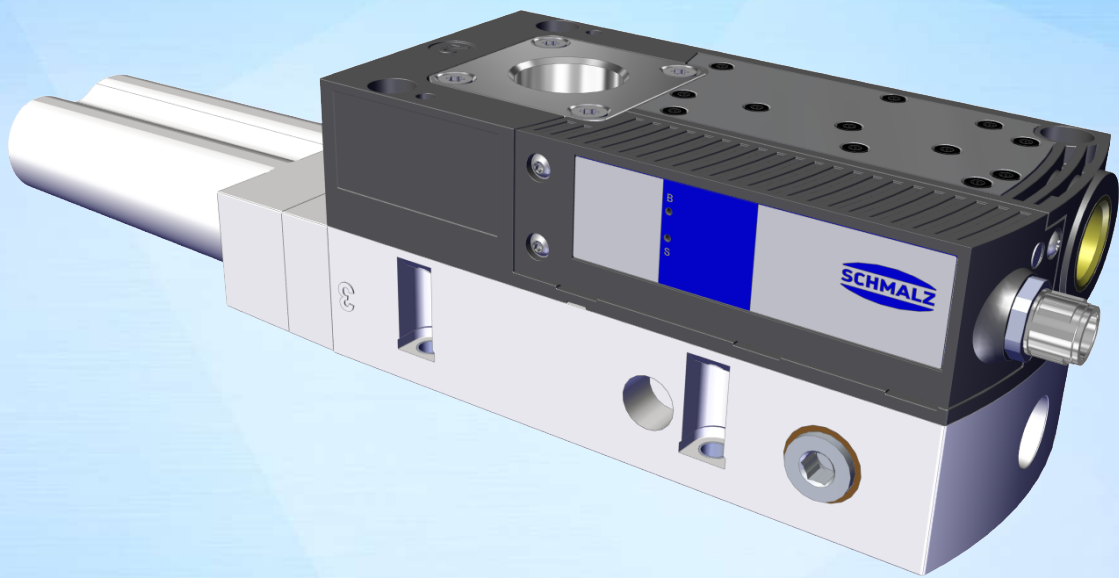




Operating instructions

Basic Ejector SCPLb

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 intended for:

- Operating personnel trained in the operation of the product
- 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

The displayed figures are only examples. Depending on the particular design, they can differ from the product.

1.3 Other Applicable Documents

- EU Declaration of Conformity, OI 30.30.01.04134

1.4 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 on hand.

1.5 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 ejector is used for vacuum generation, i.e. for evacuating suction cups for holding payloads or for evacuating other volumes.

The vacuum generated should be monitored in order to detect any issues with vacuum generation.

Neutral gases in accordance with EN 983 are approved as evacuation media. Neutral gases include air, nitrogen and inert gases (e.g. argon, xenon and neon).

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.

2.2 Non-Intended Use

Schmalz does not accept any liability for any direct or indirect losses or damages that result from using the product. This applies, in particular, to any use of the product that is not in accordance with the intended purpose and to any use that is not described or mentioned in this documentation.

In particular, the following are considered non-intended use:

- Use in potentially explosive atmospheres
- Transport and through-suction of potentially explosive materials
- Direct contact with perishable goods/food products
- Use in medical applications
- Suction of aggressive gases or media such as acids, acid fumes, bases, bio-cides, disinfectants or detergents is not permitted.

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).
- Work on electrical equipment must be carried out only by qualified electrical specialists.

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



CAUTION

Falling product

Risk of injury

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



WARNING

Noise pollution due to the escape of compressed air

Hearing damage!

- ▶ Wear ear protectors.
- ▶ The ejector must only be operated with a silencer.



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.



⚠ 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

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 the silencer air stream
- ▶ Do not look into vacuum openings such as suction cups, suction lines and hoses.

2.6 Technical Condition / Manufacturer's Liability

If the product is operated while in a defective state, safety and function will be impaired.

- If the operating behavior changes, check the product for faults. Rectify faults immediately!
If the fault cannot be rectified immediately, shut down the product and mark it as faulty.

Schmalz assumes no liability for consequences if the following points have not been complied with:

- The product must only be operated when in perfect technical working order – i.e., in its original condition.
- Follow the maintenance plan (> See ch. Maintenance).
- Only use original Schmalz spare parts and accessories.
- Unauthorized conversion or modification of the product is prohibited.
- Safety features must not be disabled under any circumstances.

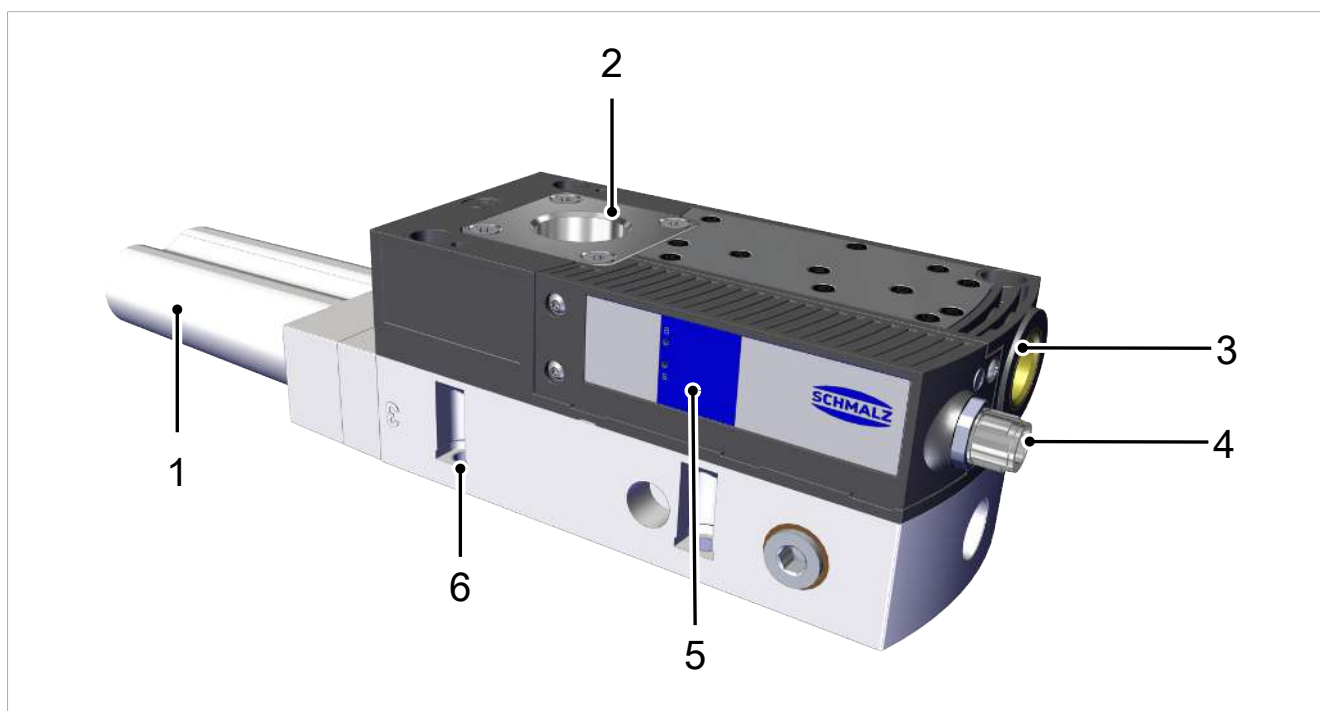
3 Product Name

The breakdown of the item designation (e.g. SCPLc 100 HV NC ABC00001C) is as follows:

Property	Variants
Type	SCPL
Version	Basic: b Controlled: c Intelligent: i
Size	25, 50, 75, 100, 125 and 150
Shape	HV, High Vacuum HF, High Flow
Thread type	G, inch thread NPT, NPT thread
Shape	SA, silencer axial FA, flange, silencer axial FE, flange, exhaust duct EA, exhaust duct
Suction valve control	NO (normally open), sucks when no voltage is applied NC (normally closed), does not suck when no voltage is applied
Construction	PNP, PNP switching NPN, NPN switching
Individual configuration code	Unique 9-digit code (SCPLc 100 HV NC ABC00001C)

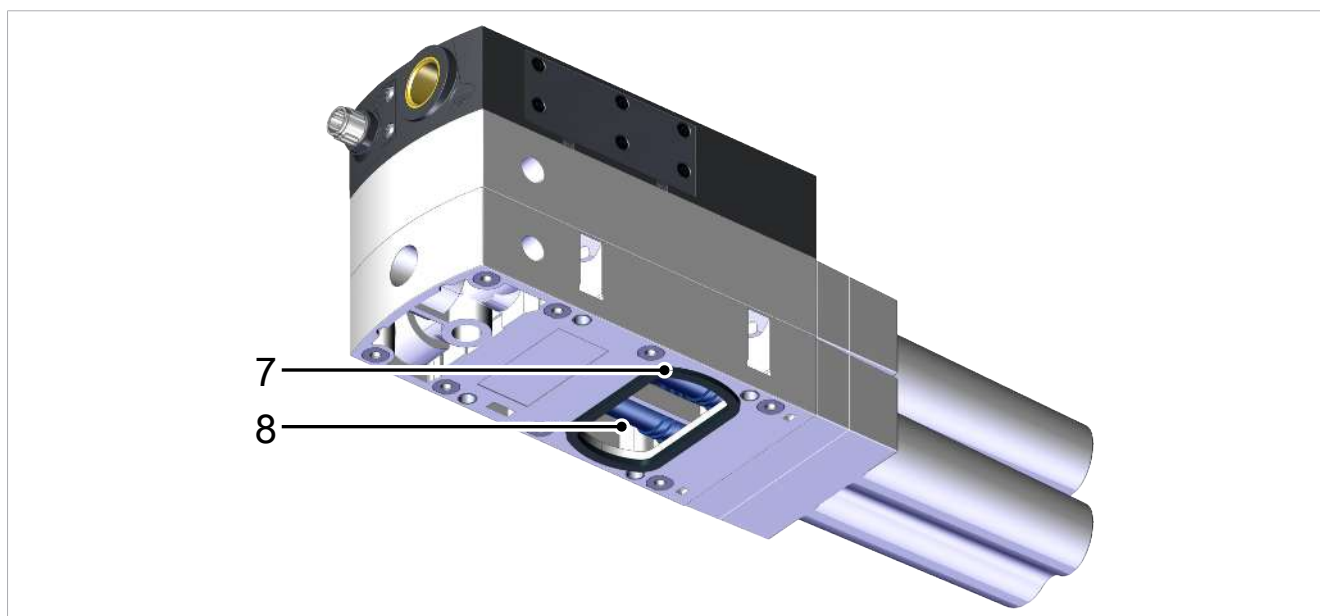
4 Product Design

Variant SCPLb SA



1	Silencer	4	Electrical connection
2	Vacuum connection	5	Display element
3	Compressed air connection	6	Mounting holes, 4x

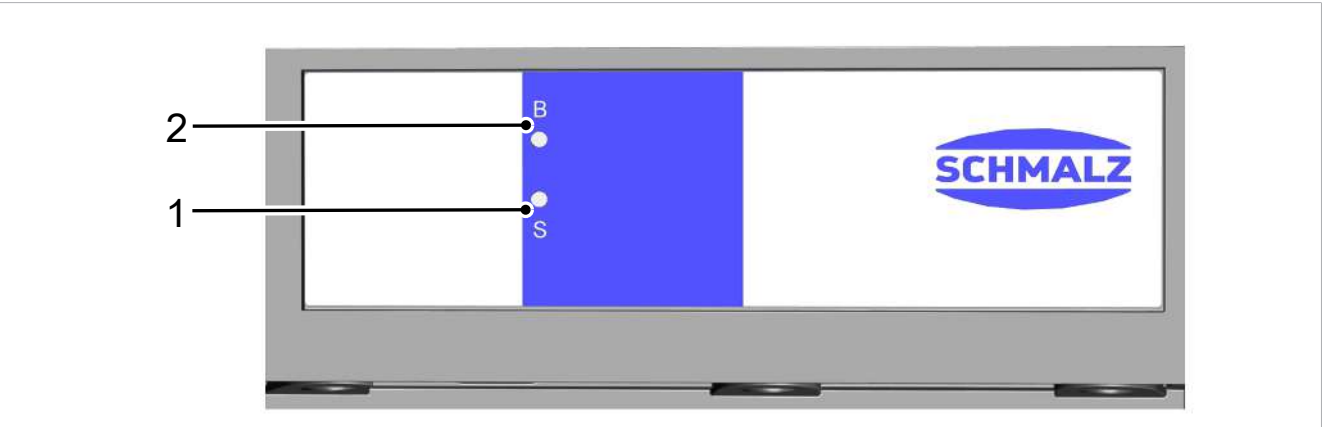
Variant SCPLb FA



7	Sealing	8	Vacuum opening
---	---------	---	----------------

5 Indicator Elements in Detail

The device has two light-emitting diodes (LEDs) for visual status display.



