Rioned.
Keeping your business flowing

User manual UrbanCombi 2.0



Edition:03
Date:15 augustus 2024

RIONED
P.O. Box 5070
5004 EB Tilburg
The Netherlands
Telephone:+31 13 5479100
e-mail:info@rioned.com

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Manufacturer:

Rioned

Centaurusweg 45
5015 TC Tilburg
Postbus 5070
5004 EB Tilburg

Phone: 013-5479100
E-mail: info@rioned.com
Website: www.rioned.com

For information about adjustments, maintenance or repairs not contained in this user manual, contact Rioned.

Original user manual

Issue date: 24 May 2022
Version: 02

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Preface

This user manual is intended for the professional user. It is intended to enable the user to operate the machine and must always be kept with the machine.
The photographs and drawings in the manual are intended to support the text.
In this user manual you will first find an introduction that describes, among other things, the intended purpose of the machine. Then there is an explanation of how the machine is constructed and how it works in general. This is followed by an overview of the most important safety aspects.
Then the best way to start up and operate the machine is explained. The standard functions and additional functions are described separately. The information in the Maintenance section allows you to perform simple maintenance work yourself. Troubleshooting tips to help you correct minor malfunctions yourself are also provided.
Finally, at the end of this user manual you will find an index to help you quickly find information and a number of annexes containing, among other things, Rioned's contact details.

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Table of contents

1 Introduction 1

2 Safety 3
2.1 Introduction 3
2.2 General danger symbol 3
2.3 Working safley 3
2.4 Dangers of non-compliance with safety instructions 3
2.5 Use only by authorized personnel 3
2.6 Bystanders 4
2.7 Restrictions on use 4
2.8 Thunderstorm 4
2.9 Spraying 4
2.10 Spray break 5
2.11 Sewer gases 5
2.12 Vacuum tank/water tank 5
2.13 Emergency stop 5
2.14 Levers and valves 5
2.15 PTO drive sticker 5
2.16 Personal protective equipment 5
2.17 Water discharge 6
2.18 Other machine safety provisions 6
2.19 Safety sticker 7

3 Description and principle of operation 9
3.1 Introduction 9
3.2 Machine 9

4 Explanation Graphics (only eControlPlus) 19
4.1 Push buttons 21
4.2 Navigation bullets 21
4.3 Function 22
4.4 Tachometer 22
4.5 Icons 22
4.6 Riomote Control 23
4.7 Unwinding manually of the eControl driven hose reel 25

5 Operation: standard functions 27
5.1 Introduction 27
5.2 Checks before departure 27
5.3 Preparations at the workplace 27
5.4 Starting the engine 30
5.5 Unblocking a sewer 34
5.6 Cleaning a wall, terrace or floor 37
5.7 Ending the work 38
5.8 Vacuum system 41

6 Operation: extra functions 43
6.1 Introduction 43
6.2 Pulsator 43
6.3 Reel 47
6.4 Hose counter eControl+ 53
6.5 Electronic water level control 55

7 Detachable unit 57
7.1 Disassembling the unit 58

8 Maintenance 63
8.1 Safety instructions 63
8.2 Making changes to the machine 63
8.3 Maintenance schedule 63
8.4 Maintenance before the work 65
8.5 Weekly maintenance 66
8.6 Maintenance every 50 hours of operation 67
8.7 Maintenance every 250 hours of operation or at least once every six months 67
8.8 Maintenance every 1000 hours of operation or at least once a year 68
8.9 Vacuum pump maintenance 68

9 Malfunctions 69
9.1 Fault messages eControl+ 69
9.2 Troubleshooting 72

10 Attachments 77

1 Introduction



Congratulations on the purchase of the UrbanCombi! The UrbanCombi is intended for unblocking sewers and vacuuming up sludge. (no chemical or vlamable luquids)
With correct use, this machine will serve you well for years to come.

RIONED thanks you for your purchase of the RIONED drain and sewer-cleaning machine. We recommend that you read this manual thoroughly and see that the machine is handled and maintained in the proper manner. If your machine should give trouble and needs servicing, when you want to order parts, or if you have any questions, contact your RIONED dealer.

The Rioned combi unit has been especially designed and manufactured for cleaning drains, walls, floors, and terraces. For cleaning drains, special nozzles are included in the delivery; for all other purposes, the spray gun, which is also included, can be used.

This manual contains all the necessary information concerning control and maintenance. If the device is positioned correctly, properly controlled, and regularly maintained, a warranty will be given according to the general conditions of delivery. However, should it arise that the control and maintenance procedures are not diligently followed, the warranty will become invalid.

Use this machine only outside. If you want to work inside a building you have to ensure that there is enough ventilation.

During the time that the weather conditions are bad, we recommend that you do not use the machine (lightning)!

Only authorised personnel may use the machine.

The machine can not be used in an explosive environment.

Fill the clean water tank only with water.

It is strongly forbidden to drain flammable materials, chemicals, and elements with special regulations.

In this manual you will find all necessary information concerning operations and maintaining your machine. If handled properly, your machine is guaranteed according the general delivery conditions.

The water tank can be disconnected which will make it a multi-functional vehicle.

The warranty is void and your safety
and that of people in the vicinity cannot be guaranteed if the operating and maintenance instructions are not followed or are not followed correctly.
The following requirements must be met when working with the machine:

Use in enclosed spaces:

> When working in an enclosed space, the space must be well ventilated.
> Make sure the combustion gases are properly discharged. Prevent CO poisoning!

Spray site:

ALWAYS follow the instructions below for the spray site:

> Demarcate the site clearly. The minimum distance between the spray site and the demarcation is six metres.
> Remove anything within the demarcation that is not firmly anchored.
> NEVER spray from an unstable location. Examples: ladder, boat, or hanging scaffolding.
> If it is necessary to use artificial lighting, ALWAYS use waterproof light fixtures.

2 Safety

2.1 Introduction

This user manual contains very important safety instructions. In this chapter we provide general instructions. ALWAYS follow these instructions for use and maintenance. In other chapters we provide specific safety instructions for each action or situation. ALWAYS follow these instructions too.

> Also observe the following safety instructions:
> Internal work, operating and safety instructions
> National accident prevention regulations

2.2 General danger symbol

In this user manual we provide various safety instructions. If these instructions are not followed, there is a danger to persons. Such a safety instruction is indicated by this general danger symbol (in accordance with DIN 4844-W9):



2.3 Working safley

ALWAYS take these three important points into account when working and maintaining the machine:

> You must NEVER remove protection from moving parts while the machine is in operation.
> You must dispose of leaked hazardous substances in such a way that there is no danger to yourself, your colleagues or the environment. Observe the environmental regulations.
> Prevent all electrical hazards.

2.4 Dangers of non-compliance with safety instructions

Possible consequences of non-compliance with safety regulations:

Dangers to persons

This concerns the exposure of persons to electrical, mechanical or chemical hazards.

Dangers to environment

This includes, for example, the danger to the environment due to leakage of hazardous substances.

Dangers to the machine

This concerns:
> failure of important functions of the machine
> failure of prescribed maintenance and repair methods

Petrol and diesel machines can cause a fire hazard due to hot exhaust and exhaust fumes.
With regard to fire hazards with petrol or diesel machines, keep the following points into account:
> Do not park in the grass.
> Do not place anything against the exhaust.
> Take extra care with flammable materials around the machine.

2.5 Use only by authorized personnel

Your employer must carefully document the following:
> the level of responsibility
> the authorizations of the personnel
> the supervision of personnel

You may ONLY operate, service and inspect the machine if you are authorized by your employer and have the necessary qualifications. Rioned can provide training if necessary.
You must have read and understood these operating instructions completely before you start working with the machine. You must keep the manual with the machine.

2.6 Bystanders

> ALWAYS consider your responsibility to other people when working with this machine.
> Keep unauthorized persons, especially children or animals, out of range of the machine.

NOTE

Failure to comply with the instructions may result in the loss of any right to compensation.

2.7 Restrictions on use

The machine may ONLY be used for:
> unblocking sewers
> for cleaning façades, terraces and floors
> sucking up liquids with or without contamination (i.e. sand and stones)
NEVER suck up the following substances:
> combustible liquids
> chemical substances

> substances subject to special rules

Do NOT use the machine in an explosive environment.

NEVER exceed the following limit values (EN IEC 60204-1):
> ambient temperature: +5 to +40 °C
> storage temperature: -25 to +55 °C
> humidity: 50% at +40 °C (higher at lower temperatures, e.g. 90% at +20 °C)
> elevation of operation: the machine works up to a maximum elevation of 1000 m without any problems. Above this elevation the machine may not function as well due to the lower air pressure.

If the machine is not functioning or displays faults, DO NOT continue working. In that case, contact Rioned by phone (tel. no. +31 13-5479100.

2.8 Maximum weight of the vehicle

It is not allowed to drive the vehicle when it is overloaded.

The maximum weight the vehicle is allowed to weigh is 3180kg.

On the front axle, the vehicle is allowed to weigh 1480kg and on the rear axle 1910kg.

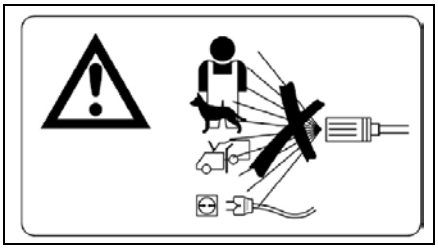
The driver is always responsible and must check whether it may be overloaded.

2.9 Thunderstorm

We ADVISE AGAINST working with the machine when the weather conditions or forecasts are unfavourable. Consider thunder and lightning in particular!

2.10 Spraying

ALWAYS follow the instructions below when spraying:
> NEVER point the jet at people or animals.
> If skin penetration occurs, consult a DOCTOR immediately.
> NEVER spray on live parts, such as electrical equipment.
> NEVER spray the machine itself.
> Prevent damage from splashing or flying parts.



2.11 Spray break

If you leave the spraying area for a short time, do the following:

1. Stop the machine (see section ‘Stopping spraying’ in ‘Unblocking a sewer’ and section ‘Stopping spraying’ in ‘Cleaning a wall, terrace or floor’).
2. Depressurize the high pressure hose. Do this as follows:

> Open the high pressure valve.
> Squeeze the trigger of the spray gun.

2.12 Sewer gases

If you use the machine for sewer cleaning, you may be exposed to bacteria and sewer gases.

This is your own responsibility.

2.13 Vacuum tank/water tank

> NEVER stand behind the cover of the vacuum tank while it is being opened or closed.
> You may NEVER be between the cover and the vacuum tank, unless precautions are taken to prevent the lid from closing.
> It is PROHIBITED to drive the vehicle if the load capacity is exceeded!
> Fill the water tank with water ONLY.

2.14 Emergency stop

The machine is equipped with an emergency stop in the form of a button.

Follow the instructions below:

> Ensure that the emergency stop is ALWAYS easily accessible.
> Use the emergency stop ONLY in the event of a dangerous situation or one that is likely to become dangerous.
> Press the button. The machine stops immediately.
> DO NOT use the emergency stop to stop the machine under normal operating conditions.

After use of the emergency stop:

1. First make sure that the danger is no longer present.
2. Unlock the emergency stop (turn the button to the left or right).

You can now continue working.

2.15 Levers and valves

> NEVER fasten the levers in position in any way whatsoever, unless otherwise instructed.
> DO NOT attach a hose to the suction valve when venting the vacuum tank.
> ALWAYS open and close the suction and delivery valves slowly.

2.16 PTO drive sticker

The vehicle must ALWAYS be set to position 2H when using the machine. The sticker on the right indicates this. Sticker is located between the seats in the cab, beside the switch to engage the PTO.

2.17 Personal protective equipment

ALWAYS use the following personal protective equipment when working with the machine:

> hearing protection
> safety glasses or face shield
> waterproof work gloves
> waterproof workwear
> helmet
> spray boots with steel toes

2.18 Water discharge

Ensure that the water is drained off properly.

Clean the discharge water before discharging it into the sewer system in the following two cases:

> when cleaning with harmful chemicals, or
> when the object to be cleaned is contaminated with environmentally harmful substances.

2.19 Other machine safety provisions

2.19.1 Introduction

In addition to the emergency stop, the machine has the following safety provisions. The numbers after the provisions and their location can be found in the section 'Design and principle of operation'.

2.19.2 Pressure relief valve

The pressure relief valve is a safety valve that opens at a relative pressure of +0.5 bar. It protects the system against overpressure that the vacuum pump can create. The pressure relief valve protects the vacuum pump, vacuum system and vacuum tank. You cannot operate the valve yourself.

2.19.3 Vacuum relief valve

The vacuum relief valve is a safety valve that opens at a relative pressure of -0.8 bar. It protects the system against excessive vacuum that the vacuum pump can create. The vacuum relief valve protects the vacuum pump, vacuum system and vacuum tank. You cannot operate the valve yourself.

2.19.4 Pressure regulator

The pressure regulator ensures that the operating pressure never becomes too high and thus acts as a safety valve.

It does not work on the vacuum system, like the pressure relief valve and vacuum relief valve do, but rather on the high pressure system.

2.19.5 Warning triangle (option)

The warning triangle is on the machine.

The warning triangle warns bystanders that they should pay attention due

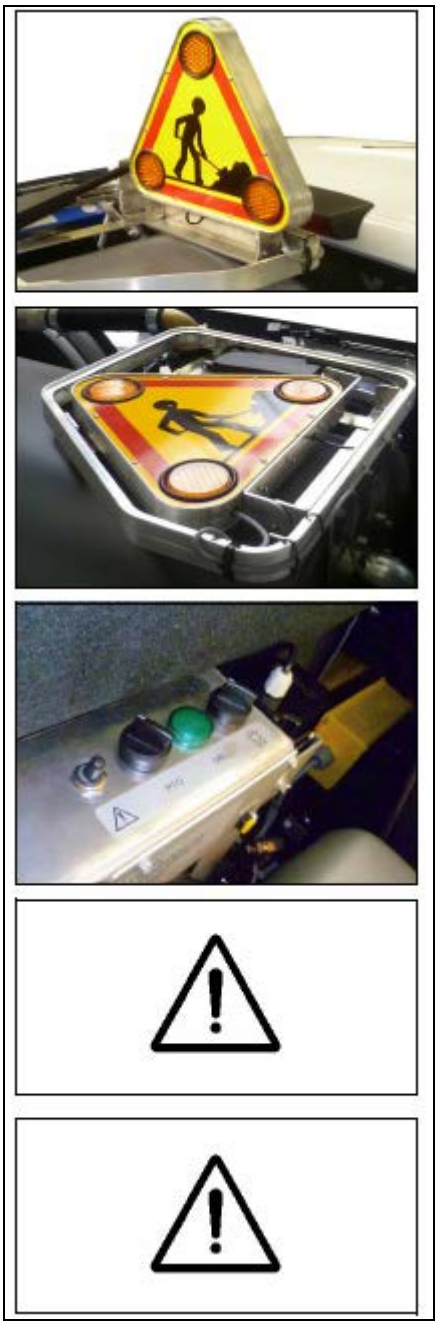
to work in progress.

The switch to operate the warning triangle is located between the seats

in the cab, against the rear wall.

Switch on warning triangle: switch rocker switch forward.

Switch off warning triangle: switch rocker switch backwards.

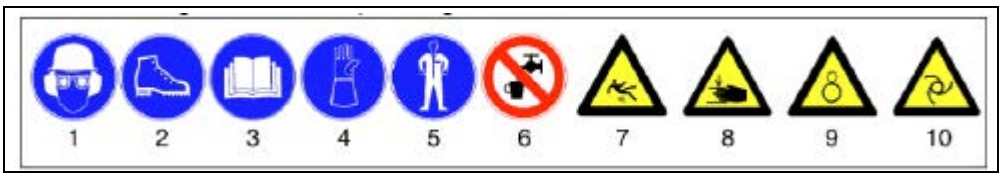


2.20 Safety sticker

The safety sticker is located on the back of the vehicle. The symbols used have the following

meaning:

1. Hearing, head and eye protection must be worn
2. Safety shoes with extra protection required
3. Reading the manual is mandatory
4. Safety gloves with wrist protection required
5. Protective workwear required
6. Not potable water
7. Risk of slipping
8. Beware of hand injury
9. Rotating machine
10. Warning for automatically starting machine



3 Description and principle of operation

3.1 Introduction

In this chapter we first briefly describe the operation, the main components and the symbols used for the machine and the accompanying accessories. You will then find a description of the machine's control units in the ‘eControl+’ and ‘Riomote control’ sections.

