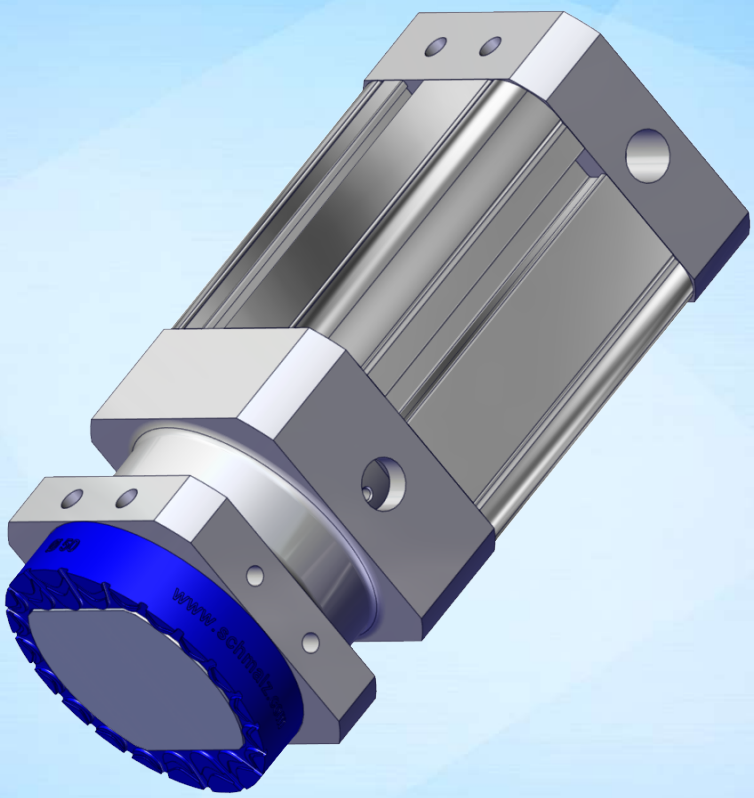

Operating instructions

Magnetic Gripper SGM-HP / SGM-HT-HP

WWW.SCHMALZ.COM

EN-US · 30.30.01.01206 · 11 · 01/24
Translation of the original operating instructions

Note

The Operating instructions were originally written in German. Store in a safe place for future reference. Subject to technical changes without notice. No responsibility is taken for printing or other types of errors.

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1 Important Information

1.1 The technical documentation is part of the product

1. For problem-free and safe operation, follow the instructions in the documents.
2. Keep the technical documentation in close proximity to the product. The documentation must be accessible to personnel at all times.
3. Pass on the technical documentation to subsequent users.

⇨ Failure to follow the instructions in these Operating instructions may result in injuries!

⇨ Schmalz is not liable for damage or malfunctions that result from failure to heed these instructions.

If you still have questions after reading the technical documentation, contact Schmalz Service at:

www.schmalz.com/services

1.2 Note on Using this Document

J. Schmalz GmbH is generally referred to as Schmalz in this document.

The document contains important notes and information about the different operating phases of the product:

- Transport, storage, start of operations and decommissioning
- Safe operation, required maintenance, rectification of any faults

The document describes the product at the time of delivery by Schmalz and is aimed at:

- Installers who are trained in handling the product and can operate and install it
- Technically trained service personnel performing the maintenance work
- Technically trained persons who work on electrical equipment

1.3 Type Plate

The type plate is permanently attached to the product and must always be clearly legible.
It contains product identification data and important technical information.

The QR code enables access to the digital technical documentation for the product.

▸ For spare parts orders, warranty claims or other inquiries, have the information on the type plate to hand.

1.4 Symbols

This symbol indicates useful and important information.

✓ This symbol represents a prerequisite that must be met before an action is performed.

▸ This symbol represents an action to be performed.

⇨ This symbol represents the result of an action.

Actions that consist of more than one step are numbered:

1. First action to be performed.
2. Second action to be performed.

2 Fundamental Safety Instructions

2.1 Intended Use

The magnetic gripper is used for handling ferromagnetic workpieces, such as perforated plates, complex laser-cut workpieces, plates with drill holes and apertures.

The operator is required to document the static strength and holding force and to adhere to safety factors.
For system designs, a safety factor of S=3 should be applied.

The load to be lifted must be sufficiently rigid so that it is not damaged during gripping and handling.

The magnetic gripper is built in accordance with the latest standards of technology and is shipped in safe condition. However, hazards can arise during use. Observe the warnings in these operating instructions.

The maximum lift capacity must not be exceeded (> See ch. Technical Data).

Do not operate the device in environments where there is a risk of explosion.

Do not operate the product in aggressive environments (e.g. ambient air containing solvent fumes).

2.2 Non-Intended Use

Schmalz accepts no liability for damage caused by the use of the gripper SGM-SV for purposes other than those described under Intended Use. Use of the gripper SGM-SV for loads that are not specified in the order confirmation or that have different physical properties than those specified in the order confirmation shall be considered non-intended use. In particular, the following are considered non-intended use:

- Use as a climbing aid
- Storing loads when active
- Removing building components or fixtures.

2.3 Personnel Qualifications

Unqualified personnel cannot recognize dangers and are therefore exposed to higher risks!

The operating company must ensure the following points:

- The personnel must be commissioned for the activities described in these instructions.
- The staff must be at least 18 years of age and physically and mentally capable.
- The product must be operated only by persons who have undergone appropriate training.
- Personnel must receive regular safety briefings (frequency as per country-specific regulations).

The following target groups are addressed in these instructions:

The operator of the system must comply with country-specific regulations regarding the age, ability and training of the personnel.

Applicable for Germany:

A qualified employee is defined as an employee who has received technical training and has the knowledge and experience – including knowledge of applicable regulations – necessary to enable him or her to recognize possible dangers and implement the appropriate safety measures while performing tasks. Qualified employees must observe the relevant industry-specific rules and regulations.

2.4 Warnings in This Document

Warnings warn against hazards that may occur when handling the product. The signal word indicates the level of danger.

Signal word	Meaning
⚠ WARNING	Indicates a medium-risk hazard that could result in death or serious injury if not avoided.
⚠ CAUTION	Indicates a low-risk hazard that could result in minor or moderate injury if not avoided.
NOTE	Indicates a danger that leads to property damage.

2.5 Residual Risks

The system integrator must carry out a risk assessment of the entire system for all operating modes and define the danger zone precisely. In doing so, country-specific provisions and regulations must be observed.

⚠ WARNING

The product contains a permanent magnet that generates a continuous magnetic field.

Danger for persons with pacemakers. Devices and data carriers can be damaged.

- Keep persons with pacemakers away from the product.
- Keep sensitive electrical devices and data carriers away from the product.

⚠ CAUTION

Risk of crushing if workpiece is abruptly attached

- Do not activate the magnet until the gripper is on the load.
- Do not place any body parts between the gripping surface and load.

⚠ CAUTION

Falling product

Risk of injury

- Securely attach the product at the site of operation.
- Wear safety shoes (S1) and safety glasses when handling and mounting/dismounting the product.

