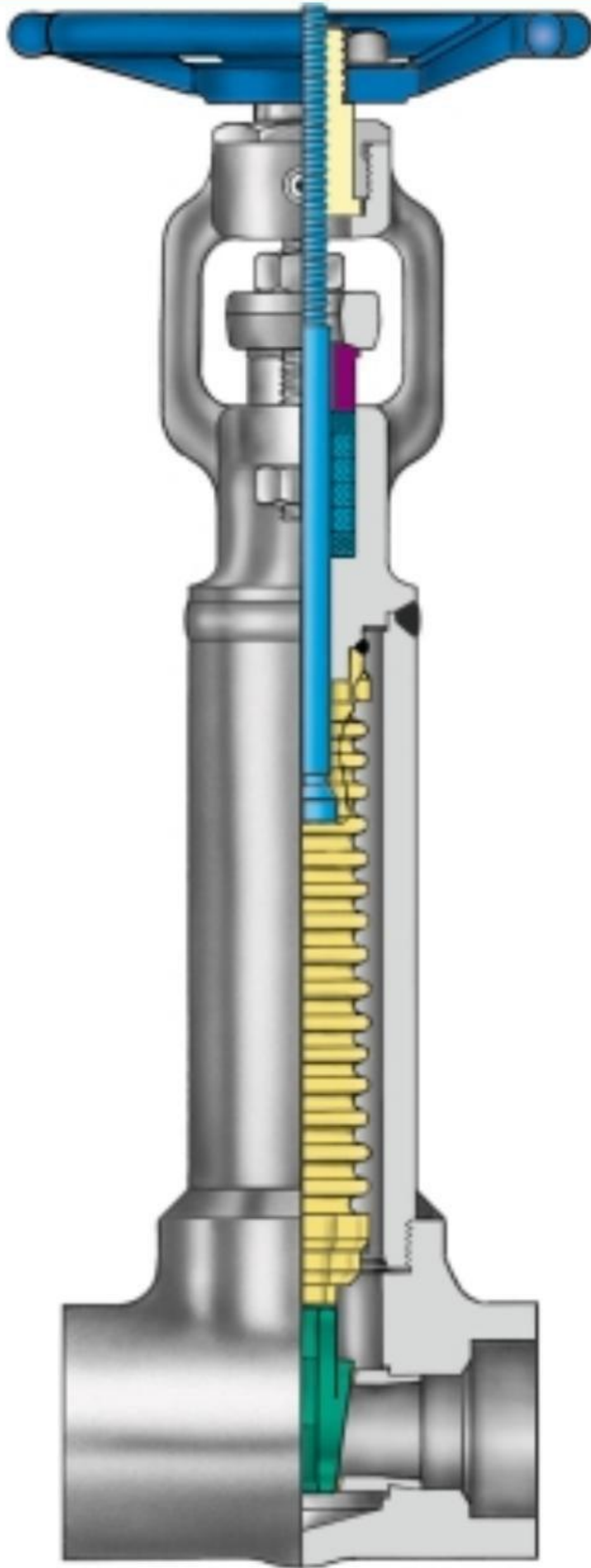




SILVER VALLEY

COMPACT FORGED STEEL BELLOWS SEAL GATE VALVES

THREADED, SOCKET WELD OR FLANGED ½–2" (15–50 mm)
API 602, CLASSES 800, 1500, ASME CLASSES 150–1500



DESIGN FEATURES:

- **Long cycle life bellows (3000 cycles).**
Designed and qualification-tested for high pressure/temperature service.
- **Bellows monitoring port (optional).** A plug can be connected with the space above the bellows to monitor performance.
- **Two secondary stem seals:**
a) Backseat in open position
b) Graphite packing.
- **Superior seating faces.**
Seats hardfaced with Stellite 6 and wedge is solid Stellite 6.

All standard valves available in A 105N, A 182 Gr. F22 & Gr. F316.

TYPICAL A 105 VALVE PARTS LIST

Part	Standard Materials
Body	A 105N
Body Extension	Steel ASTM A 106 Gr. B
Seat	Gr. 410 (stainless) HF
Wedge	Stellite 6
Bonnet	A 105N
Stem	Gr. 410 (stainless)
Packing rings	Graphite
Bellows ⁽¹⁾	Gr. 321 (stainless)
Gland stud	Gr. B6 (stainless)
Gland nut	Gr. 2H (stainless)
Gland	Gr. 416 (stainless)
Packing flange	A 105
Stem nut	Gr. 416 (stainless)
Yoke bushing	Steel
Handwheel	Malleable iron (painted)
Stem nut	Steel
Handwheel Lock washer	Steel
Name plate	Aluminum

(1) Hastelloy C and Inconel 625 also available.

A bolted bonnet version with provision for seal welding is available for nuclear and other applications.

Optional body, trim and bellows materials available on request.

PRESSURE/TEMPERATURE RATINGS

Material	Temp. °F °C	Working Pressure psig bar		Shell Test Pressure psig bar	
		800	1500	800	1500
A 105N	100 38	1975 136	3705 256	2975 205	5575 384
	800 427	1100 76	2060 142		
A 182 Gr. F 316	100 38	1920 132	3600 248	2900 200	5400 372
	1000 538	935 64	1750 121		

FIGURE NUMBERS

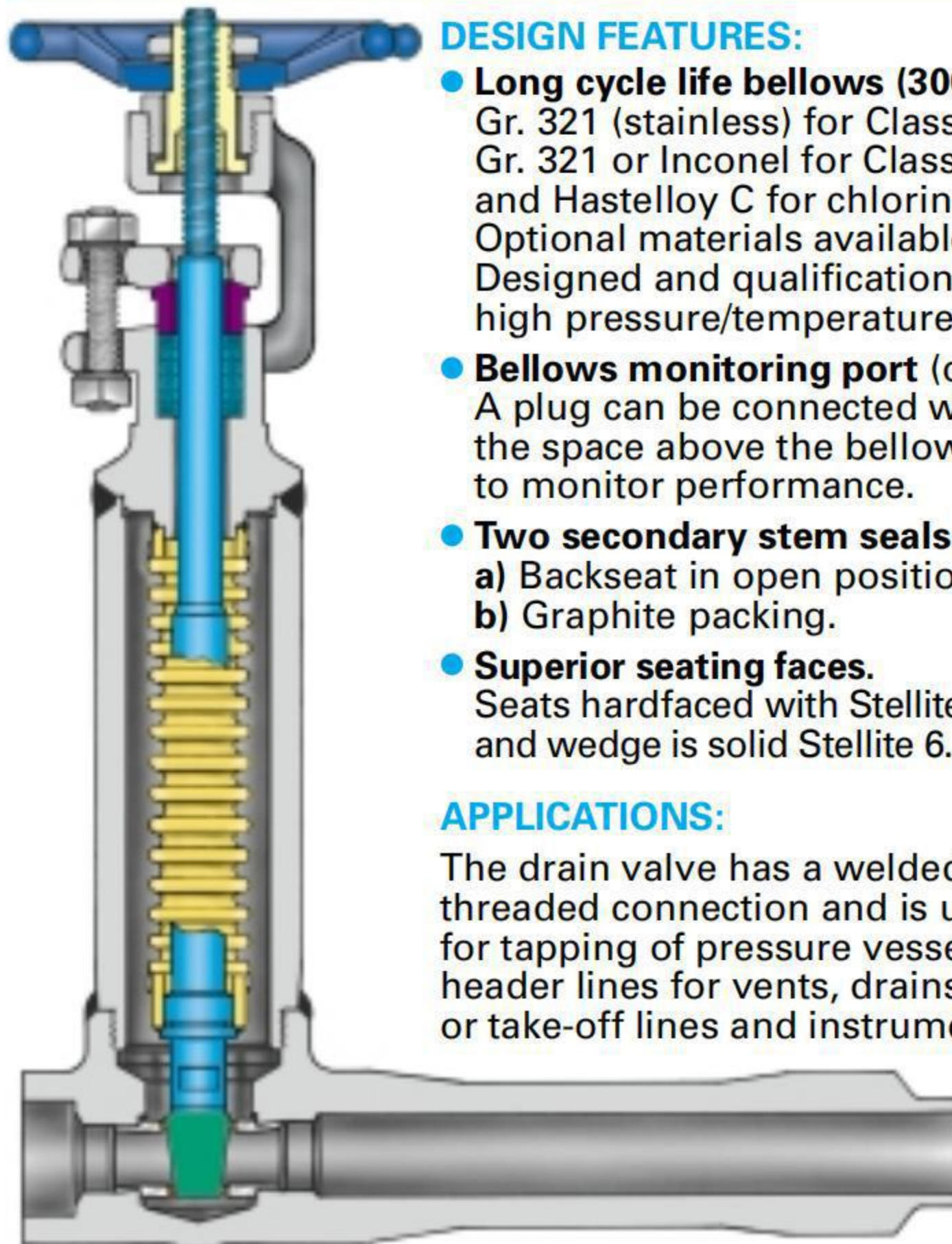
Class	Figure No.
150	0054T
300	1054T
600/800	2054T
1500	3054T

