 August 13, 2012

Prepared By: David B. Augustine

Specification: Vacuum 3 inch Gate Valve Specification for Proton Improvement Plan

The longitudinal width of the valve shall not exceed 3.625. This dimension can be a little shorter but must be approved in advance.

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| --- | --- | --- | --- | --- |
| Aperture | size | 3 inch clear through valve |  |  |
| Material | Body, Carriage, and Gate | 300 Series Stainless Steel |  |  |
| Material | Bellows | AM-350 Stainless Steel |  |  |
| Material | Air Cylinder | Teflon Coated Aluminum |  |  |
| Material | Bolts | 300 Series Stainless Steel |  |  |
| Material | Vacuum Flange | Fermi Drawing | 0315-MB-19022 |  |
| Gasket | Bonnet UHV | OFE Copper |  |  |
| Gasket | Gate | O-ring EPDM colorized series purple | DO NOT use silicone grease on this O-ring, high outgas rate.  | Higher radiation resistance than Viton |
| Gasket | Piston | O-ring EPDM colorized series purple | Lubricate piston chamber and piston seal ONLY with Dow Corning Silicone Stopcock grease. | Higher radiation resistance than Viton |
| Electropneumatic Actuator | Air Pressure | 70 to 100 psig |  |  |
| Electropneumatic Actuator | Solenoid Power | 120 Vac, 60 hz | No diode in solenoid coil | Will not survive in radiation field |
| Electropneumatic Actuator | Power Loss | Valve closes | Mechanically locks when closed, no air pressure required to remain leak tight. |  |
| Electropneumatic Actuator | Position Indicators | Mechanical, Vernier adjustable, hinged-roller type micro switches suitable for 5A, 120/240 Vac | Open and Close |  |
| Vacuum | Range | 1x10-11 | Torr |  |
| Vacuum | Leak test | 2x10-10 | Cc/sec Helium |  |
| Temperature | Bakeability | Open or closed | 150 Celsius |  |
|  |  |  |  |  |

Suggested Valve Body

From MDC Web Site



Fermi Drawing of Booster Vacuum flanges



Clamp for flange above is

VOSS 514503H-438-BA

6-93

Conceptual Design Drawing by MDC, August 9, 2012

