

## RSD SUPER HOOLIGAN TECHNICAL REGULATIONS

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## 2.7 HOOLIGAN TECHNICAL SPECIFICATIONS

The following rules are intended to give freedom to modify or replace some parts in the interest of safety, research and development and improved competition between various motorcycle concepts.

### **EVERYTHING THAT IS NOT AUTHORIZED AND PRESCRIBED IN THIS RULE IS STRICTLY FORBIDDEN**

#### 2.7.1 Motorcycle Specifications Allowed

##### a. Air Cooled Motorcycles:

- i. Originally equipped air-cooled Twin Engine, minimum displacement of 750cc normally aspirated.
- ii. Originally equipped air-cooled Twin Engine, minimum displacement of 750cc. forced induction.
- iii. **Water assisted for purpose of cooling in any form, will not be considered air cooled motorcycle.**

##### b. Water Cooled Motorcycles:

- i. Originally equipped water-cooled Twin Engine, minimum displacement of 750cc. normally aspirated.

##### c. Electric Motorcycles:

- i. Electric street legal production motorcycle with single motor. No MX or dual-sport type electric bike allowed. **All electric motorcycles must be pre-approved for competition before the event or season.**

d. Only homologated motorcycles with top-mounted handlebars "high bar bike". No clip-ons permitted.

e. Maximum claimed OEM production horsepower of 125HP or less

#### 2.7.2 Balancing various motorcycle concepts

In order to equalize the performance of motorcycles used in the RSD Super Hooligan Championship, a system of performance enhancements or restrictions can be developed (such as minimum weight, air restrictor or REV limit may be applied according to their respective racing performances). The decision to apply a balancing system to a motorcycle will be taken by the MotoAmerica Permanent Bureau based on decisions made by the Superbike Commission at any time deemed necessary to ensure fair competition.

#### 2.7.3 Minimum weight

**All machines 180.08 kg (397 lbs.)**

**American air-cooled V-Twin – No minimum weight.**

At any time of the event, the weight of the whole motorcycle (including the tank and its contents) must not be lower than the minimum weight.

There is no tolerance on the minimum weight of the motorcycle.

During the final technical inspection at the end of the race, the selected motorcycles will be weighed in the condition they finished the race, and the established weight limit must be met in this condition. Nothing may be added to the motorcycle. This includes all fluids.

During the practice and qualifying sessions, riders may be asked to submit their motorcycle to a weight control. In all cases, the rider must comply with this request.

The use of ballast is allowed to stay over the minimum weight limit and may be required due to the handicap system. The use of ballast and weight handicap must be declared to the Technical Director at the preliminary checks.

## 2.7.4 Numbers and number plates

RSD Super Hooligan front and side number plates must be used.

## 2.7.5 Fuel

a. All competitors must use VP Supplied Fuel. Fuel Specification T4.

## 2.7.6 Tires

a. All machines must be fitted with Dunlop tires.

## 2.7.8 Engine

### 2.7.8.1 Fuel system

#### Water Cooled bikes

- a. The original equipped fuel system must be used. Fuel injection systems refer to throttle bodies, carburetors, fuel injectors, variable length intake tract devices and fuel pumps.
- b. Air funnels, airbox may be altered or replaced.
- c. Air must go to the combustion chamber exclusively through the throttle bodies.

#### Air Cooled bikes

- a. May be modified or replaced

### 2.7.8.2 Cylinder Head

**Water cooled bikes: The cylinder head must be the originally fitted and a homologated part. The following modifications allowed**

- a) Porting and polishing of the cylinder head normally associated with individual tuning such as gas flowing of the cylinder head, including the combustion chamber, is allowed. Welding is allowed. No machining or modification is allowed in the cam box / valve mechanism area.
- b) The throttle body insulators may be modified.
- c) Modifications of the inlet and exhaust ports are free
- d) Surface grinding of the cylinder head surface on the head gasket side
- e) Original homologated valve guides may be replaced materials are free
- f) Polishing of the combustion chamber is allowed.
- g) Original valve seats may be modified or replaced
- h) Compression ratio is free, but the combustion chamber may be modified only by taking material off.
- i) Welding of material for cooling purpose is allowed. Must be approved by Technical Director
- j) It is forbidden to add any material to the cylinder head unless as described above.
- k) Rocker arms (if any) may be modified or replaced
- l) Valves may be modified or replaced.
- m) Valve springs may be modified or replaced.
- n) Valve spring retainers, collets and/or spring seats may be altered or replaced.