DIMENSIONS

Size in mm	Port		End to End		Handwheel		Center to Top Open		Socket Weld		End to End (Flanged)			
	800	1500	800	1500	800	1500	800	1500	Bore	Depth	150	300	600	1500
½ ⁽¹⁾ 15	0.38 10	0.50 13	2.88 73	3.50 89	2.50 64	3.50 89	7.20 183	13.50 343	0.855 21.72	0.38 10	4.25 108	5.50 139	6.50 165	8.50 216
¾ 20	0.50 13		3.25 83	3.50 89	3.50 89	3.50 89	11.25 286	13.50 343	1.065 27.05	0.50 13	4.63 118	6.00 152	7.50 191	9.00 229
1 25	0.69 18		3.50 89	5.00 127	3.50 89	5.00 127	12.56 319	17.00 431	1.330 33.78	0.50 13	5.00 127	6.50 165	8.50 216	10.00 254
1¼ 32	1.25 32		5.00 127	5.25 133	6.00 152	8.00 203	15.50 393	22.63 575	1.675 42.55	0.50 13	5.50 140	7.00 178	9.00 227	11.00 279
1½ 40	1.25 32		5.00 127	5.25 133	6.00 152	8.00 203	15.50 393	22.63 575	1.915 48.64	0.50 13	6.50 165	7.50 191	9.50 241	12.00 305
2 50	1.50 38		5.25 133	10.00 254	6.00 152	10.00 254	17.81 452	25.94 659	2.406 61.11	0.63 16	7.00 178	8.50 221	11.50 292	14.50 368

FORGED STEEL BELLOWS SEAL EXTENDED BODY GATE VALVES,

CONVENTIONAL PORT, THREADED OR SOCKET WELD FEMALE
½–2" (15–50 mm), API 602, CLASSES 800, 1500



DESIGN FEATURES:

- **Long cycle life bellows (3000 cycles).**
Gr. 321 (stainless) for Class 800,
Gr. 321 or Inconel for Class 1500,
and Hastelloy C for chlorine service.
Optional materials available on request.
Designed and qualification-tested for
high pressure/temperature service.
- **Bellows monitoring port (optional).**
A plug can be connected with
the space above the bellows to
monitor performance.
- **Two secondary stem seals:**
a) Backseat in open position
b) Graphite packing.
- **Superior seating faces.**
Seats hardfaced with Stellite 6
and wedge is solid Stellite 6.

APPLICATIONS:

The drain valve has a welded or
threaded connection and is used
for tapping of pressure vessels and
header lines for vents, drains,
or take-off lines and instrumentation.

TWO TYPES:

The valves are available with a standard
extended body or integrally-reinforced
extended body ("IREB" valves).

For Standard Materials Table see page 6.

FIGURE NUMBERS

Class	Standard	IREB
800	2184T	2174T
1500	3184T	3174T

AVAILABLE VARIATIONS

END CONNECTION	IREB	STANDARD
Female thread	Male weld end	Male thread Male plain
Female socket weld	Male weld end	Male plain

PRESSURE/TEMPERATURE RATINGS

Material	Temp. °F °C	Working Pressure psig bar		Shell Test Pressure psig bar	
		800	1500	800	1500
A 105N	100 38	1975 136	3705 256	2975 205	5575 384
	800 427	1100 76	2060 142		
A 182 Gr. F 316	100 38	1920 132	3600 248	2900 200	5400 372
	1000 538	935 64	1750 121		

STANDARD DIMENSIONS

Size in mm	Port	End to End		Male End				Handwheel		Socket Weld Bore	Socket Weld Depth	Center to Top Open	
				OD	ID	Length from Center							
		800	1500			800	1500	800	1500			800	1500
½ 15	0.50 13	5.63 143	5.75 146	0.84 21.33	0.63 16.0	4.00 102	4.00 102	3.50 89	3.50 89	0.885 21.72	0.38 10	11.25 286	13.50 343
¾ 20	0.50 13	5.63 143	5.75 146	1.05 26.67	0.63 16.0	4.00 102	4.00 102	3.50 89	3.50 89	1.065 27.05	0.50 13	11.25 286	13.50 343
1 25	0.69 18	5.75 146	6.50 165	1.32 33.53	0.84 21	4.00 102	4.00 102	3.50 89	5.00 127	1.330 33.78	0.50 13	12.56 319	17.00 432
1½ 40	1.25 32	7.25 184	7.88 200	1.90 48.26	1.50 38.1	4.75 121	5.25 133	6.00 152	8.00 203	1.915 48.64	0.50 13	15.50 394	22.63 575
2 50	1.50 38	7.88 200	12.25 311	2.38 60.45	1.69 42.9	5.25 133	7.25 184	6.00 152	10.00 254	2.406 61.11	0.63 16	17.81 450	26.00 660

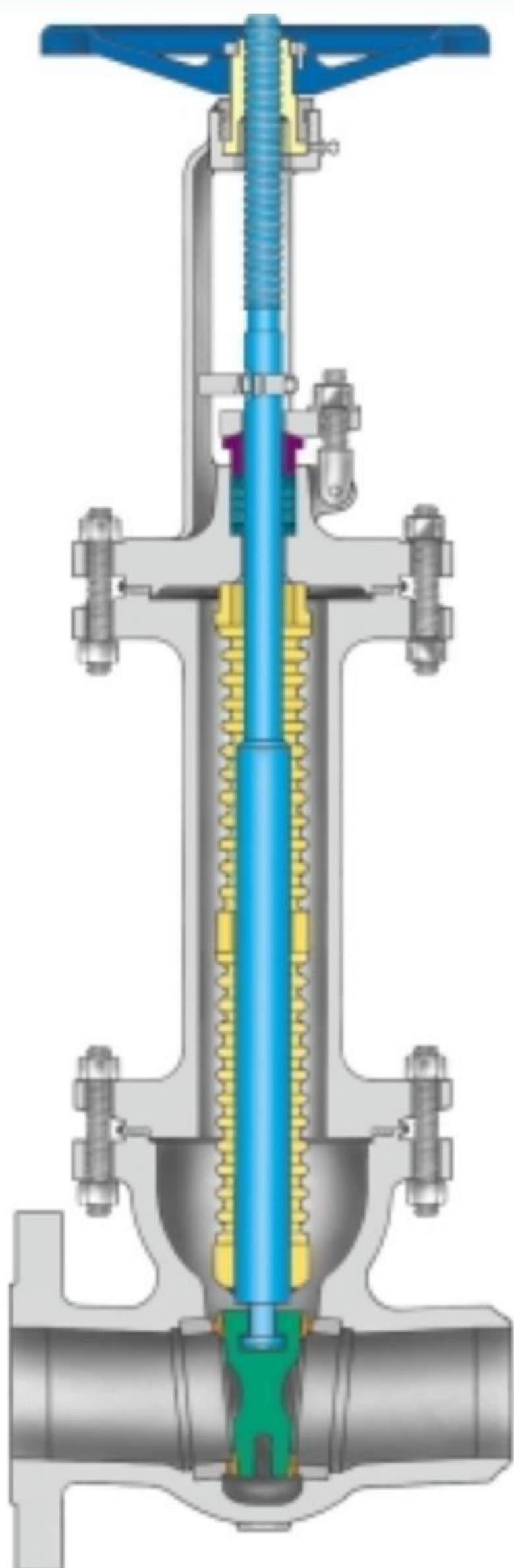
IREB DIMENSIONS

Size in mm	Port	End to End		Male End				Handwheel		Socket Weld Bore	Socket Weld Depth	Center to Top Open	
				OD	ID	Length from Center							
		800	1500			800	1500	800	1500			800	1500
½ 15	0.50 13	8.63 219	8.88 226	0.97 24.6	0.75 19.1	7.00 178	7.13 181	3.50 89	3.50 89	0.885 21.72	0.38 10	11.25 286	13.50 343
¾ 20	0.50 13	8.63 219	8.88 226	0.97 24.6	0.75 19.1	7.00 178	7.13 181	3.50 89	3.50 89	1.065 27.05	0.50 13	11.25 286	13.50 343
1 25	0.69 18	9.38 238	10.13 258	1.22 31.0	1.00 25.4	7.63 194	7.63 194	3.50 89	5.00 127	1.330 33.78	0.50 13	12.56 319	17.00 432
1½ 40	1.25 32	10.50 267	10.63 270	1.72 43.7	1.50 38.1	8.00 203	8.00 203	6.00 152	8.00 203	1.915 48.64	0.50 13	15.50 394	22.63 575
2 50	1.50 38	11.88 302	14.25 362	2.22 56.4	1.69 42.9	9.25 235	9.25 235	6.00 152	10.00 254	2.406 61.11	0.63 16	17.81 452	25.94 659



CAST STEEL BELLOWS SEAL BOLTED BONNET GATE VALVES

FLANGED OR BUTT WELD 2-12" (50-300 mm)
API 600, ASME CLASSES 150, 300, 600
WITH OPTIONAL PROVISION FOR SEAL WELDING



DESIGN FEATURES:

- **Long cycle life bellows (2000 cycles)** in Gr. 321 (stainless), Inconel for special applications, maybe replaced with Monel trim to resist corrosion or Hastelloy C for chlorine service.
- **Improved body-bonnet joint.**
Graphite reinforced with SS foil gasket for Class 150 valves. Fully-encased, spiral wound graphite-filled Gr. 316 (stainless) gasket for Classes 300-600.
- **Bolted body-bonnet** for fast serviceability.
Hermetically-sealed bonnets available for Classes 300 and 600.
- **Two or three section bellows assembly.**
- **Non-rotating stem**
prevents torsion of bellows.
- **Two secondary stem seals:**
a) Backseat in open position
b) Graphite packing.
- **Welded-in seat**
hardfaced with Stellite 6.
- **Wedge hardfaced**
with Stellite 6 for long life.
- **Seating faces hardfaced**
with Stellite 6, ground and lapped.

STANDARD MATERIALS

Part	Carbon steel	Stainless steel
Body/bonnet	A 216 Gr. WCB	A 351 Gr. CF8M
Wedge	Stellite faced	Stellite faced
Seats	Stellite faced A 105	Stellite faced CF8M
Stem	Gr. 13 CR	Gr. 316
Bellows	Gr. 321 (stainless) or Inconel	
Stem nut	Austenitic ductile iron A 439 Gr. D-2C	
Packing	Graphite	

FIGURE NUMBERS

Class	Figure No.
150	0064V
300	1064V
600	2064V

Available in A 216 Gr. WCB, A 217 Gr. C5, A 352 Gr. LCB and A 351 Gr. CF8M.

