

# USER MANUAL

part

B

version 18-R001/EN\_ULTRA SPORT\_B

model

**JETSURF ULTRA SPORT** 

#### SYMBOLS USED



This symbol is used to mark important warnings which are often ignored by the JetSurf users. Please pay due attention to these warnings. You will thus avoid making frequent user mistakes. These warnings are based on the experience of the JetSurf service technicians. Ignoring these warnings may cause permanent damage to the vessel and its parts.

#### SAFETY WARNING SYMBOL

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow the symbol to avoid possible injury or death.



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



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



CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.



NOTICE is used to address practices not related to physical injury. This information could result in damages to the product that are not covered under warranty.

These precaution icons will appear throughout the Owner's Manual.

PLEASE KEEP THIS MANUAL AT A SAFE PLACE AND HAND IT OVER TO A NEW OWNER IF YOU SELL THE JETSURF.

THE MANUAL COMPRISES OF TWO PARTS (Part A and Part B) which form an integral document.

The rules and warnings included in one part apply also to the other.

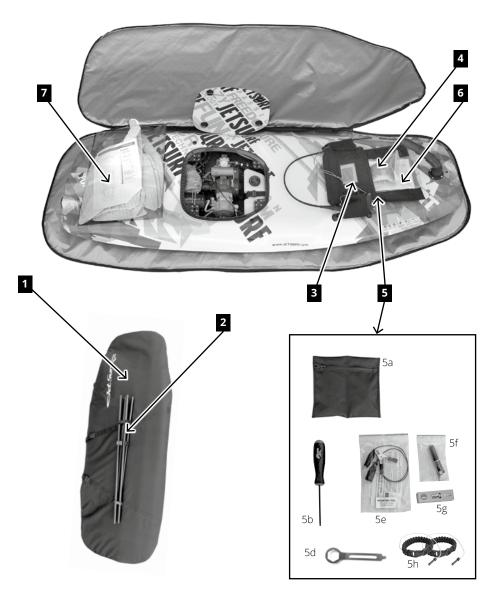
Therefore always keep both parts with you.

## **TABLE OF CONTENTS**

SAFETY WARNING SYMBOLS	
ARRANGEMENT OF JETSURF AND IT'S ACCESSORIES IN BOARD BAG	4
1B DESCRIPTION	6
FUEL TANK	12
EXHAUST	4
CONTROL HANDLE	5
ENGINE STARTER	7
IGNITION CONTROL UNIT (ICU)     1       SIGNALLING OF IGNITION CONTROL UNIT (ICU) FAULTS     2	
CARBURETOR.2CARBURETOR ADJUSTMENTS.2PROCEDURE OF IDLE SETTING.2	22
ENGINE	
ELECTRIC BILGE PUMP	
2B SPECIFICATIONS 2	6
SERVICE POINTS	27

18-R001/EN\_ULTRA SPORT\_part B

## ARRANGEMENT OF JETSURF AND IT'S ACCESSORIES IN BOARD BAG



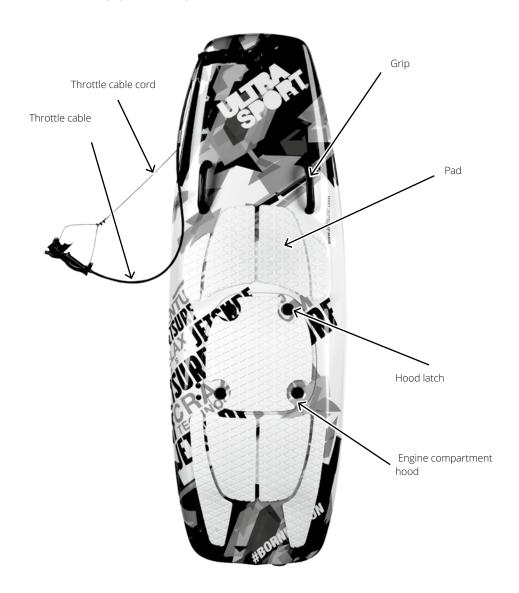
NOTICE: If the JetSurf is packed in a box, the stand (2) and the main fin (4) and the tool bag (5) is packed in the box outside the board bag.

