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Your automation specialist for all printing processes





Quickly fulfill new conditions – Adaptable customized automation

Megatrends are shaping the future of the printing and processing industry: New application fields and ever smaller batch sizes require greater flexibility. At the same time, demands on machine availability and product quality are increasing. In addition, users are demanding sustainable concepts for comprehensive investment protection and for implementation of energy efficient solutions.

Flexibility

The demographic changes in the industrialized nations and the increasing prosperity in Asia and South America are resulting in an ever increasing variety of packaging with smaller batch sizes. At the same time, new applications are being developed such as the printing of RFID electronics. These challenges can only be met with modular, flexible machine concepts.

Availability

As printers and converters, your goal in day-to-day operation is to be able to changeover for new jobs as quickly as possible and return to full production speed – every minute counts. In addition, modern machines often operate around the clock for decades. Intelligent service concepts such as condition monitoring assist you in ensuring this longevity and planning for economical maintenance intervals.

Quality

The quality requirements for printing and converting are constantly on the rise. Particularly with smaller batch sizes, minimizing start-up paper waste is an important quality factor for you. The key to success: A perfect synchronization across all machine units – a key requirement, particularly in functional printing.

- ▶ Commercial printing
- ▶ Converting
- ▶ Digital printing
- ▶ Functional printing
- ▶ Label printing
- ▶ Newspaper printing
- ▶ Packaging printing

Time to market

As a machine manufacturer, you want to implement new concepts or variants more quickly. Efficient engineering, reusable software, and easy system expandability shorten your time to market.

Sustainability

Machine operators all over the world are feeling a growing sense of responsibility. Energy-efficient machines reduce power consumption while providing the same productivity and thus contribute to climate protection. Long-lasting automation components and integrated worldwide service protect your investment for decades.



Implement innovative machine concepts more quickly

As a machine manufacturer, you are experiencing ever greater time pressure. Users expect extremely short delivery times, even with custom-tailored solutions. The critical starting points for a shorter time to market: Modular machine concepts and significant increases in efficiency along the entire engineering chain.

Reduced time to market through modular concepts

You rely on modular machine concepts to fulfill customer requests quickly and economically. Keep in step with the trends of the market – with either centralized or decentralized automation systems by Rexroth. They make it possible to easily develop standardized machine modules, link them to modular machines, and simply enhance them with new functions.

