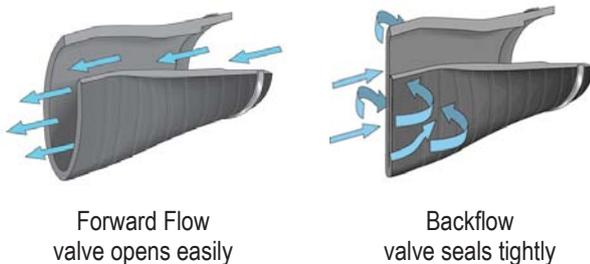




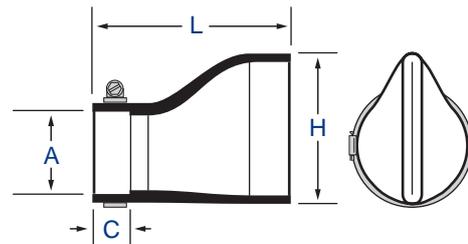
Tideflex® TF-1 Check Valve

- Lightweight, all-elastomer design
- Seals around entrapped solids
- Odour control
- Excellent drainage with low falls
- Minimum bottom clearance required
- Quiet - no slamming
- Ideal for manhole installations
- Self cleaning, low maintenance
- Working underwater or buried in sand
- Long operational life span



MATERIALS:

Body: Neoprene, Buna-N, Hypalon, EPDM, Viton,
Mounting bands / back-up rings: AISI 304.



OPERATION:

The Tideflex® TF-1 Check Valves eliminate potential backflow and are an excellent replacement for ineffective metal flap gate valves. Tideflex valves do not corrode, warp or freeze and are virtually maintenance free. They handle large obstructions without jamming, and there is no flap, gate or door to hang open or jam shut. Due to its nature, the valve collapses around any debris and seals off the backflow.

Tideflex DN450 (18") and larger are constructed with a 180° curved bill, which increases the sealing area and allows the valve to form a tighter seal area around solids. The more flexible curved tip allows even lower headloss.

The flat bottom and offset-bill design of the Tideflex valve allows it to be installed without any modifications to the structure of existing interceptors, manholes and chambers.

To eliminate standing water Tideflex valve offers low cracking pressure that is not affected by rust, corrosion or lack of lubrication.

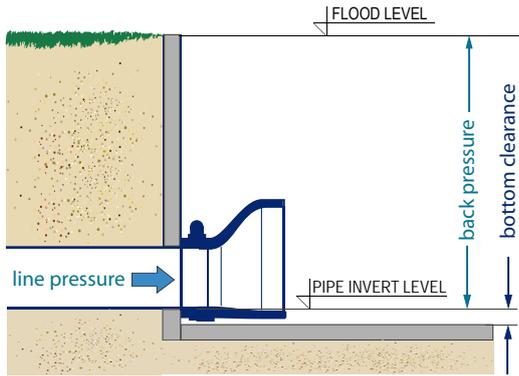
For example, in tidal areas the duckbill lips collapses tighter and tighter as the tide height increases. The pressure forcing the lips together puts a squeeze effect on any solids build-up. The valve forms around the obstruction until enough runoff flexes the lips open and flushes the material out.

Valves permanently located underwater or buried in sand, silt or mud can still discharge flow.

A* [mm]	L [mm]	H [mm]	C [mm]
100	355	305	50
150	355	305	50
200	440	390	50
250	545	480	75
300	660	560	100
400	815	740	130
500	1015	915	205
600	1170	1100	205
750	1405	1400	230
900	1650	1750	255
1050	1510	1800	255
1200	1800	2300	255
1500	2050	2450	330
1800	2440	2920	410

* Please note that Tideflex valve's body is made every 50mm/2in. - 100mm, 150mm, etc., and the valve's cuff is precisely made to fit the pipe.

Headloss charts request.
Please email us with information about valve type and size.



Headloss charts request.
Please email us with information
about valve type and size.

LP - line pressure [m]
BP - back pressure [m]
BC - bottom clearance [mm]



Required bottom clearance for TF-1 Valve.

DN	150	200	300	400	450	500	600	700	800	1000	1200	1400	1600
BC [mm]	15	35	55	60	70	70	75	85	100	125	145	165	230

Tideflex® Check Valves - Engineered for Every Drainage System



TF-1 Slip-on / Flat Bottom design - **STANDARD.**

Enables installation of Tideflex without any modifications to existing structures.

