



DS Dual Speed

Dual-Speed Hydromassage Bathtub Pump Installation, Operation & Maintenance Manual

Oxygen Codes: 106.07.136 (DS 200-II) | 106.07.137 (DS 250-II) | DS 150-II & DS 300-II: on request



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1. Safety Warnings

CAUTION — READ BEFORE INSTALLATION

Read this entire manual carefully before installing or operating the pump. Failure to follow the safety instructions may result in serious injury, property damage or death. Keep this manual in a safe place for future reference.

RISK OF ELECTRIC SHOCK

Disconnect the power supply before any installation or maintenance work. The electrical connection must be carried out exclusively by a licensed electrician in accordance with the national wiring code. The pump must be protected by a residual current device (GFCI/RCD) with a rated tripping current not exceeding 30 mA. Connect only to a grounding-type receptacle protected by a GFCI.

GROUNDING REQUIRED

The pump must be connected to a properly grounded power supply. Wires used as equipotential bonding conductors shall have a cross-section between 2.5 mm² and 6 mm² and be fitted with a suitable terminal. If the supply cord is damaged, it must be replaced immediately by the manufacturer, its service agent or a similarly qualified person to avoid a hazard.

WATER SAFETY & DRY RUNNING

THE PUMP MUST NEVER OPERATE DRY. Dry running destroys the mechanical seal and impeller and voids the warranty. The hydromassage assembly must be equipped with a system that prevents the pump from starting if the minimum water level is not present. Parts containing live parts (except SELV parts supplied at <12 V) must be inaccessible to a person in the bath.

INTENDED USE

The DS Dual Speed pump is intended exclusively for fixed-installed hydromassage bathtubs, for use with clean water at a maximum temperature of 50°C. It is NOT suitable for swimming-pool spa duty. For indoor, household use only. Do not use with chemicals, solvents, sludge or abrasive liquids.

This appliance complies with EN 60335-2-60. It is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless supervised. Children shall be supervised so that they do not play with the appliance. For warranty terms, see Section 13 — Warranty.

Important Safety Instructions

Read and follow all instructions.

To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.

Risk of electric shock: connect only to a grounding-type receptacle protected by a ground-fault circuit interrupter (GFCI). Contact a qualified electrician if you cannot verify that the receptacle is GFCI-protected.

Do not bury the supply cord. Locate the cord to minimise abuse from lawnmowers, hedge trimmers and other equipment.

Do not run the pump before the pipework has been connected — moving parts may injure people.

To reduce the risk of electric shock, replace a damaged cord immediately and do not use an extension cord; provide a properly located outlet.

This pump is for a fixed-installed bathtub; it is not suitable for a swimming-pool spa. Do not install within an outer enclosure or beneath the skirt of a hot tub unless so marked.

For indoor and household use only. Class I appliance — permanently connect to fixed wiring; the rating label must remain visible after installation.

Means for disconnection (contact separation of at least 3 mm in all poles) must be incorporated in the fixed wiring in accordance with the wiring rules.

To avoid a hazard due to inadvertent resetting of the thermal cut-out, the appliance must not be supplied through an external switching device such as a timer, or connected to a circuit that is regularly switched on and off by the utility.

Save these instructions.

2. Package Contents

On receipt, inspect the packaging and confirm that all items below are present and undamaged. Report any transport damage to the carrier and to Oxygen immediately.

- 1 × DS Dual Speed hydromassage pump (motor + wet end)
- 2 × union connectors 2" FBT (Ø63) with O-rings
- 1 × set of mounting screws
- 1 × Installation, Operation & Maintenance manual
- Silent-block anti-vibration mounts (as applicable to the model)

The new hose module supplied with the bathtub must be used; the old hose module cannot be reused.

3. Product Overview

The DS Dual Speed is a single-stage centrifugal pump designed to operate with compact hydromassage equipment. It is equipped with a total-emptying system that prevents the discharge of residual liquid at each stop. Built from top-quality materials, every unit is subjected to strict hydraulic and electrical testing before shipment.

Dual-Speed Operation

Each model provides two operating speeds selected through the air-switch / terminal wiring:

HIGH SPEED — full hydromassage power for the jets (Black + Blue wires energised).

LOW SPEED — gentle circulation / economy running at reduced flow and noise (Brown + Blue wires energised).

The pump is intended for clean water at a maximum temperature of 50°C. Storage temperature: -10°C to +50°C; relative air humidity 95% max. The supply voltage and frequency are shown on the pump nameplate (230 V~ / 50 Hz single-phase).



