



# ELECTROBOMBAS DE AHIQUE SERIE KBZ

INSTALACIÓN Y MANTENIMIENTO

## MANUAL DE INSTRUCCIONES

Por favor, lea atentamente el manual antes del uso de la bomba.





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## **INTRODUCTION**

Thank you for selecting the Pump for your application.

This equipment should not be used for applications other than those listed in manual. Failure to observe this precautions may lead to a malfunction or an accident. In the event of a malfunction or an accident, the manufacturer will not assume any liability, after reading this operation manual, keep it in a location that is easily accedible. so that it can be referred to whenever information is while operating the equipment.

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## 1. Product specifications

- 1) The body of motor and pump is made of rigid cast iron for long-lasting durability.
- 2) Greatly increased maximum submersion depth due to double mechanical seal resistant to high pressure (0.5 Mpa).
- 3) Effective motor cooling due to discharge channel cast as part of the motor housing. Space economy by a top outlet.
- 4) Discharge 50 mm (2") to 150 mm (6"), motor 1,5 kw (2Hp) to 11 kw (15 Hp).
- 5) Hermetically sealed motor equipped build.in thermal protection.
- 6) Motor is dry type submersible induction motor ( 2 poles )

## 2. Operation conditions

- 1) The supply voltage should be within  $\pm 5\%$  of the rated voltage.
- 2) To use the pump, the water temperature should be between 0°C and 40°C.
- 3) The pump should be used to pump fluids such as oil, salt water, or organic solvents.
- 4) The pump must never be used to pump explosive liquids and should not be operated in an area from whom explosive elements might be present.
- 5) The pump must not be used in a partially disassembled state.
- 6) Maximum submerion depth: 50 m.

## 3. Prior to use

Check the following points after receiving the pump.

- 1) Check the pump for damage that may have occurred during shipment.
- 2) Inspect the pump for any cracks, dents, damaged threads, etc.
- 3) Check power cord ( and seal minder cord, if installed) for any cutss or damage.
- 4) Check for, and tighten any hardware that appears loose.
- 5) Carefully read all tags, decals and markings on the pump.
- 6) Important: Always verify that the pump nameplate, amps, voltage, phase, and HP ratings match ypur control panel and power supply.
- 7) Using a megger tester, measure the resistance between each of the core wires and the ground wire (green) to verufy the insulation resistance of the motor.  
Insulation resistance reference value=20MΩmin

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Warranty does not cover damage caused by connecting pumps and controls to an incorrect power source (voltage/ phase supply). Record the model numbers and serial numbers from the pumps and control panel on the front of this instruction manual for future reference. Give it to the owner or affix it to the control panel when finished with the installation.

## **4. Pump installation**

- 1) The pump have been evaluated for use with water or water based solutions. Please contact the manufacturer for additional information.
- 2) Risk of electric shock. The pump models do not come with electric plug connectors. To reduce the risk of electric shock, be certain that it is connected only to a properly grounded, grounding-type receptacle.
- 3) Attach a rope or lifting chain (not included) to the handle (or lifting rings) on the top of the pump.
- 4) Do not lift the pump by the power cable or discharge hose/ piping. Proper lifting equipment (rope/chain) must be used.
- 5) The pump are designed to operate fully or partially submerged. Avoid running the pump dry for extended periods of time.
- 6) As a general rule, the top discharge pumps can pump down to a level above the suction screen. Pumping lower than screen will permit air to enter the pump and cavitate, lose prime or become air bound.
- 7) Running the pump dry for extended periods of time may damage the seals and over-heat the motor.
- 8) Never place the pump on loose or soft ground. The pump may sink, preventing water from reaching the impeller. Place on a solid surface or suspend the pump with a lifting rope/chain. The pumps are provided with a suction.
- 9) Strainer to prevent large solids from clogging the impeller. Any spherical solids which pass through the strainer should pass through the pump.
- 10) For maximum pumping capacity, use the proper size non-collapsible hose or rigid piping. A check valve may be installed after the discharge to prevent back flow when the pump is shut off.