2.6 Modifications to the Product

Schmalz assumes no liability for consequences of modifications over which it has no control:

1. The product must be operated only in its original condition as delivered.
2. Use only original spare parts from Schmalz.
3. The product must be operated only in perfect condition.

3 Product Description

3.1 Description of the Function

The magnetic gripper powered by compressed air lifts ferromagnetic workpieces using a magnetic force.

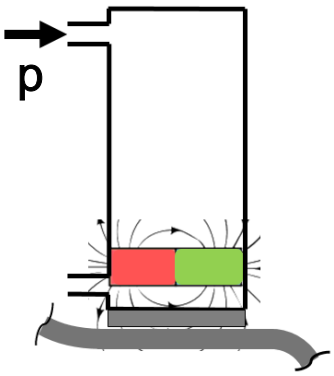
It is used for handling sheet metal and perforated plates, complex laser-cut workpieces, sheet metal with drill holes and apertures, curved sheet metal and pipes.

To control the magnet, the system alternately supplies the two gripper connections with compressed air while venting the non-actuated connection.

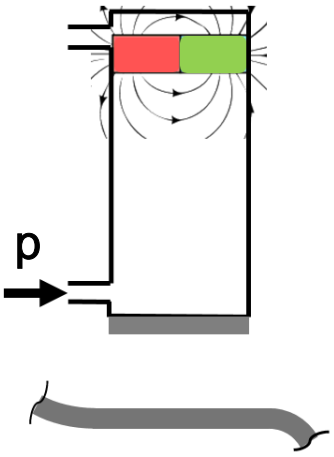
By applying the compressed air p, the permanent magnet is moved toward the gripping surface (when gripping the workpiece) or away from the gripping surface (when releasing the workpiece).

The compressed air must be applied for at least one second to ensure reliable switching.

Gripping the workpiece

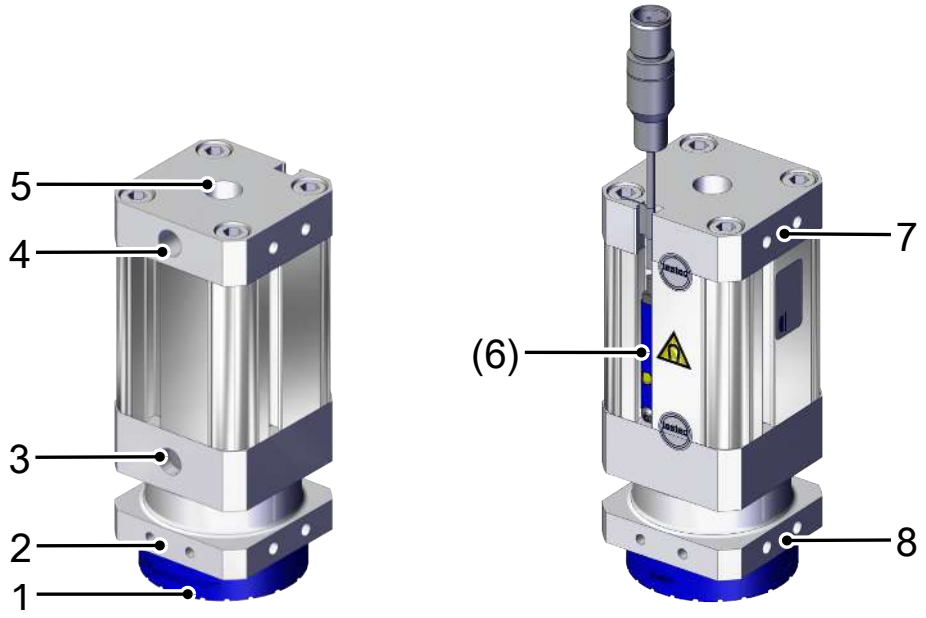


Depositing the workpiece



The bistable mode of operation allows safe gripping even during a power failure.

3.2 Product Design



1	Friction ring only ...HP, ... HT optional	5	1/4" mounting thread - central
2	Connection of retaining elements	(6)	**Optional:** Proximity sensor (for monitoring piston position) only for SGM-HP
3	1/8" compressed air connection (depositing workpiece)	7	Mechanical connection - lateral
4	1/8" compressed air connection (gripping workpiece)	8	Mechanical connection - lateral

3.3 Variants and Type Key

The version is indicated in the item designation. The item designation is composed as follows:

Part number	Type name	High-temperature
10.01.17.00424	SGM-HP 20 with PU friction ring	---
10.01.17.00316	SGM-HP 30 with PU friction ring	---
10.01.17.00304	SGM-HP 40 with PU friction ring	---
10.01.17.00282	SGM-HP 50 with PU friction ring	---
10.01.17.00397	SGM-HT-HP 30	HT
10.01.17.00403	SGM-HT-HP 40	HT
10.01.17.00402	SGM-HT-HP 50	HT

4 Technical Data

4.1 General Parameters

Operating principle	Bistable
Mounting position	Any
Opt. operating pressure	2.5 to 6.0 bar
Operating medium	Air or neutral gas, 40 µm filtered, with or without oil, class 7-4-4 compressed air quality acc. to ISO 8573-1

Gripper type SGM-HP

Type	**20**	**30**	**40**	**50**
Holding force [1] ≥ 0.5 mm sheet metal with/without friction ring	13 N / 21 N	30 N / 34 N	46 N / 52 N	65 N / 72 N
Holding force [1] ≥ 0.7 mm sheet metal with/without friction ring	16 N / 28 N	46 N / 55 N	60 N / 78 N	96 N / 102 N
Holding force [1] ≥ 1 mm sheet metal with/without friction ring	19 N / 28 N	72 N / 95 N	100 N / 125 N	162 N / 167 N
Holding force [1] ≥ 2 mm sheet metal with/without friction ring	16 N / 25 N	90 N / 130 N	210 N / 290 N	290 N / 415 N
Holding force [1] max. with/without friction ring for sheet metal thickness:	16 N / 25 N 1 mm	90 N / 130 N 2 mm	235 N / 320 N 4 mm	385 N / 560 N 6 mm
Lateral force, dry [2]	13 N	65 N	115 N	135 N
Lateral force, oily [2]	10 N	32 N	70 N	90 N
Residual holding force	≤ 0.3 N			
Temperature range	+5° C to 70° C			
Contact temperature	Max. 70° C			
Mass	81 g	215 g	415 g	770 g
Minimum component weight with/without friction ring	30 g / 30 g	30 g / 50 g	30 g / 130 g	30 g / 470 g

Gripper type SGM-HT-HP

The friction ring HT2 (black) can be retrofitted as an accessory.