DS Dual Speed hydromassage bathtub pump

4. Technical Specifications

Model Range

Parameter	DS 150-II	DS 200-II	DS 250-II	DS 300-II
Oxygen Code	on request	106.07.136	106.07.137	on request
Power — High (kW/HP)	1.1 / 1.5	1.5 / 2.0	1.85 / 2.5	2.2 / 3.0
Power — Low (kW/HP)	0.35 / 0.5	0.35 / 0.5	0.40 / 0.5	0.45 / 0.6
Max Flow — High (m³/h)	32	37	40	44
Max Head — High (m)	12	14	16	18.5
Max Flow — Low (m³/h)	15	16	18	20
Max Head — Low (m)	2.9	3.5	3.7	4.1
Connections	2" FBT (Ø63)	2" FBT (Ø63)	2" FBT (Ø63)	2" FBT (Ø63)
Max system impedance (Ω)	—	0.454	0.400	0.351

Nominal performance at 50 Hz. Max flow is the theoretical value at zero head; usable operating range is shown in the performance curves. DS 150-II and DS 300-II are available on request.

Common Characteristics

Type	Single-stage centrifugal, dual-speed
Application	Fixed-installed hydromassage bathtub
Supply	230 V~ / 50 Hz, single-phase (see nameplate)
Motor protection	Built-in thermal protection (single-phase)
Insulation / Class	Class I appliance
Max water temperature	50 °C
Max inlet water pressure	0.15 MPa (1.5 bar)
Storage temperature	-10 °C to +50 °C
Relative air humidity	95% max
Reference standard	EN 60335-2-60
Special feature	Total-emptying system (no residual liquid)

Dimensions

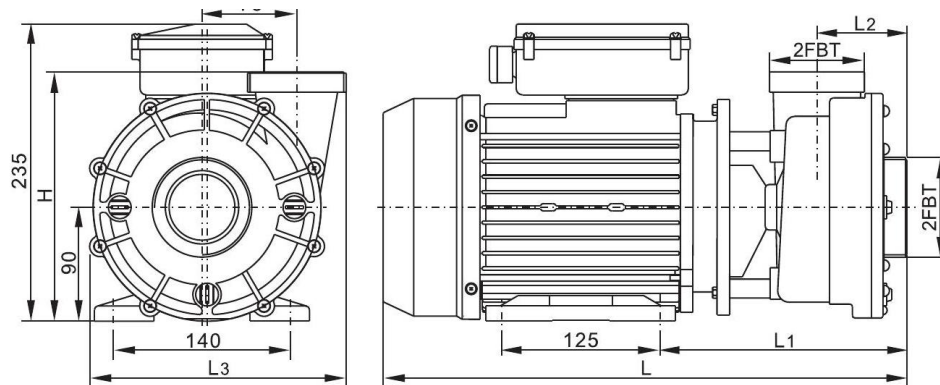


Fig.3

Fig. 1 — Overall dimensions (front and side views), mm

Total length L	431 mm
Motor length L1 / L2	195 / 71 mm
Base length L3	202 mm
Overall height (total)	235 mm
Shaft-axis height H	197 mm
Base width	140 mm
Inlet top width	75 mm
Motor body length	125 mm

