

Smooth. Slim. Flexible.

EVG Universal Gripper

Servo-electric 2-finger parallel gripper with highly precise gripping force control and long stroke

Field of Application

All-purpose, ultra-flexible gripper for great part variety and sensitive components in clean environments

Advantages – Your benefit

Gripping force control in the range of 24 N – 57 N for the delicate gripping of sensitive workpieces

Large stroke of 50 mm for flexible workpiece handling

Pre-positioning capability to reduce cycle times through a short working stroke

With external electronics for simple integration into existing servo-controlled concepts via Profibus-DP, or CAN bus

Profiled rail guide for the precise handling of all kinds of workpieces



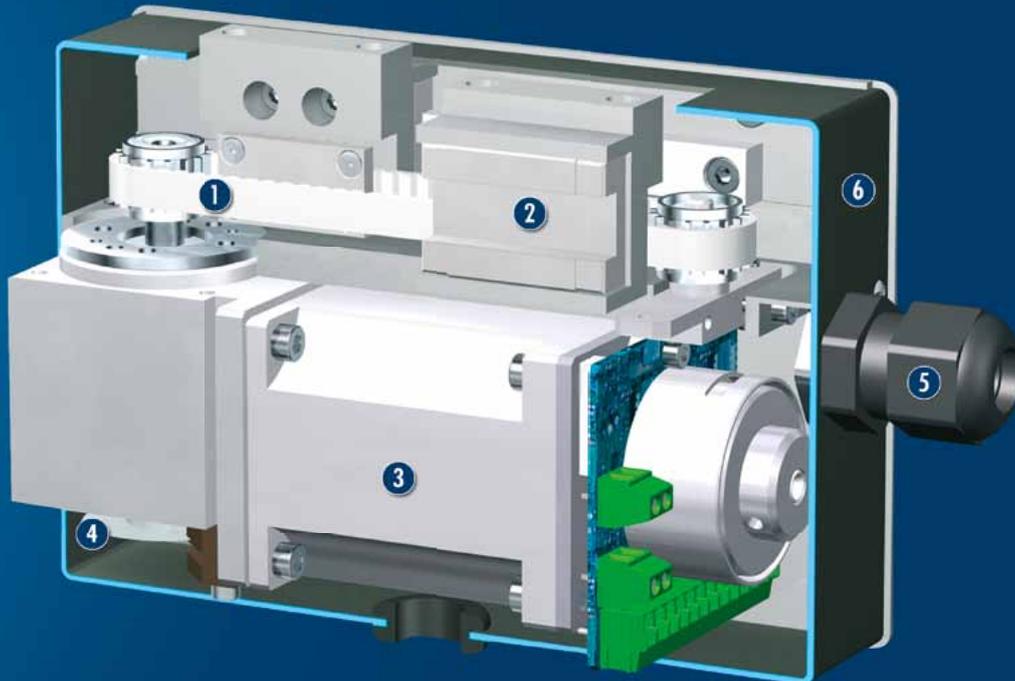
 <p>Sizes Quantity: 2</p>	 <p>Weight 0.79 .. 1.1 kg</p>	 <p>Gripping force 24 .. 57 N</p>	 <p>Stroke per jaw 20 .. 50 mm</p>	 <p>Workpiece weight 0.12 .. 0.28 kg</p>
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Functional Description

The brushless servo motor drives the toothed belt drive via the bevel gear. The base jaws mounted on the profiled rail guides are connected to the toothed belt. The rotary

movement is transferred into a linear movement of the base jaws via the gear and the toothed belt.



- ① **Kinematics**
Scope-free, robust toothed belt drive with steel reinforcement
- ② **Profiled rail guide**
for precise gripping with minimum play, smooth running gripping and low frictional loss
- ③ **Drive**
Brushless DC servo motor with hall sensor and bevel gear, incl. holding brake (only stroke variant 100)
- ④ **Encoder**
for gripper positioning and position evaluation
- ⑤ **Cable outlet**
with connection cable to MCS-06 controller
- ⑥ **Housing**
Weight-optimized through application of high-strength aluminum alloy

CAD data, operating manuals and other current product documents are available at www.schunk.com

General Notes about the Series

Operating principle: belt drive

Housing material: Aluminum alloy, DNC coating

Base jaw material: Aluminum alloy, anodized

Actuation: servo-electric, via brushless DC servomotor

Warranty: 24 months (details, general terms and conditions and operating manuals can be downloaded at www.schunk.com)

Scope of delivery: Enclosed pack with centering sleeve, assembly and operating manual with declaration of incorporation. An external MCS-06 controller is required for operation of the EVG gripper. The connection cable with a length of 3 metres is attached to the gripper. The controller is optionally available and not included in the scope of delivery.

