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**FLOW-TEK**

**SERIES F15 | F30**

**2-Piece, Floating Ball Valves  
Flanged, Full Port**



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**Bray**<sup>®</sup>

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THE HIGH PERFORMANCE COMPANY

## SPECIFICATIONS

Flow-Tek's F15 and F30 Flanged Series ball valves feature a floating ball design for low-torque and increased cycle life. As a standard, the larger sizes feature a trunnion-style ball support to offer low-torque operation. The robust design of the F-Series ball valve is ideal for demanding, industrial applications.

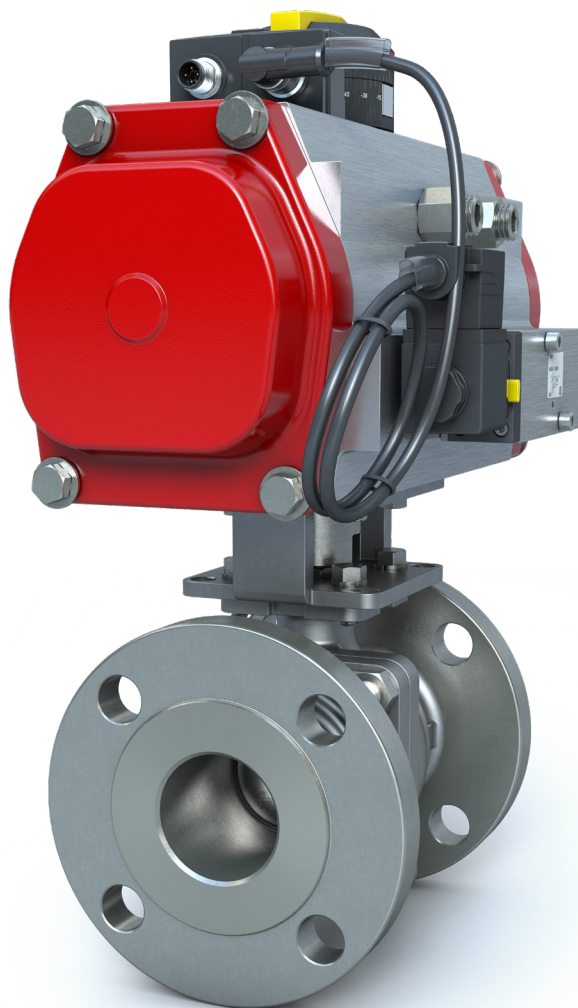
### SPECIFICATIONS

<b>Body</b>	2-Piece, Full Port
<b>Size Range</b>	NPS ½ to 12   DN 15 to 300
<b>Pressure Ratings</b>	F15: ASME Class 150   PN 10 & 16 F30: ASME Class 300   PN 25 & 40
<b>Materials</b>	Stainless Steel Carbon Steel Special Alloys
<b>Design</b>	ASME B16.34* API 608 (Available upon request)
<b>Flange Design</b>	ASME B16.5   DIN EN 1092-1
<b>Face-to-Face</b>	ASME B16.10
<b>Testing</b>	API 598 MSS SP-72 Special testing available upon request
<b>Shutoff Rating</b>	Zero leakage, Bi-Directional
<b>Approvals &amp; Certifications</b>	API 607 ISO 15848-1/2 API 641 NSF/ANSI/CAN 61 & 372 CRN PED 2014/68/EU PE(S)R UKCA S.I. 2016:1105 SIL ATEX

\* Pressure-temperature rating, wall thickness, blowout-proof stem

### SPECIAL OPTIONS/SERVICES

Cavity Fillers
Media Containment Units
Spring Return Handles
NACE MR0175 & MR0103 Materials
Vented Balls
Polished Internals
Characterized Ball (V-Control)
Special Cleaning
Chlorine Service
Silicone Free
Vacuum Service



### STEAM SERVICE PRESSURE RATINGS: WSP

	TFM Seats		Tek-Fil® Seats		PEEK Seats	
	PSI	°F	PSI	°F	PSI	°F
<b>Class 150</b>	150	365	190	383	170	374
<b>Class 300</b>	150	365	425	454	425	454

Vacuum service to -29.9 inches Hg. gauge

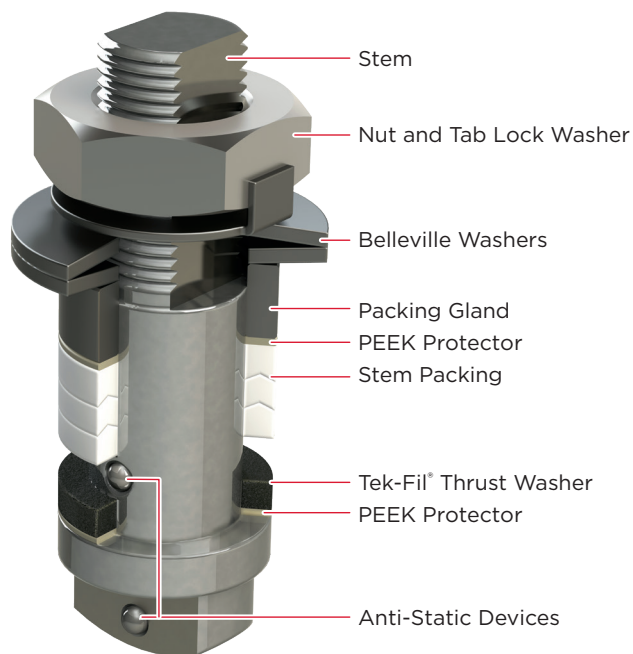
### STEAM SERVICE PRESSURE RATINGS: WSP

	TFM Seats		Tek-Fil® Seats		PEEK Seats	
	Bar	°C	Bar	°C	Bar	°C
<b>PN 10/16</b>	10.3	185	13.1	195	11.7	190
<b>PN 25/40</b>	10.3	185	29.3	234	29.3	234

Vacuum service to -29.9 inches Hg. gauge

## STEM ASSEMBLIES

Flow-Tek manufactures heavy duty, high quality stems with double “D” connection to ball and operator mounting. Stem and ball design ensure positive contact. All Flow-Tek stems are internal entry and blowout proof for maximum safety.



## SMART STEM

Valve Sizes ½” through 2” | DN15 - DN50

Flow-Tek’s interchangeable family of valves feature strong, large diameter stems with live-loaded, self-adjusting sealing utilizing Belleville washers which automatically adjust to compensate for changes in temperature and wear. Manual adjustments which can cause damage to the seal and seat are not required. The assembly is secured by a saddle-type lock washer which prevents stem nuts from unthreading in high cycle automation applications.

