

First half of 2023



# New products and innovations

Toolholding and Workholding  
Gripping Technology  
Automation Technology  
Depaneling Technology

Hand in hand for tomorrow



# New products and innovations that bring you forward

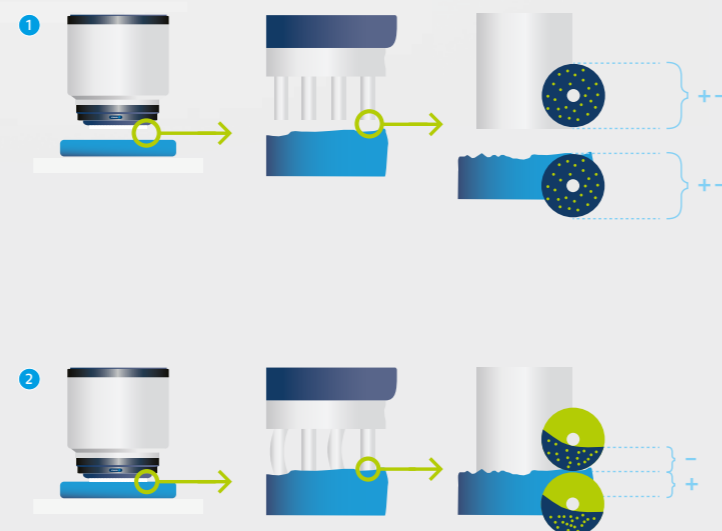
## Adhesive gripper ADHESO

The ADHESO gripper technology is based on an adhesion system that is inspired by nature. The adhesive forces used by animals such as geckos for locomotion are now being utilized by SCHUNK for handling in various fields of application.



### Principle of function

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



- 1 Initial situation
- 2 Gripping process

## Linear direct axis SLD

The SLD series is a new generation of SCHUNK linear direct axes. The dynamic, heavy-duty axes with electric linear direct drive ensure short cycle times and more productivity in high-speed assembly and handling processes. Due to the high drive forces up to a maximum of 2.4 kN and the load capacity of up to 106 kN as well as the long service life, the axis is ideally suited for any industry – even for demanding cell production in the dry room.

### High load rating

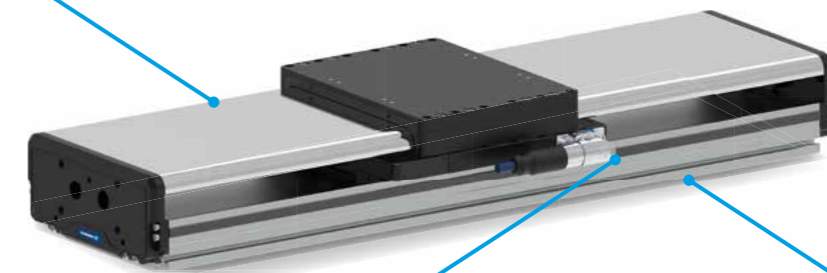
for high load capacity and service life

### No mechanical play between the drive elements

for fast response and high positioning accuracy

### Almost no wear parts

for long service life and reliability of the system

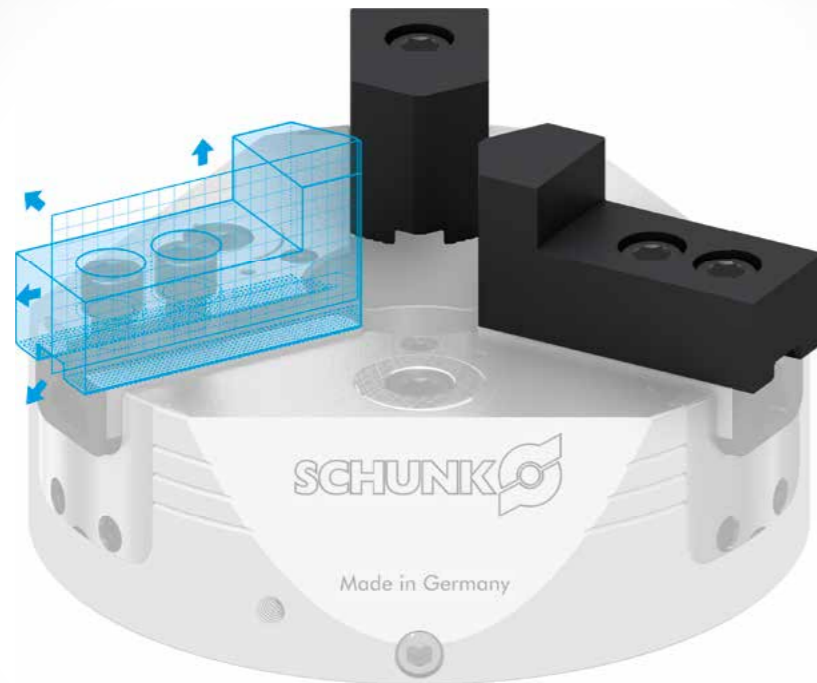


## Individual chuck jaws delivered in two weeks

With the easyJaw chuck jaw configurator, we are adding the individuality component to our standard chuck jaw program. From selected standard variants, geometries can be adapted to customized and application-specific use.



Now also configurable for RAPIDO



### Made easy in four steps

1

Select chuck jaws at [schunk.com/easyjaw](https://schunk.com/easyjaw)

2

Configure individually

3

Enter contact details

4

Check and complete configuration

## Content

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### Piezo-hydraulic quick-change pallet module

## VERO-S NSE3-PH 138 IOL



The NSE3-PH 138 IOL quick-change pallet module has the same pull-down forces as the fluidically driven NSE3 138 in the same installation space. This is made possible by the innovative piezo-hydraulic drive, which offers very high pull-down forces in a small installation space. At the same time, the drive is extremely energy-efficient.

### Compact powerhouses

## 3-jaw clamping force blocks

The TANDEM3 modular system is growing. Whether pneumatic, hydraulic, spring-actuated or electric: the new 3-jaw clamping force blocks transfer the advantages of 2-jaw clamping force blocks to the realm of cylindrical workpiece clamping – without special chuck jaws, with low deformation and even better force distribution. The enormous range of variants in the standard range and the extensive range of jaws also cover a wide variety of applications.



# PGL-plus-P Universal gripper

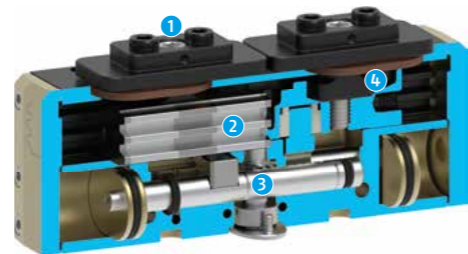
The world's first pneumatic gripper with secure and certified gripping force maintenance.



- + Secure, certified gripping force maintenance, GripGuard**  
holds the gripped workpiece safely and also ensures a permanent gripping force of min. 80% in case of pressure drop. It also ensures that no dangerous, spontaneous jaw movements can occur in the event of a pressure drop
- + Integrated sensor system**  
for precise and process-reliable monitoring of the complete gripper stroke via IO-Link
- + Long jaw stroke**  
enables flexible handling of a wide range of parts

- Sizes**  
10 .. 25
- Weight**  
0.46 .. 7.9 kg
- Gripping force**  
145 .. 1900 N
- Stroke per jaw**  
10 .. 25 mm
- Workpiece weight**  
0.72 .. 7 kg

[schunk.com/pgl-plus-p](http://schunk.com/pgl-plus-p)



- 1 Base jaw**  
with standardized screw connection diagram for the adaptation of the workpiece-specific gripper fingers. The centering sleeves are attached so that they cannot be lost when exchanging fingers
- 2 Multi-tooth guidance**  
Maximum service life due to lubricant pockets in the robust multi-tooth guidance, and absorption of high forces and torques by means of the large guidance support
- 3 Pneumatical drive piston and kinematics**  
Maximum power generation through two oval pneumatic pistons. The gear rack-and-pinion kinematics ensure synchronization of the base jaws and centric clamping
- 4 Dust cover**  
The entire circumference of the gripper is encapsulated with metal and additionally sealed with a lip seal at the base jaws so that it is suitable for universal use, even in dirty environments.