Performance Curves

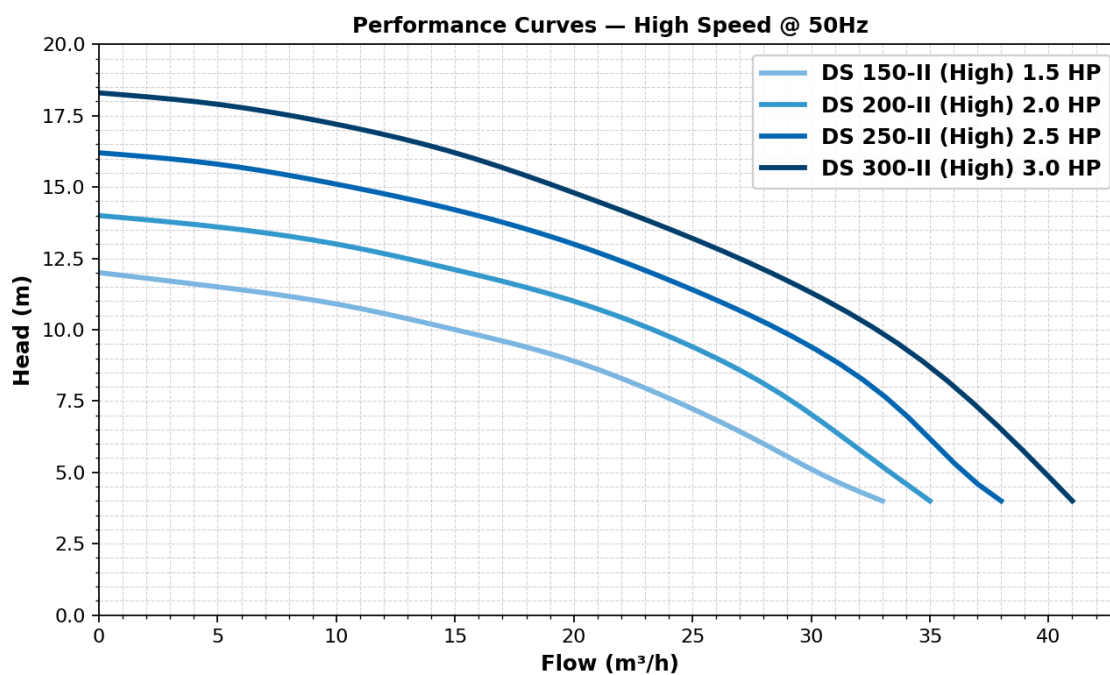


Fig. 2 — Performance curves, High Speed (50 Hz)

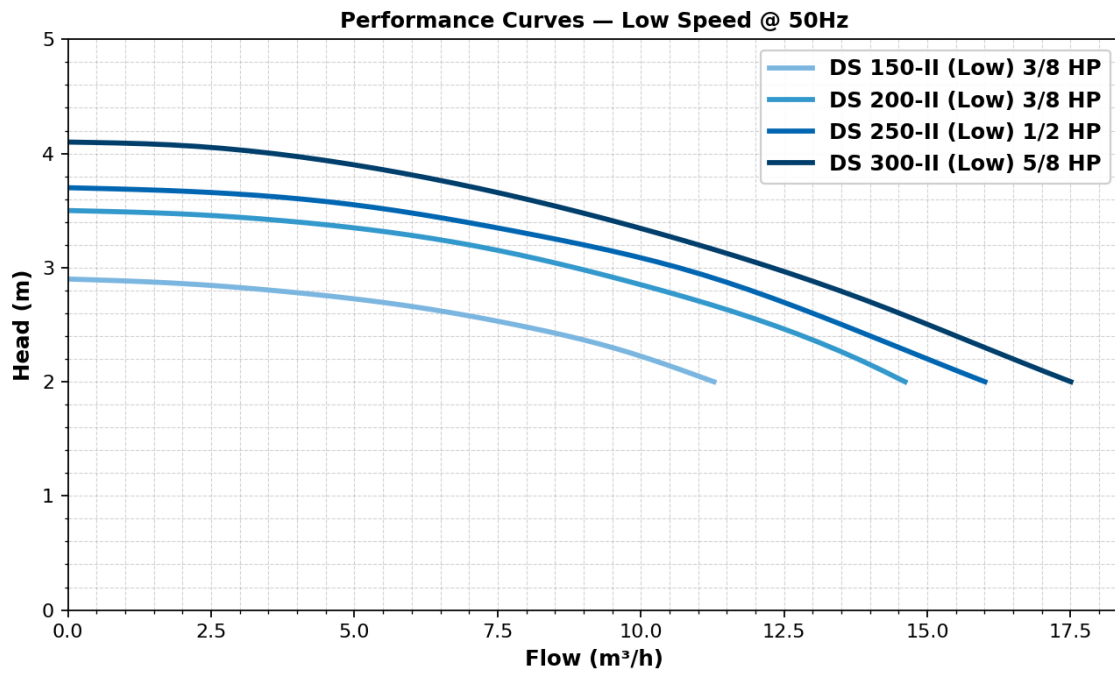


Fig. 3 — Performance curves, Low Speed (50 Hz)

5. Installation

These instructions ensure correct installation and optimum performance of the bath pump. Read them together with the wiring diagram; otherwise overloads may be produced in the motor. Oxygen declines responsibility for any damage caused by not following these instructions.

Install the pump level. Refer to the dimensions and mounting position in Section 4 (Fig. 1).

Fix the pump with screws on the tub shelf, using a silent block to reduce noise and vibration. Gluing or lashing the pump is forbidden.