1	Suction LED (S)	2	Blow-off LED (B)
---	-----------------	---	------------------

Position	Indicator	Status	
		NC variant	NO variant
1 	Lights up yellow 	Suction from ejector	No suction from ejector
2 	Lights up yellow 	Ejector blows off	Ejector blows off

6 Technical Data

6.1 General parameters

Parameter	High vacuum HV	High flow HF
Max. vacuum	900 mbar	600 mbar
Working temperature	0° C to 55° C	
Optimum flow pressure	4.5 bar for SCPL 25 - 100 5.5 bar for SCPL 125 - 150	
Operating pressure	3 bar to 6 bar	
Degree of protection	IP54	
Operating medium on compressed air side	Filtered and oiled or unoiled compressed air or neutral gases according to class 3-3-3 of ISO 8573-1	
Operating medium on the vacuum side	Dry, non-abrasive gases	

6.2 Electrical Parameters

Supply voltage	24V DC $\pm$ 10% (PELV ¹⁾)		
Polarity reversal protection	Yes		
Current consumption (at 24 V)	—	Typical current consumption	Max. current consumption
	NC	50 mA	70 mA
	NO	75 mA	115 mA

1) The power supply must correspond to the regulations in accordance with EN60204 (protected extra-low voltage).

6.3 Performance Data

Standard Variant SA

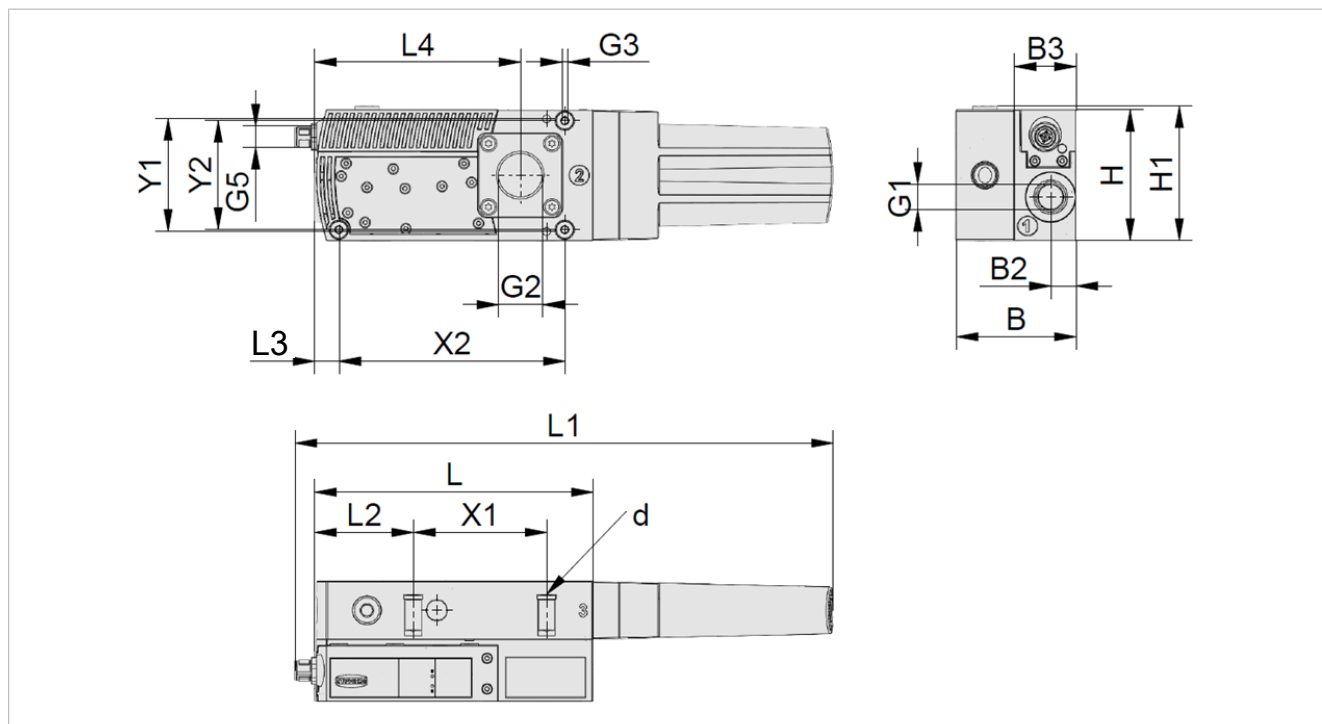
Type	Max. suction rate	Air consumption ¹⁾	Max. blow-off air consumption ¹⁾	Ideal operating pressure	Sound level Free	Sound level Picked up	Weight
SCPL 25 HV	300 l/min	105 l/min	120 sl/min	4.5 bar	65 dB	55 dB	0.83 kg
SCPL 25 HF	290 l/min	80 l/min			61 dB	54 dB	0.83 kg
SCPL 50 HV	510 l/min	210 l/min			66 dB	59 dB	0.85 kg
SCPL 50 HF	500 l/min	160 l/min			65 dB	55 dB	0.85 kg
SCPL 75 HV	720 l/min	305 l/min			68 dB	62 dB	1.23 kg
SCPL 75 HF	710 l/min	230 l/min			67 dB	57 dB	1.23 kg
SCPL 100 HV	870 l/min	395 l/min			70 dB	64 dB	1.25 kg
SCPL 100 HF	860 l/min	300 l/min			69 dB	58 dB	1.25 kg
SCPL 125 HV	1010 l/min	470 l/min		5.5 bar	72 dB	65 dB	1.65 kg
SCPL 125 HF	1010 l/min	370 l/min			70 dB	60 dB	1.65 kg
SCPL 150 HV	1140 l/min	545 l/min			73 dB	66 dB	1.67 kg
SCPL 150 HF	1120 l/min	435 l/min			71 dB	61 dB	1.67 kg

Variant FA

Type	Max. suction rate	Air consumption ¹⁾	Max. blow-off air consumption ¹⁾	Ideal operating pressure	Sound level Free	Sound level Picked up	Weight
SCPL 25 HV FA	300 l/min	105 l/min	120 sl/min	4.5 bar	65 dB	55 dB	0.83 kg
SCPL 25 HF FA	300 l/min	80 l/min			61 dB	54 dB	0.83 kg
SCPL 50 HV FA	530 l/min	210 l/min			66 dB	59 dB	0.85 kg
SCPL 50 HF FA	550 l/min	160 l/min			65 dB	55 dB	0.85 kg
SCPL 75 HV FA	800 l/min	305 l/min			68 dB	62 dB	1.23 kg
SCPL 75 HF FA	800 l/min	230 l/min			67 dB	57 dB	1.23 kg
SCPL 100 HV FA	1,000 l/min	395 l/min			70 dB	64 dB	1.25 kg
SCPL 100 HF FA	1,020 l/min	300 l/min			69 dB	58 dB	1.25 kg
SCPL 125 HV FA	1,300 l/min	470 l/min		5.5 bar	72 dB	65 dB	1.65 kg
SCPL 125 HF FA	1,300 l/min	370 l/min			70 dB	60 dB	1.65 kg
SCPL 150 HV FA	1,440 l/min	545 l/min			73 dB	66 dB	1.67 kg
SCPL 150 HF FA	1,460 l/min	435 l/min			71 dB	61 dB	1.67 kg

¹⁾ At 4.5 bar

6.4 Dimensions



L	L1	L2	L3	L4	H	H1	X1	Y1	X2	Y2	B2	B3
153.5	297	54.5	13.5	113.5	72	74	73.5	62	124.5	60	13.8	34

Type	B	G1	G2	G3	G5	d
SCPL 25/50 HF/HV	66	G3/8" female thread	G3/4" female thread	M4 female thread	M12x1 male thread	5.5
SCPL 25/50 HF/HV NPT	66	NPT3/8" female thread	NPT3/4" female thread			
SCPL 75/100 HF/HV	97.8	G3/8" female thread	G1" female thread			
SCPL 75/100 HF/HV NPT	97.8	NPT3/8" female thread	NPT1" female thread			
SCPL 125/150 HF/HV	129	G3/8" female thread	G1" female thread			
SCPL 125/150 HF/HV NPT	129	NPT3/8" female thread	NPT1" female thread			
SCPL variant FA			No thread			

