



Operation manual

for PERROT agricultural impact sprinkler
ZR 22(W)





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1. Introduction

This instruction manual explains what is important when installing, operating and maintaining the ZR 22 sprinkler. Sprinkler systems require little effort in terms of maintenance and operation. Nevertheless, there are a few things to bear in mind to ensure that the system performs its full function over a long period of time and works to your satisfaction.

We assume that you are familiar in the field of irrigation. That is why we have kept these instructions brief and only included the information that you absolutely need to know in order to use this product.

Warranty can only be accepted if the sprinkler is operated in accordance with these operating instructions and exhibits defects within the warranty period.

We reserve the right to make changes according to the state of the art, even without special notice.

2. Safety

These operating instructions contain basic information that must be observed during installation, operation, maintenance and repair. It is therefore essential that these operating instructions are read by the installer and the responsible specialist personnel / operator before installation and commissioning.

Not only the general safety instructions listed in this “Safety” section must be observed, but also the special safety instructions included in the other sections.

2.1. Use of symbols in the operating instructions

The safety instructions contained in these operating instructions which, if not observed, could endanger persons are specially marked with the general danger symbol.



The word **WARNING** is added to safety instructions which, if ignored, may result in danger to the sprinkler and its function.



2.2 Proper use

The sprinkler is used to distribute water evenly. The water should be pre-cleaned and free of coarse and long-fibered dirt. The water and ambient temperature must be below the limits specified in the technical data.

2.3 Clearly improper use

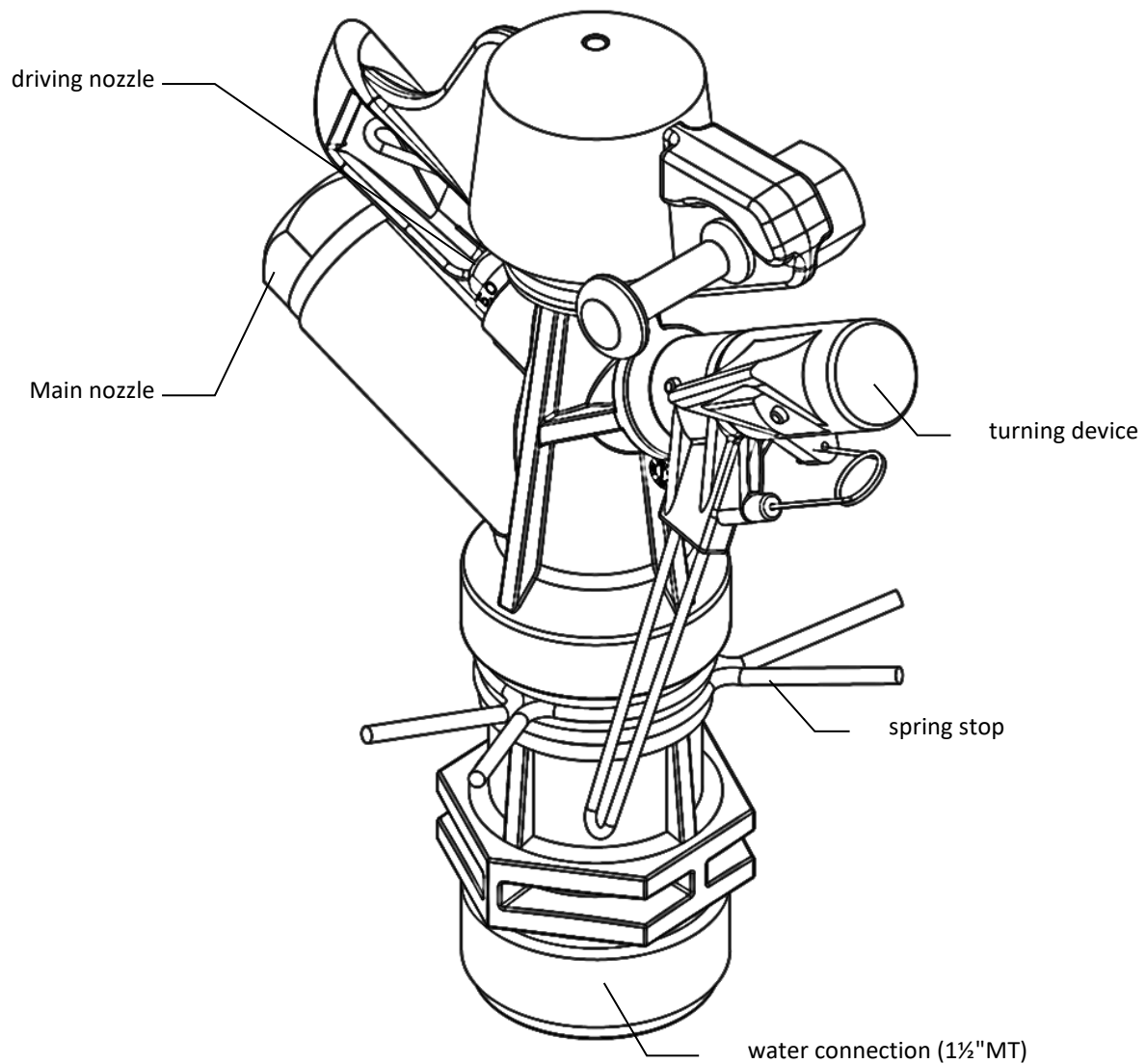
- ☆ Operation of the sprinkler by unauthorised personnel.
- ☆ Operation of the sprinkler with the sector to be watered wrongly set, e.g. as the result of vandalism. This can result in the jet of water being directed to the side away from the grassed area.