## **5. Electrical connections**

- 1) The pump must be connected to terminals or starting equipment installed at a level at which it cannot be flooded.
  - 2) All electrical equipment must always be earthed (grounded). This applies both to the pump and to any monitoring equipment.
  - 3) The electrical installation must conform to national and local.
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4) Check that the mains voltage and frequency agree with the particulars stamped on the motor rating plate.

## 6. Operation

1) Before starting: Checking the direction of rotation of the pump. At the instant of starting, the pump will jerk anti-clockwise when viewed from above. If the direction of rotation is incorrect, transpose two phases.

2) Reversal of the direction of rotation on a plug that has no phase transposing device may be done only by authorized person.

3) If the built-in motor protection has tripped, the pump will stop but will restart automatically when cooled down.

## 7. Service and maintenance

Pump must be disconnected from the electric power supply before proceeding to do any service or maintenance.

For a complete overhaul of the pump, please get in touch with your dealer. Service should only be performed by a qualified electrician.

1) Pump must be disconnected from the electric power supply before proceeding to do any service or maintenance.

2) Pump should be inspected at regular intervals for wear.

3) More frequent inspections are required if the pump is used in a harsh environment, such as pumping abrasive solids or high / low PH water.

4) Preventive maintenance should be performed to reduce the chance of premature failure.

5) Worn impeller wear plates and lip seals should be replaced.

6) Cut or cracked power cords must be replaced. (never operate a pump with a cut, cracked or damaged power cord.)

7) Seal oil should be changed at least twice a year.

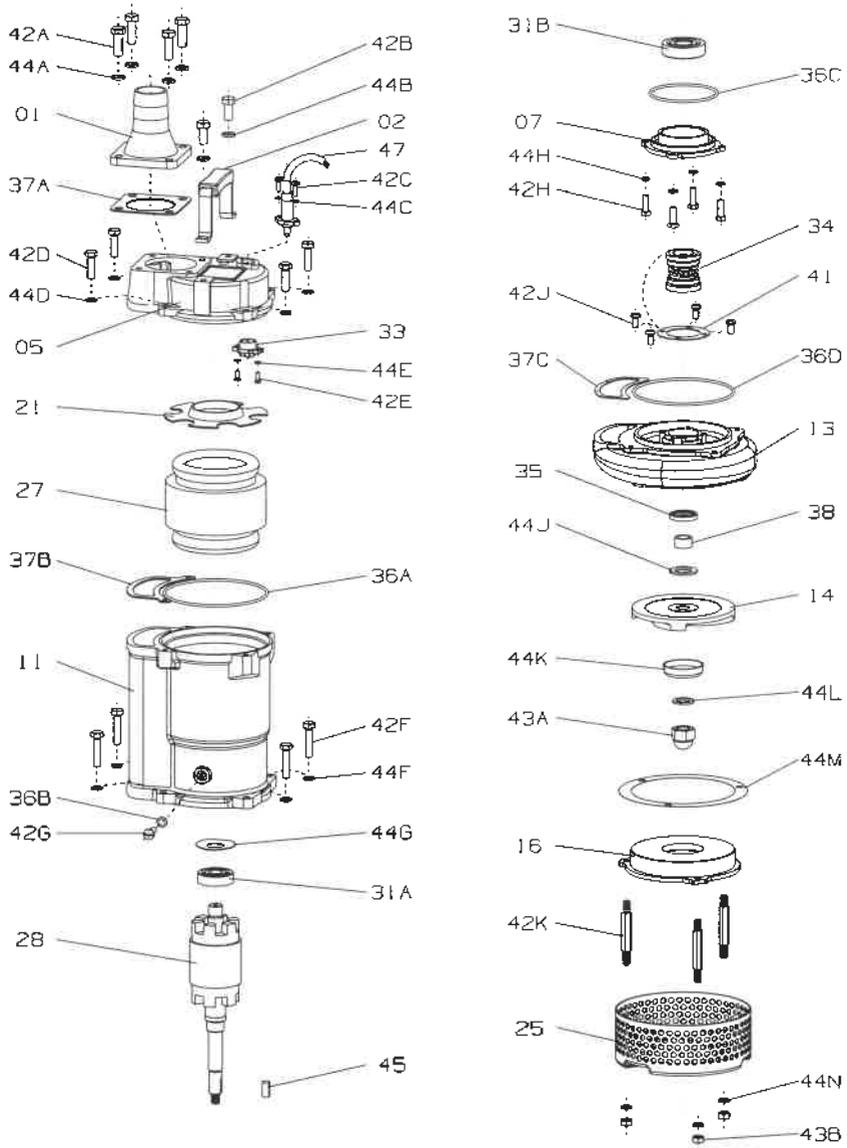
8) Maintenance should always be done when taking a pump out of service before storage.

