

# Mixing and Diverting Valves



ThermOmegaTech®'s **M/D** temperature control valve is designed for 3-way mixing or diverting applications. For fast response, the valve is compact and low mass. ThermOmegaTech®'s valves are designed around our exclusive Thermoloid® sensor/controller that automatically and accurately proportions the flow in response to fluid temperature. The Thermoloid® sensor/controller is the most advanced and reliable thermal actuator of its type available today.

For mixing applications, the **M/D** will proportion the flow from two inlet ports to produce the desired outlet port temperature. For diverting applications, the **M/D** will divert or switch the inlet flow to either of two outlet ports depending on the fluid temperature.

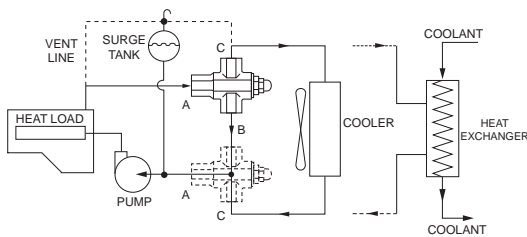
## TYPICAL APPLICATIONS

- Cooling water control for radiators and heat exchangers
- Hydraulic fluid cooling systems
- Direct cooling with water
- Lube oil cooling control
- Constant temperature baths, wash basins, and sinks
- Loop-type circulation systems
- Direct injection water heating
- Hot water washdown stations
- Make-up water
- Mobile oil coolers
- Electronics system cooling
- Air conditioning
- Water conservation

## SAMPLE APPLICATIONS

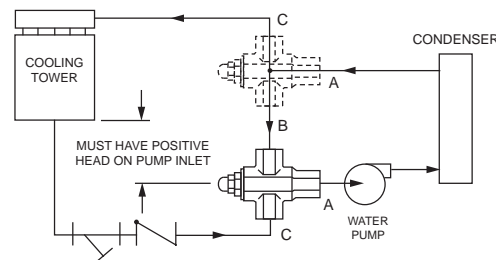
### ELECTRONICS COOLING USING RADIATOR OR HEAT EXCHANGER

Valve shown in "diverting" position to control outlet temperature. In dotted position, valve will "mix" to control inlet water to engine.



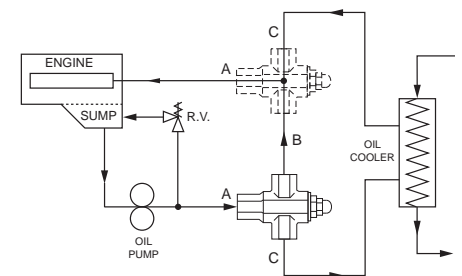
### DIRECT COOLING WITH WATER

Valve shown in "mixing" position to control temperature of inlet water to refrigeration system condenser. Valve in dotted position controls outlet temperature.



### LUBE OIL CONTROL

Valve shown in "diverting" position to control oil sump temperature. In dotted position, valve will "mix" to control oil temperature to bearings or manifold.



## Don't see exactly what you need?

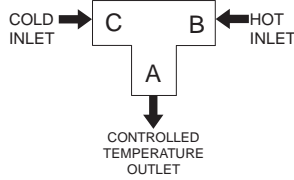
We welcome the opportunity to speak with you and discuss your unique application. The ability to customize valves to suit our customers' needs is one of ThermOmegaTech®'s greatest strengths, and we'll be here to provide you with ongoing and responsive customer service at all stages of the product's life cycle. If one of our standard valve offerings does not meet your exact requirements, our in-house engineering staff will work with you to design a solution that solves your problem. We can modify the temperatures at which the valve fully opens and closes, as well as the number of ports, including their size and configuration. In addition to our standard offerings of bronze and stainless steel, we also offer aluminum, titanium, brass, Monel or Hastelloy.

If your application requires a small amount of leakage, a manual override to allow for a bypass mode, lock wires to secure connections against vibration or tampering, or a diffuser to oscillate/mix the fluid, we can work with you to design and produce a prototype that you can evaluate prior to moving forward with your project.

