

## User Manual and Spare Parts List

Version 10/17

# DSG 160/100

(Article no. 100-01)



### Manufacturer:

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## User Manual for Ahlmer Dosing Device DSG 160/100

The DSG 160/100 is a robust, efficient device for spreading silage additives based on lactic acid bacteria / liquids.

**The device is not suitable for use  
with corrosive preservatives.**

Delivered fully assembled including a 100-litre tank, the device must be connected to the harvester's 12V power outlet.

Furthermore, it is required to create connections between the pump outlet and the nozzle. The parts required for this purpose are included in the scope of supply.

Scope of supply:

- 100-litre PVC tank with a large dome cover
- Holder
- *Shurflo* pump with a capacity of 160 l/h
- V2A housing for transportation
- Flow indicator
- 1 set of nozzles including fasteners
- Hoses with hose clamps
- Filter unit
- Terminal box, cable, pickup switch (signal breaker)
- Electric speed controller for flow control

**Approximate dimensions:** W x H x D: 80 cm x 75 cm x 50 cm

**The device has been designed exclusively for use with additives containing lactic acid bacteria! The system must be rinsed with water every day after use!**

We assume no liability whatsoever for any damages caused by improper handling or the use of any preparations or acids other than the ones mentioned above.

## **Installation Instructions:**

The dosing device must be mounted onto the respective harvester using the supplied mounting console. Be sure to install it in a vertical position.

A hose must be installed between the flow indicator and the nozzles.

## **Power Supply:**

Connect the power cord to the harvester's battery or 12V power outlet.

|             |                    |
|-------------|--------------------|
| Blue cable  | + (voltage supply) |
| Brown cable | - (ground)         |

Connect the supplied pull switch to the (3-metre long) cable designated for this purpose. Connect the pull switch to the harvester's pickup. If there is a pickup signal, it must be connected to the blue cable (in this case, the brown cable remains free).

The power supply is switched on and off using the switch located on the electric speed controller or, during operation, the pickup switch. The device's switch box is equipped with a 5-ampere fuse.

To protect the pump against damages, it has been equipped with a pressure switch (black housing). If the pressure in the pressure line rises above 20 PSI, the pump switches off automatically. Excessive pressure may also build up when using nozzles with too small a diameter. Once the pressure has dropped, the pump will switch on again.

## **How to Attach the Nozzles:**

A set of nozzles is included in the pump's standard scope of supply.

Using the matching nozzle holder, the nozzles can be easily attached to the desired spot on the harvester.

The nozzles in the feed section of the harvester must be attached so as to ensure that the shredded material is fully wetted.

When attaching the nozzles, make sure they do not come into contact with the harvested material or with the machine's feeder components.

Once the nozzles have been attached, secure all hose connections with tubing elements in order to prevent leakage.

**In order to check the flow rate setting before use, we recommend that you measure the pump volume in litres.**

This is done by placing the nozzles into a bucket and letting the pump run with the silage additive. Leave the pump running for one minute. Determine the exact quantity with a litre gauge and compare it with the pump setting. Adjust the setting if necessary.

The flow rate can be adjusted via the electronic speed controller.

Depending on the setting, the floater inside the flow metre will rise or sink. The flow indicator specifies the flow rate in litres per hour.

## **Functional Description:**

Once you have switched on the pump via the switch located on the electronic speed controller and actuated the pickup switch, the pump starts running.

Before using the pump for the first time, we recommend that you fill it with water in order to guarantee its smooth functioning.

This is only required when the pump is put into operation for the first time.

The floater inside the flow metre starts to float in the substance to be conveyed, indicating the quantity processed in litres per hour.

Depending on the concentration of the solution, different settings might be required due to the solutions' different viscosities. The required settings must be determined by measuring the pump volume in litres.

## **Caution!**

**The device has been designed exclusively for use with additives containing lactic acid bacteria.**

**After each use or before longer periods of disuse, the device must be rinsed with water.**

**In order to protect the device against frost, it must be completely emptied or filled with antifreeze.**

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**We assume no liability whatsoever for any damages resulting from non-compliance with these instructions!**

