SGW

Pneumatic • 3-Finger Concentric Gripper • Angular Gripper for small components

Sizes
40 ... 64

Weight
0.05 kg ... 0.17 kg

Gripping moment
1.35 Nm ... 7.45 Nm

Angle per jaw
8°

Workpiece weight
0.3 kg ... 1.3 kg

Application example

Linear unit with 6-fold gripper for simultaneous handling of six smaller packages

1. 3-Finger Centric Gripper SGW
2. Linear axis with toothed-belt drive HSB Beta

Angular Gripper for small components

small, plastic angular gripper with spring return and single-acting piston

Field of application

for universal use in clean and slightly dirty environments, with special requirements for the corrosion resistance and antistatic properties of the gripper unit

Your advantages and benefits

Housing of carbon-fiber-reinforced plastic
making the gripper extremely light and free from corrosion

One-way acting 3-fold piston with lever gear
for high power transmission and synchronized gripping

Spring-loaded pressure piece
for optional pressing and separating of workpieces

favorable in price
especially suitable for low-budget applications

General note to the series

Principle of function
one-way acting 3-fold piston with lever gear and spring reset

Housing material
carbon-fiber-reinforced plastic with metal functional parts

Base jaw material
carbon-fiber-reinforced plastic

Actuation
pneumatic, with filtered compressed air (10 microns): dry, lubricated or non-lubricated
Pressure medium: Required quality class of compressed air according to DIN ISO 8573-1: 6 4 4

Warranty
24 months (details, general terms and conditions and operation manuals can be downloaded under www.schunk.com)

Scope of delivery
Centering pins, O-rings for direct connection, assembly and operating manual with manufacturer's declaration

Gripping force maintenance device
possible with SDV-P pressure maintenance valve

Sectional diagram

1 **Base jaw**
for the connection of workpiece-specific gripper fingers

2 **Lever mechanism**
for precise and synchronized gripping

3 **Drive**
single-acting double piston system with spring return

4 **Housing**
weight-reduced due to the use of plastics

Functional description

The two horizontally arranged pistons are pressed away from each other by compressed air.
The base jaws are opened at an angle and in a synchronized fashion by the bearing-mounted lever mechanism.
Reset is done by compression spring.

Options and special information

The use of carbon-fiber-reinforced plastics endows this gripper with a very low weight and a disproportionately high gripping force.

Accessories

Accessories from SCHUNK – the suitable supplement for maximum functionality, reliability and performance of all automation modules.

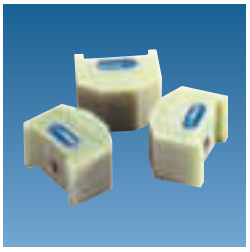
Pressure maintenance valve

Fittings

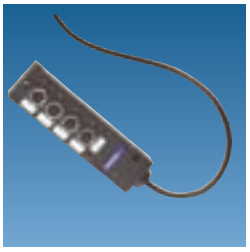
Inductive proximity switches

Sensor cables

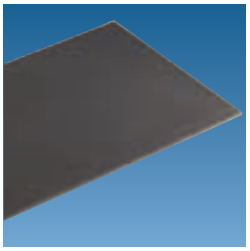
Plastic inserts



Sensor Distributor



Gripper pads



ⓘ For the exact size of the required accessories, availability of this size and the designation and ID, please refer to the additional views at the end of the size in question. You will find more detailed information on our accessory range in the “Accessories” catalog section.

General note to the series

Gripping moment

Gripping moment is the arithmetic total of gripping moments for each claw jaw.

Finger length

The finger length is measured from the upper edge of the gripper housing in direction to the main axis. If the max. admissible finger length is exceeded, the speed of jaw motions have to be reduced and/or the opening angle has to be diminished, as it is done with heavy fingers. The service life of the gripper can shorten.

Repeat accuracy

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

Workpiece weight

The recommended workpiece weight is calculated for a force-type 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.

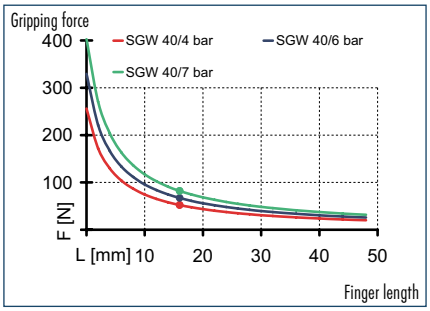
Closing and opening times

Closing and opening times are purely the times that the base jaws or fingers are in motion. Valve switching times, hose filling times or PLC reaction times are not included in the above times and must be taken into consideration when determining cycle times.