- o) The shim buckets / tappets must remain as homologated

### **Air Cooled bikes**

- a. May be modified or replaced

#### **2.7.8.3 Camshaft**

- a. Camshafts are free.

#### **2.7.8.4 Cam sprockets or cam gears**

- a. Camshaft sprockets, pulleys or gears may be altered or replaced to allow degree adjustments of the camshafts.
- b. The cam chain or cam belt tensioning device(s) can be modified or changed.

#### **2.7.8.5 Cylinders**

- a. May be modified or replaced.
- b. Water-cooled engines must stay as homologated.

#### **2.7.8.6 Pistons, rings, pins and clips.**

- a. May be modified or replaced
- b. Water-cooled engines must stay as homologated

#### **2.7.8.7 Connecting rods**

- a. Connecting rods are free.
- b. Connecting rod bolts are free
- c. Water-cooled engines must stay as homologated

#### **2.7.8.8 Crankshaft**

Only the following modifications can be made to the crankshaft:

- a. Crankshaft/flywheel are free.
- b. Water-cooled engines must stay as homologated

#### **2.7.8.9 Crankcase / Gearbox housing**

- a. Crankcases are free
- b. Water cooled bikes must stay as homologated with no modifications allowed

#### **2.7.8.10 Lateral covers and protection**

- a. Lateral (side) covers may be altered, modified, or replaced (excluding pump covers). If altered or modified, the cover must have at least the same resistance to impact as the original one. If replaced, the cover must be made in material of same or higher specific weight and the total weight of the cover must not be less than the original one.
- b. All lateral covers/engine cases containing oil, and which could be in contact with the ground during a crash, must be protected by a second cover made from metal such as aluminum alloy, stainless steel, steel, or titanium.
- c. All drain and fill plugs must be lock wired (safety wired). The use of clips is not permitted. External oil filter(s), screws and bolts that enter an oil cavity must be safety wired (i.e. on crankcases) or the oil filter may optionally have a secondary retention mechanism.

### **2.7.8.11 Transmission / Gearbox**

- a. May be modified or replaced
- b. Water cooled bike must stay as homologated with no modifications allowed

### **2.7.8.12 Clutch**

- a. Aftermarket or modified clutches are permitted (including plates/springs etc.).

### **2.7.8.13 Oil pumps, cam plates and oil lines**

- a. The oil pump and cam plate may be modified or replaced.
- b. Oil lines maybe modified or replaced. Oil lines containing positive pressure, if replaced, must be of braided reinforced construction with wedged or threaded connectors.

### **2.7.8.14 Cooling System**

- a. The only liquid engine coolants permitted is water.
- b. Additional radiators or oil coolers may be added.
- c. The original oil/water heat exchanger may be modified, replaced or removed.

### **2.7.8.15 Airbox**

- a. The airbox may be modified or replaced.
- b. Airboxes should be designed to retain oil from the crankcases in the event of engine failure or tip-over.
- c. Where breather or overflow pipes are fitted, they must discharge via existing outlets. Catch cans may be used but the original closed system must be retained; no direct atmospheric emission is permitted.

**See Bulletin 12-2022 for Pan America Eligibility.**

### **2.7.8.16 Fuel supply**

- a. Fuel lines from the fuel tank up to the injectors (fuel hoses, delivery pipe assembly, joints, clamps, fuel canister) may be replaced and must be in such a way that they are protected from crash damage.
- b. Quick connectors or dry break connectors may be used.
- c. Fuel vent lines may be replaced.
- d. Fuel filters may be added.

### **2.7.8.17 Exhaust system**

- a. Exhaust pipes, catalytic converters and silencers may be altered or replaced from those fitted to the homologated motorcycle. Catalytic converters may be removed.
- b. For safety reasons, the exposed edge(s) of the exhaust pipe(s) outlet(s) must be rounded to avoid any sharp edges.
- c. Wrapping of exhaust systems is allowed.
- d. The noise limit for Super Hooligans will be 115 dB/A measured at 3000 RPM.

