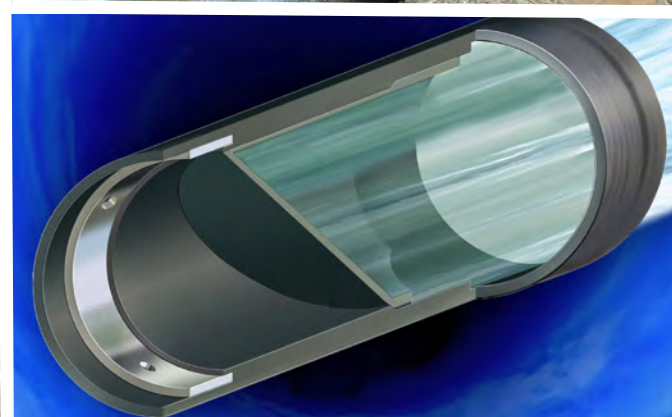




Red Valve

CheckMate UltraFlex®: The World's
Most Reliable In-Line Check Valve



CheckMate UltraFlex®- Often Imitated, Never Equaled

A Legacy of Leadership

Nearly 70 years ago, Red Valve was founded on a simple promise, to design and manufacture the highest quality engineered check valves, backed by an unsurpassed level of technical innovation and customer service.

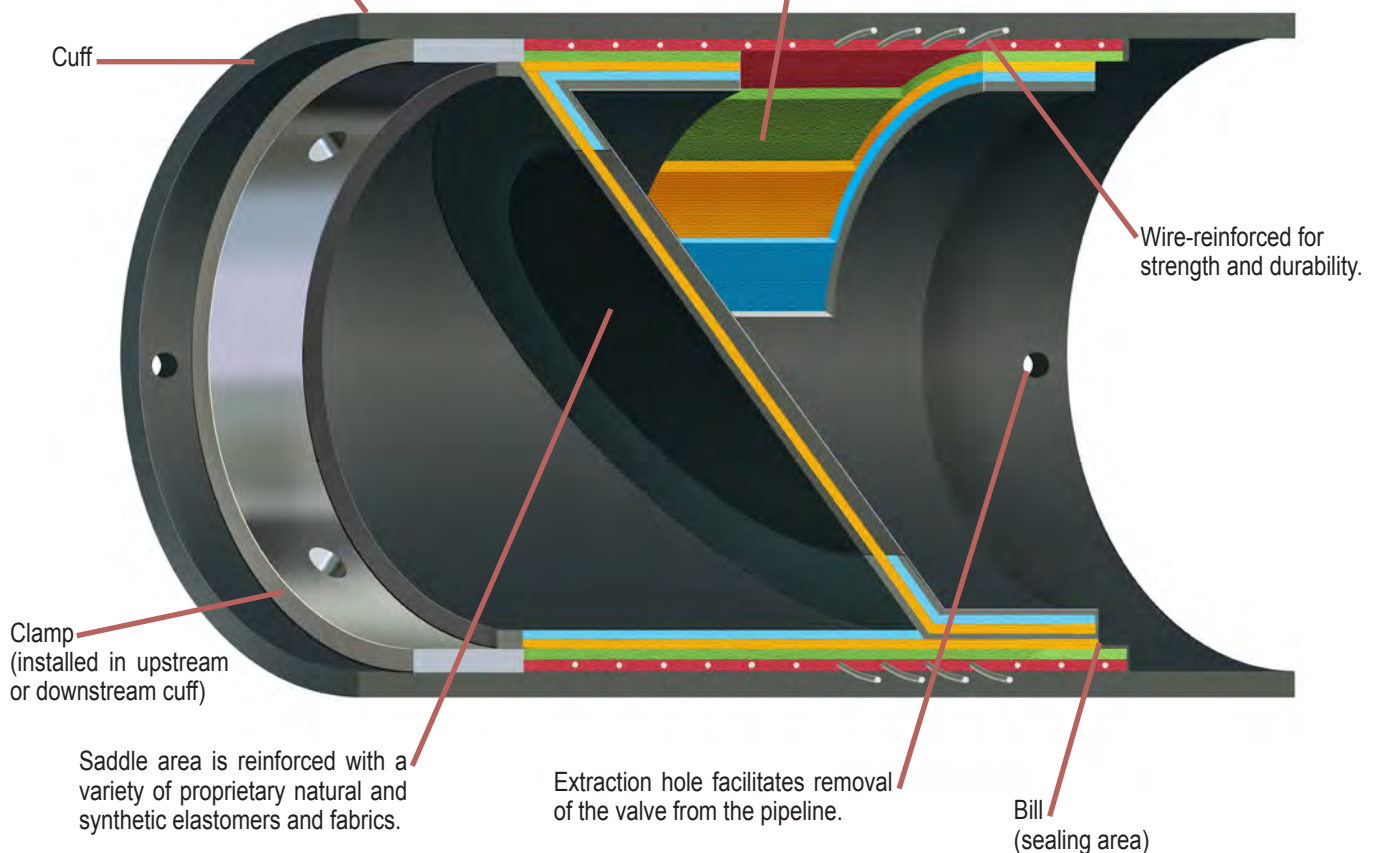
In 1984, the United States Environmental Protection Agency (EPA) commissioned Red Valve to develop and test an alternative to flap gate valves with the understanding that "Increasing the reliability and performance of tide gates has a beneficial impact on the general pollution abatement program for the nation's waterways."

