

Smart Factory

Cloud Computing

Big Data

Smart Product

70  
Years

Superior Clamping and Gripping



## Gripping Meets Industry 4.0

Intelligent SCHUNK Components  
for smart Production Processes

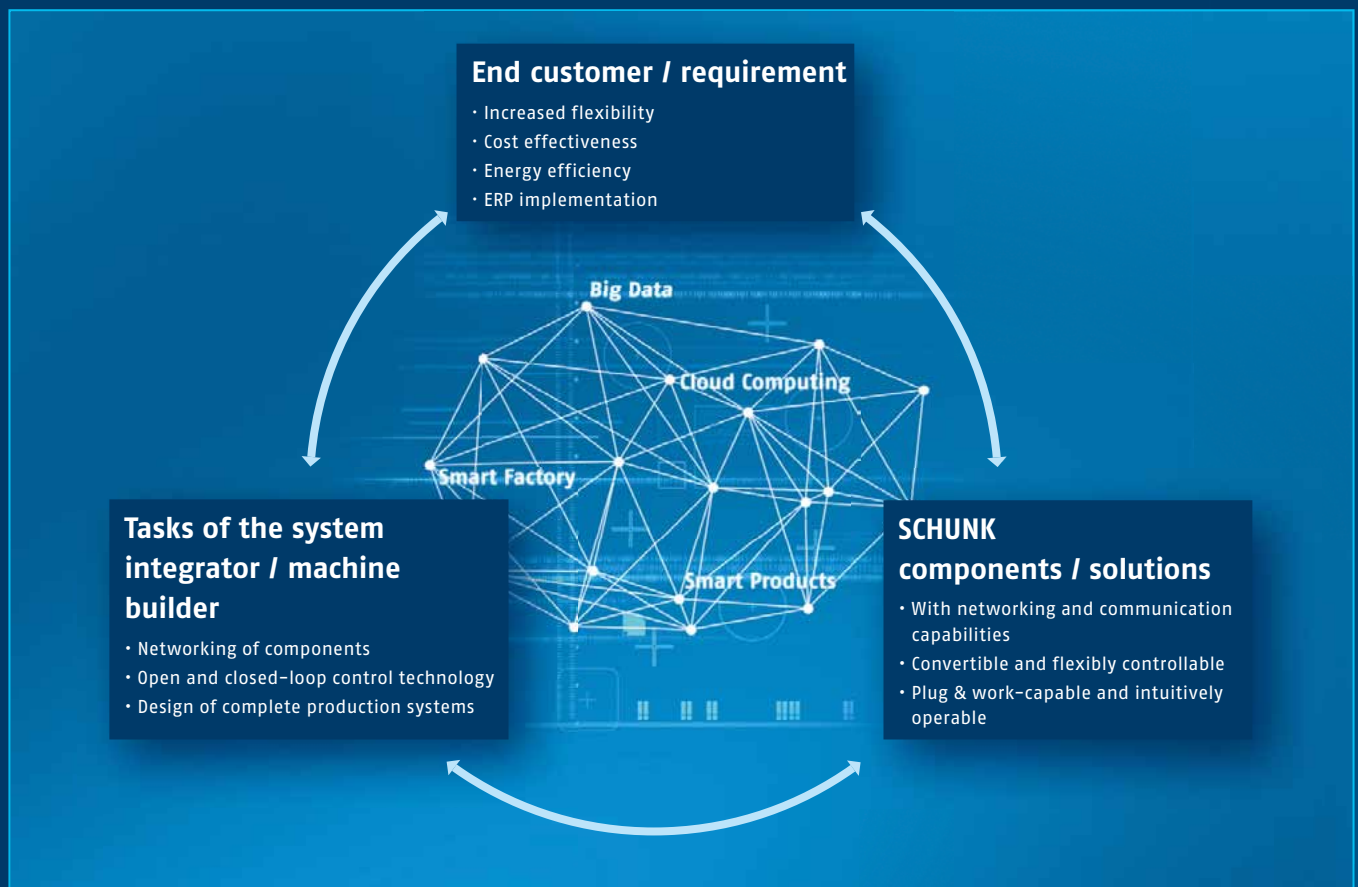
## The Mega Trend of Industry 4.0

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

SCHUNK already allows its customers to achieve full potential. Reduction in production costs and set-up times as well as providing efficient, intelligent, mechatronic components from the world's largest product portfolio. This is also our objective for Industry 4.0. With SCHUNK Synergy, the perfectly matched interplay between clamping technology and gripping systems,

