- TABLE OF CONTENTS -

1 Introduction .................................. 1
2 Description of SVD Unit ...................... 2
  2.1 The Components of the System .......... 2
  2.2 Performance ................................ 3
  2.3 Function .................................. 3
3 Commissioning ................................ 4
  3.1 Transport and Packing .................... 4
  3.2 Set-up .................................... 4
  3.3 Connection ................................ 4
  3.3.1 Suction Port Connection .............. 4
  3.3.2 Pressure Port Connection ............. 4
  3.3.3 Electrical Connection ................. 4
  3.4 Start Up .................................. 5
  3.4.1 Switching On ............................ 5
  3.4.2 Vacuum Regulation ..................... 6
  3.4.3 De-aeration of Filter Housing .......... 6
  3.4.4 Setting the Fluid Temperature .......... 6
  3.4.5 Switching Off ........................... 6
4 Operation .................................... 7
  4.1 Placement / Connection .................... 7
  4.2 Screen Layouts ............................. 7
  4.2.1 Main Screen ............................. 7
  4.2.2 Operating Mode ......................... 7
  4.2.3 Automatic Mode .......................... 7-8
  4.2.4 Manual Mode ............................. 9
  4.2.5 Maintenance Functions/Guide .......... 9
5 Maintenance ................................ 10
  5.1 Visual Checks ............................. 10
  5.2 Filter .................................... 10
  5.3 Change Fluid Filter ....................... 10
  5.4 MTS-Filter Housing ....................... 10
  5.5 Others ................................... 10
6 Troubleshooting .............................. 11
7 Technical Data ................................ 12
8 Spares ....................................... 12
9 Inspection and Maintenance ................. 13
  9.1 Abbreviations and Symbols ............... 13
  9.2 Safety Information and Instructions ........ 13
10 Inspection and Maintenance Schedule ....... 14
11 Detailed Maintenance Guidelines ........... 15
  11.1 Check Malfunction and Any Display Lamps .... 15
  11.2 Change Air Filter ........................ 15
  11.3 Clean RLT Filter and Replace the Element .... 15
  11.4 Oil, Oil Filter and Exhaust Filter Change (Only Version with Rotary Vane Pump) .... 16
  11.5 Change Fluid Filter Elements ............ 16
  11.6 11.6 MTS-Filter Housing .................. 16
  11.7 Check Reactor Level Switch .............. 17
  11.8 Check Float Switch in Oil Pan ............ 17

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The content of the manual is checked regularly. Any corrections required will be incorporated in subsequent editions. We welcome any suggestions for improvements.
All details are subject to technical modifications.
1. Introduction

Understanding all functions, warnings and installation requirements are essential for the safety of each individual using the SVD. Therefore:

Read this manual before taking the unit into operation!

Allowing the SVD to operate safely largely depends on maintenance. Regular required maintenance is described in this manual. We will support you if the unit needs repair and will provide original spare parts.

Abbreviations and Symbols

This symbol denotes safety precautions, the non-observance of which can endanger persons and the environment.

This symbol denotes safety precautions, the non-observance of which can endanger persons by electrical voltage.

This symbol marks an important note for the proper use of the unit / software. The non-observance of these notes can lead to damage or failures of the unit / software.

This symbol is followed by user tips and particularly useful information.

Delivery

The following items are supplied:
1 - Vacuum Dehydrator.
1 - Operating and Maintenance Instructions.

General Safety Precautions

- Operation- and maintenance work may only be carried out by technically skilled and trained personnel. Personnel entrusted with work on this system must have read these operating instructions before beginning work.

- The safe operation of this unit can only be ensured if it is used for the purpose it was intended. If there is any question about the use of this unit, please contact the manufacturer. The manufacturer will not accept responsibility for damages resulting from misuse of this equipment.

- In addition to any instructions for safe operation of our equipment, all national and provincial workplace safety and health regulations must be observed, as well as in-plant safety regulations.

- Spills of dangerous substances must be contained and disposed of in accordance with current waste disposal legislation.

- Before any maintenance or repair work is carried out on the unit, electrical power to the unit must be disconnected, and all hydraulic pressures relieved.

