

FEATURES AND BENEFITS

Colonial's True Union ball valves are premium quality and ideally suited for the most demanding industrial, commercial, agricultural and irrigation environments. Four different body materials and two different o-ring materials are available. A patented polymeric locking strip allows safe operation even when installed in the reverse direction. Ideally suited where full port, full flow and reparability are required.

PATENTED LOCKING STRIP

Full Block carrier held securely with a PVDF locking strip. This patented locking strip design is the strongest method available for carrier retention. It also allows for ease of disassembly, should the valve require service.

EXTERNAL SEAT WEAR ADJUSTMENT

Most brands of thermoplastic valves have internal adjustment which requires the removal of the union nut, and then the turning of a threaded carrier assembly to take up seat wear. In order to accomplish this, the system must be drained. The valve must be removed and serviced, replaced, and then the system must be re-started. Colonial's external seat wear adjustment saves time and energy. No need to remove the valve cartridge from the system. Make sure the system is de-pressurized. With the valve in place, simply close it, then slightly tighten (1/20-turn max) the union nut on the side featuring the word "ADJUST." This will increase the load of the carrier on the ball to compensate for seat wear. Remember: All union nut connections for 1/2 through 2" plastic valves should be "hand tight." For valves 2-1/2" and larger, a strap wrench may be used to tighten the nut 1/20-turn past hand tight.



SAMPLE ENGINEERING SPECIFICATIONS

All thermoplastic True Union ball valves (1/2 through 6") shall be produced of PVC Type I, cell classification 12454 or CPVC Type IV, cell classification 23447 or PP or PVDF material. Valve o-rings shall be made of EPDM or Viton® material. Valve stem shall have two o-rings. Valve body shall have two stem stops. Valve carrier shall have a full block polymeric locking strip. Valve seats shall be produced of Teflon® material. Valves shall be operated by a handle or pneumatically or electrically by an actuator. 1/2 through 4" valves shall be full port (equal to or greater than the minimum inside diameter of Sch 80 pipe). End connectors shall be of socket, thread or flange type. Valves shall meet or exceed ASTM's standard F-1970 for pressure rating. Valves shall be capable of being adjusted externally for seat wear.

REPAIR PARTS

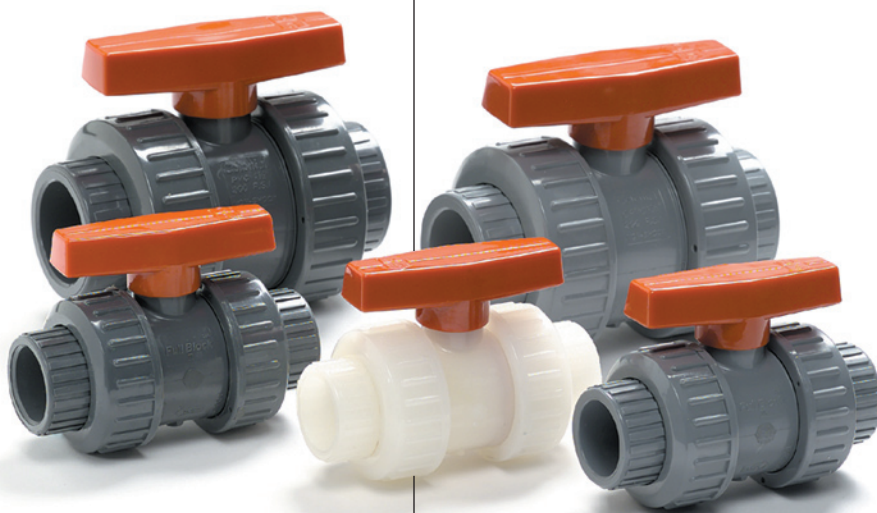
A complete inventory of repair parts is readily available.

DUAL STEM O-RINGS

The secondary o-ring protects the primary o-ring from atmospheric dust and debris, and acts as a backup to the primary. The stem is designed to shear above the secondary o-ring, should the valve become jammed and excessive torque is placed on the stem. This is an important safety feature.

METRIC / BSPT

Available with metric and BSPT end connectors in sizes 25-110mm. See list price sheet for part number details.



Valve actuation available.

Revised 10/07



Colonial Full Block TUBVs are tested under high pressure for structural integrity and low pressure for a bubble-tight seal.

