Neles Easyflow ™ reduced bore flanged ball valve
Series J7

J7 series reduced bore flanged seat supported ball valve provides long, reliable performance. Rugged two-piece body construction with dual seal body design withstands heavy piping loads and wide temperature fluctuations. Spring loaded v-ring packing provides extremely long cycle life with minimum maintenance. Direct actuator mounting capability makes it easy to automate with accurate alignment. Complete package reliability and single source responsibility with actuators, switches, and intelligent valve controllers. Cavity fill option for the J7 series ensure lowest possible dead volume in the ball cavity between the seats.

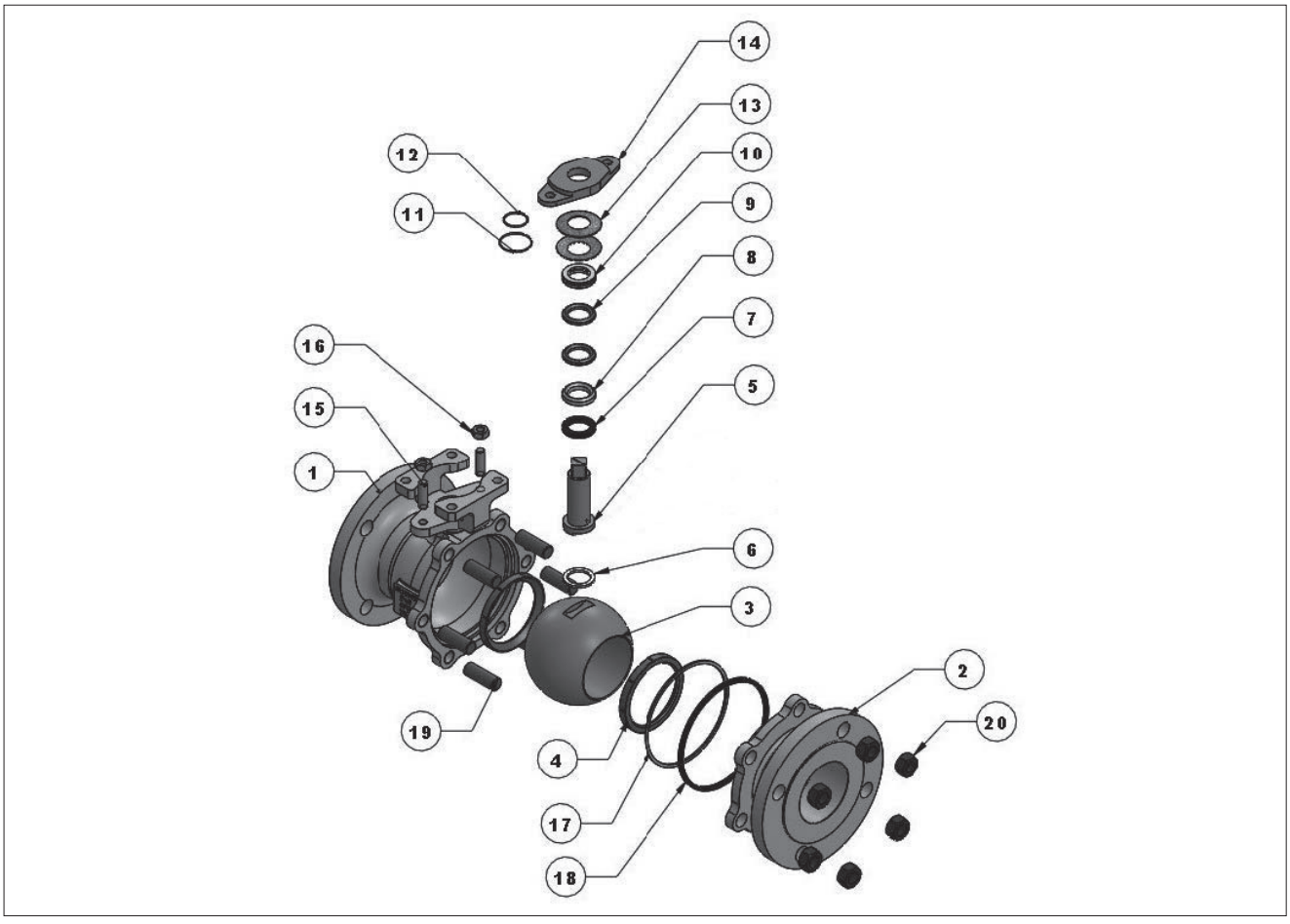
Technical description
- Sizes DN15 to 200 (NPS 1/2 to 8)
- ASME Class 150 or Class 300
- Rugged two-piece body construction
- Live-loaded stem packing
- Bi-directional bubble-tight shut-off to full rated pressure
- Suitable for vacuum service

