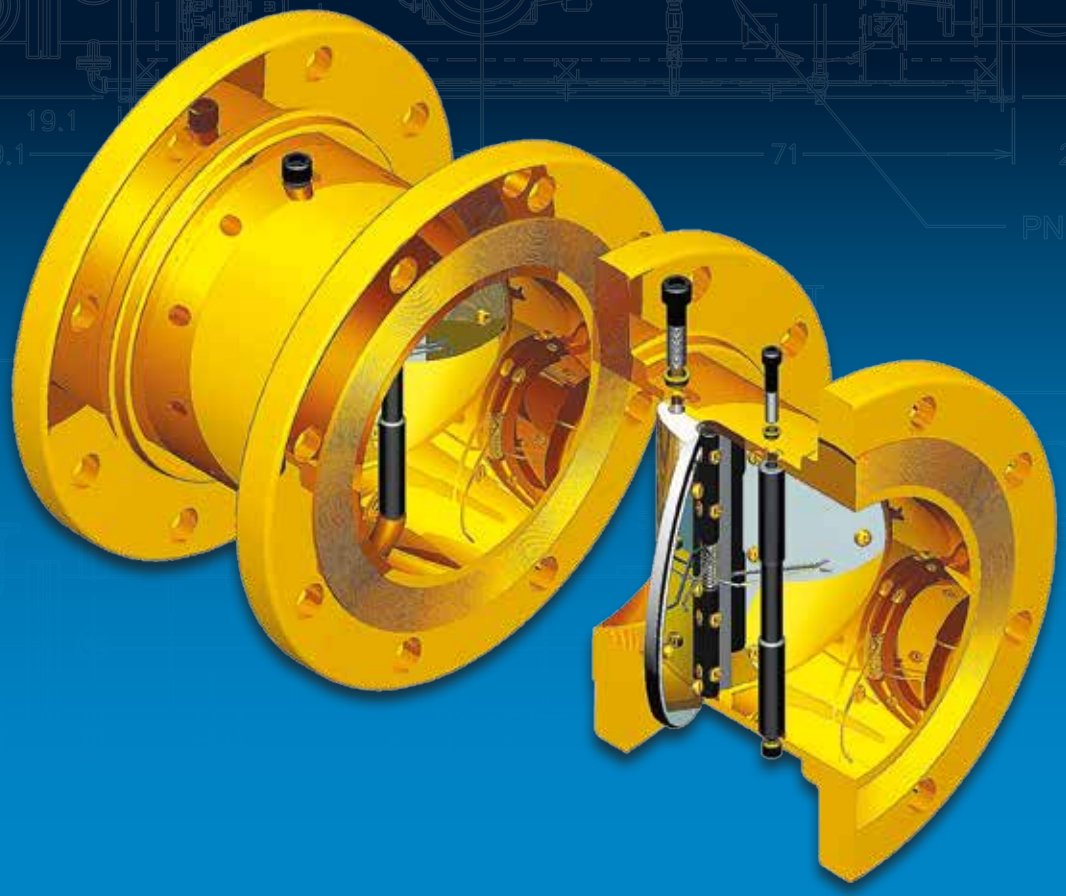
US Valve

ISO 9001-2008



Flanged Check Valves

Full Port — Lowest Pressure Drop

Maximizing the Flow

Full Port, Lowest Pressure Drop

Full Port Check Valves provide more flow and lower pressure drops than conventional check valves. Our elastomer hinge check valve design takes performance to an entirely new level by eliminating the restrictive valve seat and substantially increasing the valve's open area and flow coefficient (Cv). The resulting flow is more laminar, with lower pressure loss and reduced turbulence. It also improves valve life and reliability. Keeping pressure loss low is always important, but particularly so when handling low pressure air and gases.

Dual disc flanged check valves are the clear choice for many piping engineers because of their proven reliability, ease of installation and low ΔP. Now, they are available in a full port design that dramatically improves performance. They are ideal for application in vacuum pumps, compressed air and gas systems as well as in water systems where head loss and elimination of water hammer are desirable.

