

100DSV DRAG[®] Spray Water Control Valve



Steam temperature control

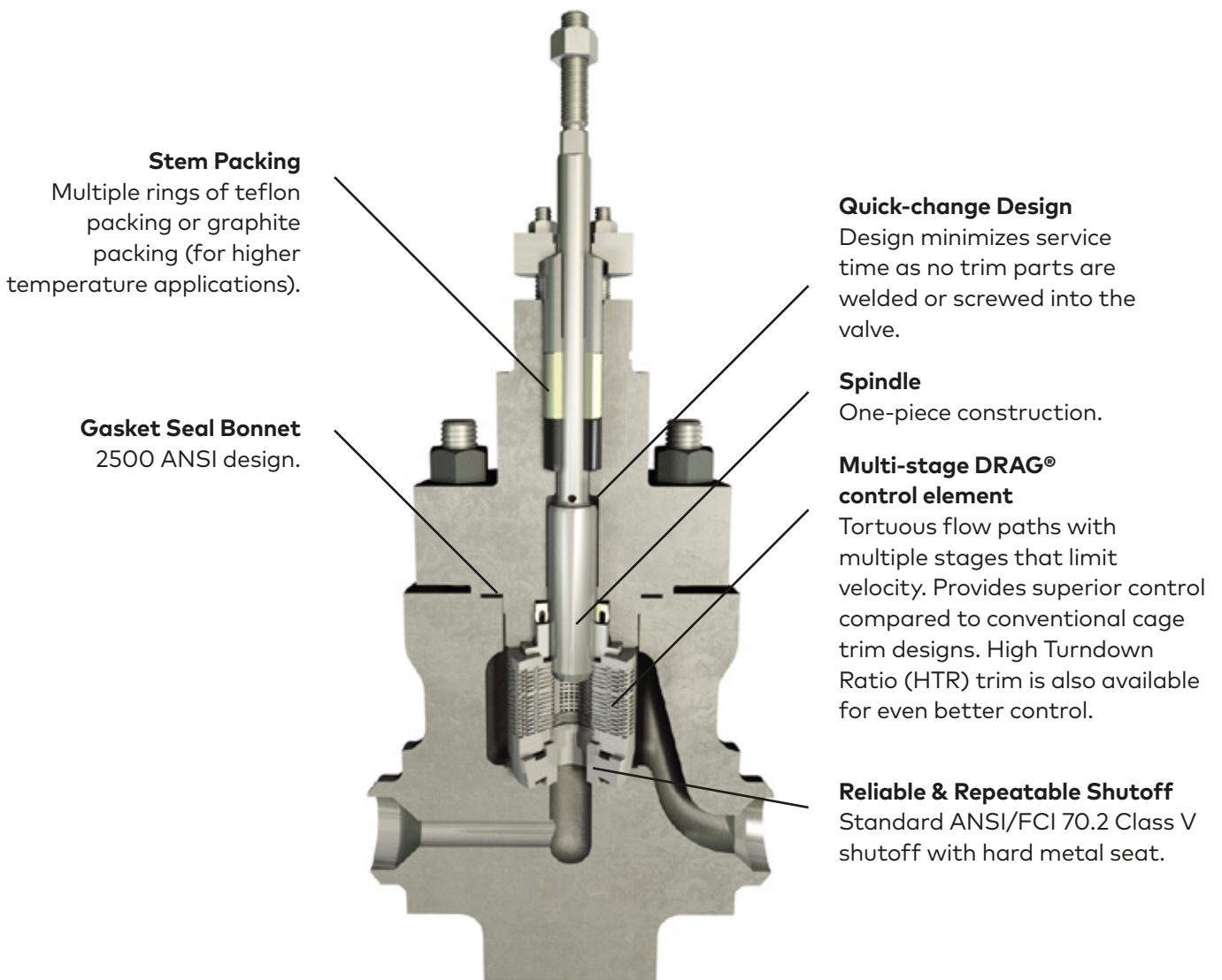
The control of steam temperatures is of vital importance for safe, reliable, and efficient operation of a thermal power plant.

Attenuator spray control valves are the final control elements for the superheat & reheat temperatures.

They are critical components responsible for fine tuning steam temperature control.

A well-tuned steam temperature control maintains the throttle temperature at the set point resulting in an efficient turbine operation.