PRESSURE/TEMPERATURE RATINGS

Material	Temp. °F °C	Working Pressure psig bar			Shell Test Pressure psig bar		
		150	300	600	150	300	600
A 216 Gr. WCB	100 38	285 20	740 51	1480 102	450	1125	2225
	800 427	80 5.5	410 28	825 57	31	78	153
A 351 Gr. CF8M	100 38	275 19	720 50	1440 99	425	1100	2175
	1000 538	20 1.4	350 24	700 48	29	76	150

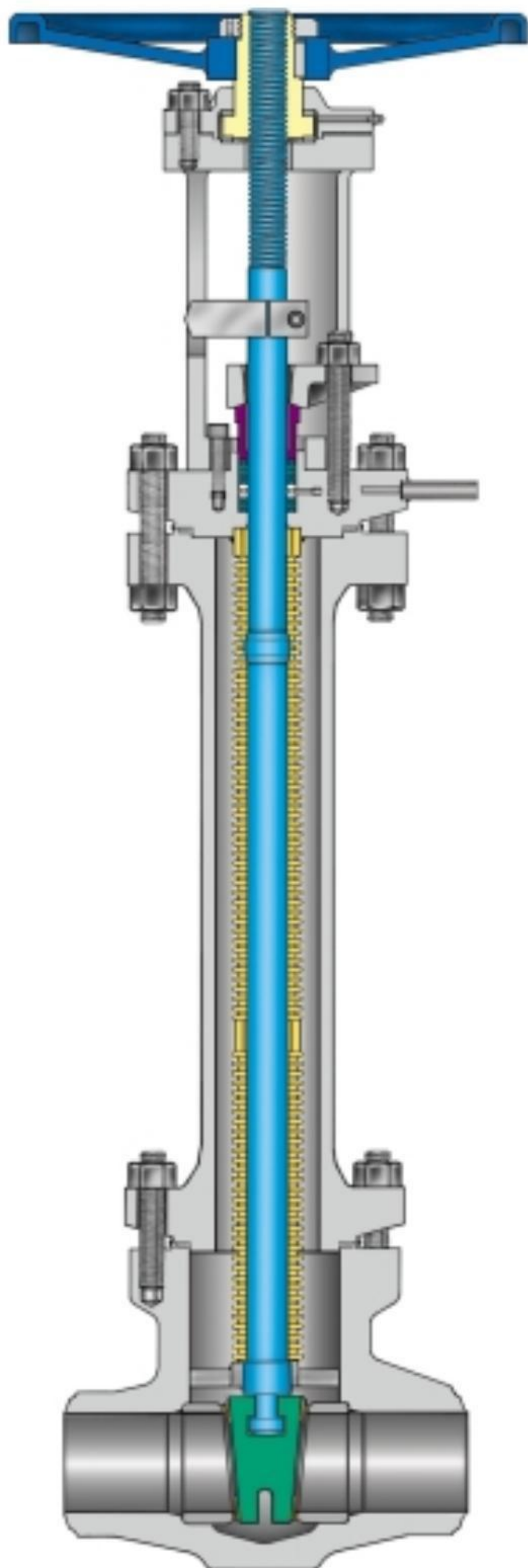
DIMENSIONS AND WEIGHTS

Size in mm	Class 150				Class 300				Class 600			
	Center to Top Closed	Center to Top Open	Face to Face		Center to Top Open	Face to Face		Center to Top Open	Face to Face		Center to Top Open	Face to Face
			BW	FL		BW	FL		BW	FL		
2 50	28.92 735	31.27 794	8.50 216	7.00 178	31.25 794	8.50 216	8.50 216	36.38 924	11.50 292	11.50 292		
2½ 65	31.17 792	33.93 862	9.50 241	7.50 191	33.38 848	9.50 241	9.50 241	38.75 984	13.00 330	13.00 330		
3 80	31.25 794	35.37 898	11.13 283	8.00 203	34.37 873	11.13 283	11.13 283	39.75 1010	14.00 356	14.00 356		
4 100	36.00 914	40.37 1025	12.00 305	9.00 229	39.87 1013	12.00 305	12.00 305	46.81 1189	17.00 432	17.00 432		
6 150	52.00 1321	58.87 1495	15.88 403	10.50 267	58.50 1486	15.88 403	15.88 403	63.44 1611	22.00 559	22.00 559		
8 200	59.25 1505	67.75 1721	16.50 419	11.50 292	68.19 1732	16.50 419	16.50 419	82.75 2102	26.00 660	26.00 660		
10 250	70.44 1789	81.31 2065	18.00 457	13.00 330	80.75 2051	18.00 457	18.00 457	100.25 2546	31.00 787	31.00 787		
12 300	80.53 2045	93.03 2363	19.75 502	14.00 356	91.12 2314	19.75 502	19.75 502	116.75 2966	33.00 838	33.00 838		



FORGED STEEL BELLOWS SEAL BOLTED BONNET GATE VALVES

2–6" (50–150 mm) ASME CLASSES 600, 1500
WITH OPTIONAL PROVISION FOR SEAL WELDING



DESIGN FEATURES:

- **Long cycle life bellows (2000 cycles)** in Gr. 321 (stainless) or Inconel. Designed for, and successfully tested in, high pressure/temperature conditions.
- **Bellows monitoring port** (optional). Connected to the space above the bellows to monitor performance.
- **Non-rotating stem** prevents torsion of bellows.
- **Two secondary stem seals:**
 - a) Backseat in open position.
 - b) Graphite packing.
- **Forged for higher safety.** Increased toughness, strength and fatigue resistance.
- **Two-part bellows.**
- **Low torque.**
 - a) Non-rotating stem prevents torsion of bellows
 - b) Stem nut thrust bearings
 - c) Central lubrication
- **Seating faces hardfaced** with Stellite 6, ground and lapped.

STANDARD MATERIALS

Part	Carbon steel	Stainless steel
Body / bonnet	A 105	A 182 Gr. F316
Wedge	Stellite faced	Stellite faced
Seats	Stellite faced A 105	Stellite faced CF8M
Stem	Gr. 13 CR	Gr. 316
Bellows Stem nut	Gr. 321 (stainless) or Inconel Manganese bronze	
Packing	Graphite	

PRESSURE/TEMPERATURE RATINGS

Material	Temp. °F °C	Working Pressure psig bar			Shell Test Pressure psig bar		
		600	900	1500	600	900	1500
A 105	100	1480	2220	3705	2225	3350	5575
	38	102	153	256			
	800	825	1235	2060			
A 182 Gr. F316	427	57	85	142	153	231	384
	100	1440	2160	3600	2175	3250	5400
	38	99	149	248			
	1000	700	1050	1750			
	538	48	72	121	150	224	372

FIGURE NUMBERS

Class	Figure No.
600	2054R
900	7054R
1500	3054R

DIMENSIONS

Size in mm	Center to Top Closed			End to End (Butt Weld)		
	600	900	1500	600	900	1500
2	25	30	36	8.50	8.50	8.50
50	635	762	914	216	216	216
2½	35	42	50	10	10	10
65	889	1067	1270	254	254	254
3	47	56	67	12	12	12
80	1194	1422	1702	305	305	305
4	57	68	81	12	14	16
100	1448	1727	2057	305	356	406
6	67	80	96	18	20	22
150	1702	2032	2438	457	508	559

All valves available in A 105N,
A 182 Gr. F22 or Gr. F316.

