

## Innovative drives – driving innovation.

**Rexroth drives have played a pioneering role in the automation industry for many years.**

**Motivation and commitment continue to drive our efforts to maintain our technology leadership.**

We keep our ears to the ground to constantly stay in tune with the latest trends in production automation. Based on the information we collect, we develop tomorrow's drive solutions for the production floor. An uncompromising focus on the needs of our customers enables us to drive innovation forward in the machine building and mechanical engineering industry.

We have repeatedly played a pioneering role in the industry. One example of the contributions which we have made to drive technology is the maintenance-free servo motor. The advantages of this technology are so fundamental that it ushered in a new generation of products throughout the mechanical engineering industry starting with transfer machines in the automotive industry. Other milestones include the first main spindle drive with positioning capability and distributed automation solutions with intelligent digital drives for modular machine design.

Linear motor technology is another ultra-modern and innovative field where Rexroth is a leader and can demonstrate more experience than any other company in the world.

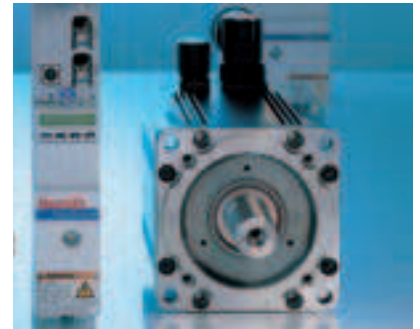
Currently, one issue of vital importance is drive-integrated safety technology.

Rexroth has proven time and again that, in the long run, innovation and market success go hand in hand. Over one million Rexroth drives are in use around the world in a wide and diverse range of applications.

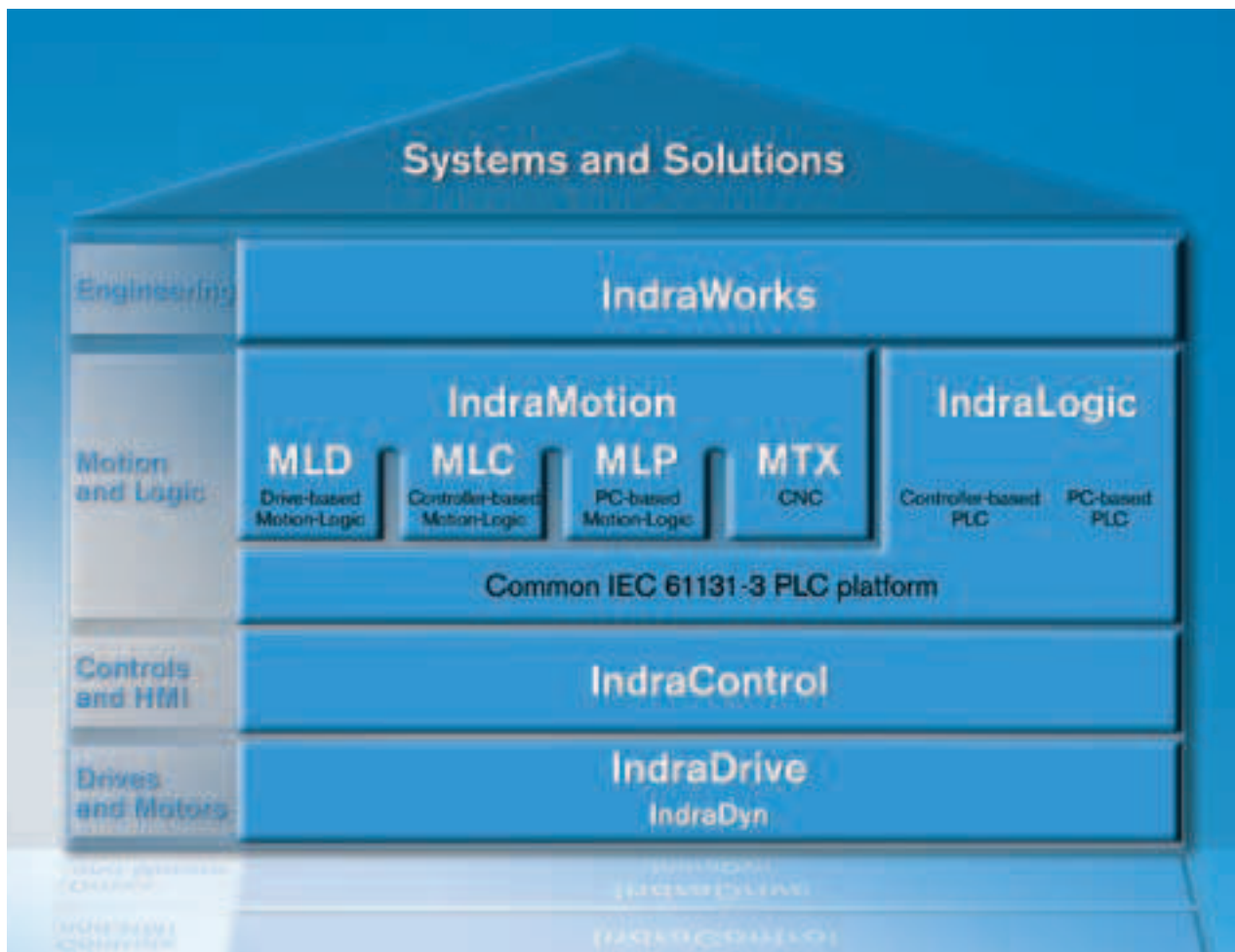
Rexroth IndraDrive, the latest generation of drives, and Rexroth IndraDyn, the complete range of motors, are the result of Rexroth's

