



OWNER'S MANUAL

AXOPAR 28 OPEN
MODEL YEAR 2021

AXOPAR 

Table of Contents

1. Introduction.....	4
1.1. Purpose of this manual.....	4
1.2. Safety symbols.....	4
1.3. Document conventions.....	5
1.4. Copyright.....	5
1.5. Disclaimer	5
1.6. Warranty.....	5
2. Safety.....	6
2.1. Safety diagram.....	6
2.2. Fire protection and control.....	7
2.2.1. Fire control equipment.....	7
2.2.2. Boat owners' and users' responsibilities.....	7
2.2.3. Checklist: Fire in the engine.....	8
2.2.4. Checklist: After fire.....	8
2.3. Carbon monoxide.....	8
2.4. Life raft.....	9
3. Product overview.....	11
3.1. Purpose of use.....	11
3.2. Identification.....	11
3.3. Builder's plate.....	11
3.4. CE certification.....	12
3.5. Conformity.....	12
3.6. Dimensions and weight.....	14
3.7. Boat layout.....	16
4. Product description.....	17
4.1. Stability and buoyancy.....	17
4.1.1. Self-draining systems.....	17
4.1.2. Openings in the hull and deck.....	18
4.1.3. Bilge system	20
4.2. Technical systems.....	24
4.2.1. Electrical system.....	24
4.2.2. 12 V system.....	24
4.2.3. Main switches.....	25
4.2.4. Direct supply switches.....	26
4.2.5. Fuses.....	26
4.2.6. Heavy duty fuses.....	27

4.2.7. Batteries.....	28
4.2.7.1. Charging the batteries.....	28
4.2.7.2. Winter storage	28
4.2.7.3. Cleaning the batteries	29
4.2.8. 110/230 V system.....	29
4.2.9. Fuel system.....	30
4.2.9.1. Refueling the boat.....	31
4.3. Optional equipment.....	32
4.3.1. Fresh water system.....	32
4.3.2. Septic system.....	33
4.3.2.1. Toilet seat.....	34
4.3.2.2. Septic tank.....	35
4.3.3. Heating system.....	35
4.3.4. Bow thruster.....	36
4.3.5. Anchor windlass.....	36
5. Transportation.....	38
5.1. Lifting the boat.....	38
5.2. Transporting the boat.....	39
6. Operation.....	41
6.1. Handling devices.....	41
6.1.1. Steering console.....	41
6.1.2. Windscreen wipers	42
6.1.3. Steering system.....	42
6.1.3.1. Checking and topping up oil	42
6.1.3.2. Steering maintenance	43
6.1.3.3. Steering console switch panel.....	43
6.1.4. Starting the engine.....	43
6.2. Swivel seat - Driver and passenger seats.....	44
6.3. Inspecting the boat.....	45
6.3.1. Checklist: Regular inspection before leaving harbor.....	45
6.3.2. Checklist: After using the boat.....	45
6.4. Handling the boat.....	46
6.4.1. Checklist: Boat handling before leaving harbor	46
6.4.2. Leaving the jetty	46
6.4.3. Driving the boat.....	47
6.4.3.1. Dead man's switch	47
6.4.3.2. Driving at high speed.....	47
6.4.3.3. Driving in rough seas.....	48
6.4.3.4. Maneuvering in narrow channels.....	49
6.4.4. Visibility from helming position.....	49
6.4.5. Using the trim tabs.....	49

6.5. Preventing falling overboard.....	50
6.6. Anchoring, docking and mooring.....	51
6.6.1. Fastening points.....	51
6.6.2. Docking.....	51
6.6.3. Checklist: Before anchoring	52
6.6.4. Towing and mooring.....	52
7. Maintenance.....	53
7.1. Maintaining the gelcoat surface.....	53
7.2. Maintaining the interiors.....	53
7.2.1. Wooden interiors.....	53
7.2.2. Plastic and painted surfaces.....	53
7.2.3. Fabrics.....	54
7.2.4. Doors and hatches.....	54
7.3. Maintaining the cover.....	54
7.3.1. Cleaning the cover.....	54
7.4. Preventing frost damage.....	55
7.5. Checklist: Before winter lay-up.....	55
7.6. Checklist: Before launching.....	55
7.7. Corrective maintenance.....	56
7.7.1. Chalking.....	56
7.7.2. Scratches and nicks.....	56
7.7.3. Stains.....	56
7.7.4. Deep marks, gouges and holes.....	56
8. Environment.....	57
8.1. Requirements for North America.....	57
9. Appendix I: Checklists.....	58
9.1. Checklist: Fire in the engine.....	58
9.2. Checklist: After fire.....	58
9.3. Checklist: Regular inspection before leaving harbor.....	58
9.4. Checklist: After using the boat.....	59
9.5. Checklist: Boat handling before leaving harbor	59
9.6. Checklist: Before anchoring	60
9.7. Checklist: Before winter lay-up.....	60
9.8. Checklist: Before launching.....	61
10. Appendix II: Fuel system.....	62
11. Appendix III: Electrical diagrams.....	63
12. Appendix IV: Warning label placement.....	64

1. Introduction

1.1. Purpose of this manual

This instruction manual contains important information and instructions for properly using your boat.

In this owner's manual you will find important information that will help you handle and maintain your boat in a safe and easy manner. Furthermore, the manual contains detailed information about the boat and the systems installed, and general information about handling and taking care of the boat.

We advise you to read the manual carefully and familiarize yourself with your boat before you start to use it. This owner's manual is not a substitute for boating safety skills or good seamanship. If this is your first boat or if this boat type is new to you, we ask for your own comfort and safety that you ensure you can handle the boat before you set out for the first time. Your boat dealer, local boat clubs and national motorboat or yacht federations will gladly inform you about local sea schools or recommend approved instructors.

You should ensure that the anticipated wind and wave conditions correspond to the design category of your boat, and that you and your crew are able to handle the boat in these conditions.

This owner's manual is not a detailed maintenance or troubleshooting guide. If problems occur, you should contact the boat manufacturer or their representative. When you are in need of maintenance or repair and alteration work, you should always turn to competent and trained workshops. Changes that can affect the boat's security features must be assessed, carried out and documented by competent professionals. The boat manufacturer cannot be held responsible for unauthorized modifications. Every change to the boat's center of gravity (from highly mounted heavy equipment or a new engine type etc.) will significantly affect the stability, trim and performance of the boat.

Keep this manual in a safe place and pass it on to the new owner if you sell your boat. If the manual is mislaid or destroyed, a copy can be ordered from your dealer.

See the purchase agreement or order for the scope of your purchase. In case something does not work satisfactorily with your boat or its equipment, you can check the service documents for possible service and repair measures. In the event of uncertainty, you should always contact your dealer.

1.2. Safety symbols

This instruction manual contains danger, warning, caution and notice statements informing the user or authorized service representatives of any potential harm to the product or person.

Hazard is defined as a source of potential injury to a person.

All abnormal use is forbidden, including disregarding information on safety.

⚠ DANGER **Danger** indicates an imminently hazardous situation which, if not avoided, **will result in death or serious injury**.

⚠ WARNING **Warning** indicates a potentially hazardous situation which, if not avoided, **could result in death or serious injury**.

⚠ CAUTION **Caution** indicates a potentially hazardous situation which, if not avoided, **might result in minor or moderate injury**.

NOTICE

Notice indicates a potential situation which, if not avoided, **might result in property damage or in an undesirable result or state.**



Note calls attention to information that clarifies or simplifies a procedure.

1.3. Document conventions

Units

This manual uses SI units in accordance with ISO 1000. In some cases, other units may have been used alongside.

An exception is the wind velocity, which in the Recreational Boat Directive is given in the Beaufort Scale.

Terminology

In this manual, the right side of the hull is referred to as starboard (STB) and the left side as port.

1.4. Copyright

Copyright ©2020 Axopar Boats. All rights reserved.

This Owner's Manual is protected by copyright controlled by Axopar Boats. This manual cannot be wholly or partly reproduced without prior written authorization by Axopar Boats. This material also contains confidential information, which may not be disclosed to others without the prior written consent of Axopar Boats.

1.5. Disclaimer

- The material in this manual is for information purposes only.
- Axopar Boats reserves the right to change the products without prior notice to improve reliability, function, design or other characteristics of the products. Axopar Boats assumes no liability for any damages, losses, costs or expenses arising out of or relating to the use of this manual or the products described herein.
- Axopar Boats makes no representations and warranties with respect to this manual, either express or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

1.6. Warranty

The Limited Warranty for the boat and the relevant contact information are enclosed as a separate document.

For any warranty claims, please contact your Axopar dealer mentioned on the cover page.

2. Safety

⚠ WARNING

Necessary safety equipment is required on the boat at all times.

The boat owner is responsible for making sure that all safety equipment, for example the fire extinguishers, meet the rules and regulations of the local authorities.

⚠ WARNING

Overloading the boat can damage the engine, even when shut off.

When loading the boat, never exceed the maximum recommended load of the boat. Always load the boat carefully and distribute loads appropriately to maintain design trim. Avoid placing heavy equipment or material high up in the boat.

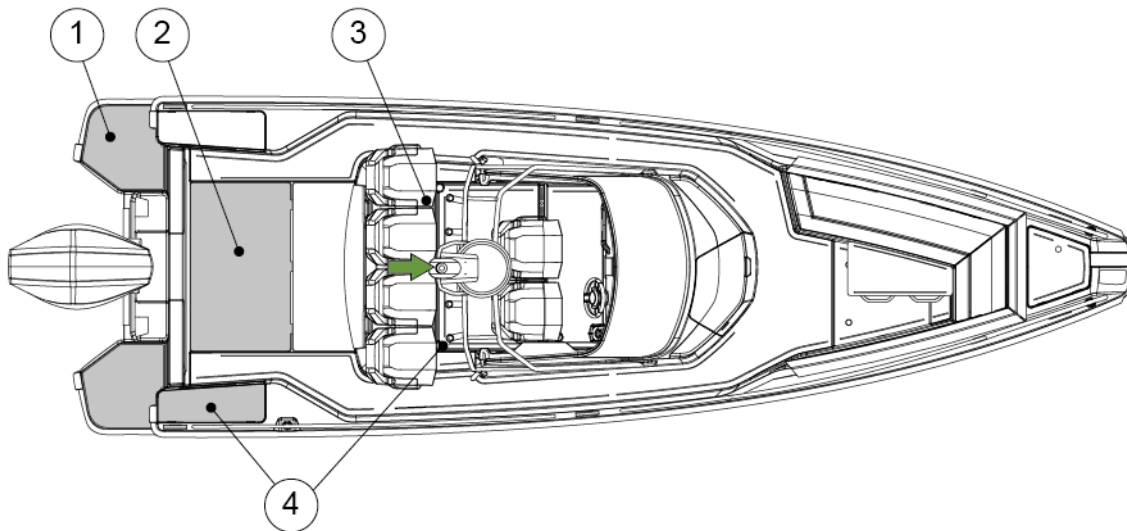
The liquids in the built-in tanks are not included in the maximum load shown on the builder's plate.

⚠ WARNING

Do not exceed the maximum number of persons allowed in the boat. The total weight of the persons on board and their personal luggage must never exceed the maximum load of the boat.

When out on the water, always use the seats intended for passengers.

2.1. Safety diagram



- (1) Swim ladder
- (2) Life raft storage
- (3) CO monitor
- (4) Fire extinguisher
- Exit

2.2. Fire protection and control

The most common fire sources are the engine and the stove. If there is a fire in the boat, it may result in an explosion.

Fire usually spreads very fast — be quick to extinguish the fire.

Fire should be put down by extinguishing, that is, depriving the fire of oxygen. Using water in fires involving flammable liquids does not help, but can spread the flammable liquid and make the fire worse.

WARNING

If the fire reaches the fuel containers, an explosion may occur and cause a large area around the boat to burn.

- Keep the bilge clean and check it regularly for fuel and gas fumes or fuel and oil leaks.
- Do not hang curtains or other flammable material near or above any equipment with naked flames.
- Never leave the boat unattended when the heater is switched on.
- Never refuel or replace gas containers when the engines are running.
- Never smoke when handling fuel or gas.
- Never block evacuation routes or emergency exits.
- Never block access to safety equipment such as fuel valves or main power switches.
- Never block access to fire extinguishers, visible or concealed.
- Never modify the boat's systems (especially electrical, fuel or gas systems).

In case of fire, use the fire extinguisher on the boat. See the section **Safety diagram** for the exact location of the fire extinguisher.

If the fire starts to get out of control, leave the burning boat to save lives.

2.2.1. Fire control equipment

This boat must be fitted with hand-held fire extinguishers with the following output and locations:

- The fire extinguisher must have a fire rating of at least 13A/89B (2 kg).
- Check the exact locations of the fire control equipment in the section **Safety diagram**.

The fire extinguishers are not included in the manufacturer's delivery.

2.2.2. Boat owners' and users' responsibilities

It is the boat owner's and users' responsibility to ensure that:

- The fire control equipment is accessible at all times.
- The fire extinguishing equipment is checked regularly at the intervals specified for the equipment.

- Equipment with expired date is replaced immediately with equivalent or better equipment.
- The crew and guests are advised of the location of and instructions for use of fire control equipment, and the location of evacuation routes and emergency exits.

2.2.3. Checklist: Fire in the engine

- Stop the engine.
- Steer the boat up against the wind, if possible.
- Make sure all passengers have life jackets.
- If necessary:
 - Evacuate the passengers.
 - Call for sea rescue.
- Shut off fuel and main power switches.
- Extinguish the fire.
- Wait until fully certain that the fire has been extinguished before opening the engine cover.
Carefully open the engine cover and be prepared to use the handheld fire extinguisher if necessary for post-fire extinguishing.
- Put out possible smoldering fires with water.

2.2.4. Checklist: After fire

- Open doors and windows for better ventilation.
- Inspect the boat and its equipment, and repair eventual damages.
- Contact local authorities, if needed.
- Make sure that the fire extinguishing equipment is refilled or replaced after use.

2.3. Carbon monoxide

There is a carbon monoxide monitor system in the boat. The system alarm is located in the main switch panel.

For the exact location of the CO monitor, see the section **Safety diagram**.

- With regular intervals, check that the monitor system is functioning. For instructions, see the equipment manufacturer's manual.
- When the boat is in use, do not turn the system switch off.

⚠ WARNING

Carbon monoxide (CO) is colorless, odorless, tasteless, and extremely dangerous gas.

All engines, generators, and fuel burning appliances produce CO as exhaust.

Prolonged exposure to low concentrations or very quick exposure to high concentrations may cause brain damage or death.

Open all doors, curtains, windows, and hatches to let fresh air circulate when running the engine or generator or burning any fuel while the boat is anchored, moored or docked.

Symptoms of carbon monoxide poisoning are dizziness, ears ringing, headache, nausea and unconsciousness. A poisoning victim's skin often turns cherry red.

Because carbon monoxide gas (CO) is odorless, colorless and tasteless, it is unlikely to be noticed until a person is affected.

- **If CO poisoning is suspected, have the victim breath fresh air deeply.**
 - **If breathing stops, resuscitate.**
 - A victim often revives, but then relapses because organs are damaged by the lack of oxygen.
- Seek immediate medical attention.**

Dangerous concentrations of carbon monoxide are present if:

- the engine or generator exhaust systems leak
- insufficient fresh air is circulating where people are present
- fumes move from the rear of the boat into the cockpit and cabin area.

To minimize the danger of CO accumulation when the engine and generator are running or when using burning fuel applications:

- Be sure to have sufficient ventilation when using canvas or window-type side curtains when underway, anchored, moored or docked.
- Operate all burning fuel appliances, such as charcoal, propane, LPG, CNG or alcohol cooking devices, in areas where fresh air can circulate.

Do not use such devices where there is no noticeable air movement, especially in the cabin, when anchored, moored or docked.

- Do not idle the engine without moving the boat for more than 15 minutes at a time.
- Inspect the exhaust system regularly. See the manufacturer's manual for instructions.

High levels of carbon monoxide may accumulate in the following ways:

- Blocking hull exhausts while operating at slow speed or if exhausts are submerged.
- Using canvas curtains.
- Winds blowing exhaust toward boat occupants.
- Operating engine or generator in a confined space.
- Operating with the bow high.

2.4. Life raft

The boat is not equipped with a life raft by the manufacturer.

Storing a life raft

If you decide to acquire a life raft for your boat, we recommend that you stow it to the aft of the boat, so that it is easily accessible in case of emergency.

Using the life raft

The life raft shall be tied to the stern of the boat and prepared for use.

In an emergency, the life raft is easiest and safest to board from the swimming deck. Switch off the engine before using the life raft.

Follow the life raft manufacturer's instructions.

3. Product overview

3.1. Purpose of use

The boat is a recreational boat, thus not suitable for professional use.

3.2. Identification

Each boat is supplied with a unique identification code, containing 14 characters and a hyphen.

The height of the code text is 6 mm and it is applied to the starboard side of the stern.

Example: FI – AXO7A001F920	Data
FI	Country of manufacturer: Finland
-	Hyphen
AXO	Manufacturer: Axopar
7A	Boat model <ul style="list-style-type: none"> • A = Open • B = T-Top • C = Cabin
001	Boat number
F	Manufacturing month <ul style="list-style-type: none"> • A = January • B = February • C = March • etc.
9	Last digit of the manufacturing year
20	Model year

3.3. Builder's plate

The builder's plate is always fitted close to the steering position in the boat.

Eurofins Expert Services Oy has inspected that the boat fulfils the Recreational Boat Directive and related standards' requirements.

Boat type	Boat model
Design category	CE classification
Max. load	Buoyancy Total weight of persons including personal luggage (excluding tank contents)
Max. no	Maximum number of persons on board

3.4. CE certification

This boat is classified to CE categories B and C.

The category is determined according to the maximum number of persons allowed onboard.

The CE certification indicates that a boat is designed and built in such a way that it retains its stability and buoyancy in given circumstances and meets other important requirements that are characteristic of the category in question. One of these requirements is that the boat must be easy to maneuver.

The CE categories classification also signifies that a boat is designed and constructed to withstand the following parameters in respect of stability, buoyancy, and other relevant essential requirements stated.

Category	Description
A. Ocean	The boat is designed for extended voyages, where conditions experienced may exceed wind force 8 on Beaufort Scale and include significant wave heights of at least 4 meters. Under such conditions, the boat must be largely self-sufficient.
B. Offshore	The boat is designed for offshore voyages, where conditions up to and including wind force 8 on Beaufort Scale and significant wave heights up to and including 4 meters may be experienced.
C. Inshore	The boat is designed for voyages in coastal waters, large bays, estuaries, lakes and rivers, where conditions up to and including wind force 6 Beaufort Scale and significant wave heights up to and including 2 m may be experienced.

3.5. Conformity

Safety	
Basic data	EN ISO 8666:2002
Hull identification	ISO 10087:2006
Builder's plate	RDC ANNEX I: A 2.2
Owner's manual	EN ISO 10240:2004/A1:2015
Preventing falling overboard	EN ISO 15085:2003/DAM 2.3.2
Life raft stowage	RSG Guidelines

Escape	EN ISO 9094:2017
Anchoring and towing	EN ISO 15084:2003
Running lights	1972 COLREG
Emissions control	EN ISO 8099:2000
Installations	
Engines and engine spaces	-
Fuel system	EN ISO 10088:2017 EN ISO 11105:2017
Electrical system	EN ISO 10133:2017 EN ISO 13297:2017 EN ISO 28846:1993/A1:2000
Steering system	EN ISO 10592:2017
Gas systems	-
Fire protection	EN ISO 9094:2017
Dimensioning	
Structure	ISO 12215-5:2008+A1:2014 ISO 12215-6:2008
Hydrostatics	
Stability and freeboard	EN ISO 12217-1:2017
Buoyancy and floatation	EN ISO 12217-1:2017
Manufacturer's maximum recommended load	EN ISO 14946:2001/AC 2005
Openings in hull, deck and superstructure	EN ISO 9093-1:1997 EN ISO 9093-2:2002 EN ISO 12216:2002
Flooding	EN ISO 11812:2001 EN ISO 15083:2003 ISO 8849:2003
Handling characteristics	
Handling characteristics	RSG Guidelines RFU 114 EN ISO 8665:2006
Visibility from the steering position	EN ISO 11591:2011

Emissions	
Exhaust emissions of engines	-
Noise emissions	-

3.6. Dimensions and weight

Dimensions

Dimension	SI units	US units
Hull length (LH)	9.2 m	30 ft 1 in
Overall length (LMAX) (excluding engine)	9.2 m	30 ft 1 in
Hull beam (BH)	2.96 m	9 ft 7 in
Draught at max. load (excluding engine)	0.8 m	2 ft 8 in
Height measured from waterline at light load	2.8 m	9 ft 8 in

Power

	SI units	US units
Maximum recommended engine power	298 kW	400 hp
Maximum recommended power with twin engines	2 x 148 kW	2 x 200 hp

Weight and loading

	SI units	US units
Hull weight (excluding engine)	2332 kg	5141 lb

	Category B	Category C
Maximum number of persons Default weights: <ul style="list-style-type: none"> • Adult: 75 kg • Child: 37.5 kg 	6	9

	Category B		Category C	
	SI units	US units	SI units	US units
Total weight of all persons	450 kg	992 lb	675 kg	1488 lb
Weight of unloaded boat with maximum weight outboard engines	2567 kg	5659 lb	2567 kg	5659 lb
Maximum recommended load	796 kg	1754 lb	1021 kg	2250 lb
Boat weight at maximum load	3363 kg	7414 lb	3588 kg	7910 lb

of which

	SI units	US units
Maximum recommended engine weight	522 kg	1151 lb
Personal luggage	50 kg	110 lb
Fresh water (39 l)	39 kg	86 lb
Septic water (45 l)	45 kg	99 lb
Fuel (260 l)	225 kg	430 lb
Other liquids (heater fuel)	17 kg	37 lb
Life raft weight	24 kg	53 lb
Total weight of fuel, water and other liquids	296 kg	681 lb
Mass on trailer	3250 kg	7165 lb

Tank capacity

	SI units	US units
Fuel tank	300 l	
Fuel tank - North American Region		63 gal
Fresh water tank	39 l	10 gal
Septic tank	45 l	12 gal

The boat's stability assessment is based on maximum load conditions.

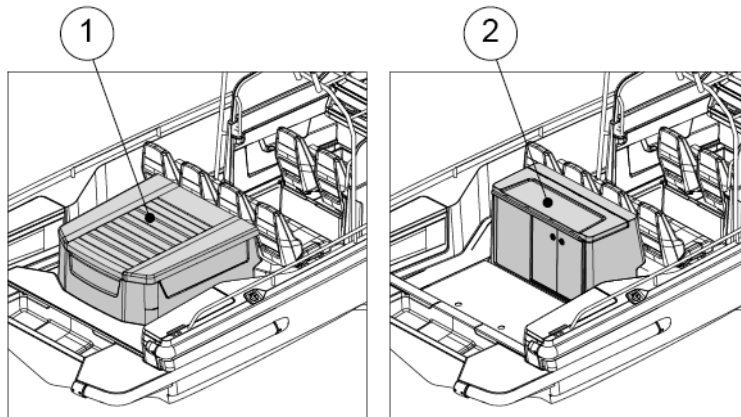
The maximum recommended load only contains the weight components mentioned above.

3.7. Boat layout

The boat has several deck options. The layout of the equipment and the technical components may vary depending on the chosen accessory alternatives.

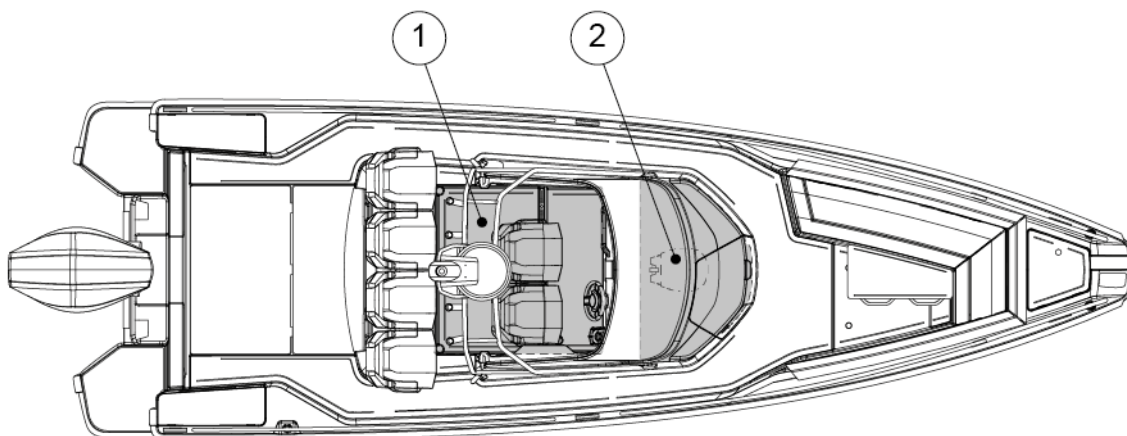
The standard boat has a flat afterdeck with stowage underneath.

The stowage can be replaced with optional extra equipment such as an aft cabin, or a wetbar.



- (1) Aft cabin
- (2) Wetbar

As an option, the cockpit can be equipped with a pilohouse pentry. In the front part of the cockpit, there is a separate storage room/toilet option with a door that opens to the front deck.



- (1) Pilohouse pentry
- (2) Storage room/toilet option

4. Product description

4.1. Stability and buoyancy

Pay attention to the stability and buoyancy of the boat.

All weight dispositions (for example installing a fishing tower, radar or furling mast, and engine replacement) can have a significant impact on the stability, trim, and performance of the boat.

- The bilge water level should be kept at a minimum.
- The stability of the boat is compromised if any weight is placed in a high position.

In stormy weather, all hatches, compartments and doors should be kept closed to minimize the risk of flooding.

Breaking waves represent a significant danger to stability.

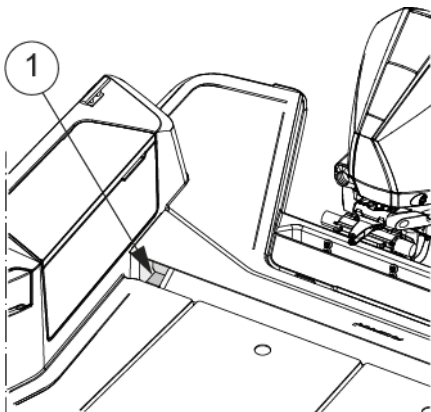
⚠ WARNING

To avoid the risk of flooding, always keep the seacocks closed when not in use (for example, the seacock for the toilet's flushing water).

4.1.1. Self-draining systems

The boat is equipped with self-draining systems for the whole deck area. The system is drained through drain holes in the aft of the boat.

There are drain holes for water in both aft corners of the deck. The openings are directly connected to the sea. The deck of the boat has been designed to allow the water to drain straight into the sea via the water gullies.



In addition to rainwater, the drain holes are intended to drain water ending up on the deck through splashing or from breaking waves.

The drain holes must be open at all times and the holes regularly cleaned by removing any accumulated debris to prevent clogging.

The system is built so as to drain the water from the deck in normal use. Do not close the taps when using the boat or when the boat is attached to the dock.

In the cockpit and driver's floor there are draining holes on both sides of the floor. Cockpit draining holes are equipped with seacocks located on transom. Driver's floor drains to a container located in front of the toilet. There is a water pump that pumps water out from the container.

⚠ CAUTION

The self-emptying open space is meant for the removal of such water that ends up on the deck through rain, splashing or from breaking waves. A part of the rain water as well as water condensation in the bilge may end up in the bilge.

Do not leave the boat unattended in the water for a long time. Observe the floating position of the boat and empty the bilge when necessary. Leaving the boat unattended in the water for a long time may cause damage.

⚠ WARNING

Do not close the drain holes when using the boat.

4.1.2. Openings in the hull and deck

There are several inlets through the boat that include valves for opening and closing such inlets. It is recommended to keep these inlets closed if the boat is out of use for a long time, and to open them again when the boat is used again. If the boat is lifted out from water or in rainy conditions, inlets should be kept open.

Always check that all hatches are securely closed before and after using the boat.

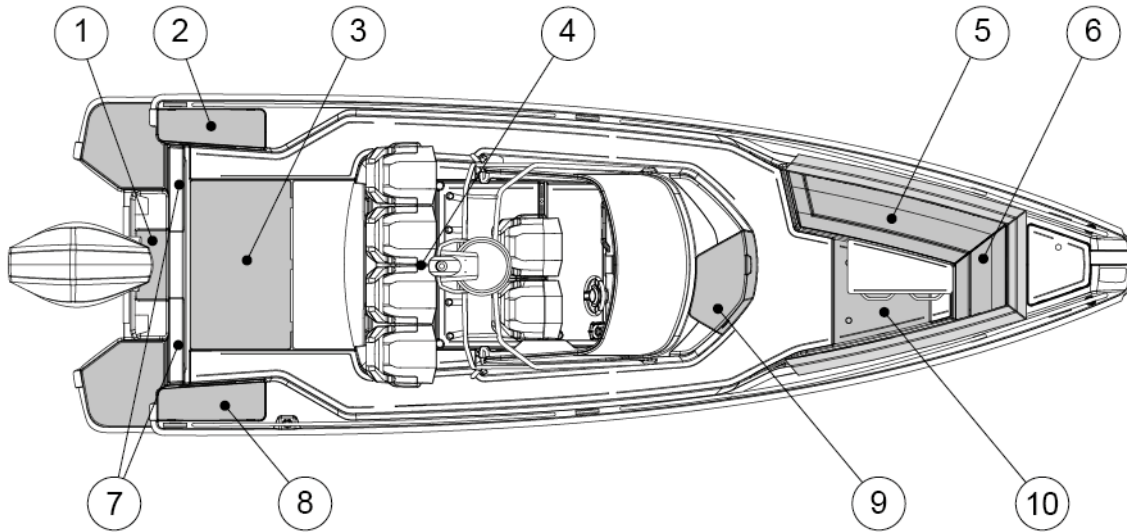
We recommend that you keep the windows, doors, deck hatches, roof hatches, vents and interior doors closed while driving. In stormy weather, always keep them securely closed to minimize the risk of water getting into the boat and to avoid any personal injuries.

In certain conditions and speeds, it is possible that water is sprayed inside through canopies, hatches or other openings, due to negative pressure or other effects. Risk for this can be minimized by closing the canopies, hatches or other openings.

⚠ WARNING

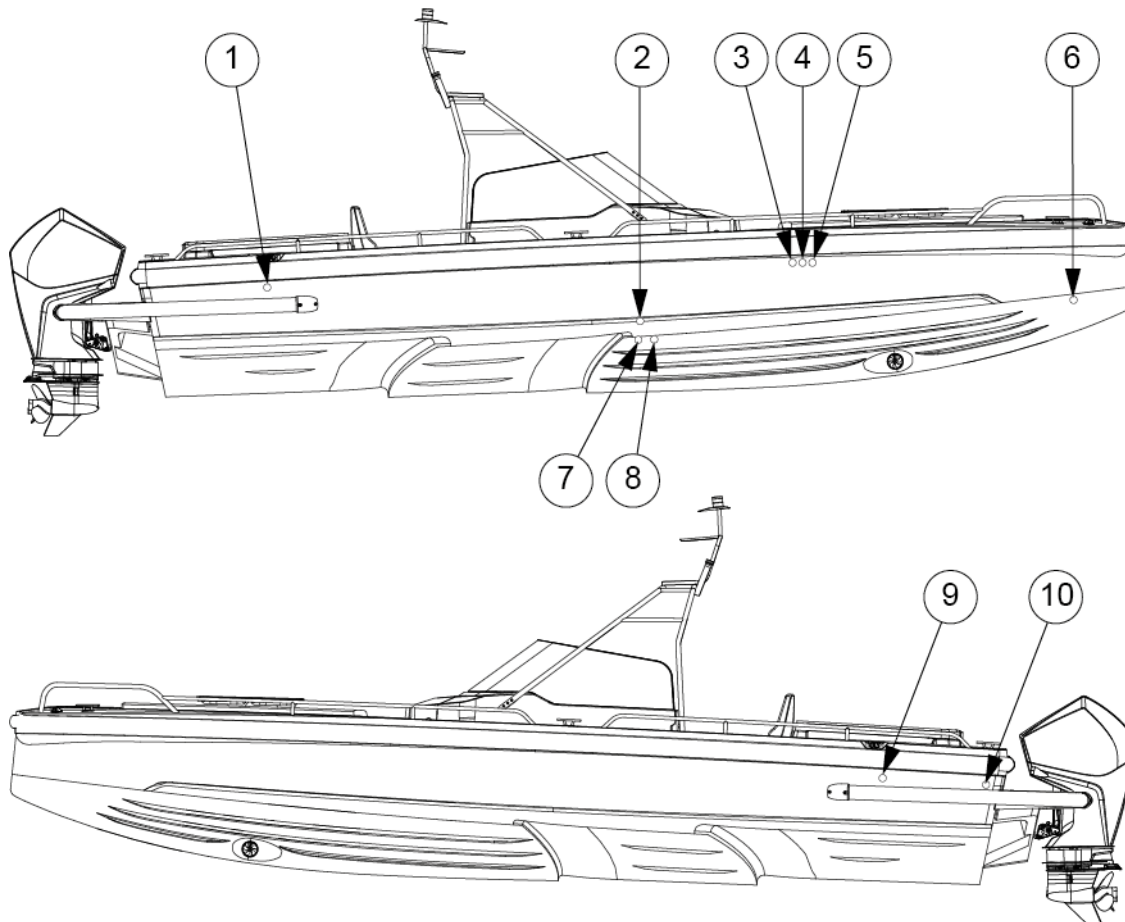
All doors and hatches must be kept shut when under way.

The figure shows the hatches that must be kept closed while under way or when the boat is left unattended.



- (1) Inspection hatch in the engine bracket
- (2) Service hatch in the Port fender box
- (3) Floor hatch or roof hatch (with aft cabin)
- (4) Cabin door (with aft cabin)
- (5) Side storage box
- (6) Front storage box
- (7) Service hatches in the cockpit step (without aft cabin)
- (8) Service hatch in the STB fender box
- (9) Toilet door
- (10) Storage box hatches

The location and number of these components depend on the level of the equipment on the boat.



- (1) Fuel vent
- (2) Toilet sink outlet
- (3) Fwd auto bilge pump outlet
- (4) Waste water tank
- (5) Fresh water tank vent
- (6) Anchor locker drain
- (7) Toilet flush inlet
- (8) Waste water tank outlet
- (9) Manual bilge outlet
- (10) Aft auto bilge pump outlet

4.1.3. Bilge system

The bilge system consists of several pumps that cover all the lower sections of the boat.

The boat is equipped with both manual and electrical bilge pumps. The signs on the boat display the draining area of each pump.

The electric bilge pumps are equipped with a float which triggers them automatically if there is water in the bilge space. The pumps can also be controlled manually from the switches on the steering console.

The manual bilge pump is controlled with its handle, which is located in the port side fender storage in the afterdeck. The purpose of the manual bilge pump is to drain the aft bilge room.

The electric pumps are submersible. One of them is located under the berth of the aft cabin and access to pump can be get by opening floor hatch. Another bilge pumps is located front of toilet and access to pump can be get by opening toilet front wall. The bilge water level should remain at a minimum.

The output of each automatic bilge pump is 41 liters (11 gallons) per minute. The manual bilge pump's output is 33 liters (9 gallons) per minute.

⚠ CAUTION

Avoid pollution!

Since the bilge system comprises of several automatic and manual pumps that cover all areas of the boat, the risk of accidental discharge of contaminated water by automatic pumps should be minimized. The boat owner and user shall mitigate the risk by checking the bilge water regularly for contaminants such as oil, diesel, and glycol. There is a sign in the boat indicating the draining area of each pump respectively.

⚠ CAUTION

Do not run dry for long time. The pump will be damaged.

⚠ WARNING

- Check the functionality of the bilge pumps regularly by manually activating them.
- Remove any waste from the intakes.

The combined capacity of the bilge system is not designed to pump out the boat in the event of hull damage.

The pumps are by default in the automatic mode and pump out the bilge once the float-switch is triggered. The pumps can also be started manually from the boat's main control panel.

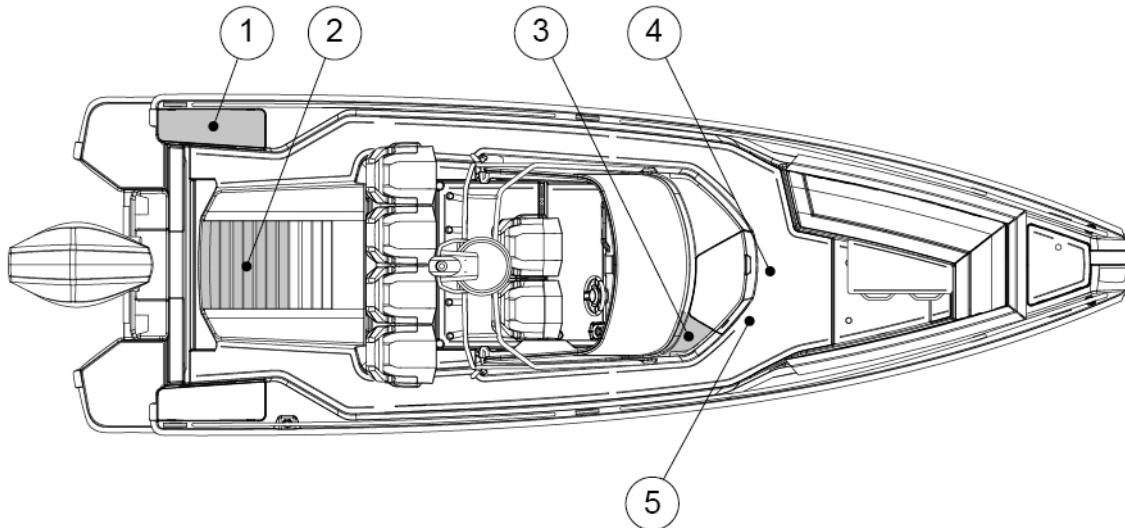
⚠ CAUTION

The bilge system is not designed for damage control.

