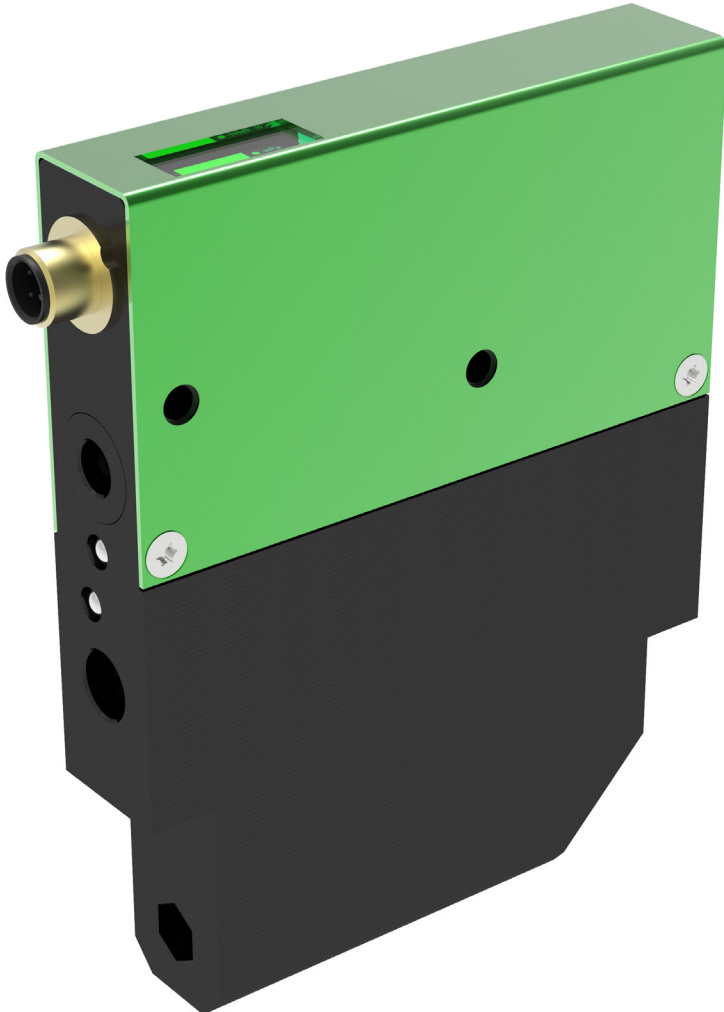


# MANUAL

**0209627 ACP-SX42PES**





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## FEATURES

- ▶ Pneumatic integrated air-saving function Energy Saving (ES) that minimizes the air consumption by controlling the incoming air flow to the pump.
- ▶ Separate port with built-in blow-off check valve. High flow capacity to maximize efficiency to release an object.
- ▶ LED display showing current vacuum level and part present.
- ▶ Standard M12 4-pin electrical connection. M12-M8 adaptor as an accessory.
- ▶ S1 part present signal. 24V when S1 - vacuum level is achieved.
- ▶ ES Not active signal. 24V when Energy Saving (ES) is Not active.
- ▶ Easy access to vacuum ejector for maintenance.
- ▶ Built in Silencer.

