

# USER'S MANUAL UNICOM



01  
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Date:

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**RIONED** has the right to change parts at any time without any prior or direct warning to the client. Also, the contents of this manual can be changed without any prior warning.

This manual is to be used only for this machine.

For extra information on adjustments, maintenance and repair, please contact the technical department of your dealer.

## **Foreword.**

This user's manual is a manual for the professional user.

This user's manual has the purpose to control the machine in a safety manner and must be saved with the machine.

The photos and drawings help you understand the text easier.

First the user's manual gives you an overview of the most important safety aspects. Then we explain how the machine is built up and the global working of the machine.

Chapter "Technical specifications" gives you information about the working characteristics, performance under normal use and construction specifications.

"Control" is the next chapter. This chapter explains how to use the machine systematically.

In the chapter "Maintenance", the user can do small maintenance on the machine.

Chapter "Trouble shooting" has the purpose to solve simple defects.

With the "Exploded views" you can order original spare parts, are also useful for mounting, and disassemble the machine.

Finally gives the chapter "Appendix" information about electrical and/or hydraulic connections.



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# 1 INTRODUCTION

RIONED thanks you for your purchase of the RIONED drain and sewer-clearing 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 need servicing, when you want to order parts, or if you have any questions, contact your RIONED dealer.

The machine is built by:

## **RIONED**

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The Rioned high-pressure device has been especially designed and manufactured for cleaning drains, walls, floors, and terraces with cold or hot water. 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 for cleaning drains, walls, floors and terraces with cold or hot water and to drain liquid with or without pollution like sand, stones etc.

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)!

Authorised personnel may only 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.

## **1.1 Use**

The integrated engine drives the high-pressure pump, the hydraulic pump, and the vacuum pump.

The high-pressure pump receives water from the water tank via the water filter and pressurises it. The pressure can be continuously adjusted. The pressurised water leaves the machine via the high-pressure hose on the reel.

The vacuum pump is connected to the vacuum tank. When this pump creates a vacuum, the tank gets filled.

The hydraulic pump drives via a hydraulic system the hose reel.



## 2 SECURITY

Be responsible for other people when you are working with this machine.

This manual contains instructions for fundamental conditions that must be followed by use and maintenance of this machine.

That is why it is necessary that authorised and qualified personnel must read the user's manual and the user's manual must always be available with the machine. Near the general regulations in this chapter, you must also follow the security regulations in the other chapters.

### 2.1 Instruction indications in this manual

The in this manual containing security instructions, which are dangerous if they are not obeyed, are marked with general security signs.



Security sign DIN 4844-W9.

### 2.2 Description security measures

- Emergency stop

The machine is equipped with an emergency stop. By operating this stop, the machine will stop immediately. Do not use the button for normal stopping. Only use it when dangerous situations occur. After use, turn the emergency stop in order to be able to start up again. Make sure the emergency stop can always be reached.

- Over-pressure valve

Protects the pipe system and reservoir.

- Pressure regulator

The pressure regulator looks to it that the working pressure never gets too high. It functions like a safety valve.

- Security covers

This machine is equipped with several safety covers over parts that are rotating. It is forbidden to remove these safety covers during operation of this machine. You can only remove them if there is maintenance on the machine. Stop the machine.

### 2.3 Personnel protection outfit

- Protection looking glasses
- Ear protector
- Gloves (Recommended)
- Waterproof clothes.

### 2.4 Warnings

Open the side doors while operating the machine!

When working with the machine, keep the grate inside the tool box free from obstacles!

Take care of not exceeding the maximum loading capacity of the vehicle by filling the tanks. Note that the driver is responsible for this.

It is prohibited to drive with the water tank and vacuum tank full at the same time if the maximum load weight of the vehicle is exceeded!

It is strongly forbidden to spray on:

- humans
- animals
- Electrical components

Never block a control lever, unless this is mentioned.

Never let the high-pressure hose spray outside a sewer, drain or pipe.

Do not let the machine operate without supervision.

## **2.5 Personnel qualification and education**

Personnel that use, maintain, and inspect the machine must have the right qualifications for this job.

Responsibility and authorisation of the personnel and the supervision on the personnel must be embedded. If the knowledge is not present, the user must provide for the necessarily education.

## **2.6 Danger that can occur if the security regulations aren't observed**

If the security regulations are not observed, danger can occur for personnel and for the environment.

No amends are given if the regulations are not observed.

If the regulations are not observed, this can results in:

- Failure of important functions of the machine.
- Failure of prescribes methods for maintenance.
- Exposure of persons to dangers of electrical or mechanical failures

## **2.7 Working safely**

The in this manual named security prescriptions, the national prescriptions to prevent accidents and the internal labour, company and security prescriptions must be followed by the user.

## **2.8 Security regulations for the user and technical service**

- Protections of moving parts (for example couplings) may not be removed if the machine is working.
- Leakage of dangerous mediums must disposed in a manner that there is no danger for the personnel and environment. Statutory regulations must be followed.
- Danger caused by electricity must be excluded.

## **2.9 Security regulations for maintenance, inspection, and mounting activities**

- The user sees to it that qualified technicians do all maintenance, inspection and mounting activities. They must study the manual thoroughly.
- Maintenance may only be done when the machine is not functioning.
- The in the user's manual mentioned handling to stop the machine must be notified.
- Directly after maintenance of the machine, all the security and protection facilities must be functionally.
- Before starting the machine again, you must follow the instructions correctly.

## **2.10 Making changes and fabricate spare parts**

Changes to the machine are only permitted if Rioned has given written authorisation. The use of original spare parts and accessories are for the safety necessary. Rioned is not responsible for injuries or damages if other spare parts are used.

## **2.11 Improper use**

The security during working with the machine is only guaranteed if the use of the machine is conforming the user's manual. The limits that are written in chapter "Technical Specifications" and "Appendix" may never be overstepped.

If the machine does not work or give troubles, it is forbidden to work further with the machine. Telephone your dealer or the technical department of your dealer.

This manual contains all the necessary information concerning control and maintenance. If the de-

vice 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.



## 3 TECHNICAL SPECIFICATIONS

### 3.1 General

|   |   |   |
|---|---|---|
| Year of constructions ( <i>month/year</i> ) | : | 12/12                                       |
| Capacity vacuum tank                        | : | 1000 l                                      |
| Capacity water tank                         | : | 500 l                                       |
| Dimensions                                  | : | <i>see chapter 12.6 Dimensions page: 62</i> |

|                  |   |           |
|------------------|---|-----------|
| Length HP hose   | : | 80 m      |
| Diameter HP hose | : | ½" (NW13) |

|                      |   |             |
|----------------------|---|-------------|
| Length supply hose   | : | 50 m        |
| Diameter supply hose | : | 5/8" (NW16) |

|                       |   |           |
|-----------------------|---|-----------|
| Length suction hose   | : | ±30 m     |
| Diameter suction hose | : | 2" (NW50) |



|                       |   |                      |
|-----------------------|---|----------------------|
| Oil hydraulic circuit | : | HESTIA 46            |
| Quantity              | : | 5,5 l                |
| Important!            | : | Replace once a year! |

|            |   |           |
|------------|---|-----------|
| Antifreeze | : | 43 liters |
|------------|---|-----------|

### 3.2 Engine

| Description (symbol)   | Technical unit(SI unit)                        |
|------------------------|--|
| Type                   | : Honda GX690                                  |
| Engine Type            | : Air-cooled, 4-Stroke, OHV                    |
| Bore x Stroke          | : 3.1" x 2.8" (78 x 72 mm)                     |
| Displacement           | : 42 cu in (688 cm <sup>3</sup> )              |
| Compression Ratio      | : 9.3 : 1                                      |
| Net Horsepower         | : 22.3 hp (16.6 kW)                            |
| Net Torque             | : 35.6 lbs ft (48.3 Nm)                        |
| PTO Shaft Rotation     | : Counterclockwise (from PTO shaft side)       |
| Ignition System        | : Digital CDI with variable ignition timing    |
| Starting System        | : Shift Type                                   |
| Carburetor             | : 2-barrel, fuel cut solenoid, inner vent      |
| Lubrication System     | : Full Pressure                                |
| Connecting Rod         | : Forged Steel                                 |
| Governor System        | : Mechanical                                   |
| Air Cleaner            | : Dual Element Type/Panel                      |
| Exhaust Emissions      | : Certified for use in all 50 states           |
| Evaporative Emissions  | : Low permeation hose and purge joint provided |
| Battery (U,I)          | : 12 V, 45 A                                   |
| Oil                    | : 10W30 API/SF-CC or better                    |
| Oil Capacity           | : 2.2 L  |
| Oil Filter             | : Automotive Spin-On Style                     |
| Dimensions (L x W x H) | : 443 mm x 421 mm x 447 mm                     |
| Dry Weight             | : 45.7 kg                                      |

|                       |   |                                 |
|-----------------------|---|---------------------------------|
| Type                  | : | Kubota V1505                    |
| Number of cylinder    | : | 4                               |
| Bore x stroke (d x l) | : | 78 x 78,4 mm (3.07 x 3.09 in.)  |
| Power (P)             | : | 26,1 kW at 3000 min-1 DIN 70020 |
| Fuel                  | : | Diesel                          |
| Cooling               | : | Water cooled                    |
| Weight (m)            | : | 110 kg                          |
| Battery (U,I)         | : | 12 V, 45 A                      |
| Starter               | : | 12 V x 1,2 kW                   |
| Oil                   | : | 10W30 API/SF-CC or better       |
| Quantity              | : | 4 18.5 liq pt (UK), 7 pt (UK)   |

Normal coolant engine is protected to -28 °C

Special coolant engine is protected to -38 °C

For more information concerning the engine you can find it in the book delivered with this machine.

### 3.3 Pump

| Description (symbol)            | Technical unit             |
|---------------------------------|----------------------------|
| Type                            | : Speck P41                |
| Number of plungers              | : 3                        |
| Number of valves                | : 6                        |
| Number of revolutions (n)       | : 1200 min <sup>-1</sup>   |
| Maximum pressure (p)            | : See type plate on frame  |
| Maximum output (V/t)            | : See type plate on frame  |
| Oil                             | : GX 80W90                 |
| Quantity (V)                    | : 1 l                      |
| Weight (m)                      | : 30 kg                    |
| Maximum water temperature (t,T) | : 80 °C                    |
| Type                            | : Speck P45                |
| Maximum pressure (p)            | : See type plate on frame  |
| Maximum output                  | : See type plate on frame  |
| Weight                          | : 50 kg                    |
| Maximum water temperature       | : 55 °C / 131 °F(328,15 K) |
| Oil                             | : GX 80W90                 |

For more information concerning the pump, you can find it in the pump appendix delivered with this machine.

### 3.4 Vacuum pump

|                   |  |
|-------------------|--|
| Type              | : MEC 5000                             |
| Oil               | : 15W30                                |
| Capacity Suction  | : -0,8 bar (relative)                  |
| Capacity Pressure | : 0,49 bar (relative)                  |
| Quantity carter   | : 2,5 l                                |
| Oil               | : 15W30                                |
| Gear box          | : SAE 90                               |
| Type              | : Mannesmann SLS 54                    |
| Capacity          | : 290 m3/h                             |
| Capacity Suction  | : -0,8 bar (relative)                  |
| Capacity Pressure | : 0,49 bar (relative)                  |
| Oil               | : Summer Winter                        |
|                   | : Essolub HDX 40Essolub HDX 30         |
|                   | : Esso-motor oil 40Esso-motor oil 30   |
|                   | : Shell Rotella SX 40Shell Rimula X 30 |

For more information see the vacuum pump enclosure

### 3.5 Customer service

When ordering spare parts it is recommended to give the following numbers:

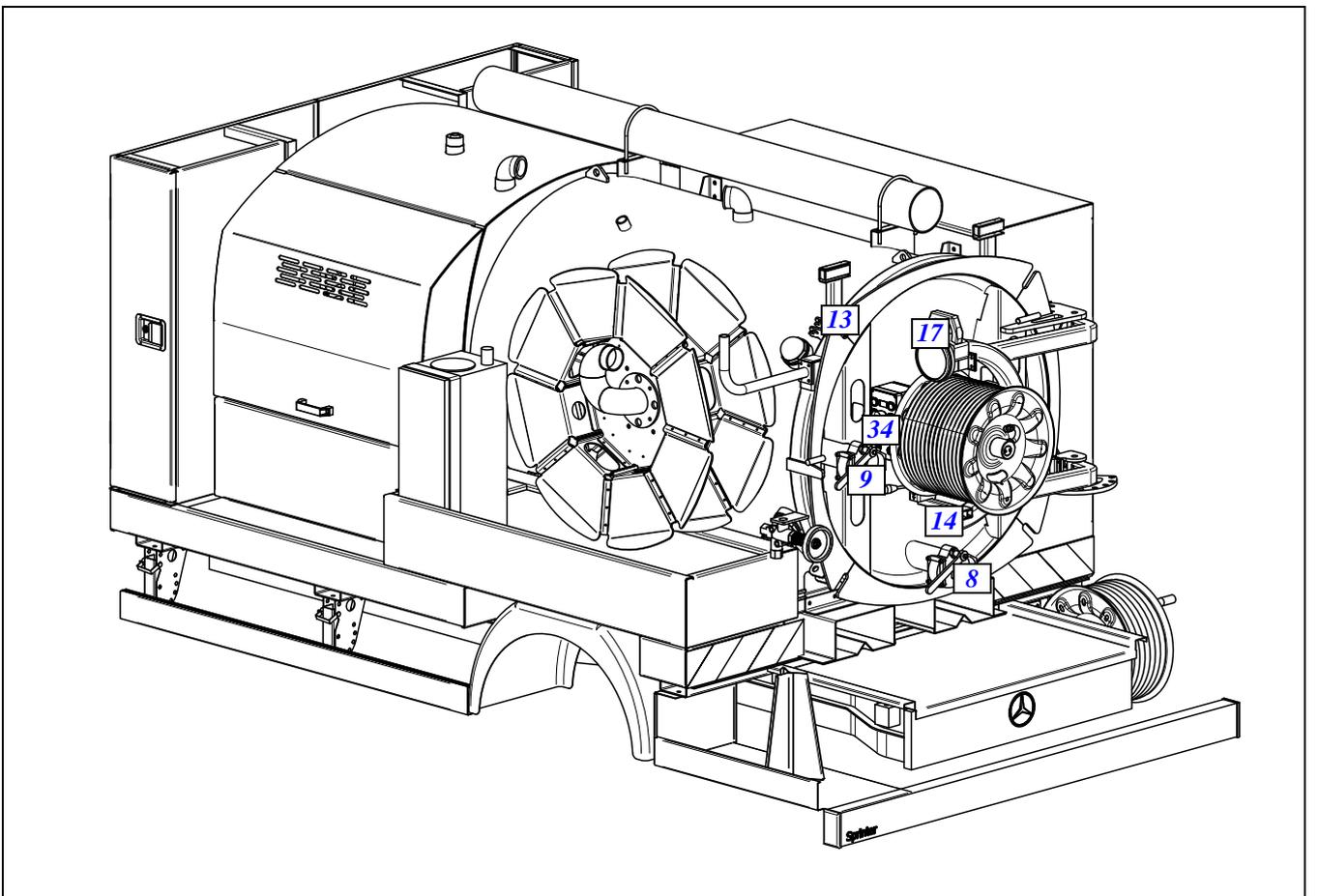
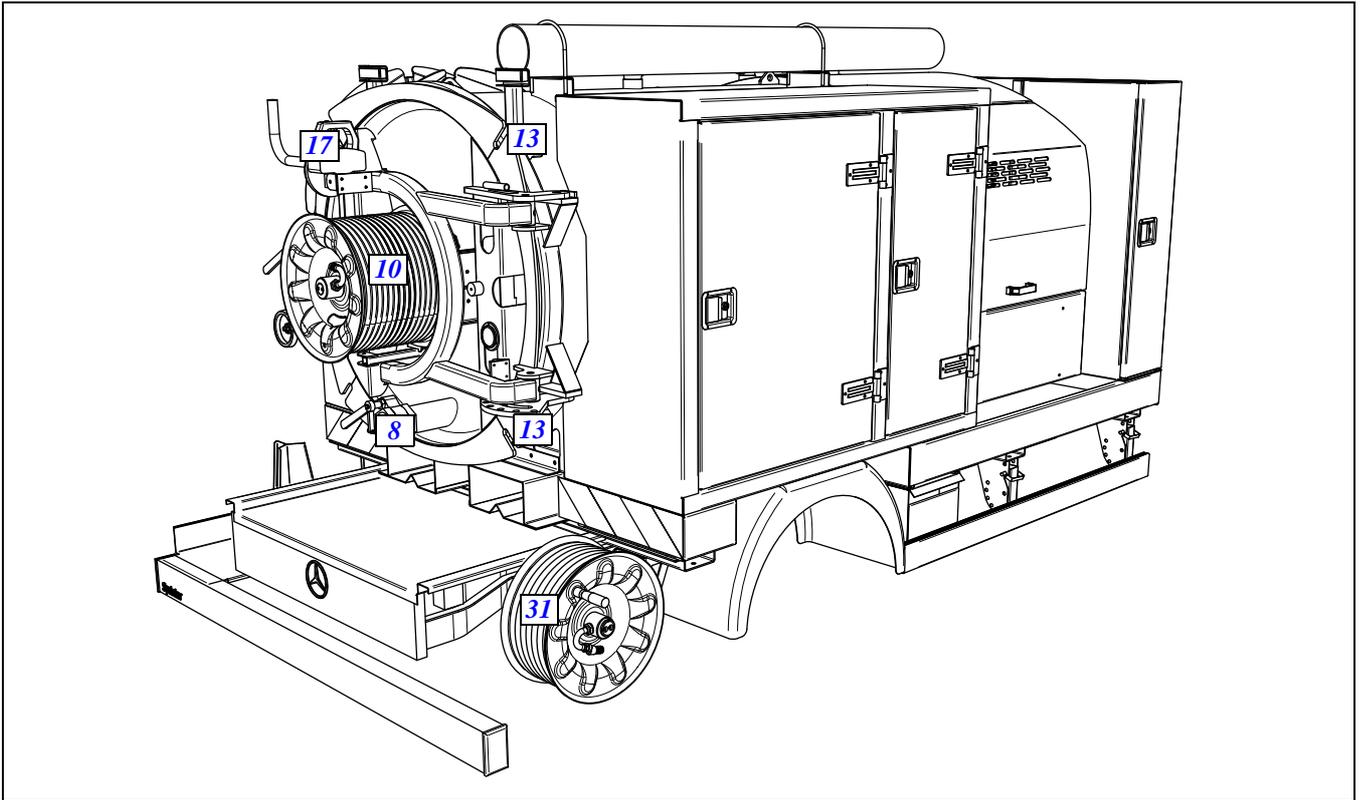
|                |                  |
|----------------|------------------|
| Machine number | : 10005002013128 |
| Article number | : 22110472000    |
| Follow number  | : <b>vo38396</b> |

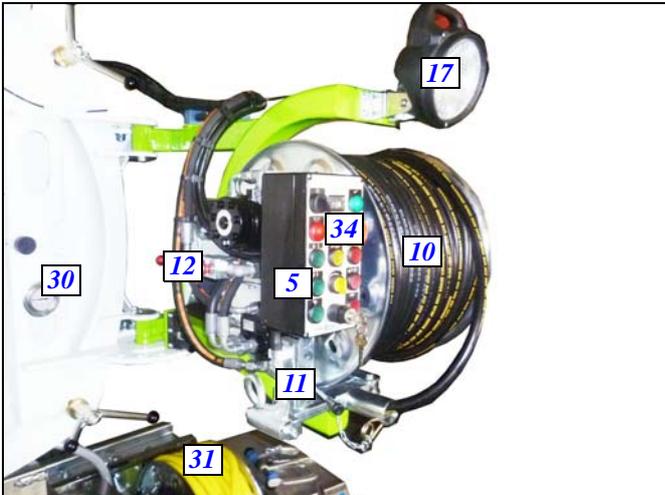


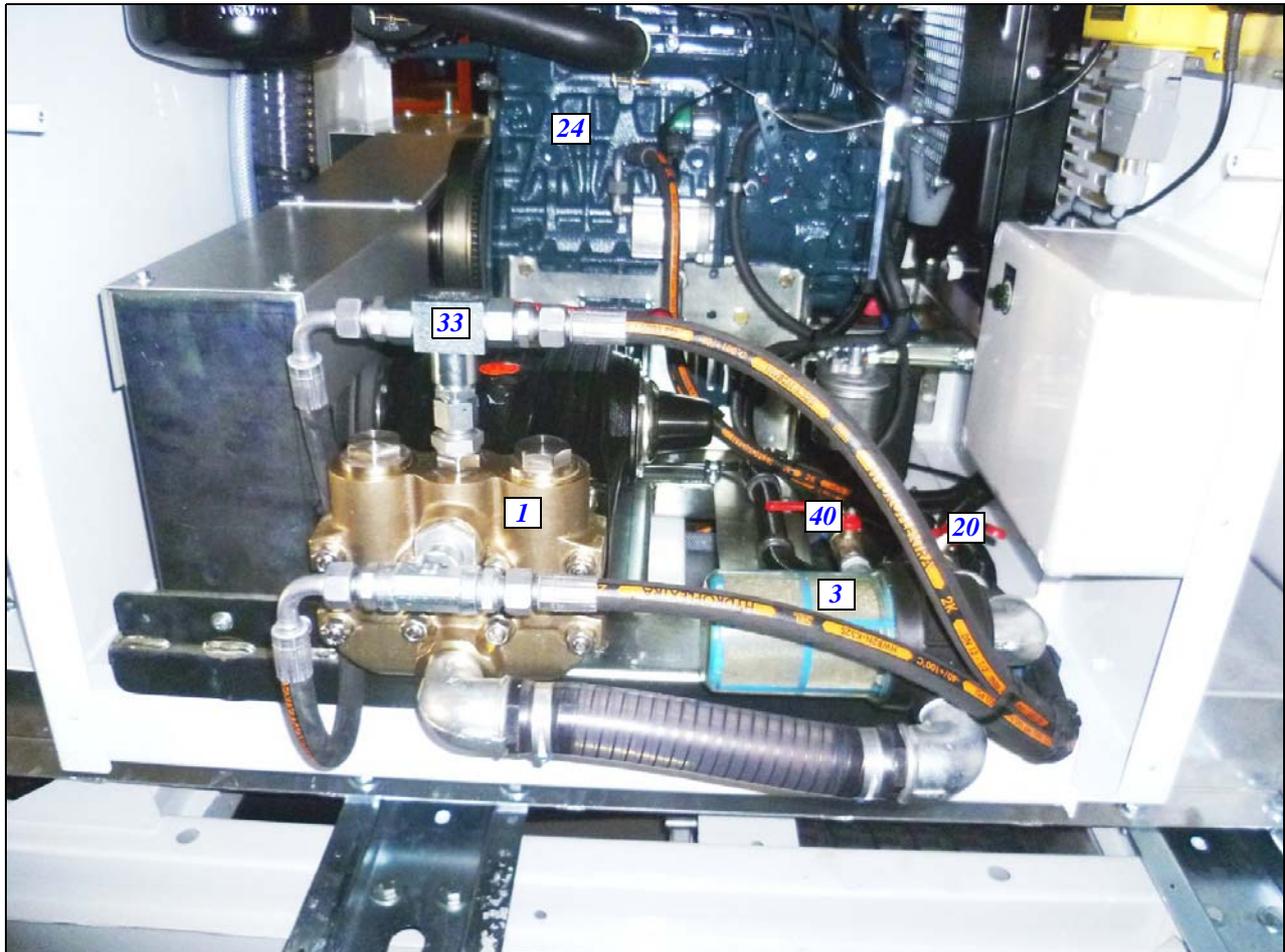
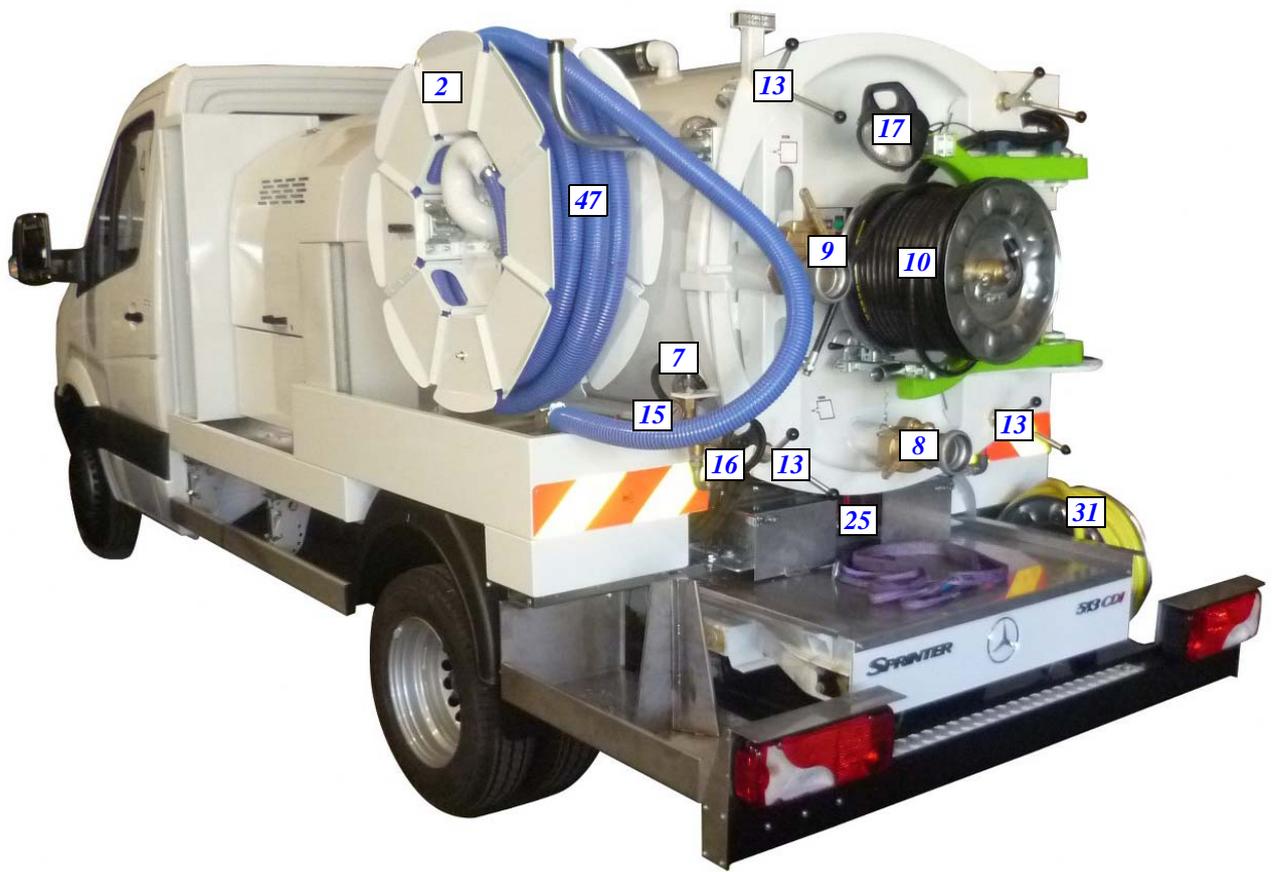
## 4 CONSTRUCTION AND FUNCTIONING