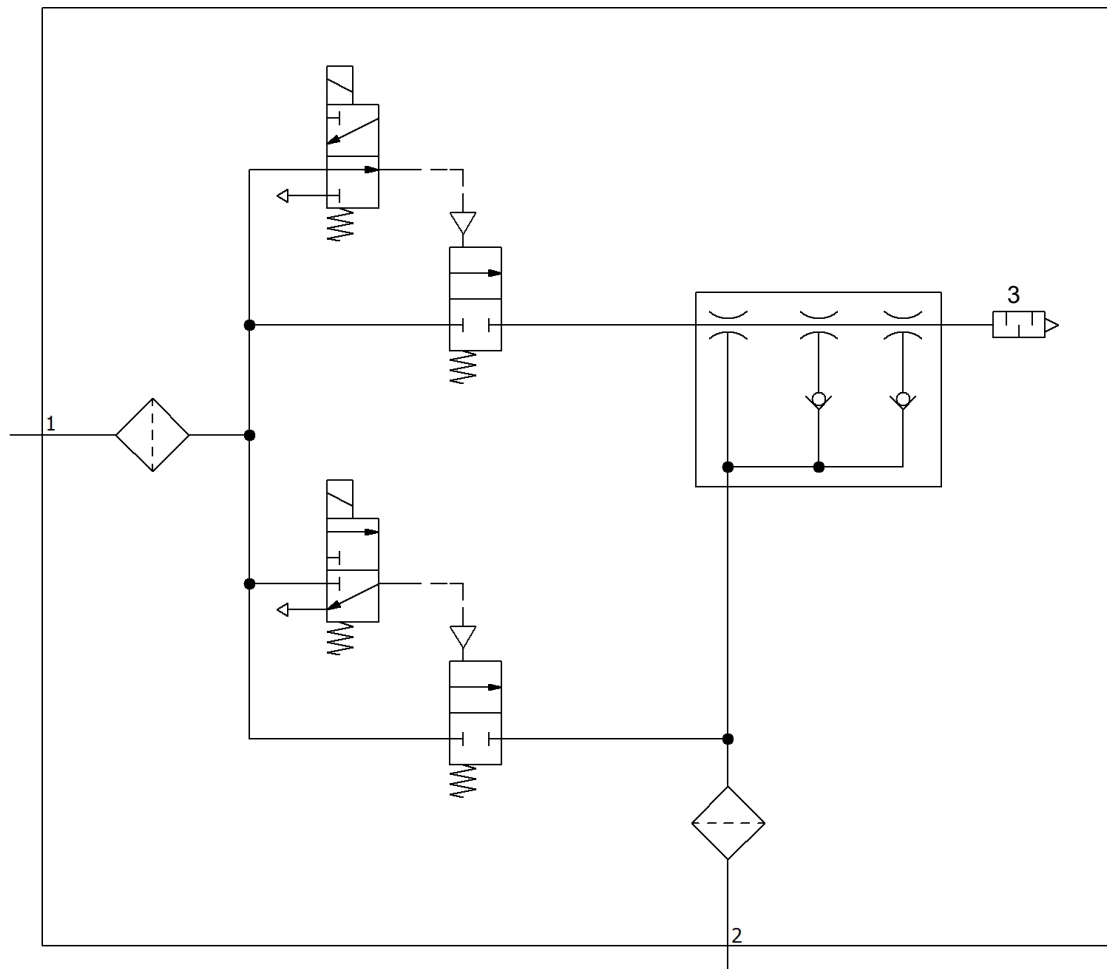
All length dimensions are in millimeters [mm].

6.5 Pneumatic Circuit Plans

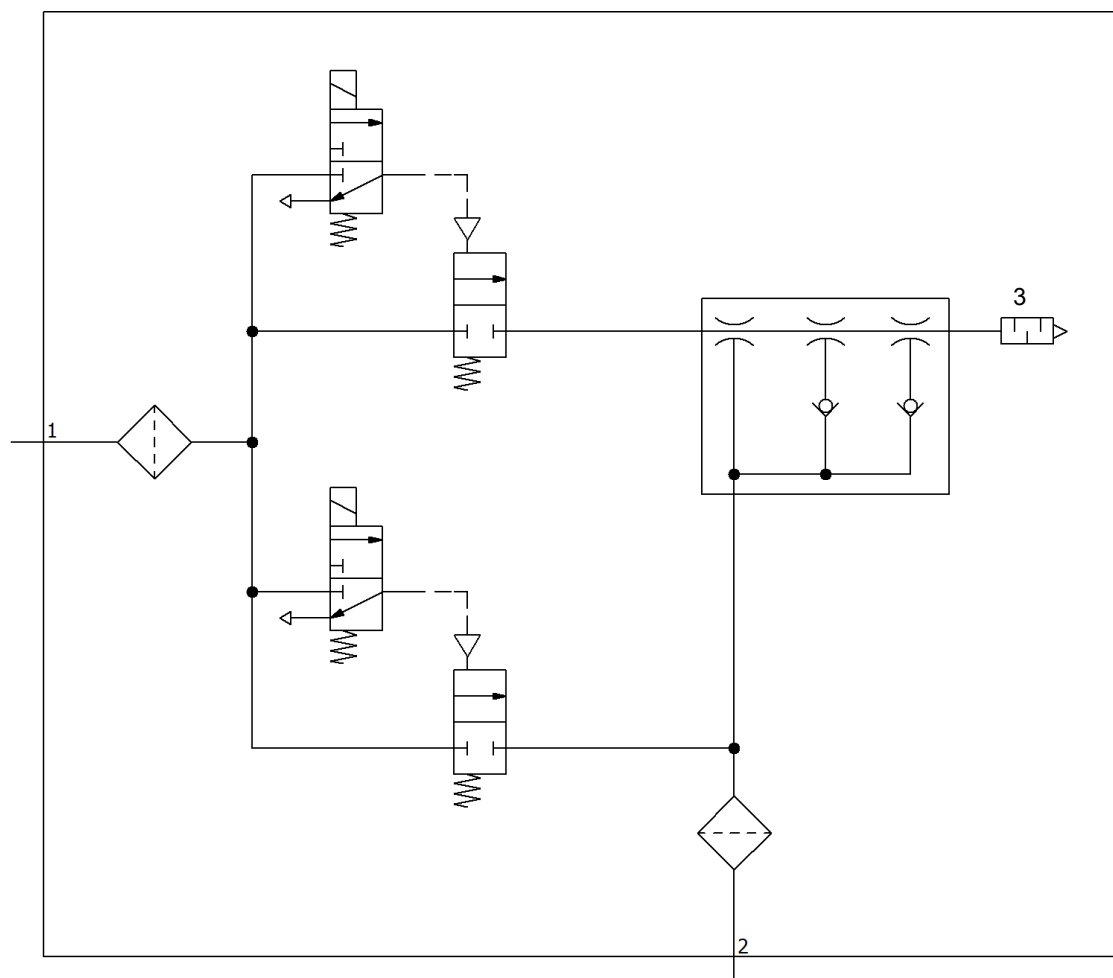
Key:

NC	Normally closed
NO	Normally open
1	Compressed air connection
2	Vacuum connection
3	Exhaust outlet

NO version



NC version



7 Description of Functions

7.1 Information Relating to Switching Logic

The vacuum is activated and deactivated using the suction command:

- In the NO variant (normally open), the vacuum is deactivated when the suction signal is received.
(This means that if the power fails or if no control signal is present, vacuum is constantly generated (continuous suction).)
- In the NC variant (normally closed), the vacuum is activated when the suction signal is received.
(This means that if there is a power failure or if there is no control signal, no vacuum is generated.)

7.2 Applying Suction to the Workpiece/Part (Vacuum Generation)

The ejector is designed for handling and holding workpieces by means of a vacuum in combination with suction systems. The vacuum is generated in a nozzle according to the venturi principle, using suction generated by the flow of accelerated compressed air. Compressed air is channeled into the ejector and flows through the nozzle. A vacuum is generated immediately downstream of the motive nozzle; this causes the air to be sucked through the vacuum connection. The air and compressed air that have been removed by the suction exit together via the silencer.

The Venturi nozzle on the ejector is activated and deactivated using the Suction command.

7.3 Depositing the Workpiece/Part (Blowing Off)

In blow off mode, the vacuum circuit of the ejector is supplied with compressed air. This ensures that the vacuum drops quickly, allowing the workpiece/part to be deposited quickly.

The blow-off valve on the ejector is activated and deactivated using the "blow off" command. The valve is always designed as an NC (normally closed) variant and switches the air pressure channel to the vacuum connection for the duration of activation.

If both "Suction" and "Blow-off" are activated, "Blow-off" is given higher priority and the vacuum is not activated.

If the ejector is in blow-off mode when the power supply fails, the blow-off is stopped and the ejector is set to "pneumatically OFF" status.

This prevents unnecessary consumption of compressed air, thus saving energy and additional costs. When the power supply returns, the ejector remains in "pneumatically OFF" status.

The "Blow-off" solenoid valve is controlled directly. The ejector switches to blow off mode for as long as the signal is present.

8 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.

9 Installation

9.1 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.

For safe installation, the following instructions must be observed:

1. Use only the connectors, mounting holes and attachment materials that have been provided.
2. Mounting and removal must be performed only when the device is unpressurized and disconnected from the mains.
3. Hose lines must be laid without bends or crimps.
4. Shorten the hoses and pipelines as much as possible to keep the response times as short as possible.
5. Remove any dirt particles or foreign bodies in the product's connections or in the hoses or pipelines because they can lead to malfunctions or failure.

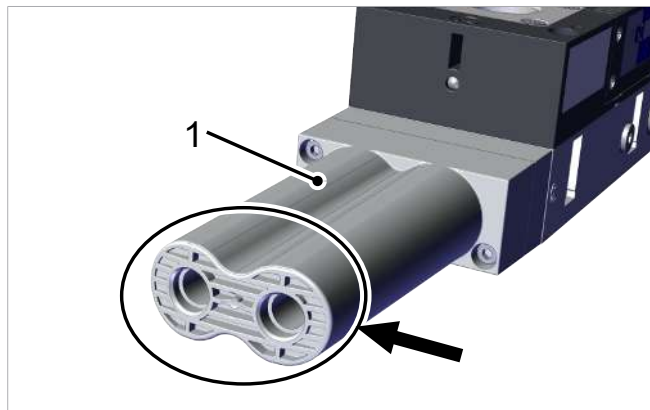
9.2 Mounting



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

The product can be mounted in any position.

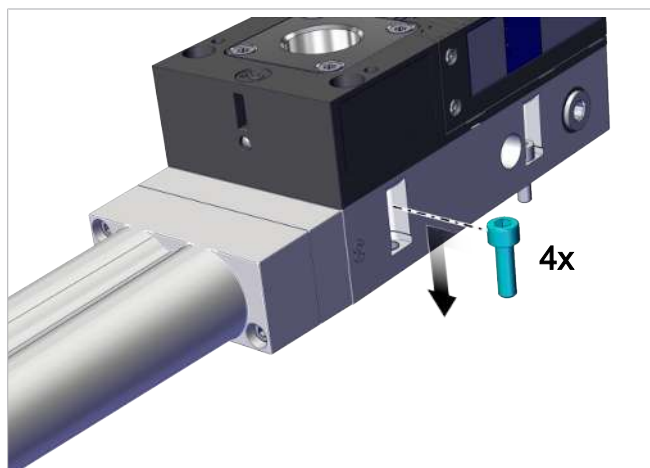
- ▶ When installing the ejector, make sure that the area around the exhaust air opening (1) remains unobstructed to ensure the unimpeded discharge of the escaping air.



9.2.1 Mounting the Standard Variant SA

The ejector is usually mounted through the holes on the side using the four supplied screws.

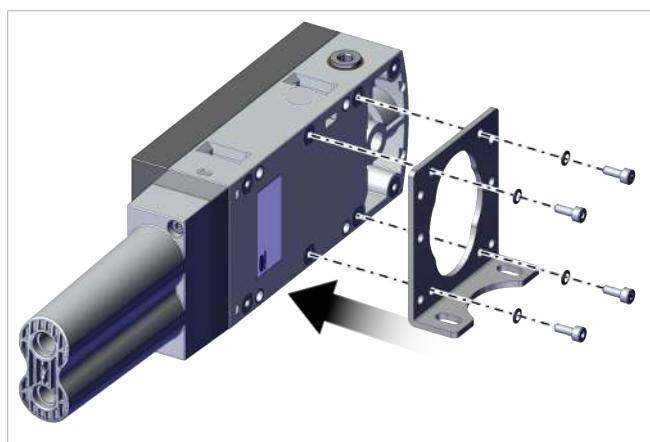
- ▶ Use the supplied M5 screws (4x) to secure the ejector to a suitable mounting with a max. tightening torque of 5 Nm.



