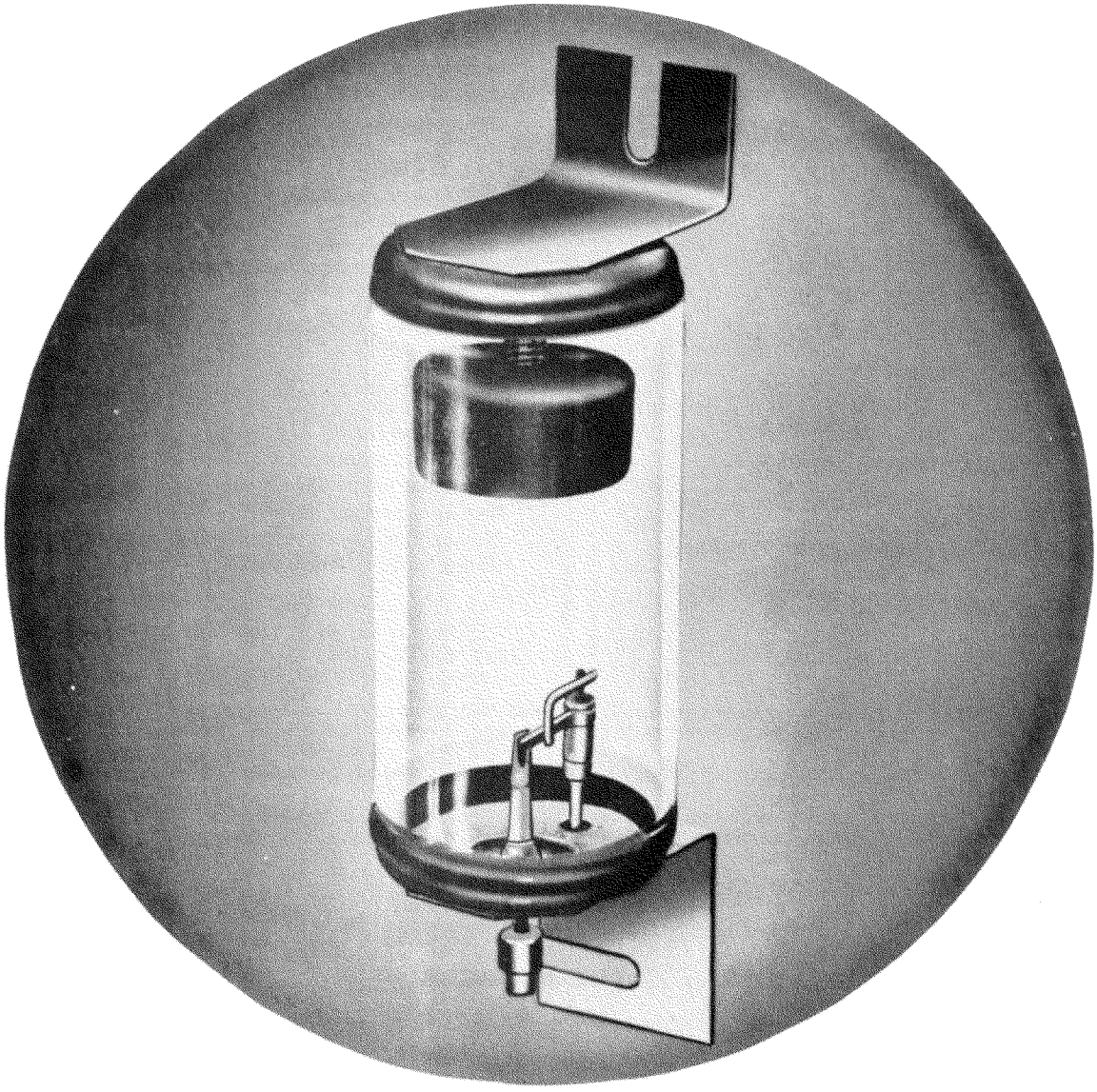
IGNITRON TUBE

NL-1001
IGNITRON TUBE
9 Amperes dc



NATIONAL IGNITRON NL-1001 is a sturdy, glass, air-cooled mercury pool tube designed especially for welder control and similar AC control applications. It is also useful for demonstrating the operating principles of ignitors and ignitrons. NL-1001 is designed for forced air cooling but may be used with free air cooling at reduced ratings.

NATIONAL ELECTRONICS, INC.
GENEVA, ILLINOIS, U. S. A.

NL-1001 IGNITRON TUBE
TECHNICAL INFORMATION

AC CONTROL APPLICATIONS — Ratings are based on full-cycle conduction (no phase delay) regardless of whether or not phase control is used, and on frequencies from 25 to 60 cycles.

