

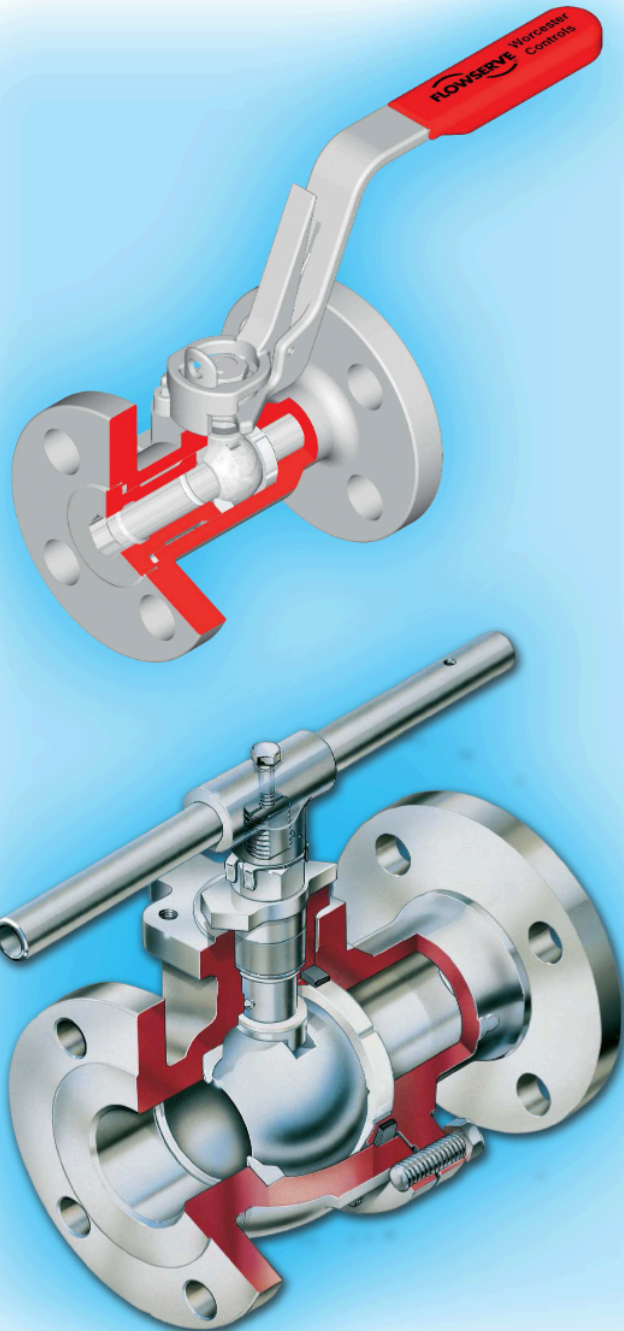


***WORCESTER CONTROLS F519/529/819/829***  
*Full Bore Fire Safe Flanged Ball Valves*



*Experience In Motion*

The Flowserve Worcester flanged full bore valve range provides customers with specification compliant product with long service free life resulting in low cost of ownership. All valves comply with the requirements of ASME B.16.34 with a one piece 519/529 design up to 1½” and the two piece design extending the range from 2” to 8”



#### **Anti-blowout stem**

Inserted from inside of valve body for greater safety

#### **Actuator Mounting**

Conforms to ISO 5211 for ease of actuation

#### **Anti-static stem design**

Ensures electrical continuity between ball and body

#### **Ball**

Parallel ported 316 stainless steel as standard with pressure equalizing hole to balance cavity pressure when the valve is open

#### **Body seals**

PTFE with metal to metal secondary seal on one-piece valves and PTFE coated graphite on two piece eliminating potential media contamination whilst providing fire rated integrity

#### **Gland packing**

Graphite provides fire rated integrity and combined with the body seals ensures Fugitive Emission compliance to ISO 15848

#### **Wrench**

Ergonomically designed tamper proof lockable design on one-piece valves and multi position fit wrench on two-piece valves to suit space requirements

#### **Locking clip**

Maintains position of gland nut during actuation for long leak-free performance

#### **Actuation**

Valve assembled ready for actuation with no changes to stem build required maintaining valve integrity

