



For 3 Way control of hot water or chilled water up to 50%Glycol.

Description



The **Contoured Port Series** are actuated **Ball Valves** that can provide digital or analog control of hot and chilled water systems containing up to 50% glycol. Each unit is comprised of a rotary actuator and linkage assembly coupled to a valve body that offers positive close off and low torque. The **Contoured Port Ball**, incorporates an integral permanently attached glass filled polymer to achieve a wide range of Cv's by offering a variety of orifices.

Valve sizes range from 1/2 inch to 2-1/2 inches with a Close-Off pressure of 100 PSIG. These low profile, compact units can be installed with ease in the often tight, restricted areas found in unit ventilators, fan coils, terminal reheat coils and larger air handlers.

The three way valve is specifically designed for throttling service and operates in a vertical plane much like a globe valve.

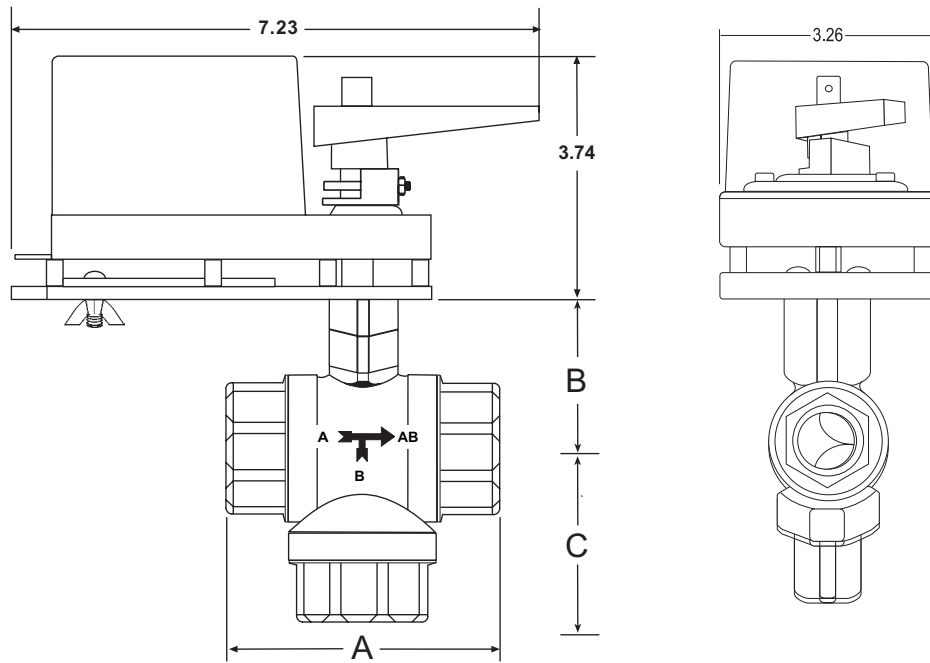
Note: Images include rendering of the permanently attached glass filled polymer as an integral part to the Contoured Port Ball Series Valve.

Specifications

Valve Flow Type:	Modified Linear (Mixing)
Static Pressure & Temperature:	360 PSI, -22°F to +250°F (-30°C to +121°C)
Differential:	35 PSIG Maximum
Maximum Close-Off Pressure:	100 PSIG Maximum
Body:	Forged Brass ASTM B283
Ball & Stem:	Nickel Plated Brass & Brass
Flow Contoured Insert:	Glass Filled Polymer
Stem Seals:	EPDM "O" Rings
Seat:	Reinforced Teflon Seals with EPDM "O" Rings
End Connections:	NPT Female

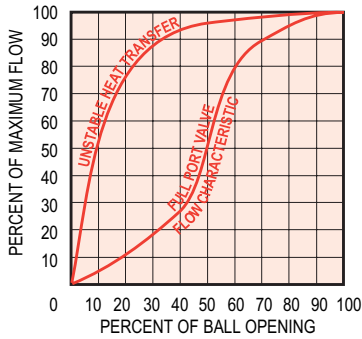


3 Way, NPT Female

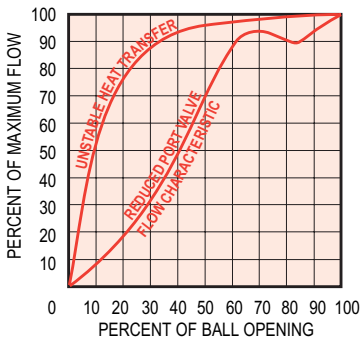


VALVE SIZE	A	B	C
1/2"	2.64	2.51	2.01
3/4"	2.64	2.51	2.00
1"	3.00	3.01	2.42
1-1/4"	3.60	3.26	3.00
1-1/2"	4.00	3.76	3.30
2"	5.00	5.01	3.80
2-1/2"	5.00	5.01	3.80

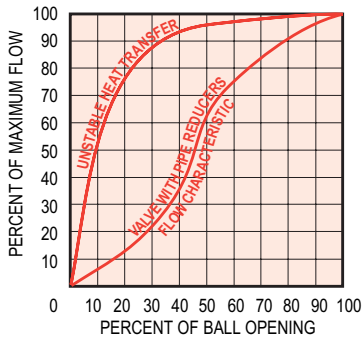
* All dimensions are in Inches.