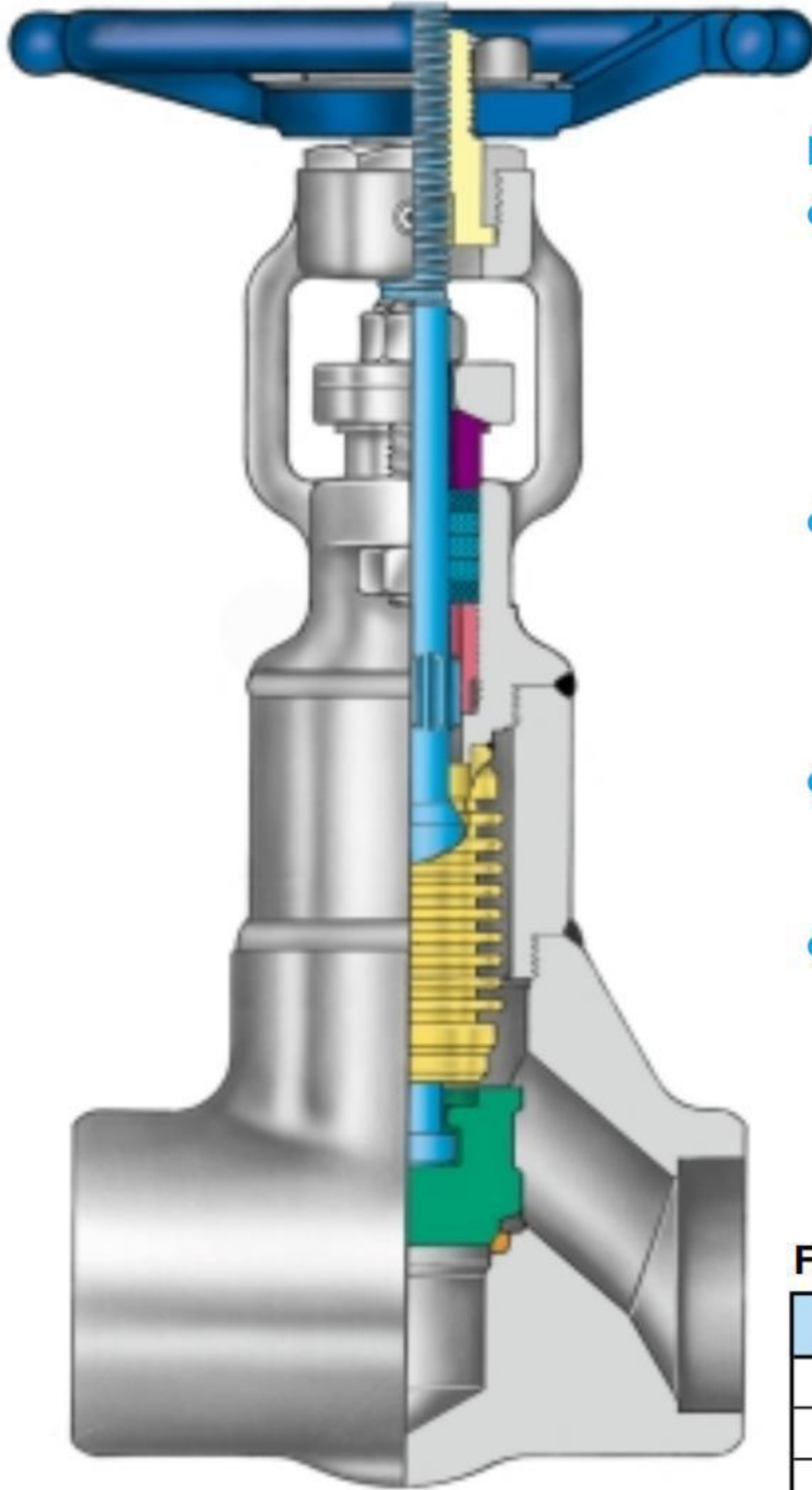


SILVER VALLEY

COMPACT FORGED STEEL BELLOWS SEAL GLOBE VALVES

½–2" (15–50 mm)

API 602 CLASS 800, ASME CLASSES 150 – 800



Optional body, trim and bellows materials available on request.

DESIGN FEATURES:

- **Long cycle life bellows (10,000 cycles).**
Designed and qualification-tested for high pressure/temperature applications.
- **Bellows monitoring port (optional).** A plug can be connected to the space above the bellows to monitor performance.
- **Two secondary stem seals:**
a) Backseat in open position
b) Graphite packing.
- **Superior seating faces.**
Seats hardfaced with Stellite 6, disc is solid Stellite 6.

FIGURE NUMBERS

Class	Figure No.
150	0074T
300	1074T
600/800	2074T

All standard valves available in A 105N, A 182 Gr. F22 and Gr. F316.

TYPICAL A 105 VALVE PARTS LIST

Part	Standard Materials
Body	A 105N
Body extension	Steel ASTM A 106 Gr. B
Seat	Stellite (integral)
Disc	Stellite 6
Bonnet	A 105N
Stem	Gr. 410 (stainless)
Packing rings	Graphite
Bellows	Gr. 321 (stainless)
Gland stud	Gr. B6 (stainless)
Gland nut	Gr. 2H (stainless)
Gland	Gr. 416 (stainless)
Packing flange	A 105
Stem nut	Gr. 416 (stainless)
Yoke bushing	Steel
Handwheel (painted)	Malleable iron
Handwheel nut	Steel
Handwheel lock washer	Steel
Name plate	Aluminum

PRESSURE/TEMPERATURE RATINGS

Material	Temp. °F °C	Working Pressure psig bar	Shell Test Pressure psig bar
		800	800
A 105N	100 38	1975 136	2975 205
	800 427	1100 76	
A 182 Gr. F316	100 38	1920 132	2900 200
	1000 538	935 64	

DIMENSIONS

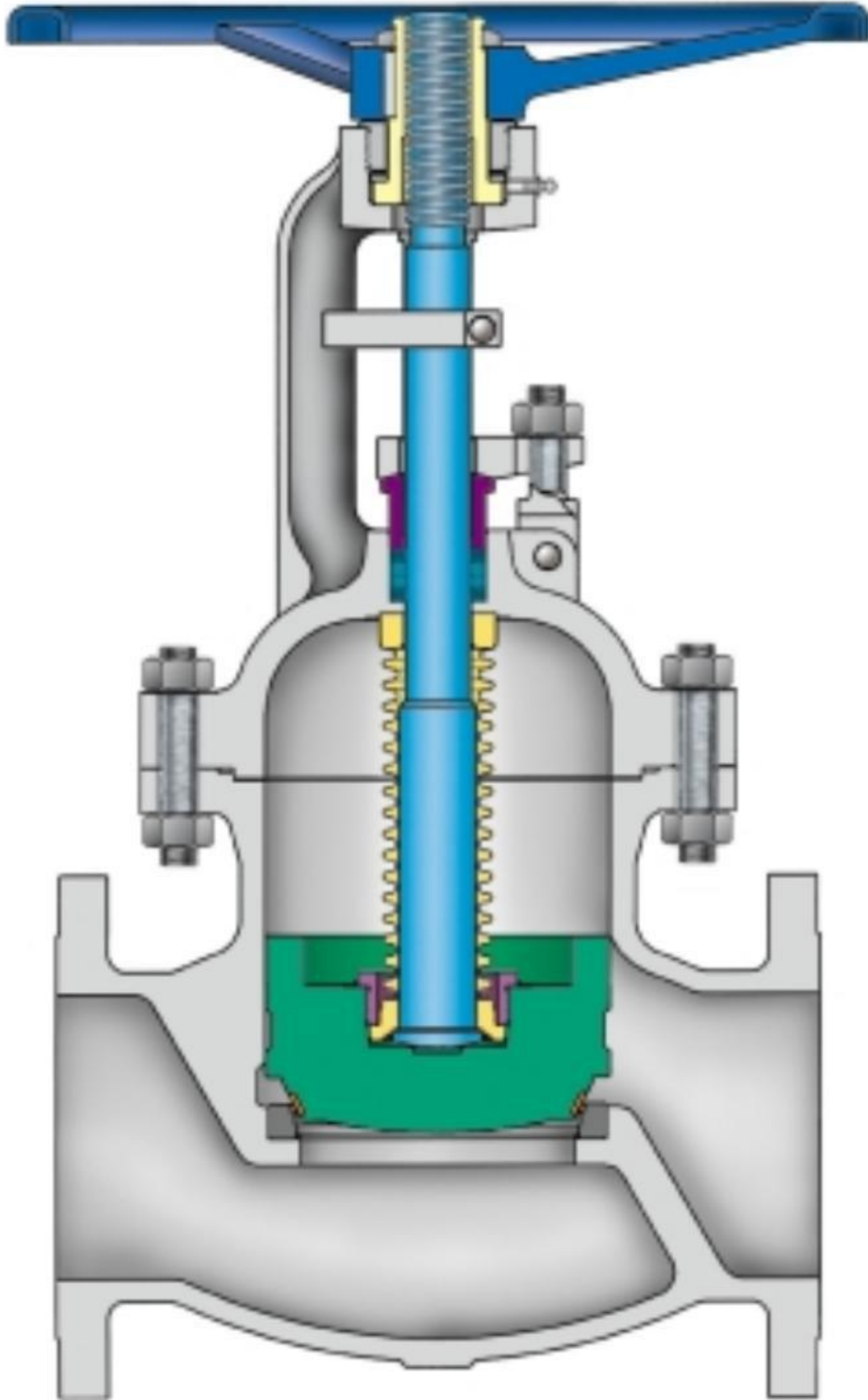
Size in mm	Port	End to End	Handwheel	Socket Weld Bore	Socket Weld Depth	Center to Top Open	End to End (Flanged)		
							150	300	600
½ ⁽¹⁾ 15	0.31 8	2.88 73	2.50 64	0.855 21.72	0.38 10	7.00 178	4.25 108	6.00 152	6.50 165
¾ 20	0.50 13	3.25 83	3.50 89	1.065 27.05	0.50 13	9.00 229	4.63 117	7.00 178	7.50 191
1 25	0.75 19	3.50 89	3.50 89	1.330 33.78	0.50 13	10.10 257	5.00 127	8.00 203	8.50 216
1¼ 32	1.25 32	5.00 127	6.00 152	1.675 42.55	0.50 13	12.31 313	5.50 140	8.50 216	9.00 229
1½ 40	1.25 32	5.00 127	6.00 152	1.915 48.64	0.50 13	12.31 313	6.50 165	9.00 229	9.50 241
2 50	1.38 35	5.25 133	6.00 152	2.406 61.11	0.63 16	14.69 373	8.00 203	10.50 267	11.50 292



SILVER VALLEY

CAST STEEL BELLOWS SEAL BOLTED BONNET GLOBE VALVES

2–8" (50–200 mm) API 600, ASME CLASSES 150, 300, 600



DESIGN FEATURES:

- **Long cycle life bellows (3000 cycles)**
in Gr. 321 (stainless), Inconel for special applications, or Hastelloy C for chlorine service.
- **Bolted body-bonnet joints** for fast serviceability.
Fully enclosed spiral wound Gr. 316 (stainless) graphite gaskets.
- **Non-rotating stem** prevents torsion of bellows.
- **Two-secondary stem seals:**
a) Back seat in open position. b) Graphite packing.
- **Bellows monitoring port** (optional).
A plug can be connected to the space above the bellows to monitor performance.
- **Seat and disc hardfaced with Stellite 6**, ground and lapped.