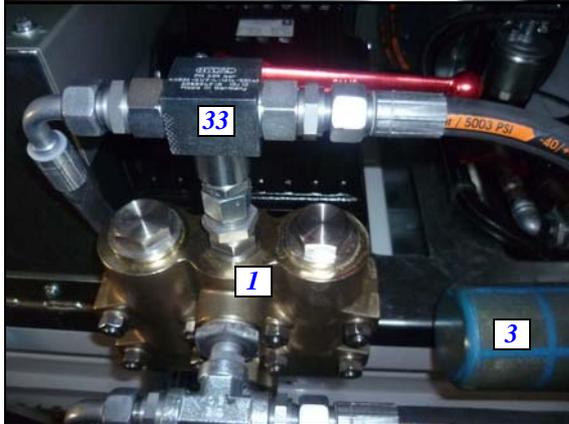
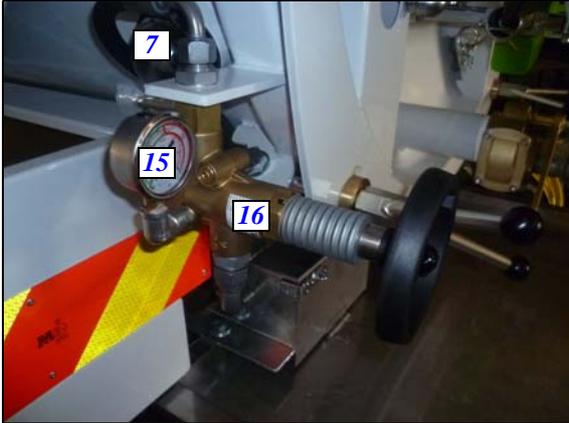
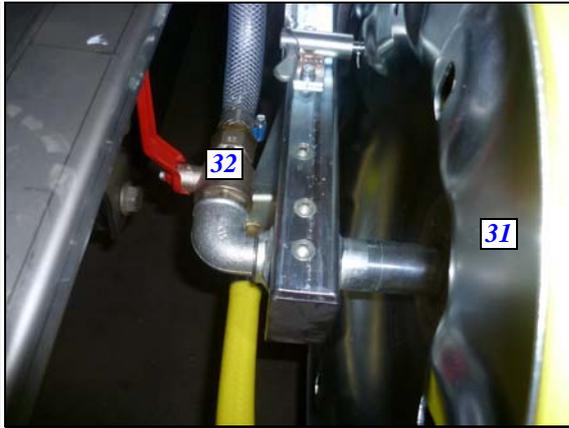
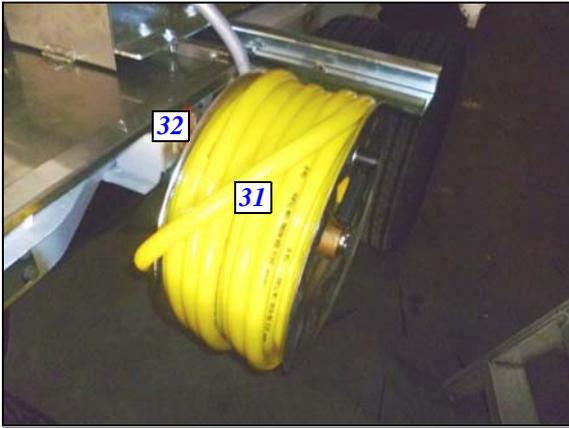
The suction unit contains the following main parts:

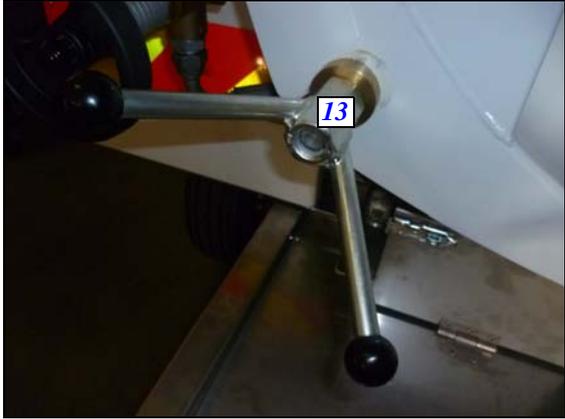
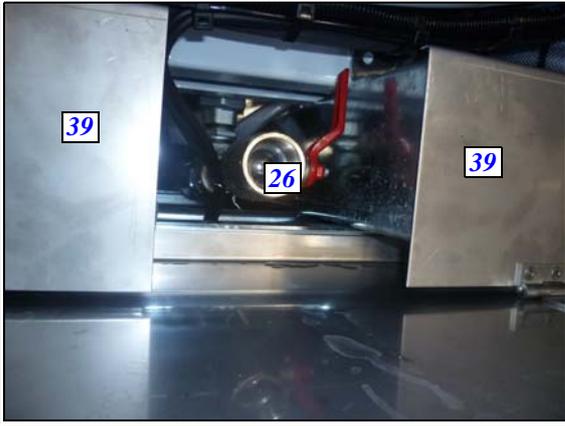
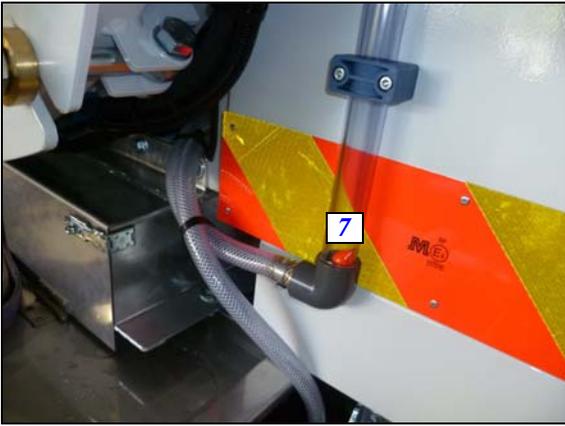
- |     |                                     |     |  |
|-----|-------------------------------------|-----|--|
| 1.  | High-pressure pump                  | 37. | Charger (radio remote control)   |
| 2.  | Reel with suction hose              | 38. | Suction pipe   |
| 3.  | Water filter                        | 39. | Suction hose storage reel  |
| 4.  | Oil tank hydraulic system           | 40. | Supply valve Antifreeze  |
| 5.  | Control box                         | 41. | Antifreeze tank  |
| 6.  | Dirt water tank (Vacuum tank)       |     | Not included or visible  |
| 7.  | Sight glass / level indicator       |     |  |
| 8.  | Press valve                         | 42. | Orange light   |
| 9.  | Suction valve                       | 43. | Oil dropper vacuum pump (only MEC)   |
| 10. | HP Hose on reel (HP =High pressure) | 44. | HP Hose hot water  |
| 11. | Hydraulic reel control              | 45. | Burner unit hot water  |
| 12. | HP valve for HP hose on reel        | 46. | Bypass valve   |
| 13. | Hook                                | 47. | Suction hose   |
| 14. | Hose guide                          | 48. | Bypass valve<br>(vacuum tank - water tank)   |
| 15. | Pressure gauge                      | 49. | HP valve for HP hose on swing arm<br>(Spool valve)                                   |
| 16. | Pressure regulator                  | 50. | Inside filter  |
| 17. | Working lamp                        | 51. | Fuel tank  |
| 18. | Battery                             | 52. | Manhole clear water tank   |
| 19. | Supply pipe water tank              | 53. | Float ball protection  |
| 20. | Supply valve water filter           | 54. | Cool tank vacuum pump  |
| 21. | Syphon                              | 55. | Oil tank vacuum pump   |
| 22. | Vacuum filter                       | 56. | Connection circulation system  |
| 23. | Clear water tank                    | 57. | Choice valve<br>Hydraulic reel- or suction reel control                              |
| 24. | Engine                              | 58. | Engine start (keyhole)   |
| 25. | Drain valve "Vacuum tank"           | 59. | Swing arm (Hydraulic)  |
| 26. | Drain valve                         | 60. | Fuel tank (Heater)   |
| 27. | Vacuum pump                         | 61. | Valve heater on/off  |
| 28. | Handle suction/pressure             | 62. | Hydraulic cover control<br>(Open/Close Cover)  |
| 29. | Security valve                      | 63. | Choice valve to use the hydraulic reel control<br>for the big reel or the small reel |
| 30. | Vacuum meter/pressure gauge         |     |  |
| 31. | Reel with supply hose               |     |  |
| 32. | Valve supply reel                   |     |  |
| 33. | Pulsator on/off                     |     |  |
| 34. | Emergency stop                      |     |  |
| 35. | Vacuum blow off container           |     |  |
| 36. | Receiver (radio remote control)     |     |  |











## 5 CONTROL



If you control, maintain or inspect the machine, you must have the right qualifications for this job. If you do not have the necessary knowledge, you may not use the machine. Further, you must convince yourself that you understand this manual thoroughly.



It is prohibited to drive with the water tank and vacuum tank full at the same time!



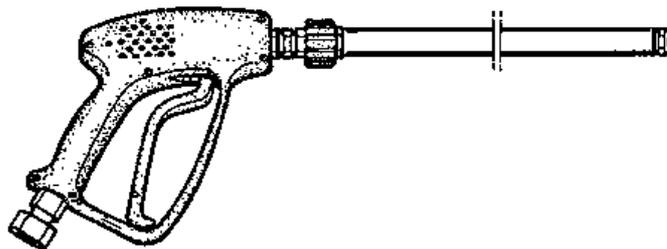
By simultaneously switching on the high pressure pump and vacuum pump, the pressure regulator should be decreased.

### 5.1 Before starting

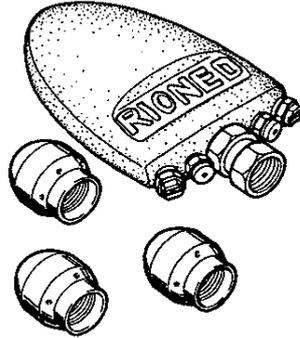
1. Check the oil level in the engine (24), high-pressure pump (1), oil tank hydraulic system (4) and vacuum pump (27) using the dipsticks. Add oil, if necessary;(see chapter 9 Maintenance page: 45).
2. Check if there is enough fuel in the fuel tank.
3. Check whether the water filter ( ) is clean. Clean the filter, if necessary.
4. Check whether the supply valve (20) to the water filter has been opened.
5. Check whether the high-pressure valve (12) at the reel is closed.
6. Fill the water tank via:
  - Supply reel (31) and/or
  - supply pipe (19).

The maximum water temperature is 55°C

7. Loosen the control wheel of the pressure regulator (16).
8. Screw the attachment onto the high-pressure hose.
  - a Cleaning a wall, a terrace or floor: spray lance gun.



b Unclogging of a drain: jet nozzle.

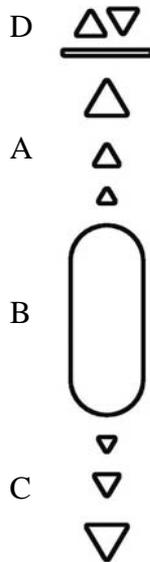


**5.2 Hydraulic reel control**

By means of pushing the control lever (*11*) upwards  or downwards  the high-pressure hose can be unrolled or rolled up. Due to the proportional functioning of this valve you can also control the speed of the reel. By putting the lever into the position  you can unroll the hose manually.



**Attention!** Never block the lever and always control it with one hand while guiding the high-pressure hose by means of the hose guide (*14*) with the other hand to the required place.



- A Wind the hose
- B Reel locked
- C Unwind the hose
- D Reel "out of gear"

### 5.3 Starting the engine



#### Emergency stop:

The machine is equipped with an emergency stop. By operating this stop the machine will stop immediately. Do not use the button for normal stopping. Only use it when dangerous situations occur. After use, turn the emergency stop in order to be able to start up again. Make sure the emergency stop can always be reached.



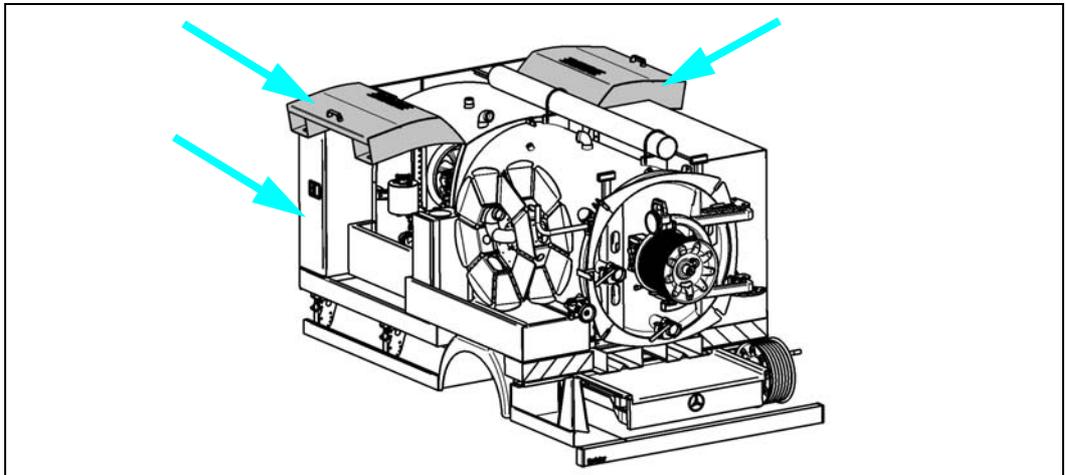
Put on protection looking glasses and ear protectors before starting the machine.