2.4 Dangers of failing to observe safety instructions



Failure to observe the safety instructions may endanger persons as well as the environment and the machine. Failure to observe the safety instructions may result in the loss of any claims for damages.

3. Description

3.1 View



3.2 Special tools

ZM/ZR Assembly key	Disassembly of sprinkler head and pipe axle		RT28396
SW 10 socket wrench DIN 3125	Changing driving nozzle		RT15745



4. Technical data

Recommended operating pressure 5 to 8 bar

Permitted operating pressure 3 to 8 bar

WARNING

The pressure at the sprinkler may not exceed 8 bar
Pressure surges must be avoided at all costs

Connection thread: G1½" MT

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



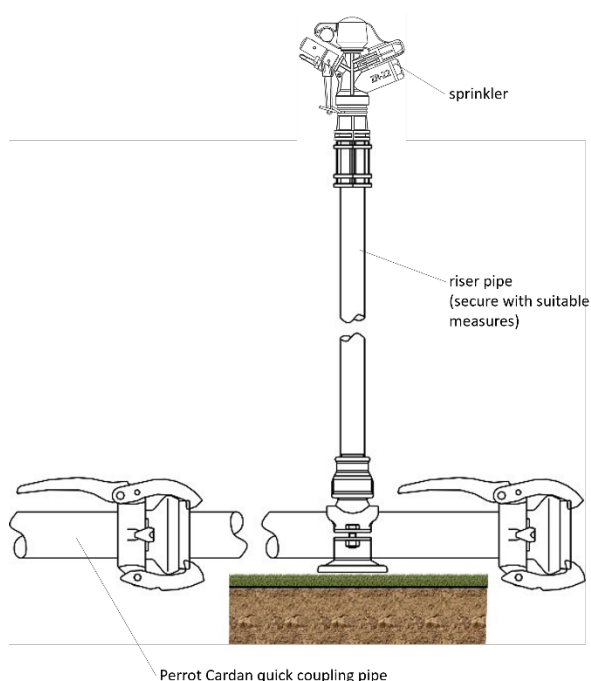
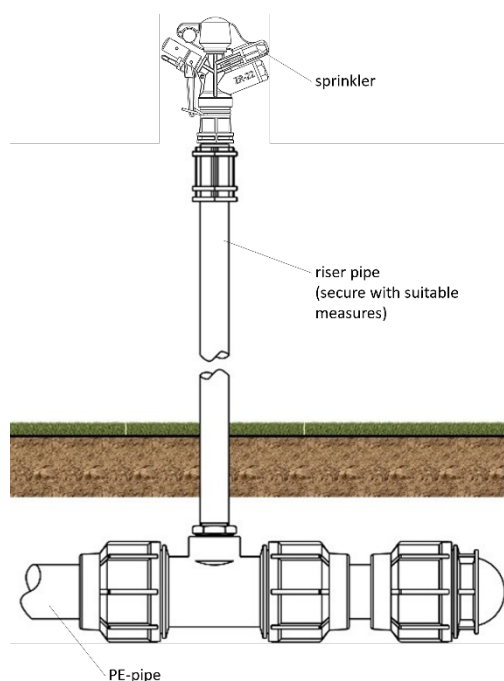
If impurities get into the sprinkler, the sprinkler can be destroyed, and the installation personnel can be injured. Therefore, flush the pipe thoroughly before connecting the water supply.