Gripping force: is the arithmetic total of the gripping force applied to each gripper jaw at distance P (see illustration).

Finger length: is measured from the upper edge of the gripper housing in the direction of the main axis. The breach of the max. permitted finger length can bring higher abrasion.

Repeat accuracy: is defined as the spread of the limit position after 100 consecutive strokes.

Workpiece weight: is calculated for a force-fit connection with a coefficient of friction of 0.1 and a safety factor of 2 against slippage of the workpiece on acceleration due to gravity g. Considerably heavier workpiece weights are permitted with form-fit gripping.

Closing and opening times: Minimum closing and opening times are only the movement times of the base jaws at max. speed, max. acceleration without electrical restrictions (maximum current) and observance of the maximum permissible mass per finger.

Nominal currents: may be permanently applied. The information in the respective product documentation must be observed for all current levels beyond the rated current up to the maximum current.

Application example

Rotate-grip combination with two sensitive servo-electric parallel grippers for flexible handling of sensitive workpieces

- ① PRH servo-electric Rotary Module
- ② EVG servo-electric 2-Finger Parallel Gripper



SCHUNK offers more ...

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



Centering Sleeves



Control Unit



PG servo-electric 2-Finger Parallel Gripper



PR Rotary Unit electric



PRH Rotary Actuator



PW electrical Rotary Pan-tilt Actuator



PDU Rotary Unit electric



PSM servo-electric Drive



ERS Rotary Actuator

① Further information regarding the products can be found on the following product pages or at www.schunk.com. Please contact us for further information: SCHUNK technical hotline +49-7133-103-2696

Options and special Information

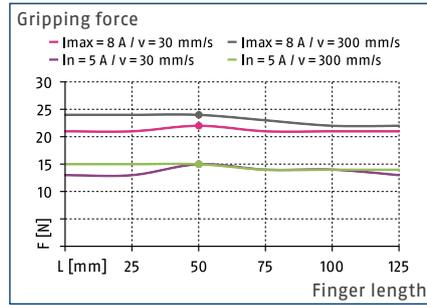
Control via external MCS-06 controller: The electrical control of the gripper takes place via the separately available MCS controller. Connection of the controller to the superordinate servo controlled concept can take place via Profibus or CAN bus. Both connection interfaces assure simple integration into the superordinate control system and enable the design of industrial bus topologies.

EVG 55-40

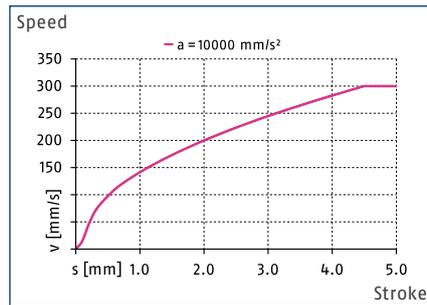
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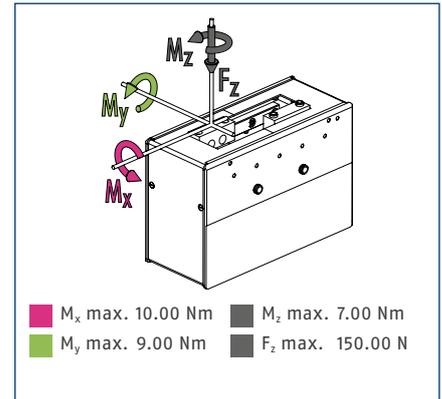
Gripping force



