

Flow-Tek[®]
Subsidiary of BRAY INTERNATIONAL, Inc.



FLANGED SERIES

2 PIECE FLANGED FULL PORT DN15 - DN300

EF10: EN PN10

EF16: EN PN16

EF25: EN PN25

EF40: EN PN40

FLANGED SERIES BALL VALVES/EN

Flow-Tek's EF10-EF40 Flanged Series ball valves feature a floating ball design for low torque and increased cycle life. Ball supports come standard in larger sizes ensuring proper ball and seat alignment for reduced wear. These rugged ball valves are ideal for industrial applications.



SPECIFICATIONS

Body	2 Piece
Full Port	DN15-DN300
Materials	Stainless Steel, Carbon Steel & Special Alloys
Pressure Ratings	EF10: EN PN10 EF16: EN PN16 EF25: EN PN25 EF40: EN PN40

BALL

Flow-Tek balls are precision machined and mirror finished for bubble-tight shut off and low 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.

BODY

DN15-DN100 valve bodies are investment cast and solution annealed/normalized for the highest quality and additional strength. All body castings are marked with a foundry heat number for full traceability. Carbon steel bodies are phosphate coated to increase corrosion resistance.

SEAT

Flow-Tek's seat design ensures bi-directional, bubble-tight sealing with low operating torque. All resilient seats feature relief slots on seat O.D. clearance to relieve pressure past the upstream seat. Seats also have positive preloading to ensure low pressure/vacuum sealing.

STEM ASSEMBLIES

Flow-Tek manufactures heavy duty, high quality stems with double "D" connections 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.

STEM SEALS

A thrust washer and thrust washer protector combine to provide the primary seal, reduce torque and prevent galling. Adjustable stem packing creates a secondary seal between the stem and body. The stem packing is composed of multiple RPTFE V-rings as standard; graphite stem packing is standard on all fire safe valves.

DN15-DN50 features Flow-Tek's Smart Stem. This stem is self-adjusting due to its Belleville washers allowing it to compensate for environmental changes and wear. 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 uniformly distribute the load across the packing.

SMART STEM Valve Sizes DN15-DN50

Flow-Tek's interchangeable family of valves feature strong, large diameter stems with live-loaded, self-adjusting seals. Belleville washers are utilized to automatically 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.

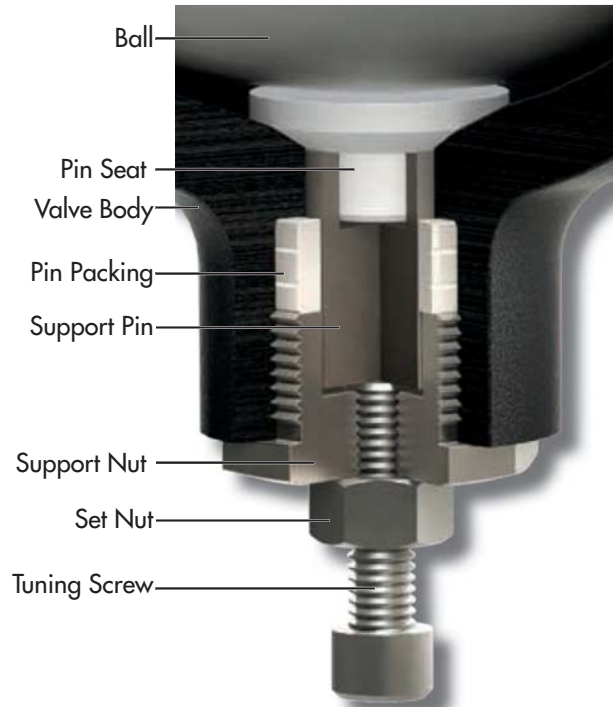


SECURE MOUNT

Flanged Series valves offer ease of automation due to an integrally cast actuator mounting pad. DN15-DN50 sizes comply with ISO 5211 standards.

