

# FlensTech

## Manual

### SpinTEC30 System Suction Hood

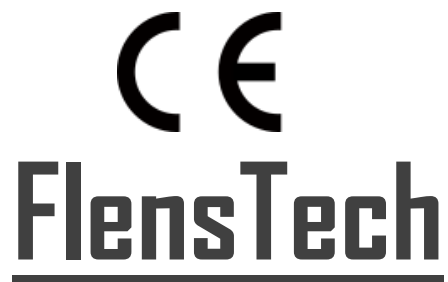
F832472



This manual describes the use of the system suction hood. Please read this manual before installation. If you have any questions, please contact FlensTech:

[info@flenstech.de](mailto:info@flenstech.de)

Version: 1.0  
September 2024



### **EU Declaration of Conformity**

We hereby declare that the product described below is designed and manufactured in compliance with the essential safety and health requirements derived from the EU Machinery Directive 2006/42/EC..

**Manufacturer:**

FlensTech GmbH  
Gewerbepark 3  
D-24983 Handewitt  
Tel.: +49(0)175-3751 062

**Applied harmonized standards:**

ISO 12100:2011-03 (Risk evaluation and risk reduction)  
VDI 2262-4:2006-03 (Detection of airborne substances)

**Details of the responsible person:**

Name: Hans Christian Madsen  
Position: Managing Director

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Place, Date

Signature

## Overview

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## 1 Discription

### 1.1 Purpose

The FlensTech system suction hood is designed for the localized capture of ozone and nitrogen oxides at the point of origin. It serves as an auxiliary device for the extraction of hazardous gases and must always be operated with a properly designed extraction unit.

The system hood is not approved for gases or vapors other than those mentioned above, as well as normal room air. Special attention should be given to environments containing solvents.

### 1.2 Technical data

|  |  |
|--|--|
| <p><b>Materials</b></p> <p>Brackets and supports: Aluminum<br/>Screws: Steel, galvanized<br/>Hood and spacers: ABS/PC, flame-retardant according to UL94 V-0<br/>Connector: PA6<br/>Hose clamps: Stainless steel, rubber</p> | <p><b>Standard-1</b></p> <p>h x w x d: 480 x 140 x 200mm<br/>Weight: 1.5kg</p> <p>Connection<br/>DN100</p> |
| <p><b>Application</b></p> <p>For a Tantec SpinTEC30 nozzle</p>   |  |

### 1.3 Technical description of the environment

|   |  |
|---|--|
| <p><b>Operating environment</b></p> <p>Temperature: +10 bis +40 °C<br/>Relative humidity, relativ: max. 70%, non-condensing</p> | <p>No elevated concentrations of solvents, paints, adhesives, or dust.<br/>Do not expose to direct UV light.</p> |
|---|--|

