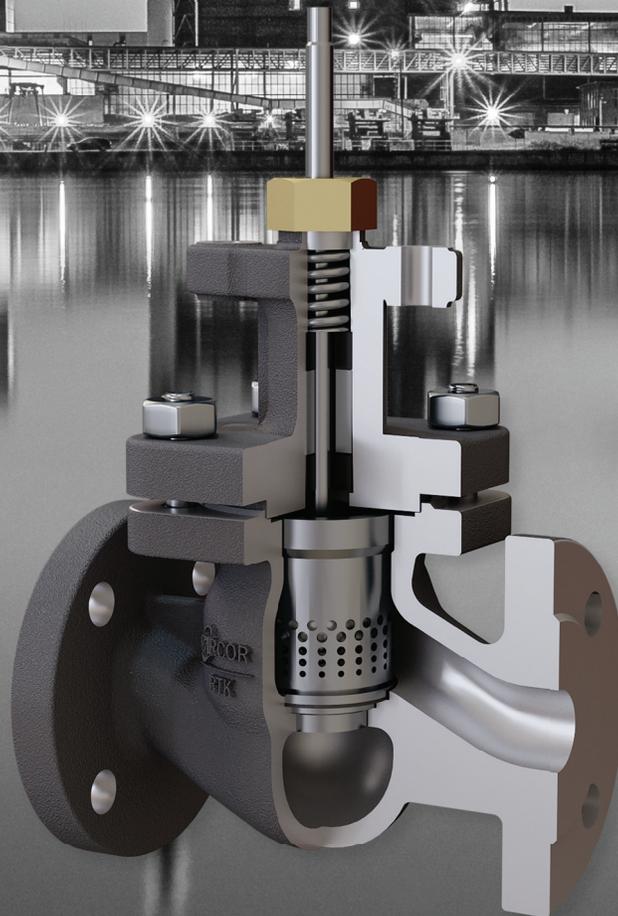


Technical Brochure
General Stem-Guided Control Valves

NPS ½ - 12 (DN 15 – 300)
CL 150 – 900 (PN 16 – 160)

www.rtk.de



REflex Control Valve

Valve Characteristics

Broadest Range in the Industry

Offers more possibilities than any other valve family in the Industry

Multiple Trim Options

Offering maximum versatility in flow control applications

Wide variety of stem packings

Giving the best stem packing for the given application

Different Trim Materials

Providing significantly longer service life

All common Body Materials

Ensure long-term use under rough conditions

High Flow capacities

Promote reduced body velocity and pressure losses

Options

- Reduced seat sizes for tighter control
- Noise and Cavitation reducing trims
- Soft seat sealing offering Class IV requirements
- Various End Connections

Applications

Control Systems used in Industries such as

- Power
- Chemical
- Petrochemical
- Pulp & Paper
- Food & Beverages
- And many more

HVAC Systems

Boiler Rooms

Engineered skid packages (OEMs) such as

- thermal fluid systems
- water treatment systems
- And many more

Actuator Characteristics

Electric Actuators

- Modular design
- Synchronous and BLDC Motor Technology
- Wide range of actuating forces
- Simple Setup
- Manual operation possible

Pneumatic Actuators

- Compact and robust design
- Multi spring technology
- Safety positioning
- Various Sizes
- Wide Range of actuating forces

Options

- Electric and electro pneumatic Positioners
- Diverse Feedback Signals
- Field Bus Systems
- Emergency Power Packages
- Built-in Process Controllers



REflex Specifications

Body Assembly Style:

Single seated, top entry bolted bonnet, globe style body, stem guided unbalanced plug

Sizes and Ratings:

2-Way

CL 150 NPS ½ – 12
CL 300 NPS ½ – 12
CL 600 NPS ½ – 12
CL 900 NPS 1 – 4

3-Way

CL 150 NPS 1 – 12
CL 300 NPS 1 – 12

Face-to-Face dimensions acc. to ANSI / ISA-S75.03

Body Materials:

Carbon Steel ASTM A216 WCB
-20°F to 797°F (-29°C to 425°C)
(CL 150 - 900)

Chrome Moly ASTM A217 WC6
-20°F to 1000°F (-29°C to 538°C)
(CL 150 – 900)

Chrome Moly ASTM A217 WC9
-20°F to 1000°F (-29°C to 538°C)
(CL 600 - 900)

Stainless Steel ASTM A351 CF8M
-20°F to 1000°F (-29°C to 538°C)
(CL 150 - 900)

Bonnet:

Bolted bonnet, bonnet with cooling fins for high temperatures, extended bonnet for bellows seal

End Connections:

Flanges acc. to ANSI B16.5 - 2017 **Raised Face (RF)** and **Ring Type Joint (RTJ)**

Butt Weld Ends (BWE) acc. to ASME B16.25 - 2012

Threaded Ends (THD) acc. to ASME B16.11 – 2016 (2-way only, up to NPS 2)

Socket Weld Ends (SWE) acc. to ASME B16.11 – 2016 Class 3000 (2-WAY only, up to NPS 2)

Stem Packing:

PTFE/Graphite (Standard) -76°F to 482°F (-60°C to 250°C)

Pure graphite -76°F to 986°F (-60°C to 530°C)

Bellows seal -76°F to 662°F (-60°C to 350°C)

Chloroprene -40°F to 212°F (-40°C to 110°C)

Body / Bonnet Gaskets:

Spiral Wound 316L/**Graphite**
max. 986°F (530°C) (Standard)

PTFE, max. 482°F (250°C)
(food & beverage, oxygen, ozone service)

Grooved gasket B7A
-328°F to 572°F (-200°C to 300°C)
(refrigeration)

Plug Types & Flow Characteristics:

2-Way

On/Off Plug (Quick Opening)
Parabolic Plug (Equal Percentage or Linear)

V-Port Plug (Equal Percentage or Linear)

Perforated Plug (Equal Percentage or Linear)

3-Way

Mixing Plug (Linear)
Diverting Plug (Linear)

Trim Types:

Screwed Seat Ring (Standard)
(CL 150 – 300)

Welded Seat Ring (Standard)
(CL 600 – 900)

Optional:

- Quick Change Seat (QCS) 1-Stage (CL 150 – 600)
- Quick Change Seat (QCS) 2-Stage (CL 150 – 600)

Trim Materials:

Plug 1.4122 (Martensitic)

Stem and Seat AISI 316 Ti

QCS Retainer ASTM A487 CA6NM
(iron-chromium-nickel-molybdenum alloy)

Optional:

- Plug made of AISI 316 Ti
- Parabolic Plug stellited or hardened
- Perforated Plug hardened
- Seat ring stellited* or hardened
*not in combination with QCS

Shutoff Class (ANSI/FCI 70-2)

Leakage Class IV, metal seat (Standard)
Diverting Plug Port B Leakage Class III

Optional:

- Leakage Class V, lapped in metal seat
- Leakage Class VI, soft seat max. 392°F (200°C)

Electric Actuators:

REact 15 (1.5 kN) force max. 337 lbs
stroke max. 1³/₈"
stem ½"

REact 30 (3 kN) force max. 675 lbs
stroke max. 1½"
stem ½"

REact 60 (6 kN) force max. 1350 lbs
stroke max. 2³/₈"
stem ½"

REact 100 (10 kN) force max. 2250 lbs
stroke max. 3"
stem ½"

ST 5106 (15 kN) force max. 3370 lbs
stroke max. 3"
stem 1¼"

Optional:

- Additional limit switches as Standard
- Electronic Positioner
- Feedback signal
- Hydraulic emergency closing unit
- Electrical emergency closing unit

Pneumatic Actuators:

ST 6135.B6 (43 Inch²) force max. 495 lbs
max. stroke 1³/₈"
stem ½"

ST 6160.A6 (82 Inch²) force max. 900 lbs
stroke max. 1½"
stem ½"

ST 6160.C6 (82 Inch²) force max. 720 lbs
stroke max. 2³/₈"
stem ½"

ST 6175.B6 (155 Inch²) force max. 3600 lbs
stroke max. 2³/₈"
stem 1¼"

ST 6175.C6 (155 Inch²) force max. 4270 lbs
stroke max. 4"
stem 1¼"

Optional:

- Handwheel
- Limit switches
- Solenoid valve
- Pneumatic and electro-pneumatic positioner
- Additional limit switches
- Booster
- Air filter regulator

Customer Specified Actuators

Electric actuator
Pneumatic actuator
Hydraulic actuator

REflex Trim Designs

Interchangeable plugs and seats offer maximum versatility in flow control applications.

2-Way Valves



On/Off

Characteristic: On/Off (Quick Opening)
Flow direction: To open or to close

This plug provides maximum flow with minimum pressure drop and is ideal when large flows are required just after opening.



V-Port

Characteristic: Linear or Equal Percentage
Flow direction: To open or to close
Rangeability: 30:1

This plug is ideally suited when actuator selection is critical, and the shorter stroke means smaller actuators can often be used.



Parabolic

Characteristic: Linear or Equal Percentage
Flow direction: To open
Rangeability: 30:1 (max 50:1)

This plug provides maximum flow with minimum pressure drop and is ideal when large flows are required just after opening.



Perforated

Characteristic: Linear or Equal Percentage
Flow direction: To open or to close
Rangeability: 30:1 (max 40:1)

The plug is suitable for use where high differential pressures are present. It can also be used where noise is an issue, typically reducing the noise level by 10 dBA. The hardened version improves life expectancy in cavitation and/or flashing conditions



Quick Change Seat (QCS) 1-Stage

Characteristic: Linear or Equal Percentage
Flow direction: To open
Rangeability: 30:1 (max 50:1)

This trim offers an easy tool-free seat exchange and can be combined with all on/off, parabolic, perforated and V-port plugs.



Quick Change Seat (QCS) 2-Stage

Characteristic: Linear or Equal Percentage
Flow direction: To close
Rangeability: 30:1 (max 40:1)

This trim offers an easy tool-free seat exchange and is used for high differential pressures to prevent cavitation and for noise reduction.

3-Way Valves



Mixing

Characteristic: Linear
Flow direction: $A + B > AB$
Rangeability: 30:1 (max 50:1)



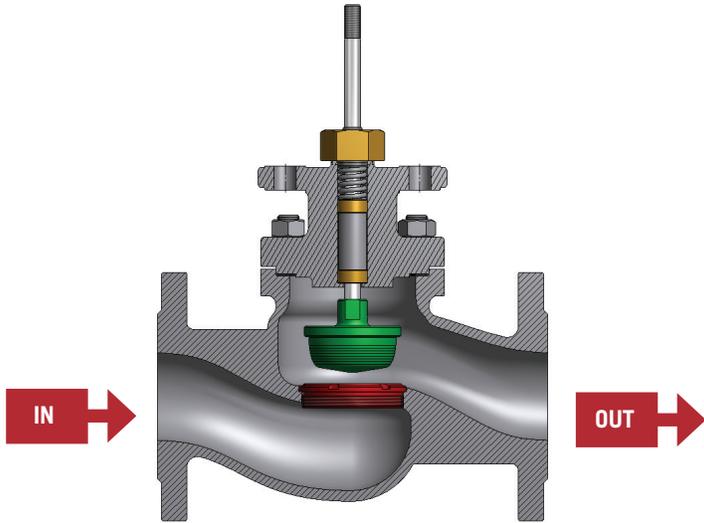
Diverting

Characteristic: Linear
Flow direction: $AB > A + B$
Rangeability: 30:1

Note – All plugs are available with Soft Seat option, offering Class VI shutoff (Not Diverting)

