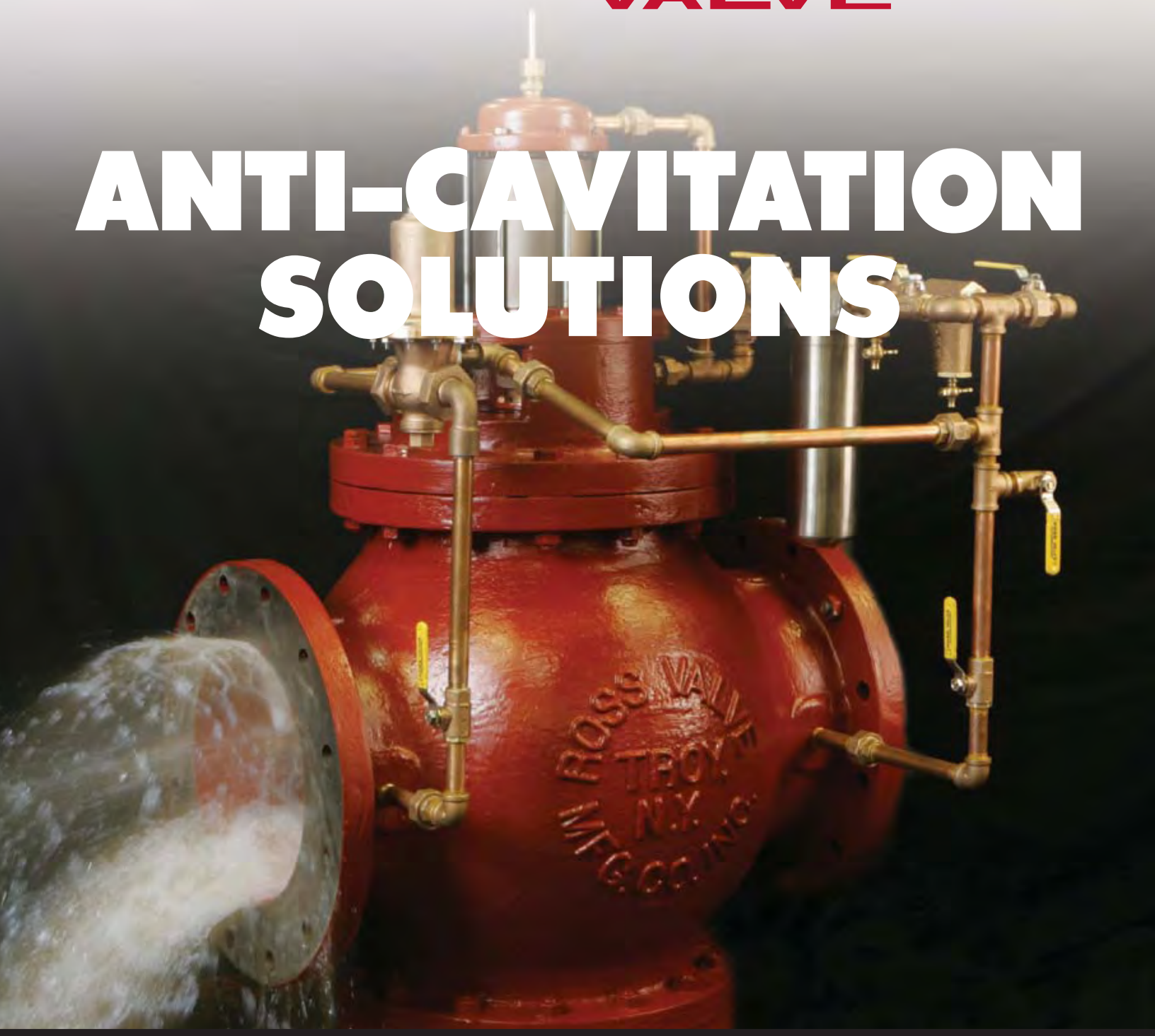
ROSS 1879 VALVE

ANTI-CAVITATION SOLUTIONS



THE WATERTAMER VALVE SAFELY REDUCES PRESSURE IN EXTREME CONDITIONS

ROSS 1879 VALVE P.O.BOX 595 TROY NY 12180 518.274.0961 WWW.ROSSVALVE.COM

The Ross WaterTamer anti-cavitation valve will take the pressure off you.