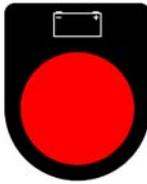
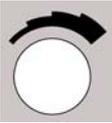
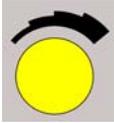
Open the side doors while operating the machine!



When working with the machine, keep grate inside the tool box free from obstacles!



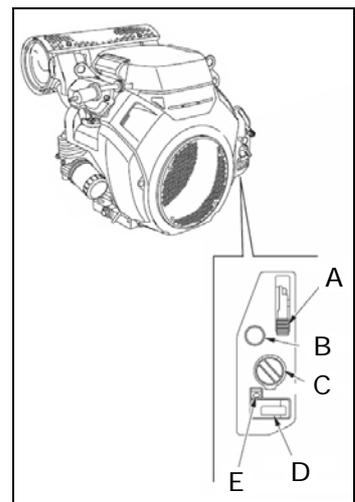
Via control box (Diesel engine):

1. Put the ignition key into the keyhole 
2. Choose "hand control" 
3. Control lights Oil pressure  and charging  lightens. If not,
4. then Troubleshooting.  
Wait 5 seconds!
5. Turn start/stop switch  to the right and release it.  
  
Glow spiral lightens , goes off and then the engine starts.

### Starting on engine (Honda)

- A Throttle handle
- B Choke
- C Ignition
- D Hour counter
- E Oil alert warning light

1. If the fuel tank is equipped with a valve, be sure the fuel valve is in the OPEN or ON position before attempting to start the engine.
2. To start a cold engine, pull the choke knob out to the CLOSED position.
3. Move the throttle lever away from the MIN. position, about 1/3 of the way toward the MAX. position.
4. Turn the engine switch to the ON position.
5. Operate the starter.
6. Turn the engine switch to the START position, and hold it there until the engine starts.
7. If the engine fails to start within 5 seconds, release the engine switch, and wait at least 10 seconds before operating the starter again.
8. When the engine starts, release the engine switch, allowing it to return to the ON position.



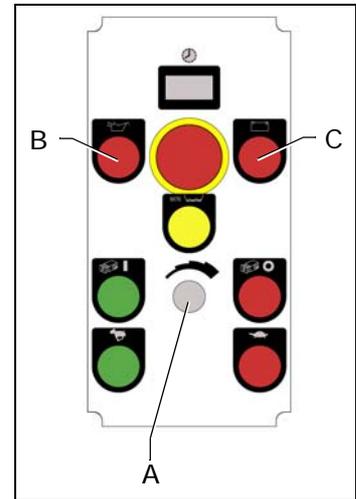
9. Warm up the engine for 2 or 3 minutes. If the choke knob was pulled to the CLOSED position to start the engine, gradually push it to the OPEN position as the engine warms up.

For a more detailed description see enclosed engine book or Internet site.

(<http://engines.honda.com/pdf/manuals/00X37Z6L6010.pdf>)

#### Starting on control box:

1. Insert the key into the ignition (A).
2. Turn the key one turn to the right.
3. Check the indicator lights “Oil pressure” (B) and “Battery” (C) light.
4. Turn the key (A) further and release the key once the engine starts.

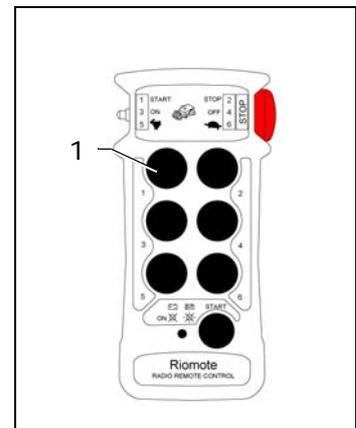


#### Starting with Riomote transmitter (optional):

5. Press button 1 in (Engine starts).

Use, if necessary, the choke!

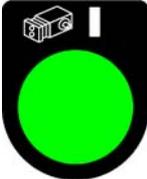
Let the engine warm up. After 3 minutes the machine is ready for use.



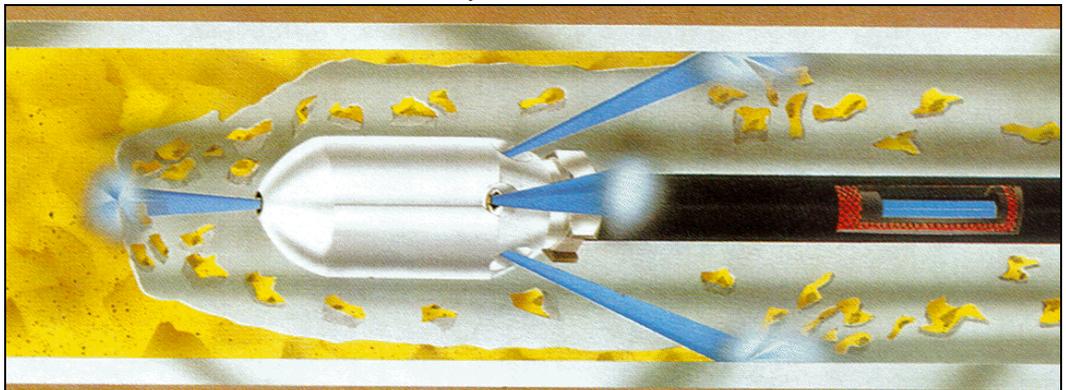
## 5.4 Unclogging a drain

1. Screw a suitable nozzle onto the high-pressure hose (10).
2. Put the hose through the hose guide (14) for safety manners (option).
3. Unwind the hose a little.
4. Put the nozzle into the drain that is to be cleaned.
5. Screw the pressure regulator (16) fully open (right).
6. Open the high-pressure valve (12).

### Start spraying:

- a Press button  (HP pump On) or press button “HP on”  (sender).
- b Press button  (Throttle open) or press button “RPM +”  (sender).

The hose will now unwind and work its way into the drain.



7. Check that the water drains away. When the blockage has been cleared, continue to flush for a while. At the same time wind the hose up slowly.



### Important!

Rewind hose onto reel under pressure to avoid crushing.

If machine has run out of water, ensure hose is unwound before pressurising.



### Attention!

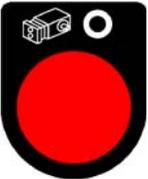
Ensure that the spraying nozzle does not leave the drain! Water under high-pressure

may cause severe injuries!

---



**Stop spraying:**

- Press button  (Throttle close) or press button “RPM-”  (sender).
- Press button  (HP pump off) or press button “HP off”  (sender).

Treat the high-pressure hose carefully:

- Always clean it after use.
- Ensure that no sharp objects are near the hose.
- Ensure that no traffic crosses the hose.
- If the hose has to be repaired, use only the special repair couplings.

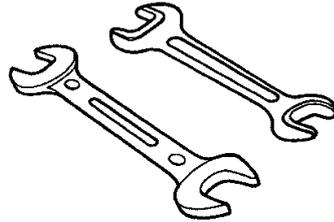
## 5.5 Cleaning a wall, terrace or floor.



### Caution!

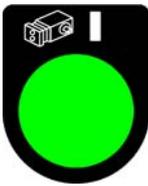
Before using a spray gun, you must always set the pressure below the maximum ( $\pm$ the half of the maximum pressure). You must do this before you start the machine. If the machine is running, the pressure can be increased by turning the control wheel to his working pressure. Never exceed the maximum pressure that is marked on the manometer when using the spray gun.

1. Screw the spray gun including in the delivery onto the high-pressure hose. Fasten it by using the two spanners provided.



2. COMPLETELY unroll the high-pressure hose.
3. Attach the spray lance gun. Secure the quick coupling tightly.
4. Open the HP valve (12).

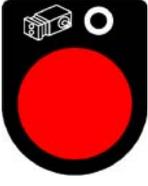
### Start spraying:

1. Push button  (Start spraying) on the control box or “HP on”  on the radio remote control.
2. Push button  (Throttle open) on the control box or “RPM+”  on the radio remote control.
3. Screw the high-pressure regulator wheel (16) upward on the high-pressure regulator until the required working pressure is reached. The adjusted pressure can be read from the pressure gauge (15) on the machine when the spray gun is open.
4. Pull the trigger of the spray gun.

### Stop spraying

Release the trigger of the spray gun.

## 5.6 Stop working

1. Press button  (Throttle close) or “RPM-”  on the radio remote control.
2. Press button  (HP pump off) or “HP off”  on the radio remote control.
3. Close the HP valve.

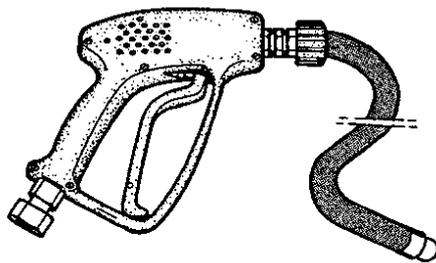
## 5.7 Spray gun with NW 5 hose

Instead of the spray lance gun, you can also mount a NW5 hose with small nozzle onto the spray gun. This set can be used for unclogging small pipes. The water supply can be used for unclogging via the gun. In this way you can prevent the system from flooding the surroundings.



**Turn the pressure regulator under the 150 bar (2175 psi).  
The pressure may never exceed the 150 bar (2175 psi).**

Always treat the high-pressure hose well!



## 5.8 Using the device during periods of frost

Your machine may freeze up during a period of frost. A number of safety precautions must be taken.

Additional preparations before departure:

1. Drain the water tank and the water filter.
2. Close the drain valve and mount the filter again.
3. Put 25 l. antifreeze into the water tank.
4. Open the supply valve to the water filter.
5. Start the machine and let it idle.

**Note: it is not necessary to attach a gun to the high-pressure control.**

6. Open the high-pressure valve.
7. Let the high-pressure pump remove all the water, which is still in the high-pressure hose.
8. Close the high-pressure valve when the antifreeze comes out of the hose.
9. Leave the engine running for some time: to allow all pipes to fill up with antifreeze.
10. Switch off the machine.

Now the machine is ready for departure!

**5.9 Additional  
preparations when  
preparing for use:**

1. Turn on the machine and let the high-pressure pump drain all antifreeze into the anti-freeze tank. The antifreeze can be reused.



Ensure that no water is mixed with the antifreeze. If too much water gets into the antifreeze, it is not suitable for re-use. Dispose the used antifreeze properly, hand it into a local depot for disposal of industrial waste.

---

2. Stop the machine and prepare it for use.

## 6 USING THE VACUUM DEVICE

### 6.1 Use

Use the vacuum system only for cleaning sewers and tanks (*see chapter 1 Introduction page: 7*).

### 6.2 Before use:

1. Close the suction valve (9) and press valve (8).
2. Clean the syphon (21).
3. Clean the float ball protection in the vacuum tank (dirt and functioning) always before use.

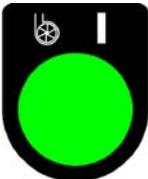


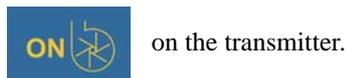
4. Empty the vacuum blow off container (35).
5. Check the oil level of the vacuum pump (27) and engine (24). Fill, if necessary.
6. Check the liquid in the cooling tank (54) (Not for type SLS and MEC pumps).
7. Couple the Suction hose at the suction valve (9) or use the suction pipe (38).
8. Set the handle (28) of the vacuum pump (27) to "Suck".



### 6.3 Fill the dirt water tank:

1. Put the end of the suction hose/pipe into the dirt.
2. Start the engine (*see chapter 5.3 Starting the engine page: 25*).

3. Press button  (vacuum on) at the control box or button "VAC on"



on the transmitter.

4. Push button  (Throttle open) on the control box or "RPM+" 

on the radio

5. Check the vacuum/pressure gauge (30) (max. -0,8 bar).



Check the oil dropper (43) on the vacuum pump. The dropper must give 7-10 drops/min. (only MEC).

- Open the suction valve (9) or “Valve open” at the remote control.

The vacuum tank gets filled.

**Remark!**

The vacuum pump is protected against overheating and will, in case of overheating, be shut off automatically. (not necessary on WPT vacuum pumps!)

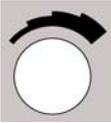
**Remark!**

Within the tank there is a float ball security mounted which closes as soon as the tank is full. This is visible in the sight glasses of the vacuum tank.

- Close the suction valve (9) when the vacuum tank is full, (see sight glass (7) or level indicator).

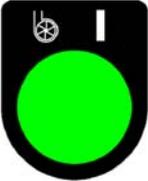
- Press button  (Throttle close) or “RPM-”  on the radio remote control

- Press button  (vacuum on) at the control box or button “VAC off”  on the transmitter.

- Stop the engine with the start/stop switch .

**6.4 Empty the dirt water tank:**

- Fasten a hose onto the press valve (8).
- Place the end of the hose where the substance must come out.
- Open the press valve (8). (substance come out now!)
- Start the engine (see chapter 5.3 Starting the engine page: 25).
- Set the handle (28) of the vacuum pump to position “Press”.

- Press button  at the control box or button “VAC on”  on the transmitter.

Let the vacuum pump press all the dirt out of the tank (max. 0.5 bar.)

At 0,5 bar the overpressure security (29) has to open. In case the tank is not pressed empty, the

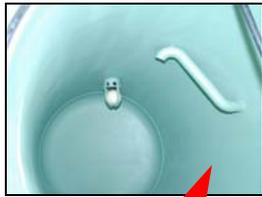
connection in the vacuum tank in front of the valve is blocked with sand or stones.

