

MAR Series – Mobile Air Cooled Brazed Aluminum Cores and DC Fan Drive Cooler

The MAR Series mobile coolers provides rugged high performance for demanding mobile equipment oil cooling applications. Select from a broad line of standard units all featuring proven brazed aluminum bar and plate core technology, engineered with an aggressive turbulator that produces ultra-high heat transfer. Available with axial fans equipped with either standard DC fans or brushless DC electric motors for extended life, minimal electrical load.

MAR units come with 25 or 60 PSI pressure bypass or 110F/60 PSI thermal/pressure bypass valve arrangement. Built in bypass reduces plumbing and decreases the time that the cooler is in bypass in cold start conditions.

®



How to Order

Model Series

MAR - Internal Bypass model

Model Size Selected

MAR - 12, 18, 32, 48, 66, 82, 120, 232, 248

With Fan:

MAR - 12, 18, 32, 48, 232, 248

Connection Type

- 1 - NPT
- 2 - SAE
- 3 - BSPP

Bypass Setting*

- Blank** - No Bypass
- 25** - 25 PSI (1.7 Bar) Pressure Bypass
- 60** - 60 PSI (4.1 Bar) Pressure Bypass
- 110** - 110F/60 PSI (43C/4.1 Bar) Thermal/pressure relief bypass

This is a partial flow pressure bypass only. It is not designed to be a full flow system bypass.

Specify Motor Required

- Blank - Core Only**
- 4A** - 12 VDC
- 4B** - 24 VDC
- 4ABL** - 12 VDC Brushless Fan**
- 4BBL** - 24 VDC Brushless Fan**

Brushless fan available on MAR-12 thru 248 models.

Features

Bar and plate brazed aluminum core

Rugged, lightweight and compact

Provides the best heat transfer per given envelope size while minimizing pressure drop

Air-side fin design minimizes fouling and static pressure ensuring long-term, reliable performance

Fans compliant with IP 68 (brushed) and IP6k9k (brushless) with fully sealed motors

Welded aluminum fitting/ports and manifolds ensure structural integrity

Standard SAE ports – NPT or BSPP ports available

Customized units are available to meet your specific performance requirements

Now available with brushless DC fan motors

Ratings

Maximum Operating Pressure
250 PSI (17 BAR)

Maximum Operating Temperature
300°F (150°C)

Heat Removal
MAR cores only 19,000 to 375,000 BTU/HR
MAR w/ fan(s) 5,000 to 160,000 BTU/HR

Flow Rates
Up to 160 GPM (350L/min)

Fluid Compatibility

Petroleum/mineral oils

Oil/water emulsion

Water/ethylene glycol

Materials

Core Aluminum

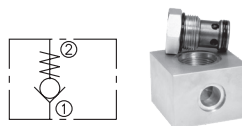
Connections Aluminum

Core Mounting Bracket Aluminum

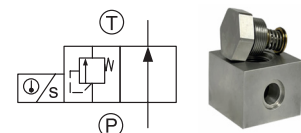
Bypass Aluminum/Steel

Internal Bypass Options

This is a partial flow pressure bypass only. It is not designed to be a full flow system bypass.



