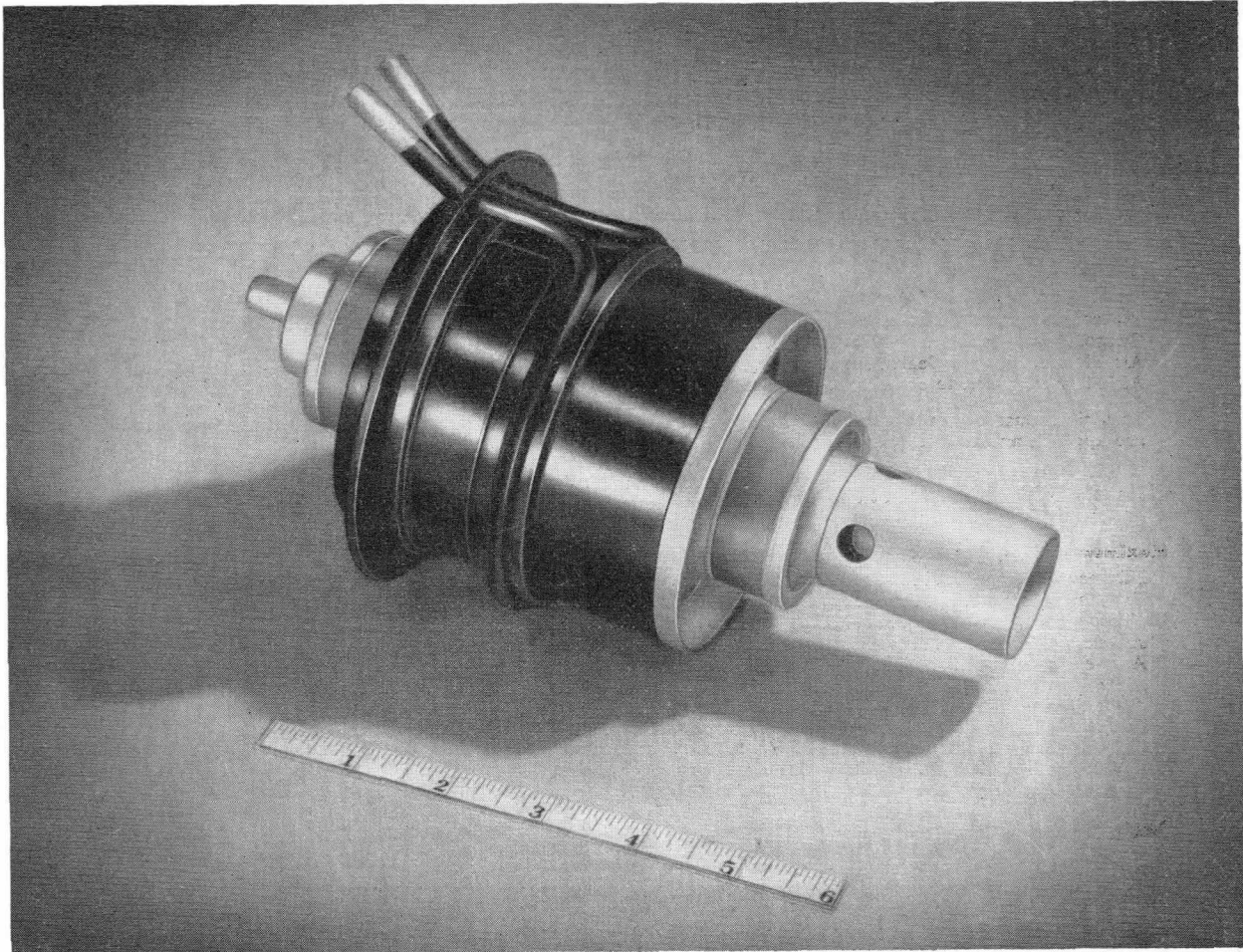




## CW MAGNETRON

METAL AND CERAMIC  
2.5 KILOWATTS OF CW POWER  
FOR DIELECTRIC HEATING

915 MEGACYCLES  
TUNGSTEN FILAMENT  
HIGH EFFICIENCY

### EXTERNAL MAGNET REQUIRED

The GL-6787 is a water and forced-air-cooled CW magnetron for use as a power source in dielectric heating. It can produce 2.5 kilowatts of useful power and operates at a fixed frequency

between 890 and 940 megacycles. An electromagnet connected in series with the plate power supply will provide the required external magnetic field.

