Superior Clamping and Gripping

Top Performance in the Team

SCHUNK is the world’s No. 1 in clamping technology and gripping systems – from the smallest parallel gripper to the largest standard chuck jaw program.

As a competence leader, we recognize and develop standards with a large potential for the future, which will drive the rapid progress in many industries.

Our customers profit from the expert knowledge, the experience and team spirit of 3,400 employees in our innovative family-owned company.

The Schunk family wishes you improved end results with our quality products.

Superior Clamping and Gripping

Jens Lehmann stands for safe, precise gripping and holding. As a brand ambassador of the SCHUNK team, the No. 1 goalkeeper represents our global competence leadership for gripping systems and clamping technology.

The top performance of SCHUNK and Jens Lehmann are characterized by dynamics, precision, and reliability.

For more information visit our website: schunk.com/lehmann
It’s time to use of your machine’s full potential!

With our superior components, find potentials in your machine, where you would least expect to find them. SCHUNK SYNERGY – the perfectly harmonized interplay between gripping systems and clamping technology – turns our customers into productivity champions.
SCHUNK sets standards in the automotive industry world-wide with its components and gripping systems. Our robot accessories include a uniquely comprehensive standard range of modules for the mechanical, sensory, and power connection of handling devices and robots. The comprehensive range of robust and long-lasting grippers for small components and universal grippers features high product quality, precision, and numerous monitoring options. What’s more, SCHUNK’s axis system handling solutions open up new perspectives for cost and benefit-optimized automation solutions from a single source.

Benefit from the SCHUNK Modular System with over 4,000 Standard Components.

For every Robot, for every Industry, for every Handling Task.
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SCHUNK provides the most comprehensive range of modules for the mechanical, sensory, and power connection of handling devices and robots. Quick-change systems, rotary feed-throughs, collision and overload protection modules, force sensors, as well as compensation units, and insertion units ensure optimum interplay between the robot arm and gripper. The basis for this cutting-edge technology “Made in Germany” is our constant innovation.
SCHUNK Gripping Systems

Product Overview

Feeding through
Over 50 process-stable pneumatic, electrical or combined SCHUNK rotary feed-throughs.
schunk.com/feeding-through

Protecting
Over 60 collision and overload sensors used to monitor, record and avoid collisions.
schunk.com/protecting

Measuring
Over 150 sensors for precise measurement of forces and moments.
schunk.com/measuring

Changing
More than 100 precise quick-change systems for flexible, fast change of effectors.
schunk.com/changing

Compensating
Over 90 components to compensate position deviations and tolerances between the robot and the tool.
schunk.com/compensating

SCHUNK Grippers
The world’s most extensive gripper portfolio with over 2,550 pneumatic and electric components.
schunk.com/grippers

Machining
Flexible SCHUNK deburring spindles for the use on robots with up to 65,000 RPM.
schunk.com/machining

Further production information is available at: schunk.com/robot-accessories
The new SCHUNK End-of-Arm Modular System
The most comprehensive modular gripping system for all Universal Robots on the market.

The new SCHUNK End-of-Arm modular systems, exclusively for Universal Robots, facilitates the individual and fast automation of handling and assembly tasks. The modular system provides a combination of a force/torque sensor, change system, and a wide range of grippers.

Up to 36 product combination possibilities

schunk.com/eoa-ur
Pneumatic SCHUNK Gripper

Pneumatic gripping systems with direct connection and integrated micro valves, sensor system with connection cable.

Measuring

6-axis force/torque sensor FT-AXIA completely with adapter plates.

Changing

Manual change system SHS
Quick-change master (SHK) and quick-change adapter (SHA) with suitable feed-through module.

Pneumatic SCHUNK Gripper

Pneumatic gripping systems with direct connection and integrated micro valves, sensor system with connection cable.
The linear module product offering combined with rotary modules, swivel units, grippers, quick-change systems, rotary indexing tables and sensor systems, SCHUNK opens up new perspectives for cost and use-optimized automation solutions.

Designed to be compact and from the modular system: From the axis right up to the gripper finger and combined for customized axis system handling solution.

SCHUNK Gripping Systems
Product Overview

Gantry Systems: Equipped by SCHUNK

SCHUNK End-of-Arm Competence for your Gantry.
Over 4,000 Components for Handling and Assembly.

The linear module product offering combined with rotary modules, swivel units, grippers, quick-change systems, rotary indexing tables and sensor systems, SCHUNK opens up new perspectives for cost and use-optimized automation solutions.

Designed to be compact and from the modular system: From the axis right up to the gripper finger and combined for customized axis system handling solution.
SCHUNK Gripping Systems

Product Overview

Gantry Solutions
Over 500 combination possibilities can be configured as standard! Besides the SCHUNK standard gantry range, individual axis systems can be implemented individually and easily. schunk.com/gantry-solutions

Linear Modules
More than 450 pneumatic and electric components with up to 7,000 mm stroke. The most comprehensive offering on the market. schunk.com/linear-modules

SCHUNK Grippers
The world’s most comprehensive gripper portfolio with over 2,550 pneumatic and electric components. schunk.com/grippers
Assembly Automation: Equipped by SCHUNK

100% Flexibility with the Modular System.

Design an infinite number of applications for small parts handling and assembly automation with the SCHUNK modular assembly system. An incredible variety of automation solutions can be realized with standard modules from the SCHUNK modular system.

Rotary Modules
Over 600 components available for rotatory movements. Variable from 180° to infinite rotation.
schunk.com/rotary-modules

SCHUNK Grippers
The world’s most comprehensive gripper portfolio with over 2,550 pneumatic and electric components. schunk.com/grippers
SCHUNK Gripping Systems
Product Overview

Linear Modules
More than 450 pneumatic and electric components with up to 7,000 mm stroke. The most comprehensive program on the market.
schunk.com/linear-modules

SCHUNK Pillar Assembly System
100% flexible. Achieves a virtually infinite number of possibilities for combining components. Pillars up to 1,000 mm long.
schunk.com/pillar-assembly-system

Media feed-through
VEH

SOE
AMEH/AMDH
AMEV/AMDV
APEM/APDH
STG/STR
From robots that replace workers to robots that serve as helpful colleagues, the field of robotic automation is experiencing a new trend that represents a huge challenge for component manufacturers. Whenever full automation of production or assembly lines is not the most economically feasible option, it is necessary to single out individual processes to be delegated between humans and robots. In such situations, autonomous cobots, meaning robots used in the worker’s immediate environment, can handle non-ergonomic or monotonous tasks such as assisting with lifting or positioning loads. This reduces the physical workload for workers and makes the process more efficient. At the same time, humans and robots working hand in hand helps to minimize space requirements and to increase flexibility.

The number of robotic assistance systems will increase in the future, especially with regard to assembly applications. Reliable grippers, safety functions, sensor systems, and a universal networking at the component level will be vital.

As the competence leader for gripping systems and clamping technology, SCHUNK is intensely committed to this new challenge.

Cobots Equipped by SCHUNK

The Mega Trend of Human/Robot Collaboration

The new SCHUNK Grippers for Collaborative Operations
Standards and Guidelines for Human/Robot Collaboration

The listed standards and guidelines are not exhaustive. For every application the applicability of further standards or guidelines have to be determined.

The Path toward the optimum Gripper for your HRC Application

To determine the optimum gripper for collaborative applications, the properties of the task, workpiece, and gripper must be taken into account.

The SCHUNK Co-act team recommends a structured approach, considering all factors and parameters.

Step 1
Task description and feasibility check
- Are the task and workpiece suitable for human/robot collaboration?

Step 2
Selection of the robot or cobot
- Definition of the basic system with mechanical and electrical connection of the peripheral devices
- Ensuring a defined control

Step 3
Selecting the gripper in collaboration with the SCHUNK Co-act team considering the following points:
- Workpiece with respect to gripping position, required gripping force, and required stroke
- Pick and place position and in turn analysis of the interfering contour
- Connection to the superordinated mechanical and electrical periphery
- Clamping and shearing points on the gripper or the attached fingers
For the first time, complete assembly systems with linear modules, rotary modules, and grippers can be entirely implemented using the 24 V technology as a basis. The reduced maintenance costs, high process stability, and lower operating costs are revolutionary. The 24 V mechatronics range offers the advantages of mechatronic modules while being as simple as pneumatics. This results in revolutionary advantages for handling in assembly automation, for instance such as a very low maintenance effort, simple and fast commissioning, and high energy efficiency.

Pick & Place Production Cell
Electric, simple, compact and fast implementation.

Easy to Start Up!
Simple commissioning of the mechatronic modules. Simpler and more intuitive than pneumatic modules

Easy to Create!
Complete Pick & Place applications can be intuitively configured with minimal design and assembly effort

Plug & Work!
Easily combine, integrate and seamlessly commission mechatronic SCHUNK grippers, rotary and linear modules from the modular system

Electric Linear Module ELP  Page 61
Electric Rotary Gripping Unit EGS  Page 56
Electric Gripper for Small Components EGP  Page 36
SCHUNK Pillar Assembly System SAS  Page 82

Further information on the new standard in assembly automation:
schunk.com/standard-in-assembly-automation
Product Overview

SCHUNK Gripping Systems

- **Easy to Use!**
  Low-wear and maintenance-free modules for smooth operation of handling and assembly systems without machine shutdown. Simple setting options can be used to react quickly to process changes, right up to automatically adjusting the modules.

- **Easy to Integrate!**
  Versatile and energy-efficient integration into the system. Consistent supply concept with standardized connecting plug and control with digital I/O. Using conventional, standardized cables and distributors, systems can be implemented easily and very compactly.

- **Easy to Save Money!**
  Observing the procurement, operating and maintenance costs comparing with purely pneumatic systems, the deployment becomes economically after just a few million cycles.
SCHUNK MECHATRONIK³

Alternative – Adaptable – Intelligent

One Strategy – 3 Features

Mechatronics³ is the strategy with which SCHUNK is the first manufacturer to bundle a comprehensive mechatronic product portfolio. Its three features – Alternative, Adaptable and Intelligent – combine to form a unique modular system. This combines our decades of experience in the field of pneumatics and our pioneering successes in the field of mechatronics, and offers sophisticated and efficient automation solutions for almost any mechatronic requirement.

With mechatronic SCHUNK products, the changeover to electrically driven components is as simple and easy as it is feasible. From simple pneumatic alternatives right up to highly intelligent modules, SCHUNK provides the right product for any application.

Benefit from the leading Modular System with the 3 Features into which all mechatronic SCHUNK Products can be classified:

**Alternative**
Replace pneumatics 1:1 while maintaining the same performance. Common pneumatic functions can be replicated with 100% accuracy using SCHUNK mechatronic components.

**Adaptable**
Driven by conventional servomotors. A motor adapter allows you to connect conventional servomotors to your SCHUNK components.

**Intelligent**
Fully integrated motor and control technology. The controller is either integrated into the SCHUNK component to save space, or installed in the control cabinet.
SCHUNK Components

offer maximum Flexibility when it comes to Incorporating them into existing Control Concepts

Standard mechatronic SCHUNK components offer the greatest flexibility when it comes to connecting customized control concepts. Depending on your requirements, you have the choice between various SCHUNK modules with integrated or external drive, and drive regulators and the possibility to control via digital I/O signals. From the customer controller right up to components, SCHUNK offers the appropriate components and therefore maximized flexibility for every control concept.

**Customer Controller**
The controller serves as the interface with the application and is specified by the customer.

Siemens | Bosch Rexrot | Beckhoff® | B&R | Schneider Electric | Lenze | More upon request
SCHUNK offers the world’s most comprehensive portfolio of grippers. Standard grippers, ready-to-install gripping system assembly groups, and an extremely wide range of customized gripping system solutions for your handling and assembly, automation and robot end-of-arm solution. We always meet the most complicated gripping requirements, and we solve them. The result: Robust and durable gripping systems which ensure maximum reliability in systems and machines all over the world for 30 years.

Over 2,500 standard grippers
Over 300 mechatronic grippers
More than 12,000 implemented gripping system solutions
More than 1,000,000 products in use worldwide
The SCHUNK Universal Grippers
PGN–plus–P and PGN–plus–E
In a Class of its Own!

Up to 50% higher Gripping Force
with the enlarged surface of the drive piston.

Diverse Accessories
with range of high-quality accessory components and matching sensor systems.

Up to 50% longer Gripper Fingers
The higher maximum moments of the perfected SCHUNK multi-tooth guidance enable use of longer gripper fingers.

Four-stage adjustable Gripping Force
for simple adaption to sensitive workpieces.

24 V Drive and Control on Option via digital I/O or IO-Link Class B Connection
for easy commissioning and quick integration into existing systems.

Lifelong Maintenance-free*
The perfected SCHUNK multi-tooth guidance with continuous lubricant pockets ensures even and permanent lubrication.
* Under normal, clean operating conditions
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2-Finger Parallel Grippers
Pneumatic

The SCHUNK Gripper PGN-plus-P

The world’s most proven gripper on the market – Now with permanent lubrication in the multi-tooth guidance. Lifelong maintenance free.* Guaranteed!

With the SCHUNK gripper PGN-plus-P, SCHUNK is raising the bar even further for pneumatically actuated universal grippers. By consistently optimizing the multi-tooth guidance, it is setting a new benchmark for the market. At the same time the PGN-plus-P benefits from the unique SCHUNK accessory program for the nearly complete spectrum of feasible automation applications.

Your benefits:

• **Up to 50% longer gripper fingers** due to higher maximum moments
• **Up to 50% higher gripping force** due to the increased surface of the drive piston
• **Lifelong maintenance-free** * due to the perfected SCHUNK multi-tooth guidance with consistent lubrication pockets
• **Maximum process reliability** with up to 60% larger diagonal pull area and therefore lower surface pressure
• **Diversity with the accessories** wide range of high-quality accessory components and corresponding sensor systems.

* Under normal, clean operating conditions

schunk.com/pgn-plus-p
## 2-Finger Parallel Grippers

**Pneumatic**

<table>
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<th>2-Finger-Parallelgreifer</th>
<th>MPG-plus</th>
<th>MPC</th>
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### Technical data

<table>
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<tr>
<th>Description</th>
<th>Number of sizes</th>
<th>Gripping force [N]</th>
<th>Stroke per jaw [mm]</th>
<th>Weight [kg]</th>
<th>Recommended workpiece weight [kg]</th>
<th>Closing/opening time [s]</th>
<th>Max. permissible finger length [mm]</th>
<th>Repeat accuracy [mm]</th>
<th>Protection class IP</th>
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<td>9</td>
<td>7 .. 370</td>
<td>1 .. 10</td>
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<td>0 .. 1.25</td>
<td>0.01 .. 0.08/0.011 .. 0.08</td>
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<td>0.02</td>
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<td></td>
<td>0.05 .. 0.94</td>
<td>60</td>
<td>0.02</td>
<td>30</td>
</tr>
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</table>

### Field of application

- **Gripping and moving**
- **For small to medium-sized workpieces**
- **In the field of assembly, testing, laboratory, pharmacies**
- **With low process forces**

### Ambient conditions

- **Clean**
- **Contaminated/coarse dust**
- **Contaminated/fine dust and liquids**
- **Contaminated/aggressive liquids**
- **High temperature range > 90 °C**
- **Cleanroom**

---

![Image of 2-Finger Parallel Grippers](image-url)

- **Gripping and moving**
- **For small to medium-sized workpieces**
- **In the field of assembly, testing, laboratory, pharmacies**
- **With low process forces**

---

Cost-efficient basic gripper with basic functionality for easy use

The most powerful pneumatic miniature parallel gripper on the market with a unique combination of oval piston drive and cross roller guide
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<th>KGG</th>
<th>PGN-plus-P</th>
<th>PGN-plus</th>
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<tr>
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<td>45 .. 540</td>
<td>200 .. 8750</td>
<td>123 .. 21150</td>
<td>123 .. 7400</td>
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<td>10 .. 60</td>
<td>2 .. 45</td>
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<td>2 .. 35</td>
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<td>0.02 .. 0.8/0.02 .. 0.8</td>
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<td>160</td>
<td>310</td>
<td>400</td>
<td>300</td>
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<td>0.02</td>
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2-finger parallel gripper with center bore

- Narrow 2-finger parallel gripper with long stroke
- Universal 2-finger parallel gripper with a high gripping force and high maximum moments due to the multi-tooth guidance
- Universal 2-finger parallel gripper with a high gripping force and high maximum moments due to the multi-tooth guidance
- Universal 2-finger parallel gripper of the compact class with 7-slot guidance and good cost-performance ratio

- Gripping and moving
- For small to medium-sized workpieces
- Equipped with a continuous center bore for workpiece supply, sensor or actuator systems
- Universal use
- For light to medium-sized workpiece weights
- With a large range of stroke
- Optimum standard solution for many fields of application
- Universal use
- Optimum standard solution for many fields of application
- Universal use
- Optimum standard solution for many fields of application
- Universal use
- In the areas of machine and plant construction, assembly and handling as well as the automotive industry

<p>| ● | ● | ● | ● | ● |
| ○ | ○ | ○ | ○ | ○ |
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<th>KGG</th>
<th>PGN-plus-P</th>
<th>PGN-plus-JGP</th>
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<tr>
<td>2-Finger-Parallelgreifer</td>
<td>• In the field of assembly, testing, • For small to medium- • Gripping and moving guide</td>
<td>• With low process forces • Gripping and moving • Equipped with a con- • For small to medium- • Universal use • Optimum standard solution for many fields of application</td>
<td>• Universal use • In the areas of machine and plant design, assembly and handling as well as the automotive industry</td>
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### Technical Data

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<th>DPG-plus</th>
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<td></td>
</tr>
<tr>
<td>Technical data</td>
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</table>

#### Description
The most powerful pneumatic wide variety.

#### Cleanroom class ISO 14644-1
- 5 5

#### Protection class IP
- 30 30 20 40 40 40/64 40

#### Repeat accuracy
- [mm] 0.02 0.02 0.02 up to 0.02 0.01 up to 0.01 up to 0.01

#### Max. permissible finger length
- [mm] 80 60 50 160 310 400 300

#### Closing/opening time
- [s] 0.01 .. 0.08/0.011 .. 0.08 0.03 .. 0.11/0.03 .. 0.11 0.05/0.05 0.03 .. 0.29/0.03 .. 0.25 0.02 .. 0.6/0.02 .. 0.6 0.02 .. 0.8/0.02 .. 0.8 0.02 .. 0.7/0.02 .. 0.7

#### Recommended workpiece weight
- [kg] 0 .. 1.25 0 .. 1.85 0.07 0 .. 2.7 0 .. 32.5 0 .. 80.5 0 .. 30

#### Weight
- [kg] 0.01 .. 0.63 0.05 .. 0.94 0.08 0.09 .. 4.2 0.17 .. 7.6 0.08 .. 39.5 0.08 .. 17.5

#### Stroke per jaw
- [mm] 1 .. 10 2.5 .. 15 4.5 10 .. 60 2 .. 45 2 .. 45 2 .. 35

#### Gripping force
- [N] 7 .. 370 16 .. 370 13 45 .. 540 200 .. 8750 123 .. 21150 123 .. 7400

#### Contaminated/fine dust and liquids
- ○ ◐ ◐

#### Cleanroom
- ○ ○ ○ ◐ ◐

#### Contaminated/aggressive liquids
- ◐ ◐

#### Ambient conditions
- 110 .. 11250 390 .. 4630
- 2 .. 45 30 .. 160
- 0.12 .. 52 1.38 .. 24.18
- 0 .. 46.35 0 .. 15.5
- 0.03 .. 0.4/0.03 .. 0.4 0.03 .. 1.1/0.03 .. 1.1 0.12 .. 1.82/0.12 .. 2.91 380 800
- up to 0.02 up to 0.01 0.02 67 41
+ + + +
+ ++ + ++

**Universal parallel gripper with surface-guided base jaws**

**Universal 2-finger parallel gripper with high gripping force and high moment capacity due to the multi-tooth guidance as well as the center bore**

**Despite the high moment load of the base jaws, this sealed 2-finger parallel gripper meets the IP67 requirements and does not permit any substances from the working environment to penetrate the interior of the unit**

