



Superior Clamping and Gripping



Product Information

Gripper change system GWS

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 secure energy supply of the gripping modules

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 Sufficient feed-throughs for most 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

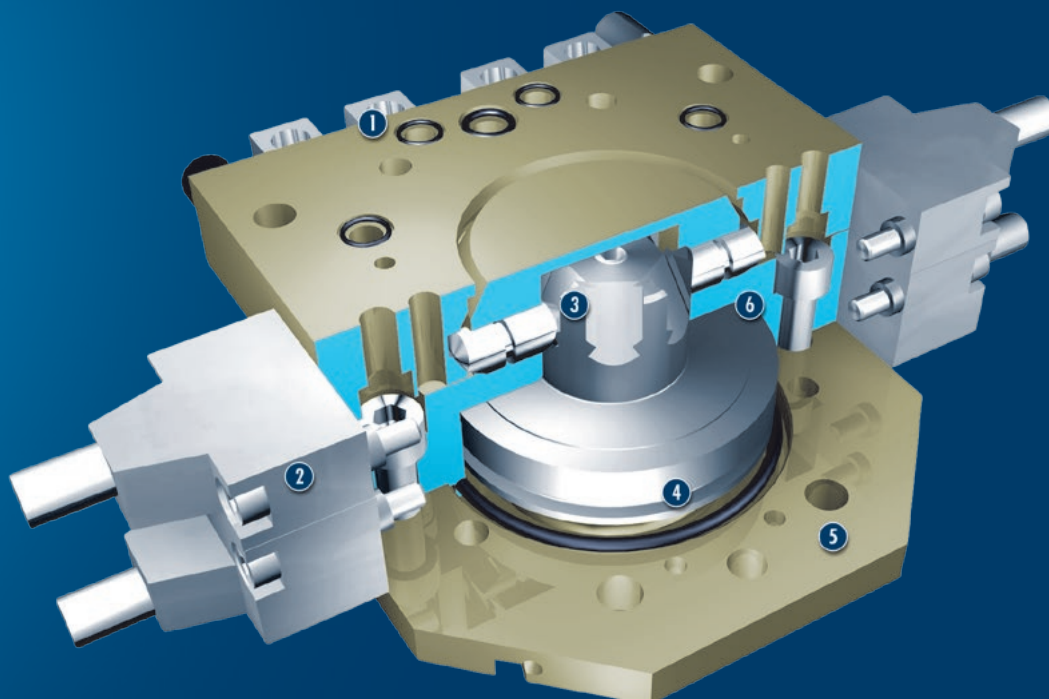
Functional description

Due to the automatic change of the robot tool (e.g. gripper, vacuum gripping system, pneumatically or electrically driven tools, welding guns, etc.) flexibility of your robot increases.

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**
integration into housing means no interfering contours

② **E 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**
Weight-optimized due to the use of high-strength aluminum alloy

⑥ **Locking**
For compensating positioning errors in the X-Y plane

CAD data, operating manuals and other current product documents can be found online.

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: 2 x 18 pins 0.14 mm²; 60 V~; max. 1 A in scope of delivery. Optionally available: 4 pins 2.5 mm²; 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

