

## **OPERATOR'S MANUAL**



**Hydrotab BT installation & 3DHC Automatic controller** 



#### **Disclaimer**

The interceptor units are also steering equipment and it is the sole responsibility of the navigator-operator to ensure that, at any point, any problem that will alter the boat's course, rising from malfunction of interceptors, should be dealt immediately by the operator. At no circumstances, fault of our interceptor equipment leading to any kind of accident, creates liability for the manufacturer.

#### **Trademark Notice**

Hydrotab is a registered trademark of Olympic Engineering Ltd, Greece. All other trademarks, trade names or company names referenced herein are used for identification only and are property of their respective owners.

#### **Patent Notice**

The Hydrotab products are protected by patents and industrial design patents, patents pending or design patents pending.

### **Declaration of conformity**

This product conforms to the following Electromagnetic Compatibility (EMC) regulations and standards for use in marine environments.

CE EN 60945

## Technical information and Documentation

The technical information provided in this document was accurate and correct at the corresponding production time of the Hydrotab interceptors. Our operating principal for improving the manufactured product, may lead to changes regarding its specifications without prior notice. Liability will not be accepted for any inaccuracy considering the product and the user manual.

#### Fair use statement

This manual can be printed or copied for your own use only. Copies should not be provided to third parties and manual should not be commercialized.

#### **Product Disposal**

Waste removal of this product must be according to the Waste Electrical and Electronic Equipment (WEEE) Directive.

#### **Product Registration**

Please register your product online in order the warranty to be valid.



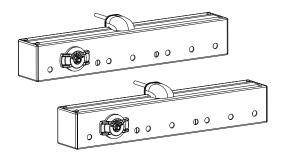
## **TABLE OF CONTENTS**

Disclaimer	2
Installation Kit	4
Required Tools for Installation	5
Before Installation	5
Safety precautions	5
Proper Interceptor Installation in Transom	6
Interceptor Installation	7
BT Series Interceptor and Anode Mounting and Coating Instructions	13
Interceptor Installation (Indirect Air Supply)	14
Air Unit Installation	14
3DHC Controller Installation	16
Air Unit: Installation Schematic Overview (One 3DHC Controller)	18
Air Unit: Installation Schematic Overview (Two 3DHC Controllers)	18
Double Speed Air Unit: : Installation Schematic Overview (One 3DHC Controller)	19
Double Speed Air Unit: : Installation Schematic Overview (Two 3DHC Controllers)	19
The 3DHC Controller	20
The 3DHC Controller Functions	21
3DHC Controller Adaptation	22
Electrical Diagram	23
Pneumatic Diagram	24
Spare Parts List - Model: 160BT (ASM-00928)	25
Spare Parts List - Model: 320BT (ASM-00560)	26
Spare Parts List - Model: 480BT (ASM-00561)	27
Spare Parts List - Model: 640BT (ASM-00562)	28
Spare Parts List - Model: 800BT (ASM-00563)	29
Spare Parts List - Model: 960BT (ASM-00564)	30
Spare Parts List - Model: 1500BT (ASM-00940)	31
Spare Parts List - Model: 2000BT (ASM-00941)	32
Spare Parts List - Air Unit (ASM-01051)	33
Spare Parts List - Double Speed Air Unit (ASM-01086)	34
Troubleshooting	35
Warranty Conditions	36

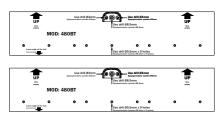


#### **Installation Kit**

#### 1. Two interceptors



### 2. Two drilling patterns



### 3. One Hydrotab AIR unit 12 OR 24VDC





### 4. Cables

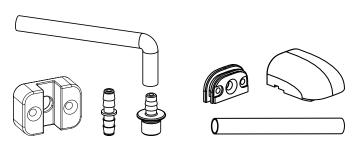


#### 5. 3DHC Controller

9 to 30 VDC panel with position indicators

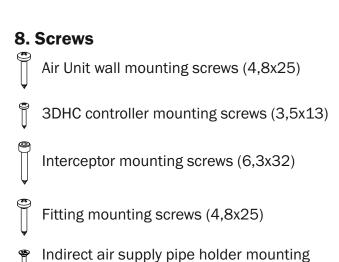


### 6. Fittings



## 7. Pipe 8mm

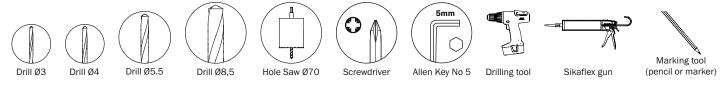




screws (3,5x13)



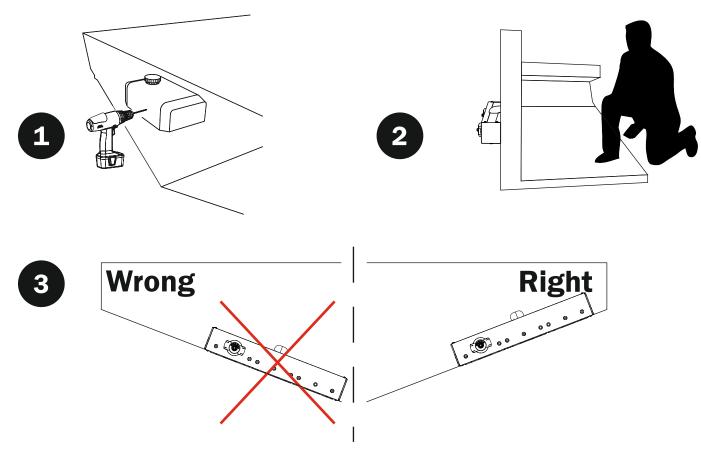
### **Required Tools for Installation**



#### **Before Installation**

Make sure there are no obstructions behind the drilling area (tanks, fuel lines, cabling) which can be damaged or prevent the installation (Figure 1).

**Attention!** Please make sure that the pipe insertion hole is accessible from the engine room (Figure 2).

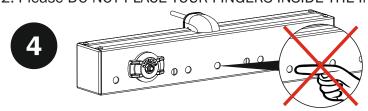


A good hint is that the closer the units are to the water line, the best the bank control of the boat will be (Figure 3).

### **WARNING!**

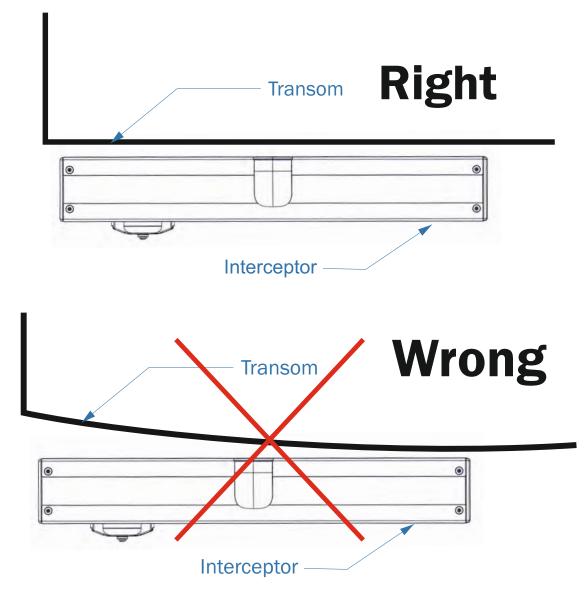
## **Safety precautions**

- 1. For high speed boats, overtrim may cause unexpectable turn. Improper use of trim tabs, may result to accident or injury.
- 2. Please DO NOT PLACE YOUR FINGERS INSIDE THE INTERCEPTOR, through the front holes (Figure 4).



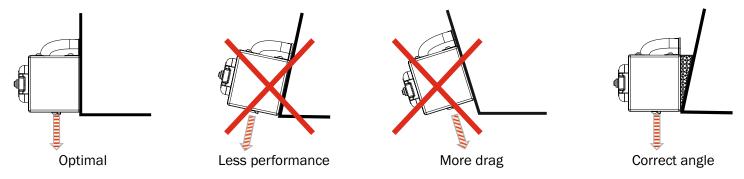


#### **Proper interceptor installation in transom**



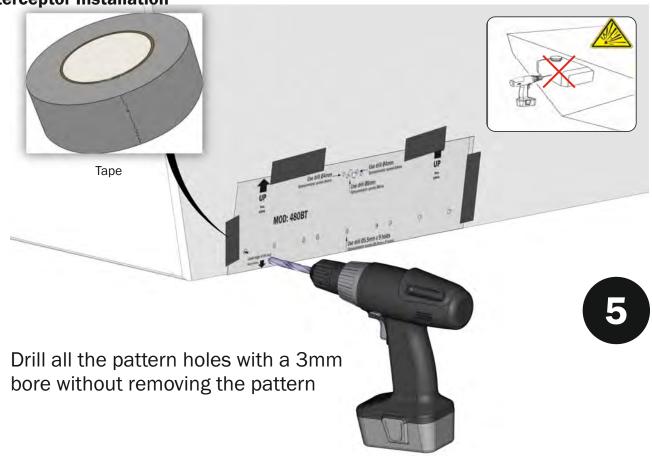
If the boat's transom has a significant curvature, it is necessary to create a flat plane for the installation (acceptable flatness tolerance: 2mm).

