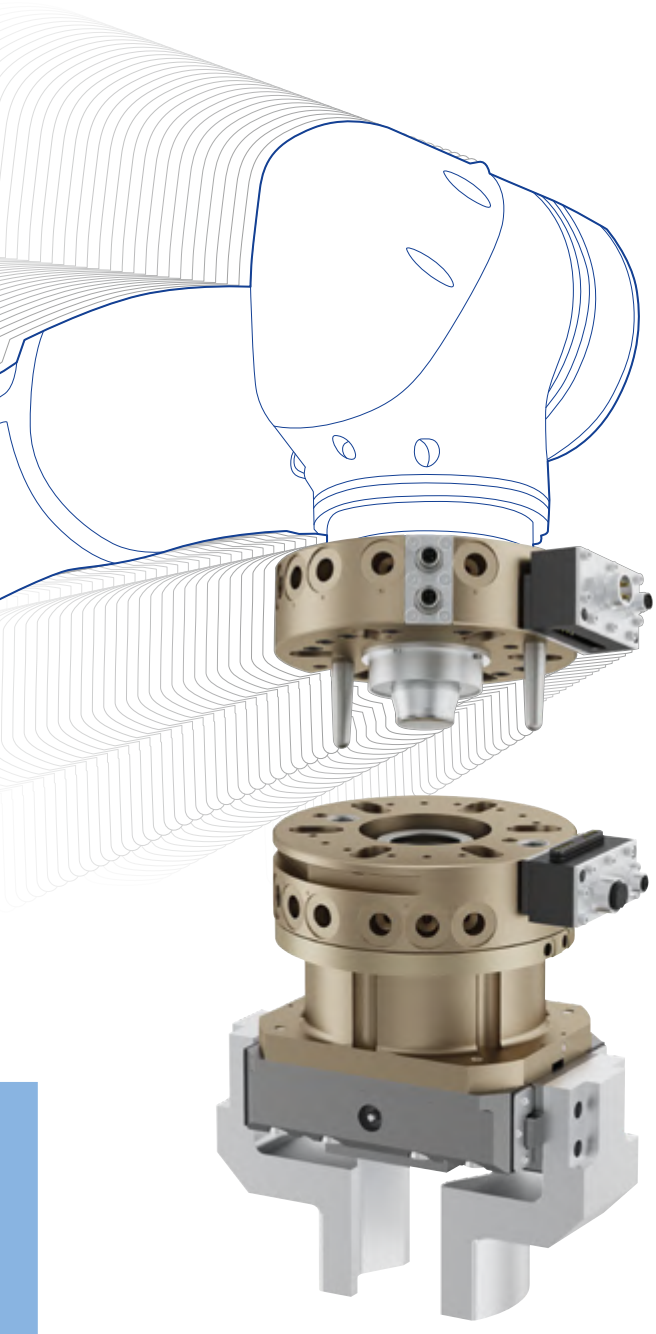
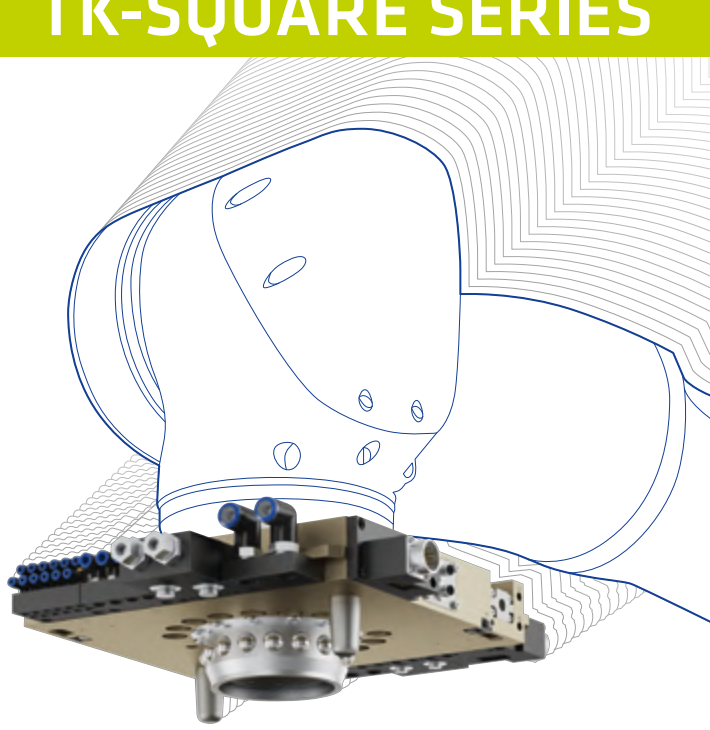
TOOL CHANGERS

TK SERIES

TK-SQUARE SERIES





- **robust and durable**
- **flexible in use**
- **wide range of compatible accessories**

INTELLIGENTE PERIPHERIEN FÜR ROBOTER

Automated changeover without delay

IPR tool changers

Our tool changers enable safe and fast changing of tools on the robot or gantry for various applications. They are perfectly adapted to the requirements of modern industrial robots and highly efficient production systems. Thus, robots are able to execute tasks with different tools without manual changeover. This allows for a reduction of machine downtime to a minimum and a significant improvement of your workflows. To equip different applications and make the best possible use of the available space, we offer different variants for all load ranges.

TK-160

TK SERIES

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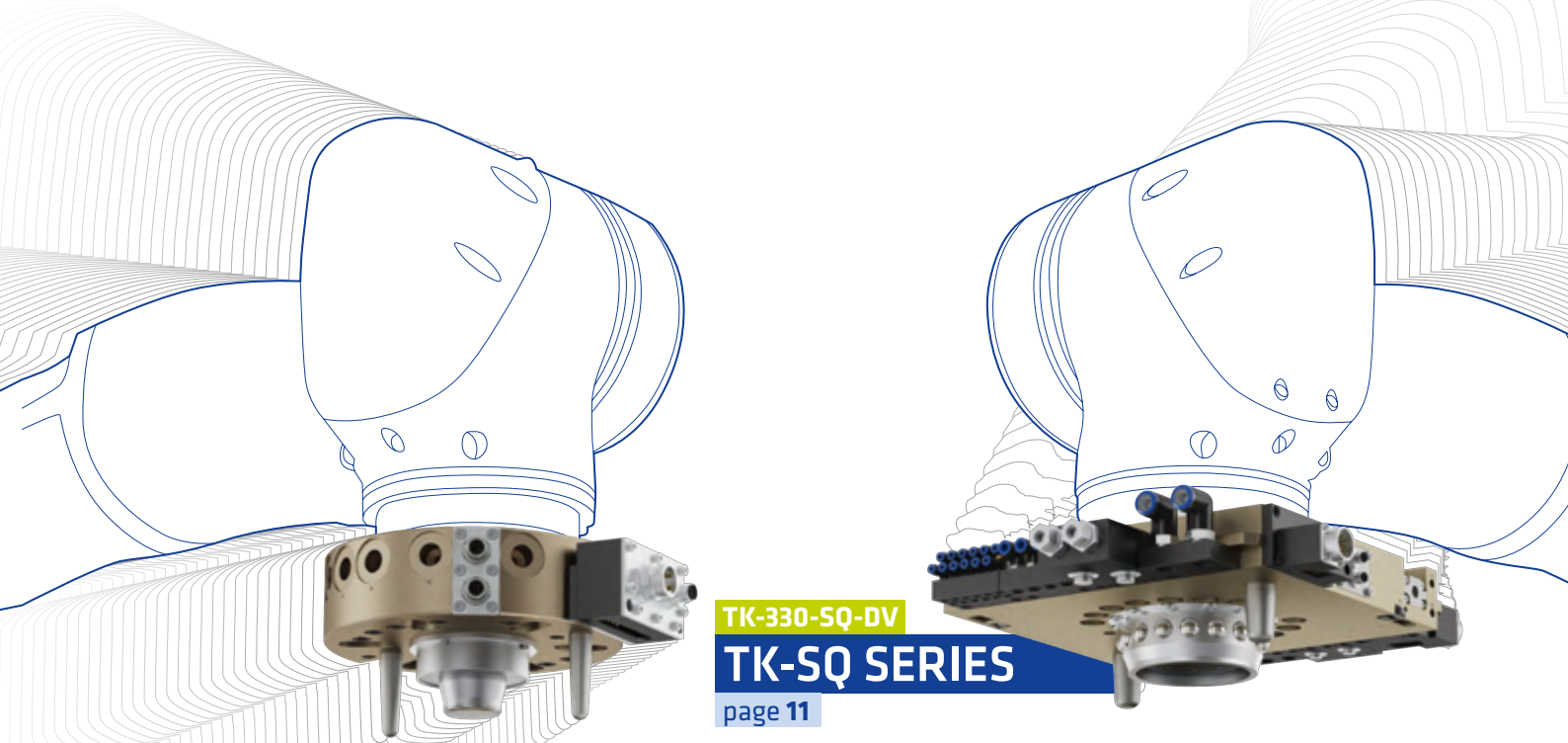

TK-330-SQ-DV

TK-SQ SERIES

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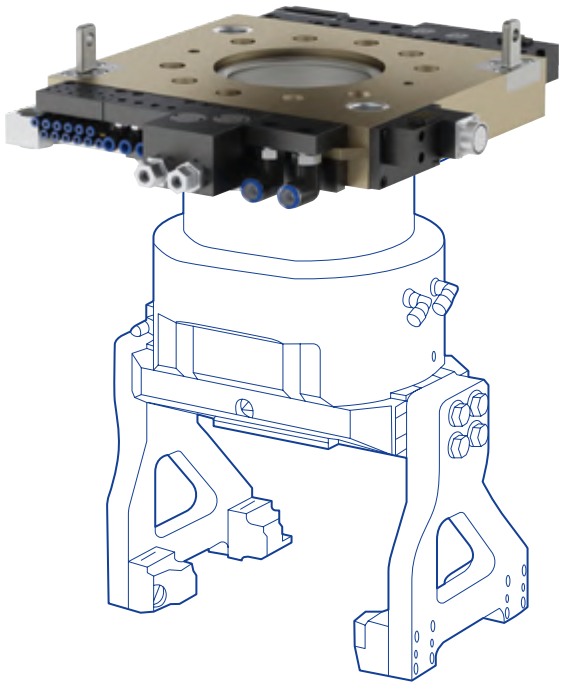

TK series

page **20**

TK-SQ series

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Electrical connectors

page **30**

Add-on modules

page **40**

Tool racks

page **44**

Overview

IPR – Solutions at hand

Our components make your robot more intelligent, flexible and universal

Innovation meets top quality

IPR - Intelligente Peripherien für Roboter GmbH is a leader in the development and manufacture of products related to industrial robots and offers an extensive product range with innovative systems and components for assembly and handling technology. Our parallel and angular grippers, tool changers, compensation modules, force-torque sensors, load limiters, 7th axes for robots and customized solutions are used by customers in many countries around the world.

Companies from all industries trust our products. Quality, technical and industry knowledge are our most important success factors.
We offer you standard products ready for immediate use, but we also support you in special and large-scale projects. Here you benefit directly from the development and manufacturing technologies in our house.

Industry-specific solutions
for robot applications and automation solutions

Assembly and handling technology

Machine loading and unloading

Foundry and forge

Automotive

E-mobility

Medicine and pharma

Increased value for your application

IPR components are used in a wide variety of industries. The high variance in the product series combined with the possibility of creating modified standard or specifically designed special products in a short time holds a lot of potential for meeting the requirements of our customers. Our success is the result of many years of experience in our company. Our employees are professionals in their field and have extensive knowledge around industries and production processes. This is how we continually develop innovative, high-quality and high-performance solutions for each individual project.

Individuality for your application
from standardized to customized

For individual solutions, we combine standardized components with custom-built modules to reduce design and delivery times as well as costs. Our company provides these services for a wide range of industries such as the automotive and supplier industry, machine tools and plant engineering, intralogistics, electrical industry, renewable energies, medical technology and the aerospace industry.

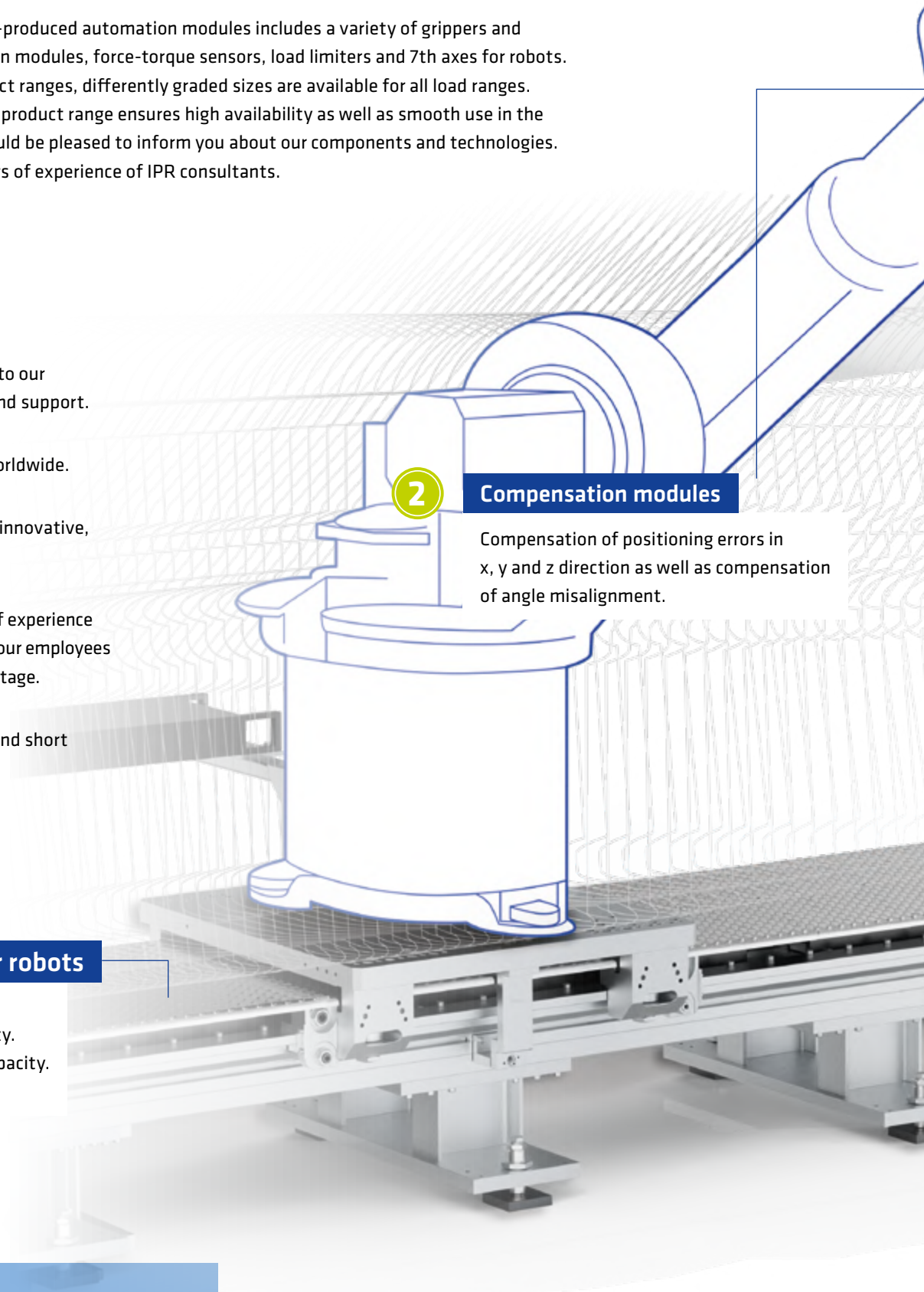
IPR offers everything robots need to do their job

Discover our extensive portfolio of peripherals for robots

Our product range of series-produced automation modules includes a variety of grippers and tool changers, compensation modules, force-torque sensors, load limiters and 7th axes for robots. Within the individual product ranges, differently graded sizes are available for all load ranges. The excellent quality of our product range ensures high availability as well as smooth use in the production process. We would be pleased to inform you about our components and technologies. Benefit from the many years of experience of IPR consultants.

IPR stands for:

- **Customer proximity**
  We are always available to our customers with advice and support.
- **Internationality**
  We are on site for you worldwide.
- **Innovation**
  We offer you innovative innovative, top-quality solutions.
- **Competence**
  We use our many years of experience and the know-how of all our employees specifically to your advantage.
- **Quality and flexibility**
  We live lean structures and short decision-making paths.

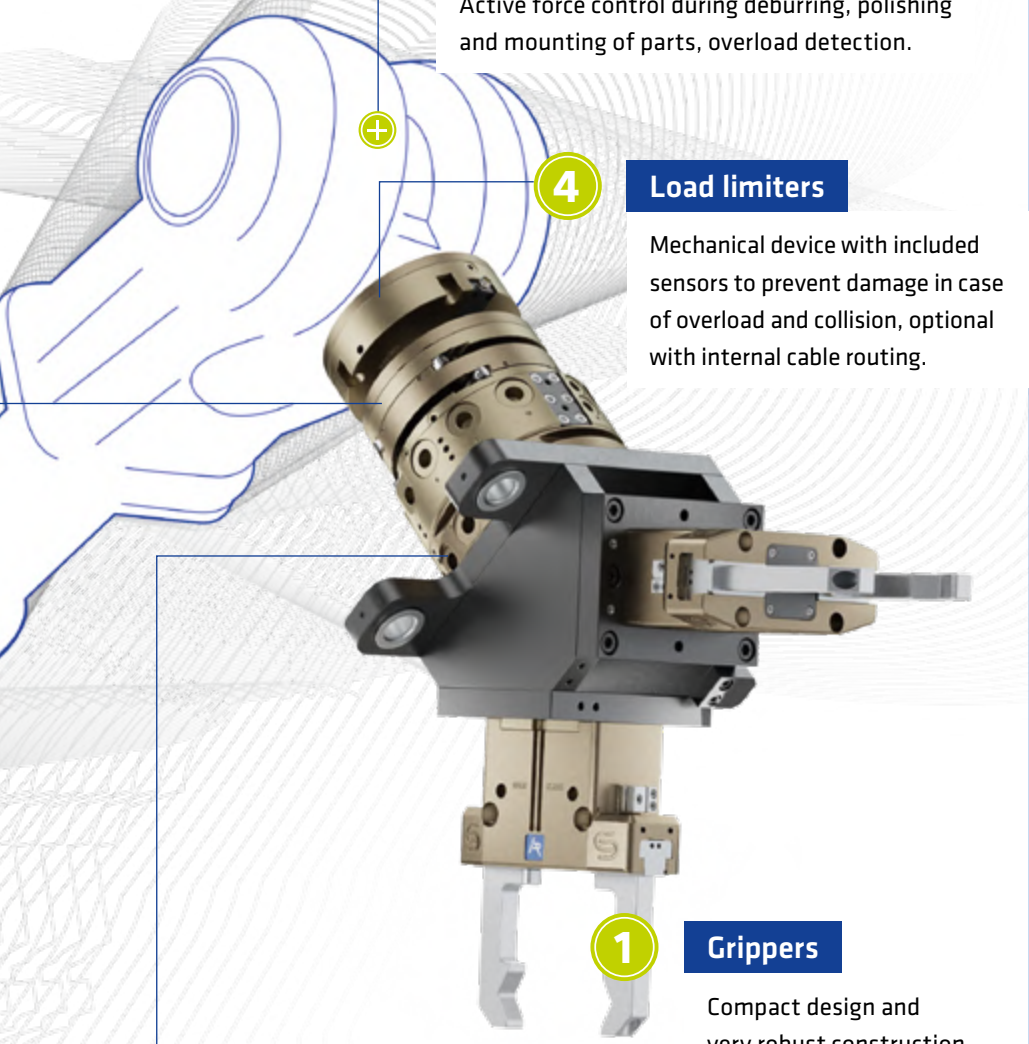


2 **Compensation modules**

Compensation of positioning errors in x, y and z direction as well as compensation of angle misalignment.

