

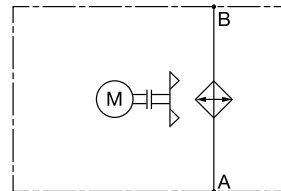
MOBILE COOLERS

AC-M Series

Mobile Air Cooler
AC-M 1-6 with DC Motor



Hydraulic Symbol



Description

The AC-M series with DC motor has been specially developed for mobile applications where high performance is required combined with compact design and easy installation.

Features

- Improved corrosion protection due to plastic fan housing and shroud
- Simple and flexible mounting design
- Choose between 2 different air fins for higher cooling performance (PC) or lower susceptibility to clogging (HB)
- Bar and Plate style construction
- Fan features sealed connector standard

Applications



Mobile Cranes

- Concrete pumps
- Drilling rigs



Agricultural



Construction

- Roadworking machines
- Electronics cooling

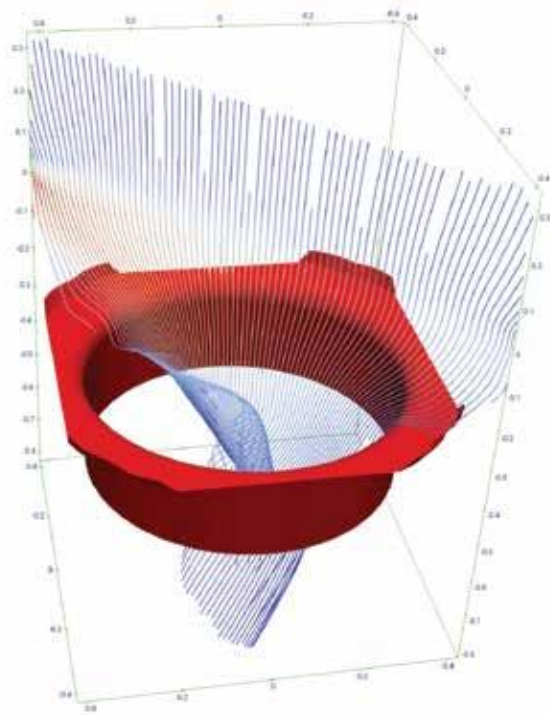


Utility

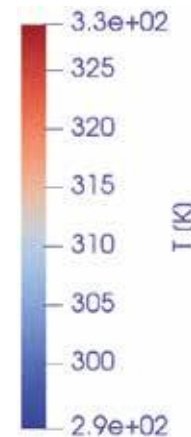
General

Fluids	<ul style="list-style-type: none"> • Oils (<i>mineral oils, synthetic oils, high viscosity oils, biological oils, phosphate ester</i>) • Water-glycol (<i>cooling fluids</i>) • DI-water-glycol (<i>cooling fluids</i>)
Viscosity	According to the max. allowed pressure
Temperature Range	<ul style="list-style-type: none"> • Minimum / maximum ambient temperature: -4°F to 104°F (-20°C to 40°C) • Maximum temperature of the medium: 68°F to 248°F (20°C to 120°C) (<i>standard</i>) <p>In case of water-glycol mixtures, please check the minimum content of glycol to be used as specified in its technical datasheet. The fluid must be kept in its liquid form according to ASTM D1177. Please contact the technical sales department in the event of deviating temperatures.</p> <p>Notice! Fan at max. speed (max. volume of air) must be avoided when operating a cooler at which the temperature difference between the medium inlet at the cooler and the ambient temperature can be greater than 122°F (50°C). Quick changes in the temperature of the cooling element material can lead to a significant reduction in service life or to direct damage of the cooling element due to thermal shock. Please contact the technical sales department to receive information about controlled fan drives.</p>
Pressure Resistance of the cooling element	• Dynamic operating pressure: 16 bar
Air fin types	<ul style="list-style-type: none"> • Panel cut (PC): for higher cooling capacities • Herringbone (HB): suitable for very dusty applications
Fan	Axial fan in suction version (<i>standard</i>)
Motor	<ul style="list-style-type: none"> • DC motor • 12 V / 24 V • Protection class IP68 (<i>IP6K9K on the complete E-fan</i>)
Accessories	<ul style="list-style-type: none"> • Integrated pressure bypass valve (IBP) or integrated thermal pressure bypass valve (IBT) (<i>cannot be retrofitted, also see options</i>) • Electronic speed control (ESC) for DC fan • Thermostats • Vibration dampers • Feet

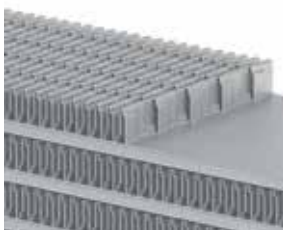
CFD modeling optimized the plastic shroud's design for improved airflow, ensuring the AC-M series achieves the highest cooling performance.



