



Flow Gripper SCGS

# Assembly Instructions

## Note

The assembly 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 Note on Using this Document

J. Schmalz GmbH is generally referred to as Schmalz in this assembly instructions.

These assembly instructions contain 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 assembly instructions describe the product at the time of delivery by Schmalz.

## 1.2 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 this manual can lead to life-threatening 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](http://www.schmalz.com/services)

## 1.3 Warnings in This Document

Warnings warn against hazards that may occur when handling the product. This document contains warnings regarding two levels of danger, which you can recognize by the signal words.

Signal word	Meaning
WARNING	Indicates a medium-risk hazard which, if not avoided, could result in death or serious injury.
CAUTION	Indicates a low-risk hazard which, if not avoided, could result in minor or moderate injury.

# 2 Fundamental Safety Instructions

## 2.1 Standards of Technology

The product is built in accordance with the latest standards of technology and is delivered in a safe operating condition; however, hazards may arise during use.



### **WARNING**

**Failure to follow these assembly instructions can lead to injuries!**

- ▶ Read the assembly instructions carefully and observe the contents.

## 2.2 Emissions

The Flow gripper SCGS emits noise due to the operation of compressed air.



### **WARNING**

**Noise pollution due to the escape of compressed air**

Hearing damage!

- ▶ Wear ear protectors.



## **⚠ WARNING**

### **Extraction of hazardous media, liquids or bulk material**

Personal injury or damage to property!

- ▶ Do not extract harmful media such as dust, oil mists, vapors, aerosols etc.
- ▶ Do not extract aggressive gases or media such as acids, acid fumes, bases, biocides, disinfectants or detergents.
- ▶ Do not extract liquids or bulk materials, e.g. granulates.

## **2.3 Intended Use**

The Flow gripper SCGS has integrated vacuum generation for gripping and transporting objects in conjunction with suction pads. It is particularly well suited to applications that require a high suction flow rate.

Neutral gases are approved as evacuation media. Neutral gases include air, nitrogen and inert gases (e.g. argon, xenon and neon). For further information, see (> See *ch. Technical Data*).

The product is intended for industrial use.

Any other use is considered improper by the manufacturer and is deemed as contrary to the designated use.

## **2.4 Non-Intended Use**

Schmalz accepts no liability for damages caused by non-intended usage of the product. In particular, the following are considered non-intended use:

- Use in potentially explosive atmospheres
- Use in medical applications
- Lifting people or animals
- Evacuation of objects that are in danger of imploding

## **2.5 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 Application Description**

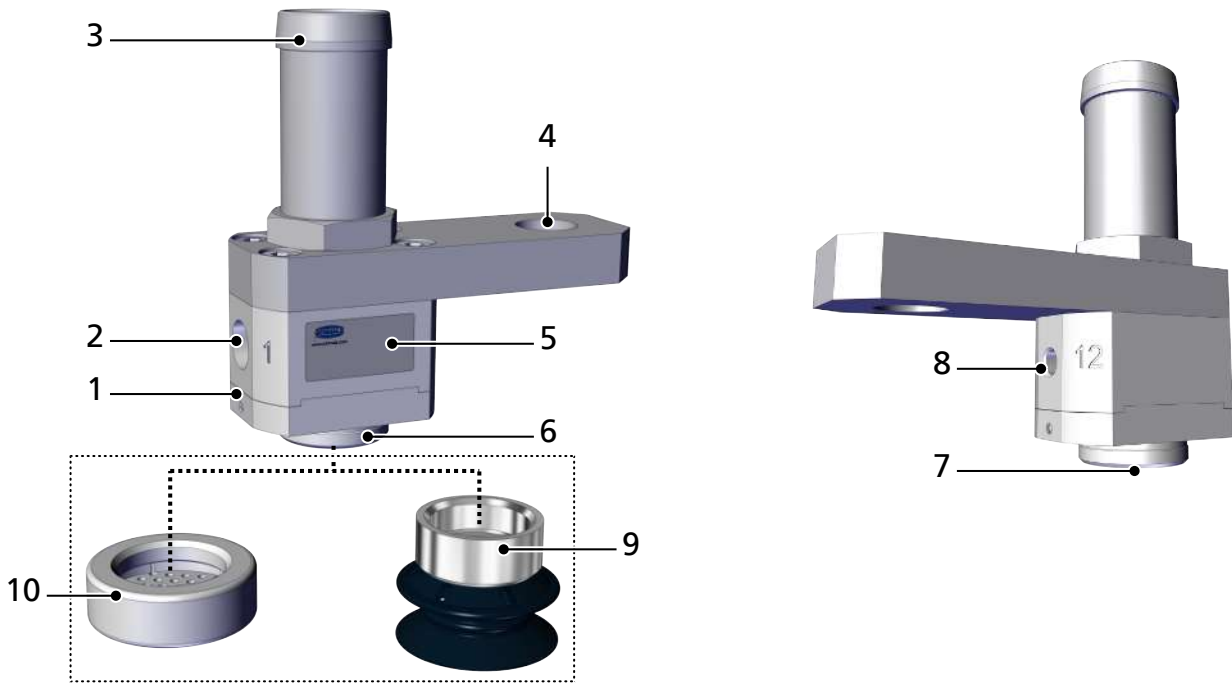
The Flow gripper SCGS has integrated vacuum generation and is used to grip and handle non-rigid and unstable workpieces. It is generally suitable for all applications that require a high suction flow rate. It is particularly suitable for gripping all porous materials, such as foams, textiles, paper, plastic films, composite textiles and the like.

