SLEIPNER
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Installation manual

For Electric Retractable Thruster Models
SRV300

DOCUMENT ID: 5372
REVISION: 12
YEAR: 2026

Warnings and safety

It is essential to read, understand, and follow all instructions, warnings, cautions, and procedures contained within this document. Failure to do so may result in serious injury, death, damage to property or equipment, product malfunction, and may affect warranty coverage.

Warnings and cautions requiring special attention are highlighted. Always read and understand the relevant safety information before using this product or performing any procedure described in this document.

⚠ WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury or damage to the product.

MC_0800

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, Sleipner products 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.

MC_0038

WARNING

Accidental activation of the retract mechanism can cause serious injury due to the high-pressure force used for closing the hatch. IF operating the hatch during any work/ maintenance around or inside the retract hatch, USE CAUTION.

MC_0627

For retract thrusters:

- The installation position of stern-mounted retract thrusters must not conflict with the propulsion propellers or their water trail.
  (NB: consult a naval architect for an exact position.)
- Paint inside the retract housing with anti-fouling. ***(NB: Do not paint the drive shaft.)***

MC_0474

For Sleipner thruster systems:

- Do not install the thruster system in any position that requires modification of hull stiffeners or stringers, as this may compromise hull integrity. Consult the boat builder if modification is absolutely necessary.
- Never operate the thruster out of water. The propeller may reach extremely high speeds and cause damage.
- Handle the thruster motor with care. Do not rest the motor on its drive shaft, as this may cause damage.

MC_0425

For on-board electric motor driven systems:

- Ensure motors installed in small compartments are dry and well-ventilated to allow the electric motor to cool.
- The electric motor, components, and cables must be mounted to remain dry.
- The electric motor can reach over 100°C before activating the temperature switch. Any loose items near the thruster motor are a potential fire hazard and can cause short-circuiting.
- The thruster power supply circuit must include the recommended sized fuse and a battery isolation switch.
- Avoid running cables near any heat sources since this might damage the insulation. Broken insulation could potentially lead to hazards and damage products.

MC_0031

For DC electric motors: MC_0426

- The electric motor will generate some carbon dust. Storage compartments must be separated from the thruster to prevent nearby items becoming dirty. ***(NB: IP version motors generate dust but are enclosed.)***

For lithium batteries powering ON/OFF thruster systems: MC_0501

- High capacity lithium batteries are capable of supplying a higher operating voltage to the motor than the ON/OFF thrusters are rated for.
  Running thrusters at higher than rated voltage will reduce operating time, increase wear and damage the thruster.
  Operating the thruster outside specified ratings will void warranty.

Sleipner S-Link™ Systems

- Only Sleipner S-Link™ products or authorized third-party control equipment may be connected directly to the S-Link™ bus.
- Non-authorized third-party equipment must always be connected through a Sleipner interface product.
- Connecting unauthorized equipment directly to the S-Link™ bus will void all warranties for connected Sleipner products.
- If third-party control equipment is interfaced to the S-Link™ bus through a Sleipner interface product, at least one Sleipner control panel must be installed to enable efficient system diagnostics and troubleshooting.

MC_0105

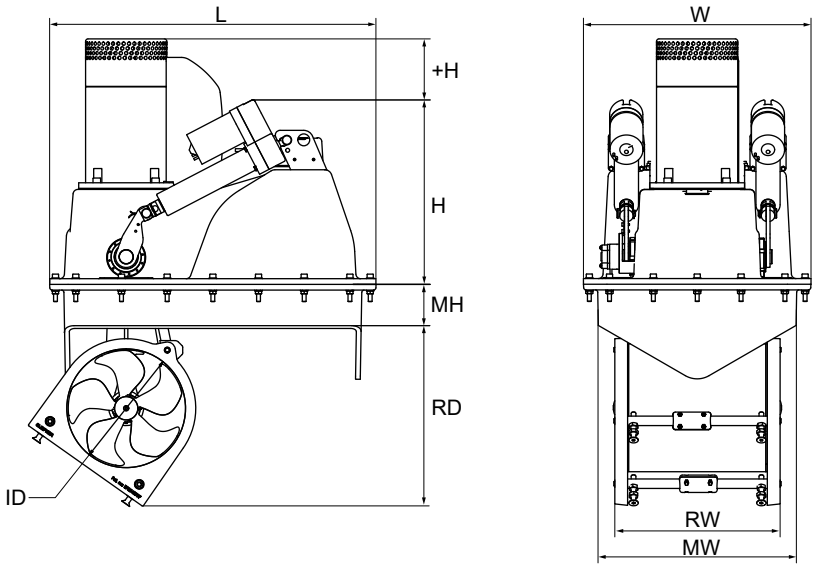
⚠

Do NOT remove the Red spacer block until the installation is completed.

Product dimensions

Dimension code	Dimension description	mm	inch
L	Thruster housing length	843	33.19
+H	Motor supplementary measuremen	172	6.77
H	Thruster housing height	452	17.80
MH	Minimum flange height	115	4.53
RD	Twist ring depth	445	17.52
ID	Tunnel diameter	300	11.81
W	SRF flange & thruster housing width	580	22.83
RW	Tunnel width	415	16.34
MW	Flange width	480	18.90

MC_0163



MG_0179

Thruster specifications

Specifications for retract thruster SRV300	
Maximum Operating Voltage*	48VDC
Thrust 48VDC	340 kg /749 lbs
Thrust 42VDC	300 kg /661 lbs
Typical Boat Size	22m - 30m 72ft - 100ft
Propulsion System	Twin propeller, counter rotating
Power	15kW/20hp
Weight	120 kg/265 lbs
Typical run time at max thrust: 2-3 min at 20°C ambient.	

MC_0166

*Measured at the motor terminals

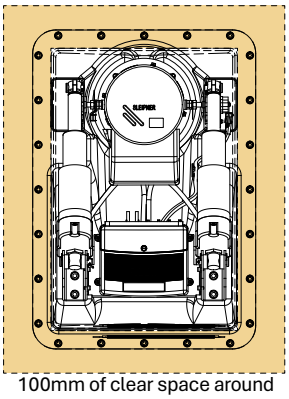
Electronic control unit 150000 specifications

Electronic control unit 150000 specifications	
Minimum supply voltage	7VDC
Nominal supply voltage	12/24VDC
Maximum supply voltage	31VDC
Minimum supply voltage for deployment	11.7VDC for 12V retract thrusters 23.4VDC for 24V and 48V retract thrusters
Fuse	40A
Operating temperature	-10°C to +60°C 14°F to +140°F
Weight	0.5 kg/1.1 lbs

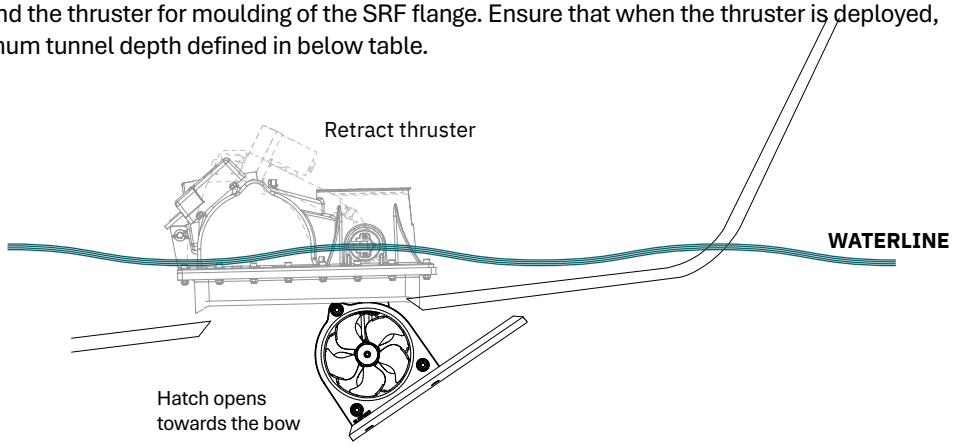
MC_1216

Retract Thruster

The thruster must always be installed so the hatch is opened towards the bow. Ensure enough space for the complete retract unit including room for installation of SRF flange and for future service.
Allow minimum 100mm of clear space around the thruster for moulding of the SRF flange. Ensure that when the thruster is deployed, the depth of the propeller exceeds the minimum tunnel depth defined in below table.

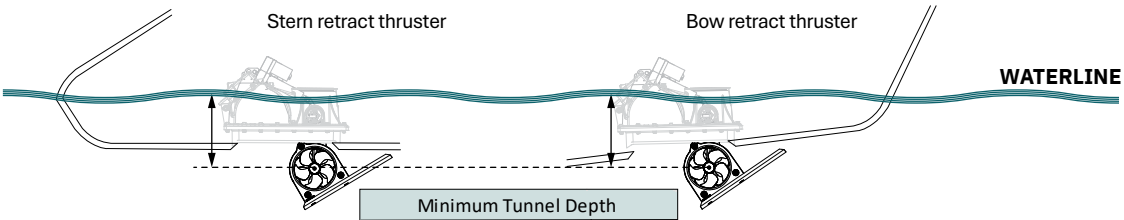


100mm of clear space around the thruster for moulding of the SRF flange.



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

- Avoid drawing air from the surface which will reduce performance and increase noise levels.
- To get as much water pressure as possible to achieve maximum thrust.



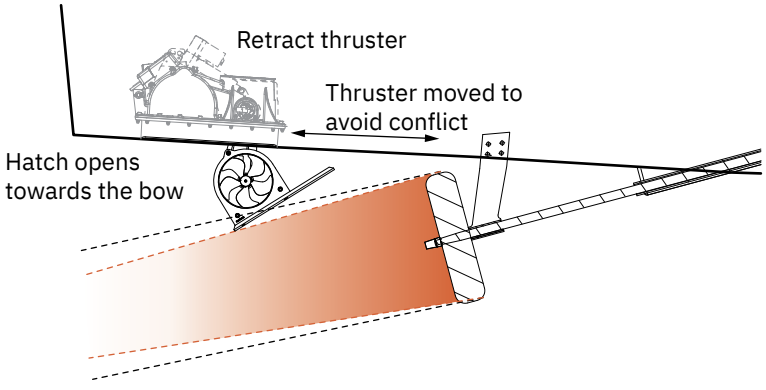
Minimum Tunnel Depth	
Retract system 80 to 100	185mm
Retract system 130 to 240	250mm
Retract system 250 to 300	300mm
Retract system 650	386mm

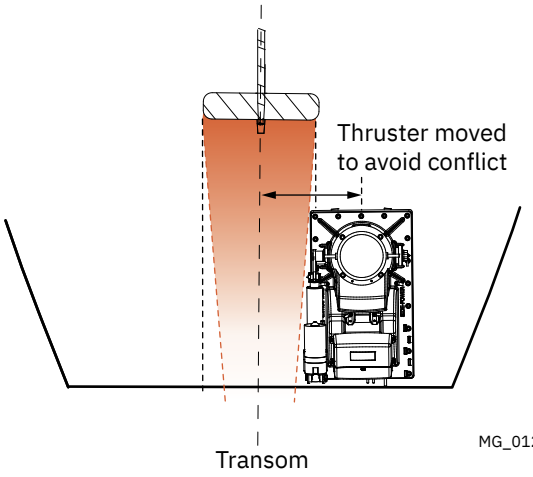
Bow installation

The thruster must be installed in the center line of the keel and as far forward as possible while following the minimum tunnel depth requirement.

Stern installation

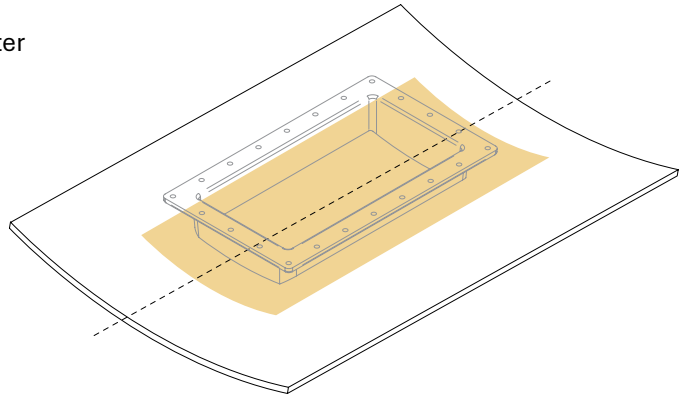
To avoid conflict between the thruster and propulsion propellers, trim tabs or rudders, the stern installation can be offset from the keel center line.
See illustrations below.