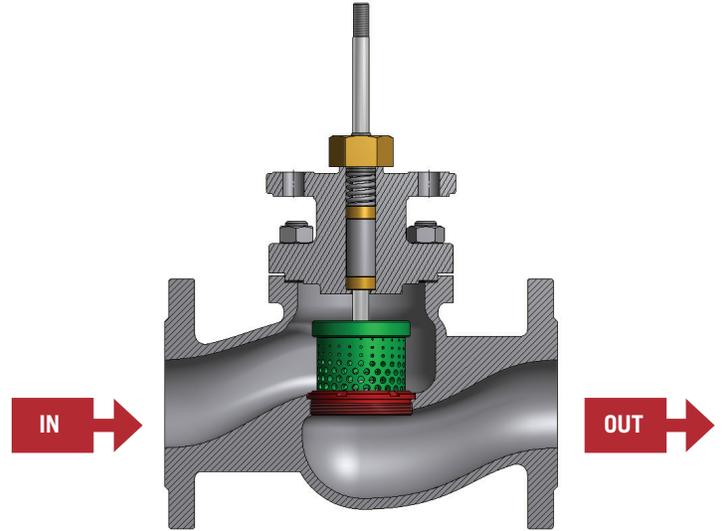
REflex Flow Directions

Flow to Open



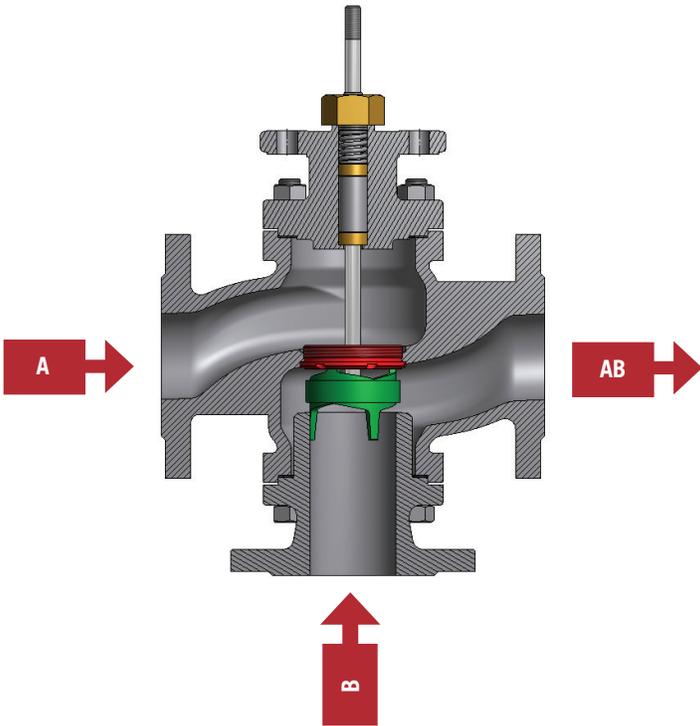
Normal flow direction for parabolic plugs

Flow to Close

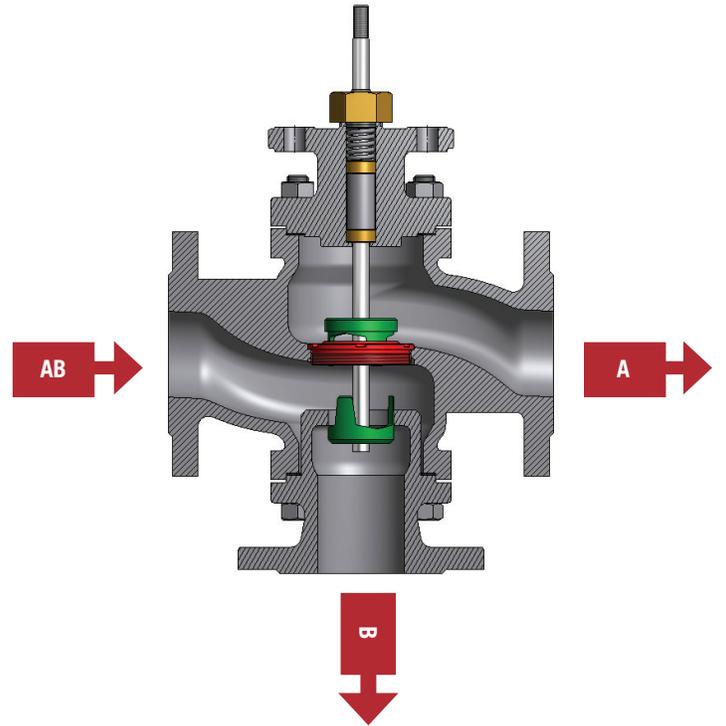


Most commonly used flow direction for On/off, V-port and perforated plugs.

Mixing

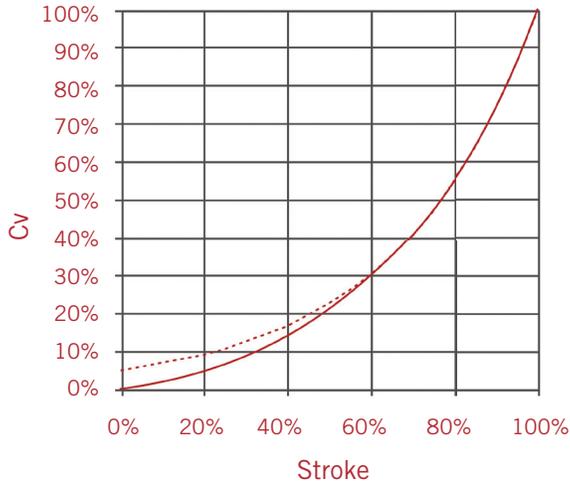


Diverting

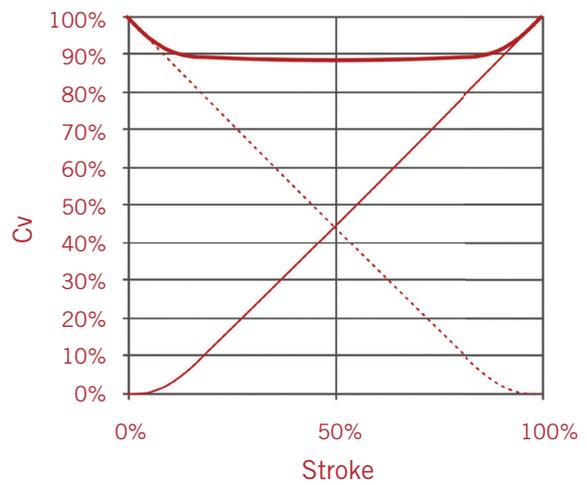


REFlex Flow Characteristics

Equal percentage



Linear

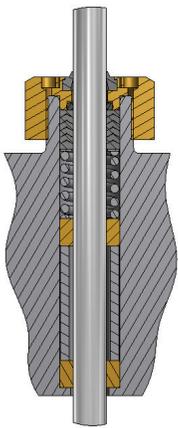


— REFlex
- - - Theory

— Cv A 2-way valve and 3-way valve port A
- - - Cv B 3-way valve port B
— Cv AB = Cv A + Cv B 3-way valve port AB

REFlex Packing Configurations

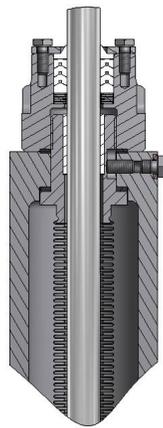
PTFE/Graphite



Maintenance free chevron rings with prestressed spring

- Material: PTFE/Graphite
- Temperature: -76°F to 482°F
- Pressure: up to CL 900
- Application: Water, steam and other media

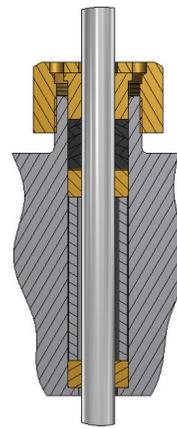
Bellows Seal



Maintenance-free metal bellows stem seal with safety packing

- Material: Stainless Steel
- Temperature: -76°F to 662°F
Optional up to 797°F
- Pressure: up to CL 300
- Application: Thermal Oil, Ammonia and other media

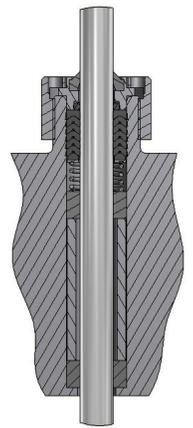
Pure Graphite



Pure graphite rings and two anti-extrusion Inconel wire reinforced graphite rings

- Material: Graphite
- Temperature: -76°F to 986°F
- Pressure: up to CL 900
- Application: Water, steam and other media

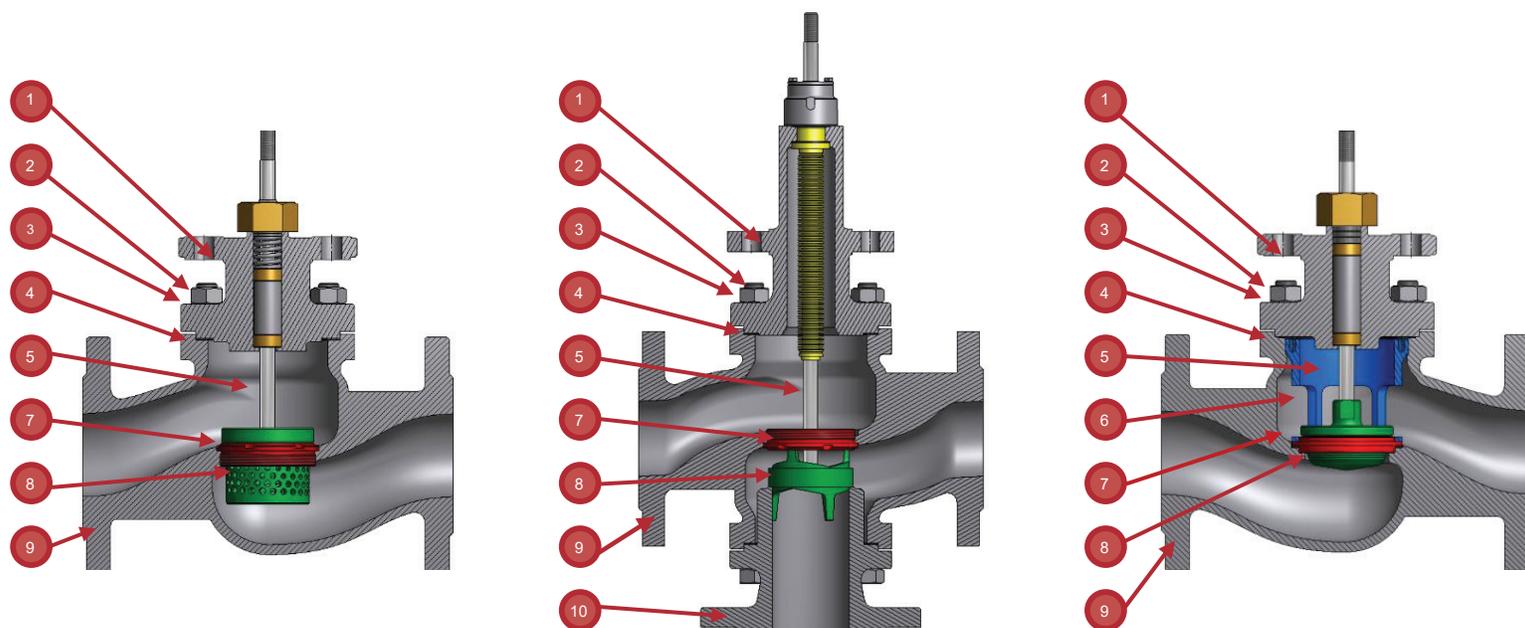
Chloroprene



Maintenance free chevron rings with prestressed spring

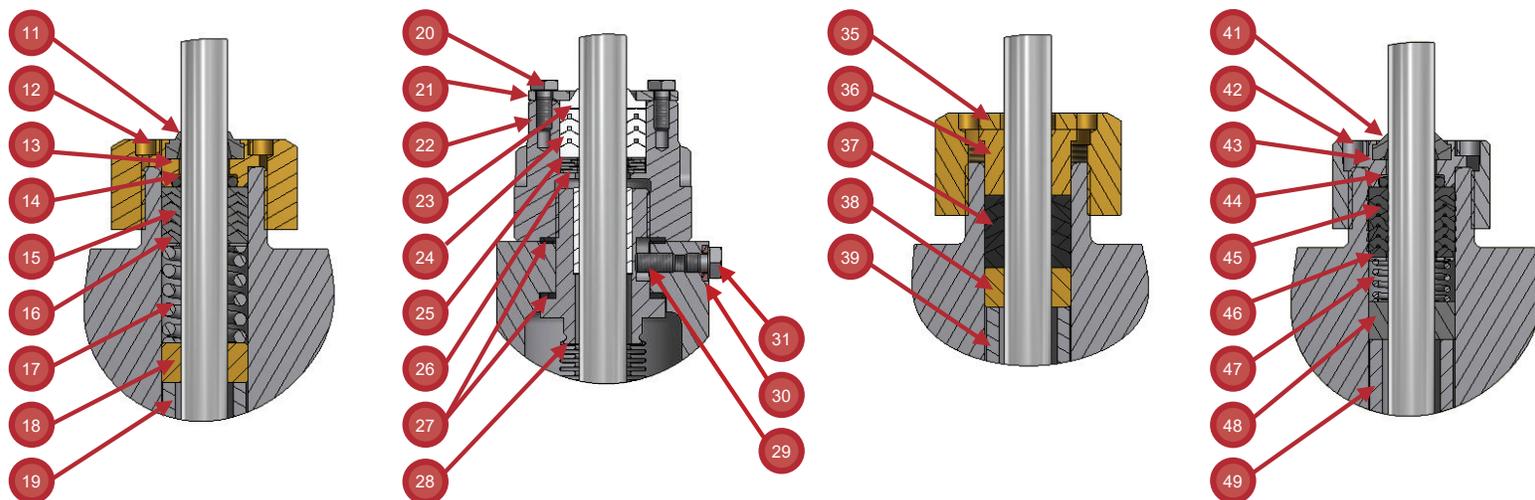
- Material: Chloroprene
- Temperature: -40°F to 212°F
- Pressure: up to CL 300
- Application: Refrigerants, natural gas and other media

