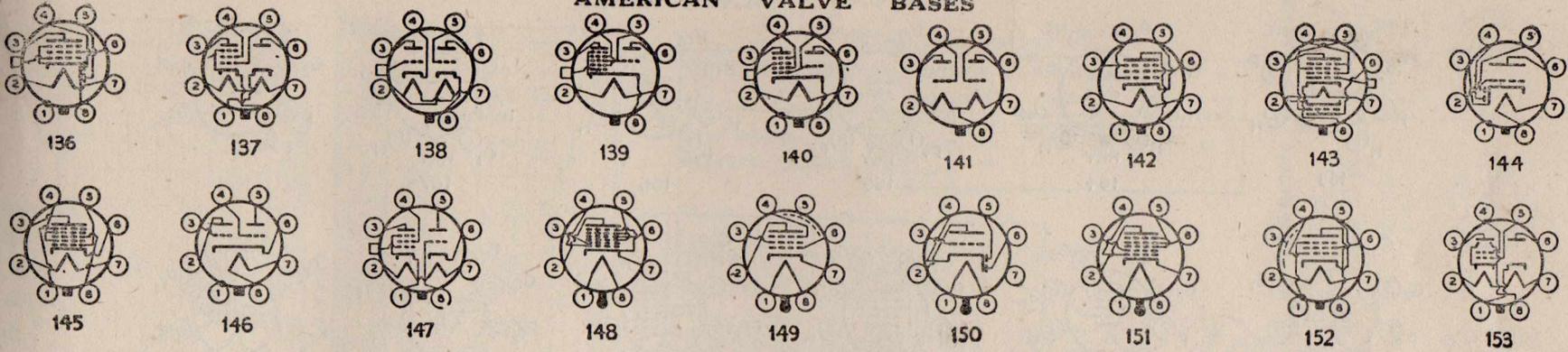


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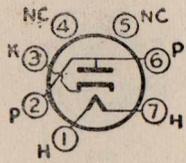


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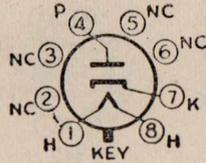
AMERICAN VALVE BASES



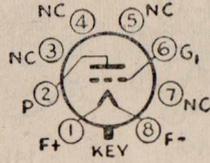
AMERICAN VALVE BASES



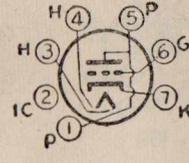
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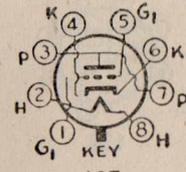
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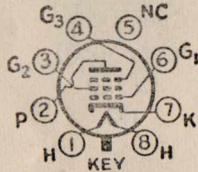
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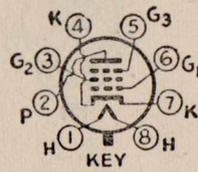
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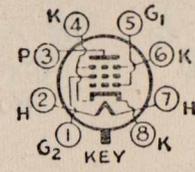
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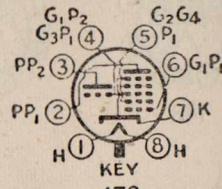
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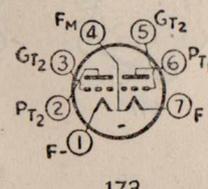
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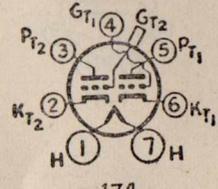
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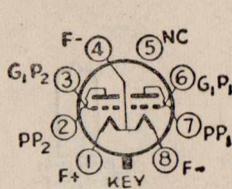
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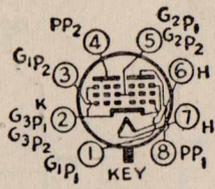
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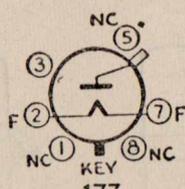
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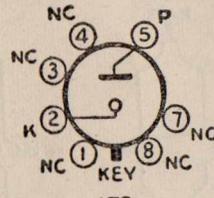
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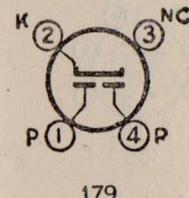
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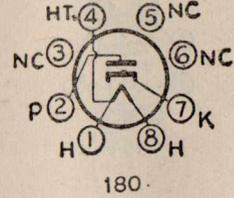
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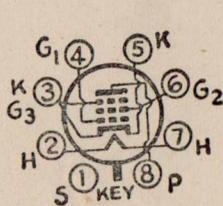
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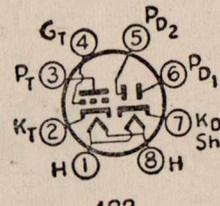
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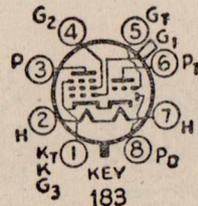
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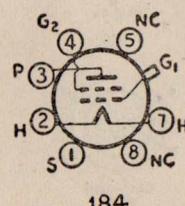
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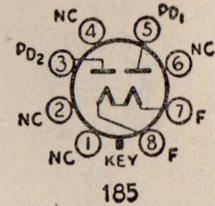
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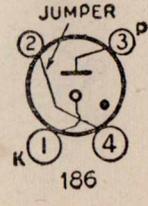
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BRIMAR VALVES

ENGLISH TYPES

Type Number	Application	Heater	Screen Voltage	Grid Voltage	Screen Current	Amplification Factor	1st-cutoff Factor	Mutual Conductance	Optimum Load Ohms	Auto Bias Resistor	Power Output in Watts
20A1	Triode Heater P.C.	4.0 1.2	250	80	11.7-25	2.2	3.0	750,000	650	200	—
20B1	"	13.0 0.15	250	100	21-30	2.5	—	1,000,000	800	350	—
15D1	Frequency Changer	13.0 0.15	250	100	21-30	3.5	—	800,000	800	300	—
15D2	"	13.0 0.15	250	100	21-30	3.5	—	800,000	800	300	—
902	Vari-Mu H.F. Pentode	13.0 0.2	250	125	31-40	10.0	2.6	1,000,000	1,650	200	—
11D3	Diode-Grid Triode	13.0 0.2	250	—	—	—	—	100,000	1,110	500	—
11D5	"	13.0 0.15	250	—	—	—	—	26,700	1.5	750	—
10D1	Double Diode	13.0 0.2	200	—	—	—	—	10,000	4.0	800	—
7D8	Power Pentode	40.0 0.2	250	250	32.0	6.0	6.0	60,000	16.0	500	3.75
7D8	"	13.0 0.15	250	250	32.0	6.0	6.0	60,000	10.0	500	1.50
7A3	"	14.0 2.0	250	250	38.0	7.5	6.0	60,000	10.0	500	3.75
7D3	"	40.0 0.2	135	135	30	37.0	6.0	100,000	2.5	500	2.25
7D5	"	13.0 0.35	250	250	16.5	34.0	6.0	100,000	2.35	1000	3.0
1D5	A.C. D.C. Rectifier	40.0 0.2	—	—	—	—	—	—	—	—	—
1R2	A.C. Rectifier	4.0 1.2 3.5	135	135	41.5	8.0	2.6	200,000	1.7	1600	0.15

Max. Rectified Current 75 Milliamperes.

Max. Rectified Current 120 Milliamperes.

AMERICAN U.X. TYPES

Type Number	Application	Heater	Screen Voltage	Grid Voltage	Screen Current	Amplification Factor	1st-cutoff Factor	Mutual Conductance	Optimum Load Ohms	Auto Bias Resistor	Power Output in Watts
2101	Battery Power Pentode	2.0 0.2	150	—	—	8.0	1.6	—	—	—	—
2102	A.C. G.P. Triode	4.0 1.0	200	—	—	5.0	—	—	—	—	—
2103	A.C. High Slope	4.0 1.0	200	—	—	5.0	—	—	—	—	—
2104	A.C. Input Choke	4.0 0.05	250	100	—	12.6	—	—	—	—	—
15A1	A.C. Vari-Mu H.F. Pent.	4.0 1.0	200	—	—	3.5	3.2	360,000	550	300	2.90
8A1	A.C. H.F. Pentode	4.0 1.0	200	80	—	1.0	2.00	600,000	4.25	200	—
11A2	A.C. Diode Triode	4.0 1.0	200	—	—	3.5	0.7	2000	600,000	2.0	—
7A2	A.C. Power Pentode	4.0 1.2	250	250	—	—	—	—	—	—	—
10A1	A.C. Rectifier	4.0 1.0	250	250	—	—	—	—	—	—	—
7B1	Rectifier Triode	4.0 0.25	250	—	—	—	—	—	—	—	—
12A1	A.C. D.C. H.F. Pent.	13.0 0.2	250	—	—	—	—	—	—	—	—

Max. Rectified Current 120 Milliamperes.

Max. Rectified Current 120 Milliamperes.

ENGLISH REPLACEMENT TYPES

Pin No.	BRIMAR	Omron	General	Radio Shack	Thorn	Thorn	Thorn	Thorn	Thorn	Thorn	Thorn
1	20A1	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
2	20B1	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
3	15D1	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
4	15D2	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
5	902	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
6	11D3	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
7	11D5	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
8	10D1	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
9	7D8	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
10	7D3	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
11	7D5	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
12	1D5	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
13	1R2	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H

Max. Rectified Current 120 Milliamperes.

Max. Rectified Current 120 Milliamperes.

LIST OF EQUIVALENTS

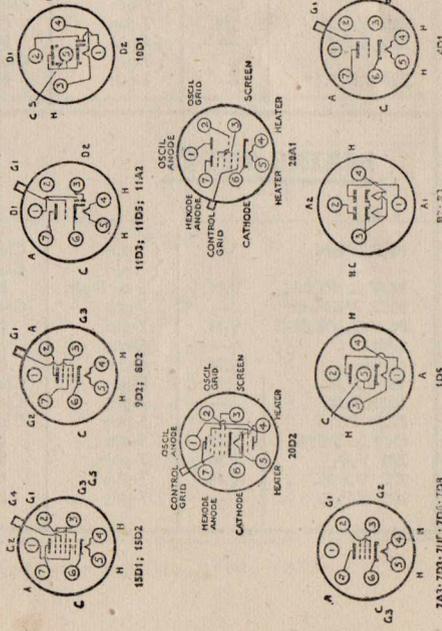
BRIMAR	Omron	General	Radio Shack	Thorn	Thorn	Thorn	Thorn	Thorn	Thorn	Thorn	Thorn
20A1	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
20B1	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
15D1	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
15D2	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
902	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
11D3	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
11D5	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
10D1	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
7D8	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
7D3	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
7D5	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
1D5	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H
1R2	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H	68E7H

*Available with 6 and 7 pin bases.

BASE CONNECTIONS

(UNDER-SIDE VIEWS)

4.—Anode. C.—Cathode. G₁, G₂, etc.—Grids. H.—Heater. D₁, D₂, etc.—Diode Anodes. S.—Shield.



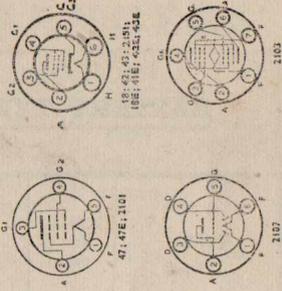
OCTAL BASE VALVES

BRIMAR	5X4G	5Y3G	6AG6	6AS6	6F5C	6F6C	6HG6	6Z6G	6T7G	6W7G	6X6	6L6G	6L7G	6N7G	6Q7G	6R7G	25L6G	
Marconi International	U59	U50	KX101	X03	H63	KX705	D03	L63	263	KX703	W63	X66	KX706	X04	D03	DH63	DL63	KX733

LOW DRAIN BATTERY OCTALS

BRIMAR	1A7B	1N5G	1H5G	1C5G
Marconi International	X14	Z14	1H14	N14

AMERICAN U.X. BASES.