If your applications encounter cavitation, you know the symptoms: that loud screeching noise that lets you know something is wrong. And something is wrong, because cavitation isn't just a nuisance problem. Over time, it erodes the valve, destroying it from the inside out and necessitating a repair that involves downtime and significant expense.

Cavitation occurs in a fluid under a drastic pressure drop where small vapor cavities form and then collapse or implode. If these implosions contact solid surfaces, the material becomes pitted. Over time, continuous erosion causes severe structural damage to the valve.

To help you combat the challenge of cavitation, Ross Valve has designed the WaterTamer, an anti-cavitation valve that can handle extreme drops in pressure. Like all Ross valves, the WaterTamer is accurate, rugged, reliable, and enduring. It's engineered to meet your operating conditions and designed to function under severe situations. By essentially dispersing the fluid, the WaterTamer changes the pressure and controls the flow, eliminating cavitation while reducing noise and operational vibration.

If you're constructing a new waterworks facility and anticipating the problems associated with cavitation, install a Ross WaterTamer. If you're ready to retrofit, do it the right way– with the Ross WaterTamer anti-cavitation control valve. It will minimize maintenance and operational expenses, give you proven reliability, and provide a cost-effective, long-term solution to the problems of cavitation. And it will give you peace of mind.

The Ross WaterTamer anti-cavitation valve. It can handle the pressure, so you don't have to.

Benefits of Ross WaterTamer Anti-Cavitation Valve

- Tested at an independent accredited laboratory
- Time proven in the field
- Proven performance with pressure drops as high as 600 psi
- Reduces noise and operational vibration
- Designed for new or existing applications
- One valve installation saves space
- Retrofit in same amount of space
- Designed for a variety of systems and operating conditions including all waterworks, reclaimed water, turbine bypass, and certain industrial applications
- Eliminates emergency call-ins to repair cavitation damage
- Anti-cavitation trim can be fitted to any Ross valve model
- Enormous savings in repair and maintenance costs
- Same rugged construction as all Ross valves, with design to testing done in-house
- Reduces or eliminates the expense of cavitation

CONSTRUCTION

ROSS WATERTAMER ANTI-CAVITATION VALVE

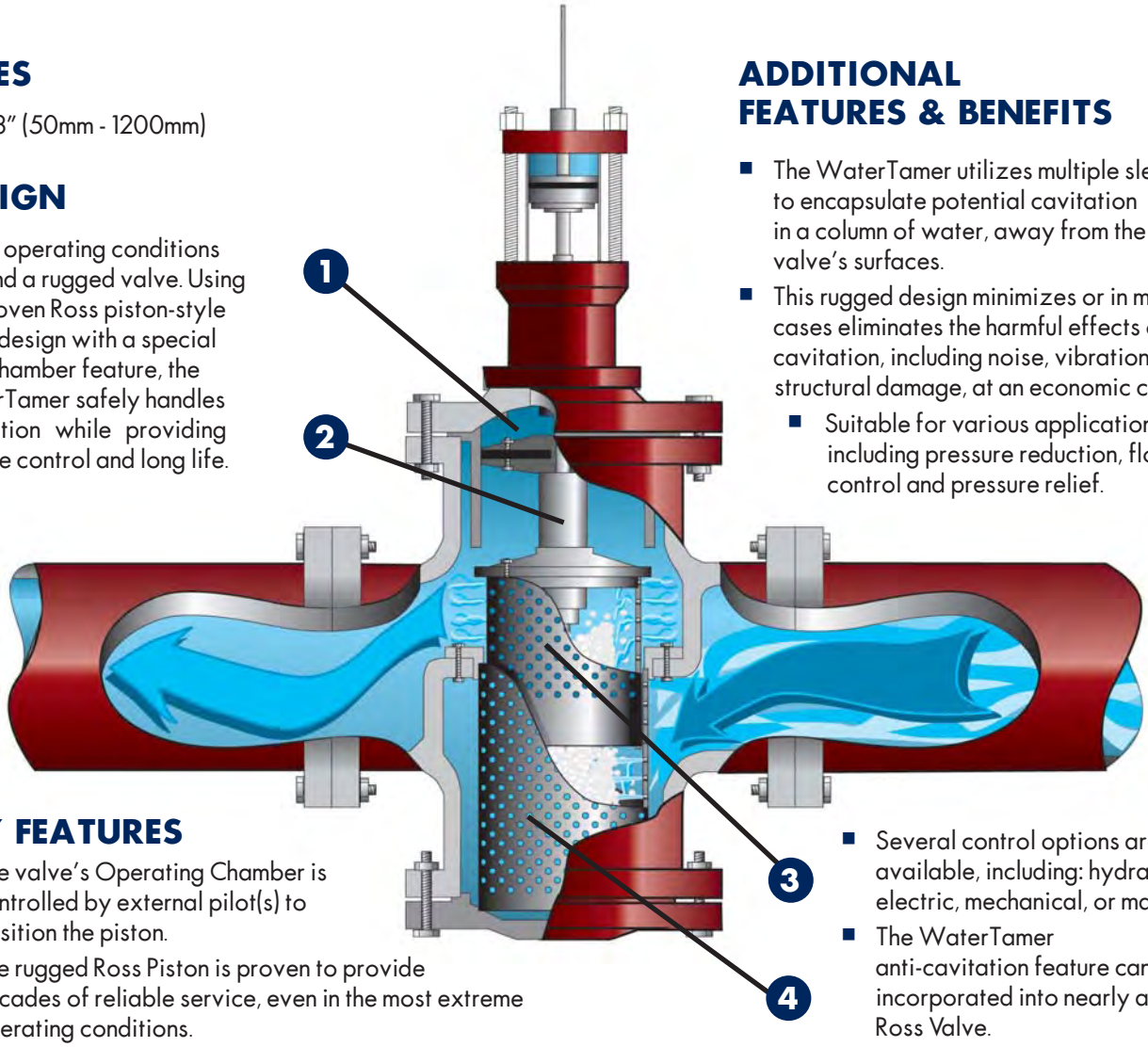
Designed to control cavitation by dispersing the water through a system of nozzles