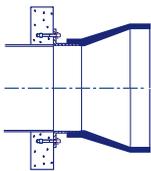
Please specify: OD - pipe outside diameter [mm]
BP - max. back pressure [m]



TF-2 Slip-on / Centered Bill design.

A standard design on inline valves, which requires greater bottom clearance than TF-1. It has been superseded by TF-1, but still remains available on special demand.

Please specify: OD - pipe outside diameter [mm]
BP - max. back pressure [m]



TF-1 Headwall design.

Supplied with AISI 304 stainless steel mounting plate, which is designed to fit the existing site structure.

Please specify: OPE - opening diameter [mm]
BP - max. back pressure [m]



Series 35-1 Flanged design.

Furnished with an integral elastomer flange and steel back-up rings for installation. The flange size drilling conforms to DIN 2632 or other standards.

Please specify: flange type and size
BP - max. back pressure [m]



Series 37-G Slip-Inside Pipe design.

The outside diameter of the valve is custom-built to match the inside diameter of the pipe, which is buried or accessible from a manhole.

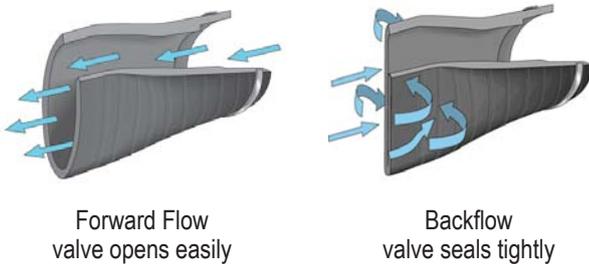
Please specify: PID - pipe inside diameter [mm]
BP - max. back pressure [m]



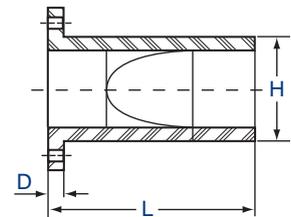


Tideflex® series 37 Check Valve

- Installs between pipe flanges, eliminating valve body. Fastened with internal expansion clamp.
- Offers minimal face-to-face dimension - only the thickness of the flange.
- Features unique, maintenance-free, one-piece elastomer check sleeve design.
- Eliminates chatter—silent, non-slamming.
- Closes on entrapped solids.



MATERIALS:
 Body: Pure Gum Rubber, Neoprene, Buna-N, Hypalon, EPDM, Viton,
 Flanges: ANSI Class 125, DIN PN6, PN10, PN16.
 Special coating available



The Series 37 Flanged InLine Check Valve is a simple, reliable, cost-effective solution to backflow problems.

Designed to be installed between two mating flanges, the Series 37 eliminates the need for a valve body.

With only one moving part, the maintenance-free rubber check sleeve, the Series 37 Check Valve is simple in design. Sliding, rotating, swinging and spring parts are eliminated. There are no seats to corrode or packing to maintain. In addition, the Series 37 is a passive design, requiring no external source of air or electricity to operate. The result is reduced operating costs.

The Series 37 Check Valve can be ordered in a variety of elastomers. Flanges conform to ANSI B16.1 Class 125 specifications. Special custom designs or metric flanged models are also available. When ordering, specify line pressure, backpressure and whether an SST is required.

The pressure drop of the Series 37 is increased because of the smaller ID required to fit the check valve in the line.

Headloss charts request - please email us with information about valve type and size. We will send you a headloss chart of the valve that meets pressure and hydraulic requirements for your specific project.

nominal size* [mm] (pipe ID)	L [mm]	H [mm]	D [mm]	Max backpressure [bar]	
				standard Tideflex	with saddle support
50	125	47	9	10.3	N/A
75	138	72	9	6.9	N/A
100	175	97	9	5.2	10.3
150	275	147	9	5.2	10.3
200	313	197	13	4.1	8.6
250	388	247	13	3.1	5.2
300	463	297	13	2.4	5.2
350	550	344	16	1.7	4.8
400	575	394	19	1.4	4.1
450	600	444	25	1.0	3.1
500	800	494	25	0.7	2.8
600	925	594	25	0.7	2.8
750	1025	744	38	0.6	2.8
900	1175	894	38	0.6	2.4
1050	1225	1038	44	0.3	1.7
1200	1300	1188	44	0.3	1.7
1350	1425	1338	50	0.3	for enquiry
1500	1600	1488	50	0.3	
1800	1825	1788	50	0.3	

