

## RENOLIN B 100 HVI PLUS

**Premium, high viscosity index hydraulic oil. Superior additives provide improved ageing resistance, corrosion protection and wear protection.**

### Description

The function of hydraulic oil pumps can often be improved irrespective of the machinery driven, because they are isolated from the variables found at the workplace. A major factor in the performance of hydraulic systems is the fluid medium. This absorbs a relatively large amount of energy when the pump is started up because of the high internal resistance of hydraulic oil. Excessive friction also occurs if the oil's viscosity is too low and this leads to wear. Such conditions can cause breakdowns. FUCHS has developed a series of so-called "low friction" oils, which reduce energy consumption and wear when hydraulic pumps are started up. These products also improve reliability and eliminate breakdowns caused by insufficient or excess viscosity, both problems associated with normal HLP hydraulic oils.

### Application

### Advantages/Benefits

- Excellent viscosity – temperature behaviour  
The manufacturers of hydraulic equipment publish threshold values for start up, minimum and optimum viscosity in their operating handbooks. The high viscosity of normal hydraulic oils consumes large amounts of energy when systems are started up and the time required for the oil to reach its operating viscosity is very long. Another problem with normal hydraulic oil is that insufficient viscosity at high operating temperatures can cause wear in bearings and pumps. The RENOLIN
- B HVI PLUS series of oils reduce these start up problems and form stable, protecting films at high operating temperatures which increases the reliability and service life of hydraulic systems. This superior high temperature viscosity also improves sealing and reduces leaks to a minimum.
- Excellent oxidation stability and resistance to ageing  
Oil temperatures of over 80°C can occur in high-pressure systems, especially if the volume of the tank is small. Insufficient oxidation stability can lead to the formation of damaging by products, which acidify the oil. This in turn causes polymerisation, which increases the viscosity of the oil and leaves lacquer-like deposits on valves and control units. The RENOLIN B HVI PLUS series of oils are based on high-grade special raffinates and contain additives, which improve their resistance to ageing. As these are long-life characteristics, they also increase the service life of the products.
- Good AW properties and thus protection against wear  
The most important functions of a hydraulic oil are sealing, cooling and lubrication. However, a hydraulic oil is only capable of lubricating and protecting moving parts against wear if mixed friction is eliminated. The good viscosity – temperature behaviour of the RENOLIN B HVI PLUS series of oils guarantees that a stable, protective film is formed between moving surfaces, even in harsh operating conditions. This feature is reinforced by the inclusion of AW additives which reduce friction in critical conditions and which reliably protect against wear. The mechanical FZG Gear Rig Test A/a, 3/90 (DIN 51 354) simulates mixed friction situations in order to examine the wear protection

properties of lubricants. The RENOLIN B HVI PLUS series of oils all achieved values of II in this test.

- Excellent shear stability Especially in high-pressure hydraulic systems, it is critical that the viscosity – temperature characteristics of the oil are not diminished by shear losses. The RENOLIN B HVI PLUS series of oils are based on high-grade special raffinates with good natural viscosity – temperature properties and contain shear-stable VI improvers to reinforce these characteristics. As the data page shows, these additives retain their effectiveness whatever the load.
- Good deaeration and low foaming The base oils used in the formulation of the RENOLIN B HVI PLUS series of oils ensure rapid, natural de-aeration. This eliminates problems stemming from too much air being trapped in the oil. Such air is released quickly and the foam, which occurs when this happens also collapses quickly.
- Good demulsifying properties Operators of large hydraulic systems usually require good separation of dragged-in water or condensation from the hydraulic fluid so that this water can be removed via drainage taps or valves. All RENOLIN B HVI PLUS oils separate water rapidly and avoid the formation of water and oil sludge.
- Good elastomer compatibility Elastomers used in hydraulic systems must neither shrink nor swell when in contact with hydraulic oil. To fulfil this specification, the RENOLIN B HVI PLUS series of oils and such elastomers are tested for 168 hours at 100°C (DIN 53 505).

The materials tested are SRE-NBR 1 standard reference elastomer (DIN 51 524 Part 2) and vulcanised butanol acrylonitrile. Seal material manufacturers, as a rule, use the values obtained from these materials to evaluate the compatibility of other elastomers with the hydraulic fluid being tested. As the values indicate, elastomers show good compatibility with the RENOLIN B HVI PLUS series of oils.

- NOTE: The RENOLIN B HVI PLUS series of oils are not just high-grade hydraulic oils but also excellent lubricating oils which can be used for numerous applications. The RENOLIN B HVI PLUS series of oils are blue in colour for ease of identification

## Specifications

- DIN 51 524-3 : HVLP
- ISO 6743-4
- Denison HFO
- Bosch Rexroth
- Vickers
- US Steel
- Cincinnati Milacron

## Approvals

- Declaration - Hazardous Substance - Meat

## FUCHS Recommendations

## CHARACTERISTICS

Appearance	Visual	Clear blue fluid	-
Kinematic Viscosity @ 40 °C	ASTM D445		100 cSt
Kinematic Viscosity @ 100 °C	ASTM D445		13.5 cSt
Viscosity Index	ASTM D2270		135 -
Density @ 15 °C	DIN 51757		0.885 Kg/L
Flash Point COC	ASTM D92		260 °C
Pour Point	FLTP* 124		-36 °C
FZG mechanical gear test rig FZG A/8,3/90	DIN 51 354-2		11 failure load
Total Acid Number	ASTM D974		0.1 mg KOH/g
VKA Shear Stability	DIN 51350-6		<20 %
Oxide Ash	ASTM D482		0.1 %

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