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 1½" MT.
- ☆ For the thread seal use hemp and sealing compound, e.g. Fermit Spezial or teflon tape.
- ☆ When connecting to the public supply network, observe the local regulations
- ☆ Pipes are to be laid in a sand bed on stony ground. The sand bed should surround the pipe 10 cm on all sides
- ☆ When installing the sprinkler, e.g. on a standpipe, make sure that the sprinkler head can easily be turned by hand.



5.3 Setting the sector

WARNING

With this 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.

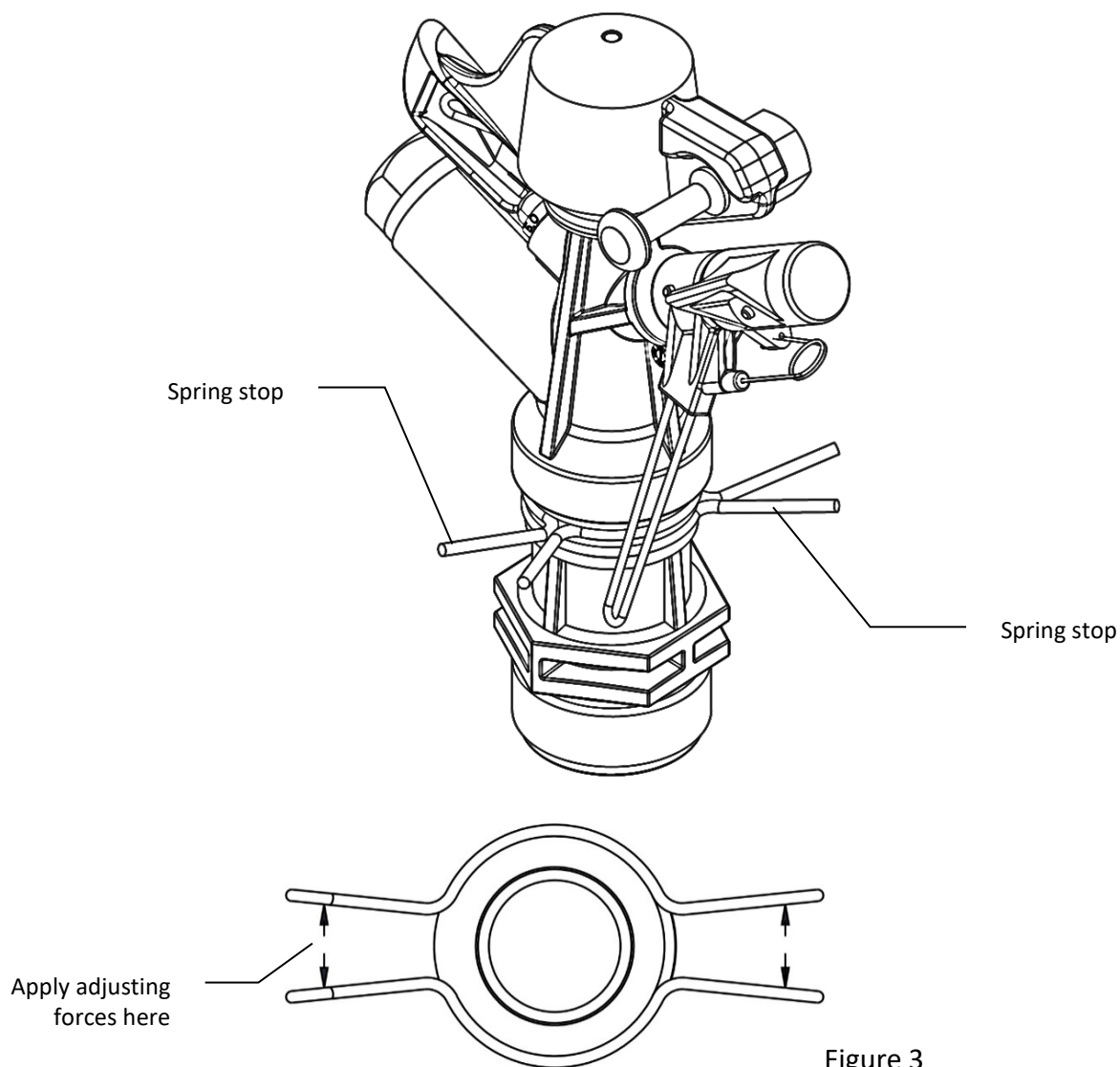


Figure 3

5.3 Casting range

- ☆ The casting range is set using different nozzles and pressures. For further information see data sheet

6. Commissioning and operation

6.1 Potential danger



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.**

6.2 Commissioning

- a) Vent the pipe network to avoid pressure surges.
- b) Slowly open supply of water to the sprinkler until operating pressure is built up.
- c) Once the water supply has been opened and max. operating pressure has been reached, check the sprinkler and connection for leaks.
