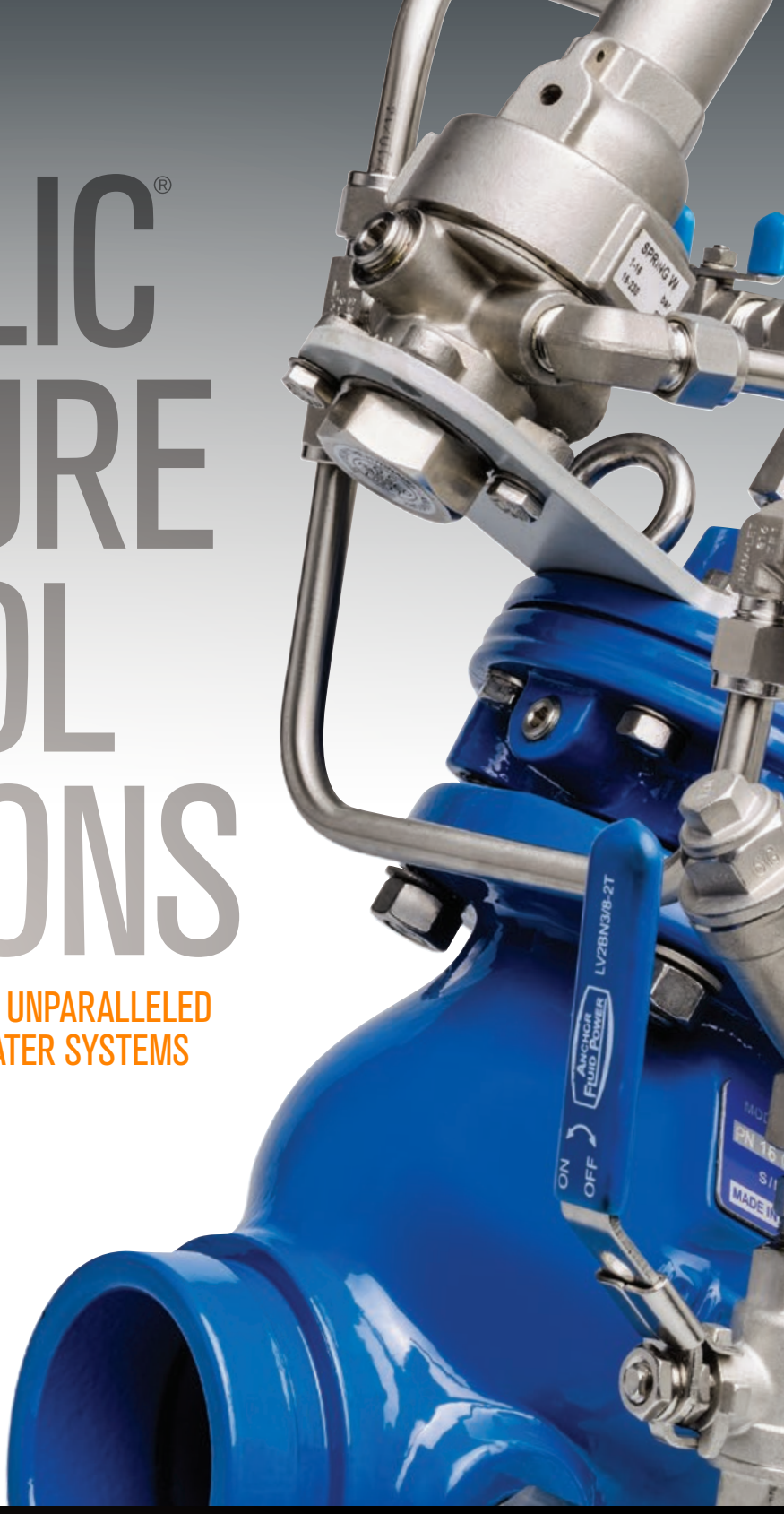
VICTAULIC® PRESSURE CONTROL SOLUTIONS

EXPERTLY DESIGNED FOR UNPARALLELED CONTROL OF POTABLE WATER SYSTEMS



NSF Certified to NSF/ANSI 61

NSF Certified to NSF/ANSI 372

Victaulic®

PRESSURE CONTROL SOLUTIONS FOR POTABLE WATER

Through our exclusive partnership with Bermad, Victaulic offers innovative solutions for the control and management of domestic water supply, specifically as it relates to commercial systems with pressure reduction needs.

