AXOPAR

USER'S MANUAL

AXOPAR 28 OPEN / OC / T-TOP


AXOPAR

CONTENTS

FOREWORD **2**

INTRODUCTION **4**
Symbols used 4
Identification 5
Manufacturer's plate 5
General layout Cabin 6
Work decks and swim ladders Cabin 7
General layout AC 8
Work decks and swim ladders AC 9
Technical data 10
Declaration of conformity 11
Toilet-, black water- and grey water systems 12
Electrical system 14
Bilge pump system 16
Deck and security equipment 17
Fire control and fuel-,
cooling-, and gas systems 18
LPG equipment 20
Installation of LPG equipment 21
Steering system 22
Environment 23

HANDLING OF THE BOAT **24**
Starting the engine 24
Before weighing anchor 24
Leaving the jetty 25
Stability and buoyancy 25
Driving the boat 25
Dead man's switch 26
Driving at high speed 26
Using the trim tabs 27
Driving in rough seas 28
Manoeuvring in narrow channels 28
Docking 28
Before anchoring 29
Anchoring, mooring and towing 29

AFTER RUNNING THE ENGINE(S) **30**
Maintenance 30
Wooden interior 30
Cover 31
Preventing frost damage 31
Lifting and transporting 32
Actions before winter storage 33
Action before launching 33

APPENDIXES **34**

FOREWORD

Congratulations on your new Axopar boat! We thank you for choosing this boat and wish you safe and enjoyable moments out on the waters.

In this user'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 your boat.

We advise you to read the manual carefully and familiarise yourself with your boat before you start to use it. Naturally 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 craft in these conditions. Design category C corresponds to wind and wave conditions that can vary from storm to strong winds. Category C also indicates a risk of exceptional swell and gust. Even if your boat is designed for such conditions, they are still very dangerous. Only a capable, fit and trained crew, using a well maintained craft, can satisfactorily operate in such 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 unauthorised modifications. Every change to the boat's centre of gravity (from highly mounted heavy equipment or a new engine type etc.) will significantly affect the stability, trim and performance of the boat.

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 licence or a separate authorization is required for driving the boat and in some countries special regulations might also be in force.

Always maintain your craft properly and make allowance for the deterioration that will occur over time and as a result of heavy use or misuse of the craft. Any craft, no matter how strong it may be, can be severe-

ly damaged if not used properly. Inappropriate use of this boat i.e. use which is not compatible with safe boating, is not allowed. It is always important to adjust the speed and direction of the craft to the sea conditions and your own boating experience.

If your boat is fitted with a life raft, carefully read its operating manual. On-board, the craft should have the appropriate safety equipment according to the type of craft, weather conditions, etc. This equipment is compulsory in some countries. The crew should be familiar with the use of all safety equipment and the most important actions in different emergency situations (man overboard recovery, towing, etc.). Sailing schools and clubs regularly organize rescue drills.

The equipment in your boat may differ from the equipment used in the pictures and illustrations in this manual. The reason for this might be e.g. due to any optional equipment you have chosen or modifications that have been adapted since this manual was made. In such cases we recommend that you contact your local dealer for additional information regarding the equipment in question.
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. The warranty on the engine, as well as optional equipment such as trim tabs, bow thrusters, navigation equipment and other equipment fitted afterwards, is on the individual supplier's conditions. The warranties for this equipment and the suppliers' contact information are enclosed. Concerning all other warranty claims, please contact you Axopar dealer mentioned on the cover page.

See the purchase agreement/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.

Please note that your boat is a recreational craft, thus not suitable for professional use.

Specifications, illustrations and examples and related constructional data in this publication are not binding. We reserve the rights for changes.

INTRODUCTION

SYMBOLS USED IN THIS MANUAL:

WARNING!

Denotes that an extreme inherent hazard exists which very likely could result in death or serious injury if proper precautions are not taken.

DANGER!

Maximum caution should be observed to prevent fatal injury or permanent harm.

CAUTION!

Take precautions to prevent injury and/or damage to the boat and its components.

The purpose of the owner's manual is not to be a complete service guide or repair handbook, but to guide the owner into the characteristics of his/her new boat and to handle it in a proper way.

CE-CATEGORY – C

This boat belongs to category C. The CE-categories means that boats in each category must be designed and constructed to withstand the following parameters in respect of stability, buoyancy, and other relevant essential requirements stated. One requirement is that the boats must be easy to manoeuvre.

A. Ocean

These boats are designed for extended voyages, where conditions experienced may exceed wind force 8 Beaufort Scale and include significant wave heights of at least 4 metres. Under such conditions these boats must be largely self-sufficient.

B. Offshore

These boats are designed for offshore voyages, where conditions up to and including wind force 8 Beaufort Scale and significant wave heights up to and including 4 metres may be experienced.

C. Inshore

These boats are 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.

IDENTIFICATION

Each boat is supplied with a unique identification code, containing the data described below. The identification code comprises 14 characters plus a hyphen. The height of the code text is 6 mm and it is applied to the starboard side of the stern. The identification code reads as follows:

FI – AXOC8001E414

FI	Country of manufacture
-	Hyphen
AXO	Manufacturer: _____
C8	Boat model
001	Boat number
E	Month of manufacture: A = January, B = February, etc..
4	Year of manufacture
14	Model year

MANUFACTURER'S PLATE

The cooperation with VTT (Technical Research Centre of Finland) means that VTT as an external and independent organisation has inspected that the boat fulfils the Recreational Craft Directive and related standards requirements. The manufacturer's plate is always fitted close to the steering position in the boat. The manufacturer's plate gives the following information:

BOAT TYPE	Boat model
DESIGN CATEGORY	Boat class. See additional information in the chapter CE-category.
MAX. NO	Maximum number of persons on board
MAX. LOAD	Buoyancy. Total weight of persons including personal luggage (excluding tank contents).
ID OF NOTIFIED AUTHORITY	VTT

A comprehensive explanation of the information given on the plate is presented in each chapter respectively in this manual.
(Load and max. engine power)

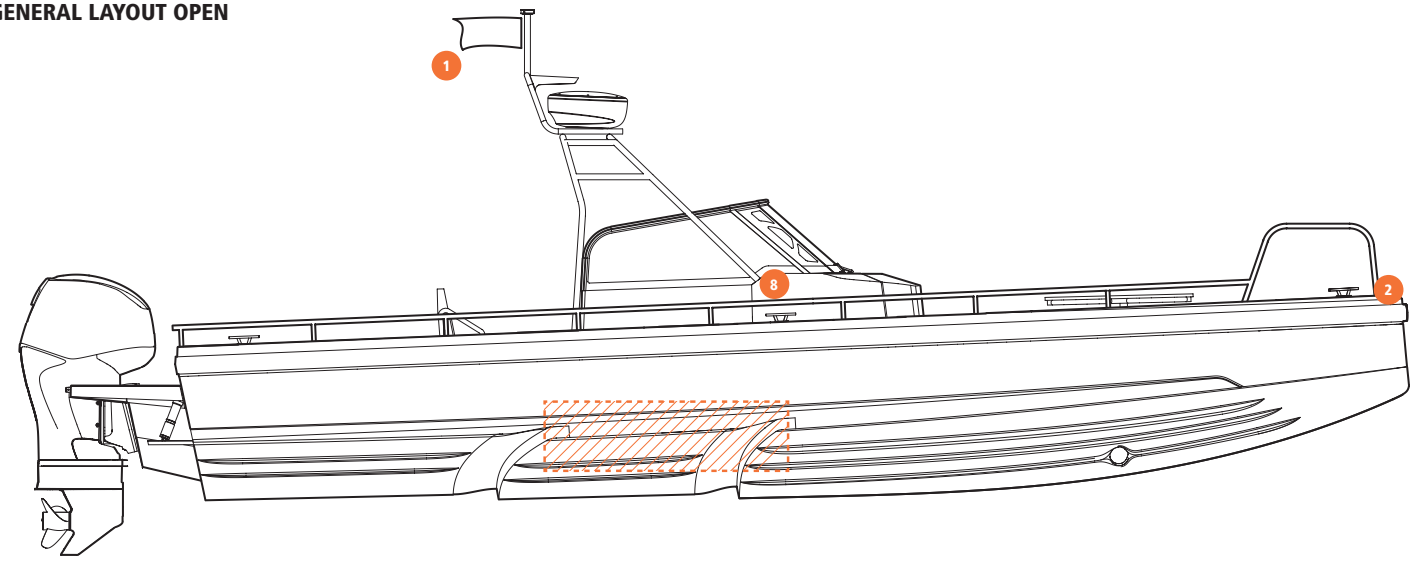
CAUTION!

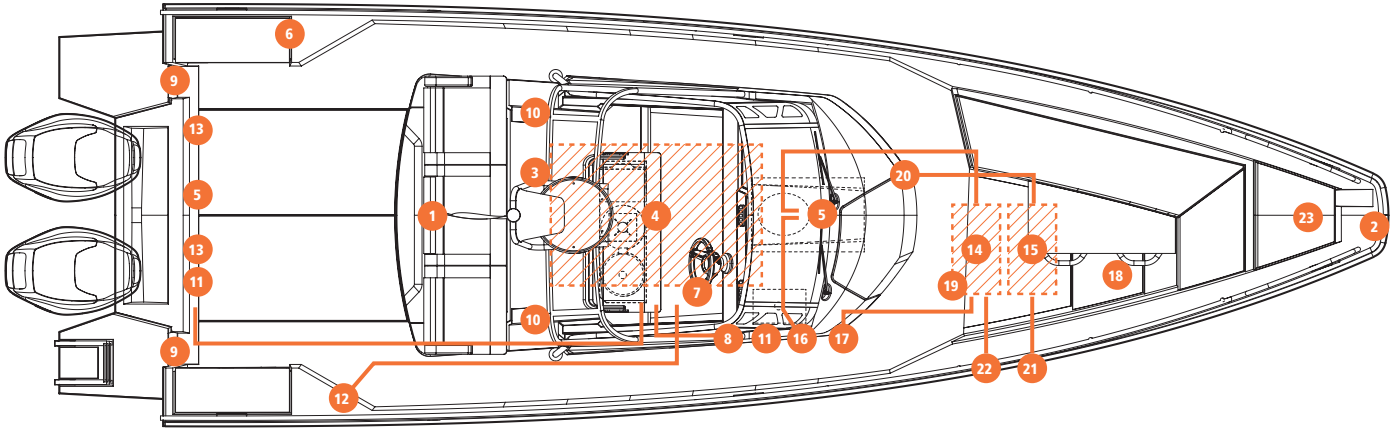
The liquids in the built-in tanks are not included in the max. load shown on the Manufacturer's plate.

WARNING!

You must not exceed the max. number of persons of the boat. Regarding the number of persons you must also always take into consideration that the total weight of the persons on board and their personal luggage must never exceed the max. load of the boat. When out on the water, always use the seats intended for passengers.

GENERAL LAYOUT OPEN

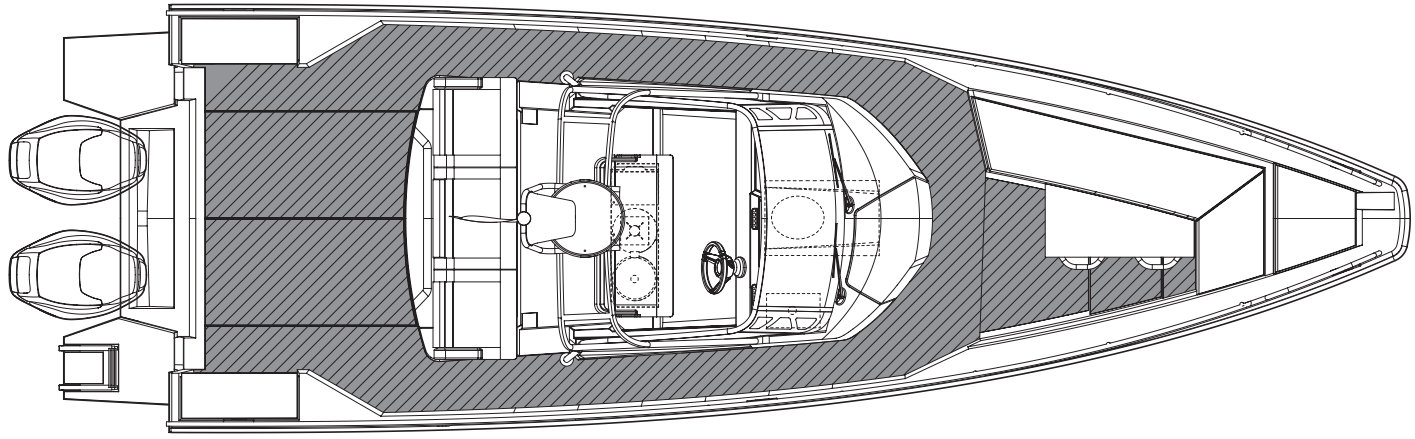




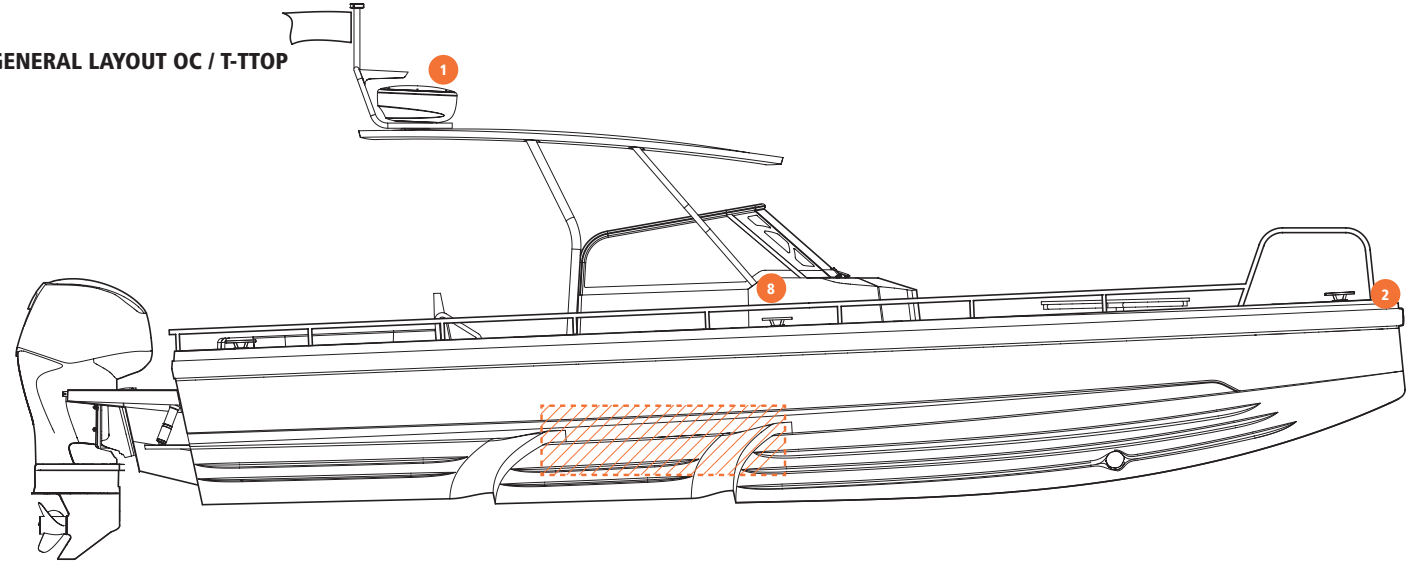
01 Mast light
02 Running lights 112.5° red
112.5° green output 10W
03 Dry powder extinguisher 2kg output
13A89BC
04 Fuel tank
05 Bilge pump
06 Manual bilge pump
07 Service hatch for fuel tank
08 Breather valve for fuel tank
09 Deck drain flaps
10 Cockpit drain
11 Cockpit drain cocks
12 Fuel inlet pipe
13 Fuel filter / - water separator
14 Septic tank
15 Water tank
16 Flushing water cock for toilet
17 Septic tank cock
18 Service hatch for bow thruster
19 Septic tank deck drain
20 Inlet pipe for water tank
21 Breather valve for water tank
22 Breather valve for septic tank
23 Liquefied petroleum gas container

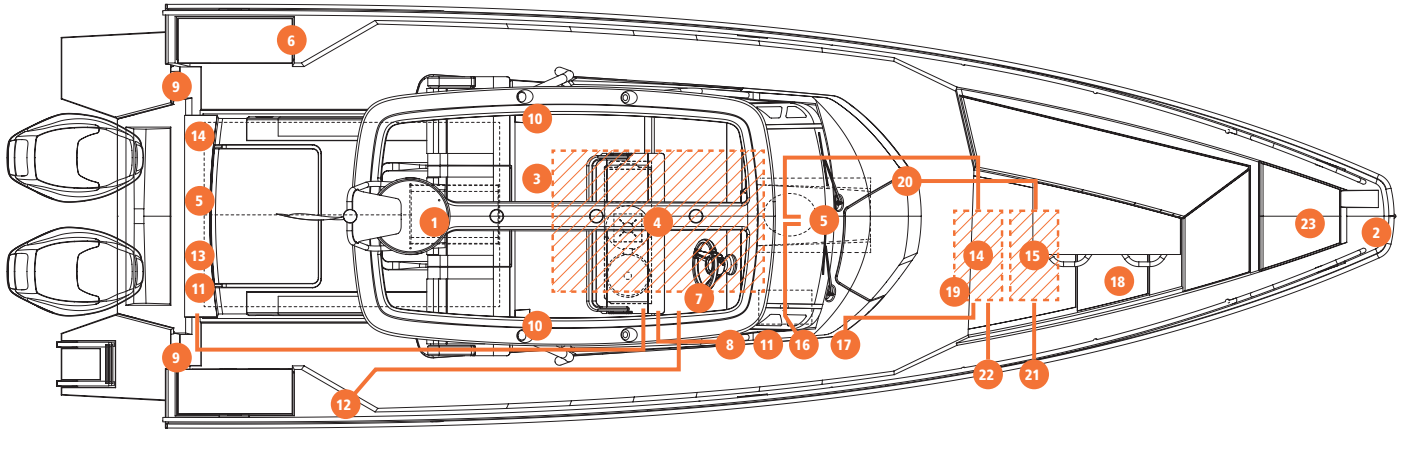
WORK DECKS AND SWIM LADDERS OPEN

01 Swim ladders **02** Trailer eyelet ▨ Work deck ■ Attaching points



GENERAL LAYOUT OC / T-TTOP

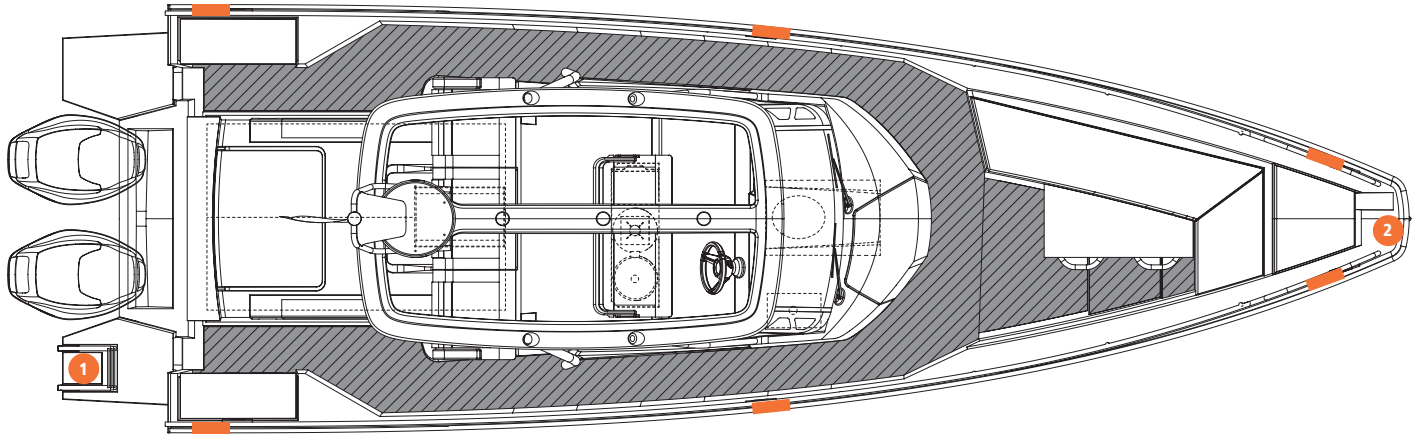




01 Mast light
02 Running lights 112.5° red
112.5° green output 10W
03 Dry powder extinguisher 2kg output
13A89BC
04 Fuel tank
05 Bilge pump
06 Manual bilge pump
07 Service hatch for fuel tank
08 Breather valve for fuel tank
09 Deck drain flaps
10 Cockpit drain
11 Cockpit drain cocks
12 Fuel inlet pipe
13 Fuel filter / - water separator
14 Septic tank
15 Water tank
16 Flushing water cock for toilet
17 Septic tank cock
18 Service hatch for bow thruster
19 Septic tank deck drain
20 Inlet pipe for water tank
21 Breather valve for water tank
22 Breather valve for septic tank
23 Liquefied petroleum gas container

WORK DECKS AND SWIM LADDERS OC / T-TOP

01 Swim ladders **02** Trailer eyelet ▨ Work deck ■ Attaching points



TECHNICAL DATA

BOAT MODEL	AXOPAR 28 OPEN / OC / T-TOP
DESIGN CATEGORY	C (INSHORE)
LENGTH	LH 9,01 M
BEAM	BH 2,81 M
MAX. RECOMMENDED NUMBER OF PERSONS	8 (DEFAULT WEIGHT OF ONE ADULT 75KG, A CHILD 37,5 KG)
MAX. RECOMMENDED ENGINE POWER	(SINGLE) 221 KW / 300 HP (TWIN) 2 X 111 KW / 2 X 150 HP
MAX RECOMMENDED WEIGHT OF ENGINES	(SINGLE) 313 KG, (TWIN) 522 KG
BOAT HULL WEIGHT (EXCLUDING ENGINES)	1650 KG
WEIGHT OF UNLOADED BOAT WITH MAX. WEIGHT OUTBOARD ENGINES	2250 KG
MAX. RECOMMENDED LOAD	900 KG
BOAT WEIGHT AT MAX. LOAD	3150 KG
OF WHICH:	
TOTAL WEIGHT OF ALL PERSONS	600 KG
PERSONAL LUGGAGE	50 KG
AMOUNT OF FRESH WATER	39 KG (39 L)
AMOUNT OF BLACK WATER	45 KG (45 L)
AMOUNT OF FUEL	192 KG (260 L)
TRAILER WEIGHT	2470 KG KG (NOT INCLUDING WEIGHT OF CREW, PERSONAL LUGGAGE OR SEWAGE)
TOTAL WEIGHT OF FUEL, WATER AND OTHER LIQUIDS	261 KG
DRAUGHT AT MAX. LOAD (EXCLUDING ENGINE)	0,45 M
HEIGHT MEASURED FROM WATERLINE AT LIGHT LOAD	OPEN / OC 2,05 M (WITH TARGA ARCH 2,85 M) T-TOP 2,95 M

Assessment of the stability of the boat has been done at max. load conditions. The maximum recommended load contains only the weight components mentioned above.