7. Press button  (Throttle close) or “RPM-”  on the radio remote control

8. Press button  at the control box or button “VAC off”  on the transmitter.

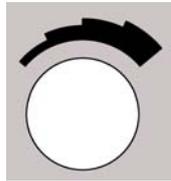
9. Stop the engine, press button  or “Stop” transmitter.

10. Open the suction valve (9) for remaining pressure.  
11. Check the float ball protection in the vacuum tank (dirt and functioning).

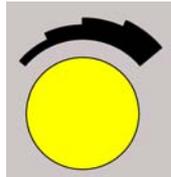




## 7 STICKERS AND SYMBOLS



Engine start/stop.



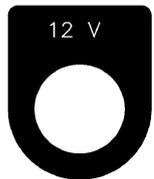
Engine glow.



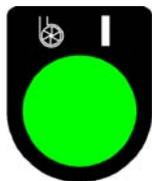
Signal lamp "Charging" (*Burns if there is no charge to the battery.*)



Signal lamp "Oil pressure" (*Burns if there is not enough oil in the engine.*)



12 V accessories.



Vacuum pump ON



Vacuum pump OFF



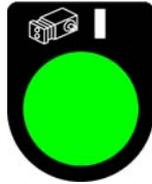
Run dry protection



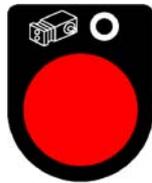
Throttle open



Throttle close



HP ON (Start spraying)



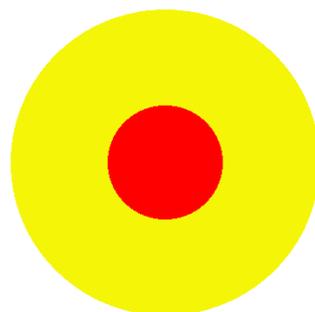
HP OFF (Stop spraying)



“Hand” or “Radio remote” control

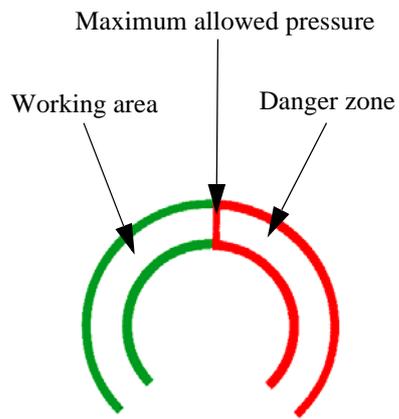


Signal lamp “Radio remote control” on

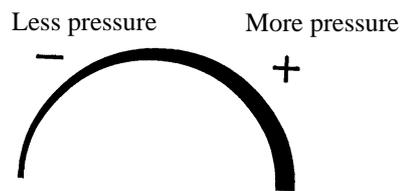


Back plate “Emergency stop”

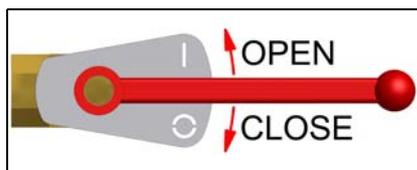
**7.1 Pressure gauge**



**7.2 Pressure regulator**



**7.3 Valve control** Open and close valve:



## 7.4 Security sticker

1. Gehör- Kopf- und Augen Schutz tragen verpflichtet.
2. Sicherheitsschuhe mit extra Schutz verpflichtet.
3. Betriebsanleitung studieren verpflichtet.
4. Sicherheitshandschuhe mit Pulsschutz verpflichtet.
5. Schutzkleidung verpflichtet.
6. Kein Trinkwasser.
7. Gefahr für rutschen.
8. Pas auf für Handverletzung.
9. Drehende Maschine.
10. Achtung für automatische anlassende Maschine.

1. You must wear ear- head- and eye protection.
2. You must wear security shoes with extra protection.
3. Read the user's manual.
4. You must wear safety gloves with wrist protection.
5. You must wear protection cloth.
6. No drinking water.
7. Slip danger.
8. Look out for hand damage.
9. Turning machine.
10. Warning for automatically starting machine.

1. Gehoor- hoofd- en oogbescherming dragen verplicht.
2. Veiligheidsschoenen met extra bescherming verplicht.
3. Handleiding lezen verplicht.
4. Veiligheidshandschoenen met polsbescherming verplicht.
5. Beschermende werkkleding verplicht.
6. Geen drinkwater.
7. Gevaar voor uitglijden.
8. Pas op voor handletsel.
9. Draaiende machine.
10. Waarschuwing voor automatisch startende machine.

1. Protection obligatoire des yeux, de l'ouïe et de la tête.
2. Protection obligatoire des pieds.
3. Obligation de lire le manuel d'utilisation.
4. Protection obligatoire des mains.
5. Protection obligatoire du corps.
6. Eau non potable.
7. Attention Risque de sol glissant.
8. Attention Risque d'écrasement.
9. Attention Risque de dangers divers.
10. Attention Risque de démarrage automatique a tous moments.



1



2



3



4



5



6



7



8



9



10

## 8 OPTIONS

**8.1 Hour counter** This machine is equipped with an hour counter.  
The hour counter indicates the number of working hours that the machine has worked.

**8.2 Pulsator system** Purpose: With less water use, quicker to the stoppage.

Construction:

The high-pressure pump has three cylinders. By normal use the three cylinders follows each other continuously. This gives a fluent volume stream. To stop one stroke, you get a pulsating water stream.

Control:

To close or open the 3-way valve, you start or stop the pulsator.

Handle to the left-Pulsator on

Handle to the right-Pulsator off

Use:

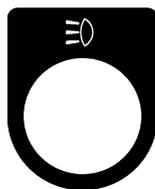
Use the pulsator system only to get quicker to the stoppage. Stop the pulsator when you are to the stoppage.

Reel out with the hydraulic control and not touch the HP hose while the Riopulse is on!

Use the machine mentioned earlier in this user's manual.



**8.3 Working lamp Control:**



By means of switch you can turn the working lamp ON and OFF.

**8.4 Anti-freeze with anti freeze tank** Your high-pressure device may freeze up during a period of frost. A number of safety precautions must be taken.

Additional preparations before departure:

1. Drain the water tank by opening the drain valve.
2. When all water has been removed/drained, you remove the water filter.
3. Clean the filter and mount it in opposite order.
4. Close the drain valve.
5. Fill the anti-freeze tank with antifreeze.
6. Remove the nozzle/gun from the HP hose.
7. Open the antifreeze valve.
8. Press the overrun button and start the engine.
9. Check if the HP-valve on the machine is open.
10. Push button on the control box.

11. Let the high-pressure pump remove all the water, which is still in the high-pressure hose and pump.
12. Close the high-pressure valve or push button, when anti freeze flows out of the HP hose (watch the colour of the water).
13. Connect the HP-hose (with special connection) to the supply hose.
14. Open the supply valve.
15. Close the HP valve, when anti freeze flows out of the supply hose (watch the colour of the water).
16. Next you connect the hose onto the anti-freeze tank (top).
17. Open the HP-valve again an let the pump sends all anti freeze to the anti-freeze tank.
18. Close the high-pressure valve.
19. Switch off the machine.
20. Disconnect the hose and the special coupling an clean up.

Make sure that the HP and the supply hose are locked and tightened. Now the machine is ready for departure!

Antifreeze can be recycled.

Ensure that not too much water is mixed with the antifreeze. If too much water gets into the antifreeze, it is not suitable for re-use. Dispose the used antifreeze properly, hand it into a local depot for disposal of industrial waste.

### 8.5 Radio remote control type Riomote

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

#### To operate the transmitter

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

- Switch  on control box at "Radiographic operating" .
- Switch the transmitter on .
- 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 transmitter. Contact your supplier.

---

If the indication  on the transmitter starts burning it's indicates that the battery must be changed with a new fully loaded battery.

If the battery is not changed the transmitter switches off in a short time.

Reload empty batteries.

#### Functions:

1. Start the engine (only 7 channel version)
2. Stop the engine (only 7 channel version)
3. High-pressure pump on (start spraying)
4. High-pressure pump off (stop spraying)
5. Open gas of the engine
6. Close gas of the engine

#### Trouble shooting

- Every system is checked on high quality before leaving the factory. If any disturbances would appear, check the part "trouble shooting"



## 8.6 Hose guide

#### Purpose:

To guide safely the HP hose into the sewer.

To wind the HP hose safely on the reel drum.

#### Use:

- Put the end of the hose through the opening of the hose guide.
- By moving the hose guide to the right and left, you can wind the HP hose fluently on the reel drum.
- After use, lock the support.

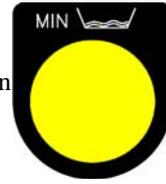
#### Advantage

- No dirty hands
- Hose lives longer
- More freedom of movement
- Security
- Hose stays cleaner.

**8.7 Run dry protection** - The run-dry protection has the purpose to protect the high-pressure pump.

Functioning:

If the water level in the tank is too low, the run-dry protection



activates.

Cancelling:

Fill the water tank. (Supply hose, Fill opening, Supply pipe...)

## 9 MAINTENANCE

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### Attention!

Always stop the engine first and depressurize the system before serving or repairing the machine.

To depressurize the system, you open the HP valve. If the spray lance gun is attached you must also pull the trigger.

To depressurize the vacuum tank, you open the suction valve.

---

### 9.1 Daily maintenance

#### 1. Oil level

Check all oil levels once a week. Add oil, if necessary.

If an oil level has dropped, this implies a leak in the system. In which case, check all gaskets, couplings, and (hydraulic) pipes in the system. Immediately repair damage and fill the system with the correct oil.

---

### Mark!

During the settling-in period, the oil consumption of the engine can be more than usually.

---

#### 2. Cleaning water filter:

- a Close the supply valve in the suction pipe.
- b Open the drain valve.
- c Unscrew cap from the filter piece.
- d Clean the filter and concerning parts.
- e After cleaning, assemble the parts in opposite order.
- f Open the supply valve.
- g Check for leakage.

### 9.2 Weekly maintenance

#### 1. Cleaning:

Clean the carriage weekly. Use car shampoo and plenty of water. Especially when salt has been sprinkled, it is strongly advised to clean the machine often and more thoroughly.

**9.3 Minor servicing** Minor servicing must be carried out EVERY 250 WORKING HOURS (or at least once every 6 months) and includes the following parts of the machine:

#### 1. Drive

##### • Servicing the engine

- a Change the oil in the engine (Super 15W40 SF CC or equivalent).
- b Renew the oil filter, if fitted.
- c Clean the air filter.
- d Renew the fuel filter.
- e Check the condition of the battery.
- f Check the torque of the attachment bolts for the engine; tighten them, if necessary.

For more information concerning the engine, you can find it in the book delivered with this machine.

#### 2. Carriage:

Lubricate all mechanical moving parts in the system. Check that all nuts and bolts have been correctly tightened.

#### 3. Pump system

- **Cleaning the high-pressure control:**  
When the high-pressure valve has been closed, the pressure gauge should not indicate any pressure. Similarly, if the spray gun is connected and closed, the pressure gauge should not indicate any pressure. If the pressure gauge does indicate a pressure, this implies a leakage in the system or that the one-way valve may be dirty or damaged. In which case stop the machine, unscrew the hose coupling and clean or replace the one-way valve. Also, check the condition of the O-ring and gasket.  
Regularly clean the high-pressure control. Carefully remove all dirt! Proper maintenance will increase the service life of this part.
- **Changing the pump oil:**  
Change the pump oil in the high-pressure pump after every 250 working hours (or at least once a year).

For more information concerning the pump, you can find it in the enclosure delivered with this machine.

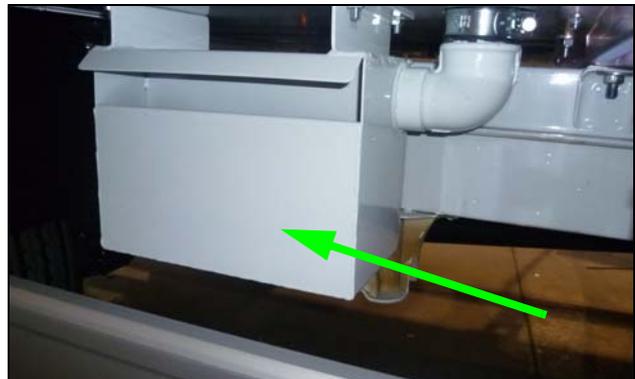
**9.4 Vacuum filter** Drain the liquid regularly.

Catch it in a bucket and dispose it in a proper way.



**9.5 Vacuum blow off container** Drain the container regularly.

Catch it in a bucket and dispose it in a proper way.



## 9.6 Hydraulic system



### Important!

You have to renew the hydraulic oil at least ones a year!

