



## **STANDARDS**

- Meets ASME B16.5, B16.10, and B16.34, API 608, API 598, API 607 Rev. 5/ISO 10497
- ASME Section 8 cover/body flange connection and bolting
- Wall thickness complies with ASME B16.34
- AGA and CGA approved, regular port, threaded ends (optional) 1/2" - 12"
- Fire tested in accordance with API 607 Rev. 5/ISO 10497

# **9400 Series Top Entry Valves**

## **FEATURES & BENEFITS**

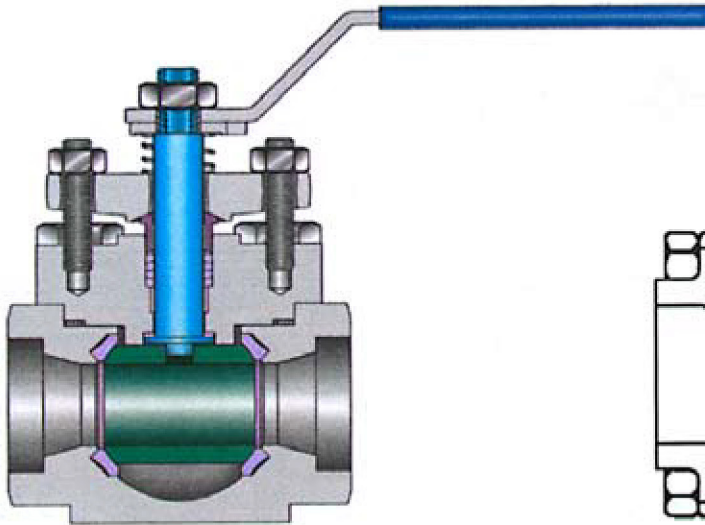
- Full port 1/2" - 10"; Regular port 1/2" - 12" threaded, socket weld, butt weld, and flanged ANSI 150 - 2500
- Seats compensate for wear and fluctuations of pressure and temperature
- Multiple solid cup and cone type PTFE stem seal or graphite packing
- Two-piece self-aligning packing flange and gland
- Stem guides in cover and gland bushing eliminate side thrust
- Longer cycle life
- Lower, uniform torque
- Live-loaded thrust washer prevents galling and provides a secondary stem seal
- Fully-enclosed spiral wound graphite filled stainless steel body gasket
- Permits in-line access for seat replacement
- Body-cover joint not affected by pipe stresses
- Can be welded into line without disassembly

## **APPLICATIONS & INDUSTRIES**

- All fluids
- Slurries
- Semi-solids
- Corrosive services
- Industrial
- Chemical
- Original equipment

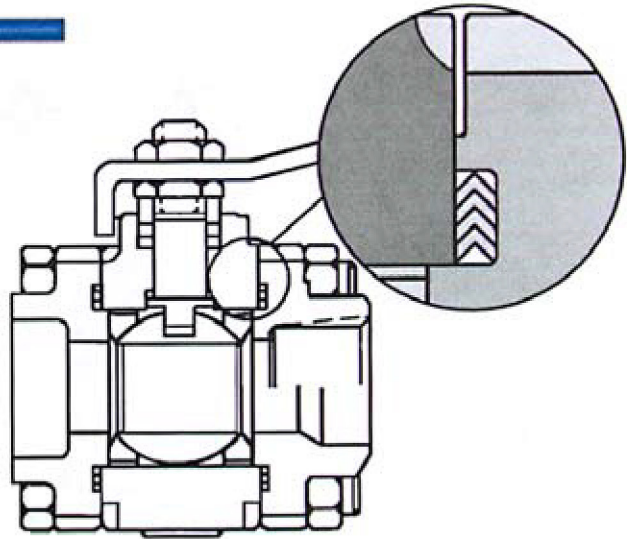
### FEATURES

#### Fire Safe Top Entry



1. Two leakage paths (gasket and packing)
2. Fully guided stem
3. In lab test 0 ppm emissions to 100,000 cycles, 500,000 with live-loading
4. Easy to weld the one-piece body into the line without disassembly. The integrity of the valve is not affected
5. All parts can be easily serviced or replaced in-line

