

The background of the advertisement is a close-up photograph of a large industrial valve. The valve is painted a bright orange-red color. A circular metal flange is visible, with several bolts around its perimeter. From the center of the valve, a powerful spray of water is being discharged, creating a dynamic and energetic scene. The water is captured in motion, with many droplets and splashes visible.

ROSS
1879 VALVE

ENERGY DISSIPATING SOLUTIONS

**MODEL MOV AND 890 (FED)
PRESSURE AND FLOW CONTROL
IN EXTREME CONDITIONS**

Control flow and pressure in demanding applications.

In high velocity and high pressure drop applications, you want a valve that works. Ross Valve offers a variety of solutions that can be customized to deal with your specific challenges, whether they include high pressure drops, high velocities, pressure surging, cavitation, or other demanding conditions.

Our energy dissipation solutions typically utilize a number of strategically-placed engineered orifices to divide the media into multiple jets and ensure the proper throttling effect is created. These uniform jet configurations effectively suppress vibration, pressure fluctuations, cavitation, and noise.

For applications with fairly constant flow or pressure requirements, the **Ross Model 890 Fixed Energy Dissipator (FED)** offers many benefits. As the name implies, this is a fixed device that is designed for a specific operating pressure and flow rate. There are no controls and no moving parts, so it requires no maintenance and is suitable for a variety of water qualities. In addition, when used as part of a multi-valve solution, the FED can provide an initial pressure drop to protect downstream equipment from cavitation damage.

For applications that require a variety of flows or pressure conditions, the **Ross Model MOV Energy Dissipating Valve** is an ideal choice. It offers excellent variable flow and can be operated manually, hydraulically or with an electrical actuator. Its narrow laying length also makes it ideal for tight spaces. This valve is not recommended for bubble-tight shut-off.

For clean water projects that require variable control, drip-tight shut off, and self-contained hydraulic operation in cavitation or near-cavitation conditions, the best solution may be a standard Ross control valve with one of our added Anti-Cavitation features. Please inquire for more details.

For high pressure and high velocity applications, Ross Valve has a variety of solutions that provide precise control and peace of mind. The next time your project requires an energy dissipation solution, contact the experts at Ross Valve. Our company's experience since 1879 is at your service.

Buy American



All Ross Valves are
100% ARRA Compliant



Potential Installations

Ross Valve's energy dissipation solutions are suitable for a wide range of applications, including:

- Water supply and distribution systems
- Headworks of water treatment plants
- Flow relief for pump and turbine units (turbine bypass)
- Water intake or discharge of dams
- Cooling and mixing systems
- Replacing butterfly valves and ball valves damaged by throttling
- Laboratory test rigs

ENGINEERED SOLUTIONS

Our Design Philosophy:

At Ross Valve, there is no "off the shelf" valve because no standard valve can perform optimally in all applications. Instead, our philosophy is based on providing extremely rugged components that offer a high degree of customizability. We use those components as building blocks that can be assembled in a way to provide the best possible performance every time. That's why over the last 130+ years we've built our reputation on providing flexible engineered solutions. This philosophy is especially important when an application involves extreme pressures and/or velocities.

Our Process:

Ross Valves are designed and built to provide the best performance for the intended application, while maintaining a degree of flexibility and customizability, should conditions change in the future. Whether the project requires a single valve or multi-stage approach, our engineers take steps to ensure all project requirements are met.

Steps:

- **Technical consultation:** Review specifications, sizing and preliminary performance criteria.
- **Design:** For multi-stage or multiple valve projects, assemblies may be modeled to ensure fit and functionality of entire solution.
- **Customization:** In order to provide the optimal solution, it may be necessary to design and manufacture custom components.
- **Flow modeling:** Performance may be verified through flow modeling, to ensure the most efficient solution.
- **Testing:** When requested, independent lab testing may be completed and reconciled against the flow modeling results.

Results:

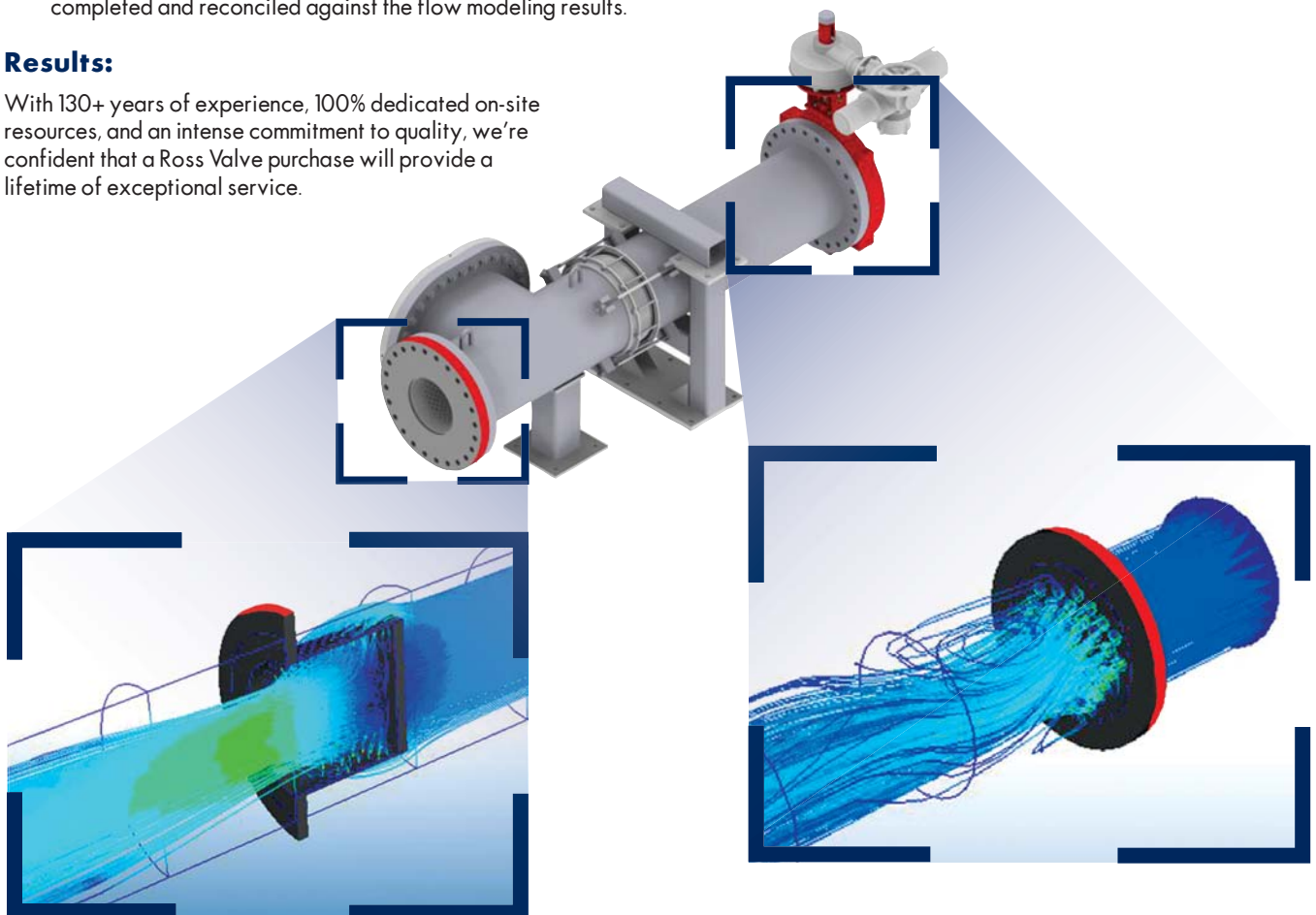
With 130+ years of experience, 100% dedicated on-site resources, and an intense commitment to quality, we're confident that a Ross Valve purchase will provide a lifetime of exceptional service.

Design Considerations:

With every valve we design, all the relevant operating conditions are taken into account. For our energy dissipating valves, this means we must consider all of the following in our design and manufacturing processes:

- Operating pressures (minimum, normal, maximum)
- Differential pressure
- Cavitation risk
- Intended valve use (frequency)
- Flow rates (minimum, normal, maximum)
- Seasonal fluctuations
- Flow media/water quality
- Type of actuation (hydraulic, manual, electric)
- Bubble-tight requirements
- Space limitations / height and length restrictions

Knowing these criteria allows us to specify, design, and build valves that provide the best possible performance in each application.



ROSS MODEL MOV - ENERGY DISSIPATING VALVE

Provides variable flow or pressure control in extreme applications.

SIZES

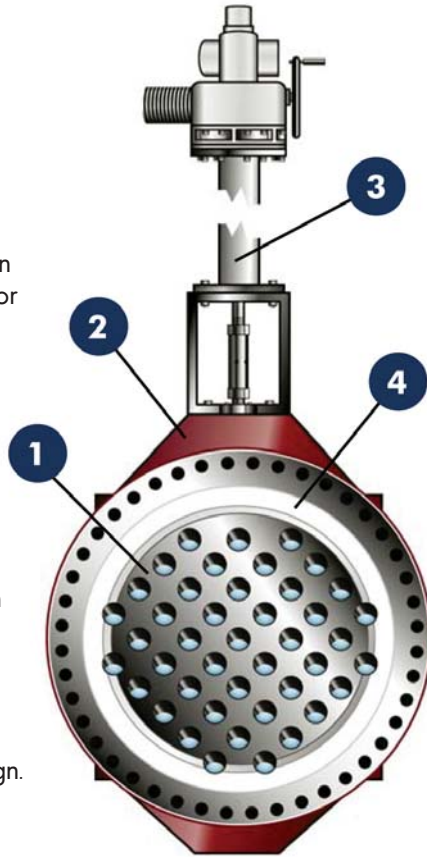
4" – 90" (100mm – 2250mm).
For larger sizes, consult factory.