Features
- Unique low torque seat design maintains tight shut-off through pressure and temperature cycles
- Reduced bore offers compact sizing of top automation
- ISO 5211 mounting pad for direct mounting of hand lever, gear operator, manual override, or actuator
- Internal entry blow-out proof stem design
- Spring loaded stem seal provides long cycle life and low emissions with minimal maintenance
- An extremely tight fit drive between the stem and ball ensures accurate and repeatable shut-off and control
- Anti-static grounding between ball and stem as well as stem and body is standard
- Available with lockable hand lever
- Cavity fill option minimizes media trapped in the cavity between the seats when the valve is open
- Every valve is factory tested, serialised & quality tagged prior to shipment
- CE marked for the European Pressure Equipment Directive (PED) 2014/68/EU as standard
- API 607 fire safe qualified
- SIL-3 qualified

Applications
- Chemical and petrochemicals
- Pulp & paper
- Food and beverage
- Water & wastewater
- Pharmaceutical
- HVAC
- Mining

Exploded view and parts list

DN15 to DN200 two-piece body construction



Bill of Material and Parts List			
Part no.	Part name	Material	
		Carbon steel -22	Stainless steel -36
1	Body	ASTM A216 Gr. WCB	ASTM A351 Gr. CF8M
2	End piece	ASTM A216 Gr. WCB	ASTM A351 Gr. CF8M
3	Ball	316 Stainless steel	
4	Seat	TFM™ 1600	
5	Stem	316 Stainless steel	
6	Stem washer	Carbon filled PTFE	
7	Stem seal	Graphite	
8	Stem retainer 1	Glass filled PTFE	
9	V-ring stem seal	TFM™ 1600	
10	Stem retainer 2	Glass filled PTFE	
11	Outer stem O-ring	Fluoroelastomer (FKM)	
12	Inner stem O-ring	Fluoroelastomer (FKM)	
13	Disc spring	Spring steel	
14	Gland flange	ASTM A216 Gr. WCB	ASTM A351 Gr. CF8M
15	Gland stud	ASTM A193 Gr. B7	ASTM A193 Gr. B8M
16	Gland nut	ASTM A194 Gr. 2H	ASTM A194 Gr. 8M
17	Body seal	Fluoroelastomer (FKM)	
18	Body gasket	Graphite	
19	Body stud	ASTM A193 Gr. B7	ASTM A193 Gr. B8M
20	Body nut	ASTM A194 Gr. 2H	ASTM A194 Gr. 8M

Technical specifications

Rating /Nominal diameter:	ASME Class 150 DN15 – DN200 (NPS 1/2 – 8) ASME Class 300 DN15 – DN150 (NPS 1/2 – 6)
Flange accommodation:	ASME B16.5
Face to face length:	ASME B16.10
Vacuum rating:	29.91 inch Hg gauge (759.98 mm Hg gauge or 2x10-^{2} Torr or 4x10-^{4} psia or 99.99% vacuum)
Leakage:	No visible leakage
Standards followed:	ISO 17292, ASME B16.34, API 598, BS EN 12266, API 607, CE-PED 2014/68/EU
Safety level:	SIL-3 capable
Testing:	API 598

Flow data

The table at right provides flow coefficients for JT series valves covered in this bulletin. C_V values represent the flow of water at +60°F through the valve in US gallons per minute at a pressure drop of 1 psi. The metric equivalent, K_V, is the flow of water at +16°C through the valve in cubic meters per hour at a pressure drop of 1 bar.

Cv = 1.167 Kv

Valve size		Cv	Kv
DN	NPS		
15	1/2	11	9
20	3/4	20	17
25	1	33	28
32	1 1/4	78	67
40	1 1/2	88	75
50	2	131	112
65	2 1/2	265	227
80	3	332	284
100	4	597	512
150	6	1,290	1,105
200	8	1,950	1,671

