



**Tideflex®**  
Technologies

**CheckMate® Inline Check Valve**



United States Patent # 5,769,125



Red Valve Company, Inc.®



# CheckMate®: Your Final Move to Eliminate Backflow!

## CHECKMATE® VALVE Designed for Inline Service

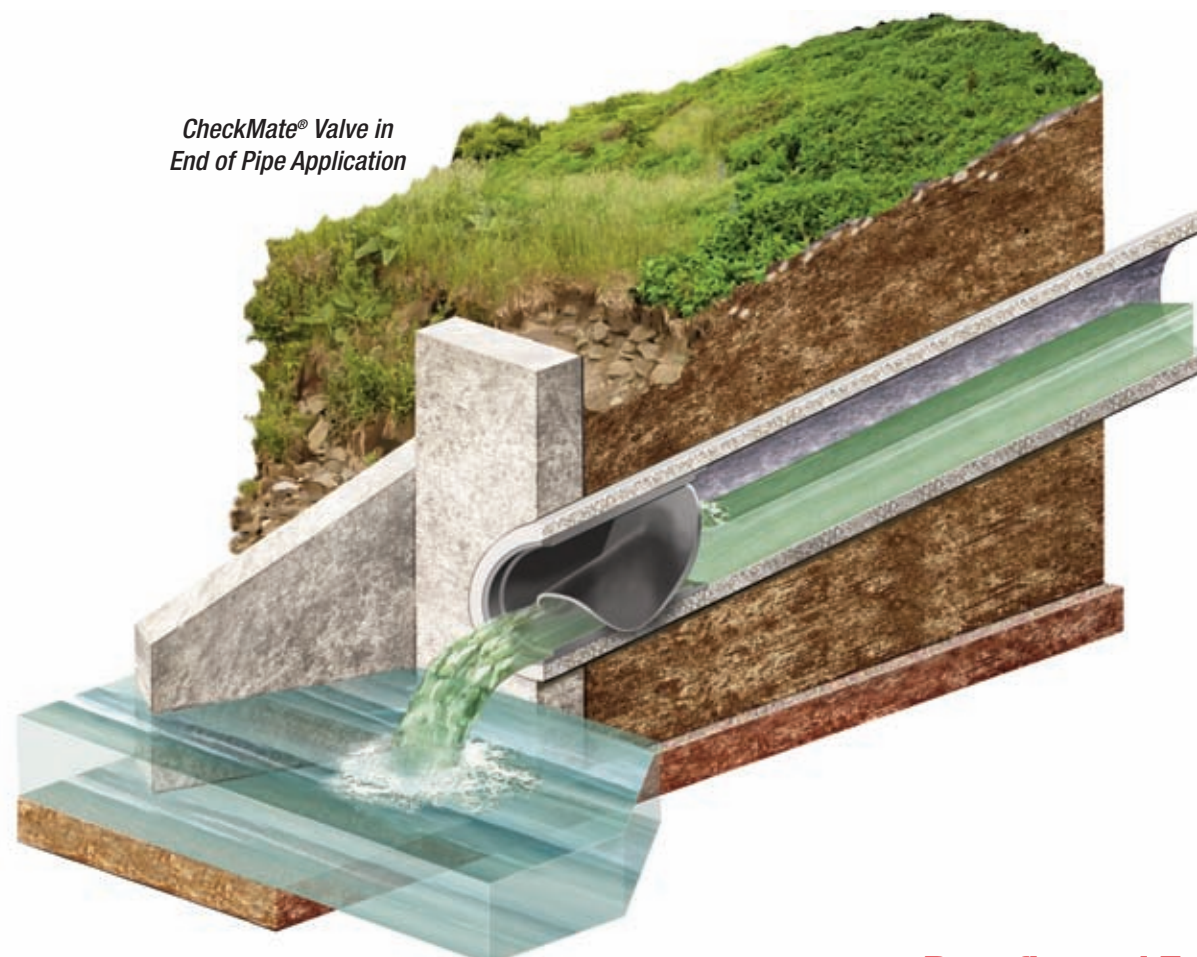
### Dependable Backflow Prevention

The CheckMate® Inline Check Valve is the valve of choice for both municipal and industrial applications - including stormwater, wastewater, highway run-off, CSO, SSO and flood control. CheckMate® Valves prevent unwanted backflow that can cause surcharging and flooding.

