

WKM DynaSeal 370D5 Trunnion Mounted Ball Valves

TECHNOLOGY



WKM DYNASEAL 370D5 TRUNNION MOUNTED BALL VALVES

Introduction	2
ASME Classes 150, 300 and 600 18", 20", and 24" (450 mm, 500 mm and 600 mm)	
Expanded View	3
Materials List	4
Dimensions	5
How to Order	6
Weight, C _v Data	7
Services for Valves and Actuation	8

WKM 370D5 Trunnion Mounted Ball Valves



Oklahoma City, Okla.,
USA

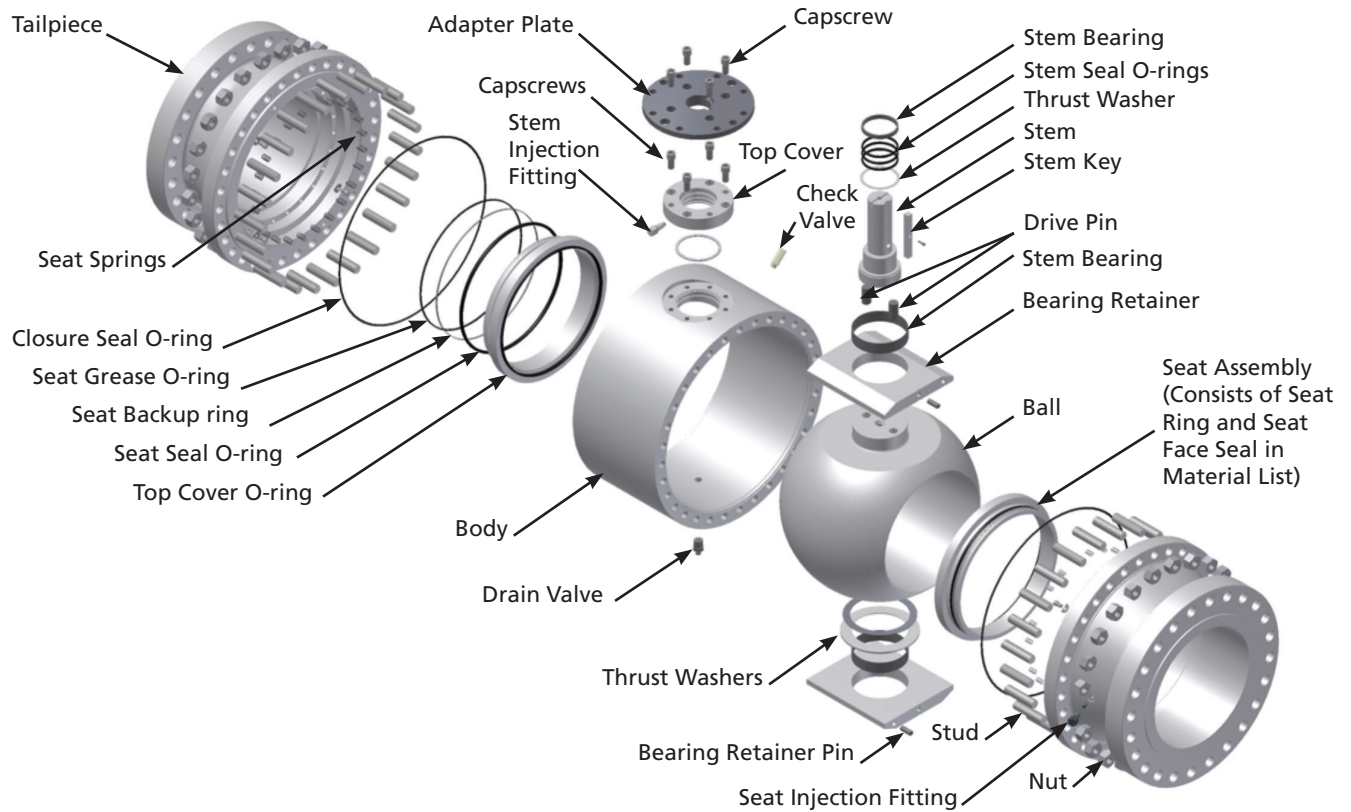
Cameron is a leading provider of valve, valve automation, and measurement systems to the oil and gas industry. We offer products primarily used to control, direct, and measure the flow of oil and gas as it is moved to refineries, petrochemical plants, and industrial centers for processing.