Speed



Finger load

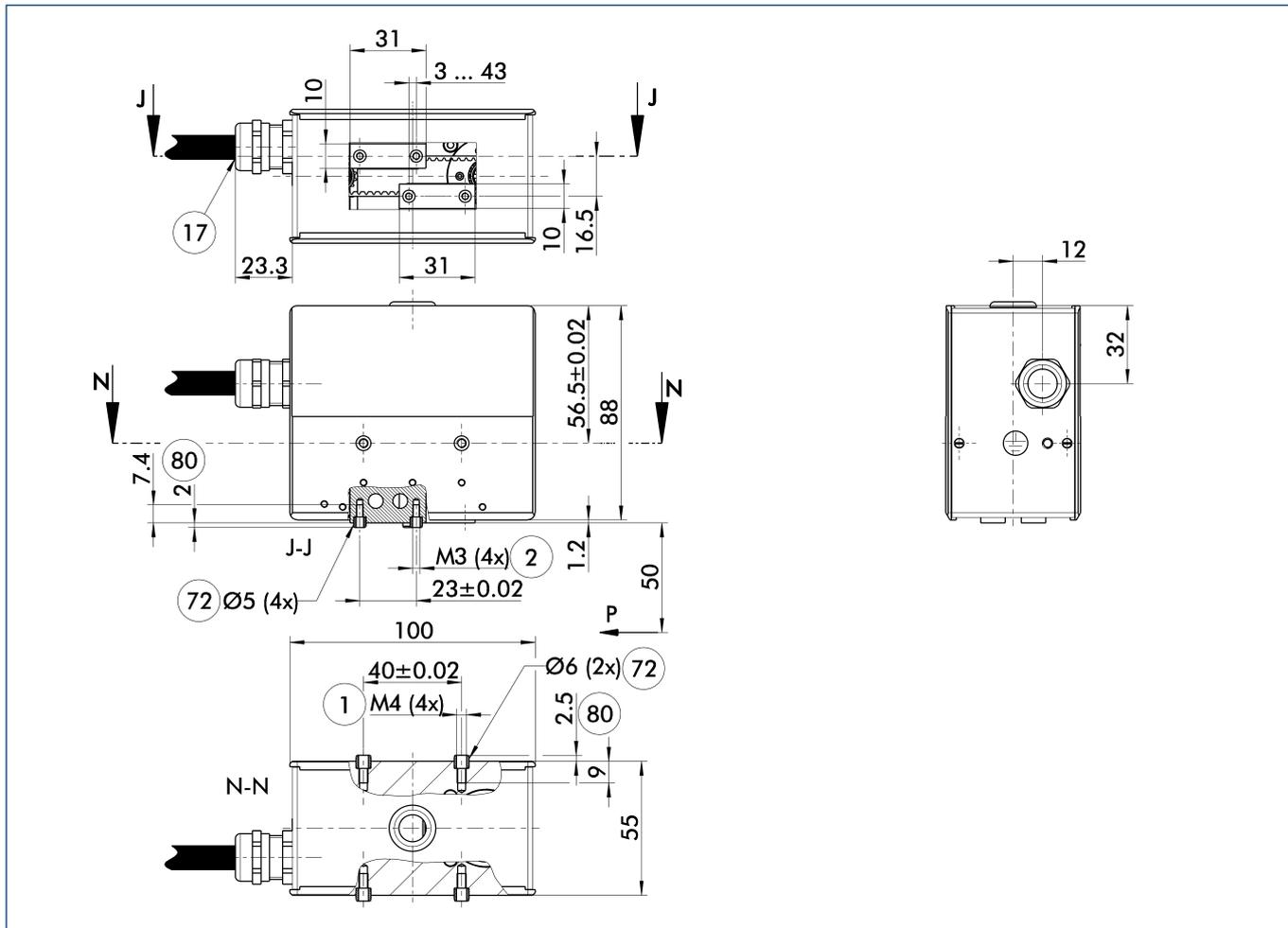


① The specified torques and forces are static values, apply for each base jaw, and may occur simultaneously. M_y may occur in addition to the torque generated by the gripping force.

Technical data

Description	EVG 55-40	
ID	0306020	
General operating data		
Stroke per jaw	[mm]	20
min. / max. gripping force	[N]	5/24
Recommended workpiece weight	[kg]	0.12
max. permitted finger length	[mm]	125
max. permitted weight per finger	[kg]	0.1
Repeat accuracy	[mm]	±0.05
Closing- / opening time	[s]	0.6/0.6
max. speed	[mm/s]	300
max. acceleration	[mm/s²]	10000
Weight	[kg]	0.79
min. / max. ambient temperature	[°C]	5/55
IP class	20	
Electrical operating data		
Controller electronics	external	
Controller type	MCS-06	
Nominal voltage	[V DC]	24
Nominal current	[A]	5
max. power supply	[A]	8
Communication interface	see MCS controller	

