



Superior Clamping and Gripping



Product Information

Universal gripper WSG

Bus capable. Compact. Flexible.

Universal gripper WSG

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

Field of application

Versatile, highly flexible gripper for great part variety and sensitive components in clean environments

Advantages – Your benefits

Gripping force control for the delicate gripping of sensitive workpieces

Long stroke for flexible workpiece handling

Fully integrated control and power electronics for creating a decentralized control system

Versatile actuation options for simple integration into existing control concepts via EtherNet TCP/IP, PROFIBUS-DP or PROFINET

Integrated plug connector in the base jaws for connection of the optionally available top fingers with integrated strain gauges for direct internal force regulation

Integrated web server for parameterization and diagnostics with any standard web browser

Integrated memory card for storage of parameters, documentation, and value adoption for gripper exchange, available for sizes 32 and 50



Sizes
Quantity: 3



Weight
0.32 .. 1.6 kg



Gripping force
20 .. 80 N



Stroke per jaw
32 .. 105 mm

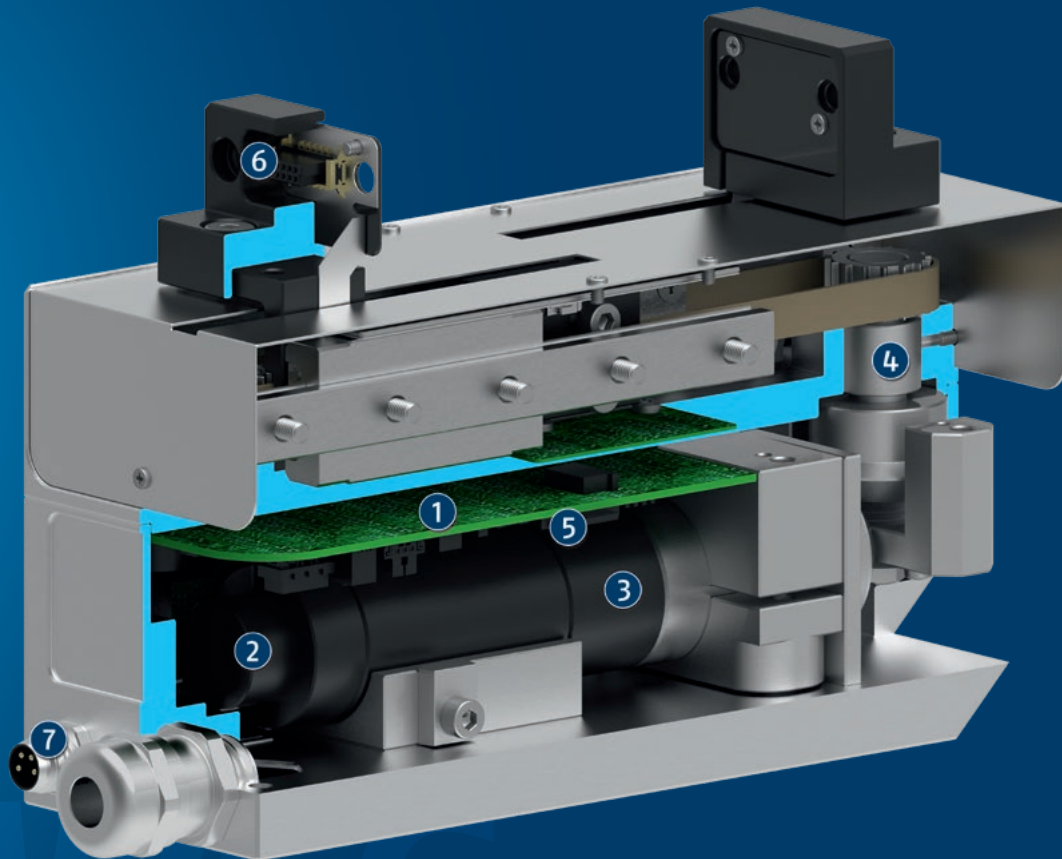


Workpiece weight
0.1 .. 0.4 kg

Functional description

The brushless servomotor 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 **Integrated electronics**
Integrated control and power electronics for decentralized control of the servomotor
- ② **Encoder**
for gripper positioning and position evaluation
- ③ **Drive**
DC servomotor
- ④ **Belt drive**
force transmission from the servomotor to the toothed belt
- ⑤ **Micro SD card**
for storing documentations and parameters
- ⑥ **Integrated plug connector**
for connection of top fingers with integrated sensor electronics
- ⑦ **Electrical connection**
for connection of power supply and communication

General notes about the series

Operating principle: Linear guidance with belt drive

Housing material: Aluminum alloy, coated

Base jaw material: Aluminum alloy, anodized

Warranty: 24 months

Scope of delivery: DVD with assembly and operating manual, and declaration of incorporation. The WSG 25 is supplied with a hybrid cable that transmits the power supply and communication. The power supply is connected via open wires, communication via RJ45 connectors. The WSG 32 and 50 each include a built-in memory card and a programming cable with RJ45 connector. A power cable is required for the voltage supply for operation of the gripper in sizes 32 and 50. This is not included and has to be ordered separately.

