

Superior Clamping and Gripping

SCHUNK New Products and Innovations

Your SCHUNK 🕂

30 New products

The highlights of SCHUNK gripping systems and clamping technology: Among other topics, the new SCHUNK Gripper JL1 for human/ robot collaboration, and the premium quick-change pallet module VER0-S NSE3 for manual or automatic machine loading. SCHUNK

8

Equipped by SCHUNK

Unique component selection for equipping your robots and machines with gripping systems and clamping technology. This means for you: 11,000 standard components. Everything from one source.





Digital Services

SCHUNK components and services play a decisive role when production processes go digital. Whether it is about the online shop for additively manufactured gripper fingers, Digital Twin or digital services through networked components. We are "closest to the part".

Your benefit of being a SCHUNK customer.

With continuing new campaigns, benefits packages, and exclusive offers, we are offering very lucrative advantages to our customers. Contact your SCHUNK consultant or our Customer Center for more information. 0

Tel. +49-7133-103-3888 customercenter@de.schunk.com

Smart Factory

In touch with big data. Intelligent and connectable SCHUNK components already form the interface for communication between workpiece and machine for smart factories in terms of Industry 4.0.





T E N D O' Slim 4ax

T | E | N | D | O° E compact BT-DC

TIRIBOS-ER

Accessories T|R|I|B|O|S[®] Fixscanner

> Hydraulic Compensation Jaw

> > Pull-down Jaw

Lightweight Jaw

Power Lathe Chuck **ROTA NCA**

Toolholder

Toolholder

Toolholder

Toolholder

Chuck Jaws

Chuck Jaws

Chuck Jaws

Lathe Chuck



Lathe Chuck

Lathe Chuck

Stationary Workholding

Stationary Workholding

Stationary Workholding

Stationary Workholding

Stationary Workholding

SCHUNK 🗘

Power Lathe Chuck ROTA NCE

Power Lathe Chuck ROTA NCR-A

Quick-change Pallet Module VER@-S NSE3 138

Quick-change Pallet System VER⊚-S NSE-E mini 90

TANDEM[®] Base Plate

5-Axis Clamping Vise KONTEC KSX-C

Double Clamping Vise KONTEC KSC-D

Your Personal Voucher

T E N D O' Slim <u>4</u>ax

The world's first Hydraulic Expansion Toolholder with Standardized Heat Shrinking Contour.



Technical support and sales Tel. +49-7133-103-3888 | schunk.com/tendo-slim-4ax



Sizes

NEW: SK 40 HSK-A 63 Ø6..32 mm



accuracy 0.003 at 2.5xD



Torques

Ø6

ØЯ

16 Nm Ø18 240 Nm Ø 25 400 Nm 23 Nm Ø16 185 Nm Ø 32 650 Nm

Repeat accuracy

< 0.003 mm

Sectional diagram

- 1 Chamber system
- Expansion sleeve
- 3 Base body 4 Length adjustment screw
- 5 Dirt groove





T | E | N | D | O^{*} E compact BT–Dual Contact Hydraulic Expansion Toolholder

Now available with simultaneous Taper and Face Support.



Technical support and sales Tel. +49-7133-103-3888 | schunk.com/tendo-e-compact-dc



Sizes

BT-DC 30 with face contact (Ø 20 mm) BT-DC 30 with face contact (Ø 12 mm) BT-DC 40 with face contact (Ø 20 mm) BT-DC 40 with face contact (Ø 12 mm)



Run-out accuracy 0.003 at 2.5xD ---M

Torque

Ø 20: 400 Nm (BT-DC 30 with face contact) Ø 20: 520 Nm (BT-DC 40 with face contact)



Repeat accuracy < 0.003 mm



T R I B C S - ER Polygonal Clamping Technology

Patented TRIBOS Polygonal Clamping Technology for your Lathe.