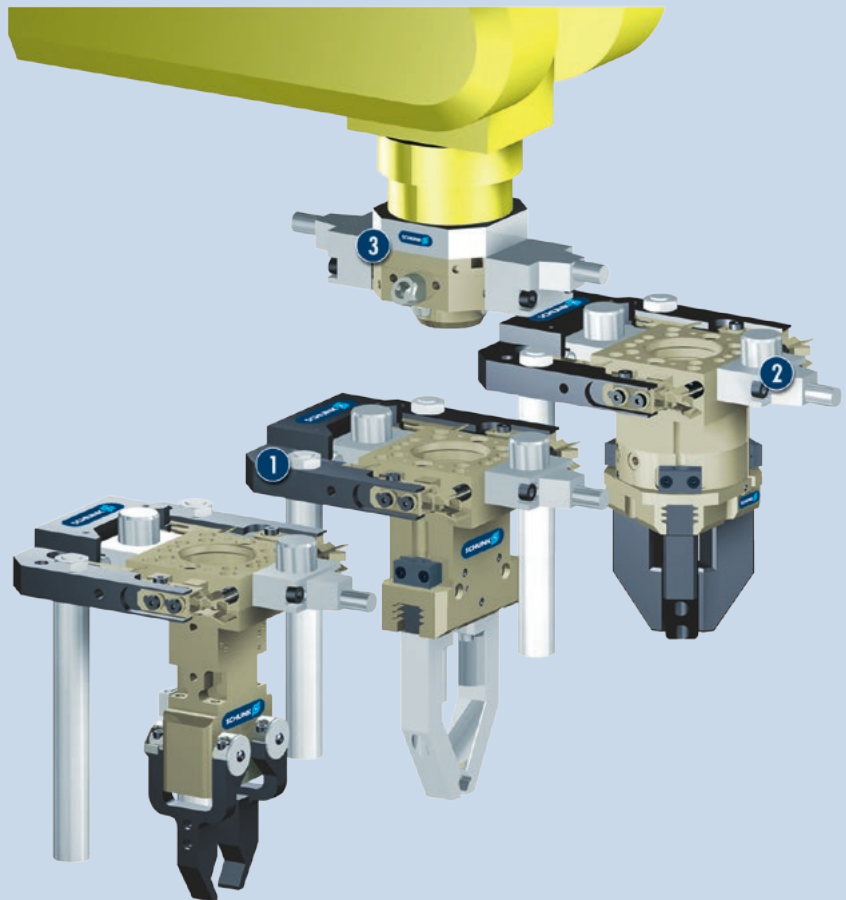
Harsh environmental conditions: Please note that the use under harsh environmental conditions (e.g. with coolant or cast and grinding dust) can considerably reduce the service life of the units and is not covered in the warrant. In many cases, however, we can find a solution. Please contact us for assistance.

Handling weight: the weight of the total load attached to the flange. The design must take into account the permissible forces and moments. Please note that the life time will be reduced if the maximum handling weight is exceeded.

Application example

Exchange and depositing of tools in a gripper change rack

- ❶ GWM gripper change rack
- ❷ GWA gripper change adapter
- ❸ GWK gripper change master



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



Inductive Proximity Switches



Fittings



Collision and overload sensors



Compensation units



Centric gripper



Deburring spindles



Dust cover



Parallel gripper



Rotary feed-through



Angular gripper

① Additional information regarding the products can be found on the following product pages or at www.schunk.com. Please contact us for further information: SCHUNK technical hotline +49-7133-103-2696

Options and special information

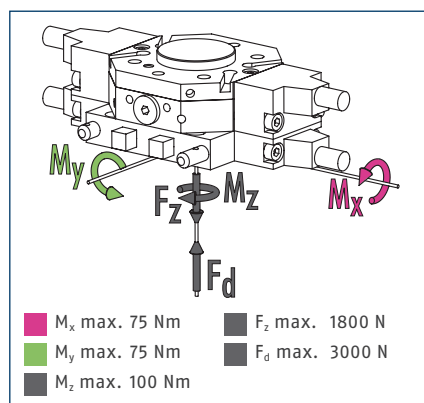
Wedge-hook kinematics: for secure locking

Piston stroke monitoring: For monitoring (optional)