CAUTION!

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.

WARNING!

When loading the craft, never exceed the maximum recommended load of the boat. Always load the craft carefully and always distribute loads appropriately to maintain design trim. Avoid placing heavy equipment or material high up in the boat. Overloading the boat can damage the engine, even when shut off.

GELCOAT / PAINT

HULL ..... **Ashland Max Guard**

DECK ..... **Ashland Max Guard**

SWITCH PANEL MODULE..... **Nextel**

TANK CAPACITY

FUEL TANK ..... **260 L**

FRESH WATER TANK ..... **45 L**

HOLDING TANK..... **42 L**

ELECTRICAL SYSTEM 12V

STARTER BATTERY **105A**

SERVICE BATTERY **105A**

ELECTRICAL SYSTEM 230V

FREQUENCY

BATTERY CHARGER ..... **12 AH**

SHOREPOWER CONNECTOR .....

DECLARATION OF CONFORMITY AND ESSENTIAL SECURITY REQUIREMENTS

Basic data EN ISO 8666:2002

2.1 Hull identification ISO 10087:2006
2.2 Manufacturer's plate RCD annex I, 2.2
2.5 Owner's manual EN ISO 10240:2004

Layout and equipment

2.3 Preventing falling overboard EN ISO 15085:2003/A1:2009
3.7 Life raft stowage RSG Guidelines
3.8 Escape EN ISO 9094-1:2003
3.9 Anchoring and towing EN ISO 15084:2003
5.7 Running lights 1972 COLREG
5.8 Emissions control EN ISO 8099:2000

Installations

5.1 Engines and engine spaces -
5.2 Fuel system EN ISO 10088:2013, EN ISO 11105:1997, EN ISO 21487:2012
5.3 Electrical system EN ISO 10133:2012, ISO 28846:1993/A1:2000
5.4 Steering system EN ISO 10592:1995/A1:2000
5.5 Gas systems -
5.6 Fire protection EN ISO 9094-1:2003

Dimensioning

3.1 Structure RSG Guidelines ISO 12215-5:2008, ISO 12215-6:2008

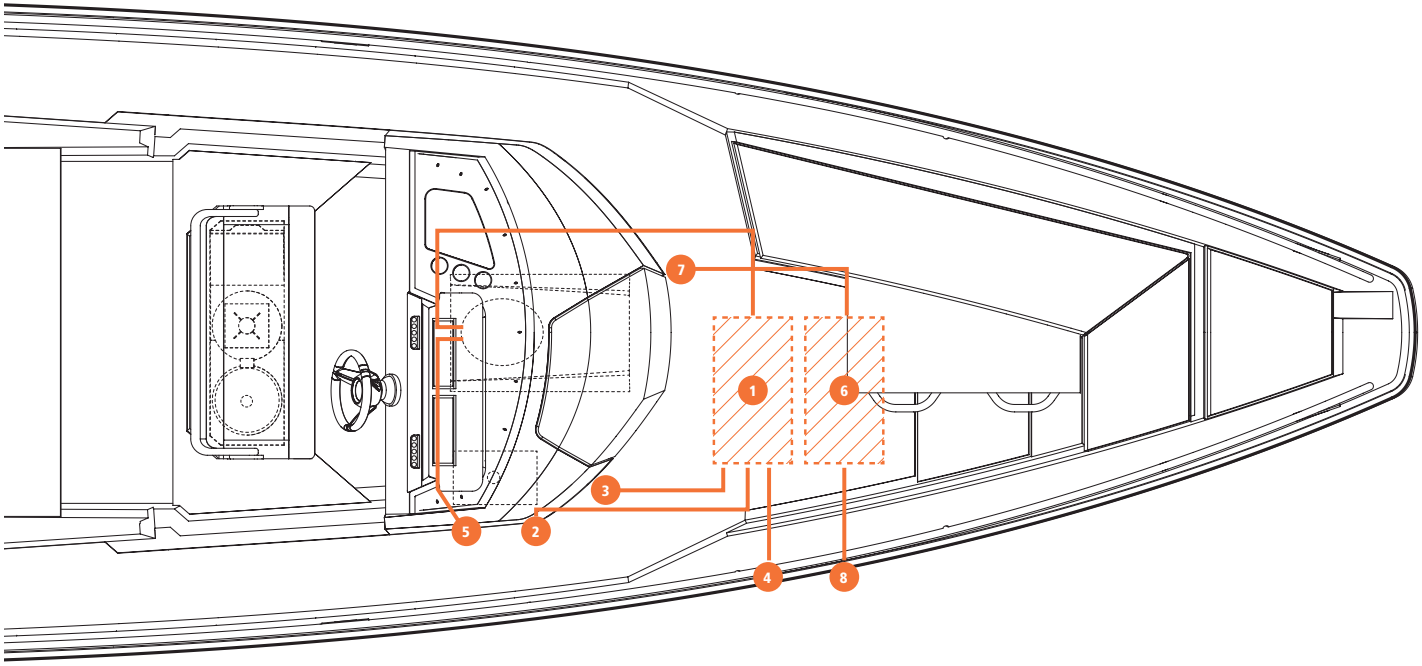
Hydrostatics

3.2 Stability and freeboard EN ISO 12217:2013
3.3 Buoyancy and floatation EN ISO 12217:2013
3.6 Manufacturer's maximum recommended load EN ISO 14946:2001/AC 2005
3.4 Openings in hull, deck and superstructure EN ISO 9093-1:1997, EN ISO 12216:2002
3.5 Flooding EN ISO 11812:2001, EN ISO 15083:2003, ISO 8849:2003

Handling characteristics

4 Handling characteristics EN ISO 11592-2 WD 2013-11-20, EN ISO 8665:2006
2.4 Visibility from the steering position EN ISO 11591:2011
Exhaust emissions of engines -
Noise emissions -

TOILET-, BLACK WATER- AND GREY WATER SYSTEMS OPEN / OC / T-TOP



01 Septic tank
02 Septic tank cock
03 Septic tank drain pipe
04 Breather valve for septic tank
05 Flushing water cock for toilet
06 Water tank
07 Inlet pipe for water tank
08 Breather valve for water tank

TOILET

Clean the toilet with a mild cleaner. Do not ever use cleaning agents or deodorants which contain pine oil, formaldehyde or chlorine nor corrosive or petroleum based agents. These can damage 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. Never put any other objects but toilet paper in the toilet. Under no circumstances is it allowed to flush paper towels, fabric or rubber products, hard objects, oil products or solvents into the toilet. In order to avoid various damages, you must also not pour hotter than lukewarm water into the toilet.

Holding 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 permanent septic tanks ashore. These facilities must always be used. In areas where there are no permanent septic tanks, you should do as follows:

Open the sealed sea valve. If possible empty the tank daily and always in deep waters far from the shore. The location of the pump is indicated on the construction drawing. CAUTION! The shut-off valve must be closed after the evacuation. Do not allow the tank to become full. This can lead to paper becoming compacted in the bottom of the tank, making it more difficult to empty. See the cleaning instructions in the chapter Winter storage.

Spring preparation of the toilet

01 Lubricate the pump cylinder with Vaseline.
02 Flush the system with fresh water.
03 Connect the hoses and open both valves.
04 Check the connections thoroughly for leaks.

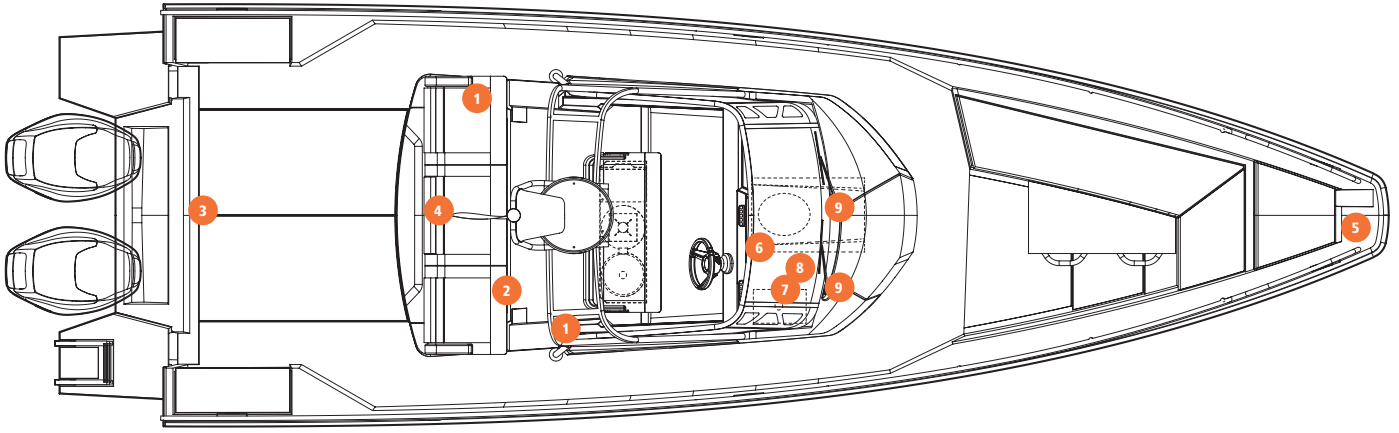
Winter lay-up

CAUTION!

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..

ELECTRICAL SYSTEM OPEN / OC / T-TOP



Your boat is equipped with so-called automatic fuses that pop out when they go off. Before activating them again, you should check for possible reasons why the fuse went off. To activate, press the fuse back into position.

WARNING! Do not:

- carry out electrical installations when the power is switched on
- modify the boat's electrical system or diagrams; service and maintenance must be carried out by a qualified electrician
- modify the nominal rated amperage of the overvoltage protector
- install or replace electrical equipment with components that cause the circuit's nominal rated amperage to be exceeded
- leave the boat unattended with the electrical system switched on, except for the automatic bilge pump or alarm system

01 Battery compartment
02 Main switch
03 Bilge pump
04 Mast light, white 360°
05 Running lights
06 Switch panel
07 Power outlet 12v. max 10A
08 Fuse box
09 Windscreen wiper

High voltage system 230V with shore power connection (optional equipment). The high voltage system comprises the following parts: 230 V 16 A earth fault breaker, 230 V power outlet in the toilet and cockpit, 1 shore power cable.

The shore power system should be checked at least bi-annually. 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's electrical system. Use electrical equipment equipped with earth protection only.

WARNING!

Do not touch an energised high voltage system
Do not modify the shore power cable connectors, only use compatible connectors

DANGER!

- The bleed hoses must be connected after battery replacement or service. When replacing batteries, marine batteries capable of being connected to the bleed hoses must be used. The battery isolating switches are located in the main switch panel. The batteries are charged when the engines are running, or they can be charged with a battery charger or other extra equipment.
- 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.
- 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.
- 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.

Low voltage system

The boat's 12 V low voltage system is fed by the service batteries. The batteries can be disconnected from all circuits using the main power switches in the electrical panel. With the main power switches on, power is conducted to the electrical panel and distributed throughout the boat. The switches for controlling the different functions of the boat are located on a control panel.

Charging the batteries

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 pre-set level. The voltage measurement should be taken at the battery terminals, not the alternator, to achieve the correct result.

Charging status

The best method for determining charging status is to measure the specific gravity of the battery acid. This is done using a hydrometer (acid measurer). Normal specific gravity for a fully charged battery at 20 °C is 1.26-1.28g/cm³. Note that the specific gravity varies with temperature. Batteries from different manufacturers can have a different specific gravity. Ask your dealer for the correct information. If the specific gravity varies from cell to cell, then the battery is not in good condition, and should be replaced. 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.

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.

Electrolyte level in cells
Do not use matches, a cigarette lighter or other form of naked flame when checking the electrolyte level, because the battery gives off explosive gas.

The electrolyte level in the batteries must be checked at regular intervals. The electrolyte level must be approx. 10 mm above the plates. If the level is too low, top up with distilled water.

BILGE PUMP SYSTEM

CAUTION!

Avoid pollution! The purpose of the boat's electrical bilge pumps is to minimize the risk of accidental discharge of oil polluted water. The boat owner should check the bilge water regularly for contaminants such as oil, diesel, glycol etc.

The bilge pump system comprises several different pumps that cover all areas of the boat.

Your boat has electrical as well as manual bilge pumps. There is also a sign in the boat indicating the draining area of each pump respectively.

The manual bilge pump is operated with the handle next to the pump, located in a storage compartment on the aft deck.

The electrical pumps are submersible. One is located in the area before the toilet (models Open and TT) and the other in front of the engine compartment in the bilge. The bilge water level should always be kept at a minimum.

The pumping capacity of the automatic bilge pump is 41 litres per minute. The pumping capacity of the manual bilge pump is 33 litres per minute. The automatic bilge pump has an alarm sound which is activated when the pump starts.

DANGER!

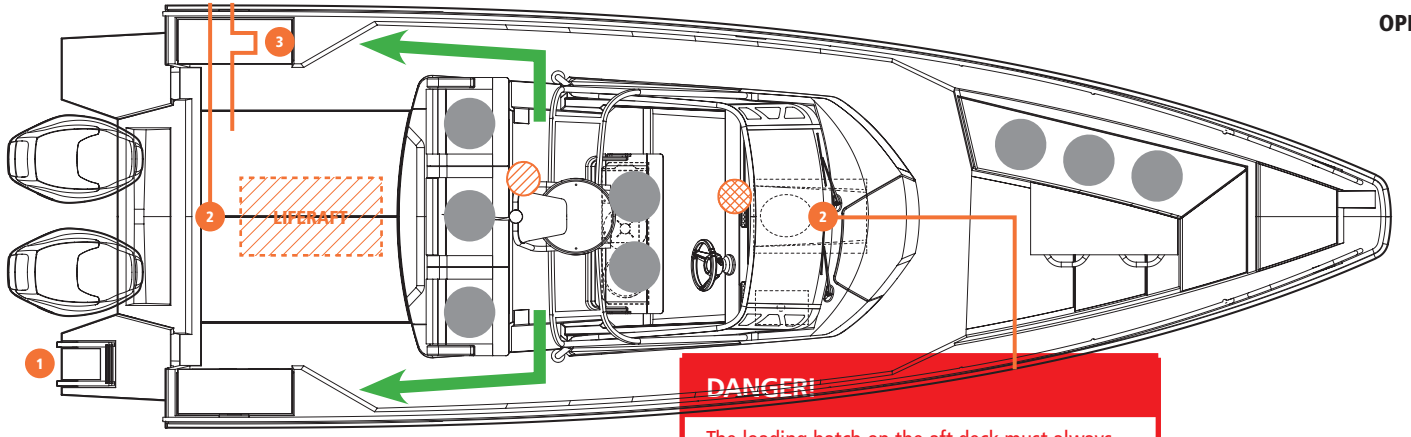
Check the functionality of the bilge pumps regularly. Remove any waste from the intakes.

The combined capacity of the bilge pump system is not designed to pump out the boat in the event of hull damage. The pumps are constantly activated and pump out the boat as required. The pumps can also be started manually from the boat's main control panel.

CAUTION!

The pumps must not be run dry for any length of time.

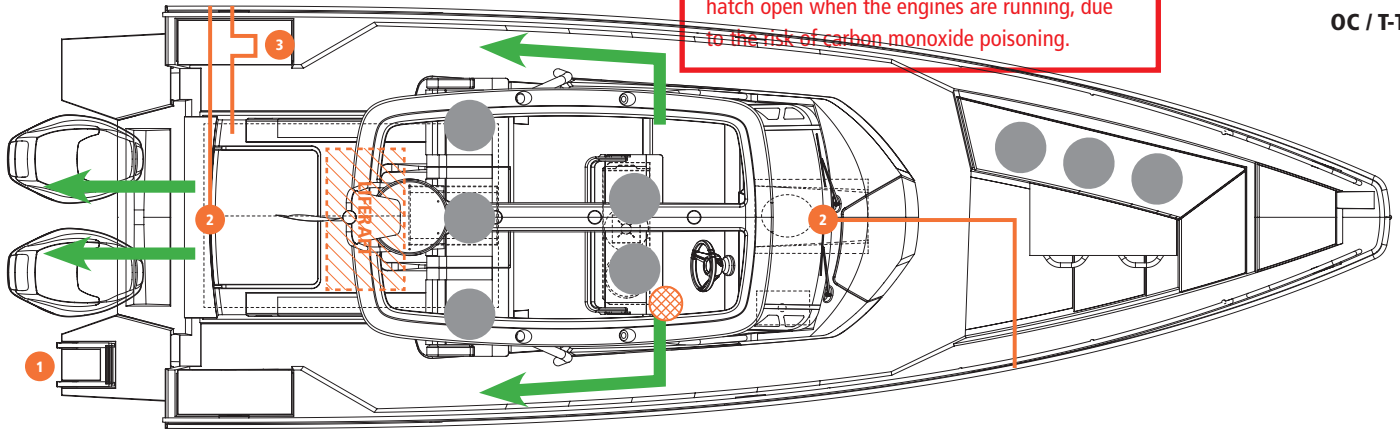
OPEN



DANGER!

The loading hatch on the aft deck must always be kept closed during driving. Do not keep the hatch open when the engines are running, due to the risk of carbon monoxide poisoning.

OC / T-TOP



DECK AND SECURITY EQUIPMENT

01 Swim ladders
02 Electrical bilge pump 41l /min
03 Manual bilge pump 33l /min

Location of fire extinguisher OPEN
Location of fire extinguisher OC / T-TOP
Seating

EMERGENCY EXITS

Get to know where the emergency exits are by studying the illustrations above. All emergency exits are marked with a white arrow on a green background.

FIRE CONTROL, FUEL-, AND LPG SYSTEM

FIRE CONTROL

This boat is fitted with hand-held fire extinguishers with the following output and location. Keep the bilge clean and check regularly for fuel- and gas fumes or fuel leaks. Do not hang curtains or other fabrics near or above the LPG cooker or other equipment with naked flames.

The fire extinguisher must have a fire rating of at least 8A 68B. The fire extinguisher's total fire rating must be at least 8A / 68B and for an individual extinguisher at least 5A / 34B. Check the correct location of the extinguishers from the diagram on page 19.

The fire blanket should be kept beside the driver's seat.

CAUTION!

Never:

- Block evacuation routes and emergency exits.
- Block access to safety equipment such as fuel valves or main power switches.
- Block access to fire extinguishers, visible or concealed.
- Leave the boat unattended when the cooker or heater is switched on.
- Modify the boat's systems (especially electrical, fuel or gas systems).
- Refuel or replace gas containers when the engines are running.
- Smoke when handling fuel or gas.

It is the boat owner's/user's responsibility to ensure that:

- the fire extinguishing equipment is checked regularly at the intervals specified for the equipment.
- equipment with passed expiry dates is replaced immediately with equivalent or better equipment.
- the crew and guests are advised of the location and instructions for fire control equipment, and the location of evacuation routes and emergency exits.
- the fire control equipment is accessible at all times.

Action in the event of fire in the engine compartment

- Stop the engine.
- If possible, steer the boat up against the wind.
- All passengers on board must put their life jackets on.
- If necessary, evacuate the passengers.
- If necessary, call for sea rescue.
- Shut off fuel, LPG and main power switches.
- Wait until fully certain that the fire has been extinguished before opening the engine hatches. Carefully open the engine hatch and be prepared to use the handheld fire extinguisher if necessary for post-fire extinguishing.
- Put out possible smouldering fires with water.

Action after the fire has been extinguished

- Open doors and windows for better ventilation.
- Make sure that the fire extinguishing equipment is refilled or replaced after use.

