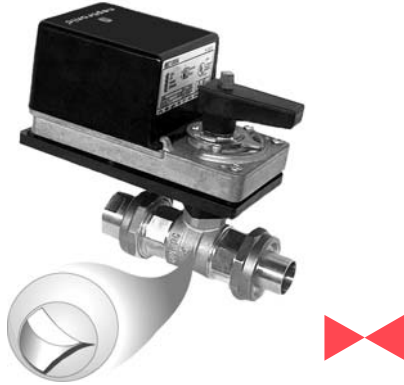




For 2 Way control of hot water or chilled water up to 50%Glycol.

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 3 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.

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:	Equal Percentage
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, Respectively, or Stainless Steel
Flow Contoured Insert:	Glass Filled Polymer
Stem Seals:	EPDM "O" Rings
Seat:	Reinforced Teflon Seals with EPDM "O" Rings
End Connections:	Standard NPT Female or Double Union
Couplings:	NPT Female or Sweat for Double Union Valves

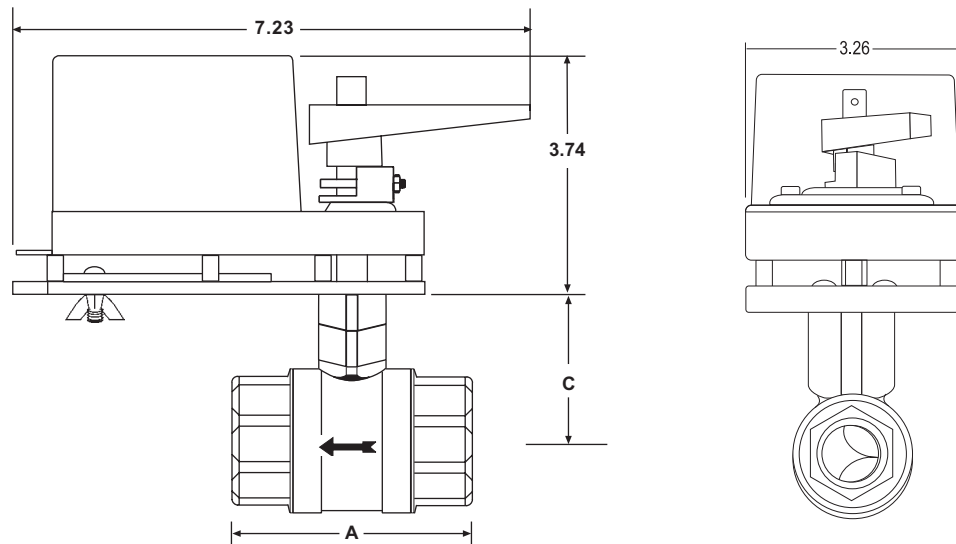
DIMENSIONS

2 WAY CONTOURED PORT BALL VALVES

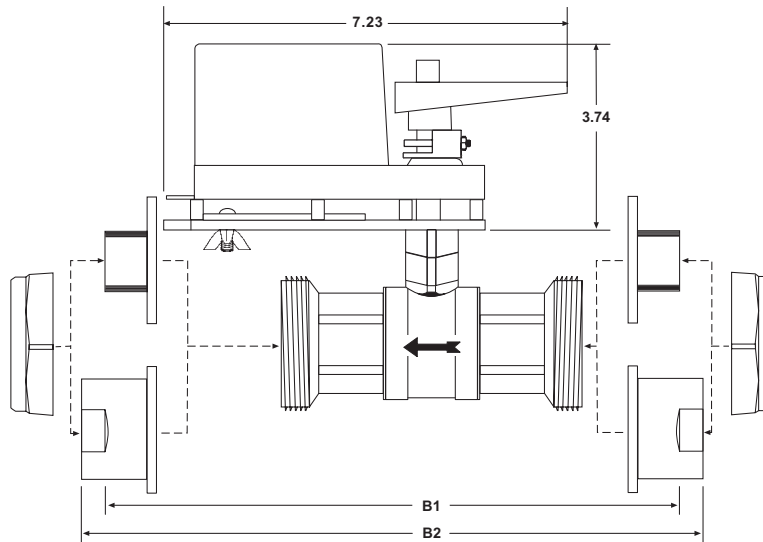
neptronic®



2 Way, NPT Female

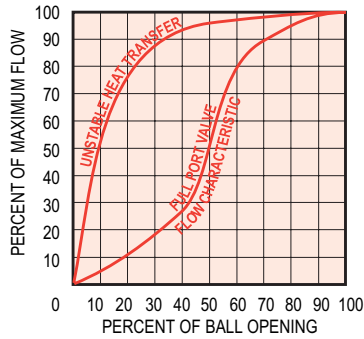


2 Way, Double Union

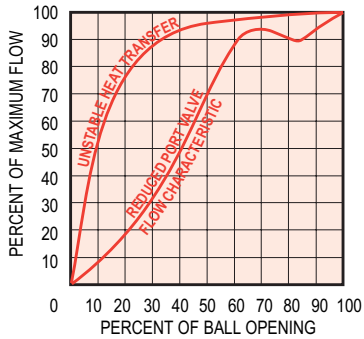


VALVE SIZE	A STANDARD NPT FEMALE	B1 DOUBLE UNION SWEAT	B2 DOUBLE UNION NPT FEMALE	C STANDARD EXTENSION
1/2"	2.37	4.45	5.01	2.40
3/4"	2.64	5.61	5.11	2.52
1"	3.05	6.05	7.55	2.62
1-1/4"	3.60	7.36	7.36	2.88
1-1/2"	3.70	7.88	7.76	3.36
2"	4.41	9.16	11.00	3.57
2-1/2"	4.70	N/A	N/A	3.57
3"	5.02	N/A	N/A	3.57