Direct assembly: On ISO 9409-1-50-4-M6



Forces and moments

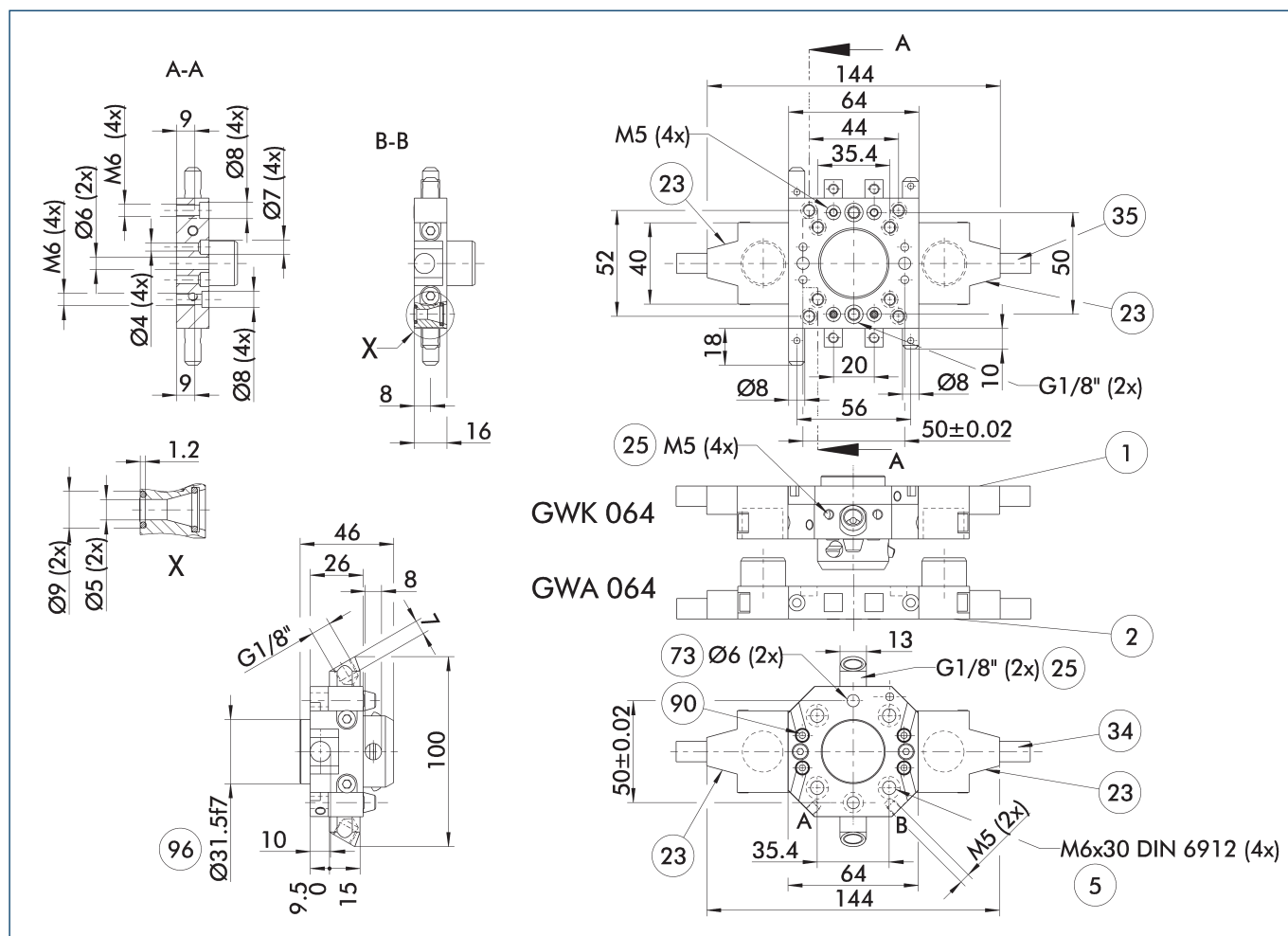


① This is the max. sum of all loads and moments (acceleration forces and moments, process forces, acceleration forces etc.) that are permitted to act on the change system to ensure error-free functioning.

Technical data

Description		GWK-064	GWK-A-064	GWA-064
		Gripper change master	Gripper change master	Gripper change adapter
ID		0302506	0302534	0302517
max. handling weight	[kg]	60	60	60
Piston stroke monitoring		no	integrated	
Repeat accuracy	[mm]	± 0.04	± 0.04	± 0.04
Weight	[kg]	0.5	0.74	0.35
max. locking distance	[mm]	2	2	2
Number of pneumatic feed-throughs		4	4	4
Air connection thread pneumatic feed-through		M5	M5	M5
Number of pneumatic feed-throughs		2	2	2
Air connection thread pneumatic feed-through		G1/8"	G1/8"	G1/8"
Number of electrical feed-throughs		36	36	36
max. permissible XY 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./max. operating pressure	[bar]	4.5/6	4.5/6	4.5/6