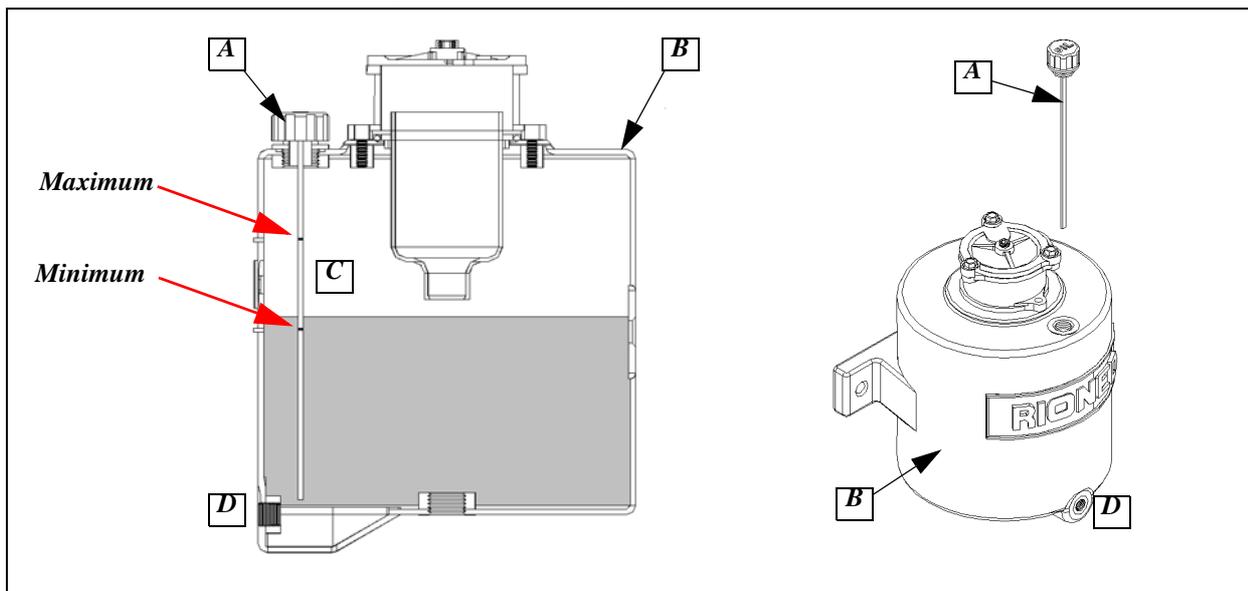
Only use oil HESTIA 46.

Order number Rioned 71-003-500-046

Check, every time before use, if the level of the oil is sufficient.

Proceed as follows:

1. Stop the machine.
2. Be aware that the machine is standing horizontal.
3. Take the dipstick (A) out of the oil tank (B).
4. Clean the dipstick with a tissue.
5. Put the dipstick into the oil tank.
6. Take the dipstick back and watch at the dipstick if the oil is between maximum a minimum (C).
7. Fill oil, if necessary.
8. Fasten the dipstick onto the oil tank.
9. Start the engine and let it turn for about 5 minutes.
10. Stop the machine and repeat point 2 until 8.



## 9.7 Cleaning the vacuum pump

See the user's manual of the vacuum pump.

## 9.8 Maintenance vacuum pump

See the user's manual of the vacuum pump

### The most causes of early failure are:

- Overheating;
- No lubrication
- Dirt in the pump;
- Working in the red danger zone (pressure gauge);
- Rust;
- Running dry;
- Suction of sand or dust;

**9.9 Cleaning the float ball (Siphon)**

Unscrew the cover, drain the water and clean the float ball.



**9.10 Extensive periodical maintenance**

Have the high-pressure machine checked and maintained from time to time by the technical service of Rioned. In this way, long life and quality will be guaranteed.

**9.11 Maintenance scheme**

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**Interval**

---

|                             |   |  |
|-----------------------------|---|--|
| Check oil levels            | : | Every time before use                                    |
| Cleaning water filter       | : | Every time before use and with strong pollution.         |
| Cleaning carriage           | : | weekly or with strong pollution.                         |
| Service engine              | : | Every 250 working hours or at least once every six month |
| Lubricate moving parts      | : | Every 250 working hours or at least once every six month |
| Cleaning pressure regulator | : | Every 250 working hours or at least once every six month |
| Renew HP pump oil           | : | Every 250 working hours or once a year                   |
| Renew oil hydraulic system  | : | Once a year  |
| Decalcify suction valves    | : | Once a year  |
| Decalcify pressure valves   | : | Once a year  |
| Puncture nozzle holes       | : | Every 50 working hours                                   |

---

Replace all parts immediately if there is wastage or defect.

## 10 TROUBLESHOOTING

| Failure  | Reason   | Solution   |
|--|--|--|
| Engine does not start or stops abruptly.                       | Machine has run out of fuel                                    | Add fuel   |
|  | Main or secondary fuse blown                                   | Replace the defect fuse and restart engine. If problem repeats, contact your dealer  |
|  | Battery voltage too low.                                       | Load or replace.   |
|  | Emergency stop activated                                       | Turn the emergency stop in order to be able to start up again  |
| The high-pressure pump does not produce the required pressure. | Water tank empty   | Fill the water tank  |
|  | Supply valve to water filter closed.                           | Open the supply valve  |
|  | Water filter clogged.  | Stop the machine and clean the water filter  |
|  | Air in high-pressure pump                                      | Allow the machine to run a few minutes. The failure will normally disappear. If not, contact the service department of your dealer |
|  | Suction valves blocked   | Carefully loosen the valves and descale them, if necessary   |
|  | Suction valves worn out.                                       | Contact the service department of your dealer.   |
| Pressure varies.   | Water level in tank too low                                    | Stop the engine, refill the tank and restart engine  |
|  | Water supply valve not sufficiently opened                     | Open the supply valve completely   |
|  | Water filter clogged.  | Stop the machine and clean the filter  |
|  | Pump sucks air   | Stop the machine and check all hoses and couplings for leakage   |
|  | Nozzle clogged   | Stop the machine and clean the nozzle (clean the nozzle holes)   |
|  | Pressure valves dirty or worn                                  | Stop the machine. Check the condition of the pressure valves. Clean or replace them  |
|  | Pump gasket worn out   | Stop the machine and replace gasket  |
|  | Ceramic plungers in the pump damaged                           | Contact your dealer  |
|  | Pressure control clogged or internally damaged.                | Contact your dealer.   |
| Hydraulic reel does not wind the hose                          | Handle not on right position                                   | Put the handle into the right position   |
|  | Hydraulic tank almost empty                                    | Refill the tank. Check the system on leakage   |
|  | Attachment bolt for control lever of hydraulic system loosened | fasten the bolt and put the lever into the correct position  |
|  | Working pressure set too low                                   | Increase the working pressure, if possible   |
|  | Return filter hydraulic tank dirty                             | Switch off the machine and clean the return filter   |
|  | Hydraulic system damaged                                       | Contact your dealer  |

| Failure   | Reason   | Solution   |
|---|--|--|
| No suction of the vacuum pump                                   | Switch doesn't supply current to magnet coupling                                       | Contact your dealer  |
|   | Magnet coupling doesn't work   | Contact your dealer  |
|   | Vacuum valve or press valve in open position   | Close the valve  |
|   | Lever vacuum valve suction/pressure in wrong position                                  | Put the lever in the right position  |
|   | Clamp bolts not well-fastened  | Fasten the bolts   |
|   | Float ball protection dirty or stacked   | Clean or loose the ball  |
|   | Still pressure in tank   | Open the vacuum valve  |
|   | Oil separator not drained  | Drain the oil separator  |
|   | Oil in the pump  | Press, at low speed of revolution, the oil out of the pump                         |
|   | Vacuum pump too hot or not greased sufficiently and blades of the pump stuck or burned | Contact your dealer  |
|   | Bad cleanness of float ball protection   | Clean again and press out the dirt, if necessary.                                  |
|   | Dirt reached the pump and blades stuck off.  | Contact your dealer.   |
| No reaction by switching in transmitter                         | No current   | Load battery   |
|   |  | Use new battery  |
|   |  | Control contact points on dirt and dust  |
|   |  | Check fuses  |
|   |  | Contact your supplier by repeating disturbances                                    |
|   | Transmitter is not on  | Put button 0/1 to position I   |
| Transmitter out of reach from receiver                          | Put the machines closer on. Put transmitter closer                                     |  |
| Warning signal after short working time                         | Battery empty / defect   | Load or replace  |
|   | Battery not loaded or defect   | Change battery complete  |
|   |  | Check if the charging works well   |
|   |  | Check battery points / clean it  |
|   |  | Use other battery  |
| Transmitter indications are good but functions are not executed | Emergency stop pushed in   | Unlock emergency stop  |
|   | Receiver has no current  | Check / replace fuses  |
|   | No radio connection  | Check functions of control lights  |
| Certain functions are not executed                              | Receiver is faulty   | Contact your supplier  |
|   | Interruption in electric circuit   | Check all plugs. Plug in and push. Check control lights if functions are indicated |

## **11 EXPLODED VIEWS AND PART LISTS**

## 11.1 Siphon

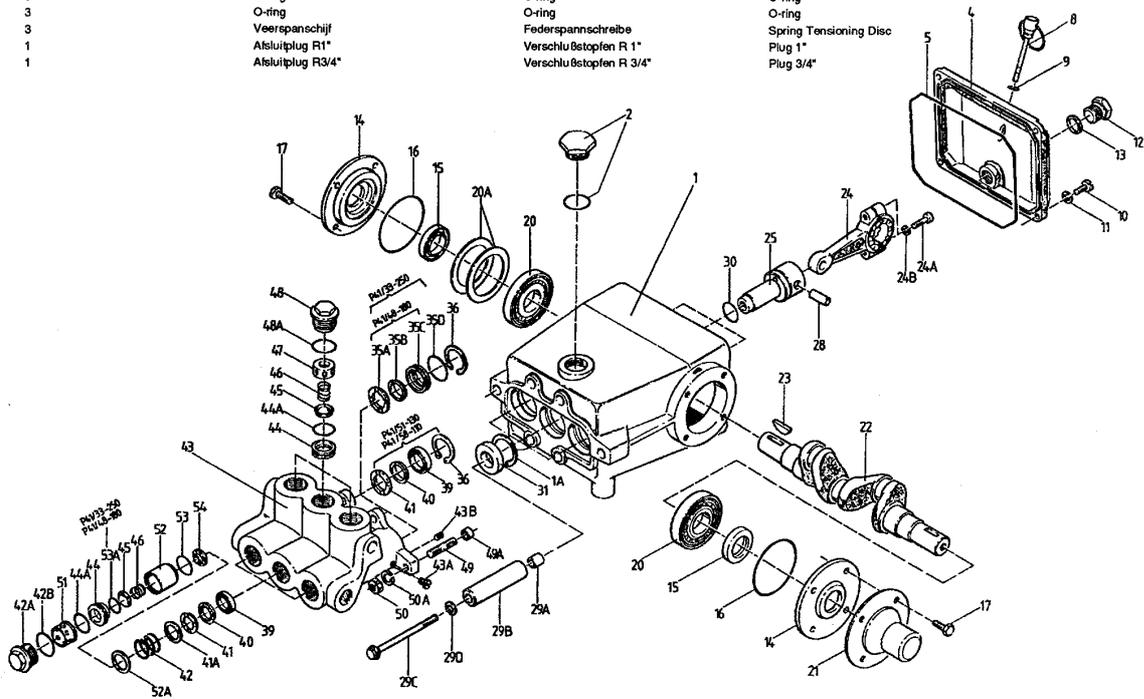
| Parts List |     |             |  |
|------------|-----|-------------|--|
| ITEM       | QTY | PART NUMBER | DESCRIPTION                              |
| 1          | 1   | 6045600060  | VLOTTERBAL ROND 60                       |
| 2          | 1   | 60456060061 | GLAS SYPHON 60 MM                        |
| 3          | 2   | 60456060062 | O-RING SYPHON                            |
| 4          | 1   | 60456060066 | AANSLUITSTUK RECHT ROND 60 MM 21732 7/60 |
| 5          | 1   | 60456060067 | AANSLUITSTUK BOCHT 60 MM                 |
| 6          | 1   | 60456060068 | SYPHON POT                               |
| 7          | 1   | 60456060069 | PLUG SYPHON ONDERZIJDE                   |

|  |  |            |                          |  |  |                 |                 |               |
|--|--|------------|--------------------------|--|--|-----------------|-----------------|---------------|
| Tenzij anders aangegeven zie Rioned normblad maaddelen en:   |  | 3.2 / 12.5 | Hoeken en kanten breken. | Zetten: R inwendig =   | Lineaire maten: (uitzondering laswerk: 0-150: ±0,5 150-2000: ±1) |                 |                 |               |
|  |  |            |                          | materiaal dikte  | 0-5-6: ±0,1  | 6-30: ±0,2      | 30-120: ±0,3    | 120-400: ±0,5 |
|  |  |            |                          |  | 400-1000: ±0,8   | 1000-2000: ±1,2 | 2000-4000: ±2,0 |               |
| Benaming:<br><b>SYPHON 60 MM NIEUW MODEL</b>   |  |            |                          | Datum:<br>5-12-2000  | Materiaal:   |                 |                 |               |
| Getek.:<br>Ronald  |  |            |                          | Gecontr.:  | Artikelnummer:   |                 |                 |               |
| An Affiliat of Spartan Tool L.L.C.<br><b>Rioned</b><br>WWW.RIONED.COM  |  |            |                          | Blad 1 v. 1 bl.  | Prod. no.: 60456060065   |                 |                 |               |
| Centaurusweg 45, 5015 TC Tilburg<br>Tel.: 013-5479100 Fax: 013-5479104   |  |            |                          | Maten in mm<br>A3  | Tek. no.:<br><b>60456060065 /</b>                                |                 |                 |               |
| Deze tekening is eigendom van Rion B.V. / Rioned en mag zonder haar toestemming niet verspreid worden.<br>noch aan derden ter inzage gegeven worden. |  |            |                          | File: C:\Vautl\branses\Biblictheek\ Parts\60 Kamlock koppelingen\60456060065.sam |  |                 |                 |               |

