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The goal of the Sport Open-Spec class is to revive interest in the Sport Mod Class while offering a lower cost solution to build competitive skis.

Eligible Models: Yamaha Waveblaster, SeaDoo HX, Polaris Hurricane, Old and New Style Kawasaki X2, HydroX.

In order to be in compliance to race this class, riders will have two options to choose from - 810cc and below and 811cc and above. If a rider chooses 810ccs and below, the current IJSBA MOD class rules will be enforced. This is to keep the current modified sport craft eligible without having to invest money to upgrade. (See the IJSBA Rule Book for Modified Rules)

811cc and above will run a Spec style system of rules. Hybrids WILL be allowed – example: riders are not required to retain the OEM motor OR the same manufacturer motor. Eligible motors will be the SeaDoo 951, Kawasaki 900 and 1100, Yamaha 1100/1200 and Polaris 1050/1200 and Weber 4strokes. (Weber motors are limited to original bore and stroke) No powervalve 1200 or Ultra 150 motors are allowed. Each model motor and craft will have a specific set of spec rules to insure fair competition. Open Spec 811cc and above craft must utilize OEM hulls. Interior of OEM hulls may be modified to accept different motors. All open spec sport skis are limited to carbureted motors. I.e. No Fuel Injection.

The decision of the Technical Director and/or Race Director regarding modifications will be final. Any question regarding the legality of modifications should be directed to the IJSBA or IJSBA affiliate prior to use in competition.

**\*\*All 811cc and above Sport Open-Spec Class models are required to run 95 and BELOW octane unleaded fuel. This rule is mandatory to insure the cost of racing this class stays low.**

***All watercraft must remain strictly stock, except where rules allow or require substitutions or modifications. Changes or modifications not listed here are not permitted.***

***NOTE: 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.***

Original equipment parts may be updated or backdated with original equipment parts of the same model. The part must be a bolt-on requiring no modifications to that part or any other parts except where rules allow substitutions or modifications. (Refer to Model Homologation listing on page 10-11.)

Sound level shall not exceed 86 dB(a) at 22.86m (75 ft.). See Section 19.5 (pg. 73). Engine fuel must consist of gasoline meeting the criteria defined in Section 19.4.3 (pg. 73).

**HULL:** 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. Hull and deck repairs may be made. However, these repairs must not alter the standard configuration by more than 2.00mm (0.08 in.). Hull, bulkhead and deck may be internally reinforced. Fasteners may be installed through the hull, bulkhead and deck for the purposes of securing components to interior surfaces, provided a hazard is not created. Bulkhead may be cut for exhaust or electrical routing. Fire extinguisher, fuel petcock and choke holes may be filled or capped.

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All watercraft may be equipped with a maximum of two sponsons. Original equipment sponsons may be modified, aftermarket, repositioned or removed. Overall length of each sponson shall not exceed 91.45cm (36.00 in.). Sponsons shall not protrude from the side of the hull by more than 100.00mm (3.94 in.) when measured in a level horizontal plane. The vertical channel created by the underside of the sponson shall not exceed 63.5mm (2.50 in.). No part of the sponsons shall extend downward below the point at which the side of the hull intersects the bottom surface of the hull by more than 63.5mm (2.50 in.). Aftermarket or modified sponsons must exceed 6mm (0.24 in.) in thickness. All leading edges must be radiused so as not to create a hazard. Sponsons may not be attached to the planing surfaces of the hull. Fins, rudders, skegs and other appendages that may create a hazard will not be allowed. (See diagrams in Appendix.)

Intake grate may be modified or aftermarket. Intake grate is required and must be the full-length type with at least one bar running parallel to the drive shaft. Grates may not extend more than 12.00mm (0.47 in.) below the flat plane of the pump intake area of the hull. All leading edges must be radiused so as not to create a hazard.

Pump cover plate may be modified or aftermarket. An extension may be added to the rear of the plate but shall not exceed the width of the original equipment plate. Modified and aftermarket plates must not extend more than 100.0mm (3.94 in.) beyond the end of the original equipment plate. The extension must be connected to the radiused portion of the pump plate so as not to create a hazard. (See diagram in Appendix.) Fins, rudders, skegs and other appendages that may create a hazard will not be allowed. Pump shoe may be aftermarket but may not extend more than 12.00mm (0.47 in.) below the flat plane of the pump intake area of the hull.

Aftermarket fixed-position trim tabs may be used. Original equipment trim plates that are detachable from the hull may be removed or replaced when installing aftermarket trim tabs. Trim tabs cannot exceed the width of the planing surface or extend rearward more than 100.00mm (3.94 in.) beyond the end of the original planing surface. Manual or automatic trim tabs attached to the hull or ride plate are not allowed. All hull extensions mounted on the hull's transom will be considered as a trim tab. All edges must be radiused so as not to create a hazard. Fins, skegs, rudders and other appendages that may create a hazard are not allowed.