## INTENDED USE

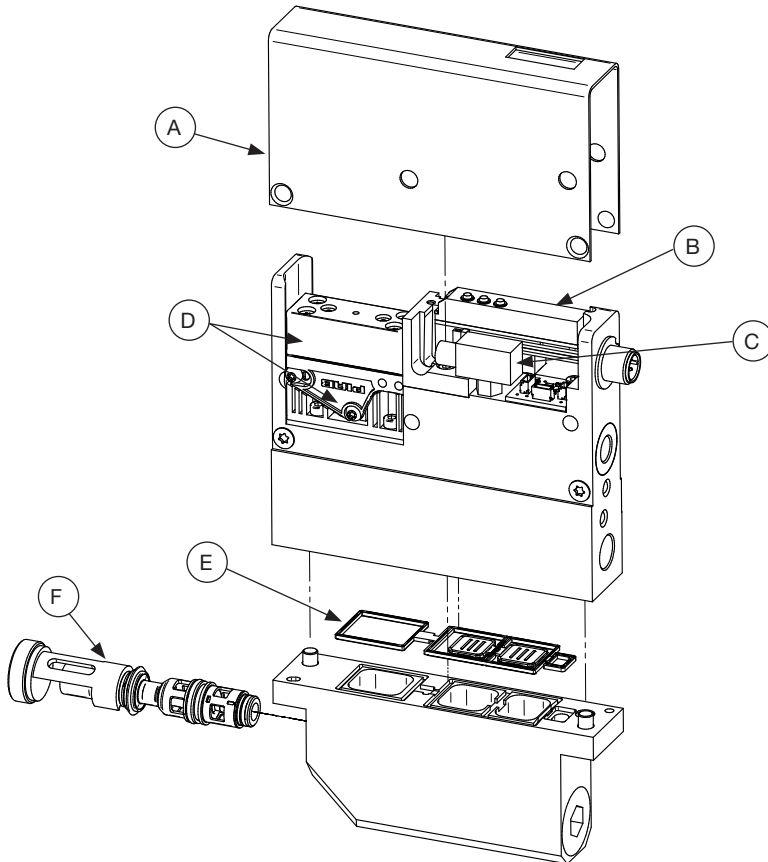
- ▶ The product shall be used to evacuate air (non liquids) from a volume to create vacuum for gripping, holding and processes
- ▶ The product can be used to blow air for surface cleaning and to remove vacuum from a volume
- ▶ The product can be used to detect and monitor vacuum
- ▶ The product shall be used in environments within the product's specifications and certifications
- ▶ The product shall be installed in accordance to installation instructions
- ▶ The product shall be maintained in accordance to maintenance instructions
- ▶ Troubleshooting shall be conducted in accordance to manual instructions
- ▶ The safety instructions shall be followed
- ▶ For professional use only.

## MISUSE

- ▶ Result from readily predictable human behavior.
- ▶ The product shall not be used to evacuate liquids.
- ▶ The product shall not be used to evacuate solid content without the use of filter.
- ▶ The product shall not be used in a fully closed compartment (non ventilated) if not exhaust is piped away.
- ▶ The product shall not be used as stand alone safety system to fulfill international lifting norms.
- ▶ The exhaust shall not be restricted or blocked.
- ▶ The vacuum and exhaust port shall not simultaneous be blocked when unit is generating vacuum.
- ▶ The product shall not be used to create vacuum or blow for other purposes than the intended use.
- ▶ Vacuum and exhaust air can cause severe injuries, keep hands, legs, hair and eyes away from vacuum inlets and exhausts.
- ▶ Do not install or operate you product if damaged.
- ▶ Do not operate the product if compressed air line is not properly secured, loose compressed air lines can cause severe injuries.
- ▶ Using compressed air pressure and/or electrical voltage outside specification can cause severe damage due to performance loss.
- ▶ Blow-off functions or ejector exhaust shall not be used to pressurize sealed compartments such as cylinders and/or tank-volumes.

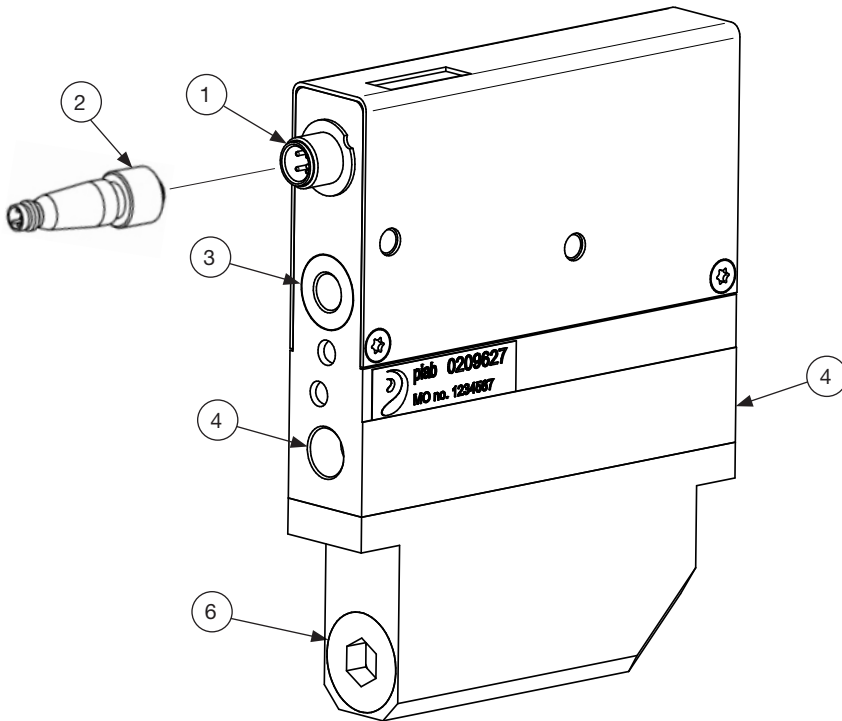
# OVERVIEW

## Function



Pos.	Description	Note
A	Cover plate	
B	Vacuum sensor switch, part present	LED display, see chapter Interface
C	Pressure sensor switch, ES not active	Signal when ES is not active
D	ES function, Vacustat	
E	Interface gasket Non-return valve	
F	COAX® cartridge with holder - SX42	