Technical support and sales Tel. +49-7133-103-3888 | schunk.com/tribos-er



Sizes

ER 11

ER 16

FR 20

ER 25

ER 32



Clamping diameter TRIBOS-Mini Ø1-6 TRIBOS-RM Ø3-12



Available starting from mid-2018

Sectional diagram

- 1 ER interface
- 2 Stability due to high radial rigidity
- 3 Tool



T R I B O S Fixscanner

Intelligent Clamping Pressure Adjustment speeds up Tool Change.

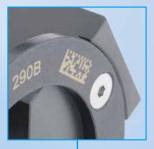


Technical support and sales Tel. +49-7133-103-3888 | schunk.com/tribos-fixscanner

For the series TRIBOS-Mini TRIBOS-RM TRIBOS-S

Application example

Faster! Automated process due to data transmission by Data Matrix Code.





Hydraulic Compensation Jaw

Chuck Jaw with Oil Chamber System for low-deformation Workpiece Clamping.



Technical support and sales Tel. +49-7133-103-3888 | schunk.com/hydraulic-compensation-jaw



Sizes Available for all sizes and interfaces on request

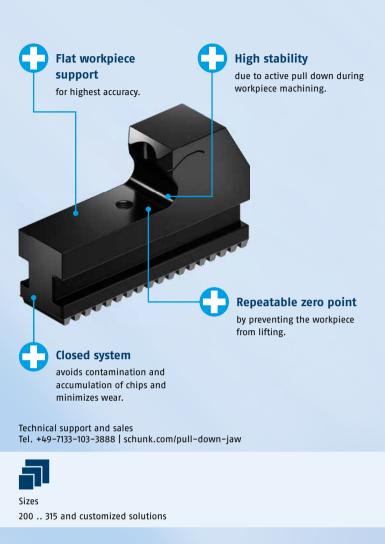
Comparison: Clamping of deformation-sensitive Workpieces

- 1 Conventional 3-point clamping
- 2 6-point clamping with a hydraulic jaw



Pull-down Jaw

Avoids lifting of the Workpiece.

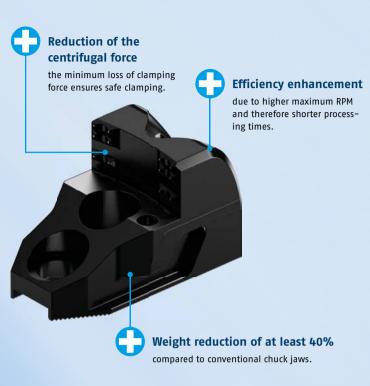


Compared to conventional stepped jaws, the new pull-down jaws avoid the lifiting of the workpiece on the chuck during machining.



Lightweight Jaw

Weight-optimized Chuck Jaw for Raw Part Clamping on all conventional Lathe Chucks.



Technical support and sales Tel. +49-7133-103-3888 | schunk.com/lightweight-jaw



Sizes 200 .. 315 and customized solutions

Your advantage



ROTA NCA Power Lathe Chuck

Sealed Power Lathe Chuck for significantly longer Maintenance Intervals.



Lathe Chuck

Power Lathe Chuck **ROTA NCA**

ROTA NCE Power Lathe Chuck

Extremely weight-reduced Wedge Hook Power Chuck with minimum Mass Moment of Inertia.

Weight-optimized design

with minimum mass moment of inertia for significantly reduced acceleration and braking times.



Large through-hole

for machining of all common bar diameters.

DIN EN ISO 50001

Suitable for energy management certification according to DIN EN ISO 50001.



100% compatible with the Kitagawa BB200 Series (up to size 260)

Exchange of the existing Kitagawa chucks can be done quickly and easily.