**2-finger parallel gripper with long jaw stroke for large parts and/or a broad range of parts**

### Additional Information

- For high part diversities due to its long jaw stroke and high gripping forces
- Universal use
- Suitable for applications that require a center bore, e.g. for workpiece feeding, special sensor systems or optical recognition systems
- Ideally suitable for handling of rough or dirty workpieces
- Its field of application extends from the loading and unloading of machines, such as in the case of sanitary blocks, grinding machines, lathes or milling machines, to handling tasks in painting plants, in powder-processing or underwater
- Optimum standard solution for many fields of application
- Universal use
- In the areas of machine and plant design, assembly and handling as well as the automotive industry
# 2-Finger Parallel Grippers

## Pneumatic

### PFH-mini
- **630 .. 2950**
- **30 .. 100**
- **2.65 .. 12.6**
- **0 .. 13**
- **0.3 .. 1.0/0.3 .. 1.2**
- **250**
- **0.05**
- **41**

### PFH
- **2200**
- **150 .. 300**
- **18.9 .. 33.6**
- **0 .. 14.7**
- **0.7 .. 1.25/0.7 .. 1.25**
- **900**
- **0.02**
- **30**

### PSH
- **320 .. 1760**
- **14 .. 100**
- **0.77 .. 8.05**
- **0 .. 8.8**
- **0.12 .. 04/0.12 .. 0.4**
- **300**
- **up to 0.05**
- **67**

### SPG
- **10000**
- **100**
- **35**
- **50**
- **1.5/1.5**
- **500**
- **0.1**
- **30**

<table>
<thead>
<tr>
<th>PFH-mini</th>
<th>PFH</th>
<th>PSH</th>
<th>SPG</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>++</strong></td>
<td><strong>++</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>+</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Technical Data
- **Repeat accuracy [mm]**
  - 0.02
  - up to 0.02
  - up to 0.01
  - up to 0.01
  - up to 0.01
  - up to 0.02
  - up to 0.01
  - up to 0.01
  - up to 0.02
  - up to 0.01
  - up to 0.01
  - up to 0.02

- **Max. permissible finger length [mm]**
  - 80
  - 60
  - 50
  - 160
  - 310
  - 400
  - 300
  - 125
  - 125
  - 380
  - 800

- **Closing/opening time [s]**
  - 0.01 .. 0.08/0.011 .. 0.08
  - 0.03 .. 0.11/0.03 .. 0.11
  - 0.05/0.05
  - 0.03 .. 0.29/0.03 .. 0.25
  - 0.02 ... .. 0.7/0.02 .. 0.7
  - 0.03 .. 1.1/0.03 .. 1.1
  - 0.12 .. 1.82/0.12 .. 2.91

- **Weight [kg]**
  - 0.01 .. 0.63
  - 0.05 .. 0.94
  - 0.08
  - 0.09 .. 4.2
  - 0.17 .. 7.6
  - 0.08 .. 39.5
  - 0.08 .. 17.5
  - 0.3 .. 5.3
  - 0.28 .. 1.32
  - 0.12 .. 52
  - 1.38 .. 24.18

- **Stroke per jaw [mm]**
  - 1 .. 10
  - 2.5 .. 15
  - 4.5
  - 10 .. 60
  - 2 .. 45
  - 2 .. 45
  - 2 .. 35
  - 7.5 .. 31.5
  - 4 .. 10
  - 2 .. 45
  - 30 .. 160

### Technical Data Description
- **Gripper with long jaw stroke for large parts and a broad range of parts**
  - 2-finger parallel gripper with long jaw stroke for large parts and/or a broad range of parts
  - 2-finger parallel gripper with long jaw stroke and dirt-resistant round guides

- **For precise handling of a wide variety of workpieces**
- **Particularly suitable for handling vehicle wheel rims**
- **For a wide range of parts**
- **For high part diversities due to surface-guided base jaws**
- **Suitable for applications that require a center bore, e.g. for sensor or actuator for workpiece supply, or underwater plants, in powder-processing blocks, grinding machines, as in the case of sanitary workpiece unloading of machines, such fields of application solution for many fields of application**

- **Optimum standard multi-tooth guidance**
- **Performance ratio good cost-saving**
- **T-slot guidance and compact class with high maximum gripping force and high moment capacity due to the multi-tooth guidance as well as the center bore**
- **Its field of application extends from the loading and handling of vehicle wheel rims to precision handling as well as for applications that require a center bore, e.g. for sensor or actuator for workpiece supply, or underwater plants, in powder-processing blocks, grinding machines, as in the case of sanitary workpiece unloading of machines, such fields of application solution for many fields of application**

- **2-finger parallel gripper meets IP67 requirements and 2-finger parallel gripper with a high gripping force and therefore it is suitable for high gripping forces and maximum moment loads.**

- **Sturdy 2-finger parallel gripper for heavy components and a broad part range, equipped with robust guides and therefore it is suitable for high gripping forces and maximum moment loads.**

- **Covering a wide range of parts with a long jaw stroke**
- **High gripping force for high workpiece weights**

<table>
<thead>
<tr>
<th>PFH-mini</th>
<th>PFH</th>
<th>PSH</th>
<th>SPG</th>
</tr>
</thead>
<tbody>
<tr>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>●</td>
<td>○</td>
<td>●</td>
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<td>●</td>
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<tr>
<td>○</td>
<td></td>
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</tr>
</tbody>
</table>
SCHUNK Gripper MPG-plus

The most powerful pneumatic miniature parallel gripper on the market. Highly efficient small parts handling in the most compact space. With its power density, the MPG-plus sets the new standard for handling small parts. The unique combination of oval piston and cross roller guide of the MPG-plus ensures higher efficiency because of higher force and load capacity.

Your benefits:

- **25% higher gripping forces** with identical size
- **25% longer gripper fingers** with identical gripper size
- **30% higher load rating** by improved guidance (cross roller guide)
- **10% less weight** for higher dynamics
- **20% improved closing time** for shorter cycle times

compared with the SCHUNK MPG gripper, which until now defined the benchmark in small parts handling.

Larger piston surface – more precise guidance

The larger oval piston surface and increase in the number of cross rollers ensure significantly improved efficiency. The improved cross roller guide with an increased number of junction rollers permits higher gripping forces.

Variable mounting options – maximum flexibility

Diverse mounting options ensure quick, easy gripper assembly and exchange. The gripper can be easily positioned using the centering sleeves and can be screwed through and fixed either laterally or at the bottom.

From a single source – Pick & Place with MPG-plus

Combine the MPG-plus miniature parallel gripper with the PPU-P from SCHUNK, the fastest pneumatic pick & place unit on the market. Benefit from high-speed pick & place with 95 cycles per minute.

Add-on valve ABV – shorter hosing, improved cycle time

The electrically controlled 3/2 pneumatic micro valves ABV are screwed onto the gripper. This hose-free direct assembly minimizes the hosing effort and reduces cycle times.

MPG-plus: award-winning at the AUTOMATICA show

schunk.com/mpg-plus
# 3-Finger Centric Grippers

## Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>MPZ</th>
<th>PZH-plus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of sizes</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>Gripping force [N]</td>
<td>20 .. 310</td>
<td>255 .. 57300</td>
</tr>
<tr>
<td>Stroke per jaw [mm]</td>
<td>1 – 5</td>
<td>2 .. 45</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>0.01 .. 0.29</td>
<td>0.13 .. 80</td>
</tr>
<tr>
<td>Recommended workpiece weight [kg]</td>
<td>0 .. 1.15</td>
<td>0 .. 227</td>
</tr>
<tr>
<td>Closing/opening time [s]</td>
<td>0.02 .. 0.06/0.02 .. 0.06</td>
<td>0.02 .. 4.6/0.02 .. 3</td>
</tr>
<tr>
<td>Max. permissible finger length [mm]</td>
<td>45</td>
<td>250</td>
</tr>
<tr>
<td>Repeat accuracy [mm]</td>
<td>0.01</td>
<td>up to 0.01</td>
</tr>
<tr>
<td>Protection class IP</td>
<td>40</td>
<td>40/64</td>
</tr>
<tr>
<td>Cleanroom class ISO 14644-1</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Comprehensive ranges</td>
<td>+</td>
<td>+++</td>
</tr>
<tr>
<td>Variety of sensor systems</td>
<td>+</td>
<td>+++</td>
</tr>
<tr>
<td>Description</td>
<td>Small 3-finger centric gripper with base jaws guided on T-slots</td>
<td>Universal centric gripper with high gripping force and maximum moments due to multi-tooth guidance</td>
</tr>
</tbody>
</table>

## Field of application

- Universal use
- Particularly suitable for gripping small workpieces
- Universal use due to numerous product variants; also in areas where there are special demands on the gripper (temperature, chemical durability, contamination, and much more)

## Ambient conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>MPZ</th>
<th>PZH-plus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Contaminated/coarse dust</td>
<td>◢</td>
<td>●</td>
</tr>
<tr>
<td>Contaminated/fine dust and liquids</td>
<td>◢</td>
<td>●</td>
</tr>
<tr>
<td>Contaminated/aggressive liquids</td>
<td>◢</td>
<td>●</td>
</tr>
<tr>
<td>High temperature range &gt; 90 °C</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Cleanroom</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

- = very highly suitable  
• = highly suitable  
+ = suitable in customized version  
+= medium-sized selection  
++ = wide selection  
+++ = very wide selection
<table>
<thead>
<tr>
<th>JGZ</th>
<th>PZH–plus</th>
<th>PZB–plus</th>
<th>SPZ–plus</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Image of JGZ gripper" /></td>
<td><img src="image2" alt="Image of PZH–plus gripper" /></td>
<td><img src="image3" alt="Image of PZB–plus gripper" /></td>
<td><img src="image4" alt="Image of SPZ–plus gripper" /></td>
</tr>
</tbody>
</table>

### Technical Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>JGZ</th>
<th>PZH–plus</th>
<th>PZB–plus</th>
<th>SPZ–plus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of sizes</td>
<td>7</td>
<td>4</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Gripping force [N]</td>
<td>225 .. 7990</td>
<td>375 .. 4200</td>
<td>340 .. 27400</td>
<td>230 .. 16500</td>
</tr>
<tr>
<td>Stroke per jaw [mm]</td>
<td>0.12 .. 8</td>
<td>0.26 .. 53</td>
<td>0.2 .. 20.1</td>
<td>0.2 .. 2.5</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>0 .. 1.15</td>
<td>0 .. 227</td>
<td>0 .. 30</td>
<td>0 .. 100</td>
</tr>
<tr>
<td>Recommended workpiece weight [kg]</td>
<td>0 .. 1.15</td>
<td>0 .. 227</td>
<td>0 .. 30</td>
<td>0 .. 100</td>
</tr>
<tr>
<td>Closing/opening time [s]</td>
<td>0.02 .. 0.06</td>
<td>0.02 .. 4.6</td>
<td>0.02 .. 0.8</td>
<td>0.25 .. 1.05</td>
</tr>
<tr>
<td>Max. permissible finger length [mm]</td>
<td>45</td>
<td>250</td>
<td>200</td>
<td>400</td>
</tr>
<tr>
<td>Repeat accuracy [mm]</td>
<td>0.01 up to 0.01</td>
<td>up to 0.01</td>
<td>up to 0.02</td>
<td>0.02 up to 2.5</td>
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<tr>
<td>Cleanroom class</td>
<td>ISO 14644-1</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

### Field of Application

- **Optimum standard solution for many fields of application**
- **Universal use**
- **In the areas of machine and plant design, assembly and handling as well as the automotive industry**
- **Universal use due to numerous product variants; also in areas where there are special demands on the gripper (temperature, chemical durability, contamination, and much more)**
- **Universal use**
  - Suitable for fields of application that require a center bore, e.g. for workpiece feeding, special sensor systems or optical recognition systems
  - Ideally suitable for handling of rough or dirty workpieces
  - Its field of application extends from the loading and unloading of machines, such as in the case of sanitary blocks, grinding machines, lathes or milling machines, to handling tasks in painting plants, in powder-processing or underwater

### Ambient Conditions

- **Clean**
- **Contaminated/coarse dust**
- **Contaminated/fine dust and liquids**
- **Contaminated/aggressive liquids**
- **High temperature range > 90 °C**
- **Cleanroom**

### Ratings

- **= very highly suitable**
- **= highly suitable**
- **= suitable in customized version**
- **= medium-sized selection**
- **++ = wide selection**
- **+++ = very wide selection**
### 3-Finger Centric Grippers

#### Pneumatic

<table>
<thead>
<tr>
<th>PZH-SF-mini</th>
<th>PZH-SF</th>
<th>Multi-finger Centric Gripper</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
</tr>
</tbody>
</table>

#### Technical data

<table>
<thead>
<tr>
<th></th>
<th>PZH-SF-mini</th>
<th>PZH-SF</th>
<th>PZH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of sizes</td>
<td>6</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>Gripping force [N]</td>
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</tr>
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<td>Stroke per jaw [mm]</td>
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<td>2 .. 16</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>0.01 .. 0.29</td>
<td>0.13 .. 80</td>
<td>0.12 .. 8</td>
</tr>
<tr>
<td>Recommended workpiece weight [kg]</td>
<td>0 .. 1.15</td>
<td>0 .. 227</td>
<td>0 .. 30</td>
</tr>
<tr>
<td>Closing/opening time [s]</td>
<td>0.02 .. 0.06/0.02 .. 0.06</td>
<td>0.02 .. 4.6/0.02 .. 3</td>
<td>0.02 .. 0.8/0.02 .. 0.8</td>
</tr>
<tr>
<td>Max. permissible finger length [mm]</td>
<td>45</td>
<td>250</td>
<td>200</td>
</tr>
<tr>
<td>Repeat accuracy [mm]</td>
<td>0.01</td>
<td>up to 0.01</td>
<td>up to 0.01</td>
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<tr>
<td>Protection class</td>
<td>IP 40</td>
<td>40/64</td>
<td>40</td>
</tr>
<tr>
<td>Cleanroom class ISO</td>
<td>14644-1</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

#### Description

- **PZH-SF-mini**: Small 3-finger centric gripper with base jaws guided on T-slots.
- **PZH-SF**: Universal 3-finger centric gripper of the compact class with T-slot guidance and best cost-performance ratio.
- **PZH**: Universal 3-finger centric gripper with high gripping force and maximum moments due to multi-tooth guidance.
- **Multi-finger Centric Gripper**: Universal 3-finger centric gripper with large, rotating jaw stroke capable of handling a broad range of workpiece sizes and a round guidance which is protected against dirt.
- **PZV**: The multi-finger gripper for applications in which two or three fingers are insufficient.

#### Field of application

- Universal use
- Particularly suitable for gripping small workpieces
- Universal use due to numerous product variants; also in areas where there are special demands on the gripper (temperature, chemical durability, contamination, and much more)
- Optimum standard solution for many fields of application
- Universal use
- In the areas of machine and plant design, assembly and handling as well as the automotive industry
- Universal use due to numerous product variants; also in areas where there are special demands on the gripper (temperature, chemical durability, contamination, and much more)
- Universal use
- Suitable for fields of application that require a center bore, e.g. for workpiece feeding, special sensor systems or optical recognition systems
- Ideally suitable for handling of rough or dirty workpieces
- Its field of application extends from the loading and unloading of machines, such as in the case of sanitary blocks, grinding machines, lathes or milling machines, to handling tasks in painting plants, in powder-processing or underwater
- Long stroke for a large range of parts or for undercut sections
- Optimum for rotationally symmetric parts
- Particularly suitable for handling vehicle wheel rims
- 4-finger centric grippers have advantages over the usual centric grippers, for example when cylindrical workpieces are being magazined in tablets
- The PZV process—reliably handles the workpieces despite the interfering contours

#### Ambient conditions

<table>
<thead>
<tr>
<th></th>
<th>PZH-SF-mini</th>
<th>PZH-SF</th>
<th>PZH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Contaminated/coarse dust</td>
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<td>Contaminated/fine dust and liquids</td>
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<td>Contaminated/aggressive liquids</td>
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<td>High temperature range &gt; 90 °C</td>
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<td>●</td>
</tr>
<tr>
<td>Cleanroom</td>
<td>○</td>
<td>◇</td>
<td>◇</td>
</tr>
</tbody>
</table>

#### Symbols

- Very highly suitable
- Highly suitable
- Suitable in customized version
- Medium-sized selection
- Wide selection
- Very wide selection

---

**SCHUNK®**
SCHUNK 3-Finger Centric Gripper PZN–plus

Universal gripper for a very wide range of parts

The PZN–plus is the first centric gripper with multi-tooth guidance for handling an extremely wide range of parts, from small parts handling through to heavy-duty applications. The universal virtuoso with 11 sizes guarantees precise gripping of centric workpieces with a workpiece weight of up to 227 kg. The PZN–plus is available with ATEX certification as a premium product specifically for potentially explosive atmospheres.

Your benefits:
- Robust multi-tooth guidance for maximum process reliability
- Significantly greater payload allows for use of longer gripper fingers
- Slender, compact dimensions for minimum interfering contours in handling
- Screw connection for flexible pressure supply in all automation systems
- Extensive sensor accessories for monitoring the stroke position

SCHUNK Miniature Gripper MPZ

Powerful handling of small parts

The powerful 3–finger miniature centric gripper can be used in small parts handling systems, e.g. for handling and mounting products such as needles, microprocessors or small electric components. A characteristic feature of the MPZ is the tried-and-tested, accurate T-slot guidance with hardened, ground steel base jaws. This ensures reliability and high performance. The gripping force maintenance device that can be integrated as an option is protected by very small springs during opening and closing. For example, this prevents loss of components in the event of a sudden drop of the pneumatic pressure.

Your benefits:
- Proven T-slot guidance
- Wedge-hook principle for high force transmission and synchronized gripping
- Gripping force maintenance optional
## Angular Grippers

### Pneumatic

<table>
<thead>
<tr>
<th>Technical data</th>
<th>2-Finger Angular Gripper</th>
<th>2-Finger Radial Gripper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of sizes</td>
<td>3</td>
<td>8</td>
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<tr>
<td>Gripping moment [Nm]</td>
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<td>0.01 .. 2.8</td>
</tr>
<tr>
<td>Opening angle per jaw [°]</td>
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<td>15</td>
</tr>
<tr>
<td>Weight [kg]</td>
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<td>0.0025 .. 0.213</td>
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<tr>
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<td>0 .. 0.46</td>
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<td>0.015 .. 0.03/0.02 .. 0.06</td>
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<td>Max. permissible finger length [mm]</td>
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<tr>
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<tr>
<td>Cleanroom class ISO 14644-1</td>
<td>○ ○ ○ ○</td>
<td>● ○ ○</td>
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<tr>
<td>Sensor systems</td>
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<td>+</td>
</tr>
<tr>
<td>Comprehensive ranges</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Description</td>
<td>Small, simple actuated plastic angular gripper with spring reset</td>
<td>Narrow double-acting 2-finger angular gripper</td>
</tr>
<tr>
<td>Field of application</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient conditions</td>
<td></td>
<td></td>
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<tr>
<td>Clean</td>
<td>●</td>
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<tr>
<td>Contaminated/coarse dust</td>
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<td>Contaminated/fine dust and liquids</td>
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<td>High temperature range &gt; 90 °C</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Cleanroom</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

* = very highly suitable  ● = highly suitable  ○ = suitable in customized version

* The GAP is an angular parallel gripper, which means the values must be understood as forces [N].

+ = medium-sized selection  ++ = wide selection  +++ = very wide selection
### Angular Grippers

#### SCHUNK Gripper PWG–plus

**Compact powerhouse**

The double oval piston drive, the one-piece, high-strength aluminum housing and the practically wear-free bone drive make the PWG-plus 2-finger angular gripper a compact and robust powerhouse. Depending on the application it can be equipped with or without a mechanical gripping force maintenance device.

In addition, extensive accessories are available, including inductive sensors and magnetic switches.

