

Superior Clamping and Gripping



## Product Information

Angular gripper SWG 12

## Slim. Reliable. Fast.

### Gripper for small components SWG

Narrow double-acting 2-finger angular gripper

#### Field of application

For universal use in clean and slightly dirty environments. Suitable for applications which require a space-optimized gripper arrangement.

#### Advantages – Your benefits

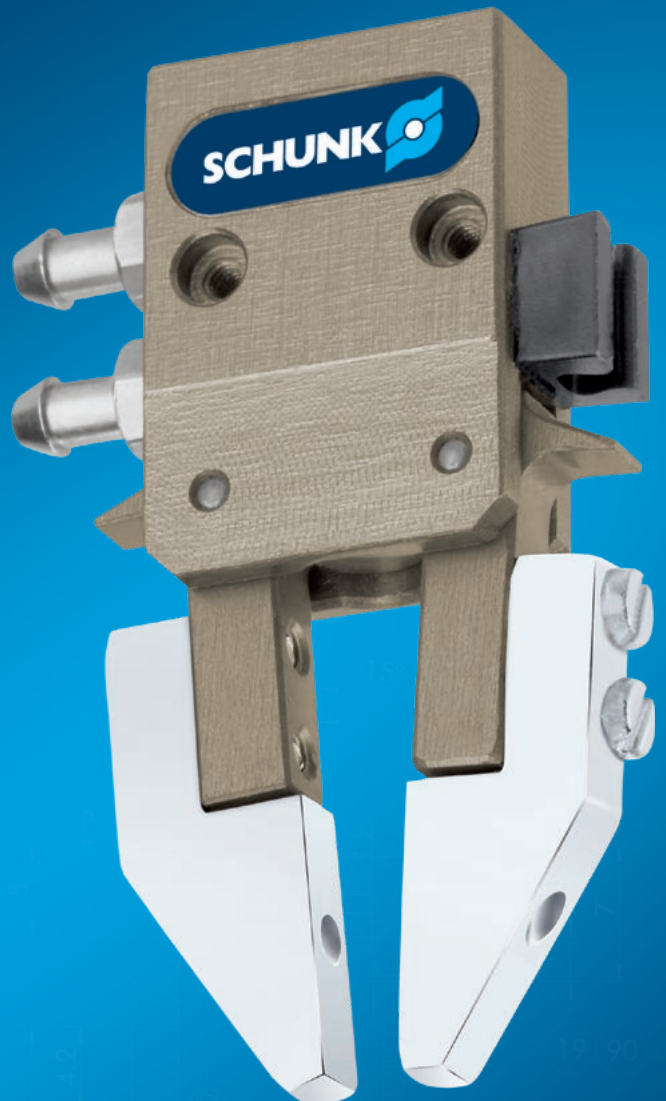
**Slim design** allowing the grippers to be arranged in a row

