



## WKM 370D6 Trunnion-Mounted Ball Valves

Designed and engineered for heavy-duty performance in general purpose petroleum and chemical process applications

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# WKM 370D6 Trunnion- Mounted Ball Valve

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.

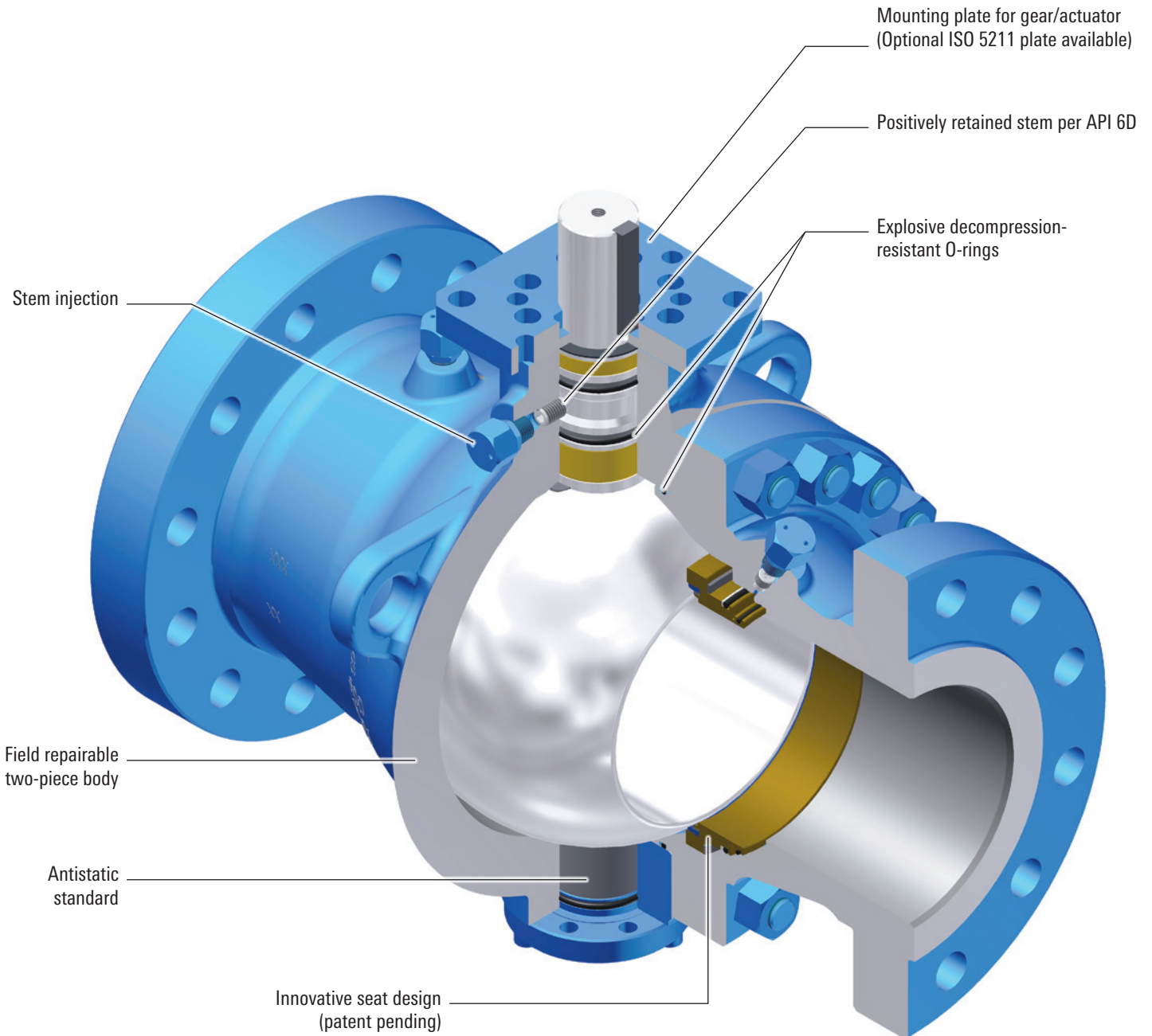
We provide valve products that are sold through distributor networks worldwide. Our products are used in oil, gas, and industrial applications, and include widely recognized brands such as DEMCO\*, NAVCO\*, NEWCO\*, DOUGLAS CHERO\*, NUTRON\*, THORNHILL CRAVER\*, TECHNO\*, TOM WHEATLEY\*, WHEATLEY\*,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

The WKM\* 370D6 trunnion-mounted ball valve 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 through 2500

2 to 16 in [50 to 400 mm]

WKM 370D6 ball valves are designed and engineered for heavy-duty performance. Used in many general purpose petroleum and chemical process applications, these valves also can be specified for more demanding applications.



## Features and benefits

### Fire-tested for safety

The WKM 370D6 ball valves are qualified under API 607 standards.

### Actuation-friendly

Valves can come with a DYNATORQUE\* gear operator or an ISO 5211 mounting pad for easy actuation.

### End connections

Flanged; 2-, 3-, and 4-in Class 150 come in flanged × studded or flanged × flanged configuration

### Body style

Two-piece

### Standard materials

Carbon steel, stainless steel, and low-temperature carbon steel

### Optional stem materials

316 SS, 410 SS, 4130 LAS, and INCONEL<sup>†</sup>

### Double block-and-bleed operation

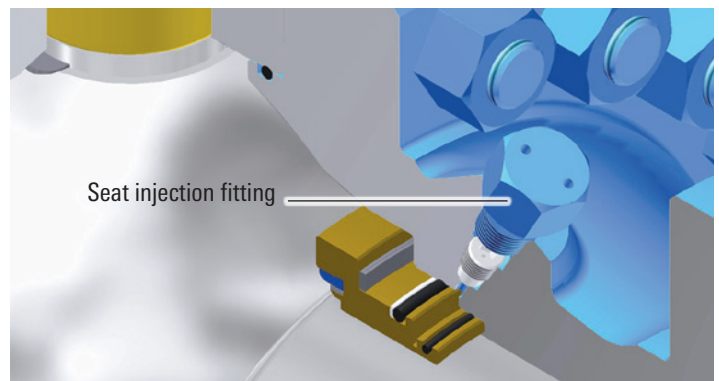
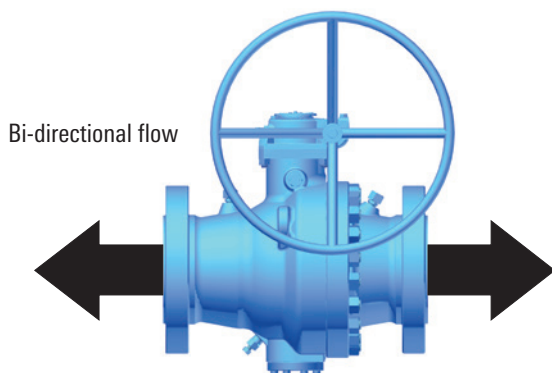
The pressure-actuated seats and bleed fittings allow double block-and-bleed operation. When used for block-and-bleed, this feature may permit the valve to take the place of two valves. It also allows the operator to check up and downstream sealing by bleeding off the body pressure. All sizes can block-and-bleed in both the open and closed position.

### NACE trim standard<sup>†</sup>

Compliant with NACE MR0175/ISO 15156 for buried service.

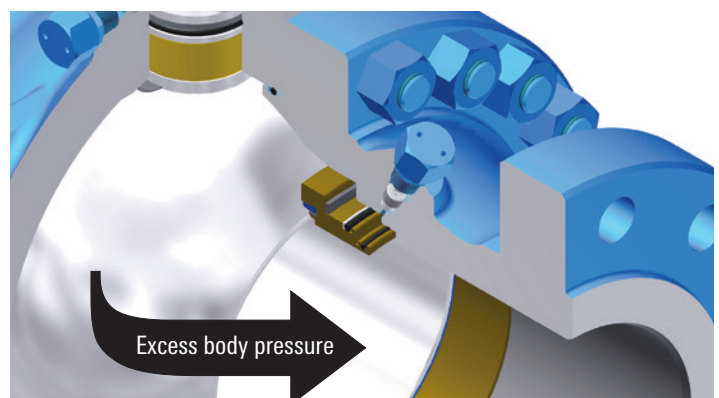
### Bi-directional flow

This valve uses pressure-actuated seats with locked-in, non-metallic face seals. To help ensure sealing at low pressure, special wave springs force the seats against the ball. At higher pressures, the upstream seat is forced against the ball by the pressure working across the differential area between the seat insert and the seat O-ring. The higher the pressure, the tighter the seal.



### Secondary seat seal injection

In the event of damage to the valve seat, sealant can be injected to temporarily seal the valve.

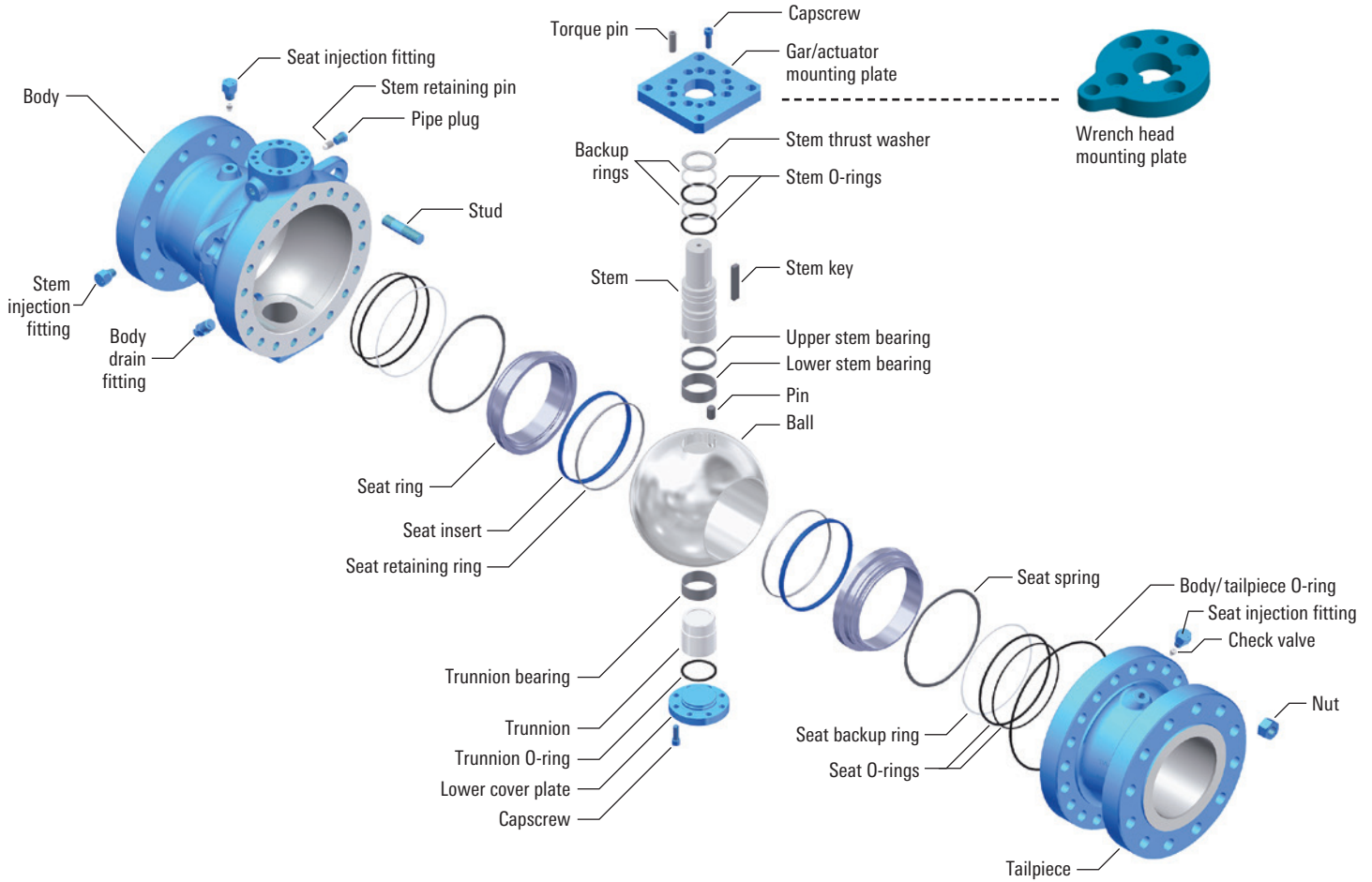


### Automatic body pressure relief

Seats will internally relieve excess body pressure.

<sup>†</sup> 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 to meet metallurgical requirements and the customer's/user's 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.

## Standards and specifications



### Design and testing standards:

- API 6D
- API 598
- API 608
- API 607 6th Ed. fire-test
- NACE MR0175/ISO 15156
- ASME B16.34 (valves, flange end)
- MSS-SP-6 (standard finishes for pipe flanges)
- MSS-SP-25 (standard marking system for valves)
- MSS-SP-55 (quality standards for steel castings)

In addition, WKM 370D6 trunnion mounted ball valves can be supplied to comply with these standards:

- CE/PED
- ISO 5211 top works
- CRN

### ASME Pressure Classes

Size, in	Size, mm	ASME Class					
		150	300	600	900	1500	2500
2	50	•	•	•	•	•	•
3 × 2	80 × 50	–	–	•	•	–	–
3	80	•	•	•	•	•	•
4 × 3	100 × 80	–	–	•	•	–	–
4	100	•	•	•	•	•	•
6 × 4	150 × 100	•	•	•	•	•	•
6	150	•	•	•	•	•	–
8 × 6	200 × 150	•	•	•	•	•	–
8	200	•	•	•	•	–	–
10 × 8	250 × 200	•	•	•	•	–	–
10	250	•	•	•	•	–	–
12 × 10	300 × 250	•	•	•	•	–	–
12	300	•	•	•	•	–	–
14	350	•	•	•	–	–	–
16	400	•	•	•	–	–	–

## Materials list

<b>Body Group Trim Number</b>				
<b>Part</b>	<b>Carbon Steel (NACE) 24</b>	<b>Carbon Steel Low Temp. (NACE) 37</b>	<b>Stainless Steel (NACE) 23</b>	<b>Carbon Steel 3 mil ENP (NACE) 27</b>
Body	A216 Gr. WCC	A352 Gr. LCC	A351 Gr. CF8M	N/A
Tailpiece	A216 Gr. WCC	A352 Gr. LCC	A351 Gr. CF8M	N/A
Lower cover plate	Carbon steel	A350 Gr. LF2	316 SS	N/A
Studs	A320 Gr. L7M zinc plate	A320 Gr. L7M zinc plate	A320 Gr. L7M zinc plate	N/A
Nuts	A194 Gr. 7ML zinc plate	A194 Gr. 7ML zinc plate	A194 Gr. 7ML zinc plate	N/A
Capscrews	L7M	L7M	L7M	N/A
Pipe plug	Stainless steel	Stainless steel	Stainless steel	N/A
Adapter plate	Carbon steel	A350 Gr LF2	A350 Gr. LF2	N/A

NACE indicates compliance with NACE MR0175/ISO 15156.

