New

PGN-plus Permanent.
With Permanent Lubrication.



Superior Clamping and Gripping

SCHUNK®

Gripping Meets Industry 4.0

Intelligent Gripping Technology for smart Production Processes





Superior Clamping and Gripping

Jens Lehmann stands for precise gripping, and safe holding. As a brand ambassador of the SCHUNK team, the No. 1 goalkeeper communciates our global competence leadership for clamping technology and gripping systems. The top performance of SCHUNK and Jens Lehmann are characterized by dynamics, precision, and reliability.

For more information visit our website:
www.gb.schunk.com/Lehmann

Jens Lehmann



Henrik A. Schunk Kristina I. Schunk, brand ambassador Jens Lehmann, and Heinz-Dieter Schunk

Top Performance in the Team

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

In order to boost efficiency, SCHUNK customers have bought more than 2,000,000 precision toolholders, 1,000,000 SCHUNK grippers, and 100,000 lathe chucks and stationary workholding systems so far.

This makes us proud and motivates us to attain new top performances.

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

Our customers profit from the expert knowledge, the experience and the team spirit of more than 2,300 employees in our innovative family-owned company.

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

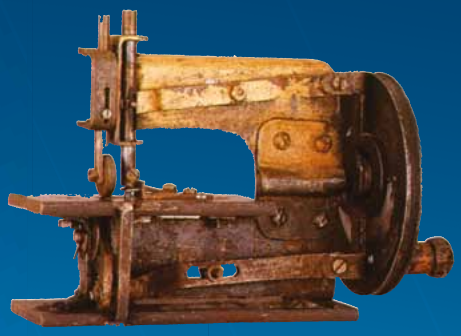
Heinz-Dieter Schunk Henrik A. Schunk Kristina I. Schunk

70 Years of SCHUNK – From a workshop to a global player

1945 Foundation

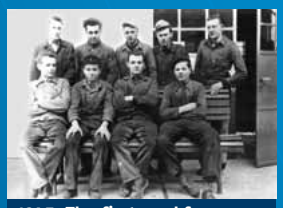


Friedrich Schunk
Company founder



The lampshade perforating machine – an innovative development by Friedrich Schunk

1945 – 1970 Early years



1945 The first workforce



Precision parts production for the Porsche 356



SCHUNK becomes the first standard chuck jaw provider in Germany



1964 Heinz-Dieter Schunk joins the company

1971 – 1990 Setting the course

PPG – First pneumatic SCHUNK gripper



PGN Pneumatic 2-finger gripper



TENDO Hydraulic expansion toolholders



1991 – 2000 "Taking off"

PGN-plus First grippers with SCHUNK multi-tooth guidance



MPG The new benchmark in pneumatic small parts handling.



Workholding Technology product area





1992 Morrisville plant, NC USA

2001 – 2005 Growth



SDH – First SCHUNK 3-finger gripping hand



Linear Modules product area



TRIBOS-Mini Polygonal clamping technology for micro machining

70 Years

SCHUNK

With Pioneering Spirit and Perfection we are setting Benchmarks worldwide

The challenges that our innovative family-owned company has overcome over 70 years of working with clamping technology and gripping systems are reflected in our top-quality products and technical innovations. They stand as milestones which document our development from a small garage business into a global player with more than 2,300 employees.

They are the result of ambition, courage and the work of many highly motivated contributors with team spirit and incredible dedication to the company. We owe our success to the confidence and trust placed in us by our customers. Their appreciation spurs us on every day to do our best. And this goes for the future as well.

2006 – New horizons 2008



Integrated PRL gripping arm module in the Care-O-Bot®



2008 First Expert Days of Service Robotics



JGP
SCHUNK
Compact class



Magnetic Clamping Technology product area

2009 – Expansion 2011



Powerball Lightweight Arm LWA 4P



2009 New building of the Hausen gripping systems plant



EGP
The most powerful electronic small component gripper with integrated electronics



Launch of VERO-S Quick-change pallet system

2012 – Superior Clamping and Gripping 2015



PGN-plus
Permanent
with permanent lubrication



SVH
First mass production
5-finger hand
with 9 motors



First certified EGN safety gripping system



Care-O-Bot® 4

Awards!

With a pioneering spirit and perfection we create the developments in clamping technology and gripping systems. Highly recognized and coveted awards, and prizes honor the excellent performance of our company, as well as our SCHUNK team.
We are pleased that we can set benchmarks with our full commitment. We want to take this opportunity to say thank you for the multiple recognitions – at national and international levels.



Dr. Rudolf Eberle Prize
1986 Gripping Systems

EuroMold Award
1998 TRIBOS
2002 SINO-T

Advertising Excellence Award
2002 SCHUNK „Power"-Advertising

iF product design award
1999 TRIBOS
2004 ROTA THW plus
2004 SRU
2005 TANDEM PZS
2009 ZENTRICO THL plus
2011 PHL
2012 ROTA NCL
2015 EGS

Junior Chamber Prize
2005 Junior Chamber Prize
2008 Junior Chamber Prize

Technology Award "Tech-Stars"
2006 3-Finger Dextrous Gripper Hand

Enterprise Medal of the State of Baden Wurttemberg
2006 Heinz-Dieter Schunk

A & D Best Product Award
2007 System GEMOTEC

Industry award
2008 Machine building:
Gripper with spindle interface
2008 SWS-I-011
2010 PPU-E
2012 EGP 40 (BEST OF 2012)
2013 NSR (BEST OF 2013)



MM Award to the AUTOMATICA
2008 Dextrous Hand SDH-2
2010 MPG-plus
2012 Powerball Lightweight Arm LWA 4P
2014 SCHUNK Safety Gripping Systems



German Machine Tool Industry Award
2008 Heinz-Dieter Schunk

Process Innovation Award
2009 UNIPLACE

KE Konstruktion & Engineering
2009 PPU (November 2009)
2010 CFK (August 2010)



Engelberger Robotics Award
2010 Heinz-Dieter Schunk



Bosch Global Supplier Award
2011 / 2012 SCHUNK GmbH & Co. KG



Preferred Supplier of the Bosch Group
2012 SCHUNK GmbH & Co. KG
2013 SCHUNK GmbH & Co. KG



Training Company of the Year Federal Metal Association
2011 SCHUNK GmbH & Co. KG



red dot award
2013 Powerball Lightweight Arm LWA 4P



Founder's Prize of Baden Wurttemberg Savings Bank Finance Group
2013 Heinz-Dieter Schunk



MM Innovation Award – Milestones of industrial History
2015 SCHUNK GmbH & Co. KG

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SCHUNK



A class of its own. The new SCHUNK PGN-plus Permanent Universal Gripper. Now with Permanent Lubrication.

The new SCHUNK PGN-plus Permanent universal gripper with unique permanent lubrication combines innovative technology with SCHUNK gripping technology that has proven its effectiveness 100,000 times over. It is based on the SCHUNK PGN-plus with multi-tooth guidance, which is the market-leading, premium product. With technological perfection and unique precision because of its multi-tooth guidance, the SCHUNK PGN-plus sets the benchmark for pneumatic universal grippers. Never before has a gripper been so precise as with the superior multi-tooth guidance from SCHUNK. Now, SCHUNK has provided the multi-tooth guidance contour with continuous grease pockets. These ensure a continuous supply of grease and ensure that an even lubricant film is created rapidly, even with short strokes.

With the new PGN-plus Permanent, SCHUNK is now optimizing the benchmark for pneumatic universal grippers, and making existing products even better.

The effect: Permanent lubrication increases the already long life span of the SCHUNK perennial and makes it practically maintenance-free.

Your advantages with the new SCHUNK PGN-plus Permanent:

- **Rapid and even lubricant distribution even with short strokes**
- **Reduced total cost of ownership (TCO)**
- **Permanently higher performance**
- **More compact, efficient systems**
- **Continuously reliable and robust**

Patentierte Präzision!
Patented Precision!
Vielzahnführung
Multi-tooth guidance

More information about the SCHUNK PGN-plus Permanent on Pages 36 and 37

SCHUNK Grippers.
Proven since 1983.

SCHUNK offers the most extensive range of grippers in the world. Standard grippers, ready-to-install gripping system assembly groups and an extremely wide range of customer-specific special gripping systems – for your handling and assembly, automation and robot requirements. You benefit from our 30 years of expertise in gripping solutions.

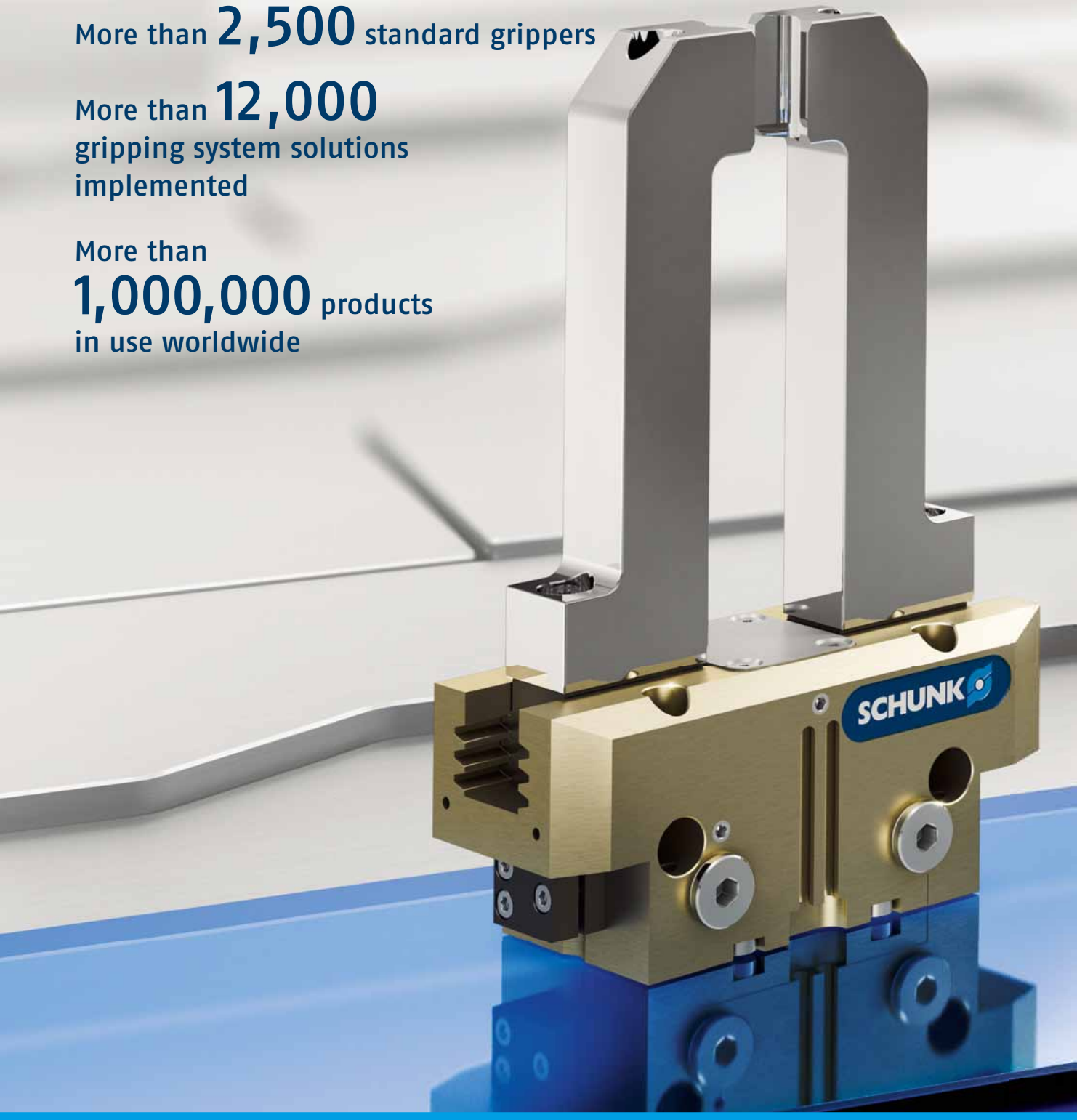
Universal.

The pneumatic SCHUNK PGN-plus Permanent Gripper
Page 36

More than **2,500** standard grippers

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

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

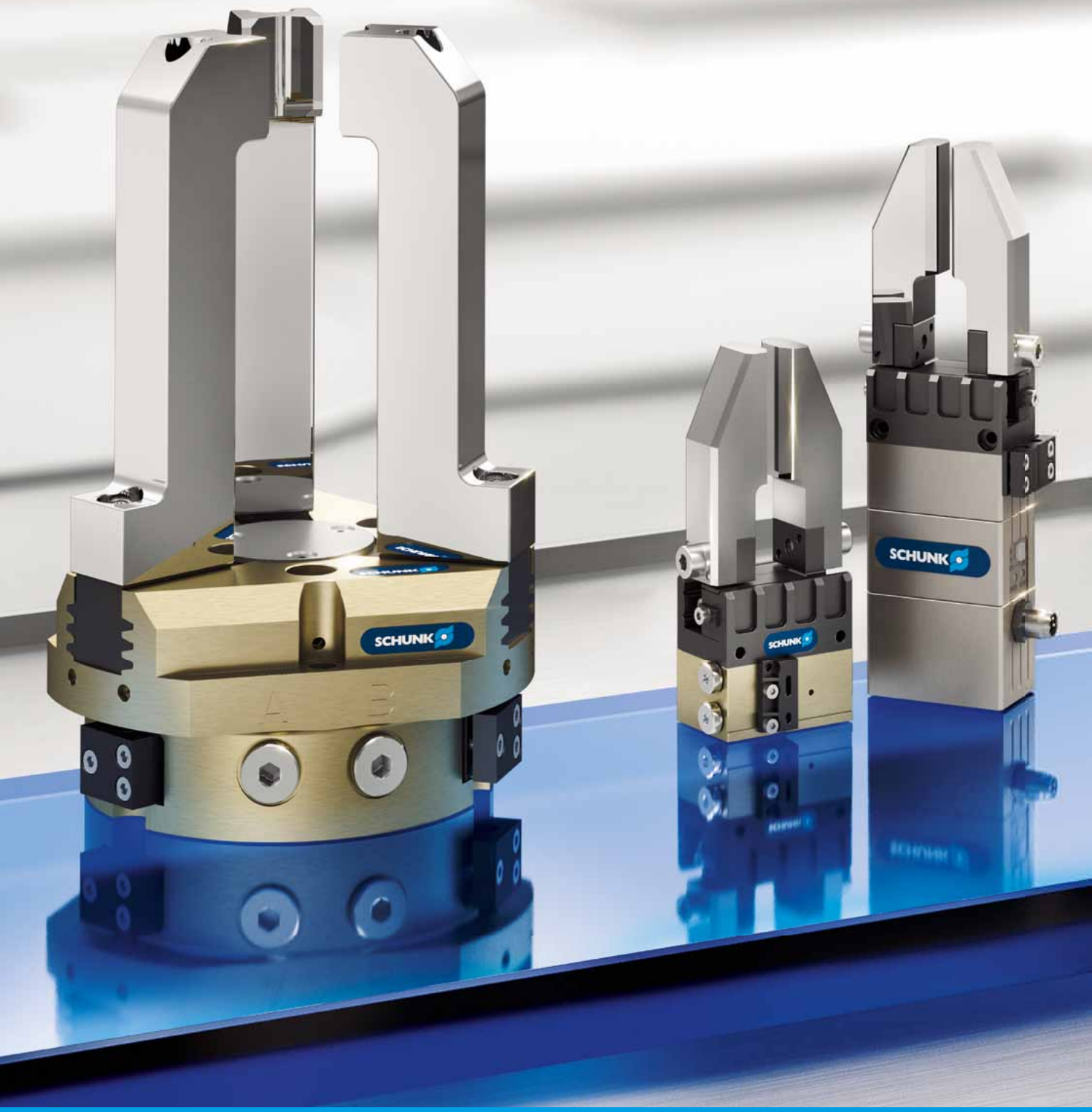


Heavy duty.

The pneumatic SCHUNK
PZN-plus Gripper

Miniature.

The pneumatic SCHUNK
MPG-plus gripper and the
electric SCHUNK EGP Gripper





Long stroke.

The electric
SCHUNK EGA Gripper



Intelligent.

The electric SCHUNK EGL Gripper

Variety in perfection.

You have the requirement, we have the gripper for any handling procedure. Whether pneumatic or electric – SCHUNK represents efficiency and precision in handling. We offer the perfect gripper for any kind of application, with previously unparalleled flexibility.

Choose from a wide range of high-quality accessory components that SCHUNK offers for its grippers. In this way, you can perfectly equip your SCHUNK gripper for your individual application. Combine different options without compromises.

We offer the right solution even under exposure to particular environmental influences such as temperature, contamination or corrosive substances, and equally for clean room or explosive environments.

SCHUNK Grippers.
Technology delivers the Benefits.

Force, precision, and variety – pneumatic and electrical.

The patented SCHUNK multi-tooth guidance makes it possible to achieve the highest possible gripping forces, a large moment and power absorption as well as precise handling in a reliable process. Only the SCHUNK gripper range with multi-tooth guidance offers the unique long-life warranty* for precision, robustness, and reliability throughout the full life of the gripper.

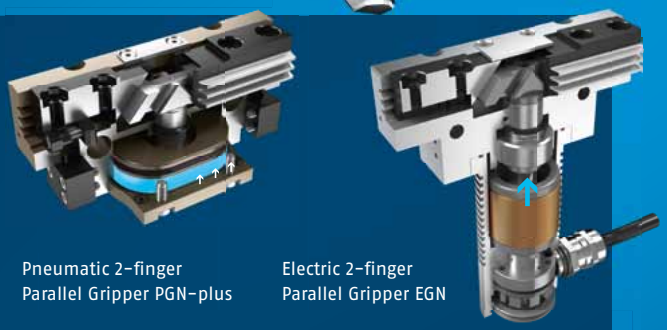


Up to 30% longer gripper fingers – due to higher torque absorption

The multi-tooth guidance allows the use of longer gripper fingers at the same gripper size, without overloading the guides.

Maximum force

Due to the large surface of the oval piston the PGN-plus achieves the maximum force in the existing, compact installation space. In proportion to the gripper size, this allows optimal utilization of the force.



Pneumatic 2-finger Parallel Gripper PGN-plus

Electric 2-finger Parallel Gripper EGN

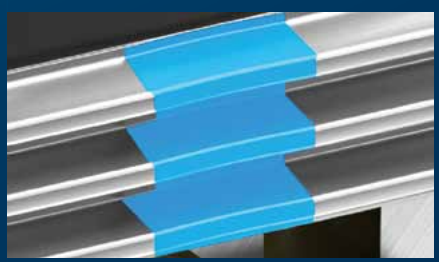
Maximum controlled production

Multi-tooth guidance allows a larger angled surface and therefore reduced surface pressure for the reliable and controlled transfer of force to the base jaw, with minimum wear.



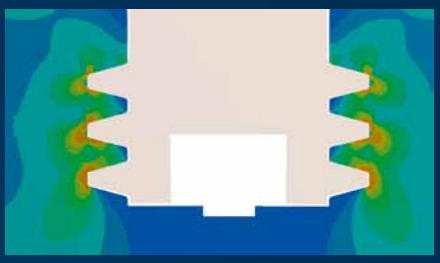
Highest service life since lubrication pockets are integrated into the robust multi-tooth guidance

Consistent lubrication pockets ensure permanent supply of lubricant. At the same time, they allow a fast and even formation of lubricant oil, even with short strokes.



Higher load capacity – due to multiple guiding surfaces

The principle of the patented SCHUNK multi-tooth guidance reduces the surface pressure by distributing the load onto several parallel prismatic guides.



For every requirement

Reliable special versions offer the matching pneumatic or electric gripper for every type of application. In case of particular environmental influences, such as temperature, contamination, or corrosive substances as well as cleanroom applications or in explosive environments.



Dust protection

For use in dusty environments. Zero dust versions with increased protection level against penetrating substances for absolute reliability.



Cleanroom

PGN-plus in the standard version is certified according to EN ISO 14644 cleanroom class ISO 5, with protective cover HUE also for standard use in cleanroom class ISO 2.



Explosion-proof version EX

All premium products from SCHUNK are also delivered with an ATEX certificate as standard.



Customized protective covers

For use in high-temperature areas, such as for welding.

Variety in accessories

SCHUNK provides a wide range of high-quality accessory components for its grippers. It goes without saying that this range of products includes the appropriate sensor systems, as well as efficient micro-valve technology for shorter cycle times and low energy input.



Coordinated accessories

e.g. ABV micro valves
Shorter cycle times with reduced pneumatic energy consumption.



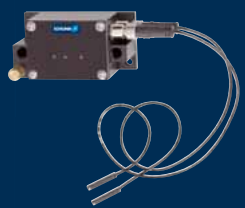
Sensor systems | Position monitoring

e.g. MMS magnetic switch
With one switching point. No interfering contour.



Sensor systems | Multi-position monitoring

e.g. MMS 22-PI magnetic switch
With adjustable hysteresis. Optionally two programmable switching points.



Radio sensor systems

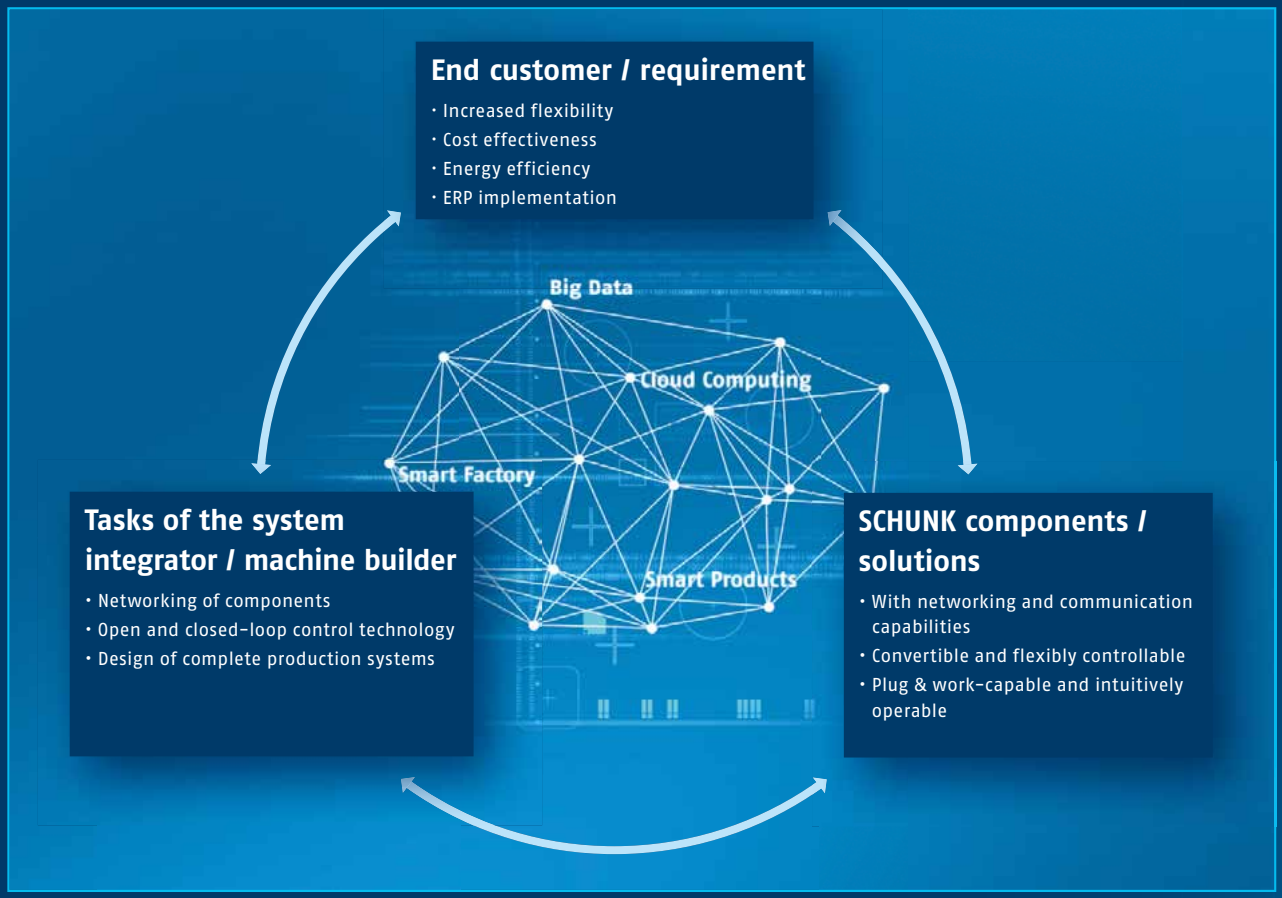
RSS wireless monitoring system
Wireless sensor system for monitoring the signals and states of sensors and processes.

The Mega Trend of Industry 4.0

The term "Industry 4.0" represents an as yet incompletely perceived change in existing production structures and markets. This is because the intermingling of production and information technology within networked factories is creating new forms of wealth creation.

SCHUNK already allows its customers to achieve full potential. Reduction in production costs and set-up times as well as providing efficient, intelligent, mechatronic components from the world's largest product portfolio. This is also our objective for Industry 4.0. With SCHUNK Synergy, the perfectly matched interplay between clamping technology and gripping systems, we are showing our customers new approaches to designing more efficient and automated production processes. Even today, intelligent SCHUNK components with networking capability provide the basis for flexible production automation. Of course, in close cooperation with machine builders or system integrators, it goes without saying.