- d) Check that sprinkler is working properly. Sprinkler head starts to rotate.



Do not stand in front of the nozzle opening!

- e) Despite of a thoroughly flushing, it may happen that the sprinkler nozzle may clog. To clean the nozzle, you must unscrew the nozzle and flush the sprinkler. (Use socket wrench SW10)

7. Maintenance and repair work



An unexpected jet of water can cause serious injury. Therefore, make sure that the water supply is safely switched off before carrying out maintenance and repair work.

- ☆ Check the sprinkler function at regular intervals
- ☆ If the sprinkler or the turning device gets dirty, it should only be rinsed with clear water. **Do not use** lubricants or grease, as this will damage the sliding discs in the sprinkler!!!
- ☆ Remove and repair defective parts immediately or return for repair

7.1 Changing the nozzles

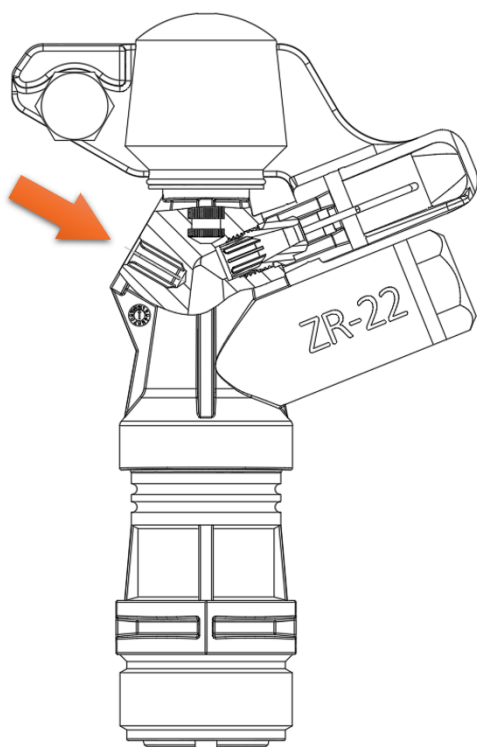
Please use the socket wrench for changing the nozzle.
Use SW10 for the driving nozzle and SW26 for the main nozzle.

