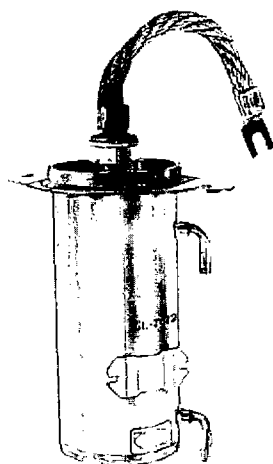


**IGNITRON
Coaxial****FREQUENCY-CHANGER WELDER SERVICE—1500 AMPERES PEAK****ADAPTED TO WATER-FLOW
CONTROL****ADAPTED TO TEMPERATURE
CONTROL**

The GL-7672 is a sealed, stainless-steel-jacketed, water-cooled ignitron for use in frequency-changer welder service. In such use two tubes in inverse-parallel connection will control 1500 amperes peak at voltages up to 1200 volts peak at a frequency of 60 cycles. The tube is also useful in other high-peak-current applications such as capacitor-discharge circuits.

The 7672 features a new coaxial construction in which current flows through

the tube from anode to cathode, then up the tube wall to a coaxial cathode terminal at the top. This coaxial current flow provides a magnetic shield to eliminate the arc deflection which the high peak currents of this tube might cause in standard design ignitrons.

A slotted mounting plate permits convenient mounting of a thermostat to provide control of the water flow or over-temperature protection.

Electrical

Cathode Excitation—Cyclic	
Cathode Spot Starting—Ignitor	
Number of Electrodes	
Main Anodes	1
Main Cathodes	1
Ignitors	1
Arc Drop at 1500 Amperes Peak	25 Volts

Mechanical

Envelope Material—Stainless Steel	
Net Weight	8.25 Pounds

Thermal

Type of Cooling—Water	
Inlet Water Temperature, minimum	10 C
Inlet Water Temperature, maximum	30 C
Outlet Water Temperature, maximum	35 C
Water Flow, minimum, solenoid water-valve open	
At Continuous Rated Average	
Current	1.5 Gallons per Minute
At No Load	0.5 Gallons per Minute
Characteristics for Water Cooling at Rated Minimum Flow	
Water Temperature Rise, maximum	6 C
Pressure Drop at 1.5 Gallons per Minute	5 Pounds per Square Inch

MAXIMUM RATINGS—FREQUENCY-CHANGER WELDER SERVICE

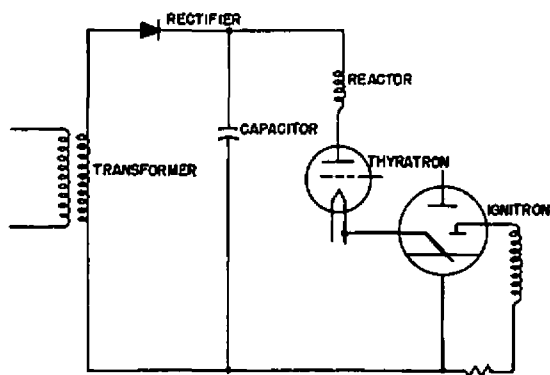
Ratings are for zero-phase-control angle (See curve K69087-72A316 on Page 3 for details).

Peak Anode Voltage			Ratio of Average to Peak		
Forward	1200	1500 Volts	Current	0.166	0.166
Inverse	1200	1500 Volts	Maximum Averaging Time	0.2	0.2 Seconds
Peak Anode Current*	1500	1200 Amperes	Ratio of Fault to Maximum		
Corresponding Average	20	16 Amperes	Peak Current	12.5	12.5
Average Anode Current	70	56 Amperes	Maximum Duration of Fault		
Corresponding Peak	420	336 Amperes	Current	0.15	0.15 Seconds
Maximum Averaging Time	6.25	6.25 Seconds	Frequency Range	50-60	50-60 Cycles per Second

Cathode Excitation Requirements

Ignitor Voltage Required to Fire	200 Volts	Ignitor	
Ignitor Current Required to Fire	30 Amperes	Maximum Voltage	
Starting time at Required Voltage or Current	100 Microseconds	Positive—Anode Voltage	
		Negative	5 Volts
		Maximum Current	
		Peak	100 Amperes
		Root Mean Square	10 Amperes
		Average	1 Ampere
		Maximum Averaging Time	5 Seconds

