

WKM[®] Model 310C2 Floating Ball Valves

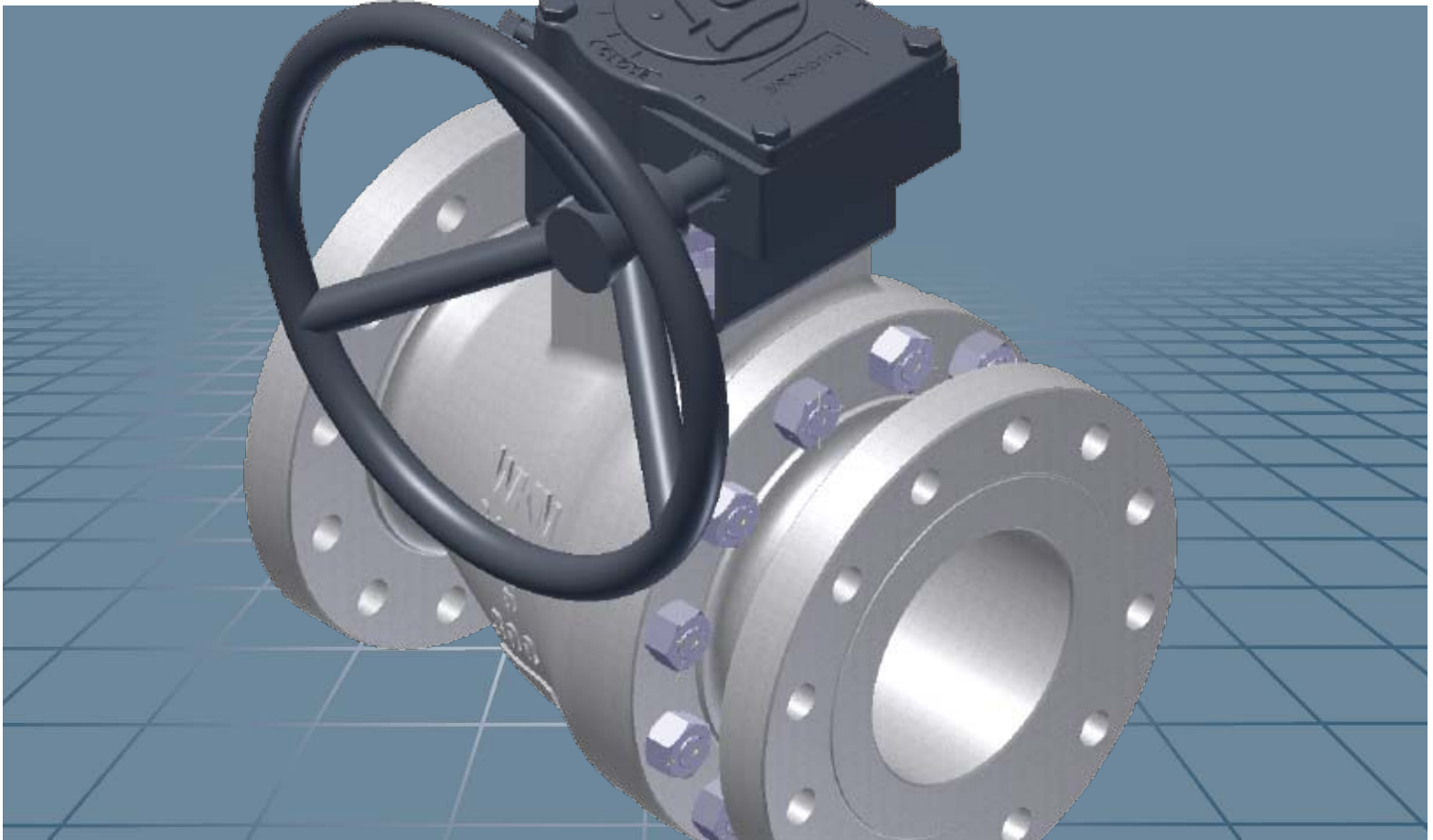


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Oklahoma City,
Oklahoma

Cameron's Valves & Measurement (V&M) group is a leading provider of valves and measurement systems to the oil and gas industry. The group's products are 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.

The Distributed Valves division provides valves products that are sold through distributor networks worldwide, for use in both oil and gas and industrial applications and include such widely recognized brand names as DEMCO®, NAVCO®, NUTRON®, TECHNO®, THORNHILL CRAVER®, TOM WHEATLEY®, WHEATLEY® and WKM®.

