

Service and Support

Checking and cleaning stuck thruster motor brushes



DOCUMENT ID: 4631

REVISION: 2

DATE: 2024

LANGUAGE: EN

SS

It is essential to follow all instructions within this document to avoid potential personal injury, death, or damage to existing products in the vessel, the vessel's hull integrity, and including this product during installation or operation. Failure to follow instructions within this document will render all warranties given by Sleipner Motor as VOID.

Warnings and situations requiring extra caution are outlined in the documentation. Take extra consideration when warnings are outlined.



WARNING

Indicate a potentially hazardous situation that, if not avoided, could result in death or severe injury.



CAUTION

Indicates a potentially hazardous situation that could result in minor or moderate injury or critical damage to vessel integrity if not avoided.

Responsibility of the installer

General:

- The installer must read this document to ensure necessary familiarity with the product before installation.
- Directions outlined in this document cannot be guaranteed to comply with all international and national regulations, including but not limited to health and safety procedures. It is the installers responsibility to adhere to all applicable international and national regulations when installing Sleipner products.
- This document contains general installation guidelines intended to support experienced installers. Contact professional installers familiar with the vessel and applicable regulations if assistance is required.
- If local regulation requires any electrical work to be performed by a licensed professional, seek a licensed professional.
- When planning the installation of Sleipner products, ensure easy access to the products for future service and inspection requirements.

Warranty statement

- The equipment manufactured by Sleipner Motor AS (The "Warrantor") is warranted to be free from defects in workmanship and materials under normal use and service.
- This Warranty is in effect for of two years (Leisure Use) or one year (Commercial use) from the date of purchase by the user. Proof of purchase must be included, to establish that it is inside the warranty period.
- This Warranty is transferable and covers the product for the specified time period.
- In case any part of the equipment proves to be defective, other than those parts excluded in paragraph 5 below, the owner should do the following:
 - Prepare a detailed written statement of the nature and circumstances of the defect, to the best of the Owner's knowledge, including the date of purchase, the place of purchase, the name and address of the installer, and the Purchaser's name, address and telephone number;
 - The Owner should return the defective part or unit along with the statement referenced in the preceding paragraph to the warrantor, Sleipner Motor AS or an authorized Service Centre, postage/shipping prepaid and at the expense of the Purchaser;
 - If upon the Warrantor's or Authorized Service Centre's examination, the defect is determined to result from defective material or workmanship, the equipment will be repaired or replaced at the Warrantor's option without charge, and returned to the Purchaser at the Warrantor's expense;
 - no refund of the purchase price will be granted to the Purchaser, unless the Warrantor is unable to remedy the defect after having a reasonable number of opportunities to do so. Prior to refund of the purchase price, Purchaser must submit a statement in writing from a professional boating equipment supplier that the installation instructions of the Installation and Operation Manual have been complied with and that the defect remains;
 - warranty service shall be performed only by the Warrantor, or an authorized Service Centre, and any attempt to remedy the defect by anyone else shall render this warranty void.
- There shall be no warranty for defects or damages caused by faulty installation or hook-up, abuse or misuse of the equipment including exposure to excessive heat, salt or fresh water spray, or water immersion except for equipment specifically designed as waterproof.
- No other express warranty is hereby given and there are no warranties which extend beyond those described in section 4 above. This Warranty is expressly in lieu of any other expressed or implied warranties, including any implied warranty of merchantability, fitness for the ordinary purposes for which such goods are used, or fitness for a particular purpose, and any other obligations on the part of the Warrantor or its employees and representatives.
- There shall be no responsibility or liability whatsoever on the part of the Warrantor or its employees and representatives for injury to any person or persons, or damage to property, loss of income or profit, or any other consequential or resulting damage or cost which may be claimed to have been incurred through the use or sale of the equipment, including any possible failure or malfunction of the equipment, or part thereof.
- The Warrantor assumes no liability for incidental or consequential damages of any kind including damages arising from collision with other vessels or objects.
- This Warranty gives you specific legal rights, and you may also have other rights which vary from country to country.

