Written by Amanda Martyka, Assistant Editor
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The places where lubrication is needed aren't always made to order. Too often, lubricants are required to stand up (and perform without a hitch) under some of the most severe conditions imaginable—extremely hot and cold environments, hazardous surroundings, contaminated areas, etc. The following list reflects companies and products that take care of the critical equipment and processes that must stay up and running in these types of challenging, often remote, situations.

Royal Purple
Most severe-service equipment reliability problems are caused by heat, contamination and/or load. The severity of these conditions impacts lubricant's ability to adequately lubricate and protect equipment, resulting in premature failure and reduced operating efficiency. Conventional, low-film strength R & O (rust and oxidation inhibited) oils rely almost solely on their viscosity to protect equipment against wear. A new generation of lubricants offers improved oxidation stability to withstand heat and dramatically increased film strength to withstand severe load. Synfilm, from Royal Purple, has become increasingly popular in severe service applications. Synfilm is a long life, high film strength, synthetic lubricant that's proven to significantly increase the reliability and life of equipment operating in severe conditions.

Royal Purple
Porter, TX
www.royal-purple-industrial.com

The Timken Company
Timken's Mill Grease is formulated with high VI paraffinic mineral oil, resulting in better oxidation stability than competitor formulas that use low VI naphtenicbase oil. Use this grease when

resistance to water washout and performance under broad operating temperatures are absolutely necessary. Design attributes include superior protection against rust and corrosion, including salt spray, and excellent high-temperature properties, including conditions from -40 F to 400 F. The lubricant contains no heavy metals or other environmentally undesirable additives. Timken's Mill Grease is applicable for steel mills, paper mills, aluminum mills, foundries, cement plants, power generation, off-road applications, mineral processing, offshore rigs and marine applications.

The Timken Company
Canton, OH
www.timken.com

CITGO Petroleum Corporation
According to CITGO, its range of synthetics provides exceptional protection for compressors in remote locations, where maintenance and parts replacement demand premium products. CompressorGard PAOs offer superior oxidation and thermal stability for use in rotary vane, rotary screw and centrifugal compressors. The CompressorGard PAGs are recommended for highpressure reciprocating compressors pumping natural gas, hydrogen, helium, CO_2 and other polar gases. DE synthetics combine premium diester base stocks with advanced additives for better low-temperature fluidity and thermal conductivity. Compared to conventional lubes, the low vapor pressure of the CompressorGard SS helps reduce oil carryover in a compressed gas stream, and inhibits H_2S corrosion. CompressorGard IPG 100 provides increased viscosity at high temperatures, oxidation resistance and good water separation.

CITGO Petroleum Corporation
Houston, TX
www.citgo.com

Mobil Industrial Lubricants
Mobilgear 600 XP Gear Oil Series is engineered to deliver exceptional, long-lasting wear and corrosion protection for gearboxes, and can help companies become more competitive by raising their productivity. Surpassing the industry's most demanding specifications, such as Flender BA Table 7300 A, DIN 51517 Part 3 and AGMA 9005 E02, Mobilgear 600 XP helps control micropitting and is designed to significantly reduce the formation of oil degradation by-products that often lead to frequent oil changes.

Mobil Industrial Lubricants
Fairfax, VA
www.mobilindustrial.com

CRC Industries
CRC's Extreme Duty Open Gear & Chain Lube is a heavy duty, extreme pressure lubricant recommended for reducing friction and wear in harsh environments. The formula is specially prepared to penetrate pores in metal, with exceptional "stay-put" characteristics. It assures a smooth, long-lasting, economical and effective coating that will not wash or wear off because of harsh weather and will not break down after repeated use. The lube contains Moly and Graphite, providing lubrication and shock protection, preventing scoring and welding of gear teeth. Its black color guides proper coverage, allowing easy touchup. Use CRC Extreme Duty Open Gear & Chain Lube to lubricate open gears, chains, cables or wire ropes. It is ideal for use on quarry and mining equipment, leaf springs, drive chains, screw threads and flexible couplings. It can also be used on racks and pinions, ball and rod mills, trunions, roller gears and winches.

CRC Industries
Warminster, PA
www.crcindustries.com

ConocoPhillips
The use of synthetic lubricants has become more widespread in automotive and industrial machinery, partly because of the severe demands imposed on the lubricants by downsizing of oil sumps, generating more power and the more stringent performance requirements established by the OEMs. ConocoPhillips Syncon® & Syndustrial ® synthetic lubricants are commonly used in industrial machinery such as air & gas compressors, aero-derivative turbines, underground mining equipment and gearboxes operating in very cold weather or very high temperature environment. They offer significant advantages over conventional lubricants in terms of low temperature pump ability and easier starts in cold weather, as well as energy savings, superior high temperature protection and longer service intervals.

ConocoPhillips Lubricants
Houston, TX
www.conocolubricants.com
www.76lubricants.com
www.phillips66lubricants.com

DuPont

Designed specifically to perform under harsh conditions and critical chemical service, DuPont™ Krytox® NRT & XHT oils and greases offer an ideal solution to extend equipment life, improve safety and reduce the potential for explosions and fire. Krytox NRT inert lubricants deliver safe, non-reactive, non-flammable lubrication for systems containing LOX, GOX, chlorine and other reactive gasses while extending equipment life. Krytox XHT Extreme High Temperature lubricants perform up to 752 F. From gearboxes, bearings and chains—to seals, actuators, valves, and more—DuPont Krytox NRT & XHT provide unparalleled performance with everyday reliability.

DuPont Performance Lubricants
Wilmington, DE
www.dupont.com

JET-LUBE, Inc.

JET-LUBE's industrial 769 Lubricant®, first introduced in 1969, is still delivering high performance in harsh environments. Salt water and salt spray, in particular, are no match for this product. It's economical, environmentally safe and non-flammable, and it doesn't evaporate or harden. It contains ashless extreme pressure additives and highly refined lubricating oils that provide superior lubricating protection and anti-wear properties. Additionally, 769 lifts and displaces moisture, while also preventing rust and corrosion. The product is available in a variety of sizes, ranging from 12-oz. aerosol containers to 50-gal. drums.

JET-LUBE, Inc.
Houston, TX
www.jetlube.com