STANDARD MATERIALS

Part	Carbon Steel	Stainless Steel
Body/bonnet	A 216 Gr. WCB	A 351 Gr. CF8M
Stem	Gr. 13 CR	Gr. 316
Disc ⁽¹⁾	CA-15 or 13CR or A 105 HF	CF8M HFor F316 HF
Bellows	Gr. 321 (stainless), Inconel or Hastelloy	
Bellows fitting	Gr. 321 (stainless)	
Packing	Graphite	
Seat	Integral hardfaced Stellite 6	
Stem nut	Manganese bronze	

(1) Soft disc inserts available for gas or vacuum service.

FIGURE NUMBERS

Class	Figure No.
150	0074V
300	1074V
600	2074V

PRESSURE/TEMPERATURE RATINGS

Material	Temp. °F °C	Working Pressure			Shell Test Pressure		
		150	300	600	150	300	600
A 216 Gr. WCB	100 38	285 20	740 51	1480 102	450	1125	2225
	800 427	80 5.5	410 28	825 57	31	78	153
A 351 Gr. CF8M	100 38	275 19	720 50	1440 99	425	1100	2175
	1000 538	20 1.4	350 24	700 48	29	76	150

Available in A 216 Gr. WCB, A 217 Gr. WC6,
A 217 Gr. C5, A 352 Gr. LCB and A 351 Gr. CF8M.

DIMENSIONS AND WEIGHTS

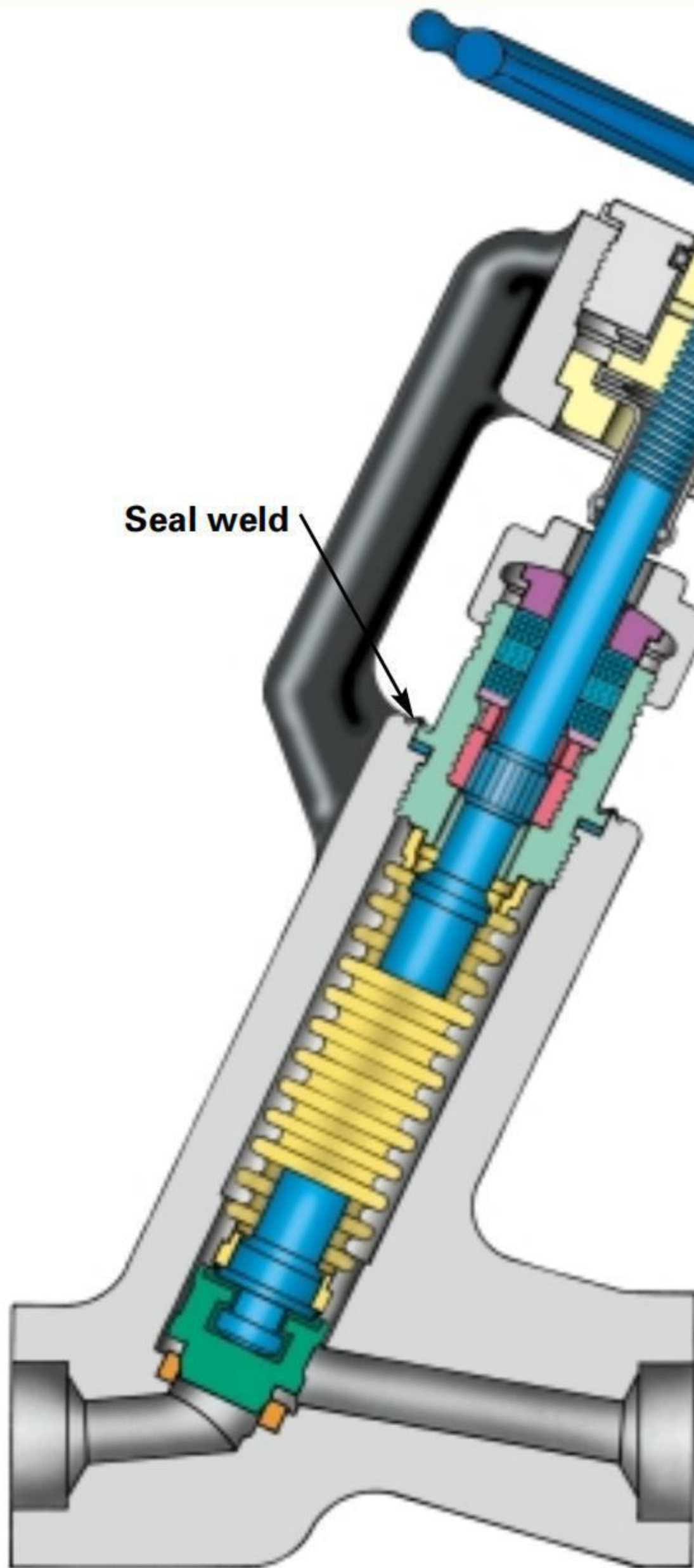
Size in mm	Class 150		Class 300		Class 600	
	Center to Top Open	End to End	Center to Top Open	End to End	Center to Top Open	End to End
		BW or FL		BW or FL		BW or FL
2 50	14.98 380	8.00 203	14.98 380	10.50 267	18.14 461	11.50 292
2½ 65	15.34 374	8.50 390	15.34 374	11.50 390	19.43 457	13.00 494
3 80	17.82 453	9.50 241	17.82 453	12.50 318	25.03 636	14.00 356
4 100	22.16 563	11.50 292	22.16 563	14.00 356	28.75 730	17.00 432
6 150	25.01 635	16.00 406	25.01 635	17.50 445	40.32 1024	22.00 559
8 200	30.46 774	19.50 495	33.59 853	22.00 559	53.56 1360	26.00 660



SILVER VALLEY

FORGED STEEL BELLOWS SEAL Y-PATTERN GLOBE VALVES

½ – 2" (15–50 mm) ASME CLASSES 1500, 2500



DESIGN FEATURES:

- **Long cycle life bellows (5000 cycles).**
Gr. 321 (stainless) for Class 1500, Hastelloy for Class 2500. Optional materials available on request. Designed for, and successfully tested in high pressure/temperature conditions.
- **No torsion of bellows.**
Splined stem prevents torsion of bellows and assures long cycle life.
- **Low torque due to:**
 - a) non-rotating stem
 - b) yoke nut thrust bearings
 - c) central grease fitting for lubrication of stem nut.
- **Two secondary stem seals:**
 - a) Backseat in open position
 - b) Graphite packing.
- **In-line servicing.** Stem-bellows assembly can easily be removed and replaced on valves with threaded (O-ring seat) bonnet. On seal-welded valves, removal and replacement of weld is necessary. Special tools are available for cutting the seal weld.
- **Solid Stellite disc and seat.** (Seat vacuum brazed).

STANDARD MATERIALS

Part	Carbon Steel	Alloy Steel	Stainless Steel
Body	A 105N	A 182 Gr. F22	A 182 Gr. F316
Seat	Stellite 6		
Disc	Stellite 6		
Stem	Gr. 410 (stainless)	Gr. 316B (stainless)	
Stem nut	Austenitic ductile iron A 439 Gr. D-2C		
Bellows	Class 1500 Gr. 321 (stainless) or Inconel Class 2500 Hastelloy C		
Bellows fitting	Gr. 321 (stainless)		
Spline bushing	Gr. 630 (stainless)		

DIMENSIONS

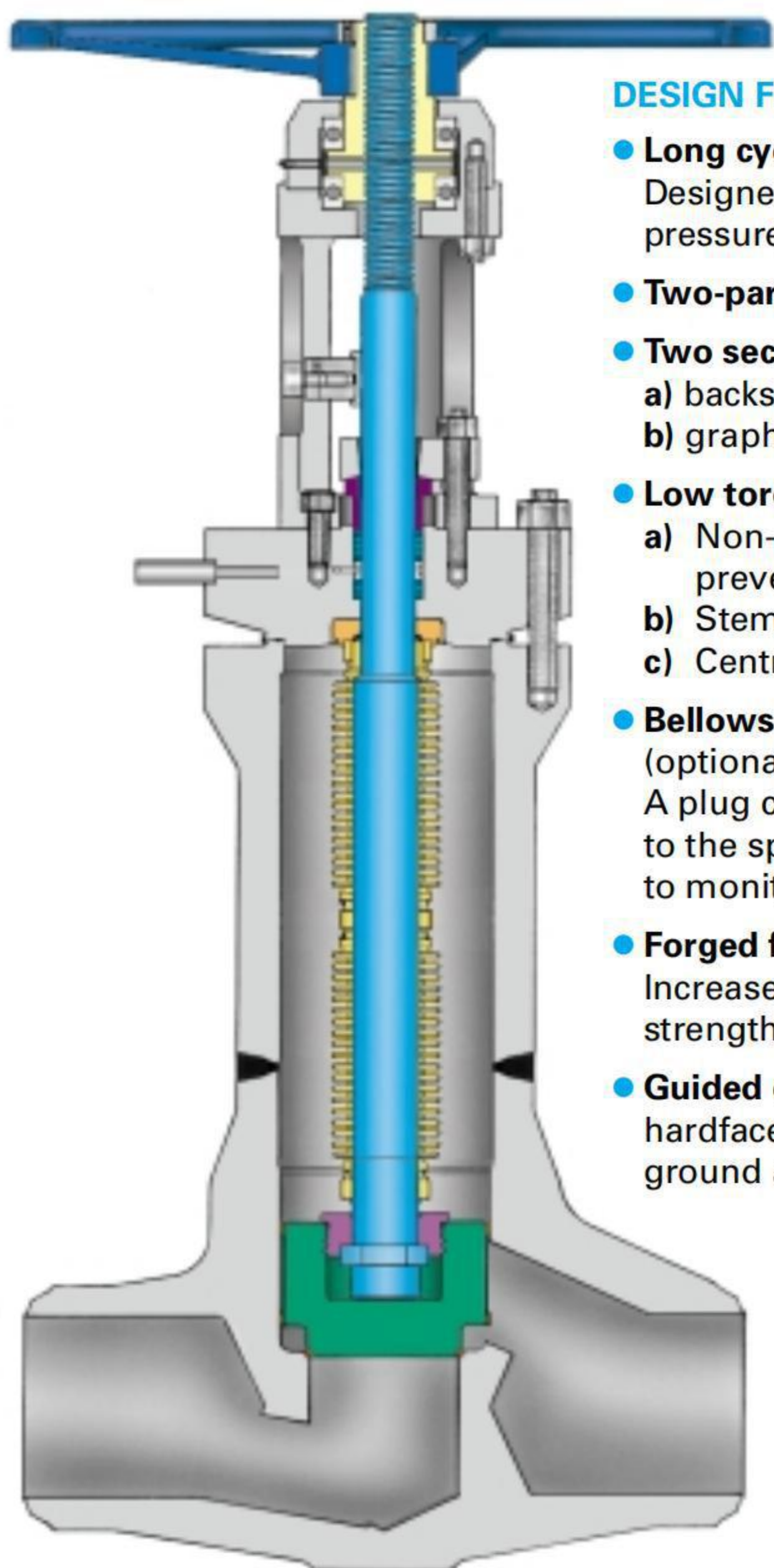
Size in mm	End to End	Center to Top	Handwheel
½ 15	5.75 146	11.90 302	6.00 152
¾ 20	5.75 146	11.90 302	6.00 152
1 25	5.75 146	11.90 302	6.00 152
1¼ 32	10.13 257	18.90 480	12.00 305
1½ 40	10.13 257	18.90 480	12.00 305
2 50	10.13 257	18.90 480	12.00 305