In response, Red Valve developed and patented the Tideflex® Duckbill Check Valve and CheckMate® In-Line Check Valve. Today, more than one million Tideflex® Duckbill Check Valves and CheckMate® In-Line Check Valves are in service around the world, reliably solving backflow problems.

The CheckMate UltraFlex® Valve is a professional's choice for municipal and industrial applications - including stormwater, wastewater, highway run-off, combined sewer overflow (CSO), sanitary sewer overflow (SSO) and flood control. No other valve outperforms the CheckMate UltraFlex® for preventing unwanted backflow that can cause surcharging and flooding.

Multiple layers of elastomer and fabric reinforcing plies are vulcanized into a single unibody construction; no rivets or connections to weaken and break.

Every valve is reinforced with a variety of ply options depending on size and process conditions. Plies include a wide range of natural and synthetic elastomers and fabrics as well as proprietary elastomers such as Neoprene (CR), Ethylene Propylene Diene Terpolymer (EPDM), Styrene Butadiene Rubber (SBR), Fluoro Rubber (FKM), Nylon, Polyester and others.



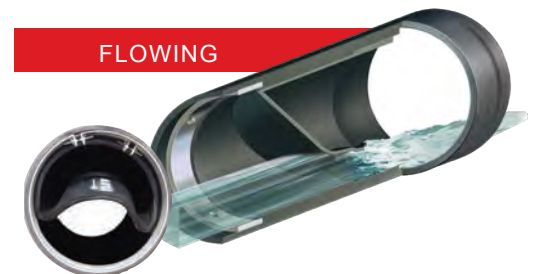


The key to the CheckMate UltraFlex® Valve's durability and longevity is Red Valve's unmatched elastomer application knowledge and engineering expertise.

Unlike other in-line valves, CheckMate UltraFlex® Valves are hand-fabricated, using various natural and synthetic elastomers and fabric ply reinforcement, to create a unibody construction. There are no molded parts, mechanical fasteners or rivets that will loosen or catch debris, corrode and fail, making the valve maintenance-free. CheckMate UltraFlex® Valves boast extremely low head loss, allowing nearly 100% flow capacity. Their inherent design and construction makes them the most user-friendly in-line check valves on the market today.