Industry 4.0 Networking

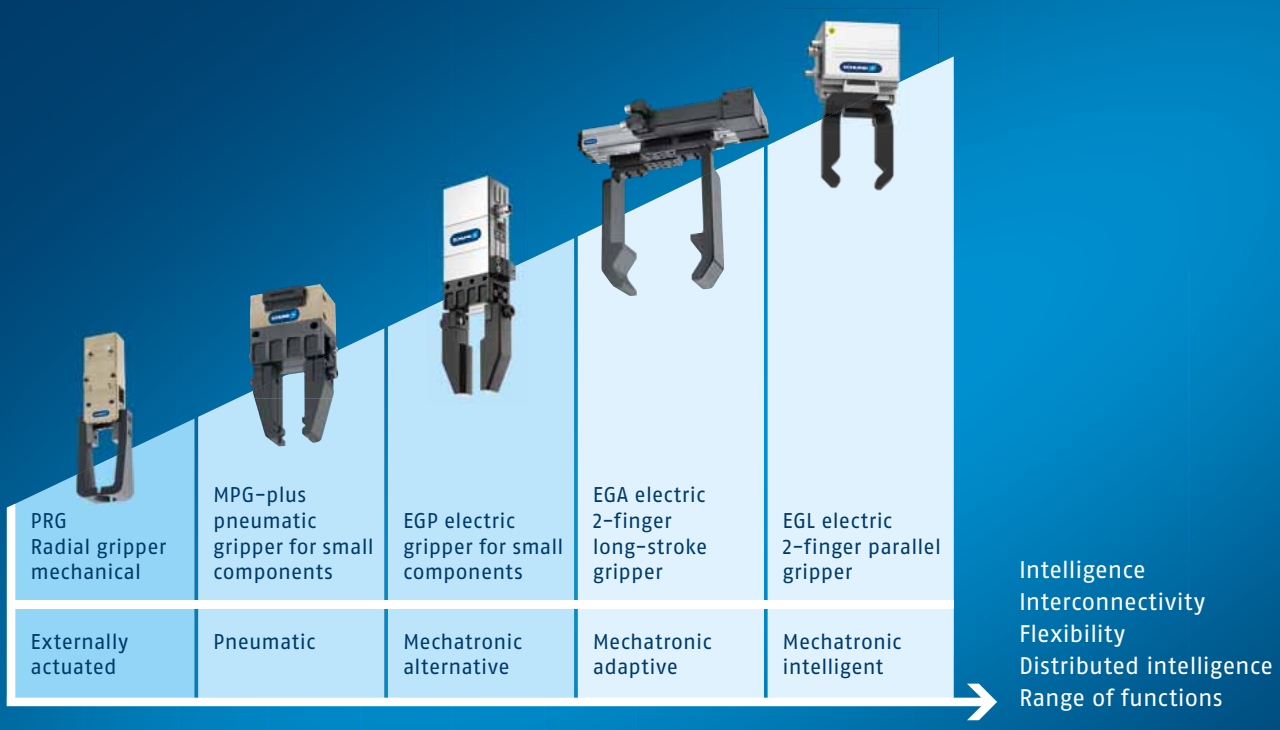


Sustainable Clamping Technology and Gripping Systems

SCHUNK components achieve more than one task. They supply information. As a partner for end customers, system integrators and machine builders, SCHUNK offers the widest product range for robots and handling solutions capable of delivering information and networking, i.e. Industry 4.0-ready.

The properties are clearly adapted to the needs of industry:

- **Flexibility**
  Freely positionable SCHUNK components that are quick and intuitive to adjust.
- **Communication / interface**
  SCHUNK components offer a wide range of communication interfaces for networking.
- **Distributed / integrated intelligence**
  In this context, SCHUNK is pushing ahead with future topics such as IO-Link and NFC.
- **Mobility**
  Energy-efficient drives and components developed with an eye to lightweight construction establish important basic preconditions.
- **Mechatronization**
  Components can be used extremely flexibly, allowing a large number of intelligent functions.
- **Human / machine interaction**
  SCHUNK components for intuitive start-up by simple configuration.
- **Safety**
  Functional safety through certified, safe SCHUNK components.
- **Quality assurance monitoring**
  SCHUNK components deliver precise information for quality assurance and for monitoring system parameters and process data.
- **Conversion capability**
  Adaptation of the SCHUNK component to the customer's requirement. You benefit from the ability to configure variants right through to complete customer-specific solutions.



Industry 4.0 – Smart Production Processes by using SCHUNK Components

This Industry 4.0 cell shows by way of example how a basic carrier with a gear and a circuit board are assembled to make an assembly group. Here, SCHUNK components with networking and communications capability form the basis for flexible production automation, together with convertible, flexibly controllable SCHUNK actuators. Together with plug & work-capable, intuitively operable concepts, they offer maximum flexibility for networked production.



Pick & Place Assembly Stations

With standardized pick & place units and modular assembly components

1 Mechatronic – Alternative

1:1 pneumatic replacement by alternative mechatronic SCHUNK components



EGS gripping swiveling unit Page 46

- Gripping force (15 and 30 N) and angle of rotation (40–290°) can be set directly on the module
- Control via 4 digital inputs and 24 V DC



EGP Safety 2-finger gripper for small components Page 38

- Certified functional safety with performance level d / SIL 3
- Maintenance of gripping force by safe operating stop (SOS)
- Inner and outer lock in one gripper

2 Pneumatic

SCHUNK sensors make pneumatic components ready for Industry 4.0



MPG-plus 2-finger gripper for small components with SCHUNK MMS-A analog magnetic sensor and IO-Link Page 88

- Non-contact analog position monitoring of the gripping stroke
- Differentiation between workpieces in the gripping process
- Convenient teach-in within a matter of seconds
- IO-LINK in preparation

Inspection and Quality Control Station

SCHUNK components: Linear motor axes with pillar assembly system, torque motor and mechatronic gripper

3 Mechatronic – Intelligent

With intelligent mechatronic SCHUNK components towards the smart factory



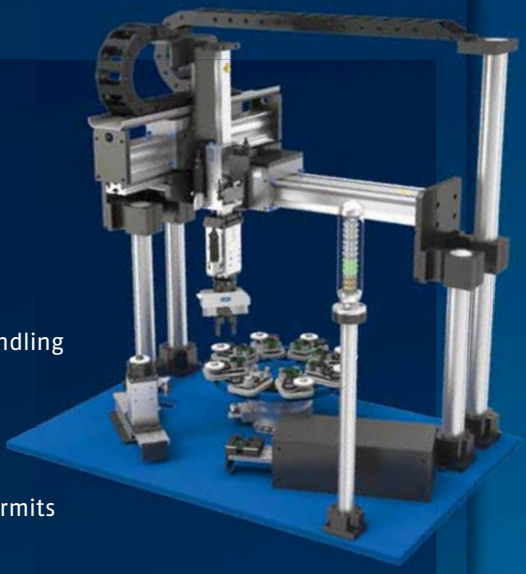
ELB linear module

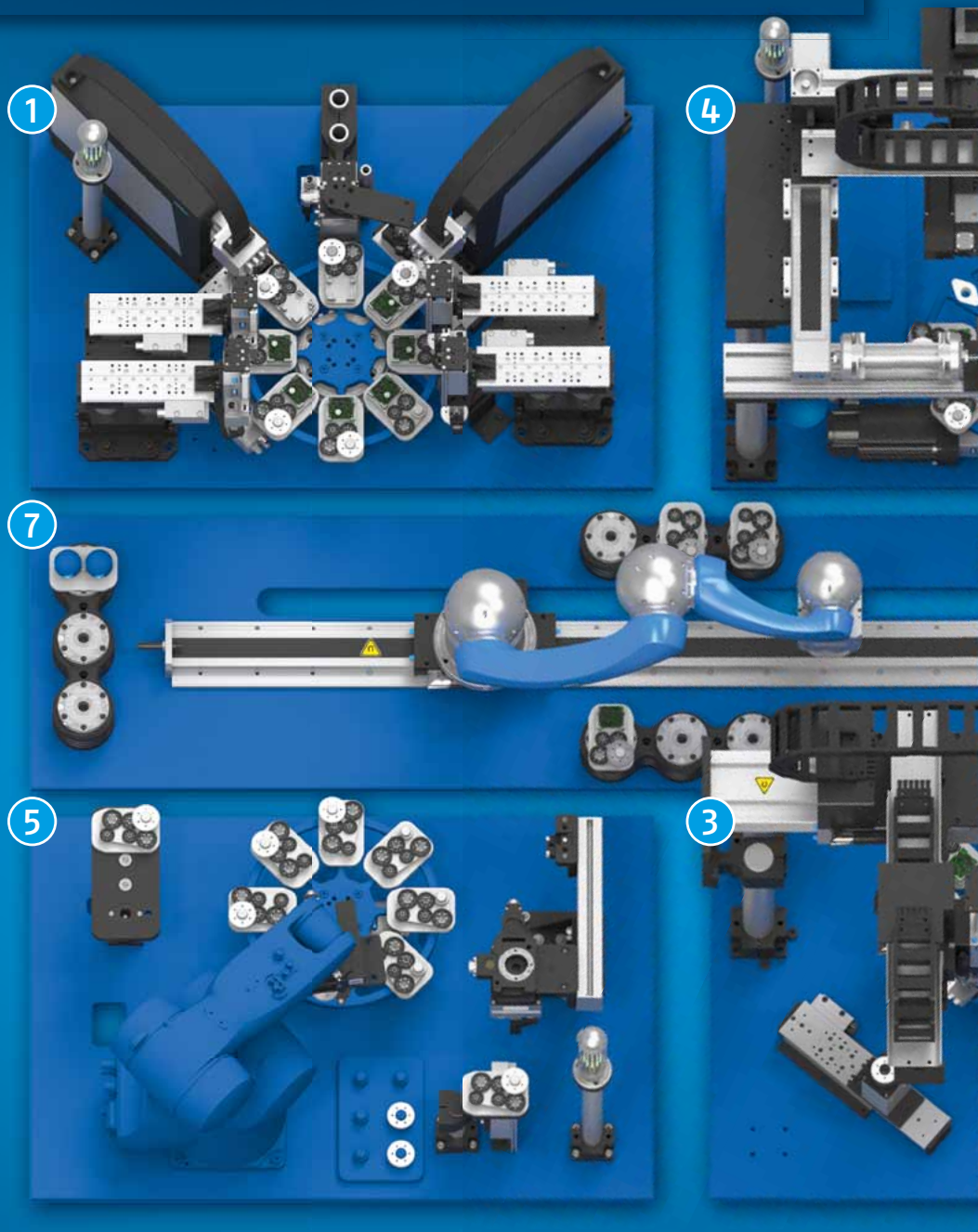
- Absolute or incremental stroke measuring system
- Flexible setting of position, speed and force for handling various workpieces



WSG sensitive 2-finger parallel gripper Page 44

- Sensitive actuator with force-measuring fingers permits integrated quality control in the handling process
- Integrated intelligence and Ethernet interface





Experience SCHUNK Industry 4.0 applications live on the Internet

www.gb.schunk.com/industry4.0

Packaging Station

SCHUNK components: RPE room gantry with pillar assembly system, rotary table with mechatronic turning unit



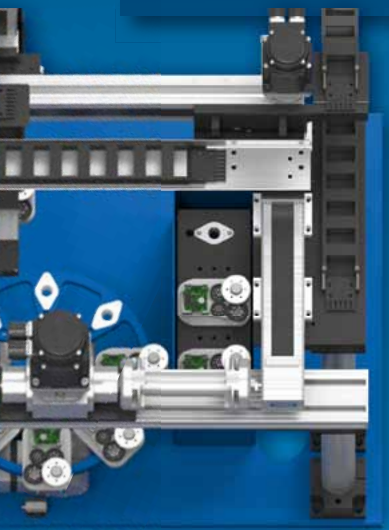
4 Mechatronic – Adaptable

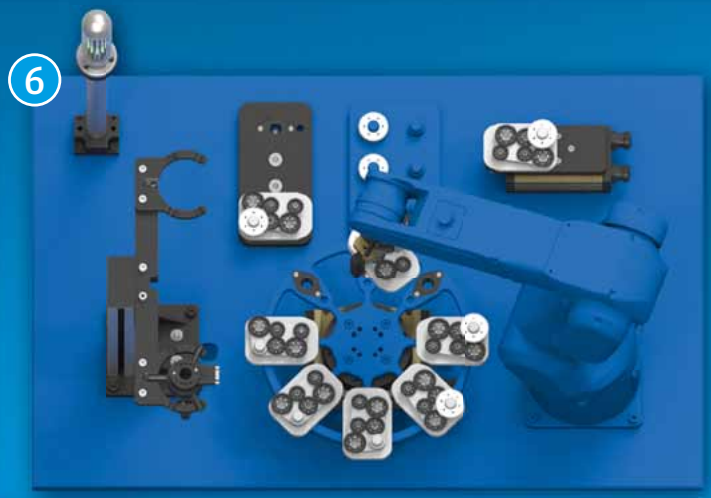
Adaptable mechatronic SCHUNK components permit networked, flexible production

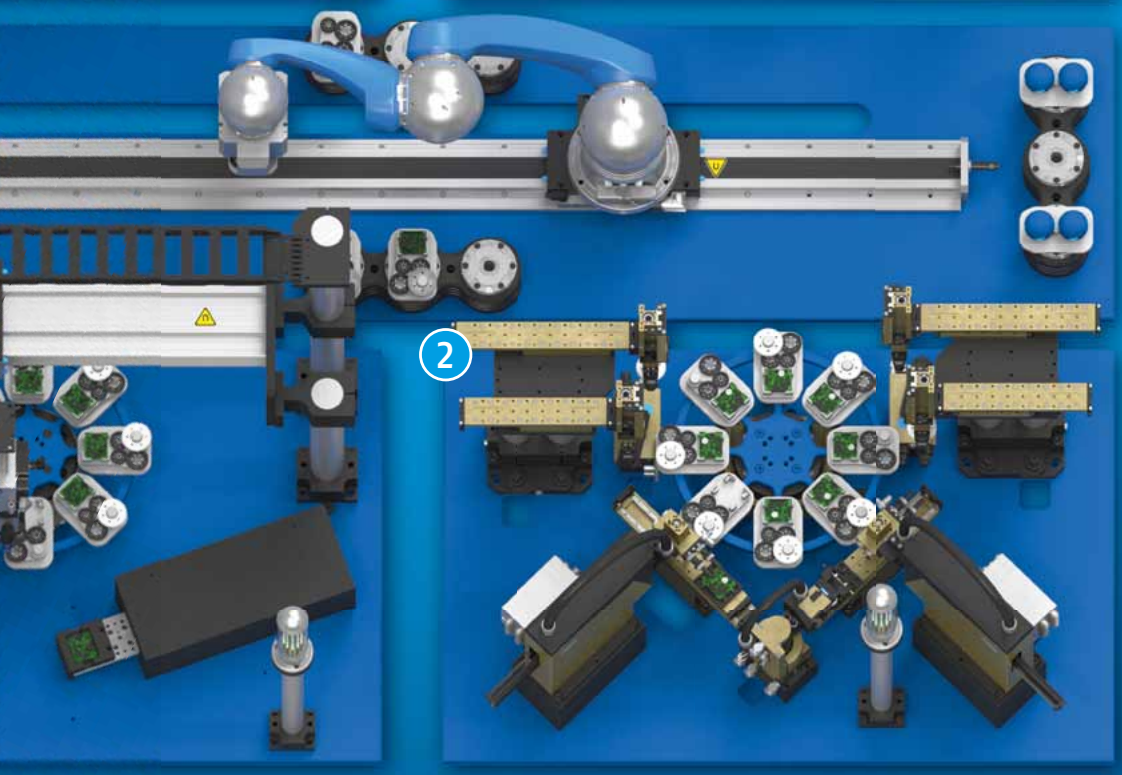


EGA long-stroke gripper Page 82

- Use of all current servo motors and controllers
- Use of process data for integrated quality assurance
- Parallel or radio adaptation of the motor
- Gripping force and gripping stroke are freely adjustable for efficient individualization







Robot Assembly Stations

SCHUNK End-of-Arm expertise:
Robot accessories, rotary tables, and rotary modules



5 Mechatronic – Intelligent

Mechatronic SCHUNK components as the basis / foundation for autonomous systems



EGL 2-finger parallel gripper with IO-Link
Page 40

- Highly flexible in terms of finger position, closing speed and gripping force for an extremely wide range of workpieces
- Complete control and power electronics integrated
- IO-Link in preparation



FTN 6-axis force / torque sensor

- Simple configuration via web browser
- System connection via Ethernet, DeviceNet or ProfiNet

6 Pneumatic

SCHUNK robot accessories make pneumatic components that are already in use compatible with Industry 4.0



SWS quick-change system Page 77

- Quick exchange of tools and effectors increases flexibility
- Ability to carry ProfiNet signals and to change ProfiNet components



Logistics Station

SCHUNK components: High-speed linear axis, Powerball lightweight arms and mechatronic grippers

7 Mechatronic – Intelligent





LWA 4P Powerball Lightweight Arm Page 94

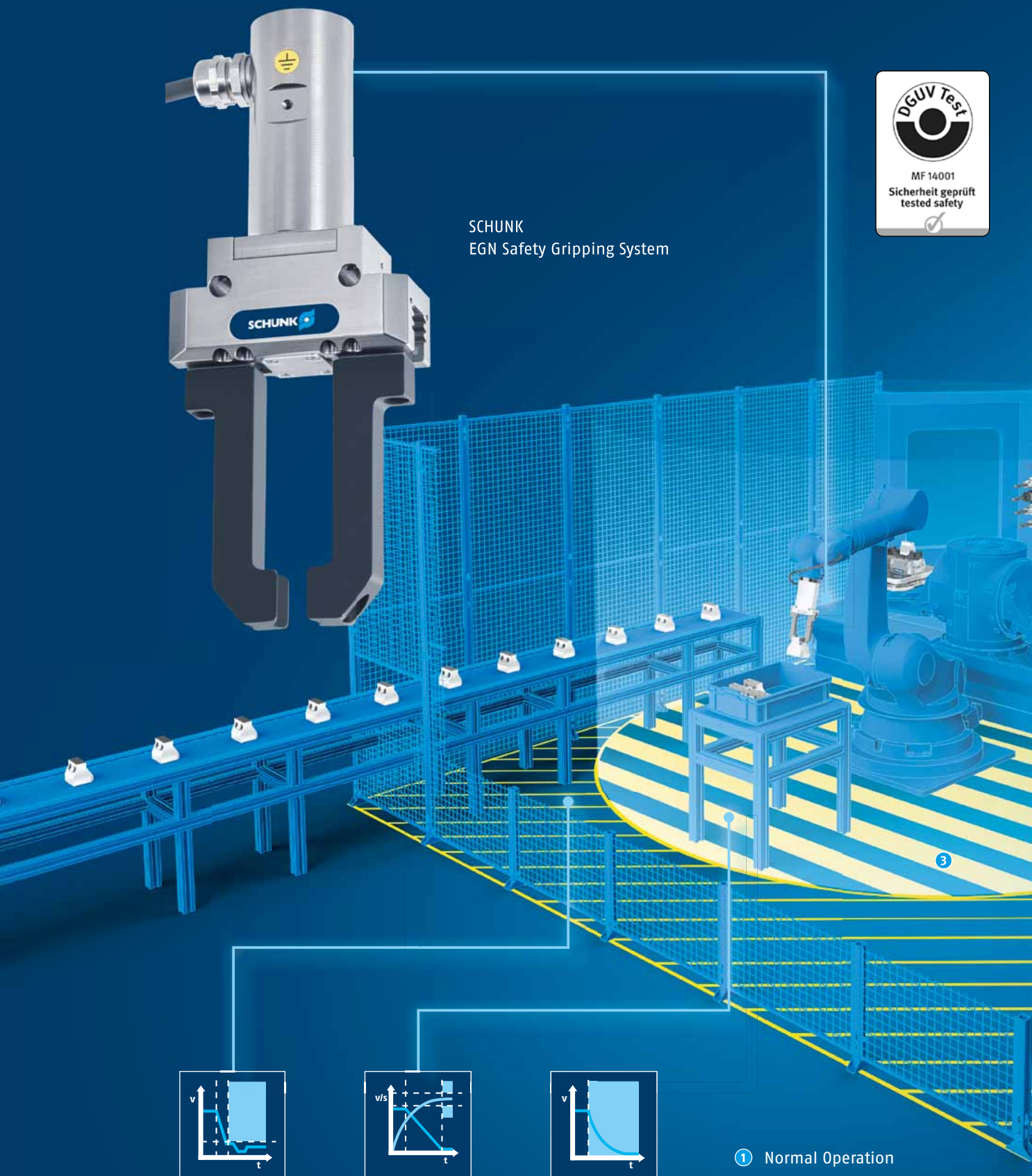
- 6 degrees of freedom for accurate repetition of movement to any positions in space
- Integrated and distributed intelligence reduces the load on the high-level control unit
- 24 V DC supply allows mobile use with optional battery operation



PG-plus 2-finger parallel gripper

- Vision-capable*, freely adjustable gripper for automatic gripping of workpieces
- Integrated optical quality control in the gripping process by selection of any required camera

* Vision-capable grippers are in preparation.


SCHUNK
SCHUNK
EGN Safety Gripping System
DGUV Test
MF 14001
Sicherheit geprüft
tested safety
3
v
t
v/s
t
v
t
SLS
Safe
Limited Speed
SOS
Safe
Operating Stop
STO
Safe
Torque Off
1 Normal Operation
2 Protection Zone 1
3 Protection Zone 2

World Premiere! The first certified Safety Gripping System.

A universal Actuator Concept for safe Human / Machine Collaborations.



SCHUNK closes a gap in the safety concept of your complete system with a unique, standardized safety component.

In contrast to other solutions on the market, the DGUV-certified SCHUNK EGN and EZN safety gripping systems continue to be powered even during emergency-stop operation and safely and actively maintain their gripping force. The workpiece remains securely held.

The incredible advantages for you:

- Safety according to **EN ISO 13849**
- Definition of **graduated protection zones**
- **Prevents** complete **emergency shut-off** of the production process
- Safe **limited speed** and **safe operating stop**
- Gripper switches back to the regular operating mode **without delay** after protection zone release
- **No restarting** of the system is required
- **Performance Level d / SIL 3** in combination with the SCHUNK ECM controller and the SCHUNK safety module
- Safety functionality can be **retrofitted** in existing EGN and EZN applications

Find out more about the SCHUNK EGN and EZN safety gripping systems on Pages 42 to 43



SCHUNK
Safety gripping systems
MM Award 2014

Gripper Fingers at the Press of a Button.

Online design and webshop order in 15 minutes.



SCHUNK eGRIP is the **first fully automatic, web-based 3D design tool for additively manufactured gripper fingers**. The **browser-based web tool does not require a license and** drastically reduces **the design and ordering time** for tailor-made gripper fingers.

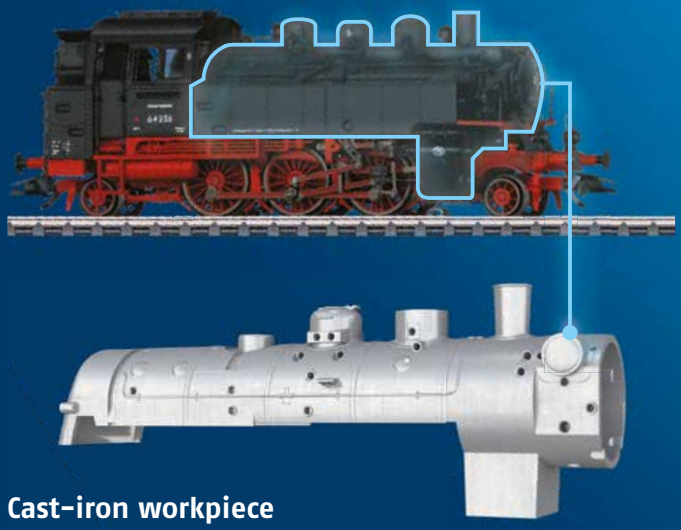
Your advantages with the SCHUNK eGRIP finger designer

- ✔ Delivered in **1 week**
- ✔ **100%** accuracy of fit
- ✔ **50%** cost reduction in gripper fingers

www.schunk.com/egrip

An example.

With **SCHUNK eGRIP** you can easily implement **form-fitting finger geometries** – especially those that are difficult or impossible to manufacture with machining processes.



Cast-iron workpiece

Steam boiler for a model railroad locomotive

✓ Upload a part



Simply upload the **STEP** or **STL file** for the workpiece. Supply **specific data,** for example the **weight,** the **installation position of the gripper** and the **finger length.**



SCHUNK Gripper
MPG-plus



SCHUNK Gripper
EGP



SCHUNK Gripper
PGN-plus

Online design and
webshop order in
15 minutes

Delivery in
1 week





SCHUNK eGRIP designs custom gripper fingers with the **optimal 3D contour** and a detailed offer including **price and delivery time.**

With SCHUNK eGRIP you receive custom SCHUNK gripper fingers fast.