## Troubleshooting Checklist

| <b>Fault</b>                               | <b>Cause</b>  | <b>Remedy</b>  |
|--|---|--|
| The pump does not suck up the additive     | <ul style="list-style-type: none"> <li>• Clogged suction line or filter</li> <li>• The inside of the pump housing is soiled</li> <li>• Too much air in the lines</li> </ul>   | <ul style="list-style-type: none"> <li>• Clean the suction line and the valve</li> <li>• Clean the filter</li> <li>• Clean the pump housing</li> </ul>                                     |
| The pump conveys a lot of air              | <ul style="list-style-type: none"> <li>• The tank is empty</li> <li>• The suction line is leaking</li> </ul>  | <ul style="list-style-type: none"> <li>• Fill or replace the tank</li> <li>• Seal the suction line by retightening the hose straps and wrapping sealing tape around the threads</li> </ul> |
| The motor does not start                   | <ul style="list-style-type: none"> <li>• The system is switched off</li> <li>• Loose cable connection</li> <li>• Defective motor</li> <li>• The remote switch is defective and/or the magnet is too far away</li> <li>• Blown fuse</li> </ul> | <ul style="list-style-type: none"> <li>• Switch on the system</li> <li>• Check the cable</li> <li>• Replace the motor</li> <li>• Replace the switch</li> <li>• Replace the fuse</li> </ul> |
| The pressure and the flow rate are too low | <ul style="list-style-type: none"> <li>• Leaky pump or lines</li> <li>• Clogged suction and/or pressure line</li> </ul>   | <ul style="list-style-type: none"> <li>• Seal the pump or the lines</li> <li>• Clean the lines</li> </ul>  |
| The pump switches off                      | <ul style="list-style-type: none"> <li>• The pressure switch has been triggered</li> <li>• In case of large flow rates: the nozzle diameter is too small</li> </ul>   | <ul style="list-style-type: none"> <li>• Install larger nozzles</li> </ul>   |

## Mixing Ratios

| Dosage<br>l/t | Amount of<br>water per<br>container<br>l | Container per<br>200 l (water)<br>units | Additive<br>200 l for ....<br>t |
|---------------|--|---|---------------------------------|
| 0.5           | 25                                       | 8                                       | 400                             |
| 1.0           | 50                                       | 4                                       | 200                             |
| 2.0           | 100                                      | 2                                       | 100                             |

## Throughput capacities for harvesters in operation (without waiting times)\*

| Process<br>Flow Rate (l/h)              | Power<br>Requirements<br>(HP) | Through-<br>put<br>(t/h) | Liquid Dosing |            |            |
|---|-------------------------------|--------------------------|---------------|------------|------------|
|   |                               |                          | 0.5 l / to    | 1.0 l / to | 2.0 l / to |
| <u>Short cut feeder wagons</u>          | 60 – 70                       | 20                       | 10.0          | 20         | 40         |
| 120 – 150 mm, 55 % DM                   | 70 – 100                      | 35                       | 17.5          | 35         | 70         |
| <u>Exact field choppers</u>             |                               |                          |               |            |            |
| <u>Grass, 20 – 30 mm, 35 % DM</u>       |                               |                          |               |            |            |
| Trailed                                 | 70 – 100                      | 20                       | 10.0          | 20         | 40         |
| Trailed/built-on                        | 120 – 150                     | 35                       | 17.5          | 35         | 70         |
| Self-propelled unit                     | 180 – 250                     | 50                       | 25.0          | 50         | 100        |
| <u>Silage maize, 8 mm, 28 – 30 % DM</u> |                               |                          |               |            |            |
| Built-on, single-row                    | 60 – 80                       | 25                       | 12.5          | 25         | 50         |
| Built-on, single-row                    | 70 – 100                      | 35                       | 17.5          | 35         | 70         |
| Trailed, double-row*                    | 110 – 140                     | 60                       | 30.0          | 60         | 120        |
| Front-mounted 3-row choppers            | 100 – 200                     | 75                       | 37.5          | 75         | 150        |
| 2-/3-row self-propelled units           | 150 – 230                     | 80                       | 40.0          | 80         | 160        |
| 3-/4-row self-propelled units           | 200 – 300                     | 120                      | 60.0          | 120        | 240        |
| 6-row self-propelled units              | 300 – 400                     | 150                      | 75.0          | 150        | 300        |

\* Choppers with interchangeable corn cutter/grass collector  
 \* Source: Landwirtschaftskammer Hannover (Chamber of Agriculture for Hanover), Referat Landtechnik (Agricultural Engineering Department)

## Selection of the Nozzle Size

The standard equipment of the **LACTO-SPRAYER JUNIOR** includes 14 nozzles (two each in green, yellow, blue, red, brown, grey and white).

Example:

Nozzles to be selected for 110 l/h:

1 x yellow + 1 x red

**Table: nozzle throughput in litres per hour with different pressures**

| <b>XR-Teejet</b> | <b>FROM</b> |       | <b>TO</b> |
|------------------|-------------|-------|-----------|
| <b>Green</b>     | 25.2        | 28.8  | 35.4      |
| <b>Yellow</b>    | 33.0        | 37.8  | 46.8      |
| <b>Blue</b>      | 49.2        | 57.0  | 70.2      |
| <b>Red</b>       | 65.4        | 75.6  | 93.0      |
| <b>Brown</b>     | 81.6        | 94.2  | 116.4     |
| <b>Grey</b>      | 97.8        | 112.8 | 139.2     |
| <b>White</b>     | 130.2       | 150.0 | 184.8     |

As indicated on the technical data sheet. The ACTUAL throughput may vary.

