



Model H

Thermostatic Valve



FEATURES

- FLOW RATES OF 345 - 1350 USGPM
- TAMPER-PROOF TEMPERATURE SETTINGS OF 55°F TO 240°F
- COMBINATIONS AVAILABLE:
 - ~ Steel Housings
 - ~ 4", 5", & 6" Pipe Sizes
 - ~ Flanged Connections

■ POSITIVE 3-WAY VALVE ACTION

■ COMPLETELY SELF-CONTAINED

APPLICATIONS

- ENGINE & COMPRESSOR COOLING SYSTEM
- LUBE OIL SYSTEMS
- COGENERATION HEAT RECOVERY SYSTEMS
- PROCESS CONTROL
- TEMPERATURE MIXING OR DIVERTING

AMOT Model H Thermostatic Valves are fully automatic, 3-way fluid temperature controllers for diverting or mixing applications. They are used to provide reliable control of fluid temperatures in engine water jacket and lubricating oil cooling systems. These valves are suitable for process control and industrial applications where fluids must be mixed or diverted, depending on their temperatures. They may also be applied to cogeneration systems to control temperatures in the heat recovery loop assuring proper engine cooling and maximizing heat recovery.

TAMPER-PROOF

As with other AMOT thermostatic valves, Model H valves utilize fully enclosed, factory-set temperature element assemblies which provide tamper-proof operation. To change a valve setting it is necessary to exchange the temperature element assembly.

Viton seals can be supplied for use in fluids which attack Buna N, such as phosphate ester and diester oils. With such oils, nickel plated element assemblies should be requested for protection of the bronze parts. Contact the AMOT factory for seal material recommendations for your specific fluid.

MANUAL OVERRIDE

If desired, AMOT Model H thermostatic valves can be supplied with a Manual Override which allows the operator to force the valve to flow a portion or all the fluid through the cooler. On 5" and 6" sizes there is one Manual Override for each of the two thermostatic element assemblies.

HIGH RESISTANCE TO SHOCK

AMOT Thermostatic Valves display excellent reliability even under extreme shocks or vibration and many models have been qualified to MIL-S-901 and MIL-V-19772.

Other AMOT Thermostatic Valves are available for water flow rates of 9-2800 USGPM. See Form No. 913.

OPERATION

The valve is supplied with the temperature element assembly factory-set to the nominal temperature setting. Temperature is sensed at Port A, which remains open to Port B (bypass) until the fluid temperature reaches a point 5-10°F below the nominal setting. As the temperature continues to rise, the sliding valve moves to close off Port B and open Port C (connected to the cooler or heat exchanger.) Port B is fully closed 8-10°F above the nominal setting. The valve continually modulates the fluid flow to maintain the nominal temperature. For optimum control, the system should be sized so that approximately one half the total fluid flow passes through the cooler at full load.

For long life, AMOT Model H Valves should not be exposed to continuous temperatures exceeding 25°F above their nominal temperature setting. For occasional short periods, such as one half hour, Model H valves can be exposed to temperatures of 50°F above their nominal temperature setting, but not to exceed 250°F.

To operate the optional Manual Override and force all of the fluid to flow through the cooler, remove Cap (17) and loosen Locknut (16). Turn the shaft counter-clockwise to its limit. To return the valve to its automatic mode, turn the shaft clockwise to its limit. Tighten the Locknut and replace the Cap. Model 4HM valves have one Manual Override and Models 5HM and 6HM have two each.

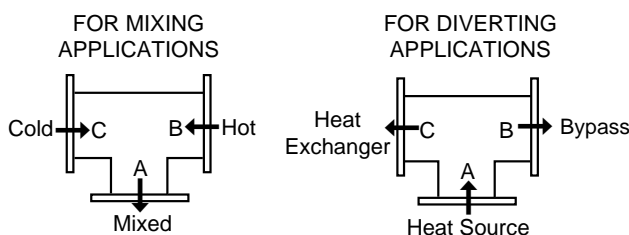
INSTALLATION

AMOT Thermostatic Valves operate in any position and may be located at the convenience of the system designer. The valve should be properly supported and should not be subjected to excessive bending. Line up the piping before tightening the connecting bolts.

If the valve is mounted at the high point of the system, the system should be properly vented to prevent trapping air at the temperature element assemblies.

