30 Years
SCHUNK
Grippers
1983 – 2013







1983
PPG

2000
PGN-plus

2013
5-Finger Hand

Superior Clamping and Gripping

SCHUNK®

Gripping Systems

The Closest Thing to the Part





Superior Clamping and Gripping

Jens Lehmann stands for precise gripping, and concentrated safe holding. As a brand ambassador of the SCHUNK team, the No. 1 goalkeeper represents 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 gripping modules, 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 2,000 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

The Closest Thing right from the Start

More than 30 years gripping competence provides the basis for the world's largest standardized gripping module product range and the expertise in customer-specific solutions.

Right from the very beginning, we focused on powerful and economical front ends in the automation of processes and machine equipment. With the development and optimization of top-notch products, technologies and solutions, we shape the high requirements for gripping systems and clamping technology.

As a pioneer, we have always been focused on real industrial circumstances. We listen and interpret needs with an eye on the future. The end result is product developments that set new standards for market-driven innovation.

Gripping Modules
The most comprehensive range of products, from small component gripping modules to heavy load grippers. Pneumatic or electric.

Modular Assembly Automation
An extensive range of pneumatic and electrical modules for an unimaginable variety of combinations.

Linear Modules
Mini-slides, pneumatic stroke modules, bending resistant gantry axes and axes with servo-electric linear motor drive.

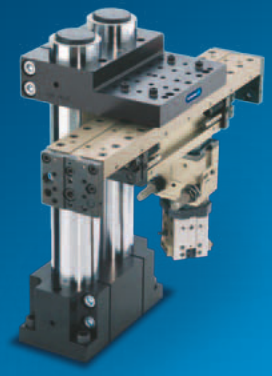
Robot Accessories
Modules ensure perfect interaction between the robot arm and the tool.

Rotary and Swivel Modules
The most comprehensive range of compact turning units and rotary actuators, swivel heads and rotary fingers.

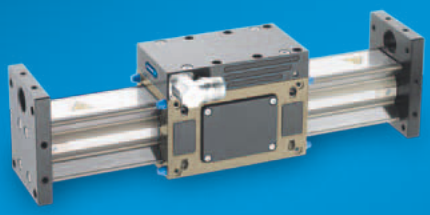
Mobile Gripping Systems
Handling tasks of the future are everyday reality at SCHUNK.



Gripping modules



Modular assembly automation



Linear modules



Robot accessories



Rotary and swivel modules



Mobile gripping systems

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 of saying thank you for the multiple recognitions – at national and international level.



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

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 VERO-S NSR (BEST OF 2013)



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



German Machine Tool Industry Award
2008 Heinz-Dieter Schunk

Process Innovation Award
2009 UNIPLACE

Trade magazine 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

SCHUNK Gripping Technology Milestones

Due to our 30 years of expertise, we now offer our customers the world's largest range of standardized gripping modules.

PPG

First pneumatic SCHUNK standard gripper. 100% constant gripping center due to integrated synchronization.



MPG

The new benchmark in pneumatic small parts handling. Up to 540 N max. gripping force.



PG

First electric SCHUNK standard gripper. Up to 70 mm stroke possible.



SDH

First SCHUNK 3-finger gripping hand with tactile sensors. With 76 measuring points per sensor field.

MECHATRONIK 3



1983 1989 1995 2000 2001 2003 2006



KONEX

First SCHUNK gripper with high performance plastic. 50% less weight compared to grippers with aluminum housing.



PGN-plus

The only 2-finger parallel gripper with multi-tooth guidance. 100% functional precision.



PEH

First servo-electric standard gripper. 100% precision gripping force control in the area of 100 to 1,800 N.

30 Years
SCHUNK
Grippers
1983 – 2013



2008

Powerball Lightweight Arm LWA 4P with WSG Gripper

The lightweight arm with the world's best compact performance, used on mobile platforms. Up to 6 degrees of freedom.



2010

PRL

Integration of gripper arm modules PRL in Care-O-Bot®. Up to 216 Nm continuous torque.



2010

EGP

The most powerful electronic small components gripper with integrated electronics. 180% improved gripping force – mass ratio.



2011

MPG-plus

The most powerful miniature pneumatic gripper on the market. 25% higher gripping force at the same module size.



2012/ 2013

RVK

Up to six standard grippers can be mounted on the first standardized collection gripper.



5-Finger Hand

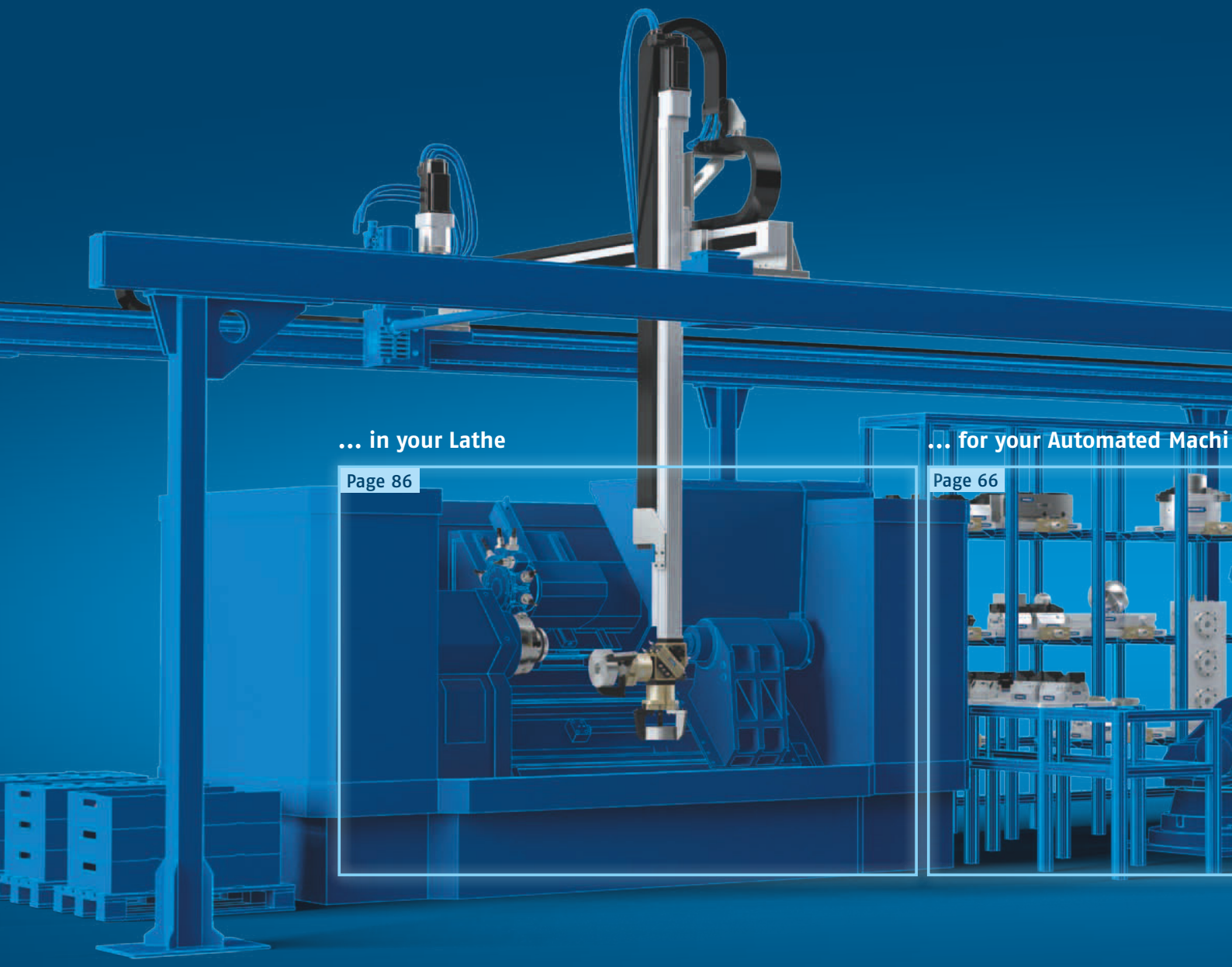
Intelligent human hand-like gripping.



SCHUNK

Superior Clamping and Gripping

SCHUNK No. 1 Products for hig



... in your Lathe

Page 86

... for your Automated Machi

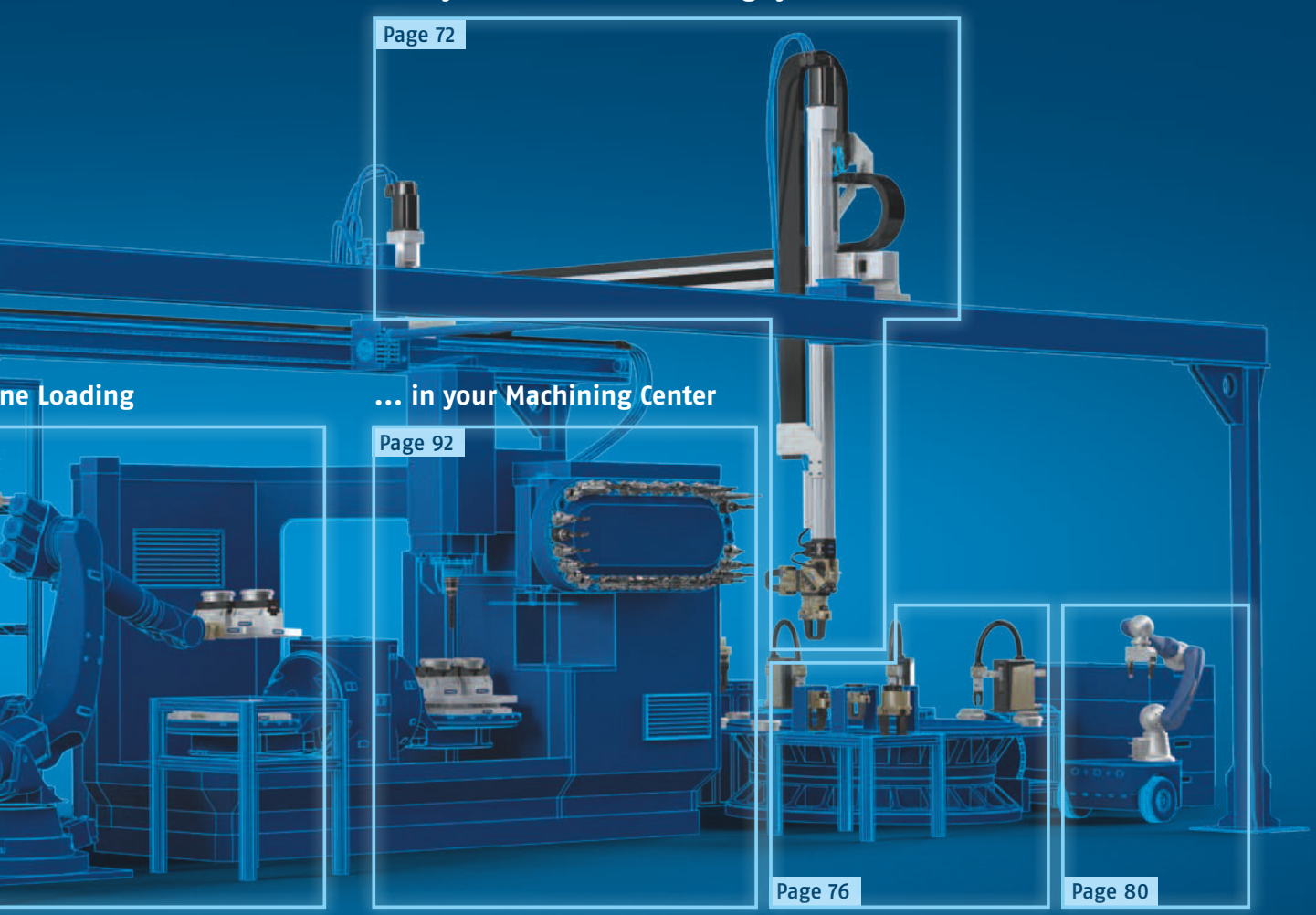
Page 66

SCHUNK

her Productivity ...

New Products
Page 17

... in your Automated Handling System
Page 72



ne Loading

... in your Machining Center
Page 92

Page 76
... for your Automated Assembly

Page 80
... in your Service Robotics Application

Superior Clamping and Gripping

It's time to use your machine's

With superior components, find potentials where you would never expect to find them. In your machine.

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 the SCHUNK Synergy.

Let's see where the potentials in your machine 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 at tel. +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

TENDOTURN – 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, the only gripper with multi-tooth guidance



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

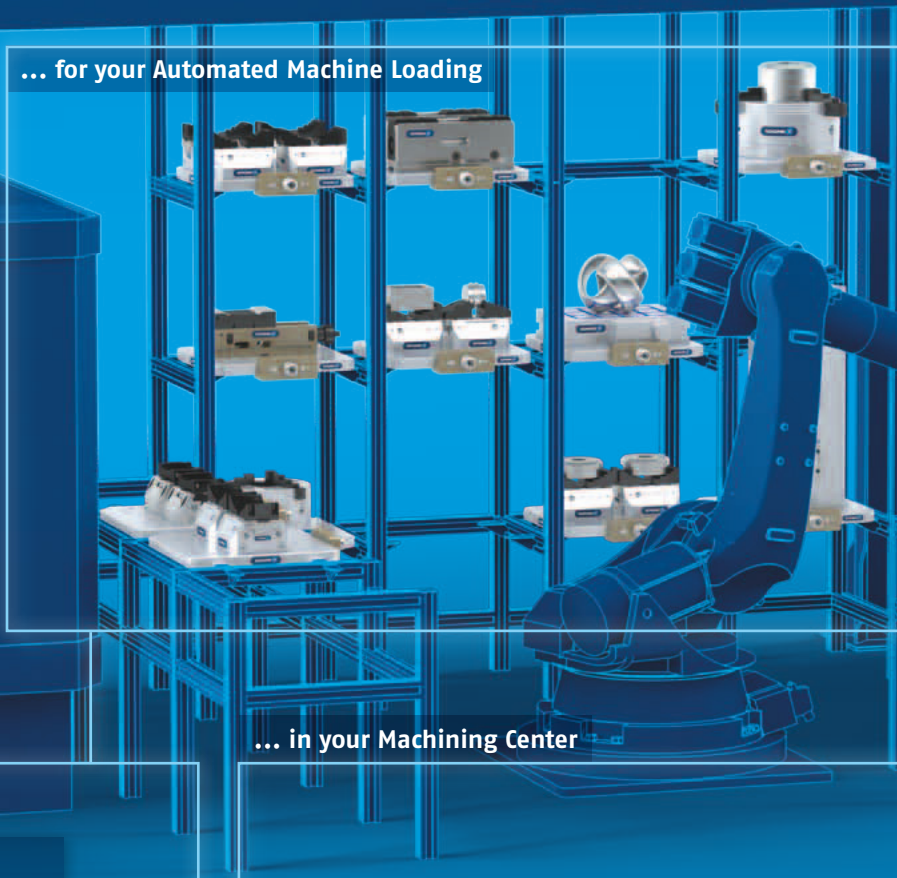
100% cycle increase
Universal rotary module SRU-plus 20-S, the new benchmark in top performance



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
VERO-S NSR Robot coupling for pallet handling – space-saving and extremely flexible

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



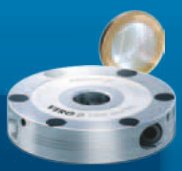


30% more productivity
Automated machine loading with **PGN-plus grippers** with **GSW Spindle interface**

… 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

... in your Automated Handling System

... in your Machining Center

... in your Automated



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

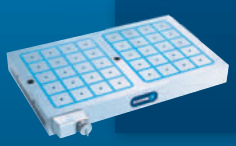
KONTEC **KSK Centric clamping vise** fully functional in harsh environments



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
EPG – 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



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 Gripping Systems

Product Overview



Gripping Modules

Precise grip!
From a few grams to over a ton.



Linear Modules

Moves precisely!
High speed in all axes.



Modular Assembly Automation

Uniquely individual!
Due to the flexibility of the modular system.



Robot Accessories

Perfectly connected!
The interaction between robot and tool.



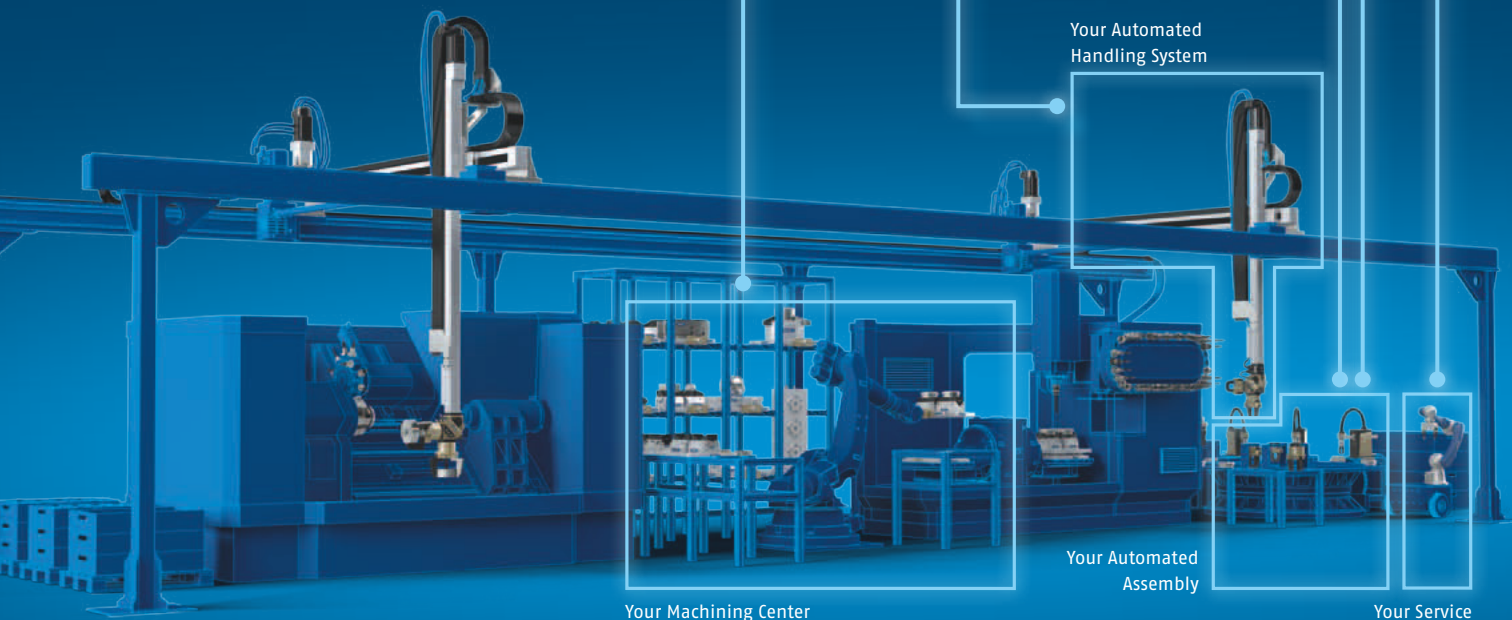
Rotary Modules

They master it!
Limited or endless – free or clocked.



