



**- QUICKGUIDE -**



**Table of contents**

|       |                                                                              |        |
|-------|------------------------------------------------------------------------------|--------|
| 1.    | Intended use / product description                                           | Page 2 |
| 2.    | Installation                                                                 | Page 2 |
| 2.1   | General                                                                      | Page 3 |
| 2.2   | Seeping water drain packing                                                  | Page 3 |
| 2.3   | Drainage element                                                             | Page 3 |
| 2.4   | Seepage hose                                                                 | Page 3 |
| 2.5   | Drainage hose                                                                | Page 4 |
| 2.6   | Shortening                                                                   | Page 4 |
| 3.    | Commissioning and pressure testing                                           | Page 4 |
| 3.1   | Commissioning                                                                | Page 5 |
| 3.2   | Pressure testing                                                             | Page 5 |
| 3.2.1 | Pressure testing of pipeline                                                 | Page 5 |
| 3.2.2 | Pressure testing of installed air valve                                      | Page 6 |
| 4.    | Servicing and maintenance                                                    | Page 6 |
| 5.    | Special functions                                                            | Page 6 |
| 5.1   | Special function - installation in flood water areas / flood protection      | Page 6 |
| 5.2   | Special function - installation in groundwater                               | Page 6 |
| 5.3   | Special function - air intake only or air release only                       | Page 6 |
| 5.4   | Special function - anti-frost disc Art. No. 992 200 1050                     | Page 6 |
| 5.5   | Special function - special insect and snail protection Art. No. 992 200 1010 | Page 6 |
| 5.6   | Special function - screw lock Art. No. 992 200 1100                          | Page 6 |
|       | Parts list Havent® air valve set                                             | Page 7 |
|       | Parts list Havent® air valve                                                 | Page 8 |

## 1. Intended use / product description

**Medium:** potable water

**Working range:** 0,2 - 25 bar

**Material:** see parts list

**Possible connections:** flange DN50, DN80

**Pipe cover depths:** 1,0 m, 1,25 m, 1,5 m, 1,75 m ( can be shortened on site by 100mm, see item 2.3 )

The air valve set (AVS) consists of a shaft with a shut-off facility and an air valve (AV).

Due to its compact design, the AVS replaces costly and high-maintenance manhole constructions.

All maintenance and repair work can be carried out from the road surface, thus avoiding the dangers possibly related with the access of manholes.

The HaVent® air valve featuring the patented valve mechanism is perfectly suitable for taking in and releasing high amounts of air during filling or draining of pipelines and for releasing major amounts of air under operating pressure.

Due to the high air intake capacity, the AV is additionally provided with effective vacuum protection.

Max. air release capacity: 770 m³/h (on filling the pipeline)