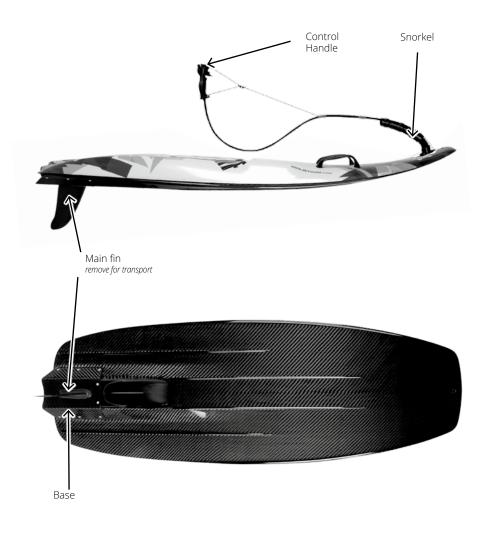
## DESCRIPTION

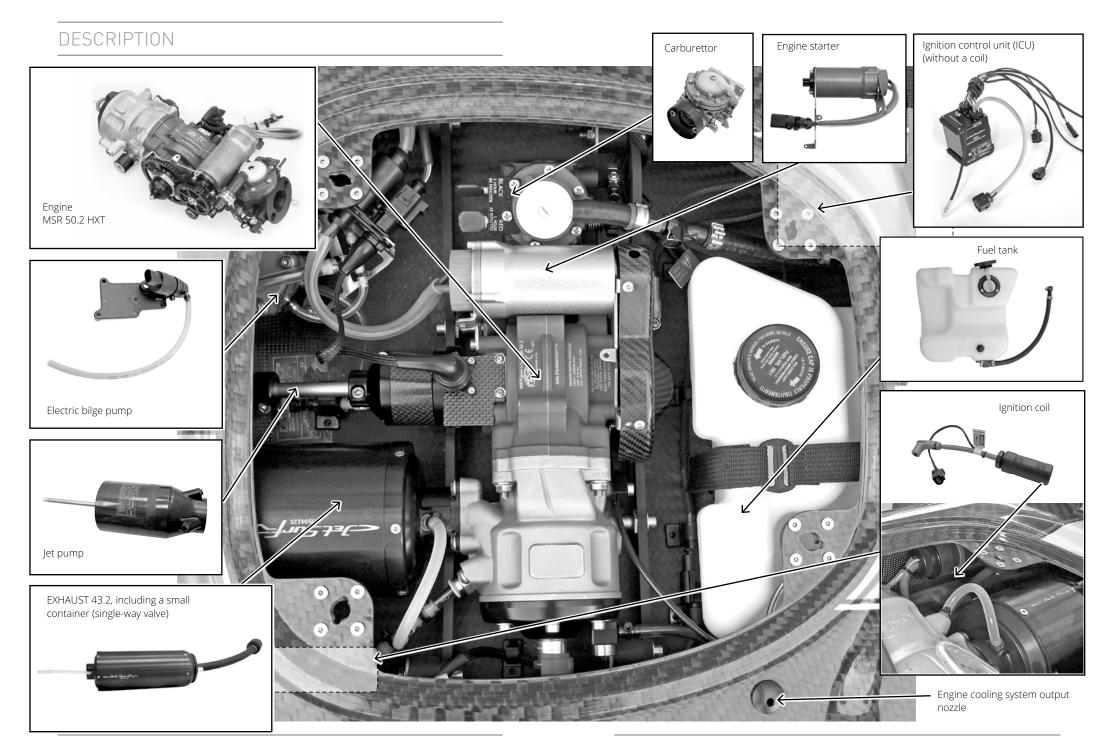
#### **LIST OF ACCESSORIES**

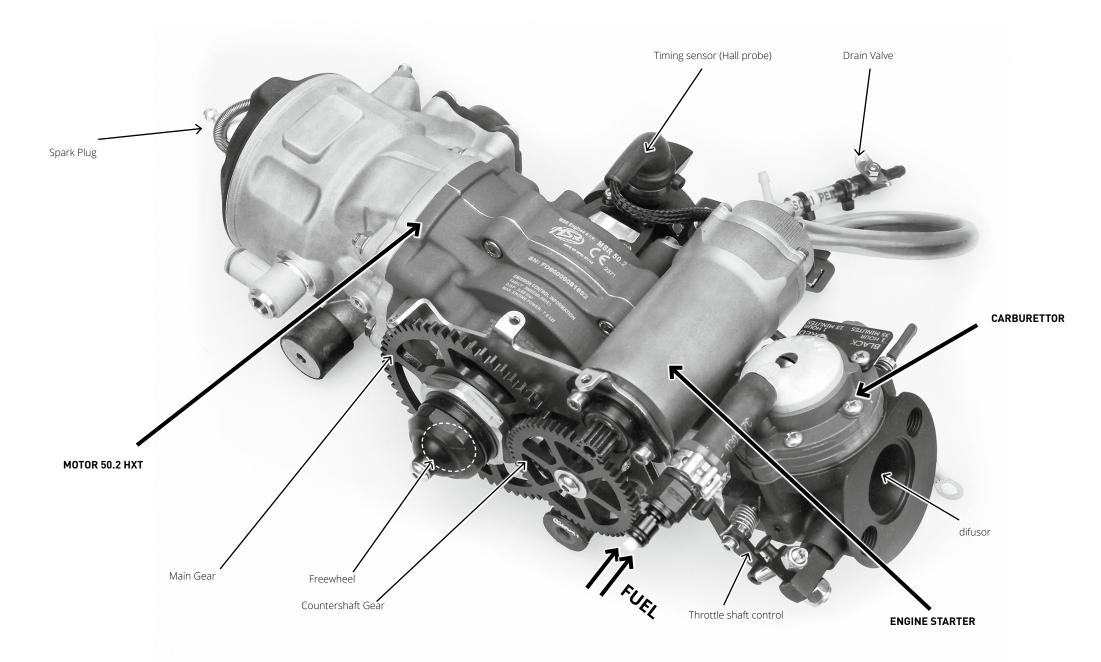
1 Board bag – 1 pc	
2 Stand – 1 pc	
Charger – 1 pc	
4 Man fin– 1pc	
5	
6 User manual part A and B Technical certificate	
<b>7</b> Pads	

## **1B DESCRIPTION**









#### **FUEL TANK**



Use lead-free car petrol with the octane number 95 or higher mixed in the proportion of fifty (50) parts of fuel to one (1) part of MOTOREX OCEAN FS

2T BIO; or oil meeting these standards: NMMA TC-W3, API TC, ISO-L-EGD: JASO FD/FC; TSI. Bad mixing or use of petrol/oil other than the prescribed one may lead to the engine damage. These cases cannot be covered with the guarantee.

Fuel system consists of the fuel tank, a fuel filter (placed inside of fuel tank), fuel hoses and a carburetor. JetSurf™ has venting hose which leads from fuel tank up to the air intake in front part of the board.

The fuel tank can be removed easily by releasing clips (couplings) in the fuel route which

are situated near the carburettor. (See the instructions specified below in the user manual where you can find complete instructions how to remove the fuel tank correctly).

Using of the correct petrol and oil mixture is crucial for ensuring long-term use of the motorized power board. Using of petrol with an incorrect octane number or oil not meeting the specifications may result in permanent damage to the fuel system and/or the engine which is not covered with the guarantee. **Apart from the above specified, please observe the following measures:** 

- MOTOREX OCEAN FS 2T BIO oil can be replaced with a quality fully synthetic oil intended for racing two-stroke engines meeting the standards NMMA TC-W3, API TC, ISO-L-EGD: IASO FD/FC; TSI.
- Never use cheap oil intended for garden machinery or similar mechanical devices.
- DO NOT USE synthetic oils intended for use in the engines fuelled by methanol (castor oil)
- Fuel is to be stored only in containers intended for that purpose. Such fuel containers must have
   D.O.T. approval or CE (for Europe) specified on the device.
- **DO NOT USE** mixed fuel older than sixty (60) days.
- If it is necessary to remove the fuel from the fuel tank, perform it in a well ventilated area and dispose of it on land. Observe the safety instructions specified in this part of the user manual. Handling of fuel or fuel vapours requires full concentration and correct procedures.
- Never try to suck the petrol up with your mouth. If you swallow some petrol, inhale its vapours or
  if it gets into your eyes, consult a physician immediately. If petrol gets in contact with your skin,
  wash the affected place with soap and water. If petrol gets onto your clothes, take them off and
  let them dry. Wash the clothes after proper drying.



