



Robotics

Tool changers
WPR5000 series

THE KNOW-HOW FACTORY

TOOL CHANGERS

WPR5000 SERIES

MAXIMUM FLEXIBILITY AND EFFICIENCY

The WPR5000 series tool changer features a flat design, increased repeat accuracy and maximum tightening stroke. The compact design allows optimal use of space, while the high load capacity ensures that even heavy tools weighing up to 500 kg or more can be handled with ease.

SELECTION GUIDE JUST A CLICK AWAY

Robotics Product Finder
Find the right product in just a few clicks. Go directly to our Product Finder for robots here.



WPR5000 SERIES OUR KNOW-HOW – YOUR ADVANTAGES

Safer tool changer

The tool changer ensures maximum safety and meets the requirements of Performance Level d, Control Category 3. This is achieved by a spring-loaded piston, self-locking mechanism, optional sensors and other accessories.

Locking kinematics

A new benchmark for tool changers is set with innovative locking kinematics with locking bolts and extreme rigidity. The extremely flat design guarantees minimal moment load on the robot and allows smaller and more cost-effective robots to be used.

Endless variety

The energy elements of the WER1500 and WER3000 series allow the standardized transmission of pneumatics, hydraulics, electrical signals, power and communication and much more.



Installation size	Connecting flange in accordance with EN ISO 9409-1	Pneumatic energy transfer	Electrical energy transfer
		[Quantity]	
WPR5040	TK 40	4	optional
WPR5050	TK 50	4	optional
WPR5063	TK 63	6	optional
WPR5080	TK 80	6	optional
WPR5100	TK 100	8	optional
WPR5125	TK 125	10	optional
WPR5160	TK 160	10	optional

COMPONENTS AT A GLANCE

ROBOTICS

FOR EVERY AUTOMATION PROCESS

Our portfolio offers you a wide range of robotic technology for industrial and lightweight robotics. It includes robot modules and tool changers, axis compensation modules and collision protection systems, rotary distributors and sensors. Increase the efficiency of your automation processes.

2

TOOL CHANGERS

From compact systems to highly modular and flexible systems for industrial applications, you will always find the right tool changer for your application.

3

ENERGY ELEMENTS

The most important accessory for tool changers. Available for an endless variety of media transmitters, including power, signal, hydraulics and communication, as well as contactless or hot-pluggable energy elements.

4

ROTARY DISTRIBUTOR

Integrated slip rings with gold-plated contacts and integrated air transfer units ensure endless rotation in a flat design.

5

AXIS COMPENSATION MODULE

Positioning inaccuracies of the workpieces are corrected reliably, precisely and with little wear by axis compensation modules in the X-Y plane and the Z-axis.

6

COLLISION PROTECTION

Prevent damage to tools, workpieces or systems that may result from collisions or robot overloads.

7

SENSORS AND POWER SUPPLY

From magnetic field sensors and plug-in connectors to safety valves and quick exhaust valves, we ensure precise monitoring and a safe power supply.

1

MATCH END-OF-ARM ECOSYSTEM

The robot module combines mechanical gripping and vacuum gripping. The innovative ecosystem can be integrated quickly and easily.



THE TECHNICAL FEATURES IN DETAIL

WPR5000 SERIES

SENSING AND SENSOR TECHNOLOGY

Save additional costs and effort with the integrated piston position sensing system. The sensors are mounted on the side of the stationary part so that no additional space is required. In addition, optionally available loose part sensing is available in the stationary part.

