Floating Suction Cup SBS 10 SF

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 these 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 these Assembly 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

1.3 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
CAUTION	Indicates a low-risk hazard that could result in minor or moderate injury if not avoided.

1.4 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. The product must be operated only in perfect condition.

2 Fundamental Safety Instructions

2.1 Safety

⚠ CAUTION

Leakage of compressed air during installation and maintenance work

Risk of injury from powerful airflow, particles and noise

Damage to hearing and eyes!

- Deactivate the compressed air supply before installation and maintenance work.
- Wear ear protection and protective glasses.

⚠ CAUTION

Depending on the purity of the ambient air, the exhaust air can contain particles, which escape from the exhaust air outlet at high speed.

Eye injuries

- Do not look into the exhaust air flow
- Wear eye protection

⚠ CAUTION

Noise pollution caused by exhaust air or leakage during operation

Hearing damage

- In the event of leakage, check connections and lines and remedy leakages
- Wear ear protectors.

2.2 Intended Use

The floating suction cup is designed for gripping and transporting unstable and non-rigid objects and/or very fragile objects that are permeable to air by using a vacuum.

The floating suction cup is a universal solution for all applications that require a high suction flow rate.

It is particularly suitable for the suction of highly porous materials, such as paper, plastic film, composite textile, bare printed-circuit boards, foams, textiles, and the like.

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.

The product is intended for industrial use.

Intended use includes observing the technical data and the installation and operating instructions in this manual.

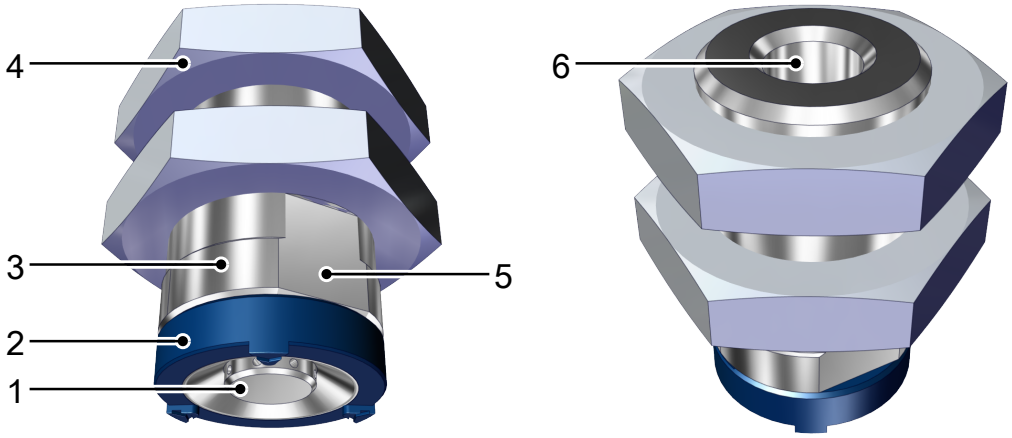
2.3 Non-Intended Use

Schmalz accepts no liability for damages caused by the use of the product for purposes other than those described under "Intended Use."

Non-intended use includes the following:

- Use in potentially explosive atmospheres

3 Design of the Flow Gripper SBS 10 SF

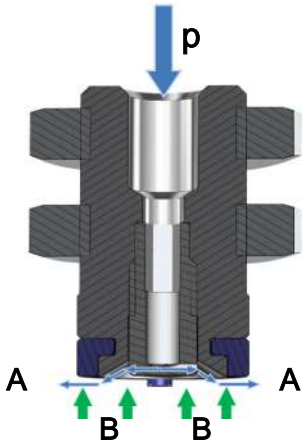


1	Flow element	2	Friction ring
3	Main body with integrated Bernoulli nozzle	4	Fastening nut, 2x
5	Hexagonal mid section	6	Compressed air connection

4 Functional Description

The compressed air (p) passed through the gripper creates a vacuum (B) on the underside of the gripper and the exhaust air (A) that is precisely guided also creates an air cushion so that the workpiece can be “gripped” with almost no contact.

p	Compressed air
A	Exhaust air / air cushion
B	Vacuum



5 Technical Data

5.1 General Parameters

Parameter	Part no. 10.01.01.12986	Part no. 10.01.01.14668
Friction surface material	Standard	ESD
“Suction” operating pressure	1.0 to 6.0 bar	
Temperature range	+0 to +80 °C	
Operating medium	Use only well-maintained compressed air (air or neutral gas according to EN 983, filtered to 40 µm, oiled or unoiled).	
Mass	7.5 g	

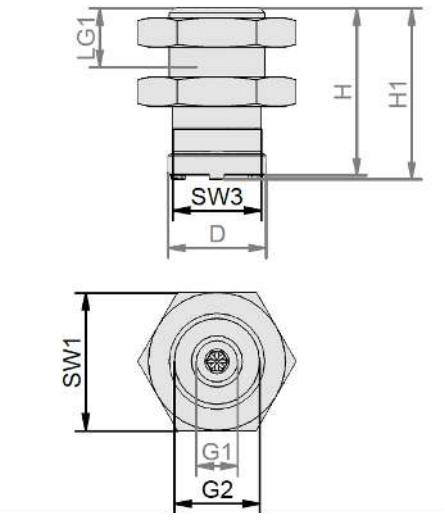
The values given in the following table apply to an operating pressure of 5.0 bar.

