



Superior Clamping and Gripping



## Product Information

Gripper change system GWS 125

# Flat. Robust. Strong.

## GWS gripper change system

Pneumatic gripper change system

### Field of application

Fast conversion of production lines for other products; the use of various different tools on a robot



### Advantages – Your benefits

**Integrated pneumatic feed-through** for safe energy supply of grippers

**Suitable storage racks for all sizes** to ensure the optimum adaption to each application

**Robust wedge-hook kinematics** For a secure connection between the gripper change master and adapter

**Two 18-pin electrical feed-throughs** are sufficient for many applications

**ISO mounting pattern** for easy assembly to most types of robots without needing additional adapter plates



Sizes  
Quantity: 3



Handling weight  
60 .. 170 kg



Moment load  $M_x$   
75 .. 400 Nm



Moment load  $M_z$   
100 .. 600 Nm

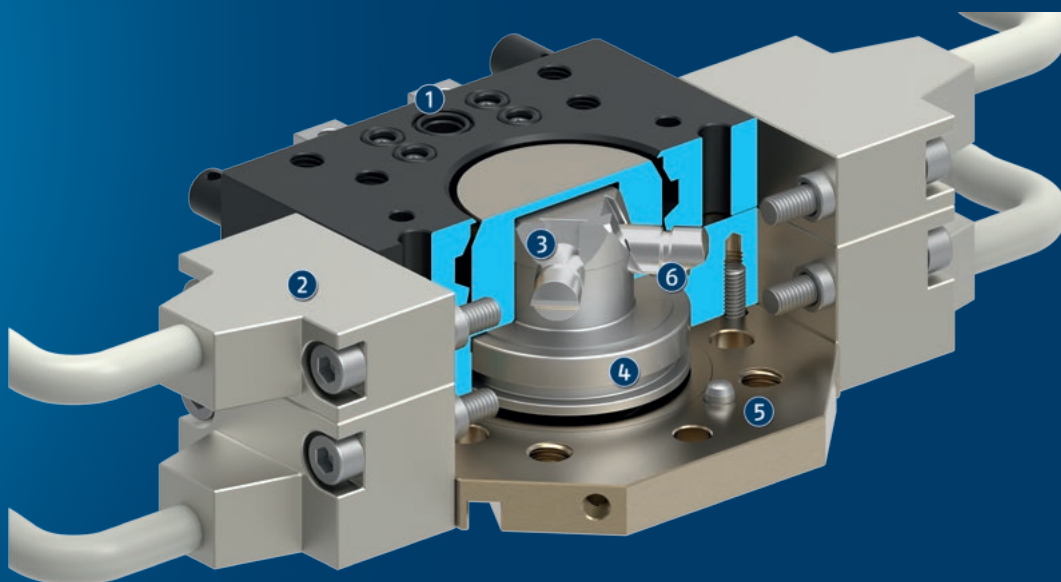
## Functional description

Automatic exchange of the end effector (e.g. gripper, pallets, vacuum gripping systems, pneumatically or electrically driven tools, welding guns, etc.) increases the flexibility of your robot.

The gripper change system (GWS) consists of a gripper change master (GWK) and a gripper change adapter (GWA). The GWK, mounted onto the robot, couples up the GWA

mounted onto your tool.

The locking mechanism, based on a wedge hook system, provides a secure connection. Integrated springs maintain the locking force in the event of a pressure drop. After coupling, pneumatic and electric media feed-throughs automatically supply your robot tool.



- ① **Pneumatic feed-through**  
no interfering contour, as integrated in the housing
- ② **Servo signal module**  
for electrical energy and signal transmission
- ③ **Locking mechanism**  
Wedge-hook system for high locking forces, integrated springs for maintaining the locking force in the event of a pressure drop

- ④ **Drive**  
pneumatic, efficient, and easy to handle
- ⑤ **Housing**  
is weight-optimized due to the use of high-strength aluminum alloy
- ⑥ **Locking**  
For compensating positioning errors in the XY-plane

## General notes about the series

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

**Operating principle:** Wedge gear with surface power transmission

**Energy transmission:** for electrical Energy: 2x 18 pins 0.14 mm<sup>2</sup>; 60 V~; max. 1 A are included in the scope of delivery. Optionally available: 4 pins 2.5 mm<sup>2</sup>; 350 V/B~; max 25 A as per VDE guidelines

**Housing:** The housing consists of high-strength, hard-coated aluminum alloy. The functional components are made of hardened steel.