For piping diagrams regarding specific applications, refer to Form 913, AMOT Thermostatic Valves General Information.

PIPING DIAGRAMS



SELECTION

AMOT thermostatic valves are selected by the anticipated flow rate through the valve. Refer to Fig. 1. Pressure drop across the valve is usually limited to approximately 2 psi to 7 psi to maintain good temperature regulation.

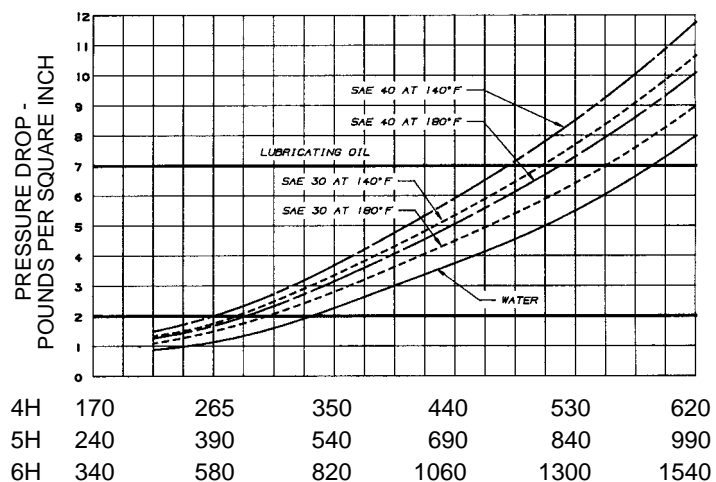
Standard versions available from USA factory (See Model Code).

Steel, 150#	Steel, 300#	Cast Iron
4 HOSJ 4 HMSJ 5 HOSJ 5 HMSJ 6 HOSJ 6 HMSJ	4HOSH 4HMSH	See Model B Thermostatic Valves

Contact factory for other special requirements.

FIGURE 1

FLOW IN U.S. GALLONS PER MINUTE
Recommended pressure drop is 2 to 7 psi.



MAINTENANCE

Properly applied and installed, AMOT Thermostatic Valves require minimal maintenance. Inspections at 2 or 3 year intervals is adequate to detect and make provision for normal wear. Another feature of the Model H Valve is that the element assembly may be removed from the valve for inspection or maintenance without removing the valve from connecting piping.

If necessary, element assemblies may be easily replaced: Remove Bolts (9) and lift off Cover (7). Remove Socket Head Screws (5) and Cage (4) and lift out Element Assembly (2). When servicing, replace O-rings (3) and (8). Lubricate O-ring (3) lightly with a good grade of petroleum grease before reinstalling in Cage (4).

HOW TO ORDER

When ordering, please specify the following:

1. Pipe size connection: 4", 5", or 6".
2. Indicate Model H and valve type (see Table B).
3. Housing material (see Table C of Model Code Systems below).
4. Type of flange connection (see Table D of Model Code Systems below).
5. Nominal temperature setting (see Table E).
6. Any of the following special features if required:
 - a) Nickel plated temperature element and cage assembly.
 - b) Viton seals (instead of Buna N).
 - c) Manual Override.
 - d) Temperature Element Assembly Leak Hole (see Table G).

SPECIFICATIONS

Internal Trim Materials	Stainless Steel & Bronze
Standard Seal Material	Buna N
Max. Pressure Drop Across Valve	20 psi (138 kPa)
Valve Pressure Rating	
Steel Body	150 lb Class, 230 psi (1586 kPa)
	300 lb Class, 655 psi (4516 kPa)
Net Weight	
4H	150 lbs (68 kg)
5H, 6H	265 lbs (120 kg)

