

METAFLUIDOS

FlowTek[®]
A Subsidiary of BRAY INTERNATIONAL, Inc.



FLANGED SERIES

2 PIECE FLANGED FULL PORT DN15 - 300

FD10 | 10 BAR RATED

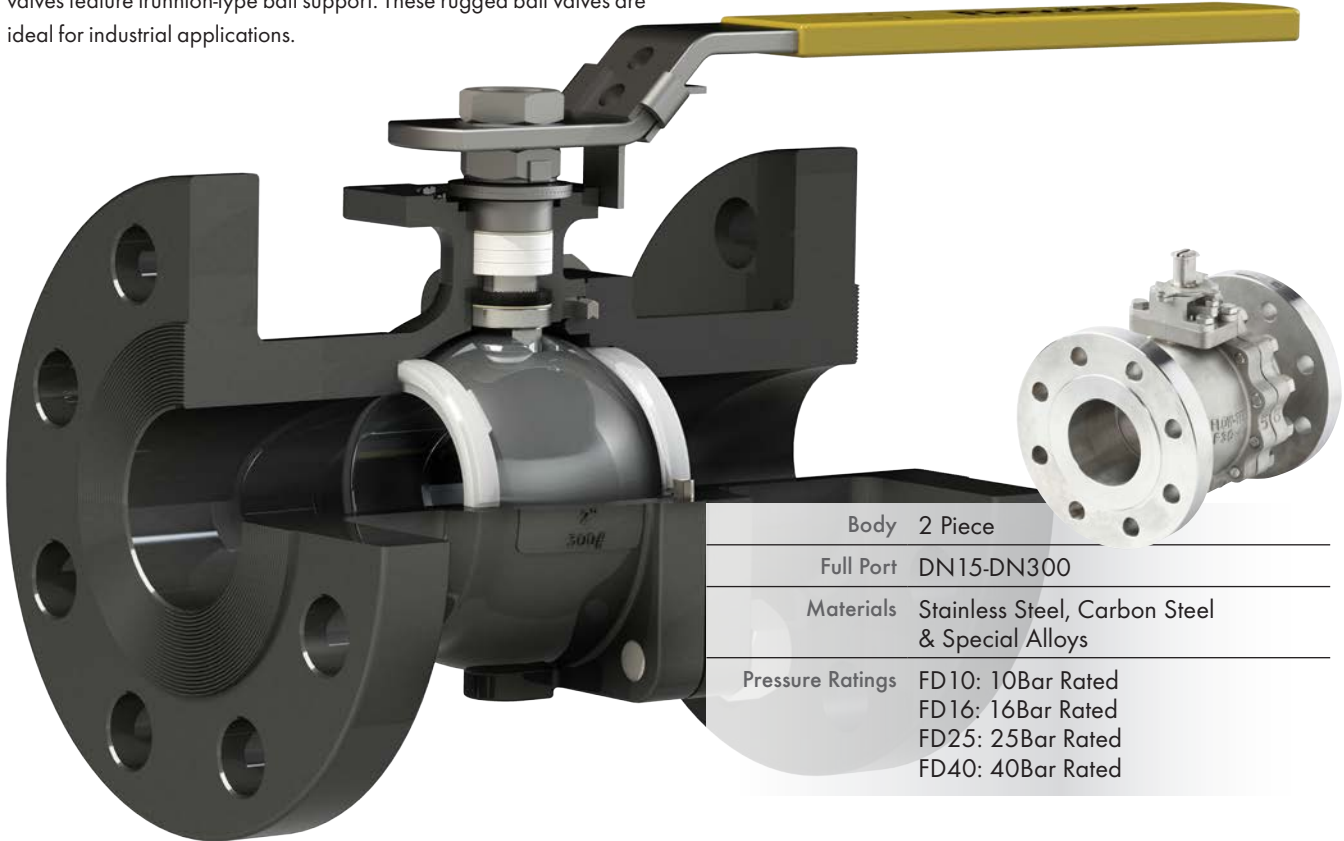
FD16 | 16 BAR RATED

FD25 | 25 BAR RATED

FD40 | 40 BAR RATED

FLANGED SERIES BALL VALVES

Flow-Tek's FD10-40 Flanged Series ball valves feature a floating ball design for low torque and increased cycle life. As standard large size valves feature trunnion-type ball support. These rugged ball valves are ideal for industrial applications.