Key Features



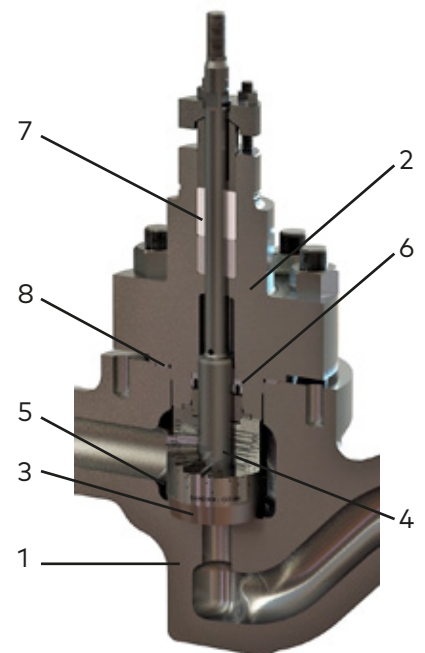
Benefits

- Solve problems with DRAG® technology**
 High trim exit velocities are responsible for cavitation, erosion, noise and vibration in control valves. DRAG® applies velocity control with up to 20 pressure reducing stages to limit exit velocities to less than 100 ft/s (30 m/s). This provides superior control compared to conventional cage valves while operating at high pressure drops (up to 3500 psi or 250 bar) without damaging the trim components.
- Easy to service design**
 Quick-change, top-entry design minimizes maintenance time as all trim components can be easily accessed and removed through the valve bonnet bore without machining or unscrewing.
- Reliable and repeatable long-term shutoff eliminates leakage**
 The over-the-plug, DRAG® velocity control trim design uses a hard seat, which resists debris damage, and high seat loading to provide reliable and repeatable shutoff for high pressure differentials. The actuator is sized to provide a minimum of 500 pounds per linear inch (9 kg per linear mm).
- Improved heat rate efficiency**
 Leaking spray water valves result in lowered throttle steam temperatures which affect the heat rate appreciably. The 100DSV spray water valve minimizes lost energy so that additional heat input is not required in the boiler to keep the throttle steam temperature at a set point.
- Custom-engineered equal percentage trim**
 DRAG® utilizes custom-engineered valve characteristics designed to meet plant specifications by utilizing long valve strokes with high actuator resolution. These help maximize rangeability and provide superior temperature control.
- Extended trim life**
 DRAG® design with velocity control and improved shutoff characteristics extend trim life and increase time between valve overhauls, significantly reducing maintenance costs.

Materials

Standard DRAG® 100DSV Spray Water Valve Materials

Item No.	Components	Materials of Construction
1	Body	A216 WCB/WCC
2	Bonnet	A105
3	Seat Ring	316 SS
4	Spindle	17-4PH, Heat Treat
5	Disk Stack	410 SS, Heat Treat (Standard) / Inconel 718, Heat Treat (HTR)
6	Balance Seal Only 1" & 1.5" trim sizes	Glass Filled Teflon
7	Stem Packing	Glass Filled Teflon OR graphite
8	Gasket	Graphite / Stainless Steel



Technical details

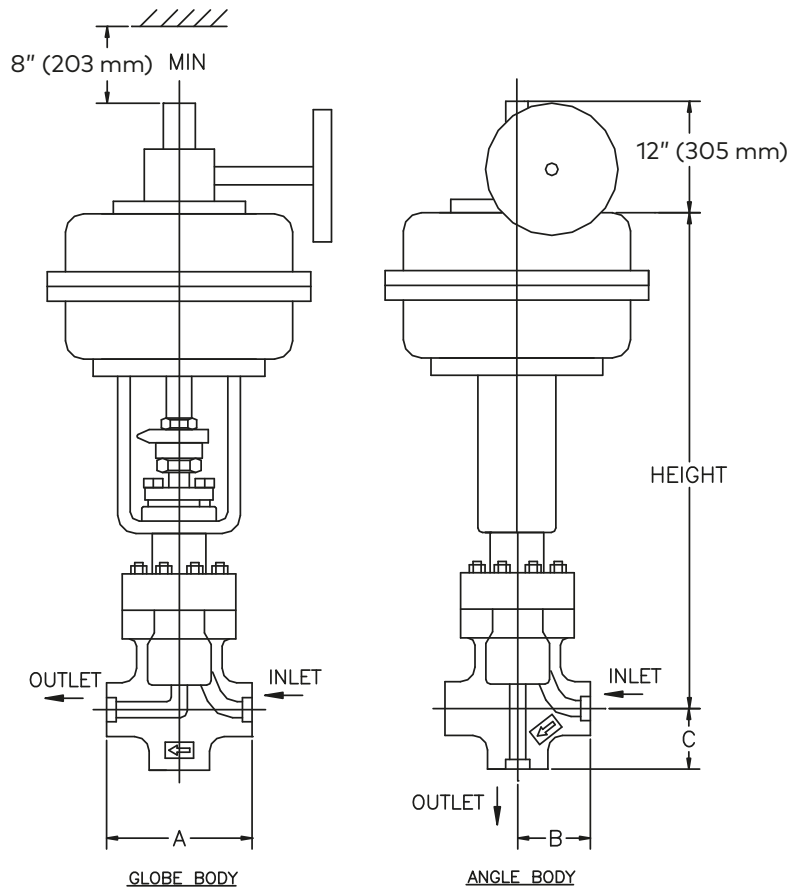
Standard DRAG® 100DSV Spray Water Valve Technical Specifications