we are showing our customers new approaches to designing more efficient and automated production processes. Even today, intelligent SCHUNK components with networking capability provide the basis for flexible production automation. Of course, in close cooperation with machine builders or system integrators, it goes without saying.

## Industry 4.0 networking

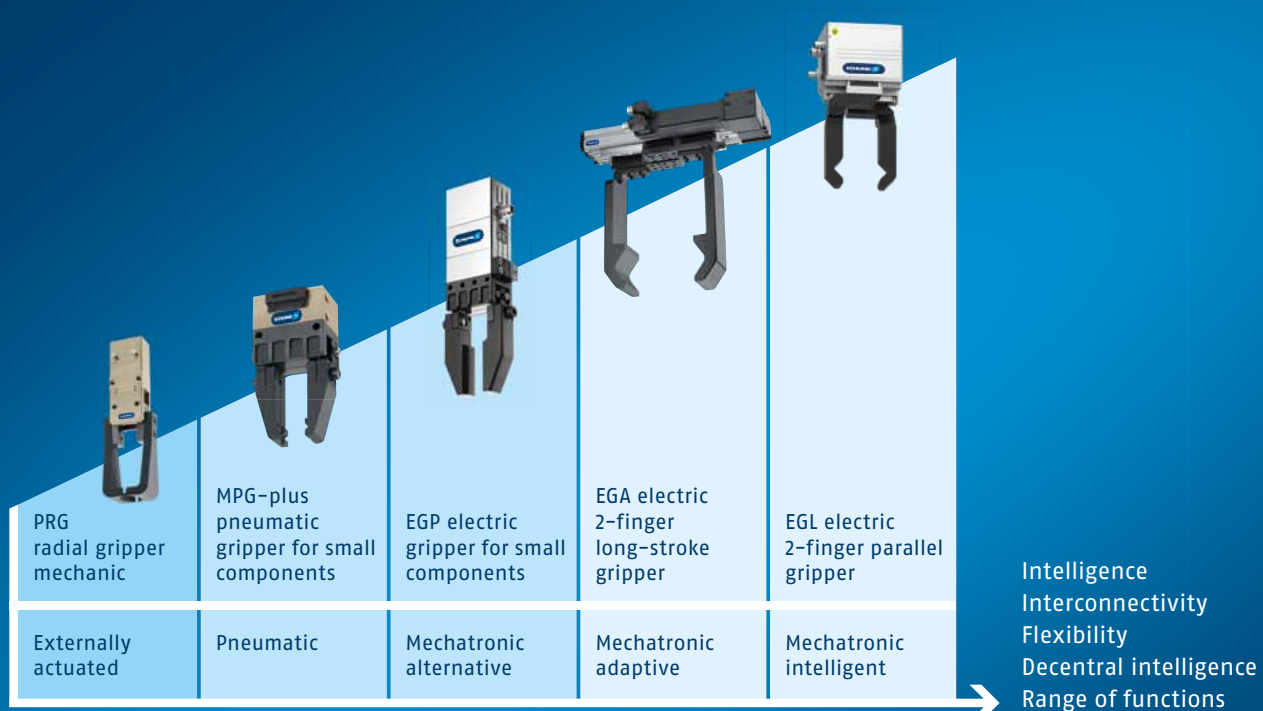


## Sustainable Clamping Technology and Gripping Systems

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

The properties are clearly adapted to the needs of industry:

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



# Industry 4.0 – Smart Production Processes by using SCHUNK Components

This Industry 4.0 cell shows by way of example how a basic carrier with a gear and a circuit board are assembled to make an assembly group. Here, SCHUNK components with networking and communications capability form the basis for flexible production

automation, together with convertible, flexibly controllable SCHUNK actuators. Together with plug & work-capable, intuitively operable concepts, they offer maximum flexibility for networked production.