COSSOR VALVES

H.F. PENTODES

BATTERY TYPES

TYPE	V.M.= Var- mu.	BASE	BULB	NOMINAL RATING				TYPICAL OPERATING CONDITIONS							BASE INDEX No.
				Fil. or Heater		Max. Anode Volts	Max. Screen Volts	Anode Volts	Screen Volts	Grid Bias Volts	Anode Current mA.	Screen Current mA.	Mutual Cond. mA/v.	Impedance (Ohms)	
				Volts	Amps.										
210 V.P.T.	V.M.	{ 4-pin 7-pin	Met. (4)	2	.1	150	80	150	60	1.5	1.5	0.7	1.1	600,000	5
210 V.P.A.	V.M.		Clear/Met.	2	.1	150	150	120	90	3	2.2	1.0	1.1	600,000	32
210 S.P.T.	—	{ 4-pin 7-pin	Met.	2	.1	150	80	150	60	1.5	1.2	0.7	1.3	600,000	5
220 I.P.T.†*	—		Clear/Met. Met.	2	.2	150	80	150	60	1.5	2.5	0.8	1.0	—	32 35

MAINS TYPES

M.S./PEN	—	{ 5-pin 7-pin	Clear/Met.	4	1.0	200	100	200	100	1.5	5.0	1.3	2.8	800,000	21
M.V.S./PEN	V.M.		5 or 7-pin	Clear/Met.	4	1.0	200	100	200	100	1.5	4.3	1.3	2.2	600,000	33
M.S./PEN-B	—	7-pin	Clear/Met.	4	1.0	200	100	200	100	1.5	5.0	1.3	2.8	800,000	34
M.V.S./PEN-B	V.M.	7-pin	Met.	4	1.0	200	100	200	100	1.5	4.3	1.3	2.2	600,000	34
OM5	—	Octal	Met.	6.3	.2	250	100	250	100	2	3.0	0.8	1.8	2,500,000	61
OM6	V.M.	Octal	Met.	6.3	.2	250	100	250	100	2.5	6.0	1.7	2.2	1,200,000	61
13 V.P.A.	V.M.	7-pin	Clear/Met.	13	.2	200	100	200	100	3	7.0	1.7	1.8	800,000	34
13 S.P.A.	—	7-pin	Clear/Met.	13	.2	200	100	200	100	3	2.3	0.6	1.25	1,000,000	34
D.S./PEN	—	5-pin	Clear/Met.	16	.25	200	100	200	100	1.5	4.7	1.3	2.3	—	21
D.V.S./PEN	V.M.	5-pin	Met.	16	.25	200	100	200	100	1.5	5.5	1.3	2.0	—	21
202 V.P.	V.M.	7-pin	Met.	20	.2	250	100	250	100	1.5	4.3	1.3	2.2	600,000	33
202 V.P.B.	V.M.	7-pin	Met.	20	.2	250	100	250	100	1.5	4.3	1.3	2.2	600,000	34
202 S.P.B.	—	7-pin	Met.	20	.2	250	100	250	100	1.5	4.8	1.3	2.6	800,000	34

*Indirectly Heated.

† Detector Pentode.

BATTERY TYPES**COSSOR VALVES****FREQUENCY CHANGERS**

TYPE	Description	BASE	BULB	NOMINAL RATING					TYPICAL OPERATING CONDITIONS					BASE INDEX No.
				Fil. or Heater		Max. Anode Volts	Max. Screen Volts	Max. Osc. Anode Volts	Anode Volts	Screen Volts	Grid Bias Volts	Total Space Current mA.	Conversion Conductance ma/v.	
				Volts	Amps.									
210 D.G.¶	Bigrid	5-pin	Clear	2	.1	150	—	—	‡100	—	0	2.75	.19§	14
210 P.G.	Pentagrid	7-pin	Met.	2	.1	150	80	150	‡120	40	0	1.9	.45	40
210 S.P.G.	Screened Pentagrid	7-pin	Met.	2	.1	150	80	150	‡120	40	0	1.9	.45	40
210 P.G.A.†	Pentagrid	7-pin	Met.	2	.1	150	80	150	‡120	40	0	1.9	.45	40
220 T.H.	Triode Heptode	7-pin	Met.	2	.2	150	150	100	‡120	60	0	*4.0	.2	43

MAINS TYPES

41 M.D.G.¶	Bigrid	5-pin	Clear/Met.	4	1.0	200	—	—	150	—	0	3.7	.25§	15
41 M.P.G.	Pentagrid	7-pin	Met.	4	1.0	250	100	100	200	100	1.5	*10.0	1.3	41
41 S.T.H.	Triode Hexode	7-pin	Met.	4	1.0	250	100	100	200	60	1.5	* 9.0	.6	42
4 T.H.A.	Triode Hexode	7-pin	Clear/Met.	4	1.5	250	100	100	250	100	2	*11.0	.85	42
OM8 (AG8)	Octode	Octal	Met.	6.3	.2	250	50	200	250	50	2	* 4.0	.55	66
OM10	Triode Hex.	Octal	Met.	6.3	.2	250	100	250	250	100	2	* 8.5	.7	67
13 P.G.A.	Pentagrid	7-pin	Clear	13	.2	250	100	200	250	100	3	*11.7	.52	41
202 M.P.G.	Pentagrid	7-pin	Met.	20	.2	250	100	100	200	100	1.5	*10.0	1.3	41
202 S.T.H.	Triode Hex.	7-pin	Met.	20	.2	250	100	100	200	60	1.5	* 9.0	.6	42
302 T.H.A.	Triode Hex.	7-pin	Met.	30	.2	250	100	100	250	100	2	*11.0	.85	42

¶ May be used as Triode Detector.

§ Mutual Conductance.

* At max. Osc. Anode Volts.

‡ Modulator and Osc. Anode Volts.

† Inter-electrode capacity lower than 210 P.G.

BATTERY TYPES**COSSOR VALVES****SCREEN-GRID VALVES**

TYPE	V.M.— Var- mu.	BASE	BULB	NOMINAL RATING				TYPICAL OPERATING CONDITIONS								BASE INDEX No.
				Fil. or Heater		Max. Anode Volts	Max. Screen Volts	Anode Volts	Screen Volts	Grid Bias Volts	Anode Current mA.	Screen Current mA.	Mutual Cond. mA/v.	Impedance (Ohms)	Amplifi- cation Factor	
				Volts	Amps.											
215 S.G.	—	4-pin	Clear/Met.	2	.15	150	80	120	60	1	1.25	0.3	1.1	300,000	330	4
220 S.G.	—	4-pin	Clear/Met.	2	.2	150	80	120	60	1	1.4	0.3	1.6	200,000	320	4
220 V.S.G.	V.M.	4-pin	Clear/Met.	2	.2	150	80	120	60	2.5	2.25	0.4	1.6	110,000	—	6
220 V.S.	V.M.	4-pin	Clear/Met.	2	.2	150	80	120	60	2.5	1.0	0.5	1.6	400,000	—	4

MAINS TYPES

M.S.G./H.A.	—	5-pin	Clear/Met.	4	1.0	200	100	150	80	1.5	2.1	—	2.0	500,000	1,000	17
41 M.S.G.	—	5-pin	Clear/Met.	4	1.0	200	80	130	60	1.5	0.8	—	2.5	400,000	1,000	17
M.S.G./I.A.	—	5-pin	Clear/Met.	4	1.0	200	100	150	80	1.5	5.2	—	3.75	200,000	750	17
M.V.S.G.	V.M.	5-pin	Clear/Met.	4	1.0	200	100	200	80	1.5	7.8	0.75	2.5	200,000	—	17
D.V.S.G.	V.M.	5-pin	Met.	16	.25	200	100	200	80	1.5	7.5	0.75	2.5	—	—	17

BATTERY TYPES**DIODES, DIODE TRIODES & DIODE PENTODES**

TYPE§	BASE	BULB	NOMINAL RATING				TYPICAL OPERATING CONDITIONS							BASE INDEX No.
			Fil. or Heater		Max. Anode Volts	Max. Screen Volts	Anode Volts	Grid Bias (Volts)	Anode Current	Mut. Cond. mA/V.	Imp. (Ohms)	Amplifi- cation Factor		
			Volts	Amps.										
210 D.D.T.	DDT	5-pin	Met.	2	1	150	—	100	0	2.3	1.1	25,000	27.5	16
2102	DDT	6-pin UX	Clear	2	.12	150	—	100	0	2.5	1.3	23,000	30	89
220 D.D.*	DD	5-pin	Clear	2	.2	—	—	—	—	—	—	—	—	12

MAINS TYPES

D.D.4	DD	5-pin	Clear	4	.75	—	—	—	—	—	—	—	—	12
D.D.T.	DDT	7-pin	Met.	4	1.0	200	—	200	3	3.4	2.4	17,000	41	28
D.D./PEN	DDP	7-pin	Met.	4	1.0	250	200	200	2.5	±5.0	2.7	—	—	39
OM3†	DD	Octal	Met.	6.3	.2	—	—	—	—	—	—	—	—	52
OM4	DDT	Octal	Met.	6.3	.2	250	—	200	4.5	4.0	2.0	15,000	30	57
13D.H.A.	DDT	7-pin	Clear	13	.2	250	—	250	1.5	1.0	1.5	83,300	125	203
D.D.T.16	DDT	7-pin	Met.	16	.25	200	—	200	3	5.0	2.5	16,000	40	28
202 D.D.T.	DDT	7-pin	Met.	20	.2	200	—	200	3	3.5	2.4	17,000	41	28

* Indirectly Heated

† Separate Cathodes.

‡ At Screen Volts 100.

§ DT=Diode Triode;

DDT=Double Diode Triode;

DD=Double Diode;

DDP=Double Diode Pentode.

BATTERY TYPES**COSSOR VALVES****TRIODES**

TYPE	BASE	BULB	NOMINAL RATING						TYPICAL OPERATING C'DIT'NS			BASE INDEX No.
			Fil. or Heater		Max. Anode Volts	Impe- dance (Ohms)	Mut. Cond. mA/V.	Amplifi- cation Factor	Anode Volts	Grid Bias (Volts)	Anode Current mA.	
			Volts	Amps.								
210 R.C.	4-pin	Clear	2	.1	150	50,000	.8	40	125	1.5	0.45	3
210 H.L	4-pin	Clear/Met.	2	.1	150	22,000	1.1	24	125	1.5	2.0	3
210 H.F	4-pin	Clear/Met.	2	.1	150	15,800	1.5	24	125	1.5	2.25	3
210 DET	4-pin	Clear/Met.	2	.1	150	13,000	1.15	15	125	1.5	4.5	3
210 L.F	4-pin	Clear/Met.	2	.1	150	10,000	1.4	14	125	3	4.5	3
<u>MAINS TYPES</u>												
41 M.R.C	5-pin	Clear	4	1.0	200	19,500	2.6	50	150	1	2.5	13
41 M.H.	5-pin	Clear/Met.	4	1.0	200	18,000	4.0	72	150	1.5	1.5	13
41 M.H.F	5-pin	Clear	4	1.0	200	14,500	2.8	41	150	2	2.5	13
41 M.H.L	5-pin	Clear/Met.	4	1.0	200	11,500	4.5	52	200	3	4.0	13
41 M.L.F	5-pin	Clear	4	1.0	180	7,900	1.9	15	160	4.5	7.5	13
D.H.L.	5-pin	Met.	16	.25	200	13,000	4.5	58	150	1.5	3.8	13

BATTERY TYPES**OUTPUT TRIODES**

TYPE	BASE	NOMINAL RATING						TYPICAL OPERATING CONDITIONS				BASE INDEX No.
		Fil. or Heater		Max. Anode Volts	Mut. Cond. mA/V.	Impedance (Ohms)	Amplification Factor	Anode Volts	Grid Bias Volts	Anode Current mA.	Optimum Load (Ohms)	
		Volts	Amps.									
215 P.	4-pin	2	.15	150	2.25	4,000	9	150	7.5	10.0	9,000	3
220 P.	4-pin	2	.2	150	2.25	4,000	9	150	7.5	11.0	9,000	3
220 P.A.	4-pin	2	.2	150	4.0	4,000	16	150	4.5	10.0	9,000	3
230 X.P.	4-pin	2	.3	150	3.0	1,500	4.5	150	18	22.0	3,500	3
<u>MAINS TYPES</u>												
2 P.*	4-pin	2	2.0	250	7.0	1,150	8	250	22	40.0	3,000	3
2 X.P.*	4-pin	2	2.0	300	7.0	900	6.3	300	36	50.0	4,000	3
41 M.P.	5-pin	4	1.0	200	7.5	2,500	18.7	200	7.5	24.0	3,000	13
41 M.X.P.	5-pin	4	1.0	200	7.5	1,500	11.2	200	12.5	40.0	2,000	13
4 X.P.*	4-pin	4	1.0	250	7.0	900	6.3	250	28.5	48.0	3,000	3
D.P.	5-pin	16	.25	200	6.0	2,800	17	200	7.5	25.0	3,500	13
402 P.	7-pin	40	.2	200	7.5	1,330	10	150	9.5	30.0	2,500	26

* Directly heated.

