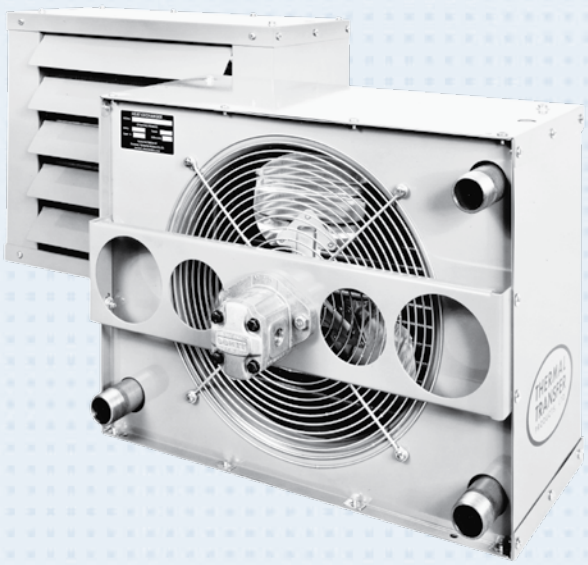
Features

- **AO/AOVH Series with Hydraulic Motor**
- **High Heat Removal**
- **Heavy Duty Construction**
- **Wide Flow Range**
- Heat Removal up to 210,000 BTU/Hr.
- Long Life Hydraulic Motor
- NPT Connections



OPTIONS
Built-in Relief Bypass Valve
SAE or BSPP Connections
Corrosion Resistant Coating

Ratings

Operating Pressure 300 psi
Test Pressure 300 psi
Operating Temperature 400° F

Materials

Tubes Copper
Fins Aluminum
Turbulators Steel
Manifolds Steel
Connections Steel
Cabinet Steel with Baked Enamel Finish
Fan Blade Aluminum with Steel Hub
Fan Guard Zinc Plated Steel
Fan Adapter Steel

How to Order

[ ] – [ ][ ] – [ ] – [ ] – [ ] – [ ] – [ ]

Model Series
AOHM
AOHMR
AOVHM
AOVHMR

Model Size Selected

Number of Passes**
Blank - No Bypass
1 - One Pass*
2 - Two Pass

Connection Type*
Blank - NPT
S - SAE

Relief Bypass**
Blank - No Bypass
30 - 30 psi
60 - 60 psi

Foot Mounting Brackets
Blank - No Brackets
FB - Foot Brackets

ADD FOR AOHM & AOHMR MODELS ONLY

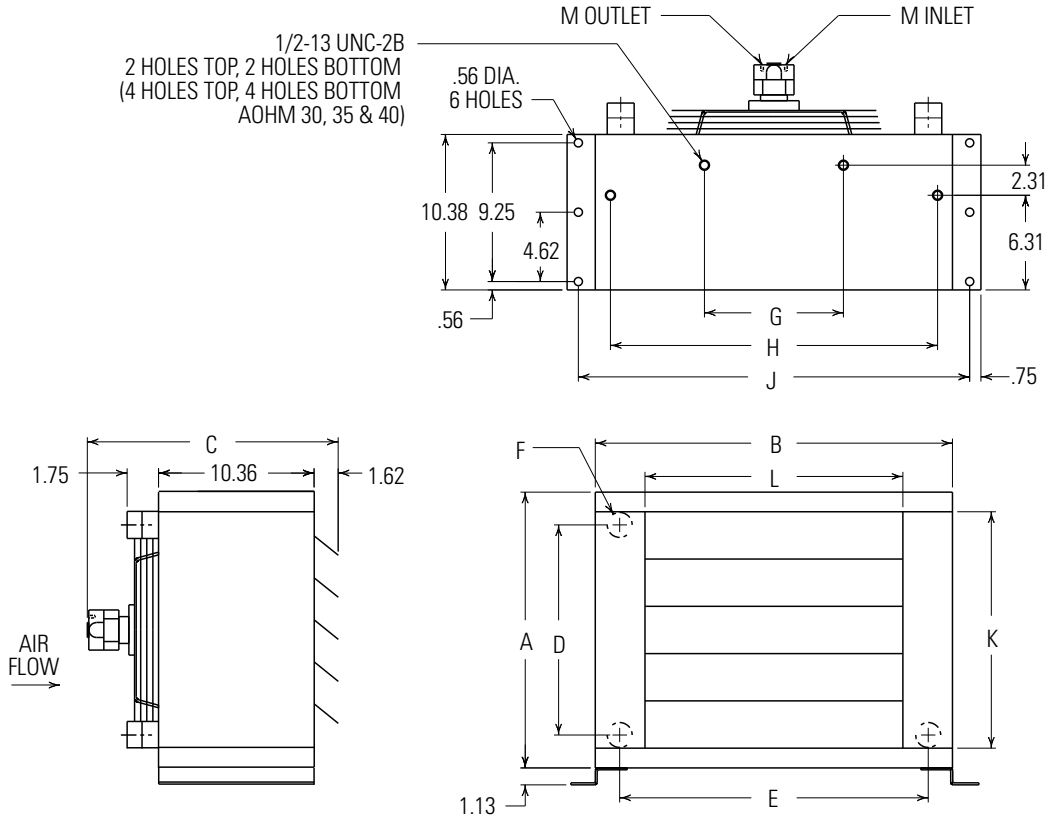
AOHMR - Relief Bypass Included
AOVHMR - Relief Bypass Included (available in 2 pass only)

