Maintenance and Operating Instructions

Pop-up impact sprinkler

Type: Triton-M (W)(WD)VAC, (W)(WD)VCID

PERROT

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Contents

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 

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.

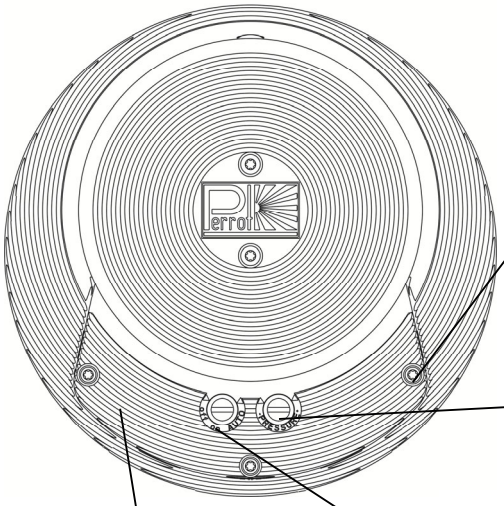
2.5 Dangers of failing to observe safety instructions

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 Views Triton-M VAC

View from above



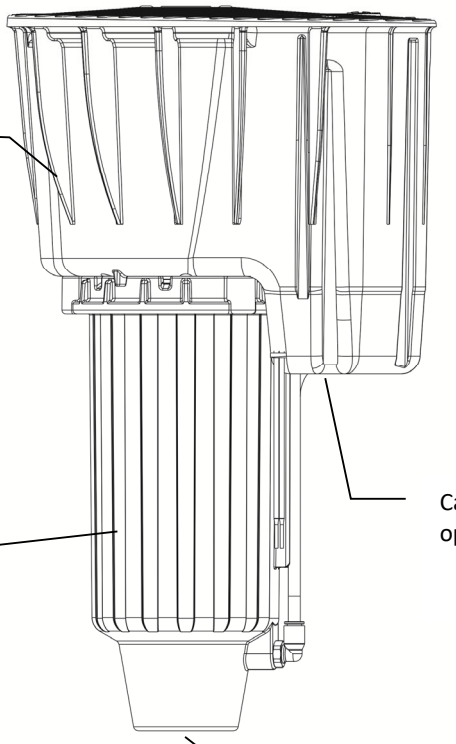
Securing screw

Pressure regulating

Manual ON/OFF/Auto control module

Cover for cable compartment

Side view

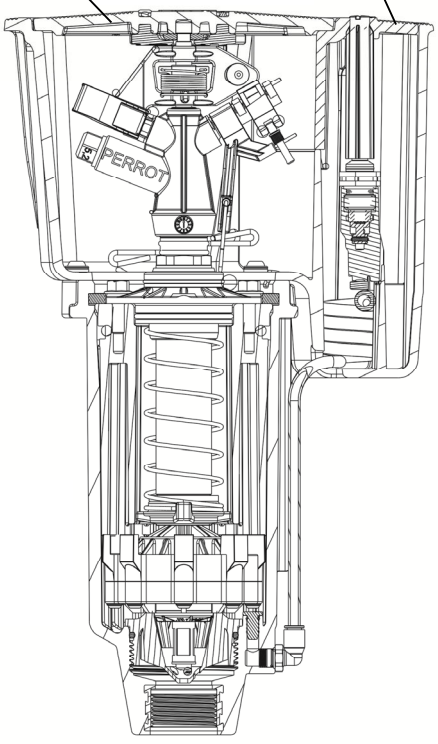


Housing

Guide housing

Cable inlet opening

Main water connection (1")



Cover

Cover for Cable compartment

3.3 Special tools

Assembly key	Disassembly of sprinkler head and pipe axle		RT16764
Flushing equipment	Flushing pipes		RT87096
SW 7 socket wrench	Nozzle removing		ZB98077
SW 14 socket wrench	Changing main nozzle		ZB98114
SW 10 socket wrench	Changing sprinkler insert		RT15745
For screws at the compartment lid Torx T20	For screws at the compartment lid		ZB98289
For screws at the housing – guide housing Torx T25	For screws at the housing – guide housing		ZB98297
Combi tool Triton-M VAC	Disassembly valve sleeve and disassembly of pre-filter		RB16725
Disassembly of pre-filter	Disassembly of pre-filter		RT14930

4. Technical data

Recommended operating pressure 5 to 6 bars
Permitted operating pressure 3 to 7 bars

