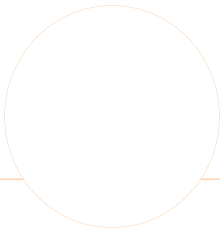




hydro^{space}

The logo features the word "hydro" in a grey, lowercase, sans-serif font, followed by "space" in an orange, lowercase, sans-serif font. The "h" and "s" are connected. The logo is centered at the top of the page, with thin orange lines intersecting at its center.



ENGLISH VERSION

A thin orange circle is positioned to the left of the text "ENGLISH VERSION". The text is in a grey, uppercase, sans-serif font and is centered vertically relative to the circle. A thin orange line intersects the text and circle.



hydro^{space}

The logo is located in the bottom right corner of the page, on a grey background. It features the word "hydro" in grey and "space" in orange, with a small orange triangle pointing upwards between the two words. The logo is mirrored horizontally.



Dear Customer,

We would like to thank you very much for your trust, and congratulate you on your new Hydrospace Standup.

When we developed it, we made it a point to create a versatile and fast S4 Standup.

We didn't forget a revolutionary design or a low-emission engine technology either.

Our S4 Standup is driven by a four-stroke turbo engine, with a sound that sparks emotion and represents sportiness.

What you need to observe and know for your S4 Standup has been summarized in this operating manual. Observing the service work is also a condition for safeguarding your guarantee claims.

Please make sure that service work on the S4 Standup's only done by specialists trained by Hydrospace.

Should you require any further information, please consult our homepage at: www.hydrospace.at

It is also important to observe the recommended service intervals after the seller's warranty.

This will not only pay off during operation, but also when you want to re-sell it.

We wish you lots of fun with your Hydrospace S4 Standup.

Yours truly,

Hydrospace



General introduction to the handbook for captains

This handbook has been compiled so that you can skipper your boat safely and enjoyably. Along with details on the boat itself, accessories supplied or built into the craft and its installations, it also contains information on its operation. Please read this carefully and familiarise yourself with the boat before you use it.

This handbook for captains is not a course in boat safety or seamanship. If this is your first boat or if you have changed to a type of boat with which you are not yet familiar, please make sure that for your own safety and comfort you know about the handling and operation of the boat before you take control. Your dealer or the national sailing or motorboat association or yacht club will be pleased to provide you with information about local yachting schools or recommend experienced trainers.

Make sure that the expected wind and sea conditions comply with the design category of your boat and that you and your crew are capable of handling the boat under these conditions.

Even if your boat is designed for them, the sea and wind conditions corresponding to design categories A, B and C range from a category A storm to the most serious conditions of the upper category C, including the risk of breaking waves or wind squalls. These are dangerous conditions in which only a competent, capable and trained crew with a well-maintained boat can work satisfactorily.

This handbook is not a detailed instruction for maintenance or troubleshooting. If difficulties arise, please consult the boat builders or their agents. If a maintenance handbook is provided, use this to maintain the boat.

Only use trained and competent staff for maintenance, repairs or alterations. Alterations which can adversely affect the safety properties of the boat must be assessed, carried out and documented by specialists. The boat builders cannot be responsible for alterations to which they have not agreed.

In some countries a driving license or an authorisation is required or particular regulations apply.

Always maintain your boat correctly and take note of any wear which may occur over time or as a result of frequent usage or incorrect use of the boat.

Any boat, regardless of how strongly it is built, can sustain serious damage through incorrect handling. This cannot be reconciled with safe skippering. Always adjust the speed and direction of travel of the boat to the sea conditions.

If your boat is equipped with a life raft, read its operating instructions carefully. The boat should have the corresponding safety equipment on board (life jackets, safety belts etc.) according to the type of boat, weather conditions etc. This equipment is obligatory in some countries. The crew should be familiar with the use of all safety equipment and manoeuvring in emergencies (man-overboard rescues, making fast etc.)

Sailing schools and clubs regularly organise training courses. Everybody should wear a portable buoyancy aid (life jacket/personal buoyancy aid) when they are on deck. It should be borne in mind that in some countries there are legal requirements which prescribe that a buoyancy aid complying with the national regulations should always be worn.

Please keep this handbook or this CD in a safe place and pass it on to the new owner when you sell the boat.



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Preparation before a ride

Clothing

The rider must wear a life jacket approved by the Coast Guard, which has been approved for use on the S4 Standup. During the ride, shatter-proof protective goggles should be used. Wind, water splashes, and speed can cause the eyes to water and reduce vision.

S4 Standup riders **must wear protective clothing**.

This comprises:

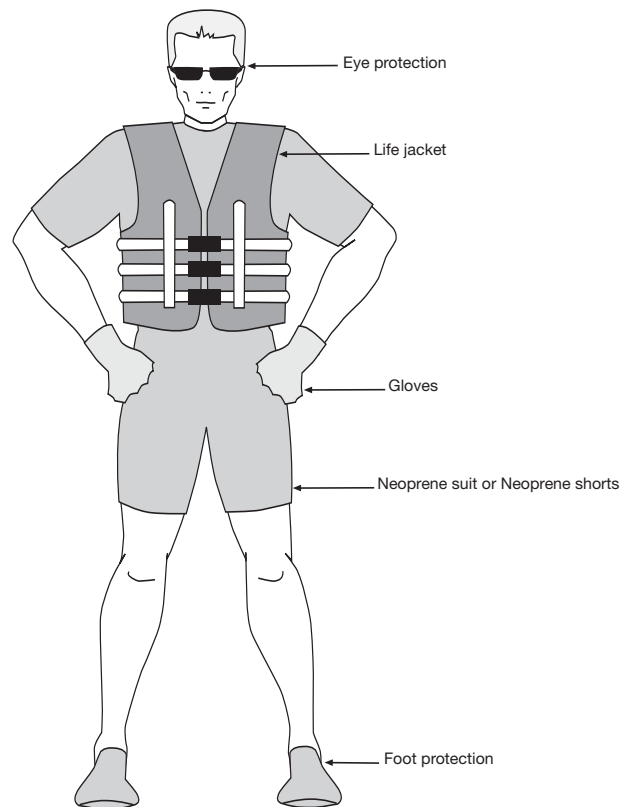
- Neoprene shorts or thick, close-woven and tight-fitting clothing which offers sufficient protection. Thin cycling shorts for example are not suitable. When you fall into the water or comes near the jet pump nozzle, you can sustain severe internal injuries. Normal swimwear does not provide adequate protection.
- Shoes and gloves are also recommended. It is advisable to protect the feet with light and flexible shoes. This reduces the risk of injuries from hitting sharp objects under the water.

Note: We recommend that recreational riders use a helmet. If you want to take part in races, you should wear a helmet approved for S4 Standup's due to the increased risk of accidents from the vicinity of other riders. Read the instructions and safety directions supplied with the helmet.



ATTENTION

Observe the safety regulations and conditions of the respective country.



1.

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1.



The identification number is
a) Above the starter
b) Right hand on the rear.

1.1 Vehicle identification numbers

You will need the identification number to register your craft. They are used for identifying your craft in order to clearly differentiate it from crafts of the same type. The manufacturer identification is also required for ordering spare parts. In case of theft, report the manufacturer identification, the exact model description and special characteristics of your craft to the appropriate authorities. This makes it possible to identify your S4 Standup.

1.1.2 Manufacturer identification

Country Manufacturer Vehicle serial number



1.2 Engine number

Month of production Model year

A non-standard engine number with 10 digits for identification, is in the crankshaft housing. From this number, the production date can be determined.

1.3 Important warnings

All warning stickers on this watercraft are shown and explained below. Every user must familiarize himself or herself with the meaning of these stickers. The warning



stickers point out important safety measures for your own protection. These stickers must therefore remain in the places provided for them. Missing, damaged, or illegible stickers must be replaced immediately and fixed in the correct place. You can get spare stickers from the licensed Hydrospace dealer.

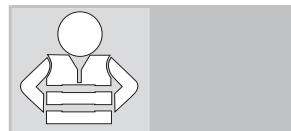
When you are riding your S4 Standup, the safety lanyard must be fixed safely to the rider at all times. If there is a fall, the safety lanyard will separate the contact to the engine and the craft will stop. If the safety lanyard is not fixed, the S4 Standup will not stop. This can cause injury or damage to yourself, swimming persons, and boats.

Riders must always wear a life jacket when they are riding.

It is absolutely necessary to read the operator manual before the watercraft is used. It contains important information for safe operation.

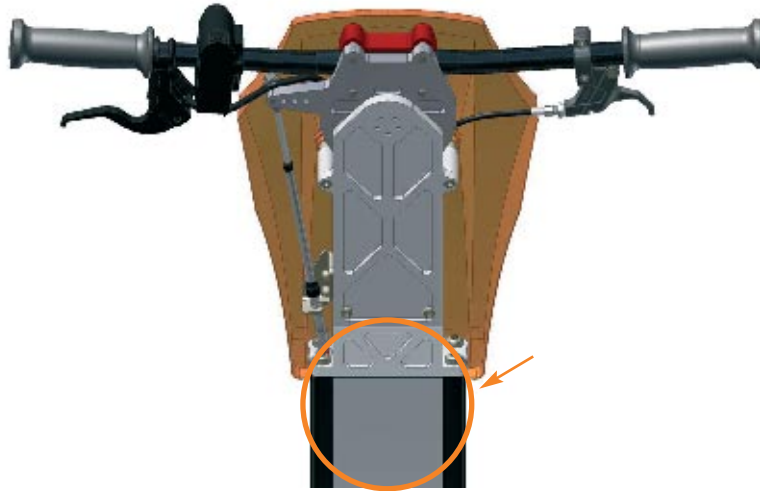


Position of warning stickers



1.4 Position of warning stickers

The warning stickers can be found on the inside of the steering column.



 SAFETY NOTE

To avoid the danger of heavy or fatal injuries you are obliged to wear a life jacket.

ALWAYS WEAR PROTECTIVE CLOTHING. A sudden fall in the water or staying in the proximity of the jet pump nozzle can cause serious injuries. Casual swimming clothes do not offer appropriate protection.

All riders must wear neoprene shorts or clothes that offer equivalent protection. Shoes, gloves, and eye protection are recommended.

MAKE YOURSELF FAMILIAR WITH THE NAVIGATION INSTRUCTIONS.