⚠ WARNING

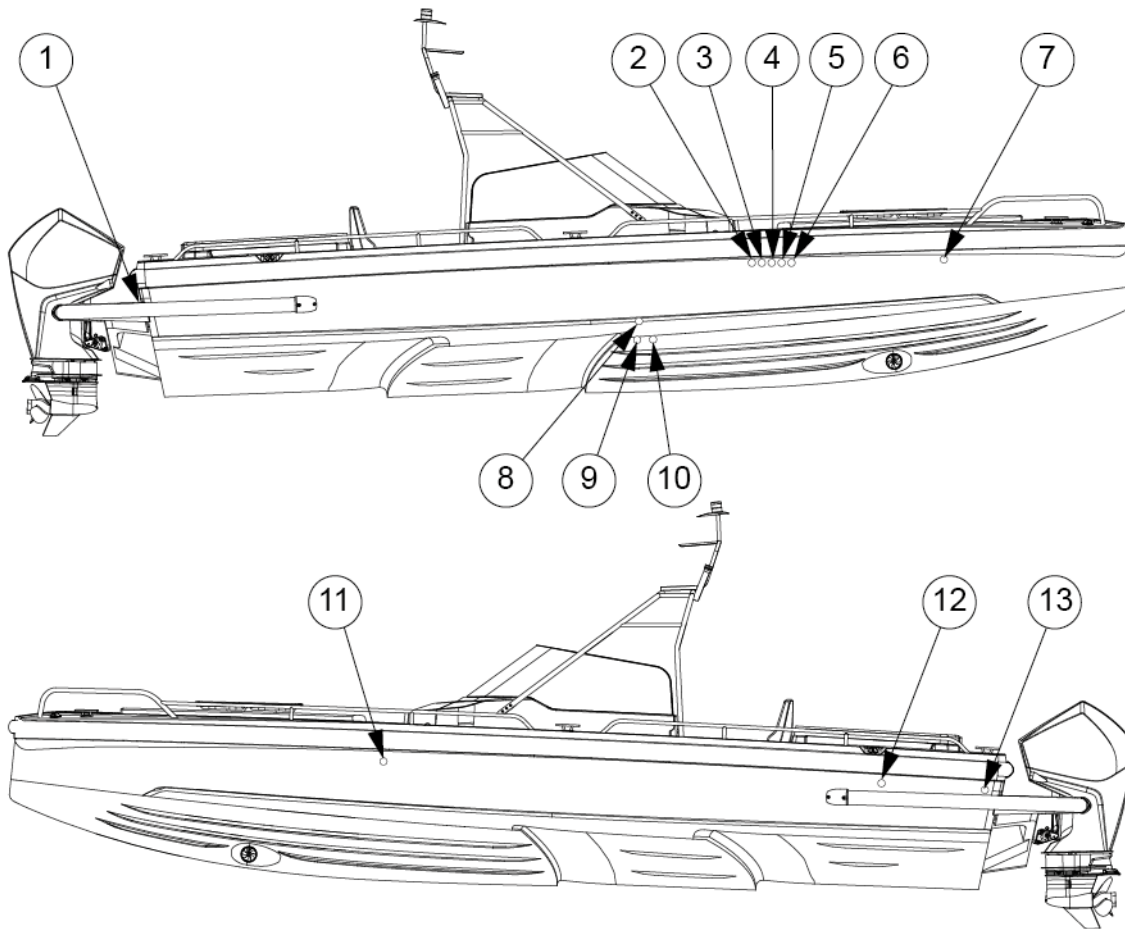
Check the function of all bilge pumps at regular intervals. Clear pump outlets from debris.

If seacocks are fitted in the fore and aft peak bulkheads, they shall be kept closed and shall only be opened to let water drain into the main bilges.



- (1) Handle bilge pump
- (2) Aft electric bilge pump
- (3) Front electric bilge pump
- (4) Hull through valves
- (5) Deck draining pump

The figure shows the seacocks and inlets through the side. Always check in the spring when launching that the inlets through the side and bottom are tightly closed.



- (1) Deck draining holes and valves
- (2) Deck draining pump outlet
- (3) Shower pump outlet
- (4) Front bilge pump outlet
- (5) Septic tank ventilation
- (6) Fresh water tank ventilation
- (7) Diesel tank ventilation
- (8) Septic tank draining seacock
- (9) Sinks draining seacock
- (10) Toilet seat inlet seacock
- (11) Heater exhaust
- (12) Manual bilge pump outlet
- (13) Aft bilge pump outlet

4.2. Technical systems

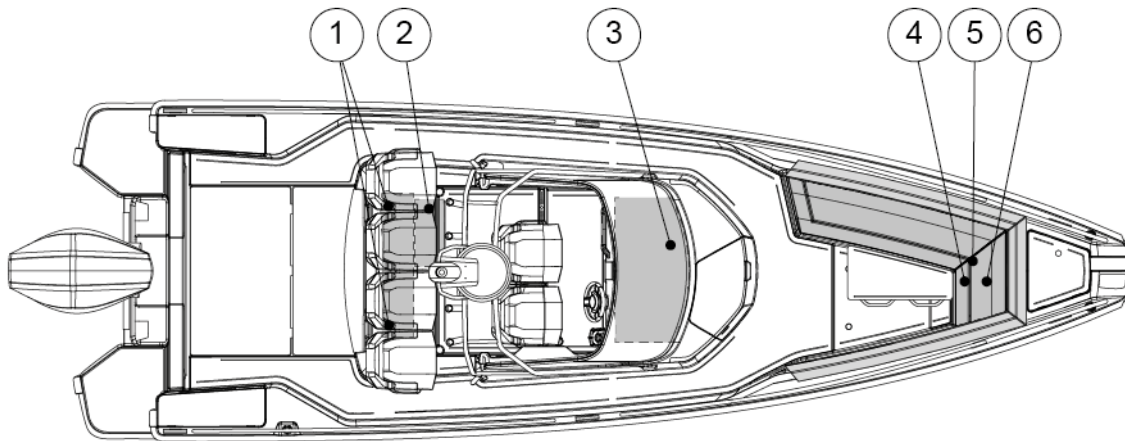
4.2.1. Electrical system

⚠ WARNING

Risks of fire, explosion and electric shock!

Improper use of electric DC and AC systems may result in fire, explosion or electric shock.

Follow the instructions carefully.



- (1) Batteries
- (2) Main switch panel
- (3) Fuse panel
- (4) Shore power plug
- (5) Shore power system battery charger
- (6) Bow thruster and windlass fuses and Aux battery

4.2.2. 12 V system

The boat is equipped with the 12 V system.

The 12 V system consists of engine driven alternators, battery chargers for shore-side electricity, batteries and equipment. The power supply happens from charger or alternator via diodes for batteries.

Most of the boat's equipment uses the 12 V system. To activate the circuits in the 12V system, the main switches for the corresponding circuits need to be activated and the fuses intact. Damaged equipment must be maintained before taking back to use. When the electronic circuit is switched on, the equipment can be operated from the main switch panel.

⚠ WARNING

- Never switch off the main switch when the engine is running, because this may cause damage to the alternator.
- Never carry out electrical installations when the power is switched on.
- Never modify the boat's electrical system or diagrams; service and maintenance must be carried out by a qualified electrician.
- Never modify the nominal rated amperage of the overvoltage protector.
- Never install or replace electrical equipment with components that cause the circuit's nominal rated amperage to be exceeded.
- Never leave the boat unattended with the electrical system energized, except automatic bilge pump, fire protection, and alarm circuits.

4.2.3. Main switches

The different electronic circuits of the boat are controlled by the main switches on the distribution board.

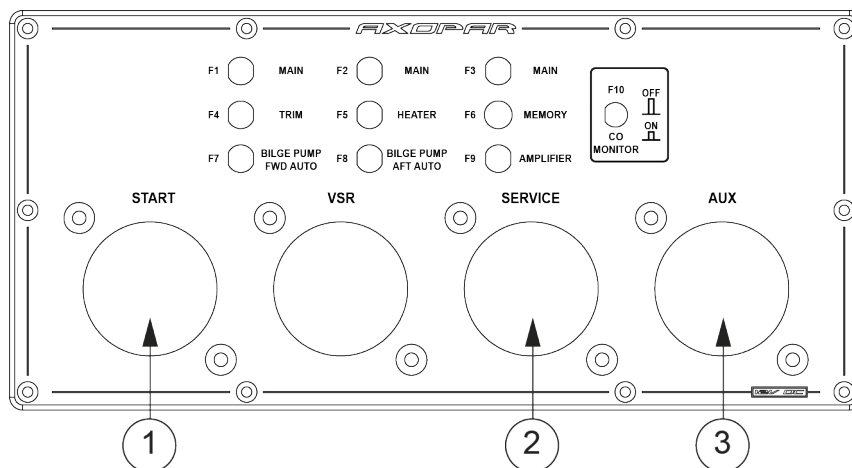
The main switches allow the batteries to be disconnected from all devices that consume electricity. When the main switches are in the On position, the current is conducted to the distribution board and from there to different parts of the boat.

The background color of the main switch and the text On shows that the electronic circuit is switched on, and when the circuit is switched off, the background color is red and the text says Off.

When you leave the boat for any length of time, switch off the current from all main switches. The devices that constantly need current will still be active.

The base drawing of the boat's electrical system is presented in the **Appendix II**. The main switch is located under after seat. In the main switch panel are direct supply switches for critical equipment and main switches for the start batteries, the service battery and the Aux battery.

Current feed to the engine is achieved by turning the Start switch to the On position, feed to other equipment is achieved by turning the Service switch to the On position and feed to the bow thruster and windlasses is achieved by turning the Aux switch to the On position.



- (1) Start batteries
- (2) Service battery
- (3) Aux battery

4.2.4. Direct supply switches

Some of the devices in the boat are supplied by direct supply switches. Direct supply switches are intended for such equipment that need current when main switches are turned off.

When pushed down, the switch is on and when pushed up it is off. The switch indicates a short circuit or interference in the electronic circuit by springing up to the “off” position. The switch can be reconnected by pushing it back down to the “on” position. Do not reconnect the switch before you have found out the reason for the interference.

The direct supply switches must be left on even if the current from other circuits is switched off. An appliance that is switched off too early may cause the appliance to overheat and become damaged.

The switches are located in the main switch panel.

WARNING

Turning the direct supply switch off too early may cause the device (for example, the heater) to break or catch fire, because the devices have a ventilation feature that works even if the device is otherwise switched off.

- Make sure the device is cooled down before turning it off completely. For more information, see the manual of the device in question.

4.2.5. Fuses

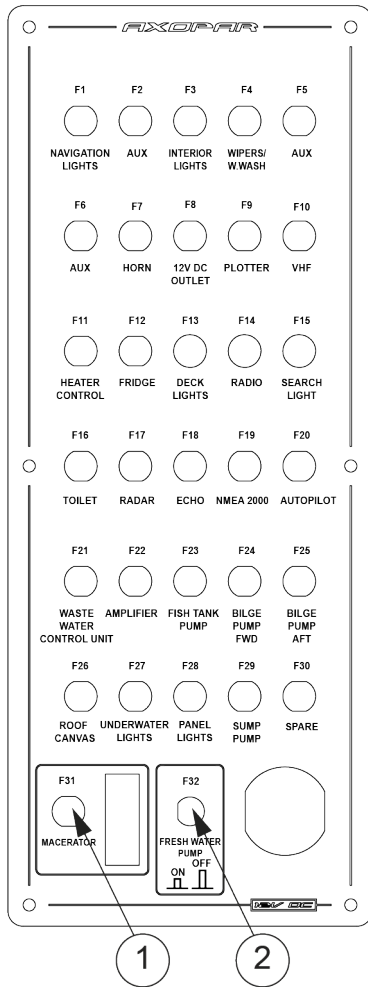
The fuse panel includes fuses for the boat’s equipment. The fuse panel is located in the toilet room.

The fuses are in the form of trip switches that break the circuit and spring up when tripped. Do not reset the switch before you have found out the reason for the breaker tripping. After that press the switch back down.

The panel has a combined switch and fuse for the macerator and fresh water pump. The fuse panel also has a 12 V output.

WARNING

Before connecting an electric circuit, make sure that the circuit is not damaged and that there will be no short circuit or a fire caused by possible damages in the electric circuit. Any damaged equipment must be maintained or changed before they are again taken into use.



- (1) Macerator pump switch and fuse
- (2) Fresh water pump switch and fuse

4.2.6. Heavy duty fuses

There are fuse panels containing fuses for appliances and electronic circuits which require large currents, such as windlasses, in the boat.

The bow thruster's and windlasses' high-current fuses are located under the front deck hatch and the battery charger fuses behind the toilet's wall panel.

The functioning of fuses can be checked from the holes in the fuse's cover. If the metal strip visible in the hole is unbroken, the fuse is operational.

If the metal strip is damaged, meaning that an overload has occurred, contact a qualified nautical electrician.

⚠ WARNING

Opening the cover is not recommended, as there is a danger of electric shock and serious injury.

If the metal strip is damaged, contact a qualified nautical electrician. If it is necessary to open the cover, make sure that all the current cables from the batteries are disconnected.

4.2.7. Batteries

The battery system has been designed and built so that the boat's engine starts even if its start batteries are dead, because then the service battery supplies the current. However, this function does not work the other way around.

The batteries are located under the aft cabin's berth. The location of the batteries is presented in the section **Electrical System**. When you leave the boat, switch off the current from the main switch.

Remove the battery from the boat for winter storage. When removing the battery, detach the negative pole first. Use only maintenance-free absorbent glass mat (AGM) batteries in the boat. When disconnecting batteries, be careful not to touch both poles at the same time with a metal tool.

The boat is equipped with three batteries, of which the start battery supplies current to the engine and power steering, and service battery for other appliances and equipment on the boat.

There is also one battery for the bow thruster.

⚠ CAUTION

Use only maintenance-free AGM batteries in the boat.

4.2.7.1. Charging the batteries



- Make sure that the battery compartment is always well ventilated when charging batteries.

Only charge batteries in the boat with the boat's own chargers. In other cases, remove batteries from the boat.

Remember that the batteries discharge an explosive oxy-hydrogen gas at a voltage of 14.4 volts. The voltage of a normal battery in unloaded status is 12.3-12.7 V. During charging, the voltage increases and the charging regulator stops the charging process automatically at a preset level. The voltage measurement should be taken at the battery terminals, not the alternator, to achieve the correct result.

4.2.7.2. Winter storage

For winter storage, the batteries can be left on board only if they are fully charged.

A partially discharged battery can freeze and crack. Always disconnect the cable terminals from the battery to avoid oxidation. When removing batteries, disconnect the negative pole first and make sure that there are no flammable or explosive materials or liquids nearby. When putting the batteries back in place, connect them in reverse order (positive pole first).

4.2.7.3. Cleaning the batteries

The top of the batteries should be cleaned regularly to avoid current leakage between the cells.

If the battery is located in a separate area, it is normally sufficient to clean it in the spring and autumn.

Make sure that the air holes in the cell plugs are open so that gas can be vented.

The terminals and cable terminals must be lubricated to prevent deposits and corrosion.

4.2.8. 110/230 V system

You can choose to equip your boat with the optional 110/230 V AC system with a shore power connection, which will allow you to use devices that run on the standard mains current.

The system obtains its power from an external supply on shore or from the jetty (shore power). In the European market the system used is 230 V and in the American market 110 V.

The system functions when a shore power cable has been connected to the shore power socket connection.

1. Turn off the shore power switch before connecting or disconnecting the cable.
2. Connect the shore power cable to the boat before connecting it to the shore power.
3. Disconnect the shore power cable from the shore power before disconnecting from the boat.
4. Close the hatch of the boat's shore power connection.

The system's main fuse is located in a separate control panel. The system includes a battery charger, which starts charging batteries automatically when the boat has been connected to shore power. The location of the components is presented in the section **Electrical System**.

The shore power system should be checked at least biannually. Always disconnect the shore power cable when the system is not in use. Metal casings of installed electrical equipment must always be connected to earth in the boat electrical system. Use electrical equipment equipped with earth protection only.

WARNING

- Do not touch an energized high voltage system.
- Do not change the plug of the shore power cable. Use compatible connectors only.
- Try to minimize the risk of electric shock, short circuit and fire.
- Do not allow the shore power cable to hang in the water. If it does, a hazardous electric field could be created in the water.
- Never modify the connections on the shore power cable. Use compatible connectors only.
- If the earth fault breaker is tripped, disconnect the shore power cable immediately. In such a case contact a qualified electrician for repairs before the system is used again.

⚠ WARNING

To avoid an electric shock and risk of fire:

- Switch off the shore power switch before connecting and disconnecting the cable.
- Connect the shore power cable to the boat before connecting it ashore.
- Disconnect the shore power cable ashore before disconnecting it from the boat.
- Close the hatch to the shore power socket on the boat carefully, avoiding getting it wet.

4.2.9. Fuel system

The boat is fitted with a separate fixed fuel system and extra water-separating fuel filter on the suction line.

Instead of the fuel system used in the European region, the boats produced for the American region use the EPA (United States Environmental Protection Agency) fuel system regarding NMMA (National Marine Manufacturers Association) certification rules.

See the fuel system drawing in the **Appendix II**. For care and maintenance of the fuel system, see the instructions in the engine manual.

⚠ WARNING

Do not smoke or handle open flames when refueling.

Remember that it is not allowed to store fuel in spaces not specifically designed for it. Since there is no ventilated storage space on this boat, possible spare fuel cans must be stored on deck.

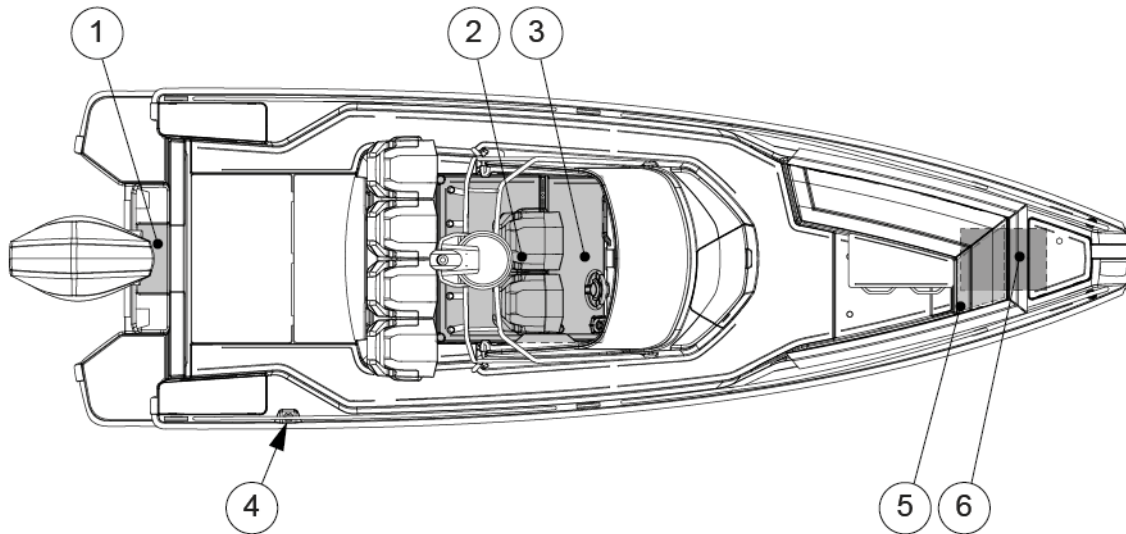
The fuel filter (if available) is located under the helmsman's seat.

The fuel tank is located midpart of the keel. Try to prevent damage to the fuel lines.

The fuel tank valves are located under the helmsman's seat. The EPA fuel system is equipped with an automatic fuel valve. The components of the tank are under the helmsman's seat.

The inlet pipe for fuel is located in the starboard side of the deck.

If the boat has been equipped with an extra diesel tank, the inlet pipe and tank are located forward.



- (1) Fuel filter (if available, depending on the engine selection)
- (2) Fuel tank
- (3) Automatic fuel valve
- (4) Fuel inlet fitting
- (5) Diesel tank inlet fitting (under hatch)
- (6) Diesel tank

4.2.9.1. Refueling the boat

When refueling a boat with composite decks (Esthec or FlexiTeek), the deck should be wetted down with water before refueling. This ensures that any fuel spillage will float on the water and not penetrate the decking material.

Water reaching the engine's injection system can cause rapid corrosion damage to the precision components in the injection pump components. For this reason, it is vital to check the extra fuel filter regularly for water. Every so often, drain a small quantity of fuel into a suitable container (avoid fuel spillage) and check that there is no condensation water. If there is water in the filter, continue to drain until only clean fuel appears.

The fuel system on the engine is sensitive to air bubbles in the fuel. Always fill the tanks well before they are completely empty. If the system has been run dry, it must be bled before the engine can be started again. See the engine manufacturer's instruction manual before bleeding the fuel system.

⚠ WARNING

- Never block access to safety equipment, fire extinguishers, fuel valves or main power switches.
- Never block any ventilation openings made in the boat because their purpose is to clear the air of fuel fumes.
- Never use a wrong type of fuel in the heater or cooker as this may damage them.
- Never use an open flame when detecting leaks.

4.3. Optional equipment

This section presents the optional equipment and systems available for the boat.

4.3.1. Fresh water system

You can choose to equip your boat with a fresh water system as an optional extra.

The fresh water system consists of a fresh water tank, pump and accumulator. The boat may also be equipped with a water supply point in the galley and a deck shower and a water supply point for the wet bar.

The tank is located under front deck. The pump and hydraulic accumulator are next to the tank. The fresh water tank is filled via the inlet pipe on the foredeck.

The fresh water system is turned on by switching on the fresh water pump. The pump switch is located on the fuse panel.

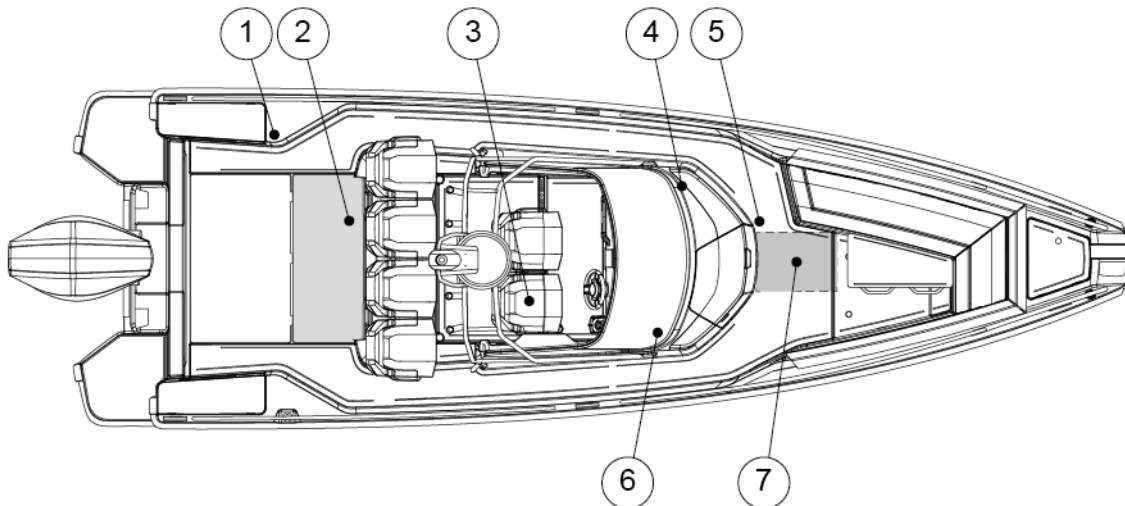
The system maintains a working pressure automatically with the assistance of a hydraulic accumulator, which is why the pump does not need to be shut after use.

Switch the system off when leaving the boat. Do not forget to check filter in the pump regularly.

The dealer is responsible for disinfecting the fresh water tank before sale.

NOTICE

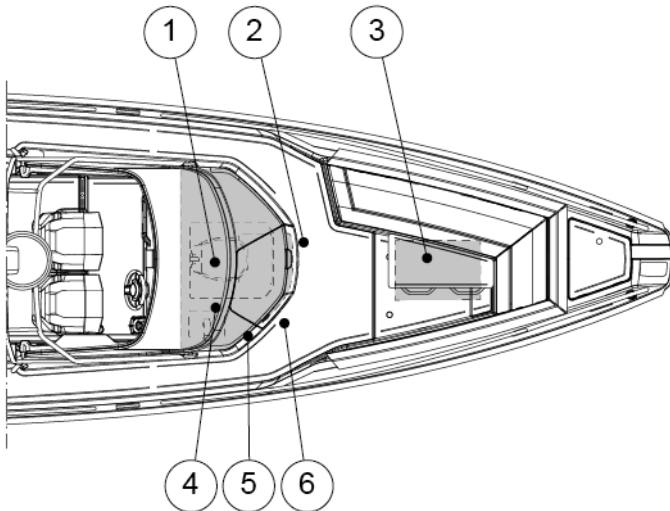
The fresh water system must be thoroughly emptied for winter storage. It is not recommended to use any anti-freeze products in the fresh water system.



- (1) Deck shower
- (2) Wetbar tap
- (3) Galley tap
- (4) Fresh water pump switch
- (5) Water inlet fitting
- (6) Toilet tap
- (7) Water tank and pump

4.3.2. Septic system

The boat's septic system consists of the toilet seat, the septic tank and the related systems.



- (1) Toilet seat
- (2) Septic macerator
- (3) Septic tank
- (4) Toilet flush water inlet and septic tank seacock
- (5) Toilet seat pump
- (6) Septic tank suction fitting

4.3.2.1. Toilet seat

The boat can be equipped with two types of toilets. The manual toilet seat system uses seawater, and the electrical toilet seat system uses fresh water.

NOTICE

- Never put any other objects but toilet paper in the toilet.

In order to avoid damages, you must also not pour hotter than lukewarm water into the toilet.

It is under no circumstances allowed to flush paper towels, fabric or rubber products, hard objects, oil products or solvents down the toilet.

Using the manual toilet

- Before using the manual toilet, open the water intake cock, which is located behind the service hatch.
- Close the cock after use.

Using the electrical toilet

The electrical toilet is used with a separate operating switch. For more information on the device, see the manual for the toilet.

Maintaining the toilet

- Clean the toilet with a mild cleaner.
- Never use cleaning agents or deodorants which contain pine oil, formaldehyde or chlorine, nor corrosive or petroleum-based agents.

These materials can damage the plastic and rubber parts in the toilet.

- Lubricate the pump shaft with Vaseline to increase the service life of the seal.
- Flush the toilet system thoroughly with fresh water when the boat is not in use.

4.3.2.2. Septic tank



Avoid environmental pollution!

The black water tank is fitted with a deck outlet pump using an international standard type connection. Using the pump, the black water can be emptied to a permanent septic tanks ashore. These facilities must always be used.

In areas where there are no permanent septic tanks, the macerator is used to evacuate the contents of the tank straight into the water as follows: Open the sealed seacock. If possible, empty the tank daily and always in deep waters far from the shore. For the location of the pump, see the section **Septic system**.



The shut-off valve must be closed after the evacuation.

Do not allow the tank to become full. It can lead to paper becoming compacted in the bottom of the tank, making it more difficult to empty.

NOTICE

Before the boat is laid-up for winter storage, the whole system must be cleaned and flushed through while the boat is still in the water. The whole system must be thoroughly drained of water when the boat is lifted out of the water. This measure prevents frost damage, bacteria growth and smells.

We do not recommend the use of antifreeze, since it is impossible to guarantee that it reaches all parts of the system.

4.3.3. Heating system

The boat can be equipped with a heating system as an optional equipment.

The heater unit is located behind the toilet room wall. In addition, there are a different number of heating vents available, depending on the boat's equipment.

The operation panel is located in the steering console.

The heater tank is located in the fore. The filling cap for the heater tank is in the bow of the boat.

⚠ WARNING

Appliances that burn fuel, consume oxygen and discharge toxic combustion products into the boat.

Good ventilation is essential when such an appliance is in use. Open ventilation holes and make sure that they are not blocked and that air flows freely through them.

- Never leave the boat unattended when the heater is in use.

NOTICE

Heater components may break if the wrong kind of fuel is used. For more information, see the manufacturer's manual.

- Do not switch off the heater's direct supply current before you have made sure that the appliance has cooled down.

4.3.4. Bow thruster

The bow thruster enhances the maneuverability of the bow when docking or performing other maneuvers that require increased operator control.

The bow thruster is located under the front deck and can be accessed by removing the bottom of the storage box.

The bow thruster is powered by the Aux battery. The main switch is located in the bow area of the boat.

The control switch is located in the steering console.

The batteries must be disconnected from the electronic circuit before changing a fuse. For more information, see the manufacturer's manual.

⚠ WARNING

Incorrect use may cause overheating and short circuiting, and pose a fire risk.

- Use the bow thruster for only short periods at a time.
- Do not exceed four duty cycles (max. 30 seconds long in 25 mins).

If overloading occurs, contact a qualified marine electrician.

⚠ WARNING

- Do not touch the bow thruster or its fuse if the main switch Aux is switched on.

4.3.5. Anchor windlass

The boat can be equipped with a fore anchor windlass as an optional extra.

The windlass switches are located in the bow of the boat, and a remote control for the windlass can be found on the steering console.

The anchor windlasses are powered by the Aux battery. The battery and its fuse are located next to the windlasses.

⚠ WARNING

- Do not touch the anchor windlass or its fuse if the main switch Aux is switched on.

Even if the current is switched off, we do not recommend changing the windlass fuse, because the high current may cause a fatal electric shock.

Before using an anchor windlass

Always check that:

- The windlass is in working order.
- The anchor chain can move freely.
- The anchor and the chain cannot damage the boat when lowered.

For more information, see the manufacturer's manual.

While under way

An anchor windlass must be fixed mechanically to prevent it from coming loose when the boat is moving. For more information, see the manufacturer's manual.

⚠ WARNING

If the windlass loosens when the boat is moving at great speed, it may cause great damage to the boat, its passengers and outsiders.

- Always fix the anchor windlass mechanically in place before getting under way.

5. Transportation

5.1. Lifting the boat

Commission only a reputable lifting company or a boatyard with sufficient lifting capacity to lift the boat. Make sure the company has full insurance cover, in case of any damages.

In addition to the boat’s own weight, also take the equipment and other possible loads in the boat into account.

⚠ DANGER

Risk of serious injury or death by dropped load.

- Do not stay under the boat when it is hanging in the crane.

Lift slings may slip on the hull. When appropriate, tie the slings together before lifting.

The position of the slings may need to be adjusted depending on how the boat is loaded.

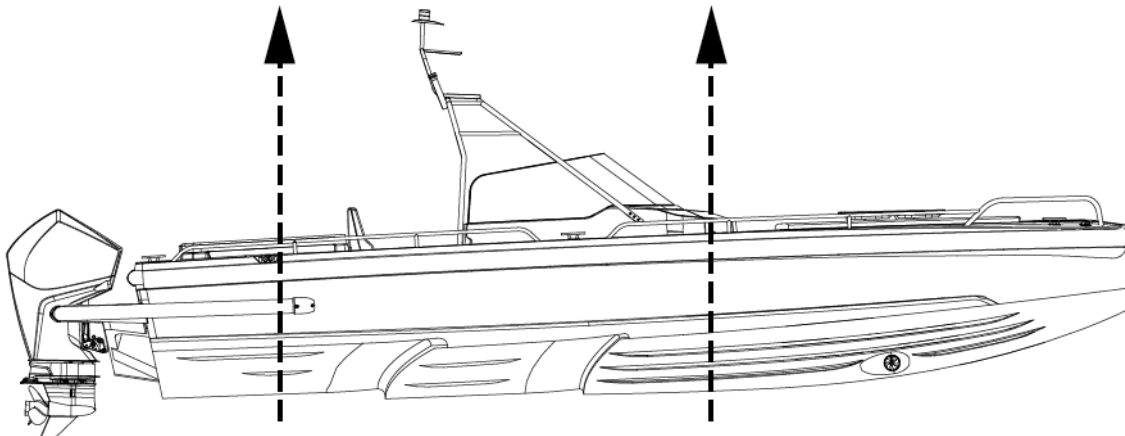
⚠ CAUTION

Note the location of the log transducer to avoid damaging it.

- Protect the hull sides well to avoid damages.

The lifting beam should be exactly the same width as the boat. Always take great precautions near and around the boat when lifting.

The location of the lift straps is indicated in the figure.



Before operating any lifting equipment:

- Check and determine applicability of federal, state, or local requirements.
- Follow the lift equipment manufacturer’s requirements and recommendations.
- Check the boat’s lift points, weights and other information.
- Straddle lift operation is a highly technical area that requires trained and experienced operators.

During lifting:

- Ensure that all hull penetrations are closed or secure.
- Check the boat for bilge water before lifting.
Excessive quantities of bilge water can shift, changing the balance of the load.
- Check for thru-hull appendages such as knot meters and stabilizers, rub, spray, and splash rails, so that they are not damaged by the lifting equipment.
- Check the hull structure to locate shafts, rudders, struts, and the forward and aft ends of any keels.
- Check the hull's structural configuration, including the location of bulkheads, stringers, engines, and tanks.
- Check bilges for water ingress following launch.
- Transport the boat as close to the ground as practicable.

5.2. Transporting the boat

Before lifting the boat onto the trailer, make sure that the trailer is suitable for the boat.

Make sure that there are a sufficient number of supports to distribute the weight properly without excessive point loads, and the capacity and dimensions of the trailer are sufficient to carry the boat and its engine, equipment, battery, boating accessories and fuel on board.

WARNING

A boat trailer that does not have sufficient capacity or that is poorly maintained can become damaged and cause a danger on the road.

- Make sure that the trailer capacity is sufficient to also carry the weight of the engine, fuel and equipment.

CAUTION

The hull of the boat can be damaged if there is an insufficient amount of supports on the trailer.

The trailer must be a little nose heavy. Make sure that the boat is securely fastened to the trailer, that it cannot move into any direction, and that the side supports provide an even support for the weight of the boat.

Before loading the boat on the trailer:

- Remove any unnecessary weight from the boat.
- Drain the bilge water.
- Adjust the side supports of the trailer so that the most weight rests on the keel supports, and the side supports only offer lateral support.
- Protect the boat by placing suitable padding between the tie down straps and the boat, if necessary.
- See the engine manual for any instructions on trailering.

- Make sure that the doors and hatches are properly closed.
- Pay attention to any equipment and accessories in the boat during trailering.
 - Make sure you secure all loose items in the boat.
 - Do not use a hood, canopy, tonneau cover or other similar top or cover on the boat during trailering.

These hoods and covers can become detached at high speeds and damage the boat and cause a danger to traffic.

A hood or other cover flapping in the wind during trailering can damage the boat surface.
 - Keep the hood in its dedicated storage compartment during trailering, or remove the hood completely, if necessary.

6. Operation

The boat owner must take local and international regulations into consideration concerning the boat crew, equipment and handling of the boat. In some countries, a driving license or a separate authorization is required for driving the boat. Special regulations may also apply.

Ensure that the anticipated wind and wave conditions do not exceed the design category of the boat, and that the crew is able to handle the boat in these conditions. Even though the boat is designed for such conditions, they can still very dangerous. Only a capable, fit and trained crew, using a well maintained boat, can satisfactorily operate in such conditions.

If the boat is fitted with a life raft, carefully read its operation manual. Onboard, the boat shall have the appropriate safety equipment according to the boat type and weather conditions. This equipment is compulsory in some countries. The crew shall be familiar with the use of all safety equipment and the most important actions in different emergency situations. Sailing schools and clubs regularly organize rescue drills.

The equipment in the boat may differ from the equipment used in the figures in this manual. This might be due to any optional equipment chosen or modifications made after producing this manual. In such cases, we recommend that you contact your local dealer for additional information regarding the operation of the equipment in question.

Always maintain the boat properly and make allowance for the deterioration that will occur over time and as a result of heavy use or misuse of the boat. Any boat, no matter how strong it may be, can be severely damaged if not used properly. Inappropriate use of this boat not compatible with safe boating is not allowed. It is always important to adjust the speed and direction of the boat to the sea conditions and own boating experience. The gelcoat parts, especially the colored parts, should be polished and waxed approximately every fourth months to prevent the parts from fading or getting other visual defects.

6.1. Handling devices

6.1.1. Steering console

The controllers are situated so that the driver can easily manage them from the steering console.

The location and quantity of the devices depend on what optional equipment and engine models have been chosen. See the device manuals for further information on the devices.



- (1) Radio and audio control
- (2) Switch panel
- (3) Engine display (optional)
- (4) Chart plotter
- (5) VHF radio
- (6) Trim tabs control
- (7) Bow thruster control
- (8) Ignition keys
- (9) Engine remote control

6.1.2. Windscreen wipers

The boat's windscreen wipers are controlled by the switches in the boat's steering console. A switch for the windscreen washer is installed next to the switch for the windscreen wipers. The windscreen wash-fluid tank is located beside the fresh water tank.

6.1.3. Steering system

6.1.3.1. Checking and topping up oil

Effective and properly working steering is crucial for the safety of the boat. Check the oil level in the pump before casting off.

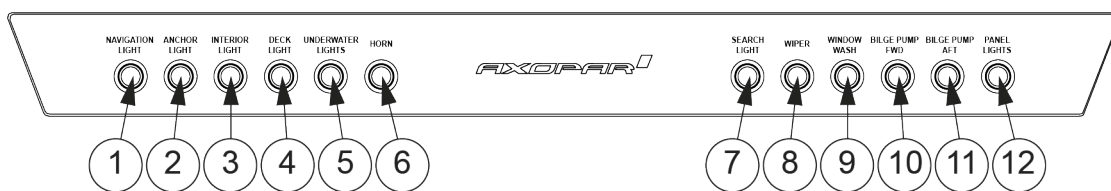
Hydraulic oil is added to the steering system via the filling plug in the steering wheel pump. The oil level must be approximately 10 mm below the filler hole.

See the manufacturer's manual for the steering system oil recommendation. For steering systems provided by engine manufacturer, see the engine manufacturer's instructions.

6.1.3.2. Steering maintenance

Check couplings, mountings and bearings. For maintenance of the steering system, see the manufacturer's instruction manual.

6.1.3.3. Steering console switch panel



- (1) Navigation lights
- (2) Anchor lights
- (3) Interior lights
- (4) Deck lights
- (5) Underwater lights
- (6) Horn
- (7) Search light
- (8) Wiper control
- (9) Wiper washer
- (10) Forward bilge pump manual use
- (11) Aft bilge pump manual use
- (12) Panel lights

6.1.4. Starting the engine

See the engine manufacturer's manual for engine information:

1. Set the engine lever in neutral.
2. Turn the ignition on and check the fuel level.
3. Start the engine by turning the ignition key.
4. Check that the gauges for oil pressure and volt meter show normal values.
5. Run the engine to operating temperature at idling speed. Never rev up a cold engine.

⚠ DANGER

Risk of carbon monoxide poisoning.

Be aware of the risks with engine exhausts. For example, under turbulence or disadvantageous wind conditions, exhaust can enter the boat. If this happens, avoid idling the engines. If these problems occur under way, do not open the hatches and ventilators, as it can worsen the problems. Instead, you may try solving the problems by changing the boat's speed or weight distribution.

⚠ WARNING

Never step onto the swim ladder when the engine is running. Stop the engine while the steering and propeller are being inspected.

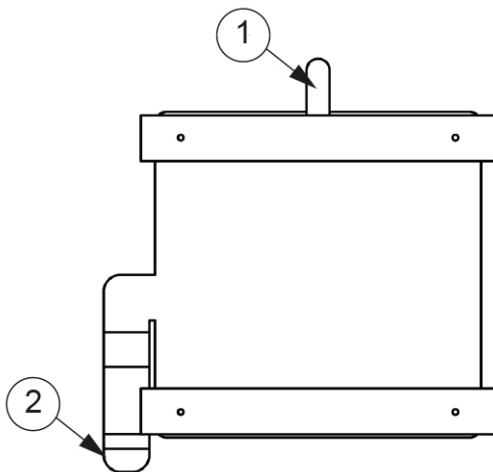
⚠ WARNING

Do not operate this boat with an engine that exceeds the maximum engine power recommended by the manufacturer.

6.2. Swivel seat - Driver and passenger seats

The driver and passenger seats are operated with the locking handle.

The locking handle must be in the locked position when the boat speed exceeds 5 knots.



- (1) Moving locking handle
- (2) Rotation locking handle

- In the moving function, lift the locking handle up to release the lock.
This allows you to move seat from back to front.
- In the rotating function, press the locking handle down to release the lock.
This allows you to rotate the seat on the post.

⚠ DANGER

The locking handle must be in the locked position before boat speed exceed 5 knots.

6.3. Inspecting the boat

Due to safety reasons, the below listed inspections must be carried out before and after using the boat.

6.3.1. Checklist: Regular inspection before leaving harbor

Safety

Make sure that:

- All the people onboard have life jackets.
- The wind and wave conditions do not exceed the design category of the boat.
- The dead man's switch is switched to driver.
- There is fire extinguisher(s) onboard and their approval/inspection date has not expired.
- The needed ropes and anchor are onboard.

