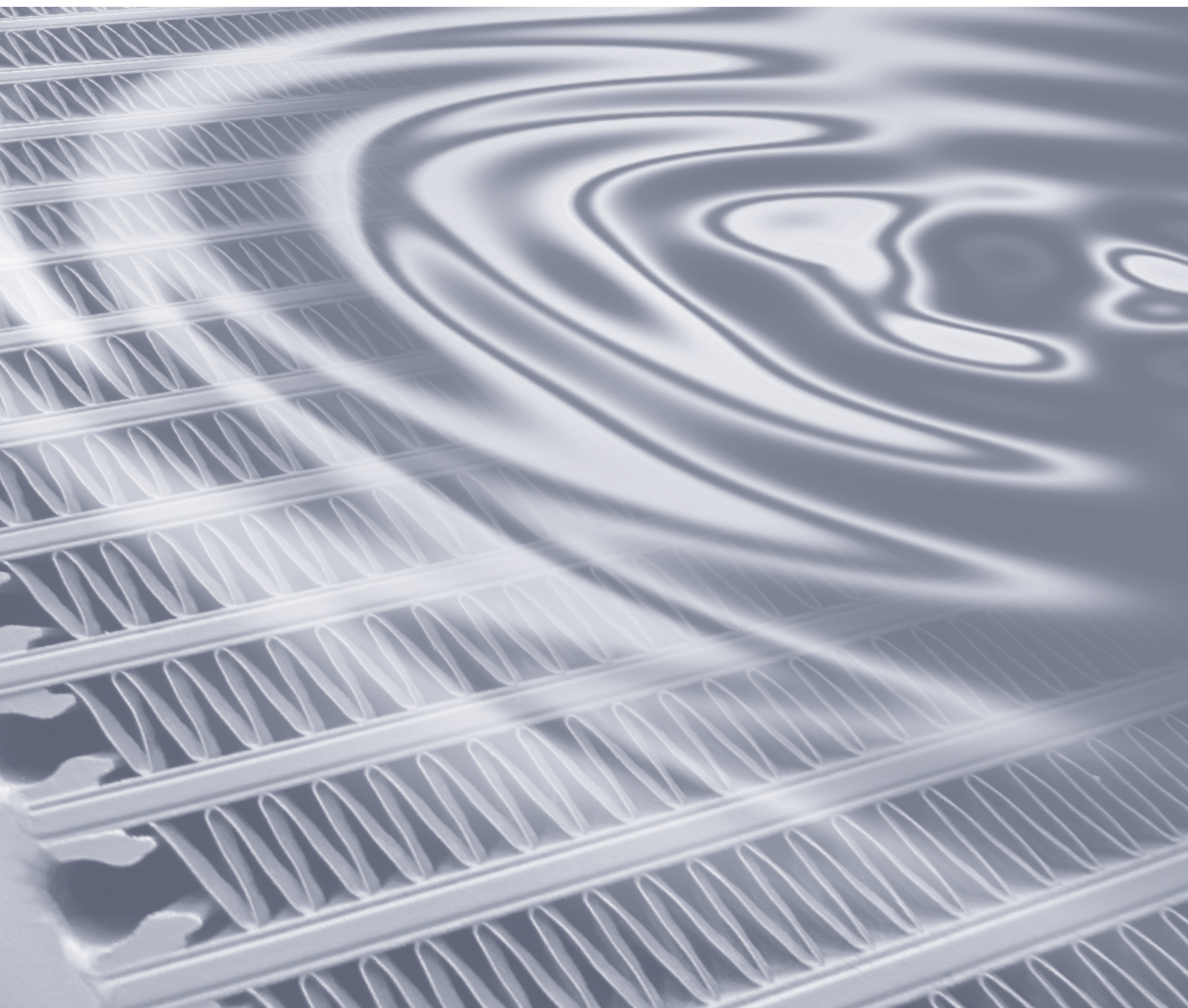




GLOBAL STANDARD COOLER

BYPASS SERIES

HY



OIL-TO-AIR COOLING SYSTEMS WITH INTEGRATED BYPASS AND HYDRAULIC MOTOR

PRODUCT INFORMATION

AKG-Line is a standard line of products from the market leader in high performance aluminium 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 **AKG-Line Bypass** Series consists of different models for mobile and stationary applications. It is available through our global specialist dealer network. This line of products embraces all-purpose complete cooling systems that comply with European or American Standards, is suited for normal or rugged environmental operating conditions and powered by AC- (AY), DC- (DY) or hydraulic-motor-driven (HY) fans.