---

### Technical Data

<table>
<thead>
<tr>
<th>DRG</th>
<th>GAP</th>
<th>SGB SWG PWG-plus PRG DRG GAP SGW</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>8.2..143</td>
<td>92..430*</td>
<td>1.35..7.45</td>
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<tr>
<td>10..90</td>
<td>30..90</td>
<td>8</td>
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<tr>
<td>0.5..4.46</td>
<td>0.3..1.33</td>
<td>0.05..0.17</td>
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<td>0..7.2</td>
<td>0..125</td>
<td>0..13</td>
</tr>
<tr>
<td>0.4..0.3/0.5..0.6</td>
<td>0.09..0.35/0.09..0.35</td>
<td>0.02..0.02/0.03..0.03</td>
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<tr>
<td>125</td>
<td>65</td>
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<td>0.1</td>
<td>0.05</td>
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<tr>
<td>67</td>
<td>40</td>
<td>20</td>
</tr>
</tbody>
</table>

++ = medium-sized selection       ++ = wide selection       +++ = very wide selection

Sealed 180° angular gripper for use in dirty environments 2-finger angular parallel gripper with gripper finger actuation of up to 90 degrees per jaw Small, simple actuated plastic angular gripper with spring return

---

**Your benefits:**

- **Workpiece weights between 0.5 kg and 7.3 kg**
- **Gripping moments amount between 3.5 Nm and 143 Nm**
- **Stroke per finger 15°**
- **Overgrip angle per jaw at least 3°**
- **Maximum force transmission and low wear** due to robust bone drive
- **High power density** due to oval piston drive
- **Flexible design of workpiece supports** because of connection threads and centering possibilities

---

**Ambient conditions**

Clean ● ● ● ●

Contaminated/coarse dust ○ ○ ◑ ○

Contaminated/fine dust and liquids ○

Contaminated/aggressive liquids ◑

High temperature range > 90 °C ● ● ●

Cleanroom ○ ○ ○ ○

= very highly suitable

= highly suitable

= suitable in customized version

---

* The GAP Is an angular parallel gripper, which means the values must be understood as forces [N].
### 2-Finger Parallel Gripper

<table>
<thead>
<tr>
<th>Alternative</th>
<th>EGP</th>
<th>PGN-plus+E</th>
<th>LEG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-act</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Technical Data

- **Number of sizes**: 2
- **Gripping force [N]**: 40 .. 140
- **Stroke per jaw [mm]**: 3 .. 6
- **Weight [kg]**: 0.16 .. 86
- **Recommended workpiece weight [kg]**: 0.2 .. 0.7
- **Closing/opening time [s]**: 0.09 .. 0.2
- **Max. permissible finger length [mm]**: 50
- **Repeat accuracy [mm]**: 0.02
- **Nominal voltage [V]**: 24
- **Nominal current [A]**: 0.14 .. 0.3
- **Protection class IP**: 30
- **Communication interface**: Digital I/O
- **Great variety**: +
- **Description**: Electric 2-finger parallel gripper. Certified for collaborative operation, actuated via 24 V and digital I/O

#### Motor & Controller

- **Motor**: Integrated
- **Controller**: Integrated
- **Controller type**: Motor-dependent

#### Field of application

- **Gripping and moving**
- **For small to medium-sized workpieces with flexible force and high speed**
- **Suitable for collaborative operation**

#### Ambient conditions

- **Clean**: ●
- **Contaminated/coarse dust**: ○
- **Contaminated/fine dust and liquids**: ○
- **Contaminated/aggressive liquids**: ○
- **High temperature range > 90 °C**: ●

- **Cleanroom**: ○

- ● = very highly suitable
- ○ = suitable in customized version
- ** = medium-sized selection
- *** = wide selection
- +++ = very wide selection
<table>
<thead>
<tr>
<th></th>
<th>EGA</th>
<th>MEG</th>
<th>PG</th>
<th>EGL</th>
<th>WSG</th>
<th>PEH</th>
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<tbody>
<tr>
<td>Finger length [mm]</td>
<td>Max. permissible</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>150 .. 1300</td>
<td>35 .. 140</td>
<td>30 .. 200</td>
<td>50 .. 600</td>
<td>5 .. 80</td>
<td>150 .. 1800</td>
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<tr>
<td>30 .. 100</td>
<td>6 .. 10</td>
<td>34</td>
<td>42.5</td>
<td>32 .. 105</td>
<td>60 .. 100</td>
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</tr>
<tr>
<td>2.2 .. 9</td>
<td>0.47 .. 1.42</td>
<td>1.4</td>
<td>1.8</td>
<td>0.32 .. 1.6</td>
<td>5.4 .. 16.8</td>
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</tr>
<tr>
<td>0 .. 6.5</td>
<td>0 .. 0.7</td>
<td>1</td>
<td>0 .. 3</td>
<td>0 .. 0.4</td>
<td>0 .. 9</td>
<td></td>
</tr>
<tr>
<td>0.3 .. 0.62</td>
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<td>0.7</td>
<td>0.5 .. 1.0</td>
<td>1 .. 1.5</td>
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<tr>
<td>500</td>
<td>64</td>
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<tr>
<td>0.05</td>
<td>0.02</td>
<td>0.05</td>
<td>0.05</td>
<td>±0.03</td>
<td>±0.05</td>
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</tr>
<tr>
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<td>24 DC</td>
<td>24 DC</td>
<td>24 DC</td>
<td>24 DC</td>
<td>24 DC</td>
<td></td>
</tr>
<tr>
<td>Motor-dependent</td>
<td>0.6 .. 1.3</td>
<td>1.4</td>
<td>2.5</td>
<td>0.3 .. 0.9</td>
<td>2.4 .. 10</td>
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<tr>
<td>40</td>
<td>30</td>
<td>20</td>
<td>46</td>
<td>40</td>
<td>41</td>
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<tr>
<td>Depending on the controller</td>
<td>Digital and analog inputs and outputs</td>
<td>PROFIBUS, CAN, Digital I/O</td>
<td>PROFIBUS, CAN, Digital I/O</td>
<td>EtherNet TCP/IP, PROFINET, PROFINET, PROFINET, CAN</td>
<td>PROFIBUS, CAN, Digital I/O</td>
<td></td>
</tr>
<tr>
<td>++</td>
<td>+</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electric 2-finger parallel gripper with adaptable servomotor</td>
<td>Electric 2-finger parallel gripper with smooth-running roller bearing guide in the base jaw</td>
<td>Servo-electric 2-finger parallel gripper with sensitive gripping force control and long stroke</td>
<td>Servo-electric 2-finger parallel gripper with sensitive gripping force control and long stroke</td>
<td>Servo-electric 2-finger parallel gripper with sensitive gripping force control and long stroke</td>
<td>Servo-electric 2-finger parallel gripper with large jaw stroke for large parts and/or diverse parts spectrum</td>
<td></td>
</tr>
<tr>
<td>Adaptable</td>
<td>Integrated</td>
<td>Integrated</td>
<td>Integrated</td>
<td>Integrated</td>
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<td>External</td>
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<td>Integrated</td>
<td>Integrated</td>
<td>Integrated</td>
<td>Integrated</td>
<td></td>
</tr>
<tr>
<td>Motor-dependent</td>
<td>MEG-C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Gripping and moving</td>
<td>• Gripping and moving</td>
<td>• Universally applicable, highly flexible gripper</td>
<td>• Various workpieces can be gripped either sensitively or with a high force</td>
<td>• Universally applicable, highly flexible gripper</td>
<td>• Universally applicable, highly flexible gripper</td>
<td></td>
</tr>
<tr>
<td>• For medium-sized workpieces with flexible force and high speed</td>
<td>• For small to medium-sized workpieces with flexible force, stroke or speed</td>
<td>• For a wide range of parts and sensitive components</td>
<td>• Flexible workpiece handling possible even in a contaminated environment</td>
<td>• For a wide range of parts and sensitive components</td>
<td>• With a wide variety of parts</td>
<td></td>
</tr>
</tbody>
</table>
### 3-Finger Centric Gripper

<table>
<thead>
<tr>
<th>EGN</th>
<th>EZN</th>
<th>EGM-M</th>
<th>EGM-B</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
</tbody>
</table>

- **Technical Data**
  - **Field of application**
    - Motor-dependent
    - Motor-dependent
    - MEG-C
  - **Controller**
    - Integrated
    - Integrated
  - **Motor & Controller**
    - Electric
    - 2-finger parallel
  - **Communication interface**
    - Digital I/O
    - Digital inputs, IO-Link
    - Digital I/0, IO-Link
  - **Nominal current [A]**
    - Motor-dependent
    - Motor-dependent
    - 0.6 .. 1.3
    - 1.4
    - 2.5
  - **Nominal voltage [V]**
    - Motor-dependent
    - Motor-dependent
    - 24 DC
    - 400 AC
    - 24 DC
    - 400 AC
  - **Repeat accuracy [mm]**
    - 0.02
    - 0.02
    - 0.05
    - ±0.03
    - ±0.05
    - ±0.03
    - ±0.05
  - **Finger length [mm]**
    - 0.35 .. 0.5
    - 0.25 .. 0.4
    - 0.3
    - 0.3
    - 200
    - 125
    - ±0.01
    - ±0.01
    - 24 DC
    - 24 DC
    - 400 AC
    - 400 AC
    - 1 .. 2.6
    - 2 .. 3
    - 2.2 .. 3.7
    - 2.9 .. 12.3
    - 41
    - 41
    - 41
    - 41
    - Depending on the controller
    - Depending on the controller
    - Depending on the controller
    - Depending on the controller
  - **Gripping force [N]**
    - 40 .. 140
    - 12 .. 300
    - 110 .. 810
    - 300 .. 1050
    - 150 .. 1300
    - 35 .. 140
    - 30 .. 200
    - 50 .. 600
    - 5 .. 80
    - Electric 2-finger parallel gripper with high gripping force and moment loads due to the multi-tooth guidance
    - Servo-electric 2-finger parallel gripper with high gripping force and moment loads due to the multi-tooth guidance
    - Servo-electric 3-finger centric gripper with high gripping force and high maximum moment due to the multi-tooth guidance
    - Electric permanent magnetic gripper for energy-efficient handling of ferromagnetic workpieces
    - Electric permanent magnetic gripper for energy-efficient handling of ferromagnetic workpieces
  - **Number of sizes**
    - 2
    - 4
    - 2
    - 3
    - 2
    - 3
    - 1
    - 1
    - 3
    - 3

### Electromagnetic Grippers

- **Alternative Adaptable Intelligent**
- **Servo-electric 2-finger parallel gripper**
- **Electric 2-finger parallel gripper**
  - Optimum standard solution for many fields of application
  - Flexible in use due to controllable gripping force, position, and speed
- **Servo-electric 3-finger centric gripper**
  - Optimum standard solution for many fields of application;
  - Flexible in use due to controllable gripping force, position, and speed
- **Electric permanent magnetic gripper**
  - Universally applicable, compact gripper, with large diversity of parts
  - Universally applicable, compact gripper, with large diversity of parts

### SCHUNK Grippers

- **Electric**
- **Flexfield**
- **Co-act**
- **EGN**
- **EZN**
- **EGM-M**
- **EGM-B**
- **Alternative**
- **Adaptable**
- **Intelligent**
- **2-Finger Parallel Gripper**
- **Servo-electric**
- **Flexible workpiece handling of ferromagnetic workpieces**
The SCHUNK Gripper PGN-plus-E

The first electric gripper with proven multi-tooth guidance. With permanent lubrication in the multi-tooth guidance, digital actuation, and 24 V drive.

The electric SCHUNK PGN-plus-E gripper transfers the proven high performance features of the pneumatic PGN-plus-P gripper directly to the area of mechatronic handling. The first electric gripper with proven multi-tooth guidance with permanent lubrication, digital actuation, and 24 V drive makes the changeover from pneumatic to electric components particularly easy. Its actuation via digital I/O simplifies commissioning, enabling rapid integration in existing systems.

Your benefits:

- **Up to 50% longer gripper fingers**
  due to higher maximum moments

- **Four-stage gripping force**
  for simple adaptation to sensitive workpieces

- **Lifelong maintenance-free**
  The SCHUNK multi-tooth guidance with continuous lubrication pockets ensures even lubrication.

- **24 V drive and actuation via either digital I/O or IO-Link Class B connection**
  for a simplified commissioning and fast integration into existing systems

- **Integrated sensor system**

Up to 50% longer gripper fingers
The improved multi-tooth guidance enables the use of even longer gripper fingers for the same gripper size due to higher maximum moments, without overloading the guidance.

Gripping force adjustable to four stages
The gripping force of the SCHUNK gripper PGN-plus-E can be quickly, safely and manually adjusted in four stages.

Maximum life span due to lubrication pockets in the robust multi-tooth guidance
Permanent lubrication pockets ensure a continuous grease supply. At the same time, it ensures that an even lubricant film is created rapidly, even with short strokes.

Maximum process safety
The multi-tooth guidance enables a greater diagonal pull surface, and therefore a lower surface pressure, for process-reliable and low-wear transmission of power to the base jaw.

Integrated sensor system
The control and power electronics are already completely integrated so that no space is taken up in the control cabinet. The 24 V gripper is actuated via digital I/O inputs. Up to 2 gripper positions can be queried via one M8 connection.

schunk.com/pgn-plus-e
## SCHUNK End-of-Arm Modular System for Universal Robots

### Selection Table

<table>
<thead>
<tr>
<th>Universal Robots</th>
<th>SCHUNK Grippers</th>
<th>Co-act EGP-C 40</th>
<th>KGG 100-80</th>
<th>PSH 22-1</th>
<th>JGP 80</th>
</tr>
</thead>
<tbody>
<tr>
<td>UR 3</td>
<td>● ● ● ● ● ● ● ●</td>
<td>● ● ● ● ● ● ● ●</td>
<td>● ● ● ● ● ●</td>
<td>● ● ● ● ● ●</td>
<td>● ● ● ● ● ●</td>
</tr>
<tr>
<td>UR 5</td>
<td>● ● ● ● ● ● ● ●</td>
<td>● ● ● ● ● ● ● ●</td>
<td>● ● ● ● ● ●</td>
<td>● ● ● ● ● ●</td>
<td>● ● ● ● ● ●</td>
</tr>
<tr>
<td>UR 10</td>
<td>● ● ● ● ● ● ● ●</td>
<td>● ● ● ● ● ● ● ●</td>
<td>● ● ● ● ● ●</td>
<td>● ● ● ● ● ●</td>
<td>● ● ● ● ● ●</td>
</tr>
</tbody>
</table>

### Combination possibilities*  

<table>
<thead>
<tr>
<th>Gripper + change system/FT sensor</th>
<th>UR 3</th>
<th>UR 5</th>
<th>UR 10</th>
<th>UR 3</th>
<th>UR 5</th>
<th>UR 10</th>
<th>UR 3</th>
<th>UR 5</th>
<th>UR 10</th>
<th>UR 3</th>
<th>UR 5</th>
<th>UR 10</th>
<th>UR 3</th>
<th>UR 5</th>
<th>UR 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<td>●</td>
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<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

### Workpiece weight

<table>
<thead>
<tr>
<th>Workpiece weight</th>
<th>0 – 1 kg</th>
<th>1.1 – 1.5 kg</th>
<th>1.6 – 2 kg</th>
<th>2.1 – 2.5 kg</th>
<th>2.6 – 3.0 kg</th>
<th>3.1 – 3.5 kg</th>
<th>3.6 – 4.0 kg</th>
<th>4.1 – 4.5 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCHUNK Grippers</td>
<td>●</td>
<td>● ●</td>
<td>● ●</td>
<td>● ● ● ●</td>
<td>● ● ● ●</td>
<td>● ● ● ●</td>
<td>● ● ● ●</td>
<td>● ● ● ●</td>
</tr>
<tr>
<td>+ change system/FT sensor</td>
<td>● ● ● ●</td>
<td>● ● ● ●</td>
<td>● ● ● ●</td>
<td>● ● ● ●</td>
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<td>● ● ● ●</td>
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### Technical data

<table>
<thead>
<tr>
<th>Technical data</th>
<th>ID</th>
<th>Weight [kg]</th>
<th>Max. gripping force [N]</th>
<th>Recommended workpiece weight [kg]</th>
<th>Stroke per jaw [mm]</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0.7</td>
<td>140</td>
<td>0.7</td>
<td>6</td>
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<td></td>
<td>0.6</td>
<td>140</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>1.33</td>
<td>415</td>
<td>2.1</td>
<td>8</td>
</tr>
</tbody>
</table>

You can find more technical data in the catalog chapter for the respective gripper.

* Overview of the combination possibilities of gripping systems and robot sizes which result from the comparison of the weight of the gripping system to half of the robot payload. A technical design for the application including top jaws and workpieces is absolutely essential.

** The cable extension ID 1399964 is required for combination with force/torque sensor.

*** The adapter plate ID 1339964 and cable extension ID 1399964 are required for combinations with force/torque sensors. The adapter plate ID 1399667 is required for combination with the change system.

---

## The new SCHUNK FT-AXIA Force/Torque Sensor

The first compact force/torque sensor with two calibrations.
The compact SCHUNK force/torque sensor FT-AXIA was designed primarily for use in lightweight and small robots. Due to the dual calibration, it covers two measurement ranges and is therefore very versatile.

- **Compact design**
  due to completely integrated electronics and status display via LEDs

- **Simple configuration**
  Two calibrations can be controlled in the sensor via web interface

- **Robust and durable and long service life**
  Even at short-term overloading, the sensor is protected from damage

- **Plug & Work**
  directly compatible for KUKA and Universal Robots via installations module
**Manual Change System SCHUNK SHS**

Manual tool change system with integrated air feed-through, locking monitoring and optional electric signal feed-through. Ideally suited for use in the flexible production of products with a comprehensive range of variants in which reliable manual changes are required.

- **6 sizes** for optimum size selection and a broad application range
- **Integrated pneumatic feed-through** for reliable energy supply of the handling modules and tools
- **The locking clip opens at the front** this allows the changer to be easily operated even in confined spaces
- **Optional locking and presence monitoring** means more process reliability
- **Broad range of electric, pneumatic and fluid modules** for various energy transmission options
- **ISO flange pattern** for simple assembly on most types of robots without additional adapter plates

---

### SCHUNK Grippers

<table>
<thead>
<tr>
<th>JGP 100</th>
<th>PGN-plus-P 80</th>
<th>PGN-plus-P 100</th>
<th>PZN-plus 64</th>
<th>Robot Accessories</th>
<th>FT-AXIA 80</th>
<th>SHS 50</th>
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<tbody>
<tr>
<td>UR 3</td>
<td>UR 5</td>
<td>UR 10</td>
<td></td>
<td>Direct assembly possible</td>
<td></td>
<td></td>
</tr>
<tr>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>UR 3</td>
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<td>●</td>
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<td>●</td>
<td>●</td>
<td>UR 10</td>
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</table>

<table>
<thead>
<tr>
<th>SCHUNK Grippers</th>
<th>Direct assembly possible</th>
</tr>
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<tbody>
<tr>
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<table>
<thead>
<tr>
<th>Universal Robots</th>
<th>Direct assembly possible</th>
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<tbody>
<tr>
<td>UR 3</td>
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<td>UR 5</td>
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<td>UR 10</td>
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<table>
<thead>
<tr>
<th>Workpiece weight</th>
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<td>※</td>
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<tr>
<td>1.1 – 1.5 kg</td>
<td>Co-act EGP-C 40</td>
<td>※</td>
</tr>
<tr>
<td>1.6 – 2 kg</td>
<td>KGG 100-80</td>
<td>※</td>
</tr>
<tr>
<td>2.1 – 2.5 kg</td>
<td>PSH 22-1</td>
<td>※</td>
</tr>
<tr>
<td>2.6 – 3.0 kg</td>
<td>JGP 80</td>
<td>※</td>
</tr>
<tr>
<td>3.1 – 3.5 kg</td>
<td>JGP 100</td>
<td>※</td>
</tr>
<tr>
<td>3.6 – 4.0 kg</td>
<td>PGN-plus</td>
<td>※</td>
</tr>
<tr>
<td>4.1 – 4.5 kg</td>
<td>PZN-plus 64</td>
<td>※</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technical data</th>
<th>ID 1320370***</th>
<th>1326455**</th>
<th>1327748</th>
<th>1327747</th>
<th>1348129</th>
<th>1348128</th>
<th>1327751</th>
<th>1327750</th>
<th>1327749</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight [kg]</td>
<td>0.7</td>
<td>0.6</td>
<td>1.2</td>
<td>1.7</td>
<td>1.33</td>
<td>1.72</td>
<td>1.38</td>
<td>1.8</td>
<td>1.22</td>
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<tr>
<td>Max. gripping force [N]</td>
<td>140</td>
<td>140</td>
<td>175</td>
<td>320</td>
<td>415</td>
<td>660</td>
<td>550</td>
<td>870</td>
<td>580</td>
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<tr>
<td>Recommended workpiece weight [kg]</td>
<td>0.7</td>
<td>0.7</td>
<td>0.9</td>
<td>1.6</td>
<td>2.1</td>
<td>3.3</td>
<td>2.75</td>
<td>4.35</td>
<td>2.9</td>
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<tr>
<td>Stroke per jaw [mm]</td>
<td>6</td>
<td>6</td>
<td>40</td>
<td>28</td>
<td>8</td>
<td>10</td>
<td>8</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Max. dynam. bending moment [Nm]</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>25</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Max. dynam. bending moment Mz [Nm]</td>
<td>45</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Range of measurement Fxy [N]</td>
<td>200 .. 500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>200 .. 500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Range of measurement Fz [N]</td>
<td>360 .. 900</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>360 .. 900</td>
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<tr>
<td>Moment measurement range [Nm]</td>
<td>8 .. 20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8 .. 20</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Overview of the combination possibilities of gripping systems and robot sizes which result from the comparison of the weight of the gripping system to half of the robot payload. A technical design for the application including top jaws and workpieces is absolutely essential.