## Connections



Pos.	Description	Size	Note
1	Electrical connector	M12 4p, A-code	
2	M12-M8 adapter	M12 4p, M8 4p	See chapter electrical connections
3	Compressed air Blow-off	G 1/8"	
4	Compressed air Vacuum	G 1/4"	
5	Vacuum port	G 3/8"	
6	Exhaust with silencer		

## INSTALLATION



**WARNING!** Do not install or operate the vacuum pump if damaged during transport, handling or use. Damage may result in bursting and cause injury or property damage.

### Pneumatic technical information

	Unit	SX42
Feed pressure, pump at opt.	MPa [psi]	0.45 [68.2]
Feed pressure, nozzle at opt.	MPa [psi]	0.43 [62.4]
Max vacuum at opt. pressure	-kPa [-inHg]	90 [26.6]
Air consumption at opt. pressure	NI/s [scfm]	2.21 [4.68]
Max vacuum flow at opt. pressure	NI/s [scfm]	3.46 [7.33]
Blow-off flow at 0.5 MPa [72.5 psi] and no counter pressure	NI/s [scfm]	0-4.3/0 [0-9.1/0]

### Min. recommended hose diameter, outer/inner diameter

Cartridge	Vacuum		Compressed air	
	mm	Inches	mm	Inches
SX42	12/10	1/2/ 3/8	8/6	5/16/ 1/4

\*Recommended minimum dual fittings.

*Min. recommended hose diameters are valid for hose lengths up to 2m (6 ft). For longer lengths, use larger hose diameters or multiple hoses to avoid reduced vacuum flow performance and the risk for false vacuum signals from sensors/switches.*

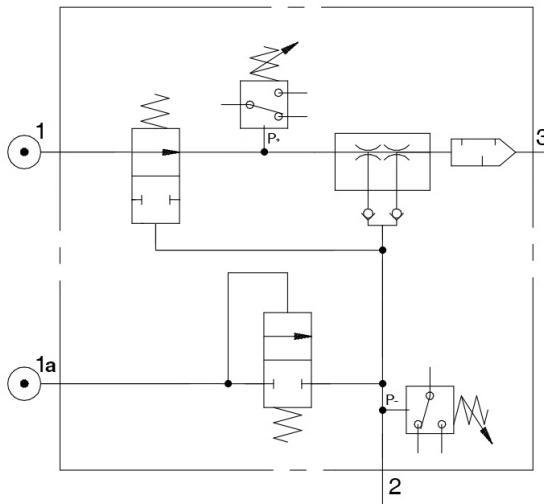
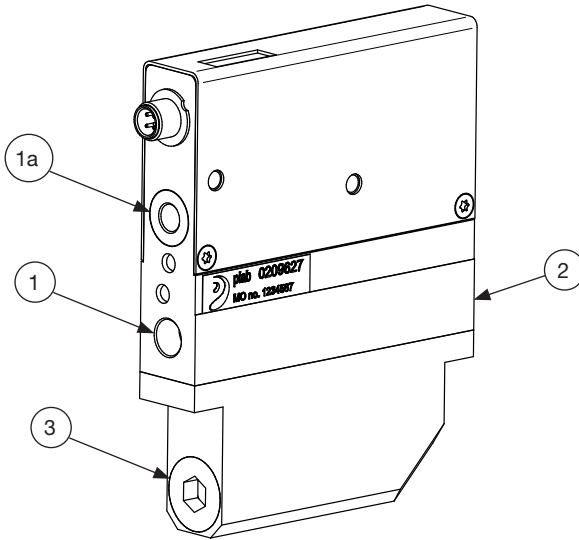


## Pneumatic installation

The vacuum pump can be installed in any orientation. Ensure that the exhaust from the ejector is not blocked. When connecting oil free compressed air and vacuum hoses to the unit, it is important to choose proper pipe dimensions to prevent pressure drops. Avoid restrictive inner diameters, long piping distances, sharp bends and small sized connections.

