Jamesbury™ DIN flanged ball valves Reduced bore : DN 15 – 150 PN 16 – PN 40 Series 7000 (716D, 740D)

The Jamesbury™ polymeric-seated flanged ball valves feature a flexible-lip seat design that provides positive bi-directional shut-off for a variety of applications in industries ranging from chemical and petrochemical to refining, pulp and paper, and power.

Polymeric-seated flanged ball valves are available in sizes DN 15 – 150 in both full-bore and reduced-bore designs that fully conform to PED and DIN requirements.

A choice of body, trim, and seat materials is available to suit an extensive range of applications. As an option, valves can be prepared for special services, such as chlorine clean, double block and bleed, oxygen clean, vacuum, NACE MR 0103, or cavity filler.

Fire-Tite™ valves

Standard body and trim materials for Fire-Tite valves are carbon steel with 316 stainless steel trim and all 316 stainless steel. Seat material options include Xtreme™ (X) for applications involving chemicals, petrochemicals, acids, caustics, and steam.

CE marked

All valves larger than DN25 are CE marked and documented to meet the European Pressure Equipment Directive (PED) 97/23/EC. CE marked products also meet the requirements of BS 5351, including static grounding.

Features and benefits

- Xtreme seat provides longer life, industry leading expanded performance boundaries,and greater value.
- Polymeric flexible lip-seat design offers tight shut-off in either direction and extended cycle life with minimum maintenance.
- Fire-Tite version with non-metallic seats meets API 607, and ISO 10497 requirements.
- Superior control characteristics, coupled with tight shut-off capabilities, make these valves ideal for a variety of on-off and control applications.
- API 608 compliance to serve refineries and related chemical and petrochemical industries.
- NACE MR0103 compliance available.
- Meets 21 standard and 12 optional industry standards and specifications.
- Face to face dimensions according to ISO 5752.

New features and benefits for DN 15 through DN150 Series 7000

- New patented stem seal system is live loaded and engineered to assure long sealing life on sizes up to DN50.
- ISO 5211 Bonnet for global conformity on sizes up to DN50.
- New stainless steel linkage for VPVL, V-Series and ADC-Series actuators has a guided coupling to align topworks during assembly and eliminate side load stress on stem seals for long life, clean environment and reduced maintenance.

Single-source responsibility

- Valves, actuators and accessories may be purchased completely mounted from one source.

Specifications

Flow data

The table at right provides flow coefficients for Jamesbury valves covered in this bulletin. Kv values represent the flow of water at 16°C through the valve in cubic meters per hour at a pressure drop of 1 kg/cm2. To convert Kv to Cv, divide by .8569.

Valve Size	
DN	Kv Bore
15	8
20	16
25	38
40	107
50	140
80	300
100	470
150	650

Valve body ratings

These are the maximum working pressure ratings of the valve body only.The seat ratings, shown on the next page, determine the practical pressure limitations according to actual service conditions. Test pressures are recommended pressures for hydrostatic test with ball half open.

Maximum Working Pressure, bar				
Temp °C	PN16		PN40	
	Carbon* steel*	316 Stainless steel*	Carbon steel*	316 Stainless steel*
-29 a 38	16	14,7	40	36,8
100	16	12,5	40	31,3
150	15,6	11,4	39,1	28,5
200	15,1	10,6	37,9	26,4
250	14,4	9,8	36	24,7
Test Pressure	24	23	60	56

