

Direct Injection Thermal Valve

For Engine and Chassis Mounted Filtration



Market Application Publication

Application

Cold weather operation with on-engine and chassis mounted filtration.

The Problem

Cold weather running conditions are not just a problem for starting diesel engines. Cold weather can rob a diesel engine of its efficiency and power by clogging the fuel filter with solidified wax particles. Although diesel fuels are usually formulated for the local climate, there is no guarantee that the weather will cooperate. Depending on the fuel, temperatures as high as 40°F may cause the paraffin waxes in diesel fuel to begin to solidify. This problem worsens as temperatures drop. Eventually diesel fuel reaches a “pour point”, where the solidified wax is so concentrated that fuel stops flowing and becomes unusable.

The Solution

Racor's Direct Injection Thermal Valve utilizing heated fuel returning from the engine.



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Why was Racor chosen as the solution?

Electric fuel heaters have their place getting engines started, but they may fall short under load as the fuel demand exceeds the amount of heat available. Racor's Direct Injection Thermal Valve solves this problem by utilizing the excess heated fuel returning from the engine. Given an engine return fuel temperature of just 85°F, the patented thermal valve will provide a heat rise of 25°F to the fuel passing through the filter. The Direct Injection Thermal Valve is a true running aid, as it allows trucks to maintain engine performance under load in the coldest conditions.

How the solution works:

Racor's Direct Injection Thermal Valve uses warm fuel leaving the engine to heat the fuel on the upstream side of the filter. The valve, when activated by cold temperatures, diverts warm fuel from the engine outlet into the upstream side of the filter. The smart technology of the thermal valve activates and deactivates automatically allowing it to respond to unexpected cold weather without overheating the fuel.



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