### **2.7.9 Electrics and Electronics**

- a. Transponders are required
- b. Competitors are required to provide their own transponder. See link to find available units [Circuit Racing - MYLAPS Timing System for car and motorbike racing](#)

## 2.7.9.2 Engine control system

### Water Cooled Engines

- a. The engine control system (ECU) must be:
  - i. Original system as homologated, with or without a change of software
  - ii. An approved aftermarket system with series specified software
- b. Central unit (ECU) may be relocated.
- c. Optional equipment sold by the motorcycle manufacturer for the homologated model is considered not homologated.
- d. At any time during an event the Technical Director has the right to make a team substitute their ECU or external module with the MotoAmerica sample.
- e. The original sensors may not be replaced or modified. No additional sensors may be added to the machine for data collection.
- f. No extra sensors may be added for control strategies except the lambda sensor and shift rod sensor.
- g. The MotoAmerica approved external fuel injection modules may not alter any sensor signal relating to the ride by wire system or control/actuate any part of the machine excepting the fuel injectors and ignition coils. No external module may add traction control strategies. The modules may only connect to the fuel injectors, ignition coils, lambda sensor, power supply and “piggyback the Throttle Position, Gear and RPM signals”. Lambda closed loop/auto tuning is permitted.
- h. Other additional electronic hardware equipment not on the original homologated motorcycle cannot be added with the exceptions noted below.
  - i. Resistors/load may be added to replace the parts of the electrical system that has been removed (including lights and lambda sensors), to prevent ECU errors.
- i. Telemetry is not allowed.
- j. No remote or wireless connection to the bike for any data exchange or setting is allowed whilst the engine is running, or the bike is moving.
- k. **Wire Harness is free**
- l. A lap timer may be fitted, including GPS lap timers. Data collection from the machines sensors or ECU is allowed. Data collection by the lap timer by way of GPS and internal IMU is permitted.
- m. Plug cap must remain as homologated.
- n. Spark plugs may be replaced.
- o. **Battery is free.**

### Air Cooled Engines

- a. Engine control system (ecu) is free

## 2.7.9.3 Generator, alternator, electric starter

- a. The stator/coil is free.
- b. Water cooled bike The stator/coil must be the originally fitted parts with no modification allowed.
- c. Motorcycles should self-start on the starting grid in neutral. Push-starting on the

starting grid is not allowed, however start line Officials may push start the motorcycle if necessary (in gear).

### **2.7.10 Main frame and spare motorcycle**

- a. During the entire duration of the event each rider may only use one (1) complete motorcycle, as presented for technical control, with the frame clearly identified. In case the frame needs to be replaced, the rider or the team must request the use of a spare frame to the Technical Director
- b. One (1) spare complete motorcycle is allowed per rider.

#### **Explanation of Procedures**

Only one (1) complete motorcycle may be presented for the preliminary technical checks, and it will be the only motorcycle allowed on the track.

### **2.7.10.1 Frame body and rear subframe**

- a. The main frame must be the originally manufactured and fitted part with no modifications allowed except listed below.
- b. On motorcycles fitted with dual shock style frames. Removal of the rear fender struts by grinding or cutting allowed. No welding allowed
- c. Holes may be drilled on the frame only to fix approved components (i.e. fairing brackets, steering damper mount).
- d. The original position (of engine, steering stem or pivots) is considered as the position in which the production motorcycle is supplied and must be retained.
- e. All motorcycles must display a vehicle identification number punched on the frame body (a proper 'legal VIN')
- f. Crash protectors may be fitted to the frame using existing points or pressed into the ends of the wheel axles.
- g. Subframes are free

#### **American air-cooled V-Twin**

- a. Modifications to the Main frame is Free

### **2.7.10.2 Suspension – General**

- a. Maybe modified or replaced.
- b. The approved products from the manufacturers must be available to all participants at least one month before the first round of the Super hooligan season and remain available all season. The products must be available within six (6) weeks of a confirmed order.
- c. Setting parts and tuning parts must be provided by the suspension manufacturers to all customers/teams/participants using the manufacturer's products. These parts can be used by all participants during the season. These parts shall be available for immediate delivery to all teams/customers.
- d. All setting parts must be supplied by the suspension manufacturer and available to all teams/riders.
- e. The suspension manufacturers are allowed to offer service contracts when a team is using the approved and listed suspension products. The suspension manufacturers cannot demand a service contract for a customer or participant in order to obtain a suspension product.
- f. Electronic suspension may only be used if it comes stock on the homologated

motorcycle.