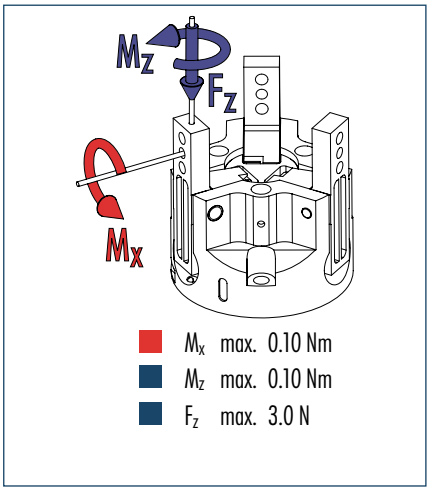
SGW 40

Pneumatic • 3-Finger Concentric Gripper • Angular Gripper for small components

Gripping force, O.D. gripping



Finger load

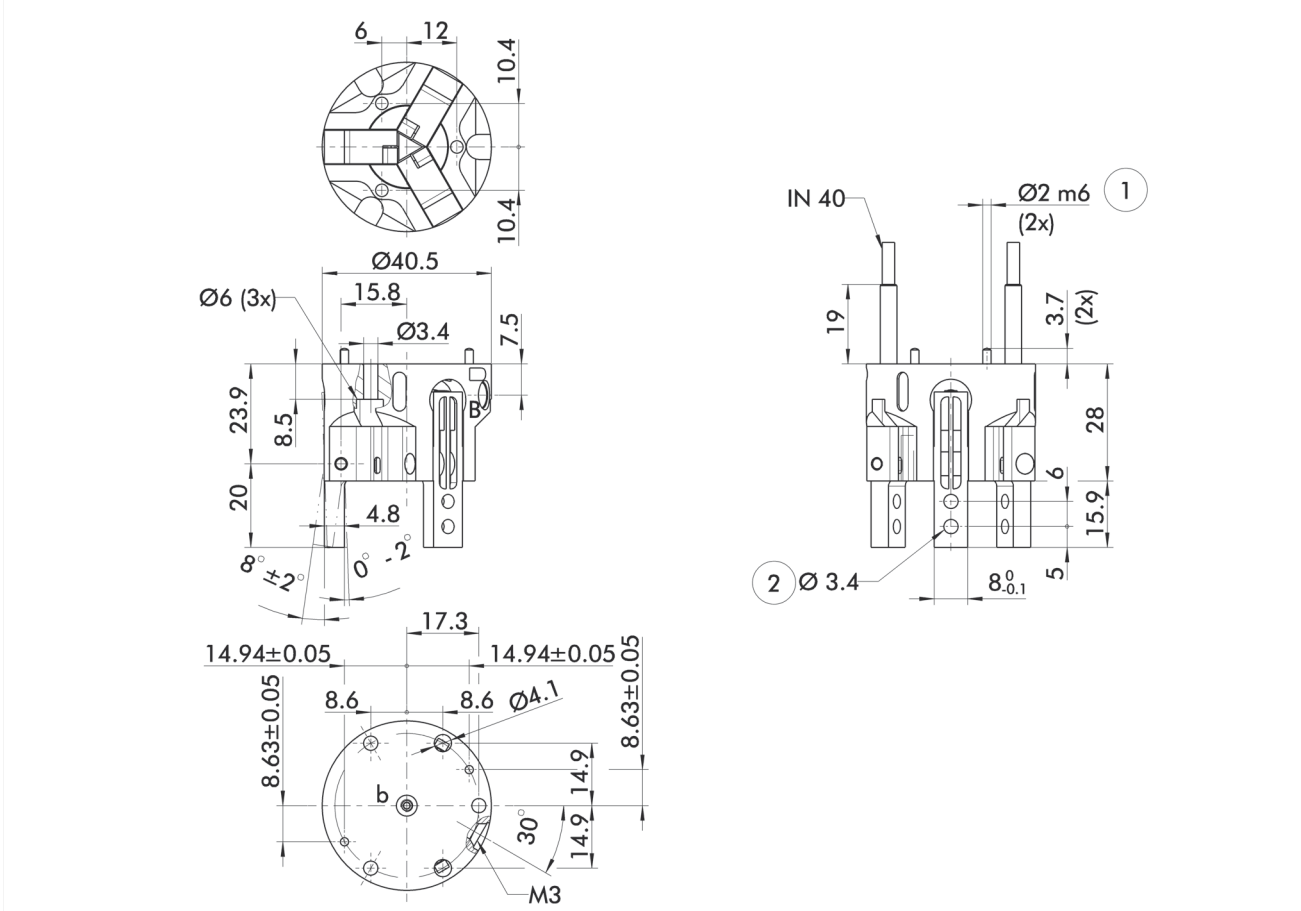


ⓘ The indicated moments and forces are statical values, apply for each base jaw and should not appear simultaneously. If the maximum admissible finger weight is exceeded, throttling is necessary in order to ensure a smooth jaw motion without jerks or bounces. The life-time may reduce.

Technical data

Description		SGW 40
ID		0305204
Opening angle per jaw	[°]	8
Closed angle per jaw up to	[°]	2
Closing moment	[Nm]	1.35
Weight	[kg]	0.05
Recommended workpiece weight	[kg]	0.3
Air consumption per double stroke	[cm³]	0.5
Min./max. operating pressure	[bar]	4/7
Nominal operating pressure	[bar]	6
Closing/opening time	[s]	0.02/0.03
Max. permitted finger length	[mm]	32
Max. permitted weight per finger	[kg]	0.03
IP class		20
Min./max. ambient temperature	[°C]	-10/90
Repeat accuracy	[mm]	0.1

Main view

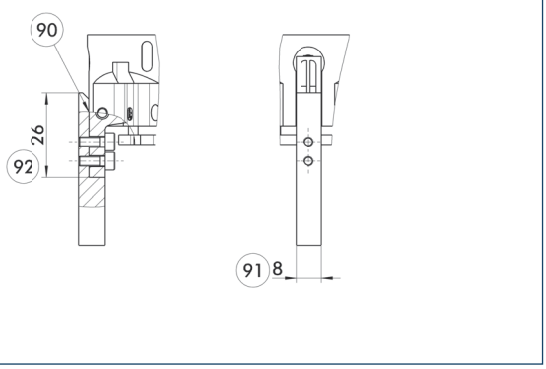


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

