

—Standard Valves—

4013-D
Valve

4013-D VALVE

SINGLE ENDED WATER COOLED TRIODE.

SPECIFICATION.

Cathode.

Pure Tungsten filament.
Constant voltage type.

Water Jacket.

Type MS.1362 Grp. 1.
Type MS.1362 Grp. 20. For below panel
connection.

Water Flow.

3 gallons per minute.

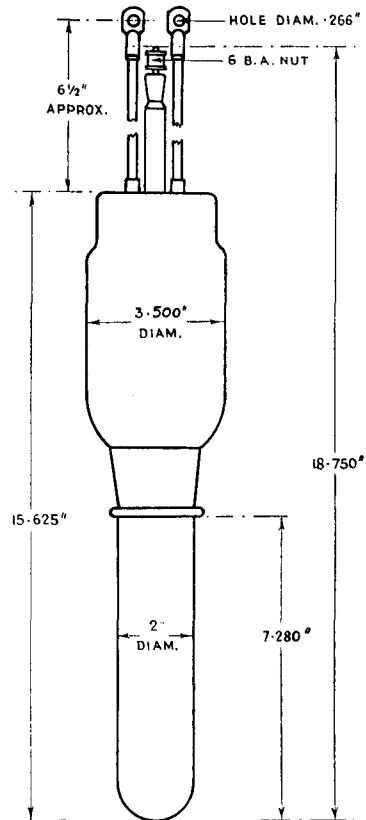
Dimensions.

Overall length $18\frac{3}{4}"$ (47.7 cms.)
Bulb diameter $3\frac{1}{2}"$ (8.9 cms.)
Net weight $2\frac{1}{2}$ lbs. (1,150 gms.)

Constants.

Filament voltage 19–21 volts.
(exact filament voltage marked
on bulb)
Nominal filament current 41 amps.
Total emission 6 amps.
*Impedance 4,200 ohms
*Amplification factor 21
Grid-anode capacity $21 \mu\mu\text{F.}$
Anode-filament capacity $2.5 \mu\mu\text{F.}$
Grid-filament capacity $16 \mu\mu\text{F.}$

* at anode current of 0.75 amp.



LIMITING CONDITIONS FOR SAFE OPERATION.

Maximum direct anode voltage	6,000 volts
Maximum direct anode voltage for anode modulation	4,000 volts
Maximum direct anode current	1.5 amps.
Maximum anode dissipation	5 Kw.
Maximum grid dissipation	100 watts
Maximum frequency for above ratings	15 Mc.
Maximum anode voltage for frequency of 22 Mc.	5,000 volts

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TYPICAL OPERATING CONDITIONS.

	Class B A.F. Amp. For balanced 2 valve circuit
Direct anode voltage Grid bias Direct anode current per valve—zero signal Direct anode current per valve—maximum signal Load resistance—anode to anode Maximum signal output—2 valves Anode dissipation	5,000 volts —100 to —150 volts 0.25 amps. 1.2 amps. 3,700 ohms 6.6 Kw. 2.7 Kw.

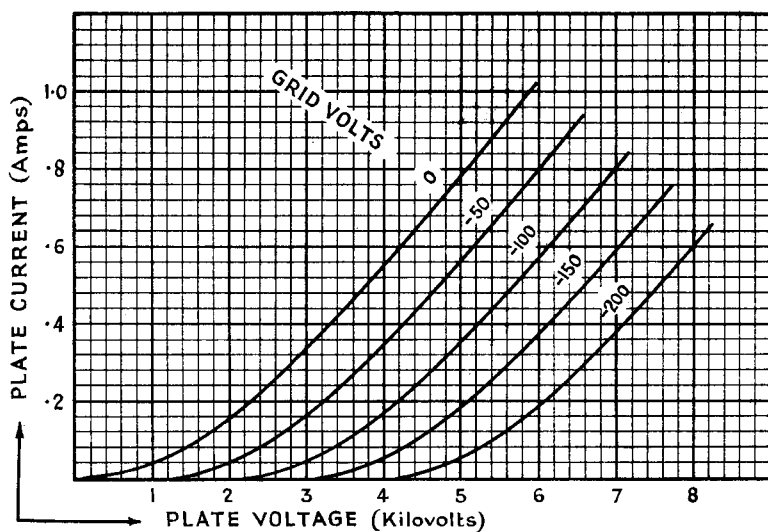
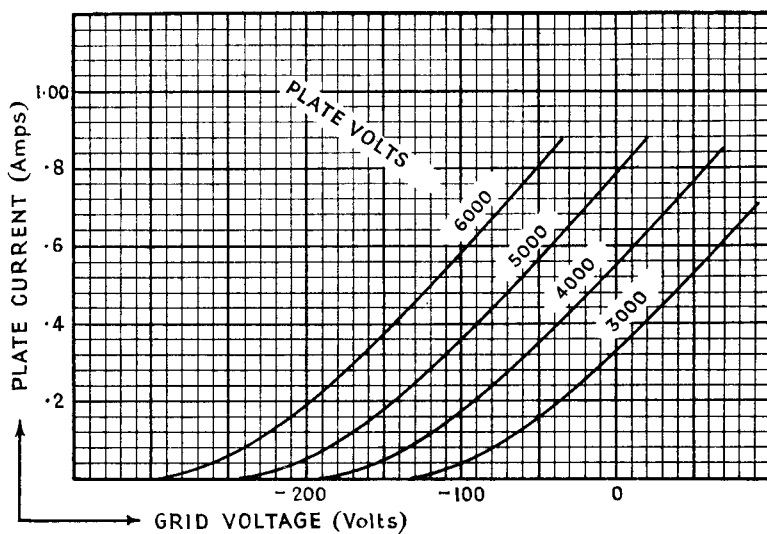
RADIO FREQUENCY OPERATION.

	Class B Telephony	Class C Telephony	Class C Telegraphy
	Modulated Carrier applied to grid	Subject to anode modulation	Unmodulated
Direct anode voltage Direct anode current Grid bias Anode dissipation Carrier output	5,000 0.75 —190 2.5 1.25	3,500 0.75 —300 0.9 1.8	5,000 volts 1.5 amps. —500 to —750 volts 2.5 Kw. 5 Kw.

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These curves are taken with A.C. filament heating, grid and anode voltages being referred to the centre point of the filament.



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