NATIONAL

NLM915-75

MAGNETRON

This data should be read in conjunction with the Installation and Operating Instructions.

ABRIDGED DATA

Fixed frequency c.w. magnetron intended primarily for use in microwave drying, food processing and dielectric heating equipment.

Frequency (-915)	915	Mhz
(-896)	896	Mhz
Output power (note 7)	75	Kw
Magnet	Separate Electro (fig. 1)	
Output	Modified 30Kw waveguide transition to WR 975 waveguide. (fig. 1) (note 2)	
Cooling-Anode	Water. (note 3)	
Dome	Forced Air.	
Cathode	Forced Air.	
Circulator	The use of a circulator is required.	

Printed in the U.S.A. 11/96

NATIONAL ELECTRONICS
A Division of Richardson Electronics, Ltd.
LaFox, IL 60147 • (708) 208-2300

GENERAL

Electrical

Cathode	Directly Heated.	
Heater voltage	12.6	V
Heater current	112	A
Heater surge current	250 (Max)	A
Cathode pre-heating time	3 (Minimum)	Min

Mechanical

Dimensions	See outline drawing (fig. 3)
Weight	15 lbs.
Mounting position	Vertical with R.F. gasket (fig. 4)
Support	Magnetic pole piece (fig. 5) (note 2)
Filament connectors	Fig. 6

MAXIMUM AND MINIMUM RATINGS (ABSOLUTE VALUES)

These ratings cannot necessarily be used simultaneously, and no individual rating should be exceeded.

	Min	Max	
Heater current	110	120	A
Heater surge current	---	250	A
Anode voltage (note 4)	---	18	KV
Anode current	2	6	A
Input power	---	108	KW
Outlet water temperature	---	50	°C
V.S.W.R. At output of waveguide transition (note 5)	---	1.1:1	---
Pressurizing of waveguide	14	---	lbs/sq. in

TYPICAL OPERATION

Operational Conditions

Electro magnet current (note 6)	5.0	A
Heater voltage	9.5	V
Heater current (note 1)	85	A
Anode current	5.0	A

TYPICAL PERFORMANCE

Anode voltage	17	KV
Output power (note 7)	75	KW

TEST CONDITIONS AND LIMITS

The magnetron is tested to comply with the following specification.

Test Condition	Anode Voltage KV	Anode Current A	VSWR
1	17	5.0	1.1:1

LIMITS

Test	Po	Frequency-915		Frequency-896	
	Min	Min	Max	Min	Max
1	75	905	925	886	906

NOTES

1. The heater current must be reduced within 5 seconds after the start of oscillation according to the schedule in fig. 2.

2. The tube can be mounted in the standard 25-30 Kw waveguide transition-electromagnet.

3. A water flow of at least 3.0 gpm must be used to cool the anode of the tube. Cooling air flow of 5 CFM for the cathode and 40 CFM for the dome must also be applied. All cooling circuits must be interlocked to shut the tube down in case of failure. Use of C.T.L. filament connectors and air duct is recommended. Operation of all cooling systems must be continued for 3 minutes after removal of H.V. and filament supplies.

4. The anode voltage ripple should be less than 0.5%. This can be accomplished with the use of a choke, or poly phase transformer.

5. The tube is burned-in with a VSWR of 3:1 varied through all phases. For optimum operation and life, the tube should be protected from high VSWR's by the use of a circulator.

6. The electromagnet current is adjusted for correct anode current. Refer to installation and operating instructions for more detail.

7. Other operating conditions are possible. Refer to installation and operating instructions or call the factory for more information.