Suitable Fluids

We recommend using the SVD only with lubricating/mineral oils, mineral oil based fluids, or biodegradable liquids - based on synthetic ester. Please contact us if you want to use other fluids.

In Case of Emergency

In case of emergency hit the emergency stop button to shut down the SVD. The vessel will continue to hold pressure over the next 2 to 3 minutes.
2. Description of SVD Unit

The SVD was designed for the dewatering, filtration and degassing of hydraulic and lubricating oils. It removes free and emulsified water from the solution. Solid particles are separated efficiently by the fluid filter.

The fluid is degassed through a vacuum in the reactor.

2.1 The Components of the System

1. Ring bolts for the transport with crane
2. Vacuum gauge with regulating valve to regulate the necessary vacuum in the vacuum chamber.
3. The control panel consisting of
   ■ Main switch and emergency off
   ■ Siemens Simatic Touch Panel
   ■ Fault indicator light (yellow)
   ■ Light to indicate “heater on” (red)
4. Heater (optional - not shown)
5. Inlet Valve (2/2-directional valve)
6. Vacuum Pump
7. Vacuum Chamber
8. Fluid Filter for the separation of solid particles
9. TWS-C Water Saturation Sensor
10. RLT Filter
11. Air Filter

*The range and type of components depend up the SVD version. The above is an example.
2.2 Performance

The SVD is able to reduce the water content of the fluids described in Section 1 “suitable fluids” to less than 100 ppm (100 ppm = 0.01%).

<table>
<thead>
<tr>
<th>Typical dewatering rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>SVD05</td>
</tr>
<tr>
<td>SVD10</td>
</tr>
<tr>
<td>SVD16</td>
</tr>
<tr>
<td>SVD23</td>
</tr>
</tbody>
</table>

Generally, the dewatering rate depends upon the following factors:

<table>
<thead>
<tr>
<th>Water content</th>
<th>Dewatering rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluid temperature</td>
<td></td>
</tr>
<tr>
<td>Detergent additives</td>
<td></td>
</tr>
<tr>
<td>Flow rate of the SVD</td>
<td></td>
</tr>
</tbody>
</table>

2.3 Function

After the SVD has been switched on, the fluid is pumped by means of the heater pump (1) via the heater (2) into the reactor (4). There, the fluid trickles downward over a special tower packing. With this tower packing a thin fluid film is created. The fluid is collected in the bottom part of the reactor. After reaching the upper level sensor the evacuation pump (5) is switched on and pumps the fluid continuously to the outlet. At the same time the 2/2-directional valve (3) closes and the level in the reactor falls until it reaches the lower level sensor. Then the 2/2 directional valve opens again and the procedure is repeated. Due to the vacuum created in the reactor, air is drawn into the reactor via the air filter/dryer (10). This air is also passing through the tower packing but in opposite direction to the oil. The dry air is taking up the moisture from the oil and is evacuated by means of the vacuum pump (7).

In the vacuum pump, the air is cooled before being released into the atmosphere. Due to the cooling, the moist air is condensed and the water is expelled through the exhaust outlet of the vacuum pump.

The vacuum in the reactor is regulated with the regulating valve (9).

After actuating the stop switch the 2/2 directional valve closes, the heater is switched off and the evacuation pump empties the reactor. The evacuation pump keeps on running until the reactor is completely drained.
3. Commissioning

3.1 Transport and Packing
- All SVD units are tested at the factory for leaks and function. They are then carefully packaged for shipment.
- The fluid connections are all sealed with plugs to prevent the intrusion of contaminants during transport.
- Upon receipt of the unit, check for any damage from transportation.
- The packaging material should be re-used/re-cycled as appropriate for your area.
- These Operating and Maintenance Instructions are a component part of the SVD.
- To lift the SVD please use the ring bolts.
- If it is not necessary to lift the SVD, its wheels may be sufficient to push it to its new emplacement.
- Take care to evacuate the reactor and the fluid filter and to close the drain valve before transport.

As the SVD can weigh more than 2095 lbs. (see page 12) we recommend transporting with two people.

3.2 Set-up
- The unit must be mounted level and on flat surface. No special mounting is required (the brakes at the wheels must be blocked!)
- The SVD should be located near the tank (length of the hoses 16 ft. max.), difference in height between tank and SVD 7 ft. max.
- Sufficient room to operate and maintain the unit must be left around the SVD.