Mobile Gripping Systems

Technologies for handling the future.



New Products

**for your Automated Handling System,
your Automated Machine Loading,
and your Automated Assembly**

	Page
Gripping Modules	**18**
2-Finger Gripper for Small Components MPG-plus NEW: Quick Jaw Change System and Precision Version	18
2-Finger Angular Parallel Gripper GAP	20
2-Finger Long-Stroke Gripper PHL	22
2-Finger Long-Stroke Gripper CGH	24
2-Finger Angular Gripper PWG-plus	26
Electric 2-Finger Gripper for Small Components EGP 25-Speed	28
Electric 2-Finger Parallel Gripper from the WSG series	30
Electric 2-Finger Long-Stroke Gripper EGA	32
Linear Modules	**34**
Rotary Indexing Table RST-D	34
Rotary Actuator SRU-Mini Speed	36
High performance Rotary Modules PR 2, PDU 2 and PSM 2	38
Robot Accessories	**40**
Linear Motor Axis ELB	40
Linear Module Gamma 90	42
Linear Module Delta 145C	44
Robot Accessories	**46**
Rotary Feed-Through DDF 2	46
Quick-Change System SWS-001	48
Electric Quick-Change System EWS	50
Anti-Collision Device and Overload Protection OPR	52
Force / Moment Sensor FTL	54
Modular Assembly Automation	**56**
Stroke / Turning Unit DRL 20	56
Collection Gripper RVK	58
Accessories	**60**
Controller ECM	60
Magnetic Switch MMS-A	62
Pressure maintenance valve SDV-P-E	64

2-Finger Gripper for Small Components MPG-plus. NEW: Quick Jaw Change System and Precision Version

Efficiency in minimum space

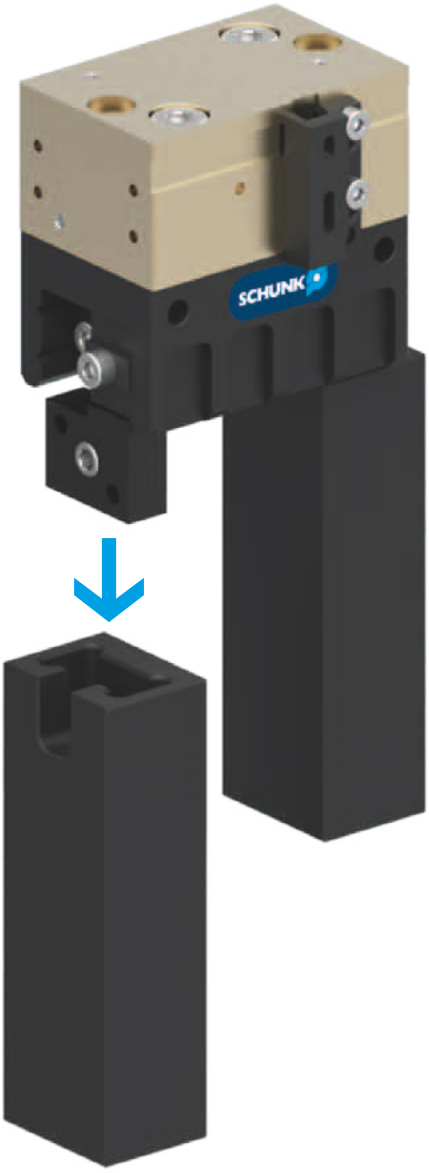
The MGP-plus combines an oval piston drive with roller guides, guaranteeing a high level of efficiency and making it the 2-finger gripper for small components with the most compact performance on the market. Due to the high force and payload, longer gripper fingers and higher gripping forces are possible with the same gripper size. Two new products provide even more efficiency:

Jaw changing in seconds

The standardized finger blanks with integrated BSWS-MPG-plus quick jaw change system can be changed within 30 seconds with a hexagon socket wrench. The finger contour can be freely designed. The system is available for all sizes and variations of the MPG-plus. It allows the quick adaptation to different workpiece geometries and dimensions with minimal set-up times.

Precision redefined

The high-precision version MPG-plus was developed especially for assembly automation of electronic components and other small components. With this version, even the most delicate components can be precisely positioned. When the gripper is changed, the high-precision version ensures perfect eccentricity, parallel positioning and evenness of height without time-consuming fine adjustments or reteaching.



MM AWARD zur AUTOMATICA 2010

Maximum precision!

Higher gripping force with small sizes. Now also available with quick jaw change system.

MPG-plus

Gripping Modules

New product | Successor product | Series expansion

Immediately available

Sizes	Weight	Gripping force	Stroke per finger	Workpiece weight
16 .. 64	0.03 kg .. 0.7 kg	25 N .. 350 N	1.5 mm .. 10 mm	0.13 kg .. 1.25 kg

Product features

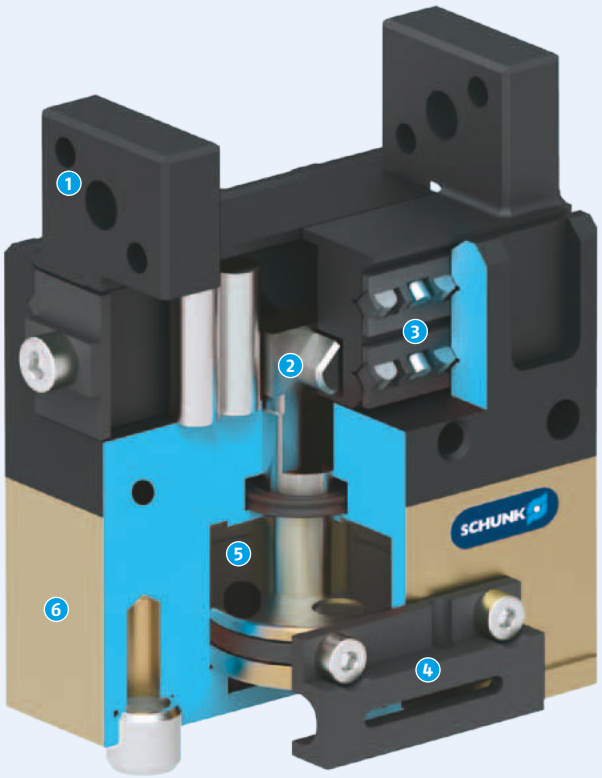
- Enormous efficiency – for 25% more gripping force
- 30% higher load rating enables 50% longer gripper fingers
- 10% weight reduction – for a gripper with higher dynamics
- Replacement accuracy of 0.1 mm
- Eccentricity of gripping center is 0.05 mm
- Evenness in height of 0.02 mm when multiple modules are positioned next to each other
- Maximum precision! Higher gripping force with small sizes now also available with quick jaw change system

Your advantage

- More compact system designs due to higher gripping forces in a smaller space
- More flexible system designs due to longer finger length in a smaller space
- Reliable processes due to dependable magnetic switch monitoring
- Increased system productivity due to reduced wear-related downtimes
- Absolute replacement accuracy when changing grippers
- Maximum accuracy of clamping device to mounting surface

Function cross section

1. Base jaw
2. Wedge hook design
3. Cross roller guidance
4. Sensor system
5. Oval piston drive
6. Housing



2-Finger Angular Parallel Gripper GAP. The only standard angular parallel gripper on the market.

Absolutely precise and powerful

The 2-finger angular parallel gripper GAP combines the advantages of two gripping principles. Depending on the version, it has an opening angle between 60° and 180°. A parallel movement guarantees maximum precision to the last few millimeters and a high gripping force between 56 and 430 N. It can easily grip protruding workpieces and interfering contours. In contrast to conventional angular grippers, the gripping center always remains identical so that parts that have different diameters can also be precisely handled and centered.

Without interfering contours

The world's only standardized 2-finger angular parallel gripper is very compact, has strong guides and can be monitored with high process reliability.
In order to shorten the cycle times, the gripper can be equipped with hydraulic shock absorbers.
It can be monitored simply and securely by means of a magnetic switch without additional interfering contours.



Combined brilliantly!

Combines all the advantages of the angular and parallel gripper.

GAP

Gripping Modules

New product | Successor product | **Series expansion**

Immediately available

Sizes	Weight	Opening angle per finger	Stroke per finger	Gripping force
16 .. 32	0.20 kg .. 1.33 kg	30° .. 90°	1 mm .. 2 mm	56 N .. 430 N

Product features

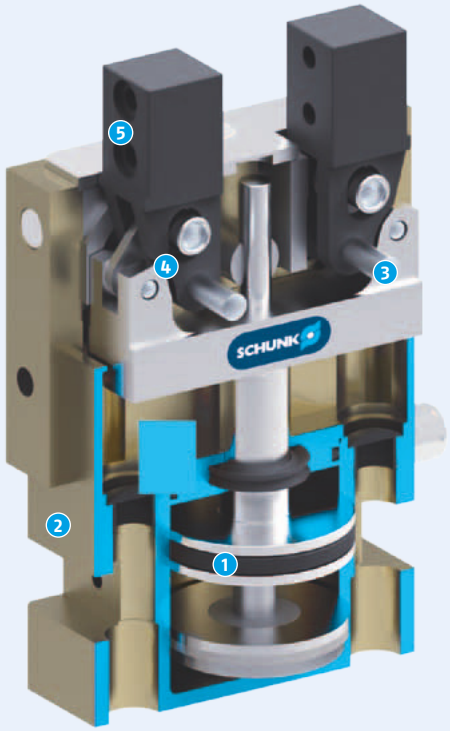
- Different opening angles from 60° to 180° for maximum flexibility
- Hydraulic shock absorbers for the opening stroke possible
- Reinforced guides and compact design

Your advantage

- Maximum flexibility due to different opening angles
- Cycle times can be increased through the use of optional integrated hydraulic dampening
- Simplest system configuration in the modular assembly automation modular system
- Complete systems from the standard possible

Function cross section

1. Drive
2. Housing
3. Base jaw bearing
4. Kinematics
5. Base jaws



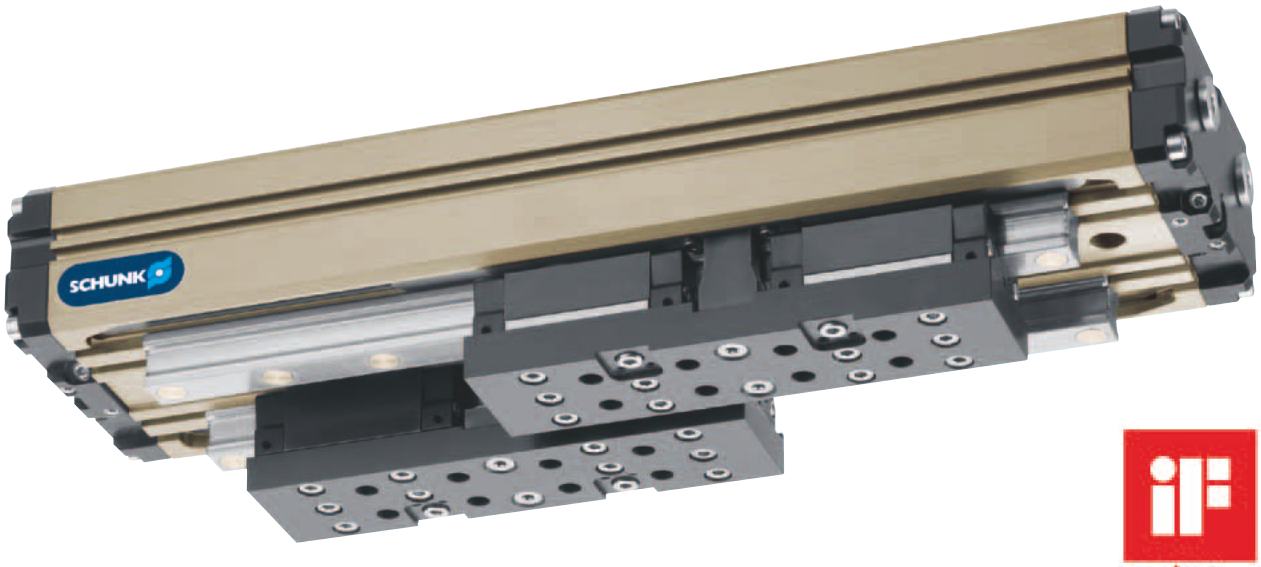
2-Finger Long-Stroke Gripper PHL. The new gripper generation.

Two guidance options available

The PHL is the first long-stroke gripper with the choice between multi-tooth guidance or profiled rail guidance, which significantly increases the efficiency of the module. With powerful sliding multi-tooth guidance, the PHL is especially suitable for harsh environments. Profile rail guidance with roller bearings boosts the efficiency by about 25 percent.

Less air consumption

The new gripper generation significantly exceeds the performance of conventional long-stroke grippers with T-slots or round guidances. In the future, many applications will therefore be able to use smaller, less expensive and – due to the decreased air consumption – more efficient sizes. Alternatively, longer fingers can be used while maintaining approximately the same gripping force.



product design award 2011

Diverse variations!

More freedom in the process design.

PHL

Gripping Modules

New product | Successor product | **Series expansion**

Immediately available

Sizes	Weight	Gripping force	Stroke per finger	Workpiece weight
25 .. 63	1.5 kg .. 21 kg	390 N .. 3,250 N	30 mm .. 160 mm	2.0 kg .. 16.6 kg

Product features

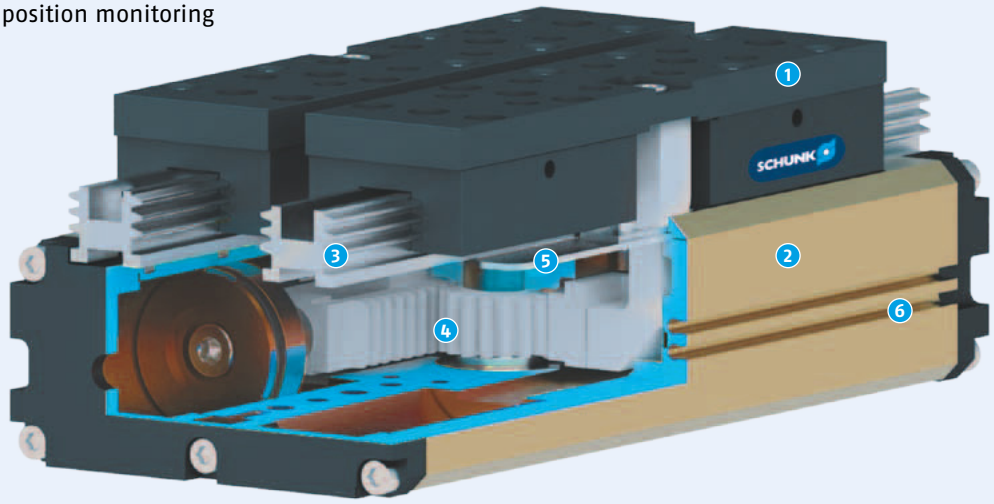
- Modular concept in 90 standardized variations
- Profile rail guidance boosts efficiency by 25%
- Available as a special Viton version and as a high-temperature version for hot environments with temperatures up to 130 °C

Your advantage

- Lower system costs due to higher efficiency
- More compact system designs due to higher gripping forces in a smaller space
- More flexible system designs due to longer finger length in a smaller space

Function cross section

1. Base jaws for adaptation
2. Housing, weight-reduced
3. Multi-tooth guidance
4. Kinematics, rack-and-pinion principle
5. Protection against dirt and dust
6. Sensor for position monitoring



2-Finger Long-Stroke Gripper CGH. First standardized lightweight gripper with RCC housing.

40% less weight and all the power you need!

This standardized lightweight gripper with RCC housing is SCHUNK's new benchmark RCC has an elasticity modulus about four times greater than that of aluminum with twice the tensile strength. At the same time, it weighs about 40% less. SCHUNK takes advantage of these properties in the CGH pneumatic long-stroke gripper. Weighing only 11.65 kg, it has a gripping force of 2,500 N and a variable stroke of up to 160 mm for each gripper finger. It can handle workpieces up to 12.8 kg. This allows for greater dynamics in existing systems or for use of smaller robots.

Higher gripping forces even when long gripper fingers are used

The recirculating ball-bearing guides of the CGH are supported separately for optimal distribution of loads. Approximately 90 percent of the energy used is applied to the finger. The module can be precisely adjusted to the specific load by changing the number and distance of the guides. For especially large gripping forces or especially long fingers, the distance between the guides is simply enlarged. In this way, even fingers longer than 1,000 mm can be used. Nearly identical clamping forces are applied to the entire finger length. To increase the efficiency of the gripper even further, the stroke can be scaled freely when in a damped end position.



World premiere!

Increased dynamics for minimum cycle times and maximum productivity.

