

## ADDENDUM TO 2010 AQUABIKE RULEBOOK 502 - CATEGORY F2

### 502.01 DEFINITION

Intended to promote interest in ~~stock~~ personal watercraft competition ~~with a limited number of modifications, and to enable individuals to become active competitors with relatively modest investment and maintenance costs.~~ Watercraft competing in this class must conform to the specifications which follow :

02) All watercraft must remain strictly stock, except where rules allow or require substitutions or modifications. Substitutions or modifications not listed here are not permitted. Some original equipment components may not comply with rules. Hull Identification Numbers must be displayed as furnished by the manufacturer.

03) When rules permit or require equipment to be installed, replaced, altered or fabricated, it is the sole responsibility of the rider to select components, materials and/or fabricate the same so that the watercraft operates safely in competition.

04) Sound level shall not exceed 86 dB(A) at 24m.

05) Gasoline must be in conformity with the criteria defined by art. 504.

### 502.02 SKI DIVISION

Watercraft competing in the Ski Division must conform to the following criteria:

01) The maximum engine cubic capacity:

- a) Atmospheric 2 Strokes 950 cc
- b) Atmospheric 4 Strokes 1150 cc
- c) Turbo 750 cc

02) The maximum engine power: 140 Ps

03) Dry weight must be greater than 114 kg

04) Hull length cannot exceed 310 cm

05) Hull width must be between 50.8 cm and 76.2 cm

06) For the Ski division homologated before September 1, 1998, the weight minimum must be 168 kg  
The cubic capacity cannot exceed the cubic origin capacity given by the manufacturer

### 502.03 RUNABOUT

Watercraft competing in the Runabout Division must conform to the following criteria:

01) The maximum engine cubic capacity:

- a) Atmospheric 2/4 Strokes 2600 cc
- b) Turbo 2000cc

02) The maximum engine power: 260 Ps

03) Dry weight must be greater than 216 kg

04) Hull length cannot exceed 360 cm

05) Hull width must be between 96.5 cm and 127 cm

06) For Endurance only, the Hull length cannot exceed 394 cm

The cubic capacity cannot exceed the cubic origin capacity given by the manufacturer

### 502.04 HULL

01) All watercraft must have a flexible tow loop attached to the bow. The tow loop should be made of a flexible material (e.g., nylon strap, rope, etc.) so as not to create a hazard. Tow hooks, which protrude beyond the plane of the hull, must be removed.

02) Hull and deck repairs may be made. However, these repairs must not alter the original configuration by more than 5 mm.

Handles, drop-in type storage buckets, bolt-on type mirrors and gauges may be modified, aftermarket or removed, provided a hazard is not created

03) All watercraft must be equipped with two sponsons. Original equipment sponsons may be modified, aftermarket, or repositioned. Overall length of each sponson shall not exceed 91.45cm. Sponsons shall not protrude from the side of the hull by more than 100 mm when measured in a level horizontal plane.

04) The vertical channel created by the underside of the sponson shall not exceed:

- a) Ski 50.0 mm.
- b) Runabout 63.5 mm

05) No part of the sponson shall extend downward below the point at which the side of the hull intersects the bottom surface of the hull by more than:

- a) Ski 50.0 mm.
- b) Runabout 63.5 mm

06) Aftermarket or modified sponsons must exceed 6 mm. in thickness. All leading edges must be radiused so as not to create a hazard. Sponsons may not be attached to the planning surfaces of the hull. Fins, rudders, wings and other appendages that may create a hazard will not be allowed.

07) Ski Division Sponsons may be attached to the inside of the bond flange, but no part of the sponson may extend more than 50 mm below the lower part of the bond flange (bumper removed).

Sponsons attached to the inside of the bond flange shall not protrude outside the bond flange (bumper removed) when measured in a level horizontal plane.

08) Replacement bumpers ~~respecting the original shape~~ may be used provided a hazard is not created.

09) A soft, flexible water-spray deflector may be attached to the hull sides or to the bond flange provided a hazard is not created. ~~No part of the deflector may extend must exceed~~ the perimeter of the bumpers of origin or the external edge of the hull, measured using a plumb line.

10) Handlebar, throttle, throttle cable, and grips may be modified or aftermarket. Handlebar cover may be modified or removed. ~~Aftermarket switches and switch housings may be used. Original switches must be used but switch housings may be modified or aftermarket.~~ Steering shaft, steering shaft holder and handlebar holder may be aftermarket. The handlebar must be padded at the mounting bracket or, if it has a crossbar, the crossbar must be padded. ~~Quick-turn steering modifications to alter steering ratio are allowed.~~ Aftermarket steering cables are allowed.