<b>Internal Group Trim Number</b>				
Ball	A216 Gr. WCC/A105 CS ENP	A352 Gr. LCC/A350 Gr. LF2 ENP	A182 Gr. 316/A351 Gr. CF8M	A216 Gr. WCC/A105 CS 3 mil ENP
Stem drive pin	Alloy steel	Alloy steel	316 SS	Alloy steel
Stem/trunnion	A105 CS ENP	A350 Gr. LF2 ENP	A182 Gr. 316 SS	A105 CS 3 mil ENP
Seat rings	A 216 Gr. WCC/A105 CS ENP	A352 Gr. LCC/A350 Gr. LF2 ENP	A182 Gr. 316/A351 Gr. CF8M	A216 Gr. WCC/A105 CS 3 mil ENP
Seat spring	B637 N07500	B637 N07500	B637 N07500	B637 N07500
Stem and trunnion bearings	CS/filled PTFE	CS/filled PTFE	CS/filled PTFE <sup>†</sup>	CS/filled PTFE
Thrust washer	CS/filled PTFE	CS/filled PTFE	CS/filled PTFE <sup>†</sup>	CS/filled PTFE
Ground spring	Stainless steel	Stainless steel	Stainless steel	Stainless steel

Note: Trim 24 is suitable for ambient temperatures from -20 to 400 degF [-29 to 204 degC].

Trim 23 and 37 are suitable for ambient temperatures from -50 to 400 degF [-46 to 204 degC] (must be combined with appropriate seal code).

<sup>†</sup> 23-23 full stainless steel gets stainless steel thrust washer and bearings.

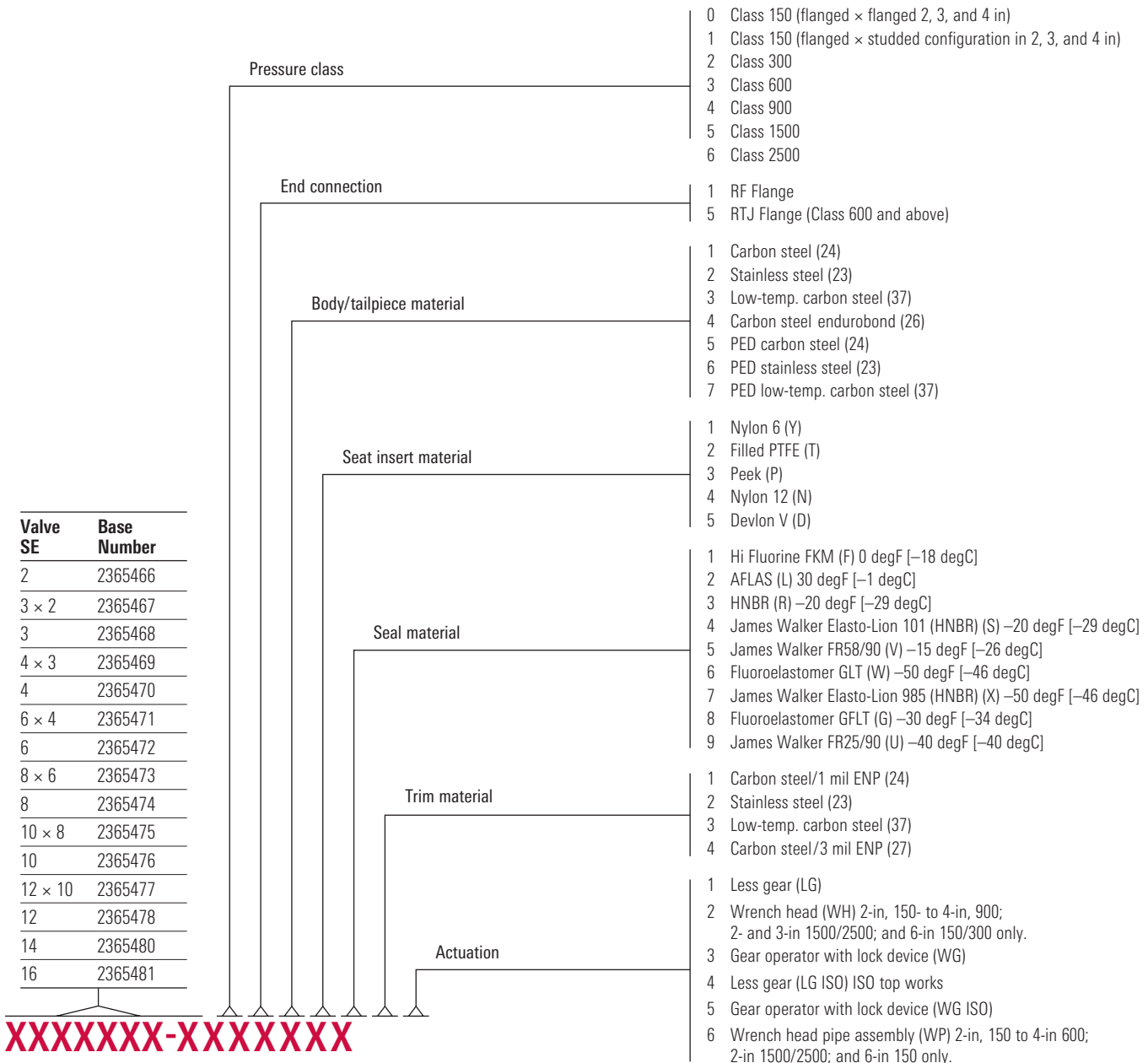
<b>Seal Group Trim Code</b>				
<b>Part</b>	<b>YXF<sup>†</sup> Fire-Tested</b>	<b>TFF Classes 150 through 600 Fire-Tested</b>	<b>YRF Fire-Tested</b>	<b>PWF<sup>†</sup> Fire-Tested</b>
Temperature limits	-50 <sup>†</sup> to 250 degF [-46 to 121 degC]	0 to 350 degF [-18 to 177 degC]	-20 to 250 degF [-29 to 121 degC]	-50 <sup>†</sup> to 350 degF [-46 to 177 degC]
Seat face seals	Nylon (N6)	Filled PTFE	Nylon (N6)	PEEK
Stem seal O-rings	JW HNBR	FKM	HNBR	FKM GLT
Body/tailpiece O-rings	JW HNBR	FKM	HNBR	FKM GLT
Seat O-rings	JW HNBR	FKM	HNBR	FKM GLT
Trunnion O-ring	JW HNBR	FKM	HNBR	FKM GLT
Backup rings	Nylon/PEEK	PEEK	Nylon/PEEK	PEEK

<sup>†</sup> When combined with trim 23 or 37, body and internal group code. Consult Cameron for a complete list of trim temperature ranges.

## Trim codes

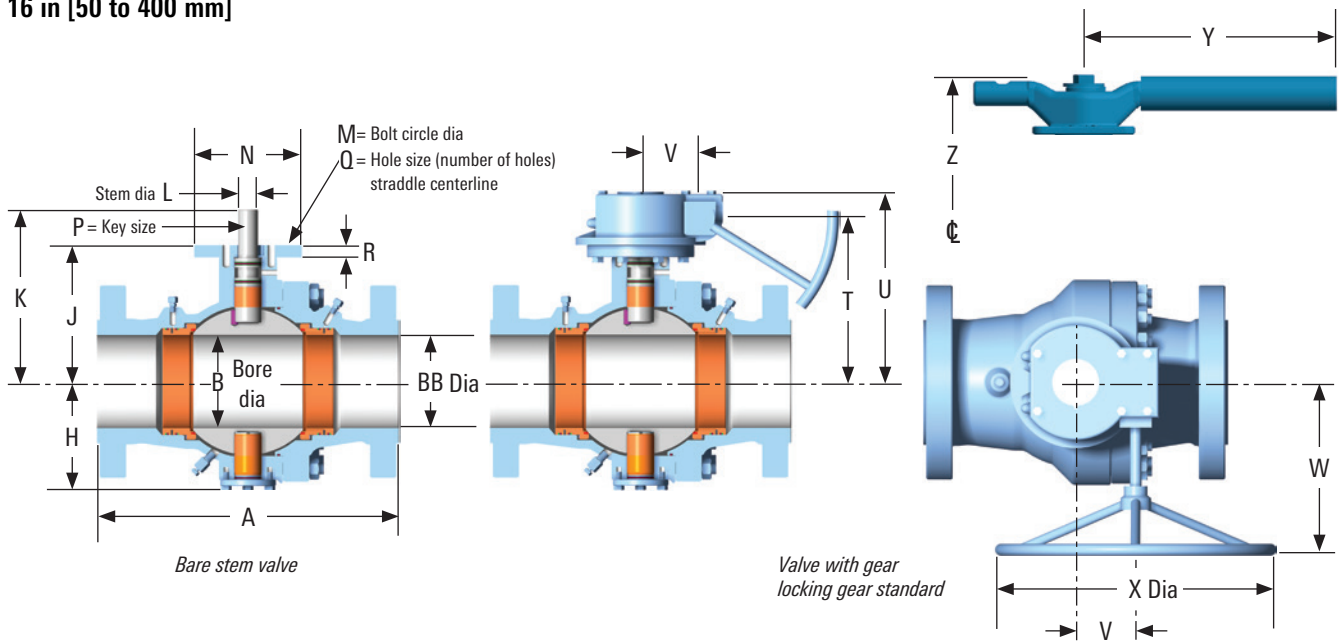
2	D6	600	RF × RF	24	Y	R	F	24	LG		
Size, in [mm]	Valve model	Pressure class	End connections	Body group	Seat group	Seal group	Fire-tested	Internal group	Actuation		
2 to 16 in [50 to 400 mm]	370D6	150 to 2500	Stainless steel NACE	23	Devlon	FKM	F	Stainless steel NACE	Less gear	LG	
	370D6P-PED		Carbon steel NACE	24		James 985	X		Carbon steel NACE	24	Worm gear
			Carbon low temp NACE	37	Nylon 6	HNBR	R	3 mil ENP carbon steel NACE	27	Wrench head	WH
					Filled PTFE	James Walker 101	S	Low-temp. carbon steel NACE	37		
					PEEK	FKM GLT	W				
						James Walker FR58	V				