6 **7th axes for robots**

Modular system.
High repeatability.
Extreme load capacity.
Long life.



5 Force-torque sensors

Active force control during deburring, polishing and mounting of parts, overload detection.

4 Load limiters

Mechanical device with included sensors to prevent damage in case of overload and collision, optional with internal cable routing.

1 Grippers

Compact design and very robust construction. Gripping force retention via spring (optional).

3 Tool changers

Quick change of tools and grippers on the robot or gantry. Simple assembly and high flexibility due to short changeover times.

1 Grippers

2 Compensation modules

3 Tool changers

4 Load limiters

5 Force-torque sensors

6 7th axes for robots

Tool changes made easy

TK series and TK-Square series

TK series tool changers – the compact standard

For robot applications with low to medium workpiece weights and high tool variance, the TK series tool changers are the right choice. With 11 sizes and ISO screw-on patterns, they can be attached to almost any robot. Compact dimensions and internal air feedthroughs enable use even in confined spaces.

TK | THE COMPACT

TK SERIES

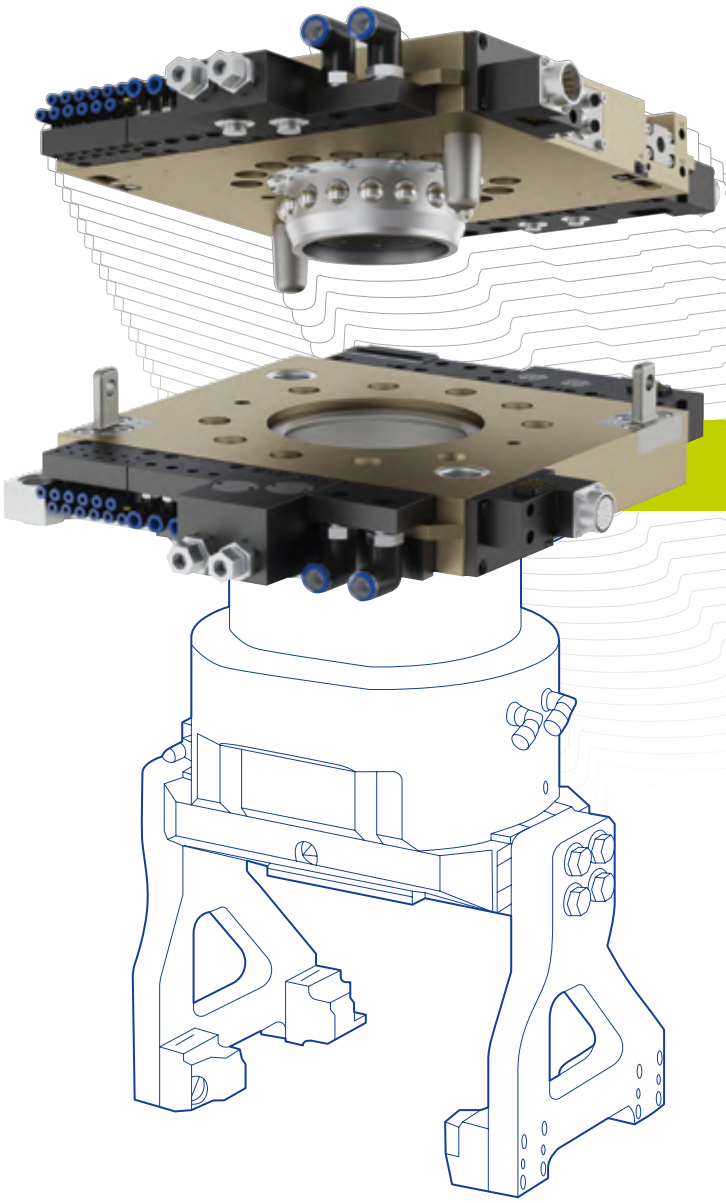
Advantages of the TK series

- **Compact dimensions**
- Easy and fast coupling due to **extra-long centering pins**
- Internal **air ducts**
- Integrated groove for **repeatable tool drop-off**
- **Standardized screw-on pattern** according to DIN EN ISO 9409-1

Technical data at a glance

Overview TK series	from	to
Recommended handling weight	8 kg	800 kg
Weight (total)	0.15 kg	43 kg
Max. tensile force Fz	500 N	60,000 N
Max. compressive force Fd	1,100 N	80,000 N
Max. moment Mx, My	35 Nm	15,000 Nm
Max. moment Mz	140 Nm	9,100 Nm

TK-SQ | THE MODULAR



TK-SQUARE SERIES

TK-SQ series tool changers – the modular heavyweight

When the requirements for payload, safety and media feedthrough increase, the TK-SQ tool changers show their strengths. With up to 10 mounting surfaces for different transfer modules, double safety lock with separate sensor query and a payload of up to 1,250 kg, they are the best choice for challenging applications.

Technical data at a glance

Overview TK-SQ series	from	to
Recommended handling weight	200 kg	1,250 kg
Weight (total)	9.6 kg	44 kg
Max. tensile force Fz	500 N	60,000 N
Max. compressive force Fd	1,100 N	80,000 N
Max. moment Mx, My	35 Nm	15,000 Nm
Max. moment Mz	140 Nm	9,100 Nm

Advantages of the TK-SQ series

- **Modular design** with countless combination options
- **Double safety lock**
- Designed for **highest loads**
- **Online configurator** enables independent configuration
- **Sensors** included as standard

Tool changer **TK series**
Features at a glance

Fields of application

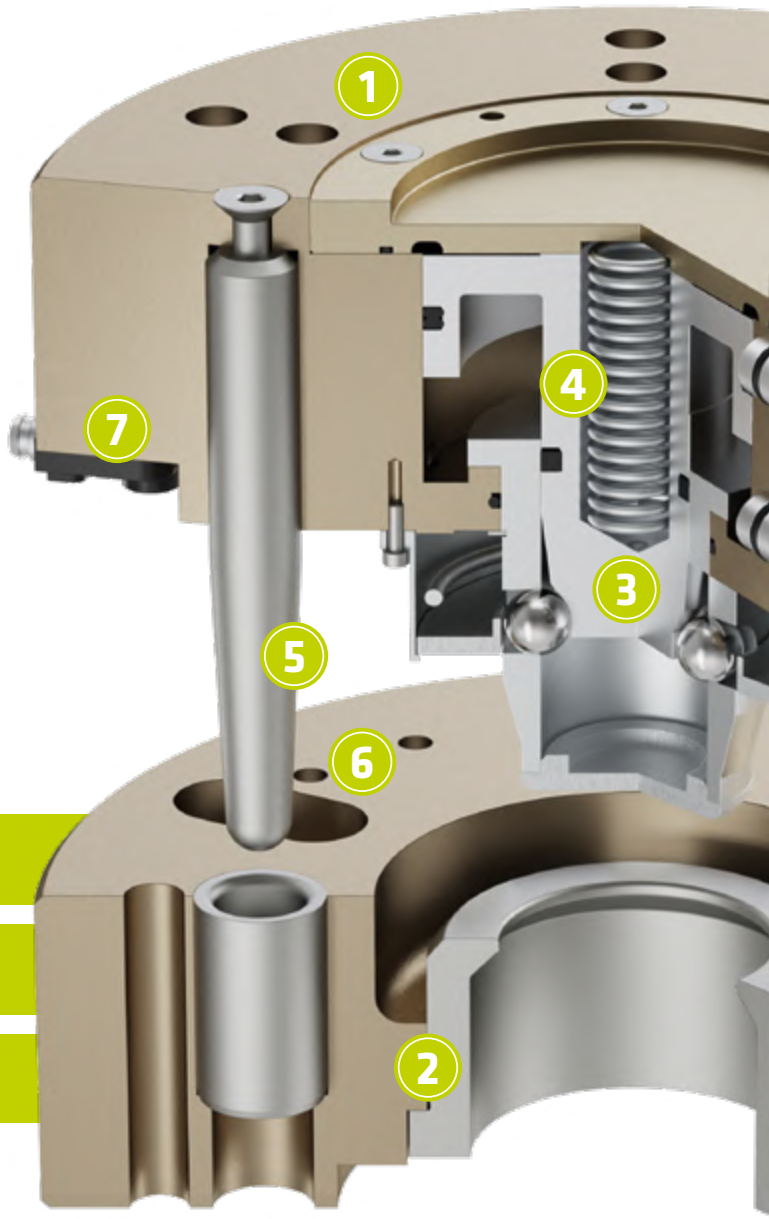
The TK series was developed for universal use. From simple assembly applications to complex manufacturing processes with different tools and changing environmental conditions, the TK tool changers master every challenge.

Compatibility

Screw-on patterns according to DIN EN ISO 9409-1 allow for compatibility with almost every robot from Fanuc, Kuka, ABB, Stäubli, Yaskawa and many more. They can be mounted directly to the hand flange of the robot and do not require any special mounting tool. If a special mounting pattern is required, we will be pleased to supply a robot-specific adapter plate.

TK | THE COMPACT

- Wide range of sizes
- Short changeover times
- Increased productivity
- Highly durable

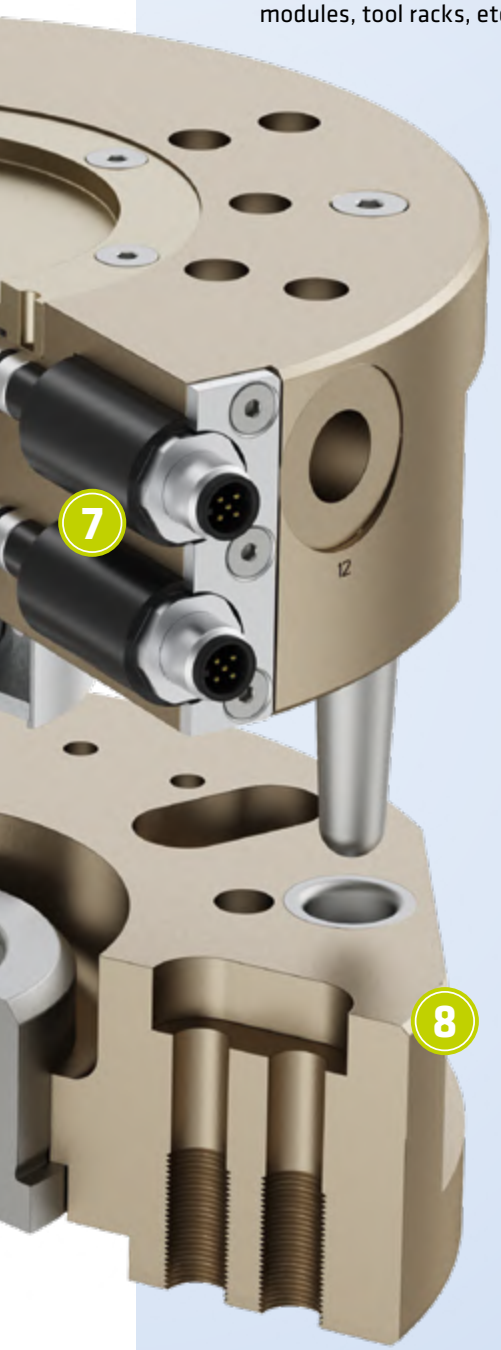


QUICK
PRECISE
RELIABLE

Picture shows TK-160 with sensor query

Product advantages & benefits at a glance

- Quick change of tools and grippers on the robot or gantry
- Simple assembly due to standardized screw-on pattern to DIN EN ISO 9409-1
- Corrosion protection of functional parts as standard for demanding environments
- Optional sensor query of piston stroke with inductive sensors*
- Integrated air feedthroughs with special seals and uniform connection threads
- Wide range of accessories such as transmission modules, tool racks, etc.



1 Robot side
The robot side contains the locking actuator and is mounted to the hand flange of the robot.

2 Tool side
The required tools are attached to the tool side. The robot can thus pick them up and change the tools automatically.

3 Piston
Through the pneumatically actuated piston, the balls are pressed out against the locking bushing and lock the tool side with the robot side.

4 Spring
A spring is installed in the piston chamber which prevents the piston from retracting and thus loosening the tool side even in the event of a loss of compressed air.

5 Taper pins
Extra long centering pins allow very early "soft-switching" of the robot during coupling, thus reducing changeover times.

6 Air ducts
External tubing and time-consuming manual changes are a thing of the past due to integrated air feedthroughs. This saves space and time.

7 Optional sensor query*
Whether the piston is in the unlocked or locked position and whether the tool side is coupled can be queried by inductive sensors.

8 Mounting surface for accessories
Each tool changer can be equipped with an IPR electrical connector for transmission of electrical signals, bus signals, etc.

* depending on size

Tool changer **TK-Square series**

Features at a glance

Fields of application

The TK-SQ series is specifically designed for use in demanding environments. When requirements for load capacity, safety components and extensive media feedthrough increase, the TK-SQ tool changer with maximum load capacity, double safety lock and configurable transmission modules scores.

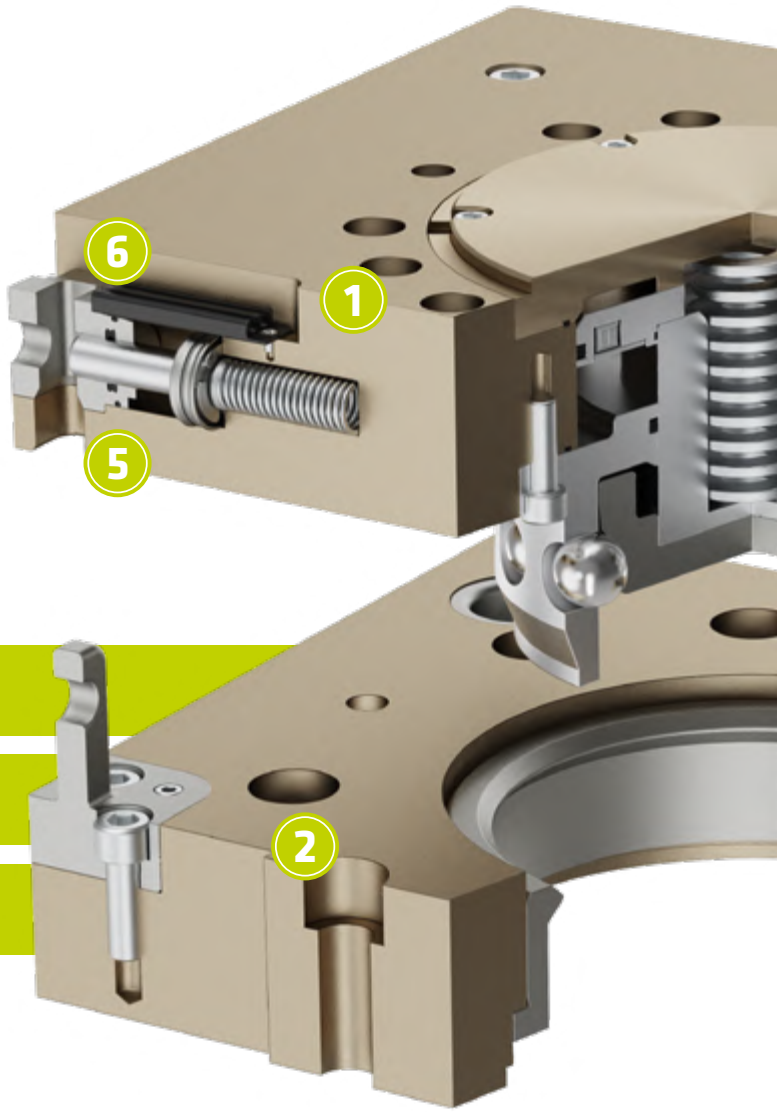
TK-SQ | THE MODULAR

- High loads
- Freely configurable
- Increased safety
- Integrated sensors

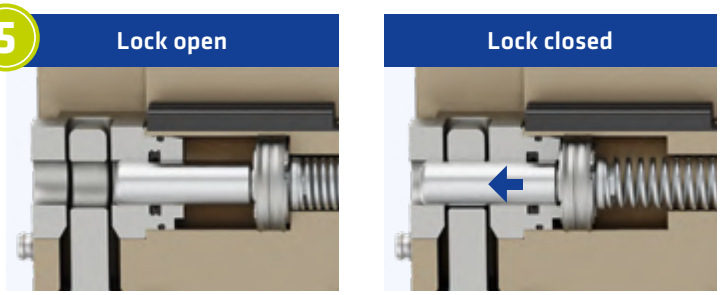
NEW: The online configurator for the TK-SQ series

There is a suitable TK-SQ tool changer for every application in our online configurator. With 26 possible transmission modules for voltage, power, pneumatics, vacuum, hydraulics and many other media, you can easily put together the desired combination. At the end, you will receive a personalized 3D model and data sheet to download and also have the option to send a quote request directly to the sales department.
Try it out:

https://ipr.partcommunity.com/



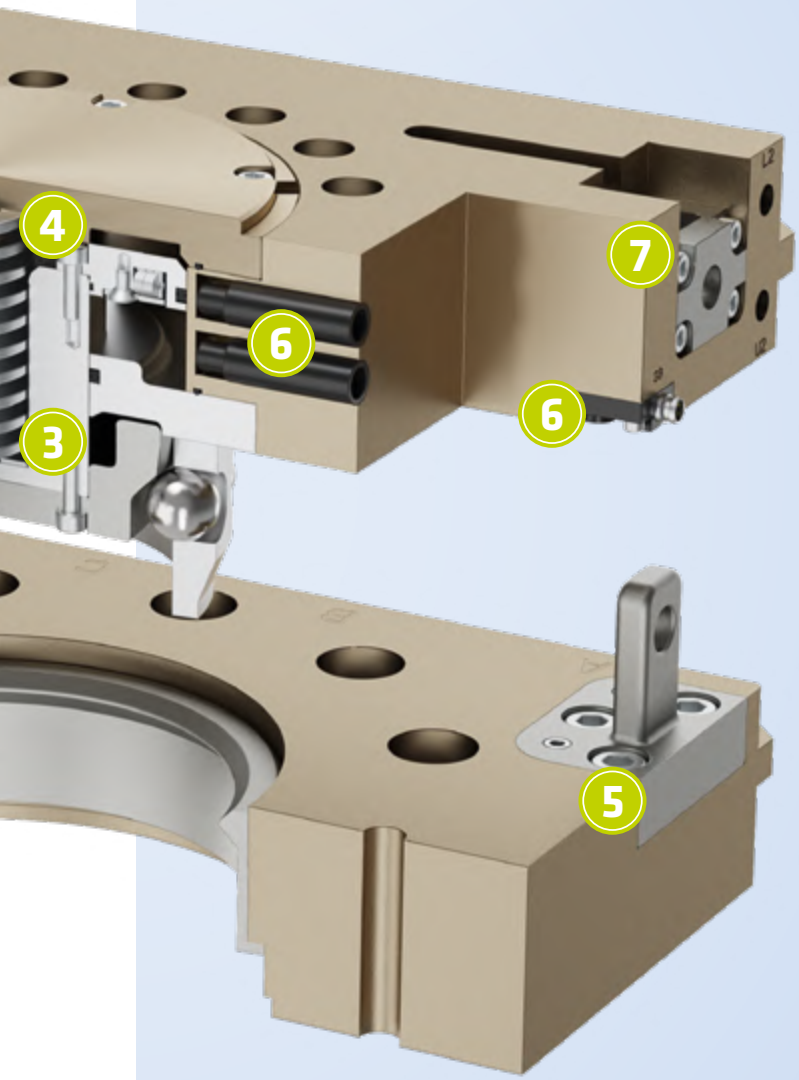
MODULAR
ROBUST
FLEXIBLE



Picture shows TK-800-SQ-DV

Product advantages & benefits at a glance

- Payloads up to 1,250 kg as standard, increased loads on request
- Freely configurable in the online configurator – fast and simple!
- Doubly secured against accidental loosening: Spring and steel bolt
- Piston stroke query and tool side detection integrated as standard
- Corrosion protection through special coating of functional parts
- Extensive accessories for transmission of various signals and media



1 Robot side
The robot side contains the locking actuator and is mounted to the hand flange of the robot.

2 Tool side
The required tools are attached to the tool side. The robot can thus pick them up and change the tools automatically.

