



Commercial Actuator Selection Chart For Resilient Seated Valves Based on Class A Non-Corrosive Fluids (i.e. water)

Resilient Seated Valves (RS) (for bubble-tight shut-off)										
Valve Size	Cv		Valve Model		Actuator Model / Minimum Close-off - PSI					
	Two Pos.	Mod			Two-Way Differential Pressure (PSI)			Three-Way Differential Pressure (PSI)		
	@ 90°	@ 70°	Two-Way	Three-Way	50	100	150**	50	100	150**
Type A Actuators					Undercut Disc	Non-Undercut Disc		Undercut Disc	Non-Undercut Disc	
2"	159	105	RS2B-2	RS3B-2	ES142† EN132†	ES142 EN132	ES142 EN132	ES142† EN221†	ES142* EN221	ES142* EN221
2-1/2"	266	156	RS2B-2.5	RS3B-2.5	ES142† EN132†	ES142 EN132	ES142 EN132	ES142† EN221†	ES142* EN221	ES142* EN221
3"	457	240	RS2B-3	RS3B-3	ES142 EN132	ES142* EN221	ES142* EN221	ES142* EN221	ES142* EN310	ES142* EN310
4"	860	423	RS2B-4	RS3B-4	ES142* EN221	ES142* EN310	EN310*	EN310	EN310*	EN310*
5"	1320	656	RS2B-5	RS3B-5	ES142* EN310	EN310*	EN310*	EN310*	—	—
6"	2020	941	RS2B-6	RS3B-6	EN310*	—	—	EN310*	—	—
Type B Actuators										
2"	159	105	RS2B-2	RS3B-2	ES177† EN140†	ES177 EN140	ES177 EN140	ES177† EN210†	ES177* EN210	ES177* EN210
2-1/2"	266	156	RS2B-2.5	RS3B-2.5	ES177† EN140†	ES177 EN140	ES177 EN140	ES177† EN210†	ES177* EN210	ES177* EN210
3"	457	240	RS2B-3	RS3B-3	ES177 EN140	ES177* EN210	ES177* EN210	ES177* EN210	ES177* EN280	ES177* EN280
4"	860	423	RS2B-4	RS3B-4	ES177* EN210	EN210*	EN210*	ES177* EN280	EN280*	EN280*
5"	1320	656	RS2B-5	RS3B-5	ES177* EN280	EN280*	EN280*	EN210*	—	—
6"	2020	941	RS2B-6	RS3B-6	EN280*	—	—	EN280*	—	—

Undercut (UC) discs are commonly used for close-offs up to 50 PSI. Standard (non-undercut) discs for close-offs 50 PSI or less are available upon request. If "UC" is not noted after the valve body number, the disc is non-undercut.

Samples:

Undercut Disc Model Number:

EN310C2 / RS2B-3(UC)

Non-undercut Disc Model Number:

EN310C2 / RS2B-3

Notes:

- * Requires 2 actuators.
- ** Call for close-offs greater than 150 PSI.
- For actuator selection part number, refer to pages AC-A-1-2 or AC-B-1-2.
- Ratings based on 10 ft/sec maximum fluid velocity.
- Most *single* & *dual* hon-RE actuators available with NEMA 4 type enclosures.
- † The valves are available in non-undercut disc only.



Valve Sizing Coefficients RS2B & RS3B Series Valves

Resilient Seated Valves Cv Values								
Valve Size	Angle of Opening (degrees)							
	20	30	40	50	60	70	80	90
2"	4.1	14.2	26.3	44.5	70.6	105	135	159
2-1/2"	6.2	20.9	38.6	65.3	140	156	215	266
3"	13.6	31.4	57.9	98.0	156	240	342	457
4"	23.9	55.1	102	173	274	423	625	860
5"	37.2	85.6	158	268	426	656	970	1,320
6"	53.3	123	227	384	610	941	1,420	2,020
8"	94.3	217	401	679	1,080	1,660	2,500	3,540
10"	145	334	617	1,040	1,660	2,560	3,830	5,580
12"	209	481	888	1,500	2,390	3,690	5,620	8,080
14"	335	670	1,226	1,935	2,893	4,406	6,752	9,578
16"	443	886	1,622	2,560	3,827	5,829	8,933	12,671
18"	567	1,138	2,075	3,275	4,896	7,457	11,429	16,221
20"	711	1,422	2,609	4,116	6,156	9,377	14,371	20,385
24"	1,038	2,078	3,792	5,985	8,947	13,628	20,887	29,627