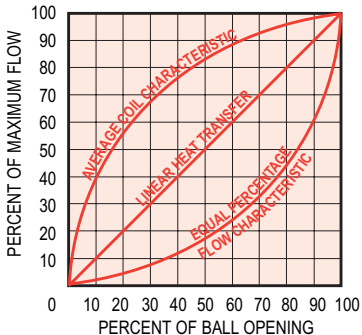
The large Cv rating of **FULL PORT VALVES** is caused by the shape and size of the orifice and results in a distorted flow characteristic, an unstable heat transfer and an “all or nothing” flow. The valve opens quickly and has a very small pressure drop. This is used for 2 position control where a low pressure drop is desirable. It is not recommended for proportional control.



Using the **REDUCED PORT VALVE** results in a smaller opening through the ball and gives a smaller Cv with a higher pressure differential yet the flow characteristic is still distorted. A stable control under these conditions will be difficult to achieve.



PIPE REDUCERS reduce the Cv due to the piping geometry but this also distorts the characteristic. As in the full and reduced port ball valves, pipe reducers cause unstable heat output that increases far too quickly as the valve opens.



The **NEPTRONIC SOLUTION** is the **CONTOURED PORT BALL VALVE**. The characterized “V” style port allows for a more gradual equal percentage curve that is controllable for the full stroke of the valve. This results in a high rangeability and a greater turn down ratio for more accurate flow control.

As you can see in the graph at the left, the equal percentage characteristic of the **CONTOURED PORT BALL VALVE** mirrors the average coil characteristic resulting in linear heat transfer.

Model Selection Tables

Select the appropriate valve model from Table 1. Each may be used with any of the six actuators described in Table 2. Select the appropriate actuator model. The actuator model selected from Table 2, is added as a suffix to the valve model selected from Table 1 to form a complete actuated valve model. Refer to the formula in Table 3.

TABLE 1: VALVE SELECTION

VALVE SIZE		VALVE FLOW		3 WAY VALVE MODELS	PORT CONFIGURATION		TOTAL WEIGHT	
IN.	MM.	Cv	Kv		REDUCE	INSERT	LB.	KG.
1/2	15	0.3	0.3	ST A0003YP1		x	3.5	1.6
1/2	15	0.6	0.5	ST A0006YP1		x	3.5	1.6
1/2	15	1.0	0.9	ST A0010YP1		x	3.5	1.6
1/2	15	2.4	2.1	ST A0024YP1		x	3.5	1.6
1/2	15	4.3	3.7	ST A0043YP1		x	3.5	1.6
1/2	15	8.0	6.7	ST A0080YP1	x		3.5	1.6
3/4	20	3.8	3.3	ST B0038YP1		x	4.0	1.8
3/4	20	12.6	10.8	ST B0126YP1	x		4.0	1.8
1	25	8.6	7.4	ST C0086YP1		x	5.0	2.3
1	25	22	18.9	ST C0220YP1	x		5.0	2.3
1-1/4	32	12.7	10.9	ST D0127YP1		x	7.0	3.2
1-1/4	32	34	29	ST D0340YP1	x		7.0	3.2
1-1/2	40	23.5	20	ST E0235YP1		x	8.5	3.9
1-1/2	40	61	52	ST E0610YP1	x		8.5	3.9
2	50	38	33	ST F0380YP1		x	10.0	4.6
2	50	108	93	ST F1080YP1	x		10.0	4.6
2-1/2	64	74	63	ST G0740YP1		x	12.0	5.5
2-1/2	64	99	85	ST G0990YP1	x		12.0	5.5

TABLE 2: ACTUATOR SELECTION

ACTUATOR MODELS	BT000S	BT020S	DT060S	DT080S	BM000S	DM060S
CONTROL SIGNAL	2 Position 3 Pt. Floating	2 Position 3 Pt. Floating	2 Position 3 Pt. Floating	2 Position 3 Pt. Floating	2-10VDC 4-20mA	2-10VDC 4-20mA
FEEDBACK	No	No	No	No	No	No
ENERDRIVE SYSTEM	No	No	Yes	Yes	No	Yes
MECH. AUX. SWITCHES	No	Yes	No	Yes	No	No

TABLE 3: ACTUATED VALVE FORMULA

FORMULA:	3 WAY VALVE	+	ACTUATOR	=	ACTUATED VALVE
Specification Requirements :	1 inch Line Size, Mixing Service, 8.6 Cv Nickle Plated Brass Ball & Stem NPT Female Connections	+	3 Point Floating Control and Fail Safe	=	Digital, 1 inch 3 Way Ball Valve with Enerdrive, Standard Trim, NPT Female Connections
Selected from the Tables :	ST C0086YP1	+	DT060S	=	ST C0086YP1 DT060S