**Electric Grippers**

Manual Change System SCHUNK SHS

You can find more technical data in the catalog chapter for the respective gripper.

- **ID 1320370***
- **1326455**
- **1327748**
- **1327747**
- **1348129**
- **1348128**
- **1327751**
- **1327750**
- **1327749**
- **1357169**
- **1334788**
- **1334789**

**Manual tool change system with integrated air feed-through, locking monitoring and optional electric signal feed-through.**

Ideally suited for use in the flexible production of products with a comprehensive range of variants in which reliable manual changes are required.

- **6 sizes** for optimum size selection and a broad application range
- **Integrated pneumatic feed-through** for reliable energy supply of the handling modules and tools
- **The locking clip opens at the front** this allows the changer to be easily operated even in confined spaces
- **Optional locking and presence monitoring** means more process reliability
- **Broad range of electric, pneumatic and fluid modules** for various energy transmission options
- **ISO flange pattern** for simple assembly on most types of robots without additional adapter plates
## Special Grippers

### Pneumatic

<table>
<thead>
<tr>
<th>Universal Gripper with Shank Interface GSW-B</th>
<th>Universal Gripper with Shank Interface and Compensation Unit GSW-B with AGE</th>
<th>Vacuum Gripper with Shank Interface GSW-V</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Universal Gripper with Shank Interface GSW-B" /></td>
<td><img src="image2" alt="Universal Gripper with Shank Interface and Compensation Unit GSW-B with AGE" /></td>
<td><img src="image3" alt="Vacuum Gripper with Shank Interface GSW-V" /></td>
</tr>
</tbody>
</table>

| Comprehensive ranges | ++ | ++ | + |
| Variety of sensor systems | + | + | |

### Description

- **Universal gripper with shank interface for toolholder**
- **Universal gripper with shank interface for toolholder and compensation unit**
- **Vacuum gripper with shank interface for machine self-operation**
- **Magnetic gripper with shank interface for toolholders**
- **Cleaning device with shank interface for toolholders**
- **Lightweight gripper made from a chemical resistant polyamide with a closed membrane system.**
- **6-finger gripper reliable internal and external assembly of O-rings**

### Field of application

- For fully automated loading and unloading of machining centers
- For fully automated loading and unloading of clamping devices such as vises
- For fully automated loading and unloading of flat workpieces
- For cleaning of clamping devices and for automating cleaning of machine tools
- Particularly suitable for highly dynamic applications with light workpieces
- For handling of small parts and plastic parts, as well as sand core handling
- For automated assembly of O-rings

### Ambient conditions

<table>
<thead>
<tr>
<th>Clean</th>
<th>Contaminated/coarse dust</th>
<th>Contaminated/fine dust and liquids</th>
<th>Contaminated/aggressive liquids</th>
<th>High temperature range &gt; 90 °C</th>
<th>Cleanroom</th>
</tr>
</thead>
<tbody>
<tr>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>○</td>
<td>○</td>
<td>○</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- = very highly suitable  ○ = suitable in customized version
++ = wide selection  +++ = wide large selection

#### SCHUNK PZN-plus with Shank Interface GSW-B

The SCHUNK GWS gripper with shank interface loads and unloads machining centers fully automatically using the machine’s own axis. It is inserted in a toolholder like a tool and can be swapped lightning fast out of the tool rack, and loaded from the tool changer into the machine spindle directly by the machine without requiring a robot or gantry.

The result: fully automatic workpiece change only with the help of the machine axis. Operation via the coolant supply.

### Your benefits:

- 30% higher productivity due to automated machine loading
- No additional energy supply required in the machine

[Schunk.com/gsw-b](schunk.com/gsw-b)
<table>
<thead>
<tr>
<th>Magnetic Gripper with Shank Interface GSW-M</th>
<th>Cleaning Device with Shank Interface RGG</th>
<th>Internal Hole Gripper LOG</th>
<th>O-Ring Gripper ORG</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
<tr>
<td>*</td>
<td>*</td>
<td>***</td>
<td>*</td>
</tr>
<tr>
<td>Magnetic gripper with shank interface for toolholders</td>
<td>Cleaning device with shank interface for toolholders</td>
<td>Lightweight gripper made from a chemical resistant polyamide with a closed membrane system.</td>
<td>6-finger gripper reliable internal and external assembly of O-rings</td>
</tr>
<tr>
<td>For fully automated loading and unloading of ferromagnetic workpieces</td>
<td>For cleaning of clamping devices and for automating cleaning of machine tools</td>
<td>Particularly suitable for highly dynamic applications with light workpieces</td>
<td>For automated assembly of O-rings</td>
</tr>
<tr>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>○</td>
<td>●</td>
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<td>●</td>
<td>●</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>●</td>
<td>●</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

**SCHUNK ORG**  
Special Gripper for O-ring Assembly  

The SCHUNK O-ring gripper must be positioned with custom fingers can be used to mount O-rings and other sealing rings, both on shafts (external assembly) and in bores (internal assembly).  

**Your benefits:**  
- **Up to 30% time saving** as the external and internal assembly can be done with one gripper

schunk.com/org
<table>
<thead>
<tr>
<th>Technical data</th>
<th>SVH</th>
<th>SDH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall length [mm]</td>
<td>242.5</td>
<td>248.8</td>
</tr>
<tr>
<td>Total width [mm]</td>
<td>92</td>
<td>120.2</td>
</tr>
<tr>
<td>Max. finger width [mm]</td>
<td>19.6</td>
<td>46.4</td>
</tr>
<tr>
<td>Finger length [mm]</td>
<td>102.7</td>
<td>155</td>
</tr>
<tr>
<td>Finger spacing [mm]</td>
<td>25</td>
<td>66</td>
</tr>
<tr>
<td>Ratio to human hand</td>
<td>1:1</td>
<td>1.4:1</td>
</tr>
<tr>
<td>Number of drives</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Number of fingers</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Degrees of freedom</td>
<td>20</td>
<td>7</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>1.3</td>
<td>1.95</td>
</tr>
<tr>
<td>Power supply [V DC]</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Nominal current [A]</td>
<td>0.16</td>
<td>2</td>
</tr>
<tr>
<td>Max. current [A]</td>
<td>3.5</td>
<td>5</td>
</tr>
</tbody>
</table>

- **CAN**
- **RS232**
- **RS485**
- **EtherNet TCP/IP**

**Environment**
- **Clean environment**
- **Easily contaminated environments**

**Tactile sensor systems**
- **Tactile sensor systems**
SCHUNK Lean Automation: Gripping Systems and Clamping Technology for the Automation of your Machine Tool

When it comes to precision, when seconds are decisive, set-up times are too long and costs too high, there is no room for compromise. And this is precisely where SCHUNK’s lean automation range comes in. Because your machine can do more than you think. With efficient and suitable solutions for loading, changing, and cleaning. And of course with optimum tool and workpiece clamping.

1. TENDO E compact Hydraulic Expansion Toolholder
   The ultimate toolholder for every cutting tool, for every application

2. Vacuum Gripper GSW-V
   for handling workpieces with a flat surface

3. Magnetic Gripper GSW-M
   for handling ferromagnetic workpieces

4. Cleaning Unit RGG
   for cleaning the machine room in a matter of seconds

5. SCHUNK Universal Gripper PZN-plus with shank interface
   for automatic loading and unloading of your machine tool

6. VERO-S Quick-change Pallet System
   Positioning and clamping in a single operation

7. TANDEM Clamping Force Blocks
   for workpiece clamping in confined spaces

8. ROTA Lathe Chuck
   for precise clamping of round workpieces
Handling and Assembly – SCHUNK has the perfect Solution for every Requirement.

With our wide range of pneumatically and electrically driven linear, rotary, and gripper standard components and many products for robots, SCHUNK offers perfect prerequisites for individual handling solutions. An enormous variety of automated solutions can be implemented by using just a few standard components – fast, simple, and professional.

Application-specific automation systems provide high dynamics during short cycle times – from small parts assembly in the production of electronics to the loading and unloading of machine tools to the handling of food products, pharmaceuticals or medical devices.

Over 4,000 standard components in the most comprehensive selection of modules for handling and assembly.
The new pneumatic SCHUNK Swivel Module SRM

The most robust and powerful swivel module on the market

Technical Data

<table>
<thead>
<tr>
<th>Size</th>
<th>14 .. 40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>0.4 .. 10.8 kg</td>
</tr>
<tr>
<td>Angle of rotation</td>
<td>0° .. 180° (Variant 90°)</td>
</tr>
<tr>
<td>Torque</td>
<td>1.1 .. 23.7 Nm</td>
</tr>
<tr>
<td>Moment of inertia</td>
<td>7 kgm²</td>
</tr>
</tbody>
</table>

Modular system
Individual fields of application through optimal air feed-through MDF and electrical feed-through EDF, can be combined in any way desired

Pre-adjusted shock absorber stroke
Meaning faster commissioning

Robust and large flange connection diagram
for higher forces and torques with compact design

Robust seal
made of FKM, very long-life and resilient

Up to 25% more torque moment
due to the large pitch circle of the pinion

Specially developed shock absorbers
for increased moments of inertia for shorter swivel times

Up to 55% larger center bore
The biggest of its class.
Problem-free feed-through of supply lines and electrical cables

Robust seal
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Up to 55% larger center bore
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The most robust and powerful swivel module on the market

The new pneumatic SCHUNK Swivel Module SRM
## Content

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<th>Product Overview</th>
<th>Page</th>
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<tr>
<td>Pneumatic Linear Modules</td>
<td>58</td>
</tr>
<tr>
<td>Electric Linear Modules</td>
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<td>Measuring Systems</td>
</tr>
<tr>
<td>Monitoring Sensors</td>
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</table>
### Rotary Modules

#### Pneumatic

<table>
<thead>
<tr>
<th>Rotary Modules, pneumatic</th>
<th>SFL</th>
<th>RM-W</th>
</tr>
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<tbody>
<tr>
<td><strong>Technical data</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Angle of rotation &lt; 360 ° [°]</td>
<td>90 .. 180</td>
<td>90/180</td>
</tr>
<tr>
<td>Angle of rotation &gt; 360 ° [°]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of sizes</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Torque [Nm]</td>
<td>0.1 .. 3.6</td>
<td>0.7 .. 22</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>0.09 .. 0.71</td>
<td>0.65 .. 8.3</td>
</tr>
<tr>
<td>Max. permissible mass moment of inertia [kgm²]</td>
<td>0.005</td>
<td>0.27</td>
</tr>
<tr>
<td>Repeat accuracy [°]</td>
<td>0.05</td>
<td>up to 0.036</td>
</tr>
<tr>
<td>Protection class IP</td>
<td>52</td>
<td>40</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Rotary actuator with a high torque for easy rotation tasks up to 180°</td>
<td>Swivel vane with high torque for fast rotation tasks</td>
</tr>
</tbody>
</table>

#### Options/versions

| Center bore | ◆◆◆◆◆ |
| Pneumatic rotary feed-through | ◆◆◆◆◆ |
| Electric rotary feed-through | ◆◆ |
| Center position | ◆ |
| ATEX-certified | ◆◆ |
| Gripping force maintenance | ◆◆ |
| Rotation adapter | ◆ |
| Monitoring options | ◆◆ |
| Inductive proximity switches | ◆ |
| Magnetic switches | ◆ |

#### Field of application

- The optimum solution for easy rotation tasks
- For fast movement cycles

#### Ambient conditions

- Clean | ◆ |
- Slightly dirty | ◆ |
- Extremely dirty | ◆ |

◆◆◆◆◆ = fully supported
## Rotary Modules

<table>
<thead>
<tr>
<th>Rotary Modules</th>
<th>Pneumatic Swivel Vane</th>
<th>Rotary Actuators</th>
<th>Swivel Heads</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRU-mini</td>
<td></td>
<td>SRU-plus</td>
<td>SRH-plus</td>
</tr>
<tr>
<td>0 .. 180</td>
<td>0 .. 190</td>
<td>0 .. 180</td>
<td>0 .. 180</td>
</tr>
<tr>
<td>4</td>
<td>6</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>0.16 .. 1.15</td>
<td>0.05 .. 1.9</td>
<td>1.13 .. 23.7</td>
<td>3 .. 115</td>
</tr>
<tr>
<td>0.15 .. 0.65</td>
<td>0.046 .. 1.6</td>
<td>0.44 .. 10.75</td>
<td>1.2 .. 26.5</td>
</tr>
<tr>
<td>0.01</td>
<td>0.023</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>0.07</td>
<td>up to 0.082</td>
<td>0.03 .. 0.07</td>
<td>0.05</td>
</tr>
<tr>
<td>65</td>
<td>40</td>
<td>65</td>
<td>67</td>
</tr>
</tbody>
</table>

- Light and fast flat swivel unit with multiple options such as fluid feed-through, hydraulic damping, hydraulic-elastomer damping and a pneumatic center position
- Light and fast swivel unit
- Universal unit for pneumatic swivel and turning movements
- Universal unit for pneumatic swivel and turning movements
- Universal swivel head SRH-plus for fast loading and unloading tasks, with integrated fluid and electrical feed-through

<table>
<thead>
<tr>
<th>Option/Versions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center bore</td>
</tr>
<tr>
<td>Pneumatic rotary feed-through</td>
</tr>
<tr>
<td>Electric rotary feed-through</td>
</tr>
<tr>
<td>Center position</td>
</tr>
<tr>
<td>ATEX-certified</td>
</tr>
<tr>
<td>Gripping force maintenance</td>
</tr>
<tr>
<td>Rotation adapter</td>
</tr>
<tr>
<td>Monitoring options</td>
</tr>
<tr>
<td>Inductive proximity switches</td>
</tr>
<tr>
<td>Magnetic switches</td>
</tr>
</tbody>
</table>

### Technical Data

- **Angle of rotation**
  - < 360° [°] 90 .. 180 90/180
  - > 360° [°] 22.5 .. 90

- **Number of sizes**
  - 3
  - 4

- **Torque [Nm]**
  - 0.1 .. 3.6
  - 0.7 .. 22

- **Weight [kg]**
  - 0.09 .. 0.71
  - 0.65 .. 8.3

- **Max. permissible mass moment of inertia [kgm²]**
  - 0.005
  - 0.27

- **Repeat accuracy [°]**
  - 0.05 up to 0.036
  - 0.07 up to 0.082

- **Protection class IP**
  - 52
  - 40

### Description

- Rotary actuator with a high torque for easy rotation tasks up to 180°
- Swivel vane with high torque for fast rotation tasks
- Light and fast flat swivel unit with multiple options such as fluid feed-through, hydraulic damping, hydraulic-elastomer damping and a pneumatic center position
- Light and fast swivel unit
- Universal unit for pneumatic swivel and turning movements
- Universal unit for pneumatic swivel and turning movements
- Universal swivel head SRH-plus for fast loading and unloading tasks, with integrated fluid and electrical feed-through

### Field of Application

- The optimum solution for easy rotation tasks
- For fast movement cycles
- For universal use with any swiveling movement
- For universal use with any swiveling movement
- Recommended for loading and unloading machine tools

### Ambient Conditions

- Clean
- Slightly dirty
- Extremely dirty

- **Recommended workpiece weight [kg]**
  - 0.2 .. 0.61
  - 0.25 .. 1.4

- **Closing/opening time [s]**
  - 0.01 .. 0.05
  - 0.015 .. 0.06

- **Max. permissible finger length [mm]**
  - 64
  - 100

- Gripping force [N]
  - 39 .. 162
  - 50 .. 420

- Stroke per jaw [mm]
  - 1.5 .. 10
  - 2.5 .. 8

- Recommended workpiece weight [kg]
  - 0.2 .. 0.61
  - 0.25 .. 1.4

- Closing/opening time [s]
  - 0.01 .. 0.05
  - 0.015 .. 0.06

- Max. permissible finger length [mm]
  - 64
  - 100

- Gripping force [N]
  - 39 .. 162
  - 50 .. 420

- Stroke per jaw [mm]
  - 1.5 .. 10
  - 2.5 .. 8

- Recommended workpiece weight [kg]
  - 0.2 .. 0.61
  - 0.25 .. 1.4

- Closing/opening time [s]
  - 0.01 .. 0.05
  - 0.015 .. 0.06
### Rotary Modules

**Pneumatic**

<table>
<thead>
<tr>
<th>SKE</th>
<th>Swivel Finger</th>
<th>Rotary Indexing Tables</th>
<th>Rotary Gripping Modules with 2-Finger Parallel Gripper</th>
<th>RP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GFS</td>
<td>RST-D</td>
<td>GSM-P</td>
<td></td>
</tr>
</tbody>
</table>

| 90   | 90 .. 180     | 0 .. 180                | 0 .. 190                                              |     |
| 4    | 4             | 3                       | 4                                                     | 5   |
| 0.4 .. 9 | 0.64 .. 10 | 3.1 .. 29.3              | 0.3 .. 2.9                                            | 0.38 .. 1.9 |
| 0.13 .. 1.95 | 0.55 .. 5     | 1 .. 8.3                | 0.37 .. 1.51                                          | 0.5 .. 2.2 |
| 0.6  |               |                         |                                                       |     |
| 0.03 | 0.07          | up to 0.04               | 0.02                                                 | 0.02 |
| 30   | 54            | 50                      | 30                                                   | 40  |

**90° swivel head with single piston drive**

- Rotary finger for turning work-pieces that are held by a gripper or can also be used as a special rotary unit
- Ring indexing unit for endlessly turning with a rotation angle up to 90° per cycle
- Compact gripper swivel combination, consisting of a powerful rotor drive and a 2-finger parallel gripper
- Compact 2-finger parallel gripper swivel module with double piston rack and pinion swivel drive

| 39 .. 162 | 50 .. 420 |
| 1.5 .. 10  | 2.5 .. 8  |
| 0.2 .. 0.61 | 0.25 .. 1.4 |
| 0.01 .. 0.05/0.01 .. 0.05 | 0.015 .. 0.06/0.015 .. 0.06 |
| 64         | 100       |

**Ambient conditions**

- **Clean**
- **Slightly dirty**
- **Extremely dirty**

**Options/versions**

- Center bore
- Pneumatic rotary feed-through
- Electric rotary feed-through
- Center position
- ATEX-certified
- Gripping force maintenance
- Rotation adapter
- Monitoring options
  - Inductive proximity switches
  - Magnetic switches

**Field of application**

- The optimum solution for easy rotation tasks
- For fast movement cycles
- For gripping and swiveling small to medium-sized workpieces in clean environments
- For gripping and swiveling workpieces in clean environments
- For light external loads
- For universal use
- For fast movement cycles

**Technical data**

- **Angle of rotation**
  - < 360 °
  - > 360 °
- **Number of sizes**
- **Torque**
- **Weight**
- **Max. permissible mass moment of inertia**
- **Repeat accuracy**
- **Protection class**

**Description**

- Light and fast flat swivel unit with multiple options such as fluid feed-through, hydraulic damping, hydraulic-elastomer damping and a pneumatic center position
- Light and fast swivel unit
- Universal unit for pneumatic swivel and turning movements
- Universal swivel head SRH-plus for fast loading and unloading tasks, with integrated fluid and electrical feed-through
- 90° swivel head with single piston drive
- Rotary finger for turning work-pieces that are held by a gripper or can also be used as a special rotary unit
- Compact gripper swivel combination, consisting of a powerful rotor drive and a 2-finger parallel gripper
- Compact 2-finger parallel gripper swivel module with double piston rack and pinion swivel drive

**Gripping force**

- 39 .. 162
- 50 .. 420

**Stroke per jaw**

- 1.5 .. 10
- 2.5 .. 8

**Recommended workpiece weight**

- 0.2 .. 0.61
- 0.25 .. 1.4

**Closing/opening time**

- 0.01 .. 0.05/
- 0.01 .. 0.05/
- 0.015 .. 0.06/
- 0.015 .. 0.06

**Max. permissible finger length**

- 64
- 100
Universal Swivel Unit SRM


The pneumatic SCHUNK universal swivel unit SRM means more power, greater modularity, and greater economy in production automation. Specially developed, inner shock absorbers ensure maximum performance in the smallest space. The especially large center bore for feed-through of various media and a unique set-up enable tailored, highly efficient solutions.