Note regarding the dosing of non-corrosive acids:

**!!! The value indicated by the flow metre is not correct here !!!**

How to proceed:

- 1.** Preselect the nozzle according to the table (the dosing line is approx. 20-30% shorter!).



## Spare Parts List (DSG 160/100):

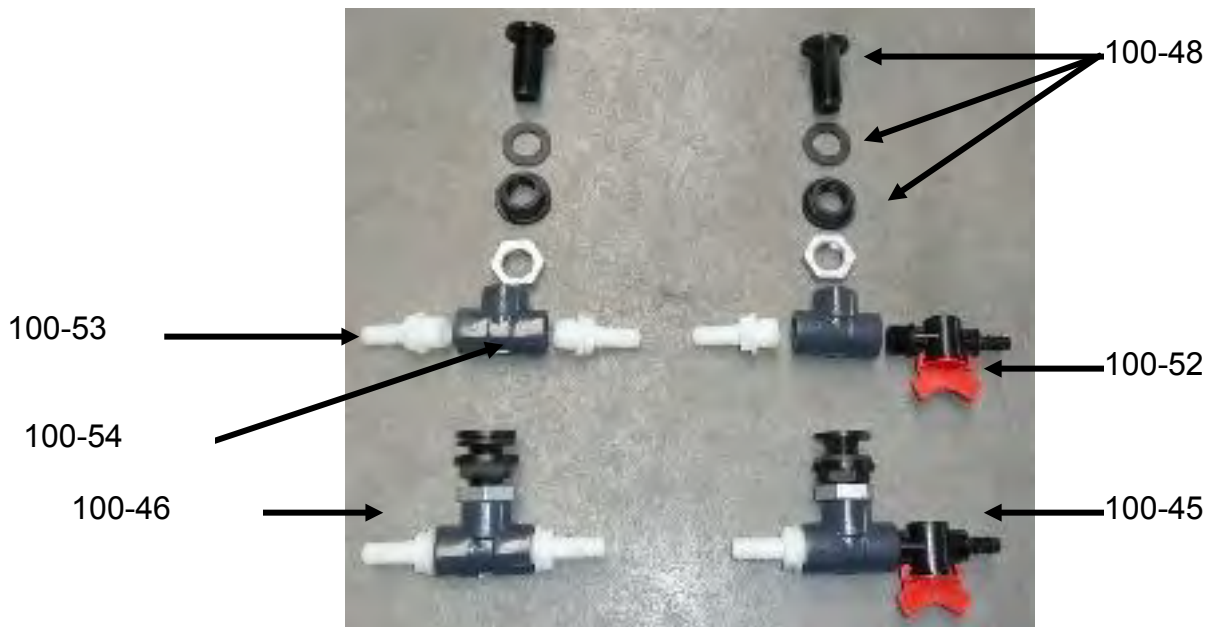


|                           |                            |
|---------------------------|----------------------------|
| Article no. <b>100-00</b> | DSG 160 E                  |
| Article no. <b>100-39</b> | Housing for transportation |
| Article no. <b>100-40</b> | Dome lid, with ventilation |
| Article no. <b>100-41</b> | 100-litre PVC tank         |
| Article no. <b>100-43</b> | Lashing strap              |
| Article no. <b>100-44</b> | Lateral tank cap           |

The pump unit can be installed on the left-hand side as well as on the right-hand side:



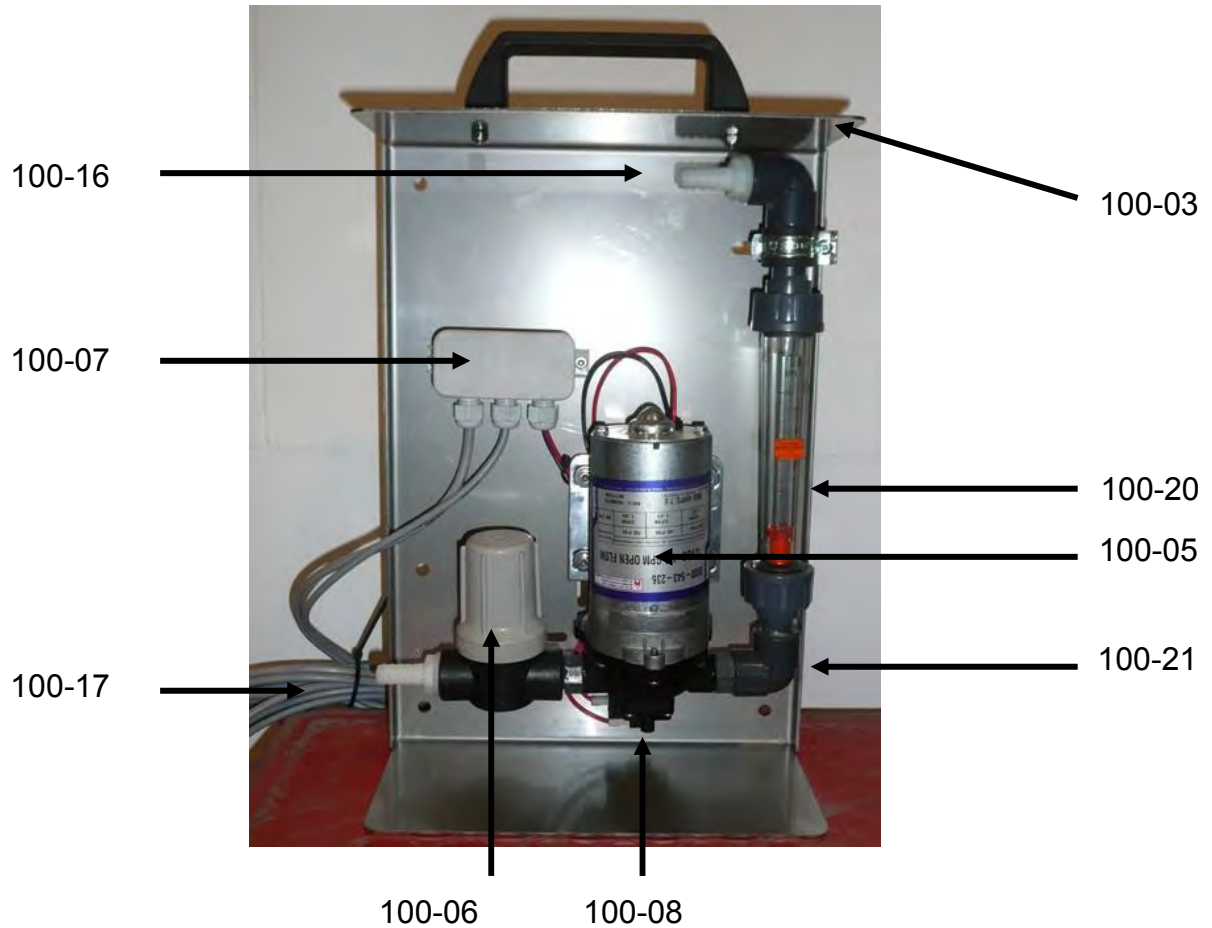
## Tank Feedthroughs



- |                           |   |
|---------------------------|---|
| Article no. <b>100-45</b> | Tank feedthrough with drain tap                     |
| Article no. <b>100-46</b> | Tank feedthrough on the pump side                   |
| Article no. <b>100-47</b> | Transparent hose                                    |
| Article no. <b>100-48</b> | 1/2" tank feedthrough incl. seal ring and union nut |
| Article no. <b>100-52</b> | Drain tap   |
| Article no. <b>100-53</b> | 1/2" hose nipple                                    |
| Article no. <b>100-54</b> | 1/2" T-piece  |

