# AKG C-12 air-oil cooler core

Manufacturer: AKG

Manufacturer part number / published order designation: C-12

Published model: C-12

## About this compilation

Prepared by Hydmaster from selected manufacturer documentation. Original technical pages follow without cropped drawings, rewritten data or altered units. This cover and index are Hydmaster editorial material, not a manufacturer-issued exact-execution datasheet.

Coverage: selected pages relevant to the identified size and configuration. Other options or neighbouring models retained on an original page apply only where explicitly identified.

## Execution notes and conditions

Standard core model only: no powered fan/motor or optional bypass, NPT adapter or coating execution inferred.

Thermal curves depend on entering temperature difference, air velocity and oil viscosity; no fixed kW rating.

Do not transfer optional ordering codes or neighbouring model dimensions.

## Source-page index

Source page numbers below are physical pages of each complete original PDF. The original printed page labels and technical content remain unchanged. Compiled page numbers count this cover/index.

## Source A: Akg C Series Air Oil Cooler Cores

| Original pages | Compiled pages | Relevant content |
|---|---|---|
| 2-3 | 2-3 | Family operating limits, media, core construction and model-labelled thermal performance curves. Maximum pressure stated as 17 bar overview and 250 psi specification.; Exact C-12 dimensional row and associated standard core drawing/port notation; performance selection conditions, air velocity correction, air pressure drop, dimensions in inches and optional ordering codes. |

## OIL-TO-AIR COOLING SYSTEMS WITH C-MOTOR

### Product Information

**AKG Classic Series** is a standard line of products from the market leader in high performance aluminum cooling systems. AKG is best known for its world-wide presence, German engineering and extremely reliable product quality on the one hand and very competitive prices on the other hand.

The Classic series consists of different models for mobile and stationary applications and are available through our global dealer network. This line of products embraces complete cooling systems that comply with both European and American standards, is suited for normal or rugged enviromental operating conditions, and is powered by AC-, DC or hydraulic-motor-driven fans and is also available with noise-optimized models.

All of AKG's solutions have been developed with state-of-the-art technology, produced in compliance with the highest quality standards and are comprehensively tested in the company's own research and test facility.

### Features of the C series

- High-Performance cooler
- The heat is transfered from the medium to be cooled to the ambient air
- Cooler can be universally used in hydraulic oil, transmission oil, engine oil, lubricating oil and coolant circuits
- For the cooling of mineral oil, synthetic oil, biological oil as well as of HFA, HFB, HFC and HFD liquids and water with at least 50 per cent of antifreeze and anti corrosive additives (other media available)
- Can be exposed to operating pressures of up to 17 bar

### Benefits

- Largest and most comprehensive series of remote mount coolers
- Highly flexible complete, ready-to-use cooling packages
- Compact and robust design, field-tested during many years of use in rugged real life conditions
- Best heat transfer results per given coolers size due to comprehensive research and development
- Highest quality due to professional engineering and in-house manufacturing
- Available from stock or at short notice
- As a standard, equipped with AKG's patented double-life hollow sections designed to increase cooler service life
- As a standard, equipped with anti-clogging cooling air fins

### C SERIES FEATURES/BENEFITS

- All C series coolers are available with internal pressure BYPASS option.
- C series coolers provide the best HEAT TRANSFER per given cooler size in the industry.
- C coolers have proprietary R & D designed, engineered and tested internal and external fins unique to AKG THERMAL SYSTEMS coolers.
- C series coolers offer the largest, most comprehensive REMOTE MOUNT size ranges with competitive pricing and deliveries from stock.

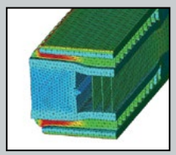
### PATENTED FLEXIBLE AKG HOLLOW PROFILE



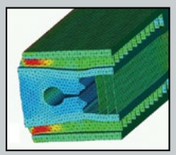
Classic Series uses patented AKG hollow profiles to reduce local peak strains. This way the strength of heat exchangers is significantly increased and their service life time is considerably prolonged.

### AKG HOLLOW PROFILE FEATURES

- Reduced Strain: Strength calculations show that when using AKG hollow profiles maximum strain is reduced by a factor of 2
- Prolonged Service Life Time: Extensive rig tests have shown that service life time increases by a factor ranging from 3 to 5



