


DA-90DSV




Engineering
GREAT Solutions

Attemperator

DA-90DSV Attemperator

IMI CCI is the world leader in the design and application of severe service control valves for critical applications in Fossil Power, Nuclear Power, Oil and Gas, Liquifaction and Petrochemical industries. With each new operating season, the limits of interstage attemperators in Heat Recovery Steam Generators (HRSGs) are being tested. As plants search for the most economical operation, be it cycling daily or operating at reduced loads for extended hours, reliability and operability of the superheat (SH) and reheat (RH) interstage attemperators consistently come into question. Whether it is a constantly leaking attemperator that must be repaired or replaced at every outage, or a more catastrophic failure like a boiler tube leak or a ruptured steam line, the headaches and frustrations associated with interstage attemperation are becoming all too familiar to plant managers, operators, and maintenance personnel.



Prevent cavitation damage

Key features

- > Light weight cast body
- > Class V shut-off
- > Graphite stem packing
- > Forged design
- > No trim in steam flow
- > Tapered profile to minimise flow induced vibration
- > Variable spray nozzle

Forged design



Typical symptoms of faulty attemperators

Many of the alternative interstage attemperator systems overlook several or all of the root causes of failure. Such designs will lead to problems in your plant, it's only a matter of time!

Some of the first signs of trouble start with uncontrolled spraywater flow and leakage. Scheduled inspections often reveal:

- > Damaged spray nozzles
- > Cracked attemperator housings
- > Damaged seals
- > Cracked steam pipes and boiler tubes
- > Cracked/broken thermal liners

The root cause of most interstage attemperator problems can be traced to four main system/installation parameters:

- > High pressure drop through the spraywater control portion of the attemperator
- > High thermal stresses caused by large temperature differences between the steam and the cooling water
- > Poor atomization of the cooling water leading to large amounts of unevaporated water in the steam line
- > Poor installation with short distances to downstream elbows, temperature sensors, or HRSG re-entry points.

Multi-stage DRAG® disk stack technologies

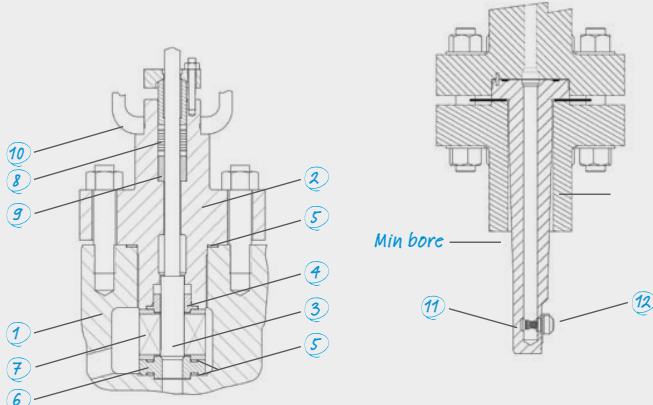


Class V metal seat with 500 PLI (pounds per linear inch of seating contact) loading force to achieve tight shut-off

Benefits

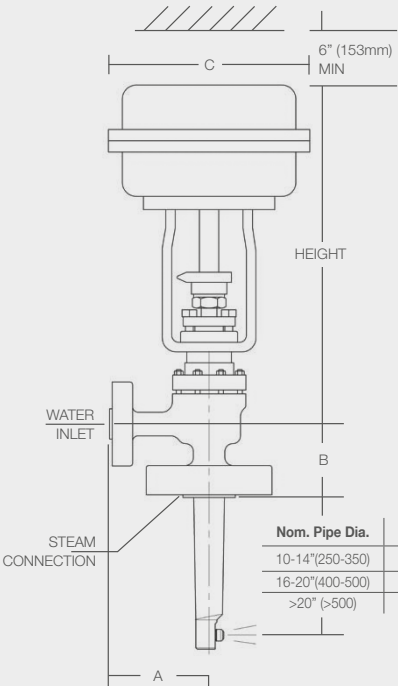
- > Provides the Valve Doctor™ Solution
 - IMI CCI can offer the Valve Doctor™ solution, working with plant operators to improve plant performance, reliability and output
- > Prevents Cavitation Damage
 - IMI CCI Works in accordance with ISA guidelines to ensure cavitation is avoided
- > Eliminates Erosion Damage
 - By controlling fluid velocities, erosion is eliminated
- > Thermal Stress Analysis
 - IMI CCI accounts for all thermal stresses in the attenuator design
- > Stops Costly Maintenance Cycles
 - IMI CCI valves are designed and sized to provide longer intervals between maintenance and allows easy access to all components
- > Eliminate Thermal Damage to Trim
 - Control element is outside of the hot steam flow
 - Proven Desuperheating Experience
- > Eliminate vibration potential
 - Tapered probe design eliminates potential for flow induced vibration

Technical specification



Item	Description	Material
1	Body	ASME-SA217-WC9/C12A
2	Bonnet	ASME-SA182-F22/F91
3	Spindle	INCONEL 718
4	Guide Bushing	300 SS
5	Gaskets	Graphite/300 SS
6	Seat	300 SS
7	Disk Stack	INCONEL 718
8	Packing, Stem	Graphite
9	Packing, Spacer	Carbon
10	Yoke	Carbon Steel
11	Nozzle Housing	ASME-SA182-F22/F91
12	Spray Nozzle	ANSI 616

Dimensions



Trim Size	Water Flange	Steam Flange	ANSI	A	B	C	Dia. D ⁽⁴⁾	Height ⁽⁵⁾	Weight
3/8", 5/8", 1" (10, 15, 25)	1.5" RF (40)	3.0" RF (80)	600-1500	9.0" (229)	6.0" (152)	19.7" (500)	2.9" (73.7)	34" (865)	~300 lbs (140 kg)
			2500	9.5" (241)	7.0" (178)				
1.5" (40)	2.5" RF (65)	4.0" RF (100)	600-2500	12.25" (311.2)	12.25" (276.4)		3.81" (96.8)	51" (1295)	~500 lbs (230 kg)

Nom. Pipe Dia.	Length (see note 3 & 6)
10-14"(250-350)	14.12"(358.6)
16-20"(400-500)	17.75"(450.8)
>20" (>500)	21.25"(539.8)

Notes:

1. Contact factory for other sizes
2. Given is maximum; add 15" (380 mm) for manual override
3. Customer flange height will vary to center nozzle(s) in steam pipe
4. Customer supplied flanged connection
5. Numbers in brackets give dimensions in millimeters
6. Custom probe lengths available for retrofit projects

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