Type	30	40	50
Holding force [1] ≥ 0.5 mm sheet metal with/without friction ring	30 N [4] / 34 N	46 N [4] / 52 N	65 N [4] / 72 N
Holding force [1] ≥ 0.7 mm sheet metal with/without friction ring	46 N [4] / 55 N	60 N [4] / 78 N	96 N [4] / 102 N
Holding force [1] ≥ 1 mm sheet metal with/without friction ring	72 N [4] / 95 N	100 N [4] / 125 N	162 N [4] / 167 N
Holding force [1] ≥ 2 mm sheet metal with/without friction ring	80 N [4]/ 120 N	200 N [4] / 260 N	270 N [4] / 370 N
Holding force [1] max. with/without friction ring for sheet metal thickness:	80 N [4] / 120 N 2 mm	230 N [4] / 290 N 4 mm	330 N [4] / 520 N 6 mm
Residual holding force	≤ 0.3 N		
Lateral force, dry [2, 4]	39 N	95 N	127 N
Lateral force, oily [2, 4]	32 N	75 N	99 N
Temperature range	Max. 150° C		
Contact temperature	Max. 350° C [3]		
Mass	212 g	410 g	765 g
Minimum component weight with/without friction ring	-- / 50 g	-- / 130 g	-- / 470 g

[1] All holding forces are static and unsecured when gripper active surfaces are fully covered on steel plate S235 at +20 °C.

[2] 2 mm sheet steel, with friction ring

[3] Can be used for workpiece temperatures up to 350° C (depending on process conditions). The influence of temperature can reduce holding forces by up to 30%.

[4] Values using the optional friction ring

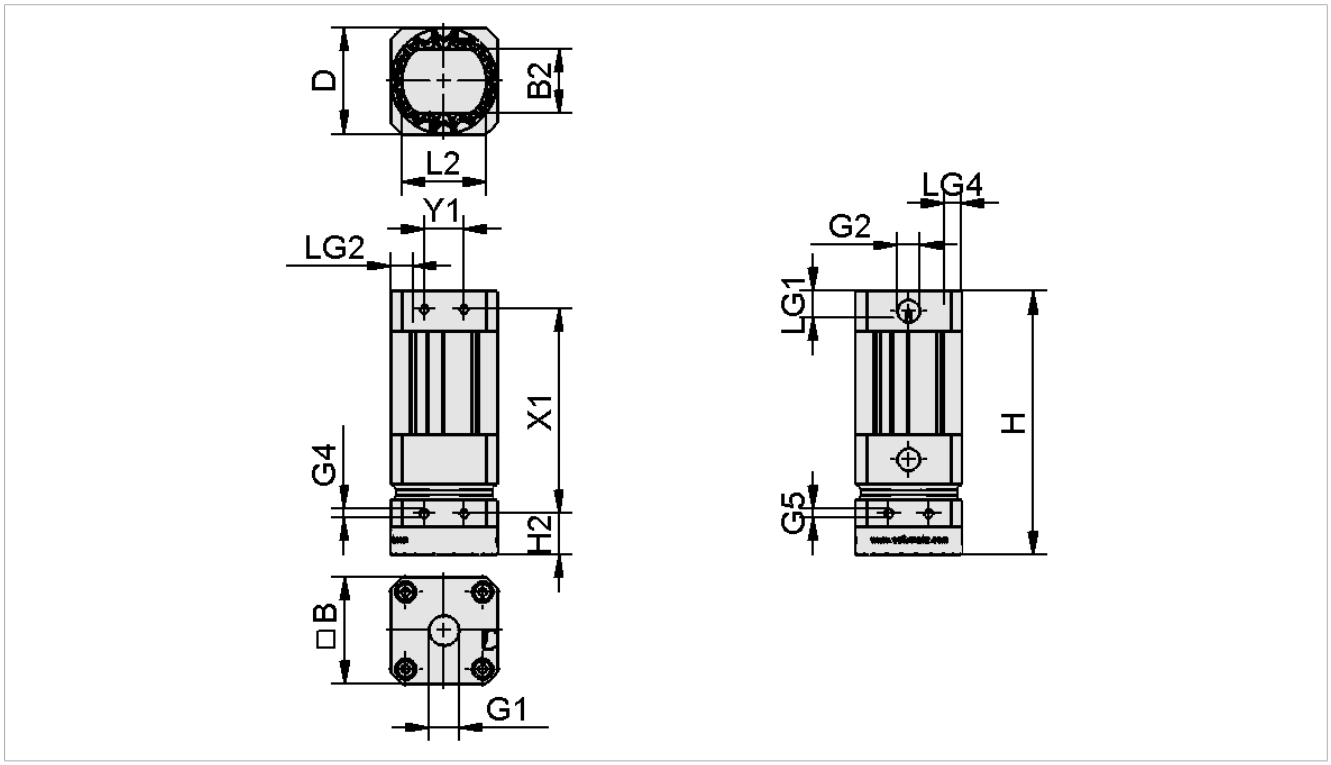
As the operating temperature increases, the holding force of the grippers decreases. We recommend performing tests before continuous operation.

The specified values apply to clean, smooth surfaces for low-carbon steel sheets. Dirty, rough, and highly alloyed steel sheets reduce the holding force.

For maximum holding forces, the component to be handled must completely cover the gripping surface.
Due to the design of the gripper, it is not possible to centrally grip parts that are smaller than the gripping surface.