MG_0121

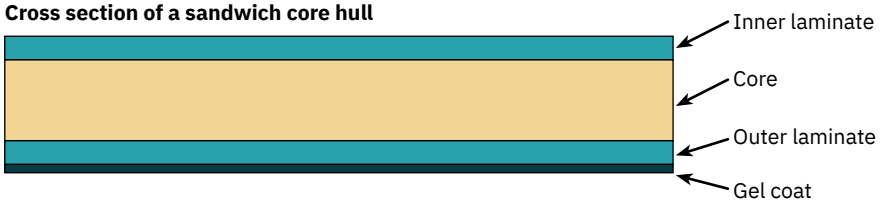
- Ensure to have a minimum of 100mm space around the thruster installation to have service access.
- Bow thrusters must be positioned on the boat center line.
- Stern thrusters can be positioned off the centre line.



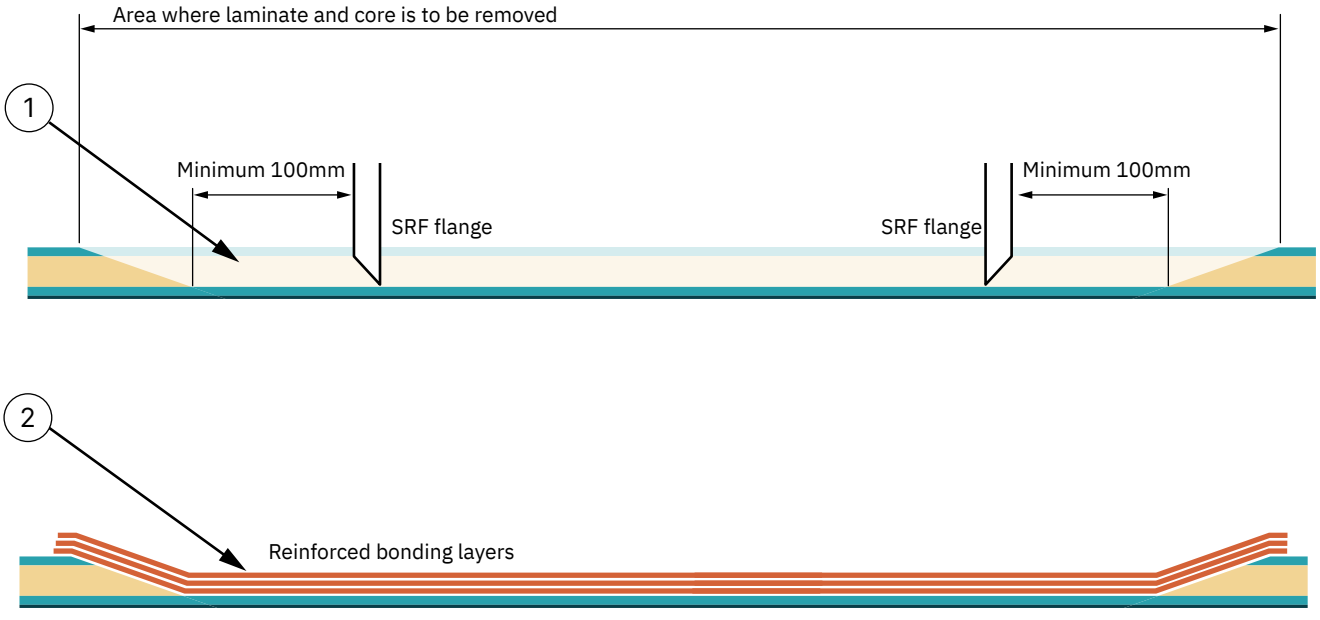
MC_0792

For vessels with sandwich hull construction, additional reinforcement of the area around the SRF flange is required.

Cross section of a sandwich core hull



1. To achieve maximum strength and bonding in the area around the installation of the SRF flange remove the inner laminate and core material to expose the outer laminate. Remove enough area for a 100mm (minimum) clearance surrounding the SRF flange.
2. Reinforce the area by applying several bonding layers to strengthen the hull for the operation of the retract thruster.



MG_0831

1. Flip the SRF flange upside down and position it at the identified installation location. MC_0773
   - For bow thrusters, this is usually symmetrical about the vessel centerline.
   - For stern thrusters, the position of the thruster may deviate from centerline.

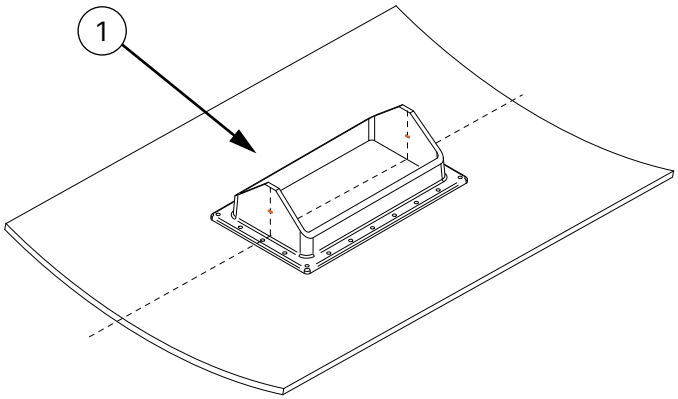
2. Use the internal edge to mark were to cut out the thruster hatch from the hull.

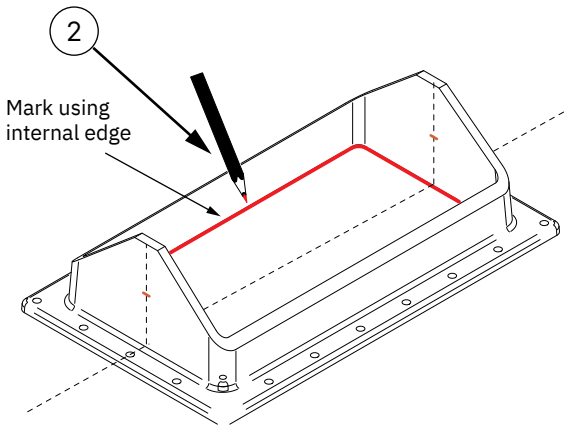
3. The SRF flange must be adapted so that the two longitudal edges on the SRF flange run flush with the hull. To do so the SRF flange must be trimmed down to match the hull profile curvature. Use a suitable tool to mark the cutting line on the SRF flange.

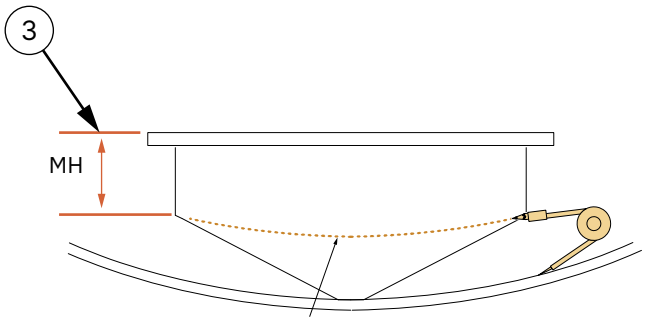
Important: The cutting line position must be according to the MH measurement for the actual thruster model. See table in topic "Thruster measurement".

For guidance or methods to transfer the hull profile to the SRF flange for cutting, consult a naval architect.

4. DO NOT cut the SRF flange length edge at this stage.



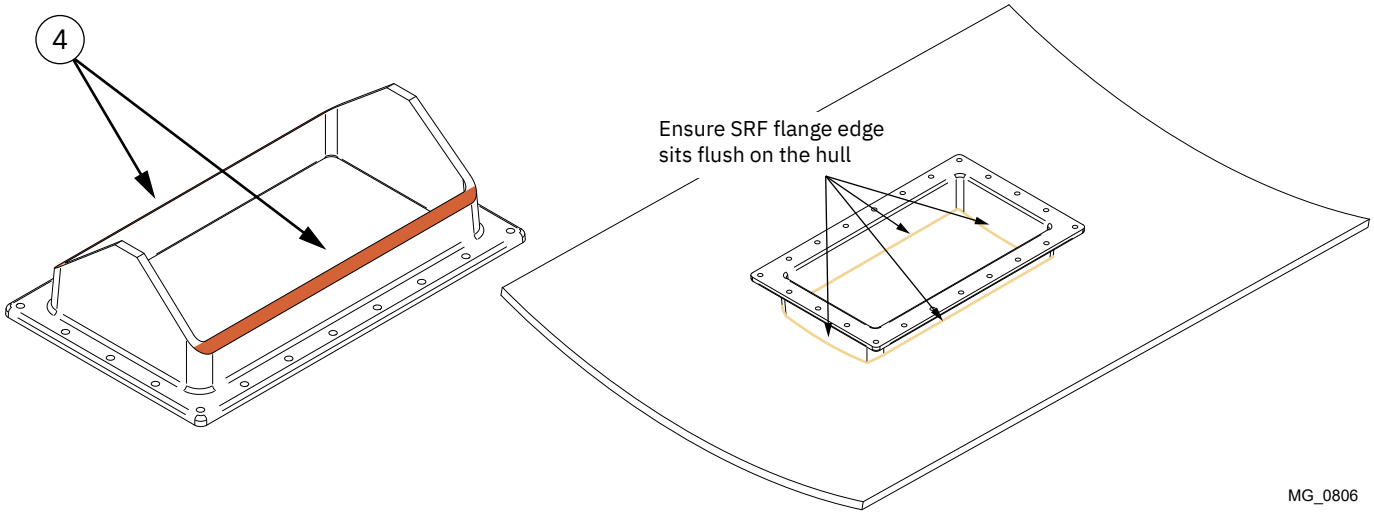




Important

The minimum SRF flange height is stated on the product measurment page (MH)

-Ø185mm = 72mm
-Ø250mm = 97mm
-Ø300mm = 115mm
-Ø386mm = 148mm

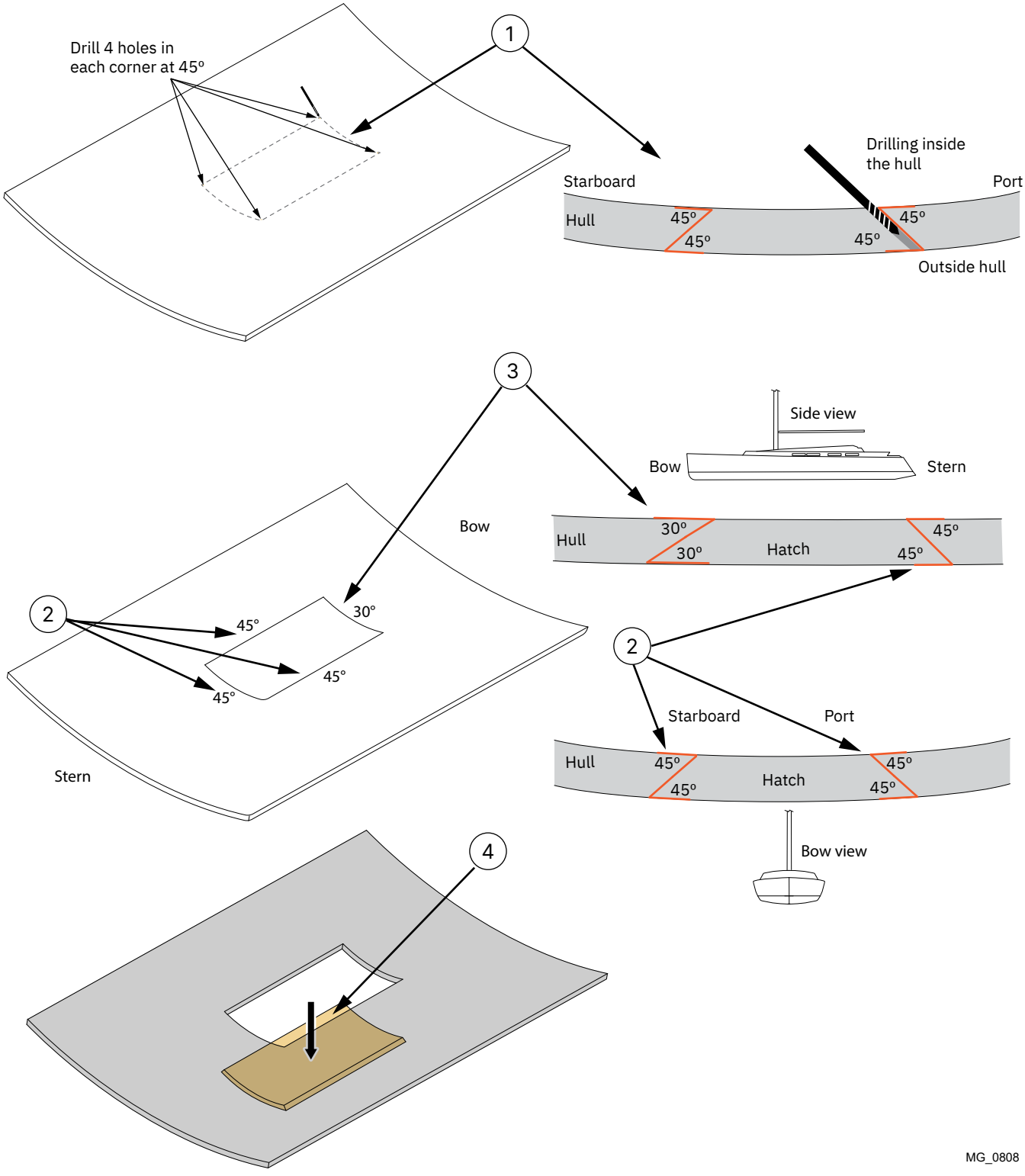


MG_0806

1. When cutting from inside, prepare for cutting by drilling 4 holes in each corner of the marked area at 45º angle inwards against the centerline.
2. The hatch opening must be cut at an angle of **45º** on starboard, port and stern sides.
3. Cut angle **30º** on the side facing the bow . This ensures that forces from water hitting the closed hatch is absorbed by the hull.