Max. release cross section: 1,500 mm²

Max. cross section for in-service venting: 3.15 mm²

### Product identification AV inside:



**Nennweite / Size:**  
BEG

**Druckstufe:**  
**max. pressure:**  
PN25  
360 psi

**Gehäuse/Body:**  
Edelstahl  
stainless steel

**European standard:**  
EN 1074-4  
DVGW\_W

**Herstelljahr:**  
**Year of manufacture:**  
xxx

**Seriennummer:**  
**Serial No.:**  
xxx

Made in Germany

### Product identification AVS outside:

**Be- und Entlüftungsgarnitur**

**DN xx**

**Flansch**

**DN 2“**  
**Havent**

**PN 0,2 - 25 bar**

**Gesamtlänge: xxx**

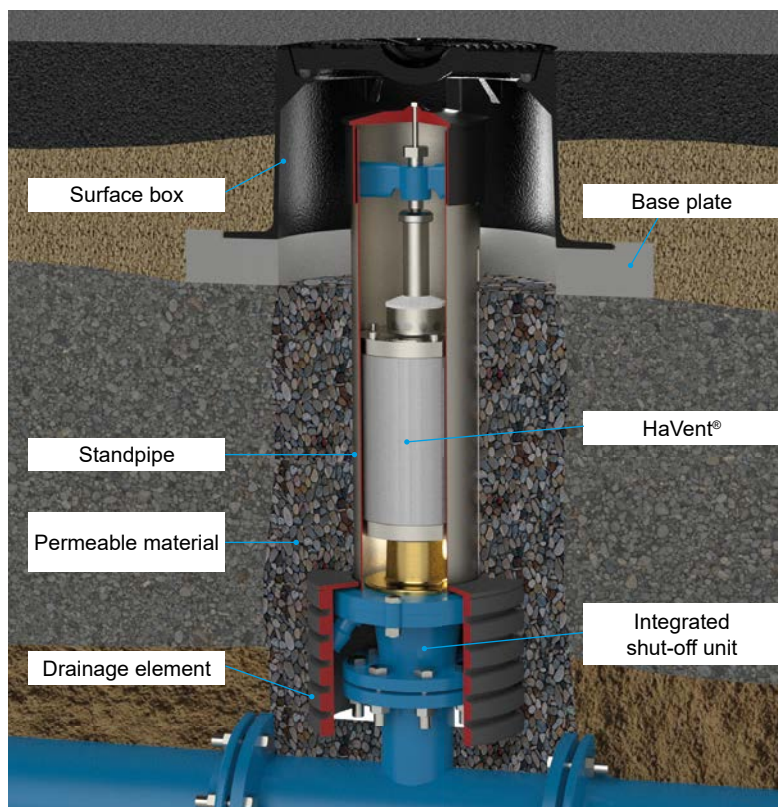
**Baujahr: xxx**

**Art.Nr. xxx**

Made in Germany

During installation and maintenance operations, the applicable standards and guidelines, accident prevention regulations and the regulations of professional associations are to be observed and complied with.  
Installation and maintenance operations may be performed by qualified personnel only.

## 2. Assembly:





2x open-ended wrench A/F 24 (version with flange), socket wrench A/F 13

## 2.1 General

Air valves and air valve sets are installed at high points, at points of change in pipe inclination, in descending line sections, in case of slightly descending or horizontal pipe runs, upstream and downstream of control valves, as well as downstream of pumps.

For detailed planning specifications for new construction and retrofitting, please refer to the technical information for planners regarding air valves and air valve sets, as well as the current DVGW sheet W 334.

The AV and/or AVS has to be installed on a vertical outlet directly on the pressure pipe. The need for an air release dome as specified in DVGW sheet W 334 has to be checked. A laterally displaced arrangement of air valves / air valve sets must be avoided.

Installation shall be performed in unpressurized condition.

For installing the AVS on the pipeline, the respective DVGW provisions for establishing a flanged connection and/or the BAIO installation instructions shall be observed.

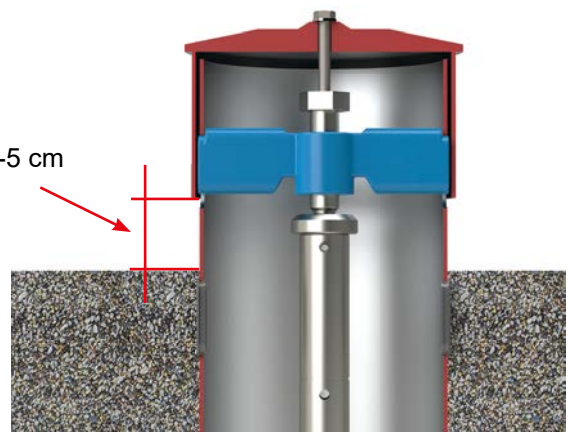
If there is a risk of frost, the AVS must be provided on site with frost-proof insulation (see also item 5.4).

## 2.2 Seeping water drain packing

To prevent surface water from running in, the standpipe must be surrounded with permeable backfilling (grain size > 5 mm).

Maximum filling height see image.

Approx. 3-5 cm distance



We recommend installing a drainage element Ord. No. 992-03, or alternatively a seepage hose Ord. No. 992-04 in connection with permeable backfilling.

## 2.3 Drainage element Ord. No. 992-03

The drainage element for AVSs serves the purpose of receiving and slowly draining off the splash water accumulating inside the AVS (originating during air release) and the residual water accumulating on dismantling the valve. Additionally, a possible penetration of roots is prevented.

### Use in:

- Normal soils
- Installation situations where no mud is expected to be washed into the housing (no groundwater).

### Assembly:

1. Remove the hood (10) from the AVS. To this end, loosen hexagon head screw M8 (8) and washer (9).
2. Put the drainage element (stop ring on top) over the shaft pipe (7) from above and push it downward as far as it will go.
3. Reinstall the hood (10) with hexagon head screw M8 (8) and washer (9).
4. Surround the drainage element with permeable backfilling.

## 2.4 Seepage hose Ord. No. 992-04

The seepage hose for AVSs serves the purpose of receiving and slowly draining off the splash water accumulating inside the AVS (originating during air release) and the residual water accumulating on dismantling the valve. Additionally, a possible penetration of roots is prevented.