4.2 Dimensions

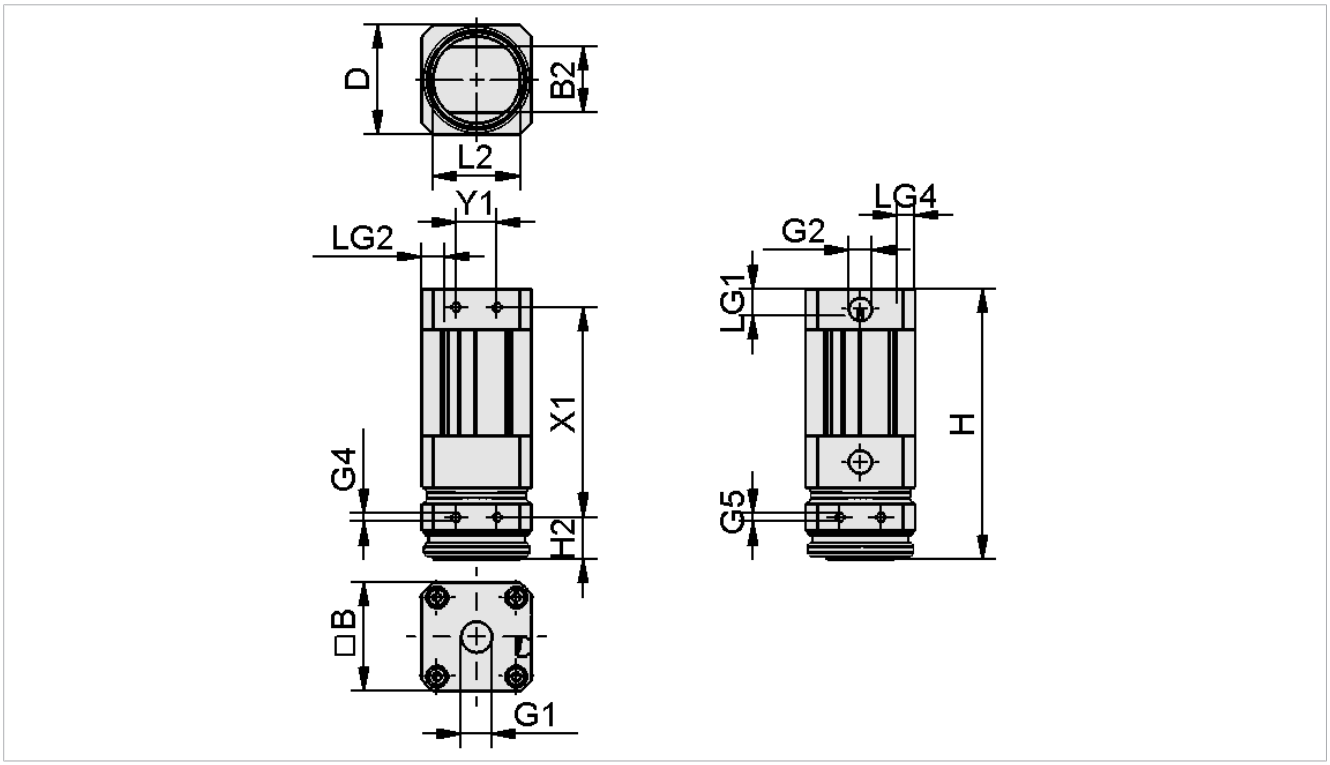
Variant SGM-HP



Type	B	H	D	L2	B2	H2	G1	LG1
SGM-HP 20	20.1	78.2	20	12	9.1	13.2	1/8" internal thread	6
SGM-HP 30	30.1	99.4	30	20.5	15	15.7	1/8" internal thread	6
SGM-HP 40	40.65	99.4	40	32	24.2	15.7	1/4" internal thread	9
SGM-HP 50	50.7	123.4	50	41.5	31.2	15.7	1/4" internal thread	10

Type	G2	LG2	G4	LG4	G5	X1	Y1
SGM-HP 20	M5 internal thread	5	M3-IG	4	M3-IG	55	6.5
SGM-HP 30	1/8" internal thread	6	M4-IG	5	M4-IG	74	12
SGM-HP 40	1/8" internal thread	6	M4-IG	5	M4-IG	74	12
SGM-HP 50	1/8" internal thread	6	M5 internal thread	6.5	M4-IG	100	15

Variant SGM-HT-HP



Type	B	H	D	L2	B2	H2	G1	LG1
SGM-HT-HP 30	30.1	99.2	26.9	20.5	15	15.5	1/8" internal thread	6
SGM-HT-HP 40	40.65	99.2	38.4	32	24.2	15.5	1/4" internal thread	9
SGM-HT-HP 50	50.7	123.2	48.4	41.5	31.2	15.5	1/4" internal thread	10

Type	G2	LG2	G4	LG4	G5	X1	Y1
SGM-HT-HP 30	1/8" internal thread	6	M4-IG	5	M4-IG	74	12
SGM-HT-HP 40	1/8" internal thread	6	M4-IG	5	M4-IG	74	12
SGM-HT-HP 50	1/8" internal thread	6	M5 internal thread	6.5	M4-IG	100	15

All specifications except angles given in mm.

5 Transportation and Storage

5.1 Checking the Delivery

The scope of delivery can be found in the order confirmation. The weights and dimensions are listed in the delivery notes.

1. Compare the entire delivery with the supplied delivery notes to make sure nothing is missing.
2. Damage caused by defective packaging or occurring in transit must be reported immediately to the carrier and J. Schmalz GmbH.

5.2 Reusing the Packaging

The product is delivered in cardboard packaging. The packaging should be reused to safely transport the product at a later stage.

Keep the packaging for future transport or storage.

6 Installation

6.1 Installation Instructions

⚠ WARNING

The product contains a permanent magnet that generates a continuous magnetic field.

Danger for persons with pacemakers. Devices and data carriers can be damaged.

- Keep persons with pacemakers away from the product.
- Keep sensitive electrical devices and data carriers away from the product.

⚠ CAUTION

Improper installation or maintenance

Personal injury or damage to property

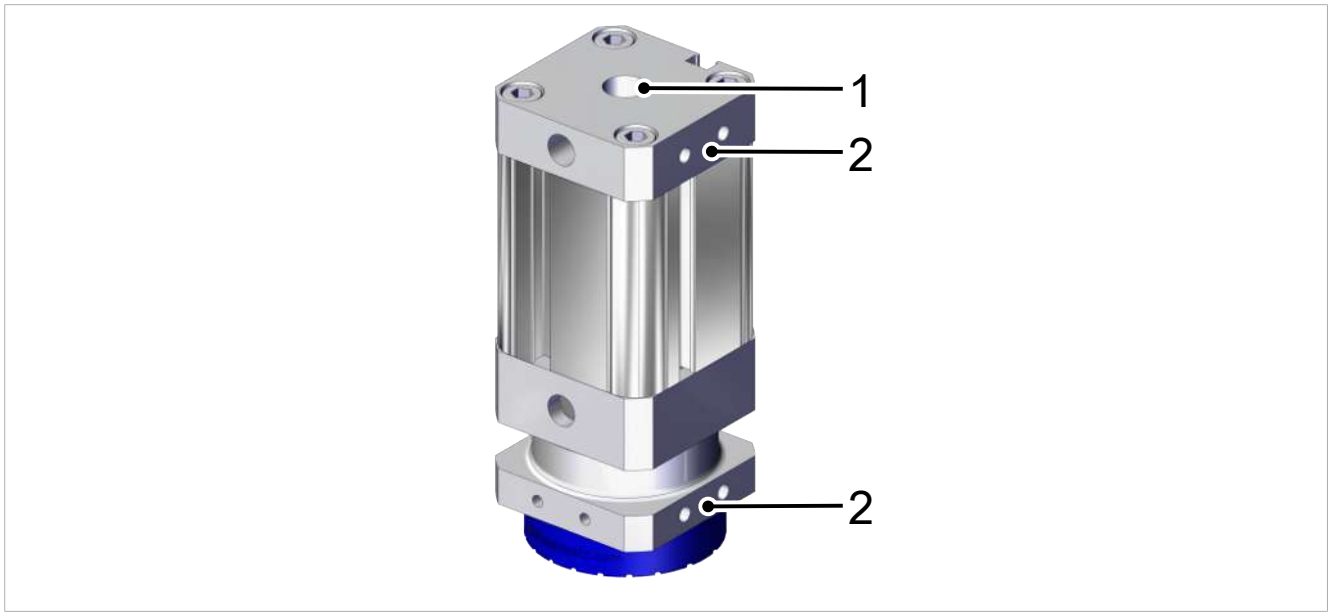
- Prior to installation and before maintenance work, the product must be disconnected from the power supply, depressurized (vented to the atmosphere) and secured against unauthorized restart.

6.2 Mechanical Attachment

The gripper is adapted to a handling system either directly or by using interchangeable holder systems. Only the Schmalz holder system (accessories) may be used for the lateral connection.

The product can be mounted in any position.

