



Superior Clamping and Gripping



SCHUNK Gripping Systems

Product Overview

More than **11.000**
Standard Components



Digital Services



60 Apprentices & Students per Year
95% Retention rate

CoLab

Planning and implementation
of industrial automation and
robotics applications



3.500
Employees

9 Plants

34 Subsidiaries worldwide

Represented in **50** Countries



Awards



Visionary
Leader



Cooperation Partner



Sustainability



1945

Founded by Friedrich
Schunk in a garage

Superior Clamping and Gripping

SCHUNK, the family-owned company, is a worldwide leader for equipping modern manufacturing and robot systems. More than 3,500 employees in 9 plants and 34 directly owned subsidiaries ensure an intensive market presence. With more than 11,000 standard components SCHUNK offers the world's largest assortment of gripping systems and clamping technology from one source. Due to the digitalization of the portfolio, users can plan their processes efficiently, transparently, and economically. In addition, they benefit from the comprehensive application knowledge surrounding tomorrow's innovative manufacturing.

Cordially yours, the Schunk family

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

For every Robot, for every Industry, for every Handling Task.

SCHUNK sets standards in the automotive industry world-wide with its components and gripping systems. Our robot accessories include a uniquely comprehensive standard range of modules for the mechanical, sensory, and power connection of handling devices and robots. The comprehensive range of robust and long-lasting

grippers for small components and universal grippers features high product quality, precision, and numerous monitoring options. What's more, SCHUNK's axis system handling solutions open up new perspectives for cost and benefit-optimized automation solutions from a single source.



Content

	Page
Modular Program	6
Robots: Equipped by SCHUNK	6
Cobots: Equipped by SCHUNK	8
Hot Topics	10
Human-Robot Collaboration	10
Gantry Systems: Equipped by SCHUNK	12
Assembly Automation: Equipped by SCHUNK	14
24 V Mechatronics Program	16
Products	20
SCHUNK Grippers	20
SCHUNK Handling Components	40
Pillar Assembly Systems/Accessories/Sensor Systems	70
Customized Solutions	80
SCHUNK Contact	84

Robots: Equipped by SCHUNK

The SCHUNK End-of-Arm Competence for your Robot.
From the standard Component to the standard Gripping System.

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

Equipped by
SCHUNK



Feeding through

Over **50** process-stable pneumatic, electrical or combined SCHUNK rotary feed-throughs.



DDF 2

DDF-SE

Page 60

Protecting

Over **60** collision and overload sensors used to monitor, record and avoid collisions.



OPR

OPS

Page 64

Measuring

Over **150** sensors for precise measurement of forces and moments.



FT-AXIA

FTW

Page 62

Changing

More than **100** precise quick-change systems for flexible, fast change of effectors.



SWS

SHS

Page 56

Compensating

Over **90** components to compensate position deviations and tolerances between the robot and the tool.



AGE-Z 2

TCU

Page 58

SCHUNK Grippers

The world's most extensive gripper portfolio with over **2,550** pneumatic and electric components.



PGN-plus-P

PZN-plus

DPG-plus

PHL

EGA

PGN-plus-E

Page 20

Machining

Compliant SCHUNK deburring spindles for the use on robots with up to **65,000** RPM.



FDB

FDB-AC

Page 65

For more information
please visit: [schunk.com/
robot-accessories](http://schunk.com/robot-accessories)



Cobots Equipped by SCHUNK

Modular. Flexible. Simple.

SCHUNK offers complete Plug & Work portfolios with a variety of products for simple use on different cobots and lightweight robots. They consist of electrically and pneumatically actuated grippers, quick-change modules and force/torque sensors that are specifically adapted to robot arms from different cobots.

Using adaptations and interfaces, the modules can be combined with the robot arms in no time at all and quickly exchanged.

Learn more about the SCHUNK Plug & Work portfolios at:

schunk.com/plug-and-work-portfolio

Collaborating SCHUNK Co-act grippers

for implementing
collaborative applications



Co-act EGP-C

Page 34

Electric SCHUNK Grippers

for flexible handling
of workpieces



EGP

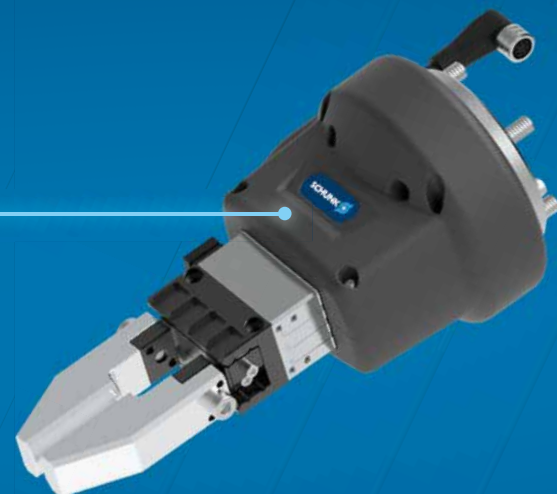


EGH



EGL

Page 34



Pneumatic SCHUNK grippers

with integrated micro valves and
sensor system for conventional and
robust handling of workpieces



PGN-plus-P



KGG



PSH

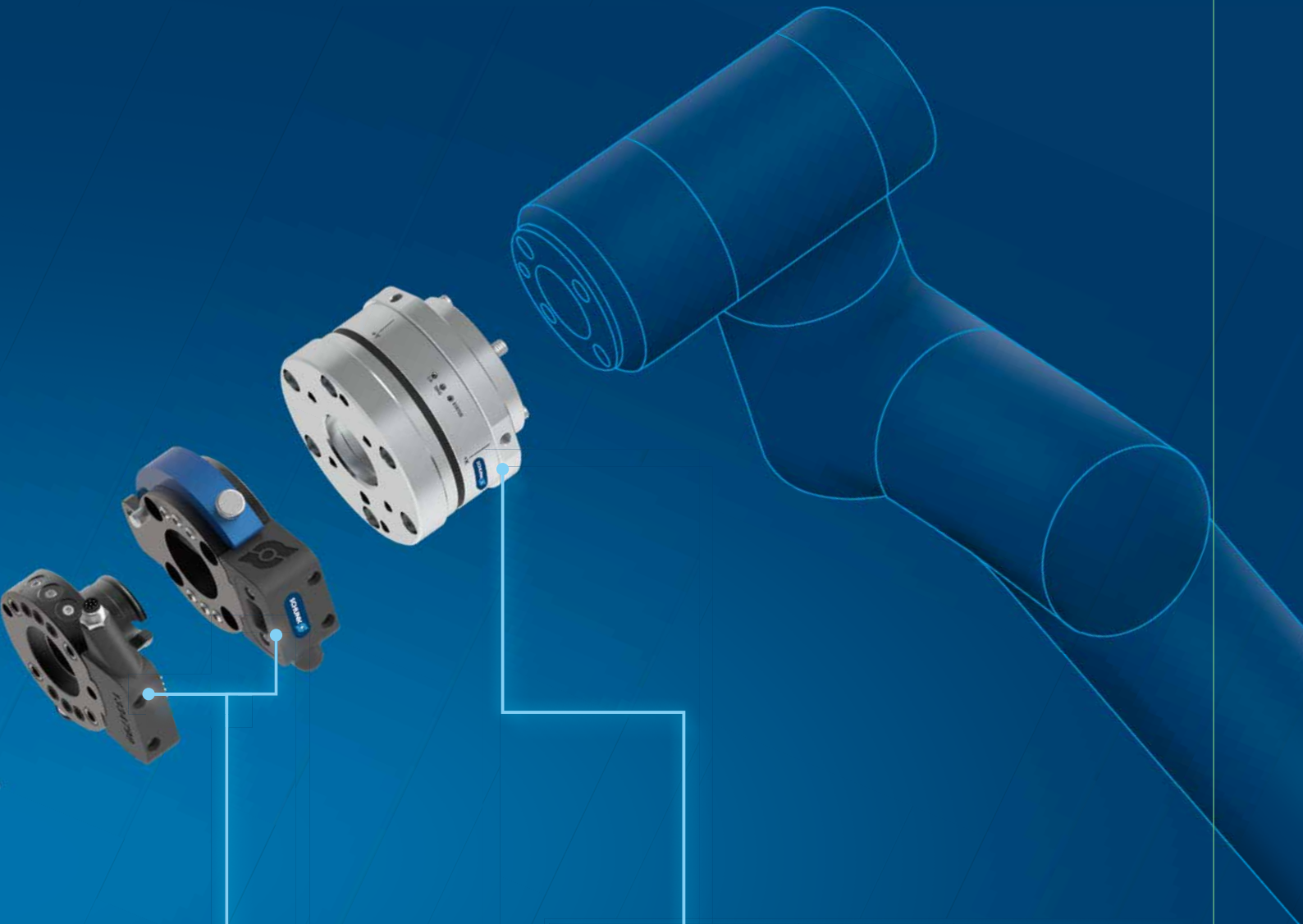


PZN-plus



JGP

Page 38



Measuring

Page 38

6-axis force/torque sensor for measuring and processing forces and moments on the robot arm, completely equipped with adapter plates



FT-AXIA

Changing

Change systems for manual exchange of different grippers and actuators with suitable feed-through module

Page 39



SHS

Cobots: Equipped by SCHUNK

The Mega Trend of Human-Robot Collaboration



From robots that replace workers to robots that serve as helpful colleagues, the field of robotic automation is experiencing a new trend that represents a huge challenge for component manufacturers.

Whenever full automation of production or assembly lines is not the most economically feasible option, it is necessary to single out individual processes to be delegated between humans and robots. In such situations, autonomous cobots, meaning robots used in the worker's immediate environment, can handle non-ergonomic or monotonous tasks such as assisting with lifting or positioning loads. This reduces the physical workload for workers and makes the process

more efficient. At the same time, humans and robots working hand in hand helps to minimize space requirements and to increase flexibility.

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

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



The SCHUNK Grippers for Collaborative Operations



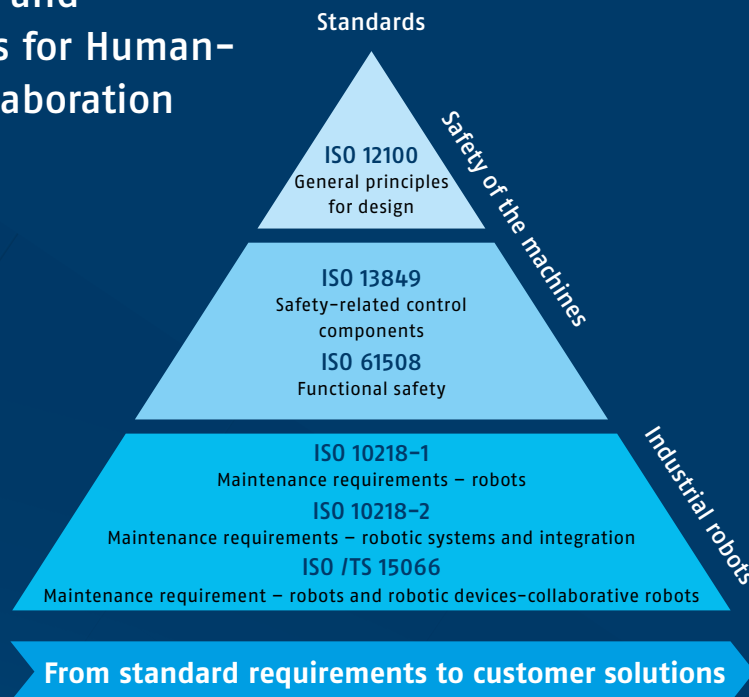
Co-act JL1
Gripper



Co-act EGP-C
Gripper



Standards and Guidelines for Human-Robot Collaboration



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

The Path toward the optimum Gripper for your HRC Application

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

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



Step 1

Task description and feasibility check

- Are the task and workpiece suitable for Human-Robot Collaboration?



Step 2

Selection of the robot or cobot

- Definition of the basic system with mechanical and electrical connection of the peripheral devices
- Ensuring a defined control



Step 3

Selecting the gripper in collaboration with the SCHUNK Co-act team considering the following points:

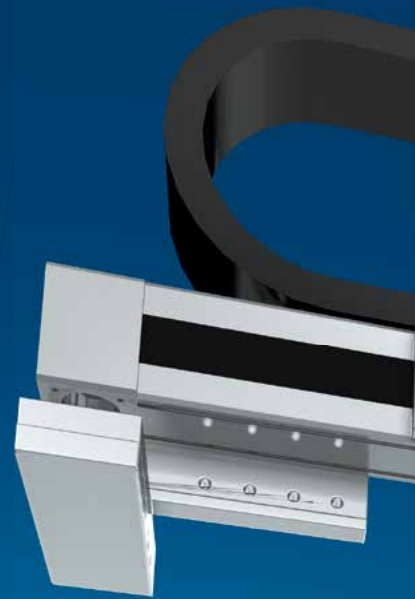
- Workpiece with respect to gripping position, required gripping force, and required stroke
- Pick and place position and in turn analysis of the interfering contour
- Connection to the superordinated mechanical and electrical periphery
- Clamping and shearing points on the gripper or the attached fingers

Gantry Systems: Equipped by SCHUNK

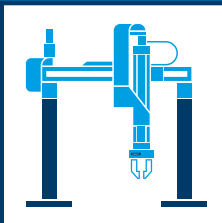
SCHUNK End-of-Arm Competence for your Gantry.
Over 4,000 Components for Handling and Assembly.

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

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



Equipped by
SCHUNK



Change Systems

Page 56

More than **100** precise quick-change systems for flexible, fast change of effectors.



SWS



SHS

Rotary Modules

Page 44

Over **600** components are available for rotatory movements. Variable from 180° to infinite rotation.



SRM



SRU-plus



SRH-plus



ERM



ERT



ERD

Compensation Units

Page 58

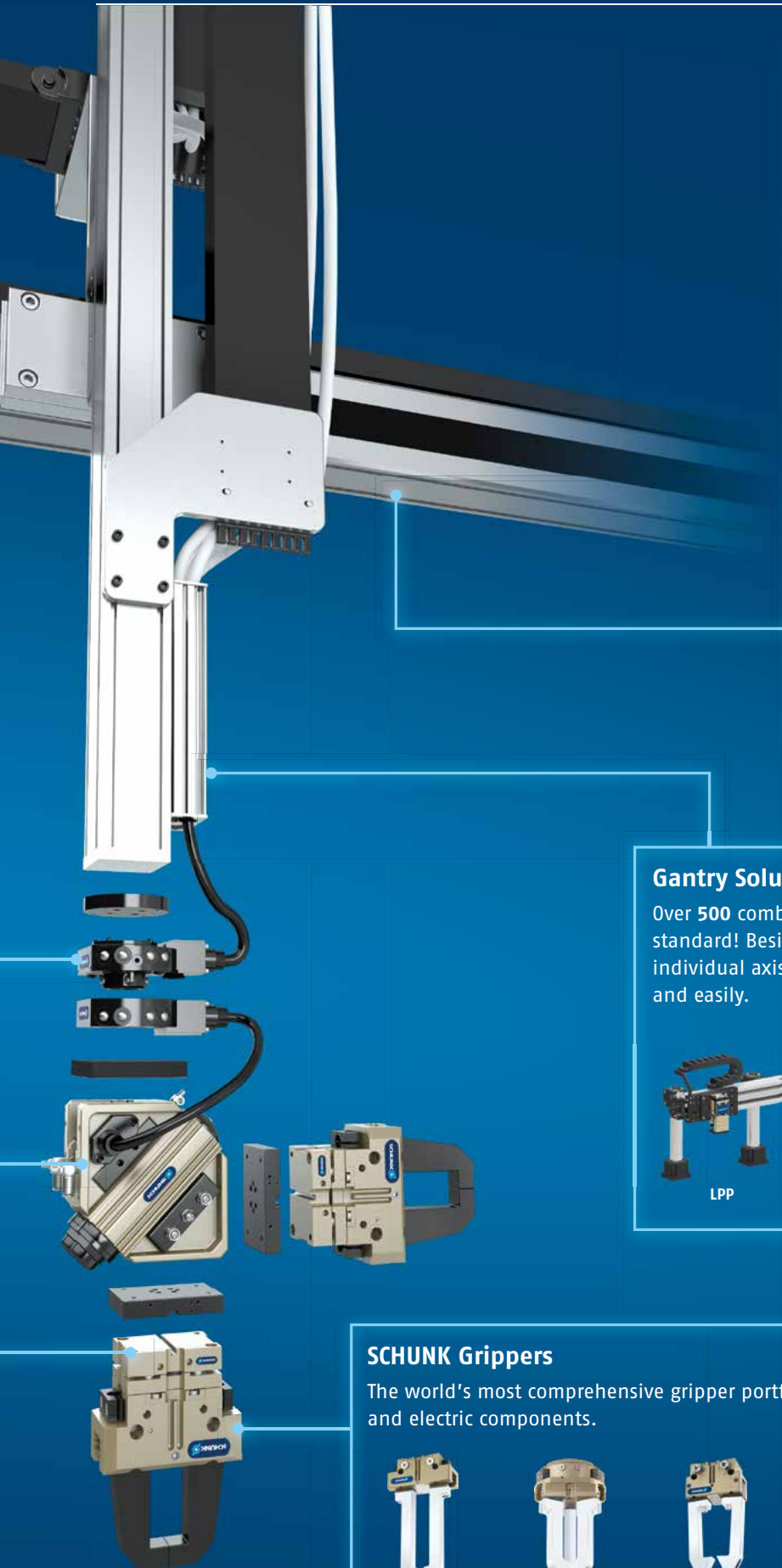
Over **90** components to compensate position deviations and tolerances between the robot and the tool.



TCU



AGE-S



Linear Modules

Page 48

More than **450** pneumatic and electric components with up to **7,000 mm** stroke. The most comprehensive offering on the market.



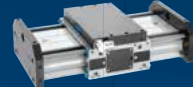
Beta



Delta



Gamma



LDT



LDK



LDN



PMP

Gantry Solutions

Page 55

Over **500** combination possibilities can be configured as standard! Besides the SCHUNK standard gantry range, individual axis systems can be implemented individually and easily.



LPP



LPE



RPE

SCHUNK Grippers

Page 20

The world's most comprehensive gripper portfolio with over **2,550** pneumatic and electric components.



