



INSTRUCTION MANUAL AND SAFETY MEASURES

GREENKEEPERS



NO HYDRAULIC OIL IN THE CYLINDERS (see 7.1)



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1. INTRODUCTION

This instruction manual is intended for people who work with the machine or who perform daily maintenance on the machine.

It must be read carefully before performing work with or on the machine for the first time.

This instruction manual describes how to use the Zocon Greenkeeper, which safety measures to take and how to service and transport the machine.

This instruction manual may include components that are optional extras.

Any deviations between the text and/or diagrams in this instruction manual and your machine may, therefore, result from a difference in design. They may also stem from changes as a result of continuous development and innovation.

 NOTE	Not observing the following instructions may result in a dangerous situation and the manufacturer's warranty may become invalid.
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Explanation of the warning symbols

- Read the instruction manual before using the machine.



- Caution. Rotating parts.



2. CE DECLARATION

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Zonderland Constructie B.V. declares that the machine:

Description of the machine	
Standard function:	GREENKEEPER
Type:	6M & 8M
Serial number:	...

Declares that the machine is in accordance with Machinery Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 amending Directive 95/16/EC (Official Journal of the EU, L 157/24 of 9/6/2006).

The person responsible for compiling the technical information is the head of the Research and Development department at Zonderland Constructie B.V.

This declaration only applies to the machine as sold in the market and does not concern components and/or treatments that are added at a later date.

3. WARRANTY

The manufacturer guarantees that the delivered machine meets the usual requirements and standards applicable to the machine and that the machine is free of faults. This warranty is valid for a period of twelve months after delivery. The warranty only concerns the components to be replaced.

This warranty is not valid if a fault occurs as a result of improper use.

Repairs may only be performed after approval from the manufacturer. Repairs that are performed before approval has been given by the manufacturer are at the owner's own expense and no claim can be made against the manufacturer for such repairs.

4. GENERAL INFORMATION

General information concerning the Zocon Greenkeeper is given below.

4.1 USE

The Zocon Greenkeeper is intended for aerating turf, levelling unevenness, such as molehills, and breaking up and distributing manure. The Greenkeeper may only be used to lightly break up the surface of the turf when reseeding grass. It must not be used to move soil.

4.2 EXPLANATION OF THE TYPE PLATE

The Greenkeeper's type plate is located on the linkage.

The Greenkeeper's type number starts with a "G" followed by a dash and the width/version of the Greenkeeper.

Example: G = Greenkeeper \Rightarrow **G-08** \Leftarrow 08 = 8-metre version

4.3 AVAILABLE TYPES

The following Zocon Greenkeepers are available:

Type	Width	Number of rows of teeth
<i>G-06</i>	<i>6 metres</i>	<i>3</i>
<i>G-08</i>	<i>8 metres</i>	<i>3</i>

5. SAFETY MEASURES



NO HYDRAULIC OIL IN THE CYLINDERS (see 7.1)



- Only use the machine for the intended purpose.
- Operate the machine safely.
- Make sure the warning symbols remain legible. Replace any missing or damaged symbols.
- Remain out of the reach of rotating parts.
- Make sure nobody is located within the machine's operating range.
- Before using the machine, check the nuts and bolts and if necessary, tighten them.
- Before using the machine, check the operation of the locking hooks.
- Before using the machine, check the hydraulic circuit for leaks.

6. TECHNICAL INFORMATION

6.1 CONSTRUCTION

The construction of the Zocon Greenkeeper consists of a frame made from angle bars. These angle bars ensure that unevenness, such as a molehill, is levelled. The Greenkeeper's 10mm teeth aerate the turf.

Both the 6-metre wide as well as the 8-metre wide Zocon Greenkeepers consist of four construction parts: the middle frame, the right-hand wing, the left-hand wing and the connecting linkage.

The left-hand and right-hand wings are connected to the middle frame by hinges. Two hydraulic hinges allow the Greenkeeper to be folded up for safe transport (within the maximum permitted width and height).

The connecting linkage is located at the front of the Greenkeeper, so that the Greenkeeper can be connected to a tractor's three-point hoisting mechanism. The connecting linkage is bolted to the middle frame.

6.2 TECHNICAL SPECIFICATIONS

Zocon Greenkeeper type	G-06	G-08
<i>Working width (m)</i>	6	8
<i>Transport width (m)</i>	2.60	2.60
<i>Weight (kg)</i>	575	750
<i>Number of rows of teeth</i>	3	3
<i>Number of tubes</i>	6	8

7. USING THE ZOCON GREENKEEPER

When using the Zocon Greenkeeper, the information given in this chapter must be observed in order to ensure safe working conditions.

