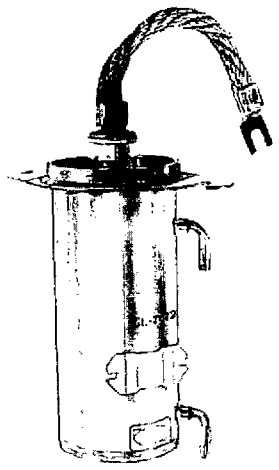
IGNITRON
Coaxial

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).

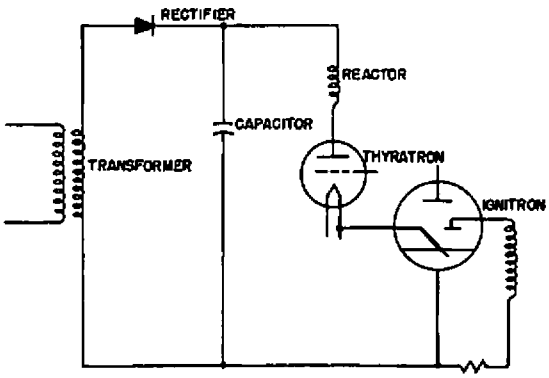
Peak Anode Voltage			
Forward	1200	1500	Volts
Inverse	1200	1500	Volts
Peak Anode Current*	1500	1200	Amperes
Corresponding Average	20	16	Amperes
Average Anode Current	70	56	Amperes
Corresponding Peak	420	336	Amperes
Maximum Averaging Time	6.25	6.25	Seconds
Ratio of Average to Peak Current	0.166	0.166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

Cathode Excitation Requirements

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

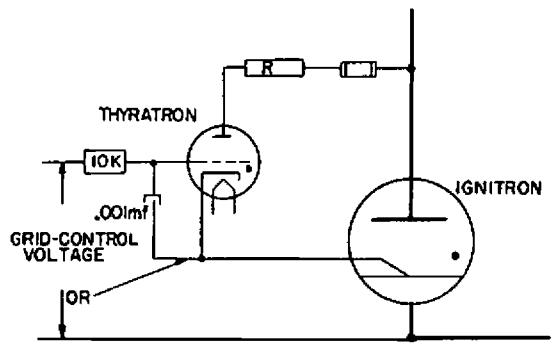
* Straight line interpolation on log-log paper is allowed between corresponding points.