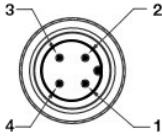
## Pneumatic diagrams

1. Compressed air Vacuum, 1a. Compressed air Blow-off, 2. Vacuum, 3. Exhaust.



## Electrical connection

### Pin configuration standard



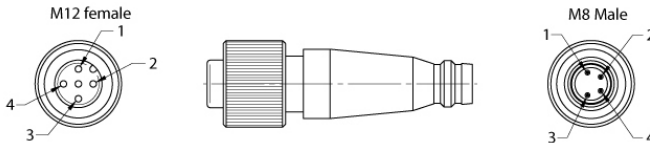
M12 4p male connector.

Pin No.	Name	Description	Note
1	V <sub>sys</sub>	Supply voltage, 24 VDC (V+)	
2	ES <sub>OFF</sub>	Switch output ES <sub>OFF</sub> , Max 80 mA	ES not active
3	GND	Common, 0 VDC (V-)	
4	S1	Switch output 1, Max 100 mA	Part present

ES = Energy Saving

### Accessory Adapter M12-M8

M12 4p female to M8 4p male connector. Accessory part: 0211827.



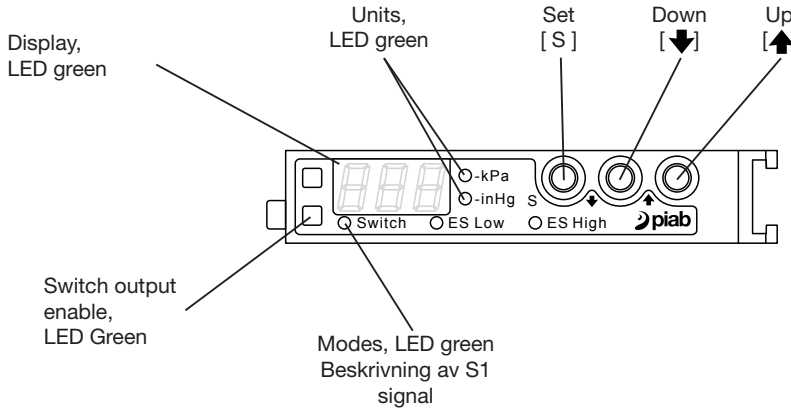
### Cable

Use cable ties to avoid tension and damage to the cable and the vacuum pump ejector.

## OPERATIONAL

### LED part present switch

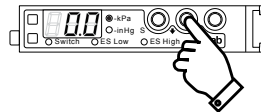
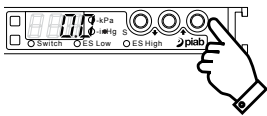
Note: Remove coverplate to access the settings.



### Setting the pressure unit

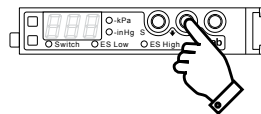
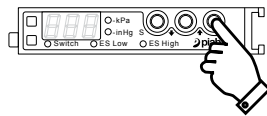
Changing the pressure unit to -kPa

Changing the pressure unit to -inHg



1. Press and hold [ ↑ ]

1. Press and hold [ ↓ ]



2. Display turned off.

2. Display will be turned off.

3. Wait 3 sec.

3. Wait 3 sec.

4. Release [ ↑ ].

4. Release [ ↓ ].



5. Unit showing -kPa

5. Unit showing -inHg

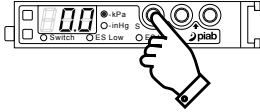
## Setting the part present switch

Optional only for ES units.

Do not set part present lower than 50 -kpa. Default value 40 -kpa.

Changing part present value

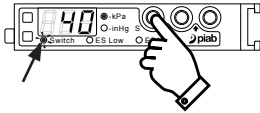
1. Press and hold [ S ]



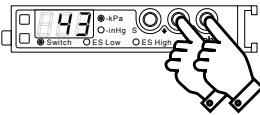
2. Wait 3 sec.

3. Release [ S ]

4. Press [ S ] to select switch mode



5. Press [ ↓ ] or [ ↑ ] to set the switch value



6. Leave it for 5 sec.

*Note: Changing ES low & high value.  
Not valid for this vacuum pump.*

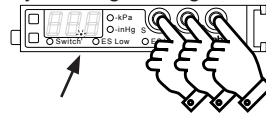
## Zero resetting

Setting the display value to zero

1. Press and hold [ S ]+[ ↓ ]+[ ↑ ]



2. Display showing flashing dot.



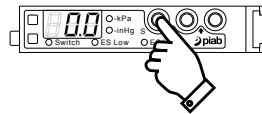
3. Wait 5 sec.