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

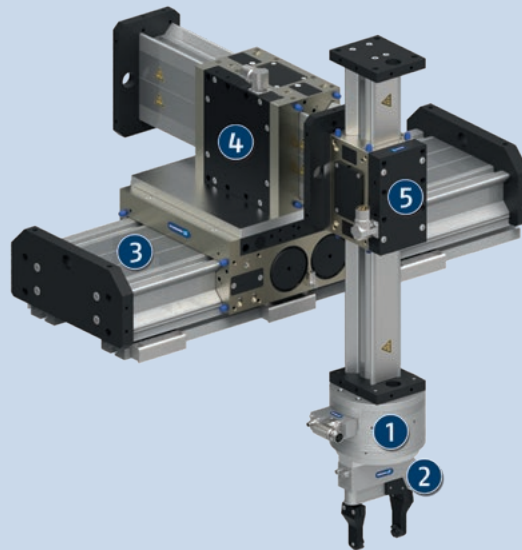
Finger length: is measured from the reference surface as the distance P in direction to the main axis.

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 and opening times: Minimum closing and opening times are merely the movement times of the base jaws or fingers at max. speed, max. acceleration, without current limitation (maximum current), and observance of the maximum permissible mass per finger.

Nominal currents: can be permanently actuated. With regard to all the currents which are ranging above the nominal current up to the maximum current, the notes of the individual product documentation has to be respected.



Application example

Electrically driven high-speed gantry for palletizing and depalletizing and re-orientation of different and sensitive components.

- ① Universal rotary module ERS
- ② Universal gripper WSG
- ③ Universal linear module LDT

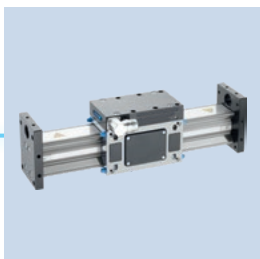
- ④ Universal linear module LDM
- ⑤ Universal linear module LDN

SCHUNK offers more ...

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



Rotation unit



Linear module



Quick change system



Fingers for WSG



Power cable

① 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

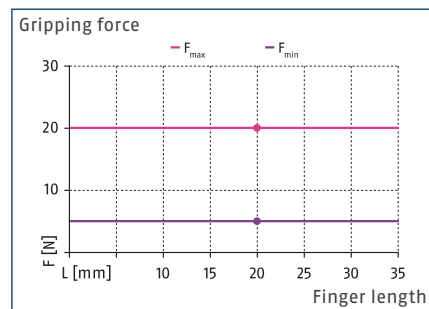
Options and special information

Integrated electronics: The electric actuation of the WSG gripper is carried out by the fully integrated control and power electronics. Hence, the module does not require any additional external control units.

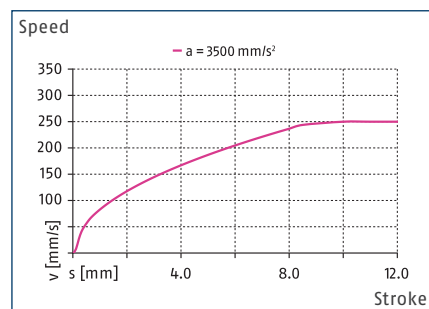
Versatile actuation options: A wide range of interfaces are available for communication such as Ethernet TCP/IP, PROFIBUS-DP or PROFINET. This enables the assembly of industrial bus networks and ensures simple integration into existing control concepts. We offer various cables for transmission of power supply and data communications.