MAINTENANCE-FREE

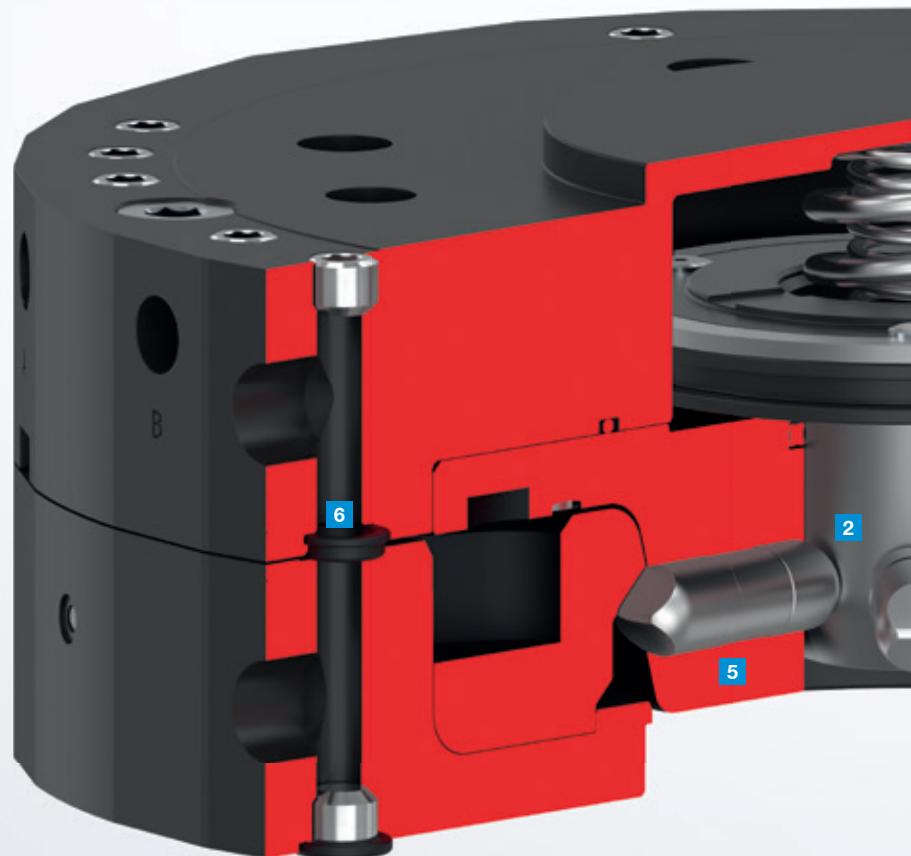
Thanks to lifetime lubrication, the tool changers of the WPR5000 series can be operated without maintenance for up to 5 million cycles, even in the most adverse environmental conditions.

1 ENERGY ELEMENTS

A nearly endless variety of optional energy elements for the transmission of pneumatics, electrical signals and load, communication and hydraulics. The right energy elements for any imaginable transmission scenario.

6 INTEGRATED PNEUMATIC FEED-THROUGH

A tubeless connection is possible thanks to the integrated axial and radial pneumatic feed-throughs.