### TECHNICAL INFORMATION

#### GENERAL

##### Electrical

|                                      |                            |         |
|--------------------------------------|----------------------------|---------|
| Preheat Filament Voltage*            | 12 <sup>+0.5</sup><br>-1.2 | Volts   |
| Preheat Filament Current at 12 Volts | 56 ± 5                     | Amperes |
| Minimum Preheat Time                 | .20                        | Seconds |
| Filament Cold Resistance             | 0.018                      | Ohms    |
| Anode-Cathode Capacitance            | 14                         | μmf     |

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## TECHNICAL INFORMATION (CONT'D)

## Mechanical

Mounting Position—Tube Axis Vertical—Cathode Up or Down

Mounting Support and Tube Connections—See K-69087-72A732 on page six for details.

Net Weight.....4.6 Pounds

## Thermal

Type of Cooling—Forced Air and Water

Water Flow through Tube, minimum.....2 Quarts per Minute

Outgoing Water Temperature.....70 Max C

Air Flow on Output Seal.....10 Cubic Feet per Minute

Air Flow on Cathode Structure.....10 Cubic Feet per Minute

Provision must be made to prevent application of filament or plate power to the tube before water and air cooling are applied, and to remove power in the case of cooling-system failure.

## MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

## Maximum Ratings, Absolute Values

Filament Voltage\*.....12.5 Volts

Filament Current.....61 Amperes

Filament Surge Current.....85 Amperes

Anode Voltage.....4100 Volts

Anode Current.....1.5 Amperes

Plate Input.....6000 Watts

Plate Dissipation.....3500 Watts

Outgoing Anode Cooling Water.....70 Max C

Cathode Stem Temperature.....200 Max C

(See Outline K-69087-72A731 on page seven for details)

Voltage Standing Wave Ratio—Presented by the Load.....3:1

## Typical Operating Conditions

Filament Voltage\*.....12.0 Volts

Filament Current.....55 Amperes

Frequency.....890 to 940 Megacycles

Anode Voltage.....3700 Volts

Anode Current.....1.10 Amperes

Power Output, minimum.....2.5 Kilowatts

Pulling Factor, VSWR 1.5:1.....2 Megacycles

Pushing Factor,  $I_b$  from 0.3 to 1.0 ampere.....2.6 Megacycles per Second

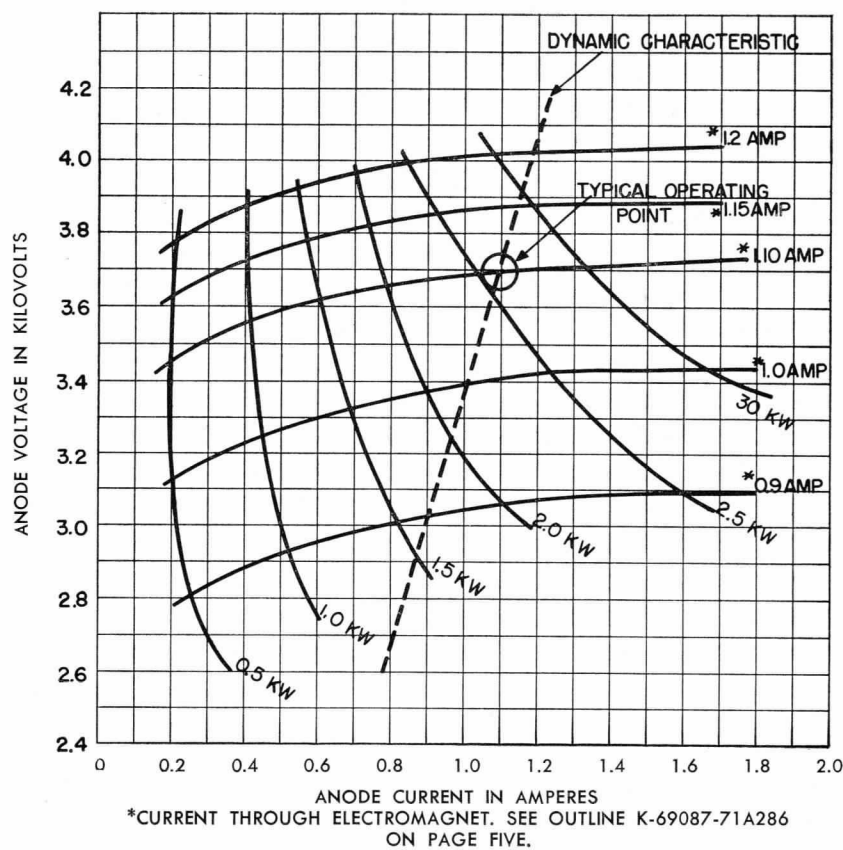
Thermal Coefficient of Temperature.....-0.07 Megacycles per Second