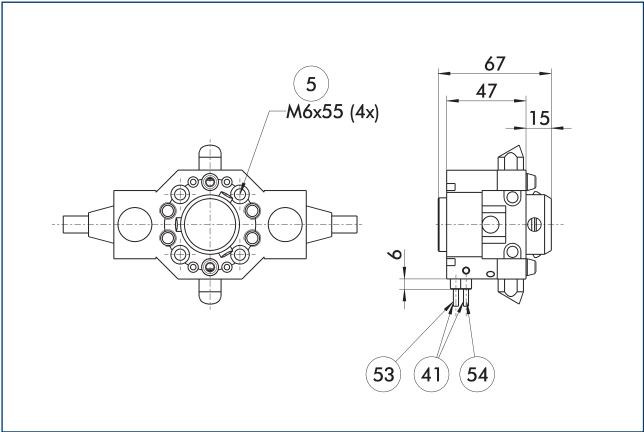
Main view



The drawing shows the basic design of the gripper 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 | 25 Pneumatic feed-throughs |
| 1 Robot-side connection | 34 Cable length robot side 5 m |
| 2 Tool-side connection | 35 Cable length tool side 2 m |
| 5 Through hole for connection with screws | 73 Fit for centering pins |
| | 90 Sensor IN ... |
| | 96 Fit for centering |

View of GWK-A with piston stroke control



- 5

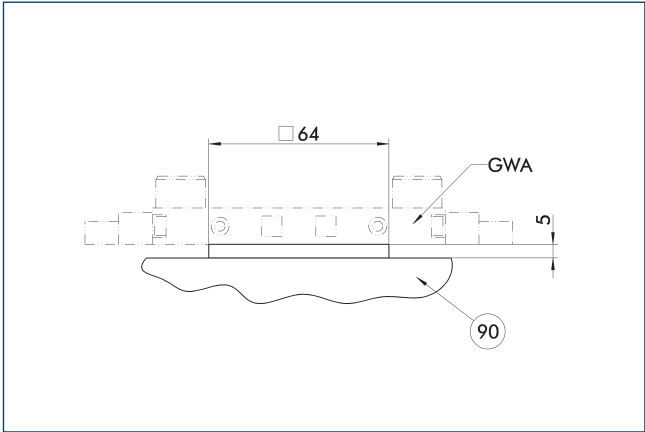
Through hole for connection with screws
- 53

