Locomotive Engine Protected from High Volume of Contaminants



Oil Analysis Cites 50% Drop in Soot Level

Scenario



Maintenance managers for a major railroad company were looking for ways to improve oil cleanliness in their EMD model GP60 locomotive. The locomotive is powered by a 3,800 hp, turbocharged V-16 EMD 16-710G3A engine.

The engine had been retrofitted with a full-flow filter screen rated at 25 microns. This screen consists of multiple chambers and has a self-cleaning capability. As the engine operates, the screen continuously isolates and back-flushes one chamber at a time, sending the back-flushed material directly to the oil sump.

While effective in blocking large contaminants, the screen system was not designed to stop soot and other small abrasives. Service intervals were also limited, since debris from screen back-flushing continued to accumulate in the sump.

Solution



After evaluating various bypass filtration options, the company chose to install two Spinner II Model 3600 centrifuges. The Spinner II centrifuges would accomplish two objectives:

(1) **Process oil exiting the screen before it enters the engine.** With the ability to extract particles as small as 1/10 micron, Spinner II centrifuges are proven to reduce wear on critical engine and turbocharger components by as much as 50% (contact Spinner II Products for test reports). Enhanced wear reduction was a key goal for the railroad company, since the locomotive is designed to operate one million miles between overhauls.

(2) **Process material back-flushed from the screen.** The unique ability of the centrifuges to remove debris from the oil stream (rather than simply blocking it) prevents the accumulation of excess debris in the sump. Each Model 3600 centrifuge has a contaminant storage capacity of 6,000 cc.

Results

Over a three-month operating interval, the Spinner II centrifuges collected nearly seven pounds of contaminants. The company's oil analysis affirmed a 50% drop in soot after fitting the Spinner II centrifuges.

The large capacity of these centrifuges provides ample contaminant storage between service intervals. The maintenance team is confident that the Spinner II centrifuges will significantly reduce long-term wear, extend engine life and decrease maintenance costs over the service life of the engine.

Questions about this centrifuge application?
Please contact Spinner II Products.

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