3 Piston
Through the pneumatically actuated piston, the balls are pressed out against the locking bushing and lock the tool side with the robot side.

4 Spring
A spring is installed in the piston chamber, which prevents the piston from retracting and thus loosening the tool side even in the event of a loss of compressed air.

5 Double safety lock
When compressed air is released, two steel bolts are pressed into recessed lugs via springs and fixed in place. This prevents unintentional release of the tool side by both the piston spring and the locking bolts.

6 Sensors
Sensors for piston stroke query and tool side presence detection are provided as standard. As an option, the double safety interlock can also be queried.

7 Screw-on surfaces for accessories
Up to 10 different modules for the transmission of pneumatics, hydraulics, fluids, etc. as well as electrical signals, power, data, etc. can be used with the tool changer at the same time.

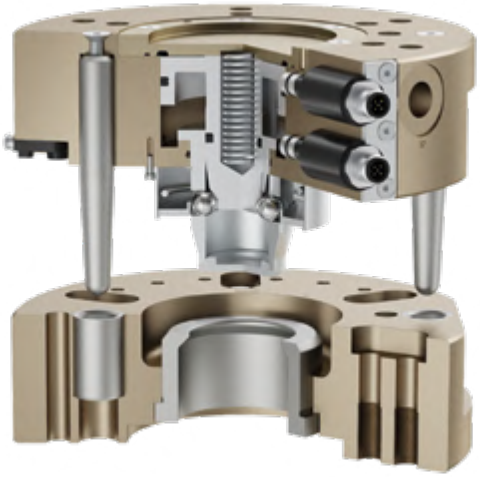
Tool changer **TK series**

Visualized principle of function

1

TK series decoupled

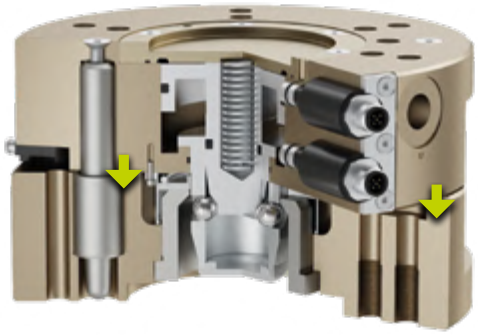
The extra-long taper pins in the robot side support simple and uncomplicated coupling with the tool side. The balls are protected under the cover and the piston is pneumatically fixed in the retracted position.



2

TK series coupled

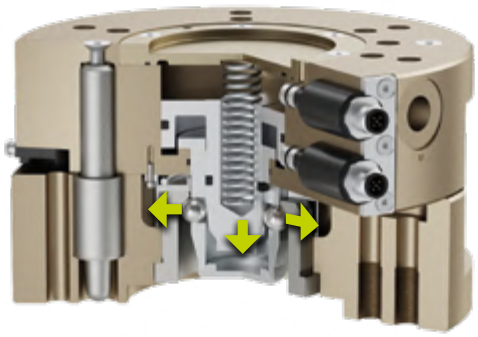
The compressed air applied to the piston in combination with the spring in the piston chamber presses the balls outward against the locking bushing. The tool side is now locked and the built-in spring maintains the locking force even in case of pressure loss.



3

TK series locked

During coupling, the ball-retaining ring is pressed backwards, exposing the balls housed by the locking bushing. The taper pins are recessed precisely in the bushings of the tool side and the tool side presence sensor sends a signal to the control unit.



Pictures show TK-160 with sensor query

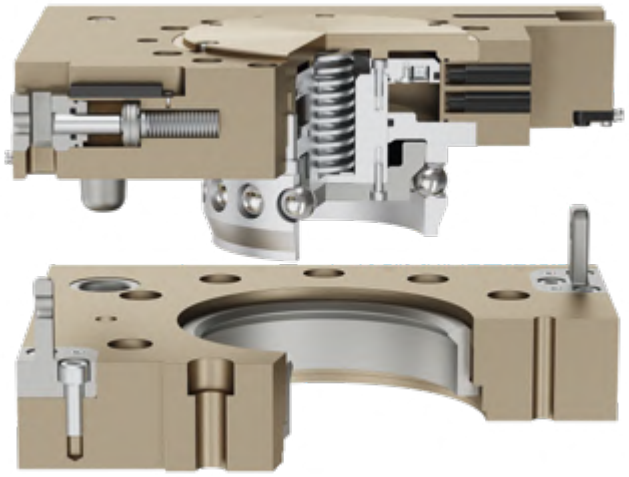
Tool changer **TK Square series**

Visualized principle of function

1

TK-SQ series decoupled

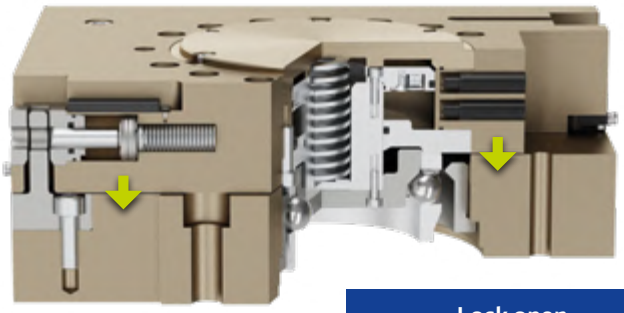
Similar to the TK series, the piston is fixed in the extended position when decoupled. The balls are always exposed thanks to a revised ball bushing which eliminates the need for a cover. The bolts of the safety lock are preloaded against a spring by compressed air.



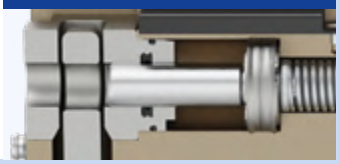
2

TK-SQ series coupled

During the coupling process, the robot side is precisely connected to the tool side by the ball bushing and the two taper pins. The lugs of the safety lock are recessed in the bushings of the robot side.



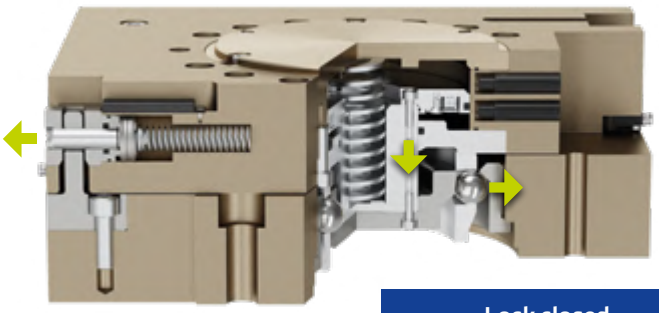
Lock open



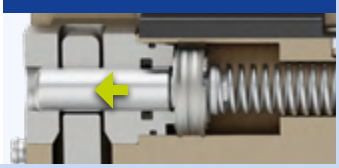
3

TK-SQ series locked

The balls are pressed outwards and locked when compressed air is applied to the piston. The bolts of the safety lock are also pressed into the lugs via spring and air pressure, thus providing double locking protection of the tool side.



Lock closed



Pictures show TK-800-SQ-DV

TK series sizes

With payloads from 8 kg to 800 kg

page 20 TK-35

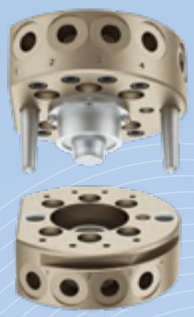
up to **8** kg

page 20 TK-40

up to **12** kg

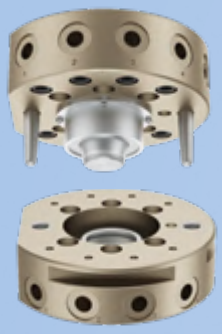
page 21 TK-45

up to **16** kg



page 21 TK-50

up to **25** kg

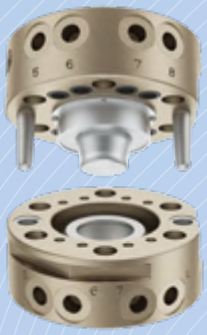


page 22 TK-63

up to **30** kg

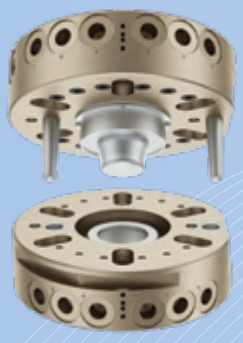
page 22 TK-80

up to **60** kg



page 23 TK-125

up to **150** kg

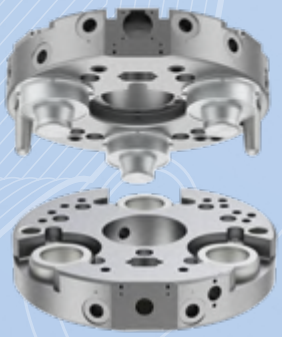


page 23 TK-160

up to **250** kg

page 24 TK-200

up to **275** kg

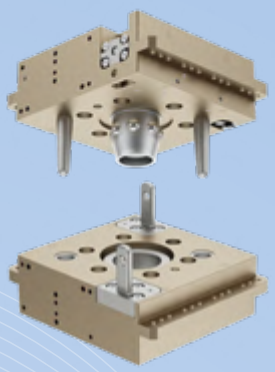


page 25 TK-300

up to **800** kg

TK-SQ series sizes

With payloads from 200 kg to 1,250 kg



page 26
TK-200-SQ-DV

up to **200** kg

page 26
TK-220-SQ-DV

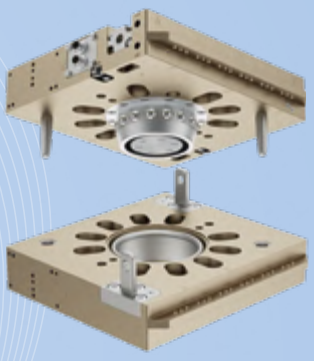
up to **220** kg

page 27
TK-250-SQ-DV

up to **250** kg

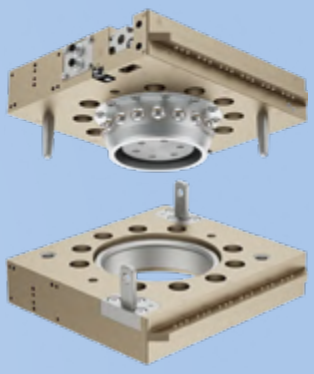
page 27
TK-330-SQ-DV

up to **330** kg



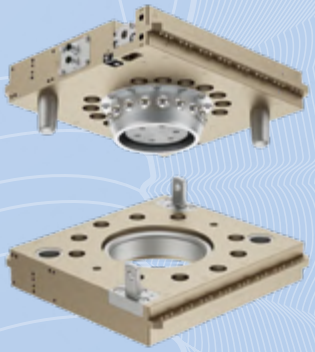
page 28
TK-400-SQ-DV

up to **400** kg



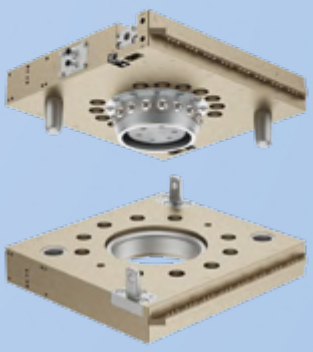
page 28
TK-650-SQ-DV

up to **650** kg



page 29
TK-800-SQ-DV

up to **800** kg



page 29
TK-1250-SQ-DV

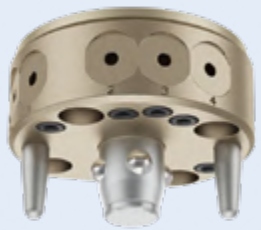
up to **1,250** kg

Technical data

TK-35 I TK-40

TK-35

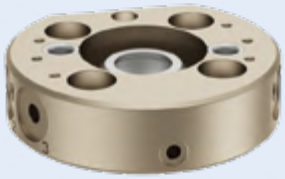
TK-35-R



TK-35-T

TK-40

TK-40-R



TK-40-T

Technical data

Type	TK-35-R	TK-35-T
Item no.	150300820	150300821
Attachment	robot side	tool side
Recommended payload	8 kg	
Max. distance to center of mass	100 mm	
Weight	0.10 kg	0.05 kg
Air consumption per cycle	0.03 l	–
Max. tensile force Fz	500 N	
Max. compressive force Fd	1,100 N	
Max. moment Mx, My	35 Nm	
Max. moment Mz	140 Nm	
Repeatability	0.03 mm	
Joining force in joining direction	–	
Max. permissible axis deviation in X / Y direction	±0.75 mm	
Max. perm. offset while locking	0.6 mm	
Coupling way	13.5 mm	
Connection flange / pitch circle diameter	35 mm	
Number of pneumatic feedthroughs	5	
Min. operating pressure	4.5 bar	
Max. operating pressure	8 bar	
Ambient temperature	+5 ... +80 °C	
Customs tariff number	85369095	

Technical data

Type	TK-40-R	TK-40-T
Item no.	15030088	15030090
Attachment	robot side	tool side
Recommended payload	12 kg	
Max. distance to center of mass	200 mm	
Weight	0.17 kg	0.10 kg
Air consumption per cycle	0.03 l	–
Max. tensile force Fz	900 N	
Max. compressive force Fd	2,200 N	
Max. moment Mx, My	50 Nm	
Max. moment Mz	270 Nm	
Repeatability	0,03 mm	
Joining force in joining direction	15 N	
Max. permissible axis deviation in X / Y direction	±1 mm	
Max. perm. offset while locking	0.6 mm	
Coupling way	15.5 mm	
Connection flange / pitch circle diameter	ISO 40	
Number of pneumatic feedthroughs	6	
Min. operating pressure	4.5 bar	
Max. operating pressure	8 bar	
Ambient temperature	+5 ... +80 °C	
Customs tariff number	85369095	

Technical data

TK-45 I TK-50

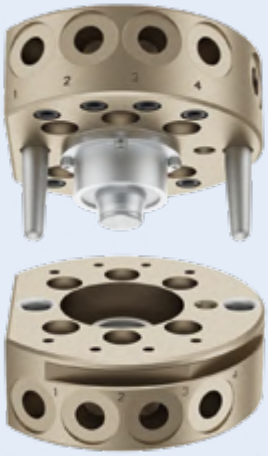
TK-45

TK-45-R

TK-45-T

TK-50

TK-50-R



TK-50-T

Technical data

Type	TK-45-R	TK-45-T
Item no.	150300954	150300955
Attachment	robot side	tool side
Recommended payload	16 kg	
Max. distance to center of mass	220 mm	
Weight	0.18 kg	0.14 kg
Air consumption per cycle	0.05 l	–
Max. tensile force Fz	1,500 N	
Max. compressive force Fd	3,500 N	
Max. moment Mx, My	55 Nm	
Max. moment Mz	300 Nm	
Repeatability	0.03 mm	
Joining force in joining direction	–	
Max. permissible axis deviation in X / Y direction	±1 mm	
Max. perm. offset while locking	1 mm	
Coupling way	17.3 mm	
Connection flange / pitch circle diameter	ISO 40	
Number of pneumatic feedthroughs	8	
Min. operating pressure	4.5 bar	
Max. operating pressure	8 bar	
Ambient temperature	+5 ... +80 °C	
Customs tariff number	85369095	

Technical data

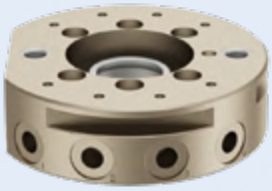
Type	TK-50-R	TK-50-T
Item no.	15030092	15030095
Attachment	robot side	tool side
Recommended payload	25 kg	
Max. distance to center of mass	300 mm	
Weight	0.45 kg	0.34 kg
Air consumption per cycle	0.09 l	–
Max. tensile force Fz	4,000 N	
Max. compressive force Fd	6,600 N	
Max. moment Mx, My	120 Nm	
Max. moment Mz	750 Nm	
Repeatability	0.03 mm	
Joining force in joining direction	40 N	
Max. permissible axis deviation in X / Y direction	±1 mm	
Max. perm. offset while locking	1 mm	
Coupling way	28 mm	
Connection flange / pitch circle diameter	ISO 50	
Number of pneumatic feedthroughs	8	
Min. operating pressure	4.5 bar	
Max. operating pressure	8 bar	
Ambient temperature	+5 ... +80 °C	
Customs tariff number	85369095	

Technical data

TK-63 I TK-80

TK-63

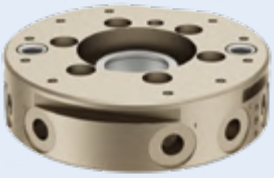
TK-63-R



TK-63-T

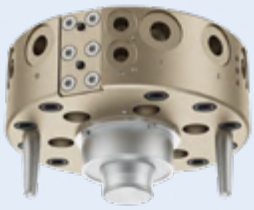
TK-80

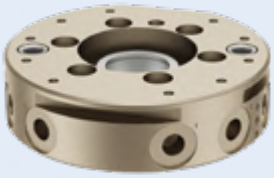
TK-80-R



TK-80-T

TK-80-R with sensor query





TK-80-T

Technical data

Type	TK-63-R	TK-63-T
Item no.	15030179	15030184
Attachment	robot side	tool side
Recommended payload	30 kg	
Max. distance to center of mass	300 mm	
Weight	1.05 kg	0.68 kg
Air consumption per cycle	0.12 l	–
Max. tensile force Fz	6,000 N	
Max. compressive force Fd	9,050 N	
Max. moment Mx, My	350 Nm	
Max. moment Mz	1,000 Nm	
Repeatability	0.03 mm	
Joining force in joining direction	60 N	
Max. permissible axis deviation in X / Y direction	±1 mm	
Max. perm. offset while locking	1.5 mm	
Coupling way	29 mm	
Connection flange / pitch circle diameter	ISO 63	
Number of pneumatic feedthroughs	8	
Min. operating pressure	4.5 bar	
Max. operating pressure	8 bar	
Ambient temperature	+5 ... +80 °C	
Customs tariff number	85369095	

Technical data

Type	TK-80-R	TK-80-R with sensor query	TK-80-T
Item no.	15030098	150300804	15030102
Attachment	robot side	robot side	tool side
Recommended payload		60 kg	
Max. distance to center of mass		500 mm	
Weight	1.80 kg	2.25 kg	1.30 kg
Air consumption per cycle	0.26 l	0.38 l	–
Max. tensile force Fz		9,000 N	
Max. compressive force Fd		17,000 N	
Max. moment Mx, My		2,000 Nm	
Max. moment Mz		1,700 Nm	
Repeatability		0.03 mm	
Joining force in joining direction		75 N	
Max. permissible axis deviation in X / Y direction		±1.5 mm	
Max. perm. offset while locking		2 mm	
Coupling way		37 mm	
Connection flange / pitch circle diameter		ISO 80	
Number of pneumatic feedthroughs		8+2	
Min. operating pressure		4.5 bar	
Max. operating pressure		8 bar	
Ambient temperature		+5 ... +80 °C	
Customs tariff number		85369095	