Monitoring Position unlocked
- 41

Optional proximity switch
- 54

Monitoring Position locked

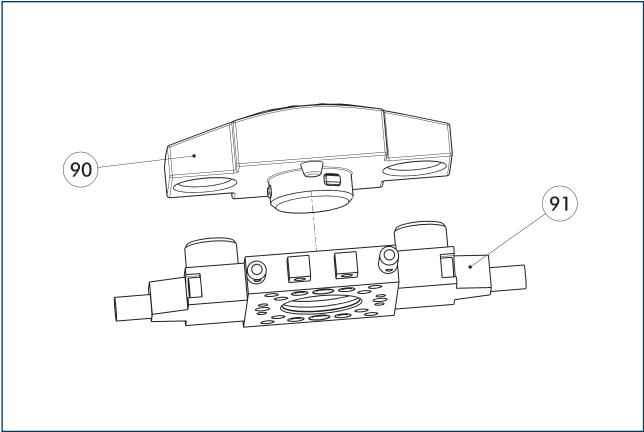
Adapter plate design



- 90

Tool

Dust cover GWD-064



- 90

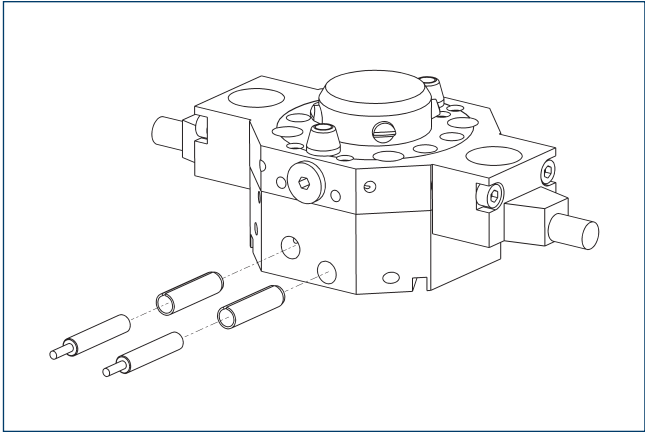
Dust cover GWD
- 91

GWA gripper change adapter

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-064	0302540	

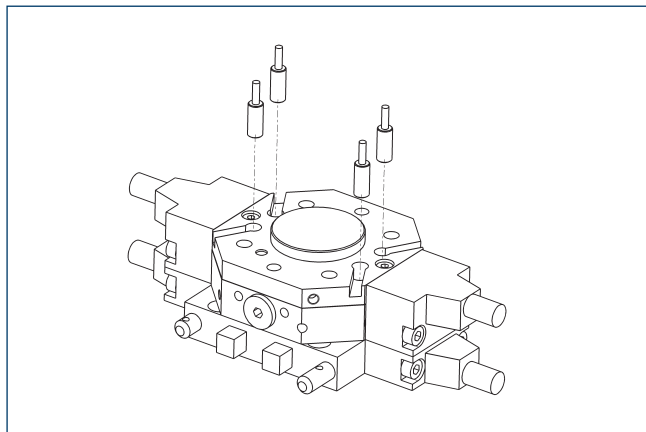
Installing the proximity switch in the GWK-A



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

Description	ID	
Inductive Proximity Switches		
IN 65-S-M8	0301476	

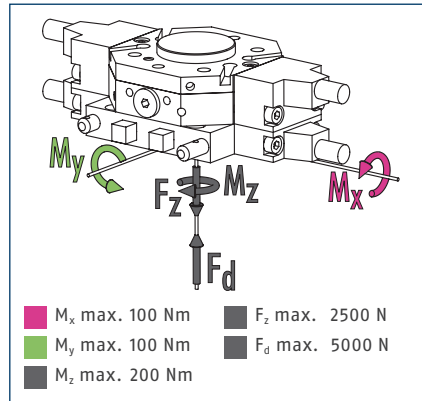
Installation of proximity switch for coding



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
Inductive Proximity Switches		
IN 60-S-M12	0301585	
IN 60-S-M8	0301485	
IN 65-S-M12	0301576	
INK 60-S	0301553	
INK 65-S	0301554	
Cable extension		
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	
clip for plug/socket		
CLI-M12	0301464	
CLI-M8	0301463	
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	
Sensor distributor		
V2-M12	0301776	●
V2-M8	0301775	●
V4-M12	0301747	
V4-M8	0301746	
V8-M12	0301752	
V8-M8	0301751	

Forces and moments



ⓘ This is the max. sum of all loads and moments (acceleration forces and moments, process forces, acceleration forces etc.) that are permitted to act on the change system to ensure error-free functioning.

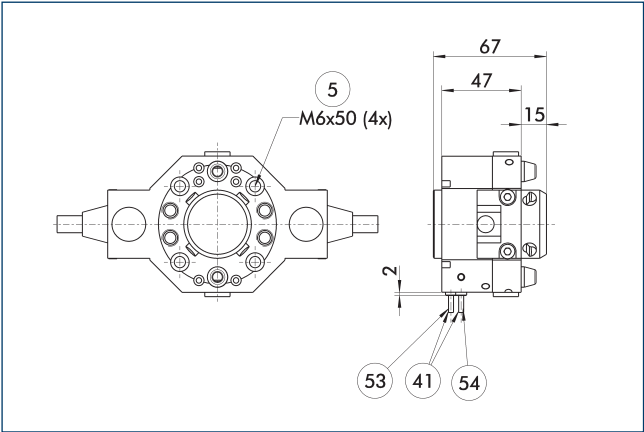
Technical data

Description		GWK-080	GWK-A-080	GWA-080
		Gripper change master	Gripper change master	Gripper change adapter
ID		0302509	0302535	0302520
max. handling weight	[kg]	86	86	86
Piston stroke monitoring		no	integrated	
Repeat accuracy	[mm]	0.04	0.04	0.04
Weight	[kg]	0.65	0.95	0.4
max. locking distance	[mm]	2	2	2
Number of pneumatic feed-throughs		6	6	6
Air connection thread pneumatic feed-through		M5	M5	M5
Number of pneumatic feed-throughs		2	2	2
Air connection thread pneumatic feed-through		G1/8"	G1/8"	G1/8"
Number of electrical feed-throughs		36	36	36
max. permissible XY 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./max. operating pressure	[bar]	4.5/6	4.5/6	4.5/6