BATTERY TYPES COSSOR VALVES OUTPUT PENTODES & TETRODES

TYPE	P= Pentode T= Tetrode	BASE	NOMINAL RATING					TYPICAL OPERATING CONDITIONS						BASE INDEX No.
			Fil. or Heater		Max. Anode Volts	Max. Screen Volts	Mutual Cond. mA/V.	Anode Volts	Screen Volts	Grid Bias (Volts)	Anode Current m/A.	Screen Current m/A.	Optimum Load (Ohms)	
			Volts	Amps										
2101	P	5-pin UX	2	.12	150	150	1.8	135	135	4.5	8.0	2.6	15,000	82
220 P.T.	P	4/5-pin	2	.2	150	150	2.5	120	120	7.5	13.5	3.0	8,000	6-19
220 H.P.T.	P	4/5-pin	2	.2	150	150	2.5	120	120	4.5	4.3	1.0	20,000	6-19
220 O.T.	T	5-pin	2	.2	150	150	2.5	120	120	4.5	4.3	1.0	20,000	18
230 P.T.	P	4/5-pin	2	.3	150	150	2.0	150	150	15	14.0	3.0	10,000	6-19

MAINS TYPES

P.T. 41*	P	5-pin	4	1.0	250	200	3.0	250	200	12.5	30.0	6.0	8,000	19
P.T. 41B.*	P	5-pin	4	1.0	400	300	2.25	400	250	40	30.0	6.0	8,000	19
M.P./PEN	P	5/7-pin	4	1.0	250	250	3.5	250	250	16	30.0	6.0	10,000	20-36
42 M.P./PEN	P	7-pin	4	2.0	250	250	7.0	250	250	5.5	32.0	6.0	8,000	36
P.T.10	P	7-pin	4	2.0	250	250	9.0	250	250	7.5	40.0	8.0	5,000	36
42 O.T.	T	7-pin	4	2.0	250	250	7.0	250	250	5.5	34.0	7.0	6,500	29
42 O.T.D.D.†	T	7-pin	4	2.0	250	250	7.0	250	250	5.5	34.0	7.0	6,500	31
OM9	P	Octal	6.3	.2	250	250	2.8	250	250	18	32.0	5.0	8,000	63
2151	P	6-pin UX	14	.3	250	250	2.3	250	250	30	48.0	11.5	4,000	93
D.P./PEN	P	7-pin	16	.25	250	250	3.5	200	200	10	31.0	6.0	10,000	36
40 P.P.A.	P	7-pin	40	.2	150	150	4.0	150	150	25	36.0	6.0	4,000	36
402 PEN	P	7-pin	40	.2	250	250	7.0	200	200	6.7	40.0	7.0	5,500	37
402 PEN/A	P	7-pin	40	.2	150	150	8.0	150	150	9	56.0	11.0	2,500	37
402 O.T.	T	7-pin	40	.2	250	250	7.0	200	200	6.6	40.0	7.0	5,500	30

* Directly heated.

† Double-diode Tetrode.

QUIESCENT OUTPUT TRIODES & PENTODES

TYPE	DESCRIPTION	BASE	NOMINAL RATING				TYPICAL OPERATING CONDITIONS						BASE INDEX No.
			Fil. or Heater		Mutual Cond. mA/V.	Anode Volts	Screen Volts	Grid Bias Volts	Quiescent Anode Current m/A.	Screen Current m/A.	Optimum Load (Ohms)		
			Volts	Amps.									
220.B	Battery Class B, Double Triode	7-pin	2	.2	—	120	—	0	2.5	—	12,000	27	
240.B	Battery Class B, Double Triode	7-pin	2	.4	—	120	—	0	4.0	—	8,000	27	
2103	Battery Q.P.P., Double Pentode	7-pin UX	2	.26	1.6	135	135	7.5	4.0	1.2	35,000	99	
240 Q.P.	Battery Q.P.P., Double Pentode	7-pin	2	.4	2.5	120	120	9	2.9	0.6	24,000	38	

COSSOR VALVES

RECTIFIERS

TYPE	DESCRIPTION	BASE	HEATER OR FILAMENT		MAXIMUM VOLTS PER ANODE	MAXIMUM RECTIFIED CURRENT mA.	BASE INDEX No.
			Volts	Amps.			
225 D.U.	Voltage Doubler	7-pin	2†	.5†	750	20	25
506 B.U.	Full Wave	4-pin	4	1.0	250	60	1
442 B.U.	Full Wave	4-pin	4	2.5	350	120	1
460 B.U.	Full Wave	4-pin	4	2.5	500	120	1
43 I.U.*	Full Wave	4-pin	4	2.5	350	120	2
44 I.U.*	Full Wave	4-pin	4	2.5	500	120	2
25RE*	Multiple	6-pin UX	25	.3	250	80	87
OM1*	Half Wave	Octal	30	.2	250	120	68
35RE*	Multiple	6-pin UX	35	.3	250	120	87
40 S.U.A.*	Half Wave	5-pin	40	.2	250	75	11

* Indirectly heated.

† Each filament.

SPECIAL RECTIFIERS

TYPE	DESCRIPTION	BASE	HEATER OR FILAMENT		MAXIMUM VOLTS PER ANODE	MAXIMUM RECTIFIED CURRENT mA.	BASE INDEX No.
			Volts	Amps.			
405 B.U.	Full Wave	4-pin	4	.5	1,500	20	1
4/100 B.U.	Full Wave	4-pin	4	2.5	500	200	1
45 I.U.*	Full Wave	4-pin	4	3.5	500	250	2
S.U. 2130	Half Wave	4-pin	2	1.0	4,000	2	—
S.U. 2150*	Half Wave	4-Pin	2	1.0	8,000	2	—

* Indirectly heated.

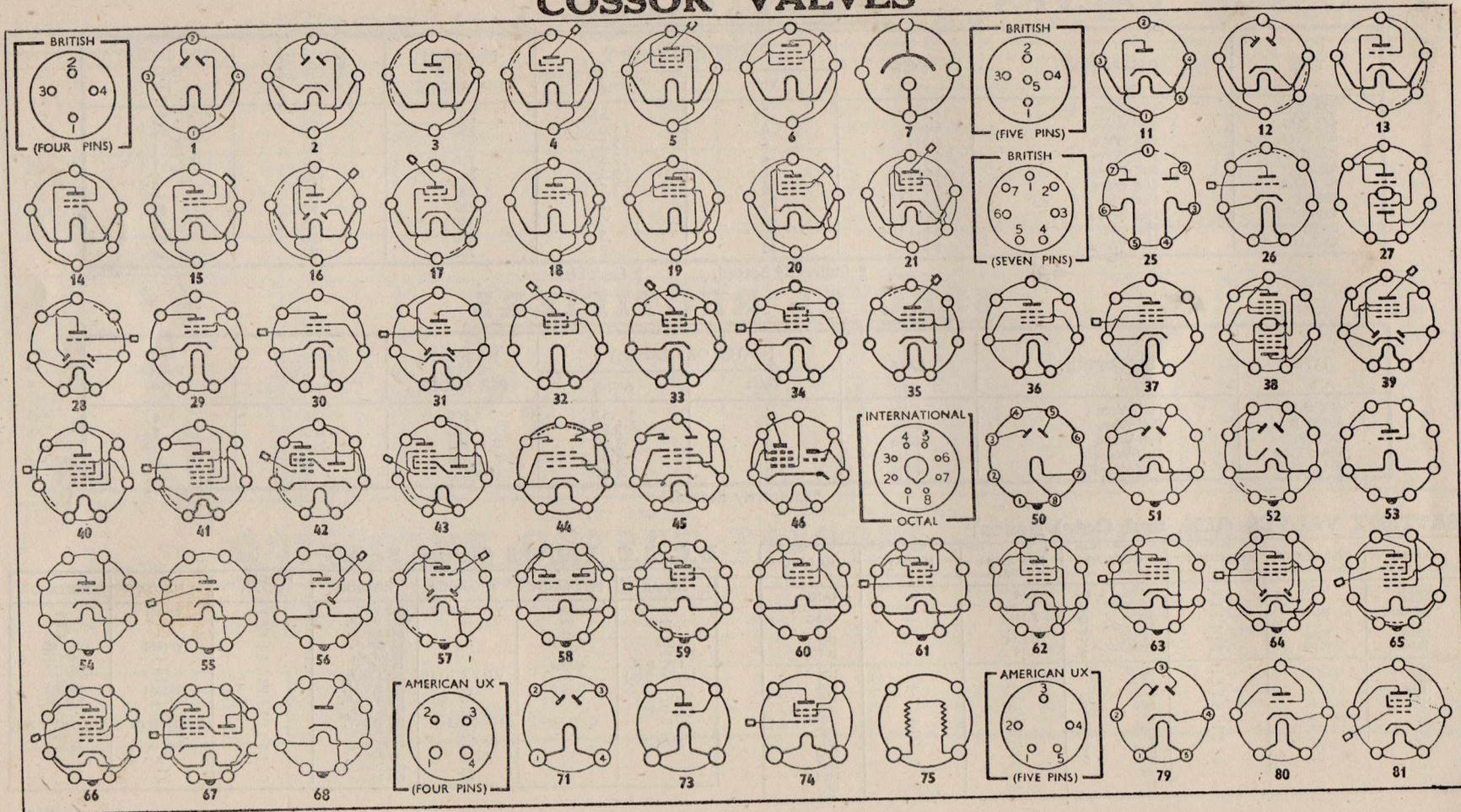
BATTERY VALVES (U.X. and Octal Bases)

BRIMAR	EVER-READY	FERRANTI	COSSOR	MARCONI-OSRAM	MAZDA	MULLARD
1A7EG	1A7G	—	1A7G 1.4	X.14	—	1A7G
1N5G	1N5G	—	1A7YG	—	—	—
—	—	—	1N5G	Z.14	—	1N5G
1H5G	1H5G	—	1N5VG	—	—	1H5G
1C5G	1C5G	—	1H5G	HD.14	—	1C5G
—	—	—	1C5G	N.14	—	—
1C6	—	—	1C6E	—	—	1C6
1A6	—	—	1A6E	—	—	1A6
1A4E	—	—	1A4E	—	—	1A4
34E	—	—	34E	—	—	34
15E	—	—	15	—	—	15
32E	—	—	32E	—	—	32
30	—	—	30	—	—	30
2102	—	—	2102	—	—	2102
2101	—	—	2101	—	—	2101
2103	—	—	2103	—	—	2103
19	—	—	19	—	—	19

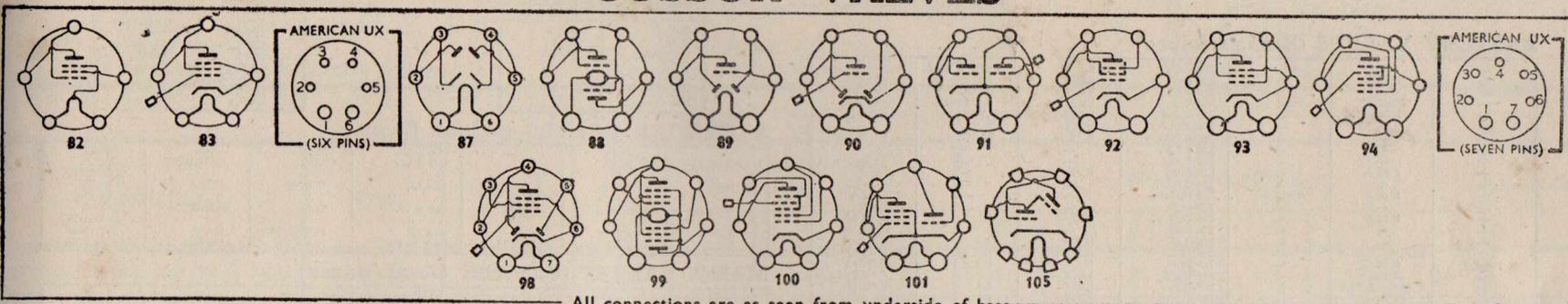
D.C./A.C. VALVES (British Bases)

BRIMAR	EVER-READY	FERRANTI	COSSOR	MARCONI/OSRAM	MAZDA	MULLARD
—	—	V.P.T.A. (13v.)	202 V.P.	—	VP1321	—
—	—	—	202 V.P.B.	—	—	—
—	—	—	202 S.P.B.	—	—	—
9.D.2	C.50.N	—	13 V.P.A.	—	VP1322	VP13C
—	—	—	13 S.P.A.	—	—	SP13C
15 D.1	C.80.B	—	13 P.G.A.	—	—	F.C.13C
15 D.1 (13v.)	—	V.H.T.A. (13v.)	202 M.P.G.	—	—	—
—	C.36.A	—	202 S.T.H.	—	TH.2321	T.H.21C
—	C.36.B	—	302 T.H.A.	—	—	T.H.30C.
11.D.3	—	—	13 D.H.A.	—	—	—
—	C.23B (13v.)	H.A.D. (13v.)	202 D.D.T.	—	HL/DD1320 (13v.)	TDD.13C. (13v.)
—	—	—	402 P.	—	—	—
7.D.3	—	—	40 P.P.A.	—	—	—
—	—	P.T.Z.	402 PEN	—	—	—
—	—	—	402 PEN/A.	—	—	—
—	—	—	402 O.T.	—	—	—

COSSOR VALVES



COSSOR VALVES



All connections are as seen from underside of base

SPECIAL TYPES (TELEVISION, TIME BASES, Etc.)