## DESCRIPTION

- Check the fuel tank before every ride to make sure that you have enough fuel for the time you have planned to spend on water. If you do not have enough fuel in the tank, your motorized power board might run out of fuel and you can get stuck far from the coast or bank. It is in responsibility of the user to prevent such situations. A low fuel level may also influence the operation. As a result of moving on the water surface, the fuel may flow from side to side in the fuel tank which can lead to uneven fuel distribution into the engine misses. If necessary, always return to land and top up the fuel.
- On such an occasional also check whether there is not water or fragments in the tank. Water stays at the bottom and leaking of water into the tank suggests a problem which has to be solved. Water in the fuel system may cause that the engine will run badly or not at all. Remove the water and destroyed petrol and oil mixture properly and then ask your JetSurf™ sales representative for help in order to find the reason why the water leaked into the tank if it is not an obvious and easily rectifiable cause.
- If it is clear that there are fragments in the fuel tank, do not start the operation of the motorized power board. The fractions might block the fuel system and cause failure of the engine and the user may get stuck far from land. Before starting again, it is important to find out how the fragments got into the fuel system.
- If you find an obvious damage or leak of the fuel tank or fuel system, DO NOT START THE ENGINE! Immediately call the authorised sales representative and service of JetSurf™ to assess the fault. Leaking fuel may cause serious damage to the environment and it could be a potential dangerous situation for people and assets.



Petrol is extremely inflammable and highly explosive. Never smoke or handle fire within fifty (50) feet / fifteen (15) metres from the fuel area when topping up fuel. Avoid spilling the fuel. If spilt, dry the fuel with cloth and dispose of it on land. Never start the engine when you can see or smell fuel, as vapours can be more explosive than liquid fuel.

If fuel can be seen during the operation, switch the engine off immediately and find assistance as soon as you get to land. Have the engine and the fuel system repaired by an authorized JetSurf™ seller before restarting the operation.

#### **EXHAUST**







Carbon monoxide (CO) is a side product of the petrol and petroleum-based oil mixture in the combustion engine. Do not possible to neglect exposure to even a small amount of CO as CO is released from the bloodstream very slowly. CO enters the body through lungs and replaces oxygen in the bloodstream. Physical activity increases the speed with which CO is absorbed in the body. Potential CO poisoning victims should get first aid immediately.

Use only the exhaust system installed by the manufacturer. Replacing of the required exhaust system may result in the engine damage or engine output decrease. The damage caused by using of another system will not be covered with the guarantee.

It is necessary for the users to ensure sufficient cooling of the exhaust system during the operation. It means that the motorized power board must be immersed in water. Running engine longer than 10 seconds outside of the water can result in damage which is not covered with the guarantee and damage of the exhaust system and other engine components.

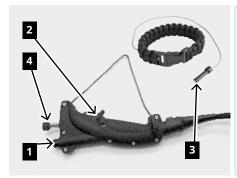
Even though the JetSurf™ engine produces much fewer side products during combustion than boat engines, exhaust fumes are still generated when the engine is running. These fumes are released by means of the exhaust system under the motorized power board where the carbon monoxide (CO) emissions are produced. Therefore it is necessary to run the engine only when the power board is on water as the fumes will dissolve faster and carbon monoxide resorption will be less probable.

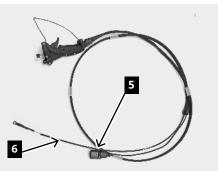
Before every operation check whether the exhaust system has been installed completely and correctly.

Regularly check and clean the exhaust ending and its parts.

## DESCRIPTION

#### **CONTROL HANDLE**







The engine shut-off key must be attached to the rider's wrist during the operation. If the rider falls off or is pushed off the motorized power board, the key will be pulled out of the engine shut-off switch and the engine will switch off automatically. It will quickly stop the forward movement of the power board, which not only enables the rider to return to the power board but it also prevents the motorized power board to continue its forward movement, which might lead to its damage, damage to other vessels in its surroundings or injuring any people, including the rider.



NEVER LEAVE THE ENGINE SHUT-OFF KEY INSIDE ENGINE SHUT-OFF SWITCH LONGER THAN 30 SECONDS IF YOU ARE NOT GOING TO CONTINUE IN YOUR RIDE. LEAVING THE ENGINE SHUT-OFF KEY INSIDE HANDLE FOR LONGER PERIOD OF TIME (IE OVER NIGHT OR WHEN TRANSPORTING THE BOARD) CAN LEAD TO COMPLETE DISCHARGE AND NON-REVERSIBLE DAMAGE TO BATTERIES.