Draining and tightness

Check that:

- There is no water in the bilge.
- All the bilge pumps are functional.
- The bilge has no signs of fuel or oil leaks.
- The deck drain system is clean and the valves are open.
- All deck hatches are tightly closed.

Electrical and engine

Check that:

- All the fuses are intact.
- The main switches are switched on.
- The batteries have enough power.
- The engine works properly.
- The engine cooling water flows as expected.
- The fuel level is sufficient.

WARNING

The specified tank capacity is not necessarily fully available, depending on the trim and load on board. The tank should always be kept at least 20% full.

6.3.2. Checklist: After using the boat

Make sure that:

- The main switches are switched off.
- The septic tank discharge valve is closed.
- There is no water in the bilge.

- The bilge pumps are functional.
- The deck draining works properly and all the draining valves are open.
- All deck hatches, roof canvas and doors are tightly closed.

6.4. Handling the boat

6.4.1. Checklist: Boat handling before leaving harbor

For safe navigation under all weather conditions, proper sound signaling equipment in compliance with regulations (COLREG, 1972) must be carried on board. Make sure that the sound signaling equipment on the boat is compliant with these regulations.

⚠ CAUTION

According to national regulations in some countries, it is a legal requirement to wear a life vest at all times.

- Check that the boat and its equipment are in seaworthy condition.
- Always listen to long-term weather forecasts when planning longer trips.
- Always make sure there is enough fuel and freshwater in the tanks.
- Always keep the engine compartment closed when starting the engine.
- Check that all items on board are properly stowed and adequately secured to manage rough sea and wind conditions.
- Make sure that the swim ladder is raised out of the water before moving off.
- Make sure that the steering is correctly positioned before starting.
- All persons on board should wear an appropriate life vest when on deck.

6.4.2. Leaving the jetty

Before casting off, consider how to best leave the jetty.

- Check what the wind direction is.
- Using a bow thruster, move the bow out and then engage the propeller.
- If the boat has two engines, move away from the jetty by engaging the engine nearer the jetty astern at idling speed and engaging the other engine ahead at idling speed on.
- The boat will swing out from the jetty astern. As the bow will move against the jetty, fend off properly.

With only one engine this can be a little more challenging, especially if the wind is pressing the boat firmly against the jetty, you have to use a spring to get the stern out.

- Firmly fend off the bow from the jetty.
- Take a line from the bow around a bollard or cleat, so that it can be easily let go.

- Engage idling speed ahead and turn the rudder so that the stern glides out from the jetty.
- When the boat has reached a position, where it can safely be reversed, release and retrieve the line, quickly center the rudder and engage astern.

⚠ CAUTION

Gather in all lines and fenders while you are still in sheltered water. A rope around the propeller can disable a boat.

6.4.3. Driving the boat

Going out in a motor boat involves responsibility not just to those on board, but also to others we meet on the water. Showing consideration for others makes boating comfortable. Everyone has the same right to be at sea, whatever kind of boat they go afloat in.

The physical laws that apply to a boat are rather different from, for example, those affecting a car, as are the possibilities of influencing its maneuverability.

You can influence a boat's behavior and the level of comfort on board primarily by adapting the speed to the prevailing sea conditions and by the intelligent use of the trim tabs. A planing boat rides almost level in the water at maximum speed. As the speed of the boat is reduced the trim angle increases and the bow rises slightly. This is normal, and is a prerequisite for good performance.

6.4.3.1. Dead man's switch

If the boat is equipped with a dead man's switch, attach its lanyard to yourself immediately after detaching the mooring lines. For more detailed instructions, see the engine manual.

It is very important that the boat stops if you for some reason fall overboard or stumble on board, particularly if you are alone. However, remember to detach the lanyard from your wrist before docking or beaching operations to prevent the engine from stopping unintentionally.

6.4.3.2. Driving at high speed

Although the boats have passed the CE requirements for swerve tests at full speed, we do not recommend making sharp turns at high speed. When exceeding a certain speed limit any hull construction might lose its grip. This might lead to passengers hurtling out of the boat, especially in a single engine configuration.

- Do not use the boat if it has an engine with a higher power rating than indicated on the capacity plate.
- Do not drive the boat at high speed if the engine's rig angle is negative (bow down).
- Do not drive at full speed on congested waterways or if the visibility is limited because of weather conditions or waves.
- Reduce your speed and wake as a matter of courtesy, and also for the safety of yourself and others.
- Observe and obey speed limits and prohibitions associated with a swell.
- Follow the rules of navigation and the requirements of COLREG (Convention on the International Regulations for Preventing Collisions at Sea).
- Always make sure that you have the space needed for avoiding collisions and coming to a halt and for evasive maneuvers.

- Always use a dead man's switch if available.
- Reduce speed in high seas for increased comfort and safety.
- Learn the boat's speed potential. Utilize this knowledge for economical and safe cruising.
- Avoid using high speed along with large rudder movements when going astern, because that places great strain on the rudder and steering mechanism.
- Avoid sudden steering maneuvers at high speeds.
- Avoid staying in the bow area when driving at high speeds.

You should avoid sudden changes in direction of travel at high speed. Let the boat come to a stop, and the engine rev down before shifting between forward and reverse. Otherwise excessive strain is put on the engine, which could cause the engine to stop. In the worst case, sea water may enter the engine.

A right-handed propeller rotates clockwise and a left-handed propeller anti-clockwise, seen from the stern. The rotation of the propeller is critical for steering the boat. The right-handed propeller pushes the stern of the boat to starboard when the engine is engaged ahead and to port when it is going astern. The direction of rotation of the propeller has a major impact on the turning radius. A right-handed propeller gives a smaller turning radius to port than to starboard. This is called the propeller's paddlewheel effect.

The boat's propellers have considerable propulsion power that provides powerful acceleration. Take this into consideration to avoid dangerous situations arising from this.

⚠ DANGER

A revolving propeller is life-threatening to a swimmer or a person who has fallen overboard. Use the dead man's switch and turn off the engine when someone is climbing on board.

6.4.3.3. Driving in rough seas

Never go out in rough seas, if you are uncertain whether the boat and those on board can cope. Follow these simple rules.

- Be well prepared.
- Remember to secure loose equipment.
- Always have a sea anchor and other emergency equipment easily accessible.
- Avoid breaking seas that can appear close to land and over shallows.
- If there are significant waves, always reduce speed to guarantee the safety of the persons on board.
- Use the trim tab to trim the bow down to reduce hull slamming in a head sea.

In a head sea

- Adjust speed to suit the size of the waves.
- Adjust the trim angle to the size of the waves. Avoid taking seas beam on.

In a following sea

Remember to keep the bow high in a following sea. Avoid crashing through waves, maintain low speed. If necessary, deploy the sea anchor to reduce speed.

Planing boats can be particularly exposed in rough following seas. The stern of the boat rises and the rudder does not answer, so the boat broaches while the bow cuts down into the sea.

6.4.3.4. Maneuvering in narrow channels

When maneuvering the boat in narrow channels the engine speed should be kept as low as possible so that maneuvers are calm and steady.

In difficult wind and current conditions, more revs might be necessary to make full use of the power of the engine. In these conditions, it is important that maneuvers are made quickly and precisely to prevent the boat from drifting into trouble for example.

A good rule before starting a maneuver under difficult conditions, is to think through the different situations which could arise. Pay attention to the wind and current conditions and decide in advance which maneuver you will make. It is also important to brief crew members on what they should do in different situations.

Always keep in mind that the stability of the boat may be reduced when towing.

⚠ CAUTION

Even a nonslip molding can be slippery to walk on when the deck is wet.

6.4.4. Visibility from helming position

Take the visibility from the helming position into consideration.

Among other things the following factors can considerably reduce visibility.

- Gear trim angle
- Trim tab angle
- Load and load positioning
- Speed
- Rapid acceleration
- Changeover from displacement speed to planning
- Sea conditions
- Rain and thunderstorms
- Darkness and fog
- Inner lighting when under way in the dark
- Position of curtains
- People and equipment that block the helmsman's view.

The International Regulations for Preventing Collisions at Sea (COLREG) demand that a proper lookout is kept at all times, and the "right of way" rule must be observed. It is essential that these rules are followed.

⚠ WARNING

Make only small adjustments at a time. Holding down the button for the trim tab for any length of time can result in partial loss of control of the boat.

6.4.5. Using the trim tabs

A boat does not need trim tabs to get up on the plane or to give good performance. However, trim tabs are a very useful aid when used correctly.

There are two situations in particular where the trim tabs should be used:

- When it is desirable to trim the bow down in a rising sea and at speeds between going up planing and cruising speed.
- When running with a strong beam wind.

A planing boat always leans into a strong side wind. This reduces the boat's seakeeping qualities, which is why listing to one side should be eliminated as far as possible. Lowering the trim tab on the windward side brings the boat back into normal attitude.

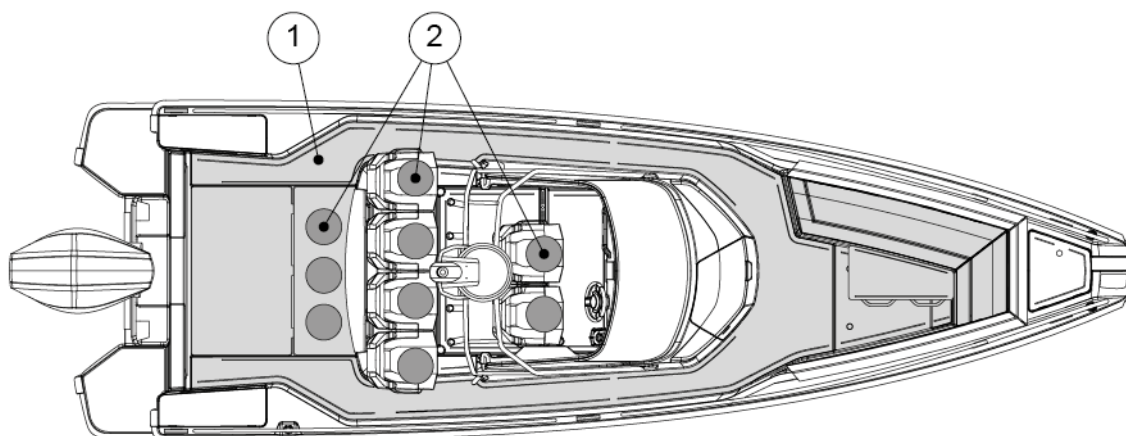
For trimming the bow down, both trim tabs are used in parallel. Begin by retracting both trim tabs completely, then lower both of them a little at a time, so that you retain complete control over how the boat is affected. When running with a following sea, both trim tabs should always be fully raised.

The reason for this is that boats have a tendency to "dive" in a strong following sea, which can result in uncontrollable slowing. Therefore you should run the boat with a high bow angle in a following sea.

6.5. Preventing falling overboard

The boat's working decks are areas where people can move about when the boat is being maneuvered.

The working deck area is shown in grey in the figure.



- (1) Working deck area
- (2) Seats

- Do not sit, stand or spend time in other parts of the boat while the boat is under way.
- Moving about in the aft part of the afterdeck and on the foredeck while the boat is under way is not recommended.

If a person has fallen into the water, the easiest way to get back on board is to use the swim ladder. The ladder can be pulled down also from the water. Keep the gates in the flat afterdeck area closed while the boat is under way.

Staying on deck

Staying on the deck is not allowed for safety reasons in speeds exceeding 30 knots.

If the sun deck cushions of the fore deck table are in place, observe the maximum speed of 15 knots to avoid the cushions or table detaching at speed or in high waves.

⚠ DANGER

A revolving propeller is life-threatening to a swimmer or a person who has fallen overboard.

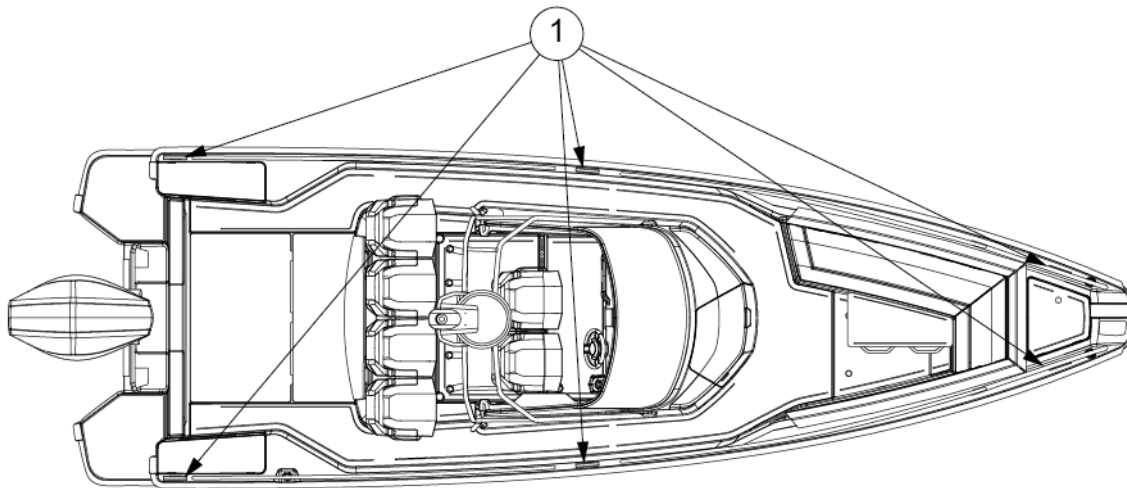
- Use the dead man's switch and turn off the engine when someone is climbing on board.

6.6. Anchoring, docking and mooring

6.6.1. Fastening points

Fastening points (or cleats) are located both at the stern, midship and bow.

- When anchoring or towing, the forward force is 32,2 kN.
- When mooring the forward force is 26,3 kN.
- When mooring the rearward force is 22,5 kN.



(1) Fastening points

6.6.2. Docking

Always brief your crew how you are planning to dock. Fenders and at least one mooring line fore and aft must be in place before approaching the jetty.

It is always easiest to dock against the wind. Try to hold the bow exactly into the wind and maintain sufficient speed for the boat to answer the rudder. If the bow is blown off in one direction, back out and repeat the maneuver. Bring the bow up to the jetty, and make sure you get a line ashore quickly.

Docking with a side wind is a little more difficult. Do not steer parallel to the jetty letting the boat blow in as there is always a risk of the bow being blown off towards other boats or the jetty. Instead, try to maneuver the boat so that the wind comes directly from astern. Then the boat can be maneuvered straight ahead since the wind helps hold the boat on a straight course. It is good to have someone on the foredeck that can go ashore and quickly turn the bow in the desired direction after the boat has stopped completely.

Try to always avoid sharp movements of the throttle, since idling speed in ahead and astern is generally adequate. Sharp movements of the throttle can lead to panic maneuvers.

⚠ CAUTION

The tensile strength of the lines or chains should normally not exceed the strength of the fastening point in question.

6.6.3. Checklist: Before anchoring

1. Check the chart to see if anchoring is permitted in the area.
2. Listen to the weather forecast for the area and take note of the expected wind conditions.
3. Switch on the echo sounder.
4. Study the seabed conditions and make sure that there is good holding ground.
5. Check that the safety chain has been released from the anchor.
6. Wait until you have reached the intended anchoring point before lowering the anchor.
7. Let out the anchor line equal to at least three times the depth of the water.
8. Put the engine in astern to check that the anchor has taken hold (only when bow anchoring).
9. Note your position on the GPS. Regularly check that the boat has not moved from its position.
10. Set the echo sounder to "Anchor Watch".

⚠ WARNING

Always fix the anchor in such a way that it is securely fastened onto the boat. An anchor that falls off when under way may cause serious damage to the boat and mortal danger to the crew.

6.6.4. Towing and mooring

⚠ CAUTION

When towing another boat or being towed, always drive slowly. If the boat you are towing is of the displacement hull type, never exceed its hull speed.

- Always attach the tow line so that it can be detached under load. It is the owner's and users' responsibility to ensure that the mooring lines, towing lines, anchor chains, anchor lines and anchors are adequate for the vessel's intended use.
- Always remember that the stability of the boat may decrease when being towed.

7. Maintenance

7.1. Maintaining the gelcoat surface

When the boat is not in use, keep the gelcoat surface out of the sun or covered with a canvas tarpaulin. Do not use plastic or other non-porous materials, which can trap moisture between the cover and the surface.

- Wash the surface with a mild detergent.

For best results, use a cleaner recommended for fiberglass and follow the instructions on the label of the product.

NOTICE

Do not use automatic dishwasher detergent, abrasives, bleaches, and strong chemicals with acids/bases or ammonia.

- Wax the surface at least twice yearly to restore gloss and protect the finish.
Only use wax recommended for fiberglass and follow the instructions carefully.

NOTICE

Never wax a gelcoat surface in direct sunlight.

7.2. Maintaining the interiors

7.2.1. Wooden interiors

The interior details of the boat, such as the locker doors and drawer fronts and wooden strips, are made of oiled wood.

- Clean the wooden interior details with a damp cloth and a small amount of soapy water.
- Treat the wooden surfaces again every year to protect the wood.

7.2.2. Plastic and painted surfaces

1. Wet the surface evenly with water before the actual cleaning.
2. Remove stains.
 - Remove regular stains with a brush and a lightly diluted cleaner.
 - Remove grease with a brush or a sponge and window cleaner.
3. Clean the surface afterwards with sponge and water.
4. Wipe dry with a piece of cloth.

7.2.3. Fabrics

The interior fabrics are washed according to separate washing instructions (marking on the fabric).

In case the marking is not visible:

1. Wash in 40°C with a light spin cycle.
2. Hang to drip dry.

The material may slightly shrink. If you want to avoid shrinking, take the fabrics to a dry cleaner.

7.2.4. Doors and hatches

- Clean the tracks of sliding doors and hatches regularly and lubricate, if necessary.
- Lubricate handles and locks with regular lock lubricant.

7.3. Maintaining the cover

New covers may leak initially, since the seams need to swell.

To prevent quick deterioration of the cover, secure it tightly in a folded-up position to prevent flapping.

NOTICE

- Hang to dry. Never use a drying cabinet or iron to speed up drying.
- Check that the cover is completely dry before stowing. Stowing a moist cover can cause mold damage.
- Store the cover in dry indoor conditions for the winter.
- The cover must not be stored in the boat.

7.3.1. Cleaning the cover

The cover should be thoroughly cleaned two or three times a year.

NOTICE

Never use high pressure washers or chemical cleaning agents.

1. Let the fabric cover soak for at least 24 hours.
2. After soaking, wash the inside and outside of the cover with a sponge or a soft brush.
3. Use mild soapy water and plenty of water, max. 30°C.
4. Rinse thoroughly with freshwater.

We recommend mixing 12% vinegar in the final rinsing water to neutralize the soap residues.

5. Hang the cover to drip dry.

7.4. Preventing frost damage

- The bilge pump system is fitted with a water lock on the hose.
 - Detach the hose and fully drain the water from the water lock and run the pumps dry. Otherwise the pumps may freeze and break.
- Unscrew the frost plug on the underside of the shower fittings.
 - If there is no frost plug, unscrew the shower hose.
- Drain the water tank and all other components containing water in order to avoid frost damage.
- Run the freshwater pump dry to drain out all the water.
- Make sure that no water remains in the boat under any circumstances. Leave the hatches in the cabin partially open.

7.5. Checklist: Before winter lay-up

1. Wash the hull and bottom immediately after lifting the vessel out of the water.
2. Wash all parts inside, also under the floorboards.
3. Leave all lockers, drawers, cabin and wardrobe doors open.
4. Remove the carpets.
 - Store the carpets and cushions indoors in a dry place.
 - If this is not possible, make sure that the cushions are dry and position them on their side.
5. Be very thorough about having good ventilation in the boat.
6. If the batteries are left aboard, make sure they are fully charged, otherwise the batteries can freeze and crack.

7.6. Checklist: Before launching

1. Remove the tarpaulin in good time before launching.
2. Wash the hull with a regular shampoo and a soft brush.
3. Wax the hull, if necessary.
Use a standard boat wax.
4. If there are small scratches on the hull or if some of the surface gelcoat has lost its shine, use a rubbing compound on these areas before polishing.
5. Paint the bottom with antifouling paint.
6. If the batteries have been removed, put them back and check the electrolyte level in the cells.
Check the condition of the batteries.
7. Check all cables, clamps, engine mountings and other fastenings.
8. Check the steering before launching.
9. Check the instrumentation.
10. Close all water drain plugs.
11. Check that the seacocks are tight and in order, check for any frost damage.

12. Check all pipes, hoses and cocks.
13. Make a note of any frost damage.

7.7. Corrective maintenance

7.7.1. Chalking

A fine rubbing compound as well as a mild detergent reduce the weathering and chalking accumulated on the surface.

NOTICE

Do not apply rubbing compound in direct sunlight.

- Use only a fine grit compound and follow label directions carefully.
- For best result, wax after compounding.

7.7.2. Scratches and nicks

Most scratches and nicks can be removed by using a rubbing compound followed by waxing.

7.7.3. Stains

The most stains can be removed by washing with a mild detergent.

- For stubborn stains, use a fine abrasive household cleanser followed by waxing to restore original luster.
- For non-water-soluble stains, such as grease, oil, and rubber heel marks, use a solvent such as acetone, rubbing alcohol, toluene or xylene, followed by a mild detergent.
 - If these solvents are not effective, try a rubbing compound or fine sanding followed by waxing.

7.7.4. Deep marks, gouges and holes

Deep marks, gouges and holes should be repaired professionally.

Gelcoats can be well repaired by professionals, and in most cases the repair will be undetectable.

NOTICE

In cases where the damage has pierced the gelcoat layer, further exposure to water or chemicals should be avoided.

Failure to observe this precaution may result in extensive and potentially costly damage to the underlying laminate structure.

8. Environment

When handling environmentally hazardous substances such as fuel, oils, solvents, grease, bottom coats etc. you should consider the following matters:

- Always read the instructions for each product carefully and handle the product with care.
 - Make sure that used packaging, cans and similar items are discarded in designated collection points.
 - If you are in any doubt whether the product is hazardous or not, contact the supplier or vendor of the product.
- The backwash from boats wears down the shoreline and creates problems for other boats near you.
 - Always adjust your speed to the situation and the surroundings to avoid unnecessary backwash.
- Always drive the boat at the most economical engine revs possible, taking the prevailing conditions in account, to avoid unnecessary emissions and noise.
- Make sure that the engine is properly maintained at regular intervals so that noise and emission levels are minimized.
 - Read the engine manufacturers manual carefully.
- As a boat owner you should be aware of local environmental laws, and respect codes of good practice.
 - Never empty the septic tanks or black water tank into waters.
 - Familiarize yourself with the international regulations on the prevention of marine pollution (MARPOL) and comply with these regulations as far as possible.

8.1. Requirements for North America

The EPA standards state that in freshwater lakes, freshwater reservoirs or other freshwater impoundments whose inlets or outlets are such as to prevent the ingress or egress by vessel traffic subject to this regulation, or in rivers not capable of navigation by interstate vessel traffic subject to this regulation, marine sanitation devices certified by the U.S. Coast Guard installed on all vessels shall be designed and operated to prevent the overboard discharge of sewage, treated or untreated, or of any waste derived from sewage.

The EPA standards further state that this shall not be construed to prohibit the carriage of Coast Guard-certified flow-through treatment devices which have been secured so as to prevent such discharges. They also state that waters where a Coast Guard-certified marine sanitation device permitting discharge is allowed include coastal waters and estuaries, the Great Lakes and interconnected waterways, freshwater lakes and impoundments accessible through locks, and other flowing waters that are navigable interstate by vessels subject to this regulation (40 CFR 140.3).

9. Appendix I: Checklists

9.1. Checklist: Fire in the engine

- Stop the engine.
- Steer the boat up against the wind, if possible.
- Make sure all passengers have life jackets.
- If necessary:
 - Evacuate the passengers.
 - Call for sea rescue.
- Shut off fuel and main power switches.
- Extinguish the fire.
- Wait until fully certain that the fire has been extinguished before opening the engine cover.
Carefully open the engine cover and be prepared to use the handheld fire extinguisher if necessary for post-fire extinguishing.
- Put out possible smoldering fires with water.

9.2. Checklist: After fire

- Open doors and windows for better ventilation.
- Inspect the boat and its equipment, and repair eventual damages.
- Contact local authorities, if needed.
- Make sure that the fire extinguishing equipment is refilled or replaced after use.

9.3. Checklist: Regular inspection before leaving harbor

Safety

Make sure that:

- All the people onboard have life jackets.
- The wind and wave conditions do not exceed the design category of the boat.
- The dead man's switch is switched to driver.
- There is fire extinguisher(s) onboard and their approval/inspection date has not expired.
- The needed ropes and anchor are onboard.

Draining and tightness

Check that:

- There is no water in the bilge.
- All the bilge pumps are functional.
- The bilge has no signs of fuel or oil leaks.

- The deck drain system is clean and the valves are open.
- All deck hatches are tightly closed.

Electrical and engine

Check that:

- All the fuses are intact.
- The main switches are switched on.
- The batteries have enough power.
- The engine works properly.
- The engine cooling water flows as expected.
- The fuel level is sufficient.

WARNING

The specified tank capacity is not necessarily fully available, depending on the trim and load on board. The tank should always be kept at least 20% full.

9.4. Checklist: After using the boat

Make sure that:

- The main switches are switched off.
- The septic tank discharge valve is closed.
- There is no water in the bilge.
- The bilge pumps are functional.
- The deck draining works properly and all the draining valves are open.
- All deck hatches, roof canvas and doors are tightly closed.

9.5. Checklist: Boat handling before leaving harbor

For safe navigation under all weather conditions, proper sound signaling equipment in compliance with regulations (COLREG, 1972) must be carried on board. Make sure that the sound signaling equipment on the boat is compliant with these regulations.

⚠ CAUTION

According to national regulations in some countries, it is a legal requirement to wear a life vest at all times.

- Check that the boat and its equipment are in seaworthy condition.
- Always listen to long-term weather forecasts when planning longer trips.
- Always make sure there is enough fuel and freshwater in the tanks.
- Always keep the engine compartment closed when starting the engine.
- Check that all items on board are properly stowed and adequately secured to manage rough sea and wind conditions.
- Make sure that the swim ladder is raised out of the water before moving off.
- Make sure that the steering is correctly positioned before starting.
- All persons on board should wear an appropriate life vest when on deck.

9.6. Checklist: Before anchoring

1. Check the chart to see if anchoring is permitted in the area.
2. Listen to the weather forecast for the area and take note of the expected wind conditions.
3. Switch on the echo sounder.
4. Study the seabed conditions and make sure that there is good holding ground.
5. Check that the safety chain has been released from the anchor.
6. Wait until you have reached the intended anchoring point before lowering the anchor.
7. Let out the anchor line equal to at least three times the depth of the water.
8. Put the engine in astern to check that the anchor has taken hold (only when bow anchoring).
9. Note your position on the GPS. Regularly check that the boat has not moved from its position.
10. Set the echo sounder to “Anchor Watch”.

⚠ WARNING

Always fix the anchor in such a way that it is securely fastened onto the boat. An anchor that falls off when under way may cause serious damage to the boat and mortal danger to the crew.

9.7. Checklist: Before winter lay-up

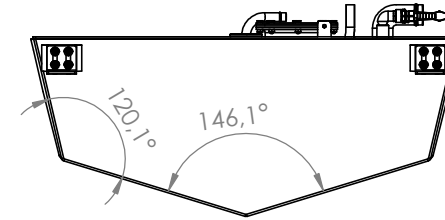
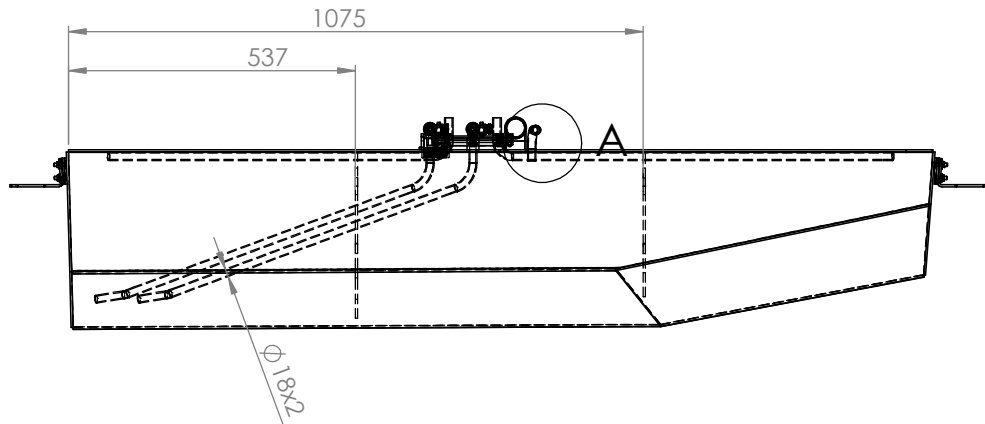
1. Wash the hull and bottom immediately after lifting the vessel out of the water.
2. Wash all parts inside, also under the floorboards.
3. Leave all lockers, drawers, cabin and wardrobe doors open.
4. Remove the carpets.
 - Store the carpets and cushions indoors in a dry place.
 - If this is not possible, make sure that the cushions are dry and position them on their side.

5. Be very thorough about having good ventilation in the boat.
6. If the batteries are left aboard, make sure they are fully charged, otherwise the batteries can freeze and crack.

9.8. Checklist: Before launching

1. Remove the tarpaulin in good time before launching.
2. Wash the hull with a regular shampoo and a soft brush.
3. Wax the hull, if necessary.
Use a standard boat wax.
4. If there are small scratches on the hull or if some of the surface gelcoat has lost its shine, use a rubbing compound on these areas before polishing.
5. Paint the bottom with antifouling paint.
6. If the batteries have been removed, put them back and check the electrolyte level in the cells.
Check the condition of the batteries.
7. Check all cables, clamps, engine mountings and other fastenings.
8. Check the steering before launching.
9. Check the instrumentation.
10. Close all water drain plugs.
11. Check that the seacocks are tight and in order, check for any frost damage.
12. Check all pipes, hoses and cocks.
13. Make a note of any frost damage.

10. Appendix II: Fuel system



D16 internal ventline
4mm hole in end of tube

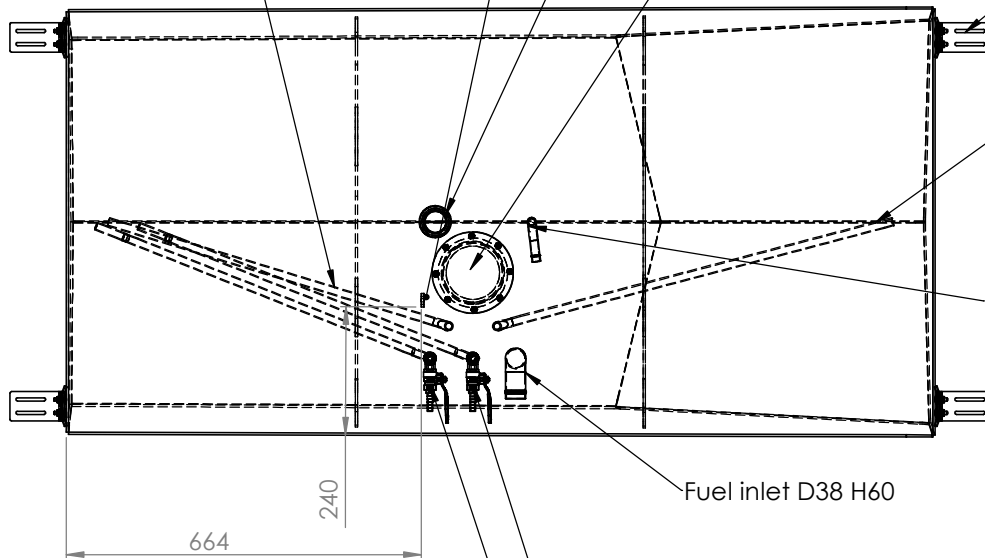
Grounding Bracket

1 1/4" 5mm

AT STD115

4x fixing brackets
Weld jig to be used

Filling vent



D16 internal ventline
4mm hole in end of tube

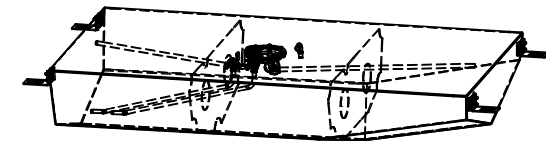
Filling ventline D16
17mm under top
DETAIL A

Fuel inlet D38 H60

3/8" plug (PLUGGED STD)

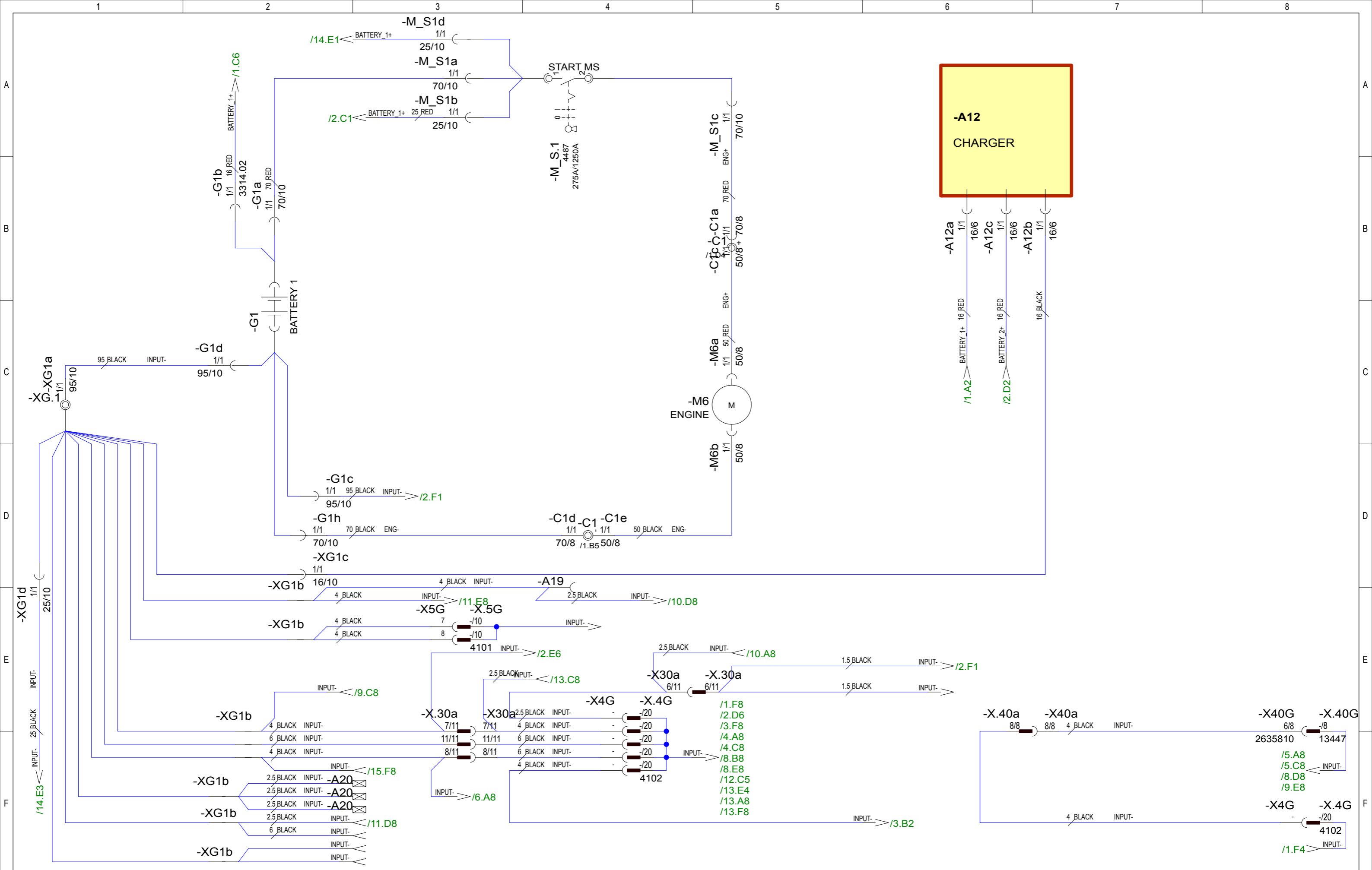
3/8 shutoff valve
13mm hose barb

DETAIL A
SCALE 1 : 5

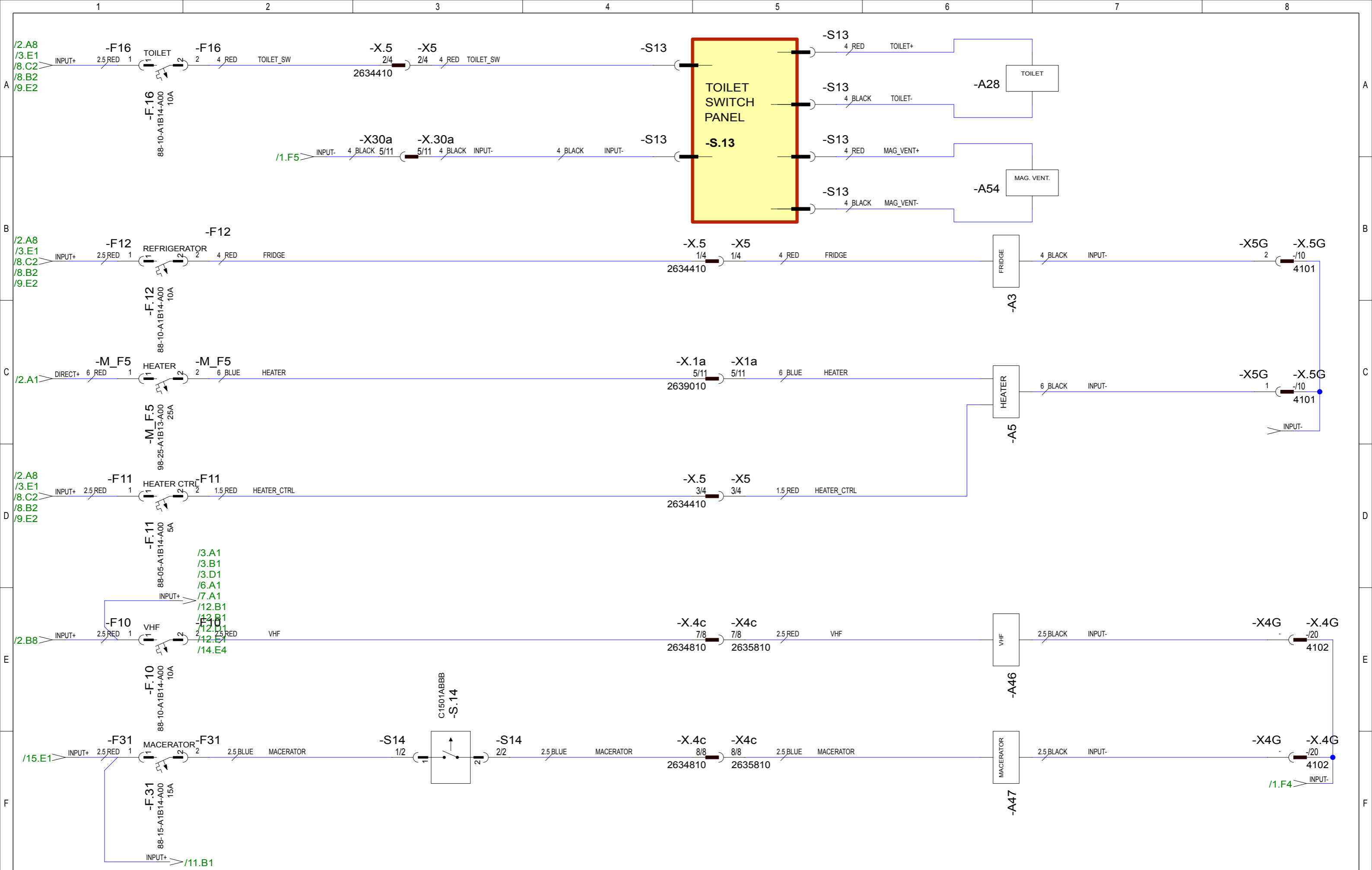


General tolerances SFS-EN 22768-1, SFS-EN ISO 13920		Customer Axopar	Designed by S.Sundfors	Date 22.08.2017
 Mass Scale A3 1:10	Product / Project Axopar 28 EU		Approved by S.Sundfors	Date 22.08.2017
	Description Fuel tank AX28 AX81692		Quantity manufactured	
 www.alutank.fi		Drawing number		Rev

