



ELICHE A PASSO VARIABILE
Manuale d'uso e manutenzione
VARIABLE PITCH PROPELLERS
Use and maintenance handbook

The background of the entire page is a technical drawing of a propeller on a grid. The drawing is a pencil sketch showing the propeller's profile, including the hub, blades, and pitch mechanism. Various parts are labeled with letters and numbers, and there are construction lines and circles used in the drawing process. The drawing is oriented vertically, with the propeller's axis of rotation pointing towards the right.



J PROP

Variable pitch propeller

Thank you for choosing a **JPROP** as the feathering propeller for your boat. This manual will provide you with the technical information needed to install, adjust and maintain your **JPROP**.

- **JPROP**'s patents, combined with the experience and machining skills of COBER, a fully integrated CNC specialist, are your assurance that **JPROP**'s performance meets your expectations.
- Sailors around the world wanted a safe, simple and efficient feathering prop, **JPROP** was designed to meet that challenge.
- **JPROP** is installed as simply as installing a fixed prop, an integral locknut ensures against losing your **JPROP**.
- Servicing of **JPROP** is simple and fast, no disassembly needed.
- **JPROP**'s pitch can be adjusted by simply changing the setting of the ogival nose.

We appreciate your choice of **JPROP** and thank you for providing us with the information needed for proper prop selection.



MARINE PROPELLER s.r.l.

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| | 2 | Pitch relative to selected notch/diameter | 11 |

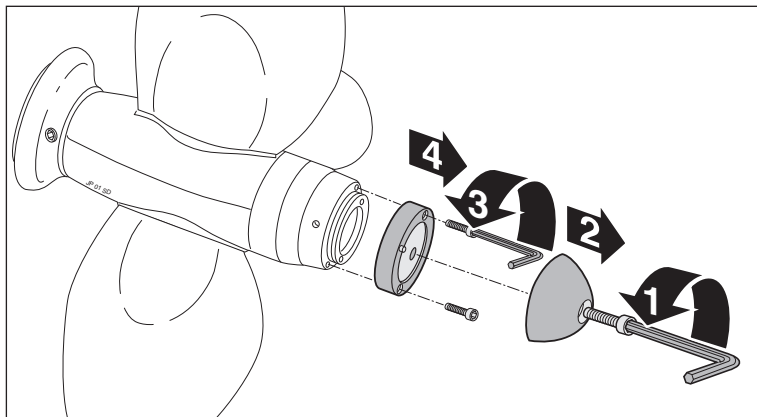
Warning

During propeller assembly and maintenance operations follow the rules of safety carefully, and in particular:

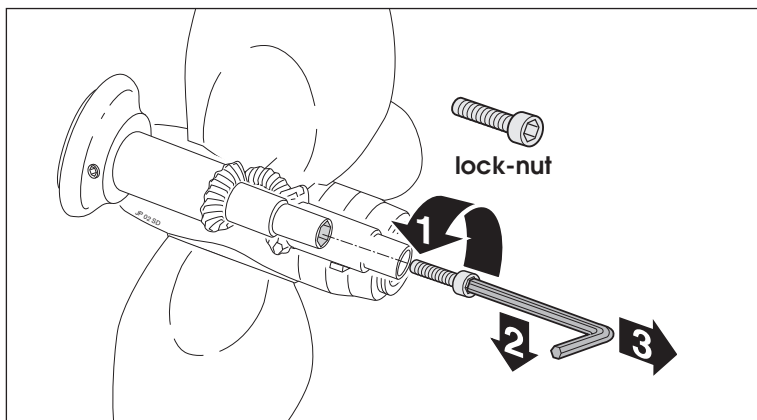
- 1 - make sure that the engine is OFF and that it cannot be started accidentally,**
- 2 - when handling the propeller do not put your hands on the hub on the points where the blades rotate.**

Section 1 - PROPELLER INSTALLATION ON A SAILDRIVE® SPLINE

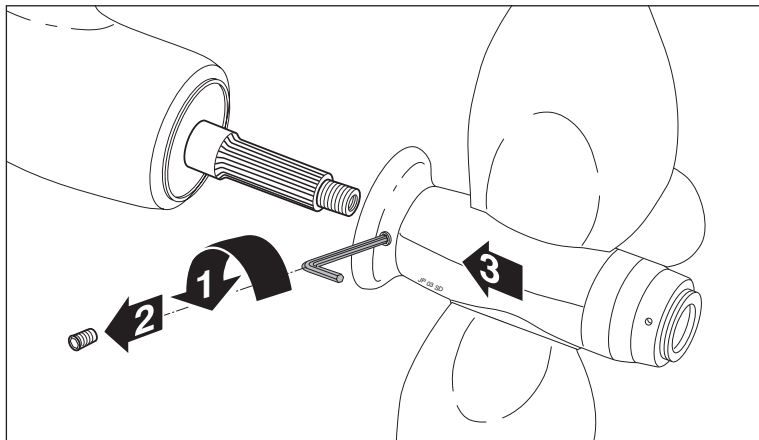
To install your JPROP on an SD spline please follow these steps:



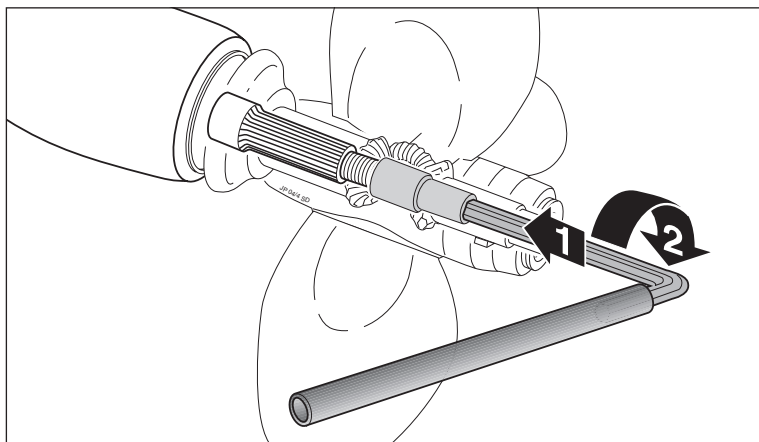
1 - remove zinc anode using Allen key type B (see page 6), remove bronze ring (anode support) using Allen key type C.



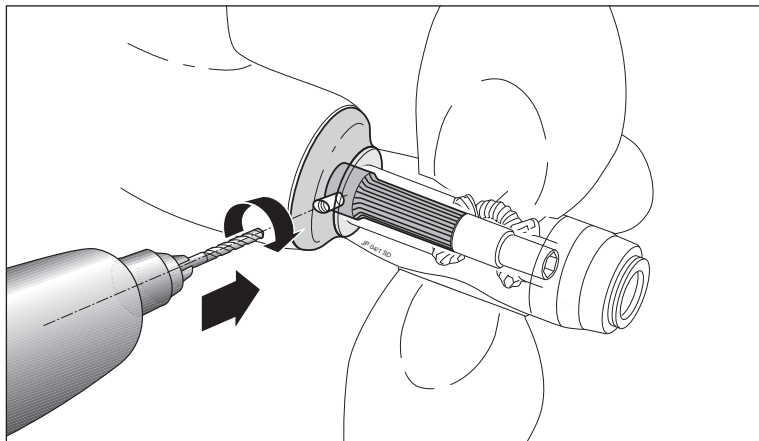
2 - Insert Allen key B into internal lock-nut and turn anti-clockwise until completely free, retract Allen key thus removing lock-nut.



3 - remove the "lock grub" using Allen key type D and put the propeller on a shaft.

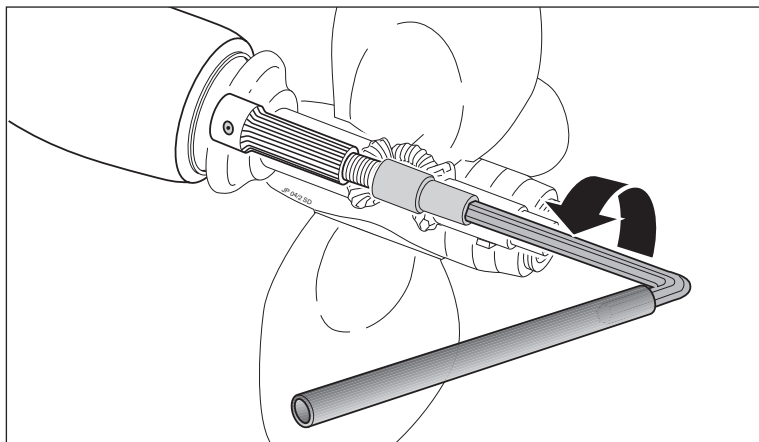


4 - using Allen key A tighten internal propshaft-nut applying a torque-load of 70 ft/lbs or 10 kgm.