## Pick & Place Assembly Stations

With standardized pick & place units and modular assembly components

### 1 Mechatronic – Alternative

**1:1 pneumatic replacement by alternative mechatronic SCHUNK components**



**EGS gripping swiveling unit**

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



**EGP Safety 2-finger gripper for small components**

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



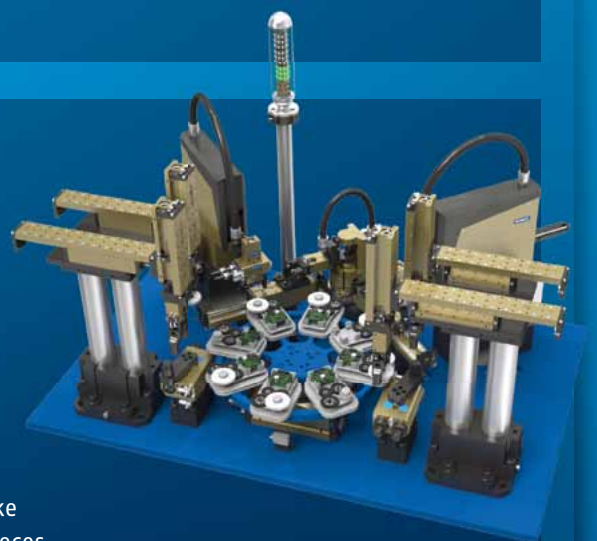
### 2 Pneumatic

**SCHUNK sensors make pneumatic components ready for Industry 4.0**



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

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





