

WKM DynaSeal 370D5 Trunnion Mounted Ball Valves

Three-piece forged construction with double block-and-bleed capabilities
for the pipeline industry

TECHNOLOGY



WKM DYNASEAL 370D5 TRUNNION MOUNTED BALL VALVES

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Oklahoma City, Okla.,
USA

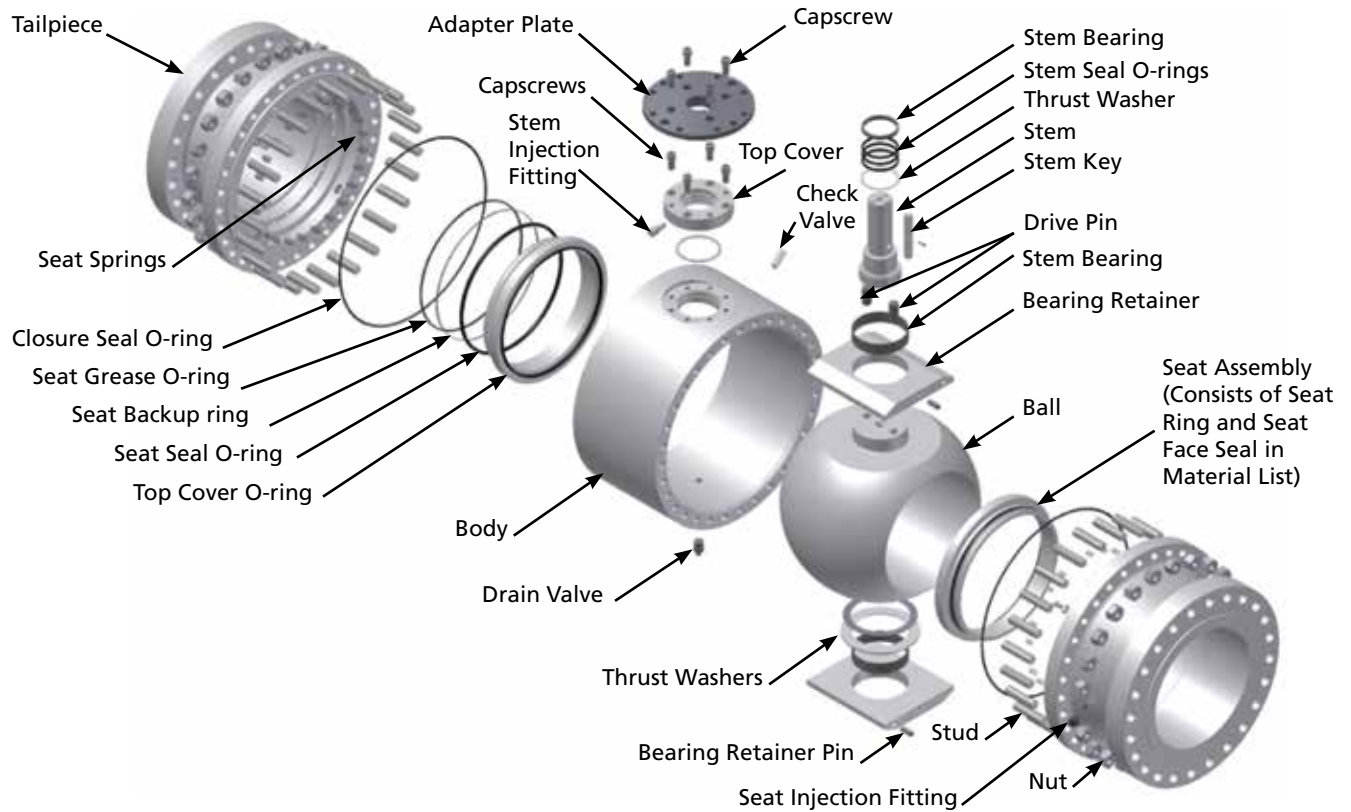
Cameron is a leading provider of flow equipment products, systems and services to worldwide oil, gas and process industries. We offer products primarily used to control, direct and measure the flow of oil and gas as it is moved from individual wellheads through flowlines, gathering lines and transmission systems to refineries, petrochemical plants and industrial centers for processing.

Cameron is a complete systems solution supplier, delivering new levels of efficiency and cost savings to our customers due to our full in-house capability to provide controls engineering and manufacturing together with choke, actuation and automation expertise, as well as project management, system engineering, operability and training.