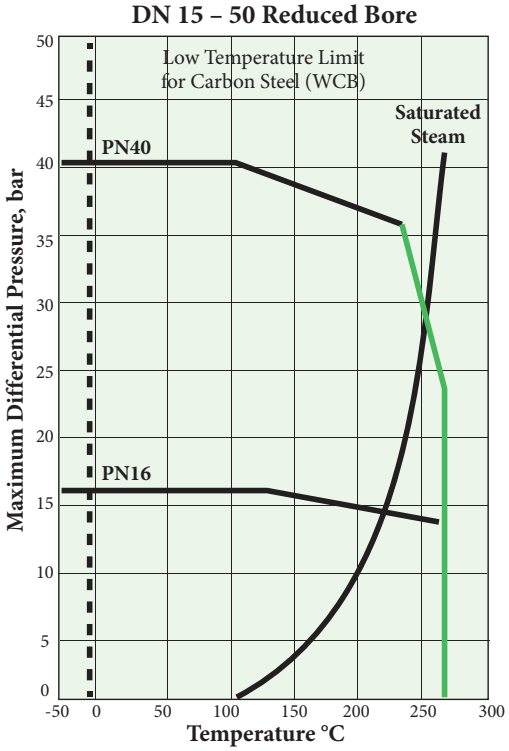
Valve seat ratings

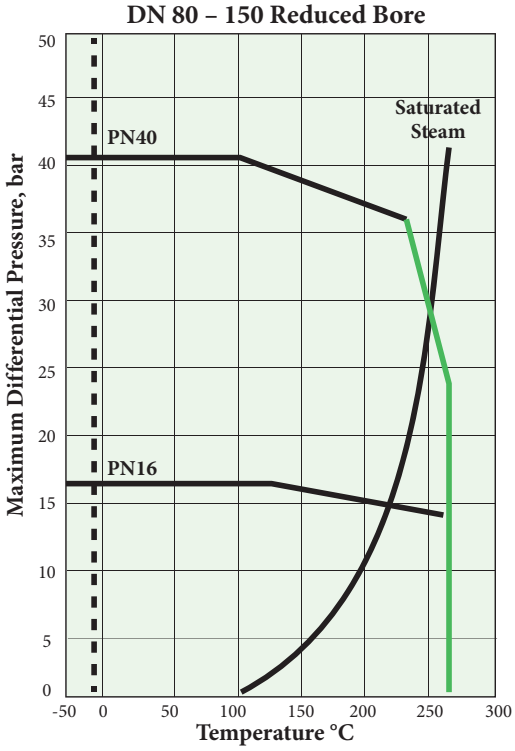
Seat ratings, indicated by solid lines in the charts on the next page, are based on differential pressure with the valve ball in the fully closed position and refer to seats only.The dotted lines indicate maximum working pressures for WCB carbon steel valve bodies. (Maximum working pressures of other body materials are shown in the tables above.) The combination of dotted and solid lines indicates the maximum valve rating at specific pressure and temperature conditions.Valves with Xtreme seats can be used in service to -51°C provided that the valve body material is suitable for such a temperature. Carbon steel valves are rated to -29°C.

On saturated steam service, stainless steel trim is recommended at all pressures and is required above 14 bar. See Bulletin B150-1. For more application information on seat materials, refer to Bulletin T140-1.

Xtreme performance and value

Xtreme seats provide longer life, expanded performance boundaries, and the greatest possible value. Xtreme is a unique material that resulted from a technological breakthrough in our polymer research lab.The material is a fluoropolymer-based blend proprietary to Jamesbury that provides superior quarter-turn performance.