## Part number code/how to order





**ASME Class 150 dimensions**  
**2 to 16 in [50 to 400 mm]**

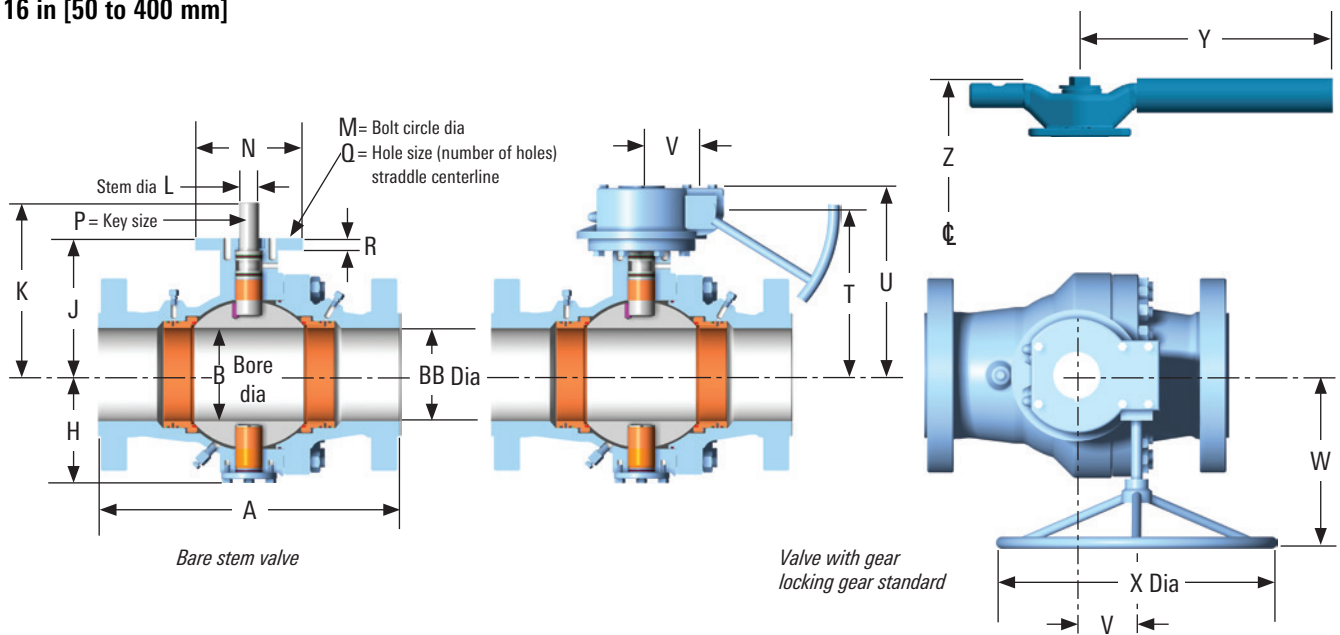


**Dimensions**

Size, in [mm]	A		B	BB	H	J	K	L	M†	N†	P	Q†	R	T	U	V	W	X	Y	Z
	RF	RJ																		
2 [50]	7.00 [178]	-	2.00 [51]	2.00 [51]	4.31 [109.5]	4.67 [118.6]	6.31 [160.3]	0.862 [21.8]	4.016 [102.00]	4.90 [124.4]	0.318 [8.08]	0.43-[4]	0.59 [14.99]	5.77 [146.6]	7.32 [185.9]	1.75 [44.5]	9.06 [230.12]	6.00 [154.4]	7.7 [196]	6.7 [170]
3 [80]	8.00 [203]	-	3.00 [76]	3.00 [76]	5.19 [131.8]	5.54 [140.7]	7.14 [181.4]	1.098 [27.89]	4.016 [102.00]	4.90 [124.4]	0.318 [8.08]	0.43-[4]	0.59 [14.99]	6.64 [168.7]	8.19 [208.0]	1.75 [44.5]	9.06 [230.12]	6.00 [154.4]	13.7 [348]	7.5 [191]
4 [100]	9.00 [229]	-	4.00 [102]	4.00 [102]	6.65 [168.9]	7.11 [180.6]	9.14 [232.2]	1.413 [35.89]	5.512 [140.00]	6.90 [175.00]	0.398 [10.11]	0.67-[4]	0.77 [19.56]	8.48 [215.4]	10.18 [258.6]	2.51 [63.8]	9.06 [230.12]	6.00 [154.4]	23.9 [607]	9.6 [244]
6 × 4 [150 × 100]	15.50 [394]	-	4.00 [102]	6.00 [152]	6.65 [168.9]	7.11 [180.6]	9.14 [232.2]	1.413 [35.89]	5.512 [140.00]	6.90 [175.00]	0.398 [10.11]	0.67-[4]	0.77 [19.56]	8.48 [215.4]	10.18 [258.6]	2.51 [63.8]	9.06 [230.12]	6.00 [154.4]	-	-
6 [150]	15.50 [394]	-	6.00 [152]	6.00 [152]	8.25 [209.5]	9.17 [232.9]	11.50 [292.1]	1.650 [41.91]	6.00 [152.40]	7.00 [177.8]	0.476 [12.09]	0.56-[4]	0.84 [21.3]	10.54 [267.7]	12.24 [310.9]	2.51 [63.8]	12.19 [309.6]	12.00 [304.8]	38.2 [970]	11.9 [302]
8 × 6 [200 × 150]	18.00 [457]	-	6.00 [152]	8.00 [203]	8.25 [209.5]	9.17 [232.9]	11.50 [292.1]	1.650 [41.91]	6.00 [152.40]	7.00 [177.8]	0.476 [12.09]	0.56-[4]	0.84 [21.3]	10.54 [267.7]	12.24 [310.9]	2.51 [63.8]	12.19 [309.6]	12.00 [304.8]	-	-
8 [200]	18.00 [457]	-	8.00 [203]	8.00 [203]	10.06 [255.5]	11.52 [292.6]	14.00 [355.6]	1.886 [47.90]	6.496 [165.00]	8.00 [203.2]	0.556 [14.12]	0.81-[4]	0.94 [23.88]	13.02 [330.7]	14.79 [375.7]	3.00 [76.2]	12.19 [309.6]	16.00 [406.4]	-	-
10 × 8 [250 × 200]	21.00 [533]	-	8.00 [203]	10.00 [254]	10.06 [255.5]	11.52 [292.6]	14.00 [355.6]	1.886 [47.90]	6.496 [165.00]	8.00 [203.2]	0.556 [14.12]	0.81-[4]	0.94 [23.88]	13.02 [330.7]	14.79 [375.7]	3.00 [76.2]	12.19 [309.6]	16.00 [406.4]	-	-
10 [250]	21.00 [533]	-	10.00 [254]	10.00 [254]	12.00 [304.8]	13.42 [340.9]	16.52 [419.6]	2.357 [59.87]	8.00 [203.20]	9.50 [241.3]	0.712 [18.08]	0.81-[4]	0.94 [23.9]	15.30 [388.6]	17.28 [438.9]	3.63 [92.08]	14.94 [379.5]	20.00 [508.0]	-	-
12 × 10 [300 × 250]	24.00 [610]	-	10.00 [254]	12.00 [305]	12.00 [304.8]	13.42 [340.9]	16.52 [419.6]	2.357 [59.87]	8.00 [203.20]	9.50 [241.3]	0.712 [18.08]	0.81-[4]	0.94 [23.9]	15.30 [388.6]	17.28 [438.9]	3.63 [92.08]	14.94 [379.5]	20.00 [508.0]	-	-
12 [300]	24.00 [610]	-	12.00 [305]	12.00 [305]	13.27 [337.0]	14.85 [377.2]	19.75 [501.6]	2.357 [59.87]	8.00 [203.20]	9.50 [241.3]	0.712 [18.08]	0.81-[4]	0.94 [23.9]	16.73 [424.9]	18.71 [475.2]	3.63 [92.08]	14.94 [379.5]	20.00 [508.0]	-	-
14 [350]	27.00 [686]	-	13.25 [337]	13.25 [337]	15.28 [388.1]	16.97 [431.0]	21.04 [534.4]	2.830 [71.88]	10.00 [254.00]	11.90 [302.00]	0.792 [20.12]	0.67-[8]	1.25 [31.80]	19.22 [488.2]	21.68 [550.7]	4.63 [117.5]	18.09 [459.5]	24.00 [609.6]	-	-
16 [400]	30.00 [762]	-	15.25 [387]	15.25 [387]	16.91 [429.5]	18.6 [472.4]	22.67 [575.8]	2.830 [71.88]	10.00 [254.00]	11.90 [302.00]	0.792 [20.12]	0.67-[8]	1.25 [31.80]	20.85 [529.6]	23.31 [592.1]	4.63 [117.5]	19.72 [500.9]	30.00 [762.0]	-	-

†M, N, and Q dimensions are for less gear and with gear configurations only.

**ASME Class 300 dimensions**  
**2 to 16 in [50 to 400 mm]**

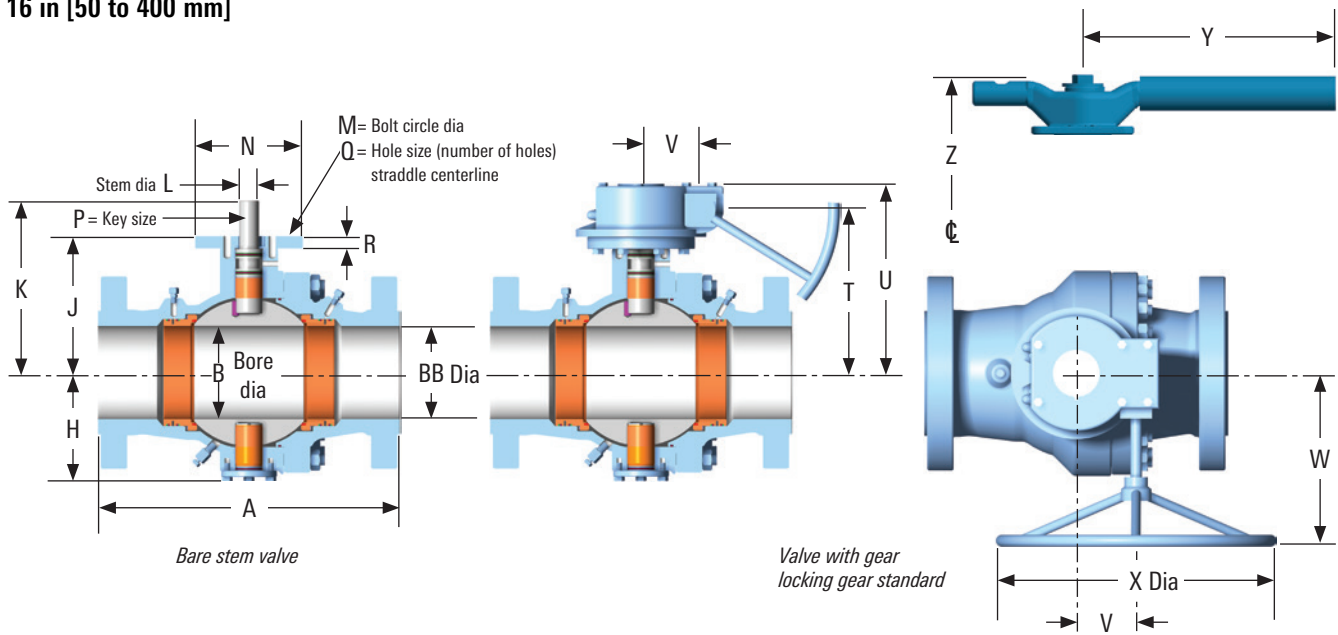


**Dimensions**

Size, in [mm]	A RF	B RJ	B	BB	H	J	K	L	M*	N*	P	Q*	R	T	U	V	W	X	Y	Z
2 [50]	8.50 [216]	-	2.00 [51]	2.00 [51]	4.31 [109.5]	4.67 [118.6]	6.31 [160.3]	1.098 [27.89]	4.016 [102.00]	4.90 [124.4]	0.318 [8.08]	0.43-[4]	0.59 [14.99]	5.77 [146.6]	7.32 [185.9]	1.75 [44.5]	9.06 [230.12]	6.00 [154.4]	13.7 [348]	6.7 [170]
3 [80]	11.12 [282]	-	3.00 [76]	3.00 [76]	5.19 [131.8]	5.54 [140.7]	7.14 [181.4]	1.098 [27.89]	4.016 [102.00]	4.90 [124.4]	0.318 [8.08]	0.43-[4]	0.59 [14.99]	6.64 [168.7]	8.19 [208.0]	1.75 [44.5]	9.06 [230.12]	6.00 [154.4]	19.7 [500]	7.5 [191]
4 [100]	12.00 [305]	-	4.00 [102]	4.00 [102]	6.65 [168.9]	7.11 [180.6]	9.14 [232.2]	1.413 [35.89]	5.512 [140.00]	6.90 [175.00]	0.398 [10.11]	0.67-[4]	0.77 [19.56]	8.48 [215.4]	10.18 [258.6]	2.51 [63.8]	9.06 [230.12]	6.00 [154.4]	31.9 [810]	9.6 [244]
6 × 4 [150 × 100]	15.88 [403]	-	4.00 [102]	6.00 [152]	6.65 [168.9]	7.11 [180.6]	9.14 [232.2]	1.413 [35.89]	5.512 [140.00]	6.90 [175.00]	0.398 [10.11]	0.67-[4]	0.77 [19.56]	8.48 [215.4]	10.18 [258.6]	2.51 [63.8]	9.06 [230.12]	6.00 [154.4]	-	-
6 [150]	15.88 [403]	-	6.00 [152]	6.00 [152]	8.25 [209.5]	9.17 [232.9]	11.50 [292.1]	1.650 [41.91]	6.00 [152.40]	7.00 [177.8]	0.476 [12.09]	0.56-[4]	0.84 [21.3]	10.54 [267.7]	12.24 [310.9]	2.51 [63.8]	12.19 [309.6]	12.00 [304.8]	-	-
8 × 6 [200 × 150]	19.75 [502]	-	6.00 [152]	8.00 [203]	8.25 [209.5]	9.17 [232.9]	11.50 [292.1]	1.650 [41.91]	6.00 [152.40]	7.00 [177.8]	0.476 [12.09]	0.56-[4]	0.84 [21.3]	10.54 [267.7]	12.24 [310.9]	2.51 [63.8]	12.19 [309.6]	304.8	-	-
8 [200]	19.75 [502]	-	8.00 [203]	8.00 [203]	10.45 [265.4]	11.85 [301.0]	14.95 [379.7]	2.357 [59.87]	8.00 [203.20]	9.50 [241.3]	0.712 [18.08]	0.81-[4]	0.94 [23.88]	13.73 [348.7]	15.71 [399.0]	3.63 [92.08]	13.81 [350.8]	16.00 [406.4]	-	-
10 × 8 [250 × 200]	22.38 [568]	-	8.00 [203]	10.00 [254]	10.45 [265.4]	11.85 [301.0]	14.95 [379.7]	2.357 [59.87]	8.00 [203.20]	9.50 [241.3]	0.712 [18.08]	0.81-[4]	0.94 [23.88]	13.73 [348.7]	15.71 [399.0]	3.63 [92.08]	13.81 [350.8]	16.00 [406.4]	-	-
10 [250]	22.38 [568]	-	10.00 [254]	10.00 [254]	12.00 [304.8]	13.42 [340.9]	16.52 [419.6]	2.357 [59.87]	8.00 [203.20]	9.50 [241.3]	0.712 [18.08]	0.81-[4]	0.94 [23.9]	15.30 [388.6]	17.28 [438.9]	3.63 [92.08]	14.94 [379.5]	20.00 [508.0]	-	-
12 × 10 [300 × 250]	25.50 [648]	-	10.00 [254]	12.00 [305]	12.00 [304.8]	13.42 [340.9]	16.52 [419.6]	2.357 [59.87]	8.00 [203.20]	9.50 [241.3]	0.712 [18.08]	0.81-[4]	0.94 [23.9]	15.30 [388.6]	17.28 [438.9]	3.63 [92.08]	14.94 [379.5]	20.00 [508.0]	-	-
12 [300]	25.50 [648]	-	12.00 [305]	12.00 [305]	14.41 [366.0]	16.10 [408.9]	20.17 [512.3]	2.830 [71.88]	10.00 [254.00]	9.50 [241.3]	0.792 [20.12]	0.67-[8]	1.25 [31.80]	18.35 [466.1]	20.81 [528.6]	4.63 [117.5]	18.09 [459.5]	24.00 [609.6]	-	-
14 [350]	30.00 [762]	-	13.25 [337]	13.25 [337]	15.28 [388.1]	16.97 [431.0]	21.04 [534.4]	2.830 [71.88]	10.00 [254.00]	11.90 [302.00]	0.792 [20.12]	0.67-[8]	1.25 [31.80]	19.22 [488.2]	21.68 [550.7]	4.63 [117.5]	19.72 [500.9]	30.00 [762.0]	-	-
16 [400]	33.00 [838]	-	15.25 [387]	15.25 [387]	18.18 [461.8]	19.89 [505.2]	24.46 [621.3]	3.145 [79.88]	10.375 [263.53]	12.00 [305.00]	0.87 [22.10]	0.67-[8]	1.27 [32.3]	25.01 [635.3]	26.40 [670.6]	5.67 [144.1]	19.78 [502.4]	20.00 [508.0]	-	-

\*M, N, and Q dimensions are for less gear and with gear configurations only.