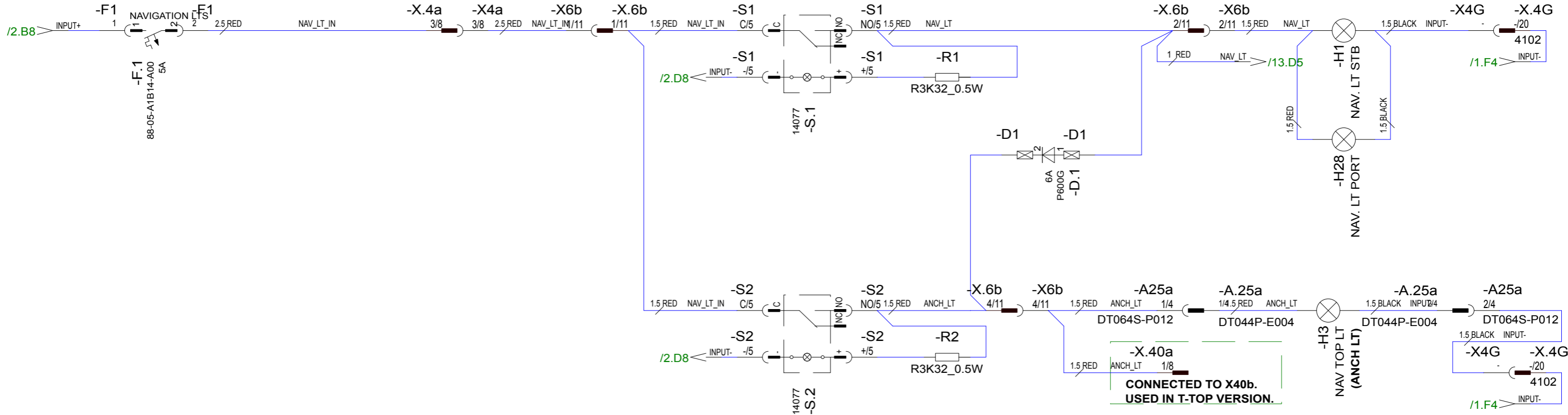
11. Appendix III: Electrical diagrams



9.11.2017	PN	C4: NOT MODIFIED.	Date	29.6.2017		Axopar			
31.1.2018	PF	C5: NOT MODIFIED	Drawing by	RN		Boat			
5.2.2018	PF	C6: CHARGER CABLES 6->16mm ² ; A12a/b/c 6R6->16/6; XG1c 6R10->16/10	Sheet rev.	6		28 MY18	Sub-product code	Product code	Project ID
Date of modification	Modified by	Description	Project rev.	C		START BT/MAIN SW CHARGER, INPUT-	HL		1/ 42
							Loc		Sheet



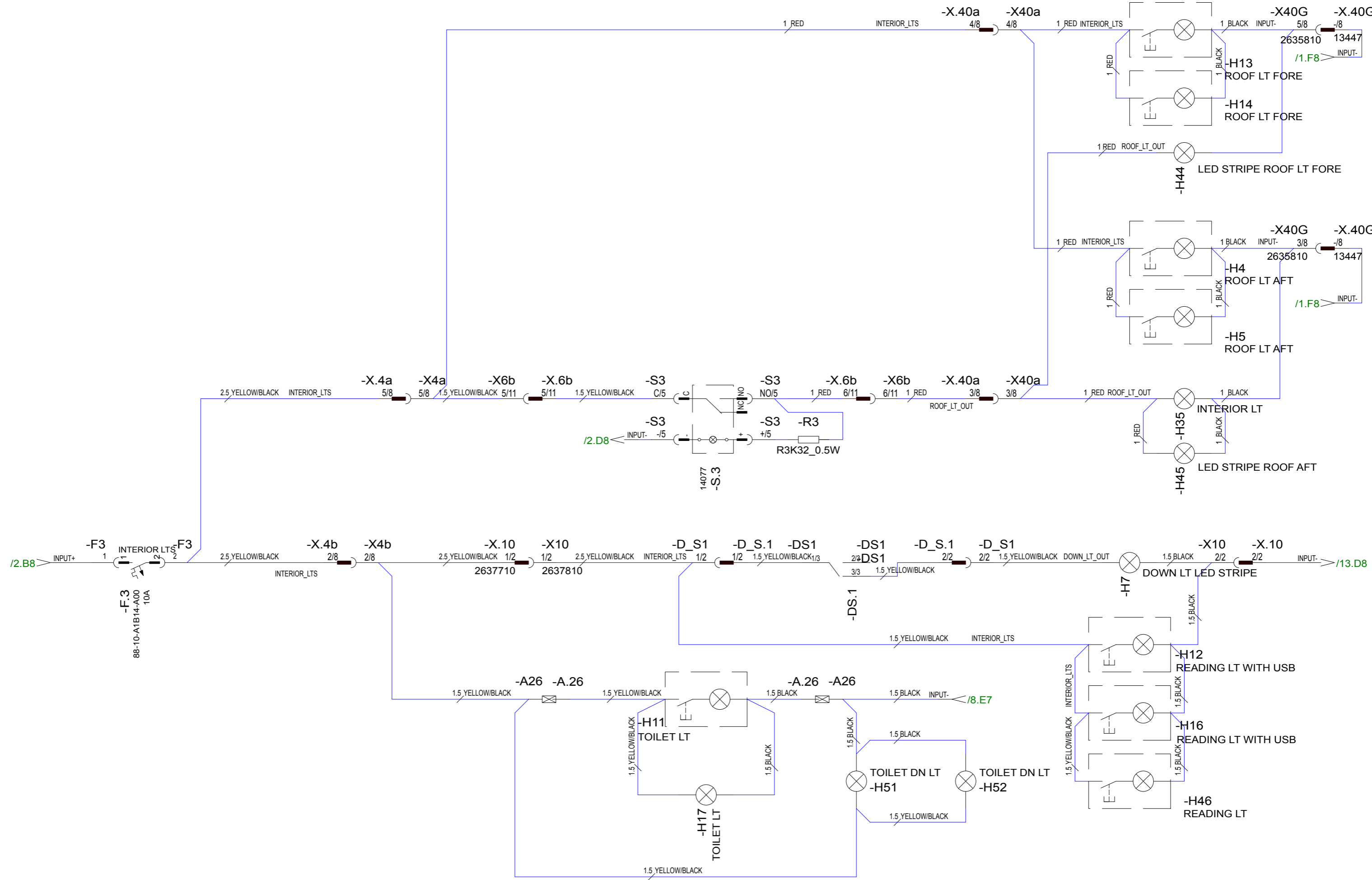
9.11.2017	PN	C4: NOT MODIFIED.	Date	29.6.2017		Axopar				
31.1.2018	PF	C5: NOT MODIFIED	Drawing by	RN		Boat	28 MY18	Sub-product code	Product code	Project ID
5.2.2018	PF	C6: NOT MODIFIED	Sheet rev.	6		Boat model		TOILET, RADAR, FRIDGE, HEATER, VHF, MACERATOR	HL	
Date of modification	Modified by	Description	Project rev.	C				Title	Loc	3 / 42 Sheet



-X.40a
ANCH_LT 1/8
CONNECTED TO X40b.
USED IN T-TOP VERSION.

9.11.2017	PN	C4: NOT MODIFIED.	Date	29.6.2017
31.1.2018	PF	C5: NOT MODIFIED	Drawing by	RN
5.2.2018	PF	C6: NOT MODIFIED	Sheet rev.	6
Date of modification	Modified by	Description	Project rev.	C

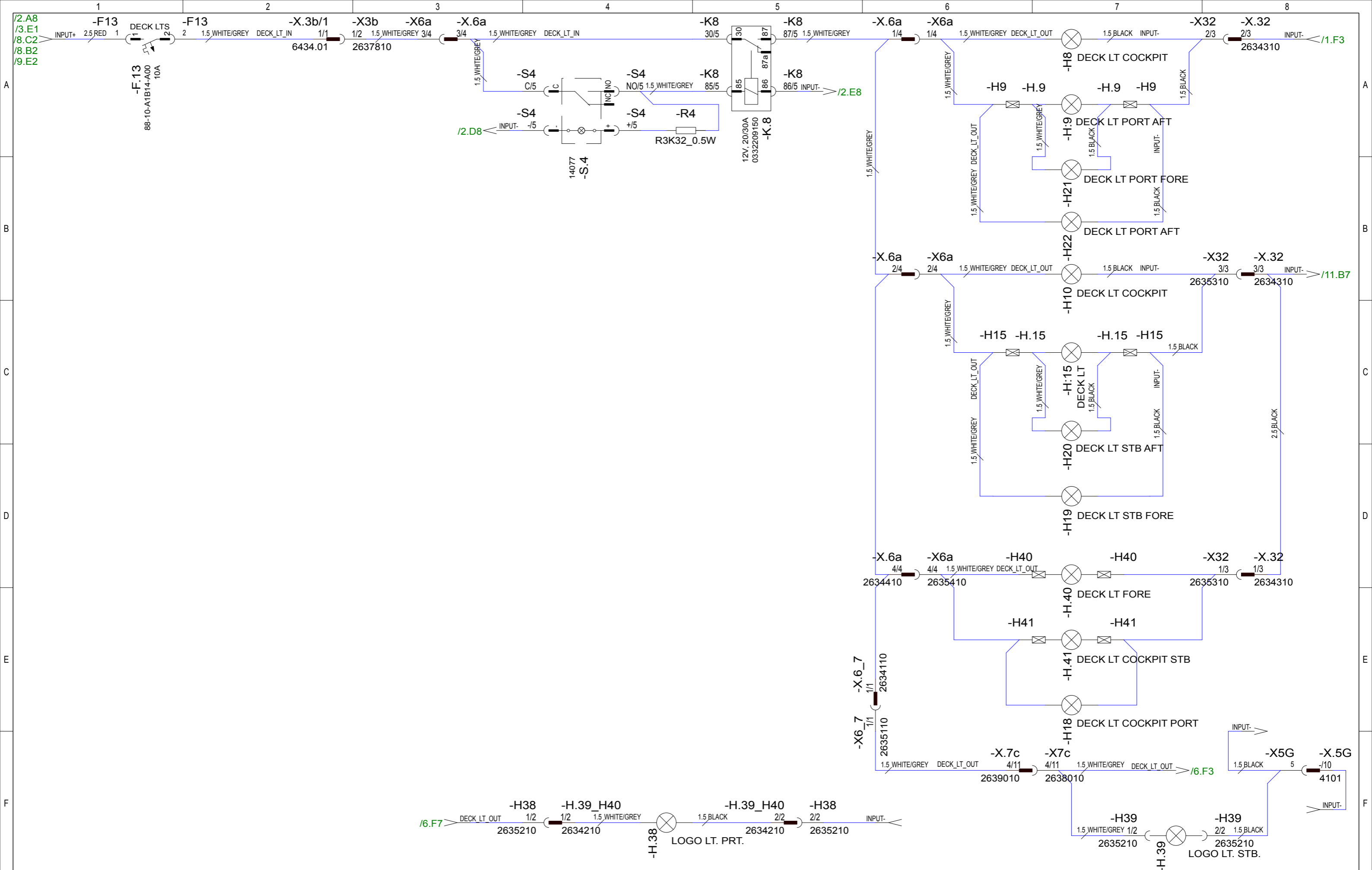
	Axopar		Project ID	
	Boat	28 MY18	Sub-product code	Product code
	Boat model		NAVIGATION LIGHTS	
			HL	4 / 42
		Loc	Sheet	



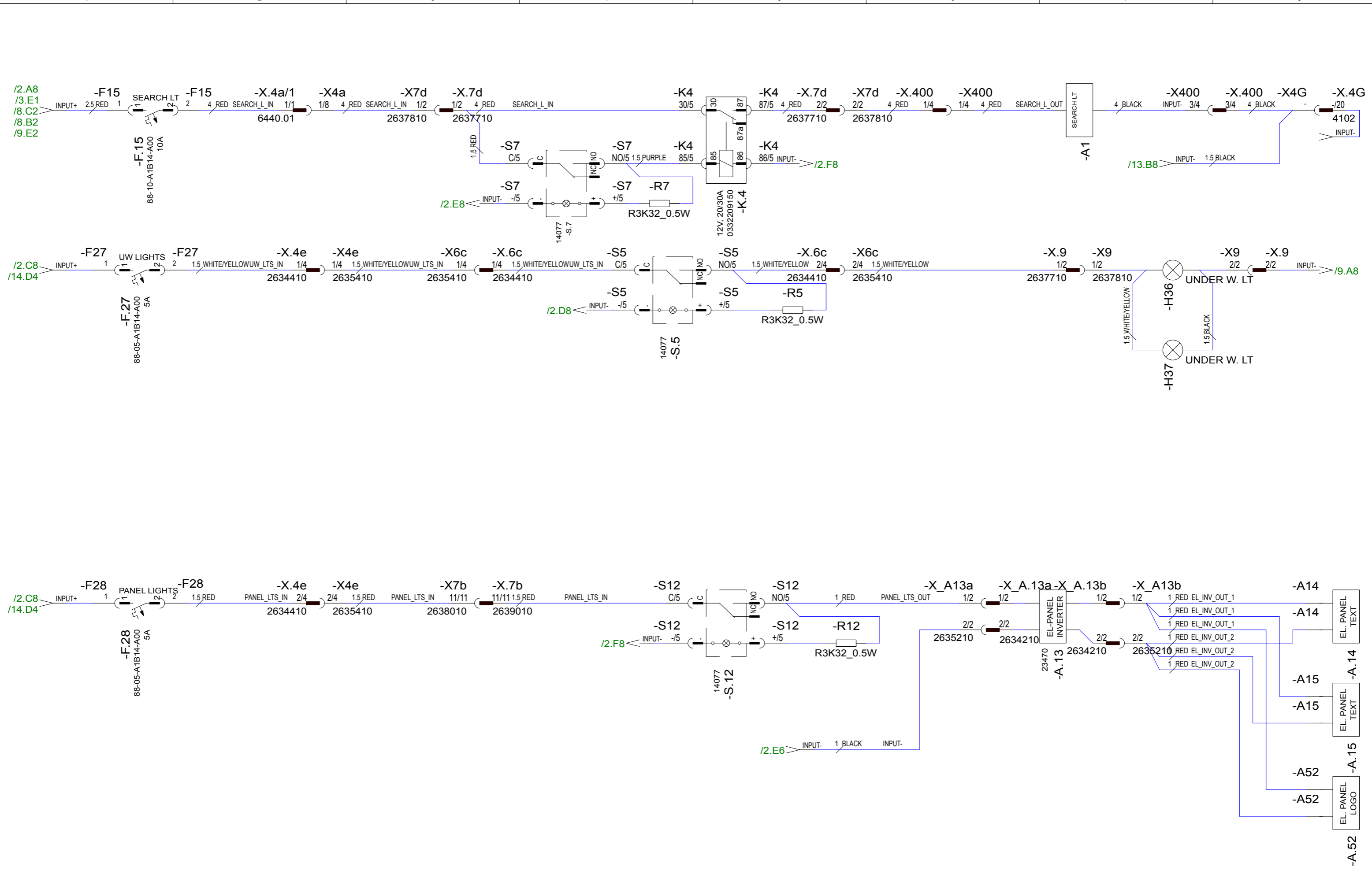
9.11.2017	PN	C4: CIRCUIT CHANGES AND ADDED H44, H45, H46	Date	30.6.2017
31.1.2018	PF	C5: NOT MODIFIED	Drawing by	TuM
5.2.2018	PF	C6: H51 & H52 (TOILET DN LT) ADDED	Sheet rev.	6
Date of modification	Modified by	Description	Project rev.	C

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Axopar	Boat	Sub-product code	Product code	Project ID
	28 MY18	INTERIOR LTS	HL	
Boat model		Title	Loc	5 / 42
				Sheet

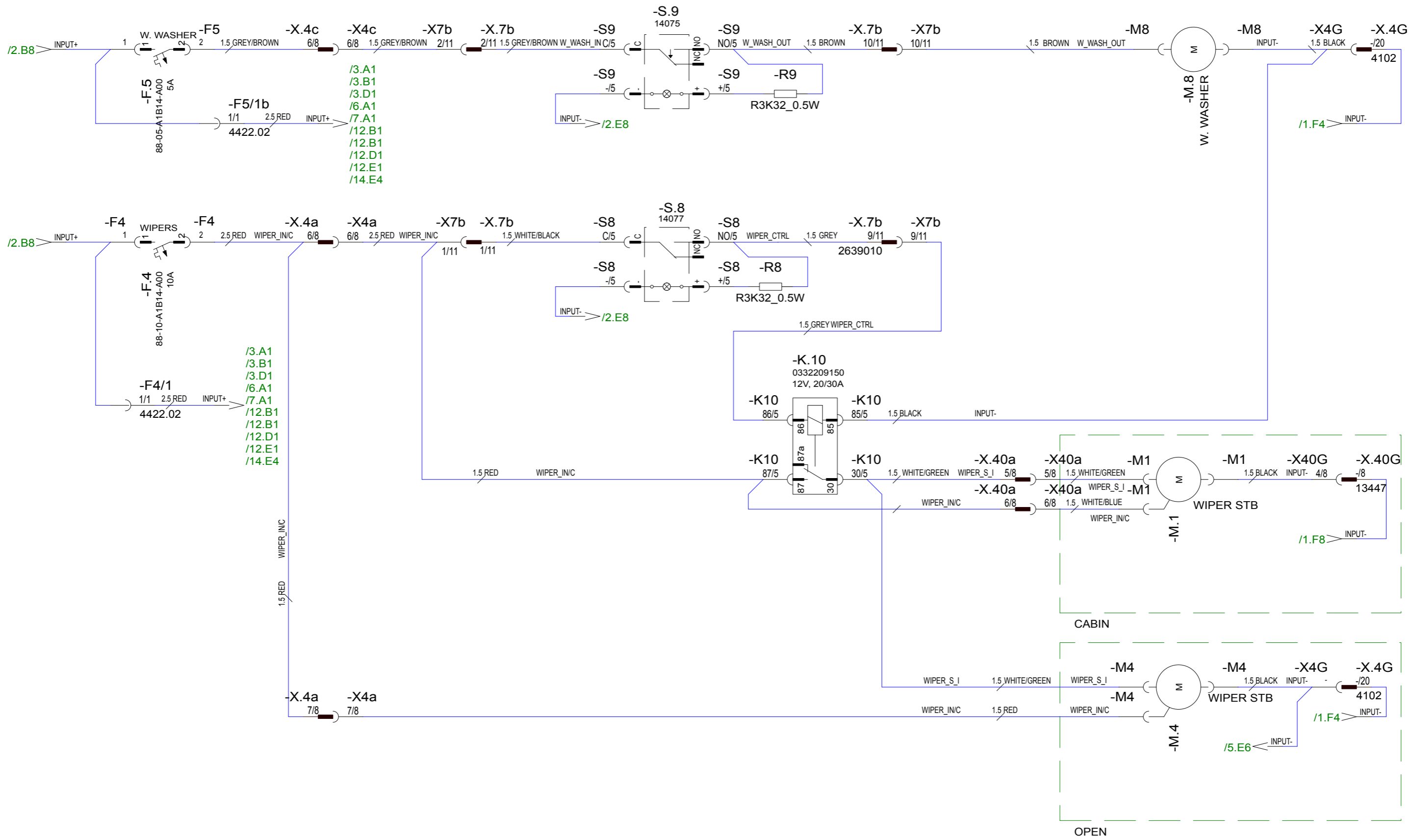


9.11.2017	PN	C4: CIRCUIT CHANGES, H18 AND H41	Date	30.6.2017		Axopar			
31.1.2018	PF	C5: ADDED H38_39 CONNECTOR	Drawing by	RN		Boat			
5.2.2018	PF	C6: NOT MODIFIED	Sheet rev.	6		28 MY18	Sub-product code	Product code	Project ID
Date of modification	Modified by	Description	Project rev.	C		Boat model	DECK LTS	HL	
						Title	Loc	6 / 42	
1	2	3	4	5	6	7	8	Sheet	



9.11.2017	TuM	C4: NOT MODIFIED.	Date	30.6.2017
31.1.2018	PF	C5: NOT MODIFIED	Drawing by	TuM
5.2.2018	PF	C6: NOT MODIFIED	Sheet rev.	6
Date of modification	Modified by	Description	Project rev.	C

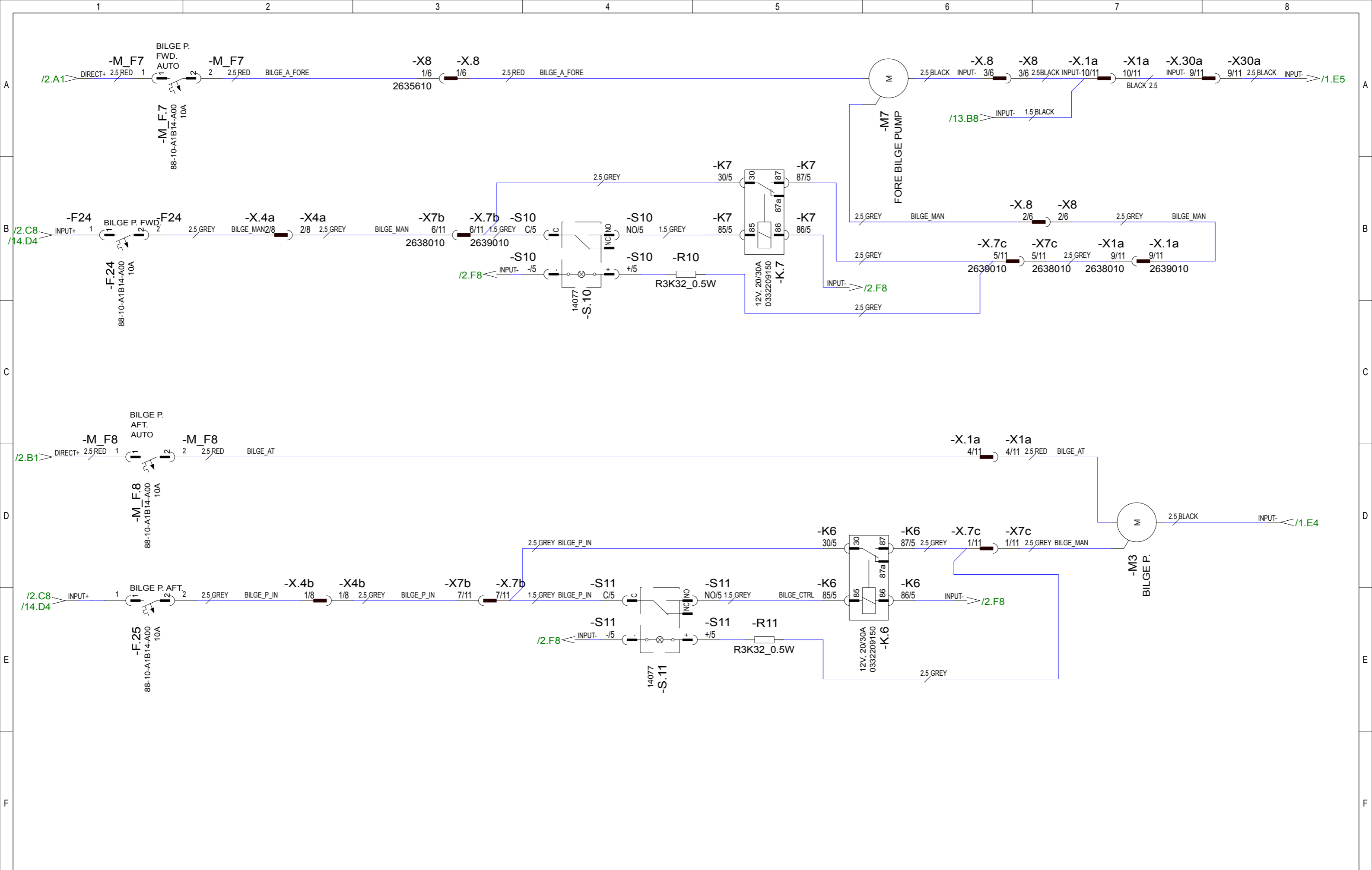
	Axopar		Project ID	
	Boat	28 MY18	Sub-product code	Product code
Boat model	6	SEARCH LTS/ UW LTS/ PANEL LTS	HL	7 / 42
		Title	Loc	Sheet



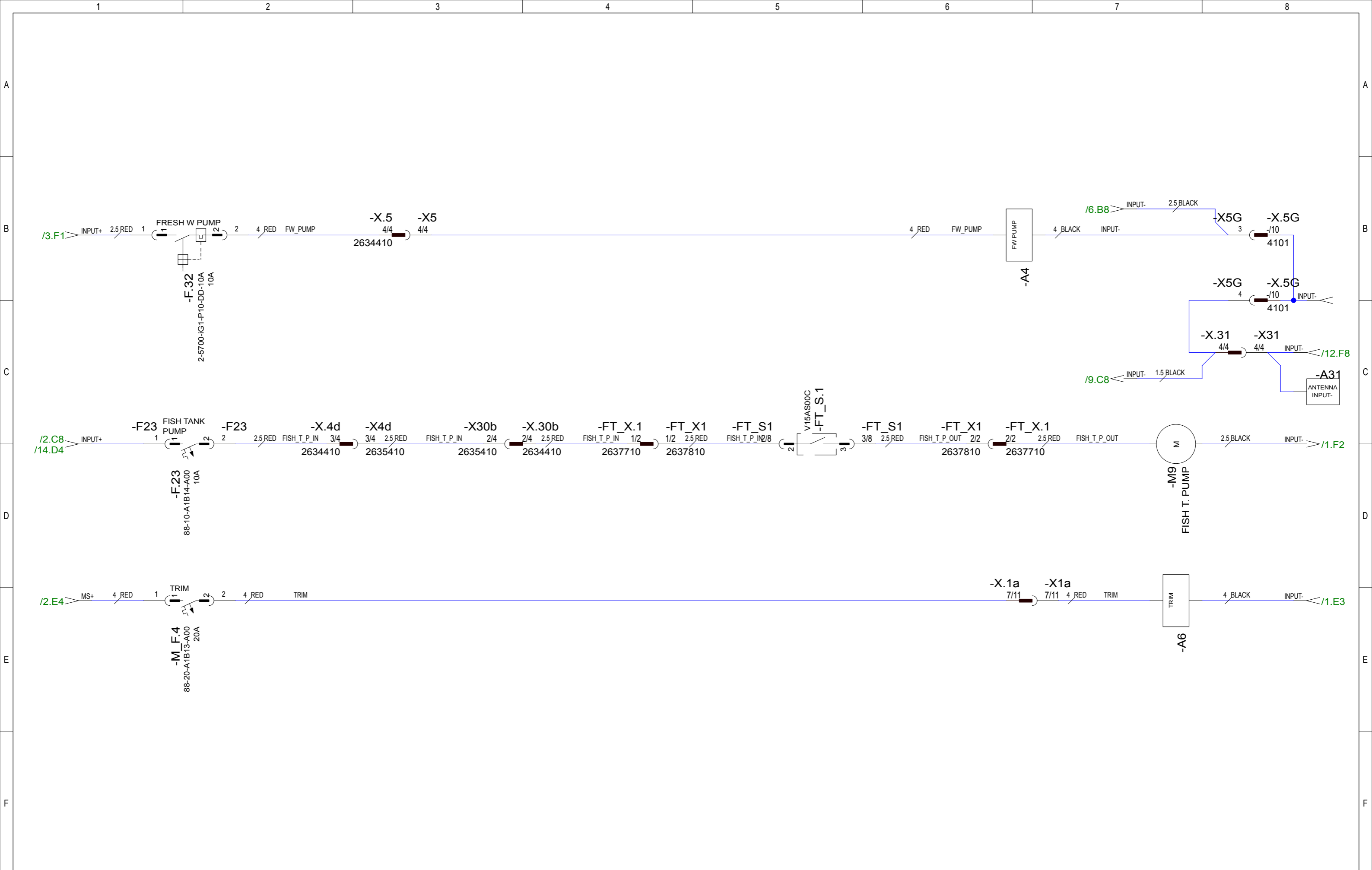
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31.1.2018	PF	C5: NOT MODIFIED	Drawing by	RN
5.2.2018	PF	C6: NOT MODIFIED	Sheet rev.	6
Date of modification	Modified by	Description	Project rev.	C



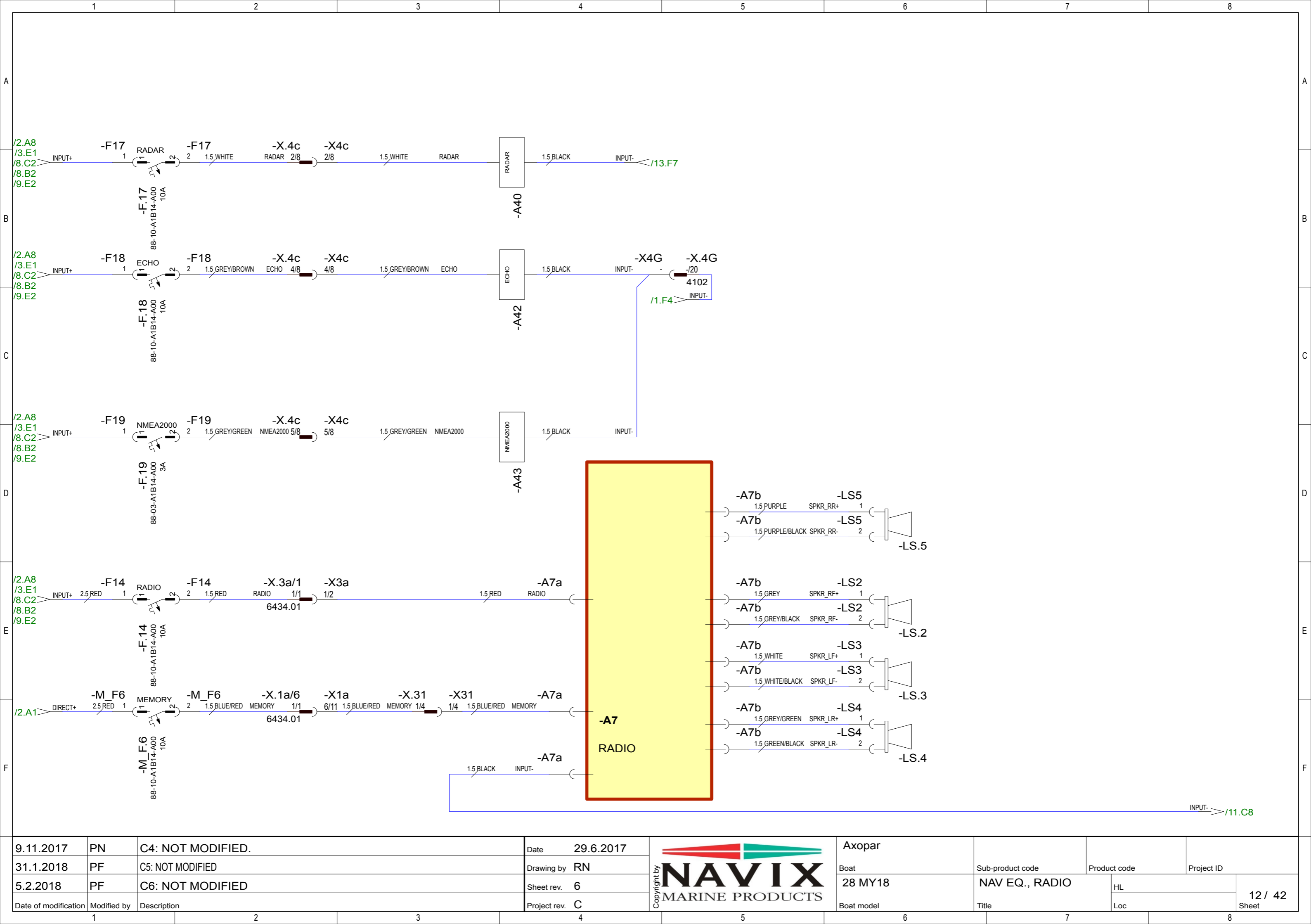
Axopar	Boat	28 MY18	Boat model	Sub-product code	Product code	Project ID
				WIPERS/ W. WASH	HL	
				Title	Loc	8 / 42 Sheet



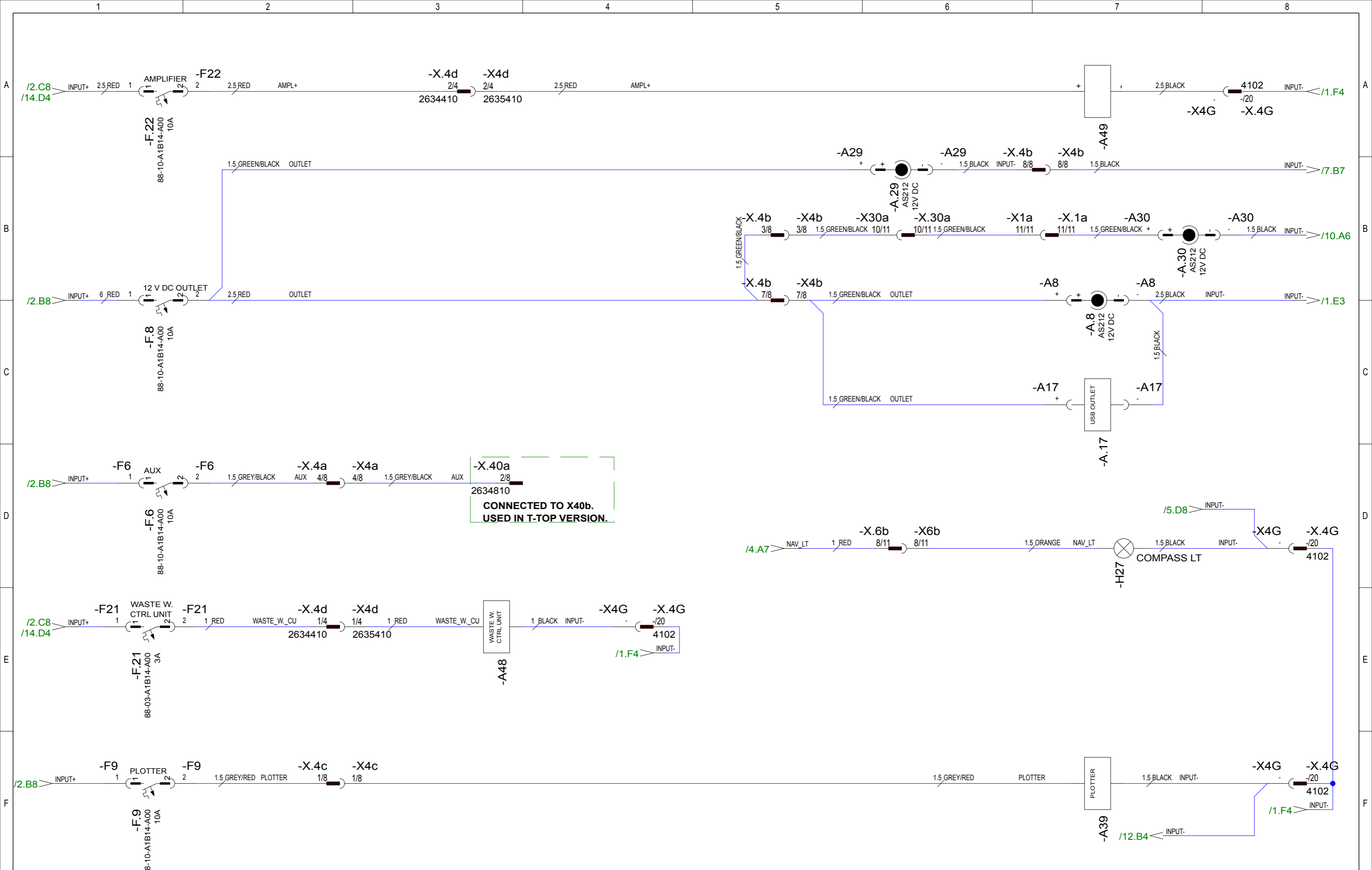
9.11.2017	PN	C4: NOT MODIFIED.	Date	29.6.2017		Axopar			
31.1.2018	PF	C5: NOT MODIFIED	Drawing by	RN		Boat			
5.2.2018	PF	C6: NOT MODIFIED	Sheet rev.	6		28 MY18	BILGE PUMPS	HL	10 / 42
Date of modification	Modified by	Description	Project rev.	C		Boat model	Title	Loc	Sheet



9.11.2017	PN	C4: NOT MODIFIED.	Date	29.6.2017		Axopar			
31.1.2018	PF	C5: NOT MODIFIED	Drawing by	TuM		Boat	Sub-product code	Product code	Project ID
5.2.2018	PF	C6: NOT MODIFIED	Sheet rev.	6		28 MY18	PUMPS, TRIM	HL	11/ 42
Date of modification	Modified by	Description	Project rev.	C		Boat model		Title	
1	2	3	4	5	6	7	8		