**Kawasaki Gen 1 X2 (pre 05) may add front hull fills providing these fills do not exceed 91.45cm (36.00 in.) in length, as measured from the front most surface of the hull (bow) towards the rear of the hull (stern).**

Replacement bumpers may be used provided a hazard is not created. 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 beyond the perimeter of the original equipment bumper or side moldings as measured by a plumb line.

Battery box may be relocated.

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. Steering shaft, steering shaft holder and handlebar holder may be modified or aftermarket. The handlebar must be padded at the mounting bracket or, if it has a crossbar, the crossbar must be padded. Aftermarket steering cables will be allowed.

Hoods may be aftermarket or modified.

Seat height may be changed and/or covered but must utilize OEM stock base. Base may have holes to provide additional air flow. Padding and/or mat kits may be added and custom painting is allowed. The surface finish of any metal component outside the area above the hull bond flange may be polished, shot peened or painted.

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Original bilge pump may be modified or disconnected. Aftermarket bilge draining systems that do not create a hazard are allowed. Flootation foam may be removed, modified or aftermarket.

Engine compartment ventilation tubes may be modified, aftermarket, relocated on the original equipment ducting, or removed. Inlet and outlet openings may not be enlarged (i.e., when the tube is removed, the opening may not be larger than stock). Vents may be shielded or plugged. No other modifications to the hood will be allowed. Polaris Hurricane hood/mirror cowling may be replaced providing it does not create additional airflow to engine compartment.

## **MODEL & ENGINE SPECS:**

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**SEADOO HX:** HX riders may do the following modifications to each individual motor:

**951 Powerplant:** Stroke must remain OEM, bore may be +1mm of original. Heads may be modified or aftermarket providing they do not go above 160lbs of compression OR go below .061mm head squish clearance. Aftermarket flame arrestors may be used. All other intake parts – manifold, reeds and carbs must remain stock from factory. OEM carbs may be rejetted for performance. Exhaust (single) and waterbox may be aftermarket or modified. Water routing may be changed. Water spray bars / water injection systems may be added. Flow control valves may be used. Ignition must remain factory stock. Stator and flywheel must remain factory stock, timing may not be advanced at stator plate or with offset woodruff keys. Primer kits may be added.

**Kawasaki/Yamaha/Polaris 900/1050/1100 or 1200 Powerplants:** (No Powervalve or Ultra 150 Motors allowed) Yamaha 1200 motor may be bored +.5mm, 1100 may be bore +2mm. Yamaha 1100 may upgrade to 1200 cylinders (limited to +.5mm overbore) Kawasaki 1100 cylinder may be bored +1mm, 900 may be bored +2mm. Polaris 900 may be bored +3mm, 1050 may be bore +2mm, 1100 may be bored +1mm. All Polaris motors may upgrade cylinders to 1100 style. Crankshaft must be stock stroke. Heads may be modified or aftermarket providing they do not go above 160lbs of compression OR go below .042mm head squish clearance. Aftermarket flame arrestors may be used. All other intake parts – manifold, reeds and carbs must remain stock from factory. OEM carbs may be rejetted for performance. Kawasaki triples may update or backdate to use either the **CDK2 or CDKCV carb racks**. OEM Exhaust may be modified. Aftermarket Exhaust are not allowed. Water spray bars / water injection systems may be added to stock exhaust. Waterbox may be aftermarket or modified. Water routing may be changed. Flow control valves may be used. MSD Enhancers may be used providing they are charging systems. (No total loss ignitions) Stator and flywheel must remain factory stock, but timing may be advanced at stator plate. Primer kits may be added. Additional fuel pick up may be added.

**Weber 4 Stroke:** Follow IJSBA Limited rules but must comply with 95 octane and below fuel requirements.

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**KAWASAKI GEN 1 X2:** There are no limitations for Gen 1 X2. Anything goes.

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**KAWASAKI GEN 2 X2:** X2 riders may do the following modifications to each individual motor:

**951 Powerplant:** Stroke must remain OEM, bore may be +1mm of original. Heads may be modified or aftermarket providing they do not go above 160lbs of compression OR go below

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.061mm head squish clearance. Aftermarket flame arrestors may be used. Manifold, reeds and carbs modified or aftermarket. Additional Pulse lines may be added. Exhaust (single) and waterbox may be aftermarket or modified. Water routing may be changed. Water spray bars / water injection systems may be added. Flow control valves may be used. MSD Enhancers may be used provided that are charging systems. (No total loss ignitions) Stator and flywheel must remain factory stock, timing may be advanced at stator plate. Primer kits may be added.

