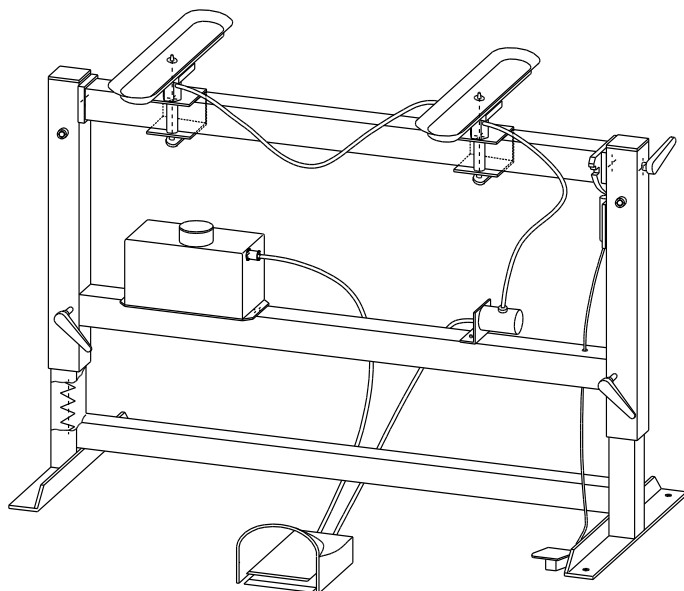
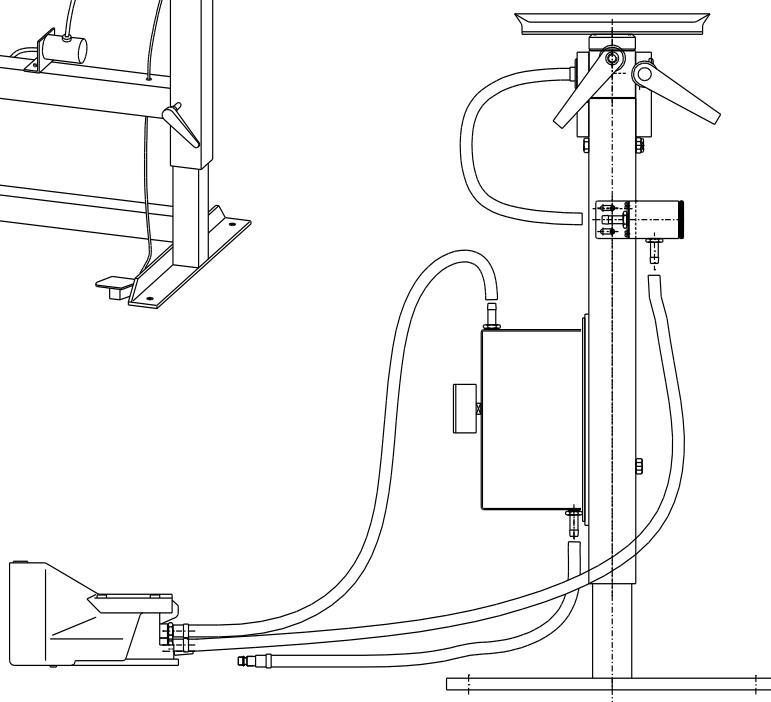


PVT



PVS



*Keep these Operation Instructions for future use !*



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**Appendix**

Operating Manual Vacuum Pump EVE 4/8  
Operating Manual Vacuum Generator VE-SEG / VER-SCP

**Version:**

Vacuum generation:  VE-EVE-4     VE-EVE-8     VE-SEG  
 VER-EVE-4                       VE-SCP     .....

Type of Suction Pad:  SPT 300x100     SPT 70x280     SPT 70x190     SPT 300  
 SPT 250             SPT 160             SPT 125             SPT 100     .....

No. of Suction Pads:  1             2             3             4             .....

**Special Features**

The unit is equipped with the following special feature(s):

.....  
.....  
.....

