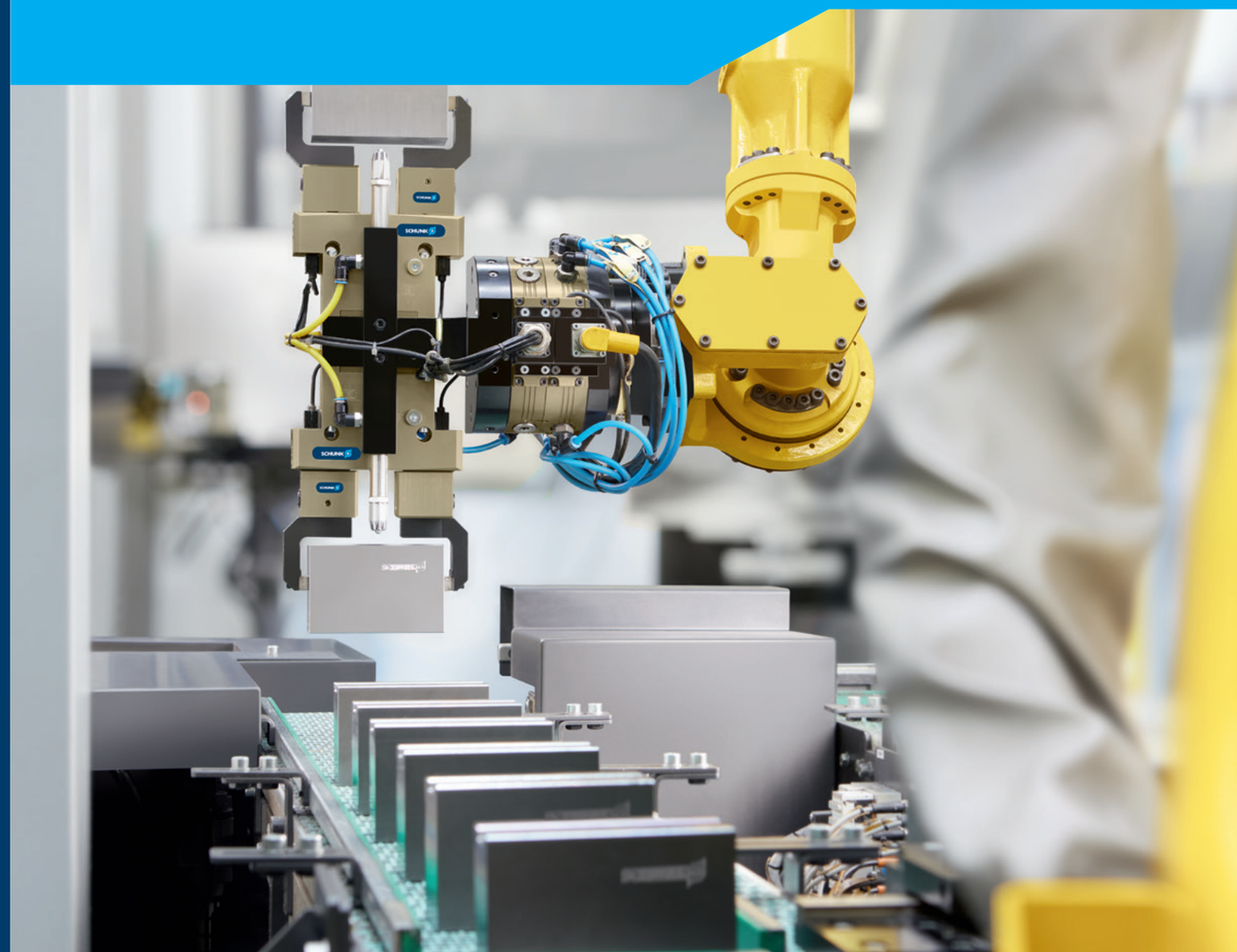
Gripping technology and automation technology

Product overview 2025

Hand in hand for tomorrow



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Automatisierungstechnik

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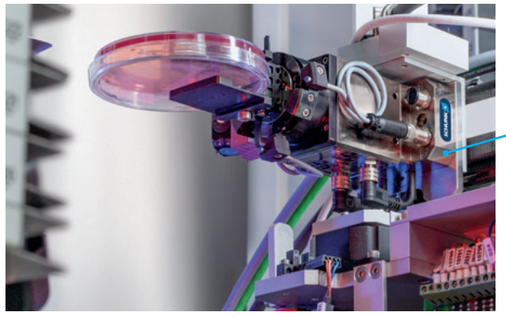
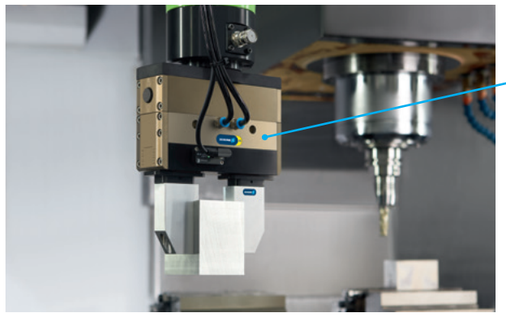
Benefit from the SCHUNK modular system with over 4,000 automation components

For any robot, for any industry and any handling task.

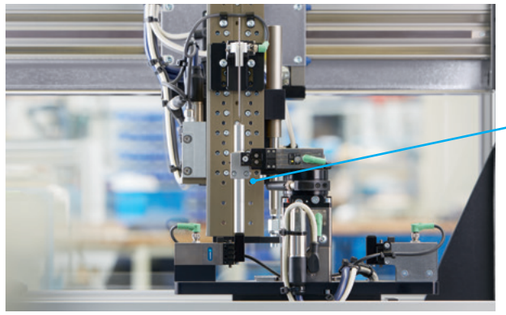
SCHUNK sets standards in all industries world-wide with its components and gripping portfolio. Our robot accessories include a uniquely comprehensive standard range of modules for the mechanical, sensory, and power connection of handlingdevices and robots. The comprehensive range of robust and long-lasting small grippers for small components and universal grippers features high product quality, precision, and numerous monitoring options. What's more, SCHUNK's handling solutions of axis system open up new perspectives for cost and value optimized automation solutions from a single source.



Industries and applications



Gripping technology



Automation technology

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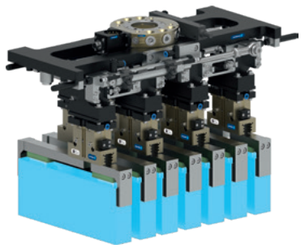
SCHUNK Engineering

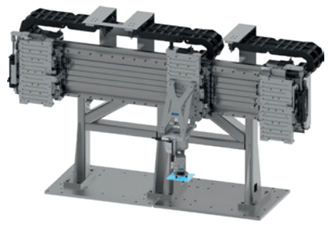
Innovating Partnerships

For the development of customized solutions, we offer a comprehensive range of services: deep industry expertise, an engineering process optimized over decades, and design authority over our broad, high-quality component portfolio. The ideal foundation for your success.

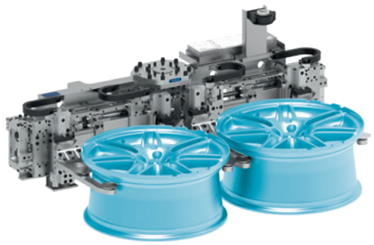
Solutions for your industry



Space-saving multi-gripper for handling prismatic battery cells



Assembly unit for handling solar module components



Double gripping unit for relocating rims

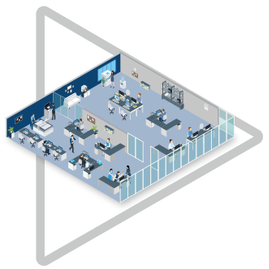
In addition to its extensive and high-quality component portfolio in the areas of clamping, gripping, and automation, SCHUNK offers a proven engineering process optimized over decades for the development of customized solutions.
This process is based on deep industry expertise, technical excellence, rapid implementation, and global availability in project management, design, manufacturing, assembly, and after-sales service.

The result: customized axis systems and assembly units in the fields of pneumatics, mechatronics, and robotic accessories from a single source, precisely tailored to the individual requirements of customers and optimally supporting their manufacturing processes.

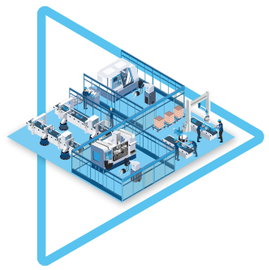
Four steps to project success

1 **Understanding challenges**

2 **Developing solutions**



3 **Manufacturing and assembly**



4 **On-site support**

Speed up your projects!

Four steps to project success

Process step	Your challenge	Our expertise
1 Understanding challenges – define requirements From working out precise requirement specifications in personal discussions to the development of a concept with reliable budget estimates.	⊖ Volatile quotation phases require early cost estimation ⊖ Complex process descriptions within short quotation phases ⊖ Find globally operating partners	⊕ Indicative prices for our solutions to provide early planning certainty ⊕ Industry expertise: analyzing processes and developing solutions ⊕ Consulting at over 34 subsidiaries and 4 Engineering hubs worlwide
2 Developing solutions – from idea to design In close coordination with you, we develop tailored solutions. This allows you to fully focus on your core competencies.	⊖ Coordination of suppliers and partners for a final concept ⊖ Short-term presentation of solution to the end customer ⊖ Economy-dependent project business	⊕ Everything from a single source: planning, quoting, design, and project management ⊕ Rapid development of solutions based on many years of industry expertise ⊕ Worldwide resources in planning, design, and project management
3 Manufacturing and assembly – testing and validation With our high manufacturing expertise and a seamless digital-process chain, we ensure maximum efficiency and precision-worldwide.	⊖ Specific expertise in vertical integration covering a broad range of industries and applications ⊖ Last-minute modifications to components in contact with the workpiece ⊖ International project business with reliable partners	⊕ Know-how and resources for custom components and assemblies as part of your system ⊕ Quick adaptation of data and components throughout the entire process chain ⊕ International Enginering hubs with globally consistent manufacturing standards and processes
4 On-site suport – delivery and after-sales As a trusted partner, we take care of your concerns and support you at every step.	⊖ Commissioning of complex systems in a production environment ⊖ Production downtime due to component failure ⊖ High maintenance and servicing effort for complex end-customer systems	⊕ Remote support for short-term assistance during commissioning ⊕ Fast and efficient fault analysis and development of customer-oriented solutions ⊕ Rapid deployment of technicians on-site to resolve complex issues ⊕ Inspection, maintenance, and repairs at the customer's location

Close to you worldwide

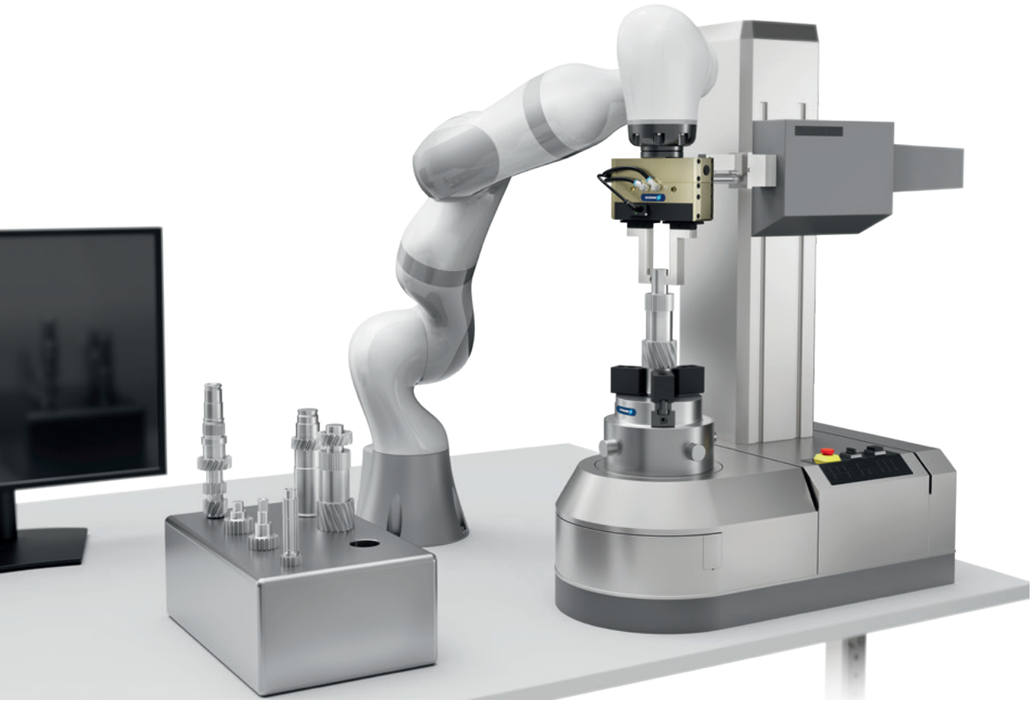
34 Sales subsidiaries

4 Engineering hubs

Speed up
+30 %

Industries

Every industry has its own requirements – from high precision in medical technology and extremely high load capacity in automated production to maximum efficiency in electronics manufacturing. Regardless of the challenge you face in your production process, SCHUNK is your reliable partner for customized solutions in the areas of toolholding and workholding, gripping and automation technology.
Thanks to our engineering expertise and decades of experience help us develop sophisticated concepts for a wide range of applications. Our products are designed to optimize processes, reduce interfaces, and sustainably increase productivity.



SCHUNK provides support along the entire powertrain manufacturing chain

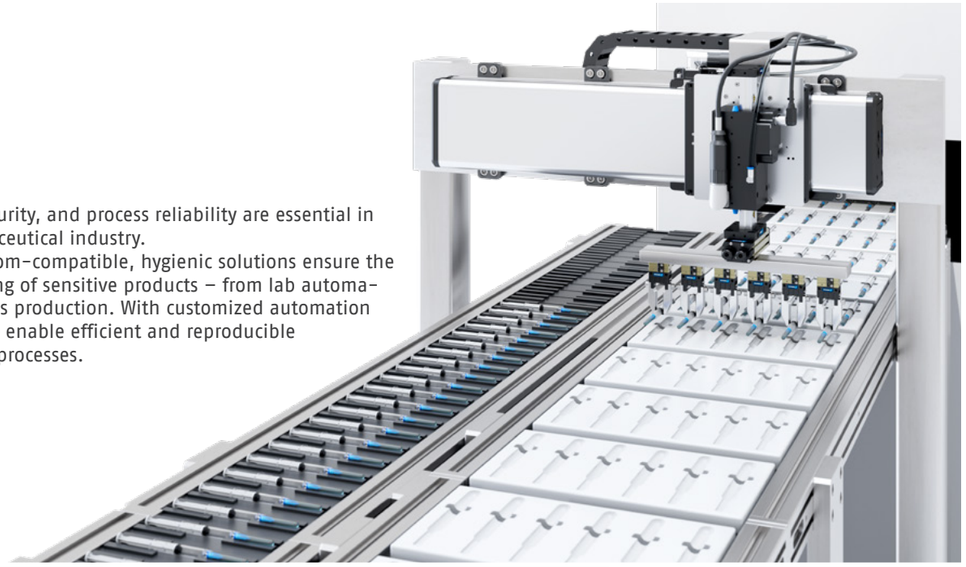
Automotive & E-Mobility

The automotive industry is a driving force for innovation and efficiency in industrial manufacturing. be it classic drives or the transformation to e-mobility – maximum precision, flexibility and process reliability are crucial.
As a long-standing partner of the automotive industry and its suppliers, SCHUNK supplies customized solutions. Thanks to our proven standards and modular system technology, we accelerate the integration of new production processes and ensure economical, future-proof manufacturing.

Round cell gripper RCG with minimal interfering contour for maximum packing density

Pharma

Precision, purity, and process reliability are essential in the pharmaceutical industry.
Our cleanroom-compatible, hygienic solutions ensure the safe handling of sensitive products – from lab automation to series production. With customized automation systems, we enable efficient and reproducible production processes.



Aerospace

The aerospace industry is characterized by the highest demands on quality, resilience, and precision.
Our clamping and automation solutions have been specially developed for these standards and ensure safe, precise, and low-deformation machining of sensitive components – from structural components to engine and landing gear components.

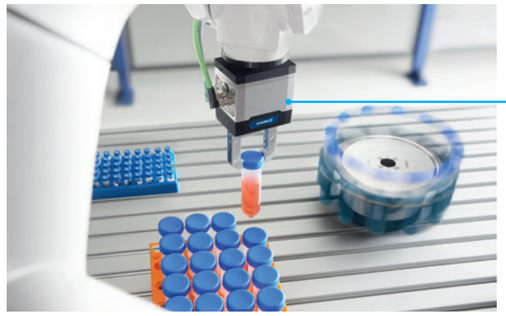
Electronics

The electronics industry requires maximum process reliability and gentle handling of sensitive components.
Our ESD-safe gripping systems and specialized automation solutions for wafer handling and final assembly ensure reliable production in demanding environments.