Hydrospace recommends a minimum age of 16 years for boat riders.

Inquire about the local minimum age for boat riders. It is recommended to complete a course for safe boat driving. Perhaps an equivalent course is offered in your country.

FASTEN THE SAFETY LANYARD on the life jacket. Make sure that the safety lanyard does not get caught on the steering handle bars if the engine stops and the driver falls down. Remove the safety lanyard from the life jacket to avoid misuse of children or other persons. Drive according to your abilities and omit aggressive maneuvers to avoid the loss of control of your standup. This is a powerful standup and not a toy. Sharp turns or jumping over wakes and waves can cause spinal column injuries (paralysis) and face injuries. Do not ride in extreme surf, wakes, or waves.

DO NOT ACCELERATE IF SOMEONE IS BEHIND THE STANDUP.

Switch off the engine or put it in the idle position only.

KEEP AWAY FROM THE PUMP INTAKE AREA when the engine runs.

Long hair, wide clothes, and straps from the life jacket can get caught in it and lead to serious injuries.

NEVER DRIVE AFTER CONSUMING DRUGS OR ALCOHOL.

READ AND OBEY THE USER MANUAL.

Improper use of the standup can lead to collision causing **SERIOUS INJURIES OR DEATH.**

TO AVOID COLLISIONS ALWAYS WATCH OUT for humans, objects or other vehicles.

Be aware of conditions that limit your safety or the view of others.

DRIVE DEFENSIVELY with a slow rate and stay away from persons, objects and other vehicles.

- Do not drive directly behind other boats.
- Avoid sharp turns or maneuvers as it makes it difficult for others to avoid you.
- Do not drive close to others to splash them with water.

Avoid areas of shallow water.

Promptly take measures to avoid collisions.

Consider that standups and other boats do not have brakes.

DO NOT RELEASE THE THROTTLE CONTROL WHEN YOU ARE EVADING.

To control the navigation, you need to accelerate.

Before riding, check the level of gas and make sure the steering is working properly.

Follow the navigation rules, as well as national, regional and local laws and instructions for standups. For further information, read the user manual.

The Hydrospace S4 Standup is certified only for one person.





SICHERHEITSHINWEIS / WARNING



Warmfahren des Motors von ca. 2 Minuten (bei 1/2 Gas) unbedingt notwendig, um Schäden am Motor zu vermeiden.

Warmup the engine for 2 Minutes. Non performance can be the result of motor trouble.



SICHERHEITSHINWEIS / WARNING



- Benzindämpfe können Brände oder Explosionen verursachen.
- Überfüllen Sie den Kraftstofftank nicht.
- Halten Sie den Standup von offenen Flammen und Funken fern.
- Starten Sie den Standup nicht, wenn flüssiges Benzin oder Benzindämpfe vorhanden sind.

- Gasoline vapors may cause fires or explosions.
- Do not overfill fuel tank.
- Keep the standup away from open flames and sparks.
- Do not start standup if liquid gasoline or vapors are present.



VORSICHT/CAUTION

Empfohlen: Bleifreies Benzin DIN 51607 ("Normal oder Super unverbleit") Oktanzahl zwischen 95 und 98 ROZ bzw. 85 MOZ.
US premium Unleaded fuel (91/92/93 Octane) or 95/98 ROZ ISO 5146.

Recommended: Unleaded fuel DIN 51607, Octane between 95 and 98 ROZ or 85 MOZ.
US premium Unleaded fuel (91/92/93 Octane) or 95/98 ROZ ISO 5146.

 SICHERHEITSHINWEIS / WARNING



KONTROLLE DES MOTORÖLSTANDS

Für die Kontrolle muss sich der Standup in waagrechtter Lage befinden. Bringen Sie den Motor auf normale Betriebstemperatur und lassen Sie ihn dann 5 Sekunden lang im Leerlauf laufen. Stoppen Sie den Motor. Warten Sie mindestens 5 Sek. und prüfen Sie dann den Ölstand mit dem Ölmesstab. Vorsicht: Lassen Sie den Motor außerhalb des Wassers niemals laufen, ohne ihn über den Spülanschluss zu spülen, da dies zu Motorschäden führen kann. Öl kann heiß sein.

CHECK ENGINE OIL LEVEL

Standup must be level to perform verification. Bring engine to normal operating temperatures, then wait for 5 seconds. Stop engine, wait for at least 5 sec. and check oil level using the dipstick. Caution: Never let the engine run out of the water without cooling through the flush kit connection as it may damage the engine. Oil may be hot.



 SICHERHEITSHINWEIS / WARNING



Laden Sie die Batterie nicht, während sie im Fahrzeug eingebaut ist. Laden nur mit entsprechenden Ladegeräten.

Do not charge or boost battery while installed on the watercraft. Use the battery charger.

 SICHERHEITSHINWEIS / WARNING

Verbrennungsgefahr am Auspuff! Motor nur im Wasser betreiben.

Avoid any contact to the exhaust. Exhaust can be heated.

1.5 Safety instructions

Riding of the S4 Standup by children.

The Hydrospace S4 Standup is not a toy. It is a highly efficient watercraft meant for the transport of one person. Minors can put themselves and others in danger with it. Hydrospace recommends a minimum age of 16 years. A course for a boat driving licence is recommended and may be mandatory in the area of use.

Floatage.

The S4 Standup is not designed to be left in the water for a long time. Strong movement of waves can cause water to get into the water draining system of the engine's interior.

Water in the engine compartment can cause the craft to sink.

S4 Standup riders can fall into the water at any time, so being a good swimmer is absolutely necessary. Don't move further away from the shore with your S4 Standup than you can swim back to under your own steam.

S4 Standup riders must absolutely use a life jacket, otherwise they are in acute danger of drowning.

Capsizing

If your S4 Standup capsizes, proceed as follows:

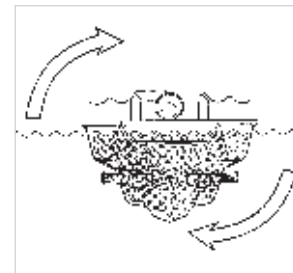
- Make sure that the motor is off. Otherwise, pull the safety rip cord immediately or actuate the motor stop button to switch off.
- Swim to the stern of your S4 Standup.
- Then grip the two rear corners of the S4 with your hands and turn the S4 clockwise.
- Plug the safety rip cord in again and start the motor.
- Climb in again



ATTENTION

ALWAYS turn the S4 Standup clockwise!!!

Turning anticlockwise can let water penetrate into the exhaust system and damage the motor.



1.6 Restrictions during operation

The safe use of your S4 Standup depends on the correct riding technique and a good and safe assessment of the respective situation.

Make use of your experience and your common sense. That is the most likely way to avoid accidents.

Before use, the following points should be met:

- Never allow anyone to ride without explanation and reading of the user handbook.
- An explanation of the warning instructions guarantees safe operation and is absolutely necessary..
- This S4 Standup is not a toy!
- Hydrospace recommends a minimum age of 16 years for its use.
- Adults have obligatory supervision of minors.
- This watercraft was designed exclusively for the transport of 1 person.
- Please also observe the local regulations for the use of your S4 Standup.

You can get exact information from your licensed Hydrospace dealer or from the competent "water authority".

1.7 Safety rules for riding

- The competent authority will tell you if you need to register the craft (licence plate).
- Observe the navigation regulations applicable in the region. You can get the respective information from the Coast Guard or the water protection police. It is advisable to consult the local authorities to protect yourself against avoidable difficulties and penalties.
- Ride defensively with a safe speed and always keep a necessary safety distance from other crafts in the water.
- Avoid riding directly behind other boats.
- Do not splash other PWC riders with water.
- Keep a sharp lookout and be careful before making sharp manoeuvres. You and other boats might get a surprise.
- Before making a sharp turn, make sure that there are no watercrafts behind you.
- Ride with foresight and take early steps for avoiding collisions.

Don't forget: S4 Standups do not have brakes.

- During a ride with the S4 Standup, the safety lanyard must always be tied to the rider. If you fall into the water, the pull on the line will cause your S4 Standup to stop safely.

■ Therefore, no alcohol for practising the sport safely!

- The rider should wear suitable eye protection. If you do not do so, spray water can cause a safety risk.
- Wear suitable shoes for riding the S4 Standup. Objects in the water could lead to unnecessary injuries.
- Hydrospace recommends the wearing of suitable neoprene suits to avoid injuries from falling into the water.
- You need to accelerate for riding curves. If you don't accelerate, the S4 Standup will lose its controllability and this could cause accidents.
- The S4 Standup was not developed for the night. Use it only during the day.
- Avoid riding in waters with algae, flotsam or other obstacles. This could block the jet pump. This can lead to increased risk of injury!
- Stick to the minimum water depth of 60 cm.
- Do not attempt to cross jumps with the S4 Standup. You risk major injuries and the S4 Standup can get damaged most severely.
- The S4 Standup is not suitable for towing other watercraft or for water-skiing.
- Riding the surf is strictly forbidden with the S4 Standup. It is dangerous and prohibited in most countries.
- If you are riding on waves, throttle before cutting through a wave. Riding too fast can cause injuries to the vertebrae.

- Attention! Wave jumps can cause the hull to break (loss of warranty claim!).
- The rider must always keep a safe riding speed. The latter depends on the visibility, weather conditions, swell, wind, etc.
- While the jet pump is safer than a propellor, safety measures must also be observed.
- Keep clothing, feet, hands, and long hair away from the jet pump intake.

1.8 Important information regarding watercraft helmets

The helmet protects the head in case of collisions, but can also contribute to neck injuries.

Therefore, consider the advantages and risks of using a helmet.

You alone must decide on the basis of the prevailing conditions:

Helmet – yes or no. (Observe regulations!)

1.9 Characteristics of the jet drive

The drive works through the intakes on the bottom sides of the boat via the intake grid. In this area there is the jet pump which ejects the water backwards via a screw.

1.10 Breaking-in of the S4 Standup according to your possibilities.

Observe the following regulations and recommendations and you will have lots of fun with your Hydrospace S4 Standup:

- During the first 5 minutes of riding time, approx. 2500 rpm should not be exceeded.
- Do not run the engine during the first 5 hours with more than 3/4 acceleration and do not overstrain it.
- Accelerate only for very short times and then ride again with average rpm.
- Warm up: With the S4 Standup turbo engine, you must warm up the engine after each start.

