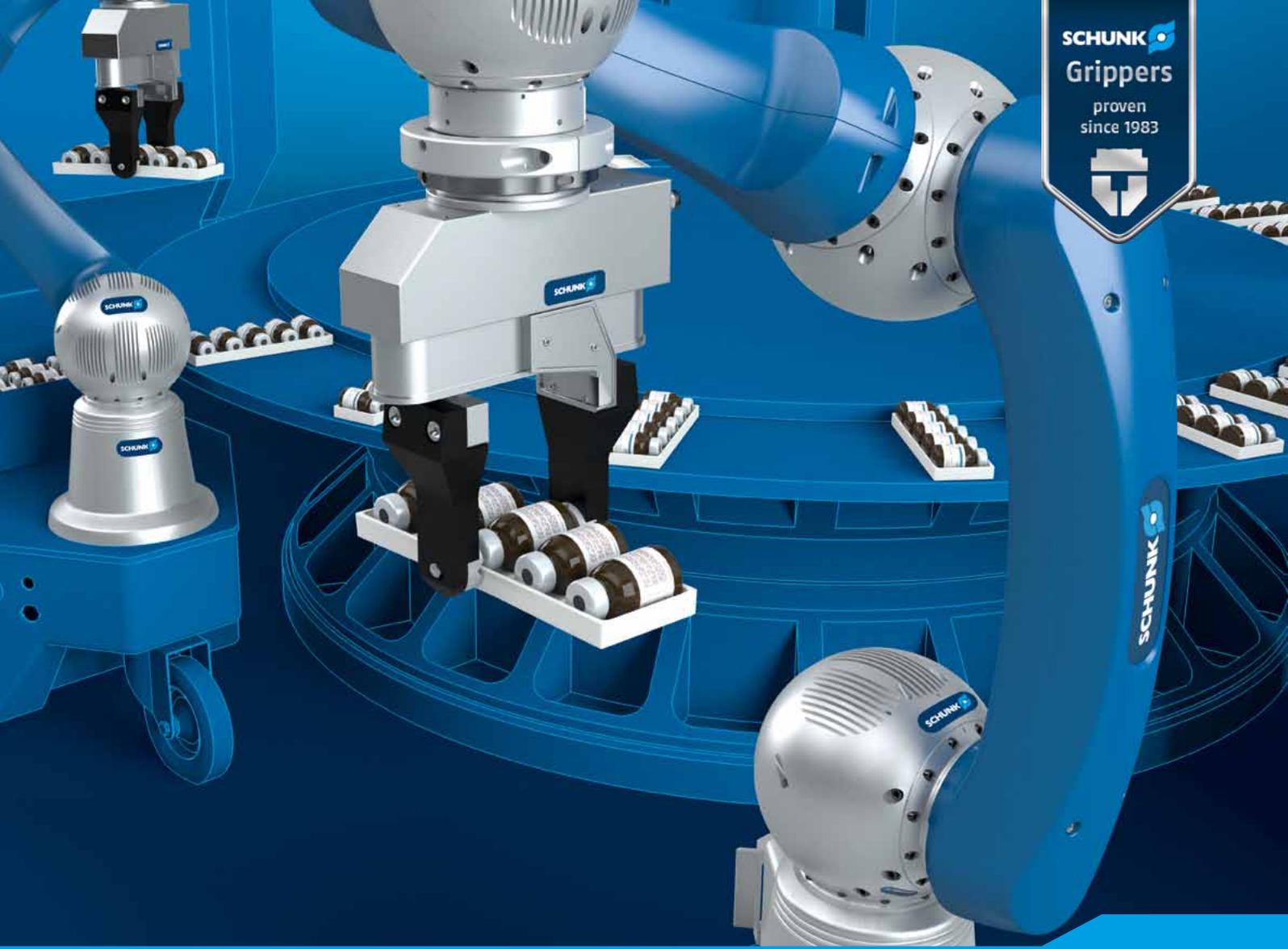


**SCHUNK**  
**Grippers**  
proven  
since 1983



Superior Clamping and Gripping



**WSG Series**  
**Electric Gripping Modules**  
Configured in 2 Minutes

# Superior Clamping and Gripping



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 standard program.