.....  
If the special features require a separate list of spare parts or parts subject of consumption, the corresponding list in section "Spare Parts" is invalid.

# 1 Safety

## 1.1 Instructions for the Company

The vacuum tables have been manufactured according to current technical standards and are safe. Still, they will present hazards

- ⇒ if they are not operated by qualified or at least trained staff,
- ⇒ if they are used contrary to the approved applications (see 4.)

Problems can arise

- ⇒ for the health and life of operators and other persons,
- ⇒ for the device and other valuable goods.

## 1.2 Instructions for the Installation, Maintenance and Operating Personnel

The device must be installed and maintained by qualified personnel, mechanics and electricians.

Each person in your company involved in the installation, start-up, operation, maintenance, and repair of the device

- ⇒ must have read and understood these operating instructions
- ⇒ and especially the chapter "Safety" herein.

Your company must ensure by internal measures

- ⇒ that the operators of the lifting device are properly trained,
- ⇒ that they have read and understood the operating instructions,
- ⇒ that the operating instructions will be available to them at any time.

The responsibilities for the tasks carried out with the device must be clearly organized and observed. Ambiguity regarding responsibilities must not exist.

## 1.3 Hazard Alert Symbols in this Manual

The hazard alert symbols in this manual are labelled as follows:



Danger

Identifies imminent hazard. If you do not avoid it, death or severe injury will result.



Caution

Identifies a potentially hazardous situation. If you do not avoid it, minor or moderate injury can result.

## 1.4 Installation Site Requirements

The device must not be operated in rooms with explosive atmosphere.

The ambient temperature must not exceed 40 °C (if this temperature range is exceeded talk to the manufacturer).

Ensure by internal instructions and checks that the installation site is totally clean and well organized.

## 1.5 Intended Use

Vacuum tables are designed to fix and retain workpieces. The surface of the items to be lifted must not be too porous.



Danger

- ⇒ Unauthorized alteration of the device is forbidden for safety reasons!
- ⇒ The operating, maintenance and service instructions in this manual must be observed.
- ⇒ The maximum suction force must not be exceeded.

## 1.6 Emissions

The equivalent continuous sound pressure level of the device is below 70 dB(A).

**1.7 Special Hazards**

Since the load is retained by a vacuum it will fall off as soon as this vacuum is lost. This happens in a sudden power / compressed air failure. When power fails immediately put the load down if possible. If this is not possible, immediately leave the dangerous area near the load. The device generates a very strong suction which can draw in hair and clothing. Do not look into the suction pad and press the touch valve when the device is switched on. Parts of body can be sucked in.

**1.8 Instructions for the Operator**

As an operator of the device you must be trained before start-up. You must have read and understood the operating instructions and especially the chapter "Safety".

Be sure, that only authorized persons use the device. You are responsible for others in the operating range of the equipment.

Local safety requirements are fully applicable. Safety instructions in this document are complementary to the rules in force and do not supersede the latter.

**1.9 Behaviour in Emergencies**

An emergency situation exists when

⇒ power suddenly fails

⇒ the vacuum pressure drops below -0.6 bar to the red section on the scale of the pressure gauge.

Put the load down immediately if possible. If this is not possible, immediately leave the dangerous area near the load. It will fall off!