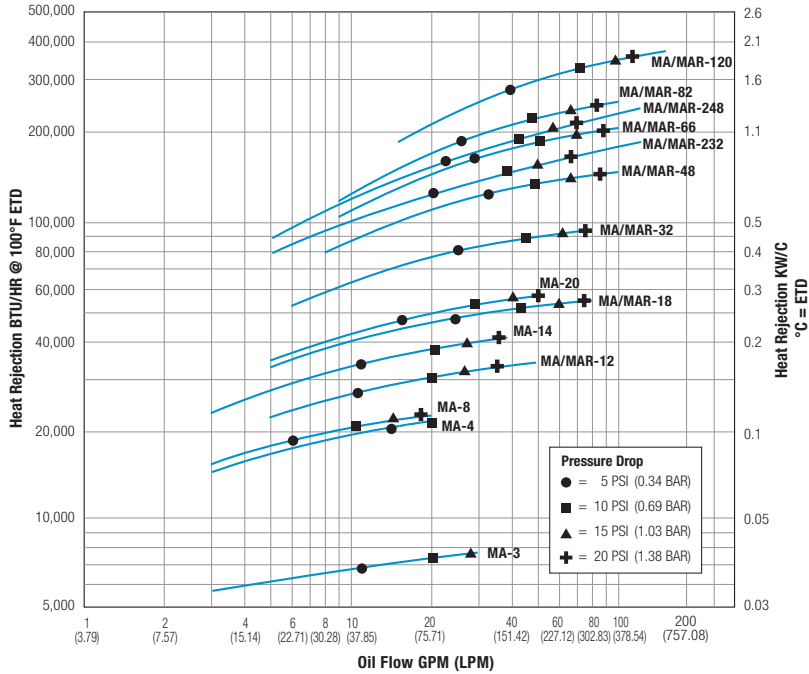
Pressure Bypass



Temperature Controlled Bypass with Integrated Pressure Relief

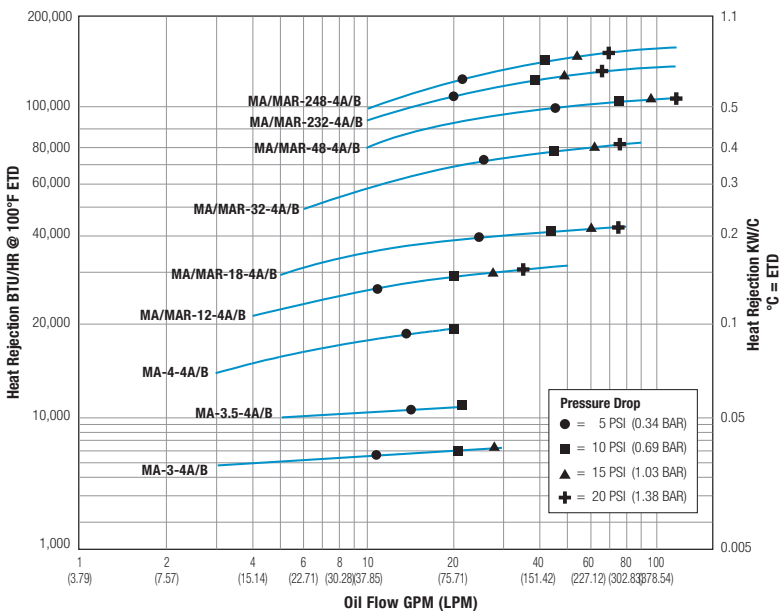
Performance Curves

MAR Models - Core only (No Fan)



Model	Approx. Shipping Weight LBS (KG)
MAR-12	15 (6.8)
MAR-14	14 (6.35)
MAR-18	18 (8.16)
MAR-20	18 (8.16)
MAR-32	28 (12.7)
MAR-48	41 (18.60)
MAR-66	50 (22.68)
MAR-82	65 (29.48)
MAR-120	88 (39.92)
MAR-232	55 (24.95)
MAR-248	80 (36.29)

MAR Models - DC Fan Assemblies

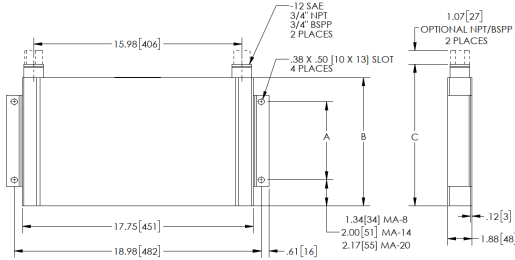


Model	DC Amp Draw		Approx. Shipping Weight LBS (KG)
	12V	24V	
MAR-12	12.5	6.3	19 (8.62)
MAR-18	10.6	5.3	23 (10.43)
MAR-32	22.2	11.1	28 (12.70)
MAR-48	22.2	11.1	45 (20.40)
MAR-232	19.3*	9.7*	65 (29.48)
MAR-248	19.3*	9.7*	90 (40.80)

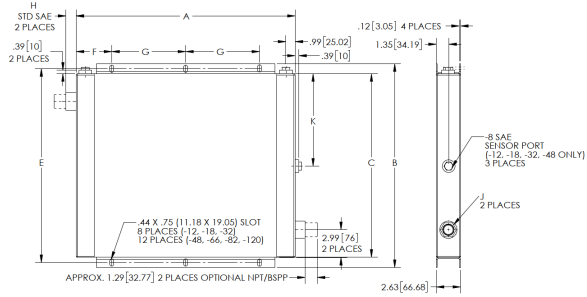
*AMP draw listed as per FAN.

