



Witzel

Vacupress

WITZEL VACUPRESS e.K.

Inh. Hendrik Witzel

Max-Keith-Str. 66 - D-45136 Essen

☎ +49 201 6462284 📠 +49 201 6462852

✉ info@vacupress.de 🌐 www.vacupress.de

# VACUPRESS **COOL-TEC**

## 900 XR - UNILOCK

(Translation of Original-)  
**INSTRUCTION MANUAL**  
**Operations and maintenance**

Before the first commissioning of the unit  
**read important safety instructions on page 10!**

This manual is an integral part of the installation and must be handed over to a new owner in case of sale or to an operator in case of use by a third party

Version 2010/01 (B) - (208/50-60/1)

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# 1 Summary

## 1.1 Short description of the unit

VACUPRESS Type 900 XR with the UNILOCK system has been developed as a powerful tool to form plastic foils over complicated models in the O&P field.

This forming technique called deep drawing or moulding is used mainly in the orthopaedic manufacturing to copy human limbs. For the deep drawing process VACUPRESS uses a bench on which the model is fixed. The material is laid over the model and on the material a high flexible working membrane is pressed. The working membrane is stretched in a frame which will be lowered around the model down to the bench. A vacuum pump is used to evacuate the air beneath the membrane. The atmospheric pressure presses the membrane onto the material with high force. The material will be formed exactly according to the model. Alternatively the foil itself can be used instead of the working membrane.

An integrated radiation heating device is used to heat up the material.

The vacuum pump can also be used for suction purposes during working in the resin casting technique.

## 1.2 Technical details

Type:	VACUPRESS 900 XR Vacuum Deep-drawing-unit for the O&P and shoe technique field
Manufacturer:	Witzel VACUPRESS e.K. - D-45136 Essen Tel. +49 201 6462284 / Fax +49 201 6462852
Serial-No.:	see name plate
Footprint:	approx. 0,90 qm
Height:	1865 mm
Width:	870 mm (incl. main handle)
Depth:	1025 mm
Frame size:	870x660 mm
Weight:	285 kg
Vacuum-Pump:	2 pc. à 0,40 KW 12 m <sup>3</sup> /h double-stage - oil-free - maintenance-free
Connections:	1 external Vacuum-supply for vacuum-distribution, etc. 1 external Compressed air inlet for COOL-TEC System supply
Electr. Connection:	208 V / 50-60 Hz / 1 Phase + N + PE
Capacity:	7,6 kW

### 1.3 Purpose of the VACUPRESS unit

The use of the VACUPRESS is restricted to the following purposes:

- .1 Moulding works with pre-heated plastics under the working membrane.
- .2 Pressing of other materials, e.g. leather or cork, cold or pre-heated under the working membrane.
- .3 Moulding of PVC or other foils on models of plaster, wood or hard foam which are thermo plastic.
- .4 Moulding of foils up to 2 mm thickness, heated up in the unit.
- .5 Moulding with sheets more than 2 mm thickness pre-heated outside the unit, e.g. in an oven.
- .6 Use of the vacuum pump for suction purposes during working in the resin casting technique.
- .7 Use of the radiation heating for activation of material up to 50 seconds.

**All other applications are not allowed.**

## 1.4 Manual

This manual

- describes the elements of the unit
- explains the procedures of the process
- gives the craft reliable instructions for the use of the unit
- draws the attention to the working risks
- and gives hints for maintenance and repair

## 1.5 Definition

See drawings and pictures on the last pages.

Illumination:	The unit equipped with an internal illumination for the working area. Two 12VDC halogen bulbs are integrated in the heating above. The illumination can be turned on and off separately.
Air filter	Air filter (2 pc.) upstream the vacuum pump.
UNI LOCK bolts	Bolts on the side of the tendering frame to which the hooks of the UNI LOCK system are engaged.
Working frame	Frame (U) where the working membrane is put on.
Mainframe locking	Front mounted locking knob (H) which locks the mainframe at its lower position
Tentering frame	Frame (M) that fixes the working membrane at the working frame.
Reduction frame	Optional insertion frame (J) with separate Tentering frame (O) which reduces the working area to a size of 600x450 mm.
UNI LOCK	Patented system to lock two frames together to fix a membrane in between.
Vacuum-valve	Three way valve inside the unit with an outside handle (C) to control the vacuum flow to the working membrane and to release the membrane at the end of the working process.
UNI LOCK handle	Handle ( I ) to control the UNI LOCK.
Main handle	Handle (T) on the right side of the unit. Moves the working frame and the Tentering frame.

Working plate	Upper surface of the VACUPRESS where the different support plates are mounted
Support plate	Is applied and fixed on the working plate to lift the working area to the material level. The moulds will be fixed on the support plate. When using the optional reduction frame, the support plate is also replaced by a smaller one.
Main switch	Switch (A) to switch the electrical supply for vacuum pump, radiation heating and electrical controls.
Pressure switch	Pressure switch (A4) controls the suction pressure on the suction side of the vacuum pumps. Below $-0.8$ bar the motor stops, above $-0.4$ bar the motor is switched on.
Timer	The timer (F) controls the radiation heating by manual start and automatic stop at the end of the programmed time.
Radiation heating	Radiator (R) for heating foils, clamped directly into the working frame or other thermoplastic materials.
COOL-TEC	Integrated cooling system for thermoplastic materials which have been molded with the VACUPRESS unit. Works with compressed air (external supply) which is reduced by an integrated pressure reducer to 1.5 bar (21,7 psi).
Working membrane	High flexible membrane which directs the atmospheric pressure to all sides of the model. Preferable consisting of rubber. Heated foils can be used instead.

## 2 Safety Instructions

These safety instructions have to be followed before each installation and commissioning.

### 2.1 Reading of this manual

Please read this manual before connecting the VACUPRESS unit to an electrical source or before commissioning!

This manual describes e.g. risks which exist in connection with improper use.

Take care that each operator of the unit is familiar with this manual.

Pay attention that this manual will always be available close to the unit.

This manual is an integral part of the installation. It must be handed over to a new owner or operator in case of sale etc.

### 2.2 Connections

#### 2.2.1 Check of power supply



The correct wiring of the power supply has to be checked by a licensed electrician. You need a power source of 208 Volt / 50-60 Hz / 1 Phase (1/N/PE). ***An incorrect wiring will cause an immediate damage of electronic parts.***

A correct wiring is not guaranteed even if other installations have been running correctly on the same electrical source.

## 2.3 Possible hazards during operation

### 2.3.1 Working frame

Risk of contusion exists for extremities during lifting and lowering of the working frame as well during opening and closing of the fixing frame.



**Attention – Danger of contusion!**

### 2.3.2 Radiation heating

Danger of burns exists in the area of the radiators.

During operation of the radiator the surrounding parts of the unit will reach high temperature incl. the protecting grill. Please do not reach the area of the radiator with your hands.

The radiator is made for the handicraft production of single parts of plastic. If more than two parts have to be heated up a sufficient cooling of the working frame and other hot parts of the unit have to be achieved.



**ATTENTION! HOT MATERIALS AND SURFACES!  
DANGER OF BURNING! ALWAYS WEAR HEAT PROTECTION GLOVES!**

### 2.3.3 Foils

Fire hazard exists when overheating PVC or other foils  
Overheated PVC foils can char and flammable and toxic gases can arise. Do not exceed the specified heating times (see point 4.5).  
Always supervise the heating process!

Supervise the heating process with other materials as well. Never run the machine unattended!



**Attention – Danger of fire !**

### 2.3.4 Working membrane (bladder)

Bursting of the working membrane may lead to a hearing defect.

Danger of burst exists using the working membrane for tall models. This goes with a loud bang.

It is recommended to wear ear protection.

This is also recommended for other persons working close to the installation.



**Attention – High noise level possible !  
Wear ear protection**

### 2.3.5 Solvents

Danger of explosion exists using solvents. Do not use solvents (for example acetone, spirit, gasoline, paint dilution etc.) during moulding. Solvents can produce explosive mixtures within the unit.



**Attention – Danger of explosion !**

### **3 Description of Function**

#### **3.1 Main switch (A)**

With the main switch the power supply is controlled for the entire machine (vacuum pump, radiation heating and the control circuit). Put the switch into the position ON. Now the machine is on stand-by. This switch can be ON during the whole day. After turning on the machine the vacuum-pump starts to run and evacuates the unit. The machine controls the vacuum permanently within a range of approx. -0.8 and -0.4 bar. Thus vacuum is always available at the external connector (left side of the machine, see also page 27, "ext"). During a longer absence the switch should be set into the OFF position (uncontrolled electrical unit).