The following threads are used to attach the gripper to a holder:



(1) 1/4" internal mounting thread — central

(2) Mechanical connection M4-IG or M5-IG — lateral

6.3 Pneumatic connection

Lay the hose lines:

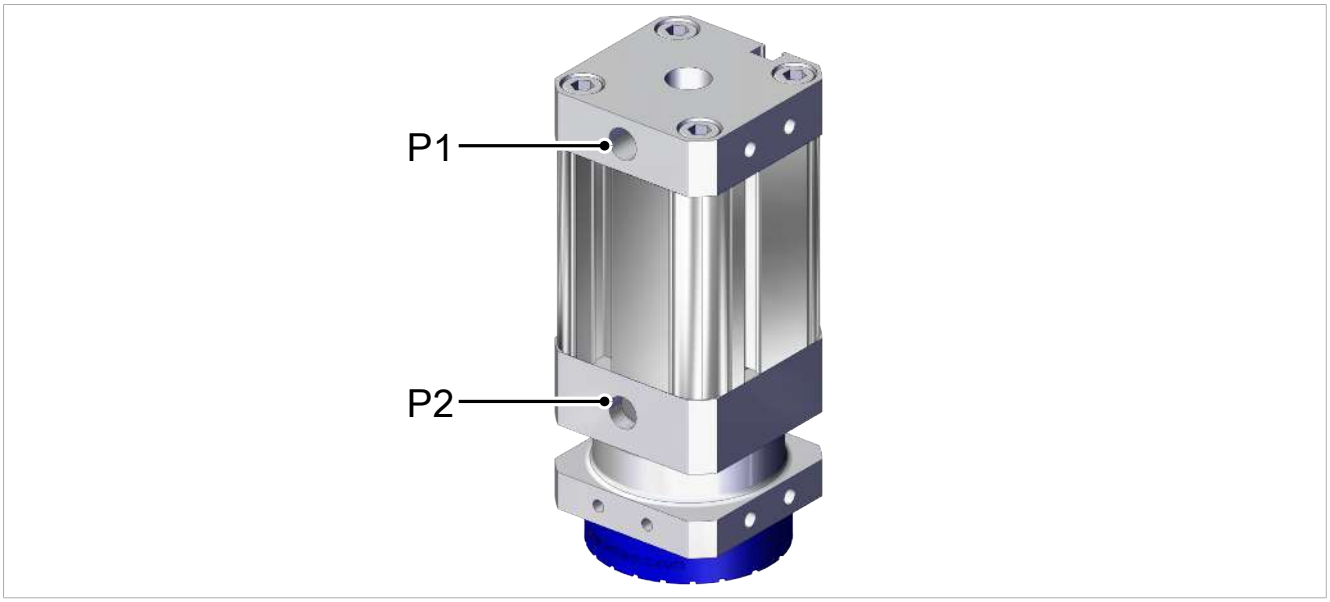
- as short as possible
- without bends and crimps
- so that they do not rub

⚠ CAUTION

Getting caught in the hose lines

Risk of injury

- Wear tight clothing when working on or near the robot.
- Route the hose lines and cables closely along the robot arm without restricting the movement of the robot.
- When securing the hose lines, also use the mounting possibilities on the gripper (mounting aid for cable ties).



✓ The customer has attached the components for connecting the hoses to the compressed air connections.

1. Connect the compressed air hose for gripping the workpiece to the compressed air connection (P1).
2. Connect the compressed air hose for depositing the workpiece to the compressed air connection (P2).

6.4 Optional: Sensor for Monitoring the Switching State of the Gripper (through the Piston Position)

Magnetic grippers from series SGM-HT-HP are not intended for sensor operation due to their application in the high temperature range.

Observe document 30.30.01.01624 Operating Instructions for Proximity Switch (Optional: Accessories) for Magnetic Grippers.

After installation, always teach the sensor with the workpiece/part to be gripped (> See ch. 6.4.4 Mounting the Sensor, p. 19).

6.4.1 Preventing Sensor Malfunctions

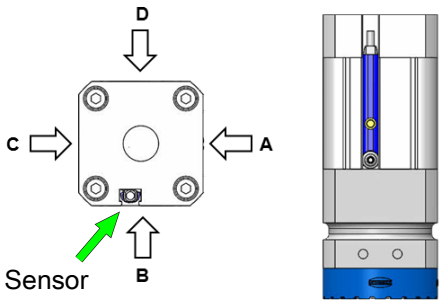
The sensor may be installed in any position.

To ensure that the gripper functions properly and to prevent faults in the sensor function, observe the following installation instructions:

- **Use mounting elements or similar made of non-magnetizable material (aluminum, plastic, etc.)**
- Check on a regular basis that the sensor is securely installed in the slot – in particular when it is used in fast handling processes or ones that are exposed to vibration.
- Strong magnetic fields can impair the functionality of the sensor. As a result, the suitability of the sensor for use, for example in close proximity to welding plants, must be checked separately in each individual case.
- Keep magnetizable objects away from the sensor or place them at a sufficient distance. Observe the minimum distances specified below.
- The sensor, sensor slot, and gripper(s) must be regularly inspected and any ferromagnetic pollutants (such as iron shavings) removed.

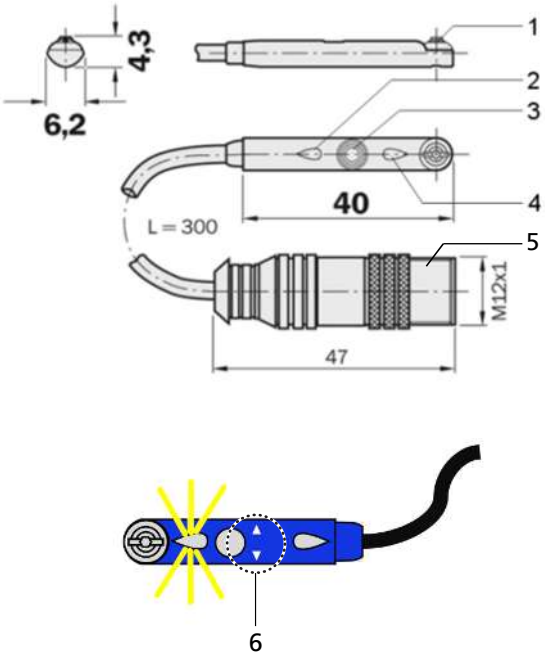
Minimum distances of magnetizable objects

Type	SGM-HP			
	20	30	40	50
Direction	A/B/C/D	A/B/C/D	A/B/C/D	A/B/C/D
Rec. minimum distance [mm]	20	20	20	20



6.4.2 Dimensions and designations

1	Fastening screw
2	LED 2 – setting down
3	Teach button
4	LED 1 – gripping
5	Electrical connection M12x1
6	Center of sensor



6.4.3 Technical data

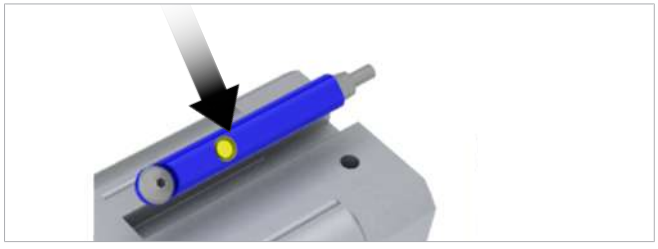
Power supply U_V PNP	15 to 30V DC
Power supply U_V NPN	12 to 30V DC
Power consumption (inactive) I	≤ 15 mA
Continuous current I_a	≤ 100 mA
Switching output	PNP/NPN
Output function	Normally open contact
Connection cable	M12x1 L=0.3 m
EMC	EN 60 947-5-2
Degree of protection	IP 67
Ambient temperature	-20 to +75

6.4.4 Mounting the Sensor

The illustrations shown below may deviate from the customer's version because they serve as examples of different versions of the product.