**Scope of delivery:** Operating and maintenance instructions, manufacturer's declaration, electronic modules

**Warranty:** 24 months

**Harsh environmental conditions:** Please note that use under harsh environmental conditions (e.g. in the coolant area, cast and grinding dust) can considerably reduce the service life of the units, and we will not take over any warranty. However, in many cases we can find a solution. Please contact us for assistance.

**Handling weight:** is the weight of the total load attached to the flange. When designing, the permissible forces and moments have to be paid attention to. Please note that exceeding the recommended handling weight will shorten the lifespan.

## Application example

Exchange and depositing of tools in a gripper change rack

- ① Gripper change rack GWM
- ② Gripper change adapter GWA
- ③ Gripper change master GWK



## SCHUNK offers more ...

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



Storage rack



Collision and overload sensors



Compensation units



Rotary feed-through



Sensor system



Angular gripper



Centric gripper



Parallel gripper

① For more information on these products can be found on the following product pages or at [schunk.com](http://schunk.com). Please contact us: SCHUNK technical hotline +49-7133-103-2696

## Options and special information

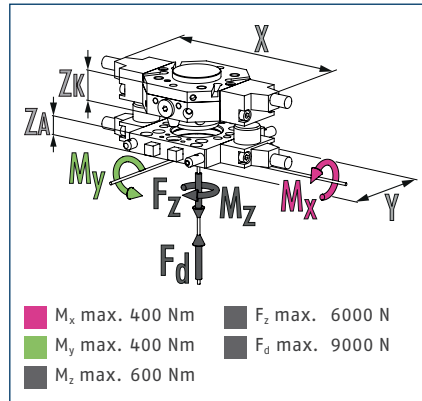
**Wedge-hook kinematics:** for secure locking