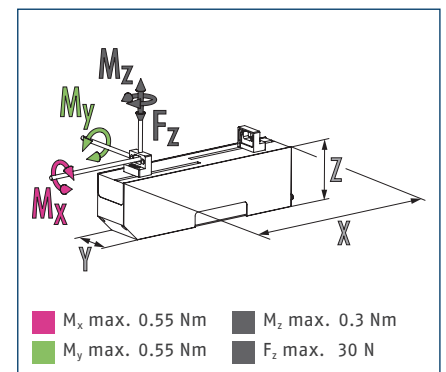
Gripping force O.D. gripping



Speed



Dimensions and maximum loads

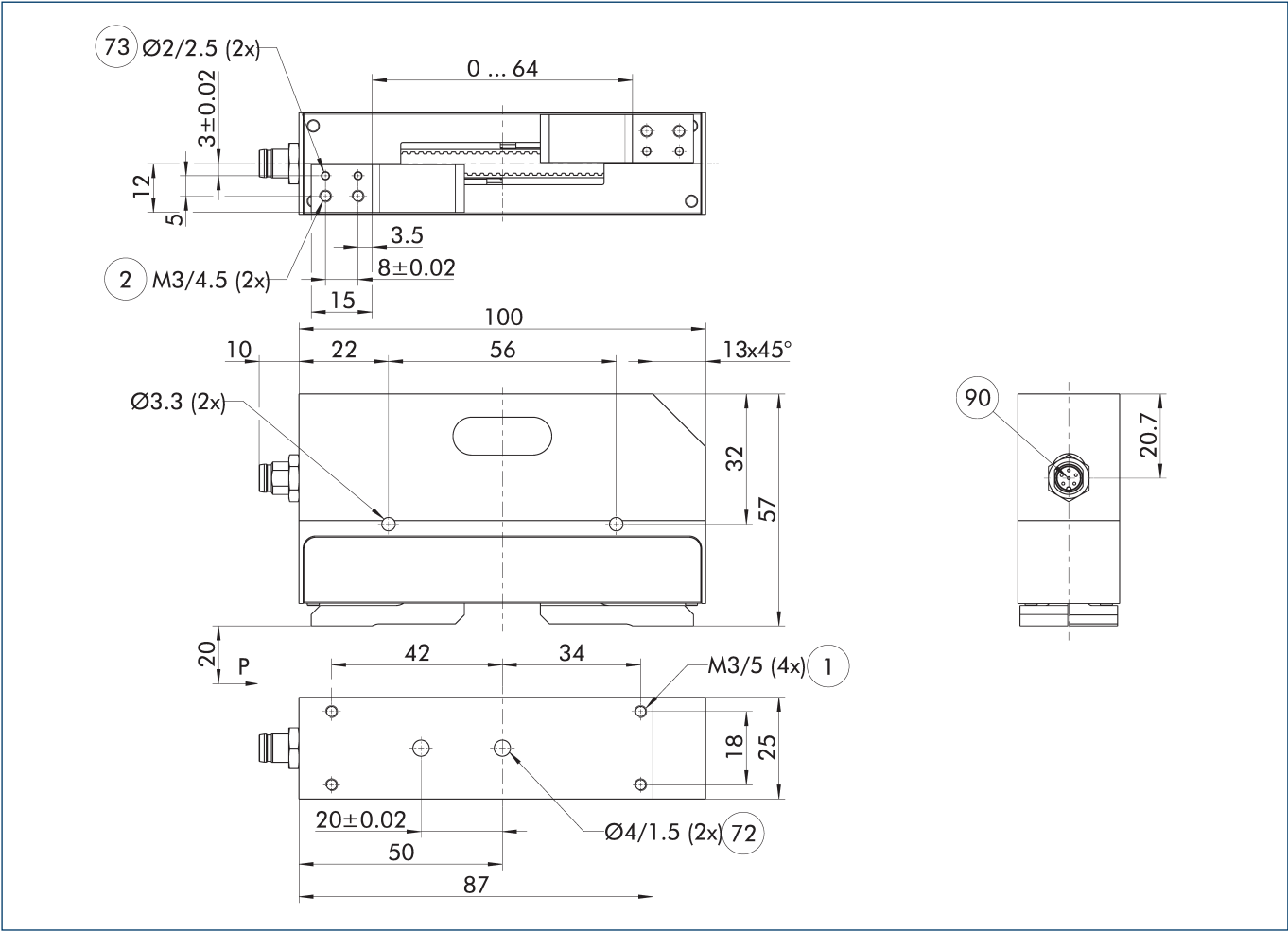


① The indicated moments and forces are static values, apply for each base jaw and should not appear simultaneously. Loads may additionally occur to the moment produced by the gripping force itself.

Technical data

Characterization		WSG 025-64-B
ID		0306170
General operating data		
Stroke per jaw	[mm]	32
Min./max. gripping force	[N]	5/20
Recommended workpiece weight	[kg]	0.1
Max. permissible finger length	[mm]	40
Max. permissible mass per finger	[kg]	0.022
Repeat accuracy	[mm]	±0.03
Max. speed	[mm/s]	250
Max. acceleration	[mm/s²]	3500
Weight	[kg]	0.32
Min./max. ambient temperature	[°C]	5/50
Protection class IP		20
Dimensions X x Y x Z	[mm]	100 x 25 x 57
Electrical operating data		
Nominal voltage	[V DC]	24
Nominal current	[A]	0.3
Max. current	[A]	0.7
Controller electronics		integrated
Communication interface		EtherNet TCP/IP
Parametrized interface		EtherNet TCP/IP

