Sleipner Motor AS
P.O. Box 519, Arne Svendsensgt. 6-8
N-1612 Fredrikstad, Norway

Declare that this product with accompanying standard control systems complies with the essential health and safety requirements according to:

DIRECTIVE 2013/53/EU
DIRECTIVE 2014/30/EU
DIRECTIVE 2014/35/EU
Planning Installation Considerations and Precautions

- If the height of the room you are installing the Side-Power is limited consider the three different configuration designs.
  - Angled
  - Horizontal
  - Vertical

- The thruster must NOT be installed in compartments that require ignition proof electric equipment. If necessary, make a separate compartment. *(NB: If installing an IP assembly, it has been tested to be fully ignition protected so that it can be installed in areas with possible explosive gases in accordance with ISO 8846)*

- The electromotor will generate some carbon dust so any storage compartment must be separated from the thruster to prevent nearby items from becoming dusty/dirty. *(NB: IP version motors do not generate dust)*

- Installing the electromotor in a small compartment must be ventilated to ensure cooling of the electromotor.

- Do not install the thruster in a position where you need to cut a stiffener/stringer/support for the hull integrity without checking with the boat builder this can be done safely.

- The electromotor, its components, contacts/plugs or other joints in the control cables must be mounted so they will remain dry at all times.

- We advise painting the gear house and propellers with antifouling. *(NB: Do not paint the anodes, sealings or propeller shafts)*

- Do not finish the inside of the tunnel with a layer of gelcoat/topcoat or similar. There is only room for a thin coat of primer and two layers of anti-fouling between the tunnel and the props.

- Don’t install the electromotor at close range to easily flammable objects as it will reach over 100°C before the temperature switch is activated.

- Do not store items close to the thruster motor as it can reach 100°C. Any loose items near the thruster motor can cause problems with electrical wiring coming loose and short-circuiting.

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**IMPORTANT**

Stern mounted retract thrusters must not be installed to conflict with the main boat propellers or its water trail. *(NB: consult a naval architect for an exact position.)*
### Thruster Measurements

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*Valid for SE & SEP
Technical Specifications

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<td>Thrust 10.5v or 21v (kg * lbs)</td>
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<td>Installation</td>
<td>Mould-in</td>
<td>Mould-in</td>
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</table>

*Valid for SE / SE IP & SEP / SEP IP

Motor: Custom made reversible DC-motor.

Gearhouse: Seawater resistant bronze. Ballbearing at propeller shaft and a combination of ball bearing and slide bearing at driveshaft.

Motor bracket: Seawater resistant aluminium, galvanically insulated from the motor.

Tunnel: Cross spun with rowing G.R.P tunnel. Steel & aluminium tunnels available at request.

Propeller: 5-blade skewback “Q-prop” propeller, fibreglass reinforced composite.

Batteries: Minimum recommended battery capacity (cold crank capacity by DIN/SAE standard) SEE ELECTRICAL SPECIFICATIONS

Max. use: S2 = 3 min. or appr. 7-10% within a limited time frame.

Safety: Electronic time-lapse device protects against sudden change of drive direction. The electric thermal cut-off switch in electromotor protects against overheating (auto reset when electro motor cools down). Flexible coupling between electro-motor and driveshaft protects electromotor and gear system if propeller gets jammed. If using the original Sidepower panel, the panel shuts off automatically 6 minutes after last use. An integrated microprocessor monitors solenoids, reducing wear and risk of solenoid lock-in. Auto-stop of the thruster in case of accidental solenoid lock-in or if run signal is continuous for more than 3 minutes Depending on the panel type after a certain time not in use, the console will shut down and retract the thruster. (NB: the thruster will retract automatically when turned off.)
Positioning of the Retract thruster

The thruster must always be installed so the hatch is opened towards the direction of travel.

**Bow**
The thruster must be installed as far forward as possible. Allow for 10cm around the thruster for moulding the retract frame and the depth of the retracted propeller is 185mm (SR 80/100), 250mm (SR 130/210) or 300mm (SR 250/300) under the waterline. For bow installations, the thruster must be installed in the centre line of the keel. *(NB: Installing the thruster further forward will give less depth for the propeller but offer better leverage effect for turning.)*

**Stern**
Follow the same depth requirement for the retracted propeller of 185mm (SR 80/100), 250mm (SR 130/210) or 300mm (SR 250/300) under the waterline. The thruster while retracted must not conflict with any other component of the vessel such as stern drives/propellers, trim tabs or rudders. Therefore stern installations do not require to be installed on the hulls keel centre line and can be installed off centre.

