DAYLIFF

# DWW/DWV/DWC
# Drainage Pumps

DWW 05A

DWW 10A/20A

DWW 30M/50M/75M

DWV 30M/50M/75M

DWV 05A/10

DWC

# Installation & Operating Manual

# INDEX


1. **PUMP SPECIFICATIONS** ..... 1

2. **INSTALLATION** ..... 3

3. **ELECTRICAL CONNECTIONS** ..... 4

4. **MAINTENANCE** ..... 4

5. **TROUBLE SHOOTING** ..... 5

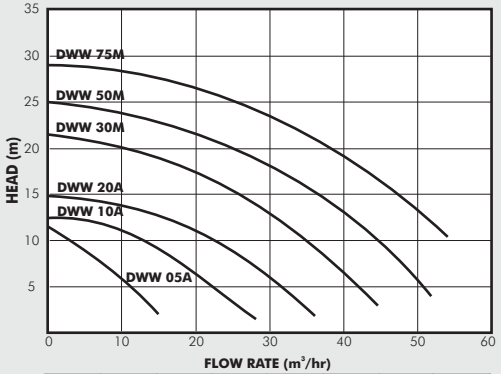
6. **WARRANTY** ..... 7

**Thank you for choosing Dayliff DW pump. The pump has been manufactured to the highest standards and if operated correctly should give many years of efficient and trouble free service. Careful reading of this instruction manual is therefore extremely important and if you have any queries please refer them to your retailer.**

# 1. PUMP SPECIFICATIONS

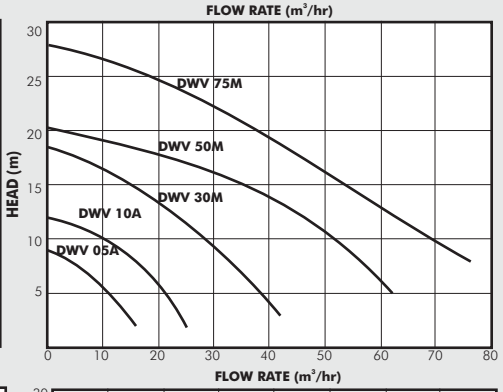
**DWW**

DWW 05A DWW 10A/20A DWW 30M/50M/75M

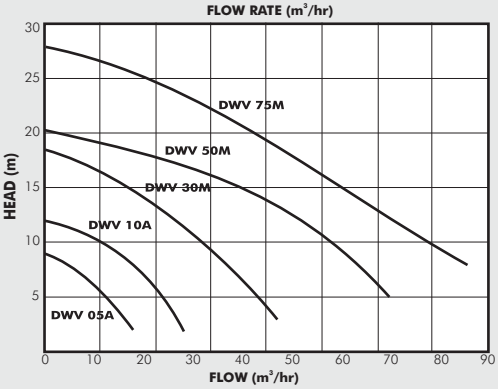



**DWV**

DWV 30M/50M/75M DWV 05A/10A




**DWC**



**DWW**

The Dayliff DWW range of open impeller portable submersible pumps are designed for pumping waste water containing particles and impurities in industrial and domestic applications. They feature cast iron impellers and pump bodies, double mechanical seals, NBR oil seals and stainless steel strainers and are supplied with 10m of cable. Single phase pumps up to 1.5kW are supplied with level switches for automatic operation while 3 phase pumps require external switching control.

**DWV**

The Dayliff DWV range of submersible pumps are designed to handle industrial and domestic waste water and sewage and are especially suitable for pumping water containing a high proportion of solid particles including threads and fibres. The pumps are of heavy duty construction featuring cast iron vortex impeller which minimises clogging, cast iron pump casing, double mechanical seal and NBR oil seal. They are designed for fixed installation with discharge connection suitable for guide rail mounting. All pumps are supplied with 10m of H07RNF cable.

**DWC**

The Dayliff DWC range of heavy duty submersible pumps are designed to handle industrial and domestic waste water and sewage with a specially designed cutter impeller. They are suitable for pumping water containing a high proportion of solid particles including threads and fibres. Pump construction is cast iron semi-open impeller with Tungsten Carbide cutting edge, cast iron casing, double mechanical seal and NBR oil seal. The pumps are designed for free standing installation and are supplied complete with 10m of H07RNF cable and level switches for automatic operation.