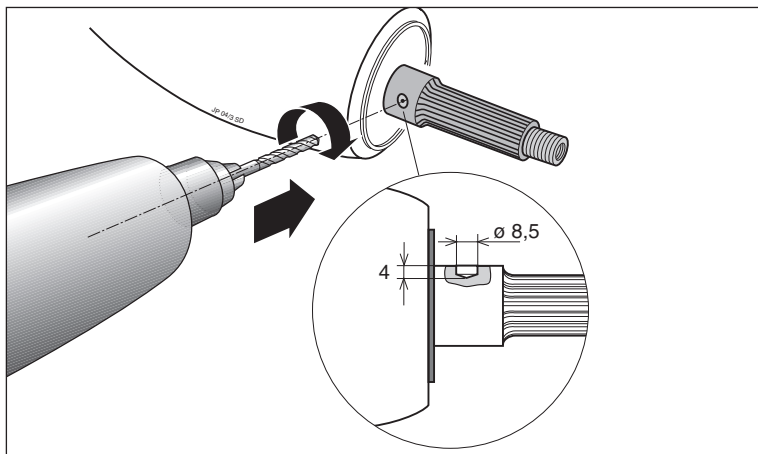


5 - mark on a shaft the position of the "lock grub" housing by means of a $\varnothing 6,5$ mm drill.

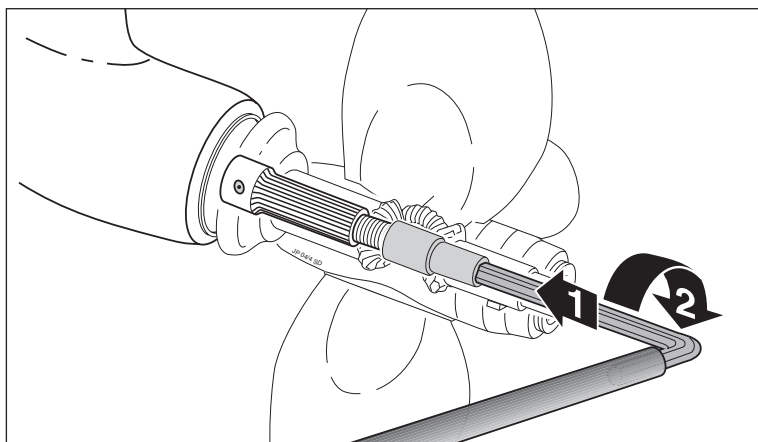
Pay attention not to damage the thread.



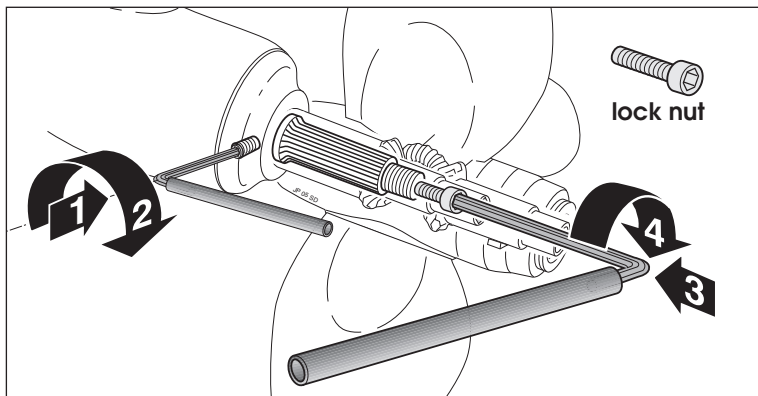
6 - Insert Allen key type A into internal propshaft-nut, turn it anti-clockwise until completely free and remove prop from shaft.



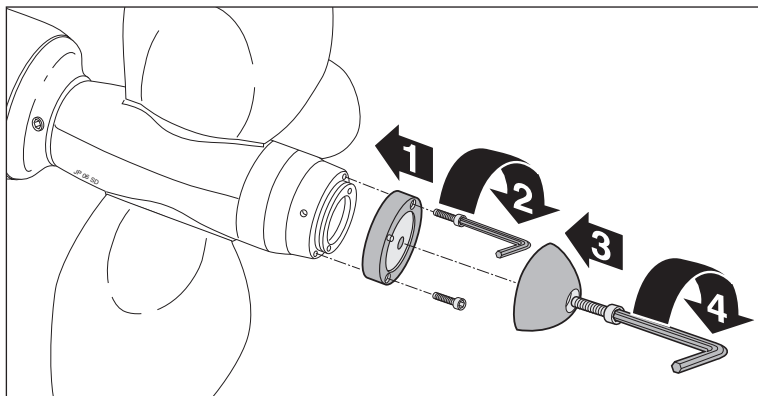
7 - make a $\varnothing 8,5$ mm, 4mm depth blind hole in the position on the shaft as marked before.



8 - apply threadlocking adhesive (Locktite) to threaded portion of spline and slide prop onto spline. Using Allen key A tighten internal propshaft-nut applying a torque-load of 70 ft/lbs or 10 kgm.



9 - apply threadlocking adhesive (LOCKTITE) to the threads. Insert and firmly tighten the "lock grub" (Allen key type D with an extension of 6" or 15 cm) and the internal lock-nut (Allen key type B with an extension of 12" or 30 cm).