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 HY SERIES

- High-Performance cooling assembly
- Hydraulic motor powered fan
- Avoiding overstraining at cold start conditions and high oil flows
- The heat is transferred from the hot medium to the cooling ambient air
- Coolers can be universally used with hydraulic oil, transmission oil, engine oil and lubricating oil
- For the cooling of mineral oil, synthetic oil, biological oil as well as HFA, HFB, HFC and HFD liquids (other media on request)
- Can be exposed to operating pressures of up to 17 bar and operating temperatures of up to 120° C
- Standard design with 2 bar opening pressure bypass valve (other pressures on request)

BENEFITS

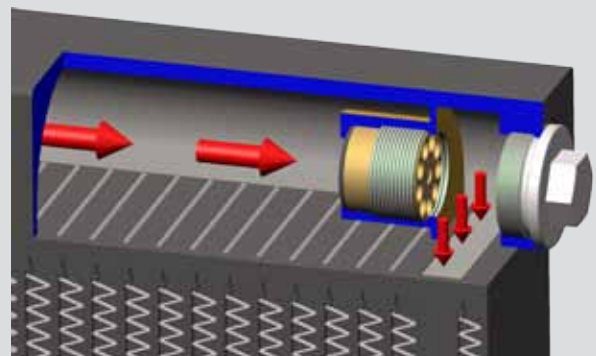
- Largest and most comprehensive series of mobile hydraulic coolers
- Highly flexible, complete ready-to-use cooling packages
- Compact design because of integration of bypass
- Faster approach of operating temperature
- Compact and robust design, field-tested during many years of use in rugged real life conditions
- Best heat transfer results per given cooler 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 double-life** hollow sections designed to increase cooler life span
- Standard equipped with fouling resistant cooling air fins

OPERATING MODE OF INTEGRATED BYPASS

Especially with high oil flows or at cold start conditions (low oil temperatures and high oil viscosities) high pressures can occur in the cooler core.

In this case part of the volume flow is bypassing the cooler core through the integrated valve.

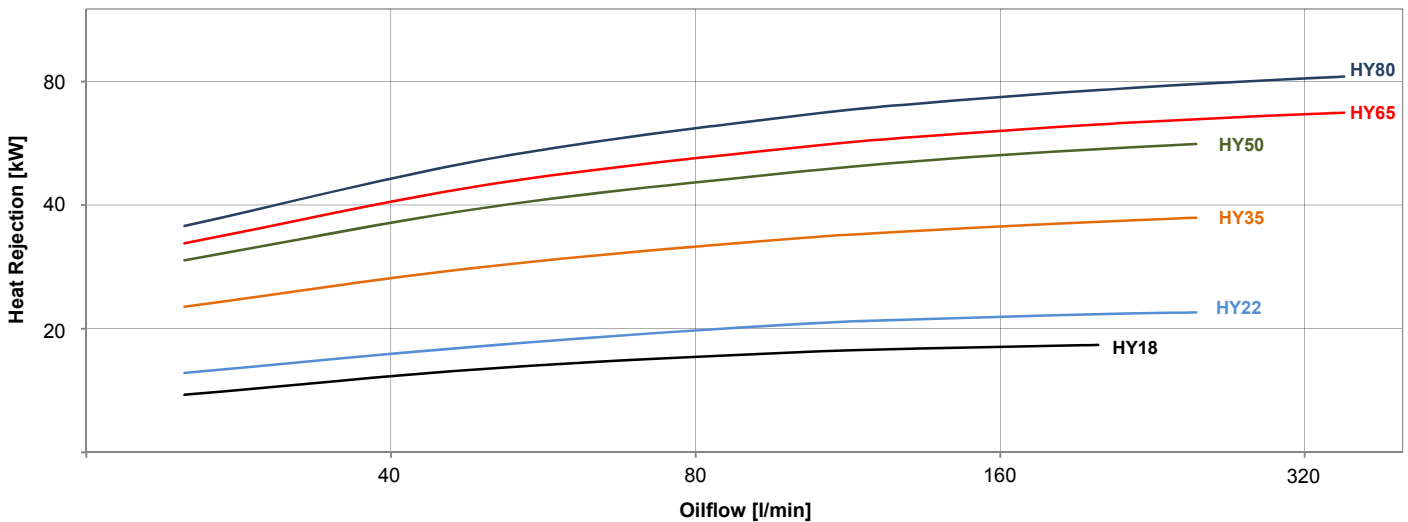
Like this a sufficient volume flow can be assured for the cooler and lubrication oil circuit - also with high pressure drops. Overstraining of the cooler core will be avoided effectively.