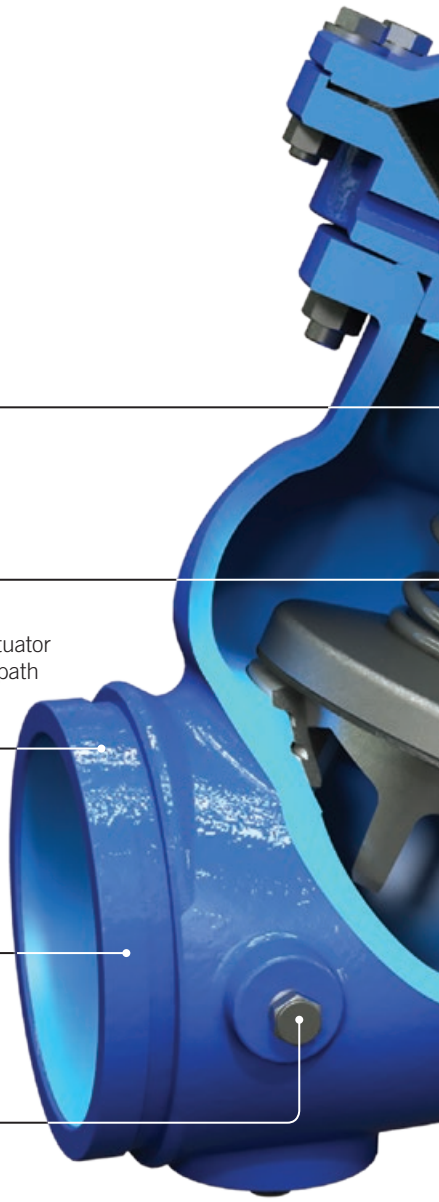
Designing water supply systems for high-rise buildings presents a unique set of challenges, all of which can be addressed by leveraging Bermad's product and technical expertise with Victaulic's extensive system knowledge and support.

INNOVATION AT A GLANCE

PRESSURE REDUCING HYDRAULIC CONTROL VALVE
VICTAULIC® SERIES 972 | BERMAD MODEL BC-720-P

The pressure reducing valve (PRV) within a pressure reducing valve station (also known as a PRV station) is typically a hydraulic control valve. Hydraulic control valves with improved flow capacity, rapid response, and simplified maintenance can increase operating life and reduce total cost of ownership for the PRV station. Bermad's advanced control valve design for pressure reducing stations does exactly that.

- Up to 15% better flow capacity than standard globe valves due to its "Y" pattern design and streamlined internal mechanism
- Double chamber actuator protects diaphragm
- Advanced actuator design increases operating life
- Actuator design eliminates potential damage of internal components during maintenance
- Variety of joining methods available to install on any pipe line
- On-site service of Bermad valves is up to 8 times faster to perform due to the modular actuator assembly



Onsite Valve Service Protocol: Down Time
Bermad Modular Actuator Assembly vs. Competitor