REflex Material Specifications



Item	Description	Material	Material Specs	(ANSI Equivalent)
1	Bonnet	Carbon Steel Stainless Steel Chrome-Moly Steel Chrome-Moly Steel	SA 216 WCB SA 351 CF8M SA 217 WC6 SA 217 WC9	
2	Stud	Carbon Steel Stainless Steel Chrome-Moly Steel	ASTM A 194 Gr. B7 ASTM A 193 Gr. B8M ASTM A 193 Gr. B16	
3	Nut	Carbon Steel Stainless Steel Chrome-Moly Steel	ASTM A 194 Gr. 2H ASTM A 194 Gr. 8M ASTM A 194 Gr. 4	
4	Gasket	Graphite+ Stainless Steel	Graphite + 1.4401	
5	Plug Stem	Stainless Steel	1.4571	(AISI 316Ti)
6	Retainer (QCS)	Chromium-Nickel Steel	ASTM A487 CA6NM	
7	Seat Ring	Stainless Steel	1.4571	(AISI 316Ti)
8	Plug Head	Stainless Steel	1.4122	
9	Body	Carbon Steel Stainless Steel Chrome-Moly Steel Chrome-Moly Steel	SA 216 WCB SA 351 CF8M SA 217 WC6 SA 217 WC9	
10	B-Flange	Carbon Steel Stainless Steel Chrome-Moly Steel Chrome-Moly Steel	SA 216 WCB SA 351 CF8M SA 217 WC6 SA 217 WC9	

REflex Material Specifications (continued)



Item	Description	Material	Material Specs	(ANSI Equivalent)
11	Wiper Ring	Nitrile Butadiene Rubber	NBR 90	
12	Cap Nut	Brass	CuZn39Pb3	(ASTM C38500)
13	Packing Follower	Red Brass	CuSn7Zn4Pb7-C	(ASTM C93200)
14	O Ring	Nitrile Butadiene Rubber	NBR 90	
15	Packing (Chevron rings)	Polytetrafluorethylene Compound	PTFE/Graphite	
16	Washer	Stainless Steel	1.4310	(AISI 301)
17	Spring	Stainless Steel	1.4310	(AISI 301)
18	Guide Bushing	Red Brass	CuSn7Zn4Pb7-C	(ASTM C93200)
19	Space tube	Stainless Steel	1.4301	(AISI 304)
20	Hex bolt	Stainless Steel	1.4301	(AISI 304)
21	Plate	Stainless Steel	1.4301	(AISI 304)
22	Cap Nut	Stainless Steel	1.4104	(AISI 430F)
23	Scraper ring	Polytetrafluorethylene	PTFE/TFM	
24	Packing (Chevron rings)	Polytetrafluorethylene Compound	PTFE/25% glass fiber	
25	Washer	Stainless Steel	1.4301	(AISI 304)
26	Spring washer set	Stainless Steel	1.4310	(AISI 301)
27	gasket	Graphite Polytetrafluorethylene Compound [1]	Graphite Gylon® Style 3501E [1]	
28	Bellow	Stainless Steel	1.4571	(AISI 316Ti)
29	Grub screw	Alloy steel	45H	
30	Seal ring	Aramid fibers with NBR Polytetrafluorethylene Compound [1]	KLINGERSIL® C-4400 L Gylon® Style 3501E [1]	
31	Hex bolt	Stainless Steel	1.4301	(AISI 304)
35	Cap Nut	Brass	CuZn39Pb3	(ASTM C38500)
36	Packing Follower	Red Brass	CuSn7Zn4Pb7-C	(ASTM C93200)
37	Packing	Graphite	Graphite	
38	Guide Bushing	Red Brass	CuSn7Zn4Pb7-C	(ASTM C93200)
39	Space tube	Stainless Steel	1.4301	(AISI 304)
41	Wiper Ring	Nitrile Butadiene Rubber	NBR 90	
42	Cap Nut	Stainless Steel	1.4571	(AISI 316Ti)
43	Packing Follower	Stainless Steel	1.4104	(AISI 430F)
44	O Ring	EPDM rubber	EPDM	
45	Packing (Chevron rings)	Based on Nitrile rubber	NBR	
46	Washer	Stainless Steel	1.4310	(AISI 301)
47	Spring	Stainless Steel	1.4310	(AISI 301)
48	Guide Bushing	Polytetrafluorethylene Compound	PTFE/25% carbon	
49	Space tube	Stainless Steel	1.4301	(AISI 304)

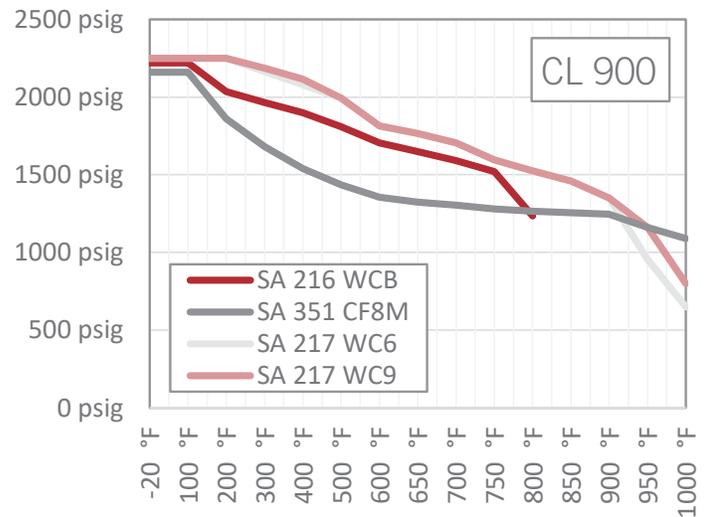
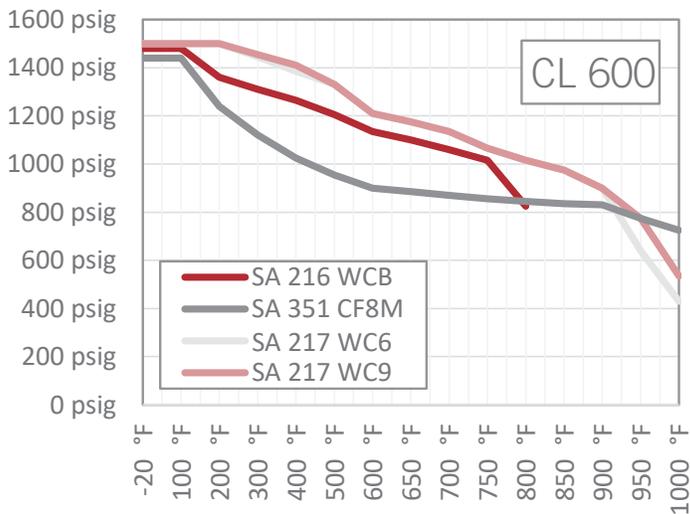
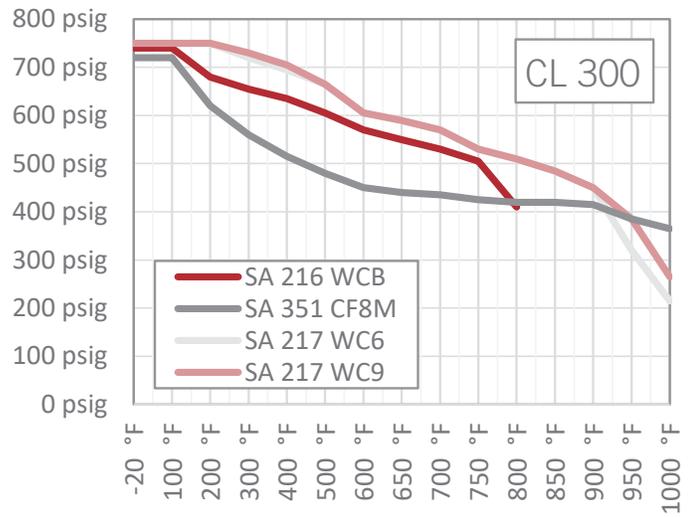
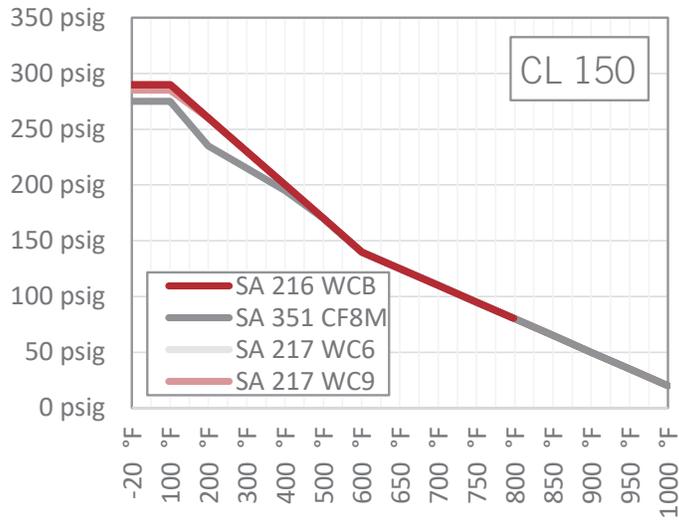
^[1] For Refrigeration valves

REflex Pressure-Temperature Ratings

Maximum allowed pressure in psig at specific temperature in °F

CL	Material	Temperature														
		-20	100	200	300	400	500	600	650	700	750	800	850	900	950	1000
150	SA 216 WCB	285	285	260	230	200	170	140	125	110	95	80	-	-	-	-
300		740	740	680	655	635	605	570	550	530	505	410	-	-	-	-
600		1480	1480	1360	1310	1265	1205	1135	1100	1060	1015	825	-	-	-	-
900		2220	2220	2035	1965	1900	1810	1705	1650	1590	1520	1235	-	-	-	-
150	SA 217 WC6	290	290	260	230	200	170	140	125	110	95	80	65	50	35	20
300		750	750	750	720	695	665	605	590	570	530	510	485	450	320	215
600		1500	1500	1500	1445	1385	1330	1210	1175	1135	1065	1015	975	900	640	430
900		2250	2250	2250	2165	2080	1995	1815	1765	1705	1595	1525	1460	1350	955	650
150	SA 217 WC9	290	290	260	230	200	170	140	125	110	95	80	65	50	35	20
300		750	750	750	730	705	665	605	590	570	530	510	485	450	385	265
600		1500	1500	1500	1455	1410	1330	1210	1175	1135	1065	1015	975	900	775	535
900		2250	2250	2250	2185	2115	1995	1815	1765	1705	1595	1525	1460	1350	1160	800
150	SA 351 CF8M1	275	275	235	215	195	170	140	125	110	95	80	65	50	35	20
300		720	720	620	560	515	480	450	440	435	425	420	420	415	385	365
900		2160	2160	1860	1680	1540	1435	1355	1325	1305	1280	1265	1255	1245	1160	1090
600		1440	1440	1240	1120	1025	955	900	885	870	855	845	835	830	775	725

[1] NPS 12 CL 600 CF8M only up to 750 °F



REflex Cv Values

Cv Values for Parabolic Plug

ANSI	Seat [Inch]																						
NPS	1/8	1/8	1/8	1/4	1/4	3/8	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	10	12	
1/2	0,01	0,02	0,05	1,2	2,0	2,4	3,1	3,8															
	0,12	0,29	0,58																				
3/4	0,01	0,02	0,05	1,2	2,0	2,9	4,3	4,9	7,0														
	0,12	0,29	0,58																				
1	0,01	0,02	0,05	1,2	2,0	2,9	4,6	6,0	8,7	10,7													
	0,12	0,29	0,58																				
1 1/2	0,12	0,29	0,58	1,2	2,0	2,9	5,1	7,9	13	17	22	28											
2				1,2	2,0	2,9	5,1	7,9	14	21	28	35	43										
2 1/2						2,9	5,1	7,9	14	22	33	43	55	73									
3							7,9	14	22	36	52	67	92	110									
4								14	22	36	56	81	115	140	172								
6											56	87	147	208	272	339	386						
8												87	147	225	325	425	487	687					
10													147	225	350	500	611	860	982	1074			
12														225	350	540	655	943	1123	1306	1546		
Stroke [Inch]	1										1 1/4			1%			2	2%	3	4			

Cv Values for V-Port Plug [gpm]

ANSI	Seat [Inch]													
NPS	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	
3/4	7,0													
1	8,7	10,7												
1 1/2	13	17	22	28										
2	14	21	28	35	43									
2 1/2		22	33	43	55	73								
3			36	52	67	92	110							
4				56	81	115	140	172						
6						147	208	271	229	285				
8							225	325	425	487	687			
10								350	508	611	866	1074		
12										655	943	1306	1546	
Stroke ¹ [Inch]	-	1	1%			1%			1%	2	2%	3%	-	-
Stroke ² [Inch]	1/2					1	1 1/4	1%	1 1/2	2%	3	4		