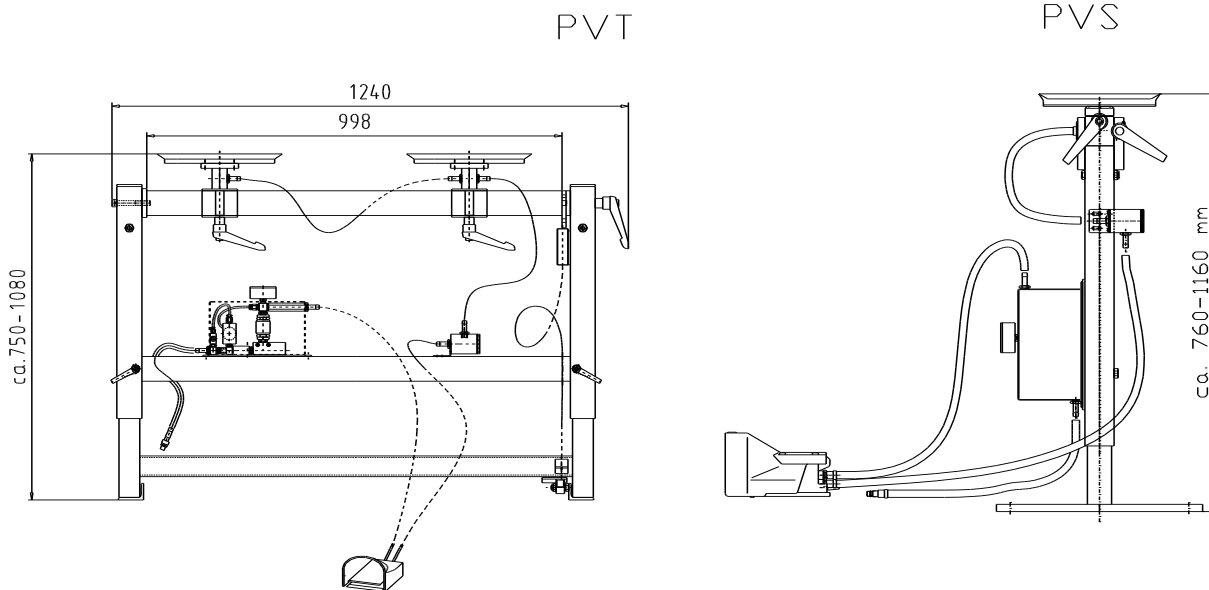
**1.10 Checking the Devices**

Check all suction hoses and clamps for proper mounting, if necessary retighten the clamps.

Correct faults before operating the device. If faults occur during operation, switch the device off and correct the faults before continuing work with the device.

## 2 Technical Data

### 2.1 Dimensions



### 2.2 Technical Data

	PVT-2	PVT-T4	PVS	PVS-T2	PVS-T4
Suction force at 60% vacuum*	90 kg	180 kg	100 kg	90 kg	100 kg
Max. distance of the suction pads (middle)	910 mm	910 x 895 mm	-	800 mm	800 x 600 mm
Adjustable in height	750-1080	750-1080	750-1100	750-1100	750-1100
Basic dimensions	1250 x 525 mm	1250 x 525 mm	300 x 300 mm	300 x 300 mm	300 x 300 mm

\* The suction force refers to the standard suction pad. If you use other suction pads, this suction force is not valid (see optional suction pads).

#### Optional suction pads

	SPT 160	SPT 100x300	SPT 70x190	SPT 70x280
Suction force at 60% vacuum	40	45	25	36