PGN-plus-P



PZN-plus



PWG-plus



PSH



PGN-plus-E



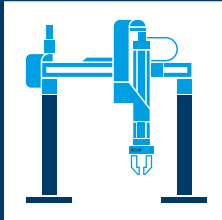
EGL

Assembly Automation: Equipped by SCHUNK

100% Flexibility with the Modular System.

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

Equipped by
SCHUNK



Rotary Modules

Page 44

Over **600** components available for rotatory movements. Variable from 180° to infinite rotation.



RM-W



RST-D



SRM



ERD



ERT



SCHUNK Grippers

The world's most comprehensive gripper portfolio with over **2,550** pneumatic and electric components.

Page 20



MPG-plus



KGG



PGN-plus-P



MPZ



PZN-plus



SWG



PWG-plus



GAP



EGP



PGN-plus-E



Linear Modules

Page 48

More than **450** pneumatic and electric components with up to **7,000 mm** stroke. The most comprehensive program on the market.



LM



CLM



KLM



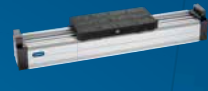
HLM



ELP



ELB



PMP



Delta



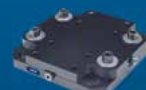
Beta

SCHUNK Pillar Assembly System

100% flexible. Achieves a virtually infinite number of possibilities for combining components. Pillars up to **1,000 mm** long.



Media feed-through



VEH



SOE



AMEH/AMDH



AMEV/AMDV



APEH/APDH



STG/STR

Page 66

The new Standard in Assembly Automation.

The 24 V Mechatronics Offering from SCHUNK.

For the first time, complete assembly systems with linear modules, rotary modules, and grippers can be entirely implemented using the 24 V technology as a basis. The reduced maintenance costs, high process stability, and lower operating costs are revolutionary. The 24 V mechatronics range offers the advantages of mechatronic modules while being as simple as pneumatics. This results in revolutionary advantages for handling in assembly automation, for instance such as a very low maintenance effort, simple and fast commissioning, and high energy efficiency.

Pick & Place Production Cell

Electric, simple, compact and fast implementation.



Easy to Start Up!

Simple commissioning of the mechatronic modules. Simpler and more intuitive than pneumatic modules



Plug & Work!

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

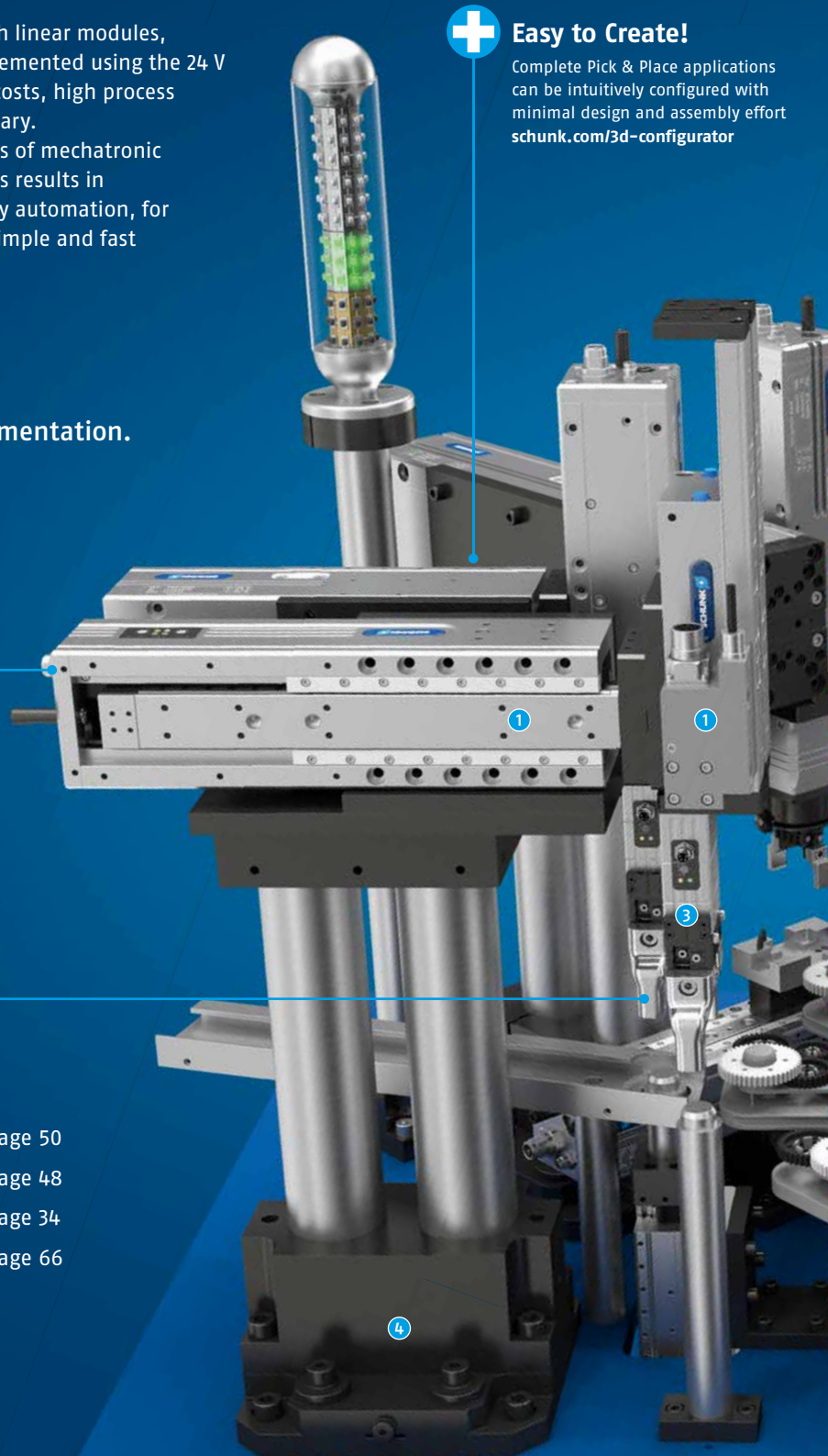


Easy to Create!

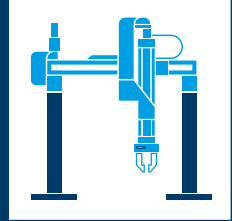
Complete Pick & Place applications can be intuitively configured with minimal design and assembly effort
schunk.com/3d-configurator

- | | |
|---|---------|
| ① Electric Linear Module ELP | Page 50 |
| ② Electric Rotary Gripping Unit EGS | Page 48 |
| ③ Electric Gripper for Small Components EGP | Page 34 |
| ④ SCHUNK Pillar Assembly System SAS | Page 66 |

For more information on the new standard in assembly automation please visit:
schunk.com/standard-in-assembly-automation



Equipped by
SCHUNK



Easy to Integrate!

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



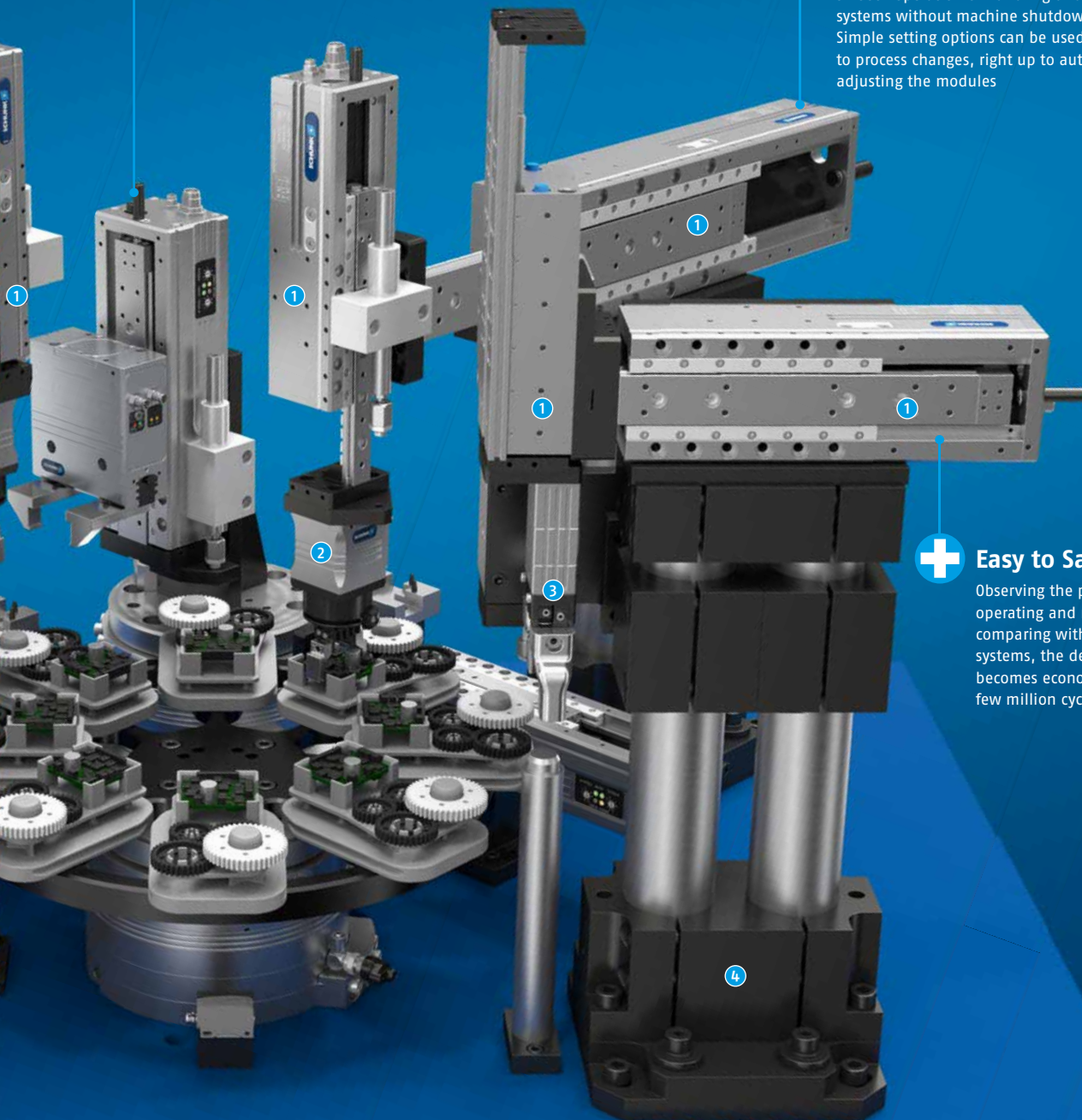
Easy to Use!

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



Easy to Save Money!

Observing the procurement, operating and maintenance costs comparing with purely pneumatic systems, the deployment becomes economically after just a few million cycles.



MECHATRONIK³ Alternative – Adaptable – Intelligent

One Strategy – 3 Features

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

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



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

Alternative

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

Adaptable

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

Intelligent

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

SCHUNK Components

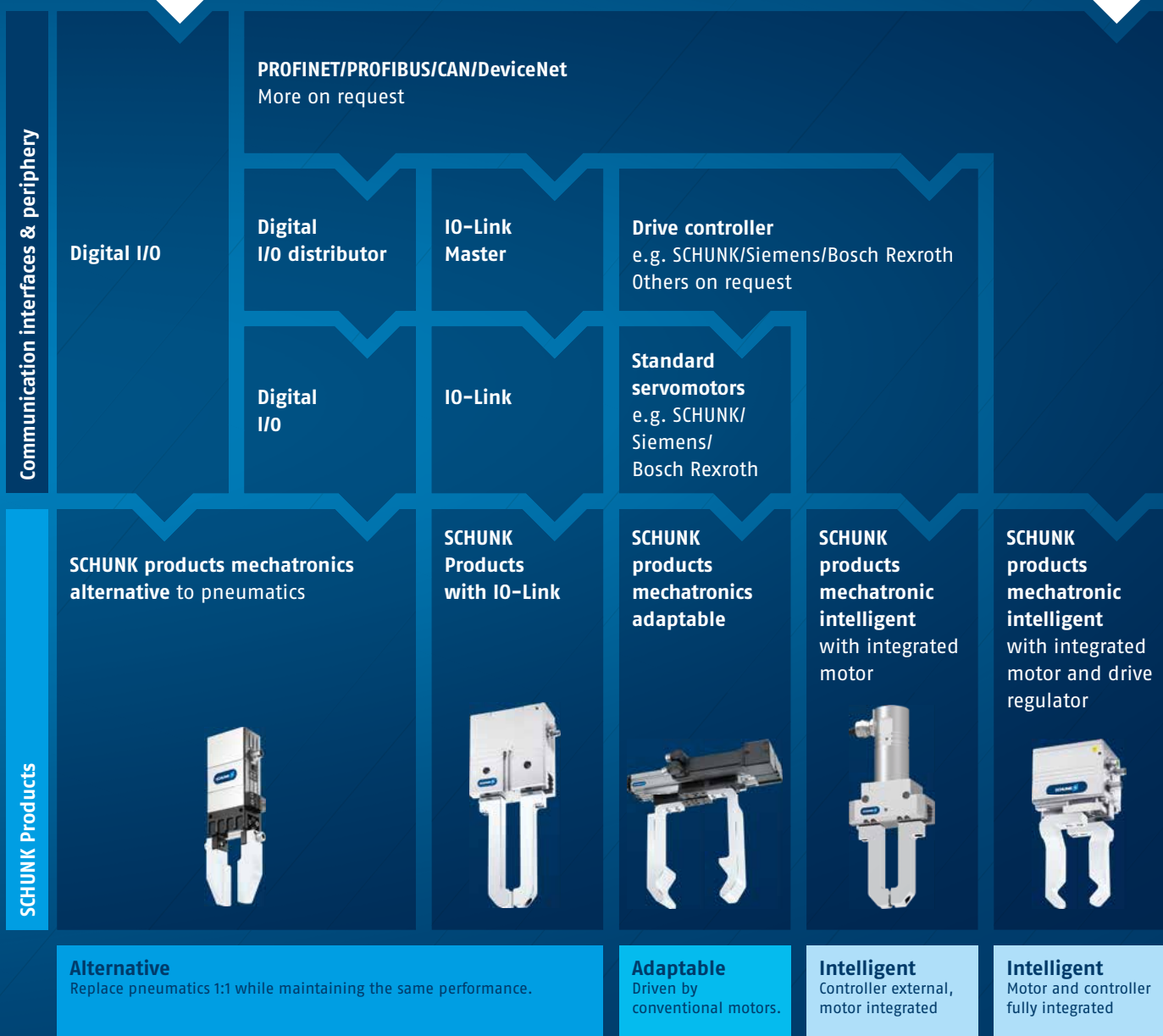
offer maximum Flexibility when it comes to Incorporating them into existing Control Concepts

Standard mechatronic SCHUNK components offer the greatest flexibility when it comes to connecting customized control concepts. Depending on your requirements, you have the choice between various SCHUNK modules with integrated or external drive, and drive regulators and the possibility to control via digital I/O signals.

From the customer controller right up to components, SCHUNK offers the appropriate components and therefore maximized flexibility for every control concept.

Customer Controller

The controller serves as the interface with the application and is specified by the customer.
Siemens | Bosch Rexroth | Beckhoff® | B&R | Schneider Electric | Lenze | More upon request

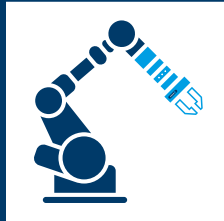


SCHUNK Grippers

The world's most proven Grippers on the Market.

SCHUNK offers the world's most comprehensive portfolio of grippers. Standard grippers, ready-to-install gripping system assembly groups, and an extremely wide range of customized gripping system solutions for your handling and assembly, automation and robot end-of-arm solution. We always meet the most complicated gripping requirements, and we solve them. The result: Robust and durable gripping systems which ensure maximum reliability in systems and machines all over the world for 30 years.

Equipped by
SCHUNK



Over **2,500** standard grippers

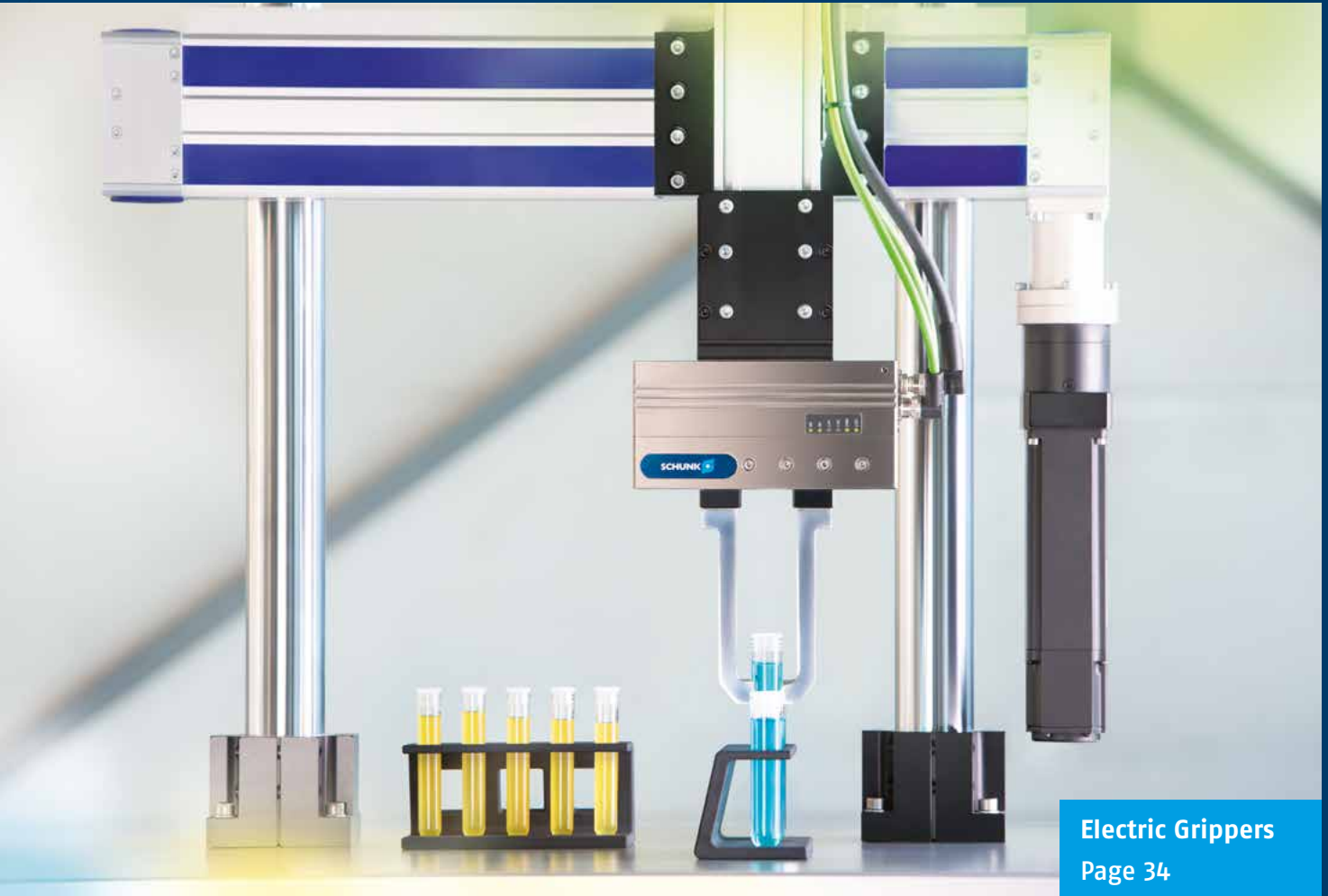
Over **300** mechatronic grippers

More than **12,000** implemented gripping system solutions

More than **1,000,000** products in use worldwide



**Pneumatic
2-Finger Parallel Gripper**
Page 24



Electric Grippers
Page 34



**Pneumatic
3-Finger Centric Grippers**
Page 30



Special Grippers
Page 38

The SCHUNK Universal Grippers

PGN-plus-P and PGN-plus-E

In a Class of its Own!