Gripper variety made by SCHUNK

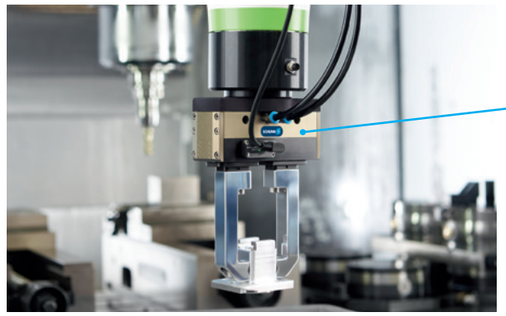
Your requirements are our motivation

SCHUNK offers an extensive gripper portfolio: standard grippers, assembly groups that are ready for use, and customized gripping technology solutions for your handling and assembly, automation and robot end-of-arm applications. We are always faced with the most complicated gripping requirements, and we solve them. The result: Robust and durable gripping solutions which have ensured reliability in systems and machines all over the world for 30 years.



Grippers
for small components

Grippers for handling small, lightweight and sensitive workpieces



Universal
grippers

Grippers for a wide range of applications

Long-stroke
grippers

Grippers with long jaw stroke and high gripping force

Pneumatic grippers

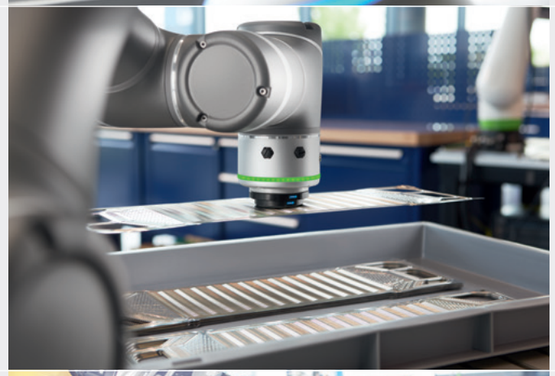
Pneumatic grippers from SCHUNK have stood for high quality and reliability for many years. The focus is always on your workpiece: from small to large, from round to square, for every batch size and every application environment.

Mechatronic grippers

For the requirements of modern process flows, mechatronic gripper solutions offer many advantages. In modern process flows, our electric grippers offer advantages such as application flexibility and process feedback.

Adhesive grippers

The bionically inspired ADHESO gripper technology is based on the principle of adhesion and uses intermolecularly acting Van der Waals forces to handle various workpieces.



Magnetic grippers

SCHUNK's magnetic grippers move ferromagnetic components in any position and size.

Accessories

To match the gripper range, SCHUNK offers accessories for each kind of application and handling requirement – and also under extreme conditions.

Product overview
Pneumatic grippers

Pneumatic grippers

Tech

The more demanding your application, the more precise the performance of the pneumatic gripper must be to match the task at hand. With our Tech segment, you have a whole range of „specialists“ at your disposal, such as grippers for handling O-rings, gears or rims.

Premium

In the premium segment you will find grippers of the highest quality with a wide range of variants and options. We not only offer more robust grippers, but also offer more maintenance-free gripping cycles and long life spans.

Economy

In our Economy segment, the focus is not only on performance but also on economic efficiency: You get real SCHUNK quality on favorable terms. Optimized for all standard applications in clean environments. The grippers focus on the essential characteristics, and thus ensure efficient use in operation.

The power of our pneumatic grippers

- **Proven**
- **Long service life**
- **Versatile**
- **High-quality**

		Parallel grippers			Centric grippers			Angular/radial grippers	
Tech	✚ Process specialists ✚ Maximum service life ✚ Best performance data	KTG	DPG-plus	PSH	ORG	DPZ-plus	PZB-plus	GAP	DRG
Premium	✚ Best performance data ✚ Maximum service life ✚ Up to 36 month warranty ✚ Large selection of variants and matching accessories	MPG-plus	PGN-plus-P	PHL	MPZ	PZN-plus	PZH-plus	SWG	PRG
Economy	✚ Proven SCHUNK quality at attractive conditions ✚ Focused performance ✚ Maximum economic efficiency	MPC	JGP-P		JGZ			SGB	

Universal gripper PGL-plus-P

The PGL-plus-P from SCHUNK is a universal 2-finger parallel gripper with a long jaw stroke, integrated sensor system, and higher torque absorption.
It is the world's first pneumatic gripper with certified gripping force maintenance.

Secure, certified gripping force maintenance, GripGuard

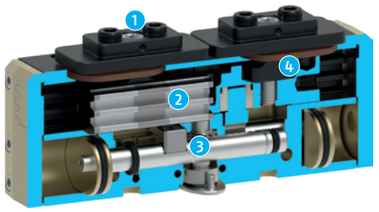
holds the gripped workpiece safely and also ensures a permanent gripping force of a minimum of 80% in case of pressure drop. It also ensures that no dangerous, spontaneous jaw movements can occur in the event of a pressure drop

Integrated sensor system

for precise and process-reliable monitoring of the complete gripper stroke via IO-Link

Long jaw stroke

allows flexible handling of a large range of parts



1. **Base jaw**
With standardized screw connection diagram for adaption of workpiece-specific gripper fingers. The centering sleeves are attached so that they cannot be lost during exchange of fingers.

2. **Multi-tooth guidance**
Maximum service life due to lubricant pockets in the robust-multi-tooth guidance, andabsorption of high forces andmoments by means of the largeguidance support.

3. **Pneumatical drive piston and kinematics**
Maximum power generation-through two oval pneumatic pistons.
The rack and pinion kinematics ensure synchronization of the base jaws and centric clamping.

4. **Dust cover**
The entire gripper is fully metal-encapsulated and additionally sealed with a lip seal at the base jaws so that it is suitable for universal use, even in dirty environments.

Pneumatic positioning device PPD

The pneumatic positioning device is an accessory for use with pneumatic grippers.
Together with a position sensor, any position of the gripper fingers can be approached in addition to the end positions (gripper open and gripper closed).
Four integrated high-speed 2/2 valves with integrated electronics ensure a closed control loop. Communication takes place via IO-Link.

Free positioning of a pneumatic gripper

enables cycle time optimization or collision avoidance by pre-positioning the gripper finger

Adjustability of the gripper jaw speed

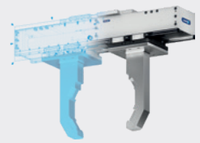
for gentle gripping of the workpieces by reducing the gripping impulse

Gripping force adjustability by adjusting the output pressures

for gripping workpieces of varying sensitivity

1. **Pneumatic positioning device PPD**
2. **Pneumatic gripper**
PGL-plus-P-IOL
3. **Position sensor**

2-finger parallel grippers
Pneumatic grippers

2-finger parallel grippers									
Premium							Tech		
Grippers for small components		Universal grippers		Long-stroke grippers			Grippers for small components	Universal grippers	
MPG-plus	KGG	PGN-plus-P	PGL-plus-P	PHL	PLG		KTG	PGB	
									
Description									
Powerful, compact gripper for small components with smooth-running roller guide on the base jaws	Narrow gripper with long stroke of up to 60 mm per finger	Guaranteed maintenance-free universal gripper with powerful gripping force and high maximum moments	Universal grippers with a long jaw stroke, integrated sensor system and high maximum moments	Grippers with high maximum moments and a long jaw stroke	Customizable long-stroke gripper with high gripping force and profiled rail guide		Gripper for small components with center through-hole	Universal centric gripper with high gripping force and high maximum moments and center bore	
For small to medium-sized workpieces	For light to medium-weight workpieces	For light to heavy workpieces	Flexible handling of a wide range of parts	For large workpieces and/or a wide range of parts	For very large workpieces and/or a wide range of parts		For small to medium-sized workpieces	For small to medium-sized workpieces	
Areas of application: Assembly, testing, laboratory, pharmaceutical, food	Areas of application: Universally applicable	Areas of application: Universally applicable	Areas of application: Different applications in clean as well as dirty environments	Areas of application: mechanical and plant engineering, assembly and handling, automotive	Areas of application: individually configurable for the application area		Areas of application: sensors or actuators are required during workpiece feeding	Areas of application: when workpiece feeding, sensors or actuators are required	
Advantages									
Maximum gripping forces with oval piston drive	High maximum moments due to the robust T-slot guidance	Precise handling due to robust multi-tooth guidance	Secure, certified gripping force maintenance, GripGuard	Use of long gripper fingers possible	Stroke per jaw configurable to the millimeter from 100 mm to 400 mm		Low self-weight for weight-optimized handling solutions	Precise handling due to robust multi-tooth guidance	
Precise gripping thanks to the cross roller guidance with minimal play	Direct power transmission and high efficiency thanks to pneumatic 2-piston drive concept	Use of long gripper fingers possible	Precise and process-reliable monitoring of the complete gripper stroke via IO-Link thanks to the integrated sensor system	Workpiece is clamped centrally using a pinion-rack principle	Application-specific standard gripper thanks to diverse variants and options and individual configuration		Large stroke in relation to size	Use of long gripper fingers possible	
Food-grade lubrication	Workpiece is clamped centrally using a pinion-rack principle	Process reliability and extended maintenance intervals thanks to permanent lubrication	IP 64 dirt protected as standard	Universal and flexible gripper assembly	Reduced design effort, simple and fast design via web tool		Precise gripping due to base jaws guided on rolling bearings	Maximum gripping force up to 610 N with oval piston drive	
Technical data									
Number of sizes	9	7	11	5	5	5	1	4	
Gripping force [N]	7 .. 370	45 .. 540	180 .. 27000	145 .. 1900	500 .. 4630	1650 .. 11650N	13	90 .. 610	
Stroke per jaw [mm]	1 .. 10	10 .. 60	2 .. 45	10 .. 25	30 .. 160	100 .. 400 mm	4.5	4 .. 10	
Self-weight [kg]	0.01 .. 0.63	0.09 .. 4.2	0.08 .. 39.8	0.46 .. 7.9	1.49 .. 23.55	19.03 .. 137.7	0.08	0.28 .. 1.32	
Recommended workpiece weight [kg]	0 .. 1.25	0 .. 2.7	0 .. 97.5	0 .. 7	2.5 .. 15.5	8.25 .. 58.25	0.07	0 .. 3.3	
Closing/opening time [s]	0.01 .. 0.08/0.011 .. 0.08	0.03 .. 0.29/0.03 .. 0.25	0.02 .. 0.8/0.02 .. 0.8	0.03 .. 0.35 / 0.03 .. 0.35	0.11 .. 1.82/0.11 .. 2.91	0.08 .. 1.7/1.1 .. 2.2	0.05/0.05	0.02 .. 0.08/0.02 .. 0.08	
Max. permissible finger length [mm]	80	160	400	100 .. 260	800	800	50	125	
Repeat accuracy [mm]	0.02	up to 0.02	up to 0.01	0.03	0.02	0.03	0.02	0.01	
Protection class IP	30/54	40	40/64	64/67	41	30	20	40	
Cleanroom class ISO 14644-1	6		7 (sizes 40 - 100)						
Sensor system	++	+	+++	+++	++	++	+	++	
High number of variants	++	++	+++	+++	++	+++	+	+	
Ambient conditions									
Clean	●	●	●	●	●	●	●	●	
Contaminated/coarse dust	○	○	●	●	◑	◑	○	◑	
Contaminated/fine dust and liquids			◑	●	○				
Contaminated/aggressive liquids			◑	◑					
High temperature range > 90°C	◑	○	●	●			○	●	
Cleanroom	◑	○	◑	◑			○	○	

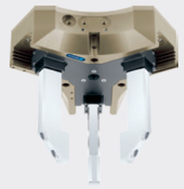
● = very highly suitable
◑ = highly suitable
○ = suitable in customized version
\+ = medium-sized selection
++ = wide selection
+++ = very wide selection

2-finger parallel grippers
Pneumatic grippers

2-finger parallel grippers							
Tech			Economy				
Universal grippers	Long-stroke grippers		Grippers for small components	Universal grippers		Long-stroke grippers	
DPG-plus	PSH	SPG	MPC	JGP-P	PGF	PFH-mini	
Description							
Reliably sealed universal gripper according to IP67	Gripper with long jaw stroke up to 100 mm and dirt-resistant round guides	Stable grippers with high maximum moments and long jaw stroke	Basic gripper for small components with good price-performance ratio	Basic universal gripper with good price-performance ratio	Compact universal gripper with surface-guided base jaws	Grippers with high maximum moments and a long jaw stroke	
For small to medium-sized workpieces	For large workpieces	For heavy workpieces and a wide variance in parts	For small to medium-sized workpieces up to 1.85 kg	For light to medium weight workpieces	Suitable for large workpieces	For large workpieces and/or a wide range of parts	
Areas of application: for use in harsh environments such as foundries, grinding shops or forges.	Applications: for use in harsh environments and with a wide range of workpieces	Areas of application: assembly, automotive	Areas of application: simple applications in small components handling	Areas of application: mechanical and plant engineering, assembly, handling, automotive	Areas of application: universal application	Areas of application: mechanical and plant engineering, assembly and handling	
Advantages							
Precise handling of different workpieces due to robust multi-tooth guidance	Sealed round guidance for long strokes	Precise handling due to robust guidance	Cost-effective alternative	Cost-effective alternative	Very good guidance characteristics due to precise flat guidance	Use of long gripper fingers possible	
Permanently secure sealing thanks to lip seal on the outer circular guide	Use of long gripper fingers possible	Use of long gripper fingers possible	Wide range of applications thanks to six sizes	Precise handling of different workpieces	Minimal interfering contours despite long stroke	Workpiece is clamped centrally using a pinion-rack principle	
Use of long gripper fingers possible	Universal and flexible gripper assembly	High efficiency due to direct drive	Simple, functional gripping system all from a single source	Comprehensive sensor accessories and monitoring of the stroke position with appropriate sensor accessories	Universal and flexible gripper assembly possible	Universal and flexible gripper assembly	
Technical data							
Number of sizes	11	4	1	6	10	5	3
Gripping force [N]	110 .. 11250	320 .. 1760	10000	16 .. 370	180 .. 8200	240 .. 1900	630 .. 2950
Stroke per jaw [mm]	2 .. 45	14 .. 100	100	2.5 .. 15	2 .. 35	7.5 .. 31.5	30 .. 100
Self-weight [kg]	0.12 .. 52	0.77 .. 8.05	35	0.05 .. 0.94	0.08 .. 17.2	0.3 .. 5.3	2.65 .. 12.6
Recommended workpiece weight [kg]	0 .. 46.35	0 .. 8.8	50	0 .. 1.85	0 .. 35	0 .. 7.1	0 .. 13
Closing/opening time [s]	0.03 .. 1.1/0.03 .. 1.1	0.12 .. 0.4/0.12 .. 0.4	1.5/1.5	0.03 .. 0.11/0.03 .. 0.11	0.02 .. 0.7/0.02 .. 0.7	0.03 .. 0.4/0.03 .. 0.4	0.3 .. 1.0/0.3 .. 1.2
Max. permissible finger length [mm]	380	300	500	60	300	125	250
Repeat accuracy [mm]	up to 0.01	up to 0.05	0.1	0.02	up to 0.01	up to 0.02	0.05
Protection class IP	67	67	30	30	40	40	41
Cleanroom class ISO 14644-1	5						
Sensor system	+	+	+	+	++	+	++
High number of variants	++	+	+	+	+	+	++
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
\+ = medium-sized selection
++ = wide selection
+++ = very wide selection

3-finger centric grippers
Pneumatic grippers

3-finger centric grippers							
Premium			Tech			Economy	
Grippers for small components	Universal grippers	Long-stroke grippers	Universal grippers			Universal grippers	
MPZ	PZN-plus	PZH-plus	DPZ-plus	PZB-plus	PZV	JGZ	
							
