Superior Clamping and Gripping

SCHUNK

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

1945

Founded by Friedrich Schunk in a garage

Visionary Leader

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

Cooperation Partner

Sustainability

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.

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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 optimal interplay between the robot arm and gripper. The basis for this high technology "Made in Germany" is our constant innovation.

Equipped by SCHUNK

Feeding through

Page 57

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

DDF 2

DDF-SE

Protecting

Page 56

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

OPR

OPS

Measuring

Page 58

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

FT-AXIA

FTN

Changing

Page 52

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

SWS

SHS

Compensating

Page 54

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

AGE-Z 2

TCU-P

Gripping

Page 22

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

PGN-plus-P

PZN-plus

MPG-plus

PHL

EGA

PGN-plus-E

Machining

Page 60

More than 50 tools for all machining processes with the robot.

RCV

AOV

For further product information visit:
schunk.com/robot-accessories

Cobots: Equipped by SCHUNK

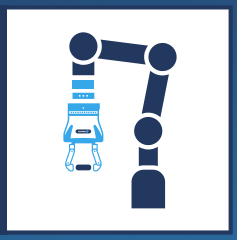
Modular. Flexible. Simple.

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.

For further product information visit:
schunk.com/plug-and-work

Equipped by SCHUNK



Collaborative gripping

Gripper for implementing collaborative applications

From page 30

Co-act EGP-C

Electric gripping

Gripper for flexible handling of work-pieces

From page 30

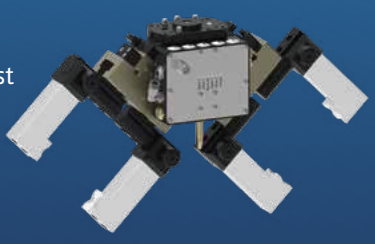
EGH

EGL

Pneumatic gripping

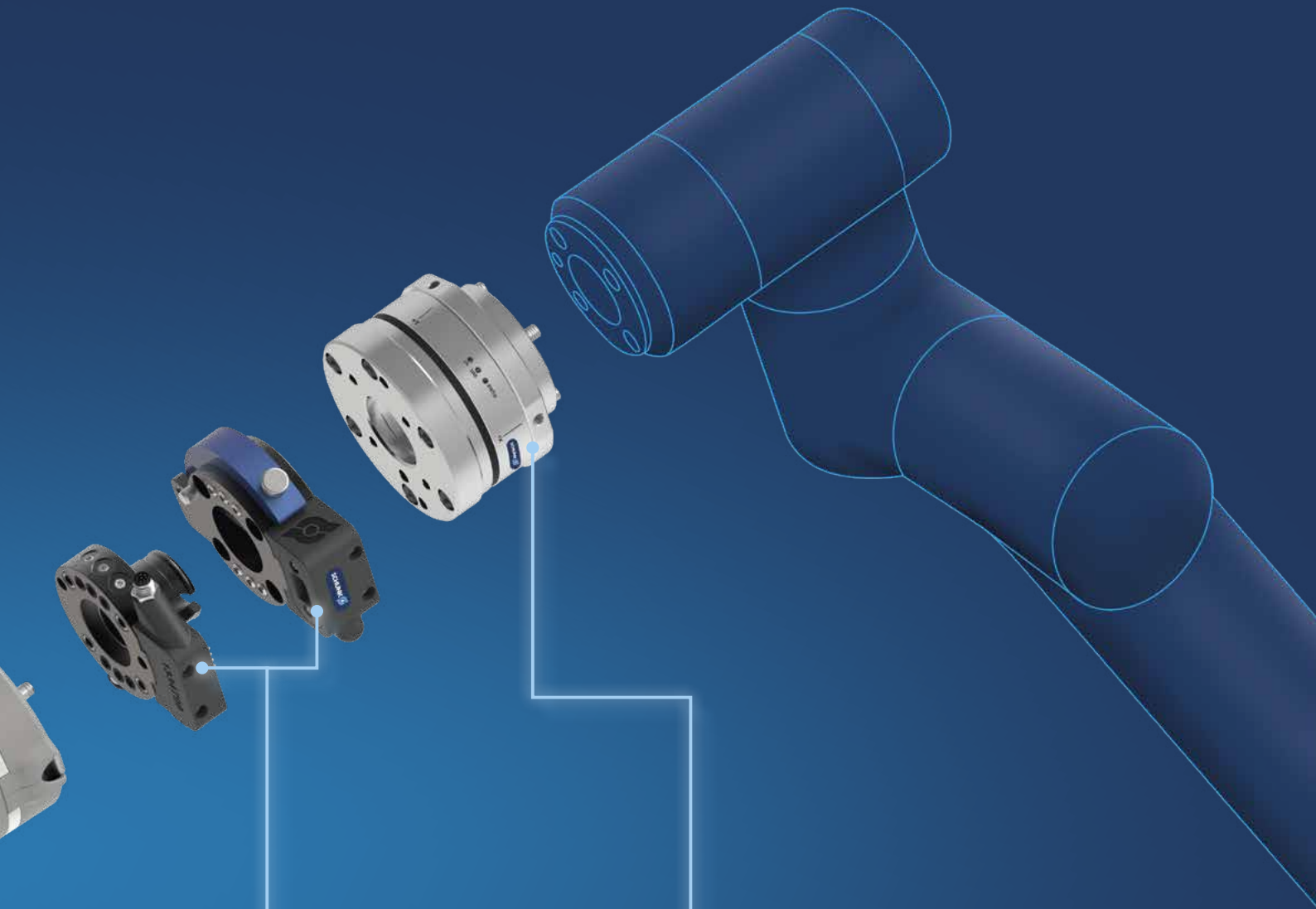
Gripper with integrated micro valves and sensor system for conventional and robust handling of workpieces

From page 34



Double Gripper Kit

Single Gripper Kit



Measuring

From page 58

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

FT-AXIA

Changing

From page 52

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

SHS

R-EMENDO Robotic Material Removal

The right Tool for all Machining Processes.

Our product range "Robotic Material Removal" has received its own name: R-EMENDO.
R stands for robotics and EMENDO means machining: Improving a workpiece by removing material – such as deburring, grinding or polishing. Get to know more about the R-EMENDO tools.

Increased efficiency and consistent quality

With the new SCHUNK tools, you can take your machining process to a new level. Automation of previously manual work steps increases your productivity while delivering consistently perfect results.

Chamfering edges, removing burrs or smoothing surfaces – SCHUNK not only offers the right tool for the individual machining operations, but also supports the entire application process – from the selection of the right components to the optimal parameters for a functioning overall solution.

Deburring

From page 60

When it comes to deburring, SCHUNK offers a wide range of tools for various deburring tasks. Find the right product for your deburring solution.


RCV


CRT


CDB


FDB


FDB-AC

Grinding

From page 60

Grinding of workpieces is often used for removing coarser material or to prepare surfaces for downstream surface finishing.


AOV

Polishing

From page 60

Polishing surfaces is usually the last machining step, giving the workpiece the perfect finish. In addition to the tool and polishing agent, constant contact force is particularly important in order to achieve optimal and uniform polishing results.


MFT-R


MFT

For further product information visit:
schunk.com/remendo

Compensating

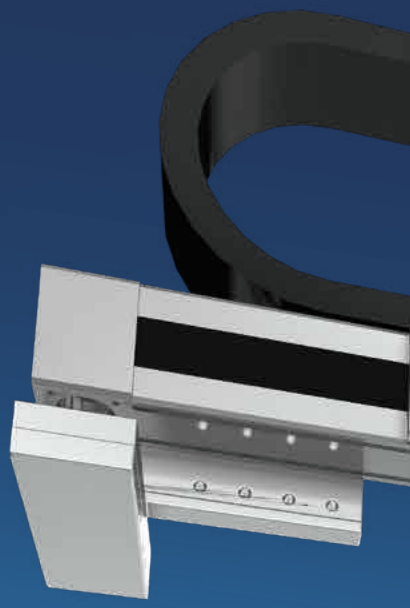
From page 60

Pneumatically controlled compensation unit with position measurement for the adjustment of compensation and contact forces.

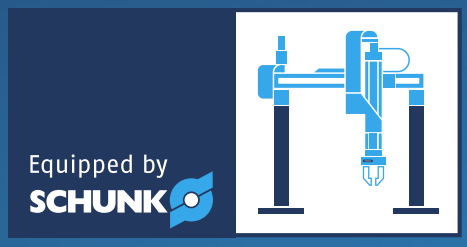
PCFC

Axis Systems: Equipped by SCHUNK

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



With the linear modules service area combined with rotary modules, swivel units, grippers, quick-change systems, rotary indexing tables and sensor systems, SCHUNK opens up new perspectives for cost and benefit-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.



For further product information visit:
schunk.com/axis-systems

Changing

Page 52

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

SWS SHS

Turning

Page 40

Over **600** components available for rotatory movements. Variable from 180° to endlessly turning.