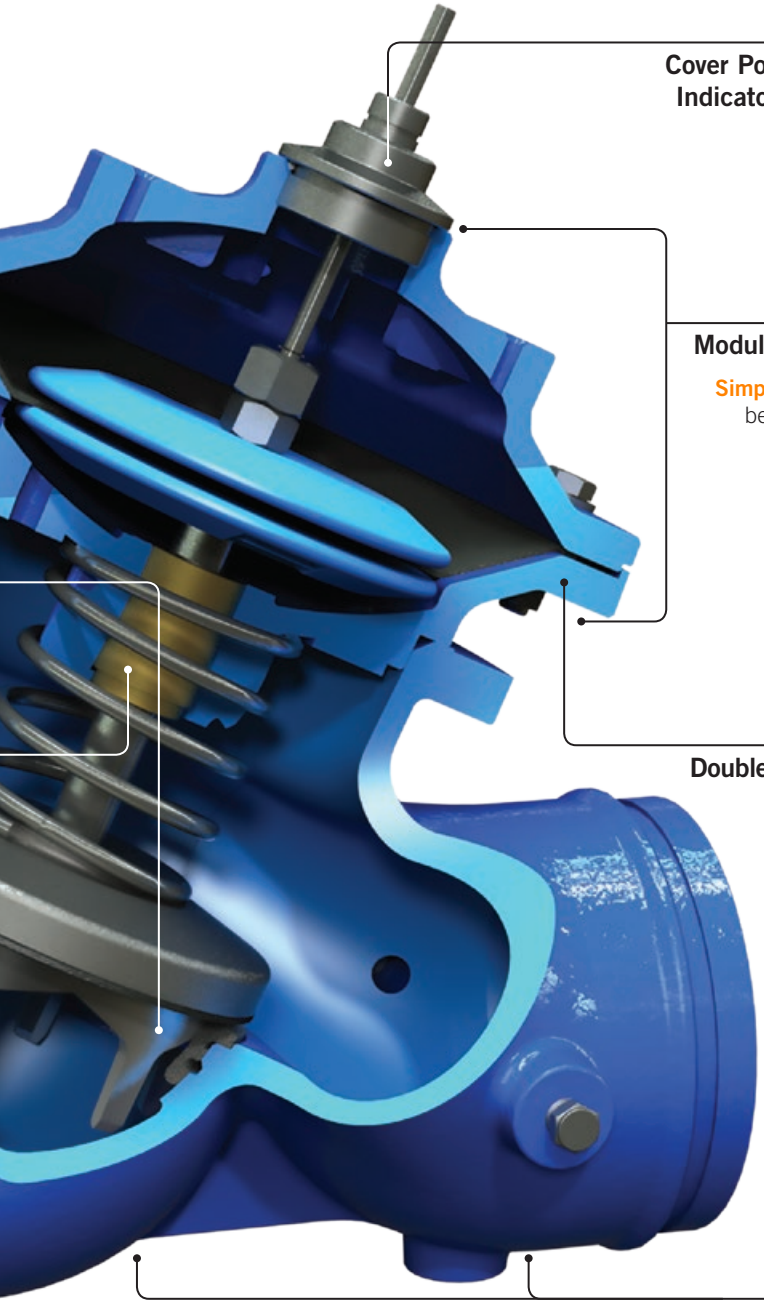
Bermad

Close the isolation valves → Vent pressure → Remove the modular actuator assembly → Inspect the body and seat → Install spare actuator → Open the isolation valves

10 – 15 MINUTES OF DOWN TIME

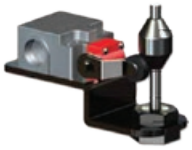
Competitor

Close the isolation valves → Vent pressure → Remove the cover → Remove the spring → Remove the stem nut → Remove diaphragm washer → Remove the diaphragm → Remove the disc retainer → Remove the seal disc



Cover Port for Optional Visual Indicator and Limit Switches

Enables on-site retrofit



Modular Actuator Assembly

Simplified maintenance – can be removed as a single unit

Double-Chambered Actuator

Protects diaphragm

Valve Trim

"Y" Pattern Valve Body with Full Bore Valve Port

Obstruction-free design **increases flow capacity by 15%**

ON-SITE SERVICE OF BERMAD VALVES IS UP TO 8 TIMES FASTER TO PERFORM

Remove the stem → Inspect the body and seat → Replace elastomers (grease o-rings) → Reassemble all of the parts → Place cover and tighten bolts → Open the isolation valves

60 – 80

MINUTES OF DOWN TIME

PRESSURE REDUCING VALVE STATIONS

Available in 1½–6" | DN40–DN150 sizes and accommodates pressures up to 300 psi | 2068 kPa | 21 bar.

Victaulic® Pressure Reducing Valve (PRV) Stations combine the functional benefits of individual *Victaulic* products into one fully assembled, ready to install "catalog item." The *Victaulic* Series 386 PRV station combines the time savings and reliability of a grooved piping system with the high performance function of a Bermad control valve.