The WKM® brand is recognized throughout the world for durable, reliable and flexible valves built for many challenging situations. Its product line offers a broad line of valves including ANSI gate valves, DynaSeal™ ball valves and DynaCentric™ butterfly valves, all built to standards for demanding applications.

ASME Classes 150, 300 and 600 18", 20" and 24" (450 mm, 500 mm and 600 mm)

EXPANDED VIEW



FEATURES AND SPECIFICATIONS

- Three-piece forged construction
- Double block-and-bleed
- Stem and seat injection
- Adapter plate for direct mount gear
- API 6D
- NACE MR0175/ISO 15156
- MSS-SP-6 (standard finishes for pipe flanges)
- MSS-SP-25 (standard marking system for valves)
- API 607/6FA (fire-test specification)

In addition, WKM DynaSeal 370D5 trunnion ball valves can be supplied to comply with these standards:

- API 598 (valve inspection and testing)
- MSS-SP-61 (pressure testing of steel valves)

ASME Pressure Classes

Size in. (mm)	Classes		
	150	300	600
18 (450)	•	•	•
20 (500)	•	•	•
24 (600)	•	•	•

MATERIALS LIST

Body Group Trim Number

Part	Carbon Steel (NACE) 24	
Body	A105	
Tailpiece	A105	
Support Legs (not shown)	Carbon Steel	
Drain Valve	Stainless Steel	
Check Valve	Stainless Steel	
Plugs	Carbon Steel	
Top Cover	A105	
Adapter Plate	A105	
Stem Key	Carbon Steel	
Lifting Lug	Carbon steel	
Anchor Pin	Carbon Steel	
Studs	A193 Gr. B7M	
Nuts	A194 Gr. 2HM	
Capscrews	A193 Gr. B7M	
Spacer	Stainless Steel	

Internal Group Trim Number

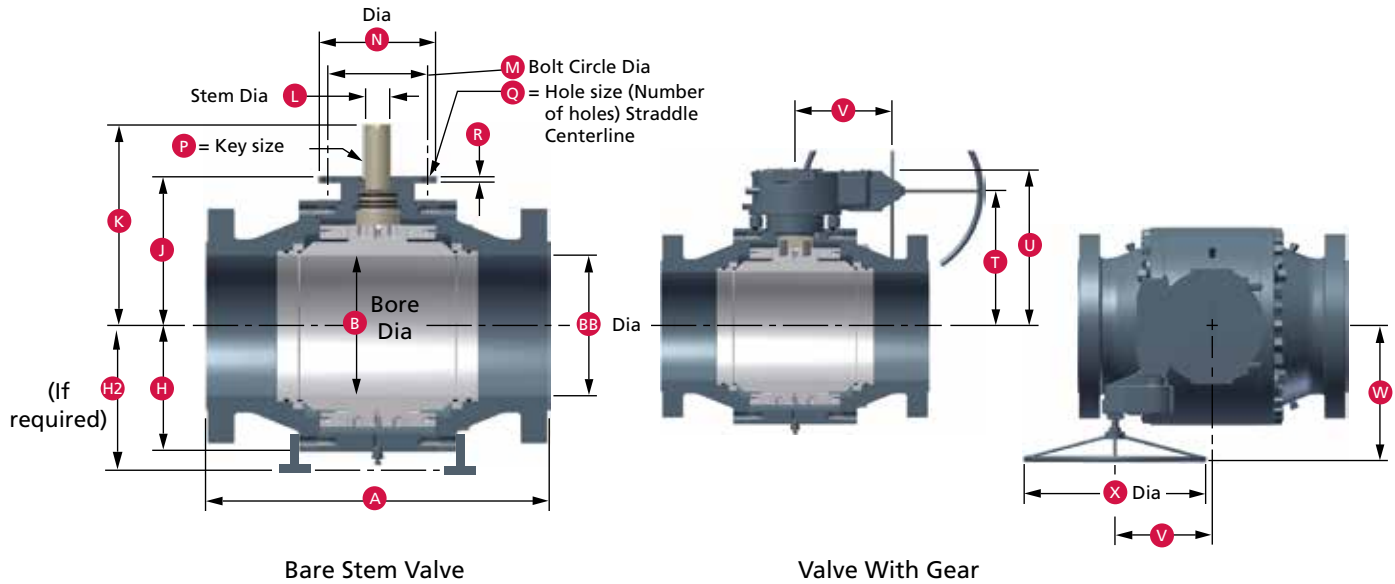
Part	Carbon Steel (NACE) 24	Stainless Steel (NACE) 23
Bearing Retainer	A516 Gr. 70	A516 Gr. 70
Bearings	SS/Filled PTFE	SS/Filled PTFE
Seat	4130/1 Mil ENP	316 SS
Seat Springs	X-750	X-750
Seat Stop Washer	A105	A105
Ball	A105/1 Mil ENP	CF8M
Stem	4130/1 Mil ENP	Type 630
Gland Bushing	4130/1 Mil ENP	4130/1 Mil ENP
Drive Pin	Type 630	Type 630
Bearing Retainer Pin	1040	1040
Ground Device	Stainless Steel	Stainless Steel

