Victaulic® Ball Valve
Series 727

08.42



Bare
Valve



Valve with
Lever Handle



Actuator Bracket Kit
(Sold Separately)
as Shipped



Actuator Bracket Kit
(Sold Separately)
Installed on Valve

1.0 PRODUCT DESCRIPTION

Available Sizes

- 2 – 6"/DN50 – DN150

Application

- For use in carbon steel, ductile iron, and plastic piping systems. When used with other piping materials, the system designer shall confirm the materials utilized are acceptable for use with the intended application.

NOTES

- Not recommended for use in potable water systems using stainless steel piping or copper tubing. Refer to publication 17.45: Victaulic Vic-300 MasterSeal™ Stainless Steel Butterfly Valve – Series 861 or publication 22.14: Victaulic Copper Connection Butterfly Valve – Series 608N for more information.
- Intended for use in full-open or shut-off service; throttling is not recommended with standard ball valves.
- The Series 727 Ball Valve shall not be installed with flange adapters, such as the Victaulic Style 741 or 743 Vic-Flange Adapters. When connecting to flanged components, a No. 45F or No. 45R Flanged Nipple shall be used.

Maximum Working Pressure

- Rated up to 1500 psi/10350 kPa/103 Bar

Operating Temperature

- Reference section 3.0 for seat performance

Function

- High pressure enhanced port NACE MR0175 compliant ball valve
- Integral/tamper-resistant lock

Pipe Preparation

- Cut or roll groove pipe in accordance with publication 25.01: Original Groove System (OGS) Groove Specifications or publication 25.02: Victaulic® EndSeal™ Groove Specifications

Configuration Options

- Grooved by Grooved End Connection
- Grooved by Male Threaded End Connection
- Uni-Directional Ball (Freeze Port) to equalize upstream line pressure

2.0 CERTIFICATIONS/LISTINGS

Product manufactured by Victaulic and/or certified suppliers in accordance with ISO-9001.

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.

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3.0 SPECIFICATIONS – MATERIAL

Body and Endface: Ductile iron conforming to ASTM A395/395M-99 Grade 60-40-18. NACE compliant.

Stem: ASTM A105 Carbon Steel. Electroless Nickel Plated to ASTM B733-04 to SC4 Severe Service. NACE compliant.

☐ Optional: UNS S31600 Type 316 stainless steel. NACE compliant.

Ball: ASTM A105 Carbon Steel. Electroless Nickel Plated to ASTM B733-04 to SC4 Severe Service. NACE compliant.

☐ Optional: UNS S31600 Type 316 stainless steel. NACE compliant.

Seats: Acetal Copolymer Temperature range -20°F to 150°F/-29°C to + 66°C continuous.

Seals: Nitrile.

Operators:

Lever Handle: 2 – 6"/DN50 – DN150

Ductile Iron per ASTM A 536 Grade 65-45-12, enamel paint

Integral Locking Drive Components:

Stamped carbon steel ASTM A572 Grade 50 and ASTM A1008, with ASTM B633 SC2 Type III zinc plating.

Actuator Bracket Kit: 2 – 6"/DN50 – DN150

Saddle Strap: Ductile Iron per ASTM A536 Grade 65-45-12, enamel paint

Mounting Bracket: ASTM A500 Grade C

Stem Driver: GB/T3077 Alloy Steel, Electrodeposited Zinc Plated to ASTM B633 Type III SC2

Alignment Bushing: UHMW Polyethylene High Density

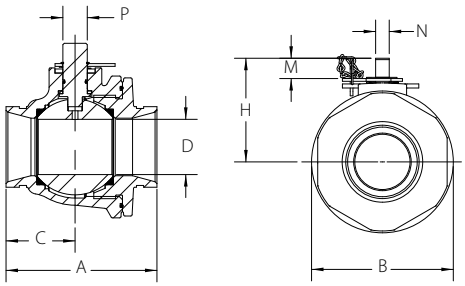
Bolts: ASTM A307 Grade A Carbon Steel, Zinc Plated to ASTM F1941