+ Up to 50% longer Gripper Fingers

The higher maximum moments of the perfected SCHUNK multi-tooth guidance enable use of longer gripper fingers.

+ Diverse Accessories

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



+ Four-stage adjustable Gripping Force

for simple adaption to sensitive workpieces.

+ 24 V Drive and Control on Option via digital I/O or IO-Link Class B Connection

for easy commissioning and quick integration into existing systems.

+ Up to 50% higher Gripping Force

with the enlarged surface of the drive piston.

+ Lifelong Maintenance-free*

The perfected SCHUNK multi-tooth guidance with continuous lubricant pockets ensures even and permanent lubrication.

* Under normal, clean operating conditions

Content

	Page
Pneumatic 2-Finger Parallel Grippers	24
Pneumatic 3-Finger Centric Grippers	30
Pneumatic Angular Grippers	32
Electric Grippers	34
Special Grippers	38

2-Finger Parallel Grippers

Pneumatic

The SCHUNK Gripper PGN-plus-P

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

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

Your benefits:

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

* Under normal, clean operating conditions



[schunk.com/pgn-plus-p](https://www.schunk.com/pgn-plus-p)



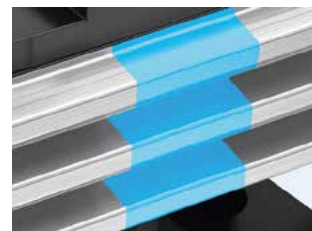
Up to 50% longer gripper fingers – due to higher maximum moments

The improved multi-tooth guidance enables the use of even longer gripper fingers for the same gripper size due to higher maximum moments, without overloading the guidance. Interfering contour-optimized gripping with confined handling tasks therefore become even easier.



Up to 50% higher gripping force

The larger surface of the drive piston in the available, and at the same time compact assembly space increases the gripping force with the PGN-plus-P. In relation to the gripper size, higher workpiece weights can be handled.



Maximum service life due to the perfected SCHUNK multi-tooth guidance with consistent lubrication pockets

Permanent lubrication pockets ensure a continuous grease supply. At the same time, it ensures that an even lubricant film is created rapidly, even with short strokes.



Maximum process reliability with up to 60% larger diagonal pull area

A larger diagonal pull surface and therefore lower surface pressure, for process reliability and low-wear transmission of power to the base jaw.

SCHUNK Gripper MPG-plus

The most powerful pneumatic miniature parallel gripper on the market.

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

Your benefits:

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

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



MPG-plus: award-winning at the AUTOMATICA show



schunk.com/mpg-plus



Larger piston surface – more precise guidance

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



Variable mounting options – maximum flexibility

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



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

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



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

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

2-Finger Parallel Grippers

Pneumatic

	2-Finger-Parallel Grippers			
	MPG-plus	MPC	KTG	KGK
				
Technical data				
Number of sizes	9	6	1	7
Gripping force [N]	7 .. 370	16 .. 370	13	45 .. 540
Stroke per jaw [mm]	1 .. 10	2.5 .. 15	4.5	10 .. 60
Weight [kg]	0.01 .. 0.63	0.05 .. 0.94	0.08	0.09 .. 4.2
Recommended workpiece weight [kg]	0 .. 1.25	0 .. 1.85	0.07	0 .. 2.7
Closing/opening time [s]	0.01 .. 0.08/0.011 .. 0.08	0.03 .. 0.11/0.03 .. 0.11	0.05/0.05	0.03 .. 0.29/0.03 .. 0.25
Max. permissible finger length [mm]	80	60	50	160
Repeat accuracy [mm]	0.02	0.02	0.02	up to 0.02
Protection class IP	30	30	20	40
Cleanroom class ISO 14644-1	5			
Sensor systems	++	+	+	+
Wide variety	++	+	+	++
Description	The most powerful pneumatic miniature parallel gripper on the market with a unique combination of oval piston drive and cross roller guide	Cost-efficient basic gripper with basic functionality for easy use	2-finger parallel gripper with center bore	Narrow 2-finger parallel gripper with long stroke
Field of application				
	- Gripping and moving - For small to medium-sized workpieces - In the field of assembly, testing, laboratory, pharmacies	With low process forces	- Gripping and moving - For small to medium-sized workpieces - Equipped with a continuous center bore for workpiece supply, sensor or actuator systems	- Universal use - For light to medium-sized workpiece weights - With a large range of stroke
Included in the Plug & Work portfolio for				Universal Robots, Doosan Robotics, Techman Robot
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

Pneumatic 2-Finger Grippers

PGN-plus-P	PGN-plus	JGP	PGF	PGB
				
11	11	10	5	4
180 .. 27000	123 .. 21150	123 .. 7400	240 .. 1900	90 .. 610
2 .. 45	2 .. 45	2 .. 35	7.5 .. 31.5	4 .. 10
0.17 .. 39.8	0.08 .. 39.5	0.08 .. 17.5	0.3 .. 5.3	0.28 .. 1.32
0 .. 97.5	0 .. 80.5	0 .. 30	0 .. 7.1	0 .. 3.3
0.02 .. 0.8/0.02 .. 0.8	0.02 .. 0.8/0.02 .. 0.8	0.02 .. 0.7/0.02 .. 0.7	0.03 .. 0.4/0.03 .. 0.4	0.02 .. 0.08/0.02 .. 0.08
400	400	300	125	125
up to 0.01	up to 0.01	up to 0.01	up to 0.02	0.01
40/64	40/64	40	40	40
	5			
+++	+++	++	+	++
+++	+++	+	+	+
Universal 2-finger parallel gripper with a high gripping force and high maximum moments due to the multi-tooth guidance	Universal 2-finger parallel gripper with a high gripping force and high maximum moments due to the multi-tooth guidance	Universal 2-finger parallel gripper of the compact class with T-slot guidance and good cost-performance ratio	Universal parallel gripper with surface-guided base jaws	Universal 2-finger parallel gripper with a high gripping force and high moment capacity due to the multi-tooth guidance as well as the center bore
• Optimum standard solution for many fields of application • Universal use	• Optimum standard solution for many fields of application • Universal use	• Optimum standard solution for many fields of application • Universal use • In the areas of machine and plant construction, assembly and handling as well as the automotive industry	• For high part diversities due to its long jaw stroke and high gripping forces	• Universal use • Suitable for applications that require a center bore, e.g. for workpiece feeding, special sensor systems or optical recognition systems
Universal Robots, Doosan Robotics, Techman Robot		Universal Robots, Doosan Robotics, Techman Robot		
●	●	●	●	●
●	●	○	○	○
○	○			
○	○			
●	●		●	●
○	○		○	○

2-Finger Parallel Grippers

Pneumatic

	2-Finger-Parallel Grippers		
	DPG-plus	PHL	PFH-mini
			
Technical data			
Number of sizes	11	5	3
Gripping force [N]	110 .. 11250	390 .. 4630	630 .. 2950
Stroke per jaw [mm]	2 .. 45	30 .. 160	30 .. 100
Weight [kg]	0.12 .. 52	1.38 .. 24.18	2.65 .. 12.6
Recommended workpiece weight [kg]	0 .. 46.35	0 .. 15.5	0 .. 13
Closing/opening time [s]	0.03 .. 1.1/0.03 .. 1.1	0.12 .. 1.82/0.12 .. 2.91	0.3 .. 1.0/0.3 .. 1.2
Max. permissible finger length [mm]	380	800	250
Repeat accuracy [mm]	bis zu 0.01	0.02	0.05
Protection class IP	67	41	41
Cleanroom class ISO 14644-1	5		
Sensor systems	+	++	++
Wide variety	+	++	++
Description	Despite the high moment load of the base jaws, this sealed 2-finger parallel gripper meets the IP67 requirements and does not permit any substances from the working environment to penetrate the interior of the unit	2-finger parallel gripper with long jaw stroke for large parts and/or a broad range of parts	Gripper with long jaw stroke for large parts and a broad range of parts
Field of application			
	• Ideally suitable for handling of rough or dirty workpieces • Its field of application extends from the loading and unloading of machines, such as in the case of sanitary blocks, grinding machines, lathes or milling machines, to handling tasks in painting plants, in powder-processing or underwater	• Optimum standard solution for many fields of application • Universal use • In the areas of machine and plant design, assembly and handling as well as the automotive industry	• For precise handling of a wide variety of workpieces
Included in the Plug & Work portfolio for			
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

PFH	PSH	SPG
		
4	4	1
2200	320 .. 1760	10000
150 .. 300	14 .. 100	100
18.9 .. 33.6	0.77 .. 8.05	35
0 .. 14.7	0 .. 8.8	50
0.7 .. 1.25/0.7 .. 1.25	0.12 .. 0.4/0.12 .. 0.4	1.5/1.5
900	300	500
0.02	bis zu 0.05	0.1
30	67	30
++	+	+
+	+	+
2-finger parallel gripper with long jaw stroke for large parts and/or a broad range of parts	2-finger parallel gripper with long jaw stroke and dirt-resistant round guides	Sturdy 2-finger parallel gripper for heavy components and a broad part range, equipped with robust guides and therefore it is suitable for high gripping forces and maximum moment loads.
• Particularly suitable for handling vehicle wheel rims	• For a wide range of parts	• Covering a wide range of parts with a long jaw stroke • High gripping force for high workpiece weights
	Universal Robots, Doosan Robotics, Techman Robot	
●	●	●
○	●	○
○	●	
	●	
●	●	
	○	

3-Finger Centric Grippers

Pneumatic

	3-Finger Centric Gripper		
	MPZ	PZN-plus	JGZ
			
Technical data			
Number of sizes	6	11	7
Gripping force [N]	20 .. 310	255 .. 57300	225 .. 7990
Stroke per jaw [mm]	1 .. 5	2 .. 45	2 .. 16
Weight [kg]	0.01 .. 0.29	0.13 .. 80	0.12 .. 8
Recommended workpiece weight [kg]	0 .. 1.15	0 .. 227	0 .. 30
Closing/opening time [s]	0.02 .. 0.06/0.02 .. 0.06	0.02 .. 4.6/0.02 .. 3	0.02 .. 0.8/0.02 .. 0.8
Max. permissible finger length [mm]	45	250	200
Repeat accuracy [mm]	0.01	up to 0.01	up to 0.01
Protection class IP	40	40/64	40
Cleanroom class ISO 14644-1	5	5	5
Comprehensive ranges	+	+++	+
Variety of sensor systems	+	+++	++
Description	Small 3-finger centric gripper with base jaws guided on T-slots	Universal centric gripper with high gripping force and maximum moments due to multi-tooth guidance	Universal 3-finger centric gripper of the compact class with T-slot guidance and best cost-performance ratio
Field of application			
	• Universal use • Particularly suitable for gripping small workpieces	• Universal use due to numerous product variants; also in areas where there are special demands on the gripper (temperature, chemical durability, contamination, and much more)	• Optimum standard solution for many fields of application • Universal use • In the areas of machine and plant design, assembly and handling as well as the automotive industry
Included in the Plug & Work portfolio for		Universal Robots, Doosan Robotics, Techman Robot	
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

Pneumatic 2-Finger Grippers

Pneumatic 3-Finger Grippers

PZH-plus	PZB-plus	DPZ-plus	Multi-finger Centric Gripper PZV
			
4	9	8	5
375 .. 4200	340 .. 27400	230 .. 16500	570 .. 6900
20 .. 75	2 .. 35	2 .. 25	4 .. 16
1.5 .. 33	0.26 .. 53	0.2 .. 20.1	0.5 .. 10
0 .. 22	0 .. 100	0 .. 60	0 .. 34.5
0.25 .. 1.05/0.2 .. 0.85	0.02 .. 2.5/0.02 .. 2.5	0.03 .. 1.8/0.03 .. 1.8	0.02 .. 0.15/0.02 .. 0.15
400	250	160	140
up to 0.02	up to 0.01	up to 0.01	up to 0.01
40	40	67	40
5		5	
+	+	+	+
+	++	+	+++
Universal centric gripper with high gripping force and maximum moments due to multi-tooth guidance	Universal 3-finger centric gripper with large gripping force and high maximum moments per finger, plus center bore	Despite the high moment load of the base jaws, this sealed 3-finger centric gripper meets the requirements of IP67 and does not permit any substances from the working environment to penetrate the interior of the component	The multi-finger gripper for applications in which two or three fingers are insufficient
• Universal use due to numerous product variants; also in areas where there are special demands on the gripper (temperature, chemical durability, contamination, and much more)	• Universal use • Suitable for fields of application that require a center bore, e.g. for workpiece feeding, special sensor systems or optical recognition systems	• Ideally suitable for handling of rough or dirty workpieces • Its field of application extends from the loading and unloading of machines, such as in the case of sanitary blocks, grinding machines, lathes or milling machines, to handling tasks in painting plants, in powder-processing or underwater	• 4-finger centric grippers have advantages over the usual centric grippers, for example when cylindrical workpieces are being magazined in tablets • The PZV process-reliably handles the workpieces despite the interfering contours
●	●	●	●
○	○	●	○
○	○	●	
○	○	○	
○	●	○	○
		○	

Angular Grippers

Pneumatic

	2-Finger Angular Gripper			2-Finger Radial Gripper
	SGB	SWG	PWG-plus	PRG
				
Technical data				
Number of sizes	3	8	8	8
Gripping moment [Nm]	0.9 .. 4.95	0.01 .. 2.8	3.32 .. 1025	2 .. 295
Opening angle per jaw [°]	8	15	15	30 .. 90
Weight [kg]	0.04 .. 0.06	0.0025 .. 0.213	0.13 .. 13.6	0.13 .. 6.72
Recommended workpiece weight [kg]	0 .. 0.8	0 .. 0.46	0 .. 23.13	0 .. 6.96
Closing/ opening time [s]	0.06 .. 0.08/ 0.04 .. 0.05	0.015 .. 0.03/ 0.02 .. 0.06	0.06 .. 0.32/ 0.01 .. 0.46	0.06 .. 0.75/ 0.06 .. 0.92
Max. permissible finger length [mm]	50	42	300	240
Repeat accuracy [mm]	0.1	0.05	0.02	up to 0.05
Protection class IP	20	30	30	20
Cleanroom class ISO 14644-1				
Sensor systems	+	+	++	++
Comprehensive ranges	+	+	++	++
Description	Small, simple actuated plastic angular gripper with spring reset	Narrow double-acting 2-finger angular gripper	Robust 2-finger angular gripper with oval piston and bone drive	180° radial gripper with powerful 1-shift slotted link gear and oval piston
Field of application				
	• Universal use • With special requirements on corrosion resistance and antistatic properties of the gripping unit	• Universal use • Suitable for applications which require a stacked, space-optimized gripper arrangement	• Universal use	• For areas of application which, in addition to a large gripping force, require the shortest possible motion sequences through the radial design of the jaw stroke
Ambient conditions				
Clean	●	●	●	●
Contaminated/coarse dust	○	○	●	○
Contaminated/fine dust and liquids			○	
Contaminated/aggressive liquids			○	
High temperature range > 90 °C		●	●	●
Cleanroom	○	○	○	○

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

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

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

DRG	GAP	3-Finger Angular Gripper SGW
		
5	3	3
8.2 .. 143	92 .. 430*	1.35 .. 7.45
10 .. 90	30 .. 90	8
0.5 .. 4.46	0.3 .. 1.33	0.05 .. 0.17
0 .. 7.2	0 .. 1.25	0 .. 1.3
0.4 .. 0.3/ 0.5 .. 0.6	0.09 .. 0.35/ 0.09 .. 0.35	0.02 .. 0.02/ 0.03 .. 0.03
125	65	50
0.1	0.05	0.1
67	40	20
++	+	+
++	++	+
Sealed 180° angular gripper for use in dirty environments	2-finger angular parallel gripper with gripper finger actuation of up to 90 degrees per jaw	Small, simple actuated plastic angular gripper with spring return
- For applications requiring a large opening range - Particularly suitable for the use in dirty environments	- Gripping and moving - For small to medium-sized workpieces	- Universal use - With special requirements on corrosion resistance and anti-static properties of the gripping unit
●	●	●
●	○	○
●		
○		
●		
○	○	○

SCHUNK Gripper PWG-plus

Compact powerhouse

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



schunk.com/pwg-plus

Your benefits:

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

	2-Finger Parallel Gripper		
	Alternative		
	Co-act EGP-C	EGP	PGN-plus-E
			
Technical Data			
Number of sizes	2	4	2
Gripping force [N]	40 .. 140	12 .. 300	110 .. 810
Stroke per jaw [mm]	3 .. 6	3 .. 10	8 .. 10
Weight [kg]	0.36 .. 86	0.11 .. 0.8	1.01 .. 1.73
Recommended workpiece weight [kg]	0.2 .. 0.7	0 .. 1.25	0 .. 4.05
Closing/opening time [s]	0.09 .. 0.2	0.03 .. 0.49	0.26 .. 0.29
Max. permissible finger length [mm]	50	80	160
Repeat accuracy [mm]	0.02	0.02	0.01
Nominal voltage [V]	24	24 DC	24 DC
Nominal current [A]	0.14 .. 0.2	0.14 .. 0.3	0.6 .. 0.7
Protection class IP	30	30	40
Communication interface	Digital I/O	Digital Inputs, IO-Link	Digital I/O, IO-Link
Great variety	+	++	+
Description	Electric 2-finger parallel gripper. Certified for collaborative operation, actuated via 24 V and digital I/O	Electric 2-finger parallel gripper with smooth-running roller bearing guide in the base jaw	Electric 2-finger parallel gripper with integrated motor and electronics as well as reliable multi-tooth guidance
Motor & Controller			
Motor	Integrated	Integrated	Integrated
Controller	Integrated	Integrated	Integrated
Controller type			
Field of application			
	- Gripping and moving - For small to medium-sized workpieces with flexible force and high speed - Suitable for collaborative operation	- Gripping and moving - For small to medium-sized workpieces with flexible force and high speed - In the areas of assembly, testing, laboratory, pharmacies	- Optimum standard solution for many fields of application - Universal use
Included in the Plug & Work portfolio for	Universal Robots, Doosan Robotics, Techman Robot	Universal Robots, Doosan Robotics, Techman Robot	
Ambient conditions			
Clean	●	●	●
Contaminated/coarse dust	●	○	●
Contaminated/fine dust and liquids			○
Contaminated/aggressive liquids			
High temperature range > 90 °C			
Cleanroom		○	

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

Adaptable		Intelligent
LEG	EGA	EGH
		
3	2	1
300 .. 1050	150 .. 1300	100
101 .. 281	30 .. 100	40
5.4 .. 7.9	2.2 .. 9	0.95
0 .. 7.5	0 .. 6.5	0.5
600	500	0.8
0.05	0.05	70
Motor-dependent	Motor-dependent	0.1
Motor-dependent	Motor-dependent	24
20	40	0.2
Depending on the controller	Depending on the controller	20
++	++	I0-Link
Light long-stroke gripper for flexible and highly dynamic handling of different components	Electric 2-finger parallel gripper with adaptable servomotor	Flexible gripper with long, adjustable stroke for simple automation with cobots
Adaptable	Adaptable	Integrated
External	External	Integrated
Motor-dependent	Motor-dependent	
• For very flexible gripping of various geometries and types of components • Due to the servo-electric drives, the gripping position and the gripping force can be exactly determined	• Gripping and moving • For medium-sized workpieces with flexible force and high speed	• Gripping and moving • For small to medium-sized workpieces with flexible stroke • For fast and easy access into the world of automation with cobots
		Universal Robots, Techman Robot
●	●	●
○	●	○
	○	

Pneumatic 2-Finger Grippers

Pneumatic 3-Finger Grippers

Pneumatic Angular Grippers

Electric Grippers

	Intelligent		
	EGI	EGL	EGN
			
Technical Data			
Number of sizes	1	1	3
Gripping force [N]	25 .. 100	50 .. 600	170 .. 1000
Stroke per jaw [mm]	57.5	42.5	8 .. 16
Weight [kg]	1.55	1.8	0.84 .. 3.4
Recommended workpiece weight [kg]	0 .. 0.5	0 .. 3	0 .. 5
Closing/opening time [s]	1.1	0.7	0.35 .. 0.5
Max. permissible finger length [mm]	200	165	200
Repeat accuracy [mm]	0.03	0.05	±0.01
Nominal voltage [V]	24 DC	24 DC	24 DC
Nominal current [A]	1.5	2.5	1 .. 2.6
Protection class IP	20	46	41
Communication interface	PROFINET	PROFINET, PROFIBUS, CAN	Depending on the controller
Great variety	+	+	++
Description	Servo-electric 2-finger parallel gripper with sensitive gripping force control and long stroke	Servo-electric 2-finger parallel gripper with sensitive gripping force control and long stroke	Servo-electric 2-finger parallel gripper with high gripping force and moment loads due to the multi-tooth guidance
Motor & Controller			
Motor	Integrated	Integrated	Integrated
Controller	Integrated	Integrated	External
Controller type	Integrated		ECM
Field of application			
	- Universally applicable, highly flexible gripper - For a wide range of parts and sensitive components	- Various workpieces can be gripped either sensitively or with a high force - Flexible workpiece handling possible even in a contaminated environment	- Optimum standard solution for many fields of application - Flexible in use due to controllable gripping force, position, and speed
Included in the Plug & Work portfolio for		Universal Robots	
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 Gripper	Electromagnetic Grippers		
	Alternative		
EZN	EGM-M	EGM-B	EMH
			
2	6	8	4
140 .. 800	780 .. 11700	1800 .. 20370	530 .. 10550
6 .. 10			
0.98 .. 2.3	1 .. 7	5.5 .. 25	1 .. 8
0 .. 4	0 .. 75	0 .. 118	0 .. 70
0.25 .. 0.4	0.3	0.3	1.2
125			
±0.01			
24 DC	400 AC	400 AC	24 DC
2 .. 3	2.2 .. 3.7	2.9 .. 12.3	3.1 .. 7.1
41	54	54	52
Depending on the controller	Depending on the controller	Depending on the controller	Digitale I/O
++	+++	+++	+
Servo-electric 3-finger centric gripper with high gripping force and high maximum moment due to the multi-tooth guidance	Electric permanent magnetic gripper for energy-efficient handling of ferromagnetic workpieces	Electric permanent magnetic gripper for energy-efficient handling of ferromagnetic workpieces	Electro-permanent magnetic gripper for energy-efficient handling of ferromagnetic workpieces with integrated electronics and feedback function on the magnetization status
Integrated			
External	External	External	Integrated
ECM	ECG	ECG	
• Optimum standard solution for many fields of application; flexible in use due to controllable gripping force, position, and speed	• Universally applicable, compact gripper, with large diversity of parts	• Universally applicable, compact gripper, with large diversity of parts	• Universally applicable, compact gripper, with large diversity of parts
•	•	•	•
•	•	•	•
•	•	•	•
•			
○	○	○	○

Special Grippers

Pneumatic

	Universal Gripper with Shank Interface GSW-B	Universal Gripper with Shank Interface and Compensation Unit GSW-B with AGE	Vacuum Gripper with Shank Interface GSW-V
			
Comprehensive ranges	++	++	+
Variety of sensor systems	+	+	
Description	Universal gripper with shank interface for toolholder	Universal gripper with shank interface for toolholder and compensation unit	Vacuum gripper with shank interface for machine self-operation
Field of application			
	• For fully automated loading and unloading of machining centers	• For fully automated loading and unloading of clamping devices such as vises	• For fully automated loading and unloading of flat workpieces
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 +++ = wide large selection

SCHUNK PZN-plus with Shank Interface GSW-B

The SCHUNK GWS gripper with shank interface loads and unloads machining centers fully automatically using the machine's own axis. It is inserted in a toolholder like a tool and can be swapped lightning fast out of the tool rack, and loaded from the tool changer into the machine spindle directly by the machine without requiring a robot or gantry. The result: fully automatic workpiece change only with the help of the machine axis. Operation via the coolant supply.



Your benefits:

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



schunk.com/gsw-b

Magnetic Gripper with Shank Interface GSW-M	Cleaning Device with Shank Interface RGG	Internal Hole Gripper LOG	O-Ring Gripper ORG
			
+	+	+++	+
Magnetic gripper with shank interface for toolholders	Cleaning device with shank interface for toolholders	Lightweight gripper made from a chemical resistant polyamide with a closed membrane system.	6-finger gripper reliable internal and external assembly of O-rings
For fully automated loading and unloading of ferromagnetic workpieces	For cleaning of clamping devices and for automating cleaning of machine tools	- Particularly suitable for highly dynamic applications with light workpieces - For handling of small parts and plastic parts, as well as sand core handling	For automated assembly of O-rings
●	●	●	●
○	●	●	
○	●	●	
	●		
	●		
		○	○

SCHUNK ORG Special Gripper for O-ring Assembly

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

Your benefits:

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



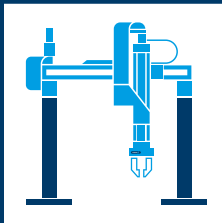
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Handling and Assembly – SCHUNK has the perfect Solution for every Requirement.

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

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

Equipped by
SCHUNK



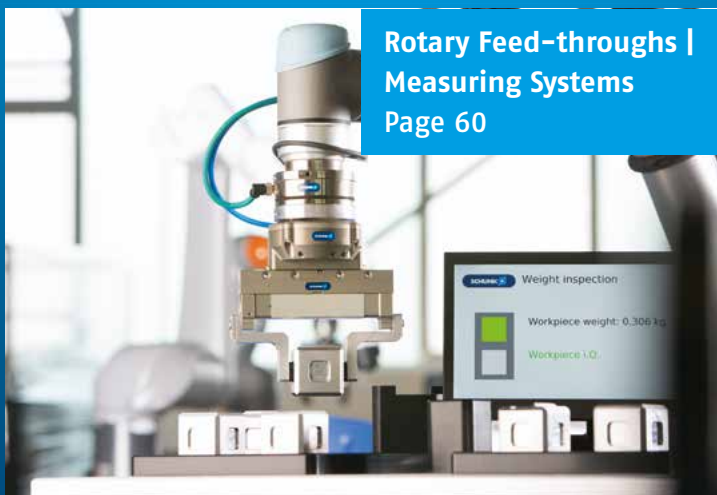
Over **4,000** standard components
in the most comprehensive selection of
modules for handling and assembly



Change Systems
Page 56



Compensation Units
Page 58



**Rotary Feed-throughs |
Measuring Systems**
Page 60

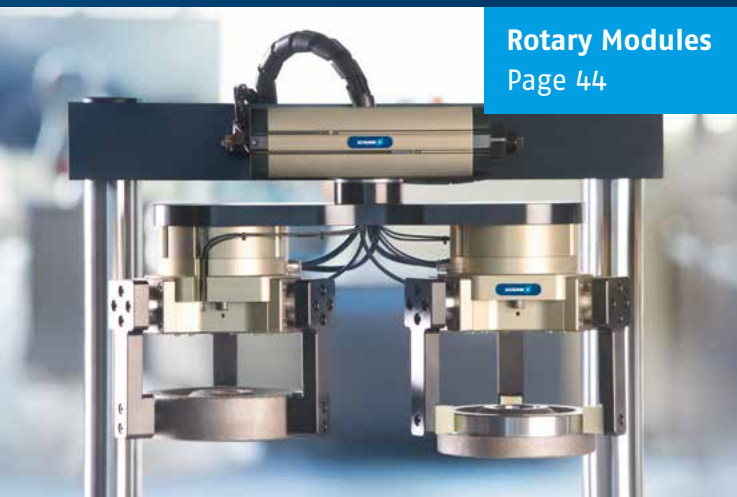


**Monitoring Sensors |
Machining Tools**
Page 64

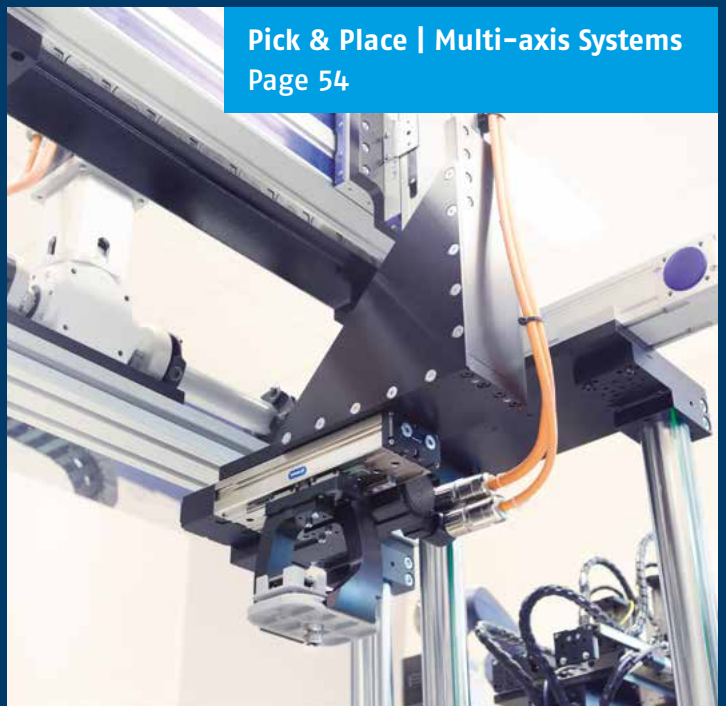
Linear Modules Page 48



Rotary Modules Page 44

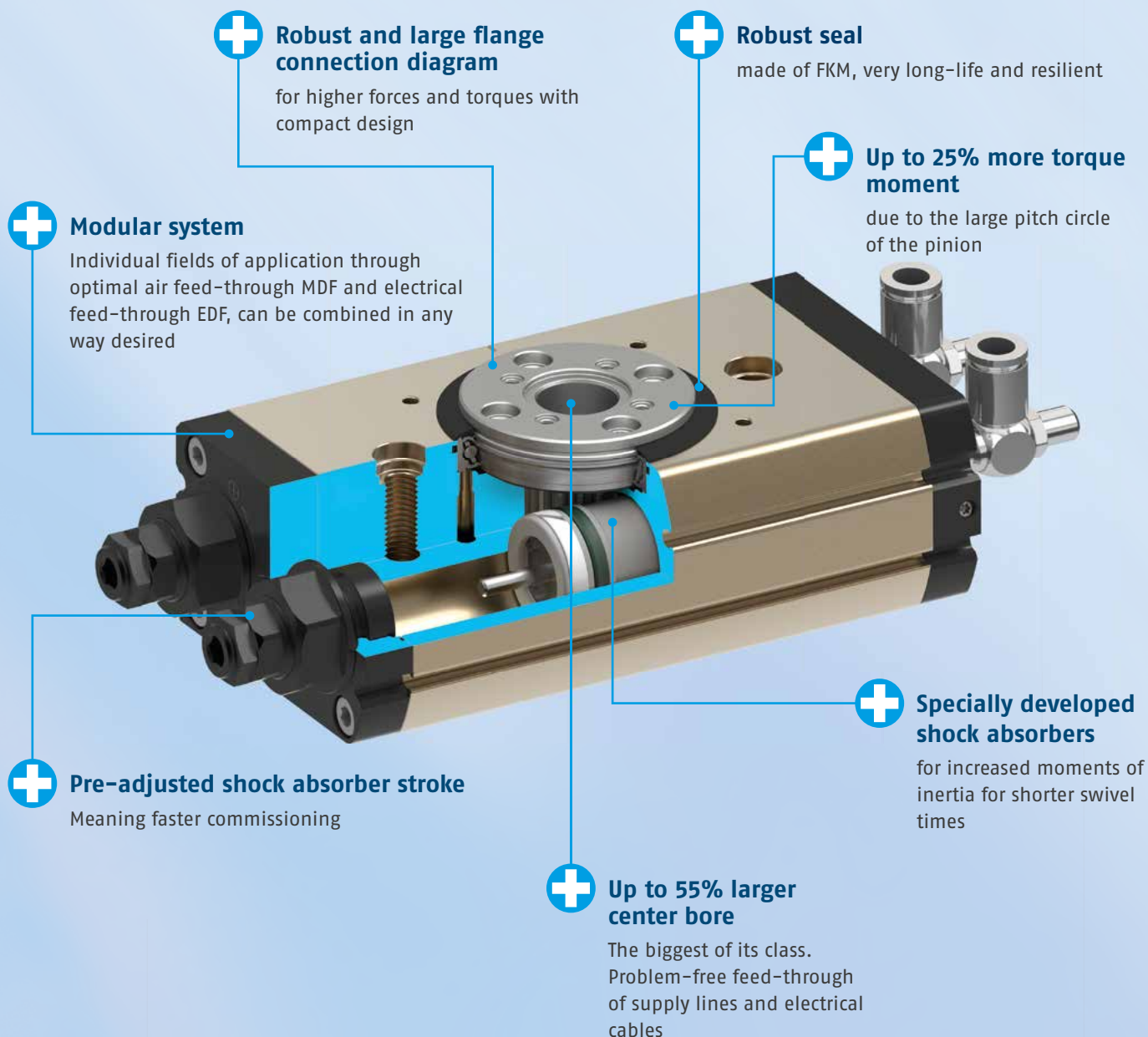


Pick & Place | Multi-axis Systems Page 54



The pneumatic SCHUNK Swivel Module SRM

The most robust and powerful swivel module on the market



Technical Data



Size
14 .. 40



Weight
0.4 .. 10.8 kg



Angle of rotation
0° .. 180°
(Variant 90°)



Torque
1.1 .. 23.7 Nm



Moment of inertia
7 kgm²

Content

	Page
Pneumatic Rotary Modules	44
Electric Rotary Modules	46
Pneumatic Linear Modules	48
Electric Linear Modules	50
Pick & Place Multi-axis Systems	54
Change Systems	56
Compensation Units	58
Rotary Feed-throughs Measuring Systems	60
Monitoring Sensors Machining Tools	64

Rotary Modules

Pneumatic

Rotary Modules, pneumatic	Swivel Vane		Swivel Units	
	SFL	RM-W	SRU-mini	SRM
				
Technical data				
Angle of rotation < 360 ° [°]	90 .. 180	90/180	0 .. 180	0 .. 180
Angle of rotation > 360 ° [°]				
Number of sizes	3	4	4	7
Torque [Nm]	0.1 .. 3.6	0.7 .. 22	0.16 .. 1.15	0.5 .. 23.7
Weight [kg]	0.09 .. 0.71	0.65 .. 8.3	0.15 .. 0.65	0.33 .. 10.75
Max. permissible mass moment of inertia [kgm²]	0.005	0.27	0.01	7
Repeat accuracy [°]	0.05	up to 0.036	0.07	0.03 .. 0.07
Protection class IP	52	40	65	40 .. 65
Description	Swivel vane with a high torque for easy rotation tasks up to 180°	Swivel vane with high torque for fast rotation tasks	Light and fast flat swivel unit with multiple options such as fluid feed-through, hydraulic damping, hydraulic-elastomer damping and a pneumatic center position	Universal unit for pneumatic swivel and turning movements
Gripping force [N]				
Stroke per jaw [mm]				
Recommended workpiece weight [kg]				
Closing/opening time [s]				
Max. permissible finger length [mm]				
Options/versions				
Center bore			●	●
Pneumatic rotary feed-through			●	●
Electric rotary feed-through				●
Center position			●	
ATEX-certified				
Gripping force maintenance				
Rotation adapter				
Monitoring options				
Inductive proximity switches		●		●
Magnetic switches	●		●	●
Field of application				
	• The optimum solution for easy rotation tasks	• For fast movement cycles	• For fast movement cycles	• For universal use with any swiveling movement
Ambient conditions				
Clean	●	●	●	●
Slightly dirty	●	●	●	●
Extremely dirty				●