Compressed air must be connected to the appropriate interfaces in order to operate the Flow gripper SCGS, i.e. to generate the vacuum and blow off.

The Flow gripper SCGS does not contain any moving parts, which makes it low maintenance and less susceptible to faults. It may be installed in any position. The blow-off function allows you to deposit the gripped workpiece actively and with high precision.

A variety of different suction pads can be connected.

### 3.2 Design of the Flow Gripper



1	Main body with integrated vacuum generation	2	"Suction" compressed air connection (1), G1/8" female
3	Exhaust air connection	4	Mechanical interface, G1/4" female
5	Label	6	Suction cup/gripper interface, M20x1
7	Vacuum vent	8	"Blow off" compressed air connection (12), M5 female
9	Optional: Suction pad	10	Optional: Suction area

## 4 Technical Data

### 4.1 General Parameters

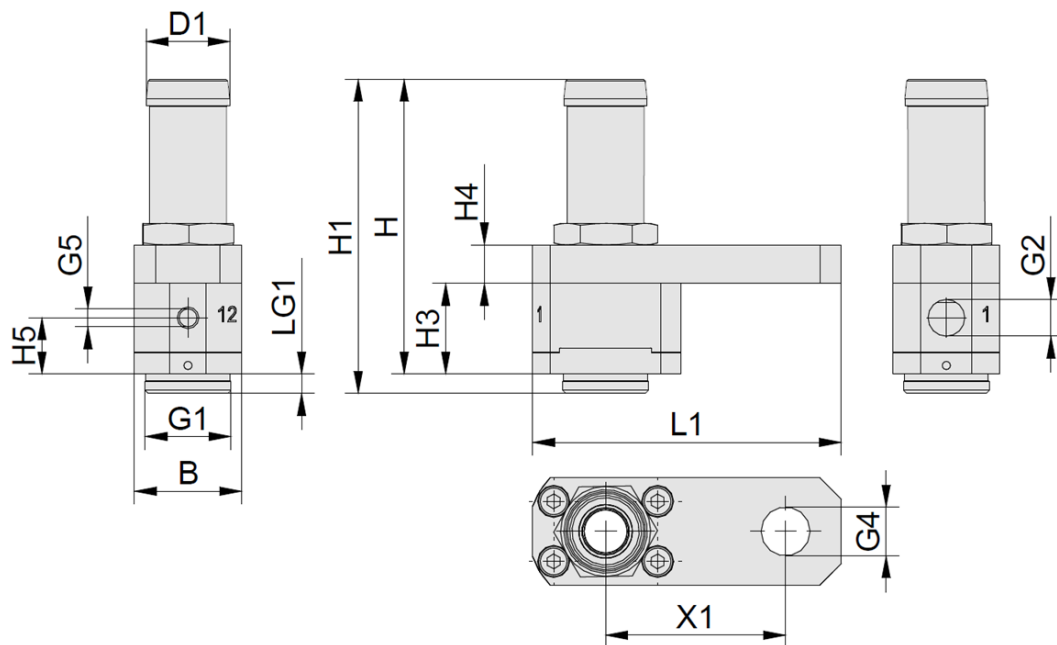
Parameter	Unit	SCGS 1xE100
"Suction" operating pressure	bar	1.0 – 5.0
"Blow-off" operating pressure	bar	1.0 – 5.0
Temperature range	° C	+5 – +75
Recommended internal hose Ø for "suction"	mm	4
Recommended internal hose Ø for "blow off"	mm	4
Recommended hose diameter for "exhaust air"	mm	26/19
Mass	g	95
Operating medium	Use only well-maintained compressed air (air or neutral gas according to EN 983, filtered to 40 µm, oiled or unoled).	

Feature	Unit	Operating pressure								
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
Air consumption <sup>1)</sup>	l/min	60	77	90	108	120	137	158	178	200
Suction flow rate <sup>1) 2)</sup>	l/min	270	352	405	456	508	553	588	620	650
Vacuum <sup>1)</sup>	mbar	21	36	56	75	91	102	112	118	121

<sup>1)</sup> Tolerance +/-10% for all specified values. Measurements without exhaust hoses!

