MAX POWER
CONTROL TO THE MAX

ECO PROPORTIONAL SERIES

150

MANUAL FOR INSTALLATION, OPERATION & MAINTENANCE

Serial No.: ----------

Installation date: ----------

THIS MANUAL MUST BE KEPT ON BOARD AT ALL TIMES

ENGLISH • VERSION 4

Contents

The use of qualified marine personnel, with experience in thruster installation, is strongly advised. Where possible, the vessel manufacturer's design departments, architects, and/or shipyards should be consulted, prior to installation taking place. For any vessel requiring official classification, bodies of approval should also be consulted at the earliest opportunity. In any case, all other bodies, governmental or otherwise, should be contacted to ensure conformity with legal regulations relating to the vessel in question. The precision of the installation will determine how reliably the thruster will perform. Most faults can be traced back to errors or inaccuracies during installation. It is therefore important that the guidelines given in this manual are followed in full during the installation process and checked afterward. Modifications made to the thruster will void any liability on the part of the manufacturer for any damages that may result. The actual thrust generated by the bow and/or stern thruster will vary from vessel to vessel depending on the Windage, the hull displacement, and the shape of the underwater section. Failure to follow the considerations and precautions advised in this manual can cause serious injury, damage and will render all warranties given by Max Power as VOID.

IT IS ESSENTIAL TO READ THE FOLLOWING MANUAL CAREFULLY BEFORE INSTALLING THE THRUSTER

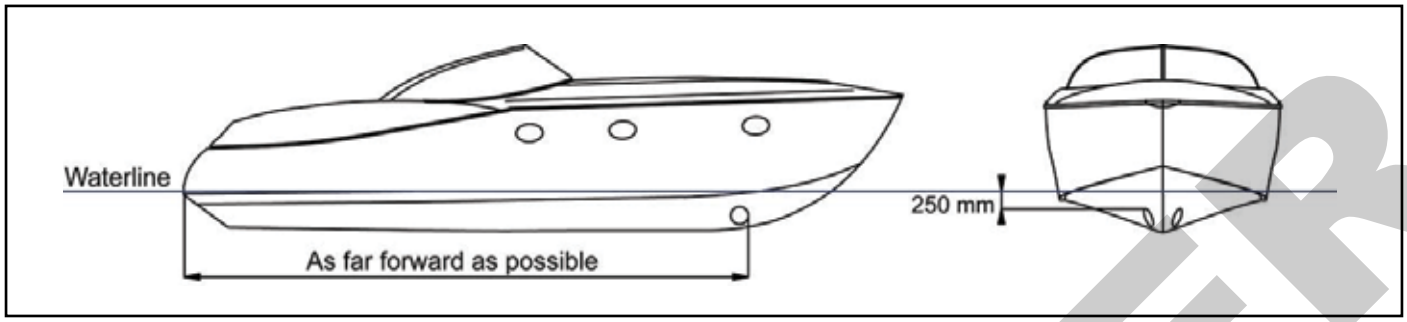
NB: The thruster is delivered with electric motor, controller with mega-fuse preinstalled, CAN panel, CAN cable (10 m)

DECLARATION OF CONFORMITY

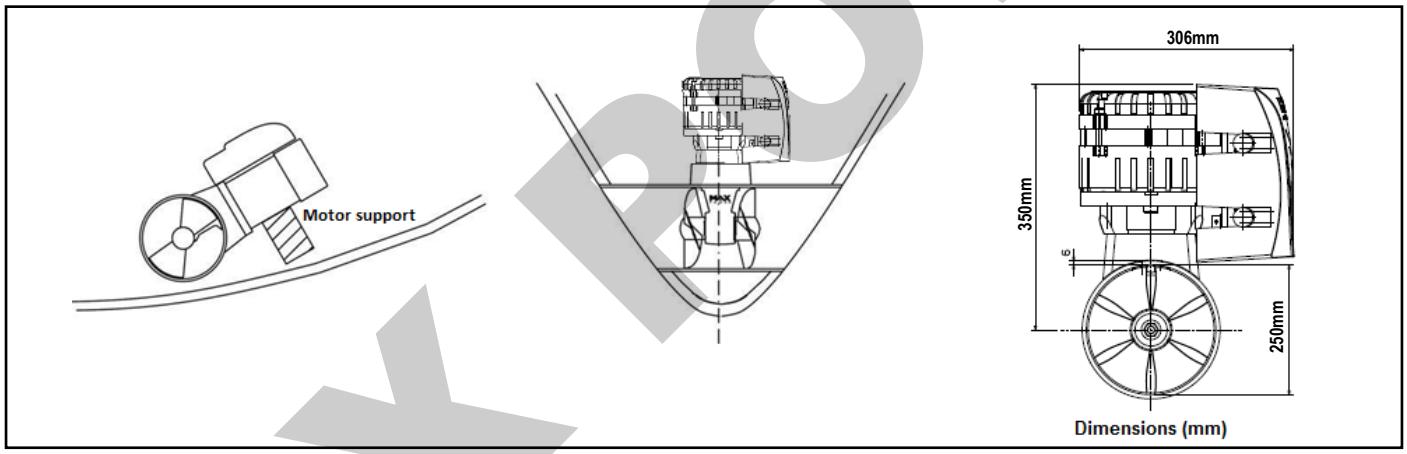
The compliance of the Directive allows the Manufacturer to affix the marking CE *to the product described.*
THIS IS TO CERTIFY THAT THE FOLLOWING PRODUCT IS IN COMPLIANCE WITH THE EUROPEAN DIRECTIVE 2006/95/CE REGARDING LOW VOLTAGE EQUIPMENT.

1. GENERAL INSTALLATION GUIDELINES

In order to install the thruster in the most efficient position, follow the instructions below:

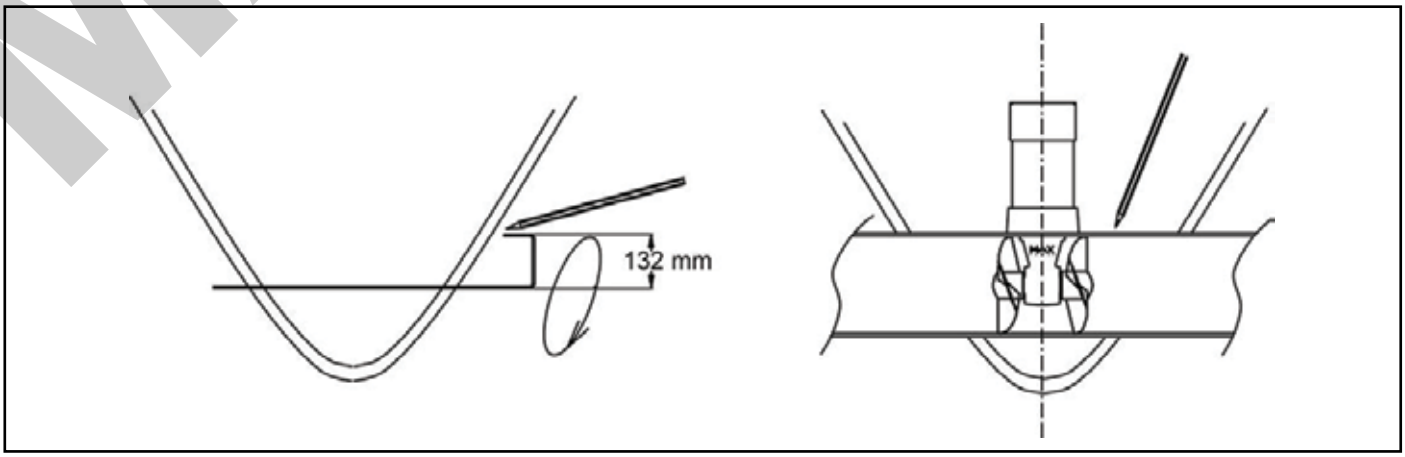


• The **minimum** acceptable tunnel position is 250mm below the waterline
• **The tunnel is ideally positioned when the distance between the waterline and the top of the installed tunnel is 250mm**
• The tunnel must be installed as far forward as possible.
NB: A thruster turbine installed above its ideal position towards its minimum depth will lead to a progressive loss of performance.
Whether vertical, inclined or horizontal, it is recommended to support the electric motor.
The electric motor generates heat when in operation. The zone in which the thruster is installed must therefore be dry and ventilated.
The batteries used by the thruster must be charged by both the main engine's alternator and an appropriate battery charger.
If the thruster is installed using a dedicated battery bank, this must be as close as possible to the thruster in order to reduce voltage loss in the electric cables.
CAUTION: In no case should flammable products be stored near to the electric components of the motor.
The drive leg must be centered in the tunnel and **under no circumstances should the propellers protrude out of the tunnel.**



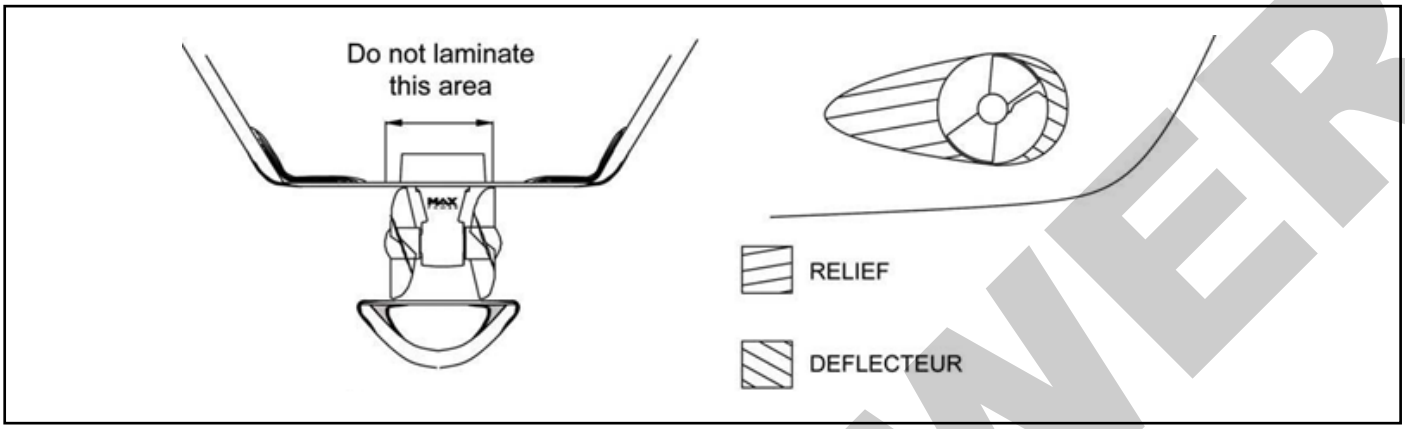
2. TUNNEL

Once the final tunnel position has been determined and all dimensions have been checked, mark the center-point of the tunnel on both sides of the hull and drill holes of 8 -10mm Ø on either side.
Using a metal rod, construct a compass with a 132mm radius. Insert through the holes and trace the ellipses, as shown below.
After cutting the holes out following the elliptical guidelines, use an abrasive disc to prepare the inside and outside surfaces of the hull for laminating (approx. 10 to 15cm around the holes).
Position the tunnel in the hull, mark the positions of the different components, as well as the areas that require laminating, then remove the tunnel. It is advisable to drill the tunnel before laminating it into position. See section 3 "Composite Motor Support and Drive leg" for more details. The propeller should preferably be situated on the centerline of the vessel, but it must always be accessible from the outside.



Replace the tunnel. To secure its position apply reinforced fiberglass filler to all areas, both inside and out, taking care to entirely fill the space between the hull and the tunnel. Laminate using a minimum of 8 layers of **ISOPHTALIC RESIN** alternated with mat and roving
In difficult to access areas (i.e. under the tunnel), it is possible to only apply reinforced filler.
Once the filler has set on the outside, finish with a waterproof under coat, followed by sanding and application of a waterproof finish coat.
In order to optimize the flow of water whilst sailing, and to avoid turbulence due to the tunnel, finish 1 to 4 cm with several coats of reinforced filler, in order to obtain the required hydrodynamic lines. Once all laminating work is complete, apply sealant.

DO NOT LAMINATE THE AREA OF THE TUNNEL TO WHICH THE ELECTRICAL MOTOR SUPPORT WILL BE FIXED.



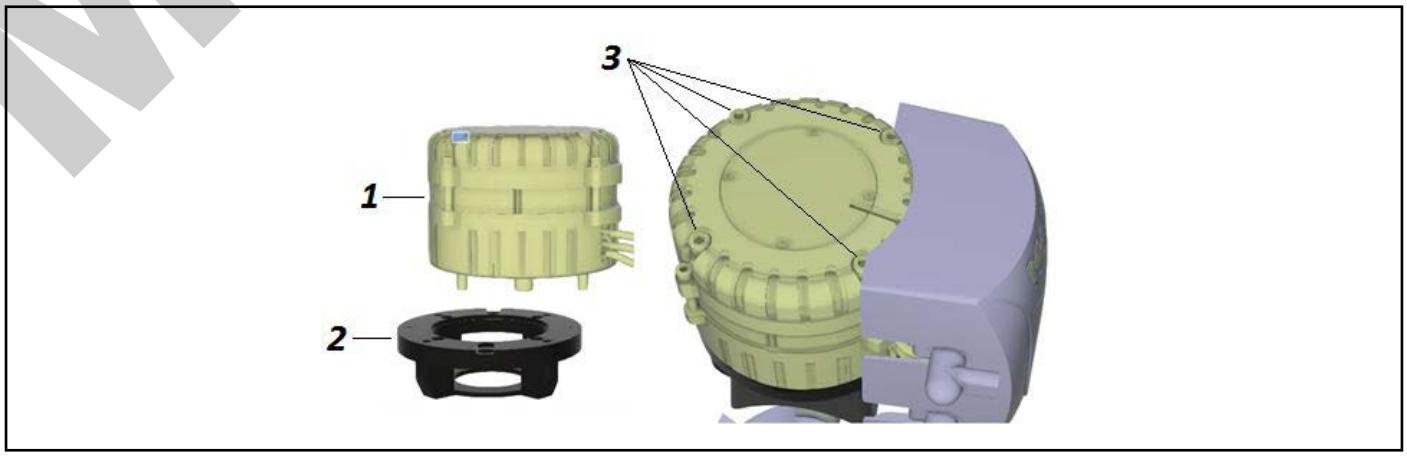
3. COMPOSITE MOTOR SUPPORT AND DRIVE LEG