The WKM brand is recognized throughout the world for durable, reliable and flexible valves built for many challenging situations. The WKM product line offers a broad line of valves including ANSI gate valves, DynaSeal ball valves and Butterfly valves, all built to exacting standards for demanding applications. Cameron offers a wide range of floating ball valves. The designs have been developed based on our customers requirements.

When you specify an WKM Ball Valve, you have selected a premier product. With our state of the art manufacturing techniques, our valves are manufactured to the highest standards ensuring superior performance.

WKM® MODEL 310C2 FLOATING BALL VALVES

STANDARD FEATURES

The new WKM 310C2 two-piece, bolted body flanged end valve has been designed to meet or exceed today's requirements for a variety of applications including oil and gas, chemical and petrochemical, refining, and power generation. WKM Model 310C2 ball valves incorporate the following standard features:

- Sizes 4 in. (100 mm) through 8 in. (200 mm) x 6 in. (150 mm) Class 150 and Class 300
- Reduced port available in 6 in. x 4 in. and 8 in. x 6 in.
- Designed and tested to B16.34
- Adjustable Graphite stem packing
- Carbon steel and stainless steel trims
- ISO 5211 Stem and mounting pad
- API 608
- Anti-static device
- Deep pocketed recessed seat
- Conforms to NACE MR0175/ISO 15156 for sour service
- Fire tested to API 607

OPTIONAL FEATURES

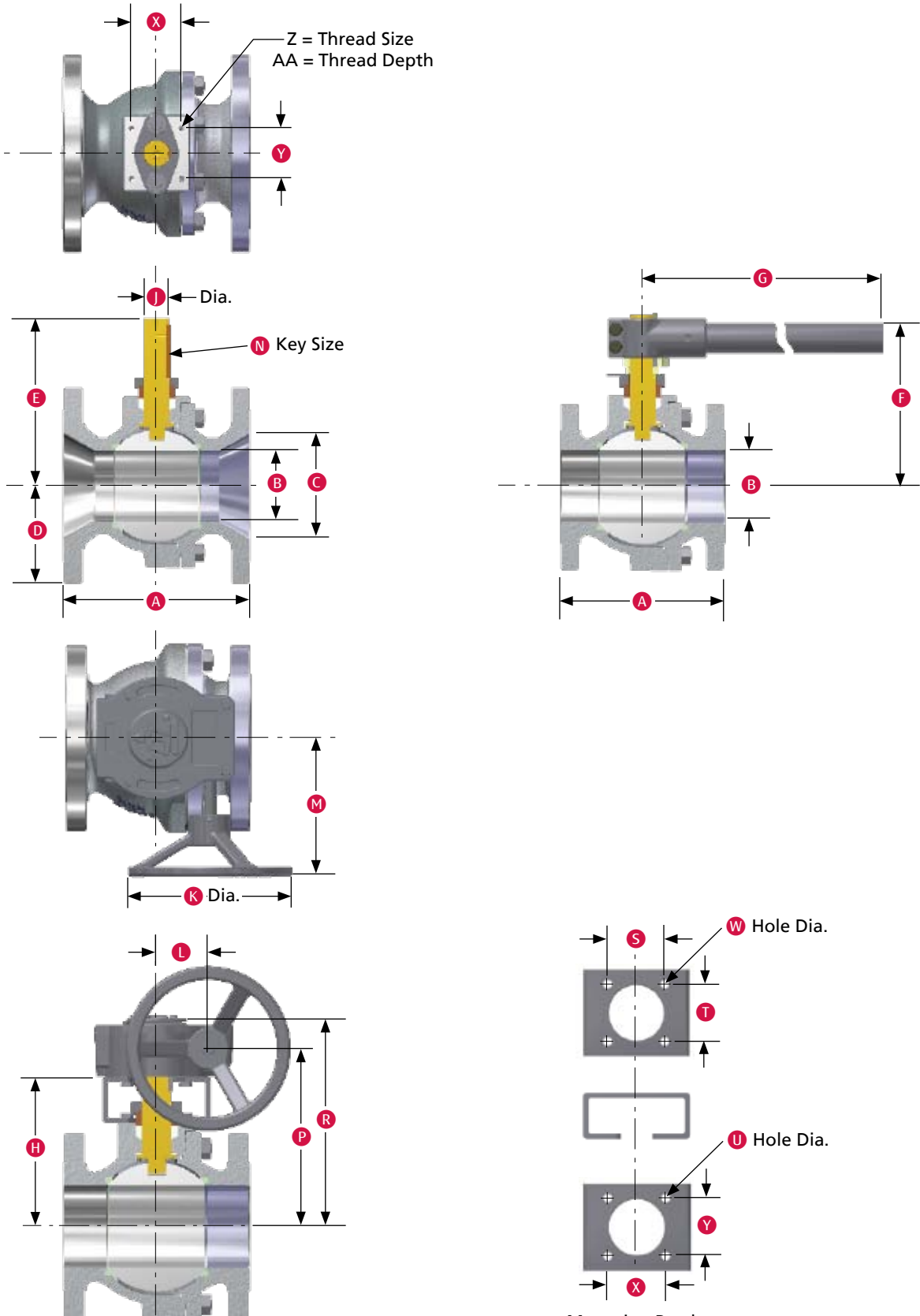
In addition to the many standard features, the new WKM 310C2 can be provided with the following options and certifications upon request:

- CE / PED
- Fugitive emissions per ISO 15848
- Metal seats
- Exotic alloy trims for more demanding applications



WKM® MODEL 310C2 FLOATING BALL VALVES

DIMENSIONS 4 in. x 4 in. - 8 in. x 6 in. (100mm x 100mm - 200mm x 150mm)



Mounting Bracket
4 in.-150 through 8 x 6 in.-150

WKM® MODEL 310C2 FLOATING BALL VALVES

DIMENSIONS DATA

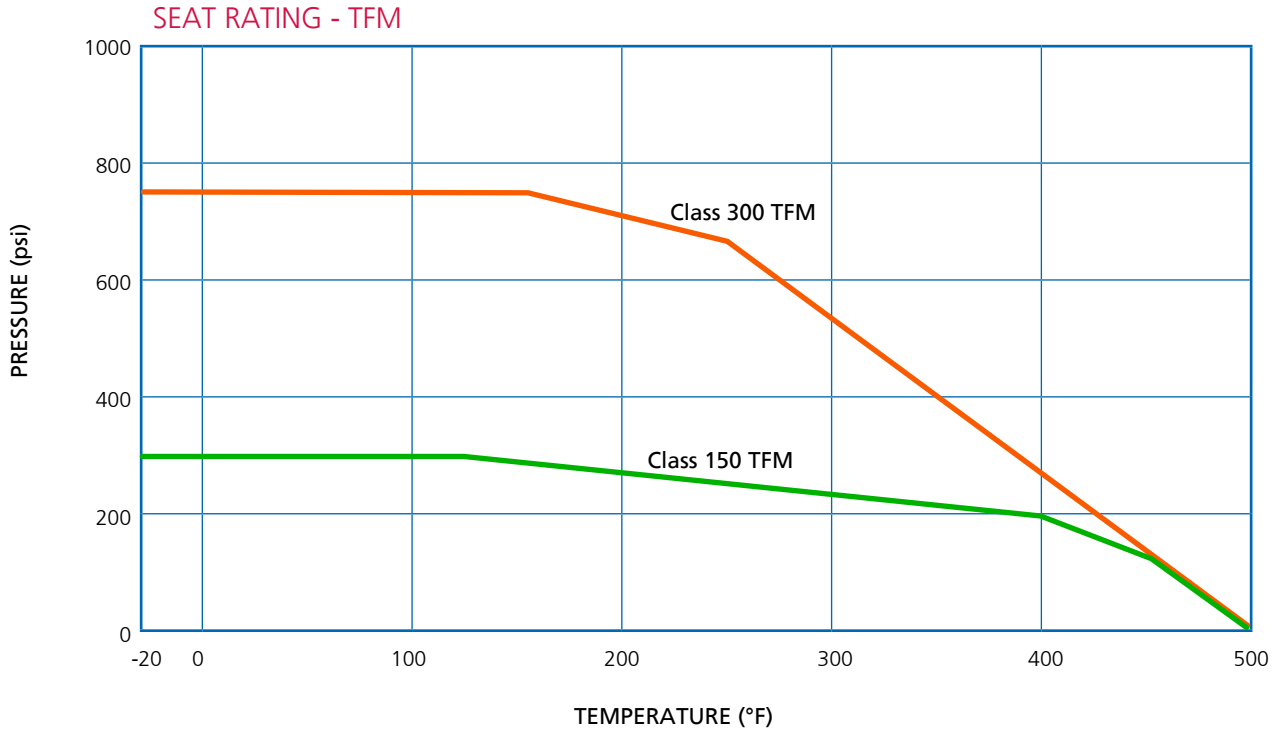
SIZE	CLASS	A		B	C	D	E	F	G	H	J	K	L	M	N
		SP	LP												
4 X 4	150	N/A	9.06 (230.2)	4.00 (101.6)	4.00 (101.6)	4.53 (115.1)	9.42 (239.2)	8.94 (227.2)	37.20 (944.9)	7.28 (184.9)	1.42 (36.0)	8.00 (203.2)	2.51 (63.8)	6.70 (170.3)	0.25 (6.4)
	300	N/A	12.06 (306.4)	4.00 (101.6)	4.00 (101.6)	5.00 (127.0)	9.42 (239.2)	8.94 (227.2)	37.20 (944.9)	7.28 (184.9)	1.42 (36.0)	8.00 (203.2)	2.51 (63.8)	6.70 (170.3)	0.25 (6.4)
6 X 4	150	10.50 (266.7)	15.51 (393.8)	4.00 (101.6)	6.00 (152.4)	5.50 (139.7)	9.42 (239.2)	8.94 (227.2)	37.20 (944.9)	7.28 (184.9)	1.42 (36.1)	8.00 (203.2)	2.51 (63.8)	6.70 (170.3)	0.25 (6.4)
	300	N/A	15.88 (403.2)	4.00 (101.6)	6.00 (152.4)	6.31 (160.3)	9.42 (239.7)	8.94 (227.2)	37.2 (944.9)	7.28 (184.9)	1.42 (36.1)	8.00 (203.2)	2.51 (63.8)	6.70 (170.3)	0.25 (6.4)
6 X 6	150	N/A	15.50 (393.7)	6.00 (152.4)	6.00 (152.4)	5.50 (139.7)	10.89 (276.7)	10.54 (267.8)	49.29 (1252.1)	8.88 (225.4)	1.42 (36.1)	10.00 (254.0)	2.54 (64.5)	6.70 (170.3)	0.25 (6.4)
	300	N/A	15.88 (403.2)	6.00 (152.4)	6.00 (152.4)	6.30 (160.0)	12.72 (323.1)	-	-	10.20 (259.1)	1.89 (48.0)	14.00 (355.6)	3.00 (76.3)	10.15 (257.7)	0.38 (9.6)
8 X 6	150	11.50 (292.1)	18.00 (457.2)	6.00 (152.4)	8.00 (203.2)	6.81 (173.0)	10.89 (276.7)	-	-	8.88 (225.4)	1.42 (36.0)	10.00 (254.0)	2.54 (64.5)	6.76 (171.7)	0.25 (6.4)
	300	16.50 (419.1)	-	6.00 (152.4)	8.00 (203.2)	7.50 (190.5)	12.72 (323.1)	-	-	10.20 (259.1)	1.89 (48.0)	14.00 (355.6)	3.00 (76.2)	10.15 (257.8)	0.38 (9.6)