Body	2 Piece
Full Port	DN15-DN300
Materials	Stainless Steel, Carbon Steel & Special Alloys
Pressure Ratings	FD10: 10Bar Rated FD16: 16Bar Rated FD25: 25Bar Rated FD40: 40Bar Rated

SECURE MOUNT

Flanged Series valves offer ease of automation due to an integrally cast actuator mounting pad which complies with ISO 5211 through DN50 valve sizes.

STEM SEALS

Flanged Series 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. 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.

BALL

Flow-Tek 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.

BODY

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.

SEAT

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

SMART STEM Valve Sizes DN15-DN65

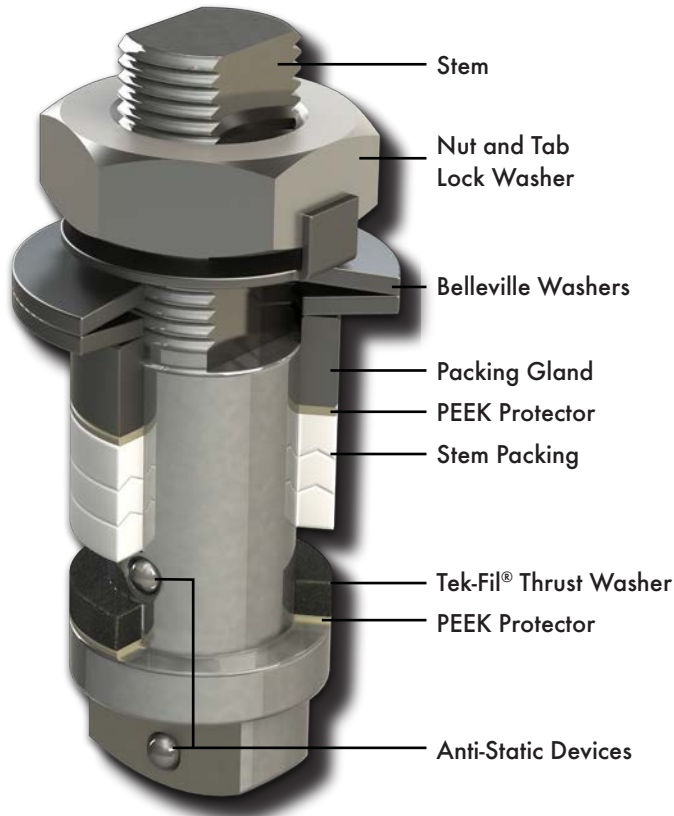
Flow-Tek's Interchangeable Family of valves feature strong, large diameter stems with live-loaded, self-adjusting sealing utilizing belleville washers which automatically adjust to compensate for changes in temperature and wear. Manual adjustments which can cause damage to the seal and seat are not required. 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 multiple 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.