11) ~~The hull can be modified or not of origin provided that the total weight of the watercraft is not lower of 10 % than the flat broke total weight given by the manufacturer.~~

12) Ski Division Mobile arm and mounting bracket may be modified or after market provided it functions as originally designed. Mobile arm attaching point may be reinforced. Handle pole spring allowed.

13) ~~Runabout Seat assembly may be modified or after market. Seat height may be changed. Original equipment seat base must be used. Seat cover may be changed. Padding can be removed or added.~~

14) Padding and/or mat kits may be added and custom painting is allowed. The surface finish of any metal component outside the hull area above the bond flange may be polished, shot panned or painted.

15) Original bilge pump may be modified or disconnected. After market bilge draining systems that do not create a hazard are allowed.

~~No other modifications to the hood will be allowed.  
The intercooler reinforcement plate can be changed, modified or added.~~

## 502.05 ENGINE 2 STROKES

01) Engines may be bored. Replacement piston assemblies may be used provided the original port timing, compression ratio, dome profile, skirt length and shape and type of material are not changed. Replacement piston assemblies must weigh within  $\pm 25.00\%$  of original equipment. Engine displacement must not exceed class designation (e.g., 550cc in 550 Limited, 800cc in 800 Limited, etc.). Chamfering of cylinder ports must not exceed 1.00mm (0.04 in.) at a 30 degree maximum angle. (See diagram in Appendix.) Cylinders may be machined to accept girdle system cylinder heads.

02) Crankshaft may be rebuilt using replacement counterweights, crank pins, bearings and connecting rods. Counterweights, crank pins and connecting rods made of non-ferrous metals are not allowed. Stroke and rod length may not be changed. Counterweights on non-rebuild able style crankshafts may be machined to accept a press-through crank pin. Replacement bearings must maintain their original type and dimensions. Replacement counterweights must resemble the original part (i.e., holes and/or pockets not existing on the original part may not be on the replacement part). Total weight of the crankshaft assembly must be within  $\pm 5.00\%$  of original equipment. Crankpins may be welded and/or keyed to the counterweights.

03) Repairs to cracked or punctured crankcases may be made provided only one damaged area affecting one cylinder bank has been repaired. Crankcase drain and cable may be removed and plugged. No other modifications or repairs are allowed.

04) External modifications to the engine finish (e.g., plating, polishing and/or painting) are allowed for cosmetic purposes only.

05) No internal modifications of any kind, including grinding, surfacing, polishing, machining, shot peening, etc., will be allowed on any engine components.

~~The exhaust system must remain entirely of origin as delivered by the manufacturer.~~

06) Cylinder head and gasket may be modified or aftermarket.

07) Exhaust manifold, head pipe, expansion chamber, gaskets and hose between expansion chamber and OEM water box may be modified/altared or aftermarket. Exhaust location of the exhaust gases may not be relocated. Original size opening must be maintained for exhaust exit. Original equipment waterbox must be used and may not be modified. No tuned portion of the exhaust shall protrude outside the hull. Through-hull exhaust outlet flap may be removed.

08) Cooling system may be modified or aftermarket. Aftermarket cooling lines and water bypass systems may be used. Additional cooling supply lines and fittings may be added to the pump. Bypass fittings may be modified, aftermarket and/or relocated but must be directed downward and/or rearward so as not to create a hazard for other riders. Any valves used within the entire cooling system must be of the fixed type or automatic (e.g., thermostats, pressure regulators, solenoids, etc.). Manually controlled devices (by any means of actuation) that alter the flow of cooling water during operation are not allowed. Cooling system flush kits are allowed.

09) Replacement starter motor and bendix may be used.

10) Replacement engine mounts may be used.

11) Oil-injection system may be disconnected or removed.

12) Replacement of general maintenance parts (e.g., gaskets, seals, spark plugs, spark plug wires, spark plug caps, wiring, water hoses, fuel lines, clamps and fasteners) shall not be restricted to original equipment providing the following:

- 1) Replacement gaskets may be used but must be of the same type (e.g., sheet, o-ring, etc.) as their OEM counterparts. Base gasket cannot be thicker than 1.52 0.8mm ~~and the intake and exhaust diagram must stay as original.~~
- 2) Stripped threads must be repaired to the original size. ~~Replacement hoses must maintain their original inside diameter.~~
- 3) Fasteners (e.g., bolts, nuts and washers) may not be substituted with titanium pieces unless originally equipped. Fasteners may integrate locking mechanisms. ~~With sand filter not of origin is authorized.~~

13) Cylinders may be interchanged between homologated watercraft of the same manufacturer subject to restrictions. Any modifications to the cylinder or crankcase must be approved, in writing, by the UIM Technical Commissioner.