SCHUNK Gripping Technology

From the Standard Component to the Customer-Specific Gripping System

More than 30 years of gripping expertise is the basis for the world's largest standardized gripping technology product range with more than 4,000 components and for an average of 2,000 standard and customer-specific gripping systems per year.

Gripping Systems Components

Standard
Components


Gripper Modules


Rotary Modules


Linear Modules


Robot Accessories


Pick & Place Units


Gripping Hands


Lightweight Arms

Customer-Specific
Components

From standard components further developed in accordance with customer requirements to exclusive customer-specific new developments.

Examples:



Wafer Grippers
made of laser-forming material with LGP gripper module



Compact Vises
for sheet metal machining, pneumatically actuated



Packaging Grippers
High-speed grippers according to legal, hygienic, and production specifications

Gripping Systems

Standard
Gripping Systems


Modular Assembly Automation


Line and Room Gantries


Solution composed of several SCHUNK standard components for robots and gantries

Customer-Specific
Gripping Systems

Solution composed of several SCHUNK components, of which at least one is further developed or newly developed specifically for the customer.

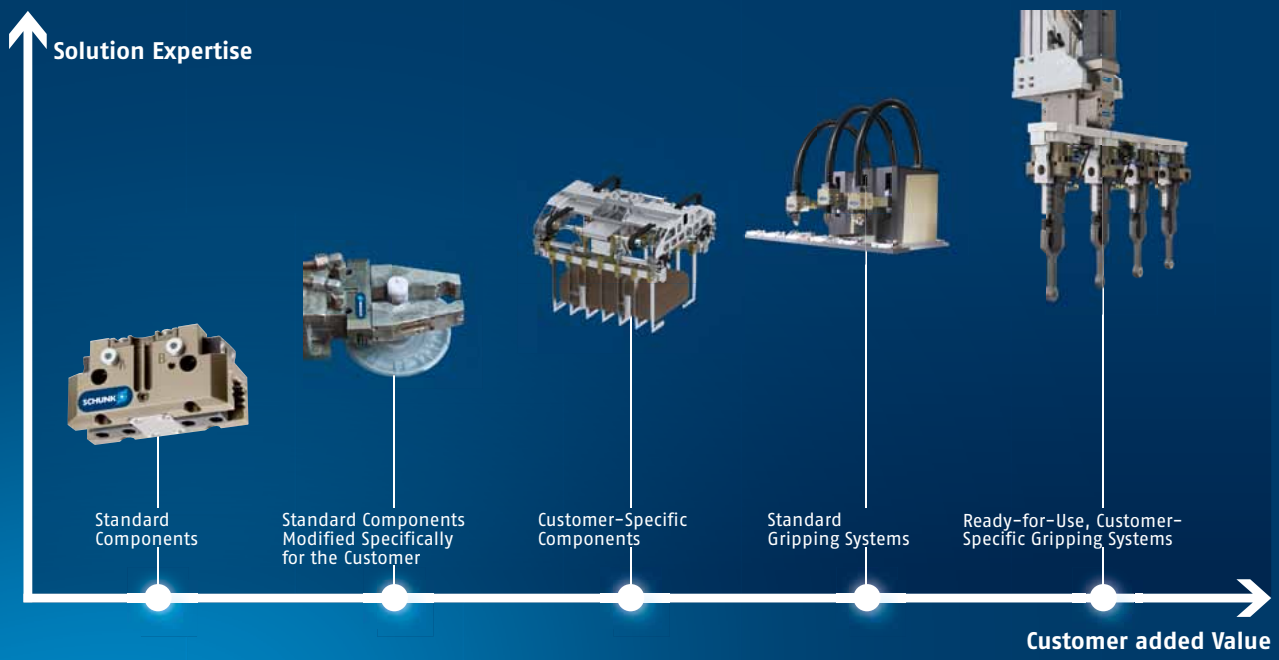
Examples:


Connecting Rod Handling


Aluminum Foil Handling


Modular and Mobile Gripping Systems

From the Standard Component to the Customer-Specific Gripping System



Just 1 Expert Contact Person for a Solution from one Source

For smooth communications, a personal contact person is available to you from the start of the project until completion. Your contact person is the interface between you and the individuals involved in the project and ensures that information is exchanged smoothly.

From planning to continued support after the conclusion of the project, SCHUNK guarantees that your project will be handled cooperatively and efficiently.

Find out more about SCHUNK standard components and standard gripping systems on Pages 8 to 13

Your advantage

- Over 30 years of experience in gripping technology
- Over 12,000 implemented gripping systems for a wide range of industries
- Modular design with perfectly coordinated standard components
- Compete accuracy of fit due to standardized interfaces
- Shorter project lead times due to standardized systems
- Reliable implementation processes and planning security without extra project costs
- Functional assemblies fitted on request or ready for use
- Time savings due to the perfect solution from a single source

Gripping Meets Robotics

Discover SCHUNK End-of-Arm Expertise! For every Robot, every Industry, every Handling Task.

With its components and gripping systems SCHUNK sets standards worldwide in automation for every sector.

Our robot accessories include a uniquely extensive standard range of modules for the mechanical, sensoric, and power connection of handling devices and robots. The comprehensive range of robust and durable gripping modules for small components and universal gripping modules features high product quality, precision, and numerous sensing options.

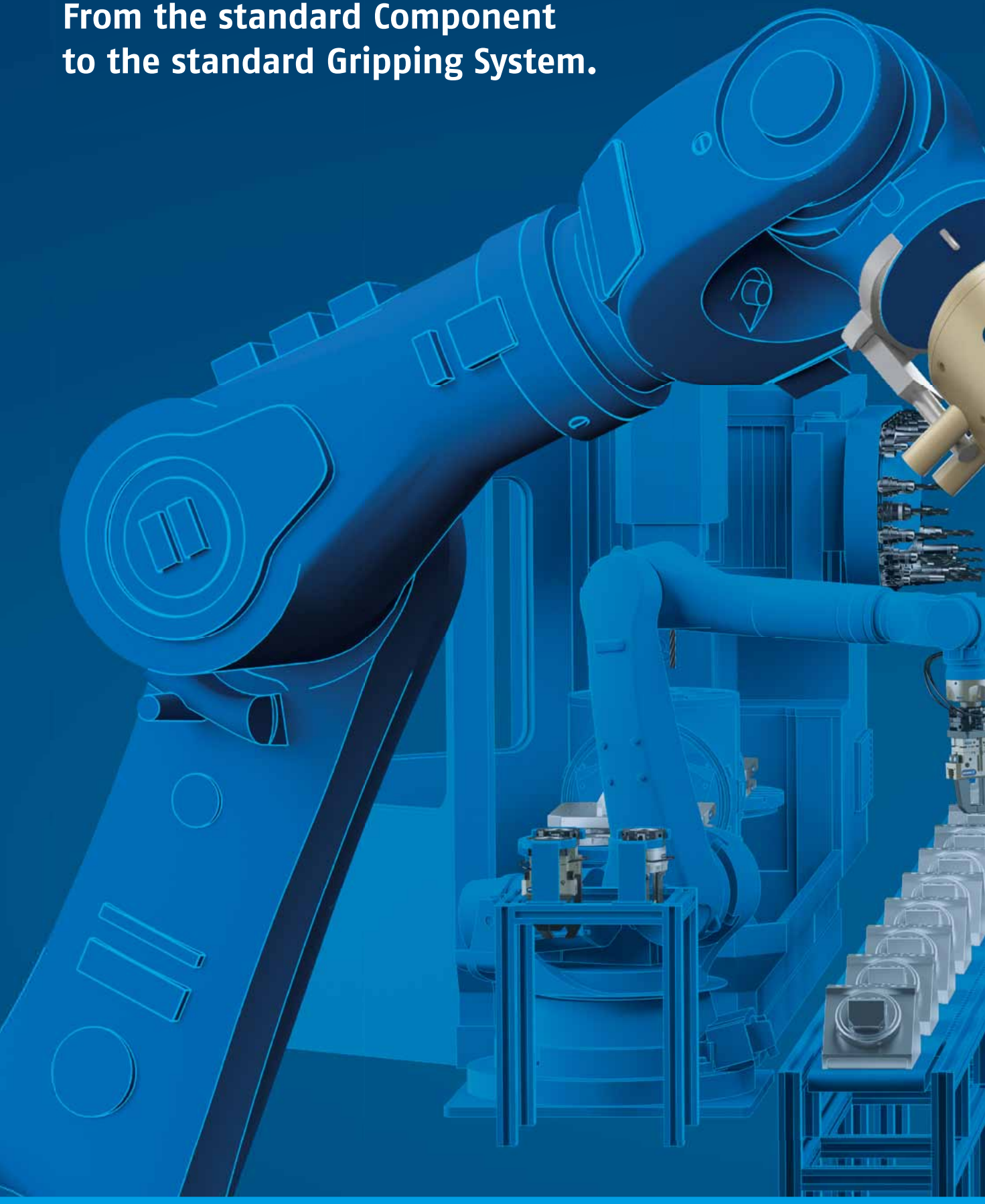
With axis system handling solutions SCHUNK also opens up new perspectives for optimally priced and value-added automation solutions from a single source.

Take Advantage of the SCHUNK Modular System with more than 4,000 standard Components.



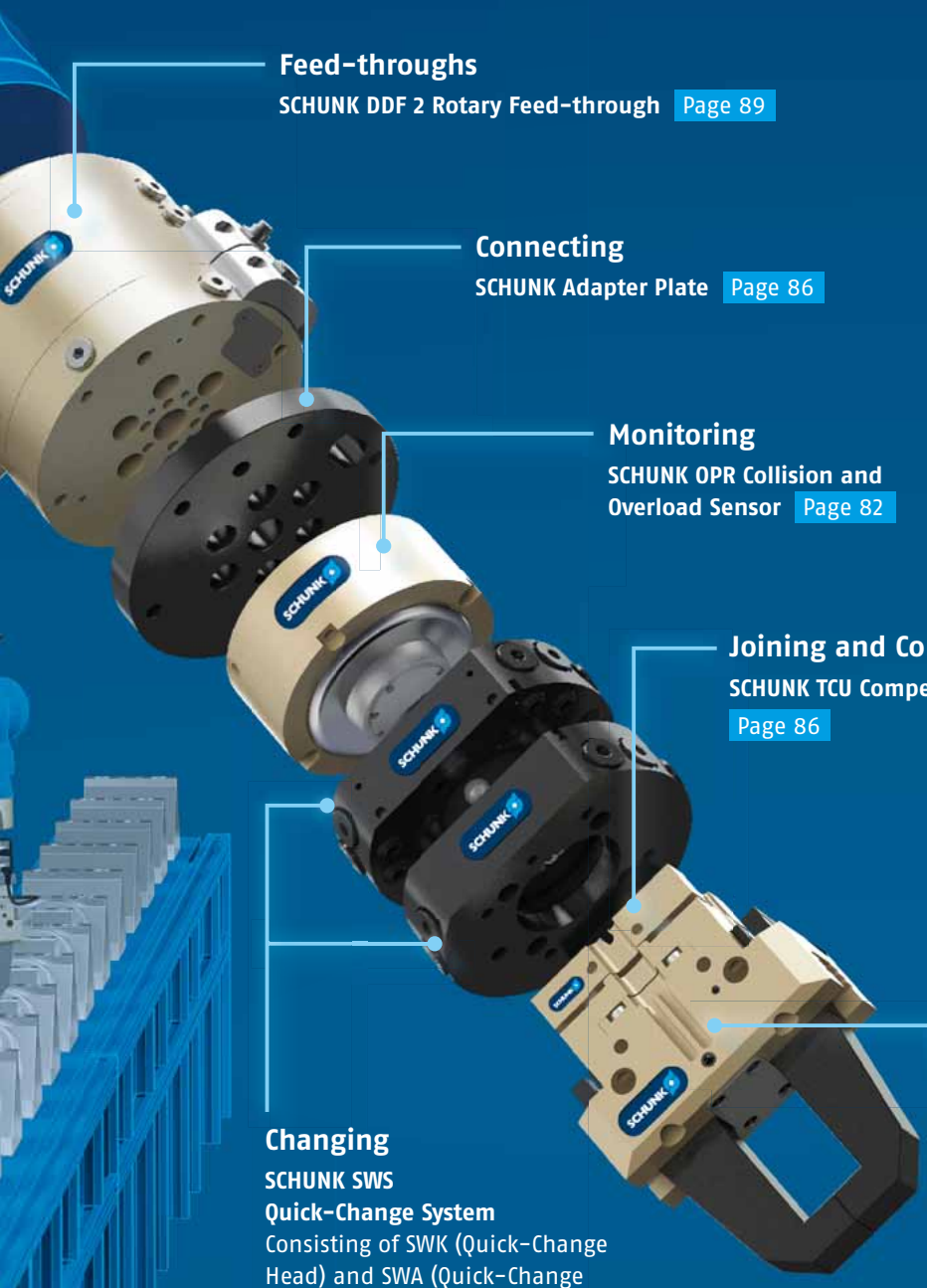
The SCHUNK End-of-Arm Ex

From the standard Component to the standard Gripping System.



xpertise ...

... for your articulated arm robot



Feed-throughs
SCHUNK DDF 2 Rotary Feed-through Page 89

Connecting
SCHUNK Adapter Plate Page 86

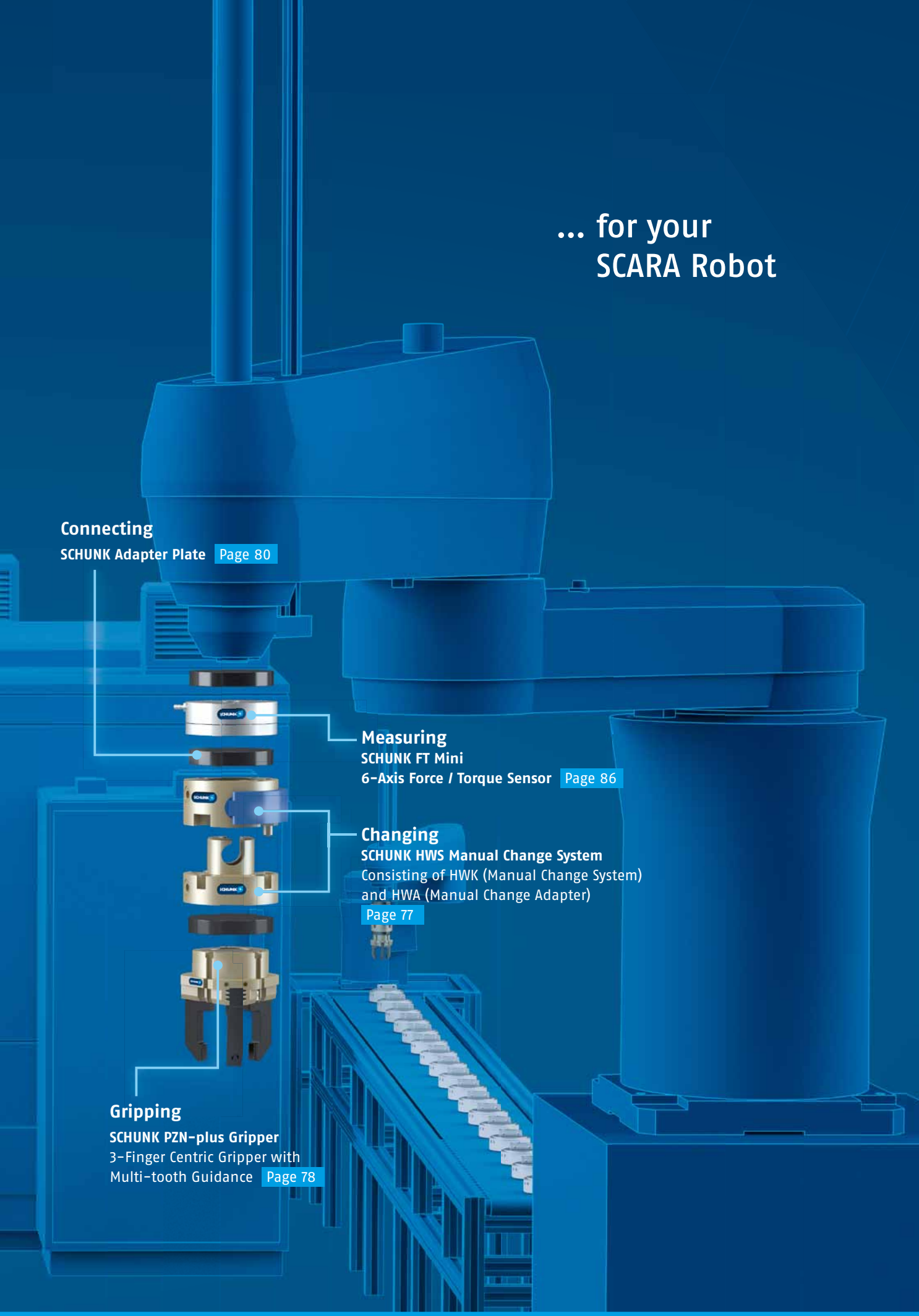
Monitoring
SCHUNK OPR Collision and Overload Sensor Page 82

Joining and Compensating
SCHUNK TCU Compensation Unit
Page 86

Changing
SCHUNK SWS Quick-Change System
Consisting of SWK (Quick-Change Head) and SWA (Quick-Change Adapter) Page 77

Gripping
SCHUNK PGN-plus Permanent Gripper
2-Finger Universal Gripper with Multi-tooth Guidance
Page 36

... for your SCARA Robot



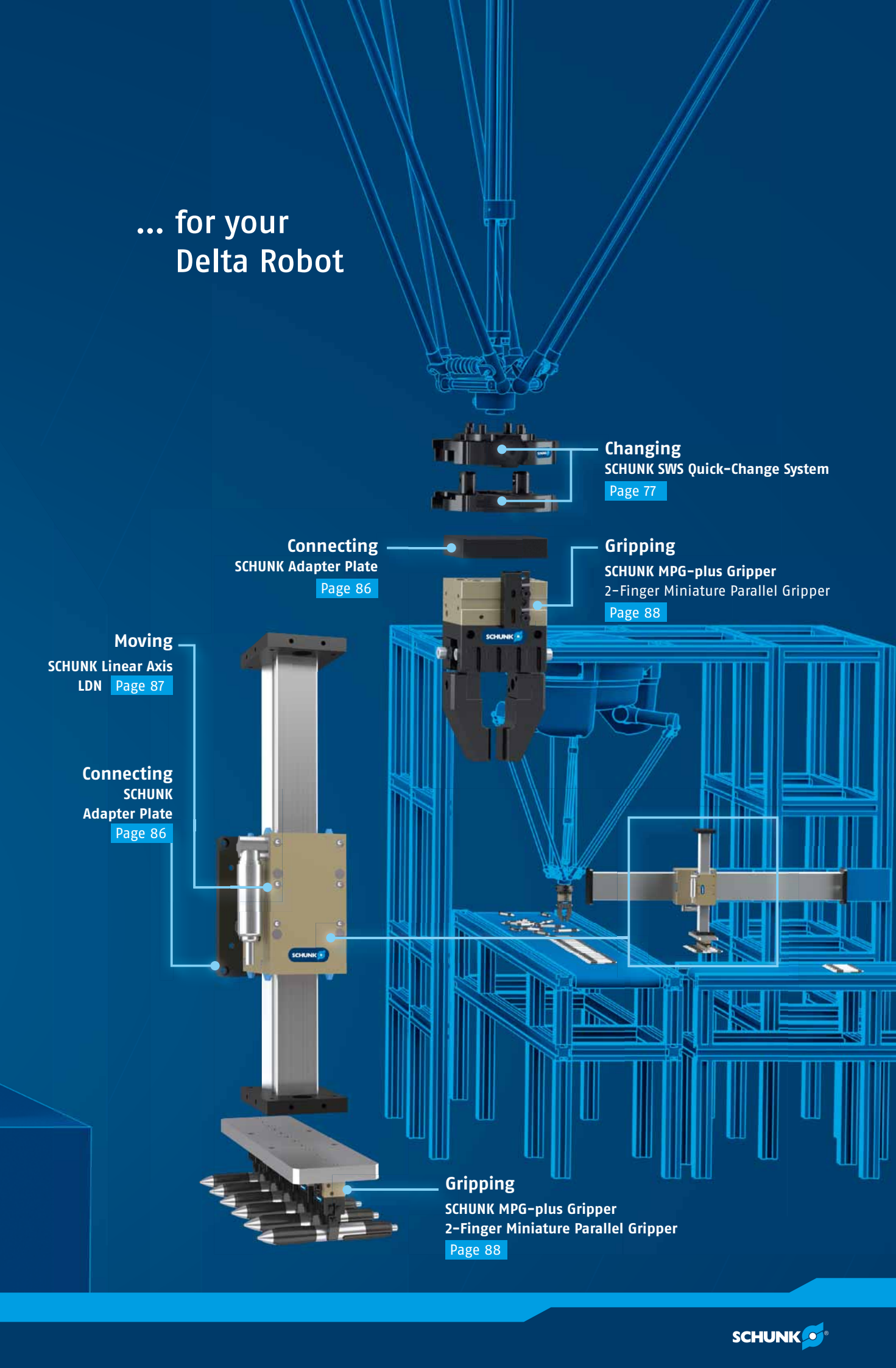
Connecting
SCHUNK Adapter Plate Page 80

Measuring
SCHUNK FT Mini
6-Axis Force / Torque Sensor Page 86

Changing
SCHUNK HWS Manual Change System
Consisting of HWK (Manual Change System) and HWA (Manual Change Adapter)
Page 77

Gripping
SCHUNK PZN-plus Gripper
3-Finger Centric Gripper with Multi-tooth Guidance Page 78

... for your Delta Robot



Changing
SCHUNK SWS Quick-Change System
Page 77

Connecting
SCHUNK Adapter Plate
Page 86

Gripping
SCHUNK MPG-plus Gripper
2-Finger Miniature Parallel Gripper
Page 88

Moving
SCHUNK Linear Axis
LDN Page 87

Connecting
SCHUNK
Adapter Plate
Page 86

Gripping
SCHUNK MPG-plus Gripper
2-Finger Miniature Parallel Gripper
Page 88

Care-O-bot® 4

Shaping the service robotics of the future with SCHUNK

Together with the Fraunhofer IPA in Stuttgart, SCHUNK has established this milestone in the sector of service robots for mobile applications. Not only the arm joints but also the 1-finger hand of the Care-O-bot® 4 are drawn from the standardized modular range from SCHUNK for mobile gripping systems. SCHUNK offers an extensive portfolio of components for use in service robotics.

Find out more about the Care-O-bot® 4 on the internet: www.gb.schunk.com/care-o-bot4



Care-O-bot® 4
Service robot of the future

New Products

	Seite
SCHUNK Grippers	**36**
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EGL 2-Finger Parallel Gripper	40
EGN Safety 2-Finger Parallel Gripper / EZN Safety 3-Finger Centric Gripper	42
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SDV-P Pressure Maintenance Valve	66

PGN-plus Permanent 2-Finger Parallel Gripper. Now with permanent lubrication.

Permanent life span

The new PGN-plus Permanent with unique permanent lubrication represents superior SCHUNK technology of the next generation. The permanent lubrication developed by SCHUNK redefines the topic of minimum-quantity lubrication for grippers with sliding guide. This significantly increases the already long life span of the SCHUNK perennial and makes it practically maintenance-free. It is based on the SCHUNK PGN-plus with multi-tooth guidance, which is the market-leading, premium product. With the new PGN-plus Permanent, SCHUNK is now optimizing the benchmark for pneumatic universal grippers, and making existing products even better.

Lubrication with reserve

A technical feature of the permanent lubrication in the PGN-plus Permanent is a continuous lubricant pocket running along the entire multi-tooth guidance contour. This technical finesse is guaranteed by a permanent lubricant reserve. At the same time, it ensures that an even lubricant film is created rapidly, even with short strokes. With the PGN-plus Permanent, SCHUNK is underlining its Longlife functional warranty, robustness, reliability, as well as its micron precision. The PGN-plus Permanent is available in unit sizes from 50 to 125 as a first step. Expansion to all existing PGN-plus unit sizes is planned.



Patentierte Präzision!
Patented Precision!
Vielzahnführung
Multi-tooth guidance

Life-long!
Low wear and maintenance.

