

## 23 VINTAGE X2 CLASS

### 23.1 VINTAGE X2 COMPETITION

Intended to promote interest in the original X2 competition platform. Watercraft competing in this class must conform to the specifications which follow. This class is designed for the Kawasaki X2 which was sold from 1986 through 1995.

**DISPLACEMENT:** The maximum displacement for Vintage Ski is 850 CC. Engine cases from the 2006 Kawasaki X2 may be used however, competitors are reminded that the hull for this category is exclusively that of the 1986-1995 OEM X2.

- 23.1.1 All watercraft must remain strictly stock except where rules allow or require substitutions or modifications. Changes or modifications not listed here are not permitted. Hull Identification Numbers must be displayed as furnished by the manufacturer.

**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.

- 23.1.2 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 online.)
- 23.1.3 Sound level shall not exceed 86 dB(a) at 22.86m.
- 23.1.4 Engine fuel must consist of gasoline meeting the criteria defined in Section 34.4.

### 23.2 HULL

- 23.2.1 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.
- 23.2.2 The hull and top deck must remain as originally furnished by the manufacturer.

Decks may be internally reinforced. Fasteners may be installed through the hull and deck for the purpose of securing components to interior surfaces, provided a hazard is not created.

If the watercraft is equipped with footwells, the footwells must be blocked off, during competition, allowing no indentation into the footwell sides.

- 23.2.3 Aftermarket hoods may be used.

23.2.4 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 sponson 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.) Sponsons may be attached to the inside of the bond flange, but no part of the sponson may extend more than 38.00mm (1.50 in.) 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.

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.

23.2.5 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.

23.2.6 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.

23.2.7 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.

23.2.8 Replacement bumpers may be used provided a hazard is not created.

23.2.9 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.

- 23.2.10 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. 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. Aftermarket steering cables will be allowed.
- 23.2.11 Padding and/or mat kits may be added and custom painting is allowed. Seat covers and seat assemblies may be modified or aftermarket so long as a hazard is not created. Seat heights may not be higher than 10" higher. The surface finish of any metal component outside the area above the hull bond flange may be polished, shot peened or painted.
- 23.2.12 Original bilge pump may be modified or disconnected. Aftermarket bilge draining systems that do not create a hazard are allowed.
- 23.2.13 Engine compartment foam may be removed, modified or aftermarket. Only floatation foam within the engine compartment may be removed. Only foam that can be removed without modification to any other part or parts, except where rules allow the parts to be modified, is allowed. Parts may not be relocated based on the removal of the foam. The hull's inner liner or deck may not be cut or modified to remove foam. Removal of foam between layers of the hull and/or deck is not allowed.
- 23.2.14 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.
- 23.2.15 Handles, drop-in type storage buckets, bolt-on type mirrors and gauges may be modified, aftermarket or removed provided a hazard is not created. Drop-in type buckets are defined as being able to be removed without the use of any tool. Other than for the use of fasteners and the placement of allowable relocated parts (i.e., ECU), the bulkhead may not be modified.
- 23.2.16 Ballast weight may be added within the normally exposed areas of the hull to alter the handling of the watercraft provided a hazard is not created. Only weight consisting of constant mass (i.e., water or other fluid is not allowed) that does not require the modification or relocation of any parts will be allowed unless such modification or relocation is specified by other rules.

### **23.3 ENGINE**

- 23.3.1 Engines may be bored. Aftermarket piston assemblies are allowed. Engine displacement must not exceed class designation. The number, type, and placement of rings on piston may be changed. At the IJSBA World Finals, the maximum displacement allowed is 850cc.

- 23.3.2 Crankcases must remain OEM manufacturer except where changes are allowed. Crankcases from any homologated two cylinder two stroke Kawasaki are allowed. Intake and exhaust ports may be modified. Port diameters and shapes may be changed. Internal modifications to the fuel, oil and/or water exposed surfaces are allowed. Bearing and seal surfaces may not be modified. Filler material may be added to hollow pockets in the base gasket areas. Ignition/stator mounting area modifications are limited to spot facing, drilling and tapping threads for the purpose of mounting an aftermarket or modified ignition system.