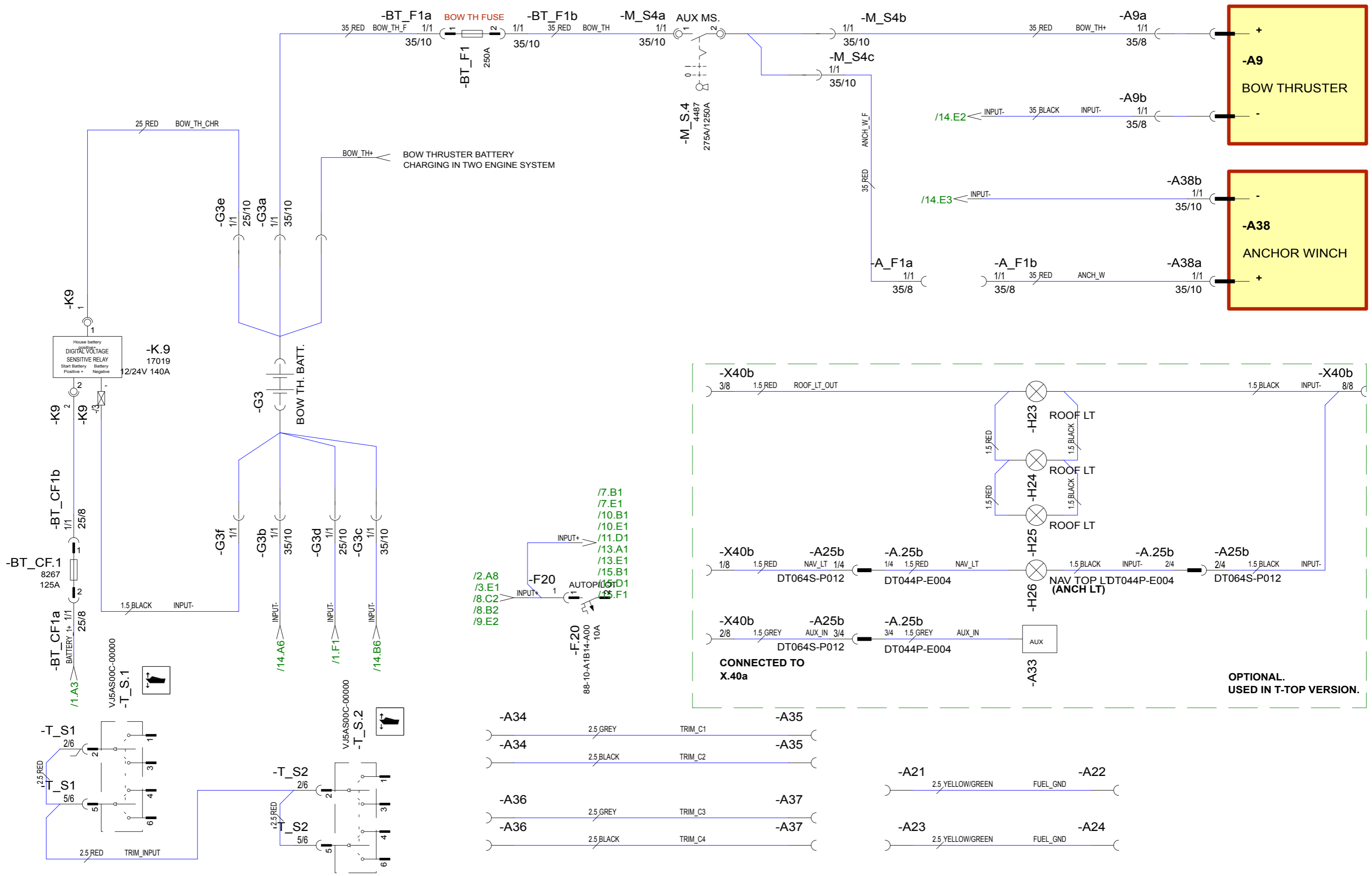


9.11.2017	PN	C4: NOT MODIFIED.	Date	29.6.2017		Axopar			
31.1.2018	PF	C5: NOT MODIFIED	Drawing by	RN		Boat	Sub-product code	Product code	Project ID
5.2.2018	PF	C6: NOT MODIFIED	Sheet rev.	6		28 MY18	NAV EQ., RADIO	HL	12 / 42
Date of modification	Modified by	Description	Project rev.	C		Boat model	Title	Loc	Sheet



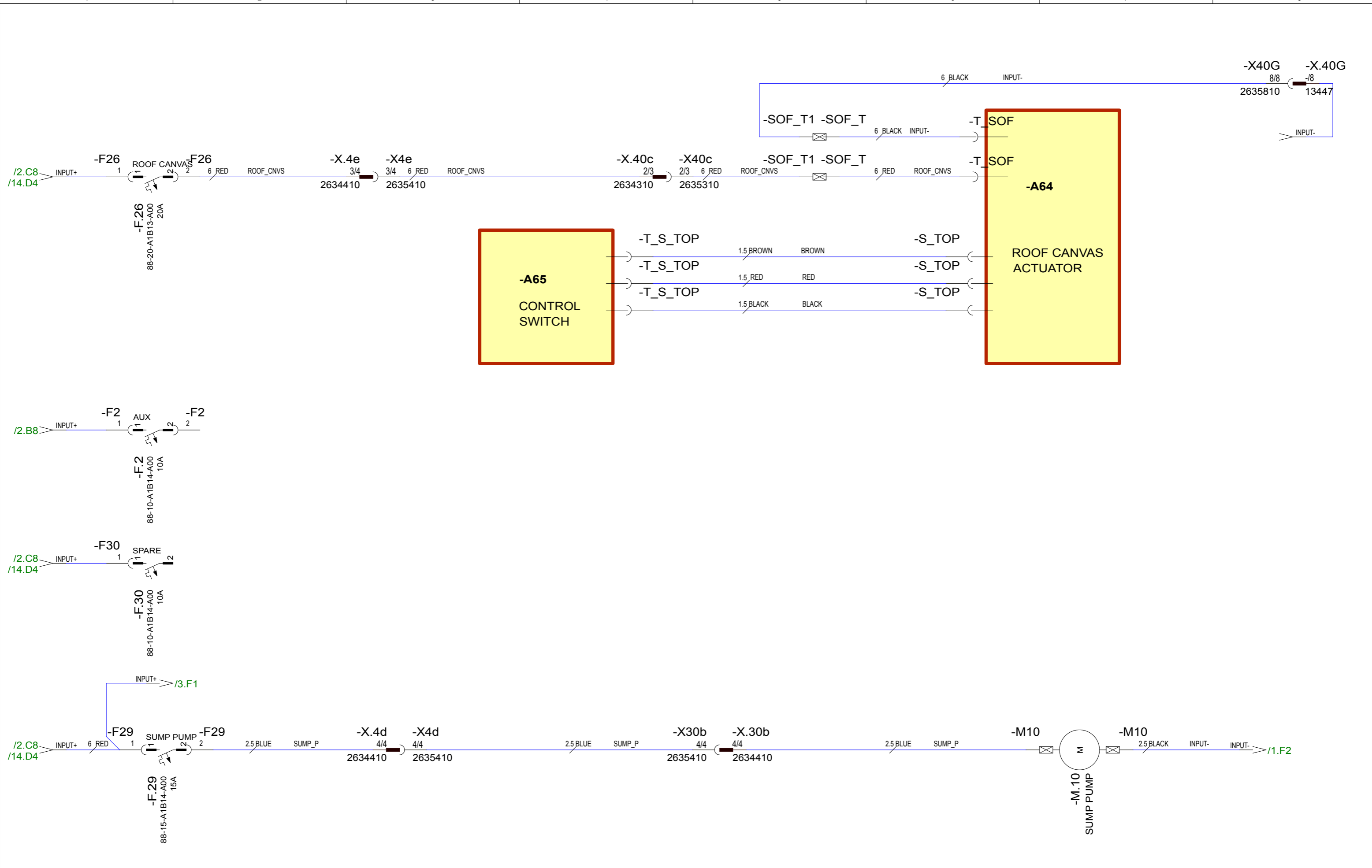
-X.40a
 2634810
 CONNECTED TO X40b.
 USED IN T-TOP VERSION.

9.11.2017	PN	C4: NOT MODIFIED.	Date	29.6.2017		Axopar			
31.1.2018	PF	C5: NOT MODIFIED	Drawing by	RN		Boat	28 MY18	Sub-product code	Product code
5.2.2018	PF	C6: NOT MODIFIED	Sheet rev.	6	Copyright by NAVIX MARINE PRODUCTS	Boat model	OUTLET, PLOTTER, AUX	HL	13 / 42
Date of modification	Modified by	Description	Project rev.	C				Title	




9.11.2017	PN	C4: NOT MODIFIED.	Date	29.6.2017
31.1.2018	PF	C5: NOT MODIFIED	Drawing by	RN
5.2.2018	PF	C6: ANCH W FUSE REMOVED, BOW TH FUSE LUGS 35/8->35/10	Sheet rev.	6
Date of modification	Modified by	Description	Project rev.	C

	Axopar		Project ID	
	Boat	28 MY18	Sub-product code	Product code
Boat model	BOW TH, ANCH W		HL	14 / 42
	T-TOP ROOF LTS, TRIM		Loc	



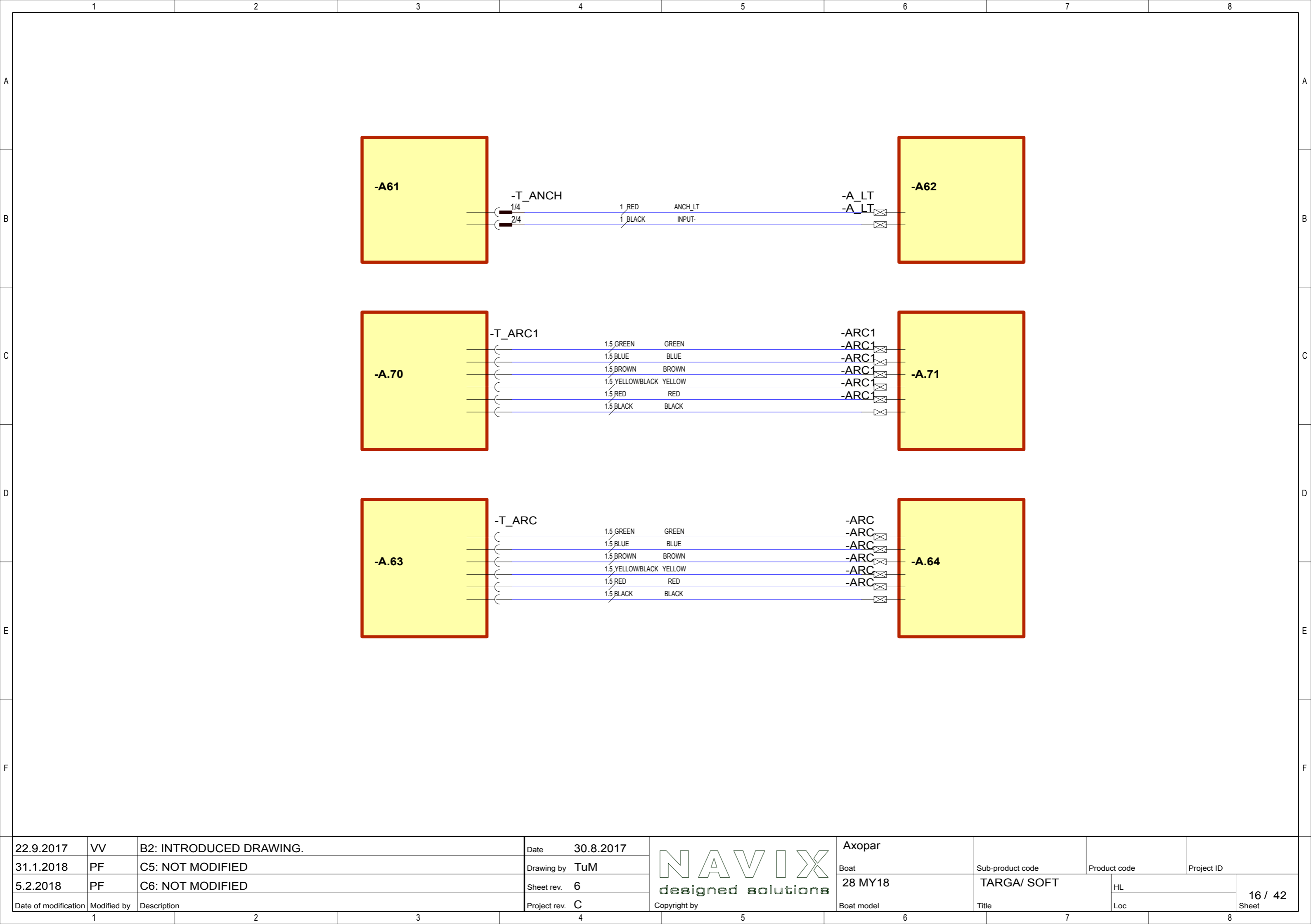
9.11.2017	PN	C4: MODIFIED ROOF CANVAS CIRCUIT, ADDED A64, A65	Date	30.6.2017
31.1.2018	PF	C5: NOT MODIFIED	Drawing by	TuM
5.2.2018	PF	C6: NOT MODIFIED	Sheet rev.	6
Date of modification	Modified by	Description	Project rev.	C




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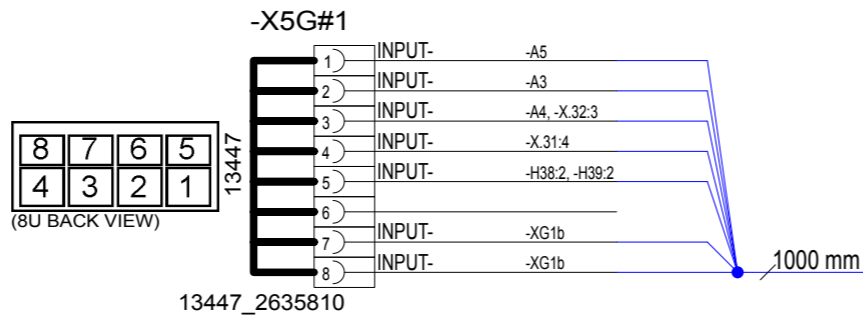
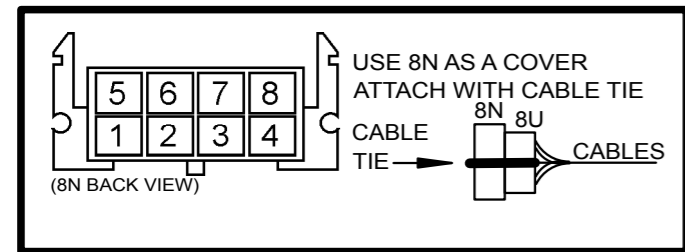
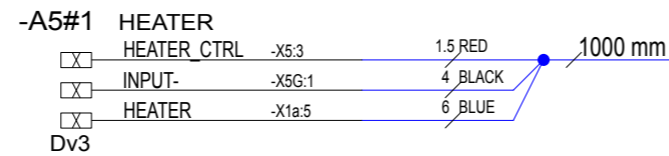
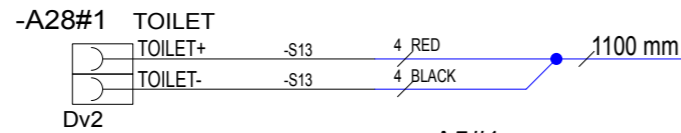
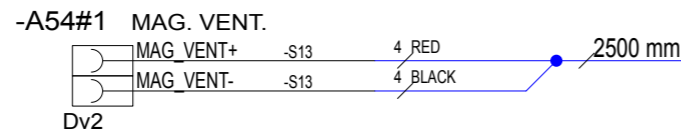
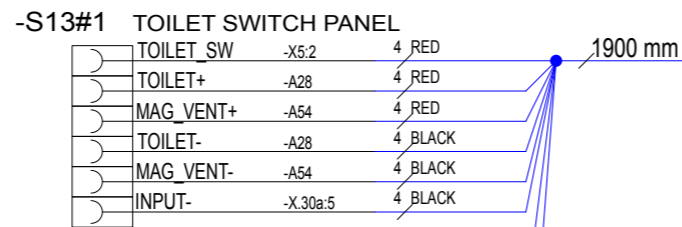
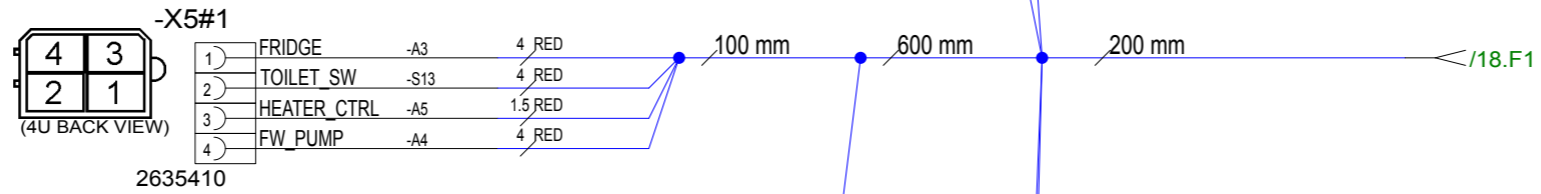
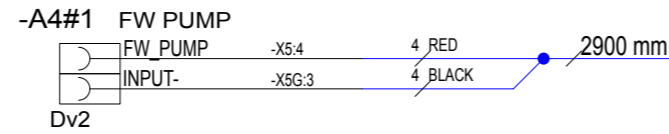
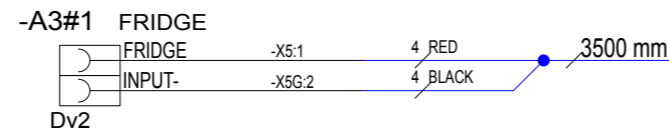
Axopar		
Boat	28 MY18	Sub-product code
Boat model		Product code
		Project ID

ROOF CANVAS/ SPARE	HL	15 / 42 Sheet
Title	Loc	



22.9.2017	VV	B2: INTRODUCED DRAWING.	Date	30.8.2017
31.1.2018	PF	C5: NOT MODIFIED	Drawing by	TuM
5.2.2018	PF	C6: NOT MODIFIED	Sheet rev.	6
Date of modification	Modified by	Description	Project rev.	C

		Axopar						
		Boat	28 MY18	Sub-product code	TARGA/ SOFT	Product code		Project ID
Copyright by				Boat model		Title		HL
						Loc		16 / 42 Sheet

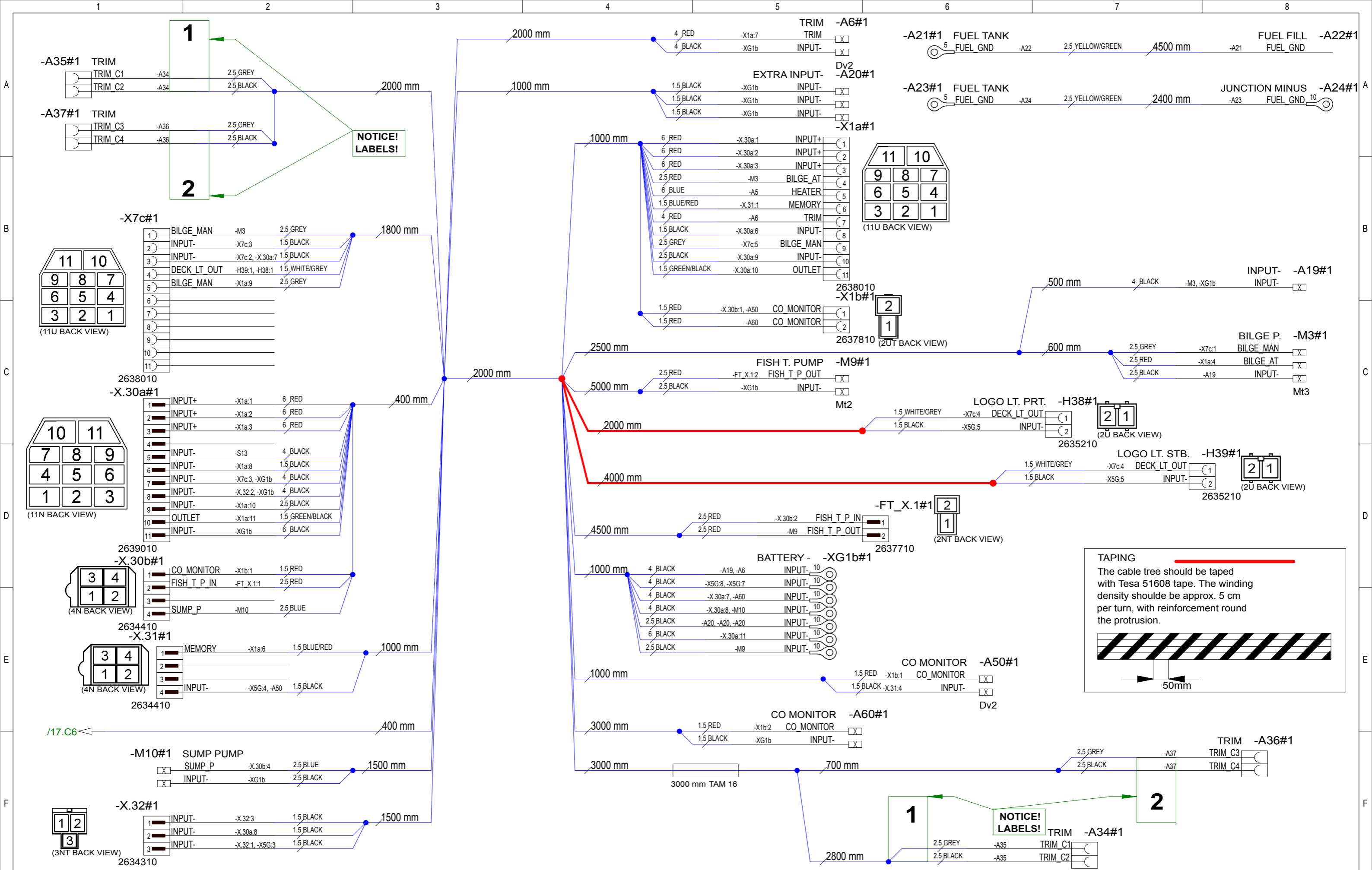


29.6.2017	TuM	A1: INTRODUCED DRAWING.
22.9.2017	VV	B2: TRIM & PENTRY HARNESS ADDED; LOGO LIGHTS & -X5G ADDED
9.11.2017	PN	C2: NOT MODIFIED
Date of modification	Modified by	Description

Date	19.9.2017
Drawing by	TuM
Sheet rev.	2
Project rev.	C



Axopar	23589	Project ID
Boat	28 MY18	HULL HARNESS
Boat model		HL
		Loc
		17 / 42
		Sheet



TAPING
 The cable tree should be taped with Tesa 51608 tape. The winding density should be approx. 5 cm per turn, with reinforcement round the protrusion.

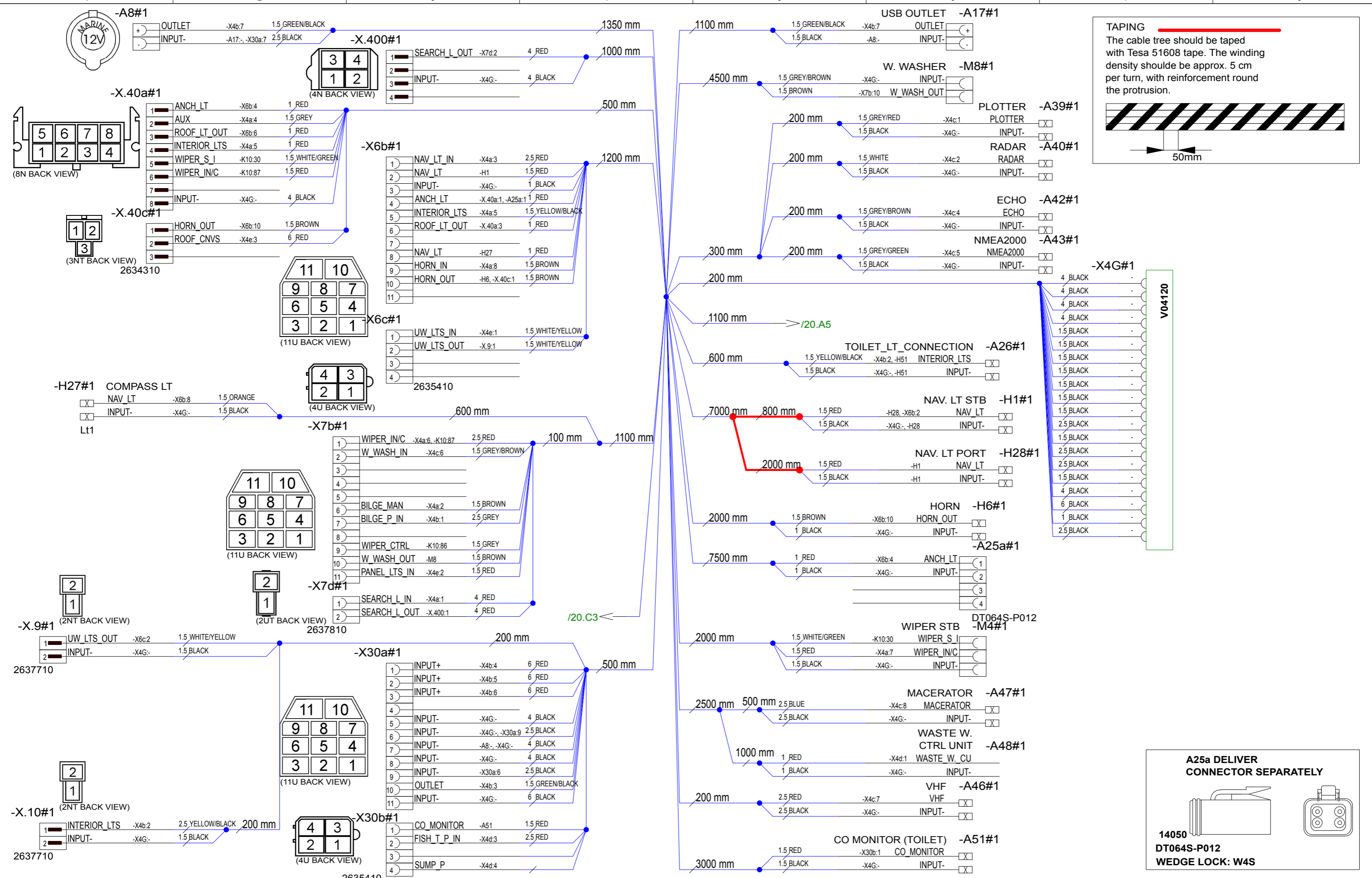
50mm

29.6.2017	TuM	A1: INTRODUCED DRAWING.
22.9.2017	VV	B2: TRIM & PENTRY HARNESS ADDED; LOGO LIGHTS & -X5G ADDED
9.11.2017	PN	C2: NOT MODIFIED
Date of modification	Modified by	Description

Date	29.6.2017
Drawing by	TuM
Sheet rev.	2
Project rev.	C



Axopar	23589	Project ID
Boat	Product code	
28 MY18	HULL HARNESS	HL
Boat model	Title	Loc
		18 / 42
		Sheet



TAPING

The cable tree should be taped with Tesa 51608 tape. The winding density should be approx. 5 cm per turn, with reinforcement round the protrusion.

V04120

A25a DELIVER CONNECTOR SEPARATELY

14050 DT064S-P012 WEDGE LOCK: W4S

9.11.2017	PN	C4: CHANGED WIRE SIZE ROOF CNVS, INTERIOR LTS.	Date	29.6.2017
5.2.2018	PF	C5: 2 x TOILET DN LT ADDED & TOILET LT CONN. CABLE LENGTH CHANGED	Drawing by	TuM
24.10.2017	PN	B3: ROCA WIPER CTRL. REMOVED, ADDED WIPER RELAY.	Sheet rev.	5
Date of modification	Modified by	Description	Project rev.	C

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Axopar

Boat: 28 MY18

Boat model: Dv2

Sub-product code: DECK HARNESS

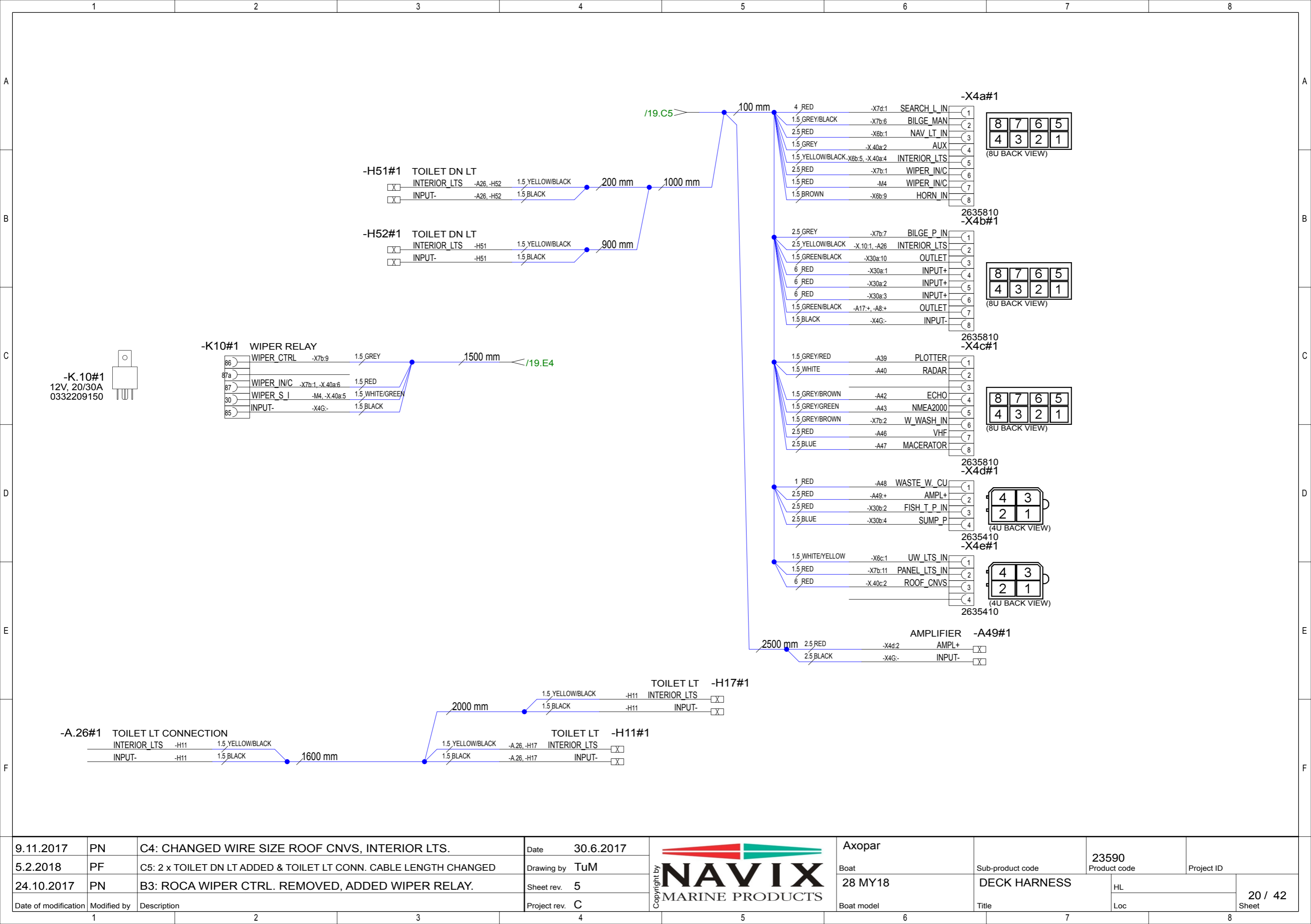
Title: DECK HARNESS

Product code: 23590

Project ID: HL

19 / 42

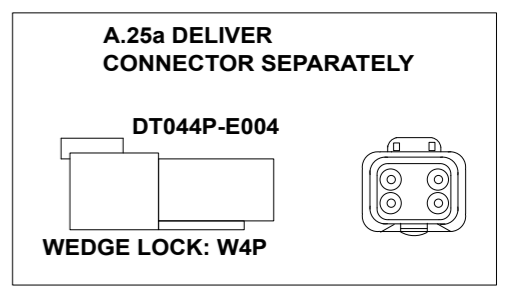
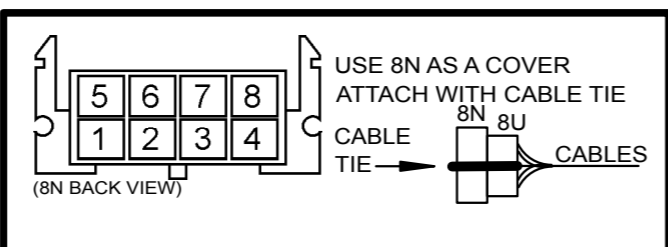
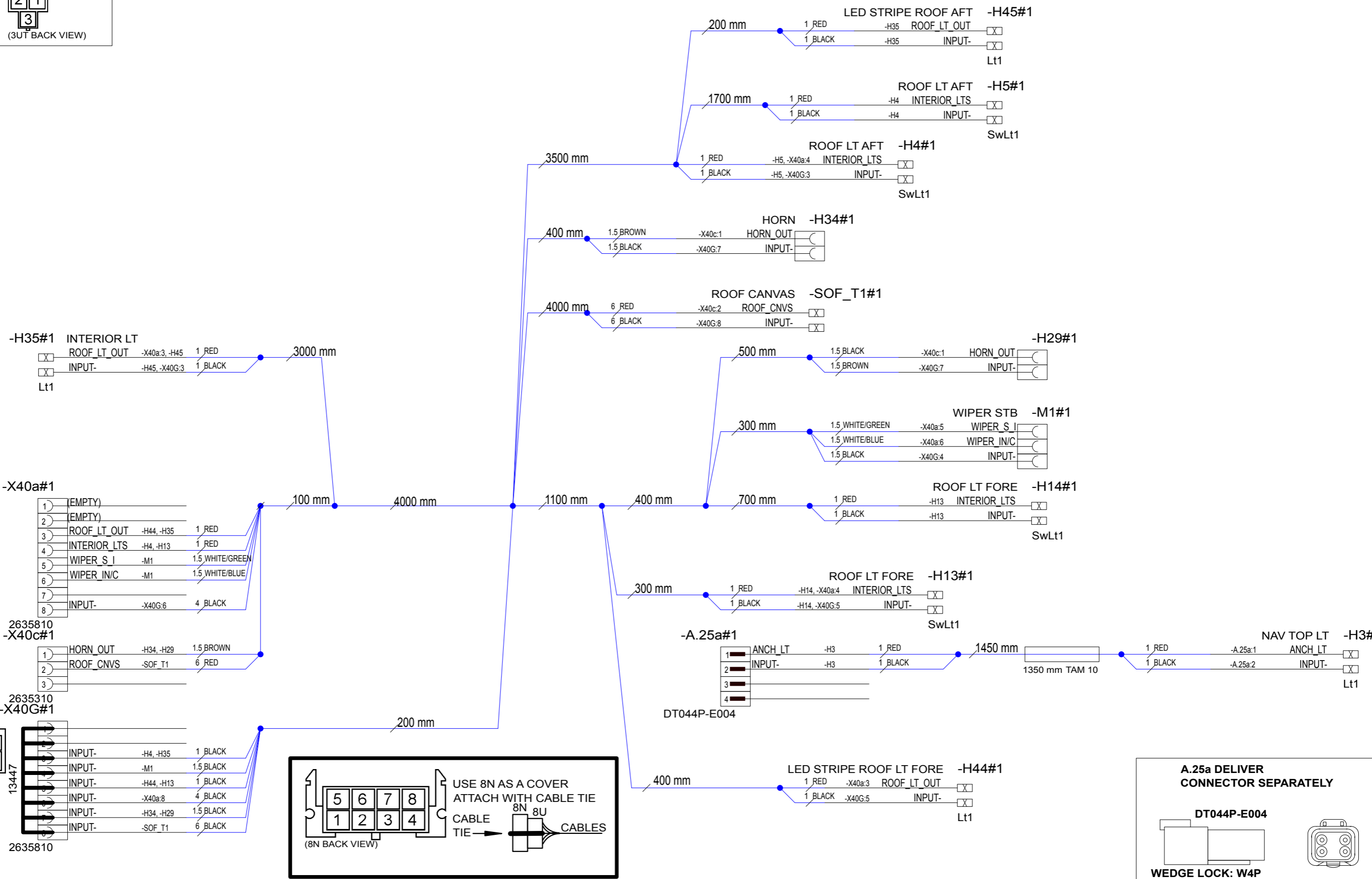
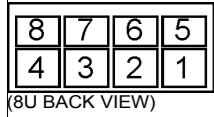
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9.11.2017	PN	C4: CHANGED WIRE SIZE ROOF CNVS, INTERIOR LTS.	Date	30.6.2017
5.2.2018	PF	C5: 2 x TOILET DN LT ADDED & TOILET LT CONN. CABLE LENGTH CHANGED	Drawing by	TuM
24.10.2017	PN	B3: ROCA WIPER CTRL. REMOVED, ADDED WIPER RELAY.	Sheet rev.	5
Date of modification	Modified by	Description	Project rev.	C

	Axopar		23590	
	Boat	28 MY18	Sub-product code	DECK HARNESS
Boat model		Title	HL	20 / 42
			Loc	Sheet

X40a & X40c DELIVER CONNECTOR SEPARATELY



29.6.2017	TuM	A1: INTRODUCED DRAWING.	Date	29.6.2017
20.9.2017	VV	B2: -H38 & -H39 LOGO LT. MOVED TO HULL HARNESS; NAME CHANGED	Drawing by	TuM
9.11.2017	PN	C3: ADDED H44, H45; CHANGED ROOF CANVAS WIRE SIZE 2,5 TO 6 MM2; NAME CHANGES	Sheet rev.	3
Date of modification	Modified by	Description	Project rev.	C

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Axopar

Boat: 28 Cabin MY18

Boat model: 28 Cabin MY18

Sub-product code: 23591

Product code: 23591

Project ID: 21/ 42

Sheet: 21/ 42

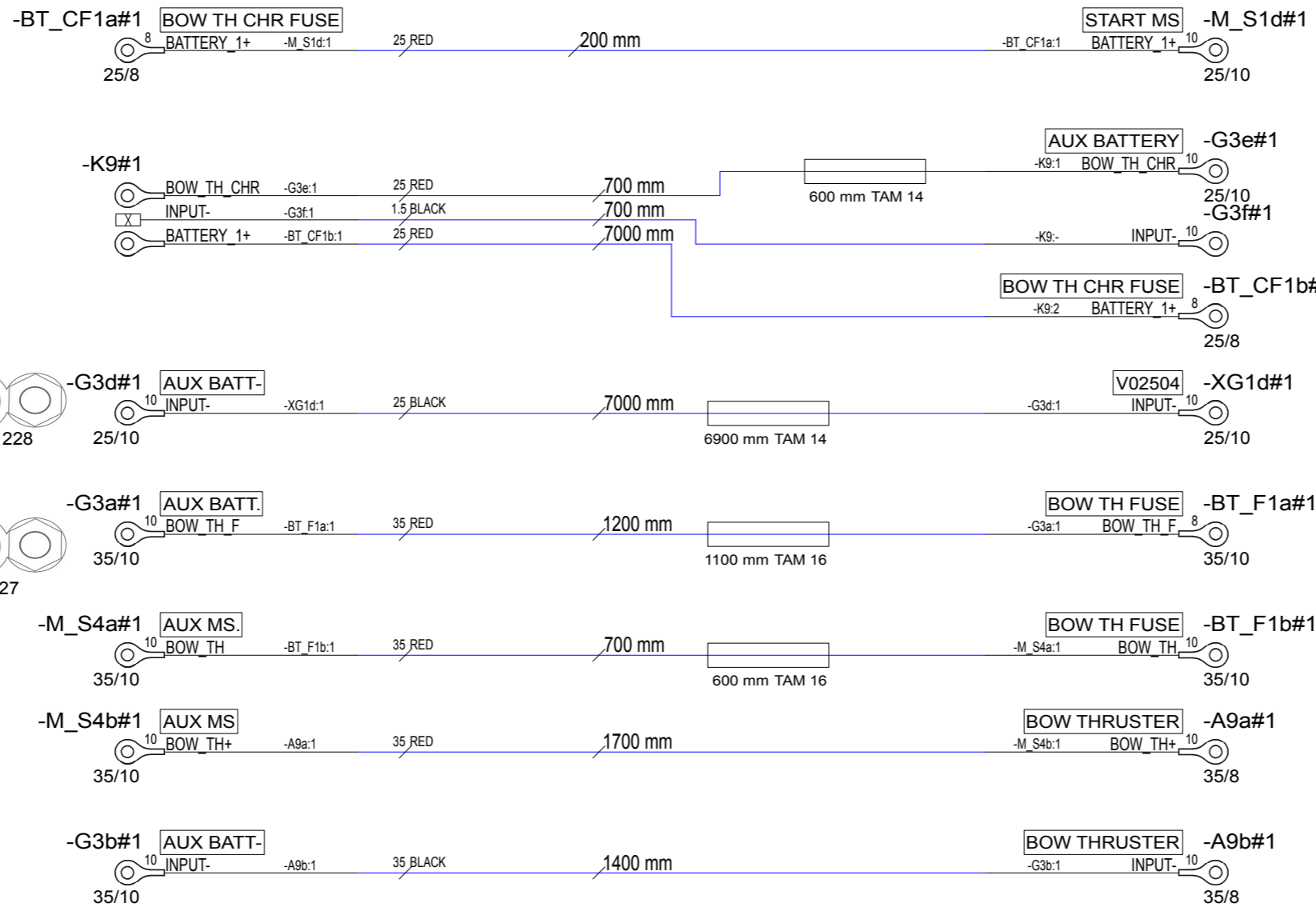
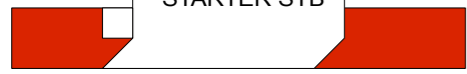
CABIN ROOF HARNESS