9) After a longer period of storage, the pump must be inspected and the impeller must be rotated by hand before the pump is taken into operation. Check the seals and cable entry particularly carefully.

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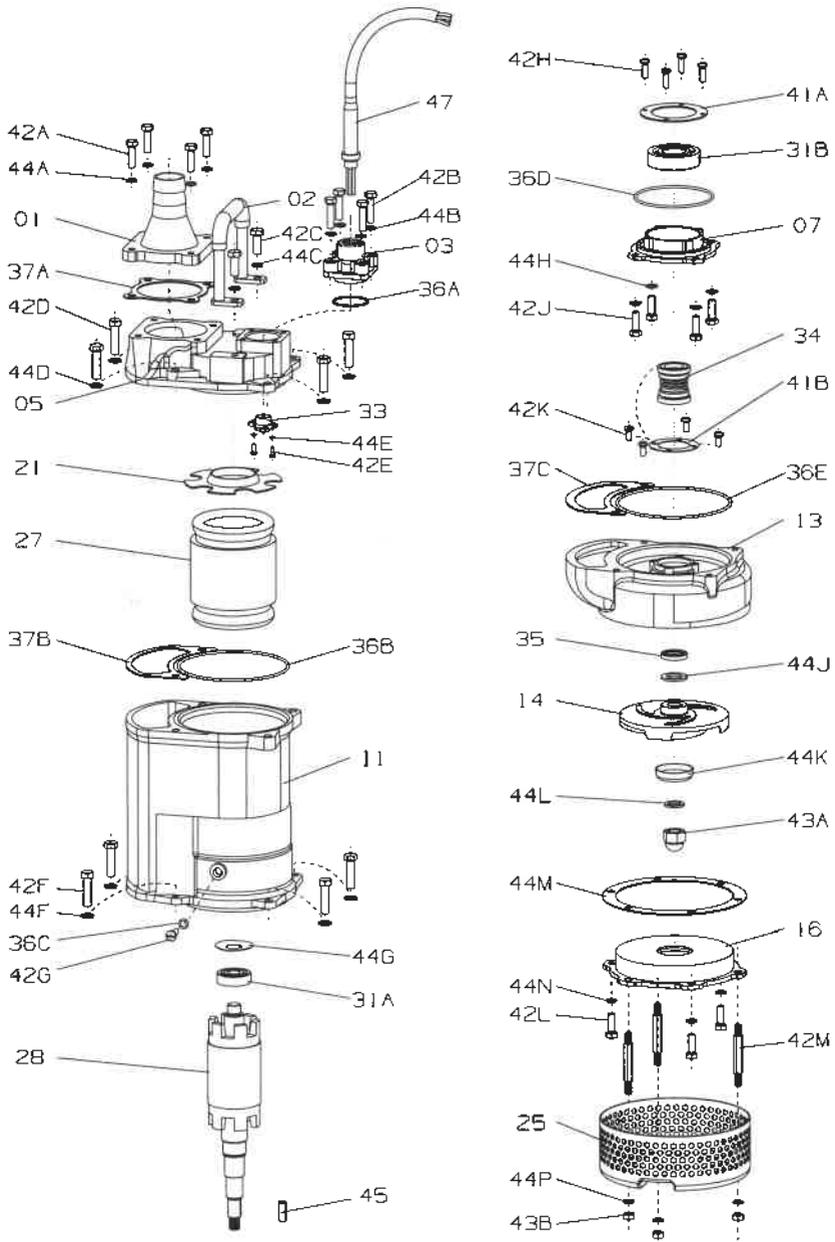
## 8. Designation of parts