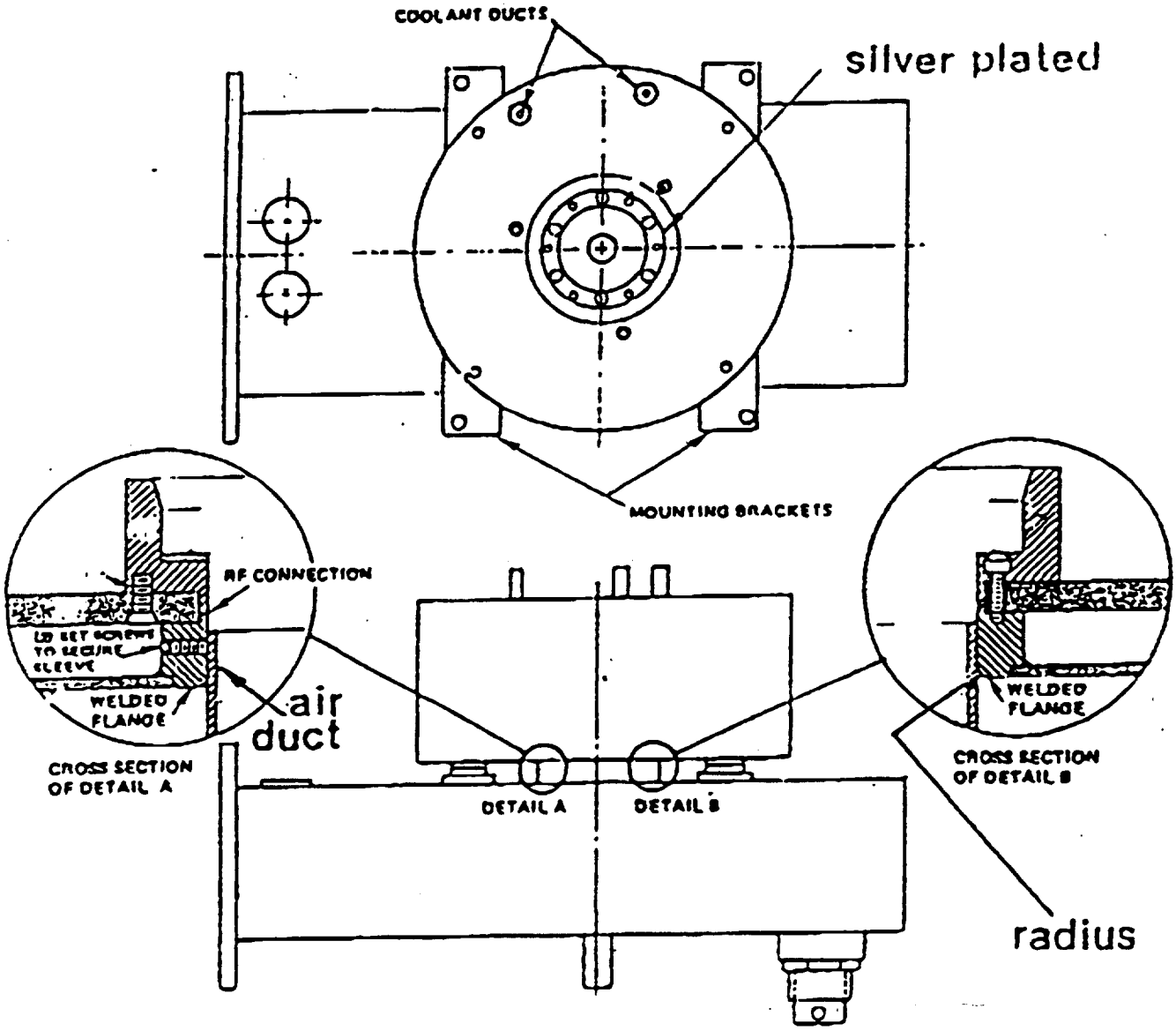