TYPE	DESCRIPTION	BASE	BULB	NOMINAL RATING				TYPICAL OPERATING CONDITIONS					BASE INDEX No.
				Fil. or Heater		Max. Anode Volts	Max. Screen Volts	Anode Volts	Screen Volts	Grid Bias Volts	Anode Current mA	Mutual Conductance mA/V.	
				Volts	Amps.								
4 T.P.B.	Screened HF Pentode	7-pin	Cl./Met.	4	1.0	250	250	200	150	3	12.0	8.0	34
4 T.S.P.	Screened HF Pentode	7-pin	Cl./Met.	4	1.0	250	250	200	150	3	12.0	8.0	33
41 M.P.T.	Screened HF Pentode	7-pin	Clear	4	1.0	250	200	250	100	3.5	12.0	4.8	33
42 M.P.T.	Screened HF Pentode	7-pin	Clear	4	2.0	250	250	200	200	3	34.0	8.5	33
42 P.T.B.	Screened HF Pentode	7-pin	Clear	4	2.0	250	250	200	200	3	34.0	8.5	34
4 T.P.	Triode Pentode	7-pin	Clear	4	1.4	200	200	150	150	5	16.0	4.5	46
D.D.L.4	Low Imped. Double Diode	5-pin	Clear	4	.75	—	—	—	—	—	—	—	12
41 M.T.S.	Split Anode Pentode	7-pin	Clear	4	1.0	250	100	—	—	—	—	—	44
4 T.S.A.	Split Anode Pentode	7-pin	Met.	4	1.0	250	100	—	—	—	—	—	45
41 M.T.B.	Triode	5-pin	Clear	4	1.0	250	—	200	—	1	3.4	2.6	13
41 M.T.L.	Triode	5-pin	Met.	4	1.0	250	—	200	—	3	4.0	3.0	13
42 S.P.T.	Screened Pentode	7-pin	Clear	4	2.0	500	250	250	250	15	27.0	11.0*	33
41 M.T.A.	Triode Discharger	5-pin	Clear	4	1.0	200	—	—	—	—	—	—	13
G.D.T.4B	Gas Discharge Triode	5-pin	Clear	4	1.75	350	—	—	—	—	**100	—	13
G.D.T. 4	Gas Discharge Triode	5-pin	Clear	4	1.5	500	—	—	—	—	20.0	—	13
206 P.T.*	Deaf-Aid Pentode	4-pin	Clear	2	.06	120	35	35	35	0	3.35	0.8	7
S.130	Voltage Stabilizer	4-pin UX	Clear	—	—	180	—	—	—	—	75.0	—	7
41 M.E.	Barretter	8-side contacts	Clear	4	.3	—	—	—	—	—	—	—	75
	Magic Eye Tuning Indicator			4	.3	250	—	—	—	0.5	—	—	105

|| Max. striking voltage.

¶ Max. current through tube.

° Pentode section.

* Directly heated.

† Wire end connections.

‡ Max. continuous anode current.

** Averaged over 15 second period.

§ Peak volts between electrodes.

‡ Anode to top cap, pin 1 blank.

COSSOR VALVES

BATTERY VALVES (British Bases)

—	—	—	215 S.G.	S.23	S.G.215, S.215A	P.M.12
—	K.40.B	—	220 S.G.	S.24	S.215.B	P.M.12A
—	—	—	220 V.S.G.	VS.2	—	P.M.12V
—	K.40.N	V.S.2	220 V.S.	VS.24	S.215.VM	P.M.12M
—	K.50.M	—	210 V.P.T.	VP.21	VP.210	V.P.2
—	—	—	210 V.P.A.	W.21	—	—
—	—	—	210 S.P.T.	Z.22	SP.210	S.P.2
—	—	—	220 I.P.T.	—	—	—
—	—	—	220 T.H.	—	—	—
—	K.80.A	V.H.T.2A	210 P.G.	X.22	—	F.C.2
—	—	—	210 P.G.	—	—	—
—	K.80.B	V.H.T.2	210 P.G.A.	—	—	F.C.2A
—	—	—	220 D.D.	—	—	2.D.2
—	K.23.B	—	210 D.D.T.	H.D.24	HL21/DD	TDD.2A
—	—	—	210 D.G.	—	—	P.M.1.DG
—	—	—	210 R.C.	H.210	H.2	P.M.1A
—	—	—	210 H.L.	H.L.210	H.L.210	P.M.1H, P.M.2HL
—	—	—	210 H.F.	H.L.2	H.L.2	P.M.1HF
—	H.L.B.1	K.30.A, K.30.K	210 L.F.	L.21	L.2	P.M.2DX
—	—	K.30.C	210 L.F.	L.21	L.2	P.M.1LF
—	—	K.30.D	215 P.	P.215	P.215	—
—	—	K.30.E	220 P.	—	—	P.M.2
—	—	—	220 P.A.	LP.2	P.220	P.M.2A
—	P.B.1	K.30.G	230 X.P.	P.2	P.220 A	P.M.202
—	—	—	220 P.T.	—	PEN.220A	P.M.22C
—	PEN.B1	K.70.B	220 H.P.T.	P.T.2	PEN.220	P.M.22A
—	—	—	230 P.T.	P.T.240	—	P.M.22
—	—	—	220 O.T.	K.T.2	—	—
—	—	—	220 B.	B.21	P.D.220	P.M.2B
—	—	K.33A	240 B.	—	P.D.220A	—
—	—	—	H.P.2	—	Q.P.230	Q.P.228
—	—	—	Q.P.T.2	240 Q.P.	Q.P.21	—

A.C. MAINS VALVES (British Bases)

S.G.1	—	—	M.S.G./H.A.	—	A.C.S2	S.4.V.A.
—	—	—	41 M.S.G.	M.S.4	—	S.4.V.
—	A.40.M	—	M.S.G./L.A.	M.S.4.B	A.C/S2	S.4.V.B.
—	—	—	M.V.S.G.	V.M.S.4, V.M.S.4.B	{ A.C/S1VM	M.M.4.V
—	—	—	—	—	{ A.C/S2VM	—
8.A.1	A.50.A	S.P.T.4A	M.S./PEN	M.S.P.4	AC/VP1	S.P.4
9.A.1	A.50.N, A.50.M	V.P.T.4, V.P.T.4B	M.V.S./PEN	V.M.P.4, V.M.P.4G	AC/VP2	V.P.4
—	A.50.B	—	M.S./PEN-B	—	—	S.P.4.B
—	A.50.P	—	M.V.S./PEN-B	W.42	—	V.P.4.B
15.A.2	A.80.A	V.H.T.4	41 M.P.G.	M.X.40, X.42	—	F.C.4
20.A.1	A.36.A, A.36.B	—	41 S.T.H.	X.41	AC/TH1	T.H.4
—	A.36.C	—	41 T.H.A.	—	AC/TH1	T.H.4B
—	—	—	41 M.D.G.	—	—	A.C./D.G
—	—	—	41 M.R.C.	—	—	—
—	A.30.B	—	41 M.H.	M.H.41	AC2/HL	484V.
—	A.30.D	D.4	41 M.H.F.	—	—	354V.
—	—	—	41 M.H.L.	M.H.4	AC/HL	244V.
—	A.20.B	—	41 M.L.F.	M.H.L.4	—	164V.
—	A.23.A	H.4.D	D.D.4	D.41	V.914	2.D.4A
11.A.2	—	—	D.D.T.	M.H.D.4	AC/HLDD	T.D.D.4
—	—	—	D.D./PEN	—	—	—
—	—	—	41 M.P.	ML.4	A.C./P	T.T.4
—	—	—	41 M.X.P.	—	AC/PI	054V
P.A.1	A.70.B	—	M.P./PEN	M.P.T.4, M.K.T.4	AC/PEN	PEN.4.VA
7.A.2	—	—	42 M.P./PEN	N.41	AC/2 PEN	PEN.4VB, PEN.4A
7.A.3	A.70.C, A.70.D	P.T.4	P.T.10	—	ACS PEN	—
—	—	—	42 O.T.	K.T.41	—	—
—	—	—	42 O.T.D.D.	D.N.41	AC/2/PENDD	—
—	A.39.A	P.T.4D	41 M.E. Tuning Ind	—	—	T.V.4
—	—	—	2 P.	—	—	—
—	—	—	2 X.P.	—	PA.20	A.C.042
—	S.30.D	—	4 X.P.	P.X.4	PP3/250	A.C.044
—	S.30.C	L.P.4	P.T.41	P.T.4	—	P.M.24M
PEN.A.1	—	—	P.T.41B	P.T.16	—	P.M.24B

D.C. VALVES (British Bases)

COSSOR	HARCONI/OSRAM
D.V.S.G.	V.D.S.
D.N.L.	D.H.
D.P./PEN	D.P.T.
D.P.	—
D.V.S./PEN	—
D.S./PEN	—
D.D.T.16	D.H.D.

O.M. SERIES (Octal Bases)

COSSOR	MULLARD
OM1	CY31(20v.)
OM3	—
OM4	EEC33
OM5	EF36
OM6	EF39
OM8 (AG8)	—
OM9	EL32
OM10	ECH33

RECTIFIER VALVES (British Bases)

—	S.11A	—	306 B.U.	U.10	—	D.W.2
—	S.11D	R.4	442 B.U.	U.12	UU120/350	{ D.W.3
—	—	—	—	—	—	{ DW4/350
R.2	{ A.11B	—	43 I.U.	M.U.12	U.U.4	{ 1.W.3
—	{ A.11D	R.4.A	460 B.U.	U.14	UU120/500	{ DW.4
—	—	—	—	—	—	{ D.W.4/500
R.3	A.11.C	—	44 I.U.	M.U.12/14	U.U.5	{ 1.W.4/500
1.D.5	C10B(20v.)	R.Z.(20v.)	40 S.U.A.	—	U.4020	{ U.R.1.C(20v.)

MAINS VALVES (U.X. and Octal Bases)

6A7E	—	—	6A7E	—	—	6A7
6A8G, 6A8EG	—	6A8G	6A8EG	X63	—	6A8G
6F7B	—	—	6F7B	—	—	6F7
36, 36E	—	—	36E	—	—	36
28A, 24E	—	—	24E	—	—	24A
6J7G	—	—	6J7G	Z61, KTZ63	—	6J7G
78, 78E	—	—	78E	—	—	78
39/44, 39/44E	—	—	39/44E	—	—	39/44
6K7G, 6K7EG	—	6K7G	6K7G	—	—	6K7G
77, 77E	—	—	77E	—	—	77
6B8G, 6B8EG	—	—	6B8EG	—	—	6B8G
6B7, 6B7E	—	—	6B7E	—	—	6B7
6H6G	—	—	6H6G	D63	—	6H6G
6R7G	—	—	6R7G	DL63	—	6R7G
75	—	—	75	—	—	75
85	—	—	85	—	—	85
6Q7G	—	6Q7G	6Q7G	DH63	—	6Q7G
6K5G	—	—	6K5G	—	—	6K5G
76	—	—	76	—	—	76
27	—	—	27	—	—	27
37	—	—	37	—	—	37
6J5G	—	—	6J5G	L63	—	6J5G
45	—	—	45	—	—	45
6B4G	—	—	6B4G	—	—	—
6A3	—	—	6A3	—	—	6A3
42E	—	—	42E	—	—	42E
41E	—	—	41E	—	—	41E
2151	—	—	2151	—	—	2151
18, 18E	—	—	18E	—	—	18
6F6G, 6F6EG	—	6F6G	6F6EG	KT63	—	6F6G
—	—	—	39E	—	—	—
—	—	—	43E	—	—	43
—	—	—	47E	—	—	47
—	—	—	6K6G	—	—	6K6G
6N7G	—	—	6N7G	—	—	6N7G
79	—	—	79	—	—	79

RECTIFIER VALVES (U.X. and Octal Bases)

35 RE	—	—	35 RE	—	—
25 RE	—	—	25 RE	—	—
25Z5	—	—	25Z5	—	25Z5
—	—	—	80	—	80
—	—	—	86	—	84
—	—	—	8Y4G	—	5Y4G
—	—	—	6Z5G	—	—
—	—	—	5X4G	—	5X4G
—	—	—	5Z3	—	5Z3

MULLARD VALVES

CHARACTERISTICS AND OPERATING DATA

A = Filament or Heater Voltage.
 B = Filament or Heater Current.
 C = Anode Voltage.
 D = Auxiliary Grid or Screen Voltage.