NOTE: It is of great importance that these cutting angles are correct. Otherwise the hatch will jam during opening. MC_0774
Use a suitable cutting tool able to be set to the desired angle, e.g. a jigsaw.

4. Remove the hatch from the hull. Prevent the hatch from falling down, ensure proper support to the hatch when cutting.



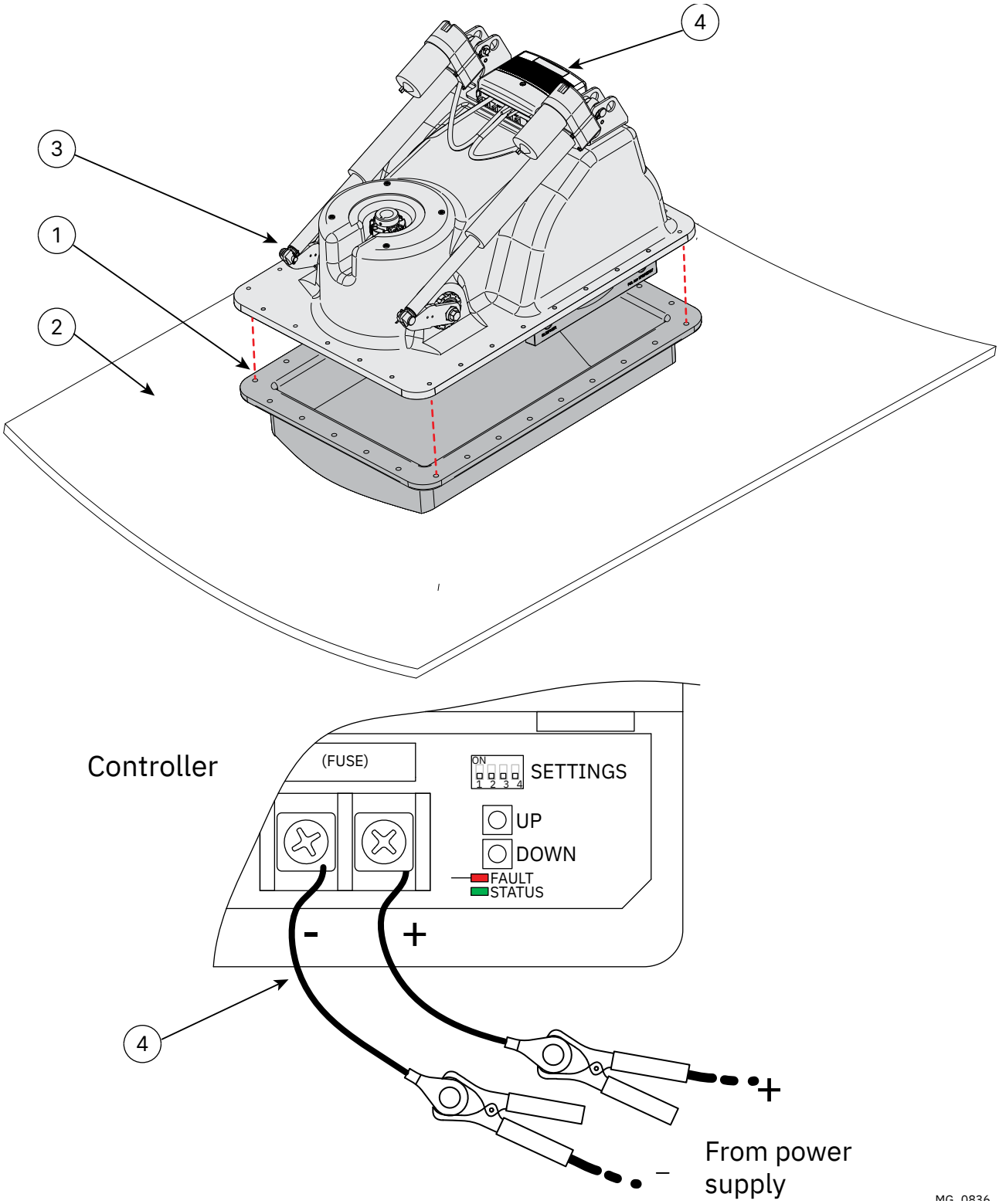
1. Position the trimmed SRF flange in the correct position over the hatch cut-out in the hull (**Reference 2**).

3. Install the thruster housing provisionally on the SRF flange, and secure it with 4 screws. Verify that the complete thruster assembly (SRF flange and thruster housing) is still inn correct position.

4. Prepare two power supply cables from the retract controller. Do not connect to the power supply yet.

Tip: For some thruster models, the motor is mounted on the thruster housing when delivered. The pre- mount process may be easier if the motor is removed from the housing before the pre- mount process is performed as shown in the figure below.

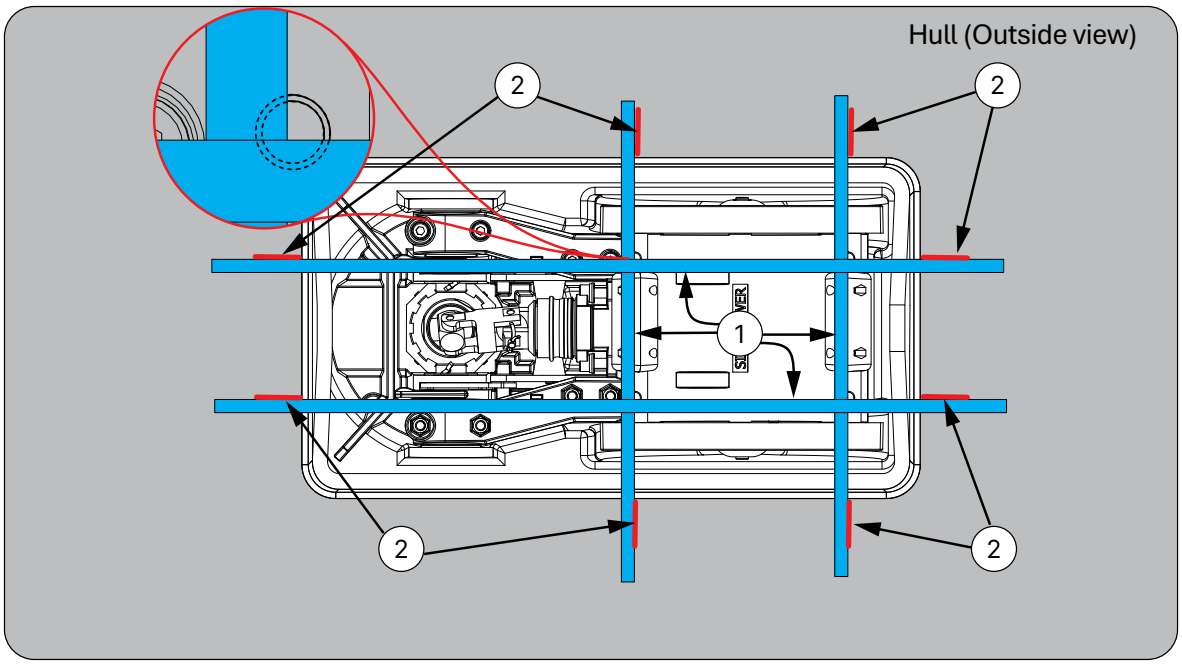
MC_0777

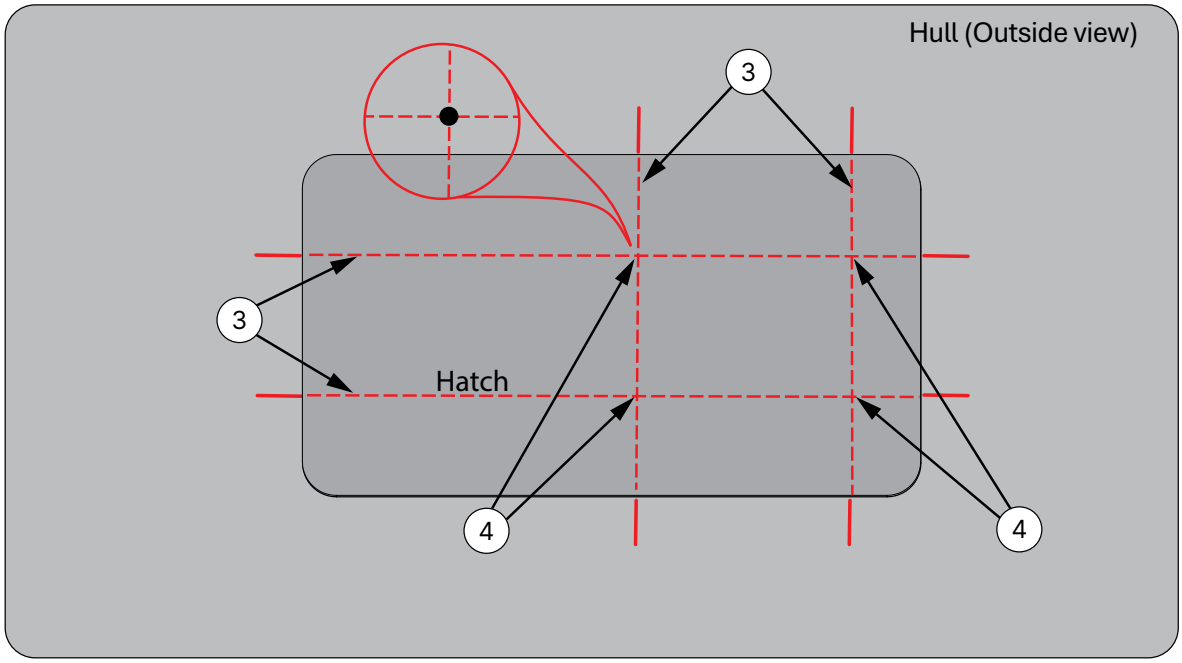


MG_0836

- Ensure that the SRF flange and the thruster housing are positioned correctly inside the hull. (See the previous topic).
- Use a suitable aid, e.g. adhesive tape, straight edge, laser or other adequate aid to follow a straight line over the center of the hatch bolt holes, in two directions. (**Reference 1, and detail bubble**).
- Apply marks on the hull, at the edges of the used aid, on the side facing the center of the bolt holes. (**Reference 2**)
- Remove the adhesive tape (or other used aid).
- Position the pre-cut hatch in the opening in the hull, and support it in its position.
- Use a flexible ruler or similar to draw extended lines on the hatch, between the marks created on the hull. (**Reference 3**).
- The correct position of the hatch attachment holes are now in the intersection of the extended lines on the hatch. Make a mark in each intersection (**Reference 4**).