14) Two Stroke Ski only If the OEM cylinders or the cylinders allowed not provide for a displacement within 10% of the maximum allowable displacement then an aftermarket cylinder sleeve may be utilized. The aftermarket sleeve must maintain the same port sizes and specifications as the original OEM cylinder sleeve.

## 502.06 ENGINE 4 STROKES

01) Head of cylinder, combustion chambers edge be cleaned with the blowing pearl with the valves inserted in place. The abrasive admission and the exhaust cannot be granulated gold cleaned with material such have wools of steel gold Scotch tape slap-Brite®. Repairs of the cylinder head affecting only one head of cylinder are authorized

02) Crankshaft must remain stock. Replacement bearings or bearing shells are allowed, providing they maintain their original type and dimensions.

03) Camshaft(s) must remain stock. Replacement bearings or bearing shells are allowed, providing they maintain their original type and dimensions.  
~~Intake and exhaust valves may be shimmed with OEM or aftermarket shims.~~

04) No water exit can be added to the cylinder head, the cylinder or the casing. Derivations of water exit can be modified and/or replaced but must be directed in bottom and/or backwards not to create a danger to other competitors.

05) The valves used in the system of cooling must be of the fixed or automatic type (for example thermostats, regulating pressure etc). The systems of electronic injection of water are not authorized unless they are of origin.

06) The manually ordered devices (some is the means of order) which change the water run-off of cooling are not authorized. The kits of rinsing of the engine are authorized.

07) Valve cover may be modified or replaced for cosmetic purposes and/or weight reduction only.

~~18) Replacement of general maintenance parts (e.g., gaskets, seals, spark plugs, spark plug wires, spark plug caps, wiring, water hoses, fuel lines, clamps and fasteners) shall not be restricted to original equipment providing the following:~~

~~1) Replacement gaskets may be used but must be of the same type (e.g., sheet, metal, o-ring, etc.) as their OEM counterparts. Base gasket cannot be thicker than 0.8mm and the intake and exhaust diagram must stay as originaly.~~

~~2) Stripped threads must be repaired to the original size.  
Replacement hoses must maintain their original inside diameter.~~

~~3) Fasteners (e.g., bolts, nuts and washers) may not be substituted with titanium pieces unless originally equipped. Fasteners may integrate locking mechanisms.~~

## 502.07 AIR/FUEL DELIVERY 2 STROKES

01) Carburetor(s) may be modified or aftermarket provided they do not vent or spill fuel at any attitude with or without the engine running. The number of venturis cannot exceed the number of cylinders. No slide-type carburetors. Aftermarket primer may be used. Intake manifold assembly may be modified or aftermarket. Aftermarket crankcase-pressure-operated fuel pumps may be used. Additional carburetor pulse line fittings may be installed on the crankcase.

02) Modified or aftermarket vapor/air separators must not exceed 2 in. x 6 in., and must have a return line to the fuel tank open at all times. Additional fuel reservoirs may not be used. Aftermarket or modified electric fuel pumps, not exceeding 4 psi, may be used. When the engine is shut off or stops, the fuel pump must automatically stop. No manually operated on/off-type fuel pumps are allowed.

03) Aftermarket fuel-injection systems and components are allowed provided the following regulations are adhered to: High pressure fuel hose meeting SAE J30R9 must be used; A.N. threaded-type fittings or equivalent and non-removable, crimped-type clamps must be used on the high-pressure portion of the system (i.e., hose clamps, tie wraps, etc. are not allowed); only metal-type fuel filters may be used on the high-pressure portion of the system; all other in-line filters must be installed on the low-pressure portion of the system. When the engine is shut off or stops, the fuel pump must automatically stop. No manually operated on/off-type fuel pumps are allowed.

04) The entire fuel system is a closed system. The watercraft must not vent or spill fuel at any attitude with or without the engine running. Original equipment fuel tank, fuel pickup, fuel filler, fuel filter, fuel tap assembly and relief valve must be used and cannot be modified. The fuel pickup, fuel filter and fuel petcock assembly may be removed and/or after-market parts may be used. Fuel petcock may be bypassed. Additional fuel filters may be used and fuel cell foam may be added to the original equipment fuel tank. Fuel tank filler cap may be modified or aftermarket provided a hazard is not created.

05) ~~Aftermarket~~ Flame arrester(s) which satisfy United States Coast Guard, SAE-J1928 Marine or UL-1111 Marine backfire flame arrester test standards may be used must be installed. Aftermarket flame arresters satisfying one of these test standards will be allowed. Intake silencer may be removed. Carburetor jets (replaceable type), needle valves springs may be changed. Choke may be removed provided additional air intake for the engine is not created. After market primer system may be installed. No other carburetor modifications will be allowed.