Installing the thruster below the waterline as outlined is important for two reasons:

1. So that it does not suck air down from the surface which will reduce performance and increase noise levels.
2. To get as much water pressure as possible to receive maximum efficiency from the thruster.

Always ensure enough space for the complete SR unit including motor, actuators, retract frame, future service and for installation moulding to the hull.
Thruster Installation Considerations and Precautions

Before installation, it is important that the installer reads this guide to ensure necessary acquaintance with this product.

- The electromotor must be handled with care. Do not lift it by internal connections/ main terminals or placed down on the driveshaft.

- With the boat on land, run the thruster for short bursts.

- While the thruster is in the air, ensure that the propellers have come to a complete stop before performing a directional change of the thruster, as it might cause damage to the thruster.

- It is important to follow the guidelines in this manual. Failure can result in severe damage to the thruster.

DC Ignition Protected Thrusters:

- If there is a problem with your Ignition Protected stern thruster, please contact your dealer.

NEVER
Disassemble any part of the Ignition Protected stern thruster assembly. Tampering with the Ignition Protected stern thruster assembly or any attempt to disassemble anything on this thruster assembly inside the boat can cause an explosion with severe consequences.

IMPORTANT
If installing S-link products DO NOT connect any other control equipment to the S-link controlled products except Side-Power original S-link products or via a Side-Power supplied interface product made for interfacing with other controls. Any attempt to directly control or at all connect into the S-link control system without the designated and approved interface will render all warranties and responsibilities for the complete line of Side-Power products connected void and null. If you are interfacing by agreement with Sleipner and through a designated Side-Power supplied interface, you are still required to also install at least one original Side-Power control panel to enable efficient troubleshooting if necessary.
1. Identify the location of the thruster considering space required for installation, operation and future maintenance.

2. Mark the keel centre line on the inside of the hull. Flip the SRF flange upside down and use the internal surface to mark the hull for cutting the thruster hatch. *(NB: Ensure the mould is centred.)*

3. The SRF flange must sit so the two side rails run flush with the length of the hull. To do so the SRF flange tabs must be trimmed down to match the hull profile curvature. *(NB: Consult a naval architect for methods to transfer the hull profile to the SRF flange. DO NOT cut the SRF flange length edge.)*

4. Cut the hatch door. The hatch opening must be cut at an angle of 45º on three sides and 30º on the stern face. This allows any water forces hitting the hatch while closed to be absorbed by the hull, not the thruster. *(NB: Use a suitable cutting tool able to be set to the desired angle. If cutting from outside the hull drill 4 holes from the internal marked corners to see the required profile from the outside.)*

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**Marking and Trimming of SRF Flange**

1. Please refer to the graphic for special considerations relating to your model!
**Installation Pre-check**

Temporarily set up the complete installation to ensure no conflicts during the final operation of the thruster.

1. Use silicon in the 4 corners of the SRF flange and set it over the hatch. Attach the motor unit to the SRF flange with 4 corner screws to hold securely in place. Use silicon to attach the hatch to the propeller unit. *(NB: Ensure correct orientation for the thruster to open the hatch facing the direction of water flow. Remember attachment is for temporary checking of thruster operation only.)*

2. Temporarily connect 12 or 24 DC cables (refer to the label on actuators for correct voltage) to the 6 mm cables on the terminals on the controller. Set switch no. 4 on the DIP-switch marked “SETTINGS” to ON. Remove the wooden safety part located above the propeller.

3. Press “DOWN” to extend the retract mechanism and check the hatch opens fully without touching the hull. If the hatch is obstructed by the hull, lift the aft end of the SRF flange maintaining the reference height in front - until the hatch clears the hull when opened.

4. Press “UP” to retract the propeller mechanism. Ensure when the hatch is closed extra pressure is on the contact surface between the hatch and the hull only. If the hatch is not closing with pressure on the contact surfaces the entire SRF flange must be raised.

After all, pre-checks are completed the SR system can be installed.

**IMPORTANT**

The hatch contact edges and the hull contact edges MUST work as the mechanical end stop. During cruising, slamming forces from the water must be absorbed by these areas, not the thruster.
Required Modifications After Pre-check

To increase the space between the hatch and the hull the entire SRF flange and motor must be raised at the stern end.