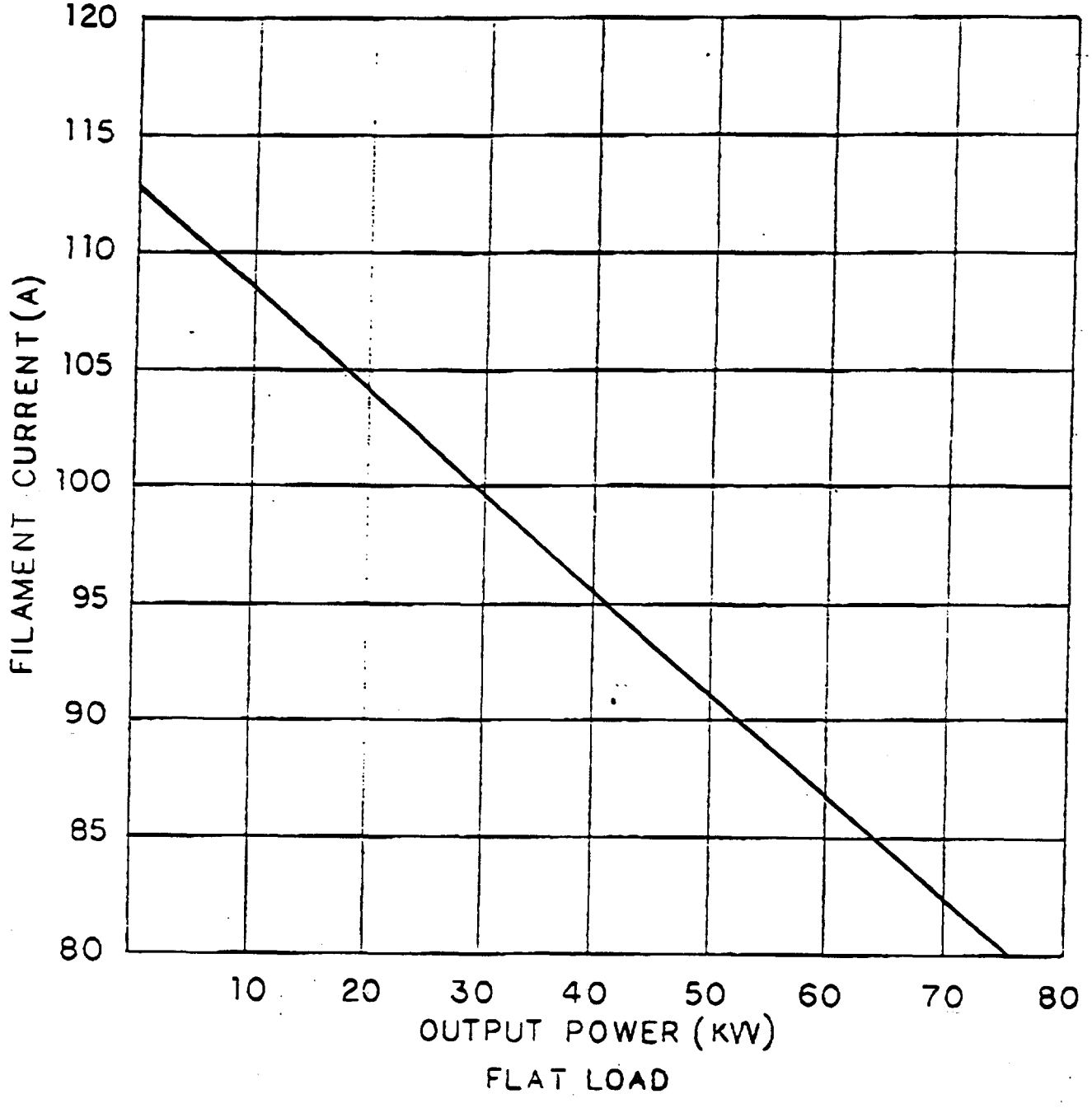
