RENOLIN Xtreme Temp

AW hydraulic and lubricating oils with a high viscosity index - high shear stability

Description

The RENOLIN Xtreme Temp series was developed for hydraulic systems which are working in a wide temperature range. The shear-stable, high viscosity index (HVI) guarantees a low viscosity at low start-up temperatures and a good low-temperature flowability of the oil. This shear-stable viscosity index will also guarantee a higher viscosity at high temperatures – a stable lubricating film at high working temperatures compared to standard HLP hydraulic oils. The RENOLIN Xtreme Temp series is based on selected semi-synthetic base oils in combination with additives to improve the viscosity-temperature behaviour (so-called VI improvers). These polymers guarantee a shear-stable viscosity index – low viscosity at low temperatures, higher viscosity at high temperatures. The energy consumption when starting up the system is reduced, and the stability of the lubricating film at high temperatures is improved by using RENOLIN Xtreme Temp. Therefore wear on hydraulic pumps and motors can be reduced. The use of RENOLIN Xtreme Temp will offer a thicker lubricating film at high temperatures and a better high-pressure stability, which reduces wear and leakages in the system. The combination of the base oil with selected additives guarantees the improvement of the low-temperature properties compared to conventional HVI oils. The RENOLIN Xtreme Temp series contains VI improvers (polymers) which are extremely shear-stable.

Shear losses can occur after a short time of operation when conventional HVI oils are used which contain low-performance VI improvers. This leads to a viscosity decrease, a decrease of the viscosity index due to shearing of the long molecule chains of the polymer additives (VI improvers).

Advantages

- **Excellent shear stability**
- **Excellent viscosity-temperature-behaviour**
- **High viscosity index**
- **Excellent low-temperature behaviour**
- **Low foaming**
- **Good air release**
- **High ageing stability**
- **Good corrosion protection**
- **Very good wear protection**
- **Wide operating temperature range**
- **Selected semi-synthetic base oils**

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Description (continued)

This will happen immediately when using standard low-quality VI improvers at high shearing rates, high pressures in valves, pumps and bearings (which will have a negative influence on the properties of the fluid). These phenomena are reported from the field when using conventional low-quality HVI hydraulic fluids. Wear of pumps can occur which is related to a decrease of the original viscosity (out of the recommended ISO viscosity class).

RENOLIN Xtreme Temp was developed in close co-operation with different multinational manufacturers of mobile hydraulic systems and components. The combination of selected semi-synthetic base oils with VI improvers (polymers) of the latest technology guarantees the performance – low viscosity at low temperatures, high viscosity at higher temperatures – which fulfils and surpasses the requirements of these manufacturers. The high-temperature stability – hydrolytic stability – is combined with an excellent anti-wear performance of the fluid. Shear losses during the lifetime of the fluid are reduced. The performance of the RENOLIN Xtreme Temp series was tested in the R&D laboratory as well as in the field in heavy-loaded units in the mining industry under extreme working conditions. These tests show the excellent performance of this new series. Conventional, standard HVI technology leads to shear losses of > 20 - 40% in the four ball tester – determination of the shear stability of lubricating oils containing polymers (which is a new requirement in DIN 51524-3 – 2006). RENOLIN Xtreme Temp surpasses the requirements of important hydraulic users, a maximum shear loss of approximately < 15% in the four ball tester.

The combination of semi-synthetic base oils with selected, synergistically acting additives will also increase the lifetime under temperature stress and prevent the formation of ageing products.

Application

Demulsifying hydraulic and lubricating oils, which are recommended for all applications in mobile industrial hydraulic units. They cover a wide temperature range, surpass the requirements of DIN 51524-3 (2006) – HVLP high-VI oils, and offer an excellent shear stability.

RENOLIN Xtreme Temp oils are especially recommended when a low start-up viscosity at deep temperatures is necessary as well as a high stability of the lubricating film at high temperatures. RENOLIN Xtreme Temp oils have a long lifetime due to the use of semi-synthetic base oils.

Specifications

The RENOLIN Xtreme Temp oils meet and surpass the requirements according to:

- DIN 51524-3 (2006): HVLP
- ISO 6743-4: HV
- Denison HF0 – T6H20C: hybrid pump
- Bosch Rexroth
- Terex
- Vickers 35VQ-25 / V104-C: vane pumps
- US Steel 127, 136
- Cincinnati Milacron P68, P69, P70

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Typical data:

Product name		Xtreme Temp 32	Xtreme Temp 46	
Properties	**Unit**			**Test method**
ISO VG		32	46	DIN 51519
Kinematic viscosity				DIN EN ISO 3104
at – 20 °C	mm²/s	1000	2040	
at 0 °C	mm²/s	220	400	
at 40 °C	mm²/s	32	49	
at 100 °C	mm²/s	6.9	9,3	
Viscosity index	-	180	180	DIN ISO 2909
Density at 15 °C	kg/m³	845	853	DIN 51757
Flashpoint (Cleveland Open Cup)	°C	216	230	DIN ISO 2592
Pourpoint	°C	- 33	- 34	DIN ISO 3016
Neutralisation number	mgKOH/g	0.5	0.5	DIN 51558
FZG A/8,3/90	Failure load stage	11	11	DIN ISO 14635-1
VKA shear stability, four-ball-test: relative shear loss after 20 h	%	< 10	< 10	DIN 51350-6
Foaming,				ASTM D 892
Seq. I: 24 °C	ml	30/0	20/0	
Seq. II: 93,5 °C	ml	20/0	10/0	
Seq. III: 24 °C after 93.5 °C	ml	30/0	20/0	
Air release at 50 °C	Min	4	5	DIN ISO 9120
Corrosion protection – steel	Degree of corrosion	0-A 0-B	0-A 0-B	DIN ISO 7120

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