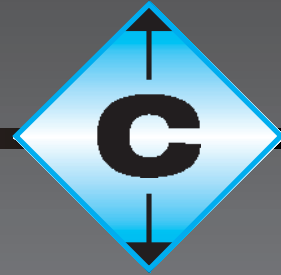




# Oil Coolers

- ▶ World Class Advanced Technology Design
- ▶ Rugged Bar and Plate Construction Protects Against Fin Damage
- ▶ Competitive Pricing, Deliveries From Stock
- ▶ Leak Free SAE O-Ring Oil Connections, Mounting Included.

 **AKG THERMAL SYSTEMS, INC.**



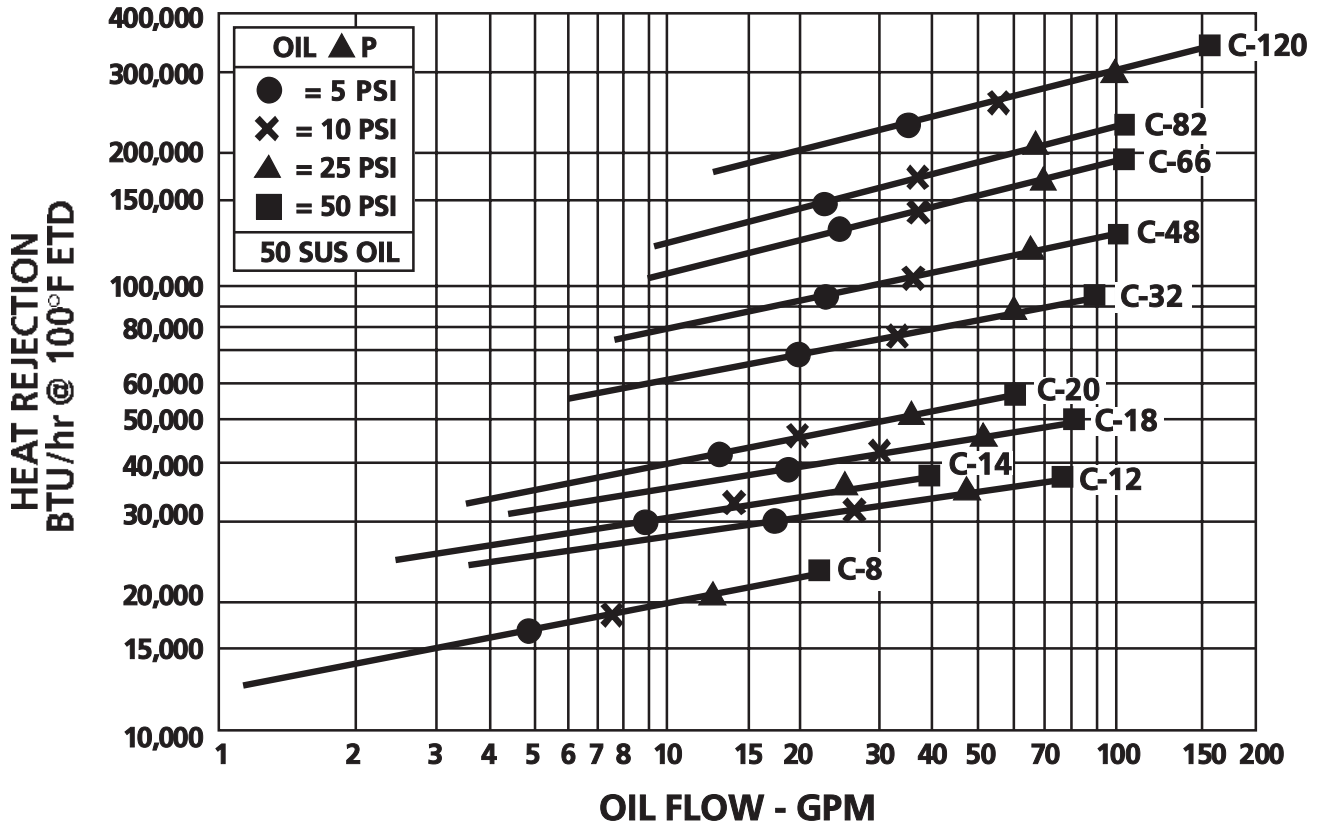
**SERIES**



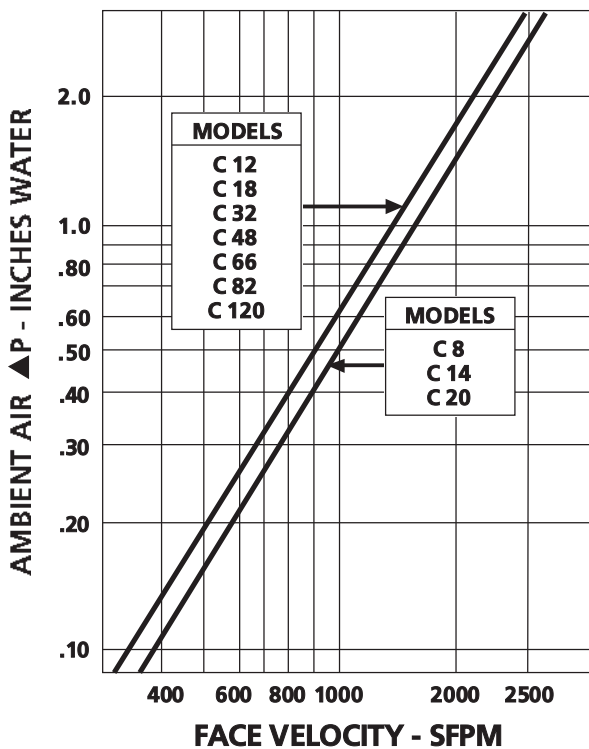
BULLETIN CB-2

# Performance

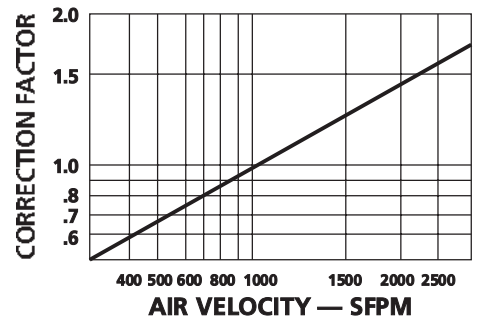
## OIL COOLER PERFORMANCE



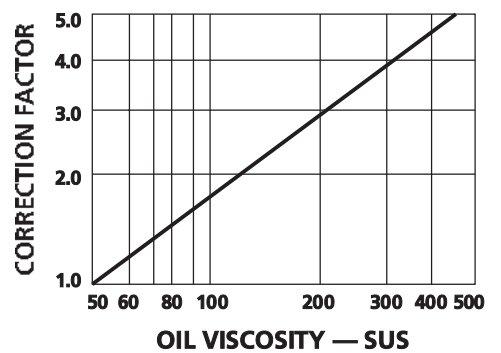
## AIR STATIC PRESSURE DROP



## AIR VELOCITY CORRECTION



## OIL PRESSURE DROP CORRECTION





# Selection Procedures

The performance curves above are based on the following:

- 1000 Standard Feet Per Minute (SFPM) Air Velocity.
- 100°F Entering Temperature Difference (ETD)

ETD = Entering OIL Temperature — Entering AIR Temperature  
• 50 SUS Oil

If your application conditions are different, use the following selection procedure:

**STEP 1. Determine the Heat Load**  
Horsepower Heat x 2545 = BTU/hr

**STEP 2. Determine the Actual ETD Desired**  
Entering Oil Temperature — Entering Air Temperature = ETD

**STEP 3. Find the Air Velocity Correction Factor**

$$\frac{\text{SCFM Air Flow Across Cooler}}{\text{FT}^2 \text{ Cooler Face Area}} = \text{SFPM AIR VELOCITY}$$

Once you have calculated the SFPM Velocity, enter the air velocity correction curve to determine the correction factor.

**STEP 4. Calculate the Adjusted BTU/hr for Selection**

$$\text{BTU/hr Heat Load} \times \left( \frac{100}{\text{Desired Air ETD} \times \text{Velocity Correction Factor}} \right) = \text{BTU/hr For Use With Selection Chart}$$

**STEP 5. Select The Model From The Curves**  
Read up from the GPM to the required heat rejection. Select any model on, or above this point.

# Features

▶ **ADVANCED TECHNOLOGY**  
Design Provides High Heat Transfer Capacity in Very Compact Sizes

