



Horticultural Spraying Solutions

# Operation manual

Flowreel



Empas B.V.  
Kruisboog 43  
3905 TE Veenendaal  
0318-525888  
[www.empas.nl](http://www.empas.nl)

## Technical data

Dimensions (LxWxH), cm .....	55x39x109
Weight, kg .....	36
Motor power, W .....	300
Speed, m/min .....	15-50
Hose reel capacity	
Nylon 3/8" light weight hose*, m .....	120
Nylon 1/2" light weight hose**, m.....	85
Max working pressure***, bar .....	200
Min output, l/ min .....	2,0

\* Outside diameter=14,5 mm, weight 105 g/m

\*\* Outside diameter=18,5 mm, weight 155 g/m

\*\*\* of if less the max working pressure of the hose

\* The machine is specially developed for use of Nylon light weight hoses. Hoses with higher weights than indicated above may be too heavy.

## The working principles

The Flowreel is a remote controlled hose reel made to put on a trolley or a sprayer.

There are two ways to remote control:

1. By opening the spray gun or valve during a short cycle (standard setting 1,2 s.) The reel change status between pulling and stand by status.
2. By opening the spray gun or a valve. The reel pulls in the hose as long as there is an output of liquid. When closing the spray gun or the valve, it returns to the stand by status.

The hose pull in at the set speed, except when it is around 3 m or less from the hose reel. The speed is then reduced for safety reason.

A blocked hose or a too high force when pulling the hose will result in a forced stop.

## Safety instructions

- The main switch shall only be on when the unit is in operation.
- If any of the protection covers are defect or opened, always push in the emergency button and put the main switch in position off.
- Always disconnect the electric power before opening the control box.
- Never exceed the lowest max pressure of the flowreel, the hose or any spray equipment connected with the hose.
- Never clean the machine with a high pressure cleaner.
- Check the machine and equipment before each time putting it into operation:
  - Cable and cable connections
  - Mechanical damages
  - Leakages

- Protection covers

Never start any operation if the result of the control not is sufficient

- If the reel is connected to batteries:
  - Always wear safety glasses and gloves when handling the batteries.
- Ensure that the machine during battery recharging not is near a place with risk for fire or sparks.

**Attention! If the reel is connected to batteries, there must be a fuse between the battery. (On the transformers is such fuse integrated on the transformer.)**

## Installation

It can also be mounted on sprayers from other manufacturers on the market. An evaluation of safety must be done before is mounted, especially regarding stability and tilt risk of the machine.

## The control unit

The function of the control box push buttons and switches:



### The main switch

Turns on the power of the control box. When the main switch is turned off and then on, many parameters will be reset. Do not use this button to stop the machine when the motor is in operation. It may cause electric shock to the electronics.

### Emergency switch

Turns off the power of the motor. Use this only in emergency situations.

### Left push button

This push button starts the command in the display's lower left corner.

### Right push button

This push button starts the command in the display's lower right corner.

## Initial start of the unit - Settings

1. Read the full instruction manual before you start the machine for the first time. If anything is unclear please contact your distributor for further information.
2. Turn the main switch on.
3. Choose set by the left push button and next by the right push button.

4. Set the desired pull speed (30-60 m/min) by the left push button. Then next by the right push button.
5. Set the hose length (10-120 m).
6. Set the diameter of the hose (10-30 mm).
7. Choose principle of remote control:  
Option 1:  
Start/stop by pulse  
Option 2:  
Pull in hose when valve is open
8. You have now returned to the main menu, Automatic mode.
9. Assemble the hose on the hose reel. A hose stopper should be assembled on the hose.
10. Choose manual mode by pressing the right push button.
11. Now it is possible to start and stop the hose reel by the left push button. The control system thinks at this stage that all hose is on the reel and will therefore pull in very slowly, independent of the speed set under point 4 above. Let all the hose run in until the reel stops by itself.
12. Make a general reset by switching the main switch off and on. The reel is now ready for operation.

## The remote mode

The control box becomes in the remote mode directly when the main switch is turned from off to on.

Depending on the setting made under point 7 at the initial start section, will the hose reel be controlled by either:

1. Pulse start/stop. Opening spray gun or a valve at the end of the hose will result in start/stop. A pulse cycle longer than 1,2 s, will not result in a changed status. This means that the operator still has the possibility to start and stop the spraying without changing status of the hose reel.
2. Open valve or spray gun results in a running hose reel. As soon as the spraying is interrupted, the hose reel stops to pull.

When the spray gun or valve is open gives a flow switch on the hose reel a signal to the control box. At the same time is the text "Flow switch" active on the display. (This is a verification that the flow switch works and the function is only active in remote mode.)

The control system will count the hose when the operator pulls out the hose or when the machine pulls in the hose. This is to make possible for the control system to increase and decrease the speed of the hose reel depending how many layers of hose there is. For safety reason is also the speed reduced when the end of the hose is around 3 m from the hose reel.

The hose counting is reset when:

1. The hose runs in completely to the hose reel and the electronics cuts off the motor automatically.
2. The main switch is turned off/on.