<sup>2)</sup> The longer the connected exhaust air hose, the lower the suction flow rate!

## 4.2 Dimensions



<b>B</b>	<b>D1</b>	<b>G1</b>	<b>G2</b>	<b>G4</b>	<b>G5</b>	<b>H</b>
25	19.5	M20x1-M	G1/8"-F	G1/4"-F	M5-F	68.6
<b>H1</b>	<b>H3</b>	<b>H4</b>	<b>H5</b>	<b>L1</b>	<b>LG1</b>	<b>X1</b>
73.1	21.1	9	13.1	72	3	42

## 5 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 in transit must be reported immediately to the carrier and J. Schmalz GmbH.

## 6 Installation

### 6.1 Installation Instructions



#### **CAUTION**

**Compressed air or vacuum in direct contact with the eye**

Severe eye injury

- ▶ Wear eye protection
- ▶ Do not look into compressed air openings
- ▶ Do not look into vacuum openings, e.g. suction cups



#### **CAUTION**

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

Hearing damage

- ▶ Correct installation.
- ▶ Wear ear protectors.

Take note of the following when mounting:

- Dirt particles or foreign bodies in the gripper connections, hoses or pipelines can lead to partial or complete gripper malfunction.
- Shorten the hoses and pipelines as much as possible.
- Insufficient compressed air is supplied if the internal diameter on the compressed air side is too small. This prevents the gripper from performing as specified in its defined performance data.
- Protect the flow gripper SCGS from vibrations and shocks.
- Hose lines must be laid without bends or crimps.
- Connection symbols and designations are located on the gripper. These must be observed.

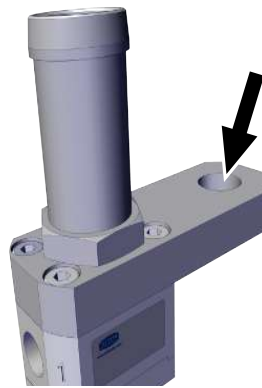
## 6.2 Mechanical Attachment

Use only the connections, mounting holes and attachment materials that have been provided.

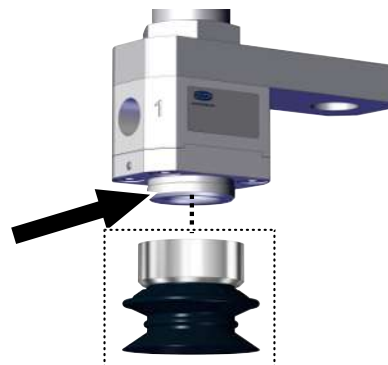
The flow gripper may be installed in any position.

The flow gripper SCGS can be adapted to your handling system using the thread integrated in the holder.

1. Use the G4 female thread of size G $\frac{1}{4}$ " to mechanically fasten the SCGS.

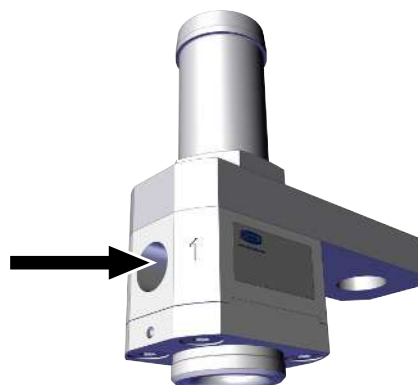


2. Use the G1 male thread of size M20x1 (interface 6) to mount suction areas and suction pads or customer-specific grippers.



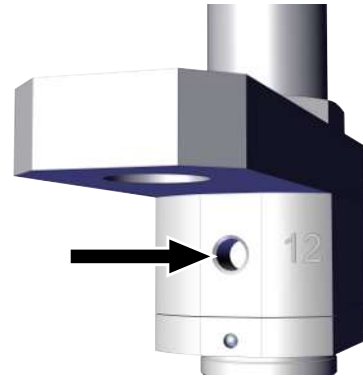
## 6.3 Connecting Compressed Air

The compressed air connection (inlet) for supplying the integrated vacuum generation is labeled with the number 1, as shown in the figure.



- ▶ Connect the compressed air for the "suction" function to the G $\frac{1}{8}$ " thread labeled with the number 1.