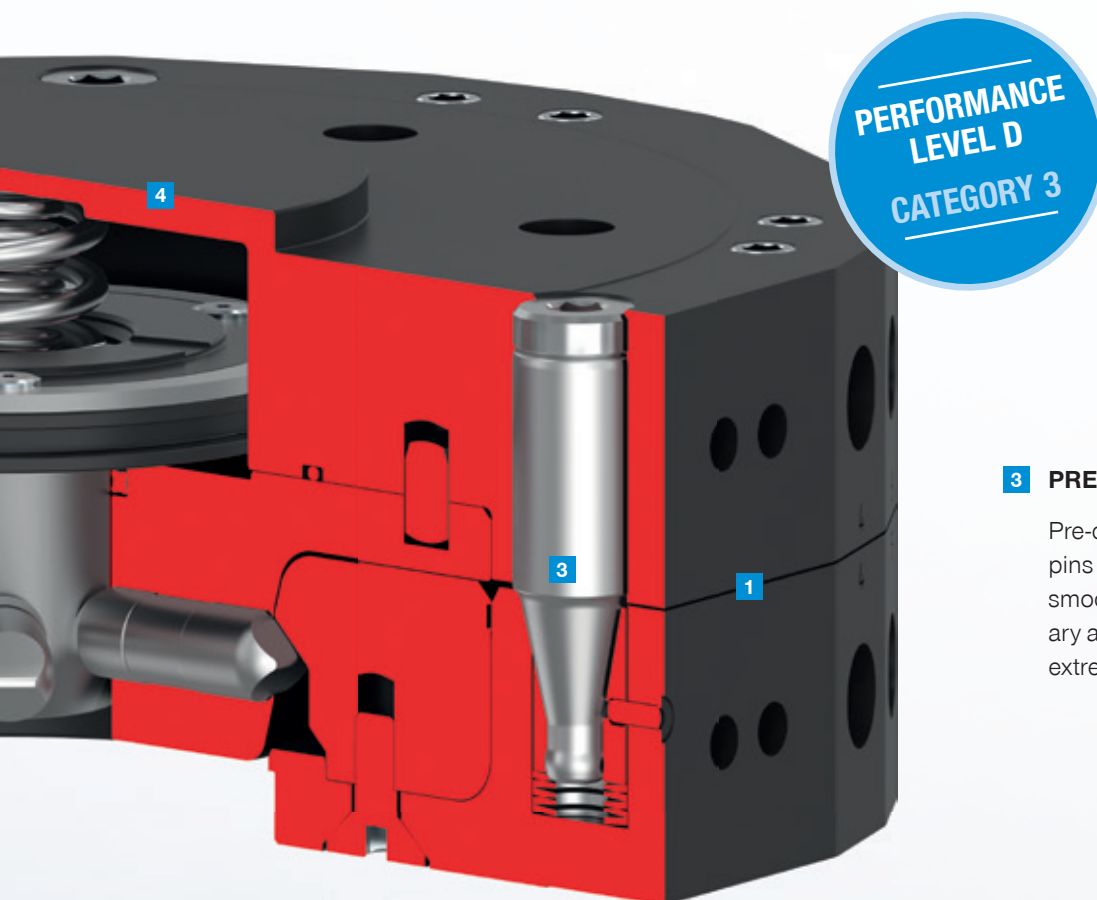


5 LOCKING BOLTS

Locking parts made of hardened steel and locking bolts between the stationary and loose parts, which provide a high tightening stroke at maximum forces and torques, are setting a new standard for tool changers.

2 SPRING-LOADED LOCKING

Completely redeveloped locking kinematics result in maximum safety combined with absolute precision. All parts of the locking mechanism are made of hardened corrosion-resistant steel, both in the stationary and in the loose part.



3 PRE-CENTERING

Pre-centering using conical centering pins on the stationary part ensures smooth changing between the stationary and loose parts while providing extremely high torsional rigidity.

4 SAFETY

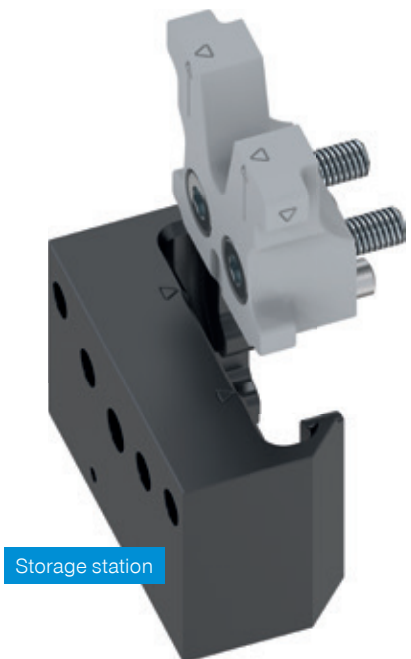
The WPR5000 series tool changers are extremely safe due to their spring-loaded locking mechanism, which holds the loose part securely to the stationary part even in the event of a pressure drop or an emergency stop.

ACCESSORIES

WPR5000 SERIES

COMPREHENSIVE RANGE OF ACCESSORIES

The WPR5000 series tool changers offer a comprehensive range of accessories that significantly increase the efficiency and user-friendliness of your automated processes. These accessories allow seamless integration into existing robotic applications and ensure maximum reliability and operating convenience.



THE STORAGE STATION

Flexibility

Two storage stations have been developed for the WPR5000 series tool changer. With integrated in-plane axis compensation module and secure loose part locking or the classic variant.

