DAYLIFF

DQ
Circulator Pumps

Installation & Operating Manual

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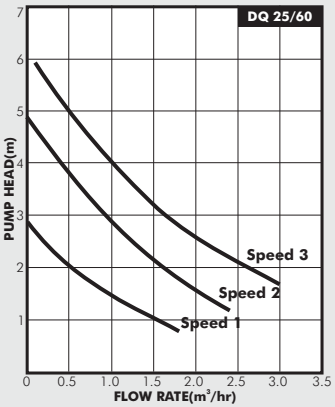
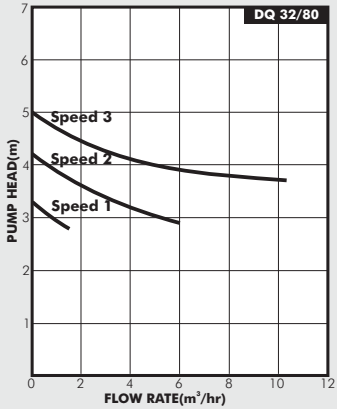
Thank you for choosing Dayliff DQ circulator pump. The pump has been manufactured to the highest standards and if operated correctly should give many years of efficient and trouble free service. Careful reading of this instruction manual is therefore extremely important and if you have any queries please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

1. PUMP SPECIFICATIONS





PUMP

DAYLIFF DQ circulator pumps are designed for hot water circulation in heating, hot water, cooling or air conditioning applications in open or closed systems. A particular feature of the pump design is that the motors have three speed settings so it is possible to select the ideal flow to meet system requirements.

Pump construction is cast iron pump housing, glass fibre reinforced polypropylene impeller, stainless steel rotor and ceramic bearing support. All pumps are supplied complete with female threaded BSP union connections.

MOTOR

The integral 2-pole asynchronous squirrel-cage motor is designed to operate at three speeds. All motors include an inbuilt capacitor and overload protection and can be connected directly to mains supply through a 5A fuse or MCB.

Enclosure Class: IP54 ***Insulation Class:*** F
Voltage: 1x240V ***Speed:*** 2900rpm

OPERATING CONDITIONS

Pumped Liquid: Thin, clean, chemically non-aggressive liquids without solids or fibres.

Max Fluid Temperature: -10^{0}C -110^{0}C. Note the liquid temperature should be higher than the ambient temperature.

Max. Ambient Temperature: 10^{0}C - 50^{0}C

Max. Operating Pressure: 6 bar

Installation: Pumps must be installed with rotor shaft horizontal and vertical water flow.

Pump Data

Model	Power (kW)	Current (A)	Dimensions (mm)			Weight (kg)
			L	H	W	
DQ 25/60	93	1.5	180	125	90	3
DQ 32/80	245	2				5.6

2. INSTALLATION

2.1 Electrical Connection Block Positioning

- If the electrical connection block is not in a convenient position when th circulator is delivered, the motor head may be rotated prior to fitting. Release the screws on the pump casing and rotate the motor head to its new position. If this is done please check the following;
    1. Take care not to remove or damage the 'O' ring seal between motor head and pump casing
    2. Tighten the fixing screws in a diagonal pattern in stages to final torque of 25kg cm.
    3. Check the motor is still moving freely by loosening the Manual Restart Knob and turn withdrawing until it engages in the motor shaft. The motor should then be free to turn with the finger tips

NOTE: After use of the Manual Restart knob should be screwed back finger tight into its original position.

2.2 System Attention

- The pump must not be installed against wood or any other material which may be effected by heat from the pump.
- Before installing the circulator ensure all soldering/welding adjacent to the pump is complete, the system has been thoroughly flushed out to remove any foreign matter and that vent and feed pipes are positioned so that the pump

will not draw in air or pump over.

