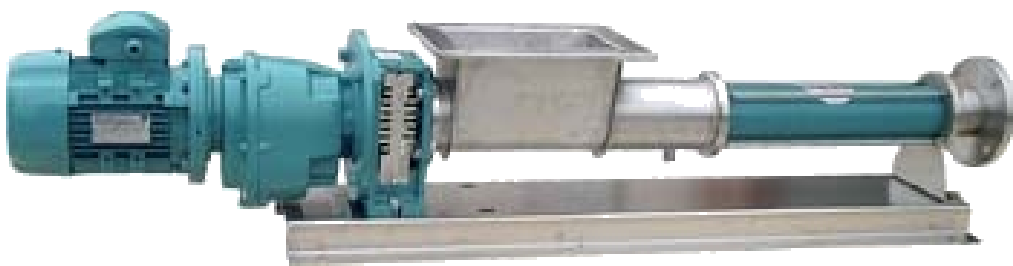


**BEDU**  
≡ POMPEN ≡

Instruction for installation,  
operation & maintenance

Wrange



**made for your process**



# OPERATIVE INSTRUCTIONS

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## INDEX

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# OPERATIVE INSTRUCTIONS

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## 1. INTRODUCTION

The following instructions contain important information on the operation, maintenance and installation of **Bedu** pumps. The observance of these directives is essential for the appropriate use of the machine.

### 1.1 Operating Instructions

Each pump is produced in relation to a specific order, and for this reason the serial number and the model indicated in this manual should be exactly the same as the model no. and serial no. indicated on the machine's nameplate.

### 1.2 The Company

The manufacturer of the pump is **Bedu Pompen B.V.**

### 1.3 Range, size, year of construction and serial Number

The range, the model no., year of construction, and the serial number are indicated in this manual, and are stated on the type plate of the machine.

### 1.4 Essential information for enquiries and orders

This information is required when inquiring about spare parts or placing orders:

- 1) Model of the machine.
- 2) Year of construction and serial Number.

### 1.5 Acoustic level pressure

The Acoustic level pressure is measured in accordance with OSHA CFR 1910.95 to assure that our machines does not exceed 85 dB (A).

The noises emission generated by the drive and the pipes are not included in the above emission value.

In order to maintain a noise emission level under 85 dB (A), the pump must be mounted correctly and not allowed to cavitate.

### 1.6 Operating Purposes

The pump must not be operated outside of the parameters specified in the order.

# OPERATIVE INSTRUCTIONS

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## 2 Safety Precautions

These operating instructions contain safety precautions that must be observed.

This manual should be read and understood by the mechanical fitter, as well other responsible operators prior to assembly and operation. The instructions should be safely kept at the operating site where the machine is being used.

Following are symbols commonly used to indicate areas of danger:

Safety Sign  
Ranger to general Public



Safety Sign,  
Electrical Hazard.



Danger from possible Injury by Machinery.



Danger from Suspended loads.



Damage to machinery.



Eyes protection sign.



# OPERATIVE INSTRUCTIONS

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## 2.1 Personnel qualifications and training

The end user must ensure that the personnel responsible for the operation, maintenance, inspection and assembly are in possession of the appropriate qualifications for the tasks. Personnel lacking the appropriate skills and knowledge should receive the correct training and instruction.

## 2.2 Non-observance of safety precautions

Failure to comply with the safety instructions may lead to hazards to life and limb, as well as dangers for the environment and for the pump.

The following are just some examples of possible dangers resulting from failure to comply with the safety instructions:

1. Failure of important machine/plant functions.
2. Premature failure of components or machine/equipment malfunction
3. Danger to the environment from leakage of dangerous materials .
4. Danger to personnel from electrical, mechanical or chemical hazards.

## 2.3 Safety rules

During maintenance and repair work on the pump, please note the following:

- 1) Keep in mind the simple safety rules that we have included in this operating instructions
- 2) Keep in mind and adhere to applicable local and international rules and regulations.
- 3) Keep in mind and adhere to the internal safety precautions and indications.

Non observance can void product warranty.

## 2.4 Safety instructions for the end-user.

1. Personnel should use the appropriate personal protection equipment [ppe]
2. Protective guards for moving parts (e.g. coupling) must never be removed whilst the machine is in operation.
3. Leakages (e.g. in the shaft seal) of hazardous liquids (e.g. explosive, toxic, hot) must be drained in such a way that no danger arises for persons or for environment. Always observe the relevant statutory requirements
4. The risk of exposure to electrical power must be eliminated.
5. Where appropriate risk assessments and/or methods statements should be provided prior to any work being carried out

## 2.5 Safety Instructions for maintenance, Inspection and Assembly Work

1. The end user must ensure that all maintenance, inspection and installation work is performed by authorised and qualified personnel who understand the operating instructions and are properly trained.
2. Pumps or units which transfer dangerous substances must be decontaminated.
3. Work on a pump/machine should only be performed when it is disconnected and safely isolated from its power source, pressure has been relieved, and the complete unit has returned to room temperature. It is imperative that these procedures are adhered to before attempting work on the machine.
4. Immediately following completion of work, all safety and protective devices must be replaced in position and, where applicable, re-activated.
5. Refer to section 5 Assembly and installation.
6. Where appropriate risk assessments and/or methods statements should be provided prior to any work being carried out

## OPERATIVE INSTRUCTIONS

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### 2.6 Unauthorised use of spare parts and/or modifications to the Pump

Modifications to the machines and/or its components are permitted only with the manufacturer's consent. Original spare parts and accessories authorised by the manufacturer ensure safety. The use of the other components revokes any warrant and liability for consequences which may result.