ⓘ The SDV-P pressure maintenance valve can be used as a gripping force maintenance device (see "Accessories" catalog section).

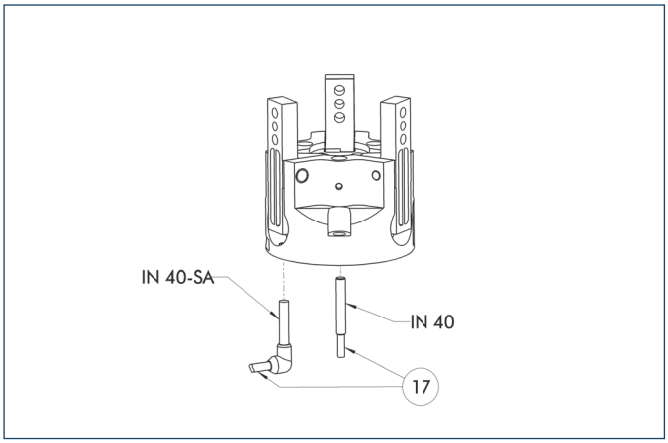
B, b Main/direct connection, gripper closing
① Gripper connection
② Finger connection

Jaw design O.D. gripping



⑨⓪ Support top jaws at the base jaw
⑨① Maximum finger width
⑨② Maximum supporting length

Inductive proximity switches



⑰ Cable outlet

End position monitoring for direct mounting

Description	ID	Recommended product
Inductive proximity switches		
IN 40-S-M8	**0301474**	•
IN 40-S-M12	**0301574**	
INK 40-S	**0301555**	
Inductive proximity switch with lateral outlet		
IN 40-S-M12-SA	**0301577**	
IN 40-S-M8-SA	**0301473**	•
INK 40-S-SA	**0301565**	
Connection cables		
KA BG08-L 3P-0300-PNP	**0301622**	
KA BG08-L 3P-0500-PNP	**0301623**	
KA BG12-L 3P-0500-PNP	**30016369**	
KA BW08-L 3P-0300-PNP	**0301594**	
KA BW08-L 3P-0500-PNP	**0301502**	
KA BW12-L 3P-0300-PNP	**0301503**	
KA BW12-L 3P-0500-PNP	**0301507**	
Cable extensions		
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**	

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

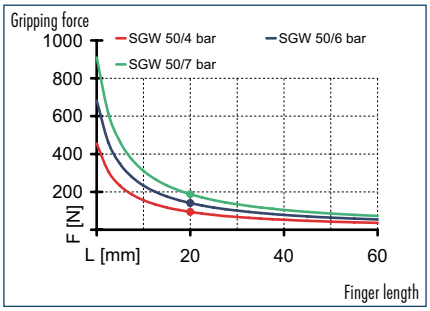
ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.