If you use the Hydrospace S4 Standup properly it will reward you with greater reliability and a longer life. Don't forget to take your S4 Standup to a licensed Hydrospace dealer after 12 hours of operation and have it serviced. In case of non-observance, warranty claims could be lost!

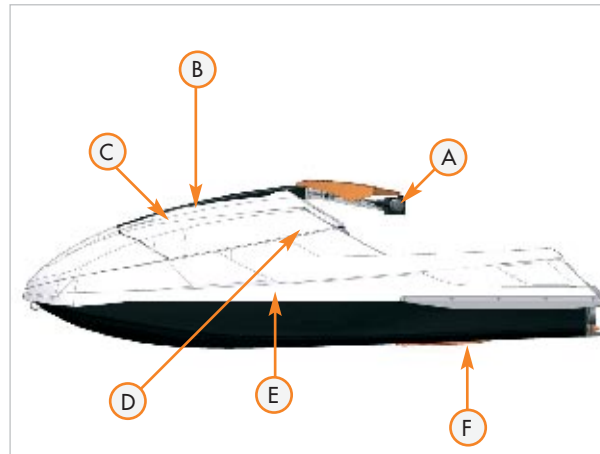
2.

Features and functions

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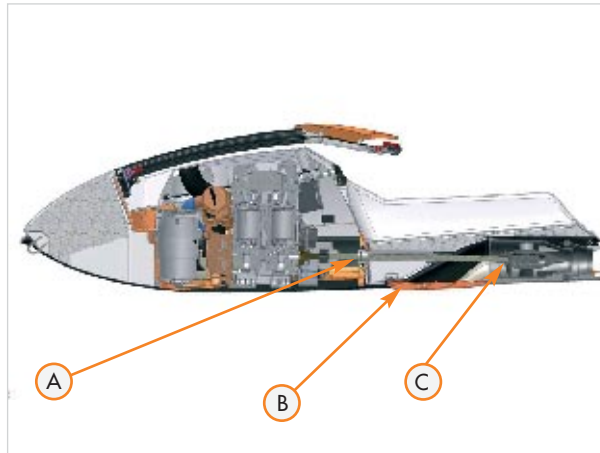
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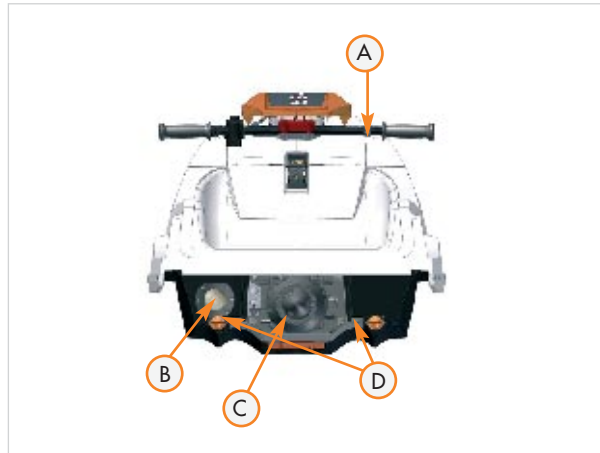
2.1 Arrangement of controls: general



- A. Steering
- B. Steering column
- C. Engine hood
- D. Fuel tank lid (inside)
- E. Bypass opening
- F. Water inlet/intake grate

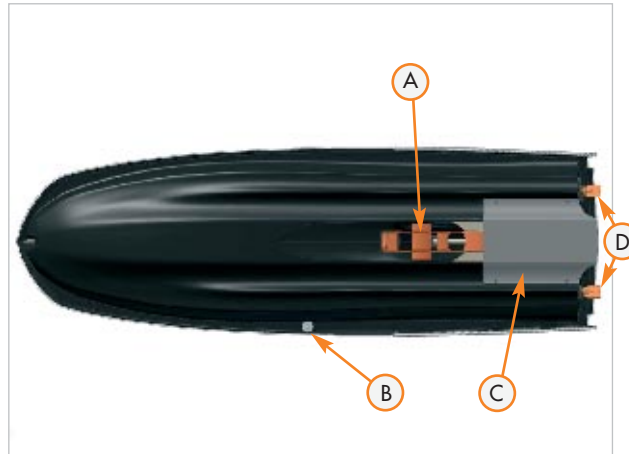
- A. Drive shaft
- B. Water inlet/
intake grate
- C. Jet pump



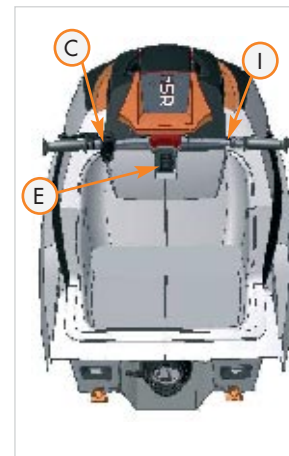
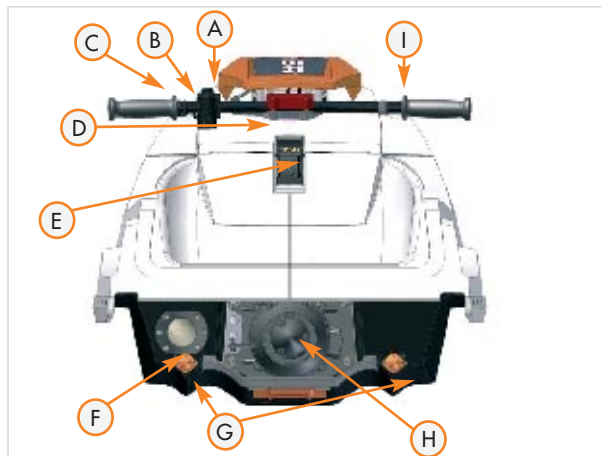


- A. Steering
- B. Exhaust
- C. Jet pump
- D. Duckbills

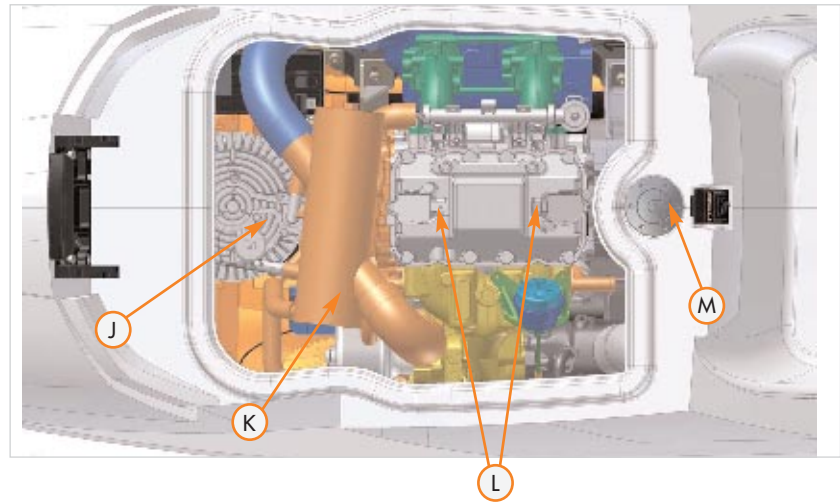
- A. Water inlet/
intake grate
- B. Cooling water exit
- C. Plate (exchangeable)
- D. Duckbills

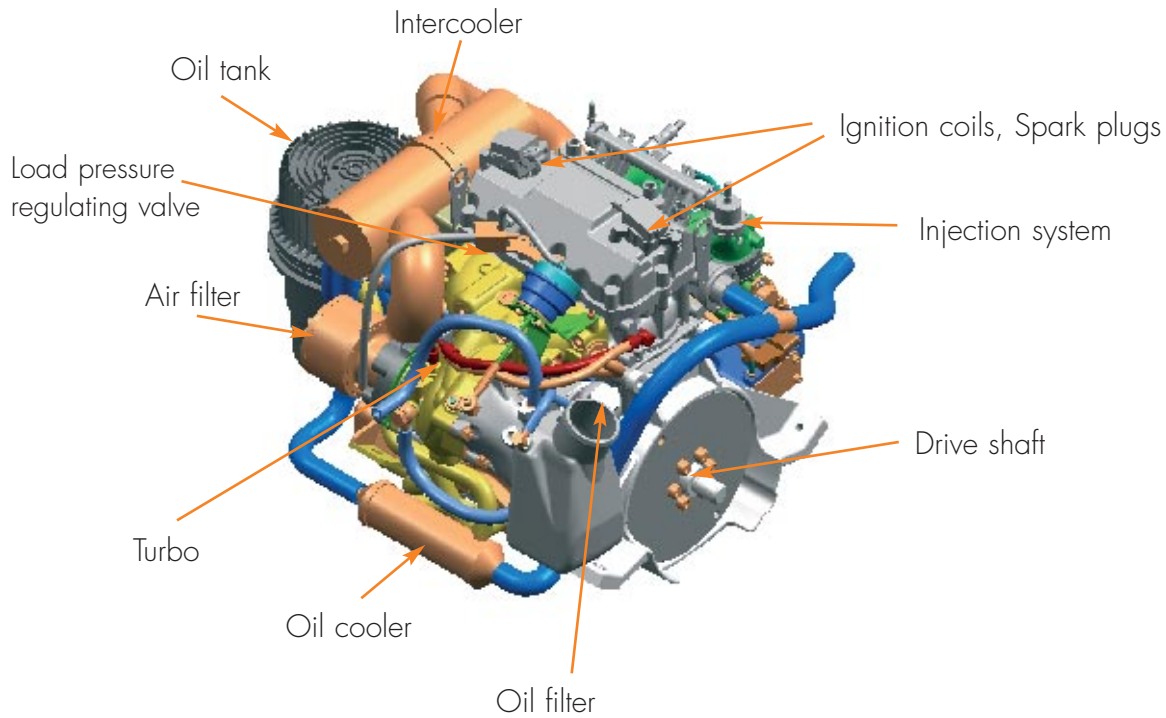


- A. Starter button, engine cut-off button
- B. Trim control
- C. Safety lanyard
- D. Engine hood
- E. Lock
- F. Exhaust outlet
- G. Duckbills
- H. Jet nozzle
- I. Throttle



- J. Oil tank
- K. Charge air cooler
- L. Ignition coils, spark plugs
- M. Fuel tank lid







2.2 Starter button/Engine cut-off button



The starter button and the engine cut-off button are housed in the switch unit on the left-hand steering handle. The starter button is green and marked START. The engine cut-off button is red and marked STOP. Pressing the engine cut-off button will stop the engine.