### 2.7 Impermissible Modes of Operation

The operational safety of the machines supplied is warranted only for employment in accordance with the intended use. The machine should not be operated in any way exceeds design capacities.

### 2.8 Handling, storage and disposal of hazardous materials

The section gives information on handling, storage and disposal of materials used in the pumps which may be considered hazardous to your health.

The following table indicates what is used inside pump:

| WHERE USED                | LIQUID - PRODUCT     | DANGER FOR   |
|---------------------------|----------------------|--|
| Bearings                  | anti-seize compounds | releases vapour  |
| Stator - rotor            | grease - Vaseline    | hands and skin   |
| Oil - general lubrication | seal - gearbox       | eyes and skin  |
| Pumps surface             | Paint                | releases dust and fumes if machined.<br>Treat as fire hazardous. |

All seek medical advice where appropriate

# OPERATIVE INSTRUCTIONS

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## 3 GENERAL DESCRIPTION OF THE PUMP

The progressive cavity pump supplied, is part of the " VOLUMETRIC PUMP FAMILY".

The inventor of that system was the professor René Moineau.

The main components of the pump are:

- the stator- a stationary part usually an alloy tube containing an injected elastomer
- the rotor - a rotating part usually made by a metallic material

The rotor has a single helix shape and the stator is formed as a double-helix with twice the pitch of the rotor. The interference fit between the rotor and stator creates a series of sealed chambers called cavities. When the rotor turns inside the stator, the medium is gently conveyed from the inlet to the outlet of the cavities.

The **Bedu** progressive cavity pump utilizes many positive characteristics:

- **Bedu** pumps have no suction or pressure valves, but do have a stable flow rate in proportion to the number of revolutions.
- **Bedu** pumps have a high suction capacity.
- **Bedu** pumps can transport all types of media including inhomogeneous, gaseous and abrasive media, as well as those that are not of a liquid consistency, or contain solids and fibrous material.
- **Bedu** pumps are capable of handling high-viscosity media.

**Bedu** progressive cavity pumps have also the following advantages:

- Self-priming even if not containing 100% liquid.
- Gentle handling of shear-sensitive products.
- Capacity is direct proportional to the pump speed.
- No pulsation, low noise and vibration.
- No significant torque increase when reaching maximum performance.
- Compact style construction.

The **Bedu** pump operates according to the positive displacement principle. Operation of the pump against an excessive pressure caused by closed valves, by high pressure losses in the piping or by product sedimentation will lead to the destruction of the pump, drive, pipe work and downstream equipment. Every progressive cavity pump must therefore be protected against overpressure. Safety valves with bypass pipes oil-filled contact manometers that deactivate the pump are appropriate protective devices.



# OPERATIVE INSTRUCTIONS

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## 4 Packing, Transportation and Storage.

### 4.1 Packaging and transportation

To transport and store the pump it is necessary that the personnel know and employ the appropriate means, hoists and tools, always observing the safety instructions.

**Bedu** pumps are shipped on skid-mounted wood-framed cardboard enclosures.

Upon receipt, inspect the pump for any transportation damage.

Check also:

- If the pump we supplied coincides with the model you ordered.
- If inside the packaging the 'Declaration of conformity' and the complete operating instructions are included.

Claims for damages should be reported to the freight carrier immediately.



**Avoid suspending the complete pump unit by the bolts of the motor or gear box.** These eye bolts should be used for lifting the motor and/or the gear box only.

Due to the variety of possible pump designs and applications, only general instructions can be given here. These should be adequate for experienced assembly or transportation personnel.



Use caution when lifting top heavy pumps. The centre of gravity may be above the points where the lifting gear is attached. If this is the case, secure additionally to prevent tipping over!

When moving the pump or unit on wheels, strictly adhere to the following:

- Lock out the motor drive to protect against unintended start-up;
- Move the pump unit carefully and slowly, especially where the ground is uneven. Hazards of tipping!
- Be careful not to allow flexible piping to bend or become kinked. Obstruction of flow will cause excessive discharge pressure.
- Where necessary, secure the pump unit with additional support blocks.

### 4.2 Storage

Pumps are packaged for transportation and short-term storage. In cases of prolonged storage, the pumps should be protected as follows until installation:

**Stator:** When stored for a long period, the elastomer along the contact line between the rotor and stator may become temporarily distorted (compression-set). This will increase the required starting torque. For this reason, the stator should be removed and stored in a cool, dry place in an air-tight package and protected from light.

**Rotor:** Support with wooden blocks and protect against damage from mechanical impact. For tool steel rotors: coat the surfaces with protective grease to avoid rusting.