MC_0776



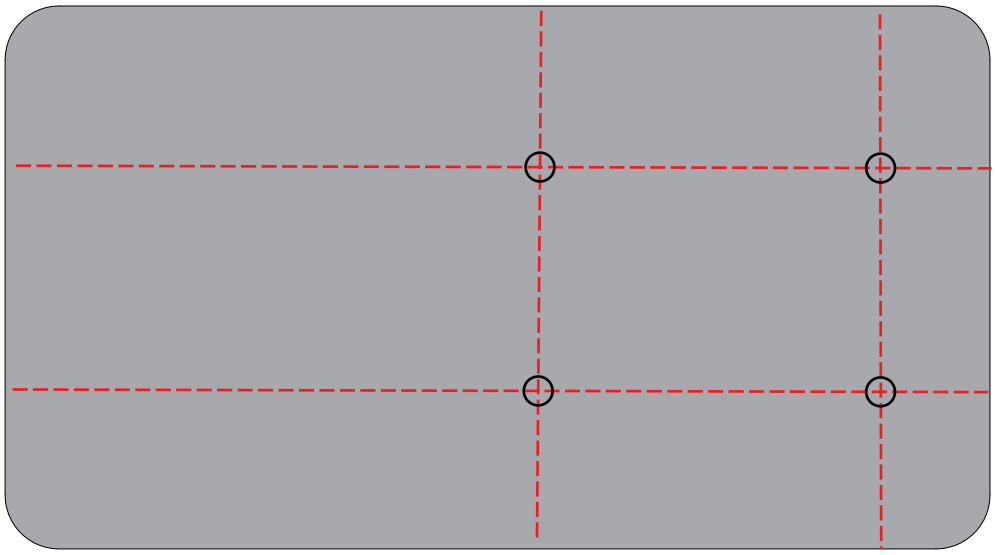


MG_0807

Drilling the attachment holes in the hatch

- Drill four Ø11mm holes in the center of each marking created in the previous step.
- It is recomended to use a pillar drill with a proper construction surface to ensure that the holes are drilled perpendicular to the hatch.
- Countersunk the holes after drilling.

MC_0778



MG_0811

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

- Temporarily attach the hatch to the thruster housing by using the M10 countersunk bolts through the drilled holes in the hatch and screw them in to the hatch bolt holes. (**Reference 1**).
  NOTE: Ensure correct orientation for the thruster to open the hatch facing the bow. Remember attachment is for temporary checking of thruster operation only.

- Ensure that the hatch is in proper place (**Reference 2**).

- Connect the prepared power supply cables from the thruster controller to a power supply.
  (NB: Refer to the label on actuators for correct voltage)

- Set switch no. 4 on the DIP-switch marked "SETTINGS" to ON (Service mode).
  NOTE: When the thruster is in Service Mode, the actuator can be moved beyond the calibration mark. Always observe the calibration mark during installation to ensure proper alignment.

- Press "DOWN" to extend the tunnel and check the hatch opens fully without touching the hull. If the hatch is obstructed by the hull in the front, (**Reference 3**), the SRF flange must be adapted so that the hatch does no longer touch the hull when in open position. (**Reference 4**).

- If necessary:
  Grind the front and side egdes of the flange a necessary amount to obtain space between the hull and the hatch (**Reference 5**).
  Note that the reference 5 illustration shows an excessive grind down in the shaded area to clarify the operation.

- Ensure that there is a space between the twist ring and the hatch during the grinding process. **Do not allow this space to be zero**. (**Reference 6**).

MC_0779

IMPORTANT

- If the space between the hull and the hatch is not obtained by the grinding process alone, (still with a space between the twist ring and the hatch), the flange must in addition be lifted in the aft end. Use wedges to obtain the correct height (**Reference 7**).
  When correct position is obtained, mark the wedge positions, and note the distance between the flange and the hull.

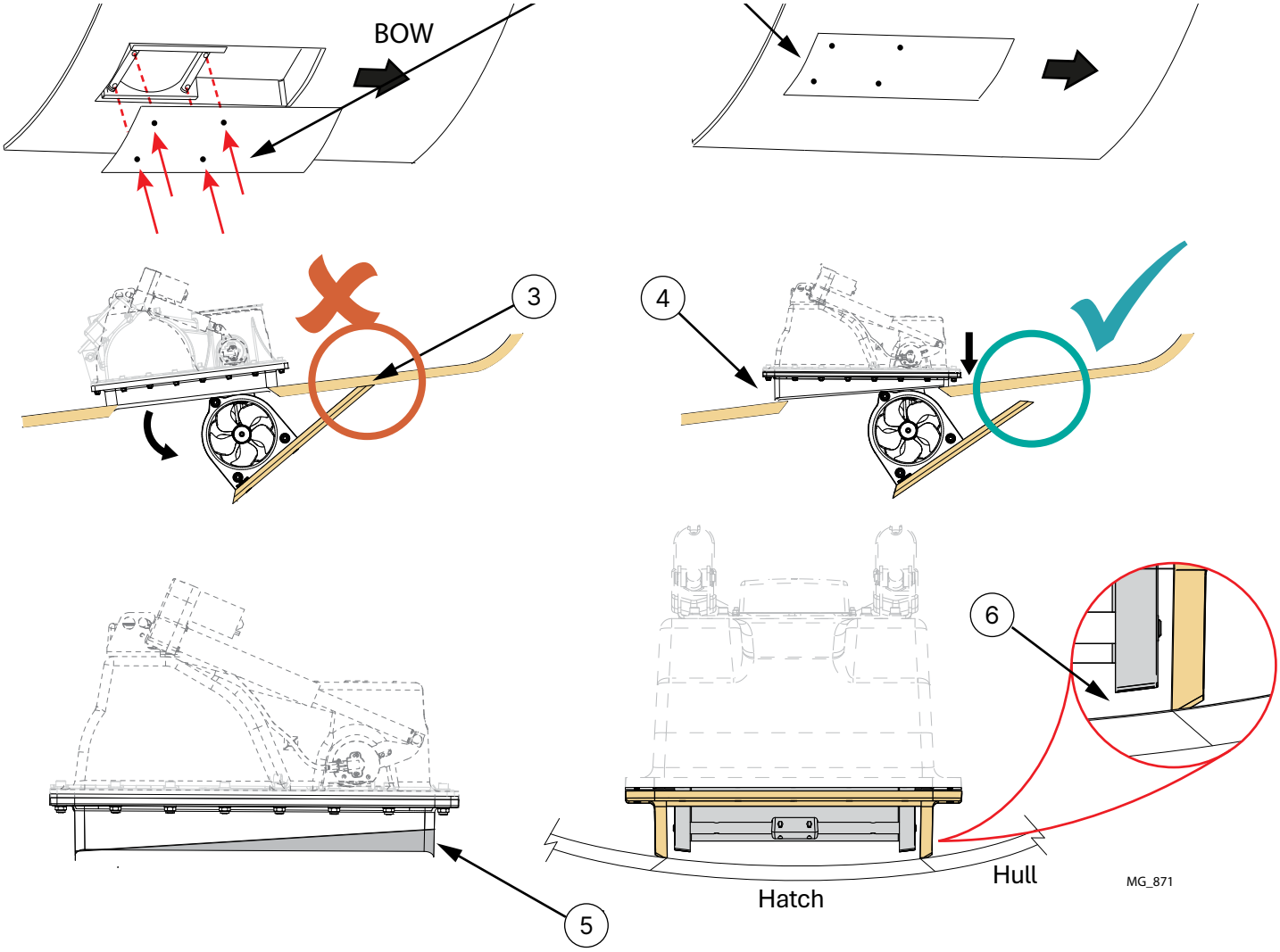
IMPORTANT

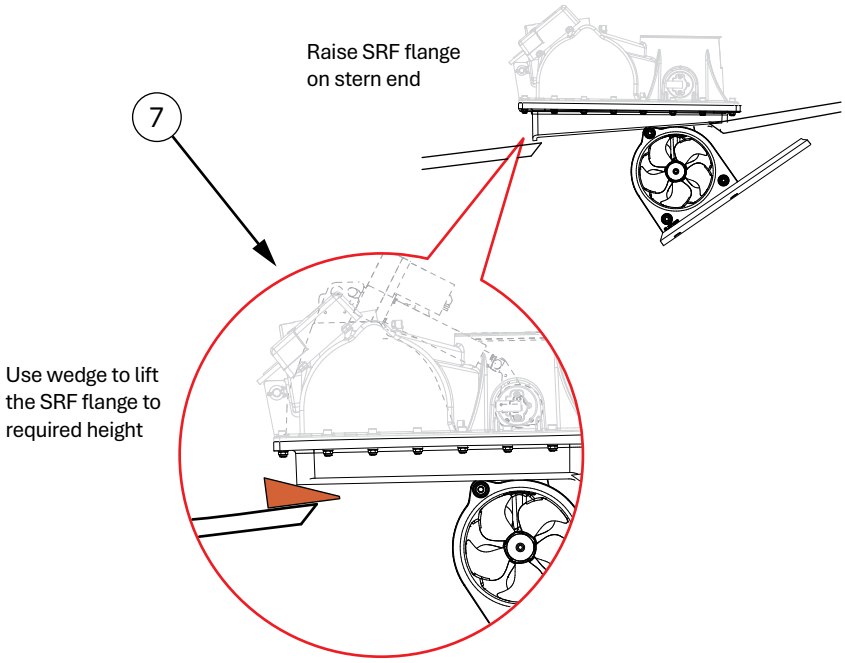
The hatch contact edges and the hull contact edges MUST work as the mechanical end stop. During cruising, slamming forces from the water must be absorbed by these areas, not the thruster.

WARNING

Accidental activation of the retract mechanism can cause serious injury due to the high-pressure force used for closing the hatch. IF operating the hatch during any work/ maintenance around or inside the retract hatch, USE CAUTION.

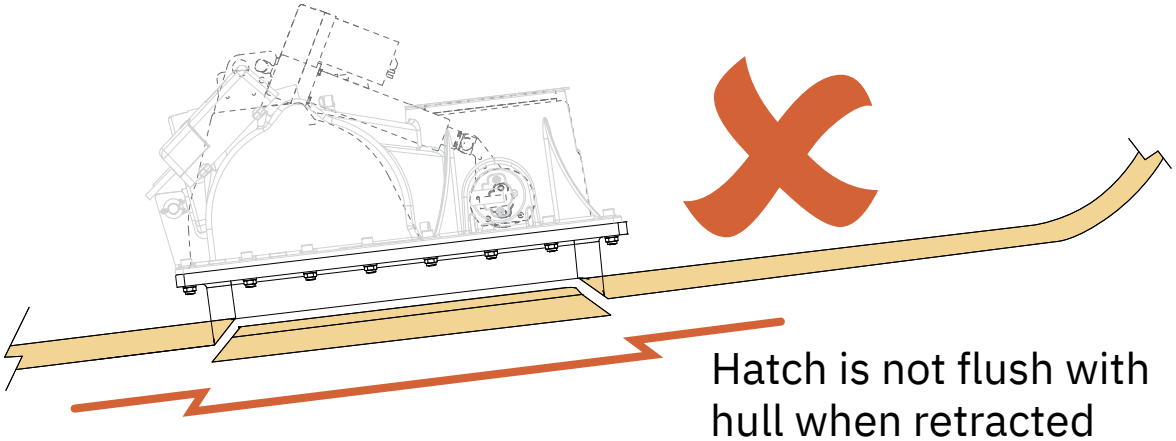
MC_0627

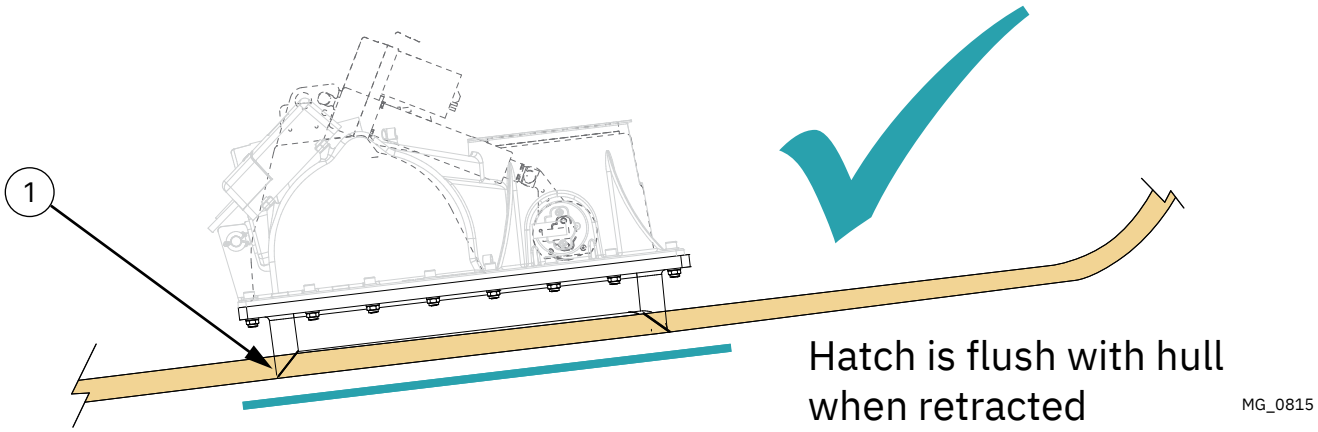

BOW
3
4
5
6
Hatch
Hull
MG_871


Raise SRF flange
on stern end
7
Use wedge to lift
the SRF flange to
required height

- Press “UP” to retract the tunnel.
- Ensure that the hatch is fitted in the hatch opening, and that the hatch is aligned flush with the hull at all edges. (**Reference 1**).
- Ensure that there is pressure on all the contact surfaces between the hatch and the hull when the hatch is closed.
- If the hatch is not closing with pressure on all the contact surfaces, the entire SRF flange must be raised to obtain this.
- When the thruster is operating as required, ensure that the position of the SRF flange can be recreated by adding position marks and leveling measurements.
- Remove the thruster housing from the SRF flange.