2.3 Safety lanyard



The engine can also be switched off by pulling the safety lanyard.



ATTENTION

The engine can only be started if the engine cut-off trigger line is plugged in!

2.4 Throttle

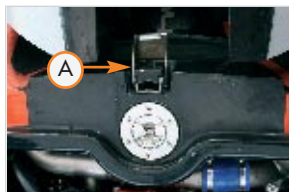


The throttle is on the right-hand steering handle. For accelerating pull the lever towards the handle. The lever will return automatically to idling position when it is released. Before starting the engine make sure that the throttle lever returns smoothly to its original position. The throttle cable must also have sufficient clearance.

2.5 Trim control



This can be found on the left steering handle. The trim lever will return automatically to idling position when it is released. The trim function serves to change the angle of the jet pump; the "nose" of the S4 Standup is pushed down with it into the water, resulting in better acceleration and higher speed in curves.



A. Engine hood lock

2.6 Steering system

Change of direction is achieved with the S4 Standup by turning the steering in the direction in which you want to go. Moving the steering will change the angle of the jet drive. The water jet ejected causes the boat to move in the desired direction.

WARNING

Warning for jet drive! There are physical limits to high speeds. Observe turning radius!

NOTE

Steer only possible during gas operation.

2.7 Engine bonnet

The engine bonnet is kept in the correct position by a latch. For taking-off the engine hood, push up the steering column and keep it in that position. Do not lean on the propped-up steering column! Then, turn the lock button clockwise and pull the lock all the way up. Unhook upwards.



ATTENTION

Do not lift engine compartment hood more than 30°! This could cause fractures of the carbon cladding.

The rear area of the engine hood (see ill.) is lifted at an angle of approx. 30°. Then, pull it out carefully backwards from its hold and lift it out. The locking takes place exactly vice-versa. Make sure that the rubber seals fit exactly so that no water can get into the engine compartment. Safety check! Make sure the engine hood is properly fastened.



2.8 Gas cap

1. Raise the gas cap.
2. Untwist counter clockwise.
3. Take off the gas cap.
4. Put the gas cap in a safe place while refueling.

Execute refueling as per manual. (Cap.3 Fuel)
Close again in reverse order.

⚠ ATTENTION

Do not refuel in the water. Gas cap does not float.

Overfill protection: if petrol escapes during filling up or runs alongside, the overfill protection ensures that no petrol can enter the engine compartment and reach the standing area.



3.

Operation

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3.

3.1 Daily checks before ride



ATTENTION

Warm-up of engine:

Before every ride, the engine must run idle (in the water) for at least 5 seconds until the oil is distributed over the entire lubrication circulation. Afterwards, run for 2 min with max. 1/2 gas on operation temperature.

In case of non-observance the turbo can get damaged. Never switch off the engine with full acceleration. There will be no lubrication.

Conduct the following checks once a day before starting the ride:

- Check fuel tank level and re-fill (no reserve indicator!).
- Ventilate engine compartment - remove engine hood. Ventilate engine compartment for a few minutes so that fuel vapors can escape.
- Check engine oil level and top off if necessary.
- Check that the engine drainage rubbers (2 pieces) are on the correct seat.
- Check water of inlet on correct attachment and eliminate possible deposits.
- Do a visual inspection of the battery jet-pump and check for tightness.
- Check the status and function of the safety line.

- Check protective clothing.
- Check the cooling water control status for proper functioning (with running engine in the water).



WARNING

Fuel vapors collected in the engine compartment constitute a fire and explosion risk.

- Hull damage – feel the hull and check for damage.
- Sufficient fuel level - lift up hood and check fuel reserve in the tank. Top off if necessary.
- Fixed screwed connections and fixing elements – check bolts, nuts, and holders for tight fitting. Tighten if necessary.
- Check hose connections – check all hose connections for tight fitting. Check hose connections and hose clips for cracks and damage - replace if necessary.
- Steering – check steering for smooth and steady operation and for excess clearance. If necessary, adjust control cable.

- Throttle – check throttle lever for smooth and steady operation and for excess clearance. If necessary, adjust throttle control cable. The throttle lever must return automatically to the original position when it is released.



WARNING

If the throttle lever does not return to its original position automatically, this may lead to losing control of the craft.

- Checking of safety lanyard – start engine and run for a short time. Pull off safety lanyard from the engine cut-off button and check if engine stops right away.



WARNING

Never run the engine in a closed room. Exhaust fumes contain carbon monoxide, a colorless, odorless, and highly toxic gas. Breathing of exhaust gases leads to carbon monoxide poisoning, asphyxiation, and death.



ATTENTION

Never run the engine for more than 10 seconds out of the water. Overheating could severely damage the engine and the exhaust system. Idle running!

3.2 Checking of oil level

Oil level check:

Check oil level before every ride.

Change oil during 1st inspection after 12 h.

Change oil every 25 h, but at least once every year. Use only Hydrospace oil. Otherwise, we cannot recognize warranty claims.

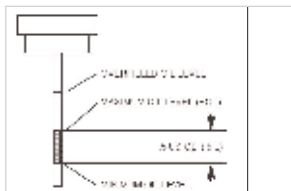


ATTENTION

Measure oil level always when the S4 Standup is in the horizontal position (operating condition). The engine has to be COLD for this. Just check it after a short start of 5 seconds.



ill. 1



ill. 2

- Start the engine.
Outside the water however, never start the engine for longer than 10 sec.
- Unscrew the oil dipstick (ill. 1) from the oil tank and wipe with a clean, non-fuzzing cloth.
- Re-insert oil dipstick in the oil tank without screwing it in. Then, pull out again and check oil level.

The oil level should be between the MIN and MAX mark (ill. 2).

The oil level will rise as the engine warms up. It should never exceed the overfill mark (ill. 2).

If the oil exceeds the MAX mark while the engine is at operating temperature, the oil must be drained out.

⚠ ATTENTION

Never allow the oil level to exceed the **Overfill mark**. This could cause major engine damage.

Engine oil:

Use fully synthetic 4 stroke Hydrospace engine oil (10W 60, API SJ-CF, ACEA A3/B3).

3.3 Filling of the fuel tank

- Remove engine hood.
- Open tank lid.

Do not pour fuel too fast. This allows the air in the tank to escape and the fuel does not flow back; **Pay attention to maximum level.**



WARNING

Petrol is easily inflammable, explosive under certain conditions, and toxic for the human body. Before refueling, pull off the safety lanyard. Do not smoke. Make sure that there is good ventilation and that there are no sparks or flames nearby; this also includes appliances with a pilot light. Always switch off the engine when refueling. Wipe spilt fuel immediately. Never refuel in the water. If petrol gets swallowed or splashed in the eyes, consult a doctor immediately.



Fuel tank content: maximum 18 litres

Always keep the S4 Standup horizontal when filling the fuel tank.

Recommended fuel:

- Super petrol unleaded DIN 51607, Octane between 95 and 98 ROZ/85 MOZ.
- US premium Unleaded fuel (91/92/93 Octane) or 95/98 ROZ ISO 5146.

Hydrospace will not recognize any damage caused by the use of unlicensed lubricants or fuels during the guarantee period. Hydrospace cannot accept any guarantee or warranty claims in such cases.



ATTENTION

If the engine is "knocking" or "whistling", use another type of petrol with a higher octane rating. If you allow this operating condition to continue, it can cause severe engine damage. High petrol quality is important. Low quality fuels or fuels which do not conform to the industrial standard can lead to insufficient engine performance. Operating problems of the engine which are caused by the use of inferior or not recommended fuels are not covered by the guarantee which applies to you.



ATTENTION

Never fill the fuel tank up to the top edge. **Pay attention to maximum level.** Petrol will expand under the influence of heat and can leak out through the fuel tank ventilation. Make sure after refueling that the fuel tank lid is closed correctly.



WARNING

Fuel vapors collected in the engine compartment constitute a fire and explosion risk.



ATTENTION

Avoid refueling in the rain or with a strong collection of dust in the air so that the fuel will not become contaminated.



ATTENTION

NEVER refuel in the water!
Never refuel near an open flame!

3.4 Fire extinguishers (depending on the country)

Visually check the extinguisher and check the expiration date before the start of the ride. (Not found in all models).

3.5 Battery

This S4 Standup has a battery which was produced in a sealed form. The sealing strip must not be removed after the electrolyte has been filled into the battery for the first time. The battery is completely service-free and therefore checking of the electrolyte filling level or topping off with of distilled water are not necessary. Regular use of your S4 Standup will contribute to maximizing the useful life. This will maintain the charge of your battery.

Battery sulphation:

Sulphation is a frequent cause for battery failure.

Sulphation occurs when the battery remains discharged for a long time.

Sulphate is a normal waste product of the chemical reaction in the battery.

Visual check: check for correct fixing of the battery clamps. Make sure that the covers of the clamps are in place. In case of loss of capacity, look for the cause immediately. Never operate your PWC with a faulty battery.



ATTENTION

Never remove the airtight battery cover. This can damage the battery. Do not replace the Hydrospace battery by a conventional type. Otherwise, the electrical system cannot work properly. Always follow the instructions on the battery cover when charging service-free batteries.

3.6 Throttle lever



ATTENTION

Check several times that the throttle lever moves smoothly before you start the engine.

3.7 Steering system

Check the correct fixing of the steering. Check the steering system by moving the steering slowly from one (steering) stop position to the other. The jet pump should move at the same ratio as the steering.

3.8 Trim

Check for correct functioning of the trim control.
When the lever is pulled, the discharge unit should move downwards. When it is released the discharge unit moves back into the horizontal position.

3.9 Switch/safety lanyard

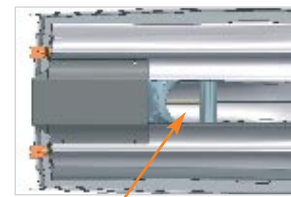
Check the safety lanyard for damage (cracks, etc...). In case of damage, it must be replaced immediately by a new one.

Check the correct functioning of the start button, the engine off-button and the engine stop line.



