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INTERNATIONAL
INDUSTRIAL VEHICLE TECHNOLOGY

PLUS

William Heath Robinson

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5 fantastic solutions for
increasing visibility and
avoiding accidents



Air conditioning

Heating

Venting

Filtration

Pressurisation

www.sndc.net

HVAC


 $\geq 12,1 \sqrt{v_{ar}}$
 h_c


Equipment manufacturer (OEM)

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AVOIDING THE AIR-CONDITIONING SNOWBALL EFFECT

From the outside, an air-conditioning system may look simple, each one built with similar components. But on closer inspection, every single component plays its own role in the refrigerant circuit: even a minor change to one parameter will create a snowball effect, influencing the overall cooling performance and, last but not least, reliability and longevity.

Installing an oversized evaporator that means the compressor cannot deliver the refrigerant flow is rather like a truck with a car engine pulling a heavy load uphill – a condenser not capable of coping with the heat rejection absorbed in the refrigerant circuit (compressor and evaporation) will reduce the efficiency. Even hoses being different between one vehicle and the next will influence the final system performance.

To enhance compressor lifetime, it is important to watch the running conditions, especially in extreme environments. The system AC performance – the answer to the customers' expectation in lowering the cab temperature in a given timescale – can be evaluated with the assistance of HVAC Standards (ISO 14269, ISO 10263). One

thing to ensure is that the cab heat being transferred into the evaporator by airflow can be handled by the refrigerant flow.

SNDC is able to predict the compressor cooling performance through the use of its sophisticated software. In combination with the heat-load and coil determination, it can produce a graph that indicates whether the system will meet or exceed the expectation and warnings about excessive pressures or temperature.

The ultimate aim is a smooth-running compressor for trouble-free operation and reduced costs. With great confidence, it can then go to the final check-up in the climate chamber where the software outcome is compared with real figures.

Before signing off, more tests are then performed, covering charge determination, oil level, air distribution, cab pressurisation, ATC behaviour, condenser water issues and noise levels.

► ENQUIRY No. 506

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