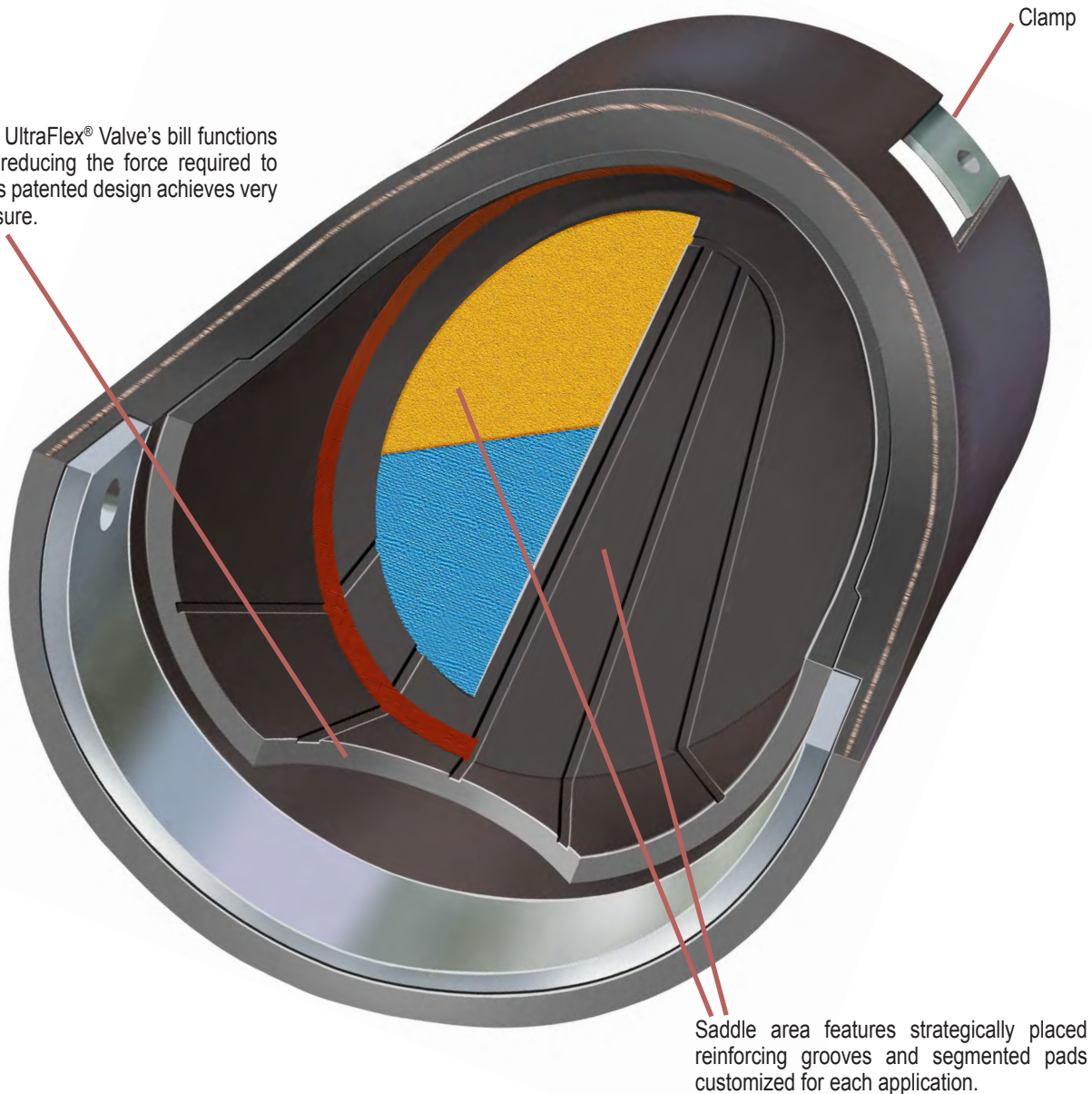
Features and Benefits:

- Extremely low head loss
- No moving mechanical parts to corrode, catch debris or fail
- Heavy-duty elastomer unibody construction
- Quick and easy installation
- Seals much better around debris compared to flap gates
- Operates on differential pressure, totally passive
- Virtually no maintenance
- Self-draining, with as little as 1" of cracking pressure
- Silent, non-slamming
- Available in sizes 3-84" (75-2100mm)
- Extensive independent hydraulic testing



CheckMate UltraFlex® - Increasing Flow Efficiency

The Arc Notch in the UltraFlex® Valve's bill functions as a hinge, greatly reducing the force required to unseat the valve. This patented design achieves very low snap-open pressure.



Saddle area features strategically placed reinforcing grooves and segmented pads customized for each application.

The Next Generation in Valve Technology

The patented CheckMate UltraFlex® In-Line Check Valve features strategically placed reinforcing grooves, segmented pads and an Arc Notch Bill. These advanced design features combine to significantly improve flow efficiency and reduce head loss, while providing reliable backflow protection.

When upstream head pressure gets to a specific level, CheckMate UltraFlex® In-Line Check Valves are designed to snap or pop open, allowing the rapid discharge of flow.

The UltraFlex's® patented saddle grooves, segmented pads, Arc Notch and optimized construction allow the valve to open sooner. As a result, the pipeline and entire collection system drains faster.