**OPERATING CONDITIONS**

***Pumped liquids:*** Thin, chemically non-aggressive liquids, containing some impurities and fibres

***Max. Liquid temperature:*** $+40^{0}$C

***Max. Operating Depth:*** 10m

***Min Immersion Depth:*** **DWW** -132mm
**DWV** - 160mm
**DWC** - 310mm

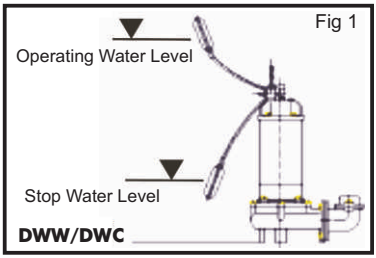
## Pump Data

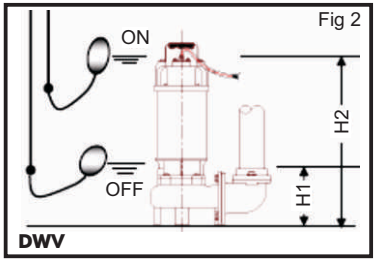
| Model | Voltage (V) | Power | | Current (A) | Max. Particle Size (mm) | Outlet | Dimensions (mm) | | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|
| | | HP | kW | | | | H1 | H2 | |
| DWW 05A | 1x240 | 0.5 | 0.37 | 4 | 6 | 2″ | 97 | 373 | 14 |
| DWW 10A | 1x240 | 1 | 0.75 | 6 | 6 | 2″ | 155 | 451 | 24 |
| DWW 20A | 1x240 | 2 | 1.5 | 12 | 6 | 3″ | 164 | 536 | 35 |
| DWW 30M | 3x415 | 3 | 2.2 | 5.2 | 6 | 3″ | 164 | 556 | 35 |
| DWW 50M | 3x415 | 5 | 3.7 | 8.6 | 6 | 4″ | 215 | 605 | 57 |
| DWW 75M | 3x415 | 7.5 | 5.5 | 12 | 6 | 4″ | 215 | 645 | 63 |
| DWV 30M | 3x415 | 3 | 2.2 | 5.2 | 35 | 3″ | 153 | 568 | 35 |
| DWV 50M | 3x415 | 5 | 3.7 | 8.6 | 50 | 4″ | 220 | 638 | 57 |
| DWV 75M | 3x415 | 7.5 | 5.5 | 12 | 50 | 4″ | 220 | 678 | 63 |
| DWC 10A | 1x240 | 1 | 0.75 | 6 | 22 | 2″ | 416 | 64 | 84 |
| DWC 20A | 1x240 | 2 | 1.5 | 12 | 22 | 2″ | 541 | 115 | 169 |

***Enclosure Class:*** F ***I nsulation Class:*** IP68 ***Speed:*** 2900rpm

# 2. INSTALLATION


***If the pump is operated continuously for an extended period of time in a dry condition or at the lowest water level, the motor will overload and shut down. Prolonged overheating will shorten pump service life. Do not start the pump again in such a situation until after the motor has completely cooled.***




- Lower the pump into the well by attaching a chain or rope to the grip to install the pump. For DWV models firmly locate the discharge connection on a base in the sump and mount to guide rails suitably supported at the sump top level. The pump rail guide should then be slid down the pipes until the pump is firmly seated on the discharge connection.
- The pump must not be installed on its side or operated under dry condition. Ensure that it is installed upright on a secure base and is not resting in silt or sand _____ normal operation.
- Install the pump at a location in the tank where there is least turbulence.
- If there is flow inside the tank, support the piping appropriately. The pipes must be installed such as to prevent air lock, if unavoidable, an air release valve must be installed wherever such air pockets are likely to develop.

- The end of discharge pipe should not be submerged as back flow will result when the pump is shut down.
- **WARNING**: For automatic pumps, install a float switch as shown in Fig-1. The pump may not start if the float switch touches the wall of the water tank or the piping.
- The Pump should be connected to either a rigid pipe or hose. The diameter should be no less than the pump outlet.
- To avoid dry running, on manual pumps an external float switch can be installed as shown in Fig-2. Always ensure to maintain a safe operating water level.
- Ensure to never lift the pump by the main supply cable or permanent damage will occur.

## 3. ELECTRICAL CONNECTIONS


***The installer is responsible for making electrical connections to the mains supply in compliance with relevant local regulations. Ensure that a professional electrician carries out the electrical connections and that the following guidelines are followed:-***

- All installations must be provided with an isolator to cut off mains power supply and coarse current protection in the form of a fuse or MCB rated at 2-3 times the full load current as given on the pump plate.
- Ensure that the power supply rating complies with the specification on the pump rating plate.
- Electrical connections must be made according to details in the pump junction box cover and effective earthing must be provided according to local regulations.
- Single-phase motors are protected against overloads by a thermal overload fitted in the motor windings. Three phase motors should be installed with remote starter.

## 4. MAINTENANCE

- Regularly check the current readings. If fluctuating, foreign matter may be clogging the pump. Also if pump output reduces, foreign matter may be present and the pumps hydraulic end should be checked and cleaned.
- Measure the insulation resistance monthly. The value should be more than 1M ohm.

If resistance starts to fall rapidly even with an initial valve of over 1M ohm, this will be an indication of a reduction in motor integrity and a qualified electrician should be consulted.