BALL SUPPORT Valve Sizes DN150-DN300

As standard, larger sized valves feature a trunion-type ball support. This support helps to maintain continuous contact between the ball and seats, preventing seat deformation and blow-by due to the weight of the ball. The results are less seat wear, lower torque, and longer service life.



LOCKING DEVICE

All manually operated valves feature a locking device to prevent unintended movement of ball position. Valves sizes DN15-DN50 feature a safety trigger that locks the handle in the open or closed position. The handle lock can also be bypassed, if needed, with a small bolt through the handle in the release position.

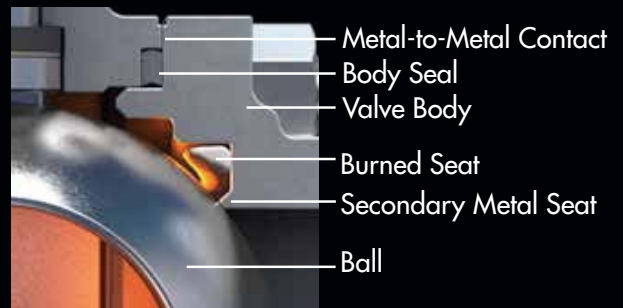


Sizes DN65-DN300 feature a travel stop plate that can be secured in the open or closed position with a padlock.

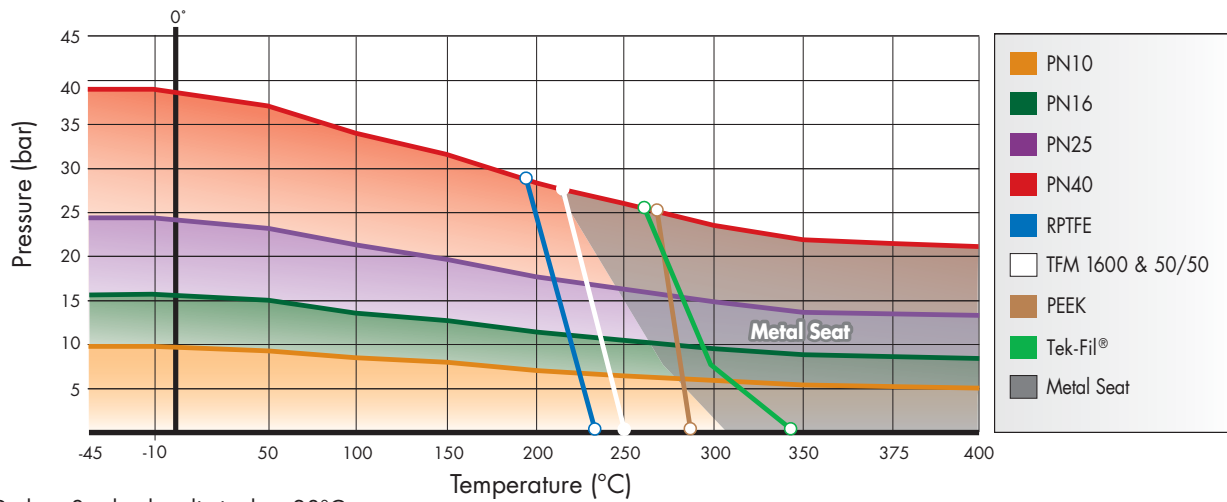
FIRE SAFE - Certified to API 607

Flanged Series valves with graphite stem seals have been thoroughly fire tested and meet these standards.

In the event of a fire, after heat destroys the primary resilient seat, the ball makes contact with the secondary metal seat, forming a secure seal. The body seal, composed of stainless steel and graphite wound into a spiral, prevents external leakage. Graphite stem rings prevent stem leakage.