The motor support and the drive leg must be centered in the tunnel.
Locate and mark the intended position of the holes for the fixing screws and the leg hub. You can use the motor support and the leg's gasket to mark these holes. In some cases, it will be easier to mark and drill these holes BEFORE laminating the tunnel.
After drilling, use the gasket to verify the holes' axes and adjust them with a round file where necessary.
These holes must be completely **clean** before inserting the screws.
Position the leg, the gasket (**between the leg and the tunnel**) and the motor support, and then tighten the two screws alternatively. Finally, mount the propeller(s) to control the general alignment.
If the general set-up is correct, remove the propeller(s), the leg and the gasket.
Apply a thin coating of silicon grease or sealing compound to both sides of the gasket (this must be resistant to hydrocarbons and water). Now fit the electric motor onto the motor support and tighten the four 10mm Ø motor support screws alternatively (maximum torque: 40Nm). Push the lower coupling up into place using a screwdriver et tighten the two 4 x 10mm Allen screws (maximum torque: 10Nm). Check that the propellers rotate freely, without resistance or friction.

It is imperative that the holes and the screws remain free of sealing compound, otherwise there is a risk of an incorrect assembly of the parts.
Caution: do not use graphite grease.
NOTE:
The composite drive leg:
• is pre-filled with oil and sealed for life
• does not require anodes
• must not be disassembled, even partially (warranty exclusion)

4. ELECTRIC MOTOR (24V)

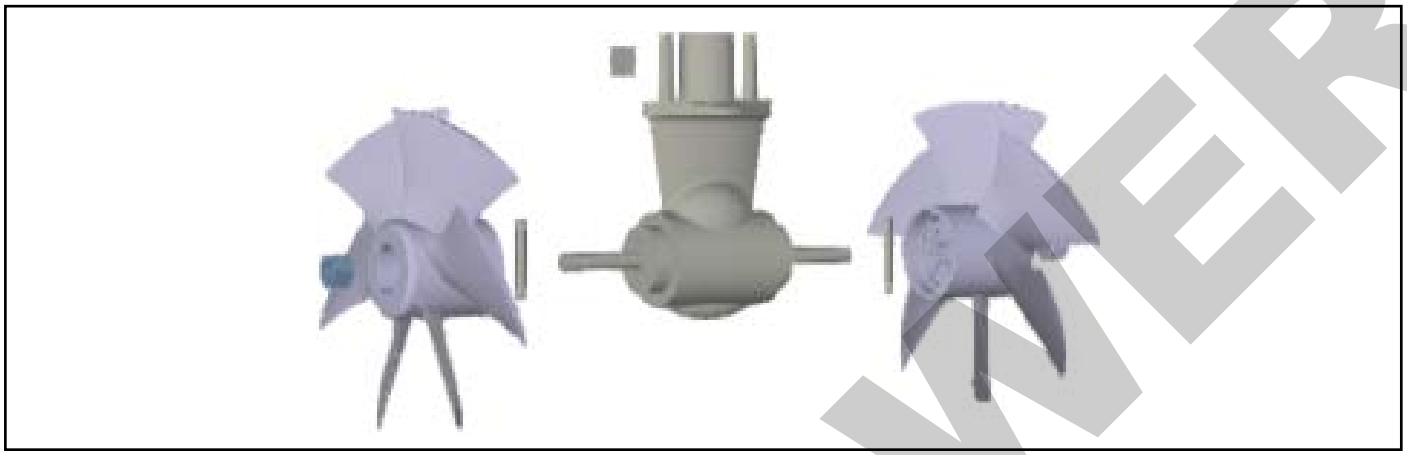
Before the installation process begins, please make sure that no power is supplied to the thruster. The upper coupling (motor side) is adjusted in the factory. Position the lower shouldered coupling on the drive leg shaft and push it down as far as it will go (lightly grease the shaft beforehand). Place the flexible coupler on the drive leg side coupling, ***(part #4 on the Eco – Pro Spare Parts diagram, page 15 & 16).***
To mount the motor/controller assembly (#1) on the motor support (#2) you will first need to remove the four nuts located at the bottom of the motor, without removing the four studs (#3) completely from the motor (if the studs are removed then it is very important that they will be reinserted carefully inside the motor). Position the motor with the studs on the motor support and start tightening them with a **8mm Allen key** (max torque 40 Nm) with even and sequential turns (do not apply any kind of Loctite on the studs):



Check that there is 2mm of play (+/- 1mm) between the couplings on motor and drive leg side. If there is too much, or too little “play”, unscrew the motor side coupling screw by using a **2.5mm Allen key** and readjust. Ensure that air can flow freely to allow the motor/controller assembly to cool whilst in operation.

5. PROPELLERS

Insert the drive pin and propellers. Check that the propellers turn without resistance (a little resistance due to the motor is normal). Tighten the 22mm nut (maximum torque: 25Nm). Protect your hands during this operation to avoid risks of injuries caused by the sharp edges of the propeller blades. **IMPORTANT:** to prevent against calcium deposits that damage the seals, we recommend that you coat the shaft and stainless steel cover with silicon grease:



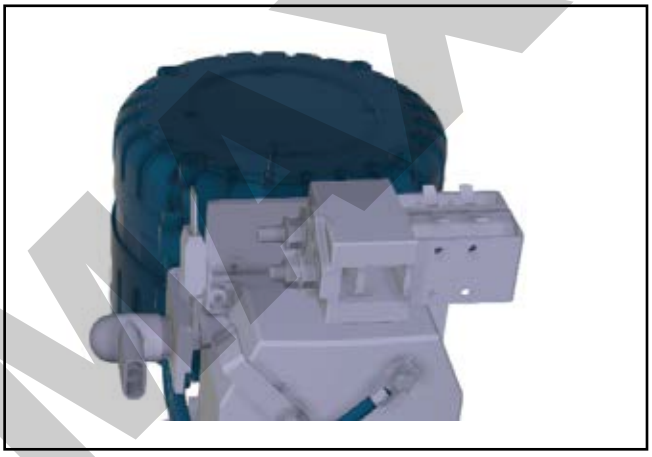
6. PROTECTION GRIDS

We recommend to install protection grids, in order to protect the drive leg and propellers from debris, however, their installation may affect thruster performance. Correct installation is important, please consult an experienced technician.

7. ELECTRICAL INSTALLATION

CAUTION: An incorrect electrical installation will cause rapid deterioration or even failure of the thruster. Excessive under voltage or over voltage can cause premature wearing of the motor and controller. Special attention should be given to the quality, capacity and condition of your batteries, as well as power supply cables used. Last but not least, the installer is responsible to protect the electrical components of the thruster assembly against direct water contact. Never store items (e.g. equipment, sails, ropes etc.) in the same compartment as the thruster. When the thruster operates for an extended period, it can reach high temperatures which can cause damage to nearby items or even cause a fire. Any loose items near the thruster motor can cause problems with electrical wiring coming loose and short-circuiting.