with standard profile

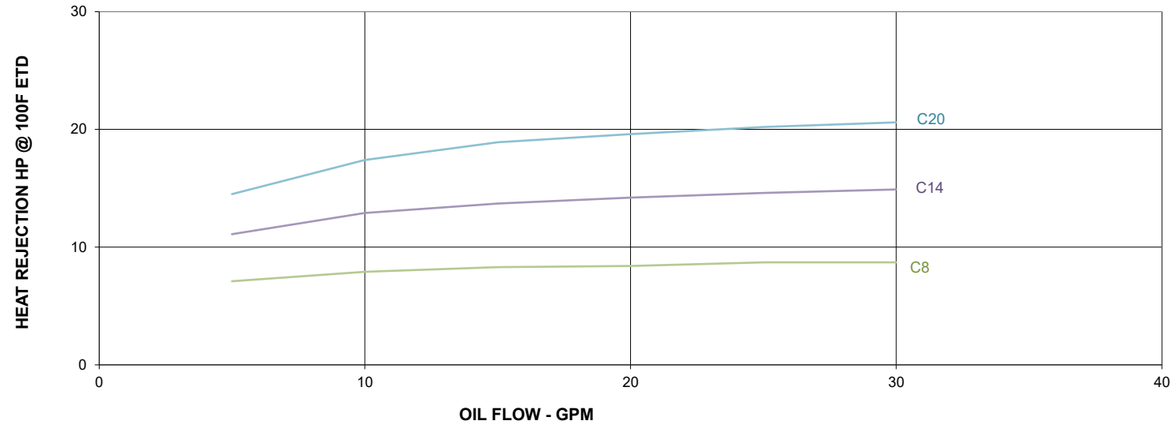


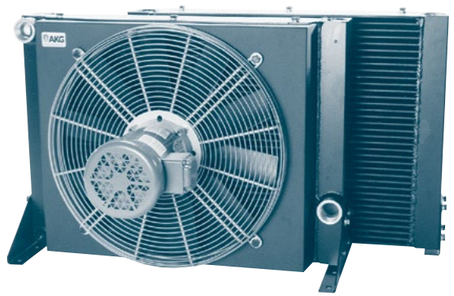
with hollow profile

CooL-Line Selection Software, which is available free of charge will guide you through the cooler model selection process in simple steps and will recommend the optimal AKG cooling package for your application: www.akgts.com

GLOBAL STANDARD COOLING SYSTEMS (C SERIES)

## PERFORMANCE C8 TO C20

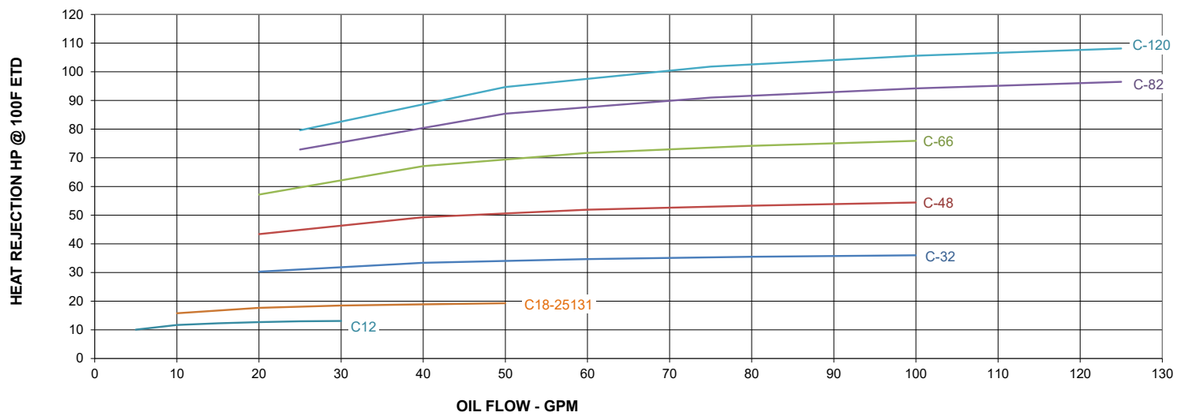


| SPECIFICATIONS | |
|---|---|
| Maximum working pressure | 250 psi |
| Maximum working temperature | 250 °F |
| Materials of construction | Aluminium |

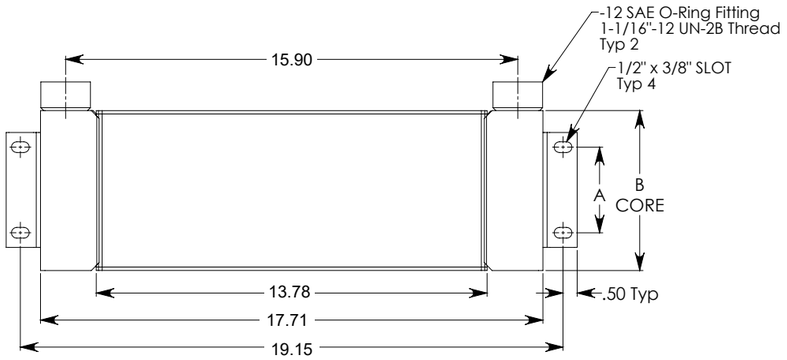
| FEATURES | |
|---|---|
| Advanced Technology | Design provides high heat transfer capacity in very compact sizes |
| Rugged | Bar and plate construction |
| Low Fouling | Non-louvered fin selection |
| Wide selection | |
| Internal pressure bypass available | |

