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Auto Expo 2012

DENSO's Car Air Conditioning Systems

Developing more efficient, smaller and cost competitive products

Car air conditioning systems are required to be not only more comfortable, but also more efficient, smaller and cost competitive. As a leader in this field, DENSO has continued to develop and produce advanced systems to meet these needs.

One example of DENSO's highly-efficient technologies is the world's first passenger vehicle air conditioning system, developed in 2009, that achieves higher efficiency using ejector technology. The ejector, which is a small refrigerant injector that recovers expansion energy previously lost in the expansion valve and converts it into pressure energy, contributes to an overall reduction in power consumption. The new air conditioning system reduces the compressor's power consumption by up to about 25 percent, compared to conventional car air conditioning systems, which helps improve fuel economy while running. The ejector is installed in the system's evaporator, which is equivalent size to the conventional evaporator.

Reducing system size can contribute to more design freedom under the vehicle hood and more cabin space. DENSO's compact air conditioning unit developed in 2008 achieves approximately 20 percent reduction in volume than the conventional product through improvements in designs and new resin molding technologies.

As part of its ongoing effort to develop cost-competitive products, DENSO developed four heat exchangers for the Indian market in 2010. DENSO's new radiator, heater core, condenser and evaporator use common, locally sourced materials and are manufactured on a single production line, which helps to significantly reduce cost.

DENSO promotes local development and designs that meet market needs to improve product competitiveness and customer services. Particularly in India, the company has established a joint venture company with India's leading car air conditioning system manufacturer Subros Limited in 2010, to design car air conditioning systems. The joint venture is DENSO's first product design company in India.