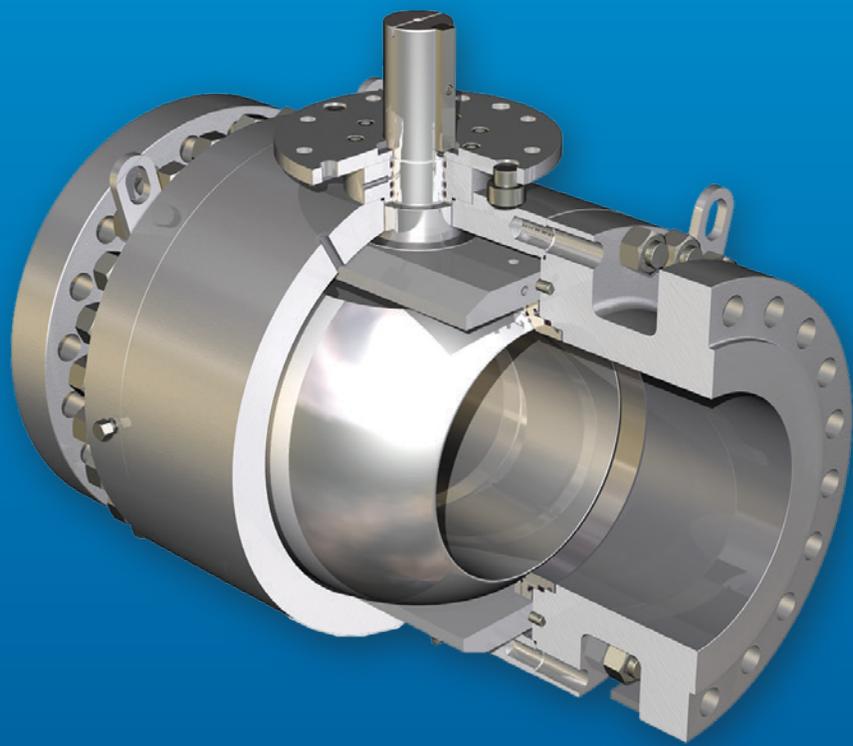




WKM 370D5

Trunnion-mounted ball valves



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WKM 370D5 trunnion-mounted ball valves

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ASME Classes 150, 300, and 600 18, 20, and 24 in [450, 500, and 600 mm]

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Oklahoma City, Oklahoma, USA

