Royal®

PRECISION LUBRICANTS

HYDROL RETAIN HYDRAULIC FLUIDS

WHEN PERFORMANCE MATTERS

Higher system efficiency presents a strong argument for using multi-grade hydraulic fluids, but their potential for improved machine productivity can have an even greater impact on your bottom line.

...DRIVEN BY PERFECTION

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HYDROL RETAIN 46 AND 68

High Efficiency Multi Grade Hydraulic Fluids

Modern hydraulic systems must perform in difficult environments – from continuous operation in industrial and agricultural machinery to mobile equipment working on projects subject to long operating times and arduous operating temperatures and conditions. Smaller hydraulic tank capacities, higher pressures and increased operating temperatures all contribute to more demand being placed on your current hydraulic fluids.

Modern hydraulic fluids must be capable of maintaining a constant viscosity ensuring greater efficiency and less energy consumption, whether in mining and construction equipment applications such as excavators, wheel loaders, skid steer-loaders, backhoes, screening plants and dump trucks, or in industrial equipment such as injection moulding machines, robotics and all other types of stationary equipment using hydraulics.

Simply changing your standard mono-grade hydraulic fluid to a Hydrol Retain multi-grade hydraulic fluid allows all hydraulically powered machinery to operate more efficiently, dynamically, and accurately through better viscosity control and thermal stability.

Demands on Hydraulic Fluid

The viscosity of a hydraulic oil has to be high enough to protect the equipment and to guarantee pump efficiency. On its way from the tank to the drive motors, actuators and rams etc, the fluid must pass several bottleneck restrictions such as filters, pumps and valves. Friction within the fluid itself and friction passing through the hydraulic circuit components creates heat. Compression of the fluid in excess of 350 bar / 5000 PSI by the hydraulic pump creates even more heat.

This heat reduces the standard mono-grade fluids viscosity more rapidly than a multi-grade fluid. Ideally the viscosity of the fluid must not get too low to maintain power and protect vital components. For this reason, a fluid with a higher viscosity is normally used because it heats up and becomes thinner on its way through the hydraulic circuit, thus requiring more power for the pump to transport the fluid. Hydrol Retain hydraulic oils keep their viscosity over a much broader temperature range. So their viscosities don't thin down as rapidly as conventional hydraulic fluids saving energy, enhancing performance and protecting the equipment's vital hydraulic components.

Cold Start

From start-up, using Hydrol Retain hydraulic fluids, less power is required than with conventional fluids since Hydrol Retain fluids are designed to provide a lower viscosity at the lower start-up temperatures. Giving the fluid a superior cold start pump ability over conventional hydraulic fluids.

Running Hot

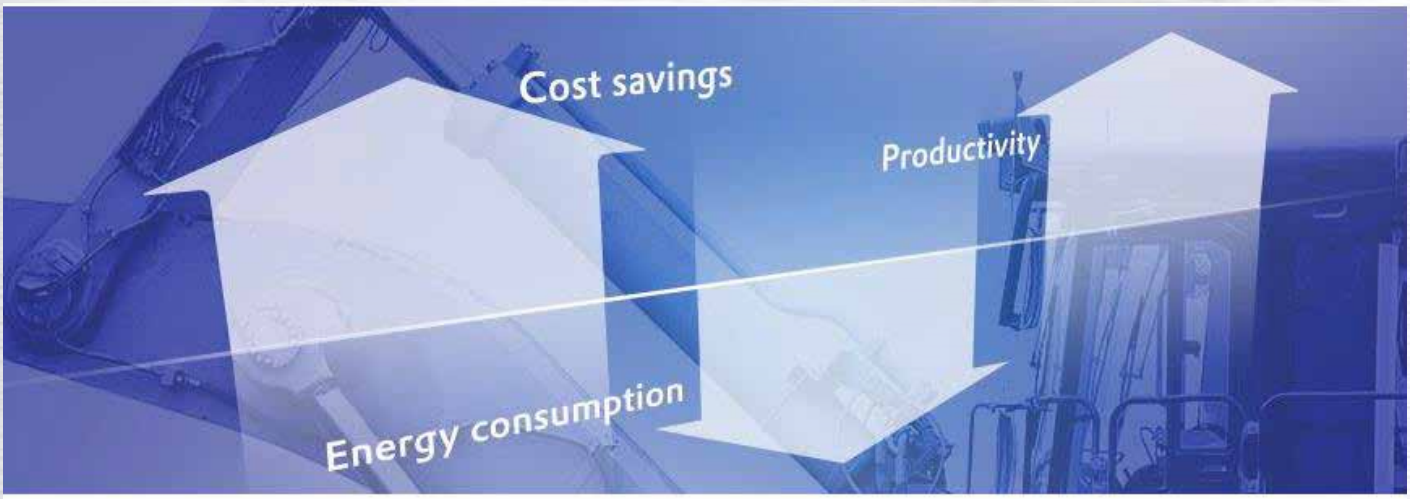
Rigorous testing throughout the entire development process ensures that Hydrol Retain hydraulic fluids perform reliably, even under the most severe conditions.

Hydrol Retain additive origins began with detailed thermodynamic modeling in labs, development continued with a regimen of pump tests, followed by a series of realistic field tests. These tests, combined with Royal Precision Lubricants close partnerships with leading formulators and Original Equipment Manufacturers, ensured that the technology used in Hydrol Retain hydraulic fluids delivered resource-efficient solutions that respond to today's changing global performance requirements.

Hot hydraulic fluid can escape the "push" of the pump vanes, or pistons, and recirculate rather than be pumped out, creating internal leakage (known as "bypass") and leading to a destructive spiral of ever-increasing fluid temperature and plummeting pump efficiency and hydraulic performance. Hydrol Retain hydraulic fluids are designed to resist recirculation, keep heat build-up in check, maintain pump efficiency, and enable a potential reduction in energy consumption.