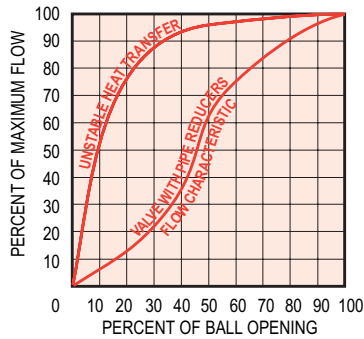
* All dimensions are in inches.



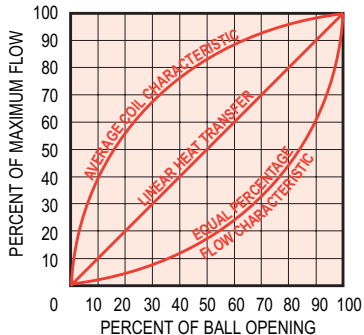
The large Cv rating of **FULL PORT VALVES** is caused by the shape and size of the orifice and results in a distorted flow characteristic, an unstable heat transfer and an “all or nothing” flow. The valve opens quickly and has a very small pressure drop. This is used for 2 position control where a low 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

In Table 1, the various models listed designate the size, flow rate, type of connections and couplings and the trim of the valves. Select the appropriate valve model. 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		CP VALVE MODELS WITH STANDARD TRIM			CP VALVE MODELS WITH STAINLESS STEEL TRIM			TOTAL WEIGHT	
IN.	MM.	Cv	Kv	STANDARD NPT FEMALE CONNECTIONS	DOUBLE UNION CONNECTONS NPT FEMALE COUPLINGS	DOUBLE UNION CONNECTONS SWEAT COUPLINGS	STANDARD NPT FEMALE CONNECTIONS	DOUBLE UNION CONNECTONS NPT FEMALE COUPLINGS	DOUBLE UNION CONNECTONS SWEAT COUPLINGS	LB.	KG.
1/2	15	0.4	0.3	CP A0004YP1	CP A0004YP2	CP A0004YP3	CP A0004YS1	CP A0004YS2	CP A0004YS3	3.5	1.6
1/2	15	0.7	0.6	CP A0007YP1	CP A0007YP2	CP A0007YP3	CP A0007YS1	CP A0007YS2	CP A0007YS3	3.5	1.6
1/2	15	1.4	1.2	CP A0014YP1	CP A0014YP2	CP A0014YP3	CP A0014YS1	CP A0014YS2	CP A0014YS3	3.5	1.6
1/2	15	2.6	2.2	CP A0026YP1	CP A0026YP2	CP A0026YP3	CP A0026YS1	CP A0026YS2	CP A0026YS3	3.5	1.6
1/2	15	5	4.3	CP A0050YP1	CP A0050YP2	CP A0050YP3	CP A0050YS1	CP A0050YS2	CP A0050YS3	3.5	1.6
3/4	20	10	8.5	CP B0100YP1	CP B0100YP2	CP B0100YP3	CP B0100YS1	CP B0100YS2	CP B0100YS3	4.0	1.8
1	25	16	14	CP C0160YP1	CP C0160YP2	CP C0160YP3	CP C0160YS1	CP C0160YS2	CP C0160YS3	5.0	2.3
1-1/4	32	26	22	CP D0260YP1	CP D0260YP2	CP D0260YP3	CP D0260YS1	CP D0260YS2	CP D0260YS3	7.0	3.2
1-1/2	40	41	35	CP E0410YP1	CP E0410YP2	CP E0410YP3	CP E0410YS1	CP E0410YS2	CP E0410YS3	8.5	3.9
2	50	71	61	CP F0710YP1	CP F0710YP2	CP F0710YP3	CP F0710YS1	CP F0710YS2	CP F0710YS3	10.0	4.6
2-1/2	64	101	87	CP G1010YP1			CP G1010YS1			11.0	5.0
3	76	124	107	CP H1240YP1			CP H1240YS1			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:	CONTOURED PORT VALVE	+	ACTUATOR	=	ACTUATED VALVE
Specification Requirements :	1-1/4 inch Line Size, 26 Cv Stainless Steel Ball & Stem Double Union Connections NPT Female Couplings	+	Control Signal 4-20mA Failsafe	=	4-20mA Control Signal, 1-1/4 inch CP Ball Valve with <i>Enerdrive</i> , SS Trim, Double Union Connections & NPT Female Couplings
Selected from the Tables :	CP DO260YS2	+	DM060S	=	CP D0260YS2 DM060S