CGH

Gripping Modules

New product | Successor product | Series expansion

Immediately available

Sizes	Weight	Gripping force	Stroke per finger	Workpiece weight
80	11.65 kg	2,500 N	0 mm .. 160 mm	12.8 kg

Product features

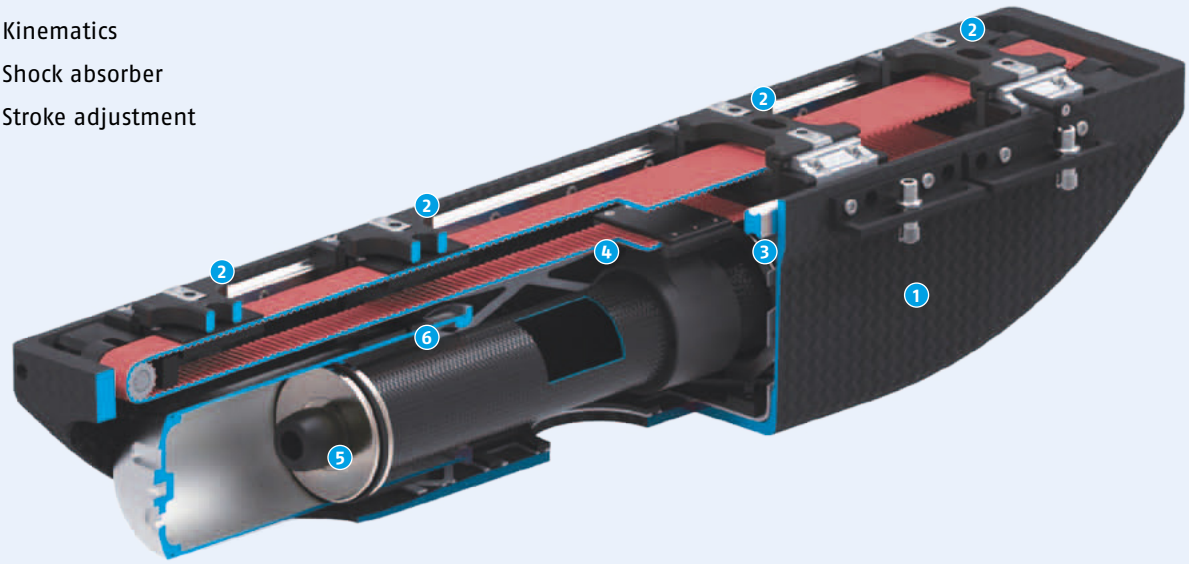
- Rolling element guides and toothed belt synchronization
- Greater bending and torsional stiffness like aluminum
- Stress-resistant fiber orientation due to RTM method
- Combination of low weight and high mechanical load-bearing capacity
- Integrated end position dampening

Your advantage

- Reduction of cycle times and less use of compressed air due to separately adjustable stroke for opening and closing
- Handling of large and small components in rotation due to belt drive and synchronized fingers
- Use of very long fingers with almost constant gripping force along the finger length
- Low net weight increases dynamics of existing systems and allows for use of small robots

Function cross section

1. RCC housing
2. Base jaw
3. Roller bearing
4. Kinematics
5. Shock absorber
6. Stroke adjustment



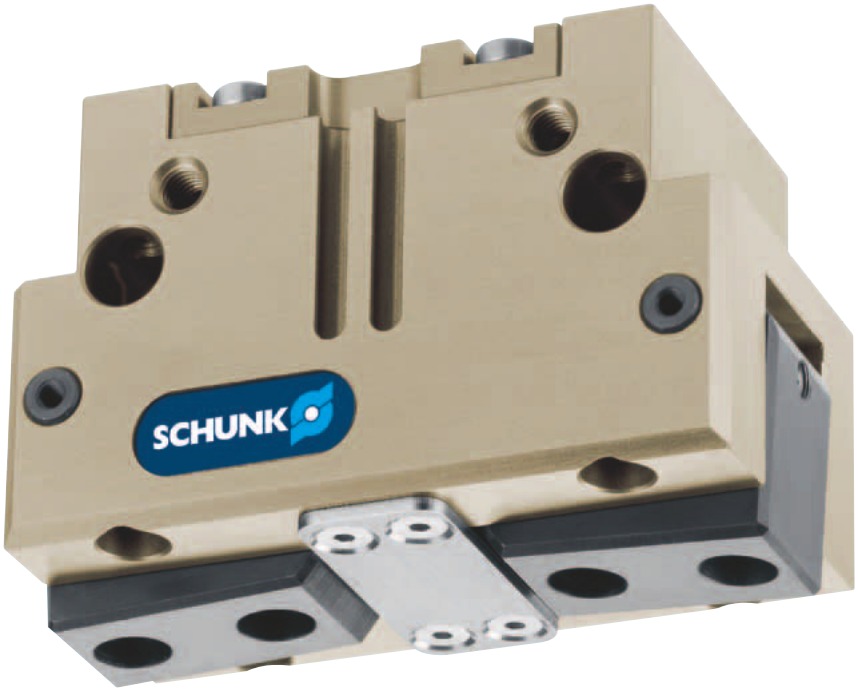
2-Finger Angular Gripper PWG-plus. Powerful for every need.

Compact powerhouse

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

Modular

Both on the finger and bottom side it is equipped with a connecting pattern identical to that of the PGN-plus universal gripper, which allows direct combination with compensation units, attachment valves or quick-change jaw systems.



Maximum gripping forces!
Due to double piston version.

PWG-plus

Gripping Modules

New product | Successor product | **Series expansion**

Immediately available

Sizes	Weight	Gripping torque	Opening angle per finger	Workpiece weight
50 .. 240	0.25 kg .. 10.4 kg	3.5 Nm .. 617 Nm	min. 15°	0.5 kg .. 16.2 kg

Product features

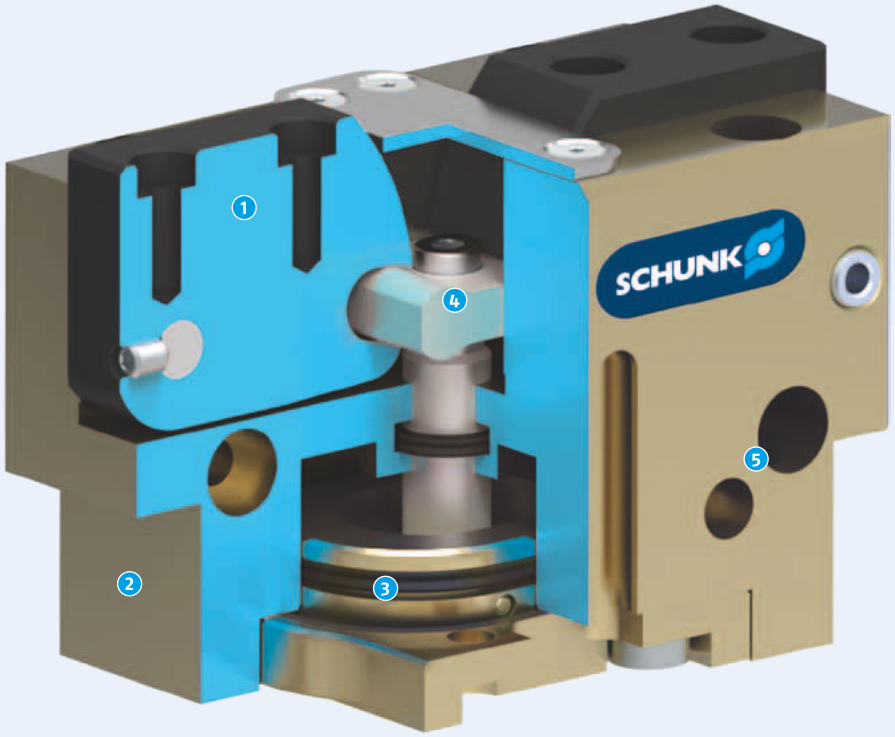
- Variable top jaws
- One-piece, robust and high-strength aluminum housing
- Front face connecting threads and centering possibilities for creating workpiece support

Your advantage

- Maximum transfer of force and low wear due to robust dog bone drive
- High power density due to oval pistons
- Flexible design of workpiece supports due to threaded connection and centering options

Function cross section

1. Base jaw
2. Housing
3. Drive
4. T-Bar drive
5. Centering and mounting options



Electric 2-Finger Gripper EGP 25-Speed for Small Components. The most compact and fastest electric gripper for small components on the market.

Excellent stroke to closing time ratio

The EGP in size 25 is already the smallest electric gripper for small components on the market today. The EGP 25 once again sets a record in speed. With a rapid 0.03 s closing time it is the fastest in its weight class and has opened up unexpected potential in high-speed Pick & Place systems. This speedy little powerhouse weighs 100 g, features a stroke of 3 mm and a gripping force up to 7 N. This makes it suitable for the handling of workpieces up to 35 g in friction-fit clamping.

In addition, SCHUNK has also completed the standard series of the EGP up to size 50. The gripper for challenging handling applications achieves gripping forces of up to 215 N with a fast closing time of only 200 ms.

Ideal for quickly handling small parts

The EGP is based on the platform of the tried and tested 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 and easily convert existing systems from pneumatic to electrical operation. Control of the SCHUNK MPG-plus can be digitally direct, or via a sensor distributor. The Pick & Place expert fulfills protection class IP30 and fits seamlessly in the program for modular high performance assembly from SCHUNK.



Alternative
Intelligent
Adaptable
MECHATRONIK3

With maximum dynamics!
For demanding Pick & Place applications.

EGP 25-Speed / EGP 50

Gripping Modules

New product | Successor product | Series expansion

EGP 25-Speed: Available starting April 2014 | EGP 50: Available starting Januay 2014

Sizes	Weight	Gripping force	Stroke per finger	Workpiece weight
Speed 25	0.1 kg	7 N	3 mm	0.035 kg
50	0.51 kg	215 N	8 mm	1.05 kg

Product features

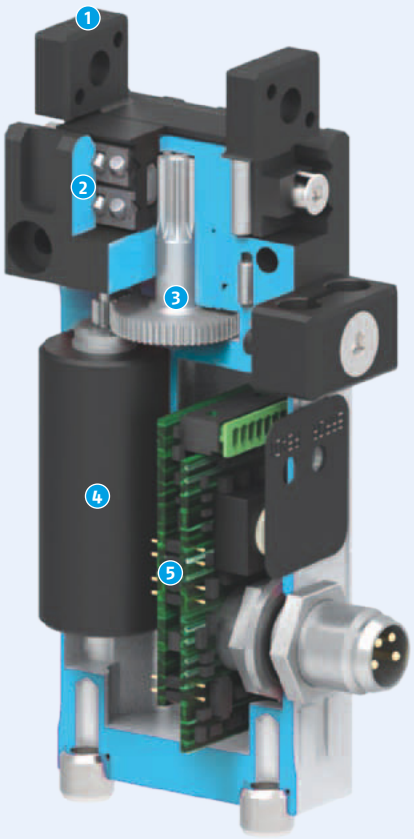
- Compact dimensions and low weight for space-critical and highly dynamic applications
- Short closing times for high cycles
- Simple controlling via two digital inputs (opening and closing)
- Electronics installed internally to save space
- Wear-resistant servo motor
- Protection class IP30

Your advantage

- More flexible system designs, due to side and bottom mounting options for bolting through and on
- The sensor system of the MPG-plus can be used in many cases for the EGP, too
- Increased system productivity due to reduced wear-related downtimes

Function cross section

1. Base jaw
2. Cross roller guidance
3. Gears
4. Drive
5. Control electronics



Electric 2-Finger Parallel Grippers from the WSG series. The first electric grippers with Profinet and integrated electronics.

WSG 32 – the sensitive compact gripper

The particularly compact WSG 32 with its gripping forces of 5 to 50 N has been designed for the precise and sensitive handling of small and medium-sized workpieces. Its fully covered guides allow for easy cleaning. It can be connected directly to the network via an Ethernet connection. Optionally, this first electric gripper with integrated electronics comes with the advanced industrial Ethernet interface Profinet and can also be quickly and easily integrated into the automated systems of tomorrow. As an alternative there is also the option with CAN-Bus. With high jaw speeds of up to 400 mm/s, the WSG 32 achieves the shortest cycle times even with a long stroke. The detection of gripped parts is already integrated into the gripper. Making it possible for gripping commands to be executed with optimized cycle times.

WSG 50 – intuitive, integrated, intelligent

The WSG series of sensitive grippers is the perfect choice for installation or assembly processes that require high flexibility and delicate handling.
The WSG 50 can be controlled via Ethernet TCP / IP, Profibus, CAN-Bus, RS232 or via eight virtual digital I/Os. Starting in February 2014, the option for controlling via Profinet will become available. At the same time, it has an integrated and intuitive web server for convenient configuration and simple diagnosis directly on a PC. The WSG 50 can achieve the shortest cycle times with a long stroke due to high jaw speeds of up to 420 mm/s. In addition to the basic version with a 55 mm stroke per finger, this gripper also comes in a long stroke version with a stroke of 105 mm per finger. Both products are capable of gripping forces between 5 N and 80 N.



WSG 32

WSG 50 - 210

Alternative
Intelligent
Adaptable
MECHATRONIK 3

Now with Profinet!
Large stroke with a compact design.

WSG

Gripping Modules

New product | Successor product | **Series expansion**

Size 32: Available starting January 2014 | Sizes 50 – 210: Available starting March 2014

Sizes	Weight	Gripping force	Stroke per finger	Workpiece weight
32	0.55 kg	5 N .. 50 N	34 mm	0.25 kg
50	1.2 kg .. 1.6 kg	5 N .. 80 N	55 mm .. 105 mm	0.4 kg

Product features

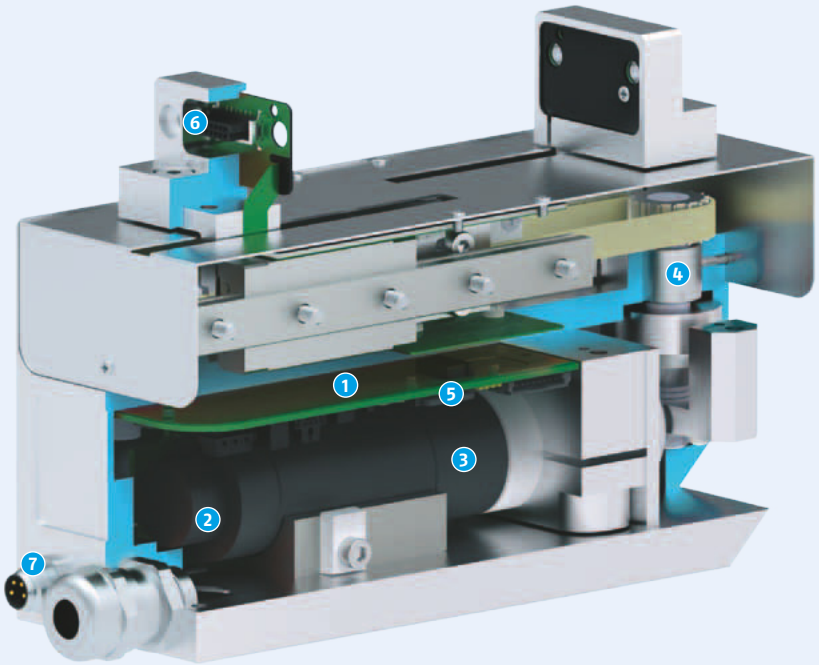
- Choice of Profinet, CAN-Bus or Ethernet interface
- Integrated gripping control with web server and Micro SD card
- Integrated sensor ports in the jaws for optional force-measuring jaws
- Gripped part monitoring already integrated

Your advantage

- Interface flexibility also when integrating into future automated 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 WSG 50

1. Electronic controller
2. Encoder
3. Drive, DC servo motor
4. Toothed belt drive
5. Micro SD card
6. Electronic sensor
7. Electrical connection



Electric 2-Finger Long-Stroke Gripper EGA. Adaptable, robust, compact.

Integration in robots and gantries

With capability of adaptation for all standard servo motors, the electric long-stroke gripper EGA is the most flexible standard long-stroke gripper on the market. Due to the easy integration of the system's control unit, all the features with respect to programs, safety, and field-busses can be transferred from the current system onto the module, and offers the advantage of a direct interpolation of the other application axes. In other words easy control as an additional axis with the identical command set is ensured.

Time-tested technology

The robust EGA long-stroke gripper is based on the proven PHL, which is extremely flat and has a compact design with minimal interfering contours. The guide carriages of its base jaws are bearing mounted, which minimizes friction, and optimally distributes the force. For robot or gantry applications, the motor can be mounted either parallel or at right angles to the direction of motion. In view to dynamics and energy efficiency the whole system profits from the weight-optimized design of the gripper.

Alternative
Intelligent
Adaptable
MECHATRONIK3



Adaptable!
All standard industrial servo motors can be used.

EGA

Gripping Modules

New product | Successor product | **Series expansion**

Size 25: Available starting January 2014 | Size 40: Immediately available

Sizes	Weight	Gripping force	Stroke per finger	Workpiece weight
25 .. 40	2.1 .. 9 kg	650 N .. 1,300 N	30 .. 100 mm	3.25 kg .. 6,5 kg

Product features

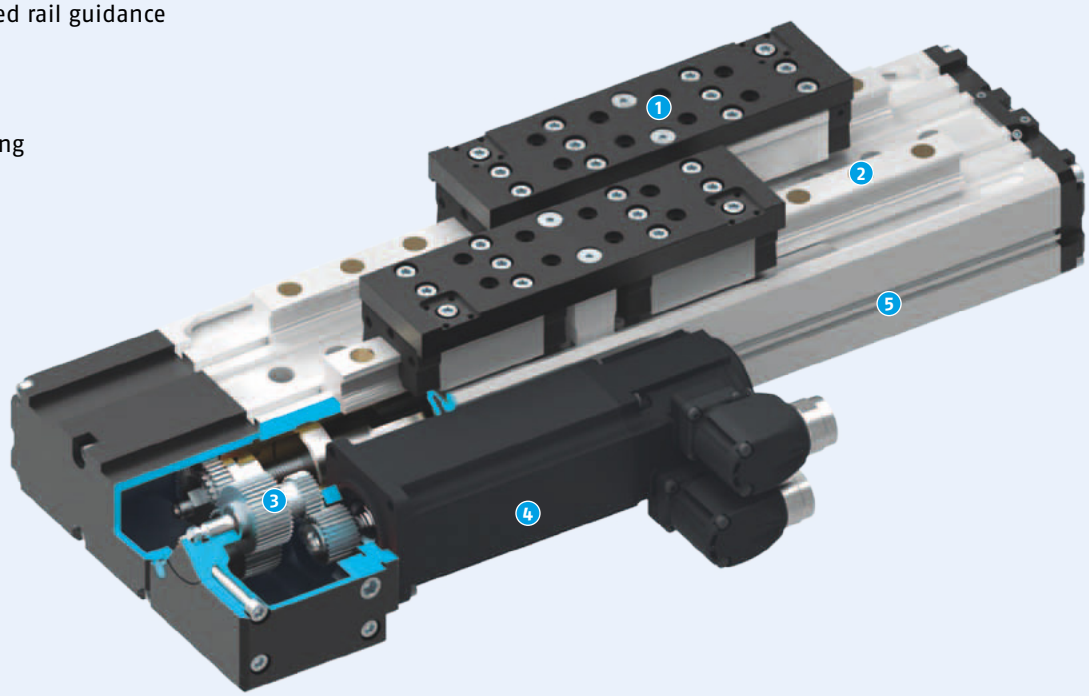
- Easy integration into exisiting control or feedback control electronics
- Flange-mounted servo motor
- Two versions with different motor positions for robot and gantry applications

Your advantage

- Higher dynamics and energy efficiency due to weight-optimized design
- Use of fieldbus and safety technology, as well as existing control and programming know-how

Function cross section

1. Base jaw
2. Profiled rail guidance
3. Gears
4. Drive
5. Housing



Rotary Indexing Table RST-D.
Powerful for high-performance assembly.

Modular high performance assembly

The RST-D extends the SCHUNK program for modular high performance assembly by a series of very compact and high-performance rotary indexing tables. The particularly rigidly designed RST-D rotary indexing table is driven by a double piston. Providing it with plenty of power for larger assemblies and up to six optional pneumatic feed-throughs, which can be retrofitted as needed.