Your single source for PRV Stations

Victaulic has taken all of the guesswork out of designing and assembling a PRV station with the convenience of a standard catalog item that reduces risk and labor costs. The single unit eliminates the need to handle loose pipe and components on the jobsite; nothing gets lost or installed incorrectly.

- Smaller footprint compared to flanged or threaded PRV stations
- Eliminates guesswork from estimating process
- Reduces jobsite labor and scheduling risks
- Utilizes *Victaulic* grooved pipe joining
- Connects to rest of system with only two couplings
- Provides easier on-site maintenance
- Integrated support frame – Ready to install
- UL Classified to NSF/ANSI 61 and NSF/ANSI 372 for potable water applications

CLASSIFIED c UL us WATER QUALITY ANSI/NSF 61 & 372

- Regional availability, contact Victaulic for details

Building a PRV Station Onsite

VS.

Series 386A Single Stage PRV Station with Low-Flow Bypass

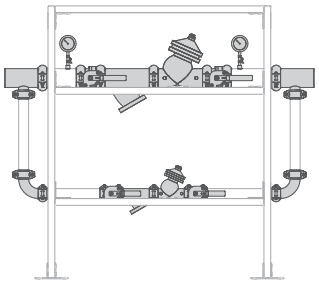
SINGLE STAGE AND TWO STAGE PRV STATIONS

Many factors come into play when trying to determine the number of pressure reduction stages in a pressure reduction application, including upstream and downstream pressure; media temperature and viscosity; flow velocity; valve body type; construction materials; and plug contour. All of these factors can affect the regulation load of the hydraulic control valve, as well as the wear and tear of the valve.

Therefore, Victaulic recommends using a multi-stage reduction, which divides the load between two or more pressure reducing valves in series.

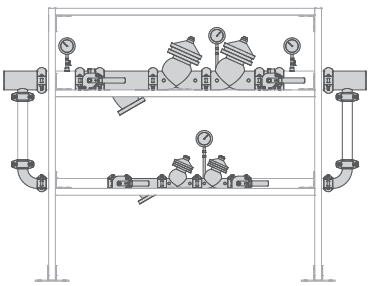
As a general rule of thumb, the ratio between the upstream and the downstream pressures should be limited to 3:1. This rule has been used for many years in various industries and has been proven to work well to reduce the cost of ownership of the regulating valves.

Standard Victaulic® PRV Station Configurations include:



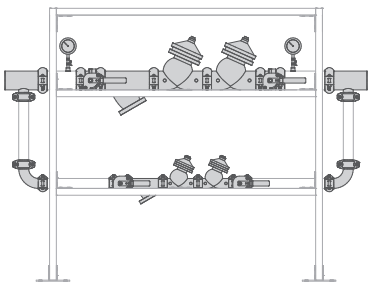
Victaulic Series 386A

Single Stage PRV Station with Low-Flow Bypass (LFB)



