Product Information

Rotary gripping module with parallel gripper EGS
EGS
Rotary gripping module with parallel gripper


Gripper swivel Module EGS
Electric, 2-finger, parallel gripper swivel module with smoothly running base jaws guidance 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
Control via digital I/O for easy commissioning and rapid integration into existing systems
Almost no wear parts for high machine uptime and low operating costs
Small required space as the rotary drive and gripper are merged in one compact module
Two to four stage adjustable gripping force for simple adaption to sensitive workpieces
Four stage adjustable rotational speed for high flexibility in cycle times
Very high maximum cycles per minute for highest productivity
Backlash-free, pre-loaded cross roller guide for precise gripping with nearly constant force for all permissible finger lengths
Standardized mounting bores for numerous combinations with other components from the modular system

Sizes
Quantity: 2

Weight
0.45 .. 1.2 kg

Gripping force
30 .. 140 N

Stroke per jaw
3 .. 6 mm

Torque
0.04 .. 0.115 Nm
Functional description

The gripper swivel module has two stationary brushless servomotor drives. The outer motor rotates the gripper. The inner motor drives the base jaw of the gripper. The jaw stroke is synchronized by a rack and pinion kinematic.

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. **Sensor system**
   Inductive monitoring of swiveling and gripping movement

4. **Drives**
   Brushless DC servomotors

5. **Control electronics**
   Integrated control and power electronics for decentralized actuation of the servomotors

6. **Patented gear coupling**
   Endless rotation without an electric feed-through
EGS
Rotary gripping module with parallel gripper

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 servomotors

**Warranty:** 24 months

**Scope of delivery:** Enclosed pack with centering sleeves, mount for proximity switch, assembly and operating manual with Declaration of Incorporation.

**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:** is defined as a distribution of the end Position for 100 consecutive strokes.

**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, opening and swiveling times:** are pure movement times of the module. PLC reaction times are not included and have to be considered when the cycle times are determined.

Application example

Electrically driven pick & place unit with gripper swivel module for simultaneous turning and shifting of electronic components.

1. Pillar assembly system
2. Electric linear module ELP
3. Electric gripper swivel module EGS
4. Universal rotary module ERS
SCHUNK offers more ...

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

Linear module
Pick & Place Unit
Gripper for small components
Pillar assembly system
Connection cables
Inductive proximity switches
Finger blank

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

Options and special information

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

**Manually adjustable rotational speed:** With an integrated rotary switch, the rotational speed can be adjusted in four stages – 100%, 75%, 50%, and 25%.

**Optional status monitoring via external sensor system:** The status of the gripping and swiveling movements can be monitored by external sensors.

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

**Description**

EGS 25-N-N-B

**ID**

0310820

**General operating data**

- **Stroke per jaw (mm):** 3
- **Min./max. gripping force (N):** 15/30
- **Nominal torque (Nm):** 0.04
- **Min./max. angle of rotation (°):** 30/270
- **Recommended workpiece weight (kg):** 0.15
- **Max. permissible finger length (mm):** 32
- **Max. permissible mass per finger (kg):** 0.02
- **Max. mass moment of inertia (kgmm²):** 50
- **Repeat accuracy for gripping (mm):** ±0.2
- **Repeat accuracy for swiveling (°):** ±0.5
- **Closing/opening time (s):** 0.05/0.05
- **Weight (kg):** 0.45
- **Min./max. ambient temperature (°C):** 5/55
- **Protection class IP:** 30

**Electrical operating data**

- **Controller electronics integrated:**
- **Nominal voltage (V):** 24
- **Nominal current (A):** 0.8
- **Max. current (A):** 1.2
- **Communication interface:** Digital inputs

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.

*The diagram is valid for applications with vertical rotary axis or for absolutely centric loads with horizontal rotary axis. We will gladly support you in designing further applications.*
The drawing shows the basic version of the gripper with open jaws, without dimensional consideration of the options described below.

Maximum permitted finger projection

$L_{max}$ 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 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.
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".

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<tr>
<th>Description</th>
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Four sensors (closer/S) are required for each unit and extension cables are available as an option. For sensor cables, note the minimum permissible bending radii. These are generally 35 mm.
The connection cable is ideal for connecting the corresponding components to the controller or the power supply unit. The connection cable has a 4-pin M8 socket on one side and an open wire strand on the other side for individual connections. The connection cables are suitable for use both in the cable track as well as in torsion applications.

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Please observe the min. bending radius for cable track-compatible cables or the max. torsion angle for torsion-compatible cables. These are generally 10 times the cable diameter or +/- 180°/m.
EGS 40
Rotary gripping module with parallel gripper

Gripping force

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<th>Finger length [mm]</th>
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Swiveling time* 180°

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<th>Swiveling time [s]</th>
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Dimensions and maximum loads

- $M_x$ max. 1.5 Nm
- $M_y$ max. 2 Nm
- $M_z$ max. 4 Nm
- $F_z$ max. 170 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.

Technische Daten

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General operating data

- Stroke per jaw [mm]: 6
- Min./max. gripping force [N]: 35/140
- Nominal torque [Nm]: 0.115
- Min./max. angle of rotation [°]: 30/270
- Recommended workpiece weight [kg]: 0.55
- Max. permissible finger length [mm]: 50
- Max. permissible mass per finger [kg]: 0.08
- Max. mass moment of inertia [kgmm²]: 180
- Repeat accuracy for gripping [mm]: 0.02
- Repeat accuracy for swiveling [°]: ±0.5
- Closing opening time [s]: 0.16/0.16
- Weight [kg]: 1.2
- Min./max. ambient temperature [°C]: 5/55
- Protection class IP: 30
- Noise emission [dB(A)]: <70
- Dimensions X x Y x Z [mm]: 101.4 x 64 x 127.3

Electrical operating data

- Controller electronics: integrated
- Nominal voltage [V]: 24
- Nominal current [A]: 1
- Max. current [A]: 2
- Communication interface: Digital inputs

* The diagram is valid for applications with vertical rotary axis or for absolutely centric loads with horizontal rotary axis. We will gladly support you in designing further applications.
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_{\text{max}} is equivalent to the maximum permitted finger length, see the technical data table.
Jaw design

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.

Finger blanks with BSWS

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.

Finger blanks with BSWS ABR-BSWS-MPG-plus 40

Finger blanks ABR-MPG-plus 40

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

Rotary gripper module
ASG adapter plate

CLM/KLM/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".

Inductive Proximity Switches

Four sensors (closers/S) are required for each unit and extension cables are available as an option. For sensor cables, note the minimum permissible bending radii. These are generally 35 mm.
The connection cable is ideal for connecting the corresponding components to the controller or the power supply unit. The connection cable has a 4-pin M8 socket on one side and an open wire strand on the other side for individual connections. The connection cables are suitable for use both in the cable track as well as in torsion applications.

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