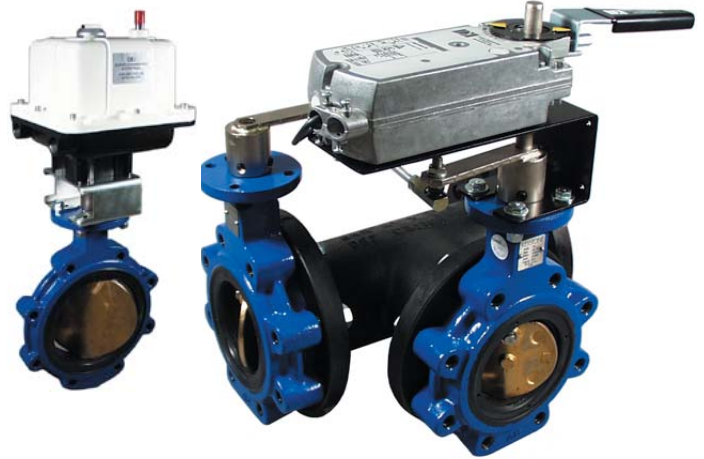


CLARK SOLUTIONS**RS Series Resilient Seat Butterfly Control Valves***Commercial or Industrial Grade Actuators, 2" to 20"***DESCRIPTION**

Clark offers a complete line of Butterfly valves for both commercial and industrial applications. The valves are designed for hot and chilled water, as well as steam applications up to 10 PSI saturated steam inlet. The valves can be used for on/off or throttling control, isolation, flow balance, mixing or diversion.

Valves are available in full-lugged or wafer mounting style. All bodies meet ANSI 150 pressure ratings for hydrostatic requirements. The valves are compatible with ANSI 125/150 flanges. Standard valves 2"-12" are bidirectional with a bubble-tight shut-off pressure rating of up to 250 PSI dead end service. Valves 14"-20" are also bidirectional with a bubble-tight shut-off standard pressure rating of 50 PSI. Rating to 150 PSI is available with non-undercut (NU) discs.



A selection of commercial grade actuators and industrial grade NEMA 4/4X actuators are available.

SPECIFICATIONS**VALVES**

Standard Materials:

BODY: Cast Iron

DISC: Aluminum Bronze

STEM: Stainless Steel

SEAT: EPDM

Optional Materials:

BODY: Ductile Iron, Cast Steel, Aluminum

DISC: Ductile Iron (Phosphate or Nylon 11 Coated), Stainless Steel

STEM: Carbon Steel (Phosphate Coated)

SEAT: BUNA-N (Nitrile), Viton GF

ACTUATORS

See selected actuator specification sheet

VALVE & ACTUATOR SELECTION

(UNITS ARE SUPPLIED FULLY ASSEMBLED & TESTED)

- 1) Review our Motor Actuated Valve Application Guide and select the valve type, size & materials. Refer to Clark bulletins on Ball valves or Globe valves if these valve types are better suited to the application.
- 2) Review valve C_v and close-off rating chart (Tables A&B) and select base valve model and actuator model
- 3) Review Valve and actuator dimensions
- 4) Review selected actuator spec. sheet and determine specific actuator model number
- 5) Assemble final model number using model number guidelines under "Ordering"

Valve Size	Cv		Base Valve Model		Actuator Model Number/Maximum Close-off- PSI					
	Two Position	Modulating			Two-Way Differential Pressure (PSI)			Three-way Differential Pressure (PSI)		
	@90°	@70°	Two-way	Three-way	50	100	150**	50	100	150**
2"	60	52	RS2B-2	RS3B-2	ES142 EN177	ES142 EN177	ES142 EN177	ES142 EN177	ES142* EN177	ES142* EN177
2 1/2"	151	107	RS2B-2.5	RS3B-2.5	ES142 EN177	ES142* EN177	ES142* EN310	ES142* EN310	ES142* EN310	ES142* EN310
3"	262	175	RS2B-3	RS3B-3	ES142* EN310	ES142* EN310	ES142 EN310	ES142* EN310	ES142* EN310	ES142* EN310
4"	647	453	RS2B-4	RS3B-4	ES142* EN310	EN310*	EN310*	ES142* EN310	EN310*	EN310*
5"	1141	832	RS2B-5	RS3B-5	EN310*	EN310*	EN310*	EN310*	-	-
6"	1580	1160	RS2B-6	RS3B-6	EN310*	-	-	EN310*	-	-