Additional carburetor pulse line fittings may be installed. Crankcase drain system may be removed or plugged. Additional mounting holes, not to exceed 10.00mm (0.40 in.) diameter, are allowed provided they do not penetrate the internal surface of the cases.

Base gasket and intake surfaces may be machined. Repairs to cracked or punctured crankcases may be made. External modifications to the crankcase finish (e.g., plating, polishing and/or painting) are allowed for cosmetic purposes only. No other external modifications or external repairs will be allowed.

- 23.3.3 Cylinder and cylinder head may be modified or aftermarket.
- 23.3.4 Crankshaft assembly may be modified or aftermarket. Stroke and rod length may be changed.
- 23.3.5 Engine bed and motor mounts may be modified or aftermarket.
- 23.3.6 Engine gaskets may be modified or aftermarket.
- 23.3.7 Exhaust system (i.e., manifold, head pipe, expansion chamber, waterbox, muffler(s), etc.) may be modified or aftermarket. Through-hull exhaust may be modified or aftermarket, providing a hazard is not created. Exit location of the exhaust gases may be relocated to the transom below the bond flange. No tuned portion of the exhaust system shall protrude outside the hull.
- 23.3.8 Cooling system may be modified or aftermarket. Aftermarket cooling lines and water bypass systems may be used. 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.
- 23.3.9 Replacement starter motor and bendix may be used.
- 23.3.10 Oil-injection system may be disconnected or removed.
- 23.3.11 Replacement of general maintenance parts (e.g., spark plugs, spark plug wires, spark plug caps, wiring, water hoses, fuel lines, clamps and fasteners) shall not be restricted to original equipment. Stripped threads can be repaired.

**23.4 AIR/FUEL DELIVERY — TWO STROKE**

- 23.4.1 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. Fuel fillers may be relocated internally.
- 23.4.2 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.
- 23.4.3 Aftermarket fuel-injection systems 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.
- 23.4.4 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. The fuel tank shall not be restricted to the original equipment, as supplied by the manufacturer, so long as the replacement is an unmodified tank from another homologated PWC and the tank fits securely in the watercraft without causing a hazard. Original equipment fuel filler and relief valve must be used and cannot be modified. The fuel pickup, fuel filter and fuel petcock may be removed and/or aftermarket 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. Aftermarket fuel tanks not coming from another homologated PWC may be allowed by the race director so long as it is demonstrated that the aftermarket fuel tanks meet or exceed the strengths and safety standards of an OEM fuel tank.
- 23.4.5 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 are allowed. Intake silencer may be removed.
- 23.4.6 Reed valve assemblies may be modified or aftermarket.

**23.5 IGNITION AND ELECTRONICS – TWO STROKE**

- 23.5.1 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.
- 23.5.2 The original electronic control unit may be modified or aftermarket so long as it does not offer any additional inputs or outputs than the original unit, and it must connect with the original connections. No additional sensors may be added (e.g., exhaust gas temperature, detonation sensors, etc.). Engine temperature sensors may be disabled.
- 23.5.3 Flywheel cover may be modified to accept a crankshaft-end bearing support.
- 23.5.4 Replacement batteries are allowed but must fit into the original equipment battery box and be securely fastened.
- 23.5.5 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). Modification will be subject to Race/Tech Directors approval.

**23.6 DRIVELINE – TWO STROKE**

- 23.6.1 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 (1.97 in.) longer than original equipment.
- 23.6.2 Aftermarket nozzle-trim systems may be used.
- 23.6.3 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.
- 23.6.4 Couplers, bearing housing and driveshaft may be modified or aftermarket provided they maintain a 1:1 drive ratio between the engine and the pump.