#### **3.2 Main handle (T)**

The main handle has 2 tasks:

- The main handle is used to lift and lower the working frame.  
In the upper position the handle locks the frame vacuum tight to the working plate.
- It opens and closes the Tentoring frame on the working frame to insert a working membrane or a foil. It supports the UNI LOCK mechanism in pressing the Tentoring frame to the working frame.

##### **3.2.1 Mainframe Locking (H)**

The mainframe locking allows to lock the mainframe at its lower position. This can be helpful when opening the UNI LOCK system for changing the materials or installing the optional reduction frame. Pushing the locking knob locks the frame, pulling unlocks it again.

#### **3.3 The UNI LOCK system**

The UNI LOCK system locks with only one movement the Tentoring frame to the working frame, with the working membrane in between.

By use of a connecting rod the UNI LOCK handle ( I ) moves two hooks, the UNI LOCK hooks. They are attached to the working frame (U). The hooks grip onto two bolts at the Tentoring frame (M). Because of the movement of the UNI LOCK handle the Tentoring frame is pulled against the working frame clamping the working membrane.

The design of the Tentoring frame allows the use of material with different thickness, e.g. plates or foils, without a correction of the clamping power.

### **3.4 The workplace illumination (S)**

The illumination of the workplace can be turned on by the small green switch on the right hand of the front panel (main switch has to be turned ON). When the illumination is turned on, the switch is additionally illuminated. When the machine turned OFF by the main switch, the workplace illumination will be turned off as well.

### **3.5 Radiation heating (R)**

The infrared-Quartz-radiator (R) is a very quick heating with a rating of 7,6 kW. The heating elements are designed for short and powerful heating periods. The heating has always be supervised carefully.

The radiator is designed for regular heating of thermoplastic materials up to 4mm thickness. Thicker materials have to be heated in dedicated convection- or infrared-ovens. By use of the optional thermostatic control the VACUPRESS 900 XR can be used to heat even thicker materials.

### **3.6 Timer for the radiation heating (F)**

For safety reasons the radiation heating is controlled only with the timer (F). The heating sequence in seconds can be adjusted manually between 30 and 200 seconds with the “+” or “-“ keys. The programmed time is shown on the right LED display. With the “START” key the radiator is switched on. The timer now displays the running time on the left LED display. At “000” an alarm sounds and the radiator is switched off. Now the timer displays the programmed time and is ready to start again. By pushing the “STOP” key the heating process can be interrupted at any time.

Advice: Rather try with a lower heating time and repeat if necessary. Keep the heating process under control. During heating never leave the unit. If necessary interrupt the heating process with the “STOP” and start again later on.

### **3.7 Heating selection switch (D)**

The Heating selection switch allows to reduce the active heating area when the optional reduction frame is in use. At level 1 just the left side of the heating area, fitting the reduction frame, is active. Level 2 activates the entire heating area.

### **3.8 Reduction frame (J) (option)**

The optional reduction frame allows to still use the well known Test-shoe foils of the dimension 600x450 mm. The reduction frame is mounted instead of the regular bladder and consists of the components: Reduction frame, small Tenting-frame and small Support-plate.

### **3.8 COOL-TEC cooling system**

The VACUPRESS 900 XR UNILOCK is equipped with the full integrated cooling system COOL-TEC. This special system allows to cool down the molded thermoplastics much faster and thus to remove them faster as well.

The COOL-TEC system is working with compressed air which is supplied by an external inlet (A7) with the compressed air line of your workshop. The pressure is internally reduced to 1.5 bar (21,7 psi) by a pressure reducer (A0). This step in combination with others allows to reduce the consumption of compressed air to a minimum.

The cooling effect is reached by the use of two air-saving special nozzles (P) which are placed on both sides behind the heat radiator facing. By use of an adjustment knob (Q) at the front side of the heat radiator facing, the air jets can be aligned individually to the models molded in the VACUPRESS unit. Turning ON and OFF the COOL-TEC system takes place by a small pneumatics switch (E) at the unit's front panel.

### **3.9 Vacuum-valve (C )**

The vacuum-valve (C ) has two tasks:

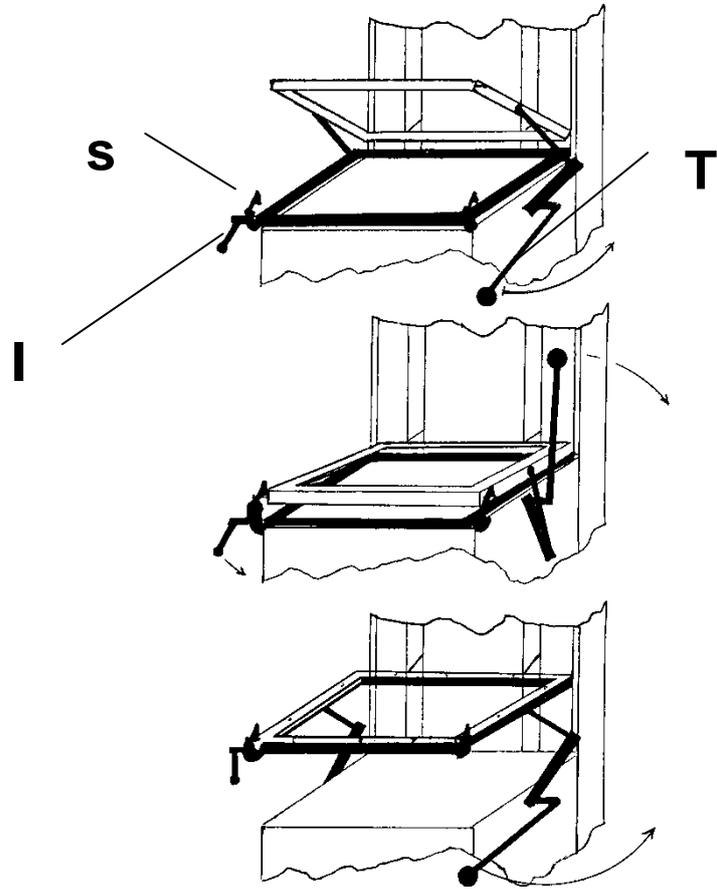
- During a moulding process it allows to control the speed of the vacuum pull. When the handle is set open (ON, right), the vacuum pulls with 100%. By a partly closing of the valve (OFF, top) the vacuum can be slowed down to a ventilation of the frame. Thus you can easily adjust and control the deep-drawing process.
- At the end of the moulding process air is led under the model to release the working membrane. The vacuum is released with the handle to the "OFF" position (top).

### **3.10 Air filter (A2)**

The vacuum pump evacuates the air between working membrane and working plate. Two air filter on the suction side avoids the entering of dust particles into the vacuum pump. Decreasing suction efficiency indicates clogging of the air filter (see point 5.6 Maintenance).

An additional filter is integrated at the external vacuum-connection (A5). This one cleans the air which is externally suctioned.

**Drawing to  
Point 4.1**



## 4. Operation instructions

These instructions describe the operation procedure in a step by step manner.

Legend:

- A figure (i.e. .1) is used to instruct an action (e.g. step 4.1.1)
- A star + is used to instruct a check. The indicated condition must be present before the start of the next action
- A hyphen – is used to indicate a consequence or a result of the ordered step.

### 4.1 Fixing of the working membrane

\*No model on the working table

- .1 Move main handle (T) into the upper position
  - The working frame is lowered to the table
- .2 -Lock main frame by pushing Locking knob (H)
- .3 Pull UNI LOCK handle ( I )
  - The UNI LOCK hooks are released
- .4 Push main handle (T) into the upper position and hold
  - The UNI LOCK hooks (s) are released from the bolts on the Tentering frame.
- .5 By holding the main handle (T) turn down UNI LOCK handle ( I ) and hold it. - This will move the hooks (s) from the bolts.
- .6 Move main handle (T) to the lower position.
  - This opens up the Tentering frame. Release UNI LOCK ( I ) handle.

\*If an used membrane was fixed in the working frame, remove it.

- .7 Put the working membrane into the working frame and adjust it.
- .8 Move main handle (T) into the upper position.
  - The Tentering frame will be closed. The membrane will be fixed. The UNI LOCK hooks (s) click to the bolts. Release main handle (T).

\*Both UNI LOCK hooks (s) are engaged.

- .9 Push down the UNI LOCK handle ( I ).
  - The Tentering frame is locked to the working frame.
- .10 Release working frame locking by pulling locking knob (H)



**Attention – Danger of contusion!**

## 4.2 Insert the material to be formed

\*The working frame is in the upper position.

\*A working membrane is fixed in the working frame.