7.1 PREPARATION WORK

Always carefully check the Zocon Greenkeeper for faults before connecting it. A number of important points of consideration are given below:

- On delivery, there is **no** oil in the hydraulic circuit! **The double-working cylinders must first be filled by keeping the control handle in both positions until the pressure relief valve of the tractor's hydraulic pump is activated. Only then may the greenkeeper be unfolded. Otherwise, there is a risk of injury and a risk of damage to the frame of the wings.**
- Check the nuts and bolts and if necessary, tighten them.
- Check whether all the assembly pins are securely locked.
- Make sure the locking hooks work correctly.
- Check the hydraulic circuit for leaks and other faults.
- Check the teeth for broken (loose) parts and other faults.
- Check the construction for faults.

The Greenkeeper may only be connected if you are sure it has no faults.

7.2 CONNECTING TO A TRACTOR

Carry out the following to connect the Zocon Greenkeeper to a tractor:

- Drive the tractor so that it is just in front of the Greenkeeper.
- Make sure the hydraulic valves to be used are not pressurized.
- Turn off the tractor and remove the key from the ignition.
- While the Greenkeeper is folded up, connect it to the tractor's three-point hoisting mechanism and secure the attachment pins with reliable circlips.
- Adjust the top rod so that the top rod pin is in the middle of the hole when the Greenkeeper is flat on the ground.
- Connect the hydraulic hoses to the tractor.
- Lead the unlocking cord to the cabin and make sure it cannot get stuck behind any components.

7.3 UNLOCKING AND LOCKING THE WINGS

The Zocon Greenkeeper has a mechanical lock on the hydraulic cylinders. This lock ensures that the Greenkeeper's wings cannot unexpectedly unfold if the driver does something wrong or if there is a fault with the hydraulic system. Thanks to this mechanical lock, the Zocon Greenkeeper meets EU Directive 2006/42/EC.

Carry out the following to unfold the wings:

- Fully lower the Greenkeeper to the ground.
- Retract the cylinders so that the locking hooks are no longer pressurized.
- From the tractor, pull the unlocking cord so that the unlocking hooks open. Make sure the hooks remain open.
- Once the locking hooks are open far enough, the cylinders can be extended so that the wings can unfold.
- The unlocking cord can be released now so that the hooks close again.

Carry out the following to fold up and lock the wings:

- Retract the cylinders until the wings have been fully folded up (the unlocking cord does not have to be pulled).
- Carefully extend the cylinders until they are blocked by the locking hooks. The locking hooks are now pressurized and can no longer unexpectedly open without the cylinders being retracted.

7.4 ADJUSTING THE ZOCON GREENKEEPER

To ensure the Greenkeeper works correctly, it must be placed flat on the turf and be able to move with any small slopes.

For this to happen, it is important that:

- When the Greenkeeper is in the operating position and the surface is flat, the top rod pin is inserted halfway into the hole.
- The hydraulic cylinders are fully extended and the pins are inserted halfway into the holes.
- The tractor's hydraulic valves are set to the float setting.
- The tractor's three-point hoisting mechanism can move freely up and down.

If, despite observing the points given above, the desired result is not achieved, the Greenkeeper's aggressiveness can be adjusted as follows.

Adjusting the depth of the teeth

The depth of the teeth can be adjusted. By setting the teeth to go deeper into the turf, the aggressiveness and the operation of the Greenkeeper can be adjusted as required.



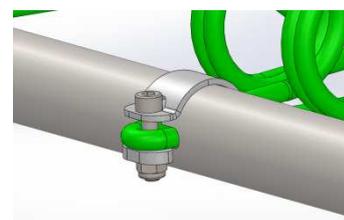
Fitting optional sliding feet

Extra sliding feet can be bolted to the front of the Greenkeeper. This reduces the Greenkeeper's aggressiveness.



Tightening the teeth

The teeth can be tightened to the frame by tightening the Allen screw.



The table below gives the standard number of sliding feet and the maximum number of sliding feet for each type of Greenkeeper.

Width of the Greenkeeper	8 metres	6 metres
Standard number of sliding feet	6	6
Maximum number of sliding feet	11	9

7.5 WHEN IN USE

During use, the Greenkeeper must lie flat on the ground and be fully unfolded. If the Greenkeeper is correctly adjusted, it will follow any slight slopes of the ground. Depending on the type of soil and the state of the vegetation, it is recommended to work at a speed of 6 to 10 km/h. If the Greenkeeper has been correctly adjusted, it should not be a problem to corner while using it. Therefore, the Greenkeeper does not have to be raised at the headland. It only has to be raised when going over the same piece of grass for a second time.

The following is not permitted:

- It is not permitted to drive in reverse with the Greenkeeper in the working position (unfolded and on the ground).
- It is not permitted to raise and transport the Greenkeeper while it is unfolded. This can cause serious damage to the Greenkeeper. It may also result in an extremely dangerous situation.
- It is not permitted to transport the Greenkeeper unless it is locked in the transport position.
- It is not permitted to unfold or fold up the Greenkeeper while it is in a raised position.