Important: When the motor/controller of the thruster is supplied with power for the first time the small relay on the controller will arm automatically and it will remain armed, in order to run the tests. As soon as you finish the tests turn off the thruster from the CAN-Joystick



⚠ An automatic battery isolator is already available on the controller of the thruster under the plastic cover:

Thruster motor power supply (24 V):
These values are given as an indication, assuming that the batteries are charged at 100% and in charge (ambient temperature 22 degrees Celsius):
• 24 V bow thruster : 21.0 - 28.8 V
Please refer to the characteristics given by the manufacturer of the batteries that will be used *(see section 9 “Batteries”)*.

Power wiring:
1. Measure the shortest and most direct route possible between the battery(ies) and the electric motor/controller; remembering to provide enough space for both “positive and negative” cables.
2. The power supply cables must be located in a well ventilated area.
3. The material of the power supply cable insulation should be from PVC and with thermal rating at least 105 degrees Celsius.

Recommended cable sections

Cable lengths	ECO-PRO 150
L ≤ 7 m (3,5 x 2)	70 mm² - 2/0 AWG
7 < L ≤ 14 m (7 x 2)	95 mm² - 3/0 AWG
15 < L ≤ 21 m (10,5 x 2)	120 mm² - 4/0 AWG
22 < L ≤ 28 m (14 x 2)	2 x 70 mm² - 2x 2/0 AWG

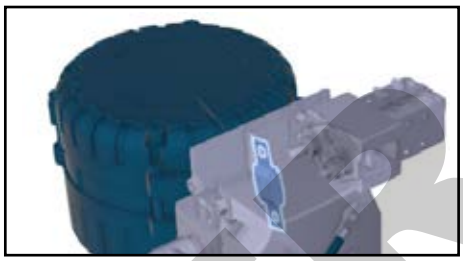
For all connections, use appropriate crimped terminals for the cable sections chosen (motor/controller has M10 terminals). It is possible to reduce the cable section to facilitate easy connection but only over a short distance. In this case, appropriated crimped fittings should be used at the connections.

Please consult the “Electrical installation” diagram p. 14 for more information

8. MAIN POWER FUSE

Fuse sizes for over current and short circuit protection must be determined on the basis of the cable sections in the circuit and NOT based the amperage drawn by the appliance (thruster motor) in the circuit. Brushless series require approximately 5% less current in relation to the equivalent Max Power brushed models:

Thruster model	Minimum Operating Voltage (V)	Maximum Operating Voltage (V)	Average Amperage (A)	Max Power Ceramic fuse (A)	Max Power ANL fuse (A)
ECO-PRO 150 24V	21	28.8	290	200	175



The main power fuse is positioned on the positive terminal.

9. BATTERIES

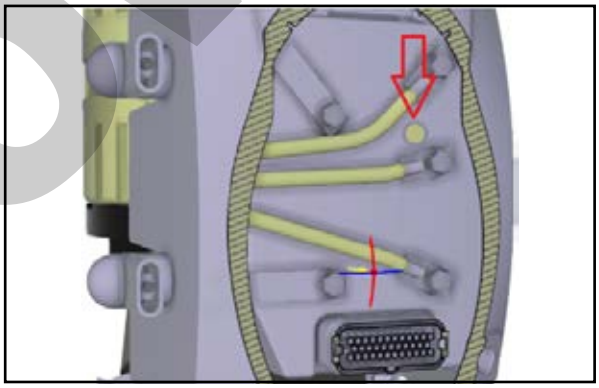
Thrusters are high amperage consumers with instantaneous demands, therefore they need high CCA outputs provided typically by lead acid “starting” type batteries. In case of lithium-ion batteries, the voltage supplied to the thruster must respect the range 21.0 - 28.8 V for 24V (consult a marine electrician for more information regarding the battery discharge needed and the BMS). If the dedicated batteries are charged by the alternator, the reference of the charge must be taken after the diode-splitting block. The total battery capacity must be sufficient for the size of the bow thruster and the operation cycle needed:

Thruster model	Recommended Battery CCA
ECO-PRO 150 24V	DIN 535, SAE / CCA 950

10. Electronic controller

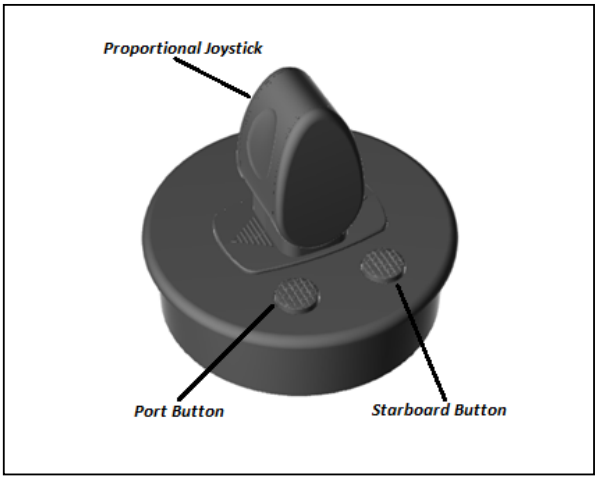
The Eco-Pro series consist of a “Hair pin” brushless AC motor, which is powered by the controller mounted on the motor and which also powers the CAN-Joystick. The controller converts the DC power supply to AC, therefore it is very important that the instructions advised in paragraphs 7, 8 and 9 are respected. If the power supply reaching the controller is not what is advised, then it can cause serious damage to the thruster and the termination of the warranty. For easy troubleshooting the controller has a LED light, which emits orange and red signals depending on the issue, to access the led you first need to remove the plastic cover.

Max Power advises the use of a separate manual isolator for additional protection.



11. CAN JOYSTICK FUNCTIONS

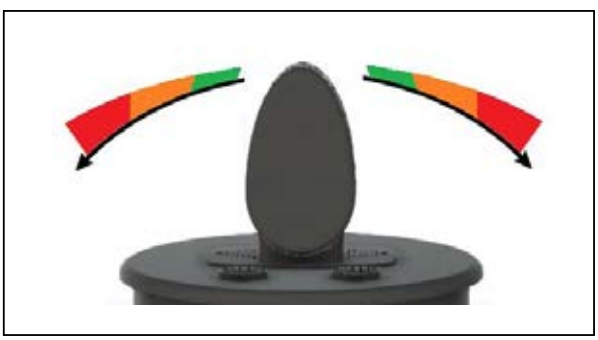
The can bus proportional joystick is equipped with a Bluetooth, which can be paired with the Android OS smartphone of the user for remote monitoring of the critical functions of the thruster and remote troubleshooting. The joystick has IP67 rating and is capable to withstand EMI, vibrations, UV light and salt water. It has automotive grade power supply, over/under voltage, reverse polarity and ESD protection.