E = Control Grid Voltage.
 F = Anode Current.

G = Anode Impedance.
 H = Amplification Factor.
 J = Mutual or Conversion Conductance.
 K = Audio Output.

SPECIAL TYPES. (All these types are in clear bulbs)

Description	Type	Number of Pins	Characteristics at Working Conditions				Working Conditions						Optimum Load
			H	J	G	K	C	D	B	F	-E	A	
Output Triode for Deaf Aids	DA3	Small 4	4.7	0.62	7,600	—	40	—	0.05	1.8	2.8	2.0	—
Output Triode	DD51	Small 4	5	0.5	10,000	—	45	—	0.067	1.7	3.0	1.5	—
Output Pentode	DL51	Small 4	128	1.5	85,000	—	45	45	0.134	1.6	1.5	1.5	—
Acorn Pentode	4672	—	2,100	1.4	1,500,000	—	250	100	0.15	2.0	3.0	6.3	—
Acorn Pentode	AP4	—	5,000	1.4	3,500,000	—	250	100	0.2	2.0	3.0	4.0	—
Amplifying Tetrode for Deaf Aids	DAS1	Small 4	—	0.58	500,000	—	120	60	0.06	1.5	2.7	2.0	—
Amplifying Triode	DC51	Small 4	25	0.38	66,000	—	45	—	0.067	0.34	0	1.5	—
Amplifying Pentode	DF51	Small 4	—	0.17	—	—	45	13.5	0.067	0.125	0	1.5	—
Acorn Triode	AT4	—	25	2.0	12,500	—	200	—	0.25	4.5	6.0	4.0	—
Acorn Triode	4671	—	25	2.0	12,500	—	180	—	0.15	4.5	5.0	6.3	—
Amplifying Triode for Deaf Aids	DA1	Small 4	32	0.4	80,000	—	40	—	0.05	0.25	0.25	2.0	—
Output Triode for Deaf Aids	DA2	Small 4	6.9	0.5	13,600	—	40	—	0.05	1.25	2.15	2.0	—

MULLARD VALVES

1.4 VOLT RANGE												
Description	Type	Number of Pins (P = Side Contact)	Characteristics at Working Conditions				Working Conditions					Optimum Load
			H	J	G	K	C	D	B	F	-E	
Output Pentode (C.)	DL2	P. Base	180	1.55	115,000	0.24	90	90	0.1	7.5	7.5	8,000
H.F. Pentode (M.)	DF1	P. Base	1,160	0.75	1,500,000	—	90	90	0.05	1.2	0	—
Output Pentode (C.)	DL1	P. Base	375	1.25	300,000	0.17	90	90	0.05	4.0	3.0	22,500
Single Diode Triode (M.)	DAC1	P. Base	65	0.275	240,000	—	90	—	0.05	0.14	0	—
Heptode Frequency Changer (M.)	DK1	P. Base	—	0.25	600,000	—	90	90	0.05	0.55	0	—
2 VOLT RANGE												
Medium Impedance Triode (M. or C.)	PM2HL	4	30	1.4	21,500	—	135	—	0.1	2.2	1.5	—
Double-diode Triode	TDD2	5	16.5	1.4	12,000	—	150	—	0.1	2.5	5.5	—
Screened Tetrode (M. or C.)	PM12A	4	500	1.5	330,000	—	135	75	0.18	2.0	0	—
Octode Frequency Changer	FC2A	7	—	0.27	2,500,000	—	135	45	0.13	0.7	0.5	—
Triode Hexode Frequency Changer	TH2	7	—	0.43	600,000	—	135	60	0.23	0.95	5.0	—
Octode Frequency Changer	FC2	7	—	0.2	—	—	135	70	0.1	0.95	0	—
Output Pentode	PM22	4 or 5	—	1.3	—	—	150	150	0.2	15.0	10.0	8,000

MULLARD VALVES

2 VOLT RANGE —contd.

Description	Type	Number of Pins (P = Side Contact)	Characteristics at Working Conditions				Working Conditions					Optimum Load
			H	J	G	K	C	D	B	F	— E	
Class B Double-triode	PM2BA	7	—	—	—	1.45	120	—	0.2	—	4.5	14,000
Q.P.P. Double Pentode	QP22B	7	—	3.1	—	1.33	135	135	0.3	3.8	11.7	14,700
Output Pentode	PM22A	4 or 5	—	2.2	150,000	0.34	135	135	0.15	5.6	4.5	19,000
High Sensitivity Output Pentode	PM22D	5	—	3.0	—	0.3	135	135	0.3	5.0	2.4	24,000
Class B Double-triode	PM2B	7	—	—	—	1.25	120	—	0.2	—	0	14,000
Super-power Triode (replaces PM252)	PM202	4	7	3.5	2,000	—	150	—	0.2	14.0	12-15	3,700
Medium Impedance Triode (M. or C.)	PM1HL	4	28	1.2	23,400	—	135	—	0.1	2.3	1.5	—
Double-diode Triode	TDD2A	5	30	1.2	25,000	—	135	—	0.12	1.95	1.5	—
Vari-mu Screened Tetrode (M. or C.)	PM12M	4	—	1.4	—	—	150	90	0.18	2.5	0-7	—
Vari-mu H.F. Pentode	VP2B	7	—	1.4	1,300,000	—	135	60	0.14	2.0	1.5	—
H.F. Pentode	SP2	7	1,200	1.8	700,000	—	135	135	0.18	3.0	0	—
Vari-mu H.F. Pentode	VP2	7	—	1.5	400,000	—	135	135	0.18	3.0	0-7	—
Screened Tetrode (M. or C.)	PM12	4	200	1.1	180,000	—	150	75	0.15	4.25	—	—
Double-diode Detector	2D2	5	—	—	—	—	125	—	0.09	0.5	—	—

MULLARD VALVES

2 VOLT RANGE —contd.

Description	Type	Number of Pins (P = Side Contact)	Characteristics at Working Conditions				Working Conditions					Optimum Load
			H	J	G	K	C	D	B	F	— E	
High Impedance Triode (C.)	PM1A	4	50	1.2	41,600	—	150	—	0.1	1.0	1.0	—
Q.P.P. Double Pentode	QP22A	9	—	4.0	—	1.4	135	135	0.45	3.0	12.0	16,000
Driver for Class B (M.)	PM2DL	4	18	1.5	12,000	—	135	—	0.1	2.0	4.5	—
Medium Impedance Triode (C.)	PM1LF	4	11	0.9	12,000	—	150	—	0.1	4.0	7.5	—
Medium Impedance Triode (C.)	PM1HF	4	18	0.8	22,500	—	150	—	0.1	1.5	3-4.5	—
Medium Impedance Triode (M. or C.)	PM2DX	4	18	1.0	18,000	—	135	—	0.1	2.0	4.5	—
Output Triode	PM2	4	7.5	1.7	4,400	—	150	—	0.2	6.6	12.0	9,000
Output Triode	PM2A	4	12	2.0	6,000	0.15	135	—	0.2	5.0	6.0	7,000

A.C. RECTIFIERS

Description	Type	Number of Pins	B	Max. C (R.M.S.)	Max. Rectified Output (mA)	A
Directly-heated F.W. Rectifier	FW4/500	4	3.0	500—0—500	250	4.0
Directly-heated F.W. Rectifier (replaces DW4)	DW4/500	4	2.0	500—0—500	120	4.0
Indirectly-heated F.W. Rectifier (replaces IW4)	IW4/500	4	2.4	500—0—500	120	4.0
Directly-heated F.W. Rectifier	DW2	4	1.0	250—0—250	60	4.0

MULLARD VALVES

A.C. RECTIFIERS —contd.

Description	Type	Number of Pins	B	Max. C (R.M.S.)	Max. Rectified Output (mA)	A
Indirectly-heated F.W. Rectifier	IW3	4	2.4	350—0—350	120	4.0
Directly-heated F.W. Rectifier (replaces DW3)	DW4/350	4	2.0	350—0—350	120	4.0
Indirectly-heated F.W. Rectifier	IW2	4	1.2	250—0—250	60	4.0
Indirectly-heated F.W. Rectifier	IW4/350	4	2.0	350—0—350	120	4.0

INDIRECTLY HEATED A.C. MAINS VALVES. A = 4.0 V.

Description	Type	Number of Pins (P = Side Contact)	Characteristics at Working Conditions				Working Conditions					Optimum Load
			H	J	G	K	C	D	B	F	E	
Vari-mu Screened Tetrode	MM4V	5	—	2.5 0.01	—	—	200 200	110 110	1.0	6.0 0.15	1.5 40.0	—
Low Impedance Triode (replaces 104V)	TT4	5	10.5	3.2	3,300	0.5	250	—	1.0	20.0	16.0	10,000
Output Pentode	Pen 428	7	—	8.0	—	8.0	375	275	2.1	62.0	20.5	6,500*
Output Pentode (replaces Pen 4VB)	Pen A4	7	—	9.5	50,000	3.8	250	250	1.95	36.0	5.8	8,000
Low Impedance Triode	TT4A	5	18.0	4.1	4,400	0.4	250	—	1.0	20.0	9.0	5,000
Output Pentode	Pen 4VA	5 or 7	—	2.8	40,000	3.8	250	250	1.35	36.0	22.0	6,000
Double-diode Output Pentode	Pen 4DD	7	—	9.5	50,000	4.3	250	250	2.25	36.0	6.0	7,000

* Data for 2 × Pen 428 in Class AB push-pull.

MULLARD VALVES

INDIRECTLY HEATED A.C. MAINS VALVES. —contd.

Description	Type	Number of Pins (P=Side Contact)	Characteristics at Working Conditions				Working Conditions					Optimum Load
			H	J	G	K	C	D	B	F	-E	
Output Pentode	Pen B4	7	—	8.5	22,000	8.8	250	275	2.1	72.0	14.0	3,500
Tuning Indicator	TV4	P. Base	—	—	—	—	250	—	0.3	—	0.5	—
Vari-mu H.F. Pentode	VP4A	5 or 7	3,500	2.5	1,400,000	—	200	100	1.2	4.25	2.0	—
H.F. Pentode	SP4B	7	6,800	3.4	2,000,000	—	250	250	0.65	4.0	2.4	—
Double-diode Triode	TDD4	7	27	2.0	13,500	—	250	—	0.65	4.0	7.0	—
Screened Tetrode (M. or C.)	S4VB	5	750	2.5	300,000	—	200	110	1.0	4.6	1.5	—
Double-diode with separate Cathodes	2D4B	7	—	—	—	—	200	—	0.35	0.8	—	—
Screened Tetrode (M. or C.)	S4VA	5	1,000	2.0	500,000	—	200	110	1.0	2.75	1.5	—
Vari-mu H.F. Pentode	VP4B	7	—	2.0	—	—	250	250	0.65	11.5	3.0	—
Triode Heptode Frequency Changer (replaces TH4A)	TH4B	7	—	0.75	1,500,000	—	250	100	1.45	3.25	2.5	—
Vari-mu H.F. Pentode	VP4	5 or 7	2,000	2.3	1,000,000	—	200	100	1.0	4.5	2.50	—
Octode Frequency Changer	FC4	7	—	0.6	—	—	250	90	0.65	1.6	1.5	—
Tuning Indicator	TV4A	P. Base	—	—	—	—	250	—	0.3	—	0.21	—
Triode Hexode Frequency Changer	TH4	7	—	1.0	1,500,000	—	250	70	1.0	4.0	1.5	—

MULLARD VALVES

INDIRECTLY HEATED A.C. MAINS VALVES.—contd.

Description	Type	Number of Pins (P=Side Contact)	Characteristics at Working Conditions				C	Working Conditions				Optimum Load
			H	J	G	K		D	B	F	- E	
Medium Impedance Triode (C.)	164V	5	16.4	4.5	3,640	—	200	—	0.65	13.0	8.5	—
High Impedance Triode (M.)	904V	5	72	3.5	20,600	—	200	—	0.65	2.2	2.0	—
Medium Impedance Triode (M. or C.)	354V	5	40	3.5	11,500	—	250	—	0.65	6.5	4.5	—
Medium Impedance Triode (M.)	244V	5	25	2.8	9,000	—	200	—	0.65	5.5	5.5	—
H.F. Pentode (M. or C.)	SP4	5 or 7	5,000	2.3	2,200,000	—	200	100	1.0	3.0	2.0	—
Double-diode	2D4A	5	—	—	—	—	200	—	0.65	0.8	—	—

DIRECTLY HEATED A.C. OUTPUT VALVES. A = 4.0 V. unless otherwise stated.