The installation of an external bypass is not necessary reducing costs and mounting space.

EASY SIZING DIAGRAM

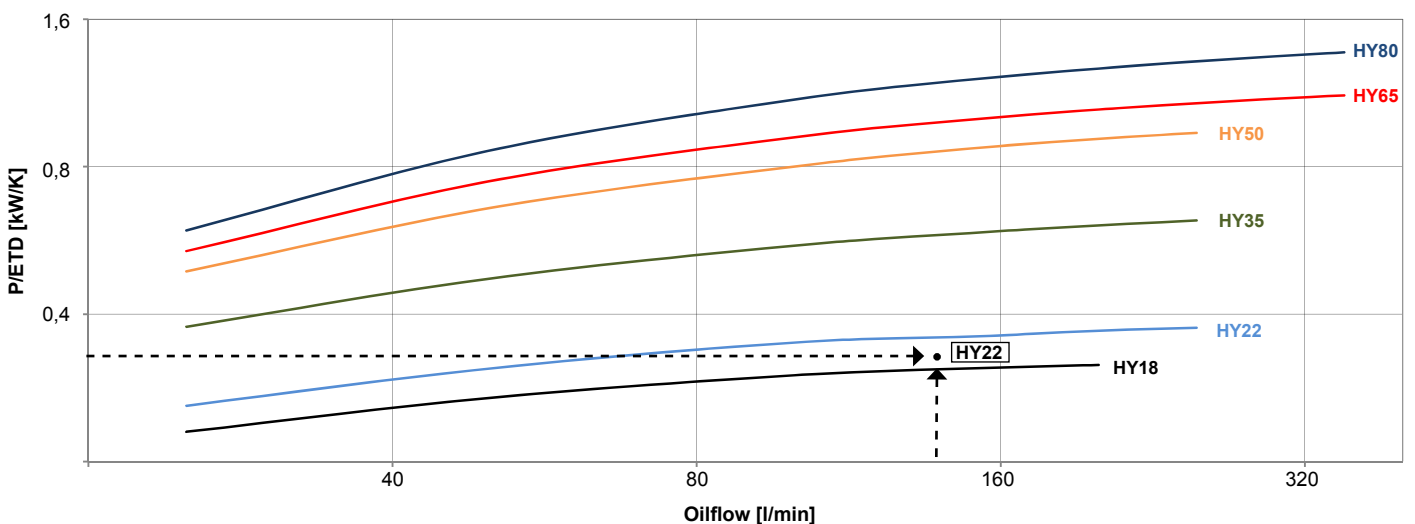
FOR ENTRANCE-TEMPERATURE-DIFFERENCE 60 K



Selection by Specific Heat Rejection

| 1. Input Data: | | Example |
|--|-------|-----------------------------------|
| Required Heat Rejection | P = | 20 kW |
| Oilflow through Cooler | V = | 150 l/min |
| Oil Inlet Temperature | T_Oil | 90 °C |
| Cooling Airflow Temperature | T_CAF | 30 °C |
| 2. Determination of Specific Heat Rejection: | | |
| Entering-Temperature-Difference | ETD = | 90 °C - 30 °C = 60 K |
| Required Specific Heat Rejection | P/ETD | 20 kW/60 K = 0,3 kW/K |
| 3. Select According to Diagram and Result: | | |
| | | Next higher curve HY 22 |