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

## SCHUNK No. 1 Products for higher Productivity...

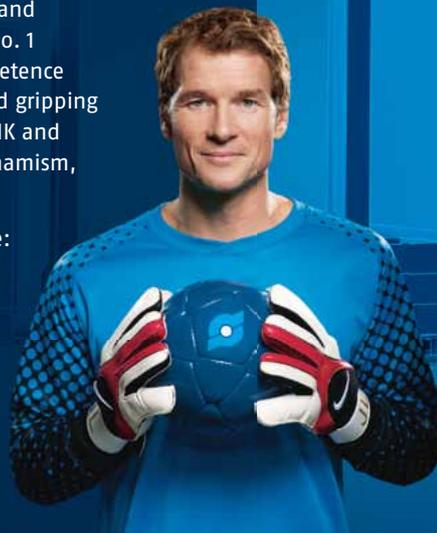


... in your Lathe

### 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 the global competence leadership for clamping technology and gripping systems. The top performance of SCHUNK and Jens Lehmann are characterized by dynamism, precision and reliability.

For more information visit our website:  
[www.gb.schunk.com/Lehmann](http://www.gb.schunk.com/Lehmann)



Jens Lehmann





# It is time to use your machine's full potential.

With superior components, find potentials where you would never expect them. In your machine. SCHUNK SYNERGY – the perfectly harmonized interplay of clamping technology and gripping systems turns our customers into productivity champions.



## Gripping Modules

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



## Linear Modules

Move 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.

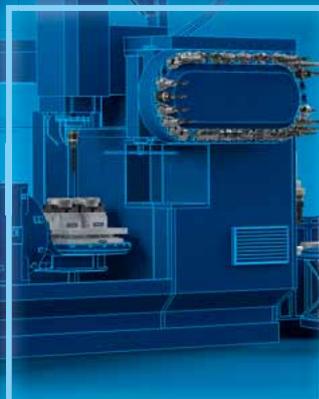
### ... in your Automated Handling System



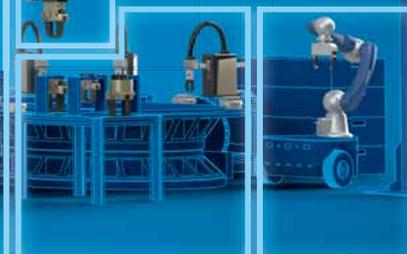
### ... for your Automated Machine Loading



