

BELIEVER "B" SERIES THERMOSTATIC STEAM TRAPS

Pressures To 250 PSIG (17.2 barg)
Temperatures to 450°F (232°C)

Applications

- Unit Heaters
- Pipe Coils
- Blast Coils
- Steam Mains
- Dry Kilns
- Jacketed Kettles
- Hot Water Heaters
- Dryers (all types)
- Large Heat Exchangers

Options *See page 8*

- SLR - SLR Orifice
- Convuluted Bronze or Welded SS Actuator
- HC - High capacity orifice

Canadian Registration # 0E0591.9

Freeze Proof — When installed on side with cover perpendicular to ground.

Renewable In-line — Renew trap in-line with factory packaged precision matched internal parts, replacement kits.

Compact — Requires minimum space while providing condensate capacities equal to larger mechanical traps.

Superior Performance — Maximum air handling capability. Immediate response to changing pressure and condensate loads. No adjustment necessary.

Sensitivity — Increased when installed on side with cover perpendicular to ground.

Actuator Construction — Internal guide rod and tube for vibration resistance and positive valve and seat alignment.

Temperature Sensitive Actuators — One moving part. Bronze Convuluted Actuator provides maximum sensitivity and fail closed operation. Optional Stainless Steel, fail open, welded actuator for maximum corrosion, thermal and hydraulic shock resistance.

Guaranteed — Guaranteed against defects in materials or workmanship. Traps with Welded Actuator-3 Years. Traps with Convuluted Bronze Actuator-1 Year

Models

- B31-1/2" straight thru trap w/convuluted bronze actuator
- B41-3/4" straight thru trap w/convuluted bronze actuator
- B51-1" straight thru trap w/convuluted bronze actuator
- B61-1-1/4" straight thru trap w/convuluted bronze actuator
- B71*-1-1/2" straight thru trap w/convuluted bronze actuator
- B81*-2" straight thru trap w/convuluted bronze actuator
- B33-Welded SS actuator on B31
- B43-Welded SS actuator on B41
- B53-Welded SS actuator on B51
- B63-Welded SS actuator on B61
- B73*-Welded SS actuator on B71
- B83*-Welded SS actuator on B81

*Add "HC" to all the above for high capacity.

Operating Principle

Thermal actuator is filled at its free length with a liquid having a lower boiling point than water. On start-up, valve is normally open. When steam enters trap, thermal actuator fill vaporizes to a pressure higher than line pressure. This forces valve into seat orifice to prevent any further flow. As condensate collects,

it takes heat from thermal actuator, lowering internal pressure. Line pressure will then compress thermal actuator to open valve and discharge condensate. Valve opening automatically adjusts to load conditions from minimum on very light loads to full lift at maximum load.

BELIEVER "B" SERIES THERMOSTATIC STEAM TRAPS

Typical Specifications

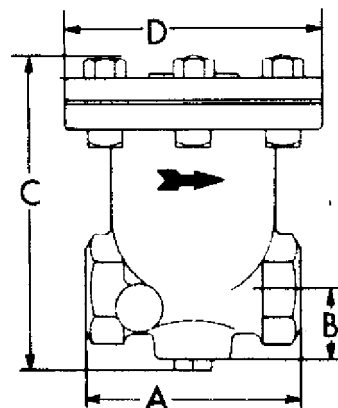
Steam trap shall be of balanced pressure design with bronze convoluted actuator or stainless steel welded actuator capable of discharging condensate within 10°F of saturated temperature. Where greater sensitivity is required or protection from flash steam locking, a SLR orifice will be available to allow condensate and flash steam evacuation at or near saturated temperatures. Thermostatic actuator shall employ a conical valve lapped in matched sets with the seat ring assuring tight shut off. Trap shall be cast iron or cast steel bodied suitable for pressures to 250 psig and available in 1/2" through 2" NPT.

Maximum Operating Conditions

PMO: Max. Operating Pressure 250 psig (17.2 barg)
TMO: Max. Operating Temperature 450°F (232°C)
PMA: Max. Allowable Pressure 250 psig (17.2 barg)
TMA: Max. Allowable Temperature 450°F (232°C)

Materials of Construction

Body & Cover: Cast Iron ASTM A278 Class 30
Actuator: Convoluted Bronze or Welded SS
Cover Gasket: Graphite
Valve & Seat: Hardened 416 Stainless Steel



Type B

Connections: 1/2"-2" NPT

Dimensions							
Actuators		Pipe Size inches	Inches (mm)				Weight lb (kg)
Convoluted Bronze	Welded Stainless		A	B	C	D	
B31	B33W	1/2	3 7/8 (98)	1 1/8 (29)	5 7/8 (149)	4 1/2 (114)	7 (3.2)
B41	B43W	3/4	4 1/4 (108)	1 3/8 (35)	6 3/4 (171)	5 1/8 (129)	10.3 (4.7)
B51	B53W	1	5 1/2 (140)	1 7/8 (48)	7 1/2 (195)	5 1/2 (148)	15.6 (7.1)
B61	B63W	1 1/4	5 1/2 (140)	1 7/8 (48)	7 1/2 (195)	5 1/2 (148)	15.3 (7.0)
B71	B73W	1 1/2	7 1/4 (184)	1 3/4 (44)	9 1/8 (230)	7 1/4 (197)	33.6 (15.3)
B81	B83W	2	7 1/4 (184)	1 3/4 (44)	9 1/8 (230)	7 1/4 (197)	32.4 (14.7)

Maximum Capacity—lbs/hr 10°F Below Saturation (Kg/hr 5°C Below Saturation)															
Trap	Pipe Size Inch	Orifice Inch (mm)	Differential PSIG (barg)												
			1 (.07)	2 (.14)	5 (0.34)	10 (0.7)	20 (1.4)	50 (3.5)	100 (6.9)	125 (8.6)	150 (10.3)	175 (12.1)	200 (13.8)	225 (15.5)	250 (17.2)
B31,B33	1/2	3/8 (10)	985 (448)	1390 (632)	2180 (991)	3070 (1395)	3735 (1698)	5040 (2291)	6645 (3070)	7315 (3325)	7560 (3436)	8045 (3657)	8200 (3727)	8615 (3916)	8915 (4052)
B41,B43	3/4	7/16 (11)	1460 (664)	2055 (934)	3240 (1473)	4560 (2073)	5550 (2523)	7480 (3400)	9865 (4484)	10850 (4932)	11225 (5102)	11935 (5425)	12165 (5530)	12770 (5805)	13225 (6011)
B51,B53, B61,B63	1, 1 1/4	1/2 (12)	1825 (830)	2575 (1170)	4050 (1841)	5700 (2591)	6925 (3148)	9350 (4250)	12340 (5609)	13565 (6166)	14030 (6377)	14920 (6782)	15230 (6923)	15960 (7255)	16540 (7518)
B71,B73, B81,B83	1 1/2, 2	3/4 (19)	2760 (1255)	3890 (1768)	6120 (2782)	8610 (3914)	10470 (4759)	14125 (6420)	18660 (8482)	20520 (9327)	21235 (9652)	22580 (10264)	23015 (10461)	24190 (10995)	25055 (11389)
B71HC,B73HC, B81HC,B83HC	1 1/2, 2	1-1/4 (32)	3555 (1616)	5030 (2286)	7950 (3614)	11240 (5109)	15900 (7227)	25140 (11427)	33000 (15000)	—	—	—	—	—	—