Dimensions - Core Only

MAR-14, MAR-20



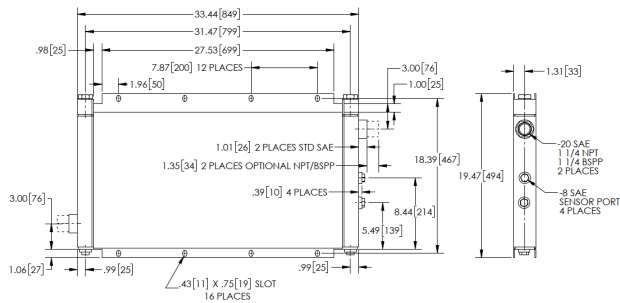
MAR-12 thru MAR-120



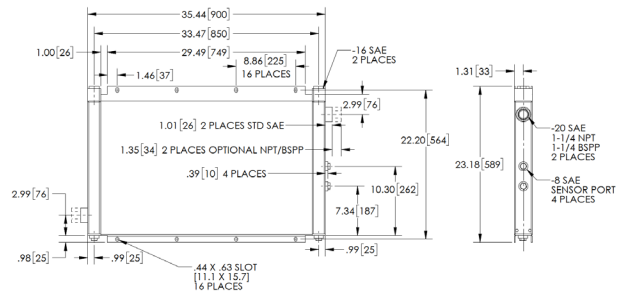
Model	A	B	C		E	F	G	H	J		K
			Without Bypass Valve	With Bypass Valve					SAE	NPT & BSPP	
MAR-12	13.82 (351)	11.97 (304)	9.85 (250)	12.8 (325)	10.98 (279)	4.06 (103)	5.71 (145)	1.00 (25)	#12	3/4"	5.00 (127)
MAR-14	6.00 (152)	9.86 (250)	10.86 (276)								
MAR-18	15.84 (402)	14.14 (359)	12.01 (305)	14.6 (371)	12.96 (329)	4.99 (127)	5.87 (149)	1.00 (25)	#12	3/4"	5.91 (150)
MAR-20	10.00 (254)	14.19 (360)	15.19 (386)								
MAR-32	19.69 (500)	18.46 (469)	16.34 (415)	18.9 (480)	17.40 (442)	3.84 (98)	12.00 (305)	1.10 (28)	#16	1"	8.07 (205)
MAR-48	23.69 (602)	22.09 (561)	20.12 (511)	22.7 (577)	21.02 (534)	3.85 (98)	8.00 (203)	1.10 (28)	#16	1"	10.00 (254)
MAR-66	27.56 (700)	25.83 (656)	23.39 (594)	26.5 (673)	24.72 (628)	3.78 (96)	10.00 (254)	1.58 (40)	#20	1 1/4"	
MAR-82	31.46 (799)	27.80 (706)	25.43 (646)	28.6 (726)	26.57 (675)	5.70 (145)	10.00 (254)	2.00 (51)	#24	1 1/2"	
MAR-120	31.46 (799)	39.6 (1006)	37.44 (951)	40.0 (1016)	38.38 (975)	5.73 (146)	10.00 (254)	2.00 (51)	#24	1 1/2"	

Note: We reserve the right to make reasonable design changes without notice. All dimensions are in inches (millimeters) unless noted otherwise.

