

JETEC TYPE DESIGNATION RETISTRATION FORM

DUAL TR AND SHUTTER TUBE

Manufacturer's Designation: BL-348
JETEC Designation: 6904
Manufacturer: Bomac Laboratories, Inc.
Beverly, Massachusetts

April 22, 1957

GENERAL CHARACTERISTICS

The 6904 is a combined shutter and dual broad-band TR tube designed to operate with suitable short-slot hybrid junctions to provide a balanced duplexer using RG 52/U size waveguide. The shutter, when closed, insures protection of the receiver crystal from nearby transmitters when the radar set is not in use. When the shutter is open, the duplexer functions normally and provides decoupling at the receiver from a common transmitting and receiving antenna during a period of transmission. It is an integral cavity type with fixed tuned gaps. Its operational band is from 8490 to 9578 megacycles.

ELECTRICAL DATA-TYPICAL VALUES

Operational Band	
VSWR 1.4 maximum	8490 to 9578 Mc/sec.
VSWR 1.2 maximum	8565 to 9487 Mc/sec.
Ignitor Ignition Time (each electrode)(max.)	5 sec.
Ignitor Voltage Drop at; $i_i=100 \mu\text{A}$ dc each electrode measured separately	200-375 Volts
Spike Leakage Energy (max.)	0.1 ergs
$F=9000 \text{ Mc}$; $p_o=40 \text{ kw}$; $t_{p1}=1.0 \mu\text{s}$; $t_{p2}=0.5 \mu\text{s}$; $p_{rr}=1000 \text{ pps}$; $i_i=100 \mu\text{A}$ dc on each electrode	
Flat Leakage Power (max.)	20 mw
(See Spike Leakage for test conditions)	
Duplexer Loss (max.) ; $i_i=100 \mu\text{A}$ dc on each electrode	
from 8490 to 9578 Mc.	1.2 db.
from 8565 to 9487 Mc.	1.0 db.
Isolation (min.)	
from 8490 to 9578 Mc.	15 db.
from 8565 to 9487 Mc.	18 db.
at 9000 Mc.	20 db.
Recovery Time (max.) at 200 kw peak 3 db down	7.0 usec.
High Level VSWR (max.)	1.2
$F=9000 \text{ Mc}$; $p_o=40 \text{ kw}$; $t_p=1.0 \mu\text{sec}$; $p_{rr}=1000 \text{ pps}$; $i_i=100 \mu\text{A}$ dc each electrode	

Shutter Tube

Attenuation 8490 to 9578 Mc. (shutter closed)(min.)	40 db.
Shutter Circuit Voltage (nom.)	28 Vdc.
Shutter Circuit Pull-In Current (min.)	220 mAdc
Shutter Circuit Holding Current (min.)	110 mAdc

MECHANICAL DATA - GENERAL

Mounting Position	Any
Number of Electrodes	Two
Weight, approximately	12 ozs.