Seal Group Trim Code

Part	NRF	NRF
Temperature Limits	-20° F to 250° F (-29° C to 121° C)	-20° F to 250° F (-29° C to 121° C)
Face Seal	Nylon 12	Nylon 12
Thrust Washer	SS/Filled PTFE	SS/Filled PTFE
Stem O-rings	HNBR	HNBR
Stem Backup Rings	Nylon 6	Nylon 6
Seat O-rings	HNBR	HNBR
Seat Backup Rings	Nylon 6	Nylon 6
Body/Tailpiece O-ring	HNBR	HNBR

NACE indicates compliance with NACE MR0175/ISO 15156.

DIMENSIONS



Full Port Dimensions

ASME Class 150

Size in.	A		B	H	H2	J	K	L	M	N	P	Q	R	T	U	V	W	X
	RF	RJ																
18 (450)	34.00 (864)	34.49 (876)	17.25 (438.2)	17.07 (433.5)	18.13 (460.5)	19.13 (486.0)	23.66 (601)	2.953 (74.93)	10.630 (270.0)	12.60 (320.0)	0.708 (18.0)	0.866-(8) (22.0)	1.31 (33.0)	24.32 (617.7)	25.70 (652.8)	7.30 (185.5)	20.94 (531.9)	20.0 (508.0)
20 (500)	36.00 (914)	36.50 (927)	19.25 (488.9)	18.15 (461.0)	25.91 (658.0)	20.59 (523.0)	25.11 (638)	2.953 (74.93)	10.630 (270.0)	12.60 (320.0)	0.708 (18.0)	0.866-(8) (22.0)	0.91 (23.0)	25.78 (654.8)	27.16 (689.9)	7.30 (185.5)	20.94 (531.9)	24.00 (610.0)
24 (600)	42.00 (1067)	42.52 (1080)	23.25 (590.55)	21.46 (545.0)	31.81 (808.0)	23.27 (591.0)	30.35 (771)	3.543 (89.99)	14.173 (360.0)	16.14 (410.0)	0.866 (22.0)	1.063-(8) (27.0)	0.91 (23.0)	28.27 (718.1)	29.84 (757.9)	5.93 (150.6)	22.43 (570.0)	24.00 (610.0)