4. Release [ S ]+[ ↓ ]+[ ↑ ]

5. Display showing **00d**



6. Press [ S ] to set value to zero



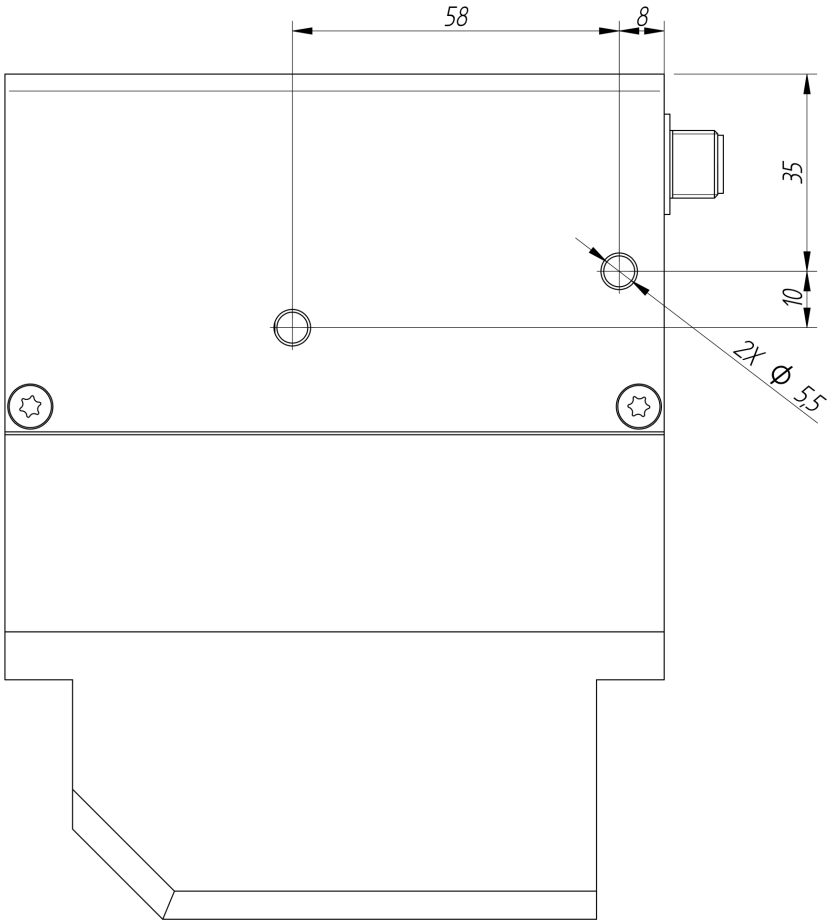
7. Leave it for 5 sec.

*Possible only with an atmospheric pressure equivalent to ±3% or less of F.S.(Full Scale)*