Technical support and sales Tel. +49-7572-7614-1302 | schunk.com/rota-nce



Sizes



65 .. 155 kN





max. RPM



Through-hole 53 .. 106 mm

165 .. 315

Clamping force Jaw stroke



3.2 .. 5.8 mm

3,500 .. 6,000 RPM

Sectional diagram

- 1 Wedge hook drive
- 2 Hardened and extremely rigid base body
- 3 Large through-hole
- Optimized lubrication system
- 5 Mounting threads for workpiece stops
- 6 Base jaw serration Freely selectable between inch or metric sizes
- 7 Jaw stroke display
- 8 Blank draw nut
- 9 Weight-optimized design



ROTA NCR-A Power Lathe Chuck

Sealed 6-Jaw Power Lathe Chuck for significantly longer Maintenance Intervals.

Compensating 6-point clamping for deformation-low clamping of thin-walled workpieces.

Low height

for maximum use of the machine room and maximum rigidity of the system.

High-low clamping

Suitable for machining of workpieces with different clamping forces.

Integrated pendulum mechanism

for best roundness tolerance values of deformation-sensitive workpieces.

Technical support and sales Tel. +49-7572-7614-1302 | schunk.com/rota-ncr-a

51

Size

250



64 kN

Clamping force



Jaw stroke 8 mm



max. RPM 3,000 RPM

Sectional diagram

- 1 Angle lever drive
- 2 Hardened and extremely rigid base body
- 3 Optimized lubrication system
- 4 Fastening thread for workpiece stops
- 5 Standard chuck jaw interface



- Sealing of the chuck for considerably longer maintenance intervals
- B Wiper strips seal the base jaw guidances and offer good protection against coolant and chips



VER@-S NSE3 138 Quick−change Pallet Module

The high-performance pneumatic Quick-change Pallet System for universal Milling Operations.



- therefore absolutely maintenancefree
- Lower lying countersunk screws for easy cleaning



Stationary Workholding

Quick-change Pallet Module VER⊚-S NSE3 138

VER@-S NSE-E mini 90 Quick-change Pallet Module

The first electrically driven Quick-change Pallet Module from SCHUNK.

Inductive clamping slide monitoring for monitoring the "open" and "clamped" state of the clamping module.



Can be operated with the standard machine control.

Electromechanical drive

Energy-efficient alternative to pneumatic modules.

Dust- and watertight

according to protection class IP67.

Technical support and sales Tel. +49-7572-7614-1301 | schunk.com/vero-s-nse-e-mini



Size

90



force 1.5 kN



Holding force

15 kN (M6) 25 kN (M8)



Repeat accuracy < 0.005 mm



Clamping and release time < 1 s

Sectional diagram

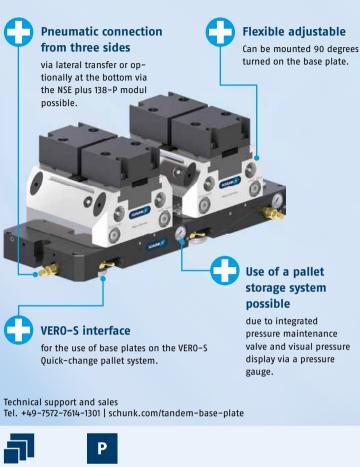
- High-precision short taper centering
- Patented dual stroke system
- 3 Large surfaces for transmitting the pull-down and holding forces
- 4 Large flat surfaces
- 5 Gear
- 6 Electric motor
- Integrated electronics
- 8 4 pin connection
- 9 Inductive proximity switch



Stationary Workholding

MANDEN[®] Base Plate

Manually controlled Base Plate for pneumatic TANDEM Clamping Force Blocks with VERO-S Interface.

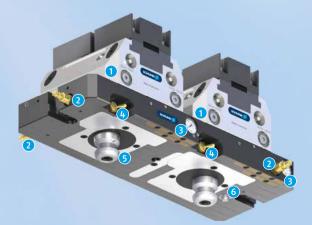


Sizes 100/160 .. 250

Pneumatic pressure up to 9 bar

Sectional diagram

- 1 TANDEM clamping force block KSP plus
- Pneumatic connection from three sides possible
- Integrated pressure gauge
- 4 Manually actuated pneumatic valves
- 5 VERO-S interface
- 6 Bottom sided media transfer via NSE plus 138-P



Stationary Workholding

KONTEC KSX-C 5-Axis Clamping Vise

Power-amplified 5-Axis Clamping Vise with adjustable Clamping Center.