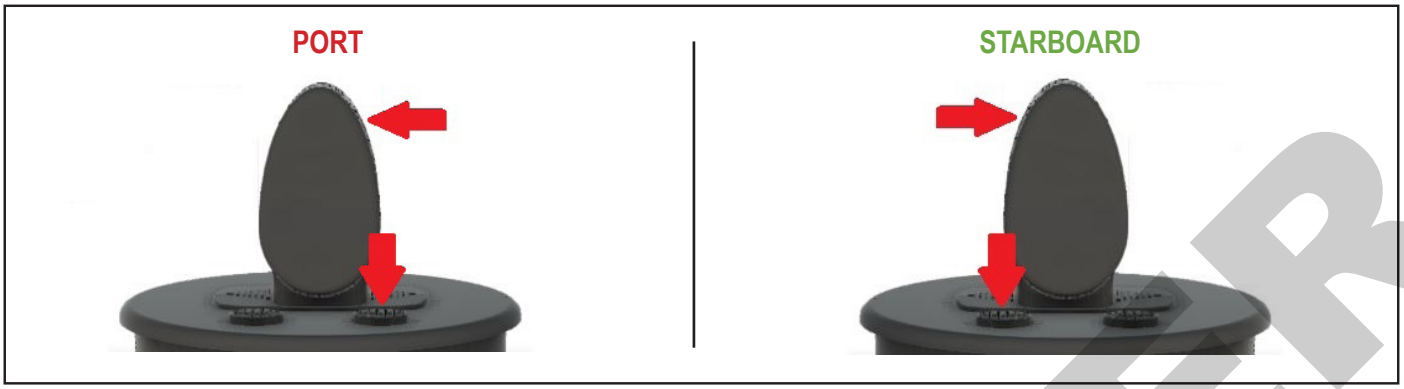
Turning the device ON: The thruster is turned On by pressing the Port and Starboard button simultaneously and holding them for 2 seconds. The two buttons will blink 3 times indicating the device is successfully turned ON.

Turning the device OFF: The thruster is turned off by pressing the Port and Starboard button simultaneously for 2 seconds. The two buttons will blink 3 times indicating the device is successfully turned OFF. The thruster will automatically turn off if there is not interaction with it for more than 20 minutes.

Normal Operation – Operating the thruster Port / Starboard: The proportional joystick is sending CAN messages proportional to the deflection angle. The push direction is indicated by lighting up of the corresponding button. The thruster controller provides a 2 second time delay between left and right thrust in order to avoid rapid direction changes that could damage the drive leg. There is no delay when thrusting to same side. At any significant cruising speed (+1-2knots) the thruster will have little effect in the maneuvering of the vessel therefore it is important to plan ahead the operation. The proportional thrust operation for the Eco - Pro series is dependent on the extent of the joystick/ throttle. For minimal thrust slightly move the joystick/ throttle in one direction:



Hold function: Assuming the thruster is turned ON, the hold function is activating by deflecting the joystick to the desired angle and pressing the button opposite to the side the joystick is pushed for 3 seconds. The joystick will indicate that the hold function is activated by blinking the button in a 1:4 ratio in the selected direction:



The device stores the deflection angle of the joystick at the moment of the function activation and continuously outputs the memorized value regardless of the joystick position. Deactivating the hold function is done by pressing any of the buttons or pushing the joystick in any direction.

Error Indication: In case of an error the connected app will provide the corresponding alert to the user, errors are also indicated from the corresponding blinking of both buttons on the CAN joystick, from the LED light on the controller (you need to remove the plastic cover to access it).

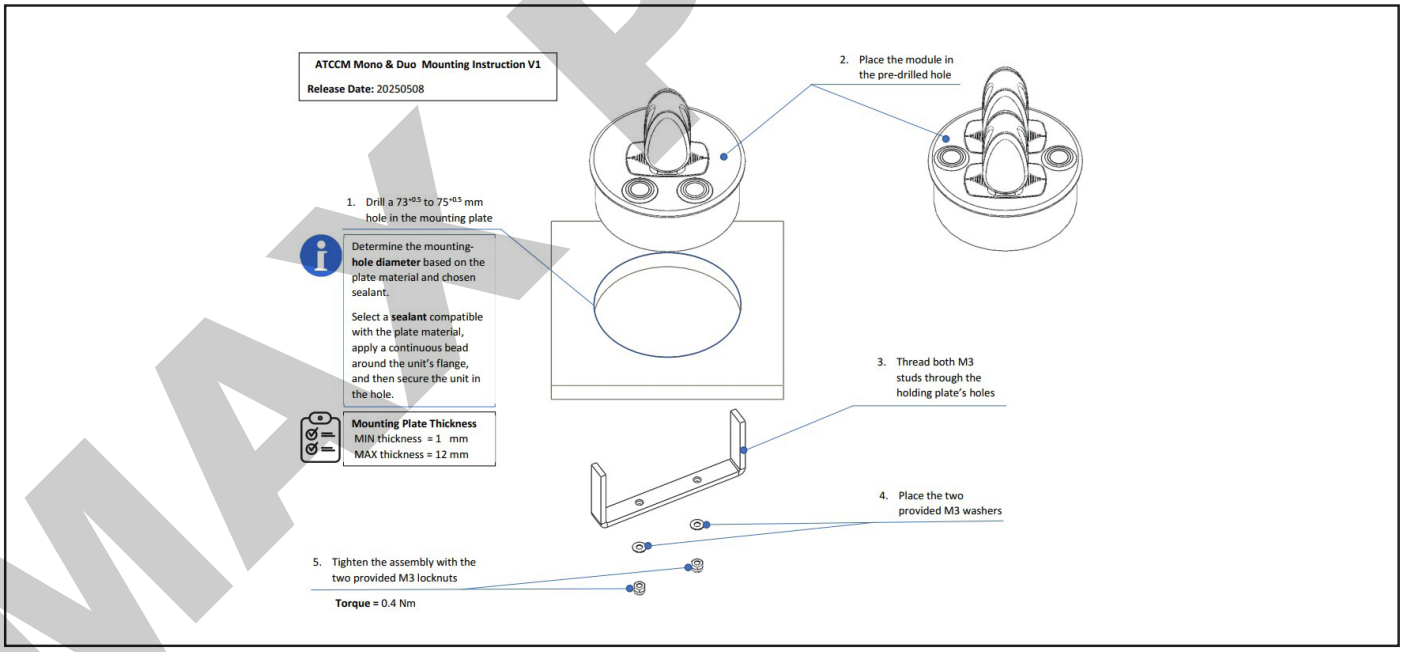
Reset function: In case of a system failure, press the joystick to the left for 10 seconds. Please, note that in cases of overheating, the thruster needs to cool down.

12. CAN-JOYSTICK INSTALLATION & APP CONFIGURATION

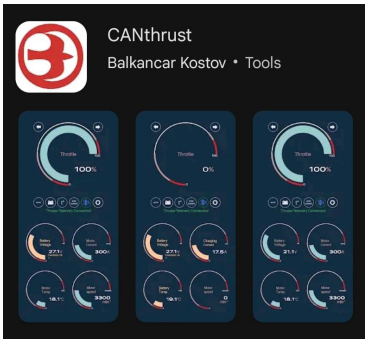
When the thruster remains offline for a significant amount of time we recommend to protect the CAN-Joystick from the natural elements (if exposed). Install the CAN-Joystick(s) in easily accessible positions, without obstructing the steering controls. We recommend that the area below the dashboard should be kept dry to avoid the risk of oxidization of the cable connecter contacts.

It is possible to connect up to three 10 meter CAN cables via a 3-way "T" connector. The moment the second CAN-Joystick is activated; it will cause the automatic deactivation of the first one therefore take into consideration that you cannot use more than one CAN-Joystick panel at the same time (the app will need a few seconds to synchronize as well).

