Photo courtesy: Shell Lubricants

Using the right lubricants can significantly reduce costs.

cation system has also changed with equipment design; OEMs have also focused on designing compact equipment, giving better performance output and handling capacity. This results in more pressure on the lubricant in terms of oil thickness maintained at elevated temperature, reduced residence time, increased speed, load and temperature with more chance of contamination from outside. Oil has to perform well under the high speed, high temperature with load, sometime shock load. The lubricant has to give better oil film to reduce wear, protect equipment from corrosion and rusting, dissipate the heat and keep the system clean in harsh conditions."

Oil additives play a major role in improving the lubricant character support sustainability in extreme environmental conditions. Says **Carlos Vernet, Marketing Manager, DYNAVIS®– Asia Pacific, Evonik Industries AG,** "In terms of hydraulic equipment trends, we see that hydraulic fluid (HF) systems are working harder than ever: at higher operating pressures (5,000-6,500 psi/345-450 bar); and given that equipment is now designed to be smaller and lighter, the fluid spends less time in the reservoir, and as a consequence, there is less time for the fluid to cool down and eliminate entrained air. Furthermore, new environmental and safety regulations require equipment noise reduction. When encapsulation is utilised as the solution for noise reduction, the encapsulation slows fluid cooling. As a result, equipment is operating at higher temperatures (80°C-100°C), which has a direct and dramatic impact on hydraulic fluid viscosity performance."

"The more demanding the operating conditions, the more stressed the hydraulic system and its fluid will be."

Carlos Vernet,
Marketing Manager, DYNAVIS® – Asia Pacific, Evonik Industries AG

CASE STUDY

Road construction company extends oil-drain interval by 50 per cent with Shell Rimula R4

A road construction company wanted to determine the best lubricants for equipment it would use on a new project in Indore, India. The equipment included heavy-duty machinery from Komatsu, MAN and Greaves. After considering different lubricant suppliers, the company chose Shell Lubricants. Shell recommended Shell Rimula R3 X 15W-40 for all the engines, which gave an oil-drain interval of 300 hours.

Subsequently, owing to an increase in the workload, the customer wanted to extend the oil-drain interval, so Shell proposed Shell Rimula R4 15W-40 for this. To support this recommendation, the Shell technical team used the oil condition monitoring service Shell LubeAnalyst to measure oil performance and identify the correct oil-drain interval.

By switching to Shell Rimula R4 15W-40, the company was able to extend its oil-drain interval by 50 per cent from 300 to 450 hours. The company reduced its lubricant consumption and extended its maintenance intervals because fewer oil changes were required, which resulted in lower maintenance costs. It also benefited from reduced production downtime and was able to complete the project two months earlier than scheduled. The company reported a total annual saving of $40,000.

Shell Rimula R4 Energised Protection oil uses exclusive combinations of the latest high-performance additives to ensure that the oil adapts and protects under the full range of pressures and temperatures found in modern engines – from the high temperatures in the pistons to the extreme loads found in the valve trains. Featuring extraactive additives to control and sweep away the harmful soot and particles found in high-performance engines, Shell Rimula R4 delivers excellent soot and viscosity control, and outstanding protection against wear. It also offers exceptional versatility; fleets with multiple engine makes need only one oil.

Selection Procedure

Using the right lubricants can significantly reduce costs by cutting unplanned equipment downtime, thereby lowering maintenance costs and increasing equipment life and availability. The selection of the right lubricant will always depend on the equipment which is going to use it and the environmental conditions. According to Khemka, the first and