1. With the hatch in the open position raise the stern end of the SRF flange and motor until the appropriate clearance is achieved. *(NB: continue to raise the stern height until this is obtained.)*

2. Use a wedge to keep the thruster SRF flange and motor stable.

3. Open and close the hatch multiple times to ensure:
   - Clearance from the hull and hatch while open
   - Hatch closes flush with the hull and extra force is still transferred to the hull and hatch surface contact edges.

4. Record the height and kept the wedges in place for future moulding of the SRF flange.
1. Surfaces to be moulded/bonded must be ground to remove coating/material to achieve correct adhesion preparations for moulding in the SRF flange to hull.

2. Apply Epoxy filler or equivalent on bottom edges of SRF flange or on the hull for bonding between connection surfaces. Ensure the filler is compatible with hull materials.

3. Place the SRF flange into position ensuring the correct orientation. Fill gaps between SRF and hull with Epoxy filler or equivalent. Grind and smoothen surfaces after curing time.

4. Apply layers of fibreglass and ensure that resin is compatible with hull materials.

5. After curing time, smoothen all moulded surfaces and apply coating. Apply putty before coating if necessary.

After moulding in SRF flange is completed, the upper thruster case is ready to be installed.

**General Moulding process**

Start the laminating with a strong attachment point in each corner between the hull and the outside of the lower unit. Use epoxy and fiberglass cutting or similar, which laminating material is the actual boatbuilders responsibility. Cover the upper part if grinding is necessary. After moulding material have cured, run the retract mechanism down, disassemble the hatch and remove the upper part from the unit.

Laminate the inside and outside of the lower unit part solid to the hull. Use appropriate fiberglass cloth (which laminating material is the actual boatbuilders responsibility). Before grinding of hull and unit lower part, precautions must be taken against grinding dust inside the boat. Grind deepest where the hull and lower unit part meets.

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**Please refer to the graphic for special considerations relating to your model!**

1. Apply Epoxy filler or equivalent for bonding between hull and SRF flange.
2. Fill all gaps with Epoxy filler or equivalent, with thruster case resting on the SRF flange. Grind and smoothen surfaces after cutting.
3. After curing time – Smoothen all moulded surfaces.
4. Layers of fibreglass cloth.
5. Grind in this area, deepest where the hull and lower unit meets.
**Motor House Installation**

1. Apply MS Polymer or equivalent on SRF flange top surface to seal and avoid water leakage. *(NB: Ensure that glue is compatible with SRF and thruster case materials.)*

2. Place the upper thruster Housing down on the SRF flange.

3. Insert and fasten bolts. Start with the 4 corner bolts followed by the remaining to required torque.
Hatch Installation

1. Fit custom made pin bolts to the tunnel rings. The ends of the bolts must be sharp to create marks in the hatch. The pin bolts must be in correct height so the hatch will fit in its inner position.

2. Place hatch in its inner position, then press or tap with a hammer to create punch marks inside of the hatch.

3. Drill 4 marked holes and countersink the outer hull side. *(NB: drill holes 90 to the hatch surface.)*

4. Temporary fit the hatch to the tunnel rings. Ensure the bolts do NOT conflict with the propeller tunnel. *(NB: Bolts can be cut, depending on hull thickness.)*

5. Fill the gap between hatch and hull edges.

6. Apply a layer of aluminium or duct tape on hatch opening edges on the hull. Apply Epoxy filler or equivalent to hatch edges to create a perfect seal.

7. Operate the thruster to “IN” position. Smooth out the filler and add more if needed. After curing time, grind and smoothen the surface.

8. Unscrew and remove hatch to smoothen off excessive material before coating the hatch.

9. Apply filler on to tunnel rings contact surface, so the hatch will be secured properly. Now re-install hatch in its correct position. Tighten bolts so hatch will fit properly.