WKM 370D5 trunnion- mounted ball valves

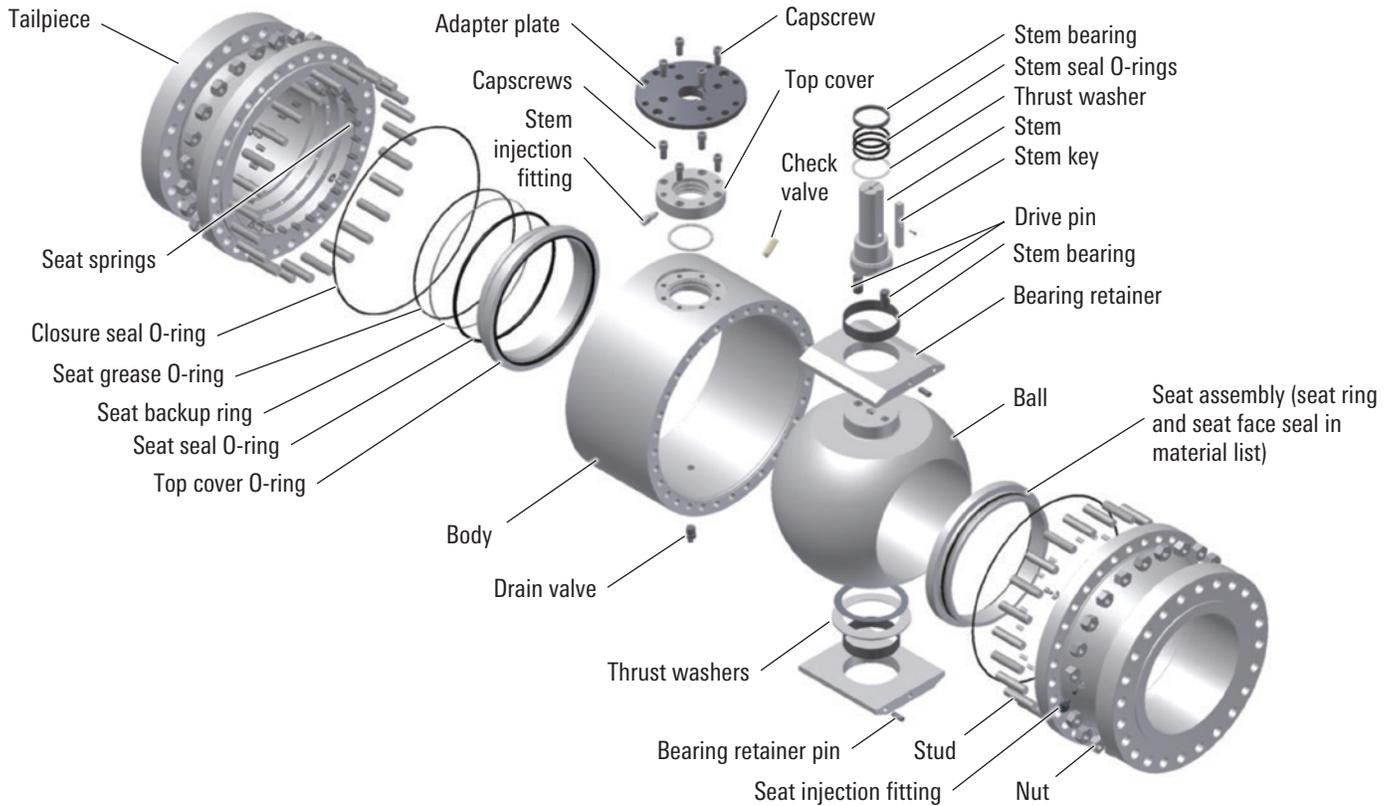
Cameron is a leading provider of valve, valve automation, and measurement systems to the oil and gas industry. We offer products primarily used to control, direct, and measure the flow of oil and gas as it is moved to refineries, petrochemical plants, and industrial centers for processing.

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* valves; NAVCO* floating ball valves; NEWCO* gate, globe, and check valves; DOUGLAS CHERO* forged-steel gate, globe, and check valves; NUTRON* ball valves; THORNHILL CRAVER* choke valves; TOM WHEATLEY* check valves; WHEATLEY* check valves; and WKM* valves.

WKM valves are recognized throughout the world for durable, reliable, and flexible operation in challenging situations. Our portfolio of valves includes gate valves, trunnion-mounted and floating ball valves, and butterfly valves, all built to standards for demanding applications.

ASME Classes 150, 300, and 600 18, 20, and 24 in [450, 500, and 600 mm]

Expanded View



Features and specifications

- Three-piece forged construction
- Double block-and-bleed design
- Stem and seat injection
- Adapter plate for direct mount gear
- Conformance to
 - API Specification 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 trunnion-mounted ball valves with DynaSeal* pressure seals 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]	150	300	600
18 [450]	●	●	●
20 [500]	●	●	●
24 [600]	●	●	●