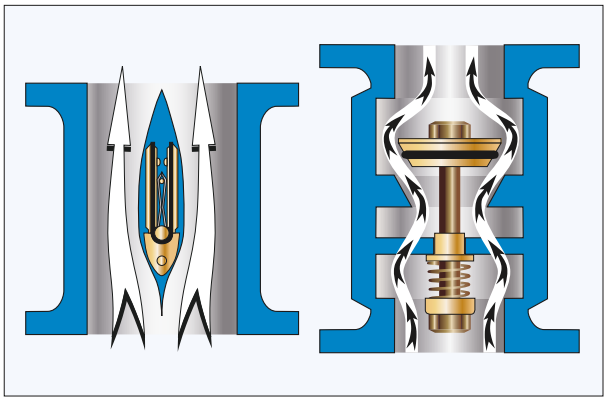
US Valve Flanged Check Valves are available in a wide variety of materials and configurations to fit your application requirements.

Valve Testing

Every elastomer hinge check valve we manufacture is assembled, inspected and tested in our plant in Maryland -USA. Our commitment to quality assures you the performance and reliability you demand and expect. Material test reports and test certificates are available on request.

U.S. Valve LLC — The Right Choice

US Valve is a New Jersey Corporation with headquarters in New Jersey and manufacturing locations in Maryland–USA, Europe and Asia. Our primary focus is check valves and our roots are grounded in low pressure drop designs. Our application engineers can assist you in making the right choice of valve for your application.



U.S. Valve Design
Open flow path, low ΔP, more laminar flow.

Conventional Design
Restricted flow path, high ΔP, increased turbulence.

Low Price, Delivery & Service

We want to be your supplier of Flanged Check Valves, so we offer *Competitive Pricing, Fast Delivery* and *Outstanding Service.* We maintain an extensive inventory of valves, parts and components in a wide variety of materials so we can respond to your needs quickly. Valves are typically assembled and tested within 1 to 2 days after receipt of an order.

We can say with confidence that our customer service is the best in our industry. Give us a chance to prove it.

ISO9001:2008 Certified

US Valve is **ISO 9001:2008 Certified.**

We always keep our certification current. We take our commitment to product quality and documentation very seriously, so you can rest comfortably in the knowledge that we have you covered.

Features & Benefits

Full Port Check Valves offer some impressive advantages over other types of check valves.

• Low Pressure Drop (High Cv)

Our elastomer hinge check valves have larger open area than other designs, thus providing higher capacity and lower pressure drops than swing and lift check, or even traditional dual plate wafer designs.

• USA Content

When specified, valves can be manufactured to meet stringent 75% or higher USA raw material content requirements.

• ARRA Compliant

USA content, substantial transformation and local assembly makes our Full Port Check Valves ARRA compliant for government funded projects.

• Alleviates Water Hammer

When spring activated, our discs are designed to close 33% faster than standard dual disc check valves due to the fact that they are closed at a 30 deg angle. This makes for an effective non-slam design when installed in liquid applications.

• Simple Installation

Easier to install, remove and replace in both new and existing piping systems.

• Variety of Configurations

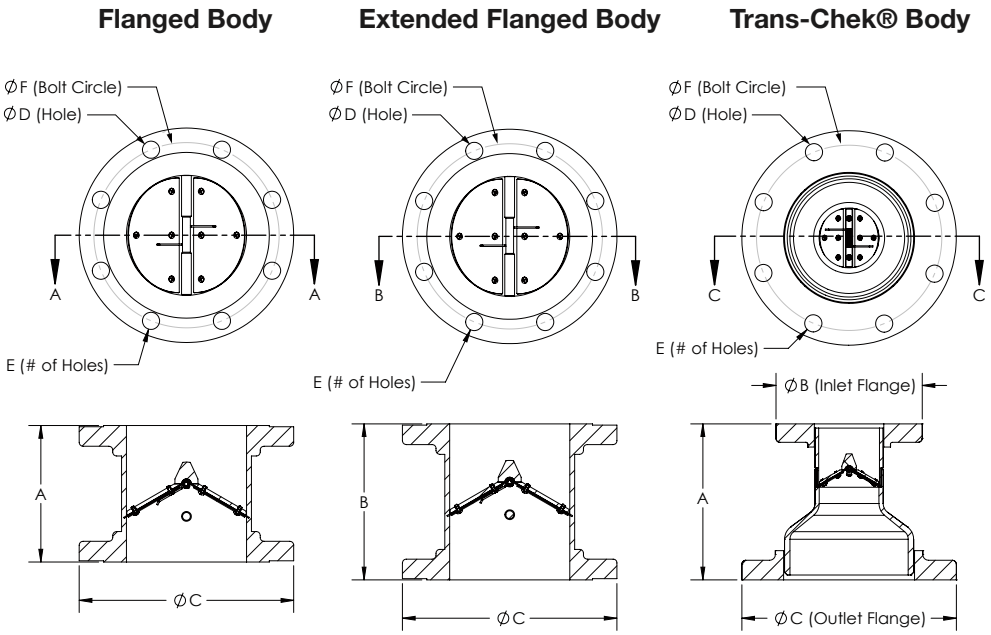
We stock a wide variety of valve bodies in different styles and materials. These can be assembled with any one of our standard disc, optional spring and elastomer seal choices to make a valve that exactly fits your application. Pins and hardware are always 316SS. Custom lengths are available.