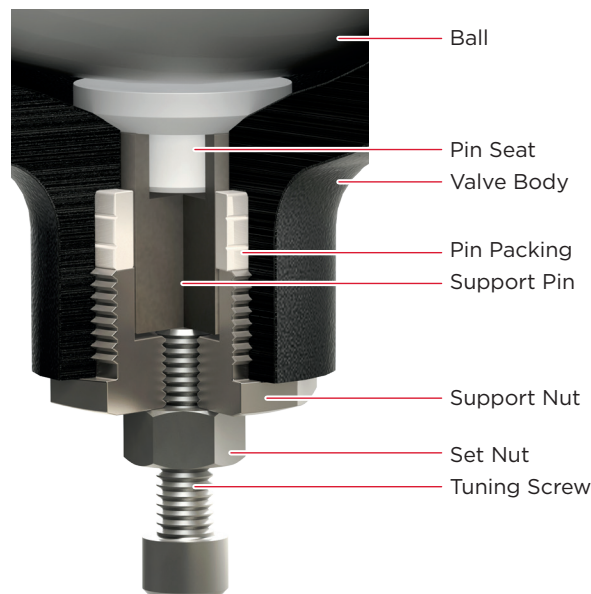
## STEM PACKING

An adjustable V-ring design creates a reliable seal between the stem and body. Each stem assembly is composed of three or four (dependent on valve size) rings providing a very high cycle life by resisting creep and cold flow. The thrust washer and the thrust washer protector combine to provide a primary seal, reduce torque and prevent galling. This arrangement is a Flow-Tek exclusive.

## BALL SUPPORT

Valve Sizes 6” through 12” | DN150 - DN300

As a standard, the larger sizes feature a trunnion-style ball support. This support helps to maintain continuous contact between the ball and seats, preventing seat damage and through-bore leakage. The results are less seat wear, lower torque, and longer service life.



## LOCKING DEVICE

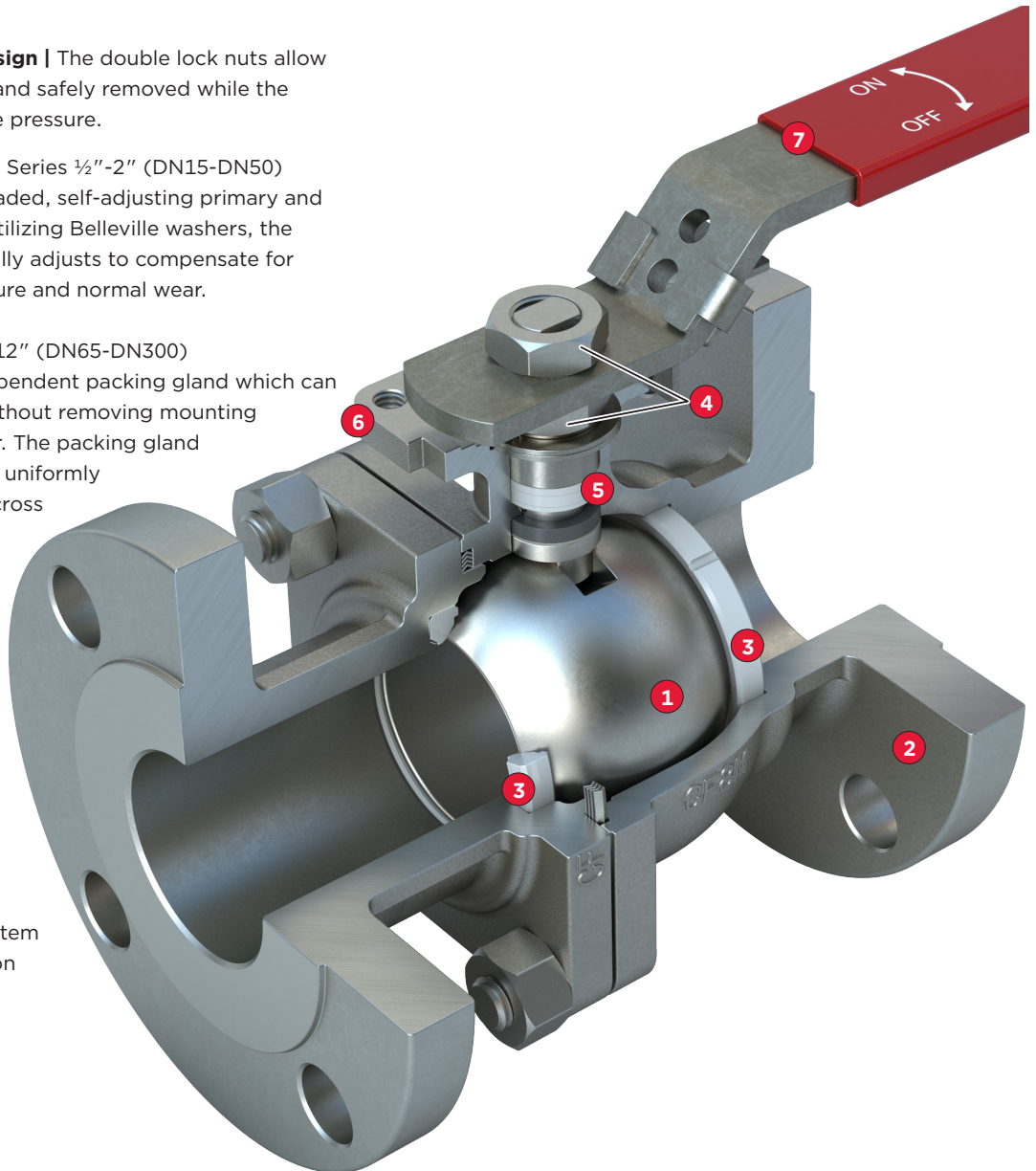
All manually operated valves feature a locking device to prevent accidental movement of ball position. Valves ½”-2” (DN15-DN50) feature a safety trigger that locks the handle in the open or closed position. The handle lock can be bypassed, if needed, with a small bolt through the handle in the release position. On all sizes a padlock can be added to secure the handle in position, preventing unwanted movement of the ball.