WARNING

Always keep hands, feet, clothing, and long hair away, (in center of floor), and never insert objects into the jet nozzle, (at the stern), while the engine is running. This could cause a major accident.



Intake grate



3.10 Starting

Warnings: exhaust gases are toxic: observe 60 cm depth of water



ATTENTION

Never run the engine for more than 10 seconds on land on low rpms.
Overheating could severely damage the engine and the exhaust system.

3.11 Turning

To turn the S4 Standup, two simultaneous actions are required:

- turning the steering, and
- accelerating

To do a left-hand turn, move the steering to the left.

To do a right-hand turn, move the steering to the right.

It is only through acceleration that the necessary pressure will build up for changing the direction.

The stronger the pressure at the jet nozzle, the stronger the turn.

To make wide turns, a low jet nozzle pressure is required.

If you let the throttle lever go, there will be hardly any drive pressure.
Only reduced controllability is possible.

! WARNING

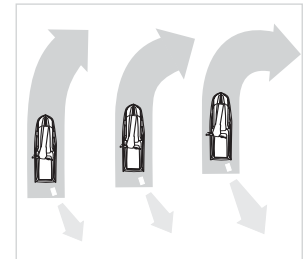
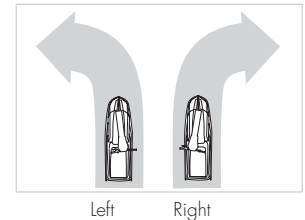
When you throttle completely, the S4 Standup will lose its controllability.
This can lead to hitting objects. Therefore, only throttle so far that sufficient pressure for steering is maintained.

If the engine is switched off during a ride, there is no more drive pressure.
The S4 Standup can now only be moved straight forward.

! WARNING

Do not switch off the engine as long as you are still manoeuvring or want to make fast turns.
The craft cannot be steered when the engine is switched off.

Throttle before you start to turn.





WARNING

The Hydrospace S4 Standup is very sporty and versatile. You could lose your hold and fall down during sharp manoeuvres. This could cause accidents. Therefore, always ride according to your personal skill and knowledge.

3.12 Starting from deep water

1. Swim to the stern.
2. Make sure that the engine is switched off.
3. Grab the steering wheel with both hands.
4. Activate the engine start button.
5. In slow travel, pull yourself up so that your knees are resting in the tray area.
6. Stand up.

4.

Upkeep and Servicing

- | | | |
|-----|------------------------------------|----|
| 4.1 | Storage | 60 |
| 4.2 | Rinsing of the cooling circulation | 62 |
| 4.3 | Servicing and setting | 66 |

4.

4.1 Storage

It is necessary to store the craft if:

- If the standup is not used for longer than 30 days
- At the end of the season, if you shut down the standup for winter

Service needed for winter storage

- Oil change
If motor oil is left in the craft for a long time, containing water and unburned fuel, the engine can begin to corrode internally.
- Conserve the cylinders
Unscrew the spark plugs. For each cylinder, approx. 10 cm³, clean the engine oil directly by filling the spark plug drillings in the engine with starter fluid. Briefly rev up the engine. Screw in the spark plugs again.
- Conserve the Wastegate flap
Put anti-rust spray around the Wastegate flap to prevent it from rusting.

- Battery clamp
Remove the battery and store in a dry, nonfreezing space.
To avoid damage to the battery, charge it approx. 1 time each month.
- Rinsing of the water cooling circuit
Thoroughly rinse the water cooling circuit of salt, sand, shells, and other pollution.
- Remove the tank completely and fill up with fuel
A full tank prevents the formation of humidity and mold in the interior.
- Mix with fuel stabilizer.
Consider the indicated mixing proportion. Fuel begins to decompose itself after approx. 30 days. Stabilizer protects against decomposition.
- disconnect wastegate and lubricate
- Flush the engine with Antifreeze (cylinder can brake if water stay inside)

4.2 Rinsing of the cooling circulation

Rinse the water cooling circuit after 50 h and after every seawater ride!
Additionally rinse after 10-12h.

- Clamp the water hose to the tail pipe.
- Attach the flush kit at the engine to the water pipeline.
- Rinse and untwist the engine (within 5 sec.) until the water no longer contains dirt.
Finishing Flushing: Stop rinse and stop the engine within 5 sec.

Flush-Kit

- The Flush kit enables it after to water cooling circuit drives into seawaters or into frames regular maintenance to flush.
- Mount the connecting piece of the flush kit (flush kit connection and connecting piece).
- Water pipe pressure max. 2 bar!

Battery:

- Disconnect battery.



ATTENTION

Never remove the airtight battery cover since this can damage the battery.

NOTE:

Use a battery charger suitable for sealed batteries.



ATTENTION

Do not store your S4 Standup at minus temperatures. The battery and the oil might become unusable.

4.3 Servicing and setting

Every authorized, official Hydrospace partner can change parts and carry out servicing or repairs.

Fuel information

The engine should be run with unleaded super petrol.

Unleaded fuel DIN 51607, Octane between 95 and 98 ROZ bzw. 85 MOZ.

US premium Unleaded fuel (91/92/93 Octane) or 95/98 ROZ ISO 5146.

The constant pressure carburetors reduce the amount of exhaust emitted by the engine into the environment. The mixture preparation and exhaust system was carefully constructed. The result: an engine with a high degree of efficiency and low exhaust figures.

Servicing and guarantee

Professional servicing is absolutely necessary to maintain a permanently low level of emissions for your S4 Standup. This operation manual contains all the necessary information and servicing recommendations for your engine.

One condition for the guarantee given by Hydrospace is that you have the servicing of your S4 Standup done by an official Hydrospace dealer. Please read the guidelines for a guarantee carefully. Hydrospace can only grant the guarantee if these have been met.

Inspection check



Important

Carry out a check before every ride, even with regular inspections.

Break-in: 2 gas tank minimum or 2h (1/2 to 3/4 throttle)

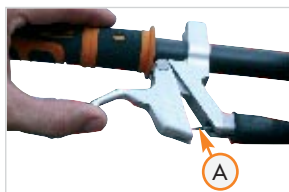
Job to be performed	After the first 12 hours of operation	Every 25 hours of operation	Every 50 hours of operation	Every 100 hours of operation
Check all hose pipes, hose clips, nuts, bolts and fixing elements	●	●		
Lubricate throttle housing cable connection on the throttle housing		●		
Lubricate throttle operation cable connection and throttle connection on the throttle housing		●		
Clean spark plugs (replace if necessary) and check electrode distance	● 1 x annually			●
Lubricate steering cable connection on the steering shaft, switch cable ball joints and steering, and water jet reversal steering pivots		●		

Job to be performed	After the first 12 hours of operation	Every 25 hours of operation	Every 50 hours of operation	Every 100 hours of operation
Lubricate steering pivot (dismantle)* ¹		●		
Clean fuel pump filter		●		
Check/adjust valve clearance	● only by dealers			● only by dealers
Check/clean air filters			● at least 1x annually	
Check engine oil every ride				
Change engine oil and oil filter	●	● at least 1x annually		
Check/tighten engine mount bolts			● at least 1x annually	
Check check valve for fuel ventilation)* ¹		●		
Check throttle operation system		●		
Check and clean filter and pump (Cooling water input)		● only by dealers		

Job to be performed	After the first 12 hours of operation	Every 25 hours of operation	Every 50 hours of operation	Every 100 hours of operation
Rinse cooling system (daily after riding in salt water)	● at least 1x annually		●	
Check air intake valve*)		●		
Check rotor wings and damage (remove)*)				●
Check/renew drive dampers*)				●
Check throttle cap shaft spring (replace throttle housing if necessary)				●
Check steering and switching cables*)				●
Replace rubber duckbills that drain the water from the engine compartment			●	
Check battery clamps		●		
Check and adjust TPS	●			
Check Bolts and Nuts, gas tank rubber, lubricate cables	●			

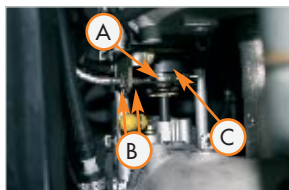
Job to be performed	After the first 12 hours of operation	Every 25 hours of operation	Every 50 hours of operation	Every 100 hours of operation
Check Impeller Torque: 80Nm and Pump seal	●			
Check intercooler plate on exit side	●			
Replace TPS, AIR sensor and Thermostat		●		
Replace Pump Seal and Pump Bearing		●		
Check Impeller Torque: 80Nm		●		
Check intercooler plate on exit side		●		

*) Special skills and tools are required for performing these jobs.
Hydrospace recommends to have these jobs done only by an official Hydrospace dealer.



ill. 1

A. 2 - 3 mm



ill. 2

A. Throttle
B. Locknut
C. Throttle unit



ill. 3

Setting of Throttle

The throttle mechanics must have some play. Measure the distance covered by the throttle lever before the engine reacts to the acceleration. The play should be 2-3 mm (ill. 1).

Setting of throttle

Loosen the counter nuts at the end of the throttle cable. Then, turn them until the required play is achieved.

Tighten the counter nuts again (ill. 2).

Setting of steering cable

- Hold the steering in straight forward position (ill. 3).
- The distance of the jet nozzle to the jet drive outlet must be the same on the left and the right side (ill. 4). Otherwise, adjust the steering cable.
- To disconnect the steering cable from the jet nozzle at the ball connection, you must first pull the steering cable back. Then, pull up on the connection. The cable will be free from the connection.
- Loosen the counter nut at the end of the steering cable on the right-hand side (ill. 5).
- Keep the steering always in straight forward position.

- Turn the cable connection to adjust the steering (ill. 6).
- Apply a liquid glue to the nut before tightening it. Apply it to the counter nut too after it has been adjusted correctly.
- Reconnect the steering cable at the ball connection. Make sure the connection locks securely over the ball.
- As an additional check, turn the steering to the left and the right until the stop. Measure the distance between the jet nozzle and the jet drive outlet in the process.
The distance should be the same on both sides.

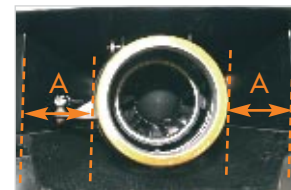


ATTENTION

When not adequately assembled the nut/mother can solve itself. The guidance characteristic can be impaired thereby. They control the locknut.