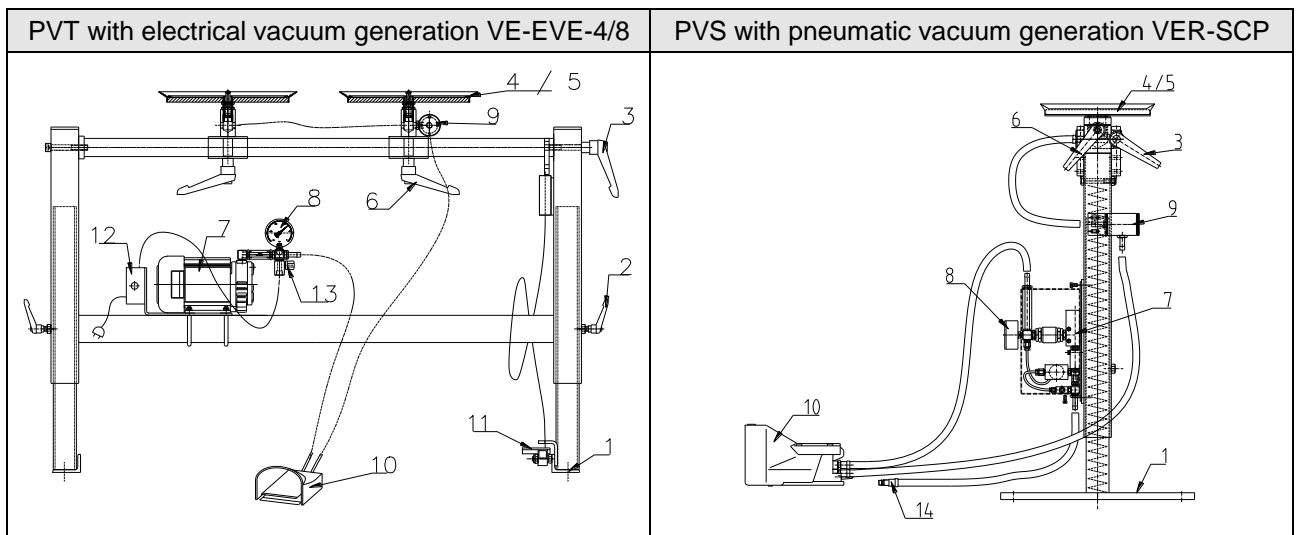
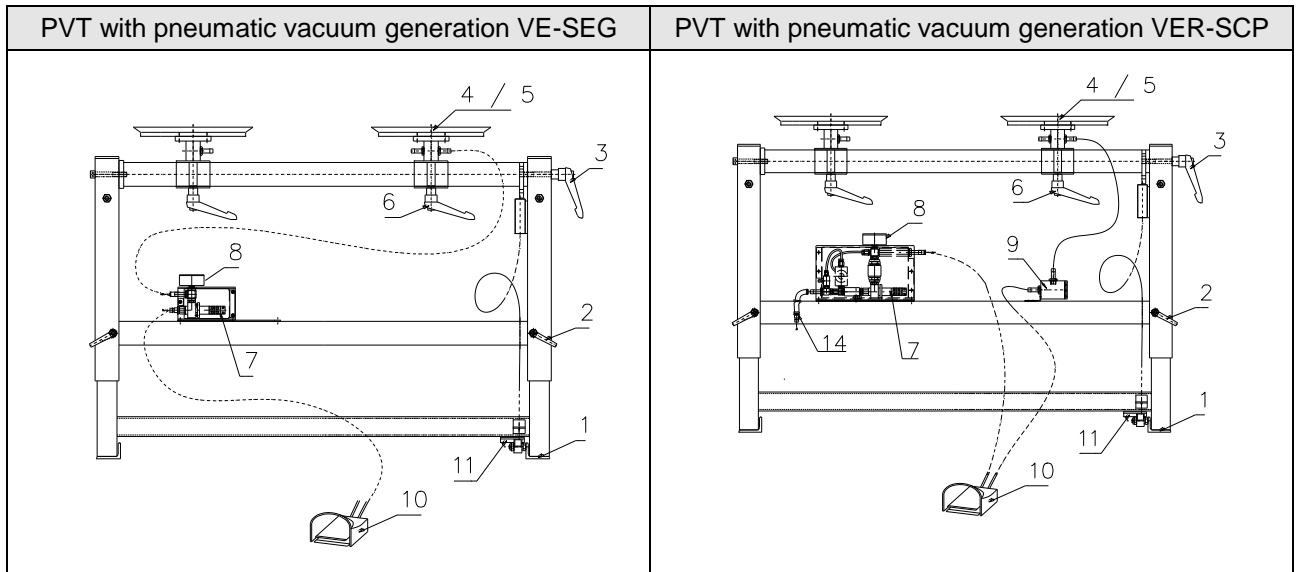
The total suction force is calculated by the suction force per suction pad multiply by the amount of suction pads.