▶ **RUGGED**  
Bar and Plate Construction

▶ **LOW FOULING**  
Non-Louvered Fin System

▶ **WIDE SELECTION**  
Of Standard Models Shipped from Stock

# Specifications

**MAXIMUM WORKING PRESSURE** .....250 PSI

**MAXIMUM WORKING TEMPERATURE**.....250 °F

**MATERIAL OF CONSTRUCTION**.....Aluminum

# Ordering Information

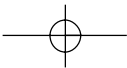
**C SERIES**

—

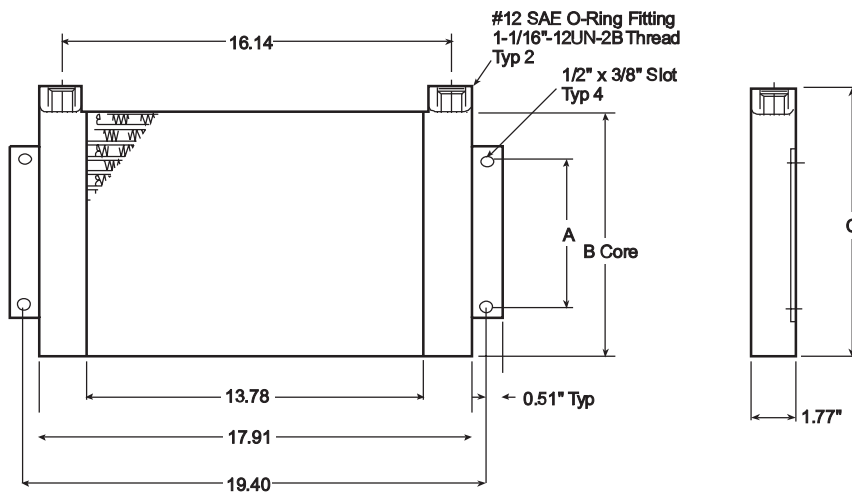
**MODEL SIZE  
SELECTED**

—

**CUSTOM FEATURE  
CODE**



# Dimensions

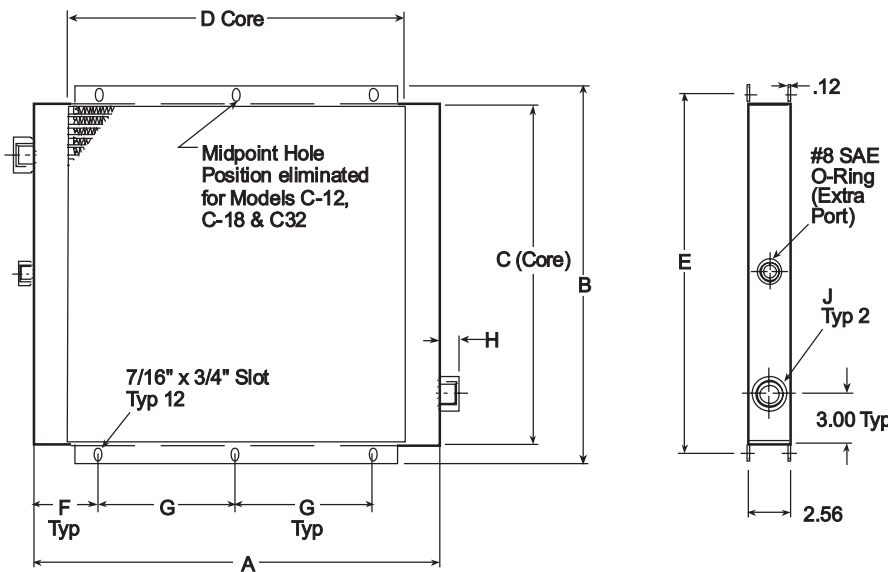


Note: All Dimensions are in Inches

Oil Ports may be reversed

We reserve the right to change dimensions without notice

Model Number	A	B	C	Weights in pounds	
				Net	Approx. Shipping
C-8	3.00	5.67	6.65	6.00	10.00
C-14	6.00	10.00	10.98	10.00	14.00
C-20	10.00	14.33	15.31	14.00	18.00



#12 SAE = 11/16"-12 UN-2B  
 #20 SAE = 15/8"-12 UN-2B  
 #16 SAE = 1 5/16"-12 UN-2B  
 #24 SAE = 1 7/8"-12 UN-2B

Note: All Dimensions are in Inches

Oil Ports may be reversed

We reserve the right to change dimensions without notice

MODEL NUMBER	A	B	C	D	E	F	G	H	J	Weights in pounds	
										Net	Approx. Shipping
C-12	13.98	11.73	9.96	9.84	10.87	4.52	4.96	1.00	#12 SAE O-Ring	11.00	15.00
C-18	15.94	13.58	11.81	11.81	12.80	5.04	5.87			14.00	18.00
C-32	19.88	18.43	16.14	15.75	17.32	3.93	12.00	1.58	#20 SAE O-Ring	24.00	28.00
C-48	23.62	22.13	19.84	19.69	21.02	3.82	8.00			36.00	41.00
C-66	27.56	25.83	23.54	23.62	24.72	3.78	10.00	1.58	#24 SAE O-Ring	44.00	50.00
C-82	31.50	27.68	25.39	27.56	26.57	5.75				55.00	65.00
C-120		39.49	37.20		38.39					78.00	88.00

Note: #8 SAE Extra Port, Models: C-12, C-32 & C-48 only.

# Storage

Product should be stored in a dry area that has a constant temperature.

Temperature changes in the storage area cause condensation to form inside the heat exchanger. This condensation then causes corrosion which causes product failure. This failure is not covered by the guarantee. If this criteria cannot be met, the cooler should be stored in a sealed plastic bag with desiccant added to absorb the moisture.

## **STORAGE TERM:**

**6 Months:** No specific internal corrosion protection procedures are required. All openings should be sealed with plastic plugs.