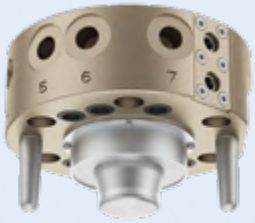
Technical data

TK-125 I TK-160

TK-125

TK-125-R

TK-125-R with sensor query



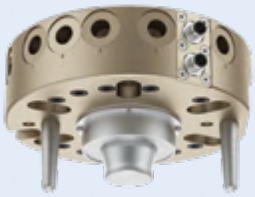
TK-125-T

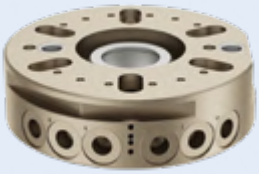
TK-125-T

TK-160

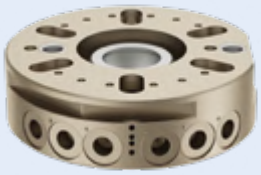
TK-160-R

TK-160-R with sensor query





TK-160-T



TK-160-T

Technical data

Type	TK-125-R	TK-125-R with sensor query	TK-125-T
Item no.	15030157	150300795	15030158
Attachment	robot side	robot side	tool side
Recommended payload		150 kg	
Max. distance to center of mass		500 mm	
Weight	3.50 kg	3.60 kg	2.55 kg
Air consumption per cycle	0.59 l	0.88 l	–
Max. tensile force Fz		30,000 N	
Max. compressive force Fd		70,000 N	
Max. moment Mx, My		5,000 Nm	
Max. moment Mz		2,400 Nm	
Repeatability		0.05 mm	
Joining force in joining direction		110 N	
Max. permissible axis deviation in X / Y direction		±1.6 mm	
Max. perm. offset while locking		3 mm	
Coupling way		47.5 mm	
Connection flange / pitch circle diameter		ISO 125	
Number of pneumatic feedthroughs	8	7	8
Min. operating pressure		4.5 bar	
Max. operating pressure		8 bar	
Ambient temperature		+5 ... +80 °C	
Customs tariff number		85369095	

Technical data

Type	TK-160-R	TK-160-R with sensor query	TK-160-T
Item no.	15030106	150300768	15030109
Attachment	robot side	robot side	tool side
Recommended payload		250 kg	
Max. distance to center of mass		500 mm	
Weight	5.25 kg	5.20 kg	4.25 kg
Air consumption per cycle	0.59 l	0.88 l	–
Max. tensile force Fz		35,500 N	
Max. compressive force Fd		70,000 N	
Max. moment Mx, My		5,500 Nm	
Max. moment Mz		3,750 Nm	
Repeatability		0.05 mm	
Joining force in joining direction		110 N	
Max. permissible axis deviation in X / Y direction		±2 mm	
Max. perm. offset while locking		3 mm	
Coupling way		56.5 mm	
Connection flange / pitch circle diameter		ISO 160 / ISO 125	
Number of pneumatic feedthroughs	12	11	12
Min. operating pressure		4.5 bar	
Max. operating pressure		8 bar	
Ambient temperature		+5 ... +80 °C	
Customs tariff number		85369095	

Technical data

TK-160-OS I TK-200

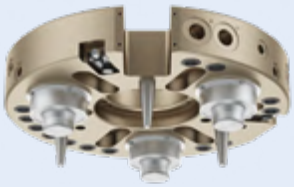
TK-160-OS

TK-160-R-OS with sensor query

TK-160-T

TK-200

TK-200-R



TK-200-T

TK-200-R SV*

TK-200-T

Technical data

Type	TK-160-R-OS with sensor query	TK-160-T
Item no.	150300798	15030109
Attachment	robot side	tool side
Recommended payload	250 kg	
Max. distance to center of mass	500 mm	
Weight	5.1 kg	4.25 kg
Air consumption per cycle	0.88 l	–
Max. tensile force Fz	35,500 N	
Max. compressive force Fd	70,000 N	
Max. moment Mx, My	5,500 Nm	
Max. moment Mz	3,750 Nm	
Repeatability	0.05 mm	
Joining force in joining direction	-	
Max. permissible axis deviation in X / Y direction	±2 mm	
Max. perm. offset while locking	3 mm	
Coupling way	56.5 mm	
Connection flange / pitch circle diameter	ISO 160 / ISO 125	
Number of pneumatic feedthroughs	11	
Min. operating pressure	4.5 bar	
Max. operating pressure	8 bar	
Ambient temperature	+5 ... +80 °C	
Customs tariff number	85369095	

Technical data

Type	TK-200-R	TK-200-R SV*	TK-200-T
Item no.	15030182	15030324	15030183
Attachment	robot side	robot side	tool side
Recommended payload		275 kg	
Max. distance to center of mass		500 mm	
Weight	6.10 kg	8.30 kg	4.60 kg
Air consumption per cycle	3x 0.26 l	3x 0.26 l / 1x 0.12 l	–
Max. tensile force Fz		30,000 N	
Max. compressive force Fd		26,000 N	
Max. moment Mx, My		8,000 Nm	
Max. moment Mz		3,200 Nm	
Repeatability		0.05 mm	
Joining force in joining direction		225 N	
Max. permissible axis deviation in X / Y direction		±1.5 mm	
Max. perm. offset while locking		2 mm	
Coupling way		44.5 mm	
Connection flange / pitch circle diameter		ISO 200 / ISO 160 / ISO 125	
Number of pneumatic feedthroughs		13	
Min. operating pressure		4.5 bar	
Max. operating pressure		8 bar	
Ambient temperature		+5 ... +80 °C	
Customs tariff number		85369095	

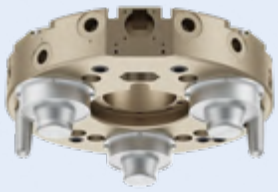
*SV = with double safety lock

Technical data

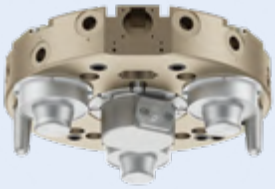
TK-300 Alu I TK-300 St

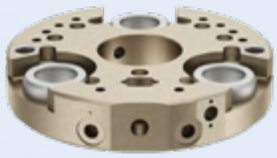
TK-300 Alu

TK-300-R Alu

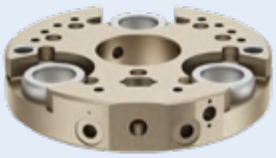


TK-300-R Alu SV*





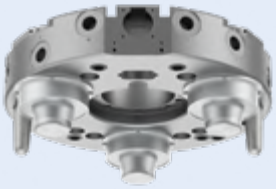
TK-300-T Alu



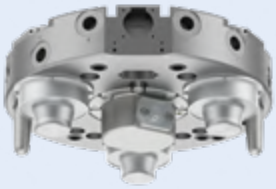
TK-300-T Alu

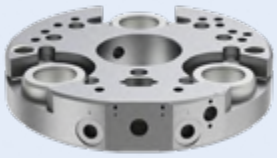
TK-300 St

TK-300-R St

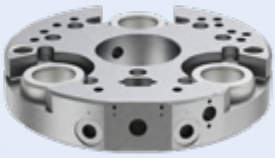


TK-300-R St SV*





TK-300-T St



TK-300-T St

Technical data

Type	TK-300-R Alu	TK-300-R Alu SV*	TK-300-T Alu
Item no.	15030321	15030137	15030138
Attachment	robot side	robot side	tool side
Recommended payload		450 kg	
Max. distance to center of mass		500 mm	
Weight	10.50 kg	13.00 kg	7.60 kg
Air consumption per cycle	3x 0.59 l	3x 0.59 l / 1x 0.13 l	–
Max. tensile force Fz		60,000 N	
Max. compressive force Fd		70,000 N	
Max. moment Mx, My		15,000 Nm	
Max. moment Mz		9,100 Nm	
Repeatability		0.05 mm	
Joining force in joining direction		330 N	
Max. permissible axis deviation in X / Y direction		±2 mm	
Max. perm. offset while locking		3 mm	
Coupling way		54.5 mm	
Connection flange / pitch circle diameter		ISO 200 / 152.4 mm / 130 mm	
Number of pneumatic feedthroughs		10	
Min. operating pressure		4.5 bar	
Max. operating pressure		8 bar	
Ambient temperature		+5 ... +80 °C	
Customs tariff number		85369095	

Technical data

Type	TK-300-R St	TK-300-R St SV*	TK-300-T St
Item no.	15030322	15030214	15030215
Attachment	robot side	robot side	tool side
Recommended payload		800 kg	
Max. distance to center of mass		500 mm	
Weight	22.50 kg	25.00 kg	18.00 kg
Air consumption per cycle	3x 0.59 l	3x 0.59 l / 1x 0.13 l	–
Max. tensile force Fz		60,000 N	
Max. compressive force Fd		80,000 N	
Max. moment Mx, My		15,000 Nm	
Max. moment Mz		9,100 Nm	
Repeatability		0.05 mm	
Joining force in joining direction		330 N	
Max. permissible axis deviation in X / Y direction		±2 mm	
Max. perm. offset while locking		3 mm	
Coupling way		54.5 mm	
Connection flange / pitch circle diameter		ISO 200 / 152.4 mm / 130 mm	
Number of pneumatic feedthroughs		10	
Min. operating pressure		4.5 bar	
Max. operating pressure		8 bar	
Ambient temperature		+5 ... +80 °C	
Customs tariff number		85369095	

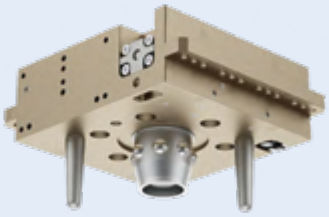
*SV = with double safety lock

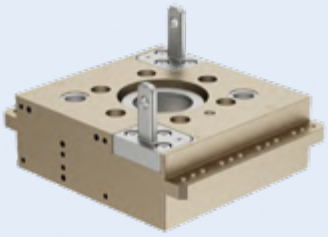
Technical data

TK-200-SQ-DV I TK-220-SQ-DV

TK-200-SQ-DV

TK-200-SQ-DV-R

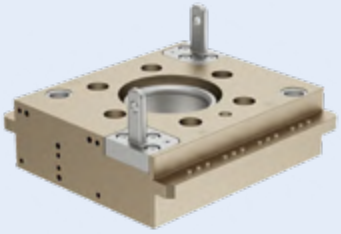




TK-200-SQ-DV-T

TK-220-SQ-DV-R

TK-220-SQ-DV-R



TK-220-SQ-DV-T

Technical data

Type	TK-200-SQ-DV-R	TK-200-SQ-DV-T
Item no.	150300876	150300877
Attachment	robot side	tool side
Recommended payload	200 kg	
Max. distance to center of mass	350 mm	
Weight	5.00 kg	4.60 kg
Air consumption per cycle	0,80 / +0.19 l	–
Max. tensile force Fz	35,500 N	
Max. compressive force Fd	70,000 N	
Max. moment Mx, My	5,000 Nm	
Max. moment Mz	3,500 Nm	
Repeatability	0.05 mm	
Joining force in joining direction	–	
Max. permissible axis deviation in X / Y direction	±1.5 mm	
Max. perm. offset while locking	1 mm	
Coupling way	56.5 mm	
Connection flange / pitch circle diameter	100 mm	
Number of mounting surfaces	6	
Min. operating pressure	4.5 bar	
Max. operating pressure	8 bar	
Ambient temperature	+5 ... +80 °C	
Customs tariff number	85369095	

Technical data

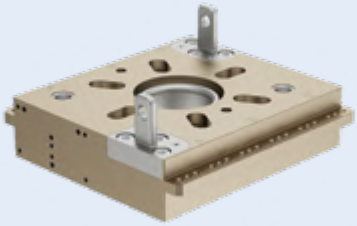
Type	TK-220-SQ-DV-R	TK-220-SQ-DV-T
Item no.	150300922	150300923
Attachment	robot side	tool side
Recommended payload	220 kg	
Max. distance to center of mass	400 mm	
Weight	6.30 kg	5.50 kg
Air consumption per cycle	0.92 / +0.46 l	–
Max. tensile force Fz	35,500 N	
Max. compressive force Fd	75,000 N	
Max. moment Mx, My	5,200 Nm	
Max. moment Mz	3,750 Nm	
Repeatability	0.05 mm	
Joining force in joining direction	–	
Max. permissible axis deviation in X / Y direction	±1.5 mm	
Max. perm. offset while locking	1 mm	
Coupling way	56.5 mm	
Connection flange / pitch circle diameter	125 mm	
Number of mounting surfaces	6	
Min. operating pressure	4.5 bar	
Max. operating pressure	8 bar	
Ambient temperature	+5 ... +80 °C	
Customs tariff number	85369095	

Technical data

TK-250-SQ-DV I TK-330-SQ-DV

TK-250-SQ-DV

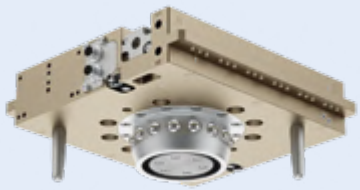
TK-250-SQ-DV-R

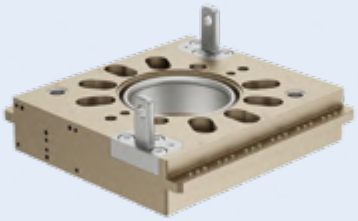


TK-250-SQ-DV-T

TK-330-SQ-DV

TK-330-SQ-DV-R





TK-330-SQ-DV-T

Technical data

Type	TK-250-SQ-DV-R	TK-250-SQ-DV-T
Item no.	150300751	150300750
Attachment	robot side	tool side
Recommended payload	250 kg	
Max. distance to center of mass	500 mm	
Weight	9.00 kg	8.50 kg
Air consumption per cycle	0.92 / +0.46 l	–
Max. tensile force Fz	35,500 N	
Max. compressive force Fd	75,000 N	
Max. moment Mx, My	5,500 Nm	
Max. moment Mz	3,750 Nm	
Repeatability	0.05 mm	
Joining force in joining direction	–	
Max. permissible axis deviation in X / Y direction	±1.5 mm	
Max. perm. offset while locking	1 mm	
Coupling way	56.5 mm	
Connection flange / pitch circle diameter	160 mm / 125 mm	
Number of mounting surfaces	8	
Min. operating pressure	4.5 bar	
Max. operating pressure	8 bar	
Ambient temperature	+5 ... +80 °C	
Customs tariff number	85369095	

Technical data

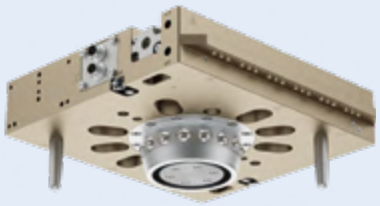
Type	TK-330-SQ-DV-R	TK-330-SQ-DV-T
Item no.	150300917	150300918
Attachment	robot side	tool side
Recommended payload	330 kg	
Max. distance to center of mass	400 mm	
Weight	13.10 kg	9.50 kg
Air consumption per cycle	1,84 / +0.48 l	–
Max. tensile force Fz	50,000 N	
Max. compressive force Fd	75,000 N	
Max. moment Mx, My	7,500 Nm	
Max. moment Mz	4,250 Nm	
Repeatability	0.05 mm	
Joining force in joining direction	–	
Max. permissible axis deviation in X / Y direction	±1.5 mm	
Max. perm. offset while locking	1 mm	
Coupling way	56.5 mm	
Connection flange / pitch circle diameter	160 mm	200 mm / 160 mm
Number of mounting surfaces	8	
Min. operating pressure	4.5 bar	
Max. operating pressure	8 bar	
Ambient temperature	+5 ... +80 °C	
Customs tariff number	85369095	

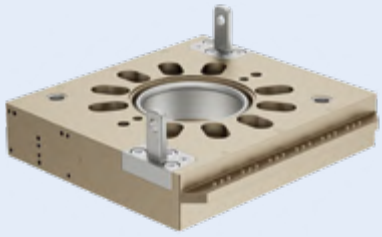
Technical data

TK-400-SQ-DV | TK-650-SQ-DV

TK-400-SQ-DV

TK-400-SQ-DV-R

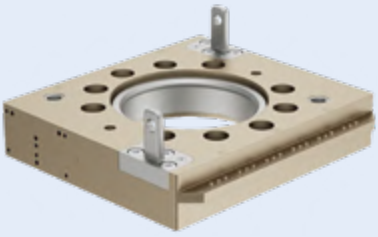




TK-400-SQ-DV-T

TK-650-SQ-DV

TK-650-SQ-DV-R



TK-650-SQ-DV-T

Technical data

Type	TK-400-SQ-DV-R	TK-400-SQ-DV-T
Item no.	150300748	150300749
Attachment	robot side	tool side
Recommended payload	400 kg	
Max. distance to center of mass	400 mm	
Weight	15.10 kg	12.10 kg
Air consumption per cycle	1.84 / +0.48 l	–
Max. tensile force Fz	50,000 N	
Max. compressive force Fd	80,000 N	
Max. moment Mx, My	12,000 Nm	
Max. moment Mz	5,500 Nm	
Repeatability	0.05 mm	
Joining force in joining direction	–	
Max. permissible axis deviation in X / Y direction	±1.5 mm	
Max. perm. offset while locking	1 mm	
Coupling way	56.5 mm	
Connection flange / pitch circle diameter	200 mm / 160 mm	
Number of mounting surfaces	8	
Min. operating pressure	4.5 bar	
Max. operating pressure	8 bar	
Ambient temperature	+5 ... +80 °C	
Customs tariff number	85369095	

Technical data

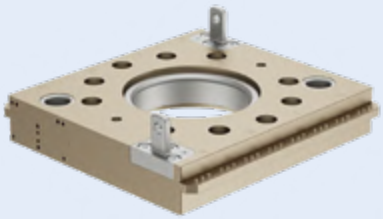
Type	TK-650-SQ-DV-R	TK-650-SQ-DV-T
Item no.	150300972	150300973
Attachment	robot side	tool side
Recommended payload	650 kg	
Max. distance to center of mass	400 mm	
Weight	18.00 kg	11.00 kg
Air consumption per cycle	2,57 / +0.57 l	–
Max. tensile force Fz	60,000 N	
Max. compressive force Fd	80,000 N	
Max. moment Mx, My	15,000 Nm	
Max. moment Mz	7,500 Nm	
Repeatability	0.05 mm	
Joining force in joining direction	–	
Max. permissible axis deviation in X / Y direction	±1.5 mm	
Max. perm. offset while locking	1 mm	
Coupling way	56.5 mm	
Connection flange / pitch circle diameter	200 mm / 205 mm	230 mm / 210 mm
Number of mounting surfaces	8	
Min. operating pressure	4.5 bar	
Max. operating pressure	8 bar	
Ambient temperature	+5 ... +80 °C	
Customs tariff number	85369095	

Technical data

TK-800-SQ-DV I TK-1250-SQ-DV

TK-800-SQ-DV

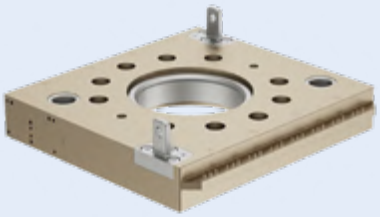
TK-800-SQ-DV-R



TK-800-SQ-DV-T

TK-1250-SQ-DV

TK-1250-SQ-DV-R



TK-1250-SQ-DV-T

Technical data

Type	TK-800-SQ-DV-R	TK-800-SQ-DV-T
Item no.	150300914	150300915
Attachment	robot side	tool side
Recommended payload	800 kg	
Max. distance to center of mass	400 mm	
Weight	21.80 kg	14.40 kg
Air consumption per cycle	2,57 / +0.57 l	–
Max. tensile force Fz	70,000 N	
Max. compressive force Fd	85,000 N	
Max. moment Mx, My	17,500 Nm	
Max. moment Mz	10,000 Nm	
Repeatability	0.05 mm	
Joining force in joining direction	–	
Max. permissible axis deviation in X / Y direction	±1.5 mm	
Max. perm. offset while locking	1 mm	
Coupling way	54.5 mm	
Connection flange / pitch circle diameter	200 mm	250 mm
Number of mounting surfaces	10	
Min. operating pressure	4.5 bar	
Max. operating pressure	8 bar	
Ambient temperature	+5 ... +80 °C	
Customs tariff number	85369095	

