



Bosch Rexroth
WE MOVE. YOU WIN.

Factory Automation

Bosch Rexroth Vietnam

Company's Global History through the years:



Moved from iron foundry to hydraulic solutions



Move from hydraulics to multi-technology provider



Move to provide integrated multi-technology solutions



Move to one brand for software driven and interconnectable Drive & Control solutions



Move into the future of digital transformation

1795

1965

1996

2001

2017

47 manufacturing locations
& Customization Sites in 21 Countries

Sales & Service Network throughout **80** countries

5 continents
Working on Research & Development



01 Erbach



02 Volkach



03 LoP2



04 Schweinfurt



05 Skofja Loka



06 Xi'an



07 Murrhardt



08 Stuttgart



Product Portfolio

Automation ecosystem for
Machine Builders / System Integrators
based on CtrlX Automation platform



The most complete and unique automation ecosystem
from controllers to mechanical system and robotics

Joining Solutions (JS)



ctrlX Automation



MOST OPEN CONTROL PLATFORM



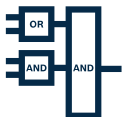
ctrlX CORE
Control platform



ctrlX WORKS
Engineering software
toolbox



ctrlX MOTION
Motion, robotics
& CNC software



ctrlX PLC
PLC solutions



ctrlX OS
Linux operating system



ctrlX IOT
IoT solutions



ctrlX HMI
HMI solutions



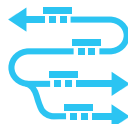
ctrlX I/O
I/O systems



ctrlX DRIVE
Drive system



ctrlX SAFETY
Safety solutions



ctrlX FLOW
Planar system



ctrlX IPC
Industrial PC

ctrlX AUTOMATION
Engineering & Robotics



Automation App Award 2023

Large Enterprises



Deutscher Innovationspreis 2021

Machines & Engineering



German Innovation Award '20

Core



Robert Bosch Innovation Award 2020

Automation & Controls



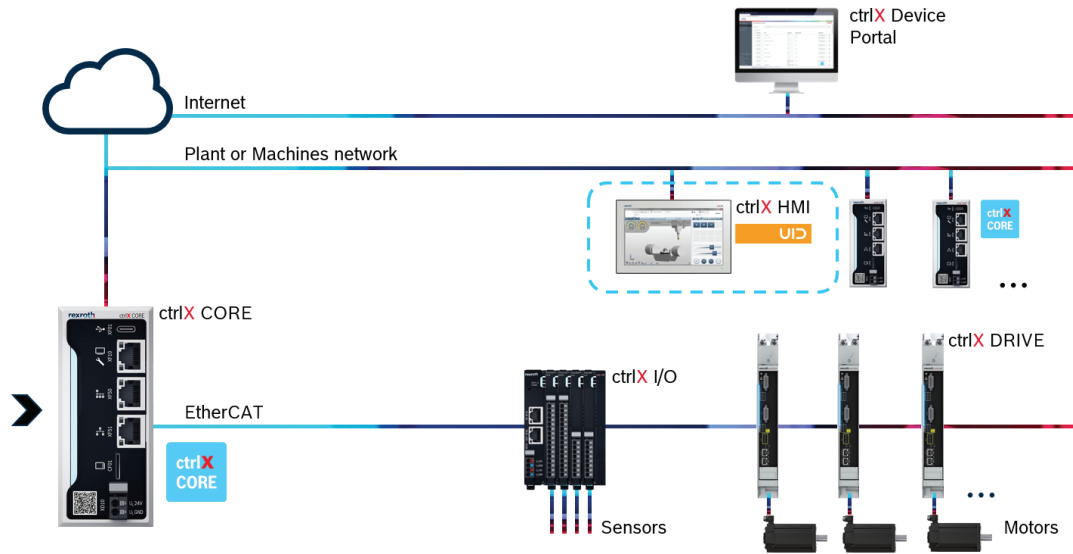
Plant Engineering Product of the Year 2020

Automation



Mesures Palmares Technologique

ctrlX Automation



ctrlX Store
Apps, Services, SDKs and more!