WARNING The pressure at the sprinkler may not exceed 10 bars

Connection thread: G1“ 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

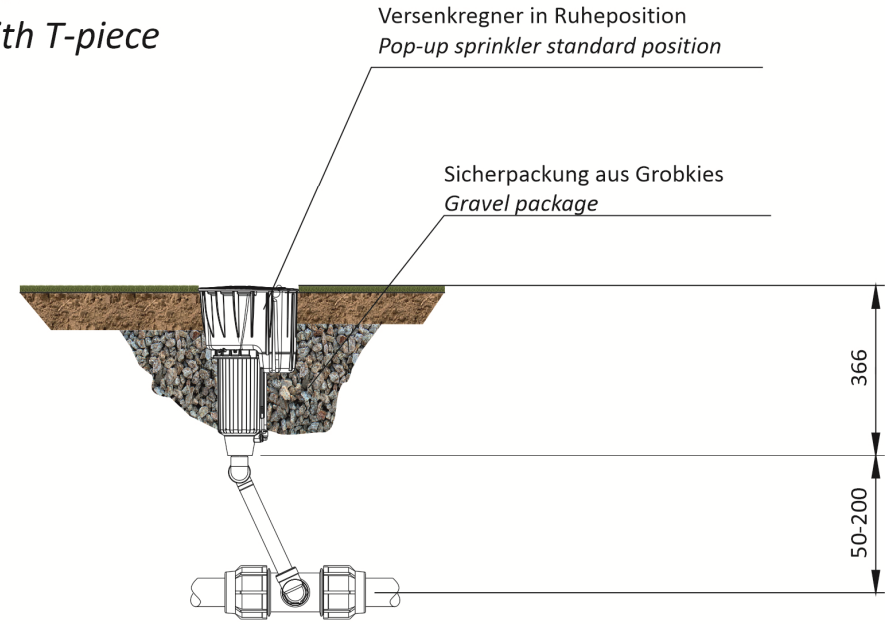
- ☆ The thread connection on the pop-up sprinkler is 1" FT.
- ☆ For the thread seal use hemp and sealing compound, e.g. Fermit Spezial or teflon tape.
- ☆ The pop-up sprinkler should be fitted in accordance with the 'Perrot Triton-M pop-up sprinkler installation diagram' (see next page). In order to avoid any load pressure on the main line, you should definitely use a flexible connection.
- ☆ Providing a drainage pit as shown in the installation diagram, is strongly 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 Triton-M VAC pop-up sprinkler installation diagram