## Technical data

Size	Stroke per jaw [mm]	Closing force [N]	Opening force [N]	Recommended workpiece weight [kg]	Weight [kg]	Max. permissible finger length [mm]
10	10	145 .. 295	145 .. 295	0.72 .. 1.1	0.46 .. 0.75	100
13	13	230 .. 475	230 .. 480	1.2 .. 1.8	0.8 .. 1.3	130
16	16	365 .. 750	365 .. 740	1.8 .. 2.8	1.4 .. 2.2	160
20	20	585 .. 1170	585 .. 1170	2.9 .. 4.4	2.7 .. 4.2	210
25	25	930 .. 1900	930 .. 1900	7	5.1 .. 7.9	260

# PPD Pneumatic positioning device

Positioning device for flexible control of pneumatic grippers



- + Free positioning of a pneumatic gripper**  
enables cycle time optimization or collision avoidance by pre-positioning the gripper fingers
- + Gripping force adjustability by adjusting the output pressure**  
for gripping differently sensitive workpieces
- + Adjustability of the gripper jaw speed**  
for workpiece-friendly gripping due to the reduction of the gripping impulse

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



## Pneumatic positioning device

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

# JGP-P Universal gripper

The high-performance gripper with diverse monitoring options – also inductive

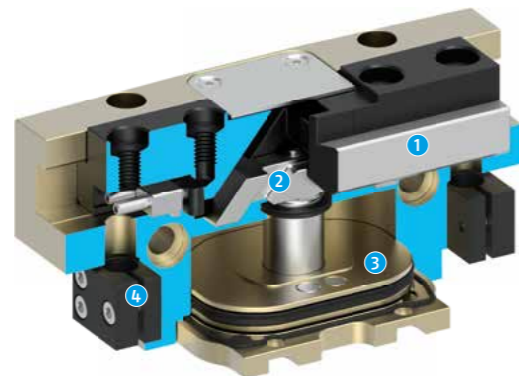


- + A firm focus on the essentials**  
for maximum profitability
- + Sturdy T-slot guidance**  
for precise handling of different workpieces
- + Comprehensive sensor accessory program**  
for versatile querying possibilities and stroke position monitoring

- Sizes**  
40 .. 300
- Weight**  
0.08 .. 17.2 kg
- Gripping force**  
180 .. 8200 N
- Stroke per jaw**  
2 .. 35 mm
- Workpiece weight**  
0.9 .. 33 kg

[schunk.com/jgp-p](http://schunk.com/jgp-p)

- 1 T-slot guidance**  
Loadable, robust base jaw guidance for long gripper finger lengths
- 2 Wedge-hook design**  
for high power transmission and minimal wear as a result of larger diagonal pull surfaces
- 3 Piston**  
Maximum force through maximum surface of drive piston
- 4 Bracket for sensor system**  
Brackets for proximity switches and adjustable control cams in the housing



## Technical data

Size	Stroke per jaw [mm]	Closing force [N]	Opening force [N]	Recommended workpiece weight [kg]	Weight [kg]	Max. permissible finger length [mm]
40	2.5	180 .. 235	200 .. 260	0.9	0.08 .. 0.1	55 .. 60
50	2 .. 4	220 .. 490	235 .. 520	1.1 .. 1.9	0.17 .. 0.2	66 .. 75
64	3 .. 6	350 .. 920	375 .. 1050	1.75 .. 3.6	0.27 .. 0.35	80 .. 90
80	4 .. 8	550 .. 1500	610 .. 1600	2.75 .. 5.5	0.51 .. 0.63	100 .. 110
100	5 .. 10	870 .. 2200	930 .. 2400	4.35 .. 8.75	0.9 .. 1.1	125 .. 145
125	6 .. 13	1400 .. 4200	1520 .. 4450	7 .. 15	1.4 .. 1.9	160 .. 180
160	8 .. 16	2500 .. 6300	2800 .. 6900	12.5 .. 24.5	3 .. 3.8	200 .. 220
200	25	3800 .. 5050	4050 .. 5500	19	5.4 .. 7	240 .. 280
240	30	5300 .. 7800	5600 .. 8300	26.5	8.7 .. 11.8	280 .. 320
300	35	6600 .. 8200	6800 .. 8400	33	13.7 .. 17.2	300 .. 350

# FGR Customizable gripper fingers

Four steps to the individual gripper finger



- + Short delivery time**  
Fast availability, without tying up your own resources
- + Attractive price**  
eliminates the need for in-house design and production of gripper fingers
- + Immediate display of price and delivery time**  
enables shortest request and order processes

**Suitable series**

- PGN-plus-P
- PGL-plus-P
- JGP-P
- PGB
- PZN-plus
- JGZ
- PZV
- PZB-plus
- PGN-plus-E
- EGI
- EGN
- EZN
- EGU
- EGK

- 1 SCHUNK gripper PGN-plus-P**
- 2 FGR individually configured gripper finger**
- 3 SCHUNK ID**  
for ordering the gripper finger
- 4 Optional customer material number**  
for internal materials management



## Configure individual gripper fingers quickly

- Step 1:** Gripper selection
- Step 2:** Finger configuration
- Step 3:** Contact details
- Step 4:** Complete configuration



Configure online now:

[schunk.com/fgr](http://schunk.com/fgr)

# EGU Universal gripper

The robust electric universal gripper



**+ Robust and reliable**  
sealed design with proven sliding guidance especially suitable for the harsh ambient conditions of machine loading

**+ Minimal integration effort**  
due to a wide range of communication interfaces, and PLC function blocks, robot plug-ins are compatible to the leading manufactures on the market

**+ Versatile and productive**  
due to the large and freely programmable jaw stroke with continuous gripping force adjustment for flexible workpiece handling

**Sizes**  
50 .. 80

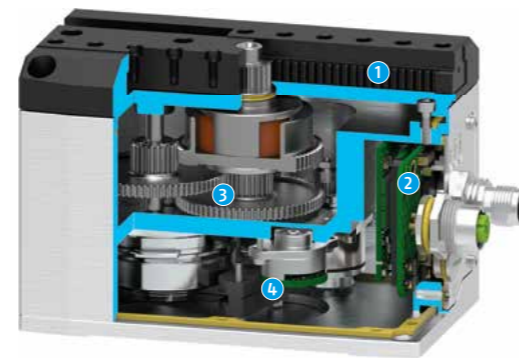
**m**  
**Weight**  
1.49 .. 7.72 kg

**F**  
**Gripping force**  
150 .. 3000 N

**S**  
**Stroke per jaw**  
41 .. 80 mm

[schunk.com/egu](http://schunk.com/egu)

- 1 Robust and resistant T-slot sliding guidance**  
for long finger lengths, external forces and moments.  
Optionally available as a dust-tight version
- 2 Fully integrated and sealed control and power electronics**  
with status LEDs and connection for voltage supply and communication
- 3 High-resolution, output-side absolute encoder**  
for precise positioning of the gripper jaws with permanent absolute position feedback
- 4 Sealed drivetrain with BLDC flat motor, spur gear and pinion/rack principle**  
for a constantly acting gripping force over the entire finger length, without a minimum approach distance, with an additional mechanism for gripping force and position maintenance



## Technical data

Size	Stroke per jaw [mm]	Min. gripping force [N]	Max. gripping force [N]	Max. permissible finger length [mm]	Weight [kg]
50	51	150	450	80	1.49
60	60	325	975	125	2.9
70	70	650	1950	160	4.52
80	80	1000	3000	200	7.72

# EGK Gripper for small components

Electric gripper for small components  
for maximum process reliability



**+ Reliable and sensitive**  
Particularly suitable for the requirements of laboratory automation and electronics production due to the sealed design and smooth-running profiled rail guide

**+ Minimal integration effort**  
due to a wide range of communication interfaces, and PLC function blocks, robot plug-ins are compatible to the leading manufactures on the market

**+ Versatile and productive**  
due to the large and freely programmable jaw stroke with continuous gripping force adjustment for flexible workpiece handling

