



CTS BALL VALVES



Sample Engineering Specification

All thermoplastic ball valves shall be Copper Tube Size (CTS) sealed unit type constructed from CPVC Type IV, ASTM D 1784 Cell Classification 23447. All O-rings shall be EPDM. All valves shall have double stop Polypropylene handle. All valves shall be certified by NSF International for use in potable water service. All valves shall be pressure rated at 100 psi for water at 180°F, as manufactured by Spears® Manufacturing Company.

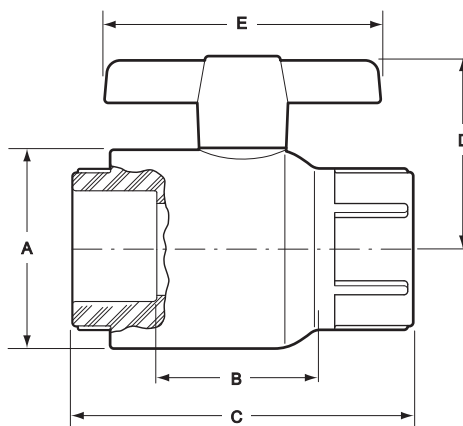
Features – CPVC

A high quality, quarter-turn shutoff valve designed for line-stop use in Copper Tube Size (CTS) CPVC hot and cold water distribution systems as specified in ASTM D 2846. Approved by national, state and most municipal building codes for use in residential and commercial structures, as well as recreational vehicles, modular homes and mobile home applications. Check local codes for acceptability and restrictions. Available in CTS sizes 1/2" - 2" with socket end connectors.

- Chemical & Corrosion Resistant CPVC Construction
- Maintenance-Free Sealed Unit
- High Impact Polypropylene Handle
- Spears® Single O-ring Safe-T-Shear® Stem Design
- EPDM O-rings
- Teflon® HDPE Floating Seat Design
- Suitable for Commercial Hot Water Systems
- Sizes 1/2" - 2" Pressure Rated to 100 psi @ 180°F
- NSF Certified for Potable Water use
- Assembled with Silicone-Free, Water Soluble Lubricant
- Manufactured to ASTM F 1970

Quick-View Valve Selection Chart

Valve Size	O-ring Material	Part Number Socket	Pressure Rating
1/2	EPDM	1922-005	100 psi Non-Shock Water @ 180°F
3/4	EPDM	1922-007	
1	EPDM	1922-010	
1-1/4	EPDM	1922-012	
1-1/2	EPDM	1922-015	
2	EPDM	1922-020	



Dimensions, Weights & C_v Values

Nominal Size	Dimension Reference (inches, ± 1/16)					Approx. Wt. (Lbs.)	C _v ² Values
	A	B ¹	C	D	E		
1/2	1-11/32	1-1/16	2-1/4	1-5/16	2	.11	37
3/4	1-3/4	1-1/2	2-31/32	1-23/32	2-23/32	.24	84
1	2-1/32	1-5/8	3-3/8	2-7/16	3-1/2	.39	151
1-1/4	2-9/16	1-31/32	3-7/8	2-13/16	3-3/4	.66	229
1-1/2	2-15/16	2-1/2	4-11/16	2-15/16	4-1/4	.99	330
2	3-9/16	2-27/32	5-5/32	3-13/16	4-31/32	1.50	598

1: Valve Lay Length

2: Gallons per minute at 1 psi pressure drop. Values calculated from valve laying length, based on derivative of Hazen-Williams equation with roughness factor of C=150.



CPVC CTS FITTINGS & BALL VALVES

CTS-2-1004

Certified Safe Alternative to Metal Plumbing Systems



All conventional metal plumbing systems corrode leaving their corrosive wastes for deposit into the water system. Spears® thermoplastic system components never corrode and are certified by the NSF International (NSF) for safe use in drinking water systems. Approved by national, state and most municipal building codes*, Spears® CTS CPVC Fittings and Valves are ideally suited for hot and cold water distribution systems in residential and commercial structures, as well as recreational vehicles, modular homes and mobile homes.

*Check state and local codes.

Full 1/2" Through 2" Availability

Spears® line of CPVC CTS fittings and valves offer a variety of injection molded configurations in sizes 1/2" through 2".

Exceptional Corrosion Resistance

Unlike metal systems, CPVC CTS fittings and valves never rust, scale, or pit, and will provide many years of maintenance-free service and extended system life.

Energy Savings

Low heat conductivity minimizes heat loss in hot water systems.

Higher Flow Capacity

Smooth interior walls result in lower pressure loss and higher volume than conventional metal systems.