3.3 Connection

3.3.1 Suction Port Connection
- The suction port may be connected using a flexible hi-collapse hose, or hard piping. The nominal size of the connected hoses/piping, must be at least as large as the inlet/outlet port sizes of the SVD in order to prevent an excessively high negative suction pressure.
- Make sure that the tank connection is always below the fluid level.
- Do not prime the fluid from the sump of the tank where high contamination may affect the operation of the unit.

Priming in the sump of the tank can lead to damage to the SVD

3.3.2 Pressure Port Connection
- The return line must also be installed below the fluid level in order to prevent air being introduced into the system again.

3.3.3 Electrical Connection
- The voltage and frequency given on the type plate must agree with that of the power supply.
- Connection: 3xL+ PE. Conduit is not necessary.

The electrical connection must be carried out by a qualified electrician. All local and national electrical regulations and codes must be adhered to.
3.4 Startup

3.4.1 Switching On

- Move main switch to position “ON” (Fig. 1) and wait until the touch panel displays the main screen (Fig. 2). The SVD can run manually or automatically (Fig. 3).
- Manually: Click on “Operation” and then “Manual Mode.” A warning screen will then appear (Fig. 4). From the “Manual Mode” screen, the vacuum pump, discharge pump, fill valve, drain valve, heater (if equipped), heater pump (if equipped) can be manually operated (Fig. 5). Systems faults can also be viewed/cleared. Only use Manual Mode to check the function of the unit.
- Automatic: Click on “Operation” (Fig. 6) and then “Automatic Mode” (Fig. 7). From this screen the user will need to set the heater temperature (if equipped) and target saturation level. User will also see the Feed Pump flow rate, current cycle elapsed time. User may also click on %SAT TREND to display the saturation trending for the current cycle. Here the user may also view and clear faults and see the current system status. Click on the “Temperature” field and enter heater set point, then click on the “Saturation” field and enter saturation set point. Press the start button to turn on.

![Fig. 1](image1.png)

![Fig. 2](image2.png)

![Fig. 3](image3.png)

![Fig. 4](image4.png)

![Fig. 5](image5.png)

![Fig. 6](image6.png)

![Fig. 7](image7.png)

- Maintenance: Click on “Maintenance” and then select appropriate option.
3.4.2 Vacuum Regulation

- Now adjust the vacuum pressure with the regulating valve near the vacuum gauge depending upon the operating viscosity according to the following table.

<table>
<thead>
<tr>
<th>Operating viscosity</th>
<th>Vacuum pressure (absolute pressure)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 cSt (230 SUS) Hydraulic Oil</td>
<td>250 mbar / 25 kPa / 3.6 psi</td>
</tr>
<tr>
<td>300 cSt (1391 SUS) Lube Oil</td>
<td>500 mbar / 50 kPa / 7.3 psi</td>
</tr>
<tr>
<td>50 cSt (230 SUS) Ester Fluids</td>
<td>400 mbar / 40 kPa / 5.8 psi</td>
</tr>
</tbody>
</table>

3.4.3 De-aeration of Filter Housing

- In order to de-aerate the filter housing, open the bleed port until fluid escapes from it.

![Bleed Port]

**Do not unscrew the bleed port plug completely. Plug has vent groove.**

3.4.4 Setting the Fluid Temperature

Set the fluid temperature by following these steps through the touch panel.

- Click on “Operation” on the main screen, shown in section 3.4.1
- Click on “Automatic Mode” on the operation functions screen, shown in section 3.4.1
- Click on the I/O field shown as “Setpoint” in Temperature section on the SVD automatic mode screen.
  The following keypad will display.
- Type the desired temperature followed by enter.

*The maximum allowed temperature is 135°F. After a voltage loss the SVD will not start automatically, it has to be started again.*

![Keypad]

3.4.5 Switching Off

Follow appropriate procedure whether running manually or automatically.