Nuts: ASTM A563 Grade A Carbon Steel, Zinc Plated to ASTM F1941

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4.0 DIMENSIONS

Series 727 Grooved Ball Valve



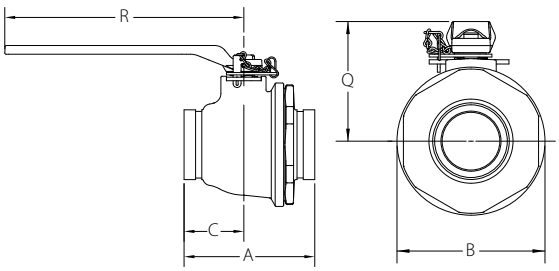
Bare Valve Grooved End
2 – 6"/DN50 – DN150

Size		Dimensions								Weight
Nominal inches DN	**Actual Outside Diameter** inches mm	**A** **E to E** inches mm	**B** inches mm	**C** inches mm	**D** inches mm	**H** inches mm	**M** inches mm	**N** inches mm	**P** inches mm	**Approx. (Each)** lb kg
2 DN50	2.375 60.3	5.53 140	4.50 114	2.50 64	1.65 42	3.88 98	1.00 25	0.59 15	1.10 28	11.0 5.0
3 DN80	3.500 88.9	6.56 167	6.25 159	3.00 76	2.40 61	4.63 117	1.00 25	0.59 15	1.10 28	22.0 10.0
4 DN100	4.500 114.3	8.26 210	8.13 206	3.88 98	3.40 86	5.75 146	1.13 29	0.75 19	1.38 35	48.0 22.0
6 DN150	6.625 168.3	10.10 256	10.50 267	5.13 130	4.90 124	7.63 194	1.50 38	0.95 24	1.75 44	105.0 47.5

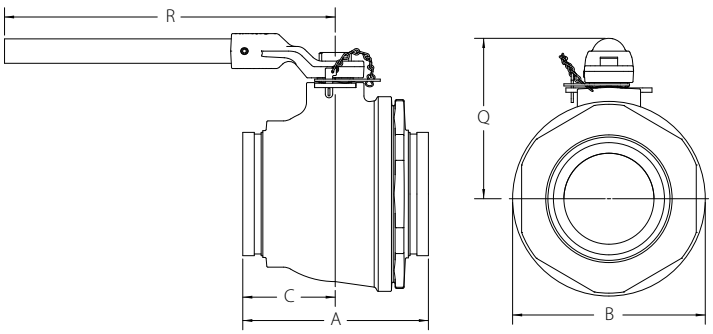
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4.0 DIMENSIONS (CONTINUED)

Series 727 Grooved Ball Valve with Handle



Grooved End Valve with Lever Handle
2 – 3"/DN50 – DN75



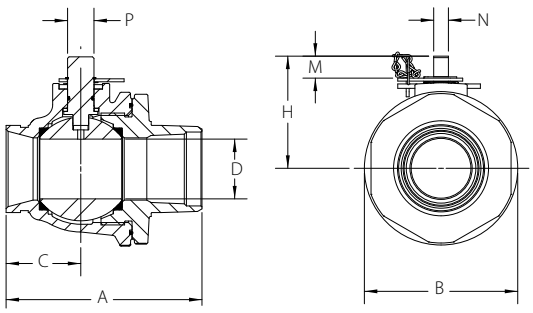
Grooved End Valve with Lever Handle
4 – 6"/DN100 – DN150

Size		Dimensions					Weight
Nominal inches DN	**Actual Outside Diameter** inches mm	**A** **E to E** inches mm	**B** inches mm	**C** inches mm	**Q** inches mm	**R** inches mm	**Approx. (Each)** lb kg
2 DN50	2.375 60.3	5.53 140	4.50 114	2.50 64	4.38 111	12.00 305	13.0 5.9
3 DN80	3.500 88.9	6.56 167	6.25 159	3.00 76	5.00 127	12.00 305	24.0 11.0
4 DN100	4.500 114.3	8.26 210	8.13 206	3.88 98	7.13 181	18.00 457	54.0 24.5
6 DN150	6.625 168.3	10.10 256	10.50 267	5.13 130	8.75 222	18.00 457	115.0 52.0