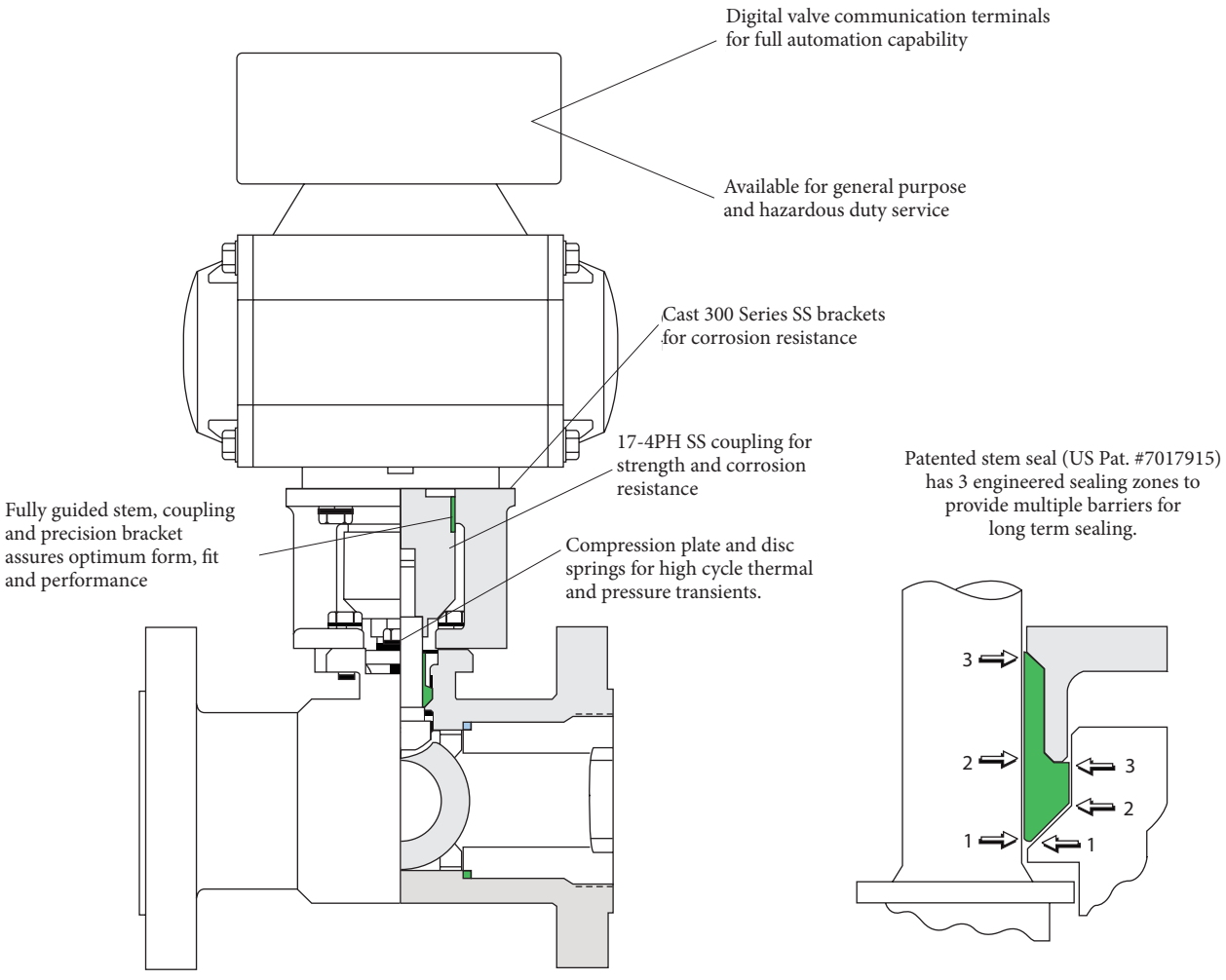




LEGEND: X = Xtreme

Jamesbury brand 'The Ultimate Process Automation Package' for VPVL Pneumatic Actuators, V-Series and ADC-Series Electric Actuators

