VACUUM CHAMBER:

Top View

6" CF

2 1/4 CF

4 3/8" CF

2 3/4 CF

4 5/8" CF

4 5/8" CF

12" High

22" 10

(24" OD)

CHAMBER/PORT SIZES
VACUUM CHAMBER:
Top View

[Diagram of a vacuum chamber with labels for "Power", "O₂", "Heated Substrate", "YBCO Target", and "Quartz Window".]
VACUUM CHAMBER:
Top View

Ion Source

Feedthrus

photoresist patterned
 target
Elastomer Seals

Fig. 17.8 Elastomer seal geometries: (a) rectangular groove, (b) ISO-KF flanges with centring ring, (c) confined gasket, (d) dovetail groove, (e) L-gasket, (f) double gasket with differential pumping port.

Con-Flat Seal

Fig. 17.9 Metal gasket seal geometries: (a) wire seal; (b) confined gasket; (c) ConFlat type knife edge seal; (d) Helicoflex seal.
PUMPING SYSTEM
11 ■ Gate Valves

MODELS SG (MV) and SG (PV)

These stainless steel gate valves are reliable, economical, general purpose valves for HV and UHV service. The Conflat-flanged valves are available from \( \frac{3}{8} \)" to 12" bore.

All valves have Viton O-ring seals for the gate and all have bellows sealed actuators. The bonnet seals (which seal the bellows to the body of the valve) can be either Viton O-ring or OFHC copper gasket. All valves are available with either manual or pneumatic actuators. All pneumatic valves are supplied complete with the appropriate 115 VAC solenoid valve at no extra charge.

They have high concussance and are compact because of a short stroke actuator used in the design. The gate carriage is an anti-scuff design to protect the O-ring seal during operation. The useful pressure range of these valves is from atmosphere to \( 10^{-15} \) torr for the metal bonnet seal and \( 10^{-5} \) torr for Viton seal models.

The electro-pneumatic versions will close, or remain closed, on power loss. If already closed, the valve will also stay closed upon loss of air pressure.

The valves can be baked to 200°C under vacuum in the open position and to 120°C with the valve closed. (The pneumatic cylinder should be excluded from the bakeout zone.)
Pump

Turbo molecular
Pressure Gauging/Control

Atm $\rightarrow 10^{-6}$ or $5 \times 10^{-7}$ Torr

($760$ torr $= 1$ atm)

Atm $\rightarrow 1$ torr

Capacitor Manometer

1 torr $\rightarrow 10^{-10}$ torr

Cold Cathode Gauge
PRESSURE GAUGING/CONTROL SYSTEM
FIGURE 3-1
Basic Gas Inlet Pressure Control System
COLD CATHODE TUBE DESIGNS
Figure 1
INTERNAL MOUNT SYSTEM

- Viewport Cover (removable)
- Target Holder
- Arms have connectors to ½" rod mount system
- 3 collars slip over center rod
- Feet rest on baseplate
- 6" Cover
- 4" Pumping Hole