Alternative attachment with mounting bracket

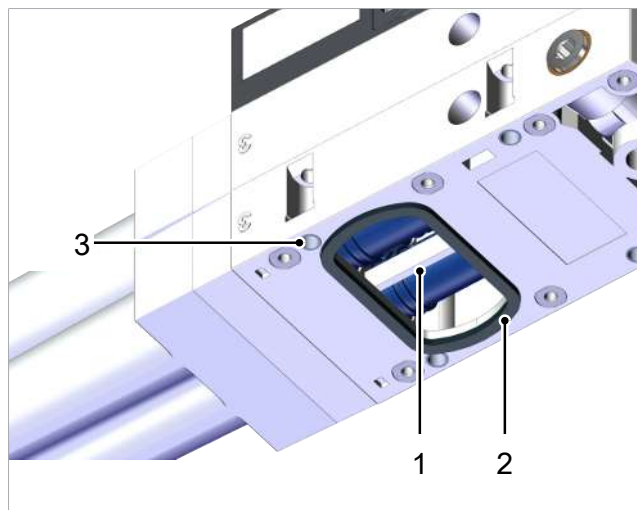
For an alternative mounting, the product is designed with M4 threaded inserts.

- ▶ Attach the mounting bracket (see the chapter "Accessories") to the ejector using the supplied M4 screws (4x), with a max. tightening torque of 2.5 Nm.



9.2.2 Mounting the Flange Variant FA

In the flange variant, the vacuum is connected via the opening (1) or the interface with the seal (2). Four holes (3) for mounting are also available in the housing here.



The operator must ensure a leak-free connection. When attaching the ejector to the operator's vacuum system, the requirements for continuous and dynamic stress must be observed, among others.

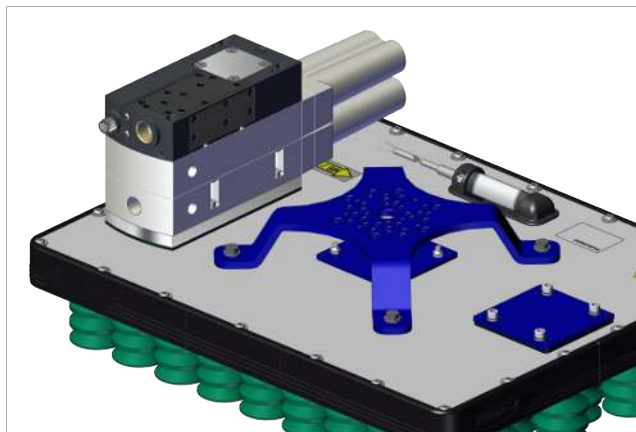
Exemplifying using the Schmalz adapter plate

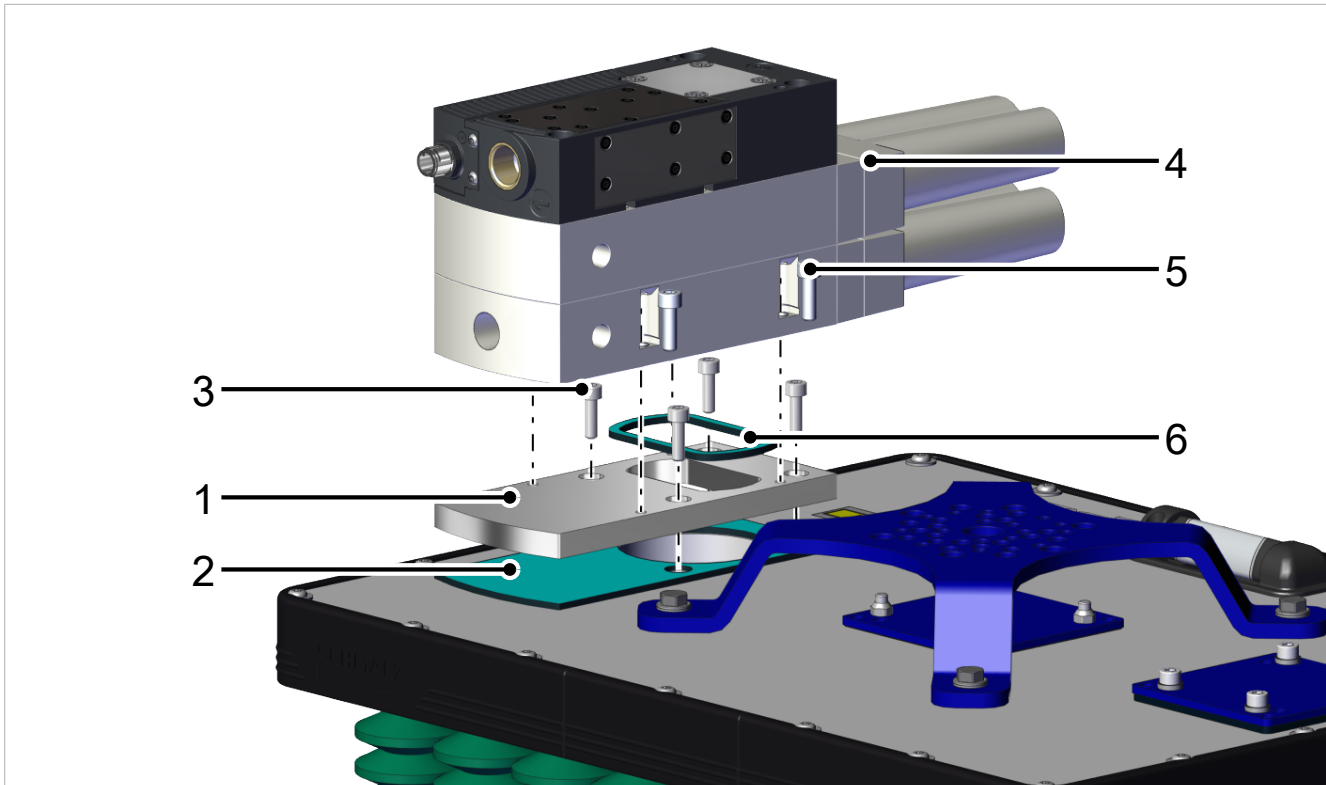


The illustrations shown below may deviate from the customer's version because they serve as examples of different versions of the product.

The figure shows a Schmalz area gripper with:

- Bellows suction cups
- Vacuum switch
- Flange
- Vacuum generator SCPL





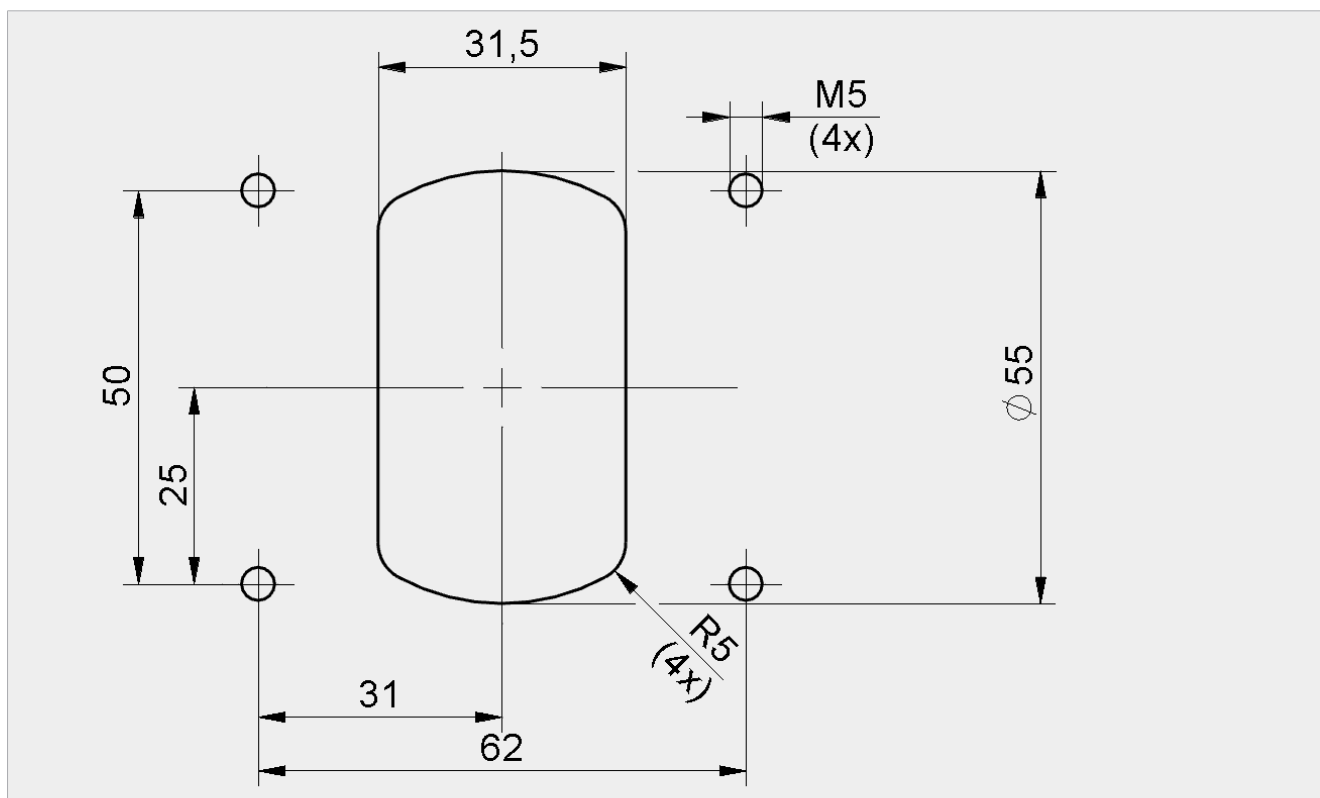
The adapter plate (1) is used for mounting the SCPL (4) on the area gripper. Diese ist zum Führen des Vakuums mit einer Öffnung in Form der Vakuum-Öffnung am Ejektor und mit vier Gewinden (5) zur Befestigung des Ejektors an der Adapterplatte (1) ausgeführt. The seal (6) that is included in delivery seals the SCPL (4) to the adapter plate (1).

In addition, the adapter plate (1) is designed with mounting holes for mounting on the area gripper (3). For sealing, a customer-specific seal (2) has to be provided between the adapter plate (1) and the vacuum gripping system.