### ... in your Machining Center



### ... for your Service Robotics Application



### ... in your Automated Assembly



## The sensitive Specialist for sensitive small Components

### Electric 2-Finger Parallel Gripper WSG 32

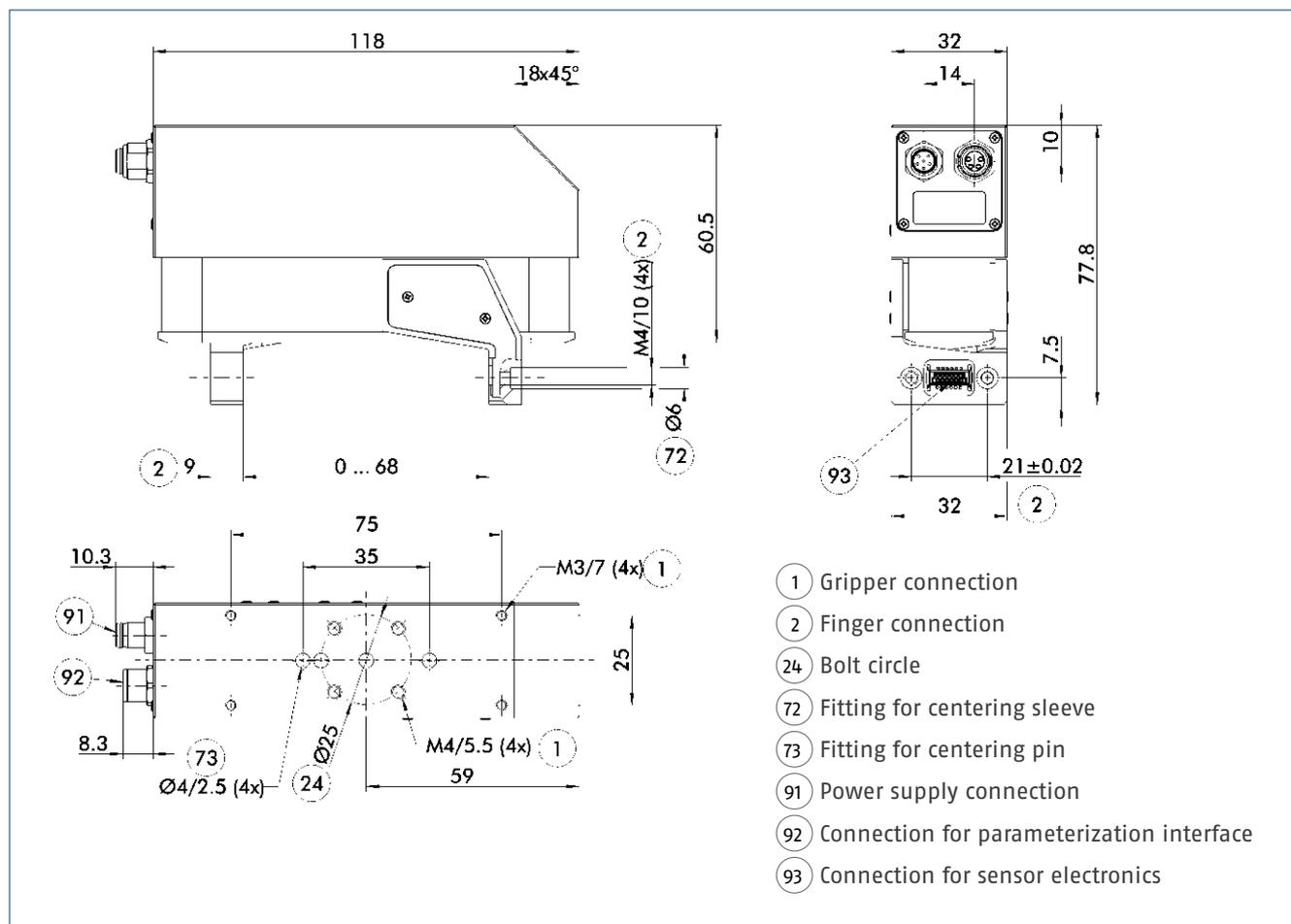
The particularly compact WSG 32 with its gripping forces of 5 to 50 N has been designed for the precise and sensitive handling of small and medium-sized workpieces. Its fully covered guidances allow for easy cleaning. With high jaw speeds of up to 400 mm/s, the WSG 32 achieves the shortest cycle times even with a long stroke. The detection of gripped parts is already integrated into the gripper. In this way, gripping commands can be executed with optimized cycle times.

It can be connected directly to the network via an Ethernet connection. This electric gripper is available as an option with integrated electronics comes with the advanced industrial Ethernet interface Profinet and can also be quickly and easily integrated into future smart factory systems. As an alternative there is also the variation with CAN-Bus.

### Your advantage

- Integrated gripping control with Web server for **easy configuration and diagnosis** without software installation via web browser
- **Integrated sensor systems ports** in the jaws for optional use of force measurement fingers for precise, force controlled gripping of sensitive components and gripped part monitoring
- **High functionality** due to standard commands and easy expansion due to user-friendly programming language
- Available with **Profinet, CAN-Bus or Ethernet interface** for **easy system integration**
- **Dust-resistance cover** for the drive and guidance system in the form of a stainless steel strip for applications in the pharmaceutical industry and assembly