Victaulic Series 386B

Two Stage PRV Station with LFB

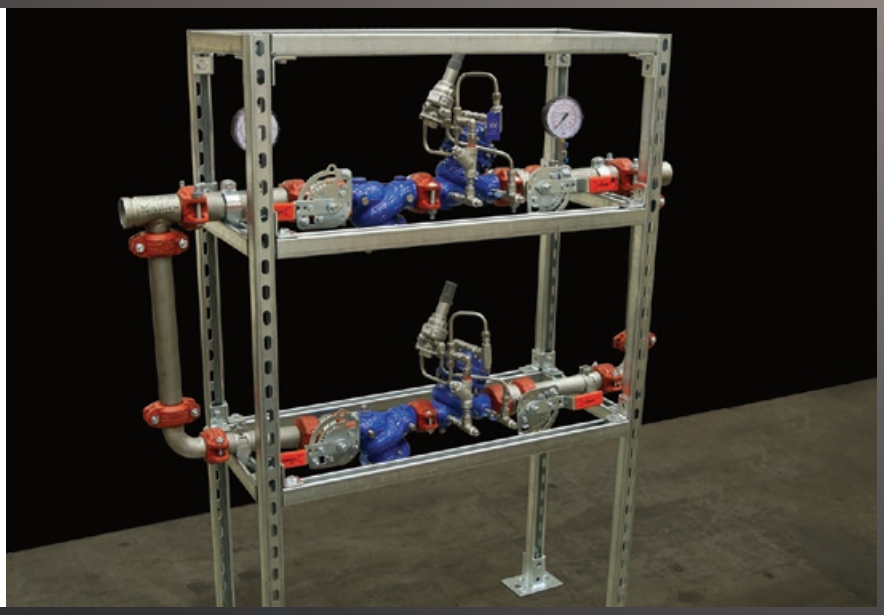


Victaulic Series 386C

Single Stage PRV Station with LFB and “Watchdog” Combination

SINGLE STAGE PRV STATIONS

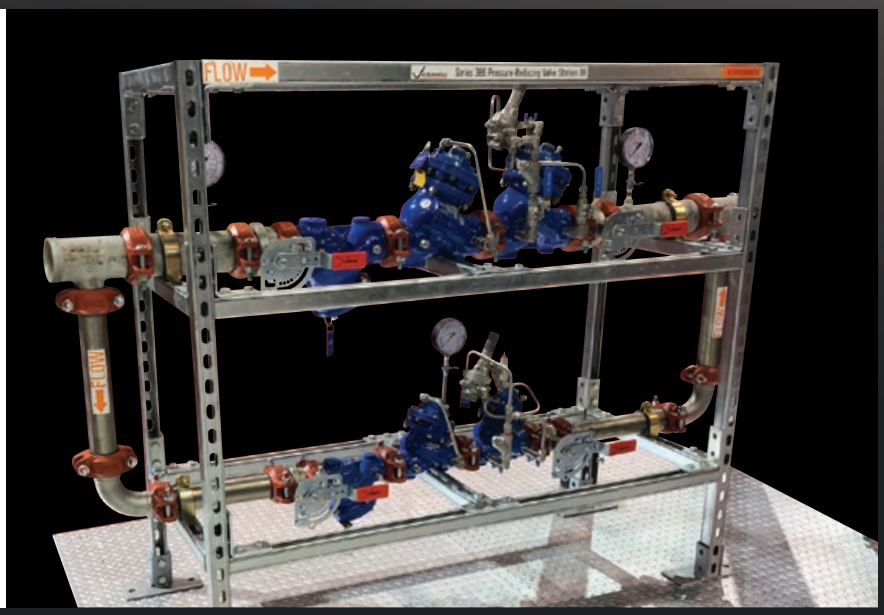
A single stage pressure reducing valve station contains one standard PRV (Victaulic® Series 972 | Bermad Model BC-720-P) on the main line and one on each parallel branch. If the ratio between the inlet and the outlet pressures (the upstream and the downstream pressures) is less than 3:1, a single stage PRV station is recommended. However, when dealing with a ratio higher than 3:1, a two stage system is ideal.

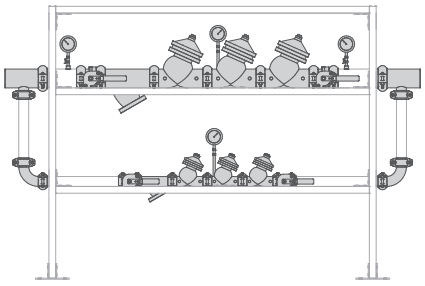


TWO STAGE PRV STATIONS

In a two stage scenario, a proportional PRV (*Victaulic* Series 972-PD | Bermad Model BC-720-PD-P) is installed first in series, followed by a standard PRV. This applies to both the main line and each parallel branch.

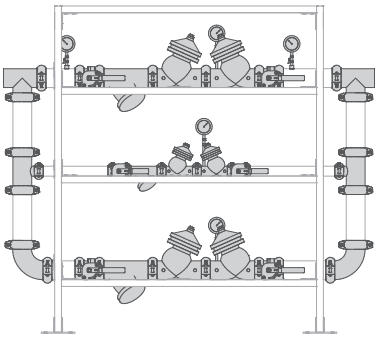
When the ratio exceeds 7.5:1, a “three stage” or “3 Stage” system is recommended. Custom configurations may be available upon request. Contact Victaulic for details.