**Pump parts in :** No protection necessary  
**Stainless steel**

## OPERATIVE INSTRUCTIONS

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Drives:                   Observe the instructions of the drive supplier

Store Room: The environment in which rubber products are being kept must be cool, dry, free of dust and well ventilated, and must not be stored in the open.

Rubber products should be kept in surroundings not having less than minus 10°C and not more than plus 15°C.

Store rooms should not be damp, and it must be ensured that there will be no condensation.

Recommended relative humidity is < 65%.

Rubber products must be protected against light, particularly direct sunlight or artificial light having a high UV portion.

Rubber products should be kept in a sealed package.

There must be no solvents, oil, grease, lubricants or any chemicals kept in the store room.

# OPERATIVE INSTRUCTIONS

## 5 ASSEMBLY AND INSTALLATION

### 5.1 Mounting tools

No special tools are required for the assembly and installation of the pump.

### 5.2 Space requirements

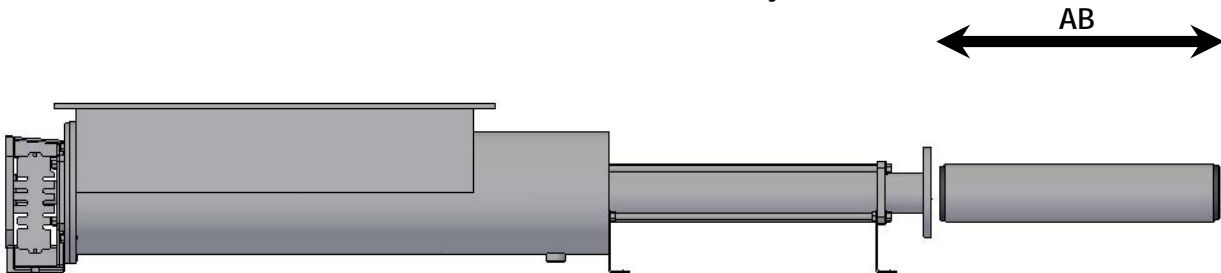
Customers are responsible for determining the space requirements. The following factors must be taken into consideration:

- Dimensions and weight of the machine.
- Required transportation and hoisting equipment.
- Possible piping layout should include an allowance for the space required to remove the rotor and stator.
- Freedom of movement to:
  - Operate the drive.
  - Speed and pressure indicators.
  - Space required for lubrication.
  - Disassembly of mechanical protective devices.
  - Space required for handling the mounting tools.



**Space allowing disassembling of Stator and Rotor.**

A specific space must be allowed for exchanging the stator. The required dimensions. See chart below for recommended disassembly dimensions:



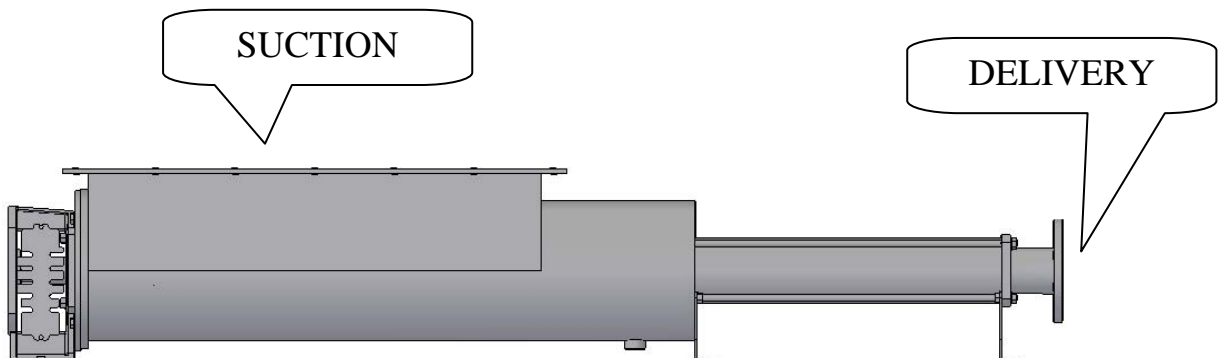
### 5.3 Direction of Rotation



The rotational direction of the pump determines the flow direction of the conveying medium (check the diagram below), this direction is given on the name plate of the pump.

For the M range is possible reverse the rotation (for more info contact our technical department).

Following the drawing below:



## OPERATIVE INSTRUCTIONS

### 5.5 Piping sizing

The pipe diameters on the suction and pressure sides must be dimensioned in accordance with the customer's pressure - loss calculation. The nominal size of the suction pipe should at least match that of the pump suction flange.

Prior to starting up the pump, ensure that all pipelines are free from foreign bodies. Installation residues (such as weld spatter, screws, steel chips etc) will lead to damage of the Bedu pump for which warranty claims will not be accepted.

### 5.6 Electrical connection

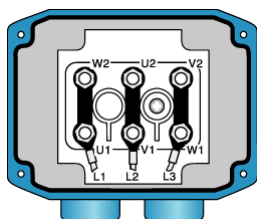


The electrical connections must be established in accordance with the manufacturer's specifications, as well as the safety specifications applying at the installation site.