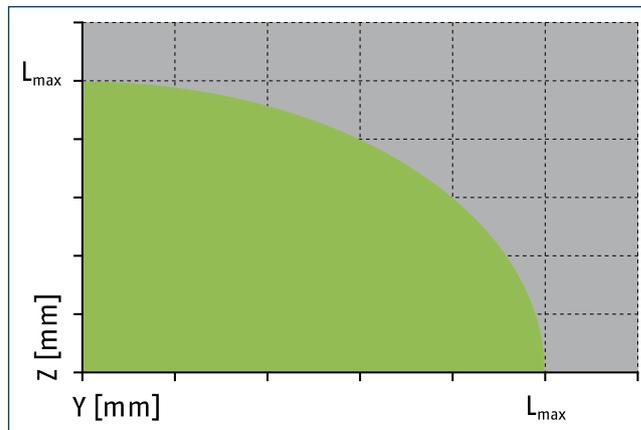
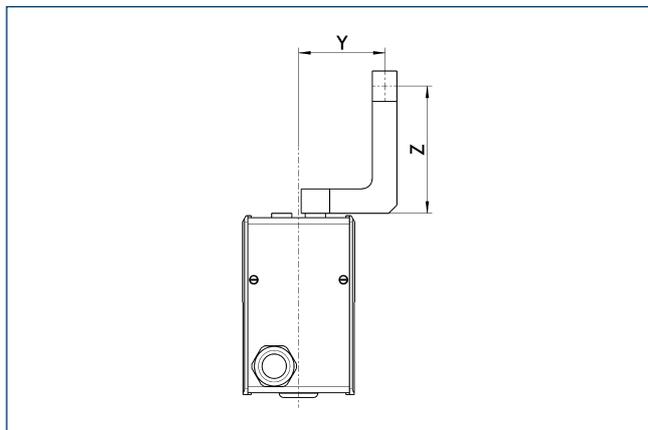
Main view



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

- ① Gripper connection
- ② Finger connection
- ①⑦ Cable outlet
- ⑦② Fit for centering sleeves
- ⑧① Depth of the centering sleeve hole in the mating part

Maximum permitted finger projection



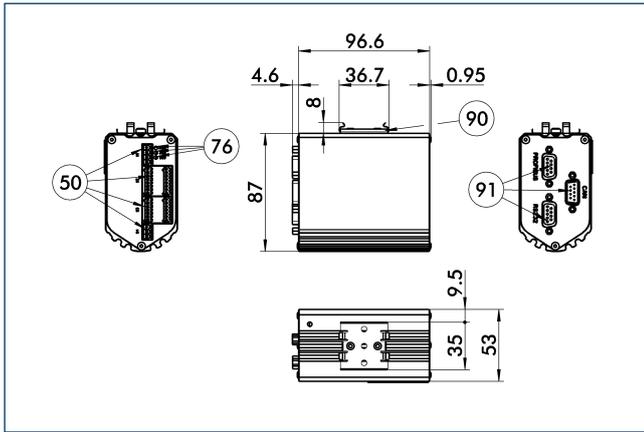
■ Permitted range ■ Inadmissible range

L_{max} is equivalent to the maximum permitted finger length, see the chart of technical specifications.

