



# MUKMOVA MANURE & “TRASH” PUMP INSTALLATION AND OPERATING INSTRUCTIONS

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

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

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 correctly
- The power supply is correctly connected
- All steps have been taken for safe operation

Appropriate details for all of these items are contained in the following Installation and Operating Instructions. Read these in their entirety before switching on this pump. If you are uncertain as to any of these Installation and Operating Instructions please contact your Davey dealer or the appropriate Davey office as listed on the back of this document.

## Location

The pump must be protected from the weather. If it is to be located outside, a weatherproof shelter must be put over the pump and motor. This shelter must have ventilation to allow the motor to draw in air for cooling, and 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. Provision is made in the base of the pump for bolting down, and it is recommended that the pump be permanently secured, particularly for dairy and piggery use.

## Installation

### Power

In accordance with AS 3350.2.41 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.

| NOMINAL POWER SUPPLY | PHASE | CYCLES | MAXIMUM * RATED CURRENT | LOCKED ROTOR CURRENT |
|----------------------|-------|--------|-------------------------|----------------------|
| 230V $\pm$ 10%       | 1     | 50 Hz  | 11 Amps                 | 68 Amps              |
| 480V $\pm$ 10%       | 1     | 50 Hz  | 5.5 Amps                | 38 Amps              |
| 415V $\pm$ 6%        | 3     | 50 Hz  | 5.1 Amps                | 24 Amps              |

\* Maximum rated current is the maximum for the motor, and is higher than that required when pumping clean water - this is to allow a motor power reserve when pumping effluent.

## Single Phase



The single phase 240/480V motor on this pump is fitted with an in-built 240V thermal overload switch located under the terminal cover on the end of the motor. For 480V operation the terminal connections must be changed as per the wiring diagram included in the capacitor housing. A 480V overload and fitment kit is supplied with the pump. This overload is fitted into the endshield just above the terminal block.



Single phase units should be restricted to no more than 20 starts per hour.

## Three Phase



The three phase 415V TEFC motor on this pump must have a contactor wired in which has correctly rated quick trip (M10) thermal overloads, otherwise any failure will not be the responsibility of Davey.

Davey recommend the use of overloads which also have the ability to detect “single phasing” or “dropped phase” conditions in the power supply.

Three phase Mukmova models have been designed to allow for connection either side of the Capacitor Cover (marked “A” in figure one) on the motor. (NOTE: Three phase motors do not have capacitors fitted in the Capacitor Cover). This is achieved by way of either of the two 19mm access holes (marked “B” in figure one). The access holes are designed to accept most standard cable grommets. The unused hole can be sealed by inserting the plug enclosed with the pump. To connect a three phase Pressure Pump start by removing the Terminal Cover (“C”).

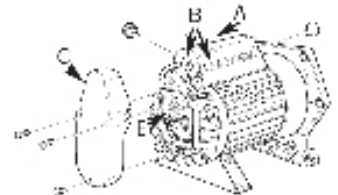


Figure One

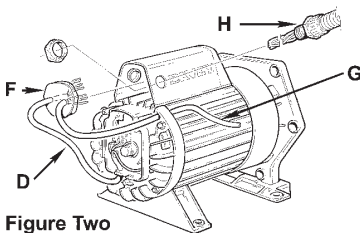


Figure Two

A short four core flex (“D”) is fitted from the motor terminals (“E”). This lead is inserted through the blanking grommet (“F”). Pressure switch or other control leads (“G”) can be fitted as well. Incoming power (“H”) can be fitted through the preferred access hole, and terminated as shown in Figure Three. A termination kit is available if required.

Insert the blanking grommet (“F”) into the capacitor cover (“A”). Fix the short lead (“D”) into the path provided in the non-drive endshield and replace the terminal cover (“C”).

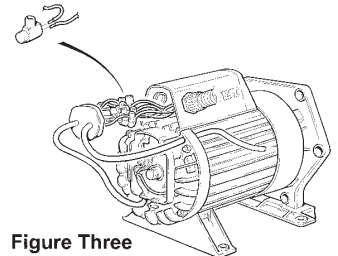


Figure Three

### IMPORTANT NOTE: THREE PHASE MODELS ONLY



Before finalising wiring connections, check that motor rotates in direction of arrow (clockwise when shaft is viewed from wiring connection end). To alter rotation, change any two power leads at motor terminals.

When the unit 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 unbalance will usually be attributed to an input power unbalance. This must be addressed before the pump is used.



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



Note: Minimum three phase voltage supply at the motor must not fall below 374 volts, otherwise motor damage may result which is not claimable under Guarantee.



A registered electrician is required to directly wire in the pump. EXTENSION LEADS MUST NOT BE USED.

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

The suction inlet to the pump is 2<sup>1</sup>/<sub>2</sub>” BSP female and for optimum performance, 2<sup>1</sup>/<sub>2</sub>” or larger smooth bore reinforced suction hose should be used. Maximum suction lift of the pump should be limited to 6 metres (20 ft) and the length of suction pipe should not exceed approximately 8 metres.



