



Installation Guide

For DC External Electric Thruster Models
SX80 & SX100



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Warnings and Safety

MC_0800

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.

MC_0020

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.

For Sleipner thruster systems:

MC_0425

- Do not install the thruster system in any position that requires modification of hull stiffeners or stringers. This might jeopardize the hull integrity. Consult with the boat builder to see if this can be done safely if absolutely necessary.
- Never run the thruster out of water. The propeller will reach extremely high speed, damaging the thruster.
- The thruster motor must be handled with care. Do not rest the motor on its drive shaft, as its weight can damage it.

For externally mounted thruster systems:

MC_0427

- Ensure enough space inside and outside the transom when planning the thruster's position. The thruster must not interfere with existing equipment inside the boat, such as motor bedding, steering links, etc.
- Avoid interference from the thruster's propulsion water flow from elements such as stern drives or trim tabs. Interfere will considerably reduce the thrust effectiveness.
- Avoid running cables near any heat sources since this might damage the insulation. Broken insulation could potentially lead to hazards and damage products.

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.

For Ignition Protected systems:

MC_0007



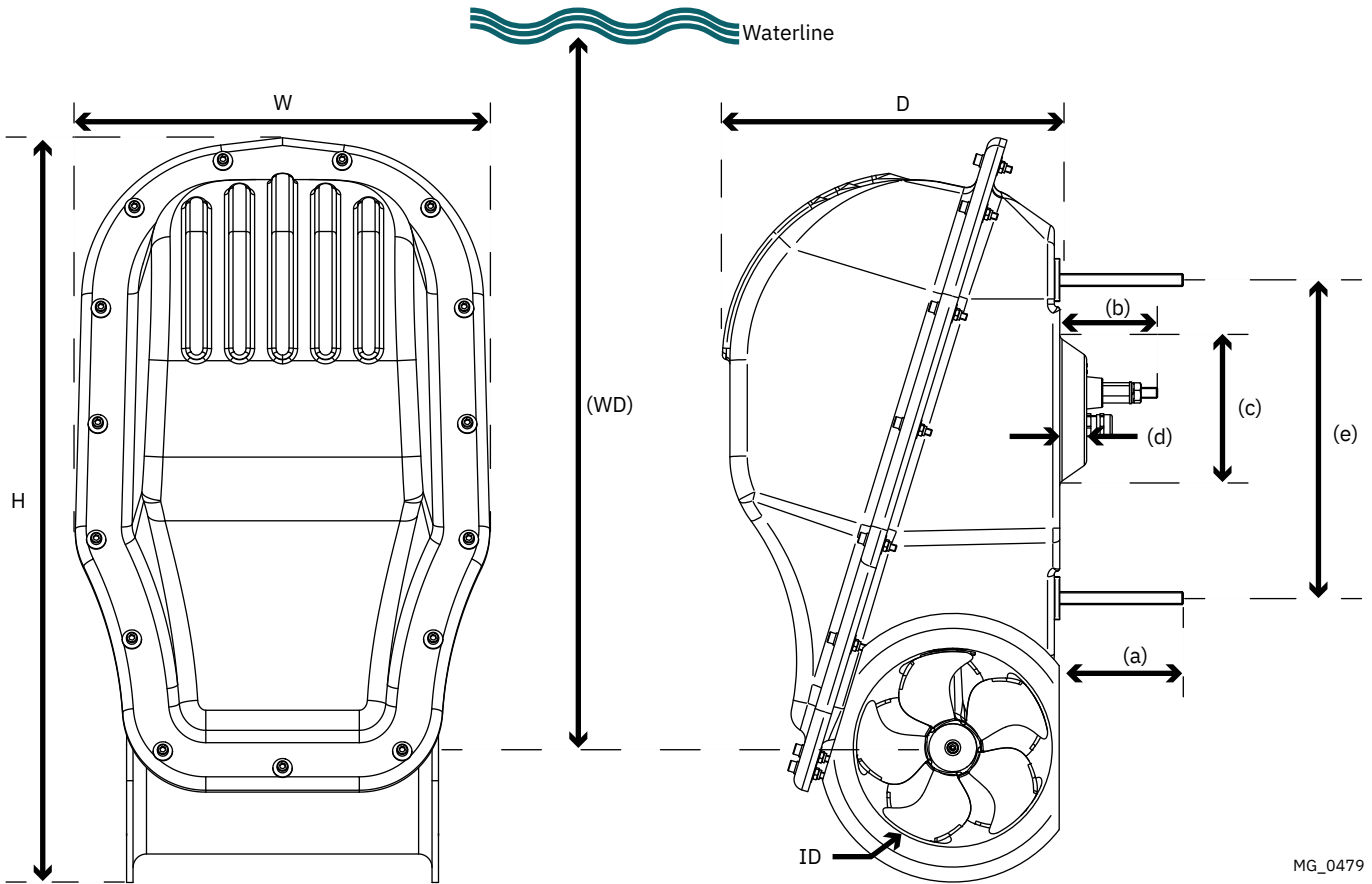
CAUTION

NEVER Disassemble any part of the Ignition Protected assembly. Tampering with the Ignition Protected assembly will cause it to lose this safety feature. If there is a problem with your Ignition Protected motor, please contact your dealer.

Product Dimensions

MC_0416

Dimension code	Dimension description	SX(P) 80 & 100 12V & 24V	
		mm	inch
H	Height	692	27.2
W	Width	361	14.2
D	Depth	314	12.3
WD	Water depth	185	7.28
ID	Internal Diameter	185	7.28
(a)	Reference technical drawing	115	4.5
(b)	Reference technical drawing	91	3.5
(c)	Reference technical drawing	140	5.5
(d)	Reference technical drawing	25	0.98
(e)	Reference technical drawing	296	11.65



Product Specifications

MC_0415

Product	Maximum Operating Voltage	Thrust is kg / lbs at (V)		Power Output kW / Hp	Weight kg / lbs	Maximum Operation Time
SX(P)80 12V	12V	96 kg / 212 lbs (12V)	80 kg / 176 lbs (10.5V)	4.4 kW / 6 hp	27 kg / 59.5 lbs	S2 motor at 2 - 3 min. Duty cycle at 20°C (Ambient temperature)
SX(P)80 24V	24V	96 kg / 212 lbs (24V)	80 kg / 176 lbs (21V)	4.4 kW / 6 hp	27 kg / 59.5 lbs	
SX(P)100 12V	12V	116 kg / 256 lbs (12V)	100 kg / 220 lbs (10.5V)	6.3 kW / 8.4 hp	35 kg / 77.2 lbs	
SX(P)100 24V	24V	116 kg / 256 lbs (24V)	100 kg / 220 lbs (21V)	6.3 kW / 8.4 hp	35 kg / 77.2 lbs	

Install the thruster as deep on the stern as possible for the best performance.

Installing the thruster as deep as possible ensures:

1. The thruster does not suck air from the surface, which will reduce performance and increase operational noise levels.
2. A deeper installation naturally increases the strength in maneuvering the vessel.

Ensure that the chosen location does not cause the thruster to disturb the water flow under the hull as the vessel travels. If the thruster is installed in the path of the water flow, the thruster can be damaged and add additional drag. Unwanted water splashing can also be a result.