## 11.2 Exploded view Pump P41(48L-180B).

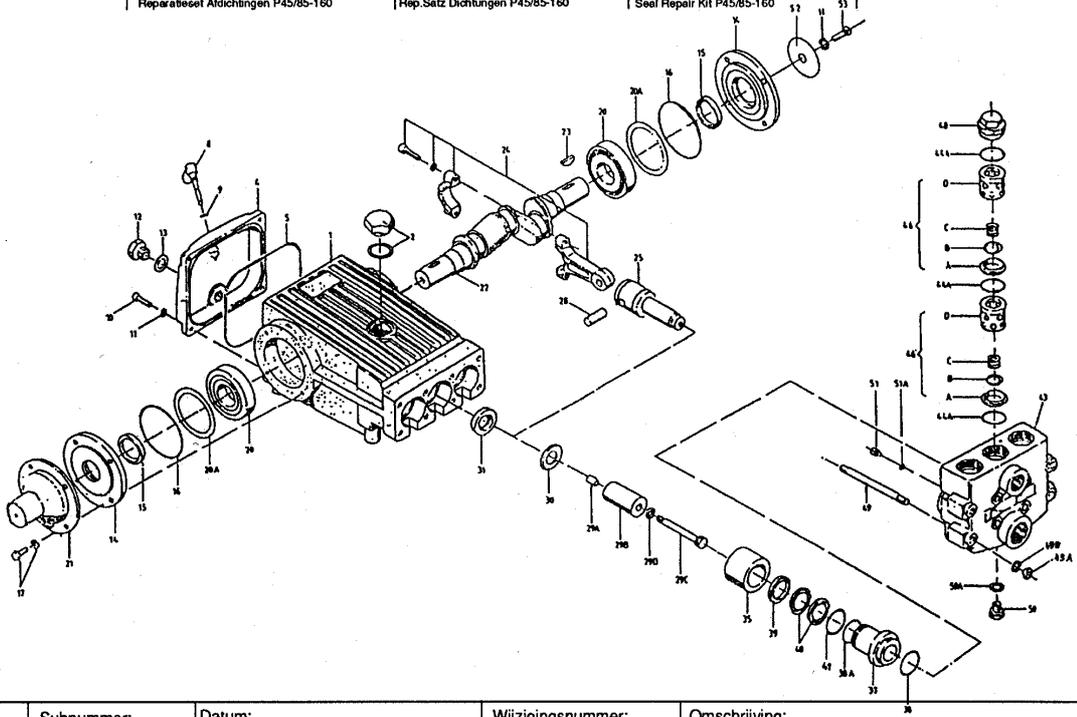
| Pos | Aantal | Rionednr.:     | Omschrijving                 | Benennung                     | Description              | Designation |
|-----|--------|----------------|------------------------------|-------------------------------|--------------------------|-------------|
| 1   | 1      | 66.041.414.001 | Carter                       | Antrieghöhuse                 | Transmission Casing      |             |
| 2   | 1      | 66.050.411.002 | Olievuldcop                  | Ölaufüllstopfen Kpl.          | Oil Filling Plug         |             |
| 4   | 1      | 66.041.414.004 | Carterdeksel                 | Getriebedeckel                | Transmission Cover       |             |
| 5   | 1      | 66.041.414.005 | O-ring                       | O-ring                        | O-ring                   |             |
| 8   | 1      | 66.041.414.008 | Oliefeststok                 | Ölmestab                      | Oil Dipstick             |             |
| 9   | 9      | 66.008.411.006 | O-ring                       | O-ring                        | O-ring                   |             |
| 10  | 4      | 32.218.008.020 | Cilinder Kopschroef M.8 X 20 | Zylinderschraube              | Cylinder Screw           |             |
| 11  | 12     |                | Veerring M.8                 | Federring                     | Spring Washer            |             |
| 12  | 1      | 66.041.414.012 | Plug                         | Ölablästopfen                 | Oil Drain Plug           |             |
| 13  | 1      | 66.041.414.013 | Dichting                     | Dichtung                      | Gasket                   |             |
| 14  | 2      | 66.041.414.014 | Lagerschild                  | Lagerdeckel                   | Bearing Cover            |             |
| 15  | 2      | 66.041.414.015 | Ollekeerring                 | Radialwellendichtung          | Radial Shaft Seal        |             |
| 16  | 2      | 66.041.414.016 | O-ring                       | O-ring                        | O-ring                   |             |
| 17  | 8      | 32.201.008.020 | Tapbout M.8 X 20             | Sechskantschraube             | Hexagon Head Screw       |             |
| 20  | 2      | 66.041.414.020 | Lager                        | Kegelrollenlager              | Taper Roller Bearing     |             |
| 20A | 1-3    | 66.041.414.120 | Passschijf 0,1 mm            | Paßscheibe 0,1 mm             | Fitting Disc 0,1 mm      |             |
| 20A |        | 66.041.414.120 | Passschijf 0,15 mm           | Paßscheibe 0,15 mm            | Fitting Disc 0,15 mm     |             |
| 21  | 1      | 66.041.414.021 | Beschermkap                  | Wollenschutz                  | Shaft Cap                |             |
| 22  | 1      | 66.041.414.022 | Krukas                       | Kurbelwelle                   | Crankshaft               |             |
| 23  | 1      | 66.041.414.023 | Halve Maan Spie              | Schreibenfeder                | Woodruff Key             |             |
| 24  | 3      | 66.041.414.024 | Drijfstang                   | Gleitlagerpleuel              | Connecting Rod           |             |
| 24A | 6      | 66.041.414.124 | Imbusbout                    | Innensechskantschraube        | Inner Hexagon Head Screw |             |
| 24B | 6      |                | Veerring                     | Federing                      | Spring Washer            |             |
| 25  | 3      | 66.041.414.025 | Kruiskop Kpl.                | Kreuzkopf                     | Crosshead                |             |
| 28  | 3      | 66.041.414.028 | Pistonpen                    | Kreuzkopbolzen                | Crosshead Bolt           |             |
| 29A | 3      | 66.041.414.129 | Centreerhuls                 | Zentriehöhuse für Plungerrohr | Centring Sleeve          |             |
| 29B | 3      | 66.041.412.229 | Plunjerpijp                  | Plungerrohr                   | Plunger Pipe             |             |
| 29C | 3      | 66.041.414.329 | Spannschroef                 | Spannschraube                 | Tensioning Screw         |             |
| 29D | 3      |                | Cu-ring                      | Kupler-Dichtring              | Copper Seal Ring         |             |
| 30  | 3      | 66.041.414.030 | Olleafsbrjker                | Ölabstreifer O-ring           | O-ring                   |             |
| 31  | 3      | 66.041.414.031 | Ollekeerring                 | Radialwellendichtung          | Radial Shaft Seal        |             |
| 35A | 3      | 66.041.412.135 | Lekage Steuring              | Leckagestützring              | Support Ring             |             |
| 35B | 3      | 66.041.412.235 | Lekage Manchette             | Leckage Manschette            | Sleeve                   |             |
| 35C | 3      | 66.041.412.335 | Lekage Drukkring             | Leckage Druckring             | Pressure Ring            |             |
| 36  | 3      | 66.041.414.036 | Seegering                    | Seegering                     | Clip Ring                |             |
| 39  | 6      | 66.041.412.039 | Drukkring                    | Druckring                     | Pressure Ring            |             |
| 40  | 6      | 66.041.412.040 | Manchet                      | Manschette                    | Sleeve                   |             |
| 41  | 6      | 66.041.412.041 | Steuning                     | Stützring                     | Support Ring             |             |
| 41A | 3      |                | Tussenring                   | Zwischenring                  | Spacer Ring              |             |
| 42  | 3      |                | Spanveer                     | Spannfeder                    | Tensioning Spring        |             |
| 42A | 3      |                | Plug                         | Vorspannstopfen               | Tensioning Plug          |             |
| 42B | 3      |                | O-ring                       | O-ring                        | O-ring                   |             |
| 43  | 1      |                | Klepkooi                     | Ventilgehöhuse                | Valve Casing             |             |
| 43A | 2      | 66.041.414.143 | Schroef                      | Zylinderschraube              | Cylinder Screw           |             |
| 43B | 2      | 66.041.414.243 | Stift                        | Gewindestift                  | Allen Grub Screw         |             |
| 44  | 6      | 66.041.414.044 | Klepzitting                  | Ventilzitz                    | Valve Seat               |             |
| 44A | 6      | 66.041.414.144 | O-ring                       | O-ring                        | O-ring                   |             |
| 45  | 6      | 66.041.414.045 | Klepplaat                    | Ventilplatte                  | Valve Plate              |             |
| 46  | 6      |                | Kleppveer                    | Ventilfeder                   | Valve Spring             |             |
| 47  | 3      | 66.041.414.047 | Veerspannschijf              | Federspannschale              | Spring Tensioning Cap    |             |
| 48  | 3      |                | Plug                         | Stopfen                       | Plug                     |             |
| 48A | 3      | 66.041.414.148 | O-ring                       | O-ring                        | O-ring                   |             |
| 49  | 6      | 66.041.414.049 | Stiftschroef                 | Stiftschraube                 | Stud Bolt                |             |
| 49A | 2      |                | Centreerhuls                 | Zentriehöhuse                 | Centring Sleeve          |             |
| 50  | 6      | 66.041.414.050 | Moer                         | Mutter                        | Hexagon Nut              |             |
| 50A | 6      |                | O-ring                       | Federring                     | Spring Washer            |             |
| 51  | 3      | 66.041.414.051 | Afstandspijp                 | Abstandsrohr                  | Spacer Pipe              |             |
| 52  | 3      |                | Zuigklep Adaptor             | Saugventilaufnahme            | Suction Valve Adapter    |             |
| 52A | 3      |                | Tussenring                   | Distanzring                   | Spacer Ring              |             |
| 53  | 3      |                | O-ring                       | O-ring                        | O-ring                   |             |
| 53A | 3      |                | O-ring                       | O-ring                        | O-ring                   |             |
| 54  | 3      |                | Veerspannschijf              | Federspannschreibe            | Spring Tensioning Disc   |             |
| 55  | 1      |                | Afsluitplug R1"              | Verschlussstopfen R 1"        | Plug 1"                  |             |
| 56  | 1      |                | Afsluitplug R3/4"            | Verschlussstopfen R 3/4"      | Plug 3/4"                |             |



|   |                 |   |                               |  |
|---|-----------------|---|-------------------------------|--|
| Artikelnummer:<br><b>66.041.412.000</b> | Subnummer:<br>- | Datum:<br><b>Donderdag, 30 maart 1995</b> | Wijzigingsnummer:<br>W- + + + | Omschrijving:<br><b>Speckpomp P41/48-180</b> |
|---|-----------------|---|-------------------------------|--|