*Other connection types available. Please consult factory for assistance.

****ADD FOR AOHMR & AOVHMR MODELS ONLY**

Dimensions

Fan Rotating Clockwise/Facing Motor Shaft



Foot Brackets:
Optional for AOHM
Standard with AOVHM

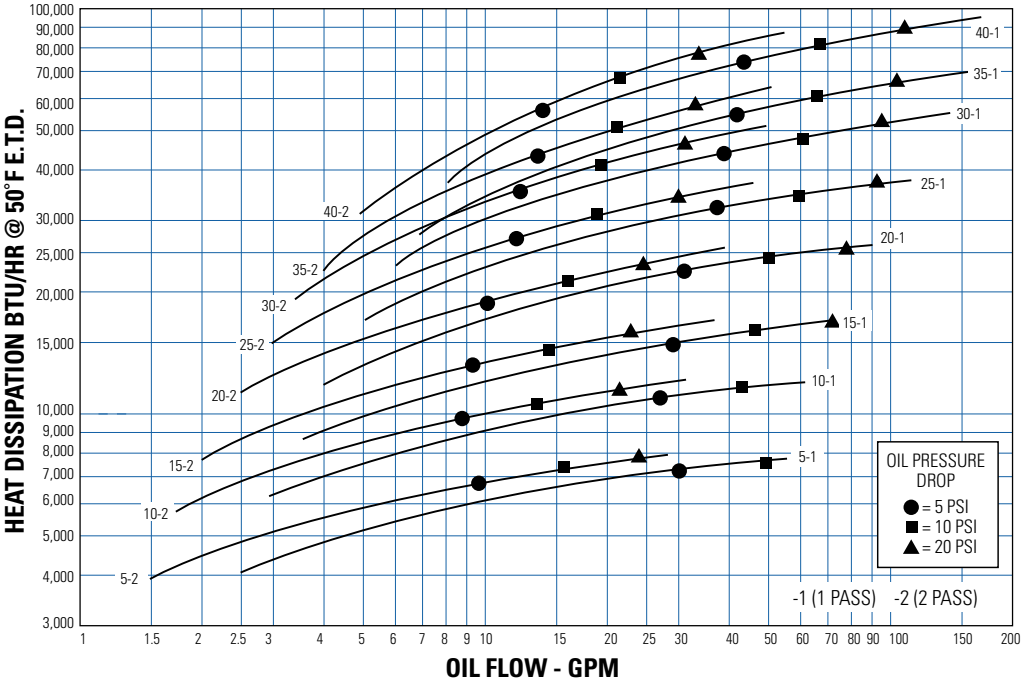
See dimensional chart for external NPT or optional internal SAE connection size.