Because the CheckMate UltraFlex® Valve opens with less head pressure, pipeline capacity is significantly increased, while the chance for standing water to collect upstream of the valve is greatly eliminated.



The CheckMate UltraFlex® Valve will crack open with as little as 1" of head pressure.



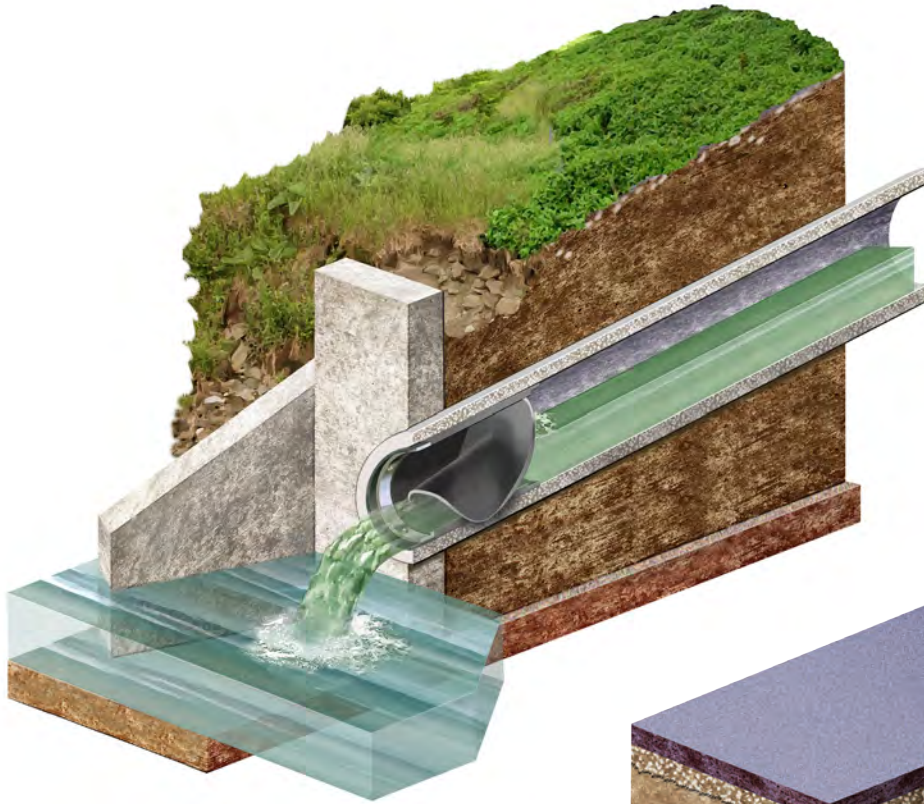
When the CheckMate UltraFlex® snaps open, the valve immediately achieves rapid discharge of flow.

UltraFlex® Boasts Lower Snap Pressure®

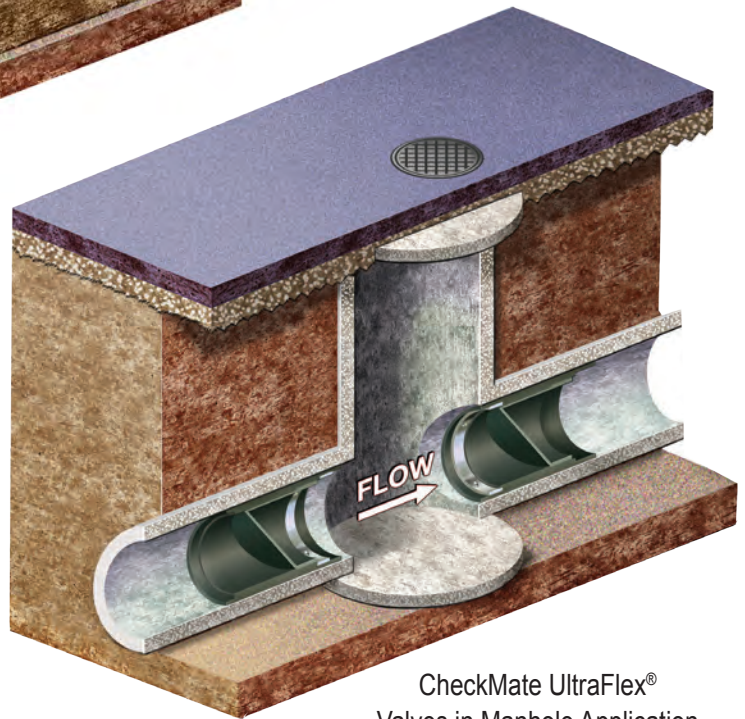
The CheckMate UltraFlex® Valve boasts a lower Snap Pressure® to open or unseat the valve, without compromising the valve's ability to seal. This greatly improves capacity in pipelines and the rapid drainage of upstream flow through the valve. With its patented design features, the CheckMate UltraFlex® In-Line Check Valve boasts a significantly improved flow efficiency due to reduced head pressure levels required to snap open the valve.