GENERAL ELECTRIC



ELEMENTARY CIRCUIT FOR CAPACITOR FIRING

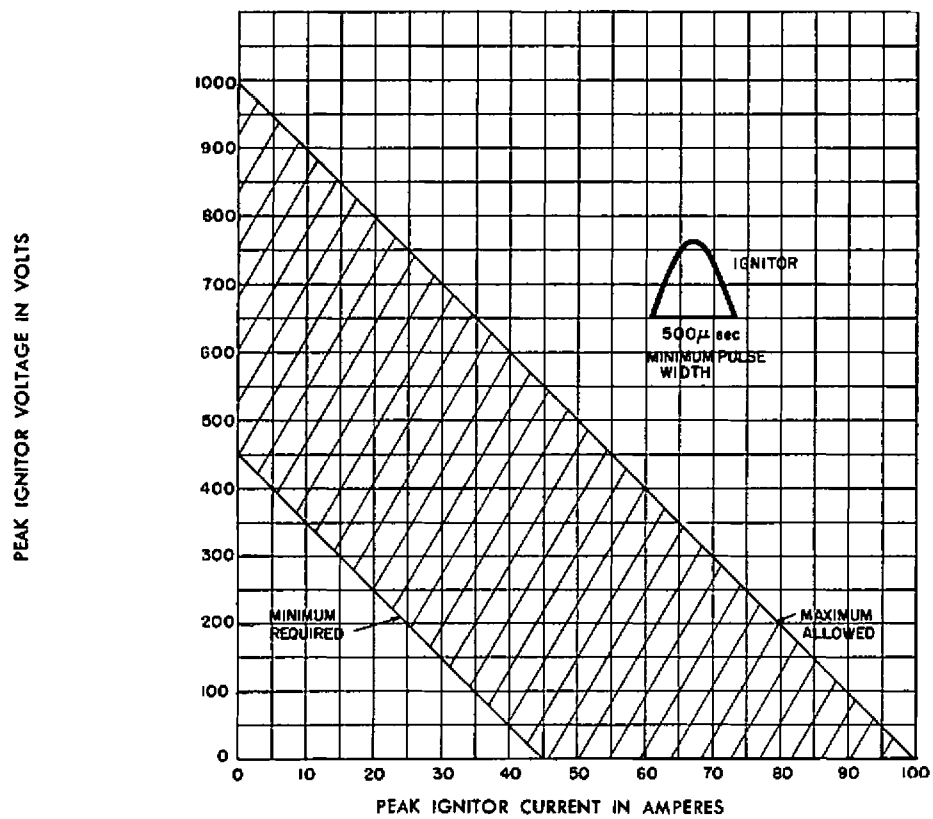
K-9033525 5-54



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

K-9033542 9-60

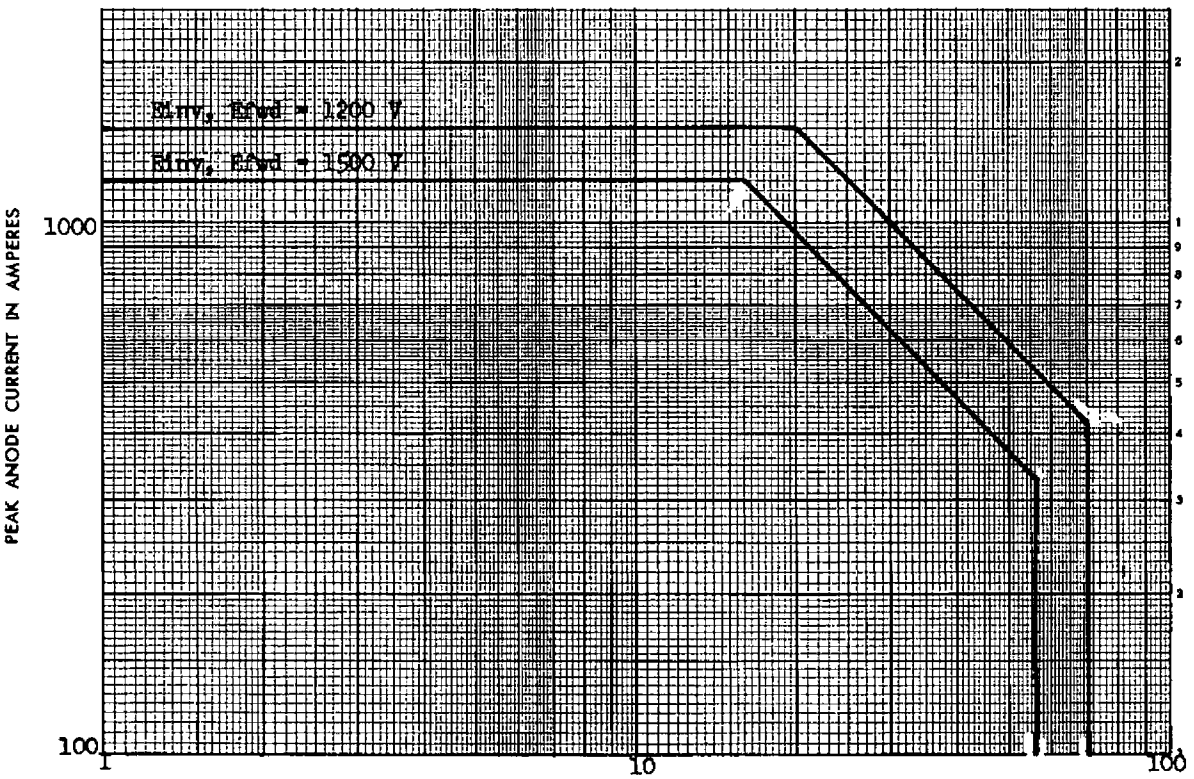
IGNITOR VOLT-AMPERE REQUIREMENTS FOR SEPARATE EXCITATION SEALED-IGNITRON RECTIFIERS