3.2 Machine

3.2.1 Design and principle of operation

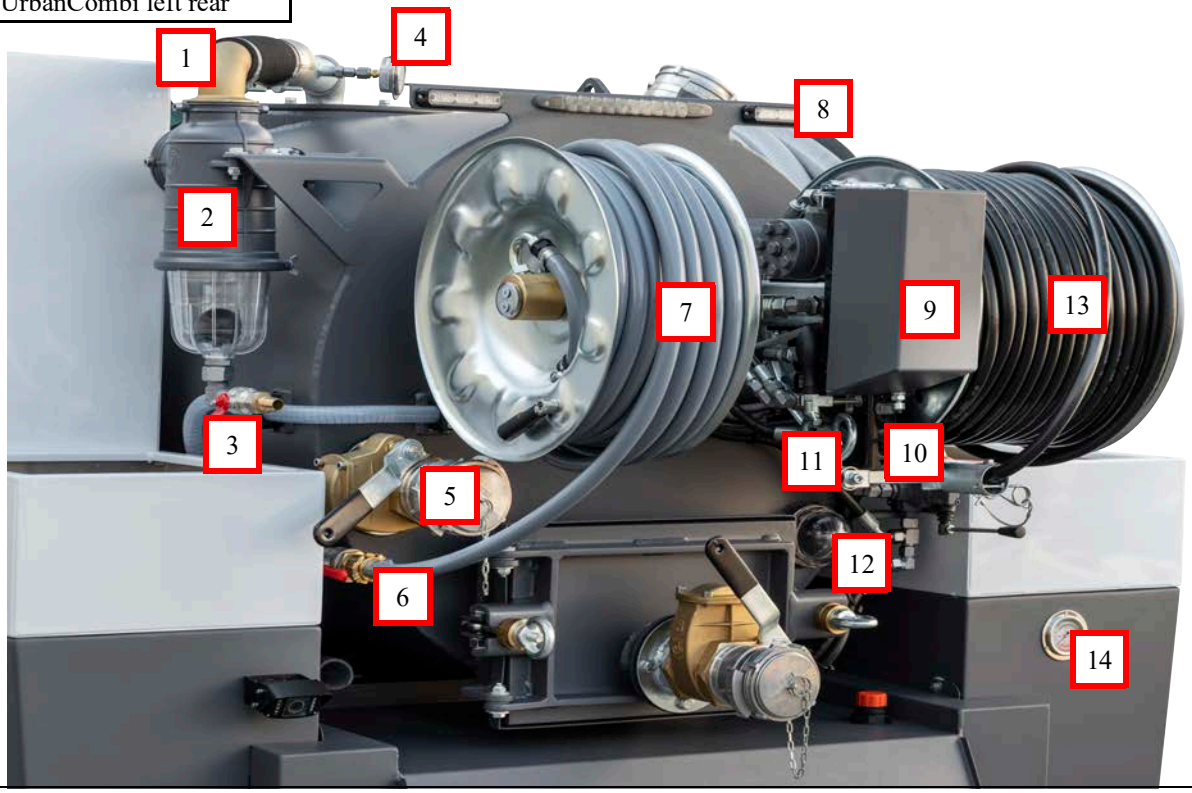
The vehicle engine drives the high pressure pump and the vacuum pump via a hydraulic transmission. The high pressure pump draws water from the water tank via the water filter and pressurizes it. The water then exits the machine at high pressure via the high pressure hose on the reel.

The vacuum pump is connected to the vacuum tank. By creating a vacuum with the vacuum pump, the vacuum tank can be sucked full. This sucking is done with a suction hose.

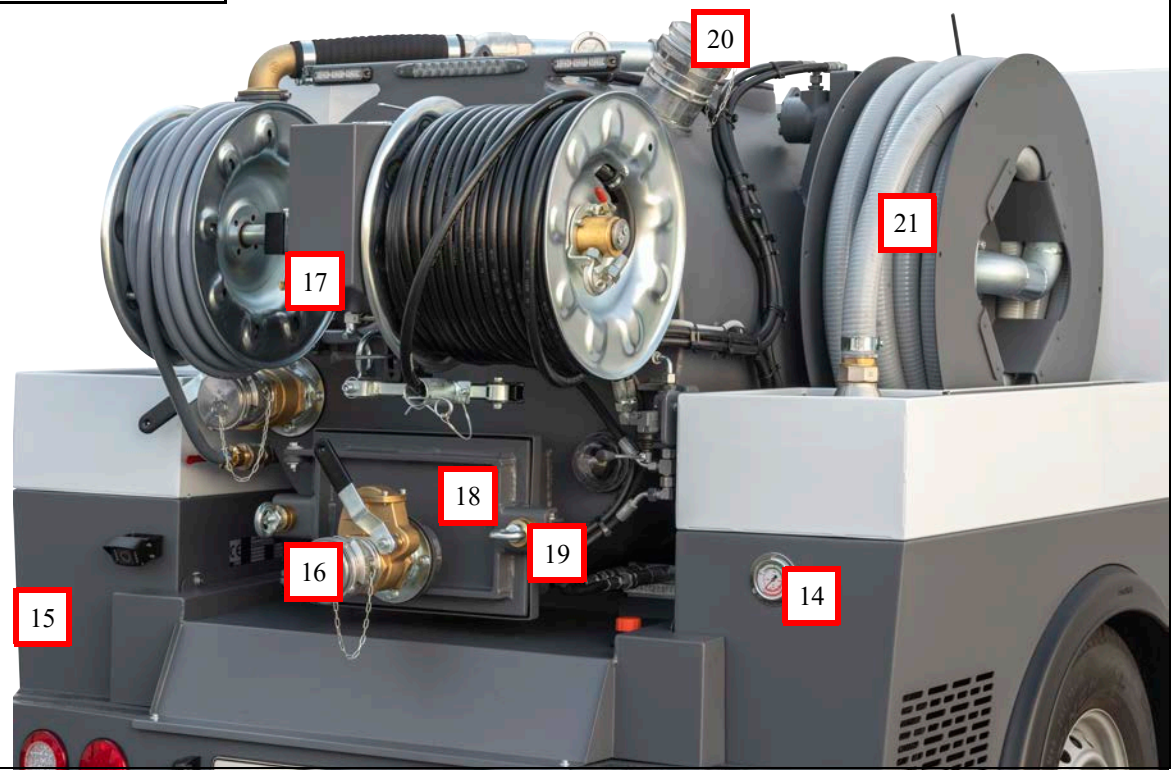
The machine consists of the following parts:

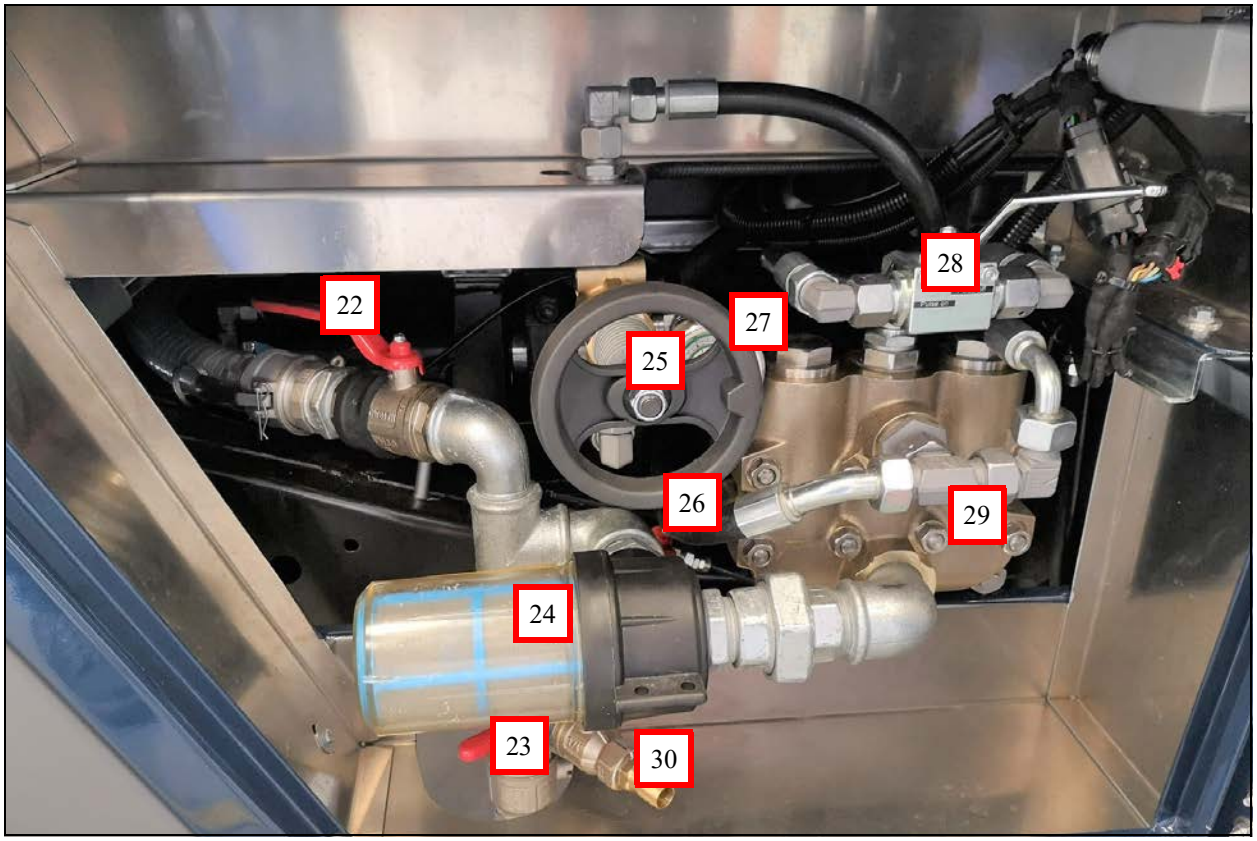
1. Transfer valve
2. Siphon
3. Drain valve Siphon
4. Vacuum gauge
5. Suction valve
6. Filling line fresh water tank
7. Filling reel
8. Flashing lights
9. eControl+
10. Lever hydraulic high pressure reel
11. Hose guide
12. Sight glass
13. High pressure hose
14. Pressure gauge
15. Oil-tank hydraulic system
16. Pressure valve
17. Emergency stop
18. Inspection hatch at the bottom of the tank
19. Toggle clamps
20. Inspection hatch at the top of the tank
21. Suction reel
22. Shut-off valve water
23. Drain-valve water filter
24. Water filter
25. Pressure regulator
26. Air valve high pressure system
27. High pressure gauge
28. Connection antifreeze (option)
29. High pressure pump
30. Oil bath filter
31. Drain valve, oil collector
32. Oil collector, vacuum pump
33. Lever hydraulic vacuum reel
34. Selector valve hydraulic reel
35. Lifting eyes
36. Pressure relief valve
37. Vacuum relief valve
38. Pressure relief valve for inspection hatch
39. Selector lever: suction or pressure

UrbanCombi left rear



UrbanCombi right rear

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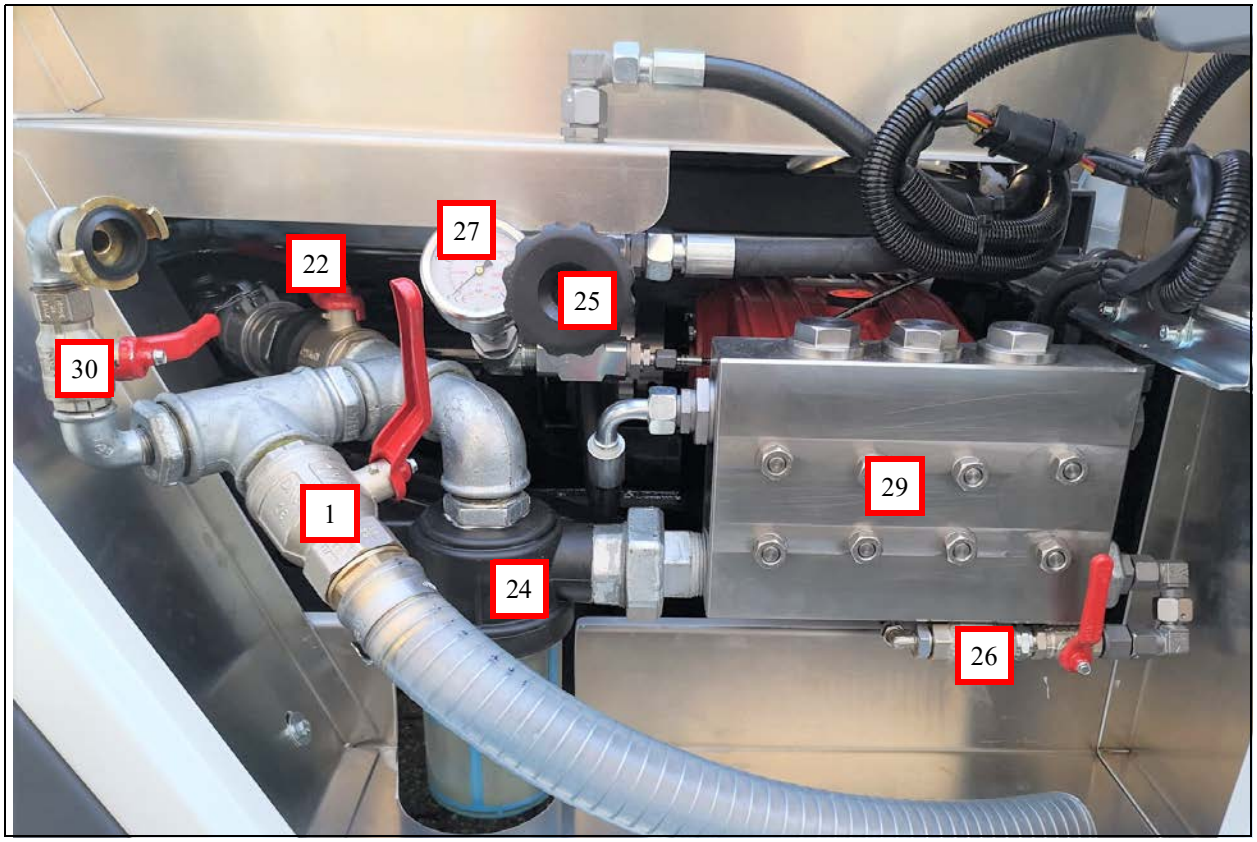
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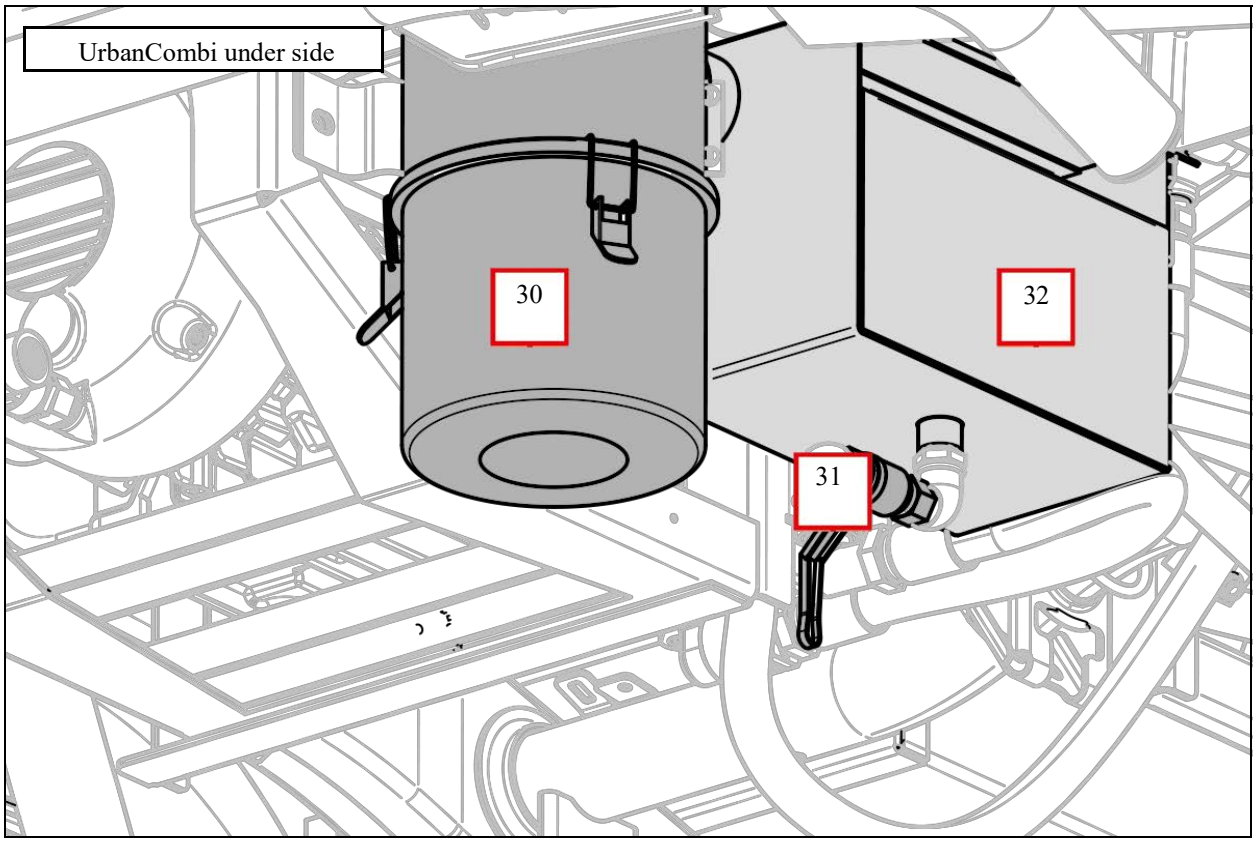
UrbanCombi under side
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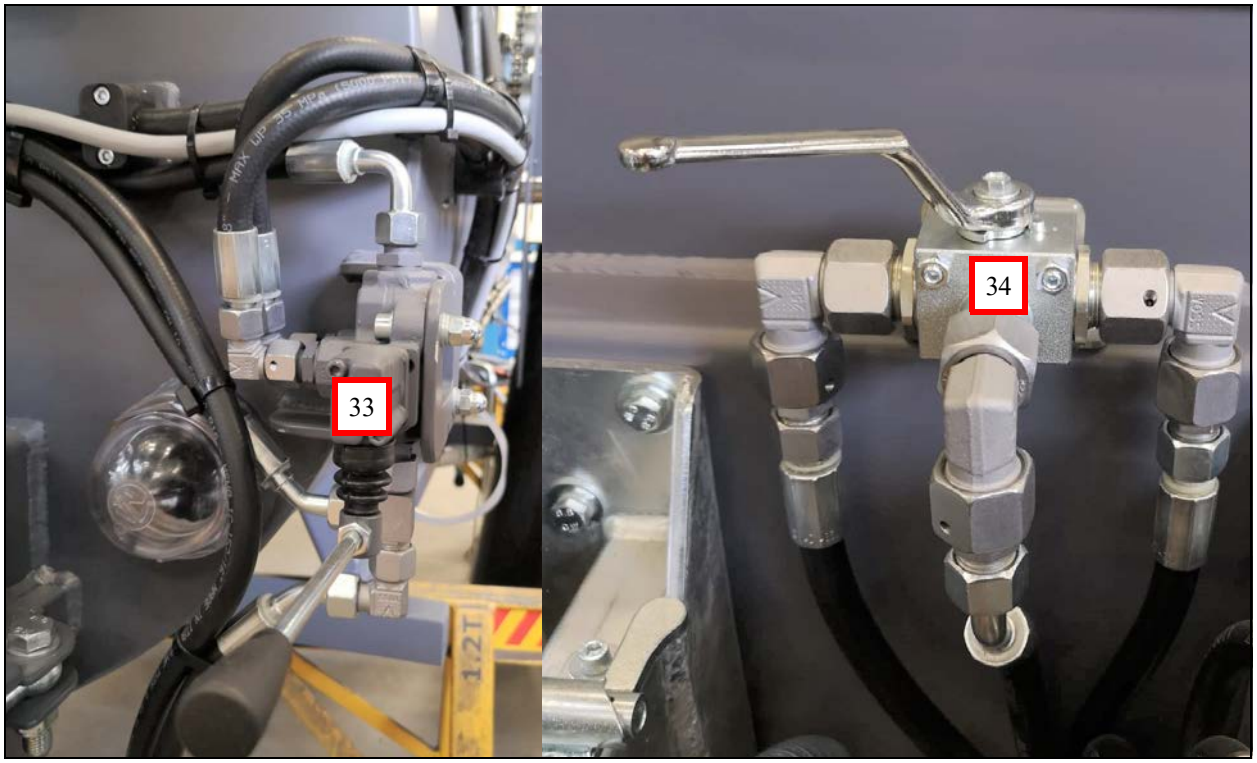
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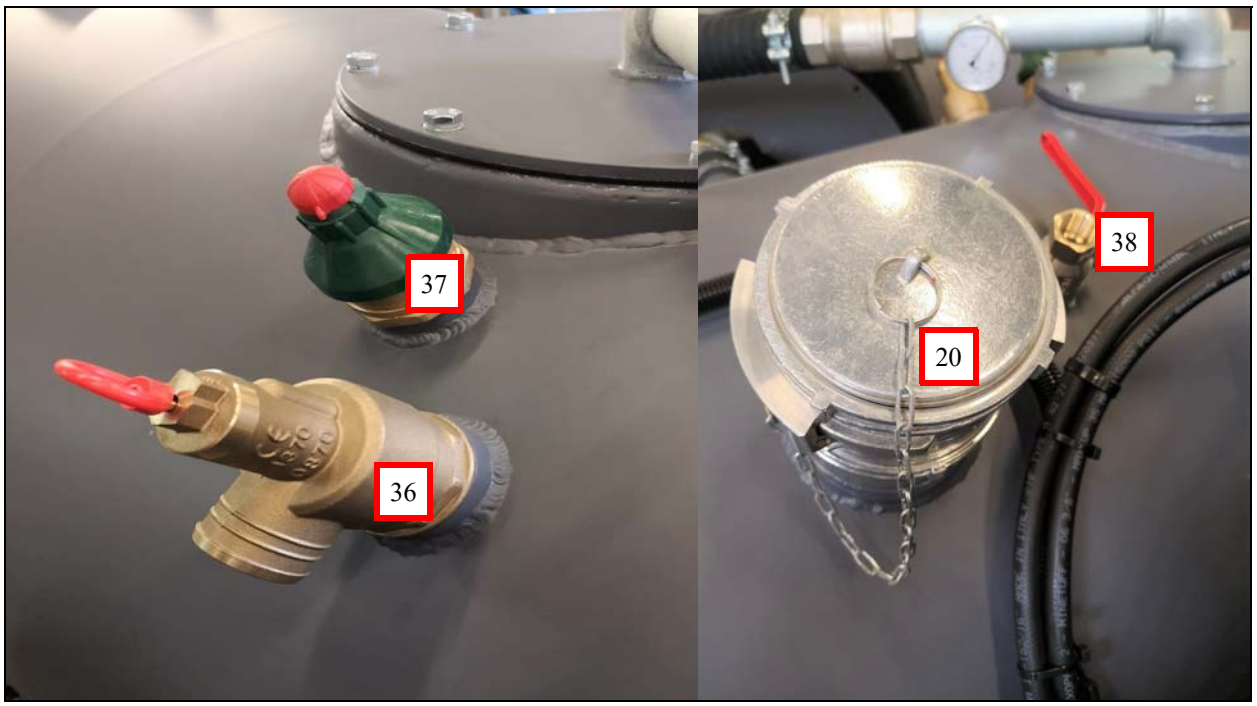
The lifting eyes as can be seen above (35) must all be used when lifting the tank.