**NOTE:** The use of suction piping smaller than 2 1/2" I.D. will result in decreased pump performance. When pumping dairy or piggery slurry, no inlet strainer should be fitted to the end of the suction hose as this may easily be blocked.

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

## Operation

When first installed the pump must be filled with water at the priming hole adjacent to pump outlet. A weighted flap valve on the suction inlet retains the liquid within the pump for subsequent operation.

As this pump has excellent self priming characteristics, there is no need to fit a foot valve or fill the suction pipe.

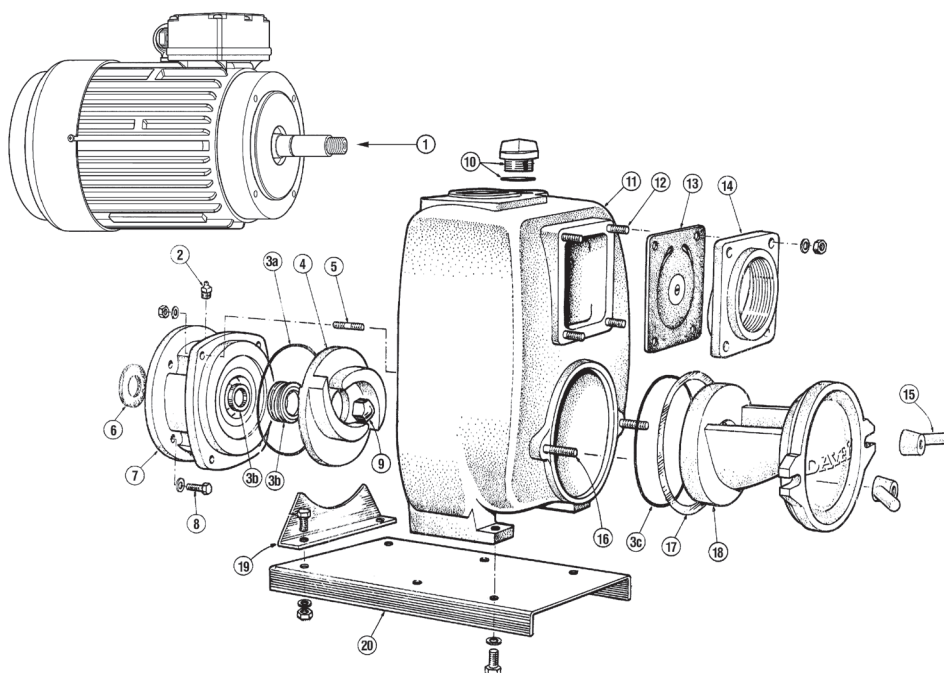
An automatic float switch may be wired into the contactor coil to operate the pump.



**The pump is capable of pumping up to 3/4" dia. solids in suspension, however pumping stones or hard solids of any size for extended periods will shorten the pump's life. A coarse screen should be installed at the entrance to the collection pit to prevent large items including rocks, sticks and some straw from entering.**

## Maintenance

1. **Monthly** grease the seal area at the nipple (see exploded view - Item 2) located in the yoke (Item 7) joining pump and motor. Use **BP "ENERGREASE"** multi purpose LS2 or equivalent.
2. Regular flushing of the pump with clean water is good practice when pumping dairy or piggery manure, and will prevent build up and the need to unclog frequently.
3. If the pump has been idle for a long period, remove the inspection cover. (Item 18 located below the pump inlet), and ensure pump impeller can rotate freely.
4. To clean any blockages, the large inspection hole provides excellent access to pump impeller area for cleaning. Periodic cleaning out of the pump is good practice.



## Impeller Clearance Adjustment

The Mukmova pump has an open face impeller (see the exploded view – Item 4). As this pump is used to pump manure and “trash”, the impeller will wear over time.

The optimal performance of the pump is maintained by close fit of the inspection cover (Item 18) to the front of the impeller. This close fit is maintained over the life of the pump by periodic removal of the impeller shims (Item 17).

When the pump is manufactured the correct number of shims will be inserted for peak performance. As this performance declines over time, impeller shims will need to be removed to optimise the performance.

If all shims are removed and performance continues to decline, it is time to replace the impeller.

## Spare Parts

Should any parts be required, be sure to quote **Model and/or Build** number from the nameplate on the pump.

# Davey® Repair or Replacement Guarantee

In the unlikely event in Australia or New Zealand that this Davey product develops any malfunction within one year of 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.

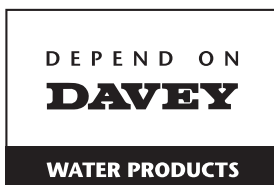
Your Davey One Year Guarantee does not cover freight or any other costs incurred in making a claim. Please retain your receipt as proof of purchase; you **MUST** provide evidence of the date of original purchase when claiming under the Davey One Year Guarantee.

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 Customer Service Centre on the number listed below.

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



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P/N 47755-6 supersedes P/N 47755-5

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