**Spring-supported gripping force maintenance** holds the workpiece even in case of a loss of pressure

**Wedge-hook design** for high power transmission and synchronized gripping

**Light and compact design** for space-saving handling without interfering contours

**Monitoring via electronic magnetic switches** a space-saving feature in a slot in the housing



Sizes  
Quantity: 8



Weight  
0.0025 .. 0.213 kg



Gripping moment  
0.01 .. 2.8 Nm



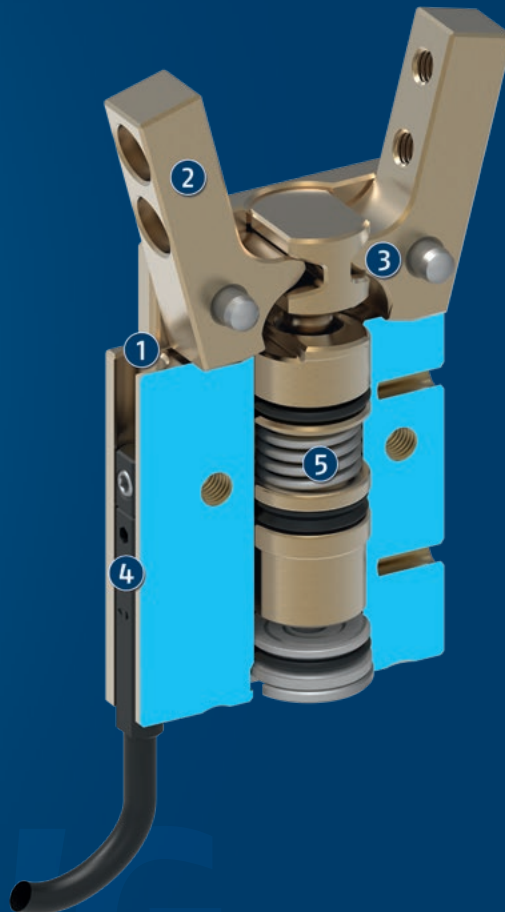
Angle per jaw  
15°



Workpiece weight  
0.007 .. 0.46 kg

## Functional description

The piston is moved up and down by compressed air. The kinematics transforms this vertical motion into a synchronous and rotatory gripping motion of the base jaws.



- ① **Housing**  
is weight-optimized due to the use of high-strength aluminum alloy
- ② **Base fingers**  
for the connection of workpiece-specific gripper fingers
- ③ **Kinematics**  
precise gear for centric gripping
- ④ **Sensor system**  
electronic magnetic switch, space-saving integration in the groove of the housing
- ⑤ **Gripping force maintenance device**  
mechanic gripping force maintenance for O.D. gripping

## General notes about the series

**Operating principle:** double-acting, guided kinematics

**Housing material:** Aluminum alloy, anodized

**Base jaw material:** Aluminum alloy, anodized

**Actuation:** pneumatic, with filtered compressed air as per ISO 8573-1:2010 [7:4:4].

**Warranty:** 24 months

**Scope of delivery:** Centering sleeves, assembly instructions (operating manual with declaration of incorporation is available online)

**Gripping force maintenance device:** always integrated by using springs, and also possible via pressure maintenance valve SDV-P

**Closing moment:** is the arithmetic sum of the individual moment applied to each jaw.

**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.

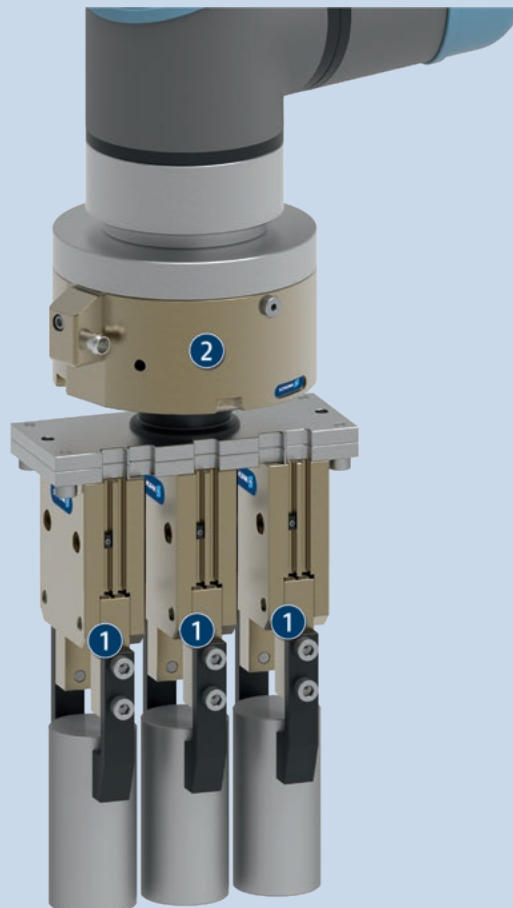
**Workpiece weight:** is calculated for force-fit gripping with a coefficient of static friction of 0.1 and a safety factor of 2 against workpiece slippage at acceleration due to gravity g. For form-fit or capture gripping, there are significantly higher permissible workpiece weights.

**Closing and opening times:** are purely the times that the base jaws or fingers are in motion. Valve switching times, hose fill times, or PLC reaction times are not included, and are to be considered when cycle times are calculated.