For the complete installation instructions of the CAN-Joystick, please refer to the "Installation Guidelines", which is supplied as a hard copy with each CAN-Joystick. Mind to write down the "RNXXXX – XXXA" reference advised in the label highlighted with a red arrow below, as it will be needed later on for the configuration of the app:



Max Power has developed along with our partners an app, which allows the user to monitor the main operation values of the thruster such as battery voltage, battery current, motor temperature, motor speed through the Android OS smartphone with OS version 8 and above. The smartphone is connected to the thruster via the Bluetooth of the CAN-Joystick. In order for the connection not to be interrupted the distance of the smartphone from the CAN-Joystick, must not be higher than 5 meters.



To connect the Android smartphone to the CAN-Joystick, please follow the steps below:

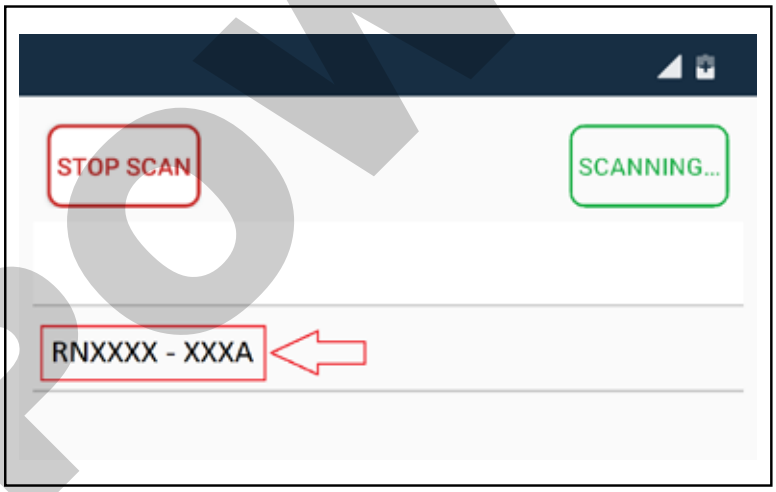
1. Download and install the free app from Google store:

2. Provide the Bluetooth and Location permissions requested by the app, this will ensure that the app will operate without a problem. Please mind not to restrict the background activities that the app can perform.

3. Activate the Bluetooth on your smartphone, go to “Settings” through the app (highlighted below):

4. Select “Bluetooth connection”:

5. Select the Bluetooth name of the joystick, which is indicated on the label available at the lateral surface of the CAN-Joystick (RNXXXX – XXXA):



Important note, through the app the user will only be able to monitor the thruster, the app will not provide any command capability to the user for safety reasons.

13. TESTS

⚠ **When the motor/controller of the thruster is supplied with power for the first time the small relay on the controller will arm automatically and it will remain armed, in order to run the tests. As soon as you finish the tests turn off the thruster. Activating the thruster when the vessel is out of the water, is not advised under any circumstances. Tests must be carried out with the vessel in the water, the battery(ies) charged at 100% and in charge, and the engines running.**

The thruster can run continuously for as long as there is power. Even after heating up the thruster will continue to operate but with decreased thrust until the battery runs out (see chapter 16).

14. ELECTRICAL MEASUREMENTS

In normal “usage” mode, i.e. thrusters running, vessel in the water, with fully charged batteries under ongoing charge (alternator), electrical measurements should be made at the following points:
At the batteries
At the battery cut-off switch At the fuse
At the electric motor’s connections
At the power supply arriving at the thruster control box These measurements will enable you to detect voltage drop.

NOTE: the voltage reading between the thruster’s negative and positive connections should be approx. **21.0 - 28.8 V for 24V models.**

⚠ **The cumulative effect of voltage drops at these points can severely impair the thruster’s performance.**
Should the voltage measured be too low, the following points need checking: Are the batteries of sufficient capacity?
Are the batteries good quality?
Are the batteries sufficiently charged?
Are appropriate cable sections being used? Are the connections sufficiently tightened?

15. OPERATION

Before the thruster is operated the user must be aware of its surroundings (objects, other vessels, etc.). In case the thruster malfunctions during a maneuver, the user must have a backup plan to avoid damage to persons or any other objects. When maneuvering keep in mind that the vessel's momentum continues after the joystick is released, therefore remember to release the joystick prior to reaching your desired position. The thruster must not be used, when close to objects, persons or animals in the water, as it will draw objects into the tunnel and the rotating propellers. Always turn the main power switch off before performing any service to the thruster. The battery isolator that disconnects the thruster from all power sources (batteries) must be located in an easily accessible area so that the thruster can be turned off in case of serious malfunction. We advise keeping the main engine(s) running while using the thruster. This will keep the batteries in a good charge condition and also maintain the performance of the thruster. If the performance of the thruster is reduced check the battery system and the app for overheat alarm, also check the tunnel for marine growth.

16. ALARMS OR THERMAL SWITCH-OFF

If for any reason the thruster/controller start to overheat then at first the controller will limit the power to 80% and will continue to operate normally. If the temperature continues to rise until the critical threshold is reached, then the controller will terminate the operation of the thruster and the two buttons of the CAN joystick will start flashing red, the mobile app will also indicate the overheat of the thruster.
The unit will then not be able to be switched on again until the motor has cooled down.

17. SAFETY

Switch off means to cut the power at both the DC equipment panel (control power supply) & the thruster battery isolator (thruster power supply) after having used the thruster. Under no circumstances should any flammable products be stored next to the electric components of the thruster. Care must be taken not to use the thruster in areas where there may be people swimming or in the water close to the thruster.
CAUTION: Never tamper with the thruster / thruster turbine if not 100% sure that both the control and power circuits have been isolated, except if taking electrical measurements on the thruster motor or relay.