AIR **+10%***
VOLUME
FLOW



AC-M with PANEL CUT fins



Options

Integrated pressure bypass valve (IBP) / Integrated thermal pressure bypass valve (IBT)

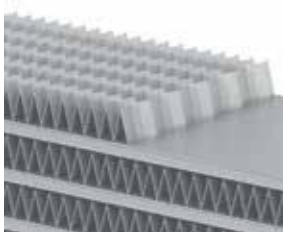
The bypass channel is integrated in the cooling element. If a particular pressure is exceeded, the IBP opens the bypass channel, thereby protecting the cooling element from too high a pressure.

Furthermore, the IBT only opens the cooling element path once a particular temperature has been reached.

Air cooler with

1. Axial fan with integrated motor
2. Plastic fan housing
3. Heat Exchanger

AC-M with HERRINGBONE fins



MOBILE COOLERS

Model Code

AC-M

4

2.5

12V

HB

S

IBT45-2

TS120

X

Cooler type
AC-M = Air cooler for mobile applications

Size
1, 2, 3, 4, 5, 6

Modification Number (latest version always supplied)
2.5 = Heat Exchanger 1.0 Ports ORB-16, and ORB-08

Fan Motor Voltage
12 = 12 volt DC (Standard) 24 = 24 volt DC

Air Fin Design
HB = Herringbone (Standard) PC = Panel cut

Air Flow Direction
S = Suction (Standard) B = Blowing

Bypass Options
(omit) = None
IBT = Internal Thermostatic Bypass Valve
IBP = Internal Pressure Bypass Valve

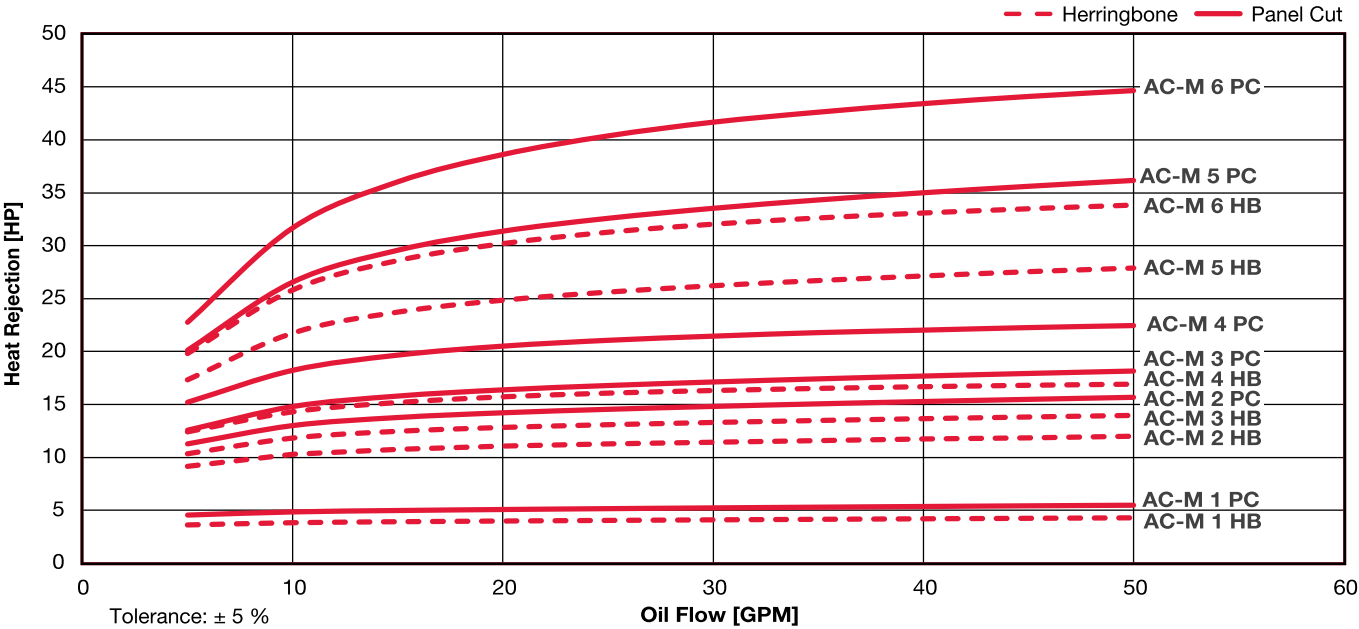
Valve Opening Temperature (IBT only, consult factory for other options)
45 = 113°F (45°C) (closes at 131°F)