STEM ASSEMBLIES

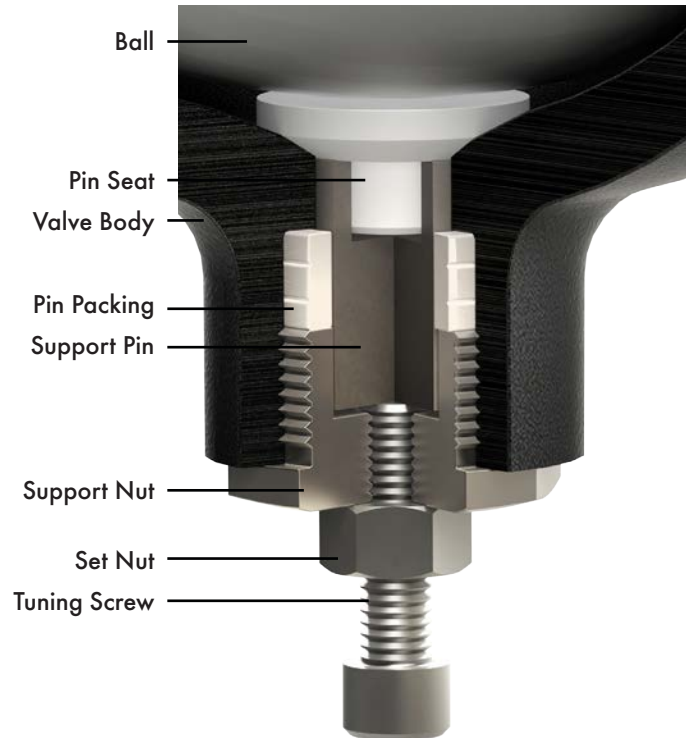
Flow-Tek manufactures heavy duty, high quality stems with double "D" connection to ball and operator mounting. Stems are mated with the ball to ensure positive contact. All Flow-Tek stems are internal entry and blowout proof for maximum safety.



BALL SUPPORT

As standard, larger sized valves feature trunnion-type ball support. This support helps to maintain continuous contact between the ball and seats, preventing seat damage and blow-by. The results are less seat wear, lower torque, and longer service life. This feature is standard on