**Piston stroke monitoring:** for monitoring (optional)

**Direct assembly:** by using a standardized ISO 9409 interface for robots



### Dimensions and maximum loads



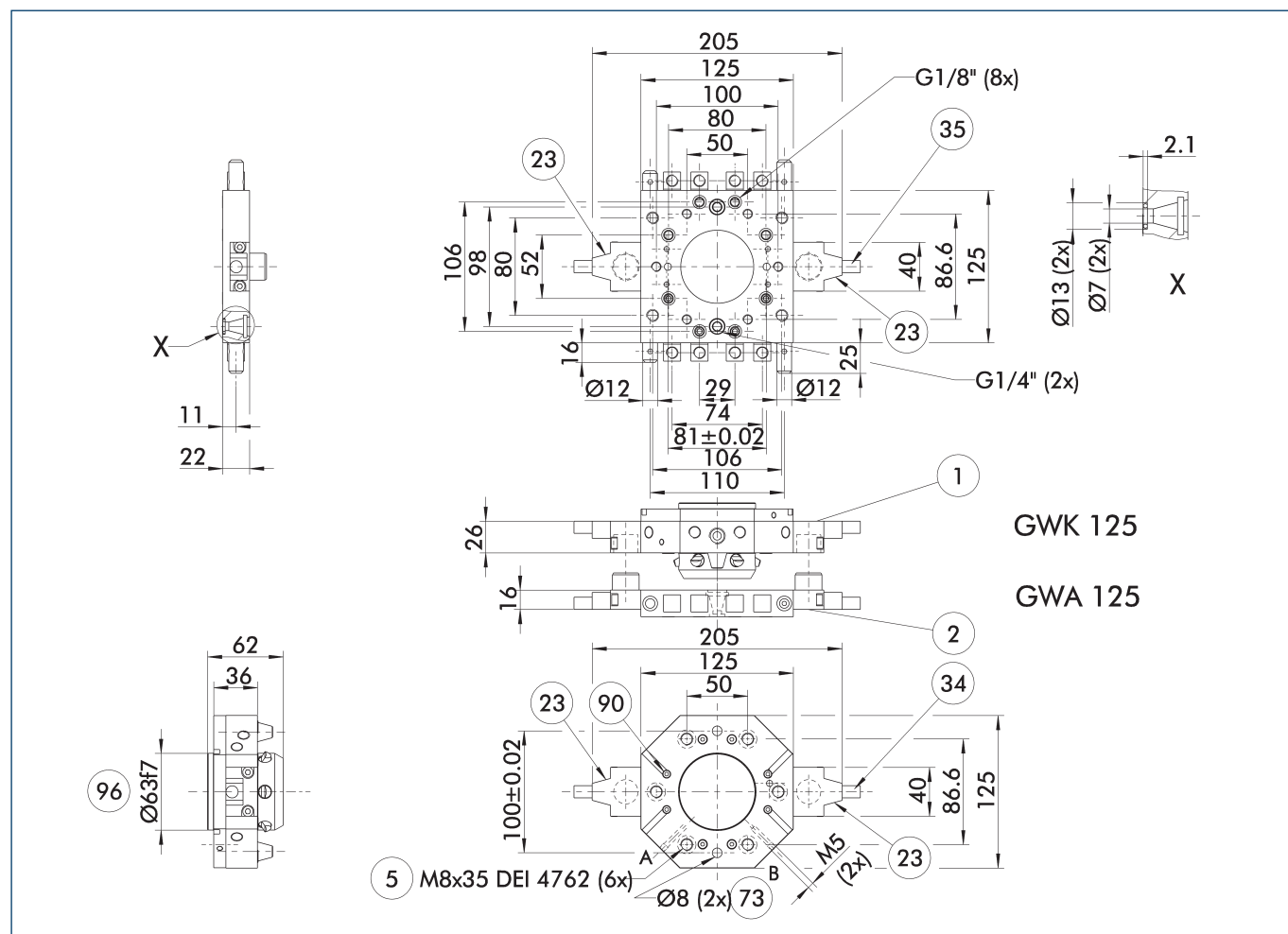
ⓘ This is the max. sum of all forces and moments which are permitted to act on the change system for ensuring proper functioning.

### Technical data

| Description                                  |       | GWK-125             | GWK-A-125           | GWA-125                |
|----------------------------------------------|-------|---------------------|---------------------|------------------------|
|                                              |       | Gripper change head | Gripper change head | Gripper change adapter |
| ID                                           |       | 0302514             | 0302536             | 0302525                |
| Recommended handling weight                  | [kg]  | 170                 | 170                 | 170                    |
| Piston stroke monitoring                     |       | no                  | integrated          |                        |
| Repeat accuracy                              | [mm]  | 0.04                | 0.04                | 0.04                   |
| Weight                                       | [kg]  | 2.3                 | 2.6                 | 1.7                    |
| Max. distance when locking                   | [mm]  | 2                   | 2                   | 2                      |
| Number of pneumatic feed-throughs            |       | 8                   | 8                   | 8                      |
| Air connection thread pneumatic feed-through |       | G1/8"               | G1/8"               | G1/8"                  |
| Number of pneumatic feed-throughs            |       | 2                   | 2                   | 2                      |
| Connection threads for fluid feed-through    |       | G1/4"               | G1/4"               | G1/4"                  |
| Number of electrical feed-throughs           |       | 36                  | 36                  | 36                     |
| Max. permissible XY-axis offset              | [mm]  | ±1.5                | ±1.5                | ±1.5                   |
| Max. permissible angular offset              | [°]   | ±1                  | ±1                  | ±1                     |
| Min./max. ambient temperature                | [°C]  | 5/60                | 5/60                | 5/60                   |
| Min./nom./max. operating pressure            | [bar] | 4.5/-/6             | 4.5/-/6             | 4.5/-/6                |
| Dimensions X x Y x Z**                       | [mm]  | 125 x 205 x 36      | 125 x 205 x 59      | 125 x 205 x 22         |

\*\* Please note that the heights of the change master (ZK) and change adapter (ZA) differ. The sum represents the total height of a coupled change system.