Dimensions



Technical data

Designation	Unit	WSG 032-068 <sup>1</sup>		
ID		0306130	0306131	0306132
Stroke per finger	mm	34	34	34
min. / max. gripping force	N	5 / 50	5 / 50	5 / 50
Closing time	s	0.25	0.25	0.25
Weight	kg	0.55	0.55	0.55
Recommended workpiece weight	kg	0.25	0.25	0.25
Max. permissible mass per finger	kg	0.1	0.1	0.1
Protection class	IP	40	40	40
min. / max. ambient temperature	°C	5 / 50	5 / 50	5 / 50
min. / max. speed	mm / s	5 / 400	5 / 400	5 / 400
min. / max. power supply	V	DC 20 / 28	DC 20 / 28	DC 20 / 28
Nominal power	W	22	22	22
Interfaces		Ethernet	CAN-Bus, Ethernet	Profinet, Ethernet

<sup>1</sup> Available starting January 2014



 <b>Size</b> 32	 <b>Dead weight</b> 0.55 kg	 <b>Gripping force</b> 5 .. 50 N	 <b>Stroke per finger</b> 0 .. 34 mm	 <b>Workpiece weight</b> 0.25 kg
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# WSG 50

Electric 2-Finger Parallel Gripper



## For sensitive and flexible Workpiece Handling

### Electric 2-Finger Parallel Gripper WSG 50

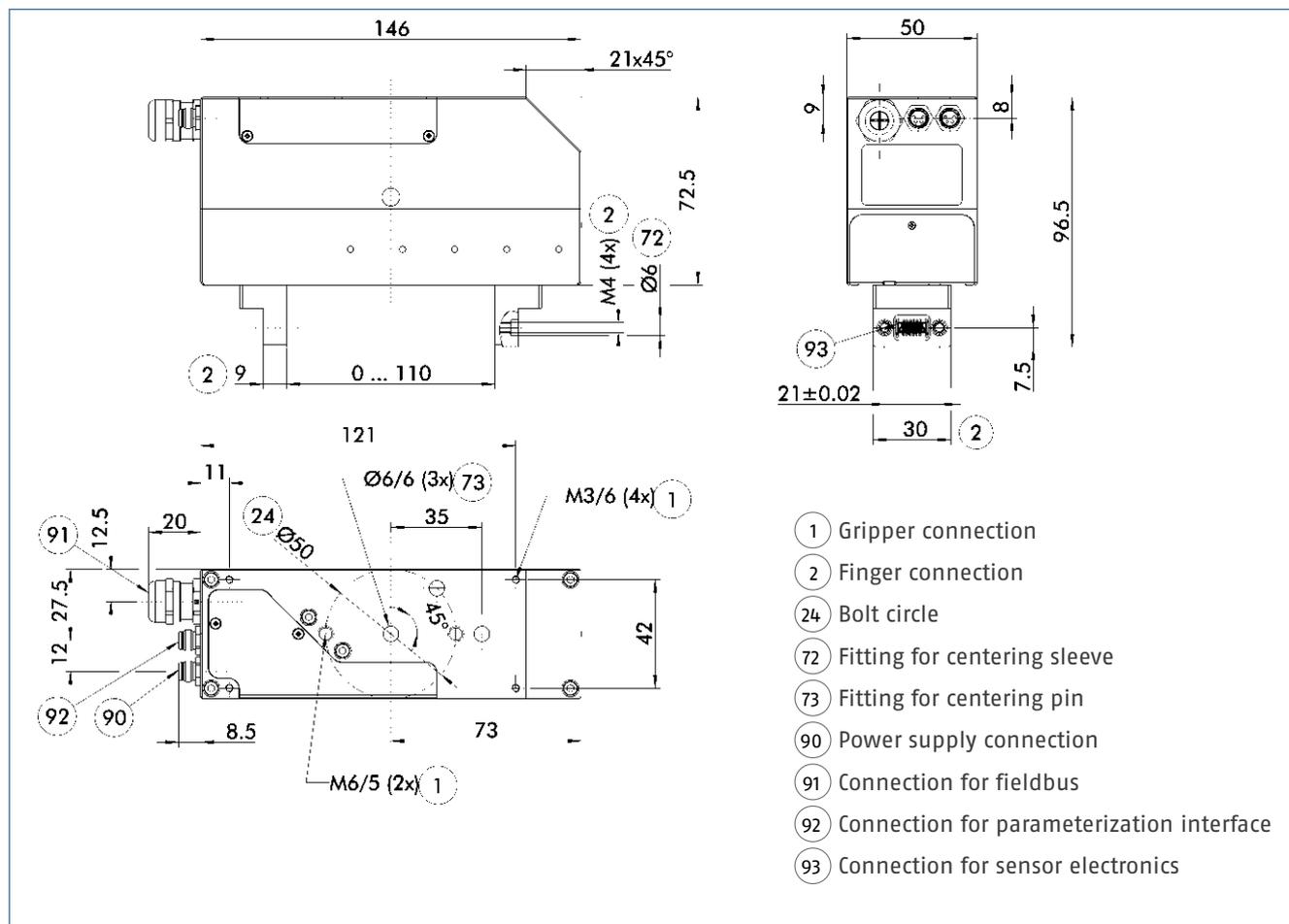
The WSG 50 series is the first choice for installation and assembly processes that require high flexibility and sensitive handling with a large stroke. In addition to the basic version with a 55 mm stroke per finger, this gripper also comes in a long stroke version with a stroke of 105 mm per finger. Both products are capable of gripping forces between 5 N and 80 N. The WSG 50 can achieve the shortest cycle times with a long stroke due to high jaw speeds of up to 420 mm/s.