ADDITIONAL FEATURES

- Thermoplastic design eliminates process and atmospheric corrosion.
- Double “D” stem design.
- Pressure rated up to 235 psi, non-shock water at 73°F.
- Rated for vacuum service to 26 in Hg with less than 1 in Hg loss.
- Socket dimensions meet all ASTM requirements. PVC: D-2467, D-2464; CPVC: F-439, F-437.
- Full port design – same I.D. as Sch 80 pipe – minimizes turbulence at high flow rates.
- Two stem stops for positive shut off.
- Full block design allows for external adjustment for seat wear.
- Floating ball design for positive seal.
- True Union design permits easy removal of valve body for service.
- Easily repairable.

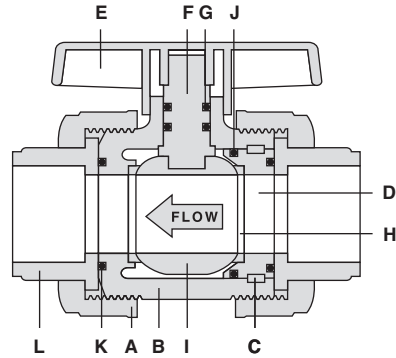
Note: Kalrez®/Aflas®, silicone-free and other o-ring material choices, as well as stem extensions, 2” operating nut and locking handles are available. Contact customer service for information.

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COMPRESSED AIR WARNING

The products in this document are only intended for use in transferring or storing chemically compatible pressurized liquids. Do not test or use products in this document with compressed air or other gases. Doing so is dangerous and could cause injury or great bodily harm should a system fail under compressed air. Only use products that are specifically designed for compressed air/gas service. Call Colonial technical service for more information.

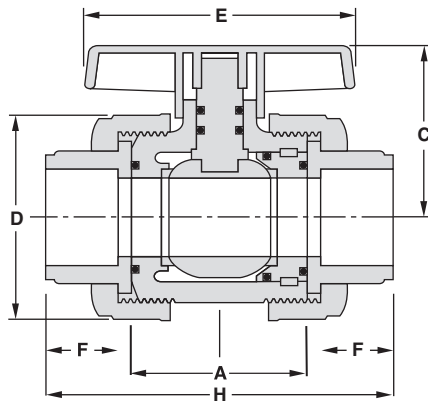
AIR/GAS



COMPONENTS AND MATERIALS

Part Letter	Component	Quantity	Material
A	Union Nut	2	PVC, CPVC, PP, PVDF
B	Body	1	PVC, CPVC, PP, PVDF
C	Locking Strip	1	PVDF
D	Carrier	1	PVC, CPVC, PP, PVDF
E	Handle	1	ABS
F	Stem	1	PVC, CPVC, PP, PVDF
G	Stem O-Ring	2	EPDM, Viton®
H	Ball Seat	2	Teflon®
I	Ball	1	PVC, CPVC, PP, PVDF
J	Carrier O-Ring	1	EPDM, Viton®
K	Face O-Ring	2	EPDM, Viton®
L	Connector	2	PVC, CPVC, PP, PVDF

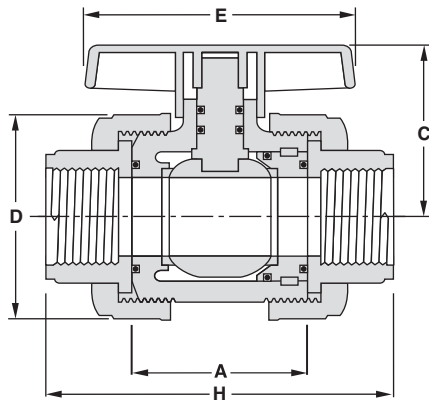
Viton® is a registered trademark of Dupont Dow Elastomers. Teflon® is a registered trademark of DuPont. Only DuPont makes Teflon.