PGN-plus Permanent

SCHUNK Grippers

New product | Series expansion

Available starting January 2016

Sizes	Weight	Gripping force	Stroke per finger	Workpiece weight
50 .. 125	0.17 kg .. 1.35 kg	160 N .. 2780 N	2 mm .. 13 mm	0.8 kg .. 13.9 kg

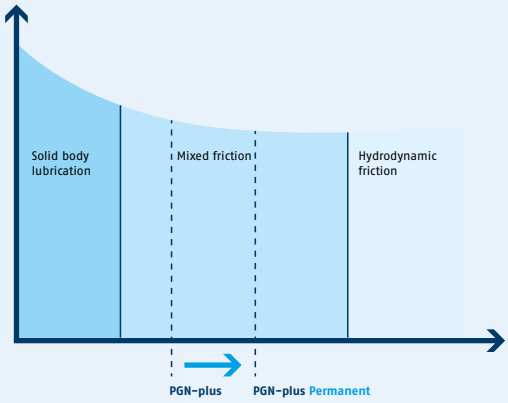
Product features

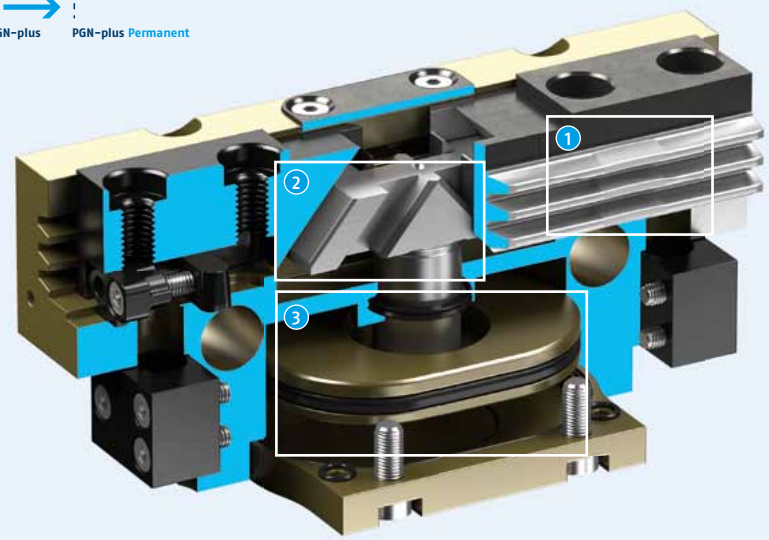
- Lubricant pockets with flat lubricating wedge in the multi-tooth guidance
- Longest life span and SCHUNK longlife warranty
- Patented, sturdy multi-tooth guidance
- Increased moment and force absorption
- Improved efficiency and wear reduction
- Precise repeat accuracy 0.01 mm

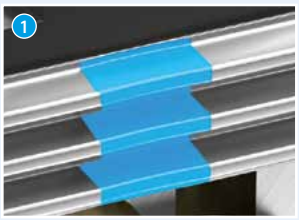
Your advantage

- Rapid and even lubricant distribution even with short strokes.
- Reduced total cost of ownership (TCO)
- Permanently higher performance
- More compact, efficient systems
- Continuously reliable and robust

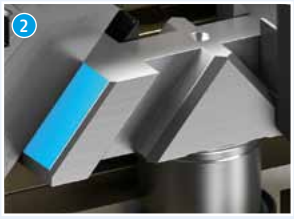
Optimized friction by continuous lubrication







Maximum life span by grease pockets in the robust multi-tooth guidance



Maximum process reliability by larger diagonal pull area



Maximum force by maximum surface area of the oval piston

EGP Safety 2-Finger Gripper for Small Components. Now SIL 3-certified for functional safety.

Now SIL 3-certified

The SCHUNK EGP is the electric gripper for small components with the greatest compact performance and shortest stroke closing time on the market. With SOS and STO functions, it can be used in functional safety areas up to SIL 3. The SCHUNK EGP Safety enters a safe stop status if the assembly process is interrupted by an emergency shut-off or an electric power failure. Even in the safe operating stop, the SCHUNK EGP Safety remains continuously energized, meaning that the gripped parts are reliably held even without mechanical gripping force maintenance – for ID ond OD gripping. As soon as the voltage is applied again, the gripper immediately switches back to the regular operating mode – without the system having to be actuated again. The SCHUNK EGP Safety is controlled by a PILZ PNOZmulti control system equipped with standardized plug technology and four inductive proximity switches.

Ideal for quickly handling small parts

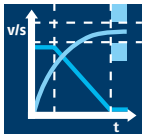
The SCHUNK EGP is the electric counterpart of the proven, pneumatic SCHUNK MPG-plus gripper for small components. In many cases, users can transfer the sensor systems used in the SCHUNK MPG-plus to the SCHUNK EGP. Control is easily done via digital inputs, and the user can easily convert the existing system from pneumatic to electric operation without loss of gripping force. In case of Pick & Place application, the grippers integrated cross roller guide ensures a high efficiency, and makes it to a dynamic and energy-efficient small parts gripper.



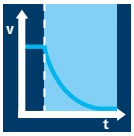
DGUV Test
MF 14001
Sicherheit geprüft
tested safety

Alternative
Adaptable
Intelligent
MECHATRONIK 3

Now SIL 3-certified!
For functional safety.



Safe
operation stop
(SOS)



Safe
torque off
(STO)

EGP Safety

SCHUNK Grippers

New product | Series expansion

Available starting July 2015

Sizes
25 .. 64

Product features

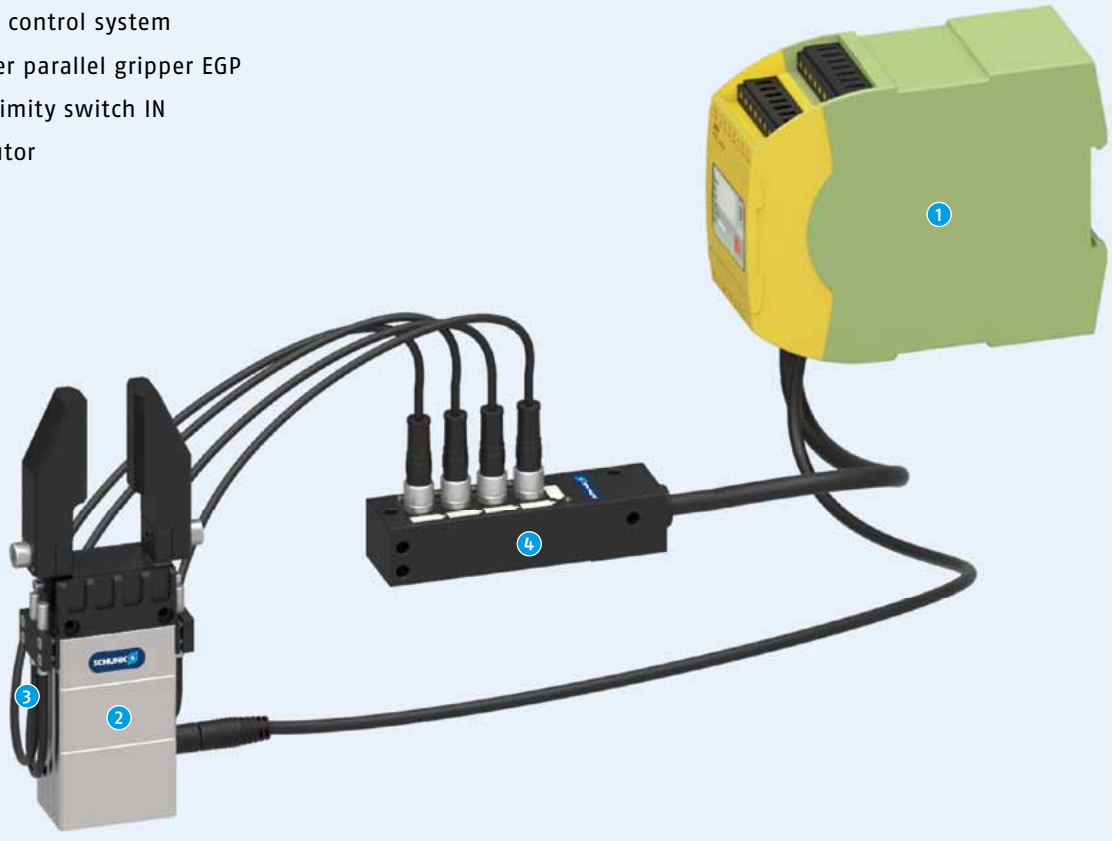
- High compact performance
- Certified SOS and STO functions
- Performance level d / SIL 3 combined with PILZ PNOZmulti control system
- Wear-resistant servo motor
- Four-stage adjustable gripping force for adaptation to the workpiece
- Space saving integration of electronics

Your advantage

- Safety according to IEC 61508
- Maximum power transmission and low wear because of robust lever mechanism
- Flexible design of workpiece supports because of connection thread and centering possibilities
- Safe holding of the workpiece even when the process is interrupted
- Immediate return to the regular operating mode avoids restarting of the system

Function cross section

1 PILZ PNOZmulti control system
2 Electric 2-finger parallel gripper EGP
3 Inductive proximity switch IN
4 Sensor distributor



EGL 90 2-Finger Parallel Gripper. Intelligent Powerhouse for Handling and Assembly.

Optimal combination of power and intelligence

The SCHUNK EGL 90 2-finger parallel gripper, with a variable gripping force between 50 and 600 N is one of the most powerful and flexible mechatronic grippers on the market. Since the finger position, closing speed, and gripping force are freely programmable within a maximum stroke of 49 mm per finger, diverse components up to 3 kg can be precisely handled and are force-fit gripped. The gripper fingers can be prepositioned to reduce cycle times. A brushless servo motor ensures continuous and reliable operation with no maintenance required. To maintain the position in the event of a power outage the gripper features an electrically operated brake.

Fast commissioning

The entire control and power electronics of the EGL 90 are integrated to save space and to allow decentral operation and even mobile use, due to the 24 V DC operating voltage. Standard Profibus DP and CAN bus interfaces allow fast and easy integration in higher level system controllers. The gripper also features a USB-port as a service interface. Since the EGL 90 fulfills industrial standards and the basic version is connected only by means of industrial connectors, installation time is reduced to a minimum.



Alternative
Adaptable
Intelligent
MECHATRONIK 3

Highly flexible!
Intelligent powerhouse with variable gripping force adjustment.

EGL

SCHUNK Grippers

New product | Series expansion

Immediately available

Size	Weight	Gripping force	Stroke per finger	Workpiece weight
90	1.8 kg	50 N .. 600 N	49 mm	3 kg

Product features

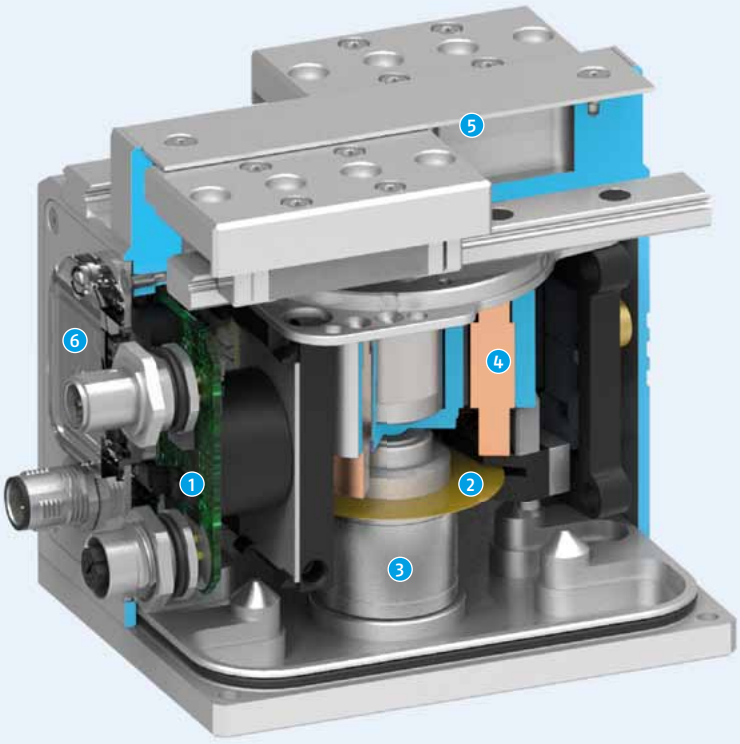
- Freely programmable finger position, closing speed, and gripping force
- Pre-positionable gripper fingers
- Completely integrated control and power electronics
- 24 V DC operating voltage
- Mobile use possible
- Standard interfaces Profibus DP and CAN bus
- Service interface with USB-port
- Brushless servo motor

Your advantage

- Fast and easy integration in higher level system controllers
- Long-term reliable operation with no maintenance costs
- Reduced assembly time due to industrial standards

Function cross section

1. Control electronics
2. Encoder
3. Electric brake
4. Drive
5. Kinematics
6. Service window



EGN 2-Finger Parallel Gripper.
EZN 3-Finger Centric Gripper.
The first certified Safety Gripping Systems.

Safe stop – fast restart

With the SLS, SOS and STO functionalities the DIN EN ISO 13849 certified SCHUNK EGN and EZN gripper systems allow safe human-machine interaction. In the event that the production process is interrupted due to an emergency shut-off, the SCHUNK EGN and the SCHUNK EZN switch either to a state of safe limited speed or safe stop, depending on the activated safety zone. As opposed to existing solutions on the market the SCHUNK safety gripping systems remain continuously powered even during a safe operation stop, so that the gripped components can remain reliably held without mechanical maintenance of gripping force. As soon as the safety zone is released the gripper switches without delay – and without having to restart the system – back to the regular operating mode.

Safety functions can be retrofitted at any time

SCHUNK safety gripping systems are completely modular in design and are suitable for a broad spectrum of applications. The gripping force, speed and finger position can be adjusted and controlled flexibly during the handling process. All sizes feature the patented SCHUNK multi-tooth guidance. The SCHUNK EGN and EZN are controlled via the SCHUNK ECM controller with standard connection technology either by Profibus (up to 12 Mbit/s) or CAN bus (up to 1 Mbit/s). To use the certified functions SLS, SOS and STO, the gripper and controller are supplemented with the SCHUNK safety modules. Due to the modular design, existing EGN and EZN applications can be retrofitted with the safety functionality at any time. Both grippers are available in a dust-proof version. An optional protective sleeve can be mounted by the user.

DGUV Test
MF 14001
Sicherheit geprüft
tested safety

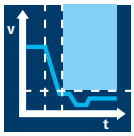


Learn more about the SCHUNK safety gripping systems EGN and EZN on Pages 22 to 23

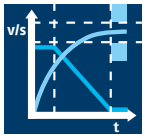


SCHUNK Safety Gripping Systems MM Award 2014

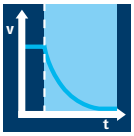
World premiere!
Certified safety gripping system. Can also be retrofitted!



Safe Limited Speed (SLS)



Safe Operation Stop (SOS)



Safe Torque Off (STO)

EGN | EZN

SCHUNK Grippers

New product | Series expansion

Immediately available

	Sizes	Weight	Gripping force	Stroke per finger	Workpiece weight
EGN	80 .. 160	0.84 kg .. 3.0 kg	400 N .. 1000 N	8 mm .. 16 mm	2.1 kg .. 5.4 kg
EZN	64 .. 100	0.98 kg .. 2.3 kg	500 N .. 800 N	6 mm .. 10 mm	2.5 kg .. 4.0 kg

Product features

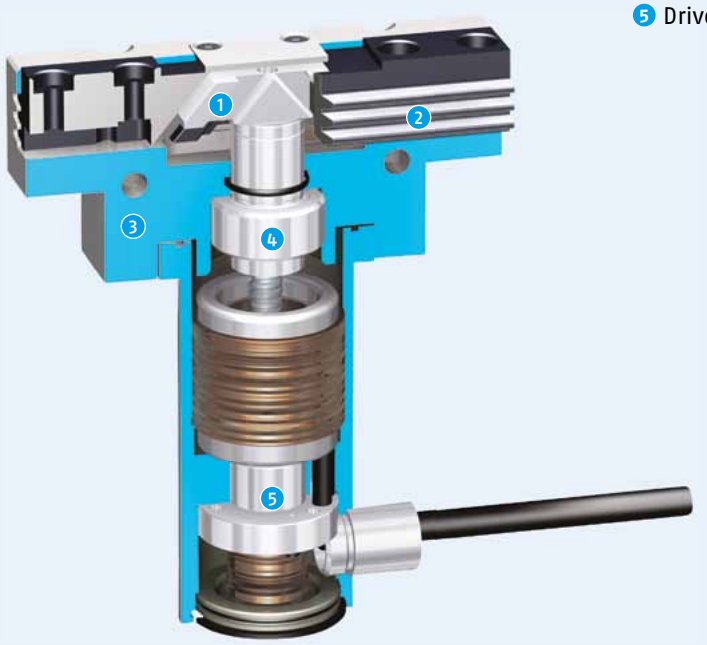
- Option now available for dusty, humid or caustic environments
- Modular gripper concept
- Certified SLS, SOS, and STO functionalities
- Performance Level d / SIL 3 in combination with SCHUNK ECM controller and the SCHUNK safety module
- Brushless servo motor
- Different lengths of robot-compatible cable sets

Your advantage

- Certified according to EN ISO 13849
- High gripping speed along with high force
- Simple commissioning and parameterization via PC, USB stick, or rotary encoding switch
- Safe holding of the workpiece even when the process is interrupted by an emergency shut-off
- Immediate return to the regular operating mode avoids restarting of the system

Functional cross section EGN

1. Wedge-hook design
2. Multi-tooth guidance
3. Housing
4. Spindle nut
5. Drive



Functional cross section EZN

1. Base jaw
2. Wedge-hook design
3. Housing
4. Kinematics
5. Drive



WSG-25 2-Finger Parallel Gripper. The smallest intelligent Gripper on the Market with control via Ethernet TCP/IP.

Intelligent and sensitive compact gripper

The new WSG 25 small component gripper is the smallest intelligent gripper on the market that can be controlled via Ethernet TCP/IP. The WSG 25 was designed especially for use on small robots and in compact gantry systems. Both the finger position and the gripping force can be individually adapted for each stroke and continuously monitored. Even fragile small components can be handled with assured process stability. Like all gripper modules of the WSG series the WSG 25 can be put into operation quickly and easily by means of an intuitive user interface via Ethernet TCP/IP and any standard web browser, without the installation of additional software.
For this purpose it is equipped with an industrial M8 connector. The web server is already integrated in the gripper as a standard feature. It can also be used for remote diagnosis and for sending status e-mails.

Complete series – intuitive, integrated, intelligent

The intelligent mechatronic grippers of the WSG series are available in a total of four versions: The WSG 50 version can be controlled either via Ethernet TCP/IP, Profibus, CAN bus or eight virtual digital I/Os. In addition to the basic version WSG 050-110 with a stroke of 55 mm per finger, there is the long-stroke version WSG 050-210 with a stroke of 110 mm per finger. The WSG 32 on the other hand is substantially more compact and was designed especially for the handling of small and medium-sized components.



Alternative
Adaptable
Intelligent
MECHATRONIK 3

Very compact!
Only 25 mm wide!

WSG

SCHUNK Grippers

New product | Series expansion

Immediately available

Sizes	Weight	Gripping force	Stroke per finger	Workpiece weight
25 .. 50	0.32 .. 1.6	0.1 .. 0.4 kg	32 .. 105 mm	0.1 .. 0.4 kg

Product features

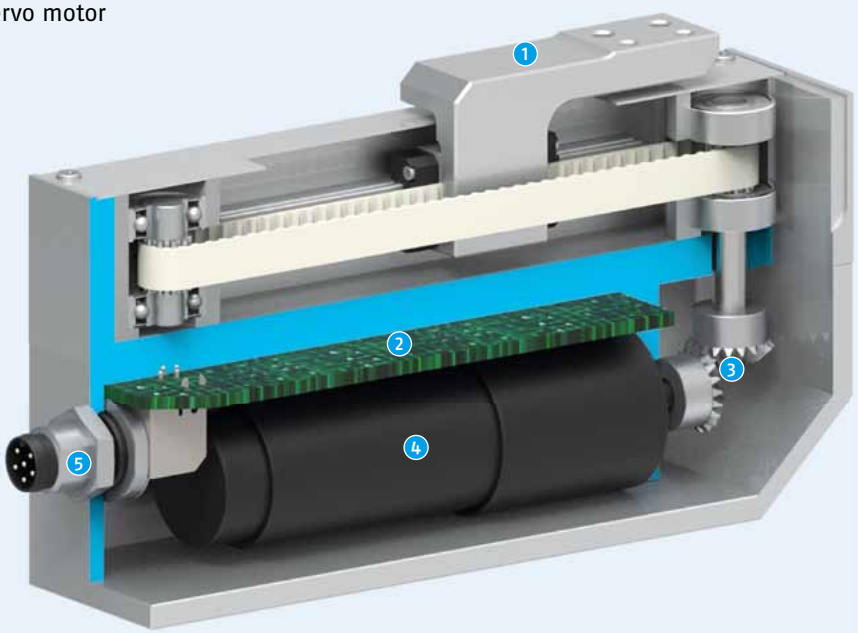
- Optionally with ProfiNet, CAN bus, or Ethernet interface
- Integrated gripping control with web server and in some cases Micro SD card
- Integrated sensor ports in the jaws for optional force-measuring jaws for sizes 32 and 50
- Gripped part monitoring already integrated

Your advantage

- Interface flexibility also when integrating into future systems
- Convenient configuration and diagnostics without software installation directly via Ethernet
- Direct gripping force feedback without interfering sensor system cables
- Implementation of safe processes without additional programming effort

Function cross section

1. Base jaw
2. Integrated control and power electronics for decentral control of the servo motor
3. Bevel gear stage
4. Drive
5. Power + Ethernet connectors



EGS Rotary Gripping Unit.
The world's most compact electric Rotary Gripping Unit.

The new efficiency class in small component handling

The SCHUNK EGS electric rotary gripping unit makes the switch to pneumatic handling solutions easy. It is the first unit to combine electric gripping and rotation in a single compact housing. The low-maintenance and attractively priced module paves the way for highly efficient pneumatic-free systems. Coupling of the gripping and rotation gear, patented by SCHUNK, allows continuous rotation without an electric feed-through. The module is equipped with stationary, brushless and therefore wear-free 24 V DC motors. It requires no moving cables, slip rings or shock absorbers, which increases the process stability and availability of assembly systems.

Extremely easy commissioning

Both the angle of rotation and the gripping force can be adjusted independently of each other directly at the module. Monitoring is possible via inductive proximity switches. The module is controlled directly / digitally or via a fieldbus distributor. The entire control and power electronics for decentral control of the motors are integrated directly in the module. This eliminates the need for external controllers and additional programming. The SCHUNK EGS features a torque of 0.04 Nm and a freely definable angle of rotation between 40° and 290°. The gripping force is 30 N, the stroke / jaw 3 mm. The swiveling time is 0.18 s/180° and the gripping time is 0.05 s/stroke.



product design award

Alternative
Adaptable
Intelligent
MECHATRONIK 3

Fast!
The swiveling time amounts to 0.18 s/180°, gripping time is 0.05 s/stroke.

EGS

Rotary Gripping Modules

New product | Series expansion

Immediately available

Size	Gripping force	Stroke per jaw	Torque	Workpiece weight
25	30 N	3 mm	0.04 Nm	0.15 kg

Product features

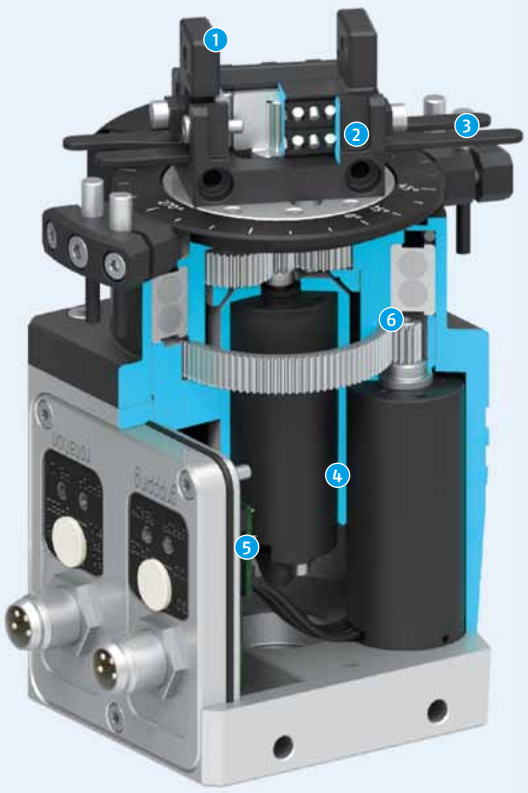
- Small dimensions of 58 mm x 45 mm x 89 mm
- Backlash-free pre-loaded junction roller guides for high-precision gripping and virtually constant gripping forces over the entire finger length
- Swiveling time 0.18 s/180°
- Gripping time 0.05 s/stroke
- Freely definable angle of rotation between 40° and 320°
- Brushless 24 V DC motors
- 4 digital inputs (open gripper, close gripper, rotate left, rotate right)
- Controlled with 24 V

Your advantage

- Fast conversion to pneumatic-free handling
- Convenient configuration without external controllers and additional programming
- Gripping and rotating with one extremely compact module
- Easy, fast commissioning

Function cross section

1. Base jaw
2. Junction roller guide
3. Monitoring
4. Drives
5. Control electronics
6. Patented gear coupling



SRM Universal Rotary Unit.
The most powerful Rotary Unit on the Market.

Larger center bore and maximum flexibility

The SCHUNK SRM universal rotary unit ensures high performance for production automation and differs significantly even in external appearance from the existing rotary modules on the market. The most striking features are the low interfering contour, the specially developed internal high-capacity dampers for maximum performance in a compact space and the large center hole for the feed-through of cables, hoses, workpieces or for the use of a camera. To speed up commissioning, the SRM features a pre-defined shock absorber stroke and fast clamping of the end position. In addition, a marking facilitates setting of the angle of rotation.
Correspondingly compact, it ensures a customized design at a cost-effectiveness ratio that is unique on the market.