- Manually: Click on “Operation” and then “Manual Mode.” From this screen, the vacuum pump, discharge pump, fill valve, drain valve, heater (if equipped), heater pump (if equipped) can be manually operated. System faults can also be viewed/cleared. Only use Manual Mode to check the function of the unit.
- Automatically: Click on “Operation” and then “Automatic.” Press the “STOP” button to turn off. Note: Reference pictures in section 4.2.2 for visual aid.

The SVD discharge pump will remain on for 1 minute. Wait until it turns off before manually turning off the main switch.

Move main switch to position “OFF.”
4. Operation

4.1 Placement | Connection

The SVD comes mounted on a portable frame. Make sure the SVD is placed on a level surface.

If the SVD is placed on a sloped surface, it may roll during operation.

4.2 Screen Layouts

4.2.1 Main Screen

From the Main Screen, you have the option of entering Maintenance Functions of Operation Functions.

4.2.2 Operating Mode

The Operating Mode screen gives the user the choice between automatic and manual operation. Back will take the user to the Main Screen.

4.2.3 Automatic Mode

- The Automatic Mode screen allows the user to run the SVD automatically.
- Default temperature and saturation setpoints need to be entered to run in automatic mode. Select “Setpoint” under Saturation and enter your value. Select “Setpoint” under Temperature to enter the desired default temperature value. The temperature setpoint is only available on units equipped with a heater.
- The current % saturation can then be observed on the scale. All values during testing can be reset by selecting the appropriate “Setpoint” again.
- If the fault light turns on during automatic mode, you will be directed to the corresponding screens to observe and reset the cause of the alarm by pressing the “F3” button.
- Once the setpoints for the heater (if equipped) and % saturation have been set, press the F2 button to start the unit. To stop the unit, press the F1 button.
From the automatic mode screen the user may toggle between the following screens: Recorded Time; Percent Water Saturation History; Automatic Mode System Status; Fill Cycle Time and Drain Cycle Time.
4.2.4 Manual Mode

- The Manual Mode screen allows the user to run the SVD manually.
- The Vacuum Pump switch will turn the vacuum pump on/off.
- The Discharge Pump switch will turn the discharge pump on/off.
- The Fill Valve switch will open/close the fill valve.
- All values during testing can be reset by pressing the ALL OFF button.
- If the fault light turns on during manual mode, the “check faults” button will direct the user to the corresponding screens to observe and reset the cause of the alarm.

4.2.5 Maintenance Functions | Guide

The SVD Maintenance screen allows the user to choose to view 9 sections of this manual on the touch panel (Commissioning, Technical Data, Spares, Troubleshooting Guide).

- **Safety Information:** Provides 5 pages of basic safety information and instructions the user must follow while operating the SVD.
- **Maintenance Schedule:** This section provides the user the schedule that needs to be followed to ensure correct maintenance. There are inspection and maintenance schedules in the following categories: General, Fluid Filter, Electrical, Vacuum Pump, Functional Test, and Drain Pump/Charge Pump.
- **Maintenance Procedures:** This section provides the user with step-by-step maintenance procedures to follow to ensure correct maintenance.
- **Troubleshooting:** This section of the manual provides information regarding basic problems encountered while operating the SVD. On these screens, the user can find the cause and remedy of the problem by locating the error message.
- **Commissioning:** This section of the manual provides information regarding transport and packing, set-up, connection, start up, and storage.
- **Spare Parts:** This section of the manual provides information regarding spare parts. It contains a list of basic components of the SVD with their Schroeder part number. Contact Schroeder with any part not listed or with a “per inquiry” part number.
- **Screen Maintenance:** To update screen software, adjust contrast, and calibrate the screen.
- **Technical Data:** This section of the manual provides information regarding basic technical data of the feed pump, evacuation pump, vacuum pump, heater, and the SVD unit.
- **Contact Schroeder Industries:** This screen provides all information needed to contact Schroeder for product information, technical support, or for any suggestions for improvement related to the maintenance instructions.
5. Maintenance

5.1 Visual Checks
- Check regularly if all hoses and pipes are tight.
- Check electrical installations regularly to see if cables, plugs, sensors or connections or other parts in the switch cupboard are damaged.

5.2 Filter
The suction strainer/filter has to be cleaned regularly and when the error message “check suction strainer” appears. To do this remove the suction strainer / filter from the housing and clean it with compressed air. Then put it back into the housing. The dirt from the suction strainer has to be collected and disposed of according to the local regulations as hazardous waste.