DN 15 – 50 Reduced Port Series 7000

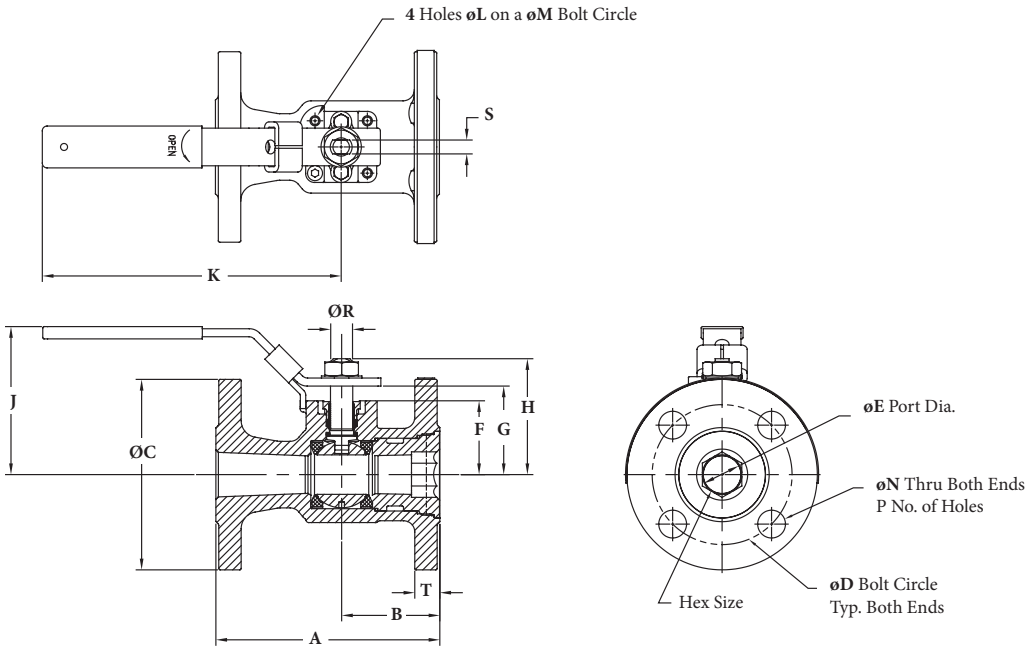


Automation performance and value

Valves combined with Jamesbury actuators offer a total value and performance package. Available with pneumatic Valv-Powr™ VPVL actuators, V-Series, ADC-Series, LCU-Series, and LCR-Series electric actuators and with Stonel™ Quartz™, Eclipse™, and Hawkeye™ digital monitors or VCTs, the packages have a wide range of applications. Visit our website at: **www.valmet.com/flowcontrol**.

Dimensions

DN15 – 50, Series 716D and 740D



Valve Size DN	Series 716D, PN16 Approximate Dimensions - mm																		ISO Bonnet	Approx Weight kg
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	X		
15	115	49	95	65	13	27	34	41	86	127	M5	36	14	4	8	5	16	13	F03	1.8
20	120	51	105	75	18	31	38	45	89	127	M5	36	14	4	8	5	16	18	F03	2.1
25	125	56	115	85	22	42	52	66	94	165	M5	42	14	4	13	8	18	22	F04	3.7
40	140	67	150	110	32	53	66	84	108	203	M6	50	18	4	16	9	18	32	F05	6.0
50	150	67	165	125	38	57	71	89	113	203	M6	50	18	4	16	9	18	38	F05	7.4

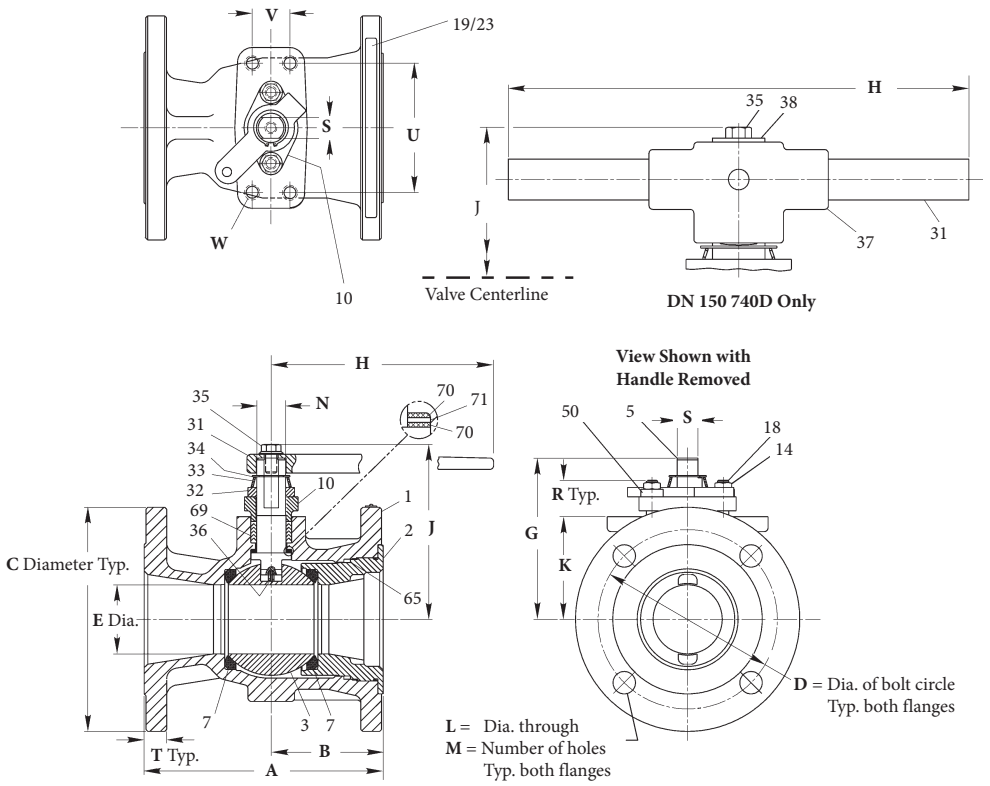
Valve Size DN	Series 740D, PN40 Approximate Dimensions - mm																		ISO Bonnet	Approx Weight kg
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	X		
15	115	49	95	65	13	27	34	41	86	127	M5	36	14	4	8	5	16	13	F03	2.7
20	120	51	105	75	18	31	38	45	89	127	M5	36	14	4	8	5	16	18	F03	2.8
25	125	56	115	85	22	42	52	66	94	165	M5	42	14	4	12	8	18	22	F04	3.8
40	140	67	150	110	32	53	66	84	108	203	M6	50	18	4	16	9	18	32	F05	6.0
50	150	67	165	125	38	57	71	89	113	203	M6	50	18	4	16	9	20	38	F05	9

