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

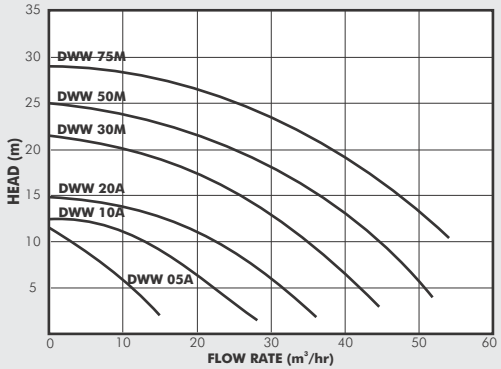
INDEX

Congratulations on selecting a Dayliff DW Pump. They are manufactured to the highest standards and if installed and operated correctly will give many years of efficient and trouble free service. Careful reading of this Installation Manual is therefore important, though should there be any queries they should be referred to the equipment supplier.

1. PUMP SPECIFICATIONS

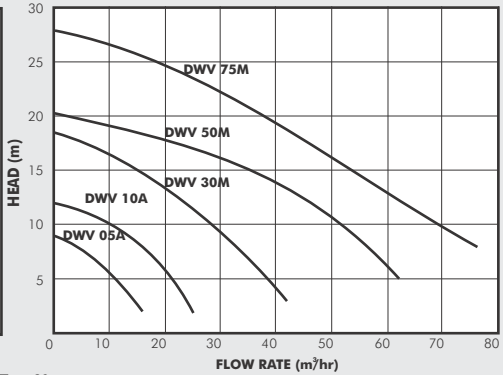
DWW

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

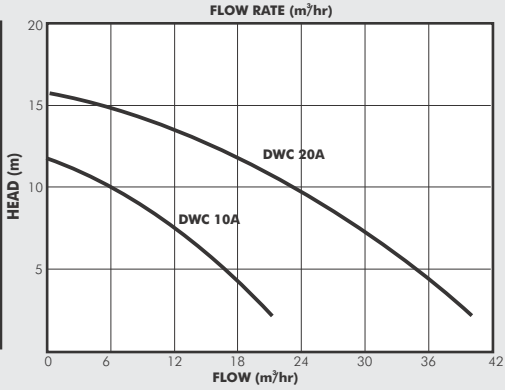


DWV

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 05A	1x240	0.5	0.37	4	35	2″		410	13.5
DWV 10A	1x240	0.1	0.75	6	35	3″		464	18.5
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

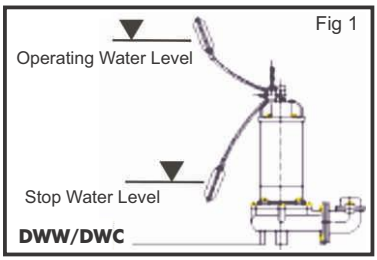
Enclosure Class: F ***Insulation Class:*** IP68 ***Speed:***2900rpm

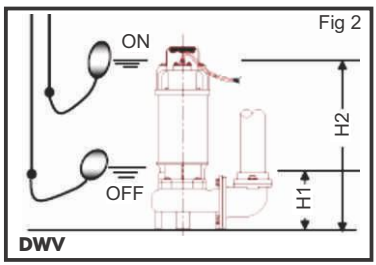
2. INSTALLATION

WARNING

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 amount 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

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 Dayliff 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

General Terms

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 one year - The item will be replaced or repaired at no charge.**
- **Over one year, less than two year - 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**

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for details of the nearest branch or stockist

INS253B-10/14