Instruction manual

Negative pressure unit

Compact 25.000

Manufacturer: deconta GmbH
Im Geer 20, D - 46419 Isselburg

Description / Type-No.: Compact 25.000 / Type 524, 532
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1 Introduction

Thank you for choosing a deconta product!

With this device you obtain a practical solution with simple operation, which was completed in a compact and functional way.

The deconta products guarantee:

- Stability, Long life and aptness on site
- Mechanics with „kick“
- Pleasing design

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For more information, please see our website www.deconta.com.
2 Basic safety advices

The handling of the appliance technology is only allowed for instructed staff. The exact knowledge of the guide book is an important condition for your staff in regard to the handling of the machine.

2.1 Intended use

deconta has to engage you as the user to follow the guide book and to employ this engineered technology only in accordance with the regulations and not in an inappropriate way! In the event of non-observance, deconta assumes no liability.

2.2 Operation

In order to ensure the safety during the operation of the device, please respect, without fail, the following:

- Do not place in an explosive area
- Necessary repairs, maintenance and cleaning, in particular in the field of electrical equipment may only be realized by qualified staff
- The safety and security equipments have to be treated with care, ready for use.
- The indicated safety advices have to be kept in a readable state and have to be observed

In order to ensure safety, any changes to the machine are prohibited.

ATTENTION!
The device is not suitable for the use in a condensed, corrosive, flammable and explosive compartment air.

Express reference is made to the additional and national safety measures and directives when operating the Equipment technology.

The control of the exhaust has to be effected during the initial operation as well as at least in 3 years interval.
3 Transport

3.1 Transport

To unload a crane a Minimum load of 1,3 tons is required. The unloading place should be firm and flat. Transport damages have to be documented at once during the handing over of the carrier or another supplier. Please note the possible damages additionally on the way bill. Available as option is a specially designed chassis allowing moving the machine on level floors.

3.2 Storage

Storage in areas inaccessible to unauthorized persons only. Seal the flap on the exhaust side. Attach the transport lid at the sucking side and, if used filters are installed, seal additionally with tape.

4 Scope of delivery at purchase and rental

4.1 Scope of delivery

The delivery of the Compact 25 000, regardless of whether a device is purchased or rented, unless other arrangements have been made, contains:

- N.P.U. Compact 25.000
- Transport lid
- Complete set of filters
- 25 m measuring tube (only with SRE version)
- Instruction manual

4.2 Return shipment after renting

To protect our customers and in terms of dangerous goods transport regulations, we must insist on following return delivery conditions:

- thoroughly cleaned (ready for use)
- without residual fiber bonding
- completely as in 4.1 but without filter
- without damage
5 Technical description

5.1 Intended use

The negative pressure unit Compact 25.000 was built for the filtration of non-condensing asbestos contaminated air, in temperature range up +45 °C, with external exhaust for the air. During asbestos sanitation works within closed rooms, it must be avoided that asbestos fibres leave the sanitation area and in this way endanger humans and the environment. For these reasons, the sanitation areas (also called dirty area) have to be separated from the clean area with the help of a negative pressure unit and kept under dynamic negative pressure.

An integrated filtering system establishes the conditions that the asbestos concentration in the exhausted air does not exceed max. 1000 f/m³. The exhausted air is blown in the open air.

The device is not appropriate for the filtration of flammable gas or dust.

5.2 Unit description

NPU as Container system

- Effective air capacity 25000 m³/h
- Automatic or manual negative pressure control (Version SRE)
- Manual negative pressure control (Version SE)
- 3 filter stages consisting of HEPA filter, bag filter and pre-filter
- Filter change from the outside
- Manometer for filter control
- Lockable control cabinet
- Eye hooks
- External dimensions 2150 x 1670 x 2240 mm (L x W x H)

Options:

- Manual negative pressure control (SE-Control)
- Sound damper
- Chassis
- Installation of further filter stages (double filtration)
5.3 Control cabinet

5.4 Filter description / Classification

There is a 3 stage filtration unit integrated in this unit.