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.

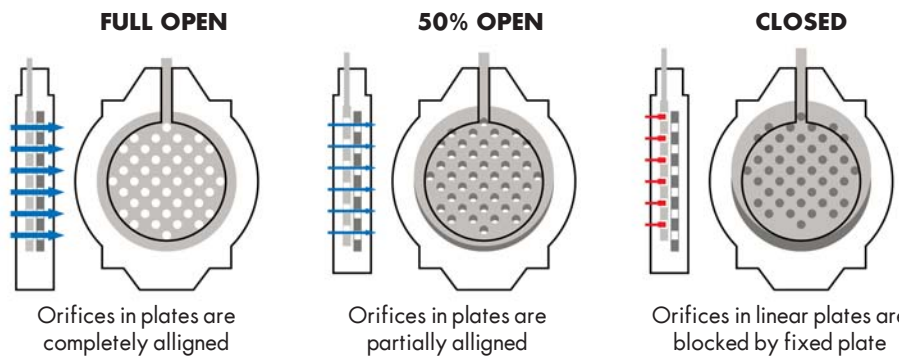


ADDITIONAL FEATURES & BENEFITS

- 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.
- Compact size and lay length.
- Small and large 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 engineered orifices at a large number of precise 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.



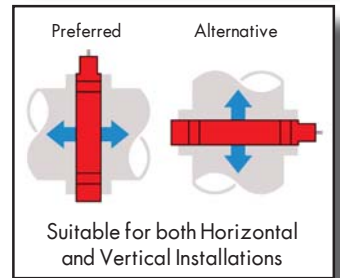
Orifices in plates are completely aligned

Orifices in plates are partially aligned

Orifices in linear plates are blocked by fixed plate



Taper Ring allows for fine adjustment of spacing between plates to control leak rate.



Suitable for both Horizontal and Vertical Installations

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

SIZING

SIZE (in)	4	6	8	10	12	14	16	18	20	24	28	30	32	36	40	42	48	54	60	66	72	84	90
DN (mm)	100	150	200	250	300	350	400	450	500	600	700	750	800	900	1000	1050	1200	1350	1500	1650	1800	2100	2250
LENGTH (in) *	3-7/8	3-7/8	3-7/8	4-1/2	4-1/2	4-1/2	4-1/2	4-1/2	4-1/2	6-7/8	6-7/8	6-7/8	6-7/8	6-7/8	7-3/4	7-3/4	7-3/4	7-3/4	10	10	10	10	10
MAX (gpm)	1,100	2,500	4,400	6,900	10,000	13,700	17,900	22,600	27,900	40,200	54,800	62,900	71,600	90,600	111,900	123,300	161,000	203,000	251,000	319,000	362,000	493,000	566,000
FLOW** (mgd)	1.6	3.6	6.4	10	14.5	19.7	25.8	32.6	40.2	58	78.9	90.6	103	130	161	178	232	293	362	460	522	711	816
(m ³ /s)	0.1	0.2	0.3	0.4	0.6	0.9	1.1	1.4	1.8	2.5	3.5	4.0	4.5	5.7	7.1	7.8	10.2	12.8	15.9	20.1	22.8	31.1	35.7

* Standard lay length based on ANSI 150# Flanges. Subject to change.

** Recommended maximum flow at 75 psi differential pressure. For sustained maximum flow recommendations, please consult factory.

ROSS MODEL 890 - FIXED ENERGY DISSIPATOR (FED)

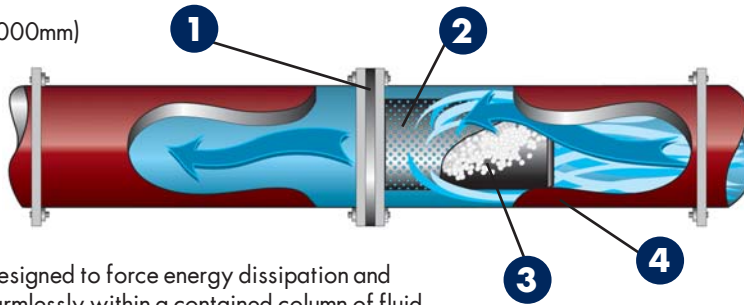
Fixed device engineered for a specific pressure reduction or flow rate.

