

FEATHERSTREAM™
PROPELLERS
SHAFTDRIVE

darglow

MARINE ENGINEERS

**MADE IN
BRITAIN**

**Owner's handbook
& fitting instructions**



To watch a YouTube video with step by step instructions on how to fit your FeatherStream propeller visit our website www.darglow.co.uk/product-support/Video-gallery

SHAFTDRIVE
July 2015 edition

Important stuff to know before fitting...

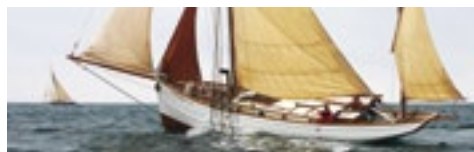
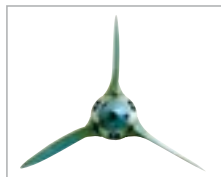
Thank you for choosing a Darglow shaftdrive FeatherStream propeller – it has been 100% designed and manufactured by craftsmen engineers in the UK. With care, this propeller should deliver many years of excellent service. So, before we lead you through the simple fitting instructions, we'd like you to spend a few minutes reading about some important maintenance matters.



Blades in position for run ahead



Blades in feathered position for sailing



The propeller is supplied fully assembled and filled with grease. There is no need to disassemble the propeller. In some cases, where space is restricted, it can be disassembled and reassembled on the shaft. Please contact Darglow for special fitting instructions if this applies, before proceeding. The propeller should automatically take up the required forward drive, sailing or reverse positions in use. However, there are some minor differences between its use and that of a fixed propeller.

When sailing there are two different ways to ensure that the propeller feathers. With a mechanical gear box the engine should be stopped as normal in neutral. Then, with the engine off, reverse gear should be engaged to lock the shaft. This will cause the propeller to feather. Check to see that it has feathered by putting it back in to neutral. If the shaft remains stationary, the propeller has feathered. With a hydraulic gear box, it is not possible to lock the shaft. In this case, when changing from motoring to sailing, the engine should be stopped at idle speed, in forward drive. This will cause the propeller to feather. Again, if the shaft is not rotating while sailing, the propeller has successfully feathered. In all cases, the propeller will only feather from the forward drive position (i.e. having been motoring in forward prior to sailing). It will not feather from the reverse position.

About the anode

The propeller is protected from electrolysis by the zinc anode. This is designed to be used in addition to other anodes on the boat (hull, shaft anodes etc). If it is the only anode on the boat it is likely to be consumed quickly. The rate at which the anode is consumed varies enormously and it will be used at whatever rate it needs to in order to protect the propeller.



When motoring, it is very important to allow the engine speed to drop down to idling revs when changing from forward to reverse and vice versa. This reduces force on the pitch stops inside the propeller. Rapidly changing from forward to reverse at high engine revs will cause damage to the pitch stops and premature wear of the propeller.

Most owners need to change the anode once per year (or less often) but in some rare circumstances it may not last a whole season, so it is advisable to check it periodically. When the anode is being replaced, make sure that the mating face between propeller and anode is clean. This will provide good electrical contact around the base of the anode.

Anti-fouling

As with any bronze propeller, regular hull antifouling should not be used on the propeller. There are many propeller antifouling products available and almost any can be used provided the manufacturer states clearly that the product is safe to use with bronze propellers. The only exception is the thick grease type products that require the propeller to be heated before application. **NB - Applying excessive heat to the propeller may cause the grease inside the propeller to melt**



Grease

The grease inside the propeller needs to be topped up at least once a year. On the side of the hub there is a small hole blocked with a grub screw. This should be removed with a 3mm allen key and the grease nipple (supplied with the propeller) inserted in its' place.

Tip: See photos for guidance on page 6
A grease gun can now be connected to the nipple and grease pumped into the hub whilst the propeller is moved from stop to stop as the grease is injected. Once grease starts to exit from the propeller, either from the inner / outer hub junctions or blade junctions, or the area around the pitch cassette, the hub is filled.



The grub screw should be replaced. It is very important that the correct grade of grease is used and Darglow Feathering Propeller grease is recommended.

Important

If a rope cutter is fitted, please make sure there is a minimum of 2mm between the cutter and the FeatherStream hub. When fitting a new FeatherStream, or after greasing, ensure that the propeller is free to move and test immediately after launch, whilst in slings, or along side. **Never engage gear with the vessel out of water as this can damage the propeller. This also applies to any feathering of folding propellers.**

Adjustments

Should any change of blade angle (pitch) be required, please contact Darglow for instruction on how to proceed. Before lifting the boat, a sea trial should be performed noting engine speed and hull speeds at 200rpm intervals from tick over rpm to maximum achievable rpm underway (throttle fully open).

Customer support

If you have any queries regarding the fitting, use or maintenance of Featherstream propellers or if you require grease / anodes etc. please contact Darglow for personal assistance.



1 Firstly, remove the key from the shaft and clean any marine deposits from the taper. NB - If the Nordlock washer / locktite method described later is to be used; clean, degrease and dry the shaft threads.



Important

If a rope cutter is fitted, please make sure there is a minimum of 2mm between the cutter and the FeatherStream hub.

