

# Maintenance and Operating Instructions

## Large-area sprinkler

Type: VP3-short

PERROT



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## 1. General

We presume that you are experienced in the field of irrigation. We have therefore kept these instructions brief and included only the information that it is imperative for you to have to use this product.

Any warranty claims can be accepted only if the sprinkler is used in accordance with these operating instructions and if any defect emerges within the warranty period.

We reserve the right to make changes in line with technological advances, including without prior notice.

## 2. Safety

These operating instructions contain some fundamental instructions that must be followed when installing, operating, servicing and maintaining the sprinkler. It is therefore imperative that these instructions are read by the fitter and the relevant specialised staff / operators prior to installation and commissioning.

Attention must be paid not just to the general safety information set out in this 'Safety' section, but also to the special safety instructions included in the other sections.

### 2.1. Use of symbols in these operating instructions

Where failure to follow safety information can place individuals at risk, such information is specifically marked in these operating

instructions with the general danger symbol



Warning of potential hand injuries



Warning of potential automatic start-up

In the case of safety information, where failure to follow it can damage the sprinkler and/or impair its function, you will see the word:

**WARNING**

## 2.2 Proper use

The sprinkler is used for the even distribution of water onto lawns, green spaces and sports fields laid with natural or artificial grass. The water should be pre-cleaned and free of any coarse or fibrous contamination. The water and ambient temperatures must be below the limits specified in the technical data.

## 2.3 Clearly improper use

- ☆ Operation of the pop-up sprinkler by unauthorised personnel (if the control unit is freely accessible).
- ☆ Operation of the sprinkler with the sector to be watered wrongly set, e.g. as the result of vandalism. This can result in the jet of water being directed to the side away from the grassed area.

## 2.4 Safety information



Read the operating instructions, especially the safety information, before starting any work on or with the sprinkler.

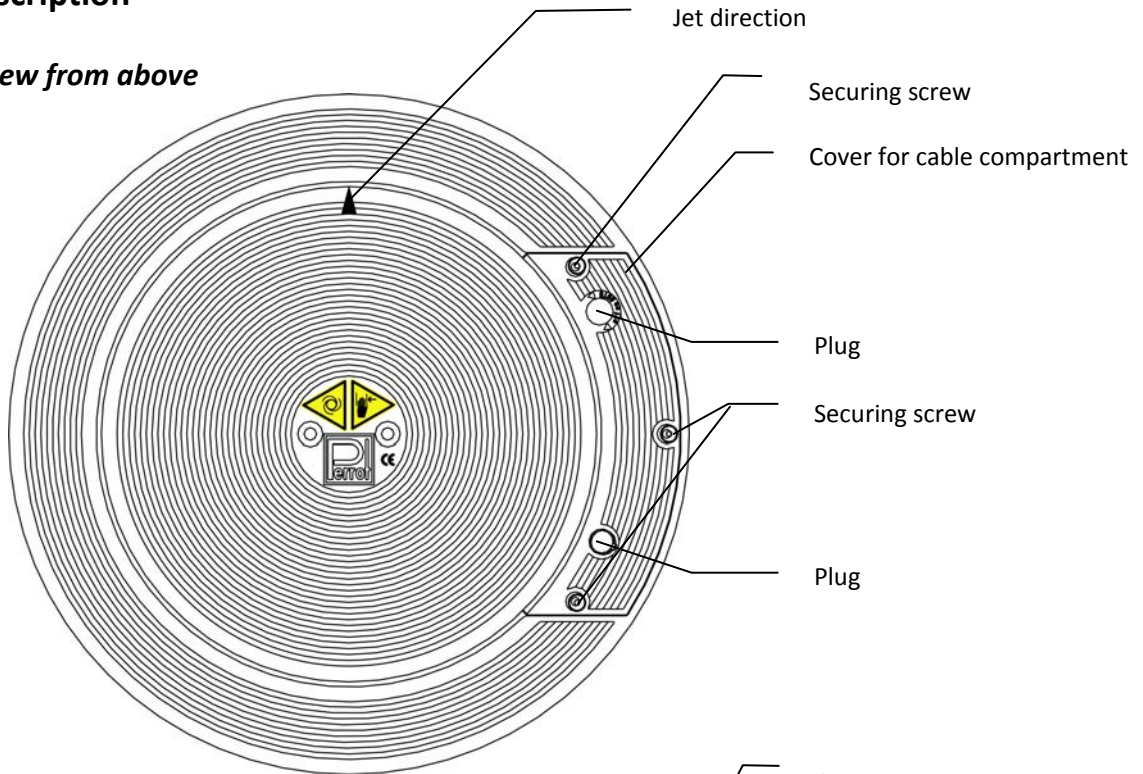
The specific safety instructions appear at the start of each section.