## DSG 160 E (Article No. 100-00)

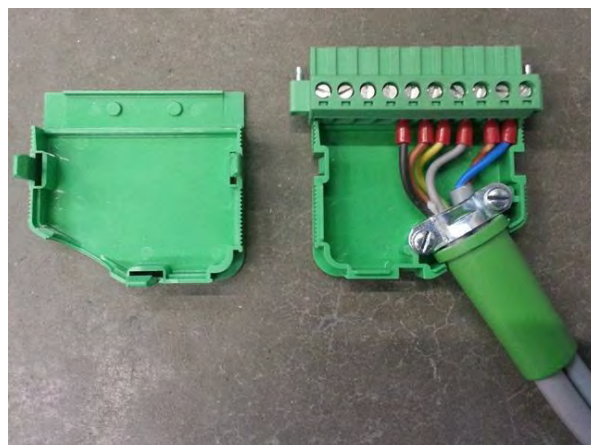
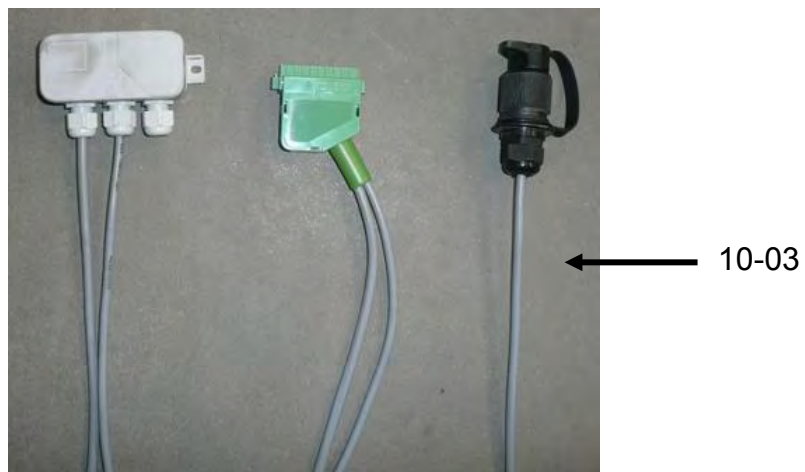
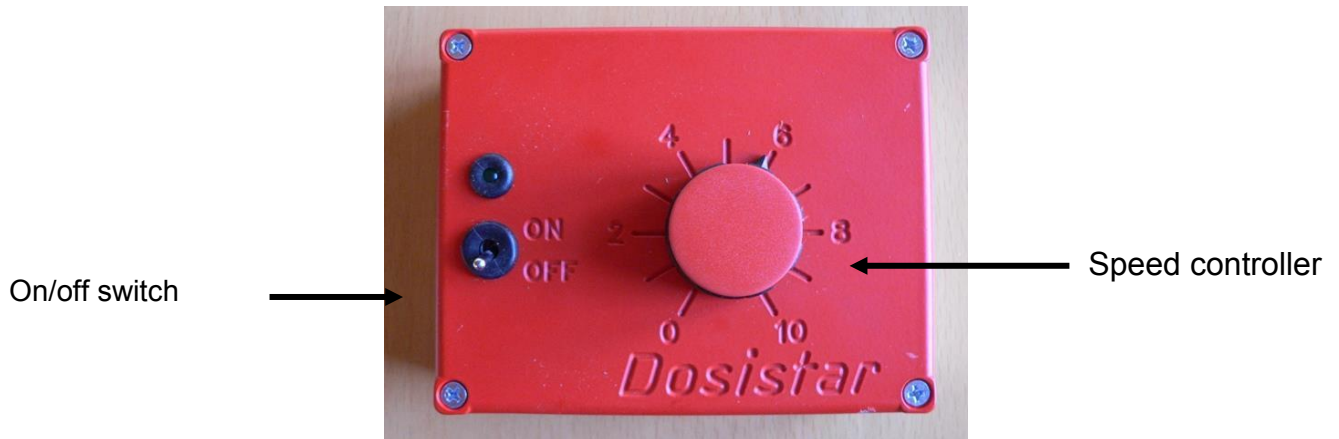
Console, pump, filter, flow metre



|                           |                           |
|---------------------------|---------------------------|
| Article no. <b>100-03</b> | Mounting console          |
| Article no. <b>100-05</b> | Pump                      |
| Article no. <b>100-06</b> | Suction filter - complete |
| Article no. <b>100-07</b> | Terminal box              |
| Article no. <b>100-08</b> | Pressure switch           |
| Article no. <b>100-16</b> | Upper hose connection     |
| Article no. <b>100-17</b> | Cable set                 |
| Article no. <b>100-20</b> | Gauge glass with floater  |
| Article no. <b>100-21</b> | Lower connection          |

**DSG 160 E**  
**(also for corrosive acids)**

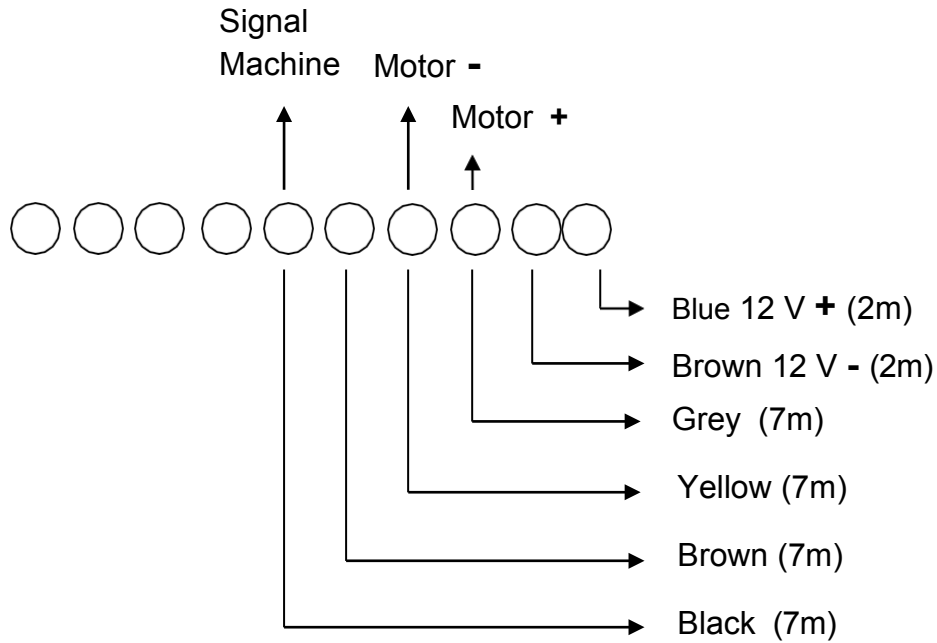
Electronic speed controller (*Dosistar*, article no. 10-00)