- FD10/16 | DN250 and above
- FD25/40 | DN150 and above



LOCKING DEVICE

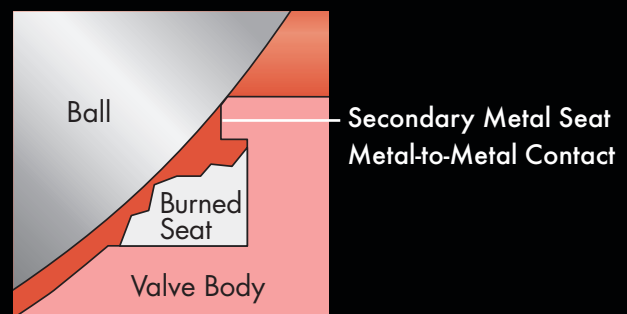
All manually operated valves feature a locking device to prevent accidental movement of ball position. Valves DN15-DN50 feature a safety trigger that locks the handle in the open or closed position. The handle lock can be bypassed, if needed, with a small bolt through the handle in the release position.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



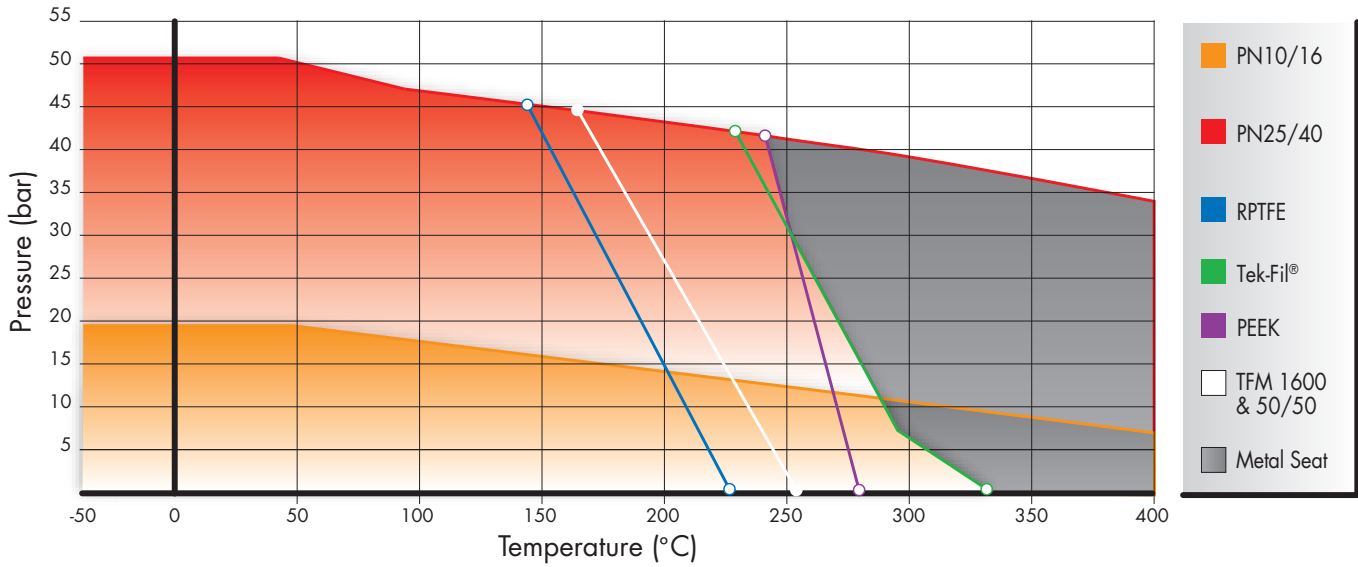
FIRE SAFE - Certified to API 607 4th Edition