- .1 Turn main switch (A) to ON
- .2 Place model on the support plate (L). Be aware of central position.
- .3 Place the material to be formed on to the model and fix it, if necessary.
- .4 Move main handle into the upper position.
  - The working membrane is lowered, the working frame contacts the table.
- .5 Start the deep-drawing by moving the vacuum-valve (C ) from the upper “OFF” position to the right “ON” position. Adjust the speed by moving the vacuum-valve handle slowly. Finally set the handle completely to the “ON” position. The vacuum-pump shuts down automatically at approx. -0.8 bar – the vacuum is continuously controlled.

### **Advice:**

To achieve a plaster-cast which surrounds the model completely the model has to be positioned on a small support. So the foil can follow the contours even to the underside of the model

## 4.3 **Moulding of foils without working membrane**

- .1 Remove working membrane, see point 4.1.1 – 4.1.5
- .2 Insert the foil to be moulded into the working frame, see point 4.1.6 – 4.1.8
- .3 Move main handle into the lower position.
  - Working frame moves into the upper position.
- .4 Adjust the required heating time on the timer to warm up the foil.  
**Be aware of hazards, see point 2.3.3**
- + Check plasticity of foil after the heating process, restart heating if necessary
- .5 Move main handle upwards with care
  - The working frame is lowered, the foil is put onto the model.
- .6 Start the deep-drawing by moving the vacuum-valve (C ) from the upper “OFF” position to the right “ON” position. Adjust the speed by moving the vacuum-valve handle slowly. Now the foil surrounds the model completely. Finally set the handle completely to the “ON” position. The vacuum-pump shuts down automatically at approx. -0.8 bar – the vacuum is continuously controlled.
- .7 After the foil has cooled down again the mould can be removed. See also point 4.5

#### 4.4 Cooling of molded thermoplastics by use of the COOL-TEC system

- .1 First ensure that the external compressed air inlet (A7) is connected to your workshop's compressed air line and a pressure of minimum 1.5 bar (21,7 psi) is supplied.
- .2 Activate the COOL-TEC cooling-system by turning ON the „cooling“ switch (E) at the unit's front panel.
- .3 Align the air nozzles (P) by use of the adjustment knobs (Q) in the way that the air is „flowing“ around your model(s) in the optimal way.
- .4 After the thermoplastic material is cooled down as far as it can be removed (depends on kind and thickness of material) you can turn OFF the COOL-TEC cooling-system again by use of the “Cooling-switch” (E) at the unit's front panel.

#### Overview COOL-TEC elements

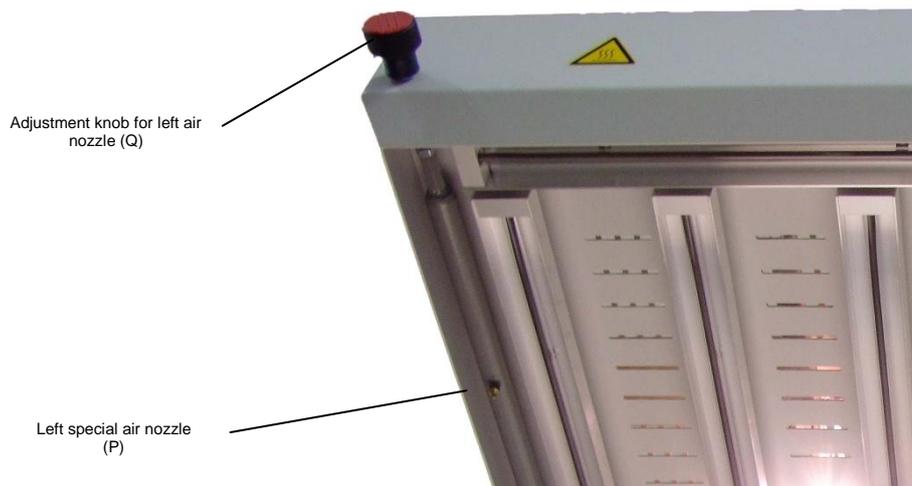


Right rear view



Front Panel view

Cooling Switch  
ON <-> OFF  
(E)



Adjustment knob for left air  
nozzle (Q)

Left special air nozzle  
(P)

Front Heating view

#### 4.5 Removal of the moulded foils

- .1 Set handle of vacuum-valve to "OFF" (top) position
  - Air flows into the area of the moulded foil. The form is released from the model. The working membrane is released from the foil and the table.
- .2 Move main handle to the lower position.
  - The working frame is elevated to the upper position.
- .3 The moulded form can be removed.

\* for the removal of foils, which have been fixed to the working frame

- .4 Pull up UNI LOCK handle ( I )
  - The UNI LOCK hooks (s) are loosened.
- .5 Push main handle (T) into the upper position
  - By pressing the Tentering frame against the working frame the hooks (s) are freed from the bolts on the Tentering frame
- .6 Push down and hold UNI LOCK handle ( I )
  - The hooks (s) are released.
- .7 Move main handle (T) into the lower position
  - The Tentering frame is opened up and releases the moulded foil.
- .8 The moulded form can be removed.

#### 4.6 Times of heating

The following times are recommended. Specific times will be ensued from experience.

Material:	Heating time approx.
PVC clear foils 0.4 mm	45 sec.
PVC clear foils 1.2 mm	75 sec.
Bathing slipper-material 6 mm	200 sec. In intervals of 40 sec. each With interruption of 15 sec. to heat the material thoroughly

Danger: Never use heating times longer than 200 sec. Rather repeat the heating process.  
Supervise the heating process carefully to avoid danger of fire.



**Attention – Danger of fire !**

## 4.7 Conversion to optional reduction frame 600 x 450 mm

\*No model on the working table

- .1 Move main handle (T) into the lower position
    - The working frame is lifted to the upper position
  - .2 Remove large support plate
  - .3 Move main handle (T) into the upper position
    - The working frame is lowered to the table
  - .4 -Lock main frame by pushing Locking knob (H)
  - .5 Put in small Tentering frame 600x450 mm (O) at the top
    - Loosen the 4 lock nuts (N) on the large Tentering frame (M), so the retaining plates of the small frame can be slide underneath.
    - Slide small Tentering frame to the left on the bolts of the large Tentering
- frame
- (M) and fix it with the 4 lock nuts
  - .6 Pull UNI LOCK handle ( I ) to the top
    - The UNI LOCK hooks are released
  - .7 Push main handle (T) into the upper position and hold
    - The UNI LOCK hooks (s) are released from the bolts of the Tentering frame.
  - .8 By holding the main handle (T) turn down UNI LOCK handle ( I ) and hold it. - This will move the hooks (s) from the bolts.
  - .9 Move main handle (T) to the lower position.
    - This opens up the Tentering frame. Release UNI LOCK ( I ) handle.
- \* If a used membrane was fixed in the working frame, remove it.
- .10 Put in reduction frame (J).
    - **Pay attention that the actuation-pin of the reduction frame is slide into the guiding slot at the rear wall (thus an ancillary-weight is deactivated which is not needed when the reduction frame is in use)**
    - Align the reduction frame at the upper sealing of the working frame (U).
  - .11 Set Heating selection Switch (D) to Level 1ellen. Thus the heating area and the vacuum is adjusted to the left, reduced working area.
  - .12 Put in small foil (600x450mm) and lock UNILOCK System as described above. After the Mainframe locking (H) is released, the entire frame can be moved to the upper position.
  - .13 Put in small support plate (K) and snap it into the holes on the working area.

The material clamping system at the reduction frame is orientated to the UNILOCK System and is also self adjusting to different material thicknesses. So an adjustment of the reduction frame to different materials is not required. The system is designed for clamping foils from 0,5mm up to 2,0 mm thickness. For further way of proceeding in heating and deep-drawing foils refer to point 4.3 ff above.



**Attention – Danger of contusion!**

## 5. Maintenance

### 5.1 Vacuum pump

VACUPRESS 900 XR is equipped with two oil-free, maintenance-free vacuum pumps (A1). When using the optional reduction frame the Heating selection switch at Level 1 activates also just the pump for the left working area.

The vacuum-pumps are equipped with automatic thermostat protection switches. In case of an overheating of the motor (by a malfunction etc.), the protection switch automatically shuts down the pump. After the temperature has cooled down (after 15-20 minutes) and is normal again, the pump can be turned on again. This process is working automatically, no reset button or the like has to be pushed. In case of additional problems, please contact our technical support.

#### **ATTENTION!**

**If you are often using wet materials or models, it is necessary to let the pump run for a few minutes after you have finished your work! Otherwise humidity may reach the pump and in the case of longer standstill (e.g. at the weekend) the pump may stuck and can be damaged!**

### 5.2 Heating

Clean regularly IR-tubes (carefully, attention glass tubes) and reflector housings. Use compressed air or a vacuum cleaner and a soft brush. **ATTENTION! Implement any cleaning just at a cool machine!**

### 5.3 Guidance of the working frame

The 16 ball bearings of the frame guidance are maintenance free. Oil the pivot of the main handle from time to time.