CheckMate® Inline Check Valves have become the specified solution for residential and commercial areas where complete, dependable backflow prevention is necessary. The CheckMate® is not simply a molded part. Rather it is hand-fabricated, utilizing various natural and synthetic elastomers and fabric ply reinforcement to create a unibody construction. There are no mechanical parts or fasteners to catch debris, corrode, or fail, making the CheckMate® maintenance-free. With seven elastomers to select from, the CheckMate® can be custom engineered to resist chemicals, grease and oils typically found in stormwater, wastewater and industrial applications.

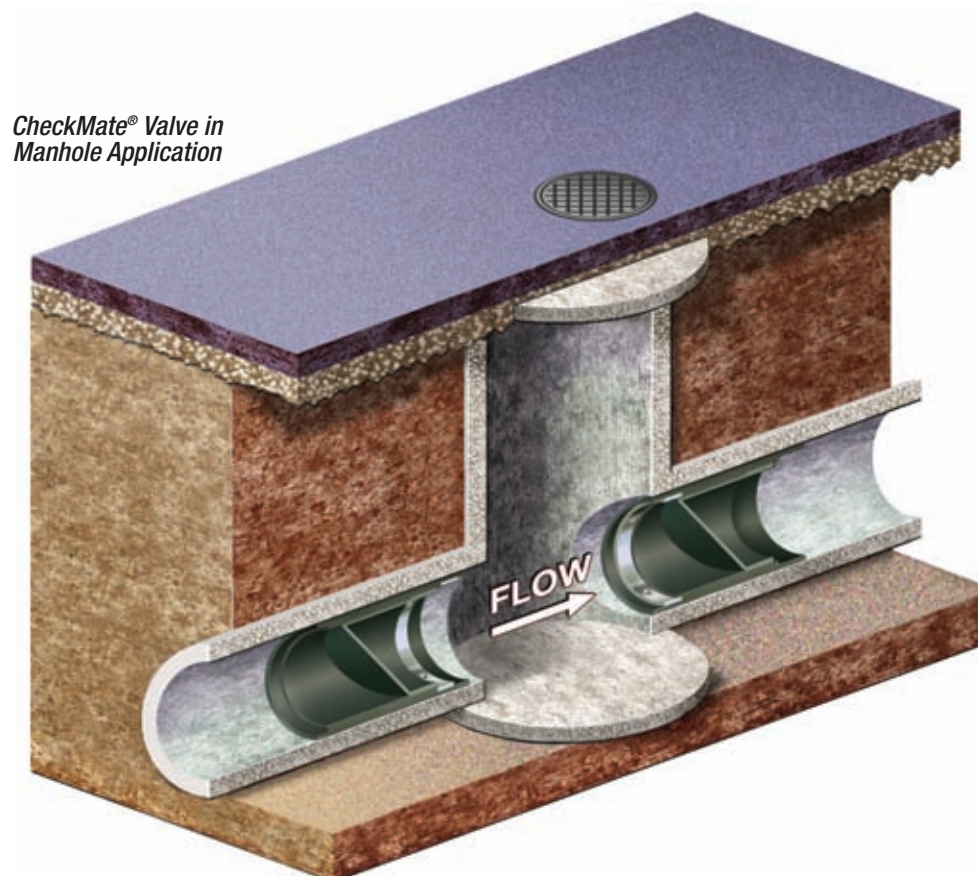
The CheckMate® Valve boasts extremely low headloss, allowing for near 100% flow capacity. Its inherent design makes it the most user-friendly inline check valve on the market today. From the upstream or downstream end of the pipe, simply insert the valve into position and clamp it into place. Typically no modification to the pipe or structure is required to install the CheckMate®. Because the CheckMate® is recessed inside of the pipe, additional permitting is not required. The result is savings in both installation time and operational cost.

CheckMate® Valve in  
End of Pipe Application



The valve can successfully withstand severe winter freezes, typhoons, hurricanes and flooding. The CheckMate® also minimizes damage to wetlands, beaches and residential areas, eliminates hydraulic surges to wastewater treatment plants and saves municipalities millions of dollars in maintenance and treatment costs.