Beschreibung							
Small 3-finger centric gripper with base jaws guided on T-slots	Universal 3-finger centric gripper with high gripping force and high maximum moments	Universal 3-finger centric gripper with a long stroke and high maximum moments	Reliably sealed 3-finger centric gripper according to IP67 standard	3-finger centric gripper with high gripping force and high maximum moments and center bore	Multi-finger gripper for applications, in which two or three fingers are insufficient	Universal 3-finger centric gripper of the compact class with T-slot sliding guide and the best cost-performance ratio	
Especially suitable for small workpieces	Flexible handling of a wide range of parts	For large, sensitive workpieces	For rough or dirty workpieces	Flexible handling of a wide range of parts	E.g. for cylindrical workpieces	Flexible handling of a wide range of parts	
Areas of application: universally applicable	Areas of application: can also be used in areas with special requirements such as temperature, chemical resistance, contamination	Areas of application: can also be used in areas with special requirements such as temperature, chemical resistance, contamination	Areas of application: wide range of applications from wet cells, grinding machines, lathes and milling machines to powder and paint spraying systems.	Areas of application: when workpiece feeding, sensors, actuators or customer-side attachments are required	Areas of application: MedTech, laboratory automation, pharmaceuticals	Areas of application: mechanical and plant engineering, assembly and handling, automotive	
Vorteile							
Precise gripping with high bearing load capacity thanks to T-slot guidance	Precise handling due to robust multi-tooth guidance	Sensitive gripping for deformation-free handling	Precise handling of different workpieces thanks to robust multi-tooth guidance	Precise handling of different workpieces due to robust multi-tooth guidance	Process-reliable handling despite interfering contours	Cost-effective alternative	
Monitoring of finger positions also possible via FPS	Use of long gripper fingers possible	Precise handling due to robust multi-tooth guidance	Permanently secure sealing thanks to lip seal on the outer circular guide	Use of long gripper fingers possible	Precise handling due to robust multi-tooth guidance	Compact dimensions and low self-weight for minimum interfering contours in handling	
Compact dimensions for minimum interfering contours in handling	High force transmission and synchronized gripping due to wedge-hook principle	Use of long gripper fingers possible	Use of long gripper fingers possible	Multi-functional range of applications due to high gripping forces	High force transmission and synchronized gripping due to wedge-hook design	Use of long gripper fingers possible	
Technical data							
Number of sizes	6	11	4	8	9	5	7
Gripping force [N]	20 .. 310	255 .. 57300	375 .. 4200	230 .. 16500	340 .. 27400	570 .. 6900	225 .. 7990
Stroke per jaw [mm]	1 .. 5	2 .. 45	20 .. 75	2 .. 25	2 .. 35	4 .. 16	2 .. 16
Self-weight [kg]	0.01 .. 0.29	0.13 .. 80	1.5 .. 33	0.2 .. 20.1	0.26 .. 53	0.5 .. 10	0.12 .. 8
Recommended workpiece weight [kg]	0 .. 1.15	0 .. 227	0 .. 22	0 .. 60	0 .. 100	0 .. 34.5	0 .. 30
Closing/opening time [s]	0.02 .. 0.06/0.02 .. 0.06	0.02 .. 4.6/0.02 .. 3	0.25 .. 1.05/0.2 .. 0.85	0.03 .. 1.8/0.03 .. 1.8	0.02 .. 2.5/0.02 .. 2.5	0.02 .. 0.15/0.02 .. 0.15	0.02 .. 0.8/0.02 .. 0.8
Max. permissible finger length [mm]	45	250	400	160	250	140	200
Repeat accuracy [mm]	0.01	up to 0.01	up to 0.02	up to 0.01	up to 0.01	up to 0.01	up to 0.01
Protection class IP	40	40/64	40	67	40	40	40
Cleanroom class ISO 14644-1	5	5	5	5			
Sensor system	+	+++	+	+	++	+++	++
High number of variants	+	+++	+	++	+	+	+
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
+ = medium-sized selection ++ = wide selection +++ = very wide selection

Angular/radial grippers
Pneumatic grippers

Angular/radial grippers							
Premium			**Tech**		**Economy**		
Grippers for small components	**Universal grippers**		**Grippers for small components**	**Universal grippers**	**Grippers for small components**		
SWG	**PWG-plus**	**PRG**	**GAP**	**DRG**	**SGB**	**SGW**	
Description							
Narrow double-acting 2-finger angular gripper	Robust 2-finger angular gripper with oval piston and bone drive	180° radial gripper with powerful 1-pin crank system and oval piston	Compact, double-acting, 2-finger angular parallel gripper for parallel O.D. gripping after swiveling in the gripper finger up to 90 degrees per jaw	Sealed 180° angular gripper for use in contaminated environments	Small, single-acting, plastic 2-finger angular gripper with spring return	Small, single-acting, plastic 3-finger angular gripper with spring return	
For small to medium-sized workpieces	Flexible handling of a wide range of parts	Flexible handling of a wide range of parts	For small to medium-sized workpieces	Flexible handling of a wide range of parts	For small to medium-sized workpieces	For small to medium-sized workpieces	
Areas of application: areas that require stacked, space-optimized gripper arrangements	Areas of application: can be used in challenging environments	Areas of application: applications that require a large gripping force with the shortest possible movement sequences at the same time	Areas of application: applications requiring parallel external gripping with previous swiveling of the gripper fingers up to 90° per jaw.	Areas of application: can be used in dirty environments	Areas of application: applications requiring corrosion resistance and anti-static properties	Areas of application: applications requiring corrosion resistance and anti-static properties	
Advantages							
Narrow design, allowing the grippers to be arranged in a row	Variable top jaw design, as grippers are available in a jaw version as well as in a finger version using intermediate jaws	Almost constant closing torque at closing angles from -5° to +7° due to kinematics.	Positively driven angular and parallel movement in a single functional unit	Completely sealed gripper version	Cost-effective alternative	Cost-effective alternative	
Spring-supported gripping force maintenance in the event of a pressure loss	Equipped with gripping force maintenance in the event of a pressure loss	Optimized cycle time due to innovative damping directly in the drivechain	Maximum positioning accuracy, due to absolute centric clamping in the parallel stroke	Opening angle adjustable from 20° to 180°	Light and corrosion free as housing is made from fiberglass-reinforced plastic	Light and corrosion free as housing is made from plastic	
High force transmission and synchronized gripping due to wedge-hook design	Optional stroke limitation upon opening, for confined spaces and short cycle times	Higher closing moments for longer and more stable gripper fingers due to maximum power density	High force transmission and synchronized gripping due to stable kinematics	Equipped with gripping force maintenance in the event of a pressure loss	High power transmission and synchronized gripping thanks to single-acting double-piston drive with lever transmission	High power transmission and synchronized gripping due to single-acting 3-piston drive with lever transmission	
Technical data							
Number of sizes	8	8	8	4	5	3	3
Gripping moment [Nm]	0.01 .. 2.8	3.32 .. 1025	2 .. 295	56 .. 430	8.2 .. 143	0.9 .. 4.95	1.35 .. 7.45
Opening angle per jaw [°]	15	15	30 .. 90	30 .. 90	10 .. 90	8	8
Self-weight [kg]	0.0025 .. 0.213	0.13 .. 13.6	0.13 .. 6.72	0.16 .. 1.33	0.5 .. 4.46	0.04 .. 0.06	0.05 .. 0.17
Recommended workpiece weight [kg]	0 .. 0.46	0 .. 23.13	0 .. 6.96	0 .. 1.25	0 .. 7.2	0 .. 0.8	0 .. 1.3
Closing/opening time [s]	0.015 .. 0.03/0.02 .. 0.06	0.06 .. 0.32/0.06 .. 0.46	0.06 .. 0.75/0.06 .. 0.92	0.09 .. 0.35/0.09 .. 0.35	0.4 .. 0.3/0.5 .. 0.6	0.06 .. 0.08/ 0.04 .. 0.05	0.02 .. 0.02/0.03 .. 0.03
Max. permissible finger length [mm]	42	300	240	65	125	50	50
Repeat accuracy [mm]	0.05	0.02	up to 0.05	0.05	0.1	0.1	0.1
Protection class IP	30	30	20	40	67	20	20
Cleanroom class ISO 14644-1							
Sensor system	+	++	++	+	++	+	+
High number of variants	+	++	++	++	++	+	+
Ambient conditions							
Clean	●	●	●	●	●	●	●
Contaminated/coarse dust	○	◑	○	○	●	○	○
Contaminated/fine dust and liquids		○			●		
Contaminated/aggressive liquids		○			◑		
High temperature range > 90°C	●	●	●		●		
Cleanroom	○	○	○	○	○	○	○

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

Special grippers
Pneumatic grippers

Special grippers								
Tech								
O-ring gripper	**Round cell gripper**	**Gripper with shaft interface for toolholder**						**Internal hole gripper**
ORG	**RCG**	**GSW-B**	**GSW-B with AGE**	**GSW-V**	**GSW-M**	**RGG**		**LOG**
Description								
6-finger gripper reliable for internal and external assembly of O-rings	Round cell gripper	Universal grippers	Universal gripper with compensation unit	Vacuum gripper for spindle interfaces	Magnetic gripper for spindle interfaces	Cleaning unit for up to 80 bar operating pressure		Light gripper made of highly resistant polyamide with closed diaphragm system
For O-rings, square rings, etc. up to 160 mm outer diameter	For handling battery cells with Ø 46 mm	Flexible handling of a wide range of parts	Flexible handling of a wide range of parts	For flat workpieces weighing up to 4.9 kg	For flat, ferromagnetic workpieces	For machine fluid (filtered, max. particle size of 30 µm) or filtered compressed air in accordance with ISO 8573-1:2010 [7:4:4].		For lightweight workpieces of up to 3 kg such as small components, plastic components and sand cores
Areas of application: automated assembly	Areas of application: for example, as a multiple gripping unit for packaging battery cells after cell production or for further processing into battery modules or complete battery packs; cell to module or cell to pack	Areas of application: for fully automated loading and unloading of machining centers	Areas of application: for fully automated loading and unloading of clamping devices such as vises	Areas of application: for fully automated loading and unloading	Areas of application: for fully automated loading and unloading	Areas of application: for cleaning clamping devices and for automating machine tool cleaning		Areas of application: particularly suitable for highly dynamic applications with lightweight workpieces
Advantages								
O.D. and I.D. assembly with one gripper for flexibility and cost savings	Compact external dimensions of the single gripper enable maximum packing density of battery cells	Cost effective module consisting of a universal gripper PGN-plus-P/PZN-plus and a shaft interface	Cost effective module consisting of a universal gripper PGN-plus-P/PZN-plus and a shaft interface	Cost-effective unit for flexible automation in the machine	No electricity required, actuated using cooling lubricant	Cost-effective unit for flexible automation in the machine		High dynamics in the application due to low self-weight
Reliable performance due to new mounting principle for high availability	Maximum process reliability due to sensory workpiece and status detection	Fast, automated gripper change from the tool rack	Fast, automated gripper change from the tool rack	Fast, automated gripper change from the tool rack	Cost-effective unit for flexible automation in the machine	Fast, automated cleaning for maximum machine utilization		A closed membrane system and internal stop protect the expansion membrane from damage
Standard assembly finger for external assembly used for fast commissioning of common ring sizes	Avoidance of workpiece loss thanks to the integrated gripping force maintenance, even in the event of energy loss	Fully automatic tool change without the use of robots or gantries	Fully automatic tool change without the use of robots or gantries	Fully automatic tool change without the use of robots or gantries	Fully automatic tool change without the use of robots or gantries	Increased safety for machine operators		A long service life ensures long-lasting economical use
Sensor system	+	++						
High number of variants	+	++	++	++	+	+	+	+++
Ambient conditions								
Clean	●	●	●	●	●	●	●	●
Contaminated/coarse dust			●	◑	○	○	●	●
Contaminated/fine dust and liquids			◑	◑	○	○	●	●
Contaminated/aggressive liquids			◑	◑			●	
High temperature range > 90°C			●	●			●	

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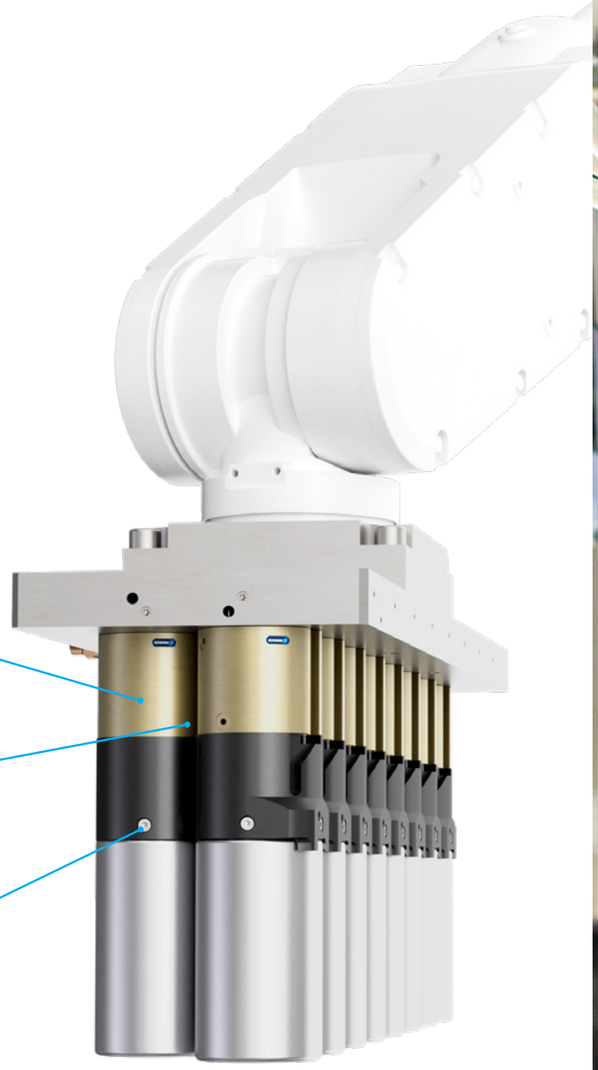
Round cell gripper RCG

The increased use of batteries is presenting new challenges for the automotive industry. The round cell gripper RCG from SCHUNK offers an innovative solution. Specially developed for handling 46 mm round cells, the RCG enables cells to be picked up and set down precisely due to a pneumatically controlled magnet system. The RCG is typically used in multiple gripping units, such as in row arrangements or for gripping complete cell clusters. Compact external dimensions of the single gripper enable maximum packing density.



Compact overall dimensions

the individual gripper enables maximum packing density of battery cells

Maximum process reliability

through sensory workpiece and status detection

Avoidance of workpiece loss

due to the integrated gripping force maintenance, even in the event of energy loss

From round cell to battery pack

SCHUNK handles everything from the individual battery cell to the finished battery pack from one source. The combination of RCG round cell grippers and other SCHUNK components such as sensors, compensation units, cell spacing units and linear direct axes enables precise and dynamic processes. The RCG is tailor-made for your application and is individually scalable.

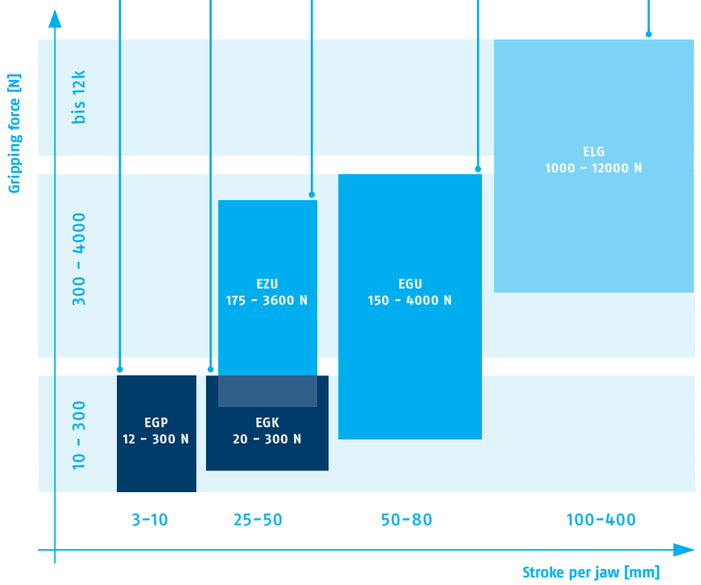
Mechatronic grippers

Our mechatronic grippers combine mechanics, electronics and integrated software to create advanced solutions that outperform traditional tool functions. The parallel and centric gripper portfolio currently comprises five product series that are optimally adapted for use in various application areas in terms of gripping force and stroke.

Mechatronic grippers offer many advantages for the requirements of modern process flows

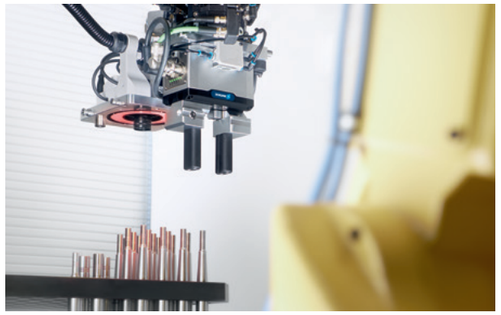
- **Flexible in use:** variety of parts, adjustment options (positioning, stroke, force, gripping modes), future-proof thanks to new software functions that can be added at a later date.
- **Connectivity:** added value through standardized interfaces (flexible and simple connection to all relevant robot and controller manufacturers)
- **Process feedback:** for greater process stability and reliability due to integrated monitoring and analysis options
- **Independent of compressed air:** for improved availability, cleanliness, and sustainability even in mobile applications

Gripper for small components EGP | Gripper for small components EGK | 3-finger universal gripper EZU | 2-finger universal gripper EGU | Long-stroke gripper ELG



Anwendungsbeispiele

Flexible machine tool loading



Assembly and joining tasks

Handling printed circuit boards

Laboratory automation

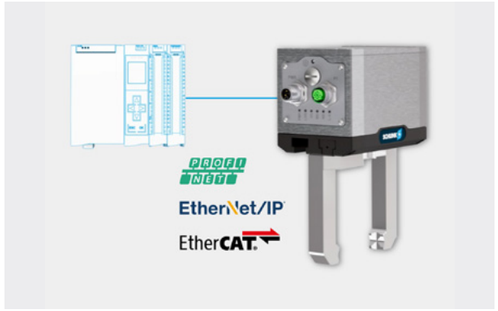
Assembly automation

Handling of tires

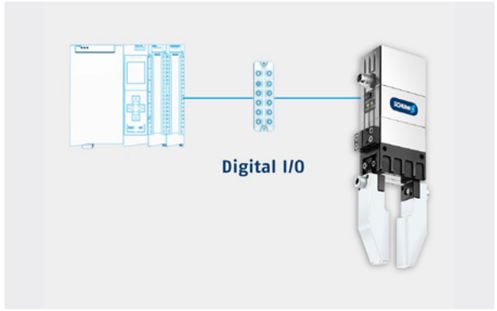
Mechatronic grippers

Connectivity

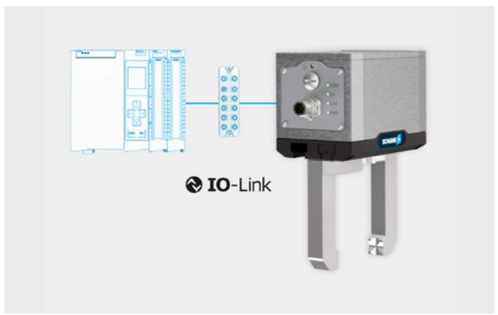
For easy integration, our mechatronic grippers are equipped with a variety of communication interfaces.
This allows them to connect quickly and easily with all relevant robot and controller manufacturers.