SRM SRU-plus SRH-plus

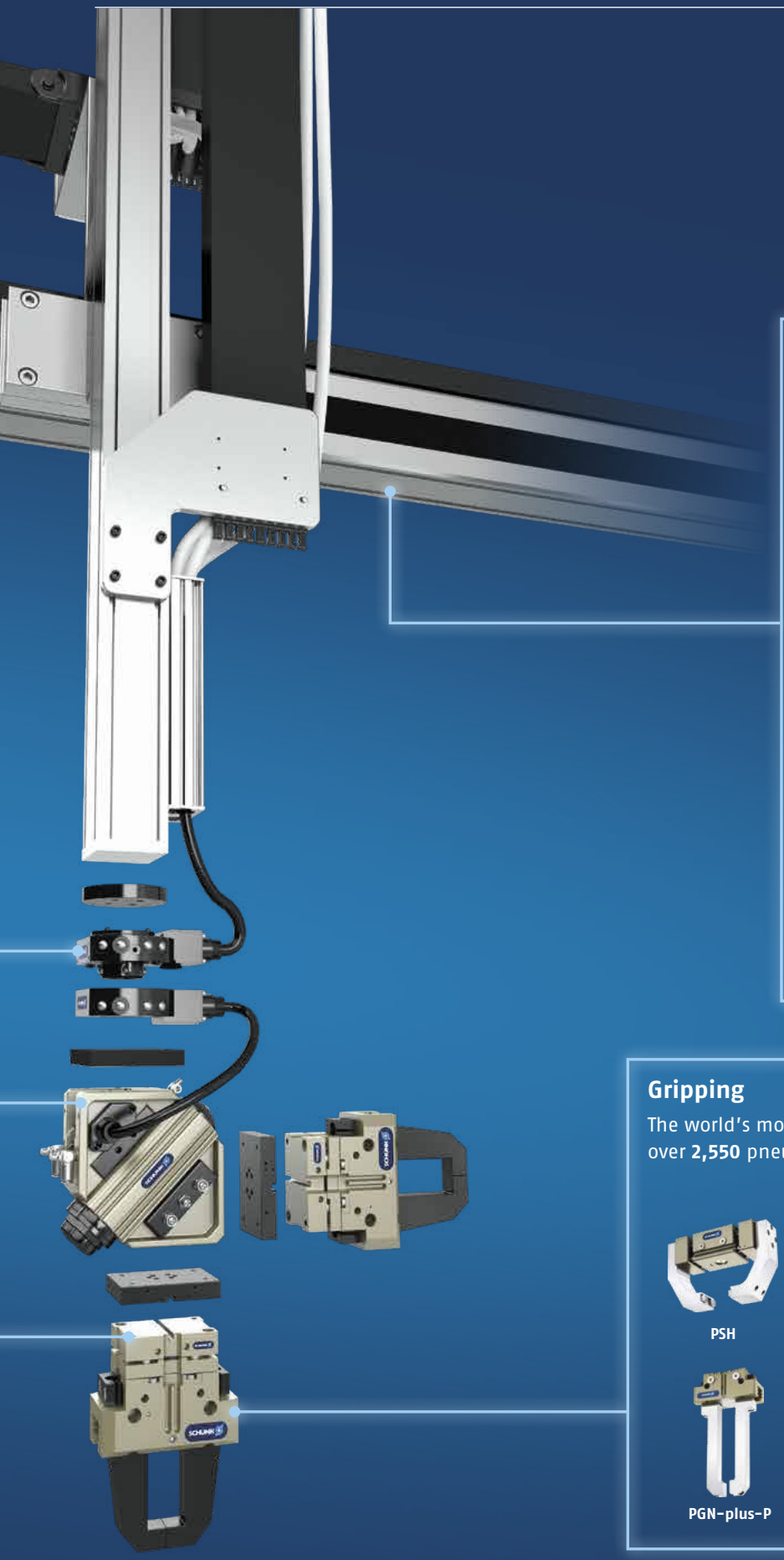
ERM ERT ERD

Compensating

Page 54

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

TCU-P AGE-S



Moving

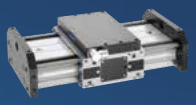
Page 44

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


Beta

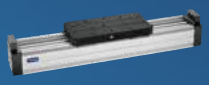

Delta


Gamma


LDT


LDK


LDN


PMP

Gripping

Page 22

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

PSH


PGN-plus-E


EGL

PGN-plus-P


PZN-plus

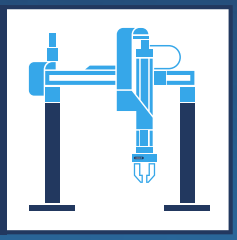

PWG-plus

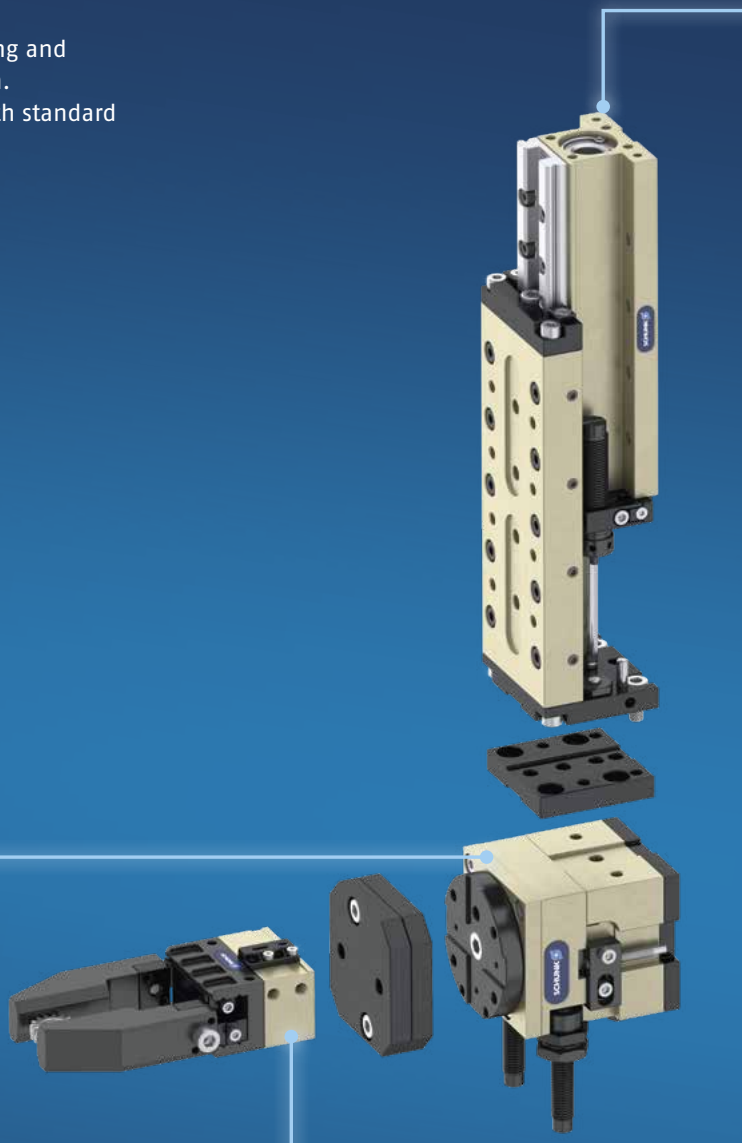
Assembly Automation: Equipped by SCHUNK

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





Turning

Page 40

Over **600** components available for rotatory movements.
Variable from 180° to endlessly turning.


RM-W


RST-D


SRM


ERD


ERT

Gripping

Page 22

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


MPG-plus


KGG


PGN-plus-P


MPZ


PZN-plus

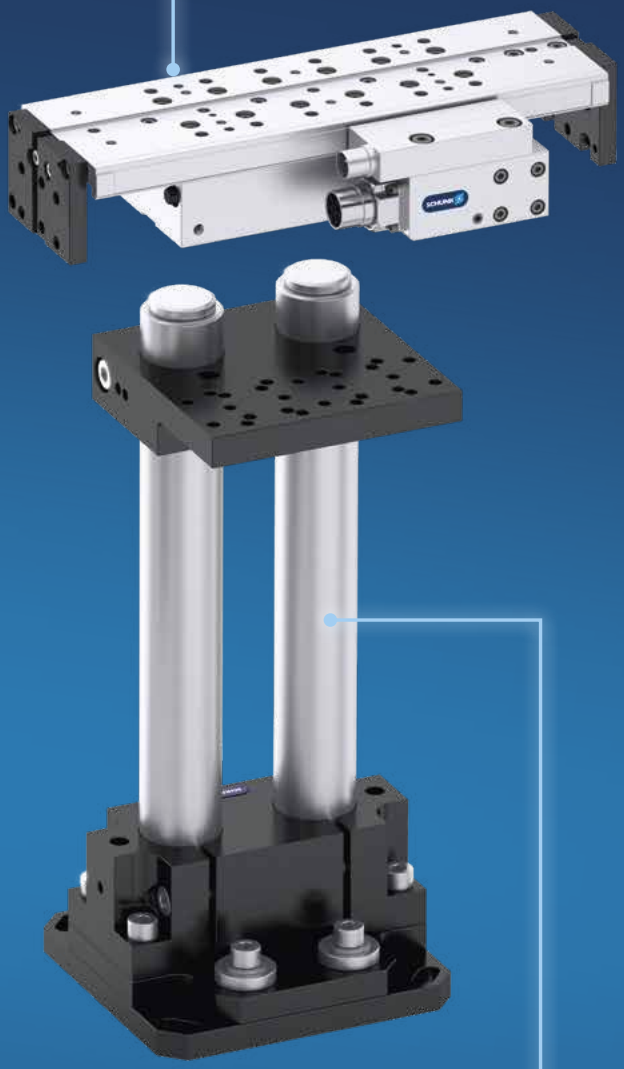

SWG


PWG-plus


GAP


EGP


PGN-plus-E



Moving

Page 44

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


LM

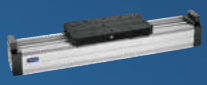

CLM


KLM


HLM


ELP


ELB


PMP


Delta


Beta

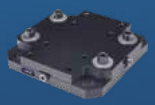
For further product information visit:
schunk.com/standard-in-the-assembly-automation

Assembling

Page 66

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

The new Standard in Assembly Automation.

The 24 V Mechatronics Range 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 program offers the advantages of mechatronic modules whilst being as simple as pneumatics. This results in revolutionary advantages for handling in assembly automation, for instance such as very low maintenance effort, simple and fast commissioning, and high energy efficiency.

Easy to Create!

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

Pick & Place Production Cell

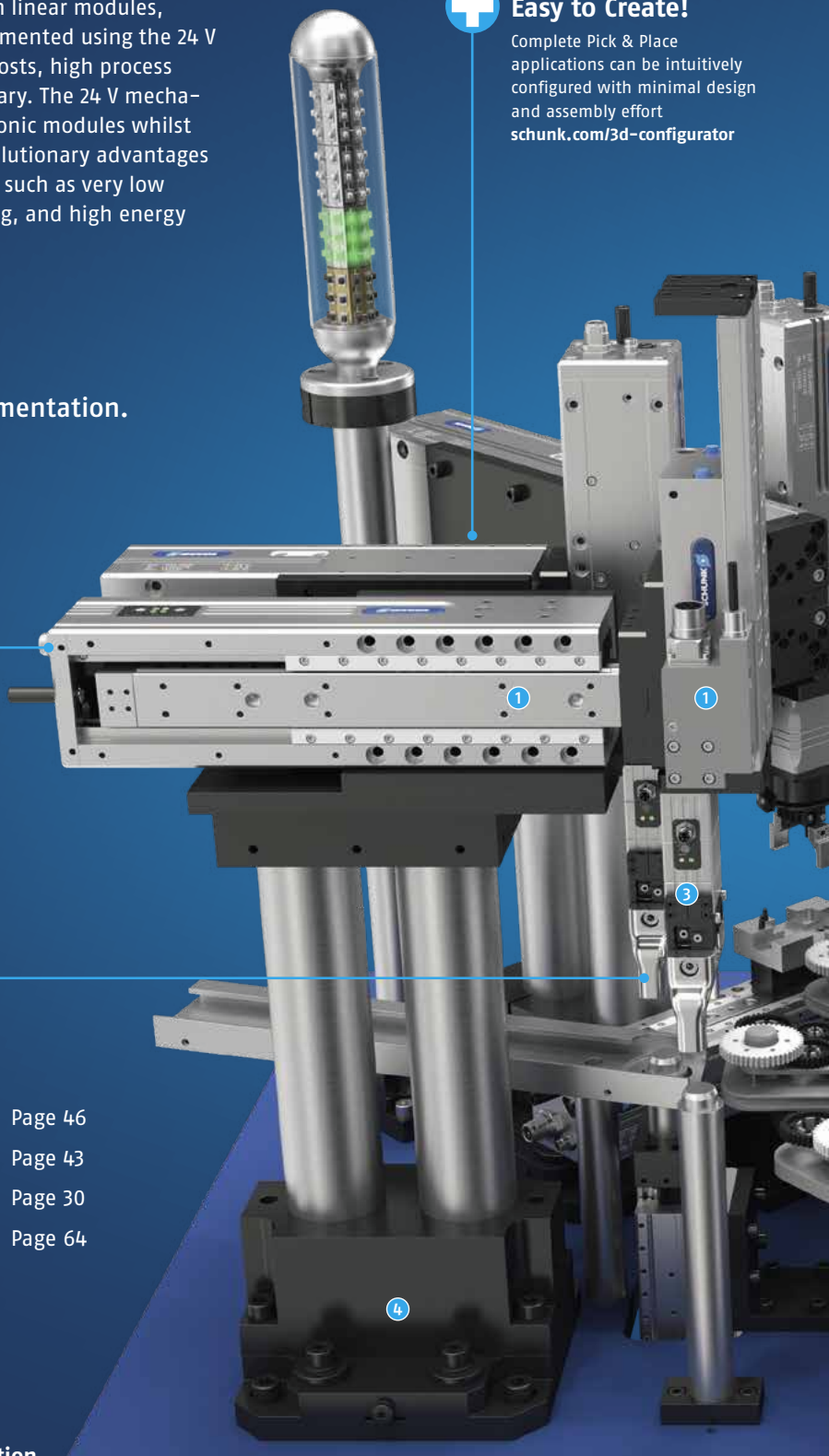
Electric, simple, compact and fast implementation.