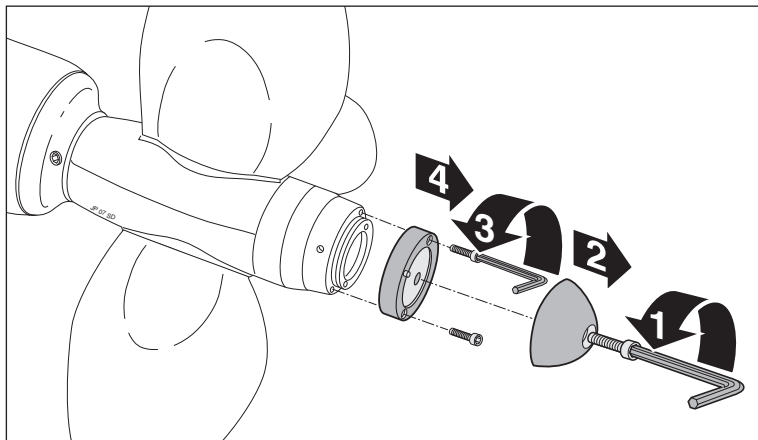


10 - followings instructions from section 3 (2 - 9) set the pitch for your JPROP.
 11 - reinstall bronze ring and install anode.

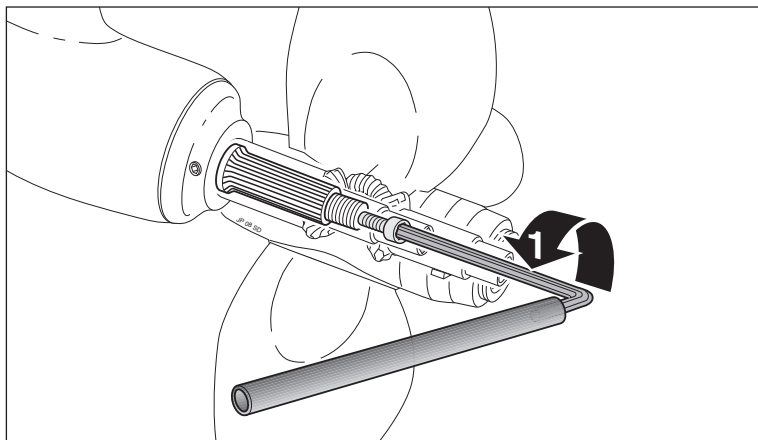
Installation of the anode is the last phase of this assembly operation. The zinc-anode has to protect your JPROP from cathodic corrosion, changing it when partly sacrificed will keep your JPROP in the best possible condition.

Section 2 - PROPELLER REMOVAL FROM SAILDRIVE® SPLINE.

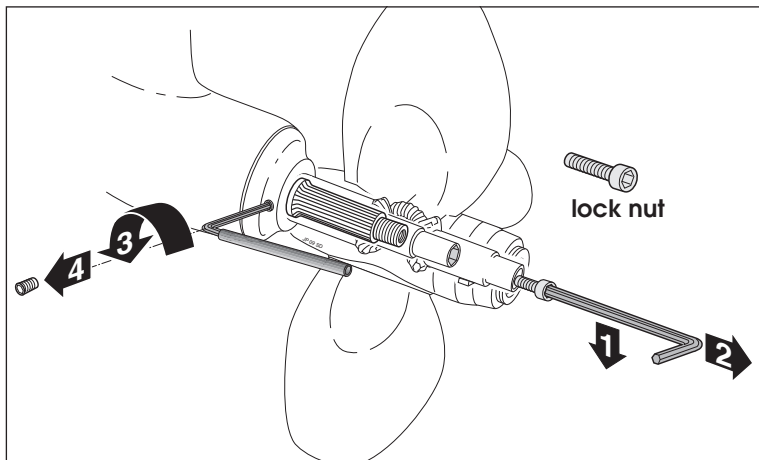
To remove your JPROP from SD spline please follow these steps:



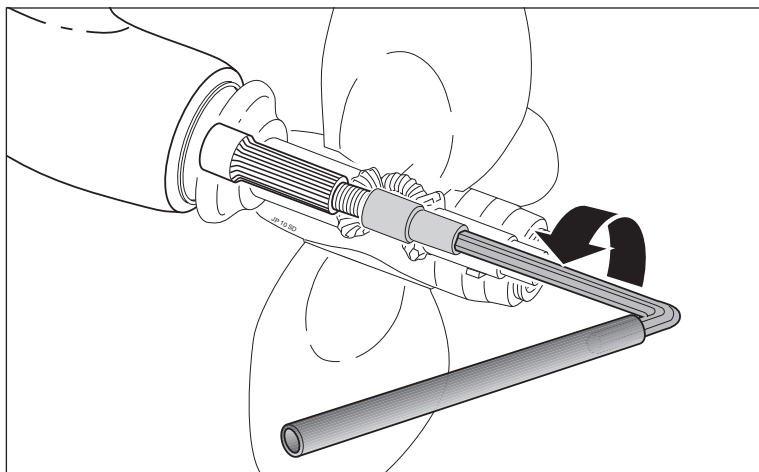
1 - remove zinc-anode using Allen key type B (see page 6), remove bronze ring (anode support) using Allen key type C.