### Main view

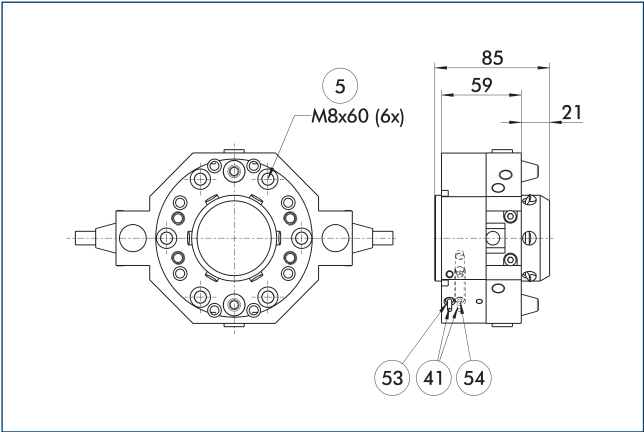


The drawing shows the basic design of the quick-change system without dimensional consideration of the options described below.

- |                                           |                                   |
|-------------------------------------------|-----------------------------------|
| A, a Air connection locked                | 23 Electrical signal feed-through |
| B, b Air connection unlocked              | 34 Cable length robot side 5 m    |
| 1 Robot-side connection                   | 35 Cable length tool side 2 m     |
| 2 Tool-side connection                    | 73 Fit for centering pins         |
| 5 Through hole for connection with screws | 90 Sensor IN ...                  |
|                                           | 96 Fit for centering              |

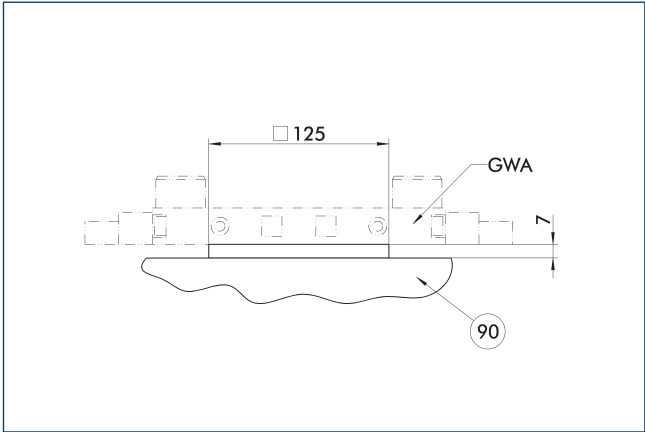


View of GWK-A with piston stroke control



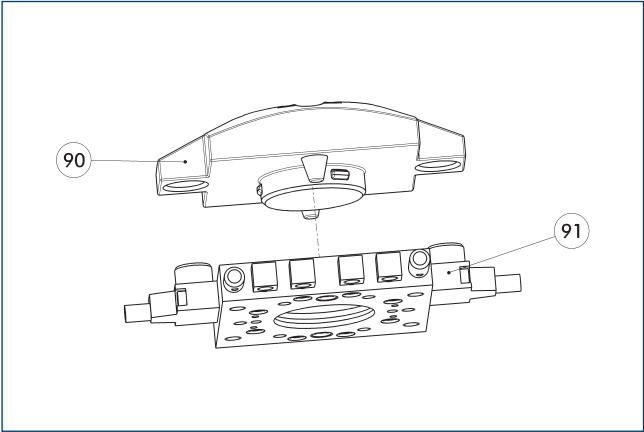
- 5 Through hole for connection with screws
- 53 Monitoring Position unlocked
- 41 Optional proximity switch
- 54 Monitoring Position locked