**Sizes**  
25 .. 50

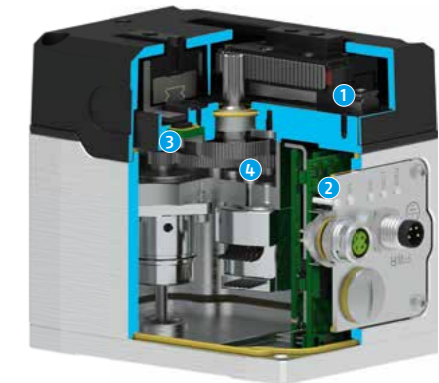
**m**  
**Weight**  
0.62 .. 1.63 kg

**F**  
**Gripping force**  
20 .. 300 N

**S**  
**Stroke per jaw**  
26.5 .. 51.5 mm

[schunk.com/egk](http://schunk.com/egk)

- 1 Smooth profiled rail guidance**  
with stainless steel face seal and food-compliant lubrication
- 2 Fully integrated and sealed control and power electronics**  
with status LEDs and connection for voltage supply and communication
- 3 High-resolution, output-side absolute encoder**  
for precise positioning of the gripper jaws with permanent absolute position feedback
- 4 Sealed drive train with BLDC flat motor, spur gear and pinion/rack principle**  
for a constantly acting gripping force over the entire finger length, without a minimum approach distance, with an additional mechanism for gripping force and position maintenance



## Technical data

Size	Stroke per jaw [mm]	Min. gripping force [N]	Max. gripping force [N]	Max. permissible finger length [mm]	Weight [kg]
25	26.5	20	50	70	0.62
40	41.5	55	150	100	1.02
50	51.5	150	300	130	1.63

# ELG Customized and configurable long-stroke gripper

The electric gripper for large workpieces with configurable stroke accurate to the millimeter



- + High degree of flexibility**  
due to the large jaw stroke and high gripping force
- + Adaptable drive motor**  
for flexible actuation and easy integration into existing control concepts
- + Position- and torque-controlled movement of the gripper**  
for the highly flexible gripping of a wide range of geometries and types of parts

- 1 Drive**  
Servomotors from numerous manufacturers can be adapted
- 2 Kinematics**  
high bearing load capacity and accuracy due to proven combination of ball screw and toothed belt
- 3 Profiled rail guide**  
Base jaw guidance for long finger lengths; with high load bearing capacity and minimal play
- 4 Base jaw**  
for adapting the workpiece-specific gripper fingers



- Sizes**  
10 .. 120
- m**  
**Weight**  
8.03 .. 56.5 kg
- F**  
**Gripping force**  
1000 .. 12000 N
- S**  
**Stroke min.**  
100 mm
- S**  
**Stroke max.**  
300 .. 400 mm



Configure it online now:

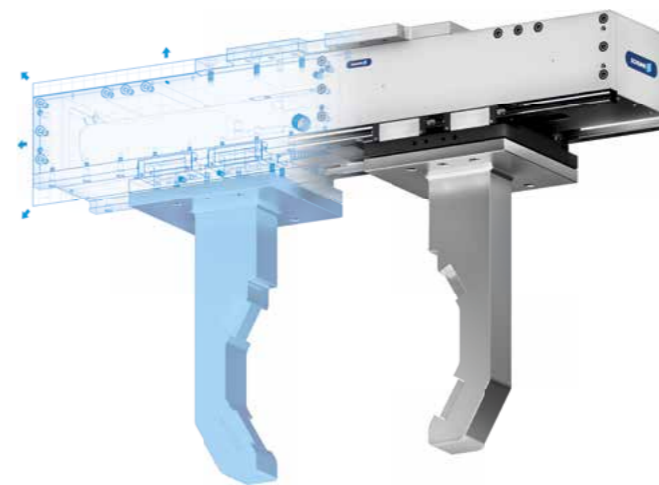
[schunk.com/elg](http://schunk.com/elg)

## Technical data

Size	Stroke min. [mm]	Stroke max. [mm]	Gripping force [N]	Recommended workpiece weight [kg]	Weight [kg]	Max. permissible finger length [mm]
10	100	300	1000	5	8.03 .. 10.25	400 .. 800
30	100	400	3000	15	14.7 .. 20	400 .. 800
75	100	400	7500	37.5	24.5 .. 32.9	240 .. 800
120	100	400	12000	60	42 .. 56.5	300 .. 800

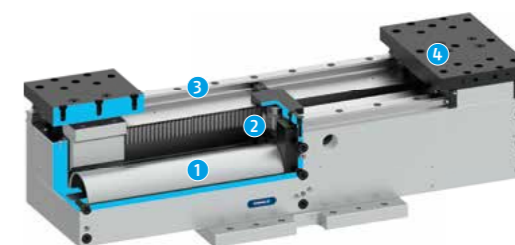
# PLG Customized and configurable long-stroke gripper

The pneumatic gripper for large workpieces with configurable stroke accurate to the millimeter



- + High level of flexibility**  
due to long jaw stroke and high gripping force
- + Application specific standard gripper**  
through diverse variants and options and individual configuration
- + Reduced design effort**  
Simple and fast construction of individual long-stroke grippers via the web tool

- 1 Drive**  
Two double-actuated pneumatic cylinders
- 2 Kinematics**  
Pinion and rack principle for centric clamping, even at large strokes
- 3 Profiled rail guide**  
Highly loadable, nearly backlash-free base jaw guidance for long finger length
- 4 Base jaw**  
for the connection of workpiece-specific gripper fingers



- Sizes**  
20 .. 120
- m**  
**Weight**  
19.03 .. 137.7 kg
- F**  
**Gripping force**  
1650 .. 11650 N
- S**  
**Stroke min.**  
100 mm
- S**  
**Stroke max.**  
400 mm



Configure it online now:

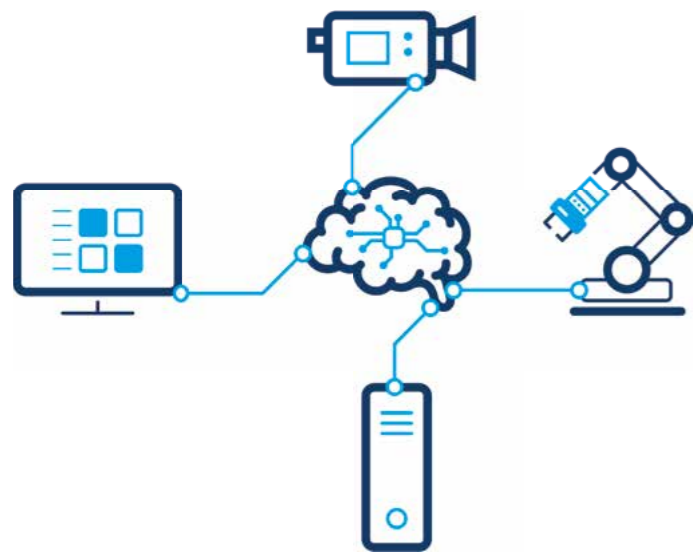
[schunk.com/plg](http://schunk.com/plg)

## Technical data

Size	Stroke min. [mm]	Stroke max. [mm]	Closing force [N]	Opening force [N]	Recommended workpiece weight [kg]	Weight [kg]	Max. permissible finger length [mm]
20	100	400	1650	2000	8.25	19.03 .. 26.63	330 .. 800
30	100	400	3000	3350	15	27.46 .. 40.58	350 .. 800
50	100	400	4750	5100	23.75	42.22 .. 61.1	365 .. 800
75	100	400	7500	8000	37.5	62 .. 88.75	240 .. 800
120	100	400	11650	12500	58.25	94.6 .. 137.7	280 .. 800