5.4.1 Prefilter:

<table>
<thead>
<tr>
<th>Filter class pursuant DIN 24185 / EN 779</th>
<th>G4 / EU4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame</td>
<td>Cardboard frame, 47 mm wide</td>
</tr>
<tr>
<td>Filter medium</td>
<td>Synthetic</td>
</tr>
<tr>
<td>Degree of separation (Am)</td>
<td>90 %</td>
</tr>
<tr>
<td>Nominal rated current</td>
<td>5400 m³/h/m²</td>
</tr>
<tr>
<td>Nominal velocity in blower stream by nominal volume</td>
<td>1,5 m/s</td>
</tr>
<tr>
<td>Difference of initial pressure</td>
<td>42 Pa</td>
</tr>
<tr>
<td>Recommended final pressure drop</td>
<td>250 Pa</td>
</tr>
<tr>
<td>Temperature / humidity</td>
<td>100 °C / 100 % RF (relative humidity)</td>
</tr>
<tr>
<td>Filter dimensions</td>
<td>610 x 610 x 47 mm</td>
</tr>
</tbody>
</table>
### 5.4.2 Bag filter:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filter class pursuant DIN EN 779</td>
<td>F5</td>
</tr>
<tr>
<td>Degree of separation (Am)</td>
<td>96 %</td>
</tr>
<tr>
<td>Nominal rated current</td>
<td>3400 m³/h</td>
</tr>
<tr>
<td>Difference of initial pressure</td>
<td>55 Pa</td>
</tr>
<tr>
<td>Recommended final pressure drop</td>
<td>250 Pa</td>
</tr>
<tr>
<td>Temperature / humidity</td>
<td>55 °C / 100 % RF</td>
</tr>
<tr>
<td>Filter area</td>
<td>2,3 m²</td>
</tr>
<tr>
<td>Filter dimensions</td>
<td>592 x 592 x 330 mm</td>
</tr>
</tbody>
</table>

### 5.4.3 Main filter:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame</td>
<td>Plastic</td>
</tr>
<tr>
<td>Filter medium</td>
<td>Glass fibre</td>
</tr>
<tr>
<td>Sealing compound</td>
<td>Polyurethan</td>
</tr>
<tr>
<td>Seal</td>
<td>Polyurethan, foamed</td>
</tr>
<tr>
<td>Filter area</td>
<td>31 m²</td>
</tr>
<tr>
<td>Filter class</td>
<td>H13 pursuant EN 1822</td>
</tr>
<tr>
<td>Degree of separation</td>
<td>&gt; 99,95 % im MPPS leak tested</td>
</tr>
<tr>
<td>Temperature / humidity</td>
<td>110 °C / 100 % RF</td>
</tr>
<tr>
<td>Filter dimensions</td>
<td>610 x 610 x 292 mm</td>
</tr>
<tr>
<td>Handle protection</td>
<td>Expanded metal gratings, both sides</td>
</tr>
</tbody>
</table>
5.5 Information for filter change

The frequency of the change of filter depends on the degree of pollution of the filter. If the sealing up of the filter increases (contamination of the filter), the air capacity decreases. For the control of the filter during the operation, the device is equipped with a manometer.

**Important: Use only authorised, faultless filter!**

- With filter in new state, approximately 650 Pascal are displayed on the gauge. (Evaluated at 100 % capacity)
- We recommend a filter change at about 1300 Pascal (indicator light filter monitoring is on)
- To determine which filter (main filter, bag filter or pre-filter) at a Manometer value of about 1300 Pascal, is dirty, do the following:
  1. Renew the pre and bag filter and switch the device on
  2. Pressure gauge value 950 - 1150 Pascal => continue to operate the device
  3. Pressure gauge value > 1150 Pascal => renew the main filter
6 Technical data

6.1 Fan guide line

![Graph showing the fan guide line with Volumenstrom in m³/h on the x-axis and Druckdifferenz in Pa on the y-axis.]

Technical data:

- Voltage: 400 V
- Frequency: 50 Hz
- Speed: 2750 U/min
- Max. air temperature: 45°C
6.2 Performance data

Air capacity with filters 25000 m³/h
Power connection 400 Volt, 50 Hz
Current consumption 30 Ampere
Motor-Power 18,5 KW

6.3 Filter system

3-stage:
- Pre-filter EU 4, 610 x 610 x 47 mm
- Bag filter F5, 592 x 592 x 360 mm
- HEPA-Filter pursuant EN 1822 Class H13, 610 x 610 x 292 mm

6.4 Connections, Dimensions, Weights

Power connection 400 Volt, 32 Ampere
CEE- connector plug 5-pin

Length x Width x Height 2150 x 1670 x 2240 mm
Total weight approx. 1220 kg

Technical changes reserved
7 Assembly system

This NPU comes ready from the factory and is intended for immediate operation. Do not operate unit, if it is visibly damaged. Please inform deconta GmbH immediately.

- Connect the container to the sanitation area
- Seal the container with the sanitation area
- Ensure that sufficient fresh air arrives in the sanitation area
- Connect earth to ground connector (see picture on page 7)
- Remove transport lid
- Fully open the exhaust air damper
8 Initial operation

8.1 Version with SRE control

SRE is a control electronic for Negative Pressure Units. The SRE-control measures permanently via a measuring tube the actual negative pressure in the sanitation area and controls according to its specifications the Negative Pressure Unit automatically. The requested negative pressure can be maintained constantly.