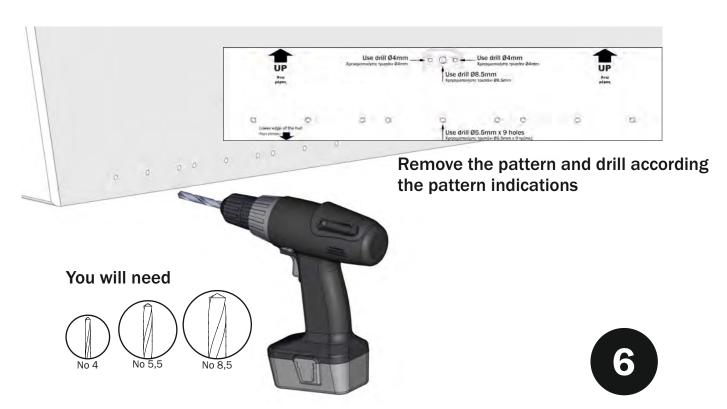
For aluminum hulls, it is suggested Isolation Plates between hull and interceptors to be installed. You can find installation instructions in the Isolation Plates Kit.



For maximum performance and less drag, install interceptors on the transom so blades deploy vertically. If transom is not vertical to water plane, correct the angle by using wedges or other means.





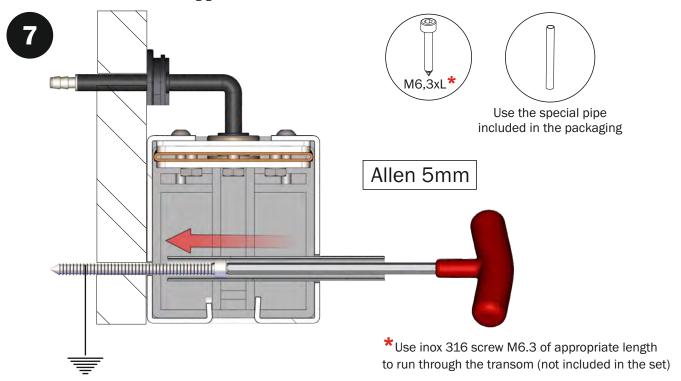




### **Optional: Connecting Interceptors with Earthing Grid of boat**

Except periodical replacement of anodes, you can enhance protection of interceptors from electrolytic corrosion by connecting them to the earthing grid of the boat:

- 1. Drill through the hull one of the mounting pattern-holes on the transom.
- 2. Replace one regular self-tapping mounting screw (M6,3x32), with a longer screw (Inox 316,  $\Phi$ 6.3mm) so to run through the transom wall (use sealant before tightening the screw).
- 3. Connect the screw with earthing grid of boat.

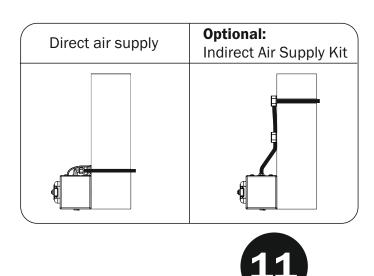




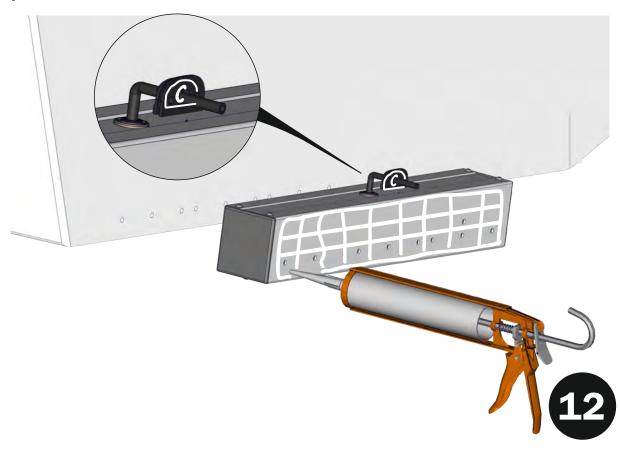


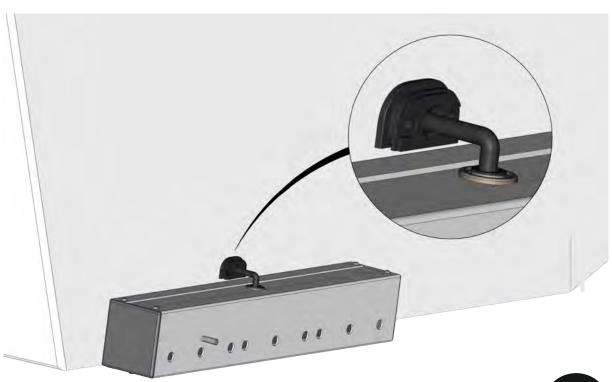




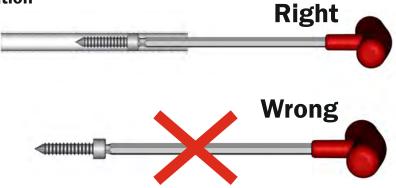






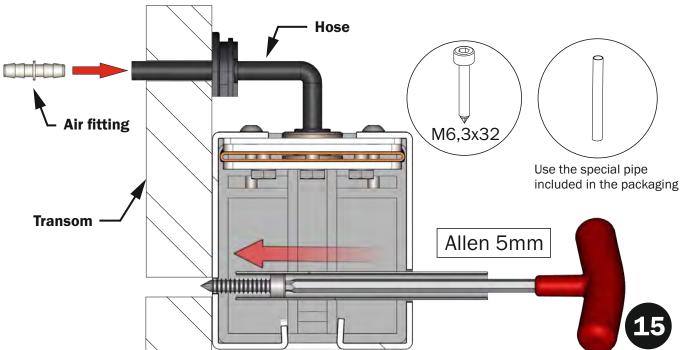




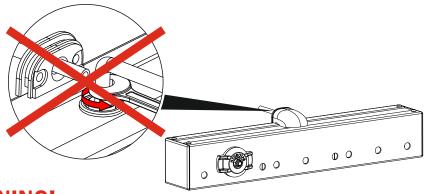


**WARNING!** Do not try to place the screw without using the guide pipe! If the screw falls in the internal of the interceptor, you must disassemble the rear plastic cover, and restore the screw.

14



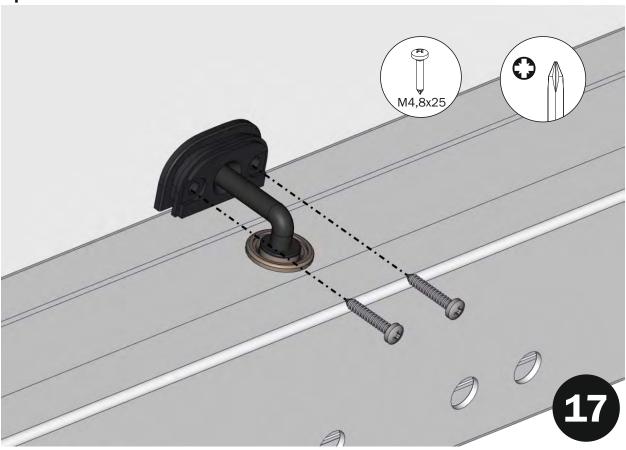
**WARNING!** After you install the hose through the transom, mount the air fitting into the hose.



**WARNING!** Do not try to dismount the interceptor's air fitting! Danger of damaging tubular's leakproof!!!

**16** 



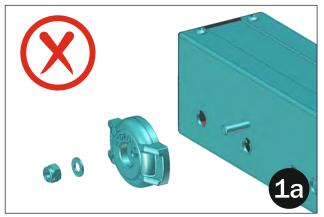




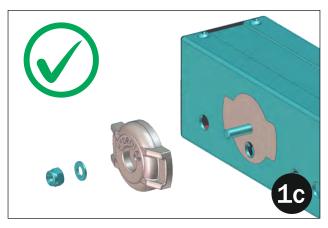
**Attention!** The anodes replacement, depends on the sea water quality you have dropped anchor. As the corrosion of an anode looks like a sponge, for more efficient checking you should touch it to feel that its smooth surface has become porous. We suggest a precautionary monthly inspection and replacement before anodes mass is worn over 50%.



### **BT Series Interceptor and Anode Mounting and Coating Instructions**



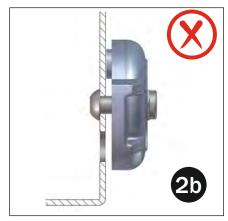




Note 1: You may apply protection coating on interceptor if you'd like so, but:

- 1. Do not apply coating on anodes
- 2. Do not apply coating on the area of interceptors which is in contact with anode (see Fig. 1a, 1b, 1c).