## FEATURES & BENEFITS

- 1 Ball** | Balls are precision machined and mirror finished for bubble-tight shut off and less operating torque. As an added safety feature, a hole in the stem slot of each ball equalizes pressure between the body cavity and the line media flow.
- 2 Body/Endcap** | ½"-4" (DN15-DN100) valve bodies are investment cast and solution annealed/normalized for the highest quality and added strength. All body castings are marked with a foundry heat number for full traceability. Carbon steel bodies are phosphate coated for increased corrosion resistance.
- 3 Seat** | The seat design ensures bidirectional, bubble-tight sealing with low operating torque. The seats are preloaded between the ball and body during assembly to ensure sealing against low-pressure and vacuum service.
- 4 Double Lock Nut Design** | The double lock nuts allow handles to be easily and safely removed while the valve is under full line pressure.
- 5 Stem Seals** | Flanged Series ½"-2" (DN15-DN50) valves feature live-loaded, self-adjusting primary and secondary sealing. Utilizing Belleville washers, the stem seal automatically adjusts to compensate for changes in temperature and normal wear.
- 6 Secure Mount** | Flanged Series valves offer ease of automation due to an integrally cast actuator mounting pad which complies with ISO 5211 through 2" (DN50) sizes.
- 7 Handle** | The handles feature a standard Safety Trigger to prevent accidental movement of ball position. Operation is easily made with one hand. The trigger locks the handle in the open or closed position. The handle lock can be bypassed, if needed, with a small bolt through the handle in the bypass position. An Anti-Tamper Padlock can be used to secure the handle in position, preventing unwanted access. Travel stops limit the movement of handle to set 90° intervals, preventing over travel of the ball.

Flanged Series 2½"-12" (DN65-DN300) valves utilize an independent packing gland which can be easily adjusted without removing mounting hardware or operator. The packing gland is contoured to more uniformly distribute the load across the packing. The primary stem seal is a combination of a thrust-washer and a thrust washer protector. An adjustable stem packing creates a secondary seal between the stem and body. The stem packing is composed of RPTFE V-rings as standard - graphite stem packing is standard on all fire safe valves.

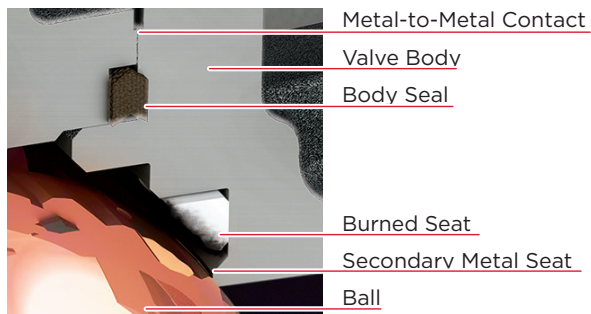


## FIRE SAFE - CERTIFIED TO API 607

Flanged Series valves with graphite stem seals have been thoroughly fire tested and certified to API 607.

In the event of a fire, if heat compromises the primary resilient seat, the ball then makes contact with the integral secondary metal seat, forming a secure seal.

The body seal, a spiral wound stainless steel and graphite gasket, prevents external leakage. The graphite stem rings prevent stem leakage.



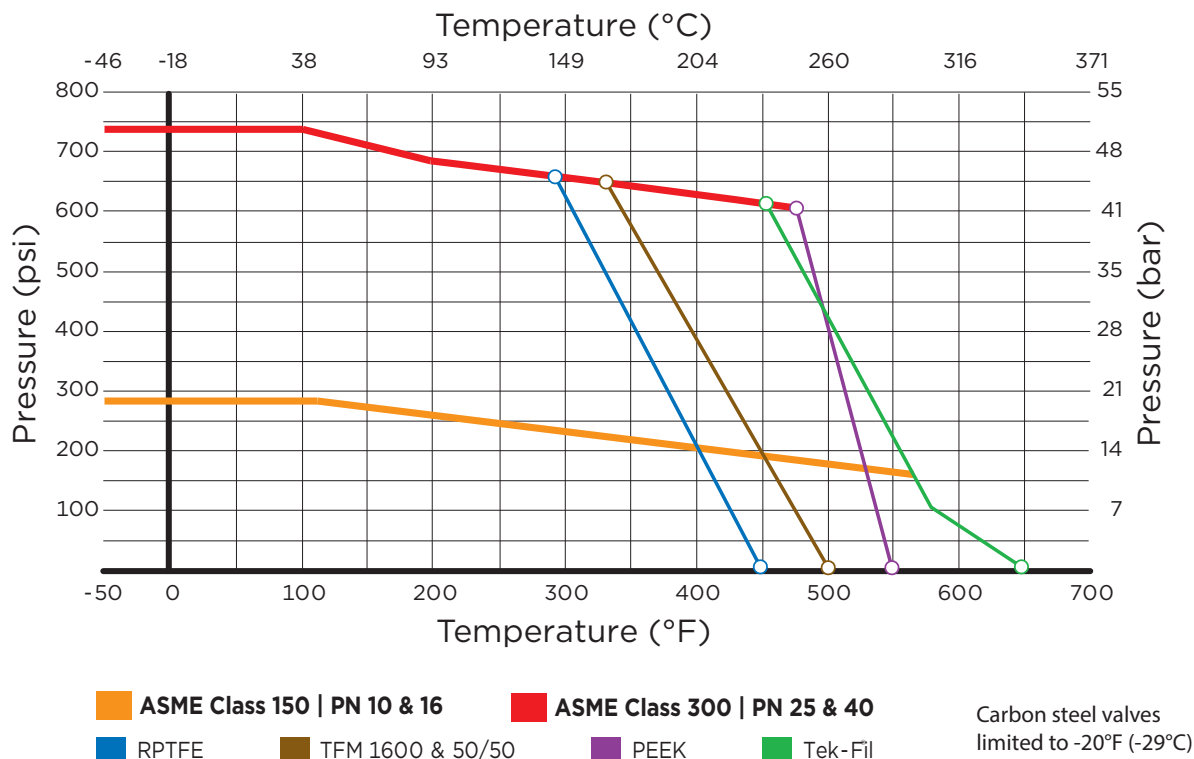
## SEAT SELECTION

A wide range of seat materials are available to meet most applications. The standard seat is TFM 1600. Options include:

- > RPTFE
- > UHMWPE
- > Virgin PTFE
- > PEEK
- > Full metal seats
- > Cavity Fillers
- > Tek-Fil® (carbon/graphite filled TFM)
- > Stainless Steel/PTFE (50/50)

PEEK seats offer high pressure/temperature capability. Tek-Fil® seats offer reduced torque in high temperature, high cycle, and steam service applications. TFM 1600 seats offer the exceptional chemical resistance of PTFE plus lower porosity and permeability, improved temperature range and reduced valve torques.