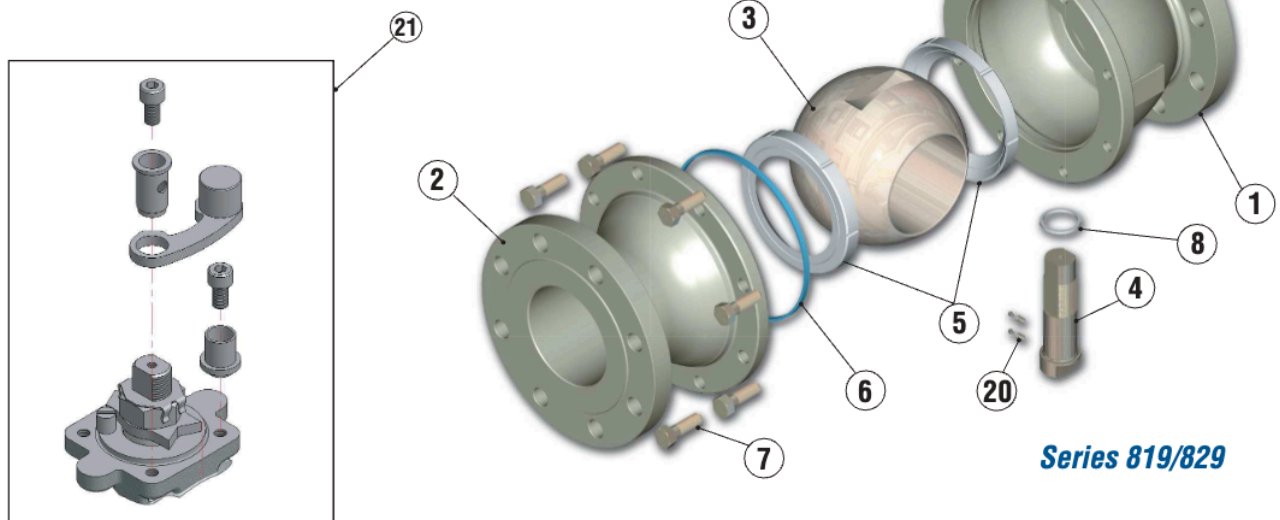
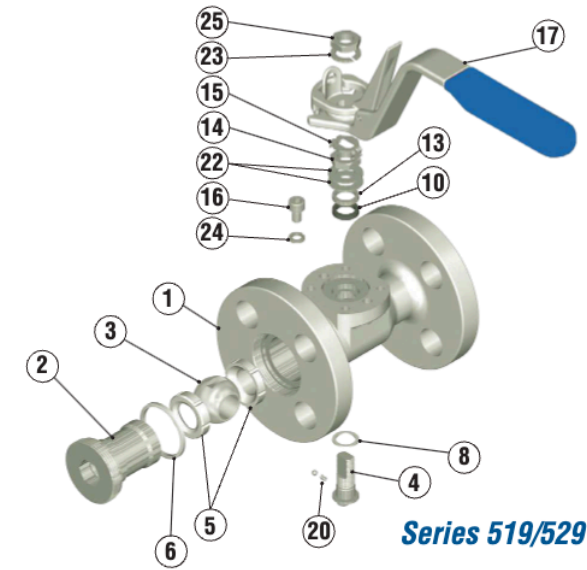
#### **Bolting**

Stainless steel as standard meeting the requirements of ASME VIII Div 1 pressure vessel codes