Schema A

Seitlich am Rohr

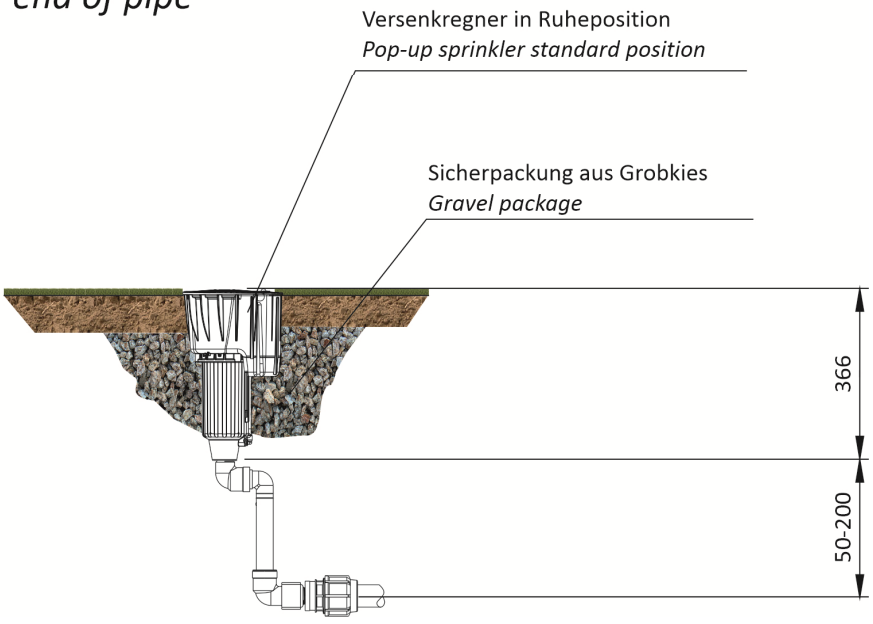
Installation with T-piece



Schema B

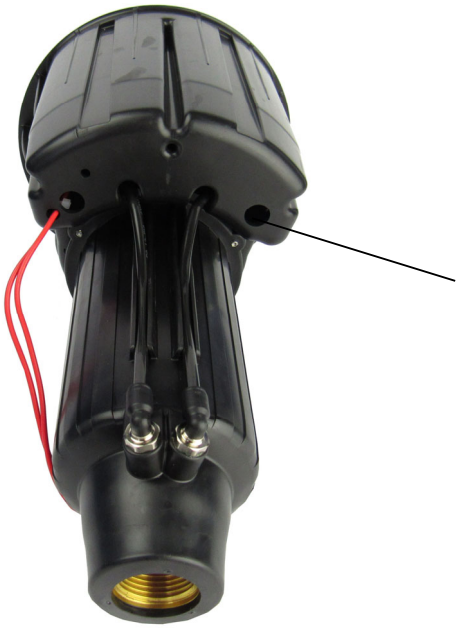
Am Leitungsende

Sprinkler at the end of pipe

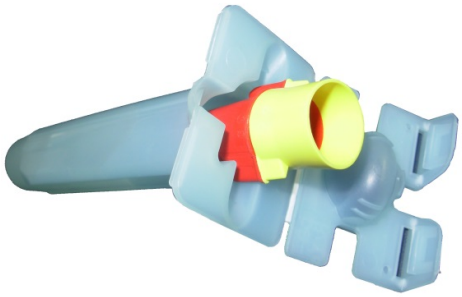


5.5 Cabeling

The laid 2-core cable is installed for the electrical connection of the Triton-M pop-up sprinkler.
The cable is pulled through the right or left opening on the bottom of the housing into the cable compartment.



Proposal for pulling in the control cable into the sprinkler



DBR/Y-6 cable connector kit (article no.: ZH90032) for connecting the control cable to the coil fitted inside the sprinkler.

Open the cover of the cable compartment (TX20) and connect the solenoid cable. Please use the DBR/Y-6 connector kit for the connection

Put back the cables into the cable compartment and close the cover.

The electrical connection is thus not exposed to the soil, but is instead protectively integrated inside the sprinkler and accessible again at any time.
This simplifies any search for faults and any maintenance work can be carried out at any time without any earthwork.

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**.

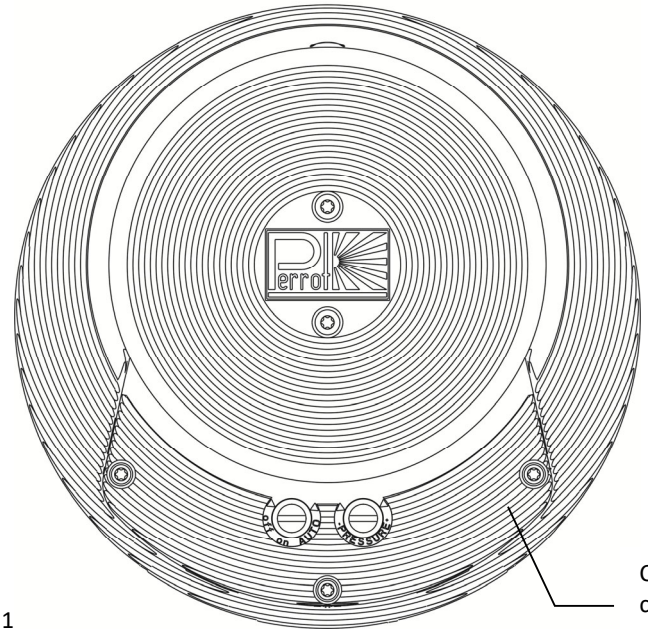


Figure 1

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.

6.2 Commissioning

a) Check electrical function:
   Before any water supply to the sprinkler is opened, activate the coil by means of the controller. If you hear a 'clicking' sound from the coil, the electrics are working properly. (The click is produced by the movement of the armature.)
b) Ensure that <Manual opening> is set to AUTO **(turn screw for <Manual opening> as far as it will go to the left).** This setting ensures that after water is supplied the sprinkler closes if it has no power.
c) Slowly open supply of water to the sprinkler until operating pressure is built up. It is possible that the sprinkler will briefly open, but should then automatically close after at most 30 seconds.
d) Once the water supply has been opened and max. operating pressure has been reached, check sprinkler and connection for leaks.
e) Check that sprinkler is working properly: Open sprinkler using <Manual opening> by moving the screw for <Manual opening> into the position between AUTO and OFF (approx. 1 rotation). Sprinkler head rises and starts to rotate.

Do not stand in front of the nozzle opening!

f) Close <Manual opening> and put into AUTO position (see point 6.2b). Sprinkler must stop water flow within 30 seconds.
g) Keep repeating steps 'e' and 'g' until the sprinkler is working faultlessly.
h) Check once again that it works correctly when activated electrically from the controller.

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 or pressing on the relevant end of the top or bottom spring stop.

Setting the sector angle

WARNING Infinitely variable setting is possible by pulling or pressing on the relevant end of the top or bottom spring stop.