The following is a brief explanation of parts from the illustrations above that are not discussed further in the manual.

Toolbox

This space is intended for storing tools. It contains:
> the spray gun with lance
> the nozzles
> the open-end spanners
> the key to open the rear cover

Transfer valve

This valve must be closed when driving the vehicle. This prevents sludge from leaking into the clean water tank.

Toggle clamps

The four toggle clamps ensure that the rear cover is closed securely.

Sight glass

The sight glass allows you to check how far the vacuum tank is filled.

Oil bath filter

The vacuum pump consumes lubricating oil. The oil bath filter separates the used lubricating oil from the air blown off by the vacuum pump.

Pump compartment, high pressure pump

Lift the latch to release the door.

Air valve HP system

By opening this valve you blow the remaining water out of the high pressure system.
To get the remaining water out of the high pressure system, the following valves must be in the indicated
position:
> Supply valve to water filter closed
> Drain valve, closed
> High pressure valve open

Oil collector, vacuum pump

The oil collector collects the last remaining oil from the blown-off air.

Indicator, water level

This indicates the water level in the water tank.

Vacuum/pressure gauge

This gauge indicates the pressure in the vacuum tank.

High pressure valve

This valve regulates the supply of water to the high pressure hose. If the Riomote control (option) is installed, the high pressure valve is always open. The water supply is then controlled by the valve. The high pressure valve acts as a safety valve in an emergency: this allows you to immediately interrupt the supply of water to the high pressure hose.

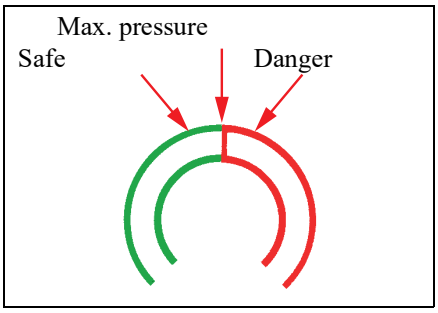
Selector lever: suction or pressure (vacuum pump)

Use this lever to set the vacuum pump to suction or pressure operation:
> Suction position: in this position the vacuum pump sucks the vacuum tank full of sludge,
> such as mud.
> Pressure position: in this position the vacuum pump pushes the sludge (e.g. mud) out via the pressure valve.

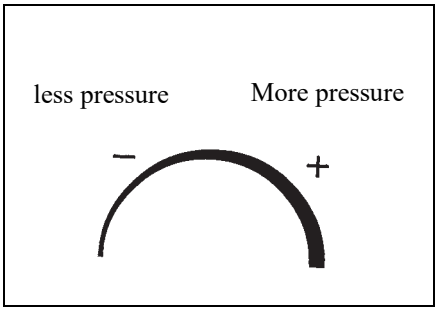
3.2.2 Symbols on pressure gauge, pressure regulator and valve controls

Pressure gauge (16)

The maximum operating pressure is indicated on a sticker near the pressure gauge.
Reduce the operating pressure with the handwheel of the pressure regulator until the indicator of the pressure gauge is halfway between 0 and the maximum operating pressure.

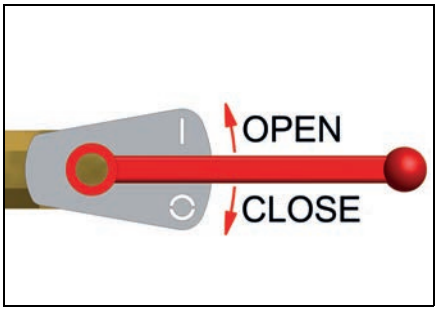


Pressure regulator (25)



Operation of high pressure valve

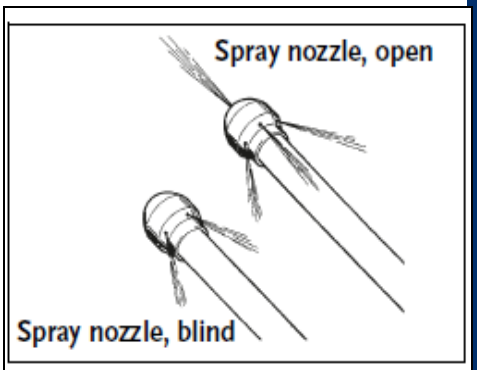
Move the lever up to open the high pressure valve. Move the lever down to close the high pressure valve.



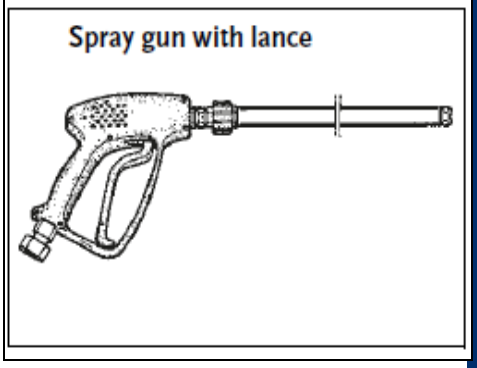
3.2.3 Accessoires

The following are included as standard with the machine:

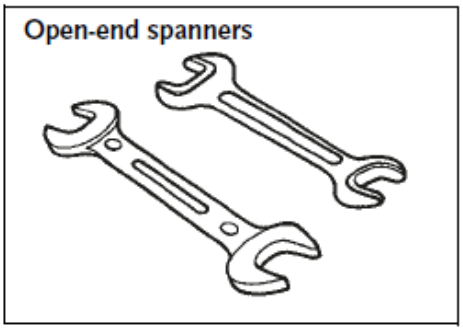
1. Two nozzles for unblocking sewers: ‘Open nozzle’ and ‘Blind nozzle’, which are fitted on the end of the high pressure hose.
   The nozzles are located in the nozzle holders.



2. One spray gun with lance for cleaning facades, terraces and floors.
   The spray gun is attachted to the end of the high pressure hose using the open-end spanners.



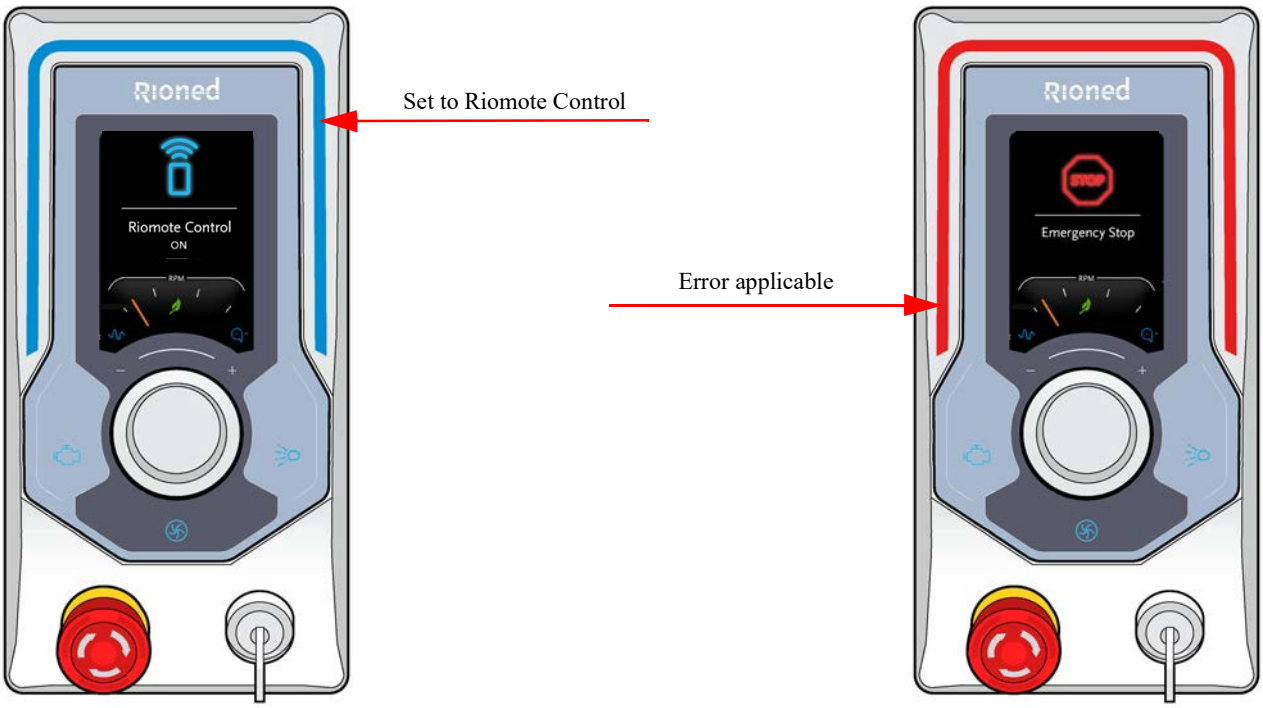
3. Two open-end spanners for tightening and loosening the spray gun.
4. Key for toggle bolts
5. Suction tube
6. Suction tube holder
7. This user manual
8. Documentation Ford Ranger
9. Attachment manual, high pressure pump and drawings
10. Manual, high pressure pump



Explanation Graphics (only eControlPlus)

The Corona is OFF (grey) unless:

> The Control Unit is:



5.1 Push buttons

When system is switched ON with the key,  and  are lighted.

 is lighted on machines featuring vacuum functionality.

 are lighted when the corresponding functionality is active, regardless Manual Control or Riomote Control.

In case of "Run Dry",  is blinking with 1 ON/OFF cycle per second.

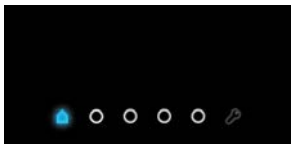
5.2 Navigation bullets

The navigation bullet (2) has two general states:

> Passive (Grey)



> Active (Blue)



Depending on the user's location in the menu, one of them is on display or, in case of a pop-up, all navigation bullets disappear.

Features in navigation bullets are in specified order, if applicable:

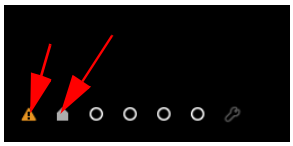
>  Error

>  Home

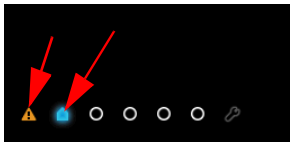
>  Management

The Error-navigation-icon  is only visible and can only be navigated to when an error is applicable, otherwise the icon is hidden.

> Error passive (Grey)



> Error active (Blue)



The first icon, representing Home , is always visible and can always be navigated to.

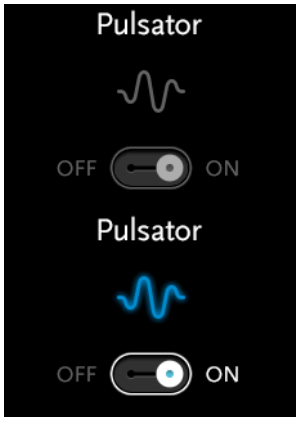
The last item, the Management-navigation-icon, is always visible and can always be navigated to.

5.3 Function

A function (3) has two general states:

> Passive (Grey)

> Active (Blue)



Depending on the user's location in the menu, one of them is on display or, in case of a pop-up, all navigation bullets disappear.