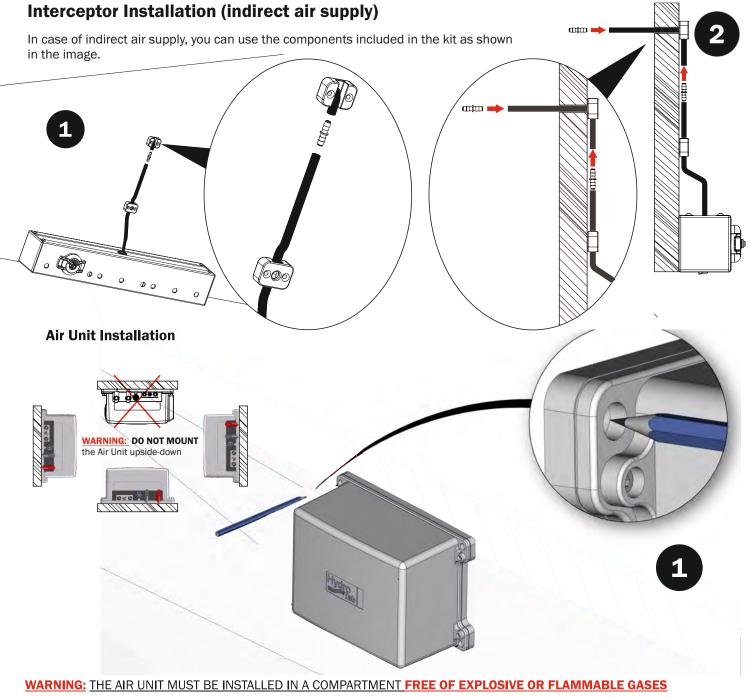


**Note 2:** Mount anode to the interceptor, so the bump of anode fits into the hole of the interceptor. Then tight the mounting bolt so interceptor and anode be in direct contact. (see Fig. 2a, 2b).

**Note 3:** When in brackish or fresh water, use Magnesium anodes instead of Zinc (Zinc anodes are preinstalled and they are appropriate only for sea-water).

**Note 4:** Check often condition of anodes and replace them when they lose about 50% of their mass. Life time of anodes cannot be easily predetermined because it is related to sea-water characteristics as well as other factors of sea environment.



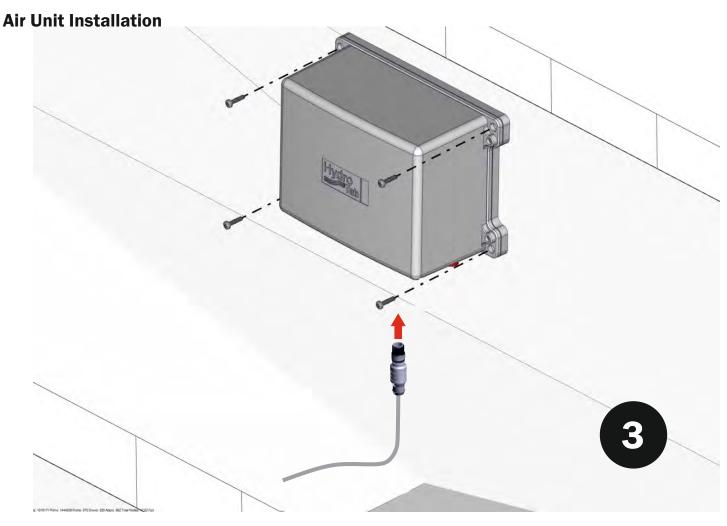


WARNING: PLEASE INSURE THAT THE AIR UNIT IS INSTALLED ACCORDING TO THE IP30 LIMITATIONS.

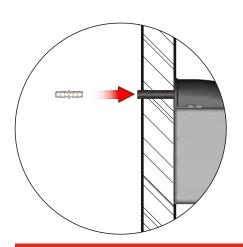




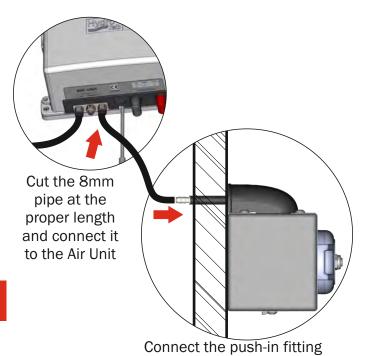




## **Pneumatic Connection**



After you install the hose through the transom, mount the air fitting into the hose.