Our patented, aerodynamic wing support and reinforced elastomer hinged double discs provide the lowest resistance to flow. Front and rear disc plates provide strength and stability and insure positive seating. Optional springs are available in a variety of tensions.

Industries Served

- Industrial and Wastewater
- Vacuum Pumps
- Low Pressure Fans and Blowers
- Pneumatic Conveying Systems
- Well Applications
- Power Plants
- Oil and Gas Production
- Petrochemicals
- Steel/Primary Metals
- Pulp & Paper
- Marine

Valve Dimensions



Flanged Body & Extended Flanged Body Dimensions

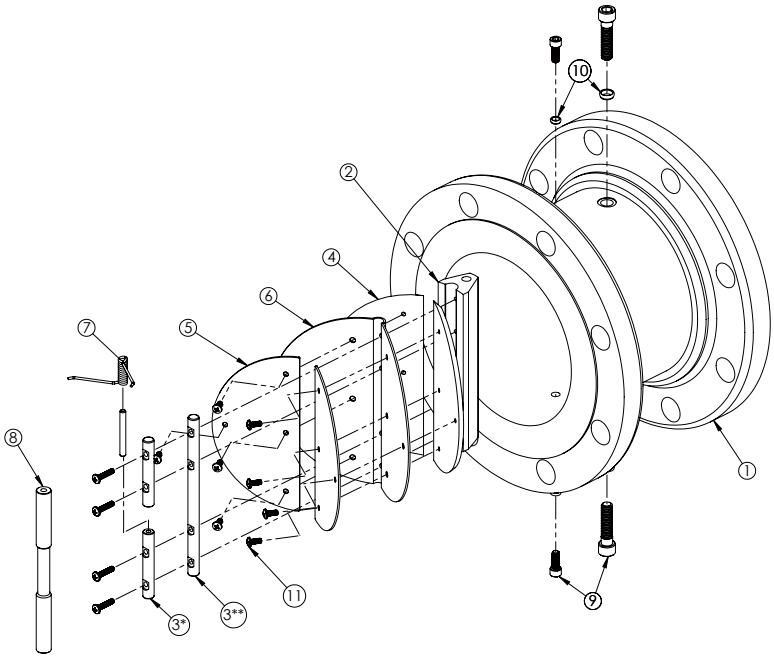
Size	A	B	C	D	E	F
1 ½	4-½	—	5	⅝	4	3-⅞
2	4-½	5-⅛	6	¾	4	4-¾
2 ½	5	5-⅝	7	¾	4	5-½
3	5	6	7-½	¾	4	6
4	5-½	6-⅝	9	¾	8	7-½
5	6	7-¼	10	⅞	8	8-½
6	7	8	11	⅞	8	9-½
8	9	10-½	13-½	⅞	8	11-¾
10	11	12-½	16	1	12	14-¼
12	13	—	19	1	12	17
14	15	—	21	1-⅛	12	18-¾
16	17	—	23-½	1-⅛	16	21-¼
18	19	—	25	1-¼	16	22-¾
20	21	—	27-½	1-¼	20	25