#### **Locking Device**

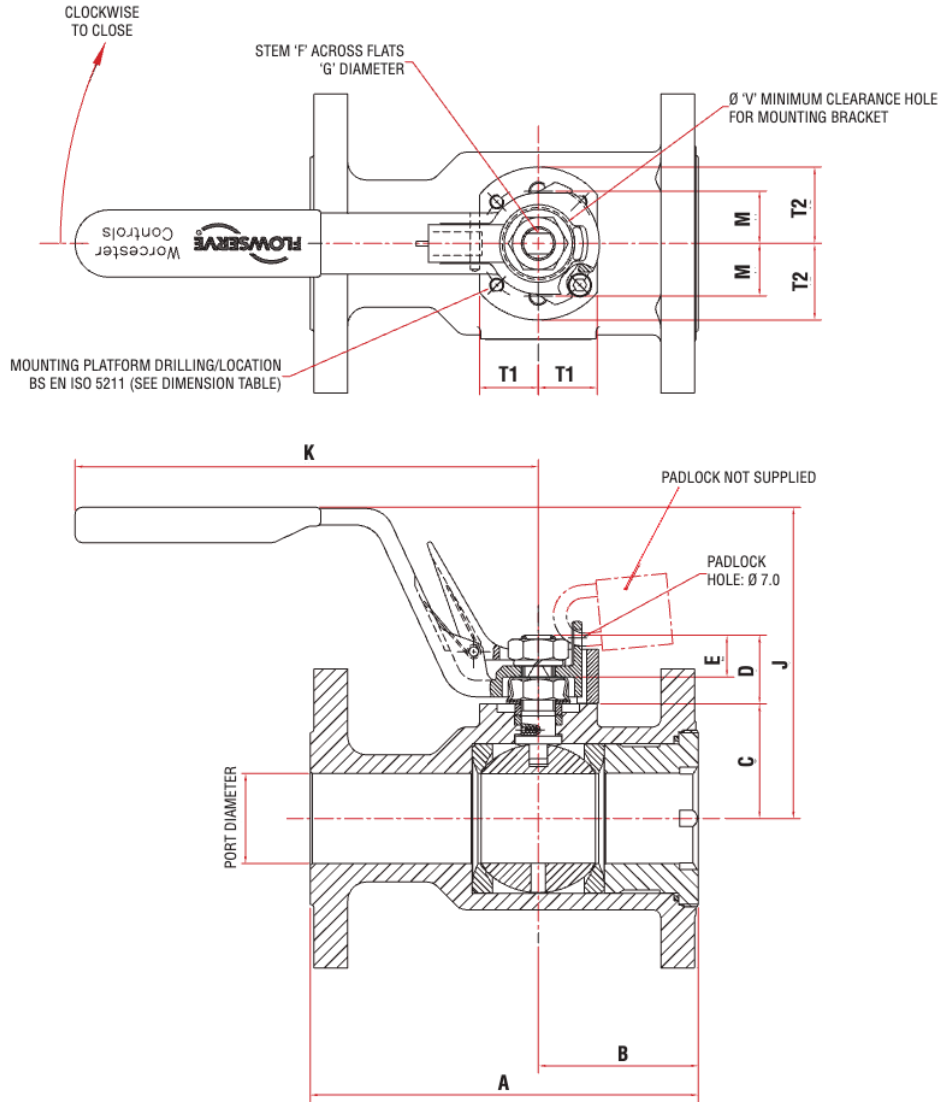
Tamper proof design ensures the padlock cannot be removed or over-ridden when locked either open or closed (North America & Canada only)