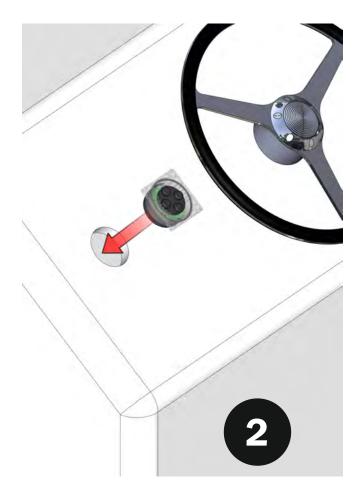




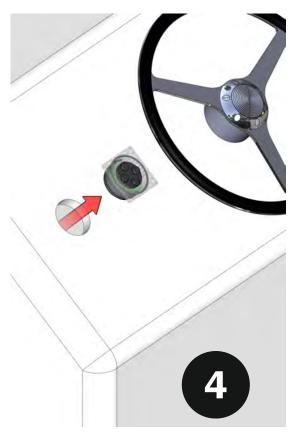
5



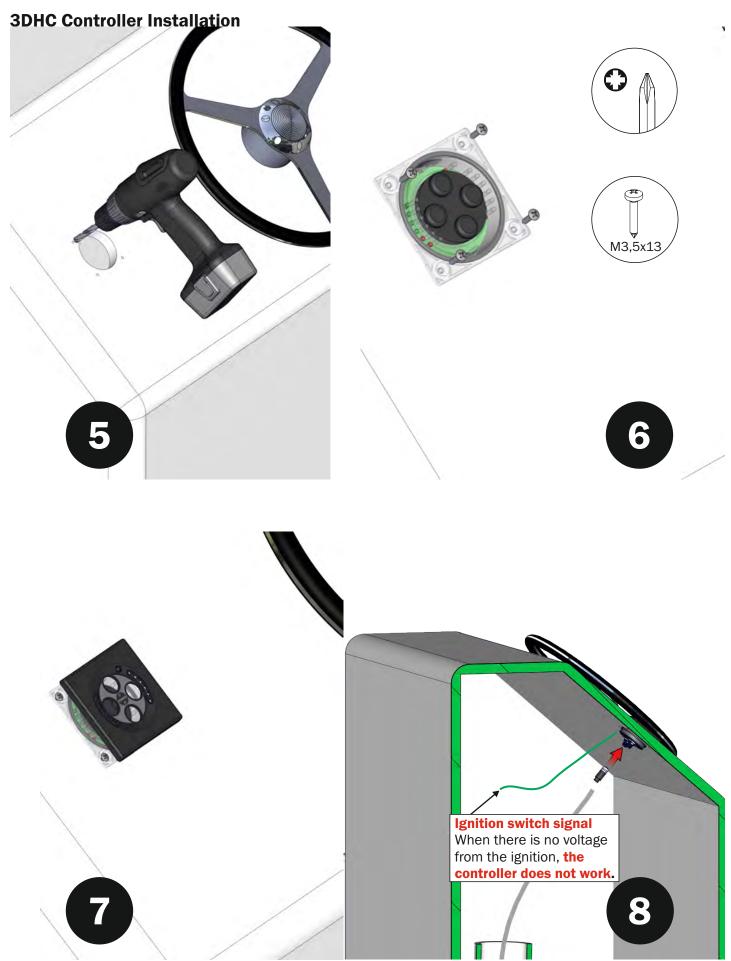






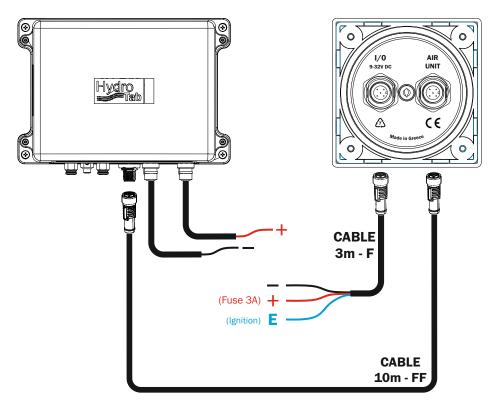


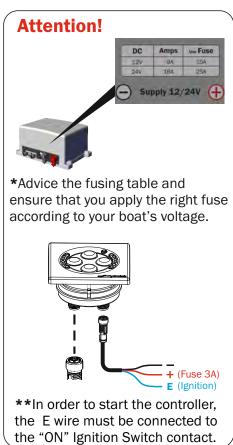




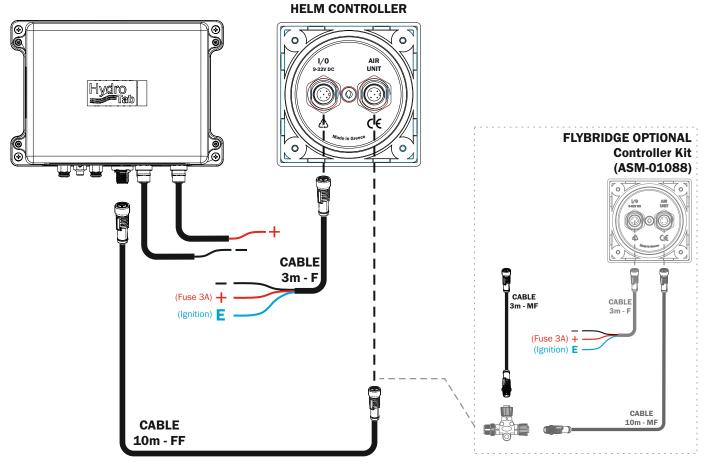


# Installation Schematic overview - Single Compressor Air Unit with One 3DHC Controller



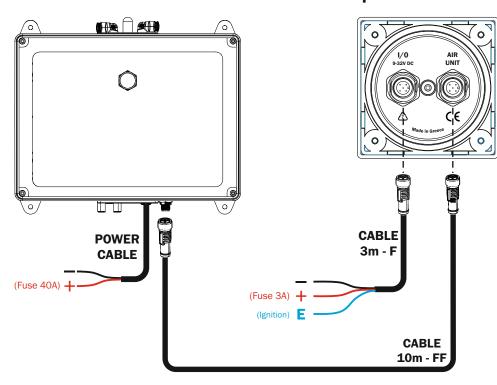


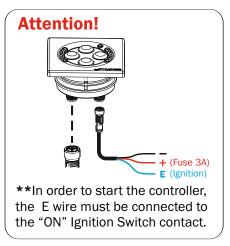
## Installation Schematic overview - Single Compressor Air Unit With Two 3DHC Controllers



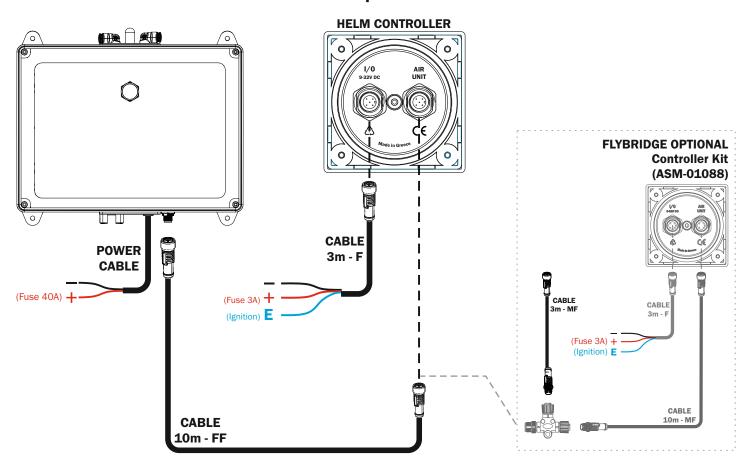


### Installation Schematic overview - Double Speed Air Unit with One 3DHC Controller



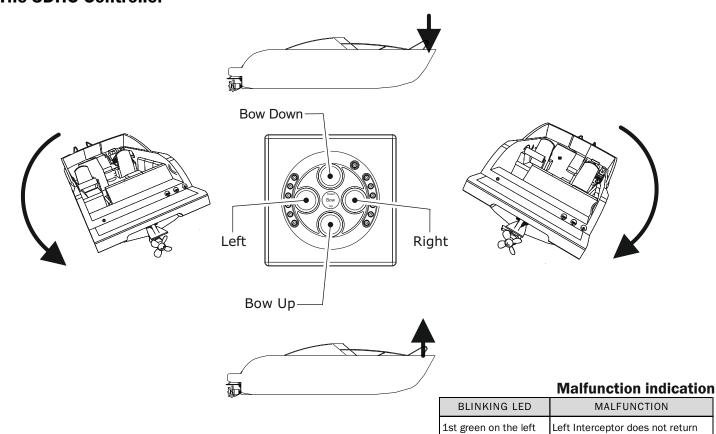


### Installation Schematic overview - Double Speed Air Unit with Two 3DHC Controllers





#### The 3DHC Controller



#### The 3DHC controller operation

Interceptors operate when voltage comes from the ignition. When there is no voltage from the ignition, system does not work.

#### **System Reset-Retracting**

The system resets and interceptors retract automatically:

- On Engine start
- On Engine stop
- On simultaneously pressing the UP + DOWN buttons for 1 second.

Note: During reset process controller LEDs are flashing.

#### Night and day mode

The indication brightness changes by pressing simultaneously the buttons LEFT + RIGHT for 1 second.

#### Memory

#### Setting the desired trim angle

You may save the desired trim angle for the cruising speed.

Just manually adjust the position and then press simultaneously any diagonal press buttons for about 3 seconds. This position of trim tabs is stored in 3DHC memory and the power-on led is flashing to confirm the setting.

Right Interceptor does not return

Left Interceptor does not extend Right Interceptor does not extend

1st green on the right

2nd green on the left

2nd green on the right

Whenever the user presses instantaneously two diagonal press buttons, the trim tabs get the preset position.

The saved position is stored even after switching off the main switch of the boat.

#### **Maintenance**

Check connectors for corrosion or liquid pollution. Check in regular intervals the condition of the sacrifice anodes. Below 50% in volume, anodes must be replaced.

When the boat is out of the water (end of season):

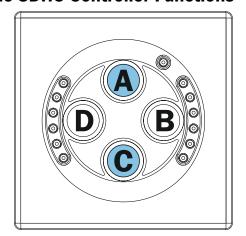
- a. extend the blades
- b. spread the decalcifying liquid with a brush
- c. let it for 15-20 min
- d. wash out with clean water
- e. retract the blades

Every two years remove the cover and clean the inside of the units, using water pressure.

Every three years check the springs condition.

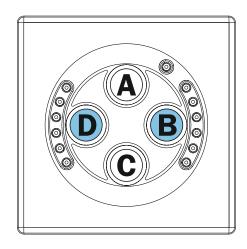


#### **The 3DHC Controller Functions**



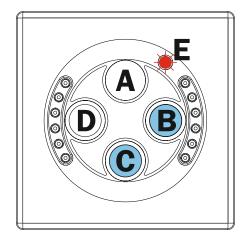
## **EMERGENCY RETRACTING**

Press the **A** + **C** buttons simultaneously for 1 second.



## **NIGHT AND DAY MODE**

The indication brightness changes by pressing simultaneously the  ${\bf B}+{\bf D}$  buttons for 1 second.



## **INTERCEPTOR POSITION MEMORY**

Press **B** + **C** buttons simultaneously until the red led **E** blinks, to save the interceptor position in the memory.

Next time you press **B** + **C** simultaneously for 1 second, the interceptors will be extended automatically in the previous memorized position.

If you save a new position in memory, automatically the previous position is cancelled.



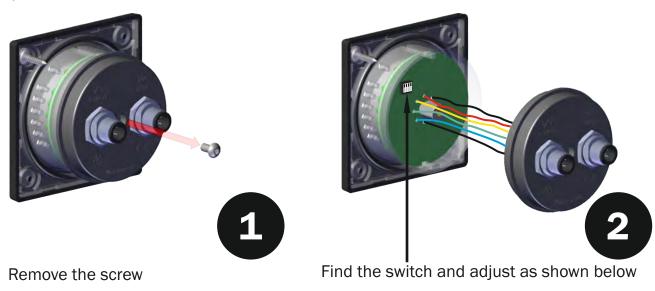
### **3DHC Controller Adaptation**

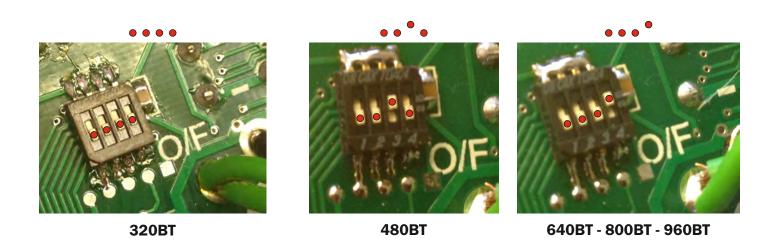
## The controllers included in packaging, are pre-adjusted.