DIMENSIONS

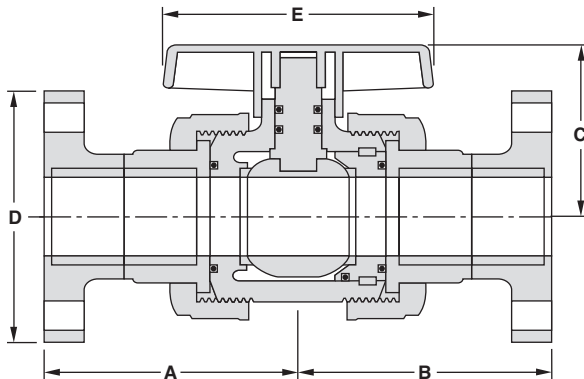
Slip X Slip

Size	A	C	D	E	F	H
1/2"	2-1/16"	1-29/32"	2-1/32"	3-7/32"	15/16"	4-1/4"
3/4"	2-5/8"	2-3/8"	2-15/32"	3-7/16"	1"	5-1/8"
1"	2-7/8"	2-19/32"	2-27/32"	4"	1-5/32"	5-3/8"
1-1/4"	3-3/8"	3-19/32"	4-3/32"	5"	1-3/32"	6-1/8"
1-1/2"	3-3/8"	3-19/32"	4-3/32"	5"	1-13/32"	6-1/2"
2"	4-1/4"	4-9/32"	5-5/16"	5-31/32"	1-17/32"	7-3/4"
2-1/2"	5-7/8"	5-13/32"	7-7/32"	7-5/8"	2-1/4"	10-7/8"
3"	5-7/8"	5-13/32"	7-7/32"	7-5/8"	1-15/16"	10-5/16"
4"	7"	6-1/32"	8-9/16"	9-15/32"	2-9/32"	12-3/16"



DIMENSIONS
FPT X FPT

Size	A	C	D	E	H
1/2"	2-1/16"	1-29/32"	2-1/32"	3-7/32"	3-11/16"
3/4"	2-5/8"	2-3/8"	2-15/32"	3-7/16"	4-5/16"
1"	2-7/8"	2-19/32"	2-27/32"	4"	5"
1-1/4"	3-3/8"	3-19/32"	4-3/32"	5"	6-1/16"
1-1/2"	3-3/8"	3-19/32"	4-3/32"	5"	5-3/4"
2"	4-1/4"	4-9/32"	5-5/16"	5-31/32"	6-11/16"
2-1/2"	5-7/8"	5-13/32"	7-7/32"	7-5/8"	10-3/4"
3"	5-7/8"	5-13/32"	7-7/32"	7-5/8"	10-1/4"
4"	7"	6-17/32"	8-9/16"	9-15/32"	12-3/16"

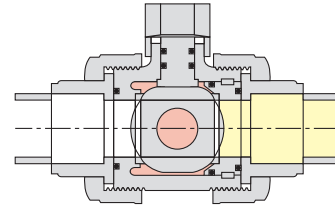


DIMENSIONS
Flanged

Size	A	B	C	D	E
1/2"	3-3/16"	3-3/16"	1-29/32"	3-17/32"	3-7/32"
3/4"	3-3/4"	3-3/4"	2-3/8"	3-29/32"	3-7/16"
1"	4"	4"	2-19/32"	4-9/32"	4"
1-1/4"	4-1/2"	4-1/2"	3-19/32"	4-21/32"	5"
1-1/2"	4-13/16"	4-13/16"	3-19/32"	5-1/32"	5"
2"	5-5/8"	5-5/8"	4-9/32"	6"	5-31/32"
3"	7"	7"	5-13/32"	7-1/2"	7-5/8"
4"	7-5/16"	7-5/16"	6-17/32"	9-7/16"	9-15/32"

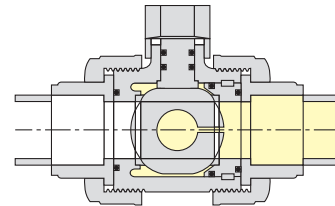
COLONIAL'S VENTED BALL VALVE

Problem: In sodium hypochlorite applications (chlorine), plating of the PVC or CPVC interior body material or valve explosion.



Standard ball valve (in closed position).

Possible cause: In sodium hypochlorite applications, pressure build-up of gasses produced as a result of the decomposing solution trapped in the ball and body of a valve in the closed position.



Colonial's custom vented ball valve (in closed position).

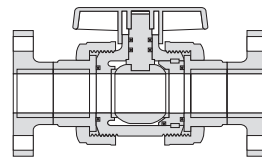
Solution: Colonial offers factory-customized True Union ball valves featuring a vented ball, specifically for applications utilizing sodium hypochlorite. The ball is vented to the pressure port allowing the interior of the ball and body to remain wetted to prevent the occurrence of plating.

Contact customer service to specify the "vented" ball valve that meets your specifications.

To order: Add "-V" to the valve part number. Example V20101N-V. See list price sheet for details.

METAL TO PLASTIC TRANSITION WARNING

Colonial does not recommend the joining of metal pipe threads with plastic female pipe threads. To join a metal system with a plastic system, we recommend the use of a transition union or flanged end connections (shown below).