Industrial Ethernet enables direct integration into the control environment of leading PLC manufacturers on the market, without additional gateways.



Control via **digital inputs and outputs** is the simplest type of communication and enables simple connections with limited functionalities.



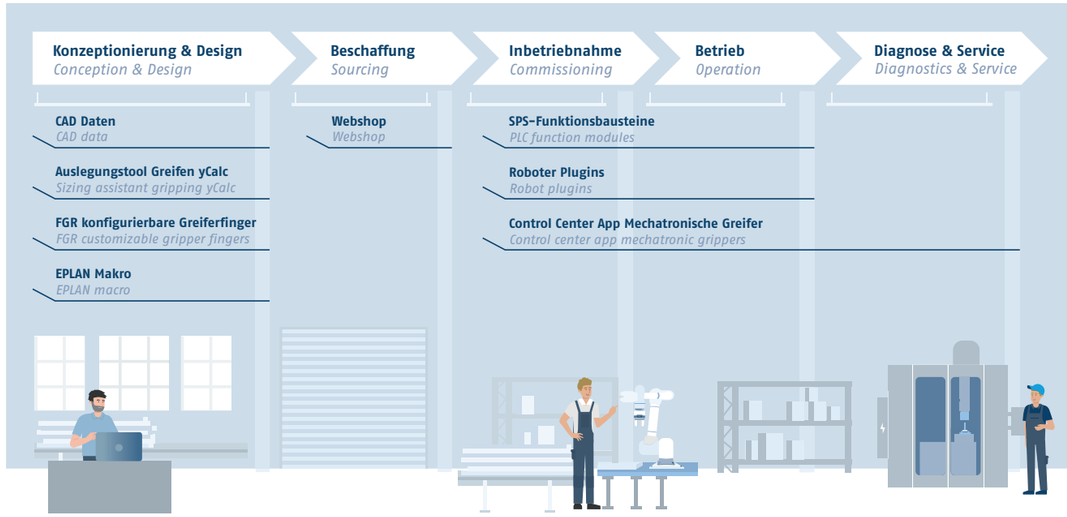
IO-Link is independent and offers flexibility in connecting to other networks.

With the **Modbus RTU serial interface**, the gripper can be connected to the tool flanges of leading robot manufacturers without external cable routing.

Product overview
Mechatronic grippers

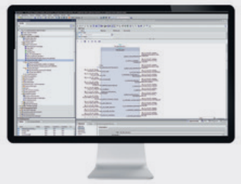
Digital tools & services

SCHUNK offers a wide range of digital tools and services for mechatronic grippers with the aim of providing the greatest possible support throughout the machine life cycle.



Efficient commissioning

SCHUNK provides you with the following tools and services:



PLC integration
For seamless interaction between gripper and PLC control, function modules are available for the programming interfaces of leading manufacturers such as Allen Bradley, Beckhoff, and Siemens. This means that all gripper functions can be used directly without any additional programming effort.

Robot integration
Plugins are available to enable quick and easy gripper integration into robot control systems from ABB, FANUC, Universal Robots and YASKAWA. After installation, you can immediately start programming applications.

SCHUNK Control Center
The "Mechatronic Grippers" app simplifies commissioning, operation, diagnostics, and service due to its extensive catalog of functions. Users can control the gripper directly and perform application validation without the need for a PLC.

	2-finger parallel grippers					3-finger centric grippers	Special grippers
	Grippers for small components		Universal grippers	Long-stroke grippers	Collaborating grippers	Universal grippers	Servo-electric 5-finger gripping hand
	EGP	EGK	EGU	ELG	Co-act EGP-C	EZU	SVH
Description							
	2-finger gripper for small components with smooth-running base jaws guided on roller bearings	Versatile 2-finger gripper for small components for maximum workpiece diversity and maximum process reliability	Versatile 2-finger universal gripper for the highest level of workpiece variety with maximum robustness	Configurable 2-finger long-stroke gripper with a gripping force of up to 12,000 N	Collaborating 2-finger gripper for small components with control via 24V and digital I/O	Versatile 3-finger centric gripper enables eccentrically positioned workpieces to be gripped and centered with consistently high gripping force	The servo-electric 5-finger hand grips nearly as perfectly as the human hand.
	For precise small components handling with short cycle times	For delicate and fragile workpieces such as printed circuit boards, samples and trays	Universal workpiece handling, even for large and heavy workpieces	For large, bulky and heavy workpieces	For small and lightweight workpieces	Universal workpiece handling of cylindrical workpieces, even for large and heavy workpieces	For a wide variety of gripping and manipulation tasks
	Areas of application: electronics manufacturing, laboratory automation and assembly automation in rigidly linked production processes	Areas of application: flexible production processes in electronics manufacturing and laboratory automation	Areas of application: loading and unloading of machine tools, assembly and joining tasks with externally acting process forces	Applications: customized, handling of crates, boxes, rims, white goods and much more	Areas of application: applications with direct collaboration between humans and cobots	Areas of application: loading and unloading of machine tools, handling of shafts or gears	Areas of application: mobile robotics, research and development
Advantages							
	Compact dimensions for minimum interfering contours in the application	Versatile and productive due to the long and freely programmable jaw stroke with continuous gripping force adjustment	Versatile and productive due to the long and freely programmable jaw stroke with continuous gripping force adjustment	Adaptable drive motor for flexible actuation and easy integration into existing control concepts	Plug & Work: Compatible with a wide range of cobots	Versatile and productive due to the long and freely programmable jaw stroke with stepless gripping force adjustment	Various gripping operations can be executed with high sensitivity thanks to the moving parts with a total of nine drives
	Control via digital I/O for easy commissioning and rapid integration into existing systems	Gripping force maintenance with loss detection	Gripping force maintenance with loss detection	Reduced design costs thanks to simple and fast design of individual long-stroke grippers via web tool	Certified by German statutory accident insurance (DGUV)	Gripping force maintenance with loss detection	Reliable grip of objects thanks to elastic gripping surfaces
	Control via IO-Link. Enables pre-positioning of gripper finger and evaluation of gripper condition as well as adjustability of special gripping modes	Always referenced in the event of both emergency stop and power failure thanks to integrated absolute encoder	Always referenced in the event of both emergency stop and power failure thanks to integrated absolute encoder	CAD data available at the press of a button; the gripper can be immediately integrated into the CAD system design	Functional safety ensured thanks to inherent safety with current limitation	Always referenced in the event of both emergency stop and power failure thanks to integrated absolute encoder	Extremely compact design thanks to integration of the complete control, regulator, and power electronics in wrist
Technical data							
Number of sizes	4	3	4	4	2	3	1
Gripping force [N]	12 .. 300	20 .. 300	150 .. 4000	1000 .. 12000	140 .. 230	175 .. 3600	
Stroke per jaw [mm]	3 .. 10	26.5 .. 51.5	41 .. 80	100 .. 400	6 .. 10	20 .. 40	
Self-weight [kg]	0.11 .. 0.83	0.58 .. 1.63	1.44 .. 7.88	8.1 .. 56.5	0.59 .. 1.38	2.25 .. 7.55	1.3
Max. permissible finger length [mm]	80	130	200	800	80	160	
Nominal voltage [V]	24	24	24	Motor-dependent	24	24	24
Protection class IP	30	67	67	20 .. 44	30	67	20
Communication interface	Digital I/O, IO-Link	PROFINET, EtherNet/IP, EtherCAT, IO-Link, Modbus RTU	PROFINET, EtherNet/IP, EtherCAT, IO-Link, Modbus RTU	Controller-dependent	Digitale I/O	PROFINET, EtherNet/IP, EtherCAT, IO-Link, Modbus RTU	RS485
High number of variants	+++	+++	+++	+++	++	+++	+
Ambient conditions							
Clean	●	●	●	●	●	●	●
Contaminated/coarse dust		●	●	●		●	
Contaminated/fine dust and liquids		◑	●	◑		●	
Contaminated/aggressive liquids							
High temperature range > 90°C							
Cleanroom	◑	◑	◑			◑	

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ADHESO Adhesive grippers

The ADHESO gripper technology is based on an adhesive system modeled on nature. The adhesive forces used by animals such as geckos for locomotion are now being utilized by SCHUNK for handling applications in the most diverse of fields.

The advantages of the ADHESO gripper technology are revolutionary

- **Low operating costs thanks to energy-efficient gripping** without additional power supply
- **Gripping without visible residue** for sensitive workpieces
- **No particle emission** making it suitable for clean room applications
- **Versatile in use and ideally adapted** to different ranges of applications

Material and surface

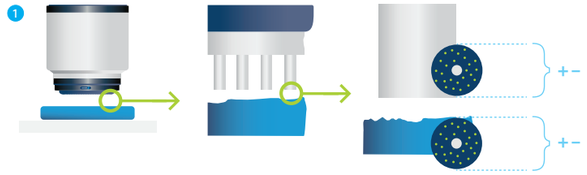
SCHUNK grippers with ADHESO gripper technology have a distinctive surface architecture made of special polymers. The result is a structure of extremely finely structured legs, which adheres residue-free to the different materials and objects. The scalability options and use of different material characteristics allows the adhesive structure to be adapted to different workpieces and surfaces.
This makes grippers with ADHESO technology easy to customize for the most diverse workpieces and applications.

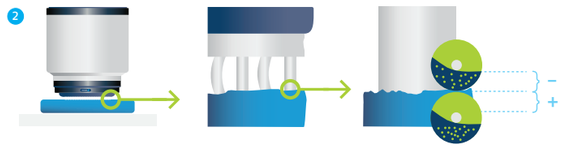
IKU
Der Innovationspreis für Klima und Umwelt 2022
Preisträger

The German Federal Ministry for Economic Affairs and Climate Protection awarded the innovative ADHESO gripping technology from SCHUNK with the IKU 2022.

Operating principle

The bionic-inspired ADHESO gripper technology is based on the principle of adhesion, using intermolecularly acting Van der Waals forces for handling various workpieces and materials. Due to the high variability of the adhesive structures, grippers with ADHESO technology can be individually tailored to different applications.





1. **Initial situation**
2. **Gripping process**

Application examples

Handling of laboratory samples

Handling of semiconductors

Handling of vehicle components

Handling of food

Magnetic grippers

As if by superpower, SCHUNK's magnetic grippers move ferromagnetic components in any position and size. Whatever their position – the workpieces are always gripped quickly and securely. A short pulse of current is all it takes to get the magnetic grippers ready for use. Uncomplicated, easy to handle and exceptionally strong – it's time to add the invisible force of magnetism to your production!

The advantages of magnetic gripping technology offer you real added value

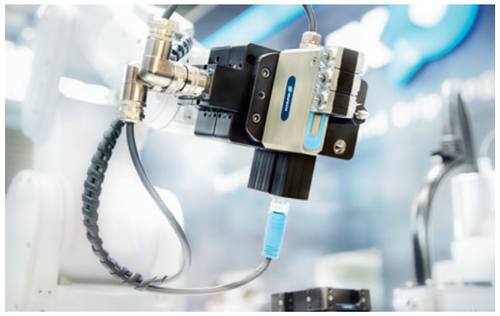
- **High holding forces for reliable part handling**
  in compact systems
- **Actuation via 24 V power supply**
  saves energy and simplifies connection and wiring
- **Workpiece accessibility**
  Interference-free from five sides
- **Low weight for high dynamics**
  in challenging applications
- **Reliable maintenance of holding force**
  for process-reliable use even in emergency-stop scenarios

Application examples

Handling of battery round cells

Handling of sheet metal

Bin picking of raw parts



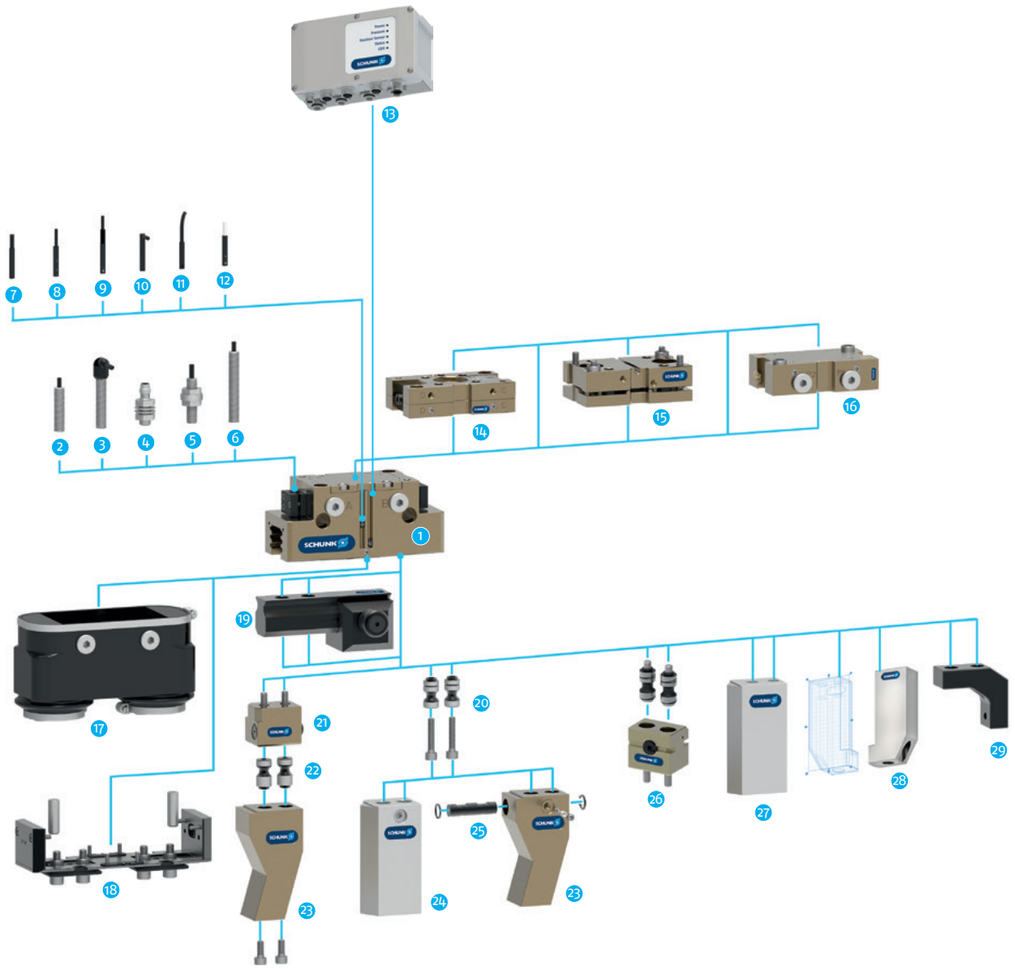
Handling of motors

Electromagnetic grippers		
	EGM	**EMH**
Description		
	Compact electro-permanent magnetic gripper for energy-efficient handling	Compact electro-permanent magnetic gripper for energy-efficient handling with integrated electronics and feedback function
	For ferromagnetic workpieces that weigh up to 118 kg	For ferromagnetic workpieces that weigh up to 70 kg
	Areas of application: universally applicable for a wide variety of parts	Areas of application: Universally applicable for a wide variety of parts
Advantages		
	Reliable part handling in compact systems due to high holding forces in very small spaces	Reliable part handling in compact systems due to high holding forces in very small spaces
	Low weight for high dynamics in challenging applications	Compact design due to integrated electronics without additional controller
	Reliable gripping force maintenance for process-reliable use even in emergency-stop scenarios	3:1 ratio of workpiece weight to dead weight for high dynamics in demanding applications
Technical data		
Number of sizes	14	6
Gripping force [N]	780 .. 20370	530 .. 10550
self-weight [kg]	1 .. 25	1 .. 8
Recommended workpiece weight [kg]	0 .. 118	0 .. 70
Closing/opening time [s]	0.3	0.2
Nominal voltage [V]	400 AC	24 DC
Nominal current [A]	2.2 .. 12.3	3.1 .. 9.8
Protection class IP	54	52
Communication interface	Controller-dependent	Digitale I/O
High number of variants	+++	++
Motor & controller		
Motor		
Controller	External	Integrated
Controller type	ECG	
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
\+ = medium-sized selection ++ = wide selection +++ = very wide selection

Accessories

SCHUNK also offers suitable accessories for the comprehensive gripper range. The universal gripper PGN-plus-P, for example, features a large number of variants and a superior range of accessories offering everything needed for flexible use in your specific automation application. For any kind of application and handling requirement – also under extreme conditions.