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. The Graphite stem rings prevent stem leakage.



PRESSURE / TEMPERATURE



Carbon Steel valves limited to -29°C
The graph above is representative only.

SEAT SELECTION

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

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



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.

* Metal Seats 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	97/23/EC
ATEX Conformance	94/9/EC
Russian Federation Certificate	GOST-R
Safety Integral (SIL)	IEC 61508
Fugitive Emissions	EN 15848 (Pending) 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/Graphite)		1
7. Body Nut	A2-70/ SS304	Alloy Steel	**
8. Body Stud	A2-70/ SS304	Alloy Steel	**
9. Anti-Static Device	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/Graphite		3/1
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	A2/ SS304	Zinc Plated Carbon Steel	1
23. Travel Stop Sleeve	EN1.4301/SS304		1
24. Travel Stop Bolt	A2-70/ SS304		1
25. Handle	SS304/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 alternative

** Quantity dependent on valve size.

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

DN65-DN300 VALVES

Ball Support (not shown) is included on:

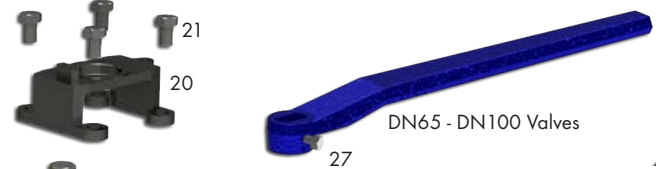
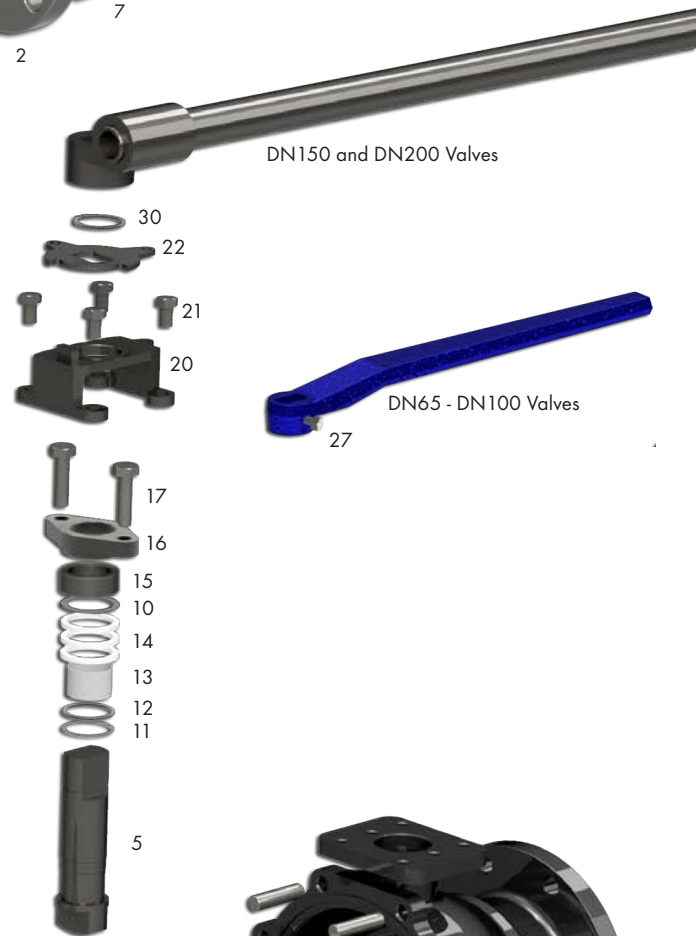
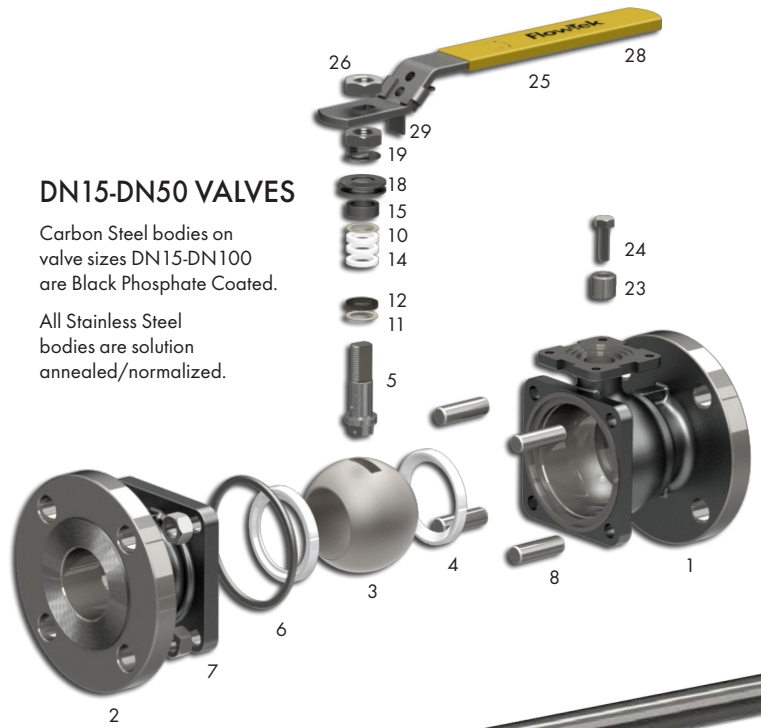
- FD10/16 | DN250 and above
- FD25/40 | DN150 and above.