8.1 NOTE: 1,5 kW and 2,2 kW have the same construction



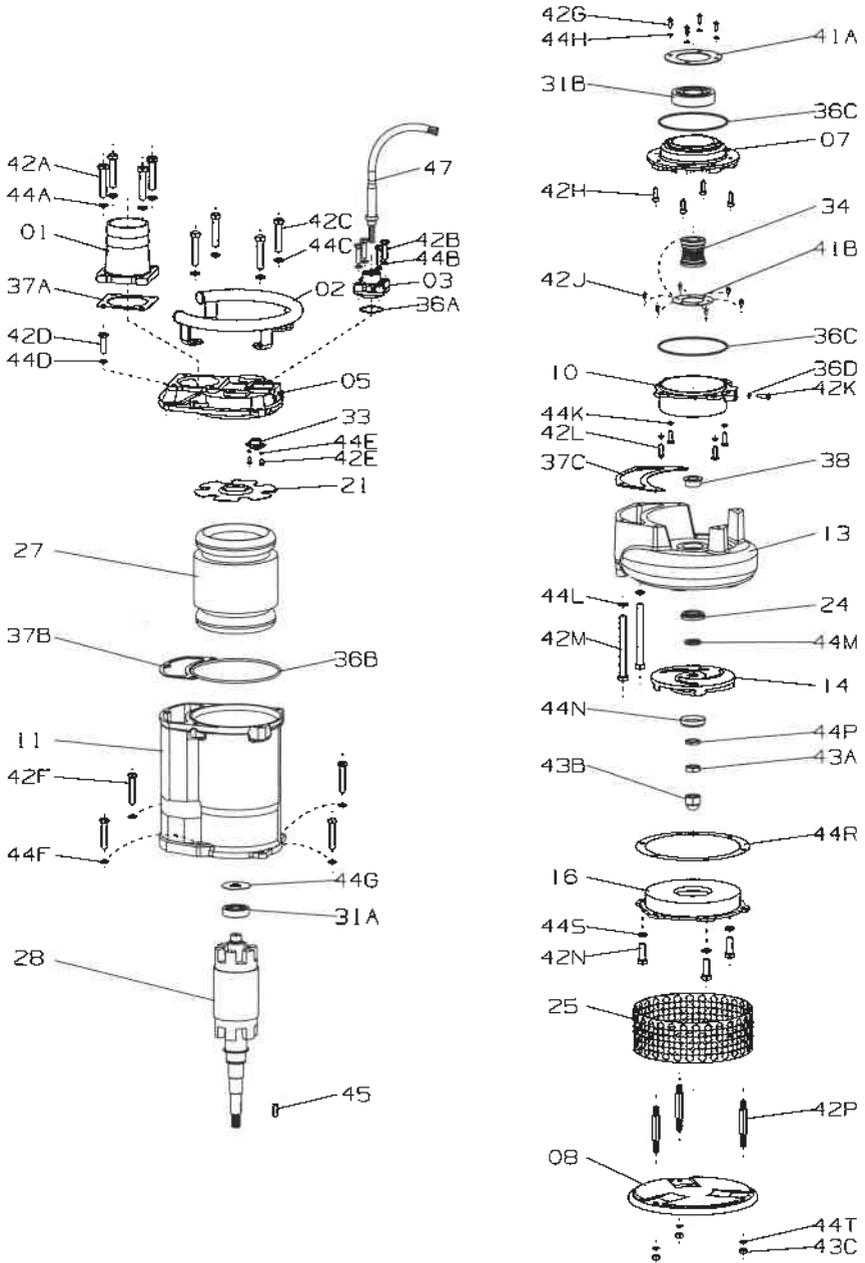
<b>Nº</b>	<b>Part Name</b>	<b>Nº</b>	<b>Part Name</b>	<b>Nº</b>	<b>Part Name</b>
<b>01</b>	Discharge head	<b>36B</b>	O'ring	<b>43A</b>	Nut
<b>02</b>	Handle	<b>36C</b>	O'ring	<b>43B</b>	Nut
<b>05</b>	Upper cover	<b>36D</b>	O'ring	<b>44A</b>	Washer
<b>07</b>	Bearing bracket	<b>37A</b>	Gasket	<b>44B</b>	Washer
<b>11</b>	Motor frame	<b>37B</b>	Gasket	<b>44C</b>	Washer
<b>13</b>	Pump casing	<b>37C</b>	Gasket	<b>44D</b>	Washer
<b>14</b>	Impeller	<b>38</b>	Shaft sleeve	<b>44E</b>	Washer
<b>16</b>	Inlet plate	<b>41</b>	Shim	<b>44F</b>	Washer
<b>21</b>	Protecting cap	<b>42A</b>	Screw	<b>44G</b>	Washer
<b>25</b>	Strainer	<b>42B</b>	Screw	<b>44H</b>	Washer
<b>27</b>	Stator	<b>42C</b>	Screw	<b>44J</b>	Washer
<b>28</b>	Rotor	<b>42D</b>	Screw	<b>44K</b>	Washer
<b>31A</b>	Bearing	<b>42E</b>	Screw	<b>44L</b>	Washer
<b>31B</b>	Bearing	<b>42F</b>	Screw	<b>44M</b>	Washer
<b>33</b>	Motor protector	<b>42G</b>	Screw	<b>44N</b>	Washer
<b>34</b>	Mechanical seal	<b>42H</b>	Screw	<b>45</b>	Key
<b>35</b>	Oil seal	<b>42J</b>	Screw	<b>47</b>	Cable
<b>36A</b>	O'ring	<b>42K</b>	Screw		