Your benefits:

• **Robust and large flange connection diagram** for higher forces and torques with compact design

• **Robust seal** made of FKM, very long-life and resilient

• **Up to 25% more torque moment** due to the large pitch circle of the pinion

• **Specially developed shock absorbers** for increased moments of inertia for shorter swivel times

• **Up to 55% larger center bore** The biggest of its class. Problem-free feed-through of supply lines and electrical cables

• **Pre-adjusted shock absorber stroke** Meaning faster commissioning

• **Modular system** Individual fields of application through optimal air feed-through MDF and electrical feed-through EDF, can be combined in any way desired

schunk.com/srm
## Rotary Modules

### Electric

<table>
<thead>
<tr>
<th>Rotary Modules, electric</th>
<th>Rotary Actuators</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Alternative</td>
</tr>
<tr>
<td></td>
<td>ERP</td>
</tr>
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</table>

### Technical data

<table>
<thead>
<tr>
<th></th>
<th>Alternative</th>
<th>Adaptable</th>
<th>Intelligent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of sizes</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Torque [Nm]</td>
<td>2</td>
<td>75</td>
<td>4.3 .. 98</td>
</tr>
<tr>
<td>Max. speed [RPM]</td>
<td>62.5</td>
<td>13 .. 78</td>
<td></td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>3.61</td>
<td>15.5</td>
<td>1.9 .. 6.4</td>
</tr>
<tr>
<td>Max. permissible mass moment of inertia [kgm²]</td>
<td>0.1</td>
<td>20</td>
<td>9.5</td>
</tr>
<tr>
<td>Repeat accuracy [°]</td>
<td>0.02</td>
<td>0.035</td>
<td>0.03</td>
</tr>
<tr>
<td>Gear ratio</td>
<td>48</td>
<td>51 .. 161</td>
<td></td>
</tr>
<tr>
<td>Intermediate circuit/nominal voltage [V]</td>
<td>24</td>
<td>Motor-dependent</td>
<td>24</td>
</tr>
<tr>
<td>Nominal current [A]</td>
<td>0.8</td>
<td></td>
<td>5 .. 12</td>
</tr>
<tr>
<td>Diameter of center bore</td>
<td>17.1</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Number of electric feed-throughs</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Number of pneumatic feed-throughs</td>
<td>0</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Protection class IP</td>
<td>54</td>
<td>65</td>
<td>40</td>
</tr>
<tr>
<td>Type of measuring system</td>
<td>Motor-dependent</td>
<td>Incremental</td>
<td></td>
</tr>
<tr>
<td>Angle of rotation [°]</td>
<td>45 .. 180</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Description

- Elektrische Schwenk- einheit mit Direktantrieb und integrierter Steuerung mit Automationsfunktion
- Electric rotary module with adaptable servo-motor, angle of rotation > 360°, center bore and optional feed-throughs
- Servo-electric rotary actuator with angle of rotation > 360°, precision gear and integrated electronics

### Motor & Controller*

<table>
<thead>
<tr>
<th></th>
<th>Alternative</th>
<th>Adaptable</th>
<th>Intelligent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor</td>
<td>Integriert</td>
<td>Adaptable</td>
<td>Integrated</td>
</tr>
<tr>
<td>Controller</td>
<td>Integriert</td>
<td>External</td>
<td>Integrated</td>
</tr>
<tr>
<td>Controller type</td>
<td>Motor-dependent</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Options/versions

<table>
<thead>
<tr>
<th></th>
<th>Alternative</th>
<th>Adaptable</th>
<th>Intelligent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center bore</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pneumatic rotary feed-through</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electric rotary feed-through</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brake</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Field of application

- Elektrisches Schwenken von kleinen und mittelschweren Werkstücken ohne flexibles Positionieren
- Universal, extremely flexible rotary module
- Universal-use, extremely flexible rotary actuator
- As a component in a handling or positioning system
- As an axis for lightweight arms in industrial or service robotics

### Ambient conditions

- Clean
- Slightly dirty
- Extremely dirty

* = fully supported ** = More controllers available upon request

---

**Note:** Technical data and specifications may vary depending on specific application and component requirements. Always consult the latest manufacturer's documentation for the most accurate information.
<table>
<thead>
<tr>
<th>Drives</th>
<th>PRH</th>
<th>ERD</th>
<th>ERS</th>
<th>PDU 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>0.75 .. 6.8</td>
<td>0.4 .. 1.2</td>
<td>2.5 .. 10</td>
<td>4.3 .. 98</td>
<td></td>
</tr>
<tr>
<td>35 .. 117</td>
<td>600</td>
<td>140 .. 2300</td>
<td>13 .. 78</td>
<td></td>
</tr>
<tr>
<td>0.75 .. 1.55</td>
<td>1.2 – 1.8</td>
<td>2.7 – 10.9</td>
<td>1.9 .. 6.1</td>
<td></td>
</tr>
<tr>
<td>0.3</td>
<td>0.0012</td>
<td>0.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.004</td>
<td>0.01</td>
<td>up to 0.01</td>
<td>0.03</td>
<td></td>
</tr>
<tr>
<td>30 .. 100</td>
<td>560</td>
<td>560</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>1.3 .. 6.5</td>
<td>0.43 .. 1.6</td>
<td>1.2 .. 1.8</td>
<td>5 .. 13</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>4</td>
<td>8</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>54 .. 65</td>
<td>40 – 54</td>
<td>40</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Incremental</td>
<td>Absolute (Hiperface)</td>
<td>Incremental</td>
<td>Incremental</td>
<td></td>
</tr>
<tr>
<td>Servo-electric miniature rotary actuator with angle of rotation &gt; 360°, center bore and precision gear</td>
<td>Powerful torque motor with absolute-value transducer and electric and pneumatic rotary feed-throughs</td>
<td>Electric rotary actuator with torque motor and angle of rotation &gt; 360° in optional protection class IP54 plus optional rotary feed-through and with holding brake</td>
<td>Servo-electric drive with angle of rotation &gt; 360°, precision gear and integrated electronics</td>
<td></td>
</tr>
</tbody>
</table>

** = More controllers available upon request
### Rotary Modules

#### Gripper Swivel Modules with 2-Finger Parallel Gripper

<table>
<thead>
<tr>
<th>2-Axis modules</th>
<th>PSM 2</th>
<th>PW</th>
<th>EGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0.16 .. 0.88</td>
<td>2125 .. 6500</td>
<td>1.3 .. 1.9</td>
</tr>
<tr>
<td>2</td>
<td>12 .. 23/2 .. 12</td>
<td>1.8 .. 3.4</td>
<td>0.45 .. 1.2</td>
</tr>
<tr>
<td>2</td>
<td>0.04 .. 0.11</td>
<td>0.00018</td>
<td>0.00012</td>
</tr>
<tr>
<td>0.2</td>
<td>up to 0.03</td>
<td>1</td>
<td>0.03 .. 0.05</td>
</tr>
<tr>
<td>24</td>
<td>24</td>
<td>24</td>
<td>40</td>
</tr>
<tr>
<td>6 .. 12</td>
<td>1.6</td>
<td>30</td>
<td>40</td>
</tr>
</tbody>
</table>

#### Servo-electric drive with angle of rotation > 360° and integrated electronics

- Servo-electric rotary pan-tilt actuator with precision gear and integrated electronics
- Compact electrical 2-finger parallel rotary gripper module with smooth-running roller bearing guide

### Technical Data

- **Servo-electric pan-tilt actuator with angle of rotation > 360°:**
  - 15 .. 140
  - 3 .. 6
  - 0 .. 0.55
  - 0.03 .. 0.22
  - 50

### Options/versions

- **Learn Funktion**
- **Steuerung mit Auto-progression und integrierter einheit mit Direktantrieb**
- **ERP ERM PR 2 PRH ERD ERS PDU 2**

### Description

- **Universal use, highly versatile rotary pan–tilt actuator**
- As a component in a handling or positioning system for cameras or laser scanners
- Can be used as a wrist module on robots
- For electrical gripping and swiveling of small to medium-sized workpieces up to 270°
SCHUNK Gripper Swivel Unit EGS

The world’s most compact electric gripper swivel unit.

The SCHUNK electric gripper swivel unit EGS facilitates the switch to pneumatic-free handling solutions. For the first time ever, it successfully combines electrical gripping and swiveling in the smallest space in a compact housing. The low-maintenance and price-attractive module paves the way for highly efficient pneumatic-free systems. Coupling of the gripping and rotation gear, patented by SCHUNK, allows continuous rotation without an electric feed-through.

Your benefits:
• Quick switch to pneumatic-free handling
• Simple, fast commissioning without external regulators and additional programming
• Gripping and swiveling with this extremely compact module
• Swiveling time 0.18 s/180°
• Gripping time 0.03 s/stroke
• Freely definable angle of rotation between 30° and 270°
• 4 digital inputs (open gripper, close gripper, turn left, turn right)
• Controlled with 24 V

SCHUNK Swivel Module ERP with 24 V Technology

Compact, dynamic and versatile

The ERP is the most easy to adjust swivel module on the market. For commissioning the 24 V component, it is connected with the control unit via digital I/O, the swivel unit is defined via end stops (45°/90°/180°), and if required the end position can be mechanically fine adjusted (±5°). Everything else is done by the auto-learn technology. Three to five swivel motions are enough for completing the programming.

Your benefits:
• The intelligent auto-learn technology automatically adjusts the movement profile to the part weight
• Control via digital I/O
• Compatible with all control systems
• Repeatability of ±0.01°
## Linear Modules

### Pneumatic

<table>
<thead>
<tr>
<th>Pneumatic Linear Modules</th>
<th>Stroke Module HLM</th>
<th>Compact Slide CLM</th>
<th>Universal Linear Module LM</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image of Stroke Module HLM" /></td>
<td><img src="image2.png" alt="Image of Compact Slide CLM" /></td>
<td><img src="image3.png" alt="Image of Universal Linear Module LM" /></td>
<td></td>
</tr>
</tbody>
</table>

### Drive type

- Piston rod cylinders
- Rodless cylinder

### Technical data

<table>
<thead>
<tr>
<th></th>
<th>HLM</th>
<th>CLM</th>
<th>LM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of sizes</td>
<td>4</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Number of pistons</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Repeat accuracy [mm]</td>
<td>up to 0.01</td>
<td>up to 0.01</td>
<td>up to 0.01</td>
</tr>
<tr>
<td>Useful stroke [mm]</td>
<td>0 .. 150</td>
<td>0 .. 150</td>
<td>0 .. 450</td>
</tr>
<tr>
<td>Max. driving force [N]</td>
<td>482</td>
<td>482</td>
<td>753</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>0.5 .. 5.64</td>
<td>0.07 .. 5.32</td>
<td>0.44 .. 15.81</td>
</tr>
<tr>
<td>Adjustable end positions</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Max. end positions adjustment per side [mm]</td>
<td>25</td>
<td>25</td>
<td>25</td>
</tr>
</tbody>
</table>

### Guidance type

- Cross roller guide
- Cross roller guide
- Cross roller guide

### Comprehensive ranges

<table>
<thead>
<tr>
<th></th>
<th>HLM</th>
<th>CLM</th>
<th>LM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required maintenance</td>
<td>Hydraulic shock absorbers, lubrication of the guide, replacement of seals</td>
<td>Hydraulic shock absorbers, lubrication of the guide, replacement of seals</td>
<td>Hydraulic shock absorbers, lubrication of the guide, replacement of seals</td>
</tr>
<tr>
<td>Note</td>
<td>Optionally available with rod lock</td>
<td>Optionally available with rod lock</td>
<td>Optionally available with up to two intermediate positions and with rod lock</td>
</tr>
</tbody>
</table>

### Field of application

- Compact
- Optimum for lifting workpieces
- Ideal for space-optimized applications
- Universally applicable
- Optimum for short-stroke applications
- For demanding requirements with respect to precision
- Universally applicable
- For demanding requirements with respect to precision, flexibility and rigidity

### Ambient conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>HLM</th>
<th>CLM</th>
<th>LM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Slightly dirty</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Dirty</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- ● = fully supported
- ○ = technically possible
- + = medium-sized selection
- ++ = wide selection
- +++ = very wide selection

---

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### SCHUNK Universal Linear Module LM

Pneumatic linear modules LM from SCHUNK are characterized by long life span and reliability. The use of cross roller guides convinces with respect to accuracy, rigidity, and low friction. And also in terms of minimal space requirements, the linear modules score with their very compact design, even when two guide rails running in parallel are used.

![SCHUNK Universal Linear Module LM](https://www.schunk.com/)

**Your benefits:**
- **5 sizes** with a total of 52 stroke variants
- **High availability off the shelf**
- **Over 20 years of experience** with cross roller guides
- **Can be flexibly combined** by up to 38 fastening threads on one side
- **No additional interfering contour** when adding shock absorbers or sensors

### Intermediate Stops ZZA for pneumatic Linear Modules LM and KLM

Up to two intermediate stops ZZA are possible per linear module. Therefore up to four positions are available to the linear unit. With the intermediate stops ZZA on a linear unit, NOK parts (not OK parts) can be rejected for instance on an assembly station.

![Intermediate Stops ZZA](https://www.schunk.com/)

**Your benefits:**
- **Up to two intermediate positions** possible
- **No oscillations** in the intermediate position
- Can be moved from the intermediate position in both directions

---

<table>
<thead>
<tr>
<th>Linear Module</th>
<th>Gantry Axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>KLM</td>
<td>PMP</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Drive type</th>
<th>Pneumatic</th>
<th>Linear Modules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piston rod cylinders</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Rodless cylinder</td>
<td>●</td>
<td>●</td>
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</table>

<table>
<thead>
<tr>
<th>Technical data</th>
<th>Number of sizes</th>
<th>Number of pistons</th>
<th>Repeat accuracy [mm]</th>
<th>Useful stroke [mm]</th>
<th>Max. driving force [N]</th>
<th>Weight [kg]</th>
<th>Adjustable end positions</th>
<th>Max. end positions adjustment per side [mm]</th>
<th>Guidance type</th>
<th>Required maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
<td>1</td>
<td>up to 0.02</td>
<td>0 .. 150</td>
<td>482</td>
<td>0.5 .. 5.64</td>
<td>Yes</td>
<td>25</td>
<td>Cross roller guide</td>
<td>Hydraulic shock absorbers, lubrication of the guide, replacement of seals</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>1</td>
<td>0.04</td>
<td>0 .. 300</td>
<td>482</td>
<td>0.07 .. 5.32</td>
<td>Yes</td>
<td>50</td>
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<td>Hydraulic shock absorbers, lubrication of the guide, replacement of seals</td>
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<tr>
<td></td>
<td>5</td>
<td></td>
<td>250</td>
<td>0 .. 3700</td>
<td>753</td>
<td>0.44 .. 15.81</td>
<td>Yes</td>
<td>25</td>
<td>Cross roller guide</td>
<td>Hydraulic shock absorbers, lubrication of the guide, replacement of seals</td>
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<tr>
<td></td>
<td>2</td>
<td></td>
<td>3.12</td>
<td>3 .. 44.91</td>
<td>753</td>
<td>0.5 .. 13.2</td>
<td>Yes</td>
<td>50</td>
<td>Ball bushing guide</td>
<td>(Double) profiled rail guide</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Optional availability</th>
<th>Ball bushing guide</th>
<th>Hydraulic shock absorbers, lubrication of the guide, replacement of seals</th>
<th>Optionally available with up to two intermediate positions, rod lock and dustproof version</th>
<th>Optionally available with up to two intermediate positions, rod lock and dustproof version</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Simple stroke module</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Optimum use as Z-axis in handling modules</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>For high requirements of flexibility</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Robust and precise gantry systems</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>For large range of stroke</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
SCHUNK Linear Module ELP

The new benchmark for mechatronic linear modules.
The SCHUNK ELP is the most easy to adjust electric linear module on the market and is put into operation more quickly than the pneumatic linear module. Due to the revolutionary auto-learn function, no more shock absorbers are required. This makes the SCHUNK ELP practically wear-free and therefore robust and long-lasting. Actuation can be done in decentralized manner using a fieldbus distributor or directly over digital signals.

Your benefits:

- **Simple 1:1 replacement** of pneumatic through mechatronic components
- **No shock absorbers**, therefore **no wearing parts and maintenance-free!**
- **Commissioning in just 2 working steps** due to the revolutionary auto-learn function
- **Simple speed configuration** using two rotary switches
- **0.01 mm repeat accuracy** due to the backlash-free roller guidance
- **Linear direct drive** for high dynamics and long lifespan
- **Version without auto-learn function is available** for pressing and joining applications

schunk.com/elp
### Electric Linear Modules

#### Alternative

<table>
<thead>
<tr>
<th>Compact Linear Module ELP</th>
<th>Compact Linear Module ELM</th>
<th>Compact Linear Module ELS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

**Drive type**

- Spindle drive
- Toothed belt drive
- Rack and pinion drive
- Direct drive (linear motor)

**Technical data**

<table>
<thead>
<tr>
<th>Number of sizes</th>
<th>Repeat accuracy [mm]</th>
<th>±0.01</th>
<th>±0.05</th>
<th>±0.01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. useful stroke [mm]</td>
<td>200</td>
<td>260</td>
<td>125</td>
<td></td>
</tr>
<tr>
<td>Max. driving force [N]</td>
<td>104</td>
<td>160</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>Max. speed [m/s]</td>
<td>Auto-learn function</td>
<td>1.5</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Max. acceleration [m/s²]</td>
<td>Auto-learn function</td>
<td>40</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

**Type of measuring system**

- Hall-effect sensor
- Absolute or incremental

**Guidance type**

- Cross roller guide
- Profiled rail guide
- Cross roller guide

**Comprehensive ranges**

<table>
<thead>
<tr>
<th>Maintenance-free</th>
<th>Cleaning of the magnetic tracks, lubrication of the guide</th>
<th>Cleaning of the magnetic tracks, lubrication of the guide</th>
</tr>
</thead>
</table>

**Motor & controller**

- Integrated
- LinMot*
- Bosch Rexroth, Siemens*

**Field of application**

- Simple, compact short stroke module
- For small loads
- For exceptionally dynamic positionings
- Extremely compact and simple short stroke module
- For small loads
- For exceptionally dynamic positionings
- Compact and simple short stroke module
- For small loads
- For exceptionally dynamic positionings

**Ambient conditions**

- Clean

- **Note**

- Axis with mechanically adjustable stop positions, optionally available with load balance
- Freely programmable, optionally available with rod lock
- Freely programmable, optionally available with rod lock, brake or load balance

---

* = Additional controllers available upon request
** = Depending on the drive type
<table>
<thead>
<tr>
<th>Stroke Module</th>
<th>Universal Linear Module</th>
<th>Universal Linear Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDK</td>
<td>LDN</td>
<td>LDM</td>
</tr>
<tr>
<td>![Image](62x622 to 97x703)</td>
<td>![Image](308x643 to 393x682)</td>
<td>![Image](448x237 to 556x216)</td>
</tr>
</tbody>
</table>

| 2               | 2                        | 2                        |
| 0.01            | 0.01                     | 0.01                     |
| 200             | 2700                     | 2700                     |
| 500             | 500                      | 1000                     |
| 4               | 4                        | 4                        |
| 40              | 40                       | 40                       |
| Abs. or incr.   | Abs. or incr.            | Abs. or incr.            |
| Roller guide    | Roller guide             | Roller guide             |
| ++              | +++                      | ++                      |
| Cleaning the    | Cleaning the             | Cleaning the             |
| magnetic tracks | magnetic tracks          | magnetic tracks          |
| Freely          | Freely                   | Freely                   |
| programmable,   | programmable,            | programmable,            |
| optionally      | optionally               | optionally               |
| available,      | available,               | available,               |
| with brake,     | with brake,              | with brake,              |
| limit switch,   | limit switch,            | limit switch,            |
| reference       | reference                | reference                |
| switch, cable   | switch, cable            | switch, cable            |
| track, supported| track, supported         | track, supported         |
| profile         | profile                  | profile                  |
| Integrated      | Integrated               | Integrated               |
| Bosch Rexroth,  | Bosch Rexroth,           | Bosch Rexroth            |
| Siemens*        | Siemens*                | Siemens*                |
| Multi-Ethernet  | Multi-Ethernet           | Multi-Ethernet           |
| (Sercos III, PROFINET IO, EtherCAT, PROFIBUS) | (Sercos III, PROFINET IO, EtherCAT, PROFIBUS) | (Sercos III, PROFINET IO, EtherCAT, PROFIBUS) |