2 Offer the Featherstream Propeller onto the shaft, without the key in place. This will allow a check that the tapers are a good match. If there is any discrepancy between the shaft and propeller tapers it will be felt as a slight movement of the propeller hub on the shaft. If any discrepancy is found, the propeller should be lapped onto the shaft taper using valve grinding paste.



When a good taper match has been established, slide the propeller onto the shaft, without the key in place, and with a pen or scribe, mark the position, of the forward face of the hub, on the shaft.

3 Remove the propeller and replace the key in the shaft.



4 Replace the propeller on the shaft, making sure that the propeller forward hub face aligns with the pen mark. If it does, continue with step [6]. If it does not it is because the key is too tall for the keyway in the propeller. In this case follow step [5]



5 The top of the key now needs to be filed down until it allows the propeller to align with the pen mark on the shaft. This is very important because if the key is not filed down sufficiently, the propeller will be "key bound" and may cause operational problems or damage to the propeller.



6 As an additional check, ensure that there is a visible gap above the key (after the propeller has been pushed up to the pen mark) by shining a torch at the forward end of the hub and looking at the aft end of the hub. Light should be visible through a gap above the key. These checks are very important and if in any doubt, file more from the top of the key until light can be seen.

7 Now that the propeller is a good fit on the taper and the key is not "keybound", the propeller can be fitted and the propeller nut tightened. In many cases, the propeller nut extends down into the hub of the propeller. This means that a split pin cannot be used to lock the propeller nut, as would be the case with a fixed propeller. In this case, Darglow recommend the use of Nordlock Washers and Locktite (or similar anaerobic adhesive) as described in the following steps. If the nut and shaft thread extend aft of the propeller hub, then a split pin may be used, but care must be taken to ensure that it does not foul the inside of the anode.

8 Firstly, fit the nut without the Nordlock washer and torque to approximately 45 lbf ft. It is difficult to give an exact torque figure due to the many different thread sizes used and sometimes a torque wrench cannot fit in the available space. As a guide, the nut should be tightened as hard as possible using one hand and a normal size socket wrench or spanner.

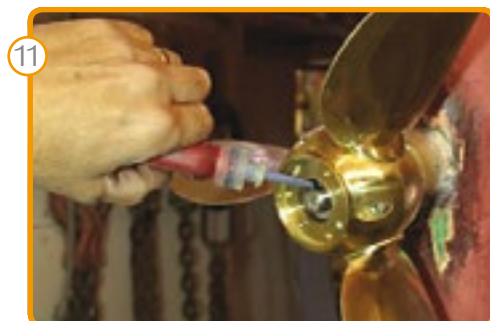


9 At this stage, check that the propeller movement from forward to reverse position is smooth and free. It should be possible to move it with the pressure from one finger on a blade tip. Very rarely, tightening the propeller nut can cause the propeller movement to stiffen excessively. If this occurs, contact Darglow and do not continue with the fitting. Provided that the movement of the propeller is free, the nut should now be undone again and removed.

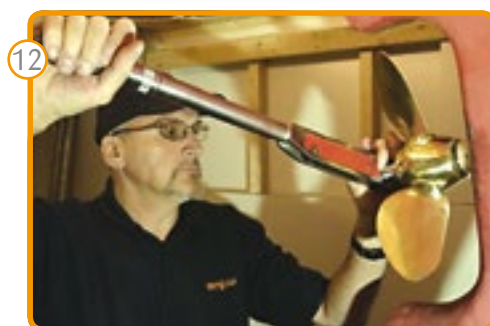
10 The pair of Nordlock washers should now be fitted as shown with the larger wedge shaped cam faces touching each other.



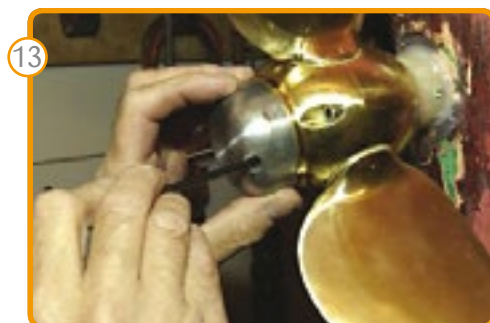
11 Lockite should be applied to the previously cleaned, degreased and dried shaft threads.



12 Re-fit the propeller nut and re-tighten to approximately 45 lbf ft torque.



13 Fit the anode, applying lockite to the two screws before tightening them.



13 Finally, the movement of the propeller should be re-checked. It should be free from forward to reverse position, requiring only the pressure from one finger on a blade tip



Grease

These photos accompany the text on page 2 regarding maintaining the grease levels inside your propeller.

These show an older model with the greasing point under the anode.

New models have the same greasing point system, but more conveniently located on the side of the hub as identified here



Genuine hand-built Darglow propeller:

Prop' no: Hub size: Anode code:

Diameter: Pitch setting: Number of blades

Propeller taper details:

Shaft nut: Pitch cassette: forward reverse

Owner's certificate

Owners details:

Date purchased: Name:

Address:

Post code:

Telephone number:

Vessel details:

Gear ratio:

Vessel make: Vessel model:

Engine make: Engine model:

Engine HP: Maximum RPM:



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