Attention: the total suction force of the device PVS ... is limited to 100 kg

#### Vacuum generation

Type	Max. vacuum	Suction capacity	Electrical connection	Air consumption	Operating pressure	Air-saving system	Possible at	Connection with
VE-SEG	85 %	4 m³/h	-	102 NI/min	5 bar	no	Standard version	Hose nozzle
VER-SCP	85 %	4 m³/h	-	0-117 NI/min	5 bar	yes	PVT-2, PVT-T4 PVS, PVS-T2, PVS-T4	Hose nozzle
VE-EVE-4	85 %	4 m³/h	230 V / 50 Hz	-	-	no	PVT-2 PVS, PVS-T2	Safety plug
VER-EVE-4	85 %	4 m³/h	230 V / 50 Hz	-	-	yes	PVT-2 PVS, PVS-T2	Safety plug
VE-EVE-8	85 %	8 m³/h	230 V / 50 Hz	-	-	no	PVT-2, PVT-T4 PVS, PVS-T2, PVS-T4	Safety plug

**3 Description**  
**3.1 Components**



Pos.	Designation
1	Support with mounting drillings
2	Clamping lever for adjusting height
3	Clamping lever for swivelling
4	Suction pad
5	Touch valve
6	Clamping lever for adjusting the pads
7	Vacuum generator

Pos.	Designation
8	Vacuum gauge
9	Vacuum filter*
10	Foot switch
11	Pedal
12	Vacuum switch**
13	Ball valve*
14	Hose nozzle for connection compressed air***

\* Only for version with pneumatic vacuum generation with air-saving system

\*\* Only for version with electrical vacuum generation with air-saving system

\*\*\* Only for version with pneumatic vacuum generation

### 3.2 Installing the Work Bench

The work bench is delivered ready for use. It merely needs to be connected to the vacuum generation.

Depending on the application or special floors (slippery) we recommend to bolt the work bench to the floor using the 4 bores ( $\varnothing$  12 mm, Pos. 1).

### 3.3 Vacuum Generation

#### Ejector

The vacuum generation take place via vacuum pump (version VE-EVE-4/8) or via vacuum ejector (version VE-SEG / VER-SCP).

#### Vacuum Pump

Connect the compressed-air piping at the hose nozzle. (filtered, dry air, operating pressure min. 5 bar).

Connect the plug of the pump at a socket (230 V AC).

On the version with vacuum control (VER-EVE-4), the vacuum pump is switched on automatically by a vacuum switch in the control housing and is switched off again when the maximum vacuum is reached.

This means that the motor and the pump do not run continuously.

The vacuum pump is optimally adjusted ex-works and must not be readjusted. Readjustment of the vacuum pump by unqualified personnel can decrease the carrying capacity of the device and may lead to unexpected failures.

#### !! Accident hazard !!

**Note:** Do not open / disassemble the pump in the period of guarantee, otherwise you loose the guarantee.

After installation, a tightness inspection have to be done (see chapter "Maintenance")



Caution

### 3.4 Suction Pads



Danger

The suction pads apply the vacuum to the load. They are designed to suck on various items.

To generate vacuum, the suction pad(s) must be attached to the load and must grip it.

Not activated suction pads reduce the total suction force of the device.

Do not deviate the admissible suction force per suction pad.

## 4 Operating

### 4.1 Safety Instructions

Local safety requirements are fully applicable. The following safety instructions are complimentary to the rules in force and do not supersede the latter:

- ⇒ Never exceed the maximum lifting capacity of the device.
- ⇒ When there is a power failure put the load down immediately if possible. Immediately leave the danger area near the load.
- ⇒ Apply suction and lift only to appropriate loads (check for stability and porosity).
- ⇒ Always keep an eye on the vacuum gauge. Never work when the vacuum is below -0.6 bar. When the pointer of the pressure gauge moves into the red danger zone below -0.6 bar, put the load down immediately.
- ⇒ Deactivated suction pads reduce the total suction force of the device.
- ⇒ Do not deviate the admissible suction force per suction pad.
- ⇒ Check all suction hoses and clamps for proper mounting, if necessary retighten the clamps.



