

Superior Clamping and Gripping



## Product Information

Angular gripper SWG 16

## 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

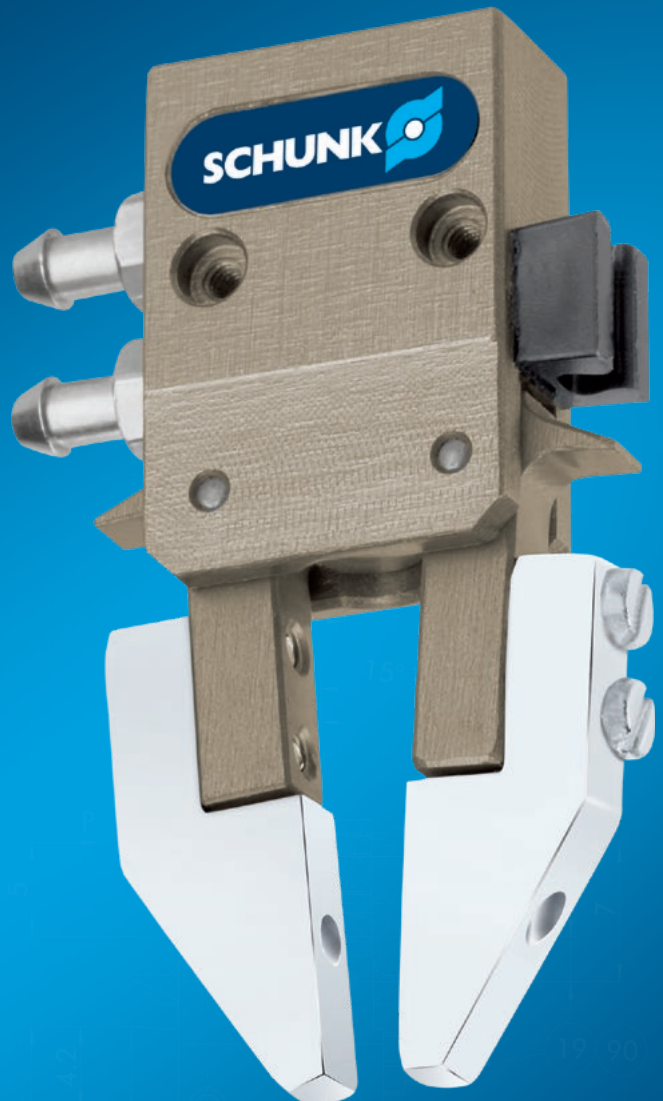
**Slim design** allowing the grippers to be arranged in a row

**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



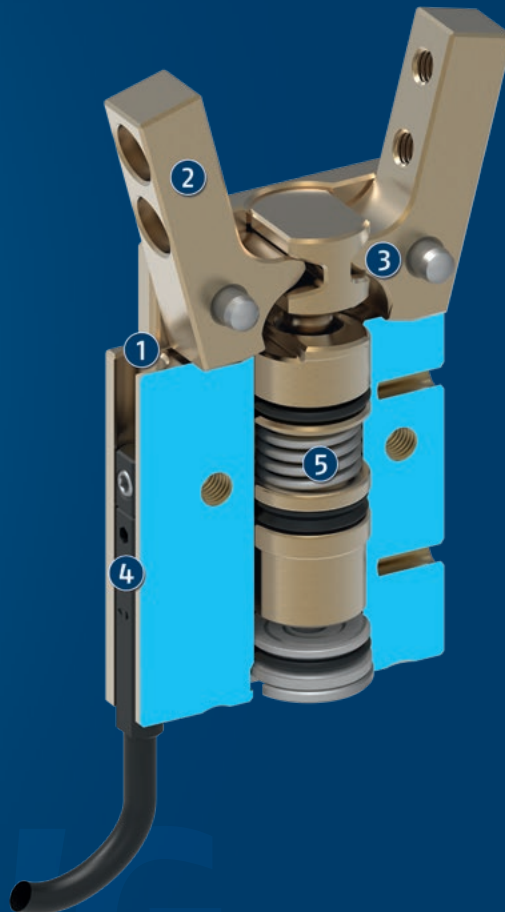
Angle per jaw  
15°



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.