> 100 APPS
Continuous growing

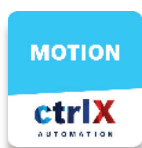
OT APPS

IT APPS

AI APPS



AI Language



Bosch Rexroth – FACTORY Orchestration Platform



ifp Software - oee.ai Cloud Connector Manufacturing Intelligent



Smart Factory

ctrlX CORE
Industrial Design



reddot winner 2020 industrial design

Control Systems: PLCs, PACs



Engenius 2022 Engineers' Choice Awards 2020

Electric Motors & Drives



Plant Engineering Product of the Year 2020

TOP 3 Nomination ctrlX CORE



Hermes-Award 2022

ctrlX IOT
Control & Drive



Produkte des Jahres 2021 Computer & Automation

ctrlX OS
Software & IT

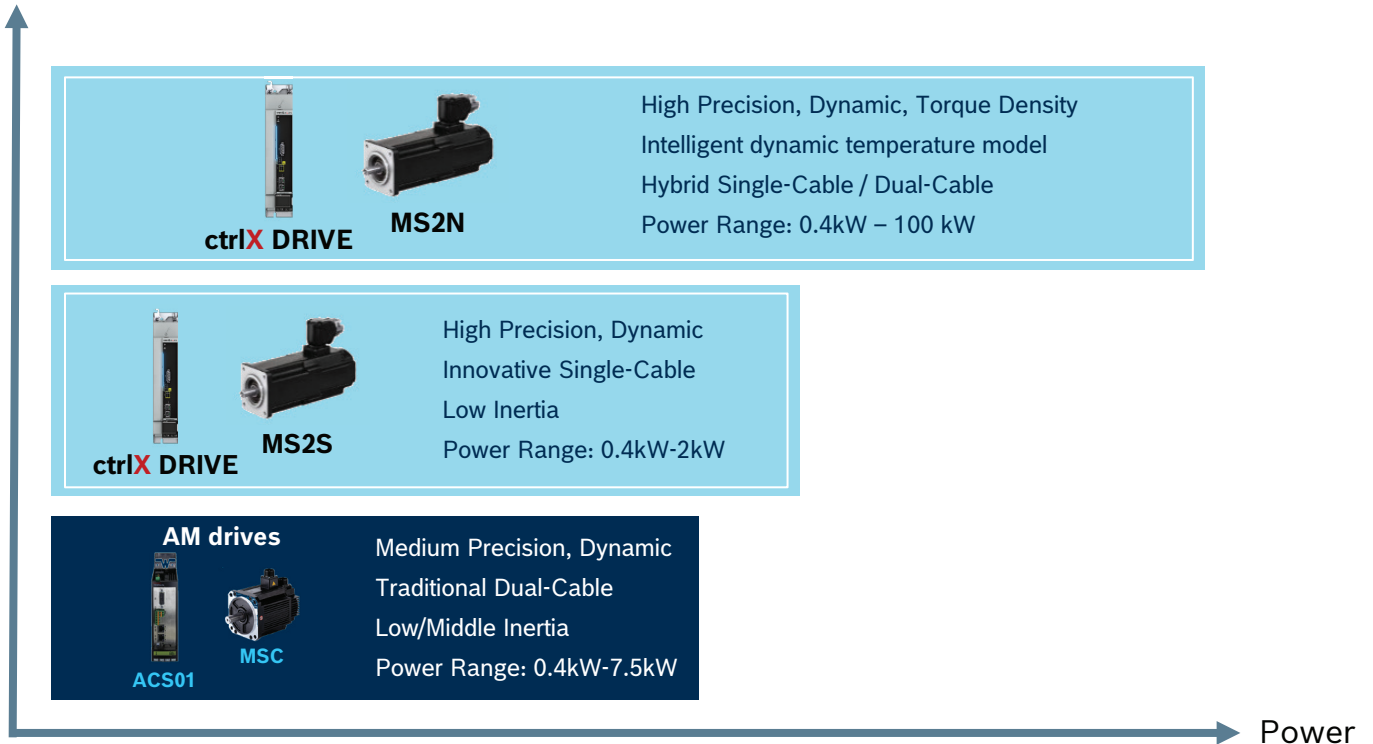


Produkte des Jahres 2023 Computer & Automation



Servo Drive

Model



Compact design
Side-by-side mounting supported

3 product sizes
5 power ranges

Internal resistor integrated
Carry out the quickstop functionality at no extra cost

Performance level & Lower cost



Operation panel with the built-in memory chip
Easy for updating and commissioning

Multi-Encoder
3rd-party motor supported

Multi-Ethernet interface
Adapt to the most 3rd-party controllers

Powerful & Robust

Frequency Converters:

- ▶ Control technology: V/f and SVC, Torque control
- ▶ Motor type: Asynchronous motors, Permanent magnet motors
- ▶ Power range: from 0.4 kW up to 355 kW
- ▶ Power supply: 200VAC (1P) up to 480VAC (3P)
- ▶ Interface: Multi-Ethernet (SERCOS, EtherCAT, Ethernet/IP, Profinet, Modbus TCP), Modbus RTU, mini-USB).
- ▶ Built-in DC reactor (from 30Kw)