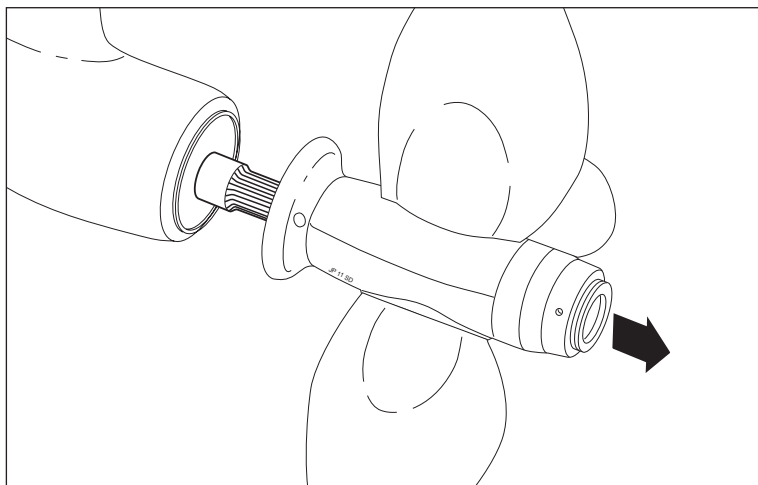
2 - Insert Allen key type B into internal lock-nut and turn anti-clockwise until completely free.



3 - retract Allen key thus removing lock-nut. Insert Allen key type D with an extension of 6" or 15 cm into "lock grub", turn it anti-clockwise until completely free and remove it.



4 - using Allen key A loosen internal propshaft-nut, this will probably require a torque-load of approx. 80 ft/lbs or 12/15 kgm.



5 - when nut idles remove prop from spline.

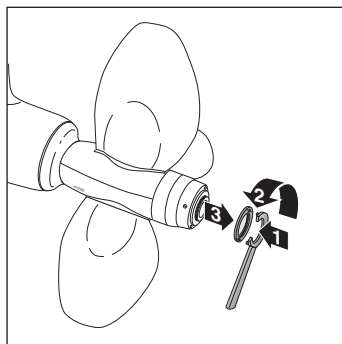
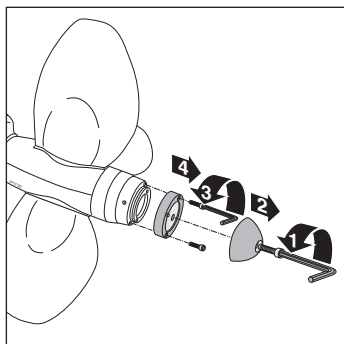
Table 1

Allen keys to be used for installation and removal of JPROPs

| prop. type | Allen key A | Allen key B | Allen key C | Allen key D |
|------------|-------------|-------------|-------------|-------------|
| body dia | mm | mm | mm | mm |
| 63 SD | 14 | 6 | 3 | 4 |

Section 3 - PITCH ADJUSTMENT

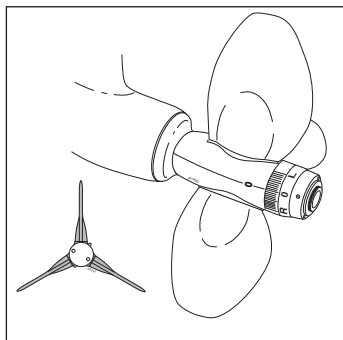
It's possible to adjust the pitch anytime following these procedures:



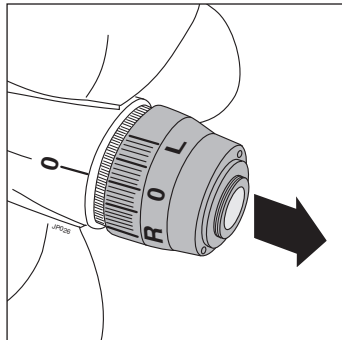
1 - pull the cone of the propeller backward (the 4 projecting balls help the holding of the hand). If the ogival nose doesn't move enough to be free to turn follow the next steps, if it moves go to step 4.

2 - remove the zinc anode and the bronze ring (anode support) with the Allen keys B and C (see page 6).

3 - remove the bronze «pitch-lock» flange by means of a «sector spanner».