## 2.5 Dangers of failing to observe safety instructions

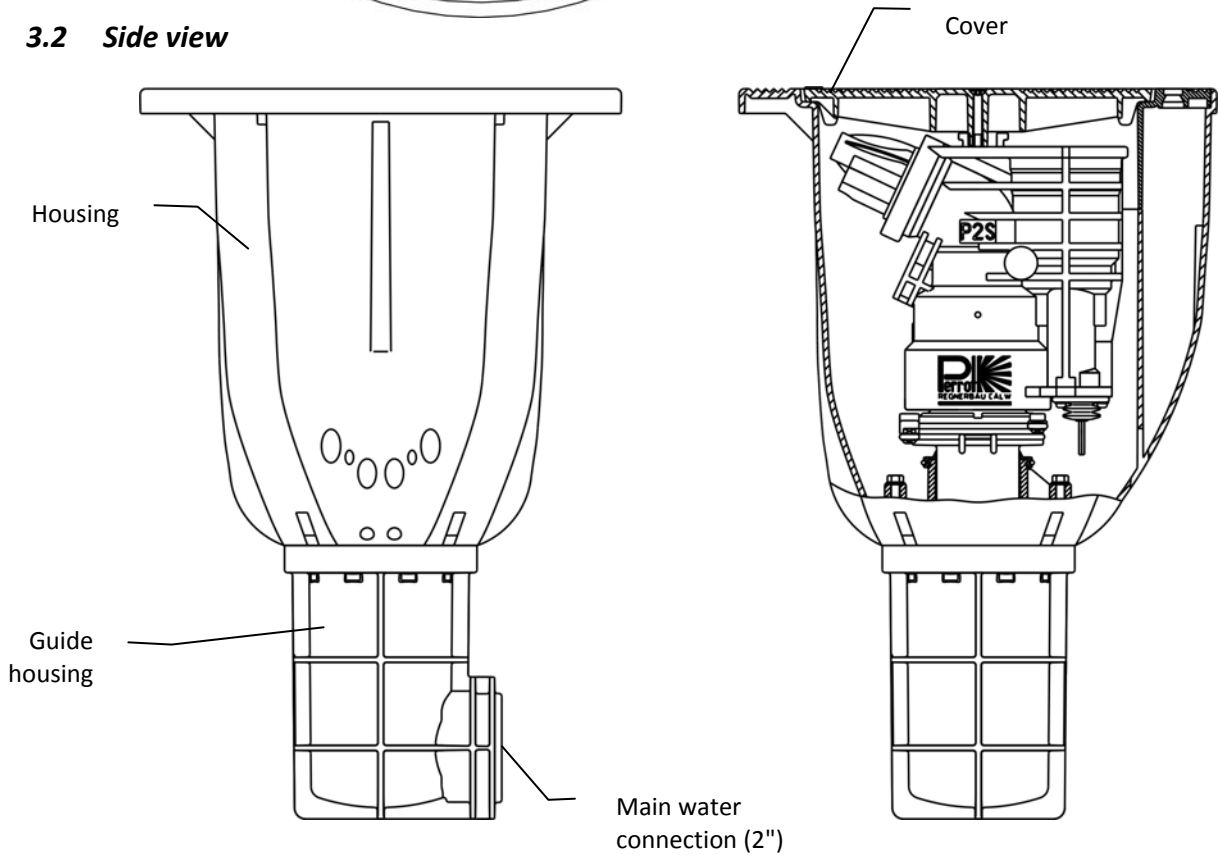
Failure to observe safety instructions can result both in people being placed at risk and in damage to the environment and machine. Failure to observe safety instructions can lead to the loss of any rights to claim compensation.

### 3. Description




#### 3.1 View from above



#### 3.2 Side view



### 3.3 Special tools

Face hole key	Piston motor cover		ZB98236
VP3 flush insert	Flush main line		RB25380
VP3 assembly key for nozzle	Changing nozzle		RB25189

## 4. Technical data

Recommended operating pressure 4 to 8 bar  
 Permitted operating pressure 4 to 10 bar

**WARNING** The pressure at the sprinkler may not exceed 10 bar

Connection thread: G2" FT

Liquids: Water

Liquid temperature: 40°C max.

Ambient temperature: 60°C max.

For further data see separate data sheet.

## 5. Assembly, set-up and installation

### 5.1 Hazard warnings



If any impurities get into the sprinkler, it is possible that the sprinkler could be destroyed and that fitters could be injured. Therefore flush out the line thoroughly before connecting the water supply.



Any unexpected emergence of a jet of water can lead to serious injury. Therefore make sure that the installation has been fully completed before turning on the water supply.

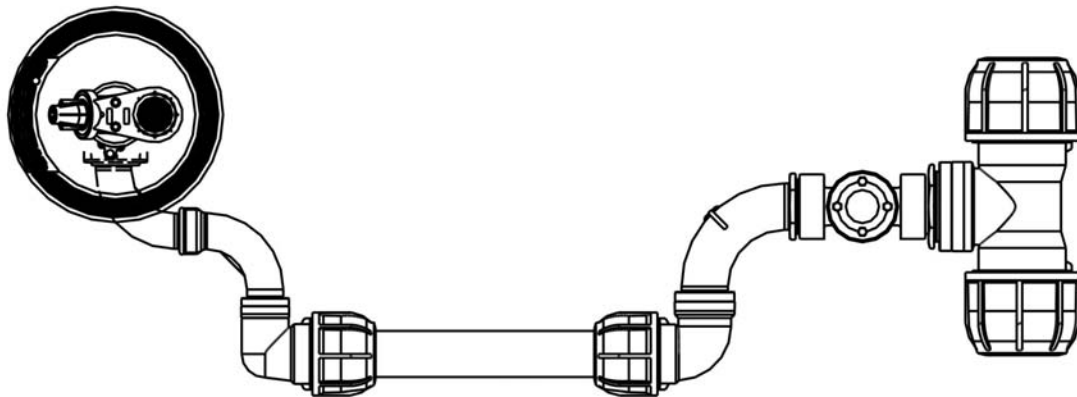
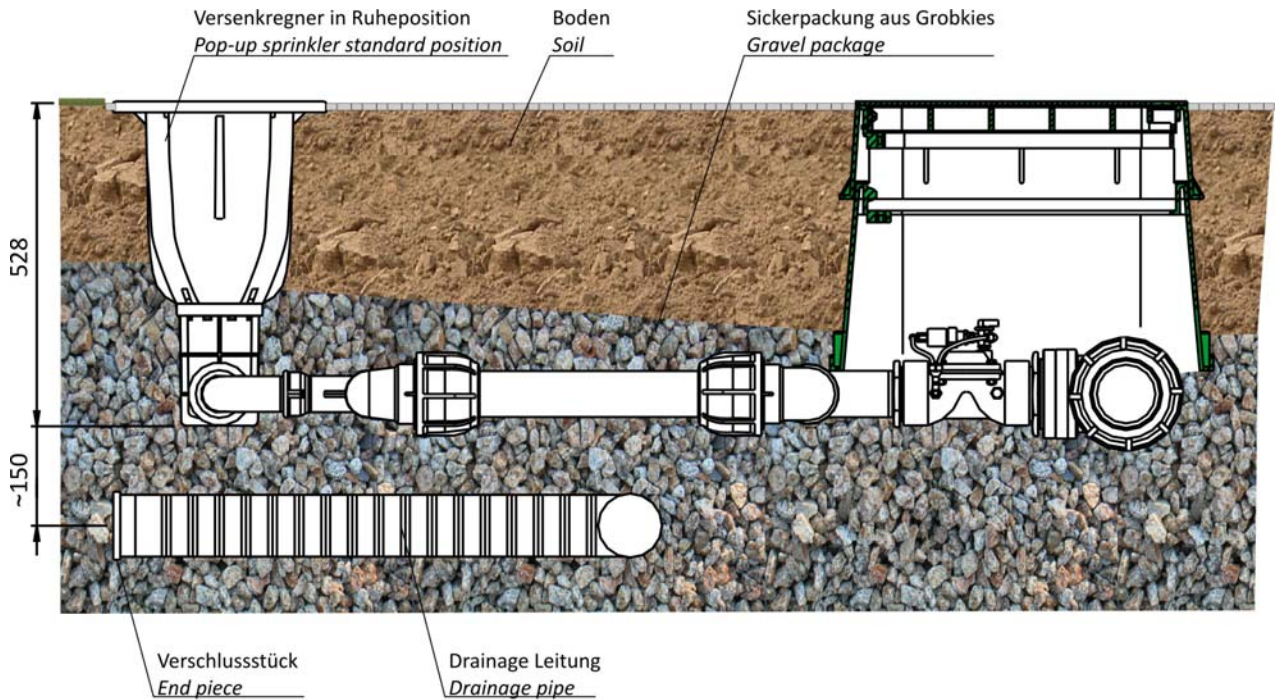
### 5.2 Installation instructions