DT044P-E004

WEDGE LOCK: W4P

NOTICE! CABLES WITH STICKER

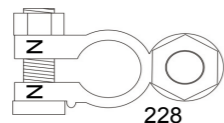
FOR EXAMPLE
EA032
STARTER STB



INSULATOR FOR BATTERY TERMINAL WITH BOLT BLACK



11068/456N9V14

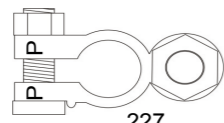


228

INSULATOR FOR BATTERY TERMINAL WITH BOLT RED

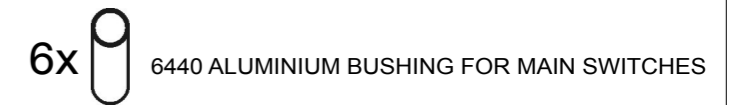
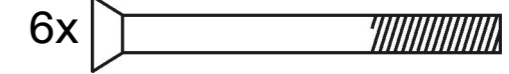


11067/456N9V02

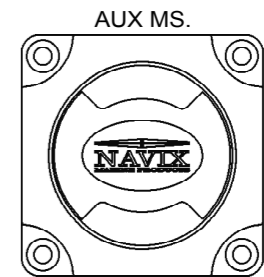


227

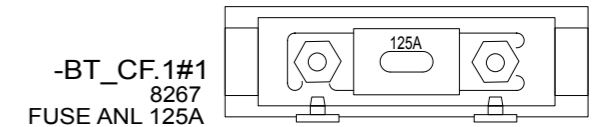
M5x50 COUNTERSUNK HEXAGON SCREW



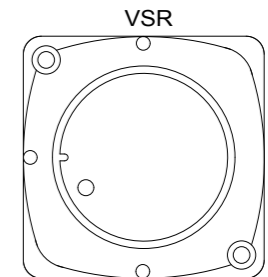
1Pcs 20733 SIDEPower ANL FUSE COVER
1Pcs 9036 ANL FUSE 250A



-M_S.4#1
AES-1211-28A
4487



-BT_CF.1#1
8267
FUSE ANL 125A

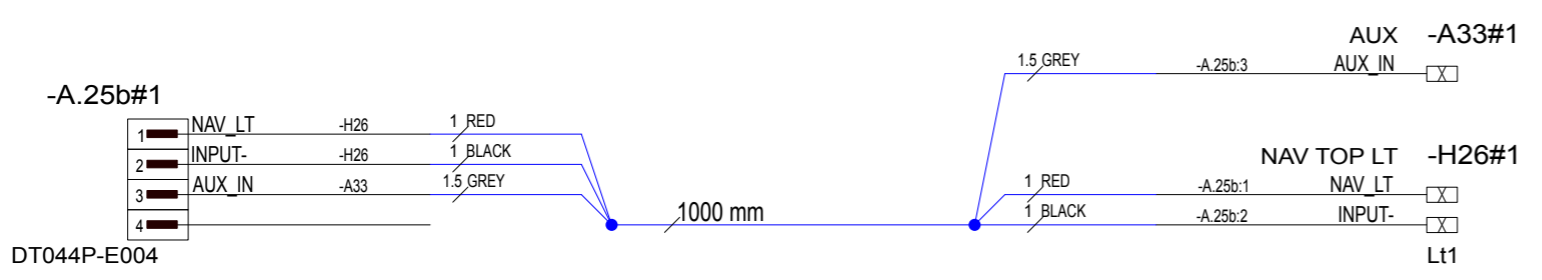
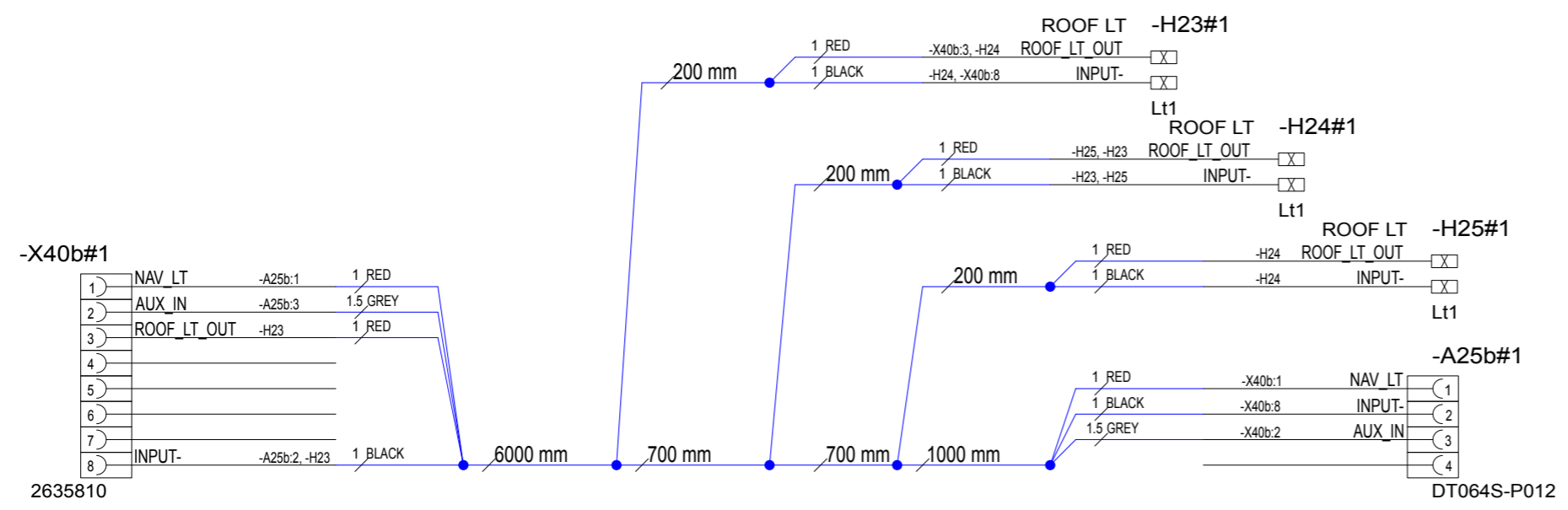


-K.9#1
17019

5.2.2018	PF	C4: BOW TH FUSE LUGS CHANGED 35/8->35/10, G3f CHANGED 6R10->PR10	Date
22.9.2017	VV	B2: LENGHTS CHANGED; BOW TH. FUSE CHANGED TO ENGBO.	Drawing by TuM
9.11.2017	PN	C3: ADDED PIPES TO AUXBATT AND AUXBATT-.	Sheet rev. 4
Date of modification	Modified by	Description	Project rev. C



Axopar	23594	Project ID
Boat	Sub-product code	Product code
28 MY18	BOW TH. CABLES	HL
Boat model	Title	Loc
		22 / 42
		Sheet



X40b DELIVER CONNECTOR SEPARATELY

8	7	6	5
4	3	2	1

(8U BACK VIEW)

A25b & A.25b DELIVER CONNECTOR SEPARATELY

DT064S-P012

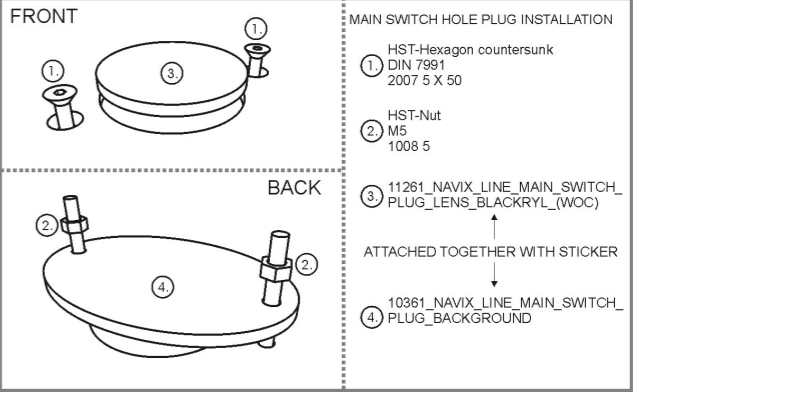
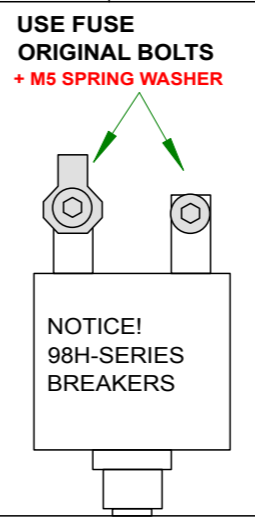
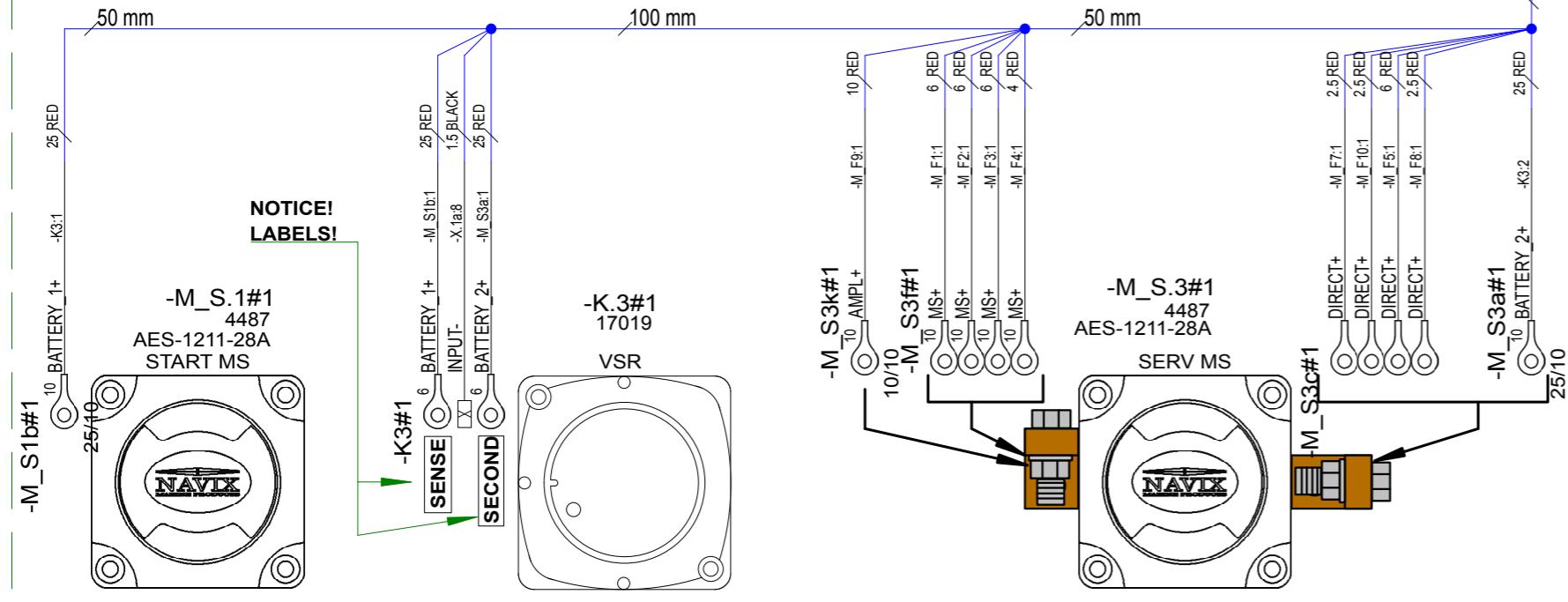
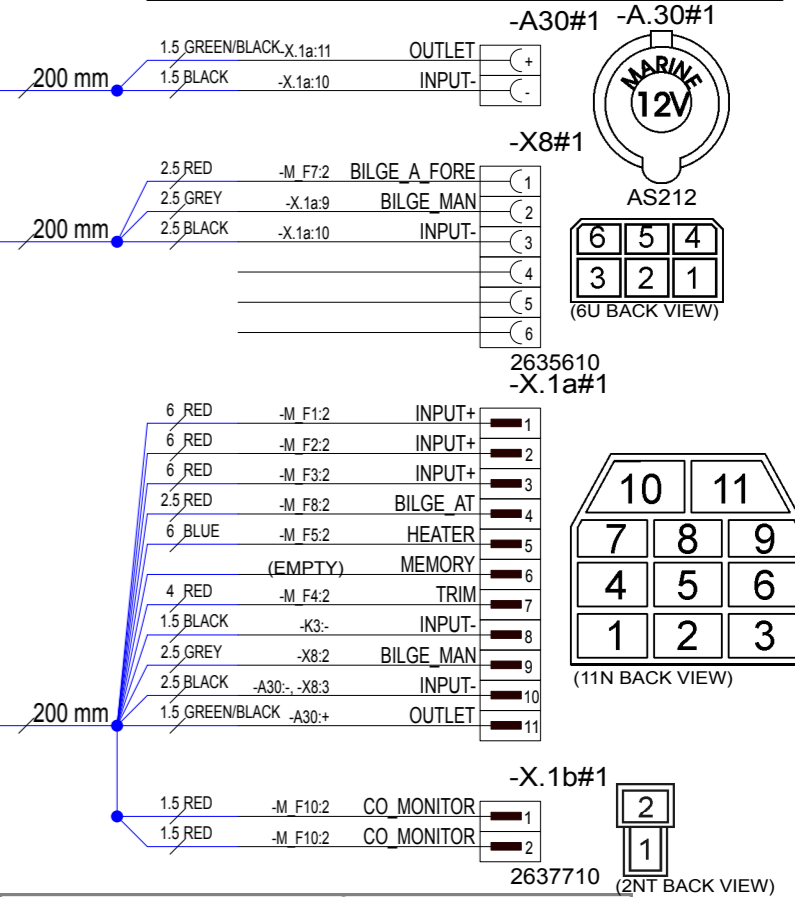
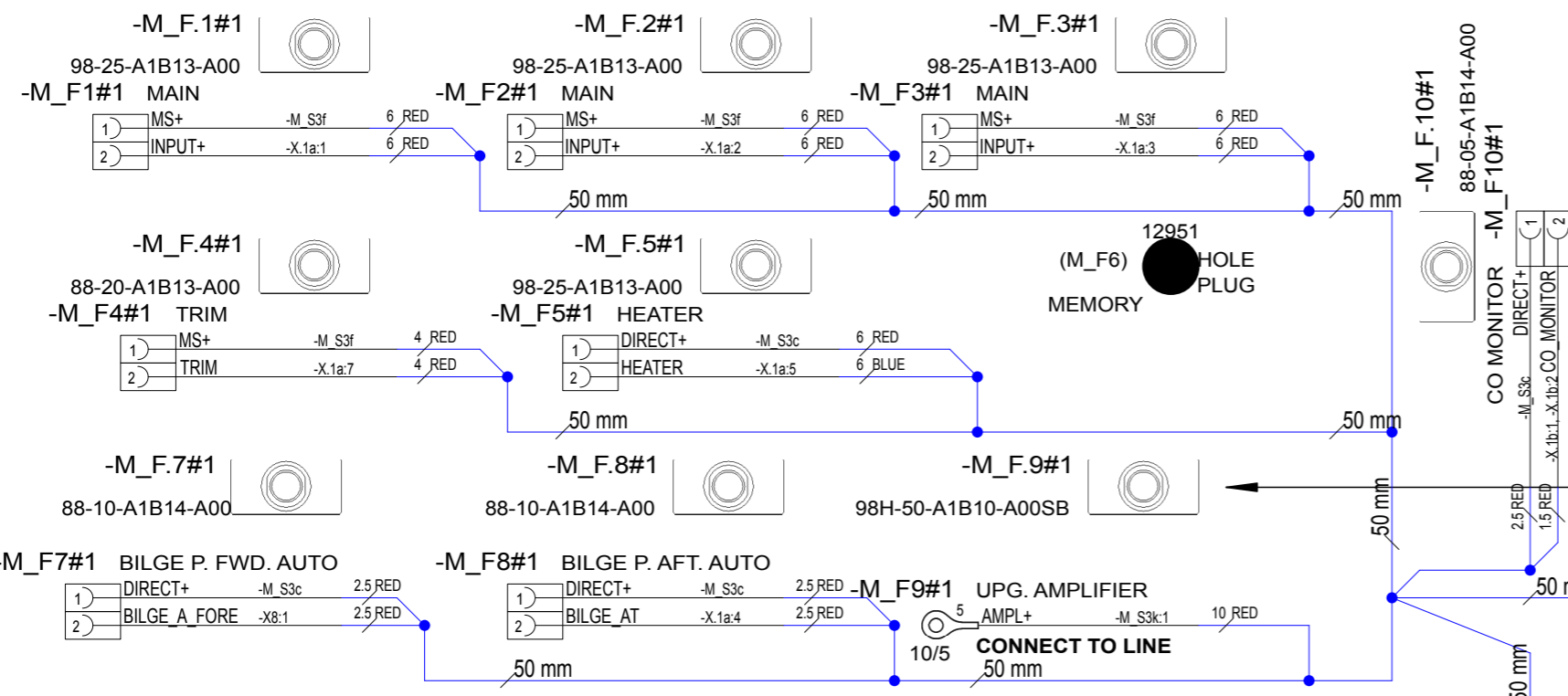
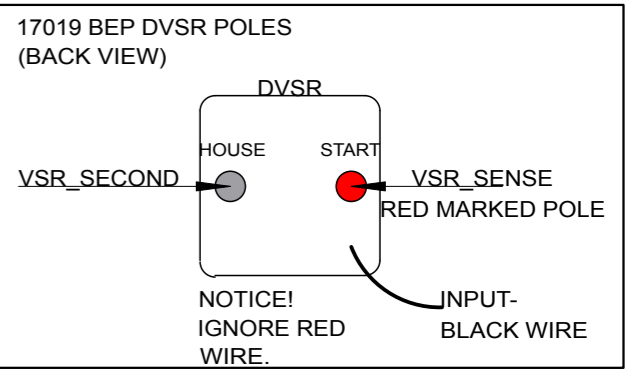
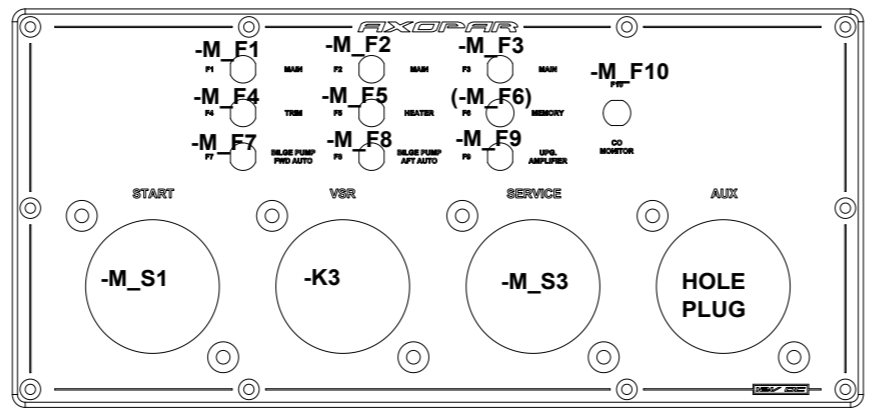
WEDGE LOCK: W4S

DT044P-E004

WEDGE LOCK: W4P

29.6.2017	TuM	A1: INTRODUCED DRAWING.	Date	29.6.2017		Axopar			
22.9.2017	VV	B1: NOT MODIFIED.	Drawing by	TuM		Boat		23597	
9.11.2017	PN	C1: NOT MODIFIED.	Sheet rev.	1		28 MY18	Sub-product code	Product code	Project ID
Date of modification	Modified by	Description	Project rev.	C		T-TOP ROOF HARNESS	HL		24 / 42
1	2	3	4	5	6	Title	Loc	8	Sheet

3760 COPPER BAR ANGLE TYPE
M10x30 BOLT
M10 NUT
M10 SPRING WASHER



29.6.2017	TuM	A1: INTRODUCED DRAWING
22.9.2017	VV	B2: FUSES RENAMED; -M_F.10 CHANGED DD -> 88-SERIES; BATTERY CABLES AND HEATER FUSES ADDED
9.11.2017	PN	C3: HEATER MOVED FROM MS+ TO DIRECT+, -G1h DELIVER SEPARATELY.
Date of modification	Modified by	Description

Date	29.6.2017
Drawing by	TuM
Sheet rev.	3
Project rev.	C



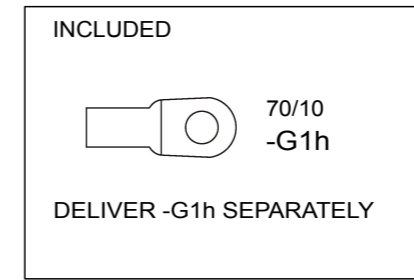
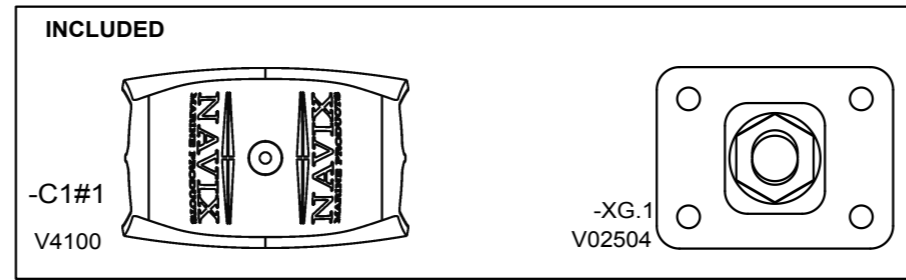
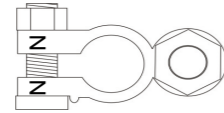
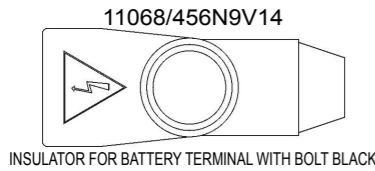
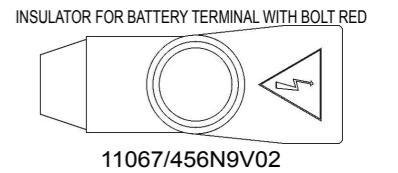
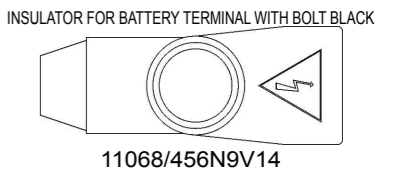
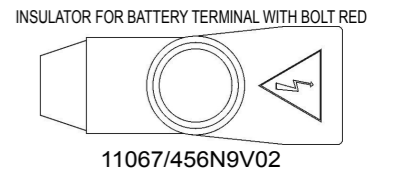
Axopar
Boat
28 MY18
Boat model

23875	23598	
Sub-product code	Product code	Project ID
BATTERY HARNESS		HL
2xBATT. 1xENG.		Loc
		25 / 42
		Sheet

NOTICE! CABLES WITH STICKER

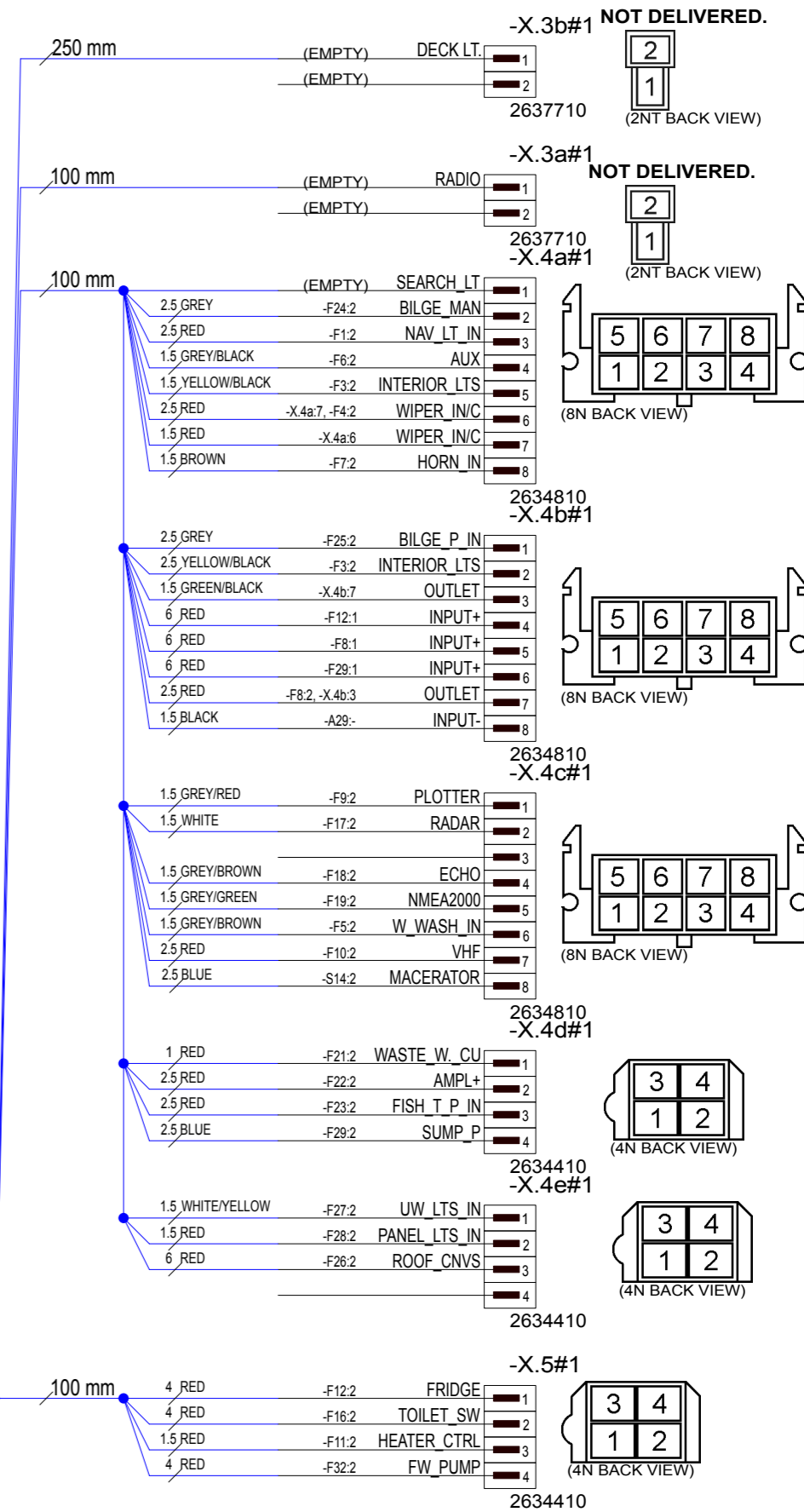
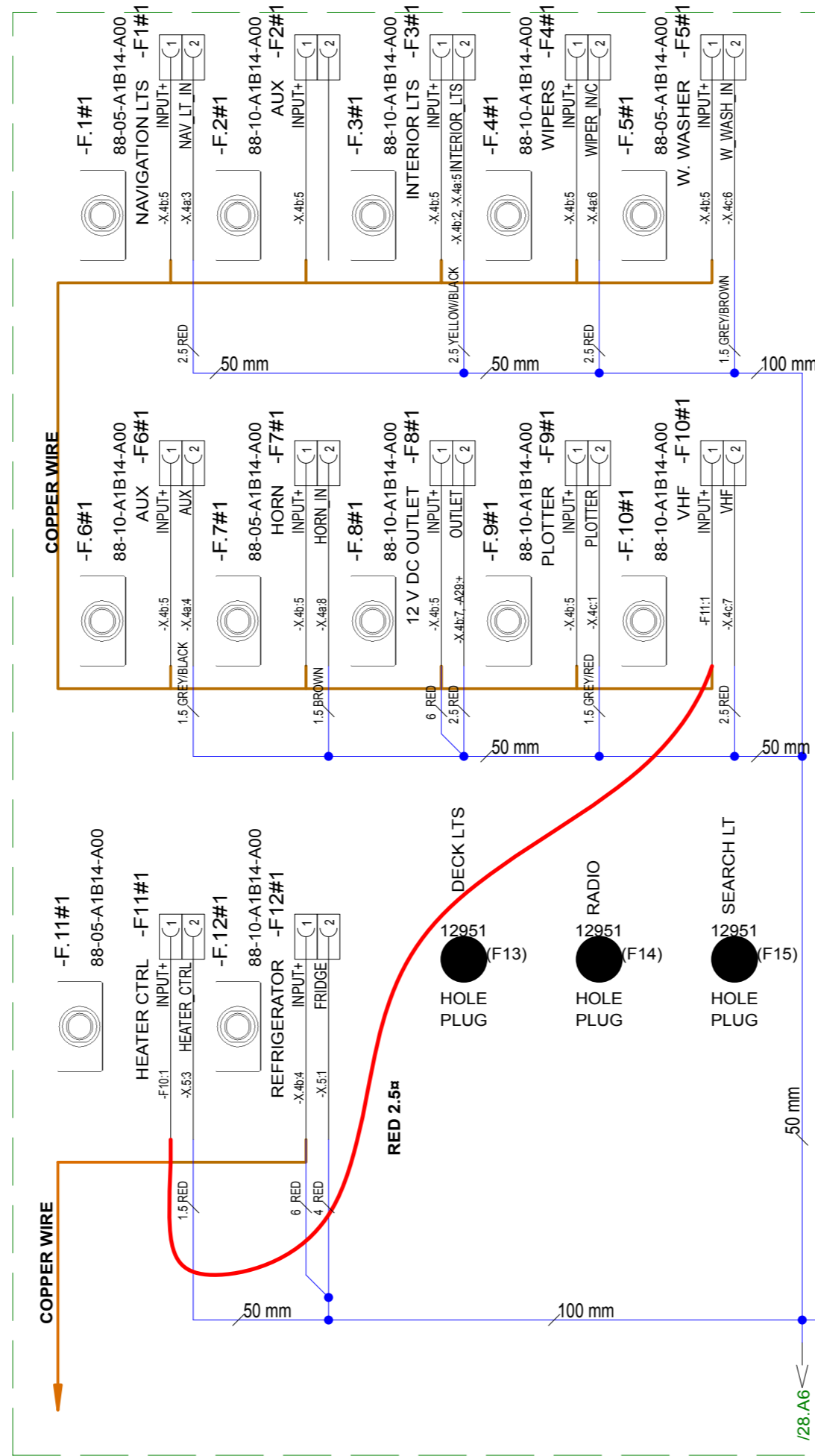
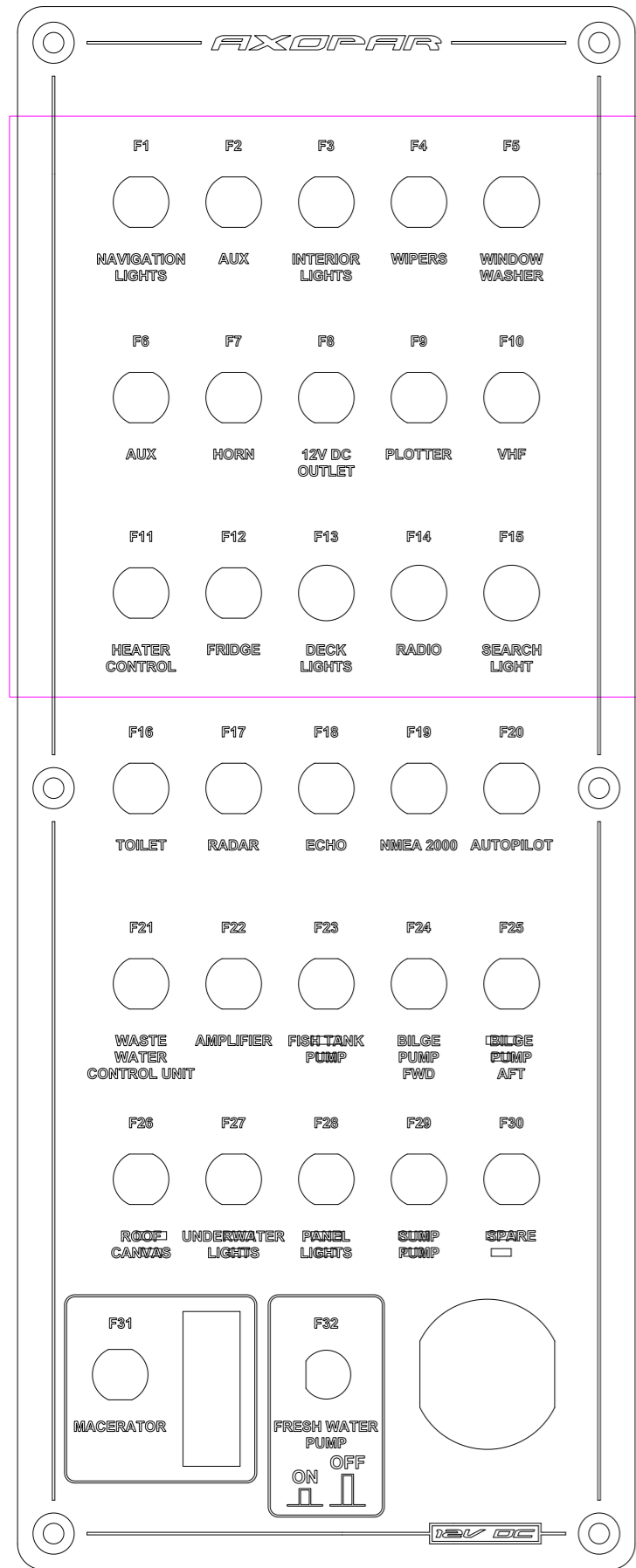
FOR EXAMPLE

EA032
STARTER STB



29.6.2017	TuM	A1: INTRODUCED DRAWING	Date	29.6.2017
22.9.2017	VV	B2: FUSES RENAMED; -M_F.10 CHANGED DD -> 88-SERIES; BATTERY CABLES AND HEATER FUSES ADDED	Drawing by	TuM
9.11.2017	PN	C3: HEATER MOVED FROM MS+ TO DIRECT+, -G1h DELIVER SEPARATELY.	Sheet rev.	3
Date of modification	Modified by	Description	Project rev.	C

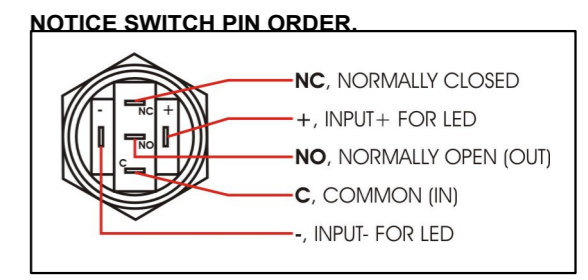
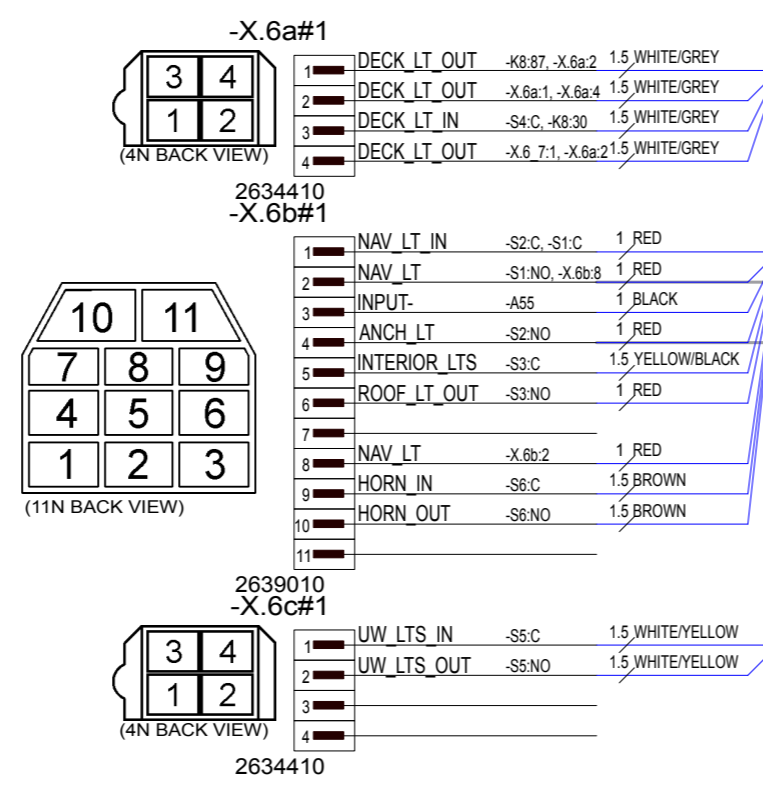
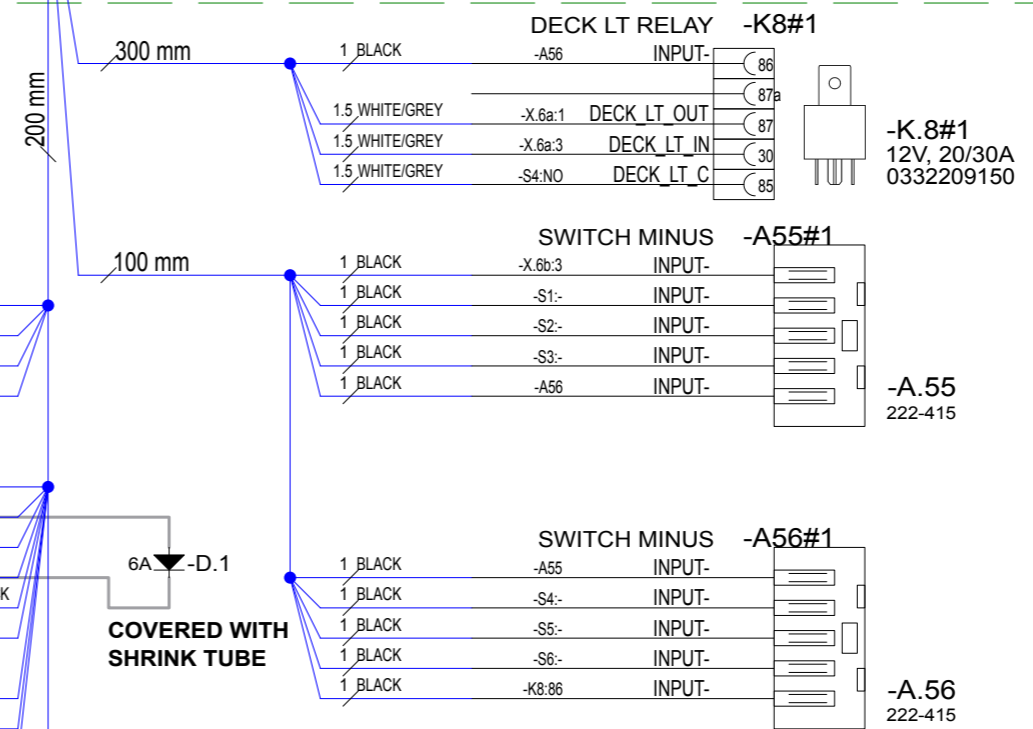
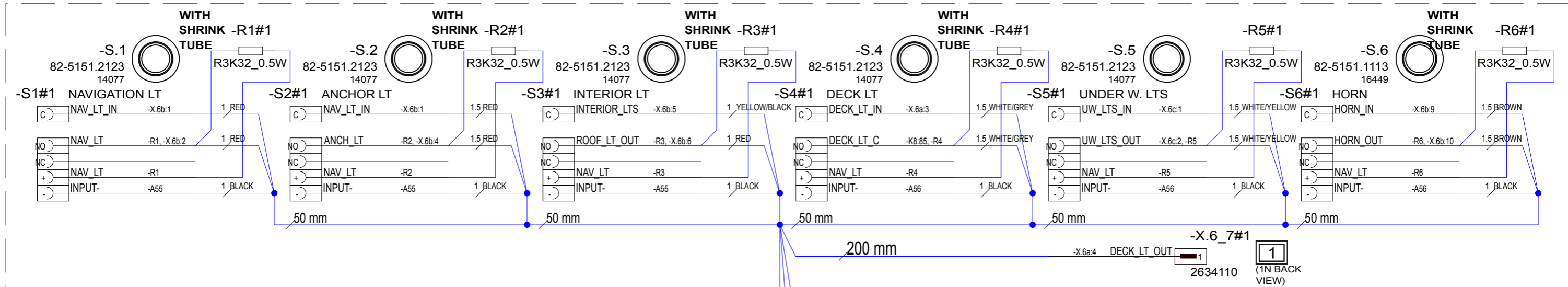
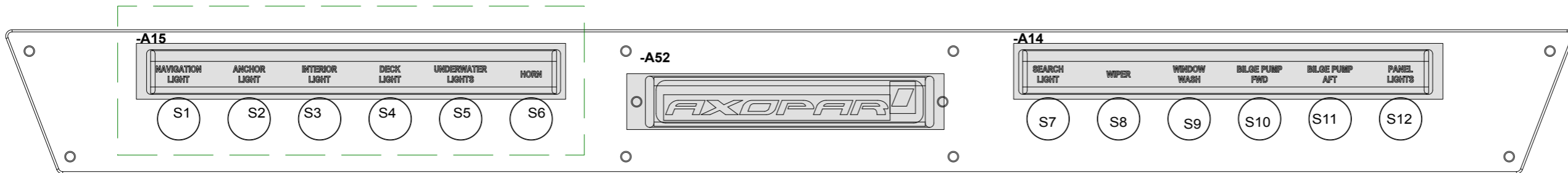
	Axopar		23875		23598		Project ID	
	Boat		Sub-product code		Product code		Title	
	28 MY18		BATTERY HARNESS		HL		26 / 42	
Boat model		2x BATT. 1x ENG.		Loc		Sheet		