Easy to Start Up!

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

Plug & Work!

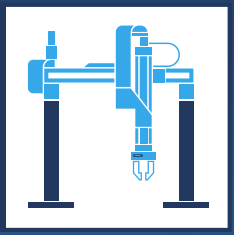
Easily combine, integrate and seamlessly commission mechatronic SCHUNK grippers, rotary and linear modules from the modular system



1 **Electric Linear Module ELP** Page 46
2 **Electric Rotary Gripping Unit EGS** Page 43
3 **Electric Gripper for Small Components EGP** Page 30
4 **SCHUNK Pillar Assembly System SAS** Page 64

For further product information visit:
schunk.com/standard-in-the-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 downtime. Simple setting options can be used to react quickly to process changes, right up to automatically adjusting the modules

Easy to Save Money!

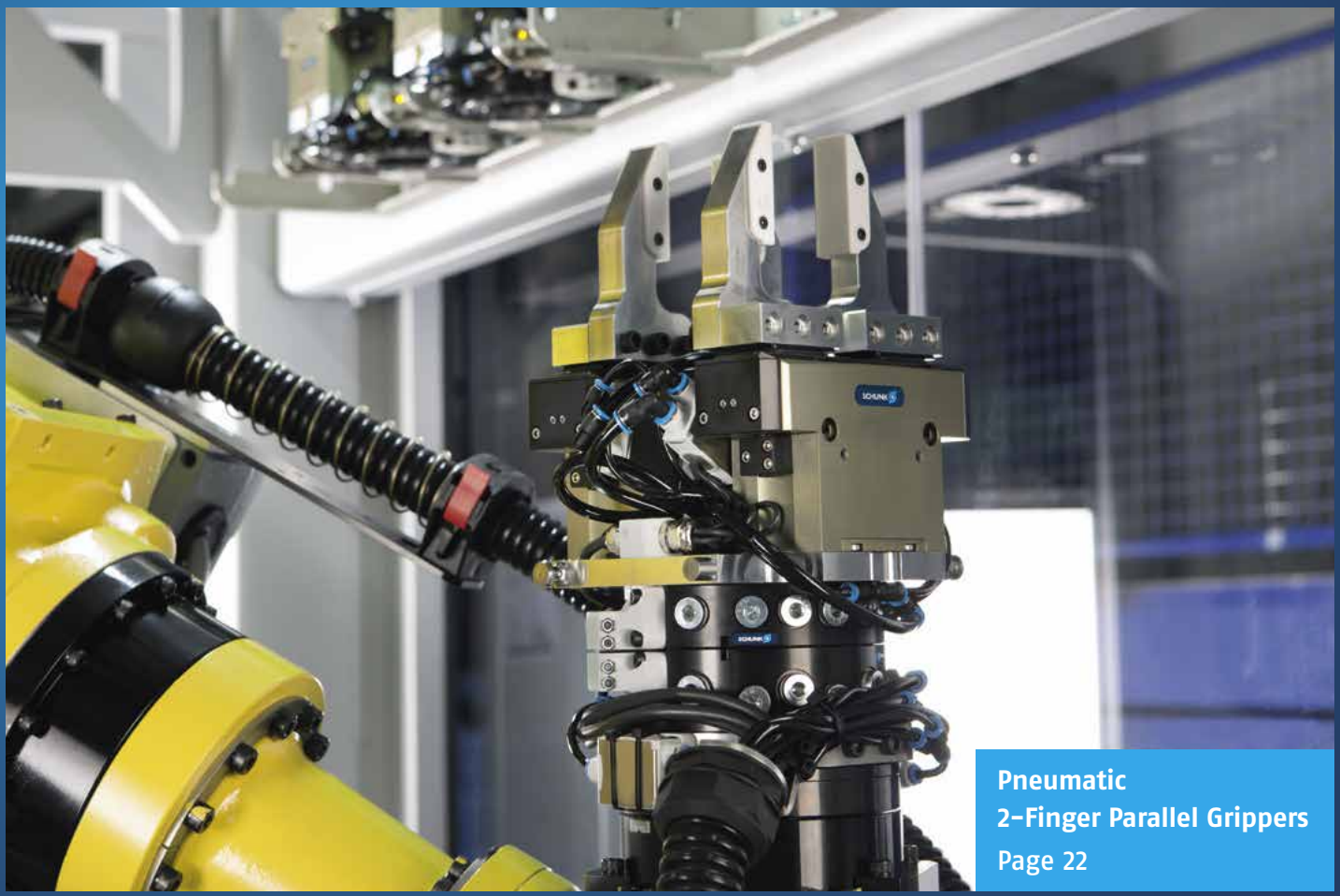
Observing the procurement, operating and maintenance costs in direct comparison with purely pneumatic systems, the deployment becomes economically after just a few million cycles.

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 Grippers
Page 22

Electric Grippers
Page 30

Pneumatic 3-Finger Centric Grippers
Page 26

Special Grippers
Page 34

The SCHUNK Universal Grippers PGN-plus-P and JGP-P

The best Values in the Industry

10% longer gripper fingers with the same size

For cost-sensitive applications

Universal application possibilities

10 sensor systems for variable monitoring options

More than **2,000** possible combinations of variants and options

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Pneumatic 3-Finger Centric Grippers	26
Pneumatic Angular Grippers	28
Electric Grippers	30
Special Grippers	34

2-Finger Parallel Grippers

Pneumatic

	2-Finger Parallel Grippers			
	MPG-plus	MPC	KTG	KGG
				
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 .. 125	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 / 54	30	20	40
Cleanroom class ISO 14644-1	6			
Sensor system	++	+	+	+
Variant variety	++	+	+	++
Descripton	The most powerful pneumatic miniature parallel gripper on the market with a unique combination of oval piston drive and junction 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	• For universal use • For light to medium-sized workpiece weights • With a large range of stroke
Ambient conditions				
Clean	●	●	●	●
Dirty/coarse dust	○		○	○
Contaminated/fine dust and liquids				
Dirty/aggressive liquids				
High temperature range > 90 °C	◑		○	○
Cleanroom	◑		○	○

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

2-Finger Parallel Grippers

Pneumatic

	PGN-plus-P	JGP-P	PGF	PGB
				
	11	10	5	4
	180 .. 27000	180 .. 8200	240 .. 1900	90 .. 610
	2 .. 45	2 .. 35	7.5 .. 31.5	4 .. 10
	0.17 .. 39.8	0.08 .. 17.2	0.3 .. 5.3	0.28 .. 1.32
	0 .. 97.5	0 .. 35	0 .. 7.1	0 .. 3.3
	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	300	125	125
	up to 0.01	up to 0.01	up to 0.02	0.01
	40/64	40	40	40
	+++	++	+	++
	+++	+	+	+
	Universal 2-finger parallel gripper with a high gripping force and high maximum moments due to the use of a 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 slideway as well as the center bore
	• Optimal standard solution for many fields of application • Universal use	• Optimal 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 high part diversities due to its long jaw stroke and high gripping forces	• For universal use • Suitable for fields of application that require a center bore, e.g. for workpiece feeding, special sensor systems or optical recognition systems
	●	●	●	●
	●	◑	○	◑
	◑			
	◑			
	●		●	●
	◑		○	○

2-Finger Parallel Grippers

Pneumatic

	2-Finger Parallel Grippers			
	DPG-plus	PHL-W	PFH-mini	
				
Technical data				
Number of sizes	11	5	3	
Gripping force [N]	110 .. 11250	500 .. 4630	630 .. 2950	
Stroke per jaw [mm]	2 .. 45	30 .. 160	30 .. 100	
Weight [kg]	0.12 .. 52	1.49 .. 23.55	2.65 .. 12.6	
Recommended workpiece weight [kg]	0 .. 46.35	2.5 .. 15.5	0 .. 13	
Closing/opening time [s]	0.03 .. 1.1/0.03 .. 1.1	0.11 .. 1.82/0.11 .. 2.91	0.3 .. 1.0/0.3 .. 1.2	
Max. permissible finger length [mm]	380	800	250	
Repeat accuracy [mm]	up to 0.01	0.02	0.05	
Protection class IP	67	41	41	
Cleanroom class ISO 14644-1	5			
Sensor system	+	++	++	
Variant variety	+	++	++	
Descripton	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 systems, in powder-processing or underwater	• Optimal 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	
Ambient conditions				
Clean	●	●	●	
Dirty/coarse dust	●	◑	◑	
Contaminated/fine dust and liquids	●	○	○	
Dirty/aggressive liquids	◑			
High temperature range > 90 °C			●	
Cleanroom	◑			

● = very highly suitable ◑ = highly suitable ○ = suitable in customized version
+ = medium 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 .. 04/0.12 .. 0.4	1.5/1.5
	900	300	500
	0.02	up to 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	Robust 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 moments.
	• 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
	●	●	●
	○	●	○
	○	●	
		●	
	●	●	
		○	

MTB application kit

The right kits for a quick entry into the world of automated machine loading and unloading

The MTB application kits enable quick and easy implementation of automated machine loading. The specific application kits take on the important key role of workpiece handling and workpiece clamping. They seamlessly fit into the machine environment.

schunk.com/plug-work-mtb

Your benefits:

- **Process reliability**
  By means of a sealed valve box, the electronic system is protected against dust, chips and oil
- **Increased productivity**
  This is achieved by automated removal of chips and coolant from the workpiece and clamping force block
- **Increased productivity**
  The double gripper kit enables workpiece removal and reloading of the machine in one work step

3-Finger Centric Grippers

Pneumatic

	3-Finger Centric Grippers		
	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
Dead 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
High number of variants	+	+++	+
Variety of sensor systems	+	+++	++
Descripton	Compact 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			
	• For 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)	• Optimal 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
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 selection ++ = wide selection +++ = very wide selection

3-Finger Centric Grippers

Pneumatic

				Multi-finger Centric Grippers
	PZH-plus	PZB-plus	DPZ-plus	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	
	+	+	+	+
	+	++	+	+++
	Long-stroke gripper with high 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)	• For 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 Grippers			2-Finger Radial Grippers
	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
Dead 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 system	+	+	++	++
Variant variety	+	+	++	++
Descripton	Small, single-acting 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				
	• For universal use • With special requirements on corrosion resistance and anti-static properties of the gripping unit	• For universal use • Suitable for applications which require a stacked, space-optimized gripper arrangement	• For 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	○	○	○	○

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+ = medium-sized selection ++ = large selection +++ = very large selection
* The GAP Is an angular parallel gripper, which means the values must be understood as forces [N].