per C

Magnetic Field—See K-69087-71A286 on page five for details.

\* While the magnetron is oscillating, a portion of the input plate power (depending on load conditions) will cause the filament to overheat. Maximum life will be obtained by reducing the filament power during oscillation; if the loading changes rapidly, this reduction can best be done by an automatic control, otherwise, a manual correction may be used. The required reduction of power can be ascertained by decreasing the filament voltage until the hot filament resistance during oscillation is the same as that when the magnetron is not oscillating.

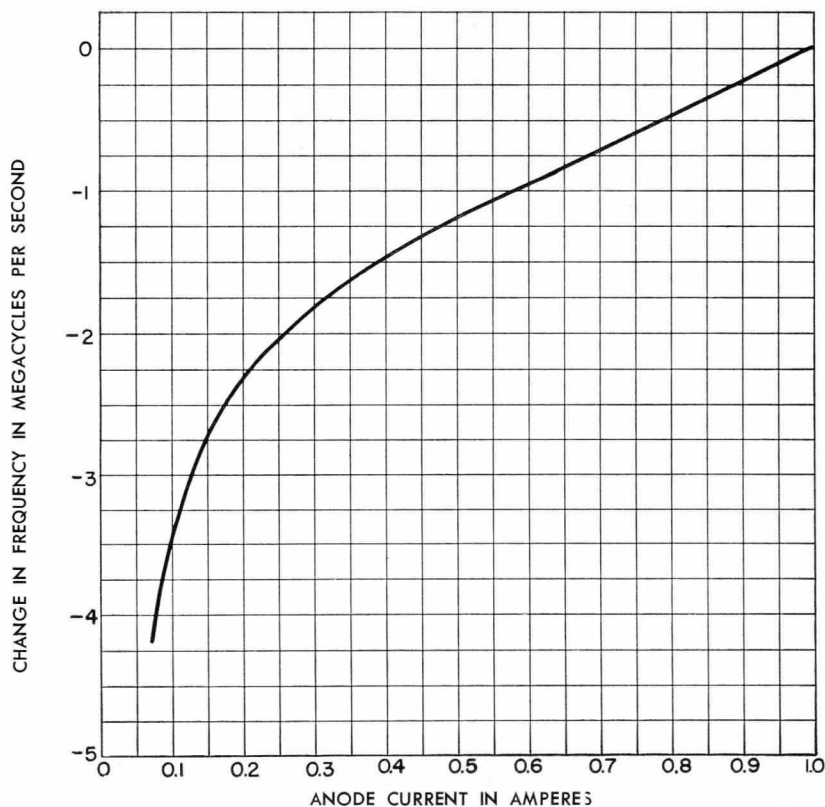
TYPICAL PERFORMANCE CHART



K-69087-72A734

2-24-56

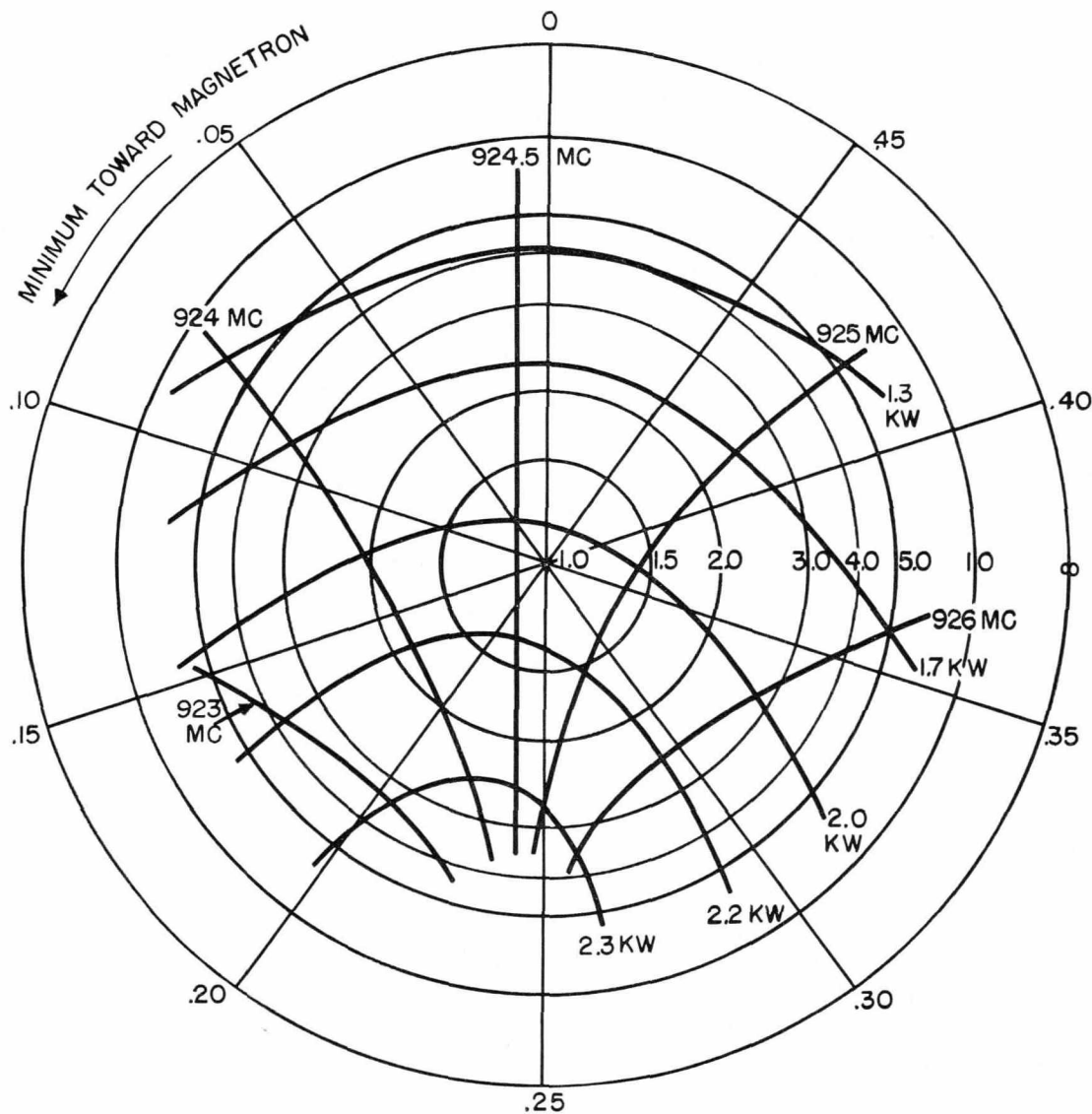
TYPICAL PUSHING CURVE



K-69087-72A735

11-9-55

RIEKE DIAGRAM



CONSTANT ANODE VOLTAGE = 3.3 KILOVOLTS.

ELECTROMAGNET—SEE OUTLINE K-69087-71A286 ON PAGE FIVE FOR DETAILS.