dedication to innovation in drive technology.

With their fully-integrated platform, innovative safety technology and intelligent functions, Rexroth IndraDrive and IndraDyn are predestined for both intelligent single-axis and complex multiple-axis applications. This innovation in drive technology will set market trends again – to benefit all users.



# Innovative integration – Rexroth Automation House.



Our Automation House is a unique modular toolkit which gives you everything you need to create leading-edge automation solutions. From drive and control systems to the high-performance software framework for standardized engineering and user-friendly operation. This innovation gives you all the privileges associated with modern automation technology – integration, intelligence and investment for the future.

## **IndraDrive and IndraDyn**

The intelligent drive solution and comprehensive range of motors for maximum dynamics

## **IndraControl**

The standardized control and visualization hardware platform for increased transparency in production

## **IndraLogic**

The IEC-compliant PLC solution for intelligent automation

## **IndraMotion**

The scalable system software platform for high-performance motion control applications

## **IndraWorks**

The integrated engineering software package for project planning, programming, visualization and diagnostics

# Rexroth IndraDrive and Rexroth IndraDyn cause a stir in the drive market.

## **This new design is redefining standards in drive technology.**

Complete in terms of hardware and software, safe in terms of application and intelligent in terms of functionality:

With IndraDrive and IndraDyn you will benefit from the economic, intelligent and future-assured approach to your automation tasks – regardless of your industry!