- Compact and simple short stroke module
- For small loads
- For exceptionally dynamic positionings
- Universally applicable
- Linear motor axis with simple X-profile
- For applications with demanding requirements with respect to dynamics
- For a faster and precise movement or controlled press-in operation of workpieces in the high-speed assembly
- Universally applicable
- Linear motor axis with double X-profile
- For medium loads with very high dynamic and precise requirements
- For a faster and precise movement or controlled press-in operation of workpieces in the high-speed assembly
<table>
<thead>
<tr>
<th>Universal Linear Module</th>
<th>Flat Linear Module</th>
<th>Compact Linear Module</th>
<th>Linear Table Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDT</td>
<td>LDL</td>
<td>ELS</td>
<td>Alpha</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>±0.01</td>
<td>±0.01</td>
<td>±0.01</td>
<td>±0.03</td>
</tr>
<tr>
<td>2700</td>
<td>3800</td>
<td>260</td>
<td>2540</td>
</tr>
<tr>
<td>1500</td>
<td>500</td>
<td>150</td>
<td>18000</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>1</td>
<td>2.5</td>
</tr>
<tr>
<td>40</td>
<td>40</td>
<td>8.5</td>
<td>20</td>
</tr>
<tr>
<td>Absolute or incremental</td>
<td>Absolute or incremental</td>
<td>Motor-dependent</td>
<td>Motor-dependent</td>
</tr>
<tr>
<td>Roller guide</td>
<td>Roller guide</td>
<td>Profiled rail guide</td>
<td>Double-profiled rail guide</td>
</tr>
<tr>
<td>++</td>
<td>+</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Cleaning the magnetic tracks</td>
<td>Cleaning the magnetic tracks</td>
<td>Lubrication of the guide and the spindle</td>
<td>Lubrication of the guide and the spindle</td>
</tr>
<tr>
<td>Freely programmable, optionally available with brake, limit switch, reference switch, cable track, supported profile</td>
<td>Freely programmable, optionally available with brake, limit switch, reference switch, cable track</td>
<td>Freely programmable, also available standard-equipped with Bosch Rexroth motor</td>
<td>Freely programmable, optionally available with customized motor, limit switch and reference switch</td>
</tr>
<tr>
<td>Integrated</td>
<td>Integrated</td>
<td>Adaptable</td>
<td>Adaptable</td>
</tr>
<tr>
<td>Bosch Rexroth, Siemens*</td>
<td>Bosch Rexroth, Siemens*</td>
<td>Motor-dependent</td>
<td>Motor-dependent</td>
</tr>
<tr>
<td>Multi-Ethernet (Sercos III, PROFINET IO, EtherCAT, PROFINBUS)</td>
<td>Multi-Ethernet (Sercos III, PROFINET IO, EtherCAT, PROFINBUS)</td>
<td>Controller-dependent</td>
<td>Controller-dependent</td>
</tr>
</tbody>
</table>

- Universally usable linear motor axis with triple X-profile
- For heavy loads with very high dynamic and precise requirements
- For a faster and precise movement or controlled press-in operation of workpieces in the high-speed assembly.
- Flat linear motor axis
- For applications with very high dynamic and precise requirements
- For a faster and precise movement or controlled press-in operation of workpieces in the high-speed assembly.
- Compact spindle cantilever axis
- For short strokes
- For high precision and driving force requirements
- Particularly flat design for table assembly
- For high precision and driving force requirements
<table>
<thead>
<tr>
<th>Universal Linear Module</th>
<th>Flat Linear Module</th>
<th>Universal Linear Module</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beta</strong></td>
<td><strong>Delta</strong></td>
<td><strong>Gamma</strong></td>
</tr>
<tr>
<td>![Image](Linear Modules Electric.png)</td>
<td>![Image](Flat Linear Modules.png)</td>
<td>![Image](Universal Linear Modules.png)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Feature</th>
<th>Universal Linear Module</th>
<th>Flat Linear Module</th>
<th>Universal Linear Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive controller</td>
<td>Bosch Rexroth, Siemens*</td>
<td>Bosch Rexroth, Siemens*</td>
<td>Bosch Rexroth, Siemens*</td>
</tr>
<tr>
<td>Motor</td>
<td>Integrated, Adaptable</td>
<td>Integrated, Adaptable</td>
<td>Motor-dependent</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Maintenance-free</td>
<td>Cleaning of the magnetic guide</td>
<td>Maintenance-dependent</td>
</tr>
<tr>
<td>Max. acceleration [m/s²]</td>
<td>40</td>
<td>100</td>
<td>40</td>
</tr>
<tr>
<td>Max. speed [m/s]</td>
<td>1.5</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Max. driving force [N]</td>
<td>104</td>
<td>160</td>
<td>150</td>
</tr>
<tr>
<td>Max. useful stroke [mm]</td>
<td>200</td>
<td>260</td>
<td>200</td>
</tr>
<tr>
<td>Repeat accuracy [mm]</td>
<td>±0.01</td>
<td>±0.05</td>
<td>±0.01</td>
</tr>
</tbody>
</table>

**Field of application**

- **Alpha**
  - Compact Linear Module
  - Stroke Module
  - Linear Table
  - LDK
  - LDL

- **Beta**
  - Rack and pinion drive
  - Spindle drive
  - LDK
  - LDL

- **Delta**
  - Rack and pinion drive
  - Spindle drive
  - LDK
  - LDL

- **Gamma**
  - Rack and pinion drive
  - Spindle drive
  - LDK
  - LDL

**Interface**

- Digital I/O
- Sercos III
- EtherCAT
- PROFINET
- EtherNet/IP
- CANopen
- PROFIBUS DP

**Additional features**

- **Ball-screw drive** for high precision and driving force requirements
- **Belt drive** for high dynamic requirements with large stroke
- **Universal applicable**
- **Spindle drive** for high precision requirements with high driving force
- **Belt drive** for high dynamic requirements with large stroke
- **With closed profile** for high rigidity requirements
- **With rack and pinion drive** for precise applications and large strokes
- **Toothed belt drive** for dynamic applications

**Controller**

- **Controller-dependent**
  - Motor-dependent
  - Controller-dependent
  - Motor-dependent
  - Controller-dependent
SCHUNK Linear Module Beta

Linear module with adaptive drive.
The product range includes 12 sizes. Depending on the application, choose between spindles, belt or rack and pinion depending on the drive type as well as between roller guidance and profile rail guidance. The Beta series is outstanding for its economical axis applications with high requirements with respect to dynamism and smooth running. Even long stroke lengths can be implemented with this drive system.

Your benefits:
- 12 profile sizes
- 3 drive types (spindle/belts/gear rack)
- 2 guide systems
- 100% modular for high availability
- 20 years of experience with linear systems
- 100% flexible actuation due to adaptable motors

Accessories for spindle, belt and rack and pinion driven Linear Modules

Servomotors
With the linear modules Alpha, Beta, Gamma, Delta and ELS with adaptable drive, you receive from SCHUNK on request an already completed configuration with servomotors that is designed in accordance with your specific application and technical requirements. We can use servomotors either from Bosch Rexroth, Siemens or SCHUNK.

We will be happy to supply you with the required IndraDrive series controller from Bosch Rexroth or the SINAMICS series from Siemens – depending on the servo motors used. Naturally, you have the option of attaching any other servo motor yourself to the linear axes listed.

Bosch Rexroth servomotor
Siemens servomotor
Compact SCHUNK servo drive type PDU 2 with precision gear and integrated controller
### Pick & Place Unit

<table>
<thead>
<tr>
<th></th>
<th>Pneumatic</th>
<th>Electric*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PPU-P</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PPU-E</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Pneumatic</th>
<th>Electric*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of sizes</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Horizontal stroke in Y [mm]</td>
<td>121 .. 210</td>
<td>0 .. 280</td>
</tr>
<tr>
<td>Horizontal stroke in X [mm]</td>
<td>500 .. 150</td>
<td></td>
</tr>
<tr>
<td>Vertical stroke [mm]</td>
<td>30 .. 45</td>
<td>0 .. 150</td>
</tr>
<tr>
<td>Swivel angle [*]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal load [kg]</td>
<td>0 .. 3</td>
<td>0 .. 5</td>
</tr>
<tr>
<td>Repeat accuracy X-axis [mm]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeat accuracy Y-axis [mm]</td>
<td>up to ±0.01</td>
<td>±0.01</td>
</tr>
<tr>
<td>Repeat accuracy Z-axis [mm]</td>
<td>up to ±0.01</td>
<td>±0.01</td>
</tr>
<tr>
<td>Repeat accuracy, rotary [*]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>4.5 .. 15.5</td>
<td>15 .. 35</td>
</tr>
<tr>
<td>Max. cycle time/picks per minute</td>
<td>95</td>
<td>110</td>
</tr>
<tr>
<td>Actuation</td>
<td>Pneumatic valve</td>
<td>External controller</td>
</tr>
<tr>
<td>Protection class IP</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Guidance type</td>
<td>Cross roller guide</td>
<td>Profiled rail guide</td>
</tr>
<tr>
<td>Number of possible combinations</td>
<td>*</td>
<td>**</td>
</tr>
<tr>
<td>Comprehensive ranges</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor &amp; controller*</td>
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<td></td>
</tr>
<tr>
<td>Motor</td>
<td>Integrated</td>
<td></td>
</tr>
<tr>
<td>Drive controller</td>
<td>Bosch Rexroth, Siemens*</td>
<td></td>
</tr>
</tbody>
</table>

#### Options/versions

<table>
<thead>
<tr>
<th>Option</th>
<th>Pneumatic</th>
<th>Electric*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rod lock</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Center position</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrated valve</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>Additional C-axis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive package</td>
<td>●</td>
<td></td>
</tr>
</tbody>
</table>

#### Description

- Compact 2-axis unit for running a typical pick & place motion
- Compact 2-axis unit for flexible running of any curve on one plane

#### Field of application

- For the rapid and precise transfer of workpieces in high-speed assembly
- For the rapid and precise transfer or controlled press-in operation of workpieces in high-speed assembly

#### Ambient conditions

- Clean: ●
- Slightly dirty: ●

---

* = fully supported  + = medium-sized selection  ++ = wide selection
* = Control concepts for mechatronic SCHUNK components see page 19  ** = More controllers available upon request
## Standard Gantry Systems

<table>
<thead>
<tr>
<th>Pneumatic</th>
<th>Electric*</th>
<th>Room Gantry RPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line Gantry LPP</td>
<td>Line Gantry LPE</td>
<td>Room Gantry RPE</td>
</tr>
</tbody>
</table>

### Technical data

<table>
<thead>
<tr>
<th></th>
<th>PPU-P</th>
<th>PPU-E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of sizes</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Horizontal stroke in Y [mm]</td>
<td>121 .. 210</td>
<td>0 .. 1500</td>
</tr>
<tr>
<td>Horizontal stroke in X [mm]</td>
<td>500 .. 1500</td>
<td>500 .. 1500</td>
</tr>
<tr>
<td>Vertical stroke [mm]</td>
<td>30 .. 45</td>
<td>0 .. 225</td>
</tr>
<tr>
<td>Swivel angle [°]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal load [kg]</td>
<td>0 .. 5</td>
<td>0 .. 5</td>
</tr>
<tr>
<td>Repeat accuracy X-axis [mm]</td>
<td>±0.08</td>
<td>±0.01</td>
</tr>
<tr>
<td>Repeat accuracy Y-axis [mm]</td>
<td>up to ±0.01</td>
<td>up to ±0.08</td>
</tr>
<tr>
<td>Repeat accuracy Z-axis [mm]</td>
<td>up to ±0.01</td>
<td>up to ±0.03</td>
</tr>
<tr>
<td>Repeat accuracy, rotary [°]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>4.5 .. 15.5</td>
<td>15 .. 35</td>
</tr>
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<tr>
<td>Actuation</td>
<td>Pneumatic valve</td>
<td>External controller</td>
</tr>
<tr>
<td>Protection class</td>
<td>IP 40</td>
<td>IP 40</td>
</tr>
<tr>
<td>Guidance type</td>
<td>Cross roller guide</td>
<td>Profiled rail guide</td>
</tr>
</tbody>
</table>

### Motor & controller

<table>
<thead>
<tr>
<th></th>
<th>Bosch Rexroth, Siemens*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bosch Rexroth, Siemens*</td>
</tr>
<tr>
<td></td>
<td>Bosch Rexroth, Siemens**</td>
</tr>
</tbody>
</table>

### Options/versions

- Rod lock ● ● ●
- Center position ●
- Integrated valve ●
- Additional C-axis ●
- Drive package ● ●

### Description

- Compact 2-axis unit for running a typical pick & place motion
- Compact 2-axis unit for flexible running of any curve on one plane
- Line gantry with a horizontal, pneumatic gantry axis, and a vertical, pneumatic linear module
  - For easily conducting the most common two-dimensional handling and assembly tasks for small to medium-sized workpieces
- Room gantry with two electric toothed belt axes in a horizontal direction, and one electric spindle axis in a vertical direction
  - For easily conducting the most common three-dimensional handling and assembly tasks for medium-sized and large workpieces

### Ambient conditions

- Clean ● ● ●
- Slightly dirty ● ●

---

* = Control concepts for mechatronic SCHUNK components see page 19
** = More controllers available upon request
SCHUNK Quick-change System SWS

Fast effector change for high flexibility in production, handling and assembly.

When changing grippers, tools and other end-effectors, an automatic quick-change system (as robot accessory) can clearly reduce manual work or even entirely replace it. While manually re-equipping a pneumatic effector takes ten to thirty minutes, a quick-change system reduces this time down to ten to thirty seconds, with merely locking and unlocking taking even just milliseconds.
Your benefits

- **Payloads up to 1,350 kg** possible
- **Patented** self-locking locking system
- **No-Touch**locking™
  Secure locking without making contact, for the SWS even when the SWK and SWA do not touch
- **21 sizes** for optimal size selection and a broad application range

- All functional components made of **hardened steel** for high bearing load capacity of the change system
- **Transmission possibility** for electric, pneumatic and fluid media
- For a **process-reliable connection** between the quick-change head and the quick-change adapter with self-sealing couplings
## Compensation Units

### Product features

<table>
<thead>
<tr>
<th>Feature</th>
<th>AGE-XY</th>
<th>AGE-Z 2</th>
<th>AGE-S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumatic locking</td>
<td>● ● ●</td>
<td>● ● ●</td>
<td>● ● ●</td>
</tr>
<tr>
<td>Position memory</td>
<td>● ● ●</td>
<td>● ● ●</td>
<td>● ● ●</td>
</tr>
<tr>
<td>Screwed flange acc. to ISO-9409 standard</td>
<td>● ● ●</td>
<td>● ● ●</td>
<td>● ● ●</td>
</tr>
<tr>
<td>Monitoring via proximity switch</td>
<td>● ● ●</td>
<td>● ● ●</td>
<td>● ● ●</td>
</tr>
</tbody>
</table>

### Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>AGE-XY</th>
<th>AGE-Z 2</th>
<th>AGE-S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of sizes</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Compensation stroke XY [mm]</td>
<td>±2.5 .. ±4</td>
<td>±4 .. ±12</td>
<td>±2.5 .. ±4</td>
</tr>
<tr>
<td>Compensation stroke Z</td>
<td>8 .. 10</td>
<td>10 .. 14</td>
<td>10 .. 14</td>
</tr>
<tr>
<td>Rotatory compensation [°]</td>
<td>±12 .. ±16</td>
<td>±20 .. ±30</td>
<td>±12 .. ±16</td>
</tr>
<tr>
<td>Spring force [N]</td>
<td>20 .. 120</td>
<td>240 .. 1100</td>
<td>20 .. 120</td>
</tr>
<tr>
<td>Piston force Z at 6 bar in extended position [N]</td>
<td>500 .. 1500</td>
<td>800 .. 3000</td>
<td>500 .. 1500</td>
</tr>
<tr>
<td>Piston force Z at 6 bar in retracted position [N]</td>
<td>280 .. 1450</td>
<td></td>
<td>280 .. 1450</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>0.46 .. 1.5</td>
<td>0.55 .. 1.7</td>
<td>2.6 .. 29.5</td>
</tr>
<tr>
<td>Locking force at 6 bar [N]</td>
<td>235 .. 580</td>
<td>800 .. 2700</td>
<td>800 .. 2700</td>
</tr>
<tr>
<td>Horizontal payload [kg]</td>
<td>0 .. 10</td>
<td>0 .. 10</td>
<td>0 .. 10</td>
</tr>
<tr>
<td>Vertical payload [kg]</td>
<td>0 .. 15</td>
<td>0 .. 12</td>
<td>0 .. 16</td>
</tr>
<tr>
<td>Repeat accuracy [mm]</td>
<td>0.1</td>
<td>0.02</td>
<td>0.1</td>
</tr>
<tr>
<td>Locking force Fz [N]</td>
<td>235 .. 580</td>
<td>280 .. 1500</td>
<td>800 .. 2700</td>
</tr>
<tr>
<td>Max. pulling force Fz [N]</td>
<td>300 .. 750</td>
<td>200 .. 500</td>
<td>110 .. 2000</td>
</tr>
<tr>
<td>Max. pressure force Fz [N]</td>
<td>1700 .. 3200</td>
<td>800 .. 1500</td>
<td>500 .. 6000</td>
</tr>
<tr>
<td>Moment load capacity Mx, My [Nm]</td>
<td>16 .. 30</td>
<td>10 .. 30</td>
<td>30 .. 500</td>
</tr>
<tr>
<td>Twist torque Mz [Nm]</td>
<td>3.5 .. 9</td>
<td>20 .. 80</td>
<td>30 .. 250</td>
</tr>
<tr>
<td>Angular compensation x [°]</td>
<td>● ● ●</td>
<td>● ● ●</td>
<td>● ● ●</td>
</tr>
<tr>
<td>Angular compensation y [°]</td>
<td>● ● ●</td>
<td>● ● ●</td>
<td>● ● ●</td>
</tr>
<tr>
<td>Angular compensation z [°]</td>
<td>● ● ●</td>
<td>● ● ●</td>
<td>● ● ●</td>
</tr>
</tbody>
</table>

### Advantages/your added value

- Robust guidance for high moment loads even with minimal space requirements.
- Locking in order to switch the unit rigid in retracted or extended position.
- Three compensation directions XYZ in one unit.
- Compact design for minimal design heights.

### ISO flange pattern, simple assembly on most types of robot without additional adapter plates

- ●
- ●
- ●

### Field of application

Universally applicable for assembling, palletizing and inserting workpieces with high precision

### Ambient conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>AGE-XY</th>
<th>AGE-Z 2</th>
<th>AGE-S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean</td>
<td>● ● ●</td>
<td>● ● ●</td>
<td>● ● ●</td>
</tr>
<tr>
<td>Slightly dirty</td>
<td>● ● ●</td>
<td>● ● ●</td>
<td>● ● ●</td>
</tr>
<tr>
<td>High-temperature version on request</td>
<td>● ● ●</td>
<td>● ● ●</td>
<td>● ● ●</td>
</tr>
</tbody>
</table>
SCHUNK Compensation Unit AGE-S-XYZ

Palletizing, joining, and assembling with flexibility.
The compensation unit AGE-S extends the AGE series (AGE-XY/AGE-Z/AGE-F) for the medium and heavy load range. The compensation unit provides the required flexibility between the effector and the robot arm.

The AGE-S-XYZ helps you to avoid damage to the system and malfunctions, while increasing process reliability. During handling in XY- as well as Z-direction, the unit can be made rigid using the integrated pneumatic lock and eccentrically locked using the position memory in XY-direction.