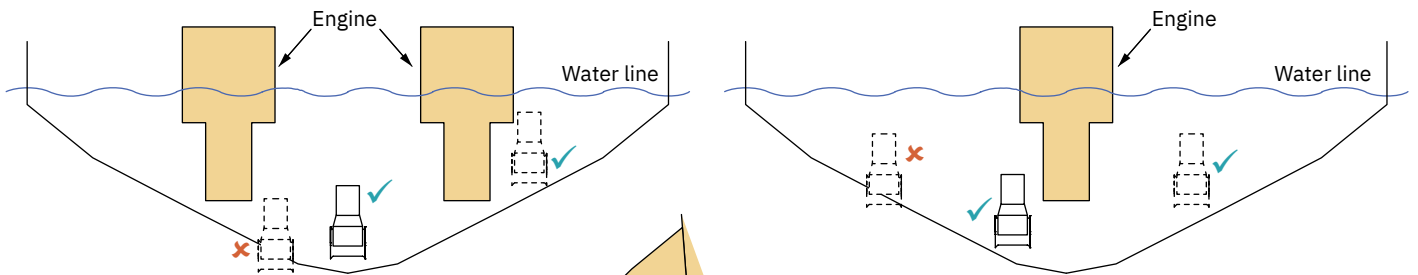
Ensure other objects do not obstruct the propeller's water flow from the SX thruster. Objects that obstruct the water flow from the thruster will significantly reduce the thruster efficiency.

To avoid any external or internal obstructions on the vessel, it may be necessary to install the thruster off-center

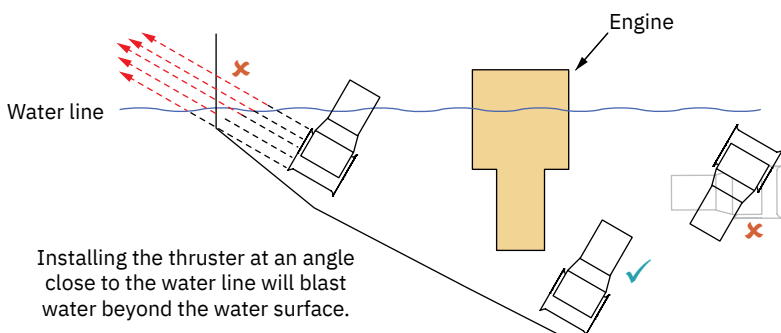
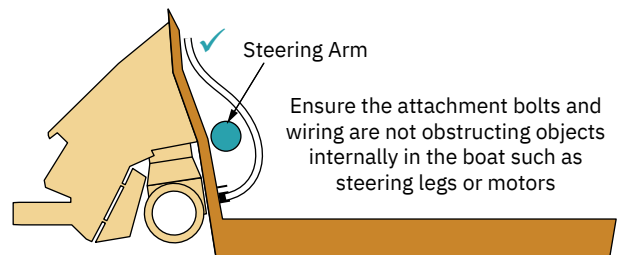
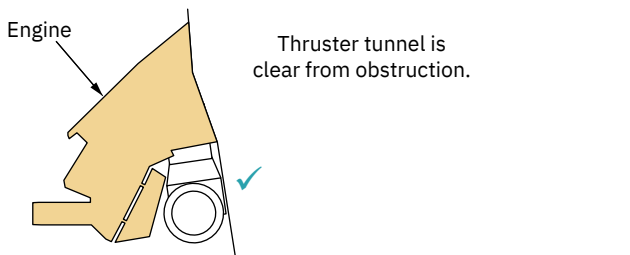
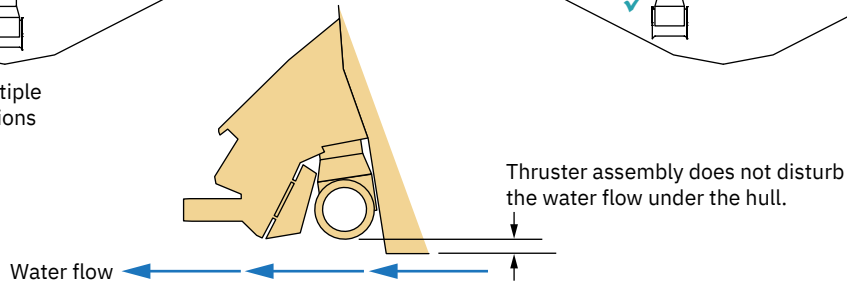
Alignment

The thruster can be installed at a slight angle to avoid obstructions in the water flow. These obstructions can include propeller systems, trim tabs, or the hull. The thruster propels water with an average speed of 5-7 meters per second, therefore angled installations must be as deep as possible under the water to minimize spray breaking beyond the water's surface.

Install the thruster at an angle only as a last resort if no other appropriate location is available.



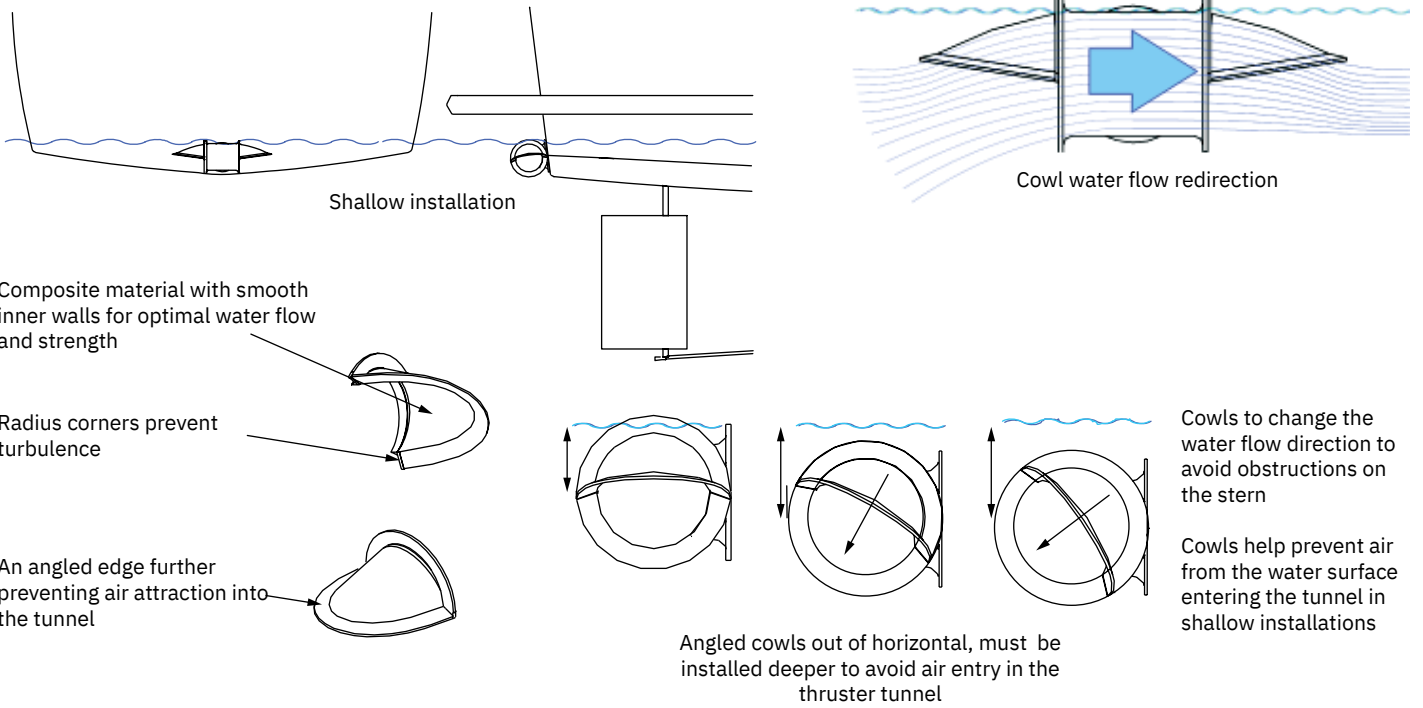
The thruster can be installed in multiple locations based on object obstructions on the stern.