Linear Motion Technology



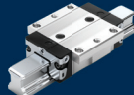
Product Overview

LINEAR GUIDANCE

Linear bushings and shafts



Ball rail systems



Roller rail systems



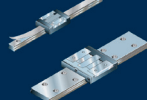
Ball screw assemblies



Cam roller guides



Miniature ball rail systems



Braking and clamping units

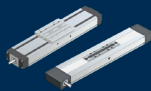


Planetary screw assemblies

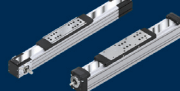


LINEAR AXES

Compact modules



Linear modules



Function modules



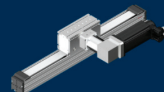
Precision modules



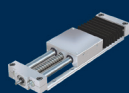
Ball rail tables



Omega modules



Linear slides



Drive units with ball screw



Electromechanical cylinder



SMART MECHATRONIX

THE SOLUTION PACKAGES



Smart Function Kit Pressing



Smart Function Kit Handling



Smart Function Kit Dispensing

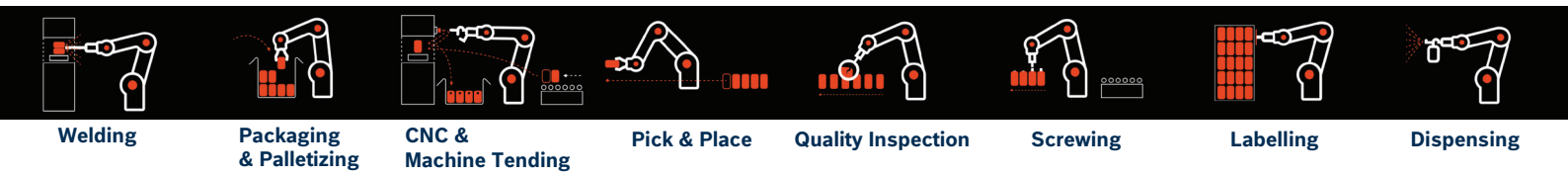
Cobots and Transport System



Kassow Cobots - with 7 axes

A payload of 5 to 18 kg and a reach of 850 to 1800 mm – all delivered at joint speeds of up to 225 degrees per second: Our five lightweight 7-axis robots are ready to go to work in virtually no time – at companies of all sizes.

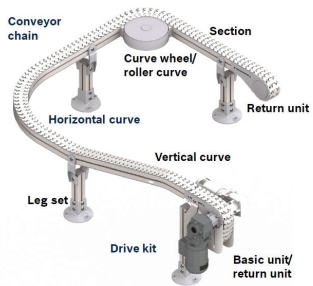
- ▶ Great maneuverability & around-the-corner reach
- ▶ Easy programming & operations
- ▶ High flexibility & fast relocation
- ▶ Employees & cobots team up
- ▶ Fast ROI & more satisfied employees



| Modelname | KR810 | KR1018 | KR1205 | KR1410 | KR1805 |
|-----------------|----------------|-----------------|----------------|-----------------|----------------|
| Reach / Payload | 850 mm / 10 kg | 1000 mm / 18 kg | 1200 mm / 5 kg | 1400 mm / 10 kg | 1800 mm / 5 kg |
| Weight | 24 kg | 34 kg | 25 kg | 35 kg | 38 kg |

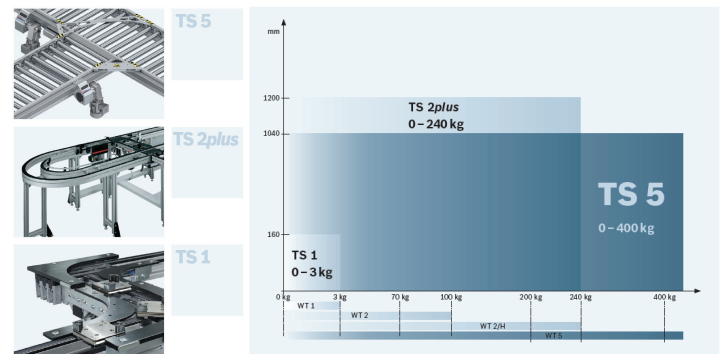


Chain Conveyor System VarioFlow plus

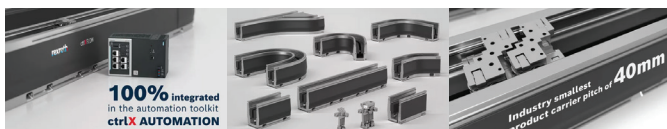


- ▶ Direct parts transport in a horizontal and vertical direction in sizes 65, 90, 120, 160, 240 and 320
- ▶ FDA compliant materials and stainless steel ball bearing with food safe grease for components of the drive, return units and curves subjecting to constant friction
- ▶ Wedge conveyor for steep vertical ascents of products