PRESSURE/TEMPERATURE RATINGS

Material	Temp. °F °C	Working Pressure psig bar		Shell Test Pressure psig bar	
		1500	2500	1500	2500
A 105N	100 38	3705 256	6170 426	5575 384	9275 640
	800 427	2060 142	3430 237		
A 182 Gr. F22	100 38	3750 259	6250 431	5625 388	9375 647
	1000 538	1305 90	2170 150		
A 182 Gr. F316	100 38	3600 248	6000 414	5400 372	9000 621
	1000 538	1750 121	2915 201		

FORGED STEEL BELLOWS SEAL BOLTED BONNET GLOBE VALVES

2½–10" (65–250 mm) ASME CLASSES 600, 900, 1500
WITH OPTIONAL PROVISION FOR SEAL WELDING



DESIGN FEATURES:

- **Long cycle life bellows (3000 cycles)** in Gr. 321 (stainless) or Inconel. Designed and successfully tested in high pressure/temperature conditions.
- **Two-part bellows.**
- **Two secondary stem seals:**
 - a) backseat in open position
 - b) graphite packing.
- **Low torque.**
 - a) Non-rotating stem prevents torsion of bellows
 - b) Stem nut thrust bearings
 - c) Central lubrication.
- **Bellows monitoring port** (optional). A plug can be connected to the space above the bellows to monitor performance.
- **Forged for higher safety.** Increased toughness, strength and fatigue resistance.
- **Guided disc.** Seat and disc hardfaced with Stellite 6, ground and lapped.

STANDARD MATERIALS

Part	Carbon steel	Stainless steel
Body/bonnet	A 105	A 182 Gr. F316
Stem	Gr. 13 CR	Gr. 316
Disc ⁽¹⁾	A 105 ⁽²⁾	Gr. F 316 ⁽²⁾
Bellows	Gr. 321 (stainless), Inconel or Hastelloy	
Bellows fitting	Gr. 321 (stainless)	
Packing	Graphite	
Seat	Integral Hardfaced Stellite 6	
Stem nut	Manganese bronze	

(1) Soft disc inserts available for gas or vacuum service.

(2) Hardfaced Stellite 6

FIGURE NUMBERS

Class	Figure No.
600	2074R
900	7074R
1500	3074R

PRESSURE/TEMPERATURE RATINGS

Material	Temp. °F °C	Working Pressure psig bar			Shell Test Pressure psig bar		
		600	900	1500	600	900	1500
A 105	100	1480	2220	3705	2225	3350	5575
	38	102	153	256			
	800	825	1235	2060			
A 182 Gr. F316	427	57	85	142	150	224	372
	100	1440	2160	3600			
	38	99	149	248			
	1000	700	1050	1750			
	538	48	72	121			

DIMENSIONS

Size in mm	Center to Top of Handwheel in mm			End to End in mm		
	600	900	1500	600	900	1500
2½ 65	22 559	26 660	29 737	8.50 216	10 254	10 254
3 80	23 584	28 711	31 787	10 254	12 305	12 305
4 100	31 787	35 889	38 965	12 305	14 356	16 406
6 150	41 1041	47 1194	51 1295	22 559	20 508	22 559
8 200	44 1118	55 1270	60 1524	26 660	26 660	28 711
10 250	48 1219	59 1499	65 1651	31 787	31 787	34 864



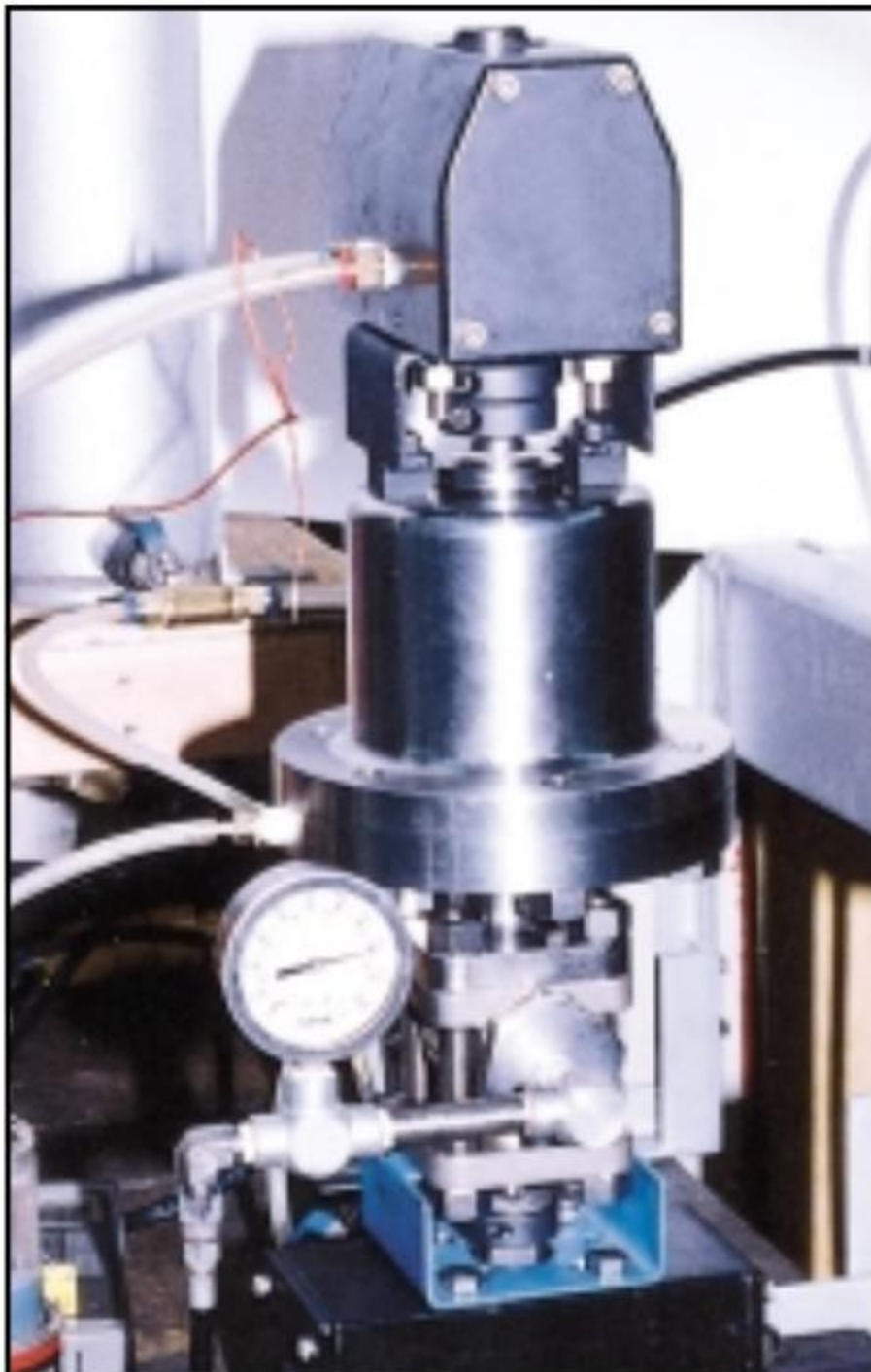
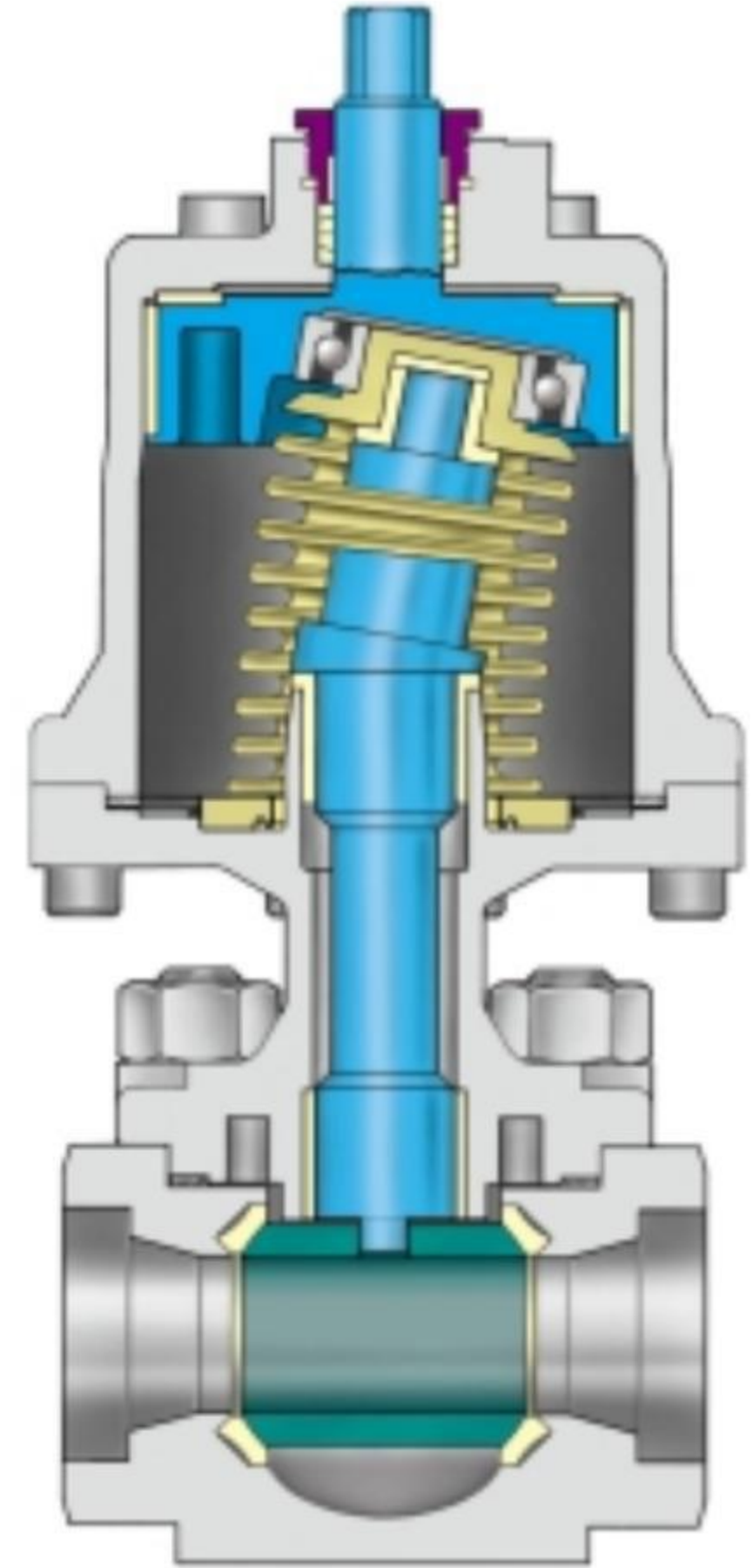
TE-150/300 BELLOWS SEAL MEMORY SEAL BALL VALVES