Brushes

This instruction sheet is intended for experienced maintenance personnel.

Stuck brushes, or brushes that are not completely loose in the brush holder will cause the thruster to run slowly with diminishing power.

Under no circumstances should a lubricant or cleaning agent be sprayed into the motor.

Doing so can cause a fire hazard and voltage leaks.

The thruster motor must be removed from the vessel and brought to a convenient working location to complete this procedure. The motor can be removed from the vessel with the vessel in the water.

1:

Shut off dedicated thruster battery switch or remove the fuse from the thruster circuit.

Check for voltage across the positive and negative battery cable studs on the motor to ensure battery power to the thruster is not present.



2:

Remove Battery cables. Secure the jam nut behind the cable lug when loosening the outer nut.

Ideally a thin wrench should be used to hold the jam nut; if one is not available a pair of needle-nose Vise-Grips can be used.

If the stud is allowed to turn, internal motor damage can occur.



3:

Unplug 4-wire Control Harness.



Brushes

4:

Remove motor mounting bolts. Lift motor off motor bracket.



5:

Remove top cap or brush screen to access the brushes. There are three versions of motors utilized on Side-Power Thrusters; these three motors

versions are referred to as “K”, “S” or “R” version motors.

5a:

“K”/“R” version motors have a top cap on the motor that encloses the brush assembly and is held in place by either two or four bolts. “K”/“R” small motors have four brushes and springs and the larger motors have eight brushes and springs.



5b:

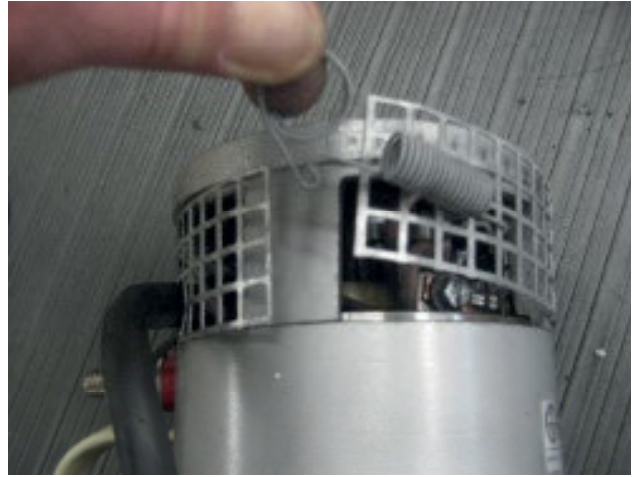
“S” version motors have a brush screen wrapped around the brush assembly area of the motor which is held in place with a spring. “S” motors have four brushes, one brush in each of four brush holders. Each brush may have either one or two brush springs depending on the thruster model.



Brushes

6:

It is recommended to blow the motor out with compressed air to remove as much carbon dust as possible prior to servicing. Either the top cap or brush cage will have to be removed in order to do this depending, on the type of motor you have, please see step (6) below Caution: Blowing out the carbon dust should be done in a well ventilated area. Proper respiratory protection must be worn to avoid inhalation of carbon dust. Avoid skin contact with carbon dust; plastic gloves should be worn. If skin contact is unavoidable then wash affected area to remove carbon dust.



7:

With a small hook (a small Allen wrench works well), pull back the brush spring to free the brush from tension. Be careful not to let the spring slip and become dislodged, they are not easily re-installed and they can fall into the motor which can require complete motor break-down.



8:

Gently pull the brush out of the holder. The brushes must be completely loose in the holder, if there is any friction at all between the brush and the holder the motor will not run properly. The brush and holder will need to be cleaned such that the brush is completely loose. Note: it is not necessary to unbolt the brush wire to complete this step.



