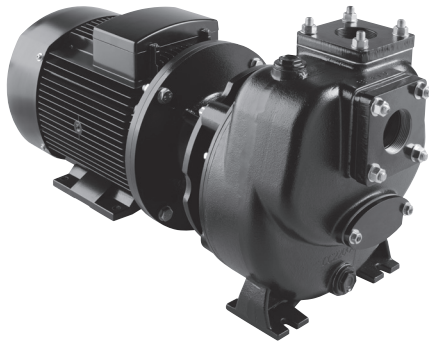


DAVEY

Jumbo Mukmova Pumps

Installation and Operating Instructions



These Instructions and the accompanying engine manufacturer's instructions must be delivered with the pump to the operator.

Please pass these instructions on to the operator of this equipment.

General Safety Information

Please read these instructions before installing and operating this equipment.



Failure to follow these instructions and comply with all applicable codes may cause serious bodily injury and/or property damage.



Do not pump flammable or explosive liquids such as petrol, diesel fuel, fuel oil, kerosene or other such liquids. Failure to follow this warning can result in personal injury and/or property damage and will void the warranty.

Prior to using this pump you must ensure that:

- The pump is installed in a safe and dry environment
- The pump enclosure has adequate drainage in the event of leakage
- Any transport plugs are removed
- The pipe-work is correctly sealed and supported
- The pump is primed (the pump casing is filled up with water) correctly
- The power supply is correctly connected
- All steps have been taken for safe operation

Product Description

Jumbo Mukmova pumps are robust, single stage, open impeller, self-priming centrifugal pumps with an internal armoured volute plate specifically designed to pump water with solids in suspension. They can pump effluent water, dairy or piggery waste, liquid food (for animals) transfer, bentonite sludge or sawdust muds. They are driven by a direct coupled electric motor, all mounted on a galvanised baseplate.

| Part Number | Description |
|-------------|---|
| MM07/3 | Jumbo Mukmova, 7.5kW, 415V, 3 phase, 50Hz motor |
| MM09/3 | Jumbo Mukmova, 9.2kW, 415V, 3 phase, 50Hz motor |

Jumbo Mukmova pumps are designed to provide quality performance under the following operating limits.

- Maximum solid size: 30mm x 40mm
- Maximum specific gravity: 1.1
- Minimum water temperature: 1°C
- Maximum water temperature: 90°C
- Maximum ambient temperature: 50°C

Handling and Storage

Delivery and Inspection

Upon receipt the unit check you have received the correct pump unit and thoroughly inspect it for any damage sustained during transit. Any equipment damage or shortfall should be immediately advised to your nearest Davey Dealer or Davey Support Centre.

Handling



NOTE: Do not use the eyebolt of the motor to lift the entire pump. The movement of these pumps should only be performed by suitably equipped and trained personnel. Use ropes, harness and lifting equipment suitable for the weight of the Jumbo Mukmova pumps.

Storage

If the unit is not to be installed immediately, it should be stored in a clean, dry and preferably warm environment. The pump and motor shaft should be rotated at least once a week to avoid the phenomenon of “brinelling” on the bearings and to avoid the sticking of the mechanical seal faces. Motors that are subject to extended storage where vibration exists should be fitted with bearing locks.

Installation

Location

The pump must be protected from the weather. If it is to be located outside, a weather-proof shelter must be placed over the pump and motor. This shelter must have ventilation to allow the motor to draw in air for cooling and have adequate space, so as not to restrict the flow of air to the motor. The shelter should be readily removable for access to the pump at a later date.

Locate the pump as close as possible to the liquid to be pumped. When a suction lift is unavoidable, install the pump as near to the water level as possible. You should always check the maximum permissible lift of the pump from its performance curve. The pump must be installed with sufficient space at the fan end of the motor to ensure the air intake is not obstructed.

Foundations

The pump unit should be mounted on a foundation that is substantial enough to withstand the weight of the unit and large enough to accommodate baseplate mounting holes so they can be securely fixed to avoid movement, particularly for dairy and piggery use.

Suction Piping

As this pump does not have a fixed column inlet, it may be used on a wide variety of collection pits without modification. Furthermore, by using a flexible, smooth bore, reinforced suction pipe, the pit may be almost fully emptied.

Suction piping must be selected of a size that would be equal, or larger, than the suction inlet (2" BSP female) of the pump. All suction piping and fittings should be free of air leaks. The maximum suction lift is limited to 6 metres (20') and the length of the suction pipe should not exceed approximately 8 metres (26').

The suction pipe must not trap air pockets that may cause intermittent operation of the pump. For this reason the suction pipes must have a continuous upward trajectory from the water source to the pump. Any "goosenecks" in the suction pipes must be avoided.

If bends in the suction pipes are required, long radius bends should be used. Also, to help ensure a less turbulent water entry into the pump a straight length of pipe should be installed between any bends and the pump inlet. This straight length should be at least 2.5 times the pump inlet diameter in length.