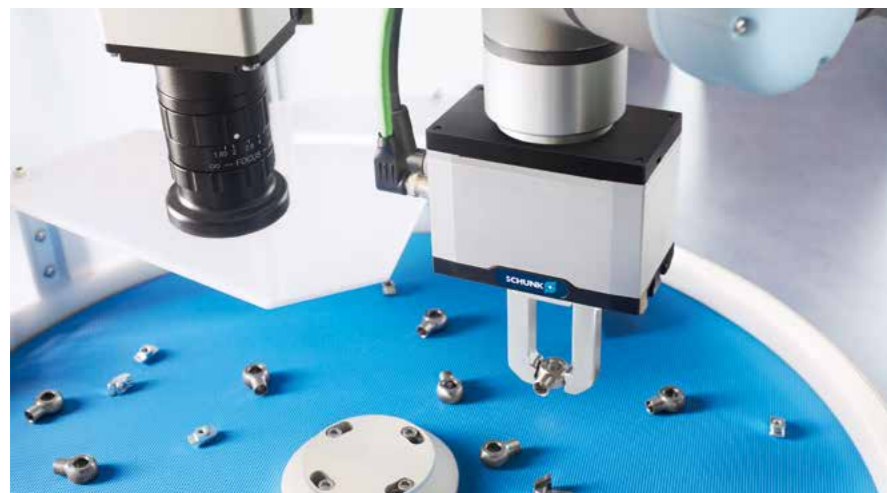
# 2D Grasping Kit Application kit

Intelligent application kit for vision-based gripping



- + Complete, perfectly attuned kit consisting of hardware, software, and service**  
for minimal commissioning and configuration effort
- + Intelligent software**  
Software adapts itself and works even under "less than optimal" ambient conditions
- + Intuitive user software interface**  
for easy configuration of the application without the need for prior knowledge

[schunk.com/vision](http://schunk.com/vision)



## 2D Grasping Kit

With the 2D Grasping Kit, users from many industries realize pick & place applications of randomly arranged parts on a single level – for example from a vibrating table, assembly line or load carrier. The metalworking industry, the automotive sector, companies in production engineering and logistics as well as from the life-science sector gain reliability, process precision and benefit from increasing their output using the kit – manual, error-prone handling thus becomes a thing of the past.

# MTB Application kit

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



- + Perfect match**  
Due to the high application specialization of the application kits, you do not have to search long for a suitable solution. Use your time for more important things
- + Increased productivity**  
You don't have an employee available for a third shift? Let the robot work for you.
- + Stress relief for employees**  
Protect your employees from dirty, dangerous and tedious tasks such as manual loading and cleaning operations.

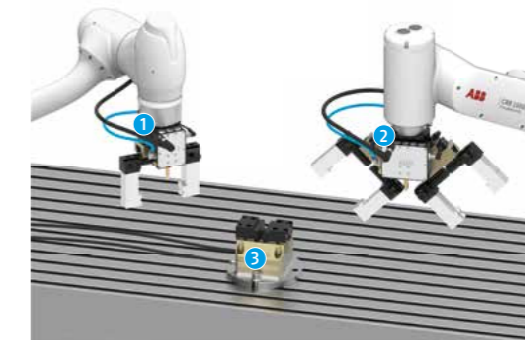
**Variants**  
5

**Supported robots**

- Universal Robots e-Series
- FANUC CRX
- ABB GoFA

[schunk.com/mtb-kit](http://schunk.com/mtb-kit)

- 1 Single gripper**  
Perfect for use in confined spaces
- 2 Double gripper**  
Increased machine productivity due to loading and unloading in just one cycle
- 3 Clamping force block**  
Reliable holding of the workpiece during machining



## Technical data

Description	Stroke per jaw [mm]	Weight [kg]	Closing force [N]	Opening force [N]	Recommended workpiece weight [kg]
Single gripper JGP-P 80	8	0.99	550	610	2.75
Single gripper JGP-P 100	10	1.38	870	930	4.35
Double gripper JGP-P 64	6	1.62	350	375	1.75
Double gripper JGP-P 80	8	2.1	550	610	2.75
Clamping force block PGS3 100	2	5			



# SLD Linear direct axis

The dynamic axis all-rounder – perfectly tailored to your application.



- + Almost no wearing parts**  
for long service life and reliability of the system
- + No mechanical play between the drive elements**  
for fast response and high positioning accuracy
- + High load rating**  
for high bearing load capacity and service life

- 1 Extruded aluminum section**  
Flat and weight-optimized
- 2 Pre-loaded profiled rail guide with recirculating ball-bearing guides**  
for optimal guidance properties and speeds
- 3 Integrated secondary parts**  
with high power magnets
- 4 Compact primary part slide**  
with mounting surfaces, roller shoes adjusted free from play and integrated measuring system



**Sizes**  
1 .. 2

**S**  
Max. stroke  
5190 .. 5500  
mm

**F**  
Max. driving  
force  
300 .. 2400 N

**Repeat accuracy**  
0.01 mm

**V<sub>max</sub>**  
Max. speed  
5 m/s

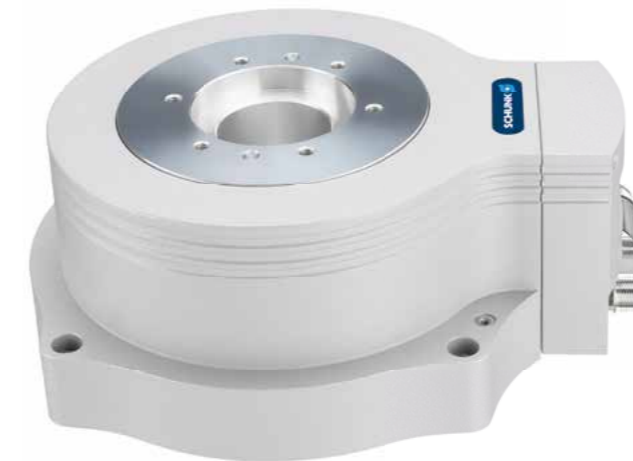
[schunk.com/sld](http://schunk.com/sld)

## Technical data

Size	Drive concept	Max. nominal stroke H [mm]	Max. driving force [N]	Max. speed [m/s]	Max. acceleration [m/s <sup>2</sup> ]
1	Linear direct drive	5190 .. 5500	300 .. 1200	5	100
2	Linear direct drive	5190 .. 5470	600 .. 2400	5	100

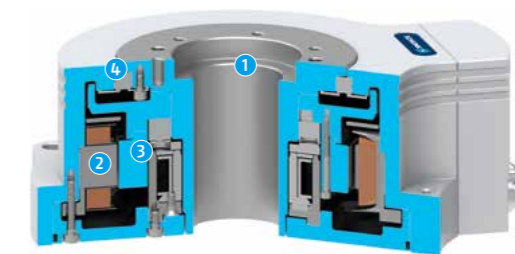
# ERT Universal rotary unit

The flat rotary unit with absolute encoder and electric brake



- + ERT series**  
equipped for the future by a fourth size and the additional measuring system interface HIPERFACE DSL®
- + Integrated torque motor**  
for high torque and flexible use by controlled position, velocity and torque
- + Extremely flat design**  
for minimal interfering contours and use in confined spaces

- 1 Rotor with large center bore**  
for feed-through of supply lines and media
- 2 Torque motor**  
with high torque, flexible speed of rotation and position control
- 3 Electric holding brake**  
for securely maintaining position in downtime
- 4 Bearing**  
very robust, for high maximum moments



**Sizes**  
12 .. 300

**m**  
Weight  
2.4 .. 25.2 kg

**M**  
Torque  
1.4 .. 32 Nm

**Repeat accuracy**  
±0.01°

**Angle of rotation**  
>360°

[schunk.com/ert](http://schunk.com/ert)

## Technical data

Size	Nominal torque [Nm]	Peak torque [Nm]	Max. permissible mass moment of inertia [kgm <sup>2</sup> ]	Repeat accuracy [°]	Weight [kg]
12	1.4 .. 1.52	4.17	0.07	0.01	2.4 .. 2.85
50	7.04 .. 7.8	20.1	0.39	0.01	5.7 .. 6.84
100	14 .. 16.7	51	0.57	0.01	7.8 .. 8.84
300	31 .. 32	76	5.53	0.01	19.5 .. 25.2

# R·EMENDO RCE Deburring spindle

Adjustable electric deburring spindle  
with wide speed range and radial compensation



- + Brushless electric motor**  
for high efficiency, long service life and adjustable speed of rotation for more flexibility
- + Variable speed control**  
for the flexible machining of different workpieces with different tools and only one electric deburring tool
- + The rigidity of the tool can be adjusted using compressed air**  
for high-quality deburring results in any installation position

- Sizes**  
230 .. 710
- Max. speed**  
13000 .. 50000 RPM
- Power**  
230 .. 710 W
- Compensation angle, radial**  
±1.8 .. 3°

[schunk.com/rce](http://schunk.com/rce)