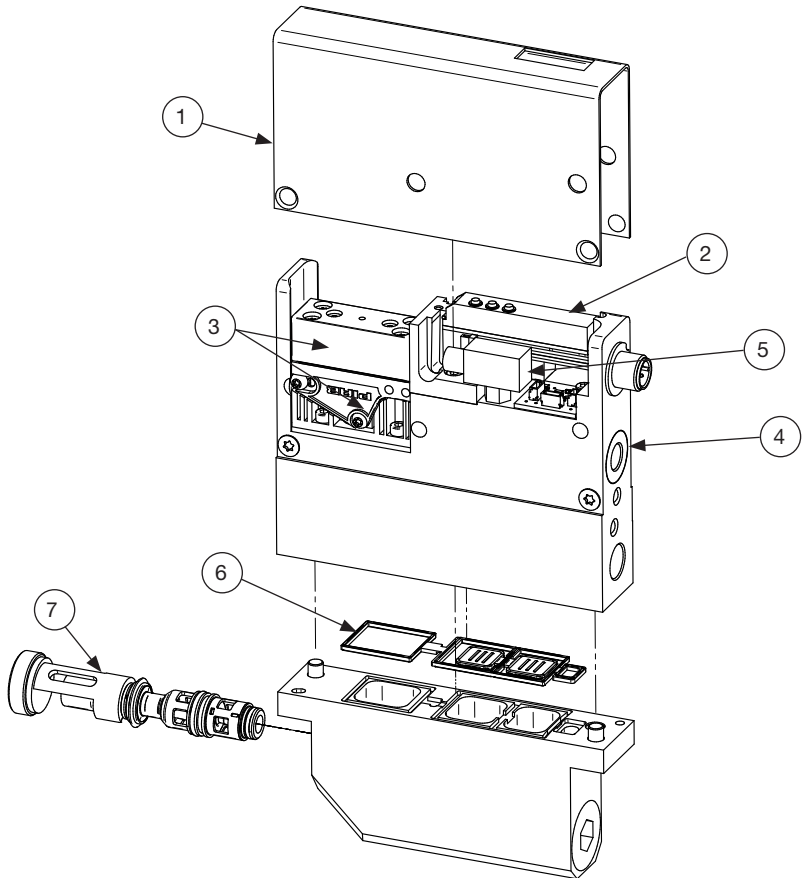
## Error code

Code	Cause	Solution
E1	Electric overload detection for SW / Short-circuit protection for SW	Check sensor A2DP output wiring for S1
E2	Pressure not within adjustable range	Only possible if atmospheric pressure equivalent to ±3% or less of F.S. (Full Scale).
E3	Internal error	Unplug power from ACP-SX42PES, then plug it back in.

MOUNTING



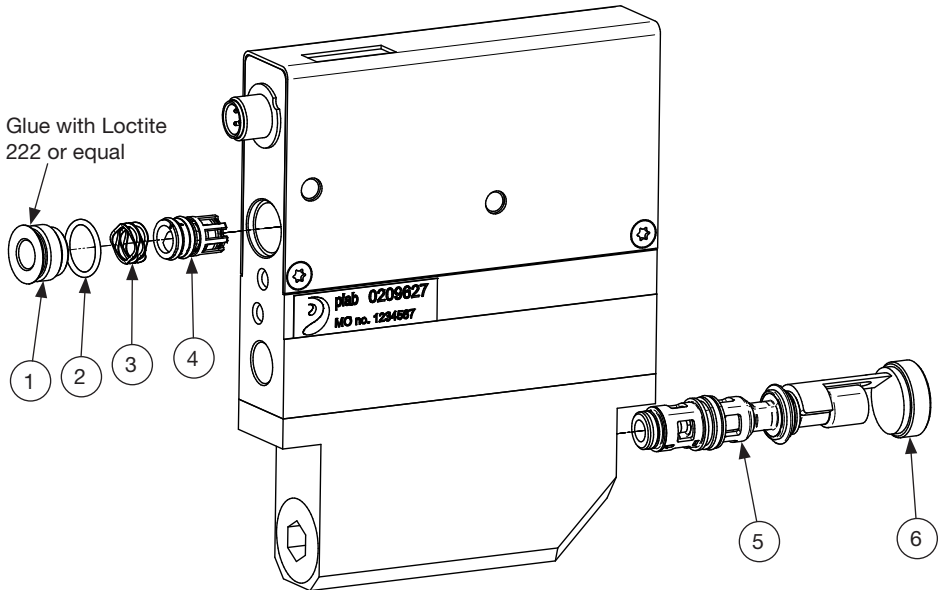
## MAINTENANCE



### Exploded view

#### Spare parts

Pos	Description	Item number
1	Coverplate	-
2	Vacuum sensor switch, part present	-
3	ES functionality Vacustat	-
4	Blow-off check valve	-
5	Pressure sensor switch, ES not active	-
6	None-return valve	-
7	COAX® cartridge SX42	0205724

**Cleaning or replacement of Filter COAX® and Blow-off check valve**


Pos	Description
1	Plug low G1/4"
2	O-ring 14,1 x 1,6 mm
3	Wave Spring
4	Check Valve EM23
5	COAX® cartridge SX42
6	COAX® holder

**COAX®**

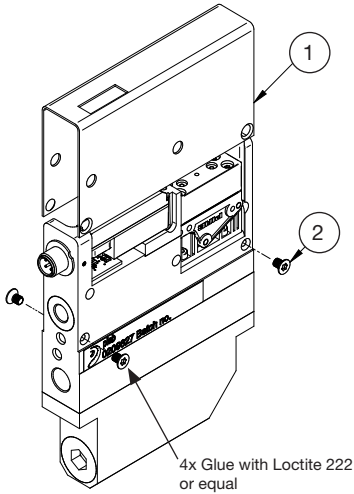
The COAX® cartridge is removed with a 10mm hex key. When cleaning or replacing COAX® cartridge, put on grese on the o-rings and screw it back in and tighten it.