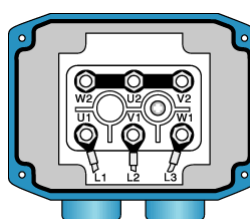
On the name plate of the electric motors you will find voltage/frequency and kW data. The mains voltage and frequency must match the ratings indicated on the type and rating plates

Three-phase cage motor:

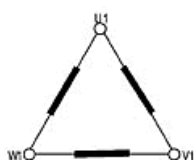
Delta connection



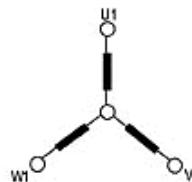
Star connection



Delta connection



Star connection



Switch on electric motor direct on line or use an adequate frequency inverters.



An increased starting torque is necessary due to the clamping between the rotor and stator conveying elements. This means the electric motors that drive the progressive cavity pumps must always be switched on directly or with an adequate frequency inverters.

Ensure that customer-supplied frequency inverters comply with the starting torque and running power specified on the offer specifications.

Other important point to be observed:

- Always use a thermal motor safety switch.
- If possible, mount a working switch as close as possible to the pump.
- It is recommended to mount an earth leakage circuit breaker.

# OPERATIVE INSTRUCTIONS

## 6 START-UP AND TEMPORARY SHUTDOWN

### 6.1 Start-up

Bedu progressing Cavity Pumps must be operated with the following precautions:

- Before initial start-up, regardless of rotation, make sure the pump housing and suction piping are filled with medium. Priming of the pump is necessary to lubricate the stator.



**Never run the pump dry!**  
Even a few rotations in dry condition will damage the stator.

- Turn pump motor on and off briefly to check direction of rotation.



Bedu pumps are positive displacement progressing cavity pumps and have the potential to generate very high pressure capable of bursting vessels or pipes.



Excessive pressure can overload the drive train (shaft, joints, rotor) or exceed pressure limitations of the housing and their connections, resulting in damage or breakage.

Never run the pump with an inlet or outlet valve closed. Open valves and vents before starting the pump.

### 6.2 Temporary Shutdown

Following the temporary shutdown, the pump should be emptied and flushed when:



- The pump is installed in a location inside or outside where the medium has the potential to freeze.
- The medium has a tendency to solidify or harden.
- The medium tends to build up or become tacky on the shaft sealing area

Other suggestions:

**Stator:** When stored for an extended period, the elastomer along the contact line between the rotor and stator may become temporarily distorted (compression-set). This will increase the required starting torque. For this reason the stator should be removed and stored in a cool, dry place in an air-tight package and protected from light.

**Rotor:** After the stator has been removed. Cover the entire pump to protect from mechanical damage.



Prior to installation, thoroughly clean rotor to prevent damage caused by interaction of the grease, stator material and medium.

### 6.3 Stand-by pump

A stand-by pump is sometimes installed to eliminate downtime. Stand-by pumps should be operated occasionally to keep properly them conditioned for use.

# OPERATIVE INSTRUCTIONS

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## 7 MAINTENANCE

### 7.1 General Instructions

A requirement for the reliable operation of any pump is service and maintenance in compliance with instructions. Maintenance personnel must therefore have access to these operating instructions and adhere to them meticulously. **Bedu** will accept no liability for damages arising through non-observance of these operating instructions.



- The pumps should be regularly rinsed or cleaned if deposits of medium are likely to build up.



- If the pump needs to be disassembled, ensure that the pump and motor are switched off and cannot be turned on accidentally.

### 7.2 Lubrication

Bedu pump does not require frequent lubrication.



- Maintenance and lubrication of the drive should be carried out according to the drive manufacturers instructions.

### 7.3 Lubricating the Pin Joints with SM-Pin Joint Seals

It is advisable to change the oil and check the seals of the pin joints:

- When replacing worn joint parts.
- When disassembling the pump for any reason.

### 7.4 Removal and Assembly of the Stator and the Rotor

The end have to check that all maintenance, inspection and installation work is performed by authorized and qualified personnel who understand the operating instructions and are properly trained.

#### 7.4.1 Preventive actions



The pump with attached pipework should be empty and must be cooled off.

- Close all the valves and disconnect the pipework on the suction side and pressure side of the pump.
- Before commencing the dismantling of pumps parts, safeguard the pump against tipping over or falling down by fastening it at the lantern.