- 1 Brushless electric motor**  
with adjustable speed of rotation for versatile use and a long service life
- 2 Gimballed system**  
for a robust compensation function
- 3 Tool holder mounting**  
for ER-11 collets
- 4 Air connection**  
for cooling the motor



## Technical data

Size	Power [W]	Min. rotational speed [RPM]	Max. speed of rotation [RPM]	Max. compensation X/Y [mm]	Max. compensation angle X/Y [°]	Min. radial compensation force [N]	Max. radial compensation force [N]	Tool holder mounting	Weight [kg]
230	230	5000	50000	7.1	3	1.8	8.5	Collet ER-11 6 mm	1.7
710	710	1000	13000	4.6	1.8	24.5	80	Collet chuck ER-11 6 mm and 8 mm	5.35

# SWM-B Storage system

Compact design for minimal interfering contours  
on storage station and tool

**Standardized adapter plates**  
available for all suitable SWS sizes



**Variant without locking**  
for simple, cost-conscious applications



**Variant with self-retained locking**  
for maximum safety and flexibility in the orientation and position of the storage rack

- 1 Locking**  
via pistons with patented dual stroke system
- 2 Piston drive via spring and pneumatics**  
Opening by pneumatics, closing by spring – for secure locking, even in the event of compressed air failure
- 3 Monitoring of tool presence**  
optional, for higher process reliability
- 4 Monitoring of locking status**  
optional, for the positions "storage module open" and "storage module locked"



[schunk.com/swm-b](http://schunk.com/swm-b)

## Technical data

Description	Variant	Recommended SWS size	Installation position	Moment load Mx [Nm]	Tool presence monitoring	Monitoring, locking
SWM-B 050	Passive	005, 007, 011	horizontal	12	optional	
SWM-B 050-V	Active	005, 007, 011	any	18	optional	optional
SWM-B 085	Passive	020, 021, 022, 029, 0400, 041, 046, 060, 071, 076	horizontal	100	optional	yes
SWM-B 085-V	Active	020, 021, 022, 029, 0400, 041, 046, 060, 071, 076	any	100	optional	optional

# FT-AXIA Force/torque sensor

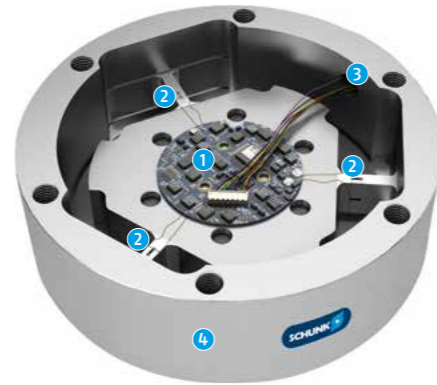
Attractively priced, compact force/torque sensor with integrated electronics



**+ FT-AXIA 90 and FT-AXIA 130**  
open up new possibilities for new entrants to automation

**+ Compact design**  
due to space-saving set-up with integrated electronics

- 1 Electronics**  
No interfering contour, as integrated in the housing
- 2 Strain gauges**  
Silicon gauges provide a signal 75 times stronger than conventional foil gages. This signal is amplified resulting in near-zero noise distortion.
- 3 Interfaces**  
Data evaluation via Ethernet, EtherCAT, RS-422 or RS-485
- 4 Protection class IP**  
Sizes FT-AXIA 90 and FT-AXIA 130 with IP67



**Sizes**  
90 .. 130

**F**  
**Force measurement range**  
±1000 .. ±6000 N

**M**  
**Moment measurement range**  
±50 .. ±300 Nm

[schunk.com/ft-axia](http://schunk.com/ft-axia)

## Technical data

	FT-AXIA90 SI-1000-50	FT-AXIA130 SI-2000-125	FT-AXIA130 SI-4000-300
Evaluation via	EtherNet, EtherCAT, RS-422	EtherNet, EtherCAT, RS-422	EtherNet, EtherCAT, RS-422
Weight [kg]	0.744	0.86	1.88
Calibration	SI-1000-50	SI-2000-125	SI-4000-300
Range of measurement $F_x, F_y, F_z$ [N]	±1000/±2000	±2000/±4000	±4000/±6000
Range of measurement $M_x, M_y, M_z$ [Nm]	±50/±50	±125/±125	±300/±300
Resonant frequency $F_x, F_y, M_z$ [Hz]	2300	2500	2450
Resonant frequency $F_z, M_x, M_y$ [Hz]	2900	4000	2900
Resolution $F_x, F_y, F_z$ [N]	0.4/0.4	0.625/0.625	1.67/1.67
Resolution $M_x, M_y, M_z$ [Nm]	0.01/0.01	0.025/0.025	0.07/0.07
Protection class IP	67	67	67
Dimensions $\varnothing D \times Z$ [mm]	89.9 x 26.9	130 x 39.2	130 x 39.2

# CMS Manual change system

User-friendly, manual change system with a comprehensive complementary portfolio



**+ Increased process reliability**  
Thanks to integrated locking and tool presence monitoring in all sizes (sensors optional)

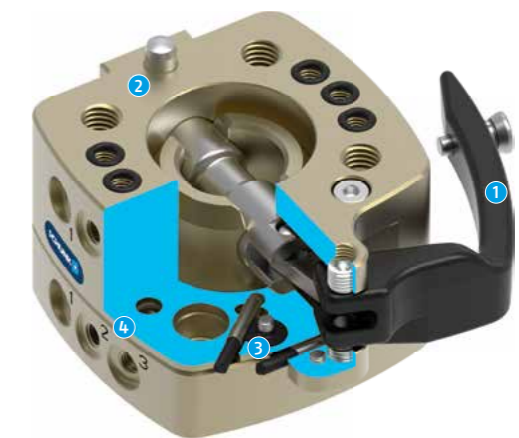
**+ Integrated air feed-throughs**  
All feed-throughs can be used radially and axially for pneumatics and vacuum. The basic version is available without integrated feed-through

**+ Direct screw connection of electric, pneumatic and fluid modules**  
Enables versatile energy transmission for control of a wide range of tools

**Sizes**  
Number  
6

**m**  
**Handling weight**  
9 .. 58 kg

- 1 Locking lever**  
Proven technology for manual actuation without additional tools
- 2 ISO flange pattern**  
Head and adapter side, for mounting on most robot types without requiring additional adapter plates
- 3 Integrated locking and tool presence monitoring**  
optional, for process-reliable monitoring of the locking status and tool presence
- 4 Integrated air feed-through**  
via sealing pins with cylinder seals for minimum effort when locking



## Technical data

Size	Recommended handling weight [kg]	Pneumatic feed-through air connection thread (radial)	Connecting flange (robot & tool side)	Dimensions (coupled) [mm]
040	9	4 x M5	ISO 9409-1-40-4-M6	50 x 55 x 39
050	11	6 x M5	ISO 9409-1-50-4-M6	63 x 63 x 42.5
063	18	6 x G1/8"	ISO 9409-1-63-4-M6	80 x 88 x 46.5
080	36	9 x G1/8"	ISO 9409-1-80-6-M8	100 x 108 x 48
100	43	12 x G1/8"	ISO 9409-1-100-6-M8	125 x 125 x 66
125	58	12 x G1/4"	ISO 9409-1-125-6-M10	160 x 160 x 78

# i...T|E|N|D|O<sup>2</sup> Hydraulic expansion toolholder

The intelligent way to the optimal process



- + Intelligent real-time sensor system**  
Easy process monitoring and maximized tool service lives
- + Speeds of rotation of up to 30,000 RPM**  
Wide range of applications
- + 100% compatibility**  
1:1 exchange with SCHUNK standard toolholders without time-consuming reprogramming of your system

**New interfaces**  
 HSK-A63 Ø20x90  
 HSK-A63 Ø32x125  
 HSK-A100 Ø32x115  
 BT30 Ø20x90  
 BT40 Ø20x110  
 SK40 Ø20x110  
 SK50 Ø32x103.2  
 CAT4.0 Ø3/4x4"  
 CAPTO C6 Ø32x110

**Battery service life**  
10 h

**Acceleration sensor**  
100 G

**Speed of rotation**  
30000 RPM

**Balance grade**  
G2.5 bei  
25000 1/min or  
U<sub>max</sub> < 1 gmm

**External cooling/  
internal cooling**  
up to 80 bar

- 1 Case**  
This means that all components can be protected during storage and it offers highly flexible transportation to the machine also in case of temporary process monitoring.
- 2 iTENDO<sup>2</sup> pad**  
Direct connection to the tablet PC without machine connection and simple process optimization.