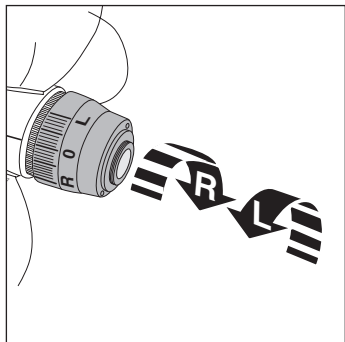


4 - put the propeller's blade in feathering position.

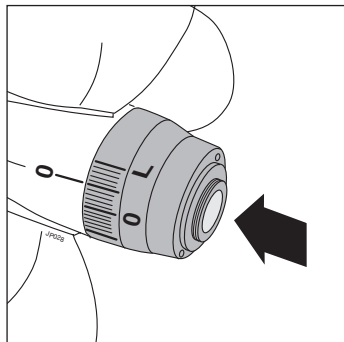


5 - pull the ogival nose.

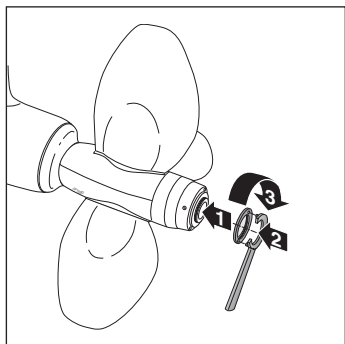
Attention : when the boat is out of the water the movement of the ogival nose is easy. When the boat is in the water it takes more time to pull the ogival nose as water has to fill the void created by the action. Drains are built into the ogival nose to allow flooding of the void.



6 - Turn the ogival nose towards the «R» or «L» side depending on the type of engine (rightway or leftway) and reach the notch of the desired pitch.

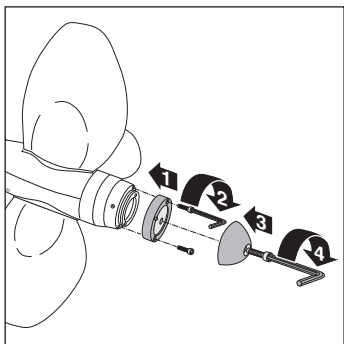


7 - release the ogival nose
 8 - make sure that the reference line «0» matches the desire notch.
 9 - make sure that the ogival nose backs itself firmly against the props body.



10 - if you are sure that you reached the right pitch, reinstall the bronze «pitch-lock» flange in order to lock the ogival nose, but if you plan to modify it again while the boat is in the water, do not install it now.

11 - put on the bronze ring and the zinc anode.



Calculation of the slip:

The following tables give the theoretical value of the pitch.
To obtain the real value multiply the datum being examined by a reduction factor of 0.55.

E.g.: *propeller hub 63, Ø 16", adjusted to the 10th step.*
*Theoretical pitch *24.655 "/rot.*
Real pitch: 24.655 x 0.55 = 13.560 "/rot.

PROPELLER HUB Ø 63 SD Pitch in inches per rotation

Propeller diameter

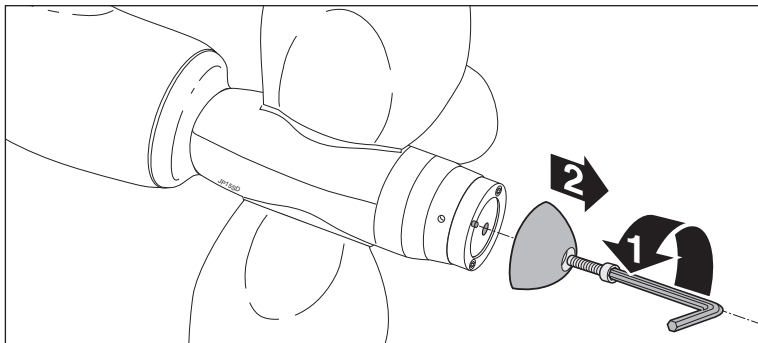
| Notch. | Propeller diameter | | | | | |
|--------|--------------------|--------|--------|---------|--------|--------|
| | 13" | 14" | 15" | 16" | 17" | 18" |
| 1 | 1,863 | 2,007 | 2,150 | 2,293 | 2,437 | 2,580 |
| 2 | 3,735 | 4,022 | 4,309 | 4,597 | 4,884 | 5,171 |
| 3 | 5,622 | 6,054 | 6,487 | 6,919 | 7,352 | 7,784 |
| 4 | 7,533 | 8,112 | 8,692 | 9,271 | 9,851 | 10,430 |
| 5 | 9,476 | 10,205 | 10,934 | 11,663 | 12,392 | 13,121 |
| 6 | 11,462 | 12,343 | 13,225 | 14,107 | 14,988 | 15,870 |
| 7 | 13,498 | 14,537 | 15,575 | 16,613 | 17,652 | 18,690 |
| 8 | 15,597 | 16,797 | 17,997 | 19,197 | 20,397 | 21,596 |
| 9 | 17,771 | 19,138 | 20,505 | 21,872 | 23,239 | 24,606 |
| 10 | 20,032 | 21,573 | 23,114 | *24,655 | 26,196 | 27,737 |
| 11 | 22,397 | 24,120 | 25,843 | 27,566 | 29,289 | 31,012 |
| 12 | 24,884 | 26,798 | 28,712 | 30,626 | 32,541 | 34,455 |
| 13 | 27,512 | 29,626 | 31,745 | 33,862 | 35,978 | 38,095 |
| 14 | 30,308 | 32,640 | 34,971 | 37,302 | 39,634 | 41,965 |
| 15 | 33,300 | 35,861 | 38,423 | 40,984 | 43,546 | 46,107 |
| 16 | 36,522 | 39,332 | 42,141 | 44,951 | 47,760 | 50,570 |