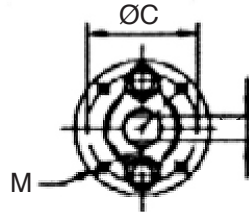
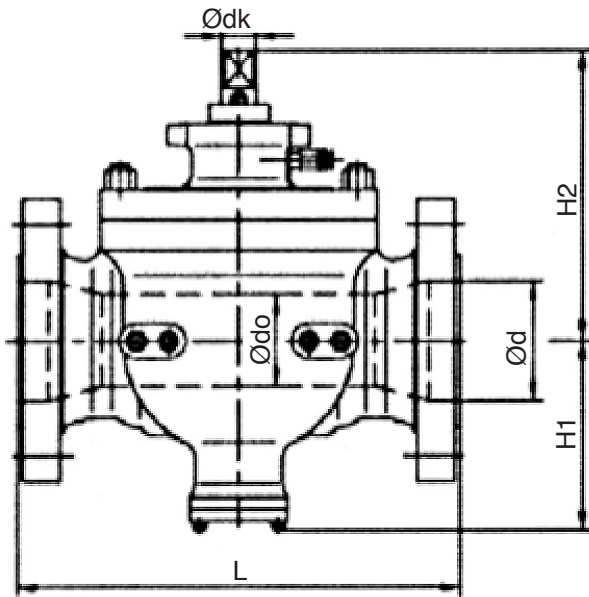
#### Three-Piece Fire Safe Valves



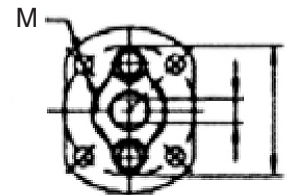
1. Three leakage paths (2 gasket and packing)
2. Fully guided stem
3. Stem can wobble, cause leakage
4. Greater emissions, lower cycle life
5. Welding can affect the integrity of the valve due to tendency to separate the three-bolted body parts during the welding
6. Valve can not be serviced in-line, because the fire safe design with spiral-wound gaskets requires internal guiding of the two end pieces. The guiding prevents the centerpiece from swinging out.

## 9400 Series Top Entry Valve

### DIMENSIONS - ANSI CLASS 150, 300 (INCHES)



Size 2" ~ 4"



Size 6" ~ 10"

Valve Size	Ødo	Ød	L (RF)		H1	H2	Ødk	ØC	K	M
			150 Lb	300 Lb						
2"	1.93	--	* 11.50		4.13	5.59	0.79	2.76	0.47	4-M8
3" x 2"	1.93	2.91	△ 11.14		4.13	5.59	0.79	2.76	0.47	4-M8
3"	2.91	--	* 14.02		4.92	7.68	1.06	2.76	0.67	4-M8
4" x 3"	2.91	3.94	△ 12.01		4.92	7.68	1.06	2.76	0.67	4-M8
4"	3.94	--	* 17.01		5.94	8.62	1.34	4.02	0.87	4-M10
6" x 4"	3.94	5.91	15.51	15.87	5.94	8.62	1.34	4.02	0.87	4-M10
6"	5.91	--	* 22.01		7.24	7.95	1.73	5.51	1.06	4-M16
8" x 6"	5.91	7.91	17.99	19.76	7.24	7.95	1.73	5.51	1.06	4-M16
8"	7.91	--	* 25.98		10.79	11.61	2.01	6.50	1.26	4-M20
8" x 10"	7.91	9.92	20.98	22.36	10.79	11.61	2.01	6.50	1.26	4-M20
10"	9.92	--	* 30.98		12.52	13.31	2.01	6.50	1.26	4-M20
12" x 10"	9.92	11.93	24.02	25.51	12.52	13.31	2.01	6.50	1.26	4-M20

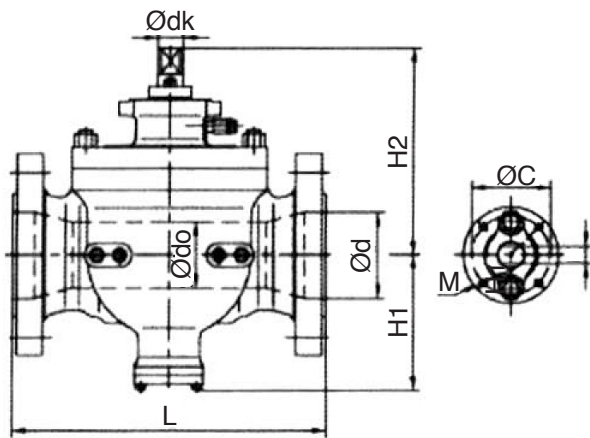
Note:

