

GL-6878

IGNITRON

LOCOMOTIVE RECTIFIER SERVICE - 675 AMPERES

THREE IGNITORS

DESCRIPTION AND RATING

The GL-6878 is a double-grid ignitron designed for railroad locomotive rectifier service.

A coaxial cathode-current return reduces magnetic fields due to tube currents. The tube also features baffles in the mercury pool to assure contact between the mercury and the ignitor points during swaying of the equipment.

A companion tube, the GL-6509 ignitron, has been designed to supply the auxiliary power requirements of applications which use the GL-6878 as the main power source.

TECHNICAL INFORMATION

GENERAL

Electrical

Cathode Excitation - Cyclic  
Cathode-Spot Starting - Ignitor  
Number of Electrodes

Main Anodes . . . . .	1
Main Cathodes . . . . .	1
Ignitors . . . . .	3
Shield Grids . . . . .	1
Control Grids . . . . .	1

Mechanical

Envelope Material - Stainless Steel

Net Weight . . . . .	190	Pounds
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Thermal

Type of Cooling - Water

Inlet Water Temperature, minimum . . . . .	30	C
Outlet Water Temperature, maximum . . . . .	55	C
Water Flow, minimum		
At Continuous Rated Average Current . . . . .	10	Gallons per Minute
At No Load . . . . .	1	Gallons per Minute
Temperature Range . . . . .	40 to 45	C

from JETEC release #1639, May 7, 1956

Thermal (Cont'd)

Characteristics for Water Cooling at Rated Minimum Flow		
Water Temperature Rise, maximum. . . . .	10	C
Pressure Drop at 10 Gallons per Minute, maximum . . . . .	2.5	Pounds per Square Inch

MAXIMUM RATINGS AND TYPICAL OPERATION

Power-Rectifier Service, Continuous Duty  
Ratings are for Zero-Phase-Control Angle

Maximum Peak Anode Voltage		
Inverse. . . . .	4000	Volts
Forward. . . . .	100	Volts
Maximum Anode Current		
Peak . . . . .	2500	Amperes
Average*		
Continuous . . . . .	675	Amperes
Fifty Minutes. . . . .	675	Amperes
Twelve Minutes . . . . .	750	Amperes
Six Minutes. . . . .	810	Amperes
Four Minutes . . . . .	875	Amperes
Fault		
Peak Forward Direction, without damage . . . . .	20,000	Amperes
Peak Reverse Direction . . . . .	40,000	Amperes
Maximum Duration of Fault Current. . . . .	0.15	Seconds
Frequency Range. . . . .	25-60	Cycles per Second