The pump becomes hot during operation. To speed up cooling, the minimum distance between the pump motor and any surrounding structure must not be less than 20 mm.

Keep the suction pipe as short as possible.

The rating label must remain visible after installation.

Parts containing live parts (except SELV parts supplied at <12 V) must be inaccessible to a person in the bath.

Class I appliances must be permanently connected to fixed wiring; parts with electrical components (except remote-control devices) must be located or fixed so that they cannot fall into the bath.

6. Pipe Assembly

The maximum inlet water pressure must not exceed 0.15 MPa (1.5 bar).

The suction pipes should have a diameter equal to or larger than the discharge pipes. This avoids loss of head and improves efficiency.

The suction and discharge pipes should not rest above the pump in any case.

Seal all connectors and unions well. Avoid any dripping onto the motor, which would unfailingly damage it.

Use the new hose module supplied with the bathtub; the old hose module cannot be reused.

7. Electrical Connection

QUALIFIED PERSONNEL ONLY

The electrical connection must be carried out by qualified staff strictly in accordance with EN 60335-2-60. Disconnect the supply before wiring.

The electrical installation must have a multiple-separation system with contacts opening at least 3 mm.

For continued protection against electric shock, the unit is to be mounted to its base in accordance with the installation instructions.

System protection must be based on a residual current device (RCD) with a rated tripping current not exceeding 30 mA. The supply cable must comply with EMC standards.

Single-phase motors have built-in thermal protection.

Ensure the earth cable is correctly connected. Equipotential bonding conductors must have a cross-section of 2.5–6 mm² with a suitable terminal receptacle.

Speed Selection Wiring

The colours of the wires in the mains lead may not correspond with the coloured markings identifying the terminals. Proceed as follows: the green-and-yellow wire must be connected to the terminal marked E, or the earth symbol, or coloured green / green-and-yellow.

BROWN wire + BLUE wire connected to the power supply → LOW SPEED.

BLACK wire + BLUE wire connected to the power supply → HIGH SPEED.

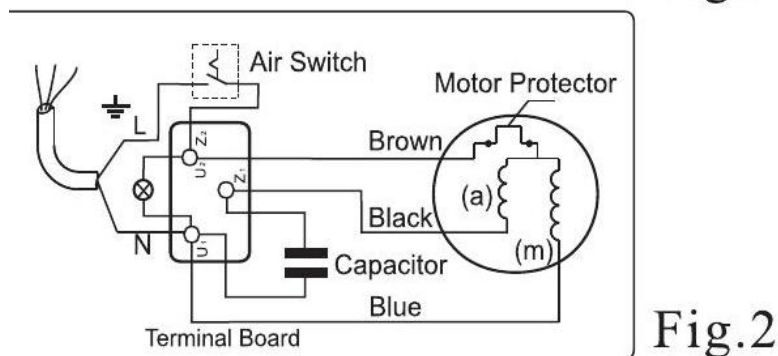
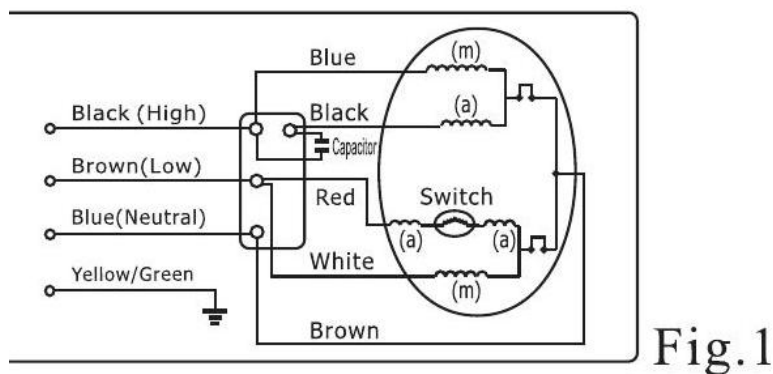


Fig. 4 — Wiring diagrams: dual-speed connection (Fig. 1) and air-switch terminal board (Fig. 2)

Minimum supply system impedance requirements: DS 200-II $\leq 0.454 \Omega$, DS 250-II $\leq 0.400 \Omega$, DS 300-II $\leq 0.351 \Omega$. If necessary, consult your supply authority for system impedance information.

8. Controls Prior to Start-Up & Start-Up

Controls Prior to Initial Start-Up

Verify that the pump shaft turns freely.

Check that the mains voltage and frequency agree with the nameplate.