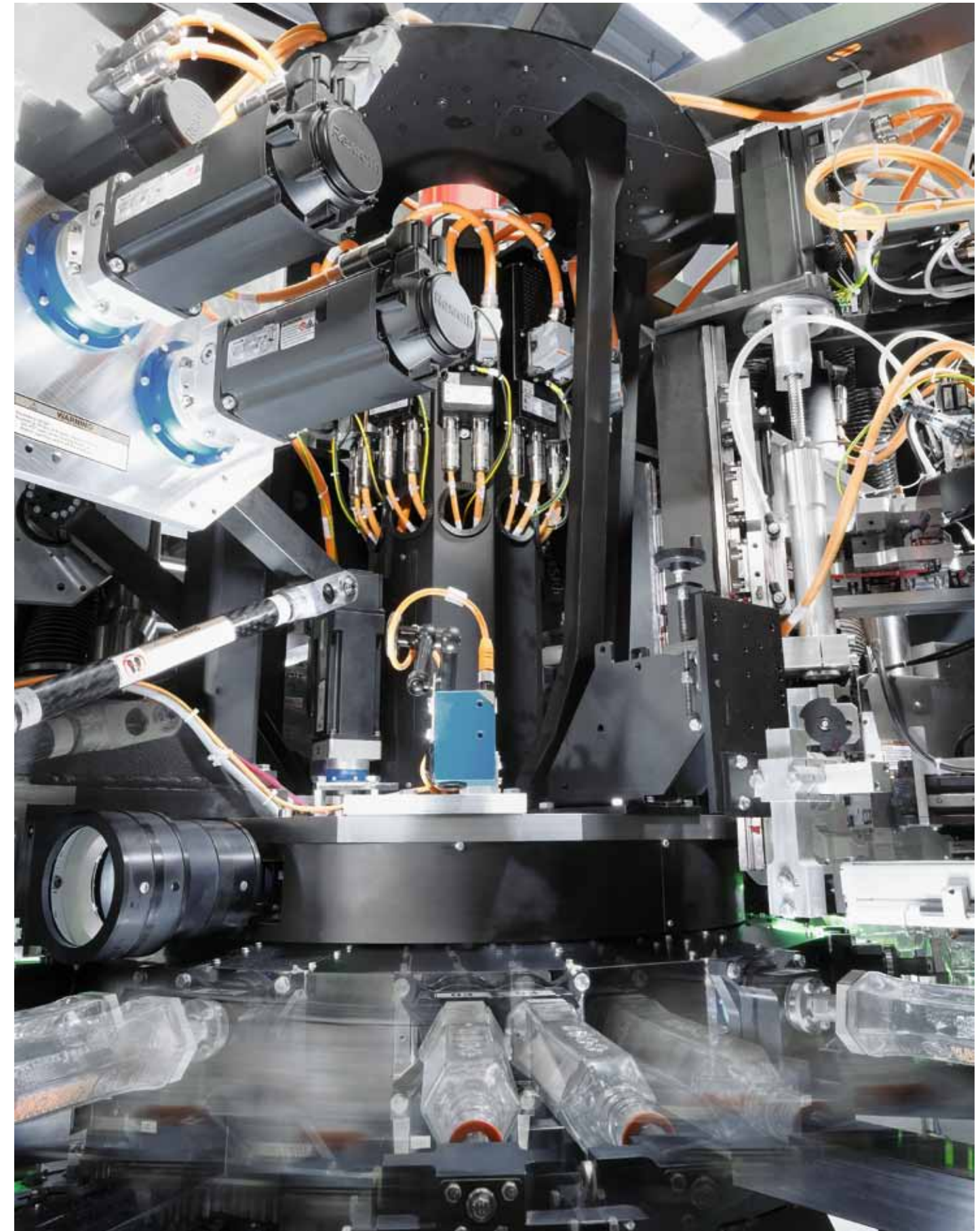


Efficient engineering

Shorten your time from project planning to commissioning. Rexroth will increase your efficiency significantly. Open interfaces and a standardized communication facilitate the integration of third-party hardware and software. We have already anticipated your machine functions and incorporated them into a wide variety of tried and tested technology functions – as a result, they only require parameterizing instead of time-consuming programming. In addition, the reusability of software once it is written and the modular architecture reduce the amount of engineering; this is particularly advantageous in retooling situations.

An automation partner

Rexroth is your one-stop source for all automation technologies: Software, control hardware, and electromechanical, pneumatic, and hydraulic drive solutions. All of their interfaces are perfectly matched to one another. Not only that, we offer you consulting services to assist you in implementing standard-compliant safety concepts, increasing energy efficiency, or implementing condition monitoring strategies.



More flexible printing and converting – with minimized format change times

As a printer, you are processing ever smaller batch sizes under even greater time pressure. Printing presses and converting machines using Rexroth technology significantly reduce the format changeover time. At the same time, your customers are always increasing their product requirements, which always requires new processing steps. You can use our automation solution to easily integrate the machine modules needed for this.

Economy through flexibility

Whether for classic printing techniques or for print-on-demand: The Rexroth system solution IndraMotion helps you to operate with high productivity even on small jobs. The intelligent safety functions help you to save time because it is not necessary to switch off the machine during a plate change. During the format changeover, high-dynamics servo drives reduce positioning times. In addition, automatic register presetting permits a rapid restarting and on-the-fly synchronization.

Precision achieves quality

Using modern direct drive technology allows you to reduce the torsion in the drive chain. This and the exact synchronization of all of the drives in the machine modules, as well as the perfect register and tension control achieves maximum product quality across the complete production process.