When upstream head reaches a certain level above pipe invert (for example, 8" head in a 24" valve), the UltraFlex® bill snaps open into a concave shape, allowing substantially more flow with the same amount of head. The valve will progressively open with increased head and flow. The CheckMate UltraFlex® can have up to 40% lower Snap Pressure® than a valve without the saddle grooves and Arc Notch.

CheckMate UltraFlex® - Ultimate in Backflow Prevention



CheckMate UltraFlex® Valve in
End of Pipe Application

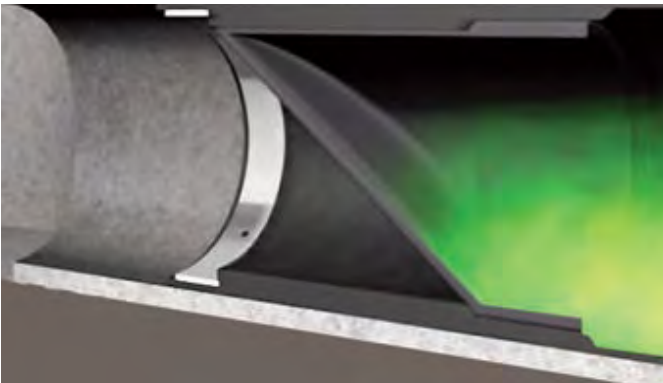


CheckMate UltraFlex®
Valves in Manhole Application

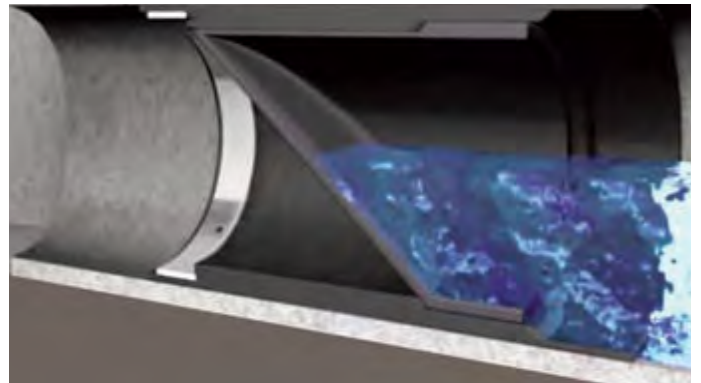
Accept No Substitutes!

The innovative CheckMate UltraFlex® In-Line Check Valve has quickly become the specified choice for in-line residential, municipal and commercial areas where complete, dependable backflow prevention is critical. It has also become the valve of choice for municipal and industrial applications such as stormwater, wastewater, highway run-off, CSO, SSO and flood control, because it prevents unwanted backflow that can cause surges and flooding. In addition, the CheckMate® minimizes damage to wetlands, beaches and residential areas.

CheckMate UltraFlex® Valves are ideally suited for interceptor, manhole and outfall pipelines, as they allow flow to discharge with very little head loss and prevent backflow. The CheckMate UltraFlex® Valve's innovative in-line design allows it to easily be installed without modifications to existing structures, making it the perfect choice for both municipalities and commercial property owners. The valve also eliminates hydraulic surges to wastewater treatment plants, potentially saving municipalities millions of dollars in maintenance and treatment costs.



The CheckMate® seals tightly to provide odor control.



The unibody CheckMate® also prevents backflow.

CheckMate® Solves Odor Problems

When foul odors were plaguing a soybean-producing town in Illinois, officials turned to Red Valve for the most reliable, cost-effective solution. A chemical deodorizing system and a pump station were also evaluated, but far exceeded budget constraints. The CheckMate® In-Line Check Valve proved to be the perfect solution. The CheckMate® In-Line Valve was installed in 2012 and has worked flawlessly ever since, completely blocking the backdraft of the odor.