		3-Finger Angular Grippers
DRG	GAP	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 .. 125	0 .. 13
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 for parallel O.D. gripping after swiveling in the gripper finger up to 90° 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	• For 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 T-bar 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

Grippers

Electric

	2-Finger Parallel Grippers		
	Alternative		
	Co-act EGP-C	EGP	PGN-plus-E
			
Technical data			
Number of sizes	2	4	2
Gripping force [N]	140 .. 230	12 .. 300	110 .. 810
Stroke per jaw [mm]	6 .. 10	3 .. 10	8 .. 10
Dead weight [kg]	0.59 .. 1.38	0.11 .. 0.8	1.01 .. 1.73
Recommended workpiece weight [kg]	0.7 .. 1.15	0 .. 1.25	0 .. 4.05
Closing/opening time [s]	0.2 .. 0.49	0.03 .. 0.49	0.26 .. 0.29
Max. permissible finger length [mm]	80	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
Variant variety	++	++	+
Descripton	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 work-pieces with flexible force and high speed • Suitable for collaborative operation	• Gripping and moving • For small to medium-sized work-pieces with flexible force and high speed • In the areas of assembly, testing, laboratory, pharmacies	• Optimal standard solution for many fields of application • Universal use
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 ++ = large selection +++ = very large 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
			0.8
	600	500	70
	0.05	0.05	0.1
	Motor-dependent	Motor-dependent	24
	Motor-dependent	Motor-dependent	0.2
	20	40	20
	Controller-dependent	Controller-dependent	IO-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
	●	●	●
	○	◑	

Grippers

Electric

	Intelligent		
	EGI	**EGL**	**EGN**
			
Technical data			
Number of sizes	2	1	3
Gripping force [N]	25 .. 100	50 .. 600	170 .. 1000
Stroke per jaw [mm]	40 .. 57.5	42.5	8 .. 16
Dead weight [kg]	1 .. 1.1	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]	0.7 .. 1.5	2.5	1 .. 2.6
Protection class IP	20	46	41
Communication interface	PROFINET, Ethernet/IP, EtherCat	PROFINET, PROFIBUS	PROFINET, PROFIBUS
Variant variety	++	+	++
Descripton	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	• Optimal standard solution for many fields of application • Flexible use due to controllable gripping force, position, and speed
Ambient conditions			
Clean	●	●	●
Contaminated/coarse dust		●	●
Contaminated/fine dust and liquids		◑	◑
Contaminated/aggressive liquids			◑
High temperature range > 90 °C			
Cleanroom	○		○

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3-Finger Centric Grippers	Electromagnetic Grippers		
	Alternative		
EZN	EGM-M	EGM-B	EMH
			
2	6	8	6
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	0.2
125			
±0.01			
24 DC	400 AC	400 AC	24 DC
2 .. 3	2.2 .. 3.7	2.9 .. 12.3	3.1...9.8
41	54	54	52
PROFINET, PROFIBUS	Controller-dependent	Controller-dependent	Digitale I/O
++	+++	+++	++
Servo-electric 3-finger centric gripper with high gripping force and high maximum moment due to 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	Intergrated
ECM	ECG	ECG	
• Optimal 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 Shaft Interface	Universal Gripper with Shaft Interface and Compensation Unit	Vacuum Gripper with Shaft Interface	Magnetic Gripper with Shaft Interface	
	GSW-B	GSW-B with AGE	GSW-V	GSW-M	
					
Variant variety	++	++	+	+	
Variety of sensor systems	+	+			
Descripton	Universal gripper with shaft interface for toolholder	Universal gripper with shaft interface for toolholder and compensation unit	Vacuum gripper with shaft interface for machine self-operation	Magnetic gripper with shaft interface for toolholder	
Field of application					
	• For fully automated loading and unloading of machining centers	• For fully automated loading and unloading of clamping devices such as vises	• For fully automated loading and unloading of flat workpieces	• For fully automated loading and unloading of ferromagnetic workpieces	
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 ++ = large selection +++ = very large selection

SCHUNK Adhesive Grippers ADHESO

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

Your benefits:

- **Low operating costs** due to energy-efficient gripping without an additional energy supply
- **Gripping without visible residue** for sensitive workpieces

schunk.com/adheso

	Adhesive Gripper	Cleaning Unit with Shaft Interface	Internal Hole Gripper	O-ring Gripper
	ADHESO	RGG	LOG	ORG
				
	+++	+	+++	+
	+			+
	Customer-specific gripping units with adhesive technology	Cleaning unit with shaft interface for toolholder	Lightweight gripper made from a chemical resistant polyamide with a closed membrane system.	6-finger gripper reliable internal and external assembly of O-rings
	• Primarily smooth and clean surfaces in the field of assembly, electronics production, but also medical technology. Residue-free handling applications where there is only one-sided access to the handling object.	• 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 components and plastic parts, as well as sand core handling	• For automated assembly of O-rings
	●	●	●	●
		●	●	
	◑	●	●	
		●		
	○	●		
	●		○	○

SCHUNK Servo-electric 5-Finger Gripping Hand SVH

The ready for series production version of the anthropomorphic SCHUNK 5-finger hand grips nearly as perfectly as the human hand. Due to the moving parts with a total of nine drives, various gripping operations can be executed with high sensitivity.

Your benefits:

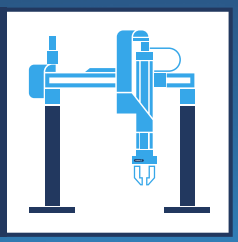
- **Suitable for mobile applications**
  Low energy consumption at 24 V DC
- **Extremely compact design** due to integration of the complete control, regulator and power electronics in wrist

schunk.com/svh

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

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Measuring Systems
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Pick & Place | Multi-axis Systems
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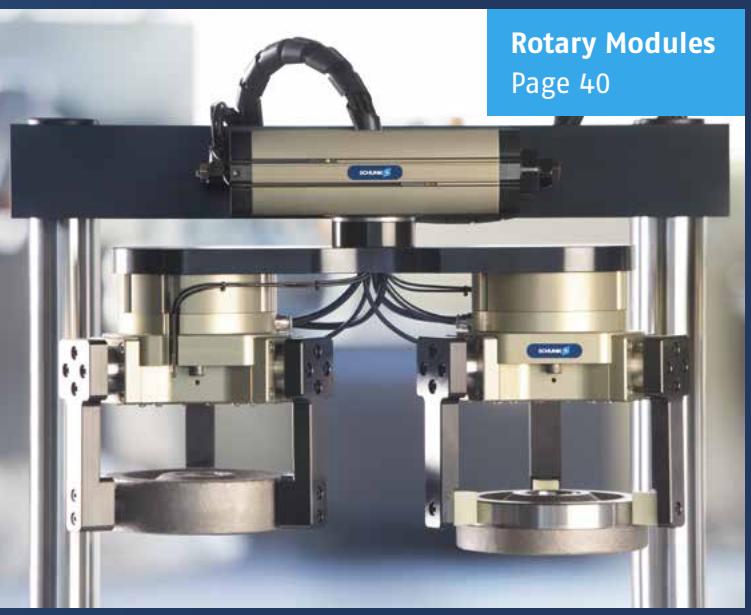

Rotary Modules
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Monitoring Sensors
Rotary Feed-throughs
Page 40

The pneumatic SCHUNK Swivel Module SRM

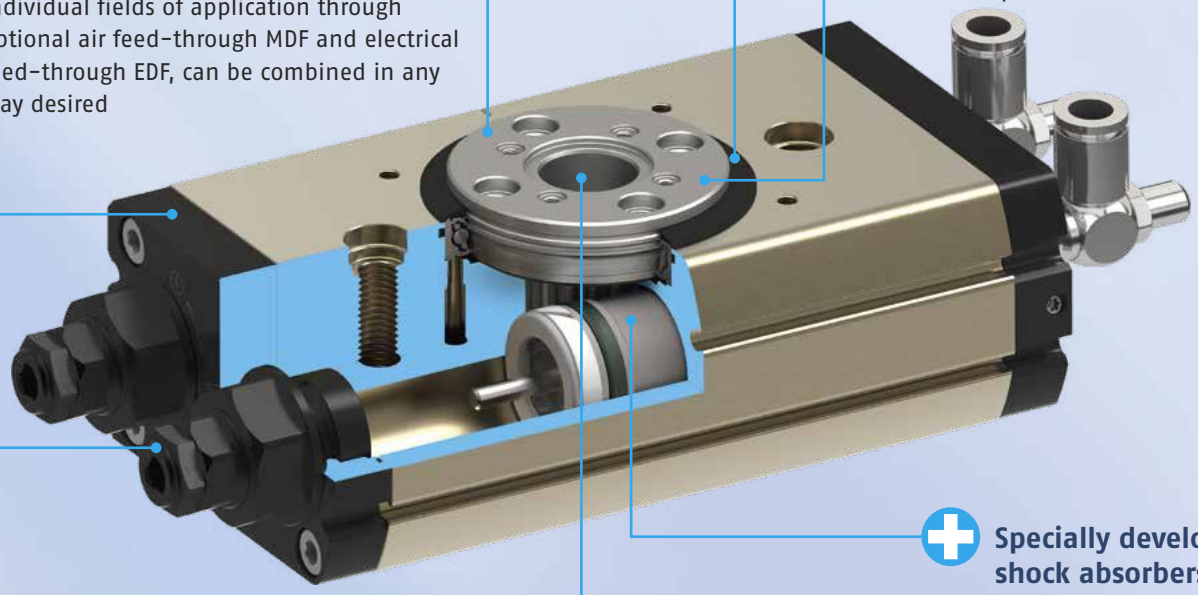
The most robust and powerful Swivel Module on the Market

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

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

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

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



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

Pre-adjusted shock absorber stroke
Meaning faster commissioning

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

Technical data

Size	Weight	Rotating angle	Torque	Mass moment of inertia
10 .. 40	0.252 .. 9.74 kg	0° .. 180° (variant 90°)	0.45 .. 23.7 Nm	7 kgm²

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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	8
Torque [Nm]	0.1 .. 3.6	0.7 .. 22	0.16 .. 1.15	0.45 .. 23.7
Dead weight [kg]	0.09 .. 0.71	0.65 .. 8.3	0.15 .. 0.65	0.252 .. 9.74
Max. permissible mass moment of inertia [kgm²]	0.005	0.27	0.01	0.0008
Repeat accuracy [°]	0.05	up to 0.036	0.07	0.03 .. 0.06
Protection class IP	52	40	65	40
Descripton	Swivel unit with a high torque for easy rotation tasks up to 180°	Vane swivel unit 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/Variants				
Center bore			●	●
Pneumatic rotary feed-through			●	●
Electric rotary feed-through				●
Center position			●	
ATEX-certified				
Gripping force maintenance				
Monitoring options				
Inductive proximity switch		●		●
Magnetic switches	●		●	●
Field of application				
	• The optimal solution for easy rotation tasks	• For fast movement cycles	• For fast movement cycles	• For universal use with any swiveling movement
Ambient conditions				
Clean	●	●	●	●
Easily contaminated	●	●	●	●
Highly contaminated				●

● = fully supported

Rotary Modules

Pneumatic

	Swivel Heads	Swivel Finger	Rotary Gripping Modules with 2-Finger Parallel Gripper
SRU-plus	SRH-plus	GFS	GSM-P
			
0 .. 180	180	90 .. 180	0 .. 180
8	7	4	4
3 .. 115	3 .. 69.9	0.64 .. 10	0.3 .. 2.9
1.2 .. 26.5	2.1 .. 21.2	0.55 .. 5	0.37 .. 1.51
32	2.6		
0.05	0.05	0.07	0.02
67	67	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	Swivel finger for turning workpieces that are held by a gripper or can also be used as a special swivel 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 universal use	• For gripping and swiveling small to medium-sized workpieces in clean environments
●	●	●	●
●	●	●	
●	●		