Technical drawing of the GWK 080 and GWA 080 components. The drawing includes three views: a top view, a side view, and a front view. The top view shows a square flange with dimensions 160x160 mm, a central hole of Ø8, and various mounting holes. The side view shows the profile of the component with dimensions 80, 40, 16, and 26 mm. The front view shows the component with dimensions 160x160 mm, a central hole of Ø8, and various mounting holes. The drawing also includes a detail view of the mounting holes and a section view X-X. The components are labeled GWK 080 and GWA 080.

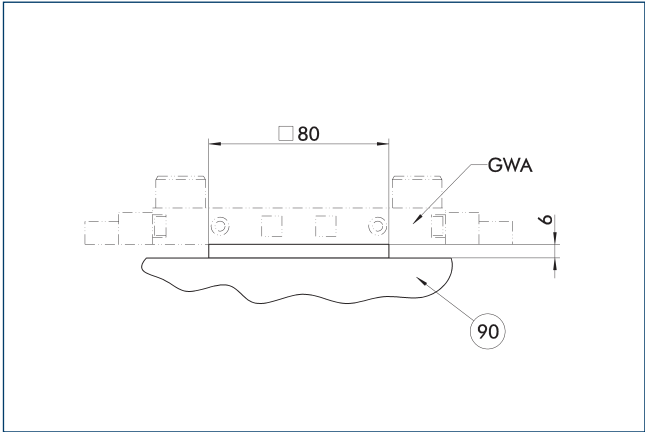
96 Fit for centering

View of GWK-A with piston stroke control



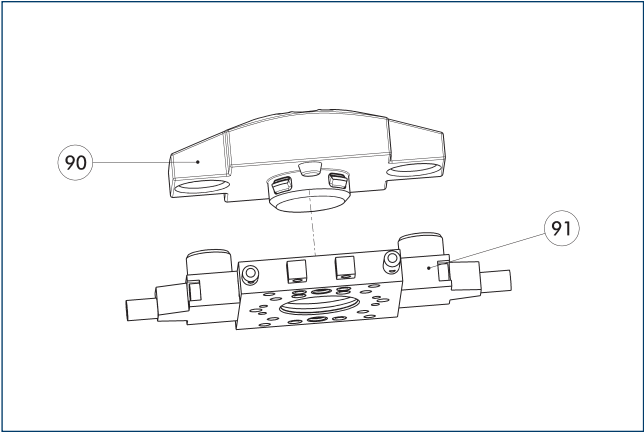
- 5 Through hole for connection with screws
- 41 Optional proximity switch
- 53 Monitoring Position unlocked
- 54 Monitoring Position locked