SIZE	CLASS	P	R	S	T	U	V	W	X	Y	Z	AA	WEIGHT	
													GEAR	LEVER
4 X 4	150	8.65 (219.6)	10.26 (260.6)	2.84 (72.1)	2.84 (72.1)	0.44 (11.2)	2.25 (57.2)	0.44 (11.2)	2.84 (72.1)	2.84 (72.1)	3/8-16UNC	0.56 (14.2)	117 (53)	103 (47)
	300	8.65 (219.6)	10.26 (260.6)	2.84 (72.1)	2.84 (72.1)	0.44 (11.2)	2.25 (57.2)	0.44 (11.2)	2.84 (72.1)	2.84 (72.1)	3/8-16UNC	0.56 (14.2)	141 (64)	129 (59)
6 X 4	150	8.65 (219.6)	10.26 (260.6)	2.84 (72.1)	2.84 (72.1)	0.44 (11.2)	2.25 (57.2)	0.44 (11.2)	2.84 (72.1)	2.84 (72.1)	3/8-16UNC	0.56 (14.2)	131 (59)	120 (54)
	300	8.65 (219.6)	10.26 (260.6)	2.84 (72.1)	2.84 (72.1)	0.44 (11.2)	2.25 (57.2)	0.44 (11.2)	2.84 (72.1)	2.84 (72.1)	3/8-16UNC	0.56 (14.2)	189 (85)	179 (81)
6 X 6	150	10.24 (260.1)	11.85 (301.1)	3.48 (88.4)	3.48 (88.4)	0.56 (14.2)	2.25 (57.2)	0.56 (14.2)	3.48 (88.4)	3.48 (88.4)	1/2-13UNC	0.75 (19.1)	229 (104)	217 (99)
	300	11.70 (297.1)	13.38 (339.8)	3.90 (99.0)	3.90 (99.0)	0.69 (17.5)	3.00 (76.2)	0.69 (17.5)	3.90 (99.0)	3.90 (99.0)	5/8-11UNC	0.88 (22.4)	290 (131)	- (-)
8 X 6	150	10.24 (260.1)	11.85 (301.1)	3.48 (88.4)	3.48 (88.4)	0.56 (14.2)	2.25 (57.2)	0.56 (14.2)	3.48 (88.4)	3.48 (88.4)	1/2-13UNC	0.75 (19.1)	282 (128)	- (-)
	300	11.62 (295.0)	13.38 (339.8)	3.90 (99.0)	3.90 (99.0)	0.69 (17.5)	3.00 (76.2)	0.69 (17.5)	3.90 (99.0)	3.90 (99.0)	5/8-11UNC	1.00 (25.4)	351 (159)	- (-)