**WORKING PRESSURE @ 73° F
NON-SHOCK WATER**

Valve Size	PVC/CPVC	PP/PVDF
1/2"	235	150
3/4"	235	150
1"	235	150
1-1/4"	235	150
1-1/2"	235	150
2"	235	150
2-1/2"	150	
3"	150	
4"	150	
6"	150	

TORQUE VALUES

Valve Size	Opening Torque (In-Lbs)
1/2"	5
3/4"	35
1"	60
1-1/4"	100
1-1/2"	110
2"	180
2-1/2"	600
3"	600
4"	1,000
6"	1,000

**TEMPERATURE DE-RATING FOR
VALVES & UNIONS (ABOVE 73° F)**

Temp (° F)	PVC	CPVC	PP	PVDF
73	1.00	1.00	1.00	1.00
80	.88	.96	.93	.93
90	.75	.92	.83	.87
100	.62	.85	.74	.82
110	.50	.77	.66	.76
120	.40	.70	.58	.71
130	.30	.62	.51	.65
140	.22	.55	.40	.61
150	NR	.47	.38	.57
160	NR	.40	.35	.54
170	NR	.32	.29	.51
180	NR	.25	.23	.47
200	NR	.18	.14	.41
210	NR	.15	.10	.38
240	NR	NR	NR	.28
280	NR	NR	NR	.22

NR: Not Recommended

Caution: Colonial recommends a minimum installation distance of 10 X the pipe diameter from a pump or other sources of turbulence.

FLUID FLOW COEFFICIENT Cv*

* Gallons per minute @ 1 psi pressure drop

Nominal Size	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
	22	55	112	178	285	540	1,348	1,348	2,602

MATERIAL CHOICES	Socket & Threaded End Connectors	Socket	Threaded	Flanged	Socket & Threaded End Connectors	Socket	Threaded	Flanged
	PVC w/EPDM O-Rings				PVC w/Viton® O-Rings			
1/2"	V07101N	—	—	V07121N	V07102N	—	—	V07122N
3/4"	V08101N	—	—	V08121N	V08102N	—	—	V08122N
1"	V10101N	—	—	V10121N	V10102N	—	—	V10122N
1-1/4"	V14101N	—	—	V14121N	V14102N	—	—	V14122N
1-1/2"	V17101N	—	—	V17121N	V17102N	—	—	V17122N
2"	V20101N	—	—	V20121N	V20102N	—	—	V20122N
2-1/2"	—	V27101N	V27111N	—	—	V27102N	V27112N	—
3"	—	V30101N	V30111N	V30121N	—	V30102N	V30112N	V30122N
4"	—	V40101N	V40111N	V40121N	—	V40102N	V40112N	V40122N
6" *	—	V60101N	—	V60121N	—	V60102N	—	V60122N

MATERIAL CHOICES	Socket & Threaded End Connectors	Socket	Threaded	Flanged	Socket & Threaded End Connectors	Socket	Threaded	Flanged
	CPVC w/EPDM O-Rings				CPVC w/Viton® O-Rings			
1/2"	V07103N	—	—	V07123N	V07104N	—	—	V07124N
3/4"	V08103N	—	—	V08123N	V08104N	—	—	V08124N
1"	V10103N	—	—	V10123N	V10104N	—	—	V10124N
1-1/4"	V14103N	—	—	V14123N	V14104N	—	—	V14124N
1-1/2"	V17103N	—	—	V17123N	V17104N	—	—	V17124N
2"	V20103N	—	—	V20123N	V20104N	—	—	V20124N
2-1/2"	—	V27103N	V27113N	—	—	V27104N	V27114N	—
3"	—	V30103N	V30113N	V30123N	—	V30104N	V30114N	V30124N
4"	—	V40103N	V40113N	V40123N	—	V40104N	V40114N	V40124N
6" *	—	V60103N	—	—	—	V60104N	—	V60124N

MATERIAL CHOICES	Socket & Threaded End Connectors	Socket	Threaded
	PP w/Viton® O-Rings		PVDF w/Viton® O-Rings
1/2"	V07106N	V07108N	V07118N
3/4"	V08106N	V08108N	V08118N
1"	V10106N	V10108N	V10118N
1-1/4"	V14106N	V14108N	V14118N
1-1/2"	V17106N	V17108N	V17118N
2"	V20106N	V20108N	V20118N

NOTE: PP & PVDF valves are special order. Contact customer service for minimum order quantity and lead time.

* 6" Venturied: Assembled with 4" Valve and 6 x 4 Reducing End Connectors. Contact customer service for drawings.