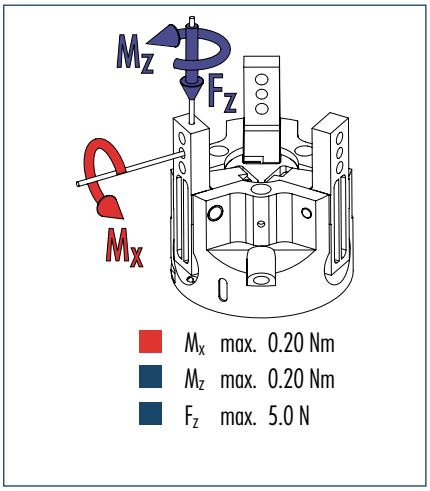
SGW 50

Pneumatic • 3-Finger Concentric Gripper • Angular Gripper for small components

Gripping force, O.D. gripping



Finger load

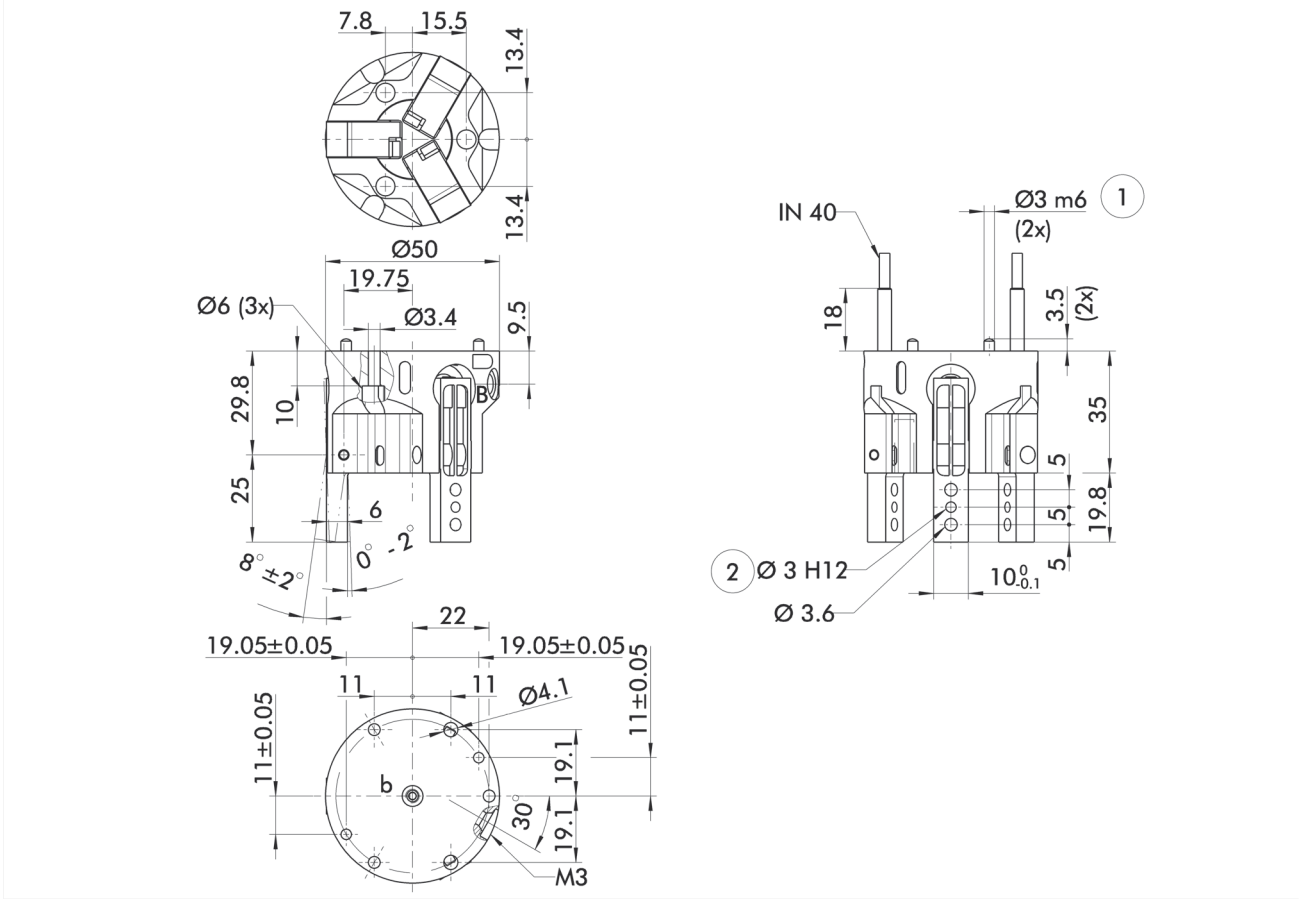


ⓘ The indicated moments and forces are statical values, apply for each base jaw and should not appear simultaneously. If the maximum admissible finger weight is exceeded, throttling is necessary in order to ensure a smooth jaw motion without jerks or bounces. The life-time may reduce.

Technical data

Description		SGW 50
ID		0305205
Opening angle per jaw	[°]	8
Closed angle per jaw up to	[°]	2
Closing moment	[Nm]	3.55
Weight	[kg]	0.09
Recommended workpiece weight	[kg]	0.6
Air consumption per double stroke	[cm³]	1