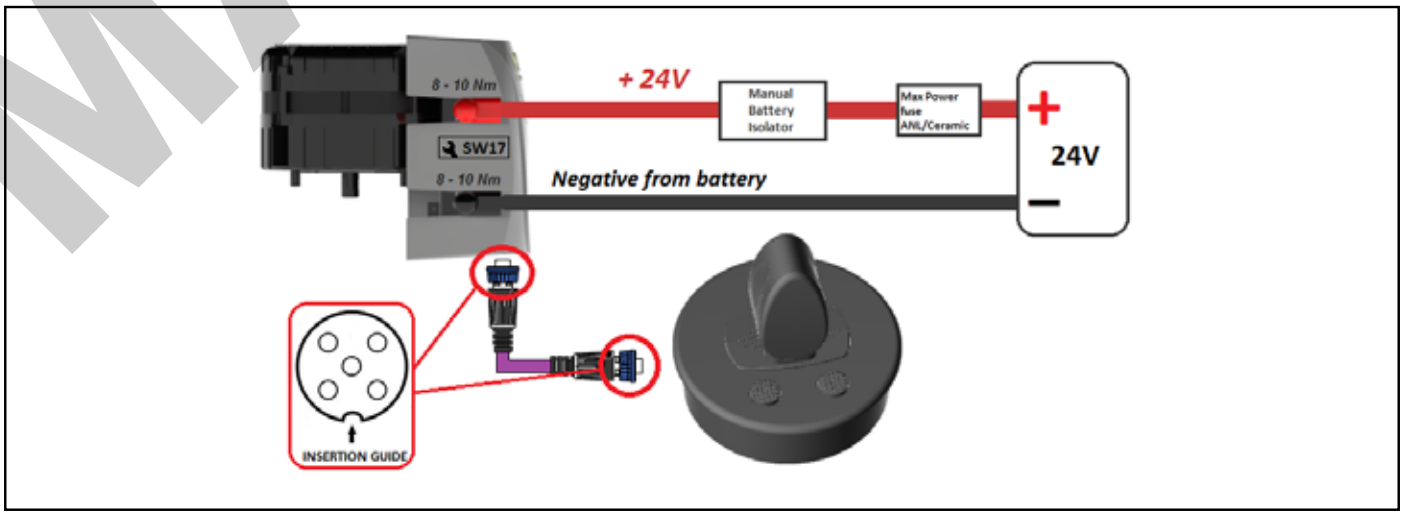
18. MAINTENANCE

Before every sail season we recommend to proceed to the following preventing checks:
Inside Water: The area around the thruster inside the vessel is clean and dry. Ensure there are no signs of water leaks; All electrical connections are clean from oxidation and fastened firmly; Ensure that your batteries are in good condition and the suggested voltage reach the thruster; Check that the coupling assembly is in position.
Outside Water: Check the propeller(s) or tunnel for any damage or obstacle; The propeller(s) is fastened securely to the drive leg; Clean the tunnel and drive leg from marine growth; Paint the propeller and drive leg with anti-fouling before every season to keep it clean from sea growth (ensure paint does not enter the space between the propeller and the drive leg.); The composite drive leg is pre-filled with oil and sealed for life. It does not require oil replenish or anode; The electric motor is brushless, therefore no maintenance is needed; The drive leg must not be disassembled, even partially (this would void the warranty). To prevent the buildup of calcium on the drive shafts, which would damage the oil seals, cover the drive shaft and the oil seals' stainless steel covers with silicon grease before fitting the propeller(s). This should be done on an annual basis after the cleaning of the outside of the drive leg. Do not use aggressive solvents as they may damage drive leg seals. If drive leg oil seals are found to be worn, replace the drive leg with a standard exchange unit.

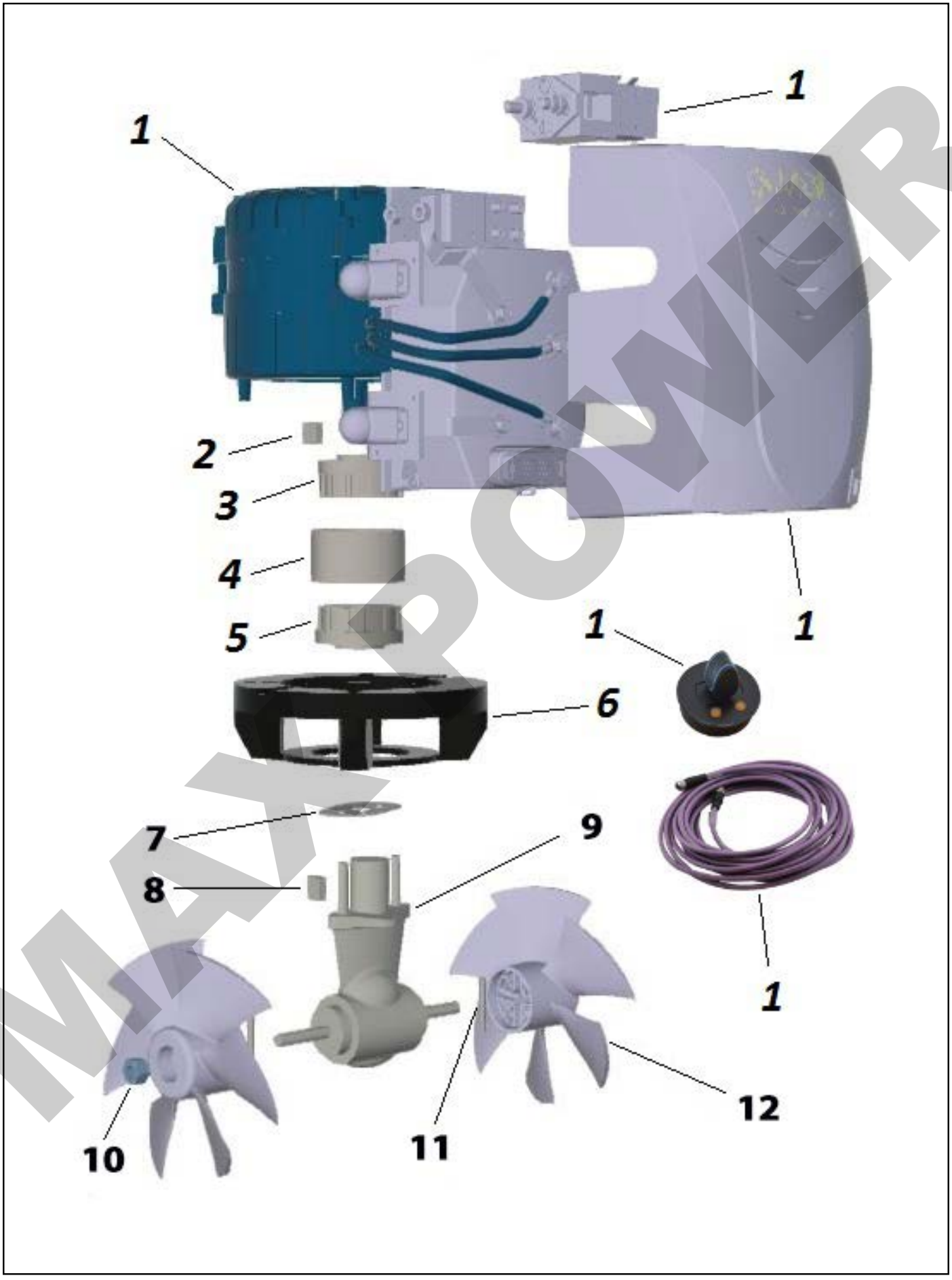
PREVENTIVE TESTS TO CARRY OUT	DATE											
All electrical connections are free from any oxidation and fastened firmly												
Batteries are fully charged and in good condition												
The area around the thruster is dry and the thruster is not near flammable materials												
The drive leg and propellers have anti-fouling												

19. Power supply diagram

ECO PRO - 150 (24V): The integrated mega-fuse located under the plastic cover is meant for the protection of the motor and controller, for the protection of the cables a different fuse must be installed near the positive terminal of the battery (see pages 6 and 7). To connect the CAN bus cables the insertion guides must match first in order to tighten the safety:



20. SPARE PARTS DIAGRAM ECO – PRO 150



21. SPARE PARTS LIST

N°	Description	Quantity	Code
1	MAXPOWER THRUSTER ECO 150 MOTOR KIT	1	636678
2	Key (included in the part number #1)	1	N/A
3	Coupling motor	1	630487
4	Coupling PG56	1	633743
5	Coupling drive leg	1	633746
6	MOTOR SUPPORT ALU MP11 WITHOUT LUB+4 SCREW	1	310368
7	Leg gasket	1	310254
8	Key 15X5X18	1	312211
9	Bronze leg (includes n° 8, 9, 11, 12)	1	633674
10	M22 Lock nut DIN985 A4	2	N/A
11	Propeller pin	2	312053
12	MAX POWER Propeller Ø250	2	35042