MODEL	A	B	C	D	E	F		G	H	J	K	L	M (SAE)	NET WT (LBS)
						NPT	SAE							
AOHM-5	11.81	14.81	16.70	7.69	11.69	1″	#16	–	12.94	16.81	9.19	8.31	#8	35
AOVHM-5						1 1/2″	#24							59
AOHM-10	13.12	19.00		8.88	15.88	1″	#16		17.12	21.00	10.50	12.50		50
AOVHM-10						1 1/2″	#24							76
AOHM-15	15.75	20.38	17.09	11.50	17.25	1″	#16		18.50	22.38	13.12	13.88		60
AOVHM-15						1 1/2″	#24							89
AOHM-20	18.38	23.81		14.00	20.56	1 1/4″	#20		21.81	25.81	15.75	17.19		75
AOVHM-20						2″	#32							108
AOHM-25	23.62	26.68		19.25	23.56	1 1/4″	#20		24.81	28.68	21.00	20.1[9]		110
AOVHM-25			17.25			2″	#32							143
AOHM-30	27.56	31.62	16.70	23.19	28.50	1 1/4″	#20	11.00	29.75	33.62	24.94	25.12		120
AOVHM-30			16.95			2″	#32							178
AOHM-35	30.19	33.81	16.70	25.81	30.69	1 1/4″	#20	11.00	31.94	35.81	27.56	27.31		135
AOVHM-35			17.22			2″	#32						#10	220
AOHM-40	36.75	41.62	16.70	32.38	38.50	1 1/4″	#20	13.25	39.75	43.62	34.12	35.12	#8	160
AOVHM-40			17.22			2″	#32						#10	286

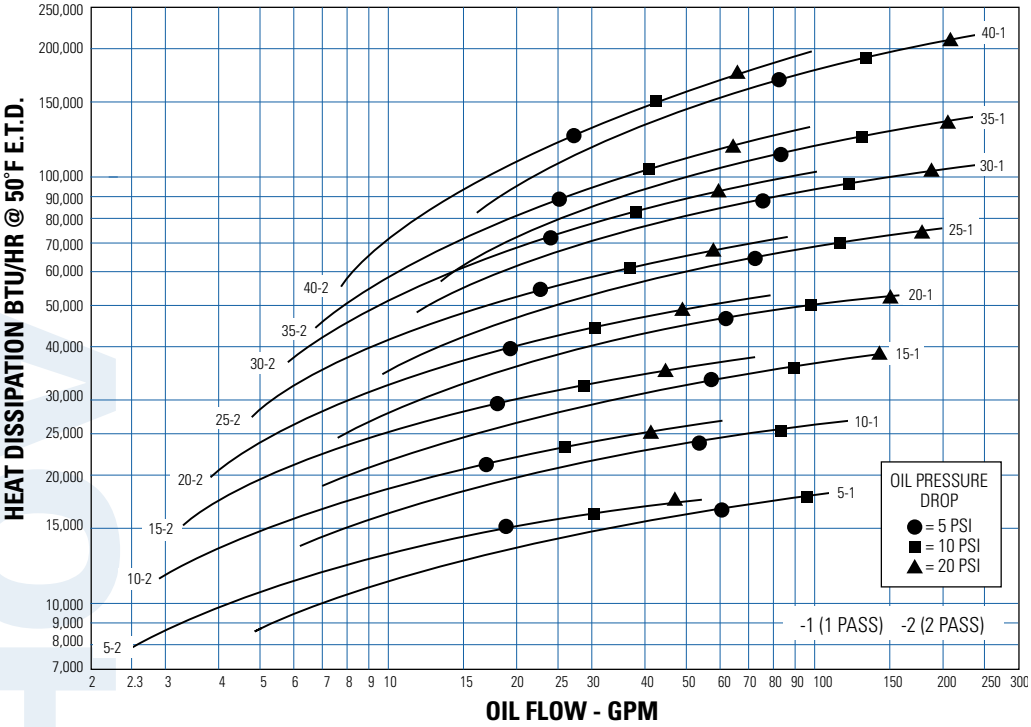
NOTE: All dimensions are in inches.
NOTE: We reserve the right to make reasonable design changes without notice.

Performance Curves

AOHM Series



AOVHM Series



Selection Procedure

Performance Curves are based on 50 SSU oil entering the cooler 50°F higher than the ambient air temperature used for cooling. This is referred to as a 50°F E.T.D.

Step 1 **Determine the Heat Load.** Heat load may be expressed as either horsepower or BTU/Hr. To convert horsepower to BTU/Hr.:
BTU/HR = Horsepower x 2545

Step 2 **Determine Entering Temperature Difference.** The entering oil temperature is generally the maximum desired oil temperature.
Entering oil temperature – Ambient air temperature = E.T.D.