1	Pressure Rating / ASME B16	2500
2	Body Configuration	Angle or Globe (through)
3	Maximum Design Temperature	500°F (260°C) ⁴
4	Flow Direction	Over-the-plug (Flow-to-close)
5	Rangeability	30:1 (Standard) / 50:1 (HTR) ⁴
6	Actuator	Spring Diaphragm with Positioner & Filter Regulator
7	Failure Mode	Fail Close or Fail Open (Standard) / Fail-in-Place (Optional)
8	Manual Override (Optional)	As shown
9	Position Feedback Transmitter (Optional)	Output signal = 4-20 mA (Integral)
10	Positioner Demand	Input signal = 4-20 mA
11	Limit Switches (Optional)	Double pole/Double throw
12	Shutoff	ANSI/FCI 70.2 Class V

Notes:

- ¹ All butt weld end connections in accordance with ASME B16.25.
- ² All socket weld end connections in accordance with ASME B16.11.
- ³ Use IMI Critical Engineering's program for sizing and selection.
- ⁴ Custom designs available to meet any special requirements related to sizing, performance, piping configuration, etc. Please contact us for details.

Dimensions



Standard DRAG® 100DSV Spray Water Valve Outline

Dimension in (mm)	Nominal Size: 1"		Nominal Size: 2"	
	Trim: 3/8", 5/8", 1"		Trim: 1.5"	
	Angle	Globe	Angle	Globe
A	-	8.50" (216 mm)	-	11.50" (292 mm)
B	4.25" (108 mm)	-	5.75" (146 mm)	-
C	-	3.50" (89 mm)	-	4.50" (114 mm)
Weight	500 lbs (230 kg)		750 lbs (340 kg)	
Height	34" (864 mm)		37" (940 mm)	
Max Rated Cv ⁴	1.1	4.1	11.5	27
Valve Stroke	1.5" (38 mm)		2.5" (64 mm)	
BW Connection Per ASME B16.25	1", 1.5", 2", 2.5", 3" SCH 40, 80, 160 & XXS		2", 2.5", 3", 3.5", 4" SCH 40, 80, 160 & XXS	
SW Connection Per ASME B16.10	1", 1.5", 2" SCH 40, 80, 160 & XXS		2", 2.5" SCH 40, 80, 160 & XXS	

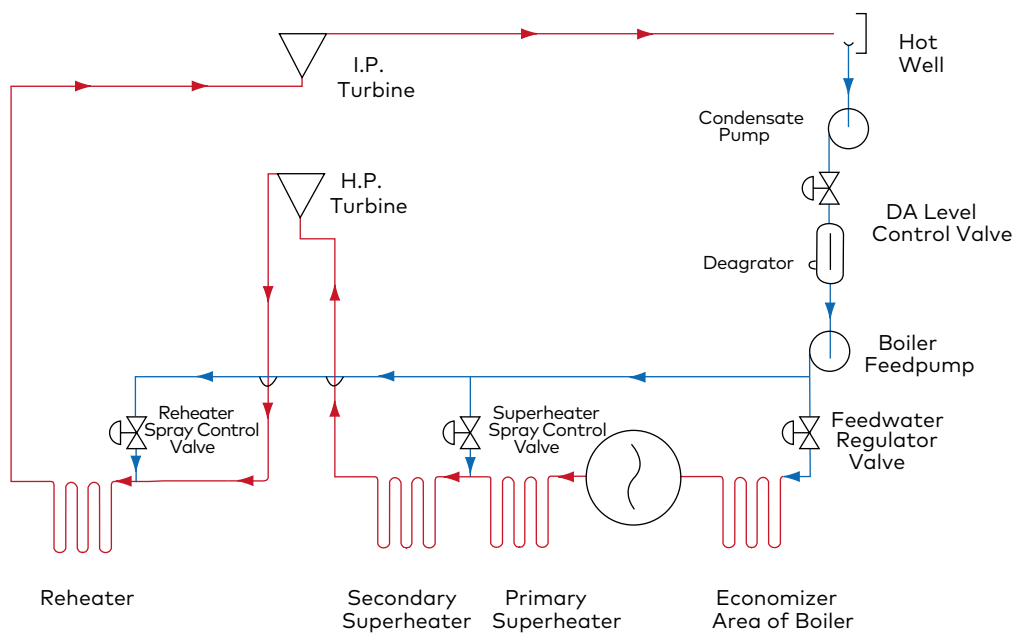


Figure 1: An example of a typical spraywater system schematic. The IMI CCI 100DSV DRAG® valve is engineered to exceed the demands of these severe service applications.

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