22. TROUBLESHOOTING GUIDE

Before contacting your nearest Max Power service station, please check the below troubleshooting guide and our online trouble shooting videos: https://www.max-power.com/troubleshooting

Problem	Check
The CAN-joystick does not activate	• Check that the CAN cable behind the joystick is connected, perform the same check for the connection on the thruster. Remove the plastic cover from the thruster and check that all connections are ok and free from any oxidation • Check that the battery main switch is 'ON' • Check that the main power fuse located near the positive terminal of the battery is not burnt • Check that the battery voltage is correct: • 24 V bow thruster: 21.0 - 28.8 V
The motor is running but the thruster is not working or the thrust has decreased	• Check that the propellers are fitted correctly with no visible damage and that the propeller pin is not broken • Check the coupling assembly, if damaged replace it • Check that the tunnel is not obstructed or the propellers blocked. Remove any marine growth and clean tunnel • Rotate by hand the upper shaft of the drive leg, if the rotation is not smooth and all the above are ok then replace the drive leg • The motor or controller has overheated and the motor is now running at reduced power (see chapter 16)
Electric motor does not operate	• Check that the battery main switch is 'ON' • Check that the mega-fuse located on the positive terminal inside the controller (under the plastic cover) and the main power fuse located near the positive terminal of the battery are not burnt • Check electrical connections and make sure they are tight and free from any oxidation/corrosion • Check that the battery voltage is correct: • 24 V bow thruster: 21.0 - 28.8 V • Check the android app for any alert • Remove the plastic cover from the controller and count the red and orange signals available and contact Max Power • Reset the system by pressing the joystick to the left for 10 seconds.
The Curtis controller flashes in a sequence of 7 red and 2 yellow flashes.	• If the thruster detects an undervoltage or overvoltage, then it will go into fault for protection. Press the joystick to the left for 10 seconds, in order to reset the system.

23. WORLDWIDE DISTRIBUTION NETWORK

To locate the nearest Max Power distributor, please consult the section "Worldwide Distribution" on our website: www.max-power.com

24. WARRANTY COVERAGE

Introduction
The purpose of this document is to set out the terms of warranty cover offered in relation to products purchased by the End User from Max Power or its approved network of resellers. This document will adhere to the following format:

Section 1 Definitions
Section 2 Period of Coverage
Section 3 Warranty Registration
Section 4 Warranty Terms
Section 5 Warranty Exclusions
Section 6 Procedural Guidelines
Section 7 Service Centers

1) Definitions
Authorized Repair Number - The number given by Max Power on reporting a fault with your thruster
Dealer - An authorized Max Power sales center
End User - The vessel supplied with supplied equipment and the owner thereof Installer - The authorized center responsible for the installation of your thruster
Manufacturer - supplier of the equipment under warranty
Pleasure Craft - Vessels used for owner's personal use that have no commercial use (i.e Charter vessels or work vessels)
Resellers - Max Power approved distributors and dealers
Serial Number - Number in upper right hand corner of Warranty document
Supplier - The manufacturer (Max Power)
Warranty - The terms and conditions that are covered by the manufacturer

2) Period of Coverage
The equipment manufactured by the Supplier is guaranteed to be free from defective workmanship, components and materials under normal usage conditions for a period of two years from the date of purchase by the End User. This warranty is transferable to subsequent owners of this equipment during the period of coverage.

3) Warranty Registration
Register your purchase now to receive free extended warranty coverage (additional 1 year, 3 years in total). This can be done using one of the following methods (NB. proof of purchase must be included to establish that equipment is still under warranty):
a) The quickest and easiest method to register your warranty is to email the attached installation check list and warranty registration to the Manufacturer.
b) Mail in your warranty registration document, please ensure that you make a copy before sending it.

4) Warranty Terms
If the equipment is used for anything other than for pleasure craft, the guarantee is limited to a one year period.
Year 1 - All factory testing, diagnosis, repairs and replacements are performed at no charge to the End User. All parts and up to two hours of labor are covered for repairs and replacements conducted in the field.
Year 2 - All factory testing, diagnosis, repairs and replacements are performed at no charge to the End User. This excludes any damage or faults occurring from normal wear and tear on the following items: engine, oil seals, relay contacts (If warranty is registered within the 3-month period following installation)

5) Warranty Exclusions
Damage due to modifications or installation contrary to published specifications Cost of hauling the vessel
Damage due to repairs performed by an unauthorized service center Damage due to lack of normal maintenance services
Damage due to water ingress
Parts replaced due to normal wear and tear
Repairs performed without knowledge of manufacturer (please contact dealer to receive Repair Authorization Number)
Tampering of equipment by the End User Cost of travel to and from the service site
Cost of economic loss, including injury to any person, damage to property, loss of income or profit, communication, lodging, inconvenience
Consequential damage due to failure, including those arising from collision with other vessels or objects

6) Procedural Guidelines

PLEASE VIEW THE TROUBLE SHOOTING LIST TO ASCERTAIN OR SOLVE ORIGIN OF PROBLEM PRIOR TO CONTACTING THE DEALER/INSTALLER

1) Contact your dealer/installer to report the problem.
a. If you do not know who this is contact the nearest Max Power distributor
b. If you are in foreign waters, please contact the nearest Max Power distributor
2) Ensure you have your serial number and model number to hand (top right hand corner of warranty)
3) Dealer/Installer will come to site to decipher the cause of the fault
4) If the cause of fault is due to a manufacturing problem the dealer will contact Max Power to receive Repair Authorization Number.
5) If the problem is due to an installation error, please contact your installer.

IF POSSIBLE: PLEASE TAKE PHOTOGRAPHS OF THE THRUSTER TO SHOW THE PROBLEM

The warranty as outlined above is only applicable to Max Power manufactured thrusters and optional equipment as used in marine pleasure industry. The supplier holds the exclusive right to test the product and determine whether it is defective

25. WARANTY FORM

Serial No.:

VERY IMPORTANT: Please complete this form and email a COPY to Max Power with a copy of the installation invoice or the invoice of the yacht/vessel in order for the warranty to come into effect.

To be completed by the owner:

Name of owner:	Tel.:
Address:	Email:
Postcode:	Country:
Name of skipper:	Tel:
Owner's signature:	**Date:**

To be completed by the installer:
Installation details

Thruster model:	Electric/Hydraulic:
Installation date:	Date of launching vessel:
Model and hull number of vessel:	Builder: Build year:
Pleasure or commercial vessel? :	Hull construction material:
L.O.A:	Width:
Waterline length:	Gross weight:
Tunnel Diameter, Thickness, Material & Length:	If Electric, Battery Type, Size & Number:

Installation checklist:

Electric :	**Before using thruster**	**During use:**
Voltage at batteries		
Voltage at thruster motor		
Ampere in motor power circuit		

Mechanical:	**YES / NO**
Check the motor is tight on its base and the flexible coupling is present between motor and drive leg	
Check that the thruster and all cable connections are tight and protected from water contact	
The thruster installation has been checked and the thruster functions correctly?	

Important: Please consult this manual for more details

Name of Installer: …… Signature:……..

Please visit our website to register the warranty:

https://www.max-power.com/warranty

Via Philips 5, 20900 Monza (MI), Italy
Tel. +39 039 200 1973-936 - Fax +39 039 2004299
E-mail:contact@max-power.com

www.max-power.com

20.26.2.7