BILLS OF MATERIALS AND PARTS LIST			
DN 15 – 50, Reduced Port Series 716D and 740D			
Part No.	Part Name	Material	
		Carbon Steel (22)	316 Stainless Steel (36)
1	Body[1]	DIN 1.0619/ A216 Type WCB	DIN 1.4408/ A351 Type CF8M
2	Insert[1]	DIN 1.0619/ A216 Type WCB	DIN 1.4408/ A351 Type CF8M
3	Ball	316 Stainless steel	
4	Stem	316 Stainless steel	
5	Seat	*Xtreme*	
6	Body Seal	TFM®	
7	Secondary Stem Seal[2]	Graphite[2]	
8	Primary Stem Seal	TFM	
13	Stem Bearing	Filled PTFE	
16	Hex Nut	Carbon steel (zinc plated)	Stainless steel
17	Handle	Carbon steel (zinc plated)	Stainless steel
19	Lock Washer	Carbon steel (zinc plated)	Stainless steel
20	Compression Plate	316 Stainless steel	
25	Socket Cap Screw	Stainless steel	
26	Handle Stop Spacer	Stainless steel	
29	Hex Cap Screw	ISO 3506, A2/A193, Gr. B8	
31	Disc Springs	Inconel	

Note 1: When investment castings are used, chemical and physical properties are determined from a master heat in accordance with ASME/ANSI B16.34-2004 Sect. 5.1.3.
Note 2: Fire-Tite construction only.

Dimensions

DN 80 – 150 Series 716D and 740D (Non-Trunnion)



Valve Size DN	Series 716D, PN16 Approximate Dimensions - mm																	Weight kg
	A	B	C	D	E	G	H	J	K	L	M	N	R	S	T	U	V	W	
80	180	95	200	160	59	137	356	149	87	18	8	25	32	18	20	110	32	M12	18
100	190	102	220	180	76	150	356	161	100	18	8	25	32	18	20	110	32	M12	26
150	210	108	285	240	102	211	506	223	140	22	8	35	45	25	22	130	32	M12	53

Valve Size DN	Series 740D, PN40 Approximate Dimensions - mm																	Weight kg
	A	B	C	D	E	G	H	J	K	L	M	N	R	S	T	U	V	W	
80	180	95	200	160	59	137	356	149	87	18	8	25	32	18	24	110	32	M12	24
100	190	102	235	190	76	191	356	202	119	22	8	35	45	25	24	130	32	M12	39
150	210	111	300	250	102	231	762	255	144	26	8	44	45	32	28	160	40	M16	77

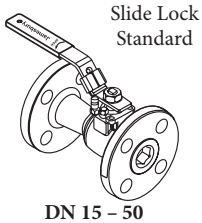
BILLS OF MATERIALS AND PARTS LIST			
DN 80 – 150 Series 716D/740D (Non-Trunnion)			
Part No.	**Part Name**	**Body Material**	
		Carbon Steel	**316 Stainless Steel**
1	Body[1]	DIN 1.0619 / ASTM A216, Gr. WCB	DIN 1.4408 / ASTM A351,Gr.CF8M
2	Insert/Body Cap[1]	DIN 1.0619 / ASTM A216, Gr. WCB	DIN 1.4408 / ASTM A351,Gr.CF8M
3	Ball	316 Stainless steel	
5	Stem	316 Stainless steel	
7	Seat	Xtreme	
10	Compression Plate	Stainless steel	
14	Stud	EN 10269, Gr.1.7225 / ASTM A193, Gr. B7	ISO 3506, Gr. A2 / ASTM A193, Gr. B8
18	Nut	EN 10269, Gr.1.1191 / ASTM A194,Gr.2H	ISO 3506, Gr. A2 / ASTM A194, Gr. 8
19	Identification Tag	Stainless steel	
23	Rivet	Stainless steel	
31	Handle	Ductile Iron	
32	Indicator Stop	Carbon steel	
33	Conical Spring	Inconel	
34	Retainer Ring	Stainless steel	
35	Cap Screw	Carbon steel	
36	Grounding Spring	Inconel	
37	T Handle Adapter	Ductile Iron	
38	Washer	Carbon steel	
50	Stop Bushing	Stainless steel	
65	Body Gasket	PTFE	
69	Packing	molecularly enhanced PTFE	
70	Stem Bearing	Filled PTFE	
71	Secondary Stem Seal[2]	Graphite	