Ensure the hydromassage assembly is equipped with a system that prevents the pump from starting if the minimum water level is not present.

Check the rotating direction of the motor, which must agree with the arrow on the fan cover.

If the motor does not start, refer to the troubleshooting table (Section 10).

THE PUMP SHOULD NEVER OPERATE DRY.

Start-Up

Start the pump electrically only when the suction and discharge pipes are connected to the corresponding inlets and outlets.

Apply voltage to the motor and suitably adjust the jets to obtain the desired flow.

9. Operation

During normal use, select HIGH SPEED for full hydromassage jet power and LOW SPEED for gentle circulation or economy running. Speed is changed through the air switch / control fitted on the tub deck.

Ensure the bathtub is filled and the suction inlet is fully submerged before starting.

Point the jets away from the suction inlet so that air is not drawn into the pump suction.

Do not run the pump dry, even momentarily.

Stop the pump before draining the bathtub; the total-emptying system evacuates residual water automatically at each stop.

10. Maintenance & Cleaning

Oxygen pumps for hydromassage facilities do not require any special maintenance or programming. If the pump will be idle for a long period, it is recommended to disassemble, clean and store it in a dry, well-ventilated place.

Disconnect the power supply before any cleaning or maintenance.

Keep the motor and its ventilation grille free of dust and obstructions.

Periodically check the unions and connections for leaks and reseal if necessary.

If the supply cord is damaged it must be replaced by the manufacturer, its service agent or a similarly qualified person to avoid a hazard.

Do not use aggressive solvents to clean the plastic housing.

11. Troubleshooting

Symptom	Possible cause	Check / Remedy
Pump does not turn	No power to pump	Verify incoming power to the pump.
Pump does not turn	No power to pump	Check that the circuit breaker is on.
Pump does not turn	No power to pump	Check that the GFCI/RCD is operating properly and not tripped.
Pump does not turn	No power to pump	Check that the air switch is plugged in.
Pump does not turn	Air switch disconnected	Check that the air-switch hose is connected to the pump.
Pump does not turn	Air switch disconnected	Check that the air-switch hose is connected to the actuator button on the tub deck.
Pump does not turn	Thermal protection tripped	Allow the motor to cool; verify supply voltage and adequate ventilation (≥ 20 mm clearance).
Pump not pumping properly	Air in suction	Ensure the jets are pointed away from the suction inlet so air is not forced into the pump suction.
Pump not pumping properly	Blockage	Check whether the in-tub suction inlet is blocked or covered.
Pump not pumping properly	Blockage	Check for any debris in the pump housing.
Pump not pumping properly	Leak	Check for a leak in the piping or connections.
Pump not pumping properly	Low voltage	Verify that the proper voltage is applied to the pump.
Pump not pumping properly	Low voltage	Check that no extension cord is being used.
Excessive noise / vibration	Mounting	Check the silent-block mounting and ensure the pump is fixed level.

12. Spare Parts & Accessories

Use only genuine Oxygen spare parts. When ordering, quote the Oxygen code and the model designation (e.g. DS 250-II). Contact Oxygen service for availability.

Item	Description
Mechanical seal	Shaft seal assembly for the wet end
Impeller	Speed-matched impeller (specify model)
Union set 2" FBT	2 × Ø63 unions with O-rings
O-ring / gasket kit	Housing and union seals
Run capacitor	Motor start/run capacitor (specify model)
Air switch	Pneumatic air switch with hose
Silent-block set	Anti-vibration mounting feet

Spare-part codes are assigned per model on request.

13. Warranty

Oxygen warrants the DS Dual Speed pump against defects in materials and workmanship for the statutory warranty period from the date of purchase, under normal use and correct installation in accordance with this manual.

The warranty covers manufacturing defects only.

Dry running, incorrect electrical connection, use outside the stated limits (water temperature, pressure, chemicals), unauthorised modification or transport damage are excluded.

Keep proof of purchase; warranty claims must be accompanied by the model designation and Oxygen code.

Material recycling must be carried out in accordance with the applicable regulations. Do not dispose of the appliance as unsorted municipal waste — use separate collection facilities.

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ISO Certifications

9001:2015 Quality Management <i>EUROCERT</i>	14001:2015 Environmental Management <i>BQV</i>	45001:2018 Health & Safety <i>BQV</i>
22301:2019 Business Continuity <i>EUROCERT</i>	46001:2019 Water Efficiency <i>BQV</i>	

Recycling of materials must be carried out in accordance with applicable regulations.