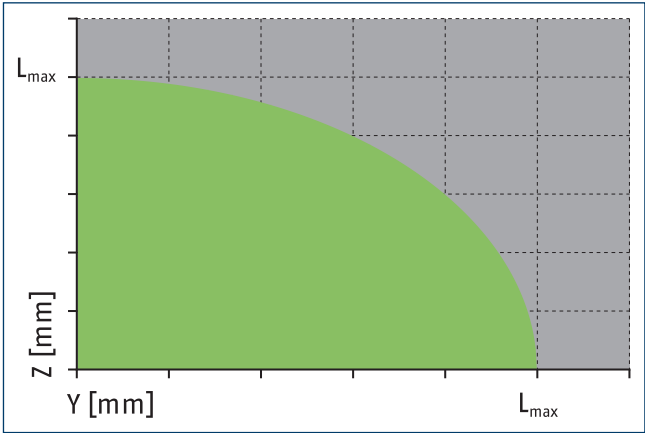
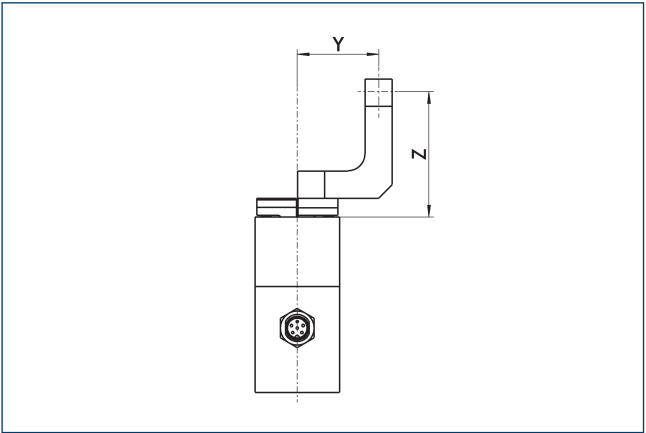
Main view



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
- ⑦② Fit for centering sleeves
- ⑦③ Fit for centering pins
- ⑨⑦ Connection power supply and communication

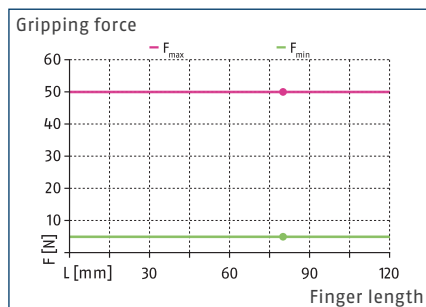
Maximum permitted finger projection



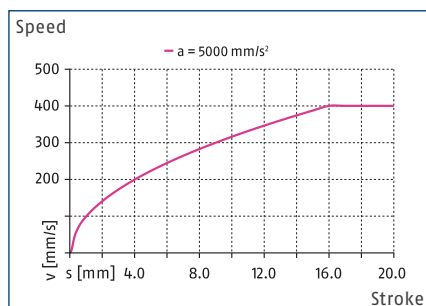
■ Permitted range ■ Inadmissible range
 L_{max} is equivalent to the maximum permitted finger length, see the technical data table.



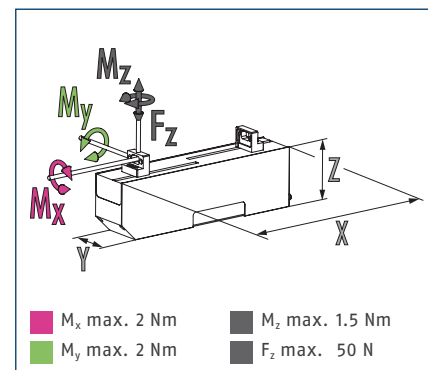
Gripping force O.D. gripping



Speed



Dimensions and maximum loads



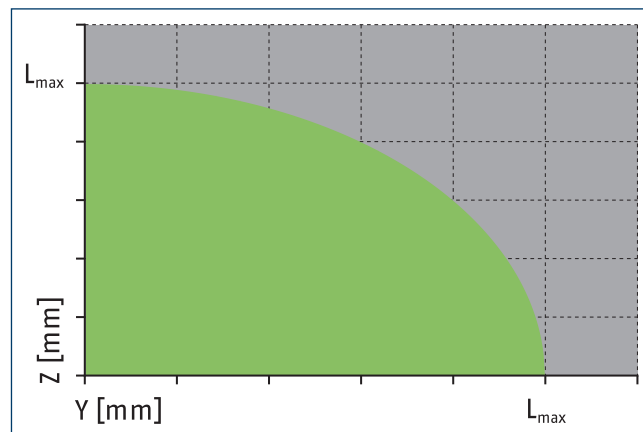
① The indicated moments and forces are static values, apply for each base jaw and should not appear simultaneously. Loads may additionally occur to the moment produced by the gripping force itself.