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

Sensor systems

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 plugable

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

MMS 22-PI1
Magnetic switch with straight cable outlet for monitoring a freely programmable position

8 **MMS 22-PI2**
Magnetic switch with straight cable outlet for monitoring two freely programmable positions

9 **MMS 22-PI1-HD**
MMS 22-PI1 in robust design

MMS 22-PI2-HD
MMS 22-PI2 in robust design

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

MMS 22-PI1-SA
Magnetic switch with straight cable outlet for monitoring two freely programmable position

MMS 22-PI1-EX
Magnetic switch in ATEX version with straight cable outlet for monitoring a freely programmable position

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

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

MMS-IOL
Magnetic switch with straight cable outlet for measuring the gripper jaw position with IO-Link interface and teach function

Complementary products

13 **PPD**
Pneumatic positioning device for flexible control of pneumatic grippers

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

15 **TCU**
Tolerance compensation unit for compensation of small tolerances in the plane

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

17 **HUE**
Sleeve for protection against dirt

18 **SAD**
Dustproof version, retrofit kit

Finger accessories

19 **UZB**
The universal intermediate jaw allows for the fast tool-free and reliable plugging and shifting of top jaws on the gripper

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

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

22 **BSWS-A**
Locking mechanism of the jaw quick-change system for fast, manual change of top jaws

23 **Customized fingers**

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

BSWS-SBR
Finger blank made of steel with interface to the jaw quick-change systems

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

26 **BSWS-BR**
Automatic jaw quick-change system

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

28 **FGR**
Configurable, workpiece-specific gripper finger made of aluminum or steel

29 **ZBA**
Intermediate jaws for reorientation of the mounting surface

	Finger accessories								Complementary products		
	Jaw quick-change system					Adjustable intermediate jaw	Workpiece-specific gripper fingers	Top jaws blank	Pneumatic positioning device	Pressure maintenance valve	Protective cover
	BSWS-B	**BSWS-BM**	**BSWS-R**	**BSWS-ABR-/SBR/-ABRM**	**BSWS-UR/-URM**	**UZB**	**FGR**	**ABR/SBR**	**PPD**	**SDV-P**	**HUE**
	21 22	22	26	24	25	19	28	27	13	16	17
Description											
	Jaw quick-change system, manual and tool-operated	Jaw quick-change system, manual and tool-free	Automatic jaw quick-change system	Finger blank for customized reworking with integrated jaw quick-change system	Locking mechanism of the jaw quick-change system for installation into customized fingers	Universal intermediate jaw for fast tool-free and reliable plugging and shifting of top jaws on the gripper	Workpiece-specific, configurable gripper finger made of aluminum or steel	Blanks made of aluminum or steel for rework by the customer	Pneumatic positioning device for flexible control of pneumatic grippers	Prevents venting of the module in the event of a loss in air pressure in the supply line	Protective cover for gripper against external influences in a dirty environment
	Gripper fingers changed manually using an Allen key	Change the gripper fingers by simply pressing the release button	Change gripper finger fully automatically without manual intervention	Available as a manual tool-operated or manual tool-free system		Handling of various workpieces	Suitable for many gripper types	Suitable for common gripper types	The PPD allows flexibility in all applications with pneumatic grippers through free position-ing, gripping force and speed adjustment	This is especially useful for grippers where a mechanical grip force maintanence solution is not possible	Suitable for grippers PGN-plus-P, PGN-plus, PZN-plus, EGN, and EZN
	Area of application: for high workpiece variance, for quickly changing the gripper fingers					Areas of application: With highly diverse workpieces that can be covered by increasing the clamping width	Areas of application: universally applicable	Areas of application: for quick and easy creation of top jaws by adding clamping contours	Fields of application: suitable for use in industrial environ-ments thanks to the sealed design of the PPD	Areas of application: temporary force or position maintenance for various pneumatic actuators	Areas of application: suitable for applications of up to IP65 if additional sealing of the cover bottom is provided
Advantages											
	Maximum flexibility: the BSWS product family makes it possible for one single gripper to be used universally in various applications					Gripper and finger-side centering for universal and flexible assembly of the gripper	Easy configuration of individual gripper fingers	Matching finger blanks for commonly used gripper types	Free positioning of a pneumatic gripper enables cycle time optimization or collision avoidance thanks to pre-positioning of the gripper fingers	Greater operational safety when using pneumatic components	Cost-effective for economical handling
	Time-saving retooling due to quick and easy changing of the gripper fingers					Stable guide strip, suitable for long gripper fingers	Short delivery times for quick availability without tying up your own resources	Easy to assemble thanks to standardized drilling pattern	Adjustable gripping force since the output pressure can be adjusted for gripping of different sensitive workpieces	Long-term reliable application thanks to robust design	Can be retrofitted
	Quick gripper finger change	Quick gripper finger change without tools	Fully automatic gripper finger change	No disturbing mounting bores in the finger contour	Use for demanding finger contours	Precise and repeatable grid	No CAD program or expertise required thanks to license-free web tool	High replacement accuracy thanks to centering	Adjustable gripper jaw speed for gentle gripping of the workpiece thanks to the gripping impulse being reduced	Universally applicable, as it can be combined with almost any pneumatic actuator	Space-saving thanks to low interfering contours

Sensors & cables
Accessories

Sensors

	Monitoring one position				Monitoring of several positions			Monitoring of the overall stroke		
	1 digital switching point				2 digital switching points		5 digital switching points	IO-Link signal		
	MMS 22	MMS-PI 1	IN	RMS	MMS-PI 2	MMS-P	FPS	MMS 22 IO-Link	APS-Z80	MMS-A
	8		2		9	12	5	13	6	13
Technical data										
Number of sizes	1	1	10	2	1	1	3	1	1	1
Operating principle	Magnetic	Magnetic	Inductive	Reed	Magnetic	Magnetic	Magnetic	Magnetic	Inductive	Magnetic
Max. IP protection	67	67	67	67	67	67	67	67	67	67
Supply voltage [V DC]	24	24	24	24	24	24	24	24	24	24
Max. current on contact [mA]	50	50	100 .. 200	400	25	100	200	25		
PNP version	●	●	●	●	●	●	●	●		
NPN version	●	●	●	●						
LED display	●	●		●	●	●		●		●
Min./max. ambient temperature [C°]	-10 .. 70	-10 .. 70	-25 .. 70	-5 .. 70	-10 .. 70	5 .. 55	-25 .. 70	5 .. 55	-10 .. 70	5 .. 55
Closer		●	●	●	●	●	●			
Opener			●							
Connection type										
Number of wires	3	3	3	3	4	4	7	3	3	3
Cable version	●	●	●		●	●	●		●	
Connector M8 version	●	●	●	●	●	●		●	●	●
Connector M12 version			●					●		●
Ambient conditions										
Clean	●	●	●	●	●	●	●	●	●	●
Easily contaminated	●	●	●	●	●	●	●	●	●	●
Extremely dirty	●			●						

● = highly suitable/fully supported

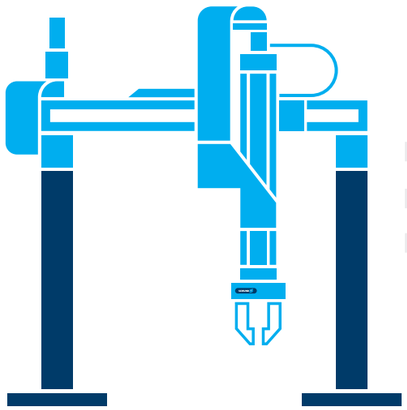
Cables

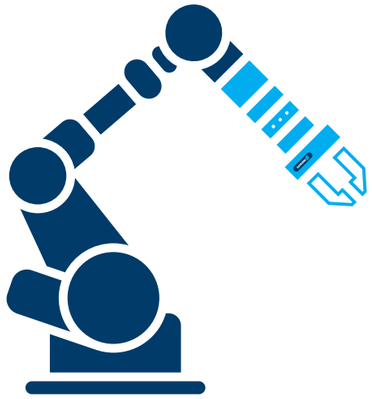
	Cables				Plug connector
	Sensor cables	Actuator cable	Communication cables	Power/sensor cables	Plug-in connectors
Description					
	Optimally suited for signal transmission of SCHUNK sensor technology	Perfectly suited to supply and control SCHUNK components	Optimally suited for reliable transmission of bus signals from the higher-level control system to the mechatronic SCHUNK components	Perfectly suited to supply SCHUNK components and transmit signals	For the assembly of cables for sensors and actuators
	Areas of application: for use on all SCHUNK sensors as well as components with integrated sensor technology	Areas of application: the connectors are used for every SCHUNK gripping, rotary, and linear module, and also for numerous components in the robot accessories area	Areas of application: the connectors are used for every SCHUNK gripping, rotary and linear module, and also for numerous components in the robot accessories area	Areas of application: the connectors are used for every SCHUNK gripping, rotary and linear module, and also for numerous components in the robot accessories area	Areas of application: in conjunction with sensors, actuators, distributors and cables, wherever customized cable lengths are required
Advantages					
	Industrial standard plug connector	Industrial standard plug connector	Industrial standard plug connector	Industrial standard plug connector	Industrial standard plug connector
	Different connections possible (straight/angled)	Different connections possible (straight/angled)	Different connections possible (straight/angled)	Different connections possible (straight/angled)	Different connections possible (straight/angled)
	Combination with plug-in connector possible	Combination with plug-in connector possible	Available in torsion or cable track capability	Suitable for connection to the respective SCHUNK component	Easy assembly

Automating with SCHUNK

We can help you to master any challenge

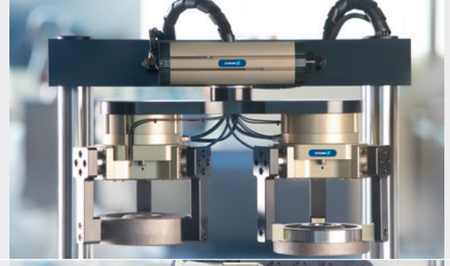
SCHUNK offers a comprehensive product portfolio for technical solutions for automated handling of workpieces. Whether pick & place units, linear modules or multi-axis systems – as a complete supplier of handling solutions, we will be happy to assist you. Application-specific automation systems provide high dynamics with 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.





Swivel units

SCHUNK offers a unique range of swivel and rotary modules with various options.



Swivel units

Linear modules & axis systems

Whether it's a variety of linear technology from a single source for high-speed assembly automation or an extensive axis portfolio for machine loading and unloading – SCHUNK is your partner for every type of automation and handling processes.

Linear modules & axis systems

Tool changer & option modules

In the field of automation, SCHUNK offers the most comprehensive portfolio of components for robot applications, from small components to heavy load handling.

Tool changers & optional modules

Rotary feed-throughs

SCHUNK rotary feed-throughs are the modern standard for stationary use and for automation.

Rotary feed-throughs

Compensation units & collision protection

To prevent damage to tools or workpieces, SCHUNK compensation units offer the flexibility required. Moreover, monitoring modules are an effective tool for process-reliable manufacturing in automated handling processes.

Compensation units & collision protection

Force/torque sensors

When precise results are needed, the precise force/torque sensors from SCHUNK provide robots with the required sensitivity.

Force/torque sensors

Machining tools

Deburring, grinding and polishing – demanding tasks such as removing material or finishing workpieces can be automated quickly and easily with the help of the R-EMENDO tools.

Machining tools

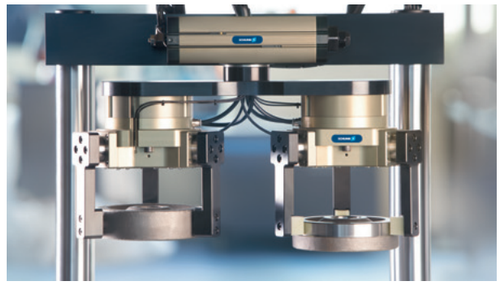
Pneumatic swivel units

Swiveling and rotating are universal processes required in any industrial situation comprising an automated handling of workpieces. The requirements for the components used are very high and also very specific. SCHUNK offers a unique range of swivel and rotary modules with various options.

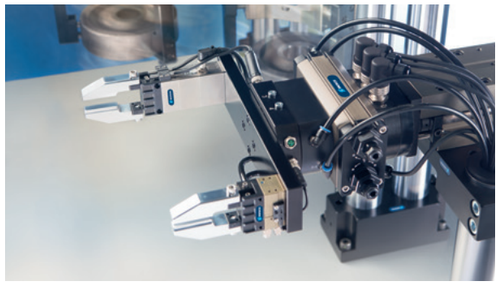
Pneumatic swivel units from SCHUNK offer you many advantages:

- **The right product for your application**
  available as standard thanks to a diverse range of series
- **Numerous options available**
  e.g. integrated media and electrical feed-through and pneumatic center position
- **Specially developed shock absorbers**
  for high moments of inertias and fast cycle times
- **Online configurator for gripper-swivel units**
  makes it easier to find the right product
- **Wide range of accessories available**

Application examples



Raw and finished parts handling



Sheet metal handling

Electric swivel units

The electric swivel units from SCHUNK more than meet the high requirements for swivel and rotary movements in automation. In addition to the diverse options and the wide range of variants, the universal use of the swivel and rotary modules is perfect for custom applications of any kind.

Electric swivel units from SCHUNK offer you many advantages:

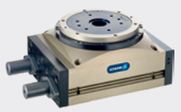
- **The right product for your application**
  available as standard thanks to a diverse range of series
- **Arbitrary intermediate positions enable highly flexible processes**
  and optimum adaptation to the relevant application
- **Extensive consulting service**
  ranging from choosing the appropriate technology to design tasks
- **Various actuation options**
  facilitate easy integration into existing control concepts
- **Numerous options available**
  e.g. integrated media and electrical feed-through and integrated holding brake

Application examples

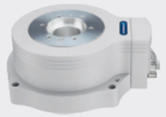
Handling of finished products

Handling of electronic components

Pneumatic rotary modules
Swivel units

	Swivel units		Swivel head	Vane swivel unit		Rotary indexing table	Swivel finger	Gripper swivel module with parallel grippers
	SRM	**SRU-plus**	**SRH-plus**	**SFL**	**RM-W**	**RST-D**	**GFS**	**GSM-P**
								