### 1.4 General information

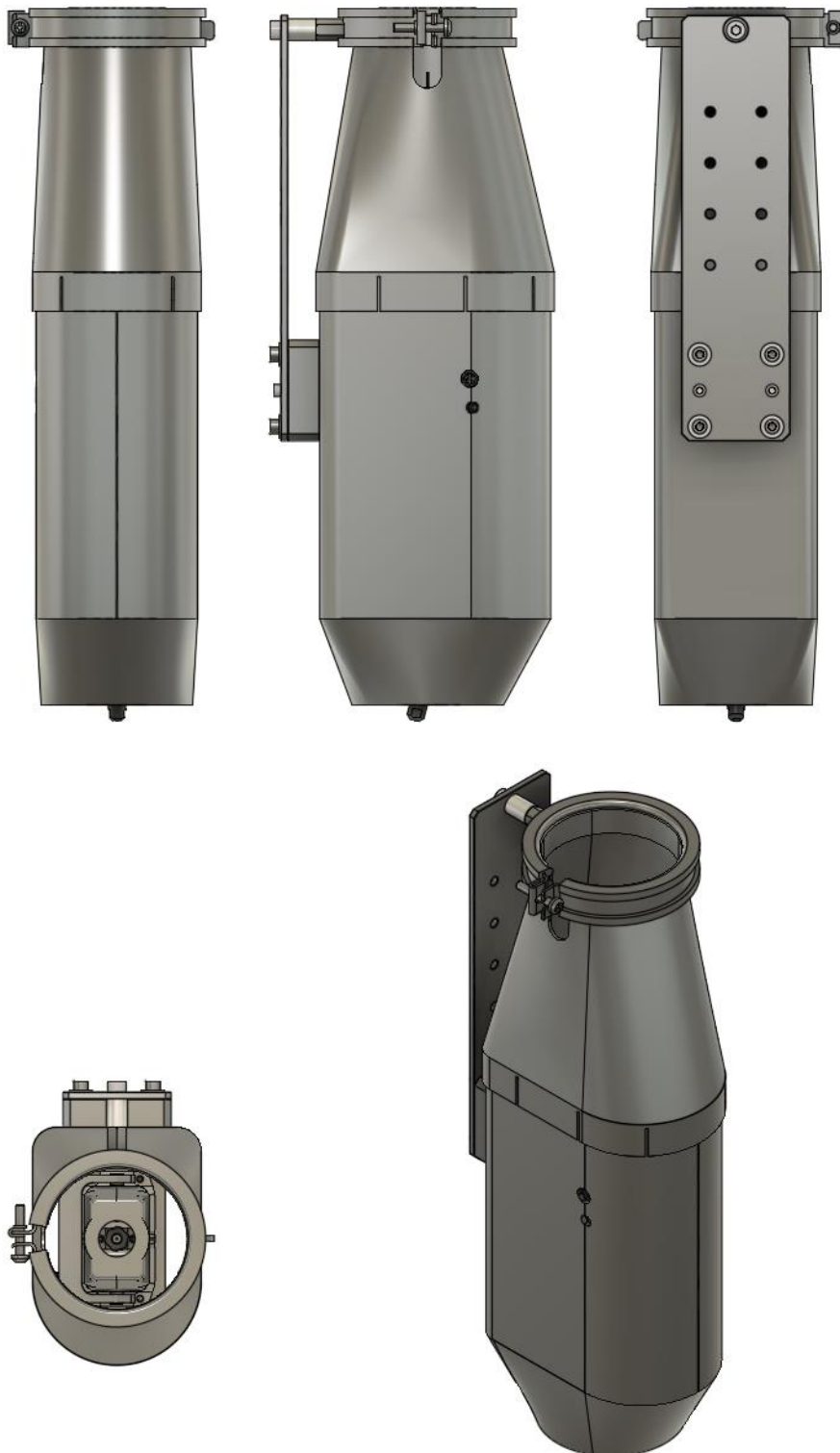
The information in this datasheet is based on our current knowledge and the versions of the components at the time of publication. We reserve the right to make changes to the components or the datasheet. For the most up-to-date versions, please contact us.

The system hood is intended as an auxiliary tool. FlensTech assumes no responsibility for ensuring compliance with applicable maximum workplace concentration limits. The buyer is responsible for the correct installation and use of the system. Please regularly inspect the effectiveness of the entire extraction system. Additionally, be sure to comply with applicable regulations and limits for your specific working environment. The same applies to the protection of other machine components, such as preventing corrosion due to ozone exposure.

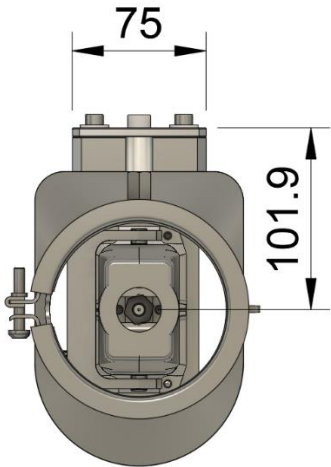
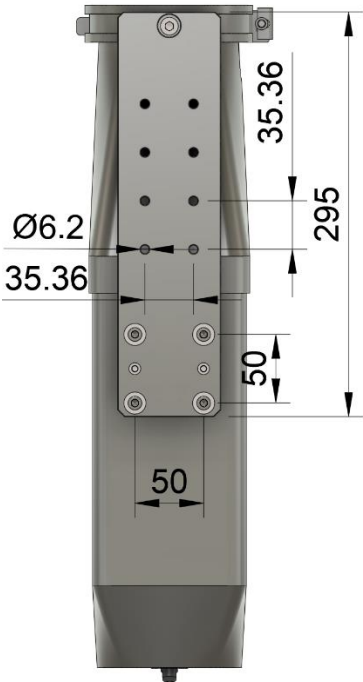
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## 1.5 Illustration