Technical data

Characterization		WSG 032-068-B	WSG 032-068-P
ID		0306130	0306132
General operating data			
Stroke per jaw	[mm]	34	34
Min./max. gripping force	[N]	5/50	5/50
Recommended workpiece weight	[kg]	0.175	0.175
Max. permissible finger length	[mm]	120	120
Max. permissible mass per finger	[kg]	0.1	0.1
Repeat accuracy	[mm]	±0.03	±0.03
Max. speed	[mm/s]	400	400
Max. acceleration	[mm/s²]	5000	5000
Weight	[kg]	0.55	0.55
Min./max. ambient temperature	[°C]	5/50	5/50
Protection class IP		40	40
Dimensions X x Y x Z	[mm]	118 x 32 x 60.5	118 x 32 x 60.5
Electrical operating data			
Nominal voltage	[V DC]	24	24
Nominal current	[A]	0.75	0.75
Max. current	[A]	1.6	1.6
Controller electronics		integrated	integrated
Communication interface		EtherNet TCP/IP	EtherNet TCP/IP, PROFINET
Parametrized interface		EtherNet TCP/IP	EtherNet TCP/IP

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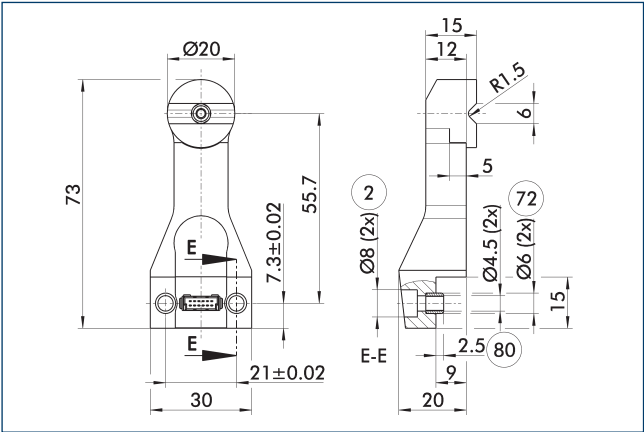
- ① Gripper connection
- ② Finger connection
- ②④ Bolt circle
- ⑦② Fit for centering sleeves
- ⑨① Integrated plug connector for top jaws
- ⑨① Connection power supply
- ⑨② Connection Ethernet communication (optional PROFINET)



■ Permitted range ■ Inadmissible range

$L^{\max}$ is equivalent to the maximum permitted finger length, see the technical data table.

Attachment fingers for WSG



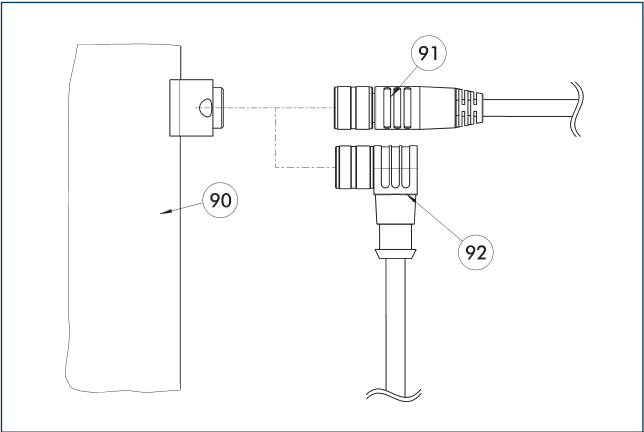
- ② Finger connection
- ⑦② Fit for centering sleeves
- ⑧① Depth of the centering sleeve hole in the counter part

The attachment fingers are optionally available with (DV) or without (GV) integrated strain gauges. The plastic insert can be reworked or exchanged for customized requirements. Fastening screws and centering sleeves are included in the scope of delivery.

Characterization	ID	Material	Scope of delivery
Finger			
ABF WSG32/50-DV	0306160	Aluminum	1
ABF WSG32/50-GV	0306150	Aluminum	1

- ① With operation of the WSG with the ABF attachment fingers, two pieces are normally required, optionally with or without integrated strain gauges.