- ☆ The thread connection on the pop-up sprinkler is 2" FT.
- ☆ For the thread seal use hemp and sealing compound, e.g. Fermit Spezial or teflon tape.
- ☆ The pop-up sprinkler should be fitted in accordance with the 'Perrot VP3-short pop-up sprinkler installation diagram' (see next page). In order to avoid any load pressure on the main line, you should definitely use a flexible connection.
- ☆ Providing a drainage pit directly connected to the drainage, as shown in the installation diagram, is very much recommended.
- ☆ For screwing in the connection joint the housing or housing edge of the pop-up sprinkler can be firmly held or clamped.



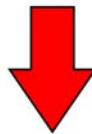
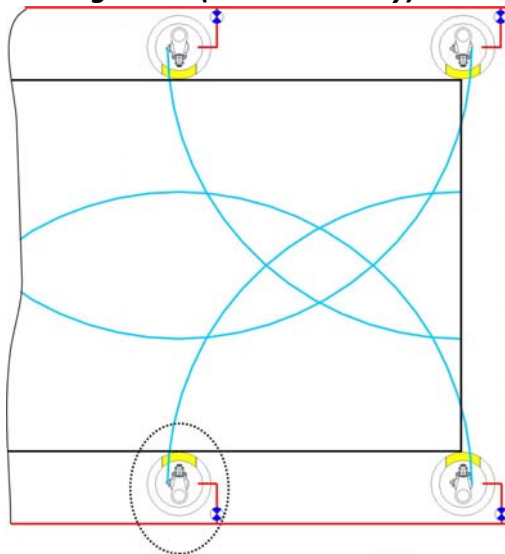
### 5.3 VP3-short pop-up sprinkler installation diagram