1. Stroke for equal percentage

2. Stroke for linear

Cv Values for Perforated Plug [gpm]

ANSI	Seat [Inch]																						
NPS	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	7	7	8	8	9	9	10	10	12	
1/2	1,9	3,0																					
3/4	2,0	3,1	5,3																				
1	2,0	3,1	5,6	8,4																			
1 1/2	2,0	3,1	5,6	8,8	14	22																	
2	2,0	3,1	5,6	8,8	14	22	34																
2 1/2			5,6	8,8	15	22	35	57															
3				8,8	15	23	35	60	86														
4				8,8	15	23	35	60	91	110	135												
6						23	35	60	91	110	142	220	303										
8							35	60	91	110	142	220	317	371	435	467	540						
10								60	91	110	142	220	317	371	435	479	564	650	742	791	842		
12									91	110	142	220	317	371	435	479	564	650	742	841	910	1235	
Stroke [Inch]	1				1 1/4			1 1/2	2			2%	3		4	3	4	3	4	3	4	3	4

REflex Cv Values (continued)

Cv Values for On/Off Plug [gpm]

ANSI	Seat [Inch]															
NPS	¼	⅜	½	¾	1	1¼	1½	2	2½	3	4	5	6	8	10	12
½	2,0	3,1	3,8													
¾	2,0	4,3	4,9	7,0												
1	2,0	4,7	6,0	8,7	10,7											
1½			7,9	13	17	22	28									
2				14	21	28	35	43								
2½					22	33	43	55	73							
3						36	52	67	92	110						
4							56	81	115	140	172					
6									148	208	271	339	386			
8										225	325	425	487	687		
10											350	508	611	766	1074	
12													655	943	1306	1546
Stroke [Inch]	½									1	1¼	1⅝	1½	2⅜	3	4

Cv Values for Quick Change Seat 2-Stage

ANSI	Seat [Inch]													
NPS	¾	1	1¼	1½	2	2½	3	4	5	6	8	8	10	10
1½	4,0	6,3	9,7											
2	4,0	6,3	9,7	15,5										
2½	4,0	6,3	10,6	16,3	24									
3		6,3	10,6	16,3	24	42								
4		6,3	10,6	16,3	24	42	63							
6				16,3	24	42	63	98	154					
8					24	42	63	100	157	226				
10						42	63	100	157	226	340	400		
12							63	100	157	226	340	400	597	644
Stroke [Inch]	1		1¼			1½	2		2⅝	3		4	3	4

Diverting Plug

ANSI	Stroke [Inch]	Seat [Inch]	Cv [gpm]
NPS			
1	½	1	8,7
1½		1¼	22
2		1½	35
2½		2	55
3	1	2½	92
4	1⅝	3	140
6	1½	5	339
8	2⅜	6	487
10	3	8	867
12	6	10	1306

Mixing Plug

ANSI	Stroke [Inch]	Seat [Inch]	Cv [gpm]
NPS			
1	½	11/4	10,7
1½		11/2	28
2		2	43
2½		21/2	73
3	1	3	110
4	1¼	4	172
6	1½	6	386
8	2⅜	8	687
10	4	10	1074
12	6	12	1546

REflex Shutoff Tables

Max. Permissible Shutoff Pressures with Electric Actuators (psig)

P2 = 0 psig, Flow-to-Open/Close, Stem Packing PTFE/Graphite ⁽¹⁾

Seat [Inch]	Stroke [Inch]	Parabolic	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	
			On/Off, V port, Mixing	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1	1 1/4	1 3/8	1 1/2	2 3/8	3
Actuator	Stroke [Inch]	Perforated																		
			REact 15	1 3/8	(35mm)	750	750	750	750	435	262	148	85	47	21					
REact 30	1 1/2	(40mm)	750	750	750	750	750	700	417	258	158	87	54	31						
REact 60	2 3/8	(60mm)	750	750	750	750	750	750	750	605	380	218	140	87	52	35				
REact 100	3	(80mm)	750	750	750	750	750	750	750	750	675	392	255	160	99	67				
ST 5106	3	(80mm)		750	750	750	750	750	750	750	750	585	382	241	150	103	55	35	23	

⁽¹⁾ Consult factory for shutoff ratings when using other packing types.

⁽²⁾ Stroke 2 Inch for Valves with 1 1/4 Inch Stem

REflex Shutoff Tables (continued)

Max. Permissible Shutoff Pressures with Pneumatic Actuators (psig)

P2 = 0 psig, Spring Closes on Air Failure [Reverse acting], Flow-to-Open, Stem Packing PTFE/Graphite ^[1]

Seat [Inch]	Stroke [Inch]	Actuator	Air Supply [PSIG]	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12					
				Parabolic	On/Off, V port, Mixing	Diverting	Perforated	Parabolic	On/Off, V port, Mixing	Diverting	Perforated	Parabolic	On/Off, V port, Mixing	Diverting	Perforated	Parabolic	On/Off, V port, Mixing	Diverting	Perforated	Parabolic	On/Off, V port, Mixing	Diverting	Perforated		
30	Parabolic	ST6135. B6-2G	30	750	750	346	197	88	41	4															
				750	750	667	402	203	115	58	28	10													
									115	58	28	10													
						346	197	88	41	4															
60	On/Off, V port, Mixing	Stroke 1 3/8 Inch Stem 1/2 Inch Spring-range 3 - 15 psi	60	750	750	398	230	106	53	4															
				750	750	667	402	203	115	58	28	10													
									115	58	28	10													
						398	230	106	53	4															
90	Parabolic	Actuator Code: BCA_	90	750	750	398	230	106	53	4															
				750	750	667	402	203	115	58	28	10													
									115	58	28	10													
						398	230	106	53	4															
60	On/Off, V port, Mixing	Stroke 1 3/8 Inch Stem 1/2 Inch Spring-range 11.6 - 43.5 psi	60	750	750	750	750	750	618	310	189	114	48	27	14										
				750	750	750	750	750	750	473	293	180	100	44	19										
									750	473	293	180	100	62	25										
						750	750	750	618	310	189	114													
	90		Parabolic	Actuator Code: BDA_	90	750	750	750	750	750	618	310	189	114	48	27	14								
						750	750	750	750	750	750	473	293	180	100	44	19								
											750	473	293	180	100	62	25								
								750	750	750	618	310	189	114											

^[1] Consult factory for shutoff ratings when using other packing types.

^[2] Stroke 2 Inch for Valves with 1 1/4 Inch Stem

REflex Shutoff Tables (continued)

Max. Permissible Shutoff Pressures with Pneumatic Actuators (psig)

P2 = 0 psig, Spring Closes on Air Failure [Reverse acting], Flow-to-Open, Stem Packing PTFE/Graphite ^[1]

Seat [Inch]	Stroke [Inch]	Parabolic	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12
			1	1	1	1	1	1	1 1/4	1 1/4	1 1/4	1 3/8	1 3/8	1 3/8	2	2 3/8	3	4	4
60	On/Off, V port, Mixing	1	1	1	1	1	1	1	1 1/4	1 1/4	1 1/4	1 3/8	1 3/8	1 3/8	2	2 3/8	3	4	4
		1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1	1 1/4	1 3/8	1 1/2	2 3/8	3	4
								1/2	1/2	1/2	1/2	1/2	1		1 3/8	1 1/2	2 3/8	3	
					1	1	1	1	1 1/4	1 1/4	1 1/4	1 1/2	2	2	2 3/8	3	4	4	4
90	On/Off, V port, Mixing	750	750	750	750	750	750	750	750	547	343	161	102	62					
		750	750	750	750	750	750	750	750	750	750	491	284	145	76	37	18		
								750	750	750	491	284	183	89	46	23			
				750	750	750	750	750	750	547	343	131							
30	On/Off, V port, Mixing	750	750	750	750	750	750	750	750	547	343	161	102	62					
		750	750	750	750	750	750	750	750	750	491	284	145	76	37	18			
								750	750	750	491	284	183	89	46	23			
				750	750	750	750	750	750	547	343	131							
60	On/Off, V port, Mixing	750	750	750	750	750	750	750	418	259	158	76	46	26	5				
		750	750	750	750	750	750	750	554	345	214	120	60	30	13	5			
								750	554	345	214	120	75	35	16	7			
				750	750	750	750	418	259	158	65	24	12						
90	On/Off, V port, Mixing	750	750	750	750	750	750	750	418	259	158	76	46	26	5				
		750	750	750	750	750	750	750	554	345	214	120	60	30	13	5			
								750	554	345	214	120	75	35	16	7			
				750	750	750	750	418	259	158	65	24	12						
60	On/Off, V port, Mixing	750	750	750	750	750	750	750	750	697	439	227	145	89	33	11			
		750	750	750	750	750	750	750	750	750	572	332	183	100	54	31			
								750	750	750	572	332	215	113	61	36			
				750	750	750	750	750	750	697	439	201	94	56	19				
90	On/Off, V port, Mixing	750	750	750	750	750	750	750	750	697	439	227	145	89	33	11			
		750	750	750	750	750	750	750	750	750	572	332	183	100	54	31			
								750	750	750	572	332	215	113	61	36			
				750	750	750	750	750	750	697	439	201	94	56	19				

^[1] Consult factory for shutoff ratings when using other packing types.

^[2] Stroke 2 Inch for Valves with 1 1/4 Inch Stem

REflex Shutoff Tables (continued)

Max. Permissible Shutoff Pressures with Pneumatic Actuators (psig)

P2 = 0 psig, Spring Closes on Air Failure [Reverse acting], Flow-to-Open, Stem Packing PTFE/Graphite ^[1]

Seat [Inch]	Stroke [Inch]	Parabolic	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12		
			1	1	1	1	1	1	1 1/4	1 1/4	1 1/4	1 3/8	1 3/8	1 3/8	2	2 3/8	3	4	4		
Actuator	Air Supply [PSIG]	Parabolic																			
		On/Off, V port, Mixing	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1	1 1/4	1 3/8	1 1/2	2 3/8	3	4	
		Diverting							1/2	1/2	1/2	1/2	1/2	1		1 3/8	1 1/2	2 3/8	3		
		Perforated			1	1	1	1	1 1/4	1 1/4	1 1/4	1 1/2	2	2	2 3/8	3	4	4	4	4	
ST6175.B6-3D Stroke 2 3/8 Inch Stem 1 1/4 Inch Spring-range 10.2-30.5 psi Actuator Code: DJA_	60	Parabolic									750	742	400	259	162	74	37				
		On/Off, V port, Mixing										750	750	531	303	176	101	62	19		
		Diverting										750	750	531	346	190	110	68	33	10	
		Perforated										750	742	367	195	121	57				
	90	Parabolic										750	742	400	259	162	74	37			
		On/Off, V port, Mixing										750	750	531	303	176	101	62	19		
		Diverting										750	750	531	346	190	110	68	33	10	
		Perforated										750	742	367	195	121	57				
ST6175.B6-7D Stroke 2 3/8 Inch Stem 1 1/4 Inch Spring-range 23.2 - 68.2 psi Actuator Code: DLA	90	Parabolic									750	750	750	671	426	204	111				
		On/Off, V port, Mixing										750	750	750	750	453	269	169	60		
		Diverting										750	750	750	750	481	287	185	93	37	
		Perforated										750	750	750	512	324	163				
ST6175.C6-3D Stroke 4 Inch Stem 1 1/4 Inch Spring-range 11.6 - 30.5 psi Actuator Code: DNA_	60	Parabolic									750	750	520	339	213	116	70	33	13	8	
		On/Off, V port, Mixing										750	750	607	368	222	133	87	37	19	8
		Diverting										750	750	607	397	232	139	91	46	22	12
		Perforated										750	750	498	296	185	104	62	23	13	8
	90	Parabolic										750	750	520	339	213	116	70	33	13	8
		On/Off, V port, Mixing										750	750	607	368	222	133	87	37	19	8
		Diverting										750	750	607	397	232	139	91	46	22	12
		Perforated										750	750	498	296	185	104	62	23	13	8
ST6175.C6-7D Stroke 4 Inch Stem 1 1/4 Inch Spring-range 27.6 - 68.2 psi Actuator Code: DQA_	90	Parabolic									750	750	750	750	541	299	197	90	46	31	
		On/Off, V port, Mixing										750	750	750	750	555	343	230	109	56	31
		Diverting										750	750	750	750	569	352	236	127	68	38
		Perforated										750	750	750	743	472	287	165	74	46	31

^[1] Consult factory for shutoff ratings when using other packing types.