## Parts/Materials List



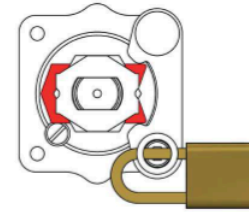
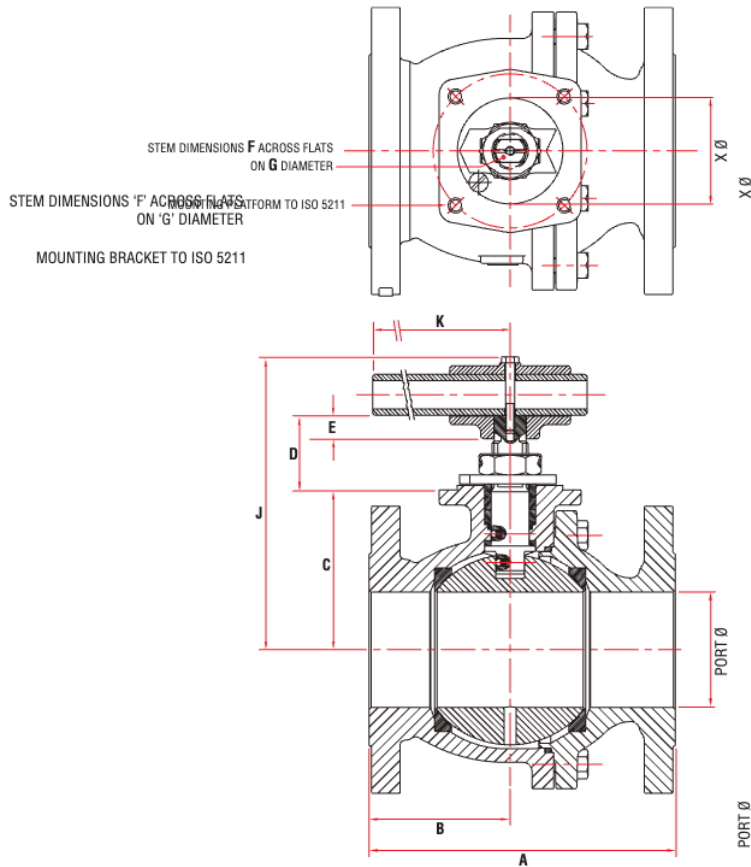
Item	Description	Material	Item	Description	Material
1 & 2	Body & Insert/Connector	Stainless Steel ASTM-A351 CF8M Low Temp Carbon Steel ASTM-A352 LCB	14	Gland nut	Zinc Plated Stainless Steel. Carbon Steel
3	Ball	Stainless Steel A479 316, ASTM-A351 CF8M	15	Gland Nut Locking Clip	Stainless Steel
4	Stem	Stainless Steel A479 316	16	Stop Pin	Stainless Steel
5	Seat	TFE Virgin, Polyfill (see page 6)	17	Wrench	Stainless Steel, Carbon Steel
6	Body Seal	PTFE / PTFE Coated Flexible Graphite	18	Wrench Head	Stainless Steel, Carbon Steel
7	Body Connector Screw	Stainless Steel ASTM A193M, B8 CL2/B8M CL2	19	Wrench attachment Bolt	Stainless Steel, Carbon Steel
8	Stem Thrust Seal	TFE, Polyfill	20	Anti-static Spring & Plunger	Stainless Steel
9	Secondary Stem Seal	TFE	21	Locking /device	Stainless Steel
10	Gland Packing	TFE, Flexible Graphite	22	Washer	Stainless Steel
11	Stem location ring	Stainless steel 316	23	Lockwasher	Stainless Steel
12	Indicator Stop	Stainless Steel	24	Washer	Stainless Steel
13	Gland	Stainless steel 316	25	Nut	Stainless Steel

## Valve Dimensions 519/529 inch/mm

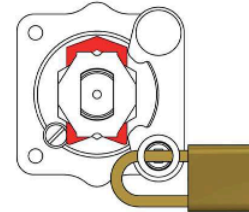


Valve Size	Port Dia. Min.	A		B	C	D	E	Stem		J	K	M	T1	T2	V	Mounting Platform			
		F519	F529					F	G							ISO Size	PCD	Thread	Depth Min
½"	0.54	4.25	5.5	2.07	0.916 0.906	0.691 0.664	0.421 0.401	0.218 0.215	3/8"-24 UNF	3.74	6.10	0.63	0.75	0.91	0.77	F03	1.42	M5	0.31
DN15	13.7	108.0	140.0	52.5	23.27 23.01	17.56 16.86	10.69 10.19	5.54 5.46	3/8"-24 UNF	95.0	155.0	15.9	19.0	23.0	19.5	F03	36.0	M5	8.0
¾"	0.79	4.61	6.0	2.24	1.273 1.263	0.935 0.902	0.598 0.578	0.297 0.294	7/16"-20 UNF	4.17	6.61	0.81	0.87	1.06	0.89	F04	1.65	M5	0.31
DN20	20.0	117.0	152.0	57.0	32.34 32.08	23.76 22.92	15.19 14.69	7.54 7.47	7/16"-20 UNF	105.8	168.0	20.7	22.0	27.0	22.5	F04	42.0	M5	8.0
1"	1.00	5.00	6.5	2.48	1.461 1.451	0.935 0.902	0.598 0.578	0.297 0.294	7/16"-20 UNF	4.35	6.61	0.81	0.87	1.06	0.89	F04	1.65	M5	0.31
DN25	25.3	127.0	165.0	63.0	37.11 36.85	23.74 22.90	15.19 14.69	7.54 7.47	7/16"-20 UNF	110.5	168.0	20.7	22.0	27.0	22.5	F04	42.0	M5	8.0
1½"	1.48	6.50	7.5	2.68	1.920 1.909	1.163 1.130	0.724 0.704	0.343 0.340	9/16"-18 UNF	5.19	7.76	0.88	0.98	1.28	1.16	F05	1.97	M6	0.39
DN40	37.7	165.0	190.0	68.0	48.76 48.50	29.55 29.71	18.39 17.89	8.71 8.64	9/16"-18 UNF	131.7	197.0	22.3	25.0	32.5	29.5	F05	50.0	M6	10.0