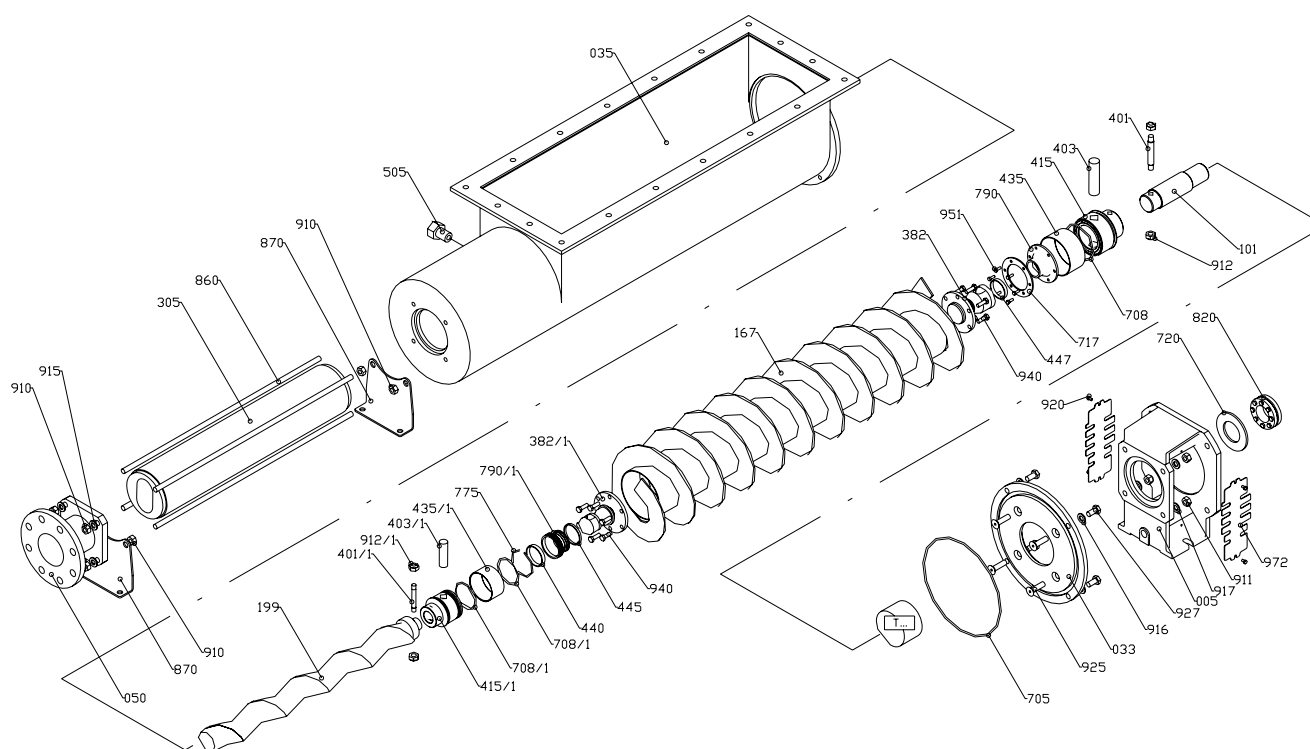
#### 7.4.2 Removal the Stator and the wide throat.

Disassembly of the stator (305) can be made considerably easier by first moistening the inner surface of the stator with antiseize agent (soft or liquid soap). If is possible, before removing the discharge flange (050) pour the antiseize agent into the opening between rotor and stator on the

## OPERATIVE INSTRUCTIONS

discharge flange side. Several Clockwise revolutions of the rotor will then distribute the antiseize agent over the inner surface of the stator and will reduce the friction between rotor and stator considerably.

- Remove the screws from the support feet (870).
- Remove the Nuts (910) from the Discharge flange (050).
- Remove the discharge flange and the support foot (870).
- Remove the ties rod (860) and the remains nuts (910).
- Remove the stator (305).
- Remove the screws from the lantern (927) and extract the wide throat (035).



### 7.4.3 Assembly the Stator and the wide throat.

- Reassemble the stator (305) in reverse order (see point 7.4.2).
- Installing the stator will be easier when using glycerine as a lubricant.

### 7.4.4 Removal the rotor.

- Remove the stator and the wide throat (see point 7.4.2).
- Place the dismantled unit - consisting in a block lantern (005) or a bearing house with a drive shaft (101) the auger (167) and rotor (199) - on the workbench with a wooden block supporting the rotor (199).
- Remove the 1° pin (401/1) that connect the Rotor (199) to the auger (167).
- Remove the rotor (199) from the auger (167).

### 7.4.5 Assembly the Rotor.

- Reassemble the Rotor in reverse order (see point 7.4.4).

## 7.5 Removal and Assembly of the connecting rod

### 7.5.1 Removal of the connecting rod.

## OPERATIVE INSTRUCTIONS

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- Remove the stator and the wide throat (see point 7.4.2).
- Unscrew the locking assembly (820) and remove the entire transmission.

### 7.5.2 Disassemble and assembly the two joints

The Transmission has two joints (one on the rotor side and the another one on the fe(male) drive shaft.

### 7.5.3 Disassemble the joint Nr.1 (from the drive female shaft side):

- Remove the six screws (940) from the joint.
- Remove the ring for sleeve (717).  
Drain the oil into a receptacle, and dispose of this oil in the proper manner.
- Remove the ring cover for bell (435).
- Remove the 2° pin (403), where a pin may not come out easily the metallic head of rotor should be supported on wooden blocks. Then the pin can be driven out with the help of a pin punch. This should be done with care.
- Remove the bell (415) from the spherical head seat (382).
- Finally take away the band-it (447) from the sleeve and remove the sleeve (790) with care from the spherical head seat (382).

