Product Information

Gripper for small components EGP 25
EGP
Gripper for small components

Gripper for small components EGP

Electric 2-finger parallel gripper with smooth-running base jaws guided on roller bearings

Field of application
Gripping and moving of small to medium-sized workpieces with flexible force and high speed in clean environments, such as assembly, testing, laboratory and pharmaceutical industry

Advantages – Your benefits

Highest performance density for the use of smaller grippers sizes
Control via digital I/O for easy commissioning and rapid integration into existing systems
Two to four stage adjustable gripping force for simple adaption to sensitive workpieces
Backlash-free, pre-loaded cross roller guide for precise gripping with nearly constant force for all permissible finger lengths
Very high maximum cycles per minute for highest productivity
Compact dimensions for minimal interfering contours in the application
Proven a thousand times MPG-plus basis for equal gripping forces and strokes with identically high efficiency
Brushless DC servomotor for almost wear-free use and a long service life
Control via IO-Link enables the prepositioning of the gripper finger and the evaluation of the gripper condition

Sizes
Quantity: 4

Weight
0.11 .. 0.8 kg

Gripping force
12 .. 300 N

Stroke per jaw
3 .. 10 mm

Workpiece weight
0.07 .. 1.25 kg
**Functional description**

The brushless servomotor drives the base jaw via the gear mechanism. The jaw stroke is synchronized by means of rack and pinion kinematics.

1. **Base Jaw**  
   For the connection of workpiece-specific gripper fingers

2. **Cross roller guidance**  
   Precise gripping due to backlash-free base jaw guidance

3. **Gear**  
   Rack and pinion principle for centric gripping

4. **Drive**  
   Brushless DC servomotor

5. **Control electronics**  
   Integrated control and power electronics for decentralized control of the servomotor
General notes about the series

**Operating principle:** Rack and pinion principle

**Housing material:** Aluminum alloy, coated

**Base jaw material:** Steel

**Actuation:** servo-electric, via brushless DC servomotor

**Warranty:** 24 months

**Scope of delivery:** Accessory kit for centering sleeves, bracket for proximity switch, assembly instructions.

**Gripping force:** is the arithmetic sum of the individual force applied to each jaw at distance \( P \) (see illustration).

**Finger length:** is measured from the reference surface as the distance \( P \) in direction to the main axis.

**Repeat accuracy (gripping):** defined as the spread of the actual position at 100 consecutive closing or opening movements on a rigid workpiece or a fixed workpiece stop under constant conditions.

**Repeat accuracy (positioning, unidirectional):** defined as the spread of the actual position of the base jaws after 100 consecutive movements to a target position from the same direction under constant conditions.

**Repeat accuracy (positioning, bi-directional):** defined as the spread of the actual position of the base jaws after 100 consecutive movements to a target position from both directions under constant conditions.

**Workpiece weight:** is calculated for force-fit gripping with a coefficient of static friction of 0.1 and a safety factor of 2 against workpiece slippage at acceleration due to gravity \( g \). For form-fit or capture gripping, there are significantly higher permissible workpiece weights.

**Closing and opening times:** are purely the times that the base jaws or fingers are in motion. PLC reaction times are not included in the above-mentioned times and must be taken into consideration when determining cycle times.

Application example

Pick & place unit driven by linear motor for dynamic movements.

1. Pillar assembly system
2. Electric linear module ELP
3. Electric 2-finger parallel gripper EGP
SCHUNK offers more ...

The following components make the product EGP even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.

Options and special information

Manually adjustable gripping force: With an integrated rotary switch, the gripping force can be adjusted in two stages for the EGP 25 to 100% and 50%, and in four stages for EGP 40, 50 and 64 to 100%, 75%, 50%, and 25%.

Optional status monitoring via external sensor system: The status of the gripper can be monitored by external sensors.

Optional adapter plates: Space saving, front-end fastening of the gripper is enabled by optional adapter plates.

KA connection cable: Connection cables with an angled or a straight female connector can be ordered in various lengths to connect the gripper with the power supply and higher-level control system.

Speed version S: for faster closing and opening times due to the use of a different gear ratio. The option of a gripping force adjustment is no longer available.

Version with IO-Link: The integration of IO-Link makes it possible to adjust the gripping force, to pre-position the gripper fingers and to evaluate the gripper status.

For more information on these products can be found on the following product pages or at schunk.com. Please contact us: SCHUNK technical hotline +49-7133-103-2696
## EGP 25

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### Gripping force

<table>
<thead>
<tr>
<th>Finger length [mm]</th>
<th>Gripping force [N]</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td>15</td>
<td>35</td>
</tr>
<tr>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>30</td>
<td>20</td>
</tr>
</tbody>
</table>

### Dimensions and maximum loads

- $M_x$ max. 0.5 Nm
- $M_y$ max. 0.42 Nm
- $M_z$ max. 1.5 Nm
- $F_z$ max. 70 N

The specified torques and forces are static values, apply for each base jaw, and may occur simultaneously. $M_y$ may arise in addition to the moment generated by the gripping force itself.