Opening Pressure Drop (IBT & IBP Only)
2 = 2 bar (29 psi) 3 = 3 bar (45 psi)

Temperature Switches (normally open, closes at listed temperature)
TS120 (wire leads)
TS140 (wire leads)

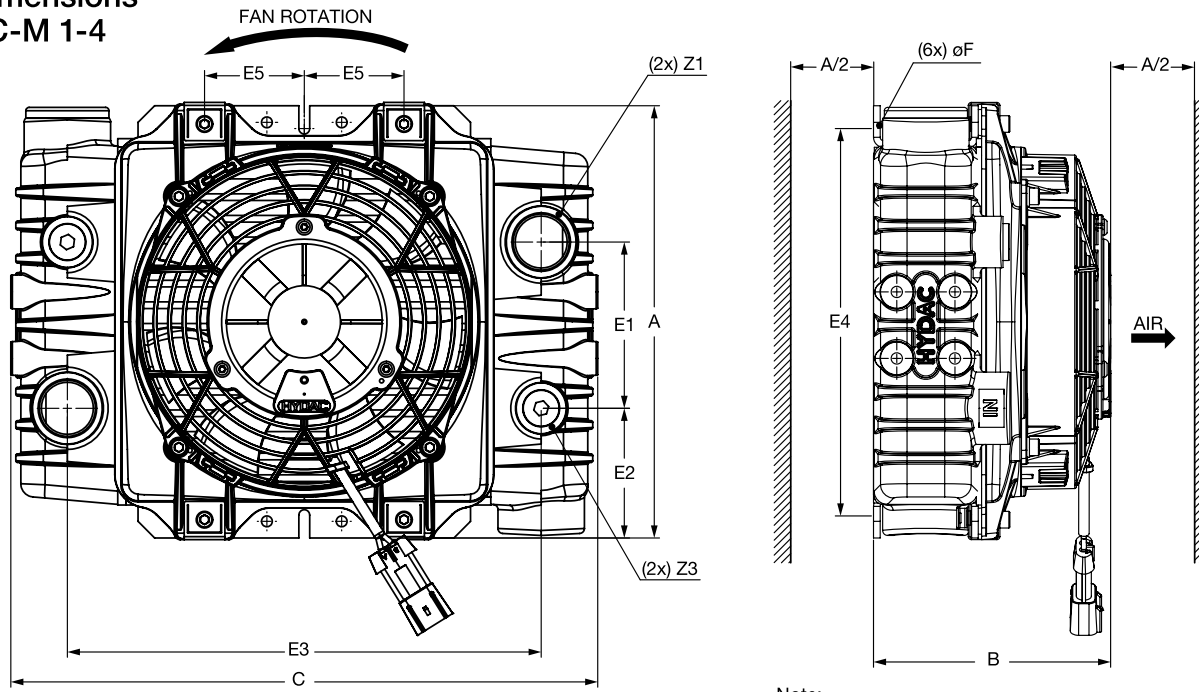
Other Options
F = Foot Mount ESC = Electronic Speed Controller

Heat Dissipation @ ΔT = 72°F



Dependent on the oil flow rate and the temperature difference ΔT between oil inlet and air inlet.
Note: The values are measured at ΔT = 72°F (40°C). For smaller ΔT values, the heat dissipation can change. Please reference page E1 or contact your local HYDAC distributor for further consultation.