Quick lever clamping for easy and quick clamping of the workpieces by traction. Optimum accessibility

of the machine spindle due to the special design and higher seated spindle.



Individual adjustment of the clamping center for the use on a 5-axis machines. Continuous adjustment of the clamping force quickly and easily, from 4-40 kN.

Technical support and sales Tel. +49-7572-7614-1301 | schunk.com/kontec-ksx-c

430 .. 630 mm



125







4 .. 40 kN



Clamping width 0 .. 596 mm

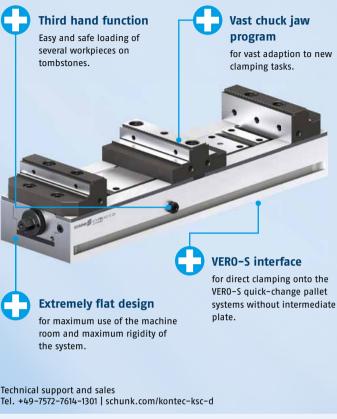
Sectional diagram

- 1 Actuation via hexagon connection
- 2 Completely encapsulated spindle
- 3 Long jaw guidance
- Jaw clamping via hexagon connection for individual adjustment of the clamping center
- 5 Continuous clamping force adjustment
- 6 Mechanical force transmission for self-retaining and vibrationresistant clamping
- Casered scale
- 8 Standard chuck jaw interface with a great selection of chuck jaws



KONTEC KSC-D Double Clamping Vise

Manual Double Clamping Vise with Third Hand Function for clamping of two Workpieces.





Sizes 80 .. 125

Sectional diagram 1 Spindle drive

3 Third hand function

2 Long chuck jaw guidance

4 Fastening thread for workpiece stops



Tightening torques

90 .. 100 Nm

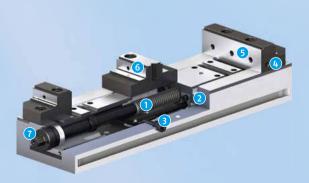




Clamping force 25 .. 40 kN

Clamping width 0 .. 331 mm

- 5 Standard chuck jaw interface with a great selection of chuck jaw
- 6 Central jaw for clamping of two components
- Actuation via hexagon connection



Stationary Workholding

Double Clamping Vise KONTEC KSC-D

SCHUNK Catalogs





Catalog order Tel. +49-7133-103-2256 | schunk.com/catalog-order

Your Benefit of being a SCHUNK Customer.

With continuing new campaigns, benefits packages, and exclusive offers, we are offering lucrative advantages to our customers.

Contact us and find out about our current customer specials.

Contact your SCHUNK consultant or our Customer Center for more information. We are looking forward to hearing from you. Tel. +49-7133-103-3888 customercenter@de.schunk.com



Your Personal Voucher





SCHUNK Gripper	5-Finger Gripping Hand SVH
SCHUNK Gripper	Pneumatic Universal Gripper PGN-plus-P
SCHUNK Gripper	Pneumatic Centric Gripper PZN-plus-P
SCHUNK Gripper	Electric Universal Gripper PGN-plus-E
SCHUNK Gripper	Electric Parallel Gripper EGL 90
Gripper Swivel Module	Electric Gripper Swivel Module EGS
Linear Module	Electric Linear Module ELP

SCHUNK Gripper





Robot Accessories	Angular Compensation Unit AGE-W
Control Unit	Controller ECM
Software	Commissioning Assistant EGL 90
Digitalization	Digital Twin
Configuration	SCHUNK Online Configurator
Configuration	EPLAN
Accessories Sensor Syste	SCHUNK Sensor MMS 22–10L

SCHUNK 🗘

Your Personal Voucher



The new SCHUNK Technology Carrier for Collaborative Gripping.



mounted between the fingers for detecting the surroundings, differentiating and searching for objects.