**ASME Class 600 dimensions**  
**2 to 16 in [50 to 400 mm]**

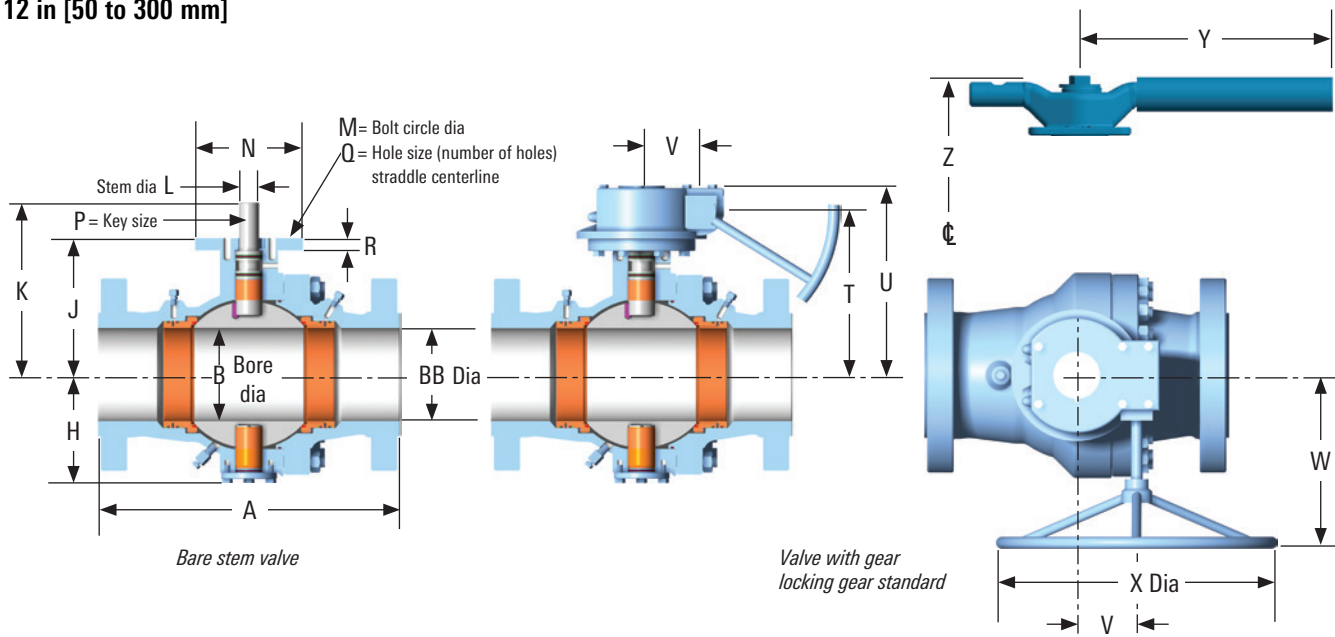


**Dimensions**

Size, in [mm]	A		B	BB	H	J	K	L	M*	N*	P	Q*	R	T	U	V	W	X	Y	Z
	RF	RJ																		
2 [50]	11.50 [292]	11.62 [295]	2.00 [51]	2.00 [51]	4.31 [109.5]	4.67 [118.6]	6.31 [160.3]	1.098 [27.89]	4.016 [102.00]	4.90 [124.4]	0.318 [8.08]	0.43-14 [14.99]	0.59 [14.99]	5.77 [146.6]	7.32 [185.9]	1.75 [44.5]	9.06 [230.12]	6.00 [154.4]	13.7 [348]	6.7 [170]
3 × 2 [80 × 50]	14.00 [356]	14.12 [359]	2.00 [51]	3.00 [76]	4.31 [109.5]	4.67 [118.6]	6.31 [160.3]	1.098 [27.89]	4.016 [102.00]	4.90 [124.4]	0.318 [8.08]	0.43-14 [14.99]	0.59 [14.99]	5.77 [146.6]	7.32 [185.9]	1.75 [44.5]	9.06 [230.12]	6.00 [154.4]	-	-
3 [80]	14.00 [356]	14.12 [359]	3.00 [76]	3.00 [76]	5.84 [148.3]	6.23 [158.2]	8.27 [210.1]	1.413 [35.89]	5.512 [140.00]	6.90 [175.00]	0.398 [10.11]	0.67-14 [19.56]	0.77 [19.56]	7.60 [193.0]	9.30 [236.2]	2.51 [63.8]	9.06 [230.12]	6.00 [154.4]	31.9 [810]	8.7 [221]
4 × 3 [100 × 80]	17.00 [432]	17.12 [435]	3.00 [76]	4.00 [102]	5.84 [148.3]	6.23 [158.2]	8.27 [210.1]	1.413 [35.89]	5.512 [140.00]	6.90 [175.00]	0.398 [10.11]	0.67-14 [19.56]	0.77 [19.56]	7.60 [193.0]	9.30 [236.2]	2.51 [63.8]	9.06 [230.12]	6.00 [154.4]	-	-
4 [100]	17.00 [432]	17.12 [435]	4.00 [102]	4.00 [102]	7.02 [178.3]	7.77 [197.4]	10.10 [256.5]	1.650 [41.91]	6.00 [152.40]	7.00 [177.8]	0.476 [12.09]	0.56-14 [21.3]	0.84 [21.3]	9.14 [232.2]	10.84 [275.3]	2.51 [63.8]	12.19 [309.6]	12.00 [304.8]	45.2 [1,148]	10.6 [269]
6 × 4 [150 × 100]	22.00 [559]	22.12 [562]	4.00 [102]	6.00 [152]	7.02 [178.3]	7.77 [197.4]	10.10 [256.5]	1.650 [41.91]	6.00 [152.40]	7.00 [177.8]	0.476 [12.09]	0.56-14 [21.3]	0.84 [21.3]	9.14 [232.2]	10.84 [275.3]	2.51 [63.8]	12.19 [309.6]	12.00 [304.8]	-	-
6 [150]	22.00 [559]	22.12 [562]	6.00 [152]	6.00 [152]	8.87 [225.3]	10.04 [255.0]	12.53 [318.3]	1.886 [47.90]	6.496 [165.00]	8.00 [203.2]	0.556 [14.12]	0.81-14 [23.88]	0.94 [23.88]	11.54 [293.1]	13.31 [338.1]	3.00 [76.2]	13.31 [338.1]	20.00 [508.0]	-	-
8 × 6 [200 × 150]	26.00 [660]	26.12 [663]	6.00 [152]	8.00 [203]	8.87 [225.3]	10.04 [255.0]	12.53 [318.3]	1.886 [47.90]	6.496 [165.00]	8.00 [203.2]	0.556 [14.12]	0.81-14 [23.88]	0.94 [23.88]	11.54 [293.1]	13.31 [338.1]	3.00 [76.2]	13.31 [338.1]	20.00 [508.0]	-	-
8 [200]	26.00 [660]	26.12 [663]	8.00 [203]	8.00 [203]	10.45 [265.4]	11.85 [301.1]	14.95 [379.7]	2.357 [59.87]	8.00 [203.20]	9.50 [241.3]	0.712 [18.08]	0.81-14 [23.9]	0.94 [23.9]	13.73 [348.7]	15.71 [399.0]	3.63 [92.08]	16.44 [417.6]	24.00 [609.6]	-	-
10 × 8 [250 × 200]	31.00 [787]	31.12 [790]	8.00 [203]	10.00 [254]	10.45 [265.4]	11.85 [301.1]	14.95 [379.7]	2.357 [59.87]	8.00 [203.20]	9.50 [241.3]	0.712 [18.08]	0.81-14 [23.9]	0.94 [23.9]	13.73 [348.7]	15.71 [399.0]	3.63 [92.08]	16.44 [417.6]	24.00 [609.6]	-	-
10 [250]	31.00 [787]	31.12 [790]	10.00 [254]	10.00 [254]	12.91 [327.9]	14.53 [369.1]	18.60 [472.4]	2.830 [71.88]	10.00 [254.00]	11.90 [302.00]	0.792 [20.12]	0.67-18 [20.12]	1.25 [31.80]	16.78 [426.2]	19.24 [488.7]	4.63 [117.5]	19.72 [500.9]	30.00 [762.0]	-	-
12 × 10 [300 × 250]	33.00 [838]	33.12 [841]	10.00 [254]	12.00 [305]	12.91 [327.9]	14.53 [369.1]	18.60 [472.4]	2.830 [71.88]	10.00 [254.00]	11.90 [302.00]	0.792 [20.12]	0.67-18 [20.12]	1.25 [31.80]	16.78 [426.2]	19.24 [488.7]	4.63 [117.5]	19.72 [500.9]	30.00 [762.0]	-	-
12 [300]	33.00 [838]	33.12 [841]	12.00 [305]	12.00 [305]	14.41 [366.0]	16.1 [408.9]	20.17 [512.3]	2.830 [71.88]	10.00 [254.00]	11.90 [302.00]	0.792 [20.12]	0.67-18 [20.12]	1.25 [31.80]	18.35 [466.1]	20.81 [528.6]	4.63 [117.5]	19.72 [500.9]	30.00 [762.0]	-	-
14 [350]	35.00 [889]	35.12 [892]	13.25 [337]	13.25 [337]	16.55 [420.4]	18.54 [470.9]	22.84 [580.1]	3.145 [79.88]	10.375 [263.53]	12.00 [305.00]	0.87 [22.10]	0.67-18 [22.10]	1.27 [32.3]	23.66 [601.0]	25.05 [636.3]	5.67 [144.1]	21.28 [540.5]	24.00 [609.6]	-	-
16 [400]	39.00 [991]	39.12 [994]	15.25 [387]	15.25 [387]	18.37 [466.6]	20.17 [512.3]	25.64 [651.3]	3.852 [97.84]	11.732 [298.00]	13.70 [348.00]	1.106 [28.09]	0.83-18 [28.09]	1.36 [34.5]	25.36 [644.1]	26.74 [679.2]	7.30 [185.5]	22.59 [573.8]	30.00 [762.0]	-	-

\*M, N, and Q dimensions are for less gear and with gear configurations only.

**ASME Class 900 dimensions**  
**2 to 12 in [50 to 300 mm]**

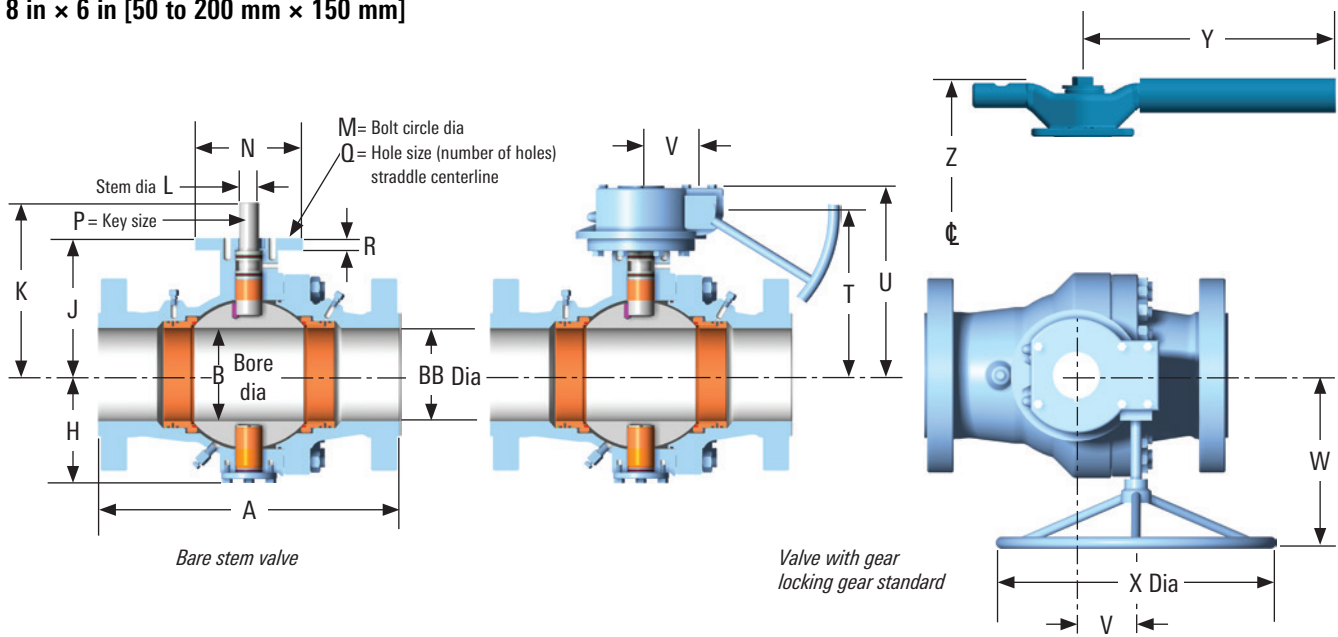


**Dimensions**

Size, in [mm]	A		B	BB	H	J	K	L	M*	N*	P	Q*	R	T	U	V	W	X	Y	Z
	RF	RJ																		
2 [50]	14.50 [368]	14.62 [371]	2.00 [51]	2.00 [51]	4.31 [109.5]	4.67 [118.6]	6.31 [160.3]	1.098 [27.89]	4.016 [102.00]	4.90 [124.4]	0.318 [8.08]	0.43-[4]	0.59 [14.99]	5.77 [146.6]	7.32 [185.9]	1.75 [44.5]	9.06 [230.12]	6.00 [154.4]	19.7 [500]	6.7 [170]
3 × 2 [80 × 50]	15.00 [381]	15.12 [384]	2.00 [51]	3.00 [76]	4.31 [109.5]	4.67 [118.6]	6.31 [160.3]	1.098 [27.89]	4.016 [102.00]	4.90 [124.4]	0.318 [8.08]	0.43-[4]	0.59 [14.99]	5.77 [146.6]	7.32 [185.9]	1.75 [44.5]	9.06 [230.12]	6.00 [154.4]	-	-
3 [80]	15.00 [381]	15.12 [384]	3.00 [76]	3.00 [76]	5.84 [148.3]	6.23 [158.2]	8.27 [210.1]	1.413 [35.89]	5.512 [140.00]	6.90 [175.00]	0.398 [10.11]	0.67-[4]	0.77 [19.56]	7.60 [193.0]	9.30 [236.2]	2.51 [63.8]	9.06 [230.12]	6.00 [154.4]	36.9 [937]	8.7 [221]
4 × 3 [100 × 80]	18.00 [457]	18.12 [460]	3.00 [76]	4.00 [102]	5.84 [148.3]	6.23 [158.2]	8.27 [210.1]	1.413 [35.89]	5.512 [140.00]	6.90 [175.00]	0.398 [10.11]	0.67-[4]	0.77 [19.56]	7.60 [193.0]	9.30 [236.2]	2.51 [63.8]	9.06 [230.12]	6.00 [154.4]	-	-
4 [100]	18.00 [457]	18.12 [461]	4.00 [102]	4.00 [102]	7.02 [178.3]	7.77 [197.4]	10.10 [256.5]	1.650 [41.91]	6.00 [152.40]	7.00 [177.8]	0.476 [12.09]	0.56-[4]	0.84 [21.3]	9.14 [232.2]	10.84 [275.3]	2.51 [63.8]	12.19 [309.6]	12.00 [304.8]	-	-
6 × 4 [150 × 100]	24.00 [610]	24.12 [613]	4.00 [102]	6.00 [152]	7.02 [178.3]	7.77 [197.4]	10.10 [256.5]	1.650 [41.91]	6.00 [152.40]	7.00 [177.8]	0.476 [12.09]	0.56-[4]	0.84 [21.3]	9.14 [232.2]	10.84 [275.3]	2.51 [63.8]	12.19 [309.6]	12.00 [304.8]	-	-
6 [150]	24.00 [610]	24.12 [613]	6.00 [152]	6.00 [152]	9.12 [231.6]	10.51 [267.0]	13.61 [345.7]	2.357 [59.87]	8.00 [203.20]	9.50 [241.3]	0.712 [18.08]	0.81-[4]	0.94 [23.88]	12.39 [314.7]	14.37 [365.0]	3.63 [92.08]	14.94 [379.5]	20.00 [508.0]	-	-
8 × 6 [200 × 150]	29.00 [737]	29.12 [740]	6.00 [152]	8.00 [203]	9.12 [231.6]	10.51 [267.0]	13.61 [345.7]	2.357 [59.87]	8.00 [203.20]	9.50 [241.3]	0.712 [18.08]	0.81-[4]	0.94 [23.88]	12.39 [314.7]	14.37 [365.0]	3.63 [92.08]	14.94 [379.5]	20.00 [508.0]	-	-
8 [200]	29.00 [737]	29.12 [740]	8.00 [203]	8.00 [203]	11.77 [299.0]	13.13 [333.5]	17.20 [436.9]	2.830 [71.88]	10.00 [254.00]	11.90 [302.00]	0.792 [20.12]	0.67-[8]	1.25 [31.80]	15.38 [390.7]	17.84 [453.1]	4.63 [117.5]	18.09 [459.5]	24.00 [609.6]	-	-
10 × 8 [250 × 200]	33.00 [838]	33.12 [841]	8.00 [203]	10.00 [254]	11.77 [299.0]	13.13 [333.5]	17.20 [436.9]	2.830 [71.88]	10.00 [254.00]	11.90 [302.00]	0.792 [20.12]	0.67-[8]	1.25 [31.80]	15.38 [390.7]	17.84 [453.1]	4.63 [117.5]	18.09 [459.5]	24.00 [609.6]	-	-
10 [250]	33.00 [838]	33.12 [841]	10.00 [254]	10.00 [254]	12.91 [327.9]	14.53 [369.1]	18.60 [472.4]	2.830 [71.88]	10.00 [254.00]	11.90 [302.00]	0.792 [20.12]	0.67-[8]	1.25 [31.80]	16.78 [426.2]	19.24 [488.7]	4.63 [117.5]	19.72 [500.9]	30.00 [762.0]	-	-
12 × 10 [300 × 250]	38.00 [965]	38.12 [968]	10.00 [254]	12.00 [305]	12.91 [327.9]	14.53 [369.1]	18.60 [472.4]	2.830 [71.88]	10.00 [254.00]	11.90 [302.00]	0.792 [20.12]	0.67-[8]	1.25 [31.80]	16.78 [426.2]	19.24 [488.7]	4.63 [117.5]	19.72 [500.9]	30.00 [762.0]	-	-
12 [300]	38.00 [965]	38.12 [968]	12.00 [305]	12.00 [305]	15.80 [401.3]	17.52 [445.0]	22.09 [561.1]	3.145 [79.88]	10.375 [263.53]	12 [305.00]	0.87 [22.10]	0.67-[8]	1.27 [32.3]	22.64 [575.1]	24.03 [610.4]	5.67 [144.1]	21.28 [540.5]	24.00 [609.6]	-	-