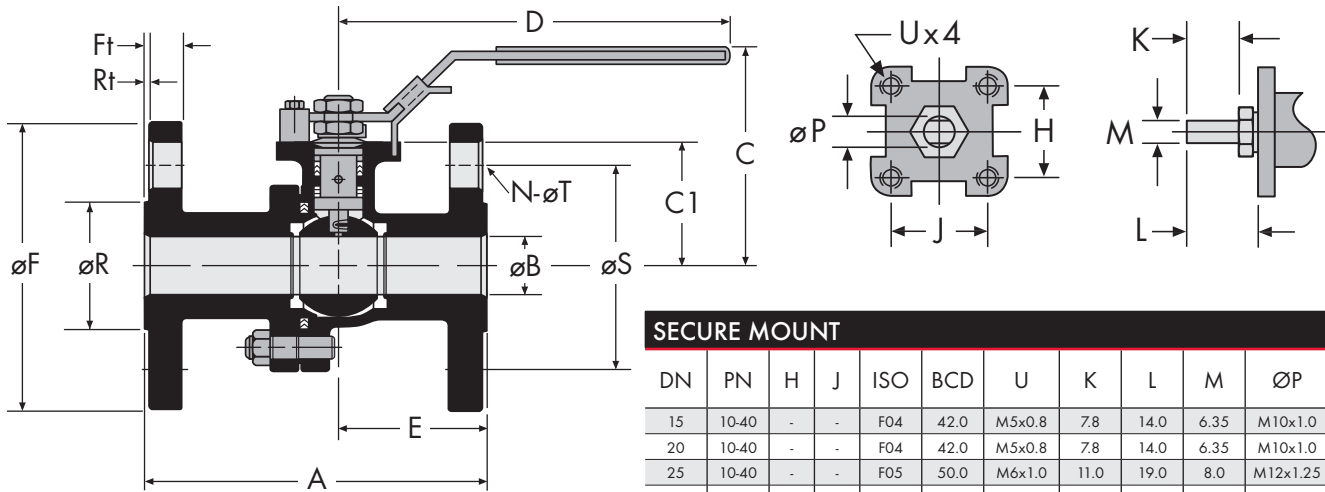
DN15-DN50 VALVES

Carbon Steel bodies on valve sizes DN15-DN100 are Black Phosphate Coated.

All Stainless Steel bodies are solution annealed/normalized.



FD10-40 DIMENSIONS **DN15-DN50**



SECURE MOUNT										
DN	PN	H	J	ISO	BCD	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 3202 F5 | EN-558 Series 15
- DIN 3202 F7 | EN-558 Series 26 + 28

(Refer to Table 2 in BS EN-588:2008+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.

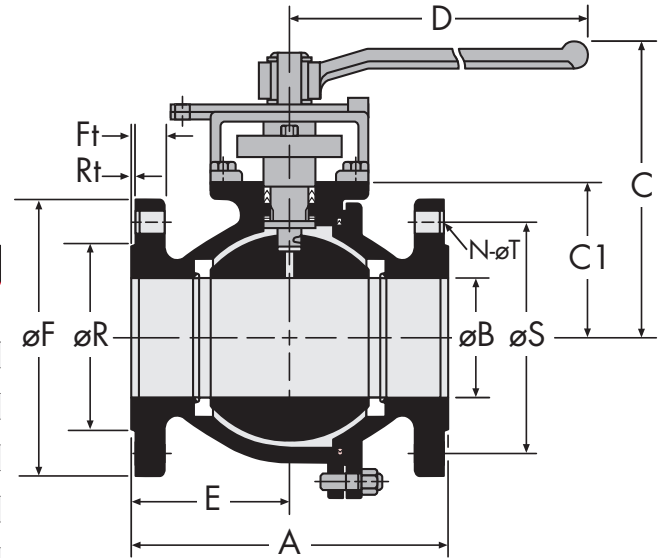
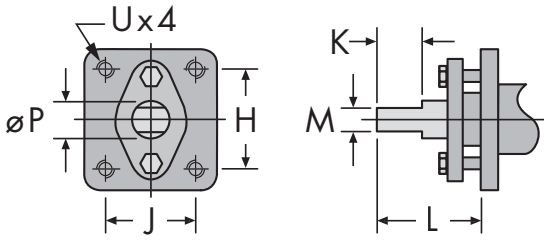
SRH SERIES Spring Return Handles (Deadman Handle) for DN15-DN50 Ball Valves



Spring Return (Deadman) Handles are manufactured from heavy duty stainless steel components to withstand frequent daily use in refueling, sampling, drains, and other OSHA applications that require positive safety closure of a manual valve. Each SRH Handle has a standard locking device.

Available in three sizes that mount directly to the rugged investment cast ISO 5211 mounting pads on compatible Flow-Tek full or standard port ball valves.