Adapter plate design



- 90 Tool

Dust cover GWD-080

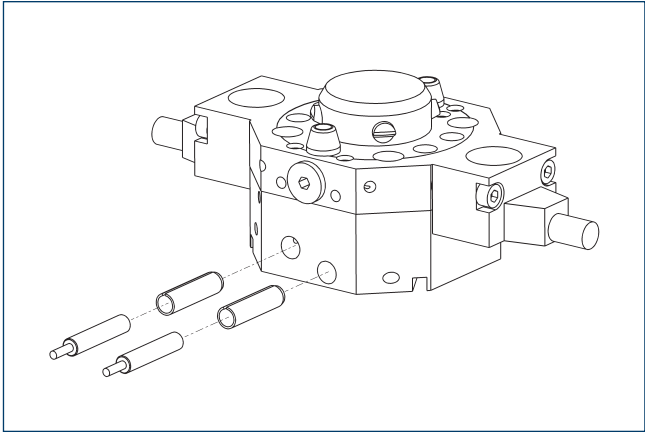


- 90 Dust cover GWD
- 91 GWA gripper change adapter

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-080	0302541	

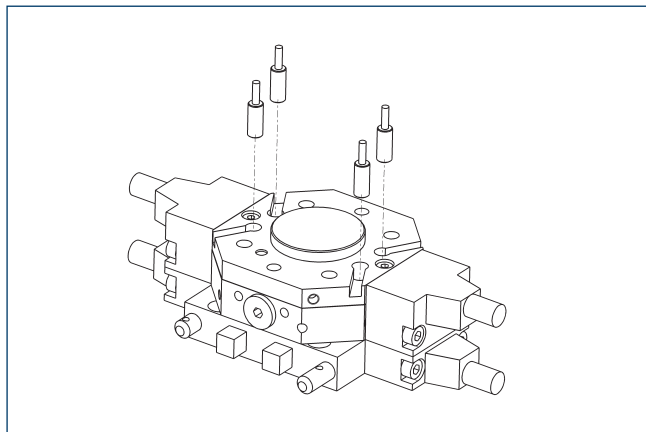
Installing the proximity switch in the GWK-A



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

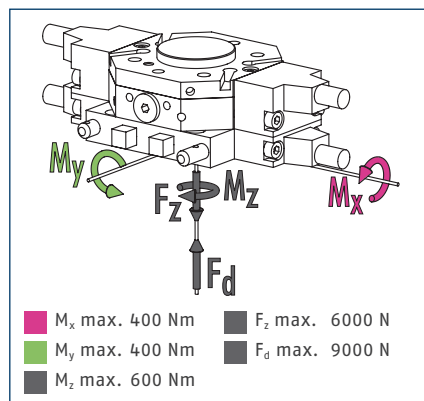


A maximum of four sensors can be mounted per gripper change system. Therefore maximum 15 tools can be given binary codes.

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



Forces and moments



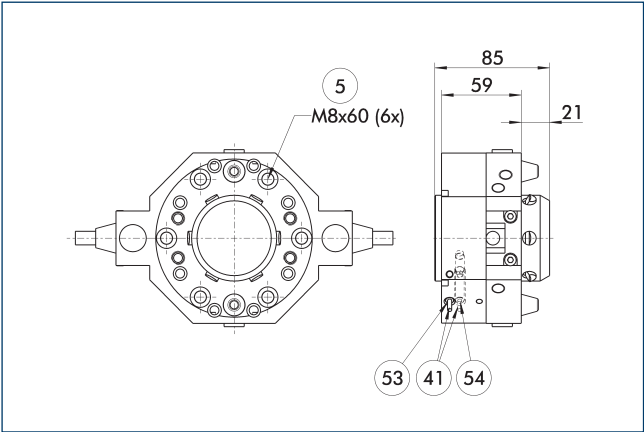
ⓘ This is the max. sum of all loads and moments (acceleration forces and moments, process forces, acceleration forces etc.) that are permitted to act on the change system to ensure error-free functioning.

Technical data

Description		GWK-125	GWK-A-125	GWA-125
		Gripper change master	Gripper change master	Gripper change adapter
ID		0302514	0302536	0302525
max. 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. locking distance	[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
Air connection thread pneumatic feed-through		G1/4"	G1/4"	G1/4"
Number of electrical feed-throughs		36	36	36
max. permissible XY 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./max. operating pressure	[bar]	4.5/6	4.5/6	4.5/6

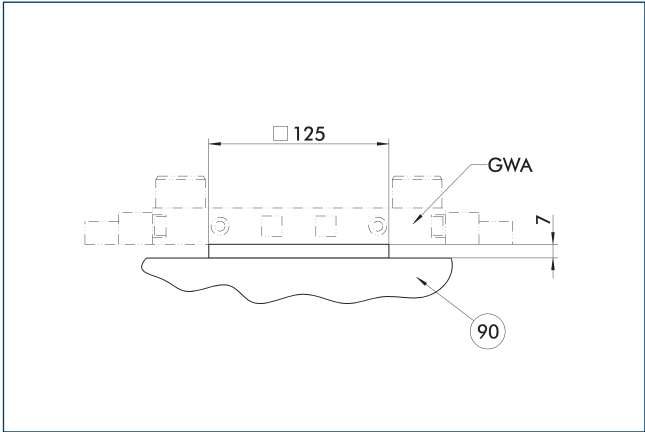
A, a Air connection locked	(23) Electrical signal feed-through
B, b Air connection unlocked	(34) Cable length robot side 5 m
	(35) Cable length tool side 2 m
(1) Robot-side connection	(73) Fit for centering pins
(2) Tool-side connection	(90) Sensor IN ...
(5) Through hole for connection with screws	(96)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