Flexible processes

Only the drive ring of the RST-D rotates, and different components and attachments can be attached to the large, fixed middle part. They can be reliably supplied via the large through-hole with compressed air, current, and signals. Right, left, and alternating operation of the RST-D are possible, and the operation type can be changed as required via the pneumatic control unit. Spacers are available for converting the cycle operation into 4, 6, 8, 12, or 16 cycle steps.



Felixble with power!
Particularly high torque, 29.3 Nm.

RST-D

Rotary Modules

New product | Successor product | Series expansion

Immediately available

Sizes	Pitch	Torque	Mass moment of inertia	Repeat accuracy
60 .. 134	4 .. 16	max. 29.3 Nm	max. 0.6 kgm²	0.06°

Product features

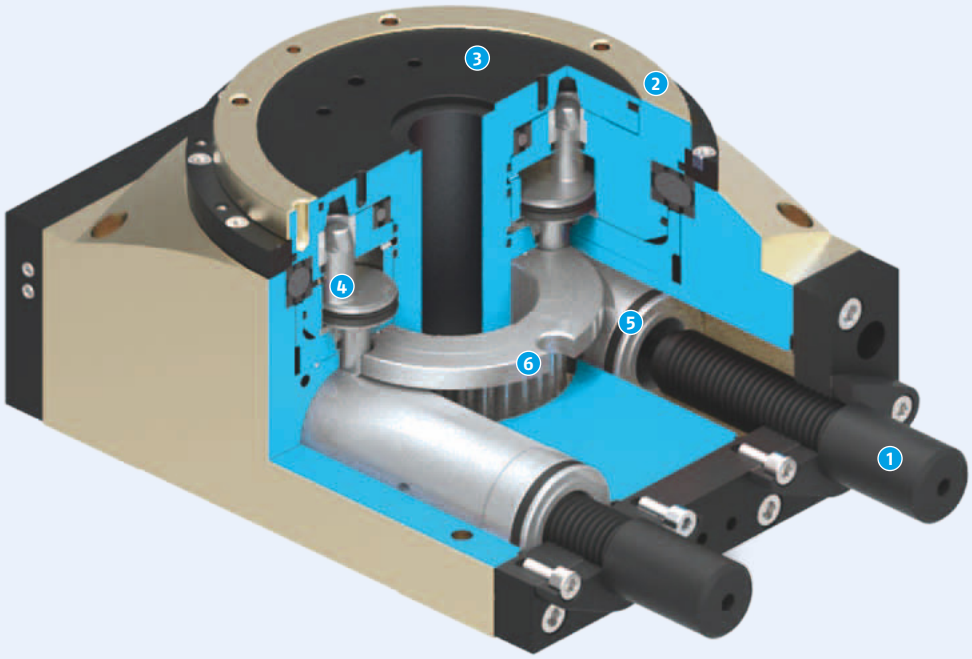
- Right, left and alternating operation are possible with this actuator
- Large through-hole for reliable supply of compressed air, and signals
- Air connection and adjustment of the shock absorbers from one side
- Shock absorber clamping with a simple hexagon socket possible – there is no need for a large open-ended wrench
- Choice of up to six air feed-throughs available (only sizes 87 and 134 can be retrofitted)

Your advantage

- Ideal for small spaces
- Process reliability and reliable supply to the rotated pneumatic modules

Function cross section

1. Damping
2. Drive ring
3. Fixed middle part with through-hole
4. Locking mechanism
5. Drive
6. Driver



Rotary Actuator SRU-Mini Speed.
The new benchmark for cycle times and frequency.

Shortest cycle times with maximum frequency

The rotary actuator SRU-Mini Speed unit was developed specifically for high performance assembly. The rapid module enables swiveling times from 0.48 s for size 14. When processing lightweight parts it can realize over 4,000 cycles per hour, more than twice as much as the conventional version. Swiveling times from 0.27 s and up to 3,600 cycles per hour are possible with size 10. Instead of higher speeds and numbers of cycles, as an alternative, higher loads can also be realized in the same amount of space. The secret for such a high process-reliable performance lies in a patented elastomer shock absorber.

Quick to change

The SRU-Mini Speed is based on the compact and light weight SCHUNK SRU-mini flat swivel unit, which has proven its worth for a long time in assembly and packaging applications. Existing modules can be replaced 1:1 because the dimensions and connections match with those of the hard or soft dampened SRU-mini. For system integrators this means a high degree of flexibility.



Rapid!
More cycles per hour at the same load capacity and cycle time.

SRU-Mini Speed

Rotary Modules

New product | Successor product | **Series expansion**

Immediately available

Sizes	Weight	Axial force	Torque	Swiveling times	Number of cycles
10	0.2 kg	255 N	0.28 Nm	from 0.48 s	up to 4,000 cycles/hour.
14	0.4 kg	330 N	1.15 Nm	from 0.27 s	up to 3,600 cycles/hour.

Product features

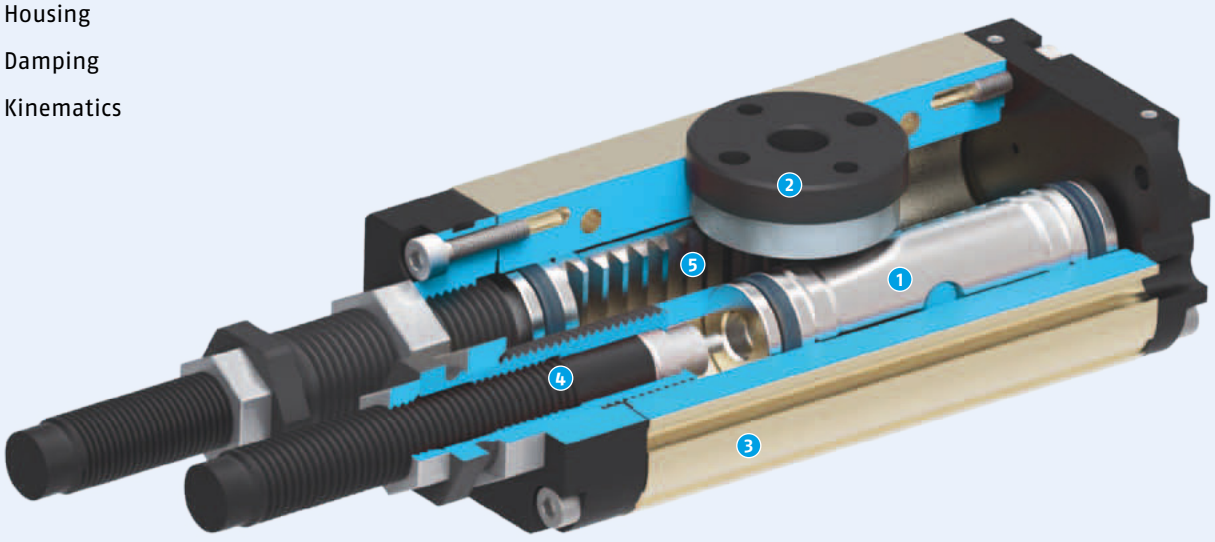
- High compact performance
- Proven hydraulic high-performance shock absorbers combined with elastomers
- Consistent modularity

Your advantage

- Higher loads in the same space due to the compact system design
- Higher energy absorption through patented elastomer shock absorber
- Greater system productivity reduces cycle times and increases cycles per hour

Function cross section

1. Drive
2. Pinion
3. Housing
4. Damping
5. Kinematics



High-performance Rotary Modules PR 2, PDU 2, and PSM 2. Compact powerhouses with integrated intelligence.

The next generation of PowerCubes

The first generation PowerCube was already successfully established in numerous industrial and laboratory applications due to its compactness and compact performance, the integrated electronics and the modular concept. SCHUNK has combined this experience with well-proven mechanics and the latest electronic technologies to further develop the second generation PowerCube. All regulating and power electronics have also been fully integrated into the new modules. This saves the need for an external controller, minimizes the cabling, and reduces susceptibility to errors.

Fast and simple commissioning

Equipped with standardized plug connections, the modules 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). The modules have a USB device connection for commissioning and parameterization via PC with the SCHUNK Motion Tool. Alternatively they 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. Initial module movements can be realized quickly via a DIP switch. The 4 LED statuses give direct feedback on the current status of the module, for example, during commissioning or operation.



PDU 2



PR 2



PSM 2

Extreme compact performance!
Maximum performance in minimal space.

Alternative
Intelligent
Adaptable
MECHATRONIK3

PR 2, PDU 2, PSM 2

Rotary Modules

New product | **Successor product** | Series expansion

Available starting January 2014

	Sizes	Weight	Torque	Speed
PR 2	70 / 90 / 110	2.0 .. 5.9 kg	16 .. 184 Nm	150 .. 470 °/s
PDU 2	70 / 90 / 110	1.9 .. 5.8 kg	16 .. 184 Nm	25 .. 78 rpm
PSM 2	70 / 90 / 110	1.8 .. 4.2 kg	0.45 .. 1.8 Nm	1,570 .. 4,320 rpm

Product features

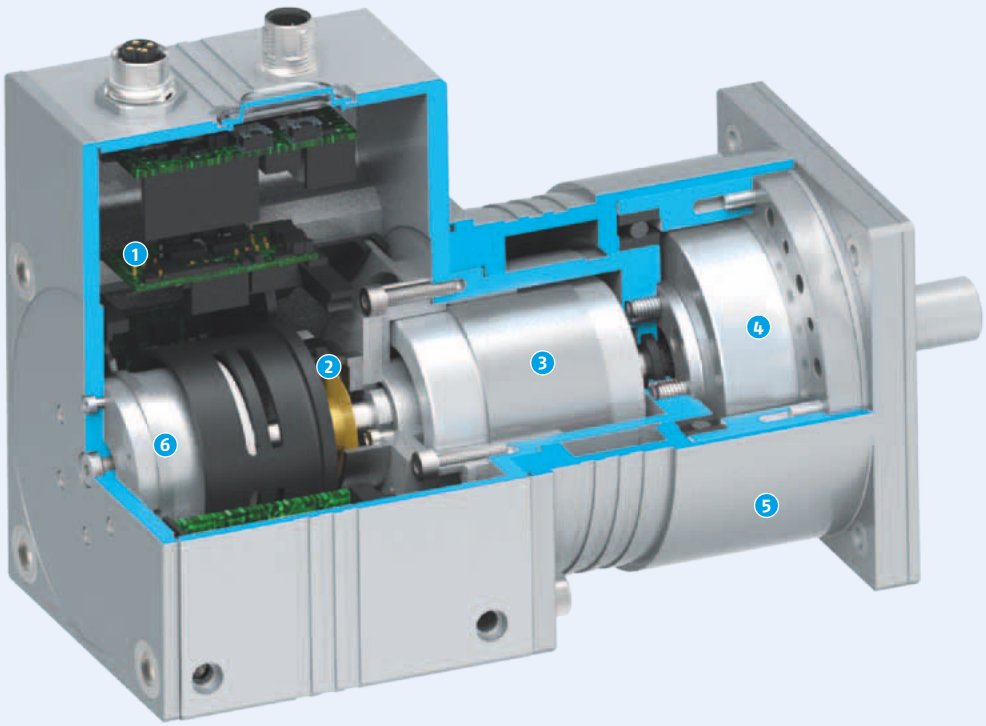
- Standard connecting elements and integrated control concept
- Service interface: USB host, USB device
- Fieldbus: Profibus or CAN-Bus
- Harmonic Drive gears with three reduction levels per size (PR 2 / PDU 2)
- 4 LED status displays
- Brushless DC servo motor
- Integrated holding brake
- 2 digital inputs

Your advantage

- Any applications can be implemented with standard components
- Convenient firmware updates via USB stick
- Rotary encoding switch for simple and manual address setting directly on the module
- Rotating angle > 360° for a variety of applications
- The integration of the regulating and power electronics saves the need for additional external controllers and additional cabling
- Simple and integrated monitoring by sensor signals

Function cross section PDU 2

1. Electronic control unit
2. Encoder
3. Brushless DC servo motor
4. Harmonic Drive gear
5. Heat sink
6. Brake



Linear Motor Axis ELB.
The compact short-stroke axis for dynamic assembly applications.

Precise and quick

The linear motor axis ELB has been especially designed for precise and dynamic strokes. The combination of a powerful linear motor drive with a particularly smooth running, pre-loaded junction roller guide, makes the module extremely compact, rigid and dynamic. The ELB positions relatively high loads with a continuous excellent repeat accuracy of 0.01 mm. The maximum acceleration amounts to 100 ms^{-2} and the maximum speed 4 ms^{-1}. For demanding joining and placing processes, users benefit from enormous precision, extremely short cycle times, as well as a high level of productivity and process stability.

Save costs and time

The precision module is available in three stroke variants of 50 mm, 75 mm, and 125 mm. It can be optionally equipped with an incremental stroke measuring system (sine or cosine interface) or with an absolute stroke measuring system (Hiperface or SSI interface). The absolute-value transducer eliminates the need for expensive homing when the system boots and after emergency stops.
In addition, the module needs neither end nor reference sensors, reducing the investment costs, programming effort, and number of cables in the cable set.



Extremely compact!
Precise strokes in the smallest space.

ELB

Linear Modules

New product | Successor product | Series expansion

Available starting November 2013

Size	Strokes	Driving force	Repeat accuracy	Maximum speed
70	50 / 75 / 125 mm	Max. 150 N	0.01 mm	4 m/s

Product features

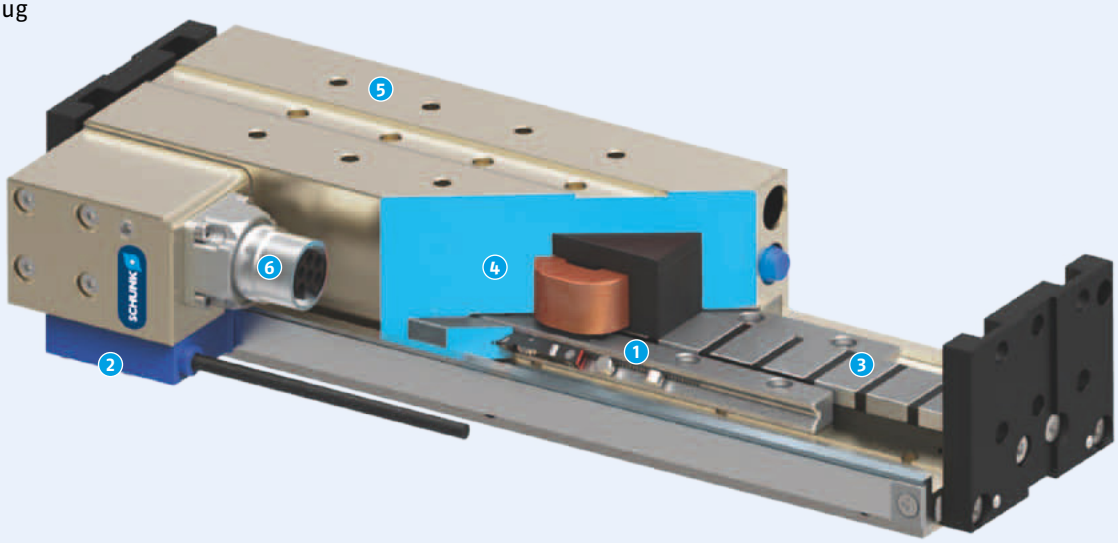
- Very compact unit due to use of junction roller guides
- Very smooth running guides
- Stroke measuring system is incremental or absolute
- Optional load compensation
- Optional holding brake available for applications as a Z axis
- As standard, can be controlled via Bosch-Rexroth IndraDrive or Siemens Sinamics controller, more on request
- The controllers are available with standard interfaces such as Sercos III, Profinet IO, Ethernet / IP, EtherCat, Profibus, Sercos 2

Your advantage

- Long service lives and no maintenance costs, no wearing parts
- Can be combined with numerous modules from the world's largest system program for modular high performance assembly from SCHUNK
- Less programming effort and saves time when commissioning due to an absolute-value transducer

Function cross section

1. Junction roller guide
2. Stroke measuring system
3. Secondary part
4. Primary part
5. Modular design hole pattern
6. Motor plug



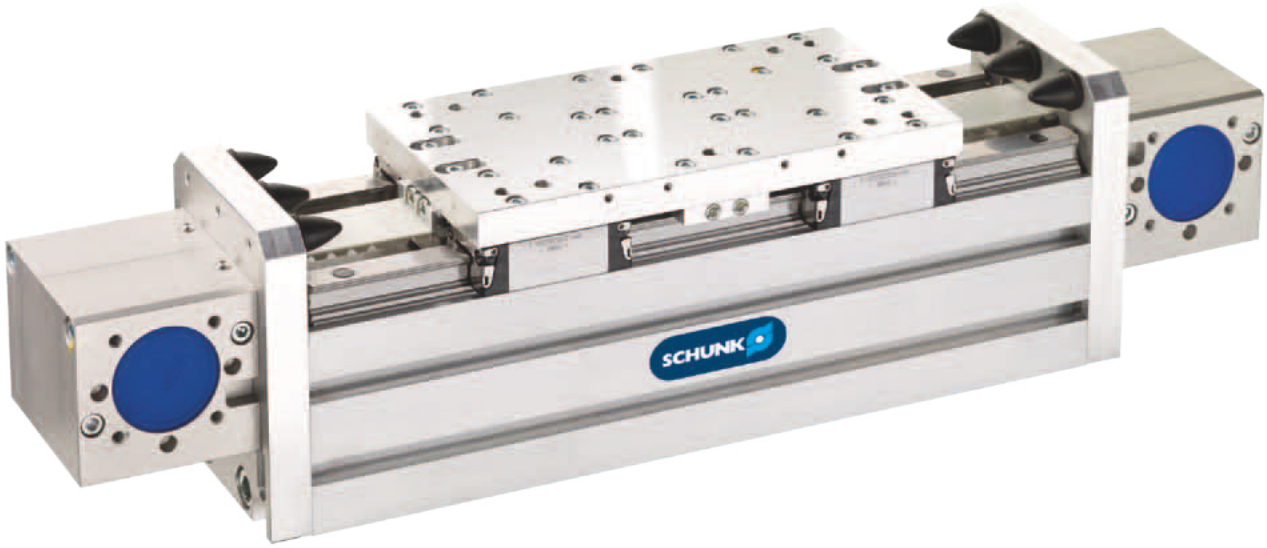
Linear Module Gamma 90.
Compact portal module for high load capacity.

Extremely high load bearing capacity

With the linear module Gamma 90, SCHUNK adds to the lower part of its successful gantry series, which is designed for high load capacities. The closed and thus particularly rigid basic profiles guarantee an extremely high load rating in conjunction with durable profiled rail guides and without additional support. The sturdy, self-supporting axes are specifically designed for loading and linking machine tools, as well as laser cutting and processing machines.