Technical data

Type	TK-1250-SQ-DV-R	TK-1250-SQ-DV-T
Item no.	150300752	150300753
Attachment	robot side	tool side
Recommended payload	1,250 kg	
Max. distance to center of mass	400 mm	
Weight	25.70 kg	18.30 kg
Air consumption per cycle	2,57 / +0.57 l	–
Max. tensile force Fz	70,000 N	
Max. compressive force Fd	90,000 N	
Max. moment Mx, My	20,000 Nm	
Max. moment Mz	15,000 Nm	
Repeatability	0.05 mm	
Joining force in joining direction	–	
Max. permissible axis deviation in X / Y direction	±1.5 mm	
Max. perm. offset while locking	1 mm	
Coupling way	54.5 mm	
Connection flange / pitch circle diameter	200 mm	300 mm / 250 mm
Number of mounting surfaces	10	
Min. operating pressure	4.5 bar	
Max. operating pressure	8 bar	
Ambient temperature	+5 ... +80 °C	
Customs tariff number	85369095	

Electrical connectors

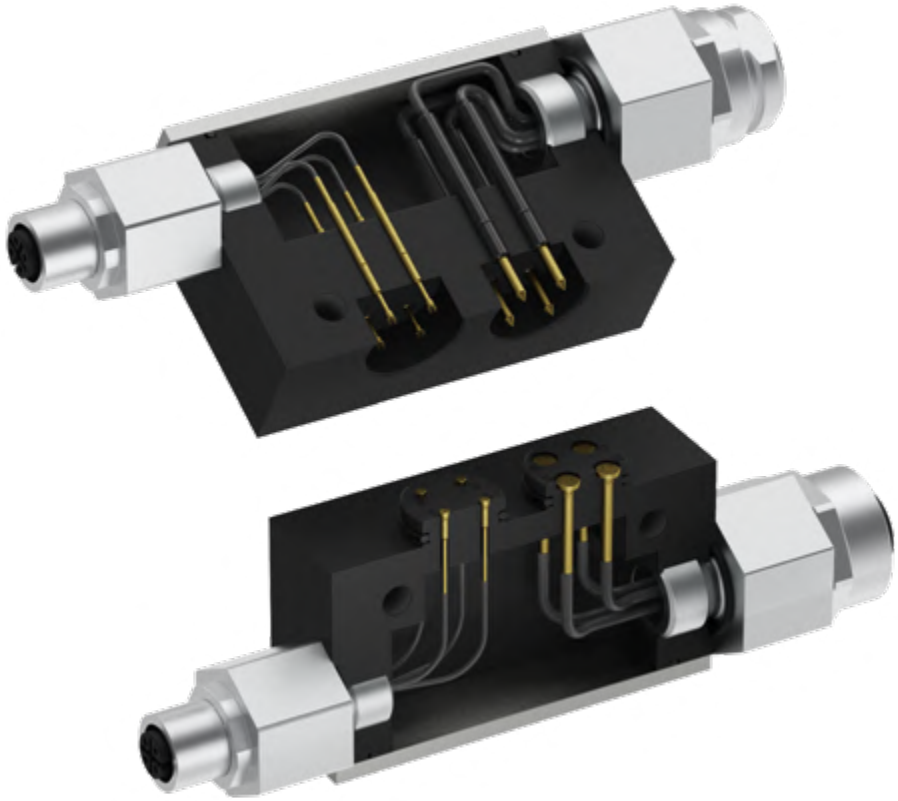
Wide range of transmission options

Overview

The IPR electrical connectors enable transmission of any kind of electrical signals – from supply voltage to power electronics and bus signals. Spring-loaded contact pins with gold coating ensure uninterrupted transmission. The mounting kit for assembly on TK and TK-SQ tool changers is always included. Customer-specific solutions can also be implemented in addition to the standard portfolio shown on the following pages.

Fields of application

You want to change tools with electrical components automatically? Then you are well served with electrical connectors from IPR. Whether sensor signals, servo motors or high-voltage actuators – there is a suitable transmission module for every application.



Advantages

- **17 standard variants** and unlimited **customized solutions**
- Different connectors, pins and geometries – **suitable for every application**
- **Mounting kit** for assembly on the tool changer is supplied

Use the IPR online portal:

3D data and data sheets for the electrical connectors are available to view and download in the online portal – quick and uncomplicated:
https://ipr.partcommunity.com/

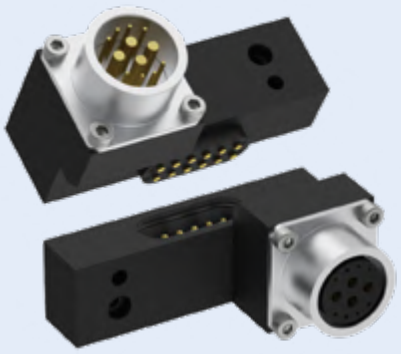
Technical data at a glance

Overview electrical connectors	from	to
Number of contact pins	4	38
Max. voltage per pin	30 V	240 V
Max. current per pin	3 A	16 A
Weight	0.02 kg	2.6 kg

EC12-MIL

Signals

EC12-MIL-R



EC12-MIL-T

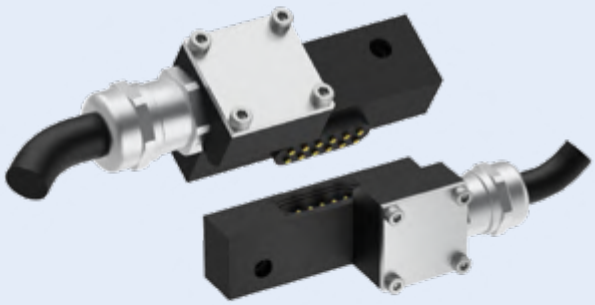
Type	EC12-MIL-R	EC12-MIL-T
Item no.	15030054	15030055
Attachment	robot side	tool side
Number of contact pins	12	
Max. voltage per pin	100 V	
Max. current per pin	3 A	
Transmission type	Signals	
Connection type	MIL, 12-pin (male)	MIL, 12-pin female)
Weight	0.060 kg	0.050 kg
Material	POM / Pins gold-plated	
Contact pin type	fixed	spring-loaded
Customs tariff number	85369095	

Typ	EC12-MIL
TK-35	✗
TK-40	✗
TK-45	✓
TK-50	✓
TK-63	✓
TK-80	✓
TK-125	✓
TK-160	✓
TK-200	✗
TK-300 Alu	✗
TK-300 St	✗
TK-200-SQ	✓
TK-220-SQ	✓
TK-250-SQ	✓
TK-330-SQ	✓
TK-400-SQ	✓
TK-650-SQ	✓
TK-800-SQ	✓
TK-1250-SQ	✓

EC12-Cxx

Signals

EC12-C6m-R



EC12-C3m-T

Type	EC12-C6m-R	EC12-C3m-T
Item no.	150300905	15030390
Attachment	robot side	tool side
Number of contact pins	12	
Max. voltage per pin	100 V	
Max. current per pin	3 A	
Transmission type	Signals	
Connection type	Cable 6 m (open cable end)	Cable 3 m (open cable end)
Weight	0.850 kg	0.500 kg
Material	POM / Pins gold-plated	
Contact pin type	fixed	spring-loaded
Customs tariff number	85369095	

Typ	EC12-Cxx
TK-35	✗
TK-40	✗
TK-45	✓
TK-50	✓
TK-63	✓
TK-80	✓
TK-125	✓
TK-160	✓
TK-200	✗
TK-300 Alu	✗
TK-300 St	✗
TK-200-SQ	✓
TK-220-SQ	✓
TK-250-SQ	✓
TK-330-SQ	✓
TK-400-SQ	✓
TK-650-SQ	✓
TK-800-SQ	✓
TK-1250-SQ	✓

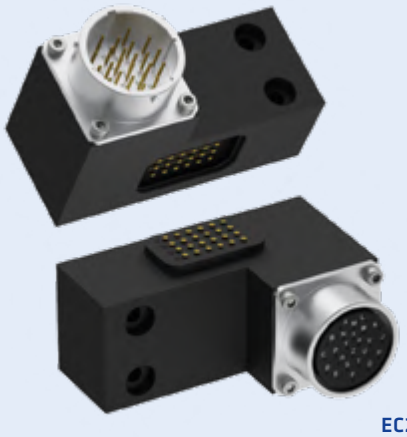
For extensive designation of symbols see p. 38

Caption: ✓ = compatible ✓ = compatible with protrusion ✗ = not useful

EC24-MIL

Signals

EC24-MIL-R



EC24-MIL-T

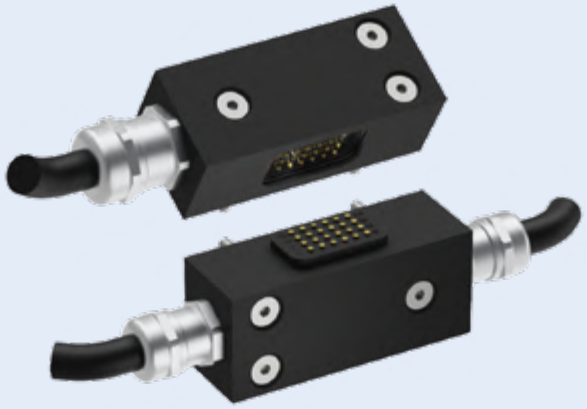
Type	EC24-MIL-R	EC24-MIL-T
Item no.	15030141	15030142
Attachment	robot side	tool side
Number of contact pins	24	
Max. voltage per pin	100 V	
Max. current per pin	3 A	
Transmission type	Signals	
Connection type	MIL, 24-pin (male)	MIL, 24-pin (female)
Weight	0.214 kg	0.165 kg
Material	POM / Pins gold-plated	
Contact pin type	spring-loaded	fixed
Customs tariff number	85369095	

Typ	EC24-MIL
TK-35	✕
TK-40	✕
TK-45	✕
TK-50	✕
TK-63	✕
TK-80	✓
TK-125	✓
TK-160	✓
TK-200	✓
TK-300 Alu	✓
TK-300 St	✓
TK-200-SQ	✓
TK-220-SQ	✓
TK-250-SQ	✓
TK-330-SQ	✓
TK-400-SQ	✓
TK-650-SQ	✓
TK-800-SQ	✓
TK-1250-SQ	✓

EC24-Cxx

Signals

EC24-C5m-R



EC24-C2m-C2m-T

Type	EC24-C5m-R	EC24-C2m-C2m-T
Item no.	15030386	15030167
Attachment	robot side	tool side
Number of contact pins	24	
Max. voltage per pin	80 V	
Max. current per pin	3 A	
Transmission type	Signals	
Connection type	Cable 5 m (open cable end)	Cable 2x2 m (open cable end)
Weight	1.350 kg	0.720 kg
Material	POM / Pins gold-plated	
Contact pin type	spring-loaded	fixed
Customs tariff number	85369095	

Typ	EC24-Cxx
TK-35	✕
TK-40	✕
TK-45	✕
TK-50	✕
TK-63	✕
TK-80	✓
TK-125	✓
TK-160	✓
TK-200	✓
TK-300 Alu	✓
TK-300 St	✓
TK-200-SQ	✓
TK-220-SQ	✓
TK-250-SQ	✓
TK-330-SQ	✓
TK-400-SQ	✓
TK-650-SQ	✓
TK-800-SQ	✓
TK-1250-SQ	✓

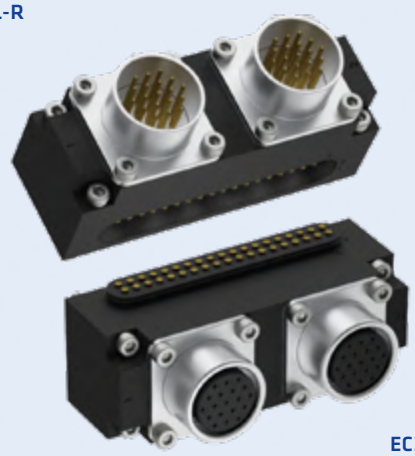
For extensive designation of symbols see p. 38

Caption: ✓ = compatible ✓ = compatible with protrusion ✕ = not useful

EC38-MIL

Signals

EC38-MIL-R



EC38-MIL-T

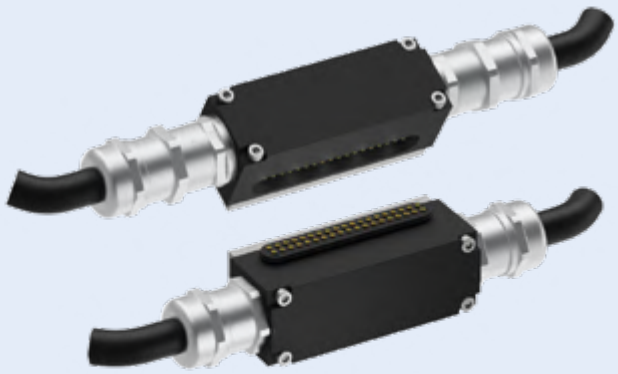
Type	EC38-MIL-R	EC38-MIL-T
Item no.	15030180	15030181
Attachment	robot side	tool side
Number of contact pins	38	
Max. voltage per pin	250 V	
Max. current per pin	3 A	
Transmission type	Signals	
Connection type	MIL, 2x19-pin (male)	MIL, 2x19-pin (female)
Weight	0.178 kg	0.131 kg
Material	POM / Pins gold-plated	
Contact pin type	spring-loaded	fixed
Customs tariff number	85369095	

Typ	EC38-MIL
TK-35	✕
TK-40	✕
TK-45	✕
TK-50	✕
TK-63	✓
TK-80	✓
TK-125	✓
TK-160	✓
TK-200	✓
TK-300 Alu	✓
TK-300 St	✓
TK-200-SQ	✓
TK-220-SQ	✓
TK-250-SQ	✓
TK-330-SQ	✓
TK-400-SQ	✓
TK-650-SQ	✓
TK-800-SQ	✓
TK-1250-SQ	✓

EC38-Cxx

Signals

EC38-C5m-C5m-R



EC38-C3m-C3m-T

Type	EC38-C5m-C5m-R	EC38-C3m-C3m-T
Item no.	150300863	150300811
Attachment	robot side	tool side
Number of contact pins	38	
Max. voltage per pin	30 V	
Max. current per pin	3 A	
Transmission type	Signals	
Connection type	Cable 2x5 m (open cable end)	Cable 2x3 m (open cable end)
Weight	2.600 kg	1.600 kg
Material	POM / Pins gold-plated	
Contact pin type	spring-loaded	fixed
Customs tariff number	85369095	

Typ	EC38-Cxx
TK-35	✕
TK-40	✕
TK-45	✕
TK-50	✕
TK-63	✓
TK-80	✓
TK-125	✓
TK-160	✓
TK-200	✓
TK-300 Alu	✓
TK-300 St	✓
TK-200-SQ	✓
TK-220-SQ	✓
TK-250-SQ	✓
TK-330-SQ	✓
TK-400-SQ	✓
TK-650-SQ	✓
TK-800-SQ	✓
TK-1250-SQ	✓

For extensive designation of symbols see p. 38

Caption: ✓ = compatible ✓ = compatible with protrusion ✕ = not useful

EC4-M12

Signals

EC4-M12-R

EC4-M12-T

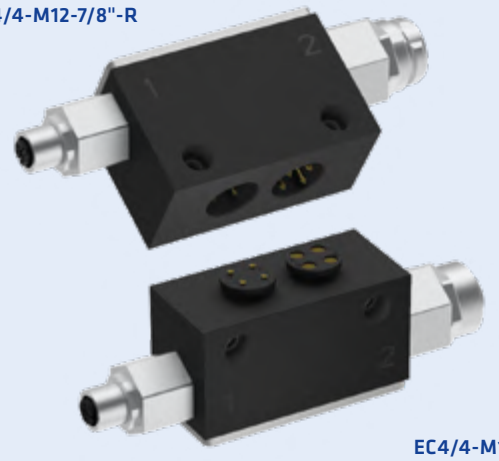
Type	EC4-M12-R	EC4-M12-T
Item no.	15030396	15030395
Attachment	robot side	tool side
Number of contact pins	4	
Max. voltage per pin	250 V	
Max. current per pin	3 A	
Transmission type	Signals	
Connection type	M12, 4-pin, A-coded (plug)	M12, 4-pin, A-coded (socket)
Weight	0.212 kg	0.199 kg
Material	POM / Pins gold-plated	
Contact pin type	spring-loaded	fixed
Customs tariff number	85369095	

Typ	EC4-M12
TK-35	✕
TK-40	✕
TK-45	✕
TK-50	✕
TK-63	✓
TK-80	✓
TK-125	✓
TK-160	✓
TK-200	✕
TK-300 Alu	✕
TK-300 St	✕
TK-200-SQ	✓
TK-220-SQ	✓
TK-250-SQ	✓
TK-330-SQ	✓
TK-400-SQ	✓
TK-650-SQ	✓
TK-800-SQ	✓
TK-1250-SQ	✓

EC4/4-M12-7/8"

Signals / Power

EC4/4-M12-7/8"-R



EC4/4-M12-7/8"-T

Type	EC4/4-M12-7/8"-R	EC4/4-M12-7/8"-T
Item no.	150300806	150300807
Attachment	robot side	tool side
Number of contact pins	4 / 4	
Max. voltage per pin	160 V / 240 V	
Max. current per pin	4 A / 8 A	
Transmission type	Signals / Power	
Connection type	M12, 4-pin, D-coded (socket)	M12, 4-pin, D-coded (socket)
	7/8", 4-pin (male)	7/8", 4-pin (female)
Weight	0.338 kg	0.300 kg
Material	POM / Pins gold plated	
Contact pin type	spring loaded	fixed
Customs tariff number	85369095	

Typ	EC4/4-M12-7/8"
TK-35	✕
TK-40	✕
TK-45	✕
TK-50	✓
TK-63	✓
TK-80	✓
TK-125	✓
TK-160	✓
TK-200	✓
TK-300 Alu	✓
TK-300 St	✓
TK-200-SQ	✓
TK-220-SQ	✓
TK-250-SQ	✓
TK-330-SQ	✓
TK-400-SQ	✓
TK-650-SQ	✓
TK-800-SQ	✓
TK-1250-SQ	✓

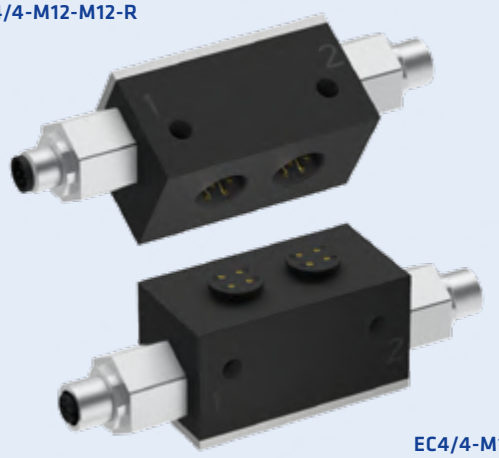
For extensive designation of symbols see p. 38