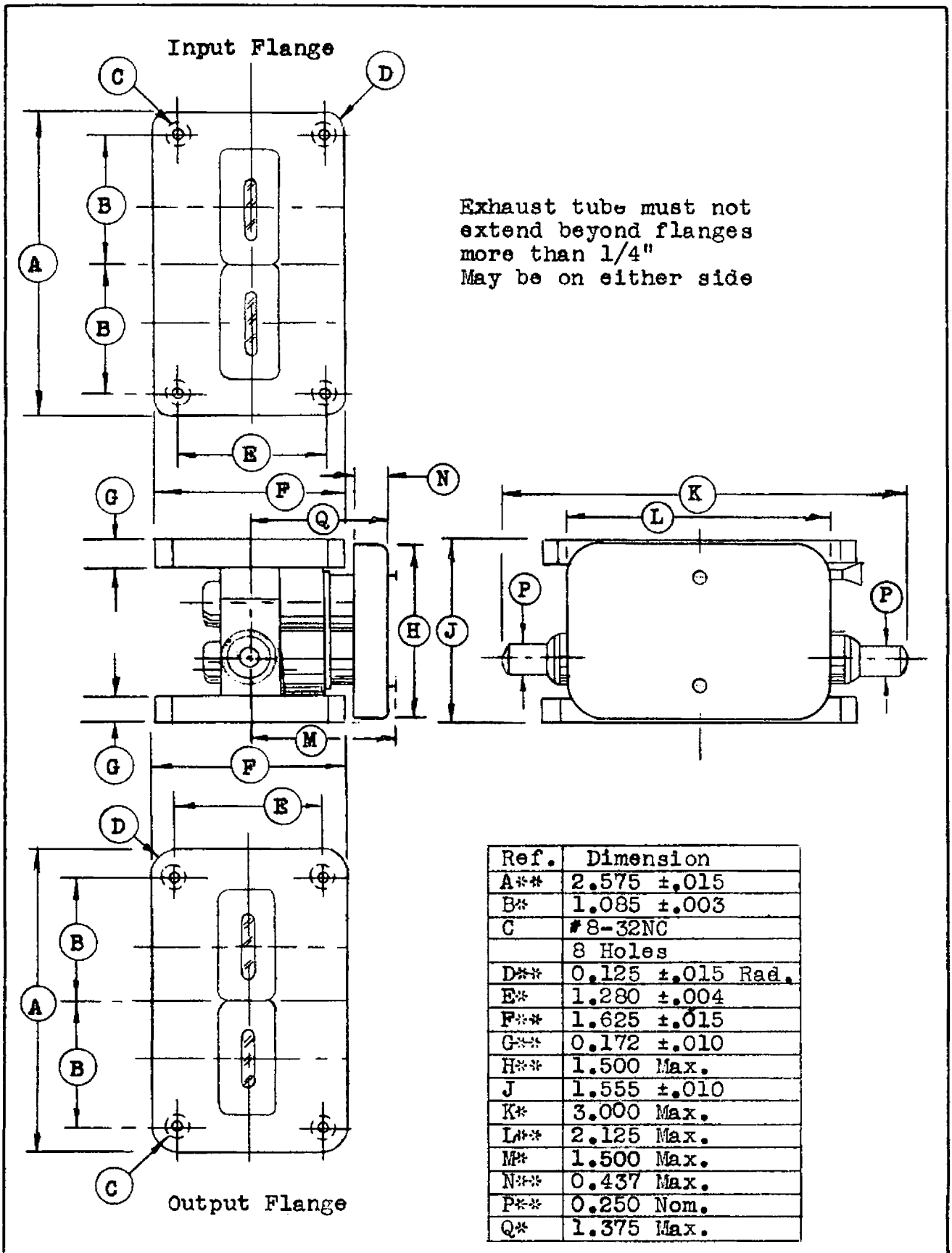
ABSOLUTE MAXIMUM RATINGS

Transmitter Peak Power (Note 1)	250 kw
Transmitter Average Power	250 W
Ignitor Current (each electrode)	200 μ Adc
Shutter Holding Current	320 mAdc

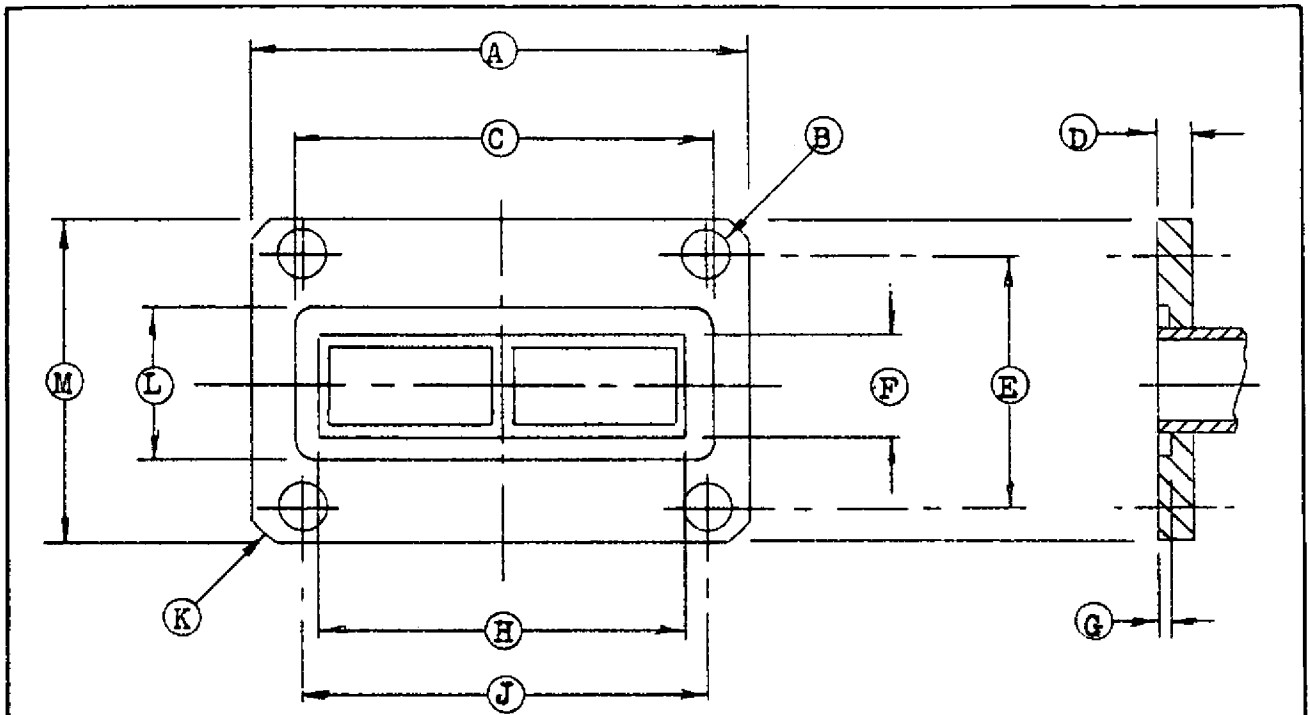
Note 1: The shutter is not intended for applications involving the switching of peak power greater than one kilowatt, therefore the rating applies only when the shutter is open or closed.

OUTLINE DRAWINGS

Outline as per attached drawing dated 9-12-56
Mating Flange as per attached drawing dated 5-28-56



SPECIFICATION SHEET		BOMAC LABORATORIES INC. SALEM ROAD BEVERLY, MASSACHUSETTS
Outline		
6904/BL-348		9-12-56 clr



Ref.	Dimensions
A	2.575±.015
B	#18(.1695) Dr. (4) Holes
C	2.203+.005-.000
D	.220±.010
E	1.280±.004
F	.500±.003
G	.070±.001
H	1.950±.004
J	2.170±.006
K	0.120 Rad. Approx.
L	.753+.005-.000
M	1.625±.015
N	3/64 Rad.

SPECIFICATION SHEET		BOMAC LABORATORIES INC. SALEM ROAD BEVERLY, MASSACHUSETTS
Mating Flange	6904/BL-348	5-28-56 clr
GS-2E-1.10.20.03		