MC_0781





MG_0815

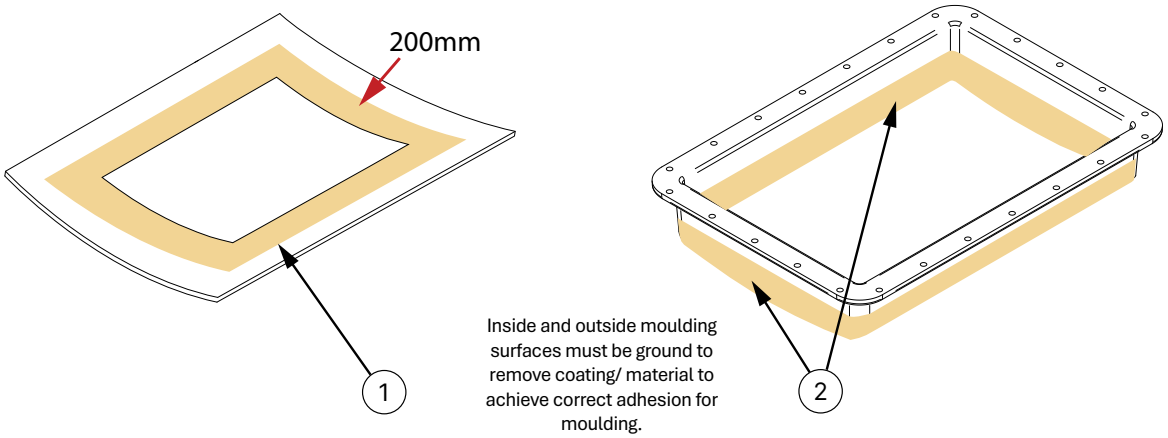
CAUTION

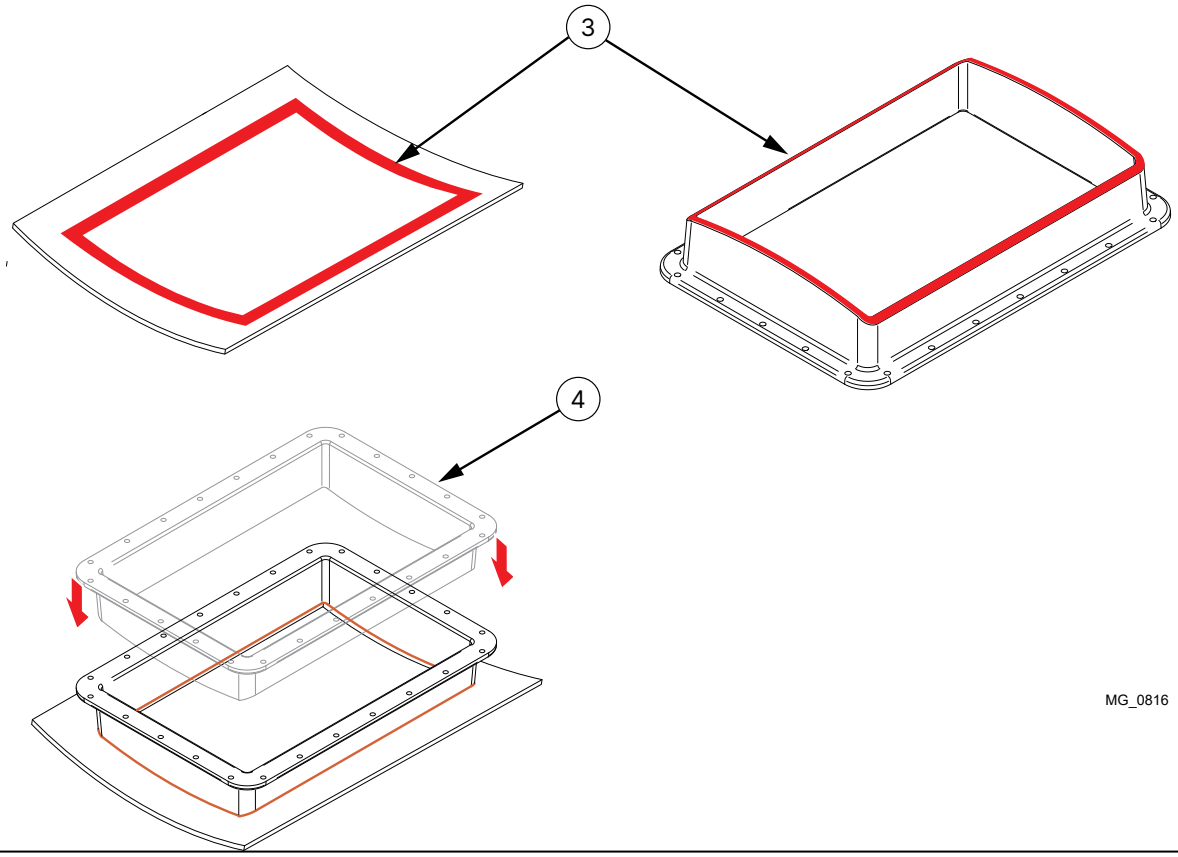
Before grinding of hull and SRF flange, precautions must be taken against grinding dust inside the boat. Surfaces to be moulded/bonded must be ground to remove coating and material to achieve sufficient adhesion.

1. Grind and smooth the area inside the hull opening to remove the gelcoat. Remove the gelcoat in a width of 200mm.
2. Grind the inside and outside of the SRF flange to remove the gelcoat.
3. Apply appropriate glue / adhesive inside the hull opening and on the bottom of the SRF flange. Apply enough glue to fill the possible space between the raised SRF flange and the hull. Reinstall the wedges from the pre-install procedure if used to obtain the correct height in the aft end of the flange.
4. Lower the SRF flange on to the hull, and position it according to the marks and measurement performed in the previous steps.

- After the SRF is positined correctly, remove the excessive glue before the hardening process starts.
- After the hardening process is finished, grind and smooth the glue joint.

MC_0782



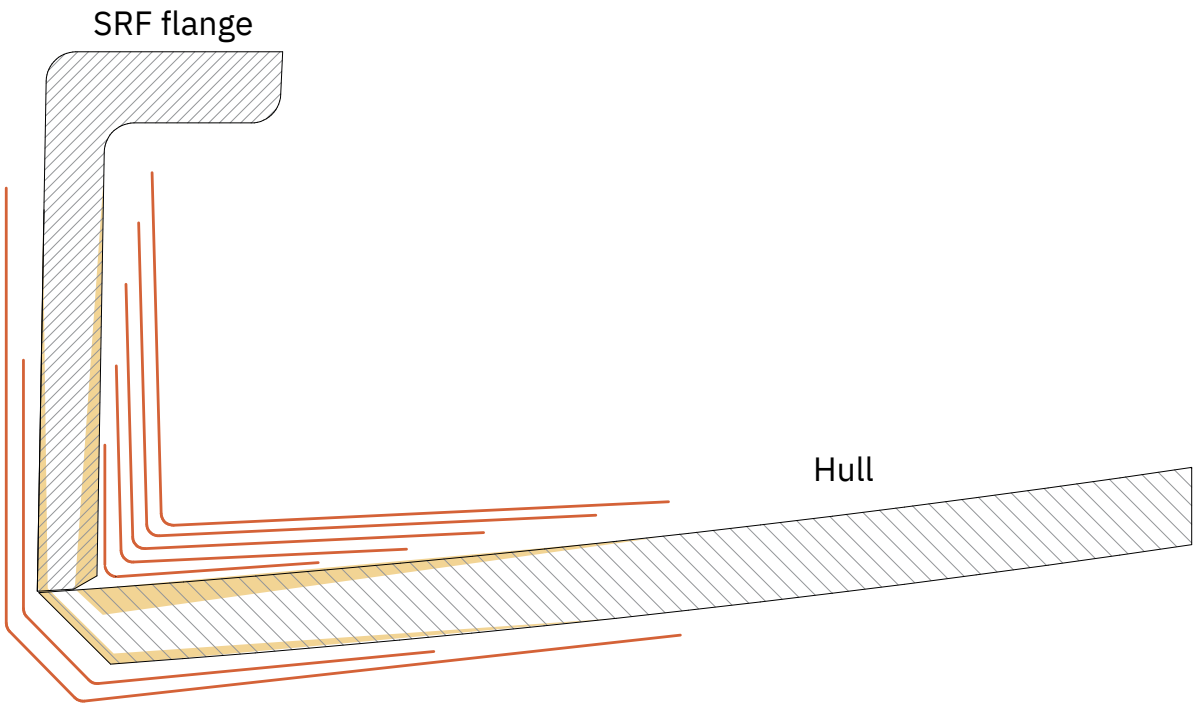


MG_0816

- After the glue / adhesive has hardened completely, the inside and outside of the SRF flange and hull must be laminated.
  Apply several layers of fibreglass and ensure that the resin and fibreglass is compatible with hull and flange materials.

MC_0783

- When the laminated ares has cured properly, smooth all moulded surfaces and apply coating.
- Apply putty before coating if necessary.



MG_0818

1. Apply MS Polymer or equivalent on SRF flange top surface to seal and avoid water leakage. Ensure that the polymer is applied over the entire surface of the flange as shown in the illustration.
   (Note: Ensure that glue is compatible with the SRF flange and retract housing materials.)

2. Place washers as spacers on the SRF flange corners.
   (Note: This Allow the MS Polymer or equivalent to semi-cure without compression, improving water tight sealing.)

3. Place the thruster housing on the SRF flange.

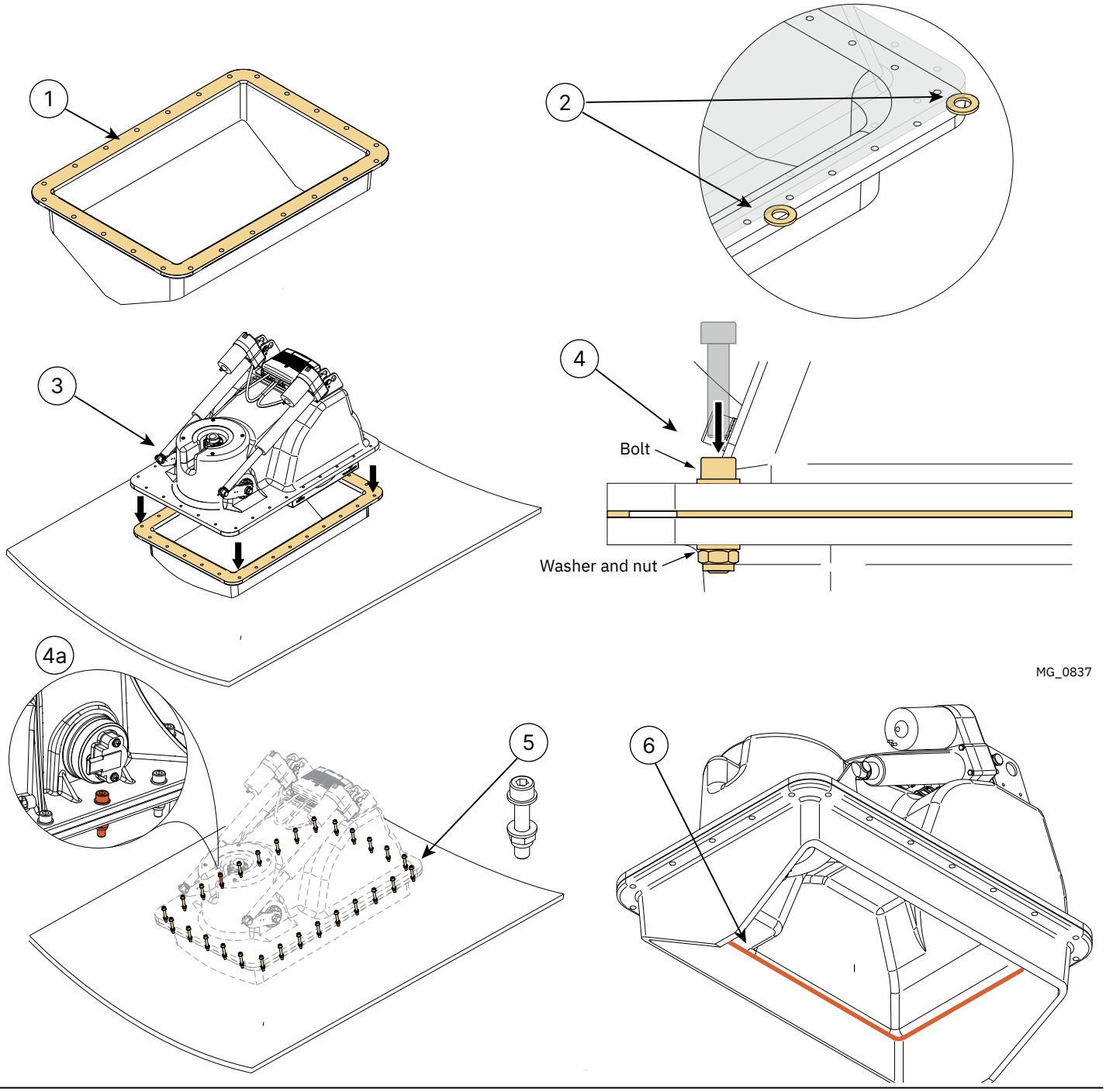
4. Insert and lightly fasten bolts to allow for the future removal of the washer spacers.
   a. **Note: It may be necessary to insert the bolts from the underside of the SRF flange, then with the nut on the top to avoid conflict with the position sensor.**

   - Allow the MS Polymer or equivalent to semi-cure and then remove the washers.