Caption: ✓ = compatible ✓ = compatible with protrusion ✕ = not useful

EC4/4-M12-M12

Signals / Signals

EC4/4-M12-M12-R



EC4/4-M12-M12-T

Type	EC4/4-M12-M12-R	EC4/4-M12-M12-T
Item no.	150300721	150300722
Attachment	robot side	tool side
Number of contact pins	4 / 4	
Max. voltage per pin	200 V / 200 V	
Max. current per pin	4 A / 4 A	
Transmission type	Signals / Signals	
Connection type	M12, 4-pin, A-coded (plug)	M12, 4-pin, A-coded (female)
	M12, 4-pin, D-coded (socket)	M12, 4-pin, D-coded (socket)
Weight	0.261 kg	0.213 kg
Material	POM / Pins gold-plated	
Contact pin type	spring-loaded	fixed
Customs tariff number	85369095	

Typ	EC4/4-M12-M12
TK-35	✕
TK-40	✕
TK-45	✕
TK-50	✓
TK-63	✓
TK-80	✓
TK-125	✓
TK-160	✓
TK-200	✓
TK-300 Alu	✓
TK-300 St	✓
TK-200-SQ	✓
TK-220-SQ	✓
TK-250-SQ	✓
TK-330-SQ	✓
TK-400-SQ	✓
TK-650-SQ	✓
TK-800-SQ	✓
TK-1250-SQ	✓

EC6/20-Cxx

Power / Signals

EC6/20-C5m-C5m-R-S3

EC6/20-C4m-C4m-T-S3

Type	EC6/20-C5m-C5m-R-S3	EC6/20-C4m-C4m-T-S3
Item no.	15030602	150300818
Attachment	robot side	tool side
Number of contact pins	6 / 20	
Max. voltage per pin	230 V / 100 V	
Max. current per pin	16 A / 3 A	
Transmission type	Power / Signals	
Connection type	Cable 2x5 m (open cable end)	Cable 2x4 m (open cable end)
Weight	2.500 kg	1.670 kg
Material	POM / Pins gold-plated	
Contact pin type	fixed	spring-loaded
Customs tariff number	85369095	

Typ	EC6/20-Cxx
TK-35	✕
TK-40	✕
TK-45	✕
TK-50	✕
TK-63	✕
TK-80	✓
TK-125	✓
TK-160	✓
TK-200	✓
TK-300 Alu	✓
TK-300 St	✓
TK-200-SQ	✓
TK-220-SQ	✓
TK-250-SQ	✓
TK-330-SQ	✓
TK-400-SQ	✓
TK-650-SQ	✓
TK-800-SQ	✓
TK-1250-SQ	✓

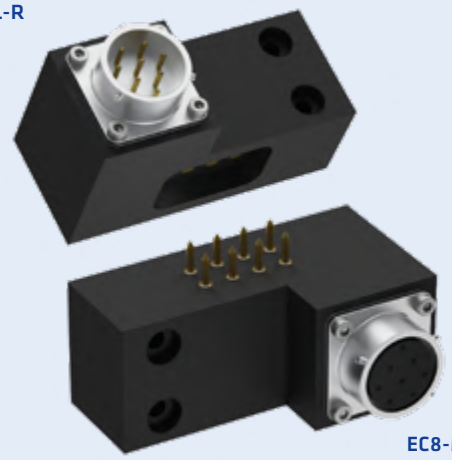
For extensive designation of symbols see p. 38

Caption: ✓ = compatible ✓ = compatible with protrusion ✕ = not useful

EC8-MIL

Power

EC8-MIL-R



EC8-MIL-T

Type	EC8-MIL-R	EC8-MIL-T
Item no.	15030195	15030194
Attachment	robot side	tool side
Number of contact pins	8	
Max. voltage per pin	230 V	
Max. current per pin	13 A	
Transmission type	Power	
Connection type	MIL, 8-pin (female)	MIL, 8-pin (male)
Weight	0.137 kg	0.175 kg
Material	POM / Pins gold-plated	
Contact pin type	fixed	spring-loaded
Customs tariff number	85369095	

Typ	EC8-MIL
TK-35	✗
TK-40	✗
TK-45	✗
TK-50	✗
TK-63	✗
TK-80	✓
TK-125	✓
TK-160	✓
TK-200	✗
TK-300 Alu	✗
TK-300 St	✗
TK-200-SQ	✓
TK-220-SQ	✓
TK-250-SQ	✓
TK-330-SQ	✓
TK-400-SQ	✓
TK-650-SQ	✓
TK-800-SQ	✓
TK-1250-SQ	✓

For extensive designation of symbols see p. 38

EC15-Sub-D

Signals

EC15-Sub-D-R

EC15-Sub-D-T

Type	EC15-Sub-D-R	EC15-Sub-D-T
Item no.	15030037	15030039
Attachment	robot side	tool side
Number of contact pins	15	
Max. voltage per pin	30 V	
Max. current per pin	3 A	
Transmission type	Signale	
Connection type	Sub-D connector, 15-pin	Sub-D socket, 15-pin
Weight	0.017 kg	0.016 kg
Material	POM / Pins gold-plated	
Contact pin type	spring-loaded	fixed
Customs tariff number	85369095	

Typ	EC15-Sub-D
TK-35	✓
TK-40	✓
TK-45	✓
TK-50	✓
TK-63	✓
TK-80	✓
TK-125	✓
TK-160	✓
TK-200	✗
TK-300 Alu	✗
TK-300 St	✗
TK-200-SQ	✓
TK-220-SQ	✓
TK-250-SQ	✓
TK-330-SQ	✓
TK-400-SQ	✓
TK-650-SQ	✓
TK-800-SQ	✓
TK-1250-SQ	✓

Caption: ✓ = compatible ✓ = compatible with protrusion ✗ = not useful

EC25-Sub-D

Signals

EC25-Sub-D-R

EC25-Sub-D-T

Type	EC25-Sub-D-R	EC25-Sub-D-T
Item no.	15030040	15030042
Attachment	robot side	tool side
Number of contact pins	25	
Max. voltage per pin	30 V	
Max. current per pin	3 A	
Transmission type	Signals	
Connection type	Sub-D connector, 25-pin	Sub-D socket, 25-pin
Weight	0.028 kg	0.019 kg
Material	POM / Pins gold plated	
Contact pin type	spring-loaded	fixed
Customs tariff number	85369095	

Typ	EC25-Sub-D
TK-35	✗
TK-40	✗
TK-45	✗
TK-50	✓
TK-63	✓
TK-80	✓
TK-125	✓
TK-160	✓
TK-200	✗
TK-300 Alu	✗
TK-300 St	✗
TK-200-SQ	✓
TK-220-SQ	✓
TK-250-SQ	✓
TK-330-SQ	✓
TK-400-SQ	✓
TK-650-SQ	✓
TK-800-SQ	✓
TK-1250-SQ	✓

EC26-Sub-D

Signals

EC26-Sub-D-R

EC26-Sub-D-T

Type	EC26-Sub-D-R	EC26-Sub-D-T
Item no.	15030431	15030432
Attachment	robot side	tool side
Number of contact pins	26	
Max. voltage per pin	30 V	
Max. current per pin	3 A	
Transmission type	Signals	
Connection type	Sub-D connector, 26-pin	Sub-D socket, 26-pin
Weight	0.021 kg	0.015 kg
Material	POM / Pins gold-plated	
Contact pin type	spring-loaded	fixed
Customs tariff number	85369095	

Typ	EC26-Sub-D
TK-35	✓
TK-40	✓
TK-45	✓
TK-50	✓
TK-63	✓
TK-80	✓
TK-125	✓
TK-160	✓
TK-200	✗
TK-300 Alu	✗
TK-300 St	✗
TK-200-SQ	✓
TK-220-SQ	✓
TK-250-SQ	✓
TK-330-SQ	✓
TK-400-SQ	✓
TK-650-SQ	✓
TK-800-SQ	✓
TK-1250-SQ	✓

For extensive designation of symbols see p. 38

Caption: ✓ = compatible ✓ = compatible with protrusion ✗ = not useful

Compatibility overview electrical connectors

Which electrical connectors can be mounted to which TK tool changers?

In this overview table you can see which electrical transmission modules are compatible with your TK tool changer. Basically any combination is possible, but in some cases these combinations result in restrictions in adapter plate and peripheral device design. If you are unsure, the IPR sales team will be pleased to assist (for contact details, see back page).

In addition to the standard modules shown here, almost any application-specific transmission module can be realized. Many years of experience in the field of electronics as well as the expertise of the engineers at IPR enable the transmission of camera signals, high currents, etc. Many well-known customers trust in IPR's tool-changing competence and have been successfully using specifically manufactured components for years. You can send your inquiry to the IPR sales team by phone, e-mail or online form.

	TK-35	TK-40	TK-45	TK-50	TK-63
EC12-MIL	×	×	✓	✓	✓
EC12-Cxx	×	×	✓	✓	✓
EC24-MIL	×	×	×	×	×
EC24-Cxx	×	×	×	×	×
EC38-MIL	×	×	×	×	✓
EC38-Cxx	×	×	×	×	✓
EC4-M12	×	×	×	×	✓
EC4/4-M12-7/8"	×	×	×	✓	✓
EC4/4-M12-M12	×	×	×	✓	✓
EC6/20-Cxx	×	×	×	×	×
EC8-MIL	×	×	×	×	×
EC15-Sub-D	✓	✓	✓	✓	✓
EC25-Sub-D	×	×	×	✓	✓
EC26-Sub-D	✓	✓	✓	✓	✓

Caption

✓ = **compatible** — The electrical connector is compatible with the tool changer without restriction in function or interference contour and can be used without issues.

✓ = **compatible with protrusion** — Although the connector strip can basically be mounted on the tool changer, it protrudes beyond the base body of the changer in the axis direction of the robot and may therefore collide with the connection flange. Please contact IPR sales for further information.

× = **not useful** — The connector strip is not reasonably compatible with the tool changer due to its size, weight, etc. Please contact IPR sales for more information.

TK-80	TK-125	TK-160	TK-200	TK-300 Alu	TK-300 St
✓	✓	✓	×	×	×
✓	✓	✓	×	×	×
✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓
✓	✓	✓	×	×	×
✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓
✓	✓	✓	×	×	×
✓	✓	✓	×	×	×
✓	✓	✓	×	×	×
✓	✓	✓	×	×	×

Add-on modules

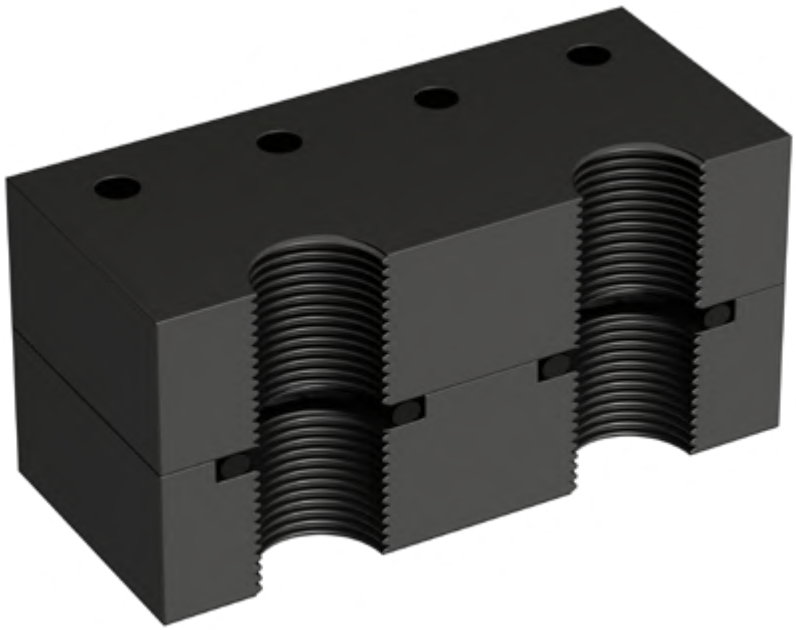
Media transmission made easy

Overview

The transmission of media of any kind is made possible with IPR add-on modules. Whether pneumatics, hydraulics, vacuum, cooling lubricant or other fluids – there is a transmission module for every application. Different sizes of connection threads, self-locking modules as well as variants in stainless steel design allow a wide range of applications. Mounting on the tool changers of the TK-SQ series is done through standardized mounting material.

Fields of application

Do you want to change tools automatically?
Then you are well served with add-on modules from IPR. Almost any type of fluid can be fed through the tool changer to the gripper or tool, depending on the design with up to 120 bar.



Advantages

- Variants made of **aluminum, steel** or **stainless steel** – the right module for every environmental condition
- **High-quality seals** made of NBR or **robust couplings** made of stainless steel, also self-locking if required
- Feedthrough of pneumatics, hydraulics, fluids, etc. with **up to 120 bar**

Use the IPR online portal:

3D data and datasheets of the add-on modules can be viewed and downloaded in the online portal – quick and uncomplicated:
https://ipr.partcommunity.com/

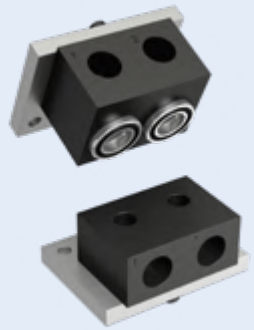
Technical data at a glance

Overview add-on modules	from	to
Number of feedthroughs	2	12
Connection thread	M5	G1/2"
Max. pressure	8 bar	120 bar
Weight	0.18 kg	1.2 kg

TK-SQ 2x G3/8"

Pneumatic module, self-locking

TK-SQ RS 2x G3/8"



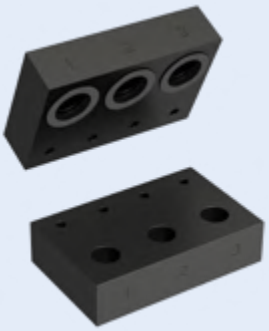
TK-SQ TS 2x G3/8"

Type	TK-SQ RS 2x G3/8"	TK-SQ TS 2x G3/8"
Item no.	150300843	150300844
Number of feedthroughs	2	
Connection thread	G3/8"	
Transmission type	Compressed air / vacuum	
Max. pressure	8 bar	
Weight	0.449 kg	0.381 kg
Material	Aluminum, steel / NBR seals	Aluminium
Customs tariff number	84799070	

TK-SQ 3x G1/4"

Pneumatic module

TK-SQ RS 3x G1/4"



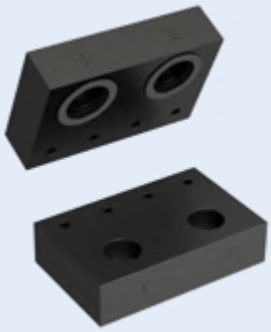
TK-SQ TS 3x G1/4"

Type	TK-SQ RS 3x G1/4"	TK-SQ TS 3x G1/4"
Item no.	150300826	150300836
Number of feedthroughs	3	
Connection thread	G1/4"	
Transmission type	Compressed air / vacuum	
Max. pressure	8 bar	
Weight	0.184 kg	0.189 kg
Material	Aluminum / NBR seals	Aluminium
Customs tariff number	84799070	

TK-SQ 2x G3/8"

Pneumatic module

TK-SQ RS 2x G3/8"



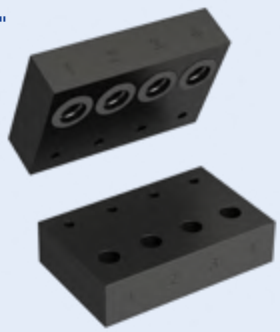
TK-SQ TS 2x G3/8"

Type	TK-SQ RS 2x G3/8"	TK-SQ TS 2x G3/8"
Item no.	150300827	150300837
Number of feedthroughs	2	
Connection thread	G3/8"	
Transmission type	Compressed air / vacuum	
Max. pressure	8 bar	
Weight	0.183 kg	0.187 kg
Material	Aluminum / NBR seals	Aluminium
Customs tariff number	84799070	

TK-SQ 4x G1/8"

Pneumatic module

TK-SQ RS 4x G1/8"

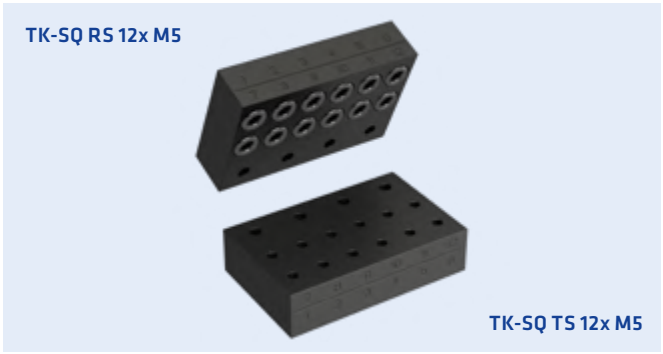


TK-SQ TS 4x G1/8"

Type	TK-SQ RS 4x G1/8"	TK-SQ TS 4x G1/8"
Item no.	150300825	150300835
Number of feedthroughs	4	
Connection thread	G1/8"	
Transmission type	Compressed air / vacuum	
Max. pressure	8 bar	
Weight	0.187 kg	0.193 kg
Material	Aluminum / NBR seals	Aluminium
Customs tariff number	84799070	

TK-SQ 12x M5

Pneumatic module



Type	TK-SQ RS 12x M5	TK-SQ TS 12x M5
Item no.	150300824	150300834
Number of feedthroughs	12	
Connection thread	M5	
Transmission type	Compressed air / vacuum	
Max. pressure	8 bar	
Weight	0.193 kg	0.196 kg
Material	Aluminum / NBR seals	Aluminium
Customs tariff number	84799070	

TK-SQ 2x G1/4" NW5

Hydraulic module

Type	TK-SQ RS 2x G1/4" NW5	TK-SQ TS 2x G1/4" NW5
Item no.	150300829	150300830
Number of feedthroughs	2	
Connection thread	G1/4"	
Transmission type	Hydraulics / fluids	
Max. pressure	80 bar	
Weight	0.525 kg	0.588 kg
Material	Aluminium	
Customs tariff number	84799070	

Note: Cannot be coupled under pressure, load on tool changer at 80 bar reduced by 125 kg per connection

TK-SQ 2x G1/2" NW8

Hydraulic module

Type	TK-SQ RS 2x G1/2" NW8	TK-SQ TS 2x G1/2" NW8
Item no.	150300831	150300832
Number of feedthroughs	2	
Connection thread	G1/2"	
Transmission type	Hydraulics / fluids	
Max. pressure	40 bar	
Weight	1.120 kg	1.240 kg
Material	Aluminium	
Customs tariff number	84799070	

Note: Cannot be coupled under pressure, load on tool changer at 40 bar reduced by 125 kg per connection

TK-SQ 2x G1/4" NW3

Hydraulic module

Type	TK-SQ RS 2x G1/4" NW3	TK-SQ TS 2x G1/4" NW3
Item no.	150300899	150300900
Number of feedthroughs	2	
Connection thread	G1/4"	
Transmission type	Hydraulics / fluids	
Max. pressure	120 bar	
Weight	0.406 kg	0.461 kg
Material	Aluminium	
Customs tariff number	84799070	

Note: Cannot be coupled under pressure, load on tool changer at 120 bar reduced by 115 kg per connection

Customize your TK-Square tool changer
with our online configurator

You want to configure your tool changer according to your wishes and needs? Then start now with our new configurator for the TK-Square tool changer. With our configurator you can configure the perfect product with all modules for your desired application on your own, download the 3D model and a data sheet, and directly request an offer from the sales office.

New features

All standard models of the TK-SQ, all compatible add-on modules and connector strips as well as the required fastening material can now also be viewed and downloaded individually in the CAD portal. In addition, the CAD model can be opened and the data sheet can be downloaded directly from the product page on our website via the “CAD data / technical data sheet” button.

Configured in only 3 simple steps

We would like to meet your requirements and enable you to configure your tool changer according to your needs. Therefore, our experts have incorporated their know-how about the various requirements of the respective product into the development of the configurator. In this way, you can configure your desired product in three simple steps.
Use our CAD portal to select your desired size that you want to configure. You can start with the robot or the tool side and then transfer the configuration to the respective counterpart.