Your benefits:

- The housing consists of high-strength, hard-coated aluminum alloy
- The functional components are made of hardened steel
- Three compensation directions in one unit, compact design for minimum installation height
- Centric locking for rigid switching of the unit at a defined centric position
- Pneumatic position memory for eccentric locking in deflected position

Compensation Units
Robot Accessories

<table>
<thead>
<tr>
<th>AGE-F</th>
<th>Tolerance Compensation Unit</th>
<th>AGE-S-XYZ</th>
<th>FUS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Technical data

- Number of sizes
- Compensation stroke XY [mm]
- Compensation stroke Z [mm]
- Rotatory compensation [°]
- Spring force [N]
- Piston force Z at 6 bar [N]
- Weight [kg]
- Locking force at 6 bar [N]
- Horizontal payload [kg]
- Vertical payload [kg]
- Repeat accuracy [mm]
- Locking force Fz [N]
- Max. pulling force Fz [N]
- Max. pressure force Fd [N]
- Moment load capacity Mx, My [Nm]
- Twist torque Mz [Nm]
- Angular compensation x [°]
- Angular compensation y [°]
- Angular compensation z [°]

Advantages/your added value

- Robust guidance for high moment loads even with minimal space requirements.
- Locking in order to switch the unit rigid in retracted or extended position.
- Three compensation directions XYZ in one unit.
- Compact design for minimal design heights.
- Spring reset and spring force adjustable in three spring stiffnesses. Defined centric position with a high repeat accuracy. Compensation stroke flexibly adjustable.
- Pneumatic locking. Long-lasting elastomers, rigid unit during travel.
- Compensates for angular errors and tolerances with jointing applications. This reduces the cycle times and increase the productivity. The pneumatic locking ensures that the unit can be locked centrically and rigid again.
- Direct assembly of parallel and centric grippers. SCHUNK grippers PGN-plus, PZN-plus can be mounted onto AGE-F without additional adapter plate.
- Direct mounting of parallel and centric grippers, no additional adapter plate required.
- Assembling, palletizing and inserting workpieces without feeding external media.
- In the fields of assembly automation and machine tool loading.
- Assembly tasks with very little play among the parts to be aligned.

schunk.com/age-s
## Rotary Feed-through

### Robot Accessories

<table>
<thead>
<tr>
<th>Rotary Feed-throughs</th>
<th>Rotary Feed-throughs DDF 2</th>
<th>Stationary Rotary Feed-through DDF-SE</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
</tr>
</tbody>
</table>

### Product features

- **Endless rotary movement**
- **Screwed flange acc. to ISO-9409 standard**
- **Pneumatic energy transmission**
- **Vacuum energy transmission**
- **Electric energy transmission**
- **Bus transmission**

### Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>DDF 2</th>
<th>DDF-SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of sizes</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>Recommended workpiece weight [kg]</td>
<td>0 .. 250</td>
<td></td>
</tr>
<tr>
<td>Max. speed [RPM]</td>
<td>90 .. 120</td>
<td>300 .. 500</td>
</tr>
<tr>
<td>Continuous torque [Nm]</td>
<td>0.5 .. 22</td>
<td>4 .. 13</td>
</tr>
<tr>
<td>Starting torque [after shutdown] [Nm]</td>
<td>0.7 .. 25</td>
<td>6 .. 20</td>
</tr>
<tr>
<td>Forces Fz [N]</td>
<td>240 .. 9000</td>
<td>2000 .. 4000</td>
</tr>
<tr>
<td>Moments Mx, My [Nm]</td>
<td>2000 .. 18000</td>
<td></td>
</tr>
<tr>
<td>Moments Mz [Nm]</td>
<td>15 .. 550</td>
<td>50 .. 180</td>
</tr>
<tr>
<td>Pneumatic energy transmissions</td>
<td>10 .. 400</td>
<td></td>
</tr>
<tr>
<td>Electrical energy transmission</td>
<td>2 .. 4</td>
<td>4 .. 6</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>4 .. 10</td>
<td>6 .. 8</td>
</tr>
<tr>
<td>Advantages/your added value</td>
<td>0.35 .. 14.2</td>
<td>3.3 .. 9</td>
</tr>
</tbody>
</table>

### Advantages/your added value

- **Three versions to choose from**
  - **Version 1:** For the feed-through of pneumatic and electrical signals.
  - **Version 2:** For the feed-through of pneumatics.
  - **Version 3:** For the feed-through of electrical signals.
- **Combined pneumatic and electric feed-through**
- **ISO flange pattern, simple assembly on most robot types without additional adapter plates**
- **Rotary feed-through for reliable pneumatic and electric feed-through in the event of robot applications with endlessly rotating movements.**
- **Ideally suitable for the use on rotary indexing tables and for stationary applications.**
- **Standardized shaft end for easy assembly of gears.**
- **Revolutions of up to 500 RPM**

### Field of application

- **Rotary feed-through for reliable pneumatic and electric feed-through in the event of robot applications with endlessly rotating movements.**
- **Ideally suitable for the use on rotary indexing tables and for stationary applications.**

### Ambient conditions

- **Clean**
- **Slightly dirty**
# Measuring Systems

## Robot Accessories

### 6-Axis Force/Torque Sensors

<table>
<thead>
<tr>
<th></th>
<th>FT-AXIA</th>
<th>FTN</th>
<th>FTD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>NET</td>
<td>DAQ</td>
</tr>
</tbody>
</table>

#### Protection class IP

- Without IP protection ● ● ●
- IP60 ● ● ●
- IP65 ● ● ●
- IP68 ● ● ●

#### Technical data

<table>
<thead>
<tr>
<th></th>
<th>FT-AXIA</th>
<th>FTN</th>
<th>FTD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of sizes</td>
<td>1</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Calibration</td>
<td>SI-200-8, SI-500-20</td>
<td>SI-12-0,12 .. SI-40000-6000</td>
<td>SI-12-0,12 .. SI-40000-6000</td>
</tr>
<tr>
<td>Evaluation electronics</td>
<td>Integrated</td>
<td>Net-Box</td>
<td>DAQ-Karte</td>
</tr>
<tr>
<td>Weight of sensor [kg]</td>
<td>0.3</td>
<td>0.01 .. 47</td>
<td>0.01 .. 47</td>
</tr>
<tr>
<td>Range of measurement Fₓ, Fᵧ [N]</td>
<td>200 .. 500 ±12 .. ±40000</td>
<td>±12 .. ±40000</td>
<td></td>
</tr>
<tr>
<td>Range of measurement Fz [N]</td>
<td>360 .. 900 ±17 .. ±88000</td>
<td>±17 .. ±88000</td>
<td></td>
</tr>
<tr>
<td>Range of measurement Mₓ, Mᵧ [Nm]</td>
<td>8 .. 20 0.12 .. ±6000</td>
<td>±12 .. ±6000</td>
<td></td>
</tr>
<tr>
<td>Range of measurement Mz [Nm]</td>
<td>8 .. 20 0.12 .. ±6000</td>
<td>±12 .. ±6000</td>
<td></td>
</tr>
<tr>
<td>Resolution Fₓ, Fᵧ [N]</td>
<td>0.1</td>
<td>0.003 .. 6.25</td>
<td>0.003 .. 6.25</td>
</tr>
<tr>
<td>Resolution Mₓ, Mᵧ [Nm]</td>
<td>0.1</td>
<td>0.003 .. 16.7</td>
<td>0.003 .. 16.7</td>
</tr>
<tr>
<td>Resolution Mz [Nm]</td>
<td>0.005</td>
<td>0.00001 .. 1.5</td>
<td>0.00001 .. 1.5</td>
</tr>
</tbody>
</table>

#### Advantages/your added value

- **FT sensor**
  - Evaluation via Ethernet and EtherCAT, 2 calibrations selectable via web interface
- **FTN sensor**
  - Evaluation via Ethernet, DeviceNet, optional PROFINET optional EtherCAT
- **FTD sensor**
  - Evaluation via DAQ card (PCI, USB)

#### Sizes with different ranges of measurement

- FT-AXIA: 1, FTN: 16, FTD: 16

#### Ambient conditions (sensor)

- Clean ● ● ●
- Slightly dirty ● ● ●
- Extremely dirty ● ● ●
- Humid ● ● ●

### Field of application

- Universally usable in robot applications such as haptics, medicine, grinding, inspecting, joining and research and development.
SCHUNK 6-Axis Force/Torque Sensor FTN

Interface variety with Ethernet, EtherNet/IP, EtherCAT, DeviceNet and a CAN interface.

With its high-speed data output, four possible communication protocols, remote monitoring via LAN and configuration via web interface, the 6-axis force/torque sensor FTN is currently the most multi-functional force/torque sensor for industrial automation. Suitable for machining tasks in the field of e.g. grinding and polishing, robot assemblies or robotic surgery as well as applications in rehabilitation and neurological applications. The sensor allows for automating difficult assembly, machining and finish machining tasks, that could previously only be performed by hand or using complex special machines.

Your benefits:

- **16 sizes**
- **Torque ranges** between 0.12 Nm and 6,000 Nm
- **Load ranges** between 12 N and 40,000 N
- The sensor measures the force and torque in all six degrees of freedom.
- Simple process integration due to simple interface compatibility
- Possible remote monitoring, via LAN connection
SCHUNK Rotary Feed-through DDF 2

The DDF 2 is the latest standard for state-of-the-art robot and assembly applications. It ensures highest process reliability even with 360° unlimited rotational movements. SCHUNK offers the DDF 2 in three variations: for the feed-through of pneumatics or electrical signals or for the combined version. A significantly increased load allows the use of a steel shaft for transmitting dynamic forces and moments. Due to a specially developed seal, the DDF 2 ensures a long service life and energy efficiency due to the possibility of using smaller drives.

Your benefits:

- 85% longer service life due to newly developed seals
- 50% greater moment load due to transmission of the dynamic forces and moments via a steel shaft
- 20% greater load capacity
- Newly developed, smoothly running and especially durable seals produce a smaller starting and continuous torque, which allows you to use smaller, i.e. more economical drives

- Depending on the size, two and four pneumatic feed-throughs are standard, as are between four and ten electrical transmissions for signals 1 A/60 V
- Allows for 360° continuous rotation
- Complete series with 14 sizes for optimal size selection
- Electrical connector contacts enable rapid and easy replacement in the event of cable breakage at the robot arm or gripper

schunk.com/ddf-2
Monitoring Sensors

Robot Accessories

<table>
<thead>
<tr>
<th>Collision and Overload Sensors</th>
<th>OPS</th>
<th>OPR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual reset</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automatic reset</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Product features**

- Pneumatic actuation
- Built-in spring optionally available

**Technical data**

<table>
<thead>
<tr>
<th></th>
<th>OPS</th>
<th>OPR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of sizes</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Moments Mx, My [Nm]</td>
<td>7.5 .. 430</td>
<td>6 .. 2000</td>
</tr>
<tr>
<td>Triggering force Fz [N]</td>
<td>500 .. 7000</td>
<td>440 .. 14000</td>
</tr>
<tr>
<td>Axial deflection [mm]</td>
<td>9.5 .. 12</td>
<td>5.1 .. 16</td>
</tr>
<tr>
<td>Angle deflection [°]</td>
<td>4 .. 12</td>
<td>8 .. 13</td>
</tr>
<tr>
<td>Rotatory deflection [*]</td>
<td>45 .. 360</td>
<td>20</td>
</tr>
<tr>
<td>Repeat accuracy [mm]</td>
<td>up to 0.02</td>
<td>±0.025</td>
</tr>
<tr>
<td>Operating pressure range [bar]</td>
<td>0.5 .. 6.0</td>
<td>1.4 .. 6.2</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>0.4 .. 7.0</td>
<td>0.24 .. 11.7</td>
</tr>
</tbody>
</table>

**Advantages/your added value**

- **Automatic return position** for faster resuming of production after a collision
- **Integrated monitoring** for signal transmission in the event of a collision
- **Triggering force and moment can be set via the operating pressure** for optimum protection of robot and components
- **ISO adapter plates are optional** for simple assembly on most types of robot without additional production costs
- **Field of application**
  - Standard solution for all robot applications where robots, tools, or workpieces are to be monitored for possible collisions
- **Ambient conditions**
  - Clean
  - Slightly dirty
  - Humid

**SCHUNK OPR, Collision and Overload Sensor**

The effective protection both for robots and for handling devices against damage as a result of collision or overload.

Unique with automatic return position.

The SCHUNK collision and overload sensors OPR effectively monitor the robot as well as handling devices. SCHUNK OPR features an automatic return position, enabling the system to resume production as soon as possible after a collision. In case of overloads or collisions, the tool plate deflects and, at the same time, automatically actuates the system’s emergency stop. The system’s sensitivity can be adjusted via the operating pressure.

Your benefits:

- **Automatic reset** into the center position
- **Overload detection** occurs in X-, Y- (+/−) and Z-direction and equally during rotation around the X-, Y- and Z-direction
- **Integrated cable breakage control** to avoid malfunctions
- Also available as IP65 protected version
- **Triggering forces and moments** can be adjusted via operating pressure

schunk.com/opr
### Product Features

<table>
<thead>
<tr>
<th>Feature</th>
<th>FDB</th>
<th>FDB-AC</th>
<th>MFT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumatic actuation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Technical Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>FDB</th>
<th>FDB-AC</th>
<th>MFT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation</td>
<td>Radial</td>
<td>Axial</td>
<td>Axial</td>
</tr>
<tr>
<td>Number of sizes</td>
<td>6</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Power [W]</td>
<td>150 .. 1040</td>
<td>250</td>
<td>390</td>
</tr>
<tr>
<td>Compensation path [mm]</td>
<td>±5.1 .. ±9.1</td>
<td>±4.1</td>
<td>±15</td>
</tr>
<tr>
<td>Recommended compensation path [mm]</td>
<td>±2.5 .. ±4.8</td>
<td>±2</td>
<td>±7.5</td>
</tr>
<tr>
<td>Compensation force [N]</td>
<td>3.1 .. 89</td>
<td>1 .. 25</td>
<td>14 .. 74</td>
</tr>
<tr>
<td>Compensating pressure [bar]</td>
<td>1 .. 4.1</td>
<td>1 .. 3</td>
<td>0.35 .. 4.1</td>
</tr>
<tr>
<td>Idle speed [1/min]</td>
<td>25000 .. 65000</td>
<td>25000 .. 30000</td>
<td>5600</td>
</tr>
<tr>
<td>Air consumption at idle run [l/min]</td>
<td>84 .. 564</td>
<td>396</td>
<td>540</td>
</tr>
<tr>
<td>Air consumption blocked [l/min]</td>
<td>228 .. 1140</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collet diameter [mm]</td>
<td>3 .. 6</td>
<td></td>
<td>9.5</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>1.1 .. 4.5</td>
<td>0.5</td>
<td>3.3</td>
</tr>
</tbody>
</table>

### Advantages/Your added value

<table>
<thead>
<tr>
<th>Advantage</th>
<th>FDB</th>
<th>FDB-AC</th>
<th>MFT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexible high-frequency spindle for maximum versatility for chamfering</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexible high-frequency spindle for maximum flexibility for polishing or brushing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rigidity of the spindle adjustable via compressed air for clean chamfering in any installation position</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High speeds for high feed rates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexible use on robot arms or as a stationary unit</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Field of application

- Standard solution for flexible and robot-guided chamfering of all sorts of workpieces.

### Ambient Conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>FDB</th>
<th>FDB-AC</th>
<th>MFT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extremely dirty</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**SCHUNK Deburring Spindle FDB**

The solution for perfect finishing. SCHUNK standard solution for flexible and robot-guided deburring of all sorts of workpieces. The drive of the unit is carried out via a pneumatic spindle with of up to 65,000 RPM – depending on the unit size. For compensating part tolerances during machining, the shank has compliant bearings.

**Your benefits:**

- Flexible **high-frequency spindle for maximum versatility** for chamfering
- **Adjustable rigidity** of the deburring spindle by means of the pneumatics
- For **clean chamfer edges** in every installation position
- **High rotational speeds**
- For **high** feed rates
- **Versatile use** on the **robot arm** or applicable as a **stationary unit**

[Schunk Deburring Spindle FDB](http://schunk.com/fdb)
The right Solution for every Application

SCHUNK original accessories for sensor systems and pillar assembly components enhance the versatility and the field of application of our standard modules for your application. Optimum functionality, reliability, and precise positioning are ensured by SCHUNK original accessories. Experience highest quality and utmost longevity.

Original accessories for an excellent accuracy of fit and function. Compatible for every SCHUNK standard product, easy integration into existing plants and systems.

Pillar assembly system 100% variable, thousands of combinations of SCHUNK components are possible

The world’s most extensive range of accessories for gripping systems

More than 150 sensors for precise force measurement and workpiece and position monitoring
SCHUNK Pillar Assembly System SAS
More than 10,000 combination Possibilities
100% Flexibility for your Applications

**Variety in Accessories**
A broad range of high-quality accessory components and suitable sensors.

**A wide range of Combinations**
Direct combination with various SCHUNK products without additional adapter plates.

**Adjustment Units**
For simple and fast fine adjustment of the finished setup systems.

**100% flexible**
Various customized lengths of the pillars possible as standard. Individual or double pillars can be selected. Various support plates for horizontal, vertical or variable connection on five sides.

**Media supply**
Simple and fast combinations from the modular system.
# Content

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<td>Sensor System</td>
<td>90</td>
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</tbody>
</table>
With more than 10,000 possible combinations, SCHUNK offers the world’s most comprehensive range of pillar assembly applications. The SCHUNK pillar assembly system allows for a combination of diverse handling modules without mechanical adaptation by means of mounting and centering holes, for an exact fit and angular precision as well as the safe, stable, and reproducible mounting of components.