Connection cables



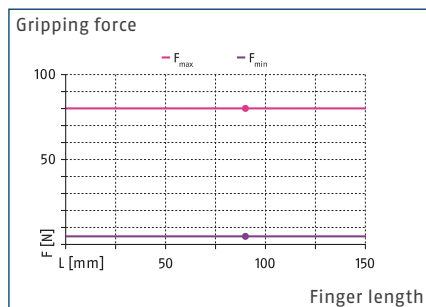
- ⑨① Electrical connection component
- ⑨① Cable with straight connector
- ⑨② Cable with angled connector

Characterization	ID	Length
		[m]
Connection cables		
KA GLN0806-LK-00500-A	0307787	5
KA WLN0806-LK-00500-A	0307785	5

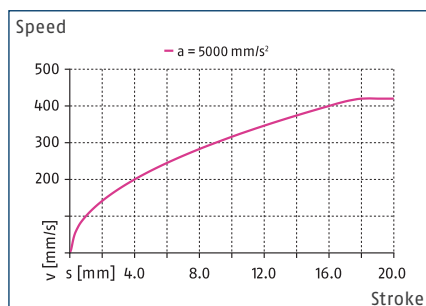
- ① KA G stands for a connection cable with a straight plug connector and KA W for a rectangular plug connector.