PRESSURE/TEMPERATURE



STEAM SERVICE PRESSURE RATINGS: WSP

	TFM Seats		Tek-Fil Seats		PEEK Seats	
	Bar	°C	Bar	°C	Bar	°C
PN 10	7	170	7	185	7	170
PN 16	10.3	185	11	187	11	187
PN 25	10.3	185	17	206	17	206
PN 40	10.3	185	17	220	23	220

Vacuum service to 101.3 KPa (1,013 mBar).

SEAT SELECTION

TFM 1600 is our standard seat material. Optional seat materials provide versatile performance in a range of applications.

Options include:

- RPTFE
- StainlessSteel/PTFE (50/50)
- UHMWPE
- Virgin PTFE
- PEEK
- Tek-Fil® (carbon/graphite filled TFM)
- Metal Seats*
- Cavity Fillers



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.

*Available on request.

STANDARDS & CERTIFICATIONS

Valve Design	EN 12516 ISO 17292
End Flanges	EN 1092-1
Face to Face	EN558
Actuator Interface	ISO 5211
Testing	EN12266 ISO 5208
Fire Safe	API 607
Internal Wetted Parts	NACE MR0175
Quality Assurance	ISO 9001
Pressure Equipment Directive	2014/68/EU
ATEX Conformance	94/9/EC
Russian Federation Certificate	GOST-R
Safety Integral (SIL)	IEC 61508 SC 3
Fugitive Emissions	EN 15848-1 TA LUFT



COMPONENTS & MATERIALS

Item	Name	Stainless Steel	Carbon Steel	Qty.
1	Body	EN1.4408	EN1.0619	1
2	End Cap	EN1.4408	EN1.0619	1
3	Ball	EN1.4401		1
4	Seat	TFM 1600		2
5	Stem	EN1.4401*		1
6	Body Seal	Spiral Wound (316 with Graphite)		1
7	Body Nut	A2-70/SS304	Alloy Steel	**
8	Body Stud	A2-70/SS304	Alloy Steel	**
9	Anti-Static Device (Shown on page 3)	SS316		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	EN1.4301/SS304		1
16	Packing Follower	EN1.4408	EN1.0619	1
17	Gland Bolt	A2-70/SS304	Alloy Steel	2
18	Belleville Washer	SS301		2
19	Tab Lock Washer	SS304		1
20	Travel Stop Housing	EN1.4408	EN1.0619	1
21	Housing Bolt	A2/SS304	Alloy Steel	4
22	Travel Stop Plate	A2/SS304	Zinc Plated Carbon Steel	1
23	Travel Stop Sleeve	EN1.4031/SS304		1
24	Travel Stop Bolt	A2-70/SS304		1
25	Handle	SS304 or Ductile Iron****		1
26	Lock Nut	A2/SS304		2
27	Handle Bolt	Carbon Steel		1
28	Handle Sleeve	Vinyl through DN50		1
29	Locking Device	A2/SS304		1
30	Snap Ring	SS304	Dacromet Plated Carbon Steel	2

- * EN1.4542 available as an alternative
- ** Quantity depends on valve size.
- *** RPTFE packing is composed of 3 or 4 pieces dependant on size. Graphite packing is composed of a single piece.
- **** Ductile iron used for valve sizes \geq DN65.

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.

DN65-DN300 VALVES

Ball Support (illustration on page 3) is included on valve sizes DN150 and above.