Note 1: DN 150 PN40 only.
Note 2: Fire-Tite construction only.

Accessories

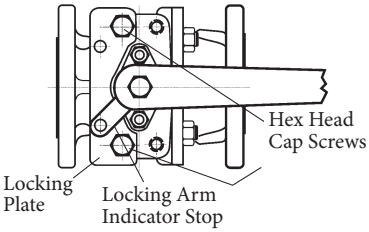
Locking Devices

When safety measures are necessary, a reliable locking plate is available to allow the valve to be padlocked in either the open or closed position. Proper figure numbers are shown in the Accessory Table below.

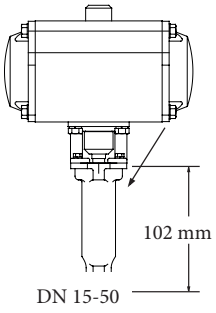


DN 15 – 50
Series 7000

DN 80 – 150 Series 7000
LD56, 57, & 58

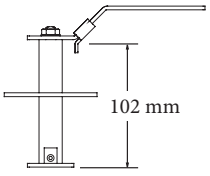


Bonnet/Stem Extensions SE-096, 097 & 098



102 mm bonnet/stem extensions are available for applications that require insulated pipe, particularly useful for automated products, extension can also be used to prevent interference between actuators and companion pipelines and equipment. They are ideal as extension that require locking lever or locking oval handle capability. Stainless steel construction offers the option of using the extension to complement the carbon steel stem extension (SE-093, 094 & 095) offerings.

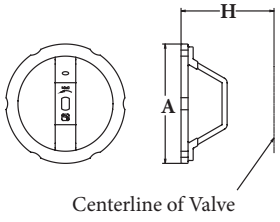
Stem Extensions SE-093, 094 & 095



A standard 102 mm stem extension is offered for Series 7000 valves for improved accessibility, particularly when used in insulated pipelines. Stem extension kits can be ordered factory-mounted or shipped separately for field mounting.

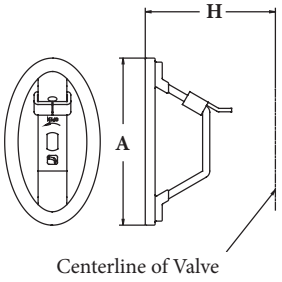
Round Handles

Series 7000 ball valves have optional round handles available. To order handles separately, specify the part number shown in the accessories table below.



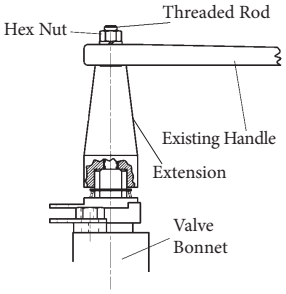
Oval handles with slide-lock

Optional oval handle saves space and may be padlocked to retain the valve in the open or closed position.



Stem Extensions SE-60, 61 y 62

A standard 102 mm stem extension is offered for Series 7000 valves for improved accessibility, particularly when used in insulated pipelines. Stem extension kits can be ordered factorymounted or shipped separately for field mounting.