\*M, N, and Q dimensions are for less gear and with gear configurations only.

**ASME Class 1500 and 2500 dimensions**  
**2 to 8 in × 6 in [50 to 200 mm × 150 mm]**



**Dimensions**

**ASME Class 1500**

Size, in [mm]	A		B	BB	H	J	K	L	M†	N†	P	Q†	R	T	U	V	W	X	Y	Z
	RF	RJ																		
2 [50]	14.50 [368]	14.62 [371]	2.00 [51]	2.00 [51]	5.21 [132.3]	5.54 [140.7]	7.57 [192.3]	1.413 [35.89]	5.512 [140.00]	6.90 [175.00]	0.398 [10.11]	0.67-[4]	0.77 [19.56]	6.91 [175.5]	8.61 [218.7]	2.51 [63.8]	9.06 [230.12]	6.00 [154.4]	23.9 [607]	8.00 [203]
3 [80]	18.50 [470]	18.62 [473]	3.00 [76]	3.00 [76]	6.36 [161.5]	7.13 [181.1]	9.44 [239.8]	1.650 [41.91]	6.00 [152.40]	7.00 [177.8]	0.476 [12.09]	0.56-[4]	0.84 [21.3]	8.50 [215.9]	10.20 [259.1]	2.51 [63.8]	12.19 [309.6]	12.00 [304.8]	-	-
4 [100]	21.50 [546]	21.63 [549]	4.00 [102]	4.00 [102]	7.59 [192.8]	8.70 [221.0]	11.19 [284.2]	1.886 [47.90]	6.496 [165.00]	8.00 [203.2]	0.556 [14.12]	0.81-[4]	0.94 [23.88]	10.20 [259.1]	11.97 [304.0]	3.00 [76.2]	11.56 [293.6]	14.00 [355.6]	-	-
6 × 4 [150 × 100]	27.75 [705]	28.00 [711]	4.00 [102]	6.00 [152]	7.59 [192.8]	8.70 [221.0]	11.19 [284.2]	1.886 [47.90]	6.496 [165.00]	8.00 [203.2]	0.556 [14.12]	0.81-[4]	0.94 [23.88]	10.20 [259.1]	11.97 [304.0]	3.00 [76.2]	11.56 [293.6]	14.00 [355.6]	-	-
6 [150]	27.75 [705]	28.00 [711]	6.00 [152]	6.00 [152]	10.25 [260.4]	10.83 [275.1]	13.61 [345.7]	2.357 [59.87]	8.50 [215.9]	9.50 [241.3]	0.712 [18.08]	0.68-[4]	1.04 [26.4]	12.71 [322.8]	14.69 [373.1]	3.63 [92.08]	16.44 [417.6]	24.00 [609.6]	-	-
8 × 6 [200 × 150]	32.75 [832]	33.12 [841]	6.00 [152]	7.62 [194]	10.25 [260.4]	10.83 [275.1]	13.61 [345.7]	2.357 [59.87]	8.00 [203.20]	9.50 [241.3]	0.712 [18.08]	0.81-[4]	1.04 [26.4]	12.71 [322.8]	14.69 [373.1]	3.63 [92.08]	16.44 [417.6]	24.00 [609.6]	-	-

**ASME Class 2500**

2 [50]	17.75 [451]	17.88 [454]	1.76 [45]	1.76 [45]	5.21 [132.3]	5.54 [140.7]	7.57 [192.3]	1.413 [35.89]	5.512 [140.00]	6.90 [175.00]	0.398 [10.11]	0.67-[4]	0.77 [19.56]	6.91 [175.5]	8.61 [218.7]	2.51 [63.8]	9.06 [230.12]	6.00 [154.4]	36.97 [939]	8.00 [203.2]
3 [80]	22.75 [578]	23.00 [584]	2.53 [64]	2.53 [64]	6.91 [175.5]	7.34 [186.4]	9.44 [252.5]	1.650 [41.91]	6.00 [152.40]	7.70 [195.6]	0.476 [12.09]	0.56-[4]	1.09 [27.7]	8.71 [221.2]	10.41 [264.4]	2.51 [63.8]	12.56 [319.0]	14.00 [355.6]	-	-
4 [100]	26.50 [673]	26.88 [983]	3.53 [90]	3.53 [90]	7.75 [196.9]	8.91 [226.3]	11.19 [284.2]	1.886 [47.90]	6.496 [165.00]	8.40 [213.4]	0.556 [14.12]	0.67-[4]	1.16 [29.50]	10.41 [264.4]	12.18 [309.4]	3.00 [76.2]	14.81 [376.02]	24.00 [609.6]	-	-
6 × 4 [150 × 100]	36.00 [914]	36.50 [927]	3.53 [90]	5.25 [133]	7.59 [192.8]	8.70 [221.0]	11.19 [284.2]	1.886 [47.90]	6.496 [165.00]	8.40 [213.4]	0.556 [14.12]	0.67-[4]	1.16 [29.50]	10.20 [259.1]	11.97 [304.0]	3.00 [76.2]	11.56 [293.6]	14.00 [355.6]	-	-

†M, N, and Q dimensions are for less gear and with gear configurations only.

# Weights, C<sub>v</sub> Data

## Weights, lb [kg]—Valve Only—Bare Stem

Valve Port		Valve Pressure Classes									
Size, in	mm	150	300	600	900		1500		2500		
		RF	RF	RF	RTJ	RF	RTJ	RF	RTJ	RF	RTJ
2	50	41 [19]	53 [24]	64 [29]	68 [31]	101 [46]	108 [49]	139 [63]	146 [66]	185 [84]	194 [88]
3 × 2	80 × 50	—	—	87 [40]	92 [42]	116 [52]	124 [56]	—	—	—	—
3	80	69 [31]	96 [44]	142 [64]	137 [62]	172 [78]	180 [81]	250 [113]	260 [118]	435 [197]	452 [205]
4 × 3	100 × 80	—	—	186 [84]	195 [89]	225 [102]	236 [107]	—	—	—	—
4	100	130 [59]	172 [78]	246 [112]	256 [116]	313 [142]	324 [147]	437 [198]	451 [204]	674 [306]	702 [318]
6 × 4	150 × 100	171 [78]	229 [104]	346 [157]	362 [164]	458 [208]	477 [216]	663 [301]	688 [312]	1,171 [531]	1,231 [558]
6	150	257 [116]	320 [145]	460 [209]	476 [216]	728 [330]	746 [339]	1,039 [471]	1,063 [482]	—	—
8 × 6	200 × 150	304 [138]	410 [186]	582 [264]	602 [273]	926 [420]	956 [434]	1,331 [604]	1,377 [625]	—	—
8	200	475 [215]	632 [287]	846 [384]	867 [393]	1,231 [558]	1,260 [572]	—	—	—	—
10 × 8	250 × 200	532 [241]	719 [326]	1,069 [485]	1,103 [500]	1,456 [660]	1,494 [678]	—	—	—	—
10	250	783 [355]	965 [438]	1,472 [668]	1,503 [682]	1,857 [842]	1,894 [859]	—	—	—	—
12 × 10	300 × 250	880 [399]	1,113 [505]	1,589 [721]	1,622 [736]	2,115 [959]	2,161 [980]	—	—	—	—
12	300	1,165 [528]	1,476 [670]	1,993 [904]	2,025 [918]	2,861 [1,298]	2,905 [1,318]	—	—	—	—
14	350	1,663 [754]	1,972 [895]	2,539 [1,152]	2,576 [1,168]	—	—	—	—	—	—
16	400	2,441 [1,107]	2,940 [1,334]	3,870 [1,755]	3,919 [1,778]	—	—	—	—	—	—

## Weights, lb [kg]—Worm Gear Actuator Only

2	50	8 [4]	8 [4]	8 [4]	8 [4]	8 [4]	8 [4]	15 [7]	15 [7]	15 [7]	15 [7]
3 × 2	80 × 50	—	—	8 [4]	8 [4]	8 [4]	8 [4]	—	—	—	—
3	80	8 [4]	8 [4]	15 [7]	15 [7]	15 [7]	15 [7]	27 [12]	27 [12]	27 [12]	27 [12]
4 × 3	100 × 80	—	—	15 [7]	15 [7]	15 [7]	15 [7]	—	—	27 [12]	27 [12]
4	100	15 [7]	15 [7]	27 [12]	27 [12]	27 [12]	27 [12]	27 [12]	27 [12]	27 [12]	27 [12]
6 × 4	150 × 100	15 [7]	15 [7]	27 [12]	27 [12]	27 [12]	27 [12]	27 [12]	27 [12]	—	—
6	150	27 [12]	27 [12]	27 [12]	27 [12]	60 [27]	60 [27]	60 [27]	60 [27]	—	—
8 × 6	200 × 150	27 [12]	27 [12]	27 [12]	27 [12]	60 [27]	60 [27]	60 [27]	60 [27]	—	—
8	200	27 [12]	60 [27]	60 [27]	60 [27]	74 [34]	74 [34]	—	—	—	—
10 × 8	250 × 200	27 [12]	60 [27]	60 [27]	60 [27]	74 [34]	74 [34]	—	—	—	—
10	250	60 [27]	60 [27]	74 [34]	74 [34]	74 [34]	74 [34]	—	—	—	—
12 × 10	300 × 250	60 [27]	60 [27]	74 [34]	74 [34]	74 [34]	74 [34]	—	—	—	—
12	300	60 [27]	74 [34]	74 [34]	74 [34]	122 [55]	122 [55]	—	—	—	—
14	350	74 [34]	74 [34]	122 [55]	122 [55]	—	—	—	—	—	—
16	400	74 [34]	122 [55]	133 [60]	133 [60]	—	—	—	—	—	—

Note: Weights shown are for worm gear actuator, handwheel, and mounting hardware.

## Flow Characteristics, C<sub>v</sub><sup>†</sup>

2	50	473	429	369	328	328	207
3 × 2	75 × 50	—	—	136	136	—	—
3	75	1,244	1,055	940	908	818	490
4 × 3	100 × 75	—	—	407	406	—	—
4	100	2,492	2,158	1,813	1,762	1,598	1,014
6 × 4	150 × 100	432	432	552	551	593	414
6	150	5,468	5,403	4,590	4,394	4,112	—
8 × 6	200 × 150	1,294	1,293	1,642	1,637	1,652	—
8	200	10,782	10,293	8,971	8,494	—	—
10 × 8	250 × 200	2,843	2,848	3,578	3,569	—	—
10	250	17,438	16,892	14,352	13,911	—	—
12 × 10	300 × 250	5,195	5,187	6,505	6,454	—	—
12	300	16,892	26,702	22,772	21,221	—	—
14	350	22,742	22,254	21,507	—	—	—
16	400	31,823	31,142	29,902	—	—	—

<sup>†</sup> Flow of water in galUS/min per 1-psi pressure drop across a fully open valve.