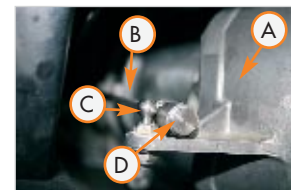
Checking of the steering cable

Please have this check only done by an official Hydrospace dealer.
If the steering is stiff or jerky, contact an official Hydrospace dealer.



A. Same distance

ill. 4



- A. Jet nozzle
- B. Steering cable
- C. Locknut
- D. Connection piece

ill. 5

Fuel system

Idling rpm

Have the setting of the idling rpm done by an official Hydrospace dealer. If the idling rpm varies, have the throttle housing checked by an official Hydrospace dealer.

Idling rpm

In Water: $1500 \pm 1750 \text{ min}^{-1}$

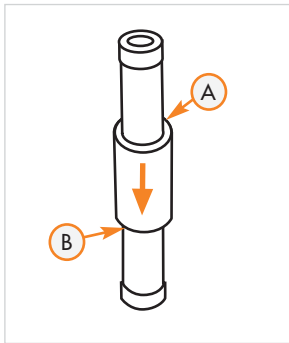
Use in high geographical location

No height adjustment is required. The E.C.U. (engine control unit) will regulate the fuel mixture automatically.

Fuel ventilation - check valve

The fuel tank has a rubber ventilation pipe. Inside the ventilation pipe there is a small plastic check valve which allows air into the tank. When rolling over, it will keep any leakage from the S4 Standup to a minimum.

Have the check valve checked by an official Hydrospace dealer according to the inspection table.



A. Check valve
B. Direction of flow

Fuel pump sieve

Your S4 Standup has a fuel pump sieve fitted to the fuel pump. It prevents dirt or other foreign bodies from entering the fuel supply.

Have the fuel pump sieve cleaned by an official Hydrospace dealer according to the inspection table.

Engine oil system

Make sure that the engine oil is always at the prescribed level so that the engine and the clutch can work properly. Change the oil filter and the oil exactly according to the inspection table. The oil loses its lubrication effect in time, and dirt and metal shavings will collect.



ill. 1



ill. 2



ill. 3

Oil changes

Change the engine oil and filter every 25 h.

Change the engine oil and filter after the break-in time (10 - 12 h) is finished.

CAUTION

Change the engine oil only when the engine is warm.

- Remove the oil tank filler-cap (A, ill. 1).
- For sucking oil off an oil exhaust pump, put the suction hose as far as possible into the oil tank. (B, ill. 2).

NOTE

There is a splash shield in the oil tank to avoid a gush.

Make sure the oil suction hose (to remove the oil) passes by the splash shields to reach the bottom of the oil tank.

- Suck the oil off of the oil tank completely, and place into a suitable container.

- After removing the suction hose, install the filler cap again. (A, ill. 1).
- Unscrew the oil hose above the oil tank (C, ill. 2).
- Remove the sea water hose from the exhaust elbow union (D, ill. 3).
- Unscrew the oil filter cover (E, ill. 4).

The engine oil in the dry sump tub can be removed with the help of the engine.

- Remove the spark plugs first. This makes it easier for the engine. Rev the starter for a few seconds.
- Take off the plugs at the two inject valves (ill. 4).
- Hold a hose over the oil drain tub (ill. 5).
- Perform this for only a few seconds. Do not run the engine for more than 15 seconds.
- To pump the old oil out completely, repeat this procedure 3-4 times.



CAUTION

In order to avoid damage due to insufficient lubrication and overloading of the starter, do not rev up the engine for an unnecessarily long period of time.



ill. 4



ill. 5

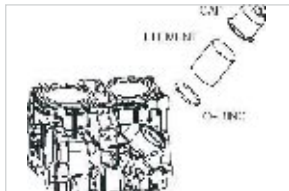


Abb. 1

- Clean the links at the oil tank and exhaust elbow union.
- Install all oil and water hoses.
- Begin new oil filter application and cover the O-ring in the oil filter.
- Before the installation of the oil filter cover, coat the O-ring easily with engine oil (ill. 1).
- Install the oil filter cover and tighten only to the prescribed starting torque.
- Fill the oil tank with fresh engine oil.
- Always use Hydrospace engine oil.



CAUTION

Never fill with more than 3.5 l of oil.

- Afterwards, install the spark plugs.
- Re-attach all wiring harness plugs.

amount of filling oil tank: min 3.3 l, max 3,5l

oil quality: Hydrospace 10W-60, API SJ or higher

starting torque oil filter cover: 24 Nm

starting torque ignition coils: 10 Nm

starting torque spark plugs: 27 Nm

starting torque hose clamps: 2.4 Nm

- Start the engine, run in the idle position for 10 sec. Then stop the engine.
- With the engine stopped, open the oil cap and check the dipstick measurement. (A, ill. 2).

! NOTE

When you open the oil cap, remove the dipstick and clean it. Put the dipstick back inside but do not screw the cap closed. Remove the dipstick again and check the oil measurement.

- The oil measurement is okay, until the oil level goes to the MIN marking on the dipstick (ill. 3).

! NOTE

The oil level will rise when the engine warms up and achieves operating temperature.

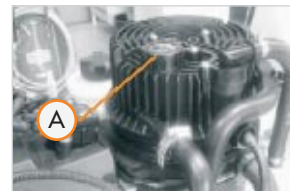


Abb. 2

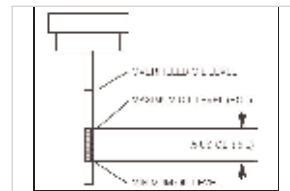


Abb. 3

Valve clearance

The clearance of the valve and the valve seats will be reduced by wear and tear. This will change the valve control times.



ATTENTION

If the valve clearance is not adjusted, the valve might remain partly open because of wear and tear. This reduces the performance, the valves and valve seats will burn, and this can cause severe damage to the engine.

The valve clearance for each individual valve must be checked and adjusted according to the table for regular servicing.
Please have settings and inspections done only by an official Hydrospace dealer.

Spark plugs

Every 100 h renew the spark plugs. Check the electrode gap and status after the break-in time (10-12 h).



CAUTION

Only change the spark plugs with a cold or lukewarm engine, otherwise the thread of the cylinder head can peel off.

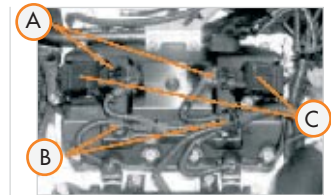
- Solve both wiring harness attachments (A) at the valve cove.
- Take off plug (B) vond ignition coils (C).
- Unscrew the ignition coils.
- Blow out the spark plug slots with compressed air.
- Unscrew spark plugs (D) with box spanner (SW 16).

Box spanner (SW 16)

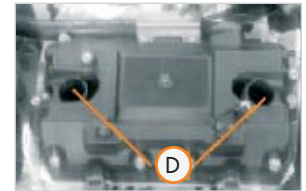
Check the candle face.

Conclusions on the operation status of the engine can be made from the burn-up. Apply the following regulations:

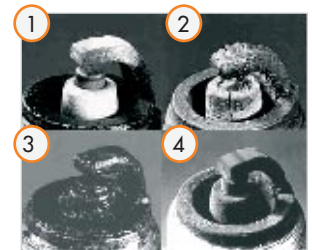
- Electrodes and moldings. Centralgrey (1) = correct the spark plug
- light-grey (2) = mixture too lean
- oil (3) = expose to the spark plug concerned or badly sealing piston rings operate
- black (4) = mixture too rich.



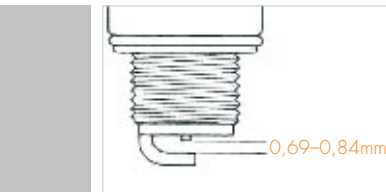
ill. 1



ill. 2



ill. 3



ill. 1

- If there is an electric leakage near the insulators, change the spark plugs.
- The electrode gap of the spark plugs can be removed with the help of a correctly adjusted feeler gauge.
- A sooted spark plug with combustion residue can be cleaned using a spark plug cleaning machine or a brass, wire brush.
- Replace the spark plug if the insulator or thread is damaged or broken.
- In order to avoid damage to the engine, only the prescribed champion RC7PYCB spark plugs may be used.
- Clean the thread of the spark plugs and in the cylinder head.
- At the cylinder head, screw in the spark plugs by hand and then tighten to the prescribed torque.
- Install both ignition coils and tighten to the prescribed torque.
- Fasten wiring harness on valve covers and attach all wiring harness plugs.

Starting torque spark plugs: 27 Nm

Starting torque ignition coils: 10 Nm

Electrode gap spark plug: 0,69 – 0,84 mm

Box spanner (SW 16):

Feeler gage

Spark plugs champion RC7PYCB

Battery

A sealed-type battery is installed in the Hydrospace S4 Standup. After the enclosed electrolyte has been filled into the battery for the first time, the sealing strip must not be removed again. It is not necessary to check the electrolyte level of the battery or to add distilled water. The battery is maintenance-free!

You must however, maintain the charge of the battery as intended in order to maximize the life of the battery and to guarantee that the battery will supply the current necessary for starting your S4 Standup. When used regularly, the charging system helps to maintain the full charge of the battery. However, if your S4 Standup is only used occasionally, the battery might possibly get discharged.

Batteries get discharged on their own because of the way they are built. The reason for the discharge depends on the type of battery and the ambient temperature. When the temperature rises, the degree of discharge will increase.

Maintenance and care of the battery:

Every craft owner is responsible for maintaining the battery in fully charged condition. If this is not done, the battery might fail and your S4 Standup might ground.

If you use your S4 Standup only rarely, the battery voltage must be checked every week with a voltmeter. If the voltage drops below 12.6 Volt, the battery must be charged with a suitable charger. If you don't use your S4 Standup for more than two weeks, the battery must be charged with a suitable charger.

Do not use a quick charger for cars. This can lead to an overcharge and damage the battery.

Hydrospace recommends the following charger:

OptiMate 3

More details from your official Hydrospace dealer.

Charging the battery:

- If possible, remove the battery from the S4 Standup.
- Charge the battery with a suitable charger.

Note

Always follow the instructions on the battery housing when charging the maintenance-free battery.



ATTENTION

Never remove the airtight battery lock. The battery must not be replaced by a conventional battery otherwise the electrical system will not work properly.