We provide valve products that are sold through distributor networks worldwide. Our products are used in oil, gas, and industrial applications, and include widely recognized brands such as DEMCO®, NAVCO®, NEWCO®, DOUGLAS CHERO™, NUTRON®, THORNHILL CRAVER®, TECHNO™, TOM WHEATLEY®, WHEATLEY®, and WKM®.

Cameron's WKM brand is recognized throughout the world for durable, reliable, and flexible valves built for many challenging situations. Our WKM product line offers a broad portfolio of valves including gate valves, trunnion mounted and floating 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 B16.104 (valve seat leakage)

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

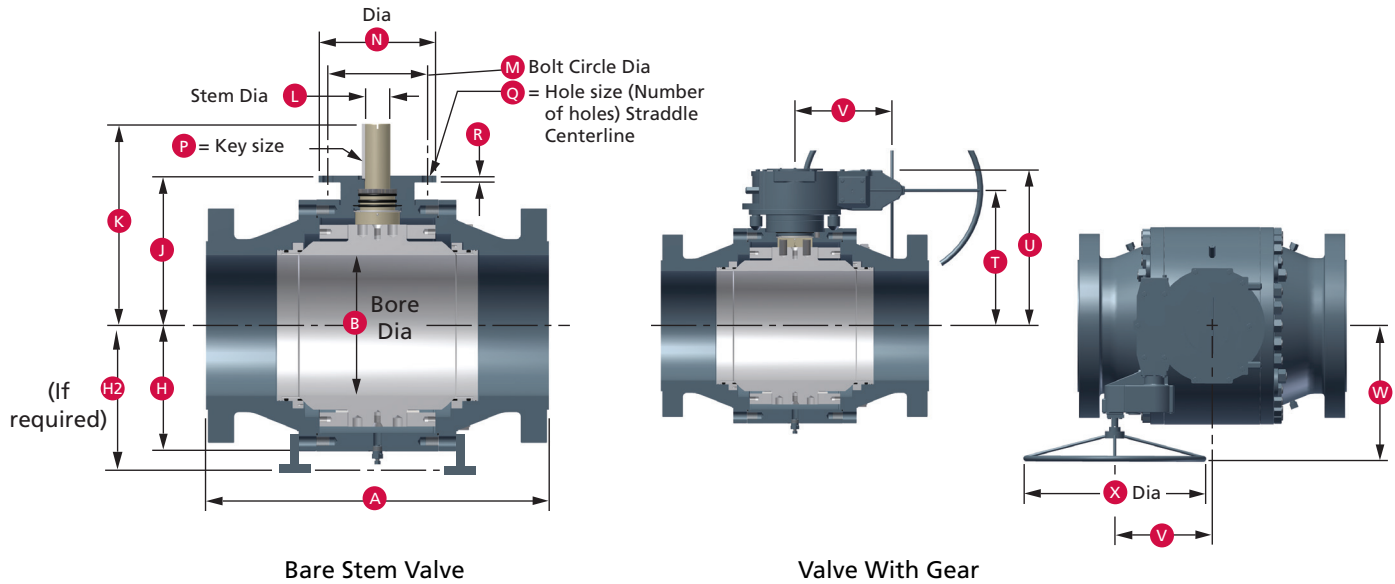
Part	Carbon Steel (NACE) 24	Stainless Steel (NACE) 23
Bearing Retainer	A516 Gr. 70	A516 Gr. 70
Bearings	SS/Filled PTFE	SS/Filled PTFE
Seat	4130/1 Mil ENP	316 SS
Seat Springs	X-750	X-750
Seat Stop Washer	A105	A105
Ball	A105/1 Mil ENP	CF8M
Stem	4130/1 Mil ENP	Type 630
Gland Bushing	4130/1 Mil ENP	4130/1 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	Devlon V	Devlon V
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)	23.70 (602.0)	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)	23.90 (607.0)	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)	29.65 (753.0)	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)