View of GWK-A with piston stroke control



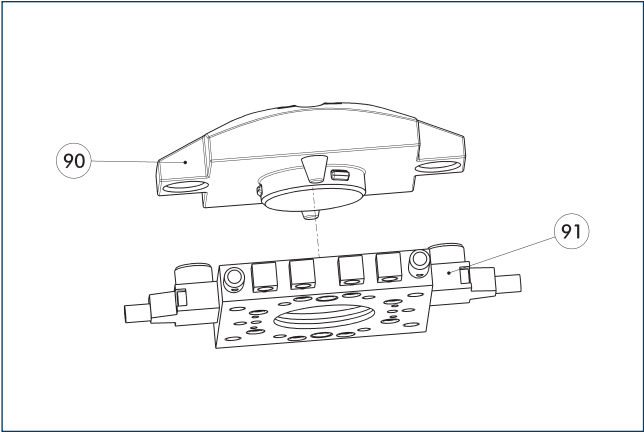
- 5 Through hole for connection with screws
- 41 Optional proximity switch
- 53 Monitoring Position unlocked
- 54 Monitoring Position locked

Adapter plate design



- 90 Tool

Dust cover GWD-125

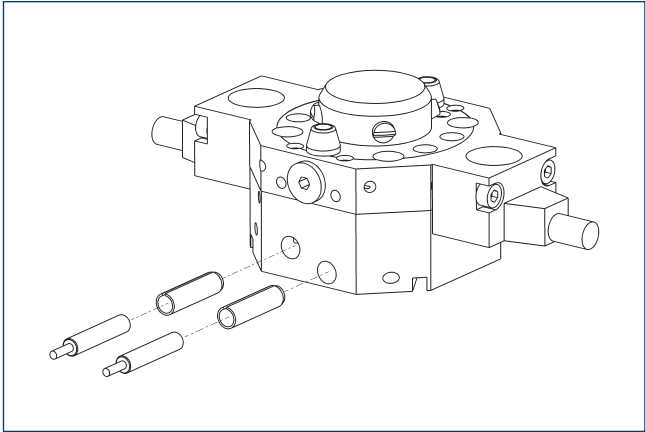


- 90 Dust cover GWD
- 91 GWA gripper change adapter

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	

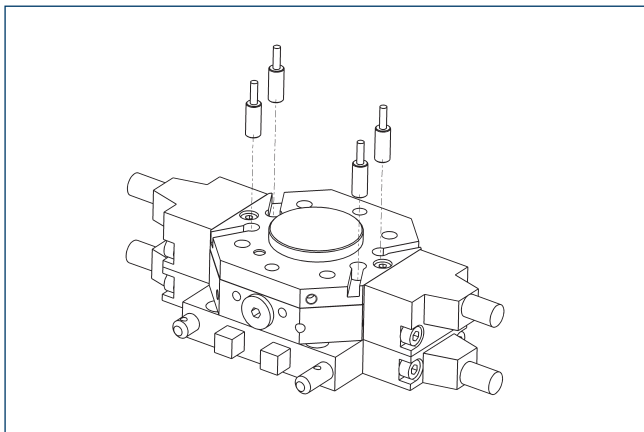
Installing the proximity switch in the GWK-A



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
Inductive Proximity Switches		
IN 60-S-M12	0301585	
IN 60-S-M8	0301485	
IN 65-S-M12	0301576	
INK 60-S	0301553	
INK 65-S	0301554	
Cable extension		
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	
clip for plug/socket		
CLI-M12	0301464	
CLI-M8	0301463	
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	
Sensor distributor		
V2-M12	0301776	●
V2-M8	0301775	●
V4-M12	0301747	
V4-M8	0301746	
V8-M12	0301752	
V8-M8	0301751	

SCHUNK GmbH & Co. KG
Spann- und Greiftechnik

Bahnhofstr. 106 – 134
D-74348 Lauffen/Neckar
Tel. +49-7133-103-0
Fax +49-7133-103-2239
info@de.schunk.com
www.schunk.com



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