5. Tighten the bolts with a torque of 4Nm - 2,9lb/ft. Start with a corner bolt, then continue tighten the bolts in a cross pattern.

6. After assembly, apply a polymer sealant bead to the joint between the flange and the housing on the inside.

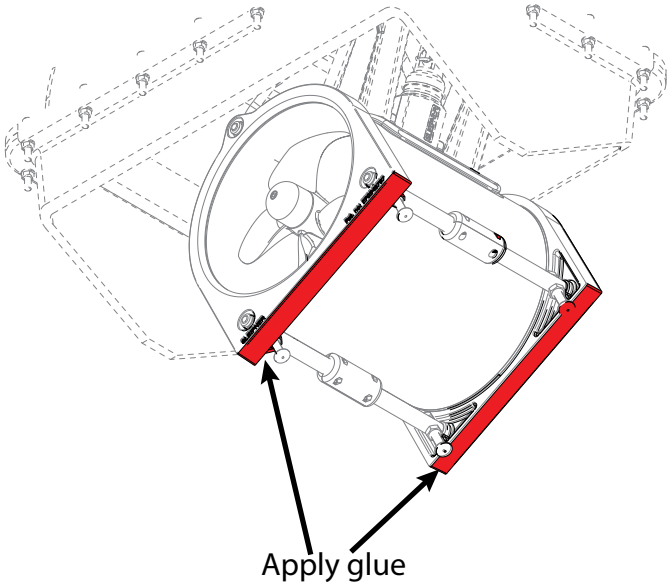
MC_0784

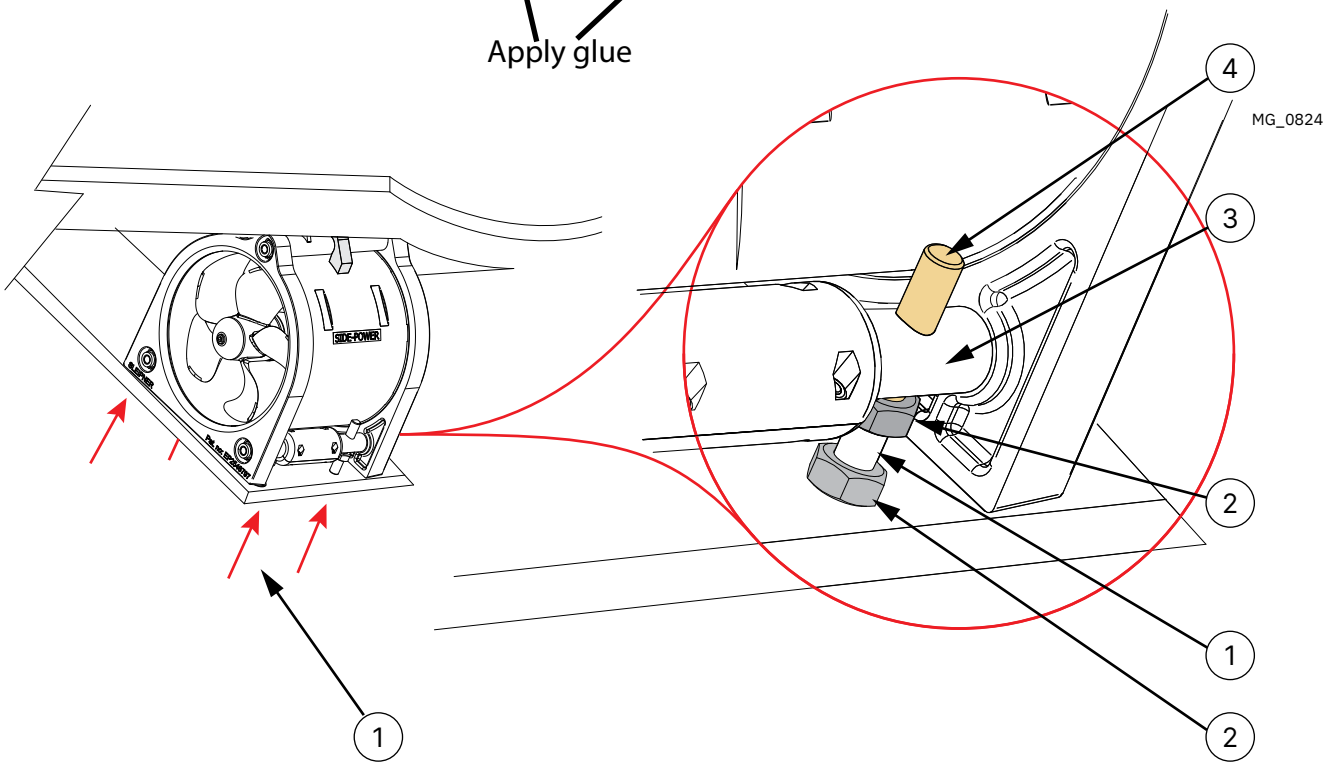


MG_0837

- Ensure that the thruster is in the outer position
- Apply glue on the twist ring facing the hatch.
- Enter the hatch bolts through the hatch, (**Reference 1)** and enter the lock nuts (**Reference 2**) on the bolt. Position the nuts close to the inside of the hatch, but do not tighten.
- Enter the bolts in to the bolt holes in the thruster housing (**Reference 3**).
- Bolt the hatch to the tunnel. Ensure the bolts do NOT conflict with the tunnel. (**Reference 4**).
  (NB: Bolts can be cut, depending on hatch thickness.)
- When all four bolts are tightened so that the hatch is in tight connection to the twist rings, tighten the lock nuts (**Reference 2**) to the hatch and bolt holes in the tunnel housing respectively.
- Retract the thruster to verify that the movement is smooth, and that the hatch is in correct position when the thruster is in both open and closed position.

MC_0786

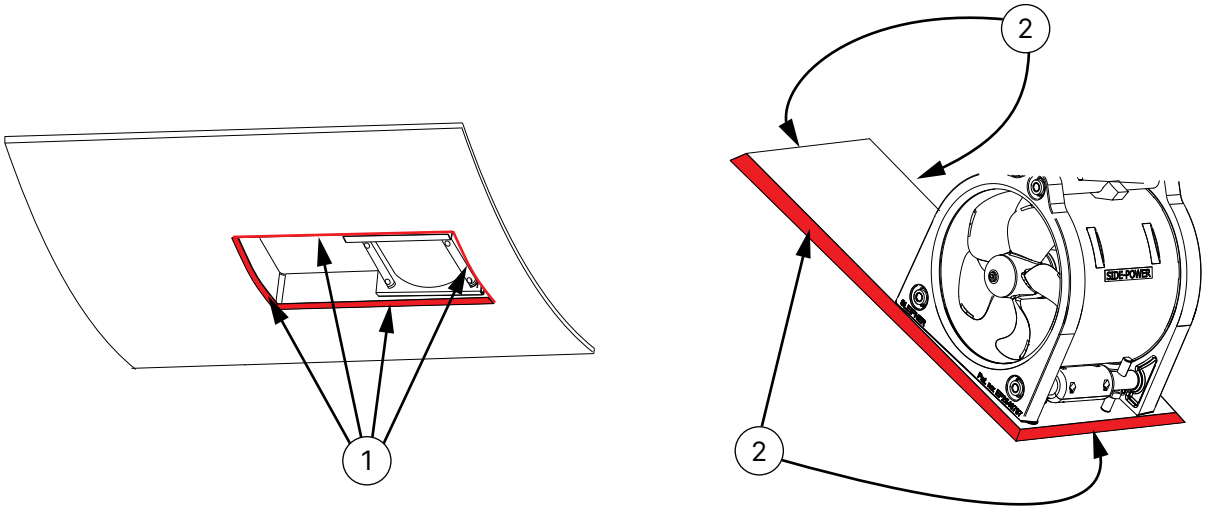


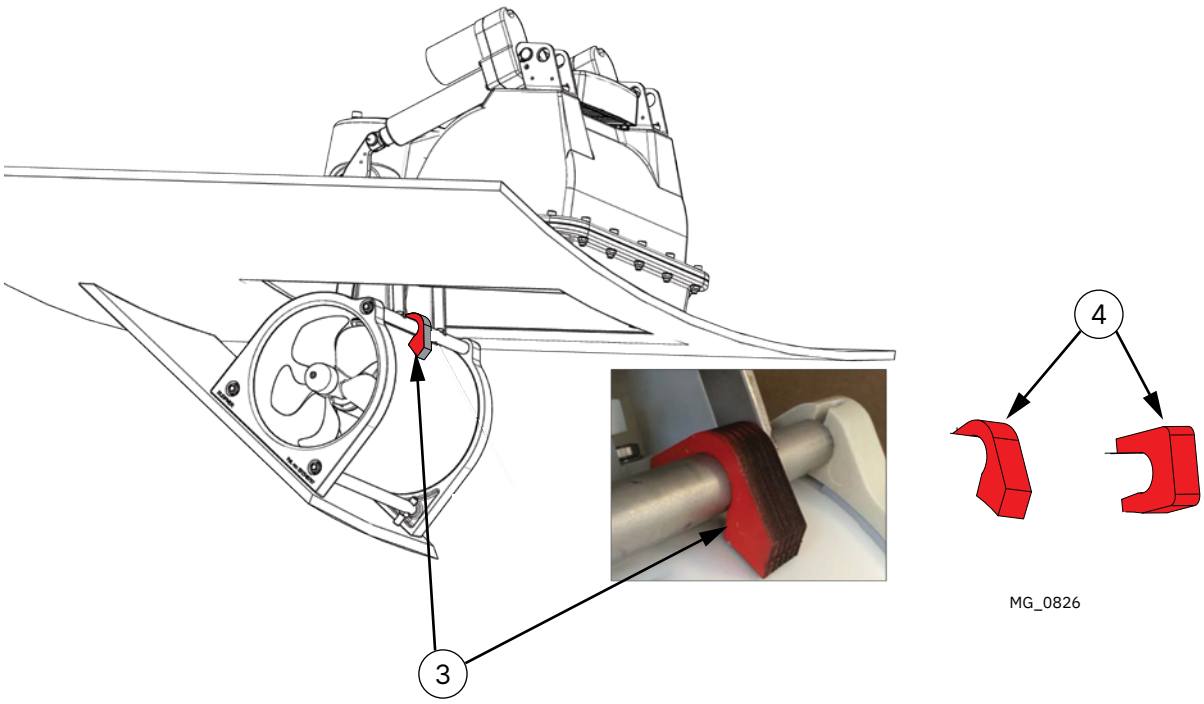


MG_0824

- Lower down the thruster.
- Apply a layer of aluminium or duct tape on hatch opening edges on the hull. (**Reference 1**). This is for masking out for the adhesive in the next step.
- Apply filler or equivalent to hatch edges in such amount that it will fill the gap between the hull and the hatch. **(Reference 2**).
- Operate the thruster to “IN” position. Smooth out the filler and add more if needed. After curing time, grind and smooth the surface. Apply glue on twist rings contact surface.
- Apply coating inside and outside of the hatch and on the hull to cover the fiberglass and filler.
- Remove the red spacer block located above the tunnel. (**Reference 3**). Note: Several types and numbers of spacer block may be used. (**Reference 4)**.