The seepage hose consists of a flexible drainage pipe d 50 mm wrapped in filter fleece. Via the big surface area, the accumulated splash water / residual water is released evenly.

The filter fleece reduces the penetration of fine soil material into the interior of the AVS via the seepage hose.

**Use in:**

- "Fine-textured" soils
- Installation situations where mud is expected to be washed into the body (groundwater).

**Assembly:**

See operating instructions "Seepage Hose for Air Valve Set".

**2.5 Drainage hose PE d20**

If the drainage element Ord. No. 992-03 or seepage hose Ord. No. 992-04 is not used, the supplied drainage hose PE d20 can be used for draining off the accumulating splash water into an additional seeping water drain packing. To this end, push the hose into the drain-off fitting (2) as far as it will go. For installation, moisten the pipe end with water.

**2.6 Shortening**

Socket wrench A/F 13, A/F 30, fitting grease, e.g. Art. No. 600 000 0015  
Angle grinder with cutting disc for stainless steel, pin punch

Prior to installation, the AVS can be shortened on site by 100 mm to adapt it to changed height conditions.

**Important:** In case of the version with pipe cover depth 1.0 m with special function "Air release only" or "Air intake only", shortening is not possible!

Sequence:

1. Take off the hood (10). To this end, loosen hexagon head screw M8 (8) and washer (9).
2. Loosen the centring screw (11) and take out the clamping yoke / spindle holder (12).
3. Take out the whole replacement set and put it aside protected from dirt.

**4. Shortening the shaft pipe:** ( see Figure 1 )

Put the hood (10) loosely onto the shaft pipe. Mark a line for shortening along the lower hood edge (corresponding to max. shortening by 100 mm). Shorten the shaft pipe using an angle grinder and cutting disc for stainless steel. Deburr the cut surface.



Figure 1

**5. Shortening the replacement** (see Figure 2)::

Dismantle the centring cap (6.16) from the operating tube (6.18). To this end, remove the roll pin (6.17) by means of the pin punch. Shorten the operating tube at the specified marking (see figure) using an angle grinder and cutting disc for stainless steel. Deburr the cut surface.



Figure 2

6. Reinstall the centring cap (6.16) and roll pin (6.17) on the shortened operating tube.
7. Reinsert the replacement set through the shaft pipe (7) into the sealing flange (3). To this end, press the replacement set into the sealing flange (3) applying manual force until you feel high resistance.
8. Subsequently, insert the clamping yoke / spindle holder (12) into the shaft pipe (7), and brace the replacement set again by turning in the centring screw (8) 2-3 revolutions.
9. Reinstall the hood (10) with the hexagon head screw (8) and washer (9).



**Important:** If a flushing and water tapping set Ord.No.992-05 und 992-06 is used for a shortened AVS, the extended clamping yoke Ord. No. 992-07 is needed (Figure 3).



Figure 3

**3. Commissioning and pressure testing**

Socket wrench A/F 13, A/F 30

### 3.1 Commissioning

For commissioning, the unpressurized line shall be filled and pressurized.



**Important:** Acc. to DVGW W334, the maximum filling rate must be limited to 0.25 m/s to avoid pressure surges.

**Note:** During start-up ventilation, a minor quantity of splash water is blown off via the valve.

Prior to commissioning, we recommend flushing to remove possible dirt accumulations at the high point of the pipeline (right column).

Alternatively, commissioning can be performed without flushing (left column).