SIZES

2" – 120" (50mm – 3000mm)
For larger sizes, consult factory.

DESIGN

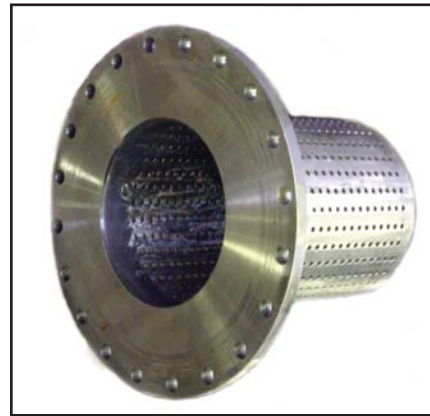
The Ross Model 890 is a fixed device with concentrically engineered orifices designed to force energy dissipation and cavitation to occur harmlessly within a contained column of fluid. With no moving parts, the performance is optimized for the original design parameters. If either the flow or pressure conditions change, the other parameter will also change.



ADDITIONAL FEATURES & BENEFITS

- Eliminates flow eddies associated with orifice plates, thus allowing the device to be installed close to other valves and fittings.
- Design permits rapid flow recovery.
- No moving parts or seals, for a maintenance-free design.

As part of a multi-valve solution, the FED is an ideal complement to other valves when cavitation is expected.



KEY FEATURES

- Flanges drilled per ANSI, PN, or any other standard for mounting between mating pipeline flanges.
- 100% stainless steel construction, with engineered orifices for optimal performance.
- Cavitation is forced to occur in the waterway, protecting any nearby equipment.
- Dimensions (diameter and length) are tailored to provide the required flow or pressure drop.

MULTI-VALVE SOLUTIONS

As applications become more complex and demanding, we often find that a multi-valve approach produces the best solution in terms of accurate control and long term results. This approach is especially effective when the operating conditions indicate cavitation is a concern.

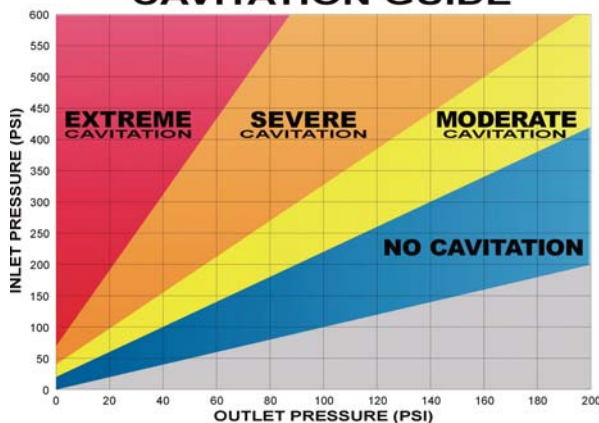
When a multi-valve approach is determined to be the best option, we can proceed with a more in depth analysis of the operating and performance requirements.

Based on a number of factors, we can select from any number of valves in our portfolio in order to achieve the best results. Some of these factors include:

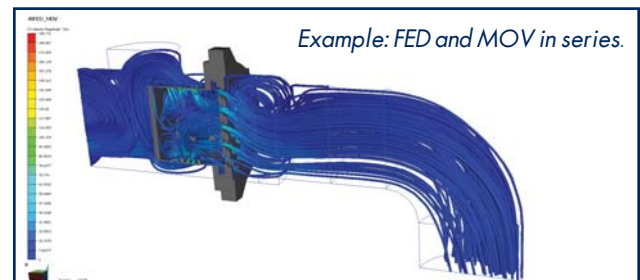
- Flow rates
- Line velocities
- Control requirements
- Water quality
- Valve sizes
- Cavitation risk

Ross Valve's product line, engineering expertise, and in-house manufacturing resources uniquely position us to develop multi-valve solutions that succeed.

CAVITATION GUIDE



Using the cavitation guide, we can determine the degree of cavitation present in an application and decide if the best solution is a standard valve (when cavitation is not a concern), a single valve with anti-cavitation protection, or a multi-valve approach that takes the pressure drop in two or more stages.



Other solutions have included combinations of the following:

- Pressure reducing valves
- Electric control valves
- Anti-cavitation components
- Multi orifice valves
- Fixed energy dissipators

Ross Valves last longer.

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, Madrid, and Dubai.

Ross offers a complete line of standard valves including 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.



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All Ross Valves meet or exceed all current AWWA standards for construction and pressure ratings.
MOV 06-10 5000



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.

Buy American



All Ross Valves are 100% ARRA Compliant



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