# Valve Dimensions 819/829 inch/mm



Locked Open\*



Locked Closed\*

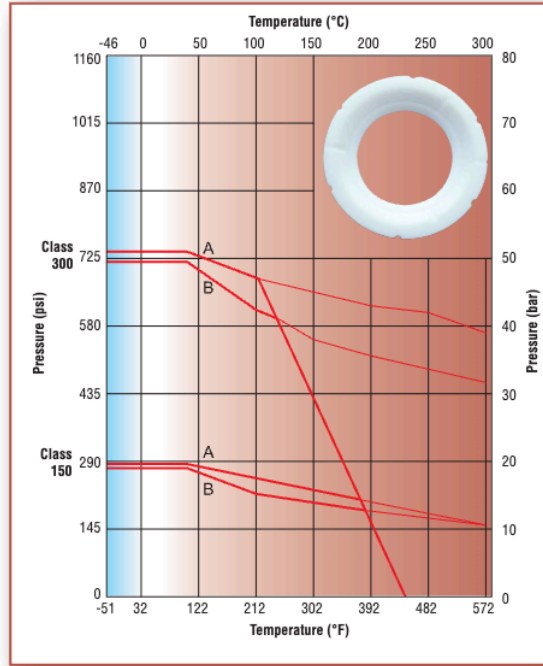
\* Padlock not supplied with valve.

Valve Size	Port Dia. Min.	819 (ASME Class 150)											829 (ASME Class 300)										
		A	B	C	D	E	F A/F Max.	G Dia. Max.	J	K	X Dia.	ISO Size	A	B	C	D	E	F A/F Max.	G Dia. Max.	J	K	X Dia.	ISO Size
2"	2.0	7.0	2.91	3.45 3.42	1.72 1.63	0.52	0.55	0.79	6.14	8.86	2.17	F07	8.5	2.9	3.45 3.42	1.72 1.63	0.52	0.55	0.79	6.14	8.86	2.17	F07
DN50	51.1	178.0	74.0	87.6 86.9	43.8 41.5	13.1	14.0	20.0	156.0	225.0	55.0	F07	216.0	74.0	87.6 86.9	43.8 41.5	13.1	14.0	20.0	156.0	225.0	55.0	F07
3"	3.0	8.0	3.70	4.43 4.39	2.01 1.91	0.66	0.59	0.83	7.91	13.78	2.17	F07 F10	11.0	3.7	4.72 4.69	2.19 2.09	0.83	0.76	1.07	8.43	21.93	2.76	F10
DN80	76.5	203.0	94.0	112.4 111.6	51.1 48.4	16.8	15.1	21.2	201.0	350.0	55.0	F07 F10	283.0	93.5	119.9 119.1	55.7 53.0	21.0	19.3	27.2	214.0	557.0	70.0	F10
4"	4.0	9.0	4.61	5.54 5.50	2.20 2.09	0.86	0.76	1.07	9.25	21.93	2.76	F10	12.0	5.2	5.79 5.76	2.87 2.78	1.11	1.05	1.31	10.83	33.46	3.35	F12
DN100	102.3	229.0	117.0	140.6 139.8	55.9 53.2	21.8	19.3	27.2	235.0	557.0	70.0	F10	305.0	132.0	147.1 146.3	73.0 70.3	28.2	26.6	33.2	275.0	850.0	85.0	F12
6"	6.0	15.5	7.05	7.18 7.15	2.87 2.77	1.11	1.05	1.30	12.20	33.46	3.35	F12	16.0	7.0	7.66 7.63	3.05 2.94	1.15	1.20	1.49	12.87	33.46	3.94	F14
DN150	152.0	394.0	179.0	182.4 181.6	73.0 70.3	28.2	26.6	33.1	310.0	850.0	85.0	F12	403.0	179.0	194.6 193.8	77.4 74.7	29.2	30.4	37.9	327.0	850.0	100.0	F14
8"	8.0	18.0	8.11	9.35 9.31	3.04 2.94	1.15	1.20	1.49	-	-	3.94	F14	20.0	9.1	10.09 10.05	3.48 3.37	1.38	1.36	1.68	-	-	5.12	F16
DN200	203.3	457.0	206.0	237.4 236.6	77.4 74.7	29.2	30.4	37.9	-	-	100.0	F14	502.0	231.0	256.2 255.3	88.4 85.5	35.0	34.5	42.6	-	-	130.0	F16