## iTENDO<sup>2</sup> packages

Package	Process transparency	Process optimization	Simple data interface	Wireless receiver	Process monitoring	Quality monitoring
iTENDO <sup>2</sup> pad	●	●				
iTENDO <sup>2</sup> easy connect	●	●	●	●		
iTENDO <sup>2</sup> easy monitor	●	●	●	●	●	●

# i...T|E|N|D|O<sup>2</sup> easy connect Machine integration package

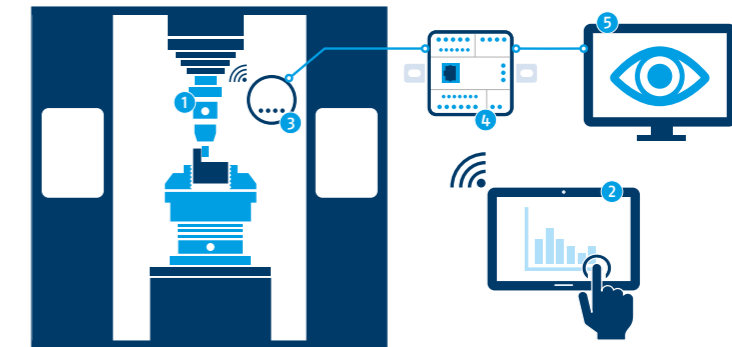
The simple connection of smart toolholder technology to your process monitoring system



- + Easy connection**  
of the smart iTENDO<sup>2</sup> toolholder to the machine
- + Extended data collection**  
"closest to the part" for your existing system
- + High data quality**  
by direct recording of process data on the last non-wearable part

- 1 iTENDO<sup>2</sup>
- 2 iTENDO<sup>2</sup> pad
- 3 Wireless receiver
- 4 Connect box
- 5 Connection to existing process monitoring system

[schunk.com/itendo2](http://schunk.com/itendo2)



## Technical data

Series	Analog output [V]	Data rate [Hz]	Memory locations	Digital outputs	Digital inputs
iTENDO <sup>2</sup> easy connect	0-10	100	64 (iTENDO <sup>2</sup> preselection)	1) System ready 2) iTENDO <sup>2</sup> connected 3) iTENDO <sup>2</sup> battery status	1) Memory selection 2) Connect iTENDO <sup>2</sup>

# iTENDO<sup>2</sup> easy monitor Software extension

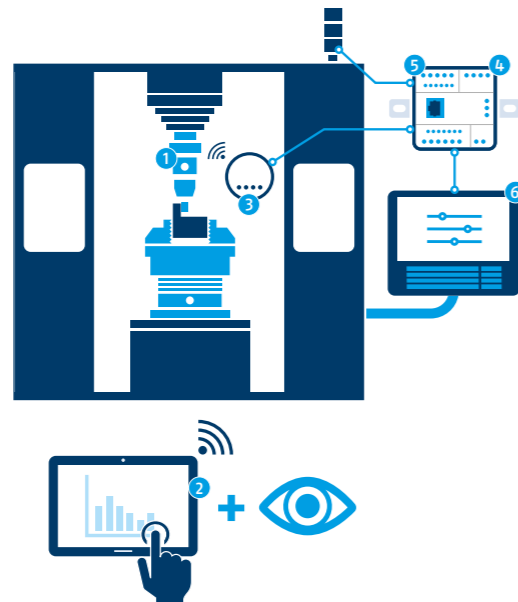
The simple, universally applicable monitoring for your process



- + Simple extension**  
for iTENDO<sup>2</sup> easy connect
- + High data quality**  
by direct recording of process data on the last non-wearable part
- + Intuitive operation**  
through a user-friendly user interface

- 1 iTENDO<sup>2</sup>
- 2 iTENDO<sup>2</sup> pad + easy monitor software extension
- 3 Wireless receiver
- 4 Connect Box
- 5 Monitoring trend limits and alarms
- 6 Integration into the machine control system

[schunk.com/itendo2](http://schunk.com/itendo2)



## Technical data

Series	Analog output [V]	Data rate [Hz]	Memory locations	Digital outputs	Digital inputs
iTENDO <sup>2</sup> easy monitor	0-10	100	64 (iTENDO <sup>2</sup> preselection and setting the limits)	1) System ready 2) iTENDO <sup>2</sup> connected 3) Battery status iTENDO <sup>2</sup> 4) Alarm limit 5) Trend limit top 6) Trend limit bottom	1) Memory selection 2) Connect iTENDO <sup>2</sup> 3) Start process

# TENDO<sup>2</sup> Slim 4ax Hydraulic expansion toolholder

The world's first hydraulic expansion toolholder in standardized heat shrinking contour



- + Permanent run-out and repeat accuracy ≤ 0.003 mm**  
Even cutting action, increased tool service life, and reduced costs for regrinding or buying new tools
- + Plug & Work**  
Can be used in existing processes without reprogramming
- + Micron precise tool change in seconds without peripheral equipment**  
Time saving due to reduction of set-up time and no investment or energy costs due to additional clamping devices

**New interfaces**  
HSK-A 100  
JIS-BT 30  
SCHUNK CAPTO C6  
SK 50



**Run-out accuracy**  
≤ 0.003 mm at 2.5 x D



**Min. torque**  
16 .. 330 Nm



**Max. speed of rotation**  
30000 .. 50000 RPM



**Diameter**  
6 .. 20 mm

- 1 Chamber system
- 2 Expansion sleeve
- 3 Base body
- 4 Length-setting screw



[schunk.com/tendo-slim-4ax](http://schunk.com/tendo-slim-4ax)

## Technical data

Series	Clamping diameter [mm]	Run-out accuracy	Min. torque [Nm]	Max. speed of rotation [RPM]	Perm. radial force [N]	MQL (Minimum Quantity Lubrication)	Bore hole for data carriers
HSK-A 63	∅ 6 - ∅ 20	≤ 0.003 mm at 2.5 x D	16-330	30000-50000	113-1490	Yes	Standard
HSK-A 100	∅ 6 - ∅ 20	≤ 0.003 mm at 2.5 x D	16-330	30000-50000	113-1490	Yes	Standard
SK 40	∅ 6 - ∅ 20	≤ 0.003 mm at 2.5 x D	16-330	30000-50000	113-1490		Optional
SK 50	∅ 6 - ∅ 20	≤ 0.003 mm at 2.5 x D	16-330	30000-50000	113-1490		Optional
JIS-BT 30	∅ 6 - ∅ 20	≤ 0.003 mm at 2.5 x D	16-330	30000-50000	113-1490		Optional
JIS-BT 40	∅ 6 - ∅ 20	≤ 0.003 mm at 2.5 x D	16-330	30000-50000	113-1490		Optional
SCHUNK CAPTO C6	∅ 6 - ∅ 20	≤ 0.003 mm at 2.5 x D	16-330	30000-50000	113-1490		Optional
CAT 40*	∅ 6 - ∅ 20	≤ 0.003 mm at 2.5 x D	16-330	30000-50000	113-1490		Optional

\* CAT 40 version is also available with inch clamping diameter 1/4" - 3/4"

# RAPIDO

## Jaw quick-change system

Completely tool-free jaw quick-change system

Configure now at [schunk.com/easyjaw](http://schunk.com/easyjaw)