7.2 Retro-fitting back nozzle

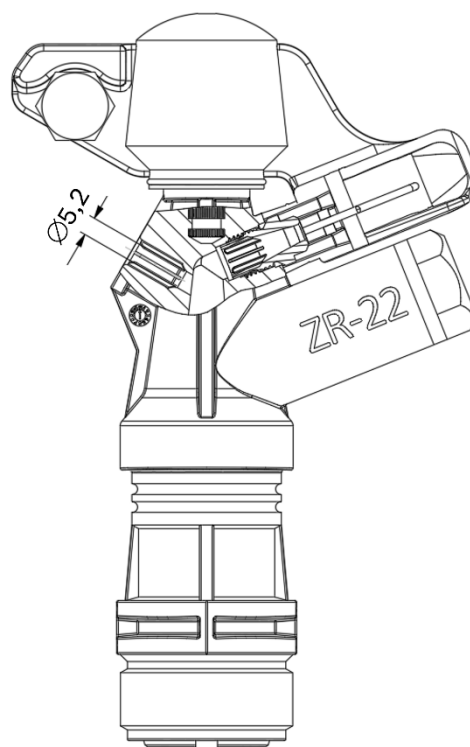
If required, the ZR 22 circular sprinkler can be equipped with a back nozzle.

WARNING Don't drill to deep, otherwise the main-nozzle will be damaged by the drill.

Drill out the blind hole with a drill bit of $\varnothing 5,2$ mm.



Before

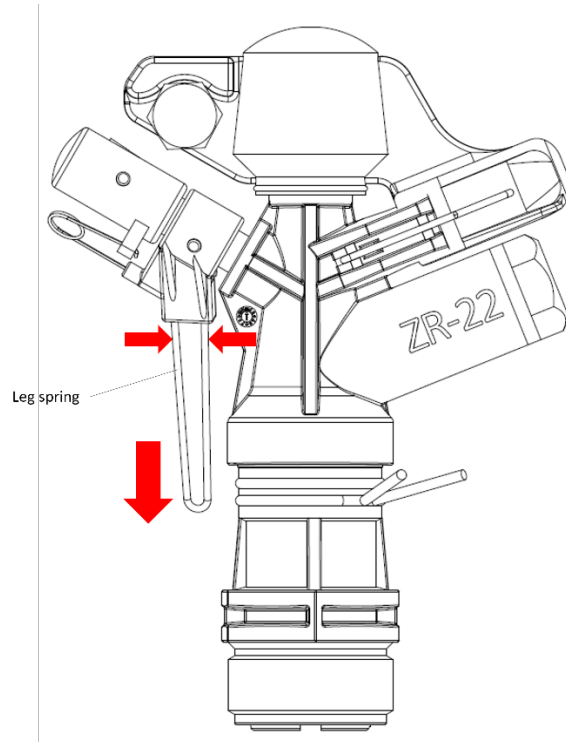


After

Pressure [bar]	Additional water consumption back nozzle [m ³ /h]
3	0,9
4	1,1
5	1,3
6	1,5
7	1,6
8	1,7

7.3 Conversion from part-circle sprinkler to full-circle sprinkler

If necessary, the part-circle sprinkler can be converted to a full-circle sprinkler.
To do this, the leg spring must be compressed and then pulled downwards.



8. Winterizing

Before shutting down the irrigation system for winter, drain the pipe system and if necessary, the pumping station. Leave drain valve open until restart.
With the sprinklers, make sure that there is no water in the sprinkler.

9. Troubleshooting and Solutions

Malfunction	Cause	Remedy
Sprinkler only turns in one direction and then stops	turning device is blocked	Clean the turning device with clean water or compressed air (only for part circle sprinklers)
	pressure is too low	Increase pressure
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
	pressure is too low	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.

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

We remain at your full disposal for any further information you may require!

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