Reset means that the control system expect that all hose is on the hose reel. If this not is the case will the pull speed be very low until all hose is pulled in and a new reset is made.

## **The manual mode**

Press the right push button to get the manual mode.

The start and stop of the hose reel is controlled by the left push button.

To return to remote mode press the right push button.

## **Service and maintenance**

### **Chain**

Lubricate the chain regularly.

### **Hose**

Check the condition of the hose regularly. Put special attention to protect the hose so it is not bent with a too small radius.

### **Cleaning**

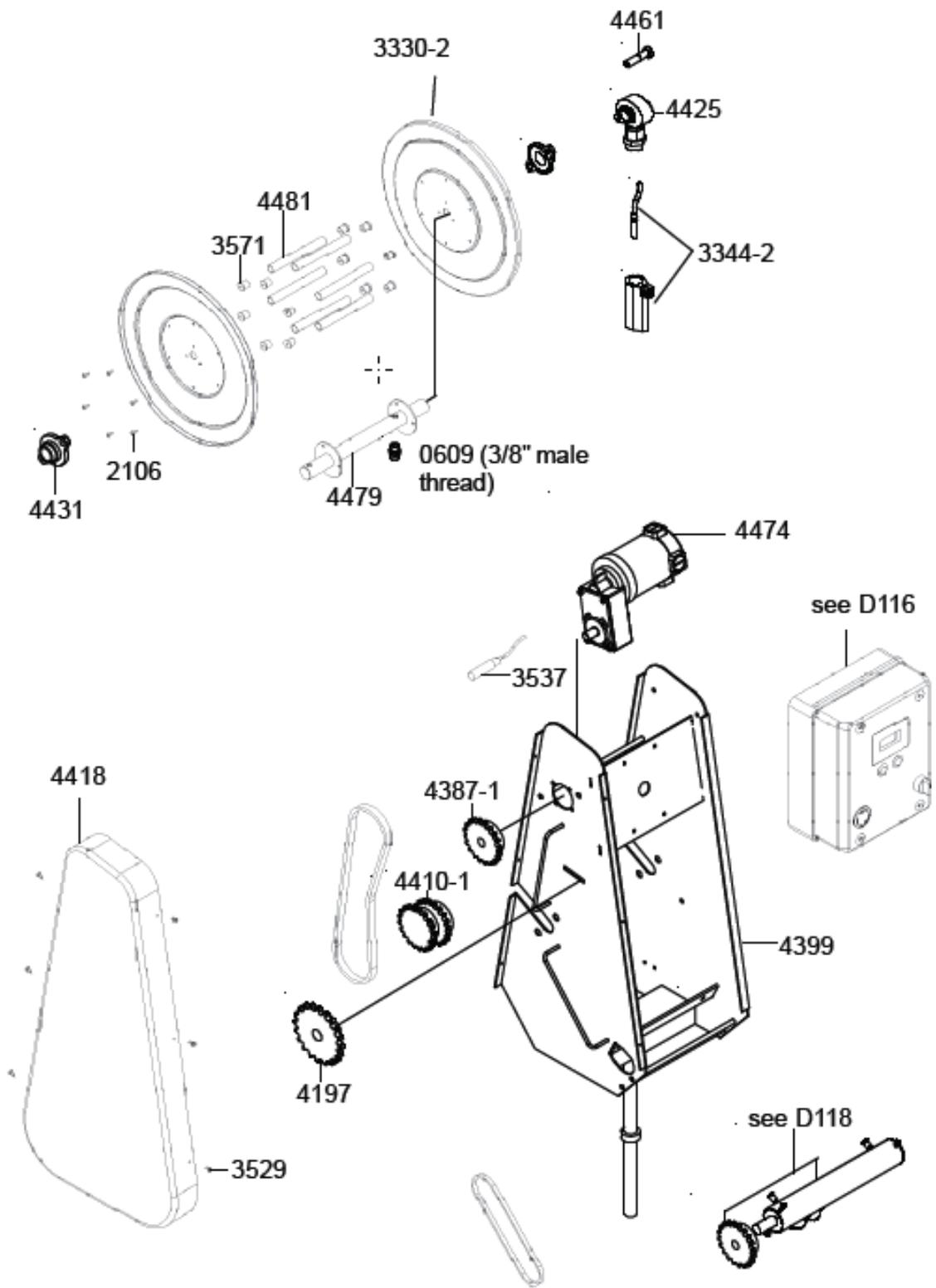
Use a wet cloth to clean the outside of the machine. The machine should never be cleaned with flushing water. This may damage the electronics and the bearings on the machine.