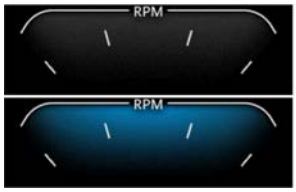
Regardless if a function is active, possible settings on display should always indicate its current status. (7, 8).

5.4 Tachometer

The tachometer (4) has two general states:

> Passive (default)

> Active (default)



Depending on the user's location in the menu, one of them is on display.

The pointer which indicates the engine's RPM should always display the current RPM.

Push button  shortly to go back to Tachometer from all menu's.

Throttle control is also accessible via the home button.

5.5 Icons

The icons always display the current status of the corresponding feature, regardless "Manual Control" or "Riomote Control".

5.6 Riomote Control

Purpose: To operate the high-pressure machine from a distance.

5.6.1 Emergency stop test

Check before working with the Riomote Control if the emergency stop works well. Proceed as follows:

1. Put the key into the keyhole.
2. Turn the key to position 2 “Radio Control ON”.



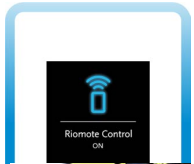
> “Work safe” is displayed for 2 seconds.



> Icon “Riomote control ON” displayed continuously.



> Corona is coloured blue and is blinking.



> Switch the Riomote Control on .
> Corona is coloured blue continuously when the Riomote control has contact with the receiver (only diesel version).





>Start the engine by means of button “START”.

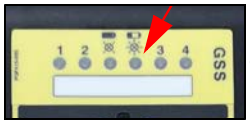


>Push the “STOP” button .

The machine has to cut off now.

If this is not the case it is not allowed to work with the Riomote Control. Contact your supplier.

5.6.2 Battery

If the indication 

on the Riomote Control starts burning it's indicates that the battery must be changed with a new fully loaded battery.

If the battery isn't changed the Riomote Control switches off in a short time.

Reload empty batteries.

5.6.3 Functions Neo:

1. Throttle down
2. Throttle up
3. Stop spraying
4. Start spraying
5. Vacuum off
6. Vacuum on

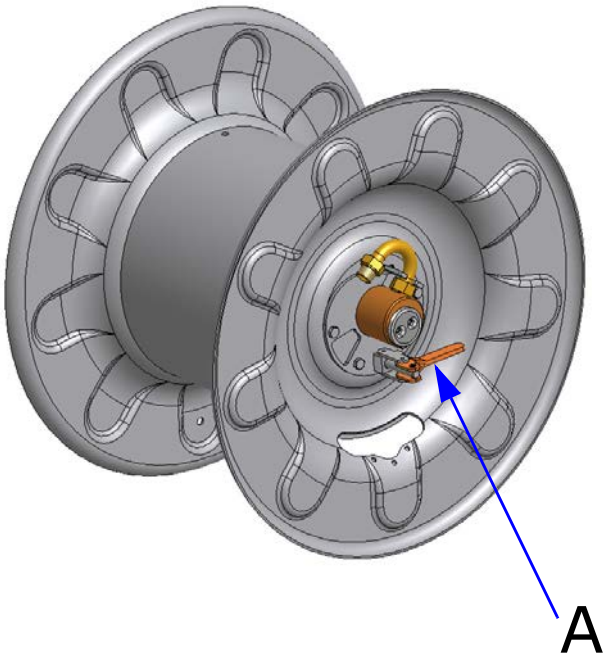
7. Start Neo Riomote control

8. Emergency stop

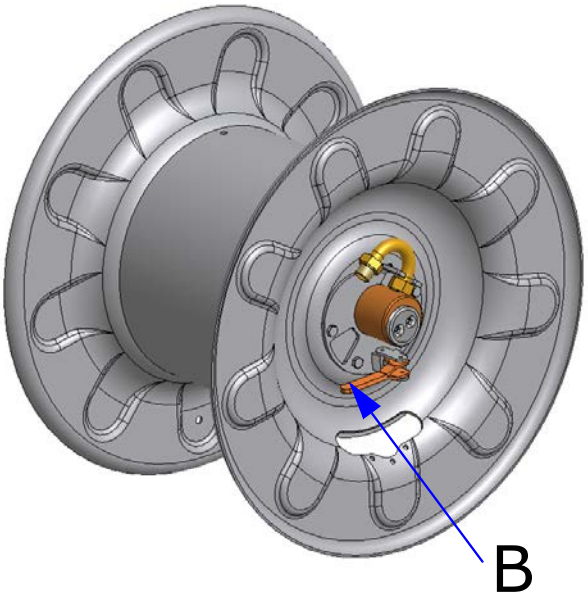


5.7 Unwinding manually of the eControl driven hose reel

Your machine is fitted with a mechanical freewheel locking device.
With this device you can put the HP hose reel in “complete freewheel position” or in “eControl”.
If you want to unwind manually you put the device in position “A”.
The locking pin is released and the HP reel can turn freely without resistance.



To get the HP reel in eControl you put the device in position “B”.
The pin gets back in locking position and you can use the eControl again.



5 Operation: standard functions

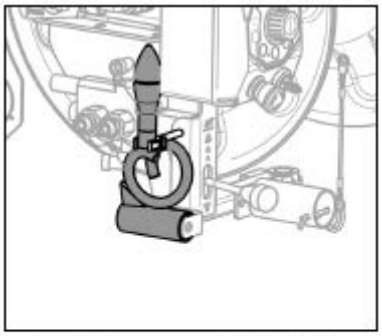
5.1 Introduction

In this chapter we first describe the checks you must carry out before departure and the preparations required at the workplace. Then the different ways to start the engine are explained.
Next the work will be discussed: unblocking a sewer, properly handling the high pressure hose and cleaning a wall, terrace or floor.
The last part of this chapter deals with working with the vacuum system.

5.2 Checks before departure

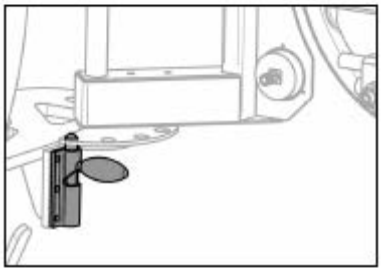
ALWAYS check the following before you drive off with your vehicle:

> Is the high pressure hose completely rolled up?
> Is the high pressure reel secured?
> Is the high pressure hose secured in the hose holder with the safety clip?
> Is the swivel arm fully retracted and secured?
> Is the hose guide fully retracted and secured?
> Is the transfer valve closed?
> Is the swivel arm positioned against the vacuum tank and secured?



Check fluids:

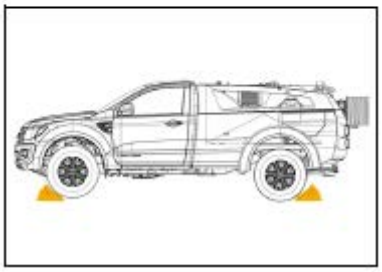
> Check the oil level of the vehicle engine with the dipstick.
> Top up as required.
> Check that there is enough fuel in the fuel tank.
> Top up the tank if necessary.



5.3 Preparations at the workplace

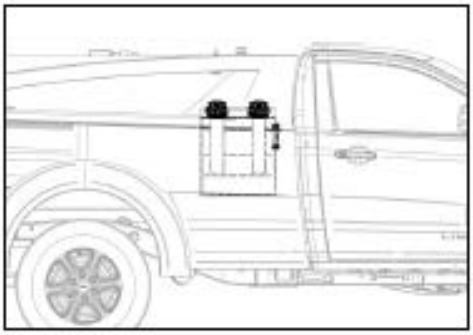
5.3.1 Preparing the vehicle

1. Park the vehicle at the desired location and engage the parking brake.
2. Block the vehicle wheels with chocks. Place two chocks in front of the front wheels and two chocks behind the rear wheels.
3. Mark the work area in accordance with local regulations.

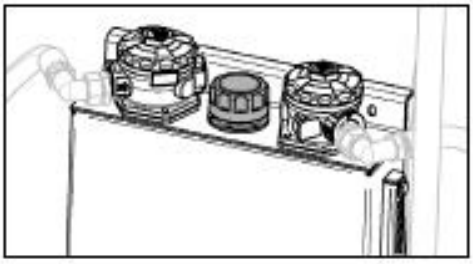


5.3.2 Before starting

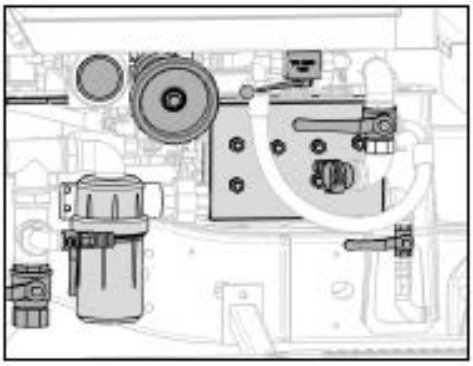
> Check the oil level in the hydraulic system using the level indicator on the side of the tank. This also indicates the temperature of the oil.



> Top up as required.



> Open the door of the high pressure pump compartment.
> Check that the water filter is clean.
> Clean the filter if necessary.
> Check that the supply valve to the water filter is open.
> Check that the drain valve is closed.
> Check that the high pressure valve is closed.

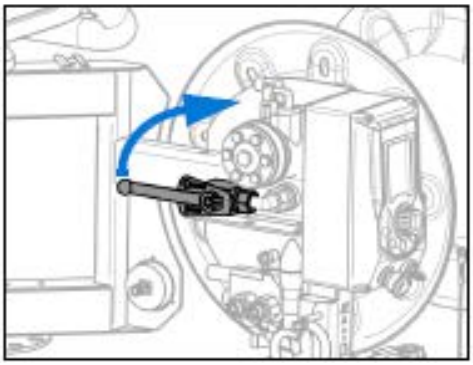


Fill the water tank via the filling line:

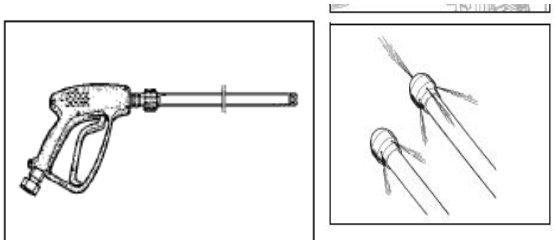
1. Connect a filling hose to the coupling of the filling line.
2. Open the filling valve.
3. Open the water tap.
   The maximum water temperature is 60 °C.
4. Turn the pressure regulator knob completely anticlockwise.
5. Screw the required attachment onto the high pressure hose:

> Check that the high pressure valve is closed.

Open the swivel arm to access it.



For unblocking a sewer: the spray nozzle.
For cleaning façades, terraces and floors: the spray gun



5.3.3 Workstations

The machine has four different workstations. These workstations are:

Behind the machine at the eControl+

The following operation is possible here:
> operation with eControl+
> emergency stop with eControl+

Risk at this workstation: extra noise when opening the suction valve.



The peak sound pressure level is about 120dB(A)!

At the manhole or sewer pipe

The following operation is possible here:
> operation with eControl+ at a distance of less than one metre
> operation with Riomote control

At the spray site

Here you work with the spray gun with lance.

Remotely with the Riomote control

Here you carry out work closer to the blockage. The maximum distance to the machine is up to 90% of the total length of the high pressure hose.
Risk at this workstation: no supervision of the machine during one-man operation.

5.4 Starting the engine

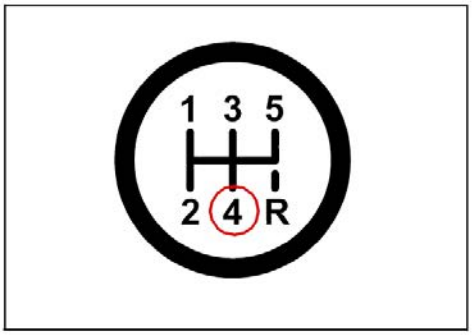
Always wear personal protective equipment! see section 'Personal protective equipment' for all the protective equipment.



5.4.1 Engaging the PTO

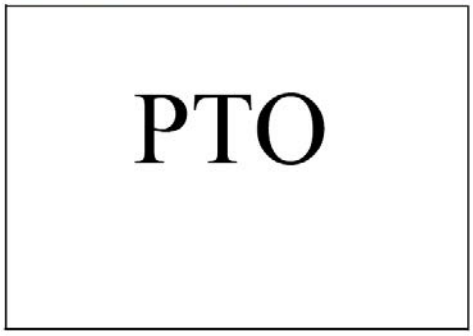
1. Engage the parking brake.
2. Depress the clutch.
3. Start the vehicle engine in the usual way.

Always set the drive to position 2H!



4. Put the gear lever in fifth gear.
5. Turn the switch to engage the PTO. The switch is located between the seats in the cab.
6. The green light will now light up.
7. Release the clutch. The vehicle engine will stall!
8. Start the engine again.
9. Now you can start the eControl+ and unblock the sewer.

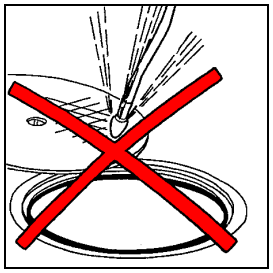




5.5 Unblocking a sewer

5.5.1 Spray nozzle warning

Ensure that the spray nozzle never exits the sewer while spraying. A high pressure water jet can cause serious injuries!



How do you prevent this?
A mark has been applied approximately five meters from the end of the hose. When you see this mark, do the following:

1. Turn off the high pressure.
2. Then pull the hose completely out of the pipe.

5.5.2 Preparations for spraying

The machine has two nozzles for unblocking sewers: ‘Open nozzle’ and ‘Blind nozzle’.

1. Attach the nozzle to the end of the high pressure hose as follows:
   • first fit the O-ring to the threads of the high pressure hose
   • screw the ‘Open nozzle’ onto the high pressure hose
2. Reel out the high pressure hose in one of the following ways:
   • with the hydraulic hose reel (see section ‘Hydraulically reeling high pressure hose or suction hose in/out’)
   • with the eControl+
   (see section ‘Reeling high pressure hose in/out with eControl+’)
   • manually (see section ‘Manually reeling high pressure hose or suction hose in/out’)
   • with the Riomote control (see section ‘Reeling in/out with Riomote control’)
3. Place the nozzle in the pipe to be cleaned.
4. Open the high pressure valve at the high pressure reel manually.
5. Turn the pressure regulator knob completely open (clockwise).
6. Start the engine if it has not yet been started.

5.5.3 Starting spraying

Only switch on the high pressure at idling speed!

Spraying can be started in two ways: with the eControl+ and with the Riomote control.

Start spraying with the eControl+

1. Press the High pressure on/off button.

The water now sprays out of the nozzle at the end of the hose.

The LED for high pressure lights up blue:



The text ‘High Pressure ON’ is displayed for two seconds:



After five seconds, the home screen is displayed:

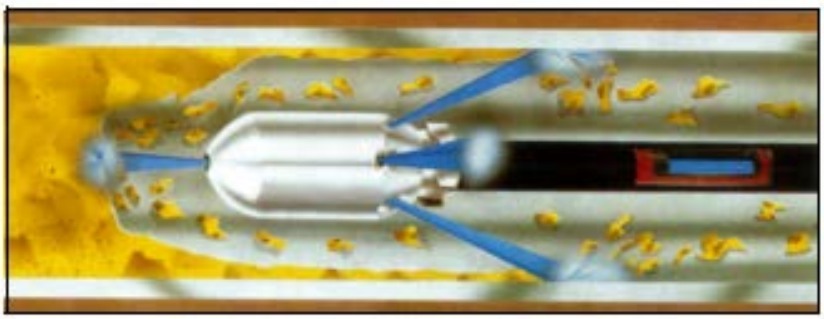


2. Turn the navigation knob to increase (clockwise) or decrease (anticlockwise) the speed:

Starting spraying with the Riomote control

1. Press button 4 ‘Start spraying’ (9-channel) or button 4 ‘HP on’ (11-channel).
2. Press button 2 ‘Increase speed’ (9-channel) or button 6 ‘Throttle up’ (11-channel).
   The hose will now unwind and at the same time work its way into the clogged
   sewer:





3. Check whether the water is drained off.
4. Continue flushing for a while after the blockage is removed.
5. Reel the hose in slowly at the same time.

5.5.4 Stopping spraying

After unblocking, it is important to flush as follows: replace the ‘Open nozzle’ with the ‘Blind nozzle’. Spraying can be stopped in two ways: with the eControl+ and with the Riomote control.

Stopping spraying with the eControl+

> Press the High pressure on/off button.
> The LED for high pressure goes out:
> The text ‘High Pressure OFF’ is displayed for two seconds:
> No more water comes out of the nozzle.
> The engine speed decreases.

Stopping spraying with the Riomote control

> Press button 3 ‘Stop spraying’ (9-channel) or button 3 ‘HP off’ (11-channel) on the Riomote
> control.
> The LED for high pressure on the eControl+ goes out.
> No more water comes out of the nozzle.
> The engine speed decreases.

5.5.5 Handling the high pressure hose

Handling the high pressure hose carefully:
> Make sure there are no sharp objects near the hose.
> Make sure no vehicles drive over the hose.
> Clean the hose after each use.
> Use only the special repair couplings if the hose requires repair.
> Remove the nozzle from the HD hose to avoid possible accidents.