Section 4 - MAINTENANCE

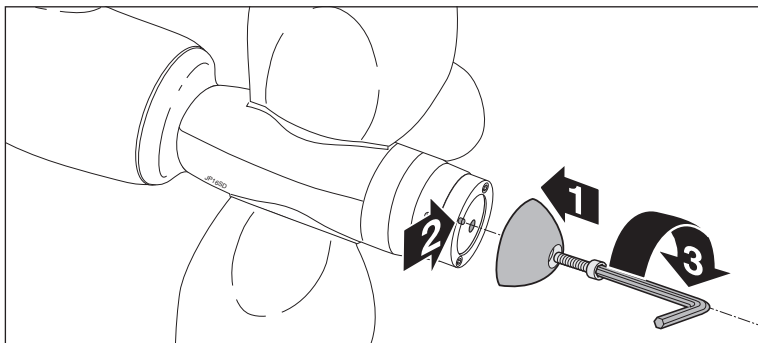
The **JPROP** propeller needs very little maintenance. Periodic maintenance, as described below, however will help you achieve best performance, both in efficiency as well as durability.

Regular maintenance.

Periodically replace the zinc-anode in order to avoid damage due to cathodic corrosion.

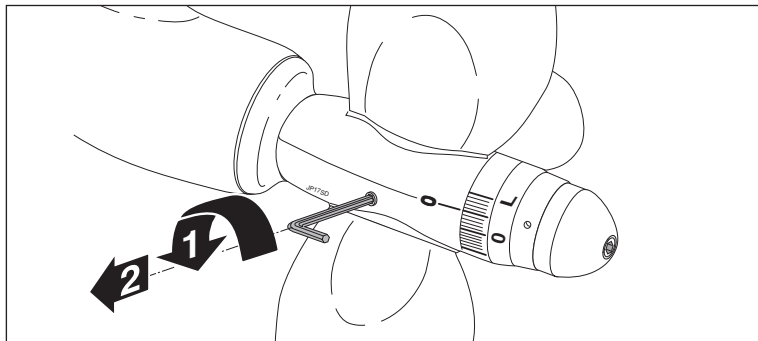


1 - remove the old anode (Allen key type B - table 1)

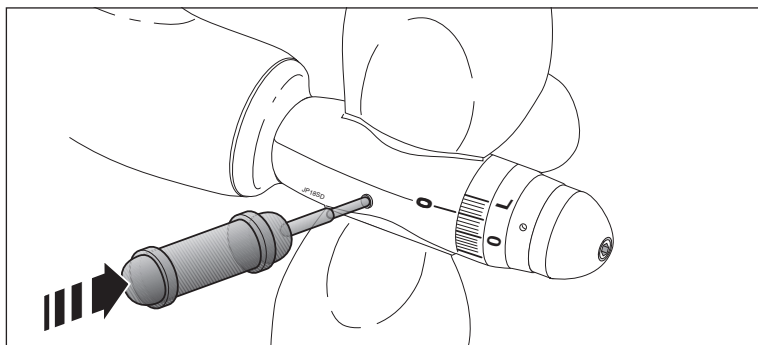


2 - install the new anode taking care that the projection on the anode fits the cavity in the bronze ring.

Lubrication.



1 - unscrew the Allen screw under the red dot (Allen key D - table 1).