Transfer System



ctrlX FLOWHS: Linear motion system for more high-speed



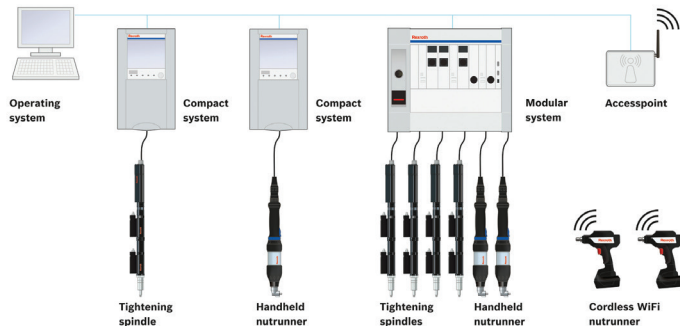
- ▶ Linear Motion system: Fast. Flexible. Compact
- ▶ Ready for the future
- ▶ Easy to configure and expand
- ▶ High speed with less space required

ctrlX FLOW6D: Planar system with 6 degrees of freedom



- ▶ Planar system: Floating. Flexible. Simple
- ▶ Floating transport system: ctrlX FLOW^{6D}
- ▶ Planar system for flexible automation

Joining Solution



Tightening systems – Clever, flexible, secure Tightening spindles and handheld nutrunners:

- ▶ Torque range 0.6 – 1 000 Nm.
- ▶ Versatile and Modular construction, true redundancy possible.
- ▶ Maintenance free for 1 million full load cycles for long service life.
- ▶ Handheld nutrunner: Torque range 1 – 220 Nm with Ergonomic design for reduced operator fatigue, angle compensation.

Compact and Modular Control systems:

- ▶ Reliable and easy to use single-channel controllers.
- ▶ Touch screen or display, variant with integrated logic.
- ▶ Space-saving and economical multi-channel controller supporting up to six tightening channels.

NEXO - the most intelligent cordless nutrunner in the world:

- ▶ High-precision torque and rotary angle measurement system.
- ▶ No external controller, large display for practical information.
- ▶ Data transfer via 2.4 and 5 GHz WiFi or mini USB.
- ▶ Torque range 1.8 – 65 Nm, max. speed 1060 rpm.
- ▶ Optionally available with barcode scanner.

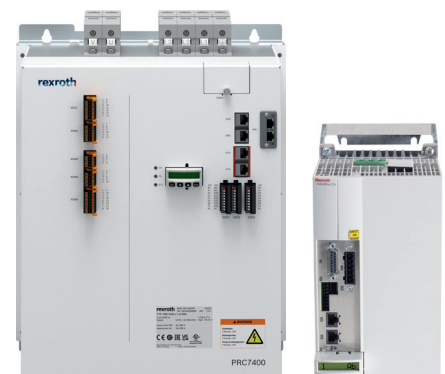
Bosch EXACT Production Cordless Screwdrivers/Wrenches:

- ▶ Torque range 0.2 – 60Nm, Exceptional runtime and lifetime.
- ▶ High quality mechanical shut-off clutch ($C_{mk} > 1.67$ with $\pm 10\%$).
- ▶ EXACT ION – new EC-brushless motors and Li-Ion batteries, capable of Multi-Step Tightening Processes programmed via USB.
- ▶ Quality control with the Bluetooth EXACT cordless system.
- ▶ EXACT 12V: Perfect ergonomics with a head length of 154 mm and a weight of 0.8 kg including 12 V/3.0 Ah rechargeable battery
- ▶ Perfect process control: with six different tightening steps, adjustable according to time, speed, direction and angle of rotation, as well as torque

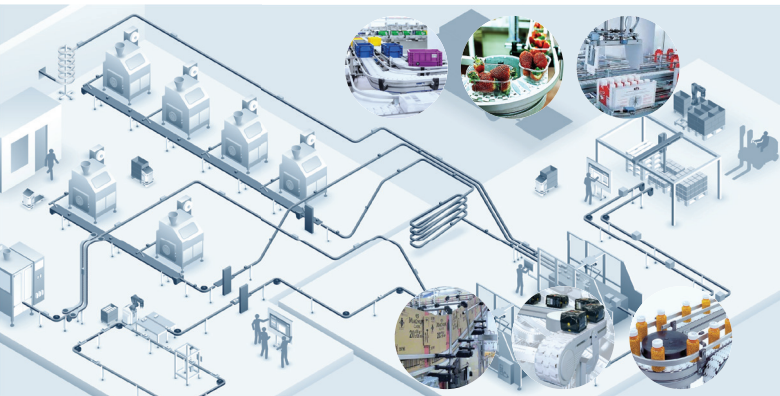


Resistance welding systems - welding controllers:

- ▶ AC and Medium-frequency(1000 Hz) modular resistance welding controllers
- ▶ Maximum quality when welding all combinations of sheet thicknesses from steel to aluminum.
- ▶ Currents of up to 360 kA, air cooled/water cooled
- ▶ Adaptive current/voltage control algorithms for consistent weld quality and reduced expulsion
- ▶ Powerful compact medium frequency transformers: Integrated temperature monitoring of the winding package and the rectifier unit, current sensor and safety resistor
- ▶ Process monitoring by integrated current measuring coil. Output up to 250 kVA (20 % ED)



Key Industries



F&B / FMCG

Quiet, fast and clever solutions made possible with VarioFlow plus chain conveyor system

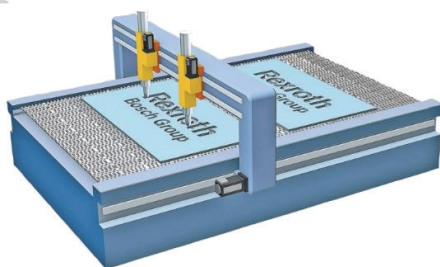
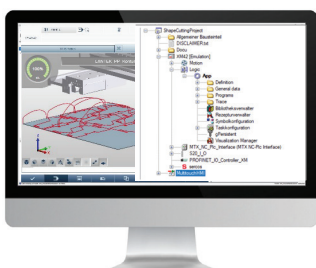
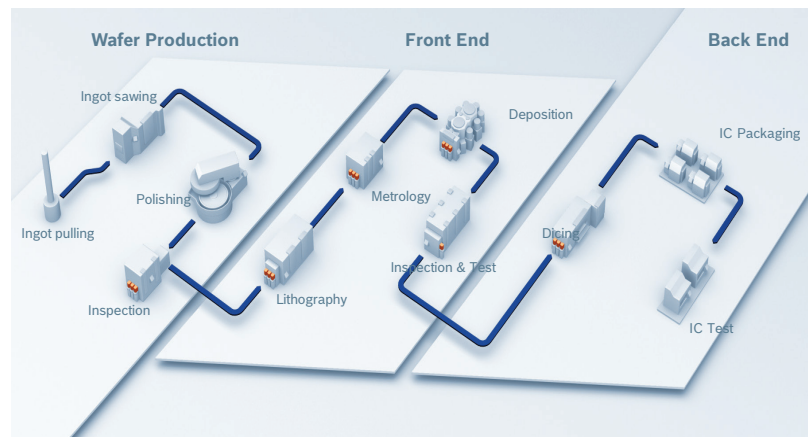
- ▶ Fast availability
- ▶ Few in-stock standard modular elements to create a large number of solutions
- ▶ Little need for spare parts
- ▶ Flexible through numerous combinations
FDA-compliant materials, e.g., stainless steel ball bearing with food-safe grease
- ▶ Simply planned, configured and ordered with the layout planning tool

Semiconductor Solutions

Automation solutions for the semiconductor industry
Semiconductor value chain

Automation needs:

- ▶ Wafer Production
 - + Wafer polishing and metrology
- ▶ Front End
 - + Clean room environment and vacuum processes
 - + Wafer positioning, handling, transfer
- ▶ Back End
 - + Control of in-machine Multi mechanisms (10 – 70 Axes)



Metal Fabrication

MTX – The most powerful CNC solution for Shape Cutting
Technology package SHC2 – 2D Shape Cutting

Automation needs:

Engineering with virtual MTX

- ▶ Offline commissioning with project template
- ▶ Testing with Simulation
- ▶ Applications
 - + Laser cutting
 - + Plasma cutting
 - + Waterjet cutting
 - + Oxyfuel cutting
 - + Combined machines

Comprehensive CNC functions

- ▶ Gantry
- ▶ FlyCut
- ▶ Leap Frog
- ▶ Distance control
- ▶ Laser power control
 - + Analogue, PWM, OVS
- ▶ Plate Search
- ▶ Re-Entry
- ▶ Retrace

Technology functions

- ▶ Technology tables
 - + Laser power, gas, material properties
- ▶ Special functions
 - + Film burning, gas control, marking, micro joints, piercing



**A Complete
Automation
Solution.**

Bosch Rexroth Vietnam

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