Min./max. operating pressure	[bar]	4/7
Nominal operating pressure	[bar]	6
Closing/opening time	[s]	0.02/0.03
Max. permitted finger length	[mm]	40
Max. permitted weight per finger	[kg]	0.05
IP class		20
Min./max. ambient temperature	[°C]	-10/90
Repeat accuracy	[mm]	0.1

Main view

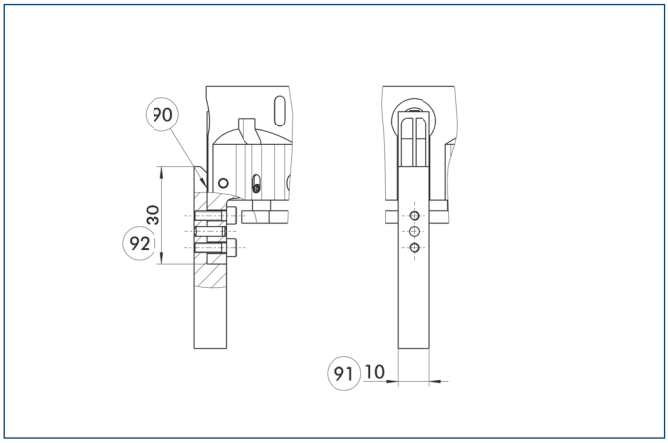


The drawing shows the gripper in the basic version with closed jaws, the dimensions do not include the options described below.

B, b Main/direct connection, gripper closing
① Gripper connection
② Finger connection

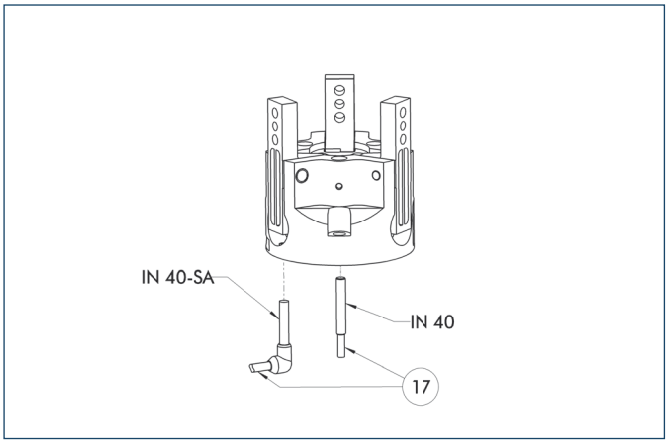
ⓘ The SDV-P pressure maintenance valve can be used as a gripping force maintenance device (see "Accessories" catalog section).