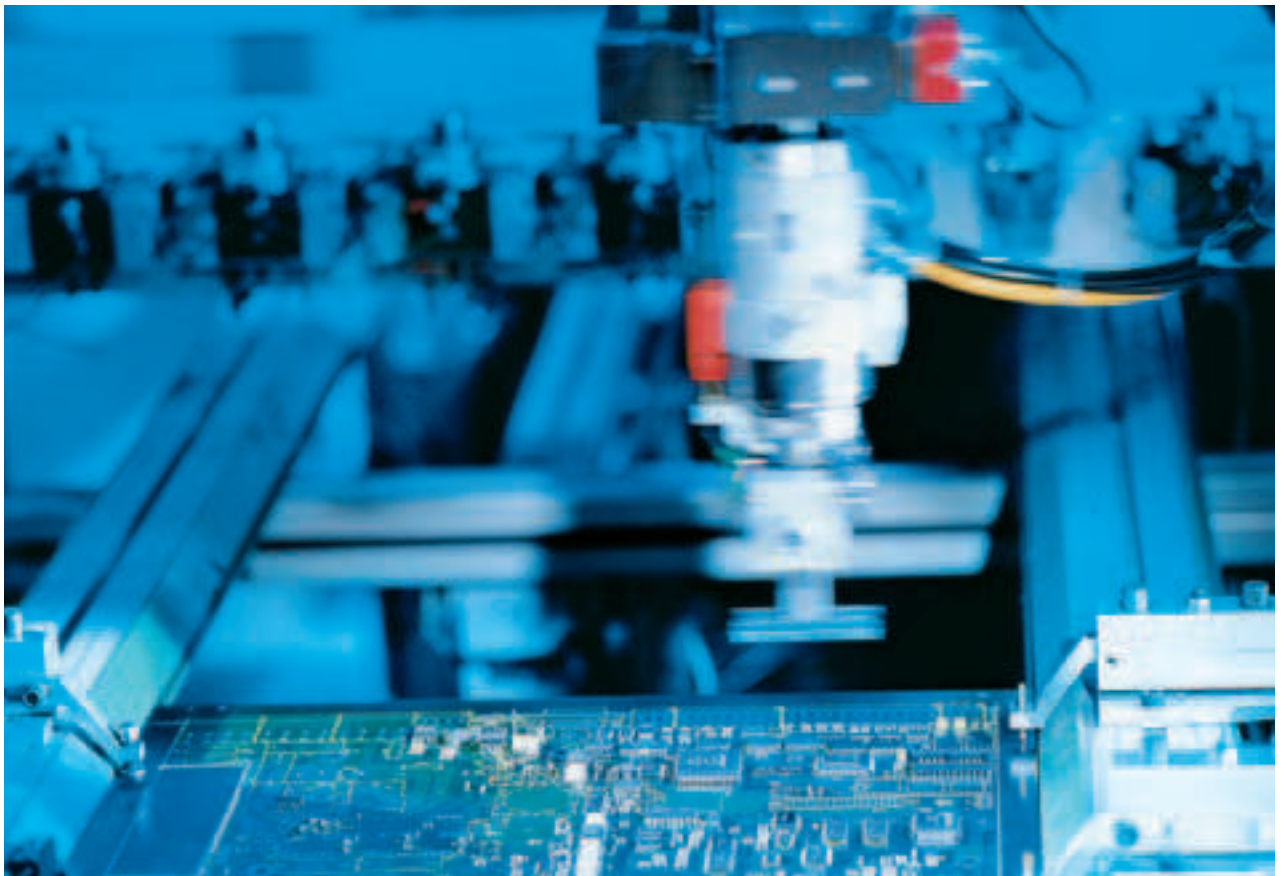
It is the combination of three features which gives IndraDrive its unique and pioneering edge:

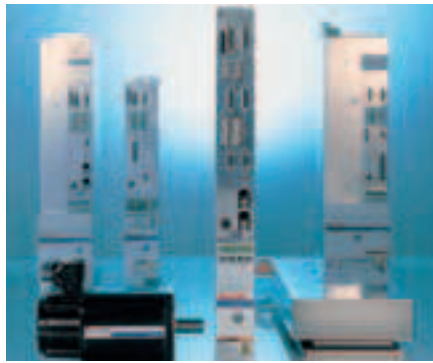
- Inclusive platform
- Integrated intelligence
- Innovative safety concept

When it comes to practical applications, IndraDrive offers many advantages such as:

- Safety on Board conforming to EN 954-1, Category 3, for safe stop and safe motion
- Wide power range from 1 kW to 160 kW

- Internationally standardized interfaces
- Integrated Motion Logic, with IEC 61131-3 compliant PLC
- Highest performance and precision
- Scalable power and functionality
- Direct mains connection
- Energy-saving power recovery





## IndraDrive has the power to convince

No matter what demands you make on your drive – IndraDrive offers an impressive array of key benefits:

- | Integrated hardware platform
- | Scalable functionality
- | Unique safety concept

# Your benefits

### Safety on board

Safety technology certified to EN 954-1, Category 3, protects machine operators while the drives are in motion. In contrast to conventional safety designs, there is no longer any need for motor contactors, additional speed monitors or frequent power shutdown using the line contactor.