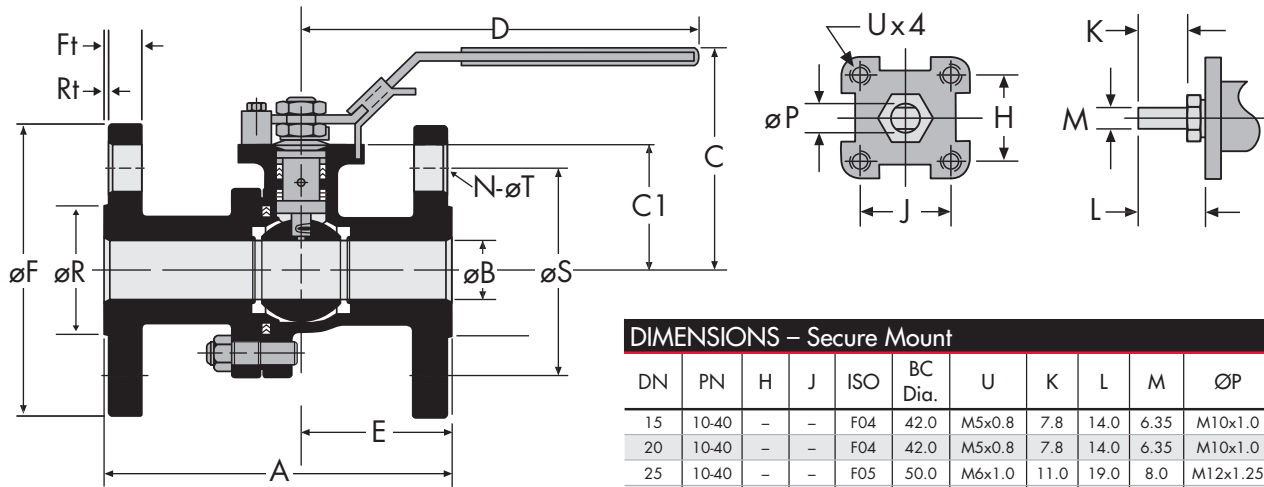


DN15-DN50 VALVES

Carbon steel bodies on valve sizes DN15-DN100 are black phosphate coated. All stainless steel bodies are solution annealed/normalized.



EF10-EF40 DIMENSIONS DN15 TO DN50



DIMENSIONS – Secure Mount										
DN	PN	H	J	ISO	BC Dia.	U	K	L	M	ØP
15	10-40	-	-	F04	42.0	M5x0.8	7.8	14.0	6.35	M10x1.0
20	10-40	-	-	F04	42.0	M5x0.8	7.8	14.0	6.35	M10x1.0
25	10-40	-	-	F05	50.0	M6x1.0	11.0	19.0	8.0	M12x1.25
32	10-40	-	-	F05	50.0	M6x1.0	11.0	19.0	8.0	M12x1.25
40	10-40	-	-	F07	70.0	M8x1.25	14.0	23.0	9.5	M16x1.5
50	10-40	-	-	F07	70.0	M8x1.25	14.0	23.0	9.5	M16x1.5

DIMENSIONS																
DN	PN	A*				ØB	C	C1	D	E	ØF	Ft	ØR	Rt	ØS	NxØT
		F1	F4	F5	F7											
15	10-40	130	115	-	-	15	66	40	165	50.5	95	16	45	2	65	4 x 14
20	10-40	150	120	-	-	20	74	42.5	165	53.0	105	18	58	2	75	4 x 14
25	10-40	160	125	-	-	25	87	52	200	53.0	115	18	68	2	85	4 x 14
32	10-40	180	130	-	-	32	91	56	200	57.0	140	18	78	2	100	4 x 18
40	10-40	200	140	-	-	38	107	66	250	57.5	150	18	88	3	110	4 x 18
50	10-40	230	150	-	-	50	115	75	265	63.0	165	20	102	3	125	4 x 18

ADDITIONAL								
DN	PN	Flow Rate		Torque** (Nm)	Weight (Kg)			
		Kv	Cv		F1	F4	F5	F7
15	10-40	28	32	5	2.5	2.3	-	-
20	10-40	52	60	8	3.9	3.7	-	-
25	10-40	91	105	12	5.4	5.1	-	-
32	10-40	171	198	20	7.7	7.2	-	-
40	10-40	238	275	31	9.0	8.4	-	-
50	10-40	433	501	50	11.8	10.6	-	-

*Face to Face dimensions in accordance with:

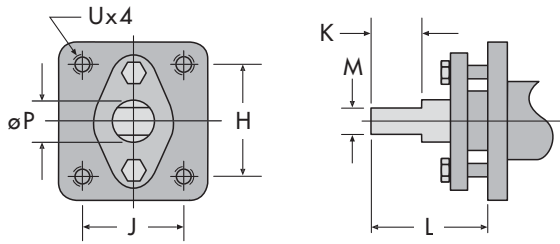
- DIN 3202 F1 | EN-558 Series 1
- DIN 3202 F4 | EN-558 Series 14 + 27
- DIN 3203 F5 | EN-558 Series 15
- DIN 3202 F7 | EN-558 Series 26 + 28

(Refer to Table 2 in BS EN-558:2008+A1:2011 for additional information)

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

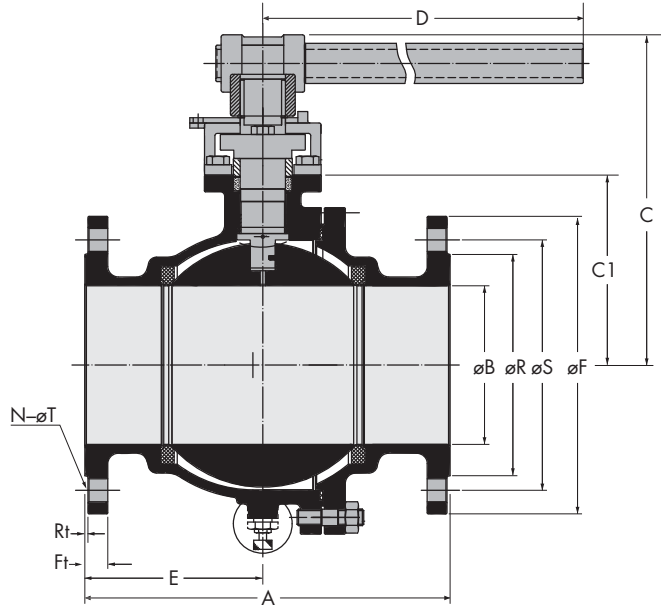
Please refer to TB 1005 for specific torques.

EF10-EF40 DIMENSIONS DN65 TO DN300



DIMENSIONS – Secure Mount

DN	PN	H	J	U	BC Dia.	K	L	M	ØP
65	10-40	90.0	47.6	M12	-	44.5	78.0	17.0	28.0
80	10-40	90.0	47.6	M12	-	44.5	78.0	17.0	28.0
100	10-40	90.0	47.6	M12	-	44.5	78.0	17.0	28.0
125	10-40	85.7	85.7	M12	121.2	42	86.8	25.9	42.0
150	10-40	85.7	85.7	M12	121.2	42	86.8	25.9	42.0
200	10-16	85.7	85.7	M12	121.2	42	98.0	25.9	42.0
	25-40	85.7	85.7	M12	121.2	42	98.0	25.9	42.0
250	10-16	115.0	115.0	M16	162.6	54.6	95.0	35.0	50.0
	25-40	115.0	115.0	M16	162.6	54.6	95.0	35.0	55.0
300	10-16	115.0	115.0	M16	162.6	54.6	95.0	35.0	50.0
	25-40	115.0	115.0	M16	162.6	54.6	95.0	35.0	55.0