● = fully supported

SRU-plus	Swivel Heads		Swivel Finger	Rotary Gripping Modules with 2-Finger Parallel Gripper GSM-P
	SRH-plus	SKE	GFS	
				
0 .. 180	180	90	90 .. 180	0 .. 180
8	7	4	4	4
3 .. 115	3 .. 69.9	0.4 .. 9	0.64 .. 10	0.3 .. 2.9
1.2 .. 26.5	2.1 .. 21.2	0.13 .. 1.95	0.55 .. 5	0.37 .. 1.51
32	2.6			
0.05	0.05	0.03	0.07	0.02
67	67	30	54	30
Universal unit for pneumatic swivel and turning movements	Universal swivel head SRH-plus for fast loading and unloading tasks, with integrated fluid and electrical feed-through	90° swivel head with single piston drive	Rotary finger for turning workpieces that are held by a gripper or can also be used as a special rotary unit	Compact gripper swivel combination, consisting of a powerful rotor drive and a 2-finger parallel gripper
				39 .. 162
				1.5 .. 10
				0.2 .. 0.61
				0.01 .. 0.05/ 0.01 .. 0.05
				64
•	•			
•	•			
•	•			
•	•			
•	•			
				•
•	•	•		•
•	•		•	•
• For universal use with any swiveling movement	• Recommended for loading and unloading machine tools	• For light external loads	• For universal use	• For gripping and swiveling small to medium-sized workpieces in clean environments
•	•	•	•	•
•	•		•	
•	•			

Rotary Modules

Electric

Rotary Modules, electric	Swivel Units		
	Alternative	Adaptable	Intelligent
	ERP	ERM	PRH
			
Technical Data			
Number of sizes	1	1	3
Torque [Nm]	2	75	0.75 .. 6.8
Max. speed [RPM]		62.5	35 .. 117
Weight [kg]	3.61	15.5	0.75 .. 1.55
Max. permissible mass moment of inertia [kgm ²]	0.1	20	0.3
Repeat accuracy [°]	0.02	0.035	0.004
Gear ratio		48	30 .. 100
Intermediate circuit/nominal voltage [V]	24	Motor-dependent	24
Nominal current [A]	0.8		1.3 .. 6.5
Diameter of center bore [mm]	17.1	22	
Number of electric feed-throughs	0	0	0
Number of pneumatic feed-throughs	0	8	0
Protection class IP	54	65	54 .. 65
Type of measuring system		Motor-dependent	Incremental
Angle of rotation [°]	45 .. 180		
Description	Electric swivel unit with direct drive and integrated controller with auto-learn function	Electric rotary module with adaptable servomotor, angle of rotation > 360°, center bore and optional feed-throughs	Servo-electric miniature rotary unit with angle of rotation > 360°, center bore and precision gear
Gripping force [N]/opening angle [Nm]			
Stroke/opening angle per jaw [mm]/[°]			
Recommended workpiece weight [kg]			
Closing/opening time [s]			
Max. permissible finger length [mm]			
Motor & Controller*			
Motor	Integrated	Adaptierbar	Integrated
Controller	Integrated	External	Integrated
Controller type		Motor-dependent	
Options/versions			
Center bore	●	●	●
Pneumatic rotary feed-through		●	
Electric rotary feed-through			
Brake		●	
Field of application			
	Electrical swiveling of small size and medium weight workpieces without flexible positioning	- Universal, extremely flexible rotary module - Suitable for use as a component in a handling or positioning system	Universal-use, extremely flexible rotary unit
Ambient conditions			
Clean	●	●	●
Slightly dirty	●	●	●
Extremely dirty		●	●

● = fully supported

* = Control concepts for mechatronic SCHUNK components see page 19

** = More controllers available upon request

		Gripper Swivel Modules with 2-Finger Parallel Gripper
		Adaptable
ERS	ERT	EGS
		
3	3	2
2.5 .. 10	1.4 .. 32	0.04 .. 0.11
140 .. 2300	150 .. 600	
2.7 .. 10.9	2.4 .. 23.8	0.45 .. 1.2
0.6	0.06	0.00018
up to 0.01	up to 0.01	1
560	560	24
1.2 .. 1.8	0.96 .. 4.4	1.6
	25 .. 92	
8	0	
1	0	
40	40	30
Incremental	Measuring system HIPERFACE	
	> 360°	30 .. 270
Electric rotary unit with torque motor and angle of rotation > 360° in optional protection class IP54 plus optional rotary feed-through and with holding brake	Flat electric rotary unit with torque motor and angle of rotation > 360° protection class IP40 and optional electric holding brake	Compact electrical 2-finger parallel rotary gripper module with smooth-running roller bearing guide
		15 .. 140
		3 .. 6
		0 .. 0.55
		0.03 .. 0.22
		50
Integrated	Integrated	Integrated
External	External	Integrated
Bosch Rexroth, Siemens**	Bosch Rexroth	
•	•	
•		
•		
•	•	
• Universal-use, extremely flexible rotary unit	• Versatile, extremely flexible rotary unit	• For electrical gripping and swiveling of small to medium-sized workpieces up to 270°
• For applications with unusual requirements in terms of maximum mass moment of inertia, compactness, and reliability	• Very flat and compact design, and therefore low interfering contour	
• As a component in a handling or positioning system	• As a component in a handling or positioning system	
•	•	•

Linear Modules

Pneumatic

Pneumatic Linear Modules	Stroke Module HLM	Compact Slide CLM	Universal Linear Module LM
			
Drive type			
Piston rod cylinders	●	●	●
Rodless cylinder			
Technical data			
Number of sizes	4	6	5
Number of pistons	1	1	1
Repeat accuracy [mm]	up to 0.01	up to 0.01	up to 0.01
Useful stroke [mm]	0 .. 150	0 .. 150	0 .. 450
Max. driving force [N]	482	482	753
Weight [kg]	0.5 .. 5.64	0.07 .. 5.32	0.44 .. 15.81
Adjustable end positions	Yes	Yes	Yes
Max. end positions adjustment per side [mm]	25	25	25
Guidance type	Cross roller guide	Cross roller guide	Cross roller guide
Comprehensive ranges	+	++	+++
Required maintenance	Hydraulic shock absorbers, lubrication of the guide, replacement of seals	Hydraulic shock absorbers, lubrication of the guide, replacement of seals	Hydraulic shock absorbers, lubrication of the guide, replacement of seals
Note	Optionally available with rod lock	Optionally available with rod lock	Optionally available with up to two intermediate positions and with rod lock
Field of application			
	• Compact • Optimum for lifting workpieces • Ideal for space-optimized applications	• Universally applicable • Optimum for short-stroke applications • For demanding requirements with respect to precision	• Universally applicable • For demanding requirements with respect to precision, flexibility and rigidity
Ambient conditions			
Clean	●	●	●
Slightly dirty			
Dirty			

● = fully supported ○ = technically possible

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

Linear Module KLM	Gantry Axis PMP
	
•	•
4	2
1	1
up to 0.02	0.04
0 .. 300	0 .. 3700
753	250
0.5 .. 13.2	3 .. 44.91
Yes	Yes
25	50
Ball bushing guide	(Double) profiled rail guide
++	+++
Hydraulic shock absorbers, lubrication of the guide, replacement of seals	Hydraulic shock absorbers, lubrication of the guide, replacement of seals
Optionally available with up to two intermediate positions, rod lock and dustproof version	Optionally available with bellow, several intermediate positions and cable track version
• Simple stroke module	• Robust and precise gantry systems
• Optimum use as Z-axis in handling modules	• For large range of stroke
• For high requirements of flexibility	
•	•
•	•
○	

SCHUNK Universal Linear Module LM

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



schunk.com/lm

Your benefits:

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

Intermediate Stops ZZA for pneumatic Linear Modules LM and KLM

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



Your benefits:

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

Linear Modules

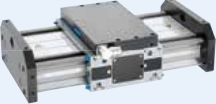
Electric

	Electric Linear Module		
	Alternative	Intelligent	
	Compact Linear Module ELP	Compact Linear Module ELB	Stroke Module LDK
			
Drive type			
Spindle drive			
Toothed belt drive			
Rack and pinion drive			
Direct drive (linear motor)	●	●	●
Technical data			
Number of sizes	3	1	2
Repeat accuracy [mm]	±0,01	±0.01	±0.01
Max. useful stroke [mm]	200	125	200
Max. driving force [N]	104	150	500
Max. speed [m/s]	Auto-learn function	4	4
Max. acceleration [m/s²]	Auto-learn function	100	40
Type of measuring system		Absolute or incremental	Absolute or incremental
Guidance type	Cross roller guide	Cross roller guide	Roller guide
Comprehensive ranges	++	+++	++
Required maintenance	Maintenance-free	Cleaning of the magnetic tracks, lubrication of the guide	Cleaning the magnetic tracks
Note	Axis with mechanically adjustable stop positions, optionally available with load balance	Freely programmable, optionally available with rod lock, brake or load balance	Freely programmable, optionally available with brake, limit switch, reference switch, cable track, supported profile
Motor & controller			
Motor	Integrated	Integrated	Integrated
Drive controller	Integrated	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
Field of application			
	• Simple, compact short stroke module • For small loads • For exceptionally dynamic positionings	• Compact and simple short stroke module • For small loads • For exceptionally dynamic positionings	• Compact and simple short stroke module • For small loads • For exceptionally dynamic positionings
Ambient conditions			
Clean	●	●	●
Slightly dirty			

● = fully supported

+ = medium-sized selection ++ = wide selection +++ = extremely wide selection

* = Additional controllers available upon request ** = Depending on the drive type

Universal Linear Module LDN	Universal Linear Module LDM	Universal Linear Module LDT	Flat Linear Module LDL
			
•	•	•	•
2	2	2	2
±0.01	±0.01	±0.01	±0.01
2700	2700	2700	3800
500	1000	1500	500
4	4	4	4
40	40	40	40
Absolute or incremental	Absolute or incremental	Absolute or incremental	Absolute or incremental
Roller guide	Roller guide	Roller guide	Roller guide
+++	++	++	+
Cleaning the magnetic tracks	Cleaning the magnetic tracks	Cleaning the magnetic tracks	Cleaning the magnetic tracks
Freely programmable, optionally available with brake, limit switch, reference switch, cable track, supported profile	Freely programmable, optionally available with brake, limit switch, reference switch, cable track, supported profile	Freely programmable, optionally available with brake, limit switch, reference switch, cable track, supported profile	Freely programmable, optionally available with brake, limit switch, reference switch, cable track
Integrated	Integrated	Integrated	Integrated
Bosch Rexroth, Siemens*	Bosch Rexroth*	Bosch Rexroth, Siemens*	Bosch Rexroth, Siemens*
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
• Universally applicable • Linear motor axis with simple X-profile • For applications with demanding requirements with respect to dynamics] • For a faster and precise movement or controlled press-in operation of workpieces in the high-speed assembly	• Universally applicable • Linear motor axis with double X-profile • For medium loads with very high dynamic and precise requirements • For a faster and precise movement or controlled press-in operation of workpieces in the high-speed assembly	• Universally usable linear motor axis with triple X-profile • For heavy loads with very high dynamic and precise requirements • For a faster and precise movement or controlled press-in operation of workpieces in the high-speed assembly.	• Flat linear motor axis • For applications with very high dynamic and precise requirements • For a faster and precise movement or controlled press-in operation of workpieces in the high-speed assembly.
•	•	•	•

Linear Modules

Electric

	Electric Linear Modules	
	Adaptable	
	Linear Table Alpha	Universal Linear Module Beta
		
Drive type		
Spindle drive	●	●
Toothed belt drive		●
Rack and pinion drive		●
Direct drive (linear motor)		
Technical data		
Number of sizes	4	12
Repeat accuracy [mm]	±0.03	0.03 bzw. 0.08**
Max. useful stroke [mm]	2540	7720
Max. driving force [N]	18000	18000**
Max. speed [m/s]	2.5	8
Max. acceleration [m/s²]	20	60
Type of measuring system	Motor-dependent	Motor-dependent
Guidance type	Double-profiled rail guide	Double-profiled rail guide
Comprehensive ranges	++	+++
Required maintenance	Lubrication of the guide and the spindle	Lubrication of the guide and (if necessary) the spindle, replacement of the cover tape
Note	Freely programmable, optionally available with customized motor, limit switch and reference switch	Freely programmable, optionally available with customized motor, limit switch and reference switch
Motor & controller		
Motor	Adaptable	Adaptable
Drive controller	Motor-dependent	Motor-dependent
Interfaces	Controller-dependent	Controller-dependent
Einsatzgebiet		
	• Particularly flat design for table assembly • For high precision and driving force requirements	• Universally applicable • Ball-screw drive for high precision and driving force requirements • Belt drive for high dynamic requirements with large stroke
Field of application		
Clean	●	●
Slightly dirty	●	●

● = fully supported

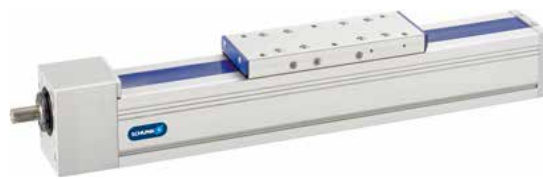
+ = medium-sized selection ++ = wide selection +++ = extremely wide selection

* = Additional controllers available upon request ** = Depending on the drive type

SCHUNK Linear Module Beta

Linear module with adaptive drive.

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



schunk.com/beta

Your benefits:

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

Flat Linear Module Delta	Universal Linear Module Gamma
	
•	•
•	•
•	•
•	•
5	3
bis zu $\pm 0.03^{**}$	bis zu ± 0.05
7700	7685
12000**	4000
5	5
60	60
Motor-dependent	Motor-dependent
Double-profiled rail guide	Double-profiled rail guide
+++	+++
Lubrication of the guide and (if necessary) the spindle, replacement of the cover tape	Lubrication of the guide and (if necessary) the gear rack
Freely programmable, optionally available with customized motor, limit switch and reference switch	Freely programmable, optionally available with customized motor, limit switch and reference switch
Adaptable	Adaptable
Motor-dependent	Motor-dependent
Controller-dependent	Controller-dependent
• Flat design for large loads	• With closed profile for high rigidity requirements
• Universally applicable	• With rack and pinion drive for precise applications and large strokes
• Spindle drive for high precision requirements with high driving force	• Toothed belt drive for dynamic applications
• Belt drive for high dynamic requirements with large stroke	
•	•
•	•

Pick & Place

Pneumatic and electric

	Pick & Place Unit	Standard Gantries
	Electric*	Pneumatic
	PPU-E	Line Gantry LPP
		
Technical data		
Number of sizes	3	1
Horizontal stroke in Y [mm]	0 .. 280	200 .. 1500
Horizontal stroke in X [mm]		
Vertical stroke [mm]	0 .. 150	0 .. 225
Swivel angle [°]		
Nominal load [kg]	0 .. 5	0 .. 5
Repeat accuracy X-axis [mm]		
Repeat accuracy Y-axis [mm]	±0.01	±0.01
Repeat accuracy Z-axis [mm]	±0.01	±0.01
Repeat accuracy, rotary [mm]		
Weight [kg]	15 .. 35	
Max. cycle time/picks per minute	110	
Actuation	External controller	Pneumatic valve
Protection class IP	40	40
Guidance type	Profiled rail guide	Profiled rail/ cross roller guide
Number of possible combinations		234
Comprehensive ranges	++	+
Motor & controller*		
Motor	Integrated	
Drive controller	Bosch Rexroth, Siemens**	Bosch Rexroth, Siemens**
Options/versions		
Rod lock	●	●
Center position		●
Integrated valve	●	
Additional C-axis	●	
Drive package		
Description	Compact 2-axis unit for flexible running of any curve on one plane	Line gantry with a horizontal, pneumatic gantry axis, and a vertical, pneumatic linear module
Field of application	• For the rapid and precise transfer or controlled press-in operation of workpieces in high-speed assembly	• For easily conducting the most common two-dimensional handling and assembly tasks for small to medium-sized workpieces
Ambient conditions		
Clean	●	●
Slightly dirty		

● = fully supported + = medium-sized selection ++ = wide selection

* = Control concepts for mechatronic SCHUNK components see page 19

** = More controllers available upon request

Electric*	
Line Gantry LPE	Room Gantry RPE
	
2	2
500 .. 1500	500 .. 1500
100 .. 500	500 .. 1500
100 .. 500	100 .. 500
0 .. 20	0 .. 20
±0.08	±0.08
±0.03	±0.03
Controller on external motor	Controller on external motor
40	40
Profiled rail guide	Profiled rail guide
90	150
+	+
Adaptable	Adaptable
Bosch Rexroth, Siemens**	Bosch Rexroth, Siemens
•	•
Line gantry with a horizontal, electric toothed belt axis, and a vertical, electric spindle axis	Room gantry with two electric toothed belt axes in a horizontal direction, and one electric spindle axis in a vertical direction
• For easily conducting the most common two-dimensional handling and assembly tasks for medium-sized and large workpieces	• For easily conducting the most common three-dimensional handling and assembly tasks for medium-sized and large workpieces
•	•
•	•