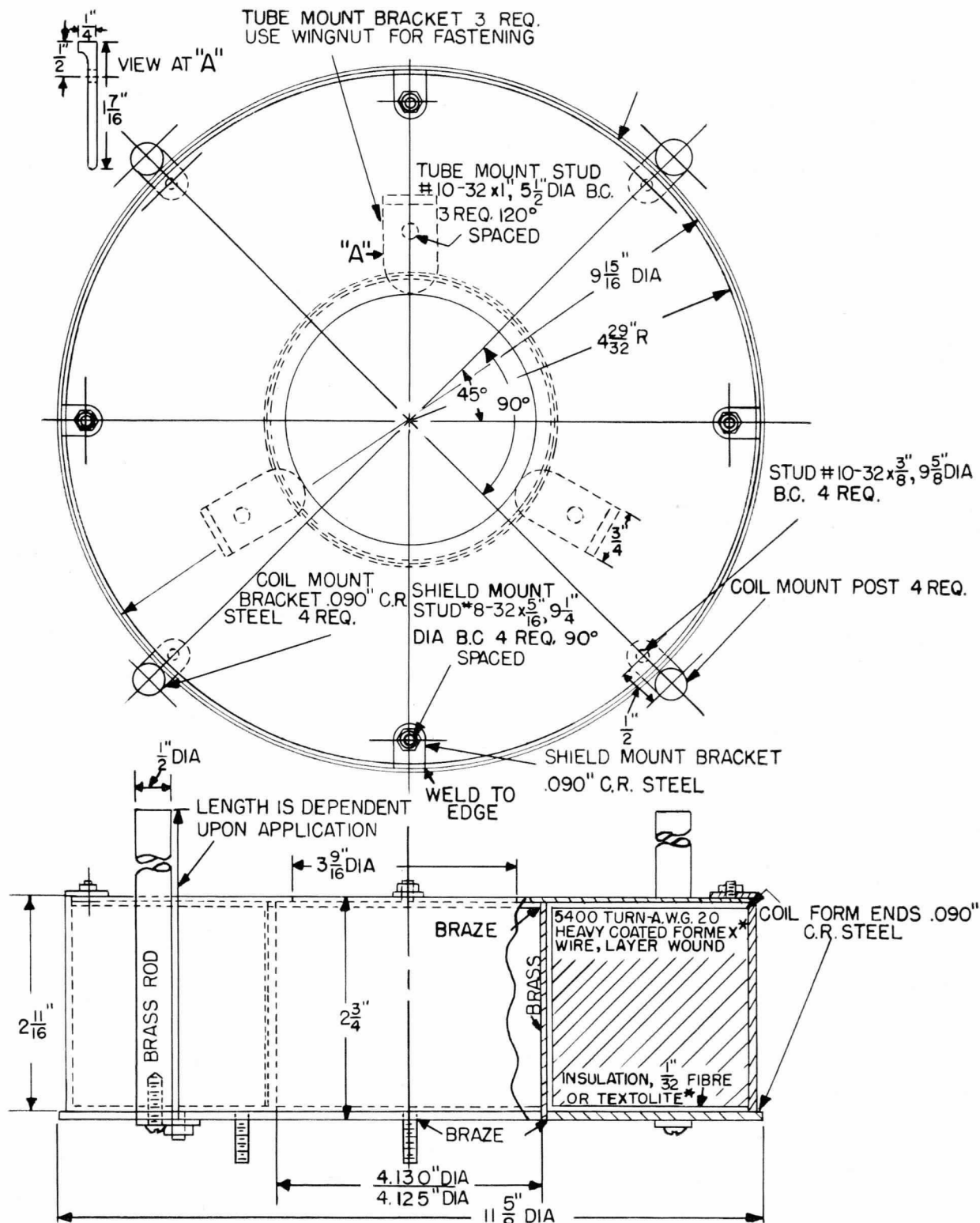
REFERENCE POINT IS  $1\frac{3}{8}$ " BELOW MOUNTING FLANGE (CENTER OF THE ANODE).

FIELD SHUNT RESISTANCE = 5 KILOHMS.