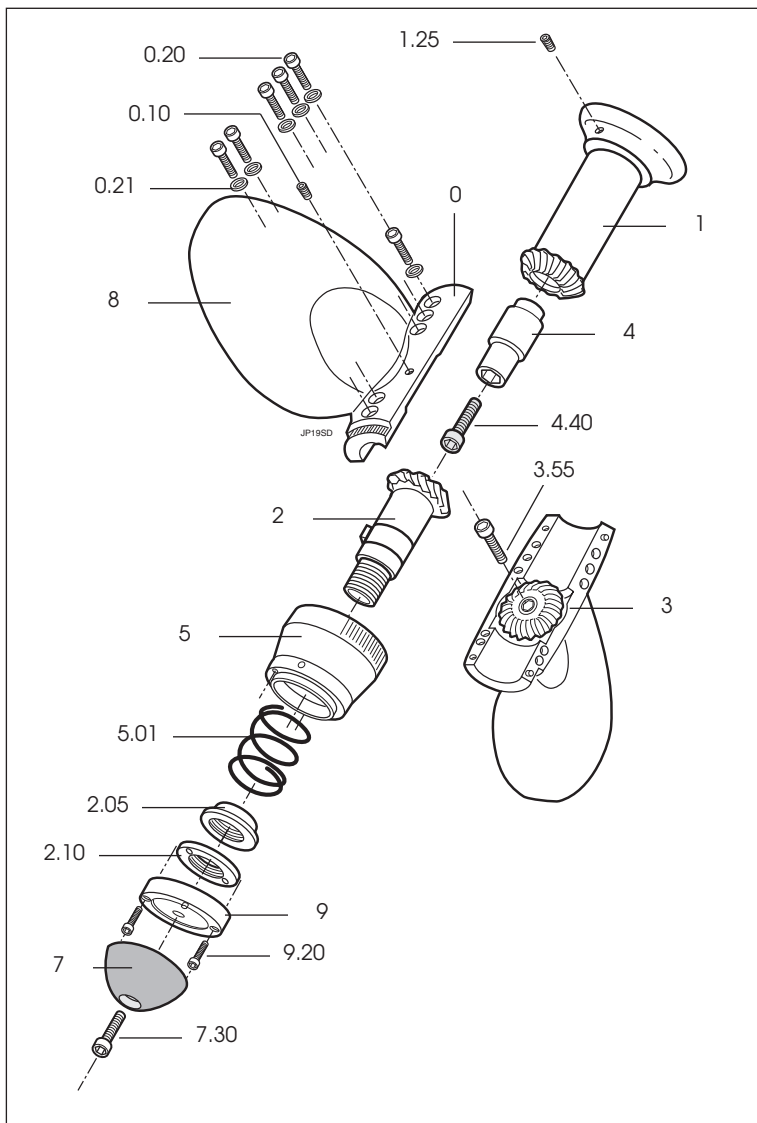
2 - Fill the propeller hub with marine grease (grease suggested: Polimar 400 or Shell Nautilus SRS 2000) using the grease-gun.
3 - replace the Allen screw in the propeller and seal with a silicon sealer.

For any other problem please contact your supplier.

The manufacturer assumes no responsibility for any damages due to incorrect installation, use or maintenance of the product.

Section 5 - SPARE PARTS LIST

Propeller hub Ø 63 SD



Spare parts list for propeller hub Ø 63 SD

| Ref. | Description | Codex JP |
|------|---|----------|
| 0 | Hub sector | 63.00.00 |
| 0,10 | Allen screw UNI 5927 M6x8 pc A4 | 63.00.10 |
| 0.20 | Allen screw TCE UNI 5931 M6x20 A4 | 63.00.20 |
| 0.21 | Washer DIN 7980 M6 A4 | 63.00.21 |
| 1 | Saildrive® junction | 63.01.00 |
| 1.25 | Allen screw UNI 5927 M8x20 pc A4 | 63.01.25 |
| 2 | Lock | 63.02.00 |
| 2.05 | Spring-lock flange | 63.02.05 |
| 2.10 | "Pitch-lock" flange | 63.02.10 |
| 3 | Satellite | 63.03.00 |
| 3.55 | Allen screw TCE UNI 5931 M8x55 A4 | 63.03.55 |
| 4 | Retaining nut | 63.04.00 |
| 4.40 | Allen screw (Lock-nut) TCE UNI 5931 M8x40 A4 | 63.04.40 |
| 5 | Ogival nose | 63.05.00 |
| 5.01 | Recall spring | 63.05.01 |
| 7 | Zinc anode | 63.07.00 |
| 7.30 | Allen screw TCE UNI 5931 M8x30 A4 | 63.07.30 |
| 8 | Blade | 63.08.00 |
| 9 | Bronze ring | 63.09.00 |
| 9.20 | Allen screw TCE UNI 5931 M4x20 A4 | 63.09.20 |

Pitch adjustment:

| notch | pitch | maximum R.P.M. | maximum speed |
|-------|-------|-------------------|------------------|
| | | | |
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| | | | |
| | | | |


NOTE:

Please take note on these pages of the pitch adjustments made as well as dates of last servicing, lubrication, anode inspection.

Blank lined area for notes, consisting of seven horizontal grey bars.

NOTE:

Please take note on these pages of the pitch adjustments made as well as dates of last servicing, lubrication, anode inspection.





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