8. 2 NOTE: 3,7 kW and 5,5 kW have the same construction.



<b>Nº</b>	<b>Part Name</b>	<b>Nº</b>	<b>Part Name</b>	<b>Nº</b>	<b>Part Name</b>
<b>01</b>	Discharge head	<b>36C</b>	O'ring	<b>43A</b>	Nut
<b>02</b>	Handle	<b>36D</b>	O'ring	<b>43B</b>	Nut
<b>03</b>	Gland holder	<b>36E</b>	O'ring	<b>44A</b>	Washer
<b>05</b>	Upper cover	<b>37A</b>	Gasket	<b>44B</b>	Washer
<b>07</b>	Bearing bracket	<b>37B</b>	Gasket	<b>44C</b>	Washer
<b>11</b>	Motor frame	<b>37C</b>	Gasket	<b>44D</b>	Washer
<b>13</b>	Pump casing	<b>41A</b>	Shim	<b>44E</b>	Washer
<b>14</b>	Impeller	<b>41B</b>	Shim	<b>44F</b>	Washer
<b>16</b>	Inlet plate	<b>42A</b>	Screw	<b>44G</b>	Washer
<b>21</b>	Protecting cap	<b>42B</b>	Screw	<b>44H</b>	Washer
<b>25</b>	Strainer	<b>42C</b>	Screw	<b>44J</b>	Washer
<b>27</b>	Stator	<b>42D</b>	Screw	<b>44K</b>	Washer
<b>28</b>	Rotor	<b>42E</b>	Screw	<b>44L</b>	Washer
<b>31A</b>	Bearing	<b>42F</b>	Screw	<b>44M</b>	Washer
<b>31B</b>	Bearing	<b>42G</b>	Screw	<b>44N</b>	Washer
<b>33</b>	Motor protector	<b>42H</b>	Screw	<b>44P</b>	Washer
<b>34</b>	Mechanical seal	<b>42J</b>	Screw	<b>45</b>	Key
<b>35</b>	Oil seal	<b>42K</b>	Screw	<b>47</b>	Cable
<b>36A</b>	O'ring	<b>42L</b>	Screw		
<b>36B</b>	O'ring	<b>42M</b>	Screw		