Now it’s your turn

Conveniently configure your desired product. Our IPR sales team will be happy to assist you with your configuration. Please call us at +49 7262 9239-100 or send us an email at info@iprworldwide.com – we will create your desired TK-Square together.

How to configure your tool changer

In the first step, you can select the desired tool changer that is to serve as the basic module under the “Basic data” tab. The selection can be made via the part number, the description or the technical data. Depending on which product you select, our configuration options will adapt.
Clicking on the “Next” button takes you to the next step – for the robot it is the “Modules” tab, for the tool side it is the “Centering for rack” tab, if a tool rack is to be used. Here, the amount of centerings as well as their position on the tool changer can be specified. All changes are transferred directly to the 3D model. All required mounting materials are also included automatically.
In the next tab “Modules”, an add-on module or a connector strip can be selected from a drop-down list for each assembly point. Only those modules are displayed that can actually be mounted due to their size and interference contour. The dependency between several elements, which may not be mounted next to each other, as well as the required mounting material is also taken into account.
Under “Summary” you will find the completion of your configuration. From here, the CAD model as well as the technical data sheet of the configured model can be downloaded. In addition, the configuration can be sent directly to our sales via the “Request a quotation” button.

Have fun configuring!

https://ipr.partcommunity.com/

Tool racks for TK series

Change your tools quickly and easily

Overview

With the IPR storage systems, the automatic changing of tools on the robot is made uncomplicated and process-safe. The robot inserts the tool side of the changer with the integrated groove into the rack. In addition to horizontal attachment, the special geometry also enables a defined drop-off position in an angled position. There are also standardized systems with columns for elevated tool storage.

Fields of application

Do you want to change your tools in a process-safe and defined manner without spending a lot of time on manual changeover processes? The IPR storage systems are ideal for your application. Whether assembly, removal or testing application – the automated exchange of tools increases productivity and reduces downtimes of your plant.

Advantages

- Standardized tool rack plates for all TK tool changers **up to size 160**
- Elevated storage systems – **different heights** for every application
- Optional **sensor query** of tool side presence in the rack

Use the IPR online portal:

3D data and data sheets of the trays can be viewed and downloaded in the online portal – quick and uncomplicated:
https://ipr.partcommunity.com/

Tool rack plate

Type	Item no.	Weight	Material
Tool rack plate TK-35 [1]	150300854	0.298 kg	Aluminum
Tool rack plate TK-40 [2]	13510206	0.494 kg	Aluminum
Tool rack plate TK-45	134707730	1.016 kg	Steel
Tool rack plate TK-50	13510110	1.765 kg	Steel
Tool rack plate TK-63	13473263	2.669 kg	Steel
Tool rack plate TK-80	13510106	3.200 kg	Steel
Tool rack plate TK-125	13510814	4.742 kg	Steel
Tool rack plate TK-160	13510497	7.743 kg	Steel

Customs tariff number: 84799020

[1] Additionally required for each TK-35-T: 150301036

[2] Additionally required for each TK-40-T: 150301037

Tool rack

The tool rack includes a tool rack plate, mounted on columns of different heights.

Type	Item no.	Weight	Material
Tool rack TK-35-A1 H=220mm	150301032	1.200 kg	Aluminum / steel
Tool rack TK-35-A2 H=270mm	150301033	1.300 kg	Aluminum / steel
Tool rack TK-40-A1 H=222mm	15030112	2.344 kg	Aluminum / steel
Tool rack TK-40-A2 H=272mm	15030113	2.440 kg	Aluminum / steel
Tool rack TK-45-A1 H=220mm	150300966	1.981 kg	Aluminum / steel
Tool rack TK-45-A2 H=270mm	150301034	2.079 kg	Aluminum / steel
Tool rack TK-50-A1 H=222mm	15030114	2.710 kg	Aluminum / steel
Tool rack TK-50-A2 H=272mm	15030115	2.810 kg	Aluminum / steel
Tool rack TK-63-A1 H=277mm	15030549	7.150 kg	Aluminum / steel
Tool rack TK-63-A2 H=577mm	15030204	9.440 kg	Aluminum / steel
Tool rack TK-80-A1 H=277mm	150301023	7.600 kg	Aluminum / steel
Tool rack TK-80-A2 H=577mm	15030116	10.000 kg	Aluminum / steel
Tool rack TK-125-A1 H=280mm	15030228	13.598 kg	Aluminum / steel
Tool rack TK-125-A2 H=580mm	150301022	18.180 kg	Aluminum / steel
Tool rack TK-160-A1 H=280mm	150301021	16.547 kg	Aluminum / steel
Tool rack TK-160-A2 H=580mm	15030229	21.666 kg	Aluminum / steel

Customs tariff number: 84799020

Customized tool racks

- Picture on the left: Storage system with three individual tool racks
- Docking surfaces on the tool changer are protected against dirt by lids
- Lids are individually controllable
- Integrated interface box for electrics and pneumatics

Tool racks for TK-SQ series

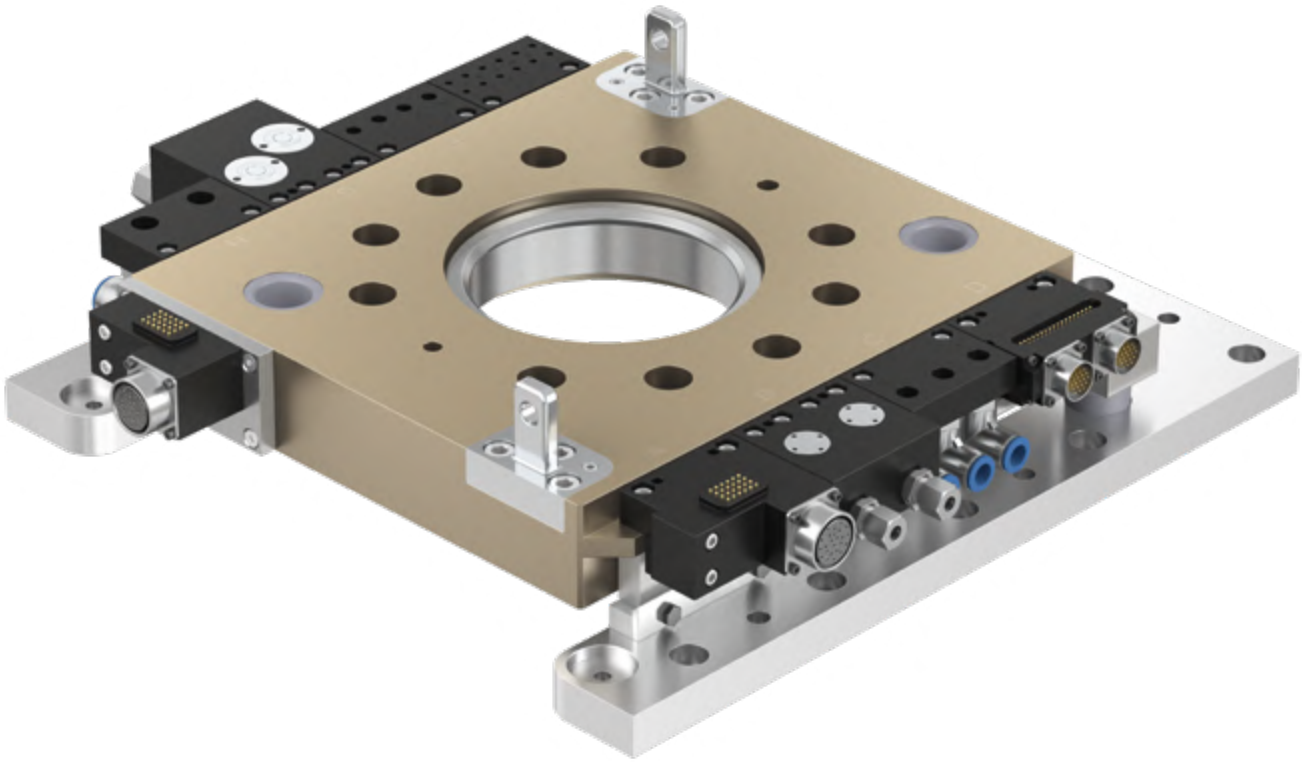
Modular and flexible

Overview

With the IPR storage systems, the TK-SQ tool changers can be changed quickly and reliably. For each size there is a tool rack, specifically configurable in number and position of the centerings. Support bars ensure defined and precisely repeatable positioning of the tool side in the rack. The IPR storage systems are designed in such a way that the tool sides can be dropped off without restrictions of mounted add-on modules.

Fields of application

Do you want to change your tools in a process-safe and defined manner without spending a lot of time on manual changeover processes? Then the IPR storage systems are ideal for your application. Whether assembly, removal or testing application – the automated exchange of tools increases productivity and reduces downtimes of your plant.



Advantages

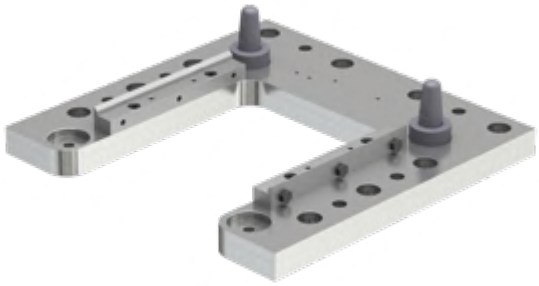
- Configurable IPR storage systems **for any size**
- Number and positioning of the centerings can be **freely selected**
- Standardized **sensor query** for tool side presence in the rack

NEW: The online configurator for the TK-SQ series

You can configure the perfect tool rack for your tool changer directly in the online portal – quick and uncomplicated:
https://ipr.partcommunity.com/

Tool rack

The base plate, two conical pins and two support strips are included as standard in each tool rack. The individual parts listed below are additionally required for each tool side that is to be stored.



Type	Item no.	Mass	Material
Tool rack TK-200-SQ	150300928	11.914 kg	Steel
Tool rack TK-220-SQ	150300927	12.472 kg	Steel
Tool rack TK-250-SQ	150300840	14.935 kg	Steel
Tool rack TK-330-SQ	150300919	17.120 kg	Steel
Tool rack TK-400/650-SQ	150300839	16.930 kg	Steel
Tool rack TK-800-SQ	150300916	19.016 kg	Steel
Tool rack TK-1250-SQ	150300838	20.242 kg	Steel

Customs tariff number: 84799020

Centering

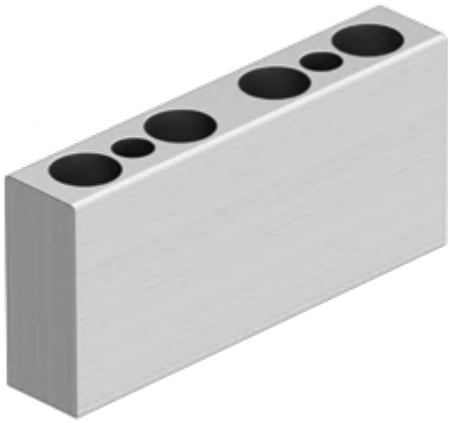
In order to be able to place the tool side of the tool changer in a tool rack, so-called centerings (locating bushings for taper pins on the tool rack) are necessary. These center the tool side on the storage station and secure it against horizontal movement. From 2 up to 4 centerings can be selected. To prevent the robot and tool side from jamming during the docking and undocking process, the centerings and taper pins have a radial clearance of approx. 0.5 mm.

Type	Item no.	Weight	Material
Centering left TK-SQ TS	150300833	0.589 kg	Steel
Centering right TK-SQ TS	150300828	0.589 kg	Steel

Customs tariff number: 84799020

Support bar

To prevent the tool side from tilting at the corners that do not have a centering centering, a support bar is required for each corner without centering. The online configurator provides support during configuration, the support bars will be added to the tool side automatically.



Type	Item no.	Weight	Material
Support bar TK-SQ TS L = 79 mm	134000947	0.258 kg	Steel

Customs tariff number: 84799020

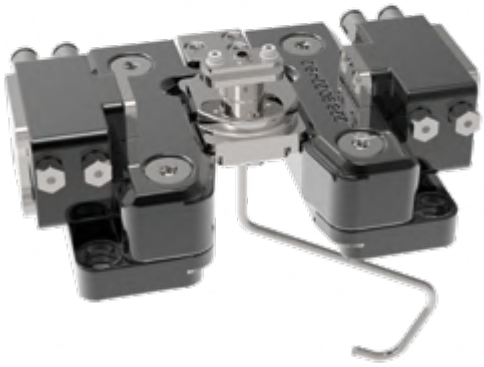
Standard is not enough for us

Solution competence made to measure

Our standard components can easily be adapted to customer-specific requirements. Various attachments and accessories are available for this purpose.

For more complex applications, where the modification of standard components no longer offers a sensible solution, we design special components that are precisely tailored to your applications. Many years of experience help us to find a technically and economically fit solution for you – quickly and effectively.

Special nozzle changer for seam sealing applications



01

CONSULTING

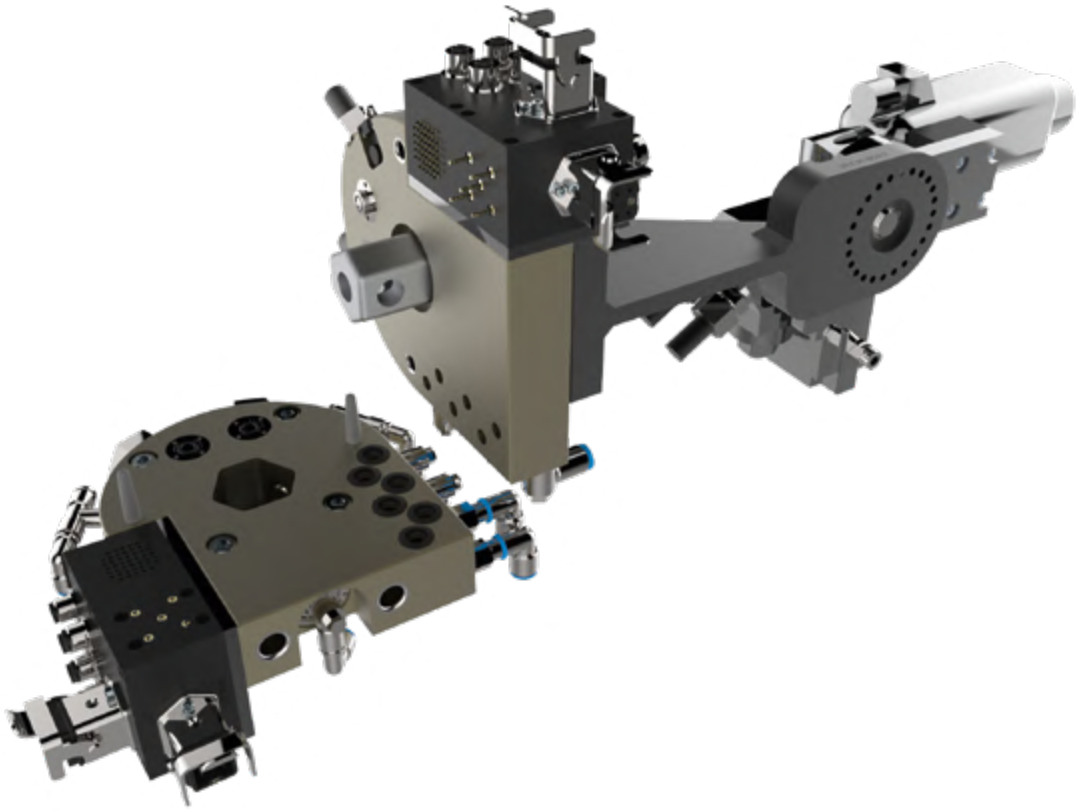
Our expert staff will specifically address your wishes and requirements and offer you competent advice on your application. With over 30 years of experience in the production of high-quality components and systems, IPR serves and supplies its customers worldwide and thus creates valuable customer proximity.

02

OFFER & PROJECT PLANNING

In the next step, we develop a solution proposal for you and create a project plan in this context. This is followed by a cost-benefit optimization and a feasibility analysis. These include the technical designs as well as constructive tests by our engineering team.

Complex tool changer for PVC applications



03

ENGINEERING / CONSTRUCTION

Our engineers and designers are professionals in their field and have in-depth knowledge of all industries and processes. Our specialists implement individual projects professionally and on schedule. You too can look forward to first-class conception and implementation.

04

PRODUCTION

A machine park equipped with the latest technologies and processes, great know-how in manufacturing and highly trained employees ensure that every single product is manufactured with the highest precision, quality and passion to your satisfaction.

05

ON-SITE SERVICE

We offer you unique support in every phase – even after commissioning: from maintenance and repair service to spare parts service as well as customer training on site or at IPR.
Our professional services show that customer proximity is very important to us.

List of abbreviations

Overview dimensions TK series / TK-SQ series

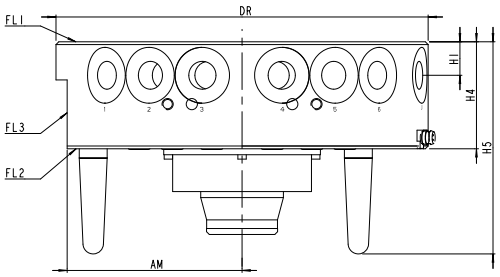
A1	Distance between tool changer center and air connection lock/unlock
A2	Distance tool changer center – piston stroke sensor
A3	Distance between tool changer center and air connection SV lock/unlock
AL1, 2, ...	Length 1, 2, ... add-on module
AB1, 2, ...	Width 1, 2, ... add-on module
AG	Engraving attachment module
AH1, 2, ...	Height 1, 2, ... add-on module
AM	Distance between mounting surfaces of electrical connectors / add-on modules
DA1	Diameter spot facing locking / unlocking the air connection
DA2	Diameter spot facing air transmission
DB	Diameter through hole mounting
DL	Diameter air transmission
DR/T	Diameter (outer dimension) – robot side / tool side
DS	Diameter countersink fastening
DP1, 2, ...	Diameter fitting hole 1, 2, ...
DZR/T	Diameter centering robot side / tool side
FL1	Mounting surface
FL2	Docking area
FL3/4	Mounting surface for optional electrical connectors / add-on modules
FL5	Mounting surface on tool changer (on mounting plate / angle)
GB	Mounting thread
GL1	Lock / unlock thread air connection
GL2	Thread air transmission
H1	Height air connections / height heel
H2	Lock height air connections
H3	Unlock height air connections
H4	Height base body
H5	Total height
H6	Height air connection SV lock
H7	Unlock height air connection SV
H8/9	Height sensor 1.2
HZR/T	Height centering robot side / tool side
NA	Groove for tool rack gripper side (not for TK-35-T / TK-40-T)
S1, 2, ...	Piston stroke sensor (type-dependent)
S7, S8	Tool side presence sensor (type-dependent); S8 not with TK-200-SQ, TK-220-SQ and TK-250-SQ
SV	Safety lock
TA1	Depth spot facing air connection lock / unlock
TA2	Depth spot facing air transmission
TG1, 2, ...	Depth mounting thread (on TK1, 2, ...)
TK1, 2, ...	Mounting pitch circle 1, 2, ...
TL1	Thread depth air connection (lock / unlock)
TL2	Thread depth air connection (air transmission)
TP1, 2, ...	Depth fitting hole on TK1, 2, ...
TS	Depth countersink fastening
WB1, 2, ...	Angle mounting hole 1, 2, ...
WP1, 2, ...	Angle fitting hole 1, 2, ...
WD1, 2, ...	Angle delta monitoring hole 1, 2
Z	Additional interference contour is created through plugs, cables, etc.