Valve body ratings

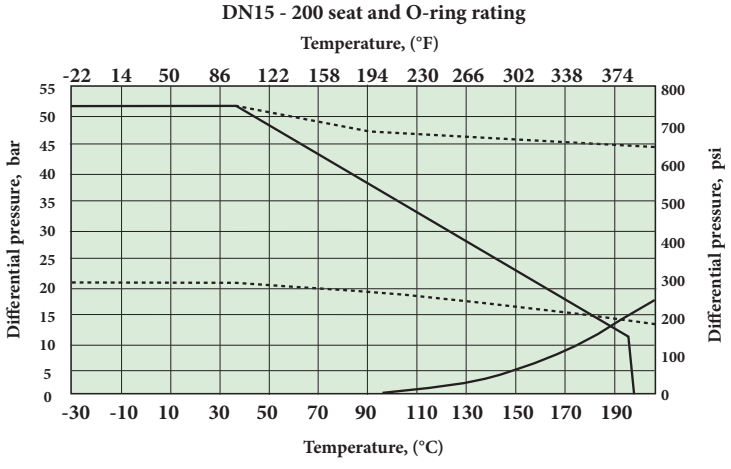
These are the maximum working pressure ratings of the valve body only. The seat ratings, shown below, determine the practical temperature and pressure limitations according to actual service conditions. Test pressures are recommended pressures for hydrostatic test with the valve ball half open.

Temperature °C	Maximum working pressure, barg			
	Class 150		Class 300	
	Carbon steel WCB	Stainless steel CF8M	Carbon steel WCB	Stainless steel CF8M
-29 to +38	19.6	19	51.1	49.6
93	17.7	16.2	46.6	42.2
149	15.8	14.8	45.1	38.5
204	13.8	13.7	43.8	35.7
260	11.7	11.7	41.9	33.4
Test pressure	30	29	77	75

Temperature °F	Maximum working pressure, psig			
	Class 150		Class 300	
	Carbon steel WCB	Stainless steel CF8M	Carbon steel WCB	Stainless steel CF8M
-20 to +100	285	275	740	720
200	260	235	680	620
300	230	215	655	560
400	200	195	635	515
500	170	170	605	480
Test pressure	450	425	1125	1100

Valve seat ratings

Seat ratings, indicated by solid line in the chart, are based on differential pressure with the valve ball in the fully closed position. The dotted lines indicate the maximum working pressures for WCB carbon steel valve bodies. The combination of dotted and solid lines indicates the maximum valve rating at specific pressure and temperature conditions. Carbon steel valves are rated to -29°C (-20°F). Low temperature limit for TFM™ seat and body seal O-ring is -30°C (-22°F).



Valve torque data

Use this torque chart as a guide for actuator selection. The recommended minimum actuator torque includes a safety factor so it suitable for difficult services such as slurries, semi-solids and non-lubricating media.

Valve size		Class 150		Class 300	
		Minimum actuator torque		Minimum actuator torque	
DN	NPS	N.m	lb-ft	N.m	lb-ft
15	1/2	6	4	9	7
20	3/4	8	6	12	9
25	1	9	7	14	10
32	1 1/4	11	8	29	21
40	1 1/2	21	15	35	26
50	2	29	21	45	33
65	2 1/2	38	28	95	70
80	3	60	44	120	88
100	4	83	61	240	177
150	6	240	177	750	553
200	8	490	361	-	-

Actuator selection

Selected rack and pinion actuator sizes in the chart are based on the recommended minimum actuator torque and 4 barg minimum air supply pressure. Selected spring return actuator size is suitable for fail open or fail close configuration. Unless otherwise specified, actuator will be set for fail close.

Actuators may be direct mounted or direct mounted with sleeve or mounted using bracket & coupler. For all these cases, the mounting sets include respective fasteners in addition to the above said components.

Valve size		Class 150		Class 300	
		Actuator, 4 barg min. air supply		Actuator, 4 barg min. air supply	
DN	NPS	RNP DA	RNP SR	RNP DA	RNP SR
15	1/2	RNP 40	RNP 50 SRR 40	RNP 40	RNP 50 SR 40
20	3/4	RNP 40	RNP 50 SR 40	RNP 40	RNP 63 SR 40
25	1	RNP 40	NP 50 SR 40	RNP 50	RNP 63 SR 40
32	1 1/4	RNP 40	RNP 63 SR 40	RNP 63	RNP 90 SR 40
40	1 1/2	RNP 50	RNP 80 SR 40	RNP 63	RNP 90 SR 40
50	2	RNP 63	RNP 90 SR 40	RNP 80	RNP 100 SR 40
65	2 1/2	RNP 63	RNP 90 SR 40	RNP 90	RNP 150 SR 40
80	3	RNP 80	RNP 110 SR 40	RNP 100	RNP 150 SR 40
100	4	RNP 90	RNP 125 SR 40	RNP 125	RNP200 SR 40
150	6	RNP 125	RNP 200 SR 40	RNP 200	RNP 300 SR 40
200	8	RNP 175	RNP 250 SR 40	-	-

