Operation Instructions

DODA Short & Long Shaft Pumps
Series AFI-ME
DODA and its authorised agent Hi-Tech Enviro Solutions, thank you for buying this DODA pump and invite you to read this booklet.

You will find all the necessary information for correct utilisation of the equipment. Please read the instructions carefully. Keep this booklet in a safe place. The content of this manual may be changed without notice in order to include changes or improvements to the units already delivered.

No reproduction or translation of any part of this booklet is permitted without prior authorisation.

**General Contents**

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1. Introduction

The pump is an open impeller centrifugal pump designed to transfer thick animal effluent or working residues from industrial plants which are too heavy to be easily pumped.

*Fibrous solids present in liquid manure can be cut up by means of an optional chopper, (blade/counter-blades and rotor/counter rotor) in order to pump them more easily.

Thanks to AFI pumps, liquid manure can be used to:
- pump to and from storage tanks.
- pump direct to fertilisation/irrigation systems.
- or loaded on tanker-trucks for transportation.

AFI pumps are fitted with Widia mechanical seals instead of the more normal gland packing. This method improves pump performance and decreases priming times and keeps liquid effluent out of the machine.

AFI pumps are manufactured in various models, with varied performance and power absorption. They are supplied in the following sizes:

Drive column from 0.6 metre up to 4 metres and from 10HP - 30HP electric motor size.

Doda products are designed and built to the “Highest quality to obtain maximum reliability and performance.”

1) Pump Body
2) Electric Motor
3) Drive Column
4) Delivery Pipe

- Chopper unit can be included as an optional extra
2. General warning

- Check that no component has been damaged during transportation. If damage has occurred, call your dealer immediately.
- Connection to the electrical supply must be carried out by a registered electrician (by connecting the power cables to the electric motor and to the power supply). DODA and Hi-Tech Enviro are not responsible for any electrical connections. Please follow instructions on the tag of the motor as well as the label showing the rotation direction.
- Before starting the pump check that the moving parts are adequately protected, as foreseen by the manufacturer.
- If the protection of a moving part is not possible, operation of the equipment must be carried out by the operator in conformity with New Zealand law.
- DODA and Hi-Tech Enviro take no responsibility for modifications altering the characteristics of the machine.
- DODA pumps must not be installed on structures that are not consistent with standard safety legislation.
- Before operating the pump ensure that you have completely understood the pump operation.
- The pump has been designed and built to pump water and effluent, not for chemical products. Pumping these substances can cause permanent damage to this machine.
- Check that the pump length is adequate for the depth of the tank.
- In all pumps with an oil-bath drive line, the driving column as well as the geared units (if present) must be filled with oil.
- Carefully avoid the pump rubber parts coming into contact with oil, grease or oil derivatives.
- Ensure that the pump remains submerged at all times during operation to avoid failure of mechanical seals. (See Diagram)

3. Pump loading and unloading

The pump loading and unloading operation can be carried out by a:

- Forklift
- Front end loader
- Hiab truck

N.B: The carrying capacity of the sling must be at least seven times as much as the machine total weight.

Warning: The machine must not be lifted by connecting to weak parts of the structure (delivery pipe, electric motor lifting eyes, etc...).

Warning: Before lifting ensure that the pump is well balanced.
4. **Preliminary checks**

Our pumps are supplied with lubricating oil in the drive column. Use 80W90 gear oil.

**INDICATIVE OIL QUANTITY LEVELS FOR DRIVING PIPE**

<table>
<thead>
<tr>
<th>Pump Length (Meters)</th>
<th>0.6</th>
<th>1.5</th>
<th>2.0</th>
<th>2.5</th>
<th>3.0</th>
<th>3.5</th>
<th>4.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil Quantity (Litres)</td>
<td>1.0</td>
<td>1.0</td>
<td>4.0</td>
<td>5.0</td>
<td>6.0</td>
<td>7.0</td>
<td>10.0</td>
</tr>
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5. **Operation**

- The pump must not be operated without oil (drive columns and gearboxes).
- Before operation, ensure that the entire structure (including machine and mounting system) is stable and disconnected from the electrical supply.
- Place the pump in the intended location position and check for stability.
- Check for the correct rotation direction of the motor.
- The machine is provided with the following label:

  ![Directional Arrow for Electric Motor](image)

- Connect to the supply.
- When reconnecting the power supply ensure that the motor rotation is clockwise as indicated by the arrow on the motor.
- During operation and maintenance, avoid contact between rubber parts (gaskets, etc.) and oil, grease or oil derivatives.
6. **Maintenance**

Before carrying out any maintenance operation stop the pump and disconnect it from the electrical supply.

- Check the oil level regularly and replace oil every 2 years (SAE80W90).
- Grease rotary parts every 1000 working hours (lubricators, bearings, etc...).

**N.B: DO NOT OVER GREASE MOTOR BEARINGS**

- At the end of the season, wash the pump to prevent liquid manure from solidifying, as this will cause damage over time.
- Wear to the blade, impellor and pump housing should be checked periodically. Replace if necessary.

Spare parts are available through your local DODA authorised agent.

7. **Health and safety rules**

- Always wear protective clothing (overalls, gloves, accident prevention shoes, etc...).
- Ensure good light for inspection of equipment during equipment inspections.
- As gases released by liquid manure are poisonous, check that:
  - the work area is adequately ventilated.
  - the equipment is not operated close to flames.
- The equipment must always be operated by authorised adults, and should not be accessible to children.
- Do not carry out maintenance when the equipment is in motion or when it is connected to the electrical supply.
- The equipment must only be operated with all safety protection correctly positioned, following instructions indicated in the previous paragraphs to avoid possible contact with moving parts. Do not damage, remove or modify any safety protection equipment.
- Where the pump delivery pipe is connected to pipes or hoses check that all clamps and joints are in good condition, to avoid the hazard of bursting and tearing.
- Use the farmer’s Health and Safety rules on site.
8. **Trouble shooting**

**Pump trips on high amps**

- Check cable size.
- Check distance from pump to shed for voltage drop.
- Check if agitating valve is closed on some tank systems.
- Check bearings on pump and motor.
- Check for blockage in pump or delivery.
- Check motor size is impellor size.
- Check distance from pump to irrigator (too close will give a higher amp reading).

**No liquid is being pumped**

- Disconnect outlet pipe from hydrant nearest to pump and turn it on to see if this is where the blockage is. If nothing is coming out then turn pump off and flush hose back to pump head to remove blockage. Turn the motor on again and if nothing comes out then you will need to remove the pump to clear blockage from pump or pipe.
- If the blockage is not at the pump then the hydrant line will need to be cleaned out after establishing where in the line it is blocked.
- It could also be a damaged irrigation line that needs to be repaired.