

Hydac keeps mobile machinery cool

The Industrial Emissions Directive for engines in mobile machinery has been structured to reduce emissions progressively, which can lead to a drastic increase in the required heat dissipation and a corresponding adjustment in cooler size. The limited installation space must therefore be utilised efficiently and intelligently.

Hydac has introduced the CMS (Cooling Mobile System) series to cope with all these requirements. The CMS series offers more performance by combining more circuits. It can combine up to seven cooling circuits in a compact design creating a single cooling unit.

The cooler comprises a set of cooling elements in different layouts, either side-by-side or front-to-back. With the addition of a fan cover, a protective grille and a fan (also available with motor), this cooler package is supplied to the customer ready for installation.

Special cooling fins ensure suitability for use in dusty environments, for example in agriculture and forestry or for applications in the mining sector.

The efficiency of a cooler also depends largely on the fan control. Various options are used for DC and hydraulic motors, such as the electronic speed control (ESC), the temperature bypass (TB) or a proportional valve that continuously adjusts the fan speed according to the fluid temperature. This means the fan speed can be tailored directly to the required cooling capacity, and just sufficient power is supplied to the fan as is immediately required.

As an option, these controls can also be supplied with a reversing function to 'purge' the cooler of coarse contamination such as lint, paper or fragments of vegetation.

A variety of equipment can be integrated to produce customised solutions, including a tank, filter and fan housing, integrated bypass valves and controls. Combined in one component, they make a significant contribution to reducing installation space.

These are the typical applications of the CMS series:

- Municipal vehicles and municipal machines.
- Cement mixers and concrete pump trucks.
- Agricultural and forestry machinery (e.g. tractors, harvesters, sprayers).
- Road-construction machinery (e.g. paver finishers, rollers, bulldozers, graders).
- Dump trucks.
- Mobile cranes.
- Wheel loaders.
- Backhoe loaders.
- Wheeled excavators and crawler excavators.
- Snow-grooming vehicles.
- Vibrator survey trucks.

Hydac offers its Understanding Thermal Optimisation course in its Melbourne head office for those who would like to learn more about today's cooling-systems advancements. This is a two-day course that highlights the importance of the thermal optimisation and the many choices in cooling-system design.

The following topics will be covered in the course: an overview of cooling in fluidic systems, thermal degradation of the system fluid, construction of the coolers (air blast, shell/tube, plate, gasket and chillers), design limitations of different cooler types and design of the cooling systems through thermal simulation and computational fluid dynamics.

The course offers hands-on examples and practical demonstrations. For enrolments, contact Hydac or visit: www.hydac.com.au/school.aspx

For more information contact: Hydac Toll Free **1300 449 322**
visit: www.hydac.com.au