Operating the SVD without suction strainer filter can lead to damages.

5.3 Change Fluid Filter
As soon as the error message “change filter element” appears on the display the filter should be taken out of the housing and be replaced by a new one. The contaminated filter has to be disposed of according to the local regulations as hazardous waste.

5.4 MTS - Filter Housing
- Relieve the pressure in the housing by carefully opening the bleed plug on the top of the housing.
- Open the drain port, and collect the fluid (follow regulations for personal protection and environmental safety).
- When the housing is completely drained, open the housing clamp and remove the upper housing.
- Turn the locking cap 90° in a counter clockwise direction for one element package. For each additional element package turn an additional 90°.
- Remove the contaminated elements and clean the filter housing.
- Inspect the o-ring for damage, and possible replacement.
- Install new filter elements in reverse order to the removal sequence.

Warning: Install and close the last filter element with the locking cap. Without this cap installed, no filtration will take place.

- Grease and install O-ring, Re-install the upper housing and clamp. Tighten the housing clamp until the two housing halves seat against each other.
- Close the drain port.
- After re-starting the unit open the bleeding port to de-aerate the filter housing. Fill the housing completely, keeping the bleed port open until fluid escapes from it.

5.5 Others
- Once a year the fluid-filter should be completely emptied, opened and cleaned. This cleaning has to be done in a well ventilated room, so that possibly arising gases can escape.
### 6 Troubleshooting

<table>
<thead>
<tr>
<th>Fault message</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Inlet Flow</td>
<td>The system is running but there is little or no flow into the vacuum chamber.</td>
<td>Verify that the inlet to the system is not blocked. Verify that the oil being dehydrated is within the acceptable viscosity range. Verify proper operation of the chamber float switch.</td>
</tr>
<tr>
<td>No Discharge Flow</td>
<td>The system is running but there is little or no flow out of the vacuum chamber.</td>
<td>Verify that the system discharge is not blocked. Verify proper operation of the discharge pump. Verify proper operation of the chamber float switch.</td>
</tr>
<tr>
<td>Vacuum Pump Drain</td>
<td>The vacuum pump reservoir is overfilled and the discharge solenoid has activated but there is little or no flow from the reservoir.</td>
<td>Verify proper operation of the discharge solenoid. Verify that the outlet is not blocked. Verify that the end of the hose is not above the water level in the reservoir.</td>
</tr>
<tr>
<td>Replace Filter Element</td>
<td>The filter element is dirty.</td>
<td>Replace the filter element.</td>
</tr>
<tr>
<td>Drip Pan Full</td>
<td>There is oil in the drip pan.</td>
<td>Check for leaks, tighten any fittings that are loose. If there is no oil in the pan replace the float switch.</td>
</tr>
<tr>
<td>Phase, Check Wiring</td>
<td>The wiring is not correct.</td>
<td>Switch any two legs of your three phase power to reverse the phase.</td>
</tr>
<tr>
<td>Discharge Motor Overload</td>
<td>The discharge motor overload has tripped.</td>
<td>Verify wiring, checking for short circuits or damaged cables. Verify overload setting. Reset overload.</td>
</tr>
<tr>
<td>Vacuum Pump Overload</td>
<td>The vacuum pump motor overload has tripped.</td>
<td>Verify wiring, checking for short circuits or damaged cables. Verify overload setting. Reset overload.</td>
</tr>
<tr>
<td>Heater Overload</td>
<td>The heater overload has tripped.</td>
<td>Verify wiring, checking for short circuits or damaged cables. Verify overload setting. Reset overload.</td>
</tr>
<tr>
<td>Emergency Stop Activated</td>
<td>The emergency stop button has been activated.</td>
<td>Deactivate the switch. If the switch is not activated, verify wiring and replace switch.</td>
</tr>
<tr>
<td>Chamber Float Switch</td>
<td>The cable to the chamber float switch has been damaged or disconnected.</td>
<td>Verify that the cable is plugged in. Replace the cable.</td>
</tr>
<tr>
<td>Manual Mode Timer Expired</td>
<td>The system has been in manual mode for longer than 15 minutes.</td>
<td>Diagnostic mode is for troubleshooting, please refrain from using the system in manual mode for extended periods of time. Clear faults to reset the timer.</td>
</tr>
<tr>
<td>Check TWS Cable</td>
<td>The PLC is no longer receiving a valid signal from the water/temperature sensor.</td>
<td>Verify the cable is connected and not damaged. Replace cable. Replace TWS sensor.</td>
</tr>
</tbody>
</table>
### 7 Technical Data