Hand lever

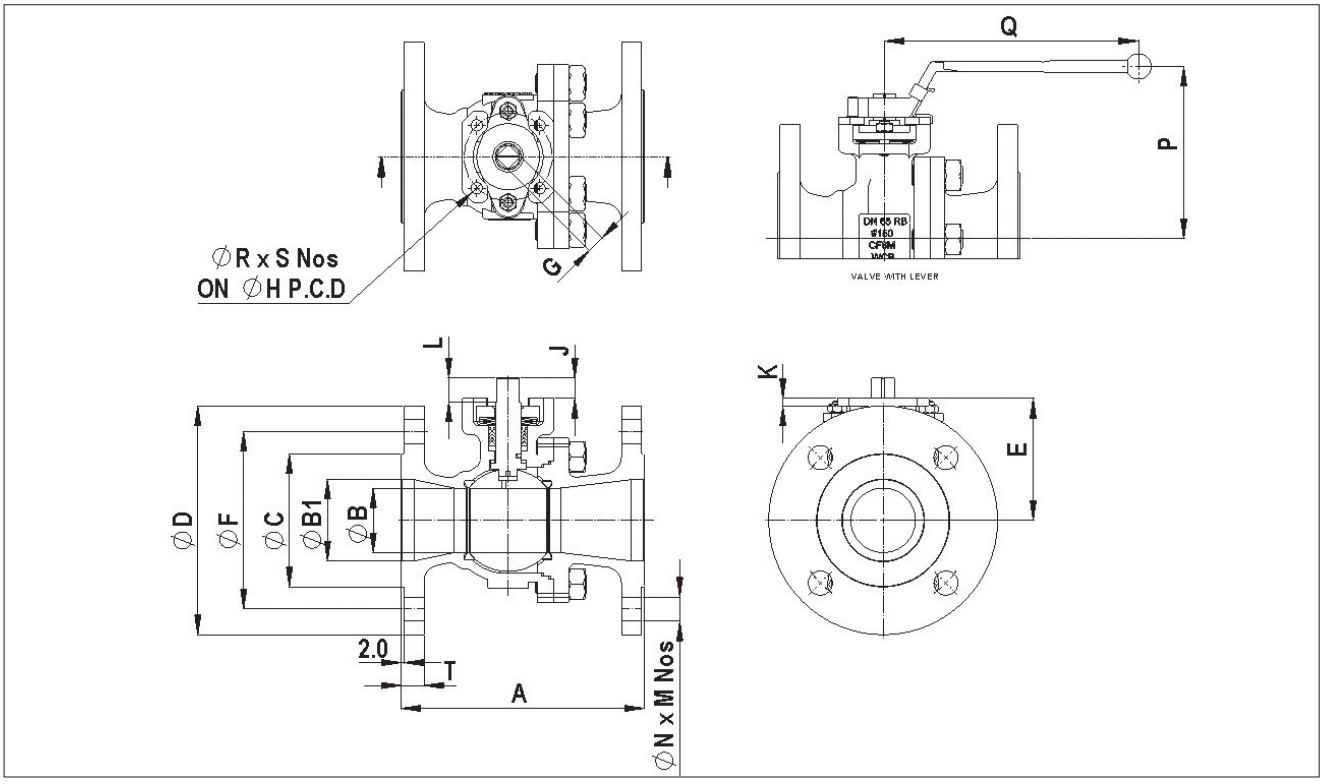
Valve size		Class	Hand lever code	Mounting set number
DN	NPS			
15	1/2	150 & 300	RHL 0815036	EASYFLOW MOUNTING SET 69
20	3/4	150 & 300	RHL 0915036	EASYFLOW MOUNTING SET 69
25	1	150 & 300	RHL 0915036	EASYFLOW MOUNTING SET 69
32	1 1/4	150 & 300	RHL 0915036	EASYFLOW MOUNTING SET 69
40	1 1/2	150 & 300	RHL 0915036	EASYFLOW MOUNTING SET 69
50	2	150 & 300	RHL 1115036	EASYFLOW MOUNTING SET 70
65	2 1/2	150 & 300	RHL 1420036	EASYFLOW MOUNTING SET 71
80	3	150 & 300	RHL 1420036	EASYFLOW MOUNTING SET 71
100	4	150 & 300	RHL 1725036	EASYFLOW MOUNTING SET 94
150	6	150 & 300	RHL 1725036	EASYFLOW MOUNTING SET 94