Metal Seated Valves Cv Values									
Valve Size	Angle of Opening (degrees)								
	10	20	30	40	50	60	70	80	90
2"	2	5	11	20	34	49	64	83	90
2-1/2"	4	8	20	34	56	84	126	178	194
3"	6	14	30	51	85	132	202	279	370
4"	13	28	54	98	159	257	391	550	747
5"	21	43	88	158	265	429	636	913	1,272
6"	30	63	126	228	382	632	955	1,370	1,999
8"	53	111	225	406	680	1,125	1,698	2,591	3,853
10"	83	174	351	635	1,063	1,758	2,655	4,051	6,362
12"	120	251	506	915	1,531	2,533	3,825	5,835	9,165
14"	143	301	606	1,096	1,835	3,035	4,583	6,992	10,982

Notes:

- Recommended control angles are between 20° and 70° open for modulating applications
- Maximum angle for control valve sizing is 70° open for modulating applications.



Resilient Seated Valves: 2" through 24" Sizes

General Description:

DEI offers a complete line of Butterfly valves for both commercial and industrial applications. Valves are designed for hot and chilled water. See high performance valves for steam applications. Resilient seated valves can be used for on/off or throttling control, isolation, flow balance, mixing or diversion.

Body Features:

Valves are available in full-lugged or wafer style. The valves are compatible with ANSI 125/150 flanges. DEI standard valves 2"-24" have a bubble-tight shut-off pressure rating of up to 150 PSI dead end service with non-undercut discs. Undercut discs are bubble tight and are rated for dead-end service up to 50 PSI.

Standard Materials:

BODY: Cast Iron ASTM A126CLB

DISC: Aluminum Bronze ASTM B148

STEM: Stainless Type 416

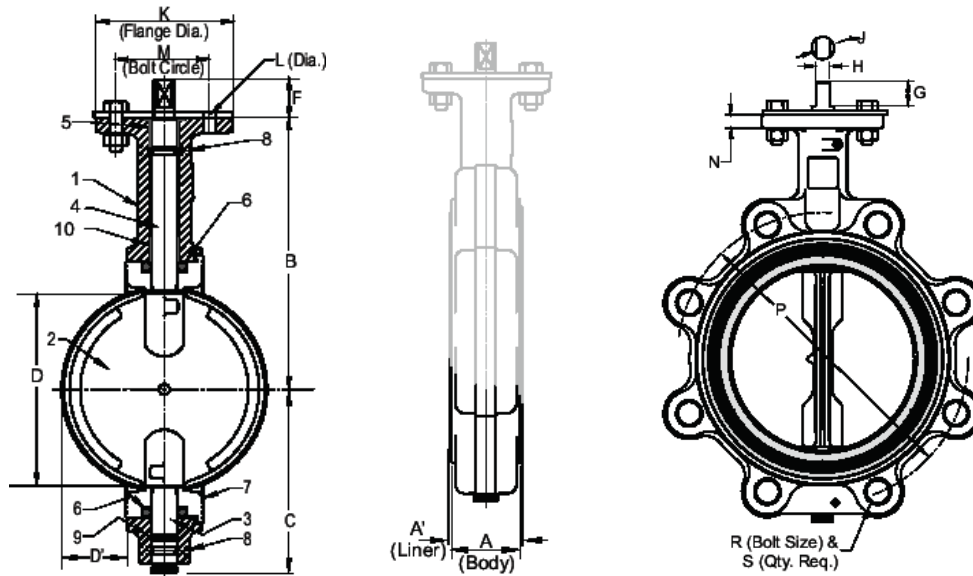
SEAT: EPDM

Optional Materials:

BODY: Ductile Iron, Cast Iron (Epoxy & Nylon Coating opt.), Cast Iron (Epoxy & Nylon Coating opt.)

DISC: Nickel Plated Ductile Iron, Stainless Steel (316)