Triode	D025	4	3.0	3.75	800	—	400	—	6.0V 1.1A	63	112.0	4,000
Triode	AC044	4	6.0	5.0	1,200	3.5	300	—	1.0	50	38.0	2,300
Pentode	PM24E	5	—	4.0	—	—	500	200	2.0	50	35.0	7,000
Pentode	PM24A	5	—	2.0	—	—	300	200	0.275	20	22.5	10,000
Triode	AC042	4	6.0	5.0	1,200	3.5	300	—	2.0V 2.0A	50	38.0	2,300
Triode	D030	4	3.1	3.5	890	—	500	—	1.85	60	140.0	—
Triode	D024	4	8.0	7.5	1,070	7.1	400	—	1.85	63	40.0	3,200

MULLARD VALVES

DIRECTLY HEATED A.C. OUTPUT VALVES.—contd.

Description	Type	Number of Pins (P=Side Contact)	Characteristics at Working Conditions				Working Conditions					Optimum Load
			H	J	G	K	C	D	B	F	— E	
Triode	D026	4	3.6	3.8	950	7.5	400	—	2.0	63	92.0	3,000
Pentode	PM24B	5	—	2.1	—	—	400	300	1.0	30	40.0	8,000
Pentode	PM24M	5	130.0	3.0	43,000	2.8	250	250	1.1	30	17.0	7,000
Pentode	PM24	4 or 5	—	1.75	—	—	150	150	0.15	20	11.0	8,000
"E" SERIES (SIDE CONTACT). A = 6.3 V. unless otherwise stated												
Low Noise H.F. Pentode	EF8 EF38	P. Base Octal	—	1.8	450,000	—	250	250	0.2	8.0	2.5	—
Triode Hexode Frequency Changer	ECH3 ECH33	P. Base Octal	—	0.65	1,300,000	—	250	100	0.2	3.0	2.0	—
Vari-mu H.F. Pentode	EF5	P. Base	2,000	1.7	1,200,000	—	250	100	0.2	8.0	3-50	—
Octode Frequency Changer	EK3	P. Base	—	0.65	2,000,000	—	250	100	0.72	2.5	2.5	—
Tuning Indicator	EM1	P. Base	—	—	—	—	250	—	0.2	—	0-5	—
Output Pentode	EL2 EL32	P. Base Octal	—	2.8	70,000	3.6	250	250	0.2	32.0	18.0	8,000
Output Pentode	EL3 EL33	P. Base Octal	—	9.0	50,000	4.5	250	250	0.9	36.0	6.0	7,000
Double-diode Output Pentode	EBL1 EBL31	P. Base Octal	—	9.5	50,000	4.3	250	250	1.5	36.0	6.0	7,000

MULLARD VALVES

"E" SERIES (SIDE CONTACT).—contd.

Description	Type	Number of Pins (P=Side Contact)	Characteristics at Working Conditions				Working Conditions					Optimum Load
			H	J	G	K	C	D	B	F	-E	
Double-diode Triode	EBC3 EBC33	P. Base Octal	30	2.0	15,000	—	275	—	0	5.0	6.25	—
L.F. Amplifier and Tuning Indicator (M.)	EFM1	P. Base	—	—	—	—	250	—	0.2	—	—	—
Double-diode H.F. Pentode (M.)	EBF2	P. Base	—	1.8	1,300,000	—	250	100	0.2	5.0	2.0	—
Sliding Screen H.F. Pentode	EF9 EF39	P. Base Octal	— —	2.2 0.0045	1,250,000 10,000,000	— —	250 250	100 250	0.2	6.0 —	2.5 49.0	—
Output Pentode	EL6 EL36	P. Base Octal	—	15.0	17,000	8.0	250	250	1.3	72.0	7.0	3,500
H.F. Pentode	EF6 EF36	P. Base Octal	4,500	1.8	2,500,000	—	250	100	0.2	3.0	2.0	—
Triple-diode	EAB1	P. Base	—	—	—	—	200	—	0.2	0.8	—	—
Tuning Indicator	EM3	P. Base	—	—	—	—	250	—	0.2	—	0-21	—
Triode Heptode Frequency Changer	ECH2	P. Base	—	0.75	1,500,000	—	250	100	0.95	3.25	2.5	—
Octode Frequency Changer	EK2	P. Base	—	0.55	2,000,000	—	250	200	0.2	1.0	2.0	—
Tuning Indicator	EM4	P. Base	—	—	—	—	250	—	0.2	—	0-16	—
Double-diode (separate Cathodes)	EB4	P. Base	—	—	—	—	200	—	0.2	0.8	—	—

MULLARD VALVES

"E" SERIES RECTIFIERS

Description	Type	Number of Pins	B	Anode Voltage (R.M.S.)	Rectified Output (mA)	A
Indirectly-heated F.W. Rectifier	EZ2	P. Base	0.4	350—0—350	60	6.3
Directly-heated F.W. Rectifier	AZ2 AZ32	P.Base Octal	2.0	300—0—300	160	4.0
Indirectly-heated F.W. Rectifier	AZ3	P. Base	2.0	350—0—350	120	4.0
Directly-heated F.W. Rectifier	AZ1 AZ31	P. Base Octal	1.1	300—0—300	100	4.0

MULLARD VALVES

DC/AC RECTIFIERS

Description	Type	Number of Pins (P = Side Contact)	B	Max. Anode Volts (R.M.S.)	Max. Rectified Output (mA)	A
Multiple Rectifier (replaces UR3)	CY2 CY32	P. Base Octal	0.2	250—0—250	120	30
Half Wave Rectifier (replaces UR1)	CY1 CY31	P. Base Octal	0.2	250	75	20
Half Wave Rectifier	UR1C	5	0.2	250	75	20
Multiple Rectifier	UR3C	7	0.2	250—0—250	120	30

DC/AC VALVES. Pin Bases; P Base (8 contact) and V Base (5 contact)

Description	Type	Number of Pins (P, V = Side Contact)	Characteristics at Wkg. Condns.				Working Conditions						Optimum Load
			H	J	G	K	C	D	B	F	-E	A	
Double-diode Triode	TDD13C	7	27	2.0	13,500	—	200	—	0.2	4.0	5.0	13.0	—
H.F. Pentode	SP13C	7	7,000	2.8	2,500,000	—	200	200	0.2	2.5	2.2	13.0	—
Tuning Indicator (replaces TV6)	EM1	P. Base	—	—	—	—	250	—	0.2	—	0.5	6.3	—
Output Pentode	CL6	P. Base	—	8.0	19,000	4.0	200	100	0.2	45.0	9.5	35.0	4,500
Double-diode Output Pentode	Pen 40DD	7	—	8.0	—	4.0	200	200	0.2	45.0	8.5	44.0	4,500
Triode Heptode Frequency Changer (replaces TH22C3)	TH30C	7	—	0.75	1,500,000	—	250	100	0.2	3.25	2.5	29.0	—
Vari-mu H.F. Pentode	VP13C	7	—	2.2	—	—	200	200	0.2	9.0	2.0	13.0	—
Double-diode Detector	2D13C	5	—	—	—	—	200	—	0.2	0.8	—	13.0	—

MULLARD VALVES

DC/AC VALVES. Pin Bases; P Base (8 contact) and V Base (5 contact) —contd.

Description	Type	Number of Pins (P,V = Side Contact)	Characteristics at Wkg. Conds.				Working Conditions						Optimum Load
			H	J	G	K	C	D	B	F	— E	A	
Output Pentode	Pen 36C CL33	7 Octal	—	8.0	—	4.0	200	200	0.2	40.0	9.0	35.0	4,000
Triode Hexode Frequency Changer	TH21C	7	—	1.0	1,500,000	—	250	70	0.2	4.0	1.5	21.0	—
Octode Frequency Changer	FC13C	7	—	0.6	—	—	200	90	0.2	1.6	1.5	13.0	—
Double-diode Output Pentode	CBL1 CBL31	P. Base Octal	—	8.0	35,000	4.0	200	200	0.2	45.0	8.5	44.0	4,500
Output Pentode	Pen 26	P. Base	—	3.1	—	3.0	200	100	0.2	40.0	19.0	24.0	5,000
Medium Impedance Triode (M.)	HL13	P. Base	40	3.3	12,000	—	200	—	0.2	5.0	3.7	13.0	—
H.F. Pentode	SP13	P. Base	3,000	2.2	1,300,000	—	200	100	0.2	3.3	2.0	13.0	—
Octode Frequency Changer	FC13	P. Base	—	0.6	—	—	200	90	0.2	1.6	1.5	13.0	—
Vari-mu H.F. Pentode	VP13A	P. Base	2,200	2.2	—	—	200	100	0.2	4.0	2.0	13.0	—
Double-diode Detector	2D13A	V. Base	—	—	—	—	200	—	0.2	0.8	—	13.0	—
Medium Impedance Triode (M.)	HL13C	7	40	3.3	12,000	—	200	—	0.2	5.0	3.7	13.0	—
Output Pentode	CL4	P. Base	—	8.0	35,000	4.0	200	200	0.2	45.0	8.5	33.0	4,500

OSRAM VALVES

SCHEDULE OF RECEIVING, RECTIFYING AND SMALL POWER TYPES.

(Types in italics are obsolete types, not normally obtainable.)

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Type	Description	Filament		Amplification Factor	Impedance ohms	Mutual Conductance mA/volt	Grid Voltage max.	Screen Voltage max.	Base	Finish M = Metallized P = Plain	Subst- tute Type
		Volts	Current amp.								
2-volt Battery Valves.											
X 21	Heptode Frequency Changer	2.0	0.1	—	—	Conversion (see note)	160	70	7-pin	M or P	X 22
X 22	Triode Hexode Frequency Changer	2.0	0.15	—	—	240	150	70	7-pin	M or P	none
X 23	Triode Hexode Frequency Changer	2.0	0.2	—	—	350	150	60	7-pin	M or P	none
X 24	Triode Hexode Frequency Changer	2.0	0.1	—	—	350	150	60	7-pin	M or P	none
S 23	Screen Grid	2.0	0.1	—	300,000	1.1	150	70	4-pin	M or P	Z 21/4
S 24	Screen Grid	2.0	0.15	—	300,000	1.4	150	70	4-pin	M or P	Z 21/4
W 21/4	Variable-Mu Screen Grid	2.0	0.15	—	250,000	1.6	150	75	4-pin	M or P	W 21/8
W 21/8	Variable-Mu Screen Grid	2.0	0.1	—	—	1.4	150	150	4-pin	M or P	—
Z 21	H.F. Screened Pentode	2.0	0.1	—	—	1.7	150	150	4-pin	M or P	—
Z 22	H.F. Screened Pentode	2.0	0.1	—	—	1.4	150	150	7-pin	M or P	W 21/7
W 21/7	Variable-Mu Screen Pentode	2.0	0.1	—	1,000,000	1.1	150	150	7-pin	M or P	—
W 21/8	Variable-Mu Screen Pentode	2.0	0.1	—	13,000	1.5	150	—	4-pin	M or P	HL 2
HL 2	Variable-Mu Screen Pentode	2.0	0.1	27	13,000	1.2	150	—	4-pin	M or P	HL 3
HL 3	Variable-Mu Screen Pentode	2.0	0.1	34	20,000	1.2	150	—	4-pin	M or P	HL 2
HL 4	Variable-Mu Screen Pentode	2.0	0.1	34	35,000	1.0	150	—	4-pin	M or P	LP 2
H 2	Triode Detector and R.C. amplifier	2.0	0.1	35	35,000	1.0	150	—	4-pin	M or P	HL 2
L 2	L.F. Triode	2.0	0.1	16	8,500	1.8	150	—	5-pin	M or P	HD 24
HD 22	Double Diode Triode	2.0	0.2	22	18,000	1.5	150	—	5-pin	M or P	none
HD 23	Double Diode Triode	2.0	0.15	40	28,000	1.4	150	—	5-pin	M or P	—
HD 24	Double Diode Triode	2.0	0.2	45	28,000	1.4	150	—	5-pin	M or P	—
P 2	L.F. and Power Triode	2.0	0.3	45	6,000	3.5	150	—	4-pin	M or P	—
P 2	Power Triode	2.0	0.16	7	2,150	3.5	150	—	4-pin	M or P	LP 2
KT 2	Output Triode	2.0	0.2	—	—	—	150	150	5-pin	M or P	—
KT 2	Output Triode (high slope)	2.0	0.2	—	—	—	150	150	5-pin	M or P	KT 24
OP 21	Double Pentode (or O.P.P.)	2.0	0.2	—	—	—	150	150	5-pin	M or P	—
B 21	Double Triode "Class B"	2.0	0.3	—	—	—	150	150	7-pin	M or P	—
1.4-volt Dry Battery Range.											
X 14	Heptode Frequency Changer	1.4	0.1	—	—	Conversion (see note)	170	60	Octal	P	JAYG
Z 11	H.F. Screened Pentode	1.4	0.05	—	—	260	90	90	Octal	P	INSG