Technical support and sales Tel. +49-7133-103-3444 | schunk.com/co-act

The technology carrier SCHUNK Co-act gripper is based on **three principles derived** from the HRC standards on human/robot collaboration:



Grippers never cause injuries when gripping

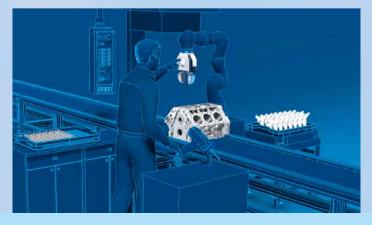


Grippers always detect human contact



Grippers never lose a workpiece

HRC Teamwork in Production Automation



SCHUNK Gripper



SCHUNK 5-Finger Gripping Hand SVH

The world's first Gripper for collaborative Robots, which received the German Social Accident Insurance (DGUV) Certificate.



SCHUNK Gripper

5-Finger Gripping Hand SVH

The new SCHUNK Gripper PGN-plus-P

The world's most proven Gripper on the Market. Lifelong maintenance-free.*

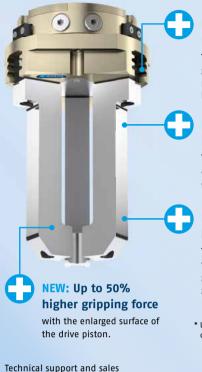


Pneumatic Universal Gripper PGN-plus-P

SCHUNK Gripper

The new SCHUNK 3-Finger Centric Gripper PZN-plus-P

Now NEW with Permanent Lubrication in the Multi-tooth Guidance. Lifelong maintenance-free.*



NEW: Lifelong maintenance-free*

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

NEW: Up to 120% higher finger load

The perfected multi-tooth guidance allows higher maximum moments due to the enlarged guide surface.

NEW: Up to 50% longer gripper fingers

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

* Under normal, clean operating conditions.

Technical support and sales Tel. +49-7133-103-3888 | schunk.com/pzn-plus-p

0.27 .. 3.34 kg



50 .. 125

1 Housing

3 Sensor system 4 Multi-tooth guidance

Sectional diagram

2 Wedge hook principle





Gripping force

325 .. 8,450 N



S

per finger 2 .. 13 mm

> Patentierte Präzision! **Patented Precision!**

Workpiece

weight 1.65 .. 29 kg

Vielzahnführung 1ulti-tooth guidance



Pneumatic Centric Gripper PZN-plus-P

D

The new SCHUNK Gripper PGN-plus-E with IO-Link

The world's first easy electric Gripper with Multi-tooth Guidance, IO-Link and 24 V Drive.



24 V drive and control on option, via digital I/O or IO-link class B connection

for easy commissioning and quick integration into existing systems.

Four-stage adjustable gripping force

for easy adaption to sensitive workpieces.

NEW: Lifelong maintenance-free

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



NEW: Up to 50% longer gripper fingers

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

Technical support and sales Tel. +49-7133-103-3888 | schunk.com/pgn-plus-e

Size

80

n	n
Wei	ght
1.01	kg



Gripping force

up to 570 N



S

Stroke

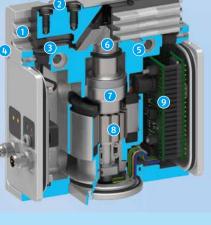
Workpiece weight up to 2.85 kg

Sectional diagram

- Multi-tooth guidance
- 2 Base jaw
- 3 Sensor system
- 4 Housing
- 5 Centering and mounting possibilities
- 6 Wedge hook principle
- **7** Spindle nut
- 8 Drive
- 9 Control electronics



Patentierte Präzision! Patented Precision! Vielzahnführung Multi-tooth guidance



SCHUNK Gripper

Electric Universal Gripper PGN-plus-E

2-Finger Parallel Gripper EGL 90 with **PROFINET**

The first Gripper with certified PROFINET Interface and integrated Control Electronics.