FD10-40 DIMENSIONS DN65-DN300



SECURE MOUNT										
DN	PN	H	J	ISO	U	BCD	K	L	M	ØP
65	10-40	90.0	47.6	-	M12	-	14.0	78.0	17.0	28.0
80	10-40	90.0	47.6	-	M12	-	14.0	78.0	17.0	28.0
100	10-40	90.0	47.6	-	M12	-	14.0	78.0	17.0	28.0
125	10-40	85.7	85.7	-	M12	121.2	40.9	86.8	25.9	42.0
150	10-40	85.7	85.7	-	M12	121.2	40.9	86.8	25.9	42.0
200	10-16	85.7	85.7	-	M12	121.2	40.9	98.0	25.9	42.0
250	10-16	115.0	115.0	-	M16	162.6	54.6	95.0	35.0	50.0
300	10-16	115.0	115.0	-	M16	162.6	54.6	95.0	35.0	50.0

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	193.0	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	537	146.2	-	141.5	143.3
	16	8304	9599	537	146.2	-	141.5	143.3
	25	8304	9599	859	-	-	-	177.7
	40	8304	9599	859	-	-	-	177.7
250	10	12975	14999	1548	-	-	-	241.6
	16	12975	14999	1548	-	-	227.9	241.6
	25	12975	14999	2011	-	-	-	283.9
	40	12975	14999	2011	-	-	-	283.9
300	10	18165	20999	2226	-	-	-	355.2
	16	18165	20999	2226	-	-	314.0	335.2
	25	18165	20999	2802	-	-	-	396.2
	40	18165	20999	2802	-	-	-	396.2

Ball Support as shown on page 3, is included on:

- FD10/16 | DN250 and above
- FD25/40 | 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 3202 F5 | EN-558 Series 15
- DIN 3202 F7 | EN-558 Series 26 + 28

(Refer to Table 2 in BS EN-588:2008+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.

ELECTRIC & PNEUMATIC ACTUATORS



PNEUMATIC – DOUBLE ACTING & SPRING RETURN

Output Torque: 5.6 to 4986Nm @ 5.5bar

Rack & pinion, opposed-piston pneumatic actuators are self contained with integral internal porting. Units are suitable for both on/off and throttling applications.

- Double Acting Rotation: 90°, 135°, 180°
Spring Return Rotation: 90°
- Supply pressure up to 10Bar (145psi)
- Temperature Range: -29°C to 95°C (-20°F to 200°F)



ELECTRIC

Output Torque: 34 – 2034Nm

This design offers greatly reduced space requirements, lighter weight and ease of installation and maintenance.

- Designed to meet NEMA 4, 4x (IP 65) or NEMA 4, 4x, 7, 9
- 120 or 220 VAC single phase permanent split-capacitor reversible induction UL listed motor, 24 VDC motor optional
- 90° reversible rotation
- Temperature Range: -40°C to 65°C (-40°F to 150°F)

FTG SERIES Worm Gear Operators for DN15-DN300 Ball Valves



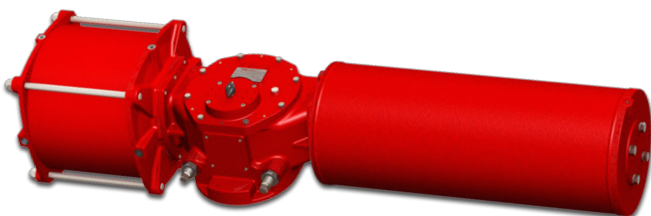
Output Torque: 600 to 7,909Nm

Options: Locking Device, Chain Wheels, Horizontal Flag Indicator, 50mm Square Input Drive Nut, Grease Fitting & Flow Pattern Indicators for Multipoint Valves

Feature a ductile iron housing, aluminum bronze gear segment and one piece steel worm gear input shaft with tapered roller bearings on both ends.

Adjustable travel stops provide precise adjustment in both open and closed positions. Housings are sealed and weather proof to fully isolate internal parts from atmospheric conditions.

S98 ACTUATOR



The Series 98 range of pneumatic Scotch Yoke actuators Symmetric and Canted Scotch Yoke.

Compliances

Torque Range	450-100,000Nm
Accessories	Shaft Driven Accessories Mounting per NAMUR-VDE
Performance Testing	EN 15714-3:2009
Ingress Protection	IP66/IP67M per IEC 60529
Safety	PED, ATEX, SIL3 suitable