Safety

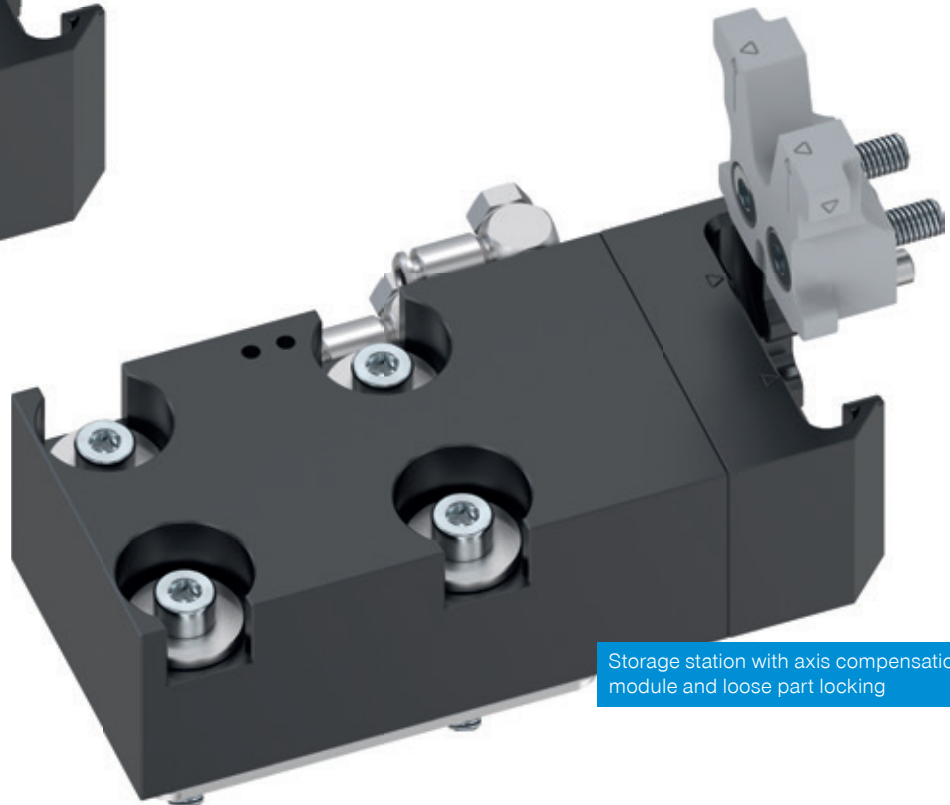
The pneumatic spring-loaded locking mechanism integrated into the storage station ensures that the loose part can be placed in almost any spatial direction and is securely locked into it.

Sensors

The range of accessories is completed by optionally available sensors for sensing the locking mechanism in the storage station and the loose part.

Passive safety interlock

It is also possible to open the storage station at the right time entirely without active control using a passive interlock via the stationary part and to lock it again automatically.