FUEL SYSTEM

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

Try to prevent damages on the fuel lines.

See the engine's instruction manual for care and maintenance of the engine's fuel system.

Do not smoke or handle open flames when refuelling.
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.

Management

When refuelling a boat with composite decks, (Esthec or FlexiTeek) the deck should be wetted down with water before refuelling. This ensures that any fuel spillage will float on the water and won't 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.

DANGER!

Your Axopar boat has LPG equipment fitted as optional equipment for the LPG cooker. The system is tested and approved before delivery.

The equipment is fitted with one shutoff valve (connected to the cooker) and a pressure reduction valve. The space where the gas container is installed is vented to the outside of the hull.

Before igniting your LPG cooker, make sure that the driver's seat is completely turned in the forward position and is not too close to the cooker.

WARNING!

Never use an open flame when detecting leaks.

Appliances which burn fuel consume oxygen in the cabin and discharge combustion products into the boat. Ventilation is essential when using appliances. Open vents as indicated, when using gas appliances. Never use the cooker or oven for heating the boat. Never cover ventilation openings. (The boat owner should keep information about locations of ventilation openings and types in every space where a gas appliance is installed.)

WARNING!

Never leave the boat unattended when LPG appliances are in use.

Do not smoke or use open flames when a gas container is being replaced.

- Before opening the valve to the gas container, make sure that the appliance valves are properly closed
- If an LPG cooker is installed:
- Fire blanket: The fire blanket must be stored in the correct position

CAUTION!

Do not use solutions that contain ammonia.

An LPG container must only be kept in a space designed for it..

Lighting the LPG cooker

01 Open both shut-off valves. Each burner has an ignition cut-out which cuts the gas supply when the flame is out..

02 Press in the knob for the required burner and turn to max. position while holding the lighter beside the burner. Keep the knob pressed in for about 20 seconds after the burner lights. If it is released sooner, the burner may go out. The reason for the burner going out is that the ignition cut-out might not be hot enough. If the burner does not light, it may be because a valve is closed, the knob is incorrectly set or the gas container is empty.

Valves

Close the valves on the supply pipes and the container valve when no appliance is in use. Close the valves before refuelling and immediately in an emergency. Check that the appliance valves are closed before opening the container valve.

Keep the valves of empty cylinders closed and disconnected. Fit the protective covers, caps or plugs. Store spare or empty containers on an open deck or in drained areas designed for the purpose. The regulating valve does not last forever. It contains a thin rubber diaphragm which eventually dries out or swells up. If the diaphragm breaks, gas can escape from the cylinder with full pressure into the system, and thus causing a fire. We recommend that the valve is replaced every 10 years.

Inspections

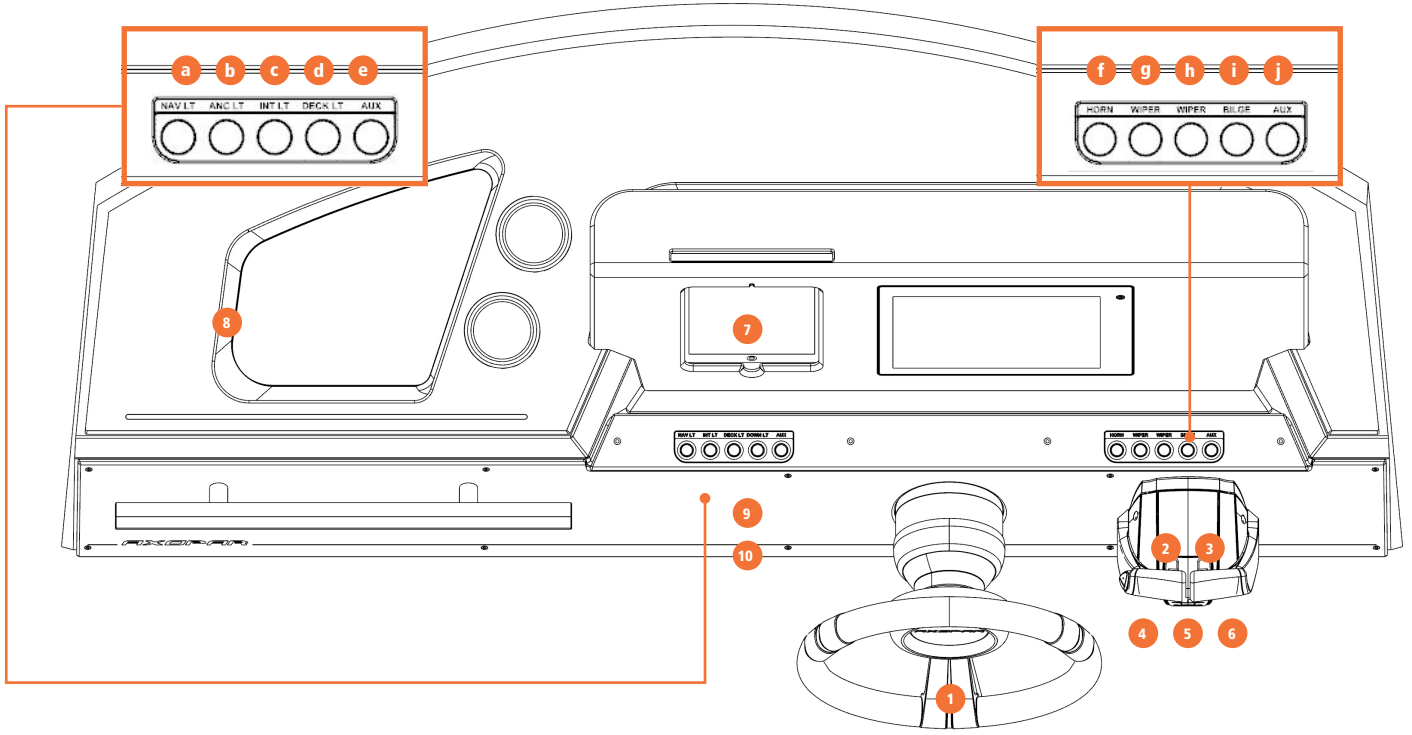
Regularly test the LPG system for leaks by brushing soapy water or a detergent solution which does not contain ammonia. Check all connections for leakages. If a leakage is detected, close the container valve and repair the system before using it again. Repairs must be carried out by a qualified gas fitter.

Ventilation

Appliances which burn fuel consume oxygen and discharge combustion products into the boat. Good ventilation is essential when an appliance is in use. Never use the LPG cooker for heating the boat. Never cover ventilation openings.

Note

- Make sure that you always have free and rapid access to the LPG system.
- The ambient temperature for LPG systems is –20 - +60°C.
- Do not use areas intended for LPG containers for storing other equipment.
- Never leave the boat unattended when LPG appliances are in use.
- Do not smoke or use open flames when a container is being replaced.
- Hoses and pipes in the system must be inspected regularly,
- at least annually. They must be replaced if there is any deterioration or damage. LPG hoses should be replaced every second year outside the cabin, and every 3 to 5 years inside.
- Check flue ducts at least once a year. They must be replaced if there is any deterioration or damage.
- Connection gaskets for the regulating valve must always be checked when containers are replaced and replaced annually.



01 Steering with tilt function
02 Control device BB
03 Control device SB
04 Ignition key BB
05 Ignition key SB
06 Emergency stop
07 iPad holder
08 12v DC power outlet
09 Trim tab switch
10 Bow thruster

a) Navigation lights
b) Anchor light
c) Interior lights
d) Deck lights
e) AUX
f) Signal horn
g) Windshield wiper BB
h) Windshield wiper SB
i) Bilge pump
j) AUX

STEERING SYSTEM

Checking and topping up oil

The safety of the boat depends on effective steering, so the oil level in the pump should be checked 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 approx. 10 mm below the filler hole. Read the manufacturers manual for oil recommendation for the steering system. (For steering systems provided by engine manufacturer read the engine manufacturers instructions).

Maintenance of the steering

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

ENVIRONMENT

CAUTION!

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 your boat at the most economical engine revs possible in the prevailing conditions to avoid unnecessary emissions and noise.
- Make sure that the engine is properly maintained at regular intervals so that noise and emission levels are minimised. 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.
- Familiarise yourself with the international regulations on the prevention of marine pollution (MARPOL) and comply with these regulations as far as possible.

OPERATION

STARTING THE ENGINE

DANGER!

Risk of carbon monoxide poisoning. It is important to be aware of the risks with engine exhausts. Under certain conditions (e.g. turbulence or disadvantageous wind conditions), exhaust can enter the boat. If this happens you should avoid idling the engines. Should these problems occur under way, do not open hatches and ventilators, as this can worsen the problems. Instead, a solution to the problem might be to change the boat's speed or weight distribution for example.

Read the engine manufacturer's manual.

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

For further information, read the engine manufacturer's manual.

BEFORE WEIGHING ANCHOR

WARNING!

- Never climb the bathing ladder when the engine is running.
- Stop the engine before inspecting the steering and propellers.

CAUTION!

- Before leaving harbour it is important to check that the boat and its equipment are in seaworthy condition.
- All persons on board should wear an appropriate life vest when on deck. Note that, in some countries, it is a legal requirement to wear a life vest in accordance with national regulations at all times.
- 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 bathing ladder is raised out of the water before moving off.
- Make sure that the steering is correctly positioned before starting.
- Always brief your crew on how you plan to leave the jetty.

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

LEAVING THE JETTY

Before casting off, consider how best to leave the jetty. What is the wind direction? Using a bow thruster, it is easy to move the bow out and then engage the propeller.

If your boat has two engines, it is easy to 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, it is important to 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. Then 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 centre 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.

STABILITY AND BUOYANCY

All weight dispositions (for example installing a fishing tower, radar or furling mast, engine replacement etc.) can have a significant impact on the stability, trim, and performance of your boat. The bilge water level should be kept at a minimum. The stability of your boat will be compromised if any weight is placed in a high position. In stormy weather all hatches, compartments and doors should be kept closed to minimise the risk of flooding. The stability can be diminished when towing or lifting heavy objects using the davit or jib crane. Breaking waves represent a serious significant danger to stability.

CAUTION!

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

DRIVING THE BOAT

Going out in a motor boat involves a 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 craft they go afloat in.

The physical laws that apply to a boat are rather different from those affecting a car, for example. You can influence a boat's behaviour 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.

DEAD MAN'S SWITCH

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

DRIVING AT HIGH SPEED

Although the Axopar 28 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 single engine configuration.

- The maximum rated engine power is Open / OC 205kw / 275hv, T-Top 223kw / 300hv
- 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 manoeuvres.
- Always use a dead man's switch if available.
- Reduce speed in high seas for increased comfort and safety.
- Learn your boat's speed potential. Utilise this knowledge for economical and safe cruising.
- Avoid using high speed along with large rudder movements when going astern, because that places large strains on the rudder and steering mechanism.
- Avoid sudden steering manoeuvres at high speeds.
- Avoid staying in the bow area when driving at high speeds.

DANGER!

A rotating propeller can be lethal for a swimmer or person who has fallen overboard. Use the dead man's switch and shut down the engine when somebody climbs on board out of the water.

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.

Your propellers have considerable propulsion power that provides powerful acceleration. Take this into consideration to avoid dangerous situ-

ations arising from this.
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 planing
- Sea conditions
- Rain and thunderstorms
- Darkness and fog
- Inner lighting when under way in the dark
- Position of curtains
- People and equipment that can block the helmsmen'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.

STAYING ON DECK

Staying on the deck is not allowed for safety reasons in speeds exceeding 30 knots. If the sun deck cushions of fore deck table are in place the observe the maximum speed of 15 knots to avoid the cushions or table detaching at speed or in high waves.

USING THE TRIM TABS

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.

An Axopar boat does not need trim tabs to get up on the plane or to give good performance. Trim tabs are, however, a very useful aid, if used correctly. There are two situations in particular where trim tabs should be used. These are when it is desirable to trim the bow down in a rising sea and at speeds between going up planing and cruising speed, as well as when running with a strong beam wind.

A planing boat always leans into a strong beam wind. This reduces the boat's sea-keeping 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.

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 is 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.

CAUTION!

Even a non-slip moulding can be slippery to walk on when the deck is wet.

MANOEUVRING IN NARROW CHANNELS

When manoeuvring the boat in narrow channels the engine speed should be kept as low as possible so that manoeuvres 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 manoeuvres are made quickly and precisely to prevent the boat from drifting into trouble for example.

A good rule, before starting a manoeuvre 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 manoeuvres 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.

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 manoeuvre. Bring the bow up to the jetty, and make sure you get a line ashore quickly.

Docking with a beam 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 manoeuvre the boat so that the wind comes directly from astern. Then the boat can be manoeuvred 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 manoeuvres.

BEFORE ANCHORING

01 Check the chart to see if anchoring is permitted in the area.
02 Listen to the weather forecast for the area and take note of the expected wind conditions.
03 Switch on the echo sounder.
04 Study the seabed conditions and make sure that there is good holding ground.
05 Check that the safety chain has been released from the anchor.
06 Wait until you have reached the intended anchoring point before lowering the anchor.
07 Let out the anchor line equal to at least three times the depth of the water.
08 Put the engine in astern to check that the anchor has taken hold. (Only when bow anchoring)
09 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"

ANCHORING, MOORING AND TOWING

Fastening points are indicated in the illustration on page 30. Points (or cleats) are located both at the stern, midship and bow. When anchoring or towing, the forward force is **28.5kN**
When mooring the forward force is **23.3kN**
When mooring the rearward force is **19,8kN**

CAUTION!

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

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/operator's responsibility to ensure that mooring lines, towing lines, anchor chains, anchor lines and anchors are adequate for the vessel's intended use.

AFTER RUNNING THE ENGINE(S)

To counteract decarburising and heat stress after the engine(s) has/have been run, let it/them idle in neutral for a couple of minutes. This is particularly important after running at high revs.

- Stop the engine(s) by turning the ignition key to position S.

MAINTENANCE

- The boat requires a certain amount of maintenance. This is especially relevant for external parts which are exposed to sun and salt water. A proper maintenance of your boat comprises the following:
- Regularly wash the boat with freshwater.
- If the boat is used the whole year, the hull should be polished approximately every fourth month.
- Polish the stainless and chromed parts with Autosol or similar chrome polish.
- Aluminium parts are cleaned with freshwater to which soap solution is added if necessary.
- Rinse the cover in freshwater. Allow to dry thoroughly before folding away.
- A teak deck requires maintenance. It is recommended to clean a composite deck using a soft brush and a mild soap solution. Over time, the teak deck takes on a satin grey appearance.
- A teak deck requires maintenance. It is recommended to clean a composite deck using a soft brush and a mild soap solution. Over time, the teak deck takes on a satin grey appearance.
- Avoid using aggressive cleaners.

WOODEN INTERIOR

Interior details of the boat such as locker doors and drawer fronts, wooden strips etc. are in oiled walnut. Clean them with a damp cloth and a little soapy water. Treat the wooden surfaces again every year to protect the wood.

Plastic and painted surfaces are cleaned by wetting the surface evenly with water before the actual cleaning. Regular stains are removed with a brush and a lightly diluted cleaner. Grease is removed with a brush/sponge and window cleaner. Clean the surface afterwards with sponge and water. Wipe dry with a piece of cloth.

The interior fabrics are washed according to separate washing instructions (marking) or as follows: Wash in 40°C with light spin-drying and hang to drip dry. The material may shrink slightly. If you want to avoid this, take the fabrics to a dry cleaner.
The tracks of sliding doors and hatches shall be cleaned regularly and lubricated if necessary. Do not lubricate sliding surfaces. Lubricate handles and locks with regular lock lubricant.

Cleaning

Let the cover soak for at least 24 hours.
The cover should be thoroughly cleaned twice a year. You should then wash the in- and outside with a sponge or soft brush. Use mild soapy water and plenty of water max. 30 degrees Celsius. Rinse thoroughly with freshwater. We recommend mixing 12% vinegar in the final rinsing to neutralize the soap residues. Finally hang the cover to drip dry.

CAUTION!

Never use high pressure washers or chemical cleaners.

COVER

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

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

CAUTION!

Hang to dry. Never use a drying cabinet or iron to speed up drying.

Check that the cover is completely dry before stowing. A moist cover can cause mould damage.

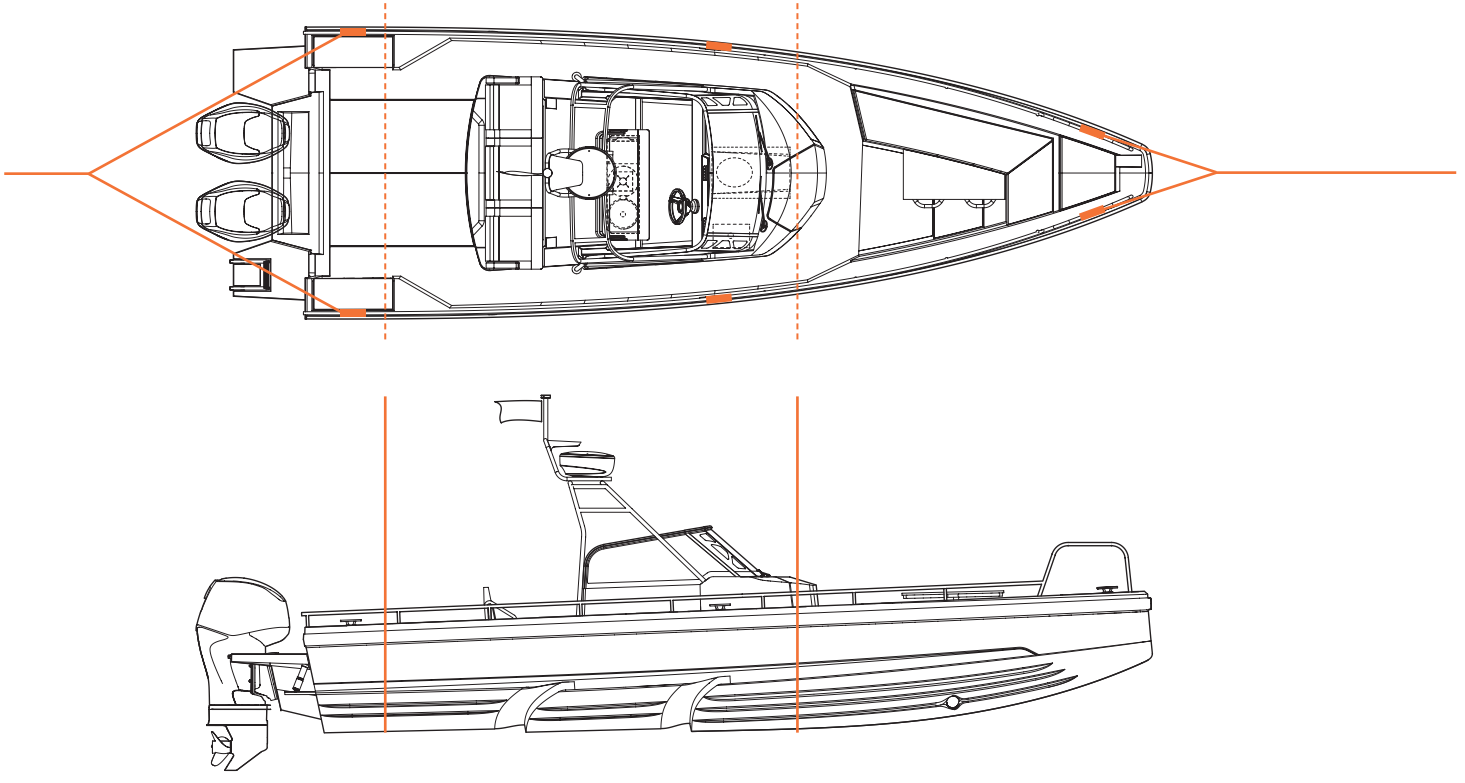
Winter store the cover in dry indoor conditions.

The cover must not be stored in the boat..

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 can 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.

LIFTING AND TRANSPORTING OPEN / OC / T-TOP



Lifting

Position the lifting straps as shown in the picture below. When the straps have been attached to the lifting hook on the crane they should be secured with lines to the bow and stern cleats to prevent the lifting straps from sliding.

Transporting

Always use an authorized boat transport company for transporting the boat on land. Make sure the company has full insurance cover, in case of any damages.

ACTIONS BEFORE WINTER STORAGE

01 Wash the hull and bottom immediately after lifting the vessel out of the water.
02 Leave all lockers, drawers, cabin and wardrobe doors ajar.
03 Wash all parts inside, also under the floorboards.
04 Carpets and cushions should preferably be stored indoors in a dry place. If this is not possible, make sure that the cushions are dry and position them on their side. Remove the carpets.
05 Be very thorough about having good ventilation in the boat.
06 If the batteries are being left aboard, make sure they are fully charged, otherwise the batteries can freeze and crack.

CAUTION!

The lifting beam should be exactly the same width as the boat.

Always take great precautions near and around the boat when lifting. Note the location of the log transducer to avoid damaging it. Protect the hull sides well to avoid damages. The position of the slings may need to be adjusted depending on how the boat is loaded.