## Pressure/Temperature Ratings

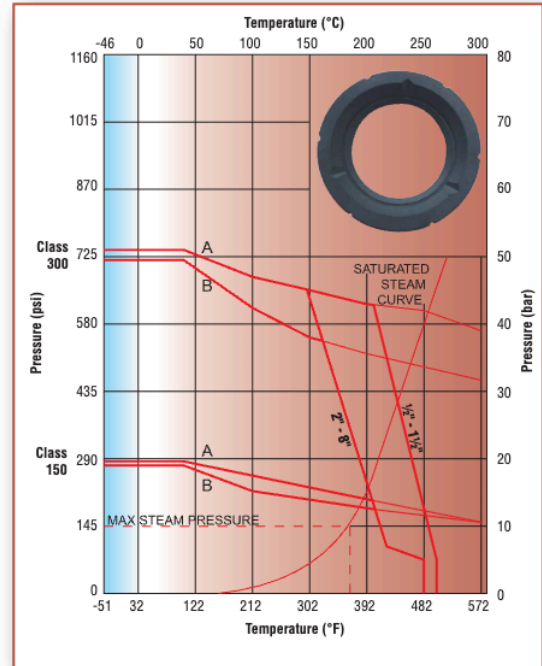
### TFE SEATS (T)

Virgin PTFE is the most common sealing material and is suitable for almost all media as it has excellent chemical resistance.



### POLYFILL / FLUOROFILL (P)

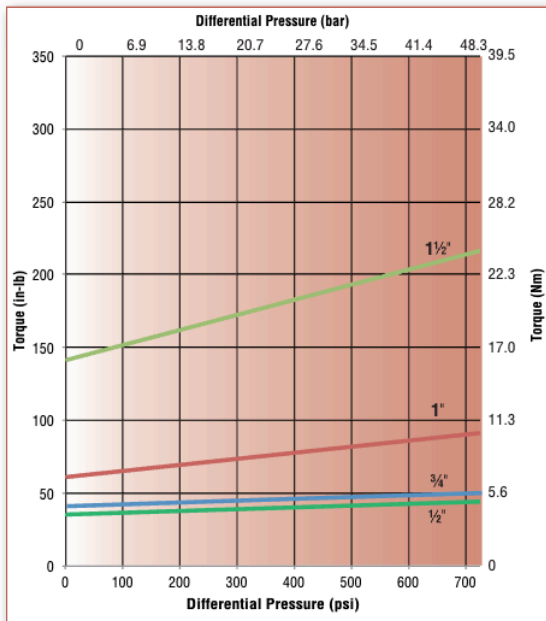
Carbon and graphite filled PTFE material an excellent seat material for higher pressure and temperature applications.



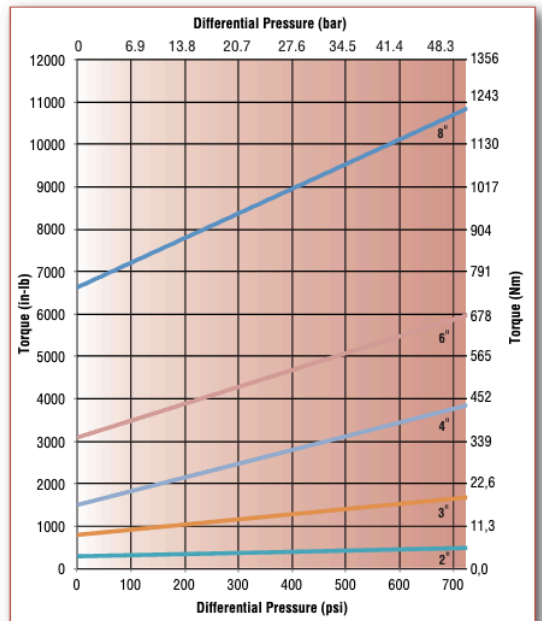
KEY: A = Carbon steel body rating B = Stainless steel body rating