### 7.5.4 Assembly the joint Nr.1 (from the female shaft side):

- Insert the o-ring (708) in its groove on the bell (415).
- Slip the ring for sleeve (717) and the ring cover for bell (435) over the spherical head seat (382).
- Push the sleeve (790) over the spherical head seat (382). To insert the sleeve you should use a screwdriver as a lever.
- Assembly the bell (415) on the spherical head seat (382), insert the 2° pin joint and couple the sleeve (790) with the bell (435) using the ring for sleeve (717) and its screws (951).
- Slide the ring cover for bell (435) towards the bell (415).
- Block the sleeve (790) with the spherical head seat (382) using the band-it (447).
- Finally fulfil with oil the joint using the hole on the bell (415). Slowly fill the oil into the joint and let the air way out.

7.5.5 Disassemble the joint Nr.2 (from the rotor side):The joints (Block rotor side) should be dismantled as follows:

- Remove the elastic ring (775) and the Covering joint Ring (435/1).
- Remove the pin (403/1).
- Drain the oil into a receptacle, and dispose of this oil in the proper manner.
- Remove the bell (415/1); Take care with the sleeve.
- Remove the following parts: Ring for sleeve -inside (440), Ring for sleeve -outer (445); Sleeve (790/1); Elastic ring (775) and remove the o-ring (708) from the bell (415/1).

### 7.5.6 Assembly the joint Nr.2 (from the rotor side):

To assembly the joint on the connecting rod following these operations:

- Insert the o-ring (708) in its groove on the bell (415).
- Slip the ring for sleeve (717) and the ring cover for bell (435) over the head of the coupling rod (120).
- Push the sleeve (790) over the spherical head seat (382/1). To insert the sleeve you should use a screwdriver as a lever.



## **OPERATIVE INSTRUCTIONS**

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- Assembly the bell (415) on the spherical head seat (382/1), insert the 2° pin joint and couple the sleeve (790) with the bell (435) using the ring for sleeve (717) and its screws (951).
- Slide the ring cover for bell (435) towards the bell (415).
- Block the sleeve (790) between the spherical head seat (382/1) and the Joint using the band-it (447).
- Finally fulfil with oil the joint using the hole on the bell (415). Slowly fill the oil into the joint and let the air way out. At last close the hole with a tap.

### **7.6 Disassemble and assembly the mechanical seal.**

#### **7.6.1 Disassemble the rotary mechanical seal face's.**

- Repeat the operations 7.4.2 / 7.4.4 /7.5.1
- Once you have slip the Auger (167) remove slowly from the shaft (101) the mechanical seal rotary face's (501) - don't use any tools use just your hands.

#### **7.6.2 Disassemble the mechanical seal counter ring face's.**

- When you conclude the operation 7.6.1 unscrew the screw (925) and remove the flange (033) from the block lantern.
- Remove the mechanical seal counter ring face's (501) from the flange (033).
- To remove the counter ring face you could delicately use an screwdriver. (501)

#### **7.6.3 Mechanical seal Reassembly**

- When you conclude the operation 7.6.2 clean the fe(male) drive shaft (101) and all the parts of the mechanical seal, check if the mechanical seal is damage - in this case change the mechanical seal.
- Clean the seal housing. \*
- Reassemble the mechanical seal in reverse order (see point 7.6.1/2).

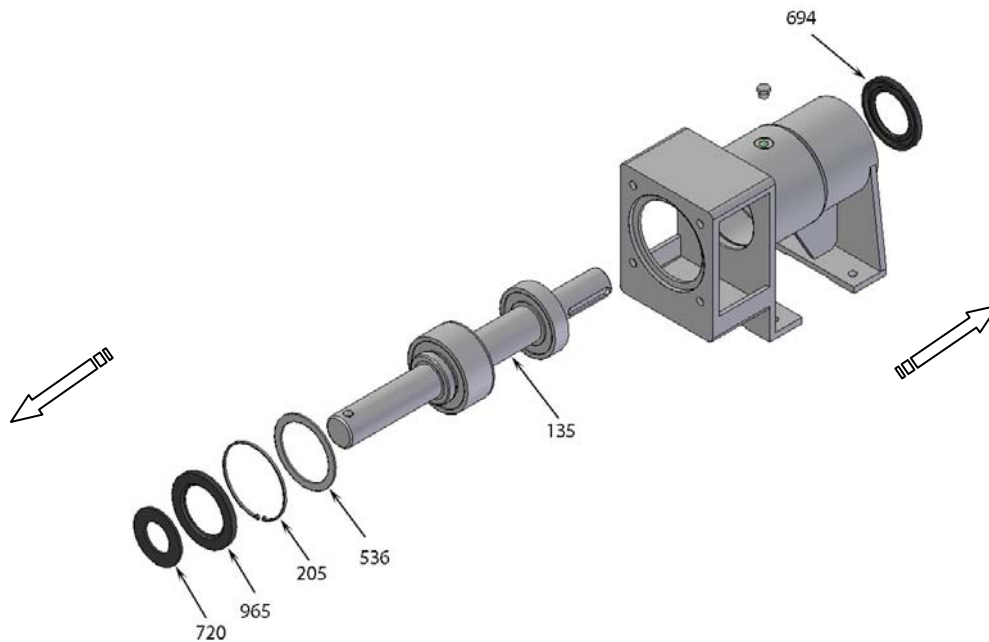
### **7.7 Bearing housing maintenance**

With a bearing housing pump version, the bearings have to be periodically lubricates to obtain a long life use.