* requires two actuators

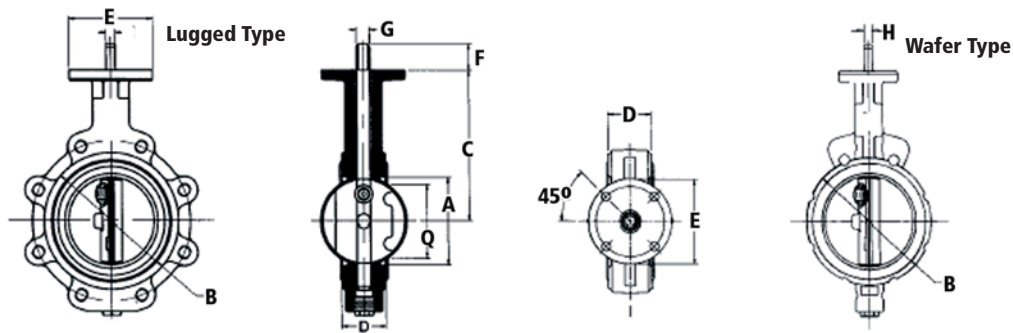
** call for close-offs greater than 150 PSI

Table B Industrial Actuator Selection Chart for valve sizes 2" to 20"										
Valve Size	Cv		Valve Model		Actuator Model/Maximum Close-off- PSI					
	Two Position	Modulating			Two-Way Differential Pressure (PSI)			Three-way Differential Pressure (PSI)		
	@90°	@70°	50	100	150*	50	100	150*		
2"	60	52	RS2B-2	RS3B-2	RE1.5	RE1.5	RE1.5	RE1.5	RE3	RE3
2 1/2"	151	107	RS2B-2.5	RS3B-2.5	RE3	RE3	RE3	RE3	RE3	RE6
3"	262	175	RS2B-3	RS3B-3	RE3	RE3	RE3	RE3	RE6	RE6
4"	647	453	RS2B-4	RS3B-4	RE3	RE6	RE6	RE3	RE6	RE6
5"	1141	832	RS2B-5	RS3B-5	RE6	RE6	RE10	RE6	RE10	- RE10
6"	1580	1160	RS2B-6	RS3B-6	RE6	RE10	RE10	RE6	RE15	RE15
8"	2892	2524	RS2B-8	RS3B-8	RE15	RE20	RE20	RE15	RE25	RE30
10"	4593	3470	RS2B-10	RS3B-10	RE20	RE15T	RE15T	RE20	RE20T	RE20T
12"	6682	5600	RS2B-12	RS3B-12	RE30	RE20T	RE20T	RE20T	RE25T	RE25T
14"	10000	7400	RS2B-14	RS3B-14	RE30	RE25T	RE25T	RE20T	call	call
16"	13000	9600	RS2B-16	RS3B-16	RE20T	RE30T	call	RE25T	call	call
18"	18000	96000	RS2B-18	RS3B-18	RE25T	call	call	call	call	call
20"	22000	12000	RS2B-20	RS3B-20	RE30T	call	call	call	call	call

-ratings based on 10ft/sec max. fluid velocity

*call for close-offs greater than 150 PSI

DIMENSIONS (INCHES)