EVG 55-40

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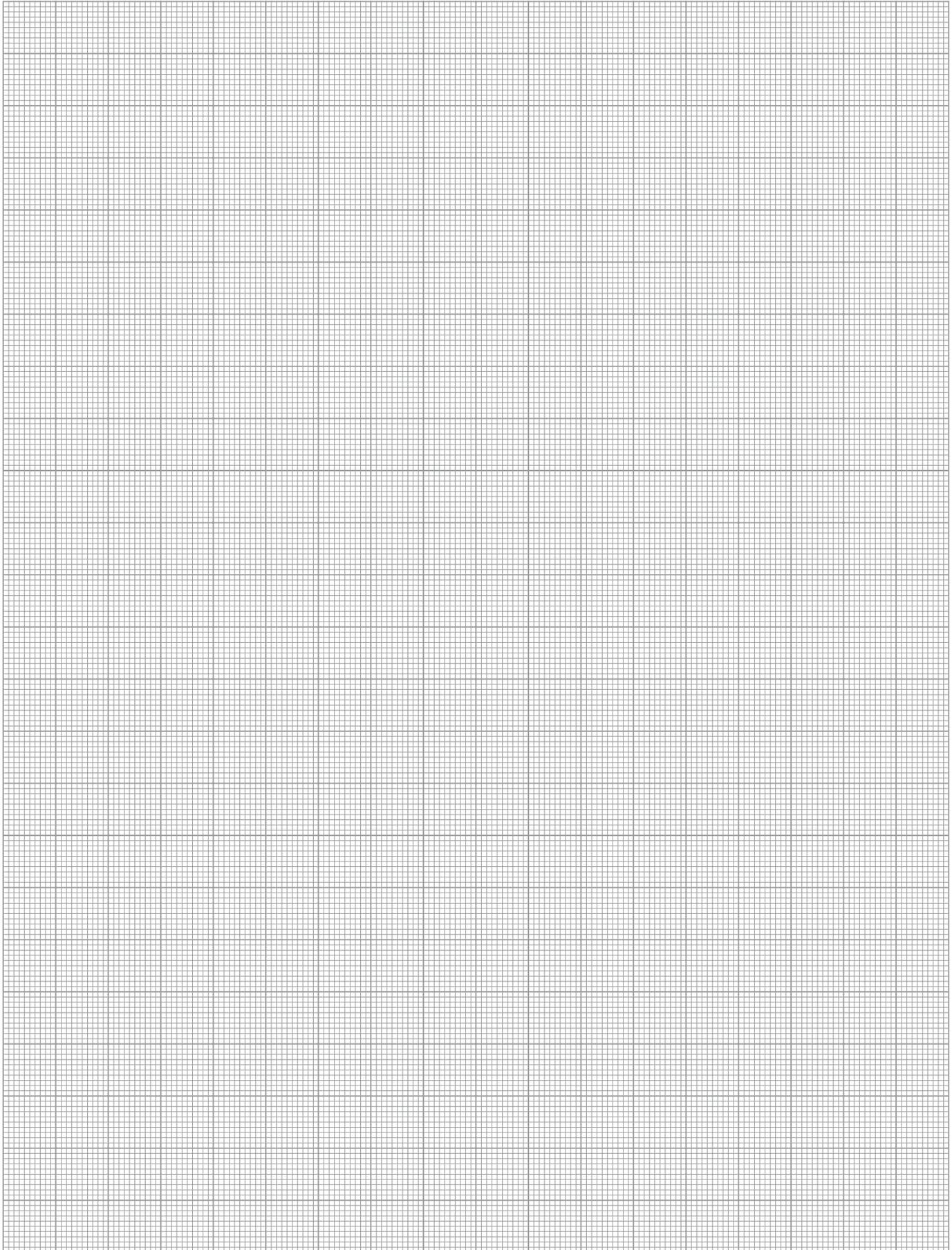
MCS motor controller



- ⑤⑩ Electrical connection
- ⑦⑥ LED
- ⑨⑩ Spring clip for top-hat rail
- ⑨① Communication interface

The MCS-06 controller is matched to the gripper EVG and is preconfigured for it. The MCS-06 is equipped with communication interfaces Profibus and CAN bus. Moreover, a RS232 interface is available for further possibilities of parameterization.

Description	ID	
Motor controller		
MCS-06 (EVG55-040)	0306030	

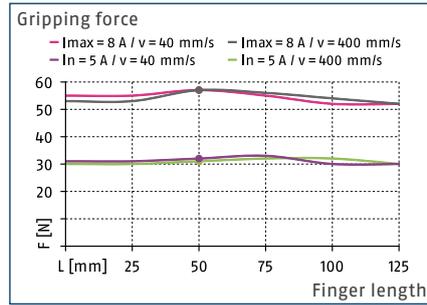


EVG 55-100

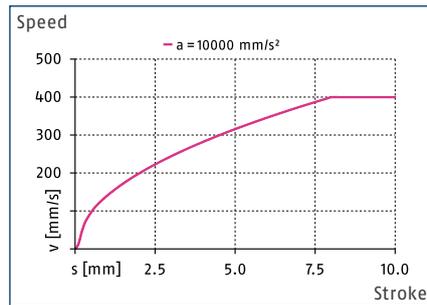
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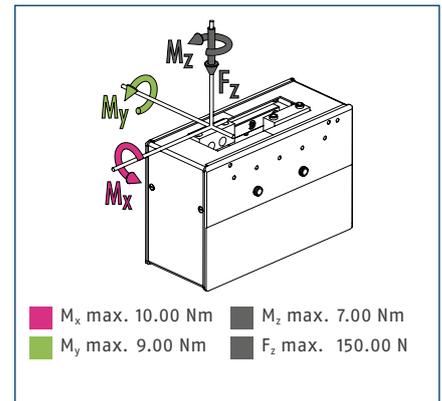
Gripping force