# ASME Class 150 through 2500 torque chart

## Ball Valve Torque Chart

Valve port size, in [mm]	Pressure class	Pressure (P), gauge psi	Break torque at max. P, in-lb	Run torque at max. P, in-lb	Mast, in-lb
2 [50]	150	80–285	256	147	3,818
2 [50]	300	286–740	613	266	3,818
2 [50], 3 × 2 [75 × 50]	600	741–1,480	898	492	3,818
2 [50], 3 × 2 [75 × 50]	900	1,481–2,220	1,146	706	3,818
2 [50]	1500	2,221–3,705	1,904	1,181	8,334
2 [50]	2500	3,706–6,170	2,496	1,896	8,334
3 [75]	150	0–285	568	329	3,818
3 [75]	300	286–740	1,238	576	3,818
3 [75], 4 × 3 [100 × 75]	600	741–1,480	2,039	1,094	8,334
3 [75], 4 × 3 [100 × 75]	900	1,481–2,220	2,611	1,634	8,334
3 [75]	1500	2,221–3,705	4,399	2,451	13,241
3 [75]	2500	3,706–6,170	6,368	4,016	13,241
4 [100], 6 × 4 [150 × 100]	150	80–285	1,026	604	8,334
	300	286–740	2,125	1,121	8,334
	600	741–1,480	3,581	2,069	13,241
	900	1,481–2,220	4,575	3,008	13,241
	1500	2,221–3,705	7,328	4,079	18,746
6 [150], 8 × 6 [200 × 150]	2500	3,706–6,170	9,371	6,581	18,746
	150	80–285	2,947	1,698	13,241
	300	286–740	4,495	1,988	13,241
	600	741–1,480	7,195	2,846	18,746
	900	1,481–2,220	11,022	4,534	36,792
8 [200], 10 × 8 [250 × 200]	1500	2,221–3,705	15,323	7,510	36,792
	150	80–285	5,146	2,870	18,746
	300	286–740	9,041	3,458	36,792
	600	741–1,480	13,423	4,631	36,792
	900	1,481–2,220	21,210	6,021	69,591
10 [250], 12 × 10 [300 × 250]	150	80–285	8,480	5,541	36,792
	300	286–740	13,149	6,237	36,792
	600	741–1,480	23,638	7,295	69,591
	900	1,481–2,220	30,433	8,013	69,591
12 [300]	150	0–285	11,601	6,311	36,792
	300	286–740	21,179	7,430	69,591
	600	741–1,480	31,608	8,405	69,591
	900	1,481–2,220	46,301	10,701	92,606
14 [350]	150	80–285	16,370	10,275	69,591
	300	286–740	26,595	11,555	69,591
	600	741–1,480	45,288	13,634	92,606
16 [400]	600	741–1,480	45,288	13,634	92,606
	150	80–285	21,999	12,447	69,591
	300	286–740	39,436	14,326	92,606
	600	741–1,480	70,917	17,382	173,880

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.

The re-seat torque is equal to ~80% of the break torque.

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

For operating temperatures between –20 to –50 degF (–29 to –46 degC) multiply these values by 1.20.

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

# Material Selection Guide

A selection of body, stem, and seat/seal materials for the WKM 370D6 ball valves are available. The following list is intended as a guide in the selection of materials for corrosive service. Material suitability is based on ladings at ambient temperatures. Other temperatures may render a given material/lading combination inappropriate. No material can be expected to resist all the many ladings found in modern industry. Experience has shown that certain materials can perform satisfactorily within certain limits. The physical properties of a material are affected differently by each corrosive medium. Therefore, it sometimes becomes necessary to sacrifice value in another property. As a result, the user must decide which property is of prime importance for his application. Internal moving parts, in contact with the lading, should always carry an "A" rating. Body materials with exposure to corrosive ladings can sometimes carry a "B" rating because metal loss due to corrosive is not as critical.

We strongly recommend that tests be run under actual operating conditions to obtain a material's performance ability in any one corrosive medium.

Lading	External Valve Body Material			Seal Code Trim					Internal Valve Trim			
	Std body 23	Std body 24	Spl body 37	Std YRF	Spl YFF	Spl TFF	Spl PFF	Spl PLF	Std Int 23	Std Int 24	Spl Int 27	Spl Int 37
ACETALDEHYDE	A	C	C	C	D	D	D	C	A	C	A	C
ACETATE SOLVENTS	A	A	A		D	D	D		A	A	A	A
ACETIC ACID (10%)	—	—	—	D	D	A	A	A	—	—	—	—
ACETIC ACID (Glacial)	—	—	—	B	C	C	C	C	—	—	—	—
ACETIC ACID (Conc)	—	—	—	D	D	A	A	C	—	—	—	—
ACETIC ANHYDRIDE	B	D	D	D	D	D	D	D	B	D	B	D
ACETONET	A	A	A	D	D	D	D	D	A	A	A	A
ACETYLENE	A	A	A	A	A	A	A	A	A	A	A	A
ACRYLONITRILE	A	A	A	D	A	A	A	B	A	A	A	A
ALCOHOL-AMYL	A	B	B	B	A	A	A	A	A	B	A	B
ALCOHOL-BUTYL	A	B	B	A	A	A	A	A	A	B	A	B
ALCOHOL-ETHYL (ETHANOL)	A	B	B	A	A	A	A	A	A	B	A	B
ALCOHOL-METHYL (METHANOL)	A	B	B	B	B	A	A	A	A	B	A	B
ALUMINUM CHLORIDE (dry)	A	B	B	A	A	A	A	A	A	B	A	B
ALUMINUM SULFATE (ALUMS)	A	C	C	A	A	A	A	A	A	C	A	C
ALUM'S	A	C	C	A	A	A	A	B	A	C	A	C
AMINES	A	B	B	D	B	B	B	B	A	B	A	B
AMINES BASED-CORROSION INHIBITOR	A	A	A	A	A	A	A	A	A	A	A	A
AMINES RICH	A	B	B	D	B	B	B	B	A	B	A	B
AMMONIA (AQUEOUS)	A	A	A	A	A	A	A	A	A	A	A	A
AMMONIA ANHYDROUS	A	A	A	B	D	D	D	A	A	A	A	A
AMMONIA SOLUTIONS	A	B	B	—	—	—	—	—	A	B	A	B
AMMONIUM BICARBONATE	B	C	C	—	B	A	—	—	B	C	B	C
AMMONIUM CARBONATE	B	B	B	D	A	A	A	A	B	B	B	B
AMMONIUM CHLORIDE	C	D	D	B	B	A	A	A	C	D	C	D
AMMONIUM HYDROXIDE (28%)	B	C	C	D	A	A	A	B	B	C	B	C
AMMONIUM HYDROXIDE CONCENTRATED	B	C	C	B	A	A	A	B	B	C	B	C
AMMONIUM MONOPHOSPHATE	B	D	D	C	B	A	A	—	B	D	B	D
AMMONIUM NITRATE	A	D	D	C	C	A	A	A	A	D	A	D
AMMONIUM PHOSPHATE (DIBASIC)	B	D	D	C	C	A	A	A	B	D	B	D
AMMONIUM PHOSPHATE (TRIBASIC)	B	D	D	B	B	A	A	B	B	D	B	D
AMMONIUM SULFATE	B	C	C	A	A	A	A	A	B	C	B	C
AMYL ACETATE	B	C	C	D	B	A	A	C	B	C	B	C
ANILINE	B	A	A	C	C	A	D	A	B	A	A	A
ANILINE DYES	A	C	C	D	A	A	A	A	A	C	A	C
ANTIMONY TRICHLORIDE	D	D	D	D	D	A	A	A	D	D	—	D

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## Material selection guide

Lading	External valve body material			Seal code trim					Internal valve trim			
	Std body 23	Std body 24	Spl body 37	Std YRF	Spl YFF	Spl TFF	Spl PFF	Spl PLF	Std Int 23	Std Int 24	Spl Int 27	Spl Int 37
APPLE JUICE	B	D	D	A	A	A	–	–	B	D	–	D
ARSENIC ACID	B	D	D	C	C	A	–	–	B	D	B	D
ASPHALT EMULSION	A	A	A	A	A	A	A	–	A	A	A	A
ASPHALT LIQUID	A	A	A	B	A	A	A	–	A	A	A	A
BARIUM CARBONATE	B	B	B	C	A	A	–	–	B	B	B	B
BARIUM CHLORIDE	C	C	C	A	A	A	A	A	C	C	C	C
BARIUM HYDROXIDE	B	C	C	A	A	A	A	A	B	C	B	C
BARIUM SULFATE	B	B	B	A	A	A	A	A	B	B	B	B
BARIUM SULFIDE	B	B	B	A	A	A	A	A	B	B	B	B
BEER (ALCOHOL INDUSTRY)	A	C	C	A	A	A	A	A	A	C	–	C
BEER (BEVERAGE INDUSTRY)	A	C	C	A	A	A	A	A	A	C	–	C
BEE SUGAR LIQUIDS	A	B	B	A	A	A	–	–	A	B	A	B
BENZALDEHYDE	A	A	A	D	A	A	A	B	A	A	A	A
BENZENE (BENZOL)	A	B	B	D	A	A	A	B	A	B	A	B
BENZOIC ACID	B	D	D	D	D	A	A	A	B	D	B	D
BORAX LIQUORS	B	C	C	A	A	A	A	A	B	C	B	C
BORIC ACID	A	D	D	B	B	A	A	A	A	D	A	D
BRINES	B	D	D	A	A	A	A	A	B	D	B	D
BROMINE	D	D	D	D	D	A	D	D	D	D	–	D
BUNKER OILS (FUEL OILS)	A	B	B	A	A	A	A	B	A	B	A	B
BUTADIENE	A	B	B	D	C	A	A	B	A	B	A	B
BUTANE	A	A	A	A	A	A	A	B	A	A	A	A
BUTTERMILK	A	D	D	A	A	A	A	A	A	D	–	D
BUTYLENE	A	A	A	D	B	A	A	B	A	A	A	A
BUTYRIC ACID	B	D	D	C	C	A	A	A	B	D	B	D
CALCIUM BISULFITE	B	D	D	A	A	A	A	A	B	D	B	D
CALCIUM CARBONATE	B	D	D	A	A	A	A	A	B	D	B	D
CALCIUM CHLORIDE	B	C	C	A	A	A	A	A	B	C	B	C
CALCIUM HYDROXIDE (20%)	B	B	B	A	A	A	A	A	B	B	B	B
CALCIUM HYPOCHLORITE	C	D	D	D	D	A	A	A	C	D	–	D
CALCIUM SULFATE	B	C	C	D	D	A	A	–	B	C	B	C
CARBON BISULFIDE	B	B	B	D	A	A	A	B	B	B	B	B
CARBON DIOXIDE (DRY)	A	A	A	A	A	A	A	A	A	A	A	A
CARBON DIOXIDE (WET)	A	C	C	A	A	A	B	B	A	C	B	C
CARBON TETRACHLORIDE (DRY)	B	A	A	B	A	A	A	B	B	A	B	A
CARBON TETRACHLORIDE (WET)	A	B	B	B	A	A	A	B	A	B	B	B
CARBONATED WATER	A	B	B	A	A	A	A	–	A	B	A	B
CARBONIC ACID	B	D	D	A	A	A	A	A	B	D	B	D
CASTOR OIL	A	B	B	A	A	A	A	A	A	B	A	B
CHINA WOOD OIL (TUNG)	A	B	B	A	A	A	–	–	A	B	A	B
CHLORINATED SOLVENTS (DRY)	A	A	A	D	B	B	B	B	A	A	A	A
CHLORINE (WET)	D	D	D	C	C	A	C	C	D	D	–	D
CHLORINE GAS (DRY)	B	B	B	D	D	A	A	–	B	B	B	B
CHLOROACETIC ACID	C	D	D	D	D	A	A	B	C	D	–	D
CHLOROBENZENE	A	B	B	D	A	A	A	B	A	B	A	B
CHLOROFORM	A	B	B	D	C	A	A	B	A	B	A	B
CHLOROSULPHONIC ACID (DRY)	B	B	B	D	D	A	A	D	B	B	B	B
CHLOROSULPHONIC ACID (WET)	D	D	N	–	–	–	–	–	D	D	–	N
CHROME ALUM	A	B	B	A	A	A	A	A	A	B	A	B
CHROMIC ACID	C	D	D	D	D	A	D	D	C	D	–	D
CITRUS JUICES	B	D	D	A	A	A	A	A	B	D	B	D
COCONUT OIL	B	C	C	A	A	A	A	B	A	C	A	C

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Lading	External valve body material			Seal code trim					Internal valve trim			
	Std body 23	Std body 24	Spl body 37	Std YRF	Spl YFF	Spl TFF	Spl PFF	Spl PLF	Std Int 23	Std Int 24	Spl Int 27	Spl Int 37
COFFEE EXTRACTS (HOT)	A	C	C	A	A	A	–	–	A	B	A	C
COKE OVEN GAS	A	B	B	D	A	A	–	–	A	B	A	B
COOKING OIL	A	B	B	A	A	A	A	–	A	B	A	B
COPPER ACETATE (10%)	B	C	C	–	–	A	A	B	B	C	B	C
COPPER CHLORIDE	D	D	D	A	A	A	A	A	D	D	–	D
COPPER NITRATE	B	D	D	D	D	A	A	B	B	D	B	D
COPPER SULFATE	C	D	D	B	B	A	A	A	C	D	–	D
CORN OIL	A	B	B	A	A	A	–	–	A	B	B	B
CORROSION INHIBITOR – AMINE BASED	A	A	A	B	B	A	A	–	A	A	A	A
COTTONSEED OIL	B	C	C	A	A	A	A	A	B	C	B	C
CREOSOTE OIL	B	B	B	A	A	A	A	B	B	B	B	B
CRESYLIC ACID	B	B	B	D	D	A	A	B	B	B	B	B
CRUDE OIL SOUR	A	B	B	C	A	A	A	B	A	B	A	B
CRUDE OIL SWEET	A	B	B	B	A	A	A	B	A	B	A	B
CUTTING OILS, WATER EMULSIONS	A	B	B	A	A	A	A	A	A	B	A	B
CYCLOHEXANE	A	A	A	A	A	A	A	B	A	A	A	A
DIACETONE ALCOHOL	A	A	A	D	A	A	–	–	A	A	A	A
DIESEL FUEL	A	A	A	A	A	A	A	A	A	A	A	A
DIETHANOLAMINE (DEA)	–	–	–	–	–	–	–	–	–	–	–	–
DIETHYLAMINE	A	A	A	B	A	D	A	B	A	A	A	A
DIETHYLENE GLYCOL	–	–	–	A	A	A	A	A	–	–	–	–
DOWTHERMS (A-E)	A	B	B	D	A	A	A	B	A	B	A	B
DRILLING MUD	A	B	B	A	A	A	–	–	A	B	A	B
DRIP COCKS, GAS	A	B	B	–	–	–	–	–	A	B	A	B
DRY CLEANING FLUIDS	A	B	B	C	B	A	A	C	A	B	A	B
EPSOM SALT (Magnesium Sulfate)	B	C	C	–	A	A	A	A	B	C	B	C
ETHANE	A	A	A	A	A	A	A	A	A	A	A	A
ETHANOL (ALCOHOL-ETHYL)	A	B	B	A	A	A	A	A	A	B	A	B
ETHANOLAMINE (MEA)	A	A	A	B	A	A	–	–	A	A	A	A
ETHERS	A	B	B	D	A	A	A	D	A	B	A	B
ETHYL ACETATE	B	B	B	D	B	B	B	D	B	B	B	B
ETHYL ACRYLATE	A	A	A	D	A	A	A	D	A	A	A	A
ETHYL CHLORIDE (DRY)	A	B	B	A	A	A	A	B	A	B	A	B
ETHYL CHLORIDE (WET)	B	B	B	A	A	A	A	B	B	B	B	B
ETHYLENE (LIQUID OR GAS)	A	A	A	B	A	A	A	A	A	A	A	A
ETHYLENE GLYCOL	B	B	B	A	A	A	A	A	B	B	B	B
ETHYLENE OXIDE	B	B	B	D	A	A	A	D	B	B	B	B
ETHYLENE PROPYLENE	A	B	–	–	–	–	–	–	A	B	–	–
FATTY ACIDS	B	D	D	B	A	A	A	A	B	D	B	D
FERRIC CHLORIDE	D	D	D	A	A	A	B	B	D	D	–	D
FERRIC NITRATE	B	D	D	A	A	A	A	A	B	D	–	D
FERRIC SULFATE	B	D	D	A	A	A	A	A	B	D	B	D
FERROUS CHLORIDE	D	D	D	C	C	A	A	–	D	D	–	D
FERROUS SULFATE	B	D	D	D	D	A	A	A	B	D	B	D
FERROUS SULFATE (SAT)	A	C	C	–	–	A	A	–	A	C	S	C
FERTILIZER SOLUTIONS	B	B	B	D	D	D	D	D	B	B	B	B
FISH OILS	A	B	B	B	A	A	A	–	A	B	A	B
FLUORINE	A	B	B	D	D	D	C	–	A	B	A	B
FLUOSILICIC ACID	C	D	D	D	D	A	A	A	C	D	–	D
FOOD FLUIDS – PASTES	A	C	C	B	A	A	–	–	A	C	–	C
FORMALDEHYDE (100%)	A	C	C	B	B	A	A	C	A	C	–	C
FORMALDEHYDE (40%)	A	C	C	B	A	A	A	C	A	C	–	C
FORMIC ACID	B	D	D	D	D	A	B	C	B	D	B	D

