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Advanced Solutions for Plastics Processing Machines Rexroth energy-saving hybrid drive and control systems



Image 1: Rexroth has an extensive track record as a supplier of cross-technology drive and control solutions for plastics processing machines.

Working in product development partnerships, Rexroth provides tailored, high-reliability automation solutions to manufacturers of injection molding machines. Rexroth has many years of worldwide applications experience in the deployment of drive and control solutions for hydraulic, electrical and hybrid machines. Hybrid drive technology combines the strengths of hydraulic systems and electrical drives, for example in clamping systems on blow molding machines.

BlueHydraulics technology reduces energy consumption and noise

Rexroth BlueHydraulics is a modular set of energy-saving and eco-friendly solutions for plastics processing machines. Variable-speed drives and active regulation based on Rexroth Blue Hydraulics technology reduce energy demand on hydraulic plastics processing machines by up to 70 percent and also significantly reduce noise emissions. In many cases, there is no need for elaborate encapsulation of the hydraulic unit. Active regulation also reduces heat transfer to the hydraulic oil, is gentle on the medium and reduces investment and maintenance costs for the cooling system. This does not, however, come at the expense of productivity, which may actually increase.

Standard fieldbus systems, Ethernet protocols and SERCOS III serve as the communications link between the servo-variable pump drives and the higherlevel controller. The drives fit seamlessly into the existing automation landscape, because the special characteristics of fluid technology are integrated in the software. The user only needs to configure the initial drive parameters.

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High-efficiency worm drives - compact and robust

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Electric motors are not the only option for worm drives. Hägglunds high efficiency hydraulic CA motors are a viable alternative. These rugged motors feature high power density, smooth operation, high reliability and long service life. Because they are highly efficient, they reduce power losses, and the compact design saves space. Since initial market introduction, Hägglunds has continued to enhance the Compact CA by improving the finish characteristics and hardness and by introducing new materials. The company Hägglunds belongs to Bosch Rexroth since December 2008.



Image 2: High-efficiency Hägglunds hydraulic CA motors feature high power density, high reliability and long service life.

Hybrid drive systems combine the strengths of hydraulic systems and electrical drives

An example of an application which demonstrates Rexroth's cross-technology expertise is a hybrid drive for a blow molding machine. Rexroth developed the customer-specific solution in partnership with the Berlin-based firm BEKUM. The low-noise, energy-efficient solution combines the advantages of hydraulic systems and electrical drives. A hydraulic gearbox translates rotary motion into linear motion on this application, cushioning the effect of rapid force changes. The switching point from rapid stroke to power stroke is user selectable, and less stress is placed on the components. Forces can be held for extended periods without torque.

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Image 3: Application-specific hybrid solutions bring out the real strengths of hydraulic systems and electrical drives working in unison.

Bosch Rexroth Canada is the Canadian subsidiary of Bosch Rexroth AG, one of the world's leading specialists in the field of drive and control technologies. Under the Rexroth brand name, the company supplies more than 500,000 customers with tailored solutions for driving, controlling, and moving. Bosch Rexroth is a partner for Mobile Applications, Machinery Applications and Engineering, Factory Automation and Renewable Energies. The company provides customized solutions tailored to the needs and specifications of each individual market. As The Drive & Control Company, Bosch Rexroth develops, produces, and sells components and systems in over 80 countries. As part of the Bosch Group, Bosch Rexroth and its 34,900 associates generated approximately 5.1 billion euros in revenue in 2010.

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Additional information can be accessed at www.bosch.com, www.bosch-press.com

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