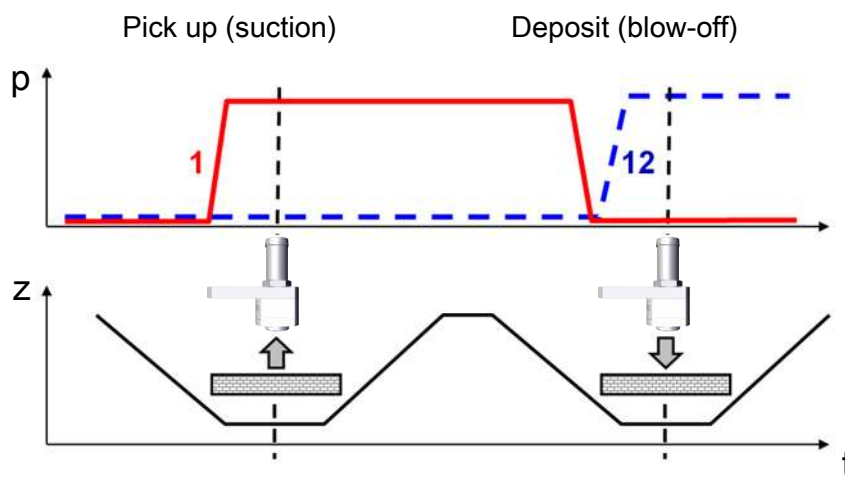
The compressed air connection (inlet) for supplying the blow-off function is labeled with the number 12, as shown in the figure.



- ▶ Connect the compressed air for the “blow-off” function to the M5 thread labeled with the number 12.

## 7 Control

*Process flow diagram*



Vacuum is generated by the activation of the “suction” compressed air connection (1). The object to be handled can then be gripped and transported.

The “blow-off” compressed air connection (12) can be activated to deposit the object quickly. No compressed air may be present at the “suction” connection (1) for this to occur.

## 8 Cleaning the Flow Gripper

1. For cleaning, do not use aggressive cleaning agents such as industrial alcohol, white spirit or thinners. Only use cleaning agents with pH 7–12.
2. Remove dirt on the exterior of the device with a soft cloth and soap suds at a maximum temperature of 60° C. Make sure that the silencer is not soaked in soapy water.

## 9 Spare and Wearing Parts

Maintenance work may only be carried out by qualified personnel.

The following list contains the primary spare parts.

Type	Designation	Part no.
FLSA 20 NBR-AS-55	Flat suction gripper (round)	10.01.06.03934
FLSA 30 NBR-AS-55	Flat suction gripper (round)	10.01.06.03935
FLSA 20 NBR-ESD-55	Flat suction gripper (round)	10.01.06.04220
FLSA 30 NBR-ESD-55	Flat suction gripper (round)	10.01.06.04214
FLSA 40 NBR-ESD-55	Flat suction gripper (round)	10.01.06.04390
FLSA 50 NBR-ESD-55	Flat suction gripper (round)	10.01.06.04388
FLSA 20 SI-HD	Flat suction gripper (round)	10.01.06.03888
FLSA 30 SI-HD	Flat suction gripper (round)	10.01.06.03746
FLSA 40 SI-HD	Flat suction gripper (round)	10.01.06.03886
FLSA 50 SI-HD	Flat suction gripper (round)	10.01.06.03467
SAUG-FL SCGS 30 POM	Suction area POM Ø 30 mm	10.01.30.00894

## 10 Accessories

The following list contains the primary accessories.

Type	Designation	Part no.
SAUG-FL SCGS 30 POM	Suction area	10.01.30.00894
SAUG-SCGS 20 NBR-AS-55	Flat suction cup (round)	10.01.30.00898
SAUG-SCGS 30 NBR-AS-55	Flat suction cup (round)	10.01.30.00899
SAUG-SCGS 20 NBR-ESD-55	Flat suction cup (round)	10.01.30.00802
SAUG-SCGS 30 NBR-ESD-55	Flat suction cup (round)	10.01.30.00876
SAUG-SCGS 40 NBR-ESD-55	Flat suction cup (round)	10.01.30.00914
SAUG-SCGS 50 NBR-ESD-55	Flat suction cup (round)	10.01.30.00915
SAUG-SCGS 20 SI-HD	Flat suction cup (round)	10.01.30.00916
SAUG-SCGS 30 SI-HD	Flat suction cup (round)	10.01.30.00917
SAUG-SCGS 40 SI-HD	Flat suction cup (round)	10.01.30.00918
SAUG-SCGS 50 SI-HD	Flat suction cup (round)	10.01.30.00919
STV-W G1/8-AG 6 <sup>1)</sup>	Plug-in screw union with swiveling angular design	10.08.02.00288
STV-W M5-AG 6 <sup>2)</sup>	Plug-in screw union with swiveling angular design	10.08.02.00296
VSL 26-19 PVC-G	Vacuum hose	10.07.09.00007

<sup>1)</sup> Suitable for "suction" compressed air connection

<sup>2)</sup> Suitable for "blow-off" compressed air connection

## 11 Warranty

This system is guaranteed in accordance with our general terms of trade and delivery. The same applies to spare parts, provided that these are original parts supplied by us.

Wearing parts are not covered by the warranty.

## 12 Disposing of the product

- ▶ Sort and dispose of all components according to the country-specific regulations.



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.