<table>
<thead>
<tr>
<th></th>
<th>SVD 05</th>
<th>SVD 10</th>
<th>SVD 16</th>
<th>SVD 23</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Feed pump</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume current</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. pressure</td>
<td></td>
<td></td>
<td>145 psi</td>
<td></td>
</tr>
<tr>
<td>Power E-Motor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Evacuation pump</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow rate (appr.)</td>
<td>5 gpm</td>
<td>10 gpm</td>
<td>16 gpm</td>
<td>23 gpm</td>
</tr>
<tr>
<td>Max. pressure</td>
<td></td>
<td></td>
<td>72.5 psi</td>
<td></td>
</tr>
<tr>
<td>Power E-Motor</td>
<td>0.5 hp</td>
<td>1.5 hp</td>
<td>1.5 hp</td>
<td>4 hp</td>
</tr>
<tr>
<td><strong>Vacuum pump</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>See also separate operation instruction Busch</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power E-Motor</td>
<td>1.5 hp</td>
<td>1.5 hp</td>
<td>2.1 hp</td>
<td>2.1 hp</td>
</tr>
<tr>
<td><strong>Heater</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>See Type plate heater</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Unit</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical dates</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>appr. 2,095 lbs</td>
</tr>
</tbody>
</table>

### 8 Spare Parts

When ordering spare parts always indicate the following:
- **Description of Part**
- **Model number of SVD**
- **Serial No. and Year of manufacturing as indicated on the type plate of the SVD**

<table>
<thead>
<tr>
<th>Description</th>
<th>Part. No.</th>
<th>Amount SVD</th>
<th>No. in Section 2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filter element - OLF</td>
<td>MTE02, MTE10, MTE20, MTE30</td>
<td>Varies</td>
<td>8</td>
</tr>
<tr>
<td>Air Breather</td>
<td>VDP-110</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Evacuation pump</td>
<td>per inquiry</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Feed Pump</td>
<td>per inquiry</td>
<td>varies</td>
<td></td>
</tr>
<tr>
<td>Suction filter (RLT)</td>
<td>RLT9VM150S20</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>RLT Element</td>
<td>9VM150</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Vacuum pump</td>
<td>per inquiry</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Vacuum gauge</td>
<td>VDP-112</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2/2-directional valve</td>
<td>VDP-104</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Level switch</td>
<td>VDP-103</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>VacuCleaner (5 ltr.)</td>
<td>Contact Factory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil VE101 for rotary vane pump</td>
<td>Contact Factory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Busch)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service Kit for rotary vane pump</td>
<td>Contact Factory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Busch) consisting of: oil filter, exhaust filter, seals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Face spanner 3-11-60</td>
<td>Contact Factory</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
9. Inspection and Maintenance

9.1 Abbreviations and Symbols

![Symbol] This symbol denotes safety precautions, the non-observance of which can endanger persons and the environment.

![Symbol] This symbol denotes safety precautions, the non-observance of which can endanger persons by electrical voltage.

![Symbol] This symbol marks an important note for the proper use of the unit / software. The non-observance of these notes can lead to damage or failures of the unit / software.

![Symbol] This symbol is followed by user tips and particularly useful information.

Eye Protection recommended. Approved eye protection wear (Safety goggles, safety glasses) should be used when working with cleaning liquids or compressed air.

Protective gloves recommended. Approved protective gloves should be used when working with cleaning liquids or compressed air.

This symbol is followed by recommended tools.

9.2 Safety Information & Instructions

- All inspection, maintenance, repair, cleaning work have to be carried out timely and by skilled personnel. Repair work required at the system is only to be carried out if the necessary qualification and technical skill are available, otherwise specialists from the manufacturer have to be called.