#### Trench cross-section and fitting plan

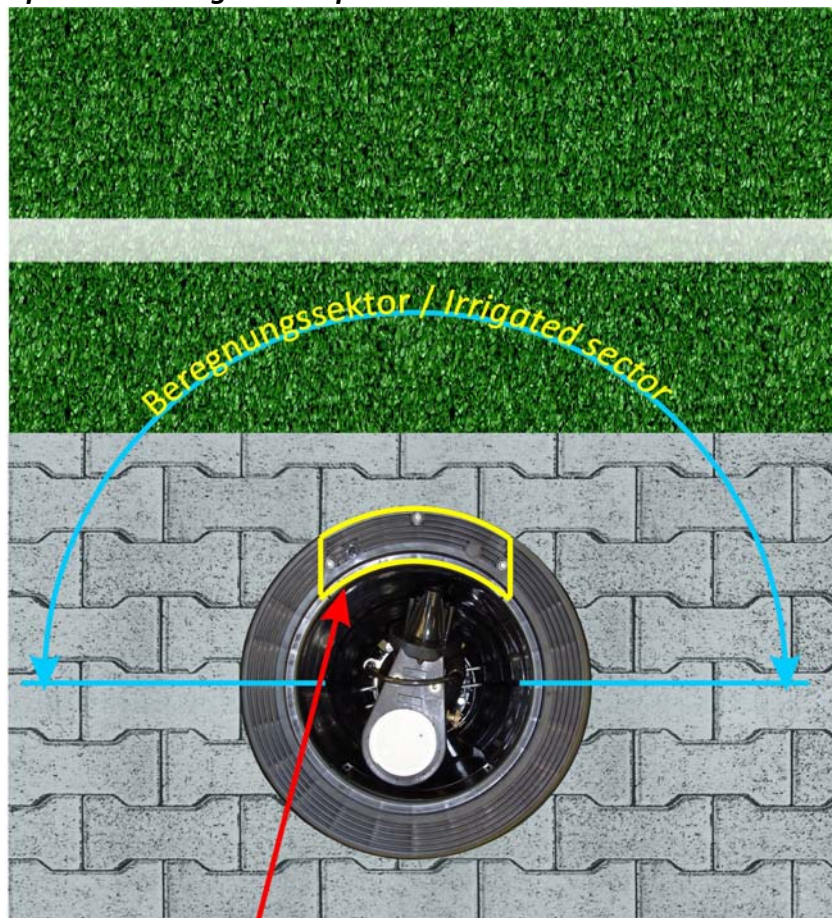




**Sprinkler arrangement (schematic only)**

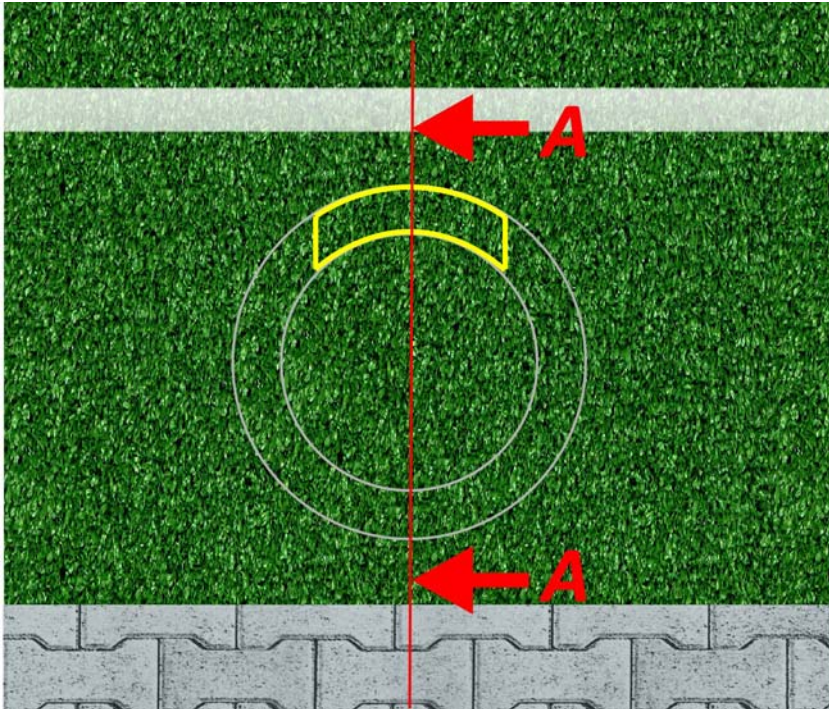


**Detail X: Sprinkler arrangement upon installation**



**VP3 sprinkler has to be installed in that way, that the cable compartment box is on the side of the irrigated area.**

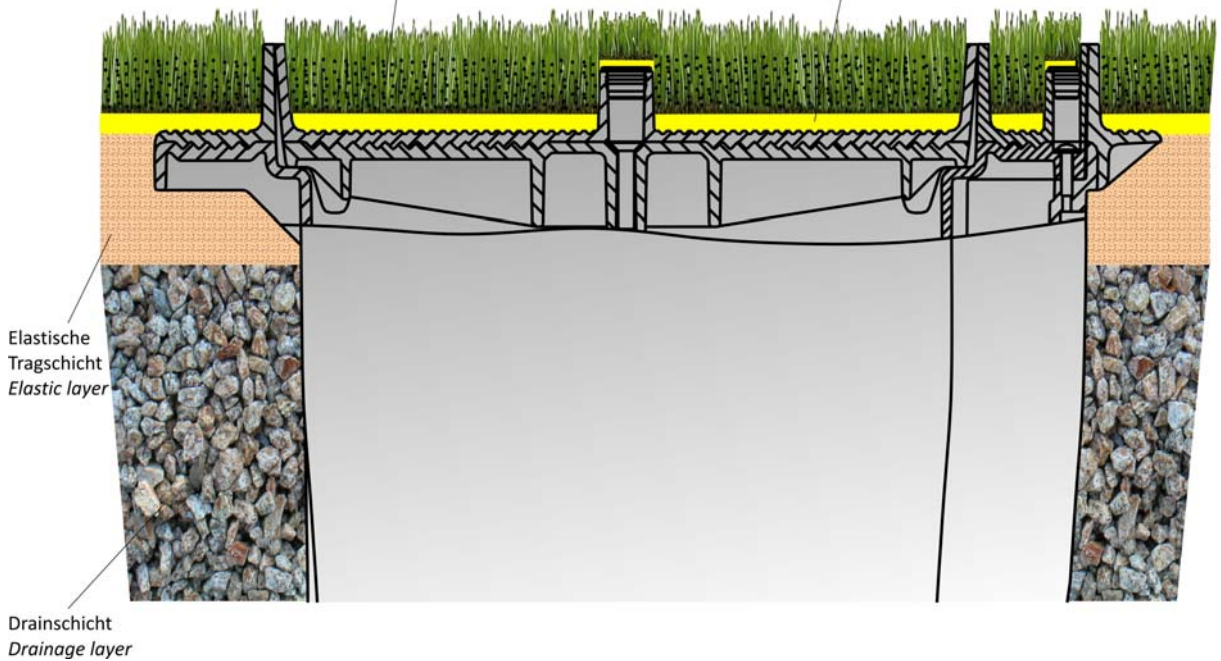
**5.4 Installation scheme for VP3 with rubber infill lawn**



**Schnitt A-A**  
**Section A-A**

Gummigranulat  
(Verfüllhöhe sollte 2-5mm unter Rand von Gehäuse sein)  
*Rubber infill*  
(Height of infill material should be 2-5mm less than height of sprinkler frame)

Verklebe-Hinweis für Kunstrasen siehe TDP075  
*Please see TDP075 for adhesive bonding hints of the synthetic turf*





#### 5.4.1 Handling the VP3 pop-up sprinkler with filled synthetic turf



Remove plug so that the lid and the cable shaft cover can be disassembled / assembled.

**WARNING**

***Do not plug the drainage holes during adhesive bonding of the synthetic turf.***



This cross shaped rubber protection has just a function at “VP3-VAC” version. For the VP3-short version it does not have a function.