Best of all, there has been no maintenance expense. According to a public works official, **“This is one of the most cost-effective solutions to a nagging quality-of-life problem the city has ever implemented. We are now looking at other parts of the combined sewer system that has a few small odor problems due to escaping sewer gas.”**

Independently Tested, Field Validated



Independent Hydraulic Testing

CheckMate UltraFlex® In-Line Check Valves are independently tested to determine their hydraulic characteristics in both free and submerged discharge applications. Published hydraulic data is validated through independent testing.

To supplement independent hydraulic testing, Red Valve continually conducts research and development and additional in-house testing to improve existing products and develop new products.

Simple Design for Simple Installation



CheckMate UltraFlex® Valves are easily installed regardless of difficult pipe end geometry or pipes in poor end condition. There is no need to rebuild headwalls.



Slips Into Existing Pipeline

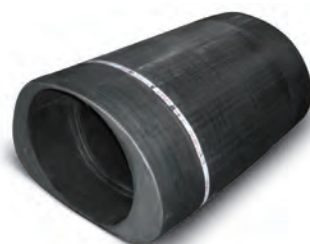
The CheckMate UltraFlex® In-Line Check Valve is extremely easy to install, regardless of the existing environment or piping. Its inherent design makes it the most user-friendly in-line check valve on the market today. From the upstream or downstream end of the pipe, simply insert the valve into position and clamp it into place.

Typically, no modification to the pipe or structure is required to install a CheckMate UltraFlex®. Because the valve is recessed inside of the pipe, additional permitting is not required. The results are construction cost savings, reduced installation time and reduced operational costs.

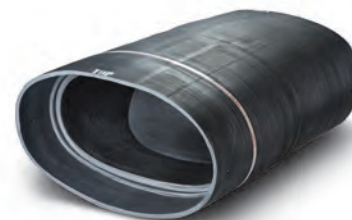
A Wide Range of Shapes and Styles

Elliptical and Arch Pipes

Elliptical and arch pipes for drainage and flood prevention projects have become popular, particularly in high water table areas with shallow surface gradients. CheckMate UltraFlex® In-Line Check Valves are the perfect solution as they can be customized to meet your specifications.



Arch Pipe CheckMate
UltraFlex®



Elliptical Pipe CheckMate
UltraFlex®

Rubber Flanged

Rubber Flanged CheckMate UltraFlex® Check Valves can be manufactured with an integral rubber upstream or downstream flange. The flanged CheckMate UltraFlex® is inserted into the host pipe, then bolted to a mating flange or anchored to a concrete headwall. The flange can be circular with standard drilling; or circular, square or rectangular with custom flange drilling. The valve is supplied with retaining rings for mounting.



Upstream Flanged CheckMate UltraFlex®

Thimble Inserts

A CheckMate UltraFlex® Thimble Insert is a CheckMate® Valve that is factory installed, clamped and pinned into a flanged or plain-end pipe. The Thimble Insert assembly is installed by inserting the CheckMate UltraFlex® into the I.D. of the host pipe. The Thimble Insert is available in flange or no-flange versions. A flange on a Thimble Insert can be upstream with circular, square, rectangular or custom flanges; or it can be located on the downstream side.

Plain end, no-flange thimble inserts are inserted into the host pipe and non-shrink grout is placed between the Thimble Insert O.D. and host pipe I.D. to form the seal. This can be done in circular pipe or in a square culvert.

Tandem Thimble Inserts can also be made for rectangular culverts. A variety of custom Thimble Insert configurations are also available.



Thimble Extension CheckMate UltraFlex®

Thimble Extensions

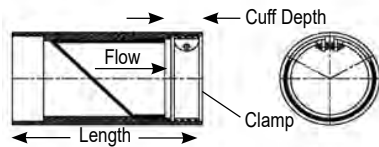
A CheckMate UltraFlex® Thimble Extension is mounted to a mating flange or concrete headwall. The CheckMate® portion extends beyond the concrete headwall. Thimble Extensions have an upstream flange. They can also be designed with a downward sloping pipe stub to gain additional head.