The instructions of this page must be executed only by authorised technicians and only in case of:

- Controller replacement with a new one after failure
- Installation of a secondary controller that **does not included in the initial set** (Flybridge)

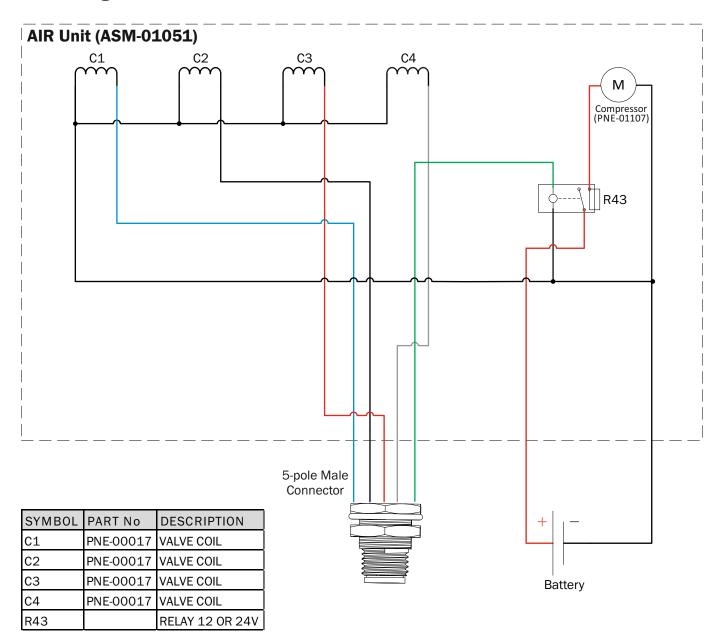
## To open the 3DHC Controller







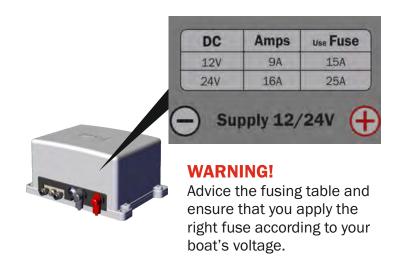
### **Electrical Diagram**



#### **ATTENTION!**

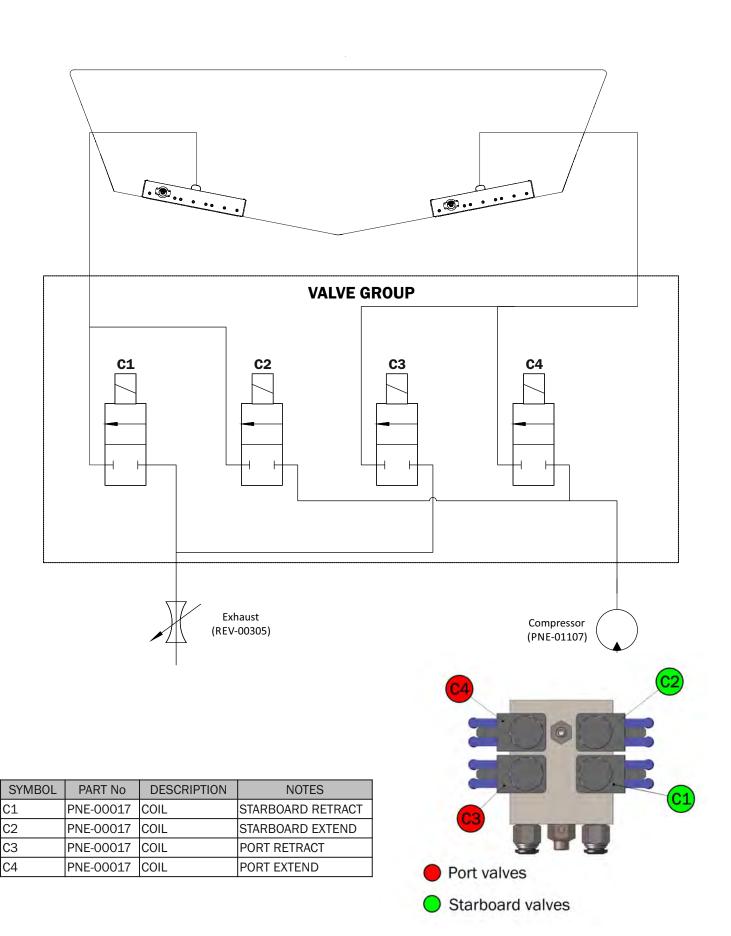
To avoid voltage drop use the right cable size.

AIR UNIT POWER CABLE SIZE		
DISTANCE FROM BATTERY	CABLE SIZE	
up to 2.5m	2 x 2.5mm	
up to 4m	2 x 4mm	
up to 6m	2 x 6mm	
up to 10m	2 x 10mm	



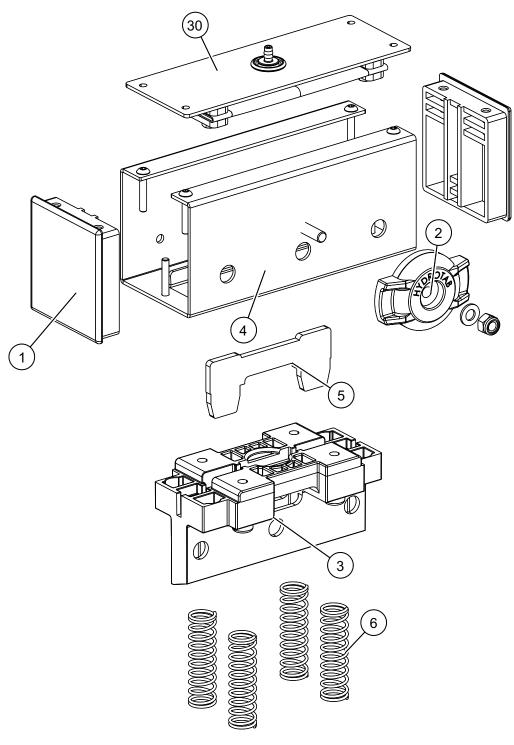


## **Pneumatic Diagram**





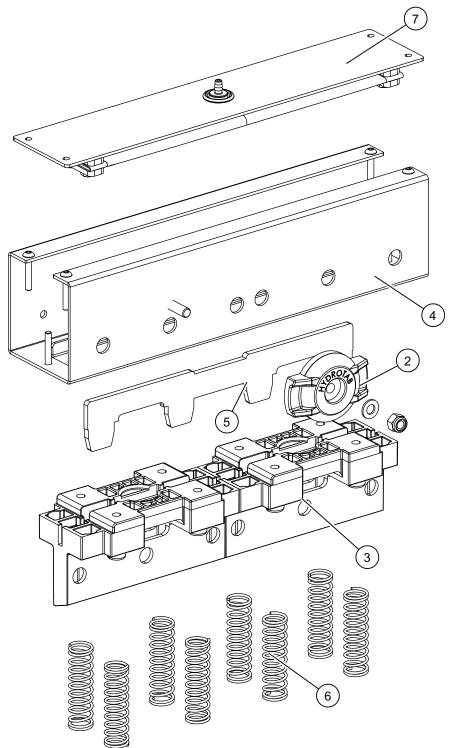
MOD: 160BT (ASM-00928)



BOM ID	PartNo	Description	Qty
1	GEN-00276	SIDE CAP	2
2	GEN-00279	ANODE	1
3	GEN-00290	BLADE	1
4	LAS-00826	HOUSING, 160BT	1
5	LAS-00851	HOLDING BLADE PLATE, 160BT	1
6	SPR-00025	SPRING	4
30	ASM-00999	TUBOLAR ASSEMBLY, 160BT	1