An integrated, intuitive web server enables easy configuration and diagnosis right from your PC. The WSG 50 can be controlled optionally via Ethernet TCP / IP, Profibus, CAN-Bus, RS232, or via eight virtual digital I / Os.

### Your advantage

- Integrated gripping control with Web server for **easy configuration and diagnosis** without software installation
- **Integrated sensor systems ports** in the jaws for optional use of force measurement fingers for precise, force controlled gripping of sensitive components, and gripped part monitoring
- **Shorter cycle times** due to high process speed
- Available with **Profinet and as a standard with Profibus, Ethernet and CAN-Bus interface** for **maximum flexibility** in system integration
- **Highest level of efficiency** due to integrated energy management
- **Integrated scripting language** for additional functionality
- **Configuration data can be quickly replicated for any number of grippers** via integrated SD card

Dimensions



Technical data

Designation	Unit	WSG 050-110		WSG 050-210	
ID		0306120	0306122 <sup>1</sup>	0306125	0306127 <sup>1</sup>
Stroke per finger	mm	55	55	105	105
min. / max. gripping force	N	5 / 80	5 / 80	5 / 80	5 / 80
Closing time	s	0.35	0.35	0.65	0.65
Weight	kg	1.15	1.15	1.60	1.60
Recommended workpiece weight	kg	0.4	0.4	0.4	0.4
Max. permissible mass per finger	kg	0.3	0.3	0.3	0.3
Protection class	IP	20	20	20	20
min. / max. ambient temperature	°C	5 / 50	5 / 50	5 / 50	5 / 50
min. / max. speed	mm/s	5 / 420	5 / 420	5 / 420	5 / 420
min. / max. power supply	V	DC 20 / 28	DC 20 / 28	DC 20 / 28	DC 20 / 28
Nominal power	W	19	19	19	19
Interfaces		PB, CAN-Bus, Ethernet	Profinet, CAN-Bus, Ethernet	PB, CAN-Bus, Ethernet	Profinet, CAN-Bus, Ethernet

<sup>1</sup> PROFINET variations available starting:

WSG 50-110: February 2014

WSG 50-210: March 2014



Size 50	Dead weight 1.15 .. 1.6 kg	Dead weight 5 .. 80 N	Stroke per finger 55 .. 105 mm	Workpiece weight 0,4 kg

# For maximum Accuracy of Gripping Force Control

## ABF WSG 50-DV Force Measurement Fingers

The SCHUNK ABF WSG 50-DV force measurement finger is a sensor finger for measuring the actual gripping force acting on the workpiece. The gripping force is measured very precisely by means of expansion measurement strips and this force is transmitted to the integrated gripper control to enable force control. The necessary signal processing is integrated in the ABF WSG 50-DV so it can be connected directly to the WSG's sensor port.