The motorized power board is supplied with the control handle which controls the engine output. The handle is supplied together with the engine shut-off key which is used for the power board activation and starting.

It is comprised of:

- Engine shut-off switch ( marked 1);
- Speed limiter (included in the accessories) ( marked 4);
- Throttle trigger [marked 2];
- Connector to the ICU (marked 5); and
- Engine shut-off key (marked 3);
- Throttle cable (marked 6).

The throttle trigger is situated on the handle, at the end of the throttle cable. JetSurf™ recommends controlling the throttle with your index finger. When the throttle trigger is pressed, you let more fuel in, when it is released, you let less fuel in.

The control handle is equipped with a throttle by means of which the user may decrease the engine power. The throttle is not screwed in the control handle in the factory, it is placed in the bag with accessories. For beginners we recommend screwing the throttle in to 1/3 of its range.







It is ABSOLUTELY NECESSARY for the rider to release the control handle when he/she loses full control over the board or his/her balance. By pulling the engine shut-off key from the engine shut-off switch you will stop the engine immediately - FIGURE 1 and 2. NOT PULLING THE ENGINE SHUT-OFF KEY FROM THE ENGINE SHUT-OFF SWITCH MAY RESULT IN SERIOUS INJURY OR DEATH.

Always check it visually and test the connection of the control handle to the throttle control cord by pulling the control handle in order to find out whether there are not any signs of movement.

## **DESCRIPTION**

#### **ENGINE STARTER**



Please be aware that excessive use of the starter may results in its overheating and damage. IF THE ENGINE DOES NOT START AFTER 5 ATTEMPTS, LET THE STARTER COOL DOWN BEFORE TRYING AGAIN.



The same also applies to the situations when there is water in the engine. If the engine starter does not run and the engine does not start correctly, stop trying to start it immediately and perform the engine cleaning procedure according to the instructions on PAGE 38/part A of this user manual.

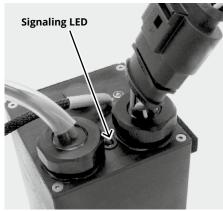
Starting of combustion engine with water inside the cylinder (drown engine) leads to DESTRUCTION of starter and excessive use of ICU used for these starts distinctly lowers lifespan of batteries. NEVER START JETSURF IF YOU HAVE DROWNED ENGINE.



PIF THE ENGINE DOES NOT START AFTER THREE (3) ATTEMPTS, CHECK ALL THE BOARD ELEMENTS (HOSES, CONNECTIONS, CONNECTORS, SPARK PLUG...). CHECK WHETHER THERE IS WATER IN THE ENGINE. BEFORE STARTING AGAIN, LET THE STARTER COOL DOWN.

#### **IGNITION CONTROL UNIT (ICU)**







Never try to remove the boot from the spark plug when the ignition control unit (ICU) is connected and in operation (LED diode is off and is not flashing).

You must never come in contact with the spark plug during the operation or when the motorized power board is in water.



Never try to charge the ignition control unit (ICU) using another charger different from the one specified by JetSurf™. This may result in which permanent dam.

The motorized power board JetSurf™ is equipped with an ignition control unit (ICU). DO NOT USE any other ignition control unit (ICU), than the one specified and supplied by the manufacturer for the engine operation.

The internal battery situated in the ignition control unit (ICU) MUST BE CHARGED BEFORE EVERY RIDE AND/OR DURING THE RIDES EXCEEDING THE TIME FOR WHICH THE BATTERY CAN STAY CHARGED. It is necessary to take the motorized power board out of water, dry it out and make the ignition control unit (ICU) accessible for charging.

Internal battery charging is described in detail in chapter RIDE on page 25 / Part A.

The electronic ignition system has six basic states:

- RIDE. - POWER OFF.

- POWER ON (ICU DIAGNOSTICS), - ENGINE CLEARING,

- IDLE (INITIAL STATE), - FAULT.

These states are signalised with a two-colour LED situated on the front of ICU between the conductor bundles.

## DESCRIPTION

#### POWER OFF - ICU power off

By BRIEFLY placing your key to the position with the circle reading "CLEANING/OFF" on the side of the ICU - FIGURE 1 - you will switch off the ICU. The LED is not lit or flashing.

#### ICU DIAGNOSTICS/POWER ON- ICU power on

By inserting the key in the switch on the handle - FIGURE 2 - you will switch on the ICU control unit which will perform a battery charge-up test and switch on the electric bilge pump. The LED is lit in red and then orange.