**Kawasaki/Yamaha/Polaris 900/1050/1100 or 1200 Powerplants:** (No Powervalve or Ultra 150 Motors allowed) Yamaha 1200 motor may be bored +.5mm, 1100 may be bore +2mm. Yamaha 1100 may upgrade to 1200 cylinders (limited to +.5mm overbore) Kawasaki 1100 cylinder may be bored +1mm, 900 may be bored +2mm. Polaris 900 may be bored +3mm, 1050 may be bore +2mm, 1100 may be bored +1mm. All Polaris motors may upgrade cylinders to 1100 style. Crankshaft must be stock stroke. Heads may be modified or aftermarket providing they do not go above 160lbs of compression OR go below .042mm head squish clearance. Aftermarket flame arrestors may be used. Manifold, reeds and carbs may be modified or aftermarket. OEM Exhaust may be modified. Aftermarket Exhaust are not allowed. Water spray bars / water injection systems may be added to stock exhaust. Waterbox may be aftermarket or modified. Water routing may be changed. Flow control valves may be used. MSD Enhancers may be used providing they are charging systems. (No total loss ignitions) Stator and flywheel must remain factory stock, but timing may be advanced at stator plate. Primer kits may be added. Additional fuel pick up may be added.

**Weber 4 Stroke:** Follow IJSBA Limited class rules but must comply with 95 octane and below fuel requirements.

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**YAMAHA WAVEBLASTER:** Waveblaster riders may do the following modifications to each individual motor:

**951 Powerplant:** Stroke must remain OEM, bore may be +1mm of original. Heads may be modified or aftermarket providing they do not go above 160lbs of compression OR go below .061mm head squish clearance. Aftermarket flame arrestors may be used. Manifold, reeds and carbs modified or aftermarket. Additional Pulse lines may be added. Exhaust (single) and waterbox may be aftermarket or modified. Water routing may be changed. Water spray bars / water injection systems may be added. Flow control valves may be used. MSD Enhancers may be used provided that are charging systems. (No total loss ignitions) Stator and flywheel must remain factory stock, timing may be advanced at stator plate. Primer kits may be added.

**Kawasaki/Yamaha/Polaris 900/1050/1100 or 1200 Powerplants:** (No Powervalve or Ultra 150 Motors allowed). Yamaha 1200 motor may be bored +.5mm, 1100 may be bore +2mm. Yamaha 1100 may upgrade to 1200 cylinders (limited to +.5mm overbore) Kawasaki 1100 cylinder may be bored +1mm, 900 may be bored +2mm. Polaris 900 may be bored +3mm, 1050 may be bore +2mm, 1100 may be bored +1mm. All Polaris motors may upgrade cylinders to 1100 style. Crankshaft must be stock stroke. Heads may be modified or aftermarket providing they do not go above 160lbs of compression OR go below .042mm head squish clearance. Aftermarket flame arrestors may be used. Manifold, reeds and carbs may be modified or aftermarket. OEM Exhaust may be modified. Aftermarket Exhaust are not allowed. Water spray bars / water injection systems may be added to stock exhaust. Waterbox may be aftermarket or modified. Water routing may be changed. Flow control valves may be used. MSD Enhancers may be used providing they are charging systems. (No total loss ignitions) Stator and flywheel must remain factory stock, but timing may be advanced at stator plate. Primer kits may be added. Additional fuel pick up may be added.

**Weber 4 Stroke:** Follow IJSBA Limited class rules but must comply with 95 octane and below fuel requirements.

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**POLARIS HURRICANE:** Hurricane riders may do the following modifications to each individual motor:

**951 Powerplant:** Stroke must remain OEM, bore may be +1mm of original. Heads may be modified or aftermarket providing they do not go above 160lbs of compression OR go below .061mm head squish clearance. Aftermarket flame arrestors may be used. Manifold, reeds and carbs modified or aftermarket. Additional Pulse lines may be added. Exhaust (single) and waterbox may be aftermarket or modified. Water routing may be changed. Water spray bars / water injection systems may be added. Flow control valves may be used. MSD Enhancers may be used provided that are charging systems. (No total loss ignitions) Stator and flywheel must remain factory stock, timing may be advanced at stator plate. Primer kits may be added.