^[2] Stroke 2 Inch for Valves with 1 1/4 Inch Stem

REflex Shutoff Tables (continued)

Max. Permissible Shutoff Pressures with Pneumatic Actuators (psig)

P2 = 0 psig, Spring Opens on Air Failure [Direct acting], Flow-to-Open, Stem Packing PTFE/Graphite ^[1]

	Seat [Inch]		1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12
	Stroke [Inch]	Parabolic	1	1	1	1	1	1	1 1/4	1 1/4	1 1/4	1 3/8	1 3/8	1 3/8 2 ^[2]	2	2 3/8	3	4	4
		On/Off, V port, Mixing	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1	1 1/4	1 3/8	1 1/2	2 3/8	3	4
		Diverting						1/2	1/2	1/2	1/2	1/2	1		1 3/8	1 1/2	2 3/8	3	
		Perforated			1	1	1	1	1 1/4	1 1/4	1 1/4	1 1/2	2	2	2 3/8	3	4	4	4
Actuator	Air Supply [PSIG]																		
ST6135.B6-2G Stroke 1 3/8 Inch Stem 1/2 Inch Spring-range 3 - 15 psi Actuator Code: BCB_	30	Parabolic	750	750	750	750	686	439	235	151	96	50	33	21					
		On/Off, V port, Mixing	750	750	750	750	750	541	330	211	135	80	43	24					
		Diverting					750	541	330	211	135	80	43	24					
		Perforated			750	750	686	439	235	151	96								
	60	Parabolic	750	750	750	750	750	750	750	497	318	181	119	76					
		On/Off, V port, Mixing	750	750	750	750	750	750	750	558	357	211	129	80					
		Diverting					750	750	750	558	357	211	139	83					
		Perforated			750	750	750	750	750	497	318								
	90	Parabolic	750	750	750	750	750	750	750	750	540	312	206	132					
		On/Off, V port, Mixing	750	750	750	750	750	750	750	750	579	342	216	135					
		Diverting					750	750	750	750	579	342	226	138					
		Perforated			750	750	750	750	750	750	540								
ST6135.B6-6G Stroke 1 3/8 Inch Stem 1/2 Inch Spring-range 11.6 - 43.5 psi Actuator Code: BDB_	30	Parabolic																	
		On/Off, V port, Mixing	346	87	38	25	14	9											
		Diverting					14	9											
		Perforated																	
	60	Parabolic	750	750	750	750	750	616	290	185	119	50	33	21					
		On/Off, V port, Mixing	750	750	750	750	750	750	547	350	224	132	60	30					
		Diverting					750	750	547	350	224	132	87	39					
		Perforated			750	750	750	616	290	185	119								
	90	Parabolic	750	750	750	750	750	750	750	532	340	181	119	76					
		On/Off, V port, Mixing	750	750	750	750	750	750	750	696	446	264	147	85					
		Diverting					750	750	750	696	446	264	147	94					
		Perforated			750	750	750	750	750	532	340								

^[1] Consult factory for shutoff ratings when using other packing types.

^[2] Stroke 2 Inch for Valves with 1 1/4 Inch Stem

REflex Shutoff Tables (continued)

Max. Permissible Shutoff Pressures with Pneumatic Actuators (psig)

P2 = 0 psig, Spring Opens on Air Failure [Direct acting], Flow-to-Open, Stem Packing PTFE/Graphite ⁽¹⁾

	Seat [Inch]		1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	
	Stroke [Inch]	Parabolic	1	1	1	1	1	1	1 1/4	1 1/4	1 1/4	1 3/8	1 3/8	1 3/8 2 ⁽²⁾	2	2 3/8	3	4	4	
		On/Off, V port, Mixing	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1	1 1/4	1 3/8	1 1/2	2 3/8	3	4	
		Diverting						1/2	1/2	1/2	1/2	1/2	1		1 3/8	1 1/2	2 3/8	3		
		Perforated			1	1	1	1	1 1/4	1 1/4	1 1/4	1 1/2	2	2	2 3/8	3	4	4	4	
Actuator	Air Supply [PSIG]																			
ST6160. A6-6G Stroke 1 1/2 Inch Stem 1/2 Inch Spring-range 11.6 - 40.6 psi Actuator Code: CEB_	30	Parabolic																		
		On/Off, V port, Mixing	750	750	750	628	353	226	138	88	57	33								
		Diverting					353	226	138	88	57	33	22							
		Perforated																		
	60	Parabolic	750	750	750	750	750	750	750	702	449	287	143	94	60					
		On/Off, V port, Mixing	750	750	750	750	750	750	750	750	666	426	252	130	72	39	22			
		Diverting					750	750	750	666	426	252	166	83	46	27				
		Perforated			750	750	750	750	702	449	287	115								
	90	Parabolic	750	750	750	750	750	750	750	750	657	361	239	153						
		On/Off, V port, Mixing	750	750	750	750	750	750	750	750	750	471	275	164	98	63				
		Diverting					750	750	750	750	750	471	311	176	105	68				
		Perforated			750	750	750	750	750	750	657	334								
ST6160. C6-3G Stroke 2 3/8 Inch Stem 1/2 Inch Spring-range 4.4 - 18.9 psi Actuator Code: CFB_	30	Parabolic	750	750	750	750	750	750	476	305	195	107	70	45	21	11				
		On/Off, V port, Mixing	750	750	750	750	750	750	589	377	241	143	82	49	29	18				
		Diverting					750	750	589	377	241	143	94	52	31	20				
		Perforated			750	750	750	750	476	305	195	97	52	34	16					
	60	Parabolic	750	750	750	750	750	750	750	750	564	325	215	137	81	52				
		On/Off, V port, Mixing	750	750	750	750	750	750	750	750	611	361	226	141	88	59				
		Diverting					750	750	750	750	611	361	239	145	90	61				
		Perforated			750	750	750	750	750	750	567	315	197	126	76					
	90	Parabolic	750	750	750	750	750	750	750	750	750	544	359	230	140	94				
		On/Off, V port, Mixing	750	750	750	750	750	750	750	750	750	580	371	233	147	100				
		Diverting					750	750	750	750	750	580	383	237	149	102				
		Perforated			750	750	750	750	750	750	750	534	341	218	135					

⁽¹⁾ Consult factory for shutoff ratings when using other packing types.

⁽²⁾ Stroke 2 Inch for Valves with 1 1/4 Inch Stem

REflex Shutoff Tables (continued)

Max. Permissible Shutoff Pressures with Pneumatic Actuators (psig)

P2 = 0 psig, Spring Opens on Air Failure [Direct acting], Flow-to-Open, Stem Packing PTFE/Graphite ^[1]

	Seat [Inch]		1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12		
	Stroke [Inch]	Parabolic	1	1	1	1	1	1	1 1/4	1 1/4	1 1/4	1 3/8	1 3/8	1 3/8 2 ^[2]	2	2 3/8	3	4	4		
		On/Off, V port, Mixing	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1	1 1/4	1 3/8	1 1/2	2 3/8	3	4		
		Diverting						1/2	1/2	1/2	1/2	1/2	1		1 3/8	1 1/2	2 3/8	3			
		Perforated			1	1	1	1	1 1/4	1 1/4	1 1/4	1 1/2	2	2	2 3/8	3	4	4	4		
Actuator	Air Supply [PSIG]																				
ST6160.C6-7G Stroke 2 Inch Stem 1/2 Inch Spring-range 10.2 - 43.5 psi Actuator Code: CGB_	30	Parabolic	750	750	629	402	226	145													
		On/Off, V port, Mixing	750	750	750	750	665	426	260	166	106	63	14								
		Diverting					665	426	260	106	106	63	42	9							
		Perforated					226	145													
	60	Parabolic	750	750	750	750	750	750	750	579	371	198	131	84	37	18					
		On/Off, V port, Mixing	750	750	750	750	750	750	750	743	476	282	158	93	54	33					
		Diverting					750	750	750	743	476	282	186	101	59	37					
		Perforated					750	750	750	579	371	178	89	57	25						
	90	Parabolic	750	750	750	750	750	750	750	750	740	417	275	176	96	59					
		On/Off, V port, Mixing	750	750	750	750	750	750	750	750	750	500	303	185	113	74					
		Diverting					750	750	750	750	750	500	330	194	118	78					
		Perforated			750	750	750	750	750	750	740	396	233	149	84						
ST6175.B6-3D Stroke 2 3/8 Inch Stem 1 1/4 Inch Spring-range 10.2 - 30.5 psi Actuator Code: DJB_	30	Parabolic								443	284	126	83								
		On/Off, V port, Mixing								750	491	290	139	71	34	16					
		Diverting								750	491	290	192	89	45	24	9				
		Perforated								443	284	87									
	60	Parabolic								750	750	750	545	297	190	117					
		On/Off, V port, Mixing								750	750	750	600	366	223	148	66				
		Diverting								750	750	750	653	384	235	155	83	42			
		Perforated								750	750	750	464	297	168						
	90	Parabolic								750	750	750	750	593	379	248					
		On/Off, V port, Mixing								750	750	750	750	662	412	279	140				
		Diverting								750	750	750	750	680	424	286	157	89			
		Perforated								750	750	750	750	593	357						

^[1] Consult factory for shutoff ratings when using other packing types.

^[2] Stroke 2 Inch for Valves with 1 1/4 Inch Stem

REflex Shutoff Tables (continued)

Max. Permissible Shutoff Pressures with Pneumatic Actuators (psig)

P2 = 0 psig, Spring Opens on Air Failure [Direct acting], Flow-to-Open, Stem Packing PTFE/Graphite ^[1]

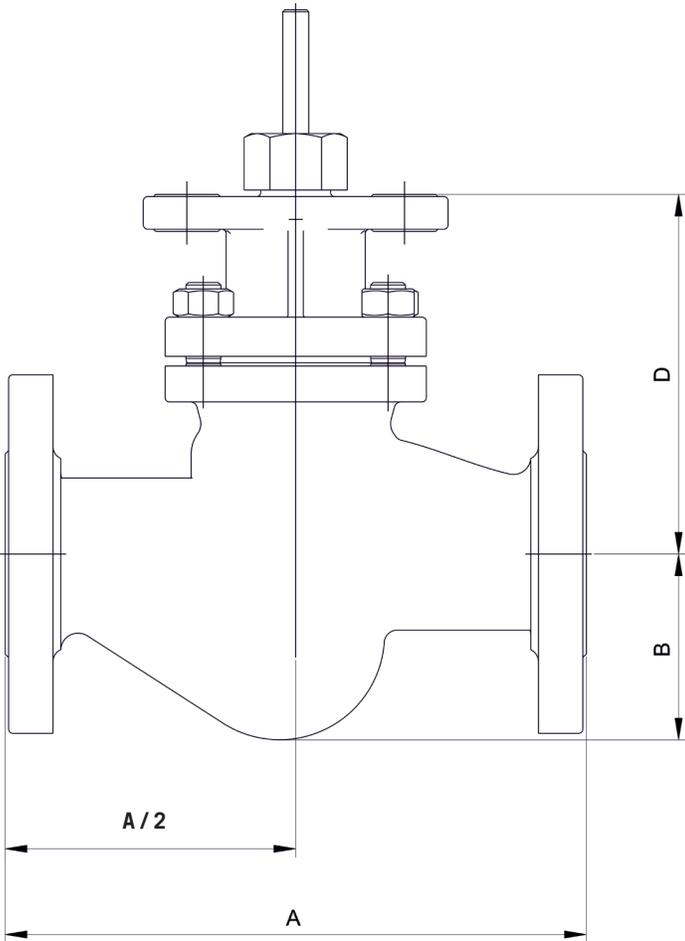
Seat [Inch]	Stroke [Inch]	Parabolic	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	
			1	1	1	1	1	1	1	1 1/4	1 1/4	1 1/4	1 3/8	1 3/8	1 3/8 2 ^[2]	2	2 3/8	3	4	4
Actuator	Air Supply [PSIG]	On/Off, V port, Mixing	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1	1 1/4	1 3/8	1 1/2	2 3/8	3	4	4
		Diverting							1/2	1/2	1/2	1/2	1		1 3/8	1 1/2	2 3/8	3		
		Perforated			1	1	1	1	1 1/4	1 1/4	1 1/4	1 1/2	2	2	2 3/8	3	4	4	4	4
ST6175.B6-7D Stroke 2 Inch Stem 1 1/4 Inch Spring-range 23.2 - 68.2 psi Actuator Code: DLB_	60	Parabolic								674	431	168	111							
		On/Off, V port, Mixing									750	750	528	229	108	45	14			
		Diverting									750	750	528	349	146	69	32	8		
		Perforated									674	431	73							
	90	Parabolic									750	750	750	573	251	161	77			
		On/Off, V port, Mixing									750	750	750	690	403	235	145	44		
		Diverting									750	750	750	750	442	258	163	82	28	
		Perforated									750	750	750	393	251	112				
ST6175.C6-3D Stroke 4 Inch Stem 1 1/4 Inch Spring-range 11.6-30.5 psi Actuator Code: DNB_	30	Parabolic								637	408	219	144	64	41	20				
		On/Off, V port, Mixing									750	520	308	174	102	59	37	11		
		Diverting									750	520	308	203	112	65	41	21	7	
		Perforated									637	408	196	99	64	28				
	60	Parabolic									750	750	750	606	359	230	151	75	42	29
		On/Off, V port, Mixing									750	750	750	636	398	248	168	85	48	29
		Diverting									750	750	750	665	407	254	172	95	54	33
		Perforated									750	750	750	561	359	218	134	66	42	29
	90	Parabolic									750	750	750	750	655	419	282	149	89	62
		On/Off, V port, Mixing									750	750	750	750	693	437	299	159	96	62
		Diverting									750	750	750	750	703	444	304	168	102	66
		Perforated									750	750	750	750	655	407	265	140	89	62
ST6175.C6-7D Stroke 4 Inch Stem 1 1/4 Inch Spring-range 27.6 - 68.2 psi Actuator Code: DQB_	60	Parabolic								750	674	357	236	86	55	20				
		On/Off, V port, Mixing									750	750	546	296	168	56	11			
		Diverting									750	750	546	360	189	108	67	32	7	
		Perforated									750	674	301	134	86	28				
	90	Parabolic									750	750	750	697	381	244	151	64	28	19
		On/Off, V port, Mixing									750	750	750	750	464	286	188	85	41	19
		Diverting									750	750	750	750	485	297	198	106	54	29
		Perforated									750	750	750	596	381	218	114	44	28	19

^[1] Consult factory for shutoff ratings when using other packing types.