On schedule through higher productivity

Higher productivity allows you to weather increasing scheduling pressure. The high-dynamic drive technology and the real-time communication across the entire line increase production speed. This, while simultaneously achieving higher availability because intelligent drive functions detect wear in a timely fashion. This prevents machine downtimes and you can selectively schedule the maintenance during non-production times.

Future-proof investment

You are thinking long-term and want your machines to be able to quickly adapt to future needs for many years? Then invest your money in a modular drive and control technology that you can expand for new tasks with a minimal investment. The Ethernet-based sercos automation bus provides future-proof networking.



Systems and components for all printing processes

Simplify your life. As automation specialists, we will match your control, electro-mechanical drives, hydraulic, and pneumatic systems to one another perfectly. Rexroth is your one-stop source for all technologies and has many years of industry expertise.



Intelligent controls

Motion logic systems from Rexroth provide you with multiple configurable controls for fully automated production. The open system architecture and modular, scalable hardware and software allow you to adapt the systems precisely to your needs.



Electric drives

The electric drive systems cover the entire power spectrum from 0.1 to 630 kW. Regardless of whether they are mounted centrally in the control cabinet or are distributed in decentralized manner throughout the system, they fulfill all customer requirements for flexibility. Use the scalable motion logic functions, certified safety technology, or multi-Ethernet communication for your custom-tailored solution.



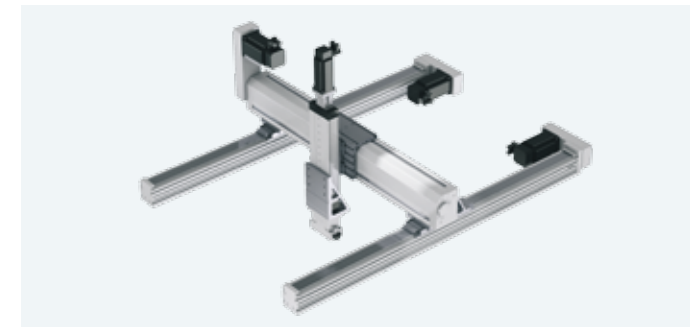
High-dynamic motors

The broad spectrum of high-dynamic servo motors, torque motors, and linear motors covers all drive functions such as for powerful winders, high-precision printing units, precise positioning axes, and high-dynamic cross cutters. The use of direct drives reduces the torsion in the machine and thus helps to extend its service life. Rexroth offers servo motors approved by ATEX and UL/CSA for use in potentially explosive areas.



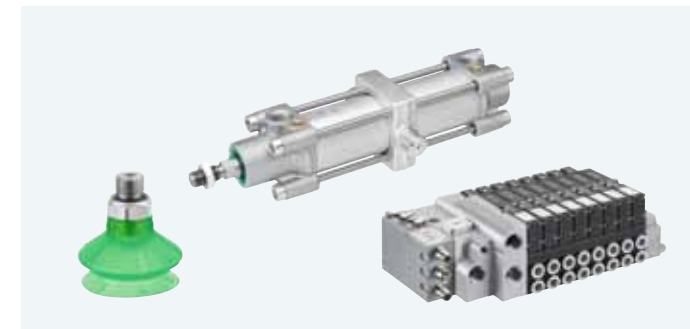
Compact linear modules

Electrically driven linear modules by Rexroth feature ultra-compact designs and maximum travel speeds. Depending on the required precision and speed profile, they are available with a ball screw drive or belt drive – both versions having identical dimensions.



Precise multi-axis systems

One, two, and three-axis handling systems for maximum speeds and accelerations provide greater efficiency in product removal. With positioning and repeatability in the μm range, they offer unrivaled precision.