9.11.2017	PN	C4: CHANGED ROOF CANVAS FUSE -F26 TO 20A AND WIRE SIZE TO 6MM2.	Date	29.6.2017
22.9.2017	VV	B2: FUSES RENAMED, REORGANIZED & ADDED; SUMP P. FUSE DD -> 88-SERIES	Drawing by	TuM
24.10.2017	PN	B3: FUSES RENAMED, REORGANIZED.	Sheet rev.	4
Date of modification	Modified by	Description	Project rev.	C

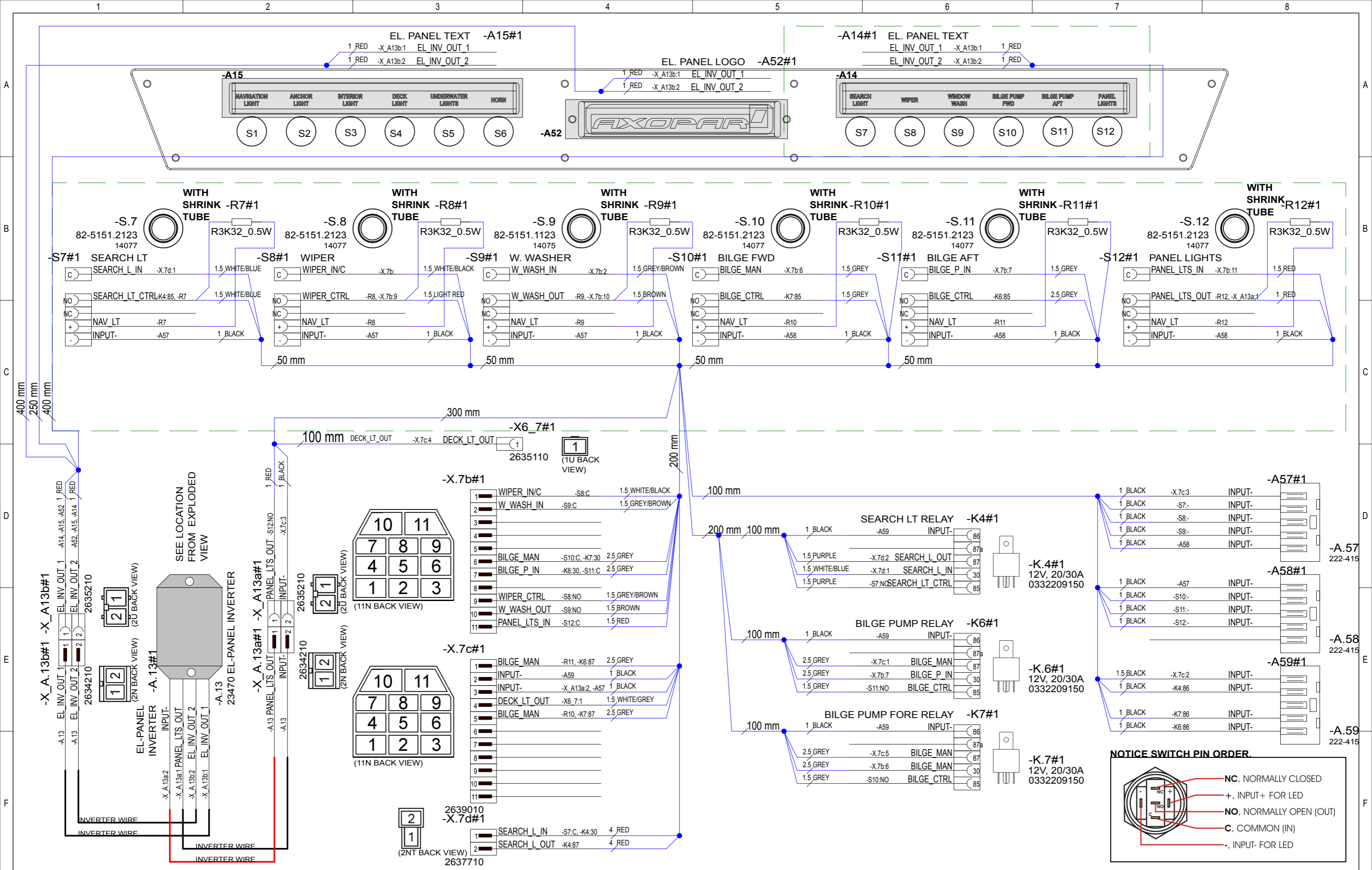


Axopar	23860	23600	Project ID
Boat	Sub-product code	Product code	
28 MY18	FUSE UNIT	HL	27 / 42
Boat model	Title	Loc	Sheet



9.11.2017	PN	C3: NOT MODIFIED.	Date	29.6.2017	Axopar	SEE EXP. VIEW	23601	Project ID
22.9.2017	VV	B2: WIPER CTRL. CHANGED TO ROCA AND WIPER RELAY REMOVED.	Drawing by	TuM	Boat	Sub-product code	Product code	
24.10.2017	PN	B3: WIPER CTRL. CHANGED TO RELAY AND ROCA REMOVED.	Sheet rev.	3	28 MY18	SWITCH PANEL	HL	29 / 42
Date of modification	Modified by	Description	Project rev.	C	Boat model	Title	Loc	Sheet

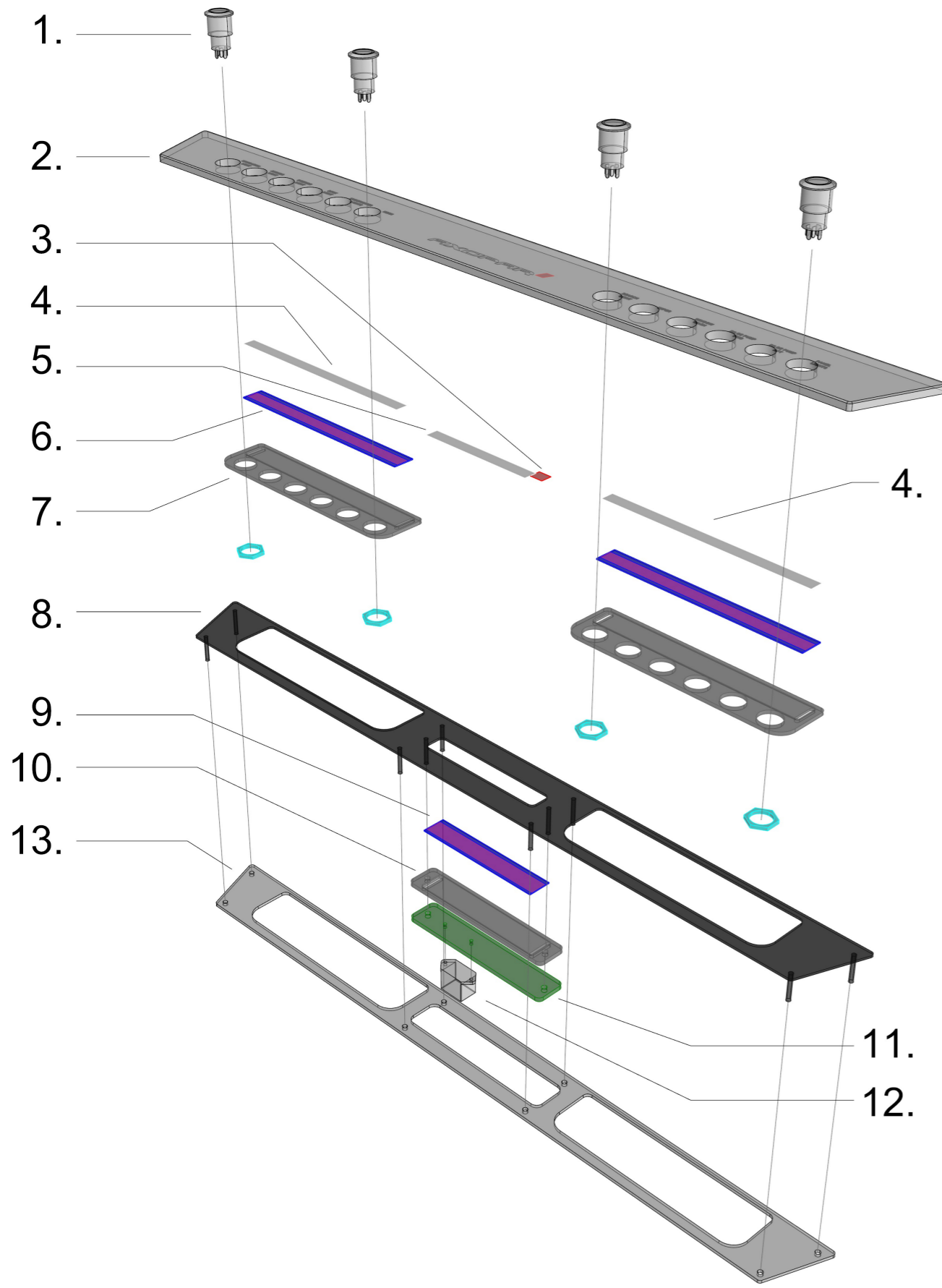




9.11.2017	PN	C3: NOT MODIFIED.	Date	29.6.2017
22.9.2017	VV	B2: WIPER CTRL. CHANGED TO ROCA AND WIPER RELAY REMOVED.	Drawing by	TuM
24.10.2017	PN	B3: WIPER CTRL. CHANGED TO RELAY AND ROCA REMOVED.	Sheet rev.	3
Date of modification	Modified by	Description	Project rev.	C



Axopar	SEE EXP. VIEW	23601	Project ID
Boat	Sub-product code	Product code	
28 MY18	SWITCH PANEL	HL	30 / 42
Boat model	Title	Loc	



23601_AXOPAR_28_SWITCH_PANEL

- 1. 12PCS HALO SWITCH (AS IN DIAGRAM)
- 2. 1PCS 23065_AXOPAR_28_GLASS_SWITCH_PANEL_2018_V1
- 3. 1PCS 23723_AXOPAR_28_SWITCH_PANEL_LOGO_RED_STICKER (PLACE BEHIND THE LOGO AREA IN 23065)
- 4. 2PCS 23724_AXOPAR_28_SWITCH_PANEL_TEXT_WHITE_STICKER (PLACE BEHIND THE TEXT AREAS IN 23065)
- 5. 1PCS 23722_AXOPAR_28_SWITCH_PANEL_LOGO_WHITE_STICKER (PLACE BEHIND THE LOGO AREA IN 23065)

6. 2PCS 23471_EL_STRIP_10mm_WHITE
 CUT 203mm LONG STRIP, PEEL CONTACTS FROM OTHER END FROM 13mm LENGHT.

BEND CONTACTS TO THE BACKSIDE OF 23515 COVER.
 SOLDER WIRES TO CONTACTS AND GLUE CONTACT POINT WITH HOTMELT GLUE TO BACKSIDE OF PANEL.

7. 2PCS 23515_AXOPAR_28_SWITCH_PANEL_HALO_LIGHT_COVER

8 1PCS 23178_AXOPAR_28_METAL_BACK_FRAME_2018
 ATTACH TO 23065 WITH BLACK MS-POLYMER GLUE

9. 1PCS 23472_EL_STRIP_15mm_WHITE
 CUT 130mm LONG STRIP, PEEL CONTACTS FROM OTHER END FROM 13mm LENGHT.

BEND CONTACTS TO THE BACKSIDE OF 23516 COVER.
 SOLDER WIRES TO CONTACTS AND GLUE CONTACT POINT WITH HOTMELT GLUE TO BACKSIDE OF PANEL.

10. 1PCS 23516_AXOPAR_28_SWITCH_PANEL_LOGO_LIGHT_COVER
 ATTACH TO 23178 WITH
 2PCS M4 SPRING WASHER A4
 4PCS M4 BOLT A4

11. 1pcs 23878_AXOPAR_28_SWITCH_PANEL_INVERTER_BRACKET
 ATTACH BEHIND TO 23516 WITH
 2PCS M4 SPRING WASHER A4
 2PCS M4 BOLT A4

12. 1PCS INVERTER (AS IN DIAGRAM)
 ATTACH TO 23878 WITH
 2PCS M3 X 10 BH HEX BOLT A4
 2PCS M3 SPRING WASHER A4
 2PCS M3 BOLT A4

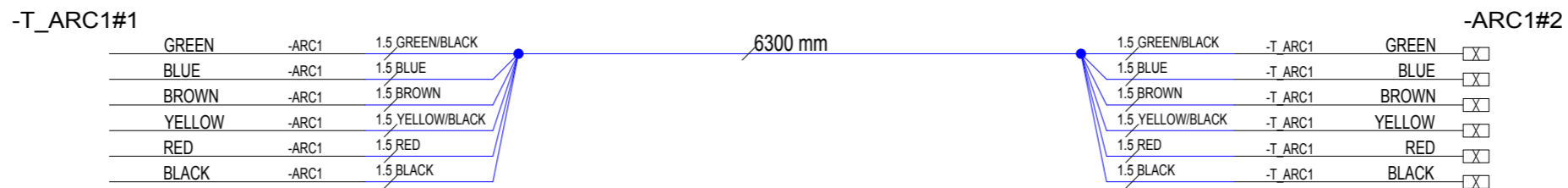
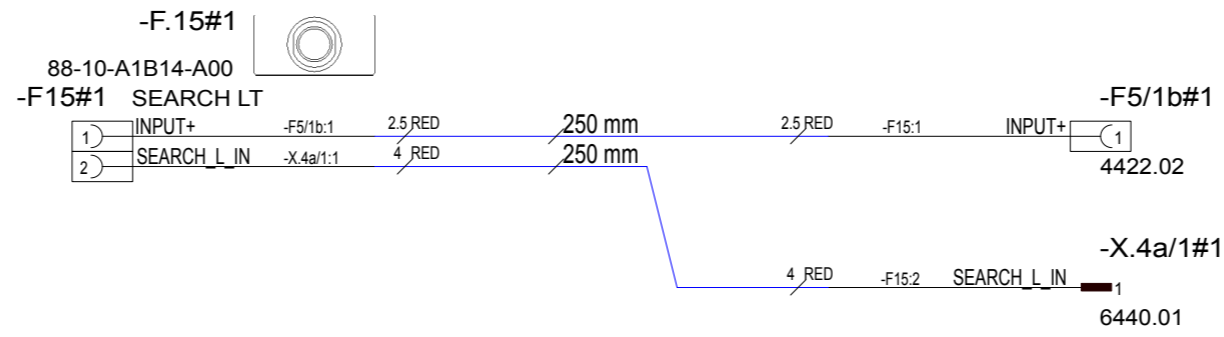
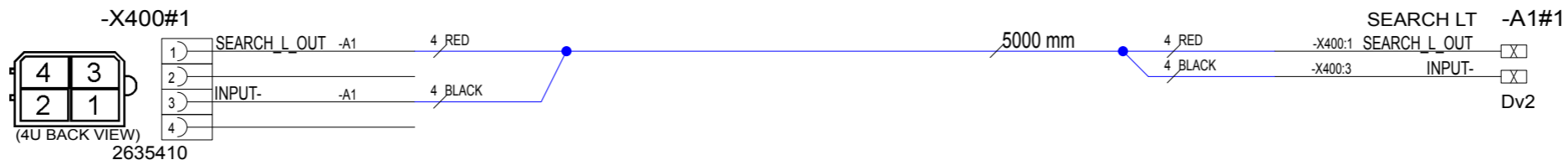
13. 1PCS 23718_AXOPAR_28_SWITCH_PANEL_GASKET
 GLUE WITH 2-SIDED TAPE TO THE BACKSIDE OF 23178

JS 06.07.2017

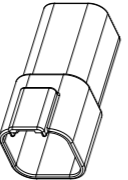
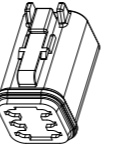
9.11.2017	PN	C3: NOT MODIFIED.	Date	6.7.2017
22.9.2017	VV	B2: WIPER CTRL. CHANGED TO ROCA AND WIPER RELAY REMOVED.	Drawing by	TuM
24.10.2017	PN	B3: WIPER CTRL. CHANGED TO RELAY AND ROCA REMOVED.	Sheet rev.	3
Date of modification	Modified by	Description	Project rev.	C




Axopar	SEE EXP. VIEW	23601	Project ID
Boat	Sub-product code	Product code	
28 MY18	SWITCH PANEL	HL	31/ 42 Sheet
Boat model	Title	Loc	

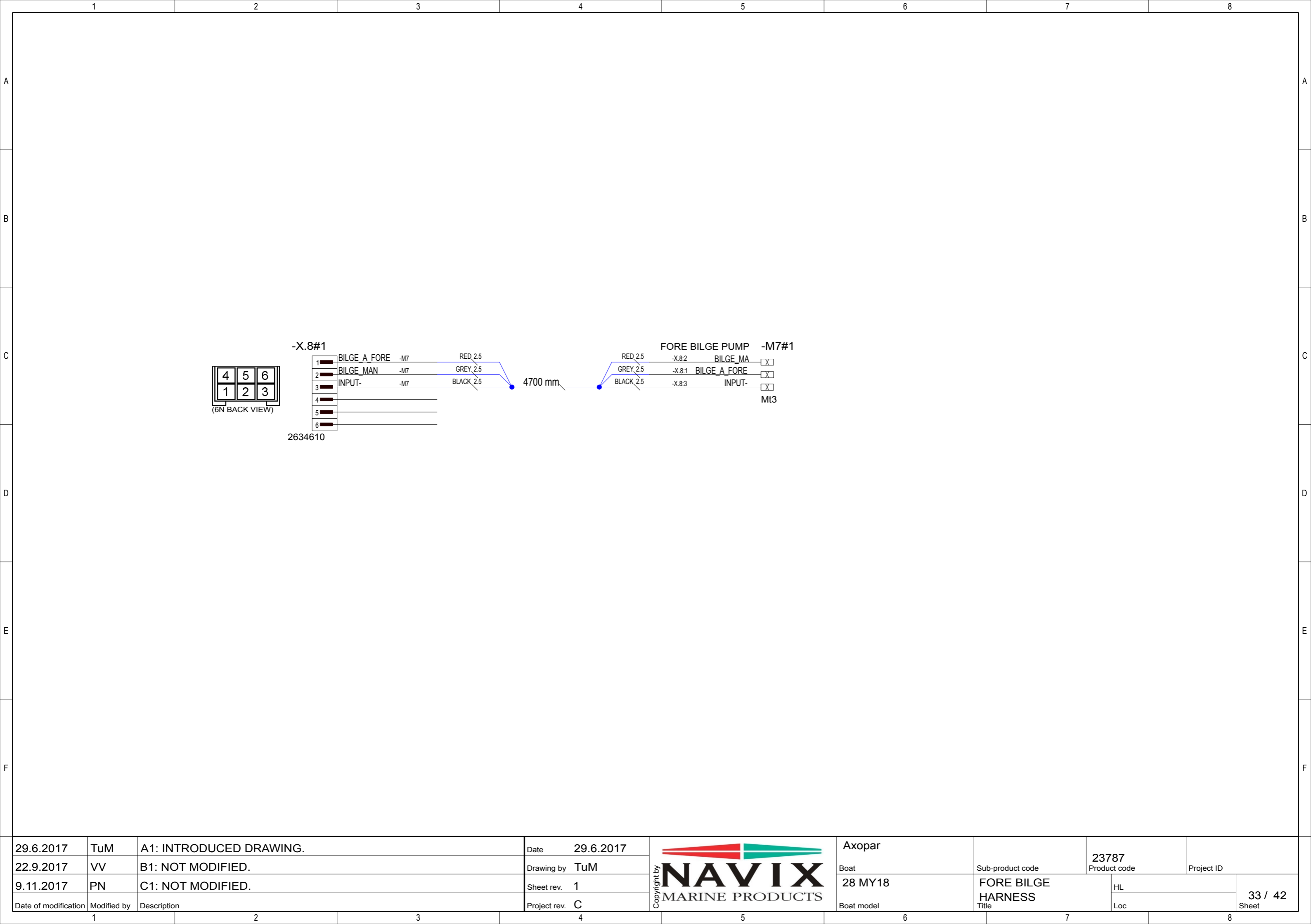


INCLUDED
DELIVER CONNECTORS SEPARATELY


-X405 DT04-6P-E004 14044		-X406 DT06-6S-P012 14046	
+		+	
W6P 14045		W6S-P012 14047	

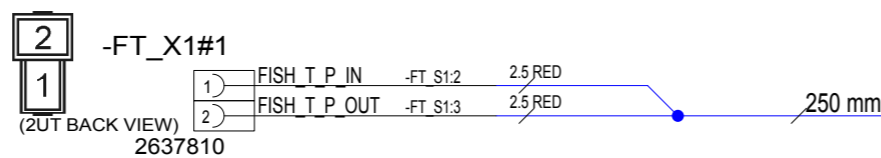
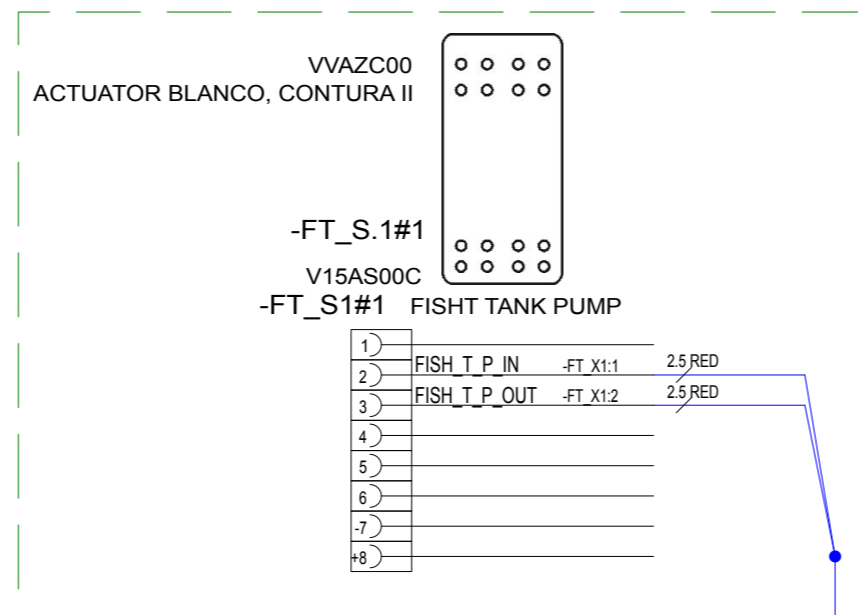
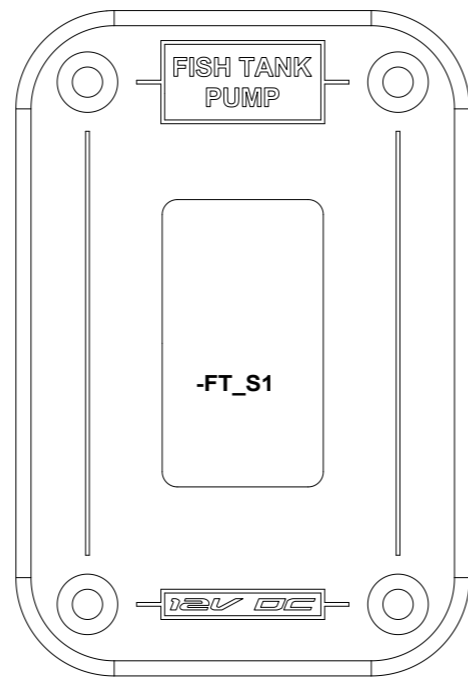
29.6.2017	TuM	A1: INTRODUCED DRAWING.	Date	29.6.2017
22.9.2017	VV	B2: NAME CHANGED.	Drawing by	TuM
9.11.2017	PN	C3: ADDED -X405, -X406 AND SEARCH LT CONTROL WIRES.	Sheet rev.	3
Date of modification	Modified by	Description	Project rev.	C

 Copyright by	Axopar		23786		Project ID
	Boat	Sub-product code	Product code		
	28 Cabin MY18	SEARCH LT/ ROOF HARNESS	HL		32 / 42
	Boat model	Title	Loc		Sheet




29.6.2017	TuM	A1: INTRODUCED DRAWING.	Date	29.6.2017
22.9.2017	VV	B1: NOT MODIFIED.	Drawing by	TuM
9.11.2017	PN	C1: NOT MODIFIED.	Sheet rev.	1
Date of modification	Modified by	Description	Project rev.	C

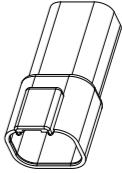
 Copyright by NAVIX MARINE PRODUCTS	Axopar		23787	
	Boat	Sub-product code	Product code	Project ID
	28 MY18	FORE BILGE HARNESS	HL	33 / 42
	Boat model	Title	Loc	Sheet



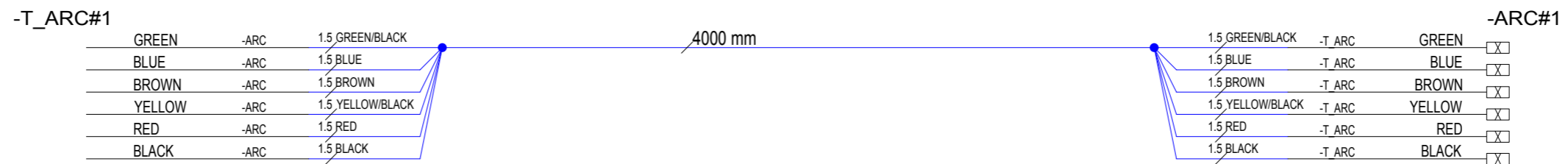
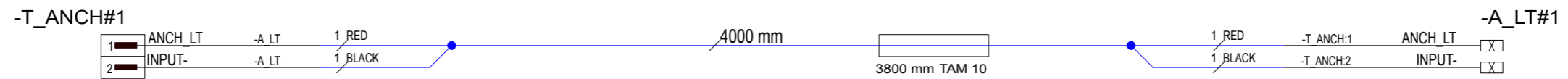
30.6.2017	TuM	A1: INTRODUCED DRAWING.	Date	30.6.2017
22.9.2017	VV	B1: NOT MODIFIED.	Drawing by	TuM
9.11.2017	PN	C1: NOT MODIFIED.	Sheet rev.	1
Date of modification	Modified by	Description	Project rev.	C

		Axopar		23863		23802		Project ID	
		Boat	28 MY18	Sub-product code	FISH TANK PUMP	HL	34 / 42		
Boat model		28 MY18		Title		Loc		Sheet	

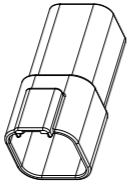
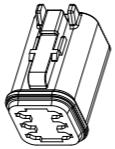
INCLUDED
DELIVER CONNECTOR SEPARATELY



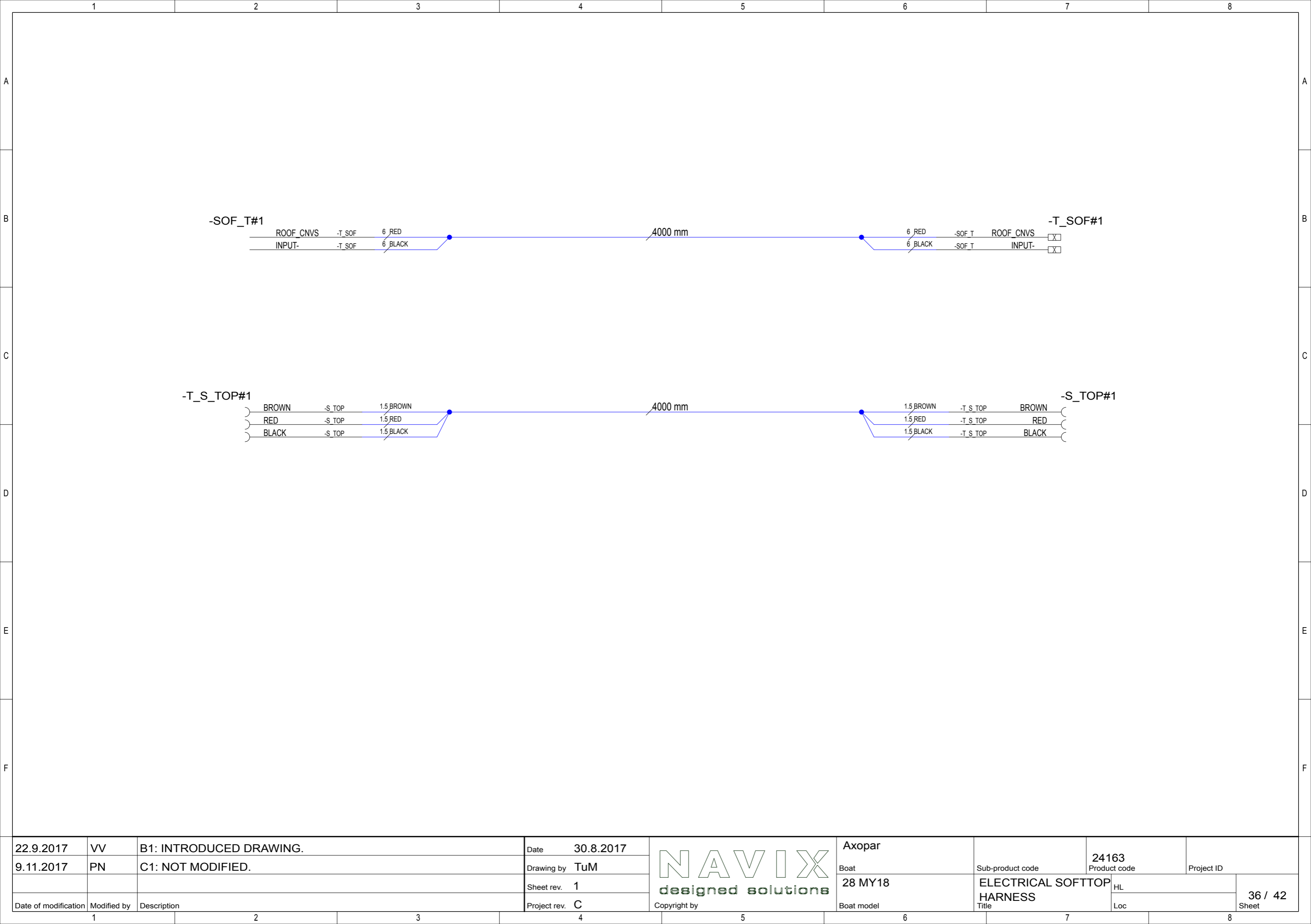
-X402
DT044P-E004
14051
WEDGELOCK : W4P



INCLUDED
DELIVER CONNECTORS SEPARATELY

-X403 DT04-6P-E004 14044		-X404 DT06-6S-P012 14046	
+		+	
W6P 14045		W6S-P012 14047	

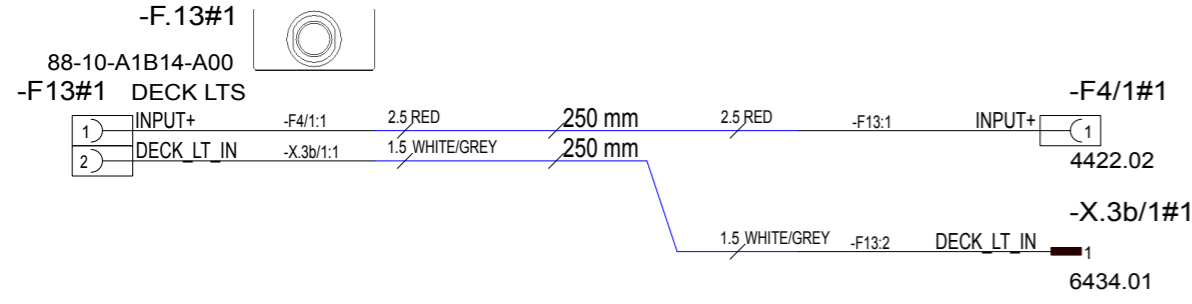
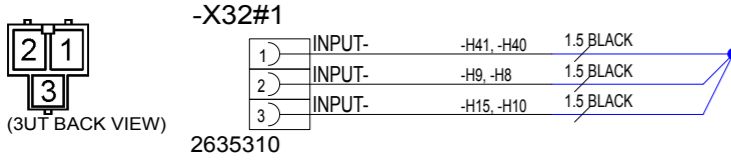
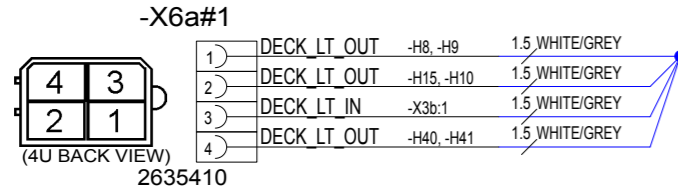
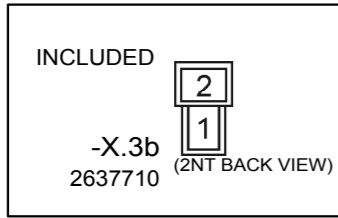
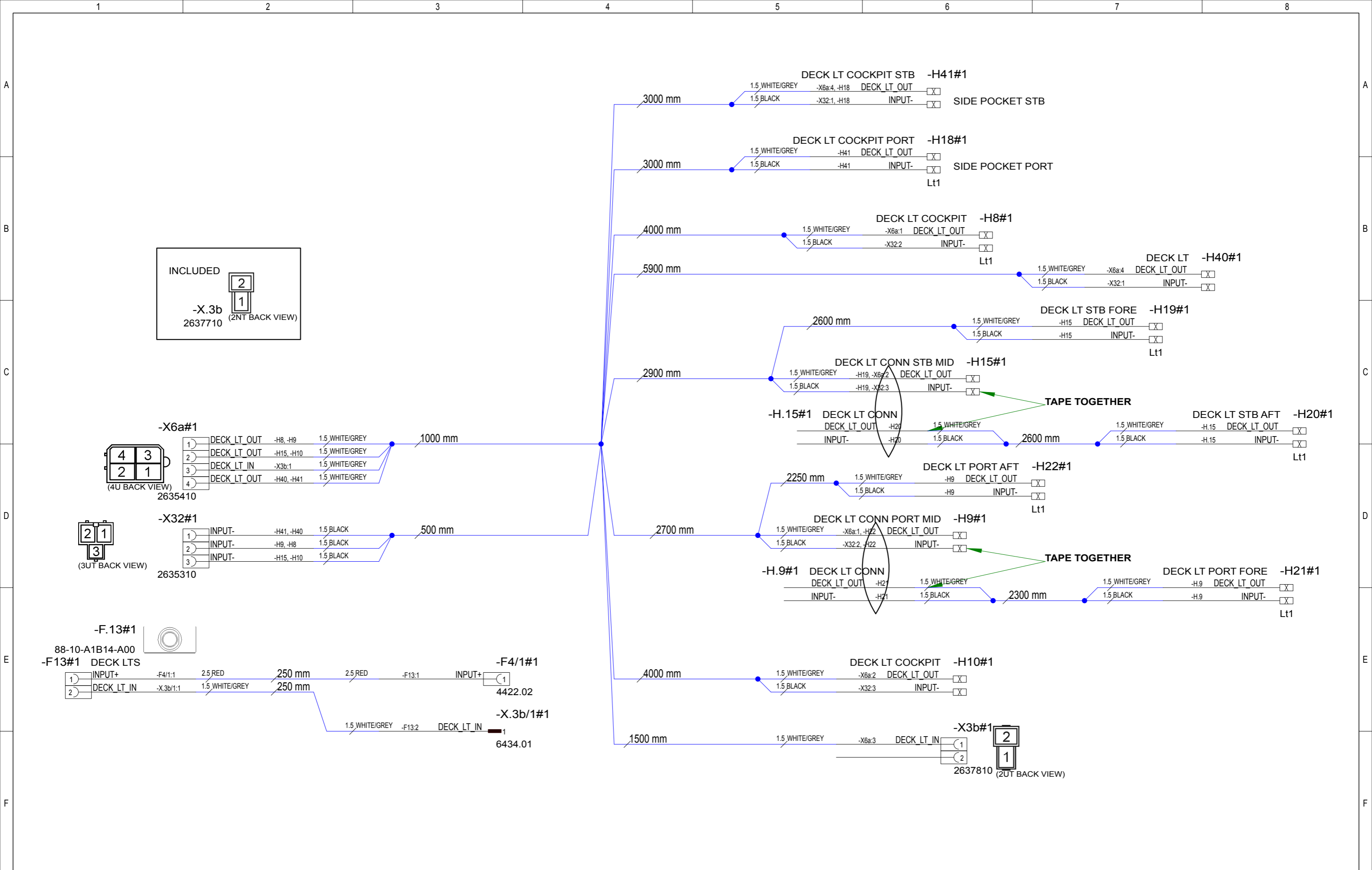
22.9.2017	VV	B1: INTRODUCED DRAWING.	Date	30.8.2017	NAVIX designed solutions	Axopar	24162	Project ID	
9.11.2017	PN	C2: ADDED -X403 AND -X404.	Drawing by	TuM		Boat			28 MY18
Date of modification	Modified by	Description	Sheet rev.	2	Copyright by	Boat model	TARGA ARC OPEN HARNESS	HL	35 / 42 Sheet
1	2	3	Project rev.	C			Title	Loc	



