

Press Release

Fluid rating from Rexroth: reliably increase the service life of hydraulics

New test cycles show wear properties under realistic conditions and increase operational reliability

PI 021/15

2015-06-23



Rexroth offers a new hydraulic fluid rating procedure which is better suited to the increased requirements on modern hydraulics.

Higher operating pressures and significantly increased power density: hydraulic performance has greatly increased again in the past years. This also places higher requirements on the hydraulic fluids used which have a decisive influence on the wear properties of hydraulic components. For this reason, Bosch Rexroth offers fluid and additive manufacturers a newly developed rating procedure for hydraulic fluids which realistically reflects and reproduces the new requirements. It goes far beyond the minimum requirements of the corresponding fluid standards. An important result: The current minimum requirements are inconclusive. On the one hand, the tests show fluids which do not cause any wear, even after 500 hours. On the other hand, hydraulic fluids can cause significant damage after less than 100 operating hours.

The relevant standards, DIN 51524, ISO 15380 and ISO 12922, outline minimum requirements for hydraulic fluids. However, they do not sufficiently reflect the technical developments in high-performance hydraulics and the

Contact for Journalists:

Bosch Rexroth AG

Susanne Herzlieb

97816 Lohr a. Main

Tel.: +49 9352 18-1573

Fax: +49 9352 18-1812

susanne.herzlieb@boschrexroth.de

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suitability of new hydraulic media and additives. With a new, scientifically standardized evaluation procedure, Bosch Rexroth tests the behavior of fluids and the interaction with the core component pumps and motors under realistic operating conditions. "The results show that suitable fluids substantially lengthen the service life of hydraulic components and therefore significantly lower the probability of failure," emphasizes Karl-Heinz Blum, Basic Development Fluids at Bosch Rexroth. The test procedure was initially developed and validated for A4VG series hydraulic pumps as well as A6VM series hydraulic motors in closed circuits. Rexroth offers this evaluation service to fluid manufacturers and, as a result, is compiling a steadily growing database of hydraulic fluid properties under real conditions.

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The evaluation procedure, which is described in the Rexroth data sheet no. 90235, is suited to all mineral-oil-based hydraulic media, environmentally acceptable media, as well as fire-resistant, water-free hydraulic fluids. Various test procedures include testing the fluids at high pressures in different cycles over several hundred operating hours, both at high temperatures and at low viscosities.

According to standardized methods, Rexroth is able to make statements regarding the interactions of fluids and components, wear properties and material compatibility. Fluid analysis at the start of, during, and at the end of the test procedure makes it possible to make statements concerning the fluid's properties throughout the duration of the test. "In this way, machine manufacturers and operators can select the fluids best suited for their application and significantly increase operational reliability," confirms Karl-Heinz Blum.

Economical, precise, safe, and energy efficient: drive and control technology from Bosch Rexroth moves machines and systems of any size. The company bundles global application experience in the market segments of Mobile Applications, Machinery Applications and Engineering, Factory Automation, and Renewable Energies to develop innovative components as well as tailored system solutions and services. Bosch Rexroth offers its customers hydraulics, electric drives and controls, gear technology, and linear motion and assembly technology all from one source. With locations in over 80 countries, more than 33,700 associates generated sales revenue of approximately 5.6 billion euros in 2014. To learn more, please visit www.boschrexroth.com

The Bosch Group is a leading global supplier of technology and services. It employs roughly 360,000 associates worldwide (as per April 1, 2015). The company generated sales of 49

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billion euros in 2014. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. The Bosch Group comprises Robert Bosch GmbH and its roughly 440 subsidiary and regional companies in some 60 countries. Including its sales and service partners, Bosch is represented in roughly 150 countries. This worldwide development, manufacturing, and sales network is the foundation for further growth. In 2014, Bosch applied for some 4,600 patents worldwide. The Bosch Group's strategic objective is to create solutions for a connected life. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "Invented for life."*

Additional information is available online at www.bosch.com, www.bosch-press.com and <http://twitter.com/BoschPresse>

*The sales figure disclosed for 2014 does not include the former joint ventures BSH Bosch und Siemens Hausgeräte GmbH (now BSH Hausgeräte GmbH) and ZF Lenksysteme GmbH (now Robert Bosch Automotive Steering GmbH), which have since been taken over completely.

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Reader Inquiries:

Phone: +49 7308 8170-2262
Fax: +49 7308 8170-2683
Email: olaf.marshall@boschrexroth.de
Address: D-89275 Elchingen /Germany
Internet: www.boschrexroth.com

Contact for Journalists:
Bosch Rexroth AG
Susanne Herzlieb
97816 Lohr a. Main
Tel.: +49 9352 18-1573
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