\* Designed as per 600 lb length

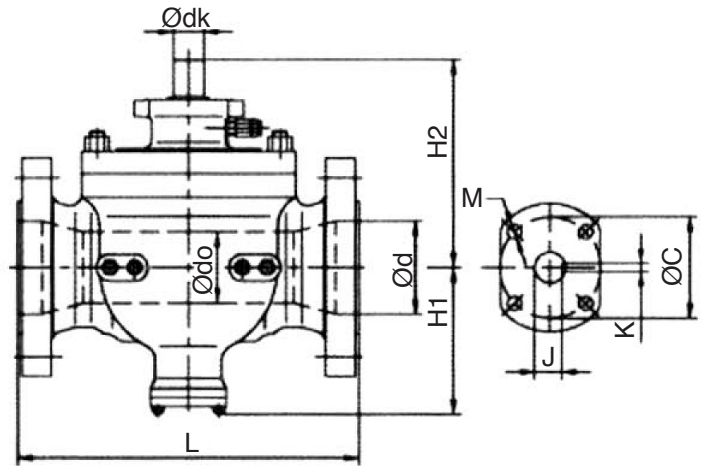
△ Designed as per 300 lb length

## 9400 Series Top Entry Valve

### DIMENSIONS - ANSI CLASS 600 (INCHES)



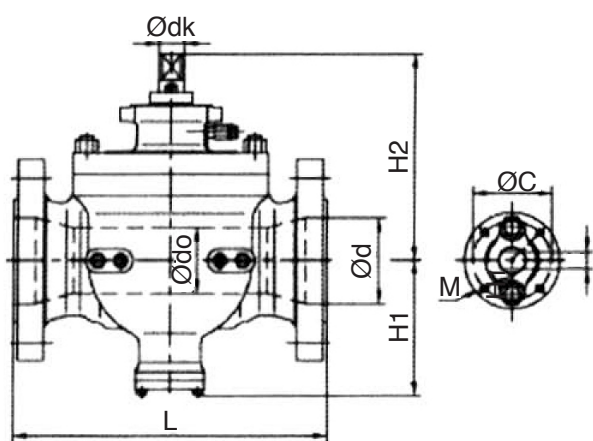
Size 2" ~ 4"



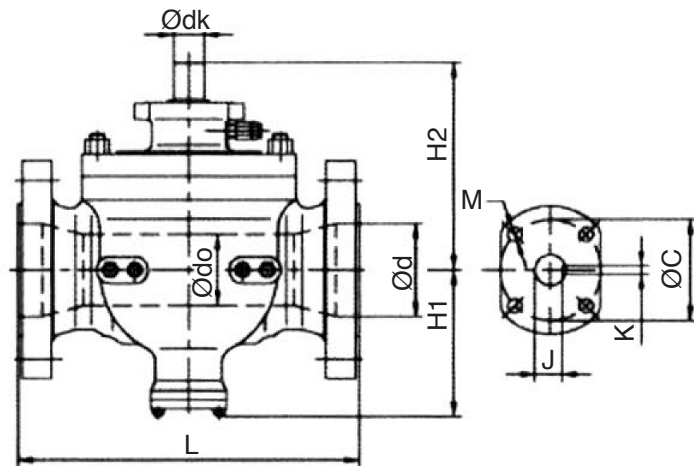
Size 6" ~ 10"

Valve Size	Ødo	Ød	L (RF)		H1	H2	Ødk	ØC	J	K	M
			400 Lb	600 Lb							
2"	1.93	--	11.50		4.84	6.85	1.06	2.76	--	0.67	4-M8
3" x 2"	1.93	2.91	14.02		4.84	6.85	1.06	2.76	--	0.67	4-M8
3"	2.91	--	14.02		5.83	8.07	1.34	4.02	--	0.87	4-M10
4" x 3"	2.91	3.94	15.98	17.01	5.83	8.07	1.34	4.02	--	0.87	4-M10
4"	3.94	--	15.98	17.01	7.01	10.87	1.73	5.51	--	1.06	4-M16
6" x 4"	3.94	5.91	19.49	22.01	7.01	10.87	1.73	5.51	--	1.06	4-M16
6"	5.91	--	19.49	22.01	9.53	13.31	1.97	6.50	1.75	0.55	4-Ø23
8" x 6"	5.91	7.91	23.50	25.98	9.53	13.31	1.97	6.50	1.75	0.55	4-Ø23
8"	7.91	--	23.50	25.98	12.20	16.10	2.52	10.00	2.28	0.71	8-Ø19
8" x 10"	7.91	9.92	26.50	30.98	12.20	16.10	2.52	10.00	2.28	0.71	8-Ø19
10"	9.92	--	26.50	30.98	14.29	18.46	2.52	10.00	2.28	0.71	8-Ø19
12" x 10"	9.92	11.93	30.00	32.99	14.29	18.46	2.52	10.00	2.28	0.71	8-Ø19

***DIMENSIONS ANSI CLASS 900 (INCHES)***



Size 2" ~ 3"

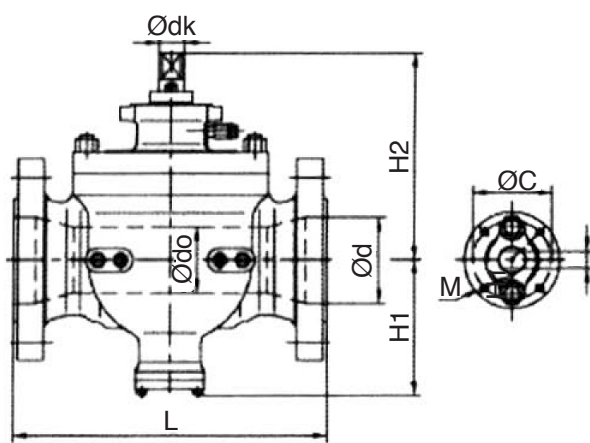


Size 4" ~ 6"