Due to the rotatable polyamide object support, the ABF WSG 50-DV can be optimally oriented to the workpiece when mounted. The flexibly designed mount for the gripped part support means that customers can use their own specific workpiece supports.

The gripper control automatically identifies the ABF WSG 50-DV (which is calibrated in the factory) as a force measurement finger and includes it directly in gripping force control, significantly improving the accuracy of the gripping process. Only one force measurement finger is needed to measure the gripping force, so the other finger can be designed as a passive ABF WSG 50-GV jaw.

### Your advantage

- Highly precise measurement of the gripping force on the workpiece
- Integrated signal processing
- High immunity to disruption
- Direct connection to the WSG gripper's sensor port

### Fields of application

- Handling of delicate goods, e.g. for medical / surgical equipment, laboratory automation systems
- Quality control in the handling process
- Measuring process forces

### Technical data

Designation	ABF WSG 50-DV (finger with electronics)	ABF WSG 50-GV (basic finger without electronics)
ID	<b>0306160</b>	<b>0306150</b>
Current supply (via WSG sensor port)	5 V / 10 mA	-
Gripping force measuring range (nominal force)	0 to 160 N (0 to 80 N)	-
Resolution	16 bits	-
Accuracy	± 3%	-
Sampling rate	300 Hz	-
Operating temperature	-10 ... 70 °C	-



- 1 ABF WSG 50-DV  
(finger with electronics)
- 2 ABF WSG 50-GV  
(basic finger without electronics)

# Technology in Detail

## Electric Gripping Modules WSG Series



### Redefining Start-up and Diagnosis

- The integrated and intuitive web server enables easy configuration and start-up of the WSG in just a few minutes.
- The WSG has an integrated Ethernet interface and can therefore be configured using any common web browser.
- In addition, the WSG can automatically send e-mails whenever various events occur. This keeps you up-to-date with its status.



### Integrated Control Unit

- The entire gripper control, including the end phase, are already integrated.
- The WSG 32 is immediately network-capable and available with Ethernet and Profinet (option) or CAN-Bus interface (option).
- The WSG 50 is controlled as an option via Ethernet TCP / IP, Profinet (option), Profibus DP, CAN-Bus, RS-232 or via digital I / Os.
- The operating software, configuration and application data are stored on a removable memory card and can be replicated for any number of grippers.



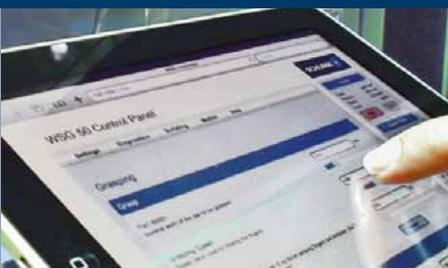
### Sensor Port as Standard

- The WSG series is the first generation of electric grippers to integrate data interfaces for sensors in the base jaw itself.
- No interfering contours or problems due to moving cables when the force measurement fingers move.
- This makes it possible to integrate sensors directly into the gripper control. The sensor port is directly connected to the internal control unit for the WSG grippers – so sensor signals are included directly in the gripping process.