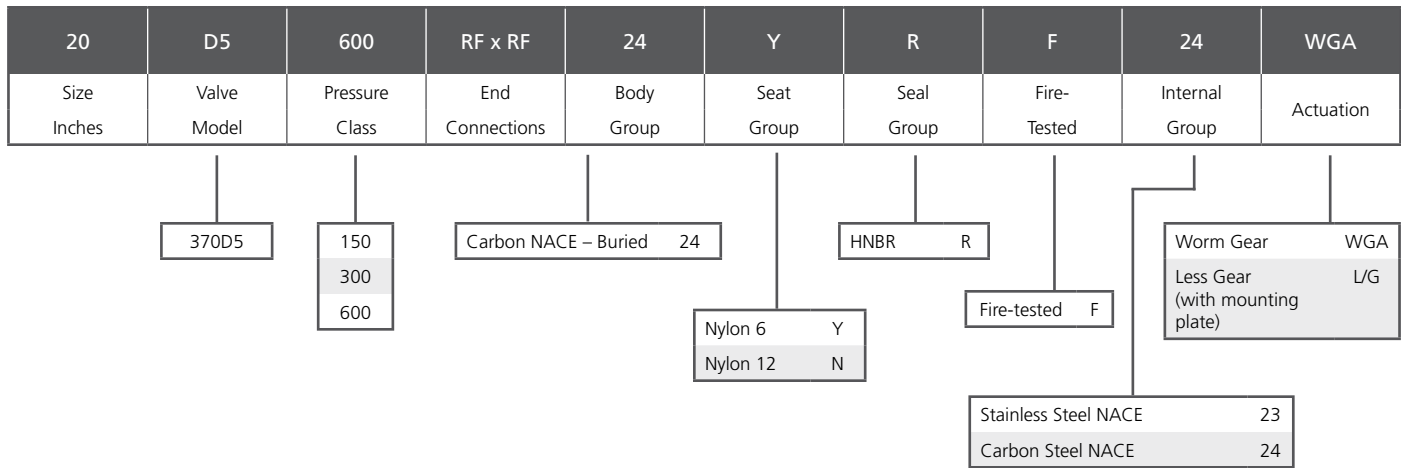
ASME Class 300

Size in.	A		B	H	H2	J	K	L	M	N	P	Q	R	T	U	V	W	X
	RF	RJ																
18 (450)	36.00 (914)	36.61 (930.0)	17.25 (438.2)	16.67 (423.5)	20.41 (518.5)	19.13 (486.0)	23.66 (601)	2.953 (74.93)	10.630 (270.0)	12.60 (320.0)	0.708 (18.0)	0.866-(8) (22.0)	1.31 (33.0)	24.32 (617.7)	25.70 (652.8)	7.30 (185.5)	20.94 (531.9)	30.00 (762.0)
20 (500)	39.00 (991)	39.76 (1010.0)	19.25 (488.9)	18.70 (475.0)	20.47 (520.0)	20.59 (523.0)	25.11 (638)	2.953 (74.93)	10.630 (270.0)	12.60 (320.0)	0.708 (18.0)	0.866-(8) (22.0)	0.91 (23.0)	25.78 (654.8)	27.16 (686.9)	7.30 (185.5)	20.94 (531.9)	36.00 (914.4)
24 (600)	45.00 (1143)	45.87 (1165.0)	23.25 (590.55)	21.93 (557.0)	25.43 (646.0)	23.60 (591.0)	30.69 (780)	3.543 (89.99)	14.173 (360.0)	16.14 (410.0)	0.866 (22.0)	1.063-(8) (27.0)	0.91 (23.0)	28.60 (726.4)	30.17 (766.3)	5.93 (150.6)	23.57 (598.7)	36.00 (914.4)

ASME Class 600

Size in.	A		B	H	H2	J	K	L	M	N	P	Q	R	T	U	V	W	X
	RF	RJ																
18 (450)	43.00 (1092)	43.11 (1095.0)	17.25 (438.2)	16.69 (424.0)	21.46 (545.0)	19.41 (493.0)	24.92 (633)	3.543 (89.99)	14.173 (360.0)	16.14 (410.0)	0.866 (22.0)	1.063-(8) (27.0)	1.57 (40.0)	24.41 (620.0)	25.98 (659.9)	5.93 (150.6)	24.07 (611.4)	30.00 (762.0)
20 (500)	47.00 (1194)	47.24 (1200.0)	19.25 (488.9)	18.70 (475.0)	20.47 (520.0)	20.39 (518.0)	27.48 (698)	3.543 (89.99)	14.173 (360.0)	16.14 (410.0)	0.866 (22.0)	1.063-(8) (27.0)	0.91 (23.0)	25.39 (644.9)	26.96 (684.8)	5.93 (150.6)	23.57 (598.7)	36.00 (914.4)
24 (600)	55.0 (1397)	55.39 (1407.0)	23.25 (590.55)	21.85 (555.0)	24.51 (622.5)	23.62 (600.0)	31.69 (805)	4.724 (120.0)	16.535 (420.0)	18.90 (480.0)	1.260 (32.0)	1.181-(8) (30.0)	1.10 (28.0)	28.59 (726.2)	30.78 (781.8)	8.87 (225.3)	27.91 (708.9)	36.00 (914.4)

HOW TO ORDER



The chart above identifies in general terms each of the standard WKM trims.