Jaw design O.D. gripping



⑨⓪ Support top jaws at the base jaw
⑨① Maximum finger width
⑨② Maximum supporting length

Inductive proximity switches



⑰ Cable outlet

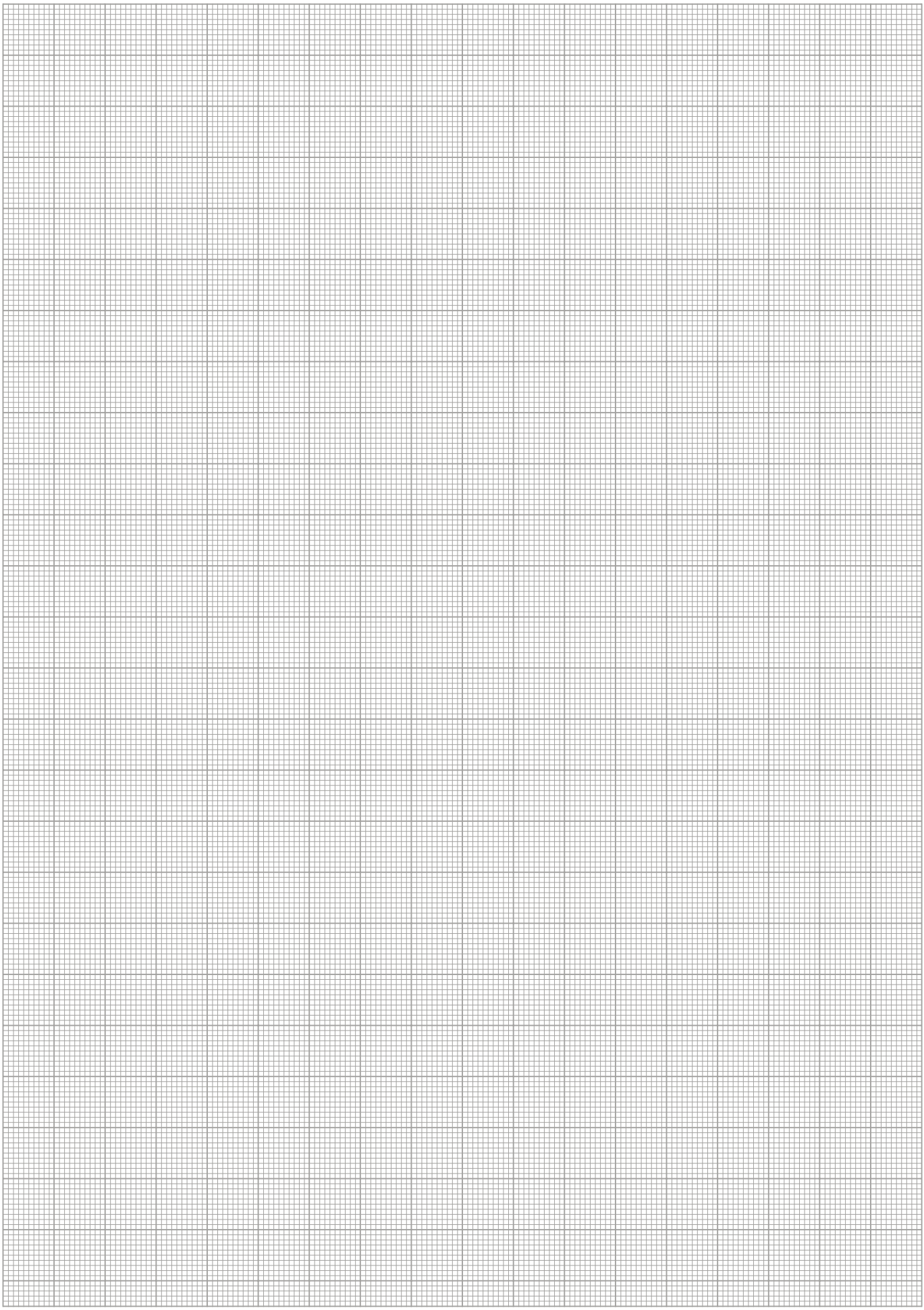
End position monitoring for direct mounting

Description	ID	Recommended product
Inductive proximity switches		
IN 40-S-M8	**0301474**	•
IN 40-S-M12	**0301574**	
INK 40-S	**0301555**	
Inductive proximity switch with lateral outlet		
IN 40-S-M12-SA	**0301577**	
IN 40-S-M8-SA	**0301473**	•
INK 40-S-SA	**0301565**	
Connection cables		
KA BG08-L 3P-0300-PNP	**0301622**	
KA BG08-L 3P-0500-PNP	**0301623**	
KA BG12-L 3P-0500-PNP	**30016369**	
KA BW08-L 3P-0300-PNP	**0301594**	
KA BW08-L 3P-0500-PNP	**0301502**	
KA BW12-L 3P-0300-PNP	**0301503**	
KA BW12-L 3P-0500-PNP	**0301507**	
Cable extensions		
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**	

ⓘ Two sensors (closer/NO) are required for each gripper, plus extension cables as an option.