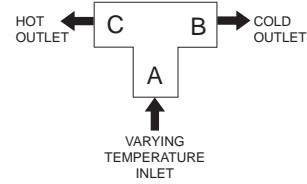
Give us a call – we love a challenge!

# PLUMBING DIAGRAMS

## FOR MIXING APPLICATIONS:

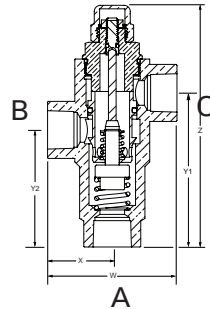


## FOR DIVERTING APPLICATIONS:



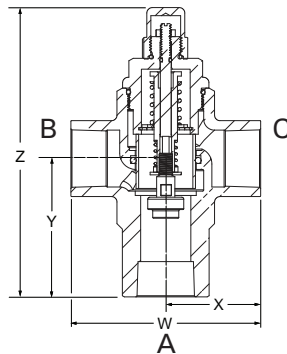
## PART NUMBERS & ORDERING

### 1/2" M/D VALVE

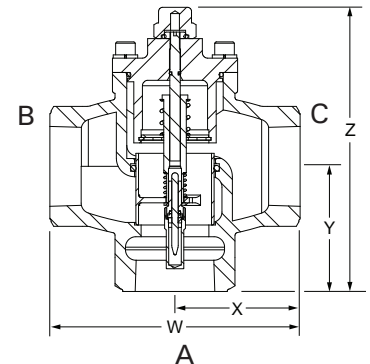


Part Number <sup>1</sup>	Description
353-00X000-XXX	1/2" M/D Valve - 316 SS Body, 300 Series SS Internals
353-02X000-XXX	1/2" M/D Valve - all 316 SS
353-01X000-XXX	1/2" M/D Valve - Bronze
356-00X000-XXX	1" M/D Valve - Bronze
356-01X000-XXX	1" M/D Valve - 303 SS
356-02X000-XXX	1" M/D Valve - 316 SS Special Order Only
359-0X4000-XXX	2" M/D Valve - SS

### 1" M/D VALVE



### 2" M/D VALVE



## DIMENSIONS & CAPACITIES

Size NPT	Body Material	W		X		Y		Y1		Y2		Z		Weight		C <sub>v</sub>	Max. Operating Pressure	Max. Operating Temperature	ANSI Body Compliance
		IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	Lb	Kg				
1/2"	SS	2.62	67	1.31	33	N/A		3.12	79	2.38	60	4.90	124	1.5	0.6	2.7	350 PSIG (24 BAR)	250°F (121°C)	300 Class
1/2"	Bronze					250 Class													
1"	Bronze	4.37	111	2.20	56	2.60	66	N/A	N/A	N/A	N/A	6.70	170	5	2.27	10	250 PSIG (17.2 BAR)	250°F (121°C)	250 Class
1"	SS																		150 Class
2"	SS	6.00	152	3.00	76	3.00	76					6.80	173	11	5	18			

### NOTES

- Seal material compatibility "X" available (replace singular X of part number with corresponding number below):
  - 0 - Buna-N for air (to 250°F), water, fuel, oil, gas, and petroleum-based hydraulic oils.
  - 1 - Viton for air (to 450°F), fuel, oil, gas, and petroleum-based hydraulic oils
  - 2 - EPDM for air (to 300°F), water, steam, ketones, and synthetic hydraulic oils
  - 3 - Fluorosilicone for air (to 400°F), aerospace industry petroleum oils/fuels, and diester-based lubricants
- For most mixing applications, pressure difference between the hot and cold ports should not exceed 10 PSI.
- Set point temperatures "XXX" available: 035°F, 045°F, 050°F, 060°F, 070°F (+/- 8°F), 085°F, 090°F, 100°F, 105°F, 110°F, 125°F, 130°F (+/- 8°F), 135°F, 147°F (+/- 8°F), 152°F (+/- 8°F), 160°F, 170°F, 190°F, 200°F, 205°F, 210°F.  
**Note:** Unless otherwise noted, during operation the valve will modulate the Cold side (C port) closed at 5°F below the set point, and the Hot side (B port) closed at 5°F above the set point.
- Customized temperature, materials, and port positions available upon request.