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Type	Description	Filament		Amplification Factor	Impedance ohms	Mutual Conductance mA/volt	Grid Voltage max.	Screen Voltage max.	Base	Finish M = Metallized P = Plain	Subst- tute Type
		Volts	Current amp.								
1.4-volt Dry Battery Range—contd.											
HD 14	Single Diode Triode	1.4	0.05	65	240,000	0.275	90	90	Octal	P	HSG
N 14	Output Pentode	1.4	0.05	—	—	1.55	50	90	Octal	P	ICSG
N 15	Output Pentode	1.4	0.1	—	—	3.0	90	90	Octal	P	3Q5C
Indirectly Heated A.C. Valves, 4-volt Heaters.											
MX 40	Heptode Frequency Changer	4.0	1.0	—	—	Conversion (see note)	250	100	7-pin	M or P	—
X 41	Triode Hexode Frequency Changer	4.0	1.2	—	—	640	180	100	7-pin	M or P	—
X 42	Triode Hexode Frequency Changer	4.0	0.6	—	—	490	250	100	7-pin	M or P	MX 40
MS 4	Screen Grid	4.0	1.0	—	500,000	1.1	250	70	5-pin	M or P	VMS 4/B
MS 4B	Screen Grid	4.0	1.0	—	350,000	3.2	250	80	5-pin	M or P	—
VMS 4B	Variable-Mu Screen Grid	4.0	1.0	—	250,000	2.5	250	80	5-pin	M or P	VMS 4/B
VMS 4/B	Variable-Mu Screen Grid	4.0	1.0	—	250,000	2.0	250	80	5-pin	M or P	VMS 4/B
VMP 4C	Variable-Mu Screen Pentode	4.0	1.0	—	—	2.8	250	100	7-pin	M or P	—
VMP 4C	Variable-Mu Screen Pentode	4.0	1.0	—	—	3.5	250	100	7-pin	M or P	VMP 4C
W 4C	Variable-Mu Screen Pentode	4.0	0.6	—	—	1.5	250	135	7-pin	M or P	—
W 4C	Variable-Mu Screen Pentode	4.0	1.0	—	—	2.6	250	100	7-pin	M or P	—
MS 2 4	Screen Pentode	4.0	1.0	—	—	4.0	250	100	7-pin	M or P	—
MSP 4	Screen Pentode	4.0	1.0	—	—	3.2	240	240	7-pin	M or P	—
MSP 4 1	High Slope Screened Triode	4.0	1.5	40	11,000	2.9	260	250	7-pin	M or P	none
MH 4	Triode Detector and L.F.	4.0	0.6	40	13,300	3.5	250	—	5-pin	M or P	—
MH 4 1	Triode	4.0	1.0	80	13,300	6.0	250	—	5-pin	M or P	—
MH 4	Triode	4.0	1.0	12	8,000	4.5	250	—	5-pin	M or P	—
MH 4	Triode	4.0	1.0	20	2,850	4.2	250	—	5-pin	M or P	—
LD 1 4	Double Diode Triode	4.0	1.0	40	18,200	2.2	250	—	7-pin	M or P	—
LD 2	Double Diode Triode	4.0	0.3	70	65,000	1.3	250	—	5-pin	M or P	MHD 4
D 4 1	Double Diode	4.0	0.3	—	—	—	250	—	7-pin	M or P	—
D 4 2	Double Diode	4.0	0.3	—	—	—	250	—	5-pin	M or P	—
D 4 3	Indirectly Heated Single Diode	4.0	0.6	—	—	—	75	—	4-pin	M or P	—

OSRAM VALVES

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Type	Description	Filament		Amplification Factor	Impedance ohms	Mutual Conductance mA/volt	Anode Volts max.	Screen Volts max.	Base	Finish M = Metallized P = Plain	Substitute Type
		Volts	Current amp.								
Indirectly Heated A.C. Valves, 4-volt Heaters—contd.											
MKT 4	Output Tetrode	4.0	1.0	—	—	3.0	250	225	5 & 7-pin	P	MKT 4
MPT 4	Output Pentode	4.0	1.0	—	—	3.0	250	225	5 & 7-pin	P	—
KT 41	Output Tetrode	4.0	2.0	—	—	10.0	250	250	7-pin	P	KT 41
KT 42	Output Pentode	4.0	2.0	—	—	2.5	250	250	7-pin	P	KT 42
KT 43	Output Tetrode	4.0	2.0	—	—	10.0	250	250	7-pin	P	MKT 4
KT 44	Output Pentode	4.0	2.0	—	—	10.0	250	250	7-pin	P	KT 44
DN 41	Output Pentode (H.F.)	4.0	2.0	—	—	10.0	250	250	7-pin	P	none
N. 43	Output Pentode (H.F.)	4.0	2.0	—	—	10.0	250	250	7-pin	P	none
Power											
Output Valves, Directly Heated.											
PX 4	Trioce, 15-watt	4.0	1.0	5	830	6.0	300	—	4-pin	P	—
PX 25	Trioce, 25-watt	4.0	2.0	9.5	1,265	7.5	400	—	4-pin	P	—
PX 26A	Trioce, 25-watt	4.0	2.0	4	650	6.9	400	—	4-pin	P	DA 30
PT 25	Pentode, 8-watt	4.0	1.0	100	42,000	2.35	200	—	5-pin	P	—
PT 25H	Pentode, 8-watt	4.0	1.0	100	28,000	6.5	400	—	5-pin	P	—
DA 30	Trioce, 30-watt	4.0	2.0	180	28,000	6.5	400	—	5-pin	P	—
DA 41	Trioce (for Zero bias Class B push-pull)	4.0	2.0	4	580	6.9	500	—	4-pin	P	—
DA 60	Trioce, 60-watt	7.5	2.5	6.2	17,500	3.6	1,000	—	American 8-pin	P	—
DA 100	Trioce, 100-watt	6.0	4.0	2.5	835	3.0	550	—	Special 8-pin	P	—
DA 250	Trioce, 250-watt	10.0	2.0	5.5	1,410	3.9	1,000	—	Special American	P	—
DET 10	Double Triode	6.3	0.8	7	2,290	7.0	2,500	—	Special American	P	—
Universal Range : D.C./A.C.											
X 39*	Heptode Frequency Changer	13.0	0.3	—	—	—	250	100	7-pin	M or P	—
X 31	Trioce Heptode Frequency Changer	13.0	0.3	—	—	—	250	80	7-pin	M	OV. 9484

* Applies also to X.32

SCHEDULE OF RECEIVING, RECTIFYING AND SMALL POWER TYPES.

(Types in italics are obsolete types, not normally obtainable.)

(Substitute types may involve some modification to the receiver, see War Emergency Leaflet OV. 9484.)

Type	Description	Filament		Amplification Factor	Impedance ohms	Mutual Conductance mA/volt	Anode Volts max.	Screen Volts max.	Base	Finish M = Metallized P = Plain	Substitute Type
		Volts	Current amp.								
Universal Range : D.C./A.C.—contd.											
W 30	Var-Mu H.F. Screen Pentode	13.0	0.3	—	—	4.5	250	250	7-pin	M	—
W 30	Var-Mu Screen Pentode	13.0	0.3	—	—	7.5	250	100	6-pin	M	—
H 30	Var-Mu Screen Pentode D.D.	13.0	0.3	—	—	3.0	250	100	7-pin	M or P	—
DH 30	D.D. Triode	13.0	0.3	80	13,300	6.0	250	—	7-pin	M or P	—
D 41	Double Diode	4.0	0.3	—	—	—	—	—	5-pin	P	—
KT 30	Output Pentode	13.0	0.3	—	—	—	—	—	7-pin	P	—
N 30	Output Pentode	13.0	0.3	—	—	—	—	—	7-pin	P	—
KT 31	Output Pentode	13.0	0.3	—	—	—	—	—	7-pin	P	—
N 31	Output Pentode	13.0	0.3	—	—	—	—	—	7-pin	P	—
Octal Base: A.C. and D.C./A.C.											
X 61M	Trioce-Hexode Frequency Changer	6.3	0.3	—	—	—	250	100	Octal	M	—
X 63	Hexode Frequency Changer	6.3	0.3	—	—	—	250	100	Octal	P	—
X 64	Hexode Amplifier, mixer	6.3	0.3	—	—	—	250	100	Octal	P	—
X 65	Variable-Mu H.F. Pentode	6.3	0.3	—	—	—	250	100	Octal	P	—
KTW 61	Variable-Mu H.F. Pentode	6.3	0.3	—	—	—	250	100	Octal	P	—
KTW 63	H.F. Screened Pentode	6.3	0.3	—	—	—	250	125	Octal	P	—
61Z 63	H.F. Screened Pentode	6.3	0.3	—	—	—	250	125	Octal	P	—
Z82	High Supply Screened Pentode	6.3	0.45	—	—	—	300	150	Octal	P	—
H 63	Trioce (high "m")	6.3	0.3	100	6,000	1.5	250	—	Octal	P	—
L 63	Trioce (medium "m")	6.3	0.3	20	7,700	2.5	250	—	Octal	P	—
D 63	Double Diode	6.3	0.3	70	58,000	1.2	150	—	Octal	P	—
DH 63	Double Diode-Trioce	6.3	0.3	36	22,500	1.6	250	—	Octal	P	—
KT 61	Output Pentode	6.3	0.3	—	—	—	250	250	Octal	P	—
KT 61	Output Tetrode	6.3	0.85	—	—	—	250	250	Octal	P	—
KT 65	Output Tetrode (Aligned Grids)	6.3	0.7	—	—	—	250	250	Octal	P	—
KT 82	Output Tetrode (D.C./A.C.)	28.0	0.3	—	—	—	135	300	Octal	P	—
KT 33C	Output Tetrode (D.C./A.C.)	28.0	0.3	—	—	—	135	300	Octal	P	—
KT 33C	Output Tetrode (D.C./A.C.)	28.0	0.3	—	—	—	135	300	Octal	P	—
KT 33C	Output Tetrode (D.C./A.C.)	28.0	0.3	—	—	—	135	300	Octal	P	—

OSRAM VALVES

SCHEDULE OF RECEIVING, RECTIFYING AND SMALL POWER TYPES.

(Types in italics are obsolete types, not normally obtainable.)
(Substitute types may involve some modification to the receiver, see War Emergency Leaflet OV. 9484.)

Type	Description	Filament		Amplification Factor	Impedance ohms	Mutual Conductance mA/ volt	Anode Voltage max.	Screen Voltage max.	Base	Finish M = Metallized P = Plain	Substitute Type
		Volts	Current amp.								
0-17 amp.											
<i>Heliode Frequency Changer</i>											
X.75M	Triode-Hexode Frequency Changer	6.0	0.17	—	—	Conversion table (see back of book)	250	30	Octal	M	none
X.71M	Triode-Hexode Frequency Changer	15.0	0.17	—	—	500	250	100	Octal	M	KTV.74M
KTV.74M	Variable-Mu H.F. Triode	6.0	0.17	—	—	520	250	100	Octal	M	DL.74M
KTV.74M	Variable-Mu H.F. Triode	6.0	0.17	4	25,000	1.5	250	100	Octal	M	DL.74M
KTV.74M	Variable-Mu H.F. Triode	6.0	0.17	36	22,500	1.6	250	—	Octal	M	DL.74M
KTV.72	Output Triode	16.0	0.17	—	—	2.5	175	175	Octal	P	KT.74
KT.74	Output Triode	16.0	0.17	—	—	2.5	175	175	Octal	P	—
U.71	See below under Rectifiers.										
U.74	See below under Rectifiers.										
Tuning Indicators.											
Y.66, Y.68	Indicators.	6.3	6.3	—	—	—	250	—	Octal	P	none
Y.65, Y.67	Tunerays										
D.C. Mains Range (0.25 amp.)											
DS	Screen Grid	15.0	0.25	550	500,000	1.1	200	70	5-pin	M or P	
VDS	Screen Grid	16.0	0.25	1,120	350,000	3.2	200	80	5-pin	M or P	
VDSB	Variable-Mu Screen Grid	16.0	0.25	—	—	2.4	200	80	5-pin	M or P	
DHD	D.D. Triode	16.0	0.25	40	18,000	2.2	200	80	5-pin	M or P	see OV. 9484
DL	Triode-L.F.	16.0	0.25	6	18,000	3.5	200	—	5-pin	M or P	
DPT	Output Pentode	16.0	0.25	12	9,000	4.5	200	—	5-pin	M or P	
						3.0	200	200	5 or 7-pin	P	

BARRETTERS.