CAUTION
Do not install the SX thruster inverted or at an angle that hinders its intended function.

Sleipner cowls allow for increased flexibility in the thruster installation location.

Specifically, they redirect the propeller's water flow to avoid obstructions on the stern, such as trim tabs, jets, or other propulsion systems. In addition, they reduce surface air entering the tunnel, allowing for shallow installations and allowing for installations in boats with shallow drafts.

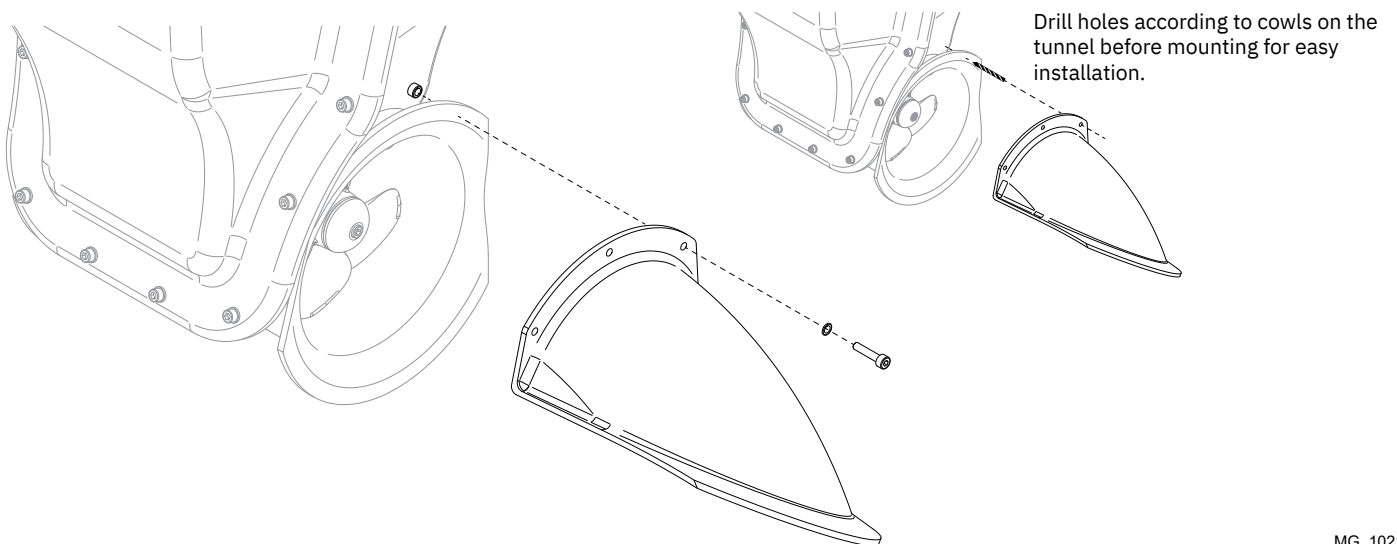


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Grids or Cowls assembly

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1. Attach the cowls or grids with included bolts. **(NB: If installation of the cowls ensure the appropriate twist of the cowl to direct water away from obstacles. Cowls are not used in combination with the hydropod.)**



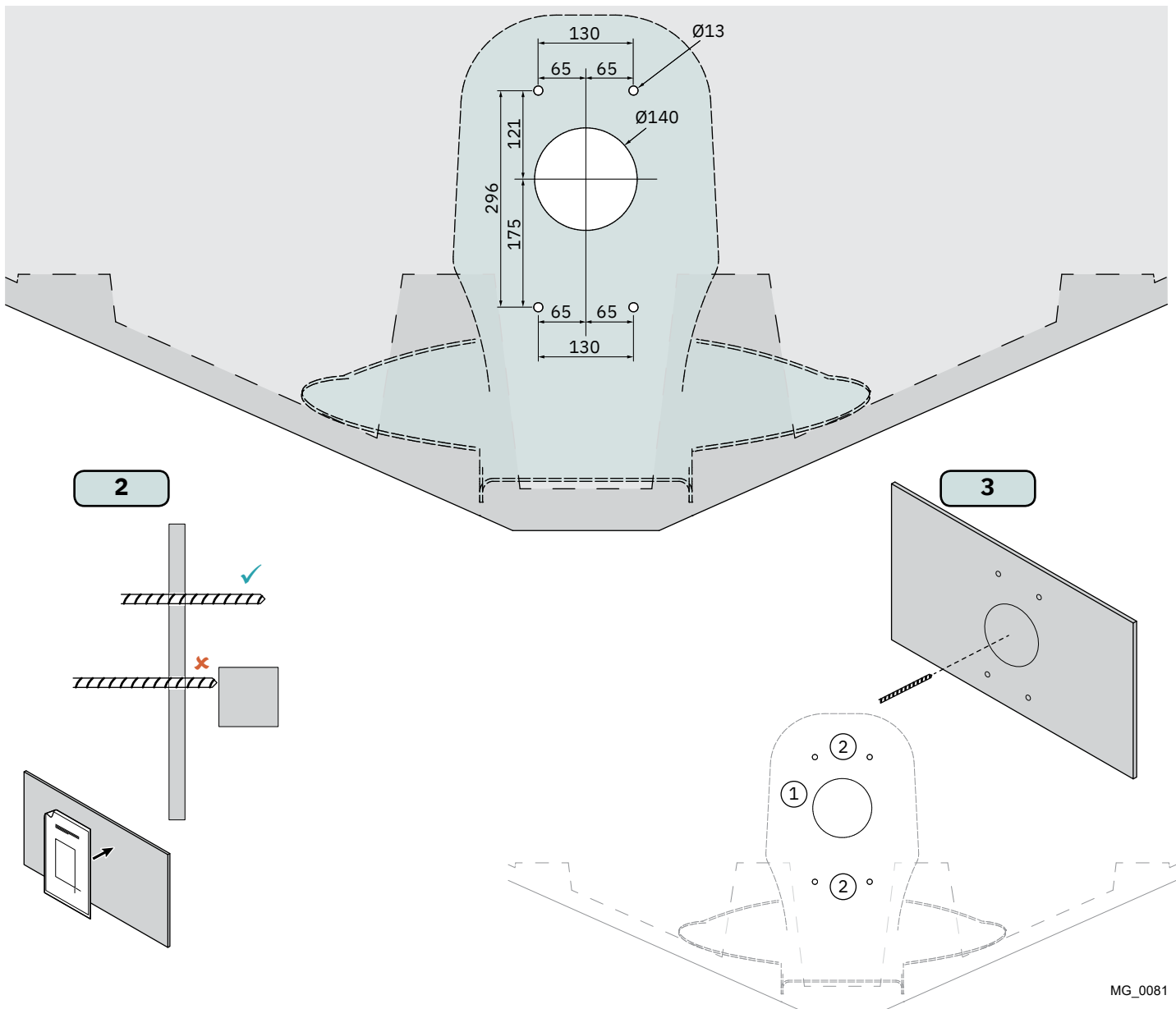
MG_1021

1. Decide the location to install the thruster based on the recommendations given in the Thruster Position Guide chapter.
2. Verify before drilling that the holes will not conflict with internal objects or necessary structural hull framing.
(NB: If included use the drilling template provided to assist in the location of the holes that will attach the thruster to the vessel.)
3. First drill the main central hole followed by the supporting bolt holes. After drilling all holes, clean the area from dust before mounting the SX thruster.