8. 3 NOTE: 7.5 kW and 11 kW have the same construction



<b>Nº</b>	<b>Part Name</b>	<b>Nº</b>	<b>Part Name</b>	<b>Nº</b>	<b>Part Name</b>
<b>01</b>	Discharge head	<b>36D</b>	O'ring	<b>43C</b>	Nut
<b>02</b>	Handle	<b>37A</b>	Gasket	<b>44A</b>	Washer
<b>03</b>	Gland holder	<b>37B</b>	Gasket	<b>44B</b>	Washer
<b>05</b>	Upper cover	<b>37C</b>	Gasket	<b>44C</b>	Washer
<b>07</b>	Bearing bracket	<b>38</b>	Shaft sleeve	<b>44D</b>	Washer
<b>08</b>	Base plate	<b>41A</b>	Shim	<b>44E</b>	Washer
<b>10</b>	Seal bracket	<b>41B</b>	Shim	<b>44F</b>	Washer
<b>11</b>	Motor frame	<b>42A</b>	Screw	<b>44G</b>	Washer
<b>13</b>	Pump casing	<b>42B</b>	Screw	<b>44H</b>	Washer
<b>14</b>	Impeller	<b>42C</b>	Screw	<b>44K</b>	Washer
<b>16</b>	Inlet plate	<b>42D</b>	Screw	<b>44L</b>	Washer
<b>21</b>	Protecting cap	<b>42E</b>	Screw	<b>44M</b>	Washer
<b>24</b>	Neck ring	<b>42F</b>	Screw	<b>44N</b>	Washer
<b>25</b>	Stariner	<b>42G</b>	Screw	<b>44P</b>	Washer
<b>27</b>	Stator	<b>42H</b>	Screw	<b>44R</b>	Washer
<b>28</b>	Rotor	<b>42J</b>	Screw	<b>44S</b>	Washer
<b>31A</b>	Bearing	<b>42K</b>	Screw	<b>44T</b>	Washer
<b>31B</b>	Bearing	<b>42L</b>	Screw	<b>45</b>	Key
<b>33</b>	Motor protector	<b>42M</b>	Screw	<b>47</b>	Cable
<b>34</b>	Mechanical seal	<b>42N</b>	Screw		
<b>36A</b>	O'ring	<b>42P</b>	Screw		
<b>36B</b>	O'ring	<b>43A</b>	Nut		
<b>36C</b>	O'ring	<b>43B</b>	Nut		

## 9. Trouble shooting

<p>Pump fails to start</p>	<ol style="list-style-type: none"> <li>1. No power is supplied (i.e. power outage)</li> <li>2. Open circuit or poor connection of the cable.</li> <li>3. Impeller is obstructed</li> </ol>	<ol style="list-style-type: none"> <li>1. Contact the electric power company or an electrical repair shop.</li> <li>2. Check if there is an open circuit in the cable or wiring.</li> <li>3. Inspect the pump and remove the obstruction.</li> </ol>
<p>Pump starts but stops immediately, causing the motor protector to actuate.</p>	<ol style="list-style-type: none"> <li>1. Impeller is obstructed.</li> <li>2. Voltage drop.</li> <li>3. A 50 Hz model is operated at 60 Hz.</li> <li>4. The strainer is obstructed and the pump was operated dry for long hours.</li> <li>5. Motor abnormal.</li> <li>6. The pump is picking up too much sediment.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inspect the pump and remove the obstruction.</li> <li>2. Correct the voltage to the rated voltage, or use an extension cable that meets the standard.</li> <li>3. Check the nameplate and replace the pump or the impeller.</li> <li>4. Remove the obstruction.</li> <li>5. Repair the motor or replace with a new motor.</li> <li>6. Place a concrete block under the pump to prevent the pump from picking up sediment.</li> </ol>
<p>The pump's head and pumping volume is lower.</p>	<ol style="list-style-type: none"> <li>1. The impeller is worn.</li> <li>2. The hose may be kinked or clogged.</li> <li>3. The strainer is obstructed or buried.</li> <li>4. The motor rotates in reverse.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace.</li> <li>2. Minimize the number of bends in the hose. (In an area with a large amount of debris, use the pump in a meshed basket.)</li> <li>3. Remove the obstruction. Place a concrete block under the pump to prevent the pump from picking up sediment.</li> <li>4. Interchange the power supply terminal connection.</li> </ol>
<p>The pump generates noise or vibration.</p>	<p>The bearing of the motor may be damaged.</p>	<p>To replace the bearing, contact the dealer from whom you purchased the equipment.</p>





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