Change Systems

Robot Accessories

Change Systems	Quick-change Systems		
	SWS	SWS-L	EWS
			
Product features			
Manual actuation			
Pneumatic actuation	•	•	
Electric actuation			•
Locking monitoring possible	•	•	•
Tool presence monitoring possible	•	•	•
Pneumatic energy transmission	•	•	•
Electric energy transmission	•	•	•
Technical data			
Number of sizes	14	4	1
Recommended handling weight [kg]	0 .. 300	0 .. 1350	18
Moment load M_{xy} [Nm]	2.8 .. 7170	7600 .. 13500	150
Moment load M_z [Nm]	3.45 .. 3800	4060 .. 16200	186
Repeat accuracy [mm]	up to 0.01	0.01	0.015
Weight [kg]	0.05 .. 9.3	7.8 .. 28	1.8
Screwed flange on the robot	Adapter plates/ direct assembly ISO-9409	Adapter plates/ direct assembly ISO-9409	Adapter plates
Advantages/your added value	• Patented self-sustaining locking system for a reliable connection between the quick-change head and the quick-change adapter • Standardized storage modules available for any size		
	• Integrated locking queries • Control via digital I/O for easy commissioning and rapid integration into existing systems		
Included in the Plug & Work portfolio for			
Ambient conditions			
Clean	•	•	•
Slightly dirty	•	•	•
High-temperature and stainless steel version on request	•	•	



schunk.com/sws



SCHUNK Quick-change System SWS

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

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

NSR-A	Manual Change Systems		
	SHS	CWS	MWS
			
	•	•	•
•			
•	•		
•	•		
•	•	•	•
•	•		•
2	6	5	2
	0 .. 58	0 .. 28	0 .. 1
75 .. 600	45 .. 960	20 .. 160	0.5 .. 1
200 .. 1600	75 .. 2325	10 .. 200	0.2 .. 0.75
0.02	0.02	0.01	0.1
0.4 .. 1.6	0.2 .. 4	0.07 .. 0.445	0.007 .. 0.016
Adapter plates ISO-9409	Direct mounting ISO-9409	Adapter plates	Adapter plates
• Form-fitting lock, self-locking, for a reliable connection between the pallet change master and the pallet change adapter	• Integrated pneumatic feed-through for secure energy supply of the handling modules and tools	• Flat and weight-optimized through direct assembly of the gripper onto the change system without adapter plate.	• Extremely flat design for minimal interference contours
• Integrated piston stroke monitoring and tool presence control for monitoring the system	• Optionally available with monitoring of the locking and presence monitoring	• Integrated pneumatic feed-throughs for reliable electricity, gas and water supply of the grippers	• Integrated feed-throughs for six pneumatic or electrical signals
	Universal Robots, Doosan Robotics, Techman Robot		
•	•	•	•
•	•		
•	•		

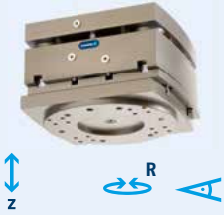
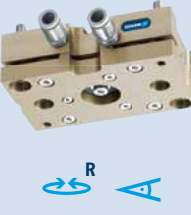
Your benefits:

- **Payloads up to 1,350 kg** possible
- **Patented** self-locking locking system
- **No-Touch-locking™**
Secure locking without making contact, for the SWS even when the SWK and SWA do not touch
- **21 sizes** for optimal size selection and a broad application range
- All functional components made of **hardened steel** for **high bearing load capacity** of the change system
- **Transmission possibility** for electric, pneumatic and fluid media
- For a **process-reliable connection** between the quick-change head and the quick-change adapter with **self-sealing couplings**

Compensation Units

Robot Accessories

	Compensation Unit		
	AGE-U	AGE-XY	AGE-Z 2
			
Product features			
Pneumatic locking	•	•	•
Position memory		•	
Screwed flange acc. to ISO-9409 standard	•	•	•
Monitoring via proximity switch	•	•	•
Technical data			
Number of sizes	1	3	3
Compensation stroke XY [mm]	±2.7	±2.5 .. ±4	
Compensation stroke Z	6.1		8 .. 10
Rotatory compensation [°]	±8	±12 .. ±16	
Spring force [N]			20 .. 120
Piston force Z at 6 bar in extended position [N]			500 .. 1500
Piston force Z at 6 bar in retracted position [N]			280 .. 1450
Weight [kg]		0.46 .. 1.5	0.55 .. 1.7
Locking force at 6 bar [N]		235 .. 580	
Horizontal payload [kg]		0 .. 10	0 .. 5
Vertical payload [kg]		0 .. 15	0 .. 12
Repeat accuracy [mm]		0.1	0.02
Locking force F_z [N]		235 .. 580	280 .. 1500
Max. pulling force F_z [N]		300 .. 750	200 .. 500
Max. pressure force F_0 [N]		1700 .. 3200	800 .. 1500
Moment load capacity M_x, M_y [Nm]		16 .. 30	10 .. 30
Twist torque M_z [Nm]		3.5 .. 9	20 .. 80
Angular compensation x [°]			
Angular compensation y [°]			
Angular compensation z [°]			
Advantages/your added value			
		• Robust guidance for high moment loads even with minimal space requirements.	• Locking in order to switch the unit rigid in retracted or extended position.
ISO flange pattern , simple assembly on most types of robot without additional adapter plates		•	•
Field of application	Universally applicable for assembling, palletizing and inserting workpieces with high precision		
Ambient conditions			
Clean		•	•
Slightly dirty			
High-temperature version on request		•	•

AGE-S		AGE-F		Tolerance Compensation Unit TCU		FUS	
							
•				•		•	
•							
•							
•		•		•		•	
4		4		8		5	
$\pm 4 \dots \pm 12$		$\pm 1.5 \dots \pm 5$				$\pm 1.7 \dots \pm 2.2$	
10 .. 14						0.4 .. 1.3	
				1 .. 1.5		2.5 .. 5	
240 .. 1100		1.5 .. 150					
800 .. 3000							
2.6 .. 29.5		0.1 .. 3.1		0.1 .. 2.1		0.05 to 1.8	
800 .. 2700				30 .. 800			
0 .. 100		0 .. 32					
0 .. 160							
0.1		0.01		up to 0.02		up to 0.01	
800 .. 2700				30 .. 800		22 .. 395	
110 .. 2000		100 .. 2800					
500 .. 4000		200 .. 12000		500 .. 6200		160 .. 5490	
30 .. 500		3.5 .. 50		5 .. 120		1.1 .. 45.2	
30 .. 250		6 .. 150		15 .. 160			
				$\pm 1 \dots 2$		± 1	
				± 1		± 1	
				$\pm 1.2 \dots 2$			
• Three compensation directions XYZ in one unit. • Compact design for minimal design heights.		• Spring reset and spring force adjustable in three spring stiffnesses. Defined centric position with a high repeat accuracy. Compensation stroke flexibly adjustable.		• Pneumatic locking. Long-lasting elastomers, rigid unit during travel.		• Compensates for angular errors and tolerances with jointing applications. This reduces the cycle times and increase the productivity. The pneumatic locking ensures that the unit can be locked centrally and rigid again.	
•		• Direct assembly of parallel and centric grippers. SCHUNK grippers PGN-plus, PZN-plus can be mounted onto AGE-F without additional adapter plate.		• Direct mounting of parallel and centric grippers, no additional adapter plate required.			
		Assembling, palletizing and inserting workpieces without feeding external media.		In the fields of assembly automation and machine tool loading.		Assembly tasks with very little play among the parts to be aligned.	
•		•		•		•	
•				•		•	
•							

Rotary Feed-through

Robot Accessories

SCHUNK Rotary Feed-through DDF 2

More powerful. More versatile. More energy efficient.

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

Your benefits:

- **85% longer service life** due to newly developed seals
- **50% greater moment load** due to transmission of the dynamic forces and moments via a steel shaft
- **20% greater load capacity**
- Newly developed, **smoothly running** and especially **durable seals** produce a smaller starting and continuous torque, which allows you to use smaller, i.e. more economical drives
- Depending on the size, **two and four pneumatic feed-throughs** are standard, as are between **four and ten electrical transmissions** for signals 1 A/60 V
- Allows for 360° **continuous rotation**
- Complete series with **14 sizes** for optimal size selection
- **Electrical connector contacts** enable rapid and easy replacement in the event of cable breakage at the robot arm or gripper



schunk.com/ddf-2

Rotary Feed-throughs	Rotary Feed-throughs DDF 2	Stationary Rotary Feed-throughs DDF-SE
		
Product features		
Endless rotary movement	•	•
Screwed flange acc. to ISO-9409 standard	•	
Pneumatic energy transmission	•	•
Vacuum energy transmission		
Electric energy transmission	•	•
Bus transmission		
Technical data		
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. pulling force F_z [N]	240 .. 9000	2000 .. 4000
Max. pressure force F_z [N]	2000 .. 18000	
Moments 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
Weight [kg]	0.35 .. 14.2	3.3 .. 9
Advantages/your added value		
	Three versions to choose from Version 1: For the feed-through of pneumatic and electrical signals. Version 2: For the feed-through of pneumatics. Version 3: For the feed-through of electrical signals.	Standardized shaft end for easy assembly of gears. Revolutions of up to 500 RPM Your gripping system is safely supplied with pneumatics and electronics even in the event of fast, endless rotary movements of up to 500 RPM.
Combined pneumatic and electric feed-through	•	•
ISO flange pattern , simple assembly on most robot types without additional adapter plates	•	
Field of application		
	Rotary feed-through for reliable pneumatic and electric feed-through in the event of robot applications with endlessly rotating movements.	Ideally suitable for the use on rotary indexing tables and for stationary applications.
Ambient conditions		
Clean	•	•
Slightly dirty	•	•

Measuring Systems

Robot Accessories

Measuring Systems	6-Axis Force/Torque Sensors		
	FT-AXIA	FTN	FTD
			
		NET	DAQ
Protection class IP			
Without IP protection	•	•	•
IP60	•	•	•
IP65		•	•
IP68		•	•
Technical data			
Number of sizes	1	16	16
Calibration	SI-200-8, SI-500-20	SI-12-0,12 .. SI-40000-6000	SI-12-0,12 .. SI-40000-6000
Evaluation electronics	Integrated	Net-Box	DAQ card
Weight of sensor [kg]	0.3	0.01 .. 47	0.01 .. 47
Range of measurement F_x, F_y [N]	200 .. 500	± 12 .. ± 40000	± 12 .. ± 40000
Range of measurement F_z [N]	360 .. 900	± 17 .. ± 88000	± 17 .. ± 88000
Range of measurement M_x, M_y [Nm]	8 .. 20	0.12 .. ± 6000	± 12 .. ± 6000
Range of measurement M_z [Nm]	8 .. 20	0.12 .. ± 6000	± 12 .. ± 6000
Resolution F_x, F_y [N]	0.1	0.003 .. 6.25	0.003 .. 6.25
Resolution F_z [N]	0.1	0.003 .. 16.7	0.003 .. 16.7
Resolution M_x, M_y [Nm]	0.005	0.00001 .. 1.5	0.00001 .. 1.5
Resolution M_z [Nm]	0.005	0.00001 .. 0.75	0.00001 .. 0.75
Advantages/your added value			
	FT sensor Evaluation via Ethernet and EtherCAT, 2 calibrations selectable via web interface	FTN sensor Evaluation via Ethernet, DeviceNet, optional PROFINET optional EtherCAT	FTD sensor Evaluation via DAQ card (PCI, USB)
Sizes with different ranges of measurement	1	16	16
High measured-value resolution and fast data transmission for nearly real-time control	•	•	•
Robust version , high overload range for a long life span	•	•	•
Rotation and translation of the coordinate systems in all three directions in space	•	•	•
Easy operation , minimized commissioning time	•		
Field of application			
	Universally usable in robot applications such as haptics, medicine, grinding, inspecting, joining and research and development.		
Included in the Plug & Work portfolio for	Universal Robots		
Ambient conditions (sensor)			
Clean	•	•	•
Slightly dirty	•	•	•
Extremely dirty		•	•
Humid	•	•	•

FTS	Wireless Transmitter FTW
 Stand-Alone	
16	
SI-12-0,12 .. SI-40000-6000	
Stand-Alone-Controller	
0.01 .. 47	
±12 .. ±40000	
±17 .. ±88000	
±12 .. ±6000	
±12 .. ±6000	
0.003 .. 12.5	
0.06 .. 33.4	
0.03 .. 3	
0.03 .. 1.5	
FTS sensor Evaluation via analog voltage (0-10 V or DI0)	• Handy wireless transmitters for the 6-axis force/torque sensors SCHUNK FT-Nano and SCHUNK FT-Mini • WiFi transmission allows easy integration of up to 6 sensors into existing WiFi systems • Wireless transmission for mobile applications
16	
Universally usable with robot applications such as haptics, medicine, grinding, inspecting, joining and research and development.	

SCHUNK 6-Axis Force/Torque Sensor FTN

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

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



schunk.com/ft

Your benefits:

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

Monitoring Sensors

Robot Accessories

	Collision and Overload Sensors	
	OPS	OPR
		
	Manual reset	Automatic reset
Product features		
Pneumatic actuation	•	•
Built-in spring optionally available		•
Technical data		
Number of sizes	4	7
Moments M_x , M_y [Nm]	7.5 .. 430	6 .. 2000
Triggering force F_z [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
Weight [kg]	0.4 .. 7.0	0.24 .. 11.7
Advantages/your added value		
Automatic return position for faster resuming of production after a collision		•
Integrated monitoring for signal transmission in the event of a collision	•	•
Triggering force and moment can be set via the operating pressure for optimum protection of robot and components	•	•
ISO adapter plates are optional for simple assembly on most types of robot without additional production costs	•	•
Field of application		
Standard solution for all robot applications where robots, tools, or workpieces are to be monitored for possible collisions	•	•
Ambient conditions		
Clean	•	•
Slightly dirty		•
Humid		•

SCHUNK OPR, Collision and Overload Sensor

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

Unique with automatic return position.

In case of overloads or collisions, the tool plate deflects and, at the same time, automatically actuates the system's emergency stop. The system's sensitivity can be adjusted via the operating pressure.



schunk.com/opr

Your benefits:

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

Machining Tools	Deburring Tool	Deburring Spindle		Polishing Spindle
	CDB	FDB	FDB-AC	MFT
				
	x ↔ y z	x ↔ y z	z	z
Product features				
Pneumatic actuation	•	•	•	•
Technical data				
Compensation	Axial & Radial	Radial	Axial	Axial
Number of sizes	1	6	2	1
Power [W]		150 .. 1040	250	390
Compensation path [mm]	Axial 8 mm Radial +5.5°	±5.1 .. ±9.1	±4.1	±15
Recommended compensation path [mm]		±2.5 .. ±4.8	±2	±7.5
Compensation force [N]	Axial 13 .. 62 Radial 26 .. 77	3.1 .. 89	1 .. 25	14 .. 74
Compensating pressure [bar]		1 .. 4.1	1 .. 3	0.35 .. 4.1
Idle speed [1/min]		25000 .. 65000	25000 .. 30000	5600
Air consumption at idle run [l/min]		84 .. 564	396	540
Air consumption blocked [l/min]		228 .. 1140		
Collet diameter [mm]	Auto tool changer for blade holder	3 .. 6		9.5
Weight [kg]	1	1.1 .. 4.5	0.5	3.3
Advantages/your added value				
Compliant high-frequency spindle for maximum versatility for chamfering		•	•	
Compliant high-frequency spindle for maximum flexibility for polishing or brushing				•
Rigidity of the spindle adjustable via compressed air for clean deburring in any installation position		•	•	•
High speeds for high feed rates		•	•	
Flexible use on robot arms or as a stationary unit		•	•	•
Field of application				
	Standard solution for flexible and robot-guided chamfering of all sorts of workpieces.			
Ambient conditions				
Clean		•	•	•
Extremely dirty		•	•	•

SCHUNK Deburring Spindle FDB

The solution for perfect finish machining at 65,000 revolutions per minute.

For compensating part tolerances during machining, the shank has compliant bearings.



schunk.com/fdb

Your benefits:

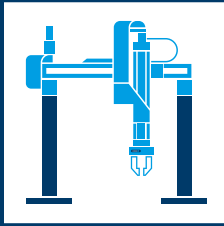
- Flexible **high-frequency spindle** for **maximum versatility** for deburring
- **Adjustable rigidity** of the deburring spindle by means of the pneumatics
- For **clean chamfer edges** in every installation position
- **High rotational speeds**
- For **high** feed rates
- **Versatile use** on the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

The right Solution for every Application

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

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

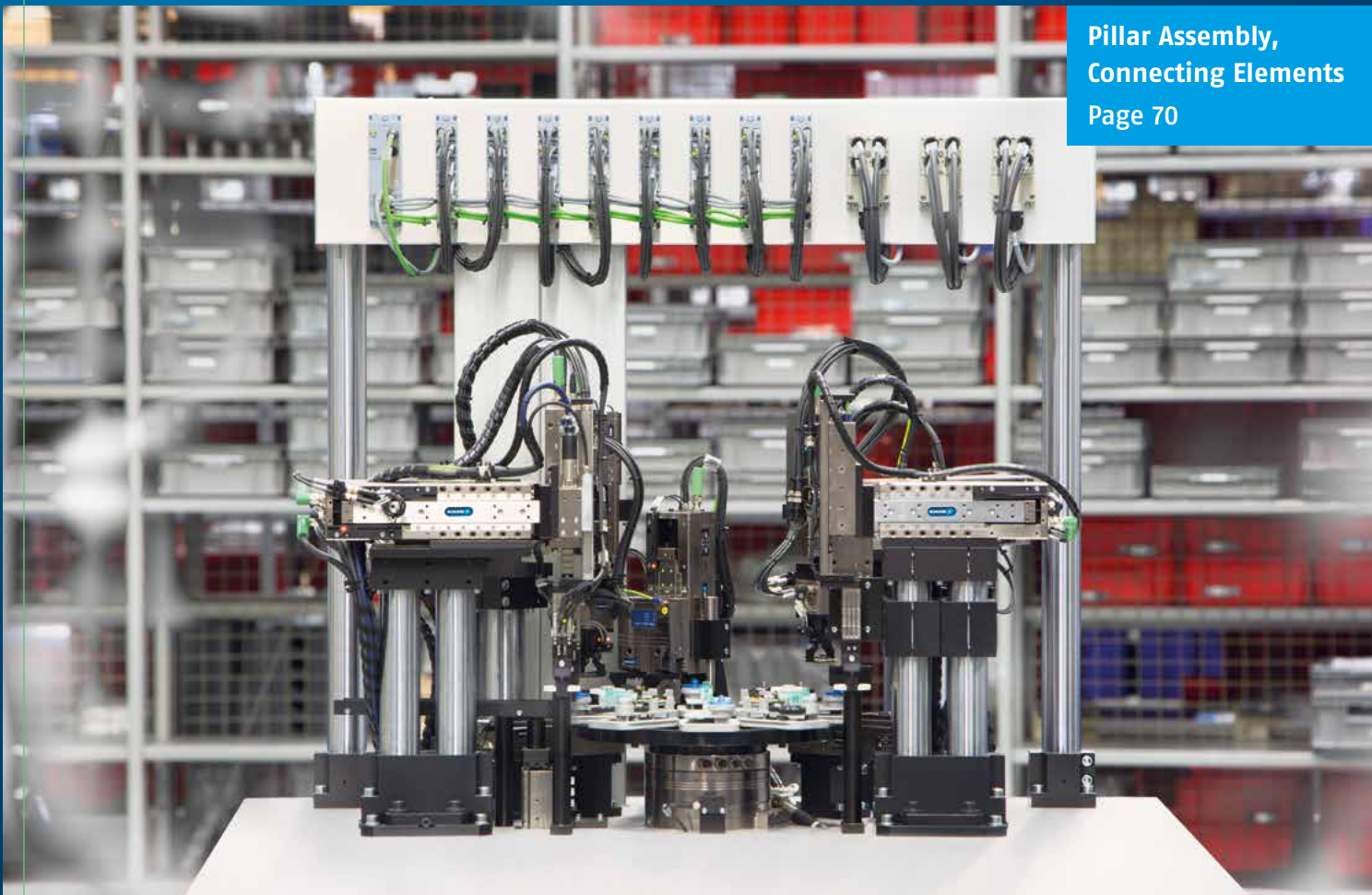
Equipped by
SCHUNK



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

The world's **most extensive** range of accessories for gripping systems

More than **150** sensors for precise force measurement and workpiece and position monitoring



**Pillar Assembly,
Connecting Elements**
Page 70



Accessories
Page 74



Sensor Systems
Page 78



SCHUNK Pillar Assembly System SAS

More than 10,000 combination Possibilities

100% Flexibility for your Applications



Variety in Accessories

A broad range of high-quality accessory components and suitable sensors.