SIZES

2" - 48" (50mm - 1200mm)

DESIGN

Rough operating conditions demand a rugged valve. Using the proven Ross piston-style valve design with a special dual-chamber feature, the WaterTamer safely handles cavitation while providing precise control and long life.



ADDITIONAL FEATURES & BENEFITS

- The WaterTamer utilizes multiple sleeves to encapsulate potential cavitation in a column of water, away from the valve's surfaces.
- This rugged design minimizes or in most cases eliminates the harmful effects of cavitation, including noise, vibration, and structural damage, at an economic cost.
  - Suitable for various applications including pressure reduction, flow control and pressure relief.
- Several control options are available, including: hydraulic, electric, mechanical, or manual.
- The WaterTamer anti-cavitation feature can be incorporated into nearly any Ross Valve.

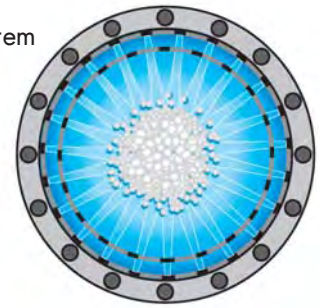
KEY FEATURES

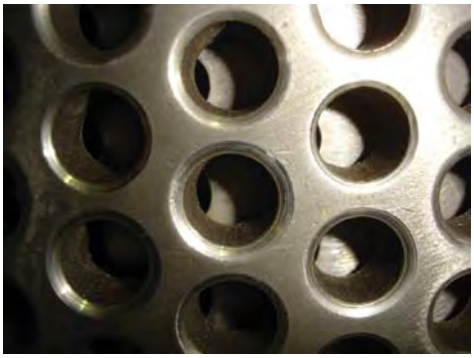
1. The valve's Operating Chamber is controlled by external pilot(s) to position the piston.
2. The rugged Ross Piston is proven to provide decades of reliable service, even in the most extreme operating conditions.
3. The Inner Chamber moves with the piston and provides excellent throttling capabilities and acts as a secondary cavitation breaking device.
4. The Outer Chamber incorporates opposing nozzles, which force cavitation to occur at its center, in a column of water.

OPERATION

By dispersing water through a system of nozzles, vapor cavities are encased in a column of water and are never allowed to collapse in the vicinity of the actual valve parts. The dual-chamber design effectively controls cavitation and protects your system from its damaging effects.