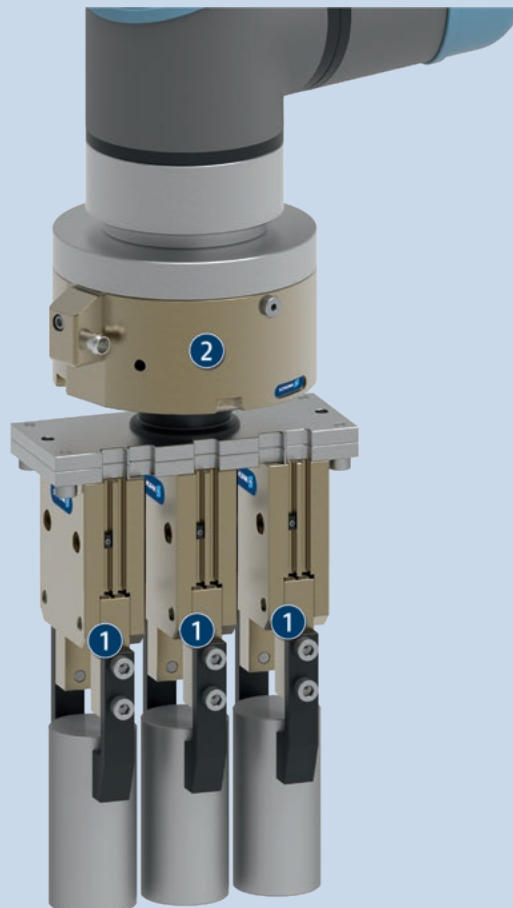
**Workpiece weight:** is calculated for force-fit gripping with a coefficient of static friction of 0.1 and a safety factor of 2 against workpiece slippage at acceleration due to gravity g. For form-fit or capture gripping, there are significantly higher permissible workpiece weights.

**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

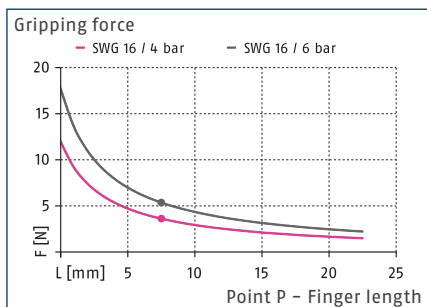
The angular gripper SWG can be directly mounted in a row to reduce interfering contours.