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FREON 12	A	B	B	A	B	B	B	D	A	B	A	B
FRUIT JUICES	A	D	D	A	A	A	A	—	A	D	A	D
FUEL JET JP-4	A	A	A	A	A	A	A	B	A	A	A	A
FUEL JET JP-5 100F	A	A	A	A	A	A	A	B	A	A	A	A
FUEL JET JP-6 100F	A	A	A	A	A	A	A	B	A	A	A	A
FUEL OIL	A	B	B	A	A	A	A	A	A	B	A	B
FUEL RP-1	A	A	A	A	A	A	A	A	A	A	A	A
FURFURAL	B	A	A	D	A	A	A	C	B	A	A	A
GALLIC ACID	B	D	D	B	A	B	—	—	B	D	B	D
GAS (MANUFACTURED)	B	B	B	A	A	A	A	A	B	B	B	B
GAS ODORIZERS (VTFEP)	A	B	B	A	A	A	A	A	A	B	A	B
GAS, NATURAL	A	B	B	A	A	A	A	A	A	B	A	B
GASOLINE, AVIATION	A	A	A	A	A	A	A	A	A	A	A	A
GASOLINE, SOUR	A	B	B	C	A	A	A	A	A	B	A	B
GASOLINE, LEADED, LOW OCTANE	A	A	A	A	A	A	A	B	A	A	A	A
GASOLINE, UNLEADED, LOW OCTANE	A	A	A	A	A	A	A	B	A	A	A	A
GELATIN	A	B	B	A	A	A	A	A	A	B	B	B
GLUCOSE	A	B	B	A	A	A	A	A	A	B	A	B
GLUE	A	A	A	—	A	A	—	—	A	A	A	A
GLYCERINE – GLYCEROL	A	B	B	A	A	A	A	A	A	B	A	B
GLYCOLS	B	B	B	A	A	A	A	A	B	B	B	B
GREASE	A	A	A	—	A	A	A	B	A	A	A	A
HEPTANE	A	A	A	A	A	A	A	C	A	A	A	A
HEXANE	A	A	A	A	A	A	A	C	A	A	A	A
HEXANOL, TERTIARY	A	A	A	—	A	—	—	—	A	A	A	A
HYDRAULIC OIL PHOSPHATE ESTER	A	A	A	C	A	A	A	A	A	A	A	A
HYDRAULIC OIL PETROLEUM BASE	A	A	A	A	A	A	A	A	A	A	A	A
HYDROBROMIC ACID	D	D	D	D	D	A	C	C	D	D	—	D
HYDROCHLORIC ACID 37% AIR FREE	D	D	D	D	D	A	A	B	D	D	—	D
HYDROCYANIC ACID	B	D	D	B	B	A	A	A	B	D	B	D
HYDROFLUORIC ACID	D	D	D	D	D	A	D	D	D	D	—	D
HYDROFLUOSILICIC ACID	C	D	D	D	D	A	—	—	C	D	—	D
HYDROGEN GAS	A	B	B	A	A	A	A	A	A	B	A	B
HYDROGEN PEROXIDE 30% (DILUTE)	B	D	D	D	D	A	A	A	B	D	B	D
HYDROGEN PEROXIDE	B	D	D	D	D	A	A	A	B	D	B	D
HYDROGEN SULFIDE (dry)	A	A	A	A	A	A	A	A	A	A	A	A
HYDROGEN SULFIDE (wet)	A	D	D	B	A	A	A	A	A	D	B	D
HYPO (SODIUM THIOSULFATE)	A	D	D	B	A	A	A	A	A	D	A	D
HYPOCHLORITES, SODIUM	C	D	D	B	A	A	A	A	C	D	—	D
ILLUMINATING GAS (coal gas)	A	A	A	—	—	A	A	—	A	A	A	A
INK	A	D	D	—	—	—	—	—	A	D	A	D
IODINE	D	D	D	A	A	A	B	B	D	D	—	D
ISOBUTANE (methylpropane)	—	—	—	—	—	A	A	—	—	—	—	—
ISO-OCTANE	A	A	A	A	A	A	A	C	A	A	A	A
ISOCYANIDE	A	A	A	—	—	—	—	—	A	A	A	A
ISODOFORM	B	B	B	—	—	—	—	—	B	B	B	B
ISOPROPYL ALCOHOL (isopropanol)	B	B	B	B	B	A	A	A	B	B	B	B
ISOPROPYL ETHER	A	A	A	B	A	A	A	D	A	A	A	A
KEROSENE	A	B	B	A	A	A	A	B	A	B	A	B
KETCHUP	A	D	D	A	A	A	A	—	D	A	—	D
KETONES	A	A	A	D	D	D	D	D	A	A	A	A
LACQUERS (SOLVENTS)	A	C	C	D	A	A	—	D	A	C	A	C
LACTIC ACID	A	D	D	—	B	A	A	A	B	D	—	D

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LARD OIL	A	C	C	A	A	A	A	A	A	C	–	C
LEAD ACETATE	B	C	C	B	B	A	A	D	B	D	–	C
LINOLEIC ACID	A	B	B	C	C	A	A	A	A	B	A	B
LINSEED OIL	A	A	A	A	A	A	A	A	A	A	A	A
LIQUEFIED PET GAS (LPG)	A	B	B	A	A	A	A	B	A	B	A	B
LITHIUM BROMIDE	A	D	D	–	–	A	B	A	A	D	–	D
LUBRICATING OIL	A	A	A	A	A	A	A	A	A	A	A	A
MAGNESIUM BISULFATE	A	C	C	–	A	–	–	–	A	C	–	C
MAGNESIUM CHLORIDE	D	C	C	A	A	A	A	A	D	C	–	C
MAGNESIUM HYDROXIDE	A	B	B	B	B	A	A	A	A	B	A	B
MAGNESIUM SULFATE (Epson Salt)	B	B	B	–	A	A	A	A	B	B	–	B
MALEIC ACID	C	B	B	D	A	A	A	A	C	B	B	B
MALEIC ANHYDRIDE	A	D	D	–	–	A	A	A	A	D	–	D
MALIC ACID	A	D	D	A	A	A	A	A	A	D	–	D
MAYONNAISE	A	D	D	–	A	A	A	–	A	D	–	D
MERCAPTANS	A	A	A	A	A	A	–	–	A	A	A	A
MERCURIC CHLORIDE	D	D	D	D	D	A	A	A	D	D	–	D
MERCURIC CYANIDE (10%)	B	D	D	C	A	B	–	–	B	D	–	D
MERCURY	A	A	A	A	A	A	A	A	A	A	A	A
METHANE	A	A	A	A	A	A	A	B	A	A	A	A
METHANOL (ALCOHOL-METHYL)	A	B	B	B	A	A	A	D	A	B	A	B
METHYL ACETATE	A	A	A	D	B	B	B	D	A	A	A	A
METHYL ACETONE	A	A	A	–	D	D	D	–	A	A	A	A
METHYL CELLOSOLVE	B	B	B	C	A	A	–	–	B	B	B	B
METHYL CHLORIDE	A	B	B	D	B	A	A	D	A	B	A	B
METHYL ETHYL KETONE (MEK)	A	A	A	D	B	B	B	D	A	A	A	A
METHYL FORMATE	B	B	B	–	–	A	–	–	B	B	B	B
METHYLAMINE	B	B	B	–	–	A	A	–	B	B	B	B
METHYLENE CHLORIDE	B	B	B	D	C	A	A	–	B	B	B	B
MILK	A	D	D	A	A	A	A	A	A	D	–	D
MINE WATERS (ACID)	B	D	D	–	B	B	–	–	B	D	–	D
MINERAL SPRITS	B	B	B	–	A	A	A	–	B	B	B	B
MINERAL OIL	A	B	B	A	A	A	A	A	A	B	A	B
MIXED ACIDS (COLD)	A	C	C	–	–	–	–	–	A	C	–	C
MOLASSES – CRUDE	A	A	A	–	A	A	A	–	A	A	A	A
MOLASSES, EDIBLE	A	A	A	–	A	A	A	–	A	A	A	A
MTBE 100% MAX (methyl tertiary butyl ether)	A	B	B	–	–	B	B	B	A	D	B	B
MTBE 40% MAX	A	A	A	C	B	B	B	B	A	B	B	A
MURIATIC ACID (hydrochloric acid)	D	D	D	–	D	A	A	A	D	D	–	D
MUSTARD	A	B	B	A	A	A	–	–	A	B	A	B
NAPHTHA (Rubber Solvent)	A	B	B	B	A	B	B	B	A	B	A	B
NAPHTHALENE (COAL TAR DISTILLATE)	A	A	A	D	A	A	A	C	A	A	A	A
NICKEL AMMONIUM SULFATE (20%)	A	D	D	C	A	A	A	A	A	D	–	D
NICKEL CHLORIDE	B	D	D	A	A	A	A	A	C	D	–	D
NICKEL NITRATE (30%)	B	D	D	B	B	A	A	–	B	D	–	D
NICKEL SULFATE	C	D	D	A	A	A	A	A	C	D	–	D
NICOTINIC ACID	A	B	B	–	–	A	–	–	A	B	A	B
NITRIC ACID (10%)	A	D	D	D	D	A	B	D	A	D	–	D
NITRIC ACID (100%)	A	A	A	D	D	A	C	D	A	A	A	A
NITRIC ACID (30%)	A	D	D	D	D	A	C	D	A	D	–	D
NITRIC ACID (80%)	D	A	D	D	D	A	C	D	A	D	–	D
NITRIC ACID ANHYDROUS/AQUEOUS	A	A	A	D	D	A	B	–	A	A	A	A
NITROBENZENE	B	B	B	B	B	A	A	D	B	B	B	B

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NITROGEN	A	A	A	A	A	A	A	A	A	A	A	A
NITROUS ACID (10%)	B	D	D	A	A	A	A	A	B	D	–	D
NITROUS GASES	A	B	B	–	A	A	A	–	A	B	A	B
NITROUS OXIDE	B	A	A	A	A	A	A	–	B	A	B	A
OIL, COTTONSEED	B	C	C	B	B	A	B	A	B	C	B	C
OIL, PETROLEUM (REFINED)	A	A	A	A	A	A	A	A	A	A	A	A
OIL, PETROLEUM (SOUR) H2S & CO2	A	A	A	A	A	A	A	A	A	A	A	A
OIL, WATER MIXTURES	A	B	B	A	A	A	A	A	A	B	A	B
OIL, ANIMAL	A	A	A	A	A	A	A	A	A	A	A	A
OIL, FISH	A	B	B	B	A	A	A	B	A	B	A	B
OIL, FUEL	A	B	B	A	A	A	A	B	A	B	A	B
OIL, LUBE	A	A	A	A	A	A	A	A	A	A	A	A
OIL, MINERAL	A	B	B	A	A	A	A	A	A	B	A	B
OLEIC ACID	A	B	B	C	A	A	A	C	A	B	A	B
OLEUM	B	B	B	B	A	A	A	A	B	B	B	B
OLIVE OIL	A	B	B	A	A	A	A	A	A	B	A	B
OXALIC ACID	A	D	D	B	B	A	A	A	A	D	–	D
OXYGEN (GAS)	A	B	B	D	A	A	A	D	A	B	A	B
OXYGEN (LIQUID)	A	B	B	D	C	C	C	D	A	B	–	B
OZONE	A	C	C	D	A	A	A	D	A	C	A	C
PAINTS AND THINNERS	A	A	A	D	A	A	A	A	A	A	A	A
PALM OIL	B	C	C	D	A	A	A	–	B	C	B	C
PALMITIC ACID	A	C	C	A	A	A	A	A	A	C	A	C
PARAFIN	A	B	B	A	A	A	–	A	A	B	A	B
PARAFORMALDEHYDE	B	B	B	A	A	A	A	–	B	B	B	B
PENTANE	A	B	B	A	A	A	–	A	A	B	A	B
PERCHLOROETHYLENE	B	B	B	C	A	A	A	D	B	B	B	B
PETROLATUM	B	C	C	A	A	A	–	A	B	C	B	C
PHENOL (CARBOLIC ACID)	A	B	B	A	A	A	A	A	A	B	A	B
PHOSGENE (CARBONYL CHLORIDE)	–	–	–	–	B	A	–	–	–	–	–	–
PHOSPHORIC ACID	–	–	–	–	B	A	A	A	–	–	–	–
PHOSPHORIC ACID (40%)	–	–	–	–	B	A	A	A	–	–	–	–
PHOSPHORIC ACID (>40%)	–	–	–	–	B	A	A	A	–	–	–	–
PHOSPHORIC ACID (CRUDE)	–	–	–	–	B	A	A	A	–	–	–	–
PHOSPHORIC ACID (MOLTEN)	–	–	–	–	B	–	–	–	–	–	–	–
PHOSPHORIC ACID (ANHYDRIDGE)	–	–	–	D	B	A	–	–	–	–	–	–
PHTHALIC ACID	B	C	C	C	B	A	A	–	B	C	B	C
PHTHALIC ANHYDRIDE	B	C	C	C	A	A	C	C	B	C	B	C
PICRIC ACID	B	C	C	A	A	A	A	–	B	C	B	C
PINE OIL	A	B	B	A	A	A	–	–	A	B	A	B
PINEAPPLE JUICE	A	C	C	A	A	A	–	–	A	C	–	C
POLYESTER RESIN	A	B	B	–	A	A	A	–	A	B	A	B
POLYETHYLENE GLYCOL	–	–	–	–	–	A	A	B	–	–	–	–
POLYURETHANE	A	A	A	–	–	–	–	–	A	A	A	A
POTASSIUM BISULFITE (10%)	B	D	D	C	A	A	–	–	B	D	–	D
POTASSIUM BROMIDE	B	D	D	C	A	A	A	–	B	D	–	D
POTASSIUM CARBONATE	A	C	C	–	A	A	A	–	A	C	–	C
POTASSIUM CHLORATE	A	B	B	–	C	A	A	A	A	C	–	B
POTASSIUM CHLORIDE	A	C	C	A	A	A	A	A	A	C	–	C
POTASSIUM CYANIDE	B	B	B	A	A	A	–	–	B	B	B	B
POTASSIUM DICHROMATE	A	B	B	B	B	A	A	A	A	B	A	B
POTASSIUM DIPHOSPHATE	A	A	A	–	–	–	–	–	A	A	A	A
POTASSIUM FERRICYANIDE	A	B	B	C	B	A	A	C	B	B	B	B