**7-24 Months:** Coolers should be flushed with oil and all openings re-sealed with plastic plugs.

**25+ Months:** Coolers should be completely filled with oil and sealed. These coolers should be flushed, inspected and re-sealed every 24 months.

# Installation

**MOUNTING:** The cooler should be mounted in such a fashion that there is no restriction to the cooling air supply. Recirculation of warmed up air must be avoided. If mounted in a closed area, sufficient ventilation must be provided. Corrosive atmospheres can cause premature failure. If mounted in a location where ambient temperature may be quite cold, allowance has to be made for high oil viscosity, and potential freeze-up. A temperature controlled by-pass valve or an additional oil heating system may be installed. Care should be taken to select a location that has reasonably clean cooling air. Dirty air fouls the unit and causes overheating. The cooler should be securely mounted to avoid injury.

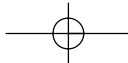
**PIPING:** All piping must be properly supported to prevent strain to the cooler. Pipe sizes should be based on the oil flow and pressure drop requirements, not the oil coolers connection size. Where excessive vibration may be a concern, flexible connectors should be used to eliminate stress.

# Maintenance

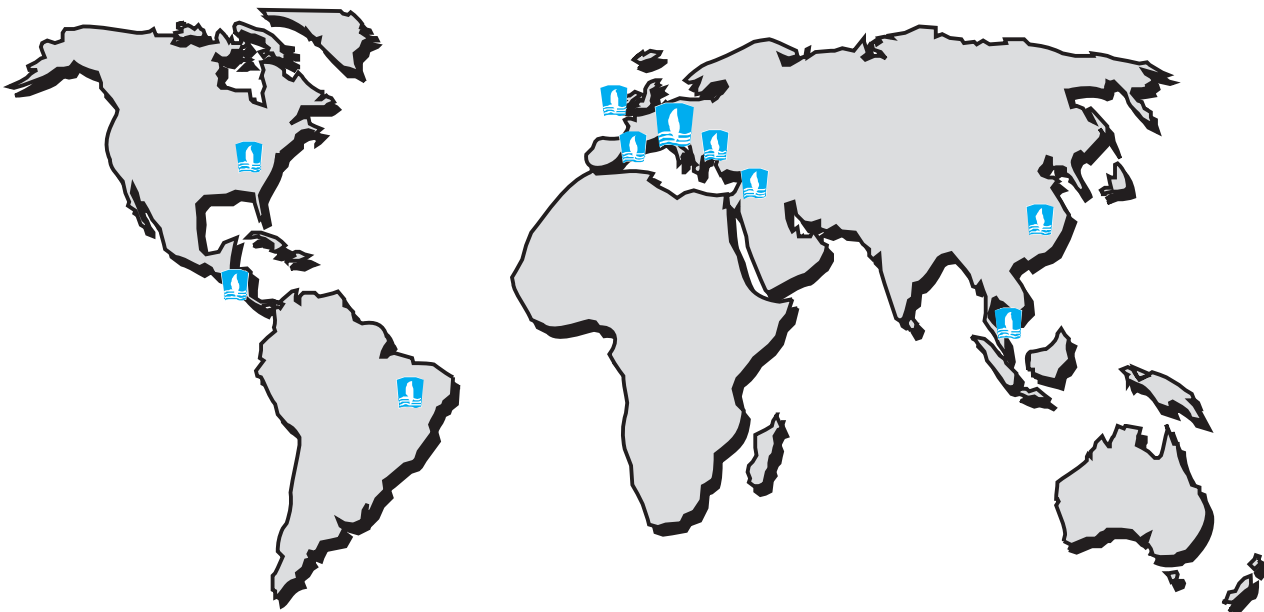
Inspect the product regularly for corrosion, and dirty or clogged heat transfer surfaces.

**EXTERNAL CLEANING:** this can be done by either washing the cooler with a mild cleaner (compatible with aluminum), or with compressed air. A power spray washer works well. Care should be taken not to damage the fins. Do not use caustic cleaners.

**INTERNAL CLEANING:** The cooler should be disconnected, and a cleaner suitable for removing the type of deposit, yet safe on aluminum should be recirculated through the cooler until clean. Make sure that they are flushed thoroughly after cleaning. It may help to blow the unit out with compressed air.



# **AKG** Worldwide



**AKG** has been manufacturing high quality coolers and cooling systems since 1919. We have grown to include 10 facilities with over 1400 employees to serve you.

## Your Business Partner



### AKG Worldwide

**AKG** is a complete single source supply for all of your cooling requirements. Choose from both standard and custom engineered products depending on your specific needs.



### Partnership

**AKG** believes in solid long-term business relationships built on partnerships with its customers.



### Customer

**AKG** places heavy emphasis on development of leading edge technologies, products and finding creative solutions to our customers individual requirements.

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