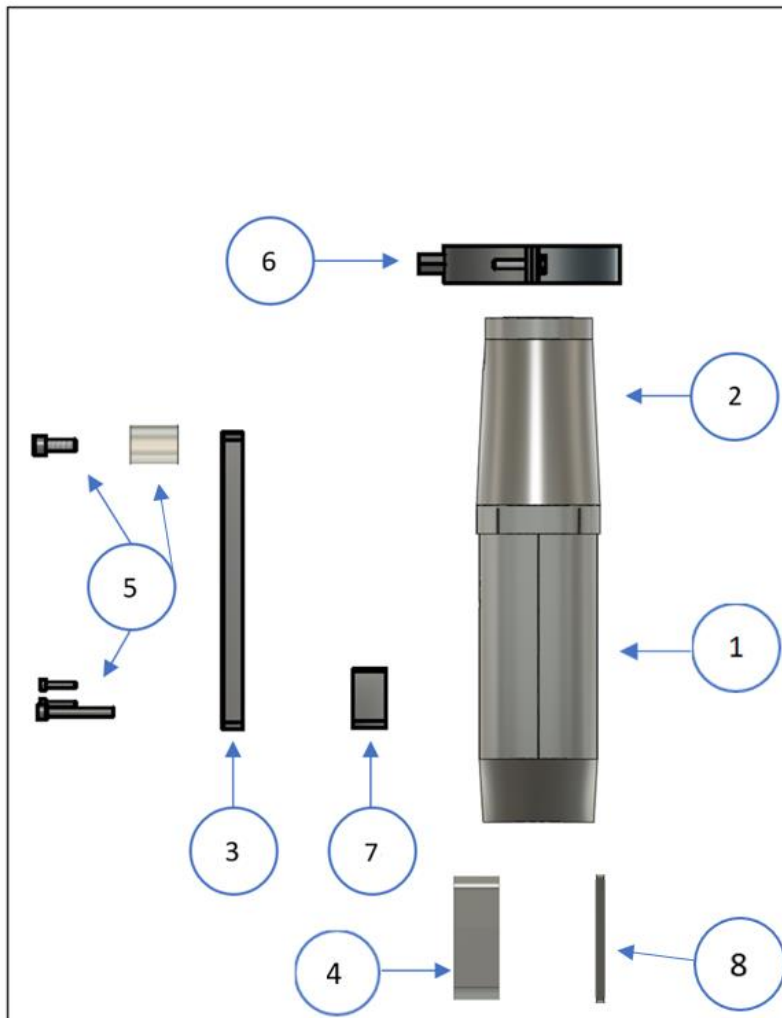
### 1.5.1 SpinTEC30



### 1.5.2 Technical drawings













## 1.6 Scope of delivery



| Pos | Discription                  | Art.-Nr. |
|-----|------------------------------|----------|
| 1   | Hood ABS                     | F830503  |
| 2   | Connector nylon              | F832373  |
| 3   | Support plate                | F832475  |
| 4   | Intermediate holder          | F832476  |
| 5   | Screw set                    | F832477  |
| 6   | Pipe clamp DN100             | 903790   |
| 7   | Spacer                       | F832474  |
| 8   | Standard sheet plate type 30 | F831475  |