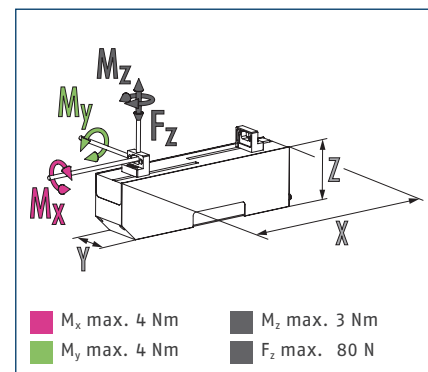
Gripping force



Speed



Dimensions and maximum loads

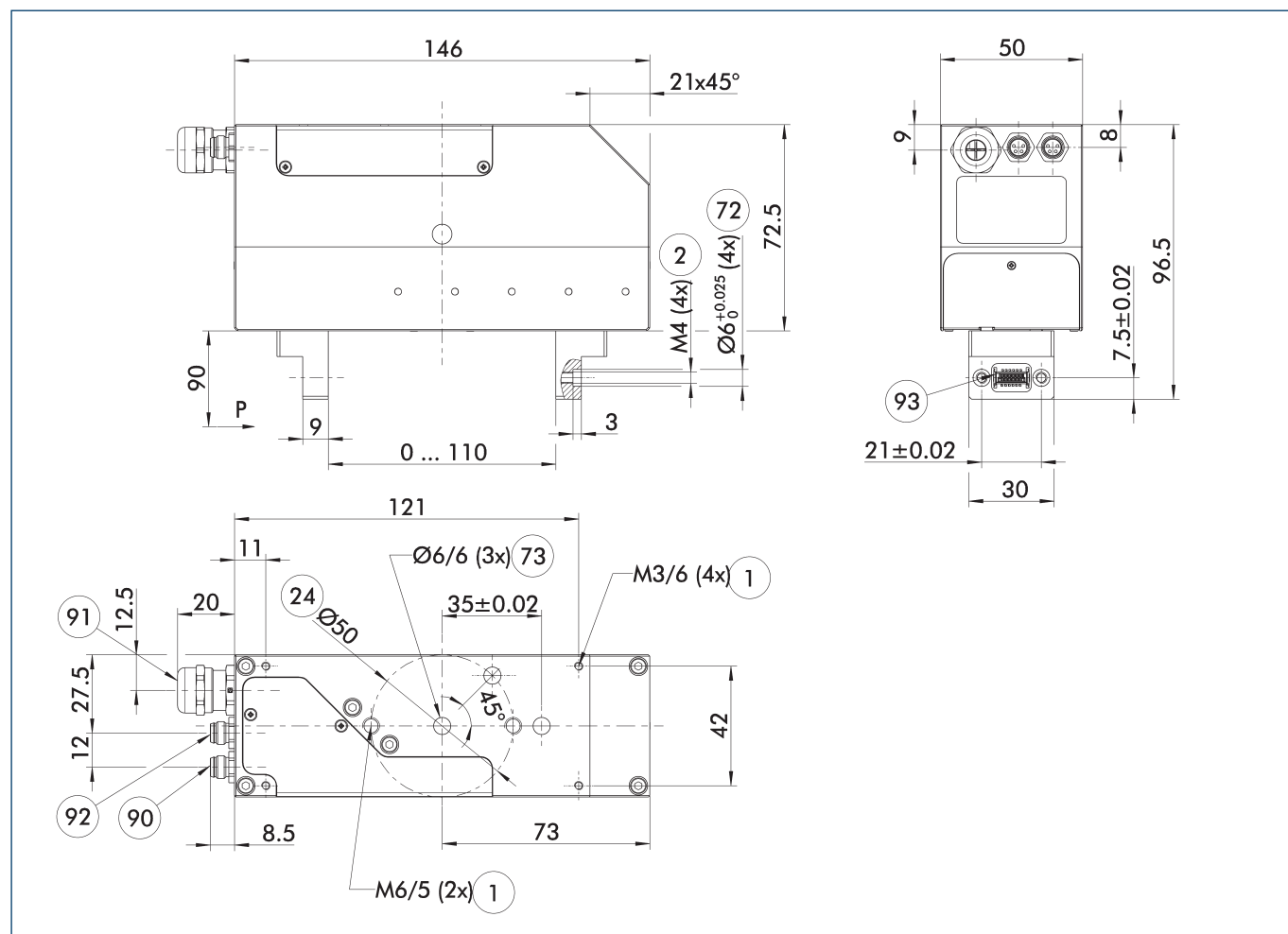


① The indicated moments and forces are static values, apply for each base jaw and should not appear simultaneously. Loads may additionally occur to the moment produced by the gripping force itself.

Technical data

Characterization		WSG 050-110-B	WSG 050-110-P	WSG 050-210-B	WSG 050-210-P
ID		0306120	0306122	0306125	0306127
General operating data					
Stroke per jaw	[mm]	55	55	105	105
Min./max. gripping force	[N]	5/80	5/80	5/80	5/80
Recommended workpiece weight	[kg]	0.4	0.4	0.4	0.4
Max. permissible finger length	[mm]	170	170	170	170
Max. permissible mass per finger	[kg]	0.3	0.3	0.3	0.3
Repeat accuracy	[mm]	±0.03	±0.03	±0.03	±0.03
Max. speed	[mm/s]	420	420	420	420
Max. acceleration	[mm/s²]	5000	5000	5000	5000
Weight	[kg]	1.2	1.2	1.6	1.6
Min./max. ambient temperature	[°C]	5/50	5/50	5/50	5/50
Protection class IP		20	20	20	20
Dimensions X x Y x Z	[mm]	146 x 50 x 72.5	146 x 50 x 72.5	246 x 50 x 72.5	246 x 50 x 72.5
Electrical operating data					
Nominal voltage	[V DC]	24	24	24	24
Nominal current	[A]	0.9	0.9	0.9	0.9
Max. current	[A]	2	2	2	2
Controller electronics		integrated	integrated	integrated	integrated
Communication interface		EtherNet TCP/IP, PROFIBUS	EtherNet TCP/IP, PROFINET	EtherNet TCP/IP, PROFIBUS	EtherNet TCP/IP, PROFINET
Data rate	[Mbit/s]	12		12	
Data rate	[Mbit/s]	1		1	
Parametrized interface		EtherNet TCP/IP	EtherNet TCP/IP	EtherNet TCP/IP	EtherNet TCP/IP

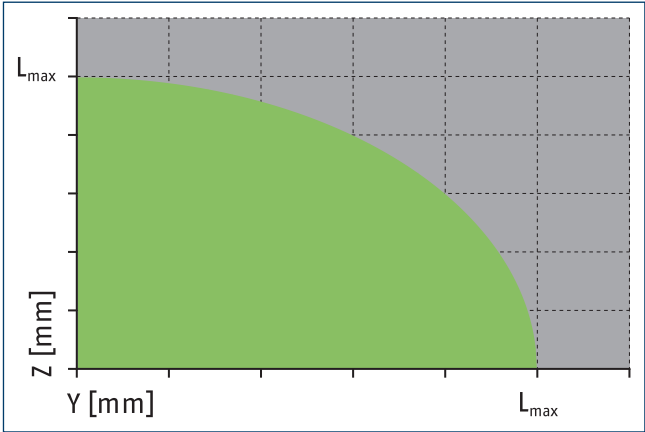
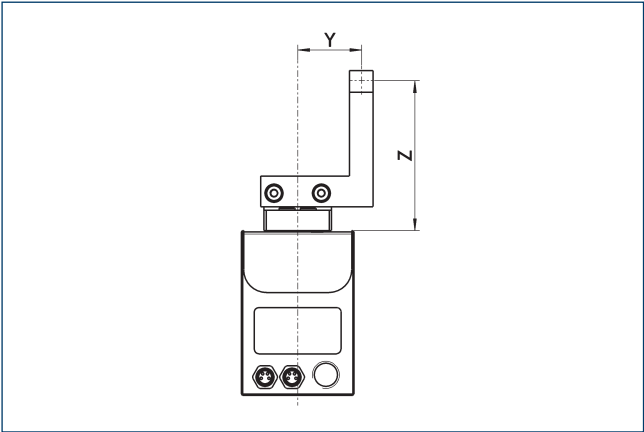
Main view