Compact gripper

The complete control and power electronics are integrated in the housing. Suitable for the use in decentralized systems.

Maximum interface flexibility

via PROFIBUS (up to 12 Mbits/s) and CAN (up to 1 Mbit/s). PROFINET certification for ensured compatibility with industry

Flexibly programmable

Finger position, closing speed, and gripping force (50 to 600 N) can be freely programmed within the maximum stroke of 42.5 mm.

Comfortable commissioning

Interactive online commissioning assistant for easy parameterization of the gripper hardware.

Technical support and sales Tel. +49-7133-103-3888 | schunk.com/parallel-gripper-egl

Size

90





Gripping force 50 N .. 600 N



Stroke per finger 42.5 mm



Workpiece weight 3 kg



Sectional diagram

1 Control electronics

- 2 Encoder
- 3 Electric brake
- 4 Drive
- 5 Kinematics
- 6 Service window



Electric Parallel Gripper EGL 90

Gripper Swivel Module EGS

The world's most compact electric Gripper Swivel Module.



Technical support and sales Tel. +49–7133–103–3888 | schunk.com/gripper–swivel–module–egs



NEW: 40

25 .. 40

Sectional diagram

Sizes

F		
+ +		
Gripping force		

30..140 N





Stroke per jaw

3..6 mm

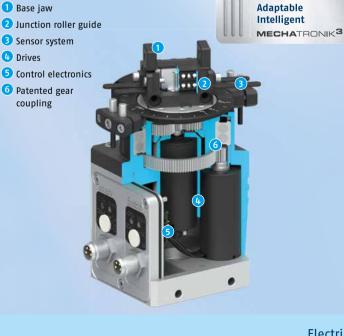
M

0.04 .. 0.11 Nm



Alternative

Workpiece weight 0.15 .. 0.55 kg

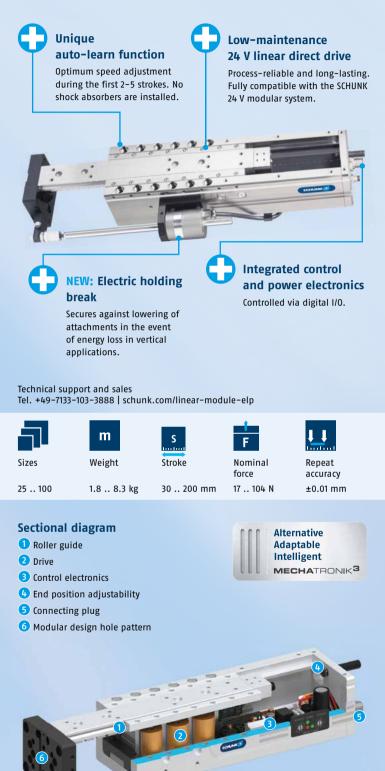


Gripper Swivel Module

Electric Gripper Swivel Module EGS

Linear Module ELP

The easiest electric Linear Module on the Market to adjust. Now NEW with electric Holding Break.



Electric Linear Module ELP

Linear Module

Angular Compensation Unit AGE-W

The world's first Angular Compensation Unit for the Use on Robots for simultaneous Rotational and Angular Compensation.

> **Rotational and angular compensation** Compensation of inaccuracies in component positioning in handling, assembly, "bin picking", and for loading and unloading.



Technical support and sales Tel. +49-7133-103-3888 | schunk.com/compensation-unit-age-w

51

Size

125



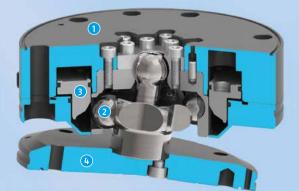
Handling weight 22.7 kg



Deflection ±13°

Sectional diagram

- 1 Housing
- 2 Locking balls
- 3 Locking piston
- 4 Mounting flange



Robot Accessories

Controller ECM with PROFINET

Modular 24/48 V Controller for electric Gripping and Rotary Modules.