Flanged Trans-Chek® Body Dimensions

Size	A	B	C	D (inlet)	E (inlet)	F (inlet)	D (outlet)	E (outlet)	F (outlet)
1-½ x 2	5	5	6	⅝	4	3-⅞	¾	4	4-¾
2 x 2-½	6	6	7	¾	4	4-¾	¾	4	5-½
2 x 3	6	6	7-½	¾	4	4-¾	¾	4	6
2 x 4	7	6	9	¾	4	4-¾	¾	8	7-½
2-½ x 3	6	7	7-½	¾	4	5-½	¾	4	6
2-½ x 4	7	7	9	¾	4	5-½	¾	8	7-½
3 x 4	7	7-½	9	¾	4	6	¾	8	7-½
3 x 5	8	7-½	10	¾	4	6	⅞	8	8-½
3 x 6	8	7-½	11	¾	4	6	⅞	8	9-½
4 x 5	9	9	10	¾	8	7-½	⅞	8	8-½
4 x 6	9	9	11	¾	8	7-½	⅞	8	9-½
5 x 6	9	10	11	⅞	8	8-½	⅞	8	9-½
6 x 8	11	11	13-½	⅞	8	9-½	⅞	8	11-¾

All dimensions in inches.

Exploded View



Part No.	Part Description
1	Flanged Body
2	Wing Support
3*	Spring Pin
3**	Wing Pin
4	Disc
5	Back-up Disc
6	Elastomer Seal
7	Spring
8	Limiter
9	WS/LM Fastener
10	Sealing Washer
11	Internal Fasteners

Note: If valve is supplied with optional spring, use part number 3 (Spring Pin), otherwise use 3** (Wing Pin).*

US Valve Flow Coefficients (Cv) vs. Conventional Designs

Size	US Valve Full Port Dual Disc	Conventional Duo Disc Design	Conventional Swing Check Design	Conventional Lift Check Valve
1	**37**	—	22	17
1 ¼	**65**	—	39	—
1 ½	**83**	—	55	35
2	**145**	75	65	63
2 ½	**350**	95	90	100
3	**590**	190	135	148
4	**920**	375	215	260
5	**1400**	480	680	415
6	**2800**	820	1270	620
8	**4900**	1590	2350	1030
10	**7200**	2900	3850	1630
12	**9000**	4500	4750	2370
14	**11000**	5900	7400	3500
16	**13000**	8700	9550	5100
18	**15000**	10900	13000	6400
20	**28000**	14300	22000	7700
24	**39000**	23000	—	11100
30	**58000**	37000	—	—

Check Valve Flow Coefficient Comparisons (Cv) — GPM of water @ 60°F and 1 PSI Pressure Drop

Valve Numbering, Nomenclature and Standard Materials

Valve Numbering

Style		Body		Internals	Spring	Elastomer Seal	Size
19	–	4	–	4	SP	V	(6)

The above valve would have a Standard Flanged Body Style (19), 316 Stainless Steel Body (4), 316 SS Disc (4), 316 SS Standard Torque Spring (SP), Viton Elastomer Seal (V), and would be 6 inches in diameter. It would be designated: 19-4-4SPV (6).

STYLE	
Code	**Nomenclature**
19	Standard Flanged Body
19X	Extended Flanged Body
15	Trans-Chek® Body

BODY / INTERNALS	
Code	**Nomenclature**
0	Aluminum
1	Carbon Steel
2	Cast Iron
3	Brass
4	Stainless Steel

OPTIONAL SPRING	
Code	**Nomenclature**
SP	316 SS Standard Torque
SL	316 SS Minimum Torque
SH	316 SS Heavy Torque