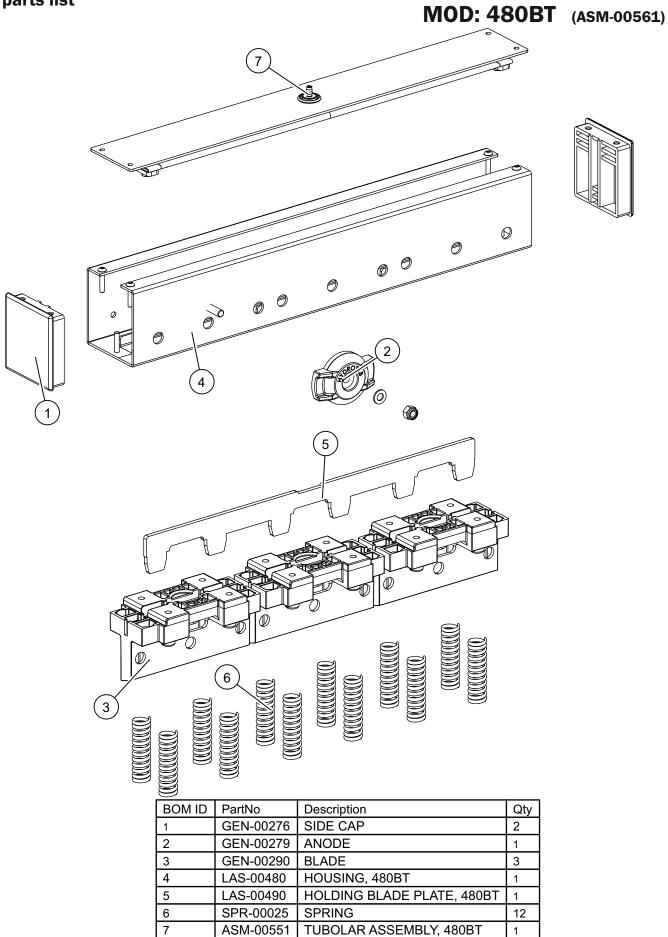


## MOD: 320BT (ASM-00560)

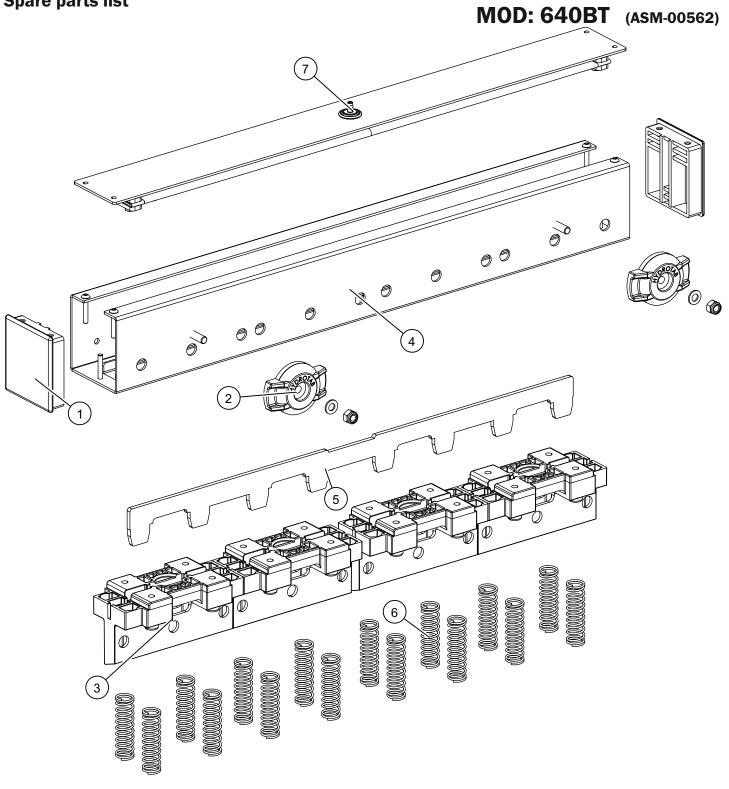


BOM ID	PartNo	Description	Qty
1	GEN-00276	SIDE CAP	2
2	GEN-00279	ANODE	1
3	GEN-00290	BLADE	2
4	LAS-00479	HOUSING, 320BT	1
5	LAS-00489	HOLDING BLADE PLATE, 320BT	1
6	SPR-00025	SPRING	8
7	ASM-00550	TUBOLAR ASSEMBLY, 320BT	1





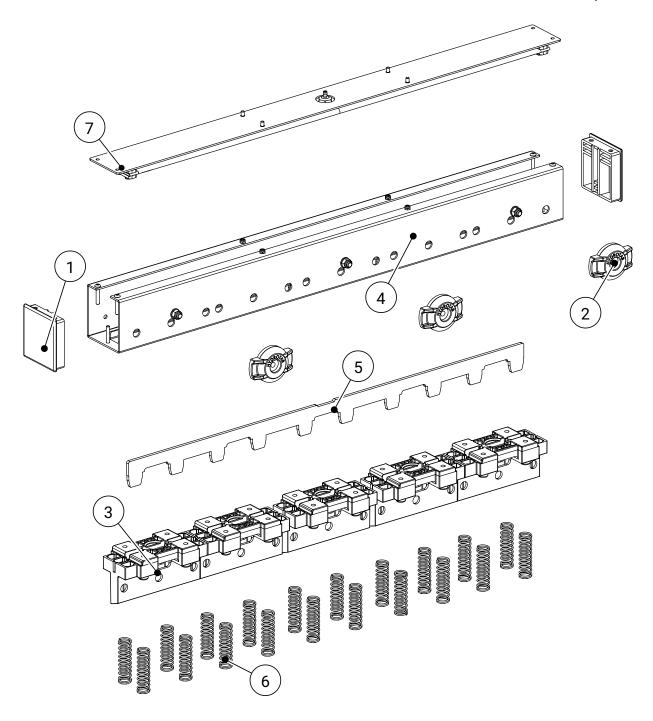




BOM ID	PartNo	Description	Qty
1	GEN-00276	SIDE CAP	2
2	GEN-00279	ANODE	2
3	GEN-00290	BLADE	4
4	LAS-00481	HOUSING, 640BT	1
5	LAS-00491	HOLDING BLADE PLATE, 640BT	1
6	SPR-00025	SPRING	16
7	ASM-00552	TUBOLAR ASSEMBLY, 640BT	1



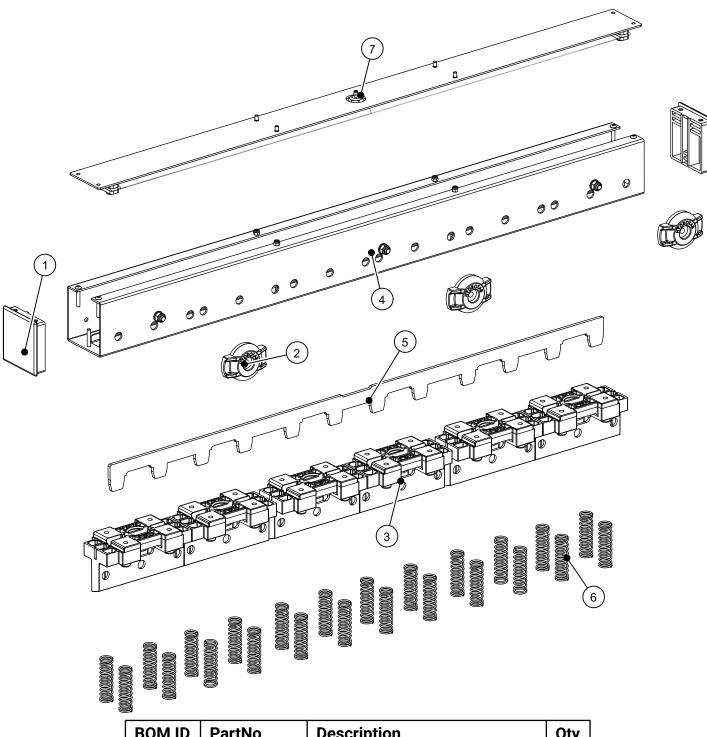
## MOD 800BT (ASM-00563)



BOM ID	PartNo	Description	Qty
1	GEN-00276	SIDE CAP	2
2	GEN-00279	ANODE	3
3	GEN-00290	BLADE	5
4	LAS-00482	HOUSING, 800BT	1
5	LAS-00492	BLADE HOLDER, 800BT	1
6	SPR-00025	SPRING	20
7	ASM-00553	TUBOLAR ASSEMBLY, 800BT	1



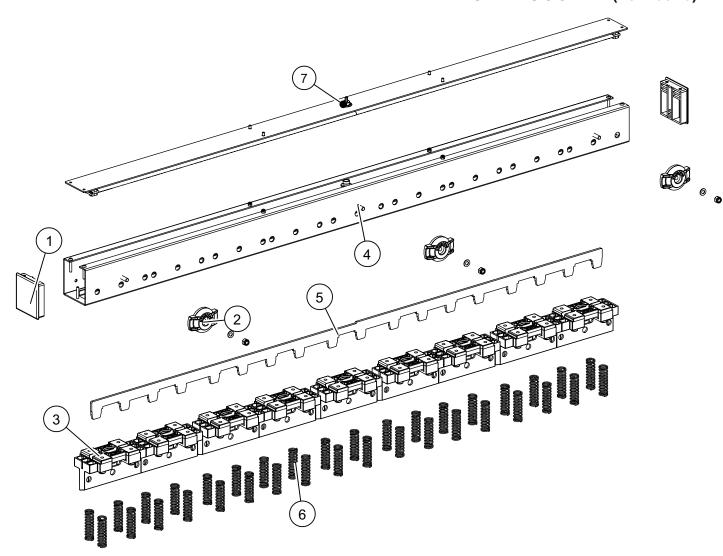
## MOD: 960BT (ASM-00564)



BOM ID	PartNo	Description	Qty
1	GEN-00276	SIDE CAP	2
2	GEN-00279	ANODE	3
3	GEN-00290	BLADE	6
4	LAS-00483	HOUSING, 960BT	1
5	LAS-00493	BLADE HOLDER, 960BT	1
6	SPR-00025	SPRING	24
7	ASM-00554	TUBOLAR ASSEMBLY, 960BT	1