CAUTION

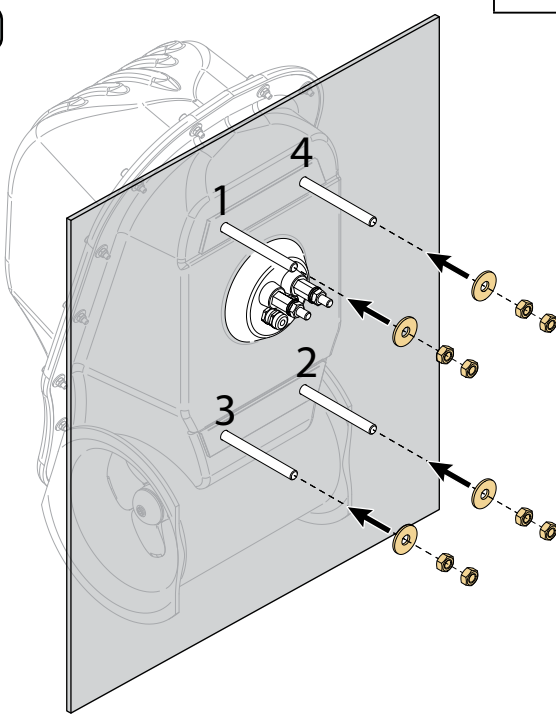
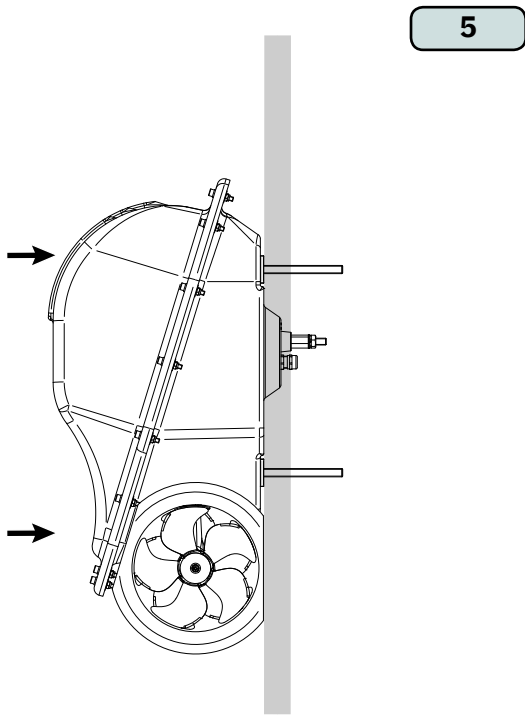
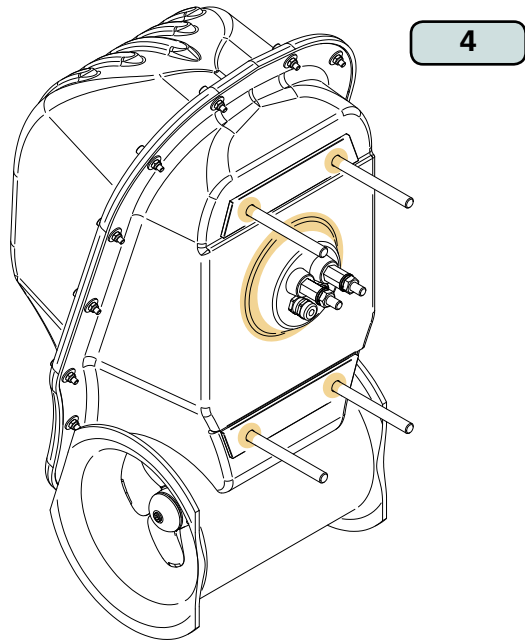


It is important that the thruster assembly sits flush on the transom. If necessary the hull may require modification to achieve the assembly sits flush.