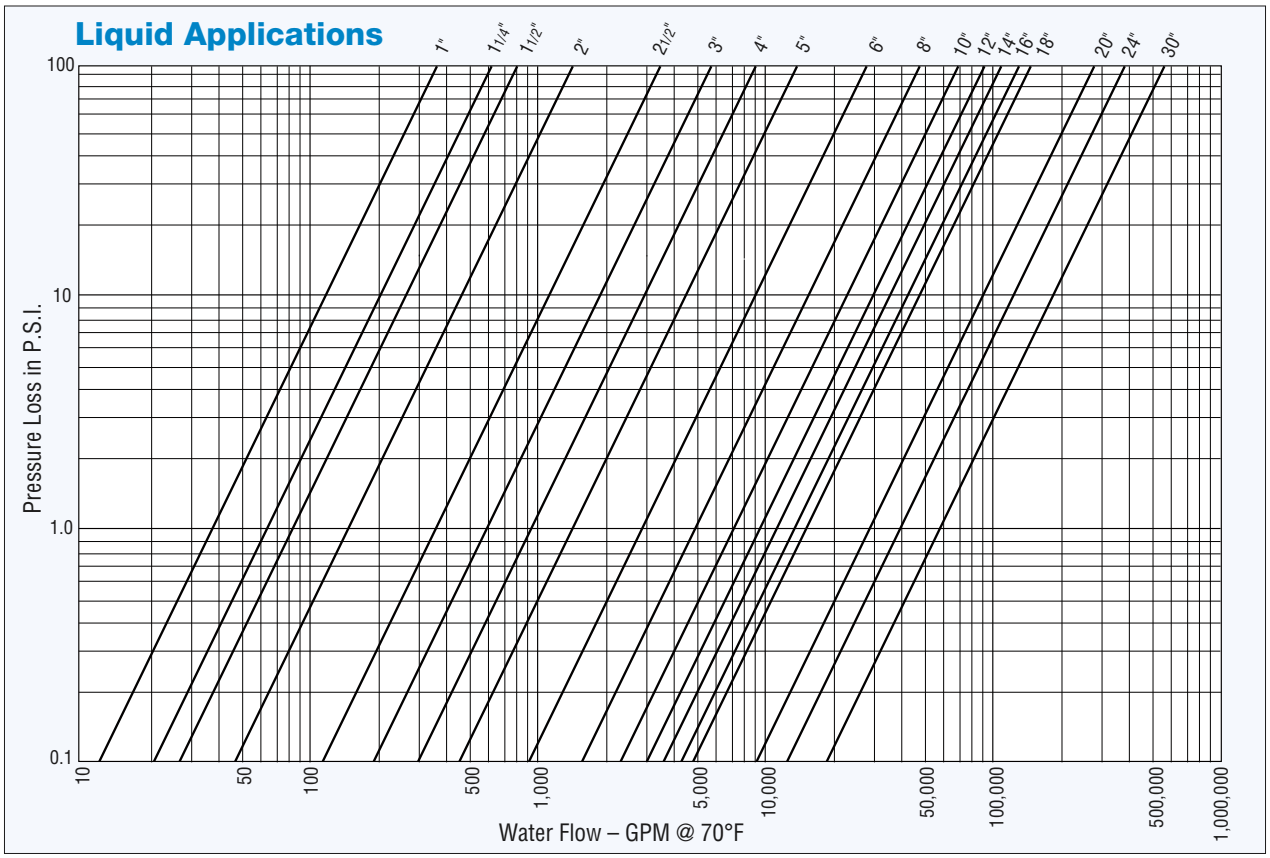
ELASTOMER SEAL		
Code	**Material**	**Temp. Range**
B	Buna N	-60°F to 225°F
E	EPDM	-40°F to 300°F
V	Viton	-20°F to 450°F
S	Silicon	-100°F to 500°F
T	Teflon	-20°F to 450°F