SEAT: BUNA, Viton, Teflon over BUNA, Hypalon, Neoprene



Valve Size	Dimensions (inches)														Lug Bolt Data		
	A [†]	B	C	D	D ¹	F	G	H	J	K	Mounting Flange Drilling		N	Key	P BC	R Threads UNC-2B	S No. Holes
											L [‡] Hole Diam.	M BC					
2"	1.82	5.50	3.06	1.49	0.28	1.13	0.81	0.35	0.50	4.00	0.44	3.25	0.44	N/A	4.75	5/8-11	4
2-1/2"	1.94	6.00	3.31	2.01	0.44	1.13	0.81	0.35	0.50	4.00	0.44	3.25	0.44	N/A	5.50	5/8-11	4
3"	1.94	6.25	3.75	2.64	0.69	1.13	0.81	0.35	0.50	4.00	0.44	3.25	0.44	N/A	6.00	5/8-11	4
4"	2.20	7.00	4.25	3.67	1.06	1.13	0.81	0.40	0.56	4.00	0.44	3.25	0.44	N/A	7.50	5/8-11	8
5"	2.32	7.53	4.94	4.71	1.50	1.13	0.81	0.40	0.56	4.00	0.44	3.25	0.44	N/A	8.50	3/4-10	8
6"	2.32	8.00	5.56	5.66	1.94	1.13	0.81	0.44	0.62	4.00	0.44	3.25	0.44	N/A	9.50	3/4-10	8
8"	2.51	9.38	6.56	7.72	2.84	1.50	1.06	0.53	0.75	6.00	0.56	5.00	0.50	N/A	11.75	3/4-10	8
10"	2.82	10.19	7.88	9.70	3.69	1.50	1.06	0.71	1.00	6.00	0.56	5.00	0.50	N/A	14.25	7/8-9	12
12"	3.32	12.06	9.25	11.68	4.50	1.50	1.06	0.71	1.00	6.00	0.56	5.00	0.50	N/A	17.00	7/8-9	12
14"	3.19	13.50	11.56	13.25	13.53	2.00	N/A	1.625	N/A	6.5	0.69	5.25	N/A	.375 sq.	18.75	1-8	12
16"	4.13	14.75	12.69	15.50	14.97	2.00	N/A	1.625	N/A	6.5	0.69	5.25	N/A	.375 sq.	21.25	1-8	16
18"	4.63	15.50	13.63	17.25	16.91	3.00	N/A	2.125	N/A	9.5	0.81	7.50	N/A	.500 sq.	22.75	1 1/8-7	16
20"	5.13	16.75	15.13	19.25	18.84	3.00	N/A	2.125	N/A	9.5	0.81	7.50	N/A	.500 sq.	25.00	1 1/8-7	20
24"	6.19	19.37	18.06	23.38	22.76	3.06	N/A	2.125	N/A	10.61	0.81	7.50	N/A	.500 sq.	29.50	1 1/4-7	20

Notes:

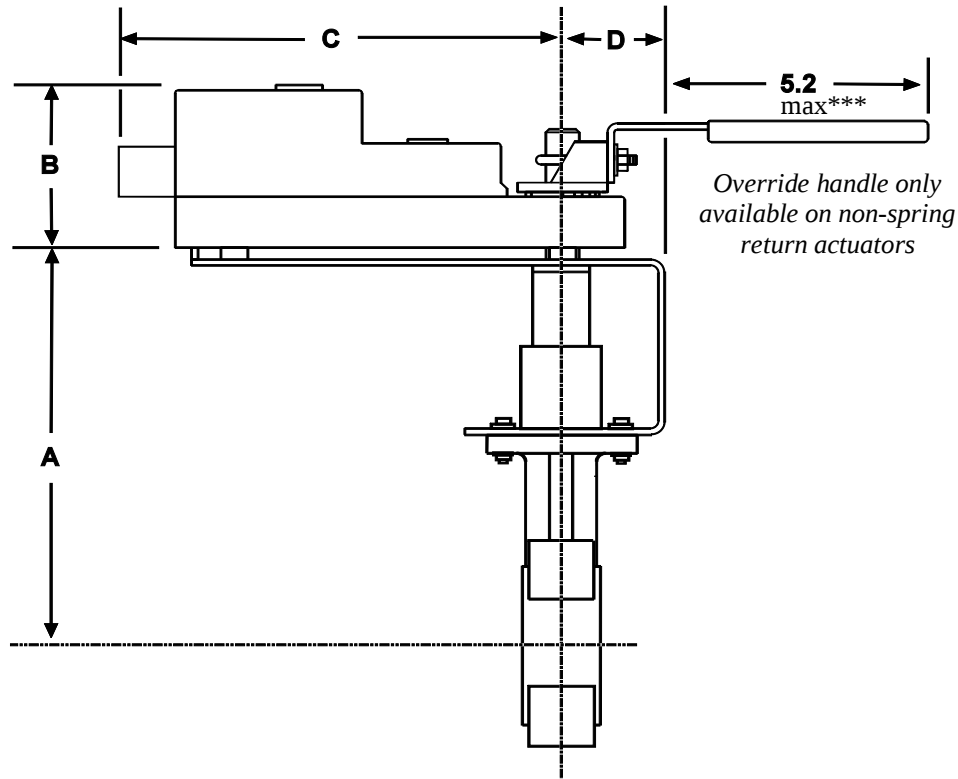
- On 10"-20" valve sizes, dimension "H" is the key size.
- "Q" dimension is the minimum allowable pipe or flange inside diameter at the centered body face to protect the disc sealing edge against damage when opening the valve.

[†] Subtract .13 for body dimension without the liner.

[‡] Mounting flange bolt circle has 4 holes.



