



FITTING AND MAINTENANCE OF YOUR APS SAILDRIVE AUTOPROP

The Autoprop is supplied assembled, tested, and ready to fit your yacht. Observing the following notes will ensure correct fitting and trouble free service.

Tools required for maintenance and fitting/removal	Parts available
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Small punch	Anode nose cone
Small flat blade screwdriver	
Bearing adjustment kit	
Small hammer	Replacement blades
Peg Spanner(Brunton's special tool for bearing adjustment)	
Individual components	
Socket spanner for propeller nut	
Socket spanner for locking bolt	
Loctite (thread locking compound)	

Fitting

1. After removing the old propeller clean any crustaceans on the spline and thread of the saildrive shaft.
2. Push the Autoprop on to the shaft making sure it fits snugly, use the spacers provided.
3. Smear loctite on the nut thread (A) and screw the new nut up tightly using the socket spanner provided.
4. Make sure that there is no movement when pushing the hub forward and aft, the Autoprop should now be secure.
5. Smear more loctite on the locking bolt (B) and thread into the aft end of the saildrive shaft.
6. With a tightening action ensure the faces of the nut and bolt are flush. Make sure that the locking bolt is well secured. Do not over tighten.
7. Use more loctite on the thread of the M5 bolt (C) and screw this into the hole on the locking bolt. This will lock the bolt and nut together.
8. Fit anode using screws provided

Removal

1. Remove the anode nose cone by removing the nylon screws
2. Remove the locking device from the shaft nut.
3. Unscrew the shaft nut and remove.
4. Remove the Autoprop from the shaft.

LAYING-UP.

When ever you haul-out for antifouling or laying-up for example, the Autoprop needs to be given a high pressure wash **before** it has a chance to dry out. This will remove the deposits which if left to dry will make the blades feel sticky when rotated. After this, rotate the blades by hand to ensure they are free moving, and 'rock' them to check that free movement is present in the bearing mechanism. At this stage the bearing clearance may be checked as outlined in BEARING ADJUSTMENT.

If the Autoprop is left out of the water for any length of time we suggest that a light lubricating oil is squirted in to the bearings to prevent them 'drying up'. Before re-launching ensure that the blades are free to rotate and that the clearance as noted above is present.

AUTOPROP MAINTENANCE - BLADE ADJUSTMENT.

Remove the retaining cap by first removing the plastic tamperproof cap. Bend back the tang of the tab washer and slacken the retaining cap locking screw (1) sufficiently to enable the retaining cap to be slackened and removed.

Remove the locking screw (1) and discard the old tab washer. A new tab washer must be used. It is advisable to slightly pre-bend one tang of the new tab washer to aid reassemble. Replace the locking screw, complete with the new tab washer and tighten on to the cap expanding cone (3) until this is lightly held in it's seat. Replace the retaining cap on to the post and tighten until it is lightly seated on the outer race assembly (4). Tighten the locking screw (1) sufficiently to draw the cap expanding cone (3) slightly in to it's seat. The retaining cap (2) should still be able to rotate with some resistance felt.

Ensure that the blades are free to rotate but without any play evident. Tighten the retaining cap if necessary. With a set of feeler gauges, measure the gap between the blade and the hub. Check at several points. If the gap is significantly less at one point, re measure at this point and mark the this position on the blade and hub. Note the thickness of the gap measured. On to this measurement add a feeler of 0.000" (0.00mm). Slacken the retaining cap sufficiently to enable the feeler gauge to fit into the gap snugly with the blade in the position previously marked , if any. Tighten the locking screw to the correct torque setting. Ensure that the blade is free to rotate through 360 degrees and that the correct clearance as previously determined is still present. Repeat the above steps as necessary until the correct clearance is achieved.

Ensure that a flat on the hexagon head of the locking screws aligned with the bent tang of the tab washer. Bend up the tang against the flat side of the locking screw. Insert a new tamper proof cap. Repeat for the remaining blades as necessary.

AUTOPROP MAINTENANCE - OUTER & INNER BEARING RACES.

As wear takes place, the correct bearing clearance may be maintained by adjustment of the retaining cap. After a period of time, normally 700 -1000 motoring hours, or when smooth operation cannot be ensured via adjustment, the bearing races will need to be replaced. Before doing so, ensure that rough operation is not due to foreign objects which may have found their way in to the bearings.

Remove the retaining cap as in the previous section. The blade, and outer race assembly can now be removed by very carefully levering under the blade with a screwdriver. Remove the blade and outer race as a unit. This will expose the inner race. The stainless steel balls are not captive, and care should be taken not to loose any. If wear is evident in the outer or inner races, these may be replaced as follows:

Upper Outer Track (4):

Once the blade is removed from the boss, this is easily accessible.

Upper Lower Track (6):

This may be removed by inserting a screwdriver in the gap formed between the underside of the track and its seat in the blade, and then prizing out. The new track can be pushed in place carefully by hand, having ensured that the seat is clean.

Upper Inner Track (8):

Two extraction holes in the blade allow access to the top of the track. Rest the underside of the blade on a surface which leaves the track exposed. With a punch, drive the track out using the two holes mentioned above. Insert the new track by pressing into position by hand, having ensured that the seat is clean.

Lower Inner Track (in boss):

Locate the jacking thread () visible through the nut pocket. Remove the propeller nut locking screw and screw in to the jacking thread. This will lever the track from its seat sufficiently for it to be removed. Insert the new track by pressing into position by hand, having ensured that the seat is clean.

Inner & Outer Track Balls:

Insert the new balls using a water soluble hand cleanser, or thin oil, to aid reassemble. Do not use grease.

When reassembling the blade on to the boss with new tracks and balls, the retaining cap should be tightened on to the outer race until the blade is difficult to rotate under light pressure. This will ensure that the tracks are seated correctly.

APS Type hub

1. Tamppoport plug
2. Retaining cap locking nut
3. Tab washer
4. Retaining cap
5. Cap expanding screw
6. Outer mode track
7. Outer track balls
8. Outer handle track
9. Blade gaiter
10. Inner track balls
11. Hub
12. Shaft nut
13. Shaft nut locking screws
14. Axle nose cone