22.9.2017	VV	B1: INTRODUCED DRAWING.	Date	30.8.2017
9.11.2017	PN	C1: NOT MODIFIED.	Drawing by	TuM
			Sheet rev.	1
Date of modification	Modified by	Description	Project rev.	C



Axopar			24163	
Boat	28 MY18	Sub-product code	Product code	Project ID
Boat model		ELECTRICAL SOFTTOP HARNESS	HL	36 / 42
		Title	Loc	Sheet

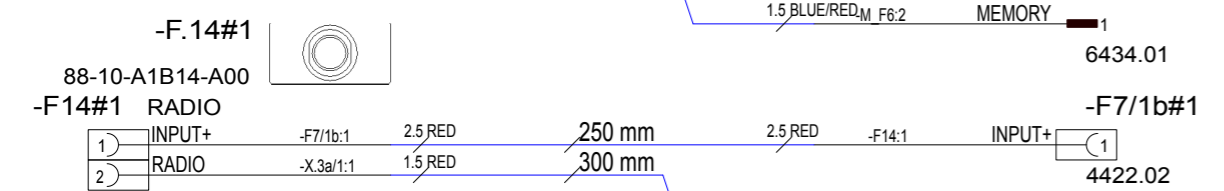
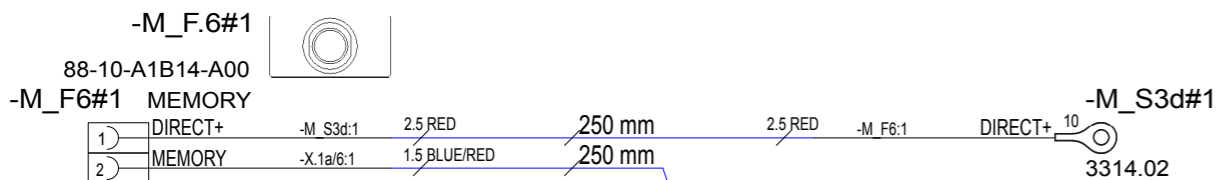
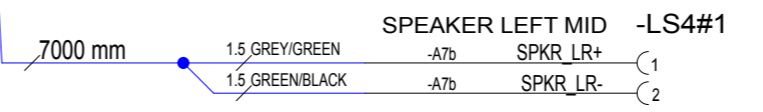
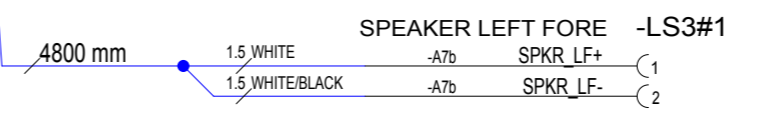
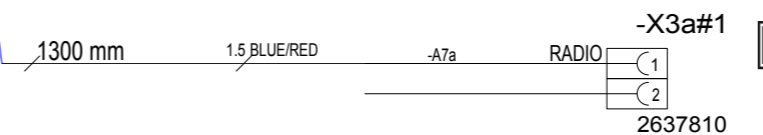
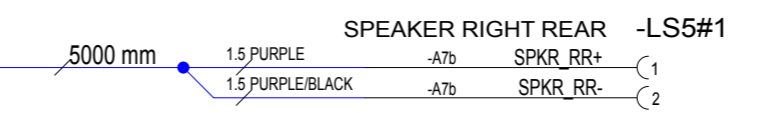
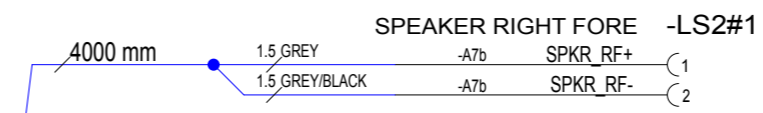
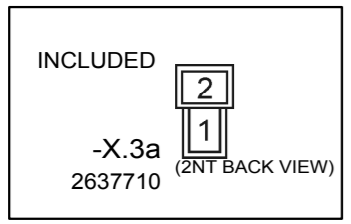
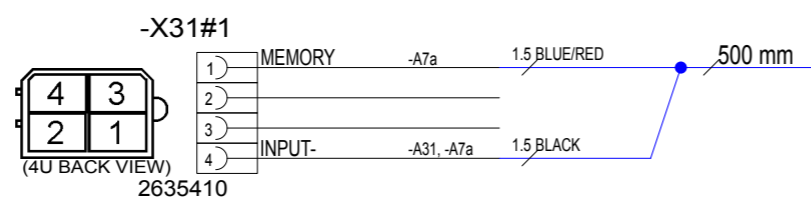
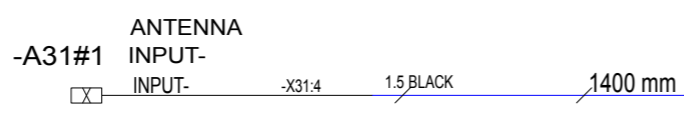
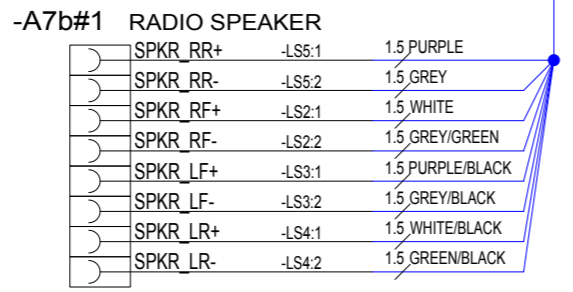
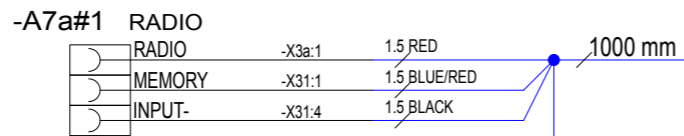


22.9.2017	VV	B1: INTRODUCED DRAWING.	Date	29.8.2017
9.11.2017	PN	C2: RENAMED H18, H41 TO DECK LT COCKPIT, CHANGED MEASUREMENTS.	Drawing by	TuM
			Sheet rev.	2
Date of modification	Modified by	Description	Project rev.	C

NAVIX
designed solutions

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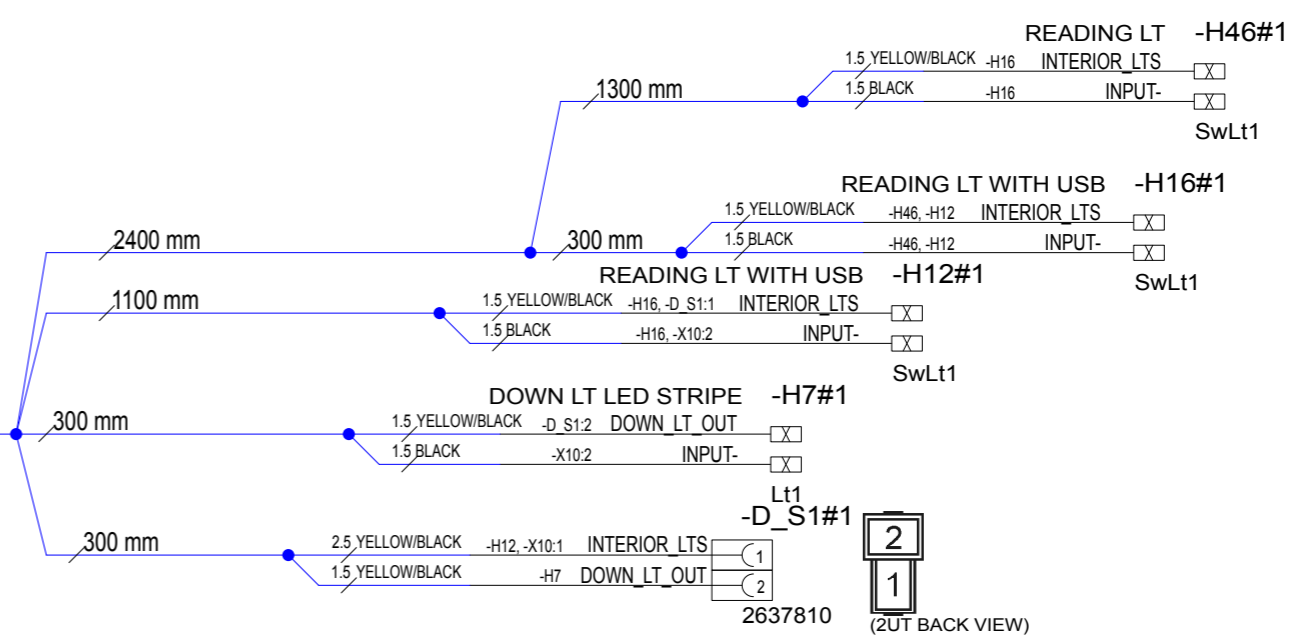
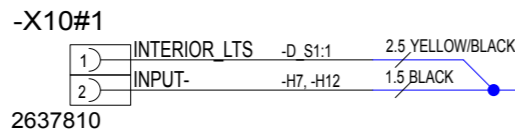
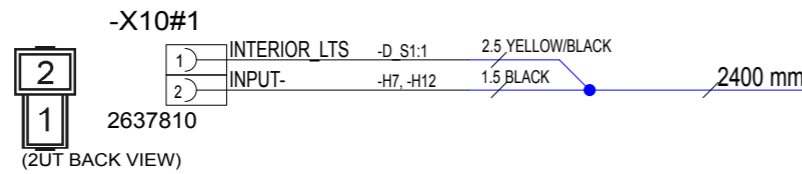
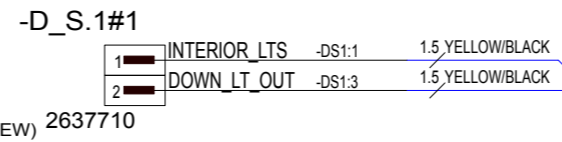
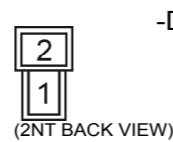
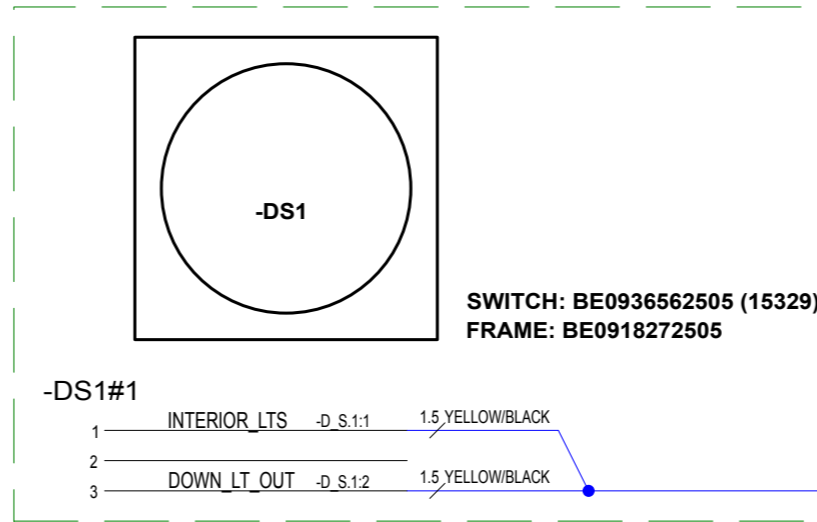
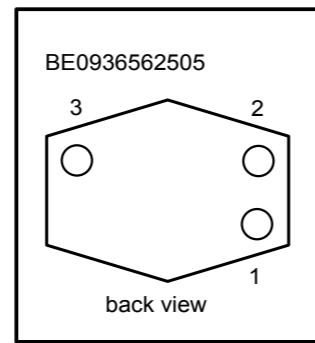
Axopar	24165	Product code	Project ID
Boat	28 MY18	Sub-product code	DECK LT HARNESS
Boat model		Title	
		HL	37 / 42
		Loc	Sheet



Date	22.9.2017	Author	VV	Description	B1: INTRODUCED DRAWING.
Date	9.11.2017	Author	PN	Description	C1: NOT MODIFIED.
Date of modification		Modified by		Description	
Date	29.6.2017	Drawing by	TuM	Sheet rev.	1
		Project rev.	C		

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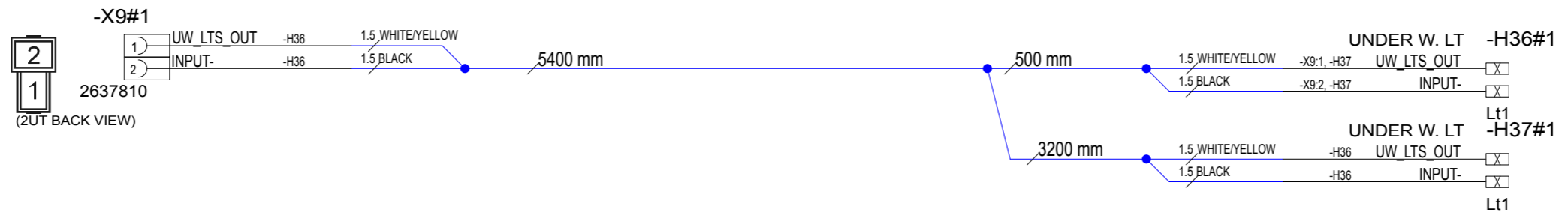
Company	Axopar	Boat	28 Cabin MY18	Sub-product code	RADIO HARNESS	Product code	24166	Project ID	
Boat model		Title		HL		Loc		38 / 42	Sheet



22.9.2017	VV	B1: INTRODUCED DRAWING.	Date	29.6.2017
9.11.2017	PN	C2: ADDED READING LT, CHANGED MEASUREMENTS.	Drawing by	TuM
			Sheet rev.	2
			Project rev.	C
Date of modification	Modified by	Description		



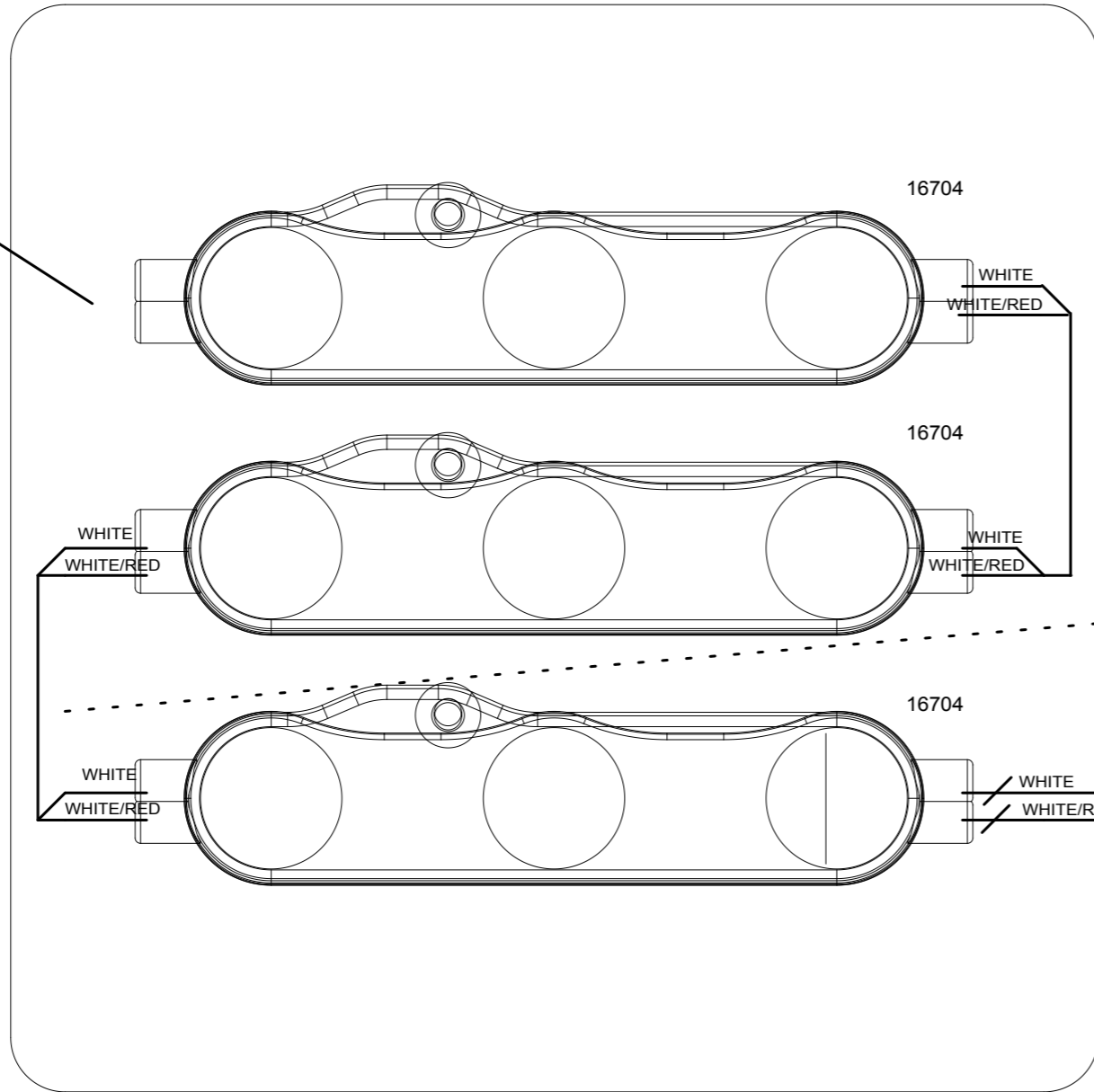
Axopar	24173	Project ID	
Boat	28 MY18	AFT CABIN HARNESS	HL
Boat model		Title	Loc
			39 / 42 Sheet



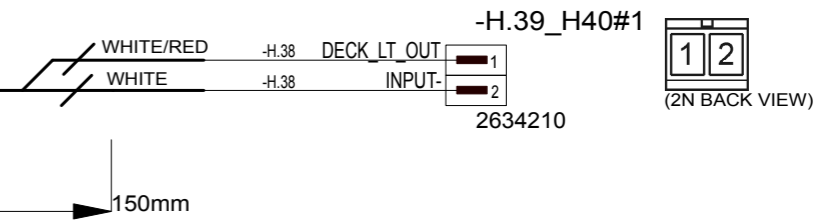
22.9.2017	VV	B1: INTRODUCED DRAWING.	Date	29.8.2017
9.11.2017	PN	C2: CHANGED UNDER W.LT. WIRE MEASUREMENT.	Drawing by	TuM
			Sheet rev.	2
Date of modification	Modified by	Description	Project rev.	C

		Axopar		24174		Project ID	
		Boat	Sub-product code	Product code		Title	
28 MY18		UW. LT. HARNESS		HL		40 / 42	
Boat model		Title		Loc		Sheet	

CUT EXCESS WIRE AWAY FROM THIS END



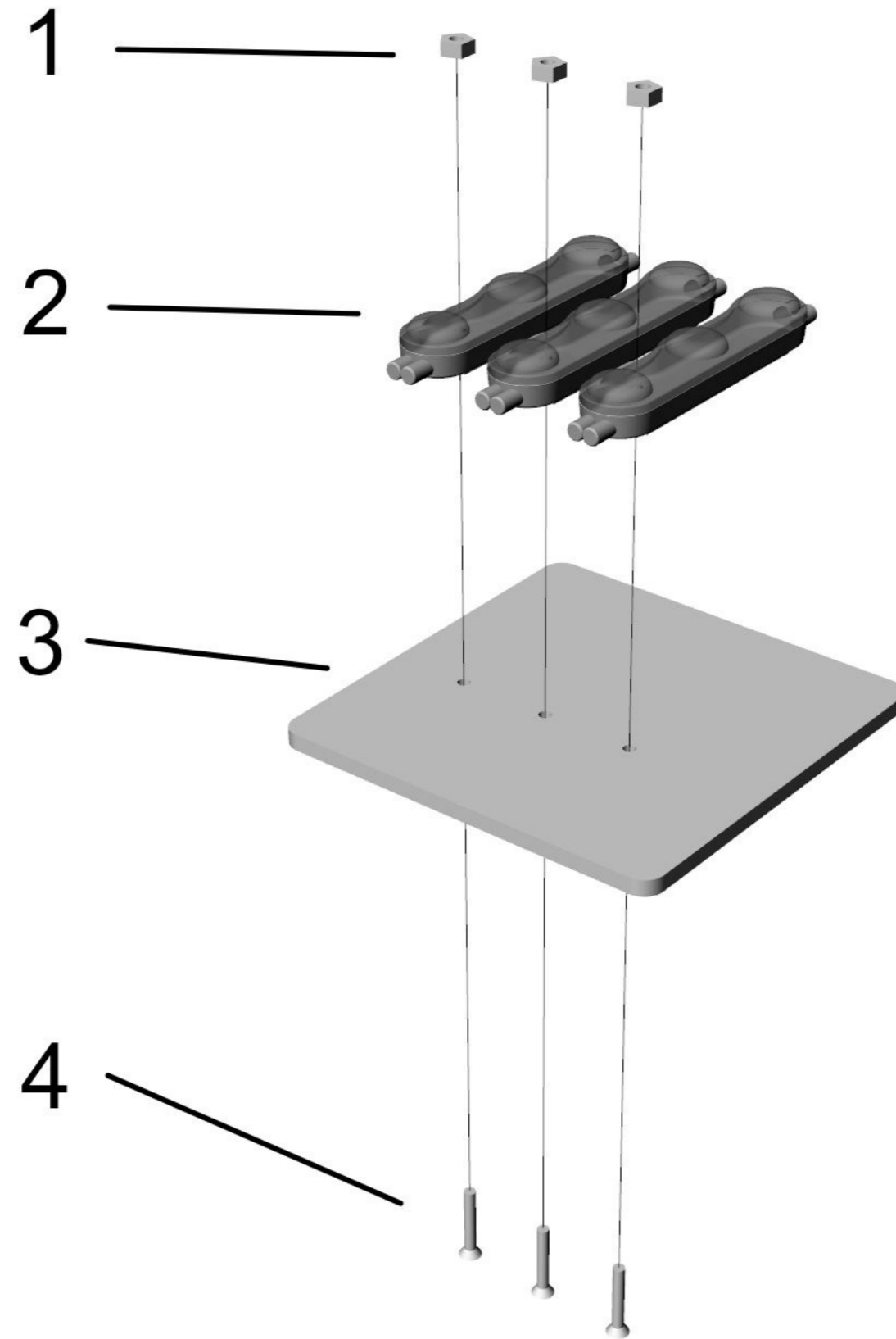
WIRING INCLUDED IN LED MODULE 16704



31.1.2018	PF	C1: INTRODUCED DRAWING	Date	31.1.2018
			Drawing by	PF
			Sheet rev.	1
Date of modification	Modified by	Description	Project rev.	C



Axopar	25779	24398	
Boat	Sub-product code	Product code	Project ID
28 MY18	CABIN LOGO	HL	41/ 42
Boat model	ILLUMINATION UNIT	Loc	Sheet




24398_AXOPAR_28_CABIN_LOGO_ILLUMINATION_UNIT_(WOC)_ASSEMBLY_V2

1. 3x M3 NUT A4

2. 3x 16704 TL3-W65K LED-MODUULI VALK

3. 25779_AXOPAR_28_CABIN_LOGO_ILLUMINATION_UNIT_PLATE_(WOC)

4. 3x M3 X 20 BOLT A4

31.1.2018		C1: INTRODUCED DRAWING	Date 31.1.2018		Axopar	25779	24398	Project ID
			Drawing by PF		Boat	Sub-product code	Product code	
			Sheet rev. 1		Copyright by	28 MY18	CABIN LOGO ILLUMINATION UNIT	HL
Date of modification	Modified by	Description	Project rev. C		Boat model	Title	Loc	Sheet

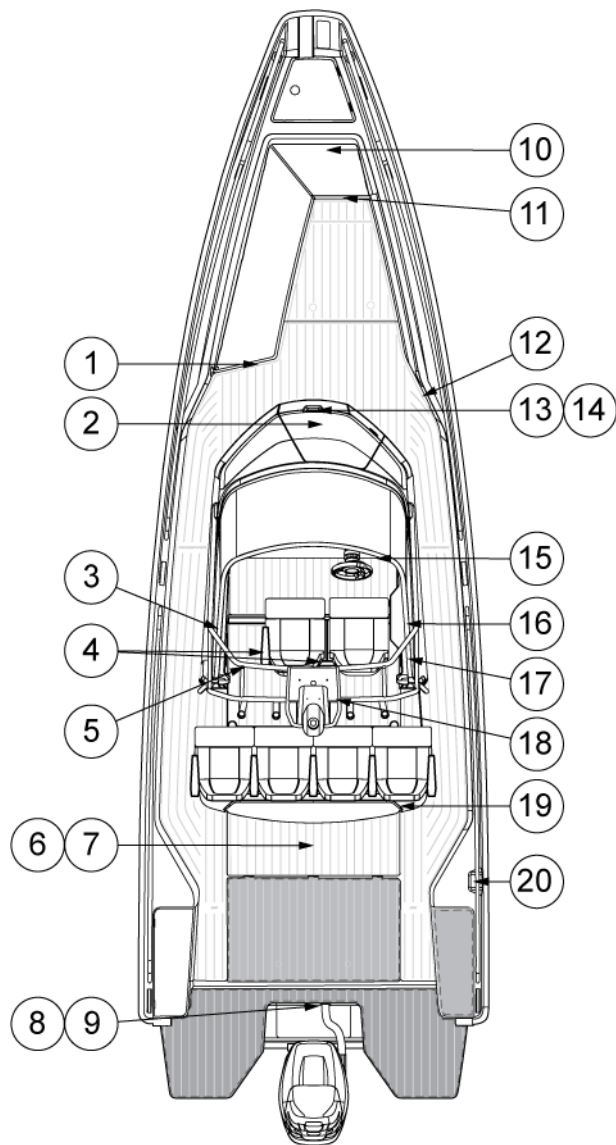
12. Appendix IV: Warning label placement

Table of Contents

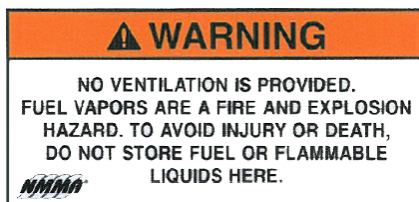
1. Port fwd storage.....	4
2. Cabin roof inner.....	5
3. Main cabin port door.....	6
4. Front seats.....	7
5. CO2 sensor - port - main cabin.....	8
6. Aft cabin hatch and skylights.....	9
7. Switch panel in aft cabin.....	10
8. Ski pole.....	11
9. Aft deck folding seat.....	12
10. Bow thruster option.....	13
11. Shore power - fwd locker.....	14
12. STB above speaker.....	15
13. Switch panel in toilet compartment.....	16
14. Panel in toilet compartment.....	17
15. Dashboard panel.....	18
16. Main cabin, STBD under cabin window.....	21
17. Fire extinguisher.....	22
18. Main cabin, PS - main switch.....	23
19. Wetbar lid - grill option.....	25
20. Deck STBD, fuel inlet.....	26

28 Warning label positions

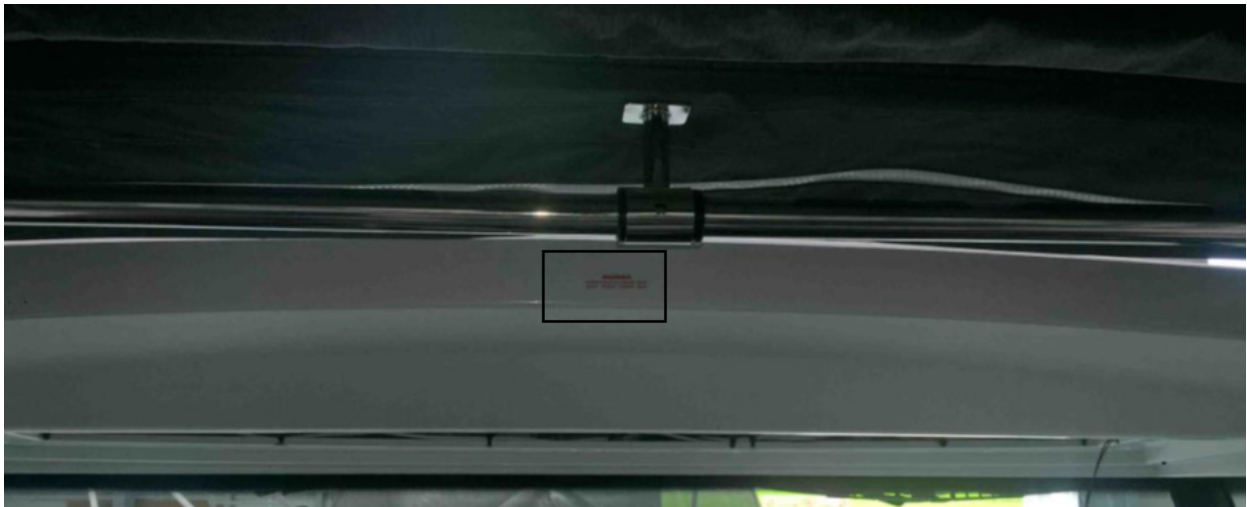
This document presents the positions and the pictures of the warning labels that are placed on the boat. The position numbers in the picture below correspond the numbering of the chapters to guide you in finding the correct warning label.



1. Port fwd storage



2. Cabin roof inner



WARNING
WATERTIGHT CLOSURE KEEP
SHUT WHEN UNDER WAY

3. Main cabin port door



4. Front seats



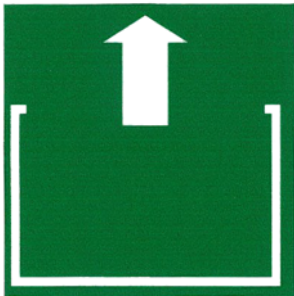
⚠ WARNING
AVOID SERIOUS INJURY OR DEATH. UNEXPECTED SEAT ROTATION MAY CAUSE EJECTION OF OCCUPANT.
LOCK SWIVEL WHEN SPEED EXCEEDS 5 MPH.

5. CO2 sensor - port - main cabin



⚠ WARNING	
	<p>CARBON MONOXIDE (CO) CAN CAUSE BRAIN DAMAGE OR DEATH. CARBON MONOXIDE CAN BE PRESENT IN THE CABIN. SIGNS OF CARBON MONOXIDE POISONING INCLUDE NAUSEA, HEADACHE, DIZZINESS, DROWSINESS, AND LACK OF CONSCIOUSNESS. GET FRESH AIR IF ANYONE SHOWS SIGNS OF CARBON MONOXIDE POISONING. GET FRESH AIR IF CARBON MONOXIDE DETECTOR ALARM SOUNDS. CARBON MONOXIDE DETECTOR MUST BE FUNCTIONING AT ALL TIMES.</p>

6. Aft cabin hatch and skylights



7. Switch panel in aft cabin



⚠ DANGER

LEAVING WINDOW OPEN COULD
INDUCE EXHAUST FUMES
INTO CABIN RESULTING IN SEVERE
PERSONAL INJURY OR DEATH.

⚠ CAUTION

IF SWITCH IS TURNED OFF
WHILE ENGINE IS RUNNING
ALTERNATOR WILL BE DAMAGED.



8. Ski pole



⚠ WARNING

SKI POLE MUST BE SECURED WHEN IN USE. TOW ROPE MAY BACKLASH INTO COCKPIT. DO NOT USE TO TOW ITEMS SUCH AS TUBES OR OTHER TOWABLES. MAX TOW LOAD CAPACITY IS 130 KG.

9. Aft deck folding seat



10. Bow thruster option



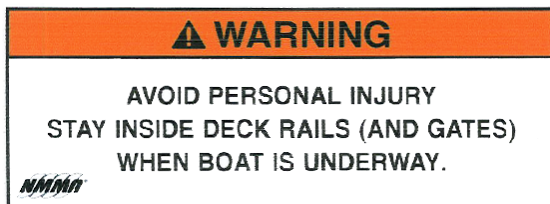
⚠ WARNING

Installation of Maintenance free AGM batteries are only allowed in this area.

11. Shore power - fwd locker



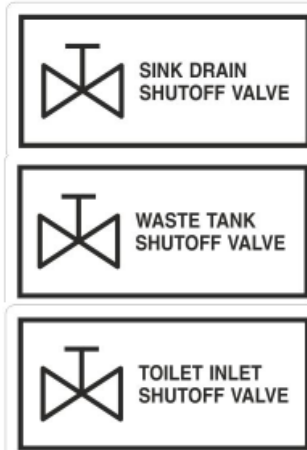
12. STB above speaker



13. Switch panel in toilet compartment



14. Panel in toilet compartment



15. Dashboard panel



BOATMAN'S CHECK LIST

For maximum enjoyment and safety, check each of these items BEFORE you start your engine:

- ✓ DRAIN PLUG (Securely in place?)
- ✓ LIFE-SAVING DEVICES (One for every person on board?)
- ✓ STEERING SYSTEM (Working smoothly and properly?)
- ✓ FUEL SYSTEM (Adequate fuel? Leaks? Fumes?)
- ✓ BATTERY (Fully charged? Cable terminals clean and tight?)
- ✓ ENGINE (In neutral?)
- ✓ CAPACITY PLATE (Are you overloaded or overpowered?)
- ✓ WEATHER CONDITIONS (Safe to go out?)
- ✓ ELECTRICAL EQUIPMENT (Lights, horn, pump, etc.?)
- ✓ EMERGENCY GEAR (Fire extinguisher, bailer, paddle, anchor & line, signaling device, tool kit, etc.?)



© NMMA 1981

▲ WARNING



CARBON MONOXIDE (CO) CAN CAUSE BRAIN DAMAGE OR DEATH. ENGINE AND GENERATOR EXHAUST CONTAINS ODORLESS AND COLORLESS CARBON MONOXIDE GAS. SIGNS OF CARBON MONOXIDE POISONING INCLUDE NAUSEA, HEADACHE, DIZZINESS, DROWSINESS, AND LACK OF CONSCIOUSNESS. GET FRESH AIR IF ANYONE SHOWS SIGNS OF CARBON MONOXIDE POISONING. SEE OWNER'S MANUAL FOR INFORMATION REGARDING CARBON MONOXIDE POISONING.

▲ WARNING

ROTATING PROPELLER MAY CAUSE SERIOUS INJURY OR DEATH. SHUT OFF ENGINE WHEN NEAR PERSONS IN THE WATER.



▲ WARNING

ATTACH SHUT DOWN SWITCH LANYARD TO QUALIFIED OPERATOR WHILE ENGINE IS IN OPERATION. UNCONTROLLED BOAT MAY CAUSE INJURY OR DEATH. READ OWNERS MANUAL BEFORE USE.

▲ WARNING

RUNNING BOAT WITH DOOR OPEN COULD INDUCE EXHAUST FUMES INTO CABIN. SEE OWNERS MANUAL FOR INSTRUCTIONS CONCERNING CARBON MONOXIDE.

⚠ WARNING

QUALIFIED OPERATOR TO BE IN CONTROL AT ALL TIMES. OPERATION BY AN UNQUALIFIED OPERATOR CAN CAUSE LOSS OF CONTROL. THIS MAY RESULT IN SEVERE INJURY, DEATH, OR PROPERTY DAMAGE. BOAT STABILITY AND HANDLING WILL CHANGE WITH WEIGHT DISTRIBUTION.
READ OWNERS MANUAL BEFORE USE.

⚠ WARNING

VISIBILITY FROM THE SEATED POSITION AT THIS HELM STATION IS LIMITED. AVOID SERIOUS INJURY OR DEATH FROM COLLISIONS. OPERATION FROM A STANDING POSITION MAY BE NECESSARY TO MAINTAIN LOOKOUT AS REQUIRED BY RULES OF THE ROAD. READ OWNERS MANUAL.

⚠ WARNING




USE CAUTION WITH SKIER IN TOW AS TOW ROPE MAY BACKSPASH INTO COCKPIT WHEN RELEASED.

16. Main cabin, STBD under cabin window



LIQUIDS HERE. IT IS ILLEGAL FOR ANY VESSEL TO DUMP PLASTIC TRASH ANYWHERE IN THE OCEAN OR NAVIGABLE WATERS OF THE UNITED STATES. ANNEX V OF THE MARPOL TREATY IS AN

INTERNATIONAL LAW FOR A CLEANER, SAFER MARINE ENVIRONMENT. VIOLATION OF THESE REQUIREMENTS MAY RESULT IN CIVIL PENALTY UP TO \$25,000, FINE AND IMPRISONMENT.

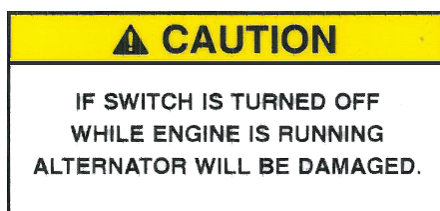
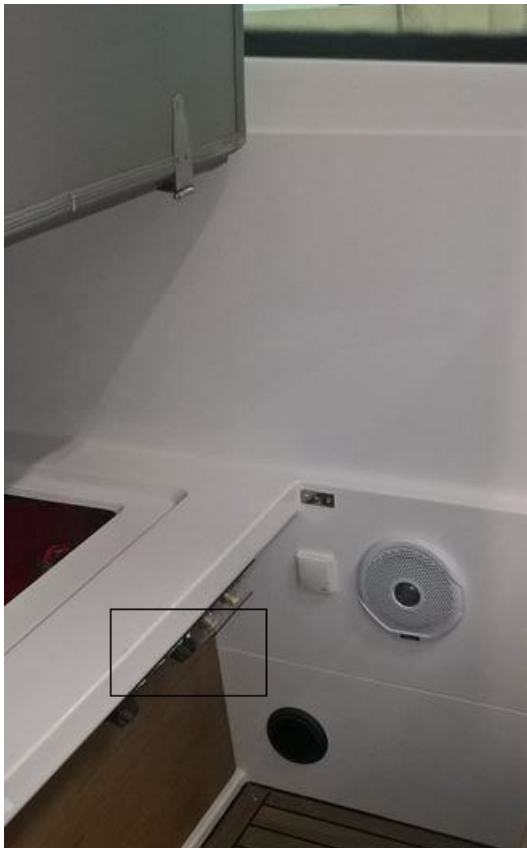
 U.S. LAKES, RIVERS, BAYS, SOUNDS AND 3 MILES FROM SHORE ILLEGAL TO DUMP PLASTIC & GARBAGE PAPER METAL RAGS CROCKERY GLASS DUNNAGE FOOD	 3 TO 12 MILES ILLEGAL TO DUMP PLASTIC DUNNAGE, LINING & PACKING MATERIALS THAT FLOAT, ALSO IF NOT GROUND TO LESS THAN ONE INCH PAPER CROCKERY RAGS METAL GLASS FOOD	 12 TO 25 MILES ILLEGAL TO DUMP PLASTIC DUNNAGE, LINING & PACKING MATERIALS THAT FLOAT	OUTSIDE 25 MILES ILLEGAL TO DUMP PLASTIC
--	--	---	--

State and local regulations may further restrict the disposal of garbage

17. Fire extinguisher



18. Main cabin, PS - main switch

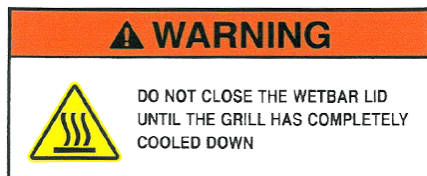




⚠ WARNING

Installation of Maintenance free AGM batteries are only allowed in this area.

19. Wetbar lid - grill option



20. Deck STBD, fuel inlet