**Kawasaki/Yamaha/Polaris 900/1050/1100 or 1200 Powerplants:** (No Powervalve or Ultra 150 Motors allowed) Yamaha 1200 motor may be bored +.5mm, 1100 may be bore +2mm. Yamaha 1100 may upgrade to 1200 cylinders (limited to +.5mm overbore) Kawasaki 1100 cylinder may be bored +1mm, 900 may be bored +2mm. Polaris 900 may be bored +3mm, 1050 may be bore +2mm, 1100 may be bored +1mm. All Polaris motors may upgrade cylinders to 1100 style. Crankshaft must be stock stroke. Heads may be modified or aftermarket providing they do not go above 160lbs of compression OR go below .042mm head squish clearance. Aftermarket flame arrestors may be used. Manifold, reeds and carbs may be modified or aftermarket. OEM Exhaust may be modified. Aftermarket Exhaust are not allowed. Water spray bars / water injection systems may be added to stock exhaust. Waterbox may be aftermarket or modified. Water routing may be changed. Flow control valves may be used. MSD Enhancers may be used providing they are charging systems. (No total loss ignitions) Stator and flywheel must remain factory stock, but timing may be advanced at stator plate. Primer kits may be added. Additional fuel pick up may be added.

**Weber 4 Stroke:** Follow IJSBA Limited class rules but must comply with 95 octane and below fuel requirements.

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**All motors are allowed the following:**

Replacement piston assemblies may be used provided the original port timing, dome profile, skirt length and shape, and type of material are not changed. Replacement piston assemblies must weigh within  $\pm 5.00\%$  of original equipment. 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. Replacement starter motor and bendix may be used. Replacement engine mounts may be used. Motors may backdate to previous year exhaust systems. Kawasaki 1100 may use DI OEM exhaust system. Yamaha triples may use 1100 or 1200 OEM exhaust. Polaris triples may use 900, 1050 or 1200 OEM exhausts.

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-rebuildable 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 crank- shaft assembly must be within  $\pm 5.00\%$  of original equipment. Crankpins may be welded and/or keyed to the counterweights.

Repairs to cracked or punctured crankcases may be made provided only one damaged area

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affecting one cylinder bank has been repaired. Crankcase drain and cable may be removed and plugged. Additional pulse line fitting may be added to crankcases. No other modifications or repairs are allowed. External modifications to the engine finish (e.g., plating, polishing and/or painting) are allowed for cosmetic purposes only.

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

Domes must be readily available, mass produced for the public products, NO custom "one off" domes will be allowed. If machining the Yamaha, Kawasaki or Polaris head, stock dome profile and angles must be retained. Drop down style domes are not allowed on any model.

Exhaust exit may be relocated on the hull provided it does not create a hazard. No tuned portion of the exhaust shall protrude outside the hull. Through-hull exhaust outlet flap may be removed. Electronic water injection is NOT allowed on any model.

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. Base gasket must remain OEM thickness for each individual model or as outlined in its respective service manual.
- 2) Fasteners (e.g., bolts, nuts and washers) may not be substituted with titanium pieces unless originally equipped. Fasteners may integrate locking mechanisms.

**AIR/FUEL DELIVERY:** The number of venturis cannot exceed the number of cylinders. No slide-type carburetors are allowed.

Aftermarket crankcase-pressure-operated fuel pumps may be used. Additional carburetor pulse line fittings may be installed on the crankcase.

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.

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 filler 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. 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.

Flame arrester(s) which satisfy United States Coast Guard, SAE-J1928 Marine or UL-1111 Marine backfire flame arrester test standards must be installed. Aftermarket flame arresters satisfying one of these test standards will be allowed. Intake silencer may be removed.

**IGNITION AND ELECTRONICS:** RPM limiter function may be modified. ALL original equipment charging systems must be used. Kawasaki ignitions may use ignition jumper for heat sensor. Flywheels must be OEM stock and unmodified as provided from the factory. Coils, plug wires and plug caps may be aftermarket. No other ignition system modifications will be allowed. Stock unmodified woodruff keys must be used on all models. Replacement batteries are allowed but must be securely fastened. Engine temperature sensor may be disconnected and/or removed.

**DRIVELINE:** Stator vane assembly must remain OEM stock from factory unless otherwise

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allowed. Polaris Hurricane my update to the factory superseded Polaris 6 vein pump. Pump mounting plate and/or pump shoe may be modified or aftermarket. Titanium drive shafts are not allowed. 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 (1.97 in.) longer than original equipment, whether using spacers or extended nozzles. Aftermarket nozzle-trim systems may be used. Additional cooling fittings may be added. Visibility spout must be removed or plugged. Silicone adhesive sealant or alike 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. Kawasaki X2 may use aftermarket pump cones. Sea Doo HX may use older style carrier assembly with grease fitting. Stator veins may be welded for repair providing they do not change in thickness or length from OEM.

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