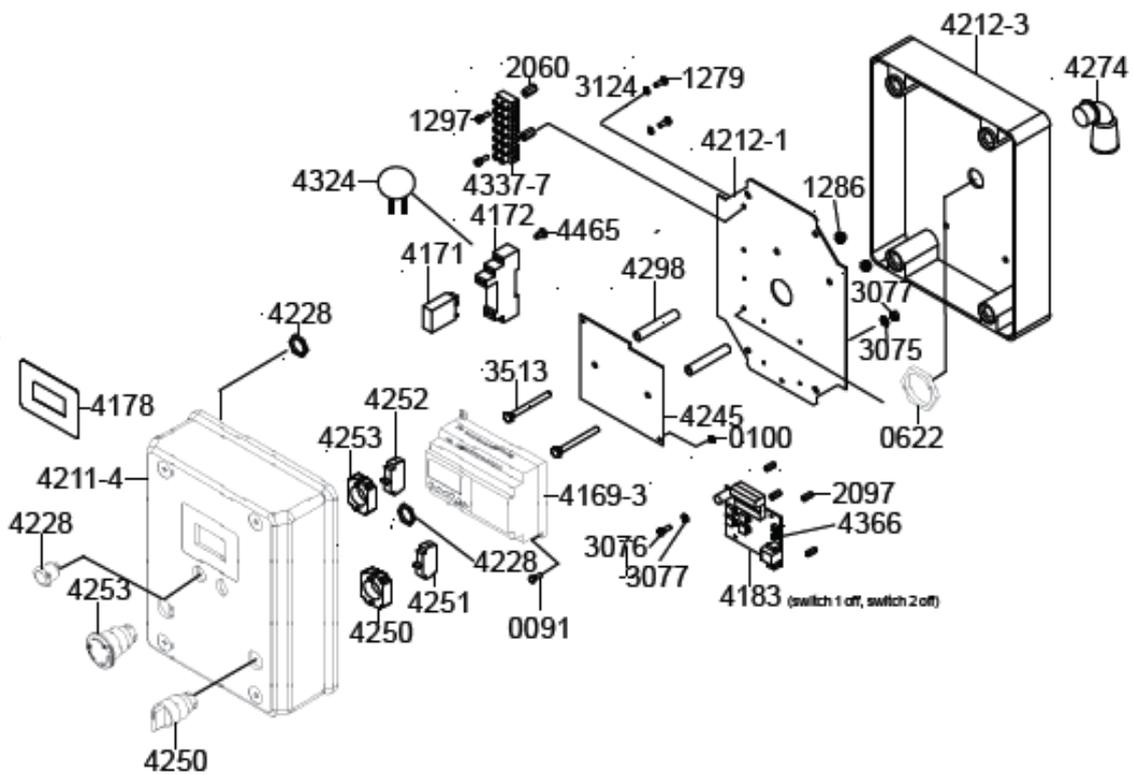
## **Guarantee**

1. The guarantee period is 6 months starting from the date of delivery.
2. Defective parts repaired or replaced in are free of charge. Damage attributable to normal wear or improper handling will be excluded from the guarantee.
3. Labour and transport costs will be charged to the customer.
4. The guarantee is valid only when the unit has been operated in accordance with recommendations in this operation manual.
5. Under no circumstances Empas is responsible for damage to persons, animals or property or consequential losses of any kind arising from use or misuse of the unit.

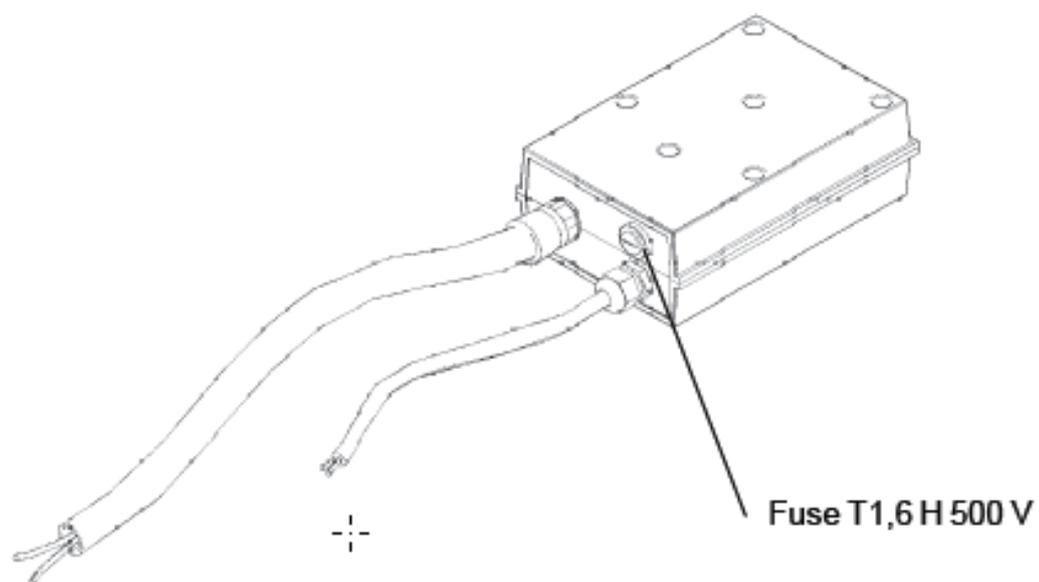
## **Declaration of conformity**

We testify that this product conforms with the following directives: 89/392/EEC, 91/368/EEC, 93/44/EEC, 93/68/EEC.









Art no 4360:  
2 phases  
400 VAC

Art no 4463:  
220-240 VAC,  
Single phase