MAR-232

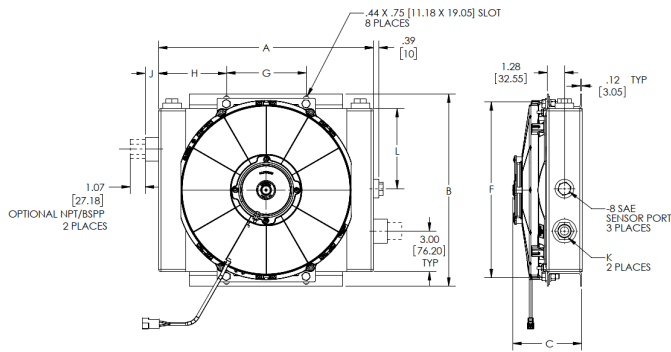


MAR-248

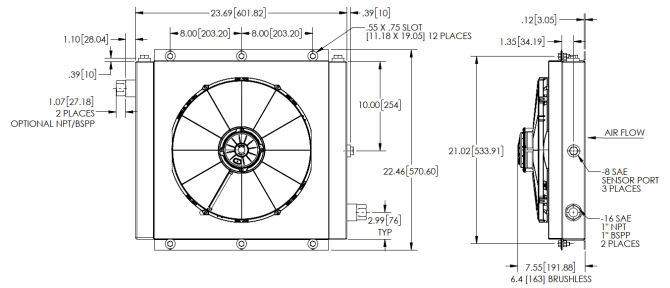


Dimensions - Fan/Core

MAR-12, MAR-18, MAR-32



MAR-48

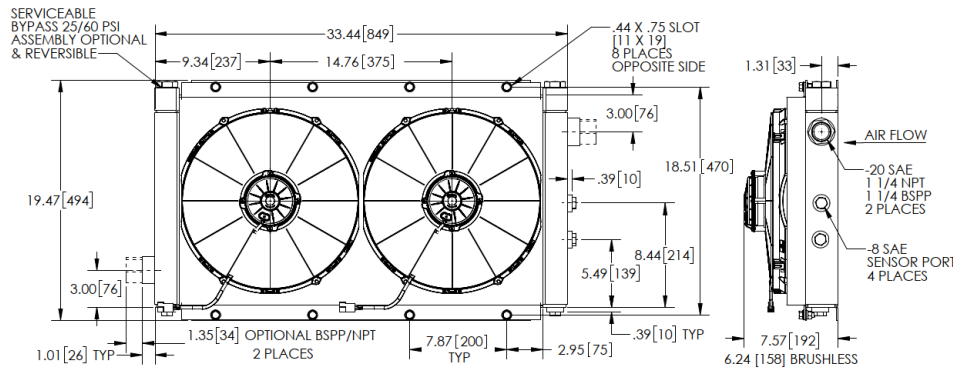


Brushless fan option has different dimensions. Consult factory.

Model	A	B	C		F		G	H	J	K		L
			Standard	Brushless	Without Bypass Valve	With Bypass Valve				SAE	NPT & BSPP	
MAR-12	13.82 (351)	11.97 (304)	6.36 (162)	6.06 (154)	10.98 (279)	11.86 (301)	5.71 (145)	4.06 (103)	1.00 (25)	#12 SAE	3/4"	4.88 (124)
MAR-18	15.84 (402)	14.14 (359)	5.12 (130)	6.2 (157)	12.96 (329)	13.4 (341)	5.87 (149)	4.99 (127)	1.00 (25)	#12 SAE	3/4"	5.91 (150)
MAR-32	19.69 (500)	18.46 (469)	6.15 (156)	6.28 (160)	17.30 (439)	17.9 (454)	12.00 (305)	3.84 (98)	1.10 (28)	#16 SAE	1"	8.07 (205)

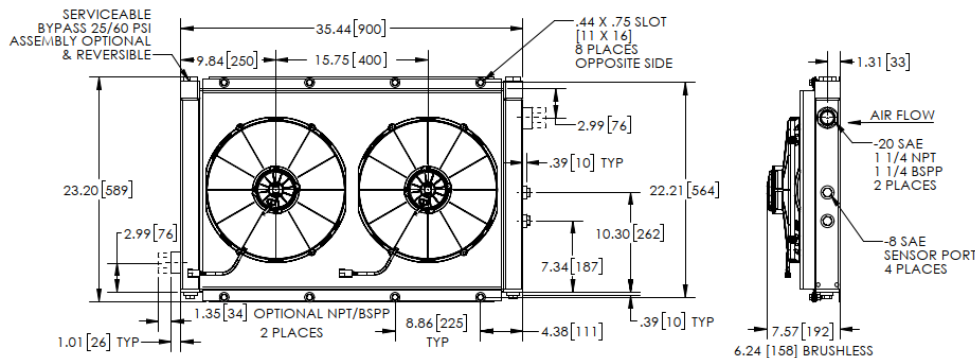
Note: We reserve the right to make reasonable design changes without notice. All dimensions are in inches (millimeters) unless noted otherwise.

MA-232



Brushless fan option has different dimensions. Consult factory.

MA-248



Brushless fan option has different dimensions. Consult factory.