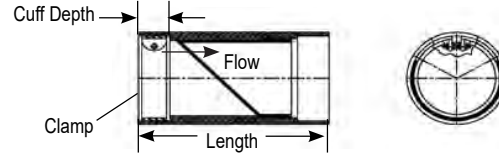
Tandem Thimble Insert
CheckMate UltraFlex®

Configurations and Custom Designs

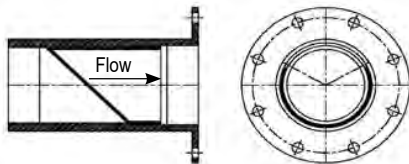
Downstream Clamp



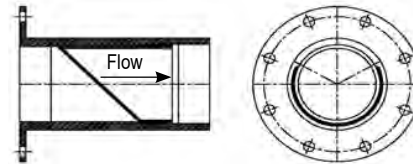
Upstream Clamp



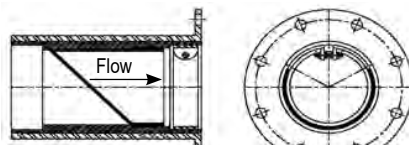
Downstream Flanged



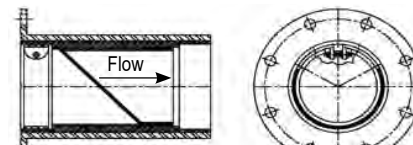
Upstream Flanged



Downstream Flanged Thimble Insert or Extension



Upstream Flanged Thimble Insert or Extension



CheckMate® can be made for any pipe I.D.
Built to fit in sizes from 3-72" (75-1800mm).

Flange shape and bolt pattern can be customized.
Flangeless thimble inserts are available.

DIMENSIONS											
	NOMINAL PIPE SIZE I.D.		OVERALL LENGTH*		NUMBER OF CLAMPS	CUFF DEPTH		BACK PRESSURE RATING**		WEIGHT***	
	Inches	Millimeters	Inches	Millimeters		Inches	Millimeters	Feet	Meters	Lbs	Kg
Low Pressure	3	75	5.1	130	1	1.5	38	10	3.0	0.7	0.3
	4	100	7.9	201	1	1.5	38	10	3.0	1.5	0.7
Standard Pressure	4	100	7.9	201	1	1.5	38	85	26.0	3	1.5
	5	125	9.5	241	1	1.5	38	83	25.3	4	2
	6	150	11.0	279	1	2.0	51	83	25.3	9	4
	7	175	12.8	325	1	2.0	51	79	24.1	11	5
	8	200	15.2	386	1	2.0	51	79	24.1	13	6
	9	225	15.4	391	1	2.0	51	75	22.9	17	8
	10	250	16.1	409	1	2.0	51	71	21.6	20	10
	12	300	19.8	503	1	2.0	51	68	20.1	37	17
	14	350	25.8	655	1	4.0	102	64	20.0	110	50
	15	381	25.8	655	1	4.0	102	62	18.9	120	55
	16	400	28.6	726	1	4.0	102	60	18.3	133	52
	18	450	31.0	787	1	4.0	102	56	17.1	143	65
	20	500	42.1	1069	2	8.0	203	53	16.2	223	102
	24	600	47.5	1207	2	8.0	203	45	13.7	304	137
	26	650	50.0	1270	2	8.0	203	42	12.8	370	168
	28	700	52.0	1321	2	8.0	203	40	12.2	434	197
	30	750	54.9	1395	2	8.0	203	38	11.6	500	227
	36	900	62.3	1582	2	8.0	203	30	9.1	828	376
	42	1050	70.6	1793	2	8.0	203	28	8.5	1423	646
	48	1200	79.0	2007	2	8.0	203	26	7.9	1801	817
	54	1350	86.4	2195	2	8.0	203	20	6.1	2700	1225
	60	1500	96.8	2459	2	9.0	229	18	5.5	3315	1504
	72	1800	119.0	3023	3	12.0	305	15	4.6	6100	2767

*Shorter lengths available.

**Back pressure measured from pipe invert.
Higher back pressure ratings available. Consult factory.

***Weights are approximate and do not include crating.



Red Valve offers a worldwide, world-class custom service network. With corporate offices in Pittsburgh, PA, manufacturing facilities in Gastonia, NC, and a network of sales representatives around the globe, Red Valve has the sales engineering team to help you select the best choice of valves and related products for your applications.



Red Valve®
The World Leader in Pinch and Check Valve Technology™

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