#### IDLE (INITIAL STATE) - water suction

If you remove the key after switching on the ICU, the ICU will switch over to the IDLE state. If the ICU remains in this state, water is sucked out of the internal area of JetSurf by means of the electric bilge pump. The LED slowly flashes orange.

#### RIDE

If you place the key again to the switch, the ICU will switch over to the RIDE state. The LED flashes green in variable speed.

#### **ENGINE CLEANING**

#### - removing water or fuel from the engine

The ENGINE CLEANING state is activated whenever the key is placed and left in the position of the circle reading "CLEANING/OFF" - FI-GURE 1. Cleaning is finished when you remove the key from the ICU. Instead of the key you can also use the magnet in the paracord wristband - FIGURE 3.

This function is used to remove water or excess fuel from the engine or sucking fuel from the tank to the carburettor.

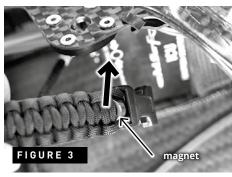
The LED flashes fast in orange.

#### **FAULT** All the faults are signalled with the LED flashing red.

If the key is removed, all the error codes are always signalled three times. If the key is inserted in the handle, the error code signalling is repeated until the key is removed.





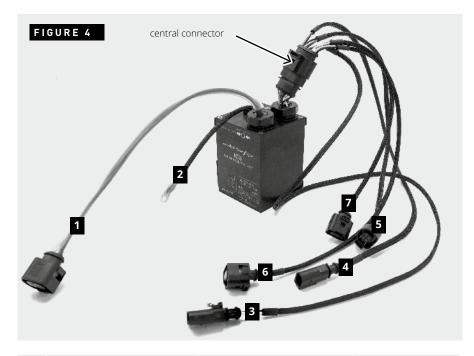


## **SIGNALLING OF IGNITION CONTROL UNIT (ICU) FAULTS**

	The LED is lit The LED is not lit		
Course of signalling	— ««««» — «» — —		
Fault type/cause	When the engine shut-off key was inserted in the handle for the first time, it stayed in the handle for longer than 30 seconds.		
How to repair it	Pull the key out.		
Course of signalling	— """"" — "" — "" — —		
Fault type/cause	Low battery – it can be caused by a short circuit of the starter or flat battery.		
How to repair it	Charge the battery. Starter replacement – if the batteries are charged and the starter turns slowly.		
Course of signalling			
Fault type/cause	Fault of electric bilge pump – a short circuit of the pump has been detected but the ignition works normally after that.		
How to repair it	Check the conductor to the pump, clean the pump or replace it.		
Course of signalling			
Fault type/cause	Fault of excessive use of the starter – there have been 10 starts without the engine getting started, this signalling will last 2 minutes.		
How to repair it	Wait for 2 minutes.		
Course of signalling	—		
When the ignition control unit (ICU) is switched off, it switches off automatically after 5 minutes of idleness.			

## DESCRIPTION

The ignition control unit (ICU) is connected with the other components using these cables. The numbers of the positions in the table correspond to the numbers in the following figure:



Posi- tion	Connector type	Connector colour	Device
1	2-pin female	Red (+), black (-)	Starter
2	Cable eye	Black with the yellow and green end	Ground cable
3	3-pin male	Red (+), black (-), white (c)	Control handle
4	2-pin male	Orange (+), black (-)	Ignition coil
5	4-pin female	Red, white, blue, black	Charging
6	2-pin female	Yellow (+), black (-)	Electric bilge pump
7	3-pin female	Red (+), black (-), white (sig)	Timing sensor

#### **CARBURETTOR**

#### **CARBURETTOR ADJUSTMENTS**

Replacement or repair of any emission related component must be executed in a manner that maintains emission levels within the prescribed certification standards.



JetSurf motorized surfboards are certified to the United States Environmental Protection Agency (EPA) as conforming to the require-

ments of the regulations for the control of air pollution from new watercraft engines. This certification is contingent on certain adjustments being set to factory standards. §1068.101(b)(1) prohibits tampering, removal or rendering inoperative any device installed onto the engine in compliance with EPA regulations prior to sale and delivery to, as well as after the sale to, the ultimate purchaser of the product.

Dealers are not to modify the engine in any manner that would alter the horsepower or allow emission levels to exceed their predetermined factory specifications.