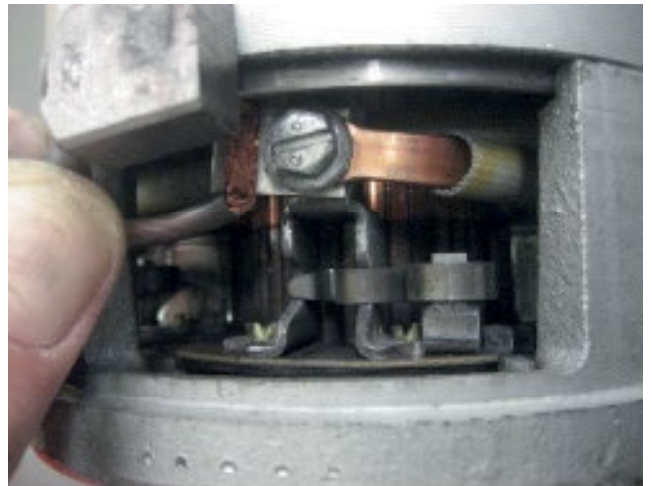
9:

Inspect brushes for damage. If any of the brushes show signs of damage or overheating the complete set of brushes will have to be replaced. When ordering replacement brushes or springs specify the thruster model and if you have an "S", "K" or "R" version motor. If a brush is not easily removed then use pliers to hold the brush so more force can be applied. In such instances the brushes are typically damaged during removal necessitating brush replacement. Use caution to avoid allowing brush debris to get lodged within the motor.



10:

After removing the brush, the spring can be rested on the holder to avoid it becoming dislodged. If any of the brush springs are corroded or if one brush spring feels weaker than the rest then the complete set of brush springs must be replaced.



11:

Use a small wire brush or file to clean the brush holder until the brush fits loosely. If using a file be careful not to file any metal off the holder, use of a file is only intended to remove carbon dust, debris, or corrosion. Pull the brush spring out of the way to access the holder as necessary.



Brushes

12:

On occasion the brush will still not fit loosely in the holder after cleaning the holder. If this is the case the brush can be very gently sanded on a flat surface a small amount just until it fits loosely. Note: Complete removal of the brush, including unbolting the brush wire, is necessary to complete this step. Only remove the brush or brushes from one holder at a time, this will prevent the brush holder bridge bars from becoming displaced.



13:

The commutator surface is often carbonized if one or more brushes are not loose in their holder. The commutator can be cleaned by applying electrical component cleaner to a cloth or cotton swab, hold the cloth against the commutator surface while spinning the motor shaft. Note: Great care is to be taken to avoid contact and damage of the rotating armature commutator with hard tools.



14a:

Notice for "K"/"R" motor reassembly:
When replacing the top cap on "K"/"R" motors ensure that no brush wires get pinched between the top cap and the motor body.



14a:

Notice for "S" motor reassembly: When replacing the brush cage, ensure that the cage is not touching either the positive or negative battery cable stud. It is recommended to cut away the cage in the area of the battery cable studs to reduce the cage being dislodged and making contact with the battery cable studs.



15:

Reverse procedures to re-install motor. Remember to use caution when installing battery cables; use a thin wrench or needle nose Vise-Grips to secure the jam nut, torque to 15Nm or 11 lb. /ft.



16:

Always check the operating voltage at the thruster motor after servicing. 12 volt thrusters typically run between 9.5v and 10.5v, 24 volt thruster typically run between 19v and 21v. Operating volts below 9v on 12v thrusters and below 18v on 24v thrusters should be addressed. Please contact a qualified marine electrician, your Side-Power dealer, or Imtra if you have low operating volts.

[illegible]

© **Sleipner Group**, All rights reserved
The information given in the document
was right at the time it was published.
However, Sleipner Group cannot
accept liability for any inaccuracies or
omissions it may contain. Continuous
product improvement may change the
product specifications without notice.
Therefore, Sleipner Group cannot accept
liability for any possible differences
between product and document.

Learn more about our products at
www.sleipnergroun.com



SLEIPNER MOTOR AS

P.O. Box 519

N-1612 Fredrikstad

Norway

www.sleipnergroun.com

Made in Norway