MC_0788





MG_0826

1. Position the gasket between the motor and the bracket, and install the motor onto the motor bracket ensuring the couplings and the drive shafts have locked together.

   Depending on your coupling you may need to wiggle the motor into place. Ensure that the couplings are correctly engaged, and make sure the motor cable terminals remain accessible for the electrical installation later.

2. Enter the bolts with washers holding the motor to the motor bracket.
   Tightening torque 33Nm (24lb/ft)

3. Check the drive shafts engage by rotating the propeller. It is required the propeller can rotate via hand power. Note that rotating the propellers can be hard because of the gear reduction and the motor.

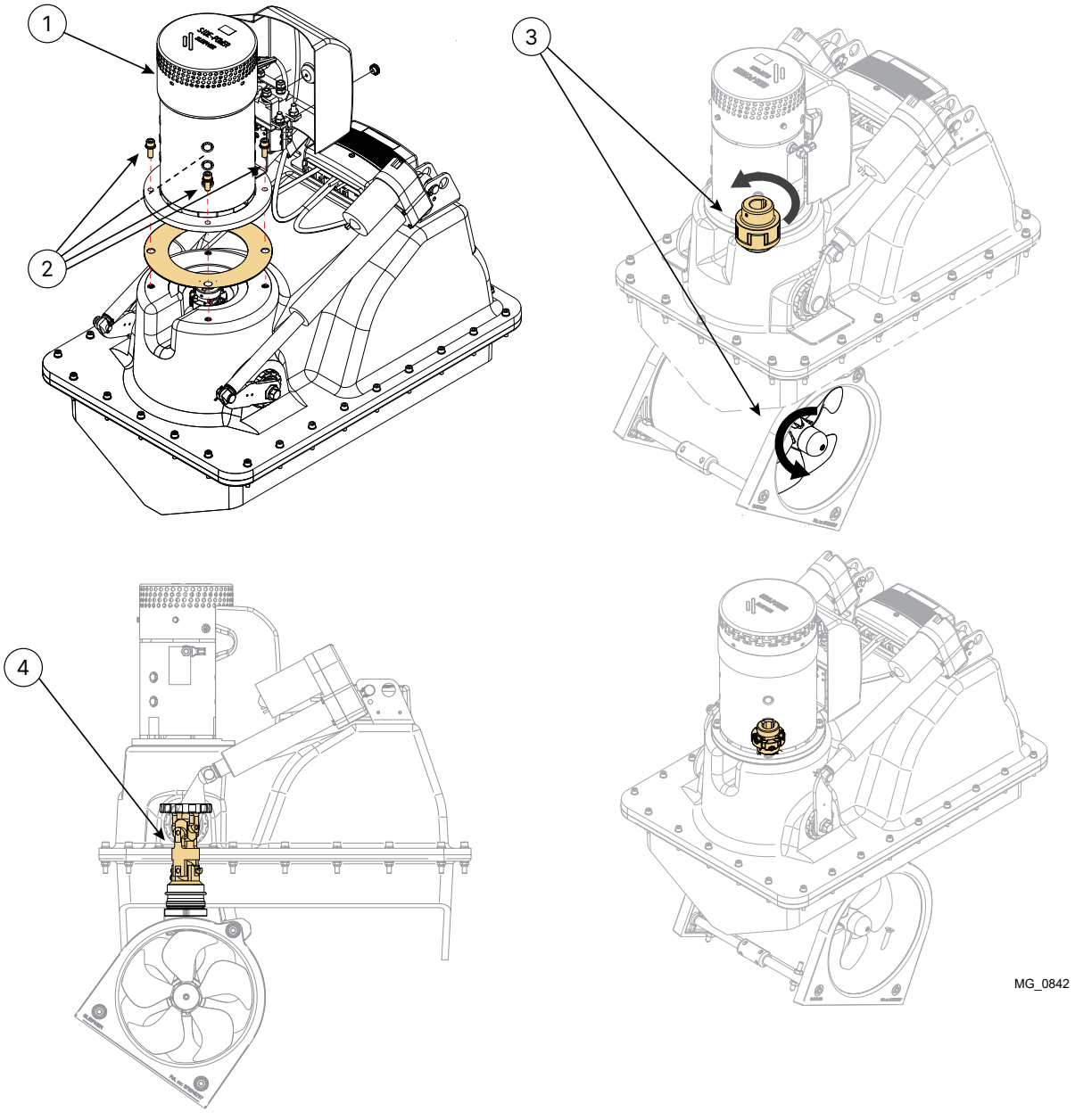
4. Apply grease to the internal drive shaft. We advise painting the gear house and propellers with anti-fouling.
   Note: Do not paint the anodes, sealing, rubber fittings or propeller shafts

Note: The motor must be covered to avoid dust from fabrication/ maintenance operation entering the motor . After fabrication maintenance operations have ceased the cover must be removed before operating the thruster.

MC_0789

WARNING

WARNING. The propeller blades may be sharp.



MG_0842

1. Plan the location of electrical components before starting with the electrical installation. Main electrical components will typically consist of battery, fuse, main switch, 20124SRV Voltage conversion unit 24V to 48V, Electronic Control Unit SRV and thruster motor.
   The 20124SRV Voltage conversion unit 24V to 48V enables to run the 48V thruster from two 24V battery banks. It also enables charging with a standard 24V charger. See the wiring diagram topic for a system overview.

   Sleipner offers both manual main switches and Automatic Main Switches (AMS). Sleipner AMS is controlled by the control panel in addition to the option of manual operation. Turning on the control panel also turn on the automatic main switch. When the control panel is turned off the automatic main switch is turned off. This ensures that the control electronics and motor are only energized when the control panel is turned on. Sleipner offers AMS supporting either S-Link or ON/OFF control panels. Note that the AMS requires a separate power supply which should be protected by a dedicated fuse. Ensure to select an AMS with a voltage rating according to the chosen motor- and battery voltage.

   Electrical products installed in gasoline engine spaces or other areas potentially exposed for explosive gases must be Ignition Protected. Products installed in such locations should conform to the ISO 8846, SAE J1171 or UL 1500 standard.

2. Estimate the total length of the power cables to determine the recommended cross-section. The total power cable length is defined as the distance from the positive battery terminal on battery bank 2, via fuse, main switch, 20124SRV Voltage conversion unit 24V to 48V, thruster motor, and all the way back to the negative battery terminal.

3. Find the recommended power cable cross-section for the installation by using the estimated total power cable length and the table shown in the chapter Electrical Reference Guide.

4. Select the recommended fuse size by using the table shown in the chapter Electrical Reference Guide.

5. Use an appropriate dimensioned battery with Cold Cranking Amps (CCA) according to recommendations given in the Electrical Reference Guide chapter. Battery voltage must be compliant with the voltage rating of the thruster motor and control circuitry. The capacity and rated discharge current of the battery should be according to the rated nominal current drawn and the typical duty cycle for thruster operation. The nominal current drawn is listed in the Electrical Reference Guide chapter.

   The actual voltage at the motor while running the thruster determines the motor RPM and thrust. Using a smaller cross-section than recommended or a low-capacity battery could reduce performance.

   Installing a battery close to the thruster reduces the length of the power cables and potentially increases the performance, due to lower voltage drop in the power cables. For installations on large vessels with bow and stern thrusters or catamarans a dedicated battery for each thruster should be considered.

6. Install and connect the electrical components according to the applicable Wiring Diagram chapter.

   For safety reasons it is always recommended to install a fuse and a main switch on the power cables and as close as possible to the positive battery terminal. The main switch must be installed such that it is easily accessible so that the thruster can be electrically disconnected to a safe state when not on-board or in the case of an emergency.

   For dual thruster systems using only one battery bank a dedicated fuse and main switch should be installed for each thruster. These should be installed close to the battery bank.

   Follow the instructions in the Motor Lug Connection chapter when fastening the power cables to the motor.

7. Fuse and main switch should be installed according to the installation manual accompanying the products.

8. Install the control panel according to the instructions in the Installation Guide included with the control panel.

9. See the S-Link System Description chapter for detailed information on the installation of the S-Link power cable, S-Link end terminator and additional S-Link components.

MC_0892

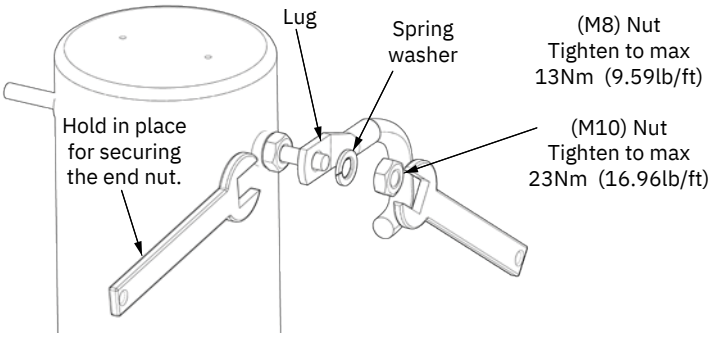
⚠ CAUTION

After all electrical connections have been completed, turn off main switch and check the following with an ohmmeter:
1. There is no electrical connection between motor flange and the positive terminal on the motor.
2. There is no electrical connection between motor flange and the negative terminal on the motor.
If unsure contact skilled personnel.

Model Size	System Voltage	Nominal current	Min. battery CCA	Rec. fuse	Cross Section Guide for Power Cables											
					Unit	<7m total + & -		7-14m total + & -		15-21m total + & -		22-28m total + & -		28-35m total + & -		36-45m total + & -	
						Min.	Rec.	Min.	Rec.	Min.	Rec.	Min.	Rec.	Min.	Rec.	Min.	Rec.
300/300TC	48V	400-450A	DIN: 400 SAE: 760 EN: 680	ANL 325	mm^2	50	70	50	70	70	95	95	120	120	120	2x95	2x120
					AWG	1/0	2/0	1/0	2/0	2/0	3/0	3/0	4/0	4/0	4/0	2x3/0	2x4/0