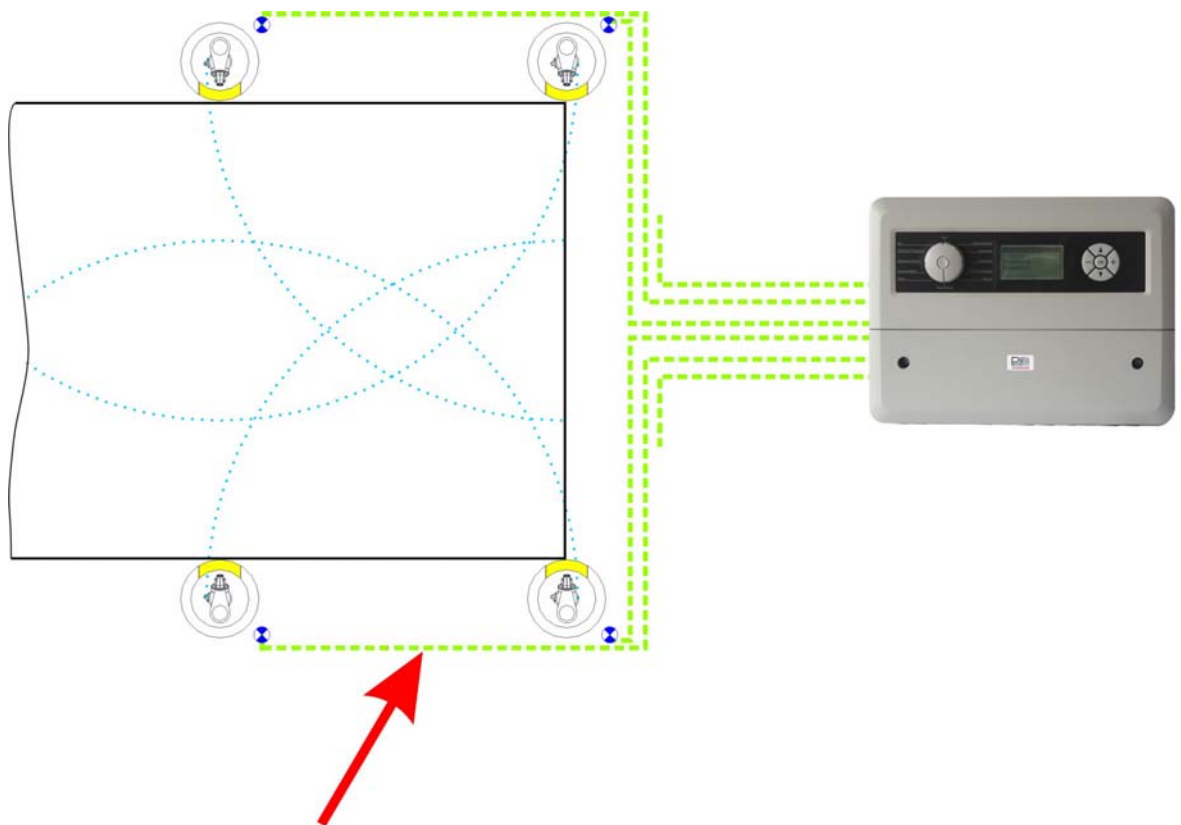
## 5.5 External start using key switch

There is a safety circuit with key-operated switch for checking whether any unauthorized people are in the danger zone / area to be watered.

The key-operated switch gets fitted in a position from which the whole danger zone can be clearly seen. Watering begins only when the operator gives the all-clear by turning the key.

For details of how the controller works please refer to the separate TDP072 operating instructions.

### Cable plan (schematic only)



**Control cable specification: Suitable for underground installation  
PVC insulated and EPDM sheathed cable, NYY**

**For solenoid valve: NYY 2x2.5mm<sup>2</sup> RE**

For further details please see separate operating instructions for Water Control (TDP072).

## 6. Commissioning and operation

### 6.1 Potential danger



When it starts up, the pop-up sprinkler rises up out of the housing and builds up full pressure within about 5 seconds. The **jet of water emitted** can cause injury. For this reason the following guidance must be followed when commissioning and operating the sprinkler:



- When **the sprinkler is being operated in automatic mode, there must be nobody present in the area.**
- Operating personnel **must not stand in the direction of the sprinkler's jet.** The jet's direction is marked on the cover by an arrow.

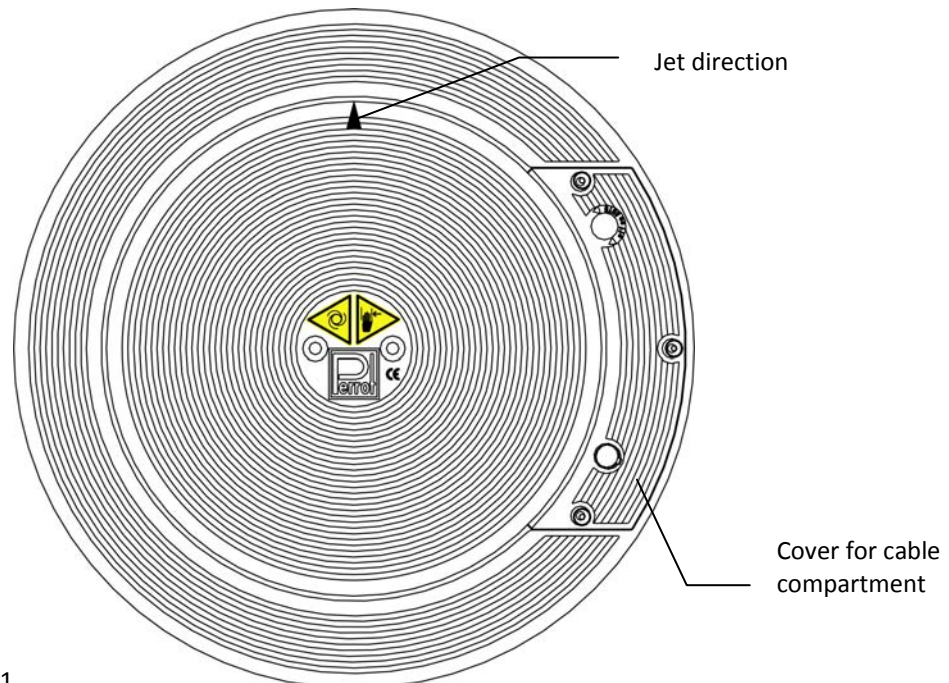


Figure 1



If the sprinkler is not installed flush with the ground, people may be injured by a fall as a result of stumbling or tripping. Therefore check prior to commissioning and regularly during ongoing use whether the sprinkler cover shuts flush with the surrounding ground.



The sprinkler must not be operated without a closed cover for the cable compartment. During operation the sprinkler head props itself against the edge of the cover and cannot rotate freely without the cover.