Commissioning the sensor for first-time installation or resetting if necessary

1. Place sensor centrally in the T-slot.



2. Push the sensor to the stop of the T-slot, or in the case of variants with **open T-slot**, fix the sensor flush with the lower end of the slot (towards the gripping surface).

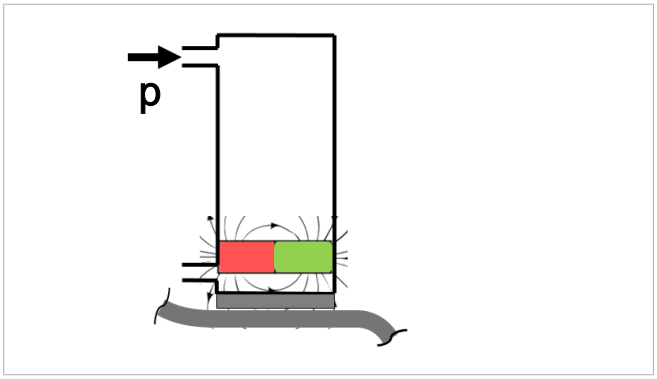
- Fix the sensor with a screwdriver (torque: 0.2 +/- 0.05 Nm).

- Connect plug M12x1 and apply operating voltage.

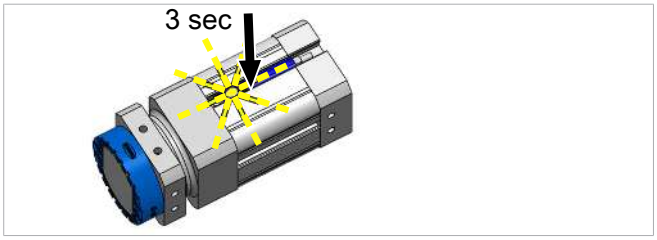
Teaching in the switching points

- ✓ Use the supplied teach-in tool or a plastic pin for the teach-in process; do not use magnetic tools (screwdriver, steel hexagonal socket wrench, etc.).
- ✓ The gripping apparatus/gripper tool is in the workpiece pick-up position.

1. Check sensor position: At the end of the T-slot or flush with the slot end.
   With the sheet clamped, set/actuate the piston position for the first switching point (front piston in operating position).

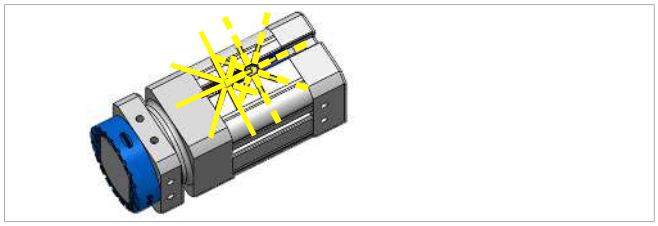


2. Press and hold the Teach button for 3 seconds.



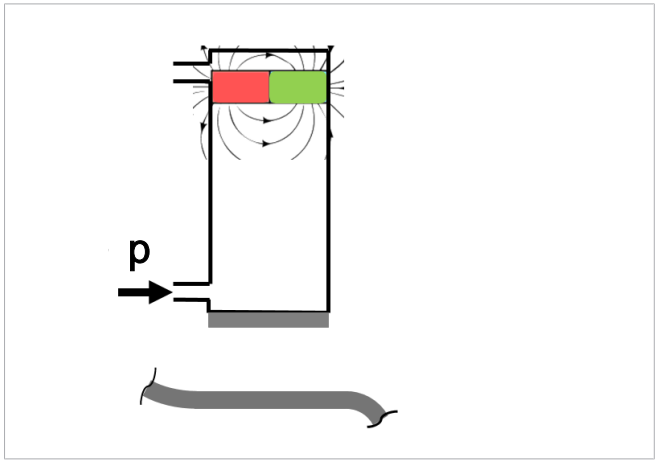
   ⇨ LED 1 flashes

3. Release the Teach button.

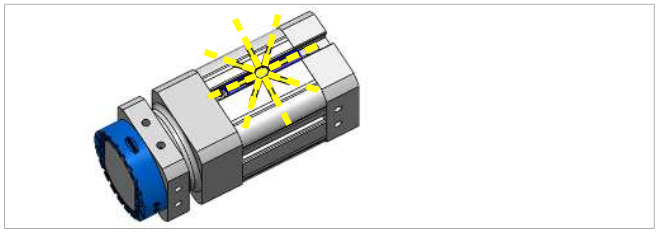


⇨ First switching point is stored (LED 1 lights up and LED 2 flashes)

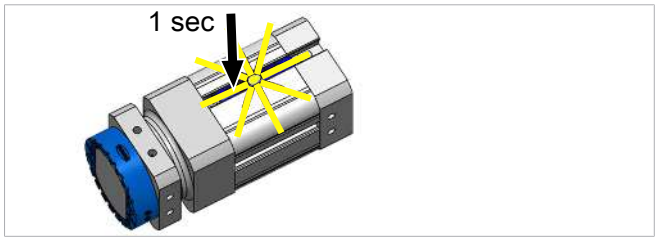
4. (Put the gripping apparatus/gripper tool in the workpiece depositing position.)
Set/actuate the piston position for the second switching point (rear piston in idle state).



⇨ LED 1 is extinguished and LED 2 flashes.



5. Press the Teach button briefly.



⇨ The second switching point is stored (LED 2 lights up).

Alternatively, teach the sensor via the IO-Link if, for example, teaching with the pin is not possible due to inaccessibility.

Inspection of first switching point

1. Move the piston to the position for the first switching point.
   ⇨ LED 1 illuminated
2. LED 1 not illuminated.

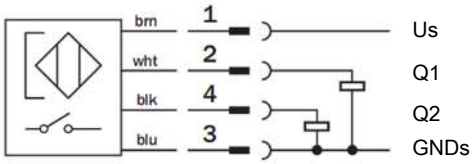
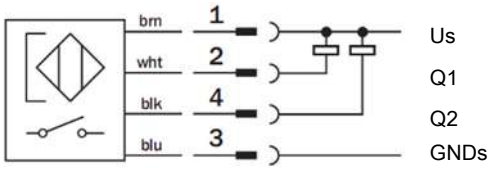
⇨ Check the operating conditions and adjust accordingly.