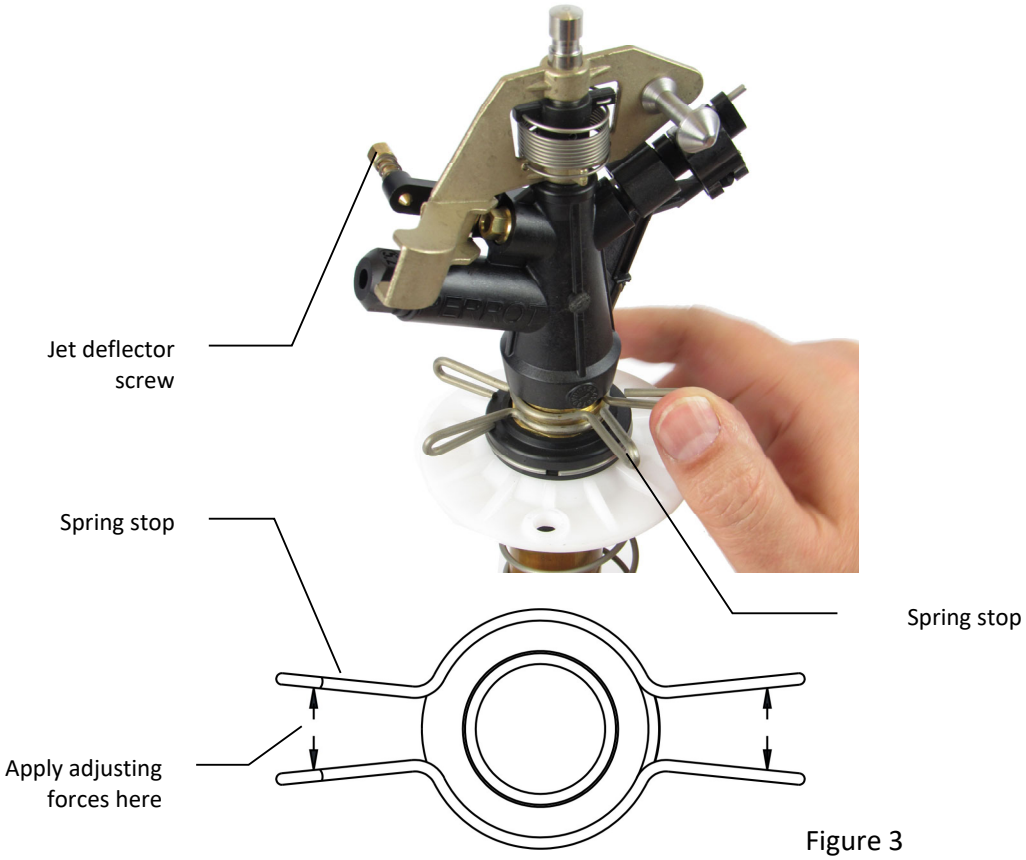


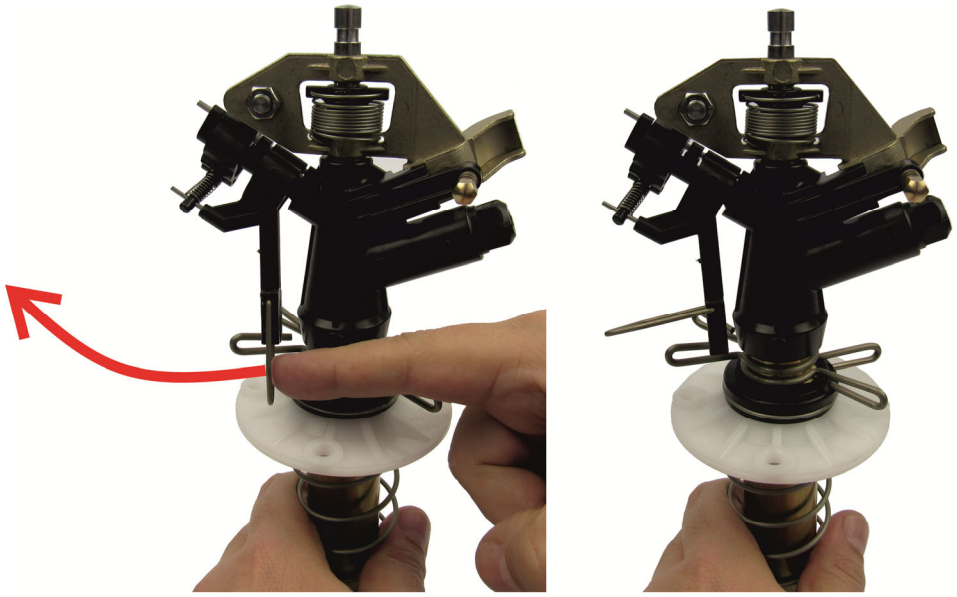
Figure 3

6.4 Jet deflector screw

The jet deflector screw is for adjustment of the near irrigation around the sprinkler. If you screw in further the screw in the water jet, the „rainfall“ consistency around the sprinkler increases, the casting range decreases. If you unscrew the interruption screw the irrigation around the sprinkler decreases and the casting range increases.