DIMENSIONS

DN	PN	A*				ØB	C	C1	D	E		ØF	Ft	ØR	Rt	ØS	N x ØT
		F1	F4	F5	F7					F1, F4, F7	F5						
65	10-16	290	170	-	290	65	158	86	390	78.3	-	185	18	122	3	145	4 x 18
	25-40	290	-	-	290	65	158	86	390	133.3	-	185	22	122	3	145	8 x 18
80	10-16	310	180	-	310	76	166	93	390	82.0	-	200	20	138	3	160	8 x 18
	25-40	310	-	-	310	76	166	93	390	151.5	-	200	24	138	3	160	8 x 18
100	10-16	350	190	-	350	101.5	183	112	390	87.5	-	220	20	158	3	180	8 x 18
	25-40	350	-	-	350	101.5	183	112	390	176.5	-	235	24	162	3	190	8 x 22
125	10-16	400	-	325	400	127	272.5	164.2	990	178.0	154.5	250	22	188	3	210	8 x 18
	25-40	400	-	-	400	127	272.5	164.2	990	188.0	154.5	270	26	188	3	220	8 x 26
150	10-16	480	-	350	450	152	285	182	990	193.5	170.5	285	22	212	3	240	8 x 22
	25-40	480	-	-	450	152	285	182	990	193.5	170.5	300	28	218	3	250	8 x 26
200	10	600	-	400	550	200	323	193	990	212.0	200.0	340	24	268	3	295	8 x 22
	16	600	-	400	550	200	323	193	990	212.0	200.0	340	24	268	3	295	12 x 22
	25	-	-	-	550	200	323	193	990	234.0	-	360	30	278	3	310	12 x 26
	40	-	-	-	550	200	323	193	990	234.0	-	375	34	285	3	320	12 x 30
250	10	-	-	-	650	250	348	250	990	266.0	-	395	26	320	3	350	12 x 22
	16	-	-	450	650	250	348	250	990	266.0	225.0	405	26	320	3	355	12 x 26
	25	-	-	-	650	250	348	250	990	284.0	-	425	32	335	3	370	12 x 30
	40	-	-	-	650	250	348	250	990	284.0	-	450	38	345	3	385	12 x 33
300	10	-	-	-	750	300	388	291	990	305.0	-	445	26	370	4	400	12 x 22
	16	-	-	500	750	300	388	291	990	305.0	500.0	460	28	378	4	410	12 x 26
	25	-	-	-	750	300	388	291	990	325.0	-	485	34	395	4	430	16 x 30
	40	-	-	-	750	300	388	291	990	325.0	-	515	42	410	4	450	16 x 33

ADDITIONAL

DN	PN	Flow Rate		Torque** (Nm)	Weight (Kg)			
		Kv	CV		F1	F4	F5	F7
65	10-16	675	780	56	16.5	14.3	-	16.5
	25-40	675	780	68	18.4	-	-	18.4
80	10-16	995	1150	73	21.6	17.6	-	21.6
	25-40	995	1150	96	24.9	-	-	24.9
100	10-16	1817	2100	170	31.2	23.9	-	31.2
	25-40	1817	2100	294	36.0	-	-	36.0
125	10-16	2585	2988	300	56.8	-	53.5	56.8
	25-40	2585	2988	486	67.9	-	-	67.9
150	10-16	4325	5000	367	79.3	-	76.3	77.4
	25-40	4325	5000	599	-	-	-	98.0
200	10	8304	9599	492	146.2	-	141.5	143.2
	16	8304	9599	492	146.2	-	-	143.2
	25	8304	9599	717	-	-	-	177.7
	40	8304	9599	717	-	-	-	177.7
250	10	12975	14999	1487	-	-	-	241.6
	16	12975	14999	1487	-	-	227.9	241.6
	25	12975	14999	1804	-	-	-	283.9
	40	12975	14999	1804	-	-	-	283.9
300	10	18165	20999	2139	-	-	-	355.2
	16	18165	20999	2139	-	-	314.0	355.2
	25	18165	20999	2506	-	-	-	396.2
	40	18165	20999	2506	-	-	-	396.2

Ball Support as shown on page 3, is included on valve sizes DN150 and above.

NAMUR Stem Slot included on DN65-DN100 valves for ease of limit switch mounting.

***Face to Face** dimensions in accordance with:

- DIN 3202 F1 | EN-558 Series 1
- DIN 3202 F4 | EN-558 Series 14 + 27
- DIN 3203 F5 | EN-558 Series 15
- DIN 3202 F7 | EN-558 Series 26 + 28

(Refer to Table 2 in BS EN-558:2008+A1:2011 for additional information)

****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.