Versatile pneumatics

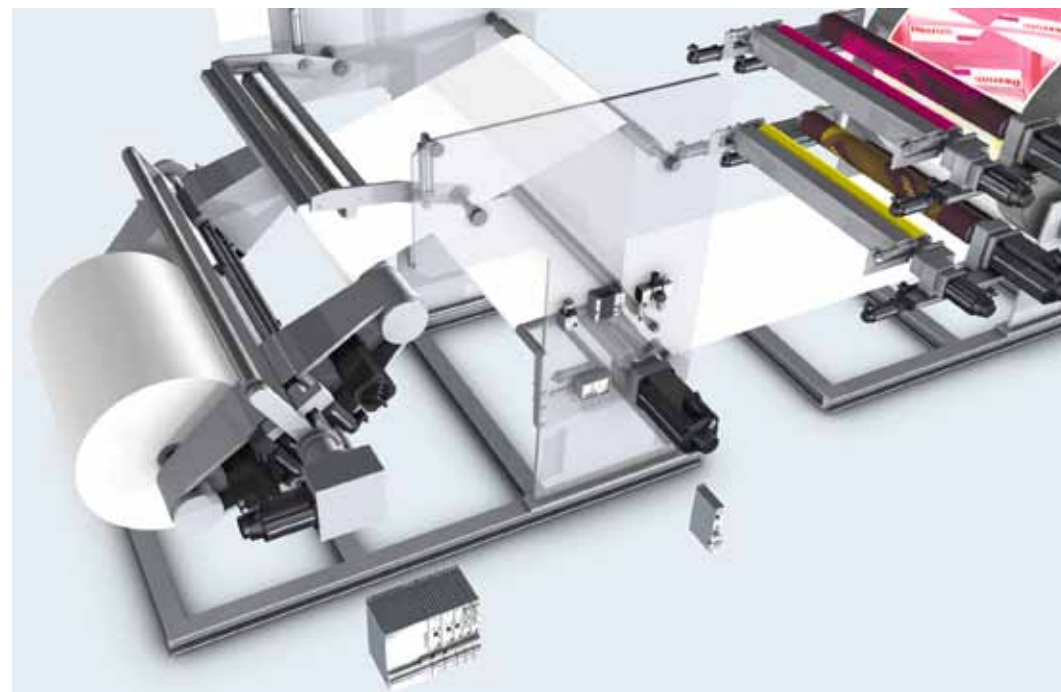
The finely graduated vacuum gripper and cylinder program offers the optimum solution for every application area. The modular valve systems can be flexibly adapted to any application with a high degree of functionality. All components feature outstanding precision and reliability in continuous operation.



Powerful hydraulics

No other technology handles heavy-duty tasks like hydraulics. Rexroth combines the high force density of hydraulics with the advantages of digital control technology. Fluid technology is seamlessly integrated into existing communication structures and thus simplifies engineering and diagnosis.

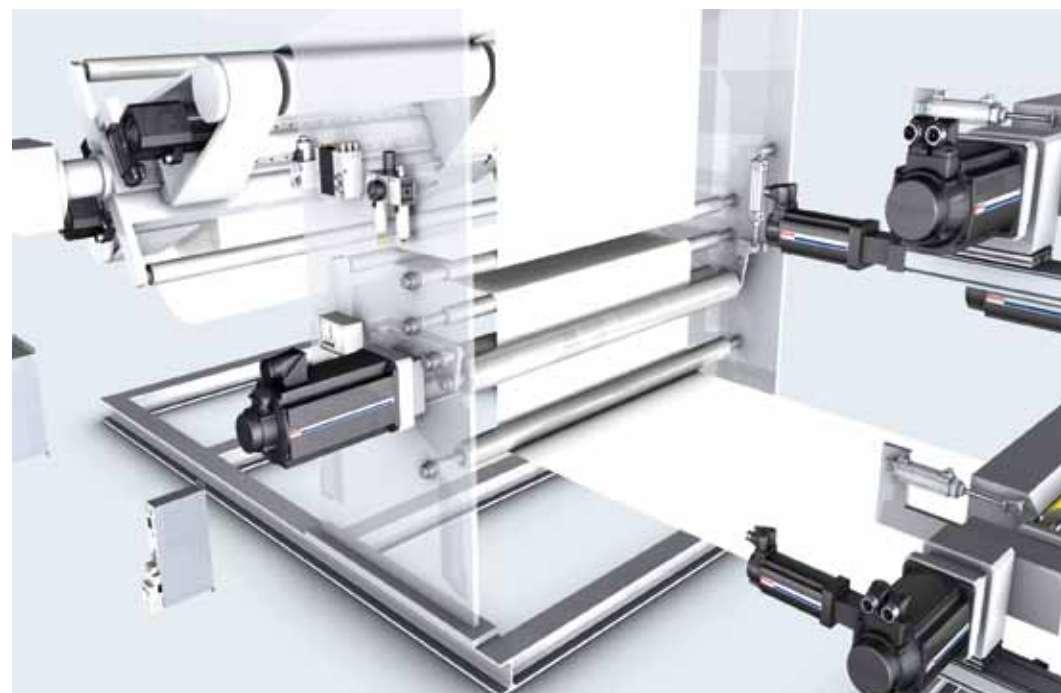
Perfection in detail: Industry know-how for custom-tailored functions