Dimensions AC-M 1-4



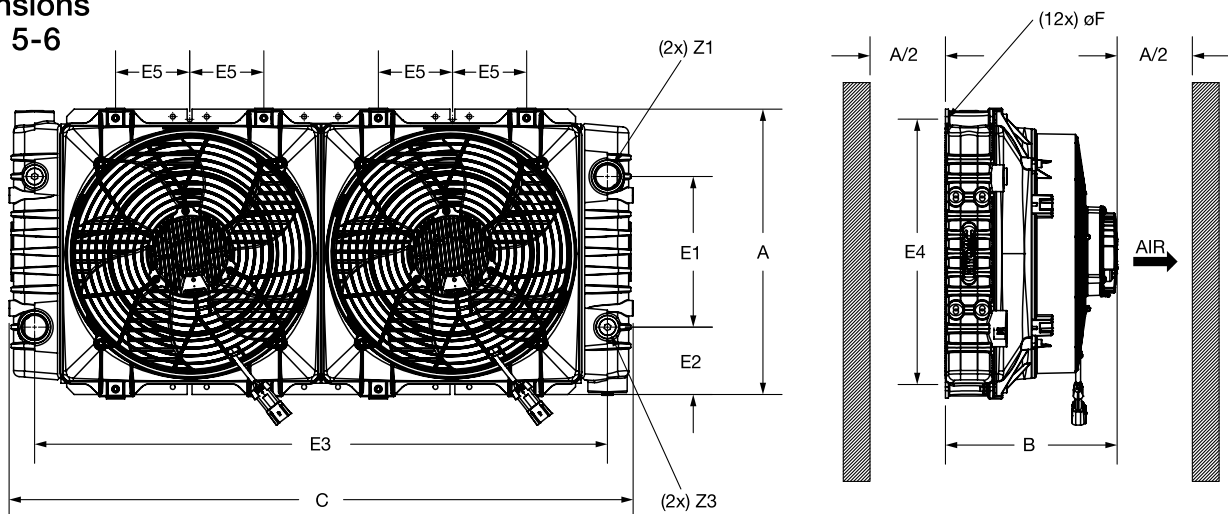
Note:

It is recommended to maintain a minimum distance to ensure an adequate airflow. The required distance is half of the height of the heat exchanger A/2. Anything below the minimum distance can affect the cooling capacity and noise emissions.

Type	A ±5	B ±5	C ±5	E1 ±5	E2 ±5	E3 ±5	E4 ±5	E5 ±2	F Ø ±2	Z1	Z3	Filling Vol. gal [L]
AC-M1	10.24 [260]	5.63 [143]	13.9 [353]	3.94 [100]	2.24 [57]	11.22 [285]	9.37 [238]	2.36 [60]	[6.5]X[17]	ORB-16	ORB-08	0.45 [1.7]
AC-M2	13.82 [351]	8.31 [211]	18.03 [458]	7.87 [200]	2.09 [53]	15.35 [390]	13.07 [332]	3.94 [100]	[6.5]X[17]	ORB-16	ORB-08	0.74 [2.8]
AC-M3	15.12 [384]	8.90 [226]	18.43 [468]	7.87 [200]	2.72 [69]	15.75 [400]	14.17 [360]	3.94 [100]	[6.5]X[17]	ORB-16	ORB-08	0.85 [3.2]
AC-M4	18.43 [468]	9.17 [233]	21.18 [538]	11.81 [300]	2.40 [61]	18.50 [470]	17.72 [450]	4.72 [120]	[6.5]X[17]	ORB-16	ORB-08	1.27 [4.8]

The dimensions are in inches [mm] and only apply to standard coolers without accessories.

Dimensions AC-M 5-6



Type	A	B	C	E1	E2	E3	E4	E5	F	Z1	Z3	FILLING VOL [gal]
AC-M5	14.93 [379]	8.98 [228]	32.64 [829]	7.87 [200]	3.53 [90]	29.96 [761]	13.88 [353]	3.99 [99]	[6.3]x[17]	ORB-16	ORB-08	1.00
AC-M6	18.51 [470]	9.15 [233]	37.72 [958]	11.81 [300]	3.35 [85]	35.04 [890]	17.72 [450]	4.72 [120]	[6.3]x[17]	ORB-16	ORB-08	1.38

The dimensions are in inches [mm] and only apply to standard coolers without accessories.