6.5 Switch sprinklers from partial circle to full circle

To change the sprinkler from partial circle to full circle, simply fold the spring up.



7. Decommissioning and preparing for winter

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

Before the onset of any winter frosts, the sprinkler needs to be emptied. To do this, a powerful compressor needs to be attached to the pipeline network. Then open the valve on the sprinkler and keep it open until nothing but air comes out of the nozzle.

The blow out pressure should not exceed 5 bars.

This model does **not** have a discharge valve and can therefore not be emptied the traditional way by gravity.

WARNING

Electrically activate the solenoid several times so that any residual water is pushed out of the coil cavity.
During the winter we recommend activating the coil for approx. 1 minute twice a week.

Springtime commissioning see chapter 6.2.

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

- ☆ 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 Changing the nozzles

Please us the socket wrench for changing the nozzle.
Use SW7 for the driving nozzle and SW14 for the main nozzle.

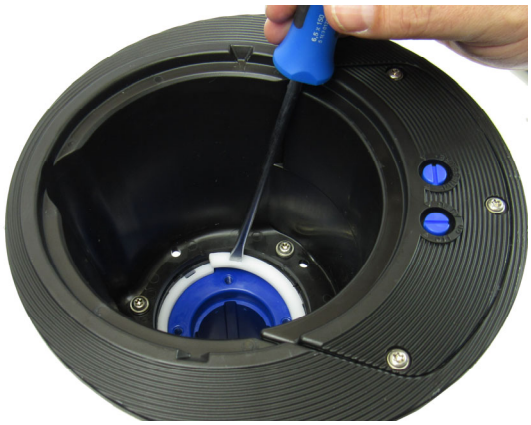
8.3 Removing the valve insert

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

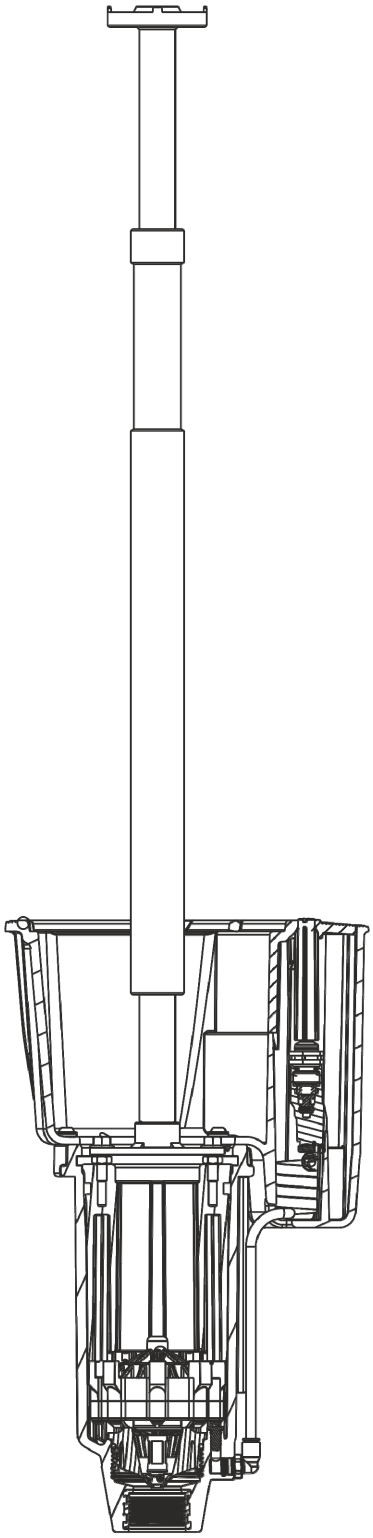
☆ Lift the cover and secure the insert, with a screw driver against snapping back. Then clip off the cover.

☆ Unscrew the 4 flange screws SW10 (tightening torque: 2,5Nm+-0,2Nm)

☆ Pull sprinkler module out of the housing.