Maximum compact performance

Just as convincing are the inner values: the torque, mass moment of inertia and rotating time of the SRM significantly exceed the previous, the top-range SCHUNK SRU-plus. In the size 40 version, for example, it was possible to increase the already high torque of the SRU-plus by another 25%. The increased mass moment of inertia is just as impressive: the compact SRM 16, for example, can rotate loads three times higher than the likewise high-end SRU-plus 20. The screw connection pattern of the new high-performance module is accordingly large and robust. SCHUNK optionally offers an air feed-through for compressed air or gases as well as an electric rotary feed-through for the reliable feed-through of sensor and actuator signals. It also offers the possibility of inductive monitoring. The SCHUNK SRM is available in sizes 16, 32 and 40. Other sizes and options to come.



Everything goes through!
Up to 55% larger center hole.

SRM

Rotary Modules

New product | Series expansion

Available from the third quarter 2015

Sizes	Weight	Torque	Center bore diameter	Repeat accuracy
16	0.6 kg	1.5 Nm	10.5 mm	0.05°
32	3.0 kg	12 Nm	21 mm	0.05°
40	5.5 kg	25 Nm	26 mm	0.05°

Product features

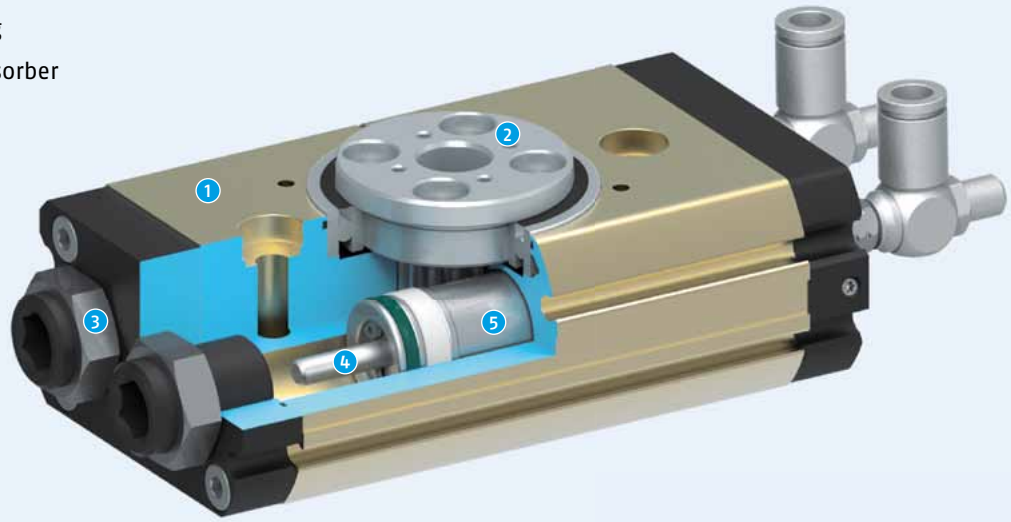
- Enlarged center hole
- Larger and more robust flange screw connection pattern
- Different damper types for a broad range of applications
- Numerous options: air feed-through (MDF), electric feed-through (EDF), inductive monitoring
- Calibration marking for angle of rotation
- End position clamping for process reliability

Your advantage

- Better mass moment of inertia range enables applications with smaller modules.
- Very compact design with internal shock absorbers. Minimized interfering contour
- Highly flexible due to modularity
- Angle of rotation marking simplifies commissioning
- Easy, fast commissioning

Function cross section

1. Housing made of press-drawn section
2. Robust flange screw connection pattern with large center hole
3. Calibration marking
4. Hydraulic shock absorber
5. Double piston drive



ERD rotary module.
The only torque motor with integrated air feed-through and absolute stroke measuring system on the market.

Complete module SIL 2-certified

The SCHUNK ERD rotary module is the first endlessly rotating and SIL 2-certified miniature module especially designed for assembly applications in the electronics, consumer goods and pharmaceuticals industries. It is equipped with two integrated air feed-throughs, four electrical feed-throughs, and a SIL 2-certified absolute stroke measuring system. The module makes it possible to implement space-saving, high-torque, high-speed assembly systems that even meet the demanding requirements of the new machinery directives. The rotary module is driven by a brushless synchronous motor with permanent excitation.

Time saving on system restart

Its special geometry ensures high dynamic properties and acceleration. In addition, pneumatic actuators connected to it can be actuated faster because of the optimized air feed-throughs. Both factors taken together ensure short cycle times and high productivity. The absolute-value transducer means that there is no need for time-consuming reference runs either when starting up or after an emergency off; furthermore, the repeat accuracy, specified as 0.01°, also benefits. A large number of pole pairings in the module ensures that it generates a high rated torque of up to 1.2 Nm even at low RPM values. The module has a long service life because it contains hardly any wearing parts.



Alternative
Adaptable
Intelligent
MECHATRONIK 3

With absolute stroke measuring system!
Use in functional safety areas up to SIL2.

ERD

Rotary Modules

New product | Series expansion

Immediately available

Sizes	Nominal torques	Repeat accuracy	Air feed-through	Electrical feed-through
04 .. 12	0.4 Nm .. 1.2 Nm	0.01°	2	4

Product features

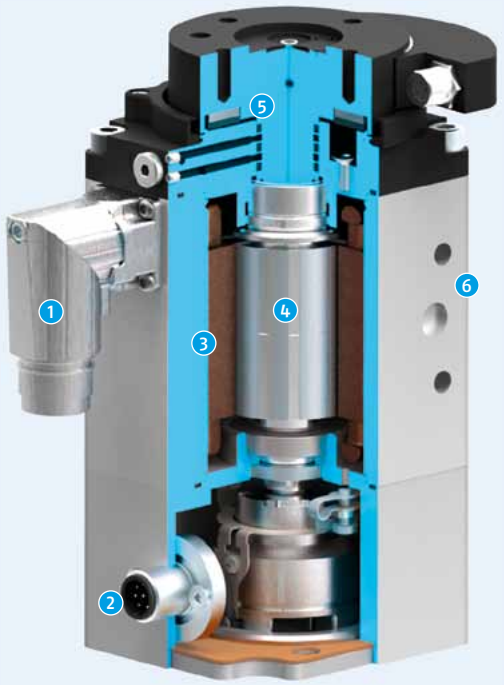
- Endlessly rotating miniature module
- SIL 2-certified
- Absolute stroke measuring system with SIL 2-certification
- Pneumatic and electrical feed-throughs
- Brushless synchronous motor with permanent excitation
- Large number of pole pairings
- Bosch-Rexroth IndraDrive CS or IndraDrive Advanced drive control units
- Optionally available in protection classes IP40 or IP54

Your advantage

- High acceleration due to special motor geometry
- Shortest cycle times due to high dynamics
- No reference runs when starting up the system or after emergency stop situations due to an absolute stroke measuring system
- Faster actuation of the actuator in high-speed applications because of optimized air feed-throughs

Function cross section

1. Motor connector
2. Absolute-value transducer connection plug
3. Primary part
4. Secondary part
5. Air and electrical feed-throughs
6. Screw connection



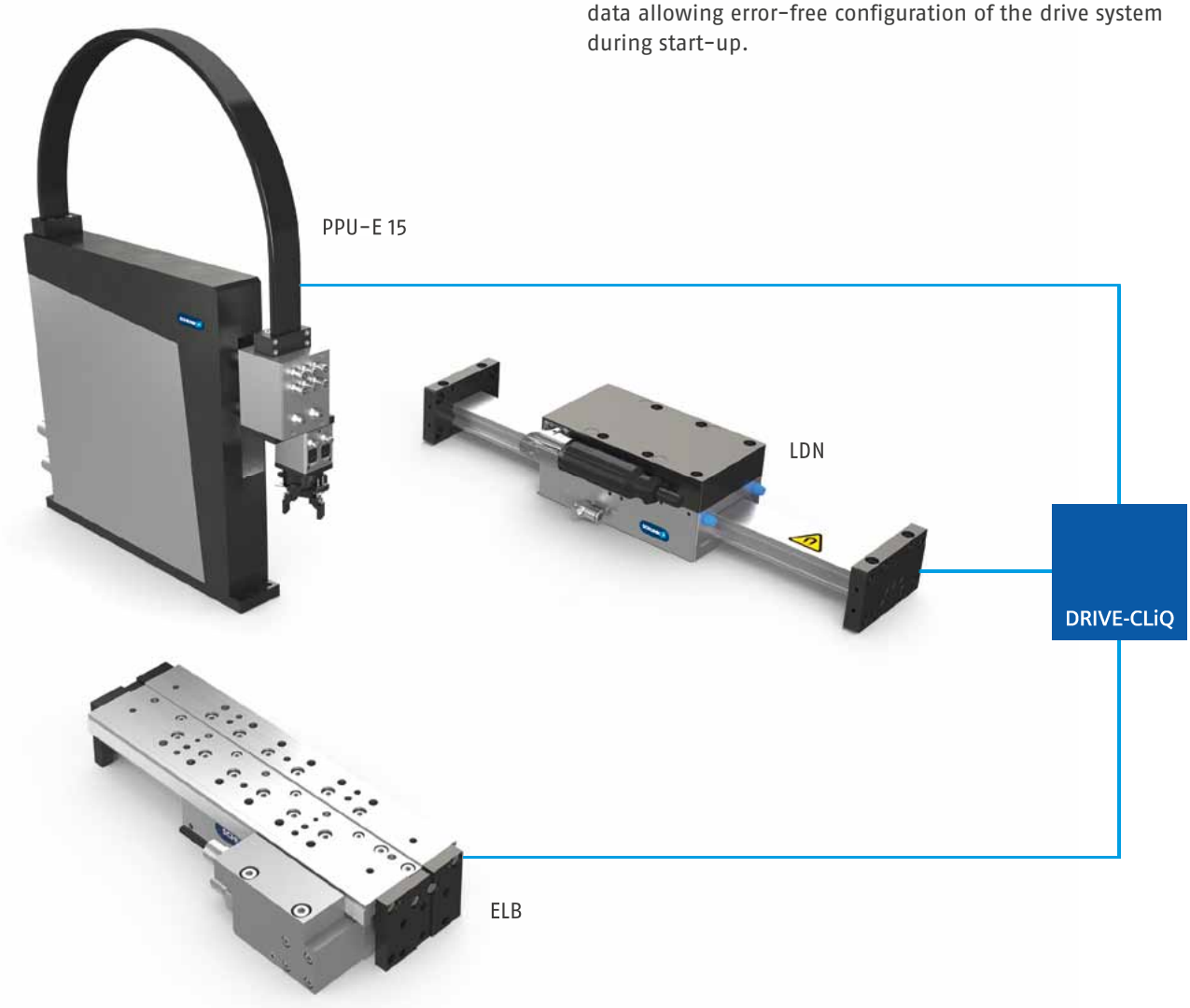
DRIVE-CLIQ Transducer. The modular Transducer System now for SCHUNK Linear Motor Drives.

Now four transducer types

SCHUNK is increasingly opening up its product world towards SIEMENS. Users of the SCHUNK LDx linear module series, SCHUNK PPU-E 15 electric pick & place unit and the SCHUNK ELB linear axis can immediately benefit from the SIEMENS DRIVE-CLIQ classification mark. Four transducer types, SSI, Hiperface, incremental and DRIVE-CLIQ can now be selected for the uniquely broad portfolio of linear motor drives.

Error-free configuration of the drive system

The direct connection to SIEMENS controllers enables a standardized transducer housing to be used. The significant simplification of axis integration with SIEMENS controllers means that the additional SME force/torque sensor system controller can be dispensed with. Furthermore, users benefit from the advantages of simpler start-up, because the SCHUNK components with DRIVE-CLIQ interface have an electronic name plate. This stores the component-specific data allowing error-free configuration of the drive system during start-up.



Free choice!
Four transducer types, SSI, Hiperface, incremental and DRIVE-CLIQ.

DRIVE-CLIQ Transducer

Linear Modules

New product | Series expansion

Available starting Juny 2015

DRIVE-CLiQ

Product features

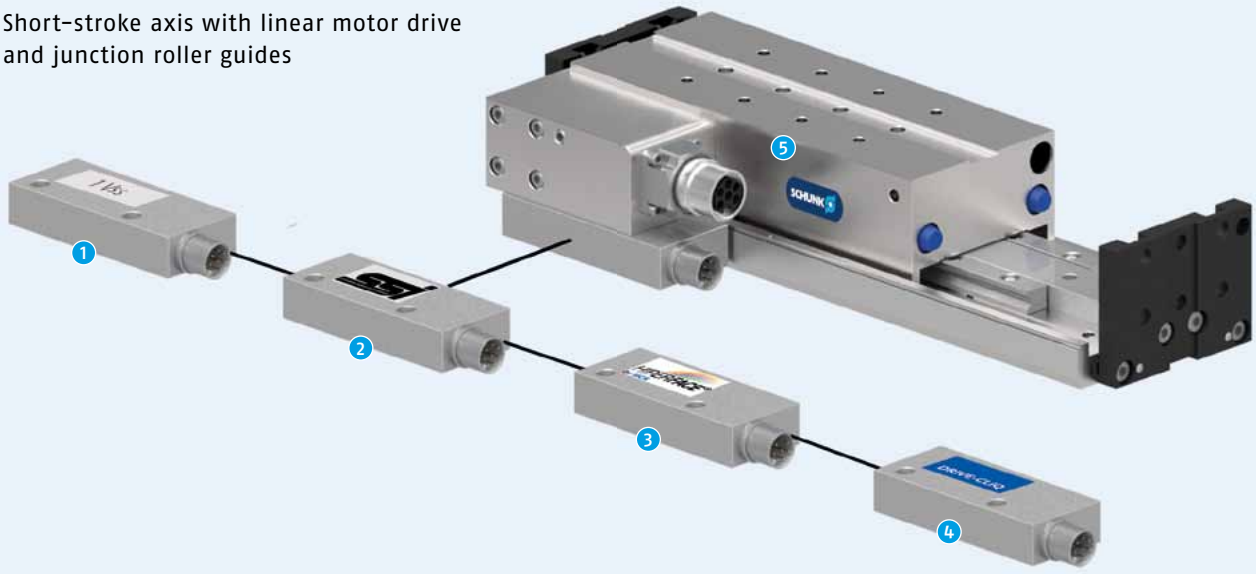
- Standardized transducer housing matching SCHUNK LDx, SCHUNK PPU-E 15 and SCHUNK ELB
- Standardized plug connectors M12
- Motor temperature line is supplied to the transducer line via SCHUNK cable sets.

Your advantage

- Saving on an additional force/torque sensor system controller
- Significant simplification of axis integration on SME controller

Function cross section

1. 1 Vss transducer
2. SSI transducer
3. Hiperface transducer
4. DRIVE-CLIQ transducer
5. Short-stroke axis with linear motor drive and junction roller guides



DRL Rotary Lift Unit.
Implement and turn in confined spaces.
Now also with center position.

High-speed assembly with integrated rotary motion

The SCHUNK DRL 25 pneumatic rotary lift unit is a pacemaker for modular high-performance assembly. The rotary loader enables dynamic and yet steady pick & place operations with rotating angles of either 90° or 180°. The 180° version is now available with center position. This means the rotary movement can be stopped at 90° if the deposit station is not yet ready, e.g. to reject faulty parts or simply to move out of the machining area.

High automated system productivity

Up to 75 cycles per minute at minimal loads and a rotating angle of 180°. In contrast to conventional pick & place units assembled from two linear units, the rotary lift unit can be positioned between the pick and place positions. This permits the overall automated system to have a very compact design.



Highly flexible!
Center position at 90°.

DRL

Modular Assembly Automation

New product | Series expansion

Immediately available

Sizes	Max. rotation angle	Vertical stroke	Driving force	Torque
20	90° or 180°	33 mm	245 N	2.26 Nm
25	90° or 180°	40 mm	321 N	3.70 Nm

Product features

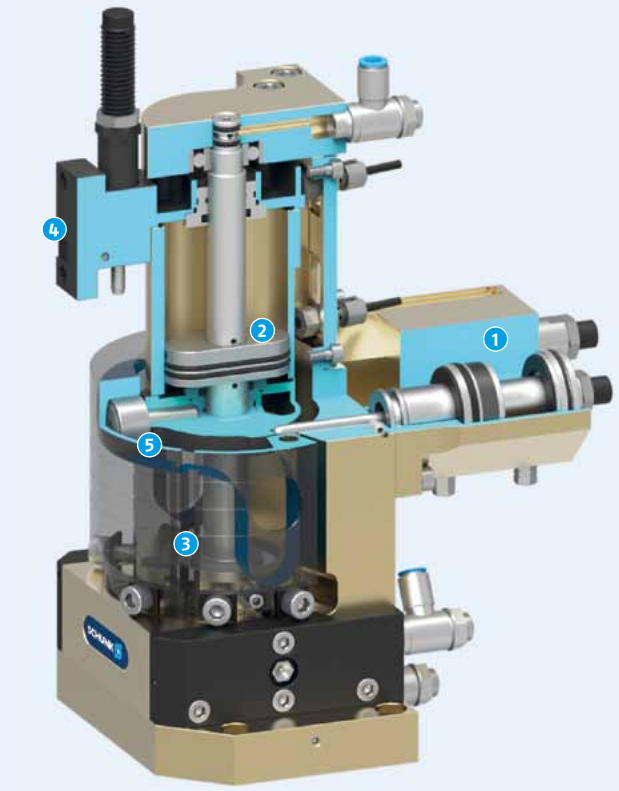
- Center position at 90° optimal
- Transferring and turning in one operation
- Rotating angle can be adjusted by ±2° on either side
- Vertical end position can be adjusted by 10 mm on either side
- Various pick and place heights are possible
- Two waiting positions are possible by control

Your advantage

- Significantly greater productivity because of higher cycle times
- Greater process reliability because of highly flexible control
- Fewer shock absorbers than in comparable pneumatic solutions
- Additional cycle movement by center position

Function cross section

1. Center position
2. Vertical drive
3. Rotary drive
4. Assembly connection
5. Connecting member



New modules for the SCHUNK Pillar Assembly System. Greater Flexibility and simple Adjustment of the Handling Units.

More than 10,000 possible combinations

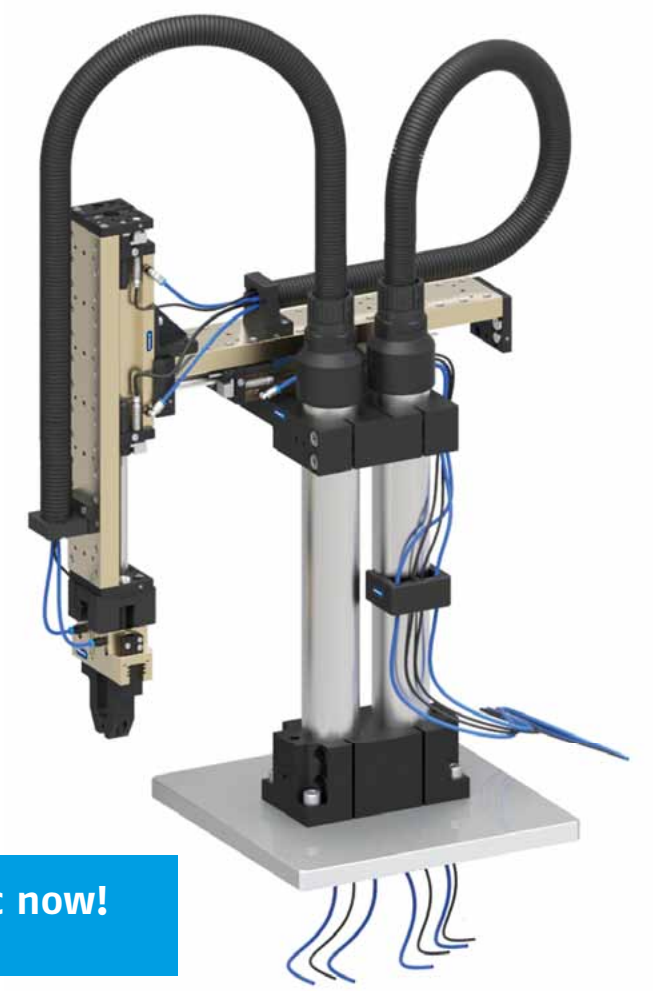
SCHUNK offers the most extensive range of modules in the world for high-performance assembly. The heart of the design is the pillar assembly system that is unique in scope with numerous standardized pillar profiles, adapter plates, centering and connection elements. New assembly sections and innovative media routing now expand the possible applications of the system. With the new modules in the SCHUNK pillar assembly system, it is now possible to achieve complete ranges more cost effectively and economically without sacrificing flexibility and precision.

Quick and easy media routing from the modular system

By integrating various standard elements into the modular system, SCHUNK now offers all media routing possibilities. For one thing, hoses and cables can be routed directly through the pillar. For another, these can be clipped onto the pillars in a time-saving and reliable process.

More versatile and more economical

The SCHUNK APEA mounting plate allows compact structures even directly above a single pillar. The SCHUNK AMEH/AMDH and SCHUNK AMEV/AMDV mounting plates, for their part, extend the already highly versatile range of combination options in the modular system. In the SCHUNK AMEH/AMDH, the mounting surface is arranged horizontally and at right angles to the pillar. In the SCHUNK AMEV/AMDV, the mounting surface is vertical and thus arranged parallel to the pillar. The SCHUNK STG split set collar which facilitates the complete assembly is also new. Fitted below the elements, it can be used for fine positioning of the height of the elements by means of screws. The set collar is in two pieces and can be reused for other positions afterwards. All elements are equipped with additional threads to make the assembly more versatile. This means brackets, cable ducts or those clamps can be attached during set-up.



Even more economic now!
Modules for greater flexibility.

SCHUNK Pillar Assembly System

Modular Assembly Automation

New product | Series expansion

Available starting Juny 2015

Pillar diameter
20 .. 55 mm

Number of module elements
19

Product features structural element

- Further structure can be attached in parallel, at right angles or directly above the pillars, depending on the structural element
- Ground and hard-chromium plated steel pillars
- Precise shape and positional tolerances
- Three pillar diameters Ø 20, 35, and 55 mm
- Assembly and centering holes for simple and precise fitting exchange
- Additional thread for mounting further elements such as brackets, cable ducts or hose clamps

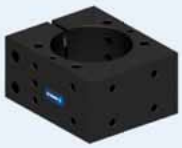
Product features media routing

- Simple and ingenious system for handling modules
- For pillar diameters Ø 35 and 55 mm

STG



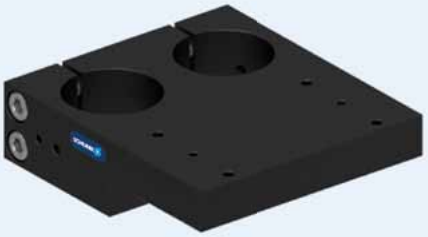
APEH



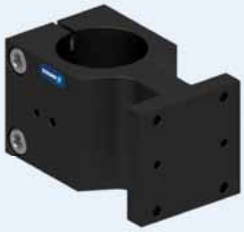
AMEH



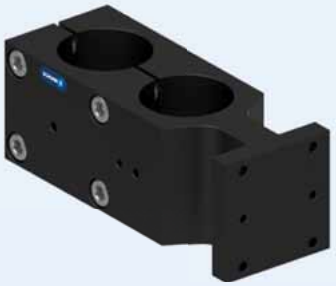
AMDH



AMEV



AMDV



Media routing



Media routing



NSR-A-100 Quick-Change Module. Compact with higher locking force.

Space-saving at maximum flexibility

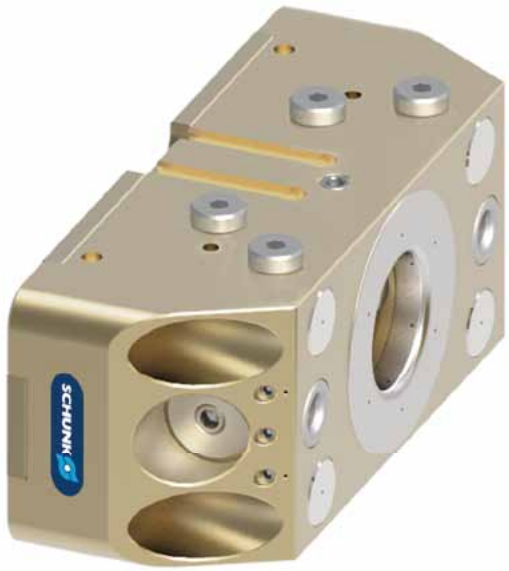
The NSR-A is the new slim quick-change module for pallet loading very close to the assembly or machine table. Very low attachments to the clamping station and pallet are feasible, and there is enough space for the components and the axis motion. For supplying the modules, handling, and assembly tools, the module can be additionally equipped with a SCHUNK standard media transfer for pneumatics, electric, or fluids.

Slim and light, but powerful

The NSR-A has a locking force of 4,000 N, and therefore is an exceptionally rigid system. It is suitable for reliable handling of pallets up to 75 kg and for handling of tools. The SCHUNK locking system with the patented fast stroke and clamping stroke makes the handling of such enormous weights possible.

Control for a higher process reliability

The locking and unlocking process is monitored by magnetic switches, the pallet and tool presence by inductive proximity switches.





Powerful!
High locking force of 4,000 N.