Valve Size	Ødo	Ød	L (RTJ)	H1	H2	Ødk	ØC	J	K	M
2"	1.93	--	14.61	6.42	8.70	1.34	4.02	--	0.87	4-M10
3" x 2"	1.93	2.91	15.12	6.42	8.70	1.34	4.02	--	0.87	4-M10
3"	2.91	--	15.12	6.69	9.45	1.73	5.51	--	1.06	4-M16
4" x 3"	2.91	3.94	18.11	6.69	9.45	1.73	5.51	--	1.06	4-M16
4"	3.94	--	18.11	7.91	11.57	1.97	5.51	1.75	0.55	4-Ø23
6" x 4"	3.94	5.91	24.13	7.91	11.57	1.97	6.50	1.75	0.55	4-Ø23
6"	5.91	--	24.13	11.81	14.41	1.97	6.50	1.75	0.55	4-Ø23
8" x 6"	5.91	7.91	29.13	11.81	14.41	1.97	6.50	1.75	0.55	4-Ø23
8"	7.91	--	29.13	12.20	16.42	2.52	10.00	2.28	0.71	8-Ø19
8" x 10"	7.91	9.92	33.11	12.20	16.42	2.52	10.00	2.28	0.71	8-Ø19

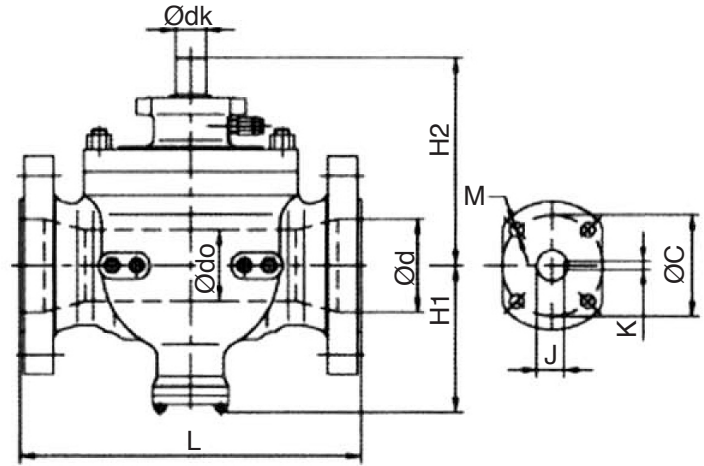
## 9400 Series Top Entry Valve

### DIMENSIONS - ANSI CLASS 1500 (INCHES)



Size 2" ~ 3" (1500)

Size 2" (2500)



Size 4" ~ 6" (1500)

Size 3" ~ 6" (2500)

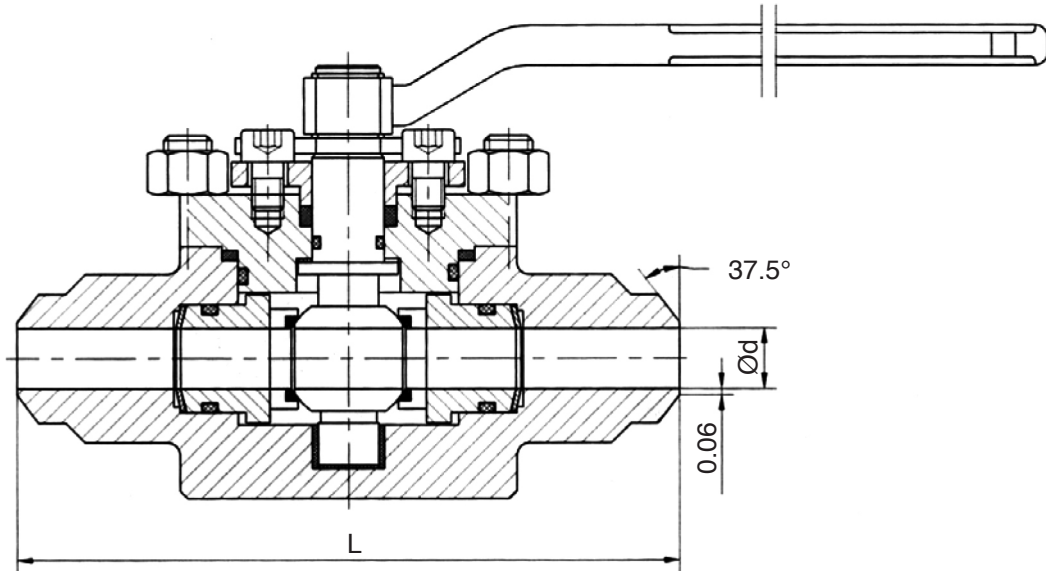
Valve Size	Ødo	Ød	L (RTJ)	H1	H2	Ødk	ØC	J	K	M
2"	1.93	--	14.61	6.42	8.70	1.34	4.02	--	0.87	4-M10
3" x 2"	1.93	2.91	18.62	6.42	8.70	1.34	4.02	--	0.87	4-M10
3"	2.91	--	18.62	7.87	11.69	1.97	6.50	1.75	0.55	4-Ø23
4" x 3"	2.91	3.94	21.61	7.87	11.69	1.97	6.50	1.75	0.55	4-Ø23
4"	3.94	--	21.61	9.72	12.99	1.97	6.50	1.75	0.55	4-Ø23
6" x 4"	3.94	5.67	27.99	9.72	12.99	1.97	6.50	1.75	0.55	4-Ø23
6"	5.67	--	27.99	12.95	16.30	2.52	10.00	2.28	0.71	8-Ø19
8" x 6"	5.67	7.56	33.11	12.95	16.30	2.52	10.00	2.28	0.71	8-Ø19