| Commissioning with automatic venting<br>Important: Malfunction caused by dirt ingress is possible!                                                                                                                                       | Commissioning with flushing and water tapping set                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| 1. Take off the hood (10). To this end, loosen hexagon head screw M8 (8) and washer (9).                                                                                                                                                 | 1. Take off the hood (10). To this end, loosen hexagon head screw M8 (8) and washer (9).                                         |
|                                                                                                                                                                                                                                          | 2. Loosen the centring screw (11) and take out the clamping yoke / spindle holder (12).                                          |
|                                                                                                                                                                                                                                          | 3. Take out the whole replacement set (6) and put it aside protected from dirt.                                                  |
|                                                                                                                                                                                                                                          | 4. Install the flushing and water tapping set Ord. No. 992-05, 992-06.<br>See operating instr. "Flushing and Water Tapping Set". |
|                                                                                                                                                                                                                                          | 5. Fix it by means of the clamping yoke / spindle holder (12) and centring screw (11).                                           |
|                                                                                                                                                                                                                                          | 6. Slowly open the ball valve at the flushing and water tapping set.                                                             |
| 2. Fill the pipeline (filling rate acc. to DVGW W334, see above).                                                                                                                                                                        | 7. Fill the pipeline (filling rate acc. to DVGW W334, see above).                                                                |
| 3. Air and/or air/water mixture escapes.<br>Dirt possibly present in the line accumulates in the AV. Consequence: AV does not close any more. Perform maintenance as described in item 4.                                                | 8. Air and/or air/water mixture escapes together with any possible dirt.<br>Continue flushing until only clear water escapes.    |
| 4. After filling is finished, the AV closes automatically.                                                                                                                                                                               | 9. Close the ball valve at the flushing and water tapping set very slowly (danger of water hammers).                             |
| 5. To be able to perform the subsequent pressure test described in item 3.2, the following sequence must be observed:                                                                                                                    | 10. Perform pressure test described in item 3.2.                                                                                 |
| 6. Loosen the centring screw (11) until the clamping yoke / spindle holder (12) is loosened.<br>Consequently, the complete replacement set is also loosened as well as unpressurized, since the sealing tappet (4) closes automatically. |                                                                                                                                  |
| 7. Perform pressure test described in item 3.2.                                                                                                                                                                                          |                                                                                                                                  |

### 3.2 Pressure testing

#### 3.2.1 Pressure testing of the pipeline

The pressure test of the pipeline with the installed AVS in the open trench shall be performed considering the maximum operating pressures as specified in the DVGW regulations.



**IMPORTANT:** The pressure test must be carried out with the replacement set put out of service and/or the flushing and water tapping set installed!

After the successful pressure test, repressurize the replacement set previously put out of service by turning in the centring screw (8) until a distinctive momentary "venting splash" appears.

Then turn in the centring screw (11) by only approx. 1/2 additional turn!

Reinstall the hood (10) with the hexagon head screw (8) and washer (9).



**IMPORTANT:** If a permanent water splash instead of a momentary venting splash appears, maintenance acc to item 4 must be performed.

### 3.2.2 Pressure testing of the installed AV

After subjecting the pipeline to a pressure test acc. to item 3.2.1 or after successful maintenance, an additional pressure test of the AV considering the maximum operating pressures specified in the DVGW regulations has to be carried out.

Before pressure testing, any flushing and water tapping set used during commissioning must be removed, and the replacement set has to be reinstalled (see item 3.1 / 3. Commissioning with flushing and water tapping set).

## 4. Servicing and maintenance

As specified in the DVGW regulations W400-3, AVSs must be maintained at least once a year. Depending on the composition of the water, it may be necessary to reduce the maintenance intervals. Regular inspection will increase the functional reliability of the AVSs.

For cleaning, we recommend using lukewarm water. Before reinstallation, all components shall be disinfected by means of disinfectants approved for potable water applications observing the manufacturer's instructions.

Foreign matter washed into the valve body (e.g. PE chips left over from drilling, wood, polystyrene, ...) as well as deposits in case of ferrous or manganiferous water qualities may impair the proper sealing function.

 **Important:** Before maintenance, AVSs shall be put out of service. Maintenance shall be performed in unpressurized condition.

**Always** take the complete replacement set out of the AVS housing for maintenance and service work.

For detailed instructions on servicing and maintenance with a detailed maintenance procedure and spare parts, see the complete version of the AVS Havent® PN25 operating and maintenance instructions, order no. 992-00.



## 5. Special functions

The following special functions are available for the AVS Havent® PN25 order no. 992-01.

| Item | Ord.No./<br>Art.No.            |                                                      | Ex factory | For<br>retrofitting<br>on site |
|------|--------------------------------|------------------------------------------------------|------------|--------------------------------|
| 5.1  | 992 000 1010<br>( 992-08 )     | Installation in flood water areas / flood protection | X          |                                |
| 5.2  | 992 500 1000 -<br>992 500 1003 | Version for groundwater installation                 | X          |                                |
| 5.3  | 992 500 0900 -<br>992 500 0903 | Air release only / air intake only                   | X          |                                |
| 5.4  | 992 200 1050                   | Anti-frost disc                                      | X          | X                              |
| 5.5  | 992 200 1010                   | Insect and snail protection                          | X          | X                              |
| 5.6  | 992 200 1100                   | Screw lock                                           | X          | X                              |

Maintenance of AVSs with special function is carried out the same way as described for the standard version (see item 4).

For a detailed description of the special functions, see the complete version of the operating and maintenance instructions.