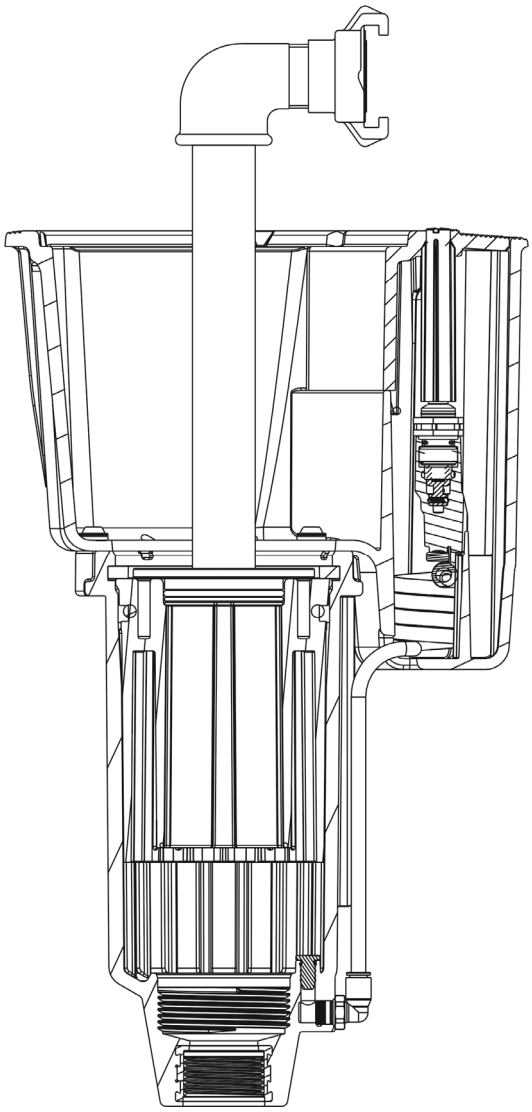
☆ Remove the retaining ring in the housing bottom with a screwdriver.



- ☆ Mount combi tool onto the valve sleeve in the base of the housing. Tighten the screws SW10 to stop (tightening torque: 2.5Nm+-0.2Nm) and pull them upwards. Light joints may be required to disassemble the valve.
- ☆ Screw valve lifter / coarse filter wrench onto valve insert's studs and manually tighten.
- ☆ Pull out valve insert complete with valve lifter and unscrew. Valve insert is now held on hollow screw by O-ring only.

8.4 Taking out the coarse filter – only if seen to be dirty

- ☆ Insert combi tool Triton-M VAC into the filter's slots, turn and pull out.
- ☆ Replace the valve sleeve and secure it with a retaining ring.
- ☆ Mount the flushing equipment with the flange screws SW10.
  (tightening torque: 2,5Nm+-0,2Nm)
- ☆ Flush sprinkler.



8.5 Fitting coarse filter

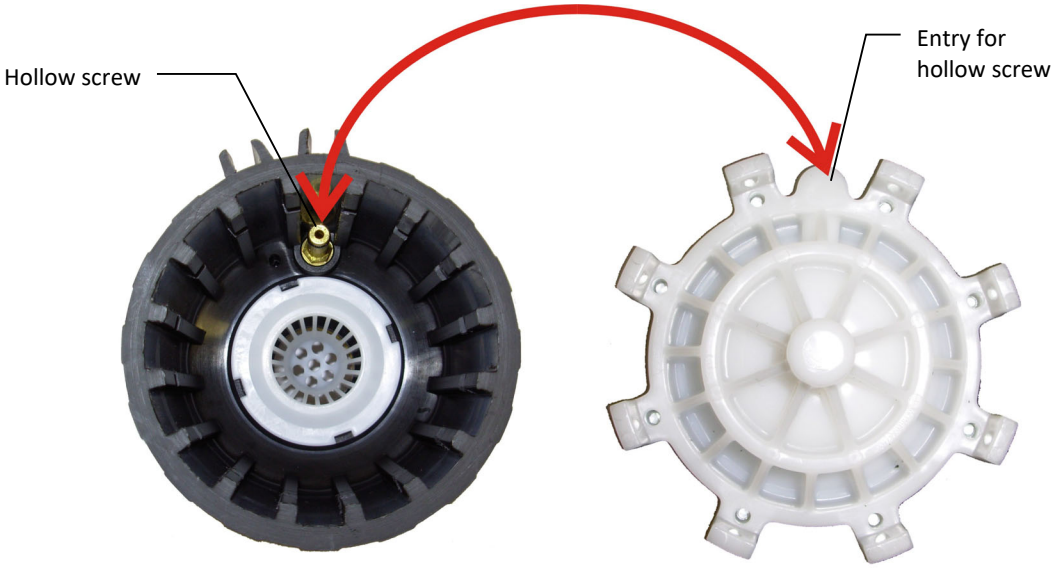
- ☆ Remove the flush insert and valve sleeve.
- ☆ Ensure that thread and O-ring are clean.
- ☆ Lightly smear O-ring with acid-free grease.
- ☆ Put coarse filter in place and manually tighten using combi tool wrench.
  (tightening torque: 10Nm+-0,5Nm)

8.6 Fitting the valve

Before fitting the valve, check the valve insert – especially around the valve seat – for any dirt or damage!

