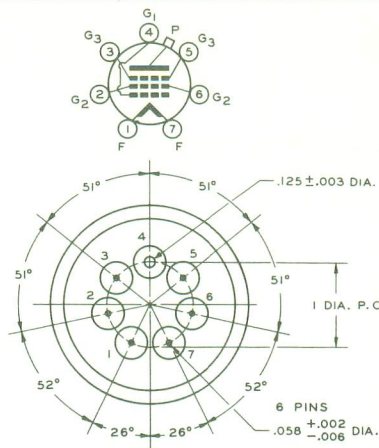
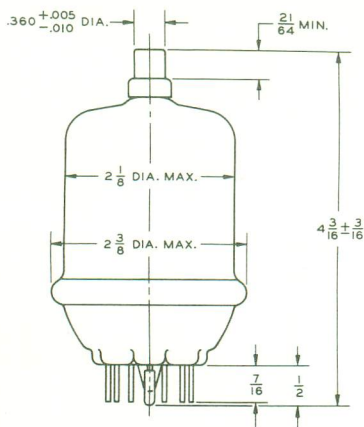


PL-177WA Beam Pentode



The PL-177WA beam pentode is a ruggedized version of the Penta PL-177A, with which it is directly interchangeable. The PL-177WA may be mounted in any position, and will withstand high levels of shock and vibration.

Cooling of the 75-watt PL-177WA is by radiation. The tube incorporates the exclusive Penta vane-type suppressor grid, which permits high power output at relatively low plate voltages, and provides excellent characteristics for use as a linear r-f or audio amplifier.

ELECTRICAL CHARACTERISTICS

Filament -- Thoriated Tungsten	
Voltage - - - - -	6.0 volts
Current - - - - -	3.2 amperes
Grid-Screen Amplification Factor - - - - -	5
Interelectrode Capacitances	
Grid-Plate - - - - -	0.06 μ fd.
Input - - - - -	7.5 μ fd.
Output - - - - -	4.2 μ fd.
Transconductance (500 v. Eb, 400 v. Ec2, 150 ma. Ib) - - - - -	4500 μ mhos

MECHANICAL CHARACTERISTICS

Base ¹ - - - - -	7-pin Septar, EIA E7-2
Maximum Overall Dimensions	
Length - - - - -	4.38 inches
Diameter - - - - -	2.38 inches
Mounting Position - - - - -	Any

MAXIMUM RATINGS — CCS (Continuous Commercial Service)

(Frequencies up to 175 Mc.)	Class-AB ₁ R-F or Audio	Class-C CW or FM	
D-C Plate Voltage	2000	2000	max. volts
D-C Screen-Grid Voltage	600	600	max. volts
D-C Suppressor-Grid Voltage	100	100	max. volts
D-C Plate Current	175	150	max. ma.
Screen-Grid Input	10	10	max. watts
Plate Dissipation	75	75	max. watts

¹ Fits E. F. Johnson Co. sockets 122-101 or 122-247.

15 October 1964

Form 92C-203A



THE PENTA LABORATORIES, INC.

A SUBSIDIARY OF RAYTHEON COMPANY

312 N. NOPAL STREET • SANTA BARBARA, CALIFORNIA 93102



PL-177WA

TYPICAL OPERATION — Class C C-W or FM Amplifier Grounded-Cathode Circuit

D-C Plate Voltage	600	750	1000	1500	2000 volts
D-C Screen-Grid Voltage	400	400	400	400	400 volts
D-C Suppressor-Grid Voltage	0	0	0	0	0
D-C Control-Grid Voltage	-90	-90	-105	-115	-125 volts
D-C Plate Current	150	150	150	150	150 ma.
D-C Screen-Grid Current	18	17	16	14	12 ma.
D-C Screen-Grid Current	6	6	5	5	5 ma.
Peak R-F Grid Voltage (approx.)	130	125	140	155	165 volts
Driving Power (approx.)	0.75	0.75	0.70	0.75	0.80 watts
Screen-Grid Power Input	7.2	6.8	6.8	6.4	4.8 watts
Plate Power Input	90	112	150	225	300 watts
Plate Dissipation	30	38	40	45	50 watts
Useful Power Output ²	55	66	100	160	220 watts

TYPICAL OPERATION — Class AB₁ Linear R-F Amplifier³ Single-Sideband, Suppressed Carrier; (Intermittent Modulation) Grounded-Cathode Circuit

D-C Plate Voltage	1000	1500	2000 volts
D-C Screen-Grid Voltage	600	600	600 volts
D-C Suppressor-Grid Voltage	0	0	0
D-C Control-Grid Voltage ⁴	-98	-110	-115 volts
Zero-Signal D-C Plate Current	40	30	25 ma.
Zero-Signal D-C Screen Current	0	0	0
Maximum-Signal D-C Plate Current	175	175	175 ma.
Maximum-Signal D-C Screen Current	10	8	7 ma.
Maximum-Signal Peak R-F Grid Voltage	96	108	112 volts
Intermodulation Distortion Level ⁵			
Third Order	-34	-30	-30 db
Fifth Order	-40	-40	-41 db
Maximum-Signal Plate Power Input	175	262	350 watts
Maximum-Signal Plate Dissipation ⁶	70	110	125 watts
Maximum-Signal Useful Power Output ²	96	140	210 watts

² Actual useful power output delivered to load from typical amplifier. So-called "plate power output" is approximately 10 per cent higher, and is equal to difference between power input and plate dissipation.