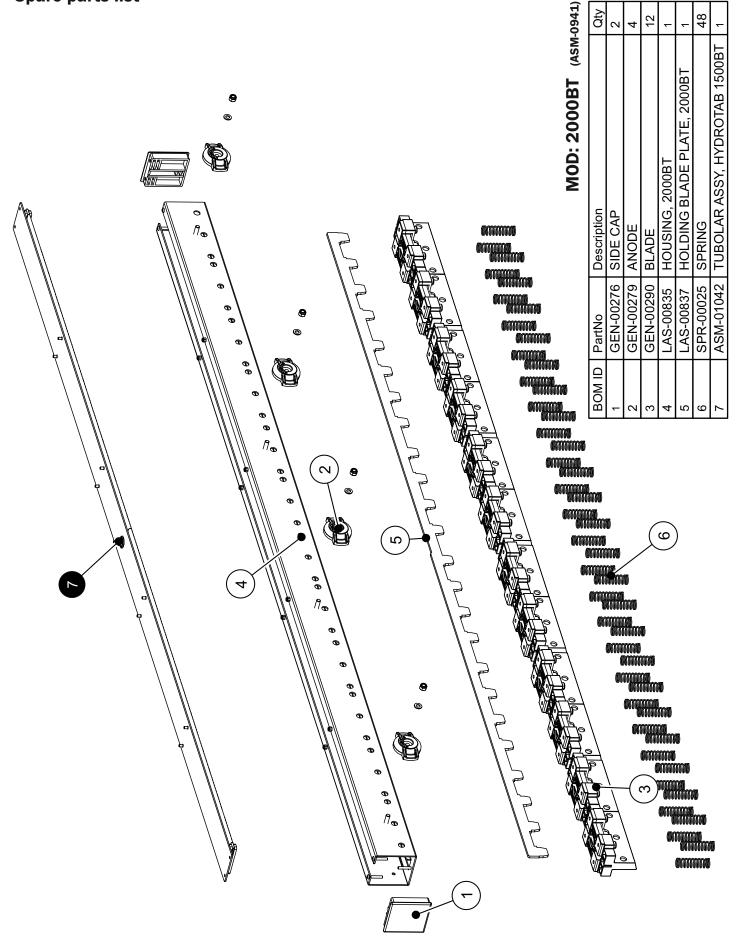


## MOD: 1500BT (ASM-0940)



BOM ID	PartNo	Description	Qty
1	GEN-00276	SIDE CAP	2
2	GEN-00279	ANODE	3
3	GEN-00290	BLADE	9
4	LAS-00832	HOUSING, 1500BT	1
5	LAS-00834	HOLDING BLADE PLATE, 1500BT	1
6	SPR-00025	SPRING	36
7	ASM-01009	TUBOLAR ASSEMBLY, 1500BT	1

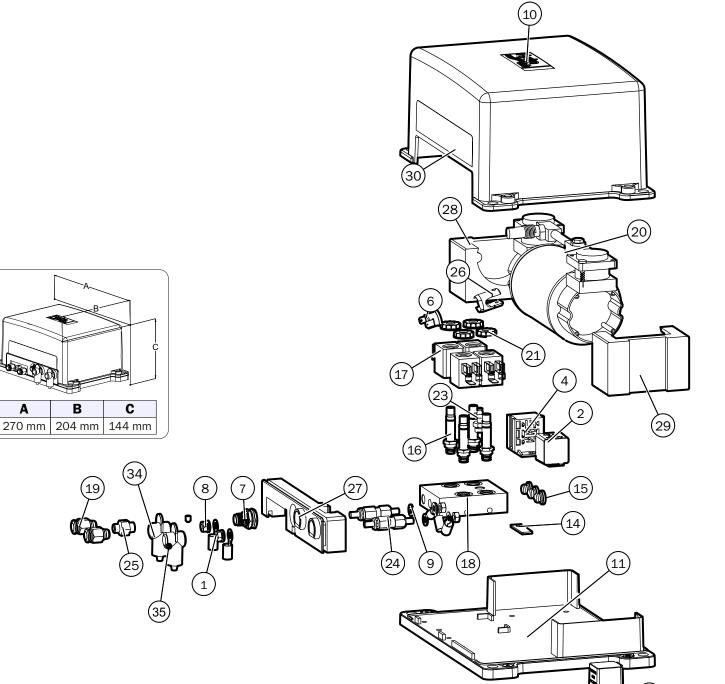






В

## AIR UNIT (ASM-01051-RE)

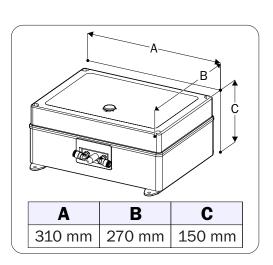


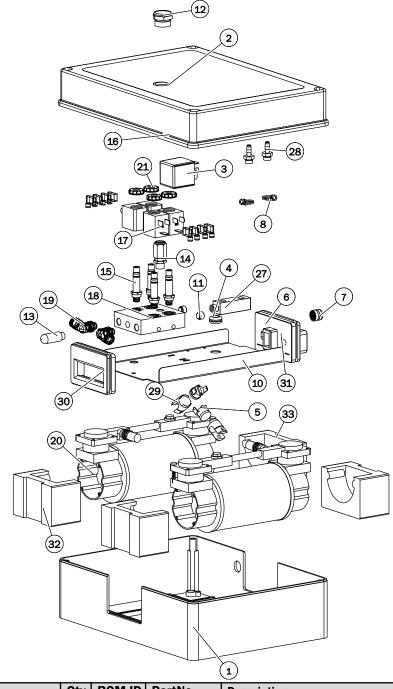
BOM ID	PartNo	Description	Qty
1	ELE-00106	TERMINAL, Ф6, YELLOW	5
-			5
2	ELE-00337	MINIRELAY FLOSSER 2262 12V 30A	1
4	ELE-00372	RELAY BASE	1
5	ELE-00374	MINIRELAY FLOSSER 4268 24V 20/30A	1
6	ELE-00533	THERMOSTAT	1
7	ELE-00535	M12, 5PIN PCB MALE CONNECTOR, PLASTIC MATERIAL	1
8	FAS-02323	NUT FOR AIR UNIT	4
9	FAS-02324	WASHER FOR AIR UNIT	4
10	GEN-00156	HYDROTAB AIR UNIT, TOP COVER	1
11	GEN-00157	HYDROTAB AIR UNIT, FS, BASE	1
14	LAS-00542	RELAY HOLDING FLANGE	1
15	PNE-00072	PLUG, MALE, PARALLEL, 1/8	3
16	PNE-00552	CANNOTTO NO Φ9 3/2 6W 09F07401A30NN	4
17	PNE-00924	COIL EVI 7/9 10W	4
18	PNE-00926	AIR UNIT VALVE BASE, 72x60x20	1

BOM ID	PartNo	Description	Qty
19	PNE-01001	FITTING, STRAIGHT, 1/8-Φ8, FOR AIR UNIT	2
20	PNE-01208	COMPRESSOR, 20VDC	1
21	PNE-01113	KNURLED NUT WITH M8 THREAD	4
23	REV-00184	FITTING, CUSTOM, 1/8, HOLE: 3.2	1
24	REV-00304	COMPRESSOR TERMINAL	2
25	REV-00305	FITTING, CUSTOM, FOR AIR UNIT	1
26	REV-00422	THERMAL RELAY RECEPTACLE	1
27	RUB-00102	HYDROTAB AIR UNIT FRONT COVER	1
28	RUB-00132	RUBBER MOUNT FOR COMPRESSOR (MALE)	1
29	RUB-00133	RUBBER MOUNT FOR COMPRESSOR (FEMALE)	1
30	STK-00086	STICKER, FRONT, AIR UNIT	1
34	ELE-00369	TERMINAL INSULATOR CAP, BLACK	1
35	ELE-00368	TERMINAL INSULATOR CAP, RED	1



## Double Speed Air Unit (ASM-01086-RD)





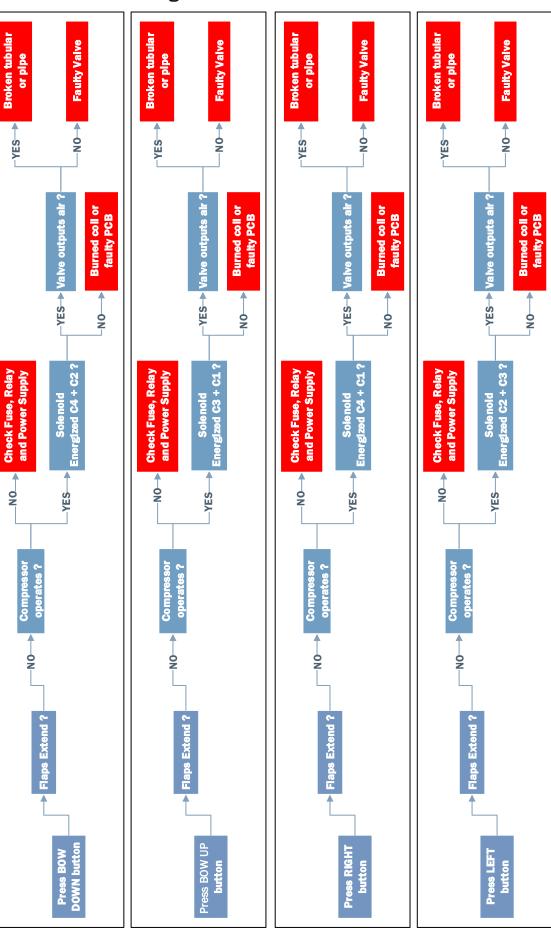
BOM ID	PartNo	Description	Qty	BOM ID	PartNo	Description	Qty
1	ELE-00034	AIR UNIT BOX BASE	1	15	PNE-00552	PILOT NO Φ9 3/2	4
2	ELE-00035	AIR UNIT BOTTOM CAP	1	16	PNE-00681	NUT 1/2	1
3	ELE-00181	MINIRELAY 24V 70A	1	17	PNE-00924	COIL EVI 7/9 10W	4
4	ELE-00361	ELASTIC HOLDER Φ9	1	18	PNE-00926	AIR UNIT VALVE BASE	1
5	ELE-00533	THERMOSTAT	2	19	PNE-01064	ADAPTOR, ELBOW MALE 1/8-Φ8	2
6	ELE-00535	M12, 5PIN MALE CONNECTOR	1	20	PNE-01208	COMPRESSOR, 20V	2
7	ELE-00540	PROTECTION CAP	1	21	PNE-01113	NUT	4
8	GEN-00168	SPRING CLAMP	2	27	REV-00111	MANIFOLD 1/8, 2 OUTPUTS	1
10	LAS-00114	MOUNTING BASE	1	28	REV-00184	FITTING, CUSTOM, 1/8	2
11	PNE-00009	CAP 1/8	2	29	REV-00422	THERMAL RELAY RECEPTACLE	2
12	PNE-00047	SILENCER 1/2	1	30	RUB-00023	VALVE RUBBER FRAME	1
13	PNE-00050	SILENCER, 1/8, PA	1	31	RUB-00024	CABLE RUBBER FRAME	1
14	PNE-00092	SAFETY VALVE, 1/8	1	32	RUB-00132	RUBBER MOUNT (MALE)	2
	•	_		33	RUB-00133	RUBBER MOUNT (FEMALE)	2