#### 4.2 Clamping the Workpiece



When you apply the work piece to the suction pad(s) it will be retained. (Vacuum generation must be switched on).

Procedure:

⇒ Switch on the vacuum generation.

⇒ Apply the workpiece to the suction pad(s).

**Note:** The suction pad(s) have to be covered entirely, otherwise no vacuum can be generated.

⇒ When the workpiece activates the touch valve in the suction pad, the workpiece will be sucked on.

⇒ Watch the vacuum gauge. Only if a vacuum pressure of -0.6 bar has been generated, the stated suction force can be reached!

#### 4.3 Removing the Work Piece

When you press the foot switch (10) the suction pads get ventilated. You can now remove the work piece.

#### 4.4 Adjusting the Height

When you open the clamping levers (2) the work bench can be adjusted infinitely variable. The height adjustment is not self arresting, i. e. when you have clamped a work piece and the clamping levers are not tightened the bench will drop to its lowest height. To ensure safe operation be sure to tighten the clamping levers even when working with the lowest height.

#### 4.5 Swivelling the Work Surface (PVT)

The work surface can be swivelled at intervals of 45° by ±90°. To do that slightly open the clamping levers (3). Step on the pedal (11) to pull the locking pin from its catch. You can now manually swivel the work surface to the desired position. When you let the pedal (11) go the catch will lock again. Be sure to tighten the clamping levers (3) after swivelling.

#### 4.6 Swivelling the Work Surface (PVS)

The suction pad(s) can be turned continuously and swivelled by 90°. When you loosen the clamping lever you can swivel the suction pads.

#### 4.7 Adjusting the Suction Pad(s)

When loosening the clamping levers (6) you can shift and turn the suction pads. Be sure when moving them not to bend or damage the vacuum hoses.

#### 4.8 Adjusting the Air-saving System



##### Pneumatic vacuum generation

See documentation "VE-SEG / VER-SCP"

##### Electrical vacuum generation

See documentation of the vacuum switch.

**Note:** if you use leaky workpieces, the air-saving system switches the vacuum pump on and off permanent. This reduce the duration of life rapidly.

**Countermeasure:** Close the ball valve while the pump is running. This implicate that the pump is running all the time.

**Caution:** If the ball valve is closed when the pump is not running, the workpiece will be dropped after a short time.

The reason for this is that the vacuum switch monitors the vacuum before the ball valve, and not at the actual workpiece. Since the vacuum before the closed ball valve does not change, the vacuum switch cannot detect that the vacuum has dropped and will not switch the vacuum pump on again!



## 5 Troubleshooting

The device must be installed and maintained exclusively by qualified personnel such as mechanics and electricians.

Error	Cause	Remedy
Pump does not run	Power supply failure	check supply line
	Vacuum pump out of order	check the pump, call for service
Pump runs, but does not suck	Not all suction pads cover the workpiece (leaking air is sucked on)	Position the device with suction pads completely on the workpiece
	Filter is dirty / damaged	clean / replace filter cartridge
	Touch valve is dirty / damaged	clean / replace it
with air-saving system	Ball valve is closed	open the ball valve
Vacuum pressure does not reach -0.6 bar	workpiece has cracks, openings or is too porous	workpiece is not suitable for this device
	seal of the suction pad is damaged	replace seal
	vacuum gauge defective	replace vacuum gauge
with air-saving system	Vacuum switch damaged	replace the vacuum switch

## 6 Maintenance

### 6.1 General

The device must be installed and maintained exclusively by qualified personnel such as mechanics and electricians.

After each repair or maintenance job check the guards as described in chapter "Safety".

### 6.2 Vacuum Generation

See Operating Instructions of the vacuum pump / ejector (appendix).

### 6.3 Suction Pads / Seals

Remove items and contaminations such as adhesives, glue, saw dust, dust etc. sticking to the seals at least once a week. Use glycerine to clean the seals.

Immediately replace damaged seals (tears, holes, waves).

Do not use petrol (gasoline).