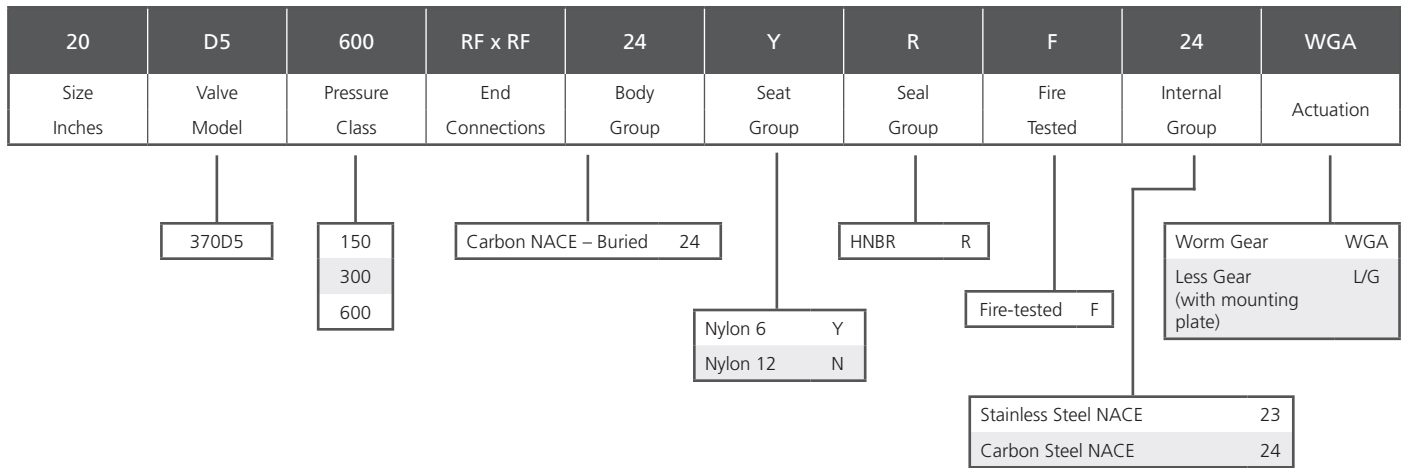
ASME Class 300

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)	21.87 (555.5)	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)	26.46 (672.0)	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)	30.30 (769.5)	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)	25 (635.0)	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)	27.46 (697.5)	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 (805.0)	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.

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 (450)	56,221	53,803	51,836
20 (500)	71,060	64,664	64,559
24 (600)	106,055	100,830	95,605

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)	35,136	19,165	28,109
	286 to 740	21440 + (47.35 x P)	10000 + (30.55 x P)	49,392	28,330	39,514
	741 to 1470	21440 + (47.35 x P)	10000 + (30.55 x P)	87,936	52,770	70,349
20 (500)	0 to 285	29650 + (49.95 x P)	19201 + (22.4 x P)	41,004	25,585	32,803
	286 to 740	29650 + (49.95 x P)	19201 + (22.4 x P)	66,564	35,777	53,251
	741 to 1480	29650 + (49.95 x P)	19201 + (22.4 x P)	104,184	52,353	83,347
24 (600)	0 to 285	50282 + (65.52 x P)	25613 + (38.5 x P)	67,956	36,586	54,365
	286 to 740	50282 + (65.52 x P)	25613 + (38.5 x P)	100,404	54,103	80,323
	741 to 1480	50282 + (65.52 x P)	25613 + (38.5 x P)	148,224	82,593	118,579

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 (-29° C to -46° C), multiply these values by 1.20.

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

Services for Valves and Actuation

WE BUILD IT. WE BACK IT.

Global Network and Local Support

Cameron is well-positioned to deliver comprehensive 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.

Easily Accessible Parts and Spare Valves

- OEM spare valves, actuators, and parts (including non-Cameron brands)
- Handling, storage, packaging, and delivery
- Dedicated stocking program



Comprehensive Services Portfolio

- Parts and spare valves
- Repair
- Field services
- Preventative maintenance
- Equipment testing and diagnostics
- Remanufacturing
- Asset preservation
- Customer property management
- Training and recertification services
- Warranty



Customized Total Valve CareSM (TVC) Programs

Customized asset management plans that optimize uptime, availability, and dedicated services.

- Engineering consultancy
- Site management
- Flange management
- Startup and commissioning
- Spare parts and asset management
- Operational support





3250 Briarpark Drive, Suite 300
Houston, TX 77042
USA
Tel 281 499 8511

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.