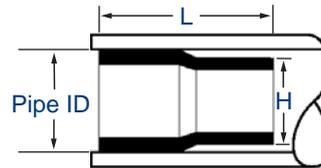
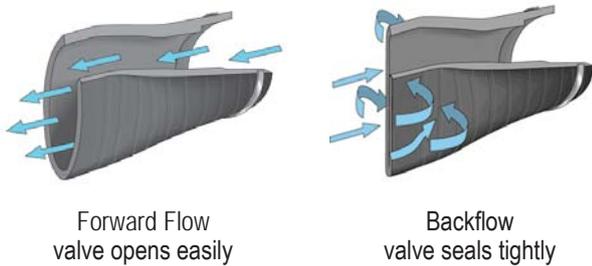
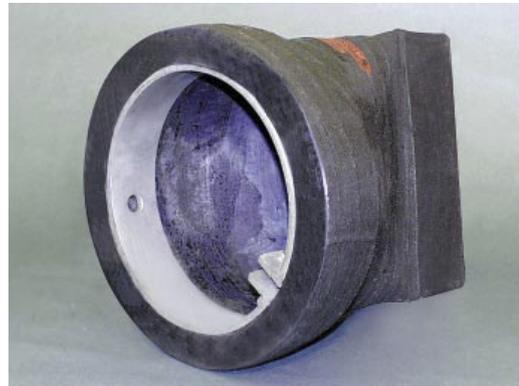
Numbers indicate maximum dimensions in millimetres.
 * Larger sizes available upon request.





Tideflex® series 37G Check Valve

- Fits inside pipe ID.
- Fastened with internal expansion clamp.
- Features all-elastomer, maintenance-free design.
- Will not warp or freeze open or shut.
- Eliminates backflow and seals on entrapped solids.
- Is custom-built to customer specifications.



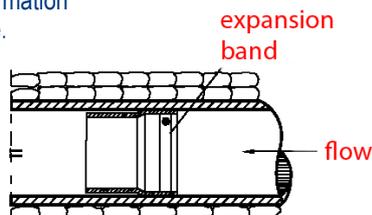
The Series 37G was developed specifically for installations where clearance below the invert of a pipe is insufficient to clear the flange of the standard Series 37. The 37G effectively has a zero face-to-face dimension since it can be completely slipped into an existing pipe. Piping modifications are not required to provide space for the valve. The Series 37G design uses the slip-on principle in reverse.

A special clamp that expands outward is provided to secure the valve to the inside of a pipe, enabling the valve to be installed easily on the outlet pipe from a manhole, such as in a CSO system.

The pressure drop of the Series 37G is increased because of the smaller ID required to fit the check valve in the line.

We recommend the valves be pinned to the pipe. Each clamp has four pre-drilled holes to allow installation of anchors/bolts. Contact MeasurIT engineering staff for additional information.

Headloss charts request.
Please email us with information about valve type and size.



MATERIALS:

Body: Neoprene, Buna-N, Hypalon, EPDM, Viton,
Mounting bands / back-up rings: AISI 304.

nominal size* [mm] (pipe ID)	L [mm]	H [mm]	Max backpressure [bar]
50	127	47	10
75	140	72	10
100	178	97	10
150	279	147	10
200	318	197	8.6
250	394	247	6.9
300	470	297	5.2
350	559	344	5.2
400	584	394	3.4
450	610	444	3.4
500	813	494	3.4
600	940	594	1.7
750	1041	744	1.7
900	1194	894	1.7
1050	1245	1038	1.7
1200	1321	1188	1.7
1350	1448	1338	1.7
1500	1626	1488	0.7
1800	1854	1788	0.7

Numbers indicate maximum dimensions in millimetres.
Contact us to verify overall dimensions.
Saddle Support Technology not available.
* Other sizes available. Valves are also made for non-standard pipe ID's.





Tideflex® Advantage

The Tideflex Check Valve was invented in the 1970's and has proven to be a superior performing, completely passive check valve that requires no maintenance.