## Application example

Triple transfer unit for packaging with small boxboards

- ❶ 2-finger angular gripper SWG
- ❷ Collision sensor OPR



## SCHUNK offers more ...

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



Miniature swivel unit



Linear module



Pick & Place Unit



Compensation unit



Programmable magnetic switch



Optical proximity switch



Pressure maintenance valve

① For more information on these products can be found on the following product pages or at [schunk.com](https://www.schunk.com).

## Options and special information

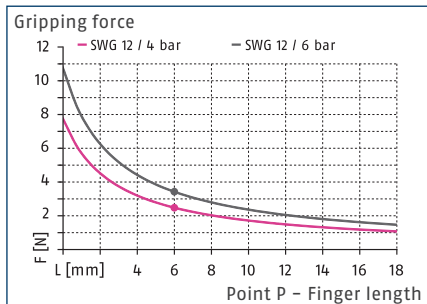
The angular gripper SWG can be directly mounted in a row to reduce interfering contours.

# SWG 12

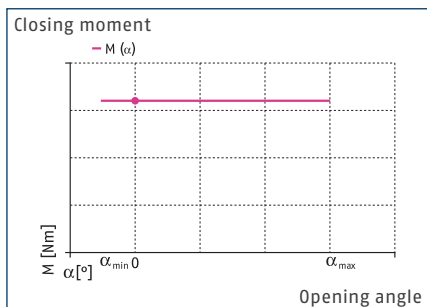
Angular gripper



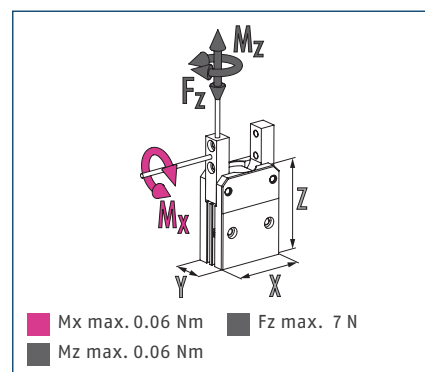
## Gripping force O.D. gripping



## Closing moment curve



## Dimensions and maximum loads

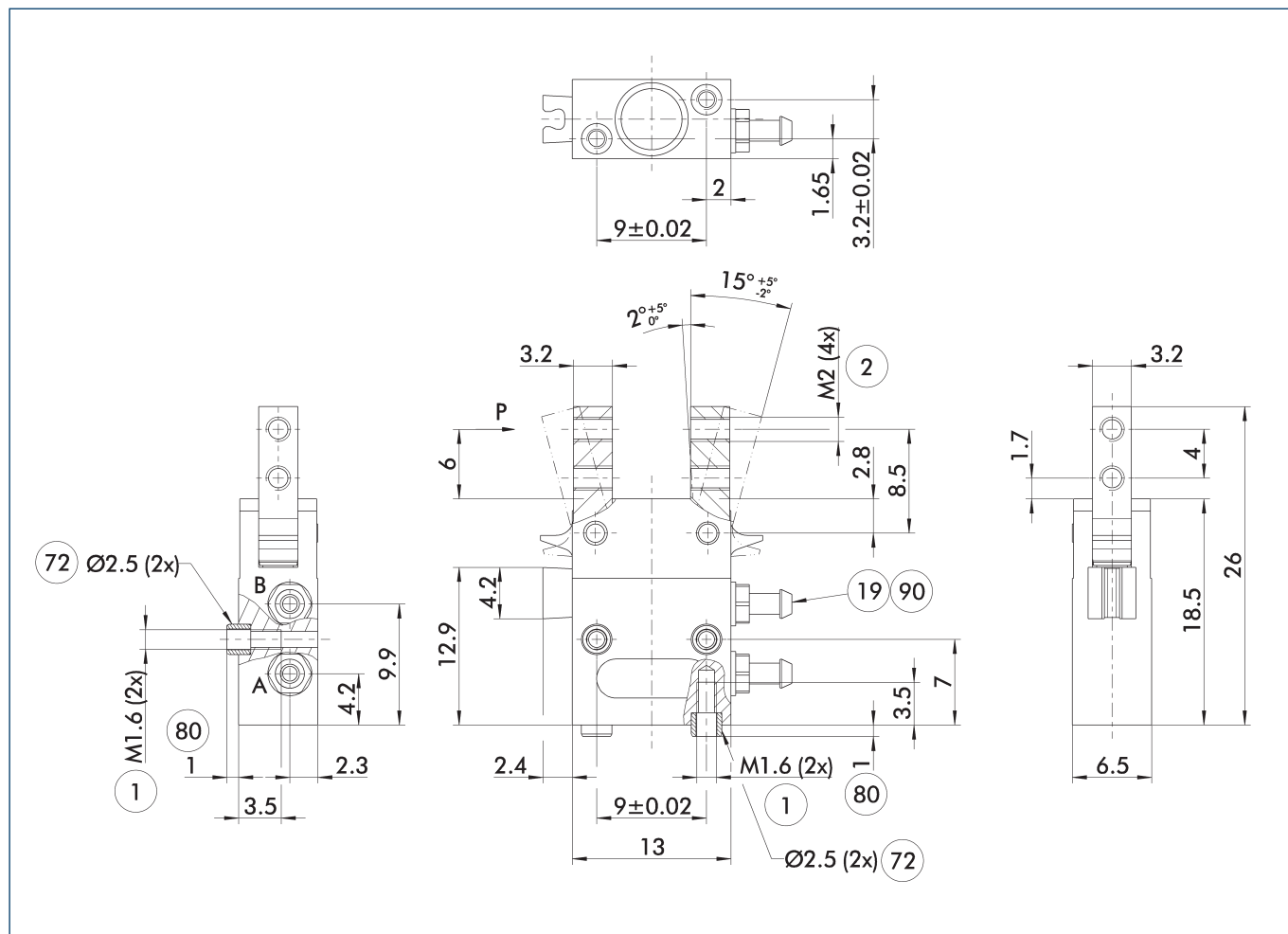


① The indicated torques and forces are static values, apply for each base jaw, and may occur simultaneously.