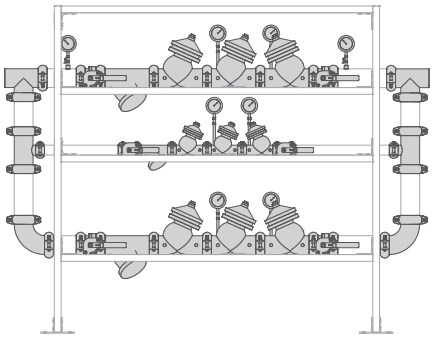
Victaulic Series 386D

Two Stage PRV Station with LFB and “Watchdog” Combination



Victaulic Series 386E

Single Stage PRV Station with LFB, Redundant Branch and Excessive Pressure Shut-Off Valve



Victaulic Series 386F

Two Stage PRV Station with LFB, Redundant Branch and Excessive Pressure Shut-Off Valve

PRESSURE SAFETY SOLUTIONS

Implementing a pressure safety solution on a PRV station is highly recommended in order to protect the downstream piping from experiencing unsafe excess pressures.

Victaulic offers three pressure safety solutions

THE EXCESSIVE PRESSURE SHUT-OFF VALVE APPROACH

Victaulic® Series 979-4 | Bermad Model BC-794-P

Used in systems designed with PRV stations featuring a redundant line

The function of the Excessive Pressure Shut-Off Valve is to **"fail closed,"** stopping all water supply downstream of the malfunctioning PRV and signaling the building management system (BMS). However, since there is a redundant line, the supply will be uninterrupted. This is a common approach to pressure safety, but it is important to note that even though a redundant line will allow continuous service, if the main line fails, the secondary line is not designed to handle that much load for an extended period of time. The main line must be repaired and made operational as quickly as possible so as to not overburden the valves on the secondary line.

THE "WATCHDOG" VALVE COMBINATION

Victaulic Series 972S-H | Bermad Model BC-72S-H-P

A more efficient and space-saving option because it does not require that the PRV station include a redundant/secondary line

The "Watchdog" approach, exclusive to Victaulic and Bermad, allows the system to continue regulating, while signaling the BMS. The benefit of this option is complete system protection and non-stop supply when using only one main line.

THE PRESSURE RELIEF VALVE APPROACH

Victaulic Series 973-Q | Bermad Model BC-73Q-P

For additional protection, a pressure relief valve can be designed into the system.

In this instance, if the pressure on the downstream side is still too high, the relief valve opens and physically releases water out of the system into a drain in an effort to stabilize the pressure, while signaling the BMS. (A drainage system would have to be piped.) This pressure relief valve can be used as a single safety method or together with a "Watchdog," where it will provide additional safety when the "Watchdog" is activated. Pressure relief valves are sold separately.

TIGHT SPACE SOLUTIONS

The Series 386 PRV stations are also available in vertical and single-branch configurations, which are typically used in tight-space installations where a standard Series 386 PRV station may not fit. Similar to the standard PRV stations, these configurations are fully assembled, ready to install "catalog items." The vertical station also includes an integrated support frame.

SINGLE BRANCH PRV STATION

Victaulic® Series 386-SB

- Designed to fit into areas with extreme spatial constraints
- Sizes from 1½–6" | DN40–DN150
- Pressures up to 300 psi | 2068 kPa | 21 bar
- Includes a low-flow bypass feature for optimum low-flow pressure control
- Offered in four standard configurations (Series 386A-SB, Series 386B-SB, Series 386C-SB, and Series 386D-SB)
- For more information, refer to **publication 102.17**

VERTICAL PRV STATION

Victaulic Series 386-V

- Designed to fit into closets
- Sizes from 1½–4" | DN40–DN100
- Pressures up to 300 psi | 2068 kPa | 21 bar
- Offered in four standard configurations (Series 386A-V, Series 386B-V, Series 386C-V, and Series 386D-V)
- For more information, refer to **publication 102.19**

Additional Pressure Control Solutions

PROPORTIONAL PRESSURE REDUCING VALVE

Victaulic® Series 972-PD | Bermad Model BC-720-PD-P

- Sizes from 1½–8" | DN40–DN200
- Pressure up to 400 psi | 2758 kPa | 28 bar
- Unique pressure reduction solution for high pressure differential applications
- Used as first stage pressure reduction in two-stage systems
- Offers more cost effective, more stable and better functioning system