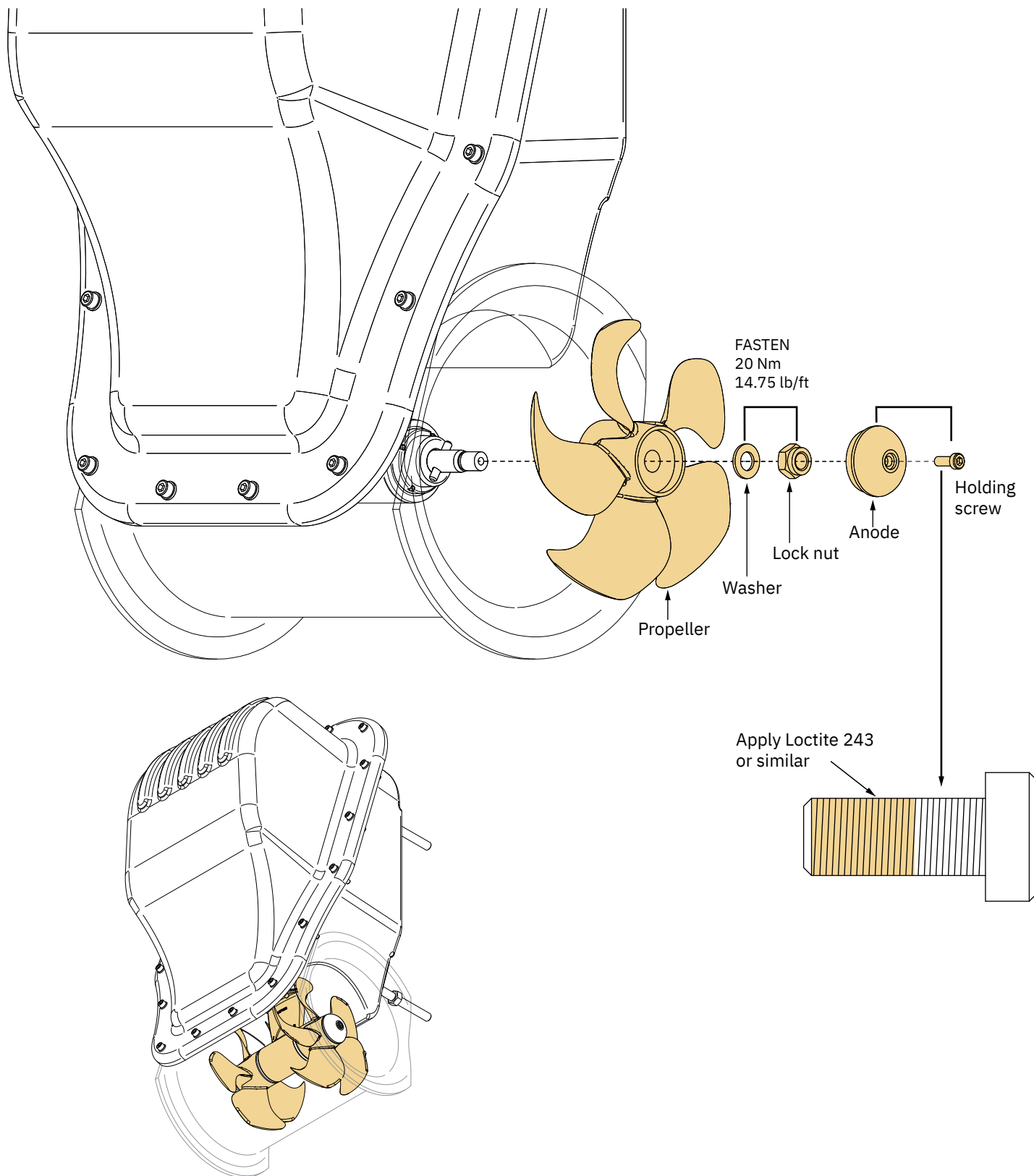
MG_0081

4. Apply MS Polymer sealant or equal around the base edge of the central connector protrusion (cable connections) and around the 4 threaded bolt rods to make a water tight fitting.
5. Insert the SX thruster and fasten with washers, nuts and locking nuts. Tighten the nuts in a cross pattern according to the numbering in the illustration, and in several rounds, with a torque for each round according to the table below.



Tightening sequence		
Round	Tightening torque	
	Nm	lb/ft
1	5	3,68
2	50	36,88
3	110	81,13

1. Apply anti-fouling to the gear leg and propeller. Do not apply anti-fouling to any rubber elements of the gear leg or anodes.
2. Centre the drive pin and insert the propeller onto the shaft spine. Rotate the propeller until the drive pin aligns with the internal slot in the propeller.
3. Insert the washer and tighten the propeller lock-nut to secure the propeller.
4. Insert the anode into the propeller and tighten the anode holding screw. Apply thread glue (Loctite 243 or similar) to ensure that the anode holding screw does not unscrew itself during operation. Tighten the anode holding screw

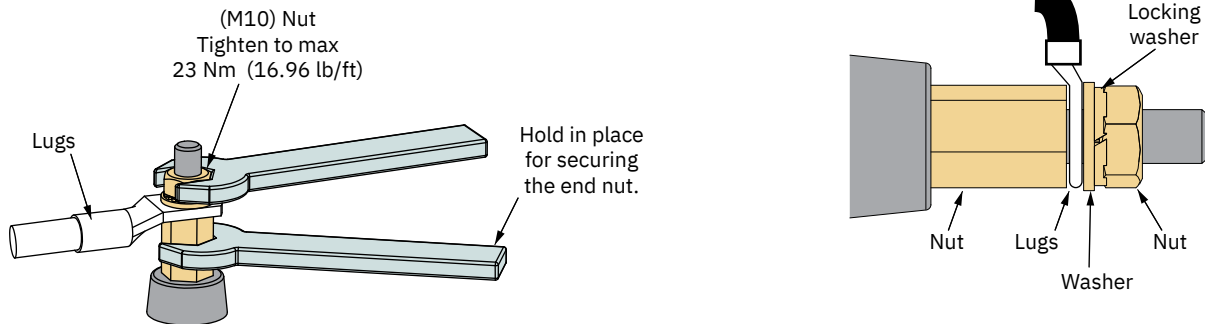


- Plan the location of all electrical components before starting with the electrical installation. Main electrical components will typically consist of battery, fuse and main switch, see Wiring Diagram chapter for an overview.

For safety reasons it is always recommended to install a fuse and a main switch on the power cable and as close as possible to the positive battery pole. Distance between battery and fuse should be less than 1 meter. The main switch must be installed such that is easily accessible to disconnect the thruster when not on-board or in the case of an emergency. 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 does also turn on the AMS. When the control panel is turned off the AMS is also turned off. This ensures that the control electronics and motor is only energized when the control panel is turned on. Sleipner offers AMS supporting either S-Link or ON/OFF control panels. Ensure to select a main switch with voltage and current ratings according to the specifications of the chosen thruster motor. Note that the AMS requires separate power supply which should be protected by a dedicated fuse.

For installations which requires ignition protected equipment ensure to use ignition protected fuse and main switch. Ensure to follow your national regulations.

- Estimate the total length of the power cables to determine the recommended cross section. The total power cable length is defined as the distances from the positive battery pole, via fuse and main switch to the thruster and all the way back to the negative battery pole. Compromising the cable sections named B+ and B- on the drawing in the Wiring Diagram chapter.
- Find the recommended power cable cross section for you installation by using the estimated total power cable length and the table shown in Electrical Reference Guide chapter.
- Find the recommended fuse rating by using the table shown in Electrical Reference Guide chapter. Use slow blow rated fuses to hold stated nominal current for minimum 5 minutes.
- Select appropriate dimensioned battery with Cold Cranking Amps (CCA) according to recommendations in Electrical Reference Guide chapter. Battery voltage must be compliant with the voltage rating of the thruster motor and control circuitry. Capacity and rated discharge current of battery should be according to rated nominal current drawn and typical duty cycle for thruster operation. Nominal current drawn is listed in Electrical Reference Guide chapter. The actual voltage at the motor while running the thruster determines the motor RPM and thrust. Cable losses can reduce the voltage level and result in reduced thrust. Use larger cable cross section and high-capacity battery for improved performance.
- Install the control panel according to instructions in the installation manual of the selected control panel.
- Install the battery, fuse, main switch and wiring according to instructions in Wiring Diagram chapter and installation manual of selected fuse and main switch.