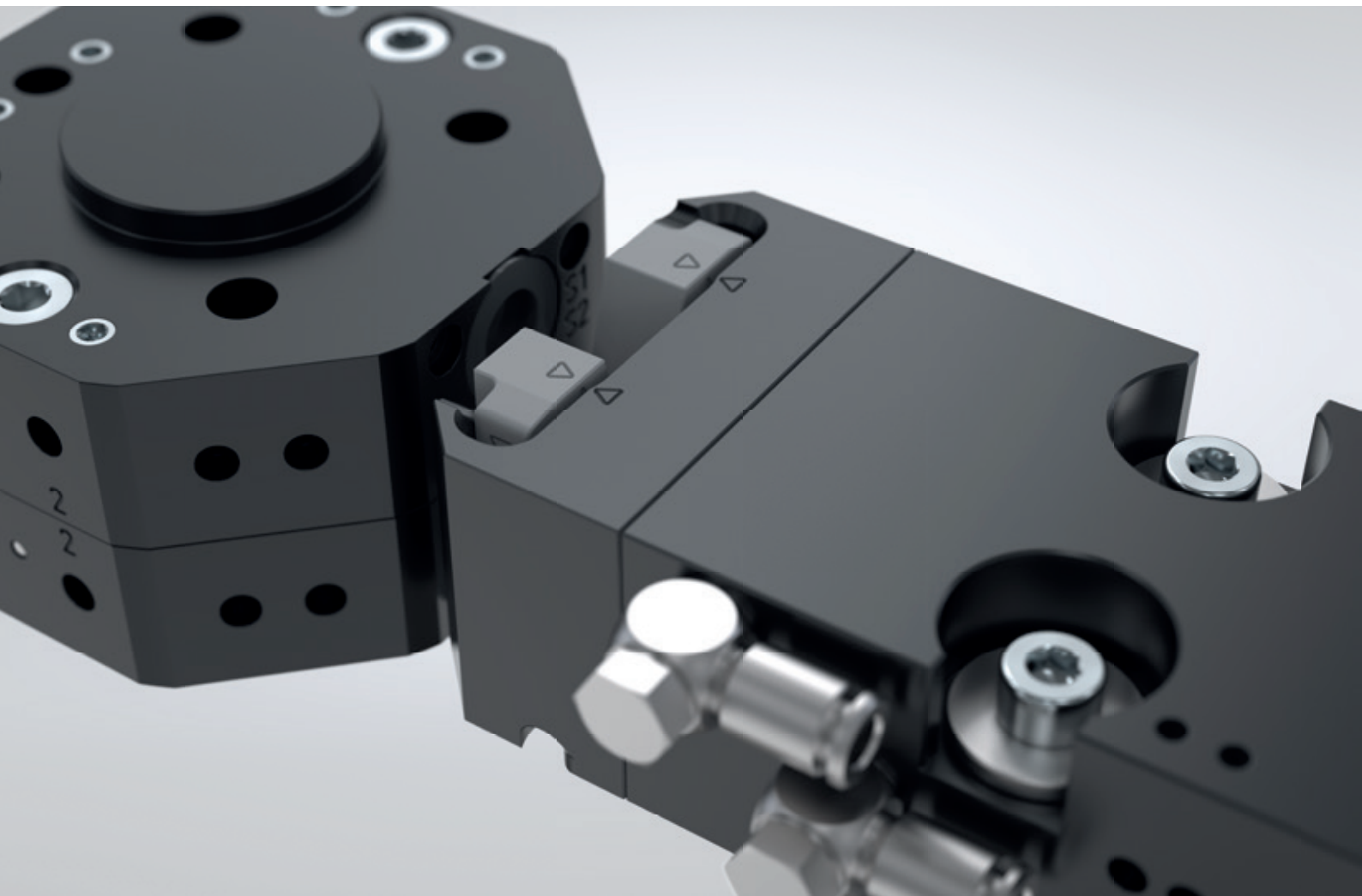


PISTON POSITION SENSING

The piston position sensing using 2-point magnetic field sensors enables simple and reliable position monitoring of the locking mechanism. Unlike conventional systems where the sensors are mounted on top of the tool changer, the WPR5000 series features side integration. This maximizes the use of the installation space and minimizes the interference contour of the tool changer.

PROGRAMMING TIPS

The programming tips provide an intuitive and simple way to make the teaching and programming process as easy and efficient as possible for the user. In addition, there are also markings on the storage station and on the suspension system for the loose part that significantly simplify the process of setting up the tool changer on the robot.