### 11.3 Exploded view Pump P45(75L-150B).

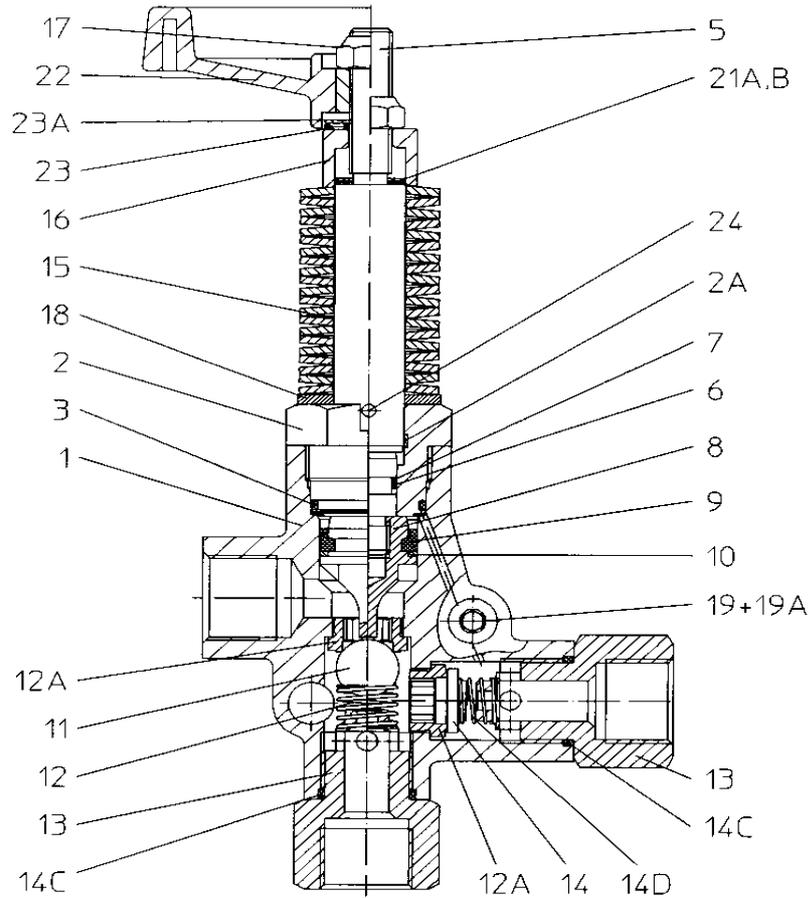
| Pos | Codenr.: | Rionednr.:     | Omschrijving                         | Benennung                           | Description                     | Designation |
|-----|----------|----------------|--------------------------------------|-------------------------------------|---------------------------------|-------------|
| 1   | 01-0508  |                | Carter                               | Antriebsgehäuse                     | Crankcase                       | Designation |
| 2   | 00-2914  | 66.050.411.002 | Olievuldop                           | Ölaufkullstopfen Kpl.               | Oil Filler Plug Assy            |             |
| 4   | 03-0136  |                | Carterdeksel                         | Geulbedeckel                        | Crankcase Cover                 |             |
| 5   | 06-0103  | 66.050.411.005 | O-ring                               | O-ring                              | O-ring                          |             |
| 8   | 00-0520  | 66.050.411.008 | Oliefelsbok                          | Ölmessstab Kpl.                     | Oil Dipstick Assy               |             |
| 9   | 06-0053  | 66.021.414.006 | O-ring                               | O-ring                              | O-ring                          |             |
| 10  | 21-0026  | 32.218.008.020 | Cilinder Kopschroef                  | Zylinderschraube                    | Cylinder Screw                  |             |
| 11  | 07-0594  |                | Veerring                             | Federring                           | Spring Ring                     |             |
| 12  | 07-0705  | 66.041.414.012 | Plug                                 | Stopfen G1/2                        | Plug                            |             |
| 13  | 06-0116  |                | Pakkingsring                         | Dichting                            | Gasket                          |             |
| 14  | 03-0137  | 66.050.411.014 | Lagerdeksel                          | Lagerdeckel                         | Bearing Cover                   |             |
| 15  | 06-0101  | 66.050.411.015 | Oliefekerring                        | Radialwellendichtring               | Radial Shaft Seal               |             |
| 16  | 06-0104  | 66.050.411.016 | O-ring                               | O-ring                              | O-ring                          |             |
| 17  | 21-0034  | 32.201.008.020 | Tapbout                              | Sechskantschraube                   | Hexagon Screw                   |             |
| 20  | 05-0096  | 66.050.411.020 | Lager                                | Kegelrollenlager                    | Taper Roller Bearing            |             |
| 20A | 07-0789  | 66.050.411.120 | Opvulring                            | Paßscheibe                          | Filing Disc                     |             |
| 20B | 07-2844  |                | Opvulring                            | Paßscheibe                          | Filing Disc                     |             |
| 21  | 07-0790  |                | Schermpak Astap                      | Weilenschutz                        | Shaft Protector                 |             |
| 22  | 11-0632  |                | Krukas                               | Kurbelwelle                         | Crankshaft                      |             |
| 23  | 07-0671  |                | Halve Maan Spie                      | Schreibbenfeder                     | Woodruff Key                    |             |
| 24  | 00-3290  |                | Drijfstaag Kpl.                      | Gleitlagerpleuel Kpl.               | Connection Rod Assy             |             |
| 25  | 00-3947  |                | Kruiskop Met Plunjer Kpl.            | Kreuzkopf M. Plunjer Kpl.           | Crosshead / Plunger Assy        |             |
| 28  | 11-0111  | 66.050.411.028 | Pistonpen                            | Kreuzkopbolzen                      | Crosshead Pin                   |             |
| 29A | 07-0662  |                | Centrerhuls                          | Zentrierhülse                       | Centering Sleeve                |             |
| 29B | 11-0242  |                | Plunjerpijp P45/85-160               | Plunjerrohr P45/85-160              | Plunger Pipe P45/85-160         |             |
| 29B | 11-0264  |                | Plunjerpijp P45/75-180               | Plunjerrohr P45/75-180              | Plunger Pipe P45/75-180         |             |
| 29C | 21-0331  |                | Spanschroef                          | Spannschraube                       | Tension Screw                   |             |
| 29D | 06-0275  |                | Koperenring                          | Cu-dichtring                        | Copper Ring                     |             |
| 30  | 06-0059  |                | O-ring                               | O-ring                              | O-ring                          |             |
| 31  | 06-0270  | 66.050.411.031 | Oliefekerring                        | Radialwellendichtring               | Radial Shaft Seal               |             |
| 35  | 07-3014  |                | Aklichthuls P45/85-160               | Dichtungshülse P45/85-160           | Seal Sleeve P45/85-160          |             |
| 35  | 07-3018  |                | Aklichthuls P45/75-180               | Dichtungshülse P45/75-180           | Seal Sleeve P45/75-180          |             |
| 37  | 07-3017  |                | Dichtings cassette                   | Dichtungskassette                   | Seal Case                       |             |
| 38  | 06-0106  | 66.050.411.038 | O-ring                               | O-ring                              | O-ring                          |             |
| 38A | 06-0234  |                | O-ring                               | O-ring                              | O-ring                          |             |
| 39  | 07-0666  |                | Drukkring P45/85-160                 | Druckring P45/85-160                | Pressure Ring P45/85-160        |             |
| 39  | 07-0694  |                | Drukkring P45/75-180                 | Druckring P45/75-180                | Pressure Ring P45/75-180        |             |
| 40  | 06-1187  |                | Manchette P45/75-180                 | Manschette P45/75-180               | Sleeve P45/75-180               |             |
| 40  | 06-1188  |                | Manchette P45/85-160                 | Manschette P45/85-160               | Sleeve P45/85-160               |             |
| 41  | 06-0107  | 66.050.411.144 | O-ring                               | O-ring                              | O-ring                          |             |
| 43  | 01-0211  |                | Kiephuis                             | Ventilgehäuse                       | Valve Casing                    |             |
| 44A | 06-0107  | 66.050.411.144 | O-ring                               | O-ring                              | O-ring                          |             |
| 46  | 00-1868  |                | Klep Kpl.                            | Ventil Kpl.                         | Valve Assy                      |             |
| 46A | 07-2456  |                | Kiepzitting                          | Ventilzitz                          | Valve Seat                      |             |
| 46B | 07-2482  |                | Kiepkast                             | Ventilplatte                        | Valve Plate                     |             |
| 46C | 07-2473  |                | Kiepvuur                             | Ventilfeder                         | Valve Spring                    |             |
| 46D | 07-2511  |                | Afstandsruhr                         | Astandsrohr                         | Spacer Pipe                     |             |
| 48  | 07-0670  |                | Plug                                 | Stopfen M.42 X 1.5                  | Plug                            |             |
| 49  | 21-0329  |                | Stiftschroef                         | Stiftschraube                       | Stud Bolt                       |             |
| 49A | 07-0988  |                | Moer                                 | Sechskanmutter                      | Hexagon Nut                     |             |
| 49B | 07-2707  |                | Vaerring                             | Schreibel                           | Disc                            |             |
| 50  | 07-1422  | 66.050.411.050 | Alfaplug                             | Stopfen G1/4                        | Plug                            |             |
| 50A | 06-0108  |                | Koperenring                          | Cu-dichtring                        | Copper Ring                     |             |
| 51  | 07-1927  | 66.050.411.051 | Aklichplug                           | Stopfen G1/8                        | Plug                            |             |
| 51A | 06-0306  |                | Koperen Ring                         | Cu-dichtring                        | Copper Ring                     |             |
| 52  | 07-0796  |                | Schijf                               | Scheibe Für Kurbelwelle             | Disc For Crankshaft             |             |
| 53  | 21-0041  |                | Tapbout                              | Sechskantschraube                   | Hexagon Screw                   |             |
|     | 00-3946  |                | Kruiskop Met Plunjer Kpl. P45/85     | Kreuzkopf M. Plun.rrohr Kpl. P45/85 | Crossh./Pl.Pipe Assy P45/85-160 |             |
|     | 00-3956  |                | Kruiskop Met Plunjer Kpl. P45/75     | Kreuzkopf M. Plun.rrohr Kpl. P45/75 | Crossh./Pl.Pipe Assy P45/75-180 |             |
|     | 14-0344  |                | Kieppen Reparatieset                 | Rep.Satz Ventile                    | Valve Repair Kit                |             |
|     | 14-0430  | 66.045.140.500 | Reparatieset Afdichtingen P45/75-180 | Rep.Satz Dichtungen P45/75-180      | Seal Repair Kit P45/75-180      |             |
|     | 14-0432  |                | Reparatieset Afdichtingen P45/85-160 | Rep.Satz Dichtungen P45/85-160      | Seal Repair Kit P45/85-160      |             |



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|                                  |                 |                                     |                               |                                       |     |
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|----------------------------------|-----------------|-------------------------------------|-------------------------------|---------------------------------------|-----|

## 11.4 Pressure regulator ULH 262



| Item No. | Qty | Order number   | Factory No. | Description                |
|----------|-----|----------------|-------------|----------------------------|
| 1        | 1   | 67-262-101-001 | 01-0630     | Casing                     |
| 2        | 1   | 67-262-101-002 | 07-2788     | Guide Plug                 |
| * 2A     | 1   | 67-262-101-102 | 06-1131     | Guide ring                 |
| * 3      | 1   | 67-262-101-003 | 06-0255     | O-Ring                     |
| 5        | 1   | 67-262-101-005 | 11-0477     | Piston Rod                 |
| * 6      | 1   | 67-262-101-006 | 06-1129     | O-Ring for 5               |
| * 7      | 1   | 67-262-101-007 | 00-6113     | Support Ring for 6         |
| 8        | 1   | 67-262-101-008 | 07-1064     | Piston Body                |
| * 9      | 1   | 67-262-101-009 | 06-0071     | Sleeve                     |
| * 10     | 1   | 67-262-101-010 | 07-0591     | Sleeve Support Ring        |
| * 11     | 1   | 67-262-101-011 | 07-1920     | Ball                       |
| * 12     | 1   | 67-262-101-012 | 07-0637     | Spring for Bypass Valve    |
| * 12A    | 2   | 67-262-101-112 | 07-1061     | Valve Body                 |
| 13       | 2   | 67-262-101-013 | 07-3006     | Valve Plug                 |
| * 14     | 1   | 67-262-101-014 | 07-3005     | Valve Plate                |
| * 14C    | 2   | 67-262-101-314 | 06-0496     | O-Ring                     |
| * 14D    | 1   | 67-262-101-414 | 07-1941     | Spring for Kick-Back Valve |
| 15       | 21  | 67-262-101-015 | 07-1662     | Spring Plate 120 bar       |
| 15       | 19  | 67-262-101-015 | 07-1523     | Spring Plate 280 bar       |
| 15       | 23  | 67-262-101-015 | 07-2899     | Spring Plate 40 bar        |
| 16       | 1   | 67-262-101-016 | 07-2167     | Spacer Sleeve              |
| 17       | 1   | 67-262-101-017 | 07-2165     | Hexagon Nut Self Locking   |
| 18       | 1   | 67-262-101-018 | 07-1076     | Disc                       |
| 19       | 4   | 67-262-101-019 | 07-1058     | Plug                       |
| * 19A    | 4   | 67-262-101-119 | 06-0245     | O-Ring for 19              |
| 21A      |     | 67-262-101-121 | 07-1792     | Spacer Disc 0,5 mm         |
| 21 B     |     | 67-262-101-221 | 07-1793     | Spacer Disc 1,0 mm         |
| 22       | 1   | 67-262-101-022 | 07-2166     | Spoked Hand wheel ULH      |
| 23       | 1   | 67-262-101-023 | 05-0136     | Axial needle Bearing ULH   |
| 23A      | 1   | 67-262-101-123 | 07-3432     | Disc ULH                   |
| 24       | 1   | 67-262-101-024 | 07-2164     | Serrated Pin               |
| *        | 1   | 67-262-101-025 | 14-0554     | Repair Kit                 |



## 12 APPENDIX

### 12.1 EC declaration Of Conformity For Machinery

RIOR B.V. / RIONED  
Centaurusweg 45, Tilburg, The Netherlands,

Herewith declares that:

*High pressure device RIONED Suction / High-pressure unit,*

Machine number: 10005002013128

- is in compliance with the Machinery Directive (2006/42/EC);
- is in conformity with the provisions of the following other EEC directives:  
2004/108/EC
- the following harmonized standards have been applied:

NEN-EN-ISO 12100-1, NEN-EN-ISO 12100-2, NEN-EN-ISO 13850,  
NEN-EN-ISO 13857, NEN-EN-349, EN 60204-1

Tilburg, The Netherlands, Tuesday 11 December 2012

A handwritten signature in black ink, appearing to read 'J. Pieters', written over a horizontal line.

J.Pieters  
Managing Director

## **12.2 Sales Managers**

### **EXPORT**

D.Maas / H. de Laat  
Centaurusweg 45  
5015 TC Tilburg  
Tel.: +31 13-547 91 00  
Fax: +31 13-547 91 04

### **REPAIR**

Rioned  
Centaurusweg 45  
5015 TC Tilburg  
Netherlands  
Tel.: +31 13-547 91 50  
Fax: +31 13-547 91 04





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## 12.5 Hydraulic oil

### Important!

You have to renew the environment friendly hydraulic oil ones a year.

---

#### *Description*

Hydraulic oil is an environment friendly oil based on vegetable oil. By use of natural vegetable oil, the hydraulic oil is neutral for the environment and is biologically decomposable. When spilling some oil, the ground as well the around water are less damaged by contamination.

#### *Characteristics*

It is possible to use the oil for a wide temperature range by having of good viscosity from different temperatures.

The good lubrication characters take care of protection against wastage.

If this oil should be used, one have to remind that the standing time of this oil is shorter than the standing time of a premium mineral hydraulic oil.

The quick connect couplings can get stocked in consequence of the resinification of spilled oil. It's recommended to remove the spilled oil as soon as possible.

This oil meets the requirements of the lubrication technical characteristics, like they are being stated in DIN 51 524, part two for HPL hydraulic oils.

This oil goes well together with elastomer, which is made of nitrorubber, polyacrylate, silicone and epihydrogen chloride.

#### *Use*

This oil is universal as hydraulic oil and is very suitable for use in hydraulic installations, which are being used often in environmental areas, like: close to rivers and lakes in water catchments areas in the wood construction

#### *Precautionary measures*

The mixing with motor oils has a negative influence for quality of this oil; consequences: formation of foam and obstruction of filters.

#### *Hygiene and health*

This oil is a safe product, but too much and long contact with skin is bad and one also have to take care of personal hygiene. If some more information is needed with regards to toxicology or the safety of petroleum products please do not hesitate to contact us.



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