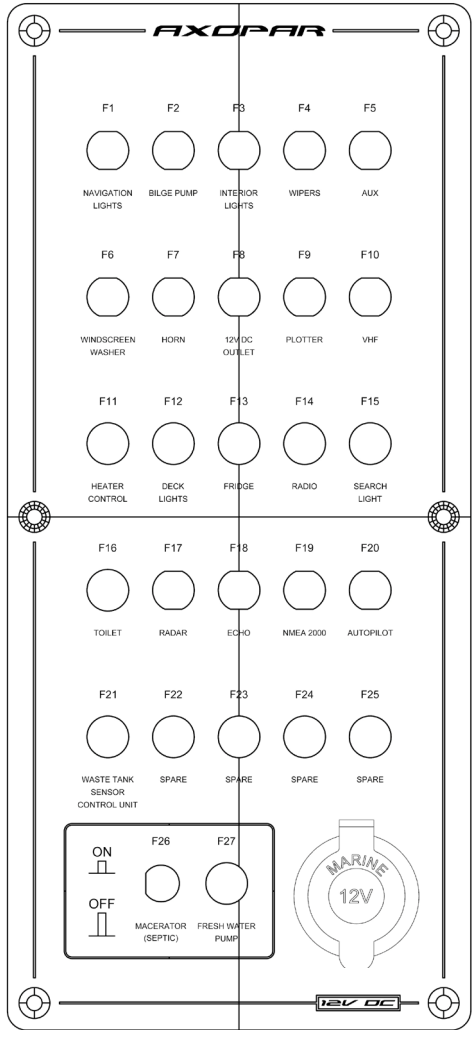
ACTION BEFORE LAUNCHING

01 Remove the tarpaulin in good time before launching.
02 Wash the hull with a regular shampoo and soft brush.
03 Wax the hull if necessary. Use a standard boat wax.
04 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.
05 Paint the bottom with antifouling paint.
06 If the batteries have been removed, put them back and check the electrolyte level in the cells. Check the condition of the batteries.
07 Check all cables, clamps, engine mountings and other fastenings.
08 Check the steering before launching.
09 Check the instrumentation.
10 Close all water drain plugs.
11 Check that the seacocks are in order and tight, check for any frost damage.
12 Check all pipes, hoses and cocks.
13 Make a note of any frost damage.

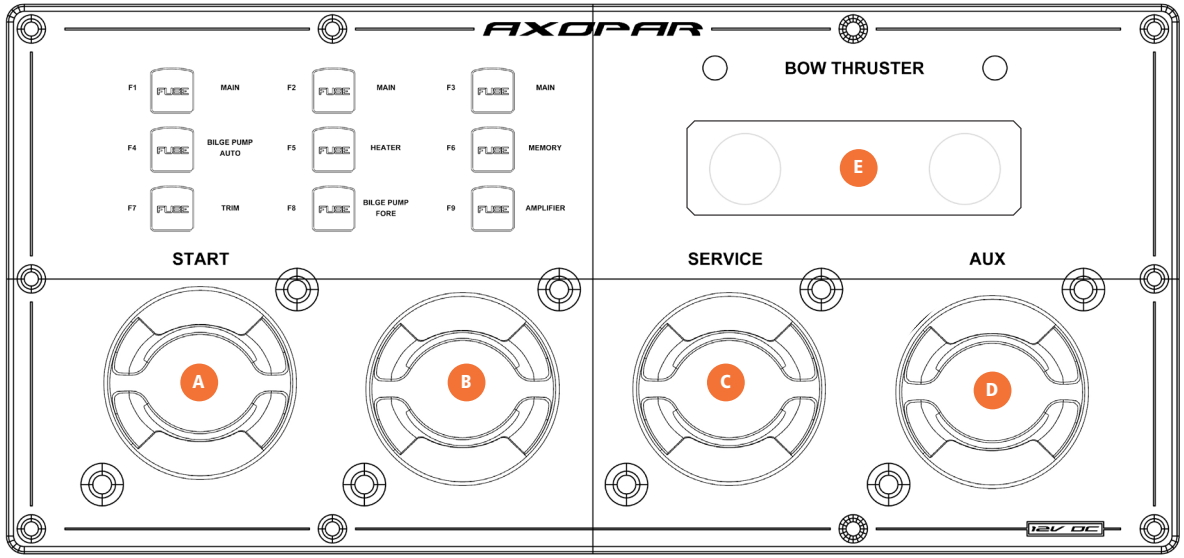
APPENDIX 1: FUSE PANEL

F1 Navigation lights
F2 Bilge pump
F3 Interior lights
F4 Windscreen wipers
F5 AUX
F6 Windscreen washer
F7 Horn
F8 12v DC power outlet
F9 Chart plotter
F10 VHF radio
F11 Heater control
F12 Deck lights
F13 Refrigerator
F14 Radio
F15 Search light
F16 Toilet light
F17 Radar
F18 Echo
F19 NMA 2000
F20 Autopilot
F21 Waste tank sensor control unit
F22-25 Spare
F26 Macerator (septic)
F27 Fresh water pump

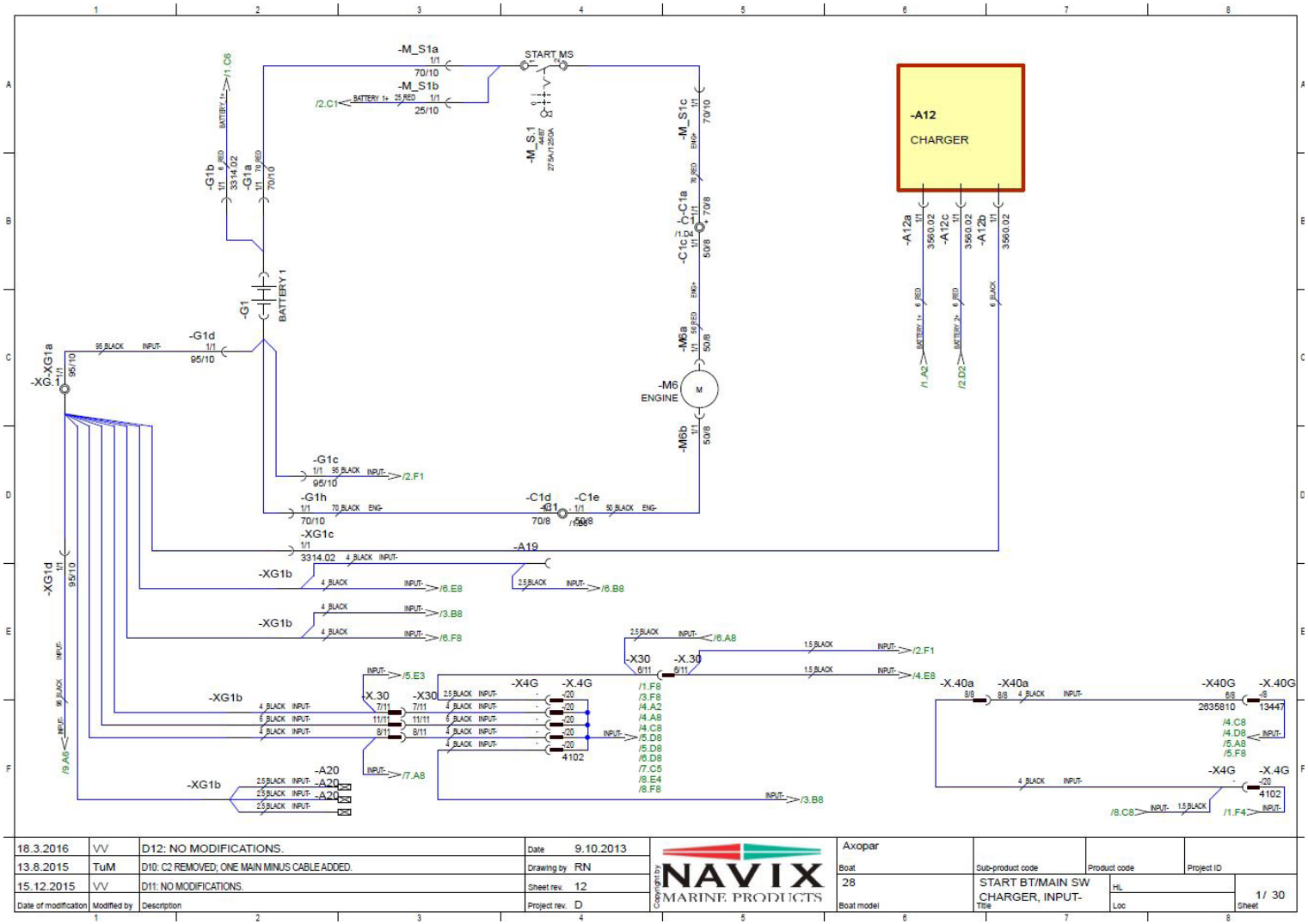
12v DC power outlet



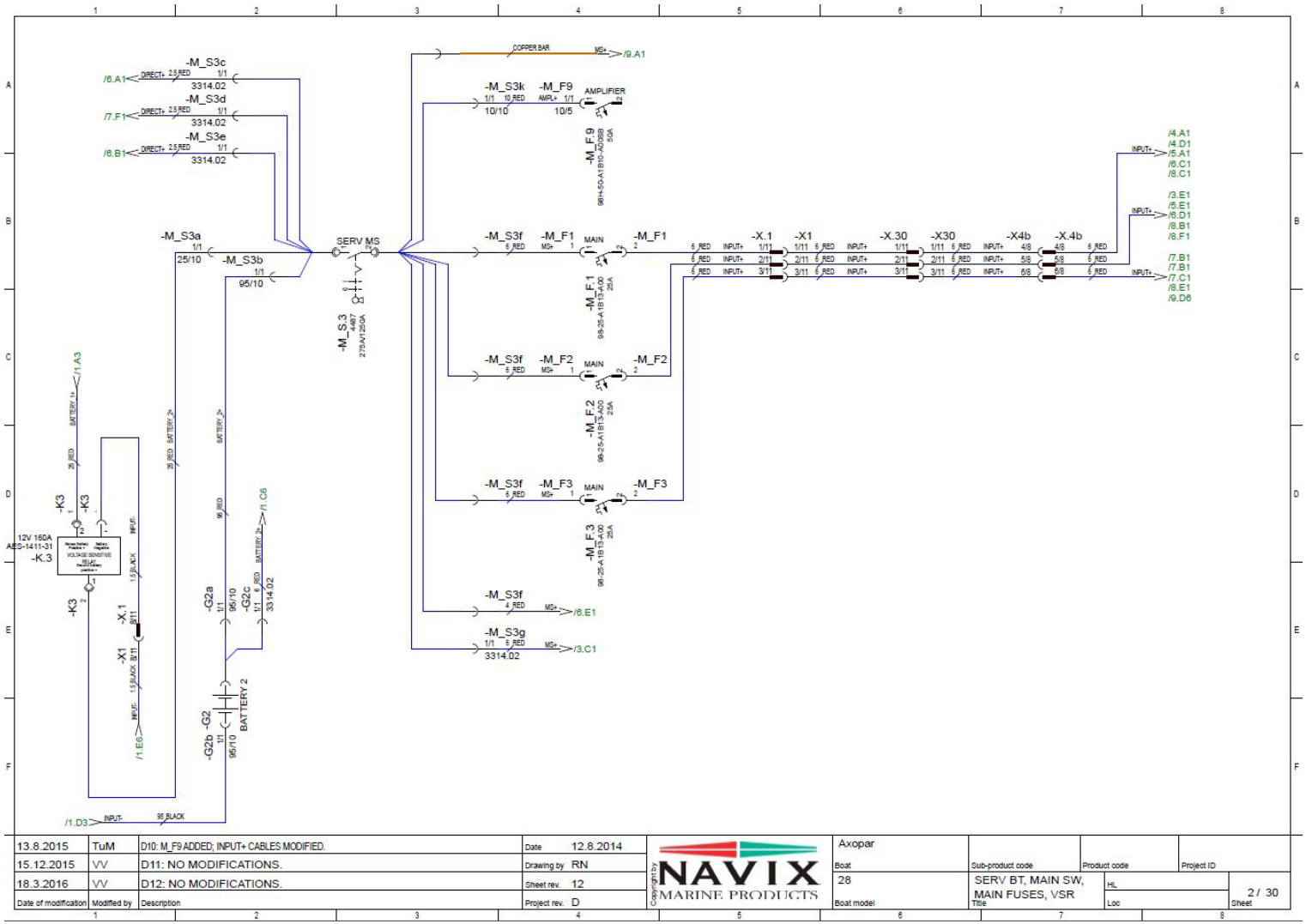
APPENDIX 2: MAIN POWER SWITCH



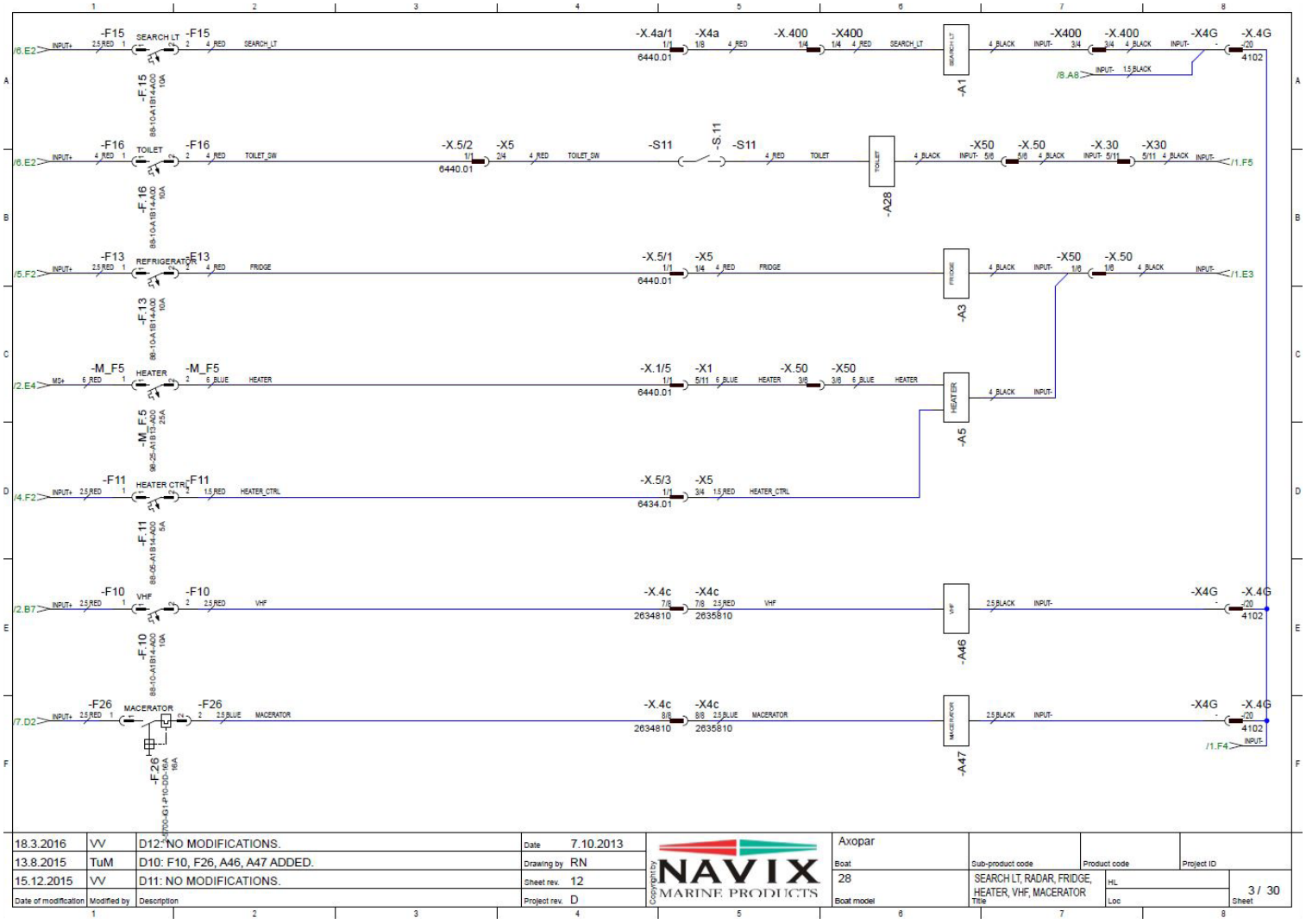
A)	SB engine	**F1**	Main fuse	**F6**	Radio memory
B)	BB engine	**F2**	Main fuse	**F7**	Trim tabs
C)	Service	**F3**	Main fuse	**F8**	Bilge pump manual control
D)	Aux	**F4**	Automatic bilge pump	**F9**	Amplifier
E)	Bow thruster fuse	**F5**	Webasto heater		

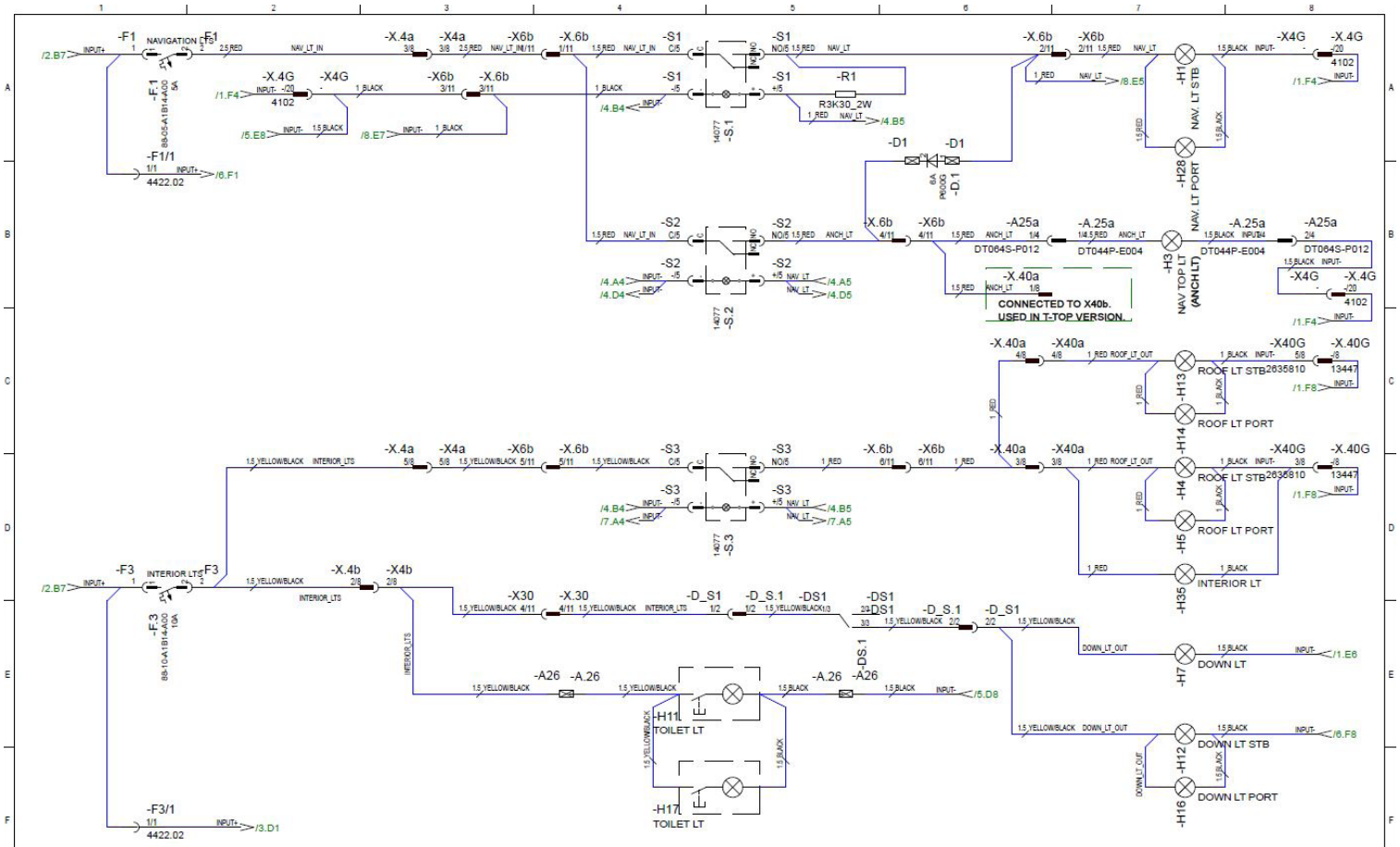


18.3.2016	VV	D12: NO MODIFICATIONS.	Date	9.10.2013	Copyright by NAVIX MARINE PRODUCTS	Axopar		
13.8.2015	TuM	D10: C2 REMOVED; ONE MAIN MINUS CABLE ADDED.	Drawing by	RN		Boat	Sub-product code	Product code	Project ID
15.12.2015	VV	D11: NO MODIFICATIONS.	Sheet rev.	12		28	START BT/MAIN SW CHARGER, INPUT-	HL	1/ 30
Date of modification	Modified by	Description	Project rev.	D		Boat model	Title	Loc	Sheet