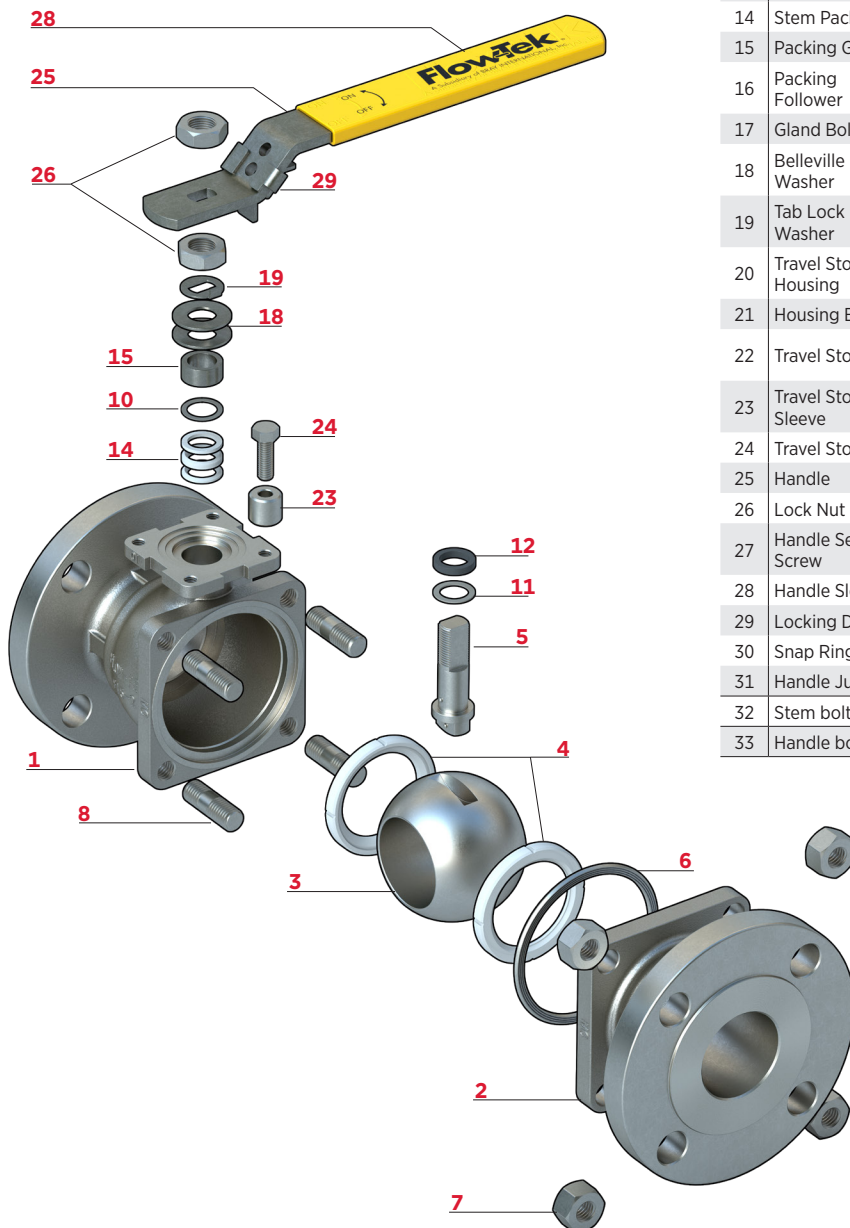
## PRESSURE / TEMPERATURE



# COMPONENTS & MATERIALS

## ½" - 2" | DN15 - DN50 VALVES

- > Carbon steel bodies on valve sizes ½" - 4" (DN15-DN100) are black phosphate coated.
- > All stainless steel bodies are solution annealed/normalized.