NSR-A

Robot Accessories

New product | Series expansion

Available starting May 2015

Sizes	Workpiece weight	Pull-in force	Repeat accuracy
100	75 kg	4,000 N	< 0.02 mm

Product features

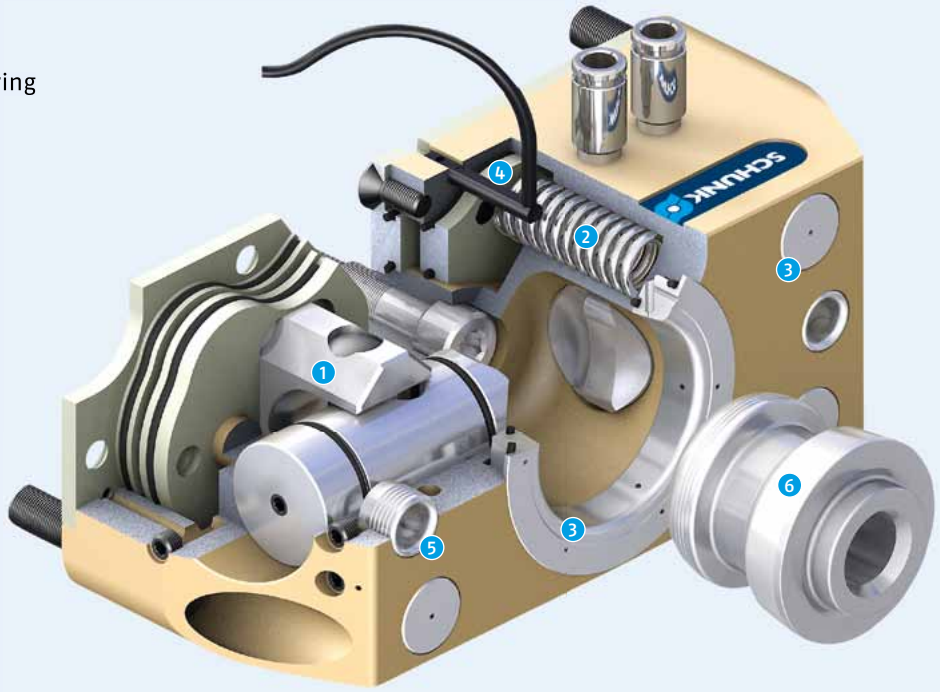
- Patented fast stroke and clamping stroke for a high locking force of 4 kN
- The module is completely sealed
- Form-fit locking with patented self-locking
- Every power transmitting part is made of hardened steel
- No lubricated air is necessary
- Pneumatic system pressure of 3.5 bar is sufficient for unlocking

Your advantage

- Optimal ratio of rigidity, robustness, and weight due to the high-strength, hard-coated aluminum for parts outside the power transmission
- Reliable pallet or tool change in narrow environments
- Secure process due to an excellent repeat accuracy

Functional cross section

1. Mechanical locking system
2. Compression springs
3. Housing
4. Piston stroke monitoring
5. Torque pin
6. Conical clamping pin



SVH Servo-electric 5-Finger Gripping Hand. The first industrial 5-Finger Hand.

Integrated control unit in the wrist

The industrial version of the anthropomorphic SCHUNK SVH 5-finger hand grips nearly as perfectly as the human hand. The electronics are completely integrated into the wrist, which allows the 5-finger hand to simulate nearly all human hand movements. Due to the moving parts with a total of nine drives, various gripping operations can be executed with high sensitivity.

Reliable holding

Elastic gripping surfaces ensure a reliable grip on objects. Due to its compact dimensions, the SCHUNK SVH is suitable for gripping and manipulation tasks, and especially for human / robot communication by means of gestures.



Integrated electronics in the wrist

Visionary!
A vision becomes reality.



Left and right gripping hand



Gripping hand



Key grip



Precision grip



Power grip

SVH

Modular and Mobile Gripping Systems

New product | Series expansion

Immediately available

Size	Weight
1	1.3 kg

Product features

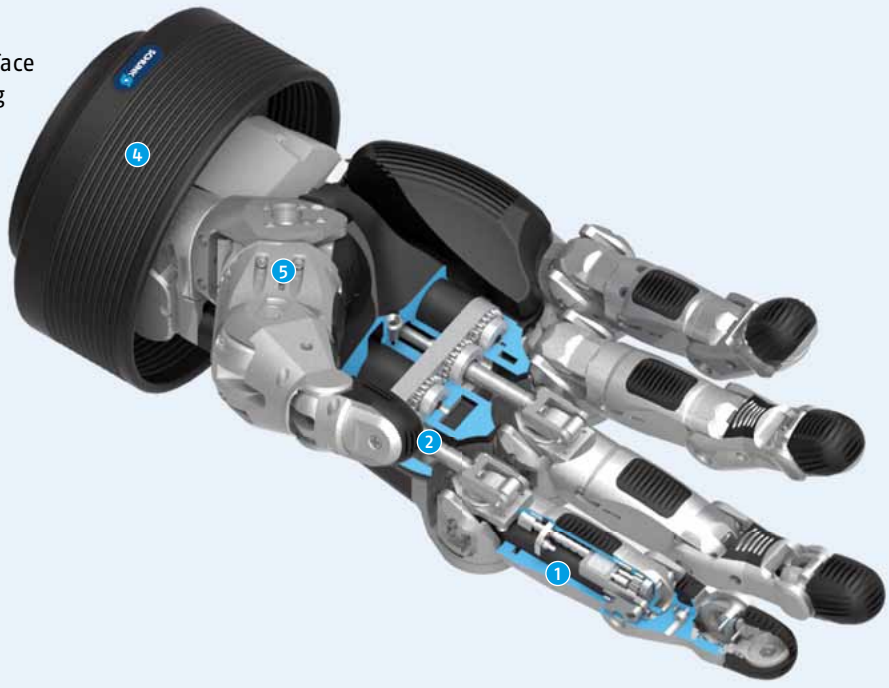
- Available in left- or right-hand versions
- Low energy consumption at 24 V DC
- Complete integration of control, regulator and power electronics in wrist

Your advantage

- Suitable for mobile fields of application
- Gripping hand key grip, precision grip, power grip
- Easy connection with market-standard industrial and lightweight robots via defined interfaces

Function cross section

1. Distal index finger drive for controlling two axes
2. Proximal index finger drive is DC motor with spindle drive
3. Slip-resistant elastic gripping surface made of rubber for secure holding
4. Integrated electronics for direct mounting on the robot arm
5. Thumb with two degrees of freedom for bending and pivoting the thumb



ECS Safety Modul.
Controller for the first certified SCHUNK Safety Gripping System.

Redundant monitoring

In conjunction with the SCHUNK ECM controller, the SCHUNK ECS safety module converts SCHUNK EGN and EZN grippers into DIN EN ISO 13849-certified safety gripping systems without conversions. The SCHUNK ECS as a safety controller monitors the resolver signal redundantly. The highly integrated solution is pre-programmed and supplied ready for use. Due to the prefabricated connection cable and the screw terminals, installation on the DIN rail could not be easier. No further software programming is required due to the safety controller pre-programmed with parameter settings.

Easily retrofitted

The SCHUNK ECS can be easily retrofitted with the SCHUNK ECM controller onto existing SCHUNK EGN and EZN grippers. This allows the certified functions of SLS, SOS and STO to be used. There is no longer any need to switch off the gripper during start-up or maintenance. Also, the gripper switches back to the regular operating mode without delay after protection zone release.



Easy to integrate!
Pre-programmed and ready for use.

ECS

Accessories

New product | Series expansion

Immediately available

Sizes
1

Product features

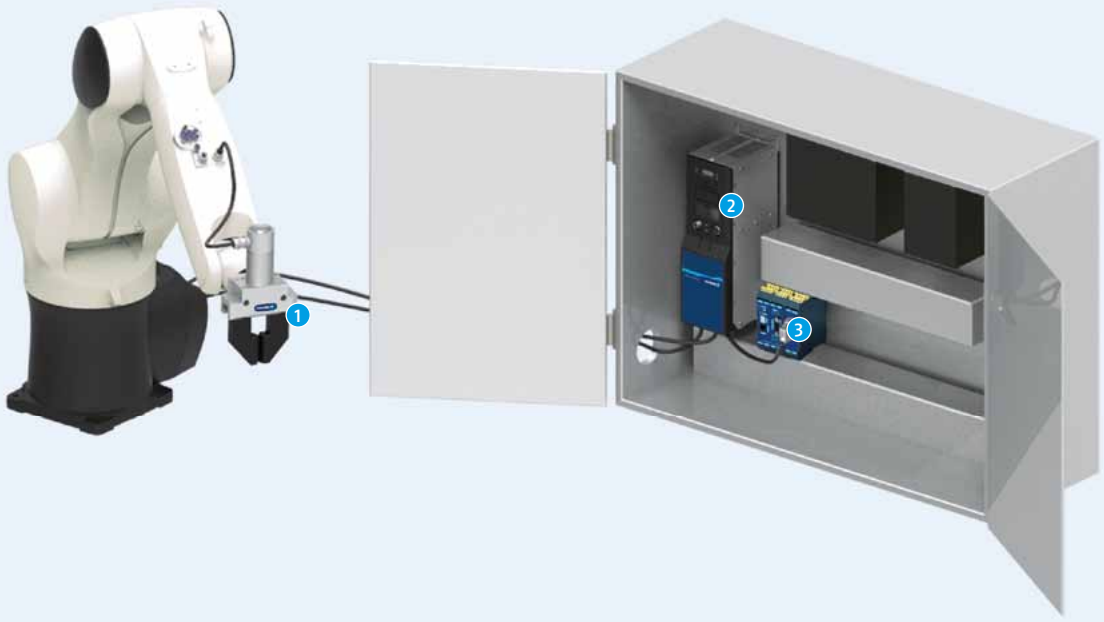
- Compact housing
- Simplest installation
- Prefabricated connection cable
- Screw clamp for simple installation
- Performance level d / SIL 3 in combination with SCHUNK
- ECM controller

Your advantage

- Fast and convenient manual start-up
- Substantially simplified assembly

Function cross section

1 EGN servo-electric 2-finger parallel gripper
2 ECM controller
3 ECS safety controller



ECM Controller.
Modular 24 / 48 V Controller for SCHUNK Modules.

Fast and simple commissioning

The modular controller ECM has been developed specifically for electrically driven gripping and rotary modules with an input voltage of 24 V or 48 V. Equipped with standardized plug connections, it can be quickly and easily connected. Control can be provided via Profibus (up to 12 Mbit/s) or CAN bus (up to 1 Mbit/s). With immediate effect, a Profinet interface is available as an additional option. For commissioning and parameterization via PC with the SCHUNK Motion Tool, the ECM has a USB device connection. Alternatively it can also be put into operation in seconds without connecting a programming device. To do this, a USB stick can be parameterized and addressing is done manually via an easily configurable rotary encoding switch.

Everything in view and under control

Initial module movements can be realized via a DIP switch. The ECM is also equipped with an LED and 7-segment display for status display and error analysis. It is also available with four digital inputs and outputs. It is suitable for evaluating resolvers, encoders with an index, differential encoders and absolute-value transducers (SSI, EnDat), and in particular, enables the control of SCHUNK EGN and EVG grippers as well as the SCHUNK ERS rotary module.



Convenient!
Parameterization via USB stick.

ECM

Accessories

New product | Series expansion

Immediately available

Feed line current
max. 15 A

Transmission rate
Profibus max. 12 Mbit/s
CAN bus max. 1 Mbit/s

Product features

- Service interface USB host and two rotary encoding switches
- Standardized plug connections for communication and cage clamp terminals for power
- DIP switches with first test and commissioning functions
- Clear information on current controller status via 7-segment display and 4 LEDs
- Toolfree connection of cables with spring clips and plug connectors

Your advantage

- Fast and convenient manual commissioning
- Substantially simplified assembly
- Maximum interface flexibility due to Profibus, CAN bus, 4 digital I/Os and ProfiNet (2014)

Function cross section

1. Status display
2. Service Interfaces
3. Rotary encoding switch
4. DIP switch
5. M12 plug connection for communication
6. Cage clamp terminals and plug connector



SDV-P Pressure Maintenance Valve. First Pressure Maintenance Valve with manual Air Bleed. Now also with Hose-free Direct Connection.

With hose-free direct connection for PGN-plus 64, 80, 100 and 125

The SCHUNK SDV-P pressure maintenance valve with integrated quick air bleed is available with hose-free direct connection for the screw connection pattern of the PGN-plus 100. Now, SCHUNK is broadening the series to PGN-plus 64, 80 and 125. This means the SCHUNK SDV-P can be linked to all grippers of the PGN-plus platform in these sizes such as PWG-plus, DPG-plus and JGP. The integrated quick-action ventilation minimizes the actions to be taken and prevents wear to both the hoses and the fittings. The SDV-P offers two advantages over grippers with mechanical means for maintaining the gripping force: it has a much more compact design and ensures that the actuators remain in their position immediately in case of an emergency stop, even if the gripper is not yet fully closed.

Reliable

Without having to disconnect the grippers under pressure, the actuators in the defined limit position can easily and quickly be released via the integrated ventilation button of the SDV-P during the reset of the system. The two adjacent ventilation buttons are accessible from the front side and can be actuated easily with a pen, Allen key, etc. The pressure maintenance valves of the SDV-P series ensure a maximum pressure drop of 0.1 bar per hour (at the defined reference volume and constant temperature) and cover a pressure range of 0.5 to 10 bar. The switching time is approximately 10 ms. Existing SDV-P valves without ventilation can be replaced 1:1 with the new SDV-P valves featuring integrated quick-action ventilation.



Manual air bleed!
Without disassembly of the gripper.

Immediately available

Sizes	Max. flow	Air connection	Max. operating pressure
04 .. 10	200 l/min .. 800 l/min	G1/8	10 bar
64 .. 125	200 l/min	direct	10 bar

Product features

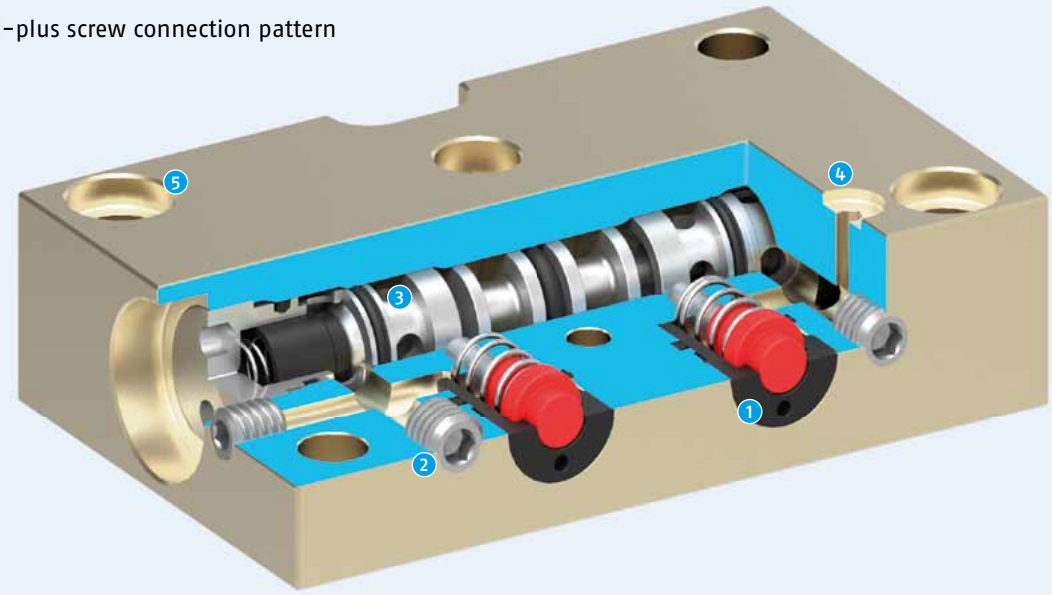
- Integrated manual air bleed
- Compact design
- Replace of existing SDV-P is possible with no modification whatsoever
- Convenient access to ventilation buttons from the front
- Suitable for PGN-plus, DPG-plus, PWG-plus, and JGP

Your advantage

- No loss of clamping force in case of pressure drop
- No additional hoses necessary
- Saves time during ventilation of the handling components
- Higher process reliability, since no disconnected hoses can be mixed up

Function cross section

1. Quick exhaust
2. External air connection to gripper
3. Valve tappet
4. Direct air connection to gripper
5. PGN-plus screw connection pattern



Superior Clamping and Gripping

It's time to use your machine's

With superior components, find potentials in your machine, where you would least expect to find them.

Make full use of your machine's potential – with the extensive product portfolio from SCHUNK.

SCHUNK, the competence leader for clamping technology and gripping systems, can now open up the full potential of your processing machines and production processes. Reduce costs by combining accurate, flexible workpiece machining with dynamic production automation.

SCHUNK Synergy – when everything fits together.

With SCHUNK Synergy, you benefit from superior components from our innovative family-owned company and the result of a perfectly harmonized interplay of clamping technology and gripping systems. The more SCHUNK, the more efficient.

SCHUNK

full potential!



"Clamping technology and gripping systems – the perfectly adjusted interplay makes SCHUNK a champion in terms of productivity. We call it SCHUNK Synergy.

Let's see where your machine's potentials are hidden."

Jens Lehmann

SCHUNK No. 1 Products for higher Productivity ...

Discover new potential now:

www.gb.schunk.com/machine-potential

And order the SCHUNK Synergy poster by telephone +49-7133-103-2256

... in your Automated Handling System



up to 20 tons load handling

MAGNOS **Magnetic lifting technology**

... in your Lathe

... in your Lathe



60 seconds jaw change

Lathe chucks ROTA-S plus 2.0 and **ROTA THW** plus

300% better surface quality

TENDO TURN – innovative **hydraulic expansion toolholders,** for lathes and turning / milling centers



1,200 standard chuck jaws

The world's largest **chuck jaw program** for every chuck type



… in your Automated Handling System



No. 1 unique
PGN-plus Permanent, the only gripper with multi-tooth guidance



more than 500 standard combinations
for **line and room gantries** from the modular system

100% cycle increase
Universal rotary module SRU-plus 20-S, the new benchmark in top performance



90% faster gripper change
SWS Quick-change system – fully automatic gripper change within seconds



… for your Automated Machine Loading





… for your Automated Machine Loading



300 kg load capacity
NSR Robot coupling for pallet handling – space-saving and extremely flexible

100% control
TANDEM **KSP plus Clamping force block** with jaw monitoring





30% more productivity
Automated machine loading with **PGN-plus Permanent grippers** with **GSW Spindle interface**

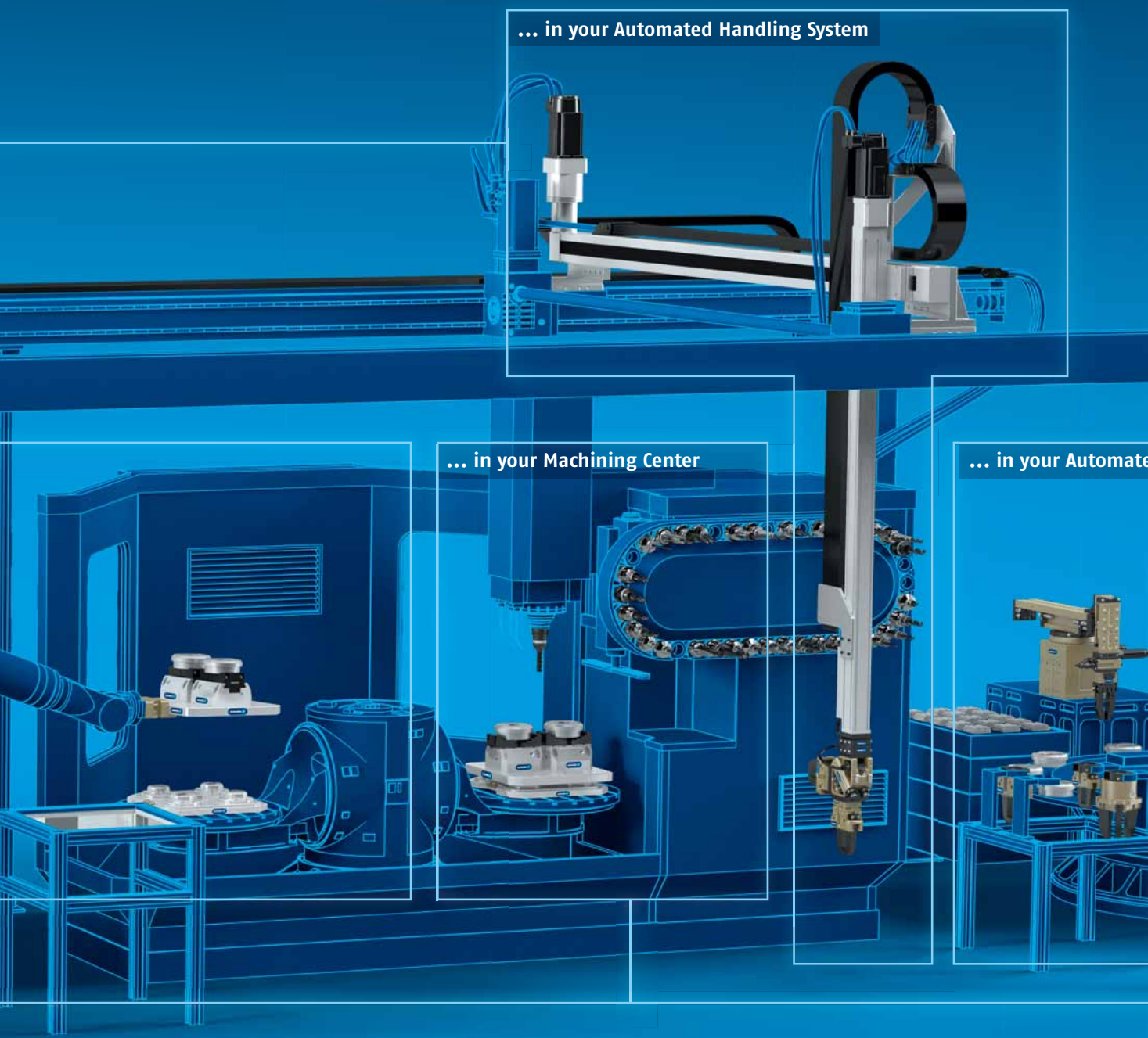
… in your Machining Center



90% less set-up costs
with **VERO-S**, due to set-up during processing time



20 mm height
VERO-S NSE *mini* – the pneumatic **quick-change pallet system** in a very flat design





75,000 customer-specific solutions
Hydraulic expansion technology for tool or workpiece clamping



0.3 mm shank diameter
TRIBOS mini sets a benchmark in micro machining

100% encapsulated
KONTEC KSK Centric clamping vise
fully functional in harsh environments



less than **3** µ run-out accuracy
TRIBOS-SVL Super-slim tool extension
optimized interfering contours





5-sided workpiece machining
in one set-up – MAGNOS Magnetic clamping technology



up to **85,000** rpm
TRIBOS-S predestined for high-speed cutting

... in your Automated Assembly



∞ combination options
SCHUNK Modular assembly system



180% better gripping force – mass ratio
EGP – The powerful electronic **gripper for small components** with integrated electronics



25% greater gripping force
MPG-plus – The most powerful pneumatic **miniature gripper** in the market



110 picks per minute
PPU-E – The fastest pick & place unit in the market, **PPU-P** with 90 picks/min



ed Assembly

... in your Service Robotics Application

Future handling





6 degrees of freedom
Powerball lightweight arm LWA 4P
The lightweight arm with the world's most compact performance. Used on mobile platforms.



less than 3 µ run-out accuracy
TRIBOS-R with unique patented **polygonal clamping technology**



100% suitable for all SCHUNK toolholders
TENDO-SVL Tool extension – optimized interfering contours and super-slim



up to 80 bar coolant-proof or peripheral coolant
Versatile clamping range with **GZB-S Intermediate sleeves**



more than 35 years of experience in **TENDO Hydraulic expansion technology.** **TENDO**, the original. With 29 interfaces, versatile, with 3 µ run-out accuracy



2,000 Nm torque with Ø 32 mm
TENDO E compact for large volume cutting, boring, reaming, and threads



0 µ permanent run-out accuracy
TENDO zero, perfect vibration damping, resulting in up to 50% longer service life

SCHUNK



Your Automated Machine Loading

SCHUNK

SCHUNK No. 1 Products for higher Productivity in your Automated Machine Loading.

By using our modules you will maximize your system productivity due to faster loading and changing processes. The systematic use of single modules from SCHUNK clamping technology and gripping systems pays off as single components and even more when used in combination.

It's time to use your machine's full potential!

30% more productivity

75 kN holding force

300 kg payload capacity

SCHUNK No. 1 Products for higher Productivity for your Automated Machine Loading.



Automated loading of a milling machining center with the clamping pallet prepared on the set-up table. After the introduction of the clamping pin, the quick-change pallet module positions and clamps the pallet in seconds.