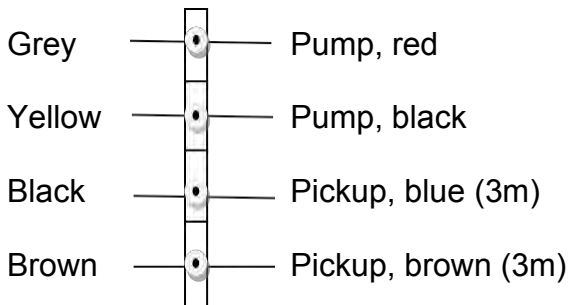
- Article no. **10-00** Dosistar-V
- Article no. **10-03** Cable harness - complete

# Diagram (DSG 160 E)

## Plug:

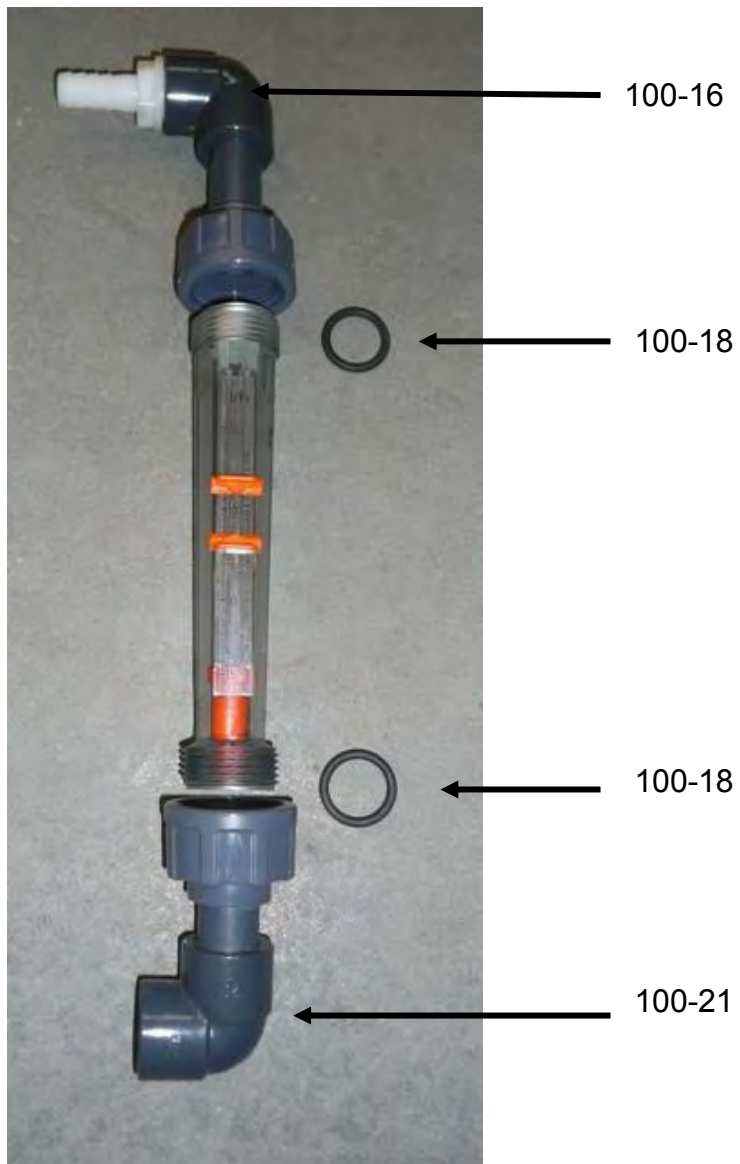


## Junction Box:



## **DSG 160 E**

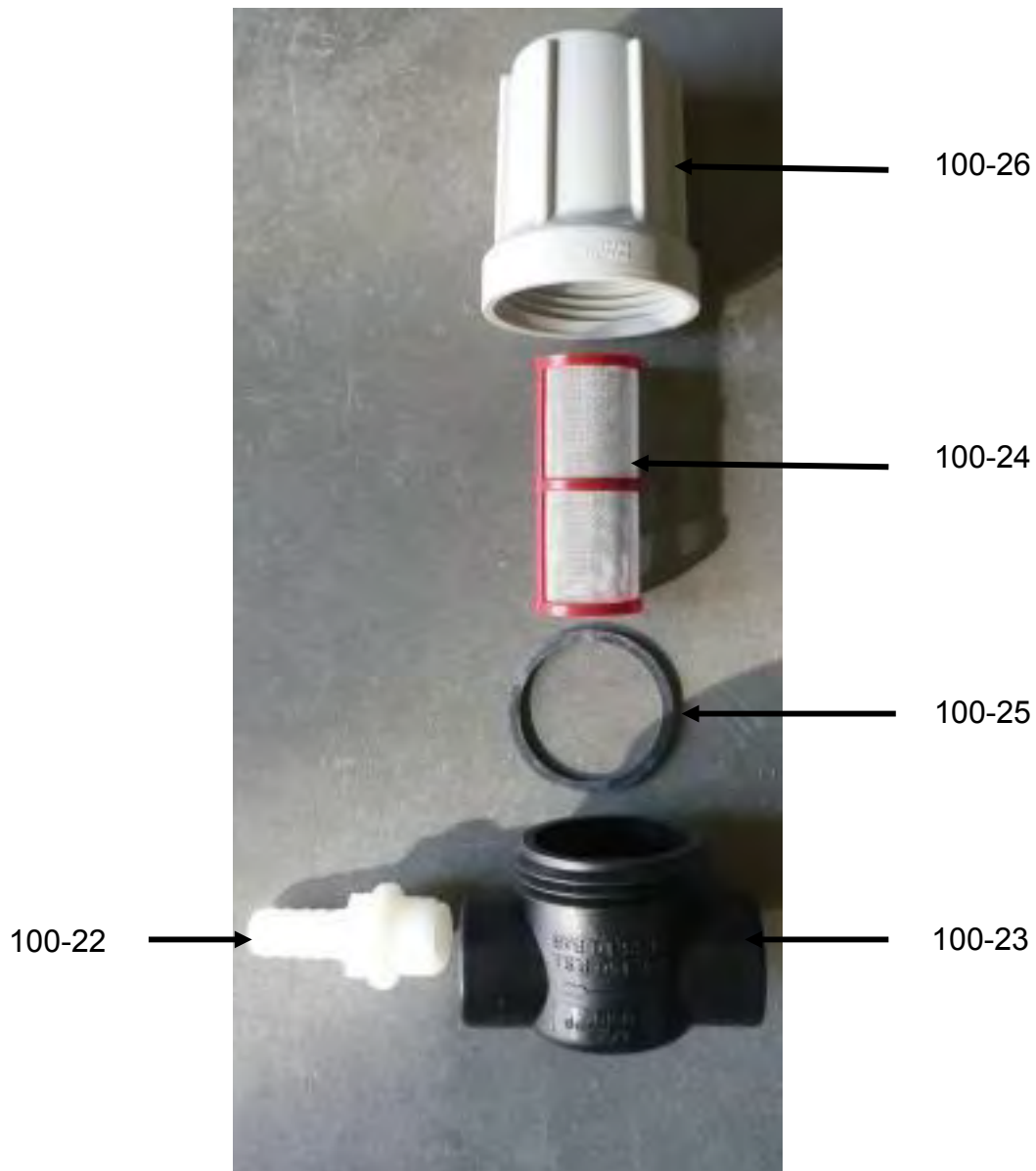
Flow indicator – complete (article no. 100-19)



|                           |                                       |
|---------------------------|---------------------------------------|
| Article no. <b>100-16</b> | Upper hose connection                 |
| Article no. <b>100-18</b> | O-ring                                |
| Article no. <b>100-19</b> | Flow metre DFM 170 - complete         |
| Article no. <b>100-20</b> | Gauge glass incl. floater and o-rings |
| Article no. <b>100-21</b> | Lower connection                      |

