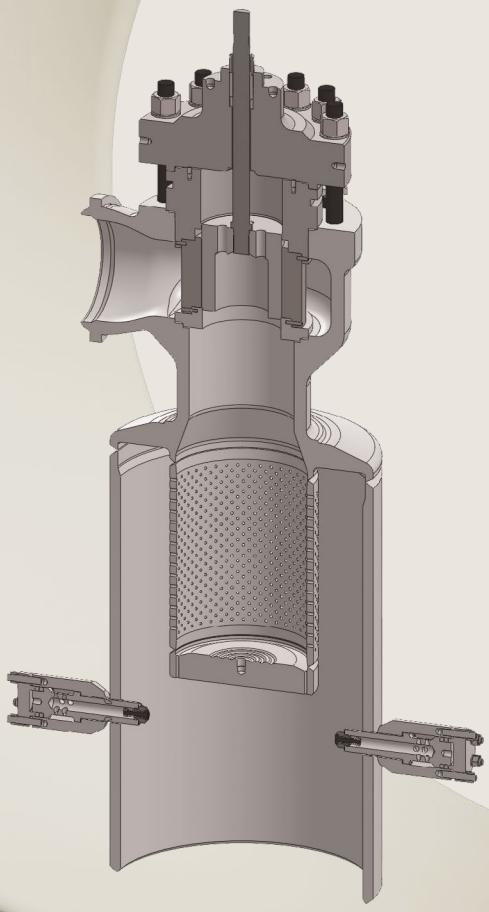
Process Automation

IMI CCI

LTB

Low Temperature
Bypass Valve

Breakthrough
engineering for
a better world



LTB

Low Temperature Bypass Valve

The LTB is a steam conditioning valve used for the simultaneous reduction of steam pressure and temperature to meet downstream requirements in a turbine bypass system or process control. The combined functions improve spray water mixing and atomisation, rangeability, noise abatement, and response time, resulting in accurate temperature control. The LTB is available in both globe or angle style body with the high-performance model DAM desuperheater at the valve outlet.

Key features

- Perforated cage design for optimal pressure reduction
- Balanced trim design for low required opening force
- Spring-loaded water injection nozzles
- Quick exchangeable seat
- Extended outlet design
- Compatible with pneumatic, hydraulic and electric actuators

Benefits

- Accurate steam temperature control and high rangeability
- High performance and control stability despite transient plant loads
- Quick change seat for easy maintenance and reduced down time
- Complete water evaporation prevents water fall-out resulting in cracked pipes
- Low noise and vibration

Product specification

Body type	Globe / Angle
End connection	Butt-weld per ASME B16.25 Flanged raised face per ASME B16.5
Design standard	ASME B16.34 / ASME B31.1
Pressure rating	Class 150 to Class 2500 as per ASME B16.34
Flow direction	Flow to close (OTP) or Flow to open (UTP)*
Body material	A216-WCB / A216-WCC / A217-WC6 / A217-WC9
Trim size (in)	1.5, 2, 2.5, 3, 4, 5, 6, 7, 8
Trim type	Balanced
Seat type	Quick change
Trim material	410 SS+HT, A182-F11, A182-F22, INC 718+HT
Standard actuator	IMI CCI spring diaphragm, IMI CCI double acting piston
Leakage class	ANSI / FCI 70.2 Class V
Noise level	<100 dBA without insulation, depends on duration hours per day
Design temperature	Maximum 550°C
Orientation	Vertical / horizontal**
Flow characteristic	Modified linear

* Design temperature for flow to open (UTP) shall be less than 400°C.
** Consult with IMI for more details on horizontal installations.

Standard Cv table

Trim size (in)	Clearance Gap Cv	Stroke (mm)	Cv ratings (Linear)	
			Globe type	Angle type
1.5	0.460	20	24	27
2	0.875	30	46	53
2.5	1.573	40	72	83
3	2.176	40	100	114
4	3.02	50	165	184
5	4.74	70	275	312
6	6.63	100	410	471
7	7.73	100	560	650
8	9.61	100	640	710

Valve inlet size variation (in)

840LTB : Globe Type Low Temperature Bypass Valve

Pressure rating	Trim size (in)								
	1.5	2	2.5	3	4	5	6	7	8
150, 300, 600	2, 3, 4	2, 3, 4	3, 4, 6	3, 4, 6	4, 6, 8	6, 8	6, 8	8, 10	8, 10
900, 1500	2, 3, 4	2, 3, 4	3, 4, 6	3, 4, 6	4, 6, 8	6, 8	6, 8	10, 12	10, 12
2500	2, 3, 4	2, 3, 4	3, 4	3, 4, 6	6, 8	6, 8	8, 10	10, 12	10, 12

860LTB : Angle Type Low Temperature Bypass Valve

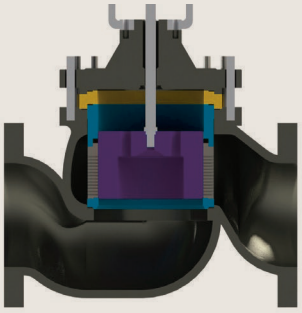
Pressure rating	Trim size (in)								
	1.5	2	2.5	3	4	5	6	7	8
150, 300, 600	2, 3, 4	2, 3, 4	3, 4	4, 6	4, 6	6, 8	6, 8	8, 10	8, 10
900, 1500	2, 3	2, 3, 4	3, 4	4, 6	4, 6	6, 8	N/A	N/A	N/A
2500	3, 4	3, 4	3, 4	6, 8	6, 8	6, 8	N/A	N/A	N/A

Note. For valve inlet sizes that are not listed, please consult with IMI.

Design advantage

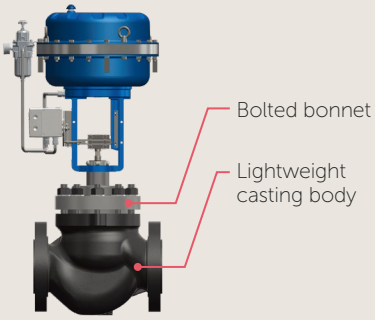
Quick exchangeable seat

Suitable for installations where erosion is caused by wet steam or where high velocities can have an adverse effect on seat leakage tightness. The distribution of pressure drops in this configuration reduces the steam velocity across the sealing surfaces.



Bolted bonnet, lightweight valve body

The lightweight casted body design distributes heat evenly, and the simple construction allows for easy maintenance. The standard diaphragm or piston pneumatic actuator can be applied and quickly removed.



Spring-loaded OP nozzles

The high-performance variable orifice OP nozzle injects the right amount of fine droplets spray water into the turbulent high velocity steam for an efficient primary and secondary atomisation, resulting in highly accurate temperature control.

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