06) Reed valve assemblies may be modified or aftermarket. Rotary valve may be modified or aftermarket.

## 502.08 AIR/FUEL DELIVERY 4 STROKES

01) Carburetted induction systems: Flame arresters that meet USCG, UL-1111 or SAE J-1928 Marine backfire flame arrester test standards must be installed. Carburettor jets (replaceable type), needle valves and needle valve springs may be changed. Choke may be removed provided additional air intake for the engine is not created. Aftermarket primer system may be installed. No other carburettor modifications will be allowed.

## 502.09 IGNITION AND ELECTRONICS 2 STROKES

01) RPM limiter function may be bypassed or eliminated. CDI unit may be modified or aftermarket.

Ignition timing may be changed. Modifications to the original equipment ignition pickup mount will be allowed. Original equipment charging system must be used. No other ignition system modifications will be allowed.

02) Flywheel cover may be modified to accept a crankshaft-end bearing support.

03) Replacement batteries are allowed but must fit into the original equipment battery box and be securely fastened.

04) ~~The electronic control unit must be original.~~ Engine temperature sensor may be disabled disconnected and/or removed.

05) Relocation of electrical components (e.g., battery, box or housing) is allowed in order to fit an aftermarket exhaust system (only the strict minimum needed).

06) Ignition timing may be altered by slotting ignition trigger mounting plate. An adapter plate may be used for the sole purpose of relocating the ignition trigger.

07) Aftermarket spark plugs with a different heat rating may be used.

#### 502.10 IGNITION AND ELECTRONICS 4 STROKES

01) Replacement batteries are allowed but must fit into the original equipment battery box and be securely fastened.

02) The electronic control unit must be original. Engine temperature sensors may be disabled.

03) Aftermarket spark plugs with a different heat rating may be used.

#### 502.11 TURBOCHARGER/SUPERCHARGER

01) ~~Modifications or regulation to any part of the turbocharger or supercharger system (i.e., housing, turbines, rotor, sensors, ducting) are not allowed.~~

#### 502.11 DRIVELINE 2 STROKES

01) Impeller housing, stator vane assembly, pump mounting plate and/or pump shoe may be modified or aftermarket. No titanium driveshaft, impeller housing or stator vane assemblies. Impeller may be modified or aftermarket. Pump nozzle and directional nozzle may be modified or aftermarket. Overall length of the complete pump and nozzle assembly may be no more than 50.00mm longer than original equipment. Aftermarket nozzle-trim systems may be used.

02) Additional cooling fittings may be installed. Visibility spout must be removed or plugged. Silicone adhesive sealant may be used in addition to original equipment seal to seal pump inlet. Couplers, bearing housing and driveshaft may be modified or aftermarket provided they maintain a 1:1 drive ratio between the engine and the pump.

#### 502.12 DRIVE LINE

01) ~~Replacement wear rings that are within OEM internal diameter specifications may be used. Used Silicone adhesive sealant may be used in addition to original equipment seal to seal pump inlet. Visibility spout must be removed or plugged.~~

02) ~~No modification interns that it is, including grinding, surfacing, polishing, machining, shot-blasting, etc, is not authorised on one of the components of the transmission (ex ; stator, cone of exit, etc).~~

03) ~~Runabout, the reverse gear can be dismantled.~~

#### 502.12 DRIVELINE 2 STROKES RUNABOUT ONLY

01) Impeller housing, stator vane assembly, pump mounting plate and/or pump shoe may be modified or aftermarket. No titanium driveshaft, impeller housing or stator vane assemblies. Impeller may be modified or aftermarket. Pump nozzle and directional nozzle may be modified or aftermarket. Overall length of the complete pump and nozzle assembly may be no more than 50.00mm longer than original equipment. ftermarket nozzle-trim systems may be used.

02) Additional cooling fittings may be installed. Visibility spout must be removed or plugged. Silicone adhesive sealant may be used in addition to original equipment seal to seal pump inlet. Couplers, bearing housing and driveshaft may be modified or aftermarket provided they maintain a 1:1 drive ratio between the engine and the pump.

03) Runabout, the reverse gear can be dismantled

#### 501.13 DRIVELINE 4 STROKES

01) Replacement wear rings that are within OEM internal diameter specifications may be used. Silicone adhesive sealant may be used in addition to original equipment seal to seal pump inlet. Visibility spout must be removed or plugged.

02) No modification interns that it is, including grinding, surfacing, polishing, machining, shot-blasting, etc, is not authorised on one of the components of the transmission (ex; stator, cone of exit, etc).

03) Runabout, the reverse gear can be dismantled