Innovative nonstop turret winders

Rexroth offers all of the hardware and software components for automation. Commanding the roll changeover takes a few milliseconds. With on-the-fly splicing, the outgoing web is cut off and glued to the new one.

In addition: Rexroth also offers you the possibility of significant power savings for winder drives. Motors operating in generating mode provide the energy for other drives via the internal DC bus.



Precise tension controllers

The correct web tension is always required in order to achieve the highest quality and productivity: The tension controller maintains a constant web tension. Extremely high printing precision is already ensured during production ramp-up. It handles all print media: From paper and cardboard of an extremely wide range of thicknesses to various films with their respective stretching properties.



High-precision printing units

During the format change-over, high-dynamic servo drives and compact linear motion technology reduce positioning times. After changing a sleeve or printing plate, operators adjust the register controller to the new printing format.

With Rexroth, this is done by the push of a button. Stepless electronic transmissions make the change immediately and thus minimize paper waste even during start-up. Precise register controllers provide perfect quality even at extremely high production speeds.



Perfect converting

Coating protects and refines the printed materials. Rexroth automation ensures precise application of the coating roller.

We control complex embossing and folder modules using integrated electronic cam plates. The best thing about this: Handling is easy for the operator because the software reduces the adjustments to a few inputs.



High-dynamics cutting

Roll processing is an extremely productive in-line process. Cross cutters with integrated register control provide exact cutting results. High-dynamics drive technology guarantees on-the-fly format changing even at full production speed. The fast PLC provides reliable control of the paper waste separator.



Efficient product removal

The high productivity of modern in-line production systems requires extremely high efficiency in product removal. Flexible handling systems from Rexroth fulfill these requirements perfectly. The certified Rexroth safety technology and the proven protective fence portfolio provides maximum operator safety.

Shorter time to market: Efficient from project planning to commissioning

Engineering is taking up an ever greater percentage of manufacturing costs. Rexroth helps you to significantly reduce this expense. Along the entire engineering chain, you benefit from essential simplifications.



IndraWorks: An environment for every task

IndraWorks includes all of the tools for the entire engineering process – from commissioning of electrical and hydraulic drives with team engineering to the unified programming of the PLC and motion control.

Increase your efficiency through:

- ▶ Unified programming of the PLC, motion control, and robotics
- ▶ Powerful wizards for simple commissioning
- ▶ Parameterizing instead of programming
- ▶ Open software architecture
- ▶ Support of team engineering
- ▶ Programming templates for simple modularization
- ▶ Simple integration of third-party components



◀ **IndraWorks – powerful wizards for quick commissioning and simple integration of third-party components.**