Tamper proof provisions: The carburetor is equipped with tamper proof screws – see below. For changing the adjustment the special tool is required (custom design). There is also applied glue on the screw to prevent adjustment by the pliers for example. When the glue is broken, it is a proof of unauthorized settings.



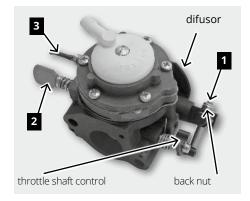
IF THE CARBURETTOR SETTING IS INTERFERED WITH BY A PERSON WITHOUT THE REQUIRED TECHNICAL KNOWLEDGE, IT CAN RESULT IN POOR ENGINE OPERATION AND ITS DAMAGE. THIS DAMAGE IS NOT COVERED BY THE WARRANTY.

# The carburettor is a vital part of the engine and it requires highly sophisticated adjustments.

The carburettor has three basic adjusting screws:

- 1 A screw for adjusting the freewheel revolutions (a freewheel screw)
- 2 A screw of the freewheel jet L
- 3 A screw of the main jet H

Screw adjustment – positions 2 and 3 are **ALWAYS** to be left to the seller.



## DESCRIPTION

#### PROCEDURE OF IDLE SETTING

Required tools: Allen key 2.5 (spanner No 8 for the back nut)

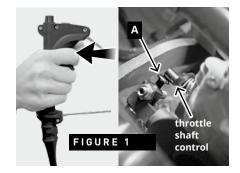
Note 1: Freewheel screw - position 1 - it is secured with a back nut from below. If you adjust the freewheel, **FIRST LOOSEN THIS NUT**. When the freewheel has been set, retighten it.

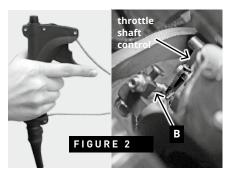
The freewheel must be set at the operating speed of the engine (the engine should be running for some time).

The screw for setting the freewheel revolutions [position 1] is set by the manufacturer in such a way that the engine keeps running for a while by itself when started on land (without requiring any throttle control).

If the engine stops by itself, it is necessary to tighten the freewheel screw (position 1) to the right by half a turn. Tightening can be repeated as required.

If the engine revolutions are too high (it does not switch off in the freewheel), the freewheel screw has to be loosened by turning to the left.

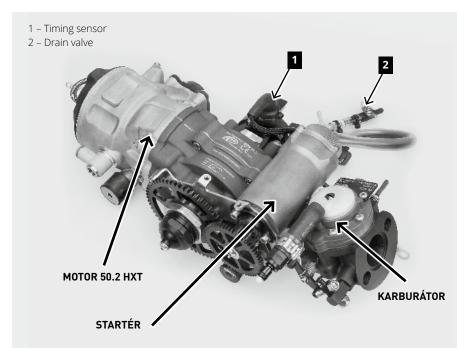




Note 2: When setting the freewheel, also check both extreme positions of the throttle shaft control.

Step 1: If the throttle trigger on the control handle is in the extreme position (pressed), the throttle shaft control must be in position A - FIGURE 1. Step 2: If the throttle trigger is in the other extreme position (released), the throttle shaft control must be in position B - FIGURE 2.

#### **ENGINE**







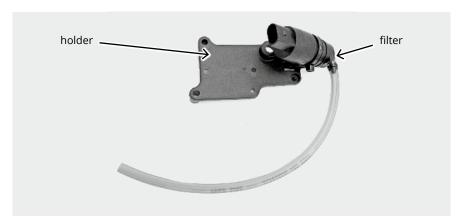
Petrol is extremely inflammable and highly explosive. Never smoke or handle fire within fifty (50) feet / fifteen (15) metres from the fuel area when topping up fuel. Avoid spilling the fuel. If spilt, dry the fuel with cloth and dispose of it on land. Never start the engine when you can see or smell fuel as vapours can be more explosive than liquid fuel. If fuel is seen during the operation, switch the engine off immediately and seek assistance as soon as you get to land. Have the engine and the fuel system repaired by an authorised JetSurf™ seller before restarting the operation.

Fuel must always be transported only in canisters approved by the D.O.T. organisation or CE (Europe). Transporting fuel in the fuel tank or in the engine may result in damage or injury. Fuel vapours are even more unstable, explosive and generally more dangerous than liquid fuel.