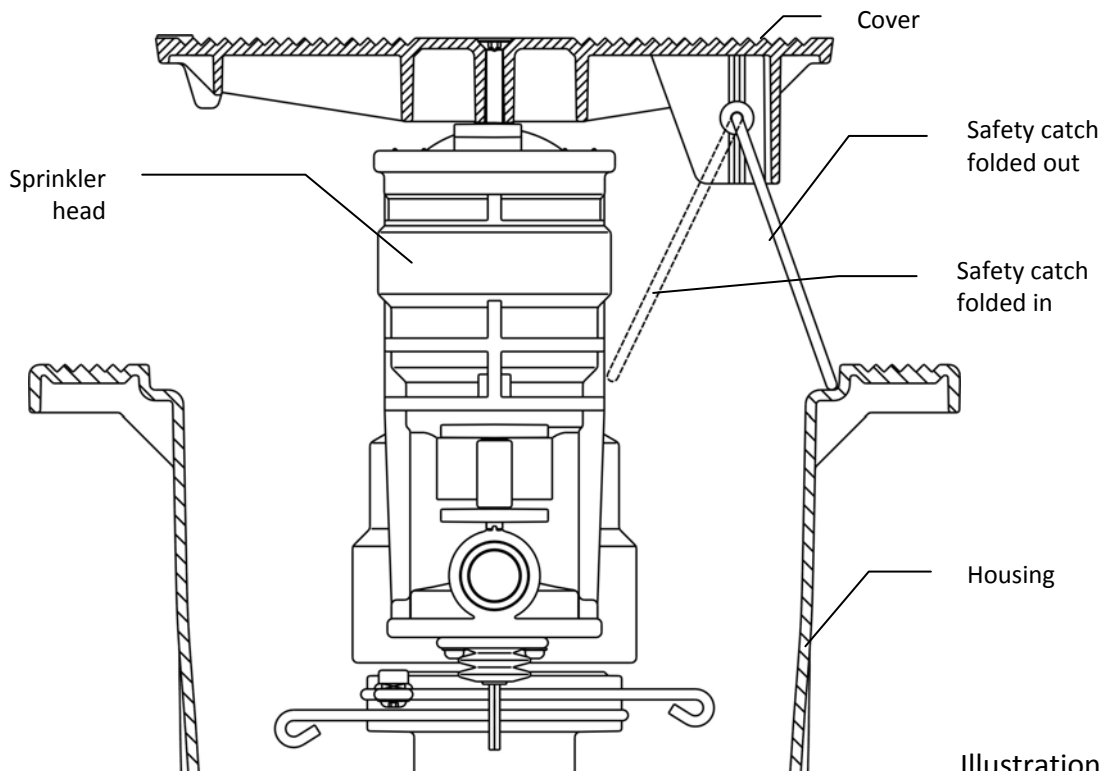
## 6.2 Commissioning

- a) Open water supply to the pop-up sprinkler slowly, until operating pressure is built up.
- b) After the water supply is opened and the max operating pressure is built up, all connection points are to be examined for leakage.
- c) Sprinkler will start rotation after rising.
- d) Make sure sprinkler rotates constantly and turns correctly



The following points 6.3, 6.4 and 6.5 should ideally be carried out with the sprinkler running.

First fold out the safety catch to the side of the sprinkler head (see illustration 2) so that no limbs (e.g. fingers) can get jammed if the sprinkler should unexpectedly close.



No special procedures are needed to set the sprinkler. All you need to set are the sprinkler's rotational speed and, when using it in back-and-forth mode, the sector to be watered.

### 6.3 Setting the sector

With this pop-up sprinkler the sector setting is infinitely variable. You can adjust the area to be watered by pulling on the relevant end of the top or bottom spring stop.

#### Setting the sector angle

**WARNING** Infinitely variable setting is possible by pulling (not pressing) on the relevant end of the top or bottom spring stop.

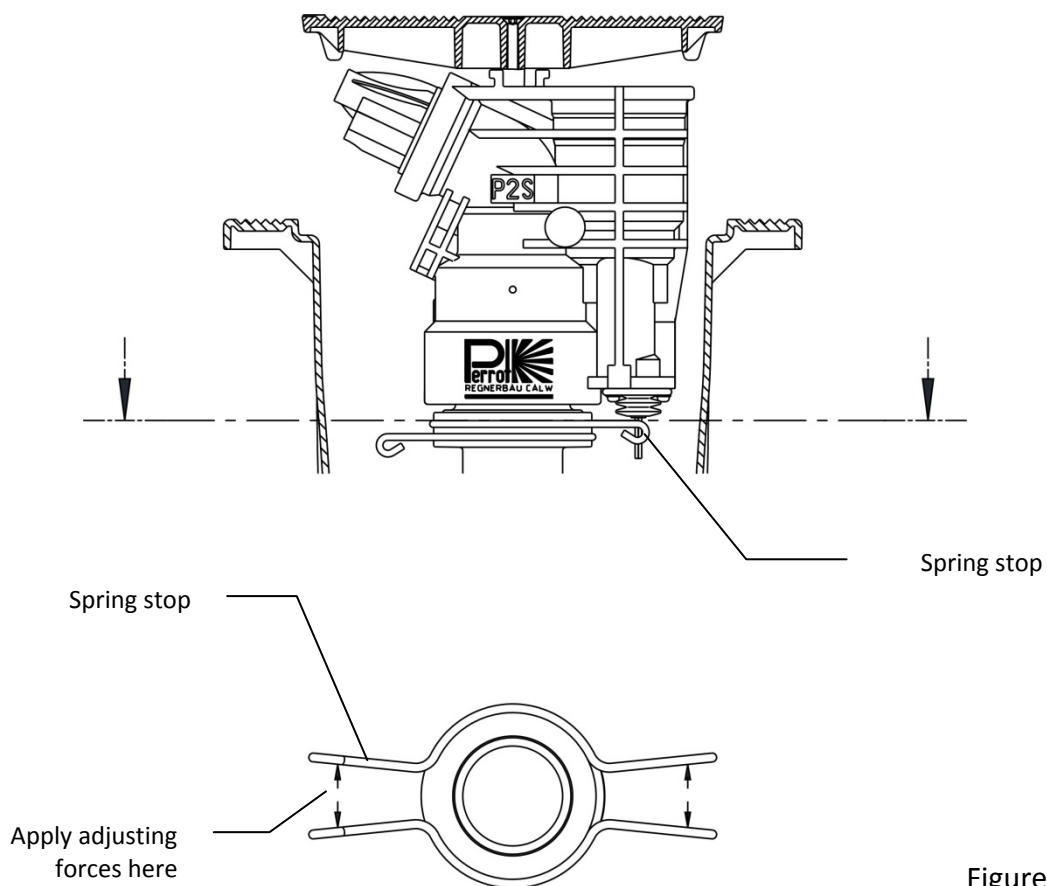


Figure 3



#### 6.4 Full-circle irrigation

For full-circle irrigation the spring stops need to be removed.  
First, the sprinkler module needs to be removed from the housing.  
(See point 8.3).

#### **WARNING**

***Pull spring stop apart at both ends only to such extent that they can just be slid off.***

***If the spring stops get overextended, it will not be possible to use them any more for back-and-forth operation.***



Gently pull both spring stops apart and remove downwards.



Now splay the spring stops over the sliding pipe and pull off. New spring stops are fitted in reverse order.

Any overextension of the spring stops must be avoided, as otherwise it can no longer be certain that they will fit tightly and it will no longer be possible to set the irrigation sector's switch-over point when reverting to sector operation.

## 6.5 Regulating the speed

Turning the regulating screw to the right reduces the rotational speed.



It is possible for the sprinkler to be **completely stopped** when the speed-regulating screw is turned to the right.

If you turn it to the left, the rotational speed gets increased again.