**Blow-off check valve**

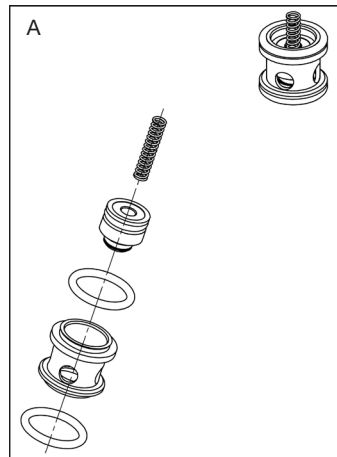
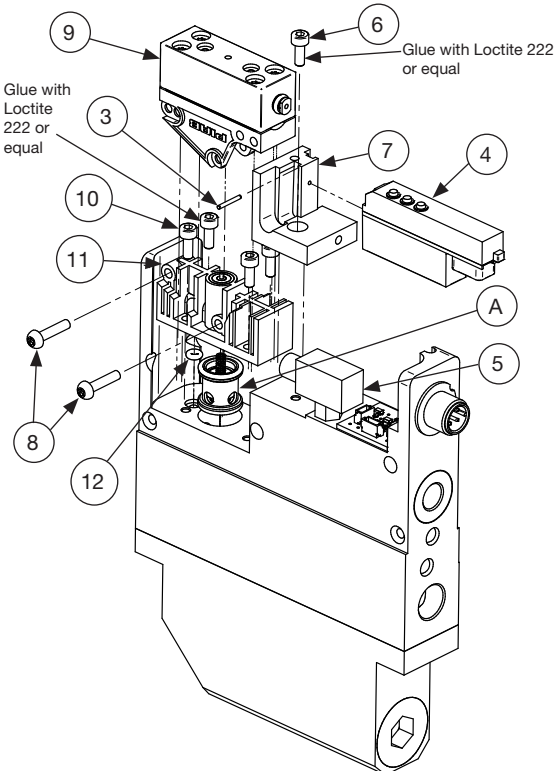
Remove the blow-off valve with a 6mm hex key. Unscrew the Plug low (1) and take out the Check valve (4).

Replace it and put on grese on the o-ring (2). Put on Loctite 222 or equal on the plug low G1/4" (1) and screw it back in and tighten it.

**Cleaning or replacement of Poppet valve**



First remove the coverplate (1) by loosening four cross-headed screws (2). Remove the sprig (3) and lift out the vacuum switch (4). Rotate the pressure switch (5) 90 degrees anticlockwise and remove the screw (6) on the holder (7) and the two screws (8) on the vacustat. Remove the top of the vacustat (9) and the holder (7). Unscrew the four screws (10) and remove the bottom part of the vacustat (11). Remove the poppet (A) and replace it. Mount the poppet and carefully place the o-ring (12) back. Reverse the procedure and put everything back together. Put on Loctite 222 or equal on the cross-headed screws (2), screws (6) and (10).

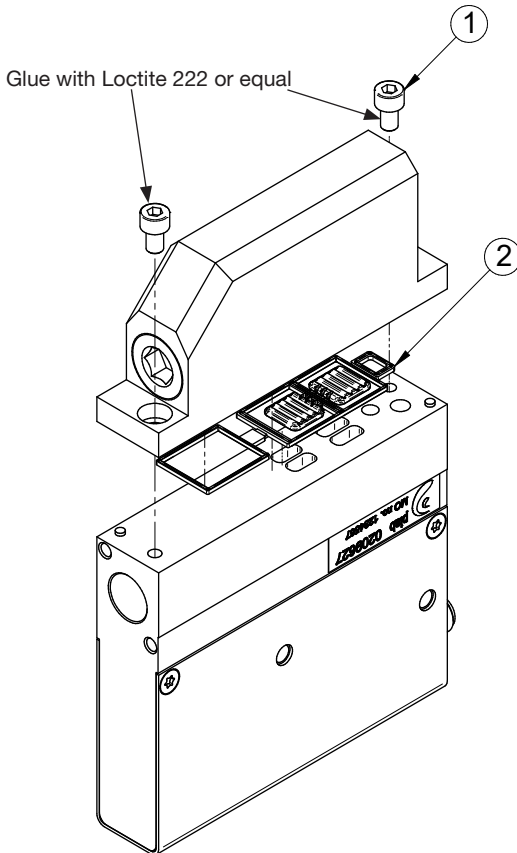


A. Repair kit  
 Art. No. **0124255**  
 Black poppet valve cpl (incl. o-rings 11.1x1.6mm and spring).  
 Recommended grease:  
 Klübersynth UH1 14-151 or similair syntetic lubricating grease.



## Cleaning or replacement of Flap valve

First remove the bottom piece by loosening four M5 cross-headed screws (1).  
 Remove and clean or change the Flapvalve (2).  
 Remount the bottom piece and tighten the screws (2).