Rotary Modules

Electric

	Rotary Modules, electric		
	Adaptable	Intelligent	
	ERM	PRH	ERD
			
Technical data			
Number of sizes	1	3	3
Torque [Nm]	75	0.75 .. 6.8	0.4 .. 1.2
Max. speed of rotation [RPM]	62.5	35 .. 117	600
Dead weight [kg]	15.5	0.75 .. 1.55	1.2 .. 1.8
Max. permissible mass moment of inertia [kgm²]	20	0.3	0.011
Repeat accuracy [°]	0.035	0.004	0.01
Gear ratio	48	30 .. 100	
Intermediate circuit/nominal voltage [V]	Motor-dependent	24	530
Nominal current [A]		1.3 .. 6.5	0.43 .. 1.6
Diameter of center bore [mm]	22		
Number of electric feed-throughs	0	0	4
Number of pneumatic feed-throughs	8	0	2
Protection class IP	65	54 .. 65	40 .. 54
Type of measuring system	Motor-dependent	Incremental	Absolute, measuring system HIPERFACE and DRIVE-CLiQ
Angle of rotation [°]	> 360°	> 360°	> 360°
Descripton	Electr. 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	Electric rotary unit with torque motor and angle of rotation > 360° in optional protection class IP54 plus optional rotary feed-through
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	Adaptable	Integrated	Integrated
Controller	External	Integrated	External
Controller type	Motor-dependent		Bosch Rexroth, Siemens*
Options/Variants			
Center bore	●	●	
Pneumatic rotary feed-through	●		●
Electric rotary feed-through			●
Brake	●		
Field of application			
	• Universal, extremely flexible rotary module • Suitable for use as a component in a handling or positioning system	• Versatile, extremely flexible rotary unit	• Versatile, extremely flexible rotary unit • Suitable for use as a component in a handling or positioning system
Ambient conditions			
Clean	●	●	●
Easily contaminated	●	●	●
Highly contaminated	●	●	

● = fully supported

* = additional controllers available upon request

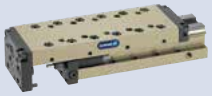
Rotary Modules

Electric

			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 .. 54	30
	Incremental	Absolute, measuring systems HIPERFACE and DRIVE-CLiQ	
	> 360°	> 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	Intergrated	Integrated
	External	External	Integrated
	Bosch Rexroth, Siemens*	Bosch Rexroth, Siemens*	
	●	●	
	●		
	●		
	●	●	
	• Versatile, extremely flexible rotary unit • For applications with unusual requirements in terms of maximum mass moment of inertia, compactness, and reliability • As a component in a handling or positioning system	• Versatile, extremely flexible rotary unit • Very flat and compact design, and therefore low interfering contour • As a component in a handling or positioning system	• For electrical gripping and swiveling of small to medium-sized workpieces up to 270°
	●	●	●
		●	

Linear Modules

Pneumatic

	Stroke Module	Compact Slide	Universal Linear Module	
	HLM	CLM	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	
Nominal 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	
Type of guide	Junction roller guide	Junction roller guide	Junction roller guide	
High number of variants	+	++	+++	
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 • Optimal for lifting workpieces • Ideal for space-optimized applications	• Universally applicable • Optimal for short-stroke applications • For demanding requirements with respect to precision	• Universally applicable • For demanding requirements with respect to precision, flexibility and rigidity	
Environmental conditions				
Clean	●	●	●	
Slightly dirty				
Dirty				

● = fully supported ○ = technically possible
\+ = middle selection ++ = large selection +++ = very large selection

	Linear Module	Gantry Axis
	KLM	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
	• Simple stroke module • Optimal use as Z-axis in handling modules • For high requirements of flexibility	• Robust and precise gantry systems • For large range of stroke
	●	●
	●	●
	○	

SCHUNK Universal Linear Module LM

Pneumatic linear modules LM from SCHUNK are characterized by long life span and reliability. The use of junction 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 junction roller guides
- **Can be flexibly combined** by up to 38 fastening threads on one side
- **No additional interfering contour** when fitting shock absorbers or sensors

Intermediate stops ZZA for LM and KLM pneumatic linear modules

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:

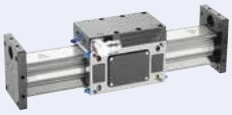
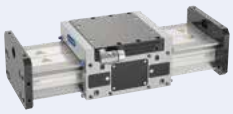
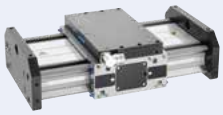
- Up to **two intermediate positions** possible
- **No oscillation** in the intermediate position
- Can be moved from the intermediate position **in both directions**

Linear Modules

Electric

	Electric Linear Modules		
	Alternative	Intelligent	
	Compact Linear Module	Compact Linear Module	Stroke Module
	ELP	ELB	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. nominal 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
Type of guide	Junction roller guide	Junction roller guide	Roller guide
Variant variety	++	+++	++
Required maintenance	Maintenance-free	Cleaning of the magnetic tracks, lubrication of the guide	Cleaning the magnetic tracks
Note	Stop position 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	Digtal 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 lightweighted short stroke module • For small loads • For exceptionally dynamic positionings	• Compact and lightweighted short stroke module • For small loads • For exceptionally dynamic positionings
Environmental conditions			
Clean	●	●	●
Slightly dirty			

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

	Universal Linear Module	Universal Linear Module	Universal Linear Module	Flat Linear Module
	LDN	LDM	LDT	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 of the magnetic tracks	Cleaning of the magnetic tracks	Cleaning of the magnetic tracks	Cleaning of 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	Universal Linear Module	
	Alpha	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. nominal 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	
Type of guide	Double-profiled rail guide	Double-profiled rail guide	
Variant variety	++	+++	
Required maintenance	Lubrication of the guidance and the spindle	Lubrication of the guide and if necessary the spindle. Replacement of the cover tape	
Note	Freely programmable, optionally available with customer-specific motor, limit switch and reference switch	Freely programmable, optionally available with customer-specific motor, limit switch and reference switch	
Motor & Controller			
Motor	Adaptable	Adaptable	
Drive controller	Motor-dependent	Motor-dependent	
Interfaces	Controller-dependent	Controller-dependent	
Field of application			
	• Particularly flat design for table assembly • For high precision and driving force requirements	• Universally applicable • Spindle drive for high precision and driving force requirements • Belt drive for high dynamic requirements with large stroke	
Environmental conditions			
Clean	●	●	
Slightly dirty	●	●	

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

	Flat Linear Module	Universal Linear Module
	Delta	Gamma
		
	●	
	●	●
		●
	5	3
	up to ±0.03**	up to ±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 customer-specific motor, limit switch and reference switch	Freely programmable, optionally available with customer-specific motor, limit switch and reference switch
	Adaptable	Adaptable
	Motor-dependent	Motor-dependent
	Controller-dependent	Controller-dependent
	• Flat design for large loads • Universally applicable • Spindle drive for high precision requirements with high driving force • Belt drive for high dynamic requirements with large stroke	• With closed profile for high rigidity requirements • With rack and pinion drive for precise applications and large strokes • Toothed belt drive for dynamic applications
	●	●
	●	●

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 profiled 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:

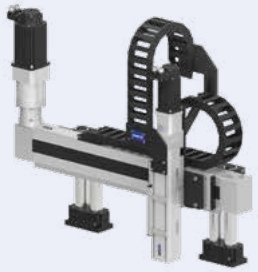
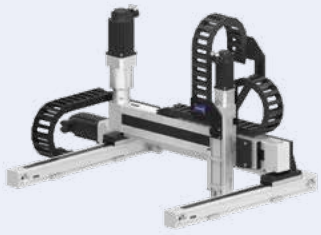
- **12 profile sizes**
- **3 drive types**
  (spindle/belts/gear rack)
- **2 guide systems**
- **100% modular**
  for high availability
- **20 years of experience**
  with linear systems
- **100% flexible actuation**
  due to adaptable motors

Pick & Place

Pneumatic and electric

	Pick & Place Unit
	Electric
	PPU-E
	
Technical data	
Number of sizes	3
Horizontal stroke in Y [mm]	0 .. 280
Horizontal stroke in X [mm]	
Vertical stroke [mm]	0 .. 150
Swivel angle [°]	
Nominal load [kg]	0 .. 5
Repeat accuracy X-axis [mm]	
Repeat accuracy Y-axis [mm]	±0.01
Repeat accuracy Z-axis [mm]	±0.01
Repeat accuracy, rotary [mm]	
Dead weight [kg]	15 .. 35
Max. cycle time/picks per minute	110
Actuation	External controller
Protection class IP	40
Type of guide	Profiled rail guide
Number of possible combinations	
Variant variety	++
Motor & controller	
Motor	Integrated
Drive controller	Bosch Rexroth, Siemens*
Options/Variants	
Rod lock	●
Center position	
Integrated valve	●
Additional C-axis	●
Drive package	
Descripton	Compact 2-axis unit for flexible running of any curve on one plane
Field of application	• For the rapid and precise transfer or controlled press-in operation of workpieces in high-speed assembly
Ambient conditions	
Clean	●
Easily contaminated	

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

Standard Gantries	
Electric	
Line Gantry LPE	Room Gantry RPE
	
2	2
500 .. 1500	500 .. 1500
	500 .. 1500
100 .. 500	100 .. 500
0 .. 20	0 .. 20
	±0.08
±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 belt drive 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 heavy workpieces	• For easily conducting the most common three-dimensional handling and assembly tasks for medium-sized and heavy workpieces
●	●
●	●

Change Systems

Robot Accessories

	Quick-change Systems	
	SWS	SWS-L
		
Product Features		
Manual actuation		
Pneumatic actuation	●	●
Locking monitoring possible	●	●
Tool presence monitoring possible	●	●
Pneumatic energy transmission	●	●
Electric energy transmission	●	●
Technical Data		
Number of sizes	15	4
Recommended handling weight [kg]	0 .. 300	0 .. 1350
Moment load M_{xy} [Nm]	2.8 .. 7170	7600 .. 13500
Moment load M_z [Nm]	3.45 .. 3800	4060 .. 16200
Repeat accuracy [mm]	up to 0.01	0.01
Weight [kg]	0.05 .. 9.3	7.8 .. 28
Screwed flange on the robot	Adapter plates/ direct assembly ISO-9409	Adapter plates/ direct assembly ISO-9409
Advantages/your added value		
	• Patented self-sustaining locking system for a reliable connection between the quick-change master and the quick-change adapter • Standardized storage modules available for any size	
Ambient conditions		
Clean	●	●
Slightly dirty	●	●
High-temperature and stainless steel version on request	●	●

● = fully supported

Quick-change Master

Quick-change Adapter

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 the time needed down to ten to thirty seconds, whereby the mere locking and unlocking needs just milliseconds.