### WARNING

***Irrigate at reduced speed only if the water is clear.***

***If the water is dirty, the regulating screw must remain fully opened. Otherwise there is a risk of the sprinkler stopping.***

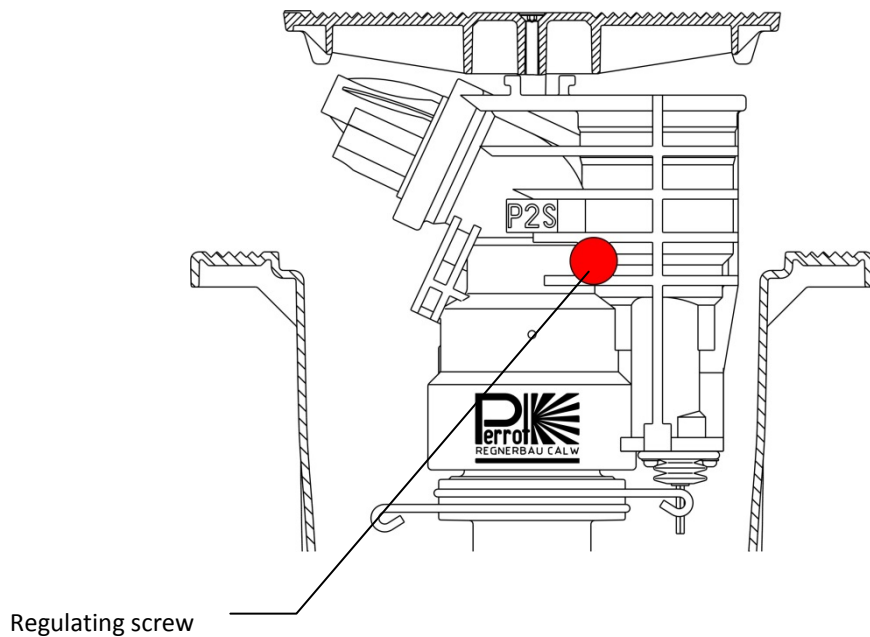


Figure 4

## 7. Decommissioning and preparing for winter

For decommissioning please turn off the water supply and electricity supply of the pump.

### 7.1 *Preparing for winter*

During the frost period please take care, that there is no water standing in the sprinkler. Remaining water in the piston drive unit does not cause problems during frost. When the sprinkler is put into operation again, although there is still ice in the piston, it will take about 15 minutes to defrost the drive unit, at an ice temperature of approx.  $-20^{\circ}\text{C}$ .

### 7.2 *Springtime commissioning*

As a result of the change of load and diverse installation conditions (damp/dry), the head of the piston sprinkler is subjected to extreme tensions. These circumstances can lead to the piston drive acquiring some axial play. In order to avoid any operating problems, the piston cover should be tightened as described below during spring commissioning in the first and second year of operation.



Before the grey cover can be tightened, the lock screw needs to be removed.

After firmly tightening the grey cover, twist in the lock screw again.



The lock screw prevents the grey cover from working itself loose.

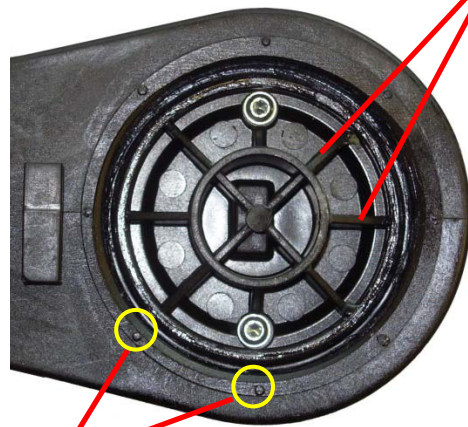


Tighten cover using face spanner ZB98236 and approx. 10Nm of torque. That means, with a lever length of 10cm you need to apply a force of 100N to the spanner.



**Note:**

After the third or fourth winter there should be no further expansion.



Marker points

Bracing ribs



**Caution:**

If the lock screw cannot be screwed in, it will hit a piston drive bracing rib! In this case, the grey cover must be tightened a bit more so that the lock screw misses the bracing rib. The orientation of the bracing ribs is indicated by marker points.

## 8. Maintenance and repair work



An unexpected jet of water can cause serious injury. Prior to any maintenance or repair work therefore ensure that the water supply is securely turned off.

### 8.1 Maintenance

- ☆ After one year of use, tighten the M6 flange screws (8 of them) using a 10mm box spanner to ensure that the sprinkler module is fixed firmly in place. Tightening torque  $9^{+1}$  Nm.
- ☆ Clean out the inside of the sprinkler housing using an industrial vacuum cleaner or similar (as necessary).
- ☆ Cut sprinkler housing free of any overgrowing grass. It makes sense to carry out these jobs prior to spring commissioning.
- ☆ Regularly check that the sprinkler is flush with the surface, especially in the case of natural grass.