Lower Installation Costs

Lower material costs than metallic systems, combined with lighter weight and ease of installation, can substantially reduce installation cost.

Suitable for Commercial Hot Water

CPVC CTS fittings and valves can handle fluids at service temperatures up to 180°F (82°C).

Conforms to ASTM D 2846

Specification for Chlorinated Poly Vinyl Chloride (CPVC) Plastic Hot and Cold Water Distribution Systems. Performance tested and certified by NSF.

Special Reinforced (SR) Transition Fittings

Spears® patented SR Fittings provide excellent plastic-to-metal system transitions, eliminating corrosive problems associated with conventional transition fittings.

CPVC CTS Valves

Spears® Copper-Tube-Size Valves feature one-piece design that never requires adjustment. Standard EPDM O-ring seal and Teflon® Ball Seats enable bubble-tight shut off. High impact Polypropylene handle has double stop engagement. 100 psi maximum internal pressure rating at 180°F.



For additional information, please refer to Spears® THERMOPLASTIC VALVES & ACCESSORIES PRODUCT GUIDE & ENGINEERING SPECIFICATIONS V-4, CTS FITTINGS WEIGHTS & DIMENSIONS CTS-4, THERMOPLASTIC VALVES & ACCESSORIES Price Schedule V-1, or CTS FITTINGS Price Schedule CTS-1.

Sample Engineering Specifications

All fittings shall be Copper-Tube-Size constructed from CPVC Type IV Cell Classification 23447. All fittings shall be certified for potable water use by the NSF International (NSF). All fittings shall be produced in strict compliance to ASTM D 2846, as manufactured by Spears® Manufacturing Company. All thermoplastic ball valves shall be Copper-Tube-Size sealed unit type constructed from CPVC Type IV Cell Classification 23447. All O-rings shall be EPDM. All valves shall have double stop Polypropylene handle. All valves shall be listed for potable water service by the NSF International (NSF). All valves shall be pressure rated at 100 psi for water at 180°F, as manufactured by Spears® Manufacturing Company.



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Spears® Exclusive Anti-Stress Drop-Ear Fittings & Brackets



Drop Ear 90° Elbow

- Eliminates fitting damage during installation of plumbing drops.
- Secures plumbing drops against horizontal and vertical movement.



Drop Ear Bracket

Valve Quick-View Selection Chart

Valve Size	O-ring Material	Part Number	C _v	Pressure Rating
1/2	EPDM	1922-005	37	100 psi Non-Shock Water @ 180°F
3/4	EPDM	1922-007	84	
1	EPDM	1922-010	151	
1-1/4	EPDM	1922-012	229	
1-1/2	EPDM	1922-015	330	
2	EPDM	1922-020	598	

Values calculated from valve laying length, based on derivative of Hazen-Williams equation with surface roughness factor of C=150.

Application

Spears® Copper-Tube-Size (CTS) fittings are manufactured from chlorinated polyvinyl chloride (CPVC) for use with SDR-11 piping systems of CTS outside diameter in hot and cold water distribution systems. Check state and local codes for application and restrictions.

Testing

Once the system has been installed and allowed to cure properly, the system shall be tested in accordance with applicable code requirements. When testing with water (hydrostatic testing), the system must be slowly filled with water and the air bled from the highest and furthest points in the system before test pressure is applied. Failure to do so can cause damage to the piping system and could be harmful to the job site personnel should a failure occur. If a leak is found, the affected product must be cut out and discarded. A new section can be installed using couplings or other approved means.

Fitting Configurations

A variety of standard, reducing, specialty and transition fitting configurations are available:

- Tees
- 45° and 90° Ells and Street Ells
- Couplings
- Male and Female Adapters
- Transition Fittings and Adapters
- Bushings

Working Pressure

Spears® CPVC CTS fittings and valves have a continuous working pressure rating of 100 psi at 180°F.

Conformance Standards

Spears® CPVC CTS fittings conform to ASTM D 2846 Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Hot and Cold Water Distribution Systems.

Product Certification

Spears® CPVC CTS fittings and Special Reinforced (SR) thread transition adapters are tested and certified by the NSF International (NSF) to ASTM D 2846 for use in Hot and Cold Water Distribution Systems, and for safe use in potable water systems under NSF Standard 14/61. Spears® CPVC CTS valves are certified under NSF Standards 61.

WARNING: THE USE OF COMPRESSED AIR OR GASES FOR TESTING MAY RESULT IN SYSTEM DAMAGE OR SERIOUS OR FATAL BODILY INJURY.



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