### Technical data

<table>
<thead>
<tr>
<th>Description</th>
<th>EGP 25-N-N-B</th>
<th>EGP 25-N-S-B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General operating data</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stroke per jaw [mm]</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Min./max. gripping force [N]</td>
<td>20/40</td>
<td>12/12</td>
</tr>
<tr>
<td>Recommended workpiece weight [kg]</td>
<td>0.2</td>
<td>0.07</td>
</tr>
<tr>
<td>Max. permissible finger length [mm]</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>Max. permissible mass per finger [kg]</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Repeat accuracy (gripping) [mm]</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Closing/opening time [s]</td>
<td>0.09/0.09</td>
<td>0.03/0.03</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>0.11</td>
<td>0.12</td>
</tr>
<tr>
<td>Min./max. ambient temperature [°C]</td>
<td>5/55</td>
<td>5/55</td>
</tr>
<tr>
<td>Protection class IP</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Noise emission [dB(A)]</td>
<td>&lt;70</td>
<td>&lt;70</td>
</tr>
<tr>
<td>Dimensions X x Y x Z [mm]</td>
<td>26.5 x 18 x 72.7</td>
<td>27 x 18 x 72.7</td>
</tr>
</tbody>
</table>

| **Electrical operating data**    |              |              |
| Nominal voltage [V]              | 24           | 24           |
| Nominal current [A]              | 0.14         | 0.14         |
| Max. current [A]                 | 1            | 1            |
| Controller electronics           | integrated   | integrated   |
| Communication interface          | Digital inputs | Digital inputs |
| Number of digital I/O            | 21-          | 21-          |
Main view

The drawing shows the basic version of the gripper with open jaws, without dimensional consideration of the options described below.

Maximum permitted finger projection

L\textsubscript{max} is equivalent to the maximum permitted finger length, see the technical data table.
A workpiece, which is gripped using three points of contact, can be reliably gripped with high repeatability. A system with more than three points of contact is overdetermined. The drawing shows two alternative gripper finger designs for coaxial and radial gripping of a cylindrical part.

The speed version S offers reduced closing and opening times by using a different internal gear ratio. The drawing shows the changes in dimension of the speed version in comparison to the basic version illustrated in the main view.

The adapter plate includes an O-ring* for a direct air connection, additional centering sleeves, and screws for mounting the gripper. *Optional only with pneumatic actuators

The adapter plate is a separately ordered, optional accessory.
Finger blanks with BSWS ABR-BSWS-MPG-plus 25

Finger blanks for customized subsequent machining with integrated jaw quick-change system for precise and fast finger changes.

<table>
<thead>
<tr>
<th>Description</th>
<th>ID</th>
<th>Scope of delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finger blank with jaw quick-change system</td>
<td>ABR-BSWS-MPG-plus 25</td>
<td>0302894 2</td>
</tr>
</tbody>
</table>

Finger blanks with BSWS

Included in the scope of delivery

The finger blanks with jaw quick-change system allow fast and manual gripper finger changes. The mechanical interface to the gripper is already integrated. Only the specific workpiece geometry needs to be machined into the finger blank.

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Finger blanks ABR-MPG-plus 25

Fit for centering pins

The drawing shows the finger blank which can be reworked by the customer.

<table>
<thead>
<tr>
<th>Description</th>
<th>ID</th>
<th>Material</th>
<th>Scope of delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finger blank</td>
<td>ABR-MPG-plus 25</td>
<td>0340211 Aluminum</td>
<td>2</td>
</tr>
</tbody>
</table>

Object distance sensor OAS-MPG-plus 25

Object distance sensor for detecting a workpiece and for measuring its distance to the gripper.

<table>
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</tr>
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<tr>
<td>Object distance sensor</td>
<td>OAS-MPG-plus 25</td>
</tr>
</tbody>
</table>
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Object distance sensor

- Cable outlet
- Not included in the scope of delivery

Optical distance and presence sensor for direct mounting to the gripper. One OAS sensor can be attached per gripper.

<table>
<thead>
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<th>Description</th>
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<tbody>
<tr>
<td>Object distance sensor</td>
<td>OAS-MPG-plus 25 0308891</td>
</tr>
<tr>
<td>Evaluation electronics</td>
<td>OAS-V09-D 0308865</td>
</tr>
<tr>
<td></td>
<td>OAS-V10-A 0308867</td>
</tr>
<tr>
<td></td>
<td>OAS-V10-D 0308866</td>
</tr>
</tbody>
</table>

Modular Assembly Automation

- Grippers
- ASG adapter plate
- CLM/KLM/LM/ELP/ELM/ELS/HLM linear modules

Grippers and linear modules can be combined with standard adapter plates from the modular assembly system. For more information see our main catalog “Modular Assembly Automation”.

17 Cable outlet
81 Not included in the scope of delivery
IN 40 inductive proximity switches

Directly mounted end position monitoring.

Description | ID | Often combined
--- | --- | ---
Inductive proximity switches | | |
IN 40-S-M12 | 0301574 | |
IN 40-S-M8 | 0301476 | ●
INK 40-S | 0301555 | |
Cable extension | | |
KV BG12-SG12 3P-0030-PNP | 0301999 | |
KV BG12-SG12 3P-0060-PNP | 0301998 | |
KV BW08-SG08 3P-0030-PNP | 0301495 | |
KV BW08-SG08 3P-0100-PNP | 0301496 | |
KV BW08-SG08 3P-0200-PNP | 0301497 | ●
KV BW12-SG12 3P-0030-PNP | 0301595 | |
KV BW12-SG12 3P-0100-PNP | 0301596 | |
KV BW12-SG12 3P-0200-PNP | 0301597 | |
Clip for plug/socket | | |
CLI-M12 | 0301464 | |
CLI-M8 | 0301463 | |
Connection cables | | |
KA BG08-L 4P-0500 | 0307767 | 5 | ●
KA BG08-L 4P-1000 | 0307768 | 10 | ●
KA BW08-L 4P-0500 | 0307765 | 5 | |
KA BW08-L 4P-1000 | 0307766 | 10 | |

Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available.

Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.
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Jens Lehmann, German goalkeeper legend, SCHUNK brand ambassador since 2012 for safe, precise gripping and holding.

schunk.com/Lehmann