# Inspection and Quality Control Station

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

## 3 Mechatronic – Intelligent

With intelligent mechatronic SCHUNK components towards the smart factory

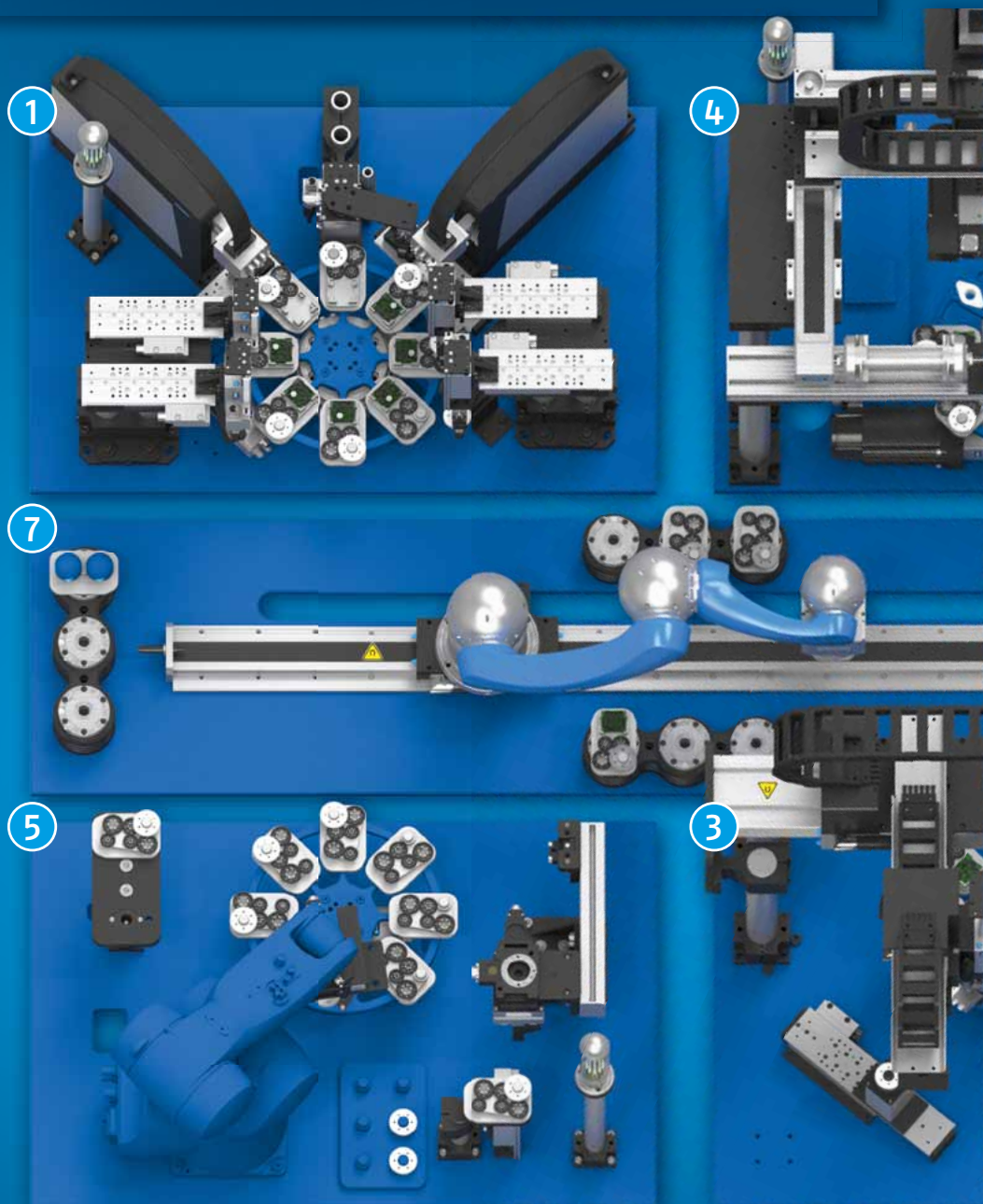
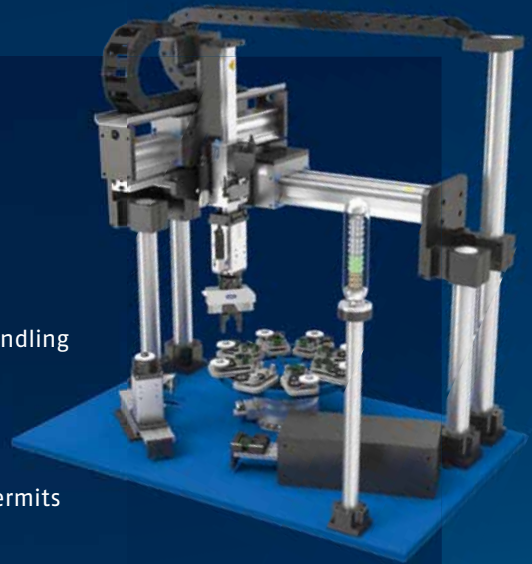


### ELB linear module

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

### WSG sensitive 2-finger parallel gripper

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



Experience SCHUNK Industry 4.0 applications live on the internet  
[www.gb.schunk.com/industry4.0](http://www.gb.schunk.com/industry4.0)