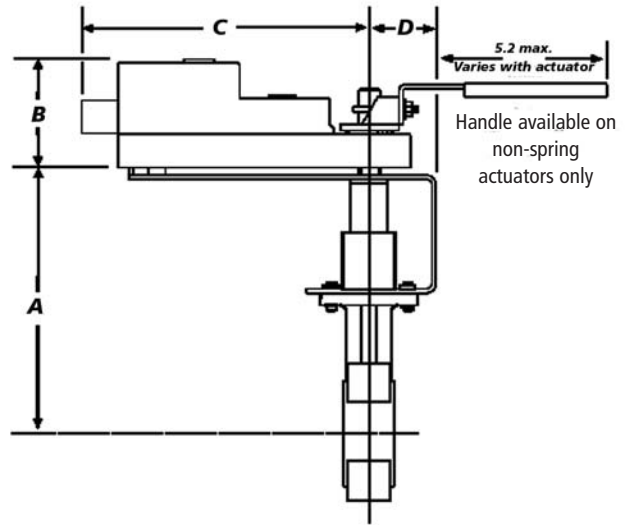


Valve Size	Table C Valve Dimensions (inches)															
	A	B	C	D	E	F	Mounting Flange Drilling			G	H	Q*	Key	Lug Bolt Data		
							BC	#Holes	Hole Dia.					BC	#Holes	Threads UNC-2B
2"	2.06	4.13	5.32	1.69	4.00	1.25	3.25	4	0.44	0.56	0.38	1.38	n/a	4.75	4	5/8-11
2 1/2"	2.56	4.63	5.94	1.81	4.00	1.25	3.25	4	0.44	0.56	0.38	2.00	n/a	5.50	4	5/8-11
3"	3.06	5.19	6.31	1.81	4.00	1.25	3.25	4	0.44	0.56	0.38	2.63	n/a	6.00	4	5/8-11
4"	4.06	6.38	7.13	2.06	4.00	1.25	3.25	4	0.44	0.63	0.44	3.69	n/a	7.50	8	5/8-11
5"	5.06	7.38	7.69	2.25	4.00	1.25	3.25	4	0.44	0.75	0.50	4.75	n/a	8.50	8	3/4-10
6"	5.81	8.50	8.31	2.25	4.00	1.25	3.25	4	0.44	0.75	0.50	5.56	n/a	9.50	8	3/4-10
8"	7.81	10.69	9.50	2.38	6.00	1.25	5.00	4	0.56	0.88	0.63	7.75	n/a	11.75	8	3/4-10
10"	9.81	13.00	10.88	2.69	6.00	2.00	5.00	4	0.56	1.13	n/a	9.75	1/4x1/4	14.25	12	7/8-9
12"	11.81	14.38	11.25	3.13	6.00	2.00	5.00	4	0.56	1.13	n/a	11.75	1/4x1/4	17.00	12	7/8-9
14"	13.25	16.75	12.00	3.00	6.00	3.00	5.00	4	0.56	1.38	n/a	13.13	5/16x5/16	18.75	12	1-8
16"	15.25	19.00	12.95	4.00	6.00	3.00	5.00	4	0.56	1.63	n/a	15.00	3/8x3/8	21.25	16	1-8
18"	17.25	21.38	14.50	4.25	8.00	4.25	6.50	4	0.81	1.88	n/a	16.88	1/2x3/8	22.75	16	1 1/8-7
20"	19.25	23.50	15.88	5.00	8.00	4.25	6.50	4	0.81	1.88	n/a	18.75	1/2x3/8	25.00	20	1 1/8-7

Standard 2" - 12' valves have fixed resilient seats, 14" and above have removable seats

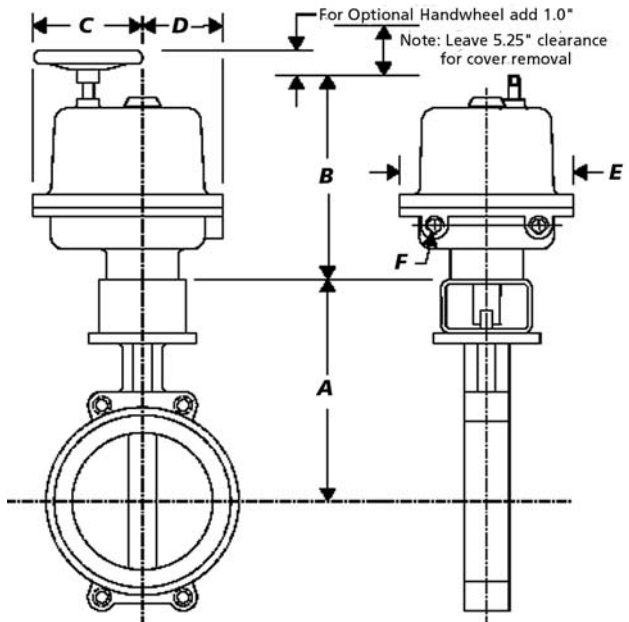
* Q dimension is the minimum allowable pipe or flange inside diameter at the centered body face to protect the disc sealing edge against damage when opening the valve

Two-Way Valve, 2" through 6" With Commercial Actuators		
Size	Model	Dimensions
		A
2"	RS2B-2	9.1
2 1/2"	RS2B-2.5	9.6
3"	RS2B-3	10.0
4"	RS2B-4	10.8
5"	RS2B-5	11.4
6"	RS2B-6	12.0



Actuator Dimensions				
Actuator	Dimensions (inches)			
	B*	C	D	E‡
Spring Return				
ES142	2.9	8.8	2.3	4.0
Non-Spring Return				
EN177	2.5	6.4	1.7	3.2
EN310	2.9	8.8	2.3	4.0

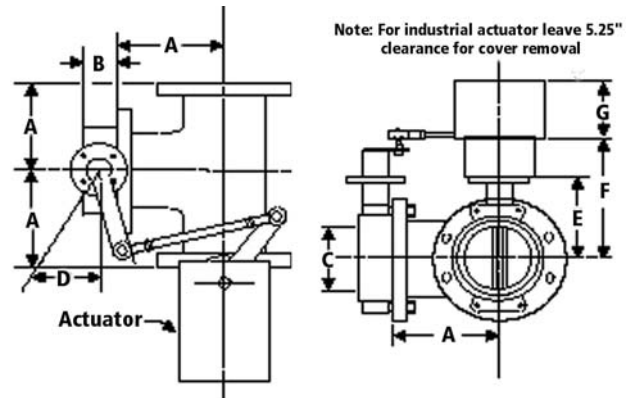
*"B" dimension is the actuator width



Two-Way Valve, 2" through 14" With Industrial RE Series Actuators		
Size	Model	Dimensions
		A
2"	RS2B-2	8.4
2 1/2"	RS2B-2.5	9.0
3"	RS2B-3	9.3
4"	RS2B-4	10.2
5"	RS2B-5	10.7
6"	RS2B-6	11.3
8"	RS2B-8	12.5
10"	RS2B-10	13.9
12"	RS2B-12	14.3
14"	RS2B-14	16.0

