

P2 Series Sprinkler Operating Manual



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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.

1.1. Application

The sprinkler is used to consistently and uniformly distribute irrigation. The water should be pre-filtered to be free of coarse and fibrous impurities. Maximum water temperature: $127^{\circ}F$ (50°C)

Maximum ambient temperature: 167°F (75°C)

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 specialized 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 symbols:



Warning of potential danger



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:



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. Other possible applications include, dust suppression, ambient temperature control, and agricultural environments. The water should be filtered 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 unauthorized personnel (if the control unit is freely accessible).
- Operation of the sprinkler before the arc has been properly set, or when the arc has been altered without authorization (e.g., as a result of vandalism). This can result in water being directed away from the intended irrigation 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 in personal injury, injury to bystanders, and possible damage to the surrounding environment or the sprinkler. Failure to observe safety instructions can lead to the loss of any rights to warranty claims.

3. Description

Recommended operating pressure: 72.5–101.5 PSI (5–7 bar) Permissible operating pressure: 58–145 PSI (4–10 bar)

WARNING! The pressure at the sprinkler must not exceed 145 PSI (10 bar).

4. Assembly

- Threaded connection on the sprinkler is 3" NPT female thread.
- For sealing the thread, an appropriate sealing compound and/or material (e.g., PTFE tape). Please be sure your sealing compound of choice is compatible with all materials at the point of connection.
- To screw on the sprinkler, always use an appropriately-sized pipe wrench.
- Tighten the sprinkler to around 22.13 pounds/foot (30Nm) of torque.

WARNING Do not turn on the water source until the sprinkler has been confirmed to be properly fit to the supply pipe.

A Sprinklers should be installed above head-height, respectively adopt any alternative safety measures.



Install the connection socket as far as it will go so the sprinkler will not loosen during operation.

5. Commissioning

There are no special measures necessary for commissioning. See **Section 5.2** for details concerning setting the sprinkler's arc. The rotation speed of the sprinkler should be set using the regulating screw (see **Figure 2**).

5.1 Adjustment of Rotation Speed (for agricultural applications)

Turning the regulating screw to the right will lower the rotation speed

Option:

If a "K" is stamped in the regulating screw, the sprinkler can be stopped completely by turning the regulation screw all the way to the right.

By turning the regulating screw to the left, the rotation speed is increased.

WARNING In adjusting rotation speed, the use of clean water is required. In cases where dirty water is used, the regulating screw has to be opened completely (turned to the left); otherwise, the sprinkler may fail to rotate.



5.2 Setting Part Circle Arc

The arc is infinitely adjustable by pulling (not pressing) the relevant end of the upper or lower spring stop (see **Figure 3**).



5.3 Full circle irrigation

For full circle irrigation, the spring stops have to be removed.

Only pull the spring stops far enough to slide them easily out of the retaining groove. If the springs are overstretched, they may fail to maintain their shape and be used for part circle operation, and a new spring stop would need to be installed.

5.4 Winterizing

During the frost period please take care, that there is no standing water in the main body of the sprinkler. Water in the piston drive unit does not cause damage in the event of freezing. When the sprinkler is put into operation again, although there may be ice in the piston area, it should take approximately 15 minutes for the drive to thaw any ice.

5.5 Putting into Service in Spring

The sprinkling head of the piston drive sprinkler is due to the load alterations and the different installation conditions (e.g. humidity) exposed to extreme tensions. Under these conditions the piston can get axial play. In order to avoid interruptions of service, the piston cover should be checked and tightened before being placed into service in spring season during its first and second year of operation as described below.



The cover has to be tightened up with the face spanner (Toro part number ZB98236) to approximately 7.4 pounds/foot (10Nm).

Note: After the third and fourth winter, you should not see any further expansion.



Option:

Before tightening the piston drive cover, the safety screw has to be removed. After adjusting the cover, the safety screw has to be installed again.

The safety screw prevents unintentional loosening of the piston drive cover.



6. Maintenance

6.1 Lubricating the Jet Pipe Thread

When changing the main nozzle, the thread at the jet pipe and the O-ring seat should be cleaned and lubricated properly. This will ensure that the nozzle can be easily removed in the future.



6.2 Clean filter for control water

The sprinkler is driven by a cylinder. The control water is pre-cleaned by a filter. The cleaning interval should be defined based on the site's water quality, hours of operation, and other environmental considerations.

To clean the filter, the use of a stiff bristled brush and clean water is recommended.



6.3 Clean piston drive and piston drive area

If the drive unit is malfunctioning due to accumulated debris, the piston drive must be removed and cleaned.

7. Malfunction and Troubleshooting

Defects	Reasons	Elimination
Sprinkler does not rotate or rotates very slowly.	The water is dirty. Regulating Screw is adjusted at minimum. Filter is blocked.	Open Regulating Screw to flush out debris. Clean filter (refer to Sections 6.2 and 6.3)
Sprinkler is exhibiting a poor stream of water.	Nozzle or jet straightener is blocked with debris.	Remove nozzle. Clean the jet straightener. Lubricate the jet pipe thread before reassembly.
Arc increases during operation.	Spring stop is loose. Spring strength is slacked. Spring stop is overstretched.	Install a new spring stop.
Sprinkler bearing is leaking.	Groove ring is worn out.	This is not a field serviceable component. Please contact your Toro distributor.

Subject to change without prior notice.