Step 3 **Determine the Corrected Heat Dissipation to use the curves.**
Corrected Heat Dissipation =
BTU/HR heat load x $\frac{50°F}{E.T.D.}$ x viscosity correction A.

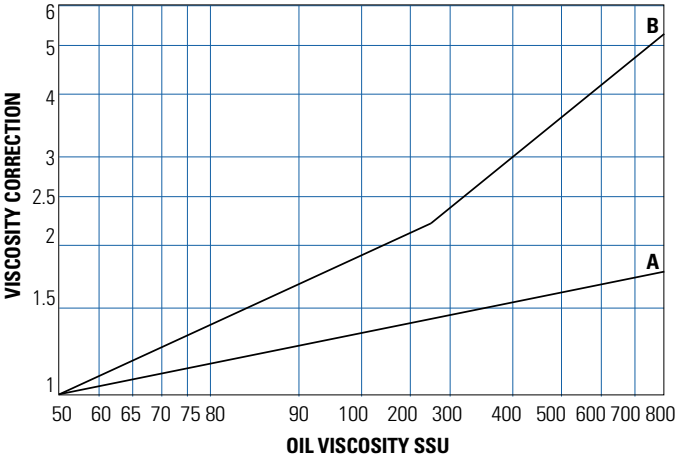
Step 4 **Enter curves** at oil flow through cooler and curve heat dissipation. Any curve above the intersecting point will work.

NOTE: *Performance curves shown are for 1 and 2 pass configuration.*

EXAMPLE: *35 - 2 is AOHM or AOVHM - 35*

Step 5 **Determine Oil Pressure Drop from Curves:**
● = 5 PSI; ■ = 10 PSI; ▲ = 20 PSI. Multiply pressure drop from curve by correction factor B found in oil viscosity correction curve.

OIL VISCOSITY CORRECTION MULTIPLIERS



Desired Reservoir Temperature

Oil Temperature: Oil coolers can be selected using entering or leaving oil temperatures.

Off-Line Recirculation Cooling Loop: Desired reservoir temperature is the oil temperature entering the cooler.

Return Line Cooling: Desired reservoir temperature is the oil temperature leaving the cooler. In this case, the oil temperature change must be determined so that the actual oil entering temperature can be found. Calculate the oil temperature change (oil △T) with this formula:

Oil △T = (BTU's/Hr.) / (GPM Oil Flow x 210).

To calculate the oil entering temperature to the cooler, use this formula:

Oil Entering Temp. = Oil Leaving Temp + Oil △T.

Oil Pressure Drop: Most systems can tolerate a pressure drop through the heat exchanger of 20 to 30 PSI. Excessive pressure drop should be avoided. Care should be taken to limit pressure drop to 5 PSI or less for case drain applications where high back pressure may damage the pump shaft seals.

Oil Temperature

Typical operating temperature ranges are:

Hydraulic Motor Oil	120°F - 180°F
Hydrostatic Drive Oil	160°F - 180°F
Engine Lube Oil	180°F - 200°F
Automatic Transmission Fluid	200°F - 300°F

Hydraulic Motor

MODEL SIZE	MAXIMUM FAN SPEED (RPM)		OIL FLOW REQUIRED (GPM)		MIN. OPERATING PRESSURE (PSI)		SOUND dB(A)*		MOTOR (in³/rev.) DISPLACEMENT		CFM	
	AOHM	AOVHM	AOHM	AOVHM	AOHM	AOVHM	AOHM	AOVHM	AOHM	AOVHM	AOHM	AOVHM
5	1725	3450	1.6	3.3	300	300	68	85	.22	.22	465	780
10							68	85			669	1110
15							69	91			956	1590
20							70	91			1460	2168
25	1140	1725	1.1	3.4	400	500	72	81	.22	.45	2160	3000
30							75	84			2990	4095
35				5.2	900	1000	76	89		.70	4370	5921
40							78	91			5450	9609