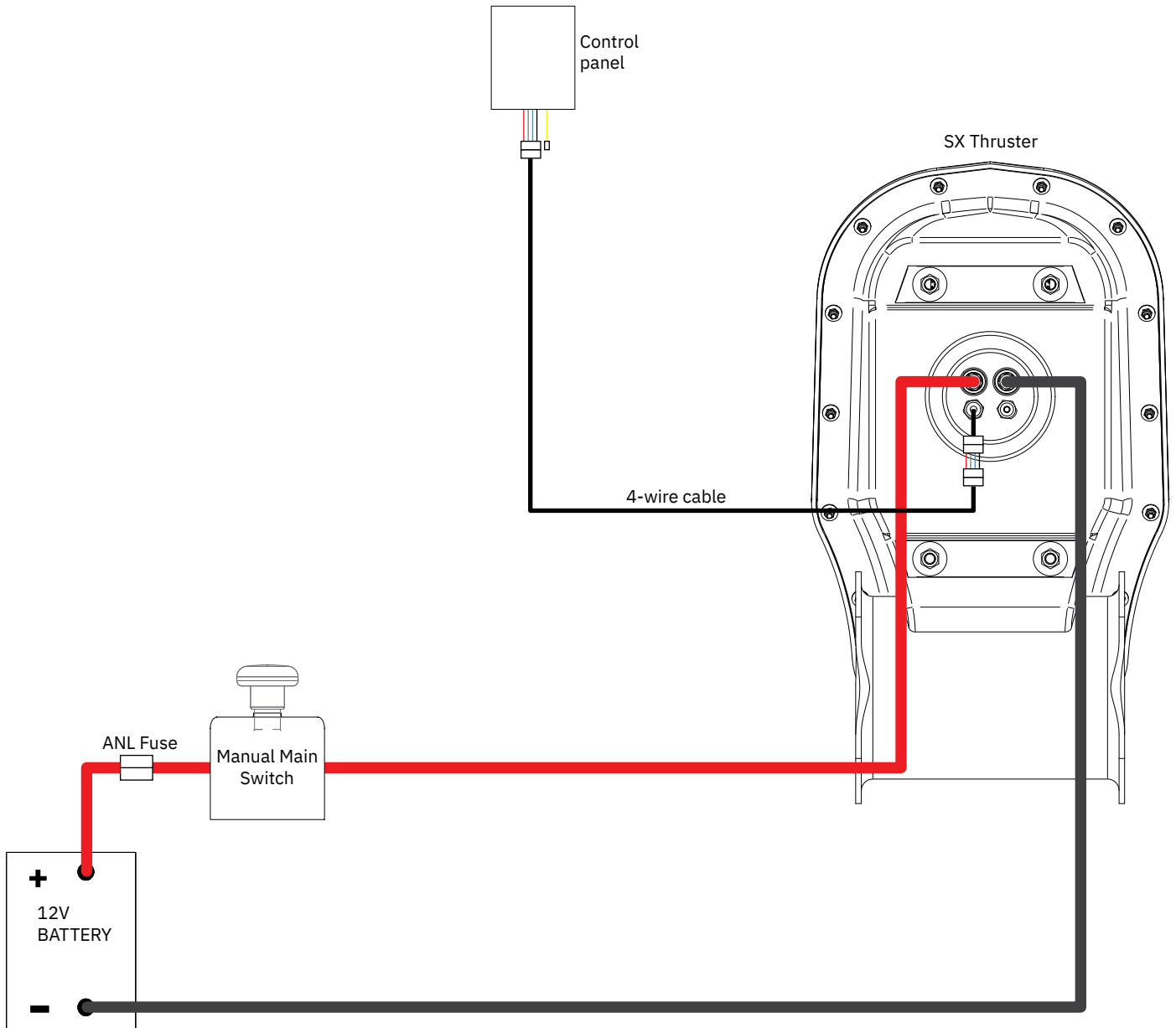


MG_0087

Electrical Reference Guide

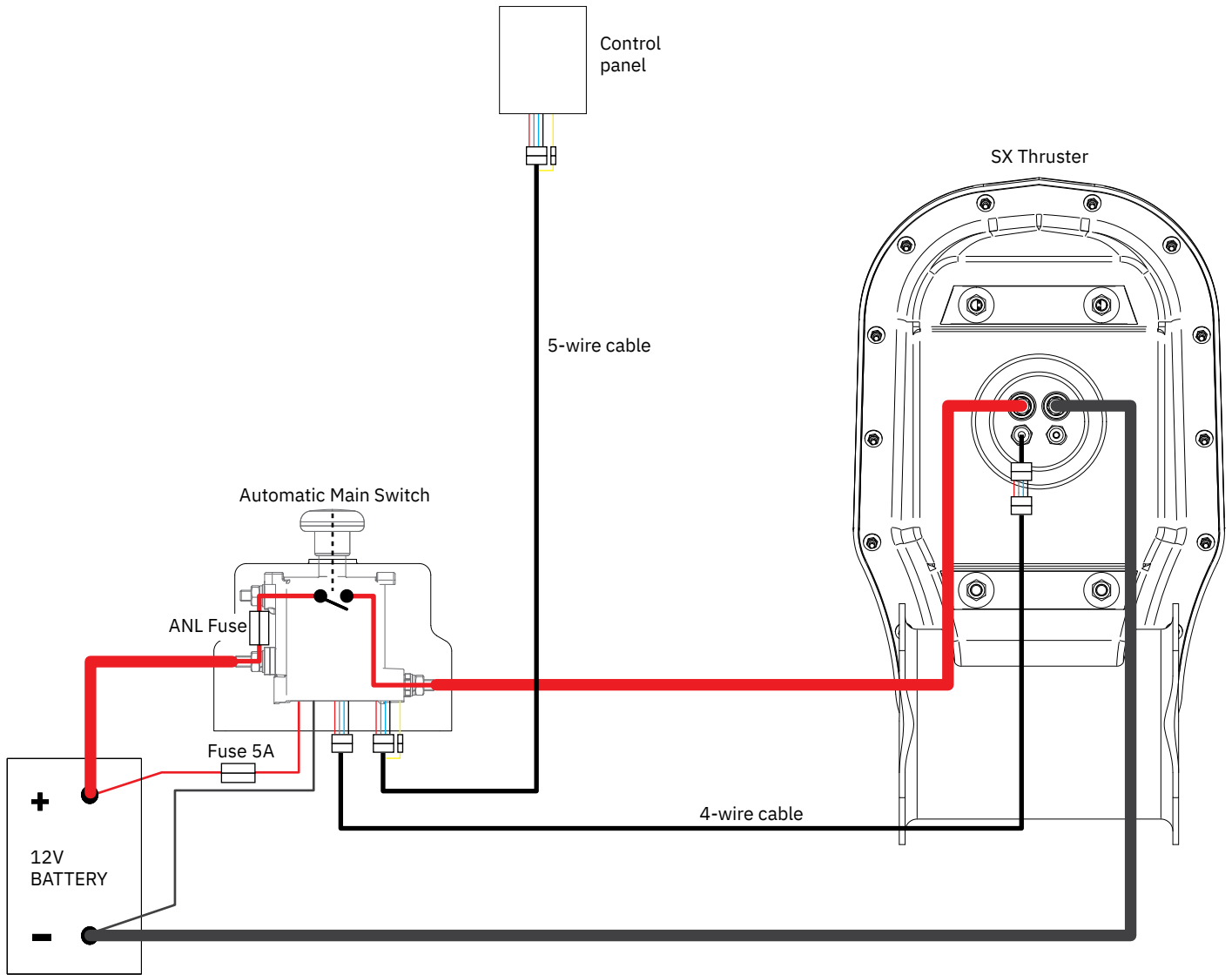
Model Size	System Voltage	Nominal current	Min. battery CCA	Rec. fuse	Cross Section Guide for Power Cables												
					Unit	<7m total + & -		7-14m total + & -		15-21m total + & -		22-28m total + & -		28-35m total + & -		36-45m total + & -	
						Min.	Rec.	Min.	Rec.	Min.	Rec.	Min.	Rec.	Min.	Rec.	Min.	Rec.
SX(P) 80/185T	12V	530 A	DIN: 550 SAE: 1045 EN: 940	ANL 400	mm ²	70	70	120	2 x 70	2 x 95	2 x 95	2 x 120	2 x 120	2 x 120	NA	NA	NA
					AWG	2/0	2/0	4/0	2 x 2/0	2 x 3/0	2 x 3/0	2 x 4/0	2 x 4/0	2 x 4/0	NA	NA	NA
	24V	280 A	DIN: 300 SAE: 570 EN: 520	ANL 250	mm ²	35	35	35	50	50	70	70	95	95	120	120	2 x 95
					AWG	2	2	2	1/0	1/0	2/0	2/0	3/0	3/0	4/0	4/0	2 x 3/0
SX(P) 100/185T	12V	740 A	DIN: 750 SAE: 1425 EN: 1320	ANL 500	mm ²	95	95	2 x 70	2 x 95	2 x 120	NA	NA	NA	NA	NA	NA	NA
					AWG	3/0	3/0	2 x 2/0	2 x 3/0	2 x 4/0	NA	NA	NA	NA	NA	NA	NA
	24V	340 A	DIN: 400 SAE: 760 EN: 680	ANL 325	mm ²	50	50	50	70	70	95	95	120	120	2 x 95	2 x 95	2 x 120
					AWG	1/0	1/0	1/0	2/0	2/0	3/0	3/0	4/0	4/0	2 x 3/0	2 x 3/0	2 x 4/0