Speed



Finger load

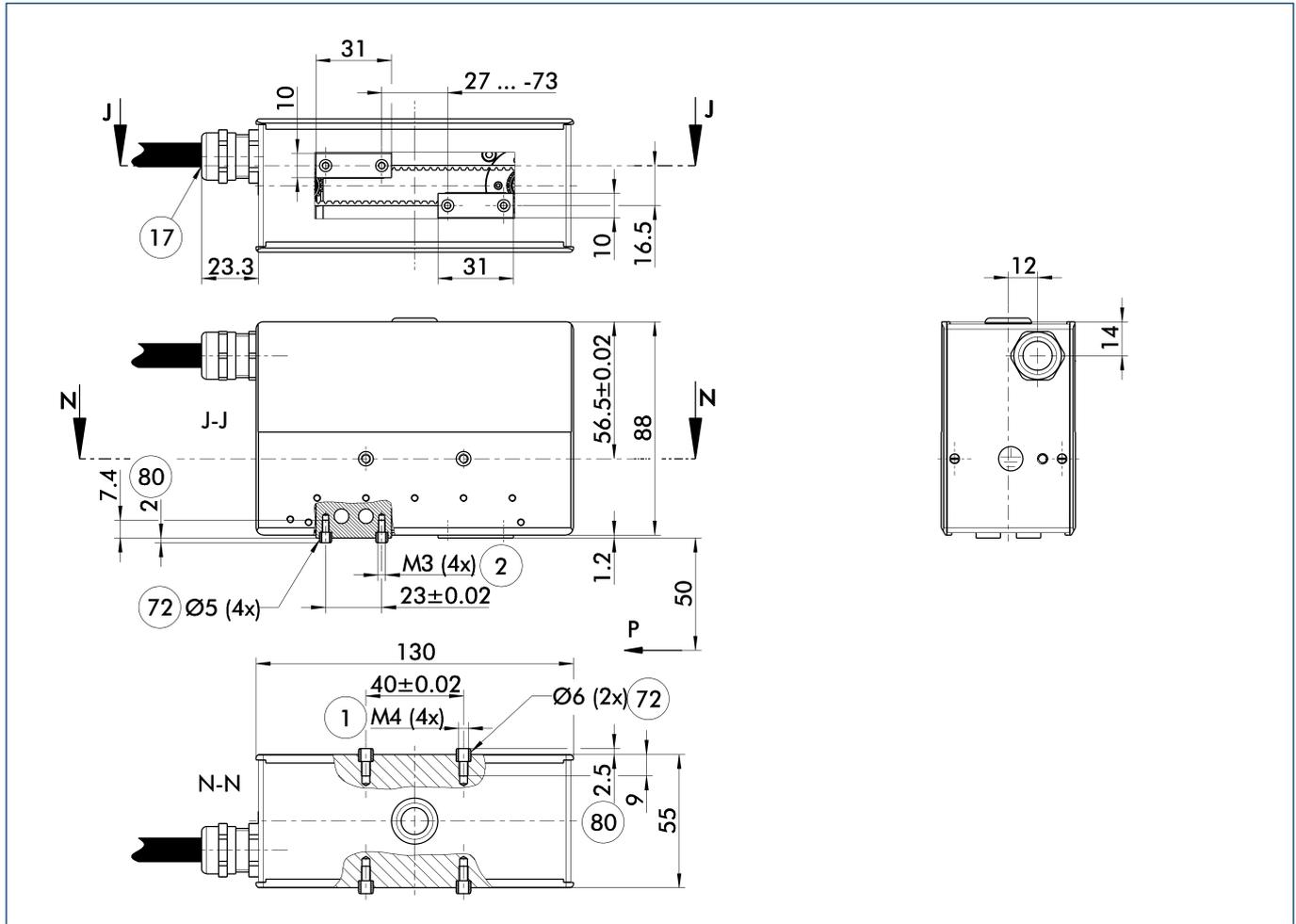


① The specified torques and forces are static values, apply for each base jaw, and may occur simultaneously. M_y may occur in addition to the torque generated by the gripping force.

