

# Maximize A/C Uptime with ProTecht

f the A/C in your car conks out, you're merely uncomfortable for a while. But on a haul truck or harvester, the operator may have to shut down the vehicle.

We developed the ProTecht system to reduce the risk of unplanned downtime and lost productivity because of an A/C system failure.

ProTecht is an active refrigerant management system. It's a compact electronic control unit that monitors high-side system pressures, compressor clutch cycles, voltage, refrigerant charge, condenser fan operation, and other performance indicators. ProTecht intervenes and prevents the clutch from engaging if it detects conditions that can lead to a compressor failure.

Blink codes on the ECU provide a simple visual indication of faults: a fast blink for low voltage, one blink for low charge, two blinks for lost charge, and so on. You can make an initial diagnosis without needing to hook up gauges.

ProTecht also transmits A/C error and diagnostic codes to the vehicle's SAE J1708 data bus. For advanced diagnostics, a technician with ProTecht can use a laptop running Red Dot's Windows-based A/C Technician software to see active faults and the A/C system's complete fault history.

Compressors are the No. 1 warranty-cost item in an air-conditioning system. Investing in a device that can prevent a compressor failure will more than pay for itself in reduced maintenance costs and downtime of heavy trucks, buses, and off-highway equipment.

ProTecht includes an ECU, electronic high-side pressure transducer, refrigerant charge sensor, and a wire harness. To learn more, talk to your Red Dot representative about ProTecht's benefits and applications.

#### **ProTecht Features**

- Exhibits visual blink codes providing system protection and troubleshooting diagnostics
- Limits excessive system pressures
- Limits excessive compressor clutch cycling
- Engages the condenser fan based on A/C and vehicle operating conditions
- Prevents compressor clutch from engaging under low battery voltage conditions
- Transmits A/C error and diagnostic codes to the Data Bus
- Displays faults and real-time diagnostics with Windows® based Red Dot A/C Technician software
- Minimal components: an ECU, high-side pressure transducer, refrigerant charge sensor, and a wire harness



## **New Products**

## Perfect Pairing: R-9727 with the R-9976 Kit



Our R-9727 is ready for any heavy-duty equipment cab—including ones where you can't run the compressor directly from the engine. When that's the case, the R-9976 hydraulic axial direct drive compressor kit (RD-5-13484-0P) is a great solution.

The R-9976 kit includes the hoses, fittings, and bracket necessary to mount the compressor on the back of the R-9727. This setup has been tested in our engineering labs and the field to ensure a rugged, reliable pairing.

Compressor speed control is possible on this unit with a separate electrically piloted hydraulic control valve (72R9904/RD-5-11209-0P for 24-volt systems or 72R9912/RD-5-11210-0P to convert 72R9904 to 12 volts).

## **AFTERMARKET SALES & SUPPORT**

## Sounding the Siren about Fire Truck A/C

early every town has one: a fire truck that needs A/C service.

"These vehicles are well maintained but basic A/C maintenance is often overlooked," says Gary Hansen, Red Dot's

VP/Engineering.
Case in point:
Gary says the No. 1
item that needs
attention is the
receiver-drier. "It

needs to be changed on a fire truck religiously every year," he explains.

Fire apparatus tend to be have large-capacity systems. For example, Red Dot is an OE supplier to Pierce Manufacturing, which uses R-9715 model ceiling-mounted air conditioners in its Velocity and Impel models. Essentially, we take two of these high-capacity units and place them back to back so one blows forward while the other blows aft for efficient spot cooling. We also use hard refrigerant lines to prevent leaks and moisture ingression.

These systems have only a few unfa-

miliar features. For example, on most heavy-duty vehicles, condensation



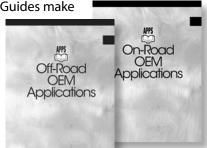
drains out of the evaporator box by gravity. On fire trucks, because these units are mounted in the center of such a large cab, they have an electric pump with a float switch that senses when there's a water buildup and activates when the system needs to be drained. Occasionally, this condensate pump needs service.

Fire apparatus and emergency vehicles have a long service life and need to perform at a moment's notice. If you're looking for parts and service opportunities, consider your local fire district.

## **Do You Have Your Red Dot Application Guides?**

Our OEM Application Guides make it easier to the

all-makes HVAC part you need cross-referenced by vehicle make and model. Separate On-Road and Off-Road



 versions are included in the Red Dot catalog, or go online to download a PDF at reddotcorp.com/ resources/productliterature

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All times are in the Pacific Time Zone