WKM® MODEL 310C2 FLOATING BALL VALVES

ENGINEERING SPECIFICATIONS

Pressure / Temperature Chart



These pressure and temperature ratings are the maximum shut-off for each seat combination for continuous service at temperature. for maximum ASME body ratings consult the factory or ASME B16.34.

Torque Values in - lbs. (TFM Seats)

Bore Size (in.)	Pressure (psi)	
	285	740
4	2400	4200
6	5400	11200

Flanged Valve C_v Values

Size (in.)	Class	
	150	300
4 FP	2511	2177
6 RP SP	932	-
6 RP LP	1047	1019
6 FP	5468	5402
8 RP SP	3020	2834
8RP LP	3071	-

Flow in US gallons of water per minute with a 1 psi pressure drop across the valve. Use this value in the flow formulas.

WKM® MODEL 310C2 FLOATING BALL VALVES

HOW TO ORDER

4	F	2	1	X	X	CS	4	4	S	1	W	R
Size Inches	Port Reduced Port = R Full Port = F	Valve Type				Body Tailpiece Code	Seat Code		Ball & Stem Code		Actuator Code	

Material	Codes
Carbon Steel	CS
Controlled hardness carbon steel for H2S service	CS2*
Same as CS2, but special for -50°F (-46°C) service	CS3*
316 stainless steel for wetted parts	S1*
316 stainless steel with stainless steel external trim and bolting. Good for -50°F (-46°C)	S8*

Materials	Codes
Carbon Steel	CS
316 Stainless Steel - NACE	S1*

Seal Number	Seal Material	Tailpiece Gasket Material
44	TFM	PTFE

Actuator Code	
Wrench	WR
Worm Gear	WG
Bare Stem	BS

Size		150 RF		300 RF	
in.	(mm)	LP	SP	LP	SP
4	100	FP	2110	-	2128
6	150	RP	2100	2102	2120
6	150	FP	2110	-	2128
8	200	RP	2100	2102	2122

Please contact factory personnel 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 with NACE MR0175 / ISO 15156, it is the manufacturer's responsibility for meeting metallurgical requirements and the customer / 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 in no way certifies or warrants the product or materials for the application.

CAMSERV™ AFTERMARKET SERVICES



Cameron's Aftermarket Services' goal is to help our customers lower the total cost of valve ownership. To that end we offer a full range of services from over twenty-five Service Centers worldwide and can provide experienced personnel trained to meet the specific service requirements of each valve type.

Aftermarket Services

- Supplies replacement valves and parts:
 - Maintains a full inventory of new and reconditioned valves for immediate delivery
 - Provides factory warranty support for all Cameron OEM brands as well as service for most other valves
- Field Service & Technical Support
 - Field service technicians on call 24 hours a day 7 days a week to handle service issues wherever they arise
 - Provides equipment installation, field repairs, as well as track and perform scheduled maintenance
- Customer Property Repair
 - The Customer Property Repair program allows Cameron valve customers to store assets at our service centers throughout the world
 - Valves tracked in electronic database accessible through the Internet
- Remanufactured Products
 - Offers a broad range of API-compliant reconditioned equipment with fast delivery
- Total Valve Management
 - Supply and service automation and control packages
 - Assist with valve installation, commissioning and start-up





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Cameron strives for continuous improvement in all aspects of our business. Cameron reserves the right to modify designs and specifications without notice or obligation. Nothing contained in this brochure is intended to extend any type of warranty, expressed or implied.