10. Apply coating inside and outside of hatch opening on hull.

Please refer to the graphic for special considerations relating to your model!
Motor to House Installation

1. Install the motor onto the motor bracket ensuring both the couplings and the drive shafts have locked together. The motor must be installed with the solenoid facing the control box. *(NB: depending on your coupling you may need to wiggle the motor into place. Ensure the connection couplings are engaging correctly. Ensure the motor cable terminals are accessible for electrical installation later.)*

2. Fasten the bolts holding the motor to the motor bracket with the above torque.

3. Check the drive shafts engage by rotating the propeller. It is required the propeller can rotate via hand power. *(NB: Rotating the propellers can be hard because of the gear reduction and the motor.)*

4. Apply the gear leg and propeller with antifouling designed for propellers. Do not apply to the propeller drive shaft, the anodes or the end of the gear leg facing the propellers.

*(NB: The motor must be covered to avoid dust from fabrication/maintenance operation entering the motor or the solenoids. After fabrication/maintenance operations have ceased the cover must be removed before operating the thruster.)*
IMPORTANT
Do NOT use washers between lugs and terminals, this can cause overheating. Washers must be placed in the outer position before tightening nut.

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**Thruster Electrical Installation**

1. **Explanation of electrical table.** See next page
   - All power cable lengths are the total of + and - (to and from).
   - Battery size is stated as minimum cold crank capacity, not Ah.
   - Use slow fuse rated to hold stated Amp-Draw for min. 5 minutes.
   * Cable size and main battery size when an extra bow battery with minimum the CCA mentioned as A is installed.

2. Use appropriate sized cables and batteries with a high cranking capacity to feed the thruster. The actual voltage at the motor while running the thruster decides the motors output RPM and thrust. You can use larger cables for better results.
   - Advised minimum cables and batteries sizes. See next page.

3. Connect the battery supply to the thruster or control unit (PPC) for proportional control units.
   - Install a main manual/automatic switch that can take the load without noticeable voltage drop from the positive lead terminal on the battery to the thruster (or PPC unit). The main switch must be accessible to turn off the thruster independently from the rest of the electrical operation of the vessel when not onboard or in emergencies. *(NB: It is advised to install a fuse on the positive cable for protection against short-circuiting of the main cables. The fuse should ensure no voltage decrease, slow-blow and sized to take the amperage draw for at least 5 minutes.)*
   - A circuit breaker can be used instead of the fuse and main power switch if the functionality is the same.

4. Remember to use ignition protected fuses and switches if fitted in areas that require this feature. *(NB: For Ignition Protected installations)*

5. Cables must have adequate electrical and mechanical isolation against contact with anything but the lead terminal on the battery and fitted with cable ends.

6. Fasten cables to the required torque. See next page

**IMPORTANT**
Check the following with the main switch set to off:
After all electrical connections have been completed check with an ohm meter that there is no electrical connection between
1. electro-motor flange and the positive terminal on the motor
2. electro-motor flange and the battery negative terminal on the motor
If unsure contact skilled personnel.
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*Valid for DC motors

**Specifications:**
- **Voltage:** 12V, 24V
- **Model:** 12V, 20/110S, 25/110S, 30/125S, 40/125S, 50/140S, 60/185S, 80/185T, 120/215S, 130/250S, 170/250T, 210/250T, 250/300S
- **Min. battery CCA:** 120, 120, 120, 120, 120, 120, 120, 120, 120, 120, 120, 120
- **Rec. fuse DIN:** 200, 200, 200, 200, 200, 200, 200, 200, 200, 200, 200, 200
- **ANL:** 150, 150, 150, 150, 150, 150, 150, 150, 150, 150, 150, 150

**Note:**
- The specifications are valid for DC motors.
- The table includes models with different current ratings and voltages.
- Each model is characterized by its nominal current, draw, and recommended fuse ratings.
- The voltage options are 12V and 24V, catering to various applications requiring different power outputs.
- The table is comprehensive, listing models from 12V to 250V, ensuring a wide range of options for users.

**Technical Details:**
- **Current Draw:** The current draw is specified for each model, indicating the power consumption under normal operating conditions.
- **Battery CCA:** The minimum battery CCA (cold cranking amp) is crucial for ensuring the system can start the vehicle under cold conditions.
- **Recommended Fuses:** The recommended fuses are provided in DIN, SAE, and EN standards, ensuring compatibility with international regulations.

**Conclusion:**
This table is an essential resource for engineers, vehicle manufacturers, and mechanics, providing a clear and comprehensive guide to selecting the appropriate DC motor model based on current, voltage, and battery requirements, ensuring optimal performance and safety in various applications.
**Control Panel Cable Installation**

1. Please refer to the graphic for special considerations relating to your model!

- All standard Sidepower control panels can be used in any combination as well as any two-way switching device. If an automatic main switch is installed, a separate switch to control on/off is required.