Optimal adaptation

The modular build allows the 90 mm wide module to be both customized and economical at the same time. It can be equipped with a rack and pinion drive for high loads or with a toothed belt drive for high process speeds. Two or more slides can be controlled independently of each other with the gear rack drive. Two slides can move independently of each other with a toothed belt drive. A rail clamping element is also available for vertical applications, preventing uncontrolled sinking during an emergency stop or power failure.



Rigid!
Double profiled rail guide for high load rating.

Gamma 90

Linear Modules

New product | Successor product | **Series expansion**

Immediately available

Sizes	Maximum stroke	Repeat accuracy	Maximum speed	Moment load
90	7,650 mm	± 0.05 m	up to 5 m/s	1,200
90 .. 280	11,380 mm	± 0.05 m	up to m/s	1,200 .. 16,000 Nm

Product features

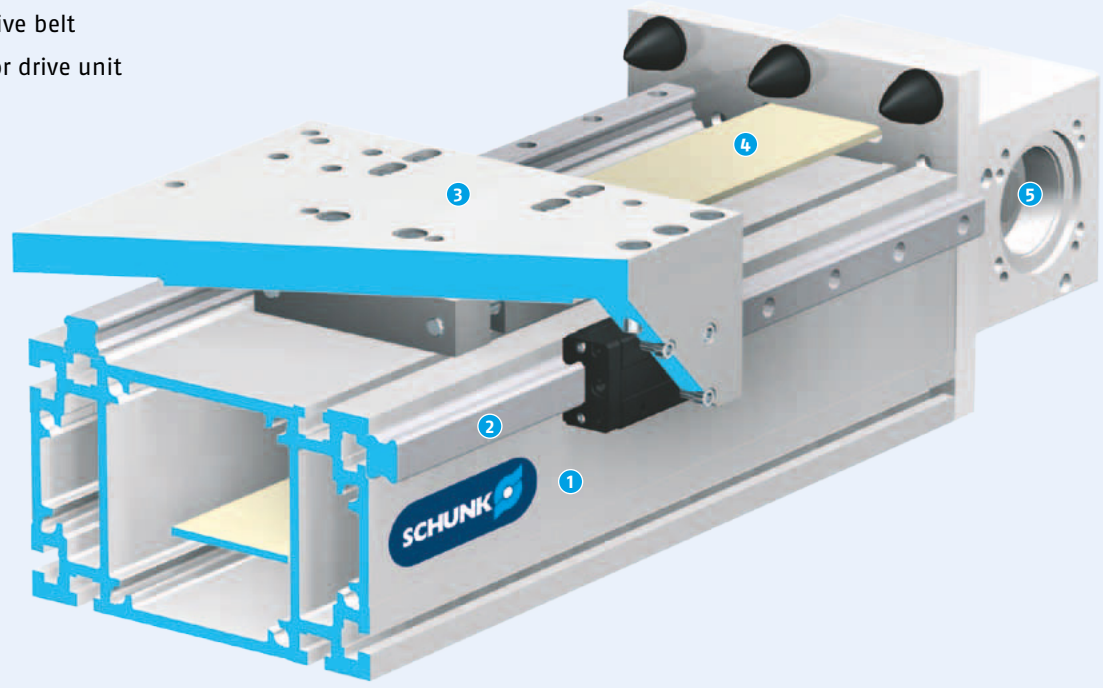
- Closed basic profile, thus high load capacities in self-supporting engineering designs
- Rail clamping element for rod lock available
- Double profiled rail guide
- Available in many variations:
  - toothed belt drive with a slide
  - toothed belt drive with two independently movable slides
  - rack and pinion axis horizontal
  - rack and pinion axis stroke version

Your advantage

- Additional support designs not required
- The rail clamping provides more process reliability and protection of the automated system
- High load rating and precision due to double profiled rail guide
- The optimal solution for your application

Function cross section

1. Axis body as carrier profile
2. Profiled rail guide
3. Motion slides
4. Toothed drive belt
5. Interface for drive unit



Linear Module Delta 145C. Powerhouse shoulders high loads.

Compact and powerful

The SCHUNK linear modules from the Delta series are able to take on extreme loads and are considered to be the specialists for demanding linear movements with high moment loads.
The Delta 145C is a particularly compact module that allows powerful strokes up to 4,000 mm. Its internal, double profiled rail guide guarantees maximum rigidity and precision, and can therefore take on high loads with confidence. To increase the reliability and life span of the module, a specially mounted plastic cover tape protects the guides and drive elements from dirt.

Versatile integration

The module is optionally available with a spindle drive for continuous high forces and a high level of precision, or with a cost-attractive, large toothed belt drive for particularly high accelerations and process speeds. They can be flexibly integrated into the automated systems using T-nuts or mounting strips.



Long travelling distance!

Optimized profile for realizing long strokes.

Delta 145C

Linear Modules

New product | Successor product | **Series expansion**

Available starting January 2014

Sizes	Driving force	Maximum stroke	Repeat accuracy	Maximum speed
145C	6,000 N	4,000 mm	± 0.03 mm	5 m/s
110 .. 240C	12,000 N	7,720 mm	± 0.03 mm	5 m/s

Product features

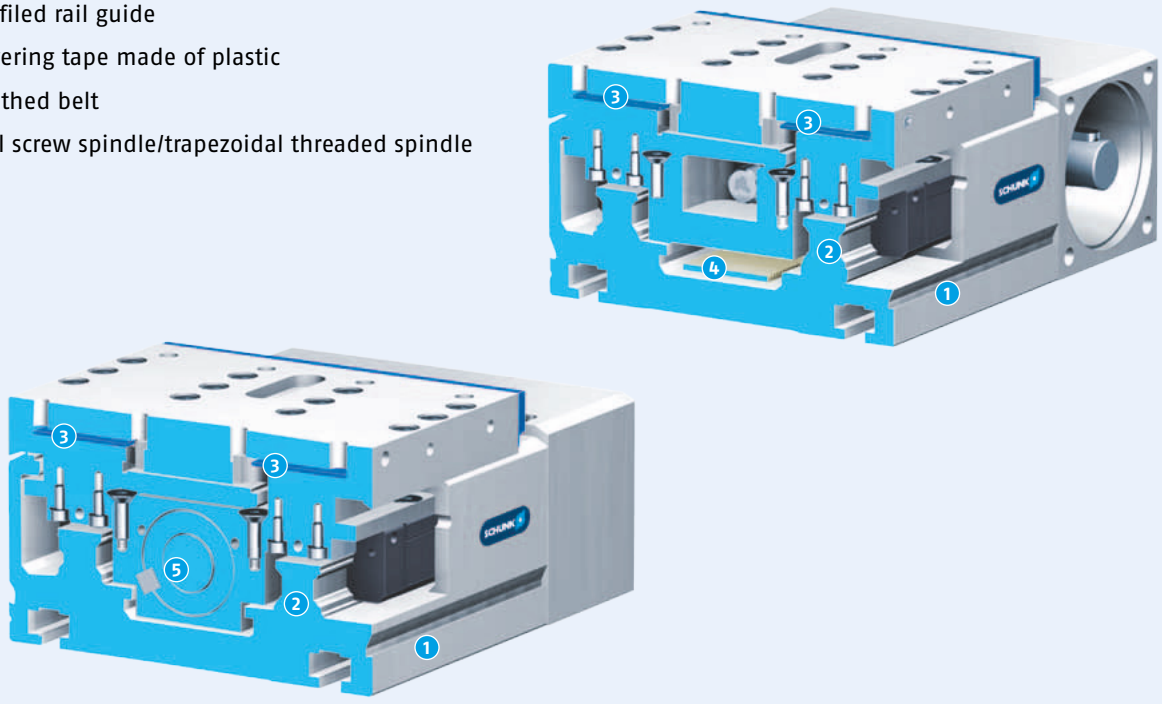
- Sturdy design
- Double profiled rail guide
- Choice of toothed belt or spindle drive
- Optimal size-performance ratio

Your advantage

- Reliable use even in dirty environments
- Maximum rigidity and precision
- Flexible connection due to T-nuts or mounting strips

Function cross section

1. Aluminum profile
2. Profiled rail guide
3. Covering tape made of plastic
4. Toothed belt
5. Ball screw spindle/trapezoidal threaded spindle



Rotary Feed-Through DDF 2.
More powerful. More versatile. More energy-efficient.

Turn on full performance.

DDF 2 is the newest and most powerful rotary feed-through unit for modern robot and assembly applications. It ensures maximum process reliability with 360° continuous rotation. We offer the DDF 2 in three variations: for the feed-through of pneumatic or electrical signals or for the combined version. More versatile than ever before, and extremely adaptable to process demands. A significantly increased load allows the use of a steel shaft for transmitting dynamic forces and moments. The DDF 2 achieves optimal dynamics and its specially-developed seal ensures long service life and energy efficiency through use of smaller drives.

The next generation

A unique feature is the large number of electrical and pneumatic transmissions. For example, depending on its size, the DDF 2 normally has two to four pneumatic feed-throughs and four to ten electrical feed-throughs. Profibus transmission is also possible. The DDF 2 is based on an advance in SCHUNK's proven DDF series and is fully 1:1 compatible. This makes replacement easy. It ensures the rotary feed-through unit can be changed quickly and rapidly.



State of the art!
The latest standard for modern robots.

DDF 2

Robot Accessories

New product | Successor product | Series expansion

Immediately available

Sizes	Weight	Speed	Air feed-throughs	Electrical feed-throughs
31 .. 160	0.5 .. 14 kg	70 .. 120 rpm	2 .. 4	4 .. 10

Product features

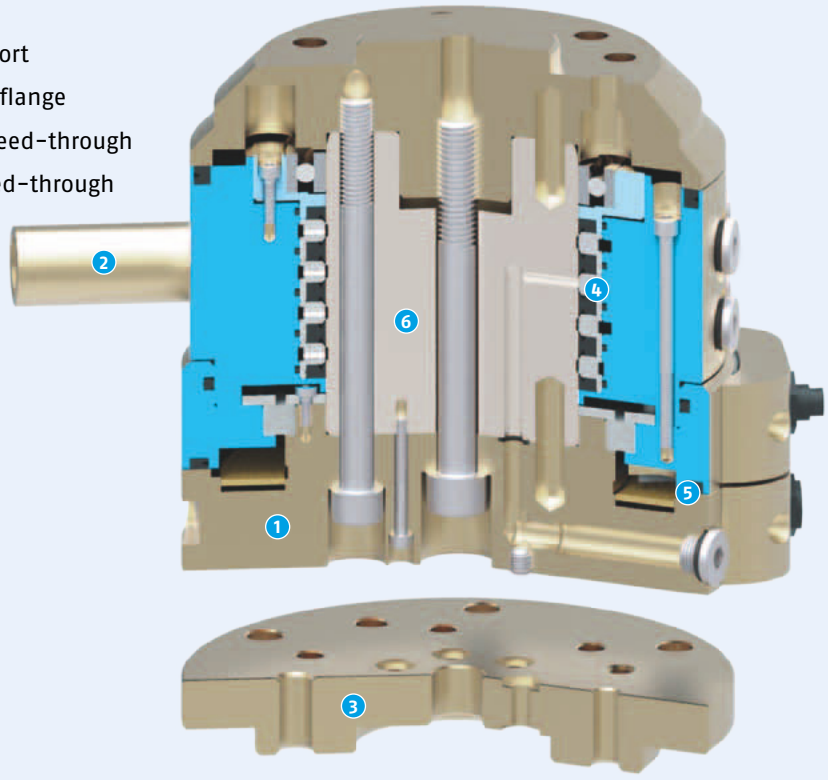
- 40% less torque for the same size
- 85% longer lifespan due to newly developed seals
- 50% greater moment load through transmission of dynamic forces and moments via a steel shaft
- 20% more load capacity possible
- Allows for 360° continuous rotation

Your advantage

- Allows for use of smaller and more efficient drives due to lower starting torque and continuous torque
- More compact system designs due to compact design
- Versatile range of applications due to combined energy transmission
- Electrical connector contacts allow for easy replacement of broken cables on robot arm or gripper

Function cross section

1. Housing
2. Torque support
3. ISO screwed flange
4. Pneumatic feed-through
5. Electrical feed-through
6. Shaft



Quick-Change System SWS-001.
The smallest automatic robot changing system.

Fast tool change for small robot types

SCHUNK has expanded its standard range of robot accessories to include smaller accessories so that users can fully utilize the potential of small robots. The extremely flat SWS-001 quick-change system, which features a slim interfering contour, is now the smallest automatic robot changing system on the market. With a handling weight of up to 1 kg, it is ideal for small types of robots in which grippers and tools must be changed automatically in seconds.

Reliable power supply

Four integrated air feed-throughs and up to eight integrated electrical feed-throughs ensure a reliable supply of power to the connected modules. A patented, self-locking locking system ensures that robots and effectors remain connected in the event of a sudden power failure. Due to its ISO flange pattern, it can be quickly and easily connected to various robots without an adapter.



Extremely thin!
Designed with minimal interfering contour.

SWS-001

Robot Accessories

New product | Successor product | Series expansion

Immediately available

Size	Workpiece weight	Moment loads	Air feed-throughs	Electrical feed-throughs
001	1 kg	M_{xy} 0.35 Nm	4	8

Product features

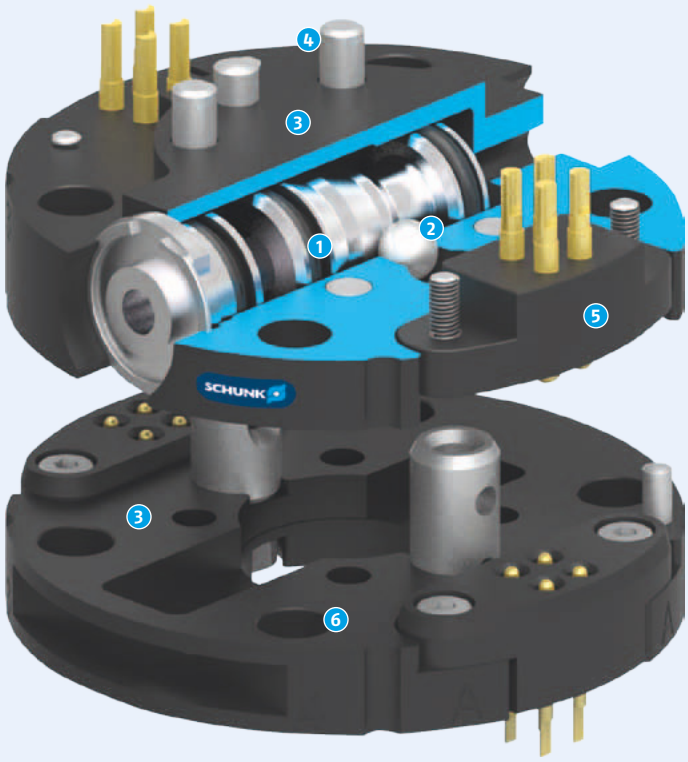
- Patented self-locking locking system
- Integrated air feed-throughs
- Integrated electrical feed-throughs
- Integrated drive in housing
- ISO flange pattern

Your advantage

- Secure connection between quick-change head and quick-change adapter due to self-locking locking system
- Flexibility for processes with frequent tool changes

Function cross section

1. Drive
2. Mechanical locking system
3. Housing
4. Centering and mounting option
5. Electrical feed-through
6. Pneumatic feed-through



Quick-Change System EWS.
Rapid tool change – electric for the first time.

The first electric automatic robot changing system

The electrically operated EWS quick-change system is a milestone towards creating a pneumatic-free factory. For the first time ever, a fully automatic robot changing system is electrically actuated instead of pneumatically. As a first step, SCHUNK is offering the digitally controllable EWS in size 018 for load capacities of up to 18 kg. A maintenance and wear-resistant servo motor which is directly integrated into the housing ensures fast and powerful locking. Because the module is extremely thin, system planners benefit from minimal interfering contours.

Tried and tested technology

The EWS is mechanically based on the platform of the long-standing and well-proven pneumatic SCHUNK SWS quick-change systems. The electrically driven module also uses the special patented self-locking locking system. Piston stroke monitoring and work tool presence monitoring are already integrated as a standard. And also the electrical transmissions of the pneumatic SCHUNK SWS quick-change systems can be used one-to-one with the EWS.



The alternative!
Tool change without air.

EWS

Robot Accessories

New product | Successor product | Series expansion

Available starting February 2014

Size	Handling weight	Weight	Moment load
18	18 kg	1.9 kg	M_{xy} 50 Nm

Product features

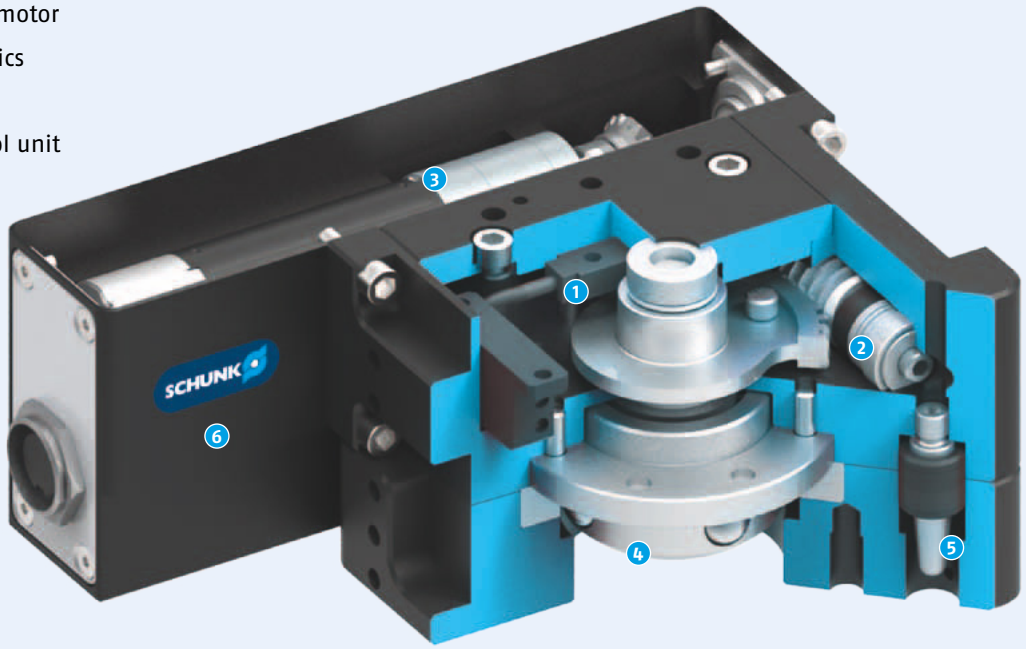
- Integrated drive in housing
- Locking system with patented self-locking
- Integrated piston stroke monitoring and tool presence monitoring
- Housing out of high-performance aluminum
- Electrical feed-through optional via elasticity modules

Your advantage

- High locking speed with the same high level of efficiency
- Extremely flat design for minimal interfering contours
- Mobile use with a 24 V DC power supply possible
- Ideal for robotic applications with frequent tool changes

Function cross section

1. Sensor for locking monitoring
2. Gears
3. Driven by servo motor
4. Locking mechanics
5. Centering bolt
6. Electronic control unit



Anti-Collision and Overload Protection Device OPR. Self-adjusting anti-collision device for small robots.