A wide range of Combinations

Direct combination with various SCHUNK products without additional adapter plates.



Adjustment Units

For simple and fast fine adjustment of the finished setup systems



100% flexible

Various customized lengths of the pillars possible as standard. Individual or double pillars can be selected.

Various support plates for horizontal, vertical or variable connection on five sides



Media supply

Simple and fast combinations from the modular system

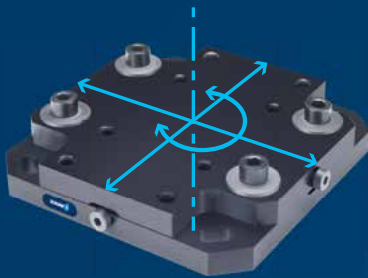
Content

	Page
Pillar Assembly System	70
Accessories	74
Sensor Systems	78

SCHUNK Pillar Assembly System SAS.

Over 10,000 possible Combinations.

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



① Adjustment Unit VEH

For easy fine adjustments of the finished assembly

- For linear and rotative compensation
- Adjustable with hexagon socket wrench
- Suitable for single and double sockets



② Pillar Assembly System

High level of precision despite high modularity and flexibility

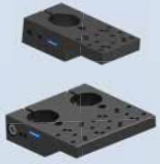
- 3 different pillar diameters
- Up to 1,000 mm pillar length
- 17 elements combined as desired
- Direct screw connection for SCHUNK components



③ Media Routing

Simple and fast combinations from the modular system

- Precise hose and cable guidance possible
- Either through the hollow pillars or attached with clips along the pillars
- Media hose for supplying the actuators can be mounted directly

	Adjustment Unit	Pillar Assembly System			
	Adjustment Unit	Base Support	Base Support	Hollow Pillars	Horizontal Mounting Plates
	VEH	SOE	SOD	SLH	APEH/APDH
					
	1	2	2	2	2
Application with					
Pillars Ø 20 mm		●	●	●	●
Pillars Ø 35 mm	●	●	●	●	●
Pillars Ø 55 mm	●	●	●	●	●
Material	Aluminum, hard-anodized	Aluminum, hard-anodized	Aluminum, hard-anodized	Stahl hartverchromt	Aluminum, hard-anodized
Description	The adjustment unit simplifies mechanical adjustment of complete handling systems	The base support is the base used for the pillar assembly system and can be directly mounted onto a firm surface	The base support is the base used for the pillar assembly system and can be directly mounted onto a firm surface. A 2-pillar assembly can be mounted with the SOD	Versatile steel pillars can be inserted at various lengths and provide high rigidity	The mounting plates connect the various SCHUNK modules of the modular system to the pillar system
Field of application	For universal use with structures that must be readjusted during assembly.	The base used for all pillar assemblies with a single pillar	The base used for all pillar assemblies with a double pillars	For all assembly systems and frames and as a mounting option for automation components	For attaching SCHUNK linear modules with horizontal movement
Advantages	• Mechanical adjustment • High degree of flexibility	• Robust and highly precise	• Robust and highly precise	• Robust and highly precise • Weight-optimized due to hollow profile • Can be used as a hose and cable channel	• Robust and highly precise • Standardized interface for many SCHUNK products

● = highly suitable/fully supported ○ = suitable to a limited extent

Pillar Assembly System

Connecting Elements

	Pillar Assembly System					
	Vertical Mounting Plates APEV/APDV	Horizontal Mounting Plates AMEH/AMDH	Vertical Mounting Plates AMEV/AMDV	Axial Mounting Plates APDA/APEA	Adjustment ring STG/STR	
						
	2	2	2	2	2	
Application with						
Pillars Ø 20 mm	●				○	
Pillars Ø 35 mm	●	●	●	●	●	
Pillars Ø 55 mm	●	●	●	●	●	
Material	Aluminum, hard-anodized	Aluminum, hard-anodized	Aluminum, hard-anodized	Aluminum, hard-anodized	Aluminum, hard-anodized	
Description	The mounting plates connect the various SCHUNK modules of the modular system to the pillar system	The mounting plates with functional screw connection diagram connect various SCHUNK modules or customized structures to the pillar system	The mounting plates with functional screw connection diagram connect various SCHUNK modules or customized structures to the pillar system	The mounting plates with functional screw connection diagram connect various SCHUNK modules or customized structures to the pillar system	The adjustment ring provides accurate positioning of the assembly elements that are mounted to the pillars	
Field of application	For attaching SCHUNK linear modules with horizontal and vertical movement	For horizontal attachment of customized structures or other automation components	For vertical attachment of customized structures or other automation components	For attaching customized structures or other automation components	For positioning mounting plates of the pillar assembly system	
Advantages	• Robust and high-precision • Standardized interface for many SCHUNK products	• Robust and high-precision • Flexible mounting options	• Robust and high-precision • Flexible mounting options	• Robust and high-precision • Flexible mounting options • Mounting options on five sides	• Fine adjustment • High degree of flexibility	

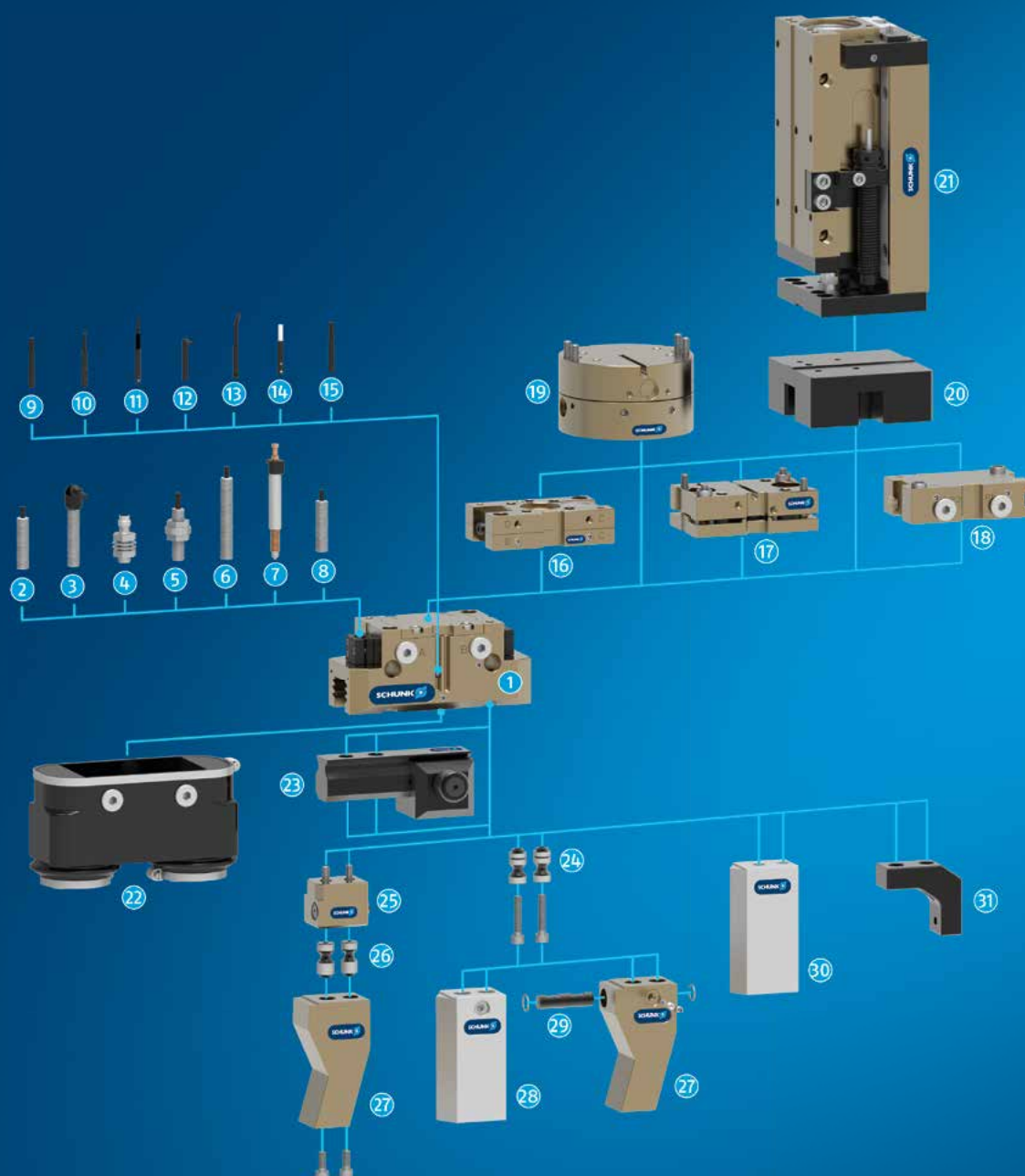
● = highly suitable/fully supported ○ = suitable to a limited extent

Cross Connector KVB	Mounting Plate MPL	Media Routing Mounting Clip MFC	Hose Routing SPL/MFB/MFS	Hose Routing MFS/MFV/MFK
				
2	2	3	3	3
•	•			
•	•	•	•	•
•	•	•	•	•
Aluminum, hard-anodized	Aluminum, hard-anodized	POM	POM	POM
Cross connectors allow for right-angle junctions to be included in the pillar assembly system.	The mounting plate offers the possibility of adding extra functionalities or structures	Mounting clips can be used to mount and route cables and hoses along the pillars	The hose routing, which is directly attachable to the linear module, allows for pneumatic hoses or cables to be collectively routed directly from the actuator to the pillar system	The hose routing, which is directly attachable to the pillars, allows for pneumatic hoses or actuator cables to be routed further from within the hollow pillars
For expanding the pillar assembly system vertically	For supporting or mounting additional structures	For all pneumatic or electric sensors and actuators that are mounted to the pillar system	For all pneumatic or electric sensors and actuators that are mounted to the pillar system	For all pneumatic or electric sensors and actuators that are mounted to the pillar system
• Robust and high-precision • High degree of flexibility	• Robust and high-precision • High degree of flexibility	• Module attachable • Reduction of cable breakage	• Module attachable • Reduction of cable breakage • Visual enhancement	• Module attachment • Reduction of cable breakage • Visual enhancement

SCHUNK Grippers

Our Response to Flexibility: Variety in Accessories.

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



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

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 pluggable
- ⑤ **FPS**
Flexible position sensor for monitoring up to five different, freely selectable positions
- ⑥ **APS-Z80**
Inductive position sensor for precise position detection of the gripper jaws with analog output
- ⑦ **APS-M15**
Mechanic measuring system for accurate acquisition of the gripper jaw position with analog output
- ⑧ **RMS 80**
Reedschalter in runder Ausführung
- ⑨ **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
- ⑩ **MMS 22-PI2**
Magnetic switch with straight cable outlet for monitoring two freely programmable position
- ⑪ **MMS 22-PI1-HD**
MMS 22-PI1 in robust design

MMS 22-PI2-HD
MMS 22-PI2 in robust design
- ⑫ **MMS 22-SA**
Magnetic switch with lateral cable outlet for monitoring a position

MMS 22-PI1-SA
Magnetic switch with side cable outlet for monitoring a freely programmable position
- ⑬ **MMS-P**
Magnetic switch with straight cable outlet for monitoring two freely programmable position
- ⑭ **MMS 22-A**
Analog magnetic switch with straight cable outlet for measuring the gripper jaw position with analog output and teach function
- ⑮ **RMS 22**
Reed switch for direct assembly in the C-slot

Complementary Products

- ⑯ **CWS**
Manual change system with integrated air feed-through for simple exchange of the handling components
- ⑰ **TCU**
Tolerance compensation unit for compensating small tolerances in the plane
- ⑱ **SDV-P-E-P**
Pressure maintenance valve for temporary force and position maintenance
- ⑲ **AGE**
Compensation unit for compensation of large tolerances along the X and Y axes
- ⑳ **ASG**
Adapter plate for combining various automation components in the modular system
- ㉑ **CLM**
Linear module with pneumatic drive and scope-free pre-loaded junction rollers
- ㉒ **HUE**
Sleeve for protection against dirt

Finger Accessories

- ㉓ **UZB**
The universal intermediate jaw allows fast tool-free and reliable plugging and shifting of top jaws at the gripper.
- ㉔ **BSWS-AR**
Adapter coupling of jaw quick-change system for fast, manual change of top jaws
- ㉕ **BSWS-B**
Locking mechanism of the jaw quick-change system for fast, manual exchange of top jaws
- ㉖ **BSWS-A**
Adapter coupling of the jaw quick-change system for adaptation to the customized finger
- ㉗ **Customized fingers**
- ㉘ **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 system
- ㉙ **BSWS-UR**
Locking mechanism for the integration of the jaw quick-change system into customized fingers
- ㉚ **ABR/SBR**
Finger blanks made of steel or aluminum with standardized screw connection diagram
- ㉛ **ZBA**
Intermediate jaws for reorientation of the mounting surface

Accessories

SCHUNK Gripping Systems

	ABR/SBR	BSWS-B/-A	ABR/SBR-BSWS	
	 30	 25 26	 24 28	
Jaw quick-change system		•	•	
Adjustable intermediate jaw				
Top jaws blank	•		•	
Pressure maintenance valve				
Field of application	For quick and easy creation of top jaws by adding the clamping contour	With highly diverse workpieces for quick jaw changes with any clamping contours	With highly diverse workpieces for quick jaw changes with simple clamping contours	
Description	Finger blanks made of aluminum or steel for application-specific rework	The BSWS consists of one base and two adapter pins. The form-fit locking mechanics ensures a fast exchange of the gripper fingers	The BSWS consists of two adapter pins and one finger blank with locking mechanism. The form-fit locking mechanics ensures a fast exchange of the gripper fingers	
Advantages	• Matching finger blanks for commonly used gripper types • Clamping contour can be machined rapidly and easily	• One gripper can be used universally in various applications • Quick and easy for high flexibility • Firm up to the max. loadability of the base jaws	• One gripper can be used universally in various applications • Quick and easy for high flexibility • Firm up to the max. loadability of the base jaws • Matching finger blanks for commonly used gripper types • Clamping contour can be machined rapidly and easily	

SCHUNK Compact Change System CWS

The flat and weight-reduced manual change system CWS from SCHUNK ensures the fast manual change of grippers at the robot when re-equipping for a new range of parts.

Your benefits:

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



schunk.com/cws

BSWS-AR/-UR	UZH	SDV-P-E-P	HUE
			
24 29	23	18	22
•	•	•	
With highly diverse workpieces for quick jaw changes with any clamping contours	With highly diverse workpieces that can be covered by increasing the clamping width	For applications in which the force or position must be maintained temporarily	For grippers used in dirty environments and where they get in contact with liquids.
The BSWS consists of two adapter pins and the locking mechanism located in the customized finger. The form-fit locking mechanics ensures a fast exchange of the gripper fingers	Allows fast tool-free and reliable replugging and shifting of top jaws	With a loss of air pressure, venting of the module will be prevented temporarily by the pressure maintenance valve	The cover protects the gripper against external influences. Depending on the application, the edge of the cover can be additionally sealed for applications up to IP65.
• One gripper can be used universally in various applications • Quick and easy for high flexibility • Firm up to the max. loadability of the base jaws • Clamping contour can be created as required	• Toolless adjustment and clamping for quick and easy conversion • Stable guide bar, suitable for long gripper fingers	• Versatile in its application, since it has standard air connections • Manual air bleed screw means no removal of pressurized hoses	• Flexible in use: can be retrofitted • Space-saving due to low interfering contours • Suitable for grippers PGN-plus-P, PGN-plus, PZN-plus, EGN, and EZN

SCHUNK Compensation Unit TCU

The TCU can compensate in the X and Y directions, allowing it to correct angle errors and provide rotational compensation.