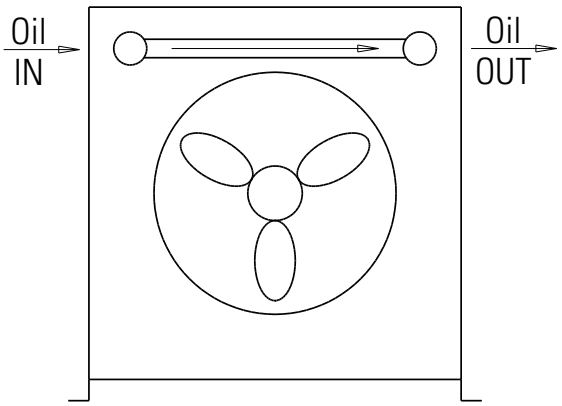
Notes: Maximum pressure is 2000 psi. Stated minimum operating pressure is at inlet port of motor. 1000 psi allowable back pressure.
**Catalog db(A) sound levels are at seven (7) feet. dB(A) sound levels increase by six (6) dB(A) for halving this distance and decrease by (6) dB(A) for doubling this distance.*

Built-In Relief Bypass

AOHMR Series

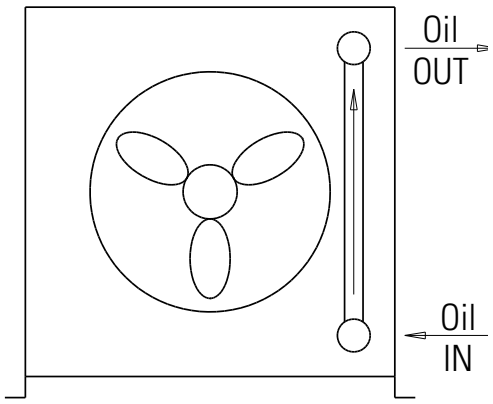
One Pass (Medium to High Oil Flows)

Model Number	Flow Range GPM (USA)
AOHMR - 5-1	2 - 80
AOHMR - 10-1	3 - 80
AOHMR - 15-1	4 - 80
AOHMR - 20-1	5 - 80
AOHMR - 25-1	6 - 100
AOHMR - 30-1	7 - 100
AOHMR - 35-1	8 - 112
AOHMR - 40-1	9 - 118



Two Pass (Low to Medium Oil Flows)

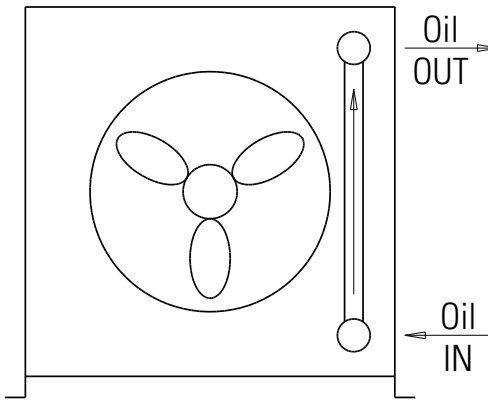
Model Number	Flow Range GPM (USA)
AOHMR - 5-2	2 - 25
AOHMR - 10-2	2 - 30
AOHMR - 15-2	2 - 40
AOHMR - 20-2	2 - 30
AOHMR - 25-2	2 - 40
AOHMR - 30-2	2 - 40
AOHMR - 35-2	3 - 40
AOHMR - 40-2	4 - 40



AOVHMR Series

Two Pass (Low to Medium Oil Flows)

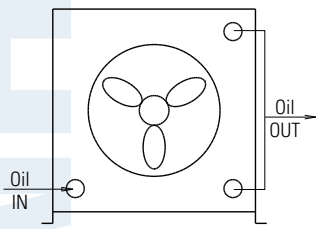
Model Number	Flow Range GPM (USA)
AOVHMR - 5-2	4 - 50
AOVHMR - 10-2	4 - 60
AOVHMR - 15-2	4 - 60
AOVHMR - 20-2	4 - 80
AOVHMR - 25-2	4 - 80
AOVHMR - 30-2	4 - 80
AOVHMR - 35-2	6 - 80
AOVHMR - 40-2	8 - 80



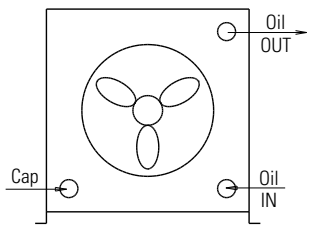
Bypass valve is available for 2 pass AOVHMR models only.

Installation Piping Diagrams

One Oil Pass



Two Oil Passes



One Oil Pass w/Bypass