Speedy reaction

The anti-collision device and overload protection OPR-048 has been especially designed for use on small robots. The speedy lightweight module, whose housing is made of a hard-anodized, high-strength aluminum alloy, weighs just 240 g. Due to minimal reaction times, the module reliably prevents damage from collisions or overloads. An automatic reset ensures that the robot can be put into operation immediately after an emergency stop or a manual intervention. Since monitoring is not done via a magnetic switch but rather via a mechanical switch, the module can also be used for welding applications.

Easily adjustable

The triggering moments (M_x, M_y) and the triggering force (Fd) can be set using the operating pressure (1.4 bar up to 6.2 bar). With the help of a standardized adapter plate, the module can be quickly and simply integrated into a robotic system. It is also available with splash-proofing in protection class IP65.



Safer!
Protects robots and handling units.

OPR

Robot Accessories

New product | Successor product | **Series expansion**

Immediately available

Sizes	Weight	Air connection	Triggering moment M_{xy}	Triggering force
48 .. 221	0.24 .. 11.7 kg	1	6 .. 1,300 M_{xy}	440 .. 13,800 N

Product features

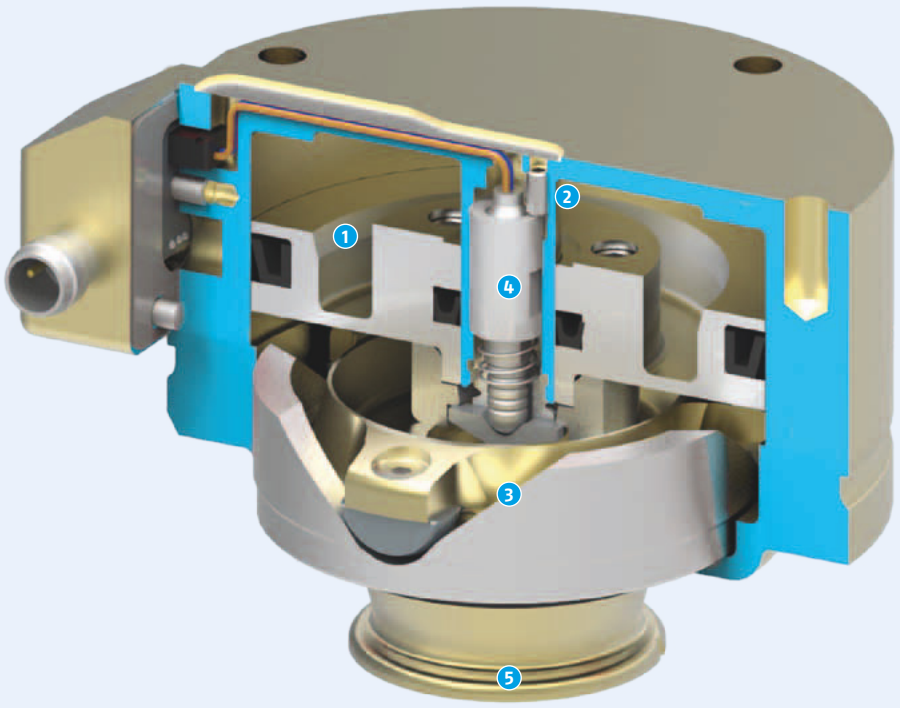
- Anti-collision and overload protection device
- Self-adjusting
- Integrated monitoring
- Sizes from 48 to 221
- Triggering forces and moments can be adjusted via operating pressure
- Splash-proofing IP65 optional

Your advantage

- No malfunctioning due to cable discontinuities due to the integrated cable discontinuity check
- Modularity to other SCHUNK products

Function cross section

1. Pneumatic pistons
2. Set screw
3. Bearing position
4. Monitoring
5. Broach plate



Force / Moment Sensor FTL.
Compact due to integrated electronics.

Integrated sensor system

As a new addition to the SCHUNK range of sensors, the FTL is a an attractively priced force / moment sensor that can also be used cost-effectively in simpler applications. It is suitable for implementing highly compact solutions because the electronic processor is fully integrated into the module. The extremely thin quick-change sensor, which features a slim interfering contour, has six independent load measurement ranges, allowing for forces up to 150 N and moments up to 3 Nm with a measuring accuracy of 3%.

Designed for robotics

The sensor can handle temporary overloads up to three times the normal load. Due to its real-time measurement and data output functions, the FTL also enables highly dynamic control concepts. It can be used for simple assembly applications as well as for hand-operated robots or service robotics applications. Another advantage: Due to its battery-servable 12 – 24 V DC power supply, it is also suitable for mobile applications.



Compact!
With integrated electronics.

FTL

Robot Accessories

New product | Successor product | Series expansion

Immediately available

Sizes	Measuring range F_{xyz}	Measuring range M_{xyz}
75	150 N	3 Nm

Product features

- Electronics integrated into sensor system
- Internal sampling rate of 1.5 kHz with 12 bit analog resolution
- Six independent load measurement ranges
- Configuration and evaluation can be performed via USB or CAN bus

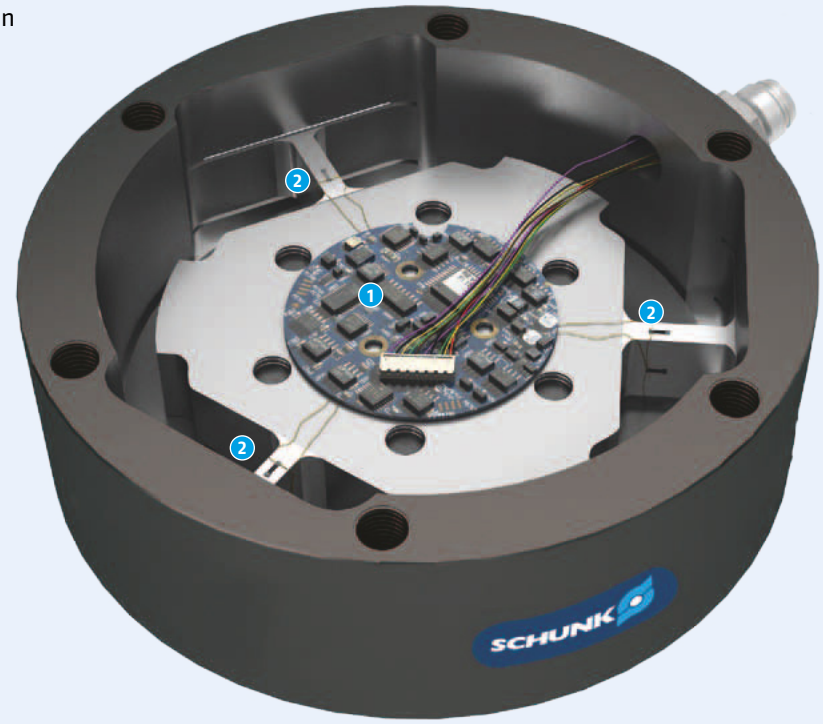
Your advantage

- Slim interfering contour due to extremely flat design
- Safe functionality through overload protection
- Reliable measuring results through temperature compensation
- Measurement of multidimensional forces

Function cross section

1 Amplifier board

2 Measurement bar with expansion measurement strips



Rotary Lift Unit DRL 20.
Implement and turn in confined space.

High-speed assembly with integrated rotary motion

SCHUNK has added the pneumatic rotary lift unit DRL 20 as an additional pacemaker to its range of modular high performance assemblies. The unit is very compact. With a 42 mm mounting surface radius, this very compact unit can be implemented in the tightest space and turn. The rotary loader enables highly dynamic and steady Pick & Place operations with rotating angles of either 90° or 180° for the assembly of electronics, medical equipment and consumer goods.

High automated system productivity

This enables up to 75 cycles per minute at minimal loads and a rotating angle of 180°. To additionally increase system productivity and process stability, the versatile control can be used to stop the effector directly over its target position and enter the standby position until the feed and the depositing unit are ready.



Fast!
Up to 75 cycles per minute.

DRL 20

Modular Assembly Automation

New product | Successor product | **Series expansion**

Available starting December 2013

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

Product features

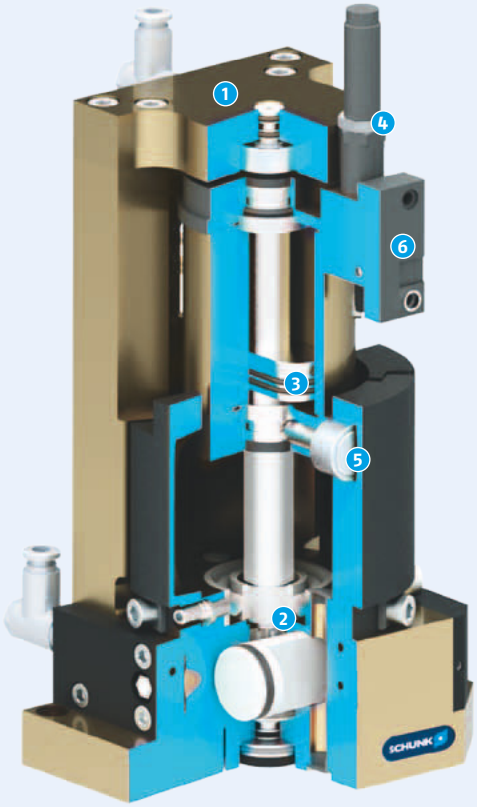
- Transfer and turning in one step
- Rotation angle adjustable by ± 2° per side
- Vertical end position adjustable by 10 mm per side
- Pick and place heights can be different
- Two stand-by positions can be achieved by actuation

Your advantage

- Significantly higher productivity due to higher cycle rates
- Higher process reliability due to highly flexible actuation
- Fewer shock absorbers than comparable pneumatic solutions

Function cross section

1. Housing
2. Rotary drive
3. Vertical drive
4. Shock absorber / end position adjustment
5. Cam roller / disk
6. Mounting attachment



Collection Gripper RVK.
Highly productive with Collect & Place applications.

Efficient high performance assembly

The all-purpose collection gripper RVK significantly increases the productivity of Pick & Place applications. Instead of picking up, moving, and positioning components one at a time – as is usual in high performance assembly – the Collect & Place principle of the RVK first collects several parts back-to-back. Only then are they brought to the assembly location and then set down back-to-back there. In this way, traverse paths are significantly reduced and up to six different parts are handled in the same cycle.

One cycle, six parts

The RVK collection gripper can be equipped with up to six standard grippers from SCHUNK's gripping system series, which is the most comprehensive of its kind in the world. With the aid of the integrated valve technology and also a pre-integrated electric pneumatic rotary feed-through, one gripper can be actuated while the others remain under pressure in the gripping position. All grippers can be monitored at any time independently of each other.



Highly productive!

The Collect & Place principle increases automated system productivity by minimizing cycle times and travelling distance.

RVK

Modular Assembly Automation

New product | Successor product | Series expansion

Available starting February 2014

Sizes	Number of grippers	Weight	Air feed-through
87	4 or 6	1.7 – 2.0 kg	2 x

Product features

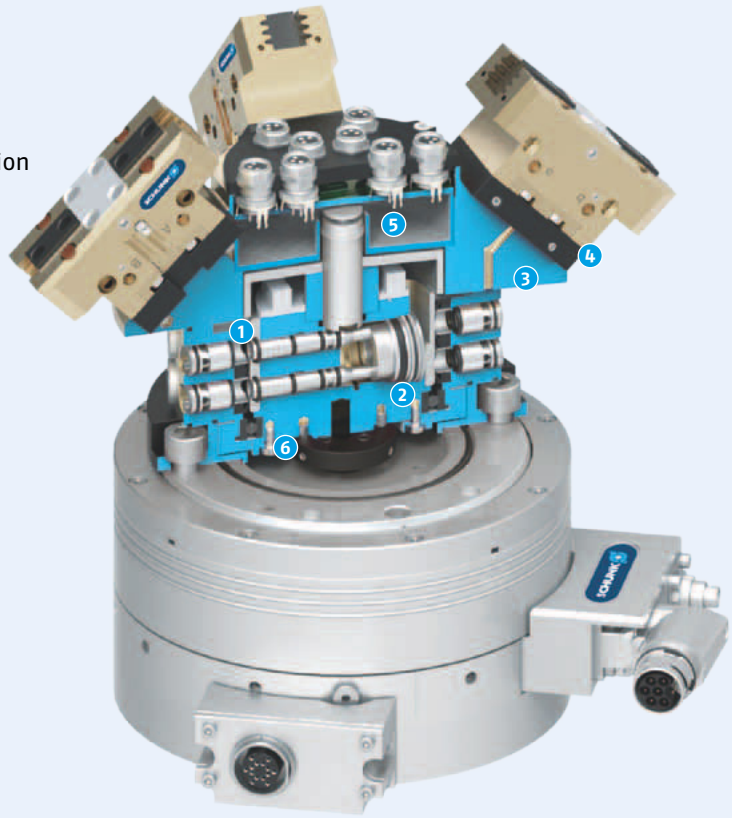
- Compact design
- Adjustable to 4 or 6 grippers
- Pneumatic and electrical feed-throughs
- Attachable as standard to the SCHUNK ERS 135 and 170 rotary modules, to the SCHUNK RST-D 087 rotary indexing table, or directly to robots with a center bore
- All grippers permanently monitored
- Integrated valve technology

Your advantage

- Allows a particularly compact system design
- Can replace gripper stations and quick-change systems in space-limited applications
- After an emergency stop the reliably gripped components can be removed individually
- All grippers are monitored and therefore process reliable

Function cross section

1. Active gripper position
2. Piston activation
3. Passive gripper position
4. Versatile gripper connection
5. Electrical feed-through
6. Storage



Controller ECM.
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).
From 2014, a Profinet interface will be 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, EZN and EVG grippers as well as the SCHUNK ERS rotary module.



Convenient!
Parameterization via USB stick.

ECM

Accessories

New product | **Successor product** | Series expansion

Available starting February 2014

Feed line current
max. 15 A

Transmission rate
Profibus max. 12 Mbit/s
CAN-Bus max. 1 Mbit/s

Product features

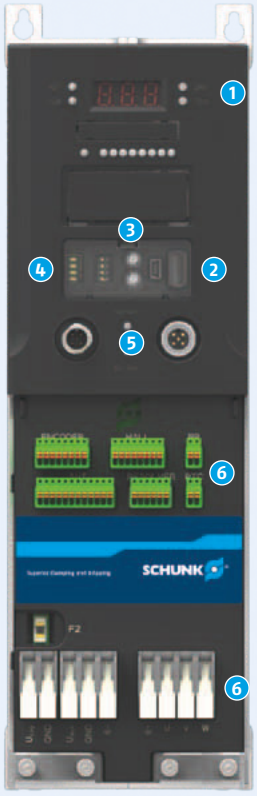
- Service interface USB host and two rotary encoding switches
- Standardized plug connections for communication and cage clamp terminals for power
- DIP switches with first test and commissioning functions
- Clear information on current controller status via 7-segment display and 4 LEDs

Your advantage

- Fast and convenient manual commisioning
- Substantially simplified assembly
- Maximum interface flexibility thanks 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



Magnetic Switch MMS-A. The first and smallest, teachable analog sensor for the C-slot.

First teachable displacement sensor for C-slot

The MMS-A analog magnetic switch is the first teachable displacement sensor that can be directly integrated in the gripping modules C-slot without interfering contours. It detects the size of the gripped parts with precision in the ongoing handling process and as an analog voltage value. Output options 0 – 5 V DC or 0 – 10 V DC are available. What previously required several magnetic switches can now be sufficiently done with the extremely compact MMS-A which has a diameter of 4 mm. The required electronics are already fully integrated. In conjunction with the SCHUNK FPS-F5 force / torque sensor system controller control, the displacement sensor becomes a simple teachable multi area sensor, which can detect up to five user-defined teachable conditions and output them as digital signals.

High repeat accuracy

The output signal is sent via a stroke measuring area of max 40 mm with a resolution of up to 0.1 mm. Using an intuitive teaching function and two LEDs, different magnetic fields can be quickly and easily linearized. In order to ensure a high degree of repeatability, the analog magnetic switch is specifically tailored to the relevant modules from SCHUNK's comprehensive standard program.



Free of interfering contours!

Integration directly into the C-slot.

Available starting January 2014

Sizes
22

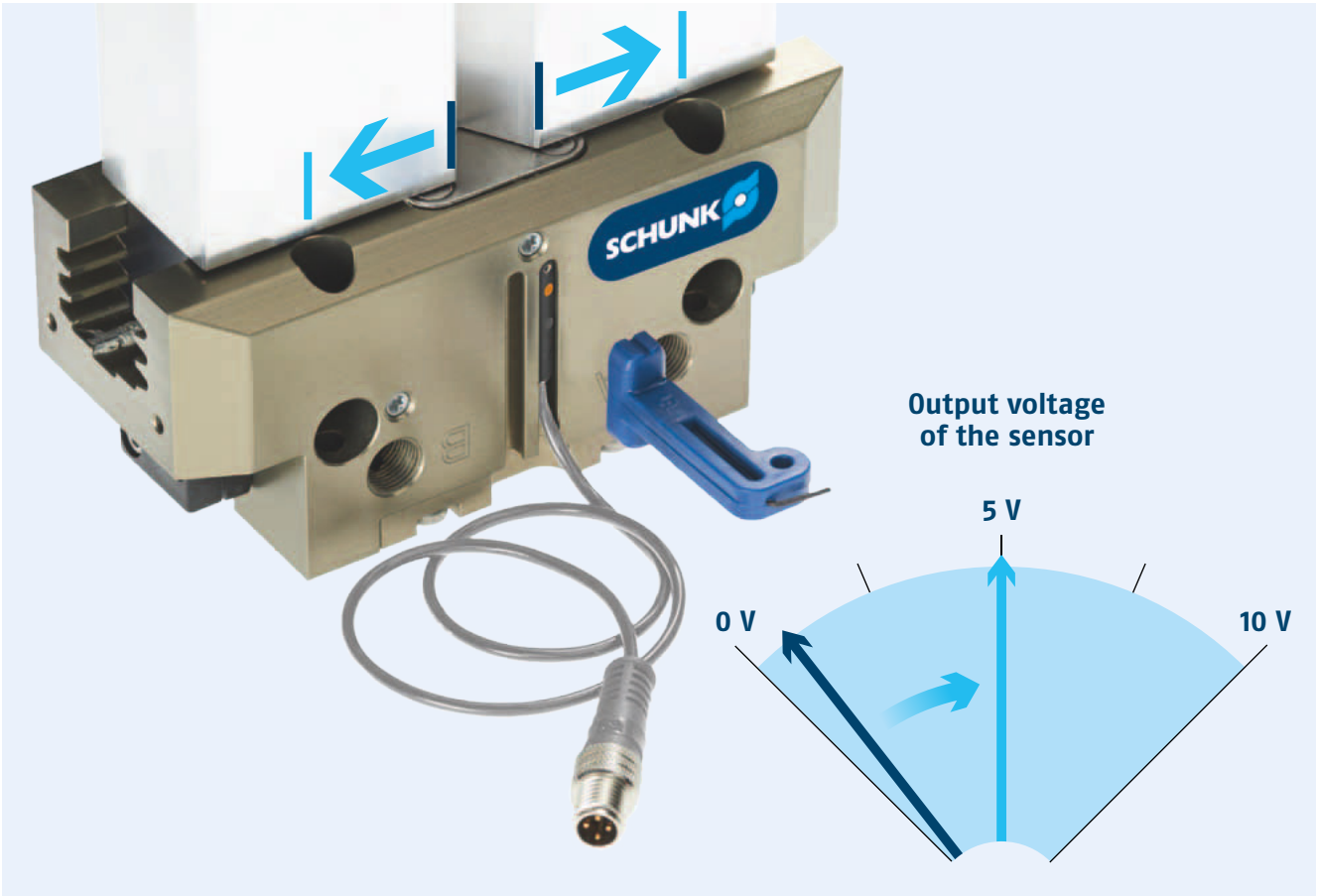
Output voltage
0 .. 5 V / 0 .. 10 V

Product features

- Magnetic switch for C-slot
- Analog signal for the entire jaw stroke
- Simple teaching in seconds for quick commissioning
- 2 LED status indicator during teaching and operation

Your advantage

- Installation of the sensor without interfering contour
- Instead of several switches, one sensor to detect different workpieces



Pressure Maintenance Valve SDV-P-E. The first pressure maintenance valve with manual air bleed.