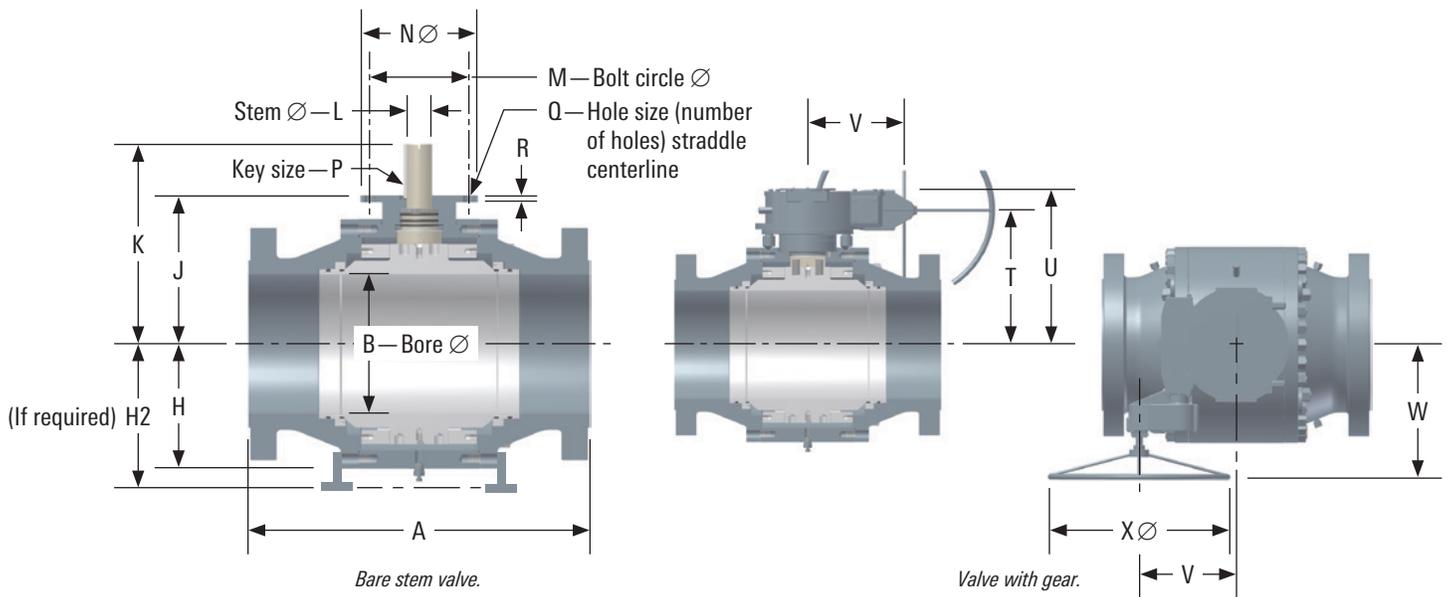
Materials List

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	Stainless steel and filled polytetrafluoroethylene (PTFE)	Stainless steel and filled PTFE
Seat	4130 and 1-mil-thick electroless nickel plating (ENP)	316 stainless steel
Seat springs	X-750	X-750
Seat stop washer	A105	A105
Ball	A105 and 1-mil-thick ENP	CF8M
Stem	4130 and 1-mil-thick ENP	Type 630
Gland bushing	4130 and 1-mil-thick ENP	4130 and 1-mil-thick 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 to 250 degF [-29 to 121 degC]	-20 to 250 degF [-29 to 121 degC]
Face seal	Devlon® V-API material	Devlon V-API material
Thrust washer	Stainless steel and filled PTFE	Stainless steel and 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 and tailpiece O-ring	HNBR	HNBR

Dimensions



Full Port Dimensions

ASME Class 150 Full Port Dimensions, in [mm]

Size, in [mm]	A		B	H	H2	J	K	L	M	N	P	Q	R	T	U	V	W	X
	RF	RJ																
18 [450]	34 [864]	34.49 [876]	17.25 [438.2]	17.07 [433.5]	18.13 [460.5]	19.13 [486]	23.70 [602]	2.953 [74.93]	10.630 [270]	12.60 [320]	0.708 [18]	0.866 (8) [22]	1.31 [33]	24.32 [617.7]	25.70 [652.8]	7.30 [185.5]	20.94 [531.9]	20 [508]
20 [500]	36 [914]	36.50 [927]	19.25 [488.9]	18.15 [461]	25.91 [658]	20.59 [523]	23.90 [607]	2.953 [74.93]	10.630 [270]	12.60 [320]	0.708 [18]	0.866 (8) [22]	0.91 [23]	25.78 [654.8]	27.16 [689.9]	7.30 [185.5]	20.94 [531.9]	24 [610]
24 [600]	42 [1,067]	42.52 [1,080]	23.25 [590.55]	21.46 [545]	31.81 [808]	23.27 [591]	29.65 [753]	3.543 [89.99]	14.173 [360]	16.14 [410]	0.866 [22]	1.063 (8) [27]	0.91 [23]	28.27 [718.1]	29.84 [757.9]	5.93 [150.6]	22.43 [570]	24 [610]