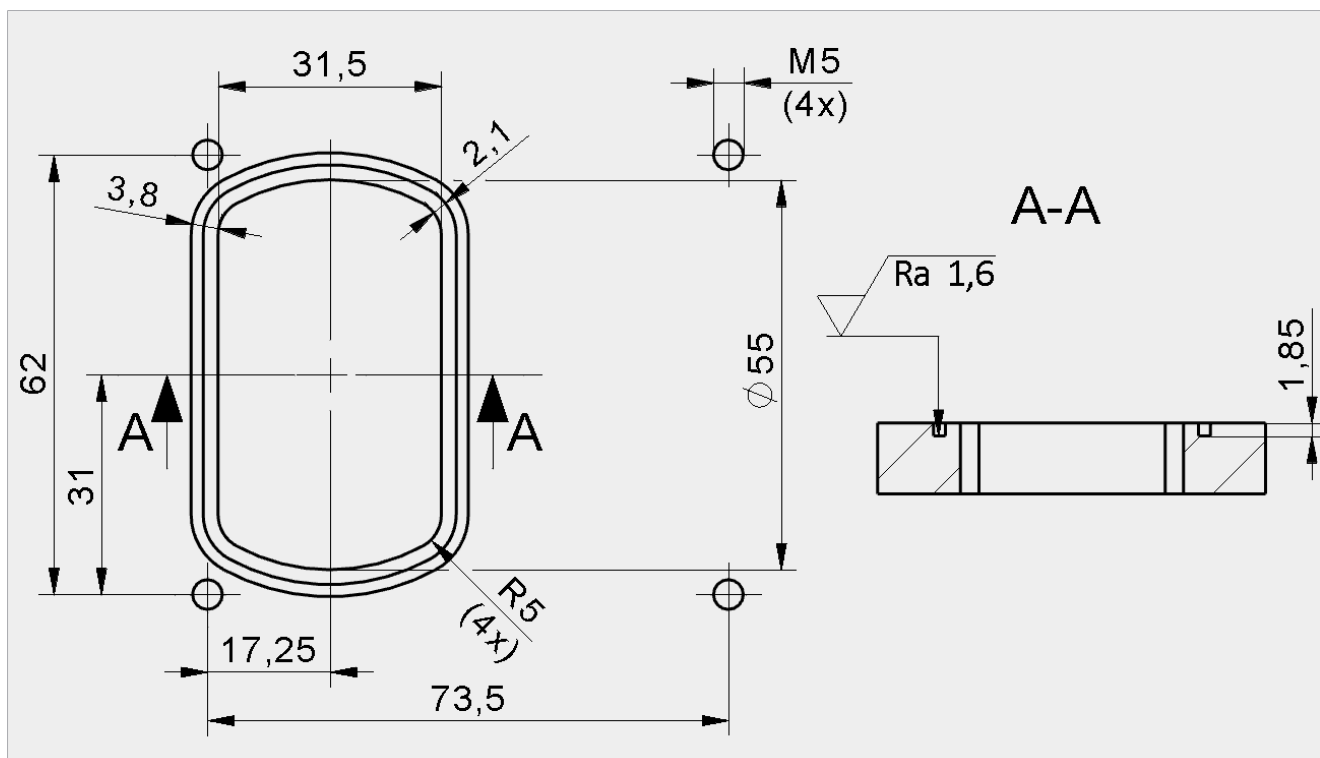
The design of the adapter plate (1) and seal (2) up to the vacuum gripping system is always the responsibility of the operator.

The following sketches show two possible designs for the interface with the ejector.

Drilling template for the variant without a slot



Drilling template for the variant with a slot (the slot is required to mount a filter screen (accessory part).)



9.2.3 Optional: Mounting with Schmalz adapter plate, including screen

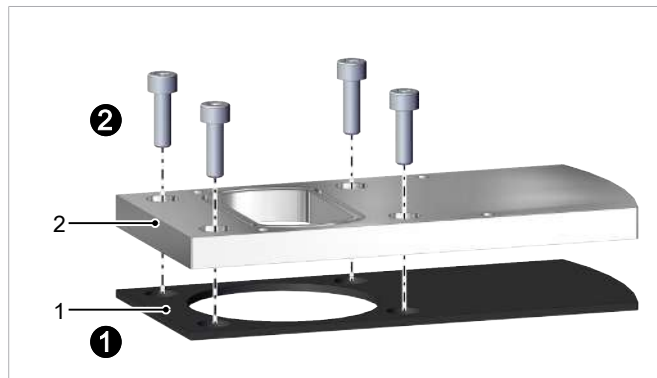
The process of mounting the ejector variant FA using the Schmalz adapter plate is described below.

The set with part number 10.02.01.02194 includes:

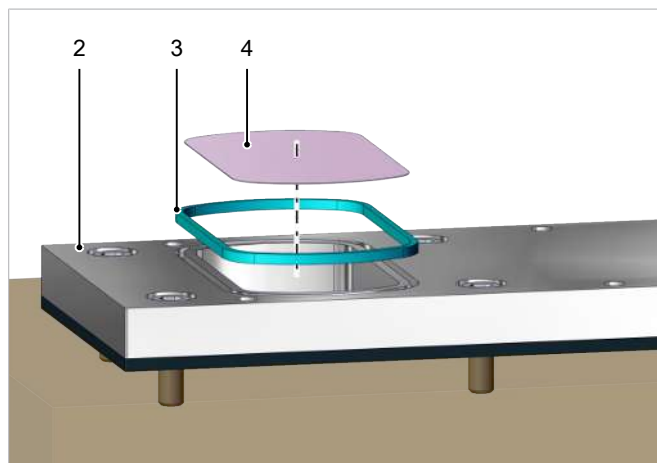
- Adapter plate
- Sealing
- Screen
- Sealing plate
- Machine screws

✓ The vacuum consumer is designed for the use of the adapter plate based on the drilling pattern.

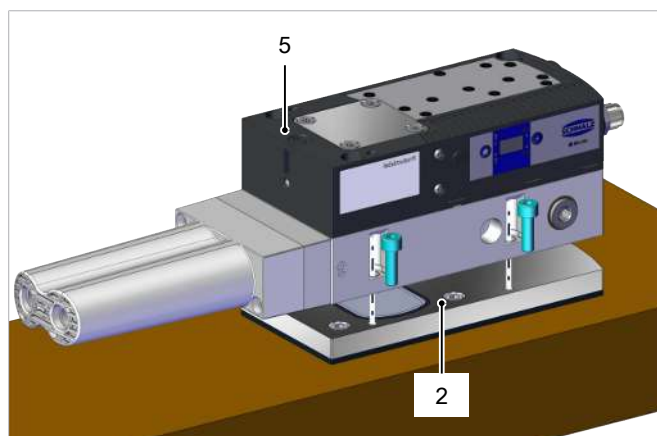
1. Correctly position the sealing plate (1) at the defined point on the vacuum consumer (not shown) ① and mount the adapter plate (2) on the vacuum consumer ②.



2. Insert the seal (3) into the adapter plate slot (2) and the screen (4).



3. Secure the ejector (5) in the correct position on the adapter plate (2) (> [See ch. 9.2.1 Mounting the Standard Variant SA, p. 22](#)).



9.3 Pneumatic Connection

9.3.1 Instructions for the Pneumatic Connection

1. Ensure that you make all connections correctly and never close them off – danger of bursting!
2. To ensure problem-free operation and a long service life for the product, only use adequately maintained compressed air.
3. Use only pipes or hoses with the recommended inner diameter to connect the product:

Type	Recommended hose diameter	
	Compressed air	Vacuum (Standard variant)
SCPL 25	6	20
SCPL 50	6	25
SCPL 75	9	32
SCPL 100	9	32
SCPL 125	11	32
SCPL 150	11	32

Internal Diameters Are Based on a Maximum Hose Length of 2 m.



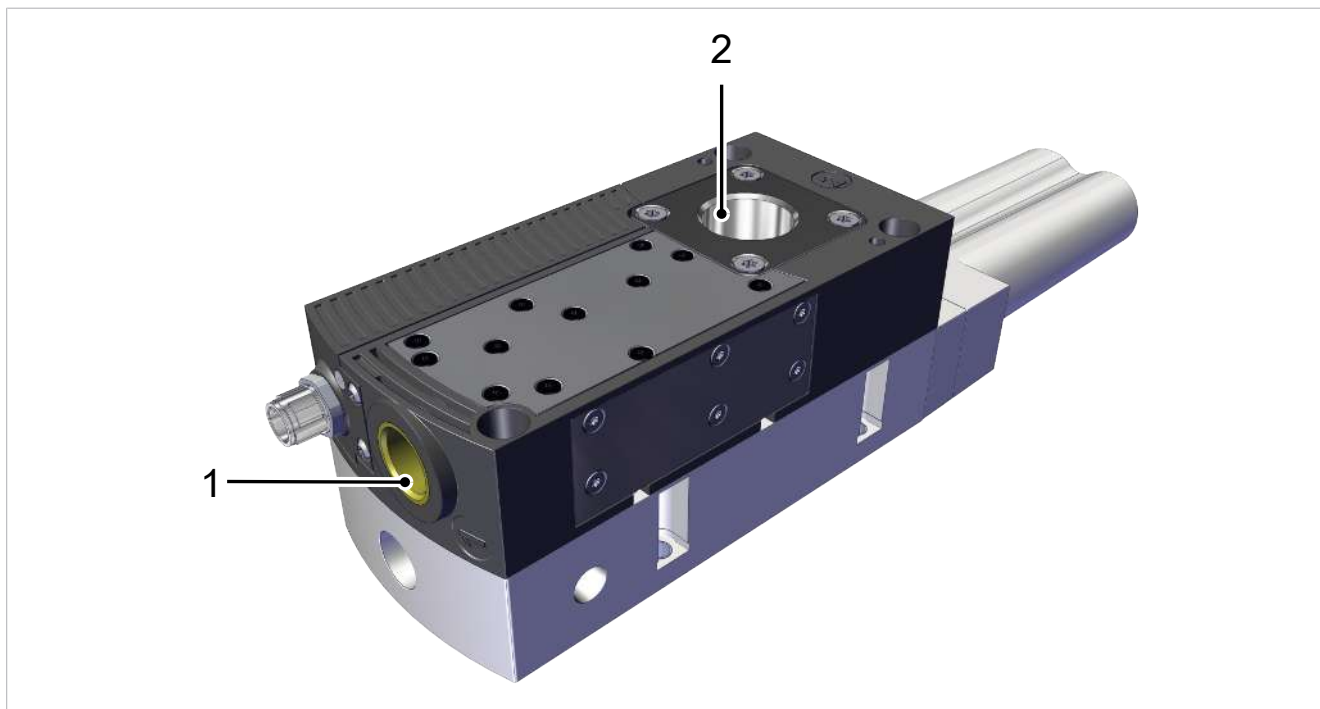
If a hose or pipe with an internal diameter that is too small is used on the compressed air side, the product will not receive enough compressed air to operate at optimal capacity.



If a hose or pipe with an internal diameter that is too small is used on the vacuum side, this will cause the flow resistance along the wall of the hose to be too high and have a negative effect on the suction capacity of the device and on evacuation times as a result. However, the hose diameters should not be arbitrarily large, as the increased volume would extend evacuation times.

9.3.2 Connecting the Compressed Air and Vacuum

Standard Variant SA



1	Compressed air connection (marking 1)	2	Vacuum connection (marking 2)
---	---------------------------------------	---	-------------------------------

- ✓ The connectors required for the hose connections are fitted by the customer.
- 1. Attach the connector to the compressed air connection. Maximum tightening torque = 10 Nm
- 2. Connect the compressed air hose to the ejector.
- 3. Attach the connector to the vacuum connection. Maximum tightening torque = 20 Nm.
- 4. Connect the vacuum hose.

Flange Variant FA

- ✓ The connectors required for the connections are provided by the customer.
- 1. Attach the connector to the compressed air connection. Maximum tightening torque = 10 Nm
- 2. Connect the compressed air hose to the ejector.
- 3. The vacuum is connected through the vacuum opening and is connected to the ejector attachment ([> See ch. 9.2.2 Mounting the Flange Variant FA, p. 23](#)).

9.4 Electrical Connection



⚠ CAUTION

Changing output signals when the product is switched on or plug is connected

Personal injury or damage to property!

- The electrical connection must be performed only by specialists who can evaluate the effects of signal changes on the overall system.