## Technical data

Description		SWG 12
ID		0305115
Opening angle per jaw	[°]	15
Closed angle per jaw up to	[°]	7
Closing moment	[Nm]	0.03
Closing moment generated by spring	[Nm]	0.009
Weight	[kg]	0.0048
Recommended workpiece weight	[kg]	0.017
Fluid consumption double stroke	[cm³]	0.07
Min./nom./max. operating pressure	[bar]	4/6/6.5
Closing/opening time	[s]	0.015/0.02
Max. permissible finger length	[mm]	12
Max. permissible mass per finger	[kg]	0.006
IP protection class		30
Min./max. ambient temperature	[°C]	5/90
Repeat accuracy	[mm]	0.05
Dimensions X x Y x Z	[mm]	13 x 6.5 x 18.5

### Main view



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

① The SDV-P pressure maintenance valve can be used as a gripping force maintenance device (see catalog section on accessories).

A, a Main / direct connection, gripper opening

B, b Main / direct connection, gripper closing

① Gripper connection

② Finger connection

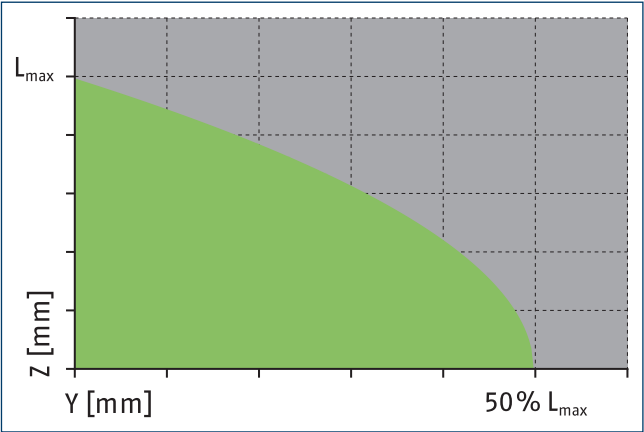
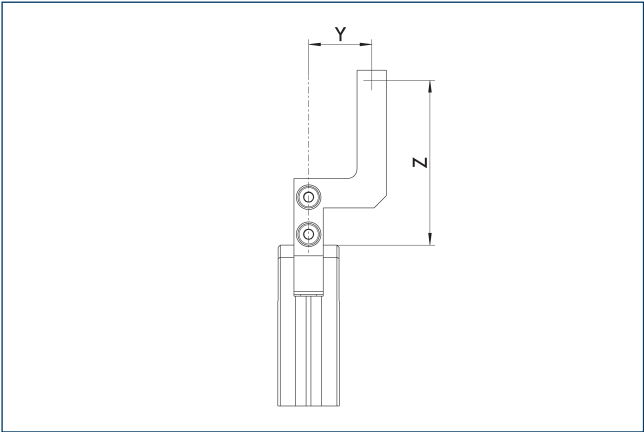
⑱ Air connection