ⓘ Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.

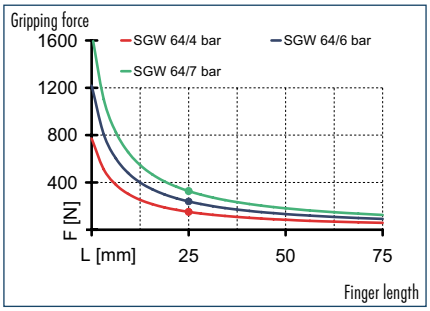
You can find more detailed information and individual parts of the above-mentioned accessories in the “Accessories” catalog section.



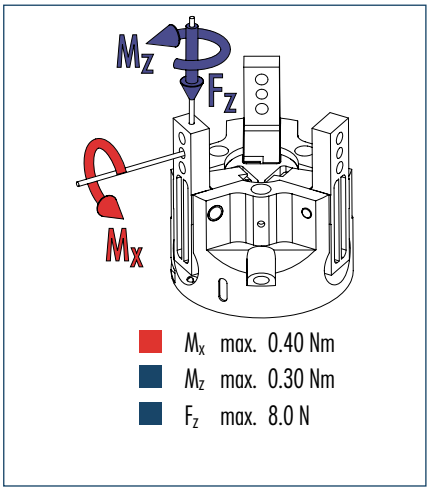
SGW 64

Pneumatic • 3-Finger Concentric Gripper • Angular Gripper for small components

Gripping force, O.D. gripping



Finger load

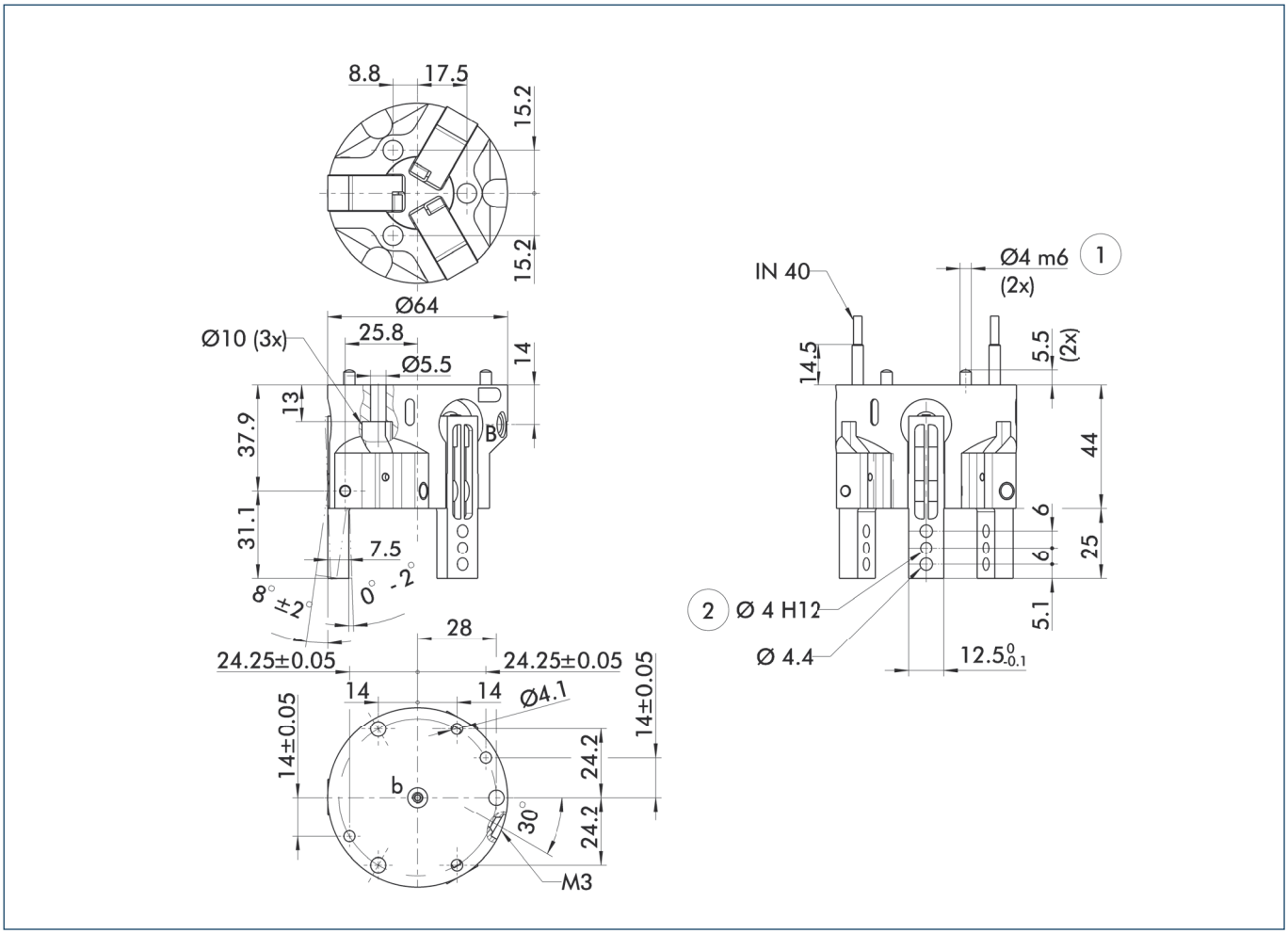


ⓘ The indicated moments and forces are statical values, apply for each base jaw and should not appear simultaneously. If the maximum admissible finger weight is exceeded, throttling is necessary in order to ensure a smooth jaw motion without jerks or bounces. The life-time may reduce.

Technical data

Description		SGW 64
ID		**0305206**
Opening angle per jaw	[°]	8
Closed angle per jaw up to	[°]	2
Closing moment	[Nm]	7.45
Weight	[kg]	0.17
Recommended workpiece weight	[kg]	1.3
Air consumption per double stroke	[cm³]	1.8
Min./max. operating pressure	[bar]	4/7