⚠ WARNING

Electric shock

Risk of injury

- ▶ Operate the product using a power supply unit with protected extra-low voltage (PELV).



NOTE

Incorrect power supply

Destruction of the integrated electronics

- ▶ Operate the product using a power supply unit with protected extra-low voltage (PELV).
- ▶ The system must incorporate safe electrical cut-off of the power supply in compliance with EN 60204.
- ▶ Do not connect or disconnect the connector under tension and/or when electrical voltage is applied.

The electrical connection supplies the product with power and communicates with the controller of the higher-level machine using defined outputs.

9.4.1 Mounting the Connection Cable

The ejector is connected to the electrical supply using an M12 connector:

- ✓ The connection cable with socket is provided by the customer. The maximum length of the cable in SIO mode is 30 m.
- ✓ Ensure that no electrical voltage is applied to the device.

- ▶ Attach the connection cable to the electrical connection (1) (with max. tightening torque = hand-tight).



Direct connection to the control unit of the higher-level machine

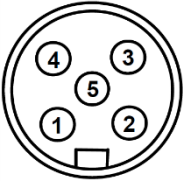
To directly connect the ejector to the control unit, a Schmalz connection cable can be used, for example:

- Ejector with 5-pin M12 connector: M12-5 connection cable with open end, 5 m, part no. 21.04.05.00080

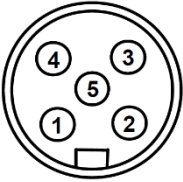
Further connection cables or connection distributors are available on request.

9.4.2 PIN Assignment for 5-Pin M12 Connector

Variant SCPLb – PNP

5-pin M12 connector	Pin	Wire color ¹⁾	Symbol	Function
	1	Brown	—	—
	2	White	IN1	“Blow-off” signal input
	3	Blue	GND	Ground
	4	Black	IN2	“Suction” signal input
	5	Gray	—	—

Variant SCPLb - NPN

5-pin M12 connector	Pin	Wire color ¹⁾	Symbol	Function
	1	Brown	U	24V DC supply voltage
	2	White	IN1	“Blow-off” signal input
	3	Blue	—	—
	4	Black	IN2	“Suction” signal input
	5	Gray	—	—

¹⁾ When using Schmalz connection cable part no. 21.04.05.00080

10 Start of Operations

10.1 General Preparations



⚠ 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.

Always carry out the following tasks before activating the device:

1. Check the product for visible damage and deal with any problems immediately (or notify the supervisor).
2. Ensure that the safety features of the machine or system are in perfect condition and check that they are functioning correctly.
3. Make sure all pneumatic connections are occupied and all screws are tight.
4. 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.

10.2 Activating the Product

You can supply the device with compressed air once all pneumatic and electrical connections have been made.

The ejector is designed for vacuum handling of airtight parts in combination with suction systems. The vacuum is generated in a nozzle according to the Venturi principle, using suction generated by the flow of accelerated compressed air. Compressed air is channeled into the ejector and flows through the nozzle. A vacuum is generated immediately downstream of the motive nozzle; this causes the air to be sucked through the vacuum connection. The air and compressed air that have been removed by the suction exit together via the silencer or exhaust air channel.

11 Troubleshooting

11.1 Help with Faults

Fault	Cause	Solution
Ejector does not respond	No actuator supply voltage	▶ Check electrical connection and pin assignment
	No compressed air supply	▶ Check the compressed air supply.
	Ejector is faulty.	▶ Check the ejector and contact Schmalz Service if necessary.
Vacuum level is not reached or vacuum is created too slowly	Dirty screen	▶ Clean or replace the screen
	Silencer is dirty	▶ Replace the silencer insert
	Hose or screw unions are leaking	▶ Replace or seal components
	Leakage at suction cup	▶ Eliminate leakage from suction cup
	Operating pressure too low	▶ Increase operating pressure, observe maximum limits
	Internal diameter of hose line too small	▶ Observe recommendations for hose diameter
Load cannot be held	Vacuum level too low	▶ Increase operating pressure, observe maximum limits
	Suction cup too small	▶ Select a larger suction cup

12 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.

We are not liable for any damage resulting from the use of non-original spare parts or accessories.

The exclusive use of original spare parts is a prerequisite for the proper functioning of the ejector and for the validity of the warranty.

Wearing parts are not covered by the warranty.

13 Maintenance and Cleaning

13.1 Safety Instructions

Maintenance work may only be carried out by qualified personnel.

- ▶ Create atmospheric pressure in the ejector's compressed air circuit before working on the system!



⚠ WARNING

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

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



⚠ WARNING

Risk of injury due to incorrect maintenance or troubleshooting

- ▶ Check that the product is functioning properly after all maintenance and troubleshooting.



⚠ CAUTION

Blowing off or cleaning the product with compressed air

Risk of injury and damage to the product

- ▶ Never blow off the product with compressed air.



⚠ CAUTION

Use of Cleaners Containing Solvents

Damage to the product (seals, insulation, coatings and other surfaces may be damaged by cleaners that contain solvents) and potentially damage to health

- ▶ Use a chemically and biologically neutral cleaning agent.
- ▶ Use cleaning agent that is rated as non-harmful to health.
- ▶ The use of the following cleaning agents is strictly prohibited:
 - Acetone
 - white spirit
 - cellulose thinner/turpentine oil (solvents)

13.2 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. Make sure that the silencer is not soaked in soapy water.
3. Ensure that no moisture can reach the electrical connection or other electrical components.

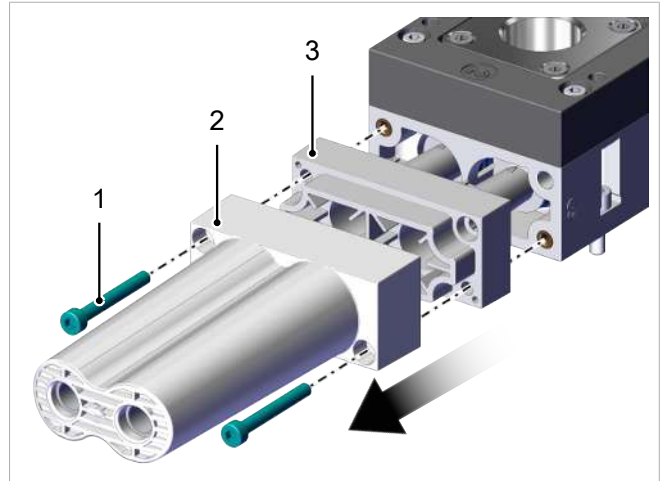
13.3 Cleaning or Replacing the Ejector Module



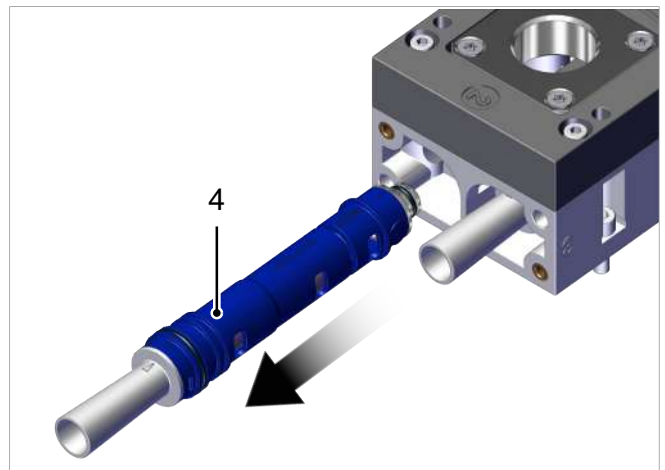
The illustrations shown below may deviate from the customer's version because they serve as examples of different versions of the product.