CheckMate® Valve in  
Manhole Application

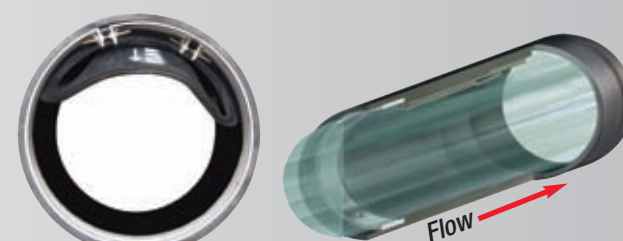


### Benefits and Features of CheckMate®:

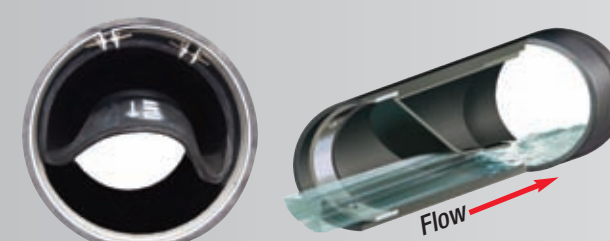
- Extremely Low Headloss
- No Moving Mechanical Parts to Corrode, Catch Debris or Fail
- Heavy Duty Elastomer Unibody Construction
- Quick and Easy Installation
- Seals Around Debris
- Operates on Differential Pressure, Totally Passive
- Virtually No Maintenance
- Self-draining, 1" of Cracking Pressure
- Silent, Non-slaming
- Available in Sizes 3" (75 mm) to 78" (1950 mm)
- Extensive Independent Hydraulic Testing



For an animated demonstration of the CheckMate® in operation, please visit:  
<http://www.tideflex.com/checkmate>.



FULLY OPEN



FLOWING



FULLY CLOSED



# CheckMate® Applications: Simply Versatile!

## CHECKMATE® VALVE Designed for Inline Service



48" CheckMate® installed in a storm sewer drain to stop backflow from flooding a residential area.



24" CheckMate® is easily installed in a municipal sewer.



48" CheckMate® Valve replacing a faulty flapgate in a CSO application.



The CheckMate® is also easily installed by hand.

### Residential and Municipal Sewers

CheckMate® Inline Check Valves have become a frequently specified solution for residential and municipal areas where complete, dependable backflow prevention is necessary. The CheckMate® Valve's maintenance-free, passive operation provides years of trouble-free service.

### CSO, SSO and Outfalls

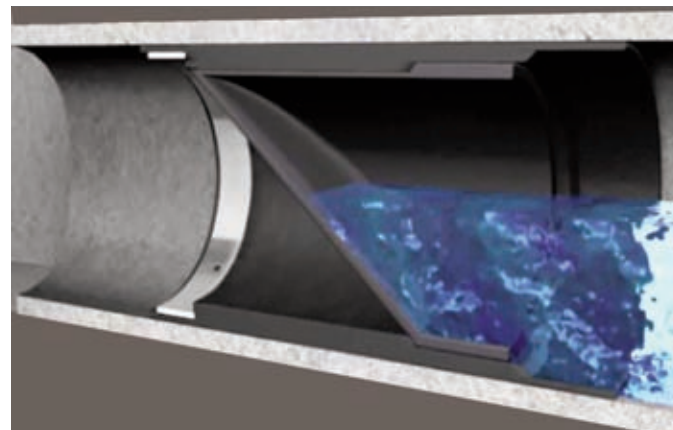
CheckMate® Valves are used for interceptor, manhole and outfall pipelines because they maximize pipeline storage and capacity while preventing water from backflowing into a sewage treatment plant. The CheckMate® Valve's innovative inline design allows it to be easily installed without modifications to structures.

### Stormwater, MS4, Highway Run-off and Site Drainage

CheckMate® Inline Check Valves are the valve of choice for both municipalities and commercial property owners to prevent costly flood damage and to maximize system storage. The CheckMate®'s low cracking pressure and headloss provide rapid drainage.

### Flow Equalization Basins, Pump Stations and Effluent Discharge

CheckMate® Valves provide backflow prevention in between basins and also protect pumps and capital equipment. The CheckMate®'s low headloss characteristics maximize flow efficiency.



The CheckMate's® rugged unibody construction prevents backflow.



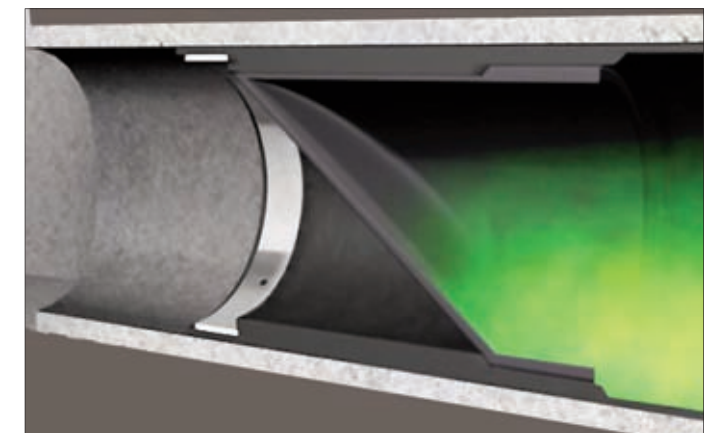
48" CheckMate® installed at the Freedom Tower for stormwater drainage.