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4.1 DIMENSIONS

Series 727 Grooved x Male Threaded Ball Valve



Bare Valve Threaded End
2 – 4"/DN50 – DN100

Size		Dimensions								Weight
Nominal inches DN	**Actual Outside Diameter** inches mm	**A** **E to E** inches mm	**B** inches mm	**C** inches mm	**D** inches mm	**H** inches mm	**M** inches mm	**N** inches mm	**P** inches mm	**Approx. (Each)** lb kg
2 DN50	2.375 60.3	6.35 161	4.50 115	2.50 64	1.65 42	3.88 98	1.00 25	0.59 15	1.10 28	12.0 5.4
3 DN80	3.500 88.9	7.87 200	6.25 159	3.00 76	2.40 61	4.63 117	1.00 25	0.59 15	1.10 28	25.0 11.5
4 DN100	4.500 114.3	9.46 240	8.13 206	3.88 98	3.40 86	5.75 146	1.13 29	0.75 19	1.38 35	50.0 22.5

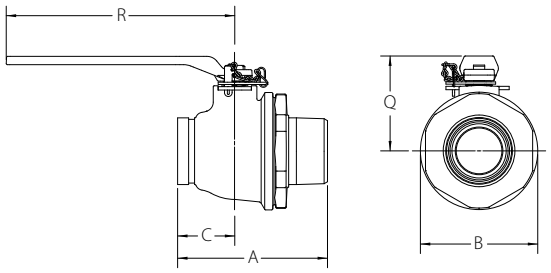
NOTE

- For the Uni-Directional Ball (Freeze Port) configuration, the Male Threaded side is the inlet side.

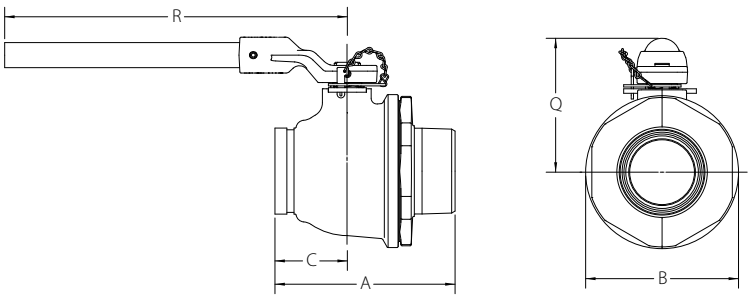
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4.1 DIMENSIONS (CONTINUED)

Series 727 Grooved x Male Threaded Ball Valve with Handle



Threaded End Valve with Lever Handle
2 – 3"/DN50 – DN75



Threaded End Valve with Lever Handle
4"/DN100

Size		Dimensions					Weight
Nominal inches DN	**Actual Outside Diameter** inches mm	**A** **E to E** inches mm	**B** inches mm	**C** inches mm	**Q** inches mm	**R** inches mm	**Approx. (Each)** lb kg
2 DN50	2.375 60.3	6.35 161	4.50 114	2.50 64	4.38 111	12.00 305	14.0 6.4
3 DN80	3.500 88.9	7.87 200	6.25 159	3.00 76	5.00 127	12.00 305	26.0 12.0
4 DN100	4.500 114.3	9.46 240	8.13 206	3.88 98	7.13 181	18.00 457	55.0 25.0