### DIMENSIONS - ANSI CLASS 2500 (INCHES)

Valve Size	Ødo	Ød	L (RTJ)	H1	H2	Ødk	ØC	J	K	M
2"	1.93	--	14.61	6.42	8.70	1.34	4.02	--	0.87	4-M10
3" x 2"	1.93	2.91	15.12	6.42	8.70	1.34	4.02	--	0.87	4-M10
3"	2.91	--	15.12	6.69	9.45	1.73	5.51	--	1.06	4-Ø23
4" x 3"	2.91	3.94	18.11	6.69	9.45	1.73	5.51	--	1.06	4-Ø23
4"	3.94	--	18.11	7.91	11.57	1.97	5.51	1.75	0.55	4-Ø23
6" x 4"	3.94	5.91	24.13	7.91	11.57	1.97	6.50	1.75	0.55	4-Ø23
6"	5.91	--	24.13	11.81	14.41	1.97	6.50	1.75	0.55	4-Ø23
8" x 6"	5.91	7.91	29.13	11.81	14.41	1.97	6.50	1.75	0.55	4-Ø23

## 9400 Series Top Entry Valve

### ***DIMENSIONS - ANSI 150 FULL PORT (INCHES)***



Valve Size	Ød	L
1/2"	0.59	6.50
3/4"	0.79	7.48
1"	0.98	8.50
2"	1.93	11.50

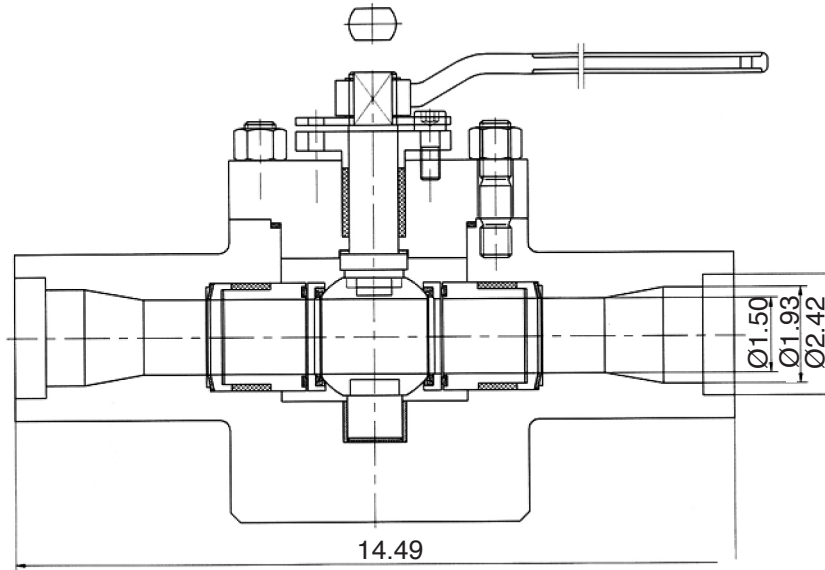
Parts	Materials
Body	ASME A182 F316L
Cap	ASME A182 F316L
Ball	ASME A182 F316
Seat	UHMWPE
Stem	ASME A182 F316
Springs	17-4PH
Packing	UHMWPE
Gaskets	SS304 + Graphite spiral wound gaskets
O-Ring	UHMWPE
Bolts/Nuts	B8M/8M

### ***SPECIFICATIONS***

- Designed to ASME B16.34
- Test and inspection to API 6D / API 598
- BW end to ASME B16.25
- Face to face dimension to factory standard
- Firesafe to API 607, 4th Edition
- Blow-out proof stem