DN 80-150
Series 7000

Accessory Table – DN									
Valve Size	Locking Device	Stem xt.	*Bonnet Ext.	Locking Oval	Round	Round/Oval Handle		Allowable Max.Torque N•m	
Reduced Bore						Dimension A	Dimension H	Round	Oval
15	Standard Equipment	SE-093	SE-096	112-0108-30	112-0105-30	101.6	75.2	12	12
20		SE-093	SE-096	112-0108-30	112-0105-30	101.6	79.0	12	12
25		SE-094	SE-097	112-0109-30	112-0106-30	114.3	94.0	24	24
40		SE-095	SE-098	112-0110-30	112-0107-30	146.0	120.7	34	34
50		SE-095	SE-098	112-0110-30	112-0107-30	146.0	125.5	34	34
80	LD56	SE-60	NA						
100 716D	LD56	SE-60							
100 740D	LD57	SE-61							
150 716D	LD57	SE-61							
150 740D	LD58	SE-62							

Valve torque data

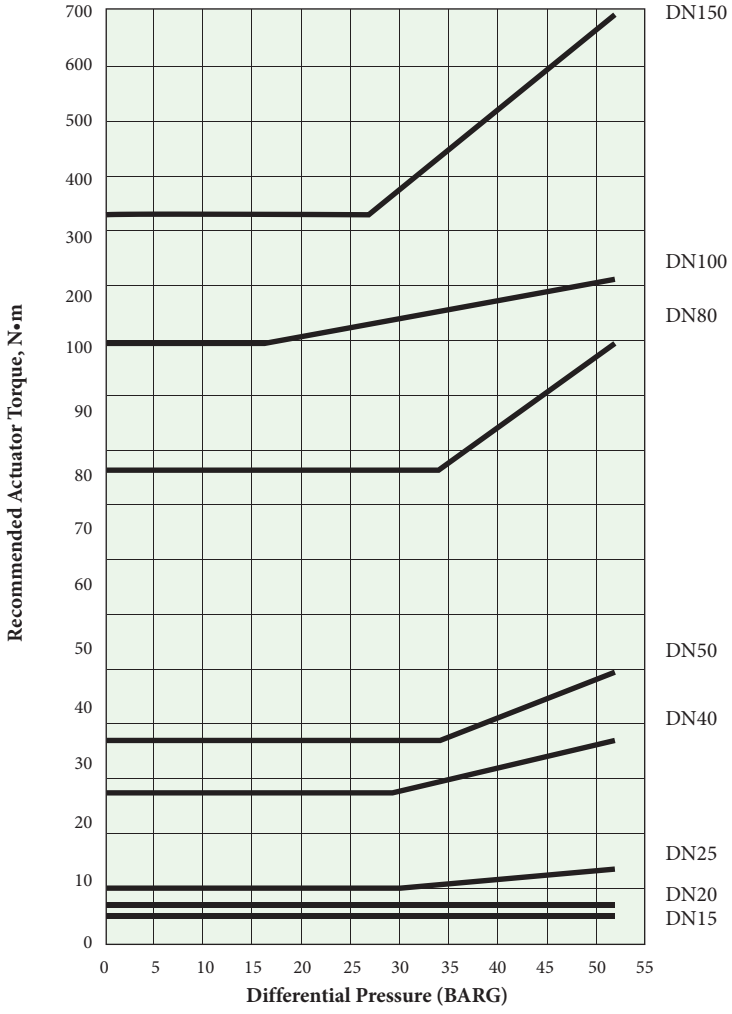
Use these torque charts as a guide for actuator selection. Additional requirements may be imposed by media characteristics, trim, and frequency of valve operation. For clean lubricating fluid service, required torque for Xtreme (X) and filled PTFE (M) seated valves only may be reduced 20% when the valve is equipped with corrosion resistant trim. For difficult services such as slurries and semi-solids, and for oxygen, increase values by 50%. If in doubt, err on the side of safety by using a larger actuator than would normally be selected.

Valves requiring increased stem seal performance should use E-Pak™. Refer to bulletin B115-4. E-Pak valves require an increase in operating torque.

Torque output values and actuator selection tables for the different types of Jamesbury brand actuators are contained in the bulletins listed below.

Manual Gear Actuators	A100-1
B-Series Piston Actuators	6B20
Quadra-Powr™ X Spring Diaphragm Rotary Actuators	A110-4
Valv-Powr Series VPVL	A111-5
VPVL Stainless Steel	A111-4
V-Series Electric Actuators	A200-1
ADC-Electric Actuators	A201-1
LCU-Series Electric Actuators	A202-1
LCR-Series Electric Actuators	A203-

Valve Torque Data
Xtreme (X) Seated Valves
DIN 7000 Series, Reduced Bore, DN15 – DN50
Torque - Xtreme Seats



How to order

EXAMPLE: A DN50, PN40 valve (740D) in Fire-Tite design with raised-face flanges (31), carbon steel body (22), and 316 stainless steel trim (36), with Xtreme seats (XTZ) and molecularly enhanced PTFE stem seals is written: 50 740D- 31-2236XTZ1.

