

Specification NOS /CV1742 Issue 1A Dated 11.8.59 To be read in conjunction with K1001	<u>SECURITY</u>	
	<u>Specification</u>	<u>Valve</u>
	UNCLASSIFIED	UNCLASSIFIED

→ indicates a change

TYPE OF VALVE - Ignitron PROTOTYPE - BK.44				<u>MARKING</u> See K1001/4	
<u>RATING</u>				<u>BASE</u> None See Drawing on Page 3	
		(a)	(b)	Note	
Max. Forward Anode Voltage	(V)	900	2100		
Max. Inverse Anode Voltage	(V)	900	2100		
Max. Anode Current	(A)	900	600		
Surge Anode Current (0.15 sec. max.)	(A)	6000	4500		
Mean Continuous Anode Current	(A)	100	75		
Max. Mean Anode Current	(A)	150	112.5	B	
Max. Mean Anode Current	(A)	200	150	C	
Max. Outlet Water Temperature	(°C)	60	45		
Min. Inlet Water Temperature	(°C)	10	10		
Min. Rate of Flow of Cooling Water (gall/min.)		1.5	1.5		
<u>Auxiliary Anode</u>					
Max. Inverse Voltage (Main anode conducting)	(V)	25			
Max. Inverse Voltage (Main anode not conducting)	(V)	150			
Max. Average Current	(A)	5			
<u>Ignitor Rating</u>					
Max. Required Positive Voltage	(V)	300			
Max. Permissible Positive Voltage		-		D	
Max. Permissible Negative Voltage	(V)	5			
Max. Required Current	(A)	40			
Max. Permissible Current	(A)	100			
Max. Permissible Average Current	(A)	2			
Ignitor Current Averaging-time(secs)		10			
<u>NOTES</u>					
A. All limiting values are absolute					
B. Mean for 2 hours averaged over any 2-minute period					
C. Mean for 1 minute averaged over 1 minute					
D. Up to anode voltage					

CONNECTIONS AND DIMENSIONS

See Drawing on Page 3

MOUNTING POSITION

Vertical only

To be performed in addition to those applicable in K1001

	Test	Test Conditions	AQL %	Insp. Level	Sym- bol	Limits		Units
						Min.	Max	
a	Load	Note 1		T.A.		-	-	
b	Ignitor Resistance	Notes 2 & 5		100%	R _{ign}	20	150	ohms
c	<u>Ignitor Operation</u> No. of misfires	Notes 3 & 5		100%		-	0	
d	High Voltage	Notes 4 & 5		100%		15	-	kV

NOTES

- Two valves shall be connected in inverse parallel to a 440-volt r.m.s. 50 c/s supply and to a suitable load. A supply of water will be required for cooling (See rating). The valves shall be operated for 10 minutes on a 50% duty cycle passing a mean anode current of 130 amps in each valve. The duty cycle may be obtained for example by operating 2 c/s on/2 c/s off, but the averaging time must not exceed 8 seconds. Adjustment of the load current by control of ignitor firing is permitted up to a maximum of 30° delay. The valves shall operate satisfactorily.
- The ignitor resistance shall be measured with an ohm-meter having an e.m.f. not exceeding 4 volts.
- The ignitor is fired by discharging a condenser into the ignitor. The condenser shall be 4/μF and shall be charged to 500 volts, and discharged through a 0.5 mH inductance and a suitable thyatron. The anode supply shall be such that an arc will be struck and maintained to the anode. Anode voltage shall be greater than 40 volts and the anode current greater than 5 amps when the ignitor fires. The number of misfires shall be recorded by observation of the anode voltage on a cathode ray tube or with a counting device. Each ignitor shall be tested for two minutes. No misfires shall be permitted.
- A 50 c/s AC supply of 15 kV peak voltage shall be applied between anode and cathode through a current limiting resistance and also through a second resistance of suitable value shorted by a neon indicator lamp. Flashing of the indicator lamp shall cease within 20 seconds; if not, the voltage shall be increased to 18-20 kV for 20 mins. after which the test shall be repeated at 15 kV.
- These tests shall be performed with the valve cold.