## 2 Safety precautions

|  |   |
|--|---|
| <p>If work on the system hood is required, it must be ensured that the suction system cannot be inadvertently activated. Otherwise, there is a risk that the resulting vacuum may suck in objects or body parts, potentially causing injury immediately or during detachment.</p>  |    |
| <p>The tip of a plasma nozzle can become as hot as 300°C. It is essential to follow the manufacturer's instructions for the plasma nozzle.</p>   |    |
| <p>The System hood serves as an auxiliary tool for capturing ozone and nitrogen oxides. Before use, it must be ensured that:</p> <ol style="list-style-type: none"> <li>1. All components have been correctly assembled and are intact,</li> <li>2. The adapter has been selected according to the number of nozzles used, or unused openings are sealed with appropriate plugs,</li> <li>3. The connected extraction unit is suitable and operational.</li> </ol> |    |
| <p>To ensure that the plasma source is only active when the extraction system is operating with sufficient capacity, we recommend continuous pressure or current monitoring in the extraction line. The measuring point should be placed as close to the hood as possible.</p>   |   |
| <p>In order to remove the toxic gases from the duct, the extraction system should continue to operate for an appropriate amount of time after the ozone and/or nitrogen oxide source has been switched off. The duration depends on the length of the ducts and the flow velocities inside. For work on the hood, the extraction should run for at least several seconds.</p>  |  |
| <p>In the event of a fire, harmful gases may be released from the hood (ABS/PC) and the connector (PA6).</p>   |  |
| <p>When handling loose substrates (e.g., cardboard or sleeves), excessive suction power may cause the substrate to be drawn in. Due to the lack of movement, the substrate could burn or catch fire.</p>   |  |
| <p>When working with loose, electrically conductive substrates (such as cardboard or sleeves), excessive suction power can draw the substrate in, potentially causing electrical potential to transfer from the plasma nozzle to the substrate.</p>  |  |
| <p>To ensure the proper functioning of the entire system, we recommend measuring the (residual) emissions under real production conditions. Such a control measurement is also recommended after any changes to the system.</p>  |  |
| <p>Please observe the applicable national limits for hazardous substances:<br/>Ozone (O<sub>3</sub>) CAS 10028-15-6<br/>Nitrogen oxide (NO<sub>x</sub>) CAS 10102-43-9</p>   |  |



## 3 Initial commissioning

### 3.1 Positioning

The plasma flame emits hazardous substances in the opposite direction to the suction flow. Due to the high exit velocity, capturing these substances can only be achieved by slowing down the gases. This means the flame should only be ignited when it comes into contact with a substrate. It is also important to ensure that the flame is aligned perpendicular to the surface of the substrate.

The optimal position of the plasma nozzle is achieved when the nozzle tip and hood's intake opening are aligned on the same plane.

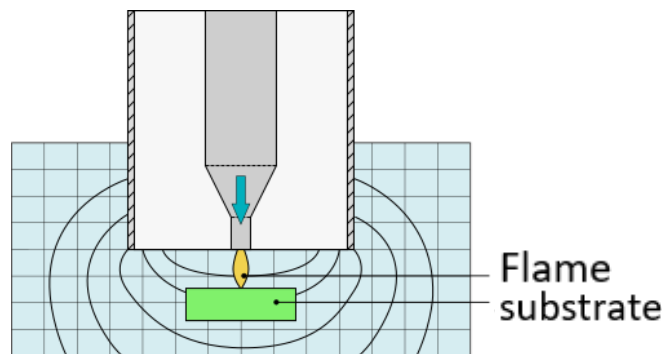


Figure 1: Plasma nozzle and substrate position in the suction field

In particular, for robot-controlled applications, care must be taken to ensure that the plasma flame is not activated during travel paths. For discontinuous treatments, such as individual parts on a conveyor belt, the plasma flame should also only be switched on when it comes into contact with a component surface.

The reason for this is that a so-called suction field forms around the air intake area. In this field, the surrounding air is drawn in depending on the suction flow. The following figure illustrates such a suction field. The capture speed towards the intake opening decreases rapidly with increasing distance.