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

- | | |
|------------------------------|--|
| ① Gripper connection | ⑨① Connection to the internal terminal box |
| ② Finger connection | ⑨② Connection Ethernet communication (optional PROFINET) |
| ②④ Bolt circle | ⑨③ Integrated plug connector for top jaws |
| ⑦② Fit for centering sleeves | |
| ⑦③ Fit for centering pins | |
| ⑨① Connection power supply | |

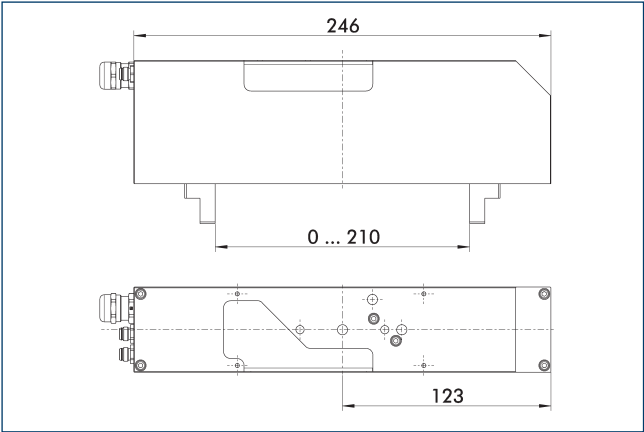
Maximum permitted finger projection



■ Permitted range ■ Inadmissible range

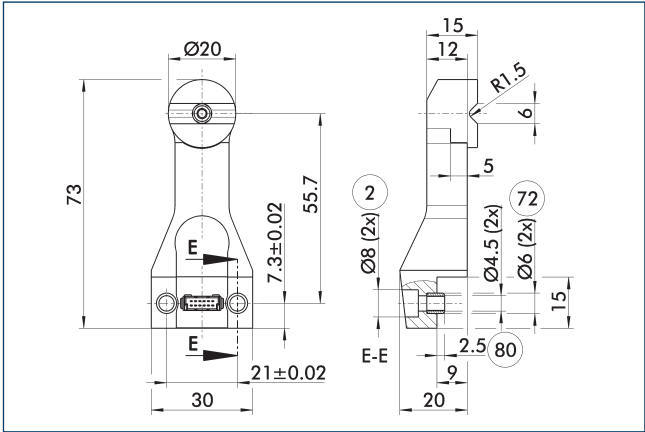
L^{max} is equivalent to the maximum permitted finger length, see the technical data table.

WSG 50 stroke variant



The drawing shows changes in dimensions of the version with a different stroke compared to the version shown in the main view.

Attachment fingers for WSG



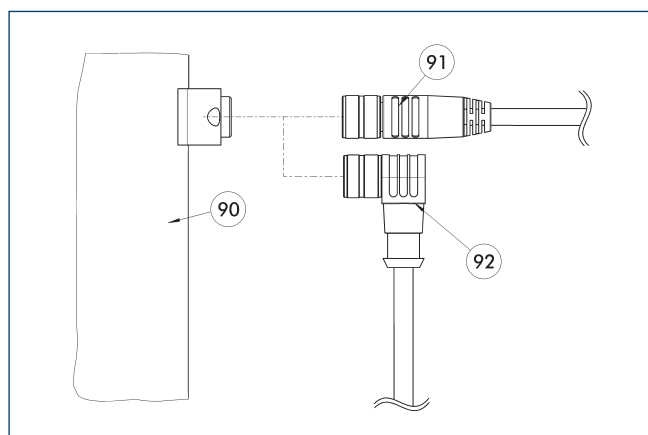
- ② Finger connection
- ⑦② Fit for centering sleeves
- ⑧① Depth of the centering sleeve hole in the counter part

The attachment fingers are optionally available with (DV) or without (GV) integrated strain gauges. The plastic insert can be reworked or exchanged for customized requirements. Fastening screws and centering sleeves are included in the scope of delivery.

Characterization	ID	Material	Scope of delivery
Finger			
ABF WSG32/50-DV	0306160	Aluminum	1
ABF WSG32/50-GV	0306150	Aluminum	1

① With operation of the WSG with the ABF attachment fingers, two pieces are normally required, optionally with or without integrated strain gauges.

Connection cables



90 Electrical connection component

91 Cable with straight connector

92 Cable with angled connector

Characterization	ID	Length
		[m]
Connection cables		
KA BG08-L 4P-0500	0307767	5
KA BW08-L 4P-0500	0307765	5

① BG stands for a connection cable with a straight female connector and BW for an angled female connector. SG stands for a connection cable with a straight male connector and SW for an angled male connector.

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