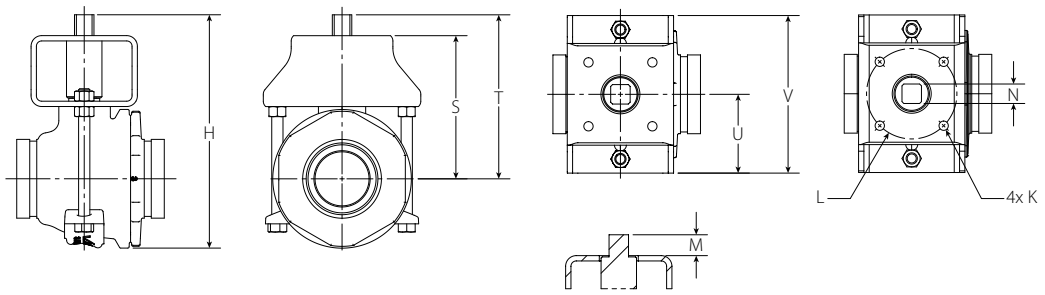
NOTE

- For the Uni-Directional Ball (Freeze Port) configuration, the Male Threaded side is the inlet side.

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4.1 DIMENSIONS (CONTINUED)

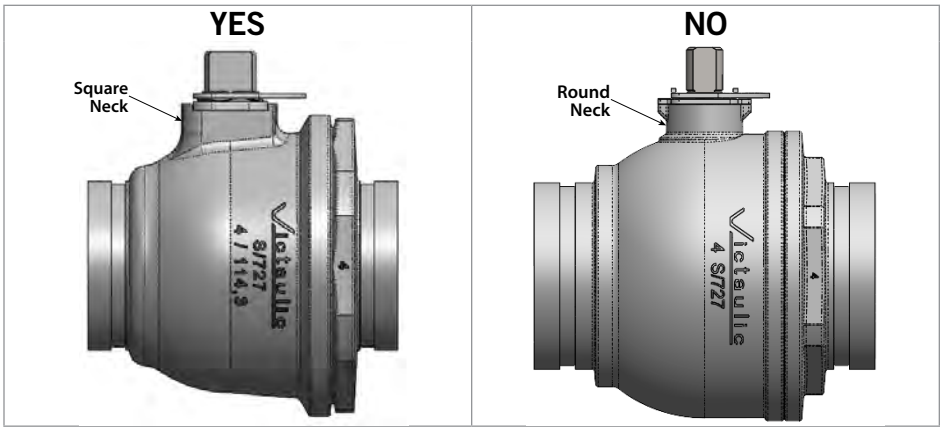
Series 727 Actuator Bracket Kit for Grooved and Threaded End Valves



Grooved Version Shown Above

Size		Dimensions									Weight	
Nominal inches DN	**Actual Outside Diameter** inches mm	**H** inches mm	**K** inches mm	**L** inches mm	**M** inches mm	**N** inches mm	**S** inches mm	**T** inches mm	**U** inches mm	**V** inches mm	**Approx. (Each)** lb kg	**ISO 5211/ MSS SP-101 Flange Designation**
2 DN50	2.375 60.3	9.13 232	0.44 11	4.02 102	1.06 27	0.88 22	5.75 146	6.75 171	3.50 89	7.00 178	19.0 8.6	F10/FA10
3 DN80	3.500 88.9	10.50 267	0.44 11	4.02 102	1.06 27	0.88 22	6.50 165	7.38 187	3.50 89	7.00 178	31.0 14.0	F10/FA10
4 DN100	4.500 114.3	12.38 314	0.56 14	4.92 125	1.19 30	1.06 27	7.13 181	8.38 213	4.50 114	9.00 228	60.0 27.0	F12/FA12
6 DN150	6.625 168.3	15.75 400	0.69 17	5.51 140	1.56 40	1.44 36	9.00 229	10.50 267	6.00 150	11.88 300	125.0 56.5	F14/FA14

This actuator bracket kit is designed for use only with Series 727 Ball Valves that have a square neck, as shown in the "YES" column to the right.



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5.0 PERFORMANCE

Flow Characteristics

C_v values for flow of water at +60°F/+16°C with a fully open valve are shown in tables below.