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POTASSIUM FERROCYANIDE	A	B	B	B	B	A	A	–	A	B	A	B
POTASSIUM HYDROXIDE 70%	A	A	A	C	C	A	A	B	A	A	A	A
POTASSIUM HYDROXIDE – DILUTE	B	B	B	–	A	A	A	A	B	B	B	B
POTASSIUM IODIDE	B	C	C	C	A	A	–	–	B	C	B	C
POTASSIUM NITRATE	A	B	B	B	B	A	A	A	A	B	A	B
POTASSIUM PERMANGANATE	A	A	A	D	D	A	A	–	A	A	A	A
POTASSIUM SULFATE	A	B	B	A	A	A	A	A	A	B	A	B
POTASSIUM SULFIDE	B	C	C	A	A	A	C	–	B	C	B	C
POTASSIUM SULFITE	A	D	D	A	A	A	–	A	A	D	–	D
PRODUCER GAS	A	B	B	A	A	A	A	A	A	B	A	B
PROPANE	A	A	A	A	A	A	A	A	A	A	A	A
PROPYLENE	A	B	B	C	A	A	A	A	A	B	–	B
PROPYL ALCOHOL (PROPANOL)	A	A	A	A	A	A	A	A	A	A	A	A
PROPYLENE GLYCOL	A	A	A	C	A	A	A	A	A	A	A	A
PYROGALLIC ACID	B	B	B	B	A	A	D	–	B	B	B	B
QUENCH OIL (WATER SOLUBLE)	A	A	A	B	B	A	A	–	A	A	A	A
RESINS-ROSINS	A	C	C	B	A	A	A	–	A	C	–	C
RUBBER LATEX EMULSIONS	A	B	B	A	A	A	A	–	A	B	A	B
SALAD OIL	B	C	C	A	A	A	A	–	B	C	–	C
SALICYLIC ACID	A	D	D	B	A	A	A	A	A	D	A	D
SALT (BRINE (NaCl) saturated)	B	C	C	A	A	A	A	A	B	C	A	C
SEA WATER	A	D	D	A	A	A	A	A	A	D	A	D
SHELLAC (BLEACHED)	A	A	A	C	A	A	A	–	A	A	A	A
SHELLAC (ORANGE)	A	A	A	C	A	A	A	–	A	A	A	A
SILICONE OILS	A	A	A	A	A	A	A	A	A	A	A	A
SILVER NITRATE	B	D	D	B	A	A	A	A	B	D	–	D
SOAP SOLUTIONS (STEARATES)	A	A	A	A	A	A	A	A	A	A	A	A
SODIUM ACETATE	B	B	B	B	B	A	A	B	B	B	B	B
SODIUM ALUMINATE	A	C	C	C	A	A	A	–	A	C	–	C
SODIUM BICARBONATE	B	C	C	A	A	A	A	A	B	C	–	C
SODIUM BISULFATE	A	D	D	A	A	A	A	A	A	D	–	D
SODIUM BISULFITE	D	D	D	A	A	A	A	A	D	D	–	D
SODIUM BORATE (BORAX)	B	C	C	A	A	A	A	A	A	C	B	C
SODIUM BROMIDE	B	C	C	C	B	A	A	–	B	C	B	C
SODIUM CARBONATE	B	B	B	A	A	A	A	A	B	B	B	B
SODIUM CHLORATE	B	C	C	C	A	A	A	C	B	C	B	C
SODIUM CHLORIDE	B	C	C	A	A	A	A	A	B	C	B	C
SODIUM CHROMATE	B	B	B	C	C	A	A	–	B	B	B	B
SODIUM CYANIDE	A	A	A	A	A	A	A	A	A	A	A	A
SODIUM FLUORIDE	C	D	D	C	B	A	A	–	C	D	–	D
SODIUM HYDROXIDE 20%	A	A	A	–	A	A	A	A	A	A	A	A
SODIUM HYDROXIDE 50%	B	B	B	–	A	A	A	A	B	B	B	B
SODIUM HYDROXIDE 80%	B	B	B	–	B	A	A	A	B	B	B	B
SODIUM HYPOCHLORIDE	C	D	D	–	D	A	A	–	C	D	–	D
SODIUM METAPHOSPHATE	A	D	D	A	A	A	A	A	A	D	–	D
SODIUM METASILICATE	A	C	C	C	A	A	A	–	A	C	A	C
SODIUM NITRATE	A	B	B	–	A	A	A	A	A	B	B	B
SODIUM PERBORATE	B	C	C	B	B	A	A	A	B	C	B	C
SODIUM PEROXIDE	B	C	C	B	A	A	A	A	B	C	B	C
SODIUM PHOSPHATE (DIBASIC)	B	B	B	A	A	A	A	A	B	B	B	B
SODIUM PHOSPHATE (TRIBASIC)	B	B	B	B	B	A	A	A	B	B	B	B
SODIUM SILICATE	A	A	A	A	A	A	A	A	A	A	A	A
SODIUM SULFATE NA2S04	A	B	B	A	A	A	A	A	A	B	A	B

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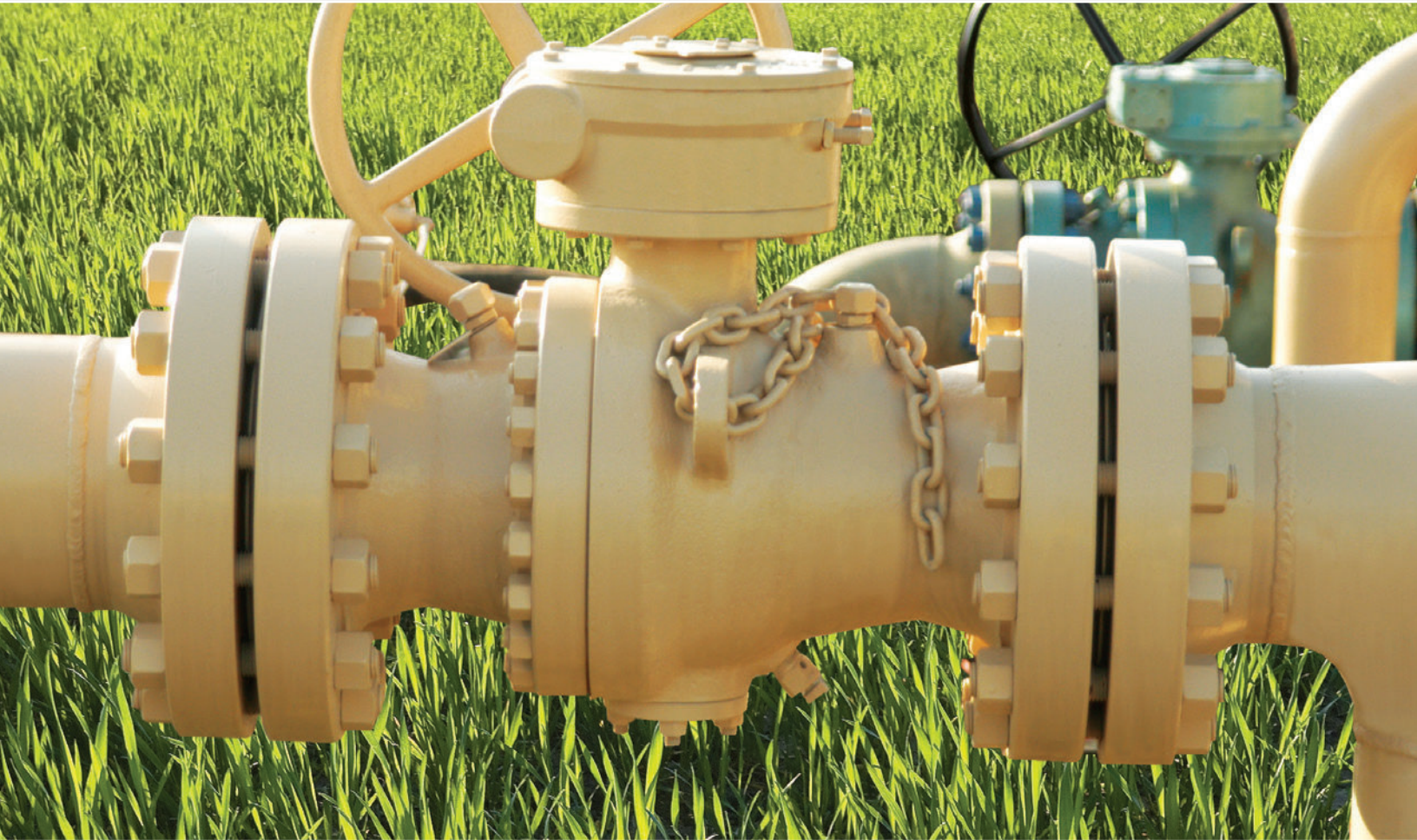
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SODIUM SULFIDE NA2S02	B	B	B	B	B	A	A	–	B	B	B	B
SODIUM THIOSULFATE	A	D	D	B	B	A	A	–	A	D	–	D
SOUR GAS AND OIL	A	A	A	–	–	–	–	–	A	A	–	A
SOYBEAN OIL	A	B	B	A	A	A	A	A	A	B	B	B
STANNIC CHLORIDE	D	D	D	B	B	A	A	A	D	D	D	D
STANNOUS CHLORIDE	C	D	D	C	C	A	A	A	C	D	–	D
STARCH	A	A	A	A	A	A	A	A	A	A	A	A
STEAM (212F)	A	B	B	D	C	A	A	A	A	B	A	B
STEARIC ACID	A	C	C	B	A	A	A	A	A	C	–	C
STODDARD SOLVENT	B	B	B	A	A	A	A	B	B	B	B	B
STYRENE	A	A	A	–	A	A	A	B	A	A	A	A
SUGAR LIQUIDS	A	B	B	–	A	A	A	–	A	B	A	B
SULFATE, BLACK LIQUORS	B	C	C	–	B	A	–	–	B	C	–	C
SULFATE, GREEN LIQUORS	B	C	C	–	B	A	–	–	B	C	–	C
SULFATE, WHITE LIQUORS	B	D	D	–	B	A	–	–	B	D	–	D
SULFURIC ACID (0 - 7%)	A	B	B	–	C	A	A	B	A	B	A	B
SULFURIC ACID (10% - 100%) H2SO4	D	D	D	–	D	A	D	B	D	D	–	D
SULFUROUS ACID	D	D	D	D	D	A	A	A	D	D	–	D
SULFUR	A	B	B	–	A	A	A	–	A	B	A	B
SULFUR DIOXIDE (DRY)	A	B	B	–	A	A	A	B	A	B	A	B
SULFUR TRIOXIDE (DRY)	B	B	B	–	A	A	A	B	B	B	B	B
SYNTHESIS GAS	B	B	B	–	A	A	A	–	B	B	B	B
TALL OIL	B	B	B	–	A	A	A	–	B	B	B	B
TANNIC ACID	B	B	B	A	A	A	A	A	B	B	B	B
TAR – TAR OIL	A	A	A	B	A	A	A	A	A	A	A	A
TARTARIC ACID	A	D	D	B	B	A	A	A	A	D	C	D
TETRAETHYL LEAD	B	C	C	B	B	A	A	C	B	C	–	C
TITANIUM TETRACHLORIDE T1-CL4	–	–	–	B	A	A	–	–	–	–	–	–
TITANIUM TRICHLORIDE T1-CL3	–	–	–	B	A	A	–	–	–	–	–	–
TOLUENE – TOLUOL	A	A	A	C	A	A	A	D	A	A	A	A
TOMATO JUICE	A	C	C	–	A	A	A	–	A	C	–	C
TRANSFORMER OIL	A	A	A	A	A	A	A	A	A	A	A	A
TRIBUTYL PHOSPHATE	A	A	A	D	D	A	–	–	A	A	A	A
TRICHLOROETHYLENE	B	B	B	C	B	A	A	D	B	B	B	B
TUNG OIL (China Wood Oil)	A	B	B	A	A	A	A	A	A	B	A	B
TURPENTINE	A	B	B	B	B	A	A	A	A	B	A	B
UREA	B	C	C	–	–	–	–	–	B	C	–	C
VARNISH	A	C	C	B	A	A	A	B	A	C	–	C
VEGETABLE OIL, EDIBLE	A	B	B	A	A	A	A	A	A	B	–	B
VEGETABLE OIL, NON-EDIBLE	A	B	B	A	A	A	A	A	A	B	A	B
VINEGAR	A	D	D	B	A	A	A	A	A	D	–	D
WATER, DISTILLED	A	D	D	A	A	A	A	A	A	D	A	D
WATER, FRESH	A	C	C	A	A	A	A	A	A	C	A	C
WATER, SALT	A	D	D	A	A	A	A	A	A	D	A	D
WAX, EMULSIONS	A	A	A	–	A	A	A	–	A	A	A	A
WAXES	A	A	A	–	A	A	A	–	A	A	A	A
WHISKEY AND WINE	A	D	D	A	A	A	A	A	A	D	–	D
XYLENE	A	A	A	D	A	A	A	D	A	A	A	A
ZINC CHLORIDE	D	D	D	C	C	A	A	A	D	D	–	D
ZINC HYDROSULFITE	A	A	A	C	A	A	–	–	A	A	A	A
ZINC SULFATE	B	D	D	A	A	A	A	A	B	D	B	D

A: Excellent B: Good (slightly attacked) C: Fair (modestly attacked) D: Not recommended –: No data

Reference: <http://www.coleparmer.com/techinfo/chemcomp.asp>. Chemical Resistance Guide by Compass Publications.

# WKM 370D6 Trunnion-Mounted Ball Valve



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