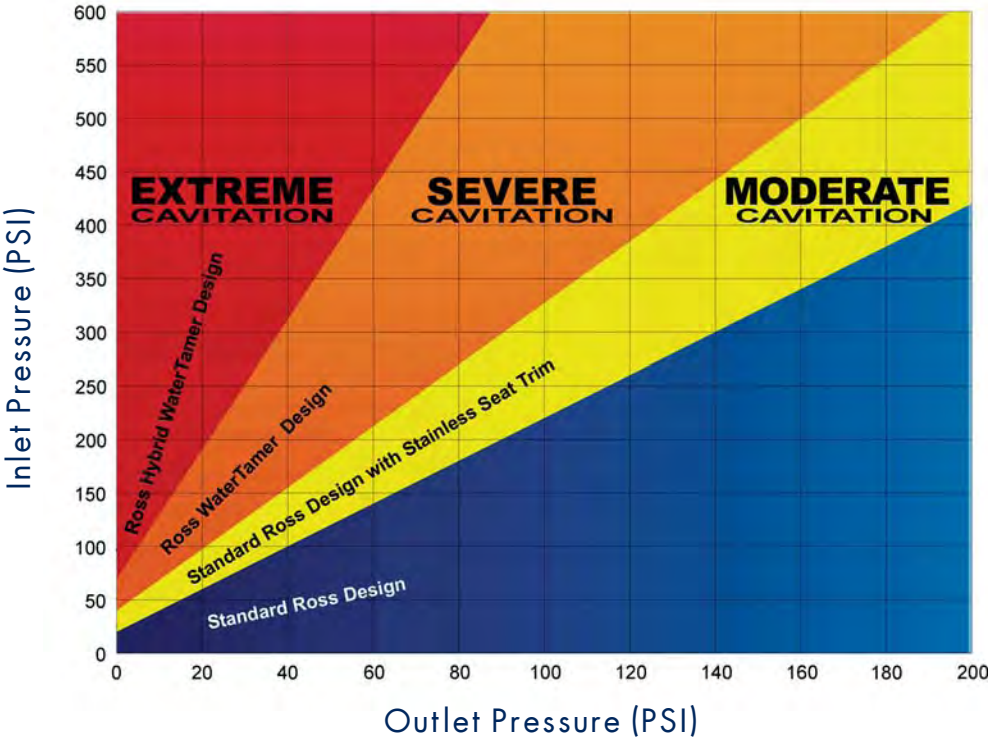
Top View





Precision-machined stainless steel sleeves are engineered to provide maximum energy dissipation.