#### **7.7.1 To disassembly the Bearing housing following these operations:**

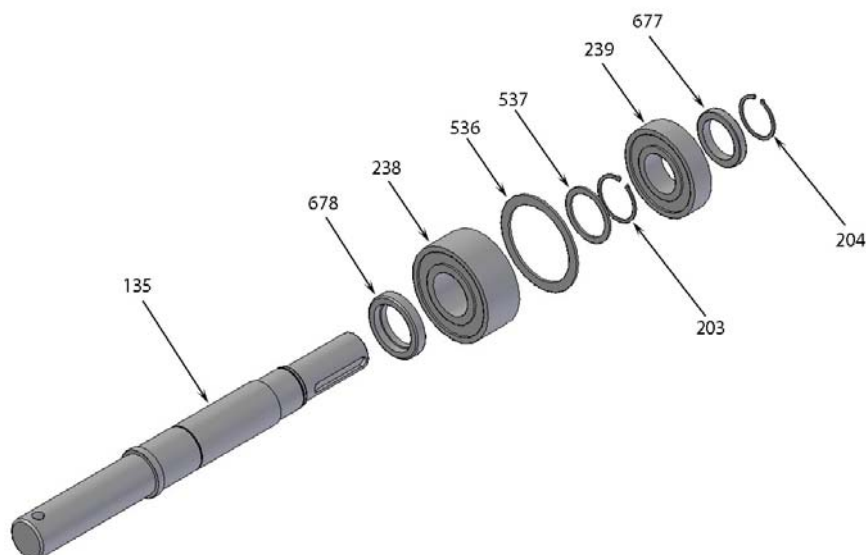
- Remove the auger (167) and Repeat the operations to remove the mechanical seal [7.6]
- Remove key (987) on the male drive shaft (135)
- Remove the followings articles: Splash guard ring (720), the oil ring (695), Elastic ring segger (205), Spacer ring (536), the oil ring (694), the other Elastic ring segger (204)
- At this point Remove the male drive shaft (135) from the housing bearing - eventually apply a puller device.

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At this point is possible remove the bearings (238 - 239) from drive shaft as following:

- Remove the elastic ring segger (204).
- Remove the bearing ring (677).
- Pull roller bearing (239) off from the male bare shaft (135).
- Remove the second elastic ring segger (203).
- Remove two spacer ring (536 -537)
- Pull roller bearing (238) off from the male bare shaft (135).
- Remove the bearing ring (677).



7.7.2 To assembly the Bearing housing following these operations:

- Reassemble the bearing housing in the reverse order (see point 7.4.1). For bearings (238 - 239) use grease or oil and a plastic hammer.

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### 8 Trouble - Shooting

Bedu progressive cavity pumps will be operate trouble-free if they are used in accordance with the offer and with this manual.

If operating problems arise, use this chart as a guide in locating the problem.

| Trouble-shooting guide |                       |                      |                        |                             |               |             |                  |   |                  |   |
|------------------------|-----------------------|----------------------|------------------------|-----------------------------|---------------|-------------|------------------|---|------------------|---|
| Pump will not start    | No suction capability | Discharge output low | Discharge pressure low | Discharge output fluctuates | Pump is noisy | Pump jammed | Drive overloaded | Stator and Rotor service life too short | Shaft seal leaks | Possible cause and remedies   |
| X                      |                       |                      |                        |                             |               |             | X                |   |                  | Pump or stator is new, to much static friction.<br>1) Fill the pump and If possible, run the pump in one way and in the another way till unblock the pump.<br>2) If necessary lubricate the rotor and the stator. |
| X                      |                       | X                    | X                      |                             |               |             | X                |   |                  | Power supply incorrect.<br>1) Check motor nameplate data. Test voltage, phase and frequency.  |
|                        |                       | X                    |                        |                             |               |             | X                | X                                       |                  | Discharge pressure too high.<br>1) Measure actual discharge pressure and compare to your specification.   |
| X                      |                       |                      |                        |                             |               | X           | X                |   |                  | Foreign matter or debris in pump.<br>1) Remove debris and correct any damage.   |
| X                      |                       |                      |                        |                             |               | X           | X                | X                                       |                  | Temperature of pumped liquid too high, stator swells.<br>1) Reduce liquid temperature, if liquid temperature cannot be reduces, use an undersized rotor.  |
| X                      |                       |                      |                        |                             |               | X           | X                | X                                       |                  | Liquid contains too many solids, causing blockages.<br>1) Check specification, increase liquid-to-solids ratio.   |
| X                      |                       |                      |                        |                             |               | X           | X                | X                                       |                  | Chemical attack on the stator.<br>1) Check specification, If necessary change the stator with a correct one.  |
| X                      |                       |                      |                        |                             |               | X           | X                | X                                       | X                | Liquid settles and hardens at pump shut-down.<br>1) Clean pump and rinse out after each use.  |
|                        |                       | X                    | X                      | X                           |               |             |                  |   |                  | Air in suction piping.<br>1) Check connections - If necessary increase NPSH.  |
|                        | X                     | X                    | X                      | X                           |               |             |                  |   |                  | Suction pipe leaks.<br>1) Check seals and connections.  |