Dismantling the battery:

- First, disconnect the black measuring cables from the battery.
- Loosen the red battery cable.
- Loosen the two rubber straps securing the battery.
- Lift out the battery from the hull.
- Clean the battery and the battery poles. Remove tough deposits with a wire brush and then rinse the battery with fresh water.
- Rinse thoroughly with clear water. Wipe the battery dry and coat the battery poles with water-resistant grease.

Installing the battery:

- Reverse the dismantling process for installing the battery. Connect the black auxiliary cable to the minus terminal.
- Connect the battery and coat the battery poles with water-resistant grease.



ATTENTION

Do not mix up the battery cables to avoid damage to the rectifier/governor.



WARNING

Loose battery cables can cause sparks and lead to a fire or an explosion. Serious injuries, even with a fatal outcome, can result. Make sure that the bolts of the battery terminals are tightened well and that the covers over the terminals are in place.

Lubrication

Regular lubrication and anti-rust treatment are indispensable for the life and reliability of your S4 Standup. The following lubrications are to be carried out according to the "inspection table" and the section "Daily checks before a ride," Chapter: Operation.

The following spots are to be lubricated with deep-penetrating rust protection, e.g. WD40

- Lubricate the throttle cable with cable lubricator (ill. 1).
- Jet nozzles and water jet reverse pivots (ill. 2).

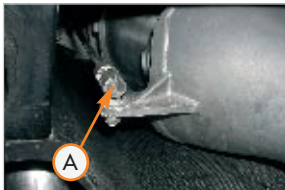


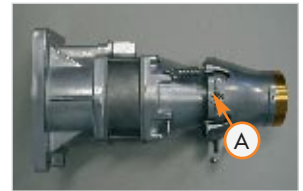
Abb. 3: Jetpump
A. Ball joint

Lubricate the following parts with high-quality water-resistant boat grease

- Switch ball and socket joint (ill. 3).
- Control joint (ill. 4).
- Throttle end near the lever (ill. 5).

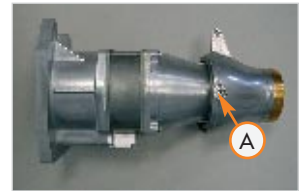


ill. 1



Jetpump downside
A. Fulcrum

ill. 2



Jetpump upside
A. Fulcrum



ill. 4

A. Handle bar - steering ball



ill. 5

A. Pivot of the control nozzle

! ATTENTION

The control shaft must be dismantled for lubricating. Have this servicing only done by an official Hydrospace dealer.

5.

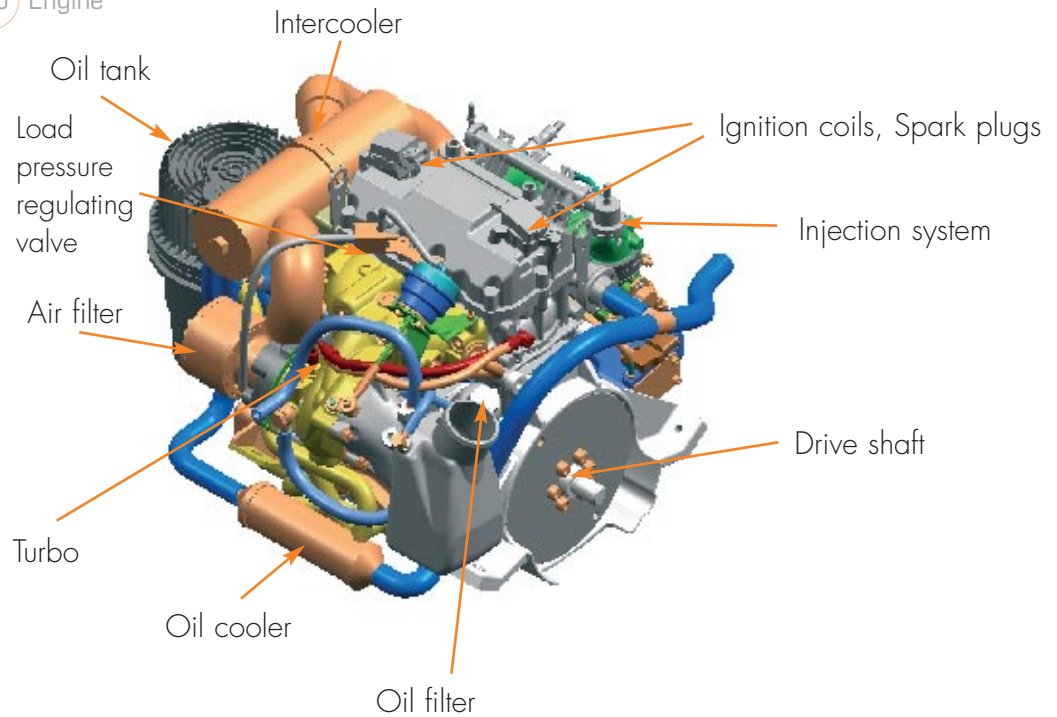
Engine description

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5.

5.0

Engine



Safety notes

Damage to the engine as a result of not approved lubrication or fuel will not be recognized during the warranty period. Also the engine will not be repaired by means of fair trading.

Same applies to damage caused by inappropriate handling and outside effect on the engine.

If work on the engine becomes, equal which type executed, screws and/or nuts/mothers are to be fastened with the prescribed torque.

Is for that tighten of screw and nuts/mothers if a certain sequence prescribed, then this is to be obeyed. Same applies to the screw locking.

Always use new seals if sections of the engine are to be installed or removed.

In handling fuels of all kinds, the highest caution is required. Working on the engine with burning cigarettes or objects is forbidden. This can lead to inflammation of the fuel.

Sections of the fuel system that concern the engine are to be exchanged when there is outside damage.

5.1 Engine data

- 2 cylinder 4 stroke engine
- Parallel twin with one countershaft
- Countershaft drive via cogwheels
- 4 valve cylinder head, valves operated via roller rocker arm with mechanical valve clearance compensation through shims camshaft with 4 main bearings
- 360° cam angular offset
- Welded cracked conrods
- Welded pistons with spray oil cooling
- Aluminium crankcase with NIKASIL cylinder bore coating
- Aluminum bedplate
- All aluminium components in copper-free alloy
- Cylinder head connection via dowel pins
- 4 layer cylinder head gasket (turbo)
- Double throttle



Dry weight basic engine	44 kg
Length	340 mm
Width	400 mm
Height	520 mm
Bore/stroke	Turbo: 85 x 66 mm
Cubic capacity	Turbo: 749 cm ³
Compression	Turbo: 9:1
Lubricating system	Eaton - oil pressure pump Oil volume-volume flow: ~ 15 l/min at 7000 rpm, Pressure valve: ~ 5 bar Dry sump pump : 2 x cogwheel pump
Cooling system	Open loop thermostat controlled integrated water pump for recirculation Short circuit external oil/water heat exchanger
Idling rpm	1400 to 1500 1/min
Max. rpm	8400 1/min, working point dependent variable rpm overspeed trip unit

Valve clearance (cold):	Turbo Outlet: 0.18 – 0.25 mm Inlet: 0.08 – 0.15 mm
Basic bearing clearance	0.03 – 0.05 mm
Conrod bearing clearance	0.03 – 0.05 mm
Control times for 1 mm valve lift	
Outlet opening	52° aBDC
Outlet closing	2° bTDC
Inlet opening	14° bBTDC
Inlet closing	50° aBDC
Valve diameter	EV: 29.5 mm AV: 32.5 mm
Valve seat angle	45°
Correction angle 1	30°
Correction angle 1	60°
Valve seat width	Inlet: 1.1 mm
Starter	Integrated starter 800 W Ratio: 33:1 Free wheel

5.2 Fill-up quantities

Oil tank/lubricating system:	First filling: 3.8l
	Oil changed quantity: 3.3l to 3.5l
Oil quality:	Hydrospace 10W-60, API SJ-CF, ACEA A3/B3
Fuel:	Unleaded fuel DIN 51607 between 95 and 98 ROZ US premium Unleaded fuel (91/92/93 Octane) or 95/98 ROZ ISO 5146

5.3 Operating conditions

5.3.1 Environment

Temperatures	0°C – + 45°C
Height	0 – 2000m
Engine compartment temperature	max. 65°C

5.3.1 Engine operation

Oil temperature	max. 110°C continuous in oil tank max. 115°C short time
Thermostat opening point	70°C
Tank temperature	max. 55°C
Fuel pressure	turbo engine 3.8 bar
Exhaust back pressure	max. 150 mbar

5.3

3. Function range engine management

- ω/n and p/n load coverage aspirating engine
- Engine characteristic based sequential fuel injection and ignition
- Adjustment to dynamic operating conditions
- Cold start adjustment
- Overspeed trip unit

The engine management has the following sensors/monitors:

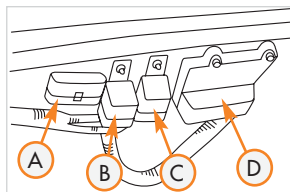
- Cooling circuit temperature
- Intake air temperature
- Height correction
- Camshaft rpm
- Cylinder 1-recognition via phase sensor
- Monitoring of open loop seawater supply via temperature switch
- Air pressure sensor

6.

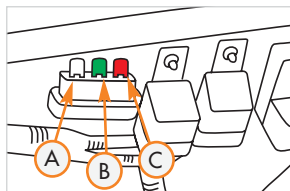
Faults and repair measures

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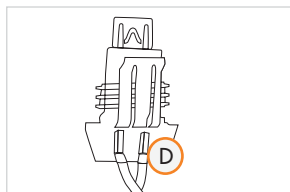
6.



ill. 1 A. Fuses C. Gasoline pump relay
B. Main relay D. Controller



ill. 2 A. Fuse 1: Gasoline pump 14 A
B. Fuse 2: Engine system ignition, injection, valves 30 A
C. Fuse 3: Supply controller over Left-Hand control 7,5 A



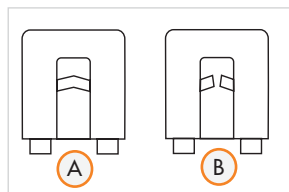
iLL. 3 D. Generator fuse at the cable harness, 30 A

6.1 Fuses

The fuse box is in the engine compartment. There are more fuses. If a fuse burns through during operation, check the electrical system to find the cause. Then, replace the fuse with one that has the corresponding Amperes.

! WARNING

Do not replace fuses by substitutes. Replace fuses only with a new fuse with the correct capacity.