# Packaging Station

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

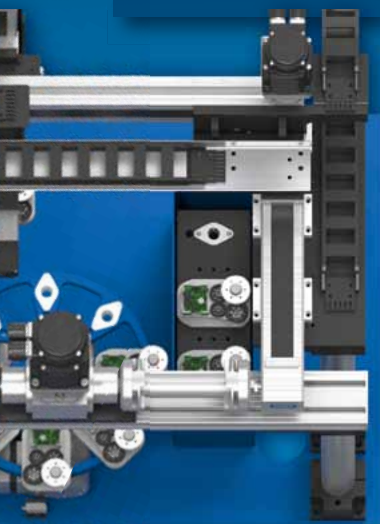
## 4 Mechatronic – Adaptable

Adaptable mechatronic SCHUNK components permit networked, flexible production

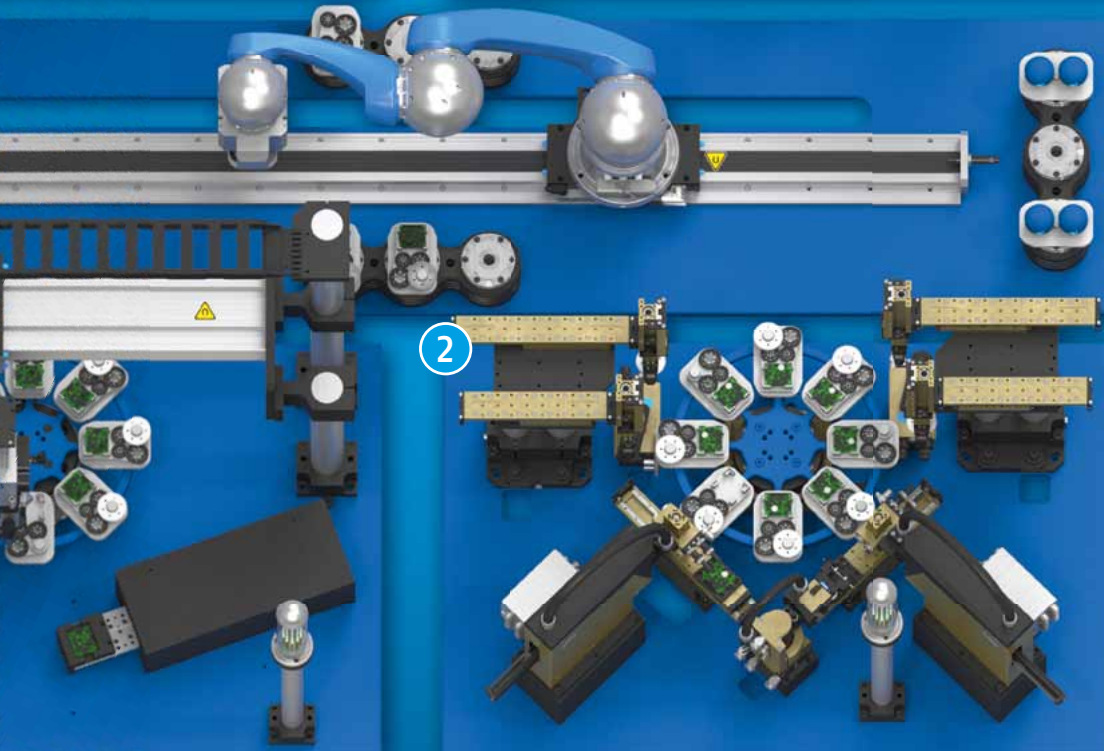


### EGA long-stroke gripper

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



6



2



# Robot Assembly Stations

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

## 5 Mechatronic – Intelligent

**Mechatronic SCHUNK components as the basis / foundation for autonomous systems**



**EGL 2-finger parallel gripper with IO-Link**

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



**FTN 6-axis force/torque sensor**

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



## 6 Pneumatic

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



**SWS quick-change system**

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



# Logistics Station

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

## 7 Mechatronic – Intelligent



**LWA 4P Powerball Lightweight arm**

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



**PG-plus 2-finger parallel gripper**

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

\* Vision-capable grippers are in preparation.

# Nr. 1

for precise gripping  
and safe holding.



*J. Lehmann*

Jens Lehmann, German goalkeeper legend,  
SCHUNK brand ambassador since 2012  
for precise gripping and safe holding.  
[www.gb.schunk.com/Lehmann](http://www.gb.schunk.com/Lehmann)

**852** minutes without a  
goal against him in the  
Champions League

**681** minutes without a goal  
against him in the national team

**2** intercepted penalties  
in the 2006 World Cup

**1** headed goal as a goalie

**0** defeats English Soccer Champion

and

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

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

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

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

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

**SCHUNK GmbH & Co. KG**  
Spann- und Greiftechnik

Bahnhofstr. 106 - 134  
D-74348 Lauffen/Neckar  
Tel. +49-7133-103-2503  
Fax +49-7133-103-2189  
[greifsysteme@de.schunk.com](mailto:greifsysteme@de.schunk.com)  
[www.schunk.com](http://www.schunk.com)



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