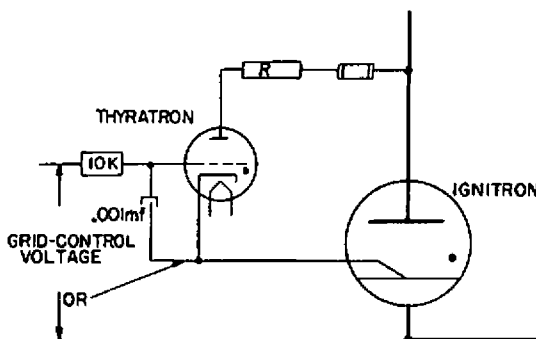
* Straight line interpolation on log-log paper is allowed between corresponding points.



ELEMENTARY CIRCUIT FOR CAPACITOR FIRING

K-9033525

5-54

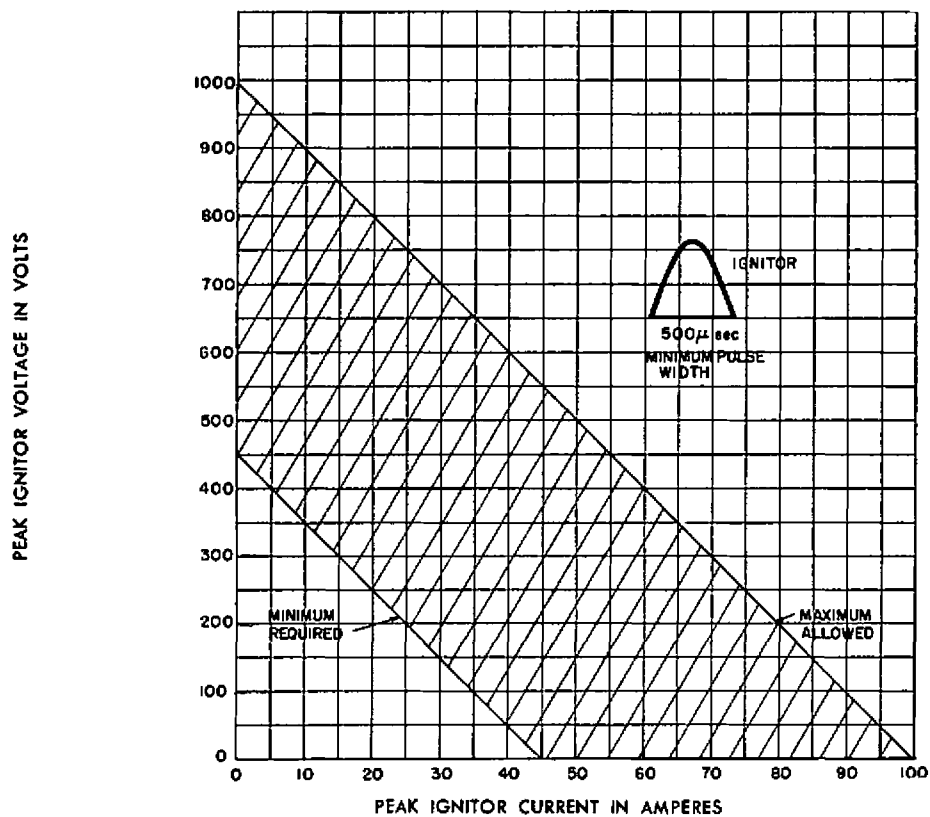


SELF OR ANODE EXCITATION IN WHICH A PART OF THE LOAD CURRENT IS DIVERTED THROUGH THE IGNITOR

K-9033542

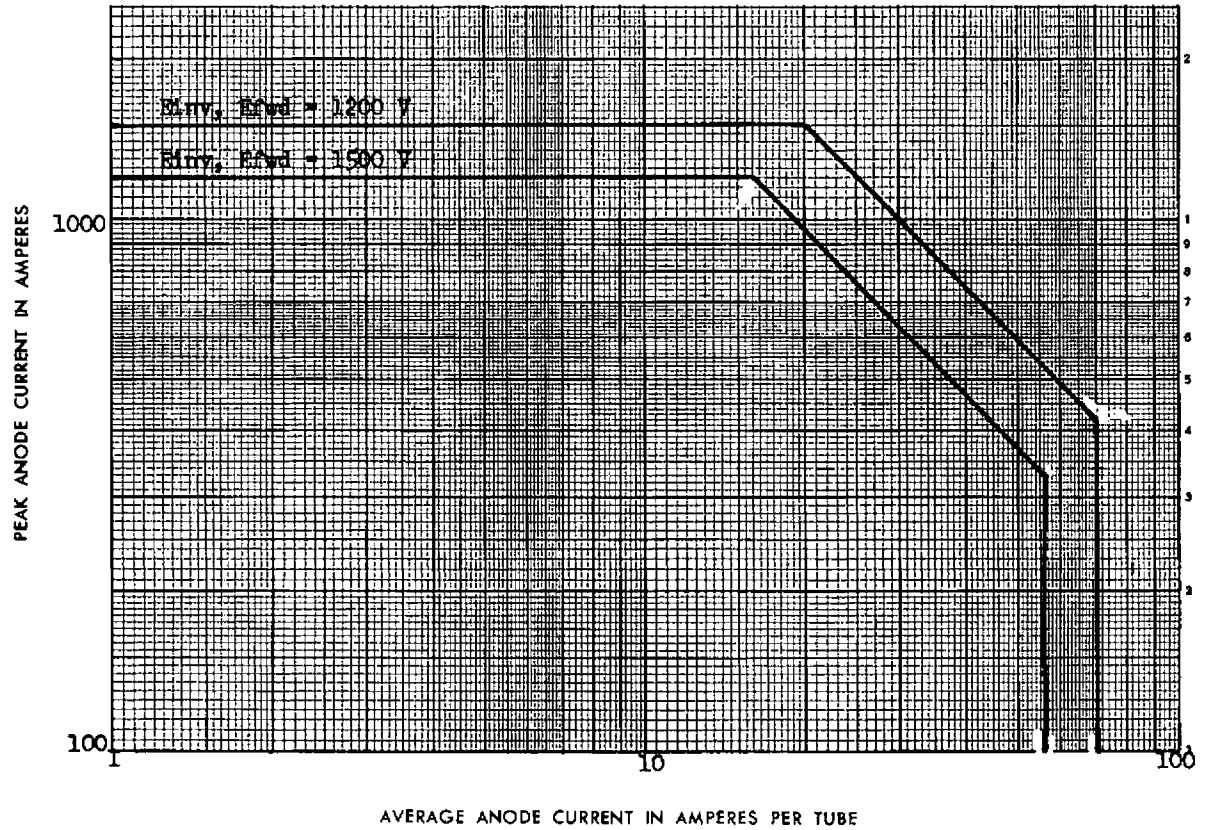
9-60

IGNITOR VOLT-AMPERE REQUIREMENTS FOR SEPARATE EXCITATION SEALED-IGNITRON RECTIFIERS



THE IGNITOR FIRING CIRCUIT SHOULD BE DESIGNED TO OPERATE WITHIN THE SHADED AREA

FREQUENCY-CHANGER RESISTANCE-WELDING SERVICE



K-69087-72A316

9-56

MAXIMUM AVERAGING TIME=6.25 SECONDS

$$\frac{\text{AVERAGE CURRENT}}{\text{PEAK CURRENT}} \text{ MAXIMUM AVERAGING TIME } 0.2 \text{ SECOND} = 0.166 \text{ MAXIMUM}$$

$$\frac{\text{SURGE CURRENT}}{\text{PEAK CURRENT}} \text{ MAXIMUM DURATION OF FAULT CURRENT } 0.15 \text{ SECOND} = 12.5 \text{ MAXIMUM}$$

Control thermostats, with mounting brackets, are available through regular tube supply channels under the following catalog numbers:

AC Control Service

Flying-Lead Type

Water-Control Thermostat—N15272AA

Over-Temperature Thermostat—N15273AA

Terminal-Block Type

Water-Control Thermostat—N15286AA

Over-Temperature Thermostat—N15287AA

See Ignitron Accessories publication in front of Ignitron section for details.