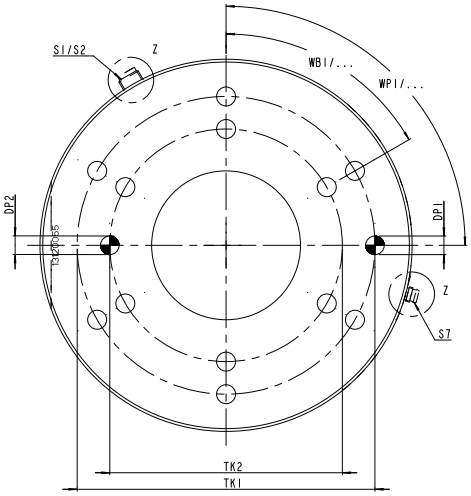
DETAIL 1	Sectional view of centering mounting surface
DETAIL 2	Sectional view of air connection / air transfer
DETAIL 3	Sectional view of mounting

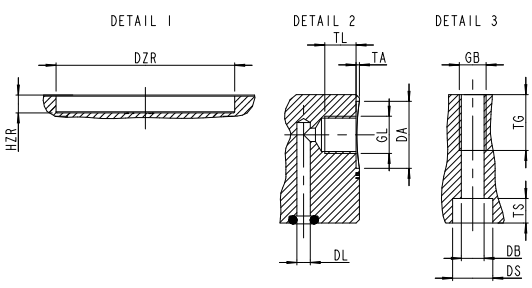
For dimensions and further information, see CAD portal:

TK Series
TK-35 to TK-160

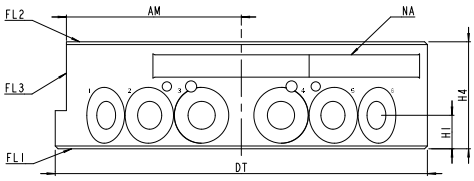
Robot side TK-35-R to TK-160-R

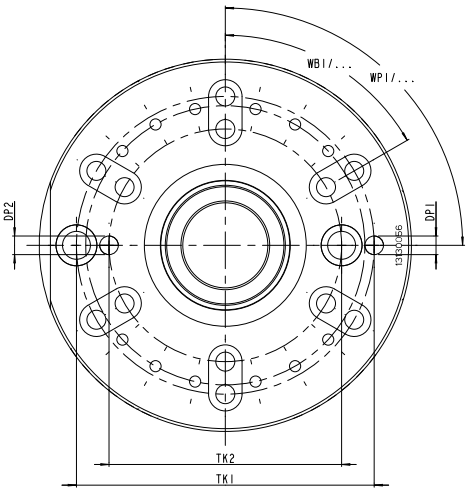


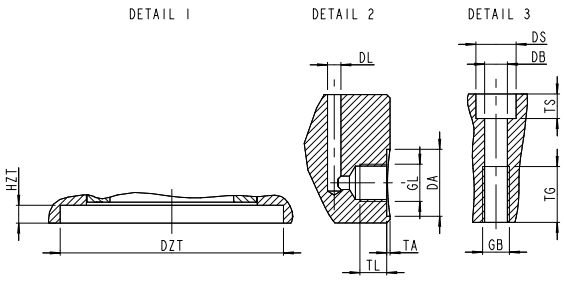




Tool side TK-35-T to TK-160-T



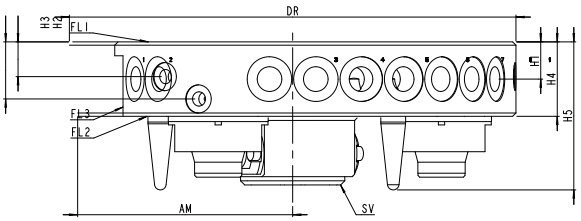


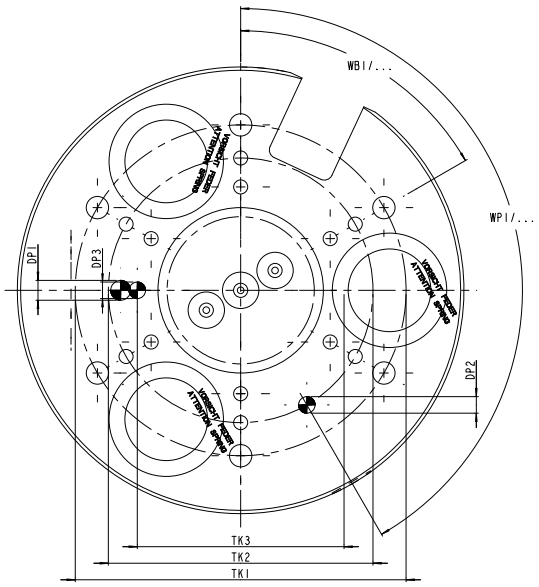


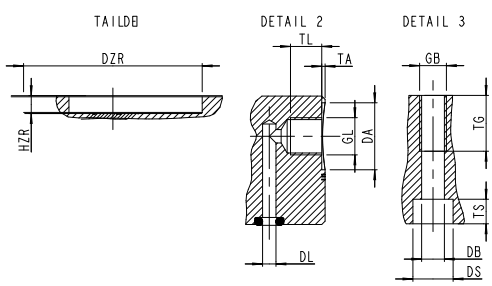
Drawings show views of the basic product, but are valid for all product variants.

TK Series
TK-200 to TK-300

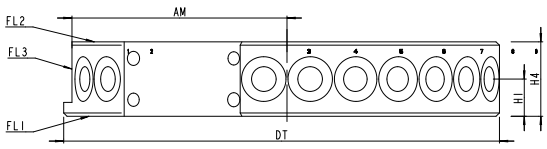
Robot side TK-200-R to TK-300-R

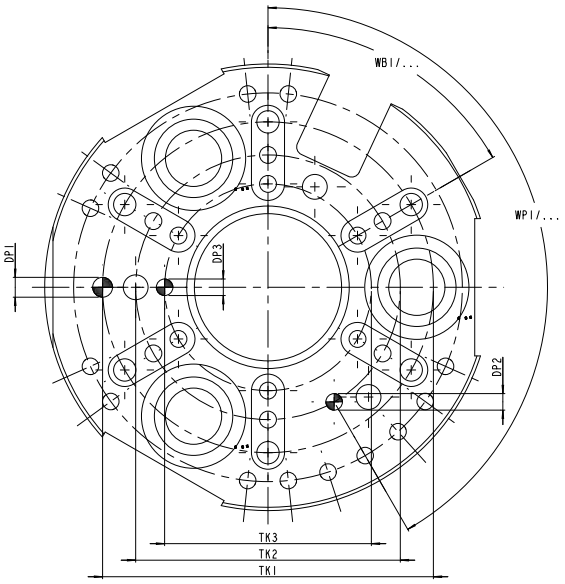


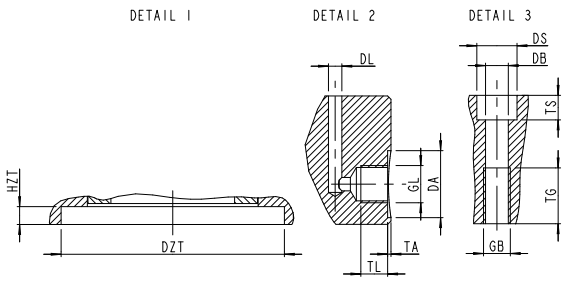




Tool side TK-200-T to TK-300-T





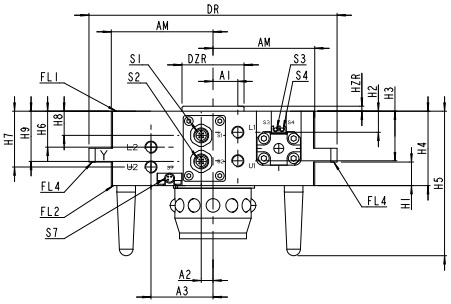


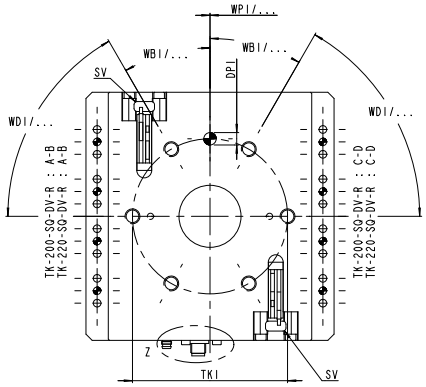
Drawings show views of the basic product, but are valid for all product variants.

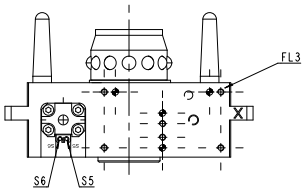
TK-Square Series

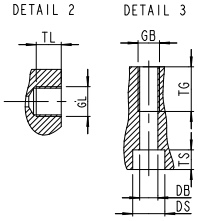
TK-200-SQ-DV to TK-220-SQ-DV

Robot side TK-200-SQ-DV-R to TK-220-SQ-DV-R

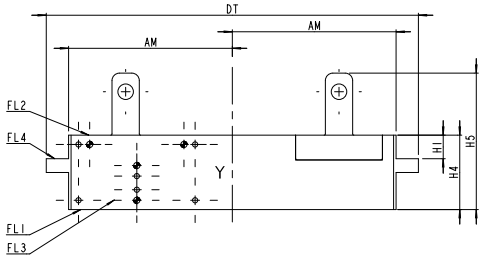


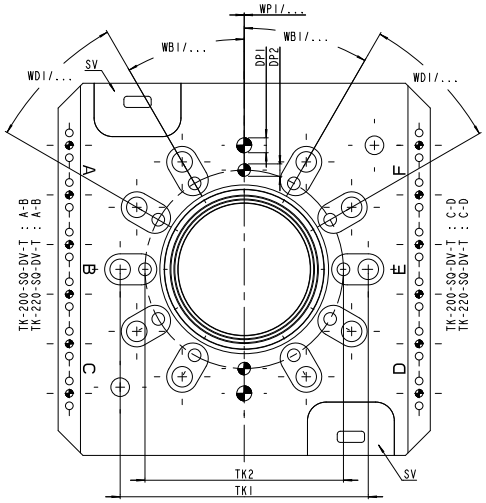


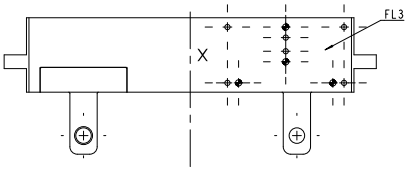


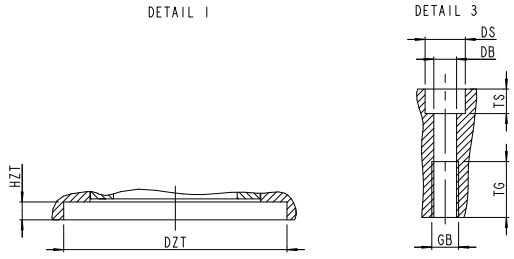


Tool side TK-200-SQ-DV-R to TK-220-SQ-DV-R







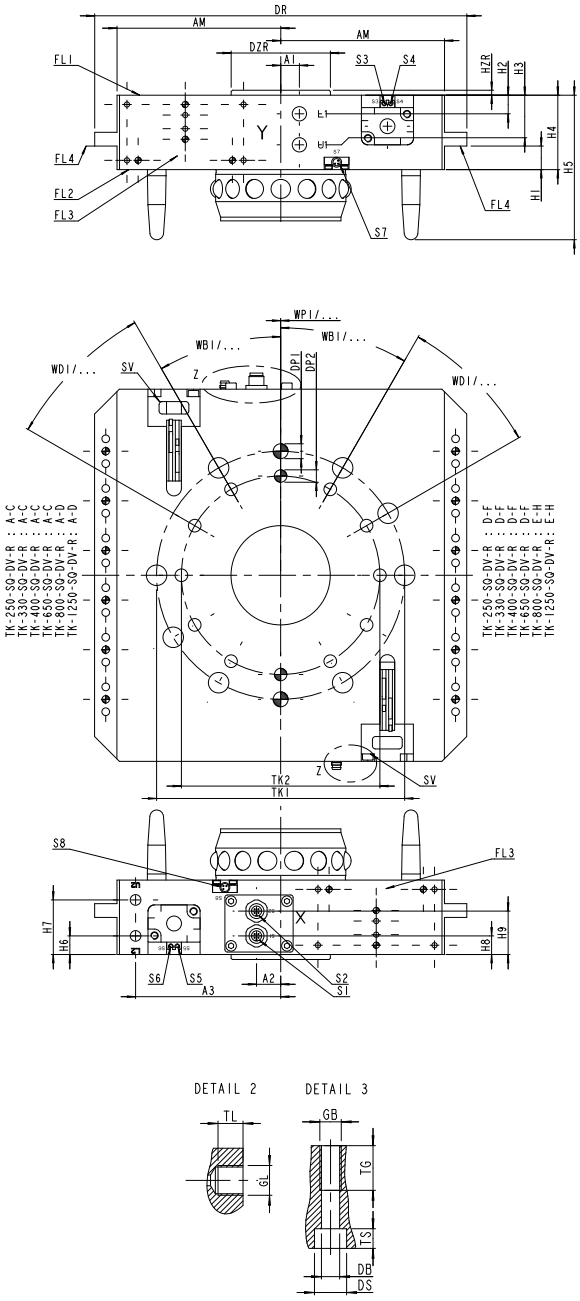


Drawings show views of the basic product, but are valid for all product variants.

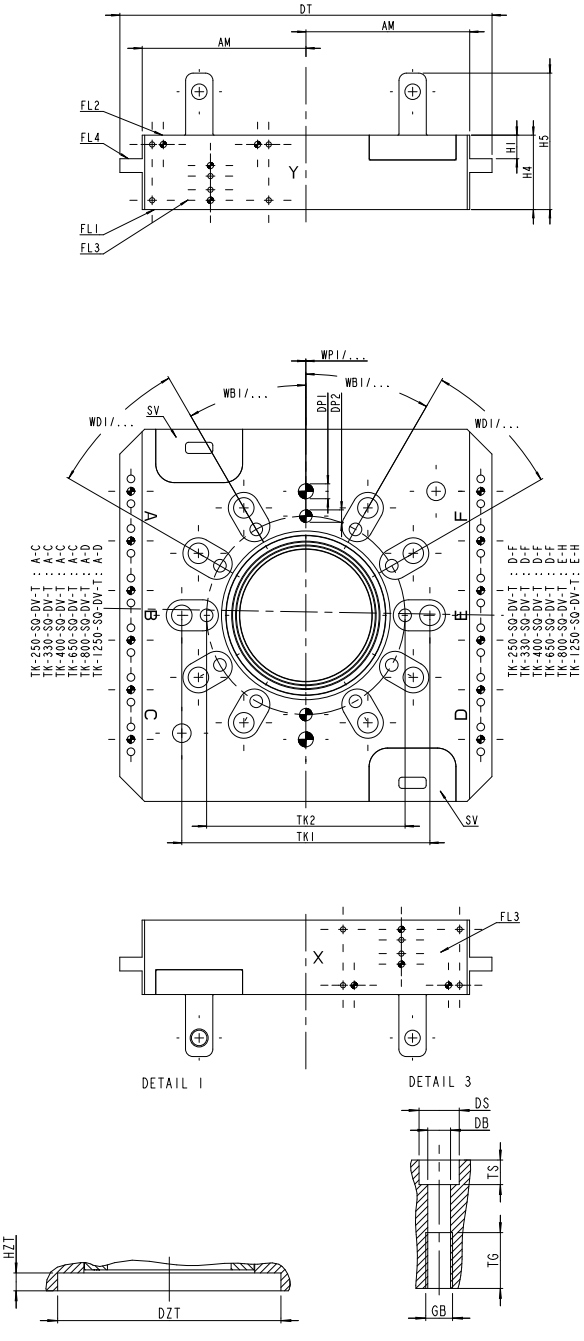
TK-Square Series

TK-250-SQ-DV to TK-1250-SQ-DV

Robot side TK-250-SQ-DV-R to TK-1250-SQ-DV-R



Tool side TK-250-SQ-DV-T to TK-1250-SQ-DV-T



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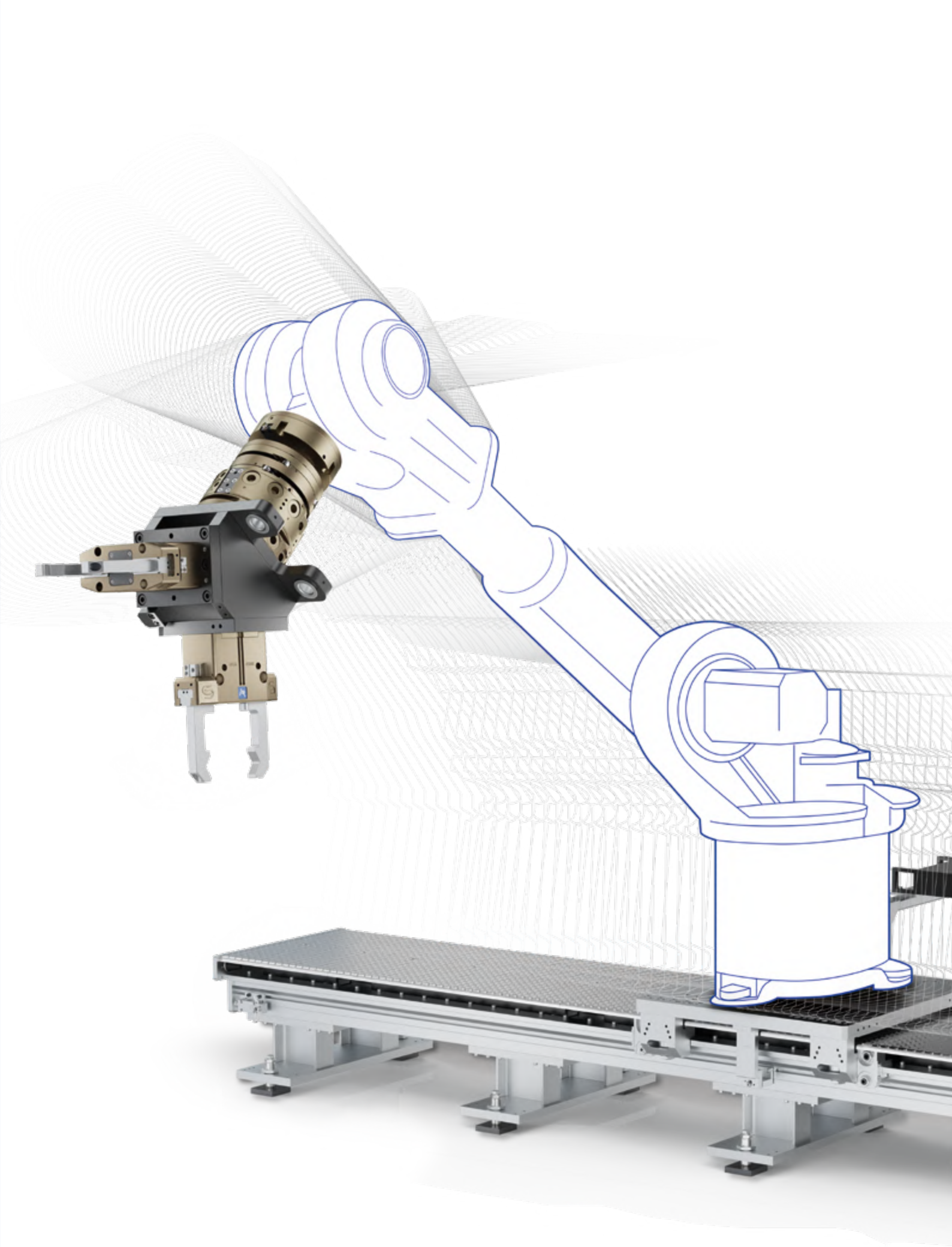

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