### Integrated Motion Logic with IEC 61131-3 compliant PLC

Motion Logic with IEC 61131-3 compliant PLC can be integrated as an optional feature that consistently applies open standards. This makes it easier to bring in customer know-how and saves on higher-level control systems and personnel training courses.

### Integrated technology functions

The technology functions can be configured on the basis of Motion Logic to perform a wide and diverse range of process-oriented tasks. This does not require any programming knowledge whatsoever on the user's part.

### Open interfaces

Internationally recognized interfaces are available for communicating with higher-level machine control systems: SERCOS, PROFIBUS DP, PROFINet IO, CANopen, DeviceNet, analog and parallel.

### A single software for all tasks

The engineering software framework, IndraWorks, carries you through all the steps involved in project planning, programming, parameterization, operation and diagnostics.

### A unique platform

In the interests of meeting your individual requirements, we have developed two versions of IndraDrive:

- IndraDrive C - Compact converters
- IndraDrive M - Modular inverters

Particularly economic drive solutions can be derived from the common control units and the combination of different versions.

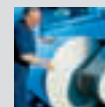
### A complete range of motors

The newly developed generation of IndraDyn motors meets all the requirements of modern factory automation through its diversity of design and unique performance:

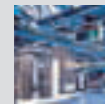
- Synchronous and asynchronous servo motors which are more compact and more powerful
- Servo motors designed for potentially explosive areas – conforming to ATEX and UL/CSA
- Synchronous and asynchronous motors for high-speed applications such as motor spindles