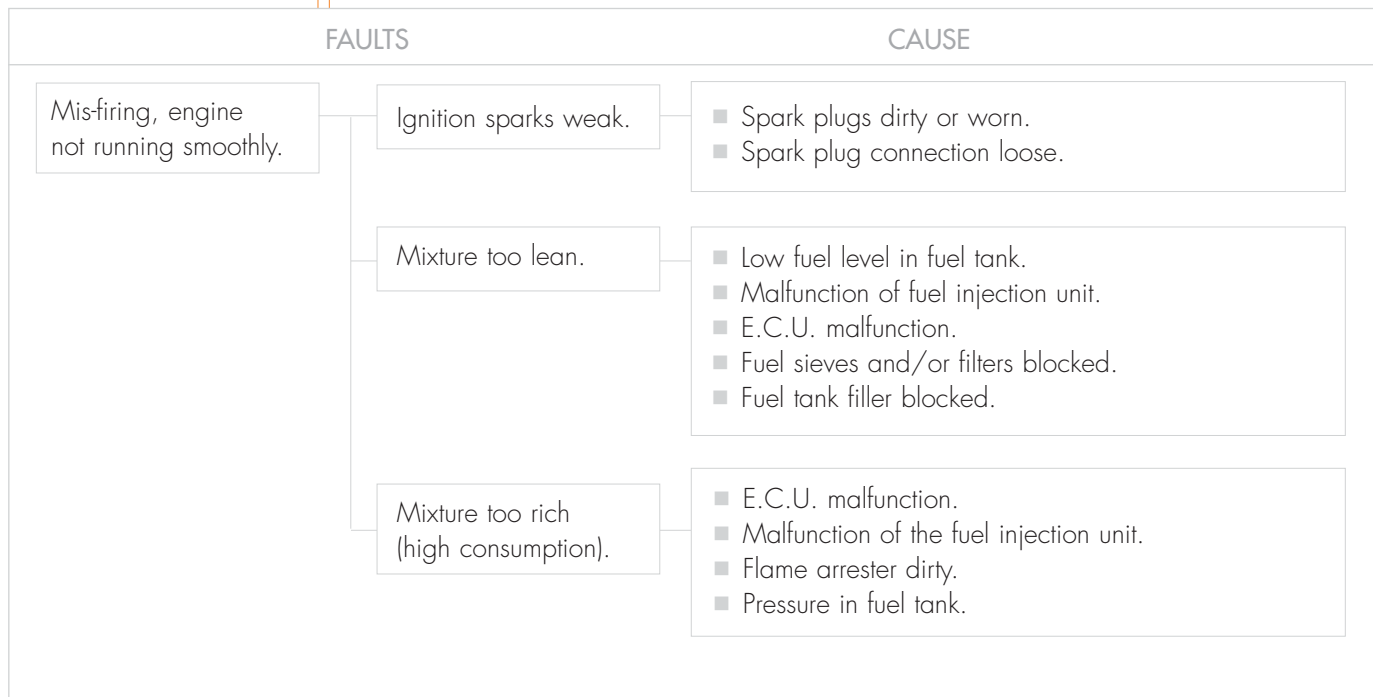


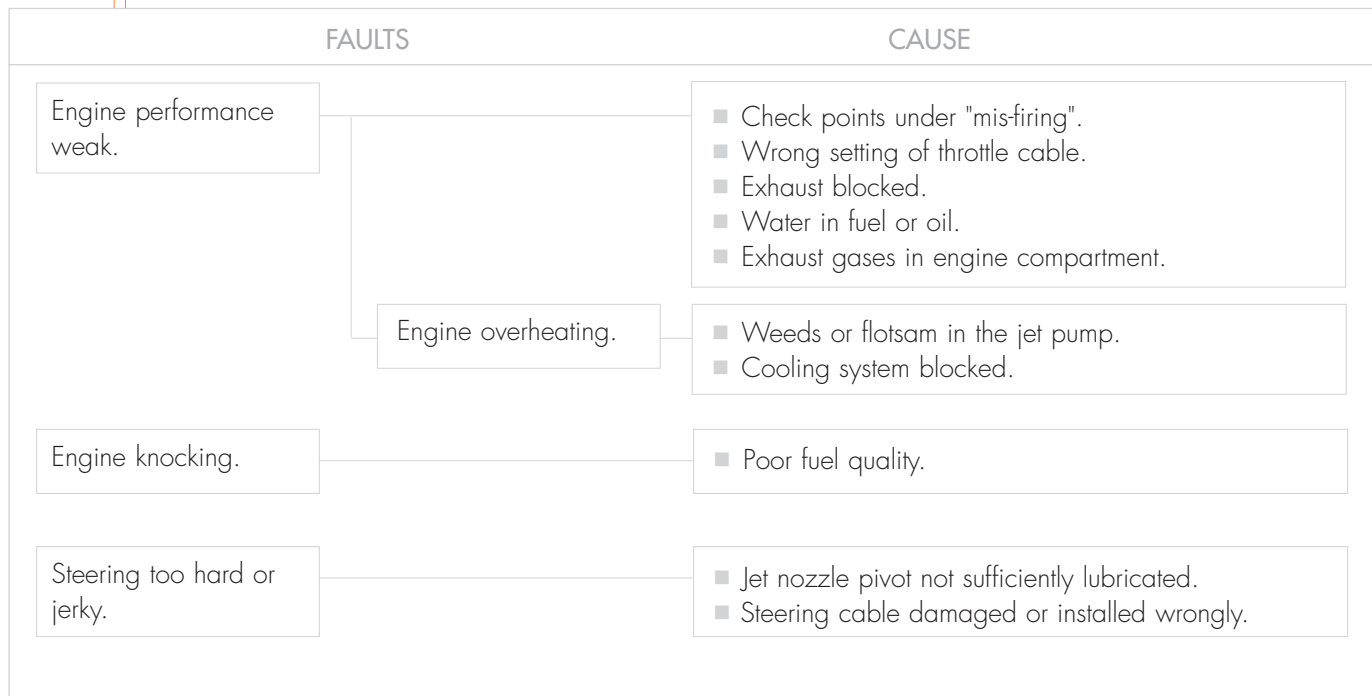
A. Normal
B. Burned through

6.2 Trouble shooting

If you cannot find the cause from the table, please contact your licensed Hydrospace dealer.

FAULTS		CAUSE
Engine does not start.	Engine does not turn.	■ Safety lanyard clip not inserted at engine cut-off button. ■ Battery flat. ■ Batteries not connected. ■ Water in the engine. ■ Ignition cables with the coils are pulled off. ■ Protections check.
	Engine turns.	
Engine starts, but stops again immediately.		■ Low fuel level. ■ Pressure in the fuel tank. ■ Fuel tank ventilation blocked. ■ Exhaust gas escaping in engine compartment. ■ Air temperature sensor defect





FAULTS	POSSIBLE CAUSES	REMEDY
Engine smokes.	Oil level too high.	■ Contact an authorized Hydrospace contract dealer.
	Internal damage to the engine.	
	Water penetrated, cooling agent leakage or damaged cylinder head gasket.	
Engine cannot achieve maximum speed.	Jet pump clogged.	■ Clean.
	Screw damaged or worn out thrust ring.	■ Replace. Contact an authorized Hydrospace contract dealer.

FAULTS	POSSIBLE CAUSES	REMEDY
Cavitation	Plants or remainders of dirt are caught in the screws.	■ Clean and check on damage.
	Damaged screw wave or drive shaft.	
	Water penetrating the interior of the jet pump leads to rusting of the ball bearings, therefore causing the ski to seize	■ Turn to a Hydrospace contract dealer.

6.3 Environmental protection

To ensure a clean environment, please observe the following:

- Dispose of your waste correctly (dumping is against the law).
- Do not pollute beaches, coastal areas, and waters with petrol and oil.
- Take care of natural habitats and their fauna.
- Make sure to properly dispose your S4 Standups empty batteries, accumulators, engine oil, and other parts. Consult your authorized Hydrospace dealer or the competent local environmental protection authorities for proper waste disposal methods.

7.

Appendix

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Design category

The S4 Standup corresponds to design category 4.

A boat allocated to this category is intended to operate in wind conditions with strengths up to 4 on the Beaufort scale and the corresponding wave heights (occasional wave heights up to 0.5 m). These conditions can occur in sheltered inland waters and in coastal waters under good weather conditions.

7.1 Technical data

Dimensions	
L/W/H	2290/740/750
Dry weight	168 kg
Recommended maximum loading	120 kg (including skipper, fuel weight and items for personal use)
Engine	
Type	2 Cylinder parallel twin with balancershaft
Displacement	749 cm ³
Bore	85 mm
Stroke	66 mm
Power Output	81 KW (110 PS) SAE 1228/7500 1/min
Max. Continuous RPM	8400 1/min regulated through E.C.U.
Ignition System	
Type	Digital electronic map ignition, Walbro ECUC-2
Spark Plug Type	Champion RC7PYCB
Electrode gap	0,69 – 0,84 mm

Lubricants	Dry sump
Oil fill volume:	3,3 - 3,5l
oil change with filter:	3,7 - 4,1l
refilling:	3,7 - 4,1l
Oil Specification:	Hydrospace 10W-60 Full synthetic, API SJ-CF, ACEA A3/B3
Other items:	
Mixture preparation:	Electronic petrol injection
Silencer:	Stainless steel single-pipe exhaust system
Starter:	Electric starting
Fuel content:	18 litres
Hull material:	Fibreglass
Voltage supply:	12 Volts
Battery:	12 V/18 AH
Working temperature range:	0° to 48° C

Manufacturer:

Hydrospace Handels- und Produktions GmbH & CoKG

Wiener Str. 71, A-3380 Pöchlarn/Austria

Fon +43 2757/48 675-600

Fax +43 2757/48 675-666

URL www.hydrospace.at

7.2 Report about servicing and repairs

Name of the owner _____

Address _____

Telephone number _____

E-mail _____

Name of the specialist dealer _____

Number of the boat hull _____

Engine number _____

Start of guarantee time _____

Date	Running time of engine	Name/Address of specialist dealer

Date	Running time of engine	Name/Address of specialist dealer

Date	Running time of engine	Name/Address of specialist dealer

Date	Running time of engine	Name/Address of specialist dealer