Maximum voltage — rms volts	250	500	600
[1]Maximum condensed mercury temp. —°C	90	80	70
Minimum condensed mercury temp.-°C		10	
[2]Maximum demand current—rms amps	600	300	250
[2]Corresponding maximum average anode current per tube-amps DC		4.9	
[2]Maximum average anode current per tube — amps DC		9.0	
[2]Corresponding maximum demand current — rms amps	200	100	83
Maximum averaging time — seconds	28	14	12
Maximum surge current—peak amps	1680	840	700
[1]With free air cooling — (no forced ventilation) Approximate average anode current per tube which will give rated "Maximum Condensed Mercury Temperature" in 40°C ambient — amps DC	3.5	2.8	2.1

CAPACITOR DISCHARGE APPLICATIONS

Maximum discharges per second		**60**	
Maximum peak forward volts		**3000**	
Maximum peak inverse volts		**3000**	
Maximum peak current — amps		500	
Maximum condensed mercury temperature--°C	70	55	
[1]Maximum average current — amps dc	3	9	
Maximum averaging time — seconds	3.3	1.1	

[4]RECTIFIER APPLICATIONS — Frequencies from 25 to 60 cycles.

Maximum peak anode voltage—volts Forward	500		900
Inverse	500		900
Maximum Condensed mercury temperature — °C	80		60
Maximum peak anode current—amps		77	
[1]Maximum average anode current — amps DC		6.4	
Maximum averaging time—seconds		10	
Maximum surge current (.03 second) — peak amperes		300	
[1]With free air cooling—(no forced ventilation) approximate average anode current per tube which will give rated "Maximum Condensed Mercury Temperature" in 40°C ambient — amps DC	2.8		1.4

IGNITION REQUIREMENTS (Same for both applications.)

Ignitor Voltage

Maximum instantaneous allowed, ignitor positive — volts	900
[3]Maximum instantaneous required, ignitor positive — volts	200
Maximum instantaneous allowed, ignitor negative — volts	5

Ignitor Current

Maximum instantaneous allowed — amperes	100
[3]Maximum instantaneous required — amperes	30
Maximum average allowed — ampere	1
[3]Ignitor ignition time, maximum — microseconds	100
Ignitor current averaging time — seconds	5

GENERAL CHARACTERISTICS

Number of anodes	1
Number of Ignitors	1
Mounting Position	Vertical
Arc drop at 100 amps peak, approx. — volts	12
Net weight — lbs.	1½
Approx. shipping weight — lbs.	5

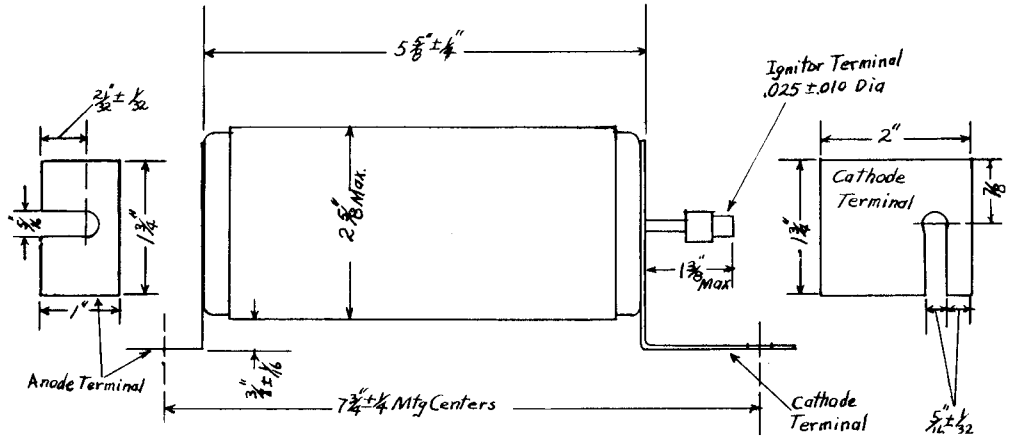
[1]The required condensed mercury temperatures are easily obtained with a small fan or blower. Free air cooling may be used but average anode current must be reduced to bring condensed mercury temperature below the maximum rated values.

[2]Using log-log paper, straight line interpolation of Demand Current vs. Average Anode current may be used to determine intermediate ratings.

[3]Ignition will occur if either maximum required instantaneous positive potential is applied or maximum required instantaneous current flows for the rated maximum ignitor ignition time.

[4]Curves must not be used for rectifier applications.

OUTLINE DRAWING



Printed in U.S.A. 12/56 G.R.

NATIONAL ELECTRONICS, INC.
GENEVA, ILLINOIS, U. S. A.