Manual Main Switch Wiring Diagram 12V SX Thruster



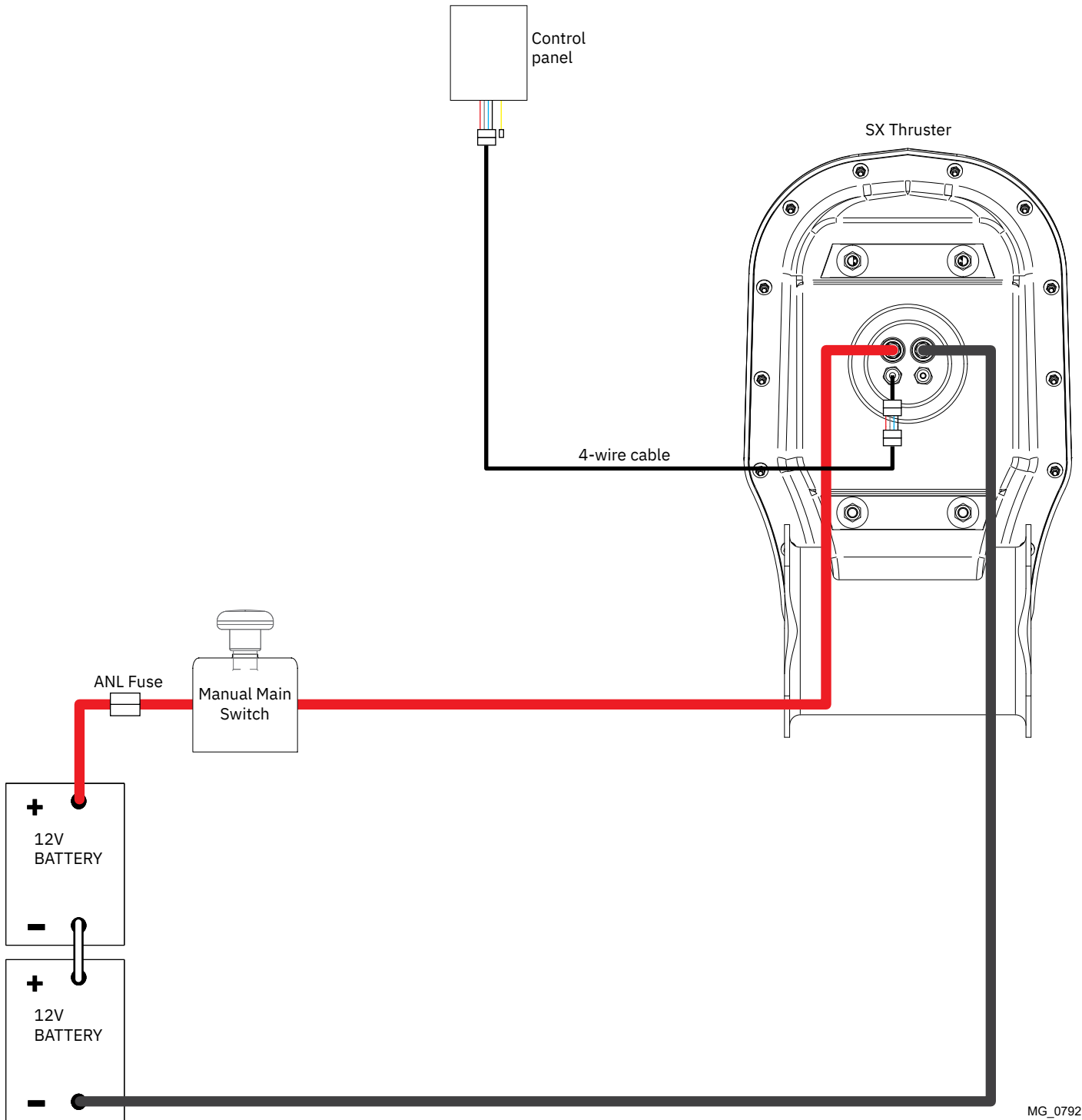
MG_0790

Automatic Main Switch Wiring Diagram 12V SX Thruster

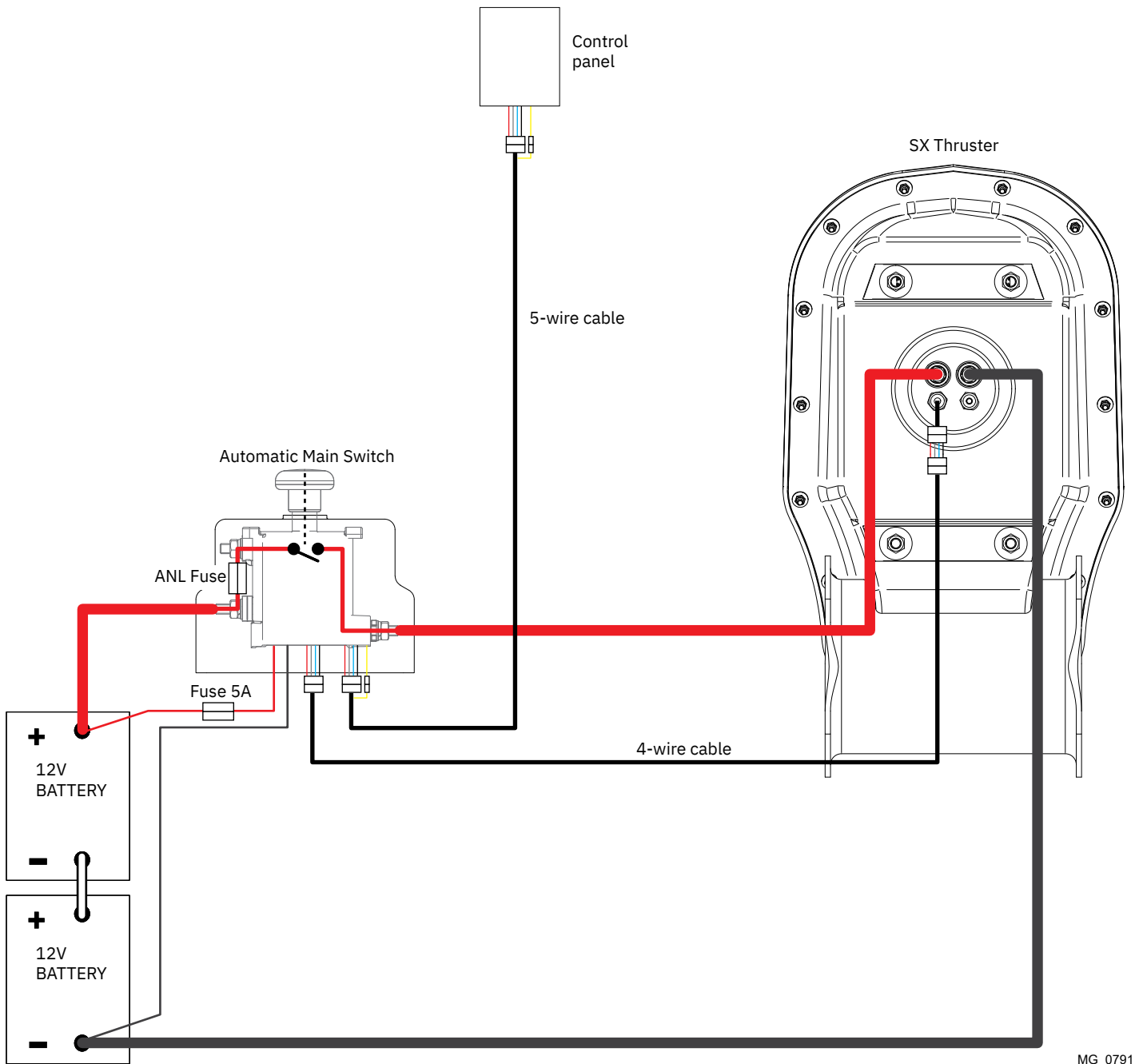


MG_0789

Manual Main Switch Wiring Diagram 24V SX Thruster



Automatic Main Switch Wiring Diagram 24V SX Thruster



MG_0791

- Propeller is fastened correctly to the shaft.
- Propeller turns freely in tunnel.
- Primer and anti-fouling have been applied to the gear house and propeller but NOT on the anode or the gear house lid where the propeller is fastened. **(NB: Do not use abrasive tools damaging the existing Epoxy coating when preparing for antifouling paint.)**
- Correct drive direction as per control panel.
- The bolts holding the thruster to the hull are tightened correctly.
- All electrical connections are clean, dry and tight, and the correct cable, fuse and main switch size.
- No water leakage around hull penetrated studs

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 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:

.....
.....
.....

Introduction:

At Sleipner Group, we prioritize sustainability and encourage the repair and re-manufacturing of products to extend their life cycles. If disposal is necessary, please follow these guidelines to recycle and manage waste responsibly, ensuring our efforts align with environmental protection efforts.

Electric Motors and Electronics:

- Disconnect from any power sources and dismantle them carefully.
- Recycle components through certified e-waste recycling centers that can adequately handle and recover electronic materials.
- Dispose of any non-recyclable electronic parts according to local environmental regulations.

Metals:

- Collect and sort metal parts for recycling as scrap metal.
- To increase recycling efficiency, ensure that metals are clean and free from non-metal attachments.

Plastics:

- Identify recyclable plastics based on local recycling guidelines.
- Remove any non-plastic components and clean them before recycling to improve the quality of the recycled material.

Hazardous Materials:

- Correctly identify any hazardous substances within components, such as batteries or capacitors etc.
- Follow local regulations for the safe disposal of hazardous materials to prevent pollution and protect environmental health.

General Disposal Instructions:

- Consult local recycling programs to determine the acceptability of various materials.
- Use authorized disposal services to ensure compliance with environmental standards.

Safe Disposal Practices:

- Adhere to local laws and regulations for waste management to minimize environmental impact and ensure community safety.

This guide is designed to help reduce our products' environmental footprint through responsible end-of-life management. Please contact your local waste management supplier or our support team for more specific disposal information or further assistance.

Find your local professional dealer from our certified worldwide network for expert service and support. visit our website www.sleipnergrouper.com/support

Product spare parts and additional resources

For additional supporting documentation, we advise you to visit our website www.sleipnergrouper.com and find your Sleipner product.

Warranty statement

1. Sleipner Motor AS (The “Warrantor”) warrants that the equipment (parts, materials, and embedded software of products) manufactured by the Warrantor is free from defects in workmanship and materials for purpose for which the equipment is intended and under normal use and maintenance service (the “Warranty”).
2. This Warranty is in effect for two years (Leisure Use) or one year (Commercial and other Non-leisure Use) from the date of delivery/purchase by the end user, with the following exceptions;
 - (a) For demonstration vessels, or vessels kept on the water, the dealer is considered as the end user from 6 months after their launch of the vessel;
 - (b) The warranty period starts no later than 18 months after the first launch of the vessel.

Please note that the boat manufacturer and dealer must pay particular attention to correct maintenance and service both by the products manuals as well as general good practice for the location the boat is kept in the period the boat is in their care. In cases where the 6 and 18 months grace periods for boat builders and dealers are passed, it is possible to obtain a full warranty upon inspection and approval of the warrantor or such representative.