- Valves ordered with Worm Gears (WGA) are shipped with gears installed, but handwheels are not installed (shipped separately)
- Valves ordered Less Gear (LG) with gear mounting plate installed (for actuation by others)

The trim charts provide more specific application details including availability of fire-tested materials. Please contact Cameron for information concerning availability of trims other than those listed or for any additional information concerning the choice or guidance for application of the trims listed. NACE MR0175/ISO 15156 Compliance – Materials of construction shall be in compliance with the pre-qualified material requirements specified by NACE MR0175/ISO 15156. According to NACE MR0175/ISO 15156, it is the manufacturer's responsibility for meeting metallurgical requirements and the customer and user responsibility to ensure that a material will be satisfactory in the intended environment. When given the application requirements (environment) by the customer/user, Cameron can make technical recommendations in accordance with NACE MR0175/ISO 15156, but that in no way certifies or warrants the product or materials for the application.

ASME CLASSES 150, 300 AND 600 WEIGHT, C_v DATA

Weights lb (kg) – Valve Only – Bare Stem

Valve Port Size in. (mm)	Valve Pressure Class		
	150	300	600
18 (450)	3476 (1577)	3584 (1626)	4553 (2065)
20 (500)	4850 (2200)	5090 (2309)	6340 (2876)
24 (600)	7200 (3266)	7560 (3429)	9430 (4277)

Weights lb (kg) – Worm Gear Actuator Only

Valve Port Size in. (mm)	Valve Pressure Class		
	150	300	600
18 (450)	150 (68)	150 (68)	148 (67)
20 (500)	150 (68)	150 (68)	148 (67)
24 (600)	148 (67)	148 (67)	402 (182)

Flow Characteristics (C_v)*

Valve Port Size in. (mm)	Valve Pressure Class		
	150	300	600
18 x 18 (450 x 450)	56221	53803	51386
20 x 20 (500 x 500)	71060	64664	64559
24 x 24 (600 x 600)	106055	100830	95605

C_v DATA AND TORQUE CHART ASME CLASSES 150 THROUGH 600# MOP

Ball Valve Torque Chart

Valve Port Size in. (mm)	Pressure (P) (psig)	Torque Expressions		Break Torque at Max P (in-lb)	Run Torque at Max P (in-lb)	Reseat Torque at Max P (in-lb)
		Break Torque (in-lb)	Run Torque (in-lb)			
18 (450)	0 to 285	21440 + (47.35 x P)	10000 + (30.55 x P)	35136	19165	28109
	286 to 740	21440 + (47.35 x P)	10000 + (30.55 x P)	49392	28330	39514
	741 to 1470	21440 + (47.35 x P)	10000 + (30.55 x P)	87936	52770	70349
20 (500)	0 to 285	29650 + (49.95 x P)	19201 + (22.4 x P)	41004	25585	32803
	286 to 740	29650 + (49.95 x P)	19201 + (22.4 x P)	66564	35777	53251
	741 to 1480	29650 + (49.95 x P)	19201 + (22.4 x P)	104184	52353	83347
24 (600)	0 to 285	50282 + (65.52 x P)	25613 + (38.5 x P)	67956	36586	54365
	286 to 740	50282 + (65.52 x P)	25613 + (38.5 x P)	100404	54103	80323
	741 to 1480	50282 + (65.52 x P)	25613 + (38.5 x P)	148224	82593	118579

The above values are new valve torque values, where P is the maximum operating pressure (psig) of the valve.

The above torque values do not contain service factors.

Soaking effects and/or particle matter in the valve may cause an increase in the torque.

For intermediate pressure use the torque expressions for the stated pressure range.

For example, an intermediate pressure of 1000 psig uses the torque equations that correspond to the 751 to 1500 psig pressure range.

The re-seat torque is taken as 0.75 times the break torque.

For power operation, multiply all of the above values by a factor of 1.25 or customer specified factor whichever is larger.

For operating temperatures between -20° F to -50° F, multiply these values by 1.20.

Actuator selection should be made on customer experience and appropriate service factors.

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Cameron is well-positioned to deliver total aftermarket support, quickly and efficiently, with unmatched OEM expertise. Our highly skilled engineers and technicians are available around the clock, seven days a week to respond to customer queries, troubleshoot problems and offer reliable solutions.

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Learn more about WKM at:
www.c-a-m.com/valves



HSE Policy Statement

At Cameron, we are committed ethically, financially and personally to a working environment where no one gets hurt and nothing gets harmed.