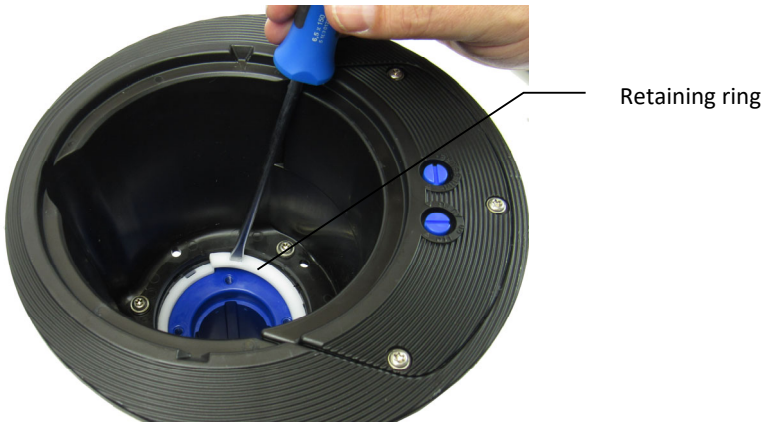
☆ Screw cleaned or new valve insert onto the valve lifter again and fit into the sprinkler housing.

WARNING Ensure it is fitted in the correct position!



☆ Insert valve sleeve and secure it with safety ring.

WARNING Retaining ring must be fully inserted into the slots!



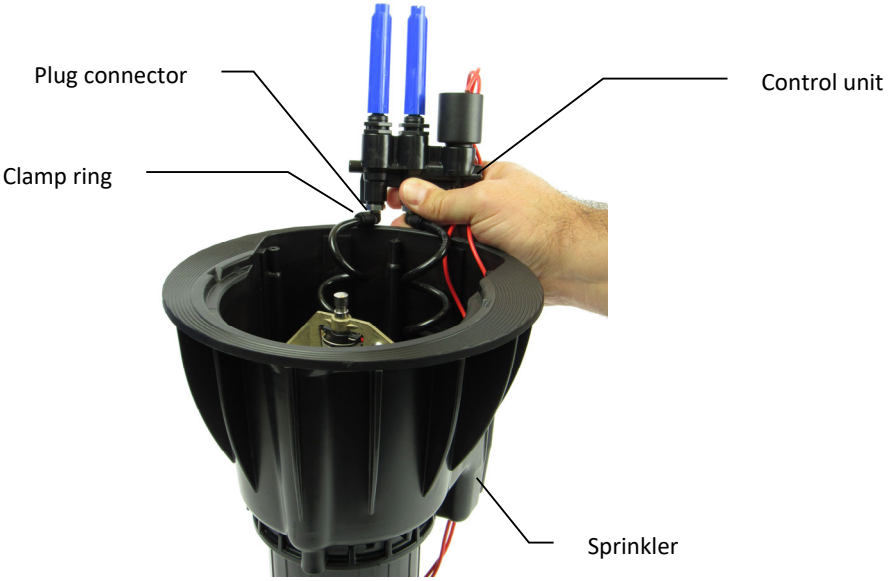
8.7 Removal / installation of the control unit

Ensure sprinkler is not under pressure.

Taking out the control unit

☆ Lift the cover and secure the insert with a screw driver against snapping back. Then clip off the cover.

☆ Unscrew all 3 locking screws (TX20) and take off cable compartment cover.
☆ Unscrew the retaining screw (TX20) from the control unit
☆ Remove control unit from protective housing.
☆ Twist out coil.
☆ When replacing the control unit, press back the clamp ring at the plug-in connector and pull out the hose.



Fitting the control unit

☆ When purchasing spare parts, the control unit is also supplied with plug connections. Push hoses into plug-in grommets as far as they will go and ensure that the clamp ring springs back.

Please note that the hoses are in the correct position are mounted to ensure correct operation.