Technical support and sales Tel. +49-7133-103-3888 | schunk.com/controller-ecm



Power supply Tran max. 15 A PRO

Transmission rate PROFIBUS max. 12 Mbit/s CAN max. 1 Mbit/s

Sectional diagram

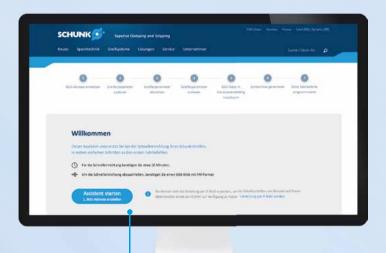
- 1 Status display
- 2 Service interfaces
- 3 Rotary encoding switch
- 4 DIP switch
- 5 M12 plug technology for PROFIBUS/ CAN communication
- 6 Spring clips and plug connectors
- 7 Standard RJ45 plug for PROFINET communication



Controller ECM

SCHUNK Online Commissioning Assistant

Interactive Tool for fast and easy Commissioning of the Universal Gripper EGL 90.





Interactive user guidance throughout the whole commissioning process for comprehensive and individual support with using SCHUNK grippers.

Technical support and sales Tel. +49-7133-103-3888 | schunk.com/commissioning-assistant-egl90

The new SCHUNK online commissioning assistant of the electric SCHUNK gripper EGL 90 PROFINET supports you quickly and easily during commissioning.

- Fast commissioning of an intelligent SCHUNK gripper with integrated control electronics.
- Interactive, web-based user guidance throughout the whole commissioning process.
- Browser-based tool for universal access from every standard computer.
- Fast and error-free configuration and parametrization of the hardware.
- Easy connection and configuration to the GSCML file in your PLC environment.
- Support during programming of the PLC with the help of prefabricated programming examples.

SCHUNK Digital Tools

Virtual Commissioning and Simulation in the Engineering Process using our **Digital Gripping System Program.**



Digital Twin

Based on a CAD three-dimensional model, production characteristics, functions, and process parameters can be assigned to the object.

Realistic simulation

The intelligent three-dimensional model allows computer-assisted simulation in real time.

Technical support and sales Tel. +49-7133-103-3888 | schunk.com/digital-twin

With the Mechatronics Concept Designer from Siemens PLM Software, and the Digital Twin from SCHUNK, construction engineers and plant designers are able to simulate complete assembly plants from the concept to commissioning in a three-dimensional space.

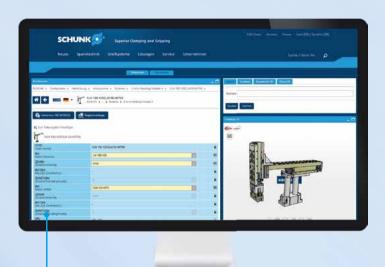
Due to the virtual simulation in the engineering process; development and project times are up to 30% shorter.

- All of individual processes can be already systematically coordinated and programmed in advance.
- Instead of the classic CAD shell model, a detailed digital image of the individual components is used, including their full functionality.
- Going digital in assembly automation: The mechatronic module from the SCHUNK 24 V program will be also available as a Digital Twin for virtual simulation of assembly plants.



Designing easy and error-free

The new SCHUNK Online Configurator is based on the proven CADENAS Technology.



CAD data are available online schunk.com/online-pick-place-configurator

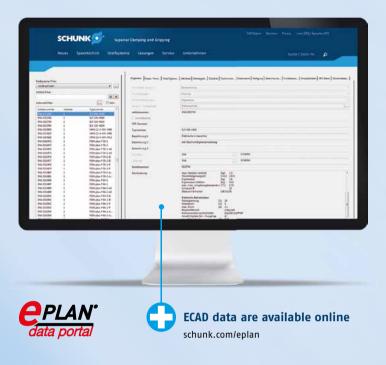
Technical support and sales Tel. +49-7133-103-3888 | schunk.com/3d-configurator

With the new SCHUNK Online Configurator for assembly automation, construction engineers can implement various pick & place applications, and upload them as a complete assembly group into their CAD program.

