

HAT/RA & HAT/RA-LP

INLINE TEMPERATURE CONTROL VALVES

BENEFITS

- Controls cooling fluid return temperatures - ideal for glycol and water
- Self-operating, no power or signal required
- Maintains constant discharge temperatures
- Improves system efficiency
- Unaffected by pressure variations
- Conserves water

DESIGN FEATURES

- Exclusive **Thermoloid**® thermal actuator
- All stainless steel body, fittings, spring, and plug
- Compact low mass - fast response
- Corrosion resistant - long service life
- Ram-type plug for reliable shut-off
- Operates in narrow temperature band
- Two wrench flats for easy installation
- Leak port (LP) option senses changing upstream temperature

APPLICATIONS

The **HAT/RA** reverse acting valve may be used to regulate the flow of cooling water, glycol or other cooling media in applications requiring economical removal of heat from equipment or a process. Since the **HAT/RA** valves open on rising temperatures, they can be used in many thermal relief valve applications.

HAT/RA-LP valves are ideal for controlling cooling water for compressors and die-casting equipment, engines, heat exchangers, welding equipment, electrical equipment, and molding equipment.

OPERATION

As the fluid temperature increases to within the operating range of the **HAT/RA** and **HAT/RA-LP**, the thermal actuator modulates the valve open. If the fluid temperature is above the acceptable range, the valve will continue to modulate open allowing additional fluid discharge. As the outlet temperature falls, the valve then modulates toward the closed position, reducing flow. This modulating action maintains a relatively constant fluid temperature even as operating conditions vary.

At start-up, the **HAT/RA-LP** is closed except for its control leakage, which allows a small flow so that the actuator inside the valve can sense the changing equipment temperature.



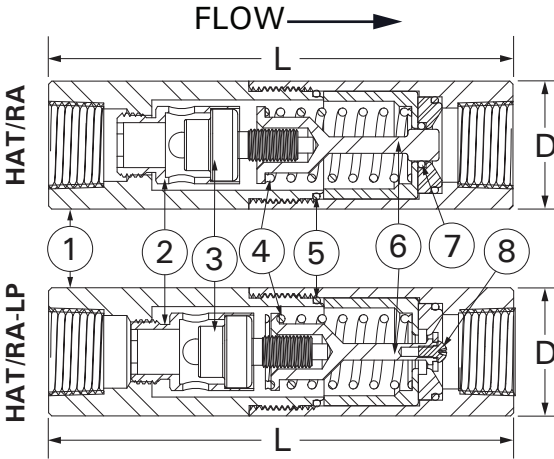
SAMPLE APPLICATION



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PARTS & MATERIALS



| ITEM | DESCRIPTION | MATERIAL |
|------|------------------|----------------------------|
| 1 | BODY | 300 Series SS |
| 2 | ACTUATOR CARRIER | Brass or SS |
| 3 | THERMAL ACTUATOR | Brass or SS |
| 4 | OPERATING SPRING | 300 Series SS |
| 5 | BODY SEAL | EPDM or Viton ³ |
| 6 | PLUG | 300 Series SS |
| 7 | SEAT SEAL RING | PTFE |
| 8 | LP WASHER | 300 Series SS |

DIMENSIONS & CAPACITIES

| SIZE (NPT) | D | | L | | Weight | | Port Size | C _v | Maximum Operating Pressure | Maximum Temperature |
|------------|-----|----|-----|-----|--------|-----|-----------|----------------|----------------------------|---|
| | in | mm | in | mm | Lb | Kg | | | | |
| 1/2" | 1.3 | 33 | 4.5 | 114 | 0.9 | 0.4 | B | 1.1 | 200 PSIG (13.8 BAR) | 150°F (66°C) over set-point - limit 300°F(149°C) |
| | | | | | | | C | 1.5 | 150 PSIG (10.3 BAR) | |
| 3/4" | 1.5 | 38 | 5.5 | 140 | 1.4 | 0.6 | D | 2.0 | 70 PSIG (4.8 BAR) | |

ORDERING

| Part Number ^{1,4} | Description |
|----------------------------|---------------------------|
| 144 - 202X00 - XXX | 1/2" HAT/RA B-Port |
| 144 - 212X00 - XXX | 1/2" HAT/RA B-Port all SS |
| 144 - 302X00 - XXX | 1/2" HAT/RA C-Port |
| 144 - 312X00 - XXX | 1/2" HAT/RA C-Port all SS |
| 145 - 502X00 - XXX | 3/4" HAT/RA D-Port |
| 145 - 512X00 - XXX | 3/4" HAT/RA D-Port all SS |

| Part Number ^{1,4} | Description ² |
|----------------------------|---------------------------------------|
| 144 - 202X02 - XXX | 1/2" HAT/RA-LP B-Port 1/4 GPM |
| 144 - 212X02 - XXX | 1/2" HAT/RA-LP B-Port, all SS 1/4 GPM |
| 144 - 302X02 - XXX | 1/2" HAT/RA-LP C-Port, 1/4 GPM |
| 144 - 312X02 - XXX | 1/2" HAT/RA-LP C-Port, all SS 1/4 GPM |
| 145 - 502X02 - XXX | 3/4" HAT/RA-LP D-Port 1/4 GPM |
| 145 - 502X03 - XXX | 3/4" HAT/RA-LP D-Port 1 GPM |
| 145 - 512X02 - XXX | 3/4" HAT/RA-LP D-Port, all SS 1/4 GPM |
| 145 - 512X03 - XXX | 3/4" HAT/RA-LP D-Port, all SS 1 GPM |

NOTES

- Full open temperatures "XXX" available: 040°F, 045°F, 050°F, 060°F, 070°F, 075°F, 085°F, 095°F, 100°F, 105°F, 110°F, 115°F, 120°F, 125°F, 130°F, 140°F, 150°F, 160°F, 170°F, 175°F, 180°F, 190°F, 200°F and 210°F.
 - Note: Closing temperature is typically 10°F below opening temperature.
- Leak port flow rate specifications:
 - All 144 Series (B and C-Port) leak flow rates at 60 PSIG (4.1 BAR)
 - All 145 Series (D-Port) leak flow rates at 40 PSIG (2.8 BAR)
- Seal material compatibility:
 - EPDM - air, water, steam, ketones, and synthetic hydraulic oils.
 - Viton - air, fuel, oil, gas, petroleum-based hydraulic oils.
- Replace singular "X" with 1 for EPDM body seals; 2 for Viton body seals
- A #20 mesh strainer is recommended.
- Warranty information disclosed at www.thermomegatech.com/terms-conditions/



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Because of continuous improvements, ThermOmegaTech®, Inc. reserves the right to change the design and specifications without notice