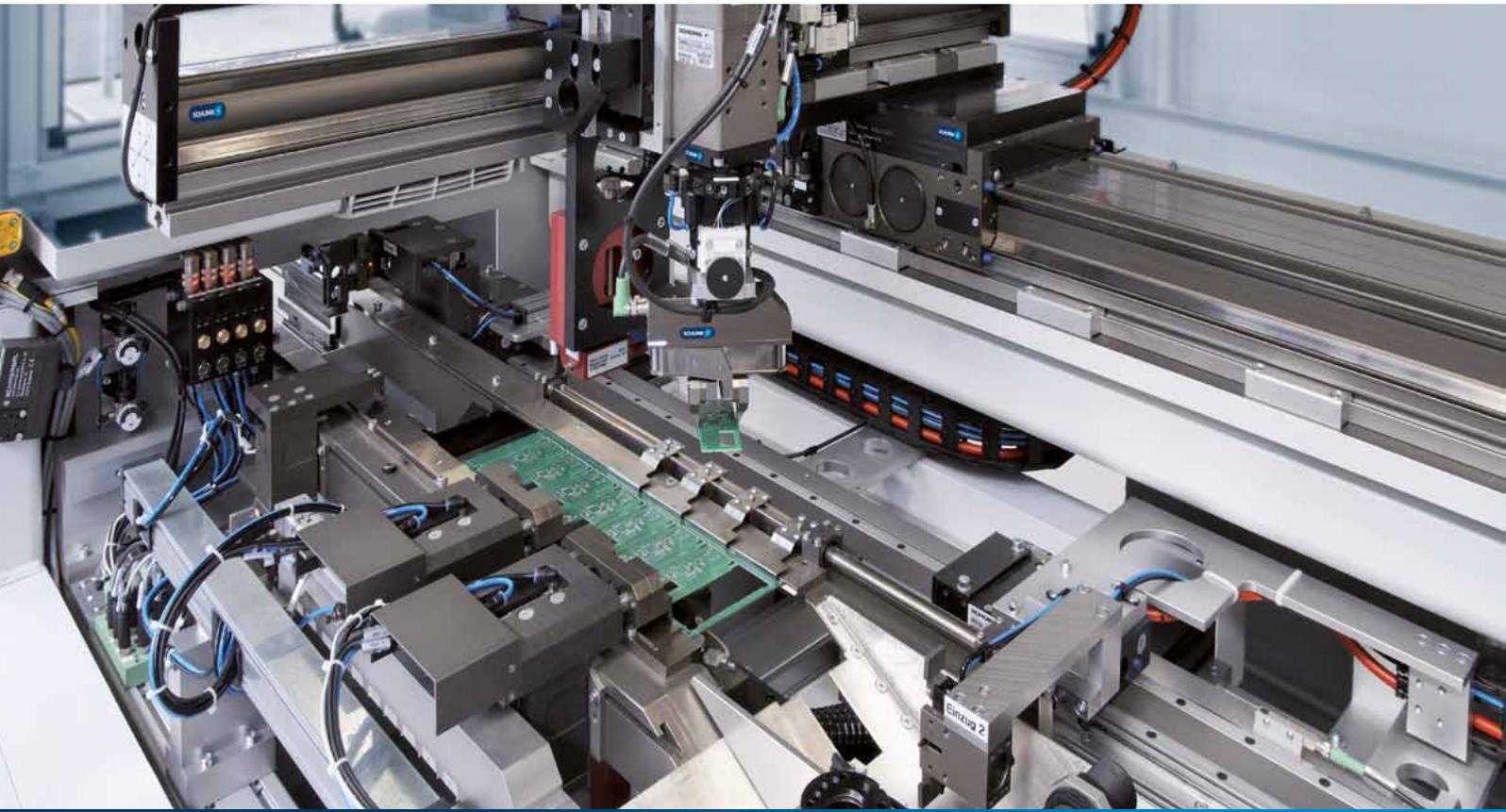
### Optional Gripper Fingers

- Finger types available with and without integrated sensor systems.
- The ABV WSG 50-DV force measurement finger measures the actual gripping force very precisely on the gripped part itself via the finger's built-in expansion measurement strips, enabling force-controlled gripping.
- An ABF WSG 50-DV force measurement finger can be used together with an ABF WSG 50-GV basic gripping finger (without electronics) for direct gripping force measurement.
- If two ABF WSG 50-GV basic gripping fingers are used, the gripping force is measured indirectly via the integrated gripper control.



### Expansion via Scripts

- The WSG has a powerful script extension that gives you access to a whole range of internal functions.
- Using the script editor integrated in the configuration interface, you can easily write additional programs and store these directly on the memory card.