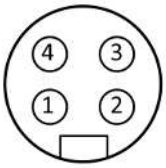
Inspection of second switching point

1. Move the piston to the position for the second switching point.
   ⇨ LED 1 is extinguished and LED 2 lights up.
2. If LED 1 does not turn off or LED 2 does not light up,

⇨ check the operating conditions and adjust accordingly.

6.4.5 Electrical connection

Variant	PNP	NPN
Circuit diagram		

Plug M12-1	Pin	Litz wire color	Symbol	PNP function	NPN function
	1	Brown	U_S	Supply voltage	
	2	White	Q1	Signal output 2 (LED 2)	Signal output 1 (LED 1)
	3	Blue	GND_S	Ground	
	4	Black	Q2	Signal output 1 (LED 1)	Signal output 2 (LED 2)

7 Start of Operations

7.1 Personnel Qualification

Unqualified personnel cannot recognize dangers and are therefore exposed to higher risks!

1. Only instruct qualified personnel to perform the tasks described in these operating instructions.
2. The product may only be operated by persons who have undergone appropriate training.
3. Electrical work and installations may only be carried out by qualified electrical specialists.
4. Assembly and maintenance work must only be carried out by qualified personnel.

7.2 Before Initial Start of Operations

Before the initial start of operations following installation, repair, servicing or maintenance work, you must check the following:

- All mechanical connectors are properly attached and secured.
- All screws and nuts are tightened to specified torques.
- All components are installed.
- The safety distances have been maintained.
- The supply hoses are properly routed.
- The EMERGENCY STOP switch for the overall system is working.
- The type plate and “Warning of Magnetic Field” sign are present and easy to read.

⚠ CAUTION

Noise pollution due to incorrect installation of the pressure and vacuum connections

Hearing damage!

- Correct installation.
- Wear ear protectors.

⚠ CAUTION

Risk of crushing if workpiece is abruptly attached

- Do not activate the magnet until the gripper is on the load.
- Do not place any body parts between the gripping surface and load.

8 Operation

8.1 Preparations

- The product must be operated only by persons who have undergone appropriate training.

⚠ WARNING

The product contains a permanent magnet that generates a continuous magnetic field.

Danger for persons with pacemakers. Devices and data carriers can be damaged.

- Keep persons with pacemakers away from the product.
- Keep sensitive electrical devices and data carriers away from the product.

To avoid injury, always use appropriate protective equipment that is suitable for the situation. The protective equipment must meet the following standards:

- Protective work shoes in safety class S1 or higher
- Eye protection class F

Before each activation of the gripping system, the following measures must be taken:

1. Check the device for visible damage. Correct any faults or report them to the supervising personnel.
2. Ensure that only authorized persons are present in the working area of the machine or system in order to prevent any hazard from switching on the machine.
3. Ensure that the danger zone of the machine or system is free of persons during automatic operation.

9 Troubleshooting

9.1 Faults, Causes, Solutions

Error	Cause	Solution
Workpiece is not gripped	Magnets are not in the corresponding end position	▸ Check compressed air supply Check hose connections and plug-in screw unions
	Pressure too low	
Magnetic gripper leaks when compressed air is applied	Sealing elements damaged; use at too high contact or ambient temperature	▸ Adhere to the defined temperature ranges.
Workpiece is only gripped with reduced holding force	The workpiece to be handled does not completely cover the gripping surface.	▸ Make sure that the workpiece to be handled completely covers the gripping surface.
	Contact elements damaged	▸ Replace damaged contact elements.
	Ferromagnetic pollutants on the gripping surface (e.g. iron shavings)	▸ Clean the gripping surface.
	Contact elements make insufficient or no contact with the pole shoes	▸ Make sure that the pole shoes are in flat contact when mounting the contact elements.
	The workpiece to be gripped has a dirty and/or rough surface or is highly alloyed.	▸ If possible, only handle low-carbon workpieces (steel sheets) with a clean and smooth surface.
	The operating or ambient temperature is too high.	▸ Adhere to the defined temperature ranges; if necessary, tests should be performed before continuous use.

When using sensors

Error	Cause	Solution
Sensor (for monitoring the piston position) cannot be taught	Sensor defective	▸ Replace the sensor.
Sensor cannot be taught or can only be taught with errors	Teaching is performed using a magnetizable tool (e.g. ballpoint pen refill, hexagon wrench, etc.).	▸ Use the teach-in tool supplied with the sensor or a comparable plastic pen.
Sensor signal is lost or faulty	Sensor not fully inserted into the corresponding sensor slot; sensor fastening screw is loose	▸ Push the sensor in as far as possible and tighten the fastening screw with the specified torque.
	Magnetic interference fields	▸ Avoid magnetic interference fields and maintain minimum distances.
	Ferromagnetic pollutants in the area of the sensor slot (e.g. iron shavings)	▸ Check the sensor slot(s) at regular intervals and clean them if necessary.

10 Maintenance

10.1 Safety Instructions for Maintenance

Personnel must have read and understood the instructions.

⚠ WARNING

Risk of injury due to incorrect maintenance or troubleshooting

- Check the proper functioning of the product, especially the safety features, after every maintenance or troubleshooting operation.

⚠ CAUTION

Improper installation or maintenance

Personal injury or damage to property

- Prior to installation and before maintenance work, the product must be disconnected from the power supply, depressurized (vented to the atmosphere) and secured against unauthorized restart.

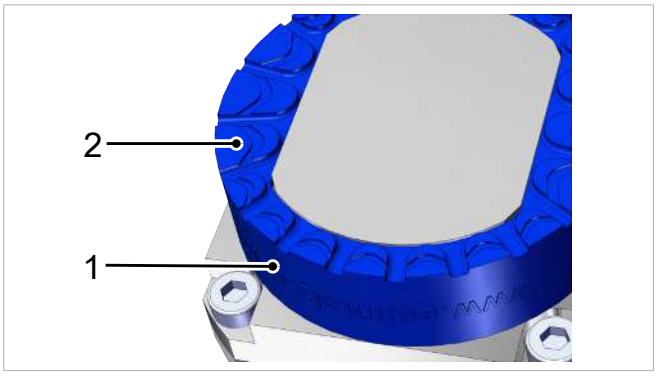
10.2 Cleaning the Magnetic Gripper

1. For cleaning, do not use aggressive cleaning agents such as industrial alcohol, white spirit or thinners. Only use cleaning agents with a pH between 7 and 12.
2. Remove dirt on the exterior of the device with a soft cloth and soap suds.
3. If using sensors, make sure that no moisture gets into the sensors.

10.3 Replacing the Friction Ring

The friction ring (1) must be replaced at the latest when the V structure (2) on the friction ring (1) is no longer visible.