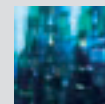
Automation



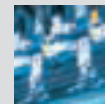
Printing and converting machines



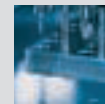
Conveying and storage systems



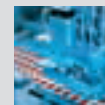
Glas processing machines



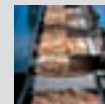
Handling and assembly systems



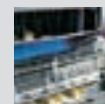
Woodworking machines



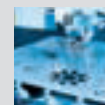
Plastics processing machines



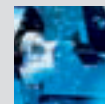
Food processing and packaging machines



Textile machines

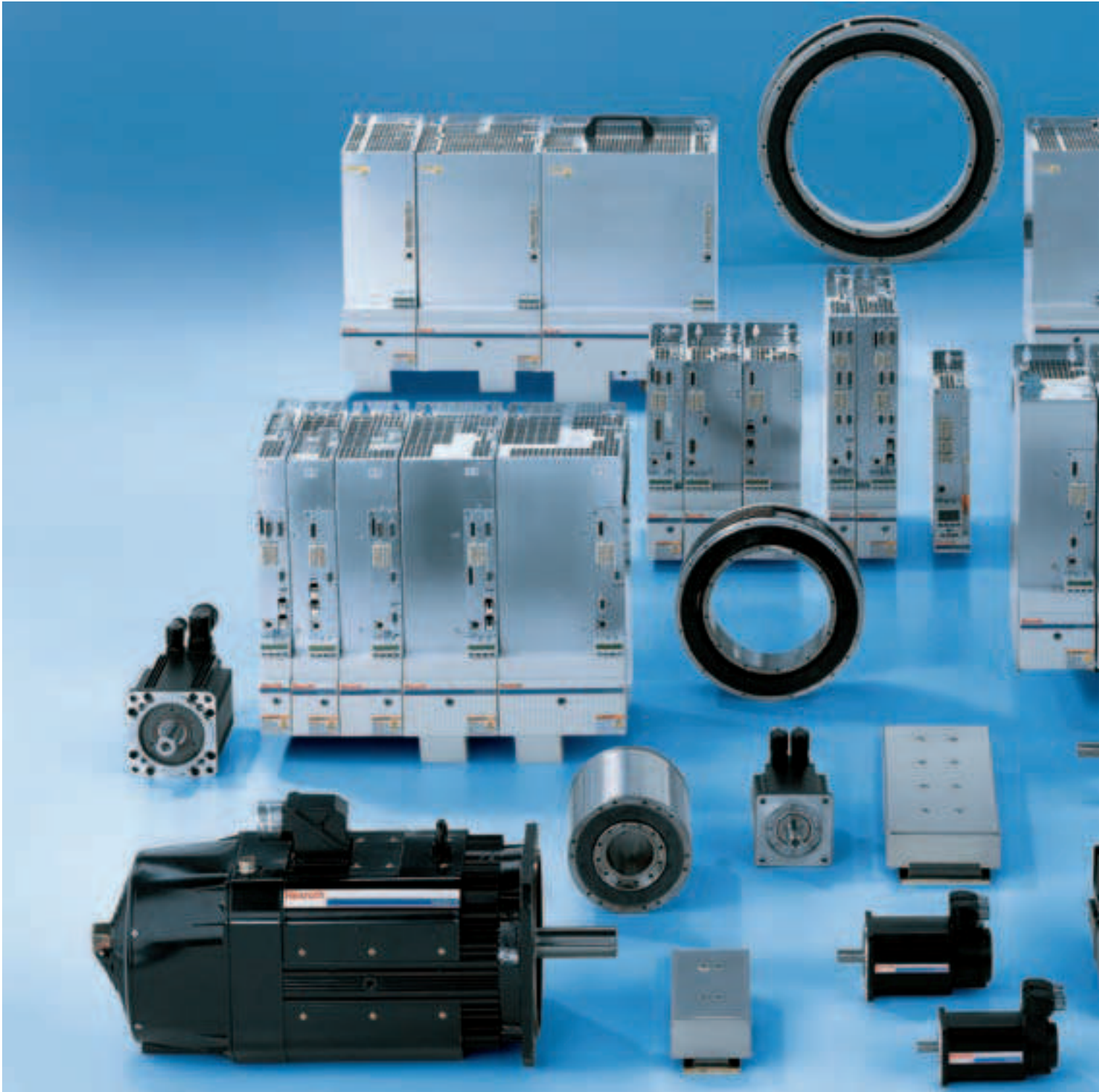


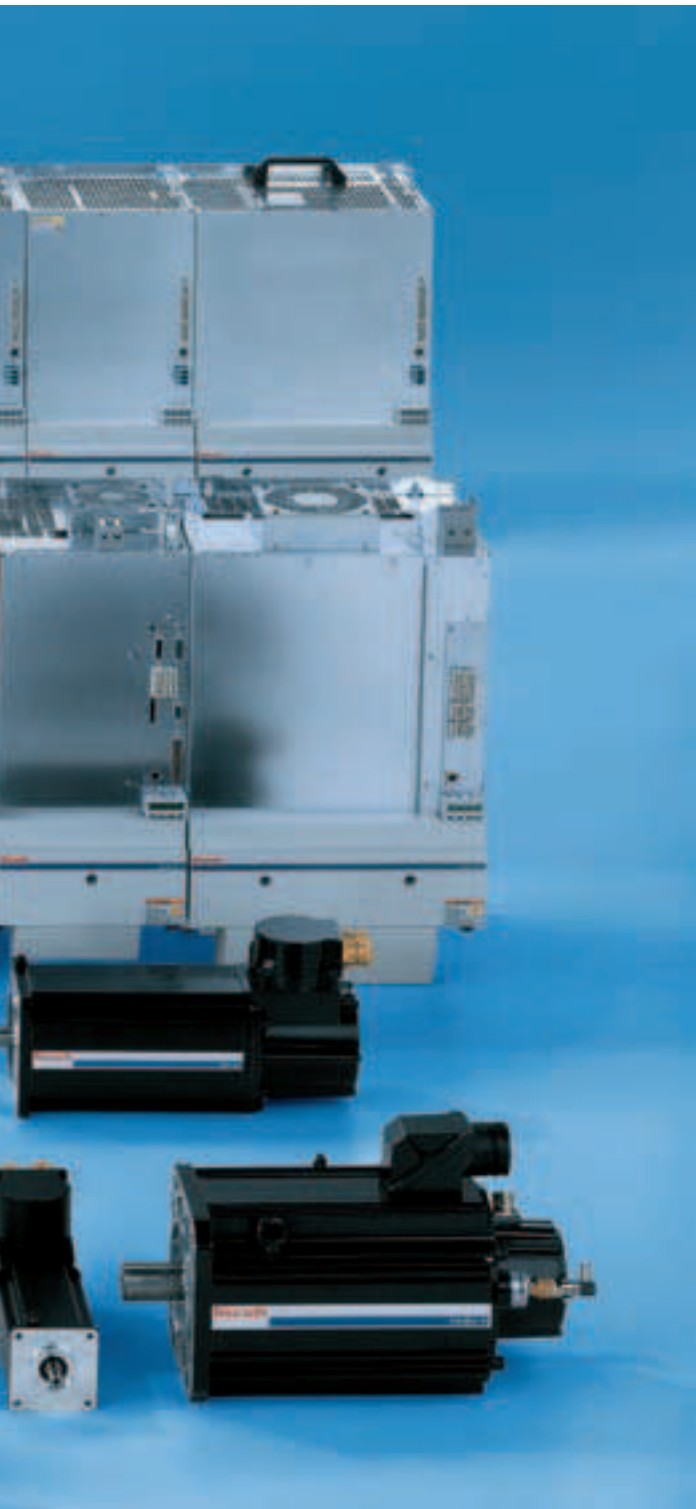
Metal forming



Machine tools

# Introducing the new IndraDrive system



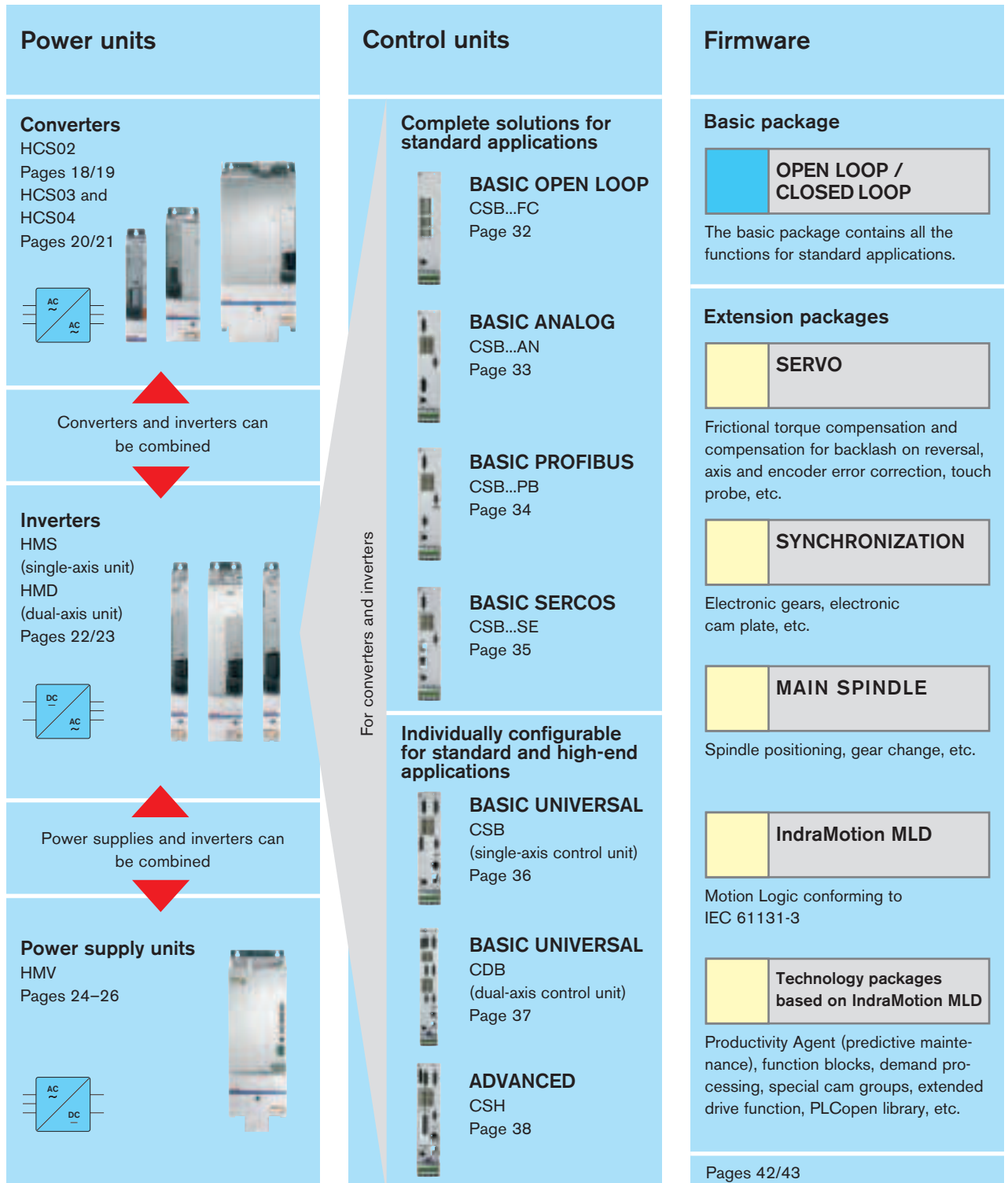


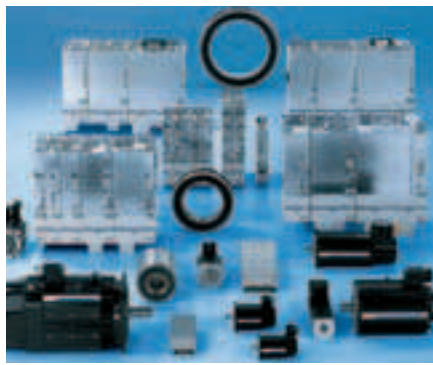
IndraDrive stands for innovation all along the line. Therefore, choosing the new drive generation from Rexroth means that your every wish will be fulfilled.

Main features of the IndraDrive:

- Compact converters and modular inverters on one platform
- Integrated Motion Logic with IEC-compliant PLC
- Drive-integrated safety technology
- Intelligent technology functions
- Integrated engineering framework for project planning, programming, operation and diagnostics
- Complete range of synchronous and asynchronous motors

# Leaving nothing to be desired: Rexroth IndraDrive – the complete system





## Seamlessly coordinated

- | Integrated system
- | Scalable power
- | Flexible function blocks
- | Open communications standards
- | Future-proof