## Highly dynamic Printed Circuit Board Handling

### Using the electric SCHUNK 2-Finger Parallel Gripper WSG 32 in a SCHUNK ILR 2000 Router

SCHUNK Electronic Solutions GmbH has used the WSG 32 to make the standardized ILR 2000 router far more flexible: now, even minimal quantities of different printed circuit board variations can be processed alternately, safely and cost-effectively. The WSG 32 fulfills two functions: while a bit mill cuts from below, the gripper fixes and supports the PCB from above.

It then places the PCB either on a pallet or a conveyor belt. As detection of the gripped parts is integrated into the WSG and there is no need for built-on limit switches, and the gripper itself has a high positioning accuracy, gripping commands can be designed to make the most of cycle times. This significantly reduces the load on the higher-level process control. All in all, this provides the ideal pre-requisites for implementing short cycle times for even large strokes, particularly as the gripper itself is moved by a high-precision, linear motor driven SCHUNK high-speed portal.

### Your advantage

- WSG offers **workpiece variability** due to its integrated gripping force monitoring and flexible stroke.
- Constantly up-to-date **feedback about the gripper's status** and additional option of **remote maintenance when service is necessary**.
- **Completely covered guidances** for the WSG 32 gripper make cleaning easy.
- **Minimum programming effort** due to intelligent gripping commands pre-stored in the gripper.

# MECHATRONIK<sup>3</sup>

## SCHUNK Mechatronics Modular System offers 100% Compatibility

SCHUNK is the very first manufacturer to group together a variety of mechatronics modules into a single series. The portfolio ranges from simple gripping modules as a pneumatic alternative, to gripping and rotary modules with integrated intelligence, and finally to adaptable mechatronic gripping and rotary modules.



Order a brochure now!

[www.gb.schunk.com/catalogorder](http://www.gb.schunk.com/catalogorder)

### SCHUNK Grippers

#### Electric 2-Finger Gripper for Small Components EGP

The EGP stands out from comparable grippers for small components due to its 180% better gripping force-mass ratio. The 40 size has a four-level adjustable gripping force. The new 25 size is the smallest electrical gripper in the world. The EGP 25 Speed version of the electrical gripper sets a new record for the closing time: a speedy 0.03 seconds.



### SCHUNK Rotary Modules

#### Electric Rotary Module with Rotary Feed-Through ERS

The latest option for the ERS is a pneumatic and electrical DDF rotary feed-through. As a standard, the DDF has more than eight signal feed-throughs and a pneumatic air duct. To allow the largest possible versatility in control and precision strategies, the ERS rotary module can be operated with an external SCHUNK controller for 48 V or with an external standard controller (e.g. from Bosch or Siemens) for the 560 V variation. Depending on the requirements and the application, the ERS is also available with a pneumatic brake and with IP54 protection.



### SCHUNK Linear Modules

#### ELB with Linear Motor Drive

The ELB linear module 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 guidance, makes the module extremely compact, rigid and dynamic.



## LWA 4P Powerball Lightweight Arm

### The Lightweight Arm with the world's best compact Performance



The most compact, powerful lightweight arm in the world with three highly-integrated SCHUNK ERB Powerball modules offers 6 degrees of freedom. Integrated intelligence makes powerful, mobile handling possible like never before. When combined with the SCHUNK WSG gripper, they enable highly flexible, delicate gripping processes – the WSG is seamlessly integrated without any external wiring.

#### Your advantage

- Suitable for mobile fields of application
- Low energy consumption at 24 V DC
- High torque, high speed and repeat accuracy for rapid acceleration, short cycle times and high process stability
- High power density and extremely compact
- Lightweight construction and new design provide weight / load capacity ratio of 2:1



MM Award 2012

#### Powerball ERB

Servo-electric double axis rotary module with precision gears

- 1 Electronic control unit
- 2 Encoder
- 3 Drive
- 4 Harmonic Drive® gears
- 5 Holding brake
- 6 Hollow shaft for internal wiring



*J. Lehmann*

Jens Lehmann,  
German goalkeeper legend,  
brand ambassador of SCHUNK,  
the family-owned company,  
since 2012

