

PRODUCT DATA SHEET

VTP-7170 — VTP Ionization Gauge Tube

The VTP-7170 Ionization Gauge Tube is an all glass gauge tube designed for the maximum of reliability and reproduction of accurate readings. This tube type is externally similar to the VTP Type 7169 and differs only in the grid structure installed. The VTP-7170 is of all glass construction and may be attached to all glass vacuum systems by direct glass sealing or to either glass or metal vacuum systems by means of a port couple.

The VTP-7170 employs a grid surrounding the collector. The design of this grid structure is such that it can be easily outgassed by means of D.C. bombardment when connected to gauge controls designed for this method of element outgassing. The VTP-7170 is provided with three separately connected filaments providing the maximum in gauge reliability when used on large systems and where a shut-down for gauge tube replacement is costly.

GENERAL CHARACTERISTICS

Filaments (use filaments individually for maximum life) Three.
Filament Voltage (single filament) 5.0 Max. Volts
Filament Current 5.0 Max. Amps
Grid Voltage (Referenced to Filament) 500 Max. Volts
Grid Current (Emission Current) 40 Max. Ma.
Grid Power (Dissipation for outgassing) 20 Max. Watts
Collector Voltage (referenced to filament)..... 500 Max. Volts
Collector Current Varies with gas pressure
and directly with grid current.

When Filament is hot do not exceed following pressures.

Pressure Maximum (Corrosive gases or Nitrogen).....5 microns

Pressure Maximum (Noble gases or Hydrogen) 1.2 Atmospheres

Base Medium Moulded flare Septar 7 pin—RETMA E7-2

Basing: Pin No.	1	2	3	4	5	6	7
Element	F1F2	F1	G	C	G	F3	F2F3

Mounting (Mechanical) Portcouple or glass seal

Mounting Position Any

Bulb and Tubulation Glass Nonex—Corning #7720

TYPICAL OPERATION

Filament Voltage — Single Filament.

(Adjust to provide 5 Ma Emission to Grid).....Approx. 3.0 Volts

Filament Current (When obtaining Emission from one Filament) Approx. 4.0 Amps

Grid Voltage (Use Voltage Regulated supply)+150 Volts

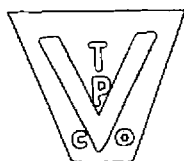
Grid Current (Adjust filament voltage to obtain this value).....5 Ma

Collector Voltage—30 Volts

Collector Current* (Depends on gas and gas pressure) 50 Microamps/micron
for Dry Air @ 5 Ma Grid Current.

GRID OUTGASSING OPERATION: Apply positive 400 Volts to Grid, with negative to filament. Adjust Filament Voltage to approx. 4.25 Volts or to allow 35 Ma of Grid Current to flow. Continue bombardment until the pressure reading measured is stable.

*NOTE: The sensitivity of the VTP-7170 may be increased to 100 μ a/micron of dry air by using a grid current of 10 milliamp. This may be done in either of two ways—(1) Use two filaments at one time to obtain 5 ma emission from either one—or (2) Increase the filament temperature of one filament to provide 10 ma emission.

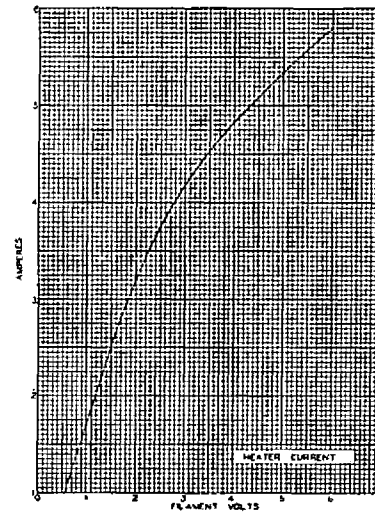
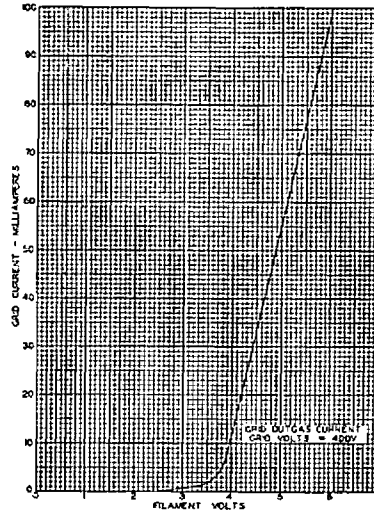
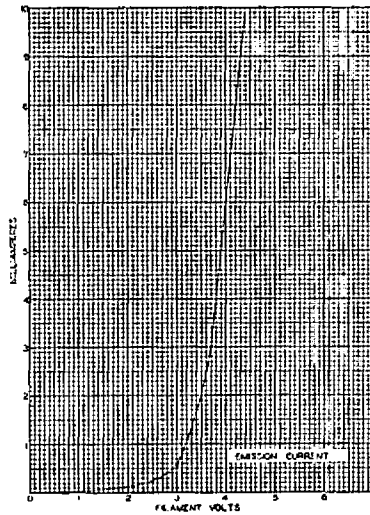
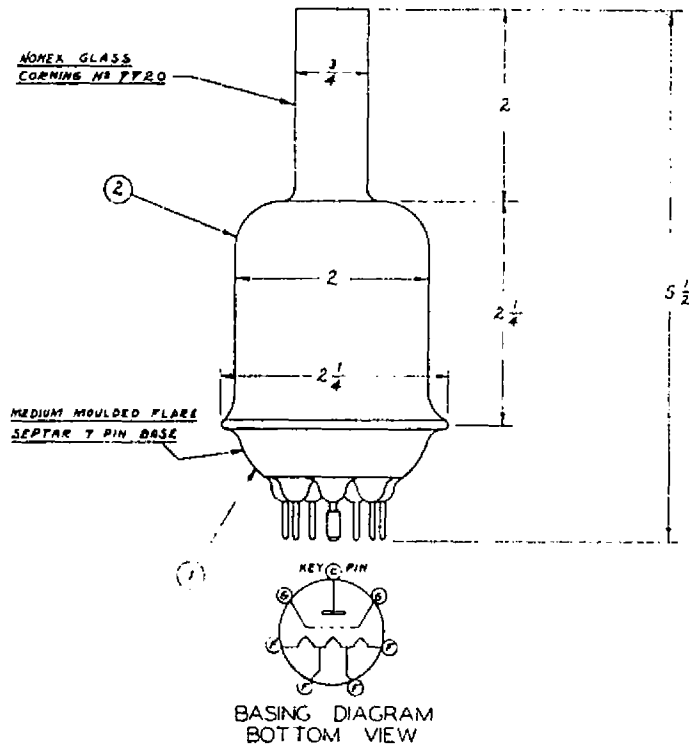


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