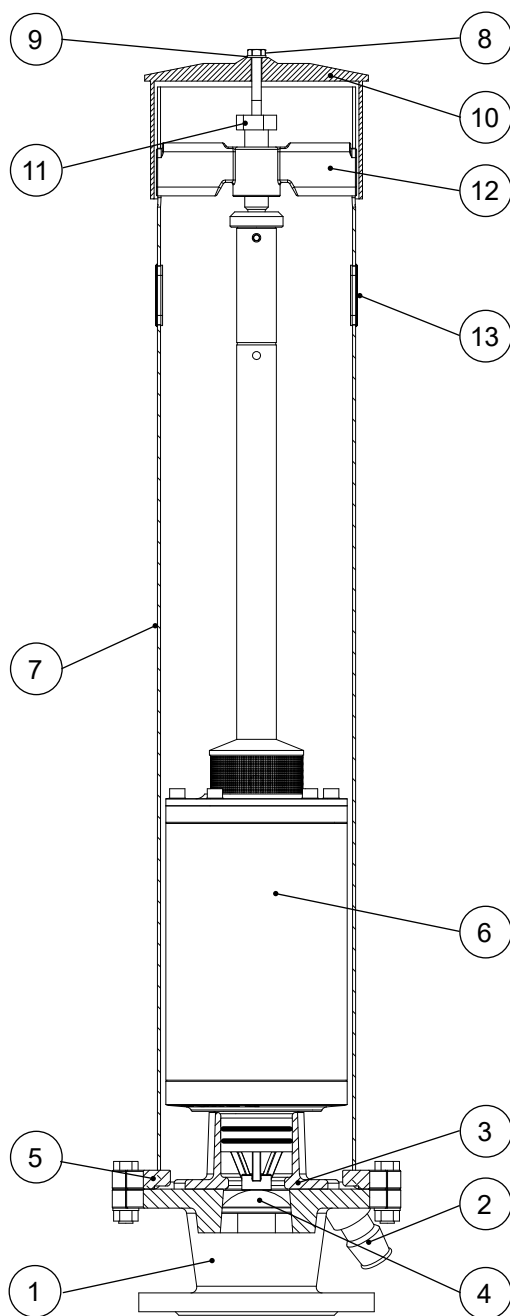


**If you have any other questions or if you need more information please contact:**

Hawle Armaturen GmbH  
- Application Engineering -  
Liegnitzer Str. 6  
D - 83395 Freilassing  
Phone: +49 (0)8654 6303-0  
Telefax: +49 (0)8654 6303-222  
E-Mail: [info@hawle.de](mailto:info@hawle.de)  
Web: [www.hawle.de](http://www.hawle.de)