# SWG 16

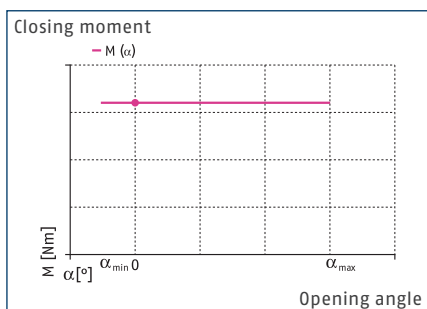
Angular gripper



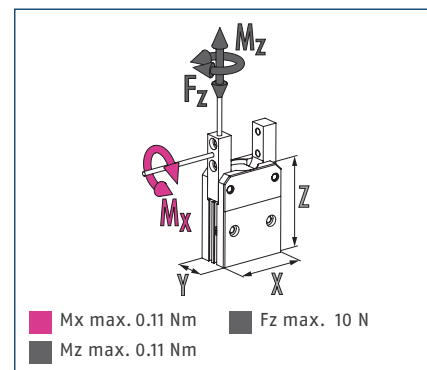
## Gripping force O.D. gripping



## 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.

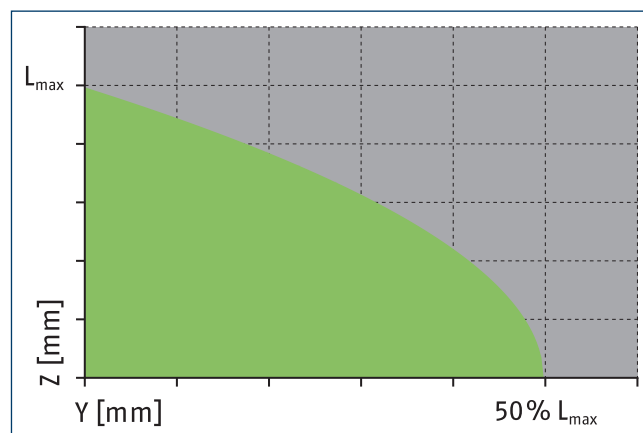
## Technical data

Description		SWG 16
ID		0305104
Opening angle per jaw	[°]	15
Closed angle per jaw up to	[°]	7
Closing moment	[Nm]	0.058
Closing moment generated by spring	[Nm]	0.017
Weight	[kg]	0.011
Recommended workpiece weight	[kg]	0.027
Fluid consumption double stroke	[cm³]	0.12
Min./nom./max. operating pressure	[bar]	4/6/6.5
Closing/opening time	[s]	0.015/0.02
Max. permissible finger length	[mm]	15
Max. permissible mass per finger	[kg]	0.012
IP protection class		30
Min./max. ambient temperature	[°C]	5/90
Repeat accuracy	[mm]	0.05
Dimensions X x Y x Z	[mm]	19 x 8 x 28.5

⑧⑩ Depth of the centering sleeve hole in the counter part

Technical drawing of a mechanical part, likely a bracket or connector. The drawing shows a side view with two circular features (possibly holes or mounting points) on the left. Dimension lines indicate the following measurements:

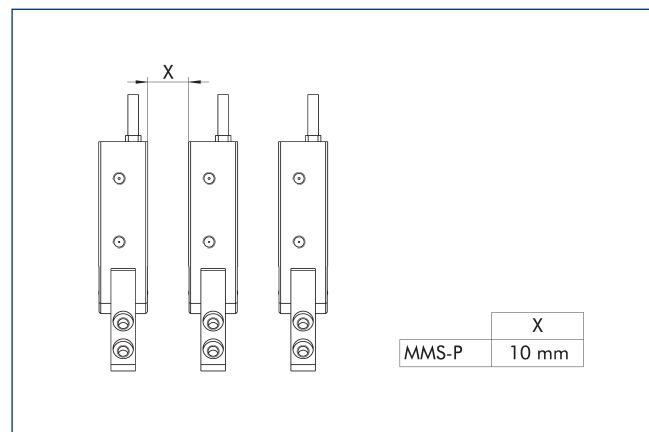
- Y:** The horizontal distance from the center of the leftmost circular feature to the right edge of the top flange.
- Z:** The vertical distance from the bottom edge of the main body to the top edge of the top flange.



Lmax is equivalent to the maximum permitted finger length, see the technical data table.

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

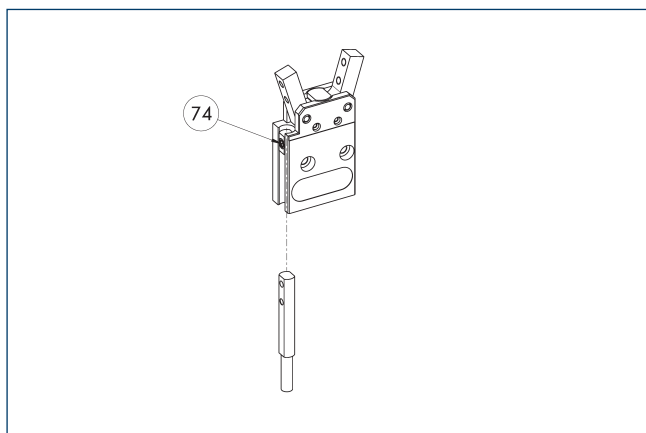
## Monitoring for stacked arrangements



This diagram shows the front of the machine with three components labeled: 4 (a small rectangular block), 90 (a large rectangular block with multiple holes), and 91 (a smaller rectangular block with a central slot). Dashed lines indicate the assembly path for these components.



## MMS-P programmable magnetic switch



Position monitoring with two programmable positions per sensor. End position monitoring for mounting in the C-slot.

Description	ID	Often combined
Programmable magnetic switch		
MMSK-P 22-S-PNP	0301371	
MMS-P 22-S-M8-PNP	0301370	●
Connection cables		
KA GLN0804-LK-00500-A	0307767	●
KA GLN0804-LK-01000-A	0307768	
KA WLN0804-LK-00500-A	0307765	
KA WLN0804-LK-01000-A	0307766	
clip for plug/socket		
CLI-M8	0301463	
Sensor distributor		
V2-M8-4P-2XM8-3P	0301380	

- ① One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.



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