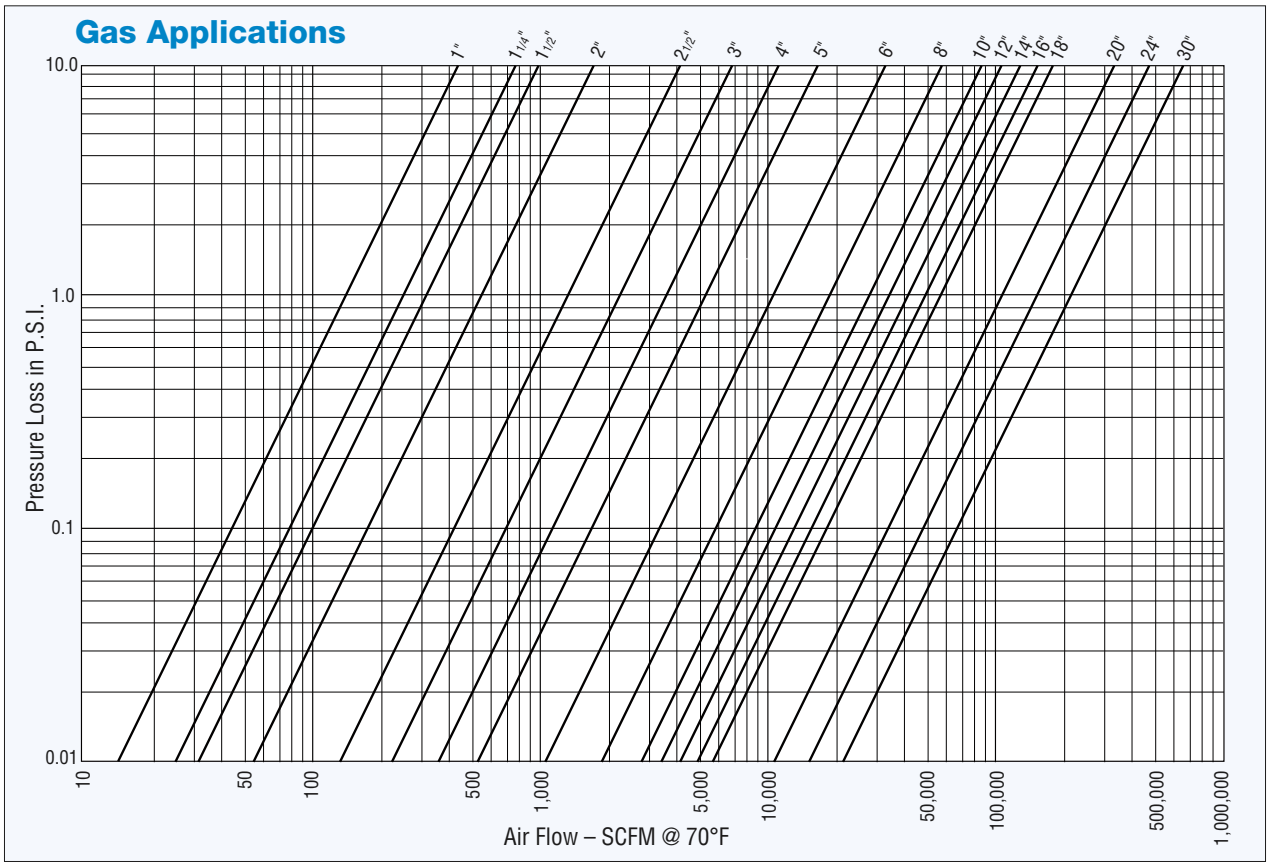
Standard Wafer Models and Materials

Model	Body	Discs	Wing Support	MAWP*
19-1-0	Carbon Steel ASTM A106 Gr.B	Aluminum ASTM B209 6061T6	Aluminum 6061T6	150 PSI
19-1-4	Carbon Steel ASTM A106 Gr.B	316 Stainless Steel ASTM A240	316 Stainless Steel ASTM A276	150 PSI
19-4-4	Stainless Steel ASTM A312 Gr.316	316 Stainless Steel ASTM A240	316 Stainless Steel ASTM A276	150 PSI
15-2-0	Cast Iron ASTM 126 Gr.B	Aluminum ASTM B209 6061T6	Aluminum 6061T6	150 PSI
15-2-3	Cast Iron ASTM 126 Gr.B	Brass ASTM B36 C260	Brass, ASTM B124 C377	150 PSI
15-1-0	Carbon Steel ASTM 106 Gr.B	316 Stainless Steel ASTM A240	316 Stainless Steel ASTM A276	150 PSI
15-1-4	Carbon Steel ASTM 106 Gr.B	Brass ASTM B36 C260	Brass, ASTM B124 C377	150 PSI
15-4-4	Stainless Steel ASTM A312 Gr.316	316 Stainless Steel ASTM A240	316 Stainless Steel ASTM A276	150 PSI

All fasteners and spring pins are 316 stainless steel. BUNA-N is standard seal in all valves. Optional seal materials: EPDM, SILICONE, VITON. 316 stainless steel springs are optional for all models. Consult factory for any other special material requirements.

* MAWP — Maximum Allowable Working Pressure at 60°F.





Pressure Losses for Gas Applications are based on valves without optional springs.

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Maximizing the Flow