



At Hunt Oil we use Hydra-cell Model D-35 Pumps (hydraulically actuated diaphragm pumps) with a VFD Electric driver for heat medium circulation down hole. We were experiencing multiple bearing failures in these pumps using OEM oil and ESSO synthetic engine oil. After the initial bearing failures, we would usually have more failures within 90-120 days of rebuild at a cost of \$3000/rebuild. Finally, we were contemplating complete replacement of the pumps as we could not live with the down time & the need for constant rebuilds. We have 4 pumps in service & the direct replacement price per pump would have been \$8,500.00ea. We were about to do a complete revamp of our injection system, buying a completely different type of pump. This would have cost us approximately \$100,000.00 or more as we would have had to retrofit the entire system & piping to accommodate the different pumps.

It was at this point that our local Royal Purple representative was called in. He quickly surmised that the dispersants in the engine oil were keeping the wear material suspended in the oil thus acting as a grinding compound. The oil was breaking down & allowing metal to metal contact, as a result the power ends of the pumps were running very hot. The Royal Purple representative was sure that we could make these pumps work as they were intended to. I was a little doubtful, given their history, but decided to give him a chance.

He suggested switching to Royal Purple Synfilm GT 150 & installing some magnetic drain plugs with Rare Earth Magnets which were much stronger than the magnets which were supplied by the OEM. Even with the low strength of the OEM magnets we were seeing appreciable amounts of debris. After draining the power ends of the pumps & flushing them with varsol we added the right amount of Synfilm GT 150. Upon restarting the pumps with the Royal Purple in our power ends, I noticed several changes in the way the pumps were performing.

I was amazed to find that we were running at a 20-25% reduction in input energy and still reaching the same discharge pressures. Originally we were running at 80-85% speed utilizing the VFD speed control. With the introduction of Royal Purple we were able to slow the speed down by approximately 25% still achieve the flow rates we needed. If that wasn't enough, we saw an average 25 degree drop in temperature on all 4 power frames. We were able to extend our oil change intervals by 30% with oil analysis. The oil analysis showed that the oil wasn't breaking down any longer but was being contaminated by water permeation thru the diaphragms, which is not controllable. We now see little or no material on the higher strength magnets which indicates much higher protection levels.

The difference in oil costs is marginal as the power frames only hold a couple of Liters of oil each. The Royal Purple has saved us a great deal of money since we started using it. We've now been using the Synfilm GT 150 for over 2 years and have not experienced a single bearing failure since. I am completely satisfied with the oils performance and would highly recommend it's use.

As an aside, I've also switched my wifes 2000 Park Avenue Buick over to Royal Purple engine & transmission oil. Since the change I continually marvel at how smooth the transmission shifts. You would think that there's no tranny at all as it seems to just glide down the highway with no noticeable shift points. The mileage increase was substantial as on average she has seen the mileage increase from 22MPG. to 26MPG. I have no problem in discussing the use of Royal Purple with others.

Thanks

Paul Neufeldt Operator

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