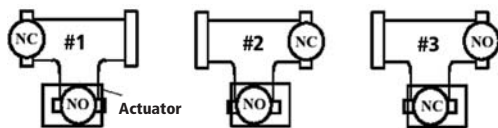
RE Series NEMA 4/4x Actuator Dimensions					
Actuator	Dimensions (inches)				
	B	C	D	E	F
Non-Spring Return					
RE1.5-RE6	9.93	5.15	3.48	7.42	1/2" NPT
RE10-RE30	11.65	6.07	4.40	9.75	3/4" NPT

-Valves are sometimes directly mounted to actuator (no bracket)
 -Call valve for sizes 16" and larger



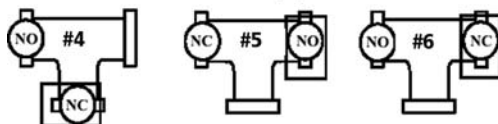
Three-Way Valve, 2" through 6" With Commercial Actuators									
Size	Valve Model	Actuator Model	Dimensions (inches)						
			A	B	C	D	E	F	G
2"	RS3B-2	ES142/EN177	4.50	1.69	1.38	3.36	5.31	9.01	3.50
2 1/2"	RS3B-2.5	ES142*/EN310	5.00	1.81	2.00	3.36	5.94	9.64	3.50
3"	RS3B-3	ES142*/EN310	5.50	1.81	2.63	3.36	6.31	10.01	3.50
4"	RS3B-4	ES142*/EN310	6.50	2.06	3.69	3.36	7.13	10.83	3.60
5"	RS3B-5	EN310*	7.50	2.25	4.75	4.77	7.69	11.39	2.90
6"	RS3B-6	EN310*	8.00	2.25	5.56	4.77	8.31	11.86	2.90
Three-Way Valve, 2" through 12" With Industrial RE Series Actuators									
2"	RS2B-2	RE1.5	4.50	1.69	1.39	3.36	5.31	7.31	9.26
2 1/2"	RS2B-2.5	RE3	5.00	1.81	2.00	3.36	5.94	7.94	9.26
3"	RS2B-3	RE3	5.50	1.81	2.63	3.36	6.31	8.31	9.26
4"	RS2B-4	RE3	6.50	2.06	3.69	3.36	7.13	9.13	9.26
5"	RS2B-5	RE6	7.50	2.25	4.75	4.77	7.69	9.69	9.26
6"	RS2B-6	RE6	8.00	2.25	5.56	4.77	8.31	10.13	9.26
8"	RS2B-8	RE15	9.00	2.38	7.75	5.47	9.50	12.50	11.65
10"	RS2B-10	RE20	11.00	2.69	9.75	6.54	10.88	13.88	11.65
12"	RS2B-12	RE30	12.00	3.13	11.75	6.54	12.25	15.25	11.65

*Requires two actuators
 -Call for valve sizes 16" and greater



Three-way Butterfly Valve Mounting Arrangements

NC= Normally Closed
 NO= Normally Open



ORDERING INFORMATION

1) SPECIFY ACTUATOR MODEL NUMBER: FIRST SELECT BASE ACTUATOR FROM TABLES A & B, THEN SEE SPECIFIC ACTUATOR SPECIFICATION SHEETS TO DETERMINE

COMPLETE MODEL NUMBER

*Non-Spring Return Actuators

EN44 & EN88

EN132, EN177 & EN310

*Spring Return Actuators

ES62, ES75 & ES142

*Industrial Actuators

RE

* See catalog or <http://www.clarksol.com/html/ValveActuators.cfm>

2) SPECIFY VALVE MODEL NUMBER (SEE TABLES BELOW)

A-B-C-D

EXAMPLE: RE6F1 - RS2B6-L

(ACTUATOR) (VALVE)

Valve Model Number			
A Base Model	B Optional Materials Select as many as apply	C Mounting Style	D Three-Way Mounting Arrangement
See Tables A & B Standard Materials are : Cast Iron Body Aluminum Bronze Disc Stainless Steel Stem EPDM Seat	- = none IB=Ductile Iron Body SB=Cast Steel Body AB=Aluminum Body ID=Ductile Iron Disc(Phosphate or Nylon 11 Coated) SD= Stainless Steel Disc CS=Carbon Steel Disc BS= BUNA-N Seat VS= Viton GF Seat	L=Lugged type W=Wafer Type	1= 1 2= 2 3= 3 4= 4 5= 5 6= 6