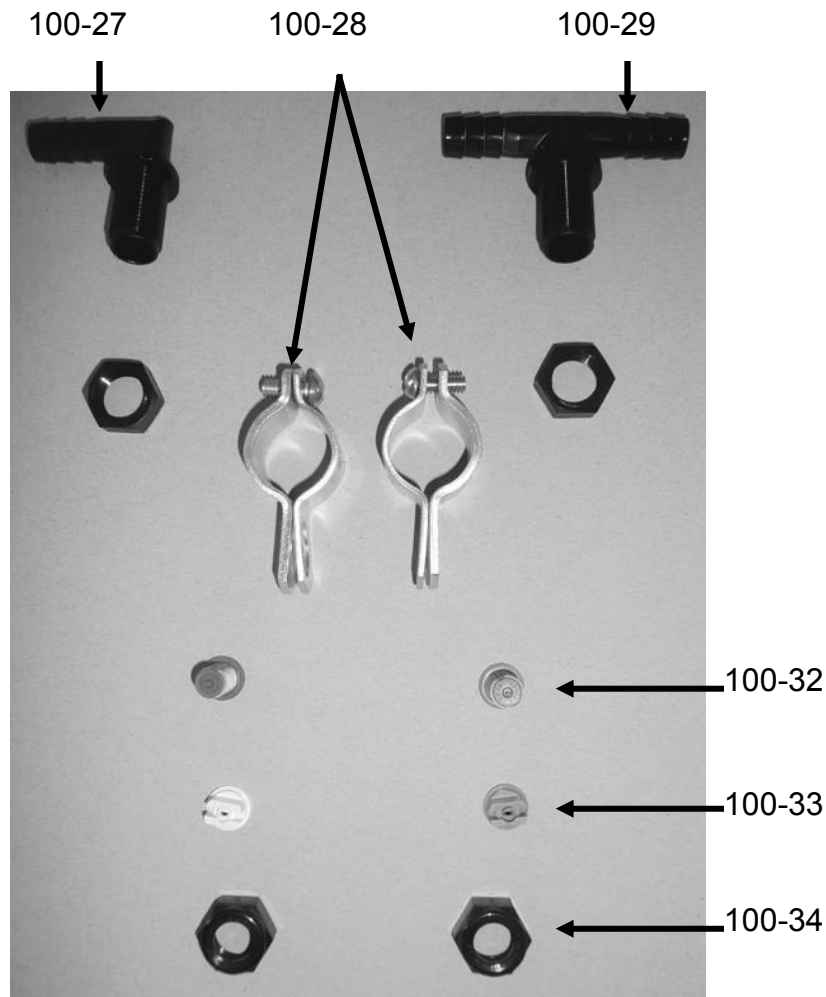
## DSG 160 E

### Suction filter – complete (article no. 100-06)



- |                           |                          |
|---------------------------|--------------------------|
| Article no. <b>100-06</b> | Suction filter, complete |
| Article no. <b>100-22</b> | Hose connector           |
| Article no. <b>100-23</b> | Filter housing           |
| Article no. <b>100-24</b> | Filter insert            |
| Article no. <b>100-25</b> | O-ring                   |
| Article no. <b>100-26</b> | Filter cup               |

**DSG 160 E**  
**Nozzle Set**



**Art. no. 100-27-k Nozzle holder elbow – complete. Art. no. 100-29-k Nozzle holder T-piece – complete, consisting of:**

|                        |  |                        |  |
|------------------------|--|------------------------|--|
| Art. no. <b>100-27</b> | Nozzle holder elbow<br>incl. union nut | Art. no. <b>100-29</b> | Nozzle holder T-piece<br>incl. union nut |
| Art. no. <b>100-28</b> | Mounting clamp                         | Art. no. <b>100-28</b> | Mounting clamp                           |
| Art. no. <b>100-32</b> | Drip stop                              | Art. no. <b>100-32</b> | Drip stop                                |
| Art. no. <b>100-33</b> | Nozzle insert                          | Art. no. <b>100-33</b> | Nozzle insert                            |
| Art. no. <b>100-34</b> | Nozzle retaining nut                   | Art. no. <b>100-34</b> | Nozzle retaining nut                     |

|                        |  |
|------------------------|--|
| Art. no. <b>19-015</b> | Nozzle insert, diameter: 0.15 mm, colour: green  |
| Art. no. <b>19-020</b> | Nozzle insert, diameter: 0.20 mm, colour: yellow |
| Art. no. <b>19-030</b> | Nozzle insert, diameter: 0.30 mm, colour: blue   |
| Art. no. <b>19-040</b> | Nozzle insert, diameter: 0.40 mm, colour: red    |
| Art. no. <b>19-050</b> | Nozzle insert, diameter: 0.50 mm, colour: brown  |

|                        |   |
|------------------------|---|
| Art. no. <b>19-060</b> | Nozzle insert, diameter: 0.60 mm, colour: grey  |
| Art. no. <b>19-080</b> | Nozzle insert, diameter: 0.80 mm, colour: white |