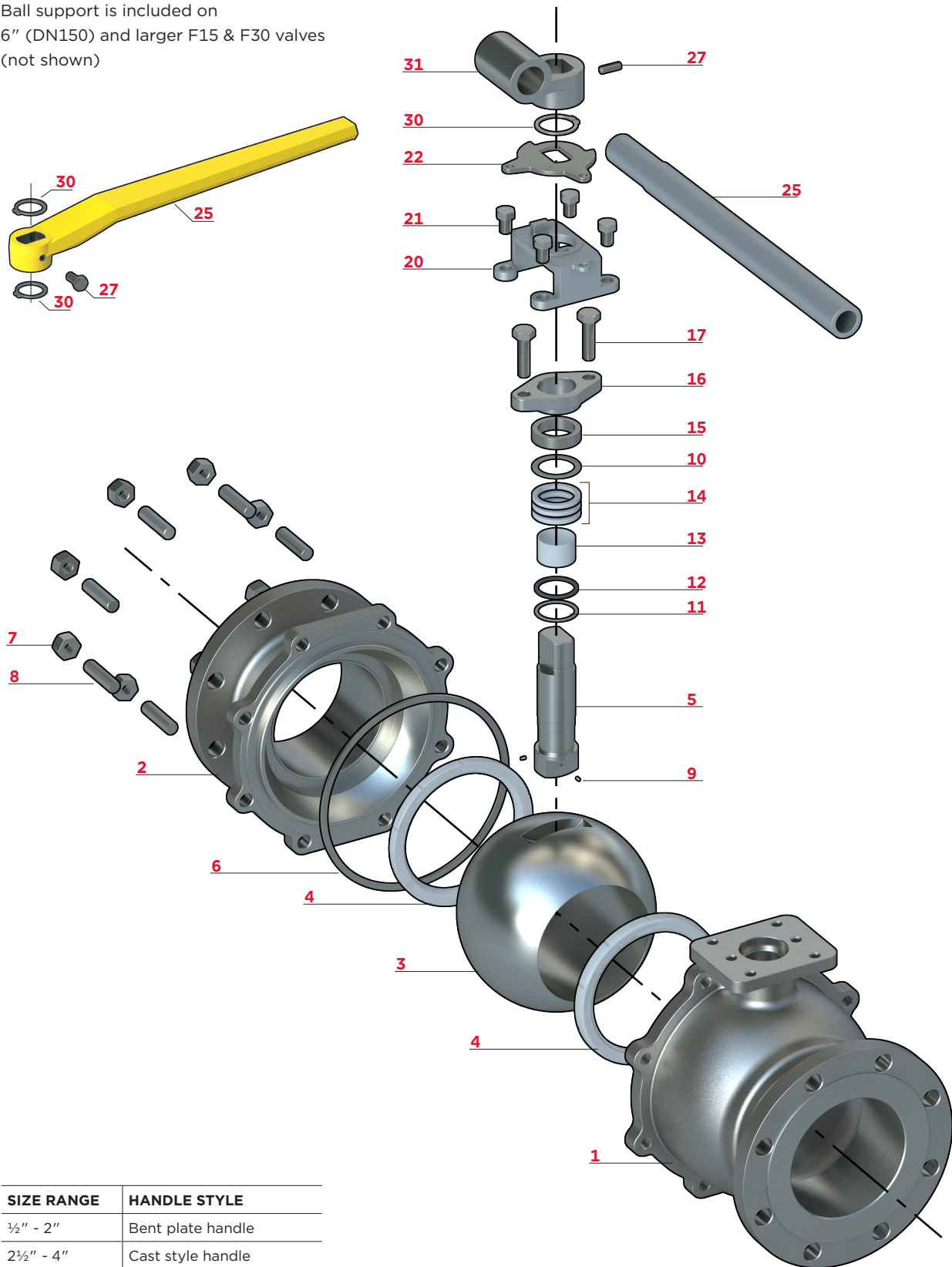
Item	Name	Stainless Steel	Carbon Steel	Qty
1	Body	ASTM A351 Gr CF8M	ASTM A216 Gr WCB	1
2	End Cap	ASTM A351 Gr CF8M	ASTM A216 Gr WCB	1
3	Ball	ASTM A351 Gr CF8M		1
4	Seat	TFM 1600		2
5	Stem	ASTM A479 Type 316		1
6	Body Seal	Spiral Wound (316/Graphite)		1
7	Body Nut	ASTM A194 Gr 8		*
8	Body Stud	ASTM A193 B8	ASTM A193 B7	*
9†	Anti-Static Device	SS304		2
10	Packing Protector	PEEK		1
11	Thrust Washer Protector	PEEK		1
12	Thrust Washer	Tek-Fil		1
13	Stem Bearing	15% RPTFE		1
14	Stem Packing	RPTFE or Graphite		**
15	Packing Gland	ASTM A167 Type 304		1
16	Packing Follower	ASTM A351 Gr CF8M	ASTM A216 Gr WCB	1
17	Gland Bolt	SS304		2
18	Belleville Washer	SS301		2
19	Tab Lock Washer	SS304		1
20	Travel Stop Housing	ASTM A351 Gr CF8M	ASTM A216 Gr WCB	1
21	Housing Bolt	SS304	Alloy Steel	4
22	Travel Stop	SS304	Zinc Plated Carbon Steel	1
23	Travel Stop Sleeve	ASTM A167 Type 304		1
24	Travel Stop Bolt	SS304		1
25	Handle	SS304 or Ductile Iron***		1
26	Lock Nut	ASTM A167 Type 304		2
27	Handle Set Screw	Carbon Steel		1
28	Handle Sleeve	Vinyl through 2"		1
29	Locking Device	SS304		1
30	Snap Ring	Nickel Plated Carbon Steel		2
31	Handle Junction	SS304 or Ductile Iron***		1
32	Stem bolt			
33	Handle bolt			

- \* Quantity depends on valve size.
- \*\* RPTFE packing is composed of 3 or 4 pieces depending on size. Graphite packing is composed of a single piece.
- \*\*\* Ductile Iron used for valve sizes  $\geq 2\frac{1}{2}"$ .
- † Not shown in model

Flow-Tek offers the seat, body seal, thrust washer and stem packing as recommended spare parts. These parts are available as a packaged repair kit.

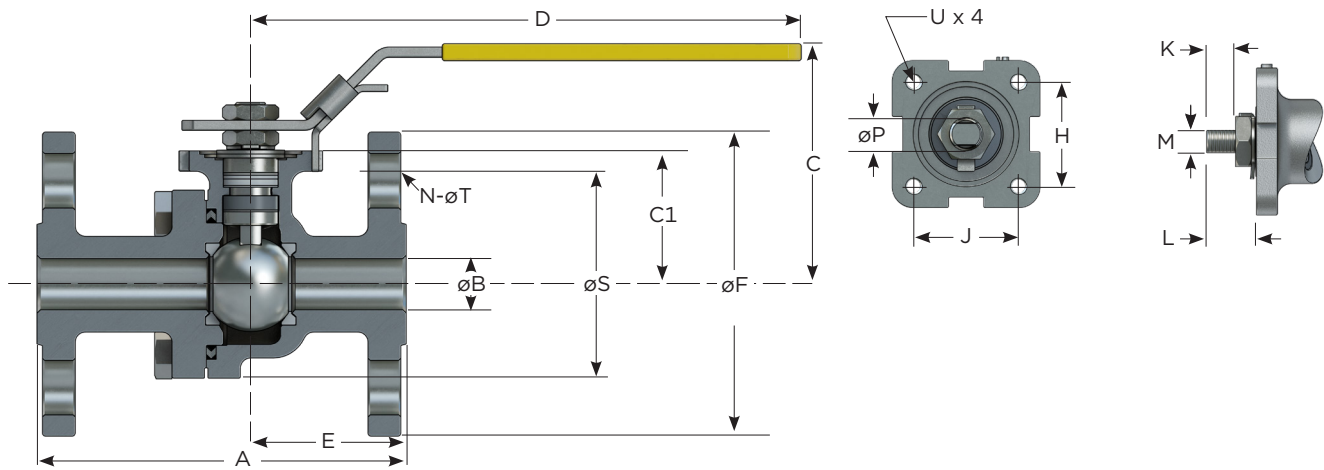
## 2½" - 12" | DN65 - DN300 VALVES

Ball support is included on  
6" (DN150) and larger F15 & F30 valves  
(not shown)



SIZE RANGE	HANDLE STYLE
½" - 2"	Bent plate handle
2½" - 4"	Cast style handle
6" - 12"	Pipe style handle

## F15/F30 DIMENSIONS 1/2" - 2"



### DIMENSIONS - Secure Mount (inches)

NPS	H	J	ISO Mounting Flange	BC DIA	K	L	M	øP	U (UNC)
1/2	1.17	1.17	F04	1.65	0.31	0.61	0.25	0.37	#10-24
3/4	1.17	1.17	F04	1.65	0.31	0.61	0.25	0.37	#10-24
1	1.39	1.39	F05	1.97	0.43	0.82	0.31	0.43	1/4-20
1-1/2	1.95	1.95	F07	2.76	0.55	0.95	0.37	0.62	5/16-18
2	1.95	1.95	F07	2.76	0.55	0.95	0.37	0.62	5/16-18