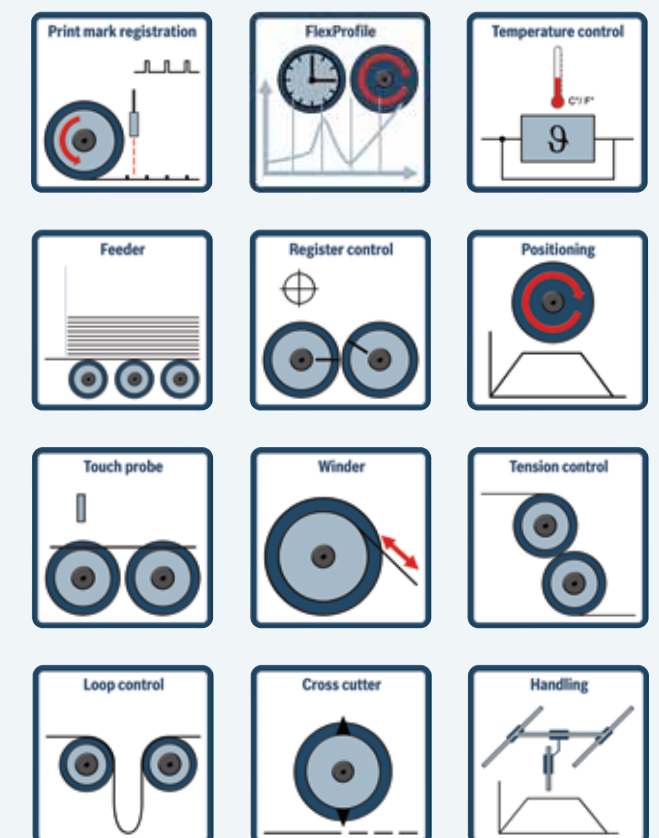
Technology functions:

Easily realize complex processes

You need to quickly react to market and customer requirements and create efficient variants? No problem; you can use the proven technology functions and function libraries from Rexroth to change even complex processes simply through parameterization:

- ▶ Color register controller
- ▶ Cross cutter
- ▶ Dynamic cam switch
- ▶ Electronic cam plates
- ▶ Extended slotting
- ▶ Feeder
- ▶ Flex profiles
- ▶ Gantry axes
- ▶ Inching
- ▶ Loop controller
- ▶ Measuring wheel
- ▶ PID controller
- ▶ Preventive diagnosis
- ▶ Print mark registration
- ▶ Probe input function
- ▶ Reel stand
- ▶ Robotic kinematics
- ▶ Temperature controller
- ▶ Tension controller
- ▶ Winder and unwinder

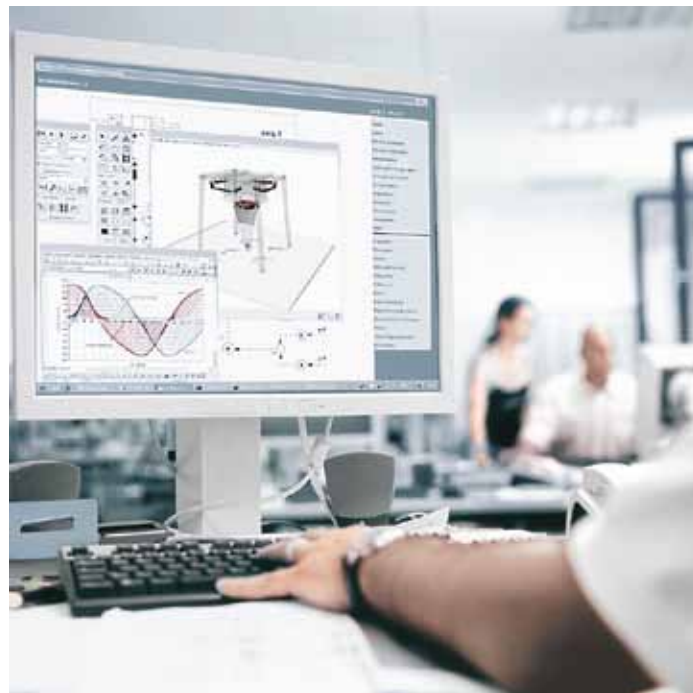
Examples of pre-programmed technology functions



Services

Unrivaed practical experience for your project

Complete all tasks on schedule with limited resources: We will help you to overcome this challenge. Whether in project planning, mechatronic construction, or commissioning, our specialists will support you with custom-tailored services all over the world.