ALWAYS THE RIGHT TRANSMITTER

ENERGY ELEMENTS

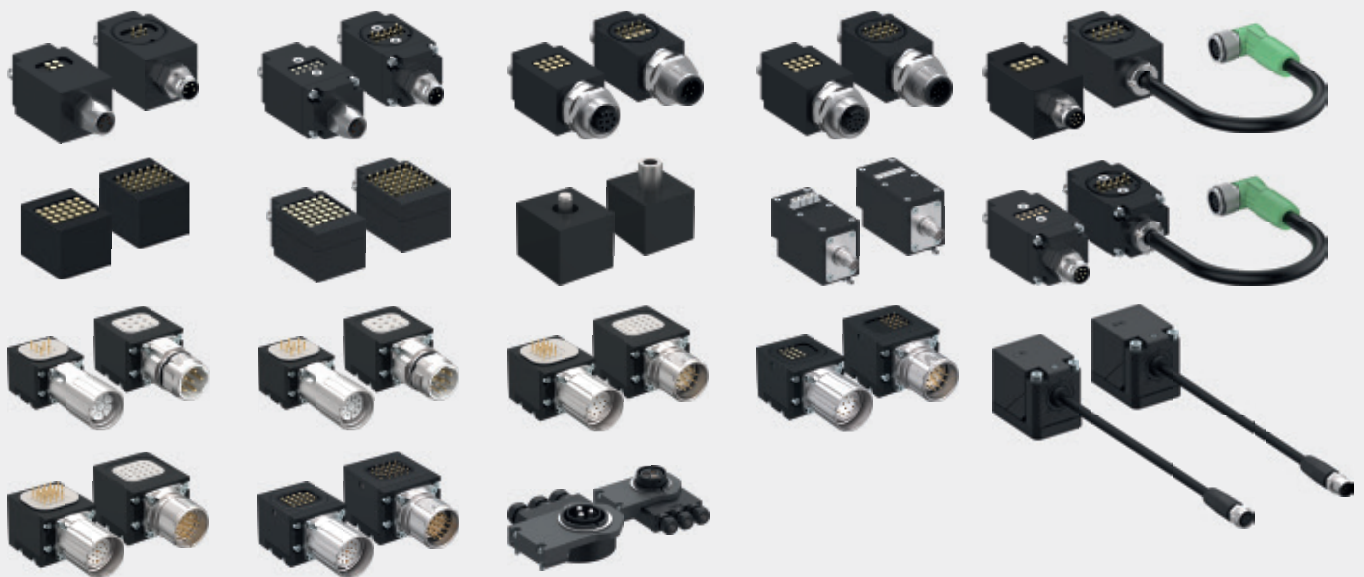
ENDLESS VARIETY

Energy elements are the most important accessories for tool changers and are essential for the transmission of a wide range of different media from the stationary part to the loose part. All tool changers offer integrated air transfer systems as

standard. If larger or smaller cross-sections are needed, energy elements can be used. In addition, almost all media such as load current, signal current, hydraulics and communication can be transmitted using energy elements.

ELECTRIC

For transmitting signal current and load current.



HYDRAULIC

For transmitting hydraulic media and gases.



OUR EXPERTISE—YOUR ADVANTAGE

- ▶ **Standardized:** Standardized interfaces and a modular design ensure flexible and cost-effective integration into all applications.
- ▶ **Integration:** Components can be integrated seamlessly into existing systems and processes.
- ▶ **Innovative:** The most modern technologies for efficient and future-proof solutions.

PNEUMATIC

For transmitting compressed air and vacuum.



COMMUNICATION

For transmitting communications data.



THE SERIES AT A GLANCE

ROBOTICS

EXCHANGE

MANUAL



HWR2000

Connecting flange: TK 31.5–TK 50
Recommended handling weight: 5 kg–20 kg
Pneumatic energy transfer: 4–8-way
Electrical energy transfer: Optional via energy element



HWR

Connecting flange: TK 63–TK 80
Recommended handling weight: 50 kg
Pneumatic energy transfer: 6-way
Electrical energy transfer: Optional via energy element

PNEUMATIC



WWR1000

Connecting flange: TK 160–TK 200
Recommended handling weight: 500 kg–1,000 kg
Pneumatic energy transfer: Optional via energy element
Electrical energy transfer: Optional via energy element



WPR5000

Connecting flange: TK 31.5–TK 200
Recommended handling weight: 10 kg–500 kg
Pneumatic energy transfer: 4–10-way integrated, optionally more via energy elements
Electrical energy transfer: Optional via energy element

MAGNETIC



WMR2000

Connecting flange: TK 63
Recommended handling weight: 14 kg
Pneumatic energy transfer: 4–10-way integrated
Electrical energy transfer: 10-way integrated