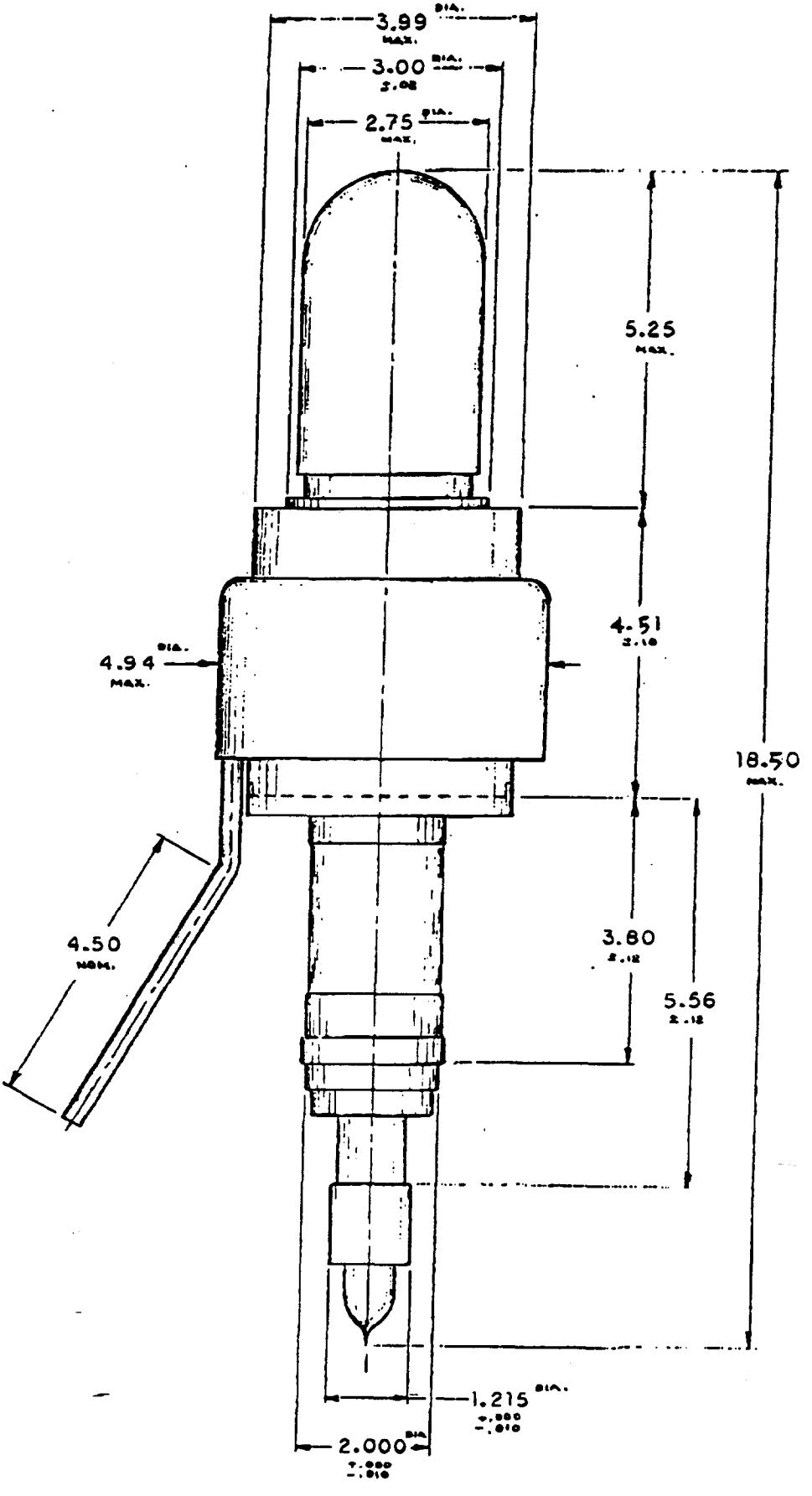