## Pressure Torque Curves

### 519/529 TFE & POLYFILL SEATS



### 819/829 TFE & POLYFILL SEATS



Note: Please apply safety factors as recommended in the Worcestor Controls Actuator Sizing Manual

## Standards of Compliance

Valve Specification	ASME B.16.34 / ISO 17292	Fire rating	API 607 ISO 10497 (Graphite build only)
Face to Face Lengths	<b>519/819 (Class 150)</b> ASME B16.10 Column 19 Short ½" - 4" ASME B16.10 Column 18 Long 6" - 8" EN558 Table 2 Series 3½" - 4" EN558 Table 2 Series 12 6" - 8" <b>529/829 (Class 300)</b> ASME B16.10 Column 8 Short ½" - 6" ASME B16.10 Column 7 Long 8" EN558 Table 2 Series 4 ½" - 6"	Pressure Test	API 598
Quality Assurance	ISO 9001	Fugitive Emission	EN 15848 (Graphite build only)
		Sour Gas Applications	NACE MR.01.75 / ISO 15156 (Internal Only)
		Flanges	ASME B.16.5 Class 150 & 300 BS EN 1759-1 Class 150 & 300

## Technical Information

Valve Size	Series	Weight		Limiting Stem Torque		Flow Coefficients	
		lbs	Kg	lb-in	Nm	Cv	Kv
½" DN15	519	4.0	1.8	69	7.8	32	27
	529	4.9	2.2	69	7.8	32	27
¾" DN20	519	5.3	2.4	157	17.7	54	46
	529	7.7	3.5	157	17.7	54	46
1" DN25	519	7.1	3.2	157	17.7	94	80
	529	10.1	4.6	157	17.7	94	80
1½" DN40	519	12.8	5.8	299	33.8	254	219
	529	19.0	8.6	299	33.8	254	219
2" DN25	819	26.5	12.0	1042	118	501	423
	829	33.1	15.0	1042	118	501	423
3" DN25	819	48.5	22.0	1838	208	1158	978
	829	70.5	32.0	3083	348	1158	978
4" DN25	819	88.2	40.0	3080	348	2118	1789
	829	125.7	57.0	6774	765	2118	1789
6" DN25	819	194.0	88.0	6774	765	5074	4287
	829	257.9	117.0	10100	1141	5074	4287
8" DN25	819	388.0	176.0	10100	1141	9337	7889
	829	520.3	236.0	14503	1639	9337	7889

Cv - Flow in US GPM Pressure psi Kv - Flow in M3/hr Pressure - bar

## How to Order (Typical)

A		B		C		D			E				F		G	
Size		Standard Variant		Series		Body	Insert/Conn	Ball	Stem	Seat	Body Seal	Thrust Seal	Secondary Stem Seal	Gland Packing	Flange	Build Variation
A - Size		B - Std Variant		C - Series		D - Main Parts			E - Seat & Seals				F - Flange		G - Build Variation	
½"	15mm	05	Fire rated	F	519 Series	519	Low-Temp Carbon Steel			5	Virgin TFE		T	Class 150	150	V3 - Vented Ball
¾"	20mm	07			529 Series	529	Stainless Steel			6	Polyfill/Fluorofill		P	Class 300	300	V32 - Oval Handle
1"	25mm	10			819 Series	819					Graphite		Z			V38 - Assembled Dry
1½"	40mm	15			829 Series	829										V46 - Silicone Free
2"	50mm	20														V66 - European C of C
3"	80mm	30														V72 - PED Compliance
4"	100mm	40														V73 - Cavity fillers
6"	150mm	60														V91 - API 608 Compliance
8"	200mm	80														



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