

Specifications

Item 1 Description:

2" control valve, Masoneilan globe style control valve, for service in high pressure dry clean air with equal percentage trim, and a full-open flow factor Cv of 35. The Government has a motivation to utilize a Masoneilan globe valve because the existing facility process system currently utilizes Masoneilan products. The selection of a Masoneilan product will minimize the required spare parts inventory that the Government must maintain at the facility. The valve shall have a "flow to close" configuration where the inlet flow acts to push the valve plug into the seat. The valve body shall be rated for 5000 psig over the temperature range from -20 F to 100 F. The valve shall be supplied with 2" Grayloc 2 GR20 (Grayloc part number 52115D) end connections rated for the same pressure / temperature combination. The valve seats shall be capable of a Class V leakage rate against a 5000 psig differential pressure in both directions. The valve shall be supplied with a REXA Electraulic™ operator. The operator shall be supplied with an accumulator and solenoid-operated valve that drives the valve shut on loss of hydraulic pressure or loss of power to the solenoid. The operator shall be capable of driving the valve shaft to the fully open or closed positions at a minimum speed of 2 inches per second and shall have a corner frequency greater than 5 Hertz, a positioning repeatability of less than 0.1%, and a linearity capability of less than 0.05%. The operator shall provide a 4-20 mA output signal to indicate the valve position (from full closed to full open) to a NASA supplied PLC and shall accept a 4-20 mA input valve position command from the NASA PLC. The operator shall include 24 VDC open and closed limit switches to signal the valve has reached its full closed and full open positions. . The vendor shall provide NASA an iges or stp file that accurately represents the valve and valve operator external dimensions for incorporation into NASA AutoCad design drawings.

The design conditions for this valve are:

Minimum Flow Condition:

Flow rate = 0.9 lb/sec

Pinlet = 3500 psia

Poutlet = 55.6 psia

Maximum flow condition:

Flow rate = 45 lb/sec

Pinlet = 3500 psia

Pout = 2840 psia

The NASA supply piping will consist of 4" Schedule XXS pipe which is reduced to 2" XXS just upstream of the new valves' Grayloc connection (rated for 5000 psig) at the valve inlet. Downstream of the new valves' outlet Grayloc connection the piping is then increased back to 4" Schedule XXS.

The tag numbers for these valves shall be V3579A and V3580A.

Quantity 2 each

Item 2 Description:

1/2" control valve, Masoneilan model XX-21114 globe style control valve, for service in high pressure dry clean air with linear trim, a full open flow factor Cv of 3.8. The Government has a motivation to utilize a Masoneilan globe valve because the existing facility process system currently utilizes Masoneilan products. The selection of a Masoneilan product will minimize the required spare parts inventory that the Government must maintain at the facility. The valve shall have a "flow to close" configuration where the inlet flow acts to push the valve plug into the seat. The valve body shall be rated for 5000 psig over the temperature range from -20 F to 100 F. The valve shall be supplied with 1" Grayloc 1 GR7 (Grayloc part number 53227D) 1" Grayloc end connections rated for the same pressure / temperature combination. The valve seats shall be capable of a Class V leakage rate against a 5000 psig differential pressure in both directions. . The valve shall be supplied with a REXA Electraulic™ operator. The operator shall be supplied with an accumulator and solenoid-operated valve that drives the valve shut on loss of hydraulic pressure or loss of power to the solenoid. The operator shall be capable of driving the valve shaft to the fully open or closed positions at a minimum speed of 2 inches per second and shall have a corner frequency greater than 5 Hertz, a positioning repeatability of less than 0.1%, and a linearity capability of less than 0.05%. The operator shall provide a 4-20 mA output signal to indicate the valve position (from full closed to full open) to a NASA supplied PLC and shall accept a 4-20 mA input valve position command from the NASA PLC. The operator shall include 24 VDC open and closed limit switches to signal the valve has reached its full closed and full open positions. The vendor shall provide NASA an iges or stp file that accurately represents the valve and valve operator external dimensions for incorporation into NASA AutoCad design drawings.

The design conditions for this valve are:

Minimum Flow Condition:

Flow rate = 0.3 lb/sec

Pinlet = 3500 psia

Poutlet = 318 psia

Maximum flow condition:

Flow rate = 4.0 lb/sec

Pinlet = 3500 psia

Pout = 3000 psia

The NASA supply piping will consist of 1" Schedule 160 pipe connecting directly to the 1" hub at the valve inlet and outlet. The Grayloc connections at the valve inlet and exit shall be rated for 5000 psig.

The tag number for this valve shall be V3574A.

Quantity 1 each