### DIMENSIONS - SERIES F15 - CLASS 150 (inches)

NPS	A	øB	C	C1	D	E	øF	øS	N / øT	Cv	Torque* lbs-in	Weight lbs
1/2	4.25	0.59	2.88	1.54	6.50	1.79	3.50	2.38	4 x 0.62	32	36	4
3/4	4.62	0.79	2.97	1.67	6.50	2.01	3.88	2.75	4 x 0.62	60	65	5
1	5.00	0.98	3.41	2.05	7.87	2.13	4.25	3.12	4 x 0.62	105	95	10
1-1/2	6.50	1.49	4.20	2.60	9.84	2.76	5.00	3.88	4 x 0.62	275	230	14
2	7.00	1.97	4.53	2.95	10.43	3.07	6.00	4.75	4 x 0.75	500	390	20.5

### DIMENSIONS - SERIES F30 - CLASS 300 (inches)

NPS	A	øB	C	C1	D	E	øF	øS	N / øT	Cv	Torque* lbs-in	Weight lbs
1/2	5.50	0.59	2.92	1.57	6.50	2.44	3.75	2.62	4 x 0.62	32	40	5
3/4	6.00	0.79	2.97	1.67	6.50	2.72	4.62	3.25	4 x 0.75	60	70	7
1	6.50	0.98	3.41	2.05	7.87	2.91	4.88	3.50	4 x 0.75	105	108	10
1-1/2	7.50	1.49	4.04	2.60	9.84	3.27	6.12	4.50	4 x 0.88	275	270	19
2	8.50	1.97	4.53	2.95	10.43	3.94	6.50	5.00	8 x 0.75	500	445	25

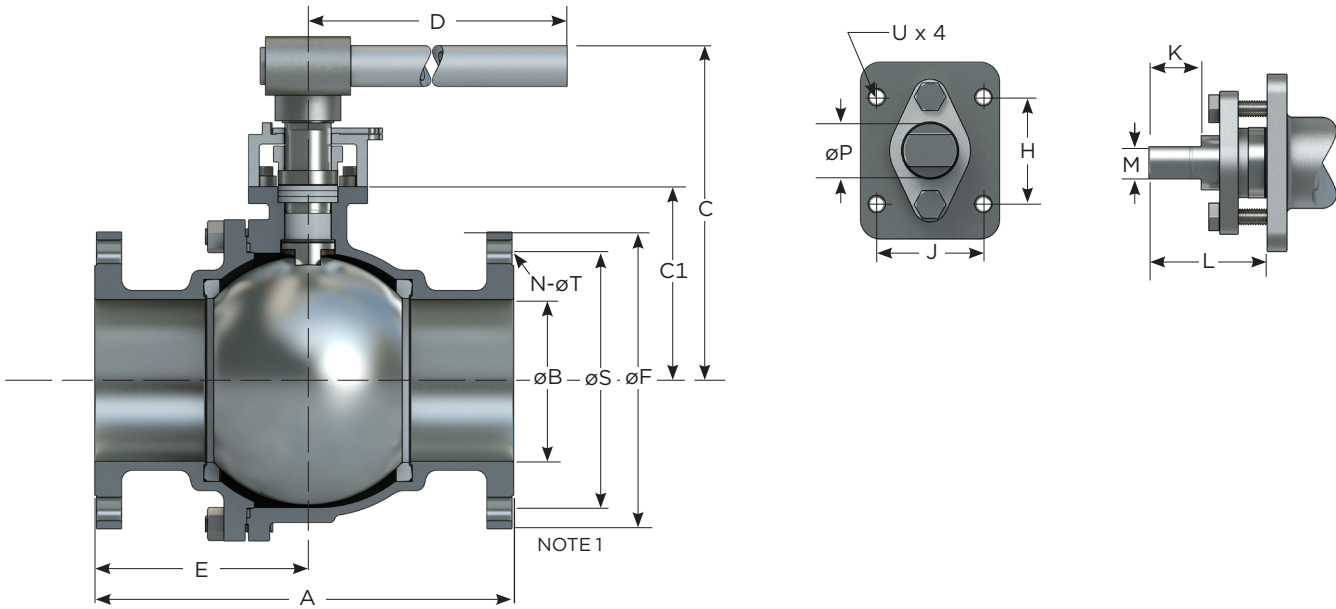
Face to Face dimensions meet ASME B16.10 long pattern and short pattern (sizes 1/2" thru 2").

\*Torque at maximum rated pressure, clean water, TFM 1600 seating material. Other seat materials exhibit different torques. Please refer to TB 1005 for specific torques.

Flow Coefficient, Cv: The flow of water through the valve at 1 psi pressure drop in U.S. Gallons per minute (Gal/Min) at 60°F.



# F15/F30 DIMENSIONS 2½" - 12"



## DIMENSIONS - Secure Mount (inches)

NPS	H	J	ISO Mounting Flange	BC DIA	K	L	M	øP	U (UNC)
2-1/2 - 4	3.54	1.87	—	—	1.75	3.10	0.67	1.10	1/2-13
6	3.37	3.37	F12	4.77	1.61	3.58	1.02	1.71	1/2-13
8 <sup>1</sup>	3.37	3.37	F12	4.77	2.13 <sup>1</sup>	3.58 <sup>1</sup>	1.02	1.71	1/2-13
10-12 <sup>2</sup>	4.53	4.53	F16	6.40	2.15	3.86 <sup>2</sup>	1.38	1.97 <sup>2</sup>	5/8-11

## DIMENSIONS - SERIES F15 - CLASS 150 (inches)

NPS	A	øB	C	C1	D	E	øF	øS	N / øT	Cv	Torque* lbs-in	Weight lbs
2-1/2	7.50	2.56	6.63	3.39	15.35	3.08	7.00	5.50	4 x 0.75	780	500	36
3	8.00	2.99	6.92	3.66	15.35	3.74	7.50	6.00	4 x 0.75	1,150	650	45
4	9.00	3.99	7.59	4.39	15.35	4.47	9.00	7.50	8 x 0.75	2,100	1,505	65
6	15.50	5.98	12.38	7.17	15.35	7.62	11.00	9.50	8 x 0.88	5,000	3,250	157
8	18.00	7.87	12.66	7.60	38.98	8.35	13.50	11.75	8 x 0.88	9,600	4,750	290
10	21.00	9.84	14.80	9.88	38.98	10.47	16.00	14.25	12 x 1.00	15,000	13,700	500
12	24.00	11.81	16.37	11.46	38.98	12.01	19.00	17.00	12 x 1.00	21,000	19,700	700