PRESSURE REDUCING VALVE WITH INTEGRAL LOW-FLOW BYPASS

Victaulic Series 972-2B | Bermad Model BC-720-2B-P

- Sizes from ½–8" | DN15–DN200
- Pressure up to 300 psi | 2038 kPa | 21 bar
- Reduces higher upstream pressure to lower downstream pressure, regardless of fluctuating demand or varying upstream pressure
- Handles low-flow conditions in a compact package
- Basis of Series 386-SB single branch PRV station

DIRECT ACTING PRESSURE REDUCING VALVE

Victaulic Series 935-H | Bermad Model BC-CAP-P

- Sizes from ½–2" | DN15–DN50
- Pressure up to 300 psi | 2038 kPa | 21 bar
- DZR low-lead forged brass body
- Female union NPT threaded ends with downstream pressure gauge
- Adjustable set point with visual indicator

PROJECT REFERENCES

90 Columbus

JERSEY CITY, NJ

Series 386A PRV Station

90 Columbus, a 52-story high rise, is a premier residential location in downtown Jersey City. During pre-construction, F&G Mechanical searched for a pipe joining solution for the building's hot and chilled water systems. F&G Mechanical typically fabricates their own pressure reducing valve (PRV) stations; however, in this case, Victaulic was able to provide the ideal solution.

Victaulic's Series 386 PRV station was presented to the project manager, who was looking to keep labor costs low by leveraging prefabrication. The Series 386 PRV station, paired with Victaulic's Style 644 Installation-Ready™ transition couplings and Style 607 QuickVic™ rigid couplings for copper, allowed F&G to maximize the space inside the mechanical rooms for equipment and walking areas. F&G also faced a spatial challenge outside the mechanical rooms. By utilizing Series 386-K PRV station kits, F&G was able to configure a solution while making an easy transition to the hot and chilled water lines.

RTI International Headquarters

RESEARCH TRIANGLE PARK, NC

"...*Victaulic* pre-assembled pressure reducing valve stations fit seamlessly with our plan to install Victaulic's grooved schedule 10 stainless steel system for the domestic water in this new building. Our BIM designers were provided the Revit® block of the station, which easily allowed our distribution fab spools to be modeled into the system. The ability to work with Victaulic in sizing the station based off the engineer's design, resulted in a pre-assembled unit that's ready to install.

This reduced the pre-fabrication and field labor that would have occurred had EAS decided to build this unit ourselves. The rigid unistrut support system for the station also provides a nice feature for quick installation on the job. I would strongly recommend anyone consider the many features and benefits of Victaulic's PRV stations on upcoming projects."

Michael J. Trought
Project Manager Sincerely,
Environmental Air Systems, LLC

Fiserv Forum

MILWAUKEE, WI

4 x 2" Series 386A PRV Station

"Hooper Corporation has had a strong and long-lasting relationship with Victaulic for many years. So when the opportunity came up for installing a PRV station at the new Milwaukee Bucks arena, it was only logical that we looked at doing this with Victaulic. Victaulic worked closely with the engineer – ME Engineers out of Colorado – to make sure that what we proposed was acceptable and would add benefits to the new arena. Throughout the submittal and installation process, Victaulic was instrumental in making sure that Hooper and the Bucks both succeeded in the installation of the PRV station and the use of Victaulic® fittings and couplings on this project."

Ryan Friedrich
Project Manager, Hooper Corporation

UMass Hospital

WORCESTER, MA

Series 386E PRV Station

Globe Life Field

ARLINGTON, TX

Custom Series 386 PRV Station

ENGINEERING CONFIDENCE
INTO EVERY BUILD

Since 1919, Victaulic's innovative solutions and design services continue to increase construction productivity and reduce risk, ensuring projects are completed safely, on time and within budget. With more than 4,000 employees and 55 international facilities, Victaulic helps customers in 120 countries succeed in the global construction industry. Learn more about how our solutions engineer confidence into every build at victaulic.com.

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