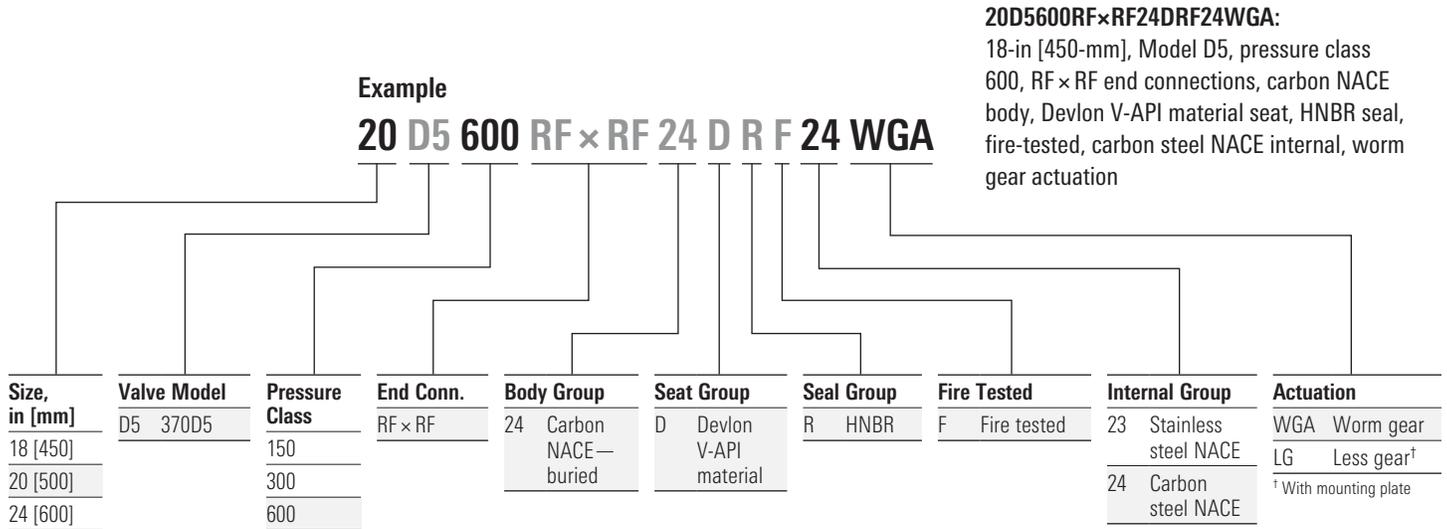
ASME Class 300 Full Port Dimensions, in [mm]

Size, in [mm]	A		B	H	H2	J	K	L	M	N	P	Q	R	T	U	V	W	X
	RF	RJ																
18 [450]	36 [914]	36.61 [930]	17.25 [438.2]	16.67 [423.5]	20.41 [518.5]	19.13 [486]	21.87 [555.5]	2.953 [74.93]	10.630 [270]	12.60 [320]	0.708 [18]	0.866 (8) [22]	1.31 [33]	24.32 [617.7]	25.70 [652.8]	7.30 [185.5]	20.94 [531.9]	30 [762]
20 [500]	39 [991]	39.76 [1,010]	19.25 [488.9]	18.70 [475]	20.47 [520]	20.59 [523]	26.46 [672]	2.953 [74.93]	10.630 [270]	12.60 [320]	0.708 [18]	0.866 (8) [22]	0.91 [23]	25.78 [654.8]	27.16 [686.9]	7.30 [185.5]	20.94 [531.9]	36 [914.4]
24 [600]	45 [1,143]	45.87 [1,165]	23.25 [590.55]	21.93 [557]	25.43 [646]	23.60 [591]	30.30 [769.5]	3.543 [89.99]	14.173 [360]	16.14 [410]	0.866 [22]	1.063 (8) [27]	0.91 [23]	28.60 [726.4]	30.17 [766.3]	5.93 [150.6]	23.57 [598.7]	36 [914.4]

ASME Class 600 Full Port Dimensions, in [mm]