	Manual Change Systems		
NSR-A	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-fit locking, self-locking, for a reliable connection between the pallet change master and the pallet change adapter • Integrated piston stroke monitoring and tool presence control for monitoring the system	• Integrated pneumatic feed-through for secure energy supply of the handling modules and tools • Optionally available with monitoring of the locking and presence monitoring	• Flat and weight-optimized through direct assembly of the gripper onto the change system without adapter plate • Integrated pneumatic feed-throughs for reliable electricity, gas and water supply of the grippers	• Extremely flat design for minimal interference contours • Integrated feed-throughs for six pneumatic or electrical signals
•	•	•	•
•	•		
•	•		

Your benefits:

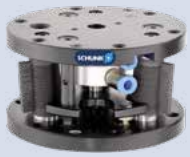
- Payloads **up to 1,350 kg** possible
- **Patented** self-locking locking system
- **No-touch locking™**
  Secure locking without making contact, for the SWS even when the SWK and SWA do not touch
- **19 sizes** for optimal size selection and a broad application range
- All functional components made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

Compensation Units

Robot Accessories

	Compensation Units		
	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]	0.6	0.46 .. 1.5	0.55 .. 1.7
Locking force at 6 bar [N]		235 .. 580	
Horizontal payload [kg]	0 .. 5	0 .. 10	
Vertical payload [kg]		0 .. 15	0 .. 12
Repeat accuracy [mm]		0.1	0.02
Locking force Fz [N]		235 .. 580	280 .. 1500
Max. tensile force F_z [N]		300 .. 750	200 .. 500
Max. contact force F_d [N]		1700 .. 3200	800 .. 1500
Moment load bearing capacity M_x, M_y [Nm]	6.8	16 .. 30	10 – 30
Twist torque M_z [Nm]	3.4	3.5 .. 9	20 .. 80
Angular compensation x [°]	3°		
Angular compensation y [°]	3°		
Angular compensation z [°]			
Advantages/your added value			
	• Deflection in rotation and in the angle compensates for inaccuracies • Savings due to reduced robot programming effort	• 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 robot types 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		●	●

● = fully supported

			Tolerance Compensation Unit	
	AGE-S	AGE-F	TCU	FUS
				
	●		●	●
	●			
	●			
	●	●	●	●
	4	4	8	5
	±4 .. ±12	±1.5 .. ±5		±1.7 .. ±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	
			±1 .. 2	±1
			±1	±1
			±1.2 .. 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 centrically and rigid again
	●	• Direct assembly of parallel and centric grippers. SCHUNK PGN-plus, PZN-plus grippers 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
	●	●	●	●
	●		●	●
	●			

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_d [N]	500 .. 7000	440 .. 14000
Axial deflection [mm]	9.5 .. 12	5.1 .. 16
Angle deflection [°]	4 .. 12	8 .. 13
Rotatory deflection [°]	45 .. 360	20
Repeat accuracy [mm]	up to 0.02	±0.025
Operating pressure range [bar]	0.5 .. 6.0	1.4 .. 6.2
Weight [kg]	0.4 .. 7.0	0.24 .. 11.7
Advantages/your added value		
Automatic reset 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 optimal 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		●

● = fully supported

SCHUNK Collision and Overload Sensor OPR

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

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

	Rotary Feed-throughs	Stationary Rotary Feed-through
	DDF 2	DDF-SE
		
Product Features		
Continuous 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. tensile force F_z [N]	240 .. 9000	2000 .. 4000
Max. contact 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 variants to choose from **Variant 1:** For the feed-through of pneumatic and electrical signals **Variant 2:** For the feed-through of pneumatics **Variant 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	●	●

	6-Axis Force/Torque Sensors		
	FT-AXIA	**FTN**	**FTD**
		 **NET**	 **DAQ**
IP protection class			
Without IP protection	●	●	●
IP60		●	●
IP64	●		
IP65		●	●
IP68		●	●
Technical Data			
Number of sizes	1	17	17
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 or RS485, 2 calibrations selectable via web interface	**FTN sensor** Evaluation via Ethernet, DeviceNet or CAN, optional PROFINET	**FTD sensor** Evaluation via DAQ card (PCI, USB)
Sizes with different ranges of measurement	1	16	16
High measured-value resolution and fast data transfer 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 with robot applications such as haptics, medicine, grinding, inspecting, joining and research and development		
Ambient conditions (sensor)			
Clean	●	●	●
Slightly dirty	●	●	●
Extremely dirty		●	●
Humid	●	●	●

● = fully supported

	FTE
	
	SI-12-0.12 .. SI-16000-2000
	ECAT interface box (Nano/Mini) or integrated (from Gamma onward)
	0.01 .. 31.8
	±12 .. ±16000
	±17 .. ±32000
	0.12 .. ±2000
	0.12 .. ±2000
	0.003 .. 4
	0.003 .. 8
	0.00001 .. 0.5
	0.00001 .. 0.5
	FTE sensor Evaluation via EtherCAT
	14
	•
	•
	•
	Universally usable with robot applications such as haptics, medicine, grinding, inspecting, joining and research and development
	•
	•
	•
	•

SCHUNK FTN 6-axis Force/Torque Sensor

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.

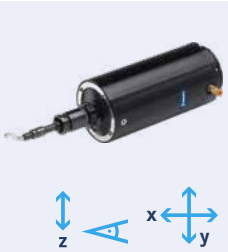
schunk.com/ft

Your benefits:

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

Machining Tools

Robotic Material Removal

	Deburring Tool		Deburring Spindle	
	CDB	CRT	RCV	FDB
				
Product Features				
Pneumatic actuation	●	●	●	●
Technical Data				
Compensation	Axial & Radial	Radial	Radial	Radial
Number of versions	2	1	2	7
Power [W]			250 .. 490	150 .. 1040
Compensation path [mm]	Axial 8 Radial ±7	±8	±7.1 .. ±8.3	±5 .. ±9
Min./max. compensation force [N]	Radial = 25/76 Axial = 13/67	18/62	9/54 .. 7/53	3.1/6.7 .. 28.9/86.7
Idle speed [RPM]		12000	30,000 .. 40,000	25000 .. 65000
Toolholder mounting	Blade holder for deburring tool types B, C, D, E, F	File holder Ø 3-6 mm	Collet chuck ER-11 Ø 6, 8 mm	Collet Ø 3-6 mm
Weight [kg]	1.04 .. 1.09	3.08	1.71 .. 3.36	1.1 .. 3.45
Advantages/your added value				
Compliant high-torque spindle for maximum flexibility for polishing or brushing		●	●	●
Compliant high-frequency spindle for maximum flexibility for polishing or brushing				
Tool rigidity **adjustable via compressed air** for optimal machining in any orientation	●	●	●	●
High speeds for high feed rates			●	●
Locking function for the Y-axis for an oscillating compensation in the X-axis	●	●	●	◑
Flexible use on robot arms or as a stationary unit	●	●	●	●
Field of application				
	Standard solution for flexible, robot-guided and stationary deburring of all sorts of workpieces			
Ambient conditions				
Clean	●	●	●	●
Extremely dirty	●	●	●	●

● = fully supported

SCHUNK Deburring Spindle RCV

The solution for perfect finishing.
Up to 40,000 RPM
Tolerances can be compensated during machining by the oscillating compensation in the X axis.

schunk.com/rcv

	Polishing Spindle		Orbital Sander Tool	Compensation Unit
FDB-AC	MFT	MFT-R	AOV	PCFC
				
●	●	●	●	●
Axial	Axial	Radial	Axial	Axial
1	2	1	4	3
250	390	390		
±4.1	15.4	±7.1	12.7	12
1 .. 25	9.7 .. 45	9.4/70	Extend = 13.3/66.7 Retract = 6.7/33.3	Extend = 85/240 Retract = 18/49
25000	5600	5600	10000	
	Quick-action chuck up to Ø 9.5 mm	Collet chuck DA Ø 6-8 mm	Velcro fastener Ø 125-150 mm	
0.51	3.3	4.42	2.68	3.54 .. 3.63
●				●
	●	●	●	●
●	●	●	●	●
●			●	●
		●		
●	●	●	●	●
●	●	●	●	●
●	●	●	●	●

Your benefits:

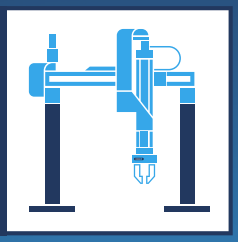
- **Tool rigidity adjustable** via compressed air for clean machining in any orientation
- **Flexible use** on robot arms or as a stationary unit
- **Compliant** in axial or radial direction for simplified robot programming.
- Use of proven **tool inserts for simple automation** of manual machining processes
- **Simple exchange of wearing parts** for maximum system availability and minimum spare parts requirements

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. Optimal 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.