With integrated quick air bleed

The pressure maintenance valves from the SDV-P series guarantee that in emergency stop situations, the existing pressure remains reliable in the piston chamber of pneumatic gripping, rotary, linear, and quick-change modules. With the SDV-P-E, SCHUNK offers for the first time a pressure maintenance valve, in which both air ducts are equipped with an integrated quick air bleed. This allows pneumatic actuators to be manually isolated quickly and easily after an emergency stop. The compact SDV-P-E is equipped with standard threaded connections and can be used on pneumatic actuators from all manufacturers. It is especially suitable for grippers that do not have a mechanical maintenance of gripping force maintenance via springs.

Holds securely

To reset the automated system, the fixed modules can be manually isolated via the ventilation buttons with the aid of the pressure maintenance valve in the defined end position, without having to remove the pneumatic hoses under pressure. It is possible to directly read on the module which channel is under pressure by means of a mechanical display that is integrated in the button.
The corrosion free module is available in two sizes for flow quantities of 200 l/min and 300 l/min. It ensures a maximum drop in pressure of 0.5 bar within 24 h (test volume 2 cm³) and covers a pressure range from 0.5 bar to 10 bar. Its switching time is around 10 ms.



Manually fast!

Bleed without removing the compressed air hose under pressure.

SDV-P-E

Accessories

New product | Successor product | Series expansion

Immediately available

Sizes	Max. flow	Air connection	Max. operating pressure
04 .. 07	200 l/min .. 300 l/min	G1/8 .. G1/4	10 bar

Product features

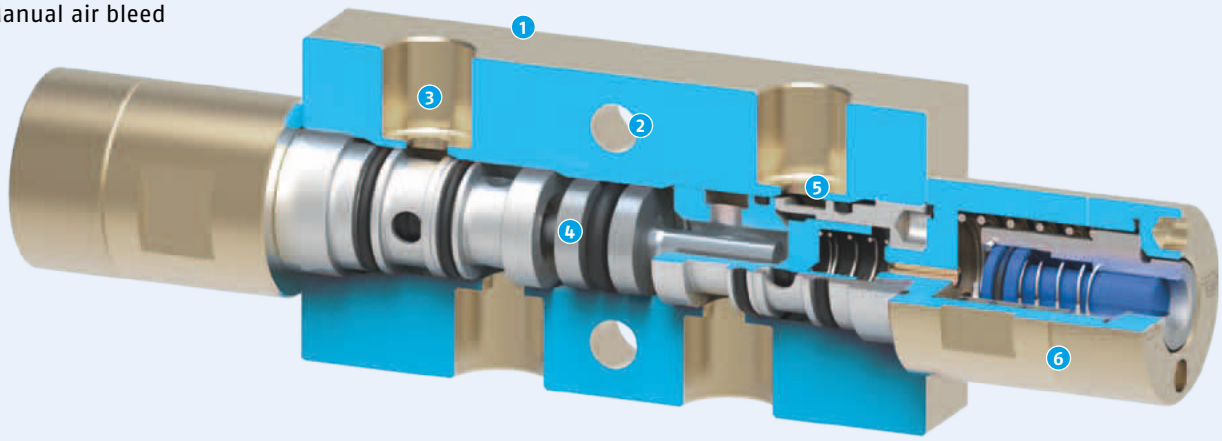
- Integrated manual air bleed
- Compact design
- Retrofitting in existing SDV-P possible
- Display of the channels under pressure

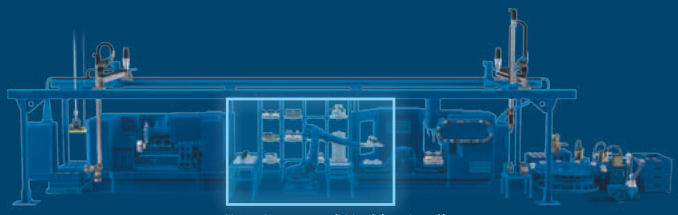
Your advantage

- No loss of clamping force in case of a drop in pressure
- Additional hosing is not required
- Flexible, as it can be used on all pneumatic actuators from all manufacturers

Function cross section

1. Housing
2. Fixing bores
3. Air connection
4. Valve tappet
5. Sealing groove
6. Manual air bleed





Your Automated Machine Loading

SCHUNK

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

Maximize your plant's productivity by using our modules, since loading and changing processes are getting faster. The systematic, and combined use of SCHUNK single modules from clamping technology and gripping systems pay off if they are used as single components and much more in combination with other modules.

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

30% more productivity

100 kN holding force

20 tons of load handling

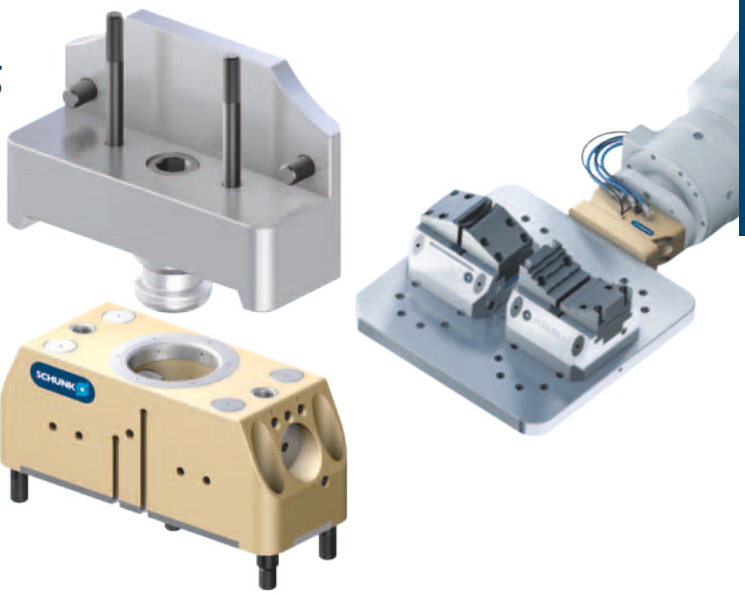
SCHUNK No. 1 Products for higher Productivity for your Automated Machine Loading.



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

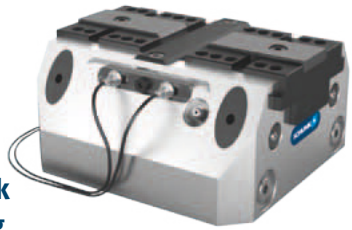
VERO-S NSR
Robot Coupling for Pallet Handling



Process reliable, precise, and space-saving
Automated pallet loading redefined. The slim VERO-S 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

100% control



TANDEM KSP plus Clamping Force Block with Jaw Monitoring

Know whether it's open or clamped
More process reliability with less investment. The compact solution for conceivably simple machine integration. Can be used versatilely both for O.D. and I.D. clamping.

100 kN holding force



VERO-S NSA plus Automated Palletizing System

Highly efficient automation
Positioned within seconds with a repeat accuracy of < 0.005 mm, 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

PGN-plus Gripper with GSW Spindle Interface

The clever productivity booster
Cuts set-up times and saves complex and expensive automated solutions. The 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.

- Air actuation using machine coolant or actuation using compressed air
- Fits in many toolholders
- Low cost solution for fully automated workpiece change

6-axis compensation



Flexible Compensation Unit GSW-B-AGE

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

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 swap 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 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 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.

Up to 20 tons load handling

MAGNOS Magnetic Lifting Technology



Highly effective load handling
High lifting and safe holding capacity. MAGNOS ensures easy handling of ferromagnetic workpieces, from simple lifting magnets to high-performance lifting devices.



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

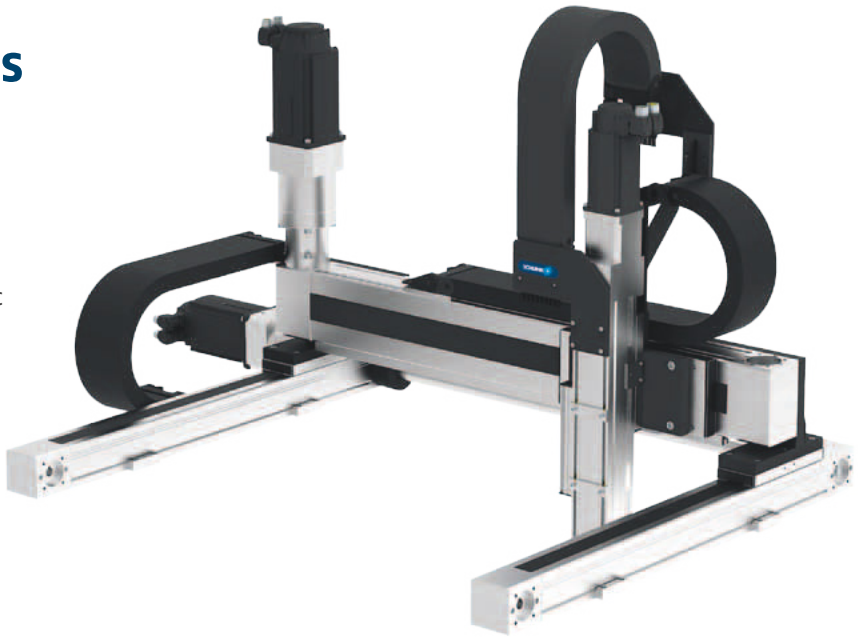
90% faster gripper change

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



Electric Rotary Module ERM

Extremely adaptable - integrates perfectly
The drive can be freely adjusted in 90° steps. In this way, the interfering contour of the 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



2-Finger Parallel Gripper PGN-plus

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

The world's first rotary feed-through with integrated bus technology



Rotary Feed-through DDF-I

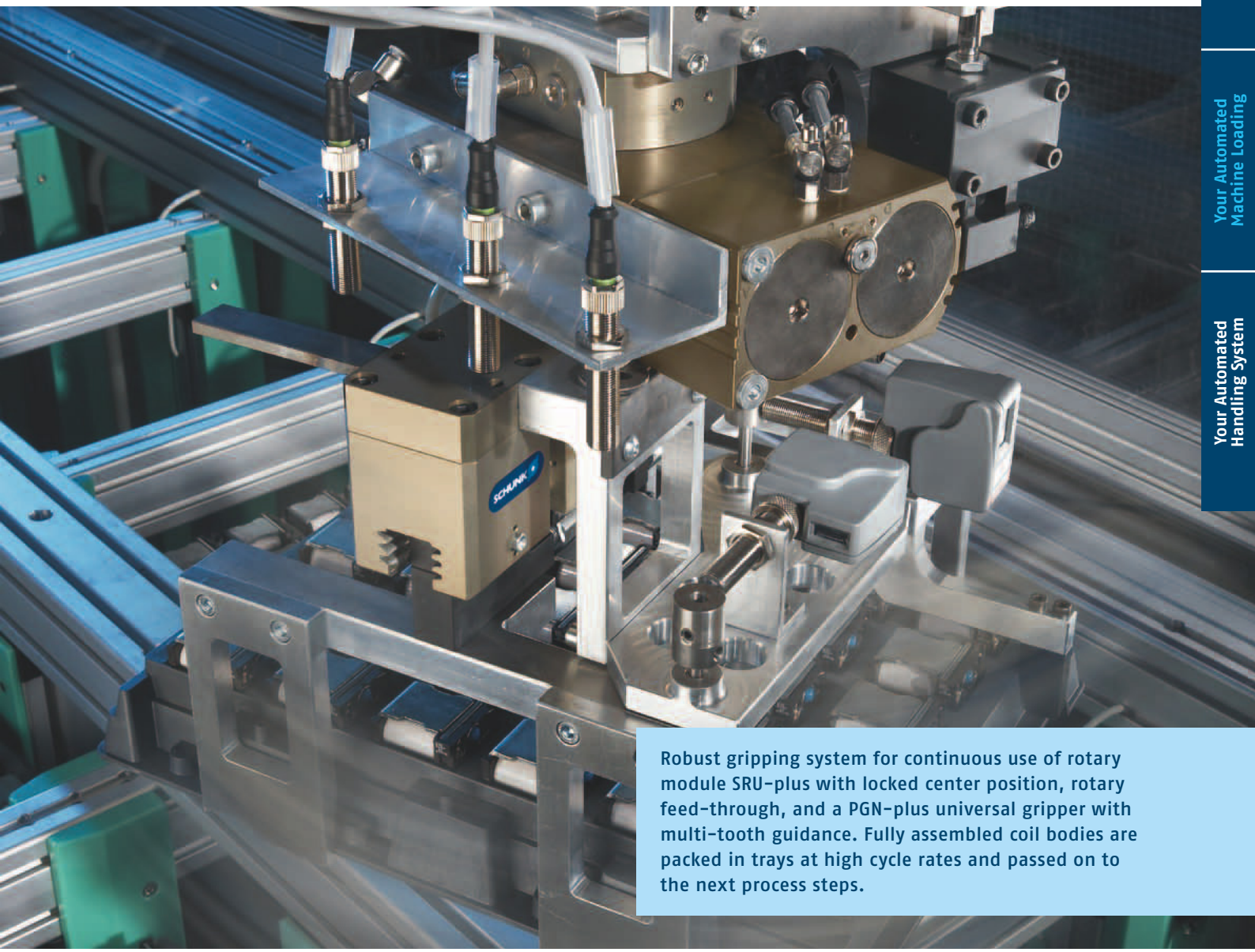
Process stable control for the highest demands
Up to 26 electrical signals can be transmitted simultaneously, and 13 of them can be used to control valves. Air and vacuum reach the actuators via an air feed-through. Due to its ISO flange pattern, it can be connected to various robots without an adapter.

In IP67 with fluid and electrical rotary feed-through



SRH-plus Swivel Head

Versatile even in the most difficult of environments
Two grippers moved in extremely confined spaces. The SRH swivel head increases machine productivity through the fast changing of rough and finished part.
All that in one cycle.



Robust gripping system for continuous use of rotary module SRU-plus with locked center position, rotary feed-through, and a PGN-plus universal gripper with multi-tooth guidance. Fully assembled coil bodies are packed in trays at high cycle rates and passed on to the next process steps.

90% faster gripper change

SWS Quick-Change System

Fully automatic gripper change within seconds

One system, two components. The standardized quick-change system SWS establishes the connection between the gripping system and robots or gantries. The SWS offers full flexibility due to fast changing processes with a repeat accuracy of 0.015 mm. 22 sizes and payloads from 1 kg to 1,350 kg ensure optimal productivity and reduce costs for an extremely wide variety of handling tasks.

- Patented self-retaining locking system
- Integrated drive in housing
- Integrated air feed-through





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.

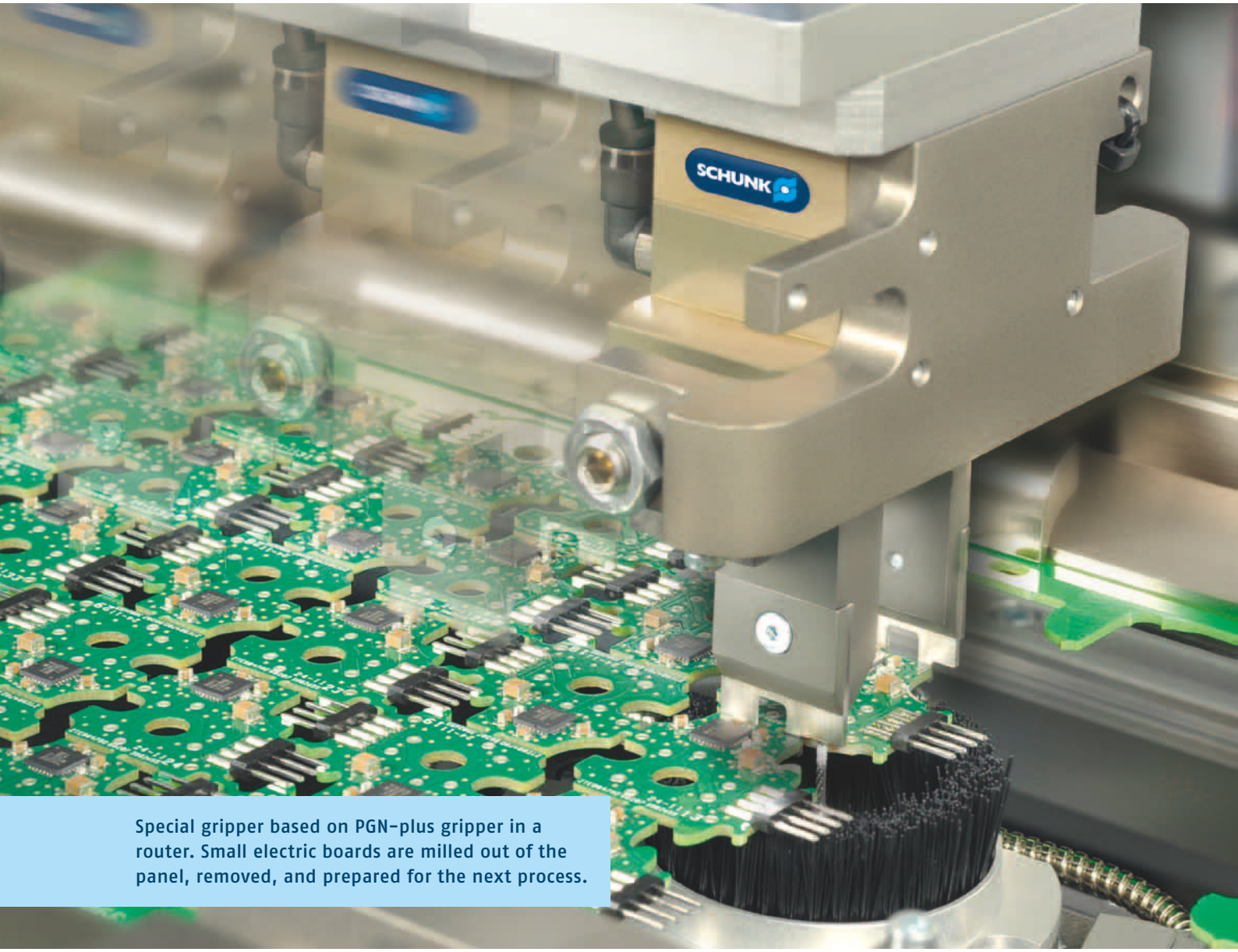
It's time to use your machine's full potential!