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

K-69087 72A982 9-60

FREQUENCY-CHANGER RESISTANCE-WELDING SERVICE



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9-56

MAXIMUM AVERAGING TIME = 6.25 SECONDS

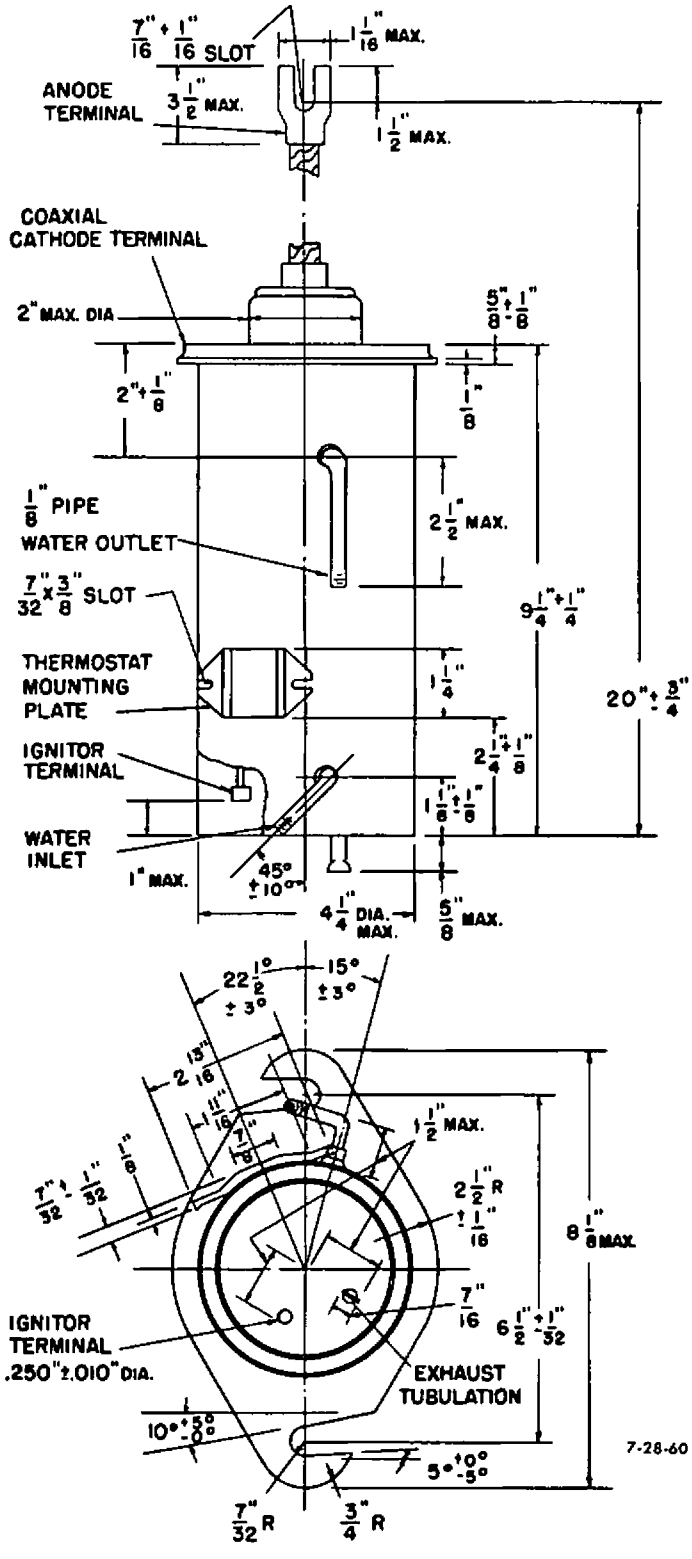
$\frac{\text{AVERAGE CURRENT}}{\text{PEAK CURRENT}}$ MAXIMUM AVERAGING TIME 0.2 SECOND = 0.166 MAXIMUM

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



K-69087-72A968

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ELECTRONIC COMPONENTS DIVISION

GENERAL ELECTRIC

Schenectady 5, N. Y.