**+ Significantly reduced set-up time**

Tool-free change of three chuck jaws in less than 60 seconds

**+ Easily retrofitted**

compatible with all commercially available lathe chucks

**+ High repeat accuracy**

<0.02 mm when changing the clamping inserts



Sizes  
210 .. 400



Jaw interface  
1.5 mm x 60°  
1/16" x 90°  
3/32" x 90°



Max. speed of rotation  
1700 .. 3200  
1/min



Max. clamping force  
80 .. 185 kN

**1 Supporting jaw**

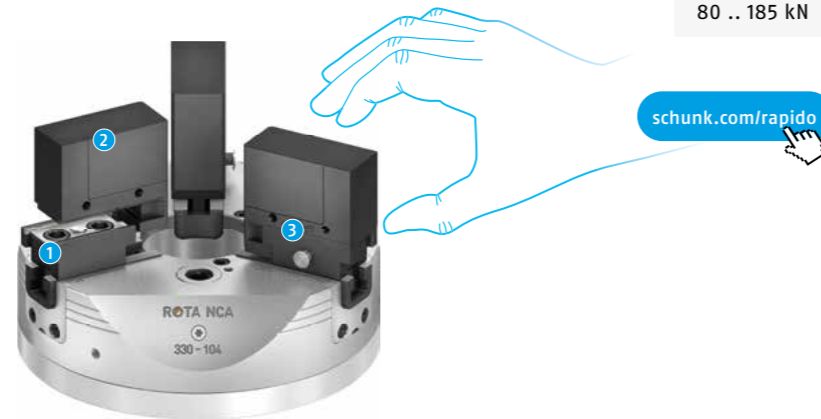
With double jaw mounting for O.D. and I.D. clamping

**2 Interchangeable insert**

Individual clamping contours available at short notice due to an extensive blank concept

**3 Actuating pin**

Tool-free change of the clamping inserts by pressing in the actuating pin



[schunk.com/rapido](http://schunk.com/rapido)

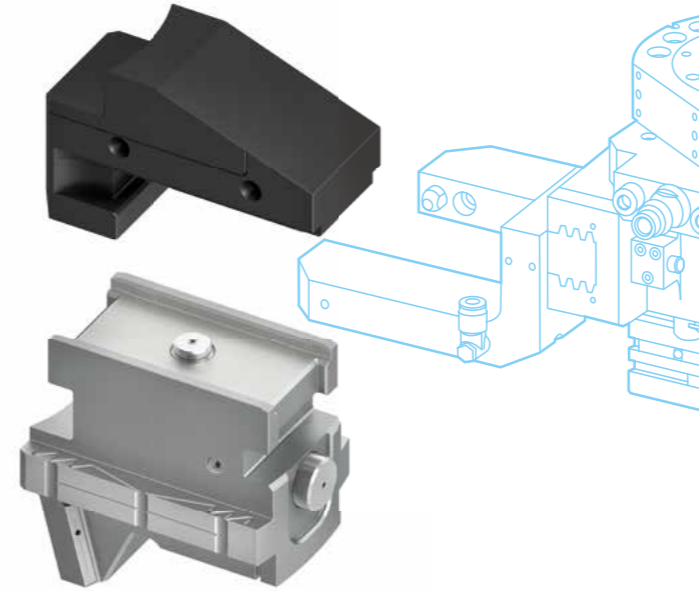
### Technical data

Supporting jaws	Jaw interface	Clamping insert, low, induction hardened	Clamping insert, high, induction hardened
TRR-M 210, 1452176	1,5 mm x 60°	RSE-I 210, 1499871	
TRR-M 260, 1449746	1,5 mm x 60°	RSE-IN 260, 1499866	RSE-IH 260, 1499873
TRR-M 315, 1452178	1,5 mm x 60°	RSE-IN 315, 1499867	RSE-IH 315, 1499874
TRR-M 400, 1452181	1,5 mm x 60°	RSE-IN 400, 1499868	RSE-IH 400, 1499875
TRR-Z 210, 1445381	1/16" x 90°	RSE-I 210, 1499871	
TRR-Z 260, 1435822	1/16" x 90°	RSE-IN 260, 1499866	RSE-IH 260, 1499873
TRR-Z 315, 1452177	1/16" x 90°	RSE-IN 315, 1499867	RSE-IH 315, 1499874
TRR-Z 400, 1448483	3/32" x 90°	RSE-IN 400, 1499868	RSE-IH 400, 1499875

# RAPIDO-A2

Fully automatable, tool-free jaw quick change

Configure now at [schunk.com/easyjaw](http://schunk.com/easyjaw)



**+ Fully automatable**  
with RAPIDO-A2  
jaw quick-change system

**+ Active locking**

The interchangeable inserts are fixed by a mechanical locking bolt

**+ Maximum process reliability**

Gripping unit with optical sensor for monitoring the top jaw and the push button



Sizes  
210 .. 400 mm



Max. clamping force  
85 .. 187.5 kN



Max. speed of rotation  
1700 .. 4000  
RPM

[schunk.com/rapido](http://schunk.com/rapido)

**1 SCHUNK lathe chuck**

equipped with RAPIDO interface

**2 RAPIDO-A2 base jaw for manual or fully automated jaw change**

directly integrated in the base body

**3 RAPIDO changing jaw**

are placed on the base jaw

**4 RAPIDO-A2 gripping unit**

Gripper for automated jaw change



### Technical data

Size	ID	Max. speed of rotation [RPM]	Max. clamping force [kN]	Max. actuating force [kN]	Max. clamping range (outside)* [mm]	Max. clamping range (inside)* [mm]	Piston stroke [mm]
ROTA NCF plus 2 215	1520664	4000	85	35.5	60 - 200	110 - 220	20
ROTA NCF plus 2 260	1520665	3500	110	47	70 - 240	130 - 270	20
ROTA NCF plus 2 315	1520666	3000	130	58	80 - 285	170 - 330	20
ROTA NCF plus 2 400	1520667	2500	187.5	77	130 - 380	200 - 420	30
ROTA NCO 210	1520668	3000	85	37.5	60 - 200	110 - 220	27
ROTA NCO 260	1520669	2800	110	45	70 - 240	130 - 270	30
ROTA NCO 315	1520670	2300	130	62	80 - 285	170 - 330	40
ROTA NCO 400	1520671	1700	185	83	130 - 380	200 - 420	45

\*with standard blanks

# TANDEM® KSE3 IOL/KRE3 IOL Clamping force blocks

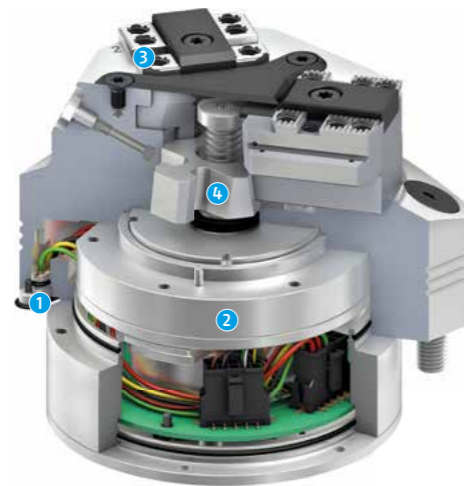
Electromechanical clamping force blocks with integrated electronics and IO-Link interface



- + The electric drive is integrated in the vise**  
Signal processing occurs exclusively in the clamping device
- + Pre-positioning of the jaws**  
for inserting an extremely wide range of workpieces
- + Control via IO-Link**  
for simple integration in commonly used fieldbus systems

- Sizes**  
100 .. 160 mm
- Supply voltage**  
24 V
- Repeat accuracy**  
< 0.01 mm
- Stroke per jaw**  
2 .. 8 mm
- Clamping force**  
8 .. 45 kN

- 1 Bottom-sided connection**  
with IO-Link control
- 2 Integrated electronics**  
for transmitting power and control signals
- 3 Motor gearbox combination**  
a high reduction ratio for high clamping forces
- 4 Wedge-hook drive**  
offers constantly high clamping forces in operation



## Technical data

Series	Type of actuation	Number of jaws	Sizes	Interface	Repeatability [mm]
KSE3-IOL	electromechanically	2	100, 140, 160	IO-Link	< 0.01
KRE3-IOL	electromechanically	3	100, 160	IO-Link	< 0.01

# TANDEM® 3 3-jaw clamping force blocks

The art of engineering from SCHUNK. Extension of the modular system by 3-jaw clamping force blocks



- + 3-jaw clamping force blocks**  
Optimal clamping of cylindrical workpieces
- + Workpiece presence control through the base jaw**  
enables automated loading of the clamping force block
- + Patented monitoring of the base jaw position via dynamic pressure**  
to know whether the vise is open or clamped