While the valve looks simple from the exterior, it has required and undergone an unprecedented amount of research & development.



Grant to Develop Tideflex

The USEPA issued a grant to Red Valve Company in 1981 to research and develop, design, and test an all-rubber "duckbill" check valve to overcome problems associated with conventional/mechanical flap gate valves.

As a result Tideflex became the first reliable check valve that does not require maintenance.

Finite Element Analysis (FEA)

Red Valve conducted FEA to analyze the deflection, and stress and strain characteristics of Tideflex under various loading conditions including forward differential pressure during flow (submerged and free discharge) and reverse differential pressure during check.

Red Valve used the results of the FEA to develop fabrication protocols for the construction of each Tideflex that provided enough reinforcement to withstand all of the loads while minimizing stiffness to reduce headloss.

Independent Hydraulic Testing

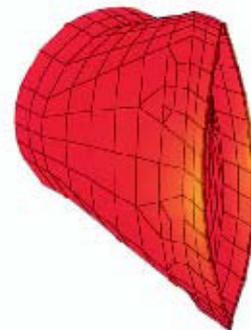
There are up to 50 different hydraulic variations of Tideflex per nominal size. Valves were tested for free discharge, submerged, and partially submerged conditions.

With the extensive amount of test data, modeling programs used to provide hydraulic characteristic curves for all Tideflex Valves were developed.



Manufacturing Capabilities

Tideflex Technologies (A Division of Red Valve Company) operates one of the most advanced rubber-based product manufacturing facilities in the world. Tideflex Technologies invested in the most advanced tooling, machinery, and autoclave equipment to produce the highest quality products in the industry to manufacture Tideflex Valves from ½" over 102" in size.



Patents

Since its beginning in 1953, Red Valve has been a pioneer in the water and wastewater markets with a great reputation for developing innovative solutions to solve customers problems.

With this pioneering spirit, Red Valve has received over 50 patents for new products and systems.





Performance Benefits: Tideflex Check Valve

1. All rubber construction has an estimated operational life of 50 years.
2. Provides 100% shut-off, even where debris is present and in large sizes. (Due to Curved Bill Design. Important for odour control applications).
3. Low cracking pressure.
 - Drainage under low head.
 - Eliminates standing water that takes up storage space and can attract mosquitoes.
4. Minimal headloss allows greater flow, saves pumping costs.
5. Headloss can be customized to meet customer needs.
6. Low installation cost, just slip it on. TF-1 requires no bottom clearance or modification to manhole floor.
7. Maintenance costs reduced.
 - No parts to lubricate or replace.
 - Nothing to freeze or corrode.
 - No structure to come loose.
8. Cannot be propped open.
 - Tamper and vandal proof.
 - Children and animals cannot enter.
 - Backflow prevention assured.
9. Zero operating costs, Zero life-cycle costs.
10. Non-slamming, no noise, no vibration.
11. Absolute backflow prevention saves money.
 - Reduces flood liability.
 - Lowers re-treatment costs.
 - Helps to eliminate compliance violations.
 - Reduces beach erosion.
 - Keeps infrastructure from shutting down (Roads, Airports, Businesses).
 - Eliminates complaints from constituents.
12. Rubber construction and less environmental impact from rust and corrosion; prevents buildup of mussels.



Read more at www.measurIT.com

Frequently Asked Questions: Tideflex Check Valve

What is the cracking pressure?

25mm to 50mm of water column over invert of pipe. Normally will drain a pipe completely.

What types of rubber are available?

PGR, Neoprene, Buna-N, Hypalon, Chlorobutyl, EPDM, Viton, etc. Tideflex® Check Valves can be fabricated to withstand nearly any flow media. Most common are Neoprene and Buna-N.

What types of materials are available for clamps and back-up rings?

Carbon steel for TF-1 and TF-2, galvanized steel for Series 35. Stainless 304, 316, 316L, Monel, etc. are optional and require special pricing.

In which orientation (flow direction) can they be installed?

Horizontal, vertical up, vertical down, and at an offset angle. Consult MeasurIT for special orientations.

Does the bill have to be installed in a vertical position?

Yes, but it can be rotated up to 30° from vertical to gain bottom clearance if necessary.

Is it protected from sunlight and UV rays?

