

HOW TO SELECT THE RIGHT TEMPERATURE CONTROL VALVE

The Selection Guide

AMOT temperature control valves provide a simple and reliable way to control the temperature of fluids that are vital to the operation of industrial machines and process equipment. They are often used in turbines, compressors, and engine jacket water and lubrication oil cooling systems. Additionally, they are suitable for process control and industrial applications where fluids must be mixed or diverted depending on their temperatures.

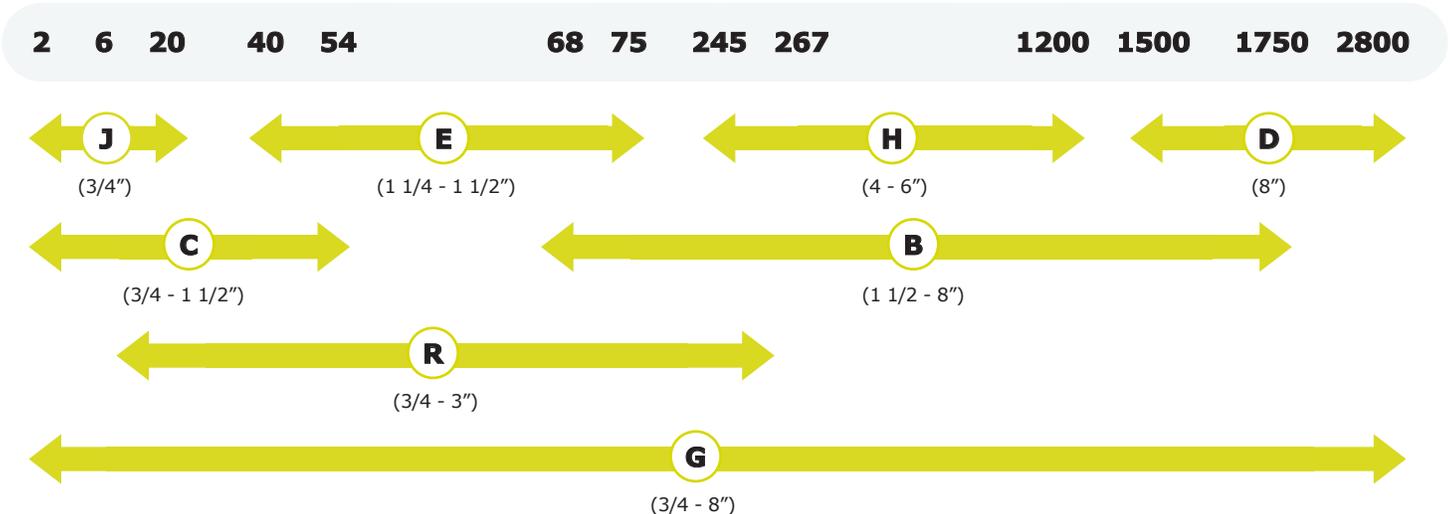
Since AMOT offers such a large selection of different sizes, actuation methods, body materials, and customized features, selecting the right valve for your application requires careful consideration of how the valve will be used and the environment in which it will be installed.

Checklist

- Flow Rate
- Actuation Method
- Flow Configuration
- Body Material
- Seal Material
- Elements
- Special Features

Flow Rate

One of the first things to consider is your required flow rate, as this will determine the valve size. If you know your flow rate, the chart below will help narrow down the choices. Note: these values are for water; heavier fluids will lower the maximum range.



Actuation Method

It is important to consider your application requirements and business goals when deciding if you need a thermostatic control valve or actuated control valve.

Self-actuated (thermostatic valves) "Fit and Forget Solution"

One preset temperature setting

Standard control range (+/- 3-5°)

Self-contained; no extra parts needed

Fully mechanical

Externally-actuated valves (Model G) "Performance Improvement Solution"

Flexible temperature adjustment

Precise temperature control (+/-1°)

Complete system: controller, temperature sensor, etc.

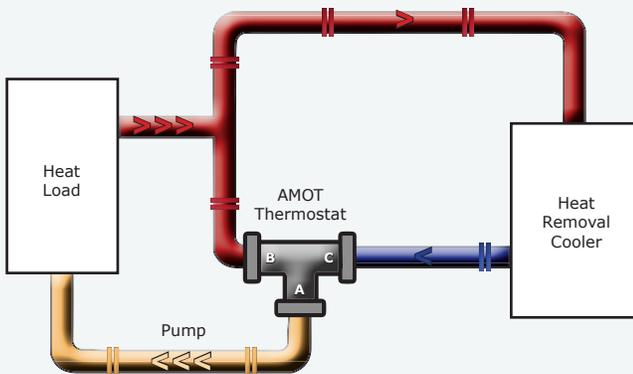
Requires electric or pneumatic activation source



Flow Configuration

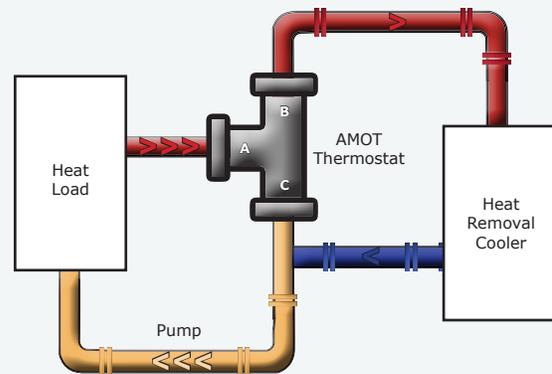
Our temperature control valves work equally well in both mixing and diverting applications, as illustrated in the drawings below.

Mixing Applications



When valves are used for mixing service, Port C is the cold fluid inlet port from the cooler, Port B is the hot by-pass fluid inlet, and Port A the common outlet. Port A is the temperature sensing port and will mix the hot and cold fluids in the correct proportion to produce the desired outlet temperature leaving Port A.

Diverting Applications



When valves are used for diverting services, the inlet is Port A (temperature sensing port), with Port C being connected to the cooler, and Port B connected to the cooler by-pass line.



Body Material

Different body materials work best in different applications.

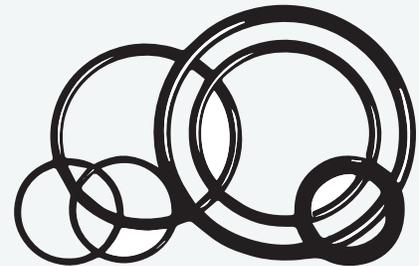
- Cast Iron: General use for most water, glycol, and oil systems
- Ductile Iron: High strength at lower cost than steel; best for marine applications
- Steel: High strength, high pressure rating
- Stainless Steel: Highest corrosion resistance, high strength, high pressure rating
- Bronze: Best for salt water and Navy applications
- Aluminum: For low cost, high pressure service



Seal Material

Buna seals are standard and work best for petroleum-based oils, water, and glycol. AMOT offers alternative seal materials for applications where Buna is not compatible with the working fluid.

- Viton: High temperature and synthetic oils
- Neoprene: Refrigeration applications using ammonia or freon



Elements

Standard bronze and steel elements work well in almost all applications. However, if your application contains corrosive fluids, such as ammonia or salt water, we recommend electroless nickel plated elements for protection.



Special Features

The last thing to consider is whether any special features are required by your applications. This can include:

- Element leak holes
- Manual override
- Nonstandard end connections
- Industry certifications