Pos	Description
1	Screw MC6S 5x8
2	Flap valve

## TECHNICAL DATA

### Pneumatic technical information

Description	Unit	Value
Feed pressure, max	MPa [psi]	0.7 [101.5]
Feed pressure, pump at opt.	MPa [psi]	0.45 [68.2]
Feed pressure, nozzle at opt.	MPa [psi]	0.43 [62.4]
Max vacuum at opt. pressure	-kPa [-inHg]	90 [26.6]
Air consumption at opt. pressure	NI/s [scfm]	2.21 [4.68]
Max vacuum flow at opt. pressure	NI/s [scfm]	3.46 [7.33]
Blow-off flow at 0.5 MPa [72.5 psi] and no counter pressure	NI/s [scfm]	0-4.3/0 [0-9.1/0]

### Pneumatic function

Description	Default value	Note
Switch value	40 -kPa [11.8 -inHg]	Vacuumswitch part present
ES low value	57 -kPa [16.8 -inHg]	Vacustat, pump turn on
ES high value	63 -kPa [18.6 -inHg]	Vacustat, pump turn off

### Electrical data

Description	Value
Supply voltage, nominal	24 VDC
Current consumption	<200 mA

### Gereal data

Description	Value
Temperature range	0 - 50°C [32-122°F]
Materials	PE, NBR, SS, Al, CuZn, PC, LCP, TPE, PA
Weight	700 g [24.69 oz]

**Technical data Vacuum sensor switch, part present**

Description	Unit	Value
Overpressure, max.	MPa [psi]	0.4 [58.0]
Signal range	-kPa [-inHg]	0-101 [0-29.9]
Safety classification	-	IP54
Max output load, digital output	V	0.08
Humidity	%RH	35-85
Response time	ms	1
Accuracy	-	±3% of F.S. (Full Scale)
Ripple (Supply voltage)	VP	10%
Vibration resistant	Hz	10-55
Shock resistant	G	10
Display	-	3 digit num LED display

**Technical data Pressure sensor switch, ES not active**

Description	Unit	Value
Overpressure, max.	MPa [psi]	1.5 [217.5]
Safety classification	-	IP40
Load current	mA	80
Humidity	%RH	35-85
Response time	ms	1
Accuracy	-	±1% of F.S. (Full Scale)
Ripple (Supply voltage)	VP	5%
Vibration resistant	Hz	10-55
Shock resistant	G	100 (980m/s <sup>2</sup> )
Indicator	-	Red LED

**Values specified are tested at:**

Room temperature (20C [68°F] ± 3°C [5.5°F]).

Standard atmosphere (101.3 [29.9 inHg] ± 1.0 kPa [0.3 inHg]).

Relative humidity 0-100%.

Compressed air quality, DIN ISO 8573-1 class 4.



**WARNING!** Do not install or operate your ACP-SX42PES if damaged during transport, handling or use. Damage may result in bursting and cause injury or property damage.

- (GB) Safety
- (DK) Advarselsymboler
- (DE) Warnsymbole
- (ES) Señales de advertencia
- (FR) Sécurité

- (IT) Segnali di avvertenza
- (NL) Waarschuwingsymbolen
- (NO) Sikkerhet
- (PT) Sinais Avisadores

- (SE) Säkerhet
- (FI) Varoitusmerkit
- (ZH) 安全
- (PL) Bezpieczeństwo
- (RU) Безопасность



- Vacuum force
- Vakuumkraft
- Vakuumkraft
- Fuerza de vacío
- Force d'aspiration
- Potenza di aspirazione
- Vakuumkracht
- Vakuumkraft
- Vácuo ligado
- Vakuumkraft
- Siła ssania
- Voimakas imu
- Сила вакуума
- 真空吸力



- Exhaust
- Udblæs
- Abluft
- Aire procedente
- Evacuation de l'air
- Aria di scarico
- Uitlaatlucht
- Eksos
- Saida de ar
- Utblås
- Poistoilma
- Wylot
- Выхлоп
- 排气



- Unrestricted exhaust
- Forbudt blokere udblæsningene
- Abluft nicht blockieren
- Prohibido bloquear la salida del aire
- Interdit de bloquer l'évacuation de l'air
- Lo scarico della pompa non deve
- essere ostruito
- Pompuitlaat vrijhouden
- Forbudt å blokkere eksos
- O escape da bomba deve ser livre
- Förbjudet blockera utblås
- Ulospuhalluksen esto kielletty
- Nieograniczony wylot
- Неограниченный выхлоп
- 自由排气



- Wear ear protection if you are working closer than 2-3m from the vacuum ejector in operation.





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**No need to compromise**

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