⑦② Fit for centering sleeves

⑧① Depth of the centering sleeve hole in the counter part

⑨① Bosch-Rexroth compressed air hose, TU1-S (Ø 3.0-0.6) series, Order no.: 1820712066 (-67/-68/-69)

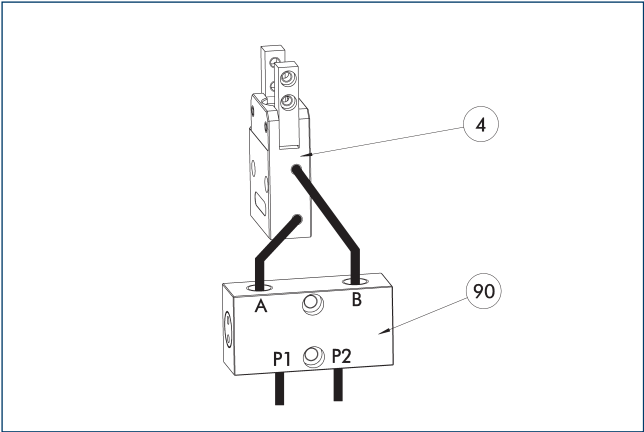
Maximum permitted finger projection



■ Permitted range      ■ Inadmissible range

L<sub>max</sub> is equivalent to the maximum permitted finger length, see the technical data table.

SDV-P pressure maintenance valve



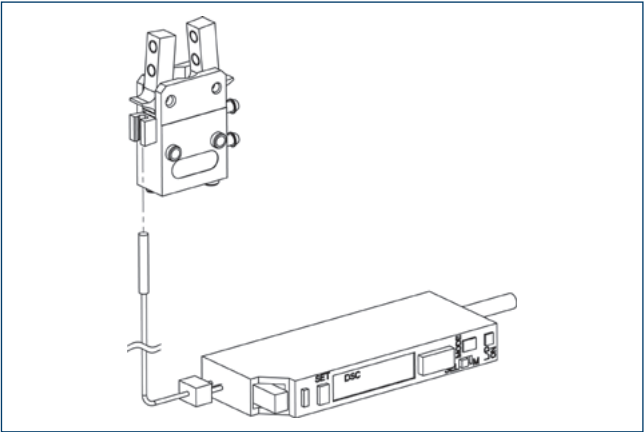
④ Grippers      ⑨⑩ SDV-P pressure maintenance valve

The SDV-P pressure maintenance valve ensures in emergency STOP situations that the pressure in the piston chamber of pneumatic gripper, swivel, linear, and quick-change modules is temporarily maintained.

Description	ID	Recommended hose diameter
		[mm]
Pressure maintenance valve		
SDV-P 04	0403130	6
Pressure maintenance valve with air bleed screw		
SDV-P 04-E	0300120	6

① In order to achieve the specified closing and opening time for each gripper variant, the recommended hose diameter must be used. The direct allocation of the respective variant of the gripper for the respective SDV-P can be found at [schunk.com](http://schunk.com).

Optical proximity switch



Description	ID	
Optical proximity switch		
ONS 01	0301390	
Optical wave guide		
ONS 01-LWL	0301391	

① Per each unit a sensor (ONS 01) as well as an optical wave guide (ONS 01-LWL) are required. Assembly of the optical sensors at the gripper is done with the supplied plastic clip.







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