### 5.4 Ball joint

Maintenance free.

### 5.5 UNI LOCK

Oil the pivot of the UNI LOCK hooks. An adjustment of the Tentoring frame and its UNI LOCK bolts is necessary after 3 years of operation. The anti slip coating on the orange frame has to be renewed all 3 years.

**Attention: Never adjust the self locking nuts on the Tentoring frame.  
The Tentoring function can be disturbed significantly.**

## **5.6 Air filter (A2)**

Two air filter are mounted inside the bench. To replace the filter cartridge loosen the two star grip screws of the front door and remove it.

### **5.6.1 Replacement of the air filter**

Remove the filter cartridge by an anti-clockwise turn. Oil the rubber seal before mounting. Do not use any mechanical means – tighten the cartridge only manually.

### **5.6.2 Replacement of the air filter (extern connection)**

At the left side of the housing is an external vacuum-supply (A5) with integrated filter. The filter glass can be removed by pulling the latch and turning the glass anti-clockwise. Clean the filter glass regularly (1x a month, resp. as required) from dust and water, etc.. At the lower end of the filter you find a filter cartridge. Clean this by use of compressed air is required

## 6. Repair

All parts of VACUPRESS 900 XR are long life and reliable industrial articles. They are liable to a thorough quality assurance in the manufacturing process of VACUPRESS. Therefore, a regular repair is not scheduled.

In case of ordering spare parts the following list gives a clear definition of each part. The list is arranged according to the location of the resp. parts. See sketches at page 26 ff.

### 6.1 Spare part list

No.	Designation	Type
<b>6.1.1 <u>Front</u></b>		
900150	Timer	Type VASU 199
900170	Vacuum gauge	63 mm
900119	Main Switch	KH20-T204
900151	Three-way ball valve	1/2 "
900152	Heating selection switch 1/2	CH10
900153	Switch for illumination, green	700304
<b>6.1.2 <u>Right side</u></b>		
900391	Link rod	M12 440x30x30
900329	Ball joint	KBRM-12 MH
<b>6.1.3 <u>Left side</u></b>		
900391	Link rod	M12 440x30x30
900196	Stop screw	M8 x 40
900329	Ball joint	KBRM-12 MH
900330	Filter / water separator (external vacuum-supply)	VF
<b>6.1.4 <u>Radiator, Heating</u></b>		
900954	IR-Heating element 600W (7x)	500
900955	IR-Heating element 600W (4x)	400
900956	Lamp holder for 12V Halogen Spotlight	EBL-3860
900957	Halogen Spotlight 12V / 20W	HL20W
900958	COOTEC, entire cooling tube with nozzle + knob	CT900

### 6.1.5 Inside

900176	Vacuum Pump (2x)	2750 BGHI
900177	Transformer 200-230V for vacuum-pump	NTO63
900325	Vacuum hose	13 mm inner /
900080	Pressure Switch	XMLB02V1S12
900042	One way valve (3x)	1/2 " 227.32
900112/1	Relay for Heating / 12A	LC1K1210P7
900113/1	Breaker for Heating / 3pol. 16A	23652
900114	Transformer for illumination 12V / 60VA	570872
900389	Filter cartridge (Air filter / 2x)	CS-050
900390	Pressure reducer COOLTEC, 0,15-3,5 bar	480.21

### 6.1.6 Rear side

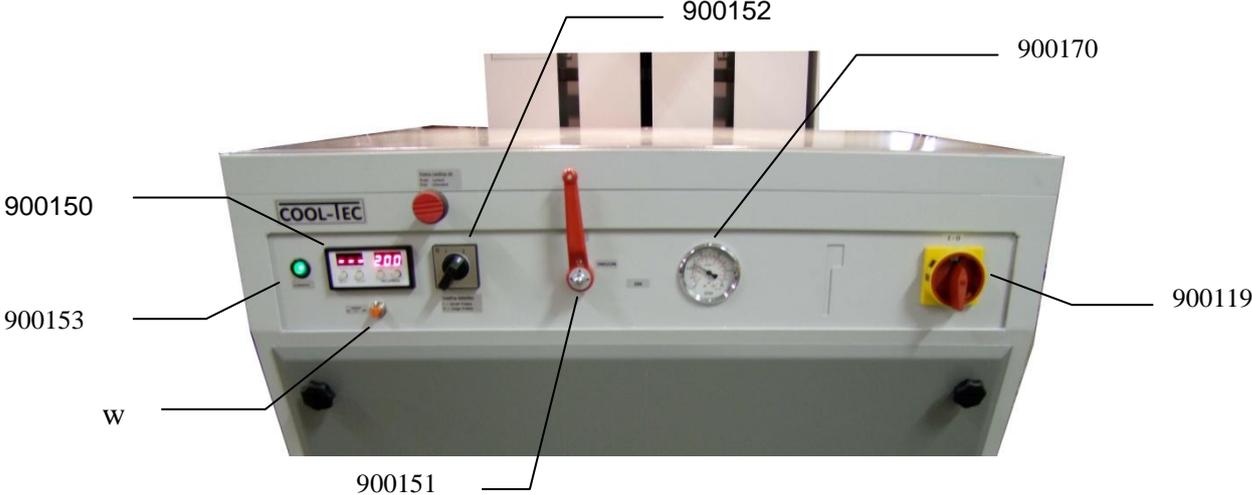
900087	Ball bearing complete	Type 300
900090	Ball bearing rails	Type 300 /1600 mm.
900192	Cross tie	KVR2 D=25/25
900343	Mini bearing	EFOM-20
900327	Gas shock	A4A4-03-700-1517- / 460N
900335	Tension spring (4x)	Li 30x25.00x68.1

### 6.1.7 Working frame

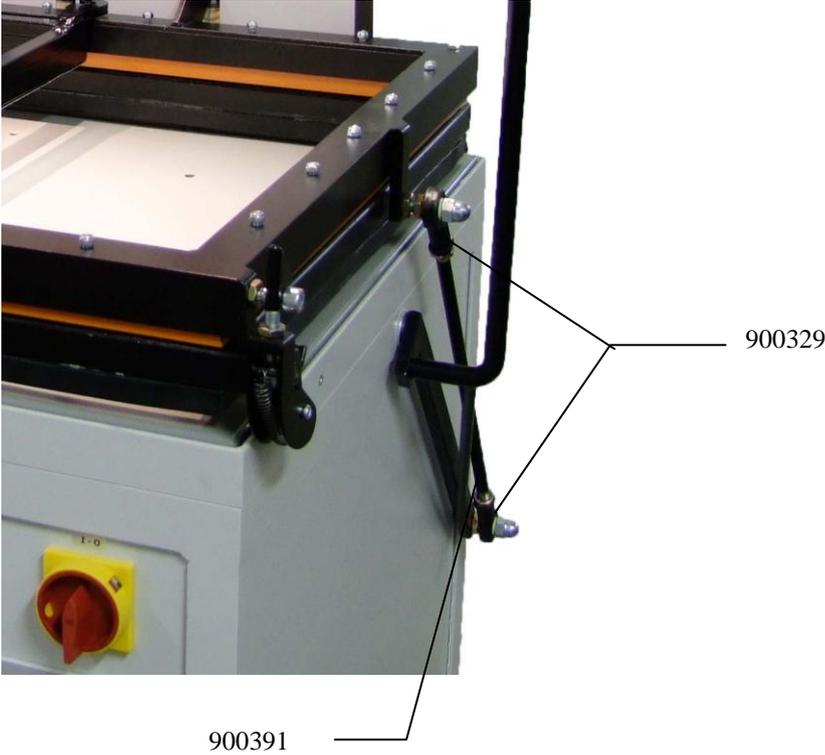
900347	Frame sealing	25x20 mm 865x655
900099	Inner frame sealing	20.x 5 mm 865x655
900357	Anti slip coating	865x655
900334	Rebound spring	2.5x14.0x52.0
900132	Tension spring (inner frame)	17/1/2 (45)
900133	Tension spring (UNI-LOCK)	12/3/1
900345	bearing	14x16
900346	bearing	16x18
900409	Torsion spring	100956
900346	Bronze bearing	BP25 18x24x28 mm
900331	Handle (Unilock)	KP06360
900332	Split hub for Unilock handle	KP06362