180% better gripping force – mass ratio

110 picks per minute

∞ combination options

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



Special gripper based on PGN-plus gripper in a router. Small electric boards are milled out of the panel, removed, and prepared for the next process.

100% cycle increase

Universal Rotary Actuator SRU-plus 20-S



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

250 rpm endless turning

Electric Rotary Module ERS with DDF



Compact and extremely modular
Compact electric rotary module with integrated pneumatic and electric feed-through. Can optionally be controlled with 48 V controller from SCHUNK or common 560 V controllers from Bosch or Siemens. As a standard, the DDF has more than eight signal feed-throughs and a pneumatic air duct. The air can be distributed over micro valves for several different actuators. Also available with pneumatic holding brake and in IP54 version.

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 PPU-E is the fastest pick & place unit in the market. PPU-P keeps up a brisk pace pneumatically with 90 picks per minute. Both are the ultimate in high-speed assembly work.

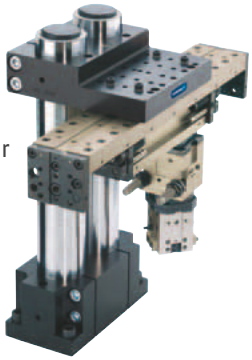
- 2 kg – 5 kg payload
- 10 µ repeat accuracy
- Plug & Work makes start-up as easy as can be



∞ 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 trend-setter for modular high-performance assembly in the SCHUNK program.



25% greater gripping force

MPG-plus Miniature Parallel Gripper

The benchmark
The most powerful pneumatic miniature gripper in the market. Used all over the world when it comes to handling small parts reliably and fast. 25% more power, up to 10% less weight. A concept proven 100,000 times.



180% better gripping force – mass ratio

EPG Electrical Gripper for Small Components

The perfect alternative
The most powerful electronic gripper for small components with integrated electronics. It makes changing from comparable pneumatic to mechatronic gripper modules without loss of gripping force easy.





Your Service Robotics Application

SCHUNK

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

Inspection systems, applications on mobile platforms, human / machine and human / human interaction. On the economic side of things, service robotics is becoming increasingly dynamic. Our mechatronic products are setting new standards even today, 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



The Use of Mobile Gripping Systems in Service Robotics

More than 1,500 lightweight arms installed, more than 15,000 swivel and gripping modules, more than 300 customers all over the world, and more than 16 years of mechatronics experience make SCHUNK one of the most important developers and vendors of mobile gripping systems for an extremely wide range of applications.

As a pioneer, we are continuously redefining the limits of industrial reality. With unique products and developments. We are characterizing the functions of inspection systems, applications on mobile platforms and human-machine interactions in the area of robotics.





Inspection service

SCHUNK component gripping system used in Areva iNDT robots does all the work when inspecting welds and pipe connections, for example in power plants with high temperature ranges or radioactive environments.



Research

A high-performance lightweight arm consisting of PRL modules with light cast connections and a SCHUNK SDH-2 gripping hand with tactile sensors. The Care-O-Bot flagship project® 3 of the Fraunhofer Institute of Production Engineering and Automation (IPA).



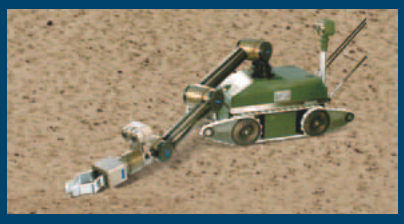
Domestic care

LWA 4D with 7 degrees of freedom and SDH-2 3-finger industrial hand for a service robot developed for people with disabilities by researchers at the University of Bremen.



Quality assurance

Highly flexible handling device for a fully automated laboratory at ThyssenKrupp AG. A SCHUNK 5-axis lightweight arm with PRL modules and mechatronic PG 70 grippers handles the sensitive cement samples.



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.



Laboratory use

SCHUNK mobile gripping system components are used around the world in highly specialized measuring robots, in laboratory automation and with cleanroom robots.



Logistics

With perfectly coordinated components from the modular system, mobile gripping systems from SCHUNK offer tailor-made and extremely efficient solutions for automated warehouse logistics and goods packaging.

SCHUNK No. 1 Products for higher Productivity for 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



340° rotation range

Powerball ERB

Well-rounded and intelligent

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



120 N gripping force

2-Finger Parallel Gripper WSG

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

3-Finger Industrial Hand SDH-2

Using people as its model

The 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.



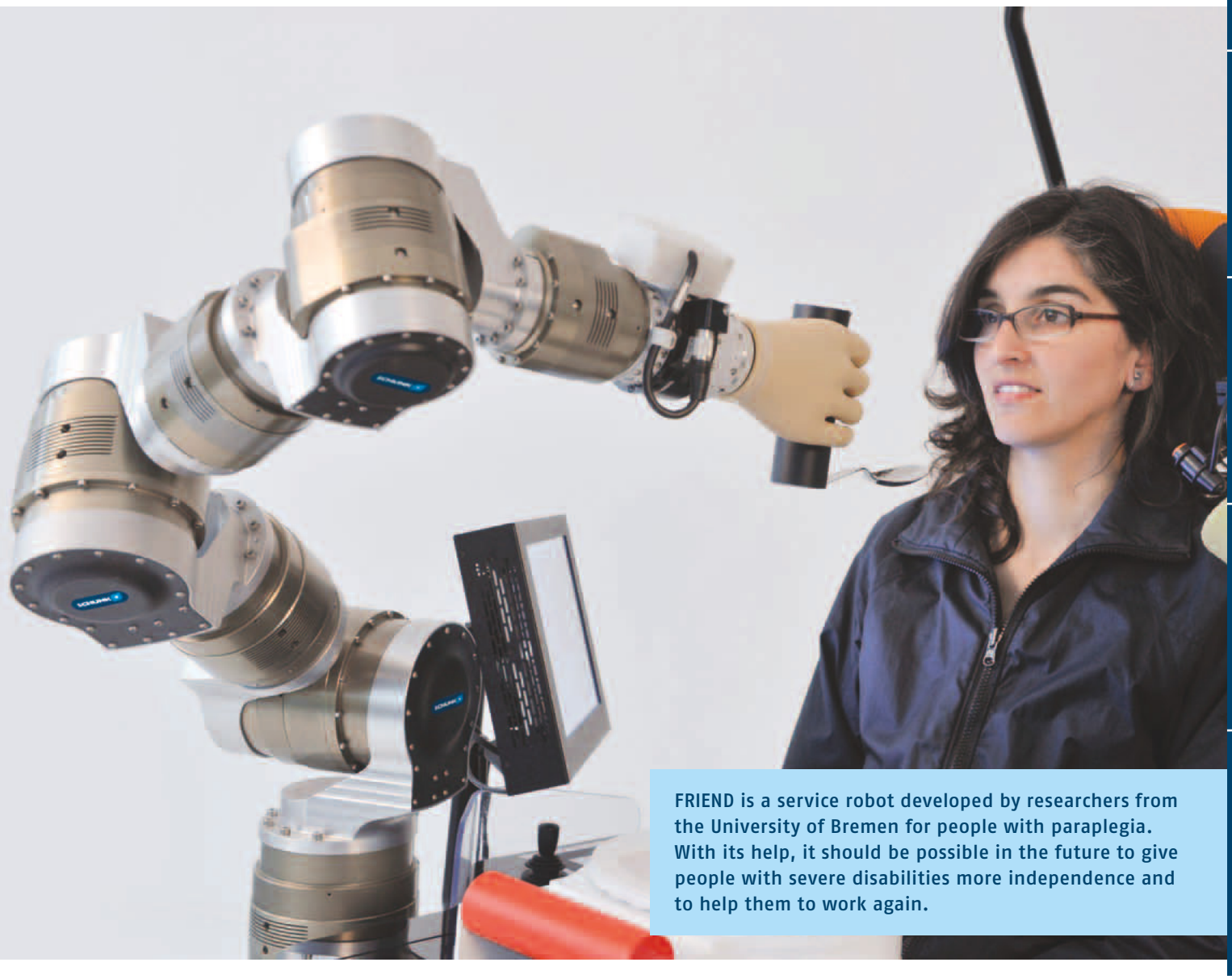
216 Nm continuous torque

Turning Unit PRL

Endless power

The highly integrated servo unit has an output of up to 216 Nm continuous torque with a weight of 3.6 kg. With connection parts freely and flexibly fitted to the individual lightweight arm, it was designed for use in industrial automation and service robotics.





FRIEND is a service robot developed by researchers from the University of Bremen for people with paraplegia. With its help, it should be possible in the future to give people with severe disabilities more independence and to help them to work again.



10 degrees of freedom

Dextrous Lightweight Arm LWA 4D

From mine detectors to the latest in rehabilitation systems. The 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

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 offers you the appropriate product with the optimal 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

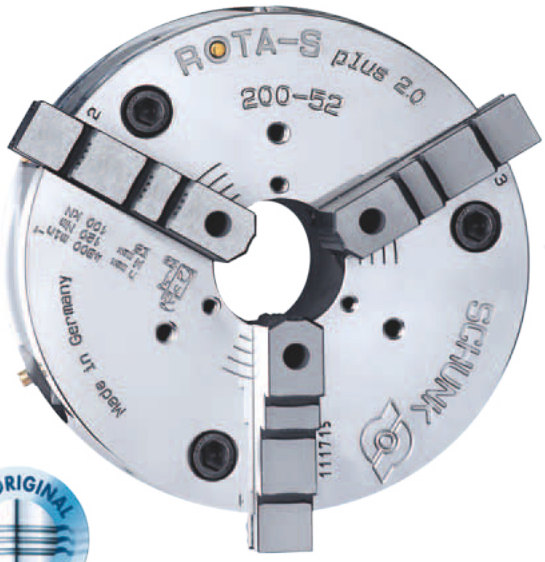
SCHUNK No. 1 Products for higher Productivity in your Lathe.



ROTA-S plus 2.0 manual chucks – fast and precise adjustment to each clamping task with an optimal expansion arbor. Also ideal for small clamping diameters.

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.

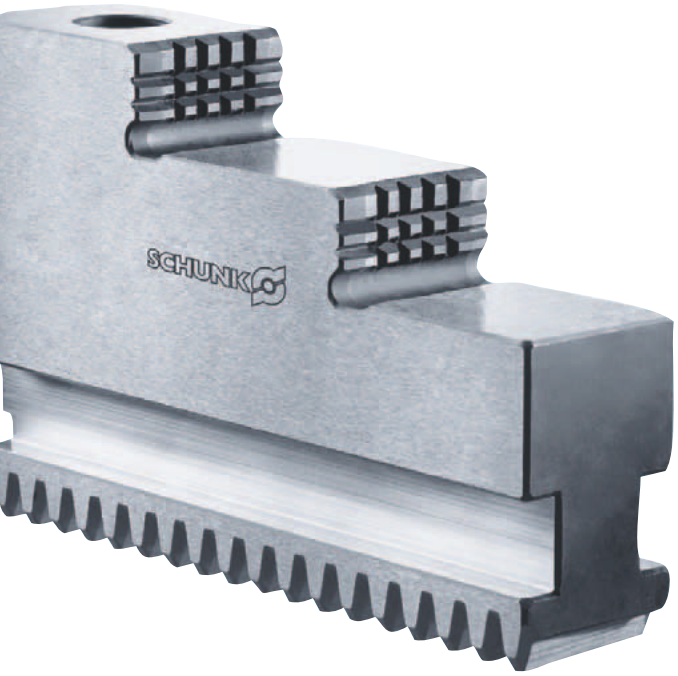
Clamping range 4 – 460 mm

ZENTRICO THL plus
Steady Rests



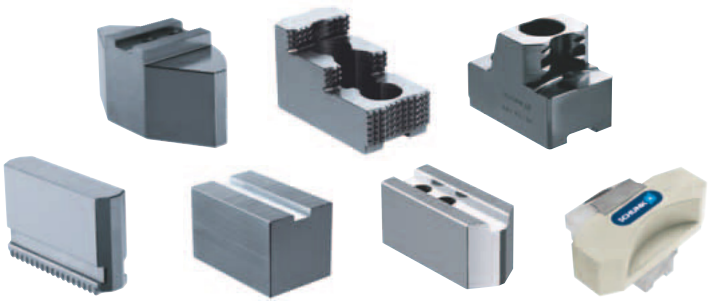
Highly precise with a long service life
A plus for any lathe in shaft machining. Excellent centering and repeat accuracy combined with maximum clamping forces. Integrated hydraulic cylinder with a large clamping range. For all-round precision.

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

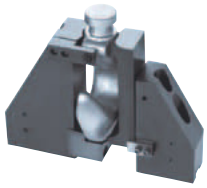
Pendulum Jaws



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 pendulum jaws with 6- or 12-point clamping. Within very little time conventional 3-jaw chuckscan 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 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.

TENDOturn DSE on a driven toolholder with NC-drilling tool in vertical machining centers.

Up to 300% improved surface finish

TENDOTURN
Hydraulic Expansion Toolholder

Including vibration damping!
The only modular 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

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 clamping technology 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.



TENDO E compact toolholder, ROTA-S plus 2.0 manual chuck, and SCHUNK stepped top jaws – three power-houses for highly accurate and fast machining.
Easy on spindles and tools while providing maximum repeat accuracy.

Coolant-proof up to 80 bar or peripheral coolant

GZB-S Universal Intermediate Sleeve

Systematic cooling
Versatile application with TENDO, TRIBOS and 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.



Up to 2,000 Nm torque

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 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



100% suitable

TENDO® SVL Tool Extension

Long and super-slim
The innovative, 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 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 next to 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. Minimum set-up costs due to fast, safe tool changes.



More than 35 years of experience

TENDO®
Hydraulic Expansion Toolholders

The hydraulic expansion toolholder for all shank types
The original made by SCHUNK. Technological leader, economical and absolutely precise. And universally applicable in highly precise boring, milling, thread milling and reaming. Process reliable clamping without expensive peripheral equipment.



0 Interfering contour

TENDO® ES
Hydraulic Expansion Toolholder

The powerhouse with zero interfering contour
First choice when power and every centimeter of machining area counts. Tool clamping is done directly in the mounting taper. The result: 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. 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 G 2.5 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. 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.



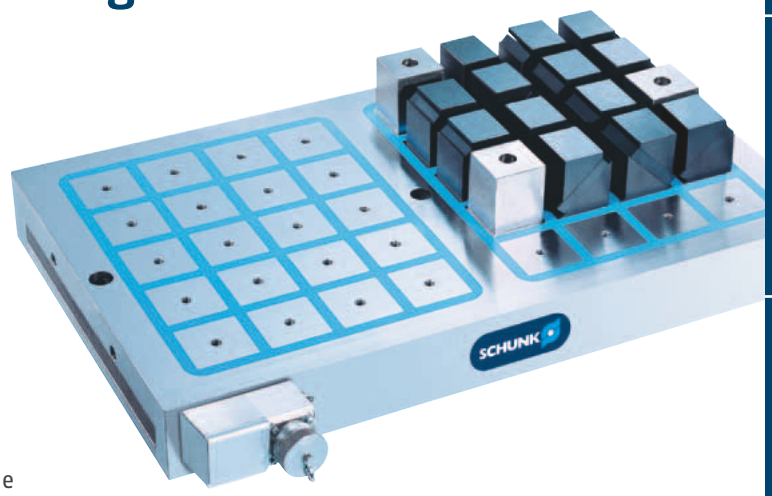
3 µ run-out accuracy

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 SVL saves you from buying expensive special tools.



5-sided workpiece machining in one set-up



MAGNOS

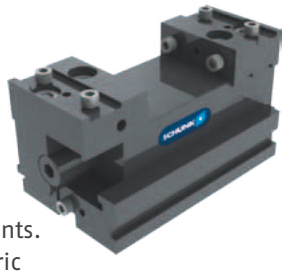
Square Pole Technology

Economy cubed
Due to the level positioning of the workpieces on the 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
Consistently permanent magnetic holding force across the entire workpiece effectively minimizes vibrations and leads to improved surfaces and clearly 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 centric clamping device 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

Special Hydraulic Expansion Solutions

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



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



4-fold clamping station
VERO-S NSL plus 400 incl.
4 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

Well over 500 variations for workpiece clamping

VERO-S
Quick-Change Pallet System

The largest modular system for individualists

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
TANDEM system



Combination with
KONTEC system



Combination with
MAGNOS magnetic clamping technology



Combination with
ROTA chuck



Combination
with tombstones



The VERO-S quick-change pallet system makes fast workpiece and pallet loading possible. The clamping pins are ideal for easy loading and unloading processes.

Height 20 mm

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

Super-thin design
At a height of 20 mm, the 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 – VERO-S NSL *mini* can be adapted to any individual requirement. For any application. On all conventional machine tables.



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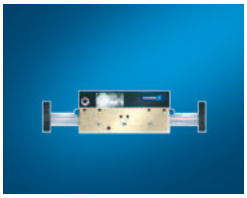
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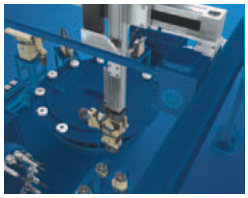
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Product Overview



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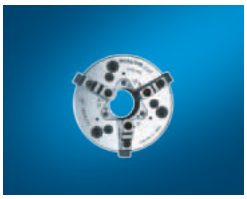
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