### Odor Control

CheckMate® Inline Check Valves prevent sewer systems' offending odors from escaping, while still allowing water to discharge when needed. The CheckMate® Valve is designed to eliminate the backflow of unwanted methane and hydrogen sulfide gases that typically result in complaints about odor from the general public.

### Levees, Marinas and Wetlands

In low lying areas where headloss is at a premium, CheckMate® Valves efficiently drain with the added benefit of providing absolute backflow prevention.



The CheckMate® provides odor control.

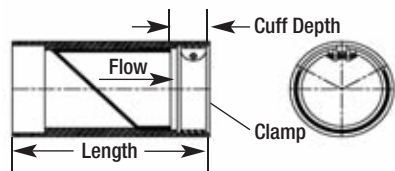
### Independent Hydraulic Testing

CheckMate® Inline Check Valves are independently tested to determine their hydraulic characteristics in both free and submerged discharge applications. Red Valve's published hydraulic data is validated through this independent testing.

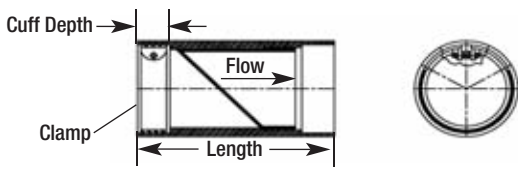




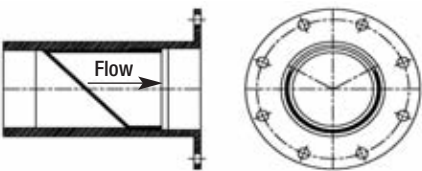
### Downstream Clamp



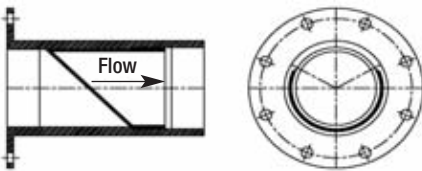
### Upstream Clamp



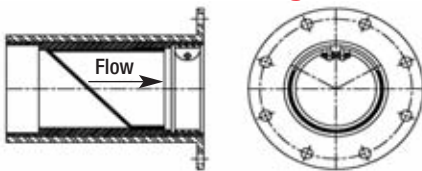
### Downstream Flanged



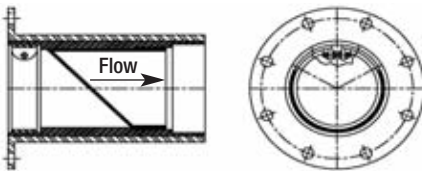
### Upstream Flanged



### Downstream Flanged Thimble Insert



### Upstream Flanged Thimble Insert



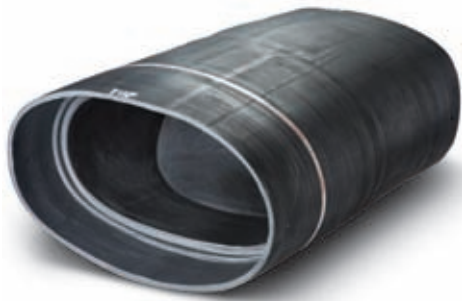
CheckMates® can be made for any pipe I.D.  
Built to fit in sizes from 3" to 78".