Use cleaning agent to clean the device (do not use petrol (gasoline) or aggressive or corrosive fluids to clean the device. The vacuum hose will otherwise become leaky or be destroyed).

### 6.4 Vacuum Filter

Check the filter at least once a week, blow the filter cartridge out (from the inside to the outside). When it is contaminated heavily, replace the filter cartridge. **Dot not beat the filter !**

Do not allow dust to enter into the suction opening when you take out the filter cartridge.



**6.5 Swivelling Unit**

We recommend to apply a drop of oil to the joints and the clamping bolts monthly.

**6.6 Tightness Inspection**

Check the tightness quarterly respectively after maintenance.

- ⇒ Apply the suction pad(s) to an air-tight surface.
- ⇒ Switch on the vacuum generation. A vacuum pressure of appr. -0.7 bar must be reached.

If this vacuum pressure is not reached check:

- ⇒ Inspect the suction pad(s), sealing lip(s), hose, hose connectors and unions for damage or leaks. Replace any defective parts.
- ⇒ Check whether the vacuum filter is blocked or dirty. Clean or replace the filter cartridge.

**7 Notes on the Nameplate**

On the nameplate the main data for the device is indicated.

The nameplate is firmly connected to the device. Its position is shown in the "Spare parts list".

The nameplate contains the following information:



- ← Type
- ← Device Number
- ← Order Number
- ← Year of construction
- ← Max. lifting capacity
- ← Weight of device



Type, no. and year of construction are vital for identification of the unit. Indicate these when ordering spares or filing claims and other inquiries.

The max. lifting capacity indicates for which maximum load the device can be used. The max. load must not be exceeded.



## 8 Guarantee, spare and consumable parts

This equipment is guaranteed in accordance with our General Conditions of Business. This also applies to spare parts where these are original parts supplied by us.

We will assume no liability for damage caused by the use of non-original spare parts and accessories.

Wear and consumable parts are not covered by the guarantee.

The most important spare and consumable parts are shown in the following list.

Abbreviations: - Spare part = **E**  
 - Consumable part = **V**  
 - Consumable-part assembly, contains consumable parts = **VB**

Description	Type	Article-No.	Legende
Suction pad for PVT/PVS with 2/4 suction pads	SPL 300x100	13.01.02.10035	V
Suction pads for PVS with one suction pad, complete with touch valve and bearing rest	SPT 100	13.01.02.10042	VB
	SPT 125	13.01.02.10043	VB
	SPT 160	13.01.02.10031	VB
	SPT 250	13.01.02.10032	VB
	SPT 300x100	13.01.02.10030	VB
	SPT 70x280	13.01.02.10034	VB
	SPT 70x100	13.01.02.10033	VB
Replacement suction pad for PVS (without touch valve and bearing rest)	SPU 100 G1/2	10.01.01.11601	V
	SPU 125 G1/2	10.01.01.10166	V
	SPU 160	10.01.01.01116	V
	SPU 250 B	10.01.01.10589	V
	SPL 300x100	13.01.02.10035	V
Replacement seal for SPT 70x280	Seal 70x280	13.01.02.10034	V
Replacement seal for SPT 70x100	Seal 70x100	13.01.02.10021	V
Foot switch without footrest	FU 1/4, yellow	10.05.09.00011	VB
Foot switch with footrest	FU 1/4, footrest yellow	10.05.09.00010	VB
Vacuum hose	VSL 15/9	10.07.09.00005	V
Vacuum gauge	VAM 63/1H	10.07.02.00003	E
Bowden cable	For PVT	13.02.01.04133	V
Filter	F 1/4	10.07.01.00003	VB
Filter cartridge	For F1/4	10.07.01.00013	V
Silencer for ejector	For SEG 15	10.02.01.00235	V
Vacuum pump	EVE 4W	10.03.01.00102	VB
Vacuum pump	EVE 8W	10.03.01.00105	VB
Ejector SCP 15	SCP15 FS RP NO	10.02.02.01862	VB