K-69087-72A733

2-22-56

## ELECTROMAGNET FOR GL-6787

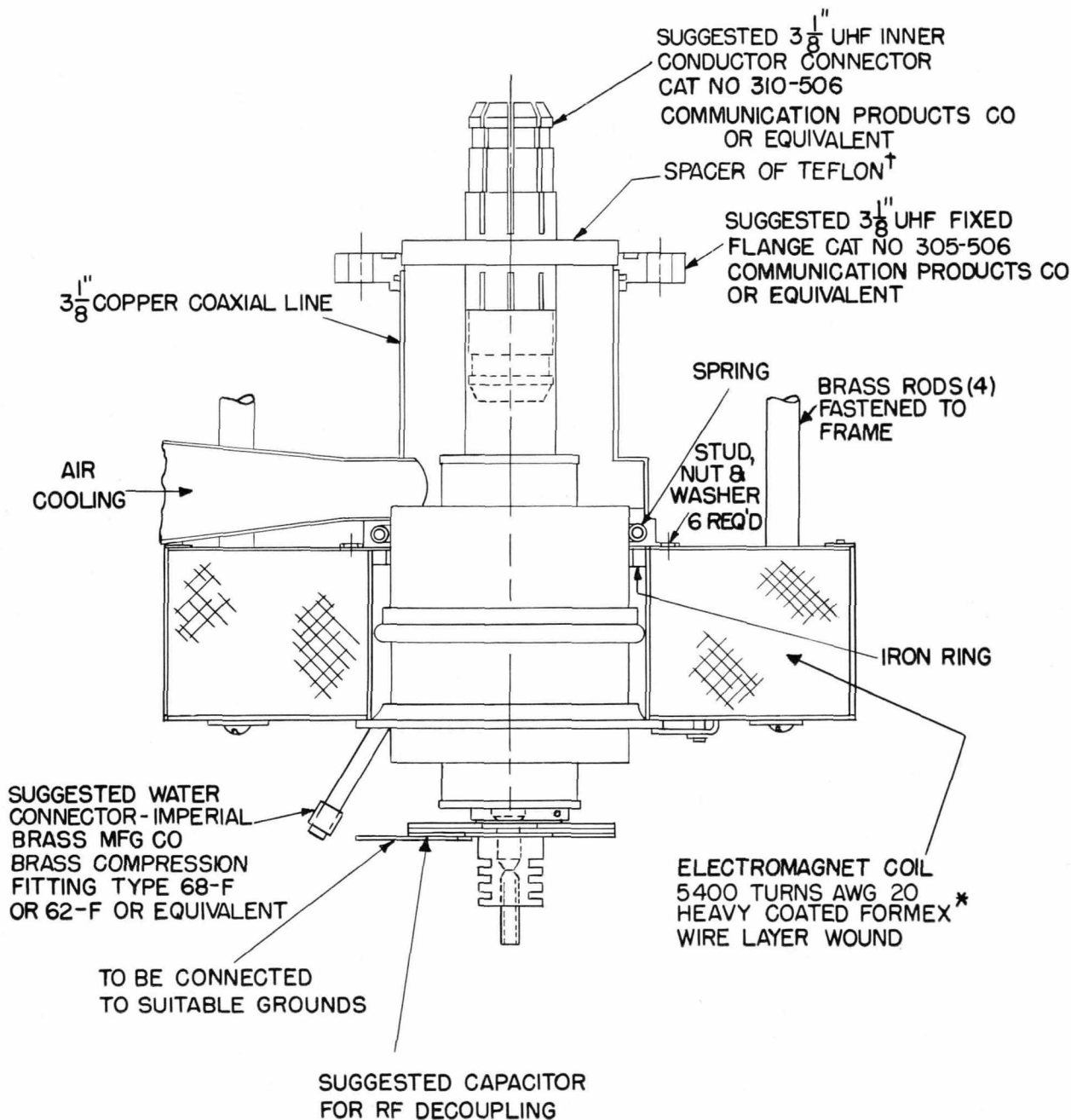


## NOTES:

1. ALL STUDS PROTRUDING FROM COIL FORM ARE SET INTO TAPPED HOLES, BRAZED, AND THEN GROUND FLUSH ON INSIDE OF FORM.

\*REGISTERED TRADEMARK OF GENERAL ELECTRIC COMPANY.