Removing the ejector module

1. Release the screws (1) and remove the silencer (2) and the silencer holder (3).



2. Pull the ejector module (4) out of the bore-hole.

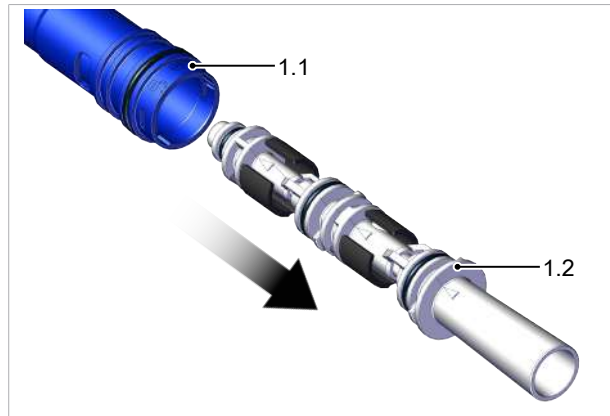


Opening and cleaning the ejector module

1. Turn the nozzle fitting (1.2) relative to the main body (1.1) to the "unlocked" position.

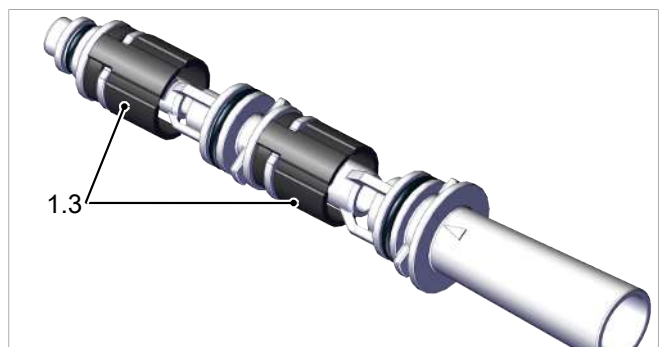


2. Pull the nozzle fitting (1.2) out of the main body (1.1), pulling only in the axial direction.

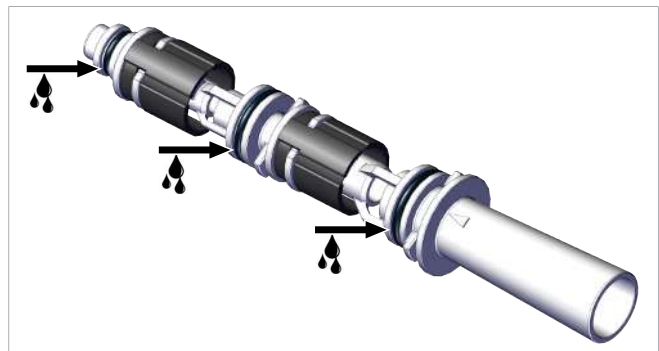


3. Blow off the components with compressed air or clean them under running water.

4. After cleaning, check the non-return valves (1.3) for wear and replace them if necessary.

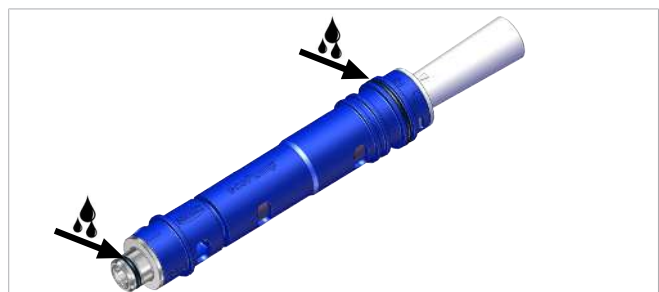


5. Grease the O-rings slightly before mounting the ejector module.

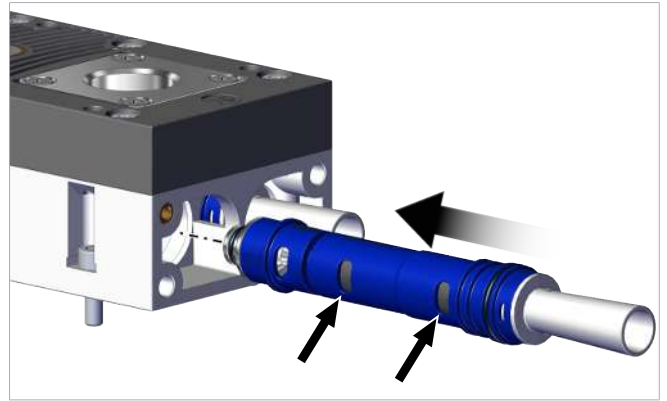


Assembling a new or cleaned ejector module

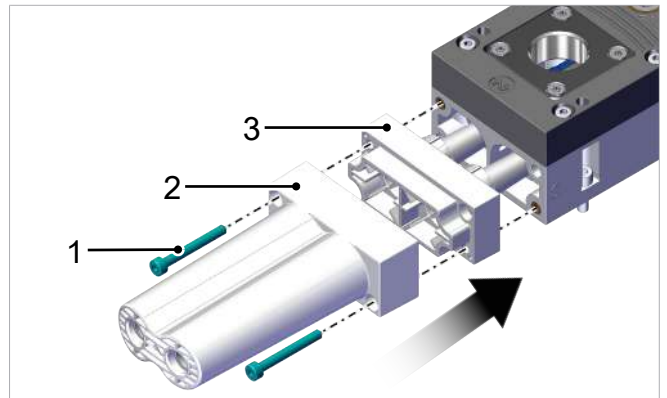
1. Lightly grease the ejector module O-rings (4) before mounting.



2. Ensure that the ejector module (4) is in the correct position and push it into the opening until it stops, with the suction openings of the ejector module (4) as shown.



3. Attach the silencer holder (3) and the silencer (2) using the two screws (1) with a tightening torque of 2 Nm.



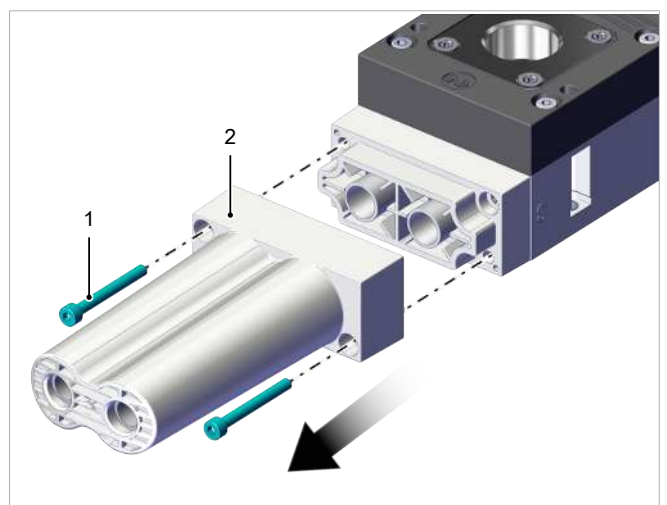
13.4 Replacing the Silencer

Heavy infiltration of dust, oil, etc. may contaminate the silencer and reduce the suction capacity. Cleaning the silencer is not recommended due to the capillary effect of the porous material.

If the suction capacity decreases, replace the silencer:

- ✓ The relevant spare parts set is made available by the customer.
- ✓ The device has been disconnected from the compressed air supply.

1. Release the screws (1) and remove the silencer (2).



2. Fasten the new silencer with the two new screws using a tightening torque of 2 Nm.

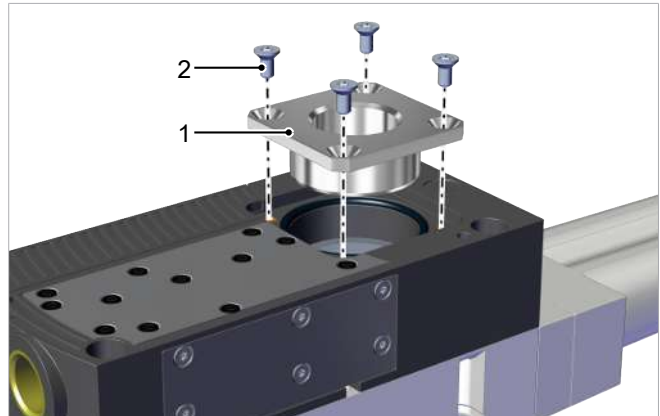
13.5 Cleaning or Replacing the Screen in the Vacuum Connection

The vacuum connection contains a screen in which dust, chippings and other solid materials may accumulate over time. If there is a noticeable reduction in performance, simply clean or replace the screen.

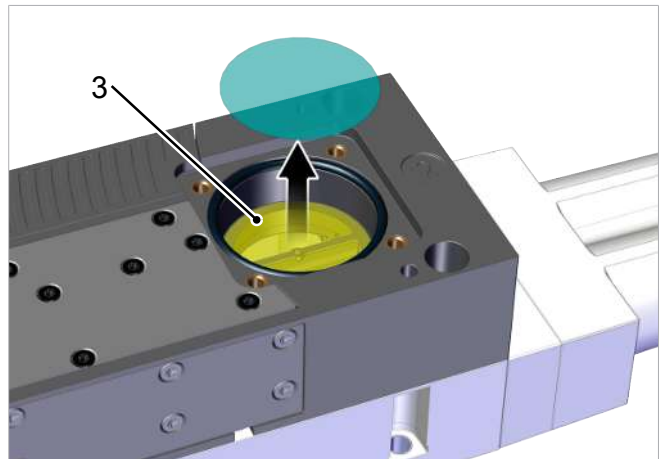
The following applies to the standard variant.

- ✓ The ejector is deactivated and disconnected from the supply lines.

1. Remove the four screws (2) and lift the vacuum connection (1) out of the housing.

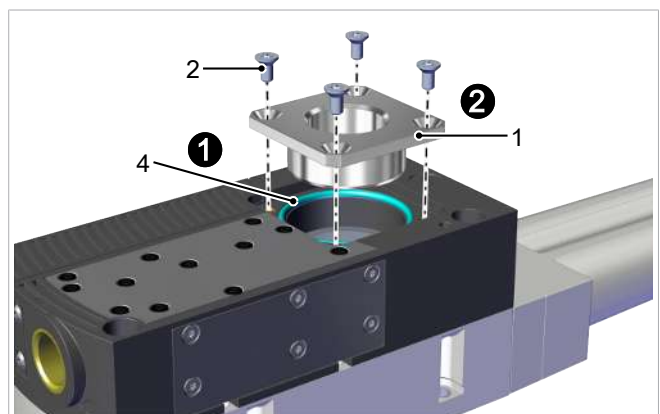


2. Remove the screen (3) from the vacuum connection and clean it. If the contamination is excessive, replace the screen.



3. Insert the cleaned or new screen into the vacuum connection.

4. Check that the O-ring (4) is fitted ①.



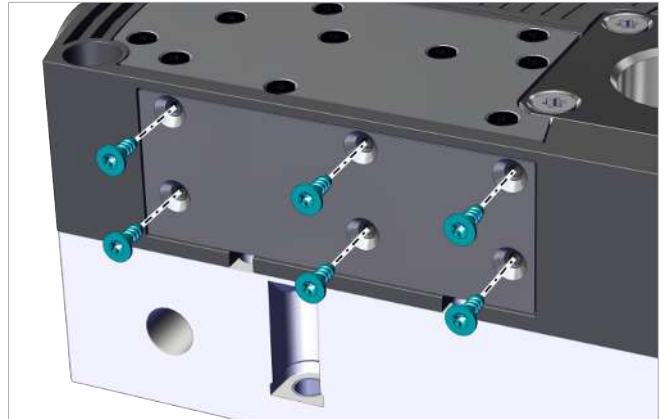
5. Insert the vacuum connection (1) into the housing and secure with the 4 screws (2) with a tightening torque of 2.5 Nm each ②.

13.6 Replacing the Valve

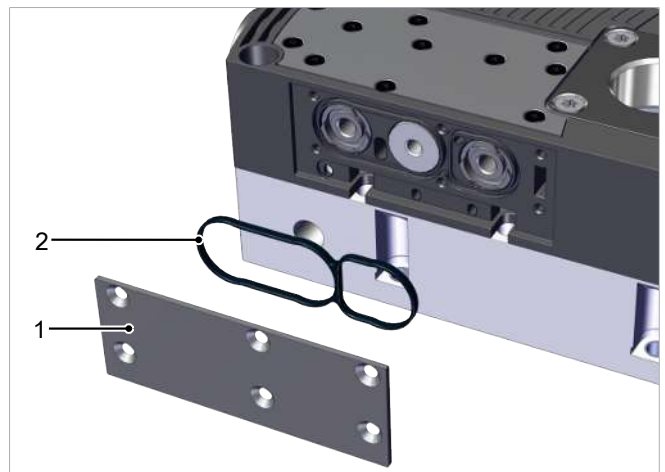
A faulty valve can be replaced as described below.

- ✓ The spare part set with part no. 10.02.02.07698 (two valves and one sealing) is provided by the customer.
- ✓ The product has been disconnected from all supply lines.

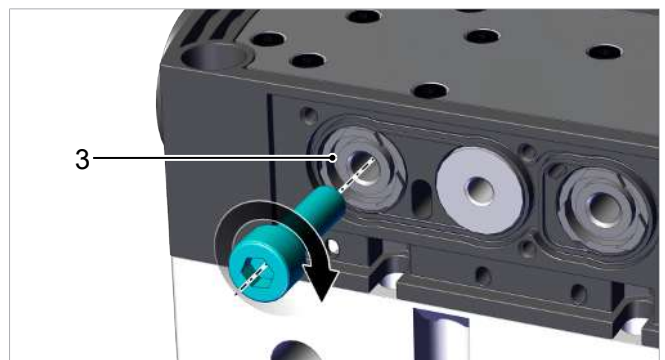
1. Loosen and remove the screws on the sealing plate.



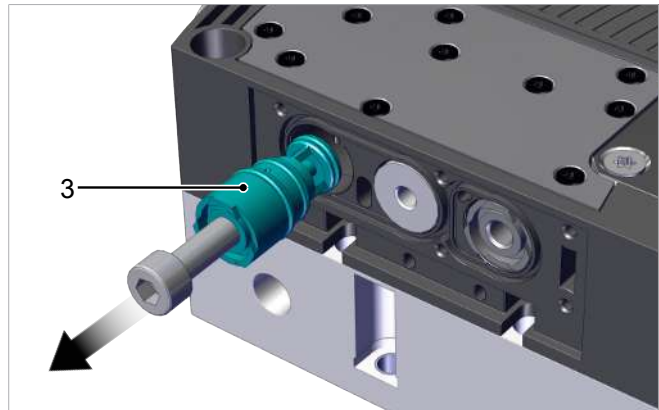
2. Remove the sealing plate (1) and sealing (2).