Description								
	Universal swivel unit for rotating and swiveling movements	Universal swivel unit for rotating and swiveling movements	Universal swivel head for simultaneous loading and unloading of workpieces with integrated fluid and electrical feed-through	Miniature vane swivel unit for light swiveling tasks up to 180°	Universal vane swivel unit with high torque up to 22 Nm for fast swivel tasks	Ring indexing unit for endless turning with a rotation angle up to 90° per cycle	Swivel finger for turning workpieces that are held by a gripper, for example; can also be used as a special swivel unit	Compact rotary gripping combination, consisting of a powerful rotor drive, an end-position and damping device, and a 2-finger parallel gripper
	Usable with any swiveling movements	Usable with any swiveling movements	Recommended for loading and unloading machine tools	Multi-functional range of applications	For fast movement cycles		Multi-functional range of applications	For gripping and swiveling small to medium-sized workpieces in clean environments
Advantages								
	Finely graded series with a steady increase in torque	Finely graded series with a steady increase in torque	Eight electrical signals can be fed through without cables	Compact design allows several modules to be mounted next to each other	Stop system with integrated fine adjustment of the rotating angle for sensitive adjustment of end positions	Right, left, or alternating operation are possible, absolute flexility for your application	Integrated hydraulic end position dampers for rapid swiveling cycles	Space-saving due to compact lubrication of rotary drive, end-position damping unit and gripper are merged in one compact module
	Large central bore for feed-through of cables and hoses with the same unit height	Rotating angle 90° or 180° selectable, application-specific angles are available on request	Significant minimization of wear and shorter loading times thanks to high damping power through hydraulic shock absorbers	Versatile setting of rotating angle from 0 -180°	Highest repeat accuracy thanks to direct drive of the rotary table with integrated rotor cylinder	Maximum damping power thanks to the use of hydraulic shock absorbers when using large rotary tables	End positions free from play for maximum positioning accuracy	Cost-saving since adapter plates are not needed and also thanks to the reduction in project planning and engineering design costs
	Pre-adjusted shock absorber stroke for simple and fast start-up	Choice of end position adjustability: +3°/-3° (small) or +3°/-90° (large)	Media feed-through and drive connection via screw connection or hose-free direct connection possible	Fine adjustment of the rotating angle for sensitive adjustment of the end positions	Extremely compact design for minimal interfering contours	Large, fixed center part for simple addition of further components	Idler unit without drive and damping as a cost-effective version of the second bearing position	Powerful for even greater masses and inertias thanks to the variant with hydraulic shock absorbers
Technical data								
Angle of rotation < 360° [°]	0 .. 180	0 .. 180	180	90 .. 180	90/180		90 .. 180	0 .. 180
Angle of rotation > 360° [°]						with cycle 22.5° ... 90°		
Number of sizes	8	8	7	3	4	3	4	4
Torque [Nm]	0.45 .. 23.7	3 .. 115	3 .. 69.9	0.1 .. 3.6	0.7 .. 22	3.1 .. 29.3	0.64 .. 10	0.3 .. 2.9
Self-weight [kg]	0.252 .. 9.74	1.2 .. 26.5	2.1 .. 21.2	0.09 .. 0.71	0.65 .. 8.3	1 .. 8.3	0.55 .. 5	0.37 .. 1.51
Max. permissible mass moment of inertia [kgm²]	7	32	2.6	0.005	0.27	0.6		
Repeat accuracy [°]	0.03 .. 0.07	0.05	0.05	0.05	up to 0.036	0.04 .. 0.09°	0.07	0.02
Protection class IP	40/65	67	67	52	40	50	54	30
Gripping force [N]								39 .. 162
Stroke per jaw [mm]								1.5 .. 10
Recommended workpiece weight [kg]								0.2 .. 0.61
Closing/opening time [s]								0.01 .. 0.05 / 0.01 .. 0.05
Max. permissible finger length [mm]								64
Options/variants								
Center bore	●	●	●			●		
Pneumatic rotary feed-through	●	●	●					
Electric rotary feed-through	●	●	●					
Center position	●	●				●		
ATEX certified		●	●					
Gripping force maintenance device								●
Monitoring options								
Inductive proximity switch	●	●	●		●	●		●
Magnetic switch	●	●	●	●		●	●	●
Ambient conditions								
Clean	●	●	●	●	●	●	●	●
Slightly contaminated	●	●	●	●	●	●	●	
Extremely dirty	●	●	●					

● = fully supported

	Swivel units			Gripper swivel module with parallel gripper
	ERM	**ERD**	**ERT**	**EGS**
				
Description				
	Electric heavy-duty rotary module with adaptable servomotor, rotary angle > 360°, center bore and optional feed-throughs.	Miniature rotary unit with powerful torque motor with absolute-value transducer and electric and pneumatic rotary feed-through	Flat electric universal rotary unit with torque motor and angle of rotation >360° protection class IP40 or IP54 and optional electric holding brake	Electric 2-finger, parallel swivel gripping module with smooth-running base jaws guidance on roller bearings
Advantages				
	Modular drive concept for adaptation of all common servomotors like Bosch or Siemens	Absolute path measuring system for less programming effort and time savings during commissioning and in operation	Integrated torque motor for high torque and flexible use by controlled position, velocity and torque	Control via digital I/O for easy commissioning and rapid integration into existing systems
	Easy system integration through use of a preferred motor and established field bus and safety technology	High dynamics for shorter cycle times resulting in high productivity	Extremely flat design for minimal interfering contours and use in confined spaces	Virtually wear-free parts for high machine availability and low operating costs
	Drive can be swiveled 90° for optimum adaptation to portals or robots	Integrated air and electric feed-through for reliable power supply to the grippers	Absolute path measuring system for less programming effort and time saving during commissioning and operation	Low space requirement thanks to the compact merging of rotary drive and gripper
Technical data				
Number of sizes	1	3	4	2
Torque [Nm]	75	0.4 .. 1.2	1.4 .. 32	0.04 .. 0.11
Max. speed [RPM]	62.5	600	150 .. 600	
Self-weight [kg]	15.5	1.2 .. 1.8	2.4 .. 23.8	0.45 .. 1.2
Max. permissible mass moment of inertia [kgm²]	20	0.011	5.53	0.00018
Repeat accuracy [°]	0.035	0.01	up to 0.01	1
Gear ratio	48			
Intermediate circuit/nominal voltage [V]	Motor-dependent	530	560	24
Nominal current [A]		0.43 .. 1.6	0.96 .. 4.4	0.8 .. 1.0
Diameter of center bore [mm]	22		25 .. 92	
Number of electric feed-throughs	0	4	0	
Number of pneumatic feed-throughs	8	2	0	
Protection class IP	65	40 .. 54	40 .. 54	30
Type of measuring system	Motor-dependent	Absolute, measuring system HIPERFACE and DRIVE-CLiQ	Absolute, measuring systems HIPERFACE®, HIPERFACE DSL® and DRIVE-CLiQ	
Angle of rotation [°]	> 360°	> 360°	> 360°	30 .. 270
Gripping force [N]/opening angle [Nm]				15 .. 140
Stroke/opening angle per jaw [mm]/[°]				3 .. 6
Closing/opening time [s]				0.03 .. 0.22
Max. permissible finger length [mm]				50
Motor & controller				
Motor	Adaptable	Integrated	Integrated	Integrated
Controller	External	External	External	Integrated
Controller type	Motor-dependent	Bosch Rexroth, Siemens*	Bosch Rexroth, Siemens*	
Options/variants				
Center bore	●		●	
Pneumatic rotary feed-through	●	●		
Electric rotary feed-through		●		
Brake	●		●	
Ambient conditions				
Clean	●	●	●	●
Slightly contaminated	●	●	●	
Extremely dirty	●			

● = fully supportedhighly suitable/fully supported * = Additional controllers available upon request

Linear modules & axis systems

For positioning and movement tasks, or for any type of automation of handling processes – SCHUNK offers the diversity of linear technology from a single source. Different types of standard modules can be combined into a complete system. There are many variants to choose from for both the drive and the guide concept.

The advantages of SCHUNK linear modules and axis systems

- **Flexible and comprehensive combinations**
  with different drive concepts
- **Over 25 years of experience in the field of linear technology**
- **Large axis system portfolio with more than 450 standard components**
- **Comprehensive consulting service**
  from the right axis technology to design
- **Pre-assembled complete solutions for minimal assembly effort**
  and immediate commissioning including commissioning support
- **Download CAD data in just a few clicks**
  various file formats

Sizing assistant

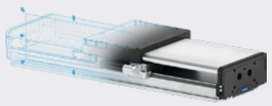
Select the right product in just a few clicks

SCHUNK sizing assistants make it easy to reliably select the right specific products from the portfolio for each application.

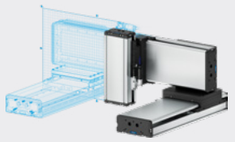
Configurators

With our configurable standard products, we reduce complexity in system planning and offer a large number of individual adaptation options. In just a few clicks, linear modules can be adapted to individual requirements in less than 10 minutes, opening up an even wider range of applications.
In addition to configurable standard products, SCHUNK Engineering offers customized solutions – please feel free to contact us!

Linear modules



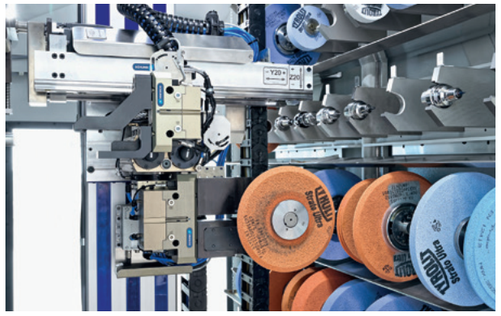
Linear modules



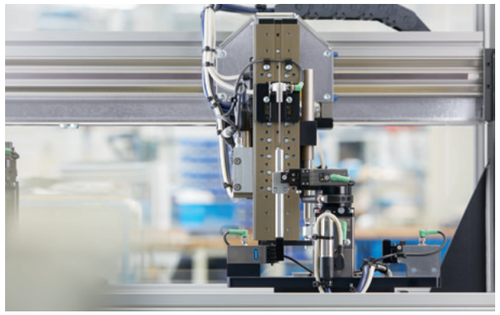
Axis systems

Application examples

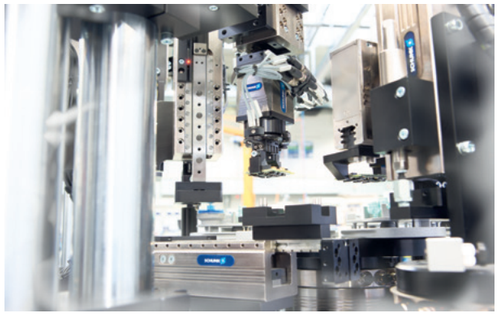
Separating circuit boards



Automatic change of grinding wheels

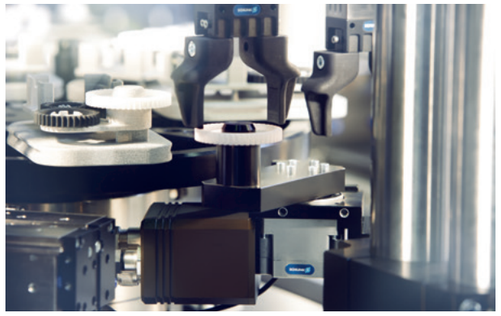


Assembly automation



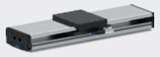
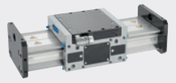
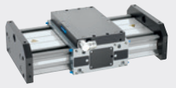
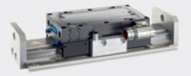
Handling of electronic components

Handling of gears

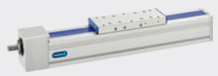


Assembly of gears

Electric linear modules
Linear modules & axis systems

	Electric linear modules							
	Linear direct axes							
	Compact linear module		Universal linear module	Stroke module	Universal linear modules			Flat linear modules
	ELP	ELB	SLD	LDK	LDN	LDM	LDT	LDL
								
Description								
	Electric linear module with direct drive and integrated controller, backlash-free, pre-loaded roller guides	Short-stroke axis with linear direct drive and cross roller guides	The dynamic, versatile axis is perfectly tailored to your application	Compact short stroke axis with linear motor and roller guidance	Universal linear axis with single X-profile, linear motor, and roller guidance	Universal linear axis with double X-profile, linear motor, and roller guidance	Universal linear axis with triple X-profile, linear motor, and roller guidance	Flat linear axis with linear motor and profile rail guidance
Advantages								
	Control via digital I/O for easy commissioning and rapid integration into existing systems	Integrated motor and measuring system in the axis minimize interfering contours and space requirements	Almost no wearing parts for long service life and reliability of the system	Almost no wearing parts for long service life and reliability of the system	Almost no wearing parts for long service life and reliability of the system	Almost no wearing parts for long service life and reliability of the system	Almost no wearing parts for long service life and reliability of the system	Almost no wearing parts for long service life and reliability of the system
	Speed of retraction and extension can be adjusted in ten increments for high flexibility in the cycle time	Can be upgraded with absolute path measuring system for less programming effort and time saving during commissioning and operation	High load ratings for high load capacity and service life	No mechanical play between the drive elements for fast response and high positioning accuracy	No mechanical play between the drive elements for fast response and high positioning accuracy	No mechanical play between the drive elements for fast response and high positioning accuracy	No mechanical play between the drive elements for fast response and high positioning accuracy	No mechanical play between the drive elements for fast response and high positioning accuracy
	For almost wear-free use and a long service life	High dynamics for shorter cycle times resulting in high productivity	High dynamics for shorter cycle times resulting in high productivity	Low vibrations and high holding force for the shortest positioning times and process stability	Low vibrations and high holding force for the shortest positioning times and process stability	Low vibrations and high holding force for the shortest positioning times and process stability	Low vibrations and high holding force for the shortest positioning times and process stability	Low vibrations and high holding force for the shortest positioning times and process stability
	Optionally certified safety devices according to SIL2/PLd for applications with high requirements in the area of machine safety				Optional certified safety devices according to SIL2/PLd for applications with high requirements in the area of machine safety			
Technical data								
Number of sizes	3	1	2	2	2	2	2	2
Repeat accuracy [mm]	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01
Max. useful stroke [mm]	200	125	5500	200	2700	2700	2700	3800
Max. driving force [N]	104	150	2400	500	500	1000	1500	500
Max. speed [m/s]	Auto-learn function	4	5	4	4	4	4	4
Max. acceleration [m/s²]	Auto-learn function	100	100	40	40	40	40	40
Type of measuring system		Absolute or incremental	Absolute or incremental	Absolute or incremental	Absolute or incremental	Absolute or incremental	Absolute or incremental	Absolute or incremental
Type of guide	Cross roller guide	Cross roller guide	Profiled rail guide	Roller guide	Roller guide	Roller guide	Roller guide	Roller guide
High number of variants	++	+++	+++	++	+++	++	++	+
Required maintenance	Maintenance-free	Cleaning the magnetic tracks, lubricating the guidance	Cleaning the magnetic tracks, lubricating the guidance	Cleaning the magnetic tracks	Cleaning the magnetic tracks	Cleaning the magnetic tracks	Cleaning the magnetic tracks	Cleaning the magnetic tracks
Remark	Stop position axis with mechanically adjustable stop positions, optionally available with load balance	Freely programmable, optionally available with rod lock, brake or load balance	UL certification as standard, freely programmable, optionally available with additional slides, brake, cover strip, lubrication adapter, limit switch, reference switch or drag chain	Freely programmable, optionally available with brake, limit switch, reference switch, drag chain or supported profile	Freely programmable, optionally available with brake, limit switch, reference switch, drag chain or supported profile	Freely programmable, optionally available with brake, limit switch, reference switch, drag chain or supported profile	Freely programmable, optionally available with brake, limit switch, reference switch, drag chain or supported profile	Freely programmable, optionally available with brake, limit switch, reference switch or drag chain
Drive type								
Spindle drive								
Toothed belt drive								
Rack and pinion drive								
Direct drive (linear motor)	●	●	●	●	●	●	●	●
Motor & controller								
Motor	Integrated	Integrated	Integrated	Integrated	Integrated	Integrated	Integrated	Integrated
Drive controller	Integrated	Bosch Rexroth, Siemens*	Bosch Rexroth, Siemens*	Bosch Rexroth, Siemens*	Bosch Rexroth, Siemens*	Bosch Rexroth*	Bosch Rexroth, Siemens*	Bosch Rexroth, Siemens*
Interfaces	Digital I/O	Sercos III, EtherNet/IP, EtherCAT, PROFINET, PROFIBUS DP, PowerLink, CANopen	Multi-Ethernet (Sercos III, PROFINET IO, EtherNet/IP, EtherCAT), PROFIBUS	Multi-Ethernet (Sercos III, PROFINET IO, EtherNet/IP, EtherCAT), PROFIBUS	Multi-Ethernet (Sercos III, PROFINET IO, EtherNet/IP, EtherCAT), PROFIBUS	Multi-Ethernet (Sercos III, PROFINET IO, EtherNet/IP, EtherCAT), PROFIBUS	Multi-Ethernet (Sercos III, PROFINET IO, EtherNet/IP, EtherCat), PROFIBUS	Multi-Ethernet (Sercos III, PROFINET IO, EtherNet/IP, EtherCAT), PROFIBUS
Ambient conditions								
Clean	●	●	●	●	●	●	●	●
Slightly contaminated			●					

● = fully supported + = medium selection ++ = large selection +++ = very wide selection * = Additional controllers available upon request

Electric linear modules				
Mechanical axes				
Linear table	**Universal linear module**	**Flat linear module**	**Universal linear module**	**Pick & Place unit**
Alpha	**Beta**	**Delta**	**Gamma**	**PPU-E**
				