Importantly, pipework supports should be installed to both inlet and outlet pipes to ensure that they are supported independently of the pump flanges.

The Jumbo Mukmova pumps are self-priming (the suction pipe does not need to be full of water, although the pump casing does, for the pump to start pumping) and hence a foot valve is not required. Only fit a strainer on the end of the suction pipe where a blockage of the strainer is unlikely. For applications on a dam or

effluent pit, make sure the suction pipe is well submerged below the surface in order to reduce whirlpools and sucking of air into the suction pipe. Air inclusion via the suction pipe can result in cavitation, reducing the pump performance and eventually destroying the pump or its components.

Discharge Piping

The pump outlet is 2" BSP female and 2", or larger, polythene piping or equivalent should be used, particularly if a sprinkler is to be operated.

Electrical Connection



In accordance with AS/NZS 60335.2.41 we are obliged to inform you that this pump is not to be used by children or infirm persons and must not be used as a toy by children.



Power connections and wiring must be carried out by an Authorised Electrician.



The three phase 415 volt motors on this pump must have a magnetic contactor wired in which has correctly rated quick trip (M10) thermal overload devices; otherwise any failure will not be the responsibility of Davey.

Ensure all electrical connections are solid and continuous. Check motor starter and overloads for correct rating and trip setting. All circuit breakers or protective devices associated with the motor must be rated to suit motor running current and starting characteristics.

When the pump is connected and operating the phase balance should be checked. This should be within 5% variation. Rolling the leads may help to improve a small unbalance, but major phase unbalances will usually be attributed to an input power unbalance. This must be addressed before the pump is used. Davey recommends the use of overloads which also have the ability to detect "single phasing" or "dropped phase" conditions in the power supply.

Pump Operation

Starting the Pump



Do not attempt to run pump if the pump casing (pump body) has not been filled with water (primed). Severe damage will result to the mechanical seal.

- 1) Ensure the pump casing is full of water and open the suction valve if fitted.
- 2) Check power is off and rotate the pump shaft slowly to release any trapped air within the pump casing.
- 3) Close the discharge valve.
- 4) Check the direction of rotation (clockwise when looking at the cooling fan) on the pump casing or motor cover.
- 5) Prior to initial start-up, the following steps must be taken:
 - Insulation resistance test. On machines up to 600 volt, the minimum value should be 1MΩ.
 - Ensure the supply voltage and frequency correspond to the motor nameplate ratings.
 - Ensure shaft turns freely before initial start.
 - Measure stator resistance and record in a log book.
- 6) If this is correct you may now start the pump. When it reaches full speed you will see the pressure in the discharge line rise. Slowly open the discharge valve until the pump adjusts to maintain its duty point.

Davey® Repair or Replacement Guarantee

In the unlikely event in Australia or New Zealand that this Davey product develops any malfunction within warranty periods beginning from the date of original purchase due to faulty materials or manufacture, Davey will at our option repair or replace it for you free of charge, subject to the conditions below.

Should you experience any difficulties with your Davey product, we suggest in the first instance that you contact the Davey Dealer from which you purchased the Davey product. Alternatively you can phone our Customer Service line on 1300 367 866 in Australia, or 0800 654 333 in New Zealand, or send a written letter to Davey at the address listed below. On receipt of your claim, Davey will seek to resolve your difficulties or, if the product is faulty or defective, advise you on how to have your Davey product repaired, obtain a replacement or a refund.

Your Davey One Year Guarantee naturally does not cover normal wear or tear, replacement of product consumables (i.e. mechanical seals, bearings or capacitors), loss or damage resulting from misuse or negligent handling, improper use for which the product was not designed or advertised, failure to properly follow the provided installation and operating instructions, failure to carry out maintenance, corrosive or abrasive water or other liquid, lightning or high voltage spikes, or unauthorized persons attempting repairs. Where applicable, your Davey product must only be connected to the voltage shown on the nameplate.

Your Davey Guarantee does not cover freight or any other costs incurred in making a claim. Please retain your receipt as proof of purchase; you **MUST** provide evidence of the date of original purchase when claiming under the Davey Guarantee.

Davey shall not be liable for any loss of profits or any consequential, indirect or special loss, damage or injury of any kind whatsoever arising directly or indirectly from Davey products. This limitation does not apply to any liability of Davey for failure to comply with a consumer guarantee applicable to your Davey product under the Australian or New Zealand legislation and does not affect any rights or remedies that may be available to you under the Australian or New Zealand Consumer Legislation.

In Australia, you are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Should your Davey product require repair or service after the guarantee period; contact your nearest Davey Dealer or phone the Davey Support Centre on the number listed below.

For a complete list of Davey Dealers visit our website (davey.com.au) or call:



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* Installation and operating instructions are included with the product when purchased new. They may also be found on our website.