Your benefits:

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



schunk.com/tcu

	Monitoring of one position				Monitoring of several positions
	1 digital switching point				2 digital switching points
	MMS 22	MMS-PI 1	IN	RMS	MMS-PI 2
	 9		 2	 8 15	
Environmental conditions					
Clean	●	●	●	●	●
Slightly dirty	●	●	●	●	●
Highly contaminated	●			●	
Technical data					
Number of sizes	1	1	6	2	1
Principle of function	Magnetic	Magnetic	Inductive	Reed	Magnetic
Max. IP protection	67	67	67	67	67
Supply voltage [V DC]	24	24	24	24	24
Max. switching current [mA]	50	50	100 .. 200	400	25
PNP version	●	●	●	●	●
NPN version	●	●	●	●	●
LED Display	●	●		●	●
Min./max. ambient temperature [°C]	-10 .. 70	-10 .. 70	-25 .. 70	-5 .. 70	-10 .. 70
Closer	●	●	●	●	●
Opener			●		
Connection type					
Number of wires	3	3	3	3	4
Cable version	●	●	●		●
Connector M8 version	●	●	●	●	●
Connector M12 version			●		

● = well suited/fully supported ◐ = suitable in special version (on request) ○ = of limited suitability

Magnetic Switch MMS – IO-Link

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



schunk.com/mms-iol



Your benefits:

- **Control via IO-Link** for evaluation of data
- **Integrated electronics lead to a more compact design** and allows use of cable with standard plug connectors
- **Suitable for confined installation spaces** due to teaching via IO-Link interface
- **Version with LED display** is used to indicate the status of the IO-Link connection
- **C-slot sensor** for space-saving, easy and fast assembly on the product

		Monitoring of the overall stroke			
2 digital switching points	5 digital switching points	IO-Link signal	Analog signal		
MMS-P	FPS	MMS 22 IO-Link	APS-M1	APS-Z80	MMS-A
					
•	•	•	•	•	•
•	•	•	•	•	•
1	3	1	1	1	1
Magnetic	Magnetic	Magnetic	Magnetic	Inductive	Magnetic
67	67	67	67	67	67
24	24	24	24	24	24
100	200	25			
•	•	•			•
•		•			
•		•			
5 .. 55	-25 .. 70	5 .. 55	0 .. 60	-10 .. 70	5 .. 55
•	•	•			
•					
4	7	3	4	3	3
•	•	•	•	•	•
•		•		•	•
		•			•

Inductive Proximity Switch IN

Reliable. Non-contact. Easy assembly.

Inductive proximity switches are used to monitor the current status of automation components. They are offered by SCHUNK in versions IN (sensor with 30 cm long cable and plug connector) or INK (sensor with 2 m long supply cable and open wires for wiring).



[schunk.com/in](https://www.schunk.com/in)



Your benefits:

- **Fastening via bracket** for simple and fast assembly
- **Version with LED display** for control of the switching condition directly on the sensor
- **Version with plug connector** for simple and fast exchangeability of the extension cable
- **Very flexible cable in PUR version** for a long service life and resistance to many chemicals
- **Proximity switch for flush mounting** for minimal interfering contours in the application

All inclusive!

SCHUNK customized Gripping Systems. Benefit from our Experience.

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

Permanent and comprehensive project management is an important part of the SCHUNK philosophy. Our approach is systematic and tailored to your individual project – each step is traceable and documented. At SCHUNK, our analysis of complex processes and holistic approach to our customers' parts and products allows us to develop effective, customized gripping systems.

Maximum precision is required in order to present automation processes visually – so we use the latest work technology, from 2D and 3D presentations to 3D simulation. Our components and configurations carry the decisive performance potential that can make your process chain more efficient. We make full use of this potential. And you benefit from this.

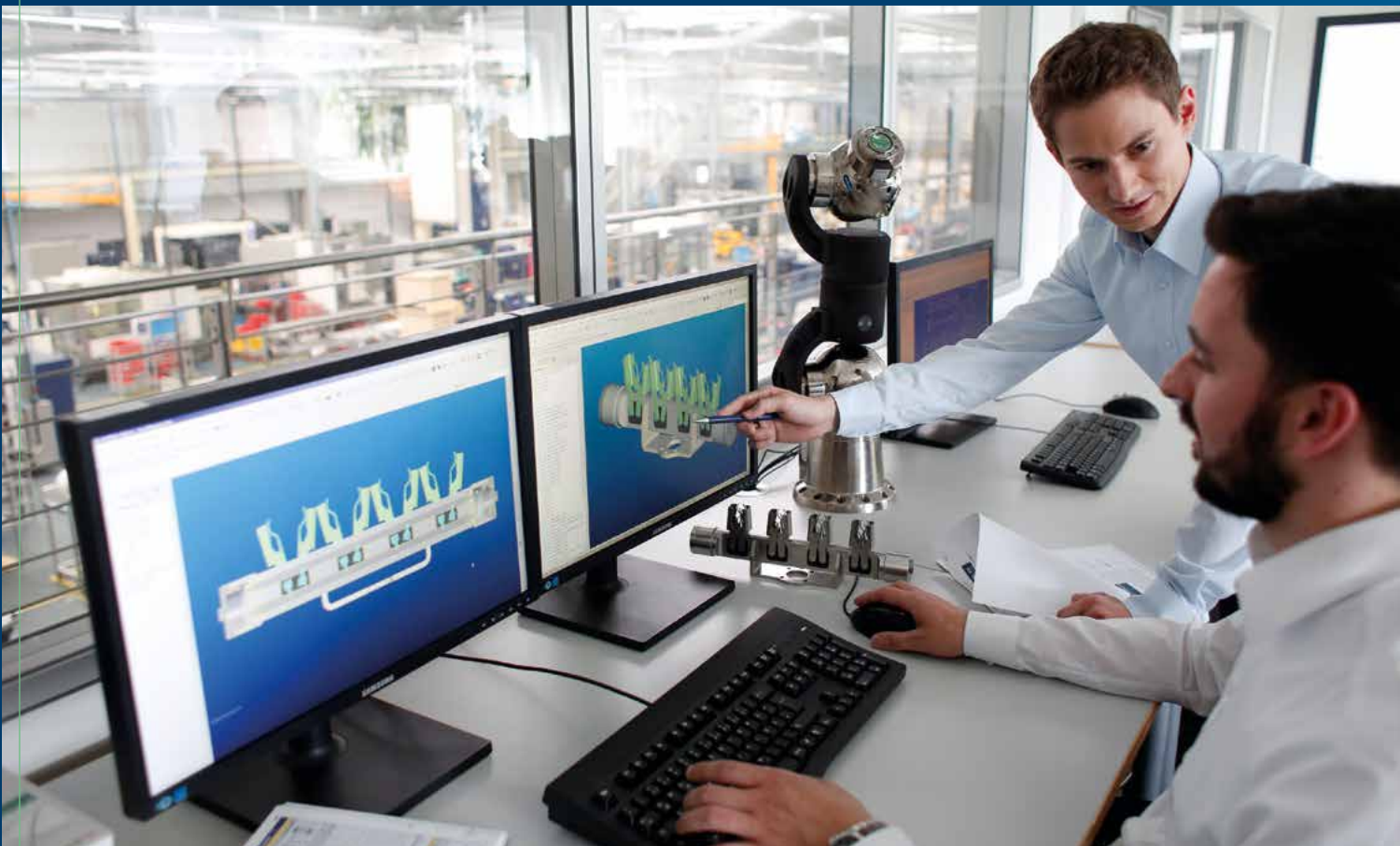
Advice

Project
planning

Engineering

Implementation

Service



This will pay off for you!

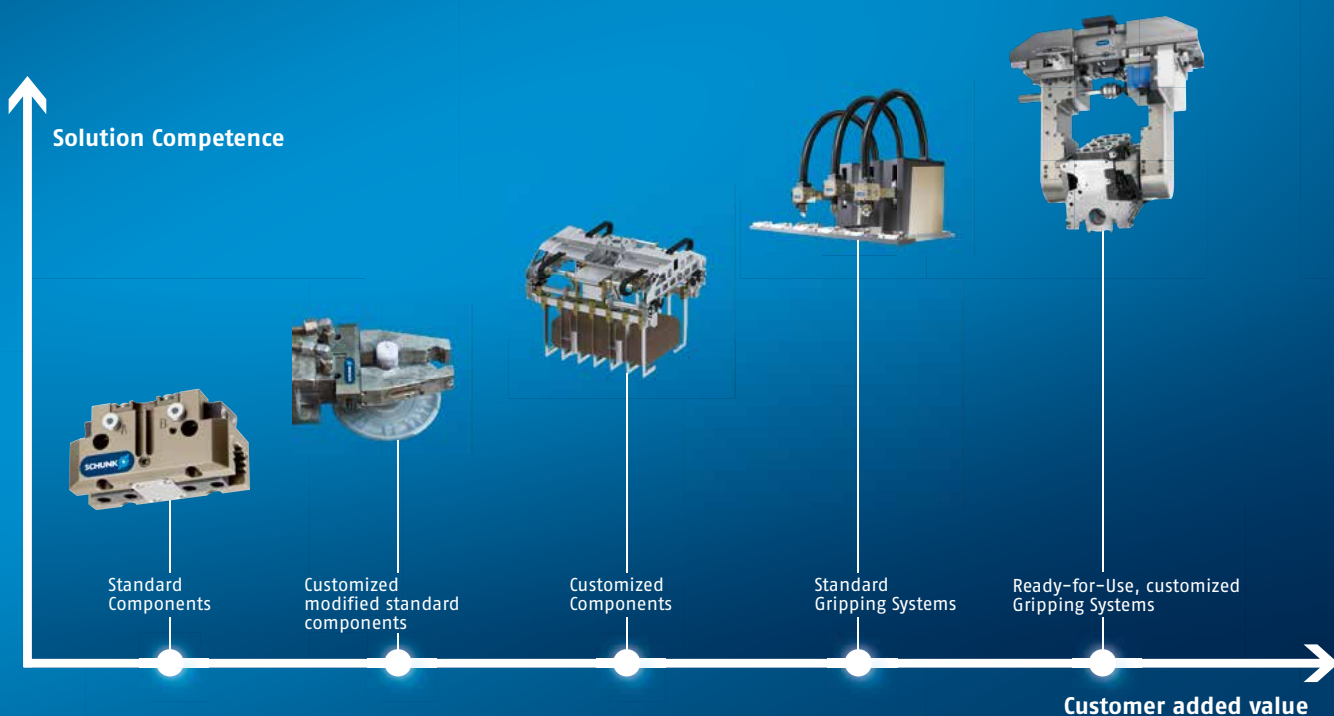
From standard Components to customized Gripping Systems.

1 personal contact for your solution from one source.

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

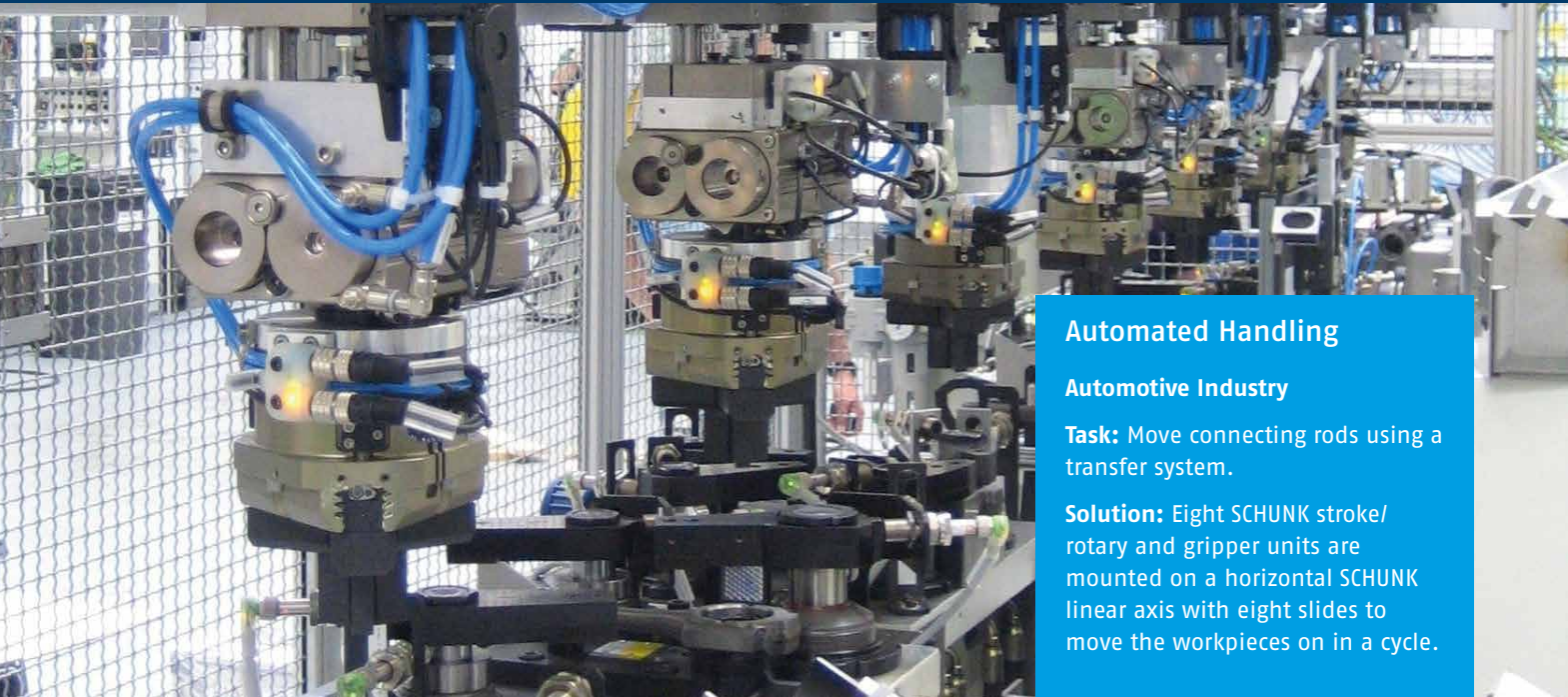
Your added value

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



Equipped by SCHUNK

Customized Solutions



Automated Handling

Automotive Industry

Task: Move connecting rods using a transfer system.

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



Handling of Sand Cores

Foundry Industry

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

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

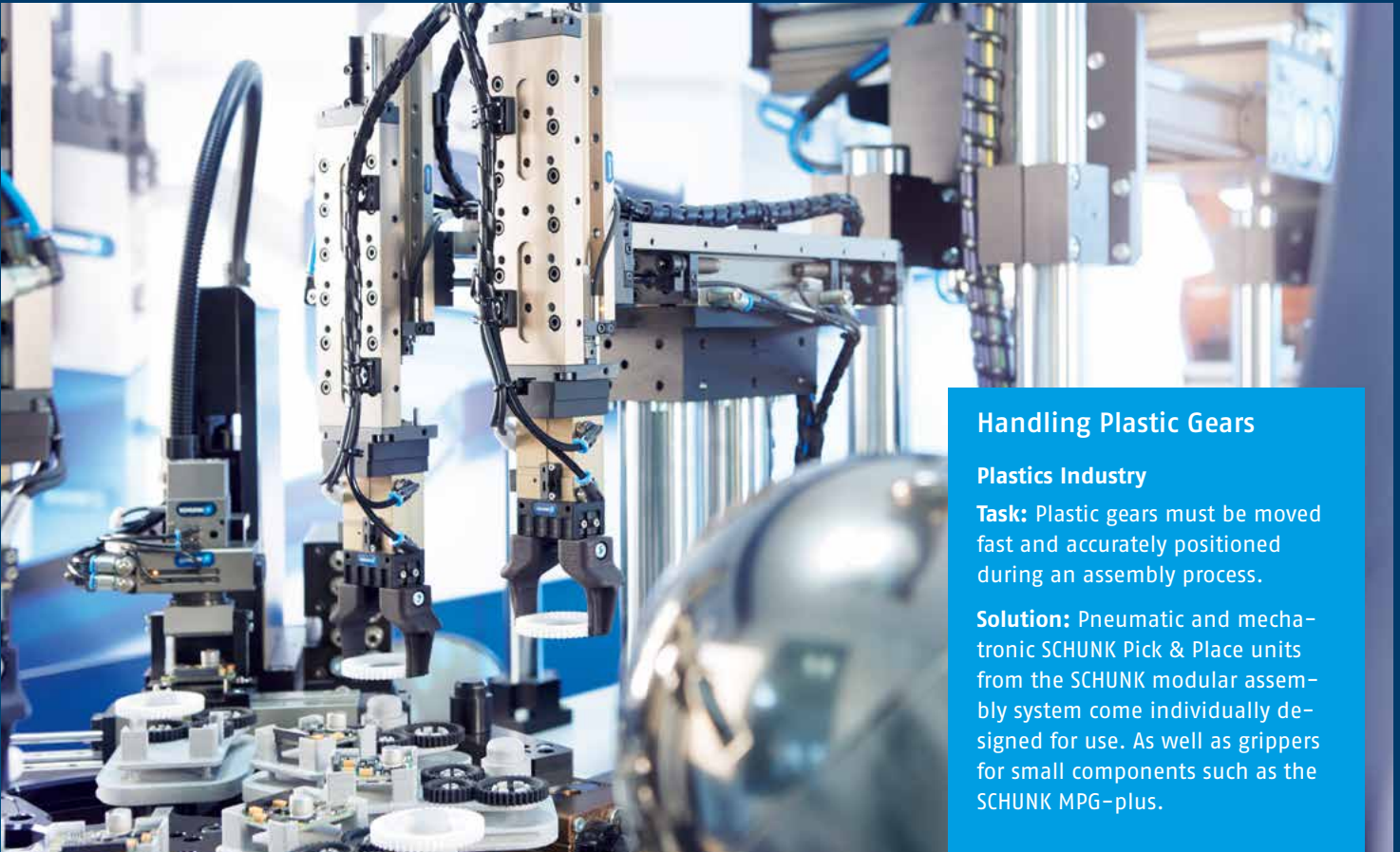


Conrod Handling

Automotive Industry

Task: To save costs using multiple handling of conrod parts during production.

Solution: An especially developed conrod gripper based on a pneumatic SCHUNK universal gripper PGN-plus with special gripper fingers is mounted on a SCHUNK rotary module ERM. Due to the rotary module with adaptable drive, this solution can use the same drive as the axis system. This creates a universal drive concept.



Handling Plastic Gears

Plastics Industry

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

Solution: Pneumatic and mechatronic SCHUNK Pick & Place units from the SCHUNK modular assembly system come individually designed for use. As well as grippers for small components such as the SCHUNK MPG-plus.



Handling of Hinge Parts

Metal Industry

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

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



Handling of Worm Gear Shafts

Metal-cutting Industry

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

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





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