5.6 Cleaning a wall, terrace or floor

5.6.1 Warnings for spray gun

Always observe the following warnings when working with the spray gun:
- Set the pressure regulator to half of the maximum operating pressure.
- Start the machine and start working.

After starting and while working:
- The operating pressure can be increased to the desired pressure, by turning the knob on the pressure regulator.
- NEVER exceed the specified maximum operating pressure!

See also the safety instructions for the spray site in the Introduction.

5.6.2 Preparations for spraying

1. Attach the spray gun to the end of the high pressure hose as follows:
   • First fit the O-ring to the threads of the high pressure hose.
   • Then screw the spray gun onto the high pressure hose using the supplied spanners.
2. Unreel the high pressure hose ALL THE WAY.
3. Open the high pressure valve at the high pressure reel.

4. Start the engine if it has not yet been started.

5.6.3 Pressurizing the system

Pressurizing can be started in two ways: with the eControl+ and with the Riomote control.

Pressurizing with the eControl+

1. Press the High pressure on/off button.
2. Turn the navigation knob to increase (clockwise) or decrease (anticlockwise) the speed:



Pressurizing with the Riomote control

1. Press button 4 ‘Start spraying’ (9-channel) or button 4 ‘HP on’ (11-channel) to start spraying.
2. Press button 2 ‘Increase speed’ (9-channel) or button 6 ‘Throttle up’ (11-channel) to increase the speed, or button 1 ‘Reduce speed’ (9-channel) or button 5 ‘Throttle down’ (11-channel) to reduce the speed.

5.6.4 Starting spraying

Starting spraying with the spray gun

1. Turn the pressure regulator knob clockwise until the desired pressure is reached.
   The set pressure can be read on the pressure gauge when the gun is spraying.
2. Squeeze the trigger of the spray gun to start spraying.
   Release the trigger to stop spraying.

5.6.5 De-pressurizing the system

The system can be de-pressurized in two ways: with the eControl+ and with the Riomote control.

De-pressurizing the system with the eControl+

1. Turn the navigation knob anticlockwise to reduce the speed:
   Reduce the speed by turning the navigation knob on the eControl anticlockwise:
2. Press the High pressure on/off button.
   Pressure drops off.
3. Press and hold the Engine on/off button for at least one second.

De-pressurizing the system with the Riomote control

1. 1. Press button 1 ‘Reduce speed’ (9-channel) or button 5 ‘Throttle down’ (11-channel) to reduce the speed.
2. 2. Press button 3 ‘Stop spraying’ (9-channel) or button 3 ‘HP off’ (11-channel) to de-pressurize the system.
3. 3. Press button 5 ‘Stop engine’ (9-channel) or button 2 ‘STOP’ (11-channel) to stop the engine.

5.7 Ending the work

5.7.1 Cleaning up, securing and draining

At the end of the work, complete the following steps:

> Is the high pressure hose completely rolled up?
> Is the high pressure reel secured?
> Is the high pressure hose secured in the hose holder with the safety clip?
> Is the swivel arm fully retracted and secured?
> Is the hose guide fully retracted and secured?
> Is the transfer valve closed?
> Is the swivel arm positioned against the vacuum tank and secured?
> Put away all the attachments.
> Put away the Riomote control.
> Drain any water that is still in the water tank via the drain valve.



Drain water tanks, water filter, water pipes, water hoses and water containers after EVERY service to prevent contamination with legionella bacteria!

5.7.2 Disengaging the PTO





Disengage the PTO as follows:

1. Depress the clutch.
2. Put the gear lever in neutral.
3. Turn the switch to disengage the PTO. The switch is located between the seats in the cab:
   The green light will now go out.
4. Release the clutch.
5. Remove the chocks from the front and rear wheels.
6. disengage the handbrake.
   The machine is now ready for departure.

5.7.3 Additional steps during freezing temperatures

The high pressure section of the machine its at high risk of freezing during freezing temperatures. Therefore ALWAYS take the following precautions before departure after you have finished your work:

Drain water

1. Open the supply valve for the water filter.
2. Open the drain valve for the water filter. This will drain the water tank.
3. When no more water comes out of the valve, close the drain valve for the water filter and the supply valve for the water filter.
4. Unscrew the cap of the water filter.
5. Let the remaining water flow out.
6. Screw the cap of the water filter tight again.

Fill the water tank with 25 l antifreeze. (optional)

1. Attach a hose to the antifreeze tank connection.
2. Put this hose in a jerry-can with 25 l antifreeze.
3. Open the valve at the antifreeze connection.
4. Turn the pressure regulator knob completely anticlockwise.
5. Check that the high pressure valve is closed.
6. Press the Engine on/off button on the eControl+.
7. Let the engine idle.
8. Open the high pressure valve.
9. Press the High pressure on/off button on the eControl+.
   The antifreeze is now sucked up and the water is pumped out of the high pressure hose.
10. Close the high pressure valve when antifreeze comes out of the high pressure hose. You will see that the water turns blue.
11. Let the engine run a while longer. All the pipes now fill with antifreeze. Eventually the rest of the antifreeze ends up in the water tank.
12. Press the High pressure on/off button on the eControl+.

13. Press and hold the Engine on/off button on the eControl+ for at least one second.
    The engine is now stopped.
    The machine is now protected against freezing temperatures.

NOTE

When pumping out water, there is no need to place a spray nozzle or spray gun on the high pressure hose.

Removing antifreeze

Complete the following procedure to remove the antifreeze from the lines:

1. Start the machine (see section ‘Starting the engine’).
2. Prepare a reservoir or jerry can.
3. Pump all the antifreeze through the high pressure hose to the reservoir or jerry-can. The antifreeze can then be used again next time.
4. Check that the antifreeze has not been diluted too much. If the antifreeze is diluted too much, the high pressure section of the machine is not sufficiently protected against freezing.
5. If the antifreeze has been diluted too much, take it to your municipal recycling collection point for disposal.
6. Stop the machine.
7. Prepare it for use (see section ‘Checks before departure’).

5.8 Vacuum system

Use the vacuum system exclusively for cleaning sewers and tanks.

Before use:

Do not switch on the vacuum if the hose/tube is not in a safe position.
Only switch on at idle speed.
Switch off the vacuum if the hose/tube is no longer in a safe position.

1. Close the suction and discharge valves.
2. Clean the trap
3. Before use, check that the inner trap is clean. Clean if necessary.
4. Open the transfer valve.
5. Check the oil level of the vacuum pump.
6. Check that the cover is closed tightly and that the four toggle bolts are tight.
7. Connect the suction hose to the suction valve, or use the suction reel with suction hose if present.
8. Connect the suction tube to the suction hose.
9. Set the lever of the vacuum pump to suction.
10. Place the end of the suction tube in the sludge to be sucked up.

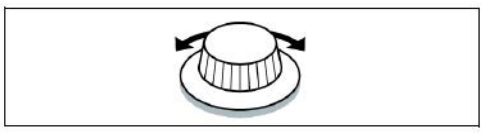
5.8.1 Switching on the vacuum system

The vacuum system serves to vacuum up sludge. It can be switched on with the eControl+ as follows:

1. Press the Vacuum on/off button:
   The Led for th vacuum function now turns blue:
   After five seconds, the home screen is displayed:



2. Turn the navigation knob to increase (clockwise) or decrease (anticlockwise) the speed:



5.8.2 Sucking the sludge

1. Check the vacuum/manometer (max. -0.5 bar).
2. Open the suction valve.
   The vacuum tank is being filled!
   The content of the vacuum tank can be seen using the sight glasses.

NOTE

A ball protection device (inner siphon) is mounted in the tank.
The ball seals the outlet when the tank is full.

5.8.3 Switching off the vacuum system

The vacuum system can be switched off with eControl+ as follows:
Press the Vacuum on/off button:
The LED for the vacuum function now goes out:
The engine speed decreases. Note: the speed does not decrease when the high pressure is activated.
Close the suction valve.

5.8.4 Emptying the vacuum tank

1. Connect the suction hose to the pressure valve.
2. Place the end of the hose where the sludge should be discharged.
3. Open the pressure valve.
4. Set the lever of the vacuum pump to ‘Pressure’.
5. Press the ‘Vacuum on/off’ button.
   Let the vacuum pump push all the sludge out of the tank (max. 0.5 bar.)
6. Press the ‘Vacuum OFF’ button.
7. Open the suction valve to release the air pressure.
8. Open the tank cover.
9. Clean the inside of the vacuum tank.
10. Check the ball valve in the vacuum tank for contamination and proper operation.
11. Close the tank cover.
12. Tighten the four toggle bolts firmly.

6 Operation: extra functions

6.1 Introduction

In this chapter we describe the various extra functions. First we discuss the machine's pulsator, reels, hose counter and electronic water level control. Then we discuss the eco mode and the management function of the eControl+. Finally, we describe the optional work lights.

6.2 Pulsator

6.2.1 Introduction

The purpose of the pulsator is to reach the blockage in the sewer pipe faster with less water consumption. Use the pulsator to get to the blockage more quickly or in case of stubborn blockages.

Construction

The high pressure pump has three cylinders. In normal use, the three cylinders generate sequential pulses, which produces a continuous flow. When one of the three strokes is stopped, this results in a pulsating water flow.

6.2.2 Manual operation pulsator

> Open the three-way ball valve to start the pulsator.
> Close the three-way ball valve to stop the pulsator.

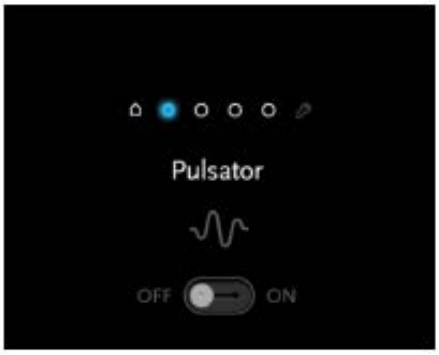
Stop the pulsator when you reach the blockage. Then continue as described in section 'Unblocking a sewer'.

6.2.3 Starting the pulsator with the eControl+

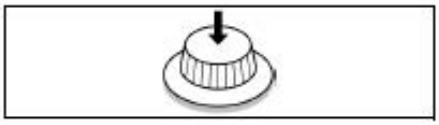
You can only use this function if it is available on the eControl+ and if the vehicle engine is running.

Perform the following operations:

> Turn the navigation knob clockwise and move the navigation bullet to the Pulsator position:



> Press the navigation knob to activate the pulsator:



The navigation bullet now goes out and the pulsator icon lights up blue.



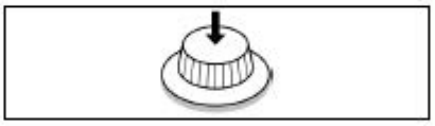
> Turn the navigation knob clockwise:



The text ‘ON’ is now shown below Pulsator.



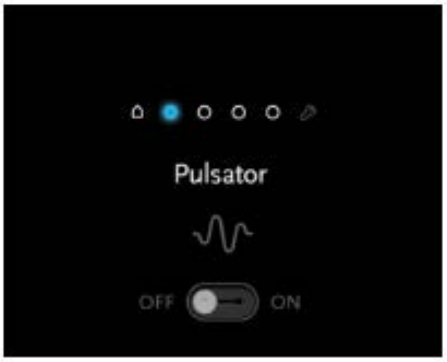
> Press the navigation knob to activate the pulsator:
The icon will now light up.
> Press the High pressure on/off button:
See section ‘Starting spraying’.



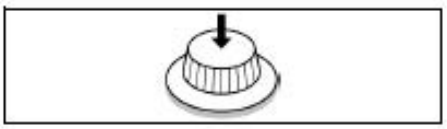
6.2.4 Stopping the pulsator with the econtrol+

Perform the following operations:

1. Press the High pressure on/off button:
See section ‘Stopping spraying’.
2. Turn the navigation knob clockwise and move the navigation bullet t
the Pulsator position:



3. Press the navigation knob to activate the pulsator:



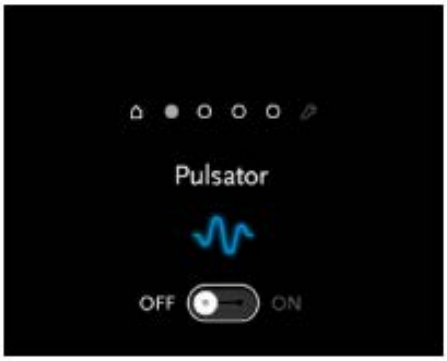
The navigation bullet now goes out and the pulsator icon lights up blue.



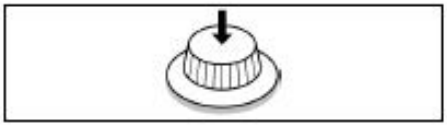
4. Turn the navigation knob anticlockwise:

   The text ‘OFF’ is now shown below Pulsator.





5. Press the navigation knob to deactivate the pulsator:



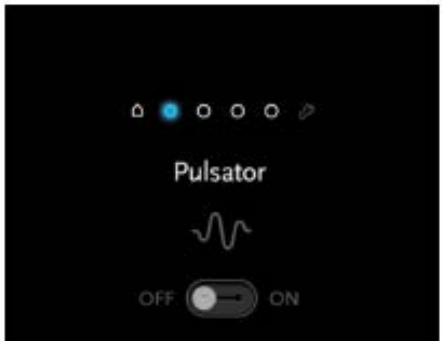
   The pulsator icon now goes out. The navigation bullet lights up



6.2.5 Setting the speed siwht the econtrol+ when the pulsator is switched on

When the pulsator is on, perform the following operations to set the speed:

1. Press the navigation knob to deactivate the pulsator:
   The pulsator icon now goes out en the navigation bullet lights up blue
2. Go to the Home screen or press the engine symbol
   The tachometer will now light up:
3. Turn the navigation knob to increase (clockwise) or decrease (anticlockwise) the speed:



6.2.6 Starting the pulsator with the Riomote control

Perform the following operations:

1. Start the engine with the Riomote control (see section ‘Starting the engine with the Riomote control’).
2. Set the PULSE rocker switch to the ‘Pulsator ON’ position (rocker switch up).

6.2.7 Stopping the pulsator with the Riomote control

Set the PULSE rocker switch to the ‘Pulsator OFF’ position (rocker switch down).

6.3 Reel

6.3.1 safety

There is a danger of pinching/crushing during reel operation! You may only operate the reels if there are no other people in the working area. This is YOUR responsibility.

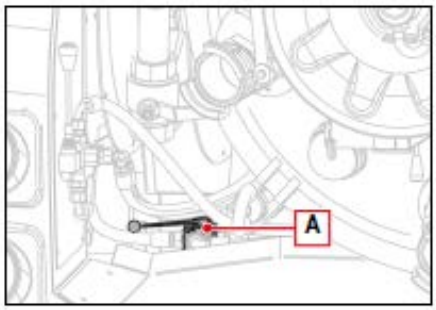


6.3.2 Hydraulically reeling high pressure hose or suction hose in/out

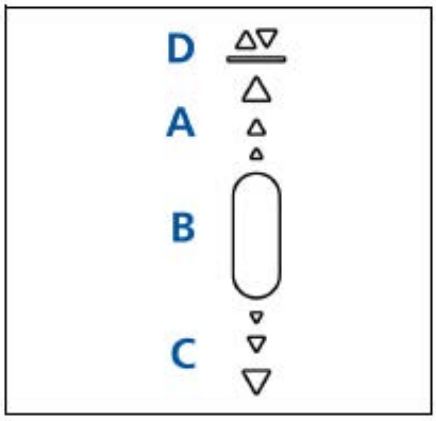
NOTE

When can still come out of the high pressure hose while reeling it in.

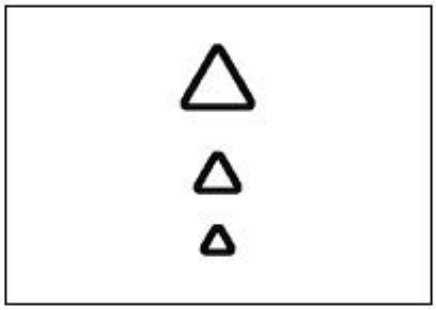
Use the valve (A) to select the reel to be hydraulically operated:
Lever to the left for the suction reel
Lever to the right for the high pressure reel:



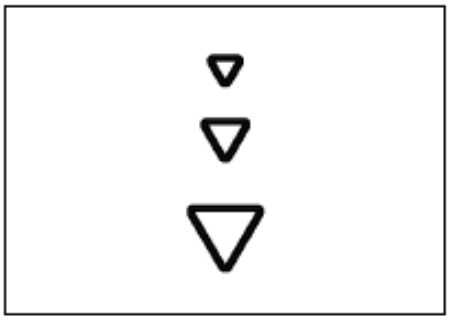
The control lever has four positions:
A: Reel in
B: Reel hold
C: Reel out
D: Reel free-wheel



Push the control lever upwards to reel in the high pressure hose or suction hose:



Push the control lever downwards to reel out the high pressure hose or suction hose:
The control lever also allows you to control the speed of reeling in/out.



