

DiskDrive 80

Compact hubless thruster

User guide

The DiskDrive80 thruster is a direct-drive, brushless thruster with a hubless propeller. The hubless design offers superior resistance to tangling due to debris in the water. Its slim-line form factor makes it ideal for space-constrained applications, such as vertical stabilisation thrusters.

Integration guidelines:

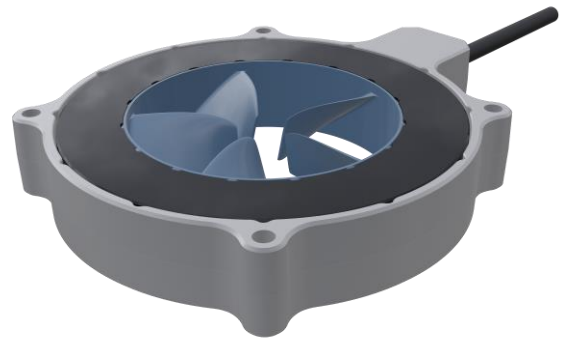
The DiskDrive80 is driven by an integrated 3-phase brushless permanent-magnet motor. It can be driven by sensorless brushless electronic speed controllers (ESC). Connect the three thruster wires to the three output wires of the ESC. If the thruster rotates in an undesired direction, swap two wires to reverse.

Maximum operating voltage: 24 V

Maximum current: 30 A

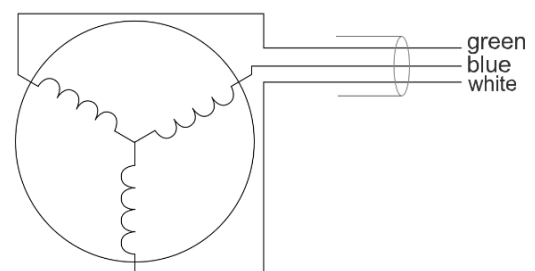
The thruster is delivered with a 0.9-1m long cable. It is the user's responsibility to fit a suitable underwater connector or hull penetrator.

For best performance, we recommend using a duct to guide the waterflow. Our duct offers optimal performance and can be placed on both sides of the motor. Two ducts are suggested for forward and reverse operation. A kit containing 2 ducts with a mounting bracket is also available on our website.



Safety and Handling

- Moving parts: do not touch propeller when motor is powered! Keep away body parts to avoid injury.
- Strong magnets: When changing propellers or disassembling motor, keep the magnetic rings well separated from each other, and away from any ferromagnetic objects. Do not let the magnet rings touch each other directly. Avoid getting skin or body parts getting trapped between the magnet rings.
- Do not run the thruster outside of water. The motor requires water for lubrication and cooling.
- Avoid prolonged exposure to direct sunlight and UV radiation.
- Do not operate thruster with broken propellers, damaged cable or other defects



Replacing the Propeller

Propellers may get chipped or damaged when the thruster is exposed to pebbles, rocks or other hard debris. Spare propellers are available from Hydromea in clockwise and counter-clockwise rotation. Follow these steps to replace a propeller:



Place thruster on clean and non-magnetic surface, free of ferromagnetic objects or particles.



Lift thruster and gently push down against two propeller blades near the outer ring until bottom ring falls out.



Place bottom ring on table, leave top ring in thruster. **Careful:** keep rings separate! Strong magnets!



Remove old propeller. Check that magnet rings are clean.



Insert new propeller. Make sure it is seated properly.



Slowly move thruster with top ring above bottom ring.



Slowly decrease distance until bottom ring rotates to match the top magnet ring orientation.



Quickly decrease distance until bottom ring snaps in place. **Careful:** Never place fingers between rings - pinching hazard!



Check that propeller is fully seated and rings are parallel. Manually rotate rings to check for free movement.

Disclaimer:

The Hydromea DiskDrive80 thruster is an OEM component for integration by experienced equipment manufacturers. It is the customer's responsibility to ensure safe operation of the thruster within their equipment, and avoid injury or harm. Hydromea shall not be held liable for any damage, including but not limited to damage to equipment, environment, any harm or injury to persons, that result from use of its products. The DiskDrive80 thruster shall not be used in safety-critical applications or medical applications.