AMOT Thermostatic Valves

AMOT thermostatic valves are manufactured and tested to the highest possible standard. If the valve is correctly applied and installed, it will give many years of reliable, trouble-free service. This operating guide gives service information for most normal operating conditions, but for unusual situations, it may be necessary to consult your local AMOT representative, or the AMOT factory.

All AMOT internally sensed thermostatic valves work on the “expanding wax” principle, the temperature elements are set to a predetermined temperature under very strictly controlled conditions. They are not adjustable. If system temperatures need to be changed, the replacement element must be fitted.

Inspection

Upon installation and on start up of the system, all parts of the circuit should be closely monitored to ensure correct performance. A system in which the valves have been properly selected for the anticipated flows should operate very closely to the valve’s nominal temperature rating.

Water cooling systems will usually operate at or slightly below the nominal temperature. Lubricating oils and most other higher viscosity fluids will operate at or slightly above the nominal temperature. In any system where the indicated temperatures are more than 2.7°C (5°F) from the nominal temperature, then an effort should be made to locate the cause.

Any system operating at an indicated 5.5°C (10°F) or more from the nominal anticipated temperatures is probably malfunctioning and the cause should be located and rectified immediately. (See troubleshooting section for possible causes).

Maintenance

AMOT thermostatic valves require minimal maintenance. Elements in normal service are designed for many years of trouble-free operation.
Excessive temperatures, chemical, electrolytic attack or cavitation can shorten the life of the elements, seats, sleeves and seals. All of these are replaceable parts. Water additives and synthetic based lubricants may cause swelling of O-rings to a point that valve action may be impaired. Distorted O-rings should be replaced. Should this occur, contact the factory for alternative materials.

Carbonates, lime scale and other solids must not be permitted to build up on sliding valves or element cup surfaces. The valve and elements may be cleaned with mild acid solutions. Hard scale may require wire brushing. Unless definite problems are detected during operation, valves usually do not require inspection more than every 12 to 24 months.

Dismantling
To dismantle the valve, the following procedure should be followed:
1. Ensure system is not pressurised.
2. Remove 4 socket head cap screws (item 6).
3. Remove element retaining cage.
4. All internals are then accessible and can easily be removed and inspected with no special tools required.
5. Inspect all parts and replace those with any indication of wear or damage.
6. Any spares required are readily available from AMOT Controls. When ordering spare parts, specify valve part number, serial number and nominal temperature. If unsure, all elements are stamped with AMOT part number and nominal temperature (in degrees Fahrenheit).
7. When reassembling any valves, it is recommended that O-rings are lightly greased prior to fitting to ease assembly.

Checking Element Operation
AMOT elements can be checked for correct operation as follows:
1. Note element part number stamped on element, last three numbers denote nominal temperature in degrees Fahrenheit.
2. Heat suitable volume of water with the element cartridge fully immersed. Agitate water to ensure even heat distribution.
3. Monitor the temperature as it increases; when 5°C below the nominal, the element should start to stroke.
4. At 5°C above, it should be fully stroked. Full stroke should be approximately 8mm.

Trouble Shooting
In the event that the cooling system does not operate close to the desired temperature, the following guide may help to identify or locate the problem.

<table>
<thead>
<tr>
<th>Size (mm)</th>
<th>Element</th>
<th>Spare Kit Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>20, 25 &amp; 40</td>
<td>5435K (temp)</td>
<td>46857x003</td>
</tr>
<tr>
<td>50 &amp; 65</td>
<td>46856K (temp)</td>
<td>46858x003</td>
</tr>
</tbody>
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Spare kit comprises: O-rings, Capscrews and Washers.