CARBON, STAINLESS STEEL AND OTHER MATERIALS
REGULAR PORT ½–2" (15–50 mm) FULL PORT ½–1½" (15–40 mm),
SCREWED, SOCKET WELD, BUTT WELD, FLANGED, ASME Classes 150, 300



DESIGN FEATURES:

- **Hermetically sealed.**
- **Laboratory testing to 100,000 cycles** with "0" ppm emissions.
- **Long cycle life bellows** in Hastelloy C.
- **Secondary PTFE or graphite packing seal.**
- **A unique bellows seal design** with stainless steel driver unit allows installation of standard, pneumatic or electric actuator.
- **Only one fully-encased spiral wound SS 316 graphite gasket** is exposed to pressure. The gasket in the driver unit acts only in the event of bellows failure.
- **Monitoring plug.** Can determine bellows failure.
- Design permits **disassembly in-line.**
- **Unique "in-tension" seats** with induced sealing memory compensate for wear and pressure/temperature fluctuations.
- **Stainless steel trim.**
- **Fire safe** to API 607 Rev. 3, and BS 6755 (standard valves) and API 607 Rev. 4 (graphite packing).



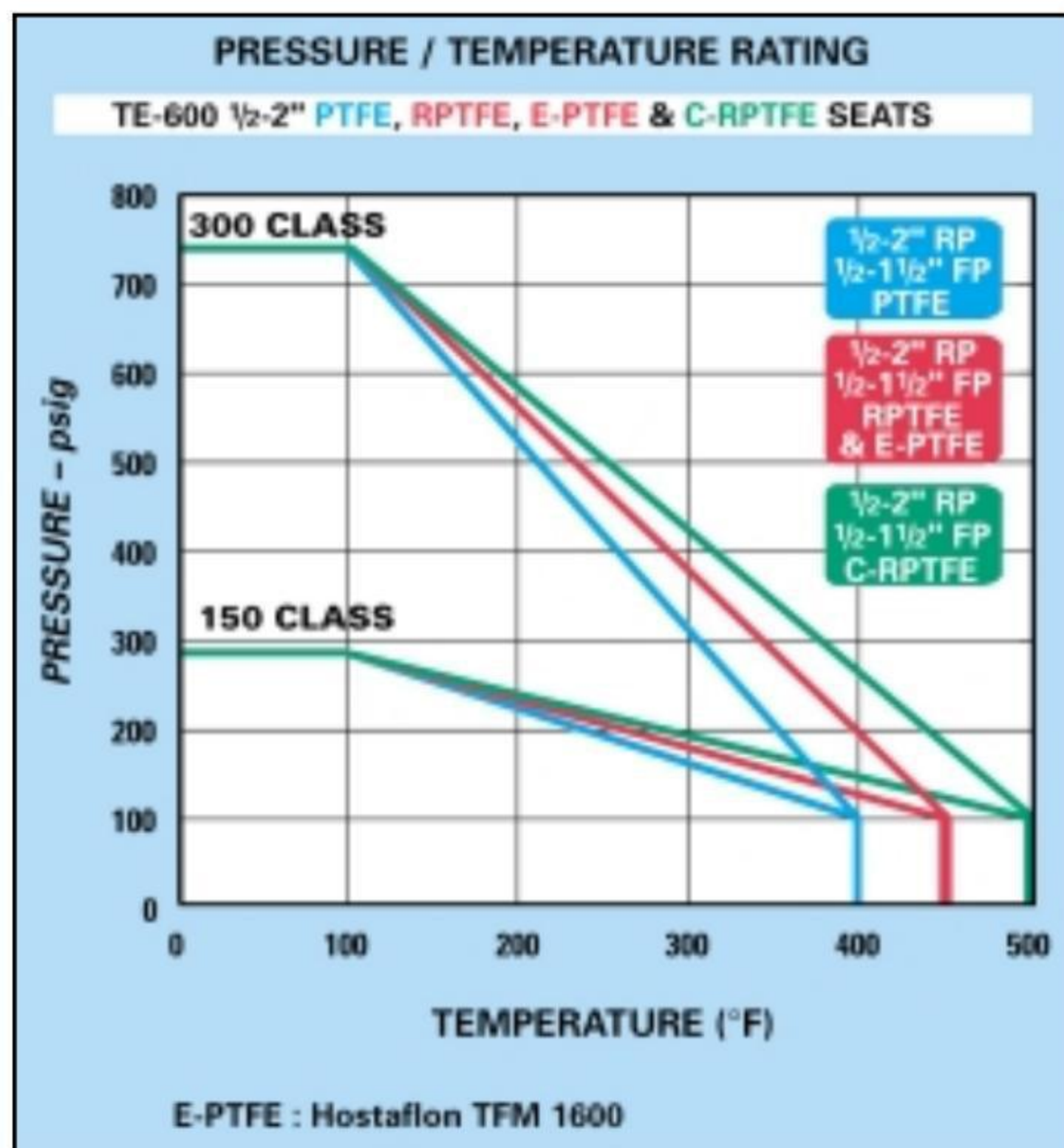
Laboratory testing for 100,000 cycles with 0 ppm.

NOTE:

1. For hazardous service, the customer must arrange to have a redundant ball position indicator (like a proximity switch) installed to insure safety in the event of mechanical failure of the Bellows seal unit.
2. The customer must verify that all internal components of the valve and bellows seal unit are compatible with the application fluid.

TYPICAL MATERIALS LIST FOR A STAINLESS STEEL VALVE

Part	Standard Materials
Body / Bonnet	A 351 Gr. C8FM
Spindle	Gr. 316
Ball	A 351 Gr. C8FM
Seat	PTFE, RPTFE, E-PTFE, C-RPTFE
Housing	A 351 Gr. C8FM
Packing ring	PTFE
Stud	Gr. B8M Cl. 2
Nut	Gr. 8M
Housing screw	Gr. B8M Cl. 2
Bonnet seal	Gr. 316 spiral wound graphite
Housing seal	Gr. 316 graphite laminate
Garlock bearing	Steel / Bronze / PTFE
Thrust bearing	FOF 321
Ball bearing	SAE 52100
Handle nut	SS
Locking device	Gr. 304
Handle	Gr. 304
Spring	Gr. 302
Packing nut sleeve	RPTFE
Spindle sleeve	PPS
Spindle bushing	RPTFE
Bellows bushing	PPS
Packing nut	Gr. 304
NPT plug	Gr. F316
Nameplate	SS
Tag plate	SS
Driver	CF8M
Bellows assy.	C-276 / SS 316 Hastelloy



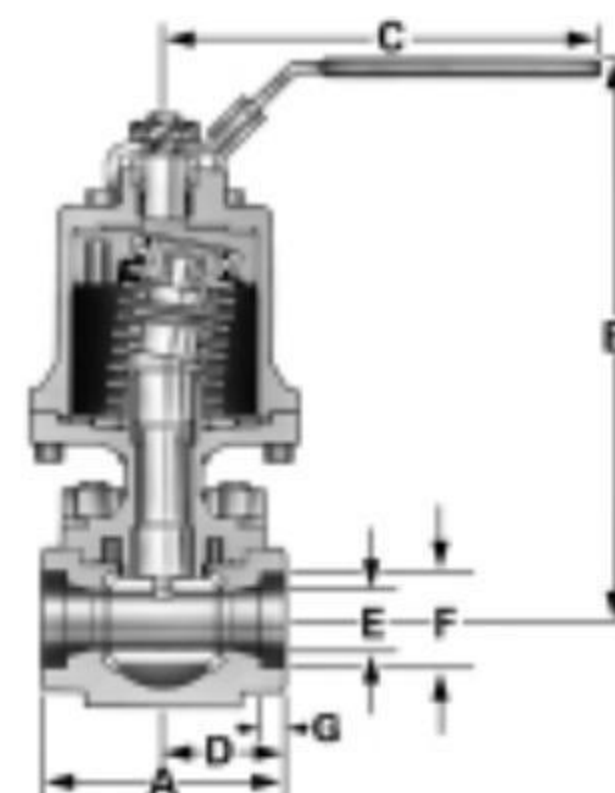
All valves available in A 105, A 182 Gr. F22 and Gr. A 315 C8FM

For other sizes, pressure classes and torque values please consult the factory.