Dimensions for Two-Way Resilient Seated Control Valves: 2" through 6" with Commercial Actuators



Valve Size	Model No.	Dim. (inches)
		A
2"	RS2B-2	9.2
2-1/2"	RS2B-2.5	9.7
3"	RS2B-3	10.0
4"	RS2B-4	10.7
5"	RS2B-5	11.3
6"	RS2B-6	11.7

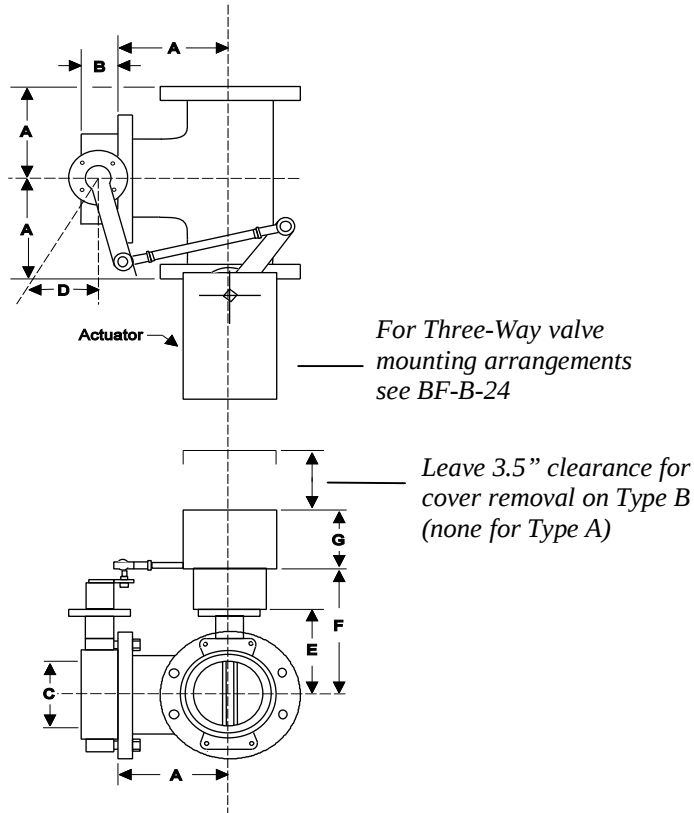
Actuator Selection Chart				
Actuator Type	Dimensions (inches)			
	B*	C	D	E**
Type A Spring Return				
ES142	3.5	8.8	2.3	4.0
Type A Non-Spring Return				
EN132	3.5	6.4	1.7	3.2
EN221	3.5	8.8	2.3	4.0
EN310	3.5	8.8	2.3	4.0
Type B Spring Return				
ES177	3.5	8.2	2.2	4.0
Type B Non-Spring Return				
EN140/210/280	3.5	4.9	1.2	4.0

Notes:

- * For valves requiring dual actuators add 4.0 inches to "B" dimension.
- ** "E" dimension is the actuator width.
- *** Length of handle varies with actuator style.
- See page BF-B-9 for additional body information.
- All assemblies are available with an optional NEMA 4/4X type housing. See page AS-1 for details.



Dimensions for Three-Way Resilient Seated Control Valves: 2" through 6" with Commercial Actuators



Valve Size	Model No.	Type A Actuator	Type B Actuator	Dimensions (inches)						
				A	B†	C	D†	E	F	G**
2"	RS3B-2	ES142*/EN221	ES177*/EN210	4.50	1.82	1.49	3.36	5.50	9.20	3.50
2-1/2"	RS3B-2.5	ES142*/EN221	ES177*/EN210	5.00	1.94	2.01	3.36	6.00	9.70	3.50
3"	RS3B-3	ES142*/EN310	ES177*/EN210	5.50	1.94	2.64	3.36	6.25	9.95	3.50
4"	RS3B-4	EN310*	EN280*	6.50	2.20	3.67	3.36	7.00	10.70	3.50
5"	RS3B-5	EN310*	EN280*	7.50	2.32	4.71	4.77	7.53	11.23	3.50
6"	RS3B-6	EN310*	EN280*	8.00	2.32	5.66	4.77	8.00	11.70	3.50

Notes:

- * May require 2 actuators. See close-off chart.
- ** For valves requiring dual actuators, add 4.0 inches to "G" dimension.
- All three-way assemblies are available with industrial actuators.
- "C" dimension is the minimum allowable pipe or flange inside diameter at the centered body face to protect the disc sealing edge against damage when opening the valve.
- Most assemblies are available with an optional NEMA 4/4X type housing. See applicable data sheet for details.
- Valve and/or actuator location may change depending on three-way arrangement.
- † "D" dimension is the farthest point of rotation of arm.
- ‡ Includes liner thickness.