

# —Standard Valves—

4228-A  
Valve

## 4228-A 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.

#### Dimensions.

Overall length 18" (45.7 cms.)  
Bulb diameter  $3\frac{1}{2}$ " (8.9 cms.)  
Net weight  $2\frac{1}{2}$  lbs. (1,150 gms.)

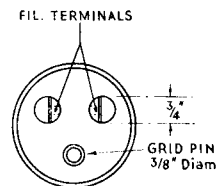
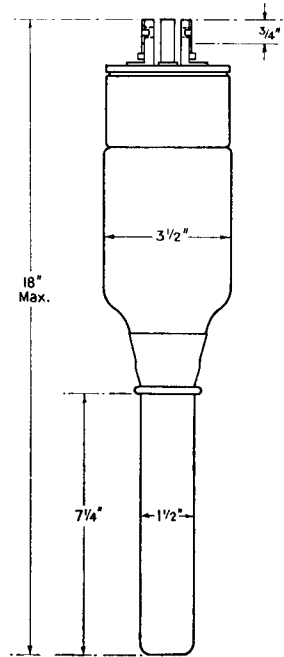
#### Water Flow.

5 gallons per minute.

#### Constants.

Filament voltage	22 volts
(exact filament voltage marked on bulb)	
Nominal filament current	41 amps.
Total emission	6 amps.
*Impedance	2,200 ohms
*Amplification factor	18
Grid-anode capacity	24 $\mu\mu\text{F}$ .
Anode-filament capacity	3.1 $\mu\mu\text{F}$ .
Grid-filament capacity	25 $\mu\mu\text{F}$ .

\* 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	3 Mc.
Maximum anode voltage for frequency of 6 Mc.	3,000 volts

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## TYPICAL OPERATING CONDITIONS.

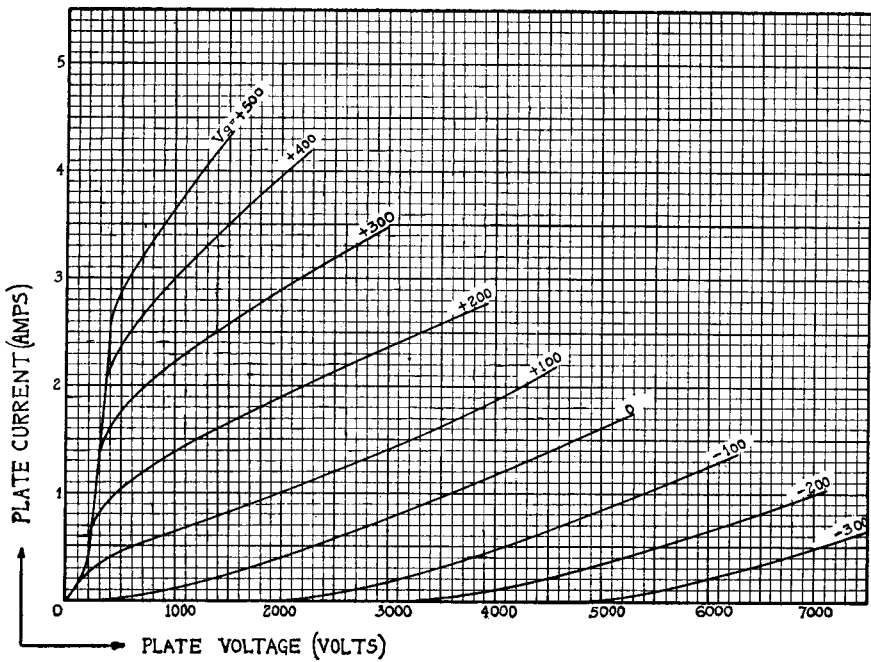
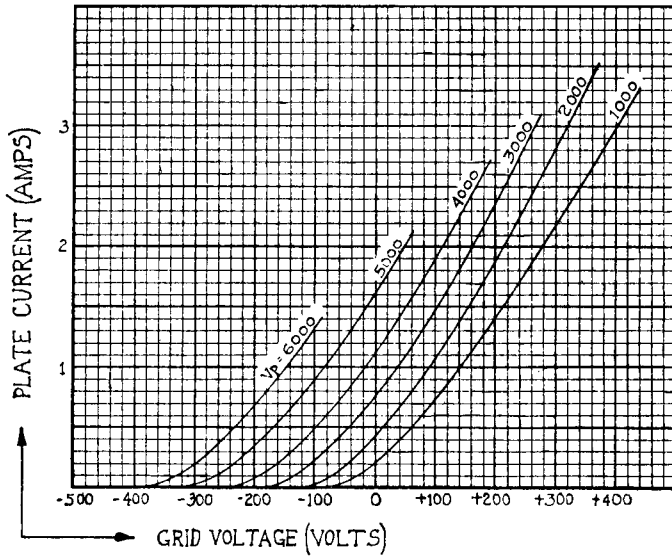
	Class B AF Amp. For balanced 2 valve circuit		
Direct anode voltage	5,000	4,000	volts
Grid bias	—265	—200	volts
Direct anode current per valve—zero signal	0.15	0.15	amps.
Direct anode current per valve—maximum signal	0.6	0.7	amps.
Load resistance—anode to anode	8,400	5,000	ohms
Maximum signal output—2 valves	3.75	3.0	Kw.
Anode dissipation	1.125	1.3	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	5,000	4,000	4,000	3,000	6,000	4,000 volts
Direct anode current	0.65	0.65	1.25	1.3	1.25	1.25 amps.
Grid bias	—325	—275	—500	—300	—600 —800	—450 to —550 volts
Anode dissipation	2.15	1.7	2.5	1.9	2.5	1.7 Kw.
Carrier output	1.1	0.9	2.5	2	5	3.3 Kw.

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