- Sizes**  
100 .. 250 mm
- Number of new variants**  
124
- Clamping force**  
3 .. 70 kN
- Stroke per jaw**  
2 .. 15 mm

- 1 100% compatible with TANDEM3 2-jaw clamping force blocks (except PM variants)**  
Clamping force blocks are 1:1 interchangeable
- 2 Wedge-hook drive**  
offers constantly high clamping forces in operation
- 3 Actuation of the vise**  
from the side or bottom as desired
- 4 Same equipment variants as for the 2-jaw version possible**  
large range of variants



[schunk.com/tandem3](http://schunk.com/tandem3)

## Technical data

Series	Actuation	Number of versions	Clamping force amplification for O.D. clamping, optional	Workpiece presence control/air purge	Inductive jaw monitoring
KRP3	Pneumatic	64	Yes	Yes	Yes
KRH3	Hydraulic	28	No	Yes	Yes
KRF3	Spring-loaded	32	No	Yes	Yes

# VERO-S NSE3-PH 138 IOL Quick-change pallet systems

Electromechanical quick-change pallet system with unbeatable power density



- + Unbeatable performance**  
Identical performance and the same installation space as pneumatic quick-change pallet systems
- + Monitoring of the clamping slide position, pallet presence and the pull-down force**  
for reliable automation
- + Control via IO-Link**  
for simple integration in commonly used fieldbus systems

- Sizes 138 mm
- Pull-down force 28 kN
- Holding force clamping pin 35 .. 75 kN
- Supply voltage 24 V
- Repeat accuracy < 0.005 mm

- 1 IO-Link interface**  
for simple integration in commonly used fieldbus systems
- 2 Bottom-sided connection**  
for easy connection of the clamping module
- 3 Integrated electronics**  
Signal processing occurs in the clamping device
- 4 Drive via piezoelectric force transducer**  
Guaranteed high pull-down forces in a small installation space



## Technical data

Size	Pull-down force [kN]	Supply voltage [V]	Interface	Repeat accuracy [mm]
NSE3-PH 138 IOL	28	24	IO-Link	< 0.005
NSE3-PH 138-V1 IOL	28	24	IO-Link	< 0.005

# VERO-S Sensory clamping modules Quick-change pallet systems

Integrated sensor system for detecting pallet presence and clamping position



- + Sensors integrated in quick-change pallet system**  
without additional interfering contour
- + Monitoring of the clamping slide position and of pallet presence**  
for reliable automation
- + Signal transmission via IO-Link**  
for simple integration in commonly used fieldbus systems

- Sizes 90 .. 138 mm
- Pull-down force 4 .. 28 kN
- Supply voltage 24 V
- Repeat accuracy < 0.005 mm

- 1 Integrated electronics and bottom-sided connection**  
with IO-Link signal transmission
- 2 Monitoring of pallet presence**  
for recording pallet presence
- 3 Monitoring of the clamping slide positions**  
for detecting the "module clamped" or "module opened" states
- 4 Pressure sensor**  
for detecting whether the turbo function is active



## Technical data

Size	Actuation	Pull-down force [kN]	Pull-down force with turbo [kN]	Unlocking pressure [bar]	Integrated monitoring
NSE-E mini 90-25 IOL	Electromechanical	4			Clamping slide position, pallet presence
NSE-S3 138 IOL	Pneumatic	8	28	6	Turbo function, clamping slide position, pallet presence
NSE-S mini 90-25-IOL	Pneumatic	1.5	6	6	Turbo function, clamping slide position, pallet presence



# VERO-S NSR3 138 Robot module standard

Very high pull-down forces and enormous strength for safe pallet handling



- + Form-fit, self-retaining locking**  
Full pull-down force is maintained even in the event of a pressure drop
- + Sensor monitoring (optional)**  
Monitoring option for the clamping slide position and pallet presence via AFS3-R IOL 138
- + Robust design**  
Robust and sealed housing made of stainless steel

- Sizes**  
138 mm
- Pull-down force**  
8 .. 28 kN
- Repeat accuracy**  
< 0.02 mm

[schunk.com/nsr3](http://schunk.com/nsr3)

- 1 Higher strength**  
for reliable pallet handling even with high weights
- 2 Monitoring of the clamping slide position**  
possible via AFS3
- 3 Patented dual stroke system**  
high pull-down forces are ensured between the piston and the clamping slide
- 4 Air purge**  
for quickly cleaning the module's clamping pin interface



## Technical data

Size	Pull-down force [kN]	Pull-down force with turbo [kN]	Max. moment $M_{xy}$ [Nm]	Max. moment $M_z$ [Nm]	Repeat accuracy [mm]
NSR 138	8	28	1500	1600	< 0.02

# VERO-S AFS3 IOL / AFS3-R IOL Monitoring segments

State monitoring for VERO-S quick-change pallet systems



- + Adaptable to VERO-S NSE3 quick-change pallet systems**  
for NSE3 99, NSE3 138, NSE3 100-75 and NSR3 138
- + Monitoring of the clamping slide position and of pallet presence**  
for reliable automation
- + Signal transmission via IO-Link**  
for simple integration in commonly used fieldbus systems

- Series**  
NSE3 99  
NSE3 100-75  
NSE3 138  
NSR3 138

[schunk.com/afs3](http://schunk.com/afs3)

- 1 Sensor**  
for monitoring pallet presence
- 2 LED**  
for status display of correct clamping
- 3 Interface**  
Plug connection M8 (4-pin)
- 4 Sensor**  
for monitoring the clamping slide position



## Technical data

Size	Pallet presence	Clamping slide position	Interface	Adaptable to	Pallet detection
AFS3 IOL 99	yes	yes	IO-Link	Module Ø 99	Steel, aluminum
AFS3 IOL 100-75	yes	yes	IO-Link	Module 100-75	Steel, aluminum
AFS3 IOL 138	yes	yes	IO-Link	Module Ø 138	Steel, aluminum
AFS3-R IOL 138	yes	yes	IO-Link	NSR3 138	Steel, aluminum

# ILR-Compact Inline depaneling machines

The economical, high-productivity depaneling machine



- + Economical and efficient**  
due to low investment and high productivity
- + Versatile and productive**  
due to the modular design and standard accessories
- + Robust, reliable and precise**  
in large-series production due to high milling accuracy and availability

**V<sub>max</sub>**  
Speed of axes up to 2000 mm/s

**Milling area**  
460 x 350 mm

**Repeat and positioning accuracy**  
±0.02 mm

**Milling accuracy**  
±0.08 mm

[schunk.com/nutzentrenner](http://schunk.com/nutzentrenner)

# SAR-Compact Stand-alone depaneling machine

The economical depaneling machine with simple operation



- + Economical and efficient**  
due to low investment, high productivity and small footprint
- + Robust, reliable and precise**  
due to high milling accuracy and availability
- + Versatile and productive**  
due to modular design, flexible workpiece carriers and connectivity to MES systems

**V<sub>max</sub>**  
Speed of axes up to 1000 mm/s

**Milling area**  
430 x 350 mm

**Repeat and positioning accuracy**  
±0.02 mm

**Milling accuracy**  
±0.01 mm

[schunk.com/nutzentrenner](http://schunk.com/nutzentrenner)

### Technical data

Length/width/height [mm]	Depaneling in-height [mm]	X-, Y-linear motor axes [mm/s]	Z-axis linear motor axis [mm/s]	Repeat accuracy/positioning accuracy [mm]	Milling accuracy without vision system [mm]	Milling accuracy with vision system [mm]	Max. panel size X- and Y-direction [mm]
1900/2115/2285	950	2000	1000	±0.02/±0.02	±0.13	±0.08	460 x 350

### Technical data

Length/width/height [mm]	Operator height [mm]	X-, Y-linear motor axes [mm/s]	Z-axis linear motor axis [mm/s]	Repeat accuracy/positioning accuracy [mm]	Milling accuracy without vision system [mm]	Milling accuracy with vision system [mm]	Max. panel size X- and Y-direction [mm]
1300/1607/1642	894	1000	1000	±0.02/±0.02	±0.15	±0.10	430 x 350



**SCHUNK SE & Co. KG**  
**Spanntechnik**  
**Greiftechnik**  
**Automatisierungstechnik**

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