3. Certain parts, classified as wearable or service parts, are not covered by the warranty. A failure to follow the required maintenance and service work as described in the product manual render all warranty on parts or components directly or indirectly affected by this void. Please also note that for some parts, time is also a factor separately from actual operational hours.
4. This Warranty is transferable and covers the equipment for the specified warranty period.
5. The warranty does not apply to 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. In case the equipment seems to be defective, the warranty holder (the “Claimant”) must do the following to make a claim:
 - (a) Contact the dealer or service centre where the equipment was purchased and make the claim. Alternatively, the Claimant can make the claim to a dealer or service centre found at www.sleipnergrouper.com. The Claimant must present a detailed written statement of the nature and circumstances of the defect, to the best of the Claimant’s knowledge, including product identification and serial nbr., the date and place of purchase and the name and address of the installer. Proof of purchase date should be included with the claim, to verify that the warranty period has not expired;
 - (b) Make the equipment available for troubleshooting and repair, with direct and workable access, including dismantling of furnishings or similar, if any, either at the premises of the Warrantor or an authorised service representative approved by the Warrantor. Equipment can only be returned to the Warrantor or an authorised service representative for repair following a pre-approval by the Warrantor’s Help Desk and if so, with the Return Authorisation Number visible postage/shipping prepaid and at the expense of the Claimant.
7. Examination and handling of the warranty claim:
 - (a) If upon the Warrantor’s or authorised service Representative’s examination, the defect is determined to result from defective material or workmanship in the warranty period, the equipment will be repaired or replaced at the Warrantor’s option without charge, and returned to the Purchaser at the Warrantor’s expense. If, on the other hand, the claim is determined to result from circumstances such as described in section 4 above or a result of wear and tear exceeding that for which the equipment is intended (e.g. commercial use of equipment intended for leisure use), the costs for the troubleshooting and repair shall be borne by the Claimant;
 - (b) No refund of the purchase price will be granted to the Claimant, unless the Warrantor is unable to remedy the defect after having a reasonable number of opportunities to do so. In the event that attempts to remedy the defect have failed, the Claimant may claim a refund of the purchase price, provided that the Claimant submits 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.
8. Warranty service shall be performed only by the Warrantor, or an authorised service representative, and any attempt to remedy the defect by anyone else shall render this warranty void.
9. No other warranty is given beyond those described above, implied or otherwise, including any implied warranty of merchantability, fitness for a particular purpose other than the purpose for which the equipment is intended, and any other obligations on the part of the Warrantor or its employees and representatives.
10. There shall be no responsibility or liability whatsoever on the part of the Warrantor or its employees and representatives based on this Warranty for injury to any person or persons, or damage to property, loss of income or profit, or any other incidental, consequential or resulting damage or cost claimed to have been incurred through the use or sale of the equipment, including any possible failure or malfunction of the equipment or damages arising from collision with other vessels or objects.
11. This warranty gives you specific legal rights, and you may also have other rights which vary from country to country.

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.sleipnergrouper.com/patents

Dotted lines for writing notes.

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Learn more about our products at
www.sleipnergroun.com



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