## 9400 Series Top Entry Valve

### ***DIMENSIONS - 2" ANSI 1500 REDUCED PORT (INCHES)***



Parts	Materials
Body	LF2
Cap	LF2
Ball	F316 Nitride hardening
Seat	F316 + Stellite
Stem	F316
Springs	17-4PH
Packing	Graphite
Gaskets	SS304 + Graphite
Bolts/Nuts	L77M

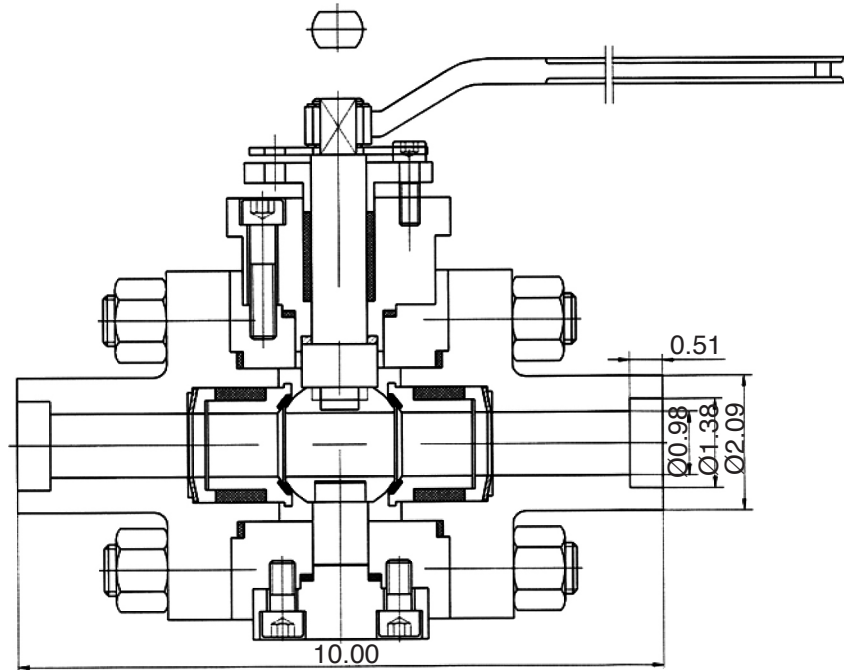
### ***SPECIFICATIONS***

- Designed to API 6D
- Test and inspection to FCI 70-2
- Face to face dimension to factory standard
- Marking to API 6D



## 9400 Series Top Entry Valve

### ***DIMENSIONS - 1" ANSI 1500 REDUCED PORT (INCHES)***



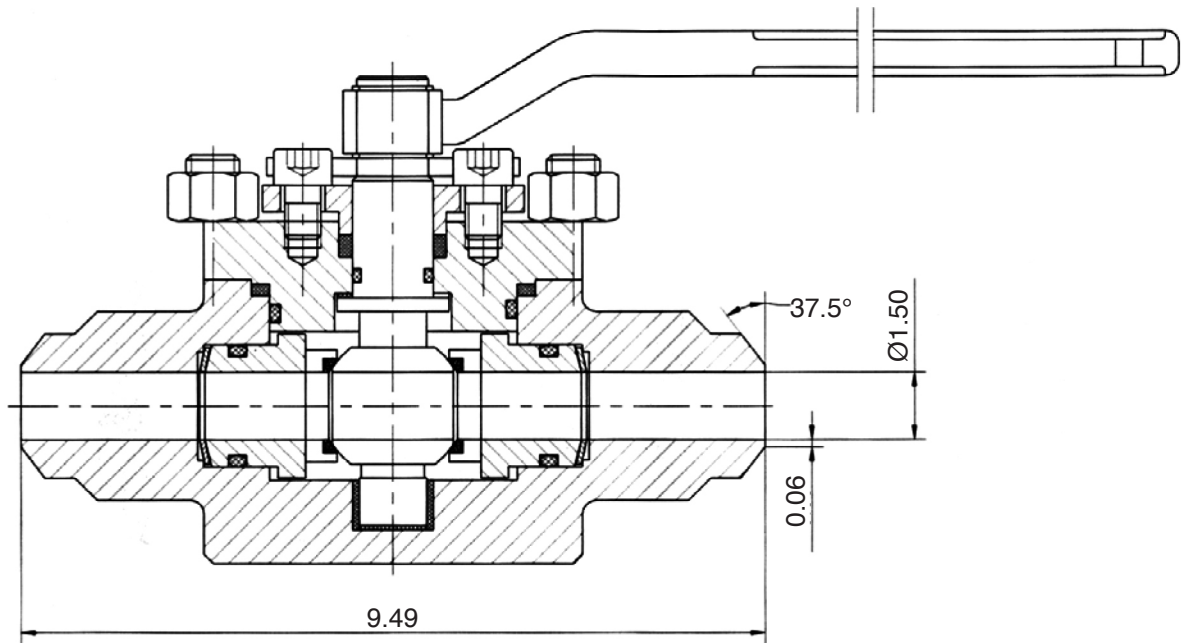
Parts	Materials
Body	LF2
Cap	LF2
Ball	F316 Nitride hardening
Seat	F316 + Stellite
Stem	F316
Springs	17-4PH
Packing	Graphite
Gaskets	SS304 + Graphite
Bolts/Nuts	L77M