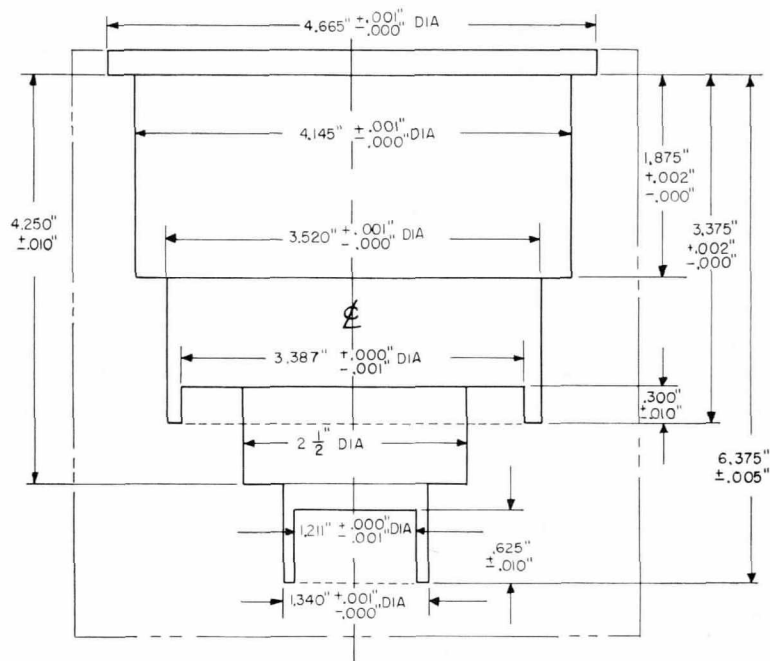
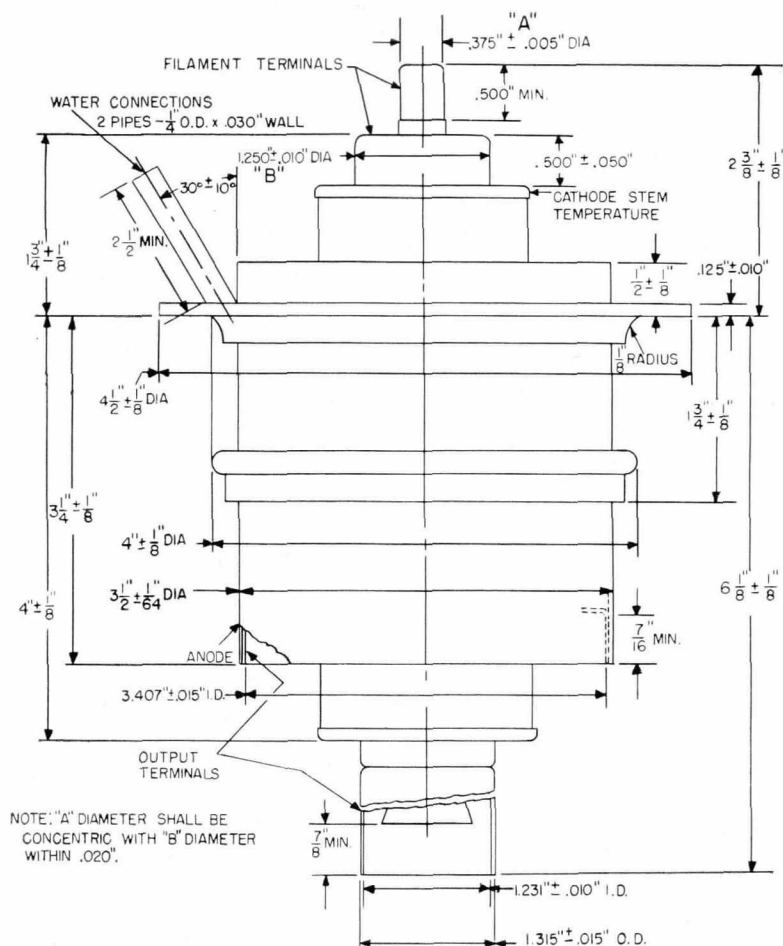
MOUNTING FOR GL-6787



\*REGISTERED TRADEMARK OF GENERAL ELECTRIC COMPANY.

†REGISTERED TRADEMARK OF E. I. du PONT de NEMOURS AND COMPANY, INC.

## OUTLINE



NOTE: THE CONCENTRICITY AND OVALNESS OF THE TUBE SHALL BE DEFINED BY THE ABOVE FIXTURE INTO WHICH THE TUBE SHALL FIT FREELY.

ALL DIAMETERS OF THE ABOVE FIXTURE SHALL BE CONCENTRIC WITH THE  $3.515" \pm .001"$  DIAMETER WITHIN .001".

ELECTRONIC COMPONENTS DIVISION

**GENERAL  ELECTRIC**

Schenectady 5, N. Y.