Trouble-shooting guide

## OPERATIVE INSTRUCTIONS

| Pump will not start | No suction capability | Discharge output low | Discharge pressure low | Discharge output fluctuates | Pump is noisy | Pump jammed | Drive overloaded | Stator and Rotor service life too short | Shaft seal leaks | Possible cause and remedies   |
|---------------------|-----------------------|----------------------|------------------------|-----------------------------|---------------|-------------|------------------|---|------------------|---|
|                     |                       | x                    | x                      |                             |               |             |                  |   |                  | Pump speed too low.<br>1) If drive is variable speed, increase speed at pump.   |
|                     |                       | x                    | x                      | x                           | x             |             |                  | x                                       |                  | Discharge too high or suction head too low (cavitation).<br>1) Reduce suction losses; lower liquid temperature, install pump at lower elevation.                        |
|                     |                       | x                    | x                      |                             | x             | x           | x                | x                                       |                  | Pump running dry.<br>1) Fill pump; provide dry run protection; relocate suction piping.   |
|                     | x                     | x                    | x                      |                             | x             |             |                  | x                                       |                  | Stator or Rotor worn out.<br>1) Check rotor and stator. Replace the worn out parts.   |
|                     |                       |                      |                        |                             | x             |             |                  |   |                  | Joints worn.<br>1) Replace the worn out pieces.   |
|                     |                       |                      |                        |                             |               |             | x                |   |                  | Pump speed too high.<br>1) If drive is variable, set at lower speed.  |
|                     |                       |                      |                        |                             |               |             | x                |   |                  | Viscosity too high.<br>1) Measure specific gravity and compare to specified specific gravity.   |
| x                   |                       | x                    |                        |                             |               | x           | x                |   | x                | Pressure head too high.<br>1) Check pressure head with manometer. Reduce the pressure head by increasing the pressure pipe diameter or by shortening the pressure pipe. |
|                     | x                     |                      |                        |                             |               |             |                  |   | x                | Wrong direction of rotation.<br>1) Reverse polarity of drive motor.   |
|                     | x                     |                      |                        |                             |               |             |                  |   | x                | Mechanical seal worn or damage.<br>1) Replace the mechanical seal.  |
|                     |                       |                      |                        |                             | x             |             |                  |   | x                | Pump bearing worn (Housing bearing version).<br>1) replace bearings, lubricate seal   |

## OPERATIVE INSTRUCTIONS

### 9 RECOMMENDED SPARE PARTS

In general, we have all spare parts subject to wear in stock. Our subsidiaries and exclusive representatives also hold a certain stock. We recommend to keep an amount of spare parts, corresponding to the pump, in stock on site as follows:

| Description               | Small Set | Large Set | Position Code                                 |
|---------------------------|-----------|-----------|---|
| Rotor                     |           | 1         | 199   |
| Stator                    | 1         | 1         | 305   |
| Connecting rod (complete) |           | 1         | (120-401-912-708-790-951-403-447-717-435-415) |
| Mechanical seal           |           | 1         | 501   |
| Lantern O'ring            | 1         | 1         | 701   |

To ensure that you receive the part quickly, please provide the following information with your order:

- Specify the model number of your pump, serial number, and Year of construction (see the plate on the pump).
- Identification part code - as per the parts drawing.



# EC - Declaration of Conformity

## Manufacturer Details

### Tradename

Bedu Pompen BV

### Address

Poort van Midden Gelderland Rood 10, 6666 LT, Heteren, Netherlands

## Product Details

### Product Name

Excentric screw pumps

### Model (+series) Name

W

## Applicable Standards Details

### Directives

2006/42/EC (Machinery Directive)  
2014/35/EU (Low Voltage Directive)  
2014/30/EU (Electromagnetic compatibility)

### Standards

EN-ISO 12100:2010  
EN-IEC 60204-1:2006  
EN 809+A1/C1

## Additional information

No further details.

## Declaration

We hereby declare under our sole responsibility that the product(s) mentioned above to which this declaration relates complies with the above mentioned standards and Directives.

Business Unit Manager: Issued Date:

01/10 2014

## BEDU Pompen BV

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E-mail : info@bedu.nl

Website : www.bedu.eu

Marco Breunissen

Signature of representative(s)



The logo consists of the word "BEDU" in a large, bold, white sans-serif font, with "POMPEN" in a smaller, white sans-serif font below it. The text is centered within a dark teal square, which is itself centered within a white square border.

**BEDU**  
POMPEN

## made for your process

- Expert advice
- A customer-oriented organization that adapts to the requirements and wishes of your organization
- Innovative and customized solutions
- Breakdownservice, 24 hours a day, 7 days a week
- Technical service with extensive test facilities, working from our own workplace or at your location
- A fast and appropriate solution for all your issues
- Wide range of liquid pumps
- Repair, maintenance and revision

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