Technical data

Description		EVG 55-100
ID		0306025
General operating data		
Stroke per jaw	[mm]	50
min. / max. gripping force	[N]	5/57
Recommended workpiece weight	[kg]	0.28
max. permitted finger length	[mm]	125
max. permitted weight per finger	[kg]	0.1
Repeat accuracy	[mm]	±0.05
Closing- / opening time	[s]	1.5/1.5
max. speed	[mm/s]	400
max. acceleration	[mm/s²]	10000
Weight	[kg]	1.1
min. / max. ambient temperature	[°C]	5/55
IP class		20
Electrical operating data		
Controller electronics		external
Controller type		MCS-06
Nominal voltage	[V DC]	24
Nominal current	[A]	5
max. power supply	[A]	8
Communication interface		see MCS controller

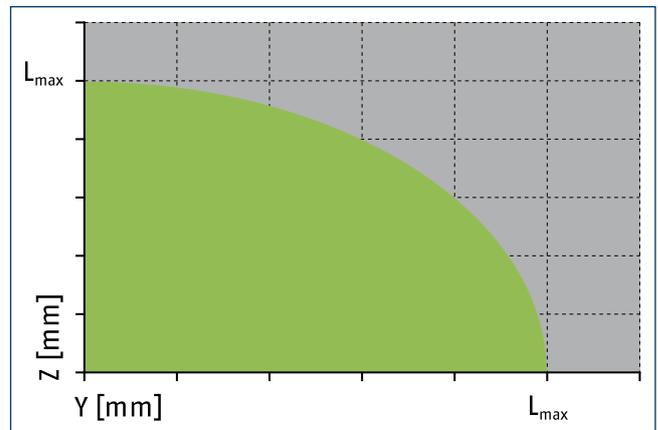
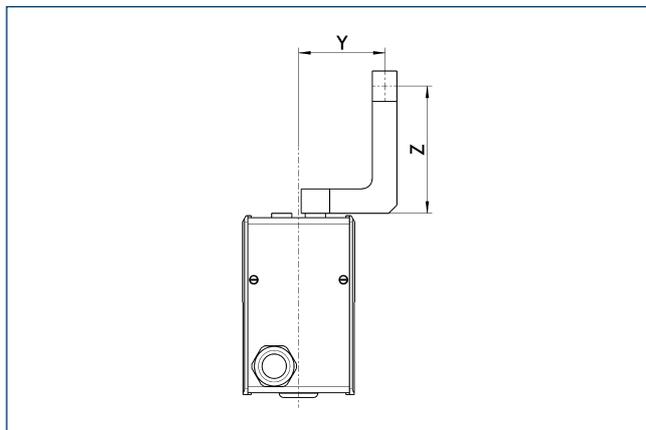
Main view



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

- ① Gripper connection
- ② Finger connection
- ①⑦ Cable outlet
- ⑦② Fit for centering sleeves
- ⑧① Depth of the centering sleeve hole in the mating part

Maximum permitted finger projection



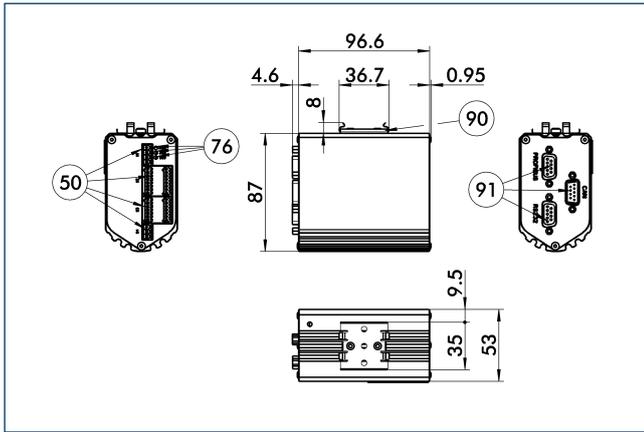
■ Permitted range ■ Inadmissible range

L_{max} is equivalent to the maximum permitted finger length, see the chart of technical specifications.

EVG 55-100

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MCS motor controller



- ⑤⑩ Electrical connection
- ⑦⑥ LED
- ⑨⑩ Spring clip for top-hat rail
- ⑨① Communication interface

The MCS-06 controller is matched to the gripper EVG and is preconfigured for it. The MCS-06 is equipped with communication interfaces Profibus and CAN bus. Moreover, a RS232 interface is available for further possibilities of parameterization.

Description	ID	
Motor controller		
MCS-06 (EVG55-100)	0306031	