Property	Value
Air consumption	85 +/-10% l/min
Holding force [1)]	1.4 +/-10% N

1) The specification of the holding force is measured on an airtight, flat workpiece surface.

5.2 Dimensions

LG1	5
D	10
SW3	9
H	17
H1	17.4
SW1	14
G1	M5 internal thread
G2	1/8" external thread



All specifications are in mm.

6 Installation

6.1 Installation Instructions

⚠ CAUTION

Leakage of compressed air during installation and maintenance work

Risk of injury from powerful airflow, particles and noise

Damage to hearing and eyes!

- ▸ Deactivate the compressed air supply before installation and maintenance work.
- ▸ Wear ear protection and protective glasses.

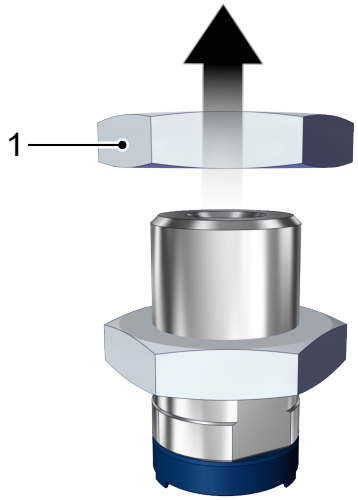
Take note of the following when mounting:

- Use only the connections and attachment materials that have been provided.
- Dirt particles or foreign bodies in the product connections, hoses or pipelines can lead to partial or complete 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.
- Hose lines must be laid without bends or crimps.

6.2 Mounting

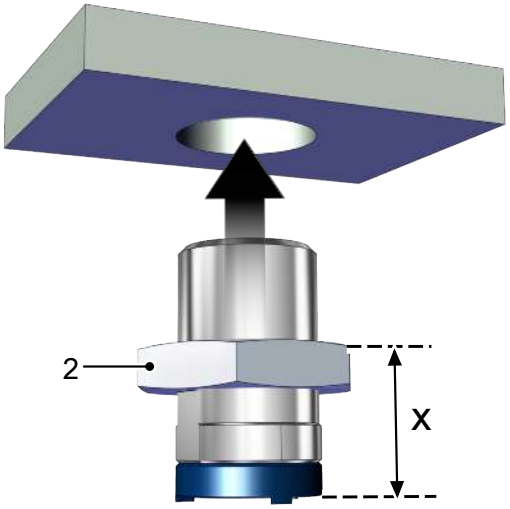
The product may be installed in any position.

✓ The customer-supplied gripper holder is prepared for mounting (through-hole with 10 mm diameter and material thickness of max. 4 mm).

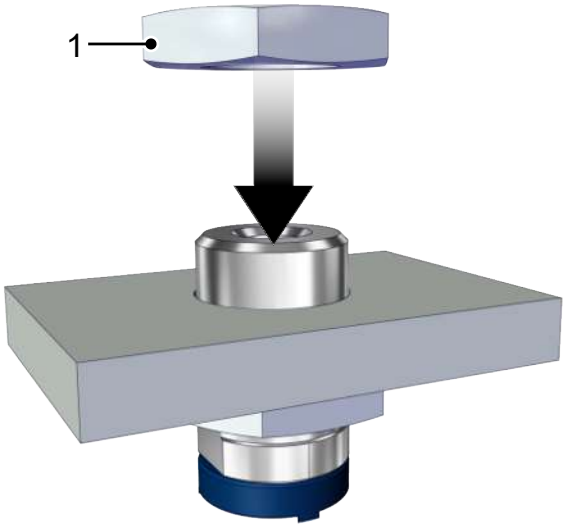


1. Remove the nut (1).

2. Guide the product through the customer-supplied holder and use the nut (2) to set the defined distance (X) to the workpiece.



3. Fit the nut (1). The tightening torque is 10 Nm, and width across flats is 14 mm.
Use thread locking compound if necessary.



4. Connect the product to the compressed air supply (accessory part).

7 Help with Malfunctions

Fault	Possible cause	Solution
Product does not respond	No compressed air supply	▸ Check the compressed air supply
Vacuum level is not reached or vacuum is built up too slowly	Leakage in hose line	▸ Check hose connections
	Operating pressure too low	▸ Increase operating pressure. Note the maximum limits!
	Internal diameter of hose line too small	▸ Observe the recommendation for an internal hose diameter of at least 3 mm
	Dirt particles or foreign bodies in the compressed air connection or in the hoses or pipelines	1. If the air outlet holes at position 1 on the flow element are blocked, pierce them with a thin wire (Ø 0.4) and blow out. 2. Remove dirt particles or foreign bodies from the connection or the hoses or pipelines.

8 Maintenance

The operation of the product is maintenance-free.

Despite this, you must regularly inspect the product for any corrosion, damage and dirt.

9 Cleaning the Product

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.
3. If the air outlet holes on the flow element (Fig. Chapter 3, position 1) are blocked, pierce them with a thin wire (Ø 0.4) and blow them out.

10 Warranty

Schmalz guarantees this system pursuant to our General Terms and Conditions of Sale 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.

11 Spare and Wearing Parts

Maintenance work may only be carried out by qualified personnel.

Designation	Part no.	Type
Friction ring REIB-RING SBS 10 HT1-60	10.01.01.12999	Wearing part
Friction ring REIB-RING SBS 10 NBR-ESD-55	10.01.01.14669	Wearing part

12 Disposing of the Product

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