AUTOMATIC



FWR-B

Connecting flange: TK 40–TK 80
Recommended handling weight: 13 kg–29 kg
Pneumatic energy transfer: 4-way
Electrical energy transfer: Optional via energy element

COMPENSATE

PNEUMATIC



FGR

Connecting flange: TK 40–TK 50
Recommended handling weight: 10 kg–20 kg
Deflection in X/Y: 2 mm–4 mm
Centered holding force: 120 N–250 N



XYR1000

Connecting flange: TK 40–TK 200
Deflection in X/Y: 3 mm–12.5 mm
Centered holding force: 150 N–3,000 N



ZR1000

Connecting flange: TK 40–TK 200
Deflection in Z: 8 mm–20 mm
Holding force: 250 N–11,500 N



ARP

Connecting flange: TK 40–TK 160
Recommended handling weight: 3 kg–60 kg
Deflection in X/Y/Z: 2 mm
Centered holding force: 170 N–3,000 N

PROTECT

PNEUMATIC



CSR

Connecting flange: TK 50–TK 160
Z-axis deflection: 12.5 mm–28 mm
Horizontal deflection +/-: 9°–12.5°



CRR

Connecting flange: TK 40–TK 80
Z-axis deflection: 8 mm–15 mm
Horizontal deflection +/-: 13°–14°

TRANSMIT

MANUAL



DVR1000

Connecting flange: TK 125
Continuous torque: 4 Nm
Pneumatic energy transfer: 8-way
Electrical energy transfer: 4-pin + PE



DVR

Connecting flange: TK 40–TK 160
Continuous torque: 1 Nm–4 Nm
Pneumatic energy transfer: 4–8-way
Electrical energy transfer: 4–12-pin

ENERGY ELEMENTS

ELECTRICAL



WER1500

Nominal current: 1.5 A–3 A
 Operating voltage: 30 V–60 V
 Number of contacts: 4–36



WER3000

Nominal current: 0.2 A–140 A
 Operating voltage: 24 V–2,000 V
 Number of contacts: 1–12



WER4000

Nominal current: 150 A
 Operating voltage: 630 V
 Number of contacts: 3

PNEUMATIC



WER1500

Number of ports: 1–2
 Flow per port: 270 l/min–900 l/min
 Connecting thread: M5–G1/4"



WER3000

Number of ports: 1–4
 Flow per port: 270 l/min–1,100 l/min
 Connecting thread: G1/4"–G3/8"



WER4000

Number of ports: 6–15
 Flow per port: 150 l/min–500 l/min
 Connecting thread: M5–G1/8"

HYDRAULIC



WER3000

Number of hydraulic couplings: 1
 Connecting thread: G1/4"
 Max. operating pressure: 150 bar



WER4000

Number of hydraulic couplings: 1–4
 Connecting thread: G1/4"
 Max. operating pressure: 250 bar

COMMUNICATION



WER1500

Connecting thread: M12
 Number of contacts: 5

IO-Link



WER3000

Data rate: 12 Mbps–100 Mbps
 Connecting thread: M12

IO-Link PROFINET EtherCAT INDUSTRIAL ETHERNET

ACCESSORIES



WFR

Suitable for all robot types with ISO pitch circle and combinable with many different grippers for machine loading.



LWR50L

Electrical angle flange solution for the MATCH end-of-arm ecosystem for IO-Link grippers.

Compatible grippers: GEP2000, GEH6000, GPP5000IL, GEP5000, HRC-03



AR2000

Pneumatic angle flange solution for machine loading.

Compatible grippers: GPP5000, GPD5000



AR2000

Valve disc for electrical control of pneumatic grippers.

Compatible grippers: GPP5000, GPD5000

ZIMMER GROUP – THE KNOW-HOW FACTORY

OUR KNOW-HOW FACTORY WORKS WITH ALL INDUSTRIES AND DELIVERS EVERYTHING FROM A SINGLE SOURCE. OUR PRODUCT RANGE IS FAR REACHING, BOTH IN ITS DEPTH AND ITS BREADTH.

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