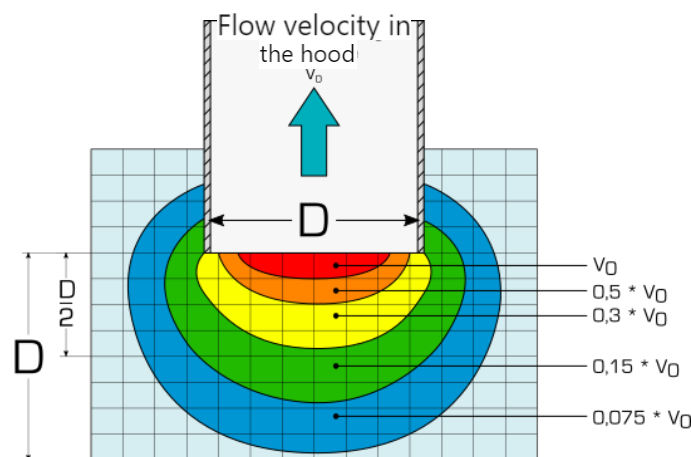
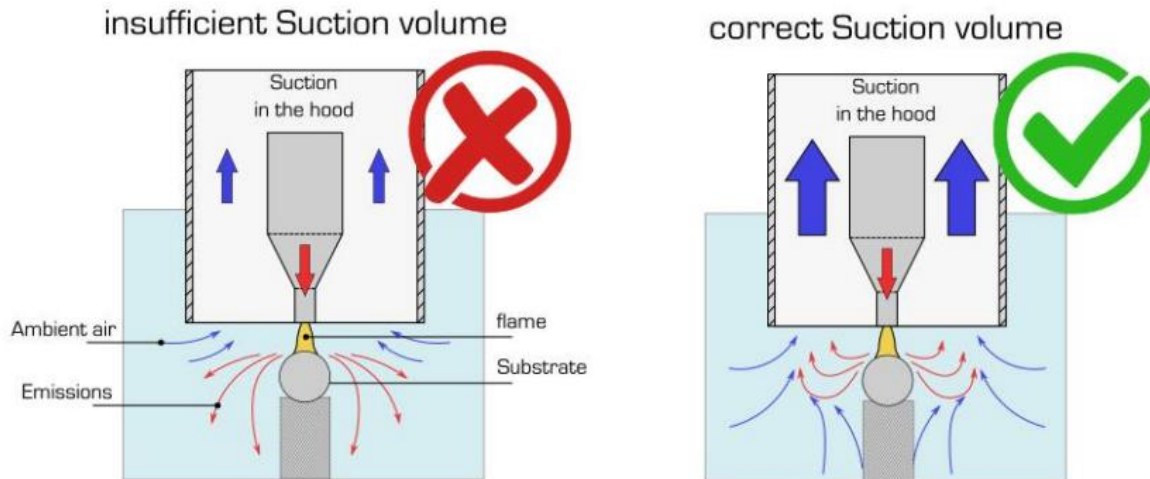


Figure 2 Suction field at the hood depending on the flow velocity and Intake diameter (based on DGUV Regel 109-002, S.15).

## 3.2 Verification of correct operation

To verify correct operation, a test run should be conducted under real production conditions after the installation of the entire extraction system. Emissions of ozone and nitrogen oxides at the facility should be measured with an appropriate device. Alternatively, airflow can be checked using a smoke generator. The test should also be performed after any changes to operating parameters and at regular intervals as a control measurement.



## 3.3 Monitoring

To ensure continuous and flawless operation, we recommend constant monitoring of the extraction performance, for example, through differential pressure measurement at the hood. Reference values for the differential pressure measurement can be found in the technical specifications.

If the set threshold values are exceeded or fallen below, the plasma nozzle should not be activated, or it should be turned off.

To set the lower pressure point, proceed as follows:

1. Set the suction power to a high level, set up measuring devices for ozone and nitrogen oxides, and start the plasma treatment.
2. Slowly reduce the suction power.  
If an increase in the concentration of any of the gases is detected, slightly increase the suction power again until the concentration returns to ambient levels.  
→ **This is the lower pressure point.**
3. Turn off the plasma treatment and wait for the nozzle to cool down.
4. Partially block the nozzle inlet by about 2/3, for example, using a sturdy piece of cardboard or metal.  
→ **Upper pressure point: Indicates a blocked hood inlet.**

Additionally, regular monitoring of pollutant levels at the site must be carried out.

## **3.4 Shutdown**

After turning off the plasma nozzle, we recommend keeping the extraction system running for several more minutes. This ensures that airborne gases remain within the duct and do not pose a potential hazard to other machines, machine components, or personnel.

## 4 Maintenance

### 4.1 Regular inspections

The components must be inspected and, if necessary, replaced according to the following maintenance intervals.

| What?  | Where?     | How?              | Interval |
|--|------------|-------------------|----------|
| Hood undamaged and clean                               | Hood       | Visual inspection | daily    |
| Adapter undamaged and clean                            | Connection | Visual inspection | daily    |
| Cables and connections undamaged and securely fastened | Cables     | Visual inspection | weekly   |

### 4.2 Wear parts

The standard connection is subject to particular stress. Due to ozone exposure, this component is further weakened and must be regularly checked for wear and breakage. If any damage is found, the part must be replaced.