SPECIFIC HEAT REJECTION



TECHNICAL DATA

| Model Size | Motor Size (cm ³) | Max. Speed (rpm) | Nominal Speed (rpm) | Max. Motor Pressure (bar) | Approx. Noise level (dB(A), 1m) | Approx. Net Weight of Assembly (kg) | Valve opening pressure (bypass) (bar) | Volume (l) | Working Pressure (bar) |
|------------|-------------------------------|------------------|---------------------|---------------------------|---------------------------------|-------------------------------------|---------------------------------------|------------|------------------------|
| HY18 | 11 | 3500 | 3000 | 250 | 80 | 17 | 2,0 | 2,3 | 17 |
| HY22 | 11 | 3500 | 3000 | 250 | 83 | 21 | 2,0 | 3,5 | 17 |
| HY35 | 11 | 3500 | 1500 | 250 | 81 | 26 | 2,0 | 4,5 | 17 |
| HY50 | 11 | 3500 | 1500 | 250 | 80 | 35 | 2,0 | 5 | 17 |
| HY65 | 11 | 3000 | 1500 | 250 | 81 | 53 | 2,0 | 7,5 | 17 |
| HY80 | 11 | 3000 | 1500 | 250 | 83 | 61 | 2,0 | 9 | 17 |

All data based on nominal fan speed conditions

DIMENSIONS

| Model Size | A | B | C (approx.) | D | E | F | G | H | J | K | L | M |
|------------|-----|-----|-------------|-----|-----|----|--------|-----|-----|-----|-----|-----|
| HY18 | 391 | 450 | 300 | 324 | 107 | 40 | G1 | 392 | 180 | 220 | M8 | ø14 |
| HY22 | 402 | 440 | 330 | 328 | 123 | 49 | G1 | 382 | 240 | 280 | M8 | ø14 |
| HY35 | 496 | 600 | 375 | 427 | 105 | 36 | G1 1/4 | 571 | 180 | 220 | M8 | ø14 |
| HY50 | 601 | 700 | 365 | 532 | 104 | 36 | G1 1/4 | 642 | 180 | 220 | M8 | ø14 |
| HY65 | 613 | 690 | 395 | 538 | 123 | 48 | G1 1/4 | 632 | 240 | 280 | M10 | ø14 |
| HY80 | 666 | 790 | 460 | 583 | 123 | 43 | G1 1/4 | 732 | 240 | 280 | M10 | ø14 |

All dimensions in mm

ORDERING INFORMATION

Serial Code: Model Size:

| | |
|-----------|--|
| HY | |
|-----------|--|

Optional Custom Features:

| |
|--|
| |
|--|

with:

with Blower Fan [B]
 with Resistplast Coating [+R]
 PTFE Based Coating [+T]
 with large Support Feet [+LF]