**6.2 Spare parts overview**

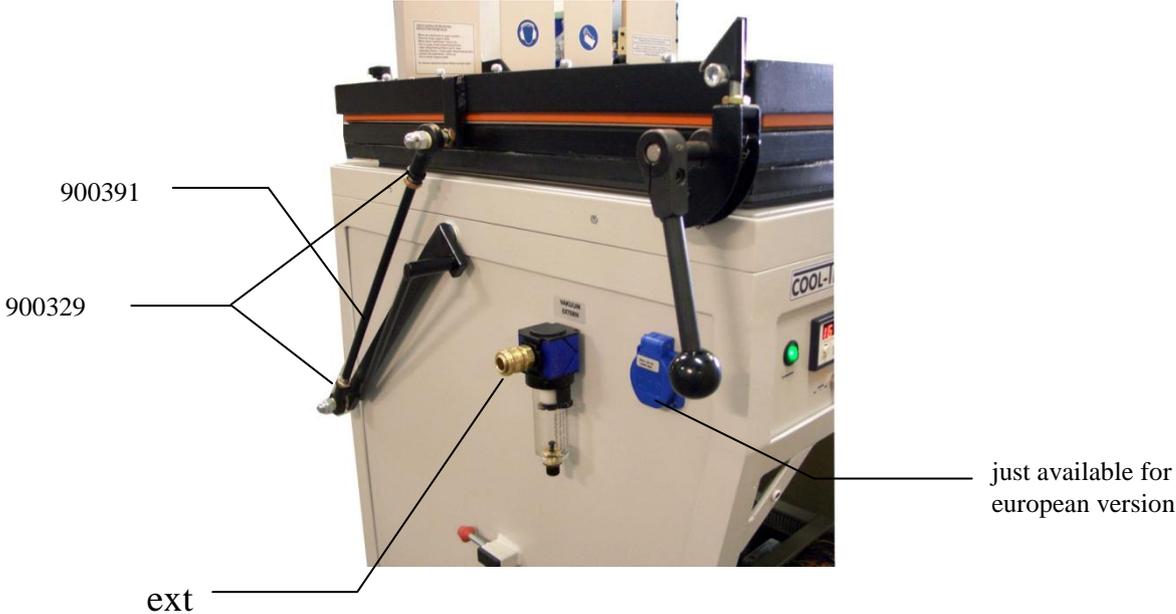
**6.2.1 Front**



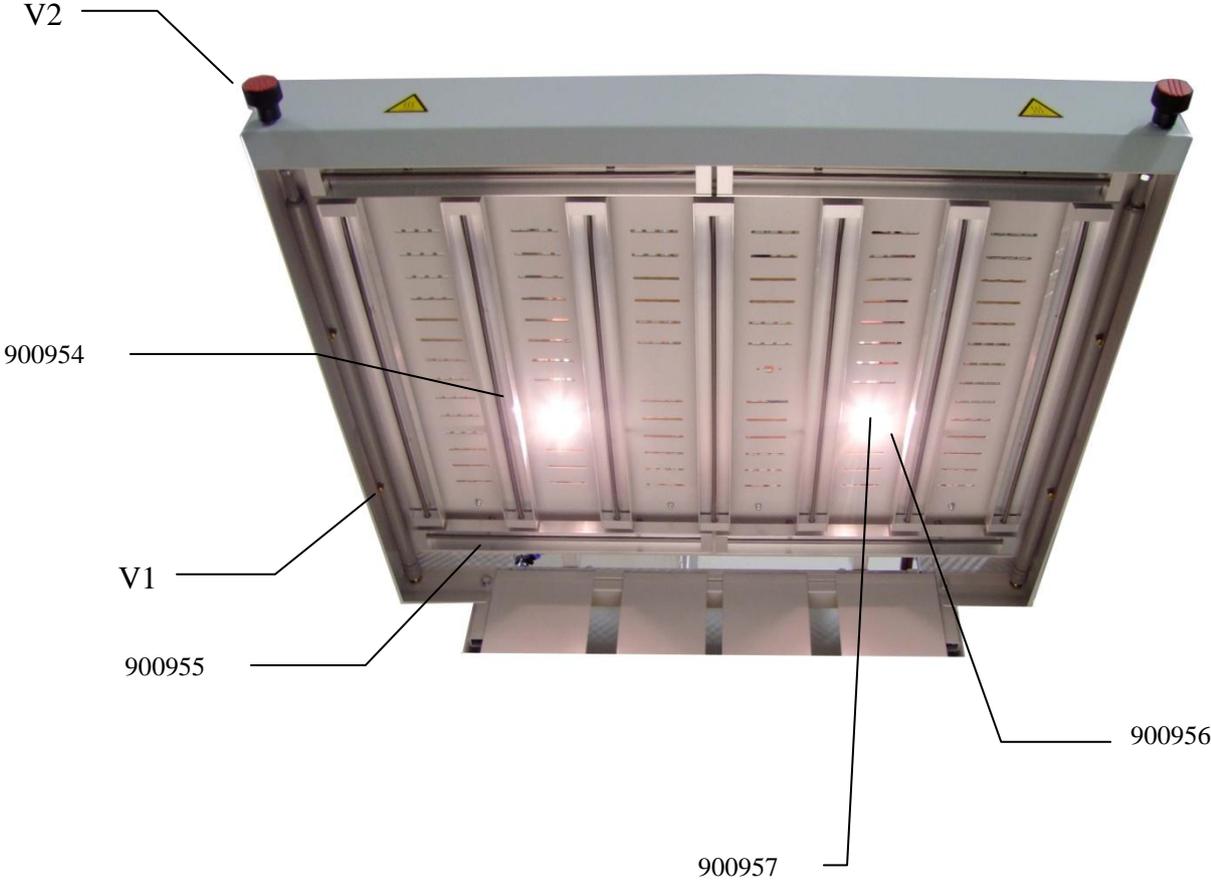
**6.2.2 Right side**



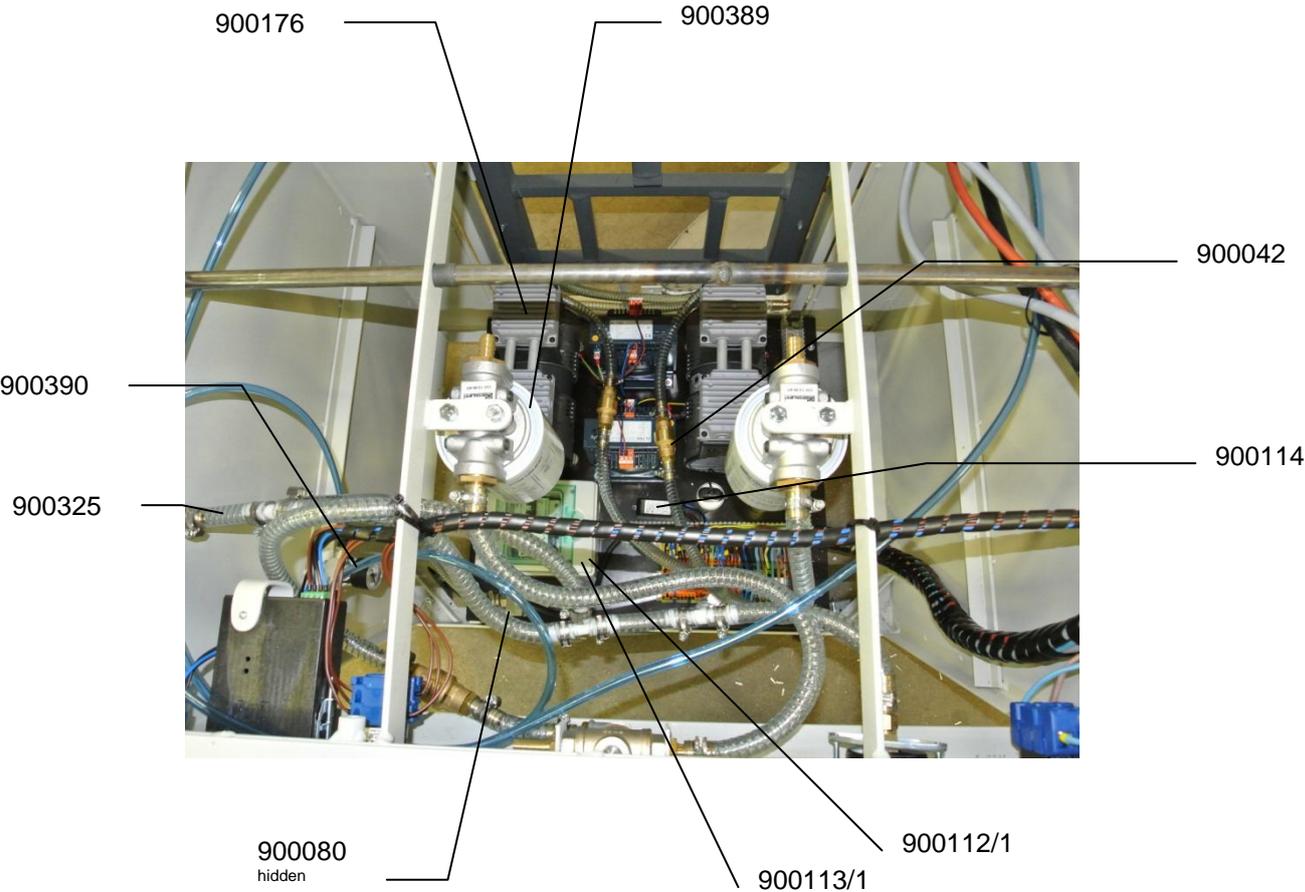
6.2.3 Left side



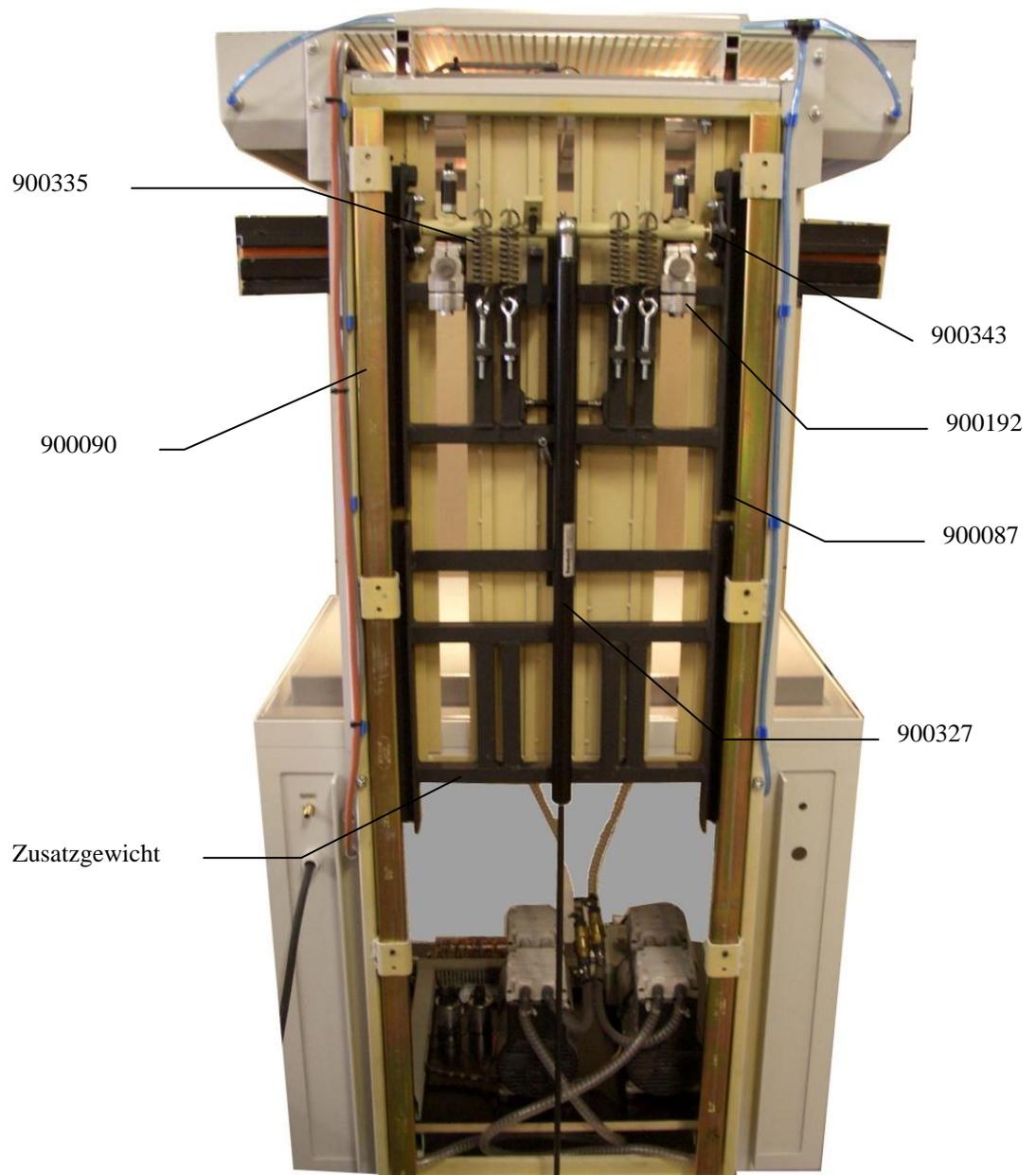
6.2.4 Radiator / Heating



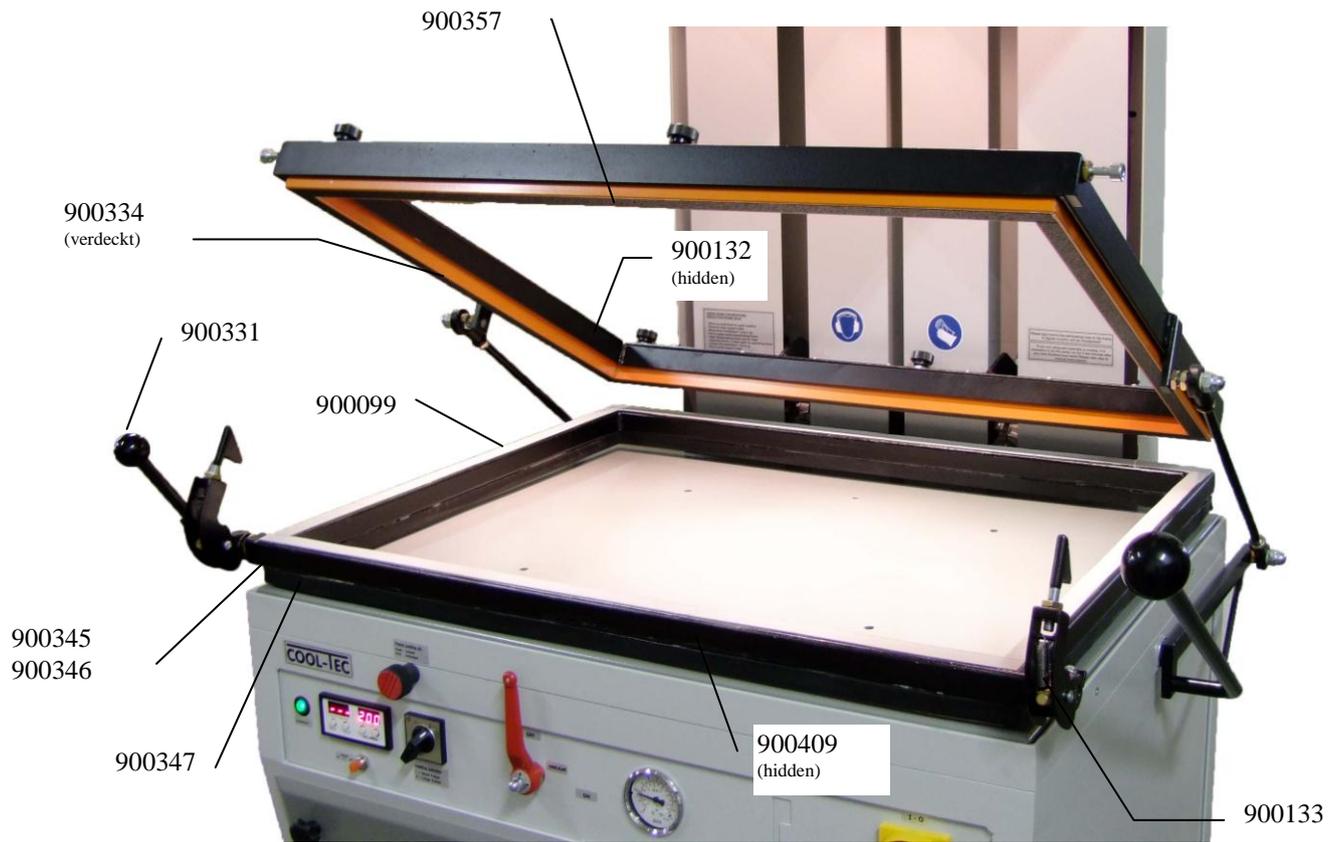
6.2.5 Inside



## 6.2.6 Rear side

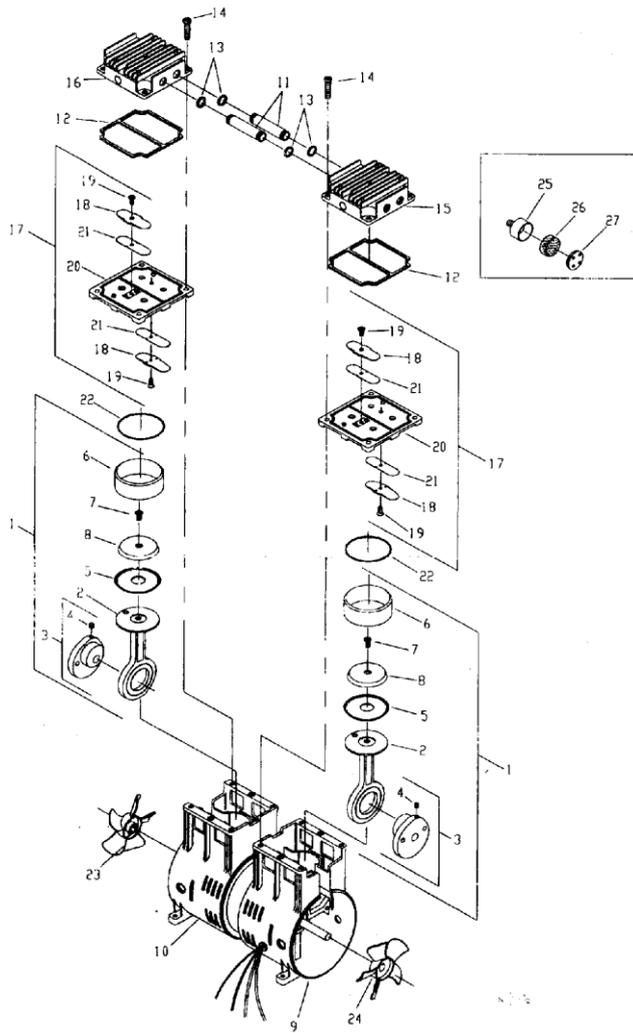


## 6.2.7 Working frame



# 7 Vacuum pump – spare part list

## DRAWING AND PARTS LIST



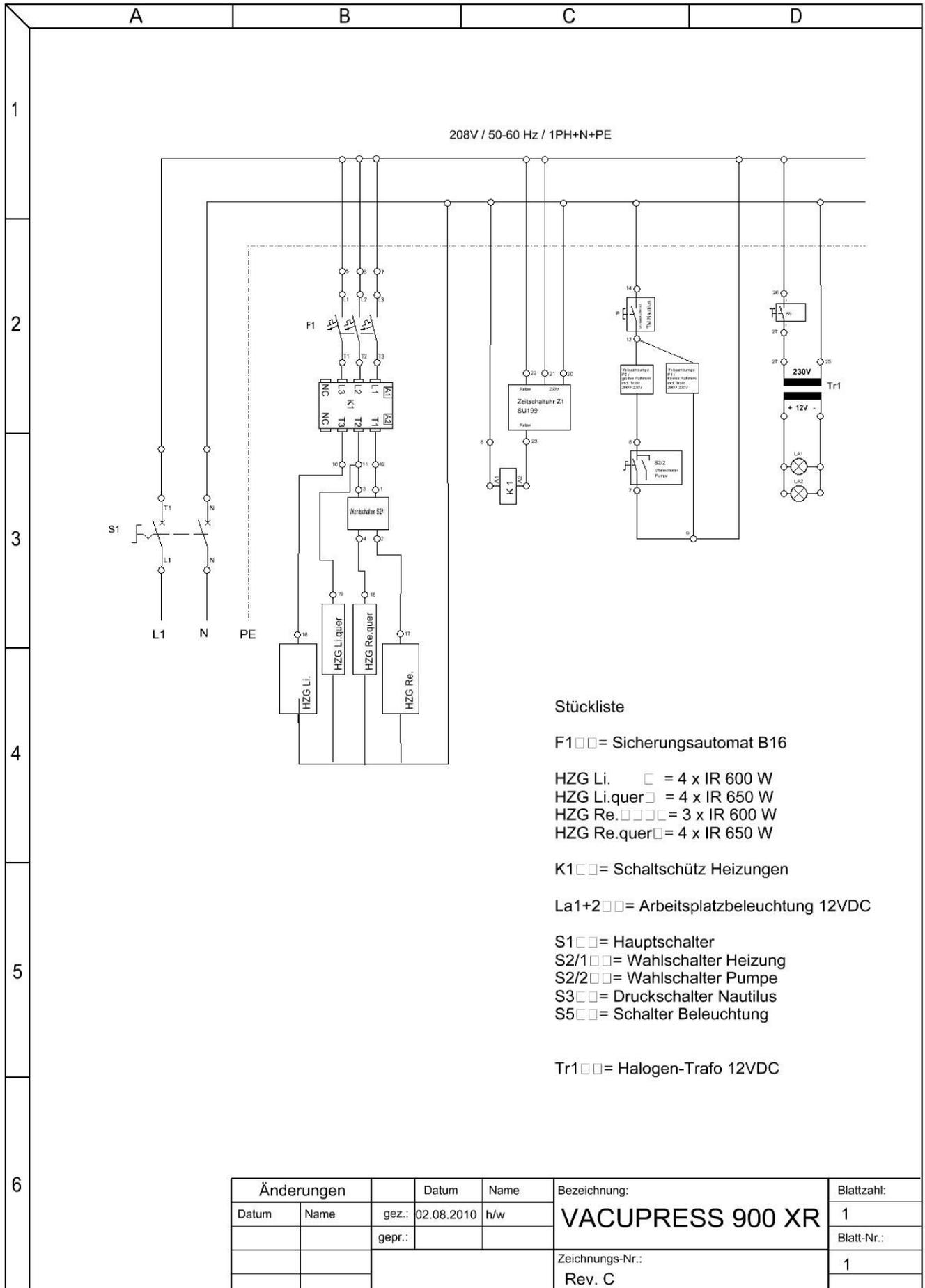
MODEL 2750CE50*, 2750CGH160+				
Item No.	Part No.	Component Part	Description	Qty
1	607635		Corn. Rod, Ecc. Sleeve & Brg. Ass'y	2
2	607540		Corn. Rod & Bearing Assembly	2
3	645907		Eccentric Assembly	2