34



## **Hydrotab BT Series Troubleshooting**

Before attempting any fault finding, check all fuses and that there is electric power to all connections





#### **Warranty conditions**

FW, TS and BT Series Interceptor units (and not complete systems) are covered by a 5-year Warranty. SR Series Interceptor units (and not complete systems) are covered by a 2-year Warranty. Recoil springs, electrical/electronic parts and devices come with a 2-year warranty. Anodes (consumables) are not included in the warranty (for BT, FW, TS Series). Hydrotab's warranty only covers the repair or replacement of spare parts.

#### **System selections**

It is the sole responsibility of the buyer to choose the correct system and even with Hydrotab's suggestion for a system, the overall responsibility is with the buyer.

#### **Limited warranty**

Provided that the system has being installed in accordance with the installation manual we provide, and no damage has been caused due to improper handling or practices, Hydrotab will replace any defective parts or parts that failed due to improper manufacturing withing the applicable warranty period.

Hydrotab only covers the parts' replacement. Fitting or shipping costs are not covered by warranty.

Hydrotab will select if we will repair or replace any given part.

Repaired or replaced products will assume the remainder of the warranty time and under no conditions will the full time of warranty be renewed.

#### **Limited warranty periods**

Limited warranty period is two years (2 years) from the product shipment from our premises.

#### **Extended limited warranty period**

It is provided in case:

- a) Hydrotab trim system is included as equipment of a newly purchased boat directly by from the boat-builder or his reseller.
- b) Hydrotab trim system has been purchased through a Hydrotab dealer.

The extended limited warranty period is valid for three (3) years from the shipping date, provided that the customer has downloaded, completed and submitted the online registration form within one month (30) days from the purchase in the following url.

https://www.hydrotab.gr/product-registration

In case the dealer sells separate units of Interceptors, Air Units and Controllers that constitute a full system that is not initially sold (as a complete system) by Hydrotab, the dealer has the responsibility to provide the separate Serial Numbers for the Interceptors, Air Units and Controllers and guide the end user for the proper registration of his serial numbers for the extended warranty to be valid.

The authorized dealer is responsible for the product's service.

For any services or spare parts requirements and replacements during warranty period, the original invoice is necessary to be presented.

For the replacement of any part of the system (interceptors, Air Unit, any controller etc.) under warranty, the replaced parts must be returned to Hydrotab Marine Engineering for inspection, otherwise warranty is not valid.

Cost of dismantling - assembly and spare parts transportation is borne by the user.

The warranty does not foresee, under any circumstances, replacement of the whole Hydrotab system.

#### What is not covered by the warranty:

Damage caused by the lack or non-replacement of worn anodes (for BT, FW, TS Series).

Damage caused by improper installation and use not consistent with the manual.

Damage with external visible deformation of the product caused by misuse of the user or other external causes.

Damage to any component caused during transportation, installation or repair from non-authorized personnel.

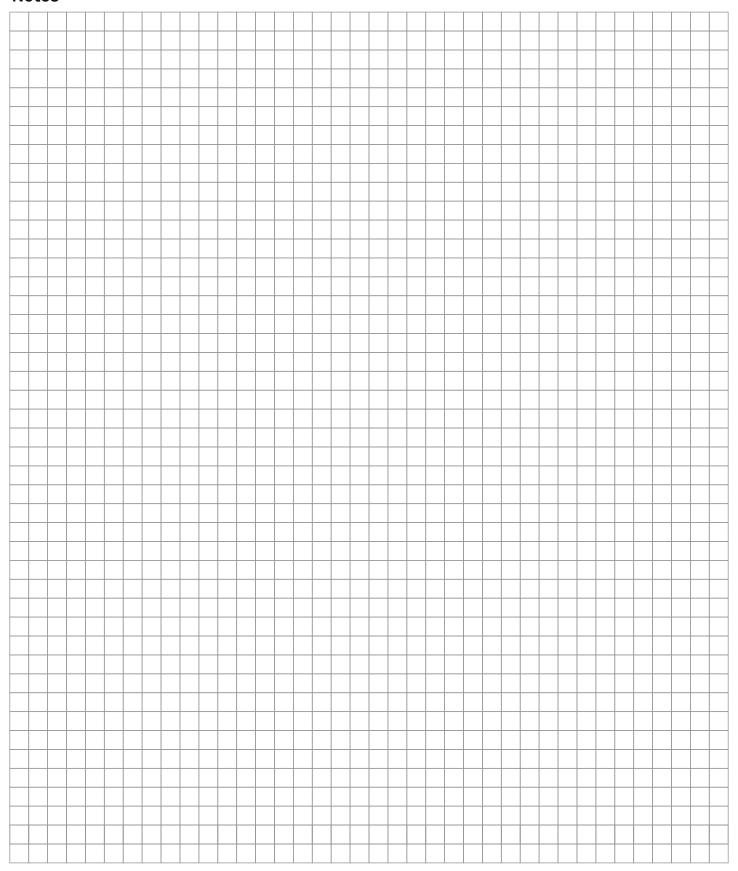
Conversions or modifications made after the initial sale.

N. Triantafyllis Ltd (Hydrotab Marine Engineering) is not liable for any incidental, indirect or consequential damages or losses, including,

without limitation: travel expenses, transport, lifting and hauling, costs, loss of income, loss of time, loss of property, loss of profits, personal injury or damage of any products, different from those that the company distributes. Any further (except the above mentioned) commitment of the intermediate dealer regarding the sale terms or servicing of Hydrotab products does not create any liability of our company.

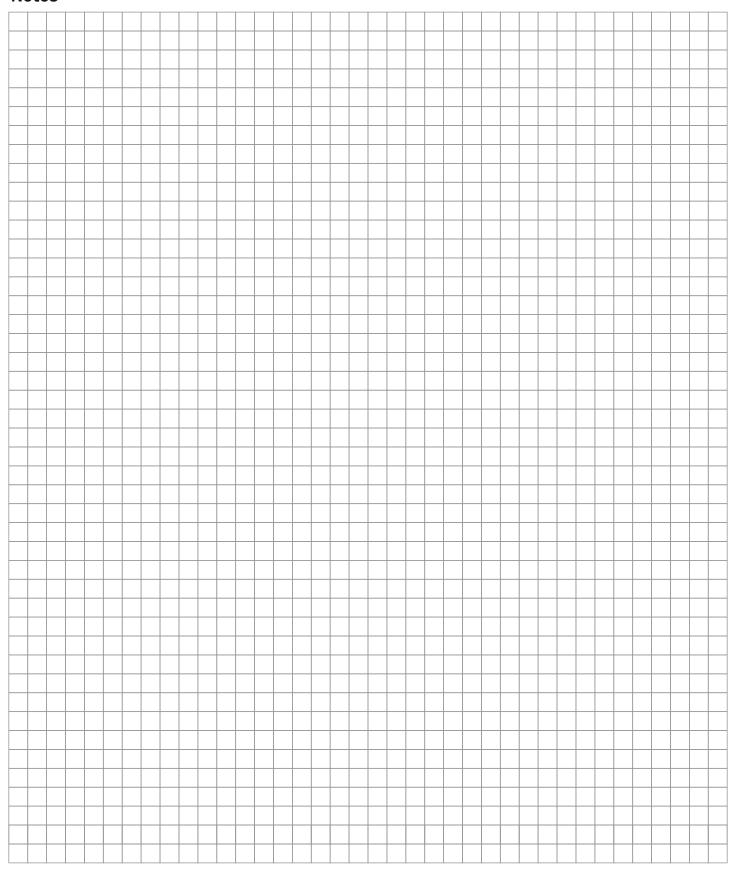


### **Notes**





### **Notes**





### **Notes**