Formulas for C_v values:

$$\Delta P = \frac{Q^2}{C_v^2}$$

$$Q = C_v \times \sqrt{\Delta P}$$

Where:
Q = Flow (GPM)
ΔP = Pressure Drop (psi)
C_v = Flow Coefficient

Size		Flow Characteristics
Nominal inches DN	**Actual Outside Diameter** inches mm	**Full Open** C_v K_v
2 DN50	2.375 60.3	282 244
3 DN80	3.500 88.9	543 470
4 DN100	4.500 114.3	1460 1263
6 DN150	6.625 168.3	1871 1618

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5.1 PERFORMANCE

Series 727 Ball Valve

Torque Requirements

Size		Torque – Foot Pounds/Newton Meters			
Nominal inches mm	Actual Outside Diameter inches mm	Differential Pressure – psi/Bar			Maximum Allowable Stem Torque (MAST)
		250/17	750/52	1500/103	
2 DN50	2.375 60.3	10 14	15 20	25 34	280 380
3 DN80	3.500 88.9	20 27	50 68	75 102	280 380
4 DN100	4.500 114.3	50 68	100 136	175 237	600 814
6 DN150	6.625 168.3	125 170	275 373	450 610	1250 1695

Source:

These torque values were derived from test data with new valves conveying water and oil at ambient temperature. For other service conditions, apply a suitable service factor.

Use the 250-psi/17-Bar torque values for lower pressure differentials. For pressure differentials between the listed values, interpolation may be utilized.

Typical Fluid Torque Factors Commonly Used for This Valve:

Water: 1.0; Oil: 1.33

Actuation Factor:

A factor should be added to account for potential drift in the output of the actuator due to actuator performance, misalignment, or external inputs (i.e., air or power supply). A factor of up to 1.25 may be applied.

Cycling Factor:

Valve torque will typically increase and actuator output decrease as the valve is cycled. A factor of 1.5 should be applied for when total valve cycles are expected to exceed 1,000.

Combining Torque Factors:

When multiple torque factors apply, they are combined by multiplying them. Example: For an actuated valve in oil service, the combined factor would be 1.33 (fluid torque factor) X 1.25 (actuation factor) = 1.66.

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6.0 NOTIFICATIONS

⚠ WARNING



- **Read and understand all instructions before attempting to install any Victaulic products.**
- **Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.**
- **Confirm that any equipment, branch lines, or sections of piping that may have been isolated for/during testing or due to valve closures/positioning are identified, depressurized, and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.**
- **Wear safety glasses, hardhat, foot protection, and hearing protection.**

Failure to follow these instructions could compromise system integrity or cause system failure, resulting in death or serious personal injury and property damage.

7.0 REFERENCE MATERIALS

V - 040 - 727 P 0 - S

Type	In./mm	Size Code	Series	End Configuration	Operator/ Ball Option	Trim
V	2/50 3/80 4/100 6/150	020 030 040 060	727	P - Grooved Ends T - Grooved x Male Threaded	0 - Standard Ball w/o handle 1 - Uni-Directional Ball (Freeze Port) w/o handle H - Standard Ball with handle 2 - Uni-Directional Ball (Freeze Port) with handle	C - Electroless nickel plated (ENP) Carbon Steel Trim S - CF8M/316SS Stainless Steel Trim

NOTE

- End configurations dependent on sizes. See Section 4.0 for details.

25.01: Original Groove System (OGS) Groove Specifications

25.02: Victaulic EndSeal™ Pipe Groove Specifications

29.01: Terms and Conditions/Warranty

I-100: Field Installation Handbook

I-727.KIT: Series 727 Ball Valve Actuator Bracket Kit Instructions

User Responsibility for Product Selection and Suitability

Each user bears final responsibility for determining the suitability of Victaulic products for their end-use application, in accordance with industry standards, project specifications, and Victaulic's published performance, maintenance, and safety data, as well as all warnings and installation instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, warranty, installation instructions, or this disclaimer.

Installation

Always refer to and follow the Victaulic Installation Handbook or installation instructions for the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at victaulic.com.

Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

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