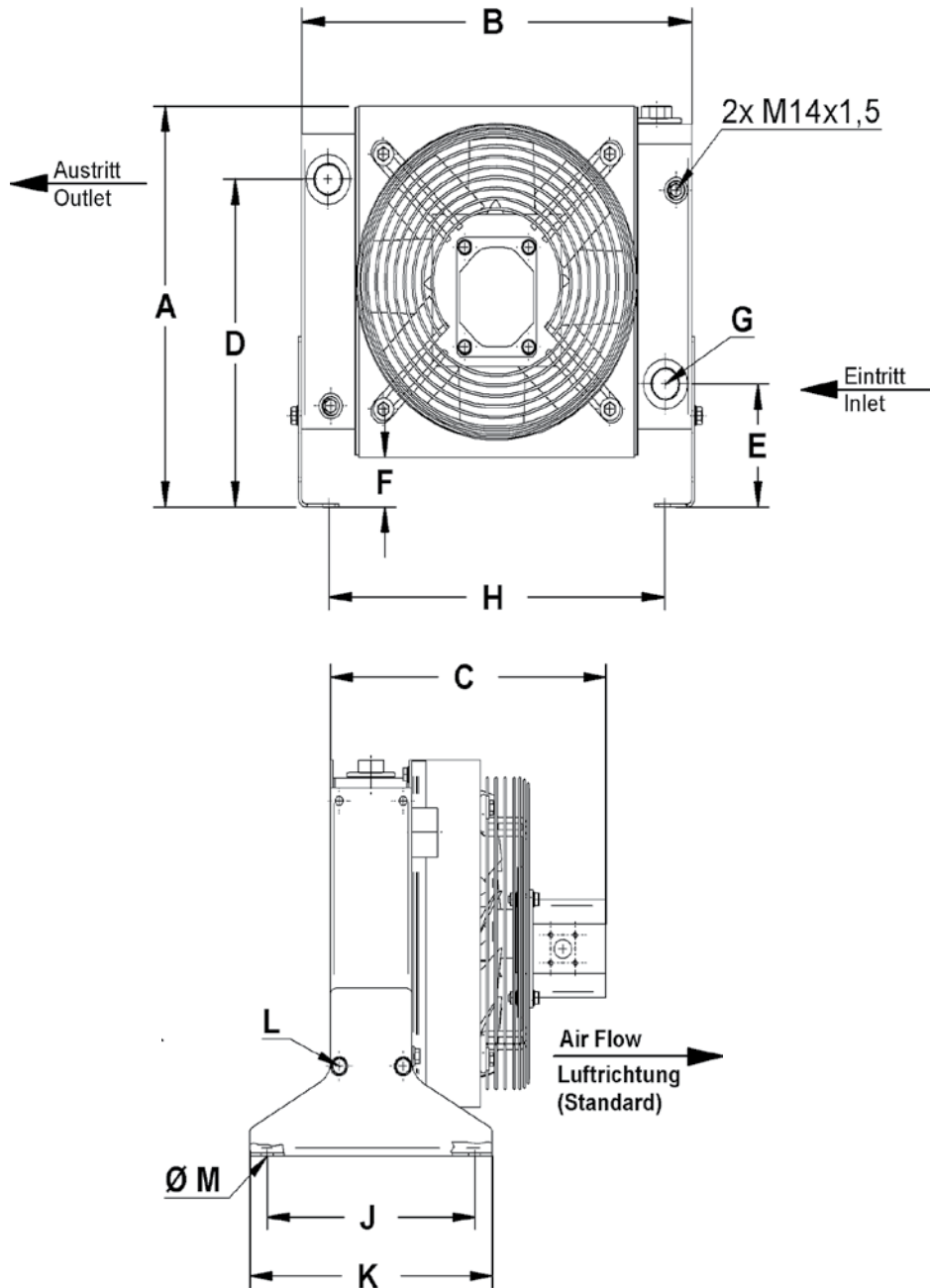
| |
|--|
| |
|--|

without:

without Motor [-M]
 without Motor, without Fan [-FM]
 Cooler Only [C]
 Cooler without Paint [-P]
 without Support Feet [-F]

Order Code Example: Heat Exchanger, 22 KW, sucking Hydraulic fan, Bypass (2 bar) -> **HY22**
 Heat Exchanger, 80 KW, blowing Hydraulic fan, Bypass (2 bar) -> **HY80B**

COOLER DIMENSIONS HY18 TO HY80



STANDARD SCOPE OF SUPPLY OF OIL-TO-AIR COOLING SYSTEM

| |
|---|
| Cooler made of painted aluminium with Bypass |
| Plastic fan |
| Fan-shroud, fingerguard and support feet all made of steel (chromated or powder coated) |
| Hydraulic motor |



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AKG – A STRONG GLOBALLY INTEGRATED GROUP OF COMPANIES

AKG is a globally leading supplier of high-performance coolers and heat exchangers as well as customised system solutions that comply with the highest quality standards.

On a world-wide scale 2,600 employees work at 13 manufacturing facilities located in Germany, France, United Kingdom, Latvia, the U.S.A., China and India. Together with a number of additional oversea sales companies they are on duty around the clock.

The longstanding and competent partnership with global OEM customers from 22 lines of business such as construction machinery, compressed-air systems, agricultural and forestry machines, vehicle construction and many other fields of application give fresh and innovative impetus to the mobile and industrial standard type series.

AKG operates one of the world's largest research, development, measurement and validation centres for cooling solutions and customised applications.

For 90 years AKG's heat exchangers have stood for innovative solutions as well as highest engineering and manufacturing competence.

Your AKG-Partner



Aluminium Coolers – Made by AKG
DIN EN ISO 9001 : 2000