HYDAC INTERNATIONAL

Cooling Systems
CMS
Cooling Mobile Systems

E 5.812.0/03.10

COMBInation of:

- ► Air-Air Coolers
- ► Oil-Air Coolers
- ► Water/Glycol-Air Coolers

The CMS series is designed specifically for mobile applications where high performance and efficiency are required and physical size is minimized to allow easy installation.

Moreover, due to the recent exhaust emission regulations, which require the progressive reduction of pollutant emissions from mobile machines and tractors. The size and the number of several engine components is increasing and the available space inside the machine hood is decreasing.

Product features

The CMS series is a development, optimization, combination and integration of the OK-ELH and OK-ELD series and offers more performance combining more circuits, up to seven in a compact design creating a single cooling unit.

The CMS series can cool several circuits on the today standard mobile machines equipped with TIER III-IV engines exhaust emission regulation:

- **Charge Air Circuit (CAC)**
  for the turbocharged diesel engines
- **Water Glycol Circuit (RAD)**
  from different engine types
- **Oil Circuits (OC)**
  transmission, engine, hydraulics and brakes
- **Diesel Circuit**
- **Condenser**
  on demand the system can also be equipped with air conditioning heat exchanger.

The CMS series is composed of a combined (COMBI) set of heat exchangers, mounted in a side-by-side or front-to-back layout. The package is generally incorporated in a single or double air conveyor, combined with a single or double fan.

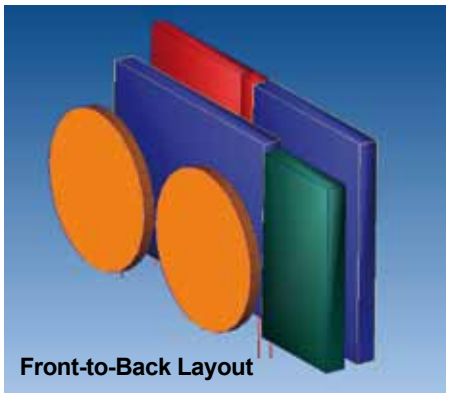
The side-by-side design can achieve all the required cooling power requested from the today available market mobile specifications. Combined with the correct air-fin turbulators for all dusty environment it can be used in agricultural, forestry and off-highway applications.


CMS


OK-ELH


OK-ELD


Side-by-Side Layout


Front-to-Back Layout

Integration

Customized solutions can be done with various function integration such as integration of housing, tank and filters in a single component with Out-to-In or In-to-Out filtration technology.

Devices to control fan rotation – sensitive to the temperature, for hydraulic and DC motor are available such as electronic speed control (**ESC**), thermal bypass (**TB**) and proportional valves (**PV**).

IBP or **IBT** – Integrated Pressure Bypass or Integrated Thermal Bypass – can be integrated in the oil or transmission cooler.

Applications

Typical applications of the CMS series include:

ON-Highway applications:

- Municipal Vehicles and Municipal Machines
- Concrete Mixers and Concrete Pump Trucks
- Mobile Cranes and Truck Cranes
- Military Trucks
- Modular Transporters

OFF-Highway applications:

- All types of Harvester Machines (e.g. potatoes, corn, grapes, etc)
- Pavers, Rollers, Graders, etc - Road Machines
- Dump Trucks
- Seismic Vibrator Trucks
- Forwarders Machines
- Loading Machines
- Mining Machines
- Backhoe Loaders
- Wheel Loader
- Military Tanks
- Snowcats
- Tractors

The CMS series can also be used in electrical and diesel trains.

Applications in aggressive environment are also possible due to special coatings e.g. for gritters or marine applications.

C	=	Cooling, Combined, Compact, Customizable
M	=	Mobile, Multi-circuits
S	=	Systems, System Integration, Silent

Model code

(Also order example)

CMS 3 / CDOW / H22 / S / IBP3 / 999A-09

Type of cooler
CMS = **C**ooling **M**obile **S**ystems

Size / Fan Diameter
1 = Fan (200 - 400mm)
2 = Fan (401 - 600mm)
3 = Fan (601 - 800mm)
4 = Fan (801 -1000mm)
5 = Fan (over 1001mm)
x2 = 2x fan diameter

Type of Heat Exchangers Combination
B = Brake
C = Charge Air
D = Diesel Oil
E = Engine Oil
O = Generic Oil
T = Transmission Oil
W = Water Glycol
K = Air Conditioning Condenser

Type of motor
Hydraulic with displacement
H6.3 = 6.3 cm³/r
H8 = 8 cm³/r
H11 = 11 cm³/r
H14 = 14 cm³/r
H16 = 16 cm³/r
H19 = 19 cm³/r
H22 = 22 cm³/r
H25 = 25 cm³/r
H28 = 28 cm³/r
H32 = 32 cm³/r
H...TB = hydraulic motor with thermal-bypass (for more info see OK- ELH catalogue)
H...PV = hydraulic motor with proportional valve
Other special hydraulic displacement available on request.

Electrical motor fan voltage
12V = 12 Volt DC
24V = 24 Volt DC
Other special AC voltages available on request.

Fan Type / Air Direction
S = Suction type
D = Blowing type

Accessories (for more information see accessories brochure)
AITF = Thermostat (fixed), with relé, with sensor, with soft start
IBP = Heat Exchanger with Integrated Pressure Bypass
IBT = Heat Exchanger with Integrated Thermo-Bypass
ESC = Electronic Speed Control
Other special accessories available on request.

Number of project
999 = Progressive project number
A = Version
09 = Project year

Catalogue: Accumulators E 30.000

Catalogue: Filter Range E 70.000

Cat.: Filters for Indr. Process. E 77.000

Catalogue: Fluid Service E 79.000

Bro.: Compact Hydraulics DEF 5.300

Catalogue: Accessories E 61.000

Catalogue: Electronics E 180.000

Brochure: Cooling Systems DEF 5.700

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