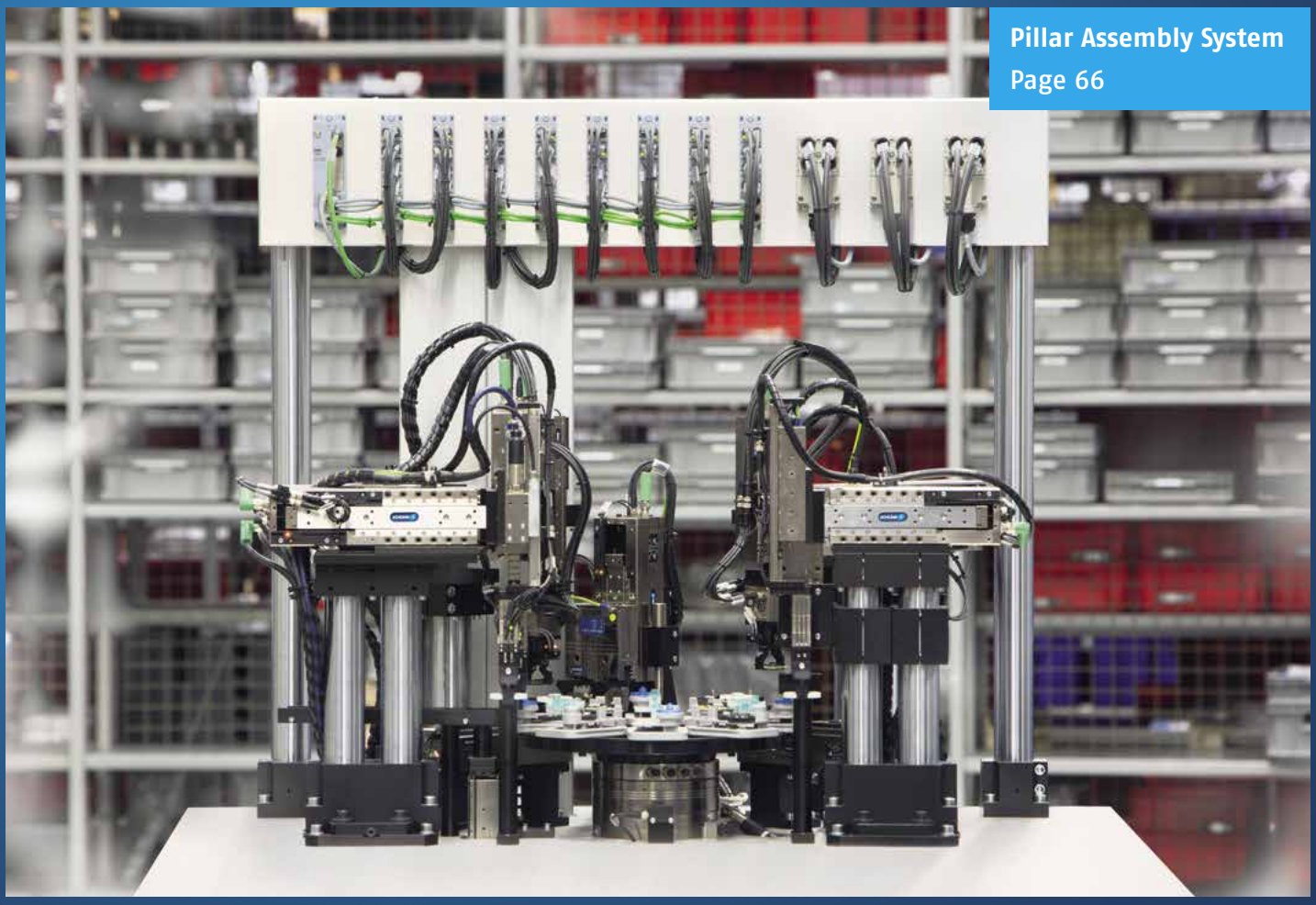
Equipped by SCHUNK



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 System
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Accessories
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Sensor System
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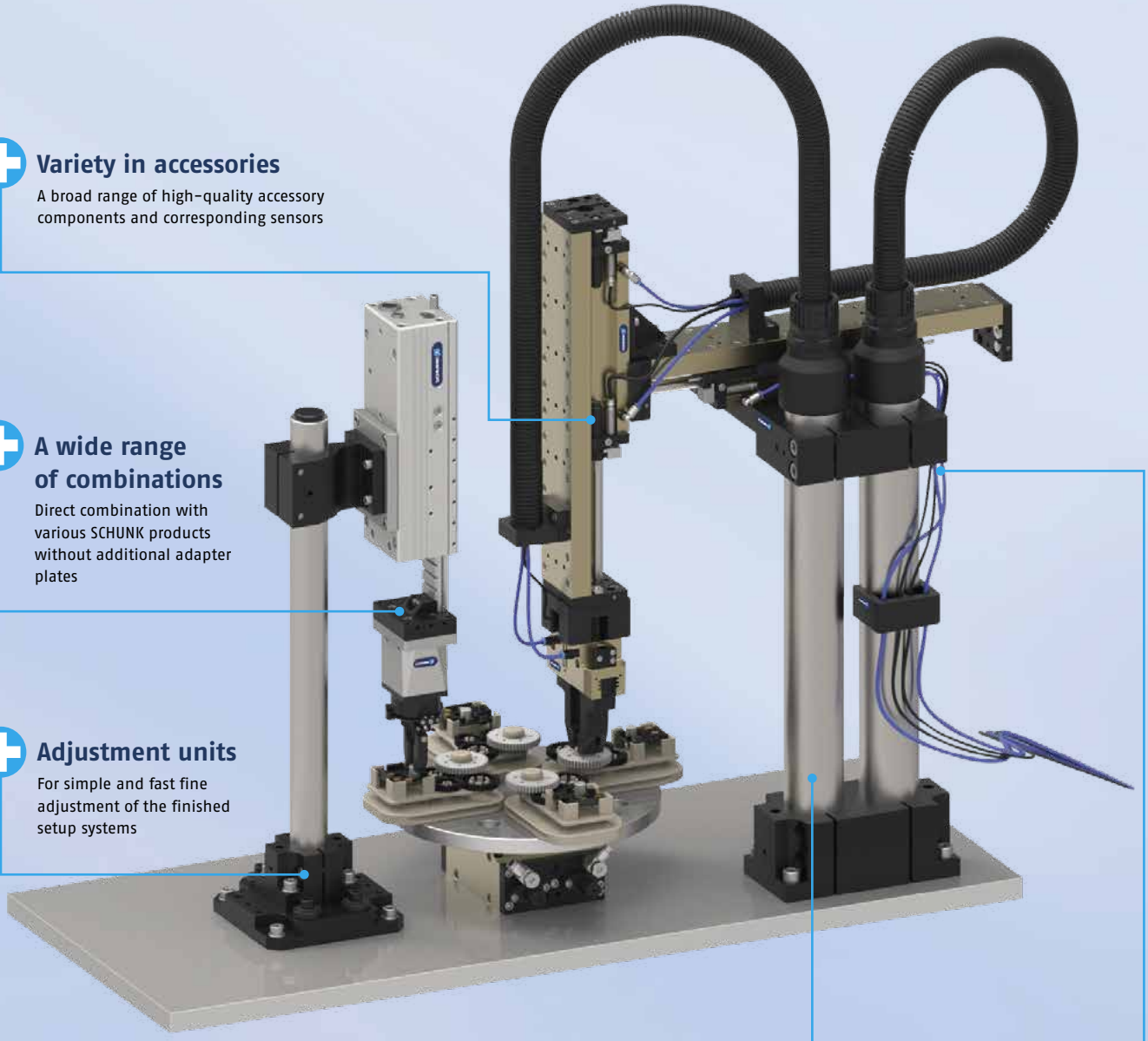
SCHUNK Pillar Assembly System SAS

More than 10,000 Combination Possibilities

100% Flexibility for your Applications



Variety in accessories

A broad range of high-quality accessory components and corresponding sensors

A wide range of combinations

Direct combination with various SCHUNK products without additional adapter plates

Adjustment units

For simple and fast fine adjustment of the finished setup systems

100% flexible

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

Media supply

Simple and fast combinations from the modular system

Content

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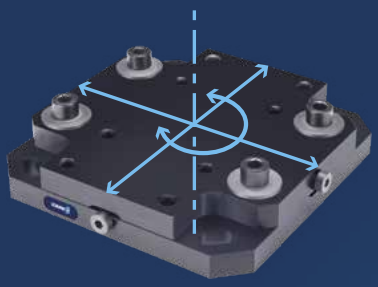
Pillar Assembly System	70
Accessories	74
Sensor System	78

SCHUNK Pillar Assembly System SAS.

Over 10,000 possible Combinations.

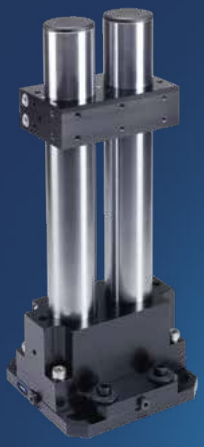
With more than 10,000 possible combinations, SCHUNK offers the world's most comprehensive range of pillar assembly applications. The SCHUNK pillar assembly system allows for a combination of diverse handling modules without mechanical adaptation by means of mounting and centering holes, for an exact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



1 Adjustment Unit VEH

For easy fine adjustment of the finished assembly

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



2 Pillar Assembly System

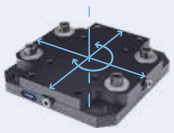
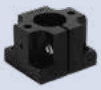
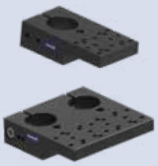
High level of precision despite high modularity and flexibility

- Three 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	Steel, hard-chromium plated	Aluminum, hard-anodized
Description	The adjustment unit simplifies mechanical adjustment of complete handling systems	The base support is the base used for the pillar assembly system and can be directly mounted onto a firm surface	The base support is the base used for the pillar assembly system and can be directly mounted onto a firm surface A 2-pillar assembly can be mounted with the 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 high-precision	• Robust and high-precision	• Robust and high-precision • Weight-optimized due to hollow profile • Can be used as a hose and cable channel	• Robust and high-precision • 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	Horizontal Mounting Plates	Vertical Mounting Plates	Axial Mounting Plates	Adjustment Ring	
	APEV/APDV	AMEH/AMDH	AMEV/AMDV	APDA/APEA	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 attaching customer-specific structures or other automation components vertically	For attaching customer-specific structures or other automation components vertically	For attaching customized structures or other automation modules vertically	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	

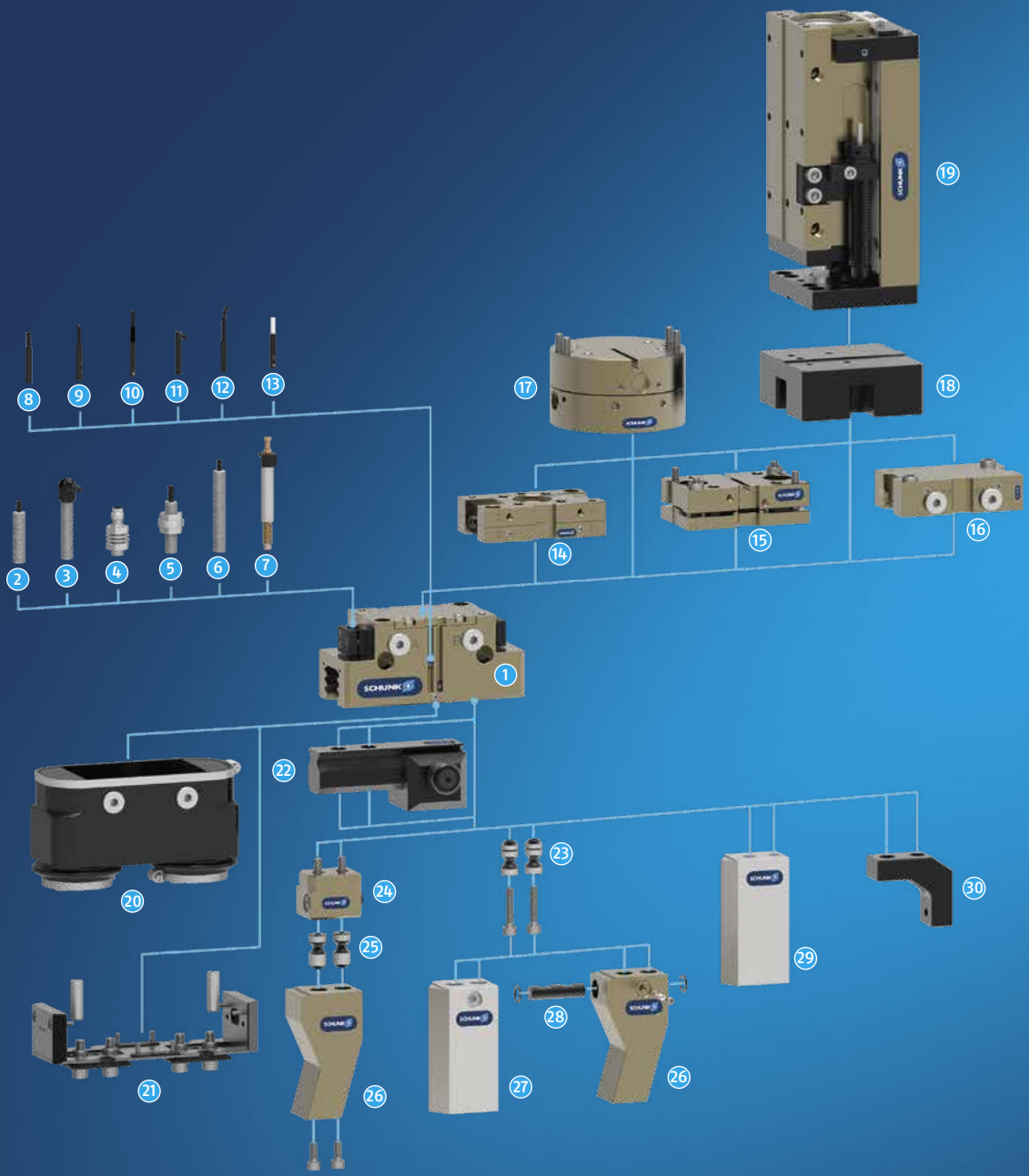
● = highly suitable/fully supported ○ = suitable to a limited extent

			Media Routing		
	Cross Connector	Mounting Plate	Mounting Clip	Hose Routing	Hose Routing
	KVB	MPL	MFC	SPL/MFB/MFS	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 routed via the media channels 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 attachable • 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 PGN-plus universal gripper features a large number of variants and a superior range of accessories offering everything needed for flexible use in your specific automation application. For each kind of application and handling requirement – including under extreme conditions.