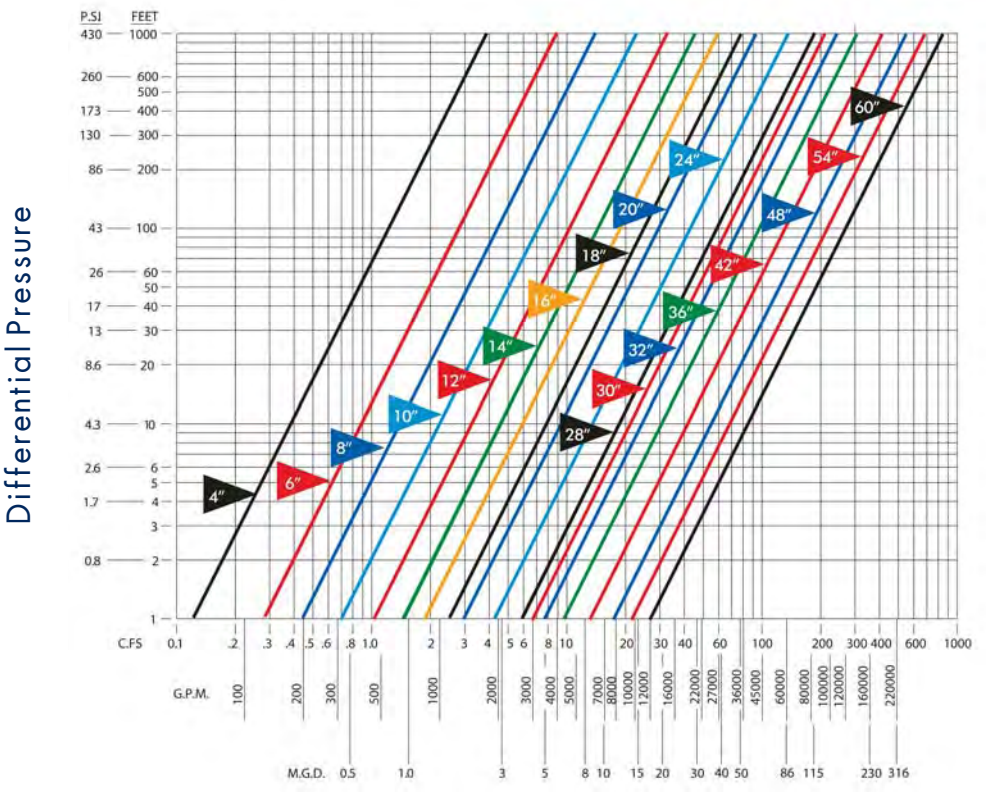
CAVITATION GUIDE



Cavitation plot is the resultant relation between the valve outlet pressure (+/- Atmospheric Conditions) and the differential pressure drop across the valve. To determine the degree of cavitation for your application and determine the best solution, locate the intersection of the expected Inlet Pressure and Outlet Pressure on the Cavitation Guide. In some cases, such as in pressure relief applications, an infrequent occurrence of cavitation caused by limited valve use may not warrant additional engineering study and/or upgrades.

SIZING GUIDE

THE ROSS WATERTAMER ANTI-CAVITATION VALVE



INSTRUCTIONS

1. Locate the anticipated differential pressure along the vertical axis.
2. Follow the line horizontally until the desired flow is reached (according to the horizontal axis).
3. Follow the line vertically down to the nearest angled line to determine the appropriate valve size.

Note: Use this chart as a guideline only. The exact hole pattern and design will be custom engineered for each application, depending on pressure and flow requirements.

OTHER SEVERE PRESSURE SOLUTIONS

ROSS MODEL MOV ENERGY DISSIPATING VALVE

Designed for severe-control situations, with a uniquely simple design that effectively controls your flow.

SIZES

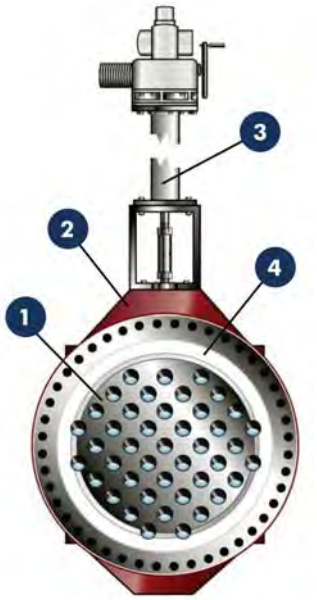
4" – 90" (100mm – 2250mm).

DESIGN

Rough operating conditions demand a rugged valve. With essentially one moving part and heavy duty construction throughout, the Ross MOV is designed for accuracy, performance, and long life.

KEY FEATURES

1. Two hardened stainless steel plates with custom designed orifices direct water to center of downstream pipe, safely dissipating energy.
2. Rugged construction throughout with heavy-duty shafts, bearing guides and seals.
3. Available automated or manual controls.
4. Narrow profile "space saving" design.

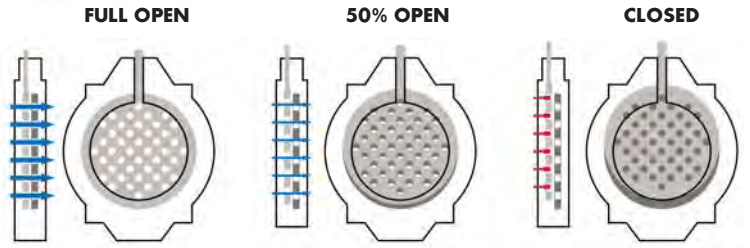


ADDITIONAL FEATURES & BENEFITS

- Multiple heavy duty bearing guides along the axis of movement.
- Anti-cavitation enhancing orifices incorporated into the fixed downstream plate.
- Jet enhancing upstream plate orifices for severe service conditions.
- Capable of controlling transient and reverse flow conditions.
- Hydraulic anti-lift flow design (typical of butterfly valves).
- Field-replaceable stem packings for low friction operation and efficient maintenance.
- Rugged construction with hardened thick plates, heavy duty shafts and seals.
- Compact size and lay length.
- Small actuation packages available.
- Full control packages available.