- The a. m. work may only be carried out by technically skilled and qualified personnel, who gained their knowledge and competence through training and education especially for this kind of work.

- Before starting the system operating personnel are to be informed about the scheduled work, and one responsible supervisor to be determined.

- The repair area is to be protected in a wide range if necessary.

- If the system is put to a standstill for maintenance and repair measures, steps have to be taken which prevent the system from being started even though this is prohibited, e.g. by locking the main and/or control switch with personal security locks. Keys are to be stored personally.

- The fact that maintenance, repair or cleaning work is carried out has to be indicated by suitable signs which are put into position.

- When single parts or structural components are being dismantled the persons involved have to take utmost care that in doing so the repair personnel will not be in danger of being hurt by, e.g. sudden movements of valves, pumps and flaps etc. If such danger cannot be excluded, suitable safety measures have to be taken e.g. by means of supports or fixed devices.

- Single parts or structural components of the system are to be dismantled only when it is guaranteed that the people doing this job have the required qualification to carry out this job according to technical specification and safety regulations. In case of doubt, information and/or specialists from the manufacturer have to be called.

- If on changing single parts or structural components the use of lifting devices is required then it is absolutely necessary to take care that the parts to be changed are fixed securely by means of stop motion devices and that the lifting devices have the required loading capacity.

- Use only those lifting devices which are adequate and technically without any defect.

- No persons should stay below hanging weights.

- Before high-pressure cleaners or other cleaning devices are used to clean the system, cover/glue up all openings into which no cleaning agents are allowed to enter due to system safety and/or functional reasons.
Remove all covers/glued connections after cleaning.

- When working on tubes or hose pipes and fittings leading or containing liquids or vapour, take utmost care, that the pumps are switch off. The tubes or hose pipes and fittings have to be cooled down completely and be totally pressure free. In front of and behind the parts of tubes or hose pipes and fittings in question the attached closing valves have to be closed and secured against being opened by accident. The conveying means is to be drained off, if possible.

- After cleaning, check all tubes or hose pipes and fittings for leakage, examine all loosened connections, chafe marks or other damages! Repair defects which have been discovered immediately!

- Always refasten screw connections which have been loosened for maintenance and repair work.

- If it is necessary to dismantle the safety devices during maintenance, cleaning or repair, they are to be reassembled and examined immediately after completion of maintenance, cleaning and repair work.

### 10 Inspection and Maintenance Schedule

The schedule listed below is intended to be an indication of the inspections- and maintenance work, to ensure a long lifetime and faultless operation of the supplied system possible.

Specific information regarding care, maintenance and troubleshooting can be found in the specific supplier’s documents.

<table>
<thead>
<tr>
<th></th>
<th>Refer to</th>
<th>24 hours or daily</th>
<th>500 hours or monthly</th>
<th>3000 hours or 1/2 year</th>
<th>6000 hours or yearly</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check for leakage</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check hoses and pipes for leaks and snug seat</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check measuring devices</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Vacuum gauge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>• Pressure gauge fluid filter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check malfunction lamps</td>
<td>11.0</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change air filter (if not earlier required)</td>
<td>11.1</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean RLT Filter &amp; change element</td>
<td>11.2</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vacuum Pump</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rotary vane type (Busch)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check oil level</td>
<td>11.4</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil-, oil filter- and exhaust filter change</td>
<td>11.4</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspect and clean fan</td>
<td>11.4</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drain Pump / Charge pump</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspect and clean fan</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Fluid Filter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change filter element (if not earlier required)</td>
<td>11.5</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drain filter housing and clean from inside</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Electrical</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check cable grommets of damage</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Measure motor current consumption of all motors and compare with type plate</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical safety test according to DIN VDE 0702 or equivalent regional regulation</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heater (only version with integrated heater): Measure current consumption and compare with type plate</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functional Test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check reactor level switch</td>
<td>11.7</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check float switch in oil pan</td>
<td>11.8</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test all components in manual operation</td>
<td>4.2, 4</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>
11. Detailed Maintenance Guidelines

The pictures and sketches in the following guidelines are only examples. They do not represent all versions of the SVD.

11.1 Check Malfunction and Any Display Lamps

Move the main switch to position “ON”. After switching on, a lamp test is performed where all malfunction and display lamps flash once.