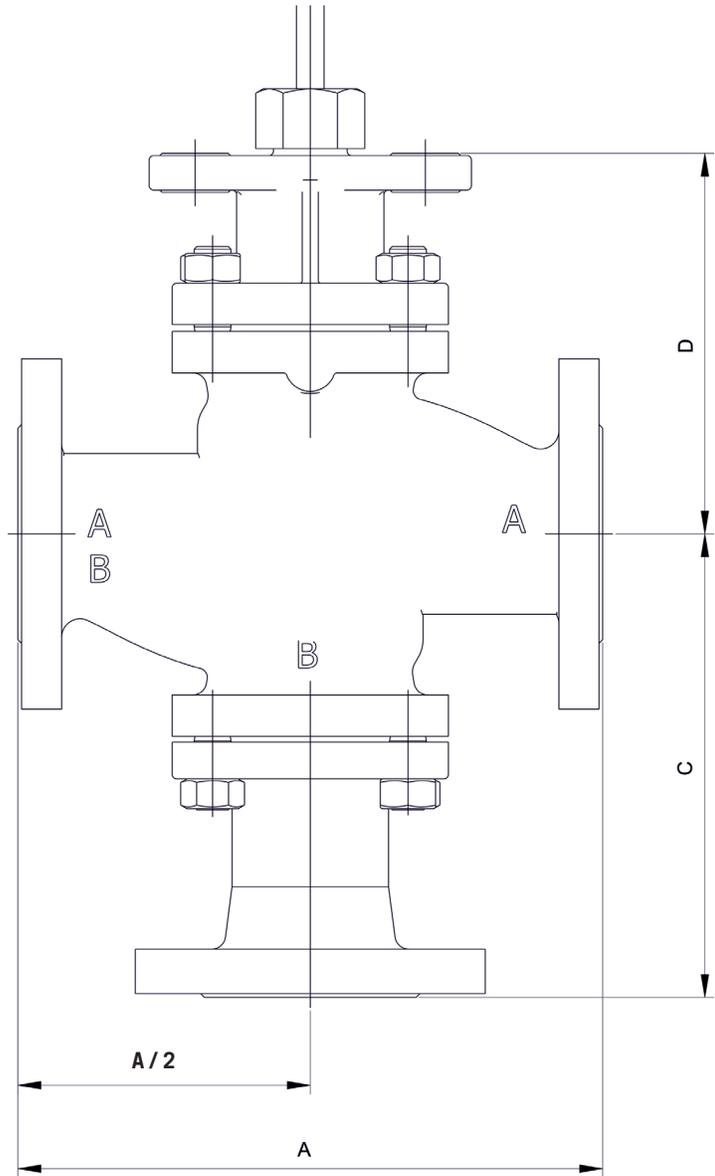
^[2] Stroke 2 Inch for Valves with 1 1/4 Inch Stem

REflex Dimensions

2-Way Valve



3-Way Valve



REflex Dimensions (continued)

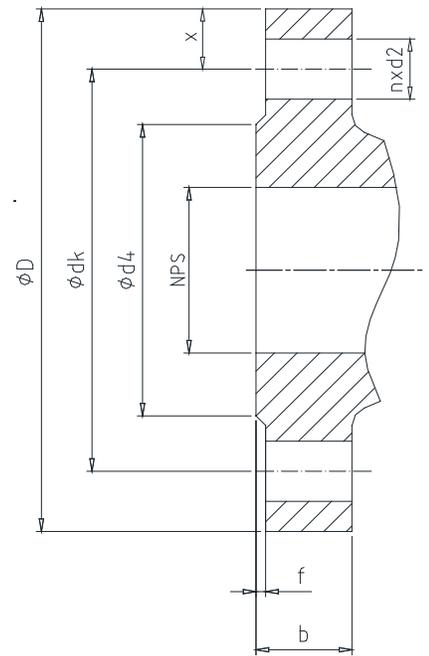
NPS	CL	A								B		C		D			
		RF		RTJ		BWE		THD / SWE		[Inch]	[mm]	[Inch]	[mm]	½" Stem Dia.		1¼" Stem Dia.	
		[Inch]	[mm]	[Inch]	[mm]	[Inch]	[mm]	[Inch]	[mm]					[Inch]	[mm]	[Inch]	[mm]
½	150	7¼	184	-	-	7¾	187	8½	206	1¼	45	-	-	5¾	137	-	-
	300	7½	184	7½	201	7¾	187	8½	206	1⅝	47	-	-	5¾	137	-	-
	600	8	203	8	203	8	203	-	-	1⅞	47	-	-	7¾	194	-	-
	900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
¾	150	7¼	184	-	-	7¾	187	8¼	210	2	50	-	-	5¾	137	-	-
	300	7¾	194	8½	207	7¾	187	8¼	210	2¼	57	-	-	5¾	137	-	-
	600	8½	206	8½	206	8½	206	-	-	2¼	57	-	-	7¾	194	-	-
	900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	150	7¼	184	-	-	8¼	210	8¼	210	2½	54	6½	157	5¾	142	-	-
	300	7¾	197	8¼	210	8¼	210	8¼	210	2½	62	6½	164	5¾	142	-	-
	600	8¼	210	8¼	210	8¼	210	-	-	2½	62	-	-	9	227	-	-
	900	11	279	⁽¹⁾	⁽¹⁾	11	279	-	-	3	75	-	-	9	227	-	-
1½	150	8¼	222	-	-	9¾	251	9¾	251	2½	63	7½	190	6¾	169	-	-
	300	9¼	235	9¼	248	9¾	251	9¾	251	3¾	78	7¾	194	6¾	169	-	-
	600	9¾	251	9¾	251	9¾	251	-	-	3	77	-	-	10	254	-	-
	900	13	330	⁽¹⁾	⁽¹⁾	13	330	-	-	3½	90	-	-	10	254	-	-
2	150	10	254	-	-	11¼	286	11¼	286	3	76	7¾	201	6½	165	8¾	206
	300	10½	267	11¾	283	11¼	286	11¼	286	3¼	82	8¼	208	6½	165	8¾	206
	600	11¼	286	11¾	289	11¼	286	-	-	3¾	92	-	-	11	278	10½	267
	900	14¾	375	⁽¹⁾	⁽¹⁾	14¾	375	-	-	4¼	107	-	-	11	278	10½	267
2½	150	10¾	276	-	-	12¼	311	-	-	3½	89	8¼	222	6¾	171	8¼	211
	300	11½	292	12¾	308	12¼	311	-	-	3¾	95	9	230	6¾	171	8¼	211
	600	12¼	311	12¾	314	12¼	311	-	-	3¾	93	-	-	12¼	310	11¾	296
	900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	150	11¼	298	-	-	13¼	337	-	-	3¾	95	8½	207	7¾	198	8¼	222
	300	12½	318	13¾	333	13¼	337	-	-	4¾	105	8½	216	7¾	198	8¼	222
	600	13¼	337	13¾	340	13¼	337	-	-	4¾	124	-	-	13¾	334	12¾	319
	900	18½	460	⁽¹⁾	⁽¹⁾	18½	460	-	-	5	127	-	-	13¾	334	12¾	319
4	150	13¾	353	-	-	15½	394	-	-	4½	114	10¾	258	8¾	224	9½	242
	300	14½	368	15¾	384	15½	394	-	-	5	127	10½	266	8¾	224	9½	242
	600	15½	394	15¾	397	15½	394	-	-	5¾	137	-	-	15¾	384	14¾	365
	900	20¾	530	⁽¹⁾	⁽¹⁾	20¾	530	-	-	5¾	145	-	-	15¾	384	14¾	365
6	150	17¾	451	-	-	20	508	-	-	5½	140	12¾	308	12½	316	12¾	328
	300	18¾	473	19¼	489	20	508	-	-	6¼	159	12½	319	12½	316	12¾	328
	600	20	508	20¾	511	20	508	-	-	6¼	160	-	-	16¾	415	16¾	426
8	150	21¾	543	-	-	24	610	-	-	8	200	14¾	374	-	-	17	431
	300	22¾	568	23	584	24	610	-	-	8	200	15¼	386	-	-	17	431
	600	24	610	24¾	612	24	610	-	-	8½	216	-	-	-	-	19¾	498
10	150	26½	673	-	-	29¾	752	-	-	10	252	17¾	446	-	-	20¾	530
	300	27¾	708	28½	724	29¾	752	-	-	10	252	18½	459	-	-	20¾	530
	600	29¾	752	29¾	754	29¾	752	-	-	10¾	277	-	-	-	-	27½	698
12	150	29	737	-	-	32¼	819	-	-	13¼	335	22½	562	-	-	26	660
	300	30½	775	31¾	791	32¼	819	-	-	13¼	335	22½	562	-	-	26	660
	600	32¼	819	32½	824	32¼	819	-	-	13¼	335	-	-	-	-	26	660

⁽¹⁾ Consult factory for RTJ dimensions of CL 900 valves

REflex Dimensions (continued)