6.3.3 Manually reeling high pressure hose or suction hose in/out

To switch off the hydraulic drive, move the control lever to the position. You can now manually reel out the high pressure hose or suction hose.

Never fasten the lever in position in any way!
Always operate the control lever with one hand. With your other hand, guide the high pressure hose to its destination using the hose guide.

6.3.4 Hose guide

Purpose

NOTE

ALWAYS use the hose guide when reeling in the high pressure hose hydraulically

The hose guide has two purposes:
1. Guiding the high pressure hose into the sewer.
2. Carefully winding the high pressure hose around the drum.

Operation

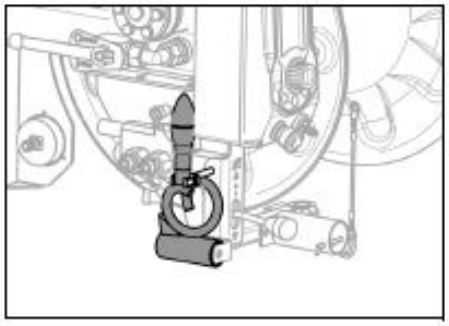
1. Insert or slide the high pressure hose through the opening of the sliding element.
2. Move the hose guide back and forth. This is how you wind the high pressure hose around the drum.

After use

Advantages

Use of the hose guide provides the following advantages:
> improved work safety
> more freedom of movement
> no dirty hands
> the high pressure hose lasts longer
> the high pressure hose remains cleaner

1. Swing back the hose guide.
2. Secure the hose guide.

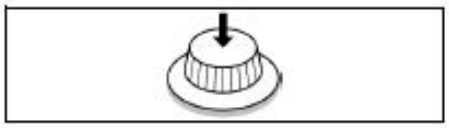


6.3.5 Reeling high pressure hose in/out with eControl+

You can only use this function if it is available and the engine is running.

Perform the following operations to reel the high pressure hose in/out:

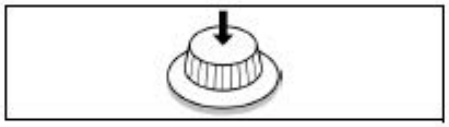
1. Press the navigation knob to activate the navigation menu:



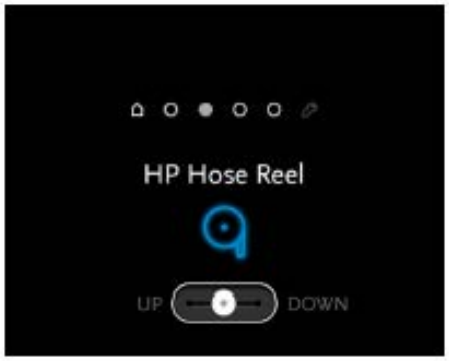
2. Turn the navigation knob clockwise and move the navigation bullet to the Reel position:



3. Press the navigation knob to activate the high pressure reel:



The navigation bullet will now go out.
The high pressure reel icon now lights up blue:



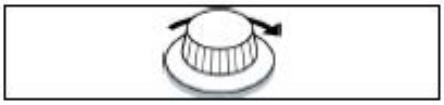
4. Turn the navigation knob anticlockwise to reel in the high pressure hose:





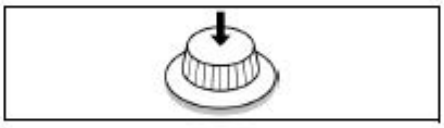
OR:

5. Turn the navigation knob clockwise to reel out the high pressure hose:





6. Press the navigation knob to start reeling in or out:
   The icon lights up when you press the navigation knob.
7. Release the navigation knob to stop reeling in or out. The icon disappears when you release the navigation knob.

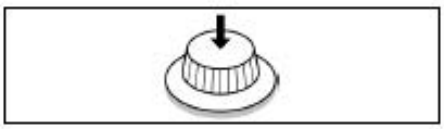


Switching off reeling in/out woith eControl+

1. Turn the navigation knob to the centre (neutral) position:



2. Press the navigation knob to deactivate the high pressure reel:



The high pressure reel icon now goes out.



The navigation bullet turns blue:



6.3.6 Manually reeling out high pressure hose controlled by eContro

Your machine may be equipped with a mechanical freewheel locking option. This allows you to set the high pressure reel to the ‘freewheel’ or ‘locked’ position.

Freewheel

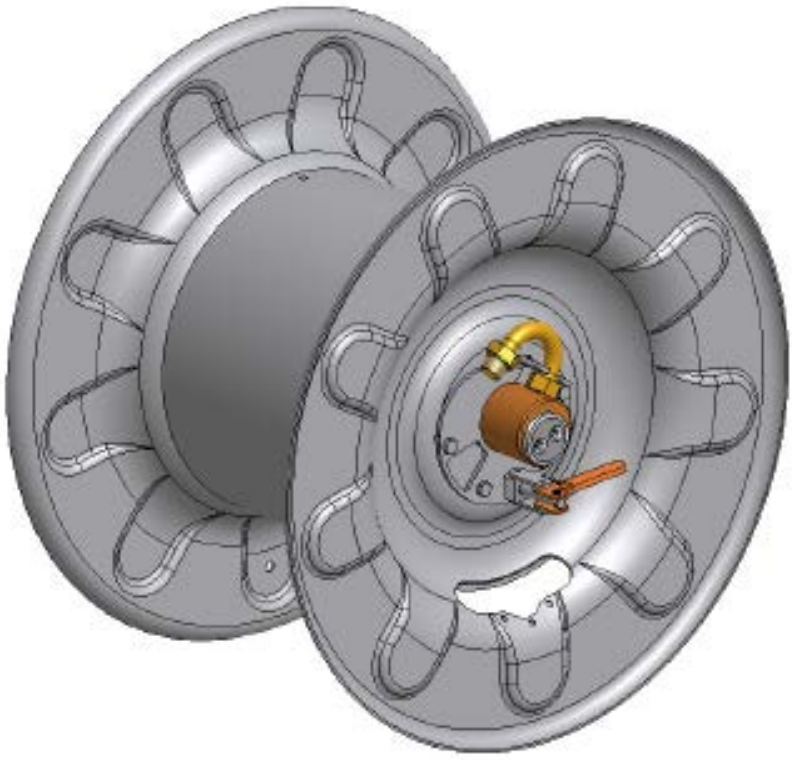
To manually reel out the high pressure hose, move the lever to the position shown below:



The locking pin is now released and the high pressure reel can rotate freely, without resistance.

Locked

To reel the high pressure hose in/out with eControl+, move the lever to the position shown below:



The pin locks and you can reel with eControl+ again.

6.3.7 Reeling in/out with the Riomote control

Reeling in

1. Check that the engine is running.
2. If not, start the engine with the Riomote control (see section ‘Starting the engine with the Riomote control’).
3. Set the rocker switch to the ‘Reel in high pressure hose’ position (rocker switch up).

Reeling out

1. Check that the engine is running.
2. If not, start the engine with the Riomote control (see section ‘Starting the engine with the Riomote control’).
3. Set the rocker switch to the ‘Reel out high pressure hose’ position (rocker switch down).

6.4 Hose counter eControl+

6.4.1 Introduction

The hose counter indicates how many metres of high pressure hose is in the sewer.

Things to keep in mind during use

Keep the following in mind when using the hose counter:

> The hose counter only measures when the ignition is turned on and the emergency stop is off.
> The Riomote control must therefore be paired!
> Make sure the hose is always rolled up completely when you turn the ignition on. This is important, because it is the reference position for the measurements.
> Make sure the hose is always stretched tight, because the measurement takes place on the reel.
> The count is in whole metres with a theoretical maximum deviation of one metre when the hose is tightly coiled.

6.4.2 Activate the econtrol+

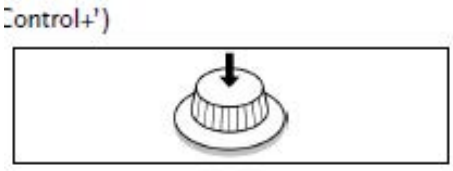
1. Turn the eControl+ key a quarter turn clockwise to position 1.
2. After a while this screen will be shown:
3. The hose counter is now directly available.



6.4.3 Switching the hose counter on and off

The hose counter is switched on as follows:

1. Select the management function
2. Press the navigation knob:
3. Select Hose Counter.
4. Press the navigation knob.
5. Press the navigation knob again. Hose Counter On turns blue.



The hose counter is now switched on.

The hose counter is switched off as follows:

1. Turn the navigation knob and select Off.
2. Press the navigation knob.
3. Select Set.
4. Select Back.

You are now back on the home screen. The hose counter is now switched off.

6.4.4 Resetting hose counter to 0 metres

If you reset the hose counter to 0 metres, you can make a measurement from any point. Do this as follows:

1. Make sure the hose is completely rolled up.
2. Press the navigation knob.
3. Select Reset and press the navigation knob. The hose counter now shows 0.
4. Select Back and press the navigation knob. You are now back on the home screen.

6.4.5 Switching between ‘metres’ and ‘feet’

The hose counter is set to ‘metres’ by default. You can switch between ‘metres’ and ‘feet’ as follows:

1. Select the management function
2. Press the navigation knob:
3. Select Hose Counter and press the navigation knob.
4. Press the navigation knob again.
5. Select Counter Unit.
6. Press the navigation knob again. Counter Unit metre turns blue.
7. Turn the navigation knob and select ft.
8. Press the navigation knob.
9. Select Set.
10. Select Back.

You are now back on the home screen. The hose counter is now set to ‘feet’ instead of ‘metres’.

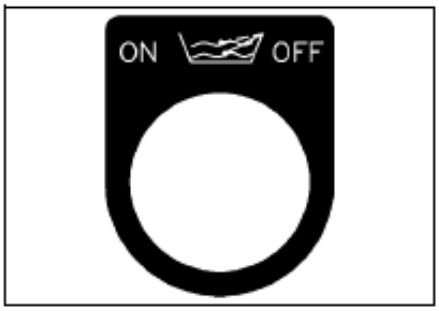
6.5 Electronic water level control

The purpose of the electronic water level control is to be able to continuously top up during spraying.

Principle of operation

There is a float in the water tank. This switch controls the solenoid valve in the filling line. When the water level is too high, the solenoid valve closes. When the water level is too low, the solenoid valve opens. You are therefore assured of water during spraying.

Filling the water tank

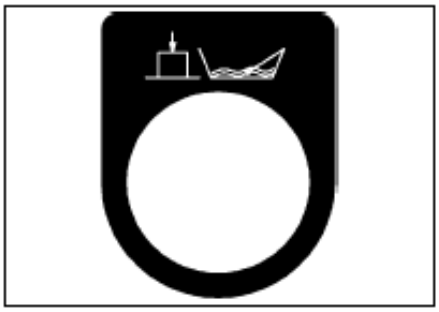


1. Connect a filling hose to the coupling of the filling line on the machine.
2. Turn on the mains water supply tap.
3. Turn on the switch for the water level control.

The water tank is now filled with water.

Stopping filling

1. Close the mains water supply tap.
2. Press the button of the solenoid valve. This releases the pressure
3. from the filling line.
4. Disconnect the filling hose from the coupling of the filling line.



7 Detachable unit

The urban combi and its water tank are detachable from each other.
In this chapter we will explain how to detach the unit.

It is not allowed to use the PTO without the unit.



There are 4 connections on the urban combi:
1. Water hoses
2. Electric cables
3. Hydraulic
4. Mechanical connection

7.1 Disassembling the unit

Rioned advises to disassemble the tool tray first and then the rest of the unit.

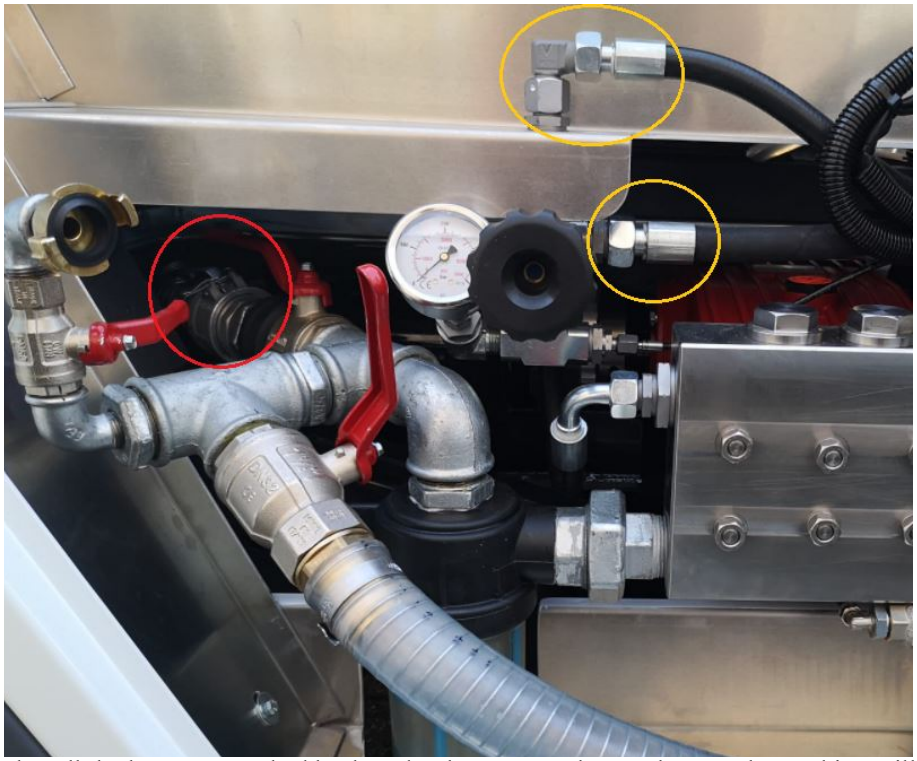
7.1.1 Step 1

Make sure that the unit is completely empty and the engine is turned off.
The water tanks and the tool tray need to be empty.

7.1.2 Step 2

Disassemble the water hoses near the high pressure pump.

Start with the coupling in the red circle and continue with the 2 orange high pressure hoses.



Make sure that all the hoses are pushed back under the water tank to make sure that nothing will get stuck under the water tank.

7.1.3 Step 3

Disconnect the electric plugs as depict below in the red circles and make sure they won't get stuck when the water tank will be lifted.



7.1.4 Step 4

Disconnect the quick coupling of the water level tube, this coupling is located directly behind the cabin.



7.1.5 Step 5

Remove the hydraulics via the quick couplings.
Make sure that PTO is turned off and don't turn PTO on when the couplings are disconnected.

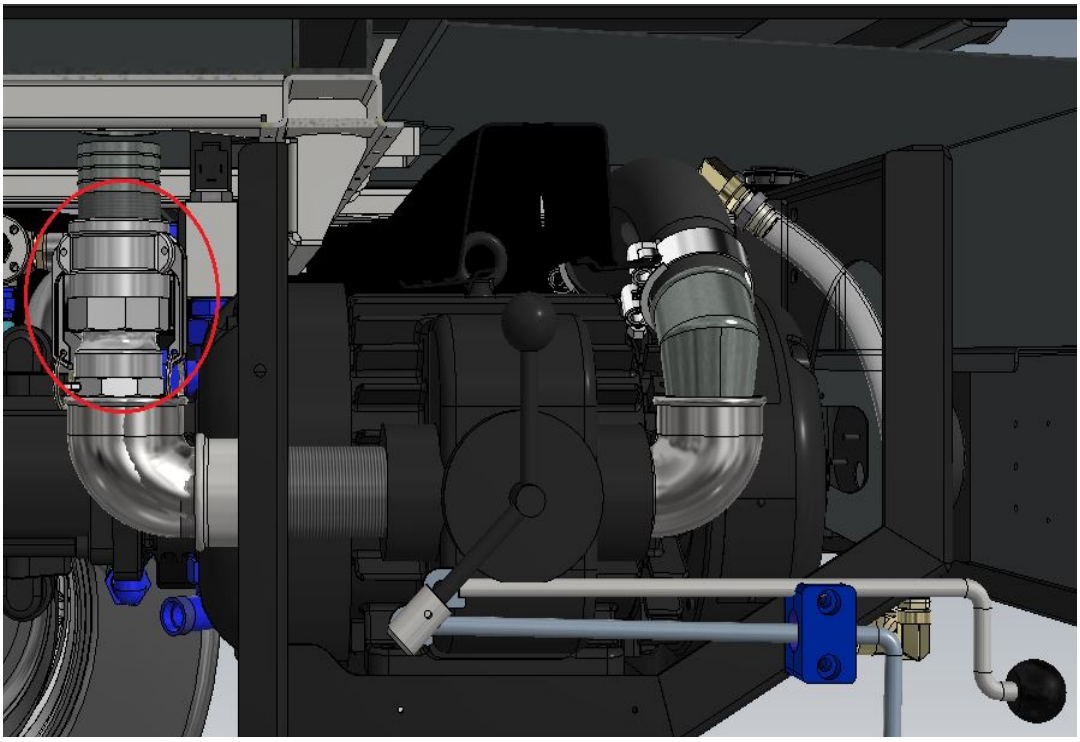
There is a non-return valve in the system that allows the quick coupling to be disassembled safely.