Nominal operating pressure	[bar]	6
Closing/opening time	[s]	0.02/0.03
Max. permitted finger length	[mm]	50
Max. permitted weight per finger	[kg]	0.07
IP class		20
Min./max. ambient temperature	[°C]	-10/90
Repeat accuracy	[mm]	0.1

Main view



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B, b Main/direct connection, gripper closing
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② Finger connection

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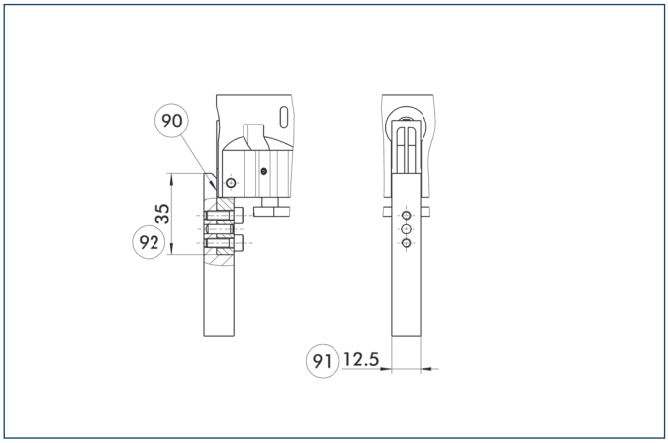
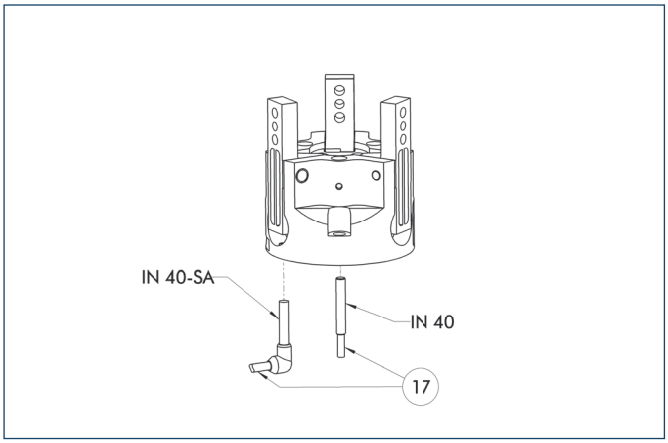
Jaw design O.D. gripping



⑨⓪ Support top jaws at the base jaw
⑨① Maximum finger width
⑨② Maximum supporting length

Inductive proximity switches



⑰ Cable outlet

End position monitoring for direct mounting

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KV BG12-SG12 3P-0060-PNP	**0301998**	
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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**	
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