- To prolong the service life of the mechanical seal, replace the oil in the mechanical seal chamber once a year.
- Water mixed with the oil or cloudy mixtures are indications of a defective mechanical seal which requires replacement. When replacing the oil, lay the pump on its side with filler plug on top and inject suitable amount of turbine oil No.32 (ISO VG-32)
- After 3-5years conduct an overhaul of the pump, for general maintenance. Replace the appropriate part when the following conditions are apparent.

| | Mechanical Seal | Oil Filter Plug Gasket | Lubrication Oil | O-ring |
|---|---|---|---|---|
| Replacement guide | Whenever oil in mechanical seal chamber is cloudy | Whenever oil is replaced | Whenever cloudy or dirty | Whenever pump is overhauled |
| Frequency | Annually | Half yearly | Half yearly | Annually |

## 5. TROUBLE SHOOTING

| PROBLEM | POSSIBLE CAUSE | SOLUTION |
|---|---|---|
| Pump does not start or starts but immediately stops | No power | Check electrical connections |
| | Electrical fault | |
| | Faulty circuit breaker | Replace |
| | Water level is below float switch | Raise water level |
| | Float switch is not in appropriate level | Adjust the position of the float switch |
| | Float switch defective | Repair or replace |
| | Foreign matter clogging pump | Remove foreign matter |
| | Motor burned out | Repair or replace |
| | Motor bearing broken | Repair or replace |

| PROBLEM | POSSIBLE CAUSE | SOLUTION |
|---|---|---|
| Pump running but stops after a while | Motor under protection from dry running | Raise water level |
| | Motor under protection from high liquid temperature | Lower liquid temperature |
| | Reverse rotation | Correct rotation |
| Pump vibrates, causing excessive operating noise | Reverse rotation | Correct rotation |
| | Pump clogged with foreign matter | Disassemble and remove foreign matter |
| | Piping resonance | Improve piping |
| | Gate valve closed | Open gate valve |
| Does not pump adequate volume | Reverse rotation | Correct rotation |
| | Electrical fault | Check electrical connections |
| | Discharge head is high | Recalculate and adjust |
| | High frictional loss | Resize pipe |
| | Air suction | Raise water level or lower pump |
| | Leaking from discharge pipe | Inspect and repair |
| | Clogging of discharge pipe | Remove foreign matter |
| | Foreign matter in suction inlet | Remove foreign matter |
| | Foreign matter clogging pump | Remove foreign matter |
| | Worn out impeller | Replace impeller |
| Over current | Unbalanced current and voltage | Wait for supply to stabilise |
| | Significant voltage drop | |
| | Motor phase malfunction | Inspect connections |
| | Reverse rotation | Correct rotation |
| | Lower head. Excessive volume of water | Replace pump with low head pump |
| | Foreign matter clogging pump | Remove foreign matter |
| | Motor bearing worn or damaged | Replace bearing |

# 7. TERMS OF WARRANTY

## i) General Liability

- In lieu of any warranty, condition or liability implied by law, the liability of Davis & Shirtliff (hereafter called the Company) in respect of any defect or failure of equipment supplied **is limited to making good by replacement or repair** (at the Company's discretion) defects which under proper use appear therein and arise solely from faulty design, materials or workmanship within a specified period. This period commences **immediately after the equipment has been delivered to the customer** and at its termination all liability ceases. Also the warranty period will be assessed **on the basis of the date that the Company is informed of the failure**.

- This warranty applies solely to equipment supplied and **no claim for consequential damages**, however arising, will be entertained. Also the warranty specifically excludes defects caused by fair wear and tear, the effects of careless handling, lack of maintenance, faulty installation, incompetence on the part of the equipment user, Acts of God or any other cause beyond the Company's reasonable control. Also, any repair or attempt at repair carried out by any other party **invalidates all warranties**.

## ii) Standard Warranty

If equipment failure occurs in the normal course of service having been competently installed and when operating within its specified duty limits warranty will be provided as follows:-

- Up to two years - The item will be replaced or repaired at no charge.
- Over two years, less than three years - The item will be replaced or repaired at a cost to the customer of 50% of the Davis & Shirtliff market price.

The warranty on equipment supplied or installed by others is conditional upon the defective unit **being promptly returned free to a Davis & Shirtliff office** and collected thereafter when repaired. No element of site repair is included in the warranty and any site attendance costs will be payable in full at standard chargeout rates. Also proof of purchase including the purchase invoice must be provided for a warranty claim to be considered.

**DAYLIFF** is a brand of **Davis & Shirtliff**

for enquiries contact

**Davis & Shirtliff, Ltd.**

P.O. Box 41762 - 00100, Nairobi, Kenya

Tel: 6968000/ 0711 079 000

or visit

**www.dayliff.com**

for details of the nearest branch or stockist

**INS253B-10/14**