### ***SPECIFICATIONS***

- Designed to API 6D
- Test and inspection to FCI 70-2
- Face to face dimension to factory standard
- Marking to API 6D

## 9400 Series Top Entry Valve

### **DIMENSIONS - 1-1/2" ANSI 600 FULL PORT (INCHES)**



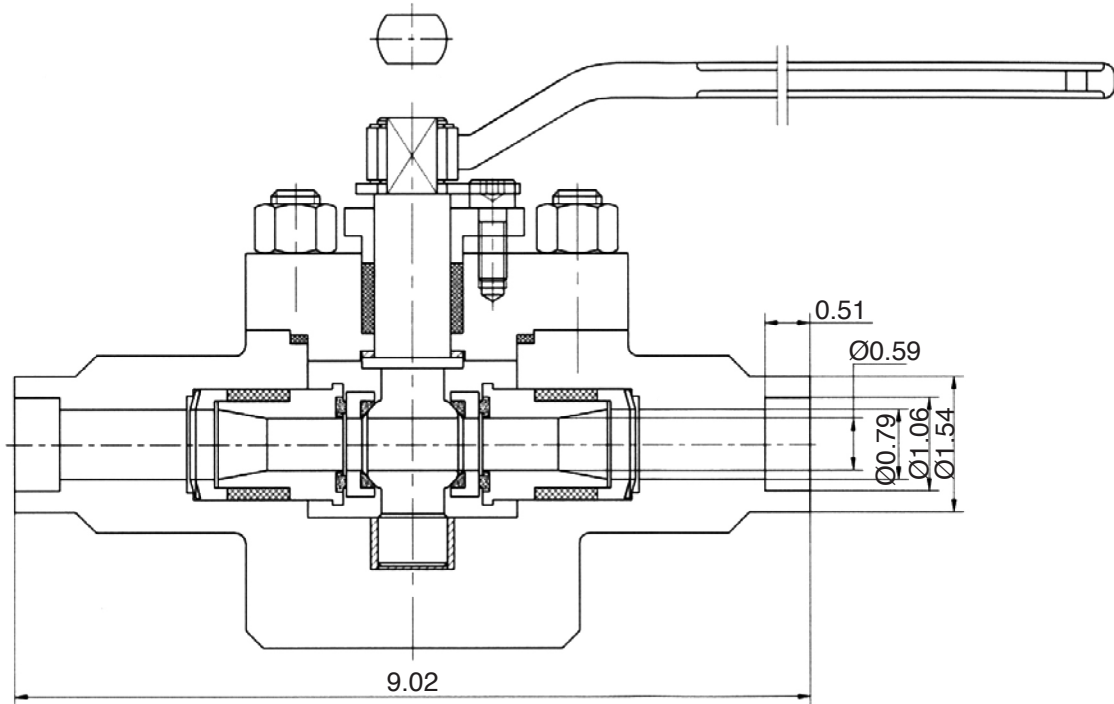
Parts	Materials
Body	ASME A182 F316L
Cap	ASME A182 F316L
Ball	ASME A182 F316
Seat	RPTFE
Stem	ASME A182 F316
Springs	17-4PH
Packing	Graphoil
Gaskets	SS304 + Graphite spiral wound gaskets
O-Ring	Viton
Bolts/Nuts	B8M/8M

### **SPECIFICATIONS**

- Designed to ASME B16.34
- Test and inspection to ASME B16.25
- Face to face dimension to factory standard
- Fire safe to API 607, 4th Edition
- Blow-out proof stem