## DIMENSIONS - SERIES F30- CLASS 300 (inches)

NPS	A	øB	C	C1	D	E	øF	øS	N / øT	Cv	Torque* lbs-in	Weight lbs
2-1/2	9.50	2.56	6.55	3.39	15.35	4.18	7.50	5.88	8 x 0.88	780	600	44
3	11.12	2.99	6.85	3.72	15.35	5.57	8.25	6.62	8 x 0.88	1,150	850	61
4	12.00	3.99	7.56	4.35	15.35	5.96	10.00	7.88	8 x 0.88	2,100	2,600	96
6	15.88	5.98	12.37	7.19	38.98	7.60	12.50	10.62	12 x 0.88	5,000	5,300	243
8	19.75	7.87	13.82	8.64	38.98	9.33	15.00	13.00	12 x 1.00	9,600	7,600	430
10	22.38	9.84	—	9.69	38.98	11.18	17.50	15.25	16 x 1.12	15,000	17,800	610
12	25.50	11.81	—	11.26	38.98	12.80	20.50	17.75	16 x 1.25	21,000	24,800	950

<sup>1</sup> For 8" F30: K=1.61, L=3.42

<sup>2</sup> For 10" F30: L=3.82, P=2.17

**NOTE 1:** Ball Support as shown on Page 3 is included on 6"-12" F15 and F30 valves.

**NOTE 2:** 2½", 3" & 4" valves feature a NAMUR stem slot for ease of limit switch mounting.

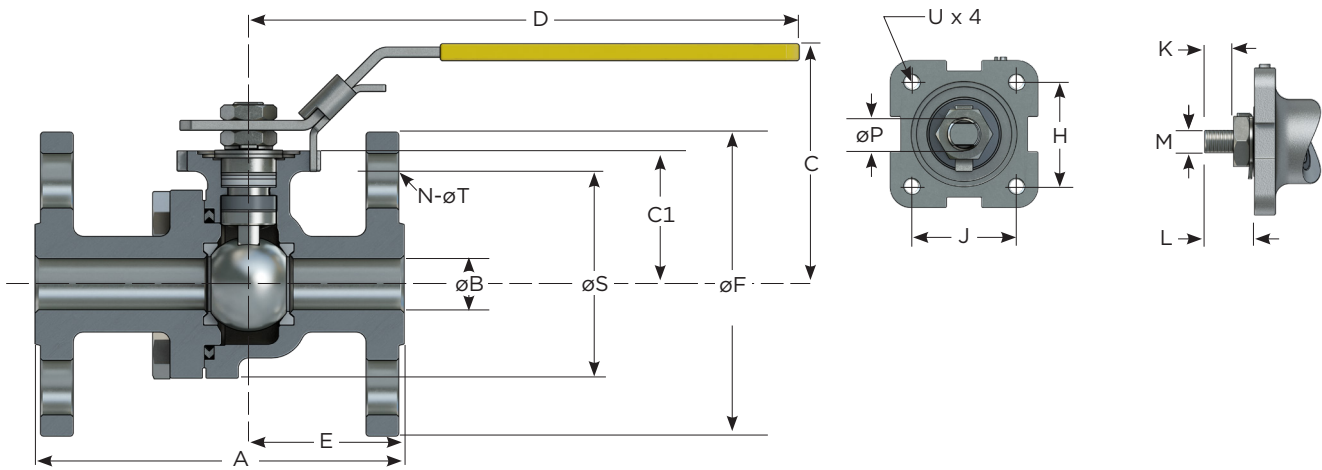
**Face to Face** dimensions meet ASME B16.10 long pattern in all sizes and short pattern sizes up to 4" F15 and up to 6" F30.

**\*Torque** at maximum rated pressure, clean water, TFM 1600 seating material. Other seat materials exhibit different torques.

Please refer to TB 1005 for specific torques.

**Flow Coefficient, Cv:** The flow of water through the valve at 1 psi pressure drop in U.S. Gallons per minute (Gal/Min) at 60°F.

## F15/F30 DIMENSIONS 15mm - 50mm



### DIMENSIONS - Secure Mount (mm)

DN	H	J	ISO Mounting Flange	BC DIA	K	L	M	øP	U (UNC)
15	29.7	29.7	F04	41.9	7.9	15.5	6.0	9.4	#10-24
20	29.7	29.7	F04	41.9	7.9	15.5	6.0	9.4	#10-24
25	35.0	35.0	F05	50.0	10.9	20.8	7.9	10.9	1/4-20
40	49.5	49.5	F07	70.0	14.0	24.0	9.5	15.8	5/16-18
50	49.5	49.5	F07	70.0	14.0	24.0	9.5	15.8	5/16-18

### DIMENSIONS - SERIES F15 - PN10 - PN16 (mm)

DN	A	øB	C	C1	D	E	øF	øS	N / øT	Kv	Torque* N m	Weight kg
15	108.0	15.0	73.25	39.0	165.0	45.5	88.9	60.5	4 x 15.8	28	4	2
20	117.0	20.0	75.40	42.4	165.0	51.0	98.6	69.9	4 x 15.8	52	7	2
25	127.0	24.9	86.69	52.0	199.9	54.0	108.0	79.0	4 x 15.8	91	11	4.5
40	165.0	37.9	106.60	66.0	249.9	70.0	127.0	98.6	4 x 15.8	238	26	6
50	177.8	50.0	115.01	74.9	264.9	78.0	152.0	120.7	4 x 19.0	433	44	9