Ignitor

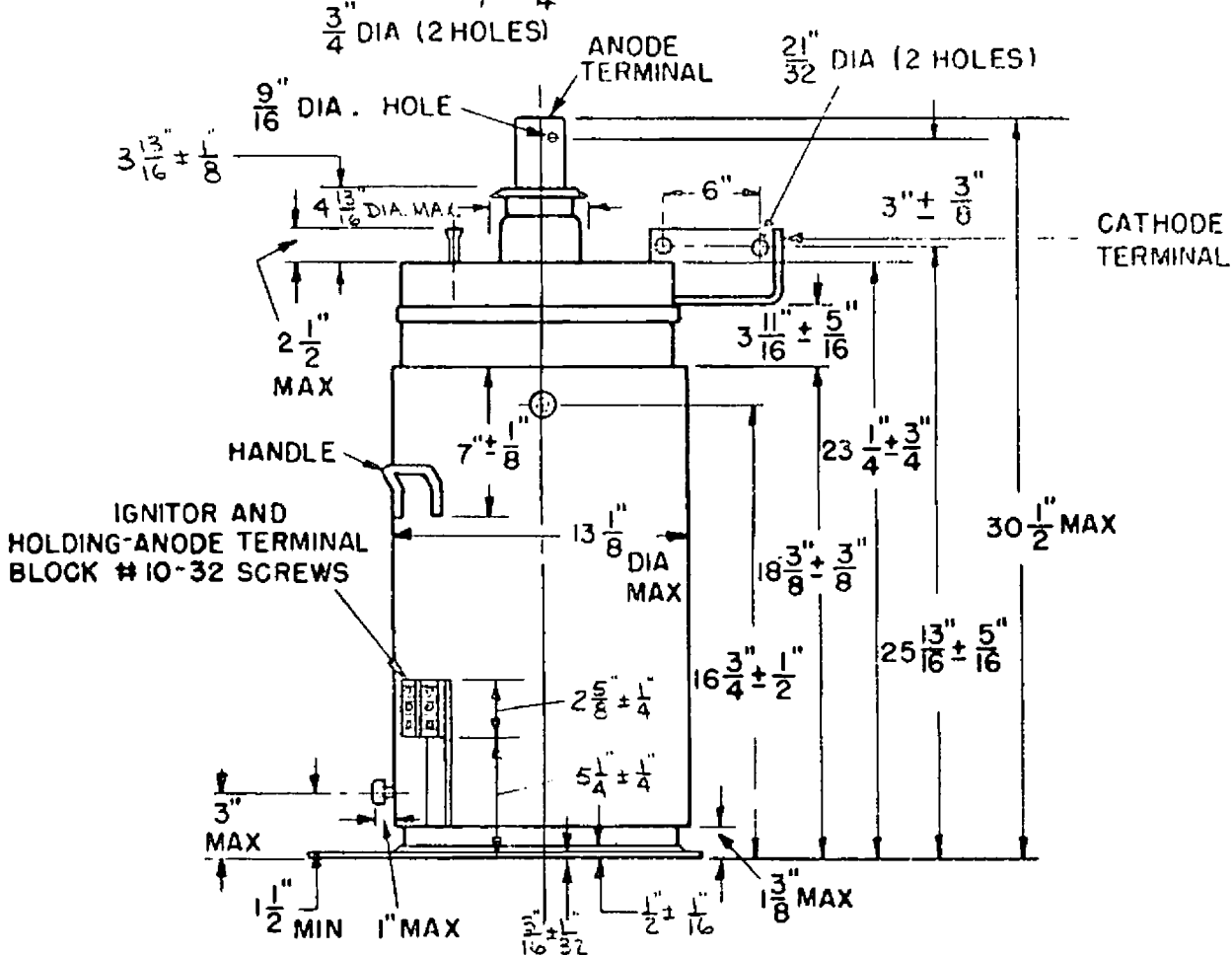
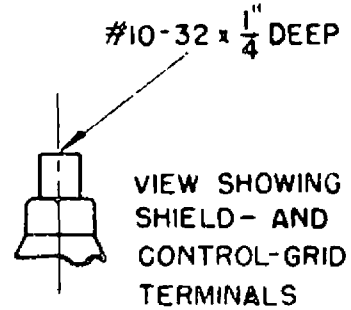
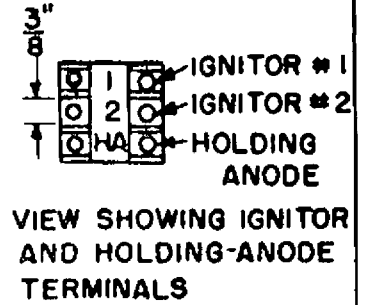
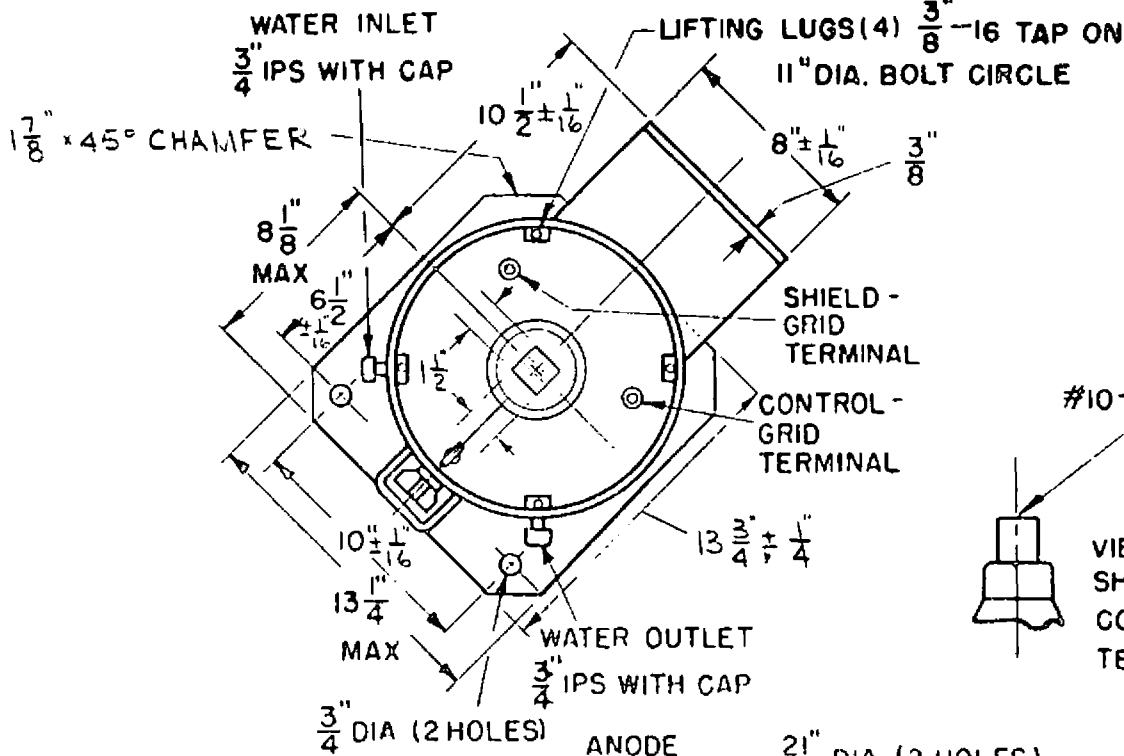
Maximum Inverse Voltage. . . . .	5	Volts
Maximum Current		
Root Mean Square . . . . .	15	Amperes
Average. . . . .	2	Amperes
Maximum Averaging Time . . . . .	10	Seconds
Shield-Grid Voltage		
Peak Forward . . . . .	Minimum 200	Maximum 500
Peak Inverse . . . . .	---	200
Shield-Grid Current		
Peak Forward . . . . .	0.2	5
Peak Inverse . . . . .	---	0.2

Ignitor (Cont'd)

	Minimum	Maximum	
Control-Grid Voltage			
Peak Forward . . . . .	200	500	Volts
Peak Inverse . . . . .	100	200	Volts
Control-Grid Current			
Peak Forward . . . . .	0.4	5	Amperes
Peak Inverse . . . . .	.0.4	1	Amperes

\* Short time loads applied following light load.

OUTLINE GL-6878



7 Aug 21, 56 DMJ  
 6 IN-8804  
 5 IN-8742  
 2 IN-8483  
 1 IN-11653

4	Apr 8, 56 DMJ 1 Baller IN-8579
3	Apr 2, 56 DMJ 1 Baller IN-8433

REVISIONS

MADE BY J.J. STOTE DEC 2, 1957

GENERAL ELECTRIC  
ELECTRONICS DIVISION

RE INSPECTED BY APR 2, 56 DMJ

K-69087-72A740  
SHEET NO. ... CONT ON SHEET ...

JN 8226

PRINTS TO