MODEL CODE SYSTEM

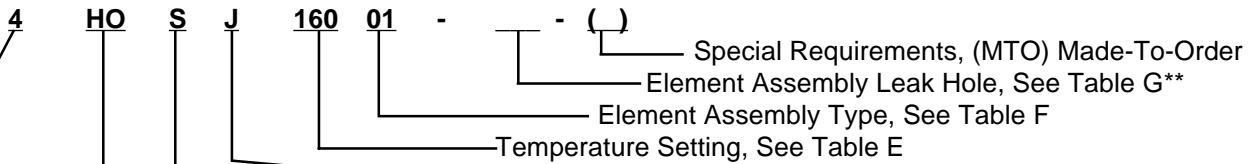


TABLE A Valve Size		TABLE B Valve Type		TABLE C Body Material		TABLE D* Connections	
Inches (mm)		Code No.	Material	Code No.	Material	Code No.	Flange
4 (100)		HO	Standard	S	Steel (Standard)	J	ANSI B16.5 (150 lb. Class) Raised Face Flange
5 (125)		HM	Manual Override	C	Cast Iron (Special Order)	H	ANSI B16.34 (300 lb Class) Raised Face Flange
6 (150)						F	ANSI B16.1 (125 lb. Class) Flat Face Flange
						A	AMOT MET 1 (ND6) 90 psi metric flange
						B	AMOT MET 2 (ND10) 150 psi metric flange
						C	AMOT MET 3 (ND16) 235 psi metric flange
						D	BS 10 Table D Flange
						E	BS 10 Table E Flange
						G	Undrilled Flange
						N	Navy Flange per MIL-F-2004
						Z	AMOT MET 1 (ND6) Flange, 8 holes (4" only)

TABLE E Temperature Setting			TABLE E (Cont'd) Temperature Setting		
Code No.	Nominal Temp °F	(°C)	Code No.	Nominal Temp °F	(°C)
055	55	(13)	155	155	(69)
075	75	(24)	160	160	(71)
090	90	(32)	165	165	(74)
095	95	(35)	170	170	(77)
100	100	(38)	175	175	(79)
105	105	(41)	180	180	(83)
110	110	(43)	185	185	(85)
115	115	(46)	195	195	(91)
120	120	(49)	205	205	(96)
130	130	(54)	215	215	(102)
135	135	(57)	225	225	(107)
140	140	(60)	230	230	(110)
145	145	(63)	235	235	(113)
150	150	(66)	240	240	(116)

TABLE F Element Assembly Type		TABLE G** Element Assembly Leak Hole	
Code No.	Type	Code No.	Size Inches (mm)
01	9760X - Standard	none	(standard)
02	9760P - Plated with Viton Seals	B	1/4" (6.3 mm)
03	9760X - Viton Seals	C	1/2" (12.7 mm)
05	9760K - Electroless Nickel Plated with Viton Seals	D	3/4" (19 mm)
07	9844X - Manual Override	On Models 5H & 6H, identical Leak Holes are supplied on both Element Assemblies	

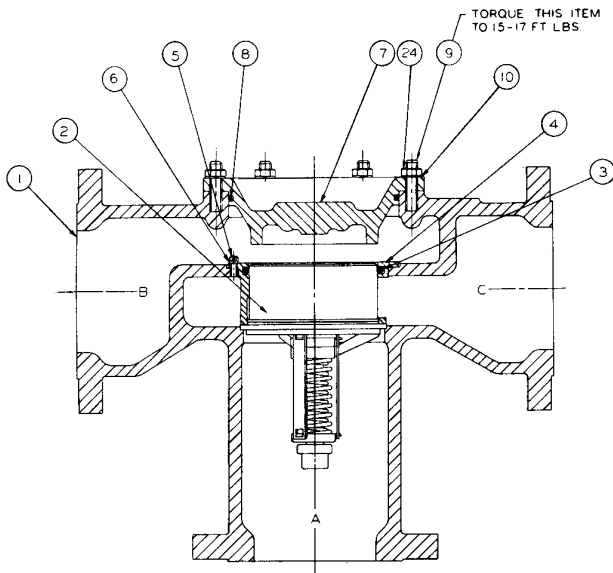
☐ Indicates Non-Standard, Special Charge

NOTE: Letters or numbers in the MTO space, other than nothing, AI or AA, indicate the unit is built to special requirements and some of the other code numbers may not be valid. Check with the factory for full specification of such models.