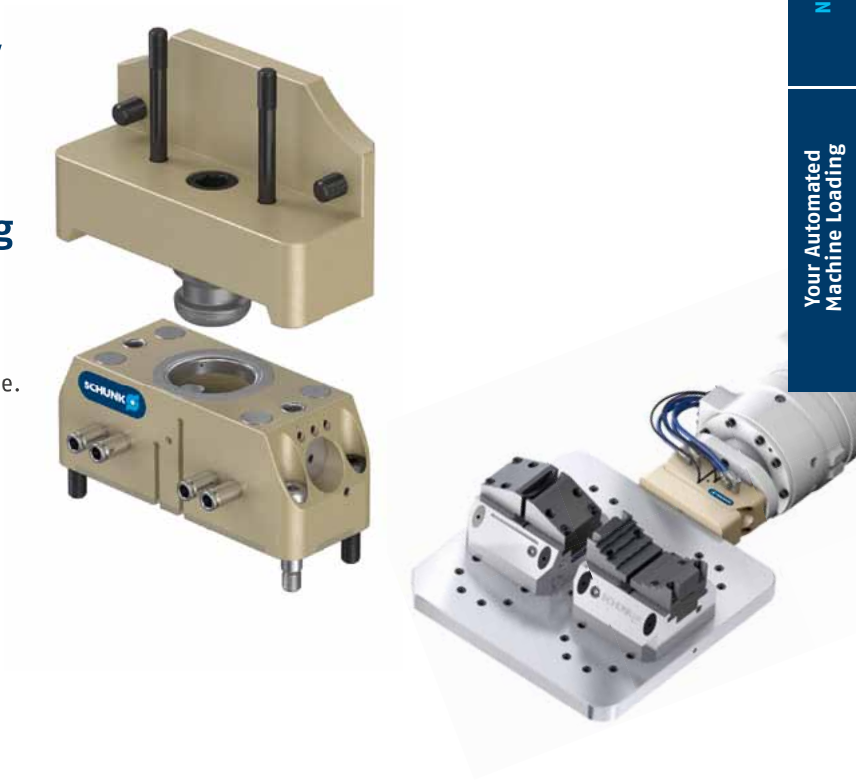
300 kg loading capacity

NSR

Robot Coupling for Pallet Handling

Process reliable, precise, and space-saving
Automated pallet loading redefined. The slim SCHUNK NSR lightweight coupling with minimized interfering contours works extremely close to the machine table. Low designs consisting of a module for stationary use and clamping pallet are easy to implement. This leaves a lot of space in the machine room for the workpiece and axis movements.

- Highest pull-in forces of up to 15,000 N
- Lightweight of 1.6 kg
- Transmittable torques of up to 600 Nm
- Integrated slide monitoring and pallet presence monitoring



90% faster gripper change

SWS Quick-Change System

One system, two components.
The standardized SCHUNK quick-change system SWS establishes the connection between the gripping system and robots or gantries. For manual change, SCHUNK offers the HWS manual change system.



75 kN holding force

VERO-S NSA plus Automated Palletizing System

Highly efficient automation
Positioned within seconds with a repeat accuracy of < 0.005 mm, SCHUNK NSA plus is the precision module for automated machine loading. Built very low, it leaves ample space in the machine room.



90% less set-up costs due to setting up during machining

Tombstones with VERO-S Quick-Change Pallet Module

Fundamental high performers
Three tombstone shapes. Extremely compact design. Ideally suited to the selected SCHUNK clamping device. Activate the full power potential of your horizontal machining centers.



SCHUNK No. 1 Products for higher Productivity for your Automated Machine Loading.



30% more productivity due to automated machine loading

PZN-plus Gripper with GSW-B Spindle Interface

The clever productivity booster
Cuts set-up times and saves complex and expensive automated solutions. The SCHUNK gripper sits in a toolholder like a tool and can easily be changed into the spindle due to the standard interface. The result: fully automatic workpiece change only with the help of the axis movements of the machine tool.

PZN-plus gripper with flexible GSW-B-AGE Compensation Unit

Before it breaks
Excessive forces during automatic machine loading? The SCHUNK GSW-B-AGE yields, compensation for tolerances and inaccuracies in six degrees of freedom is the answer.

180° rotation

SRH Swivel Head

Precise rotation and long life span
Maximum automated system productivity for demanding rotation tasks. Modules in the SCHUNK SRH series have a consistently modular structure and comprise tried-and-tested SRU rotary modules in conjunction with SRH rotary corners, EDF electrical feed-throughs and MDF media feed-throughs.



30 seconds, and the machine room is clean.

RGG Cleaning Unit

Sparkling clean machine table
Can be used for workpiece and machine room. Fits on almost any conventional toolholder mountings with a diameter of 20 mm. Cleans using air or coolant. Simply put into the machine and reduce idle times.



4.9 kg maximum workpiece weight

Vacuum Gripper GSW-V

Making machine tools more productive
Universal, maintenance-free tool for handling a large variety of flat components. Due to the integrated Venturi nozzle, this SCHUNK gripper doesn't need additional parts to generate a vacuum.



It's time to use your machine's full potential!



Automated raw and finished part handling with the machine spindle.

0% electricity requirement

Magnetic Gripper GSW-M



Attracting pole position
Maximum system productivity due to lean automation. Whether it's metal sheets, bearing rings or workpieces with complex contours – the SCHUNK magnetic gripper handles anything ferromagnetic without making adjustments or the need to change fingers, and efficiently based on the machine's own axis without electricity.

12 sizes available

Beta Linear Axis



Dynamic and smooth-running
You can choose between roller guides and profiled rail guides, depending on the application.
The Beta series enables economical axis applications with high requirements for dynamics and smooth running. Long strokes can also be achieved with this axis type.



Your Automated Handling System

SCHUNK

SCHUNK No. 1 Products for higher Productivity in your Automated Handling System.

SCHUNK offers the world's largest program of gripping modules, rotary, and swivel modules, linear modules, and robot accessories. Handling and assembly processes in the field of automation require diversity in variations of modules, particularly if the standard components are combined with each other. Discover the unforeseen possibilities.

It's time to use your machine's full potential!

More than **500** standard combinations for line and room gantries

90% faster gripper change

100% cycle increase

SCHUNK No. 1 Products for higher Productivity in your Automated Handling System.

More than 500 standard combinations

Line and Room Gantries
LPP / LPE / RPE



Standard gantries from a modular system
Pre-assembled for immediate start-up. Pneumatic or electric. These standardized configurations can be combined into customized gantries, saving up to 50% in investment, project planning, assembly and installation.

- 5 kg, 10 kg, and 20 kg payload
- 300 mm in to 1,500 mm X-stroke / Y-stroke
- 25 mm in to 500 mm Z-stroke

360° endlessly turning



ERM Electric Rotary Module

Extremely adaptable – integrates perfectly
The drive can be freely adjusted in 90° steps. In this way, the interfering contour of the SCHUNK rotary module can be optimally adjusted to the gantries or robots. Depending on the engine, the endlessly turning module has torques of up to max. 75 Nm. It can attain any intermediate positions and is designed for a maximum speed of up to 62.5 rpm.

The No. 1 in gripping



PGN-plus Permanent 2-Finger Parallel Gripper

The unique gripper with multi-tooth guidance
Highly precise handling, higher payload, higher gripping forces. Various options for special application cases and perfectly graduated sizes make it an ideal solution for all areas of application.

Up to 1,750 N gripping force



EGA Long-Stroke Gripper

Adaptable, robust, compact.
With adaptation possibilities for all commonly available servo motors, the SCHUNK EGA is the most versatile electric long-stroke gripper that can be used on the market. Easily integrated in the automation system control, all properties of the current system can be transferred to the module.

IP65 protection class



OPR Collision and Overload Protection

Rapid reaction
Particularly designed for the use on small robots. Due to the minimum reaction time, the SCHUNK OPR reliably prevents damages due to collisions or overloads.

It's time to use your machine's full potential!



Use of a SCHUNK SRU-plus rotary unit in handling and assembly for picking up and positioning small components.

100% cycle increase

SRU-plus 20-S Universal Rotary Actuator



The new benchmark
Increase cycle numbers by up to 100% compared to state-of-the-art rotary actuators of the same size. The SCHUNK high-speed module allows for swivelling times from 0.3 s and cycle numbers of up to 3,700 cycles per hour.

Performance Level d / SIL 3

EGN Safety Gripping System



Permanently live
With the SLS, SOS and STO functionalities, the SCHUNK EGN gripping system certified in accordance with DIN EN ISO 13849 enables safe human / machine collaboration.
In emergency stop mode as well, the gripper remains energized for securely holding the workpiece.



Your Automated Assembly

SCHUNK

SCHUNK No. 1 Products for higher Productivity for your Automated Assembly.

Wherever pick & place and assembly tasks place the highest demands on precision and economy, SCHUNK is the solution provider for perfect implementation. No matter whether partially or fully automatic. No matter which drive medium. The innovative SCHUNK components always get that little bit of extra power out of your processes.

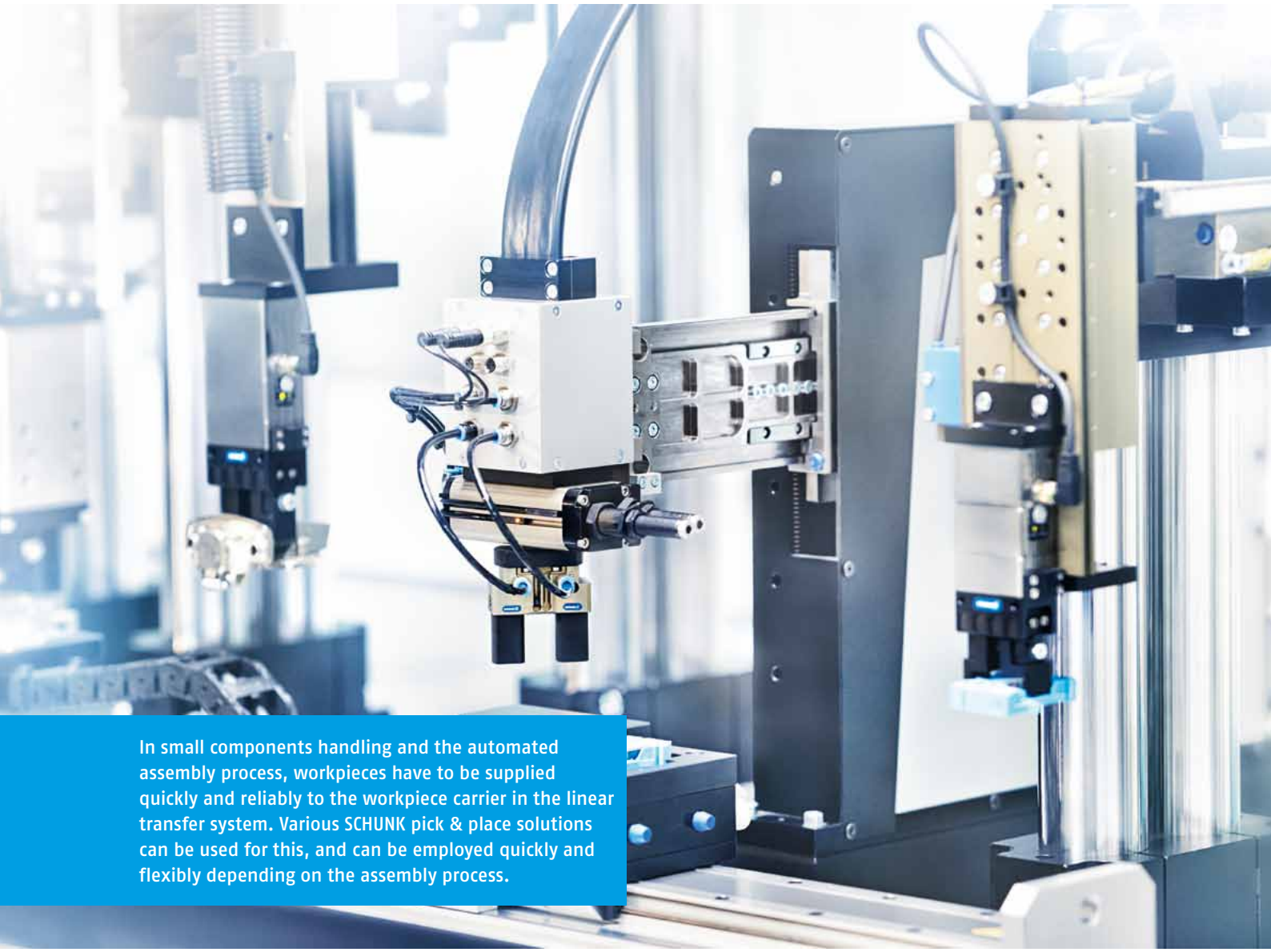
It's time to use your machine's full potential!

110 picks per minute

∞ combination options

3 compensation directions

SCHUNK No. 1 Products for higher Productivity for your Automated Assembly.



In small components handling and the automated assembly process, workpieces have to be supplied quickly and reliably to the workpiece carrier in the linear transfer system. Various SCHUNK pick & place solutions can be used for this, and can be employed quickly and flexibly depending on the assembly process.

6 degrees of freedom



FT 6-Axis-Force-Moment Sensors

The largest diversity of variations on the market
SCHUNK 6-axis-force-moment sensors measure forces and moments of 6 components during applications such as polishing, deburring, and difficult milling operations.

100% precision fitting



SCHUNK Adapter Plates

The individual connection
SCHUNK adapter plates ensure a high fitting accuracy in the interaction of robot accessory modules and ISO flange interfaces.

250 rpm endless turning



ERS Electric Rotary Module with DDF

Compact and extremely modular
Compact electric rotary module with integrated pneumatic and electric feed-through.

Compensation in 3 directions



TCU Compensation Unit

Optimal mounting or joining position
For automated joining or gripping of precise components. The SCHUNK TCU compensation unit compensates in X-, Y-, and Z-direction, corrects angle errors, and achieves rotational compensation.

110 picks per minute

PPU-P and PPU-E Pick & Place Units

The fastest in their class
With 110 picks per minute, the servo-electric SCHUNK PPU-E is the fastest pick & place unit in the market. SCHUNK PPU-P keeps up a brisk pace pneumatically with 90 picks per minute. Both are the ultimate in high-speed assembly work.

- 2 kg – 5 kg payload
- 10 microns repeat accuracy
- Plug & Work makes start-up as easy as can be



∞ combination possibilities

SCHUNK Modular Assembly System

More individuality and economy
Comprehensive, top class modular system for individual solutions. Benefit from the variety of components for automated assembly that have been tried and tested 100,000 times.



Up to 75 cycles per minute

DRL Rotary Pick & Place Unit

High-speed assembly with integrated rotary motion
Highly dynamic yet steady pick & place operations with rotating angles of 90° or 180°. The DRL is a specialized trendsetter for modular high-performance assembly in the SCHUNK program.



Over 10,000 possible combinations

Pillar Assembly System

The heart of the design in the most extensive modular program in the world
Unique pillar assembly system with numerous standardized pillar profiles, adapter plates, centering and connection elements. With more than 10,000 possible combinations, it is the most extensive modular program in the world for high-performance assembly.



6 sizes available

LDN Linear Module

For high-precision high-speed applications
Powerful servo motors can achieve a high rated force even in smaller modules. Alternatively, higher masses can be moved in vertical applications.



SCHUNK No. 1 Products for higher Productivity for your Automated Assembly.



Up to 6 parts per Cycle

RVK Collection Gripper

With 4 or 6 grippers
The SCHUNK RVK increases the productivity of pick & place applications by the collect & place principle. It collects the parts directly one after another, brings them collectively to the assembly or placement locations and puts them down there one after another.

- Collect & place principle is very easy to implement with RVK
- Minimizing cycle time and traverse paths
- Integrated valve technology
- Integrated electric feed-through for permanent monitoring of all grippers, leading to high process reliability.
- Simple mounting of the RVK on ERS 135, ERS 170 or RST-D 087 from SCHUNK



25% higher gripping force

Miniature Parallel Gripper MPG-plus

The benchmark
The most powerful miniature pneumatic gripper on the market. Ready for use around the world, wherever small parts need to be handled reliably and quickly. With its power density, the MPG-plus sets the new standard for handling small parts.



180% better gripping force / mass ratio!

EGP Electric Gripper for small components

The alternative
The most compact electric gripper for small components on the market. Based on the platform of the tried-and-tested pneumatic SCHUNK MPG-plus. The SCHUNK EGP makes changing from pneumatic to mechatronic gripping modules into child's play.



Swivelling time 0.18 s/180°

EGS Gripping Rotary Unit

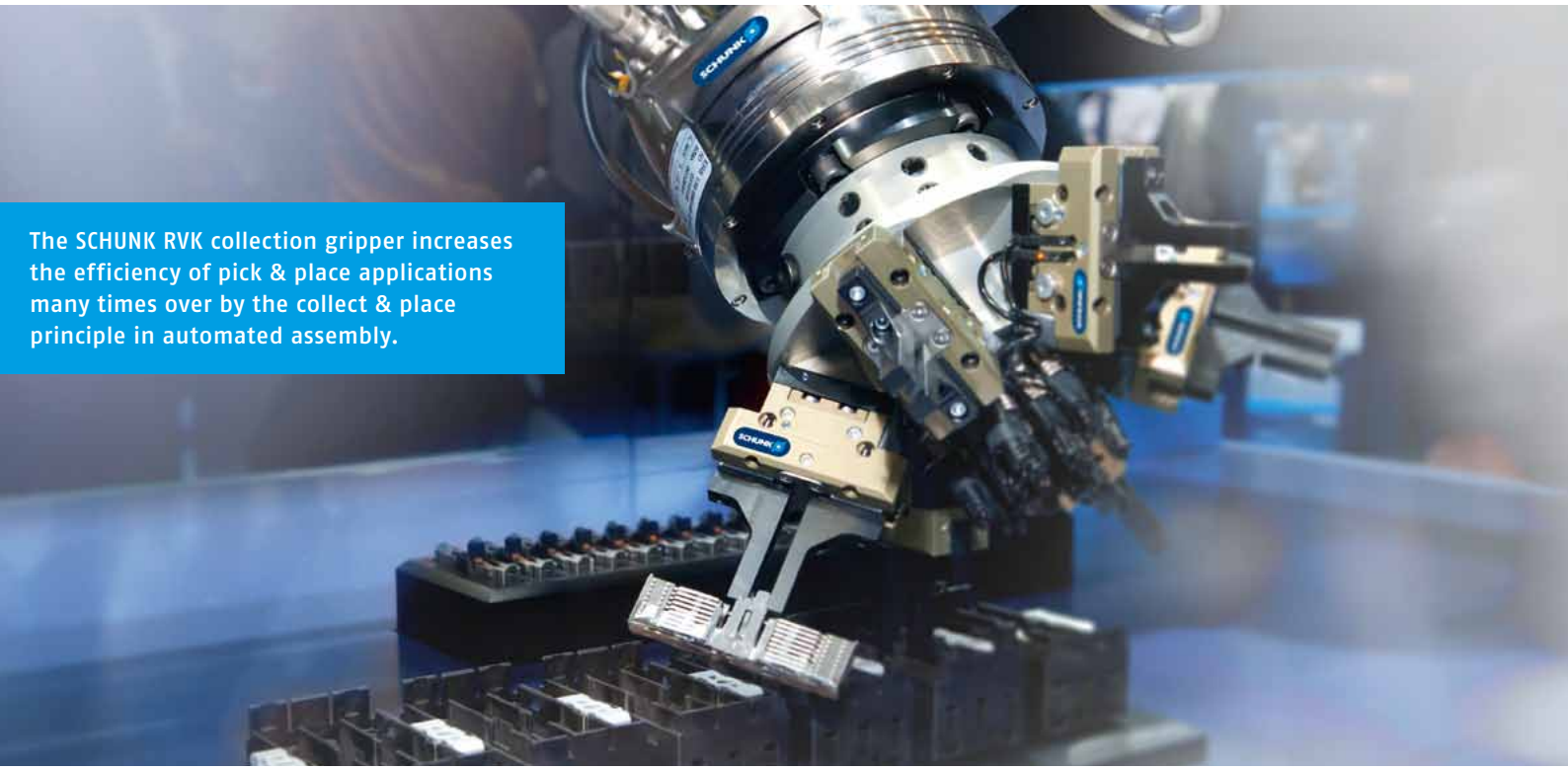
Efficiency class in handling small parts
The most compact electrical gripping rotary unit in the world. The SCHUNK EGS combines electrical gripping and swivelling in the most compact space within a single housing. The angle of rotation can be defined freely between 40° and 320°, and can be set directly on the module as the gripping force can.



340° rotation range

Powerball ERB

Well-rounded and intelligent
The unique SCHUNK rotary module with swivelling / tilting function combines high torque and precision in the smallest of spaces. With up to 34 Nm and a weight of 3 kg, the SCHUNK ERB sets benchmarks in mechatronic integration.



The SCHUNK RVK collection gripper increases the efficiency of pick & place applications many times over by the collect & place principle in automated assembly.

50% higher moment load

DDF 2 rotary feed-through



Flexibly rotating up to 360°
The latest standard for modern robot and assembly applications.
With 3 variants, the DDF 2 offers full flexibility for different process requirements.
You have the choise: Pneumatic feed-through, feeding through of electric signals or the combination of both.

High torque 29.3 Nm



RST-D ring indexing table

Versatile with power!
The SCHUNK RST-D for modular high-performance assembly possesses any amount of power for larger structures and up to six optional pneumatic feed-throughs. The pitch can be set to 4, 6, 8, 12 or even 16 steps as desired.

4 air feed-throughs



CWS Manual Change System

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

Suitability for cleanroom applications ISO class 6



LM Linear Module

Standard solution for high-precision applications
The linear modules of the LM series are equipped with pre-loaded junction rollers in hardened prismatic running rails as guides. This precision guidance system guarantees absolute freedom from play in the overall system and offers high load capacities in all directions.



Your Service Robotics Application

SCHUNK No. 1 Products for higher Productivity in your Service Robotics Application.

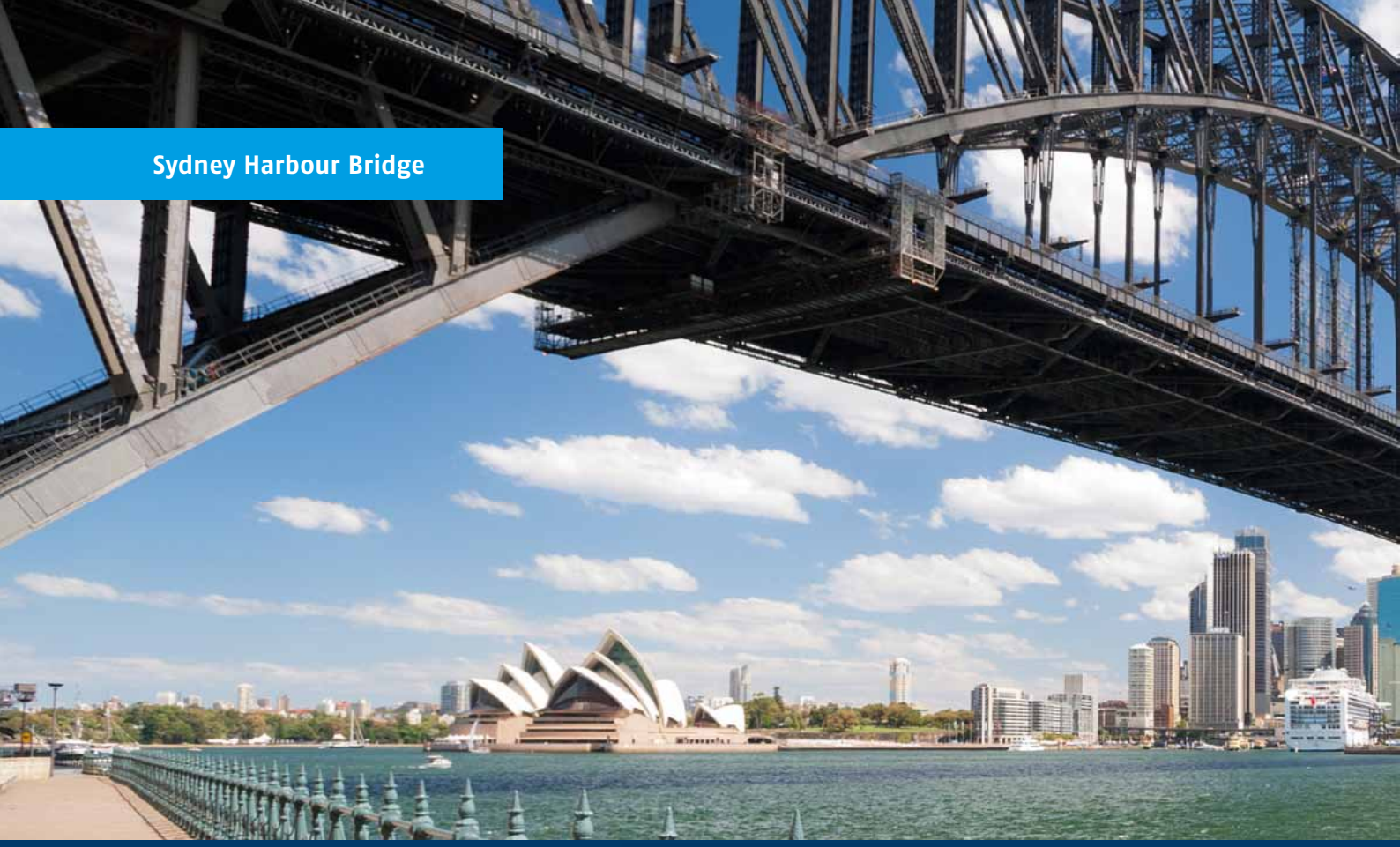
Inspection systems, applications on mobile platforms, human to machine and human to human interaction. On the economic side of things, service robotics is becoming increasingly dynamic. Our mechatronic products are setting new standards in both professional and private spheres. SCHUNK is pushing development forward.