TE-150/300 SOCKET WELD OR THREADED BELLOWS SEAL

SIZE in mm	TE-600 (REGULAR PORT) ⁽¹⁾						
	A	B	C	D	E	F	G
1/2 15	2.63 67	9.27 235	7.32 186	1.31 33	0.44 11	0.86 22	0.38 10
3/4 20	3.25 83	9.40 239	7.32 186	1.63 41	0.56 14	1.07 27	0.50 13
1 25	3.75 95	9.90 252	7.32 186	1.88 48	0.81 21	1.33 34	0.50 13
1 1/2 40	4.88 124	11.03 280	7.32 186	2.44 62	1.19 30	1.92 49	0.50 13
2 50	6.00 152	11.63 296	7.32 186	3.00 76	1.50 38	2.41 61	0.63 16

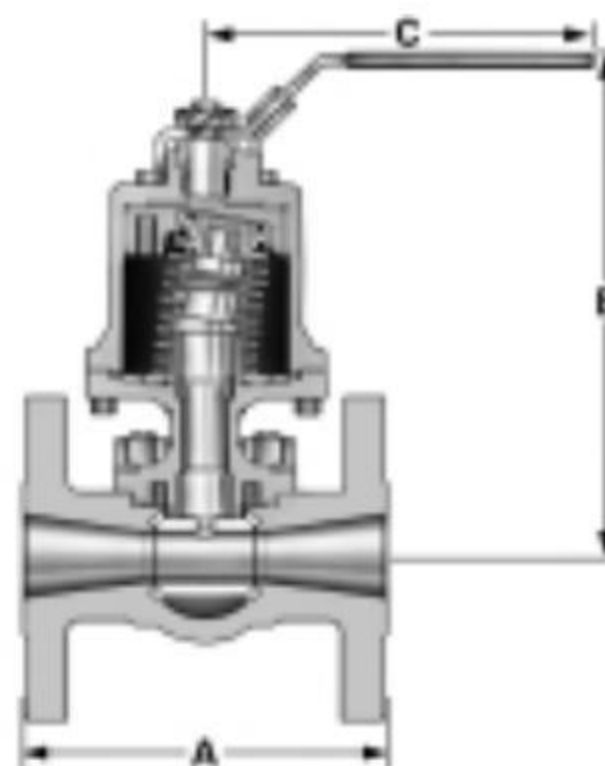
SIZE in mm	TE-600 (FULL PORT) ⁽¹⁾						
	A	B	C	D	E	F	G
1/2 15	3.25 83	9.40 239	7.32 186	1.63 41	0.56 14	0.86 22	0.38 10
3/4 20	3.75 95	9.90 252	7.32 186	1.88 48	0.81 21	1.07 27	0.50 13
1 25	4.88 124	11.03 280	7.32 186	2.44 62	1.19 30	1.33 34	0.50 13
1 1/2 40	6.00 152	11.63 296	7.32 186	3.00 76	1.50 38	1.92 49	0.50 13



(1) For butt weld dimensions, contact the factory.

TE-150/300 FLANGED REGULAR PORT⁽¹⁾

SIZE		CLASS 150		CLASS 300	
		A		A	
in	mm	in	mm	in	mm
1/2	15	4.25	108	5.50	140
3/4	20	4.63	118	6.00	152
1	25	5.00	127	6.50	165
1 1/2	40	6.50	165	7.50	191
2	50	7.00	178	8.50	216



BELLOWS SEAL CONTROL VALVES FOR EXTREME APPLICATIONS

½–6" (15–150 mm), CLASS 150–600



BELLOWS SEAL CONTROL VALVES FOR HIGH TEMPERATURES

DESIGN FEATURES:

- No fugitive emission.
- Straight or angle body.
- Equal percentage or linear characteristic.
- Metal or soft seat.
- Low maintenance.

RANGE:

- SIZES: 1/2–6" (15–150 mm).
- Class 150 to 600.
- Cv from 0.1 to 500.
- Up to 425°C (797°F).
- Flanged or BW body

OPTIONS:

- Pneumatic actuator
- Positioner, airset
- Limit switches

APPLICATIONS:

- Hazardous fluids
- Nuclear plants
- Accurate steam control
- Pilot plants
- Laboratories
- Accurate steam control



BELLOWS SEAL CONTROL VALVES FOR CRYOGENICS

DESIGN FEATURES:

- Low thermal losses
- Exposure with liquid helium 1.4 K or -271.75°C.
- Excellent seat tightness
- Angle or Straight pattern.
- Cold box mounting
- Vacuum jacket available
- Intelligent positioners available

APPLICATIONS:

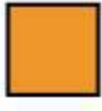
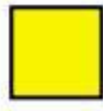
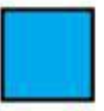
- Very low temperatures
- Liquefied Helium, Hydrogen or Oxygen.
- Rocket launching sites
- Aerospace
- Superconductivity applications.

REFERENCES

AIR-LIQUIDE, AEROSPATIALE, ALSTOM, ARIANESPACE, BOC INDIA, BP, CEA, CECELEC, CENTRE SPATIAL DE KOUROU, CERN, CENG, CNES, COGEMA, CRYO DIFFUSION, EDF, ELF, EURODIF, FRAMATOME, GAZ DE FRANCE, GOODYEAR, ISRO, IPR, IFP, KELLOG, KODAK, LINDE, MICHELIN, OXFORD INSTRUMENTS, SONATRACH, SPIE, SGN, SOLVAY, RHONE-POULENC, TECHNIP, TOTAL, TRACTEBEL...

HOW TO ORDER BELLOWS SEAL VALVES

Velan figure numbers are designed to cover essential features. When ordering please show figure numbers to preclude misunderstanding of your requirements. A detailed description for SPECIALS must always accompany order.

Type of Connection	Size of Connection	Pressure Class	Type	Body / Bonnet Style	Body Material	Trim Material
A	B	C	D	E	F	G
	 		 	 	 	 
B	1 0	0	0 7	4 V	0 2	T Y

E.G.: 3" ASME Class 150 bolted bonnet bellows seal globe valve in cast carbon steel with a butt weld connection.

A TYPE OF CONNECTION

- A** Special
- B** Butt weld
- F** Flanged
- S** Threaded
- W** Socket weld
- X** Butt weld (intermediate Class)

B SIZE OF CONNECTION

- 03** - ½"
- 05** - 1"
- 07** - 1½"
- 09** - 2½"
- 11** - 3½"
- 13** - 5"
- 15** - 8"
- 18** - 12"
- 04** - ¾"
- 06** - 1¼"
- 08** - 2"
- 10** - 3"
- 12** - 4"
- 14** - 6"
- 16** - 10"

C CLASS

- 0** - 150
- 2** - 600 flanged or 800 socket weld, butt weld or threaded
- 1** - 300
- 3** - 1500
- 4** - 2500
- 6** - 400
- 7** - 900

D VALVE TYPE

- 05** - Standard port gate
- 06** - Full port gate
- 07** - Stop (globe)
- 17** - IREB
- 18** - Drain

E BODY/BONNET STYLE

- 4** - Vertical
- 6** - Y-pattern (inclined)
- T** - Bellows seal all welded design
- R** - Forged bolted bonnet bellows seal
- S** - Bellows seal made in Y-pattern forging
- V** - Cast bolted bonnet bellows seal

F BODY MATERIAL

- 01** - Special
- 05** - Chr. Moly F11, WC6
- 02** - A105, WCB
- 13** - Stainless Steel F316, CF8M
- 06** - Chr. Moly F22, WC9
- 14** - Stainless Steel F316L, CF3M

G TRIM MATERIAL

PRODUCT	TRIM CODE	WEDGE / DISC SEATING SURFACE ⁽¹⁾	SEAT SURFACE ⁽¹⁾	STEM
½ - 2" Forged	TS MS	Stellite 6	Stellite 6	13% CR 316 or 630
2½ - 12" Forged	TS MS	Stellite 6	Stellite 6	13% CR 316 or 630
2 - 12" Cast	TY TS MY MS	Stellite 6 or 13 CR	Stellite 6	13% CR 13% CR SS 316 SS 316
NACE H ₂ S SERVICE	NA ⁽²⁾	13 CR (410 or CA 15)	Stellite 6	410 HRC 22 max.
	NB ⁽²⁾	Stellite or CF8M	Stellite 6	SS 316
	NC ⁽²⁾	Monel	Stellite 6	Monel or Monel K