Actuator mounting set

Class 150 (J715)		
Valve size	Actuator model	Mounting set number
DN15 (1/2)	RNP 40	EASYFLOW MOUNTING SET 33
	RNP 50	EASYFLOW MOUNTING SET 33
DN20 (3/4)	RNP 40	EASYFLOW MOUNTING SET 33
	RNP 50	EASYFLOW MOUNTING SET 33
DN25 (1)	RNP 40	EASYFLOW MOUNTING SET 12
	RNP 50	EASYFLOW MOUNTING SET 12
DN32 (1.1/4)	RNP 40	EASYFLOW MOUNTING SET 53
	RNP 63	EASYFLOW MOUNTING SET 41
DN40 (1.1/2)	RNP 50	EASYFLOW MOUNTING SET 53
	RNP 80	EASYFLOW MOUNTING SET 34
DN50 (2)	RNP 63	EASYFLOW MOUNTING SET 14
	RNP 90	EASYFLOW MOUNTING SET 31
DN65 (2.1/2)	RNP 63	EASYFLOW MOUNTING SET 35
	RNP 90	EASYFLOW MOUNTING SET 15
DN 80 (3)	RNP 80	EASYFLOW MOUNTING SET 15
	RNP 110	EASYFLOW MOUNTING SET 16
DN 100 (4)	RNP 90	EASYFLOW MOUNTING SET 37
	RNP 125	EASYFLOW MOUNTING SET 17
DN 150 (6)	RNP 125	EASYFLOW MOUNTING SET 17
	RNP 200	EASYFLOW MOUNTING SET 38
DN 200 (8)	RNP 175	EASYFLOW MOUNTING SET 20
	RNP 250	EASYFLOW MOUNTING SET 32

Class 300 (J730)		
Valve size	Actuator model	Mounting set number
DN15 (1/2)	RNP 40	EASYFLOW MOUNTING SET 33
	RNP 50	EASYFLOW MOUNTING SET 33
DN20 (3/4)	RNP 40	EASYFLOW MOUNTING SET 33
	RNP 63	EASYFLOW MOUNTING SET 109
DN25 (1)	RNP 50	EASYFLOW MOUNTING SET 12
	RNP 63	EASYFLOW MOUNTING SET 13
DN32 (1.1/4)	RNP 63	EASYFLOW MOUNTING SET 41
	RNP 90	EASYFLOW MOUNTING SET 34
DN40 (1.1/2)	RNP 63	EASYFLOW MOUNTING SET 41
	RNP 90	EASYFLOW MOUNTING SET 34
DN50 (2)	RNP 80	EASYFLOW MOUNTING SET 31
	RNP 100	EASYFLOW MOUNTING SET 43
DN65 (2.1/2)	RNP 90	EASYFLOW MOUNTING SET 15
	RNP 150	EASYFLOW MOUNTING SET 44
DN 80 (3)	RNP 100	EASYFLOW MOUNTING SET 16
	RNP 150	EASYFLOW MOUNTING SET 44
DN 100 (4)	RNP 125	EASYFLOW MOUNTING SET 17
	RNP 200	EASYFLOW MOUNTING SET 38
DN 150 (6)	RNP 200	EASYFLOW MOUNTING SET 38
	RNP 300	EASYFLOW MOUNTING SET 107

Dimensions



Valve size		Class 150 (J715)																				
DN	NPS	Dimensions (mm)																				Weight (kg)
		A	T	ØB	ØB1	ØC	ØD	G	ØF	ØN	M	J	K	L	E	ØH	ISO 5211	ØR	S	P	Q	
15**	1/2	108	10	14	14	34.9	90	8	60.3	15.9	4	3	5	10.5	38.3	50	F05	M6	4	68	150	1.9
20	3/4	117	10.9	12.8	19.1	42.9	100	8	69.9	15.9	4	0.7	5	10.5	38.3	50	F05	M6	4	68	150	1.7
25	1	127	11.6	19	25.4	50.8	110	9	79.4	15.9	4	8.7	6.5	10.5	52.5	50	F05	M6	4	81	150	2.5
32	1 1/4	140	13.2	25.4	32	63.5	115	9	88.9	15.9	4	10.3	6.5	12	57.8	50	F05	M6	4	85	150	3.5
40	1 1/2	165	14.7	25.4	38.1	73	125	9	98.4	15.9	4	10.3	6	12	57.8	50	F05	M6	4	95	150	4.1
50	2	178	16.3	38.1	50.8	92.1	150	11	120.7	19.1	4	15.3	6	17	77.7	50	F05	Ø8	4	106	150	6.8
65	2 1/2	190	17.9	50.8	64.1	104.8	180	14	139.7	19.1	4	18.2	6	21.5	96	70	F07	Ø9	4	137	200	11.3
80	3	203	19.5	64.1	76.2	127	190	14	152.4	19.1	4	18.8	6	21.5	106	70	F07	Ø9	4	146	200	14.8
100	4	229	24.3	76.2	102	157.2	230	17	190.5	19.1	8	24.2	12	27	133	102	F10	Ø11	4	168	250	24.2
150	6	267*	25.9	102	150.8	215.9	280	17	241.3	22.4	8	23.5	12	26.3	153	102	F10	Ø11	4	189	250	40
200	8	292*	29	150.8	203	269.9	345	22	298.5	22.4	8	44	13	47	207	125	F12	Ø13	4	#	#	77