Flanged Ends with Raised Face acc. to ASME B16.5

NPS	CL	D		b		f		dk		D4		D2		n	THD ⁽¹⁾	x	
		Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm				
½	150	3 ½	89	¾	11	⅜	1,6	2 ¾	60	1 ¾	35	¾	16	4	½	¾	14,5
	300	3 ¾	95	½	14	⅜	1,6	2 ¾	67	1 ¾	35	¾	16	4	½	½	14
	600	3 ¾	95	¾	21	¼	6,4	2 ¾	67	1 ¾	35	¾	16	4	½	½	14
¾	150	3 ¾	98	½	13	⅜	1,6	2 ¾	70	1 ¾	43	¾	16	4	½	½	14
	300	4 ½	115	¾	16	⅜	1,6	3 ¼	83	1 ¾	43	¾	19	4	¾	¾	17
	600	4 ½	115	¾	23	¼	6,4	3 ¼	83	1 ¾	43	¾	19	4	¾	¾	17
1	150	4 ¼	108	½	14	⅜	1,6	3 ½	79	2	51	¾	16	4	½	¾	14,5
	300	4 ¾	124	¾	18	⅜	1,6	3 ½	89	2	51	¾	19	4	¾	¾	17,5
	600	4 ¾	124	1	24	¼	6,4	3 ½	89	2	51	¾	19	4	¾	¾	17,5
	900	5 ½	149	1 ¾	35	¼	6,4	4	102	2	51	1	25	4	¾	¾	23,5
1½	150	5	127	¾	18	⅜	1,6	3 ¾	98	2 ½	73	¾	16	4	½	¾	14,5
	300	6 ½	156	¾	21	⅜	1,6	4 ½	114	2 ½	73	¾	22	4	¾	¾	21
	600	6 ½	165	1 ¼	32	¼	6,4	5	127	3 ¾	92	¾	19	8	¾	¾	19
	900	8 ½	216	1 ¾	45	¼	6,4	6 ½	165	3 ¾	92	1	25	8	¾	1	25,5
2	150	6	152	¾	19	⅜	1,6	4 ¾	121	3 ¾	92	¾	19	4	¾	¾	15,5
	300	6 ½	165	¾	22	⅜	1,6	5	127	3 ¾	92	¾	19	8	¾	¾	19
	600	6 ½	165	1 ¼	32	¼	6,4	5	127	3 ¾	92	¾	19	8	¾	¾	19
	900	8 ½	216	1 ¾	45	¼	6,4	6 ½	165	3 ¾	92	1	25	8	¾	1	25,5
2½	150	7	178	¾	22	⅜	1,6	5 ½	140	4 ½	105	¾	19	4	¾	¾	19
	300	7 ½	190	1	25	⅜	1,6	5 ¾	149	4 ½	105	¾	22	8	¾	¾	20,5
	600	7 ½	190	1 ¾	35	¼	6,4	5 ¾	149	4 ½	105	¾	22	8	¾	¾	20,5
3	150	7 ½	190	1	24	⅜	1,6	6	152	5	127	¾	19	4	¾	¾	19
	300	8 ¼	210	1 ½	29	⅜	1,6	6 ¾	168	5	127	¾	22	8	¾	¾	21
	600	8 ¼	210	1 ½	38	¼	6,4	6 ¾	168	5	127	¾	22	8	¾	¾	21
	900	10 ½	267	1 ¾	45	¼	6,4	8	203	5	127	1 ¼	32	8	¾	1 ¼	32
4	150	9	229	¾	23	⅜	1,6	7 ½	190	6 ¼	158	¾	19	8	¾	¾	19,5
	300	10	254	1 ¼	32	⅜	1,6	7 ¾	200	6 ¼	158	¾	22	8	¾	1 ½	27
	600	10 ¾	273	1 ¾	45	¼	6,4	8 ½	216	6 ¼	158	1	25	8	¾	1 ½	28,5
	900	11 ½	292	2	51	¼	6,4	9 ¼	235	6 ¼	158	1 ¼	32	8	1 ½	1 ½	28,5
6	150	11	280	1	25	⅜	1,6	9 ½	241	8 ½	216	¾	22	8	¾	¾	19,5
	300	12 ½	318	1 ¾	36	⅜	1,6	10 ¾	270	8 ½	216	¾	22	12	¾	1	24
	600	14	355	2 ¾	54	¼	6,4	11 ½	292	8 ½	216	1 ½	28	12	1	1 ¼	31,5
	900	15	381	2 ½	62	¼	6,4	12 ½	318	8 ½	216	1 ¼	32	12	1 ½	1 ¼	31,5
8	150	13 ½	343	1 ¾	28	⅜	1,6	11 ¾	299	10 ¾	270	¾	22	8	¾	¾	22
	300	15	381	1 ¾	41	⅜	1,6	13	330	10 ¾	270	1	25	12	¾	1	25,5
	600	16 ½	419	2 ½	62	¼	6,4	13 ¾	351	10 ¾	270	1 ¼	32	12	1 ½	1 ¾	34
10	150	16	406	1 ¾	30	⅜	1,6	14 ¼	362	12 ¾	324	1	25	12	¾	¾	22
	300	17 ½	445	1 ¾	48	⅜	1,6	15 ¼	387	12 ¾	324	1 ½	28	16	1	1 ½	29
	600	20	508	2 ¾	70	¼	6,4	17	432	12 ¾	324	1 ¾	34	16	1 ¼	1 ½	38
12	150	19	483	1 ¼	32	⅜	1,6	17	432	15	381	1	25	12	¾	1	25,5
	300	20 ½	521	2	51	⅜	1,6	17 ¾	450	15	381	1 ¼	32	16	1 ½	1 ¾	35,5
	600	22	559	2 ¾	73	¼	6,4	19 ¼	489	15	381	1 ¾	34	20	1 ¼	1 ¾	35

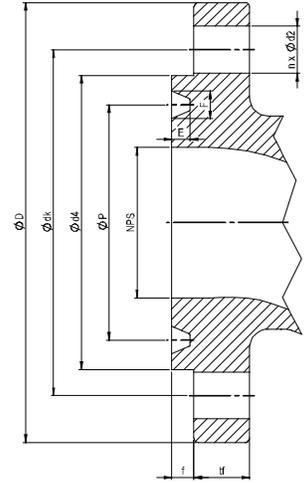


⁽¹⁾ Bolt thread

REflex Dimensions (continued)

Flanged Ends with Ring Type Joint acc. to ASME B16.5

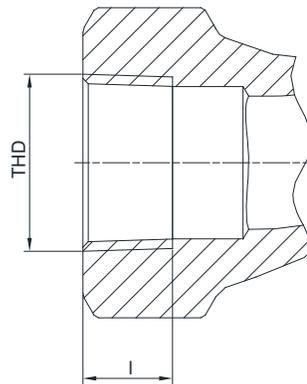
NPS	CL	D		dk		d4		P		f		tf		d2		n	THD ⁽¹⁾	E		F		Groove no
		Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm			Inch	mm			
¼	300	3 ¾	95	2 ¾	67	2	51	1 ¾	34,1	¼	7,5	½	12,7	¾	15,7	4	½	¼	5,54	¼	7,14	R11
	600	3 ¾	95	2 ¾	67	2	51	1 ¾	34,1	¼	7,5	½	12,7	¾	15,7	4	½	¼	5,54	¼	7,14	R11
¾	300	4 ½	115	3 ¾	83	2 ½	63,5	1 ¾	42,9	¾	8,5	¾	14,3	¾	19	4	¾	¼	6,35	¾	8,74	R13
	600	4 ½	115	3 ¾	83	2 ½	63,5	1 ¾	42,9	¾	8,5	¾	14,3	¾	19	4	¾	¼	6,35	¾	8,74	R13
1	300	4 ¾	125	3 ¾	89	2 ¾	70	2	50,8	¾	8	¾	16	¾	19	4	¾	¼	6,35	¾	8,74	R16
	600	4 ¾	125	3 ¾	89	2 ¾	70	2	50,8	¾	8	¾	16	¾	19	4	¾	¼	6,35	¾	8,74	R16
1½	300	6 ½	156	4 ½	114	3 ¾	90,5	2 ¾	68,3	¾	8	¾	19,1	¾	22,3	4	¾	¼	6,35	¾	8,74	R20
	600	6 ½	156	4 ½	114	3 ¾	90,5	2 ¾	68,3	¾	8	¾	19,1	¾	22,3	4	¾	¼	6,35	¾	8,74	R20
2	300	6 ¾	165	5	127	4 ¾	108	3 ¾	82,6	¾	9,6	¾	20,7	¾	19	8	¾	¼	7,92	½	11,91	R23
	600	6 ¾	165	5	127	4 ¾	108	3 ¾	82,6	¾	9,6	¾	20,7	¾	19	8	¾	¼	7,92	½	11,91	R23
2½	300	7 ½	190	5 ¾	149	5	127	4	101,6	¾	9,6	1	24	¾	20,3	8	¾	¼	7,92	½	11,91	R26
	600	7 ½	190	5 ¾	149	5	127	4	101,6	¾	9,6	1	24	¾	20,3	8	¾	¼	7,92	½	11,91	R26
3	300	8 ¾	210	6 ¾	168	5 ¾	146	4 ¾	123,8	¾	9	1 ¼	27	¾	22,3	8	¾	¼	7,92	½	11,91	R30
	600	8 ¾	210	6 ¾	168	5 ¾	146	4 ¾	123,8	¾	9	1 ¼	27	¾	22,3	8	¾	¼	7,92	½	11,91	R30
4	300	10	254	7 ¾	200	6 ¾	175	5 ¾	149,2	¾	9,6	1 ¼	30,2	¾	22,3	8	¾	¼	7,92	½	11,91	R37
	600	10 ¾	275	8 ¾	216	6 ¾	175	5 ¾	149,2	¾	8,5	1 ½	38,1	1	25,5	8	¾	¼	7,92	½	11,91	R37
6	300	12 ½	318	10 ¾	270	9 ¾	241	8 ¾	211,1	¾	9,6	1 ¾	35	¾	22,3	12	¾	¼	7,92	½	11,91	R45
	600	14	355	11 ¾	292	9 ¾	241	8 ¾	211,1	¾	8,5	1 ¾	48	1 ¼	28,5	8	1	¼	7,92	½	11,91	R45
8	300	15	380	13	330	11 ¾	302	10 ¾	269,9	¾	10	1 ¾	40	1	25,5	12	¾	¼	7,92	½	11,91	R49
	600	16 ½	420	13 ¾	351	11 ¾	302	10 ¾	269,9	¾	8	2 ¼	56	1 ¼	32	12	1 ¼	¼	7,92	½	11,91	R49
10	300	17 ½	445	15 ¾	387	14	356	12 ¾	323,9	¾	10	1 ¾	46,5	1 ¼	28,5	16	1	¼	7,92	½	11,91	R53
	600	20 ½	510	17	432	14	356	12 ¾	323,9	¾	8	2 ½	63,5	1 ¼	35	16	1 ¼	¼	7,92	½	11,91	R53
12	300	20 ½	520	17 ¾	451	16 ¾	413	15	381	¾	10	2	50	1 ¼	32	16	1 ¼	¼	7,92	½	11,91	R57
	600	22	560	19 ¼	489	16 ¾	413	15	381	¾	8	2 ¾	66,7	1 ¼	35	20	1 ¼	¼	7,92	½	11,91	R57



⁽¹⁾ Bolt thread

Threaded Ends acc. to ASME B16.11

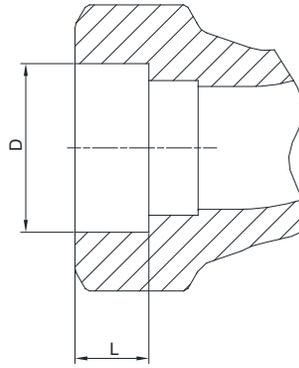
NPS	CL	THD	l	
			Inch	mm
½	150 – 600	½" – 14 NPT	½	13,6
¾	150 – 600	¾" – 14 NPT	½	14
1	150 – 600	1" – 11 ½ NPT	¾	17,3
1½	150 – 600	1 ½" – 11 ½ NPT	¾	18,4
2	150 – 600	2" – 11 ½ NPT	¾	19,2



REflex Dimensions (continued)

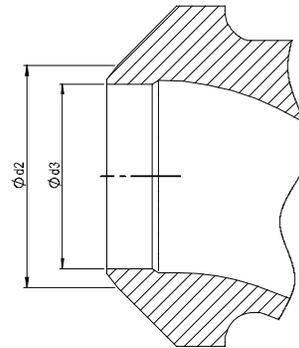
Socketed Weld Ends acc. to ASME B16.11

NPS	CL	D		L	
		Inch	mm	Inch	mm
½	150 – 600	7/8	22,2	3/8	10
¾	150 – 600	1 1/8	27,6	5/8	15
1	150 – 600	1 3/8	34,3	5/8	15
1½	150 – 600	1 7/8	49,2	5/8	16
2	150 – 600	2 3/8	61,7	5/8	16



Butt Weld Ends acc. to ASME B16.25

NPS	CL	d2		d3		Pipe Schedule acc. to ASME B36.10M
		Inch	mm	Inch	mm	
½	150 – 300	7/8	22	5/8	15,8	40
	600			1/2	13,8	80
¾	150 – 300	1 1/8	27,5	7/8	21	40
	600			3/4	18,9	80
1	150 – 300	1 3/8	34,5	1	26,6	40
	600			1	24,3	80
1½	150 – 300	2	50	1 1/8	40,9	40
	600			1 1/2	38,2	80
2	150 – 300	2 1/2	62	2 1/8	52,5	40
	600			1 7/8	49,2	80
2½	150 – 300	3	75	2 1/2	62,5	40
	600			2 3/4	59	80
3	150 – 300	3 5/8	91	3 1/4	78	40
	600			2 7/8	73,5	80
4	150 – 300	4 5/8	117	4	102	40
	600			3 3/4	97	80
6	150 – 300	6 3/4	172	6 1/4	154	40
	600			5 3/4	146,5	80
8	150 – 300	8 3/4	223	8 1/4	206,5	40
	600			7 3/4	193,5	80
10	150 – 300	11	278	10	254,5	40
	600			9 3/4	243	80
12	150 – 300	13	329	11 3/4	303	40
	600			11 1/2	289	80