1	2	3		4		5	6	7	8
50	740D	–	—	31	—	22	36	XTZ	1

1	Size
15	DN 15
20	DN 20
25	DN 25
40	DN 40
50	DN 50
80	DN 80
100	DN 100
150	DN 150

2	Valve Series & Style	Size Range
716D	Reduced Bore PN16	DN15-150
740D	Reduced Bore PN40	DN15-150

3	Special Construction
—	Standard (no entry)
C	Chlorine
N	NACE MR0103
O	Oxygen

4	End Connection Construction	Size Range
11	Raised Face Non-Fire-Tite Non-Trunnion	DN 15 – 150 Reduced Bore
31	Raised Face Fire-Tite Non-Trunnion	DN 15 – 150 Reduced Bore

5	Body Material*	Size Range
22	DIN 1.0619/A216 Gr.WCB	All
36	DIN 1.4408/A351 Gr. CF8M	All

*Other materials available on application

6	Ball & Stem Materials*	Size Range
36	316 Stainless Steel	All
71	Monel	All
00	Same as body	All (Carbon steel not available)

*Other materials available on application

7	Seat / Body Seal / Stem Seal Material
XTZ	*Xtreme*/PTFE*/TFM

***Note:** TFM on sizes DN 50 and smaller

8	Bolts	Nuts	Application
1*	EN 10269,1.7225/ ASTM A193 Gr B7	EN 10269 Gr 1.1191/ ASTM A194 Gr 2H	Carbon Steel
2	ISO 3506 A2 ASTM A193 Gr B8	ISO 3506 A2 ASTM A194 Gr 8	Stainless Steel

Bolts and nuts for DN50 and smaller valves apply to bonnet hardware only. For DN80 and larger bolts and nuts pertain to bonnet hardware and body and cap fasteners.
* Stainless bolting standard for DN50 and smaller
Note 4: DN 50 and smaller use Monel bonnet hardware for NACE MR0103 compatibility.

Standards and specifications

The Company

ISO 9001 – 2000 ANSI/150/ASQ Q9001 – 2000
Pressure Equipment Directive 97/23/EC

Available Standards

AD2000	Merkblatt
API 598	American Petroleum Institute - Valve Inspection and testing
API 607	American Petroleum Institute - Fire Test for Soft Seated Valves (Division of refining)
API 608	Metal Ball Valves Used in On-Off Service that have Buttwelded or Flanged Ends for Size DN 15 – 50 NPS
ANSI/ASME B16.34	American National Standard - Steel Valves - Flanged and Buttwelded End
ANSI/FCI 70-2-1991	American National Standard - For Control Valve Seat Leakage
ATEX	Atmosphere Explosive
ISO 15848-1	Industrial Valves - Fugitive Emissions - Measurement,Test & Qualification Procedures
ISO 17292	Metal ball valves for petroleum, petrochemical and allied industries
ISO 5211	Industrial Valve — Part turn Actuator attachment
ISO 5752:1982	International Standard for Organization Metal Valves for use in Flanged Piping Systems
ISA 75.02	Valve Sizing Coefficient Cv, Piping Geometry Factor Fp and Pressure Drop Limitation XT
ISA S75.19	Hydrostatic Testing of Control Valves
ISO 5211	Dimensions for Attachment of Actuators/Gear Boxes to Valves (ISO Mounting)
ISO 9000	
MSS-SP-55	Manufacturers Standardization Society - Quality Standards for Steel Castings
MSS-SP-6-1996	Standard Finishes for Contact Faces of Pipe Flanges and Connecting-End Flanges of Valves and Fittings
PED 97/23/EC	Pressure Equipment Directive
97/23/EC	European Pressure Equipment Directive
ISO 5208	Industrial Valves — Pressure Testing of Valves

Valmet Flow Control Oy
Vanha Porvoontie 229, 01380 Vantaa, Finland.
Tel. +358 10 417 5000.
www.valmet.com/flowcontrol