OPERATION

The Ross Model MOV is based on bi-directional operating principles and contains one fixed (downstream) valve plate, and one linearly moving (upstream) valve plate. Both plates have matching orifices at a large number of engineered locations. These orifices divide the flow into jets that dissipate energy in a short linear distance. Operation is typically smooth enough to allow placement of monitoring equipment within close proximity of the valve.



Orifices in plates are completely alligned

Orifices in plates are partially alligned

Orifices in linear plates are blocked by fixed plate

ROSS MODEL 890 FIXED ENERGY DISSIPATOR

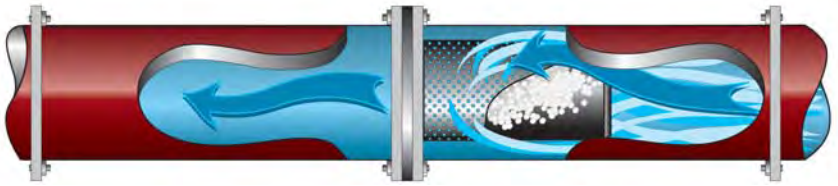
Engineered for a specific application for either pressure reduction or flow control.

SIZES

2" - 120" (50mm - 3000mm)

DESIGN

The Ross Model 890 is a fixed multi-orifice device, specifically engineered to dissipate energy for a specific flow and pressure drop.



DESCRIPTION

The Ross Model 890 is designed for a limited application and is superior when compared to a standard orifice plate, since the Model 890 is designed to:

- Eliminate cavitation.
- Eliminate orifice plate flow eddies, thus allowing the device to be installed close to other valves and fittings.
- Permit rapid flow recovery.
- Dissipate energy through precisely engineered, long lasting stainless steel components.

FLANGE RATING

The Model 890 mounts between pipe flanges and can be drilled per ANSI, PN, or any other standard for the mating pipeline flanges.

NOTES

- Performance is limited to the original design parameters. When flow conditions change, the pressure will also change.
- Consult factory for sizing guides and optional features.

Note: Renderings shown are for reference only and are subject to change at any time. Engineering drawings are provided during the submittal process.

There's nothing like a Ross Valve.

When George Ross founded our company in 1879, he made a product designed to last. He also created a company built on enduring values: integrity of design and engineering, quality of materials, craftsmanship in manufacturing, a high level of customer service, and flexible business systems that have evolved with technology and the times.

Now, much more than a century later, Ross automatic control valves are legendary throughout the world. Over the years, they have played a pivotal part in construction projects both large and small, serving systems as diverse in size and operating conditions as New York City, Los Angeles, Quito, and Madrid.

Ross offers a complete line of standard valves including electric, pump control, pressure reducing, flow control, altitude, back pressure sustaining, relief, surge control, electronic control valves, and float valves, as well as a complete line of strainers and diaphragm-style valves. Complementing these product lines are high energy dissipation anti-cavitation valves – our "WaterTamer." Rounding out our product line is a full line of valves for wastewater. Of course, we also have a variety of customized valves and valve features that can be engineered to suit any application, as well as pre-packaged valve vaults for turn-key installation.

Accurate. Ruggedly constructed. Versatile. Reliable. And backed by dedicated technical support and uncompromised field service. No wonder customers around the world always seem to say:

There's nothing like a Ross Valve.

Ross Valves are known for their exceptional quality. And no wonder, because we control the process in-house from start to finish. After designing the components, molds are made. We then start with the finest raw materials. All metals are poured in our own New York based foundries. All parts are machined to specs. Then each valve is meticulously assembled, pilot valves and controls are set, and the valve is "wet" tested under the designed operating conditions. When you receive your new Ross Valve, you can count on its ability to perform from start to finish.

ROSS 1879 VALVE

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REGISTERED ISO 9001:2000 QUALITY SYSTEM

All Ross Valves meet or exceed all current AWWA standards for construction and pressure ratings.
ACAV 9-07 5M

PROUDLY MADE IN USA