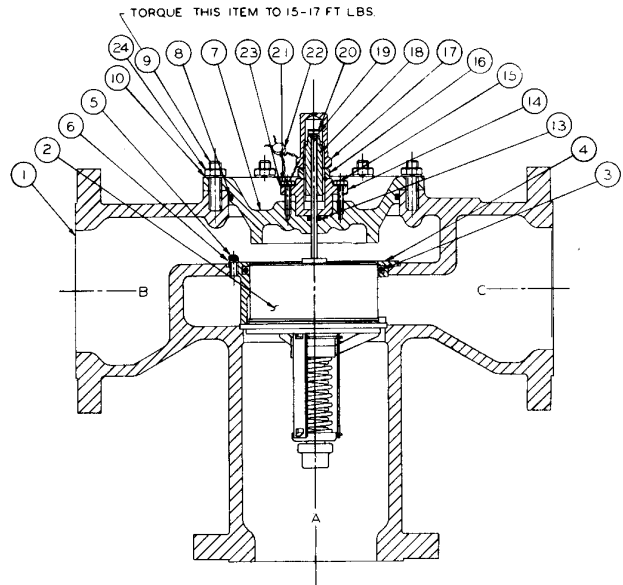
* Former model coding generally omitted Table D.

** Table G is to be omitted on any valve made in the USA not requiring a leak hole.

MODEL HO



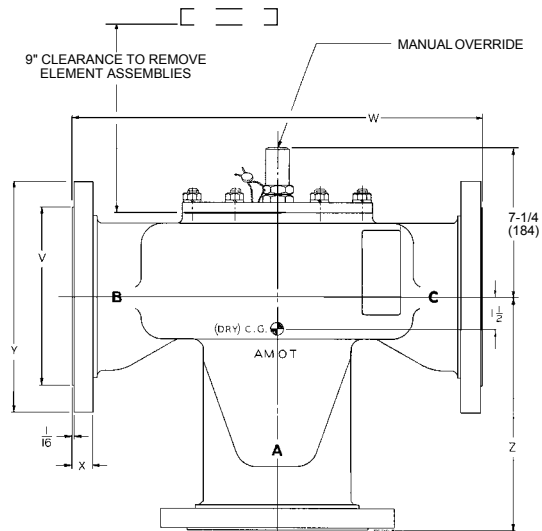
MODEL HM



SERVICE PARTS

Ref. No.	Part No.	Qty.*	Description
2	9760X(temp)	1 or 2	Element Assembly,
2	9760P(temp)	1 or 2	Element Assembly, Plated
2	9844X(temp)	1 or 2	Element Assembly, Manual Override
3	11009L001	1 or 2	O-ring, Element, Buna N (Std)
3	11009L002	1 or 2	O-ring, Element Viton
8	11007L001	1 or 2	O-ring, Housing, Buna N
8	11007L002	1 or 2	O-ring, Housing, Viton
13	11148	1 or 2	O-ring, Stem Seal, Buna N
13	11148L001	1 or 2	O-ring, Stem Seal, Viton

DIMENSIONS



This Parts List effective with Valve Serial No. C761.
 * Quantity is 1 each for 4H and 2 each for 5H and 6H valves.

Model No.	Nominal Size "N"	Principal Dimensions					Max. Width in the Other Plane	Flange Drilling			No. of Element Assemblies
		"V"	"W"	"X"	"Y"	"Z"		No of Holes	Dia. of Holes	Bolt Circle	
4HOSJ 4HMSJ	4 (100)	6-3/16 (157)	15-7/8 (403)	15/16 (24)	9 (229)	8-9/16 (217)	10-1/2 (267)	8	3/4 (19)	7-1/2 (191)	1
4HOSH 4HMSH	4 (100)	6-3/16 (157)	16-5/16 (414)	1-1/4 (32)	10 (254)	8-13/16 (224)	10-1/2 (267)	8	7/8 (22)	7-13/16 (198)	1
5HOSJ 5HMSJ	5 (125)	7-5/16 (186)	19-1/4 (489)	15/16 (24)	10 (254)	11 (279)	18-1/2 (470)	8	7/8 (22)	8-1/2 (216)	2
6HOSJ 6HMSJ	6 (150)	8-1/2 (216)	19-1/4 (489)	1 (25)	11 (279)	11 (279)	18-1/2 (470)	8	7/8 (22)	9-1/2 (241)	2

Dimensions in inches. Millimeters in ().

AMOT USA
 401 First Street
 Richmond, CA 94801
 Tel: +1 510 236-8300
 Fax: +1 510 234-9950

AMOT
 Western Way
 Bury St. Edmunds IP33 3SZ
 Suffolk England
 Tel: +44 1284 762222
 Fax: +44 1284 760256

AMOT SINGAPORE
 10 Eunos Road 8 # 12-06
 Singapore Post Centre
 Singapore 408600
 Tel: +65 6293 4320
 Fax: +65 6293 3307