Gear operated valves
* Dimensions are for short pattern
** With full bore trim

Valve size		Class 300 (J730)																				
DN	NPS	Dimensions (mm)																				Weight (kg)
		A	T	ØB	ØB1	ØC	ØD	G	ØF	ØN	M	J	K	L	E	ØH	ISO 5211	ØR	S	P	Q	
15	1/2	140	14.7	12.8	12.8	34.9	95	8	66.7	15.9	4	0.7	5	11	38.3	50	F05	M6	4	68	150	1.9
20	3/4	152	16.3	12.8	19.1	42.9	115	8	82.6	19.1	4	0.7	5	11	38.3	50	F05	M6	4	68	150	3
25	1	165	17.9	19.1	25.4	50.8	125	9	88.9	19.1	4	8.5	6.5	10.5	52.5	50	F05	M6	4	81	150	4.5
32	1 1/4	178	19.5	25.4	32	63.5	135	9	98.4	19.1	4	10.3	6.5	12	57.8	50	F05	M6	4	85	150	5.9
40	1 1/2	190	21.1	25.4	38	73	155	9	114.3	22.4	4	10.3	6.5	12	57.8	50	F05	M6	4	95	150	7
50	2	216	22.7	38	50.8	92.1	165	11	127.0	19.1	8	15.3	6.5	17	77.7	50	F05	Ø8	4	106	150	9.6
65	2 1/2	241	26.9	50.8	62	104.8	190	14	149.2	22.4	8	18.2	6	21.5	96	70	F07	Ø9	4	137	200	16.5
80	3	282	29	62	76.2	127	210	14	168.3	22.4	8	18.8	6	21.5	106	70	F07	Ø9	4	146	200	22.2
100	4	305	32.2	76.2	102	157.2	255	17	200.0	22.4	8	24.2	12	27	133	102	F10	Ø11	4	168	250	35.7
150	6	403*	37	102	150.8	215.9	320	17	269.9	22.4	12	23.5	12	26.3	153	102	F10	Ø11	4	189	250	66.5

* Dimensions are for short pattern

How to order

1.		2.	3.	4.	5.	6.	7.	8.	9.
50		J7	15	22	36	36	ZG	53	

1.	Size, DN (NPS ref.)
15	15 (1/2) **Note 2**
20	20 (3/4)
25	25 (1)
32	32 (1 1/4)
40	40 (1 1/2)
50	50 (2)
65	65 (2 1/2)
80	80 (3)
100	100 (4)
150	150 (6)
200	200 (8) **Note 1**

Note 1: Class 150 only
Note 2: With full bore trim

2.	Series
J7	

3.	Flange / rating
15	ASME Class 150
30	ASME Class 300

4.	Body material
22	Carbon steel (WCB)
36	Stainless steel (CF8M)

5.	Ball material
36	316 Stainless steel

6.	Stem material
36	316 Stainless steel
43	17-4PH Stainless steel

7.	Seat and seal materials
ZG	TFM™ 1600 / Graphite

8.	O-Ring material
53	Fluoroelastomer (FKM)

9.	Options
-	Blank, standard option
Q	Cavity filler seat

TFM™ is a trademark of Dyneon, a 3M Company

NOTE:
As the use of the valve is application specific, a number of factors should be taken into account when selecting a valve for a given application. Therefore, some of the applications in which the valves are used are outside the scope of this document. If you have any questions concerning the use, application or compatibility of the valve with the intended service, contact nearest Valmet sales office for more information.

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