11.2 Change Air Filter

What you need:
Air Breather - Schroeder Part Number: VDP-110

Description:
The air filter must be changed every 6 months. However, a more frequent change is necessary if the unit is operated in a very humid / dusty environment.
- Remove filter manually
- Assemble filter manually

11.3 Clean RLT Filter and Replace the Element

What you need:
- Compressed air
- Torque wrench with a 1-5/16 in. socket

Description:
- Secure the RLT Filter by clamping the head in a vice (container upward).
- Use a torque wrench with a 1-5/16 in. socket to loosen the container from the head.
- Remove the container from the head manually.
- Remove the element from the bushing manually.
- Clean the container with compressed air and check for damages.
- Replace the element and assemble in reverse order. Make sure the container is tightened on the head to 40 ft-lbs.
11.4 Oil, Oil Filter and Exhaust Filter Change  
(Only version with rotary vane pump)

**What you need:**  
Oil VE101, Schroeder Part Number: Contact Factory (Canister 5ltr)  
Service kit (oil filter, exhaust filter, seal) Schroeder part no.: 06018123  

![Image of vacuum dehydrator]

Open-ended spanner, size 27 and 32

**Description oil- and oil filter change:**  
For the oil change, the vacuum pump must be warm. Therefore:  
- Start the pump in manual operation or run the SVD for about 10 minutes.  
- Switch off the pump/ SVD  
- Leave until vacuum pressure gauge indicates atmospheric pressure.  
- Drain the oil through the oil plug (1).  
- When oil stops running, close the plug and start up the pump again for a few seconds.  
- Reopen the oil drain plug and discharge the remaining oil.  
- Refasten the oil drain plug.  
- Remove the oil filter (3) and replace it.  
- Fill with fresh oil through the oil fill plug (2).  

Used oil and used oil filters are to be disposed of according to environmental laws.

**Description exhaust filter change:**  
Increased energy intake by the motor or oil mist escaping from the exhaust could be a sign of an earlier filter change.

- Remove the four screws holding the exhaust cover and remove cover (1)  
- Loosen the filter spring screw and remove filter spring (2)  
- Remove and replace exhaust filter element (3)  
- Replace exhaust cover seal  
- Assemble in reverse order

11.5 Change Fluid Filter Elements

11.6 MTS Filter Housing

**What you need:**  
Fluid filter elements MTE (amount and type depends upon Version)

![Image of MTS filter housing]

Allen key, size 6

- Relieve the pressure in the housing by carefully opening the bleed plug on the top of the housing.  
- Open the drain port, and collect the fluid (follow regulations for personal protection and environmental safety).  
- When the housing is completely drained, open the housing clamp and remove the upper housing.  
- Turn the locking cap 90° in a counter clockwise direction for one element package. For each additional element package turn an additional 90°.  
- Remove the contaminated elements and clean the filter housing.  
- Inspect the O-ring for damage, and possible replacement.  
- Install new filter elements in reverse order.

- Install and close the last filter element with the locking cap. Without this cap installed, no filtration will take place.

- Wet the O-ring with operating fluid and install. Re-install the upper housing and clamp.  
- Tighten the housing clamp until the two housing halves seat against each other.  
- Close the drain port.  
- After re-starting the unit open the bleeding port  
- Fill the housing completely, keeping the bleed port open until fluid escapes from it  
- After restarting the unit check for leakage
11.7 Check Reactor Level Switch
What you need:

Phillips screwdriver size PH 2 + PH 3
Open-ended spanner, size 13

Description:
- Remove the four cover plate screws.
- Remove level switch plug.
- Remove cover plate.
- Check the floats for any contamination or damage and clean if necessary.
- Check the function of the switch by checking the inlet signals of the PLC as described in the picture below. The main switch of the unit must be ON.

When moving the upper float upwards, the malfunction message “Chamber Float Switch” appears on the text display. Press button “RESET” to acknowledge the message.
- Assemble in reverse order

11.8 Check Float Switch in Oil Pan
Description:
- Lift float switch
- SVD must switch off and the malfunction message “drip pan full” appears.
- After leaving the float switch reset the message by pressing button “RESET”