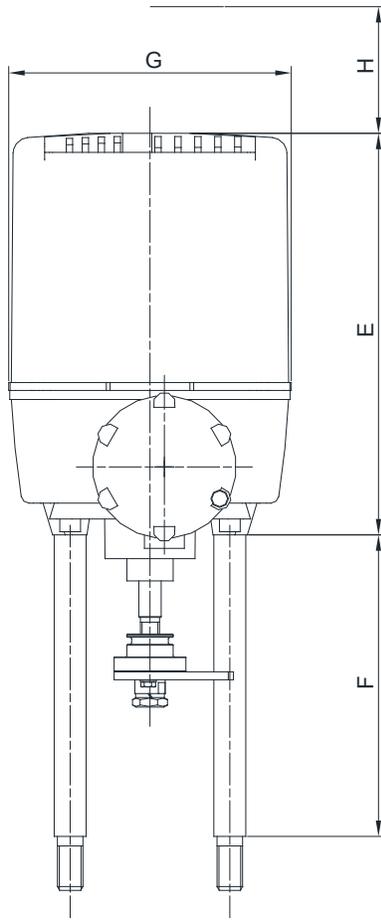


REflex Weights

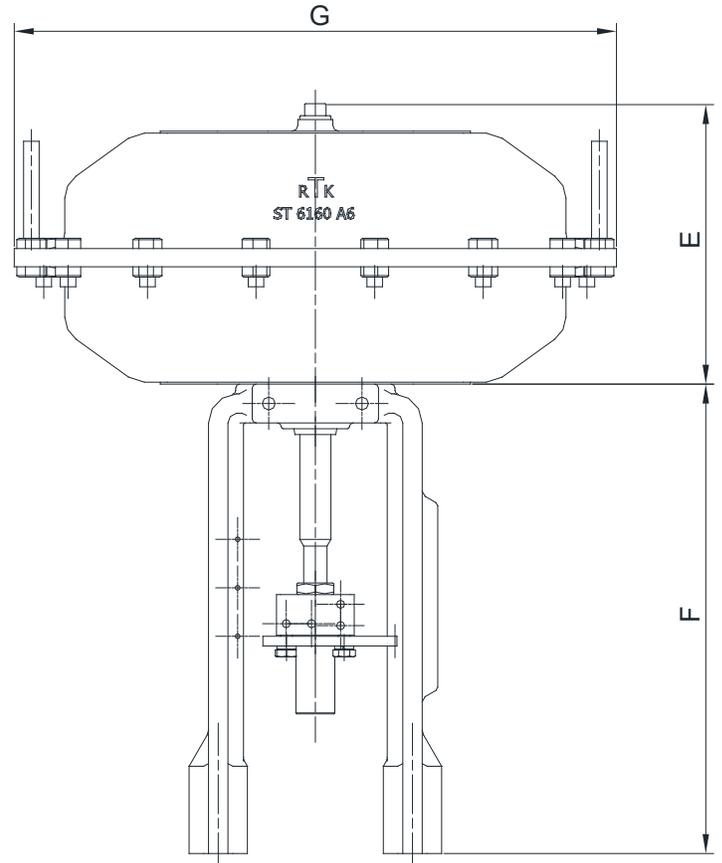
NPS	CL	2-Way Valve								3-Way Valve			
		RF / RTJ				BWE / SWE / THR				½" Stem Dia.		1¼" Stem Dia.	
		½" Stem Dia.		1¼" Stem Dia.		½" Stem Dia.		1¼" Stem Dia.					
		[lbs]	[kg]	[lbs]	[kg]	[lbs]	[kg]	[lbs]	[kg]	[lbs]	[kg]	[lbs]	[kg]
½	150	5	3	-	-	5	3	-	-	-	-	-	-
	300	5	3	-	-	5	3	-	-	-	-	-	-
	600	12	6	-	-	12	6	-	-	-	-	-	-
	900	-	-	-	-	-	-	-	-	-	-	-	-
¾	150	7	4	-	-	7	4	-	-	-	-	-	-
	300	7	4	-	-	7	4	-	-	-	-	-	-
	600	10	5	-	-	10	5	-	-	-	-	-	-
	900	-	-	-	-	-	-	-	-	-	-	-	-
1	150	5	3	-	-	5	3	-	-	9	5	-	-
	300	7	4	-	-	7	4	-	-	11	5	-	-
	600	14	7	-	-	14	7	-	-	-	-	-	-
	900	18	9	-	-	18	9	-	-	-	-	-	-
1½	150	6	3	34	16	6	3	34	16	13	6	-	-
	300	13	6	39	18	13	6	39	18	21	10	-	-
	600	23	11	79	36	23	11	79	36	-	-	-	-
	900	30	14	104	48	30	14	104	48	-	-	-	-
2	150	12	6	44	20	12	6	44	20	21	10	-	-
	300	14	7	50	23	14	7	50	23	23	11	-	-
	600	28	13	103	47	28	13	103	47	-	-	-	-
	900	42	20	131	60	42	20	131	60	-	-	-	-
2½	150	21	10	46	21	21	10	46	21	32	15	-	-
	300	23	11	55	25	23	11	55	25	34	16	-	-
	600	51	24	86	40	51	24	86	40	-	-	-	-
	900	-	-	-	-	-	-	-	-	-	-	-	-
3	150	31	15	73	34	31	15	73	34	48	22	101	46
	300	35	16	83	38	35	16	83	38	55	25	111	51
	600	60	28	176	80	60	28	176	80	-	-	-	-
	900	72	33	231	105	72	33	231	105	-	-	-	-
4	150	47	22	123	56	47	22	123	56	67	31	165	75
	300	55	25	141	64	55	25	141	64	79	36	182	83
	600	94	43	242	110	94	43	242	110	-	-	-	-
	900	122	56	301	137	122	56	301	137	-	-	-	-
6	150	83	38	231	105	83	38	231	105	128	59	299	136
	300	97	44	253	115	97	44	253	115	153	70	321	146
	600	157	72	305	139	157	72	305	139	-	-	-	-
	900	202	92	406	185	202	92	406	185	-	-	-	-
8	150	-	-	356	162	-	-	356	162	-	-	486	221
	300	-	-	396	180	-	-	396	180	-	-	536	244
	600	-	-	857	389	-	-	857	389	-	-	-	-
	900	-	-	-	-	-	-	-	-	-	-	-	-
10	150	-	-	566	257	-	-	566	257	-	-	721	327
	300	-	-	646	293	-	-	646	293	-	-	806	366
	600	-	-	1411	640	-	-	1411	640	-	-	-	-
	900	-	-	-	-	-	-	-	-	-	-	-	-
12	150	-	-	751	341	-	-	751	341	-	-	906	411
	300	-	-	851	386	-	-	851	386	-	-	1006	457
	600	-	-	1841	835	-	-	1841	835	-	-	-	-
	900	-	-	-	-	-	-	-	-	-	-	-	-

Actuator Dimensions and Weights

Electric Actuator



Pneumatic Actuator



Actuator	E		F		G		H		Weight	
	[Inch]	[mm]	[Inch]	[mm]	[Inch]	[mm]	[Inch]	[mm]	[lbs]	[kg]
REact 15	7¼	184	7½	180	7⅝	186	5⅝	130	9	4.2
REact 30	9¼	233	7½	190	10⅝	262	4¾	120	10	4.5
REact 60	9¼	233	11⅝	295	10⅝	262	4¾	120	15	6.7
REact 100	9¼	233	11⅝	295	10⅝	262	4¾	120	15	6.7
ST 5106	8⅝	225	16⅝	430	8⅝	205	7⅞	200	48.5	22
ST 6135.B6	5⅝	136	8¼	211	8¼	210	-	-	16.5	7.5
ST 6160.A6	6½	166	8¼	211	12¼	310	-	-	33	15
ST 6160.C6	7⅝	186	9⅝	231	12¼	310	-	-	36.5	16.5
ST 6175.B6	9¼	234	11¼	285	16⅝	430	-	-	105.5	48
ST 6175.C6	14¾	374	12⅝	320	16⅝	430	-	-	147.5	67

Note: For actuators with standard pillars and yokes (Pillars and yokes same length)
 For length of pillars for valves with bellows seal, fail safe unit, for refrigeration and CL 600 and 900,
 please contact factory or authorized CIRCOR representative.

REflex Order Code

Model	Position 1	Plug Type	Position 9
R REflex		A On/Off	
Standard	Position 2	B On/Off soft sealing	
A ANSI		C V-port (LIN)	
Body Style	Position 3	1 V-port (EQ%)	
A 2-Way		D V-port soft sealing (LIN)	
B 3-Way		2 V-port soft sealing (EQ%)	
D Feedwater recirculation		3 V-port hardened (LIN)	
E Bottom blow down		4 V-port hardened (EQ%)	
F Continuous blow down		E Parabolic (LIN)	
G Steam converting		F Parabolic (EQ%)	
S Other		G Parabolic soft sealing (LIN)	
Valve Size	Position 4	H Parabolic soft sealing (EQ%)	
C NPS ½		J Parabolic hardened (LIN)	
D NPS ¾		K Parabolic hardened (EQ%)	
E NPS 1		L Perforated (LIN)	
G NPS 1½		M Perforated (EQ%)	
H NPS 2		N Perforated soft sealing (LIN)	
J NPS 2½		P Perforated soft sealing (EQ%)	
K NPS 3		Q Perforated hardened (LIN)	
L NPS 4		R Perforated hardened (EQ%)	
N NPS 6		T Ferro-Titanium (LIN)	
P NPS 8		U Ferro-Titanium (EQ%)	
Q NPS 10		V Mixing (LIN/LIN)	
R NPS 12		W Diverting (LIN/LIN)	
S Other		X Other	
Valve Rating	Position 5	Seat Type	Position 10
1 CL 150		A Standard (metallic)	
3 CL 300		B Stellite	
6 CL 600		C QCS 1-Stage	
9 CL 900		D QCS 1-Stage, hardened Seat	
		E QCS 2-Stage	
		F QCS 2-Stage, hardened Seat	
		S Other	
Body Material	Position 6	Seat Size	Position 11
A SA 216 WCB		A 1/8"	
B SA 351 CF8M		B 1/4"	
C SA 217 WC6		C 3/8"	
D SA 217 WC9		D 1/2"	
E Other		E 3/4"	
		F 1"	
		G 1 1/4"	
		H 1 1/2"	
		J 2"	
		K 2 1/2"	
		L 3"	
		M 4"	
		N 5"	
		P 6"	
		Q 8"	
		R 10"	
		T 12"	
Packing	Position 8		
A PTFE/Graphite			
B PTFE white			
C Chloroprene			
D Pure Graphite			
E Bellow seal			

REflex Code Selection Example



Code Position	Model	Standard	Body Style	Valve Size	Valve Rating	Body Material	End Connection	Packing	Plug Type	Seat Type	Seat Size	Actuator Type	Actuator Spring/Voltage	Working Direction / Actuating Speed	Accessories
1	R	A	A	1	1	A	A	A	A	A	A	A	A	A	A
Actuator Type	Position 12	Actuator Working Direction / Position 14		Actuating Speed											
A ST 6115		A AFC Reverse													
B ST 6135		B AFO Direct													
C ST 6160		C AFC Reverse (w/Handwheel)													
D ST 6175		D AFO Direct (w/Handwheel)													
E REact 30 (ST 5112)		E LLP													
1 React 30 PoP		F 0.47*/min REact 30/60/100													
F REact 60 (ST 5113)		G 0.71*/min REact 15/30/60/100/ST5106													
2 REact 60 PoP		H 0.90*/min REact 15													
G REact 100 (ST 5114)		J 1.06*/min REact 30/60/100													
3 React 100 PoP		K 1.35*/min REact 15													
4 React L		L 1.75*/min REact 30													
H ST 5106		M 2.01*/min REact 30													
J ST 5116		N 2.13*/min REact 60/100/ST5106													
K REact 15 E		P 2.65*/min REact 15/30													
N Manual		Q 4.02*/min REact 60													
S Other		R 4.25*/min ST 5106													
U None (stem 1/2", max. 2250 lbf)		*Not available for 115V													
V None (stem 1 1/4", max. 13000 lbf)		S Other													
W None (stem 2 3/8", max. 18000 lbf)		X None													
Actuator Spring/ Voltage	Position 13	Actuator Accessories		Position 15											
A 13-30 PSIG (A6-3S)		A PS2													
B 12-35 PSIG (C6-4S)		B PS2 w/ Feedback Module													
C 3-15 PSIG (B6-2G)		C PS2 HART													
D 12-44 PSIG (B6-6G)		D PS2 Profibus													
E 12-40 PSIG (A6-6G)		E Foxboro SRP 981 MM													
F 4-20 PSIG (C6-3G)		F PS2 + airfilter													
G 10-45 PSIG (C6-7G)		G PS2 with Feedback Module + airfilter													
H 4-13 PSIG (B6-2S)		H PS2 HART + airfilter													
J 10-30 PSIG (B6-3D)		J PS2 Profibus + airfilter													
K 17-20 PSIG (B6-5D)		K Foxboro SRP 981 MM + airfilter													
L 23-70 PSIG (B6-7D)		L EEx PS2													
M 7-20 PSIG (C6-3S)		M EEx PS2 with Feedback Module													
N 12-30 PSIG (C6-3D)		N EEx PS2 HART													
P 20-50 PSIG (C6-5D)		P EEx PS2 Profibus													
Q 28-70 PSIG (C6-7D)		Q EEx PS2 + airfilter													
R 24 V DC		R EEx PS2 with Feedback Module + airfilter													
T 24 VAC 1-ph		T EEx PS2 HART + airfilter													
U 115 V AC 1-ph		U EEx PS2 Profibus + airfilter													
V 230 V AC 1-ph		1 Feedback poti 1 kOhm													
W 400 V AC 3-ph		2 OUT 4-20mA (REtrans)													
S Other		3 IN/OUT 4-20mA (REpos)													
X None		4 Fail Safe Unit													
		5 Fail Safe Unit & IN/OUT 4-20mA													
		S Other													
		X None													

PNEUMATIC

ELECTRIC