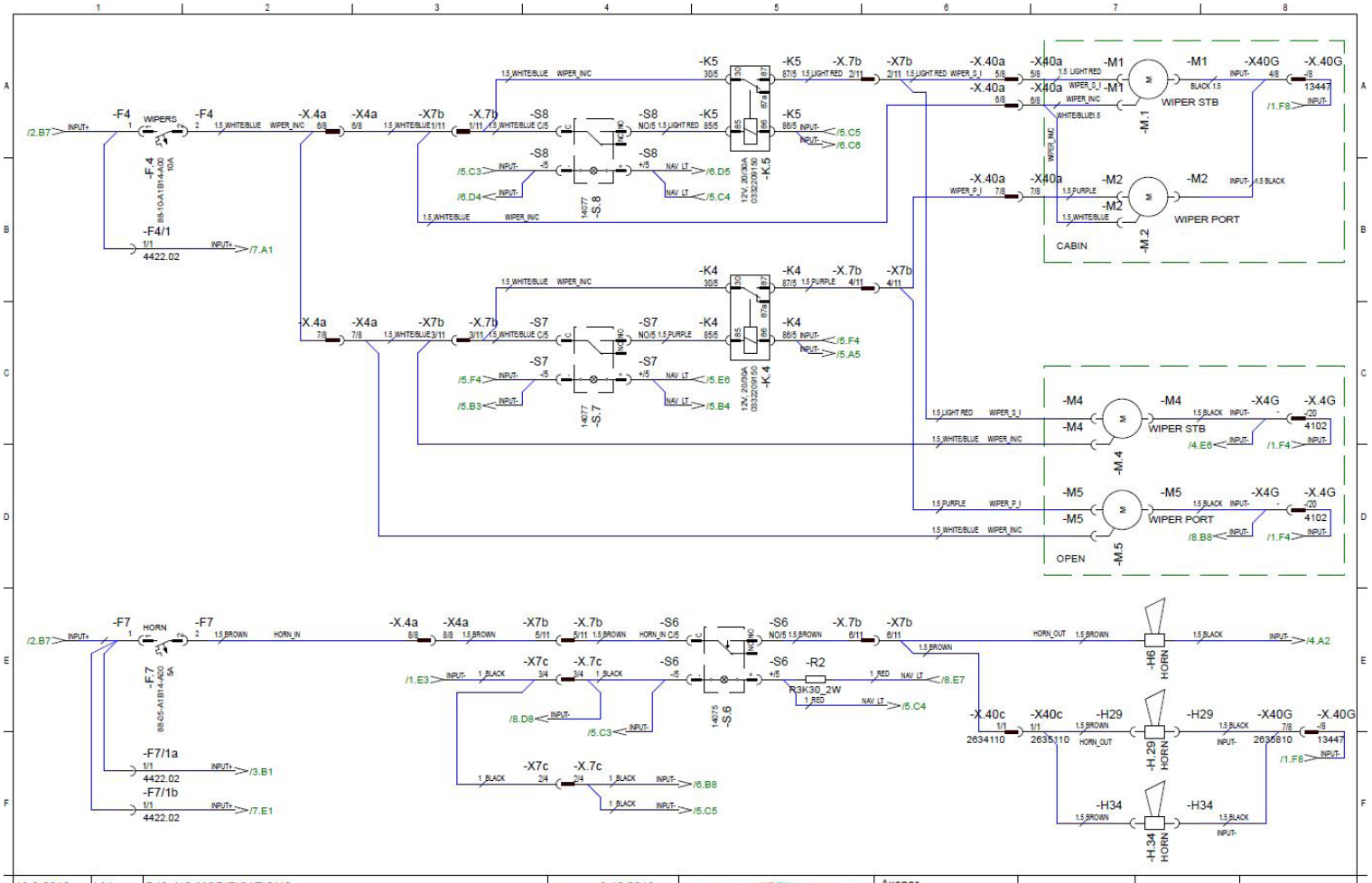


13.8.2015	TuM	D10: M_F9 ADDED; INPUT+ CABLES MODIFIED.	Date	12.8.2014	Copyright by NAVIX MARINE PRODUCTS	Axopar		
15.12.2015	VV	D11: NO MODIFICATIONS.	Drawing by	RN		Boat	Sub-product code	Product code	Project ID
18.3.2016	VV	D12: NO MODIFICATIONS.	Sheet rev.	12		28	SERV BT, MAIN SW, MAIN FUSES, VSR	HL	2 / 30
Date of modification	Modified by	Description	Project rev.	D		Boat model	Title	Loc	Sheet

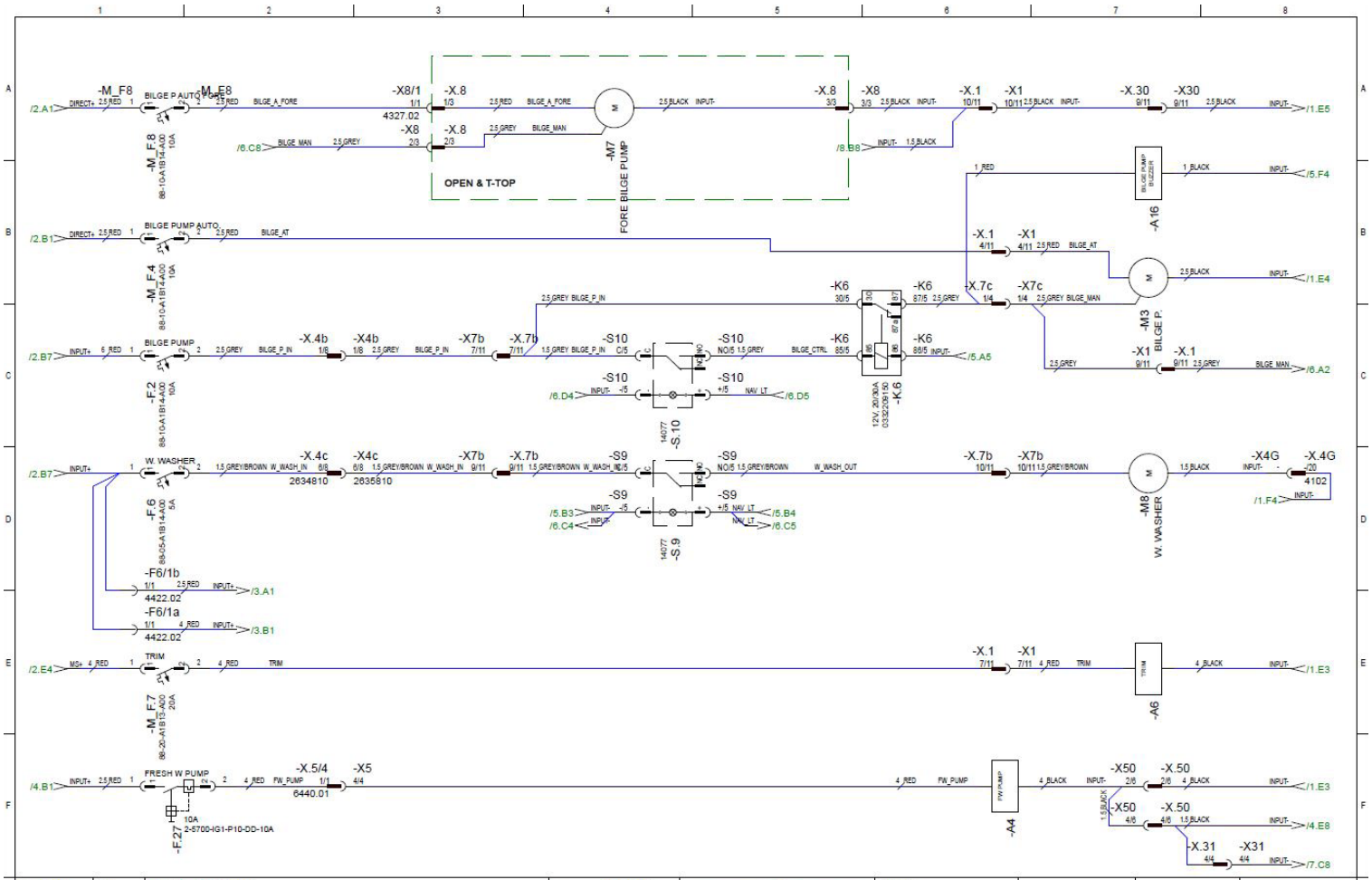

-F15 SEARCH LT
-F16 TOILET
-F13 REFRIGERATOR
-M_F5 HEATER
-F11 HEATER CTRL
-F10 VHF
-F26 MACERATOR
-X.4a/1
-X.5/2
-X.5/1
-X.1/5
-X.5/3
-X.4c
-X.400
-X.50
-X.30
-X4G
-X.4G
-S11
-A1
-A28
-A3
-A5
-A46
-A47
6440.01
6434.01
2634810
2635810
4102
/8.A8
/1.F5
/1.E3
/1.F4
18.3.2016 VV D12: NO MODIFICATIONS.
13.8.2015 TuM D10: F10, F26, A46, A47 ADDED.
15.12.2015 VV D11: NO MODIFICATIONS.
Date 7.10.2013
Drawing by RN
Sheet rev. 12
Project rev. D
NAVIX MARINE PRODUCTS
Axopar
28
SEARCH LT, RADAR, FRIDGE, HEATER, VHF, MACERATOR
HL
3 / 30



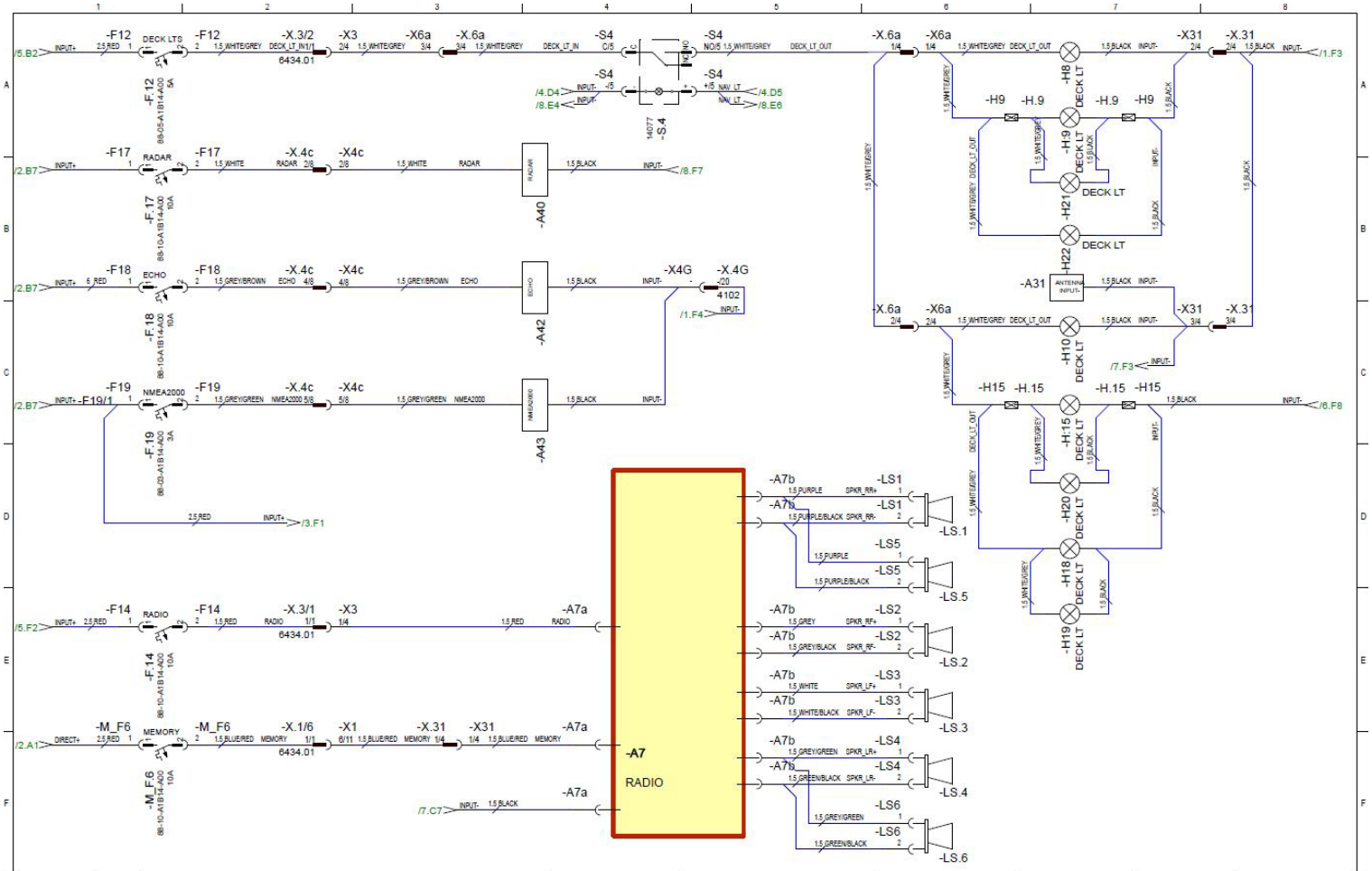
18.3.2016	VV	D12: NO MODIFICATIONS.	Date 7.10.2013	Copyright by NAVIX MARINE PRODUCTS	Axopar			
13.8.2015	TuM	D10: H28 ADDED.	Drawing by RN		Boat	Sub-product code	Product code	Project ID
15.12.2015	VV	D11: H35 ADDED.	Sheet rev. 12		28	LIGHTS	HL	4 / 30
Date of modification	Modified by	Description	Project rev. D		Boat model	Title	Loc	Sheet



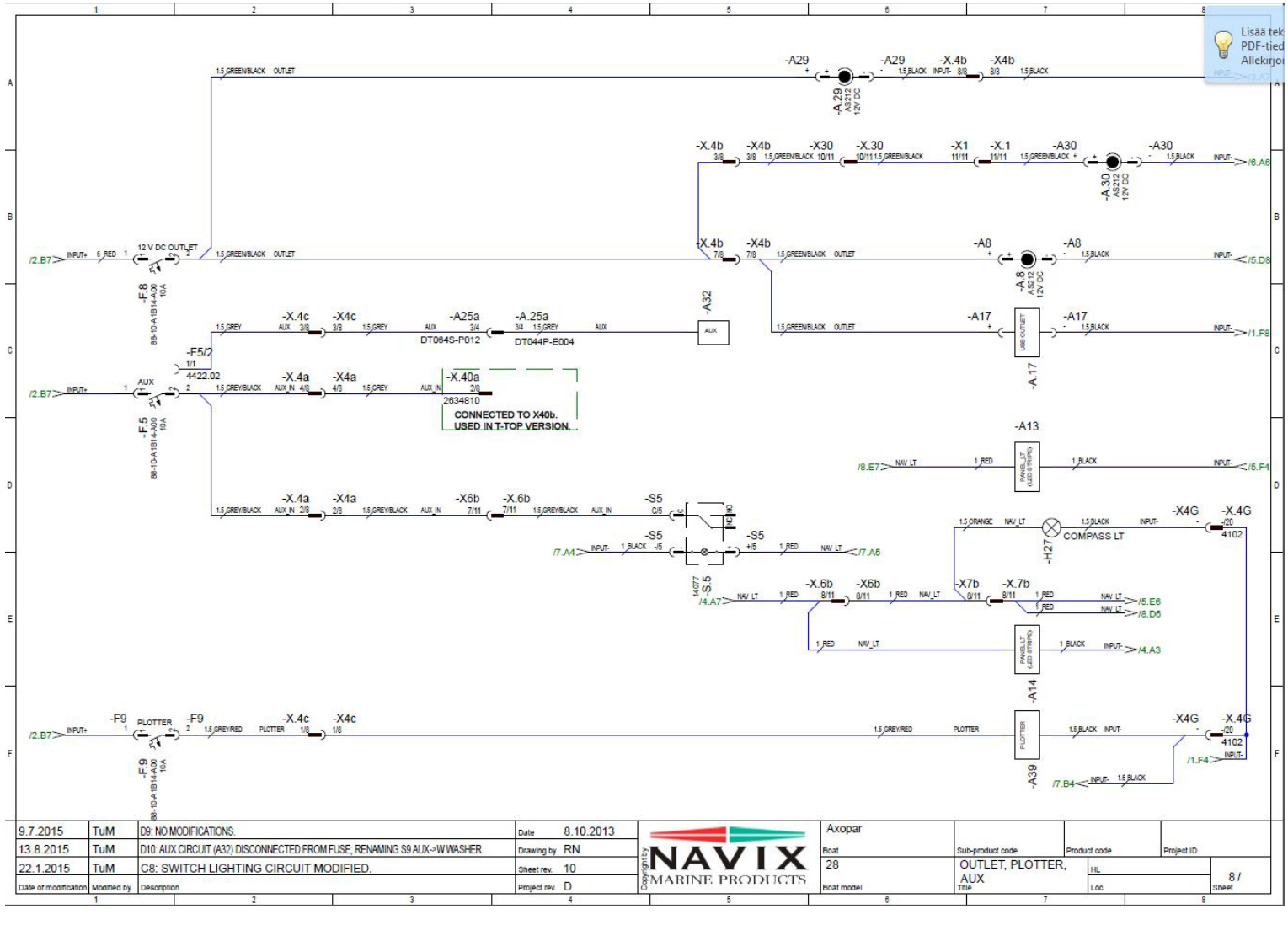
18.3.2016	VV	D12: NO MODIFICATIONS.	Date	8.10.2013	Copyright by NAVIX MARINE PRODUCTS	Axopar			
13.8.2015	TuM	D10: H29 ADDED.	Drawing by	RN		Boat	Sub-product code	Product code	Project ID
15.12.2015	VV	D11: H34 ADDED; WIPERS CONNECTORS CHANGED	Sheet rev.	12		28	WIPERS, HORN	HL	5 / 30
Date of modification	Modified by	Description	Project rev.	D		Boat model	Title	Loc	Sheet



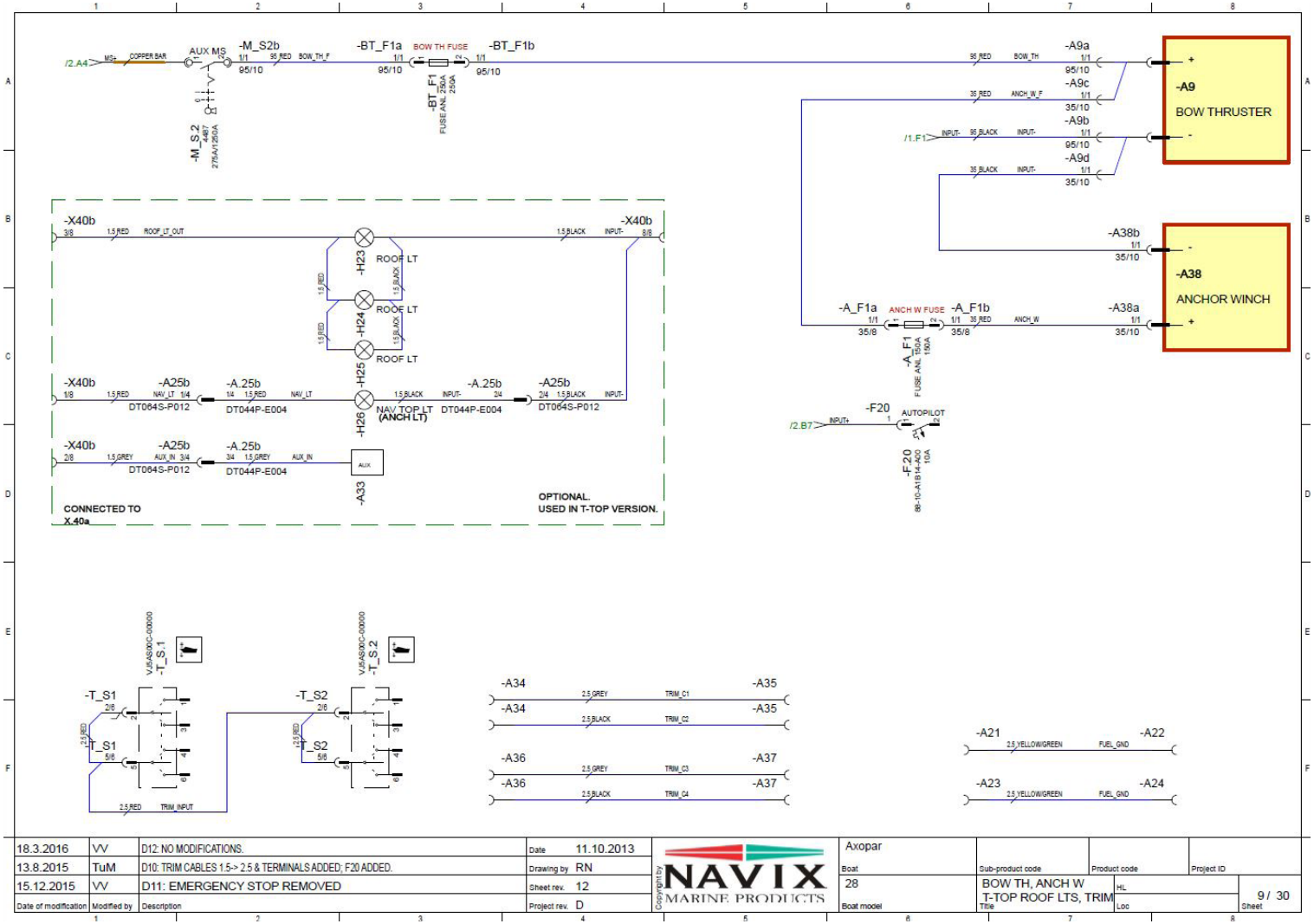
18.3.2016	VV	D12: NO MODIFICATIONS.	Date	8.10.2013	Copyright by NAVIX MARINE PRODUCTS	Axopar		
13.8.2015	TuM	D10: F6 SPARE->W.WASHER; W. WASHER CIRCUIT (F6, S9, M8) ADDED.	Drawing by	RN		Boat	Sub-product code	Product code / Project ID
15.12.2015	VV	D11: NO MODIFICATIONS.	Sheet rev.	12		28	PUMPS, TRIM, W. WASHER	HL
Date of modification	Modified by	Description	Project rev.	D		Boat model	Title	Loc / Sheet 6 / 30