**Adjustment Unit VEH**
For easy fine adjustments of the finished assembly
- For linear and rotative compensation
- Adjustable with hexagon socket wrench
- Suitable for single and double sockets

**Pillar Assembly System**
High level of precision despite high modularity and flexibility
- 3 different pillar diameters
- Up to 1,000 mm pillar length
- 17 elements combined as desired
- Direct screw connection for SCHUNK components

**Media Routing**
Simple and fast combinations from the modular system
- Precise hose and cable guidance possible
- Either through the hollow pillars or attached with clips along the pillars
- Media hose for supplying the actuators can be mounted directly
# Pillar Assembly System

## Connecting Elements

<table>
<thead>
<tr>
<th>1️⃣ Adjustment Unit</th>
<th>2️⃣ Pillar Assembly System</th>
<th>3️⃣ Base Support</th>
<th>4️⃣ Base Support</th>
<th>5️⃣ Hollow Pillars</th>
<th>6️⃣ Horizontal Mounting Plates</th>
</tr>
</thead>
<tbody>
<tr>
<td>VEH</td>
<td>SOD</td>
<td>SOE</td>
<td>SOD</td>
<td>SLH</td>
<td>APEH/APDH</td>
</tr>
</tbody>
</table>

### Application with

<table>
<thead>
<tr>
<th>Pillars Ø 20 mm</th>
<th>⬤</th>
<th>⬤</th>
<th>⬤</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pillars Ø 35 mm</td>
<td>⬤</td>
<td>⬤</td>
<td>⬤</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td>Pillars Ø 55 mm</td>
<td>⬤</td>
<td>⬤</td>
<td>⬤</td>
<td>⬤</td>
<td>⬤</td>
</tr>
</tbody>
</table>

### Material

| Aluminum, hard-anodized | Aluminum, hard-anodized | Aluminum, hard-anodized | Steel, hard-chromium plated | Aluminum, hard-anodized |

### Description

| The adjustment unit simplifies mechanical adjustment of complete handling systems | The base support is the base used for the pillar assembly system and can be directly mounted onto a firm surface | The base support is the base used for the pillar assembly system and can be directly mounted onto a firm surface. A 2-pillar assembly can be mounted with the SOE. | Versatile steel pillars can be inserted at various lengths and provide high rigidity | The mounting plates connect the various SCHUNK modules of the modular system to the pillar system |

### Field of application

| For universal use with structures that must be readjusted during assembly. | For all pillar assemblies with a single pillar | For all pillar assemblies with a double pillars | For all assembly systems and frames and as a mounting option for automation components | For attaching SCHUNK linear modules with horizontal movement |

### Advantages

| ⬤ Mechanical adjustment | ⬤ Robust and highly precise | ⬤ Robust and highly precise | ⬤ Robust and highly precise | ⬤ Robust and highly precise |

| ⬤ High degree of flexibility | | | | |

*= highly suitable/fully supported  ○ = suitable to a limited extent
## Connecting Elements

### Pillar Assembly System

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
<th>Application</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjustments</td>
<td>The adjustment unit allows for precise adjustment of the pillar system vertically and horizontally.</td>
<td>For positioning mounting plates of the pillar assembly system.</td>
<td>Aluminum, hard-anodized</td>
</tr>
<tr>
<td>Pillars Ø 35 mm</td>
<td>● ● ● ● ●</td>
<td>• High degree of flexibility</td>
<td>Aluminum, hard-anodized</td>
</tr>
<tr>
<td>Pillars Ø 20 mm</td>
<td>● ● ● ●</td>
<td>• Standardized interface for many SCHUNK products</td>
<td>Aluminum, hard-anodized</td>
</tr>
</tbody>
</table>

### Media Routing

- **For attaching SCHUNK linear modules with horizontal and vertical movement:**
  - Robust and high-precision mounting options
  - Standardized interface for many SCHUNK products
  - Reduction of cable breakage
  - Visual enhancement

- **For horizontal attachment of customized structures or other automation components:**
  - Robust and high-precision mounting options
  - Flexible mounting options

- **For vertical attachment of customized structures or other automation components:**
  - Robust and high-precision mounting options
  - Flexible mounting options

- **For attaching customized structures or other automation components:**
  - Robust and high-precision mounting options
  - Mounting options on five sides

- **For positioning mounting plates of the pillar assembly system:**
  - Fine adjustment
  - High degree of flexibility

### Mounting Plates

- **APEV/APDV**
  - Mounting options on the mounting plates of the pillar assembly elements that are mounted to the pillars

- **AMEH/AMDH**
  - Flexible mounting options
  - Robust and high-precision mounting options
  - Standardized interface for many SCHUNK products

- **AMEV/AMDV**
  - Flexible mounting options
  - Robust and high-precision mounting options
  - Standardized interface for many SCHUNK products

- **AMEH/AMDV**
  - Flexible mounting options
  - Robust and high-precision mounting options
  - Standardized interface for many SCHUNK products

- **AMEV/AMDV**
  - Flexible mounting options
  - Robust and high-precision mounting options
  - Standardized interface for many SCHUNK products

- **AMEH/AMDV**
  - Flexible mounting options
  - Robust and high-precision mounting options
  - Standardized interface for many SCHUNK products

- **AMEV/AMDV**
  - Flexible mounting options
  - Robust and high-precision mounting options
  - Standardized interface for many SCHUNK products

- **APEVAPEA**
  - Flexible mounting options
  - Robust and high-precision mounting options
  - Standardized interface for many SCHUNK products
### Pillar Assembly System

Connecting Elements

<table>
<thead>
<tr>
<th>Cross Connector</th>
<th>Mounting Plate</th>
<th>Media Routing</th>
<th>Hose Routing</th>
<th>Hose Routing</th>
</tr>
</thead>
<tbody>
<tr>
<td>KVB</td>
<td>MPL</td>
<td>MFC</td>
<td>SPL/MFB/MFS</td>
<td>MFS/MFV/MFK</td>
</tr>
</tbody>
</table>

- **Cross Connector**
  - Aluminum, hard-anodized
- **Mounting Plate**
  - POM
- **Mounting Clip**
  - POM
- **Hose Routing**
  - POM
- **Hose Routing**
  - POM

**Cross connectors allow for right-angle junctions to be included in the pillar assembly system.**

**For expanding the pillar assembly system vertically**

**For supporting or mounting additional structures**

**For all pneumatic or electric sensors and actuators that are mounted to the pillar system**

**For all pneumatic or electric sensors and actuators that are mounted to the pillar system**

- **Robust and high-precision**
- **High degree of flexibility**
- **Module attachable**
- **Reduction of cable breakage**
- **Module attachable**
- **Reduction of cable breakage**
- **Module attachment**
- **Reduction of cable breakage**
- **Visual enhancement**
- **Visual enhancement**
SCHUNK Grippers
Our Response to Flexibility: Variety in Accessories.

Along with the world’s most extensive gripper range, SCHUNK also provides an unmatched range of offering. The universal gripper PGN-plus features a large number of variants and a superior range of accessories offering everything needed for flexible use in your specific automation application. For each kind of application and handling requirement – including under extreme conditions.
## Accessories
### SCHUNK Gripping Systems

<table>
<thead>
<tr>
<th>Jaw quick-change system</th>
<th>Adjustable intermediate jaw</th>
<th>Top jaws blank</th>
<th>Pressure maintenance valve</th>
<th>Field of application</th>
<th>Description</th>
<th>Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>For easy creation of top jaws by adding the clamping contour</td>
<td>Finger blanks made of aluminum or steel for application-specific rework</td>
<td>• Matching finger blanks for commonly used gripper types • Clamping contour can be machined rapidly and easily</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>With highly diverse workpieces for quick jaw changes with any clamping contours</td>
<td>The BSWS consists of one base and two adapter pins. The form-fit locking mechanics ensures a fast exchange of the gripper fingers</td>
<td>• One gripper can be used universally in various applications • Quick and easy for high flexibility • Firm up to the max. loadability of the base jaws</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>With highly diverse workpieces for quick jaw changes with simple clamping contours</td>
<td>The BSWS consists of two adapter pins and one finger blank with locking mechanism. The form-fit locking mechanisms ensures a fast exchange of the gripper fingers</td>
<td>• One gripper can be used universally in various applications • Quick and easy for high flexibility • Firm up to the max. loadability of the base jaws</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>With highly diverse workpieces that can be covered by increasing the clamping width</td>
<td>The BSWS consists of two adapter pins and the locking mechanism located in the customized finger. The form-fit locking mechanisms ensures a fast exchange of the gripper fingers</td>
<td>• One gripper can be used universally in various applications • Quick and easy for high flexibility • Firm up to the max. loadability of the base jaws • Clamping contour can be created as required</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>For applications in which the force or position must be maintained temporarily</td>
<td>Allows fast tool-free and reliable replugging and shifting of top jaws</td>
<td>• Toolless adjustment and clamping for quick and easy conversion • Stable guide bar, suitable for long gripper fingers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>For grippers used in dirty environments and where they get in contact with liquids.</td>
<td>With a loss of air pressure, venting of the module will be prevented temporarily by the pressure maintenance valve</td>
<td>• Versatile in its application, since it has standard air connections • Manual air bleed screw means no removal of pressurized hoses</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The cover protects the gripper against external influences. Depending on the application, the edge of the cover can be additionally sealed for applications up to IP65.</td>
<td>• Flexible in use: can be retrofitted • Space-saving due to low interfering contours • Suitable for grippers PGN-plus-P, PGN-plus, PZN-plus, EGN, and EZN</td>
</tr>
</tbody>
</table>
Benefit from the SCHUNK Modular System with over 4,000 standard Components.

More than 30 years of competence in gripping forms the basis for the largest standardized range of gripping technology in the world with more than 4,000 components, a modular system with perfectly matching standard components on linear modules, turning and rotary actuators and robot accessories.

SCHUNK Compact Change System CWS
The flat and weight-reduced manual change system CWS from SCHUNK ensures the fast manual change of grippers at the robot when re-equipping for a new range of parts. A noticeable increase in productivity can thus be achieved in particular for small and medium batch sizes.

- Simple tool change on the robot due to the simple working principle
- Full compatibility due to integrated ISO robot flange
- The screw connection diagram is used to mount the most important SCHUNK gripping and compensation modules directly on the quick-change system without an adapter plate

SCHUNK Compensation Unit TCU
SCHUNK presents the TCU, a compensation unit with base plates connected together by elastomer elements. As a result, the TCU can compensate in the X and Y directions, allowing it to correct angle errors and provide rotational compensation.

- Suitable for gripper types PGN–plus, PZN–plus, DPG–plus and DPZ–plus
- The compensation travel distances in X/Y directions are two to four millimeters depending on the size, while the compensation angles are between 1.5 and 3.5°
- Maximum handling weights between 1 and 24 kg, depending on gripper size

SCHUNK Universal Rotary Actuator SRU–plus
Universal pneumatic unit for swiveling and turning movements in both clean and dirty areas.

- Graduated series with a steady increase in torque
- Swivel angle can be selected as either 90° or 180°
- End position adjustability: +3°/-3° (small) or +3°/-90° (large)
- Middle position can be selected as pneumatic or locked
- Fluid feed-through of gases, fluids and vacuums without bothersome hoses, as well as electric rotary feed-through for long-lasting and safe operational feed-through of sensors and actuator signals. Optionally with bus feed-through.
- Electronic magnetic switches or inductive proximity sensors for absolute variability in position sensing

Linear Module CLM
Compact linear modules with reduced length and high power density in relation to size. The mini-slides are ideal for use in constrained installation spaces – shock absorbers and proximity switches are integrated into the projection surface and do not give rise to any interference contours.

- 6 sizes with a total of 22 stroke variants
- 95% available from stock
- More than 20 years of experience with junction roller guides
- 90% of the applications can be implemented in assembly automation
- 0% additional interfering contour due to shock absorbers or sensors
Sensor Systems

1. **PGN-plus-P**
   Universal 2-finger parallel gripper with a high gripping force and high maximum moments due to the use of a multi-tooth guidance.

2. **IN ...**
   Inductive proximity switch with molded cable and straight cable outlet.

3. **IN ...-SA**
   Inductive proximity switch with molded cable and lateral cable outlet.

4. **IN-C 80**
   Inductive proximity switch, directly pluggable.

5. **FPS**
   Flexible position sensor for monitoring up to five different, freely selectable positions.

6. **APS-Z80**
   Inductive position sensor for precise position detection of the gripper jaws with analog output.

7. **APS-M1S**
   Mechanic measuring system for accurate acquisition of the gripper jaw position with analog output.

8. **RMS 80**
   Reed switch in round arrangement.

9. **MMS 22**
   Magnetic switch with straight cable outlet for monitoring a position.

10. **MMS 22-P1I**
    Magnetic switch with straight cable outlet for monitoring a freely programmable position.

11. **MMS 22-P12**
    Magnetic switch with straight cable outlet for monitoring two freely programmable positions.

12. **MMS 22-P1I-HD**
    MMS 22-P1I in robust design.

13. **MMS 22-P12-HD**
    MMS 22-P12 in robust design.

14. **MMS 22-SA**
    Magnetic switch with lateral cable outlet for monitoring a position.

15. **MMS 22-P1I-SA**
    Magnetic switch with side cable outlet for monitoring a freely programmable position.

16. **MMS-P**
    Magnetic switch with straight cable outlet for monitoring two freely programmable positions.

17. **MMS 22-A**
    Analog magnetic switch with straight cable outlet for measuring the gripper jaw position with analog output and teach function.

18. **RMS 22**
    Reed switch for direct assembly in the C-slot.

Complementary Products

19. **CWS**
    Manual change system with integrated air feed-through for simple exchange of the handling components.

20. **TCU**
    Tolerance compensation unit for compensating small tolerances in the plane.

21. **SDV-P-E-P**
    Pressure maintenance valve for temporary force and position maintenance.

22. **AGE**
    Compensation unit for compensation of large tolerances along the X and Y axes.

23. **ASG**
    Adapter plate for combining various automation components in the modular system.

24. **CLM**
    Linear module with pneumatic drive and scope-free pre-loaded junction rollers.

25. **HUE**
    Sleeve for protection against dirt.

Finger Accessories

26. **UZB**
    The universal intermediate jaw allows fast tool-free and reliable plugging and shifting of top jaws at the gripper.

27. **BSWS-AR**
    Adapter coupling of jaw quick-change system for fast, manual change of top jaws.

28. **BSWS-B**
    Locking mechanism of the jaw quick-change system for fast, manual exchange of top jaws.

29. **BSWS-A**
    Adapter coupling of the jaw quick-change system for adaptation to the customized finger.

30. **BSWS-ABR**
    Finger blank made of aluminum with interface to the jaw quick-change system.

31. **BSWS-SBR**
    Finger blank made of steel with interface to the jaw quick-change system.

32. **BSWS-UR**
    Locking mechanism for the integration of the jaw quick-change system into customized fingers.

33. **ABR/SBR**
    Finger blanks made of steel or aluminum with standardized screw connection diagram.

34. **ZBA**
    Intermediate jaws for reorientation of the mounting surface.
## Position Monitoring

<table>
<thead>
<tr>
<th>MMS 22</th>
<th>MMS-PI 1/2</th>
<th>IN</th>
<th>RMS</th>
<th>FPS</th>
<th>MMS 22 IO-Link</th>
</tr>
</thead>
<tbody>
<tr>
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<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
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</tbody>
</table>

### Switching behavior

<table>
<thead>
<tr>
<th>1 digital point</th>
<th>2 digital point</th>
<th>5 digital point</th>
<th>Analog</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

### Ambient conditions

<table>
<thead>
<tr>
<th>Clean</th>
<th>Slightly dirty</th>
<th>Extremely dirty</th>
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</thead>
<tbody>
<tr>
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<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
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</tbody>
</table>

### Technical data

<table>
<thead>
<tr>
<th>Number of sizes</th>
<th>Operating principle</th>
<th>IP protection max.</th>
<th>Supply voltage [V DC]</th>
<th>Supply current [mA]</th>
<th>PNP version</th>
<th>NPN version</th>
<th>LED display</th>
<th>Measurement switching distance [mm]</th>
<th>Closer</th>
<th>Opener</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Magnetic</td>
<td>67</td>
<td>24</td>
<td>&lt;50</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
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<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
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<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
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<tr>
<td>1</td>
<td>Magnetic</td>
<td>67</td>
<td>24</td>
<td>&lt;50</td>
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</tr>
<tr>
<td>6</td>
<td>Magnetic</td>
<td>67</td>
<td>24</td>
<td>&lt;200</td>
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<tr>
<td>2</td>
<td>Inductive</td>
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<tr>
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<td>Reed</td>
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<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
<td>Not adjustable</td>
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<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
</tr>
</tbody>
</table>

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### Magnetic Switch MMS – IO-Link

A magnetic switch is used for monitoring the status of automation components. They detect the magnets fixed inside the component without contact. In addition to further process data, the sensor outputs the process of the magnetic field via the IO-Link interface.

### Your benefits:

- **Control via IO-Link** for data evaluation
- **Integrated electronics lead to a compact design**, and allows the use of cables with standard plug-in connectors
- **Suitable for confined spaces** by teaching via IO-Link interface
- **Design with LED display** for status display of the IO-Link connection
- **C-slot sensor** for space-saving, simple and fast assembly on the product
Inductive Proximity Switch IN


Inductive proximity switches are used to monitor the current status of automation components. SCHUNK supplies them in two versions: IN (sensor with 30 cm cable and cable connector) or INK (sensor with 2 m supply cable and wire strands for connecting).

Your benefits:
- **Bracket mounting** for easy and fast assembly
- **Version with LED display** for controlling the switching status directly at the sensor
- **Version with plug connector** for fast and easy extension cable replacement
- **Highly flexible PUR cable** for a long service life and resistance against many chemicals
- **Proximity switch is flush mountable** to reduce interfering contours in the application
All inclusive!

SCHUNK customized Gripping Systems.
Benefit from our Experience.

SCHUNK has implemented more than 12,000 solutions, a figure that speaks for itself.

At SCHUNK, our analysis of complex processes and holistic approach to our customers' parts and products allows us to develop effective, customized gripping systems. Maximum precision is required in order to present automation processes visually – so we use the latest work technology, from 2D and 3D presentations to 3D simulation. Our components and configurations carry the decisive performance potential that can make your process chain more efficient. We make full use of this potential. And you benefit from this.

Permanent and comprehensive project management is an important part of the SCHUNK philosophy. Our approach is systematic and tailored to your individual project – each step is traceable and documented.
This will pay off for you!
From standard Components to customized Gripping Systems.

1 personal contact for your solution from one source.

For smooth communications, a personal contact person is available to you from the start of the project until completion. Your contact acts as the liaison between you and those involved in the project, and ensures that information is exchanged smoothly. From planning, to continued support after the conclusion of the project, SCHUNK ensures that your project will be handled cooperatively and efficiently.

Your added value
- Over 30 years of experience with gripping systems
- Over 12,000 implemented gripping systems for most diverse industries
- The world’s largest modular system with perfectly adapted standard components
- Highest accuracy of fit due to standardized interfaces
- Shorter project lead times due to standardized systems
- Process-reliable implementation and planning security without extra project costs
- Functional assembly groups fitted on request or ready for use
- Time savings due to the perfect solution from a single source

Customer added value
- Standard Components
- Customized modified standard components
- Customized Components
- Standard Gripping Systems
- Ready-for-Use, customized Gripping Systems

Solution Competence
Handling of Sand Cores
Foundry Industry

Task: Sand cores with different weights and interfering contours need to be gripped in a process-optimized way.

Solution: Using a SCHUNK quick-change system SWS in combination with sealed SCHUNK 2-finger long-stroke grippers PSH ensures a safe and precise hold. The SCHUNK gripping systems are designed for carrying loads up to 200 kg, depending on the application.

Conrod Handling
Automotive Industry

Task: Move connecting rods using a transfer system.

Solution: Eight SCHUNK lifting/rotary and gripper units are mounted on a horizontal SCHUNK linear axis with eight slides to move the workpieces on in a cycle.

Automated Handling
Automotive Industry

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Handling of Hinge Parts

**Metal Industry**

**Task:** Hinge parts have to be reliably transferred to the workpiece carrier in the linear transfer system.

**Solution:** Electric and pneumatic SCHUNK Pick & Place components with pillar assembly system and a compact Pick & Place unit, SCHUNK gripper for small components EGP and 2-finger parallel gripper PGN-plus as well as a swivel unit SRU–mini come available for use.

Handling of Worm Gear Shafts

**Metal–cutting Industry**

**Task:** To remove worm gear shafts in a machining center and store them temporarily before they are machined further.

**Solution:** A customized SCHUNK gripping system solution comprising two pneumatic 2-finger parallel grippers PGN–plus mounted on a SCHUNK swivel head SRH–plus, which take in turns a finished ground part from a clamping device and replace it with a blank. Finish–machined parts are deposited on a pallet, raw parts are gripped from the pallet.

Handling Plastic Gears

**Plastics Industry**

**Task:** Plastic gears must be moved fast and accurately positioned during an assembly process.

**Solution:** Pneumatic and mechatronic SCHUNK Pick & Place units from the SCHUNK modular assembly system come individually designed for use. As well as grippers for small components such as the SCHUNK MPG–plus.
Competent and skilled personnel ensure optimal availability of your SCHUNK products, and make sure that their value will be maintained.

Your advantage:
• Fast supply of original spare parts
• Reduction of down-times
• The complete spectrum of components from one source
• Quality and availability that can only be guaranteed by the original manufacturer
• 12-month warranty

Initial operation
• Professional assembly
• Fast and trouble-free

Inspection
• Inspection is carried out by skilled service engineers
• Avoiding unplanned failures of workholding and toolholding equipment

Maintenance
• Regular maintenance carried out by skilled service engineers
• Increasing and ensuring the availability of your workholding and toolholding equipment

Repairs
• Short down-times due to fast intervention of the SCHUNK service engineers
• Spare parts and accessories
Training

• Fast and practical training
• Efficient use of your SCHUNK products by training of the operating personnel
• The basis for proper machining of workpieces
• Ensures longevity of your SCHUNK products

Individual service – for better results

• Hotline to our inside technical consultants weekdays from 7 a.m. to 6 p.m.
• Project-oriented and on-site technical advice at your location
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All information in digital form, clearly structured and up-to-date on our website at www.schunk.com

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Current innovations in SCHUNK Gripping Systems

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**Depaneling Machine**

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Current innovations in SCHUNK Clamping Technology

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The complete precision toolholder range for perfect machining on around 520 pages

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Lathe chucks for sophisticated machining of world-renowned quality on 650 compact pages

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With 1,200 Types – the world’s largest chuck jaw program on over 720 pages

**Catalog Stationary Workholding**
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for safe, precise gripping and holding.

852 minutes without a goal against him in the Champions League

681 minutes without a goal against him on the national team

2 intercepted penalties in the 2006 World Cup

1 headed goal as a goalie

0 defeats English Soccer Champion

More than 2,000,000 sold precision toolholders

About 1,000,000 delivered SCHUNK grippers

More than 100,000 lathe chucks and stationary workholding systems are in use worldwide

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More than 75,000 implement hydraulic expansion customized solutions