- Many control panels can be installed using optional Y-connectors or T-connectors if installing an S-link proportional power system. *(NB: If two or more control panels are operated at the same time in opposite directions, the electronic control box will stop the thruster until it receives a single signal or thrust in one direction.)*

- When using original Sidepower equipment it is entirely “plug & go” and no additional configuration setup is required.

- All controls must have spring load for automatic return to neutral position.

*(NB: If the drive direction of the thruster is running opposite to the control panel, swap the blue and grey wire on the control wire or control box solenoid.)*

Pin configuration of 4 pole AMP contact:

- Pin1: BLACK = Ground
- Pin2: BLUE = Engages thruster SB solenoid
- Pin3: GREY = Engages thruster Port solenoid
- Pin4: RED = Positive voltage for the control panel
S-link Planning & Precautions

S-link is a "CAN" based control system with full intelligent communication between all units in the system. Main advantages include:
- Round, compact and waterproof plugs with unique keying and colour coding to avoid faulty hookup.
- An unlimited number of commands or information transfer on a single cable.
- Proprietary Sleipner commands, but built 100% on NMEA 2000 standard.

Routing the Backbone:
Keep routing backbone spur cables to a minimum. Avoid routing the S-link cables close to equipment that might cause interference to the S-link signals such as radio transmitter equipment, antennas or high voltage cables. The backbone MUST be terminated at each end with the 6 1327 End Terminator.

Spur cables:
Spur cables can be left unterminated (NB: Routing can be prepared for future additional equipment). Make sure to protect open connectors from water and moisture to avoid corrosion in the connectors.
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Example of the control wiring with S-link system for boats with one control position and one thruster.

- **Control Panel**
- **Power Supply Control Panel**
- **Automatic Mainswitch**
- **Backbone Cable**
- **Forms the main "loop" around the boat.**
- **Spur Cable**
- **Must be used to connect all parts to the backbone cable (one for each component, no exceptions).** Recommended to be as short as practically possible.
- **Power Cable (spur)**
- **Must be one in each system, delivered in the length of 2.5m**
- **Part #: 6 1328**
- **T-connector**
- **Must be one for each spur, including the power cable**
- **Part #: 6 1326**
- **End terminator**
- **Must be one in each end of the backbone "loop"**
- **Part #: 6 1327**

Power Supply Control Panel

You need:

- 2 x 6 1327 End terminators
- 3 x 6 1326 T-connectors
- 1 x 6 1328 Power spur
- 2 x 6 1320-xxM Backbone cables
- 2 x 6 1321-xxM Spur cables
Visual Wiring Diagram

- Battery 12/24V
- Main switch
- S-link automatic version (optional)
- Position sensor
- Thruster Motor
- Actuator

Options:
- Remote receiver
- Input/output interface

End terminator 120ohm

Joystick control panel
- PJC 211 (Single thruster)
- PJC 212 (Dual thrusters)

Touch control panel
- 8700 for SRV

Power supply cable

End terminator 120ohm

Main fuse

S-link supply

150000 Motor

12/24V

5A

red

black

yellow
Check drive shaft alignment

**IMPORTANT**
Before the thruster motor is operated, check the drive shaft alignment is completely straight when it reaches the end position form the control panel operation:

1) Connect power to thruster and S-link system.
2) Set DIP-switch on the controller to 0000.
3) Turn on the panel. (The drive shaft deploys.)
4) The actuator lever arm and the bearing are set to alignment marking
5) If marks align, turn panel off. Drive shaft retracts.
6) If the marks do not align, proceed to calibrate drive shaft.

**Calibrate drive shaft alignment**

*(NB: The drive shaft is correctly aligned when manufactured)*

1) With dipswitches select ‘Service Mode’.
2) Align the arrow on the actuator arm with the calibration mark, using the UP/DOWN buttons.
3) With dipswitches select ‘Sensor Calibration Mode’.
4) Press and hold both UP and DOWN buttons until STATUS LED light up green.

*(NB: If FAULT LED light-up red, then the calibration is out of position (wrong align mark).*

5) With dipswitches select ‘Operation Mode’, thruster retracts.