## 9400 Series Top Entry Valve

### ***DIMENSIONS - 3/4" ANSI 1500 REDUCED PORT (INCHES)***



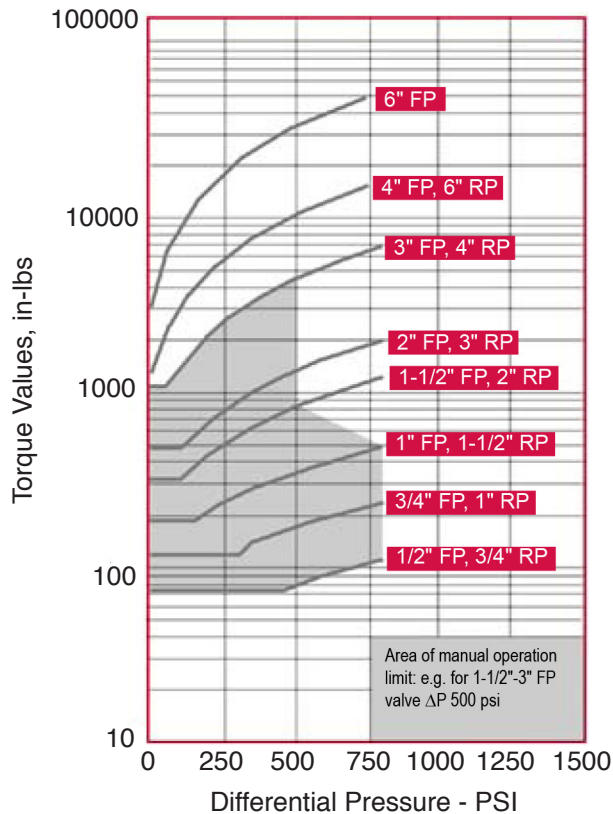
Parts	Materials
Body	LF2
Cap	LF2
Ball/Stem	F316 Nitride hardening
Seat	F316 + Stellite
Springs	17-4PH
Packing	Graphite
Gaskets	SS304 + Graphite
Bolts/Nuts	L77M

### ***SPECIFICATIONS***

- Designed to API 6D
- Test and inspection to FCI 70-2
- Face to face dimension to factory standard
- Marking to API 6D

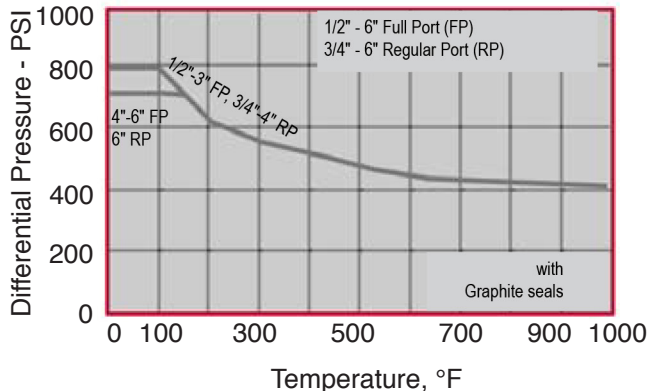
## 9400 Series Top Entry Valves

### TORQUE CHART (CLEAN SERVICE) TE-600 1/2" - 6"

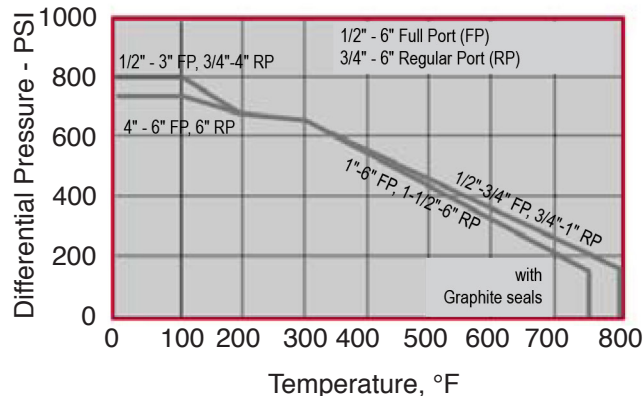


### MAXIMUM DIFFERENTIAL PRESSURE TEMPERATURE RATINGS

- Stainless Steel (CF8M)



- Carbon Steel (WCB)



(1) Body rating is per B16.34 pressure/temperature ratings, except for 2" full port and 2" regular port, which are limited to 1200 psi at 100°F, 3" and larger full port and 4" and larger regular port are rated Class 300 only. Shutoff pressure for valves is limited to the differential pressure as shown on the graphs.  
 (2) For full B16.34 ratings and/or shutoff against full B16.34 differential pressures consult factory.

### HOW TO ORDER

Series	Body	Ball & Stem	Port	Packing	Seat	End Connection
94 Series	0 LF2/LCB	2 Chrome w/ electroless nickel	F Full	T PTFE	C Carbon PEEK	B Butt Weld
	2 WCB	3 316	R Reduced	G Grafoil	K Kel-F	S Socket Weld
	3 316	4 Alloy 20			M Metal Seated	F Flanged
	4 Alloy 20	5 Monel			N Nylon	FF Flat Face
	5 Monel	7 Hastelloy			P PEEK	F1 ANSI 150
	7 Hastelloy	10 Chrome Alloy			T PTFE	F3 ANSI 300
	10 Chrome Alloy	A 304			R Reinforced	F6 ANSI 600
						F9 ANSI 900
						F15 ANSI 1500
						F25 ANSI 2500

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