4	625008		Set Screw - Eccentric	2
5	614753		Piston Cup	2
6	618119		Piston Sleeve	2
7	625776		Screw - Piston Cup Retainer	2
8	626730		Retainer - Piston Cup	2
9	664061		Housing	1
10	664062		Housing	1
11	615866		Connector Tube	2
12	623624		O Ring Gasket - Head	2
13	623632		O Ring - Connector Tube	4
14	625645		Screw - Head	8
15	664651		Head	1
16	664652		Head	1
17	662307		Valve Plate Assembly	2
18	617312		Valve Restraint	4
19	625071		Screw - Valve Flapper	4
20	662306		Valve Plate	2
21	662054		Valve Flapper - Intake & Exhaust	4
22	623638		O Ring - Sleeve	2
23	638208		Fan - Black	1
24	638223		Fan - White	1
25	660777		Filter Body	1
26	641010		Filter	1
27	660803		Cap - Filter Body	1

MODEL 2750CE60*, 2750CGH160+			
Item	Add	Description	Delete
1	607640	Corn. Rod, Ecc. Sleeve & Brg. Ass'y	607635
2	607523	Connecting Rod & Bearing Ass'y.	607540
3	645903	Eccentric Assembly	645907

MODEL 2750BE75*, 2750BGH175+			
Item	Add	Description	Delete
1	607638	Corn. Rod, Ecc. Sleeve & Brg. Ass'y.	607635
2	607530	Connecting Rod & Bearing Ass'y.	607540
3	645901	Eccentric Assembly	645907

MODEL 2750BH75-329 +			
Item	Add	Description	Delete
9	610709	Housing	664061
10	664317	Housing	664062
28	647220	Fan Guard (Not Shown) - Qty 2	---
28	625448	Screw - Fan Guard (Not Shown) - Qty 4	---

# 8. Circuit diagram (3 phase / 400 volt / 50-60 Hz)



**Stückliste**

F1□□ = Sicherungsautomat B16

HZG Li. □ = 4 x IR 600 W  
 HZG Li.quer□ = 4 x IR 650 W  
 HZG Re.□□□ = 3 x IR 600 W  
 HZG Re.quer□ = 4 x IR 650 W