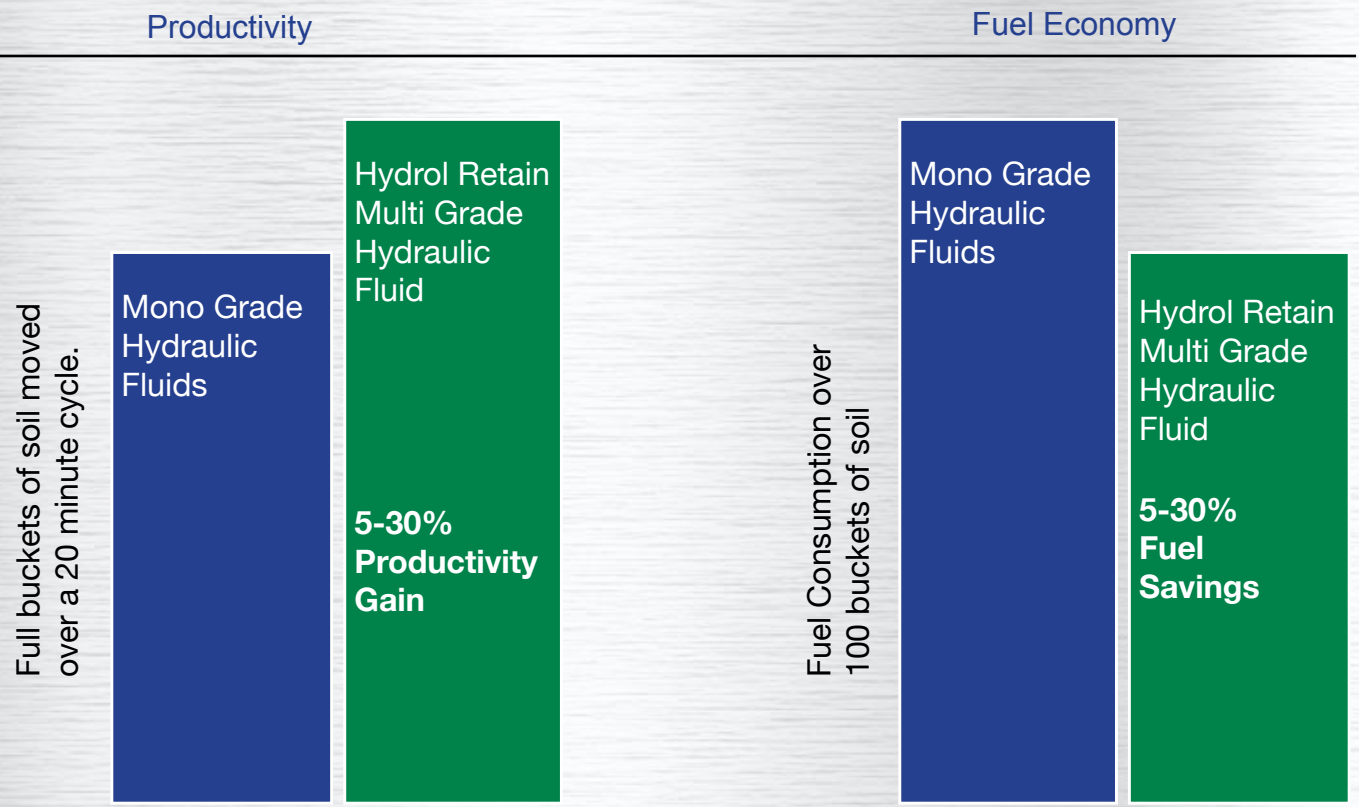
Test Capabilities Included:

- *State-of-the-art laboratory testing*
- *Shear stability testing*
- *Pump testing (piston, vane and gear)*
- *Efficiency testing*
- *Denison HF-0 tests and Pass*
- *OEM equipment field testing trials*



MONO GRADE OILS V MULTI VISCOSITY OILS

Resource Efficiency Trial Results



*Active digging cycle with a mid sized digger.
Results vary depending on equipment, hydraulic oil and test conditions.

Key Benefits:

- *Proven superior viscosity control and anti-wear technology*
- *Local service and technical support via a growing network*
- *Performance that exceeds many major OEM requirements*
- *Sustainable increases in productivity and reductions in fuel consumption*
- *Prolonged Total Oil Service Times (TOST)*
- *Better oil pressure and stability under high load / high heat conditions*
- *Less wear on pumps and equipment*
- *Superior air separation and resistance to foaming*
- *Enhancing equipment performance and longevity*
- *Raising productivity levels*

TECHNICAL DATA AND SPECIFICATIONS

Performance Specifications:

- Vickers V-104C and 35VQ25 vane, 1-286-S, M2950-S
- Denison HF-1, HF-2, HF-0, Volume vane pumps
- Cincinnati Milacron, P-68, P-69, P-70
- DIN 51524 Part 2, Lee Norse 100-1
- Jeffrey No. 87
- Ford M-6C32, US Steel 136, 127
- BF Goodrich 0152
- General Motors LH- 04-1, LH-06-1, LH-15-1
- Commercial Hydraulics (except PM500 Series) AFNOR E48-603

Hydrol Retain 46
Code: 5303

Viscosity @100 Deg C	8.9
Viscosity @40 Deg C	46.9
Viscosity Index	173
Density @ 15 deg C	0.85

Hydrol Retain 68
Code: 5304

Viscosity @100 Deg C	11.41
Viscosity @40 Deg C	67.8
Viscosity Index	163
Density @ 15 deg C	0.87

Available in 20L, 205L, 1000L

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Also Stocked By:

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