Description				
Flat linear table with spindle drive and double-profiled rail guide	Universal linear module with optional toothed belt or spindle drive and various guiding options	Flat linear module with optional toothed belt or spindle drive	Toothed belt or rack and pinion driven universal linear module with closed profile and double profiled rail guide	Compact 2-axis unit for a faster, flexible running of any curve on one plane For the rapid and precise transfer or controlled press-in operation of workpieces in high-speed assembly
Advantages				
Adaptable drive motor for flexible actuation and easy integration into existing control concepts Double-profiled rail guide for very high force and moment loads Extremely flat design for minimal interfering contours	Adaptable drive motor for flexible actuation and easy integration into existing control concepts Choice of toothed belt or spindle drive for optimum drive for the application Various guidance options for optimum adaptation to the application	Extremely flat design for minimal interfering contours Double-profiled rail guide for maximum rigidity and precision in the application Choice of toothed belt or spindle drive for optimum drive for the application	Adaptable drive motor for flexible actuation and easy integration into existing control concepts Choice of toothed belt or rack-and-pinion drive for optimum drive for the application Double-profiled rail guide for very high force and moment loads	High reliability and long service life of the system, as there is no cable break due to moving motors and moving motor cables High productivity due to low cycle time Maximum flexibility in the application, as both axes can be controlled and regulated independently of each other Optional certified safety devices according to SIL2/PLd for applications with high requirements in the area of the machine
Technical data				
Number of sizes	4	12	5	3
Repeat accuracy [mm]	±0.03	0.03 bzw. 0.08**	up to ±0.03**	up to ±0.05
Max. useful stroke [mm]	2540	7720	7700	7685
Max. driving force [N]	18000	18000**	12000**	4000
Max. speed [m/s]	2.5	8	5	5
Max. acceleration [m/s²]	20	60	60	60
Type of measuring system	Motor-dependent	Motor-dependent	Motor-dependent	Motor-dependent
Type of guide	Double-profiled rail guide	Double-profiled rail guide	Double-profiled rail guide	Double-profiled rail guide
High number of variants	++	+++	+++	+++
Required maintenance	Lubrication of the guide and the spindle	Lubrication of the guide, and if necessary, the spindle; replacement of the cover tape	Lubrication of the guide and, if necessary, the spindle; replacement of the cover tape	Lubrication of the guide and (if necessary) the gear rack
Remark	Freely programmable, optionally available with customer-specific motor, limit switch, and reference switch	Freely programmable, optionally available with customer-specific motor, limit switch, and reference switch	Freely programmable, optionally available with customer-specific motor, limit switch, and reference switch	Freely programmable, optionally available with customer-specific motor, limit switch, and reference switch
Drive type				
Spindle drive	●	●	●	
Toothed belt drive		●	●	●
Rack and pinion drive				●
Direct drive (linear motor)				
Motor & controller				
Motor	Adaptable	Adaptable	Adaptable	Adaptable
Drive controller	Motor-dependent	Motor-dependent	Motor-dependent	Motor-dependent
Interfaces	Controller-dependent	Controller-dependent	Controller-dependent	Controller-dependent
Ambient conditions				
Clean	●	●	●	●
Slightly contaminated	●	●	●	●
Motor & controller				
Motor				Integrated
Drive controller				Bosch Rexroth, Siemens*
Options/variants				
Rod lock				●
Center position				
Integrated valve				●
Additional C-axis				●
Drive package				
Ambient conditions				
Clean				●
Slightly contaminated				

● = fully supported
\+ = medium selection ++ = large selection +++ = extremely large selection
* = Additional controllers available upon request ** = Depending on the drive type

● = fully supported
\+ = medium selection ++ = large selection +++ = very wide selection
* = Additional controllers available upon request

Robot PLUS

Components & expertise aligned with your vision

Use the possibilities of robotics to optimize your production. Flexibility and efficiency are crucial in modern manufacturing. The Robot PLUS portfolio from SCHUNK has been specially designed to improve your production processes. It offers a comprehensive range of tool changers, compensation units, force/torque sensors and machining tools – developed based on decades of experience.

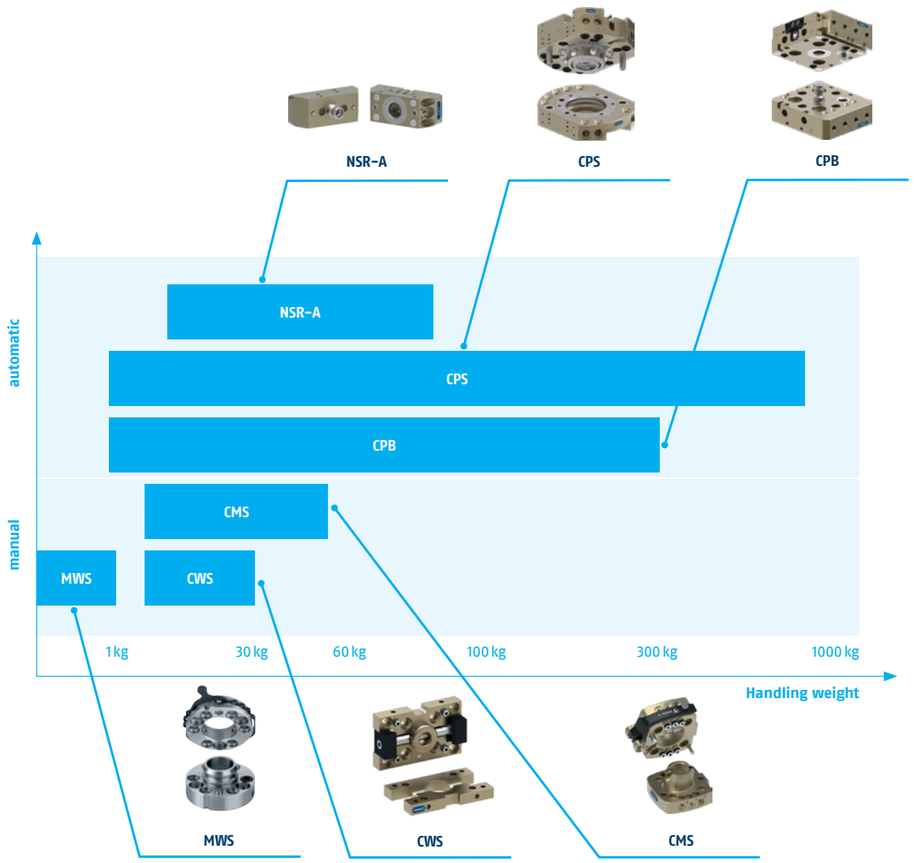
With SCHUNK as your partner, you benefit from a combination of high-quality products and comprehensive, reliable support to boost and advance your automation projects worldwide. Discover how SCHUNK can take your production to the next level!

Tool changers

Using SCHUNK tool changers on robot front ends increases your application's flexibility, efficiency, cycle time, and process reliability. Automatic and manual tool changers allow grippers, tools and other effectors to be changed quickly. In the field of automation, SCHUNK also offers a broad portfolio of components for robot applications, from handling small components to heavy loads.

Increase your productivity with SCHUNK

- **Six different series**
  for the optimal solution to your application case
- **Maximum flexibility**
  due to a load range of 0 – 1,000 kg
- **Proven and estalished locking mechanisms**
  for fast and reliable tool changes
- **Extensive range of option modules**
  and accessories for a comprehensive and complete solution from a single source



Automatic tool changers

Automatic tool changers allow tools to be changed quickly and precisely during operation. They are ideal for applications that require a seamless and fully automated process, from series production to highly flexible production environments.

Manual tool changers

Manual tool changers offer a the opportunity of changing tools by hand without the need for additional mechanisms. They are particularly suitable for applications where flexibility and easy handling are paramount.

Option modules

Safe and reliable tool changes also include safe and reliable control and supply of the changed tools. This is why our option modules are the perfect complement to SCHUNK tool changers. From simple signals to welding currents, a wide range of tools can be supplied. In addition, various modules are available for the implementation of pneumatics, fluids, vacuum and hydraulics.

Benefit from SCHUNK option modules

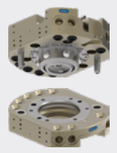
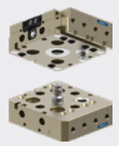
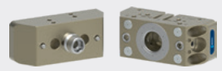
- **Optimal fit – for easy combinations**
  with any size of SCHUNK tool changers
- **Wide range of different variants**
  for feeding through various electric and fluid media
- **Combination of several option modules**
  for maximum flexibility of the tool changer
- **Minimum wear for a high number of change cycles**
  and a long service life
- **Complete solution available from a single source**
  with cable plugs, cable extensions, and protection covers

Signal modules

Pneumatic modules

Fluid modules

Communication modules

	Automatic tool changers			Manual tool changers		
	CPS	**CPB**	**NSR-A**	**CMS**	**CWS**	**MWS**
						
Description						
	Pneumatically actuated, automatic tool changer CPS with robust locking mechanism, manufactured in Germany	Robust tool changer CPB with bolt mechanism, equipped with additional pneumatic feed-throughs and mounting surfaces for maximum flexibility, manufactured in Germany	Pneumatic pallet change system with patented locking and 4000 Nm maximum moments, manufactured in Germany	Convenient manual change system with integrated air feed-through, locking monitoring and comprehensive complementary portfolio, manufactured in Germany	Compact, manual change system with integrated air feed-throughs for the most important SCHUNK gripping and compensation modules, manufactured in Germany	Manual tool change system with integrated air feed-through and optional electric feed-through, manufactured in Germany
Advantages						
	Robust, self-retaining stainless steel locking system with integrated spring increases operational safety in the event of unexpected loss of compressed air	Robust pin mechanism made of vacuum-hardened stainless steel, based on proven technology from stationary workholding	Saved time due to automatic pallet change	Series with six sizes for optimal selection of sizes and a wide range of applications	High productivity through fast manual gripper changes, especially with small and medium-sized lot sizes	Extremely flat design for low interfering contours
	Versatile media transmission thanks to a wide range of signal, pneumatic, fluid, and communication modules	Additional pneumatic feed-throughs and mounting surfaces for maximum flexibility	Extremely compact design for space-saving changing and direct coupling on the machine table	Integrated air feed-throughs for secure energy supply of the handling modules, and tools with pneumatic and vacuum, for radial or axial use	Flat and weight-optimized through direct assembly of the gripper on the change system without an adapter plate	Simple handling without additional tools; can easily be detached anytime by using the handle
	Compatible with existing SWS tool changers for seamless expansion of existing applications	Integrated ISO flange pattern on master and tool side enables easy assembly	Form-fit, patented locking system with self-locking and high locking force	Basic version without integrated air feed-through available as well as sensory option for simple and cost-sensitive applications	Series with five sizes for optimum selection of sizes and a wide range of applications	Center bore for feed-through of parts, camera, laser beams, etc.
Technical data						
Number of sizes	18	7	2	6	5	2
Recommended handling weight [kg]	0 .. 960	0 .. 405		0 .. 58	0 .. 28	0 .. 1
Moment load dynamic M_{xy} [Nm]	2 .. 5000	100 .. 3000	75 .. 600	22.5 .. 478	20 .. 160	0.5 .. 1
Moment load dynamic M_z [Nm]	2 .. 4500	100 .. 1500	200 .. 1600	15 .. 465	10 .. 200	0.2 .. 0.75
Repeat accuracy [mm]	up to 0.01	0.01	0.02	0.02	0.01	0.1
Self-weight [kg]	0.05 .. 9.3	0.4 .. 10.5	0.4 .. 1.6	0.25 .. 4.8	0.07 .. 0.445	0.007 .. 0.016
Screwed flange on the robot	Adapter plates/direct mounting ISO-9409	Direct mounting ISO-9409	Adapter plates ISO-9409	Direct mounting ISO-9409	Adapter plates	Adapter plates
Product features						
Manual actuation				●	●	●
Pneumatic actuation	●	●	●			
Locking monitoring possible	●	●	●	●		
Tool presence monitoring possible	●	●	●	●		
Pneumatic energy transmission	●	●	●	●	●	●
Electric energy transmission	●	●	●	●		●
Ambient conditions						
Clean	●	●	●	●	●	●
Slightly contaminated	●	●	●	●		
High-temperature and stainless steel version on request	●	●	●	●		

● = fully supported t

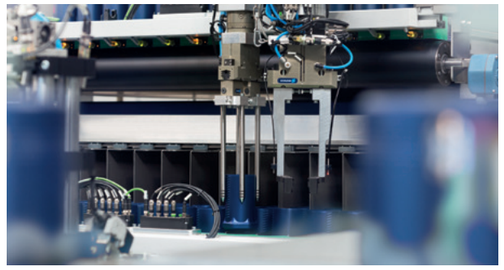
Rotary feed-throughs

With SCHUNK rotary feed-throughs, the feed-through of electrical signals and pneumatics for use in stationary applications and on robots is child's play – even with endless rotation.
The rotary feed-throughs are optimally designed for the force moments occurring with the new robot generation. Particularly developed long-lasting and smoothly running seals permit the use of small and economical drives.

Reliable feedthrough of electrical signals and pneumatics

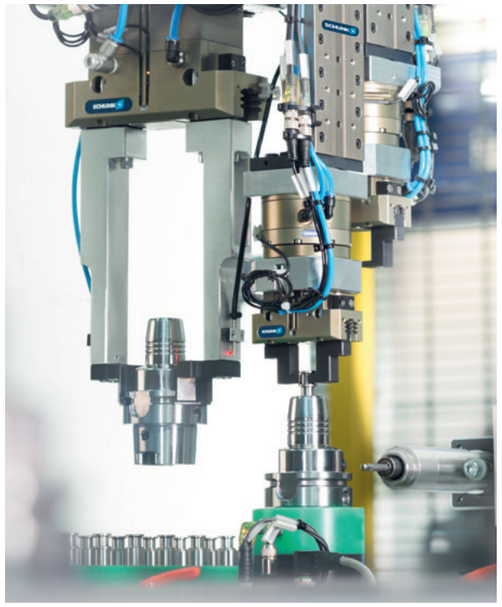
- **For robot applications and rotary indexing tables**
- **Rotary feed-throughs facilitate endless rotation** without hoses and cables twisting around the axis
- **Combined pneumatic and electric feed-through** for comprehensive supply of gripping systems and tools
- **Safe energy transfer even at higher rotational speeds** thanks to slip ring contacts

Application examples



Toolholder packing

Labeling of product packaging



Toolholder balancing

	Rotary feed-through	Stationary rotary feed-through
	DDF 2	**DDF-SE**
Description		
	For feeding through electric signals and pneumatics for use on robots even when they are endlessly rotating at a maximum RPM of 120	For feeding through electric signals and pneumatics for stationary use
Advantages		
	Combined pneumatic and electric feed-through for comprehensive supply of gripping systems/tools	Combined pneumatic and electric feed-through for comprehensive supply of gripping systems/tools
	ISO flange pattern for simple assembly on most types of robots without additional adapter plates	Standardized shaft end for easy assembly of gears
	Complete series with 12 sizes for optimum size selection	Rotations up to 500 RPM; even at fast endless rotations of up to 500 RPM, a reliable supply of pneumatic and electrical power for your gripping system is ensured
Technical data		
Number of sizes	12	2
Recommended workpiece weight [kg]	0 .. 250	
Max. speed [RPM]	90 .. 120	300 .. 500
Continuous torque [Nm]	0.5 .. 22	4 .. 13
Starting torque [after shutdown] [Nm]	0.7 .. 25	6 .. 20
Max. tensile strength F_z [N]	240 .. 9000	2000 .. 4000
Max. contact force F_z [N]	2,000 .. 18000	
Moment M_x, M_y [Nm]	15 .. 550	50 .. 180
Moments M_z [Nm]	10 .. 400	
Pneumatic energy transmissions	2 .. 4	4 .. 6
Electrical energy transmission	4 .. 10	6 .. 8
Dead weight [kg]	0.35 .. 14.2	3.3 .. 9
Product features		
Continuous rotary movement	●	●
Screwed flange acc. to ISO-9409 standard	●	
Pneumatic energy transmission	●	●
Vacuum energy transmission		
Electric energy transmission	●	●
Bus transmission		

● = fully supported

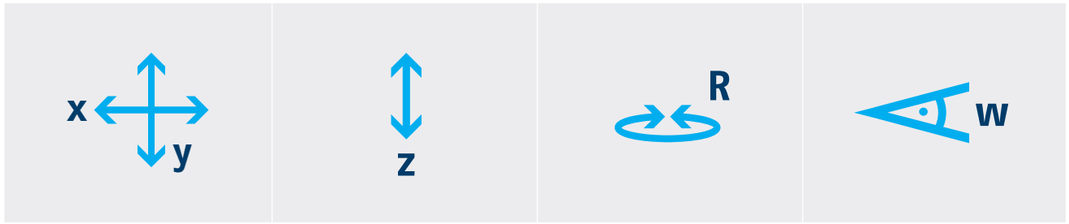
Compensation units

Inserting, assembling, loading and unloading workpieces are everyday automation challenges. To prevent damage to tools or workpieces, SCHUNK compensation units with compensation in all five degrees of freedom offer the flexibility required between the robot and tools, for example. This avoids error messages caused by imprecise tolerances and increases process reliability.