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 laberal cable outlet

4 **IN-C 80**
Inductive proximity switch, directly plugable

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

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

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

8 **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

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

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

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

11 **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

12 **MMS-P**
Magnetic switch with straight cable outlet for monitoring two freely programmable position

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

Complementary Products

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

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

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

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

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

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

20 **HUE**
Sleeve for protection against dirt

21 **SAD**
Dustproof version, retrofit kit

Finger Accessories

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

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

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

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

26 **Customized fingers**

27 **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

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

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

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

Accessories

Grippers

	Finger Accessories			
	ABR/SBR	BSWS-B/-A	BSWS-M	ABR/SBR-BSWS
	 29	 24 25		
Jaw quick-change system		●	●	●
Adjustable intermediate jaw				
Top jaws blank	●			●
Pressure maintenance valve				
Protective cover				
Field of application	For quick and easy creation of top jaws by adding the clamping contour	With highly diverse work-pieces for quick jaw changes with any clamping contours	With highly diverse work-pieces for quick jaw changes with any clamping contours	With highly diverse work-pieces for quick jaw changes with simple clamping contours
Descripton	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 one base and two adapter pins. The form-fit locking mechanics ensures fast exchange of the gripper fin-gers. No tools are required for the change	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	• By using the BSWS-M, just one single gripper is necessary for various applications • Tool-free jaw change via the unlocking button • Saving time when convert-ing applications	• One gripper can be used universally in various applications • Quick and easy for high flexibility • Firm up to the max. load-ability of the base jaws • Matching finger blanks for commonly used gripper types • Clamping contour can be machined rapidly and easily

● = well suited/fully supported

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

	Complementary Products		
BSWS-AR/-UR	UZB	SDV-P	HUE
			
23 28	22	16	20
•			
	•		
		•	
			•
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	• Tool-free 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 • Variant SDV-P-E-P available for direct mounting on SCHUNK grippers	• 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, PGN-plus-P, PZN-plus, DPG-plus and DPZ-plus
- The compensation paths in X/Y directions are 2 to 4 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
	 8		 2		 9
Ambient conditions					
Clean	●	●	●	●	●
Slightly dirty	●	●	●	●	●
Extremely dirty	●			●	
Technical data					
Number of sizes	1	1	10	2	1
Operating principle	Magnetic	Magnetic	Inductive	Reed	Magnetic
IP protection max.	67	67	67	67	67
Supply voltage [V DC]	24	24	24	24	24
Max. current on contact [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			●		

● = highly suitable/fully supported

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 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
	 12	 5		 7	 6	 13
	●	●	●	●	●	●
	●	●	●	●	●	●
	1	3	1	1	1	1
	Magnetic	Magnetic	Magnetic	Mechanical	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. Contactless. Easy assembly.

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

schunk.com/in

Your benefits:

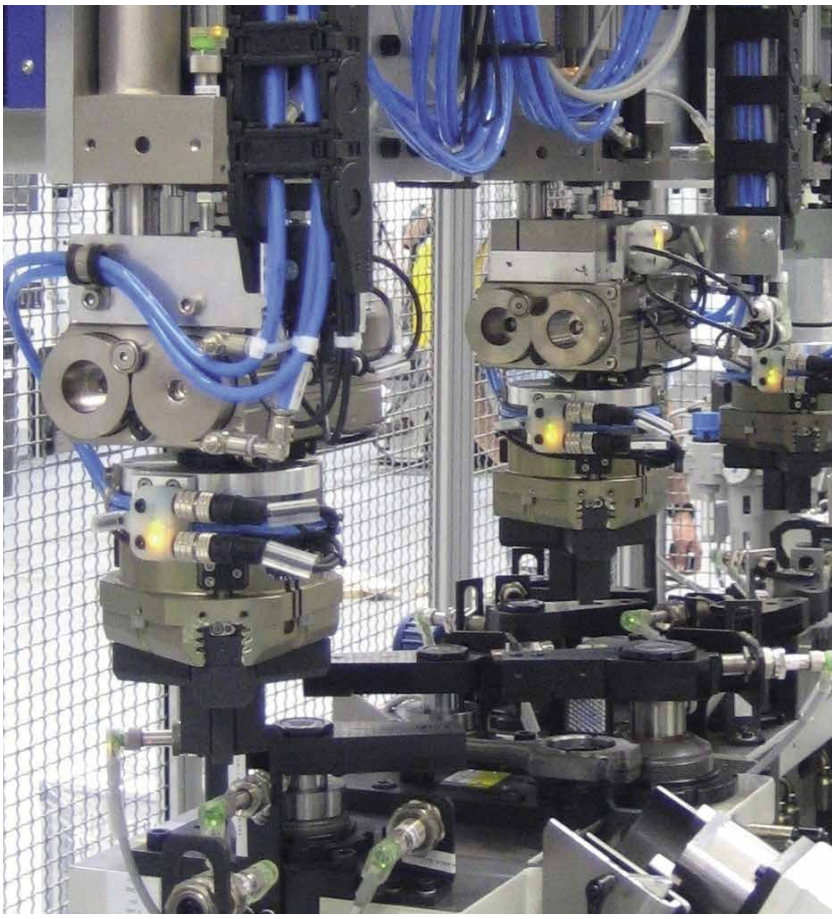
- **Bracket mounting** for easy and fast assembly
- **Version with LED display** for checking the switching status directly at the sensor
- **Version with plug connector** for fast and easy extension cable replacement
- **Highly flexible PUR cable** for a long service life and resistance against many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

Automated Handling

Automotive Industry

Task: To move conrods using a transfer system.

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

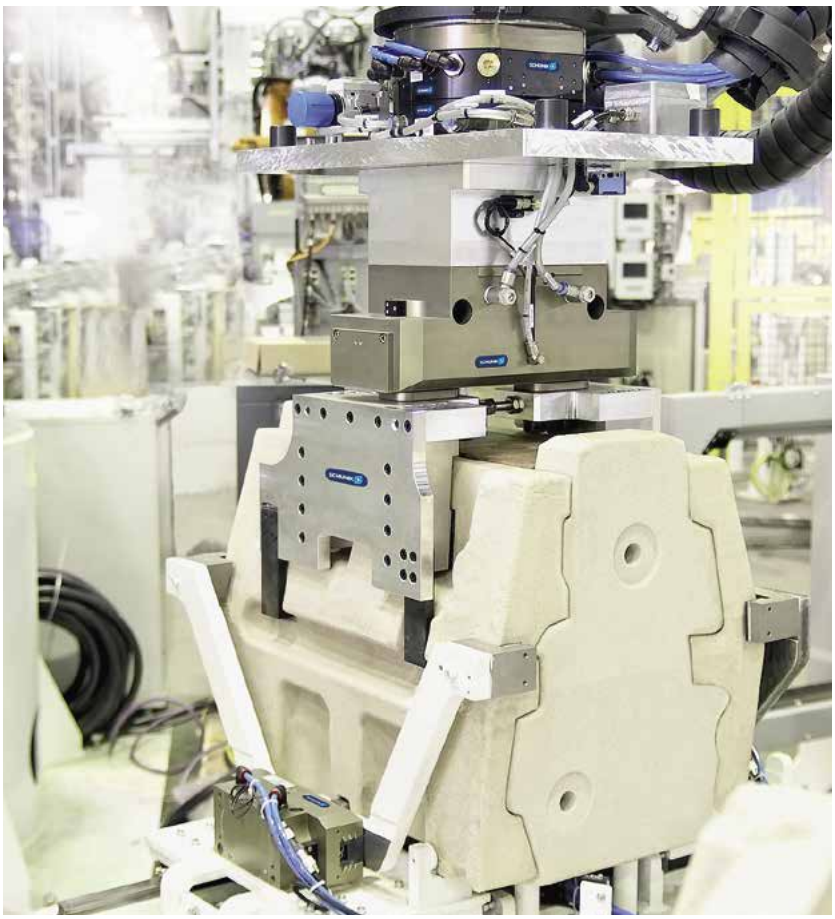


Handling of Sand Cores

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 universal grippers PGN-plus SD ensures a safe and precise hold. The SCHUNK gripping systems are designed for carrying loads up to 200 kg, depending on the application.

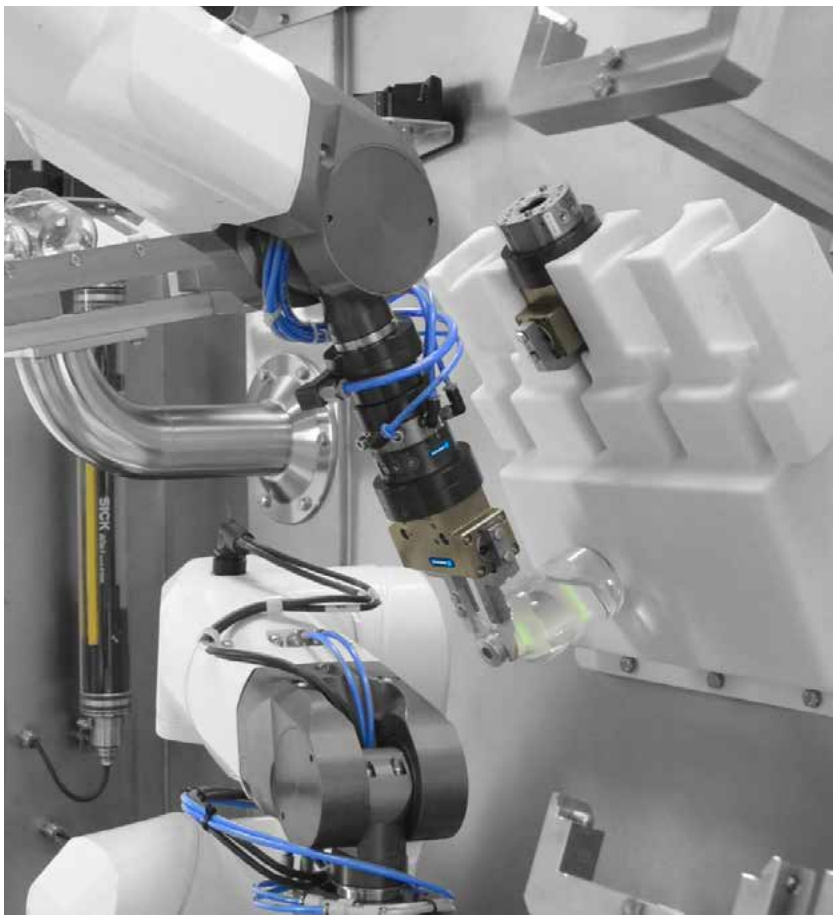


Handling Plastic Gears

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 system come individually designed for use. As well as grippers for small components such as the SCHUNK MPG-plus.



Handling and Preparation of Pharmaceuticals

Life Science

Task: Reliable gripping of different containers during the preparation of pharmaceuticals.

Solution: A robot with a change system SCHUNK SWS is used for fully automated preparation of medications. Depending on the requirements and task, the robot changes flexibly to the appropriate gripper, such as the DPG-plus. In this way, patient-specific preparations or small and medium-sized series can be realized.

Handling of Hinge Parts

Metal Industry

Task: Hinge parts must be reliably transferred to the workpiece holder 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 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 load it with a raw part. Finish-machined parts are deposited on a pallet, raw parts are gripped from a pallet.

Conrod Handling

Automotive Industry

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

Solution: An especially developed connecting rod 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, the same drive can be used as for the axis system. This creates a consistent drive concept.

Handling and Holding of Blood Collection Tubes

Life Science

Task: Gripping and holding of sensitive blood collection tubes during the untwisting process.

Solution: During automated sample taking, the gripper for small components SCHUNK EGP picks up and centers the blood collection tube. The gripper reliably holds the sensitive plastic tube while the screw cap is being opened, so that it cannot rotate with the cap.

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