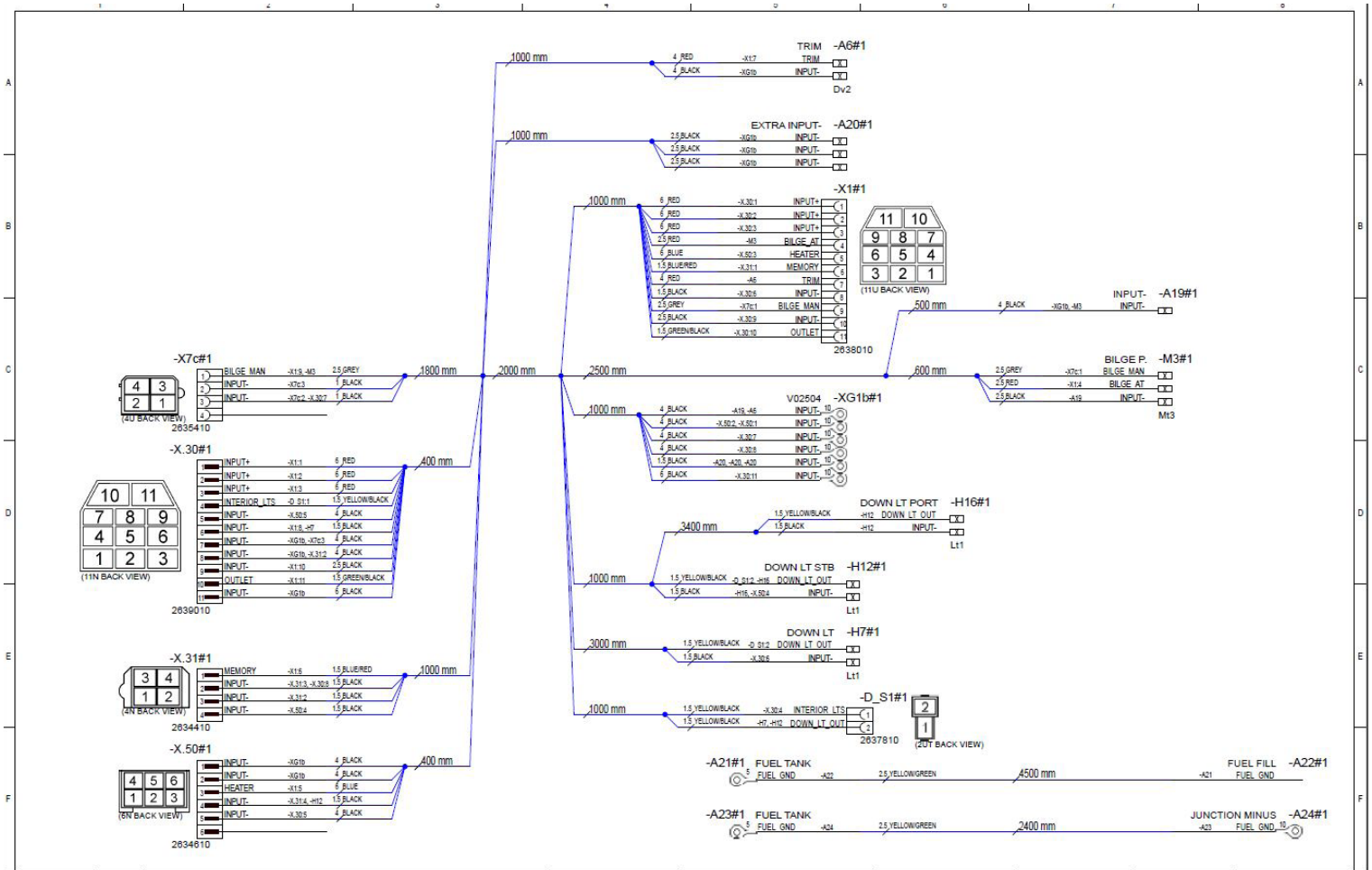
18.3.2016	VV	D12: NO MODIFICATIONS.	Date	8.10.2013	Axopar			
13.8.2015	TuM	D10: CARD READER CIRCUIT (A41 & F18) REMOVED; RENAMING F19->18, F20->19; LS5 & LS6 ADDED.	Drawing by	RN	Boat	Sub-product code	Product code	Project ID
15.12.2015	VV	D11: NO MODIFICATIONS.	Sheet rev.	12	28	DECK LTS, NAV EQ., RADIO	HL	7 / 30
Date of modification	Modified by	Description	Project rev.	D	Boat model	Title	Loc	Sheet



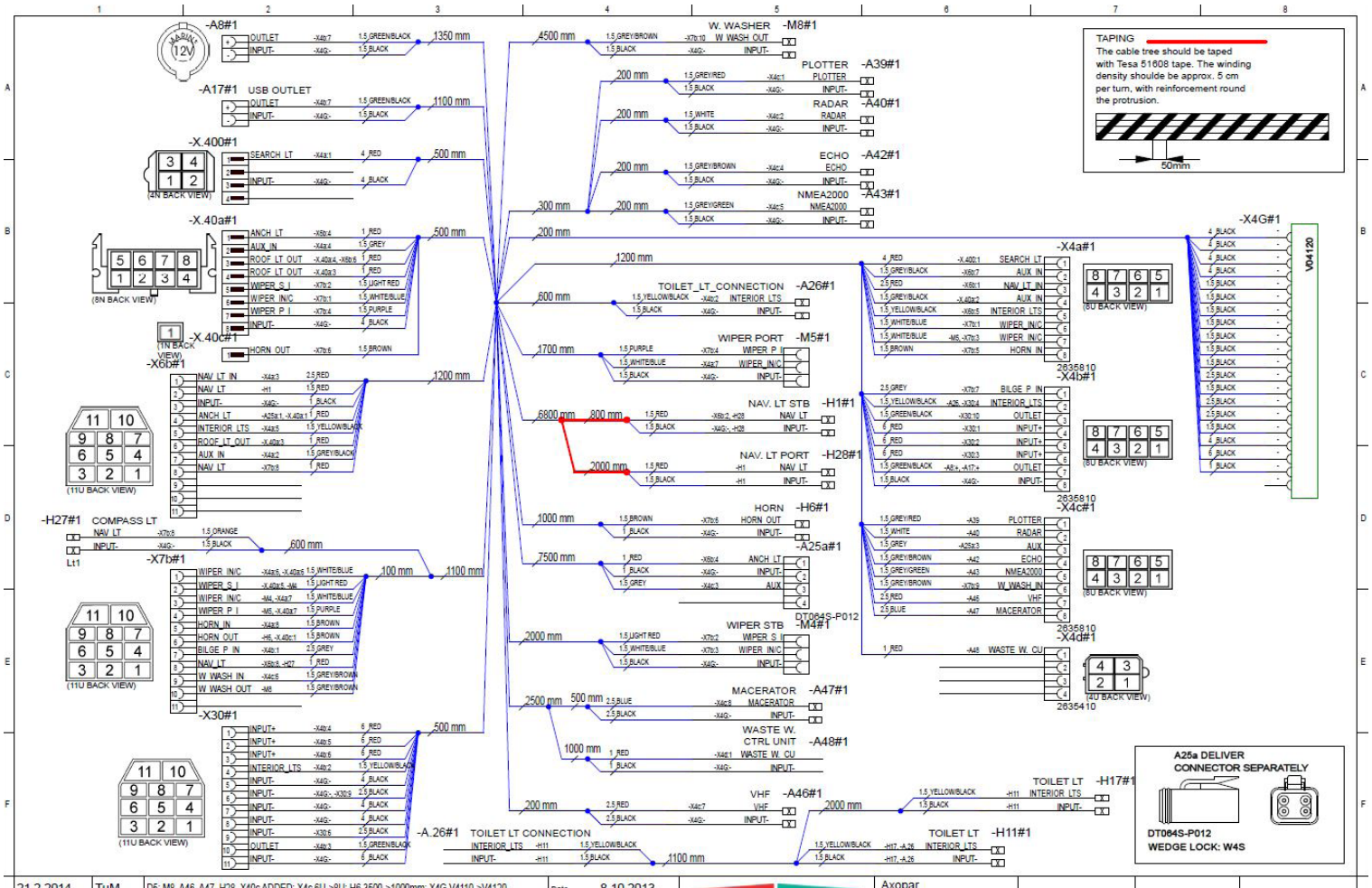
9.7.2015	TuM	D9: NO MODIFICATIONS.	Date	8.10.2013	Axopar			
13.8.2015	TuM	D10: AUX CIRCUIT (A32) DISCONNECTED FROM FUSE; RENAMING S9 AUX.->W.WASHER.	Drawing by	RN	Boat	Sub-product code	Product code	Project ID
22.1.2015	TuM	C8: SWITCH LIGHTING CIRCUIT MODIFIED.	Sheet rev.	10	28	OUTLET, PLOTTER, AUX	HL	8 /
Date of modification	Modified by	Description	Project rev.	D	Boat model	Title	Loc	Sheet



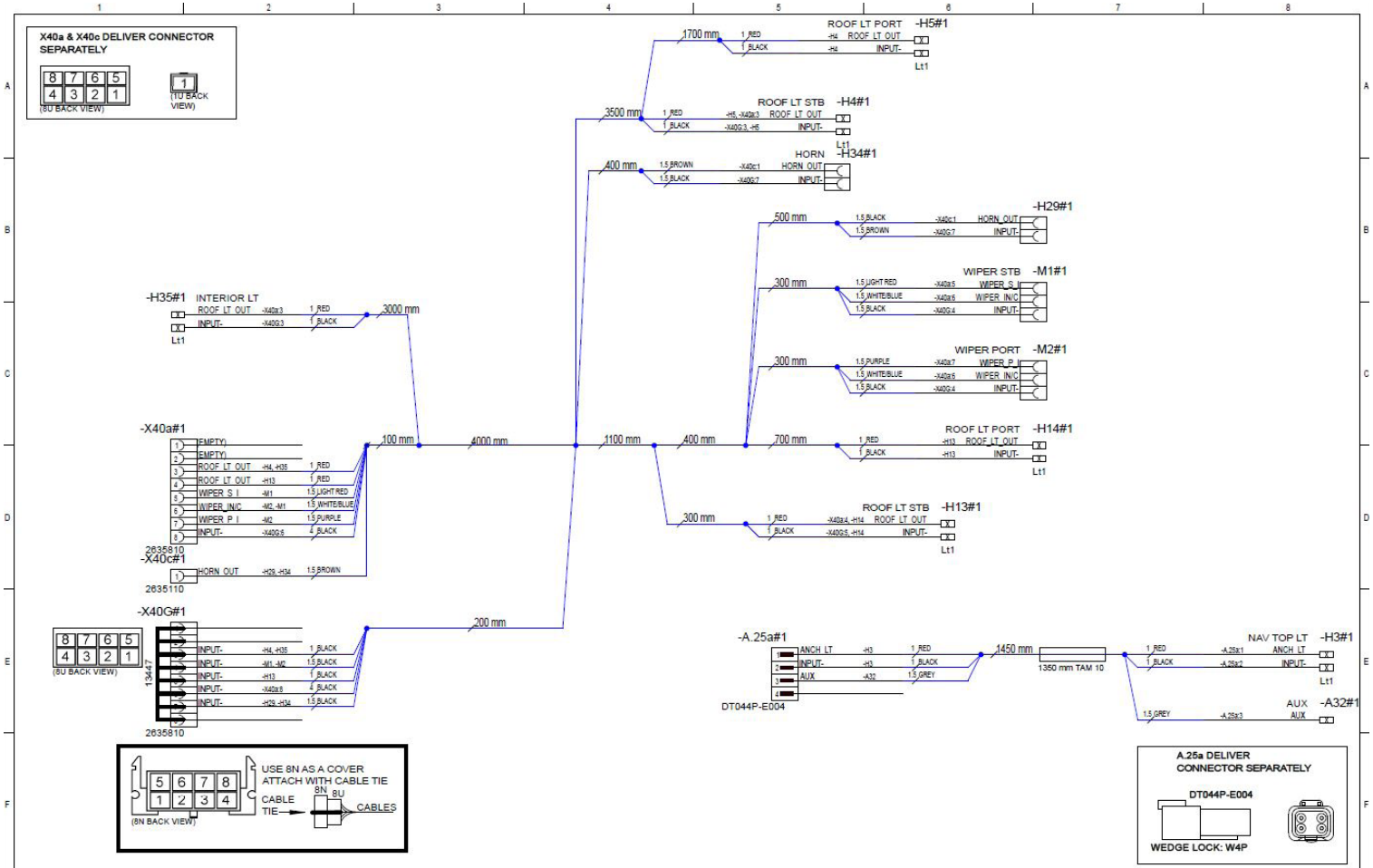
18.3.2016	VV	D12: NO MODIFICATIONS.	Date	11.10.2013	Copyright by NAVIX MARINE PRODUCTS	Axopar		
13.8.2015	TuM	D10: TRIM CABLES 1.5-> 2.5 & TERMINALS ADDED; F20 ADDED.	Drawing by	RN		Boat	Sub-product code	Product code	Project ID
15.12.2015	VV	D11: EMERGENCY STOP REMOVED	Sheet rev.	12		28	BOW TH, ANCH W T-TOP ROOF LTS, TRIM	HL	9 / 30
Date of modification	Modified by	Description	Project rev.	D		Boat model	Title	Loc	Sheet



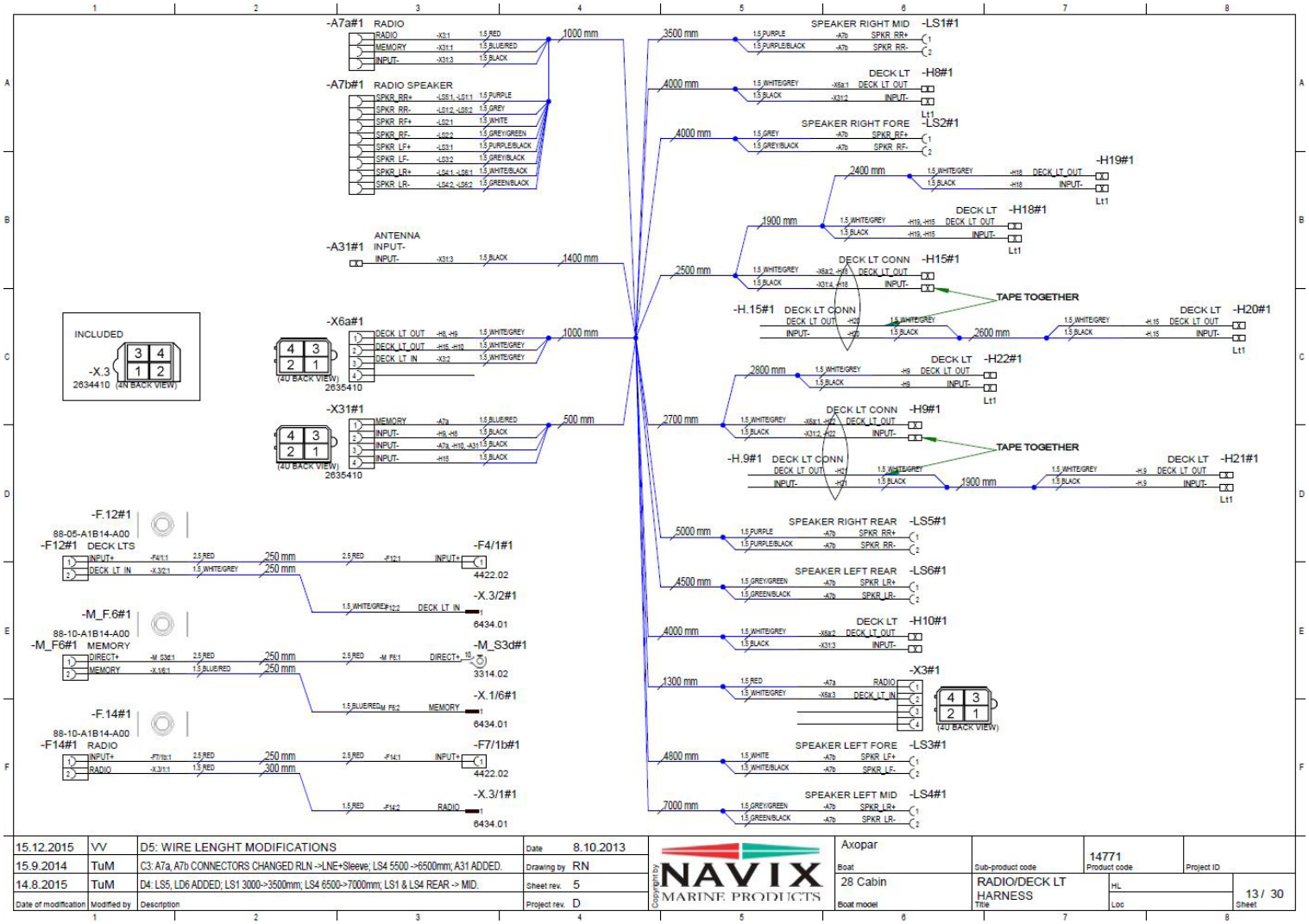
11.12.2015	VV	D5: DOWN LT PORT WIRE LENGHT 2400mm->3400mm.	Date	8.10.2013	Axopar		14767	
18.3.2016	VV	D6: -X7c LENGHT CHANGE 1700mm-> 1800mm	Drawing by	RN	Boat	Sub-product code	Product code	Project ID
14.8.2015	TuM	D4: MAIN INPUT- CABLE ADDED X.30/11 - XG1b.	Sheet rev.	6	28	HULL HARNESS	HL	10 / 30
Date of modification	Modified by	Description	Project rev.	D	Boat model	Title	Loc	Sheet



21.2.2014	TuM	D5: M8, A46, A47, H28, X40c ADDED; X4c 6U->8U; H6 3500->1000mm; X4G V4110->V4120.	Date	8.10.2013	Axopar		14768
11.12.2015	VV	D6: LENGHT MODIFICATIONS; A48 ADDED; WIPER CONNECTORS CHANGED.	Drawing by	RN	Boat	Sub-product code	Product code / Project ID
26.9.2014	TuM	C4: X4G 13447->V4110; A39-A43, H27, X4c ADDED; A8 1500->1350mm; A17 1500->1100mm; A.25, H3 REMOVED.	Sheet rev.	6	28	DECK HARNESS	
Date of modification	Modified by	Description	Project rev.	D	Boat model	Title	HL / Loc / 11/ 30 Sheet

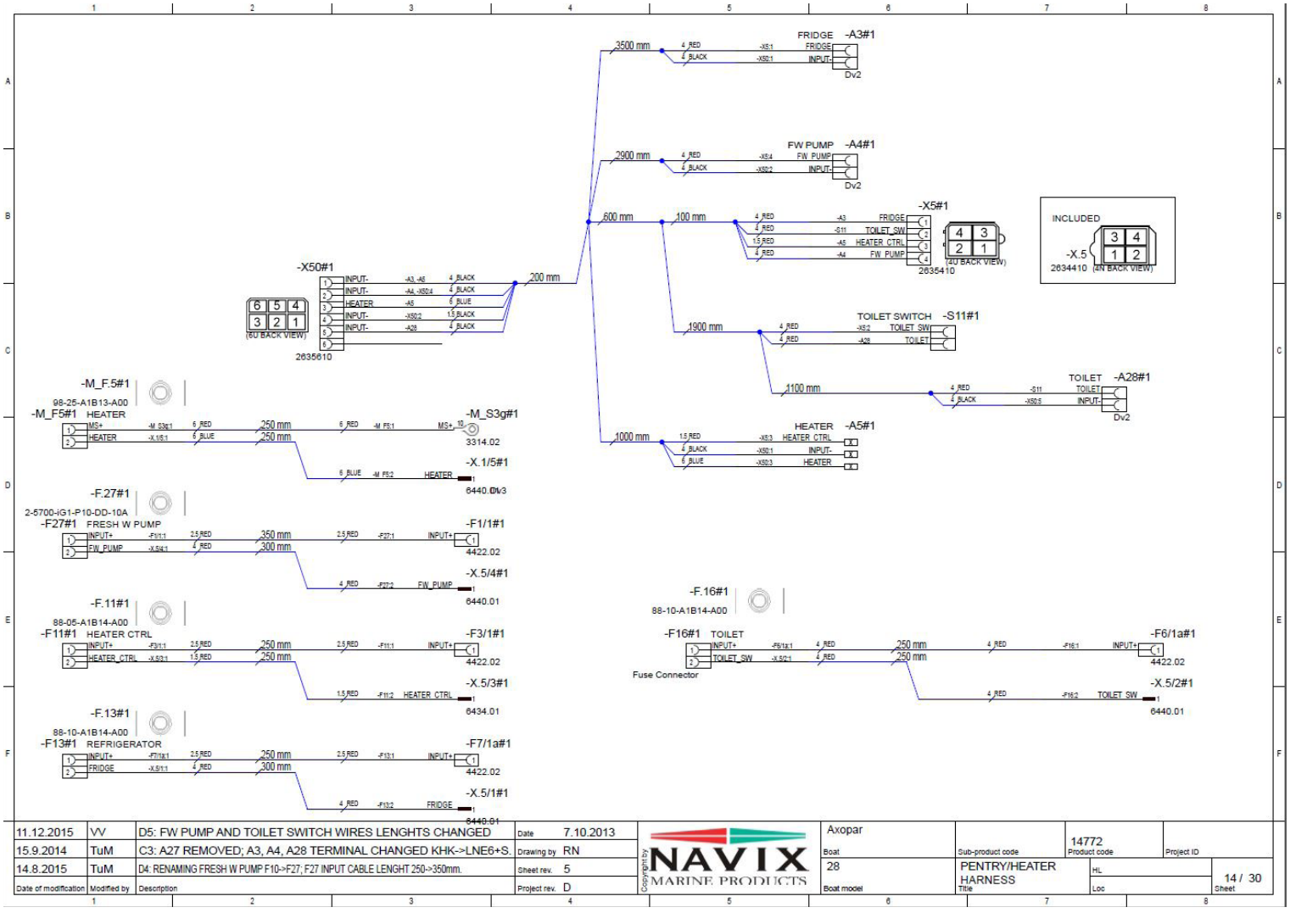


11.12.2015	VV	D5: H35 AND H34 ADDED; WIPER CONNECTORS CHANGED; WIRE LENGHT MODIFIED	Date	8.10.2013	Axopar		14769	
16.9.2014	TuM	C3: MAIN BUNDLE 200->1100mm; A.25, H3, A32 ADDED.	Drawing by	RN	Boat	Sub-product code	Product code	Project ID
14.8.2015	TuM	D4: X40c, H29 ADDED; X40 BUNDLE 2100->2600mm, A.25 1000->1450mm; TUBE ADDED TO A.25.	Sheet rev.	5	28 Cabin	ROOF HARNESS		12 / 30
Date of modification	Modified by	Description	Project rev.	D	Boat model	Title	HL / Loc	Sheet