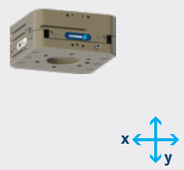
More process stability with SCHUNK compensation units

- **Nine different series**
  optimally adapted for your application
- **Units for tolerance compensation**
  available in five degrees of freedom
- **Centric reset for a defined position of the components**
  after the compensation process
- **Various sensor options for increased process reliability**
  and simplified commissioning
- **Customized solutions**
  for rotation compensation, for example

Compensation in every direction



XY compensation | Z-axis compliance | Rotation compensation | Angular compensation

Compensation units	AGM-Z	AGM-XY	AGM-W
			
Description			
	Compensation unit with Z-compensation with up to 20 mm compensation travel and over 400 kg load range	Compensation unit with XY-compensation with up to 15 mm compensation travel and over 400 kg load range	Compensation unit with angular compensation, allowing the end effector to fully adapt to the component position
Advantages			
	No compromises with the interfering contour with 10 sizes always the right unit	Resistant to gravity: With patented spring cartridges for weight compensation in a horizontal orientation position	Optimally dosed angular compensation thanks to the pressure-dependent swing-out torque of the AGM
	Always the right compensation behavior: an be combined with AGM-XY and AGM-W without an additional adapter plate	Long service life: stable, robust guideways in the smallest installation space thanks to patented guide concept	Always the right compensation behavior: can be combined with AGM-Z without additional adapter plate
	Simple assembly due to integrated ISO interface on the robot and tool side		
Technical data			
Number of sizes	10	10	3
Compensation stroke XY [mm]		±2 .. ±15	
Compensation stroke Z [mm]	4 .. 20		
Angle compensation [°]			±5
Rotatory compensation [°]			
Spring force [N]	9 .. 1500		
Piston force Z at 6 bar in extended position [N]	270 .. 12000		
Piston force Z at 6 bar in retracted position [N]	170 .. 8000		
Self-weight [kg]	0.5 .. 33	0.5 .. 40	1.2 .. 3.2
Locking force at 6 bar [N]		150 .. 8000	
Horizontal payload [kg]	0 .. 270	0 .. 240	0 .. 22
Vertical payload [kg]	0 .. 430	0 .. 400	0 .. 32
Repeat accuracy [mm]	0.02	0.05	0.08
Locking force [N]			
Max. tensile strength F_x [N]	100 .. 11000	125 .. 15000	300 .. 1200
Max. contact force F_d [N]	200 .. 20000	250 .. 20000	900 .. 3000
Moment load capacity M_x, M_y [Nm]	6 .. 1600	6 .. 1600	25 .. 100
Twist torque M_z [Nm]	9 .. 1800	6 .. 1100	30 .. 100
Angular compensation x [°]			
Angular compensation y [°]			
Angular compensation z [°]			
Product features			
Pneumatic locking	●	●	●
Position memory		●	
Screwed flange acc. to ISO-9409 standard	●	●	●
Monitoring via proximity switch	●		●
Ambient conditions			
Clean	●	●	●
Slightly contaminated	●	●	●
High-temperature version on request			

● = fully supported

	Compensation units					Tolerance compensation unit
	AGE-U	**AGE-XY**	**AGE-Z 2**	**AGE-S**	**AGE-F**	**TCU**
	z R w x y	R x y	z	z x y	x y	R w
Description						
	Compensation unit with rotational and angular compensation, allowing the end effector to fully adapt to the component position	Compensation unit with XY compensation with up to 4 mm compensation stroke	Compensation unit with Z-axis compliance with up to 10 mm compensation path	Compensation unit with XY and Z-axis compliance with up to 12 mm compensation path	Compensation unit with XY compensation and integrated spring return for handling weights of up to 32 kg	For compensation of smaller position deviations with up to 3° maximum deflection for assembly and handling applications
Advantages						
	Deflection in both rotation and angle, compensates for inaccuracies in component position, and saves time, cost and effort through reduced robot programming effort	Robust guidance for high moment loads with minimal space requirements	Locking for rigid switching of the unit at a defined extended or retracted position	Three compensation directions in one unit, compact design for minimal heights	Spring reset in three spring stiffnesses for a defined, centric position at a repeat accuracy of 0.02 mm	Compensation of workpiece-related tolerances and position inaccuracies reduces the risk of jamming; necessary assembly forces are reduced and wear of the workpiece and handling device is minimized
	Centric reset enables a defined position for the components	Centric locking for centering the unit in a defined position	Compact design for minimum installation height	Centric locking for rigid switching of the unit in a defined centric position	Direct assembly of grippers means there is no need for additional adapter plates	Direct assembly of parallel grippers means there is no need for additional adapter plates
	Spring-supported reset of the unit, adjustable via compressed air for optimal deflection	Pneumatic position memory for eccentric locking in deflected position	Can be combined with AGE-XY without additional adapter plate	Pneumatic position memory for eccentric locking in deflected position	Cross roller guide for smooth compensation at low compensation forces	Compact design, low height and weight
Technical data						
Number of sizes	1	3	3	4	4	8
Compensation stroke XY [mm]	±2.7	±2.5 .. ±4		±4 .. ±12	±1.5 .. ±5	
Compensation stroke Z	6.1		8 .. 10	10 .. 14		
Rotatory compensation [°]	±8	±12 .. ±16				1 .. 1.5
Spring force [N]			20 .. 120	240 .. 1100	1.5 .. 150	
Piston force Z at 6 bar in extended position [N]			500 .. 1500	800 .. 3000		
Piston force Z at 6 bar in retracted position [N]			280 .. 1450			
Self-weight [kg]	0.6	0.46 .. 1.5	0.55 .. 1.7	2.6 .. 29.5	0.1 .. 3.1	0.1 .. 2.1
Locking force at 6 bar [N]		235 .. 580		800 .. 2700		30 .. 800
Horizontal payload [kg]	0 .. 5	0 .. 10		0 .. 100	0 .. 32	
Vertical payload [kg]		0 .. 15	0 .. 12	0 .. 160		
Repeat accuracy [mm]		0.1	0.02	0.1	0.01	up to 0.02
Locking force [N]		235 .. 580	280 .. 1500	800 .. 2700		30 .. 800
Max. tensile strength F_z [N]		300 .. 750	200 .. 500	110 .. 2000	100 .. 2800	
Max. pressure force F_d [N]		1700 .. 3200	800 .. 1500	500 .. 4000	200 .. 12000	500 .. 6200
Moment load capacity M_x, M_y [Nm]	6.8	16 .. 30	10 .. 30	30 .. 500	3.5 .. 50	5 .. 120
Twisting torque M_z [Nm]	3.4	3.5 .. 9	20 .. 80	30 .. 250	6 .. 150	15 .. 160
Angular compensation x [°]	3°					±1 .. 2
Angular compensation y [°]	3°					±1
Angular compensation z [°]						±1.2 .. 2
Product features						
Pneumatic locking	●	●	●	●		●
Position memory		●		●		
Screwed flange acc. to ISO-9409 standard	●	●	●	●		
Monitoring via proximity switch	●	●	●	●	●	●
Ambient conditions						
Clean	●	●	●	●	●	●
Slightly contaminated	●			●		●
High-temperature version on request		●	●	●		

● = voll unterstützt

Collision protection

Collisions and overloads on the robot may cause damage to the tool, workpiece or the machines. In the automated handling process, the SCHUNK monitoring modules are effective instruments for process reliable production preventing expensive downtimes in production.

Process-reliable manufacturing with collision and overload sensors from SCHUNK

- **Integrated monitoring for signal transmission without delay in case of collisions** so that the robot can be stopped immediately
- **Mechanical flexibility** for compensation of the robot's reaction pathway **in the event of a collision or overload**
- **Triggering force and torque can be adjusted** via the operating pressure for optimum protection of your robots and components

Application examples

Pick & place with magnetic grippers

Bin picking

Collision and overload sensors		
	Manual reset	**Automatic reset**
	OPS	**OPR**
Description		
	For monitoring robots and handling units in the event of collisions or overload conditions with up to 15° angular deflection	For monitoring robots and handling units in the event of collision or overload conditions from a deflection force of 24 N
Advantages		
	Triggering force and torque can be adjusted via the operating pressure for optimum protection of your robots and components	Automatic reset position for faster resuming of production after a collision
	Integrated monitoring for signal transmission without delay in case of collisions so that the robot can be stopped immediately	Triggering force and torque can be adjusted via the operating pressure for optimum protection of your robots and components
	ISO adapter plates are optional for simple assembly on most types of robot without additional production costs	Integrated monitoring for signal transmission without delay in case of collisions so that the robot can be stopped immediately
Technical data		
Number of sizes	4	7
Moment M_x, M_y [Nm]	7.5 .. 430	6 .. 2000
Triggering force F_d [N]	500 .. 7000	440 .. 14000
Axial deflection [mm]	9.5 .. 12	5.1 .. 16
Angle deflection [°]	4 .. 12	8 .. 13
Rotatory deflection [°]	45 .. 360	20
Repeat accuracy [mm]	up to ±0.02	±0.025
Operating pressure range [bar]	0.5 .. 6.0	1.4 .. 6.2
Self-weight [kg]	0.4 .. 7.0	0.24 .. 11.7
Product features		
Pneumatic actuation	●	●
Built-in spring optionally available		●
Ambient conditions		
Clean	●	●
Slightly contaminated		●
Humid		●

● = fully supported

Force/torque sensors

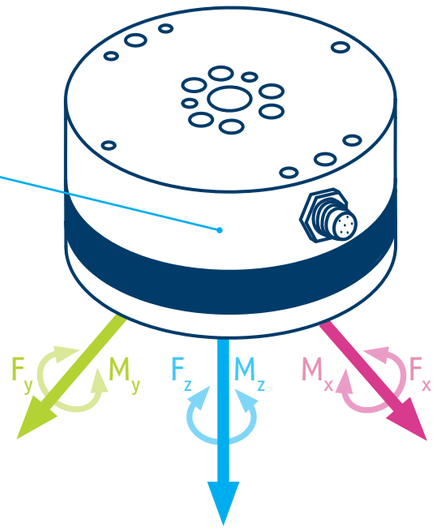
Where precise results are needed, force/torque sensors are in trend and provide robots with the required sensitivity. The force/torque sensors precisely detect the occurring process forces and moments and transmit them to the control unit. This allows for highly precise correction of the robot path.
The result are constant forces and moments, and therefore constant machining patterns.

The advantages of SCHUNK force/torque sensors

- **Rigid 6-axis force/torque sensors**
  for precision measuring in all six degrees of freedom
- **Universally applicable in robotic applications**
  such as medicine, grinding, testing, inserting, and research and development
- **Foil strain gauges**
  in combination with low-noise integrated amplifier electronics reduce the signal noise to almost zero
- **Robust design thanks to a higher overload range**
  for a long service life

Dimensions
of forces and moments

The strain gauges (DMS) of the 6-axis force/torque sensor measure the loads applied in all six degrees of freedom (F_x, F_y, F_z, M_x, M_y und M_z). The DMS signals are amplified in the sensor.



FTS

Description	
	6-axis force/torque sensor for high-precision measuring in all three spatial directions
	Universally applicable in robotics for interaction control, in automation for quality and process monitoring, as well as in biomechanics and medical technology for motion analysis and optimization of prosthetic systems
Advantages	
	IP67 as standard for use in demanding environments
	Integrated temperature compensation to ensure the defined measuring accuracy
	Simple process connection via the EtherNet/IP, EtherCAT and PROFINET interfaces
	The SCHUNK Control Center enables simple commissioning and user-friendly data recording
Technical data	
Number of sizes	9
Software interfaces	Ethernet/IP, PROFINET, EtherCAT
Range of measurement F_x F_y [N]	±125 .. ±16000
Range of measurement F_z [N]	±300 .. ±32000
Range of measurement M_x M_y [Nm]	±4.5 .. ±2800
Range of measurement M_z [Nm]	±4.5 .. ±2800
Relative display deviation	<1.0%-fs

Efficient commissioning in the SCHUNK Control Center

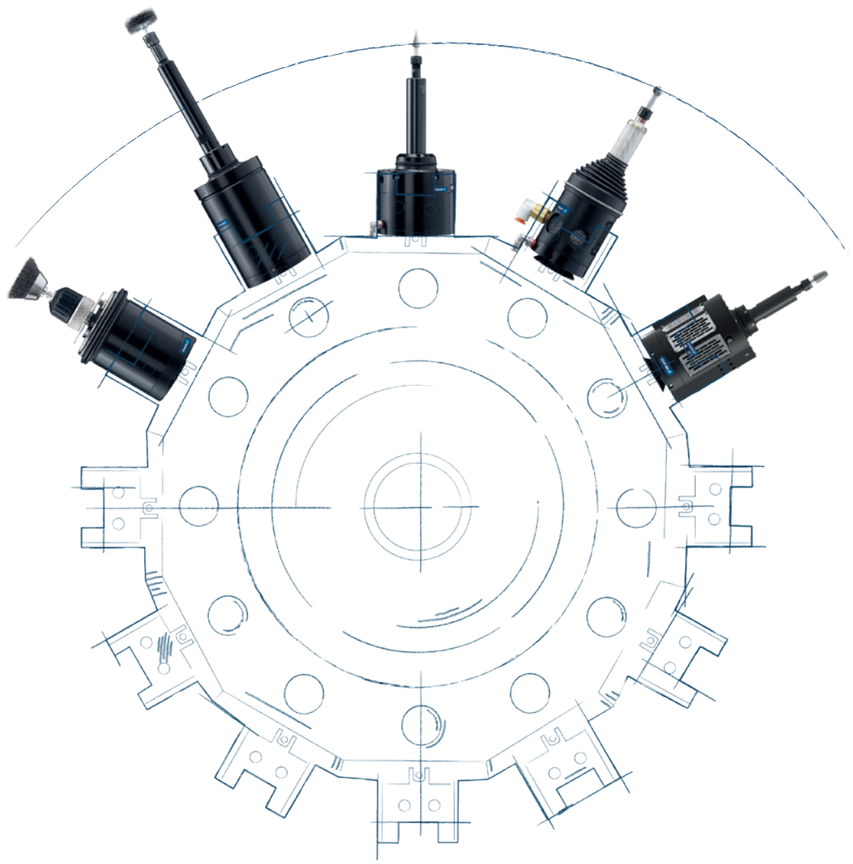
Commissioning the FTS is especially easy and user-friendly. For software integration, the SCHUNK Control Center offers an intuitive platform that enables uncomplicated parameterization, diagnostics, and data visualization.

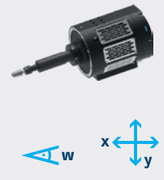
Machining tools

The machining tools from SCHUNK enable the automation of a wide range of machining steps that were previously carried out manually. The results: higher productivity, consistently perfect machining results and lower unit costs.
Manual machining of workpieces with hand tools is also often associated with putting ergonomic strain on employees. In addition, health risks are often incurred due to fine particle emissions such as abrasive dust or chips.

Create added value with a changeover to robot-assisted machining

- **Minimize health risks**
- **Consistent quality of the machining results**
- **Increased safety and ergonomic working conditions**
- **Reduction of the machining time**
- **Increase in machining capacity**



	Deburring spindle			Brush spindle	
	RCV	**RCE**	**FDB**	**MFT**	**MFT-R**
					
Description					
	Pneumatic deburring tool with radial compensation for deburring workpieces operating at up to 40,000 RPM	Electric deburring spindle with radial compensation and adjustable speed of rotation for machining workpieces operating at up to 50,000 RPM	Flexible deburring spindle for use with robots operating at up to 65,000 RPM	Flexible brush spindle for use with robots operating at up to 5,600 RPM	Pneumatic brush spindle with radial compensation, perfect for polishing and brushing workpieces operating at up to 5,600 RPM
Advantages					
	The compensation force can be adjusted using compressed air for high-quality deburring results in any installation position	Brushless electric motor for high efficiency, long service life and adjustable speed for more flexibility	Flexible high-frequency spindle for maximum flexibility for chamfering; oil-free operation for increased cleanliness	Flexible spindle for maximum flexibility for brushing and grinding	The rigidity of the spindle can be adjusted using compressed air for high-quality deburring results in any installation position
	Flexible use on robot arms or as a stationary unit	Variable speed control for the flexible machining of different workpieces with different tools and only one electric deburring tool	Adjustable rigidity of the spindle via compressed air for clean chamfering in any installation position	Adjustable contact force of the spindle via compressed air for even surfaces in any installation position	Flexible use on robot arms or as a stationary unit
	Rotating piston air engine with high torque for high feed rates and a reduced machining time	The rigidity of the tool can be adjusted using compressed air for high-quality deburring results in any installation position	High speeds for a high surface quality	Rotating piston air engine with high torque	Rotating piston air engine with high torque
Actuation					
	Pneumatic	Electric	Pneumatic	Pneumatic	Pneumatic
Technical data					
Compensation	Radial	Radial	Radial	Axial	Radial
Number of versions	2	2	5	2	1
Power [W]	250 .. 490	230 .. 710	150 .. 1040	390	390
Compensation path [mm]	±7.1 .. ±8.3	±4.6 .. ±7.1	±5 .. ±9	±7.5	±7.1
Min./max. compensation force [N]	9/54 .. 7/53	1.8/8.5 .. 24.5/80	3.1/6.7 .. 28.9/86.7	9.7 .. 45	9.4/70
Idle speed [RPM]	30000 .. 40000	13000 .. 50000	25000 .. 65000	5600	5600
Toolholder mounting	Collet ER-11 Ø 6, 8 mm	Collet ER-11 Ø 6, 8 mm	Collet Ø 3-6 mm	Quick-action chuck up to Ø 9.5 mm	Collet DA Ø 6-8 mm
Self-weight [kg]	1.71 .. 3.36	1.7 .. 5.35	1.1 .. 3.45	3.3	4.42

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