COOLANT DUCTS
silver plated
MOUNTING BRACKETS
RF CONNECTION
WELDED FLANGE
air duct
CROSS SECTION OF DETAIL A
DETAIL A
DETAIL B
WELDED FLANGE
CROSS SECTION OF DETAIL B
radius

FIG. 1



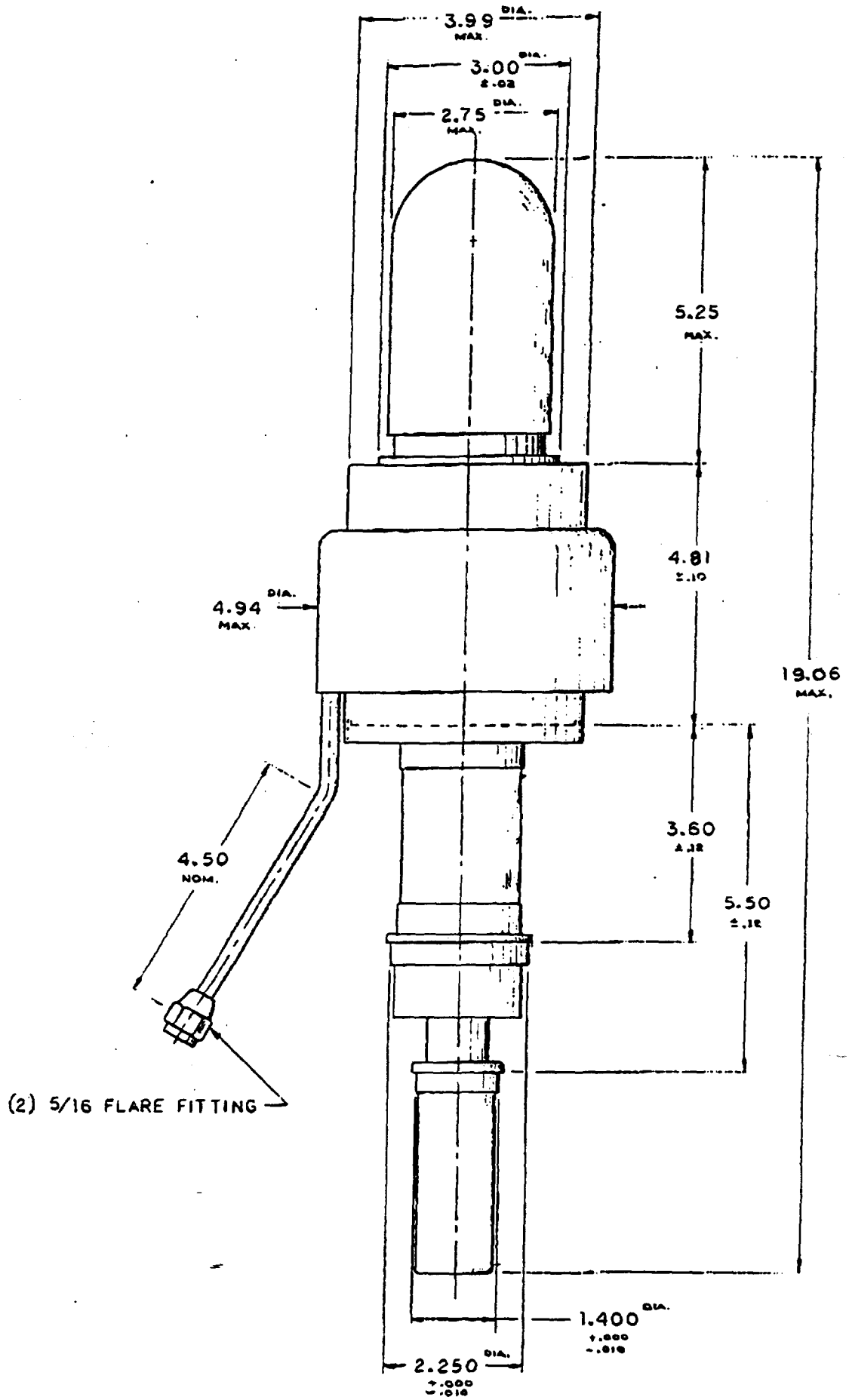
FILAMENT SCHEDULE

FIG. 2