Yes, Tideflex® Check Valves are fabricated with Neoprene exterior wrap for protection (EPDM is available).

Does the river current damage the valve?

Normal river currents do not. If excessive currents exist or if the river contains a lot of floating debris, then wingwalls or pilings would be recommended.

What pressures can they withstand?

Depends on the size and type of valve. DN25 to DN200 inline check valves have been built for nearly 200 psi of backpressure. Larger sizes cannot withstand this much. A standard DN1200 Tideflex® Check Valve can withstand about 0.7bar (7m) of backpressure. Each valve is custom-built so we need the line and backpressure for each case to design the valve.

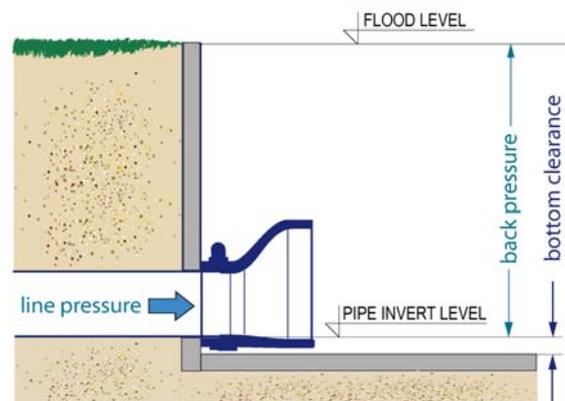


What temperatures can they withstand?

Temperatures from -45°C to +200°C, depending on elastomer.

What is the best way to explain "maximum backpressure"?

If discharging into a body of water, the maximum back pressure is essentially how many meters of water the valve can be submerged in a worse case scenario. For Series 39, the maximum backpressure is the static head or the maximum surge pressure.



Are they used to prevent the backflow of sewer and other gases?

Yes. Consult factory if absolute shut-off is required.

Can they be fabricated to install on elliptical pipe?

Yes.

What are the three most common types of installations on headwalls?

Series 35 directly on wall; TF-1 with Thimble Plate; and TF-1 installed on a pipe grouted into the existing headwall bore.

Are thimble plates only available in standard configurations?

No, they can be fabricated to customer specifications. But, we can supply typical dimensions.

Will they be closed when no line or backpressure exists?

Yes. Tideflex® Check Valves are 'normally closed' valves which means when no forces (pressure) is acting on the valve, it is in a closed position. Occasionally, a slight gap will develop in the bill, but the valve will seal when backpressure is applied.

Can they be used in powder applications?

Yes.

Can they build-up backpressure so the pipe is full of water when flowing?

Yes, this is required for many flow meters to operate properly. This a TFO-type valve.

Can they remain closed to a specific line pressure and then open?

No.

Can special dimensions (lengths, heights) be supplied?

Yes, consult MeasurIT. This usually occurs when fitting a valve into an existing manhole.

Can Series 35 and 37 valves be fabricated with special flanges?

Yes. Round and square flanges have been fabricated with special dimensions and drilling, and can be custom built to customer specifications.

Do they need to be protected from ice by wingwalls or pilings?

No, if installed in stagnant water.

Yes, if installed in moving water or where 'crush ice' can develop.

Can they discharge flow when buried in sand, silt or mud?

Yes, but it depends on upstream pressure condition. Normally a small opening will develop in the valve

which will start flow, then the jet velocity out of the valve will erode the rest of the sand away.

Can the flange of a Series 35 or 37 be installed on a curved surface, i.e.: curved manhole?

Yes, holes in the rubber flange are used as a template to drill holes in the wall.

Do they need external closing devices to assist in closing and resist slamming?

No, they are all rubber and do not slam.

What sizes should be pinned to the pipe?

Recommended DN900 and up. Also recommended for smaller sizes that will be subjected to unusually large forces.

Can they be installed in corrugated pipe?

Yes.

Are filler strips available to fill convolutions of corrugated pipe, if requested?

Yes. We need the pipe profile to determine proper filler size.

What is the best alternative for large pipe diameters, a large TF-1, TF-2 or tandem Tideflex®?

Consult the MeasurIT. Layouts for Tandem Tideflex® can be done. Then the customer can do a comparison between the single of Tandem installation. For square ducts and culverts, Tandem Tideflex® valves are applicable.

Read more at www.measurIT.com