Type	Description	Voltage range.		Type	Description	Voltage range.	
		138—221	304			112—195	257	100—180	120—200
301	For control of current 0.3 amp.	..	..	304	For control of current 0.3 amp.	..	..
302	For control of current 0.5 amp.	..	..	257	For control of current 0.25 amp.	..	..
303	For control of current 0.3 amp.	..	..	202	For control of current 0.2 amp.	..	..

SCHEDULE OF RECEIVING, RECTIFYING AND SMALL POWER TYPES.

(Types in italics are obsolete types, not normally obtainable.)
(Substitute types may involve some modification to the receiver, see War Emergency Leaflet OV. 9484.)

Type	Description	Filament		Anode Voltage R.M.S. max.	Roughed Current. (Smoothed with a 4 mfd. condenser).	Base	Substitute Type
		Volts	Current amp.				
Rectifiers.							
MU.12/14	Indirectly Heated Full Wave	4.0	2.5	500—500	120	4-pin	MU.14
MU.14	Indirectly Heated Full Wave	4.0	2.5	500+500	120	4-pin	—
U.6	Directly Heated Full Wave	5.0	1.6	400+400	45	4-pin	U.60
U.8	Directly Heated Full Wave	4.0	1.0	250+250	60	4-pin	see OV. 9484
U.10	Directly Heated Full Wave	4.0	1.0	250+250	60	4-pin	U.14
U.12/14	Directly Heated Full Wave	4.0	2.5	500+500	120	4-pin	—
U.14	Directly Heated Full Wave	4.0	2.5	500+500	120	4-pin	—
U.18	Directly Heated Half Wave	2.0	1.0	5,000	5.0	4-pin	—
U.17	Directly Heated Half Wave	4.0	1.0	2,500	5.0	4-pin	—
U.18	Directly Heated Full Wave	4.0	3.75	500+500	250	4-pin	—
U.19/20	Directly Heated Full Wave	4.0	3.75	850+850	155	4-pin	—
U.20	Directly Heated Full Wave	4.0	3.75	850+850	125	4-pin	—
U.30	Indirectly Heated Full Wave	4.0	3.75	850+850	125	4-pin	—
U.31	Indirectly Heated Full Wave	25.0	0.3	150	120	7-pin	U.18/20
U.50	Indirectly Heated Half Wave	25.0	0.3	220	75	Octal	—
U.52	Indirectly Heated Full Wave	25.0	0.3	250	120	Octal	—
U.71	Indirectly Heated Full Wave	5	3.0	350	120	Octal	—
U.74	Indirectly Heated Half Wave	30	0.17	250	100	Octal	U.74
GU.1	Mercury Vapour Half Wave	4.0	3.0	1,000	250*	4-pin	GU.50
GU.5	Mercury Vapour Half Wave	4.0	3.0	1,500	250*	4-pin	GU.50
GU.50	Mercury Vapour Half Wave	4.0	3.0	1,500	250*	4-pin	—
A.831	Entropy Charging Full Wave	1.8	2.8	30+30	1.3 amps.	4-pin	—

* Delayed Switching.

OSRAM VALVES

SCHEDULE OF MISCELLANEOUS TYPES.
(Types in Italics are obsolete types, not normally obtainable.)
(Substitute types may involve some modification to the apparatus.)

Type	Description	Filament		Amplifier Factor	Impedance ohms	Voltage Control mA/Volt.	Anode current mA.	Screen mA.	Base	Fluor. M. or P. in Glass	Substit. Type
		Current amp.	Volts								
Miscellaneous Types.											
S.12	Midget Screen Grid Triode	..	2.0	0.05	—	0.7	100	30	Special	P	None
H.12	Midget Triode (high "m")	..	2.0	0.05	21,000	1.2	100	—	Special	P	None
L.12	Midget Output Triode	..	2.0	0.05	6,000	0.8	100	—	Special	P	None
H.11	Midget Amplifying Triode	..	1.0	0.1	30,000	0.5	100	—	Small side	P	None
L.11	Midget Amplifying Triode	..	1.0	0.1	7,000	0.37	100	—	Small side	P	None
A.637	Triode for Microphone Amplifiers	..	4.0	0.4	10,000	1.5	100	—	Small side	P	A.1178
A.1178	Special Triode (replacing A.637)	..	4.0	0.25	9,000	2.8	150	—	Small side contact	P	—
MH.40	Triode for Microphone Amplifiers	..	4.0	1.0	18,750	2.4	200	—	5-pin	P	M.H.A.
H.30	Triode for High Gain Amplifiers	..	1.0	0.2	12,300	0.7	250	—	5-pin	P	Special
H.1	Triode for High Gain Amplifiers	..	1.0	0.2	12,300	0.7	250	—	5-pin	P	Special
HA.2	Low Capacity Triode (Accorn)	..	6.3	0.15	180	2.0	180	—	Special	P	Special
Z.A.1	H.F. Pentode (Accorn)	..	4.0	0.25	12,500	2.4	250	100	Special	P	Special
Z.A.2	H.F. Pentode (Accorn)	..	6.3	0.15	—	1.4	250	100	Special	P	Special
GT.1	Gasfilled Relay (Mercury filled)	..	4.0	1.3	—	—	1,000	—	5-pin	P	GT.1C*
GT.1A	Gasfilled Relay (Argon-filled)	..	4.0	1.3	—	—	1,000	—	5-pin	P	GT.1C*
GT.1B	Gasfilled Relay (Argon-filled)	..	4.0	1.3	—	—	1,000	—	5-pin	P	GT.1C*
GT.1C	Gasfilled Relay (Argon-filled)	..	4.0	1.3	—	—	1,000	—	5-pin	P	GT.1C*
ET.1	Electrometer Triode	..	1.0	0.1	—	{ 0.05 to 0.1	6.0	—	4-pin	P	—
A.477	Triode for Valve Voltmeters	..	4.0	1.0	3,000	2.0	200	—	4-pin	P	Special
A.473	H.F. Voltmeter Diode	..	1.8	1.6	—	—	200	—	S.E.S.	P	Special
A.402	Triode for Photocell Amplifiers	..	4.0	1.0	8,000	2.5	250	—	6-pin	P	Special
A.364	Triode for Photocell Amplifiers	..	4.0	0.7	7,000	1.5	150	—	4-pin	P	Special

CATHODE RAY MONITOR TUBES—Type 4035A, suitable for portable oscillograph apparatus, etc. 1½ screen. Base—9-pin.
Type 4081A, suitable for portable oscillograph apparatus, etc. 2½ screen. Base—9-pin.
* Depends on application.

1. Types discontinued (or not readily available)
No suitable substitute.

B21	H610	P425	DE1
B30	HL410	P610	DH30
B63	HL610	P625	DL63
DH	L11	P625A	DH42
D-8	L12	PT425)	DHD
D-8	L2	R	DPT
D-8	L2	R5V	DS
D-8	L410	S-8	DSB
DE5A	L610	S12	DT1A
DE5B	LS5	S410	DT1B
DE7	LS5A	S610	GU1
D1	LS5B	S625	GU5
DN41	MPT42	U6	H2
H-8	N43	WD30	H42
H11	P-8	WD40	HD21
H12	P410	P415	HD22
H210	P410		HD23
H410	P415		HL21
			HL210
			KT21
			KT30
			KT35
			KT42
			L21
			L210

In cases of 4-volt and 6-volt Battery Valves equivalent 2-volt types could be used provided that the filament voltage is connected.

Types on which deliveries are in abeyance.

HD14	Y61
N14	Y62
N15	Y63
X14	Y64
Z14	

2. Types discontinued (or not readily available) with suggested substitutes.

Original Valve	Recommended substitute	Probable effect in apparatus	Modifications required*
DE1	DE125	Probably none	None
DH30	DL63	Slight reduction in sensitivity	Octal socket; heater voltage
DH42	MHD4	Not noticeable	Reduce anode load resistance
DHD	DL63	Slight reduction in sensitivity	Octal socket; heater voltage and current
DPT	KT33C	Not noticeable	Octal socket; heater voltage and current
DS	KT263	Not noticeable	Octal socket; heater voltage and current
DSB	KT263	Slight reduction in sensitivity	Octal socket; heater voltage and current
DT1A	GT1C	Probably none	None
DT1B	GT1C	Not suitable at present for use as in time-base circuits	Anode connection through insulated lead to top cap
GU1	GU50	None	None
GU5	GU50	None	None
H2	HL2	Slight reduction in sensitivity	None
H42	H63	None	Octal socket; heater voltage and current
HD21	HD24	Slight increase in sensitivity	None
HD22	HD24	Slight increase in sensitivity	None
HD23	HD24	None	None
HL21	HL2	No change in sensitivity	Requires selection
HL210	HL2	Increased sensitivity	Probably none
KT21	KT24	Lower filament current; slight reduction in sensitivity	None
KT30	KT33C	Increased sensitivity	Octal socket; heater voltage type.
KT35	KT33C	None	None
KT42	MKT14/7-pin	Not noticeable	None
L21	HL2 or LP2	Depends on application	Alteration to grid bias
L210	HL2	Higher sensitivity	Alteration to grid bias

OSRAM VALVES

Original type of Valve	Recommended substitute	Probable effect in apparatus	Modifications required*
LS6A	PX25	Increased sensitivity; reduced signal handling capacity; greater output	Anode load; grid bias, filament voltage
MH40	MH4		Special selection
MS4	VMS4/B	Slight increase in sensitivity	None
N30	KT33C	Increased sensitivity	Octal socket; heater voltage; adjustment of bias resistance
N31	KT31	None	None
N41	KT41	None	None
N42	MKT4/7-pin	Not noticeable	None
P2	LF2	Increased sensitivity; reduced power	Reduce grid bias
P215	LP2	Increased sensitivity	Reduce grid bias
P240	LP2	Increased sensitivity	Reduce grid bias
PT2	KT2	None	None
PT25	PT25H	Slightly increased sensitivity	Increase screen voltage
PT625	KT63	Slightly increased sensitivity	Octal socket, bias resistance in cathode lead
PX25A	DA30	None	None
S21	Z21/4-pin	Not noticeable	None
S22	Z21/4-pin	Not noticeable	Probably none
S23	Z21/4-pin	Slight reduction in sensitivity	None
S24	Z21/4-pin	Reduction in sensitivity	Probably none
S215	Z21/4-pin	Not noticeable	Probably none
U5	U50	None	Octal socket

Original type of Valve	Recommended substitute	Probable effect in apparatus	Modifications required*
U8	U14	None	Reduce filament voltage from 7.5 to 4.0
U9	U10	None	None
U30	U31 in DC/AC series operated sets	None	Octal socket, wire as half-wave rectifier
VDS	KTW63	None	Octal socket; heater voltage and current
VDSB	KTW63	Reduced sensitivity	Octal socket; heater voltage and current
VMP4	VMP4G	None	7-pin base if required
VMS4	VMS4/B	Slight increase in sensitivity	None
VP21	W21/7-pin	Slightly increased sensitivity	None
VS2	W21/4-pin	Slightly increased sensitivity	None
VS24	W21/4-pin	None	None
W30	KTW61	Reduced sensitivity	Octal socket, heater voltage, grid lead to top cap in place of anode lead; anode connection to pin 3 on octal socket, reduction in screen voltage
W31	KTW61	Probably none	As for W30
X21	X22	None	None
X23	X24	None	None except in series operated receivers where X23 must be used
X30 X32	X65	Reduced sensitivity	Octal socket, heater voltage
X42	MX40	Slight reduction in sensitivity on short waves	None
Z63	KTZ63	None	None

NOTES.—Receivers employing the 16-volt 0.25-amp. range of D.C. valves can in general be made to operate by substituting the range of 0.3-amp. octal base valves and changing heater current from 0.25-amp. to 0.3-amp. This necessitates changing the barretter or series resistance to another type of suitable value.

Receivers employing 13-volt, 0.3-amp. "Universal" range of valves, can usually be made to operate by substituting the 0.3-amp. octal base range with suitable modifications as suggested.

A.C. Mains Receivers employing the 4-volt, A.C. mains types can usually be maintained, or a substitute found in the 4-volt. range with very slight modification.

Receivers with 2-volt battery valves can usually be maintained with current types without modification, except where the filaments are wired in series, where the original types are essential to maintain the original filament current.

* For modifications required in detail, reference should be made to the technical data sheets published for the types, which indicate the correct operating conditions, and pin connections, for the substitute valve recommended. Technical data sheets are available for types in current usage, from OSRAM Valve Dept., The General Electric Co., Ltd., Magnet House, Kingsway, London, W.C.2, or from any of its Branches. Individual types should be specified.

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