7.1.6 Step 6

At the height of the vacuum pump and the rear tank feet there is a suction hose that must be removed. the hose can be easily disconnected by means of the cam-lock coupling. the cam-lock is

located in the red circle in the image below.



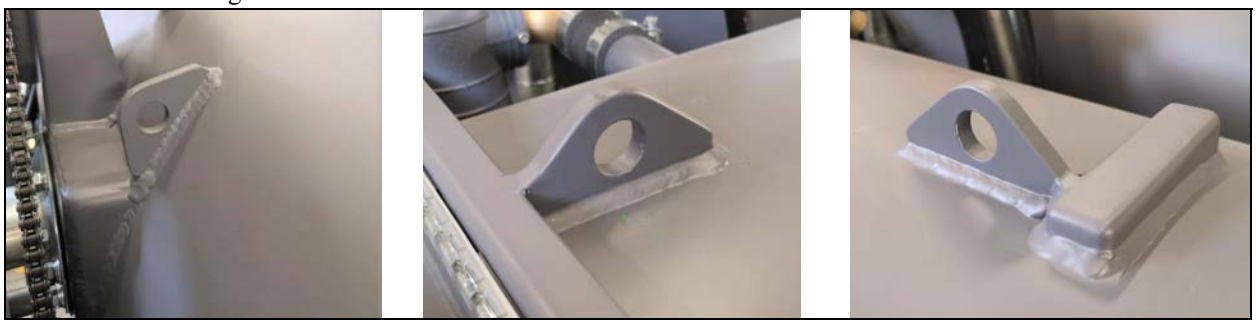
7.1.7 Step 7

Loosen the 4 bolts on the 4 corners of the water tank.



7.1.8 Step 8

Make sure that no one is under the water tank at all times and that the working environment is safe when towing. Provide a flat surface so that the tank remains stable.



Use all 3 lifting eyes when towing or lifting the water tank.

Beware the tank may move sideways while lifting.



Assembling the tank and cabinets is done with the same steps in reverse order.

8 Maintenance

8.1 Safety instructions

ALWAYS observe the following points during maintenance, inspection and installation:

> You may only perform this work if you are qualified to do so. You must have read and understood the user manual.
> You may only work on the machine when it is not running.
> You must stop the machine (take it out of service) correctly (see section ‘Ending the work’).
> Clean the pump if it has pumped liquids that could pose a health hazard.
> When you have finished your work, IMMEDIATELY reinstall all safety and protection provisions and make them functional.
> Follow all instructions before you start the machine again (see section ‘Starting the engine’).



WARNING!

- Before you start any maintenance or repair work, take the following precautions:
- ALWAYS stop the engine first.
- Depressurize the system by opening the high pressure valve.
- If the spray gun is attached to the high pressure hose, squeeze the trigger.
- Maintenance of the tank may only be performed when the tank is empty.
- Maintenance in the tank may only be performed if measures have been taken to prevent the cover from closing.

8.2 Making changes to the machine

You may ONLY make changes to the machine if you have received written authorization from Rioned. The use of original replacement parts and Rioned-approved accessories is important for safety.

If you use other parts, Rioned is NOT liable for any consequential damage.

8.3 Maintenance Ford Ranger

When maintaining your Ford Ranger, pay close attention to the service interval.

Ford recommends changing the oil every year or after 20,000km.

Rioned recommends changing the oil earlier with the oil prescribed by Ford.

When the vehicle is in PTO mode, the mileage does not increase. However, 1 hour of running equals ±90km. Maintenance can therefore be carried out late unnoticed.

E.g. the Ford Ranger has driven 10,000km and in PTO it has worked 110 hours. 10,000km + (115hours * 90kmh) = 20,350km. The vehicle should therefore have already been serviced despite the odometer showing 10,000km. Thereby, it is important to do regular highway driving so that the vehicle can regenerate properly. This prevents forced regeneration.

Maintenance is extra important because Ford uses a wet belt. This means that the timing belt is partly in the oil in the crankcase. If the oil becomes contaminated, this will also affect the life of the timing belt. As a precaution, the timing belt can be replaced earlier than prescribed by Ford. In addition, timely oil changes are very important for the life of your Ford / Urban Combi.

NOTE

The maintenance of the Ford Ranger is beyond the scope of this user manual. That information can be found in the documentation you received with the vehicle.

8.4 Maintenance schedule urban combi

The next scheduled maintenance is set to 360 days or 250 hours of operation on the eControl+. At the end of these 360 days (or 250 hours of operation, whichever comes first) a message appears on the eControl+ indicating that periodic maintenance is required (see section 'Management function eControl+').

Maintain the various parts of the machine according to the following schedule:

Check oil levels	Before the work
Clean water filter	Before the work and when very dirty
Check high pressure hose and other hoses	Before the work
Drain oil bath filter	Before the work
Clean vacuum filter	Before the work
Clean trap	Before the work
Clean bodywork	Weekly or when very dirty
Poke the nozzle holes clean	Every 50 hours of operation
Lubricate moving parts	Every 250 hours of operation or at least once every six months
Clean pressure regulator	Every 250 hours of operation or at least once every six months
Change hydraulic oil	Every 1000 hours of operation or once a year
Clean suction valves of high pressure pump	Once a year
Clean pressure valves of high pressure pump	Once a year
Major scheduled maintenance	Once a year
Engine service	See the maintenance book for the Ford Ranger

NOTE

All other parts must be replaced IMMEDIATELY when worn or defective!

Wear

Insufficient or late maintenance can result in premature wear of the machine.

Other causes of premature wear are:

> heat development caused by:
  a. letting the vehicle engine run unnecessarily
  b. not discharging water and/or
  c. continuous circulation of the oil through the lines
> lack of lubrication

> contaminants in the high pressure pump and the vacuum pump
> exceeding the maximum pressure or maximum vacuum
> rust formation at standstill
> running the machine while not cleaning or sucking up sludge
> sucking up sand or dust

In the following sections, we first describe the maintenance of the machine per period. We discuss the vacuum pump separately, because its various parts must be maintained at different intervals.

8.5 Maintenance before the work

The following parts must be checked or cleaned before the work:

8.5.1 Check oil levels

> Check ALL the oil levels before the work.
> Top up as required.

If the oil level has dropped, there is probably a leak in the system. In that case, do the following:
1. Check all the gaskets, connections and lines in the system concerned.
2. Repair the defects immediately.
3. Top up with the correct oil.

> NOTE
>
> Oil consumption may be slightly higher than normal during the break-in period (20 hours).

8.5.2 Clean water filter

Clean the water filter as follows:
1. Close the supply valve in the suction hose.
2. Unscrew the filter cap from the filter body.
3. Clean the filter screen and other contaminated parts of the filter.
4. Screw the filter cap back onto the filter body.
5. Open the supply valve in the suction hose.
6. Check the water filter for leaks.

Clean the water filter sooner if it is very dirty.

8.5.3 Check high pressure hose and other hoses

The high pressure hose may be damaged during use. Therefore perform the following checks:
> Check the high pressure hose for wear and damage every time you reel it in.
> Also check all the other hoses for wear and damage.
> Check all the hoses and connections for leaks.

8.5.4 Maintenance of remote control

The remote control requires almost no maintenance, but the following aspects require your attention:

> Make sure the on/off switch of the transmitter operates smoothly. It may stick if not kept clean, and may eventually stop working altogether.
> Protect the transmitter from water/moisture.
> Do not clean transmitter and receiver with a pressure washer or any other type of sprayer.
> Charge and discharge the transmitter regularly.
> Regularly disconnect the receiver's connector plug; otherwise it will stick in place, which will prevent proper operation.

8.5.5 Oil bath filter (vacuum filter)

Drain the liquid in the oil bath filter before the work. Clean the vacuum filter before the work.

8.5.6 Clean trap

The trap must be cleaned before the work. Do this as follows:

1. Drain the liquid. Open the tap under the trap cover.
2. Unscrew the cover.



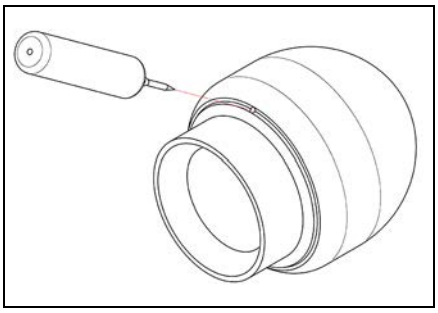
3. Clean the float ball.
4. Screw the cover closed again.

8.6 Weekly maintenance

Clean the bodywork weekly. Use lots of water and automotive shampoo. The bodywork should be cleaned earlier if it is heavily soiled.

8.7 Maintenance every 50 hours of operation

The nozzle holes must be poked clean every 50 hours of operation:



8.8 Maintenance every 250 hours of operation or at least once every six months

The following parts must be maintained every 250 hours of operation or at least once every six months:

8.8.1 Lubricate moving parts

The following parts must be lubricated every 250 hours of operation or at least once every six months:

> all pivot points of the swivel arm
> the latch of the swivel arm
> the gears of the high pressure reel
> the gears of the suction reel
> the toggle clamps
> the lever of the vacuum pump
> the hose guide

8.8.2 Clean pressure regulator

> Clean the pressure regulator every 250 hours of operation or at least once every six months.
> Carefully remove all the sand.

NOTE

Proper maintenance considerably extends the service life of the pressure regulator!

Leakage, contamination or damage

If the high pressure valve is closed, you CANNOT read the pressure on the pressure gauge. You also CANNOT read the pressure on the pressure gauge if the spray gun is connected but the trigger is not pulled.

If the pressure gauge nevertheless shows a pressure reading, there is leakage or the non-return valve is dirty or damaged. In that case, do the following:

1. Turn off the machine.
2. Unscrew the hose coupling.
3. Clean or replace the non-return valve.
4. Check that the O-ring is still in good condition.
5. Check that the sealing ring is still in good condition.

8.9 Maintenance every 1000 hours of operation or at least once a year

The following parts must be maintained every 1000 hours of operation or at least once a year:

8.9.1 Change hydraulic oil

Change the oil in the hydraulic system every 1000 hours of operation (or at least once a year).
Use oil from Rioned. P/N 71-003-000-046.

8.9.2 Clean suction valves of high pressure pump

Clean the suction valves of the high pressure pump once a year.

See accompanying annex for more information.

8.9.3 Clean pressure valves of high pressure pump

Clean the pressure valves of the high pressure pump once a year.

See accompanying annex for more information.

8.9.4 Major scheduled maintenance

Have Rioned technical service inspect and maintain the machine once a year. This will ensure the continued good performance and long service life of the machine.

8.10 Vacuum pump maintenance

The various parts of the vacuum pump must be maintained at different intervals:

Every day

Check the oil level every day. This is important because the vacuum pump consumes oil.

Every 14 days

Flush the pump housing during prolonged downtime (every 14 days)

Once a month

Check the pressure relief valve once a month for proper operation. Do this as follows: Produce pressure with the vacuum pump. The pressure gauge must never exceed 0.5 bar.

Once every 600 hours of operation

Have the pump vanes checked for wear once every 600 hours of operation.

Once a year

Change the oil once a year. Rioned P/N: 71002000100

See accompanying annex for more information.

8.11 Spare parts

The parts below are spare parts. The machine consists of more parts than shown below. Please contact serivce if you have any questions.

Article number	Description	Numbers per machine
26035006170	nozzle NW13 dense stainless steel 150 bar 100 lpm	1
26035106170	nozzle NW13 open stainless steel 150 bar 100 lpm	1
35200000039	return filter frsd160/02	2
39450500666	water filter pvc kpl transparent	1
50460063400	pressure gauge 0-400 bar/psi Rioned 1/4 BSP-T rear connection	2
50462063400	pressure gauge 0-400 bar/psi Rioned 1/4 "BSP-T bottom connection with Rioned logo	1
53422013215	hd ball valve 2-way DN13 15L	1
53423013315	hd ball valve 3-way DN13 15L	1
58500012002	pressure switch pe 1/81n festo 1.5 to 8 bar 6217	1
63488000115	temperature sensor 115 gr for gearbox PTO	1
63488010090	temperature switch M10 90	1
63488014080	temperature sensor M14 x 1.5 80gr	1
71002000090	Pump oil PROTEUS GL 5 80W-90	3.5 L
71002000100	oil for vacuum pumps MEC-Mannesmann-WPT, type Vacumax 100	3 L
71003500046	Mineral hydraulic oil HESTIA 46	40 L
75700280000	Third brake light LED 12 V lamp glass and caps smoked-glass coloured	1
75700500215	Signal light orange 12V (ECE 65) (Set of 2 pieces)	1
75700500722	stop lamp ø122mm 12V	2
75700500723	reversing light ø122mm 12V	1
84700500280	level switch incl.rub.collar plug-in model	1
63470130962	inductive sensor for hose meter meter NPN - M18	2
84700500280	level switch incl.rub.collar plug-in model	1
28423113315	Pulsator valve 3-way DN13 15L ADA machined	1

Service Rioned

Centaurusweg 45
5015 TC Tilburg
Postbus 5070
5004 EB Tilburg

Telefoon: 013-5479100
E-mail: info@rioned.com
Internet: www.rioned.com

9 Malfunctions

9.1 Fault messages eControl+

The eControl+ can display various fault messages. They are also listed in the section about the management function (see section ‘Management function eControl+’). Each of these fault messages, and what you should do if they appear, is explained hereafter.

9.1.1 Emergency stop

If the emergency stop is pressed, the following message appears:



Consequences for systems:

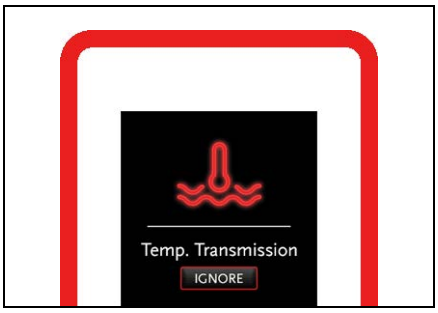
> The engine, high pressure pump, vacuum system, pulsator, reel and/or hose counter are switched off.
> The eco mode is activated.

Solution:

Unlock the emergency stop by turning the button to the left or right. You can then restart the machine (see section ‘Starting the engine with the eControl+’ and ‘Starting the engine with the Riomote control’).

9.1.2 Transmission temperature too high

If the transmission temperature becomes too high, the following message appears:

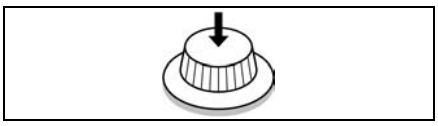


Consequences for systems:

1. The engine, high pressure pump, vacuum system, pulsator, reel and/or hose counter are switched off.
2. The eco mode remains unchanged.

Solution:

1. Press the navigation knob to clear the message:
2. Let the transmission cool down. Work can continue when the transmission has cooled down sufficiently.



9.1.3 Vacuum pump temperature too high

If the temperature of the vacuum pump becomes too high, the following message appears:

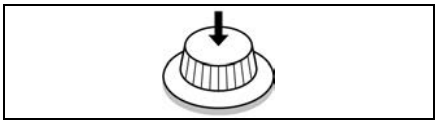


Consequences for systems:

1. If the engine is running, it will go to idle.
2. The high pressure pump, vacuum system, pulsator, reel and/or hose counter are switched off.
3. The eco mode remains unchanged.

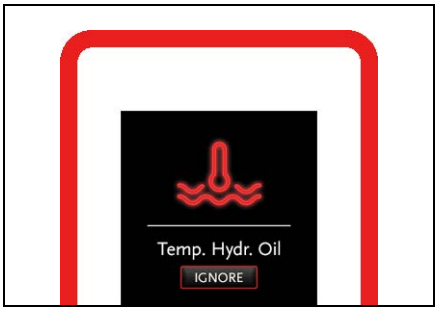
Solution:

1. Press the navigation knob to clear the message:
2. Let the vacuum pump cool down. Work can continue when the vacuum pump has cooled down sufficiently.



9.1.4 Hydraulic oil temperature too high

If the temperature of the hydraulic oil becomes too high, the following message appears:

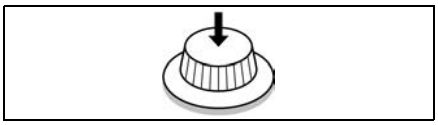


Consequences for systems:

1. The engine, high pressure pump, vacuum system, pulsator, reel and/or hose counter are switched off.
2. The eco mode remains unchanged.

Solution:

1. Press the navigation knob to clear the message:
2. Let the hydraulic oil cool down. Work can continue when the hydraulic oil has cooled down sufficiently.



9.1.5 Hydraulic oil level too low

If the hydraulic oil level becomes too low, the following message appears:

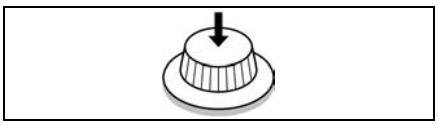


Consequences for systems:

1. If the engine is running, it will go to idle.
2. The high pressure pump, vacuum system, pulsator, reel and/or hose counter are switched off.
3. The eco mode remains unchanged.