Control panel:

- Measured negative pressure
- LED Filter change
- Set point in Automatic operation
- Fan capacity in %
- Operating mode (AUTO or MANU)
Starting position:

- Connect to power
- Chose a measuring point in the dirty area and connect the PE-tube 8 x 1 to the negative pressure connection
- Chose the measuring point in the clean area (adjoining room) and connect the PE-tube 8 x 1 to the connection atmosphere

The unit is now ready for use.

- Power switch to „ON“
- Press key “ON/OFF” IMPORTANT: Press and hold the key for about 3 seconds
- The last saved mode (AUTO / MANU)is automatically set and the fan starts

Automatic operation

In automatic operation the set value for the negative pressure in Pascal is entered with the buttons „+“ and „-“ (display set value in automatic operation). By comparing the entered set value with the permanently measured actual value (measured negative pressure) the speed of the fan is automatically adjusted, i.e. the fan moves automatically “up” or “down”.

Manual operation:

In manual operation the fan capacity is set with the buttons „+“ and „-“. The performance in % and the measured negative pressure are shown in the display. In manual operation the machine does not adjust automatically!

In case of power failure the control saves the date set last, starts after recovery automatically and re-establishes the saved data.
Switching off

Press “ON/OFF” IMPORTANT: Keep the button pressed for about 3sec.
The unit down-regulates automatically. Switch off the main switch after approx. 40sec.

8.2 Version with SE control

The negative pressure unit is as standard supplied with a manual infinitely variable control. The desired negative pressure is set via the manual power control and/or via the air supply in the contaminated work are.

- Connect to power supply
- Switch on main switch
- Turn controller

In case of power failure the negative pressure unit starts automatically after recovery.
9 Maintenance and care

9.1 Maintenance

The ventilator plants (deduster, industrial vacuum cleaners and devices for the de-aeration or keeping under negative pressure) have to be overhauled or controlled once a year at least or if necessary by an expert. The Test result must be produced on request.

9.2 Filter control

- During the operation the filter state has to be controlled as described under 5.5

9.3 Filter change

Attention:
- Contaminated filters have to be changed under all corresponding safety measures (see TRGS 519)
- Filter change only when unit is switched off.
- Use approved filters only
- Do not use bonding agents on the machine

Change of Prefilter:

- Gently remove and discard the filter
- Insert the new filter

Change of Bag filter:

- Open pressure spring
- Remove the bag filter
- Insert the new filter
  - the bags should be vertical
- Lock pressure spring again
Change of Main filter:

- Remove Pre- and Bag filter
- Unscrew fixing screws of Prefilter and Bag filter frame. Remove whole frame.

- Loosen nuts of clamping bar and remove clamping bars.

- Remove Main filter and discard
- Check and clean the sealing surfaces on the unit
- Insert the new HEPA filter
- Reattach clamping bar
- Attach Pre-and bag filter frame and insert filter.

Important:
Main filters must be handled with care. Damages can neutralise the effectiveness of the filtration.
Hoses and filters are contaminated at first use. Repairs and maintenance work may only be carried out under compliance with the strictest safety measures.
10 Double filtration

To install a second main filter level (double filtration), proceed as follows:

- Remove Pre- and Bag filter
- Unscrew clamping bolts of Pre- and Bag filter frame and remove whole frame

- Loosen nuts and remove clamping bar
- Remove screws of clamping device

- Attach extensions to the Clamping device and bolt together (the extensions are at the side walls)
• Insert two main filters one behind the other

• Fasten clamping bar
• Fix Pre-and Bag filter frame and insert filters
11 Circuit diagram

11.1 Version SRE Type 524
11.2 Version SE Type 532
12 Sound level measuring

Status:
Engine power 100%, free discharge, outside
# 13 Declaration of conformity

## EU-Declaration of conformity

<table>
<thead>
<tr>
<th>deconta GmbH</th>
<th>Im Geer 20</th>
<th>D-46419 Isselburg</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product:</strong></td>
<td>Negative pressure unit</td>
<td><strong>Type:</strong> 524, 532</td>
</tr>
<tr>
<td><strong>The design of the unit complies with the following directives:</strong></td>
<td>EU- Machine directive 2006/42/EG</td>
<td>EU- Low-voltage directive 2006/95/EG</td>
</tr>
<tr>
<td><strong>Applied harmonised standards:</strong></td>
<td>EN 60335-2-69</td>
<td></td>
</tr>
<tr>
<td><strong>Applied national standards:</strong></td>
<td>DIN VDE 0701, DIN VDE 0702</td>
<td></td>
</tr>
</tbody>
</table>

W. Weßling
Isselburg, 06.11.2013