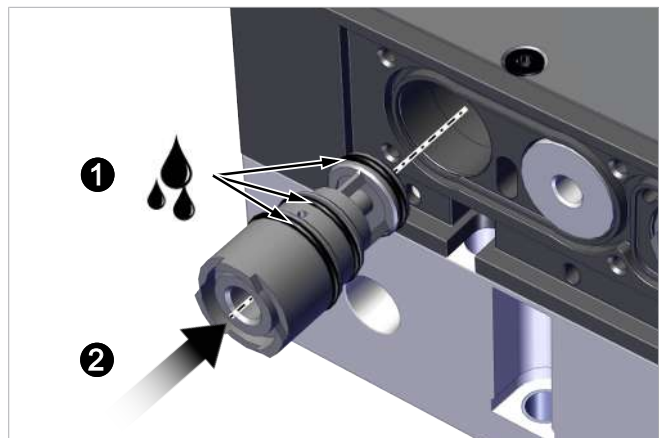
3. Screw a screw with an M5 thread into the central thread of the valve (3) to be replaced (at least 5 threads).



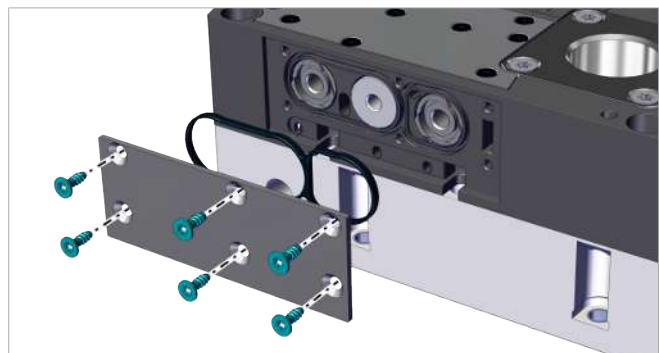
4. Pull the valve (3) out of the hole by pulling on the screw.



5. Apply pneumatic grease to the O-rings of the new valve ① and press the valve into the hole until it stops. ②.



6. Insert the new sealing in the correct position and fit the sealing plate, tightening the screws to a maximum torque of 0.75 Nm.



7. Connect the product to all necessary lines.
8. Before starting the handling process, check to ensure the device is installed and functioning correctly.

14 Spare and Wearing Parts

The product must be maintained only by qualified mechanics.

Personnel must have read and understood the operating instructions.

Designation	Type	Part no.
Silencer	SD 102x71x33 SBPL/SCPL	10.02.01.01585
Ejector module HF	SEP HF 3 13 22	10.02.01.01996
Multi-stage nozzle in compact design HV	SEP HV 3 16 22	10.02.01.01991
Sealing frame	DI-RA 112.5x34.8 NBR-55	10.02.01.01541
O-ring	O-RING 10x2.5 NBR-70	10.07.08.00002
Round screen	SIEB 36.2x0.2 A2 400 0.4/0.22	10.02.02.07119
Set of spare parts for non-return flap	ERS SEP-22 6xRUE-KLAP	10.02.01.01450
Spare part for ejector	ERS VENT SCPLb/c/i	10.02.02.07698

15 Accessories

Depending on the output module, the items listed in the following table are required for an upgrade.

The **installation information** required for the conversion is stored with the relevant **retrofit kit** at www.schmalz.de.

For standard variants:

Upgrade	Ejector	Sealing plug
SCPL 25 to 50	10.02.01.01996 (HF) or 10.02.01.01991 (HV)	Remove 10.02.01.01687!
SCPL 75 to 100	10.02.01.01996 (HF) or 10.02.01.01991 (HV)	Remove 10.02.01.01687!
SCPL 125 to 150	10.02.01.01996 (HF) or 10.02.01.01991 (HV)	Remove 10.02.01.01687!

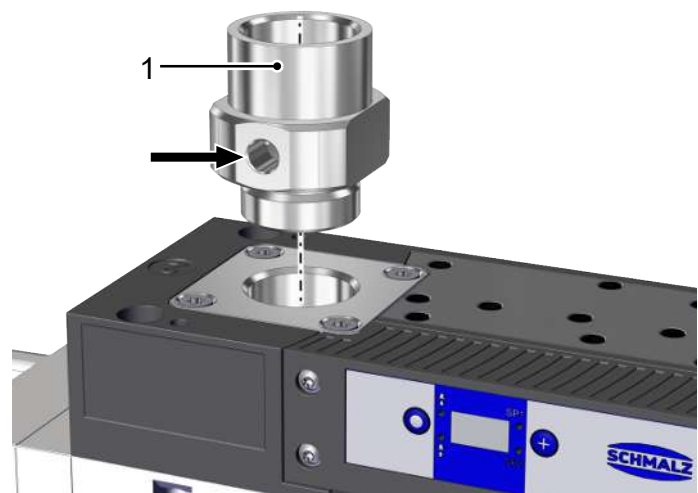
For flange variants:

Upgrade	Ejector	Sealing plug
SCPL 25 to 50	10.02.01.01409 (HF) or 10.02.01.01411 (HV)	Remove 10.02.01.01687!
SCPL 75 to 100	10.02.01.01409 (HF) or 10.02.01.01411 (HV)	Remove 10.02.01.01687!
SCPL 125 to 150	10.02.01.01409 (HF) or 10.02.01.01411 (HV)	Remove 10.02.01.01687!

Designation	Type	Part no.	Note	Hose clamp
Connection cable	ASK B-M12-5 5000 K-5P	21.04.05.00080	All SCPL	—
Connection cable	ASK B-M12-5 1000 S-M12-5	21.04.05.00158	All SCPL	—
Connection cable	ASK B-M12-5 2000 S-M12-5	21.04.05.00211	All SCPL	—
Connection cable	ASK WB-M12-5 5000 K-5P	21.04.05.00830	All SCPLs	—
Mounting bracket	BEF-WIN 25x77x72 3 SBPL	10.02.01.01705	All SCPLs	—
Vacuum gauge	VAM 40 V H	10.07.02.00035	SCPLb	—
Vacuum gauge (electric)	VAM-D 30x30 VP10 G1/8-AG	10.07.02.00055	SCPLb	—
Hose sleeve for SBPL/ SCPL 25	ST 20 AL-EL	10.02.01.01679	for rated hose Ø 20	10.07.10.00086
Hose sleeve for SBPL/ SCPL 50	ST 25 AL-EL	10.02.01.01680	for rated hose Ø 25	10.07.10.00087
Hose sleeve for SBPL/ SCPL >50	ST 32 AL-EL	10.02.01.01681	for rated hose Ø 32	10.07.10.00018
Exhaust air set	ABL-SET SBPL M	10.02.01.01939	All SCPLs	—

Designation	Type	Part no.	Note	Hose clamp
Exhaust air set	ABL-SET SBPL L	10.02.01.01940	Only for SCPL up to 100	—
Vacuum cup filter	VFT G1/2-IG 80	10.07.01.00125	SCPL25	—
Vacuum cup filter	VFT G3/4-IG 80	10.07.01.00128	SCPL50	—
Dust filter	STF G3/4-IG N	10.07.01.00007	SCPL75	—
Dust filter	STF G1-1/4-IG N	10.07.01.00008	From SCPL100	—
Multi-stage nozzle	SEP HV 3 16 22	10.02.01.01996 (HF)	For standard	
Multi-stage nozzle	SEP HF 3 13 22	10.02.01.01991 (HV)	For standard	
Ejector adapter	ADP-EJ 153x71x33.8 SBPL/SCPL	10.02.01.02194	For variant FA Sheet, screen, sealing frame and sealing plate for layer gripper	
Basic set	SET SBPL/SCPL	10.02.01.02195	For variant FA Screen, sealing frame	
Multi-stage nozzle	SEP HV 3 16 22 S	10.02.01.01411	For variant FA	
Multi-stage nozzle	SEP HF 3 13 22 S	10.02.01.01409	For variant FA	
Extension (round)	VRL-R G1 50.3x39 AL	10.02.01.02093	For standard SCPLb size 100 to 150	
Extension (round)	VRL-R NPT3/4 44.5x39 AL	10.02.01.02094	For standard SCPLb size 25 to 75	
Extension (round)	VRL-R G3/4 44.5x39 AL	10.02.01.02096	For standard SCPLb size 25 to 75	
Extension (round)	VRL-R NPT1 50.3x39 AL	10.02.01.02097	For standard SCPLb size 100 to 150	

The through hole in the extension (1) is used to measure the vacuum, for example by mounting a vacuum switch VSi or a pressure gauge. Sealing the threads is the responsibility of the operating company.



15.1 Converting the Vacuum Connection on the Standard Variant to a Hose Sleeve

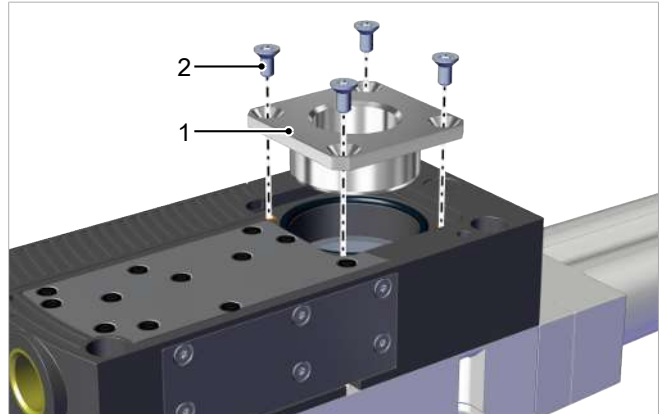
The vacuum connection can be converted to a connection using a hose sleeve. For the corresponding sizes, the part numbers of the appropriate hose sleeves are listed in the accessories.



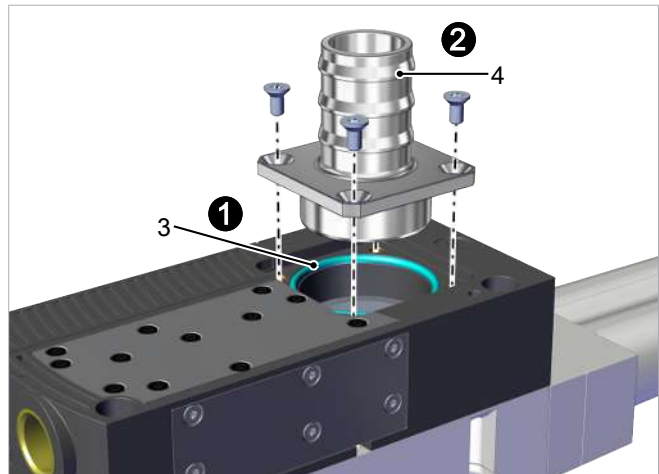
The illustrations shown below may deviate from the customer's version because they serve as examples of different versions of the product.

- ✓ The ejector is deactivated and disconnected from the supply lines.
- ✓ The customer has the correct hose sleeve for the ejector.

1. Remove the four screws (2) and lift the vacuum connection (1) out of the housing.



2. Check that the O-ring (3) is fitted **1**. Insert the vacuum connection with the hose sleeve (4) into the housing and secure using the 4 screws with a tightening torque of 2.5 Nm each **2**.



16 Decommissioning and Disposal

16.1 Disposing of the Product

The components may only be prepared for disposal by qualified specialists.

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

16.2 Materials Used

The table below shows the materials used:

Component	Material
Main body	Fiberglass-reinforced plastics
Vacuum connection	Aluminum alloy
Inner components	Aluminum alloy, brass, NBR
Screws	Galvanized steel, stainless steel
Sealing	Nitrile rubber (NBR)
Lubrication	Silicone-free

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