Size, in [mm]	A		B	H	H2	J	K	L	M	N	P	Q	R	T	U	V	W	X
	RF	RJ																
18 [450]	43 [1,092]	43.11 [1,095]	17.25 [438.2]	16.69 [424]	21.46 [545]	19.41 [493]	25 [635]	3.543 [89.99]	14.173 [360]	16.14 [410]	0.866 [22]	1.063 (8) [27]	1.57 [40]	24.41 [620]	25.98 [659.9]	5.93 [150.6]	24.07 [611.4]	30 [762]
20 [500]	47 [1,194]	47.24 [1,200]	19.25 [488.9]	18.70 [475]	20.47 [520]	20.39 [518]	27.46 [697.5]	3.543 [89.99]	14.173 [360]	16.14 [410]	0.866 [22]	1.063 (8) [27]	0.91 [23]	25.39 [644.9]	26.96 [684.8]	5.93 [150.6]	23.57 [598.7]	36 [914.4]
24 [600]	55 [1,397]	55.39 [1,407]	23.25 [590.55]	21.85 [555]	24.51 [622.5]	23.62 [600]	31.69 [805]	4.724 [120]	16.535 [420]	18.90 [480]	1.260 [32]	1.181 (8) [30]	1.10 [28]	28.59 [726.2]	30.78 [781.8]	8.87 [225.3]	27.91 [708.9]	36 [914.4]

How to Order



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

- Valves ordered with worm gears (WGA) are shipped with gears installed, but handwheels are not installed (shipped separately).
- Valves ordered less gear (LG) are shipped 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 prequalified 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’s and user’s responsibility to ensure that a material will be satisfactory in the intended environment. When given the application requirements (environment) by the customer or 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 and C_v Data

Weight (Valve Only, Bare Stem), lbm [kg]			
Size in, [mm]	Valve Pressure Class		
	150	300	600
18 [450]	3,476 [1,577]	3,584 [1,626]	4,553 [2,065]
20 [500]	4,850 [2,200]	5,090 [2,309]	6,340 [2,876]
24 [600]	7,200 [3,266]	7,560 [3,429]	9,430 [4,277]

Weight (Worm Gear Actuator Only), lbm [kg]			
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)			
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 Max. Operating Pressure

Ball Valve Torque Chart						
Size in, [mm]	Gauge Pressure	Torque Expressions		Break Torque	Run Torque	Reseat Torque
	psi	Break Torque, in.lbf	Run Torque, in.lbf	at Max. Pressure, in.lbf	at Max. Pressure, in.lbf	at Max. Pressure, in.lbf
18 (450)	0 to 285	21,440 + (47.35 × P)	10,000 + (30.55 × P)	35,136	19,165	28,109
	286 to 740	21,440 + (47.35 × P)	10,000 + (30.55 × P)	49,392	28,330	39,514
	741 to 1,470	21,440 + (47.35 × P)	10,000 + (30.55 × P)	87,936	52,770	70,349
20 (500)	0 to 285	29,650 + (49.95 × P)	19,201 + (22.4 × P)	41,004	25,585	32,803
	286 to 740	29,650 + (49.95 × P)	19,201 + (22.4 × P)	66,564	35,777	53,251
	741 to 1,480	29,650 + (49.95 × P)	19,201 + (22.4 × P)	104,184	52,353	83,347
24 (600)	0 to 285	50,282 + (65.52 × P)	25,613 + (38.5 × P)	67,956	36,586	54,365
	286 to 740	50,282 + (65.52 × P)	25,613 + (38.5 × P)	100,404	54,103	80,323
	741 to 1,480	50,282 + (65.52 × P)	25,613 + (38.5 × P)	148,224	82,593	118,579

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

The above torque values do not contain service factors.

Soaking effects, particle matter, or both 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 gauge pressure of 1,000 psi uses the torque equations that correspond to the 751- to 1,500-psi gauge pressure range.

The reseal 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 and -50 degF [-29 and -46 degC], multiply these values by 1.20.

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

Aftermarket Services for Valves and Actuation

Cameron is well positioned to quickly and efficiently deliver total aftermarket support with unmatched OEM expertise. Our highly skilled engineers and technicians are available around the clock 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 aftermarket 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 care programs

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



WKM 370D5



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