Project planning and applications support

Working together with you, we will select the right hardware and software components for each task and will configure them to produce perfect system solutions – on-site at your premises.

Mechatronics support

Even in the development process, the interactions between the mechanical, electrical, and software systems are taken into account to avoid time-consuming corrections during the rest of the process. We use mechatronic simulations to protect you and enable profound evaluation and optimization.

Commissioning

Whether at your plant or on the customer's premises: Commissioning always takes place under considerable time pressure. It's great that you always have access to our industry specialists. They are ready to lend their expertise, even at a moment's notice.

Energy efficiency consulting

Our energy efficiency specialists analyze your entire printing and converting machine. We take into account the whole picture, develop comprehensive concepts, and accompany you from the analysis to implementation. The basis for cross-technology possibilities is the universal system Rexroth for Energy Efficiency.

Mechatronics support – virtual testing and optimization of machine functions including all mechanical and electrical components.

Reduce energy consumption and contribute to climate protection

Awareness of climate change has increased all over the world. More and more companies want to make their contribution to climate protection by reducing their power consumption. You can also use our universal system Rexroth for Energy Efficiency to maximize all potential savings.



Energy System Design

Our specialists know the interactions of the different corrective measures and assist printing press manufacturers to connect productivity and energy efficiency to each other in the critical construction phase.

Energy-Efficient Components and Systems

Rexroth components and systems are extremely efficient. They form the basis for energy-efficient solutions.

Energy Recovery

Make use of braking energy. Rexroth drives automatically switch into generator mode when braking servo drive. The current that this produces is supplied to other drives, is buffered in the internal DC bus, or is fed back into the power grid.

Energy on Demand

Demand-oriented controls in electric and pneumatic drive technology and in the external peripherals open up a large savings potential without losses in productivity.



Human and machine safety

In every region of the world, standards and rules place high demands on machine safety. We help you to economically put these guidelines into practice and thus increase the productivity of your machines.



SAFETY ON BOARD

Safe Motion

Safety functions directly in the drive combine maximum safety requirements with minimum machine downtimes. Whether changing plates, rubber blankets, or rollers: With Safety on Board, Rexroth drives offer you numerous certified safety functions. They react extreme quickly. With manual interaction, the operator activates the safety functions for individual or multiple drives. The operator does not have to switch off the machine, but can instead resume production immediately after the procedure. This increases the availability with optimum safety.

SafeLogic

Replace hard-wired safety switch devices with flexibly programmable safety software. Adapt the processing of peripheral signals quickly and simply to a wide variety of machine concepts: As an integral component of the IndraMotion system solution, use SafeLogic to program standard and safety applications on one control unit with the common tools of IndraWorks. By doing this, you significantly reduce commissioning and validation times.



SafeLogic compact

Low cost, big effect: Even small and mid-sized machines require standard-compliant, economical conversion. The open, modularly expandable small safety control unit SafeLogic compact is the perfect solution for these cases. Take advantage of convenient programming and intuitive parameterization for quick, safe results.

Implement standards correctly

Machine safety does not tolerate errors. So put the knowledge of our experienced safety experts to use. In practical training sessions, they will provide you with all the tools you need. If you wish, we can assist you in all process steps relating to machine safety and can accompany you through the 10 steps to the performance level: From risk assessment to software and hardware design, to commissioning and verification of functional safety.

Cross-technology competence in all levels of automation

- ▶ Standard-compliant products
- ▶ Easy implementation
- ▶ Modular services
- ▶ Practical training sessions

Maximum availability over the whole life cycle of the machine

Your machine should be productive for more than 20 years? Then your best bet is to rely on Rexroth as your service partner. We will help you to detect wear, and react before a malfunction occurs. We increase the productivity of older machines with product overhauls, retro-fitting, and modernization.