Never try to open the spark plug boot when the ignition control unit (ICU) is connected and in operation (the LED must not be lit or flashing on the ICU). The boot is under high voltage. A contact with it can result in serious injury or death.

## **DESCRIPTION**

#### **ELECTRIC BILGE PUMP**





Please check the function of the bilge pumps before every ride and during the ride.

Keep the suction filters clean.

The bilge pumps suck water from the internal area of JetSurf. They are a vital part for the JetSurf operation. During every ride, check whether the pumps work properly.

## **2B SPECIFICATIONS**

Engine (Propulsion Unit)	Two-stroke, horizontal, single-cylinder engine, developed for JetSurf™ exclusively.	
Cylinder volume:	90 cc	
Compression ratio:	11:1	
Max Speed:	48 km/h (30 mph)	
Electronic Controller:	Automatic electronic control unit with auto start/stop	
Battery:	Li-lon 34.6 Wh (3.2 Ah); nominal voltage 10.8 V; max. charging voltage is 12.6 V	
Cooling:	Water cooled	
Starter:	Electric starter	
Spark Plug:	NGK BP7HS	
Lubrication system:	Premixed fuel and oil. Fuel mixing ratio (fuel to oil) 50:1	
Petrol:	Minimum octane rating (RON) 95, unleaded	
Oil:	MOTOREX OCEAN FS 2T BIO; or oils meeting these standards: NMMA TC-W3, API TC, ISO-L-EGD: JASO FD/FC; TSI	
Crussing range:	At full throttle 0.66 hours	
Category*	D	
Passenger capacity:	One operator	
Max Rider weight (kg):	100	
Manufacturer:	MSR Engines s.r.o.	
Dimensions:	1800 mm/70.87 inches	
Width:	600 mm/23.62 inches	
Height:	150 mm/5.91 inches	
Weight:	19.5 kilograms/43 pounds	
Maximum Load:	100 kilograms/220 pounds	
Fuel Capacity:	2.8 liters/0.74 gallons	
Power:	7.6k W/10.19 hp	

## SERVICE POINTS

## For service and ordering spare parts please contact FIRST YOUR SELLER/DISTRIBUTOR!

## LIST OF DISTRIBUTORS AND SERVICE POINTS

Europe	France, Monaco	france@jetsurf.com	+33 618 930 757 +377 977 732 69
	Carribean	france@jetsurf.com	+33 618 930 757
	Slovakia	slovakia@jetsurf.com	+421 902 112 200
	Russia	russia@jetsurf.com	+7 962 938 92 22
	Norway	norway@jetsurf.com	+47 9806 0460
	Greece	greece@jetsurf.com	+30 210 807 0775
	Ukraine	ukraine@jetsurf.com	+38 050 598 82 74
	Spain	spain@jetsurf.com	+34 676 349 474
	United Kingdom	uk@jetsurf.com	+44 (0) 1476 978 137
Asia	Israel	israel@jetsurf.com	+972 542 042 585
	Hong Kong, China	hong-kong@jetsurf.com	+852 3188 9787
	United A. Emirates	uae@jetsurf.com	+971 50 888 5957
	Singapore	singapore@jetsurf.com	+1 808 358 4674
	Japan	japan@jetsurf.com	+81455143018
	South Korea	korea@jetsurf.com	1599-6494
South America	Mexico	mexico@jetsurf.com	+521 998 734 9725
	Brazil	brasil@jetsurf.com	+55 61 8111 8854
USA	Florida, USA	usa@jetsurf.com	+1 203 JET SURF (+1 203 538 7873)
	New York	usa.ny@jetsurf.com	+1(212) 951 1171
Canada	Canada	canada@jetsurf.com	+1 604 363 3198
	Canada - Toronto	toronto@jetsurf.com	+1 (416) 908-7401

#### **HEADQUARTERS**

INTERNATIONAL Czech Republic, +420 774 60 27 01, info@jetsurf.com Monday-Friday 8:00-17:00 CET

<sup>\* –</sup> EU DIRECTIVE 2013/53/EU – The definition of Boat Design Category D:
"D. Sheltered waters — Designed for voyages on sheltered coastal waters, small bays, small lakes, rivers and canals when conditions up to, and including, wind force 4 and significant wave heights up to, and including, 0.3 m may be experienced, with occasional waves of 0.5 m maximum height, for example from passing vessels."

# BORNSFUN

www.jetsurf.com