OUTLINE DRAWING
STYLE 1

FIG. 3a



OUTLINE DRAWING

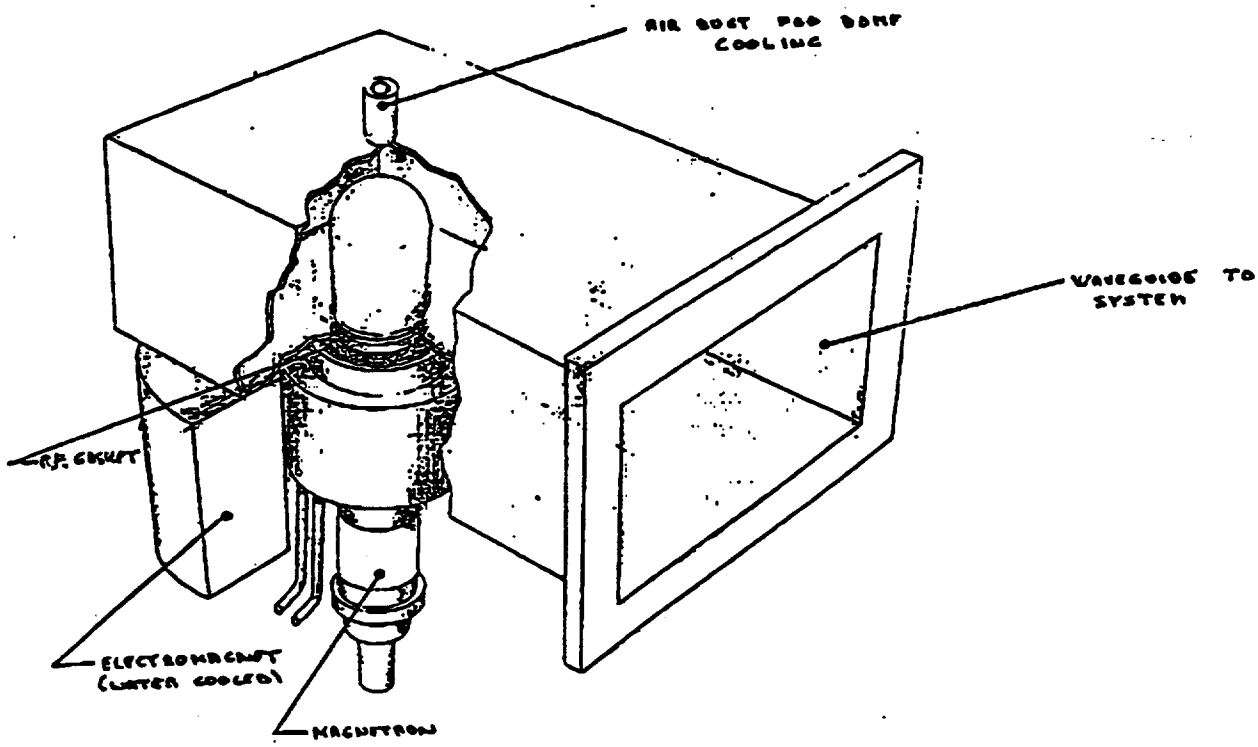


FIGURE 4

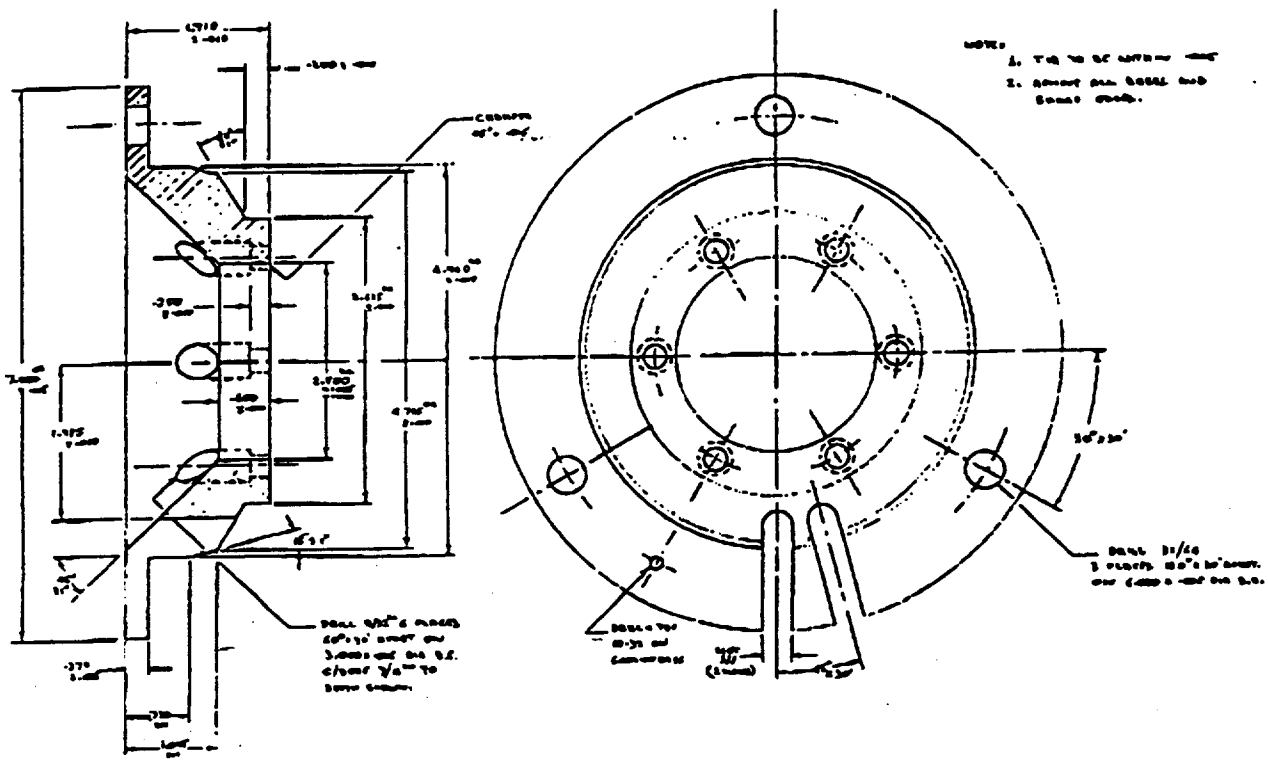
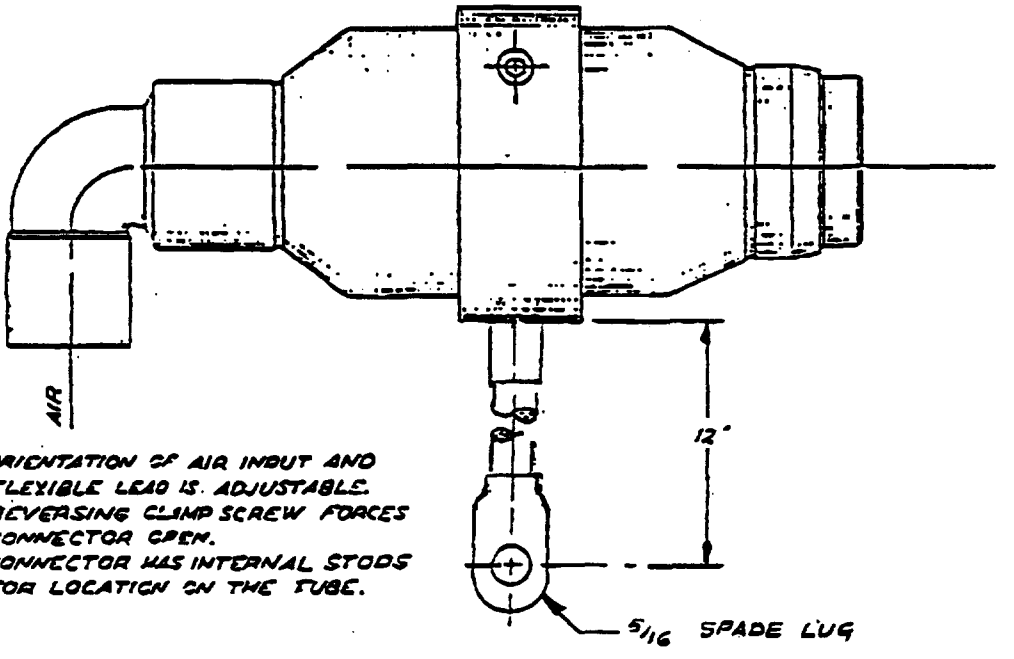
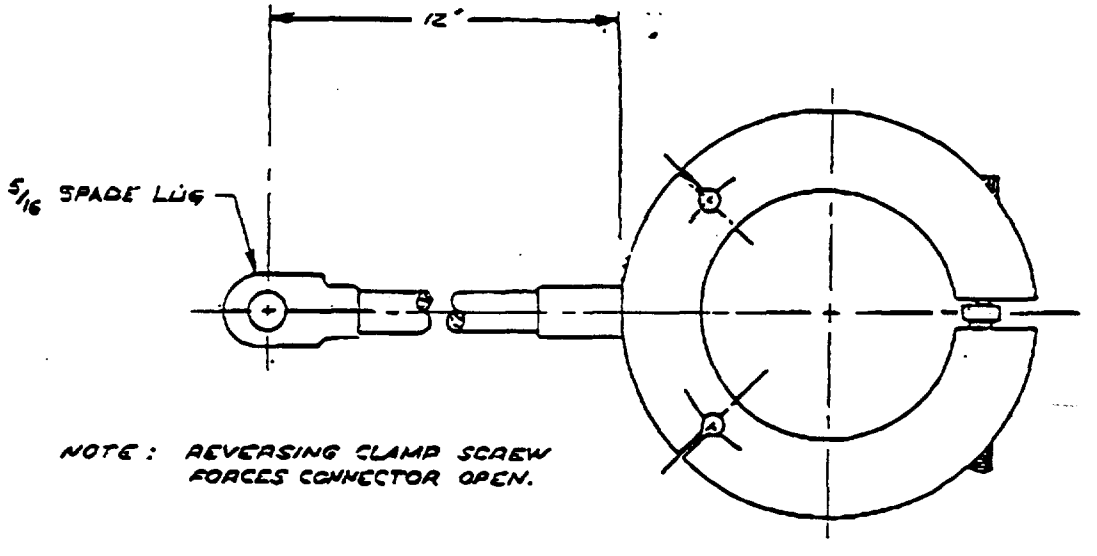


FIGURE 5

HEATER CONNECTOR



NOTE: 1. ORIENTATION OF AIR INPUT AND FLEXIBLE LEAD IS ADJUSTABLE.
2. REVERSING CLAMP SCREW FORCES CONNECTOR OPEN.
3. CONNECTOR HAS INTERNAL STOPS FOR LOCATION ON THE TUBE.



NOTE: REVERSING CLAMP SCREW FORCES CONNECTOR OPEN.

CATHODE CONNECTOR

FIGURE 6