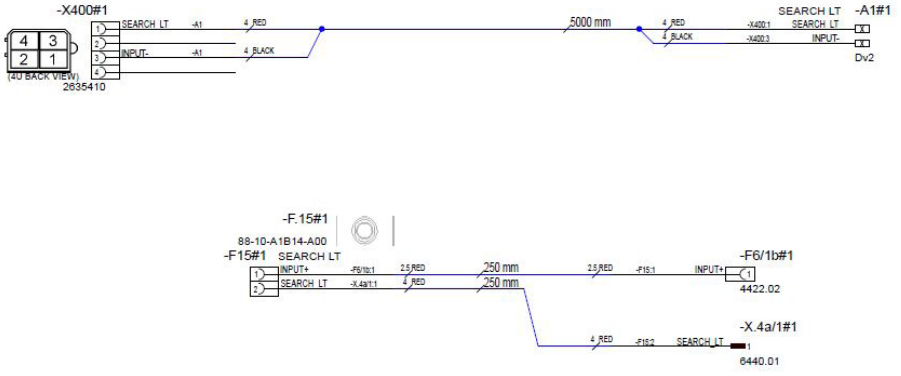
Date of modification	Modified by	Description			
15.12.2015	VV	D5: WIRE LENGHT MODIFICATIONS	Date	8.10.2013	
15.9.2014	TuM	C3: A7a, A7b CONNECTORS CHANGED RLN ->LNE+Sleeve; LS4 5500 ->6500mm; A31 ADDED.	Drawing by	RN	
14.8.2015	TuM	D4: LS5, LD6 ADDED; LS1 3000->3500mm; LS4 6500->7000mm; LS1 & LS4 REAR -> MID.	Sheet rev.	5	
			Project rev.	D	

Axopar		14771		
Boat	Sub-product code	Product code	Project ID	
28 Cabin	RADIO/DECK LT HARNESS			13 / 30
Boat model	Title	HL	Loc	Sheet



11.12.2015	VV	D5: FW PUMP AND TOILET SWITCH WIRES LENGHTS CHANGED	Date	7.10.2013	Axopar		14772	
15.9.2014	TuM	C3: A27 REMOVED; A3, A4, A28 TERMINAL CHANGED KHK->LNE6+S.	Drawing by	RN	Boat	Sub-product code	Product code	Project ID
14.8.2015	TuM	D4: RENAMING FRESH W PUMP F10->F27; F27 INPUT CABLE LENGHT 250->350mm.	Sheet rev.	5	28	PENTRY/HEATER HARNESS	HL	14 / 30
Date of modification	Modified by	Description	Project rev.	D	Boat model	Title	Loc	Sheet

Copyright by NAVIX MARINE PRODUCTS



31.3.2014	TuM	B1: NO MODIFICATIONS.	Date	7.10.2013	Axopar		14773	
16.9.2014	TuM	C1: NO MODIFICATIONS.	Drawing by	RN	Boat	Sub-product code	Product code	Project ID
14.8.2015	TuM	D1: NO MODIFICATIONS.	Sheet rev.	1	28 Cabin	OPTIONAL ROOF HARNESS	HL	15 / 30
Date of modification	Modified by	Description	Project rev.	D	Boat model	Title	Loc	Sheet

NOTICE! CABLES WITH STICKER

FOR EXAMPLE

EA032
STARTER STB

INCLUDED

M5x50 COUNTERSUNK HEXAGON SCREW

2x

2x 6440 ALUMINIUM BUSHING FOR MAIN SWITCHES

2x M5 NUT

-BT_F1#1
FUSE ANL 250A

FUSE ANL 250A
250A

AUX MS

-M_S.2#1
AES-1211-28A

1x

4629 COPPER BAR

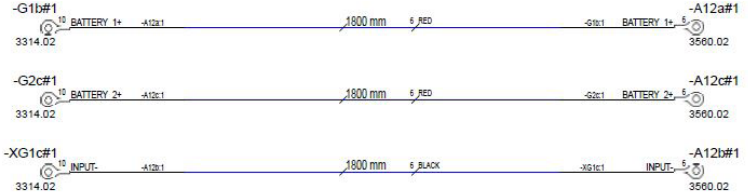
-M_S2b#1 AUX MS 10 BOW_TH_F -BT_F1a:1 — 170 mm — 95 RED — -M_S2b:1 BOW TH FUSE BOW_TH_F 5 -BT_F1a#1
95/10 95/10

-BT_F1b#1 10 BOW_TH -A9a:1 — 6000 mm — 95 RED — -BT_F1b:1 BOW THRUSTER BOW_TH_ 10 -A9a#1
95/10 95/10

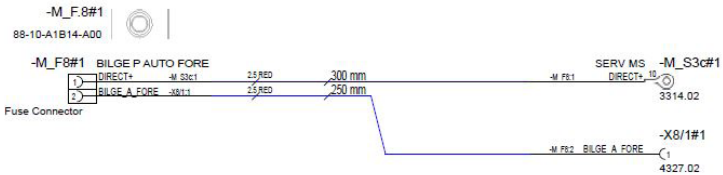
-XG1d#1 V02504 10 INPUT- -A9b:1 — 6000 mm — 95 BLACK — -XG1d:1 BOW THRUSTER INPUT- 10 -A9b#1
95/10 95/10

14.8.2015	TuM	D5: BOW_TH_F LENGHT 500->170mm.	Date	11.10.2013	Axopar		14775	
11.12.2015	VV	D6: EMERGENCY STOP REMOVED	Drawing by	RN	Boat	Sub-product code	Product code	Project ID
17.9.2014	TuM	C4: 4629 ADDED; M_S3h - M_S2a CABLE REMOVED.	Sheet rev.	6	28	BOW TH. CABLES	HL	16 / 30
Date of modification	Modified by	Description	Project rev.	D	Boat model	Title	Loc	Sheet

Copyright by NAVIX MARINE PRODUCTS

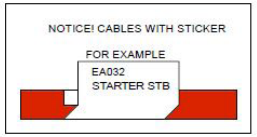


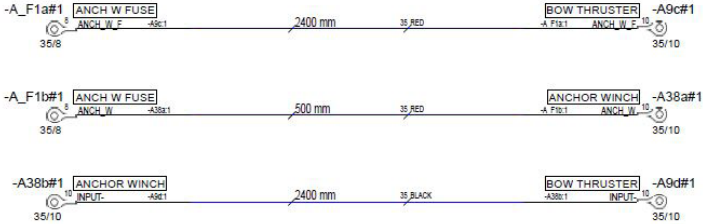
31.3.2014	TuM	B1: NO MODIFICATIONS.	Date 11.10.2013	Copyright by NAVIX MARINE PRODUCTS	Axopar		14776	
16.9.2014	TuM	C2: BATTERY_1+ 1500 -> 1800mm; BATTERY_2+ 3500 -> 1800mm; INPUT- 1500 -> 1800mm.	Drawing by RN		Boat	Sub-product code	Product code	Project ID
14.8.2015	TuM	D2: NO MODIFICATIONS.	Sheet rev. 2		28	CHARGER CABLES	HL	17 / 30
Date of modification	Modified by	Description	Project rev. D		Boat model	Title	Loc	Sheet

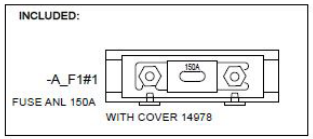


28.3.2014	TuM	B1: INTRODUCED DRAWING.	Date	28.3.2014	Axopar		15785	
16.9.2014	TuM	C1: NO MODIFICATIONS.	Drawing by	TuM	Boat	Sub-product code	Product code	Project ID
14.8.2015	TuM	D1: NO MODIFICATIONS.	Sheet rev.	1	28	FORE BILGE HARNESS	HL	18 / 30
Date of modification	Modified by	Description	Project rev.	D	Boat model	Title	Loc	Sheet

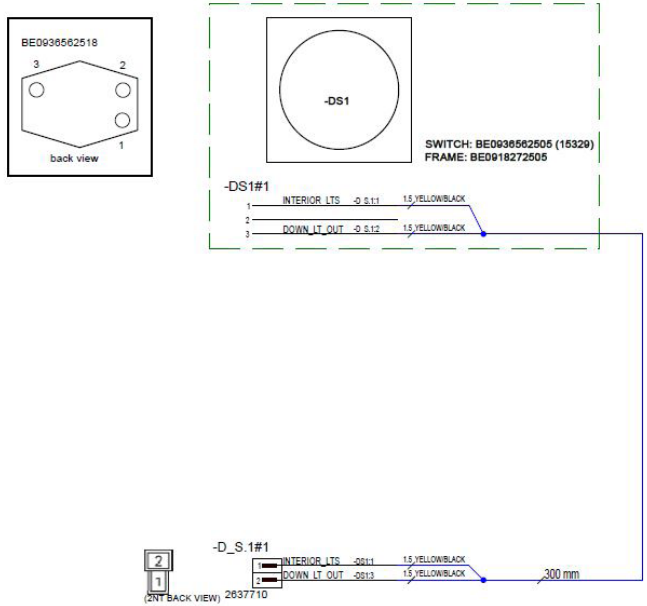
Copyright by NAVIX MARINE PRODUCTS



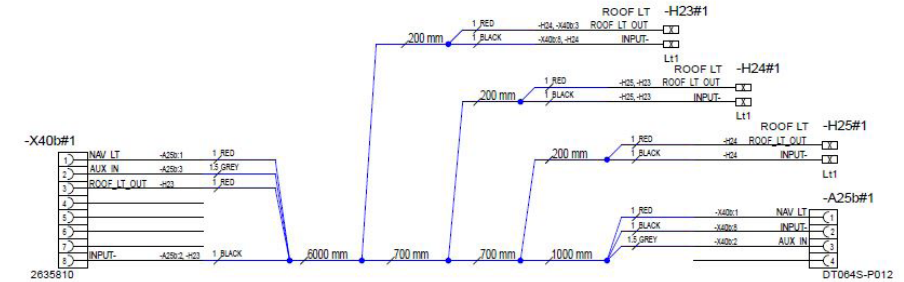


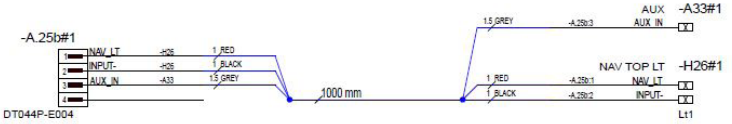


17.9.2014	TuM	C1: INTRODUCED DRAWING.	Date	17.9.2014		Axopar		16523	
14.8.2015	TuM	D1: NO MODIFICATIONS.	Drawing by	TuM		Boat	Sub-product code	Product code	Project ID
			Sheet rev.	1		28	ANCHOR WINCH CABLES FORE	HL	19 / 30
Date of modification	Modified by	Description	Project rev.	D		Boat model	Title	Loc	Sheet

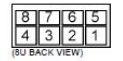


17.9.2014	TuM	C1: INTRODUCED DRAWING.	Date	19.9.2014	Axopar		16538		
14.8.2015	TuM	D1: NO MODIFICATIONS.	Drawing by	TuM	Boat	Sub-product code	Product code	Project ID	
			Sheet rev.	1	28	LIGHT SWITCH	HL	20 / 30	
Date of modification	Modified by	Description	Project rev.	D	Boat model	Title	Loc	Sheet	





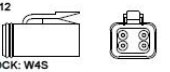
X40b DELIVER CONNECTOR SEPARATELY



(8U BACK VIEW)

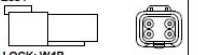
A25b & A.25b DELIVER CONNECTOR SEPARATELY

DT064S-P012



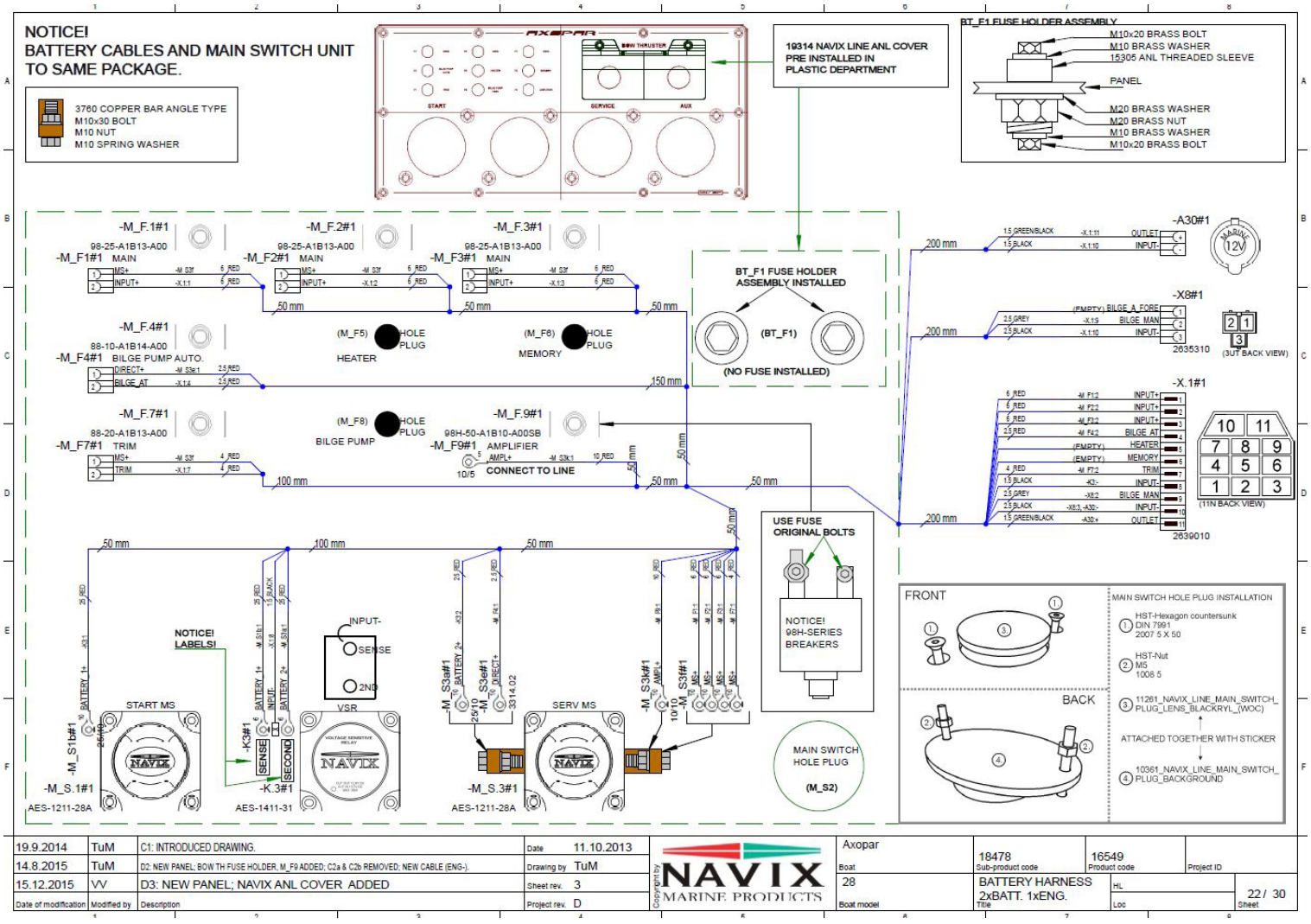
WEDGE LOCK: W4S

DT044P-E004

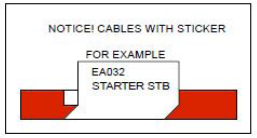


WEDGE LOCK: W4P

16.9.2014	TuM	C1: INTRODUCED DRAWING.	Date	16.9.2014	Axopar		16546	
14.8.2015	TuM	D1: NO MODIFICATIONS.	Drawing by	TuM	Boat	Sub-product code	Product code	Project ID
			Sheet rev.	1	28	T-TOP ROOF HARNESS		21/ 30
Date of modification	Modified by	Description	Project rev.	D	Boat model	Title	HL / Loc	Sheet

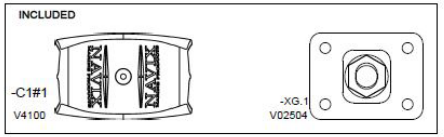


19.9.2014	TuM	C1: INTRODUCED DRAWING.	Date	11.10.2013	Axopar	18478	16549	
14.8.2015	TuM	D2: NEW PANEL; BOW TH FUSE HOLDER, M_F9 ADDED; C2a & C2b REMOVED; NEW CABLE (ENG-).	Drawing by	TuM	Boat	Sub-product code	Product code	Project ID
15.12.2015	VV	D3: NEW PANEL; NAVIX ANL COVER ADDED	Sheet rev.	3	28	BATTERY HARNESS 2xBATT. 1xENG.	HL	22 / 30
Date of modification	Modified by	Description	Project rev.	D	Boat model	Title	Loc	Sheet

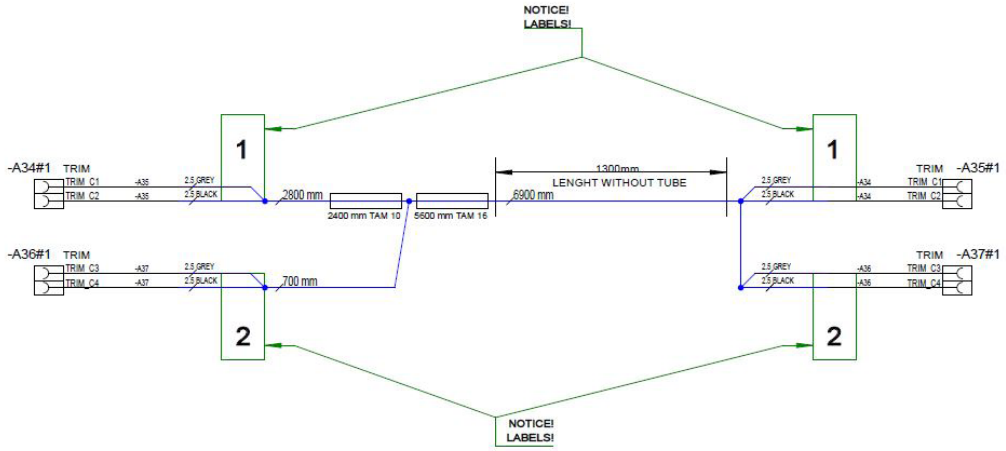


NOTICE!
BATTERY CABLES AND MAIN SWITCH UNIT TO SAME PACKAGE.

NOTICE!
VSR & M_F9 CABLES IN PREVIOUS PAGE.
MORE INFO IN CUTTING LIST.