It's time to use your machine's full potential!

> 7 degrees of freedom

100% flexibility

340° rotation range



Sydney Harbour Bridge

SCHUNK Mobile Gripping Systems for higher Productivity in your Service Robotics Application.

SCHUNK is working intensively on numerous service robot projects worldwide. Due to the battery operation, our revolutionary developments are predestined for mobile platforms and independent. Their progress is documented by field-tested applications and projects in the research and testing phase.





Renovation Work

Sandblasting robots take over the dangerous and harmful maintenance of the Sydney Harbour Bridge. The core of the robots are SCHUNK LWA 4 lightweight arms in pressurized protective casings.



Quality Assurance

The LWA 4P is a highly flexible handling device for a fully automated laboratory system at ThyssenKrupp AG. The 6-axis Powerball lightweight arm from SCHUNK is equipped with a mechatronic PG 070 gripper, and handles sensitive cement samples.



Laboratory Use

SCHUNK mobile gripping system components are used for new automation solutions in laboratory environments of the pharmaceutical and chemical industry.



Microchip Production

By using SCHUNK lightweight robots, our customized solutions provide flexible linking in industrial production. This example shows a mobile robot, carrying out transportation tasks such as loading and unloading in cleanroom conditions.



Exploration

The remote-controlled EOD robot developed by the Harris company makes it possible to safely remove explosive weapons. As a manipulator, SCHUNK integrated a modular lightweight arm with 6 degrees of freedom based on PRL rotary modules and PG grippers.



Future Service Robotics

Wrists and the 1-finger-hand from the standardized module program for mobile gripping systems from SCHUNK ensure for mobile handling of the Care-O-bot® 4 of the Fraunhofer Institute for Production Technology and Automation IPA.



Rehab and Care Robot

The battery-powered SCHUNK LWA 4D lightweight arm has 7 degrees of freedom. Service robots developed by researches at the University of Bremen, help people with disabilities to achieve more independence.

SCHUNK Nr. 1 Products for higher Productivity in your Service Robotics Application.



6 degrees of freedom

Powerball Lightweight Arm LWA 4P

A lightweight arm with the world's best compact performance
The arm has three ideally integrated Powerball modules, offering 6 degrees of freedom. Integrated intelligence makes powerful, mobile handling possible as never before, especially in terms of human-robot cooperation.

- Weight / load capacity ratio of 2:1
- Gripping radius of over 700 mm
- Excellent repeat accuracy of 60 µm
- 24 V DC supply for mobile applications
- For every mobile platform – independent of the manufacturer

First industrial 5-finger hand

SVH 5-Finger Gripping Hand

An extremely wide range of sensitive gripping operations
The industrial version of the anthropomorphic SCHUNK SVH 5-finger hand grips nearly as perfectly as the human hand. Due to the integrated control in the wrist, the SCHUNK SVH can accomplish almost all of the movements of the human hand.



120 N gripping force

WSG 2-Finger Parallel Gripper

Configured in 2 minutes
Sensitive handling. This sensitive gripper communicates via Profibus DP, CAN or Ethernet TCP / IP. Due to an integrated web server and tactile sensors, handling tasks of the future are simple.



100% flexibility

SDH-2 3-Finger Industrial Hand

Using people as its model
The SCHUNK 3-finger industrial hand features maximum flexibility when it comes to the shape, size, and above all, position of the gripped parts. Form-fit and force-fit gripping with integrated tactile sensors make it a sensitive helper.



Height 14 mm

FWS Manual Change System

Extremely flat
The SCHUNK FWS flat manual change system is used where it is important to have the shortest possible clearance between the robot arm and tool, and the weight should be low.





Two SCHUNK LWA 4P lightweight arms take over the complete handling from separating out parts through to loading the machine in two separate systems. They can be moved on a linear axis or along passive rails.



10 degrees of freedom

LWA 4D Dextrous Lightweight Arm

From mine detectors to the latest in rehabilitation systems. The SCHUNK lightweight arm LWA 4D sets standards and can be found on service robots all over the world – often combined with our sensitive gripping systems.





Your Lathe

SCHUNK No. 1 Products for higher Productivity in your Lathe.

From powerful chucks, precision toolholders and the world's largest standard chuck jaw program up to special jaw and hydraulic expansion toolholder solutions. SCHUNK always performance features for your application.

It's time to use your machine's full potential!

< 60 seconds quick jaw change

50% larger clamping range

0.01 mm repeat accuracy

SCHUNK No. 1 Products for higher Productivity in your Lathe.



The power chuck SCHUNK ROTA NCF plus 2 is the precise powerhouse for modern turning operation. The integrated centrifugal force compensation ensures save clamping at high RPM.

Sold more than 10,000 times

ROTA-S plus 2.0
Manual Chuck



The new generation
Its predecessor ROTA-S plus has already been sold by SCHUNK 10,000 times. The new generation ranks high due to: Higher rpm and cutting speeds due to permanently high clamping forces. Convenient jaw change in less than a minute due to optimized jaw quick change system. Faster to use due to maximum operator safety. The ten-thousand-fold proven concept has now been perfected. It sets the standard.

- High jaw change repeat accuracy
- 3-fold base jaw securing
- More convenience through sensible accessories such as expansion arbor and changeable protection sleeves

60 seconds quick jaw change

ROTA THW plus
Power Chuck



Quick to adapt
The set-up time killer as of batch size 1. Quickly adaptable to a whole variety of clamping jobs due to jaw change in less than a minute.

410 kN clamping force

ROTA NCO
Power Chuck



Bursting with power
The specialist for rough machining with a large jaw stroke and long life span. Does the job that others give up on. Up to 410 kN clamping force.

0.01 mm repeat accuracy

VERO-S NSL turn
Quick-Change Pallet System



Set-up timer killer for mill / turn centers
Safe clamping even below a speed of 2,000 rpm. Very simple connecting interface with a repeat accuracy of 0.01 mm turns the module for stationary use into a turbo productivity station.

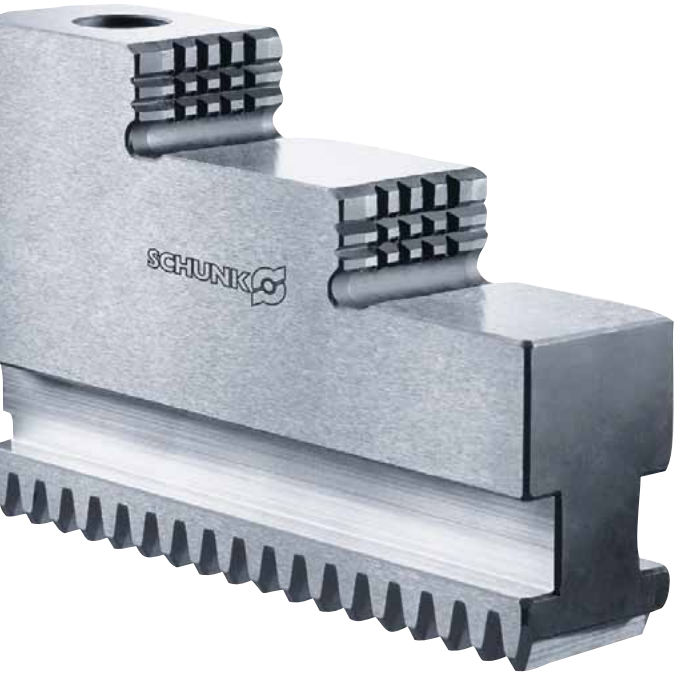
Clamping range 4 – 460 mm

ZENTRICO THL plus
Steady Rests



Highly precise with a long service life
A plus for any lathe in shaft machining. Excellent centering and repeat accuracy combined with maximum clamping forces. Integrated hydraulic cylinder with a large clamping range. For all around precision.

SCHUNK No. 1 Products for higher Productivity in your Lathe.



16,000,000 chuck jaws sold world-wide

With more than 1,200 different types, this is the world's largest standard program of chuck jaws for any lathe chuck application. More than 16 million standard chuck jaws have been delivered by SCHUNK since 1966 and are in use all over the world.



50% larger clamping range

SCHUNK Claw Jaw



Even more bite!
Unbeatable when it comes to transmitting high torques. The sharp serrations quickly claw into the workpiece surface and clamp them safely in one go. The possible combinations of basic, intermediate and top jaws expand the standard components' range of application by up to 50%.

3° maximum deflection possible

Pendulum Jaws



Intelligent yielding
As strong as necessary, as flexible as possible. Thin-walled workpieces can be clamped safely, without being deformed and at low-cost with standardized SCHUNK pendulum jaws with 6- or 12-point clamping. Within very little time conventional 3-jaw chucks can be re-equipped, to allow for 6-point clamping.

60,000 customized chuck jaw solutions

SCHUNK Chuck Jaws in special design





For complex clamping tasks
Modified SCHUNK standard jaw or complex special design. Perfectly customized, ideal solutions. As individual as necessary. As economical as possible.

30 – 40% less wear

Universal Base Jaw for Wedge Bar Chuck



Honing for precision
Exclusive at SCHUNK: Base jaws – hardened and precision ground. Frequent top jaw changes easily cause wear on both components if the locating surface is not ground. SCHUNK base jaws stand for maximum repeat accuracy, perfect power transmission and longevity.

With more than 1,200 types, SCHUNK offers the world's largest range of standard chuck jaws. The right solution for your clamping task.

Up to 300% improved surface finish

T|E|N|D|O TURN
Hydraulic Expansion Toolholder

Including vibration damping!
The only modular SCHUNK hydraulic expansion toolholder that requires no manufacturer-specific interface. Unique vibration damping for excellent workpiece surfaces.
Two inserts: DSE double vise for true run-out and repeat accuracy of < 0.003 mm. DKE lathe clamping insert for increased productivity with the equipment at hand.





Your Machining Center

SCHUNK No. 1 Products for higher Productivity in your Machining Center.

Innovative and highly precise toolholding systems in the SCHUNK Total Tooling program featuring the largest modular system of stationary worldholding cover a unique range of machining requirements.

It's time to use your machine's full potential!

0 interfering contour

0 µ permanent run-out accuracy

0.3 mm shank diameter

SCHUNK No. 1 Products for higher Productivity in your Machining Center.



MAGNOS square pole technology for deformation-free clamping and the TENDO E compact hydraulic expansion toolholder for increasing the tool life by up to 300%.

Up to 300% longer tool life*

TENDO® E compact
Hydraulic Expansion Toolholder

Full power
The ultimate for large volume cutting. Convincingly priced, it makes it easy for you to change from mechanical and thermal toolholders to the more precise SCHUNK TENDO quality.

- Highest torques up to 2,000 Nm (with a diameter of 32)
- Run-out accuracy and repeat accuracy < 0.003 mm
- Up to 40% raised tool life

* Verified in a study by the wbk Institute of Production Technology at the Karlsruhe Institute of Technology (KIT).

Cutting with full power!



www.schunk.com/tendo-e-compact/en

100% suitable

TENDO® SVL Tool Extension

Long and super-slim
The innovative, SCHUNK TENDO SVL tool extension with optimized interference contours from SCHUNK sets new standards in regard to set-up time and costs. The extension is clamped into any SCHUNK toolholder within seconds. The SCHUNK TENDO SVL has been designed for and is suitable for the precise machining of hard-to-reach areas.



0 µ permanent run-out accuracy

TENDO® zero
Hydraulic Expansion Toolholder

Down to 0.000 mm in no time
Your pro for tight tolerances during drilling, reaming and drill-finishing. Perfect whenever you require the ultimate in run-out accuracy. For even cutting action and minimum tool costs. Perfect vibration damping for up to 50% longer tool service lives. Minimal set-up costs due to fast, safe tool changes.



100% safety

TENDO® Aviation
Hydraulic Expansion Toolholder

Pull-out safety lock – easy to use and economical.
The integrated pull-out safety lock ensures correct tool orientation and form-fit clamping on weld-on shanks. Micro creep movements are completely eliminated while maintaining extremely close form and position tolerances.



New!

0 Interfering contour

TENDO® ES
Hydraulic Expansion Toolholder

The powerhouse without interfering contour
First choice when power and every bit of machining area counts. Tool clamping is done directly in the mounting taper. The result is: maximum holding forces, run-out accuracy < 0.003 mm, and additional space in the machine room.



SCHUNK No. 1 Products for higher Productivity in your Machining Center.



0.3 mm shank diameter

TRIBOS®-Mini
Polygonal Clamping Technology

The smallest, exchangeable precision toolholder
Used in the medical, dental, electrical engineering, watch and jeweley, countersunk electrodes, and mold making industries. SCHUNK TRIBOS-Mini sets the standards where miniaturization needs to be implemented economically. This tiny one for minimal shank diameters of 0.3 mm is the benchmark in micro machining.
This tool allows for extremely precise applications.

- Run-out accuracy of < 0.003 at 2.5 x D
- Balancing grade G2.5 at 25,000 rpm or $Rev._{max}$ < 1 gmm
- Quick and easy tool changes

3 µ run-out accuracy

TRIBOS®-R
Polygonal Clamping Technology

Stable and precise
Ideal for volume machining through selectively optimized radial stiffness and clamping force and a run-out accuracy of < 0.003 mm. A special chamber system dampens vibrations and allows for a better surface and longer tool life.



85,000 rpm

TRIBOS®-S
Polygonal Clamping Technology

Extremely slim design
Designed slimmer than any other known toolholder system on the market. Predestined for precise machining tasks in difficult to reach workpiece areas due to its run-out accuracy of < 0.003 mm.



85,000 rpm

TRIBOS®-RM
Polygonal Clamping Technology

The small one for high-speed cutting
High radial stiffness due to small compact design and excellent run-out accuracy of < 0.003 mm. SCHUNK TRIBOS-RM is the compact precision champion when it comes to high speed ranges of up to 85,000 revolutions of tools as of 3 mm.

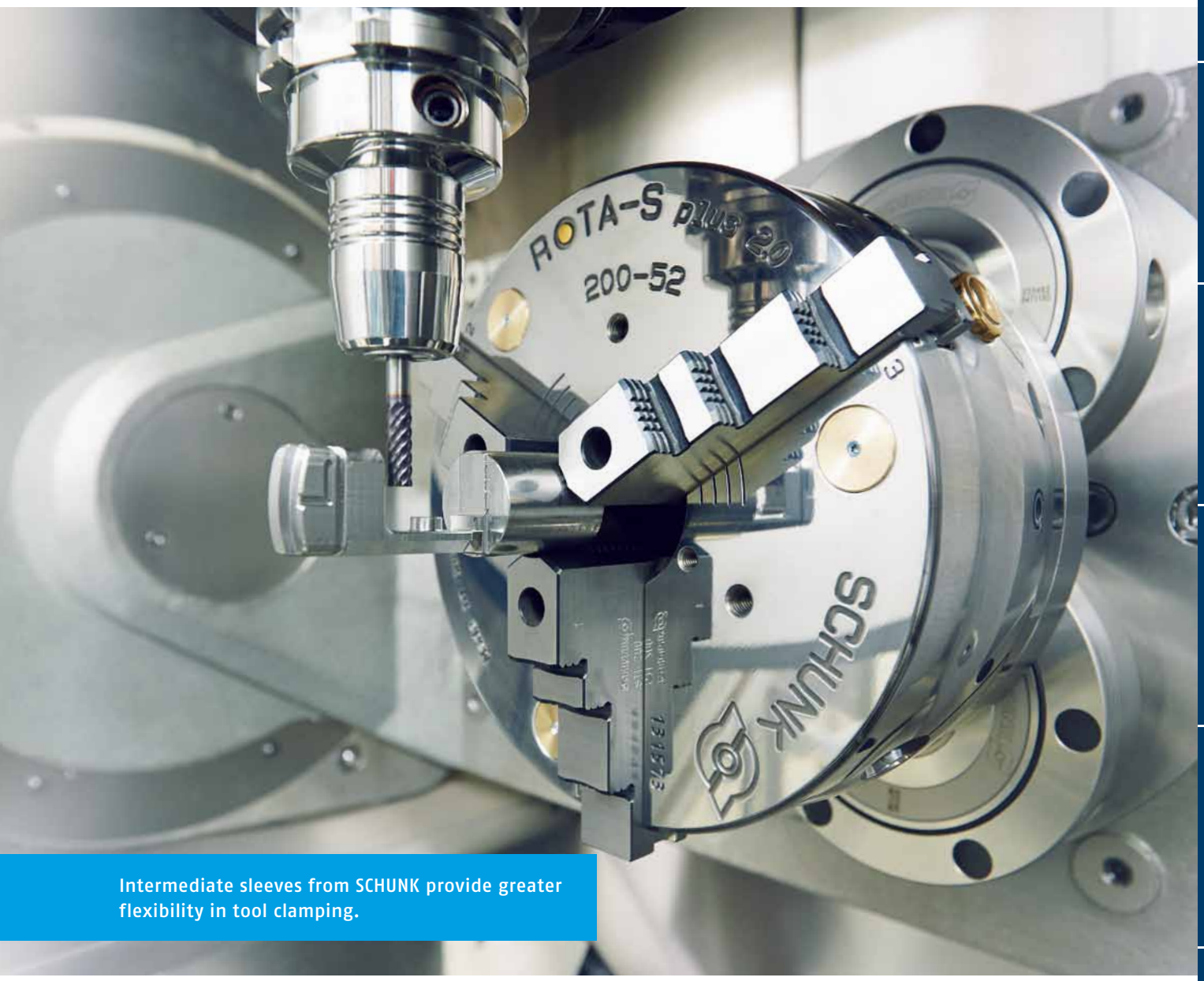


3 µ run-out accuracy

TRIBOS®-SVL
Tool Extension

Better price due to standardization
Super-slim tool extension, made for highly precise machining of difficult to reach areas. Flexibly combined with standard toolholders and tools, an SCHUNK SVL saves you from buying expensive special tools.





Intermediate sleeves from SCHUNK provide greater flexibility in tool clamping.

Coolant-proof up to 80 bar or peripheral coolant

GZB-S Universal Intermediate Sleeve

Systematic cooling
Versatile application with SCHUNK TENDO, SCHUNK TRIBOS and SCHUNK SINO-R in the clamping range of 3 to 25 mm. Six coolant slots make the difference. SCHUNK intermediate sleeves with their innovative peripheral coolant allow you to keep cool when it comes to high-precision machining.



SCHUNK No. 1 Products for higher Productivity in your Machining Center.



Pocket milling with TENDO toolholder in aluminum plate, securely clamped by PLANOS vacuum clamping technology.

5-sided workpiece machining in one set-up



MAGNOS

Square Pole Technology

Economy cubed
Due to the level positioning of the workpieces on the SCHUNK MAGNOS magnetic chuck, all of the five workpiece sides are easily accessible and can be machined from all sides in one set-up.

Increased tool life and process reliability
Consistent permanent magnetic holding force across the entire workpiece effectively minimizes vibrations and leads to improved surfaces and noticable greater precision.

Minimum set-up times and increased productivity
The workpiece is clamped in seconds. Fine adjustment of the clamping elements or re-clamping the workpiece in the machining process are no longer required, nor are time-consuming set-up times and machine shutdown times.

100% encapsulated



KONTEC KSK
Centric Clamping Vise

When the going gets rough
100% encapsulated. Fully functional in rough environments. Nothing keeps the sealed SCHUNK centric clamping vise from doing its job. No soiling. No jammed chips.

0.02 mm clamping precision



TANDEM
Clamping Force Blocks

Enormous power with highest precision
There is room for power in the smallest machining area. In confined spaces these compact versions with high clamping forces and a maximum repeat clamping accuracy of 0.02 mm ensure precise results.

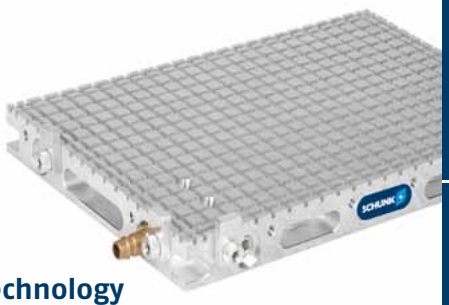
More than 75,000 implemented customer-specific solutions



Customer-specific Hydraulic Expansion

For tool or workpiece clamping. SCHUNK offers customized hydraulic expansion tool-holders when standard solutions have reached their limits even for extreme requirements.

±0.02 mm height tolerance



PLANOS
Vacuum Clamping Technology

Minimal set-up times
For fast and process-reliable clamping of flat-surface workpieces with an even underside. Even mechanically difficult to clamp components are clamped perfectly easy and deformation-free.

SCHUNK No. 1 Products for higher Productivity in your Machining Center.



4-fold clamping station
VERO-S NSL plus 400 incl.
4 NSE plus 138 quick-change
pallet modules

90% less set-up costs

VERO-S
Quick-Change Pallet System

The thriving one in the SCHUNK system
The set-up time killer for higher machine running times and a more rational production with batch sizes starting at one. Discover the ideal clamping solution for your machine.

- 90% less set-up costs
- With maximum pull-in forces of up to 40,000 N
- Repeat accuracy of < 0.005 mm



2-fold clamping station
VERO-S NSL plus 200 incl.
2 NSE plus 138 quick-
change pallet modules



6-fold clamping station
VERO-S NSL plus 600 incl.
6 NSE plus 138 quick-
change pallet modules



8-fold clamping station
VERO-S NSL plus 800 incl.
8 NSE plus 138 quick-change
pallet modules

More than 500 variations for workpiece clamping

VERO-S
Quick-Change Pallet System

The largest modular system for individualists
SCHUNK VERO-S clamps workpieces, pallets, clamping stations, and tombstones via one or more clamping pins. It offers the best clamping solution for every machine. Raised modules offer additional flexibility. With SCHUNK almost everything can be clamped – precise down to the micron and according to your individual needs.



Combination with
SCHUNK TANDEM system



Combination with
SCHUNK KONTEC system



Combination with SCHUNK
MAGNOS magnetic clamping technology



Combination with
SCHUNK ROTA chuck



Combination
with SCHUNK tombstones

Due to many combination possibilities with various clamping devices or other equipment, and the fact that workpieces can be set up outside the machine in parallel to the processing time, a consistent application of SCHUNK VERO-S offers a set-up cost reduction of up to 90%.



Height 20 mm

VERO-S NSE *mini* Quick-Change Pallet System

Super-thin design
At a height of 20 mm, the SCHUNK quick-change pallet system VERO-S NSE *mini* is extremely thin. It is an expert in direct workpiece and pallet clamping, and in assembly. Ideal for smaller machines and simpler machining jobs.



2-fold, 4-fold or X-fold

VERO-S NSL *mini* Quick-Change Pallet System

Variability due to the modular system
Whether as a 2-fold, 4-fold or multiple clamping station – SCHUNK VERO-S NSL *mini* can be adapted to any individual requirement. For any application. On all conventional machine tables.



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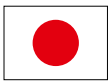
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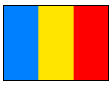


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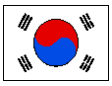
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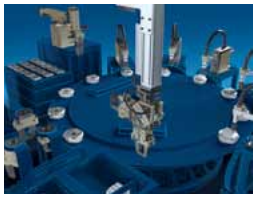
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Robot Accessories



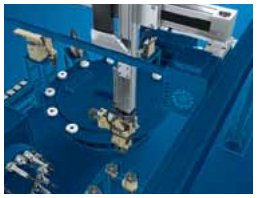
☐ Produktübersicht
Product Overview



☐ Highlights
Neuheiten | *New Products*



☐ Mechatronik
Mechatronics



☐ Produktübersicht Linear-module | *Product Overview Linear Modules*



☐ Produktübersicht Roboter-zubehör | *Product Overview Robot Accessories*

Spanntechnik | *Clamping Technology*



☐ Gesamtprogramm Spanntechnik
Complete Program Clamping Technology



☐ Werkzeughalter
Toolholders



☐ Stationäre Spanntechnik
Stationary Workholding



☐ Drehfutter
Lathe Chucks



☐ Spannbacken
Chuck Jaws



☐ Magnetspanntechnik
Magnetic Clamping Technology



☐ Produktübersicht
Product Overview



☐ Kundenspezifische Lösungen Hydro-Dehnspanntechnik
Hydraulic Expansion Technology Special Solutions



☐ Vakuumspanntechnik
Vacuum Clamping Technology



☐ Highlights
Neuheiten | *New Products*

Firma | *Company* Name | *Name* Abteilung | *Department*

Straße | *Street* PLZ | *ZIP* Ort | *City*

Tel. Fax E-Mail | *Email*

Quality Management ISO 9001:2008
Reg. No. 003496 QM08

Nr. 1

for precise gripping and safe holding.

852 minutes without a goal against him in the Champions League

681 minutes without a goal against him in the national team

2 intercepted penalties in the 2006 World Cup

1 headed goal as a goalie

0 defeats English Soccer Champion

and

More than **2,000,000** sold precision toolholders

About **1,000,000** delivered gripping modules

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

More than **16,000,000** sold standard chuck jaws

More than **75,000** implemented hydraulic expansion customer-specific solutions



Jens Lehmann, German goalkeeper legend,
SCHUNK brand ambassador since 2012
for precise gripping and safe holding.
www.gb.schunk.com/Lehmann

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