# Air valve set HaVent® for potable water PN 25

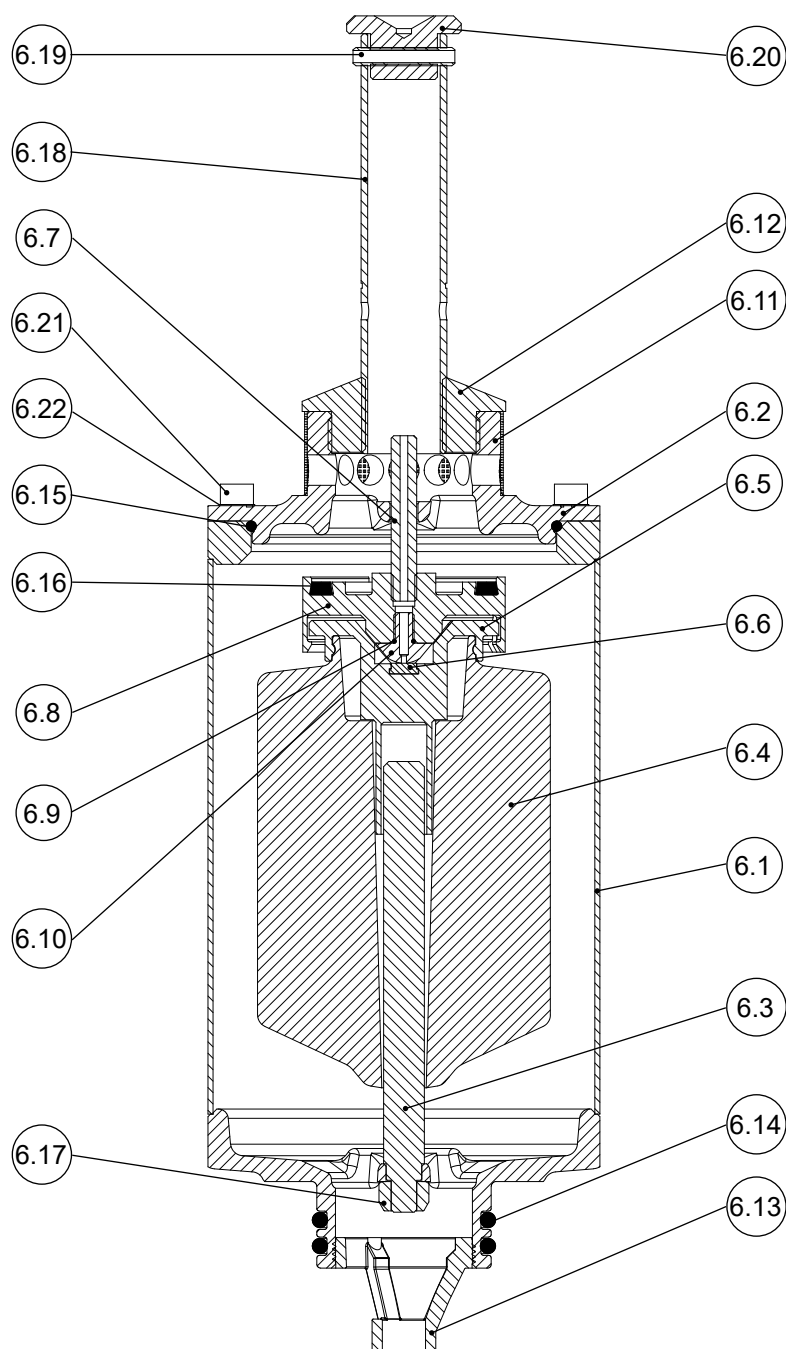
## Parts list



| No | Qty. | Short description                        | Material                          | 7  | 1 | Shaft pipe                     | Stainless steel                   |
|----|------|------------------------------------------|-----------------------------------|----|---|--------------------------------|-----------------------------------|
| 1  | 1    | Base                                     | GJS-400 Hawle epoxy powder-coated | 8  | 1 | Hexagon head screw M8x60       | Stainless steel                   |
| 2  | 1    | Drain-off fitting                        | GJS-400 Hawle epoxy powder-coated | 9  | 1 | Washer M8                      | Stainless steel                   |
| 3  | 1    | Sealing flange                           | Brass                             | 10 | 1 | Hood                           | PE                                |
| 4  | 1    | Sealing tappet                           | POM                               | 11 | 1 | Centring screw with ball       | Stainless steel                   |
| 5  | 1    | Lock ring                                | GJS-400 Hawle epoxy powder-coated | 12 | 1 | Clamping yoke / spindle holder | GJS-400 Hawle epoxy powder-coated |
| 6  | 1    | Replacement set, see separate parts list |                                   | 13 | 2 | AVS rubber plug                | EPDM                              |

# Replacement set HaVent® for potable water PN 25 for air valve set

## Parts list



| No   | Qty. | Short description  | Material        |      |   |                   |                 |
|------|------|--------------------|-----------------|------|---|-------------------|-----------------|
| 6.1  | 1    | Housing            | Stainless steel | 6.12 | 1 | Outlet nipple     | POM             |
| 6.2  | 1    | Housing upper part | Stainless steel | 6.13 | 1 | Tripod            | PA              |
| 6.3  | 1    | Guide rod PN25     | Stainless steel | 6.14 | 2 | O-ring 60x6       | EPDM            |
| 6.4  | 1    | Float              | PP              | 6.15 | 1 | O-ring 145x4      | EPDM            |
| 6.5  | 1    | Gasket seat        | POM             | 6.16 | 1 | Flat gasket       | EPDM            |
| 6.6  | 1    | Small gasket       | EPDM            | 6.17 | 1 | Nut M10           | Stainless steel |
| 6.7  | 1    | Nozzle screw       | POM             | 6.18 | 1 | Operating tube    | Stainless steel |
| 6.8  | 1    | Valve basket PN25  | POM             | 6.19 | 1 | Roll pin          | Stainless steel |
| 6.9  | 1    | O-ring 6x1.5       | EPDM            | 6.20 | 1 | Centring cap      | Stainless steel |
| 6.10 | 1    | Nozzle PN25        | Stainless steel | 6.21 | 5 | Allen screw M8x16 | Stainless steel |
| 6.11 | 1    | Mesh hose          | Stainless steel | 6.22 | 5 | Shim ring         | Stainless steel |