19.9.2014	TuM	C1: INTRODUCED DRAWING.	Date	28.3.2014	Axopar	18478	16549	
14.8.2015	TuM	D2: NEW PANEL; BOW TH FUSE HOLDER, M_F9 ADDED; C2a & C2b REMOVED; NEW CABLE (ENG-).	Drawing by	TuM	Boat	Sub-product code	Product code	Project ID
15.12.2015	VV	D3: NEW PANEL; NAVIX ANL COVER ADDED	Sheet rev.	3	28	BATTERY HARNESS 2xBATT. 1xENG.	HL	23 / 30
Date of modification	Modified by	Description	Project rev.	D	Boat model	Title	Loc	Sheet

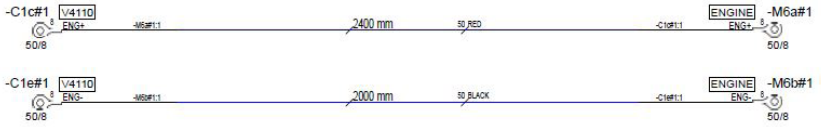


17.9.2014	TuM	C1: INTRODUCED DRAWING.	Date	17.9.2014	Axopar		17858	
14.8.2015	TuM	D2: CABLES 1.5 ->2.5mm2; LENGHTS MODIFIED; TERMINALS ADDED.	Drawing by	TuM	Boat	Sub-product code	Product code	Project ID
11.12.2015	VV	D3: CONNECTORS CHANGED; LENGHTS CHANGED; LABELS ADDED	Sheet rev.	3	28	TRIM HARNESS	HL	24 / 30
Date of modification	Modified by	Description	Project rev.	D	Boat model	Title	Loc	Sheet

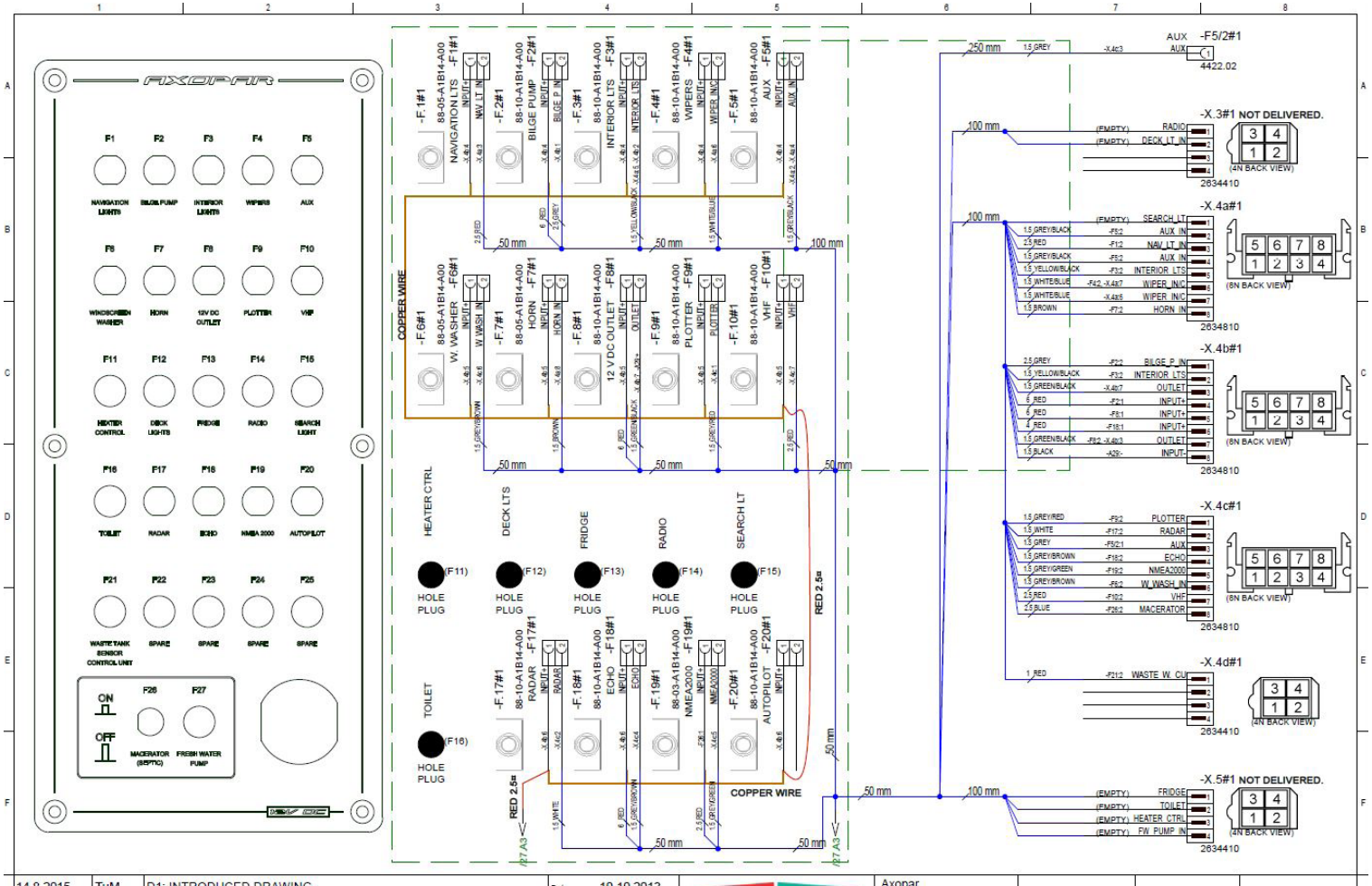
NOTICE! CABLES WITH STICKER

FOR EXAMPLE

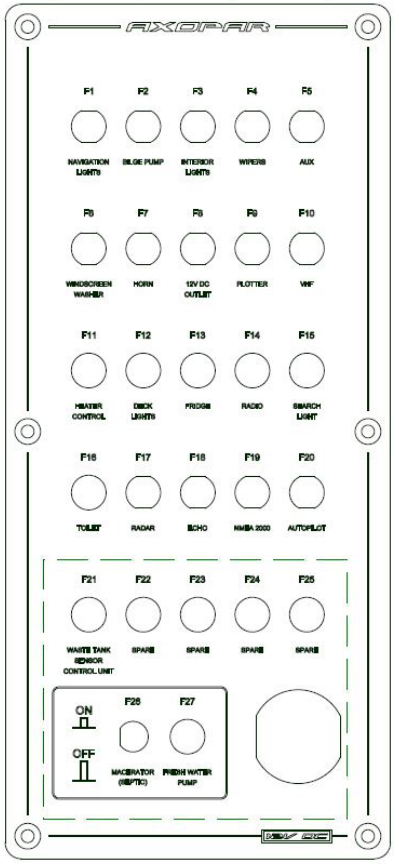
EA032
STARTER STB

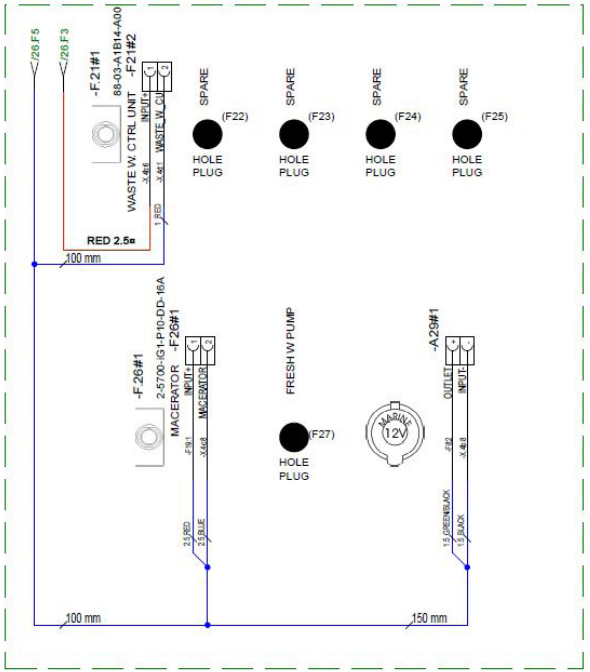


9.7.2015	RN	C1: INTRODUCED DRAWING.	Date	9.7.2015	Axopar		18138		
18.8.2015	TuM	D1: NO MODIFICATIONS.	Drawing by	TuM	Boat	Sub-product code	Product code	Project ID	
			Sheet rev.	1	28	PRE-RIG CABLES MERCURY	HL	25 / 30	
Date of modification	Modified by	Description	Project rev.	D	Boat model	Title	Loc	Sheet	

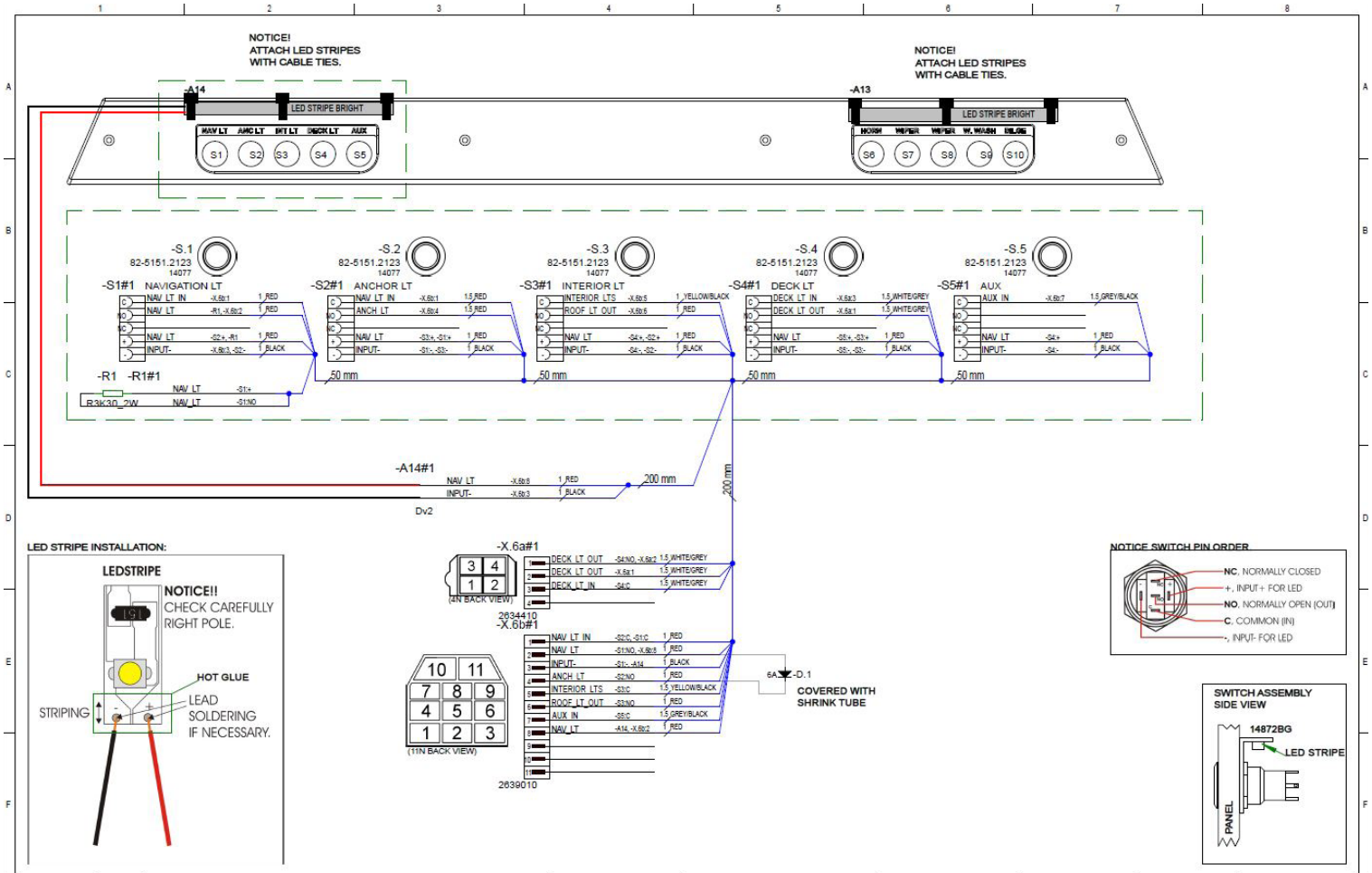


14.8.2015	TuM	D1: INTRODUCED DRAWING.	Date	10.10.2013	Axopar	18476	18145	
15.12.2015	VV	D2: NEW PANEL; F21 AND X.4d#1 ADDED	Drawing by	RN	Boat	Sub-product code	Product code	Project ID
			Sheet rev.	2	28	FUSE UNIT 2016	HL	26 / 30
Date of modification	Modified by	Description	Project rev.	D	Boat model	Title	Loc	Sheet





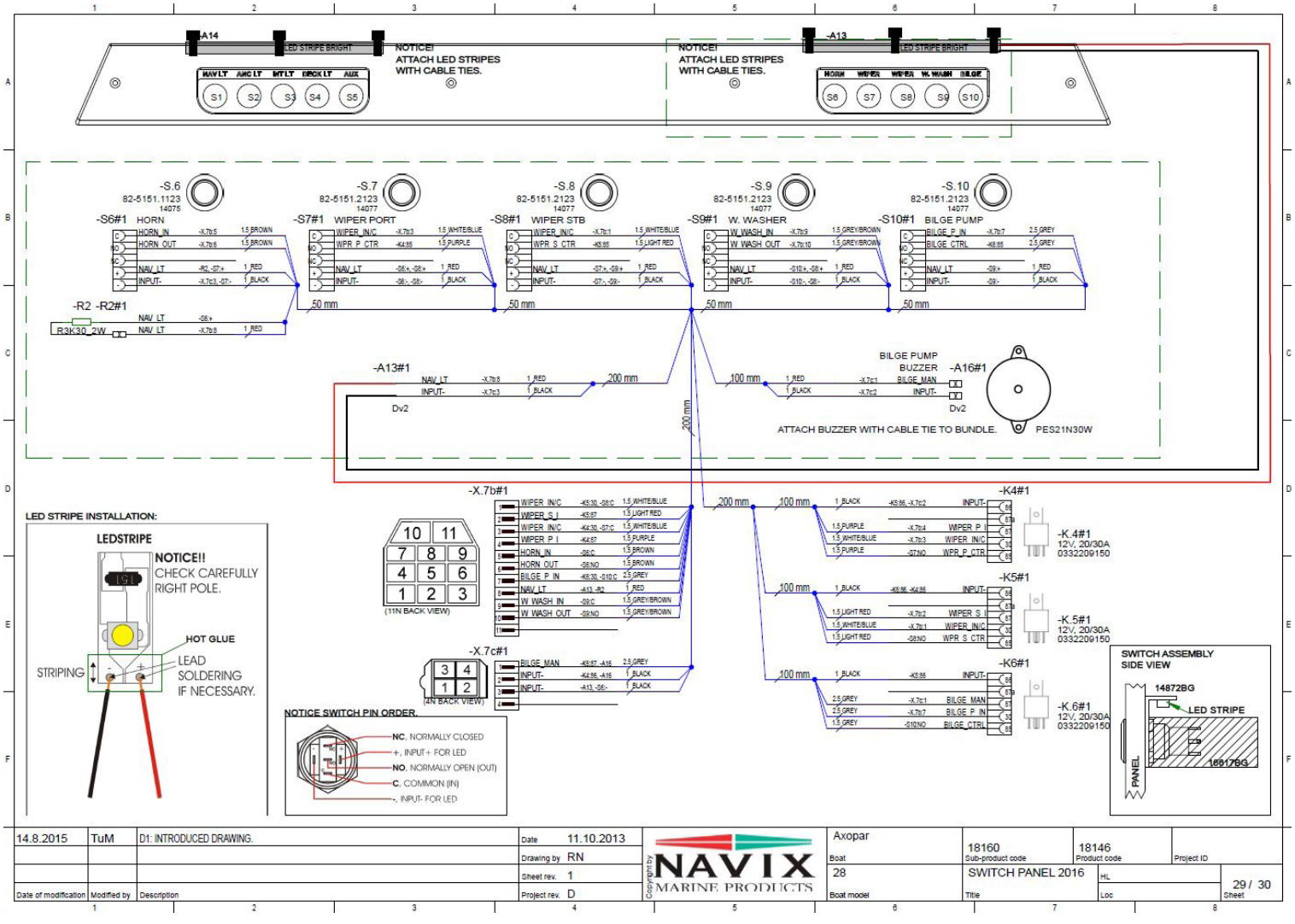
14.8.2015	TuM	D1: INTRODUCED DRAWING.	Date	28.3.2014	Copyright by NAVIX MARINE PRODUCTS	Axopar	18476	18145	
15.12.2015	VV	D2: NEW PANEL; F21 AND X.4d#1 ADDED	Drawing by	RN		Boat	Sub-product code	Product code	Project ID
			Sheet rev.	2		28	FUSE UNIT 2016	HL	27 / 30
Date of modification	Modified by	Description	Project rev.	D		Boat model	Title	Loc	Sheet



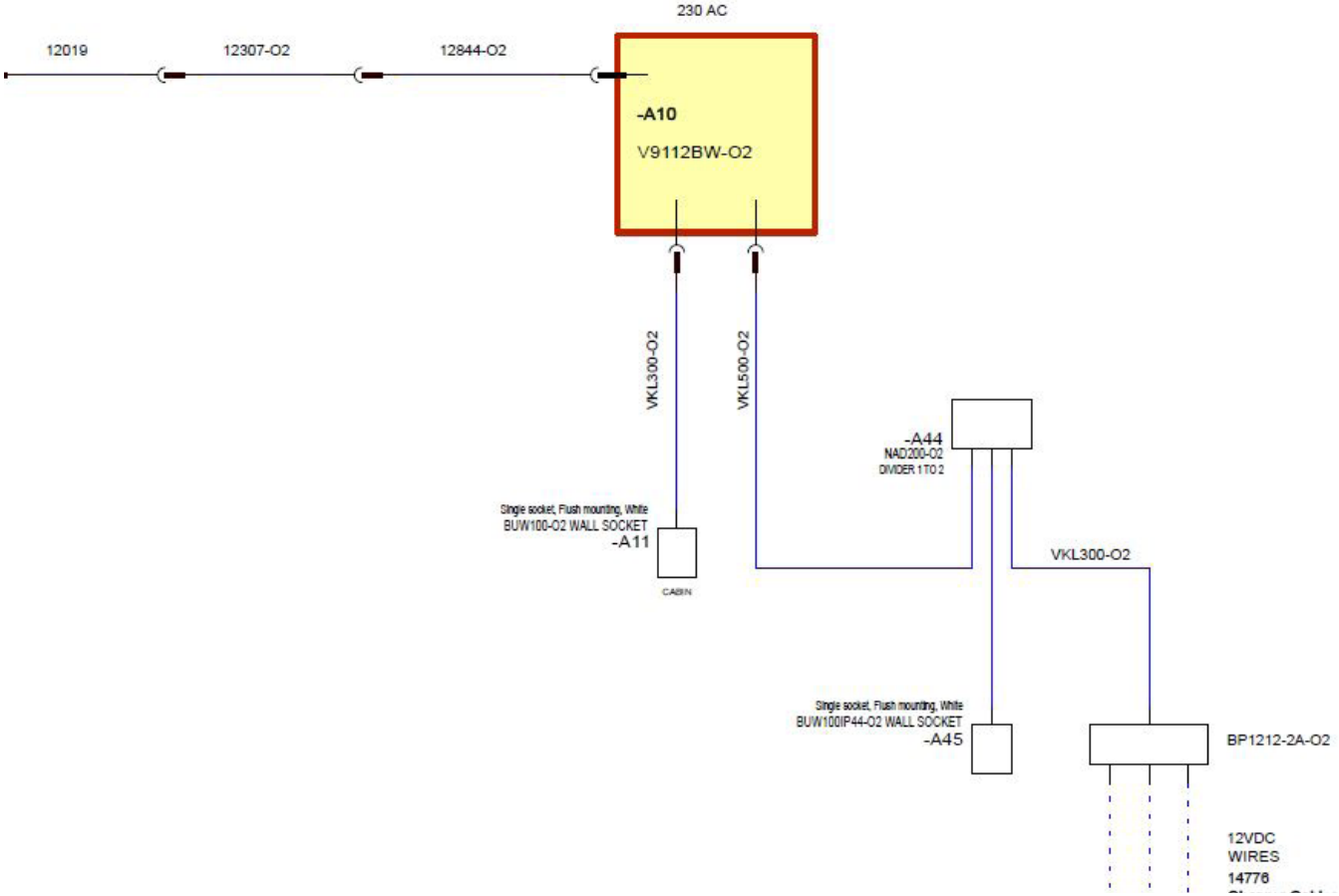
14.8.2015	TuM	D1: INTRODUCED DRAWING.	Date	11.10.2013		Axopar	18160	18146
			Drawing by	RN		Boat	Sub-product code	Product code
			Sheet rev.	1		28	SWITCH PANEL 2016	Project ID
Date of modification	Modified by	Description	Project rev.	D		Boat model	Title	HL / Loc

Copyright by NAVIX MARINE PRODUCTS

28 / 30
Sheet



14.8.2015	TuM	D1: INTRODUCED DRAWING.	Date	11.10.2013	Copyright by NAVIX MARINE PRODUCTS	Axopar	18160	18146	Project ID
			Drawing by	RN		Boat	Sub-product code	Product code	
			Sheet rev.	1		28	SWITCH PANEL 2016	HL	29 / 30
Date of modification	Modified by	Description	Project rev.	D		Boat model	Title	Loc	Sheet


230 AC
12019
12307-O2
12844-O2
-A10
V9112BW-O2
VKL300-O2
VKL500-O2
-A44
NAD200-O2
DIVIDER 1TO 2
Single socket, Flush mounting, White
BUW100-O2 WALL SOCKET
-A11
CABIN
VKL300-O2
Single socket, Flush mounting, White
BUW100IP44-O2 WALL SOCKET
-A45
BP1212-2A-O2
12VDC
WIRES
14776

AXOPAR BOATS OY

WWW.AXOPAR.FI
WWW.FACEBOOK.COM/AXOPAR