### 8.2 Replacing the nozzle

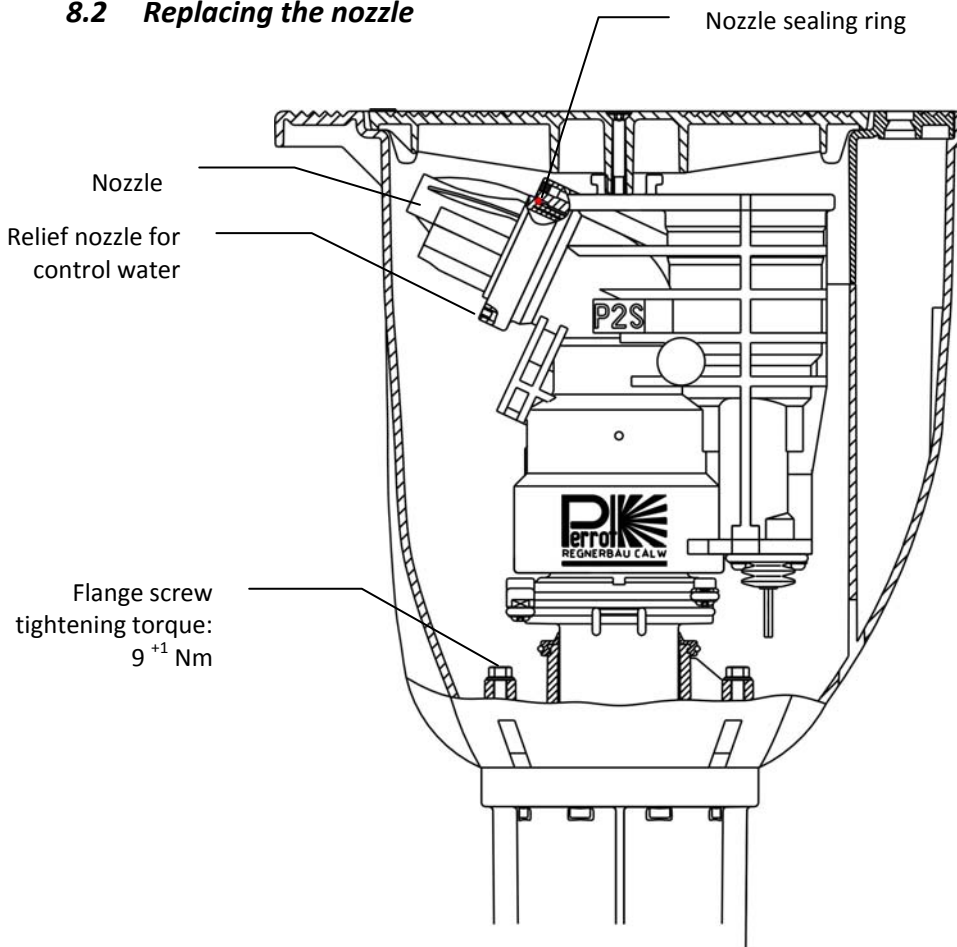


Figure 5



When changing the main nozzle the nozzle's thread should be cleaned and greased. This enables the nozzle to be easily loosened by hand (using the assembly key RB25189) and just as easily tightened again.



Wrong position



Right position

When fitting the nozzle make sure that the funnel gets pushed on in the right position. (See picture.)



If the funnel is not properly fitted first, the nozzle cannot be screwed into the manifold head.

**WARNING**



***When fitting the new nozzle, make sure that the nozzle gets fully screwed in, that the main secondary nozzle points downwards (6 o'clock position) and that the sealing ring is correctly fitted (figure 5).***

### 8.3 Disassembly sprinkler insert

The sprinkler module needs to be taken out of the housing in order to carry out the repairs described below.

- ☆ Unscrew cover using 5mm Allen key.
- ☆ Remove the 8 flange screws using a 10mm box spanner.

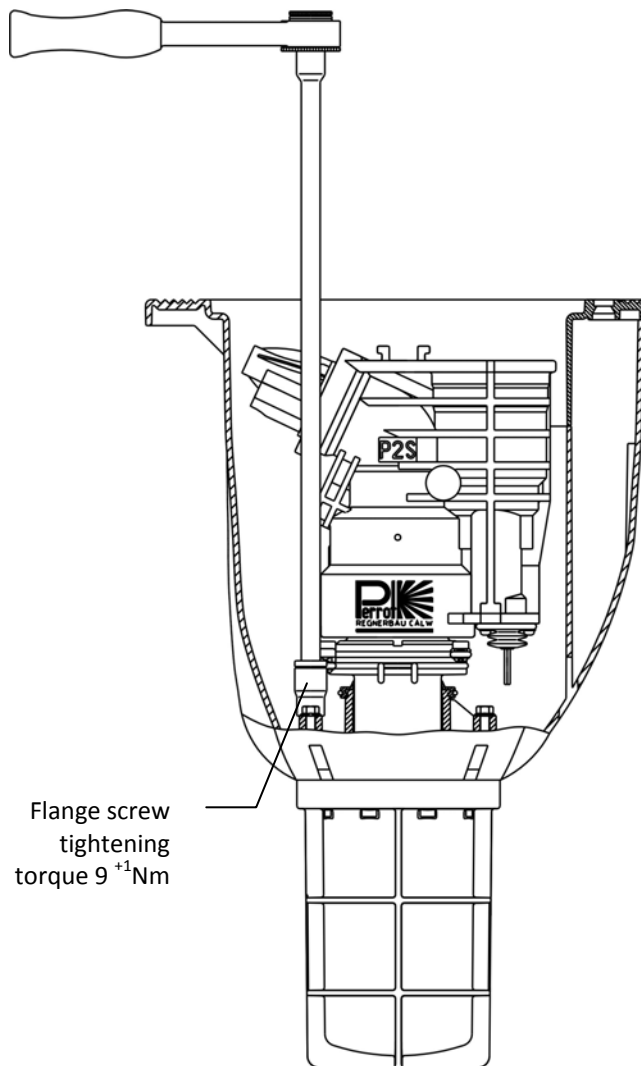


Figure 6

- ☆ Pull sprinkler module out of the housing.

**WARNING** *The sprinkler insert is fitted in reverse order.*



### 8.5 *Cleaning the piston drive and piston drive chamber*

If due to becoming very dirty the drive is no longer working, the piston drive should be taken out and cleaned.

Removing the piston drive: See repair guide *TDP055-rep*.

## 9. Troubleshooting

### 9.1 *Sprinkler malfunctions*

Malfunction	Cause	Remedy
Sprinkler not rotating or only very slowly. Sprinkler not rotating at all.	Dirty water. Speed regulator set to minimum. Blocked	Fully open regulating screw, dirt gets flushed out Clean filter See points 8.4 and 8.5
	Defective piston drive	Piston drive must be replaced, see repair instructions TDP055e-rep
Sprinkler has poor jet	Nozzle / funnel is blocked	Unscrew nozzle, remove and clean. When fitting nozzle, make sure it is in correct 12 o'clock position; grease nozzle thread.
Sector angle gets bigger during operation.	Spring stop is loose. Spring force has slackened. Spring stop has been overextended.	Fit new spring stop.
Sprinkler's bearing is leaking.	Groove ring is worn out.	Can be repaired only by the manufacturer

We reserve the right to make changes in line with technological advances, including without prior notification.

## CE declaration of conformity

**In compliance with Machinery Directive (98/37/EC), appendix II A**  
**In compliance with EC Low Voltage Directive (73/23/EEC)**  
**In compliance with EC Directive on Electromagnetic Compatibility (89/336/EEC)**

The manufacturer: Regnerbau Calw GmbH  
Industriestrasse 19-29  
75382 Althengstett – Germany  
Tel. +49-(0)7051-162-0

herewith declares that the following product

Product name: VP3 large-area pop-up sprinkler  
Year made: from 2014

conforms with the provisions of the directives indicated above.

The following harmonised standards were applied:

DIN EN 292-1; Safety of Machinery – Basic terms, general  
EN 12100 design principles; part 1: General principles and specifications

DIN EN 1050 Machine safety; guidelines for risk assessment

DIN EN 60204-1 Machine safety; electrical equipment of machines; part 1: General requirements (IEC 204-1:1992, modified)

Original versions of the operating instructions for the machine and of the technical documentation have been provided.

This declaration of conformity loses its validity if any modifications are made to the machine that we have not first agreed and approved in writing.

Althengstett,

20.05.2014

Date

Günther Flik, Director of Engineering

Signatory and signatory's details



Signature