Solution:

1. Press the navigation knob to clear the message:
2. Top up hydraulic oil. Work can continue after approximately 10 litres of oil have been added.



9.1.6 Water level too low

If the machine is in danger of running dry, the following message appears:

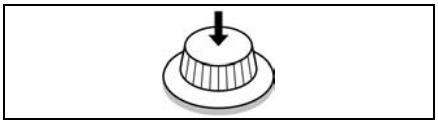


Consequences for systems:

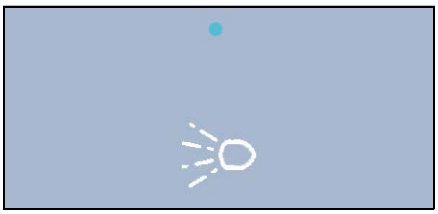
1. If the engine is running, it will go to idle.
2. The high pressure pump, vacuum system, pulsator, reel and/or hose counter are switched off.
3. The eco mode remains unchanged.

Solution:

1. Press the navigation knob to clear the message:

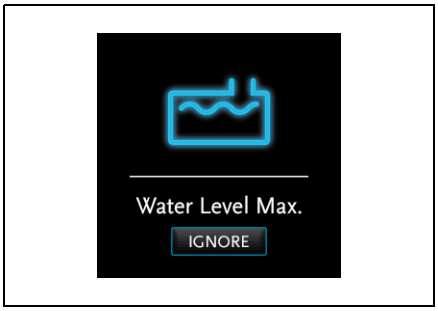


2. The high pressure LED on the eControl+ starts flashing blue:
3. Press and hold the navigation button until the message disappears.
4. Fill the water tank with about 20 litres of water (see section ‘Before starting’).



9.1.7 Water level too high

If the water level becomes too high, the following message appears: This function is only available if your machine has electronic water level control (see section ‘Electronic water level control’).

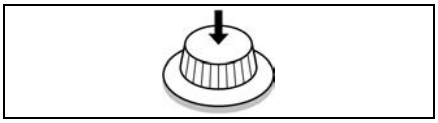


Consequences for systems:

1. The engine, high pressure pump, vacuum system, pulsator, reel and/or hose counter are switched off.
2. The eco mode remains unchanged.

Solution:

1. Press the navigation knob to clear the message:
2. Start spraying to reduce the water level in the water tank. The message then disappears automatically and the water tank is topped up with water again. This only works in conjunction with the Riomote control.



9.2 Troubleshooting

Below you will find a list of faults, their possible causes and the corresponding solution for each cause.

Problem	Cause	Solution
Engine will not start or stops suddenly.	Fuel tank empty.	Refill the fuel tank.
	Main or accessory fuse blown.	1. Replace defective fuse. 2. Restart engine. 3. If the fuse blows again, contact Rioned.
	Battery voltage too low.	Charge the battery or replace the battery
	Air in fuel line.	Bleed air at engine.
	Riomote control not switched on.	1. Turn on Riomote control. 2. Repeat procedure from section ‘Preparation for use’.
	Riomote control battery flat.	Charge battery or replace battery.
	Water tank empty.	Fill water tank
	Water temperature too high.	Fill water tank or let water cool.
	Hydraulic oil temperature too high.	Let oil cool.

Problem	Cause	Solution
High pressure pump does not produce required pressure.	Water tank empty.	Fill water tank.
	Supply valve to water filter closed.	Open supply valve.
	Water filter restricted.	Stop machine. Clean water filter.
	Air in high pressure pump.	1. Let the machine run several minutes with the high pressure valve open. 2. If the fault is not cleared, contact Rioned.
	Suction valves of high pressure pump seized.	1. Carefully free the valves. 2. Remove any lime scale build-up.
	Suction valves of high pressure pump worn.	Contact Rioned.
High pressure pump does not produce required pressure.	Water tank empty.	Fill water tank.
	Supply valve to water filter closed.	Open supply valve.
	Water filter restricted.	Stop machine. Clean water filter.

Problem	Cause	Solution
Water pressure fluctuates greatly.	Level in water tank too low.	1. Stop machine. 2. Top up water tank. 3. Restart engine.
	Supply valve not opened far enough.	Open supply valve completely.
	Water filter restricted.	1. Stop machine. 2. Clean water filter.
	High pressure pump draws in air.	1. Stop machine. 2. Check all the hoses and connections for leaks. 3. Replace defective components.
	Spray nozzle restricted or worn.	1. Stop machine. 2. Check spray nozzle condition. 3. Poke through nozzle holes or 4. Replace worn nozzle.
	Pressure valves restricted with lime scale or worn.	1. Stop machine. 2. Check condition of pressure valves. 3. Descale pressure valves or 4. Replace pressure valves.
	High pressure pump sealing ring worn.	1. Stop machine. 2. Replace sealing ring.
	Ceramic pistons in high pressure pump damaged.	Contact Rioned.
	Pressure regulator internally restricted or damaged.	Contact Rioned.

Problem	Cause	Solution
High pressure hose does not reel in.	Control slider lever in 'Manual' position.	Move control slider lever to other position.
	Oil tank for hydraulic system almost empty.	1. Top up oil tank for hydraulic system. 2. Check system for leaks.
	Drive chain not sufficiently tensioned.	Tighten chain.
	Set operating pressure is too low.	Set higher operating pressure, if possible.
	Hydraulic system damaged.	Contact Rioned.

Problem	Cause	Solution
Vacuum pump does not suck.	Vacuum or pressure valve is open.	Close valve.
	Vacuum pump lever is not in correct position.	Move lever to suction position.
	Rear cover not properly closed.	1. Check that there is nothing between the cover and the vacuum tank. 2. Close cover.
	Float ball in vacuum tank is stuck or dirty.	1. Free the float ball. 2. Clean the float ball. 3. Reinstall float ball. or 4. Clean the cover.
	Vacuum pump was used for pressure. Still pressure present in vacuum tank.	1. Open vacuum valve to release pressure. 2. Move vacuum pump to suction position.
	Float ball closed in vacuum filter.	1. Clean vacuum filter. 2. Free the float ball.
Vacuum pump will not produce pressure.	Vacuum or pressure valve is closed.	Open valve.
	Vacuum pump lever is not in correct position.	Move the lever to pressure position.

Problem	Cause	Solution
No response to switched on Riomote control.	No power.	Charge battery of RioMote control.
		Fit new battery in Riomote control.
		Check contact terminals for damage/contamination.
		1. Check fuses. 2. Replace any blown fuses.
		In the case of repeated faults, contact Rioned.
	Riomote control is not on.	Press START button bottom right of Riomote control.
	Riomote control out of range of receiver.	Bring Riomote control within range of receiver.
LED next to START button at bottom right of Riomote control flashes after a short period of operation.	Battery not charged or defective.	• Fully charge the battery or • Replace battery.
		Check whether charging process is working correctly.
		• Check battery contact terminals or • Clean battery contact terminals.
Indications on Riomote control are good, but functions are not performed.	Emergency stop pressed.	Turn button left or right to unlock emergency stop.
	Receiver has no power.	1. Check fuse. 2. Replace any blown fuse.
	No connection to receiver.	Check all indicator lights for all functions.
Command via Riomote control not performed.	Open in electrical circuit.	1. Check all plug connections. 2. Push plugs in or 3. Connect detached plugs.
		Check all indicator lights for all functions.
	Receiver defective.	Contact Rioned.

10 Attachments

Annex 1 EC declaration of conformity

Rior, industrie- en handelsonderneming B.V.
declares that:

Brand: Rioned

Type

Machine number: see type plate

> is in conformity with the Machinery Directive (2006/42/EC);
> complies with the provisions of the following other EC Directives: 2014/30/EC
> > complies with the harmonized European Standards:
> NEN-EN-ISO 12100:2010, NEN-EN-ISO 13850:2015,
> NEN-EN-ISO 13857, NEN-EN-13854 and EN 60204-1

Declaration issued in Tilburg, The Netherlands, 1 June 2022

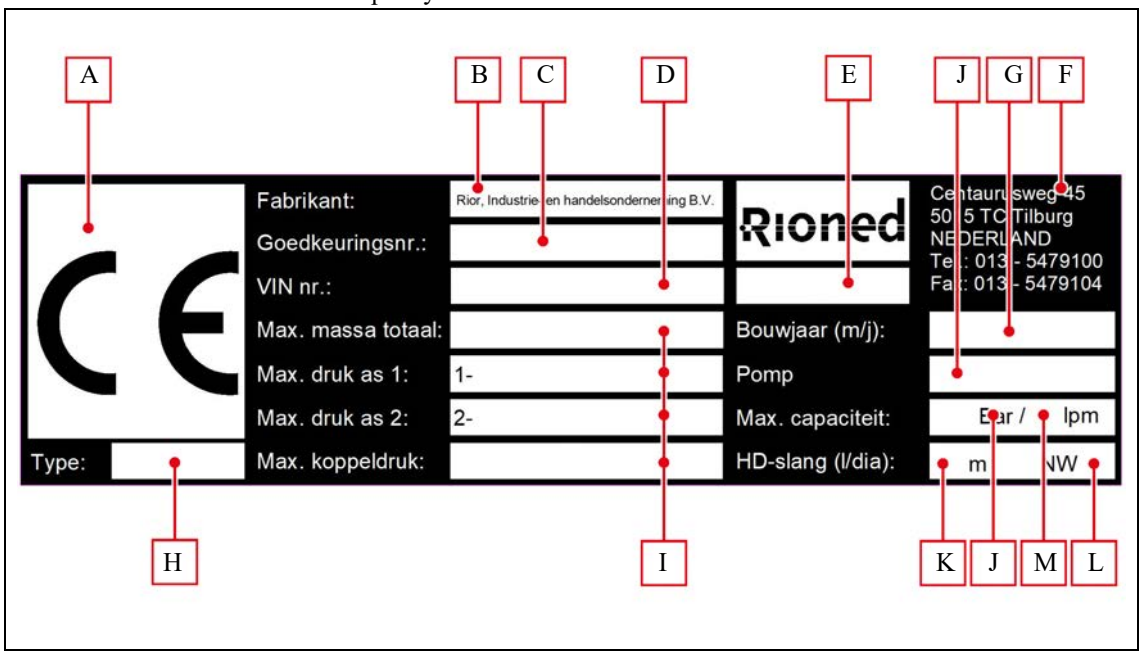


J.Pieters
Managing Directeur

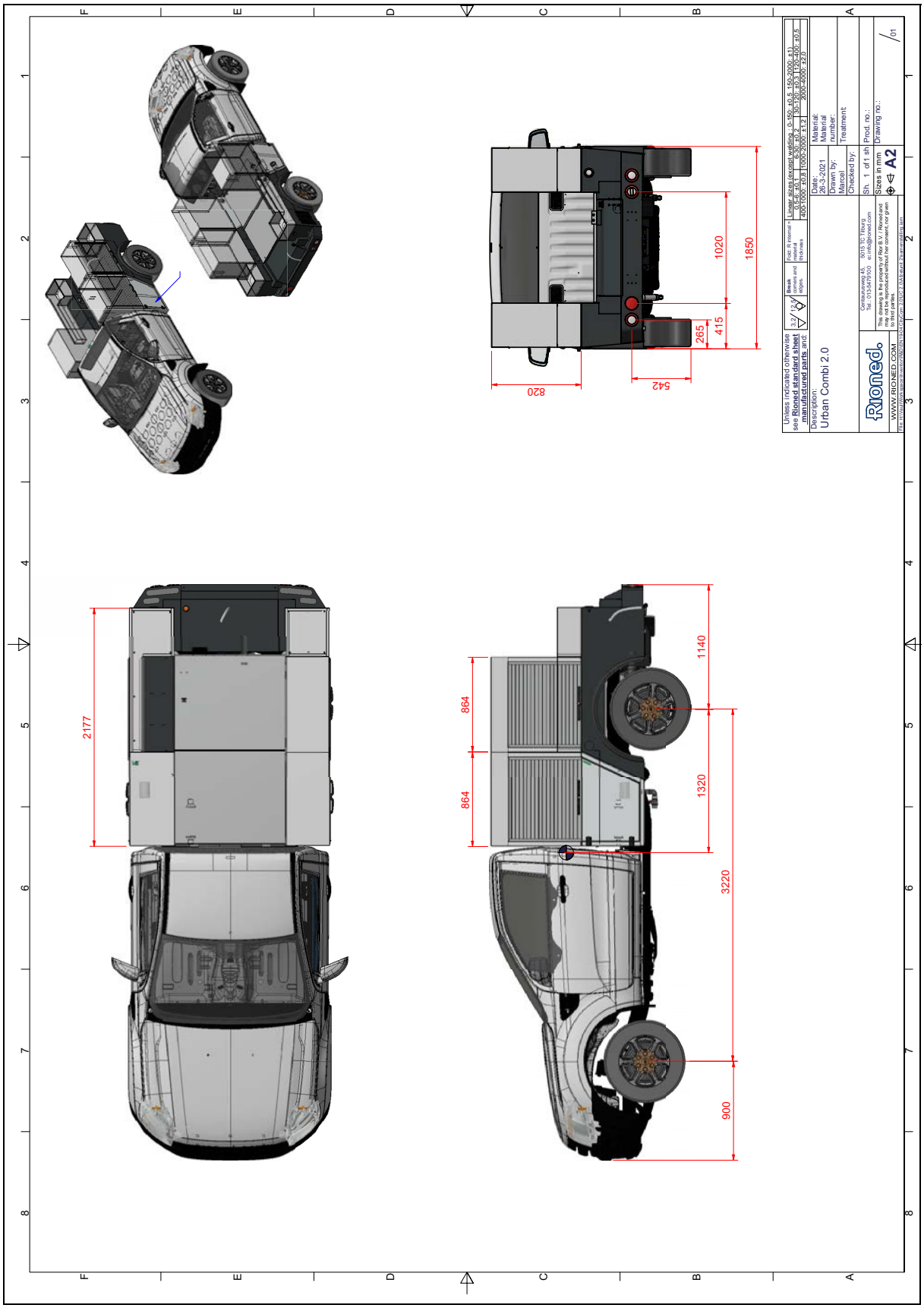
Annex 2 Type plate

The type plate is located at the left on the back side (relative to the driving direction) and shows the following information:

A CE Marking
B Manufacturer of the machine
C European approval number (not yet available)
D Chassis number of the vehicle
E Identification of the machine
F Manufacturer's address details
G Year of manufacture of the machine
H Name of the machine
I Not applicable
J Type high pressure pump
K Length of high pressure hose (for which the nozzles were calculated)
L Diameter of high pressure hose
M Maximum machine capacity



Annex 3 Dimensions



Annex 4 Technical specifications

General	
Capacity, vacuum tank :	800 l
Capacity, water tank :	400 l
Length, high pressure hose :	80 - 120 m
Diameter, high pressure hose :	1/2" (NW13), 3/4" (NW19) or 5/8" (NW16)
Length, suction hose :	2 m
Diameter, suction hose :	3"
High pressure pump	
Type : S	peck P45
Number of cylinders :	3
Number of valves :	6
Maximum capacity :	see type plate
Mass :	50 kg
Maximum water temperature :	60 °C
Oil type :	GX 80W90 (P/N 71002000090)
Volume :	3.5 l
Type : Speck	P52
Number of cylinders :	3
Number of valves :	6
Maximum capacity :	See type plate
Mass :	54 kg
Maximum water temperature :	60 °C
Oil type :	GX 80W90 (P/N 71002000090)
Volume :	3.5 l
Vacuum pump	
Type :	SLS 54
Maximum capacity :	290 m3/h
Maximum capacity, suction :	-0.8 bar (relative)
Maximum capacity, pressure :	0.49 bar (relative)
Oil type :	Vacumax 100 (P/N 71002000100)
Oil tank, hydraulic system	
Volume :	approx. 50 l
Oil type :	Hydraulic oil HESTIA 46 (P/N 71003500046)

Annex 5 Contact details

Rioned Customer Service
Centaurusweg 45
5015 TC Tilburg
P.O. Box 5070
NL-5004 EB Tilburg
Tel. no.: +31 13-5479100
E-mail: info@rioned.com
Internet: www.rioned.com

Rioned.
Keeping your business flowing

C

changing hydraulic oil 68
checking hoses 65
checking oil levels 65
chemicals 1
cleaning bodywork 66
cleaning trap 66
cleaning vacuum filter 66
cleaning water filter 65
contactgegevens
  adres fabrikant 2

D

draining
  oil bath filter 66

E

eControl+
  emergency stop 69
  fault messages 69
explosive environment 1

F

flammable material 1
forbidden 1

G

general delivery conditions 1

L

lightning 1
lubricating moving parts 67

M

maintenance
  before the work 65
  major scheduled maintenance 68
  safety instructions 63
maintenance schedule 63
making changes to the machine 63

O

oil level too low 70

P

poking the nozzle holes clean 67
pressure gauge 67
pressure regulator
  cleaning 67

R

RIONED 1
running dry 70

T

temperature too high
  hydraulic oil 70
  transmission 69
  vacuum pump 69
troubleshooting 72
typeplaatje
  plaats 78

V

vacuum pump
  maintenance 68
ventilation 1

W

water level
too high 71
too low 70
wear 64
weather conditions 1