Customized maintenance – Remote condition monitoring

Detect wear before it results in expensive machine downtime. The innovative software tool iDDS detects incipient wear without additional sensors and issues timely instructions for required corrective measures. You retain complete control over the detected data even in installations on a web server.

iDDS uses the existing data of the drive and control system of the printing press. It dynamically evaluates trend curves and changes in a wide range of process parameters. If the on-line measurement values reach a critical threshold, the system issues an appropriate warning. There is thus enough time to carry out the replacement in a planned maintenance window. If you request it, our specialists will regularly access the appropriate data by remote access and will arrange with you the necessary repairs. This reduces maintenance costs and unproductive machine malfunctions.

Gain productivity – through product overhauling

Increase the availability of your machine and rejuvenate your tried and true drive and control components. In product overhauls, we will replace all wear-prone parts of your drive and control components. You get an extended service life and a new product guarantee.



A second life for your machine – through retrofitting and modernization

You want to maximize the productivity of your machine over its entire service life. In a retrofit, we replace all outdated control and drive components with up-to-date technology.

Integrated modernization helps even older machines to have a second productive life. Our specialists oversee the entire development of the project. They analyze the system and take care of all of the engineering including standard-compliant safety and maximum energy efficiency.

With our comprehensive worldwide service network in more than 80 countries, we carry out modernization work on-site and coordinate all necessary subcontractors.

Rexroth services for conserving, increasing productivity, and reconditioning your machine:

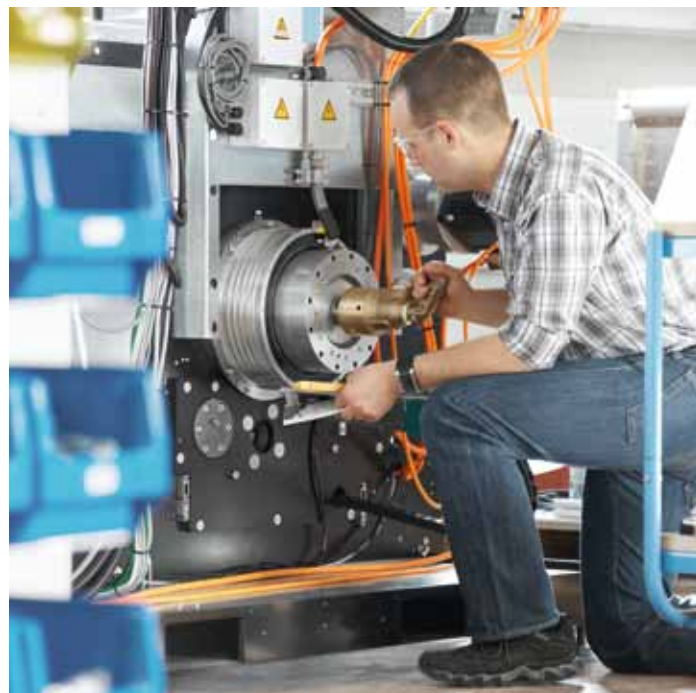
- ▶ Condition monitoring
- ▶ Retrofitting
- ▶ Modernization
- ▶ Technical support/Help desk
- ▶ Field service
- ▶ Repair service
- ▶ Spare parts service
- ▶ Industry training
- ▶ Training

Your global partner with rapid response and 20 years of printing experience

No matter where in the world you need us, we are always nearby. Take advantage of our decades-long, worldwide practical experience in all applications of the printing and processing industry. Experienced printing specialists from your own region will look after you.

You are looking for a partner that knows the regional requirements and can convert them into custom-tailored solutions? Rexroth gives you the advantage of a global partner with a decentralized organization. Industry specialists in printing and converting machines are available to assist you in every region. Our research and development centers in Europe, Asia, and America develop regionally adapted solutions and products based on our product platforms.

A comprehensive service network in more than 80 countries ensures consistently rapid response. You can count on a quick-reacting partner that will accompany you over the entire life cycle and will keep productivity at a maximum level. Wherever you need support: Rexroth is already there.



Tough application,
ingenious solution } Exactly

Your benefits

- ✓ Flexibility maximized
- ✓ Productivity outperformed
- ✓ Precision perfected
- ✓ Engineering efficiency surpassed
- ✓ 20 years of printing expertise applied