³ D-C current and power values shown are for peak conditions, or for single-tone modulation at full signal.

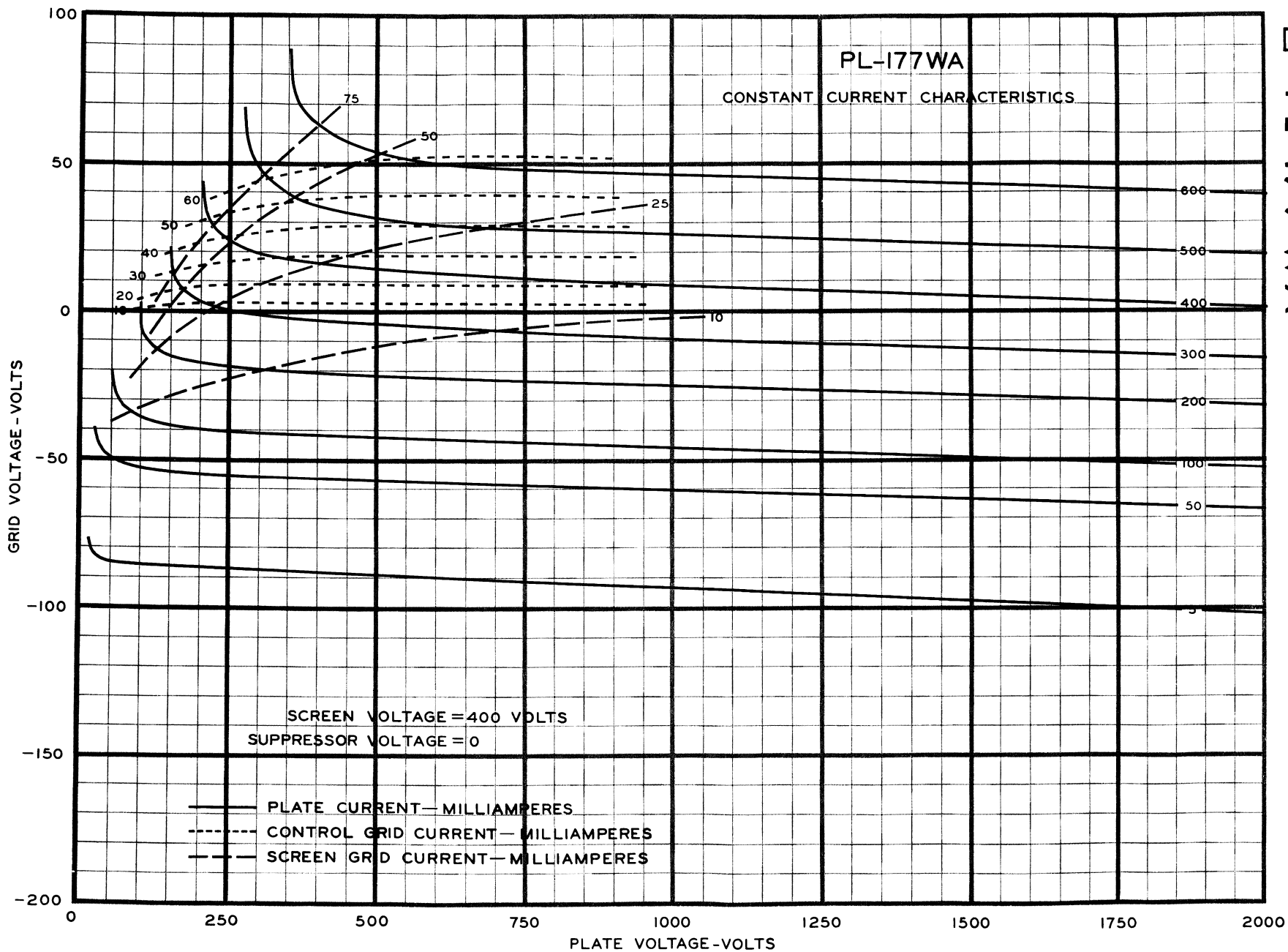
⁴ Approximate value; adjust to give stated zero-signal plate current.

⁵ Referenced against maximum-signal (or PEP) output. Two equal tones. No degenerative feedback.

⁶ Plate dissipation values shown for information only. During normal operation with intermittent modulation, average plate dissipation will not exceed 75-watt maximum rating.



PL-177WA





PL-177WA