# Your benefits

## Engineering and operation



**Standard operation panel**  
Page 39



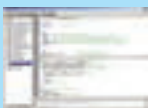
**Comfort operation panel**  
Page 39



**Additional operation panel VCP**  
Page 39



**Software module PFM**  
Page 39



**IndraWorks**  
Engineering software framework for start-up, programming, etc.  
Pages 50/51

## Cables



**Power cables RKL**  
Page 96



**Encoder cables RKG**  
Page 96



**Fiber optic cables, bus connectors, etc.**

## Motors and gearboxes



**Synchronous servo motors**  
IndraDyn S  
MSK, MKE  
Pages 56–59



**Asynchronous servo motors**  
IndraDyn A  
MAD, MAF  
Pages 60–63



**Synchronous linear motors**  
IndraDyn L  
MLP/MLS  
Pages 64/65



**Synchronous high-speed motors**  
IndraDyn H  
MSS/MRS  
Pages 66/67



**Synchronous torque motors**  
IndraDyn T  
MST/MRT  
Pages 68/69



**Gearboxes for servo motors**  
GTE, GTM  
Pages 70–73



**Standard motors, geared motors**  
Pages 74/75

## Auxiliary components



**Mains filters**  
HNF, NFD  
Page 78



**Mains filters, mains choke**  
HNK  
Page 79



**Mains chokes**  
HNL  
Pages 80/81



**Motor filters**  
HMF  
Page 82



**Brake resistors**  
HLR  
Pages 83–85



**Brake units**  
HLB  
Page 86



**Capacity module**  
HLC  
Page 87



**Blower unit**  
HAB  
Page 88

## Five steps to your drive solution



Step	Example	Help
<b>1 Determine your drive requirements</b> <ul style="list-style-type: none"> <li>• Torque, speed, power ...</li> <li>• Performance (control quality ...)</li> <li>• Interfaces, functions</li> <li>• Single-axis or multi-axis drive</li> </ul>	<b>I Servo drive for a handling axis</b> <ul style="list-style-type: none"> <li>• RMS torque 4.5 Nm</li> <li>• Maximum torque 8 Nm</li> <li>• Speed 2,500 rpm</li> <li>• PROFIBUS interface</li> <li>• Simple servo functionality</li> </ul>	<b>Drive sizing program</b> IndraSize Pages 52/53
<b>2 Select the power unit/motor combination</b>	<b>I IndraDrive C with IndraDyn S</b> HCS02.1E-W0028-A-03-NNNN MSK050C-0300-NN-S1-UG0-NNNN <ul style="list-style-type: none"> <li>• Standstill torque 5 Nm</li> <li>• Maximum torque 9 Nm</li> <li>• Maximum speed 3,000 rpm</li> </ul>	<b>Power units</b> Pages 14–27  <b>Motors</b> Pages 54–75
<b>3 Identify the control unit performance and interfaces</b> <ul style="list-style-type: none"> <li>• Higher-level control system</li> <li>• Encoder</li> <li>• Inputs and outputs</li> <li>• Safety technology</li> </ul>	<b>I BASIC PROFIBUS</b> CSB01.1N-PB-ENS-NNN-NN-S-NN-FW <ul style="list-style-type: none"> <li>• Standard performance</li> <li>• PROFIBUS</li> <li>• IndraDyn standard encoder</li> <li>• Standard operator panel</li> <li>• No additional options</li> </ul>	<b>Control units</b> Pages 28–41
<b>4 Define the firmware function</b> <ul style="list-style-type: none"> <li>• Basic OPEN LOOP or CLOSED LOOP package</li> <li>• Extension packages</li> <li>• Motion Logic</li> <li>• Technology functions</li> </ul>	<b>I Basic CLOSED LOOP package</b> FWA-INDRV*-MPB-03VRS-D5-1-NNN-NN <ul style="list-style-type: none"> <li>• No extension packages</li> </ul>	<b>Firmware</b> Pages 42/43
<b>5 Select the accessories</b> <ul style="list-style-type: none"> <li>• Mains filters and mains chokes</li> <li>• Brake resistors, brake units</li> <li>• Capacity modules</li> <li>• Cables</li> <li>• Software</li> </ul>	<b>I Mains filter</b> NFD03.1-480-016 <b>I Power cable</b> RKL4302/005,0 <b>I Encoder cable</b> RKG4200/005,0 <b>I Basic accessories</b> HAS01.1-065-NNN-CN <b>I Shield connection</b> HAS02.1-002-NNN-NN <b>I Software</b> SWA-IWORKS-D**-xxVRS-D0-CD650-COPY	<b>Auxiliary components</b> Pages 76–97  <b>Engineering software toolkit</b> IndraWorks Pages 50/51