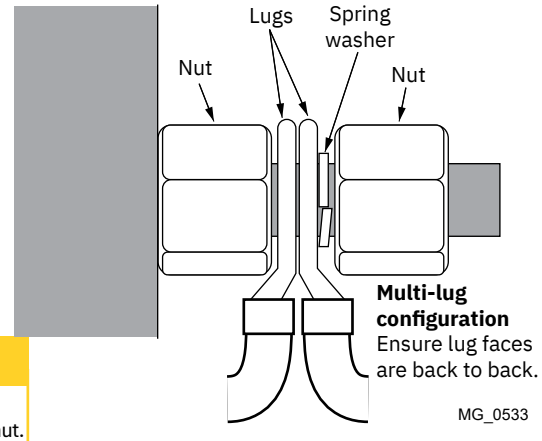
MC_0622

Motor lug connection



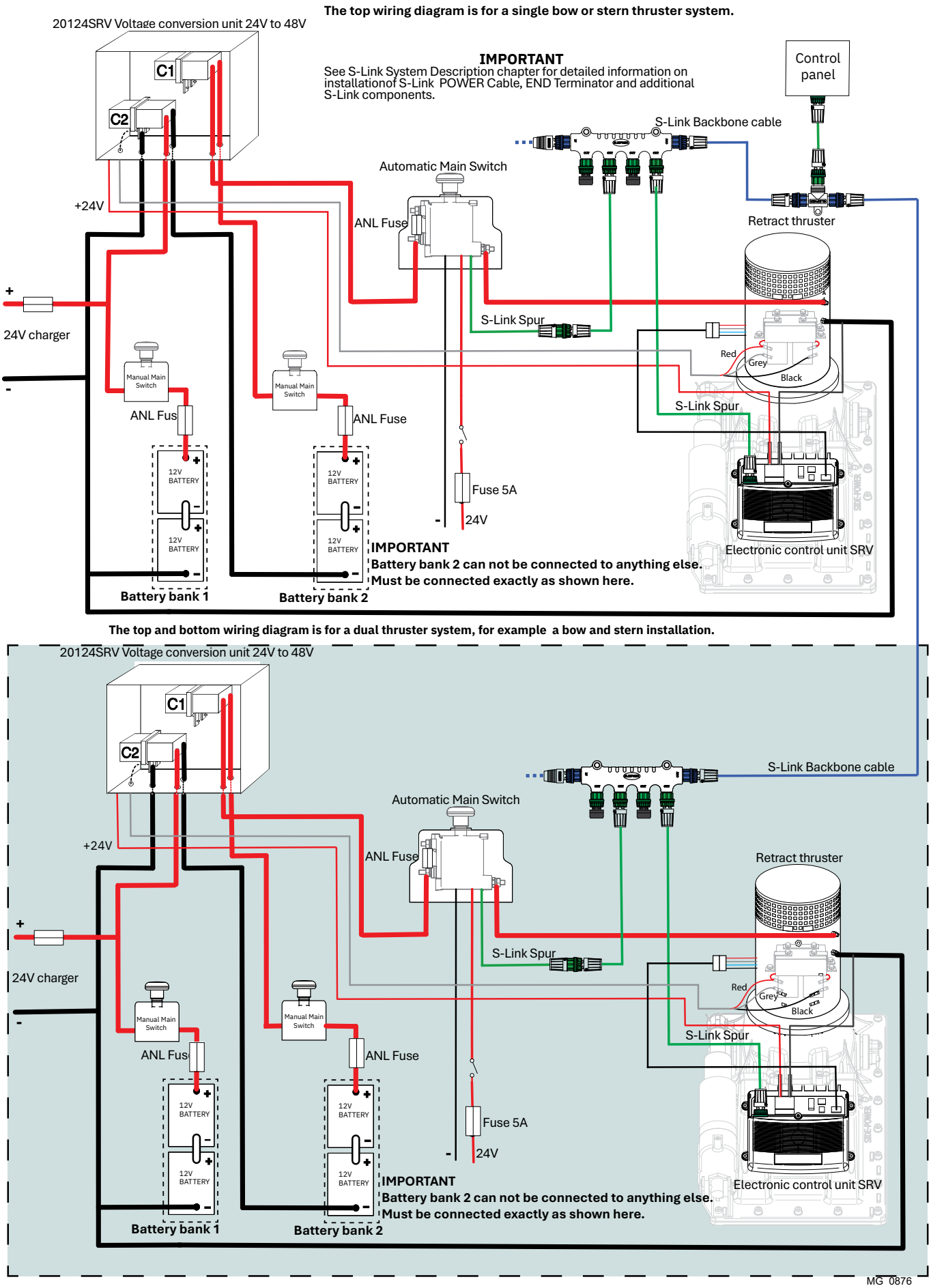
CAUTION

Do NOT use washers between lugs, this causes overheating and fire.
Spring washers must be placed in the outer position before tightening nut.



Multi-lug configuration
Ensure lug faces are back to back.

MG_0533


The top wiring diagram is for a single bow or stern thruster system.
20124SRV Voltage conversion unit 24V to 48V
C1
C2
IMPORTANT
See S-Link System Description chapter for detailed information on installationof S-Link POWER Cable, END Terminator and additional S-Link components.
Control panel
S-Link Backbone cable
Automatic Main Switch
ANL Fuse
Retract thruster
+24V
+
24V charger
-
S-Link Spur
Red
Grey
Black
Manual Main Switch
ANL Fus
ANL Fuse
12V BATTERY
Fuse 5A
24V
IMPORTANT
Battery bank 2 can not be connected to anything else.
Must be connected exactly as shown here.
Electronic control unit SRV
Battery bank 1
Battery bank 2
The top and bottom wiring diagram is for a dual thruster system, for example a bow and stern installation.
20124SRV Voltage conversion unit 24V to 48V
C1
C2
S-Link Backbone cable
Automatic Main Switch
ANL Fuse
Retract thruster
+24V
+
24V charger
-
S-Link Spur
Red
Grey
Black
Manual Main Switch
ANL Fus
ANL Fuse
12V BATTERY
Fuse 5A
24V
IMPORTANT
Battery bank 2 can not be connected to anything else.
Must be connected exactly as shown here.
Electronic control unit SRV
Battery bank 1
Battery bank 2
MG 0876

S-Link is a CAN-based control system used for communication between Sleipner products installed on a vessel. The system uses BACKBONE Cables as a common power and communication bus with separate SPUR Cables to each connected unit. Only one S-Link POWER cable shall be connected to the BACKBONE Cable. Units with low power consumption are powered directly from the S-Link bus.

Main advantages of S-Link system:

- Compact and waterproof plugs.
- BACKBONE and SPUR Cables have different colour coding and keying to ensure correct and easy installation. BACKBONE Cables have blue connectors and SPUR Cables have green connectors.
- Different cable lengths and BACKBONE Extenders make the system scalable and flexible to install.

Installation of S-Link cables:

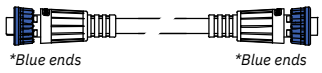
Select appropriate cables to keep the length of BACKBONE- and SPUR Cables to a minimum. In case of planned installation with total BACKBONE Cable length exceeding 100 meters please consult your local distributor. The S-Link cables should be properly fastened when installed to avoid sharp bend radius, cable chafing and undesired strain on connectors. Locking mechanism on connectors must be fully closed. To ensure long lifetime, cables, T-Connectors and Extenders should not be located so that they are permanently immersed in water or other fluids. It is recommended to install cables in such a way that water and condensation do not flow along the cables into the connectors. This can be done for example by introducing a u-shape bend before the cable enters the product connector.

Ideally, the POWER Cable should be connected to the middle of the BACKBONE bus to ensure an equal voltage drop at both ends of the BACKBONE Cable. The yellow and black wire in the POWER Cable shall be connected to GND and the red wire connected to +12VDC or +24VDC.

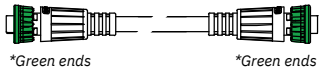
To reduce the risk of interference, avoid routing the S-Link cables close to equipment such as radio transmitters, antennas or high voltage cables. The backbone must be terminated at each end with the END Terminator.

SPUR cables can be left unterminated to prepare for the installation of future additional equipment. In such cases, ensure to protect open connectors from water and moisture to avoid corrosion in the connectors.

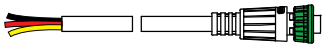
MC_0120



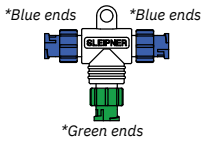
BACKBONE Cable
Forms the communication and power bus throughout a vessel. Available in different standard lengths.



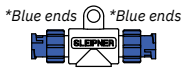
SPUR Cable
Used to connect S-Link compliant products to the backbone cable. One SPUR Cable must be used for each connected component, with no exceptions. Recommended to be as short as practically possible. Available in different standard lengths.



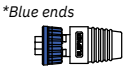
POWER Cable
Required in all installations for connection of BACKBONE Cable to a power supply and should be protected with a 2A fuse.



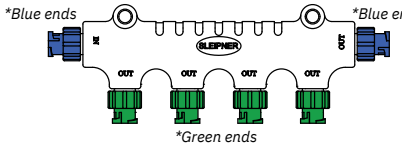
T-Connector
Used for connection of SPUR or POWER Cable to the BACKBONE Cable. One T-Connector for each connected cable.



BACKBONE Extender
Connects two BACKBONE Cables to extend the length.

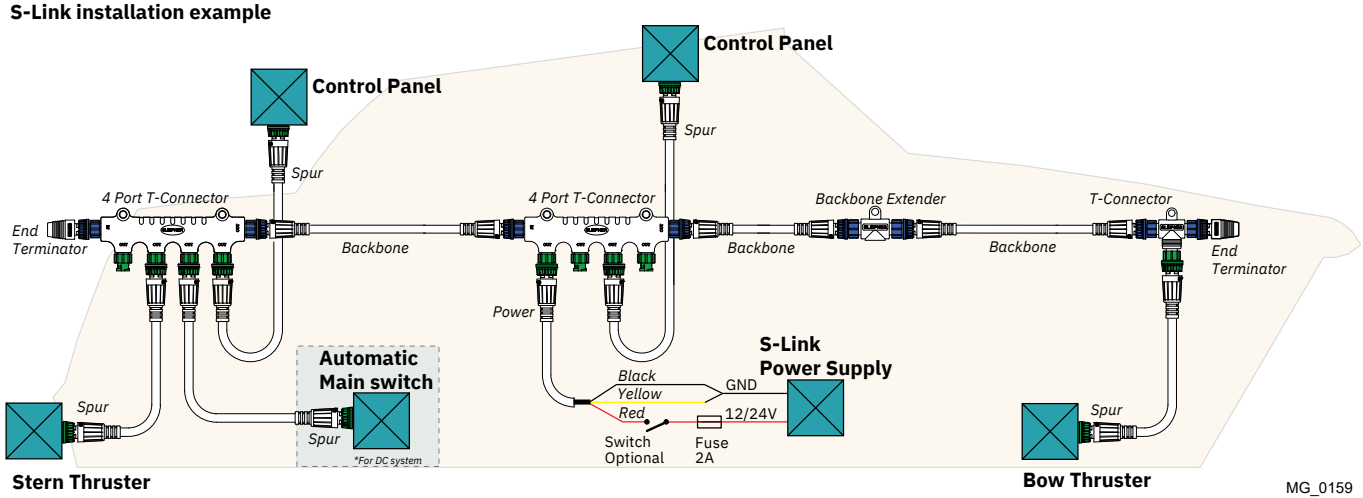


END Terminator
Must be one at each end of the BACKBONE bus.



4-Port T-Connector
The 4-PORT T-connector allows multiple SPUR Cables to be connected. The 4-PORT T-connector comes with two sealing caps to protect unused ports.

S-Link installation example

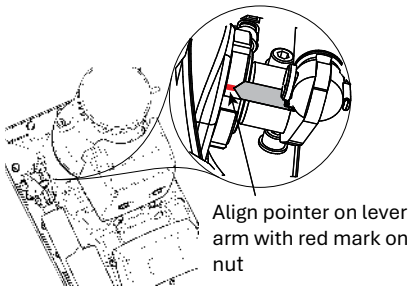


MG_0159

Check drive shaft alignment

(Note: 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. Sett DIP-switch on the controller to OFF.
3. Turn on the panel. (The thruster deploys.)
4. The actuator lever arm is set to alignment marking on the nut.
5. If marks align, turn panel off. The thruster retracts.
6. If the marks do not align, proceed to calibrate drive shaft.



Calibrate drive shaft alignment

(Note: The drive shaft is correctly aligned when manufactured.)

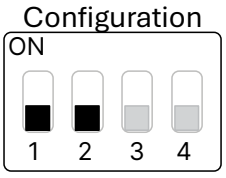
1. With dip-switches select 'Service Mode'.
2. Align the arrow on the actuator arm with the calibration mark, using the UP/DOWN buttons.
3. With dip-switches select 'Sensor Calibration Mode'.
4. Press and hold both UP and DOWN buttons until STATUS LED light up green.
   (Note: If FAULT LED light-up red, then the calibration is out of position wrong align mark.)
5. With dip-switches select 'Operation Mode', thruster retracts.

Actuator configuration

Dip-switch 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).

(Note: If dip-switch 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 dip-switch 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 over-temp, Controller over-temp, 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:

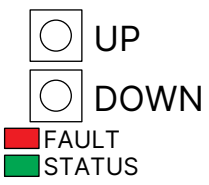
- Red light fast blinking: Dip-switch in an invalid position.
- Red light short flash every 2 seconds: Shaft not calibrated, or shaft calibrated out of range.

Continuous green light:

- Normal mode, Service mode (actuators operated by UP/DOWN buttons).
- Re-calibrated "down"-position.

Flashing green light:

- No S-Link communication.



MC_0069

[]..... The bolts holding the gearleg and main bracket 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 electro motor body and positive terminal on the motor, and between the electro motor body and the negative terminal on the motor with an ohm meter.

[]..... Anti-fouling has been applied to the gearleg and propeller but NOT anodes, sealing/rubber fittings or propeller shafts.

[]..... Propeller is fastened correctly to the shaft.

[]..... Propeller turns freely in tunnel.

[]..... The anode is in position, and that its fastening screw is tightened well with thread glue.

[]..... Check the boat for potential water leakage around installation areas.

[]..... Correct drive direction as per control panel.

[]..... User Manual is supplied to the owner. MC_0033

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

Signed: .....

Date: .....

Thruster type: .....

Serial number:.....

Date of delivery:.....

Correct drive direction as per control panel: .....

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: .....

.....

.....

Service and support

Find your local certified dealer through our global network to receive expert service and support.
Visit our website for more information: *www.sleipnergroup.com/support*

Product spare parts and additional resources

For additional supporting documentation, visit our website at *www.sleipnergroup.com* and locate your specific Sleipner product.

Patents

At Sleipner we continually reinvest to develop and offer the latest technology in marine advancements.
To see the many unique designs we have patented, visit our website: *www.sleipnergroup.com/patents*

MC_0024

MC_0037

MC_0037

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