## PERFORMANCE C12 TO C120




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## DIMENSIONS

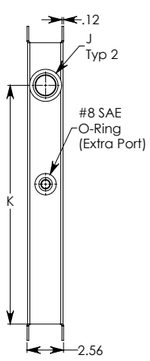


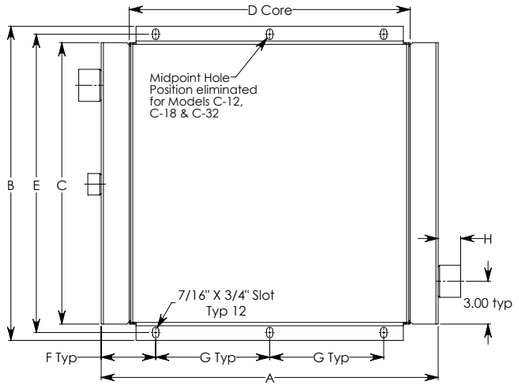

Note: All dimensions are in inches

Oil ports may be re-versed

We reserve the right to change dimensions without notice

| Model Number | A | B | C | Approx. Shipping |
|---|---|---|---|---|
| C-8 | 3.00 | 5.60 | 6.57 | 10.00 |
| C-14 | 6.00 | 9.88 | 10.88 | 14.00 |
| C-20 | 10.00 | 14.17 | 15.17 | 18.00 |




#12 SAE = 11/16"-12 UN-2B
#16 SAE = 1 5/16 - 12 UN-2B
#20 SAE = 15/8"-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 | Approx. Shipping |
|---|---|---|---|---|---|---|---|---|---|---|
| C-12 | 13.78 | 11.61 | 9.88 | 9.84 | 10.74 | 4.41 | 4.96 | 1.00 | #12 SAE O-RING | 15.00 |
| C-18 | 15.75 | 13.47 | 11.73 | 11.81 | 12.68 | 4.96 | 5.87 | 1.00 | #16 SAE O-RING | 18.00 |
| C-32 | 19.68 | 18.31 | 16.02 | 15.75 | 17.20 | 3.86 | 12.00 | 1.58 | #20 SAE O-RING | 28.00 |
| C-48 | 23.62 | 22.00 | 19.72 | 19.69 | 20.91 | 3.82 | 8.00 | 1.58 | #20 SAE O-RING | 41.00 |
| C-66 | 27.56 | 25.74 | 23.46 | 23.62 | 24.72 | 3.78 | 10.00 | 1.58 | #20 SAE O-RING | 50.00 |
| C-82 | 31.50 | 27.60 | 25.39 | 27.56 | 26.50 | 5.75 | 10.00 | 1.58 | #24 SAE O-RING | 65.00 |
| C-120 | 31.50 | 38.66 | 36.38 | 27.56 | 37.55 | 5.75 | 10.00 | 1.58 | #24 SAE O-RING | 88.00 |

Note: #8 SAE extra part, models: C-12, C18-25131, C-32 & C-48 only.

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GLOBAL STANDARD COOLING SYSTEMS (C SERIES)

## SELECTION PROCEDURES

The performance curves above are based on the following :

- 100 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 difference, use the following selection procedure:

**STEP 1: Determine the Heat Load**

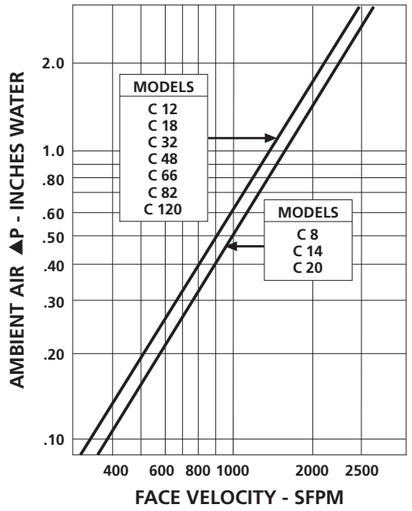
**STEP 2: Determine the Actual ETD Desired**

Entering OIL Temperature - Entering AIR Temerature = ETD

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

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

**AIR STATIC PRESSURE DROP**




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

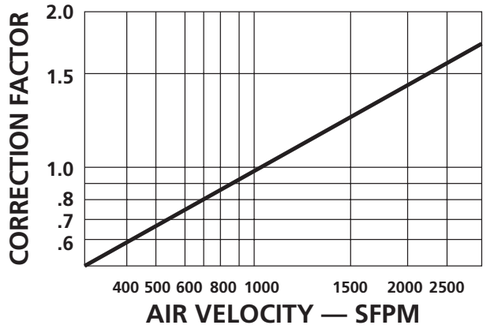
**STEP 4: Calculate the Adjusted HP for Selection**

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

**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.

**AIR VELOCITY CORRECTION**




## ORDERING INFORMATION

C — [ ] — [ ] — [ ]

**C SERIES**

**MODEL SIZE**
selected

**BYPASS DATA**
BPNV = Bypass No Valve
BP25 = 25 PSI INT Bypass
BP65 = 65 PSI INT Bypass

**CUSTOM FEATURE CODE**
AD=SAE to NPT adaptors
H= Heresite coating core

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