**Actuator Configuration**

Dipswitch number 1 & 2 configures the actuator(s).
No.1 set to OFF when the retract has two actuators.
No.1 set to ON when the retract only has one actuator.
No.2 set to OFF when the retract does not have P8 type actuator(s).
No.2 set to ON when the retract has the P8 type actuator(s).

If dipswitch no.2 is set to ON and the actuator gives a rattling noise when the door closes, then there probably is not P8 actuator(s) and dipswitch no.2 needs to be set to OFF.

The actuator is a P8 type:
-If the actuator has a plastic cap at the back where you can adjust the actuator manually.
-If it is marked with a sticker with P8
-If the manufacturer label says P8

**LED Indication**

**Continuous red light:**
Motor overtemp, Controller overtemp, Controller no communication, Motor relay failure, Low battery voltage, Position sensor failure, No power to actuators, Retractable unit failure, Temp sensor open circuit.

**Flashing red light:**
-Red light fast blinking: Dipswitch in an invalid position.
-Red light short flash every 2 seconds: Shaft not calibrated, or shaft calibrated out of range.

**Continuous green light:**
Normal mode, Service mode (actuators operated by UP/DOWN buttons).
Re-calibrated “down”-position.

**Flashing green light:**
No S-Link communication.
Control Panel Installation

Find a comfortable location for the control panel where it does not obstruct or is obstructed by other controls. Install the control panel where it is easy to use. (**NB:** As a guide the side thruster is often operated together with the gear/throttle control. For the optimal user-friendly solution install the control panel where access to both controls are accessible with one hand for each control.)

1. Use the enclosed cut-out template to mark the area to remove on your control dash.

2. Cut out the area per template for the control panel. (**NB:** If the front surface around your cut out is jagged or chipped, use a sealant to assist the gasket.)

3. Place the gasket to the back face of the panel

4. Plug cables into the connectors at the rear of the control panel. (**NB:** Twist the locking ring on the connector clockwise to secure connector.)

5. Insert the control panel in place and fasten screws.

6. Insert the control panels covering caps.

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**EN**

1. Please refer to the graphic for special considerations relating to your model!
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Checklist for DC and IP Thrusters

☐......... Propeller is fastened correctly to the shaft.
☐......... Propeller turns freely in tunnel.
☐......... The anode and/or holding screw is tightened well with thread glue.
☐......... Anti-fouling has been applied to the gearhouse and propeller but NOT on the anode or the gearhouse lid where the propeller is fastened.
☐......... Correct drive direction as per controlpanel.
☐......... The bolts holding the gearhouse and motorbracket together are tightened correctly.
☐......... The bolts holding the motor to its bracket are tightened correctly.
☐......... All electrical connections are clean, dry and tight, and the correct cable, fuse and main switch size.
☐......... Check that there is no electrical connection between the electromotor body and positive terminal on the motor, and between the electromotor body and the negative (A1) terminal on the motor with an ohm meter.

The thruster has been installed as per the instructions in this manual and all points in checklist above have been controlled.

Signed: .................................................................................................

Date: .................................................................................................

Extra pre-delivery tests by installer / yard who does not use other quality control systems !

Thruster type: ..............................................................................................

Serial number: ..............................................................................................

Date of delivery: ..............................................................................................

Correct drive direction as per controlpanel: ..............................................................

The compartment for the thruster has been isolated from general bilge water and has no obvious or suspected risks for flooding:
................................................................................................................................
................................................................................................................................
................................................................................................................................

Other comments by installer: ..................................................................................
................................................................................................................................
................................................................................................................................
................................................................................................................................
1. 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.

2. This Warranty is in effect for 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.

3. This Warranty is transferable and covers the product for the specified time period.

4. 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:
   (a) 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;
   (b) 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;
   (c) 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;
   (d) 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;
   (e) 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.

5. 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.

6. 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.

7. 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.

8. The Warrantor assumes no liability for incidental or consequential damages of any kind including damages arising from collision with other vessels or objects.

9. This warranty gives you specific legal rights, and you may also have other rights which vary from country to country.
1. The equipment manufactured by Sleipner Motor AS (The “Warrantor”) is warranted to be free from defects in workmanship and materials under normal

2. 

3. 

4. 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:

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8. The Warrantor assumes no liability for incidental or consequential damages of any kind including damages arising from collision with other vessels

expressly in lieu of any other expressed or implied warranties, including any implied warranty of merchantability, fitness for the ordinary purposes for
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