7.6 TRANSPORT

The following steps must be carried out to safely transport the Greenkeeper after use:

- Check the construction and the teeth for faults.
- The teeth must be set to the highest position.
- Check the locking hooks for faults.
- Fold up the wings.
- Check the locking mechanism.
- Raise the Greenkeeper. Make sure there is sufficient ground clearance.

Maximum permitted speed during transport:

- On tarmacked roads : 20 km/h
- On other hard road surfaces : 6-10 km/h
- On country/sand tracks : 5 km/h

8. MAINTENANCE

The following maintenance work must be performed each time after use:

- Thoroughly clean the Greenkeeper.
- Lubricate the machine with a rust-preventing agent.
- Lubricate the grease nipples on the hydraulic cylinders.
- Check all the bolted connections and retighten any that are loose.
- Check the operation of the mechanical locking mechanism.

Mind your own safety when performing maintenance and/or repairs. Make sure:

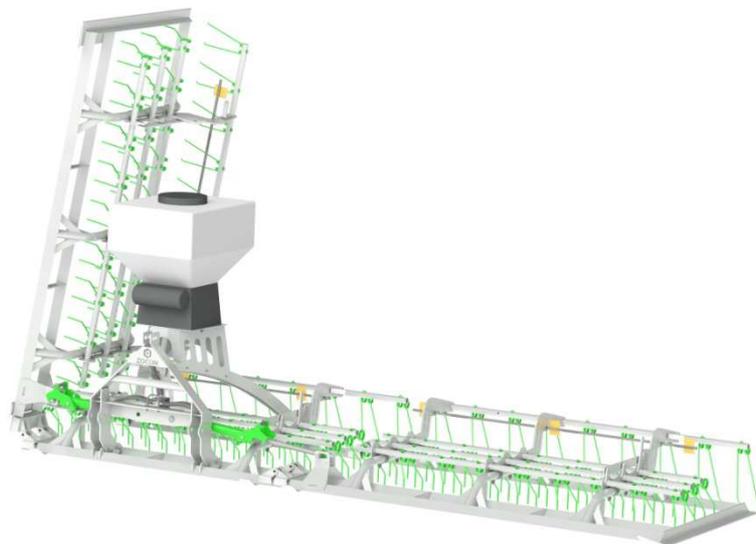
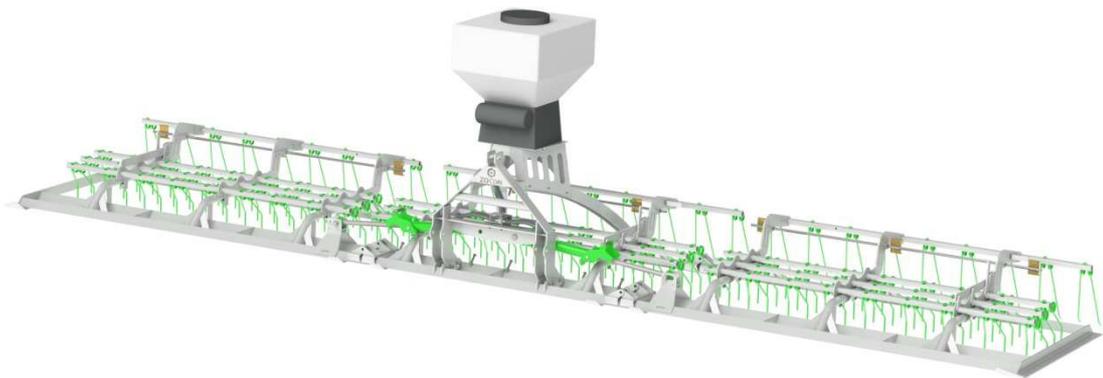
- The tractor is turned off (if the Greenkeeper has been connected to a tractor).
- The tractor's handbrake has been applied (if the Greenkeeper has been connected to a tractor).
- The Greenkeeper is stable (if the Greenkeeper has not been connected to a tractor).

When storing the Greenkeeper in the folded-up position, always place the teeth of the middle frame in the 0 position so that no weight rests on them.

9. TECHNICAL DIAGRAMS

9.1 LAYOUT DRAWING

A layout drawing of the Zocon Greenkeeper is given below. The 6-metre Zocon Greenkeeper has the same construction as the 8-metre Greenkeeper. The only difference is that the left-hand wing and right-hand wing are shorter.



9.2 HYDRAULIC DIAGRAM

Nr	Beschreibung
1	Cylinder
2	Straight screw coupling 12L M18x1.5
3	Hydraulic hose 5/16 (long)
4	T-coupling 12L
5	Bulkhead fitting 12L
6	Hydraulic hose 5/16L (to tractor)
7	Insert nipple 1/2 M18x1.5-12L
8	Hydraulic hose 5/16 (short)