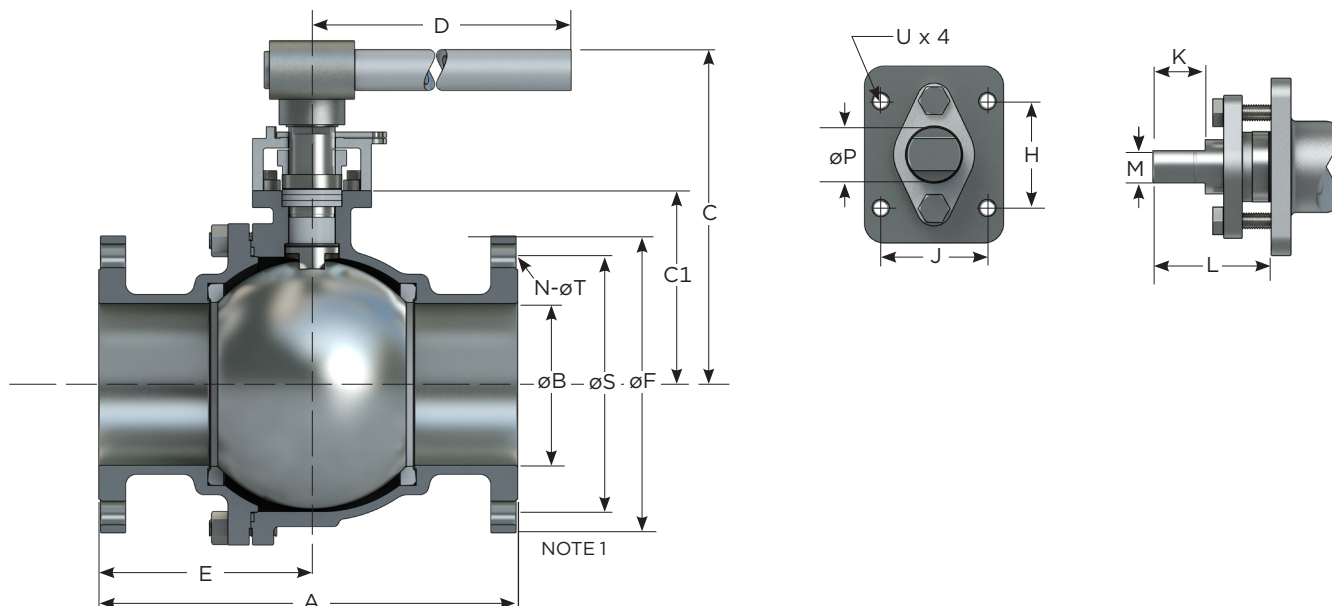
### DIMENSIONS - SERIES F30 - PN25 - PN40 (mm)

DN	A	øB	C	C1	D	E	øF	øS	N / øT	Kv	Torque* N m	Weight kg
15	139.7	15.0	74.23	39.9	165.0	62.0	95.0	66.6	4 x 15.8	28	5	2
20	152.0	20.0	75.40	42.0	165.0	69.0	117.0	82.6	4 x 19.0	52	8	3
25	165.0	24.9	86.61	52.0	199.9	73.9	124.0	88.9	4 x 19.0	91	12	5
40	190.5	37.9	102.50	66.0	249.9	83.0	155.5	114.0	4 x 22.0	238	31	9
50	215.9	50.0	115.06	74.9	264.9	100.0	165.0	127.0	8 x 19.0	433	50	11

Face to Face dimensions meet ASME B16.10 long pattern and short pattern (sizes 15 DN thru 50 DN).

\*Torque at maximum rated pressure, clean water, TFM 1600 seating material. Other seat materials exhibit different torques. Please refer to TB 1005 for specific torques.

Flow Factor, Kv: The flow of water through the valve at 1 bar pressure drop in cubic meters per hour (m<sup>3</sup>/h) at 16°C.



**DIMENSIONS - Secure Mount (mm)**

DN	H	J	ISO Mounting Flange	BC DIA	K	L	M	øP	U (UNC)
65 - 100	89.9	47.5	—	—	44.5	78.7	17.0	27.9	1/2-13
150	85.6	85.6	F12	121.0	40.9	90.9	25.9	43.5	1/2-13
200	85.6	85.6	F12	121.0	54.0	90.9	25.9	43.5	1/2-13
250-300	115.0	115.0	F16	162.6	54.6	98.0	35.0	50.0	5/8-11

**DIMENSIONS - SERIES F15 - PN10 - PN16 (mm)**

DN	A	øB	C	C1	D	E	øF	øS	N / øT	Kv	Torque* N m	Weight kg
65	190.5	65.0	168.40	86.0	389.9	78.0	177.8	139.7	4 x 19.0	675	56	16
80	203.0	76.0	175.65	93.0	389.9	95.0	190.5	152.0	4 x 19.0	995	73	20
100	228.6	101.0	192.90	111.5	389.9	113.5	228.6	190.5	8 x 19.0	1,817	170	29.5
150	393.7	151.9	314.55	182.0	389.9	193.6	279.0	241.0	8 x 22.0	4,325	367	71
200	457.0	199.9	321.58	193.0	990.0	212.0	342.9	298.5	8 x 22.0	8,304	537	132
250	533.0	249.9	375.85	251.0	990.0	265.9	406.0	362.0	12 x 25.0	12,975	1,548	227
300	609.6	300.0	415.85	291.0	990.0	305.0	482.6	431.8	12 x 25.0	18,165	2,226	318

**DIMENSIONS - SERIES F30 - PN25 - PN40 (mm)**

DN	A	øB	C	C1	D	E	øF	øS	N / øT	Kv	Torque* N m	Weight kg
65	241.0	65.0	166.40	86.0	389.9	106.0	190.5	149.0	8 x 22.0	675	68	20
80	282.5	76.0	173.90	94.5	389.9	141.5	209.6	168.0	8 x 22.0	995	96	27.7
100	304.8	101.0	192.05	110.5	389.9	151.0	254.0	200.0	8 x 22.0	1,817	294	44
150	403.0	151.9	314.20	182.6	990.0	193.0	317.5	269.8	12 x 22.0	4,325	599	110
200	501.7	199.9	351.05	219.5	990.0	237.0	381.0	330.0	12 x 25.0	8,304	859	195
250	568.5	249.9	—	246.0	990.0	284.0	444.5	387.0	16 x 28.5	12,975	2,011	277
300	647.7	300.0	—	286.0	990.0	325.0	520.7	450.9	16 x 31.8	18,165	2,802	431

<sup>1</sup> For DN200 F30: K=40.9, L=86.9

<sup>2</sup> For DN250 F30: L=97.0, P=55.1

**NOTE 1:** Ball Support as shown on Page 3 is included on DN150 - 300 F15 and F30 valves.

**NOTE 2:** DN65 - 100 valves feature a NAMUR stem slot for ease of limit switch mounting.

**Face to Face** dimensions meet ASME B16.10 long pattern in all sizes and short pattern sizes up to DN100 F15 and up to DN150 F30.

**\*Torque** at maximum rated pressure, clean water, TFM 1600 seating material. Other seat materials exhibit different torques.

Please refer to TB 1005 for specific torques.

**Flow Factor, Kv:** The flow of water through the valve at 1 bar pressure drop in cubic meters per hour (m<sup>3</sup>/h) at 16°C.

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