### 4.3 Cleaning

During cleaning, maintenance, and repair work, it must be ensured that the production process cannot start.

During these tasks, it is essential to ensure that only the responsible technician can turn the extraction system on or off.

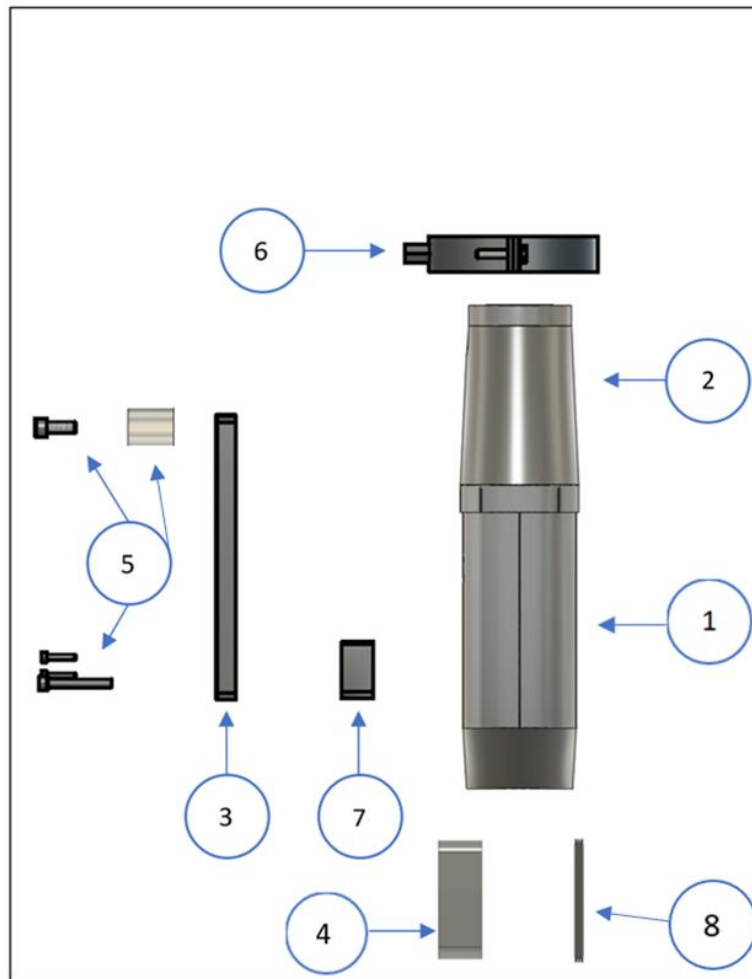
Only cleaning solutions approved for use should be utilized. This specifically includes cleaning and solvent agents intended for use on plastic surfaces.

The appropriate cleaning agents are listed under the "Spare Parts" section of the operating manual.

For cleaning, a soft cloth should be moistened with the cleaning agent and used to wipe the surfaces. Cleaning agents should not be applied directly to plastic surfaces.

## 5 Spare parts and accessories

### Parts diagram



### Version SpinTEC30

| Pos | Bezeichnung                  | Art.-Nr.  |
|-----|------------------------------|-----------|
| 1   | Hood ABS                     | F830503   |
| 2   | Connector Nylon              | F832473   |
| 3   | Mounting plate               | F832475   |
| 4   | Intermediate bracket         | F832476   |
| 5   | Skrew kit                    | F832477   |
| 6   | Pipe clamp DN100             | 903790274 |
| 7   | Spacer                       | F832474   |
| 8   | Standard sheet plate type 30 | F831475   |

### Accessories

| Pos | Bezeichnung                 | Art.-Nr. |
|-----|-----------------------------|----------|
| 1   | UniClean Cleaning solution  | F-223467 |
| 2   | Hose clamp up to DN100      | F-830406 |
| 3   | Hose, DN100, PVC, per Meter | F-830409 |
| 4   | Hose, DN90, PVC, per Meter  | F-830410 |
| 5   | Hose, DN63, PVC, per Meter  | F-830411 |

## 6 Change log

| Versionsnr. | Changes from the previous version   |
|-------------|-------------------------------------|
| 1.00        | Initial version with no predecessor |