Adapter plate design



- 90 Tool

Dust cover GWD-125

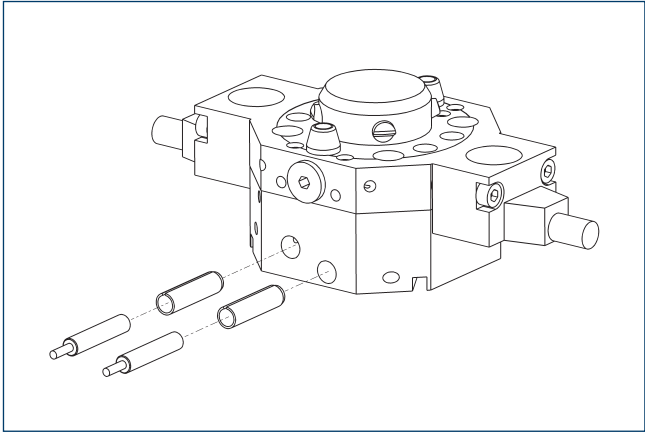


- 90 Dust cover GWD
- 91 Gripper change adapter GWA

The protection cover protects the quick-change adapter in the storage rack against dust and chips. The cover has an integrated clip mechanism which is actuated by locking/unlocking the changing master, allowing the robot to remove the cover from one adapter and placed on another adapter

| Description | ID      |  |
|-------------|---------|--|
| Dust cover  |         |  |
| GWD-125     | 0302542 |  |

Installing the proximity switch in the GWK-A

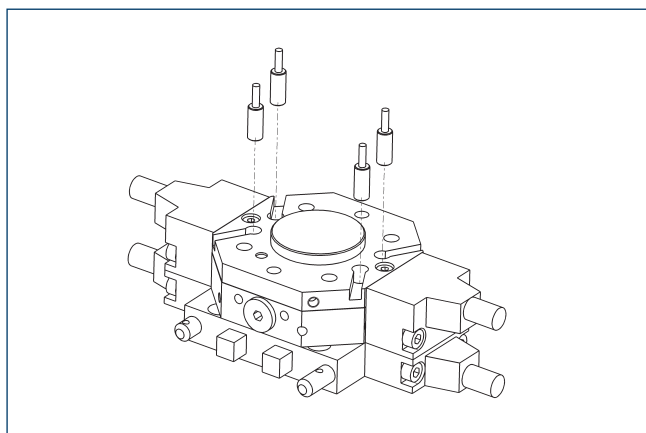


Two sensors and optional extension cables are needed for each gripper change head.

| Description                  | ID      |  |
|------------------------------|---------|--|
| Inductive proximity switches |         |  |
| IN 65-S-M8                   | 0301476 |  |



## Installation of proximity switch for coding



A maximum of four sensors can be mounted per gripper change system. Therefore maximum 15 tools can be given binary codes.

| Description                         | ID       | Often combined |
|-------------------------------------|----------|----------------|
| <b>Inductive proximity switches</b> |          |                |
| IN 60-S-M12                         | 0301585  |                |
| IN 60-S-M8                          | 0301485  |                |
| IN 65-S-M12                         | 0301576  |                |
| INK 60-S                            | 0301553  |                |
| INK 65-S                            | 0301554  |                |
| <b>Cable extension</b>              |          |                |
| 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  |                |
| <b>clip for plug/socket</b>         |          |                |
| CLI-M12                             | 0301464  |                |
| CLI-M8                              | 0301463  |                |
| <b>Connection cables</b>            |          |                |
| 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  |                |
| <b>Sensor distributor</b>           |          |                |
| V2-M12                              | 0301776  | ●              |
| V2-M8                               | 0301775  | ●              |
| V4-M12                              | 0301747  |                |
| V4-M8                               | 0301746  |                |
| V8-M12                              | 0301752  |                |
| V8-M8                               | 0301751  |                |

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