K1□□ = Schaltschütz Heizungen

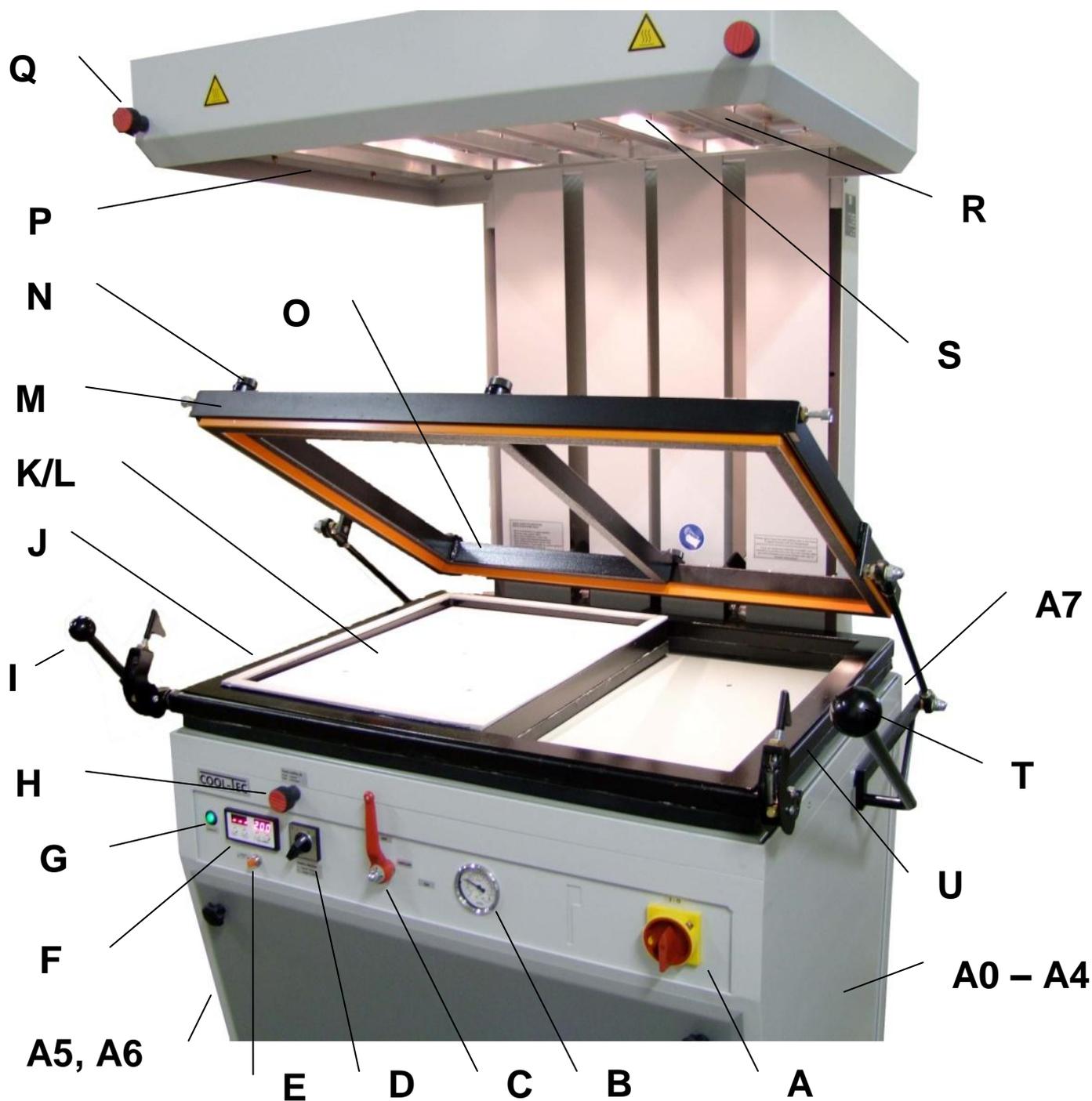
La1+2□□ = Arbeitsplatzbeleuchtung 12VDC

S1□□ = Hauptschalter  
 S2/1□□ = Wahlschalter Heizung  
 S2/2□□ = Wahlschalter Pumpe  
 S3□□ = Druckschalter Nautilus  
 S5□□ = Schalter Beleuchtung

Tr1□□ = Halogen-Trafo 12VDC

Änderungen		Datum	Name	Bezeichnung:	Blattzahl:
Datum	Name	gez.: 02.08.2010	h/w	<b>VACUPRESS 900 XR</b>	1
		gepr.:			Blatt-Nr.:
				Zeichnungs-Nr.:	1
				Rev. C	

## 9. Outline of control elements



A	Main Switch	K	Support plate small (option)	U	Working frame
B	Vacuum gauge	L	Support plate large (not shown)		
C	Vacuum-valve	M	UNILOCK Tenting frame	A0	COOL-TEC Pressure red. (inside)
D	Heating selection switch	N	Lock nuts (4x) Reduction frame	A1	Vacuum-Pump (inside)
E	COOL-TEC switch	O	Reduction frame 60x45 (option)	A2	Vacuum-Filter (inside)
F	Timer for Heating	P	COOL-TEC nozzle	A3	Breaker Heating (inside)
G	Switch for Illumination	Q	COOL-TEC knob	A4	Vacuum-pressure switch (inside)
H	Main frame locking	R	IR-Heating elements	A5	Vacuum-connection ext. (left side)
I	UNILOCK handle	S	Illumination	A6	Receptacle 230V (left side)
J	Reduction frame 60x45 (opt.)	T	Main handle	A7	COOL-TEC cpressed air inlet (rear)

## 10. Adjustment of the pressure switch

The pressure switch is easy to reach behind the front door. The adjustment of the RED set-screw for the upper shut-off point of the vacuum-pump is located at the right side of the pressure switch. The upper shut-off point can be adjusted by use of a fitting screw-driver.

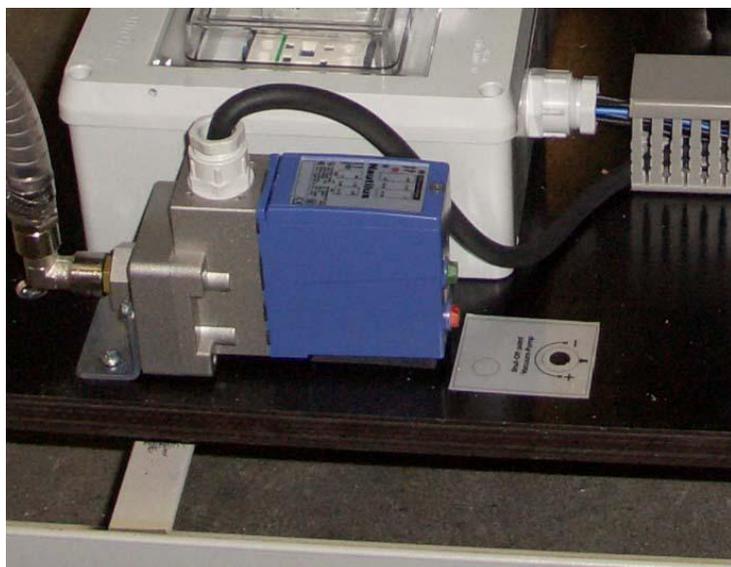
The standard shut-off point is set to approx.  $-0,8$  bar.

To REDUCE ( - ) the shut-off point, turn the set-screw to the RIGHT.

To INCREASE ( + ) the shut-off point, turn the set-screw to the LEFT.

ATTENTION! Always adjust the set-screw just for approx. a  $\frac{1}{2}$  turn and then first check the result of your adjustment. A massive disadjustment of the pressure switch can cause a malfunction and thus the vacuum-pump might not turn on or off at all.

Please don't hesitate to contact our technical support in case of any check-backs or problems. Phone number: +49 201 6462284.



## **Declaration of Conformity**

for the Vacuum-Press  
VACUPRESS 900XR (Art.Nr. 03-900XR)

**Witzel VACUPRESS e.K.**  
**Max Keith Str. 66 / D-45136 Essen**

declares as manufacturer and in sole responsibility that the Vacuum-press VA 900XR complies with the fundamental requirements of the directive 2006/42/EG and the directives listed below - including all changes, valid at the time of declaration.

The following additional EU-directives have been applied:

2006/95/EG

2004/108/EG

The following harmonised standards have been applied:

DIN EN ISO 12100-1, DIN EN ISO 12409, DIN EN ISO 14121-1

DIN EN 60204-1, DIN EN 60335-1

DIN EN 55014-1, DIN EN 55014-2

Name and address of the person who is authorized to assort the technical documents:  
Hendrik Witzel

Witzel VACUPRESS e.K.  
Hendrik Witzel



Essen, 01.11.2009



**VACUPRESS  
GIVES YOU MORE...**

...and each day  
you will find new ways  
to manufacture your  
products more efficiently