- With just one click, you can easily download complete handling systems in all common CAD formats (on option two- or three-dimensional).
- Thereby, an intelligent combination logistics ensures that only configurations are implemented, which are feasible from the technical and mechanical point of view.
- The configurator offers access to more than 10,000 possibilities of combination of the world's most comprehensive module program for high-performance assembly, in pneumatic and electric versions.
- On request, SCHUNK supplies the assembly systems, which were generated in the configurator, ready assembled.
- The system automatically generates a parts list, which includes the individual components and also the standard and centering parts needed for assembly.

EPLAN

SCHUNK starts the Integration of the world's largest Gripper Program into the EPLAN Data Portal.



Technical support and sales Tel. +49-7133-103-3888 | schunk.com/eplan

With the EPLAN Data Portal, SCHUNK, the competence leader for gripping systems and clamping technology offers significant efficiency effects for designing assembly and handling systems.

0

SCHUNK currently offers macros for more than 30 series including more than 1,500 individual components on the web-based data platform.

- Available components: The parallel gripper EGP, the gripper/swivel module EGS, and the self-learning linear module ELP from the 24 V gripper modular system, as well as the electric gripper EGL.
- By using the provided macros, construction engineers and plant designers can reduce their project planning effort, and increase the quality of the machine and plant documentation. All the data are available on the latest version of the EPLAN platform worldwide.
- Data can be directly integrated into the corresponding EPLAN software solution or can be downloaded via the browser version of the EPLAN data portal for use in other ECAD programs and can be easily inserted by drag and drop into the individual plans.

The new SCHUNK Sensor MMS 22–IOL with IO–Link Interface

Reliable and economic Sensor for Position Monitoring with the Plug Variants M8 and M12.



Technical support and sales Tel. +49-7133-103-3888 | schunk.com/sensor-mms-22-iol

SCHUNK sensors are used for monitoring the state of automatic components. They detect approach without contact and above a certain switching value and puts out a digital signal.

Sensor MMS 22-IOL-M8 with IO-link interface

for analog position query of SCHUNK grippers.

Sensor MMS 22-PI1-EX with ATEX certification

for the use in explosion-endangered areas. Fully compatible with SCHUNK ATEX-certified components.

Sensor IN 30 inductive proximity switch

Stainless steel housing with a fully integrated sensor system. SCHUNK IN sensors are insensitive to vibrations, dust, and humidity.

SCHUNK Catalogs





11,000 standard products

Learn more about the largest portfolio of gripping systems and clamping technology with 11,000 standard components in our catalogs or at schunk.com

Catalog order Tel. +49-7133-103-2256 | schunk.com/catalog-order

Your Benefit of being a SCHUNK Customer.

With continuing new campaigns, benefits packages, and exclusive offers, we are offering lucrative advantages to our customers.

Contact us and find out about our current customer specials.

Contact your SCHUNK consultant or our Customer Center for more information. We are looking forward to hearing from you. Tel. +49-7133-103-3888 customercenter@de.schunk.com



Your Personal Voucher

No. 1

for safe, precise gripping and holding.

Писсии

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

SCHUNK GmbH & Co. KG Spann- und Greiftechnik Bahnhofstr. 106 - 134 D-74348 Lauffen/Neckar Tel. +49-7133-103-0 Fax +49-7133-103-2399 info@de.schunk.com

 schunk.com

 youtube.com/schunkhq

 twitter.com/schunk_hq

 facebook.com/schunk.hq

 schunk.com/lehmann

1983-12M-09/2017 © 2017 SCHUNK GmbH & Co. KG 3flip is registered trademark. This Infoflip is Made i many by Infoflip Medien GmbH. IF.G.09.01124.F.01