1. Pry off the friction ring (1) from the gripper using a screwdriver or similar tool.

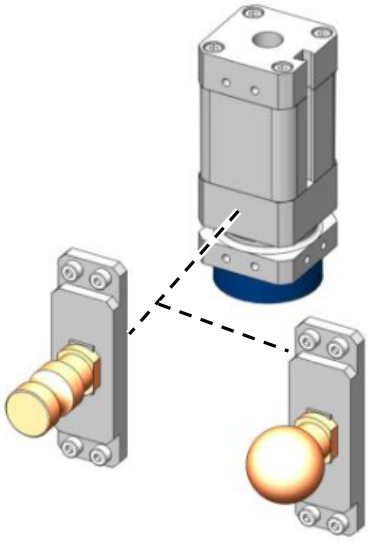


2. Press on the new friction ring.

11 Accessories, Spare Parts and Wearing Parts

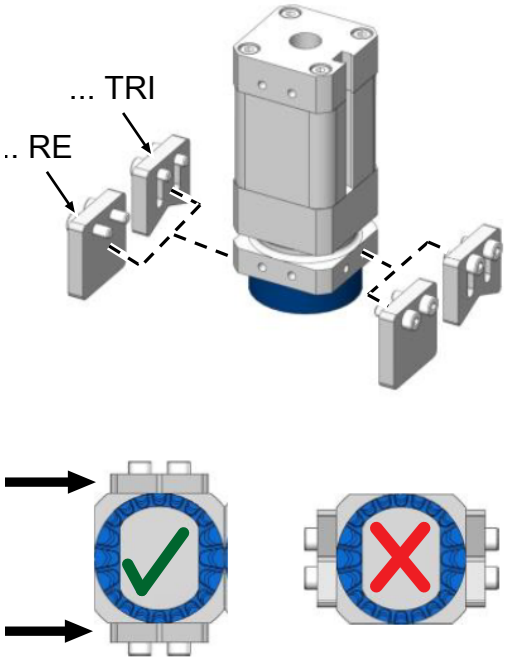
Accessories

Holder systems



Important: Only the Schmalz holder system (accessories) may be used for the lateral connection.

Retaining elements



Designation	Part no.	Note
Friction ring REIB-RING SGM 30 HT2-65	10.01.17.00410	SGM-HT-HP only
Friction ring REIB-RING-SGM-40-HT2-65	10.01.17.00411	SGM-HT-HP only
Friction ring REIB-RING-SGM-50-HT2-65	10.01.17.00412	SGM-HT-HP only
Proximity switch PNP Sensor PNP	10.01.17.00199	SGM-HP only
Proximity switch NPN Sensor NPN	10.01.17.00215	SGM-HP only
Sensor screw (left-hand thread) ZUB SGM-S NAEH-SCHA SCHRAUBE	10.01.17.00509	SGM-HP only
Plastic pin for sensor ZUB SGM-S NAEH-SCHA PIN	10.01.17.00510	SGM-HP only
Sensor module MOD-SENS NAEH SGM-HP-20-PNP	10.01.17.00447	For: magnet gripper size: HP-20-PNP
Sensor module MOD-SENS NAEH SGM-HP-20-NPN	10.01.17.00448	For: magnet gripper size: HP-20-NPN
Holder system HTS-A2 SGM-HP 20 OP	10.01.17.00565	See Fig.
Holder system HTS-A3 SGM-HP 20 OP	10.01.17.00561	See Fig.
Holder system HTS-A5 SGM-HP 20 OP	10.01.17.00579	See Fig.

Designation	Part no.	Note
Holder system HPS-SGM-HP 2M6 20 OP	10.01.17.00654	See Fig.
Holder system HTS-A2 SGM-HP 30/40 OP	10.01.17.00567	See Fig.
Holder system HTS-A3 SGM-HP 30/40 OP	10.01.17.00557	See Fig.
Holder system HTS-A5 SGM-HP 30/40 OP	10.01.17.00563	See Fig.
Holder system HPS-SGM-HP 2M8 30/40 OP	10.01.17.00651	See Fig.
Holder system HTS-A2 SGM-HP 50 OP	10.01.17.00568	See Fig.
Holder system HTS-A3 SGM-HP 50 OP	10.01.17.00562	See Fig.
Holder system HTS-A5 SGM-HP 50 OP	10.01.17.00564	See Fig.
Holder system HPS-SGM-HP 2M8 50 OP	10.01.17.00652	See Fig.
Level compensator element SGM ADP-E-TRI 20 SET	10.01.17.00419	See Fig.
Level compensator element SGM ADP-E-TRI 30/40 SET	10.01.17.00421	See Fig.
Level compensator element SGM ADP-E-TRI 50 SET	10.01.17.00422	See Fig.
Level compensator element SGM ADP-E-UNI 20 SET	10.01.17.00420	See Fig.
Level compensator element SGM ADP-E-UNI 30/40 SET	10.01.17.00423	See Fig.
Level compensator element SGM ADP-E-UNI 50 SET	10.01.17.00415	See Fig.
Straight plug-in screw union STV-GE G1/8-AG 6	10.08.02.00204	
Straight plug-in screw union STV-GE M5-AG 6	10.08.02.00201	For SGM-HP-20
Straight plug-in screw union STV-GE G1/8-AG 6 HT	10.08.02.00389	SGM-HT-HP only
Swivel plug-in screw union, angled STV-W G1/8-AG 6	10.08.02.00158	
Swivel plug-in screw union, angled STV-W M5-AG 6	10.08.02.00235	For SGM-HP-20
Plug-in screw union, angled STV-W G1/8-AG 6 HT	10.08.02.00391	SGM-HT-HP only
Vacuum hose VSL 6-4 PTFE	10.07.09.00157	SGM-HT-HP only
Vacuum hose VSL 6-4 PU MI-TR	10.07.09.00002	
Protective element for gripping surface SCHUTZ SGM-30 ST	10.01.17.00522	For HP-30 and HT-HP-30
Protective element for gripping surface SCHUTZ SGM-40 ST	10.01.17.00521	For HP-40 and HT-HP-40

Designation	Part no.	Note
Protective element for gripping surface SCHUTZ SGM-50 ST	10.01.17.00520	For HP-50 and HT-HP-50

Wearing parts

Designation	Part no.	Note
Friction ring REIB-RING SGM 20 PU-55	10.01.17.00418	For SGM-HP
Friction ring REIB-RING SGM 30 PU-55	10.01.17.00385	For SGM-HP
Friction ring REIB-RING SGM 40 PU-55	10.01.17.00373	For SGM-HP
Friction ring REIB-RING SGM 50 PU-55	10.01.17.00381	For SGM-HP
Friction ring REIB-RING SGM 30 HT2-65	10.01.17.00410	SGM-HT-HP only
Friction ring REIB-RING-SGM-40-HT2-65	10.01.17.00411	SGM-HT-HP only
Friction ring REIB-RING-SGM-50-HT2-65	10.01.17.00412	SGM-HT-HP only

12 Disposal

Recover the disassembled parts for recycling or reuse (provided no agreement on return or disposal has been made).

1. Dispose of the product properly after replacement or decommissioning.
2. Observe the country-specific guidelines and legal obligations for waste prevention and disposal.

For proper disposal, please contact a company specializing in the disposal of technical goods and instruct the company to observe the applicable disposal and environmental regulations. Schmalz is happy to assist you in finding a suitable company.

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