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

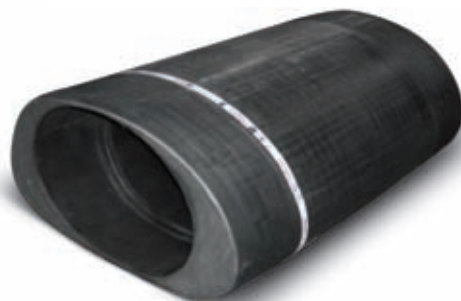
| CHECKMATE® VALVE  |                        |             |                 |             |                  |            |             |                        |        |        |      |
|-------------------|------------------------|-------------|-----------------|-------------|------------------|------------|-------------|------------------------|--------|--------|------|
|                   | 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          | 5                      | 1.5    | 1.5    | 0.7  |
|                   | 4                      | 100         | 7.9             | 201         | 1                | 1.5        | 38          | 5                      | 1.5    | 1.5    | 0.7  |
| Standard Pressure | 3                      | 75          | 5.1             | 130         | 1                | 1.5        | 38          | 85                     | 26.0   | 3      | 1.4  |
|                   | 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   |
|                   | 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  |
|                   | 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         | 26                     | 7.9    | 1423   | 646  |
|                   | 48                     | 1200        | 79.0            | 2007        | 2                | 8.0        | 203         | 23                     | 7.0    | 1801   | 817  |
|                   | 54                     | 1350        | 86.4            | 2195        | 2                | 8.0        | 203         | 17                     | 5.2    | 2700   | 1225 |
|                   | 60                     | 1500        | 96.8            | 2459        | 2                | 9.0        | 229         | 15                     | 4.6    | 3315   | 1504 |
|                   | 72                     | 1800        | 119.0           | 3023        | 3                | 12.0       | 305         | 13                     | 4.0    | 6100   | 2767 |
|                   | 78                     | 1950        | 119.0           | 3023        | 3                | 12.0       | 305         | 13                     | 4.0    | 7000   | 3176 |

\*Shorter lengths available.

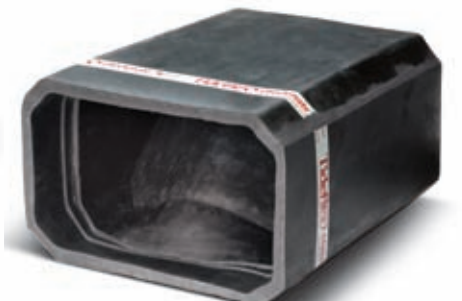
\*\*Back pressure measured from pipe invert.  
Higher back pressure ratings available. Consult factory.



Elliptical Pipe CheckMate®



Arch Pipe CheckMate®



Rectangular Pipe CheckMate®

### Elliptical, Arch and Rectangular Pipes

Elliptical, arch and rectangular pipes for drainage and flood prevention projects have become popular, particularly in high water table areas with shallow surface gradients. CheckMate® Inline Check Valves are the perfect solution for backflow prevention in elliptical, arch and rectangular pipes.

### Rubber Flanged

Rubber Flanged CheckMate® Valves can be manufactured with an integral rubber upstream or downstream flange. The flanged CheckMate® gets inserted into the host pipe then can be 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.

### Thimble Inserts

A CheckMate® Thimble Insert is a CheckMate® Valve that is factory-installed, clamped, and pinned into flanged or plain end pipe. The thimble insert assembly can either be inserted into the I.D. of the host pipe, or can be mounted to a mating flange or concrete headwall and extend beyond the pipe. Plain end 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.



Upstream Flanged CheckMate®



CheckMate® Thimble Insert

The best choice for the toughest applications.

**In addition to the Checkmate® Inline Check Valve, Tideflex® Technologies offers a complete line of check valves.**

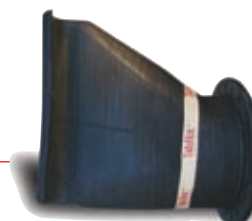
### TF-1 CHECK VALVES

The Tideflex® TF-1 Curved Bill Check Valve is designed with enhanced sealing to improve headloss. The improved TF-1 design allows the valve to handle long-term water weight while maintaining structural integrity. The spine is at a greater vertical angle, making it able to withstand the cantilever effect when water is flowing through the valve. The TF-1 is constructed of rubber, making it immune to rust, corrosion and weathering.



### SERIES 35-1 CHECK VALVES

The flat-bottom Series 35-1 features an integral rubber flange, allowing them to be mounted to flanged outfall pipes or directly to headwalls where the pipe is flush. The flange size drilling conforms to ANSI B16.10, Class 150#, or can be constructed with DIN, 2632 and other standards. The Series 35-1 Check Valve is furnished complete with steel or stainless steel backup rings for installation.



### SERIES 39 CHECK VALVES

The Tideflex® Series 39 Inline Check Valve features a fabric-reinforced elastomer check sleeve housed in a cast iron body with ANSI 125/150 flanges, allowing for easy installation into any piping system. The valve's operation is silent, non-slamming and maintenance free. Sliding, rotating, swinging and plunging parts are completely eliminated. The body is equipped with flush ports and a clean-out port and can be epoxy coated.



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