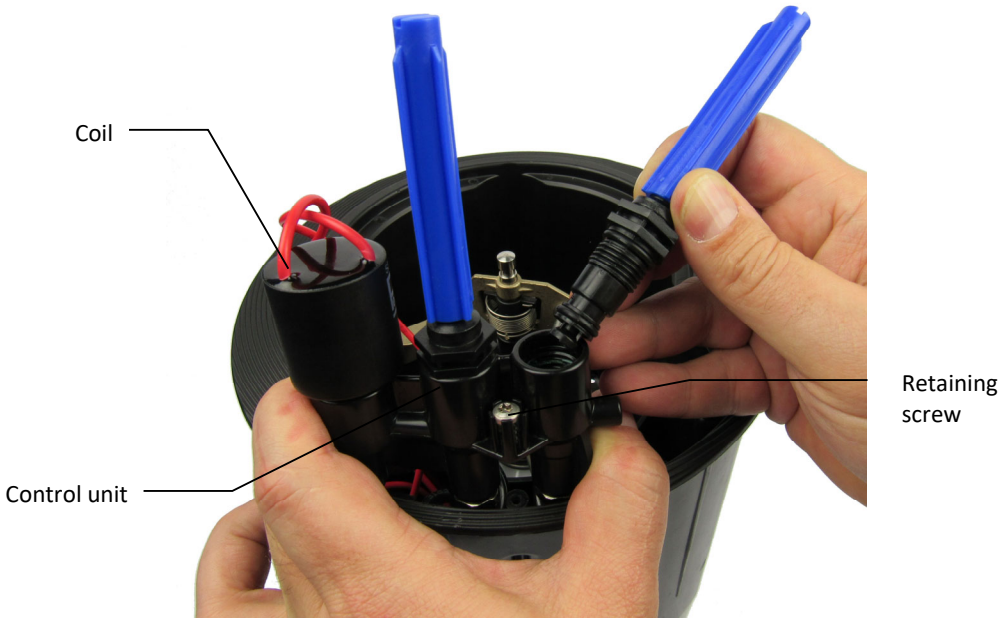
☆ Screw in coil.
☆ Clip control unit into protective casing (TX20, tightening torque: 0,9Nm+-0,2Nm)
☆ Fasten the lid for cable shaft with all three screws.
(TX20, tightening torque: 0,9Nm+-0,2Nm)
☆ Check sprinkler is working properly as per point 6.2.

8.8 Removal / fitting of manual opening and pressure regulating inserts

Ensure sprinkler is not under pressure.

Removal of manual opening and pressure regulating inserts

☆ Unscrew all 3 locking screws (TX20) and take off cable compartment cover.
☆ Unscrew the retaining screw (TX20) from the control unit
☆ Remove control unit from protective housing.
☆ Using an SW19 flat spanner, twist out manual opening and pressure regulator screws.



Fitting manual opening and pressure regulating inserts

- ☆ Set manual opening to Auto and pressure regulator into the minus (-) position (turn to the left as far as it will go) and screw in using an SW19 flat spanner.
- ☆ Clip control unit into protective casing (TX20, tightening torque: 0,9Nm+-0,2Nm)
- ☆ Fasten the lid for cable shaft with all three screws.
  (TX20, tightening torque: 0,9Nm+-0,2Nm)
- ☆ Check sprinkler is working properly as per point 6.2.
- ☆ Set manual opening / pressure regulator screws to desired position.

9. Troubleshooting

9.1 Sprinkler malfunctions

Malfunction	Cause	Remedy
Sprinkler is not rotating or only very slowly. Sprinkler is not rotating at all.	Sealing disc worn out	Change sealing disc
	Driving nozzle clogged	Unscrew driving nozzle and clean
	Minimum pressure of 3 bars not reached	Increase pressure
Sprinkler has poor jet	Nozzle is blocked	Unscrew nozzle, remove and clean.
Sector angle gets bigger during operation.	Spring stop is loose. Spring force has slackened. Spring stop has been overextended.	Fit new spring stop.
Valve opens/closes only with manual opening, but not on any electric signal	Screw for <Manual opening> is set to OFF	Turn screw to the left as far as it will go, to Auto.
	Core is jammed in the coil	Remove coil and clean core
	No / inadequate power supply	Establish 24V AC power supply
	Defective coil	Check coil resistance (should be approx. 35 ohms) and replace if necessary
	Relief channel for coil blocked	Clean channel
	Control pipe to the solenoid clogged or bent	Replace control pipe
Valve fails to open even with manual opening	Control water hole or relief hole blocked	Clean control water / relief hole
	Supply line under no / insufficient pressure	Establish pressure supply
Valve fails to close	Coil seat dirty	Clean coil seat
	Bits of dirt between valve seat and sealing plate	Clean valve seat and sealing plate
	Defective membrane	Remove valve and replace membrane
	Control water filter contaminated from valve	Clean control water filter
	Control pipe defect	Change control pipe
	Too little pressure drop at the valve	Tighten the pressure regulating screw
Output pressure at sprinkler nozzle too low or casting range too short	Stones and bits of dirt are hindering an unimpeded passage of water	Clean valve and flush sprinkler
	Pressure regulator is on (-)	Pressure control screw to the left, turn towards (+)

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