- It is advisable to ensure the impeller is free by rotating manually through the outlet.
- The pump should not be installed in either a high point in the system where air could collect or a low point where sediment could build up.
- Pipes on both sides of the pump should be supported to reduce strain and must be correctly aligned prior to installing the pump to reduce the risk of scalding.
- The pump must be installed with the rotating shaft horizontal.
- Check the direction of flow indicated by an arrow on the pump casing and install the pump between the isolating valves. When replacing a pump maintaining the same direction of flow.
- Use approved makes of additives with corrosion inhibitors only and follow manufacturer's instructions. Do not leave system empty without protection from corrosion inhibitor.

Ensure no fluid drips onto the pump motor or its electrical connections during installation, venting or operation as when the pump is energised this may create a risk of electric shock.

2.3 Electrical Connections

Electrical work to be carried out by competent qualified and licensed electrician in strict conformity to ruling national conditions and local regulations. All wiring and external switchgear to comply with the ruling local regulations in accordance with the latest edition of IEE wiring regulations.

- Observe pump name plate data.
- For the pump fuse protection use a 3 Amp fuse.
- A means of disconnection from the power supply having a contact separation of at least 3mm in all poles must be provided.
- If the pump already has a cable fitted to it, ensure the pump is isolated from the mains before removing the terminal cover.

Wiring Procedures

- Use heat resisting 3x0.755mm2 core cable with rubber insulation rated at 110^0C minimum.
- Cut the cable to required length.
- Remove terminal cover.
- Thread cable through grommet.
- Refit terminal cover, locating cover onto motor and tighten screws.
- The cable must not come in contact with the pump body or pipework.

This pump must be earthed.

3. OPERATION

- Open both valves either side of the pump
- In normal operation the pump surface can be hot (ip to 1250C) creating a risk of being burnt.

Manual Restart (first commissioning). During this operation be aware of the risk of scalding from escaping hot water or steam.

- Before switching the pump on the manual restart should be unsscrewed and withdrawn to engage in the motor shaft. Check that the shaft rotates freely and that the knob can be seen rotating on initial start up of the circulator. Screw manual restart back in.

Venting

- When the system is filled with water the pump will normally self vent air within a short while of switching on. In cases where the pump venting is slow (identified by pump noise) the pump bearings my be quickly vented by using the manual restart knob.

During this operation be aware of the risk of scalding from escaping hot water or steam. Ensure the pump is switched off.

- Once the system has filled, switch off the pump, unscrew the manual restart knob applying sideways pressure to the screw until water emerges from it. Screw the manual restart knob back in. Swithc pump back on.
  NOTE: A system may take 24 hours to vent all the air in the system to atmosphere. Attention do not run the pump dry as this will result in bearing failure
- Output of the range of domestic circulators is by 3 speed control. (Single speed versions are also available)

Speed regulator adjustment should only be made with electrical supply switched off.

- It is always preferable to use the lowest performance where this gives circulation sufficient to heat all the heat emitters evenly (uneven distribution of heat may be due to the need to balance the flow of water in eat heat emitter.
- If the pump performance requirement is not known start with the lowest pump setting. if heat emitters remain cold or if the boiler inlet and outlet temperature differential (specified by the manufacturers of the boiler) is not achieved increase the flow by adjusting the speed control.

Too high a speed setting may result in pumping over or drawing in air.

Important - Do not use pump isolating valves for performance control.

4. MAINTENANCE

- No routine maintenance is necessary, however, during prolonged shut down it is advisable to run the pump for a few minutes every few weeks.

Locked pump

- Should the pump fail to start, witch to maximum setting. If the pump still does not start, the manual restart knob be used to free a locked pump. Once the pump is running the regulator should be reset to its original position.

5 TROUBLE SHOOTING

PROBLEM	SOLUTION
Pump fails to start	Check power supply fuses
	Check voltage at pump terminals
	Check electrial connection wiring procedure
	Check rotor free to rotate
Pump start but provides incorrect circulation	Check pump valves open
	Check pump case and system adequately vented
	Check correct electrical regulator setting
Noise	Check electrical regulator setting and readjust as required
	Noise due to cavitation can be subdued by increasing the system pressure withing the permissible limits
	Pump may require 48 hours to attain normal quiet operation

6. 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**

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www.dayliff.com

for details of the nearest branch or stockist

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