- g. An electronic controlled steering damper can only be used if installed on the homologated model for road use. However, it must be completely standard (any mechanical or electronic part must remain as homologated).

#### **2.7.10.3 Front Suspension**

- a. The front fork in whole or part may be changed but must be the same type homologated (leading link, telescopic, etc.).
- b. The upper and lower fork clamps (triple clamp, fork bridges) and stem may be changed or modified.
- c. A steering damper may be added or replaced with an 'after-market' damper.
- d. The steering damper cannot act as a steering lock limiting device.

#### **2.7.10.4 Swing-arm (Rear Fork)**

- a. Swing-arms may be replaced or modified.
- b. A solid protective cover (shark fin) shall be fixed to the swing-arm and must always cover the opening between the lower chain run, swingarm and the rear wheel sprocket, irrespective of the position of the rear wheel.
- c. Rear wheel stand brackets may be added to the rear fork by welding or by bolts.
- d. Brackets must have rounded edges (with a large radius). Fastening screws must be recessed.
- e. Swingarm spindle (pivot) may be modified or replaced.

#### **2.7.10.5 Rear Suspension Unit**

- a. Rear suspension unit may be changed but a similar system must be used (i.e. dual or mono).
- b. Removable top shock mounts may be replaced. Geometry of shock(s) is free.

#### **2.7.10.6 Wheels**

- a. Wheels may be replaced, and associated parts may be altered or replaced from those fitted to the homologated motorcycle.
- b. Material of wheels is free
- c. Bearings, seals, and axles may be altered or replaced from those fitted to the homologated motorcycle. The use of titanium and light alloys is forbidden for wheel spindles (axles).
- d. Wheel balance weights may be discarded, changed or added to.
- e. Aluminum or steel inflation valves are compulsory.
- f. Front and rear wheel sizes are free

#### **2.7.10.7 Brakes**

- a. Front brake master cylinder may be altered or replaced.
- b. Front brake calipers may be altered or replaced.
- c. Rear brake master cylinder may be altered or replaced.
- d. Rear brake calipers may be altered or replaced.
- e. Brake pads or shoes may be altered or replaced.



- f. Brake hoses and brake couplings may be altered or replaced.
- g. Hydraulic anti-knockback systems may be fitted to the brake lines/caliper.
- h. Brake discs may be altered or replaced. Only Steel (max. carbon content 2.1 wt.%) is allowed for brake discs. Alloys containing beryllium are not allowed to be used for brake calipers.
- i. ABS systems should be removed. If used the system may not be altered.

#### **2.7.10.8 Handlebars and hand controls**

- a. Handlebars, hand controls and cables may be altered or replaced from those fitted to the homologated motorcycle.
- b. No clip-ons that have been converted to top-mounted handlebars permitted. The end of the handlebar must sit above top plane of upper triple clamp
- c. Cable operated throttles (grip assembly) must be equipped with both an opening and a closing cable including when actuating a remote drive by wire grip/demand sensor.
- d. Motorcycles must be equipped with a functional ignition kill switch or button mounted on the right-hand handlebar (within reach of the hand while on the hand grips) that can stop a running engine. The button or switch must be RED.

#### **2.7.10.9 Footrest and foot controls**

- a. Footrests, hangers/brackets and hardware may be replaced and relocated but the hangers/brackets must either be mounted to their original frame mounting points or another location that does not require the modification of the frame.

#### **2.7.10.10 Fuel tank**

- a. Maybe modified or replaced.
- b. The fuel tank must conform in principle to the homologated appearance and location of the original tank
- c. Fuel Tank material is free.
- d. If using any non-metal material, fuel cell is required.

#### **2.7.10.11 Fairing / Bodywork**

- a. No upper fairing or windscreen allowed
- b. RSD Super Hooligan number plate required
- c. A lower catch/belly pan must be constructed to hold, in case of an engine breakdown, at least half of the total oil and engine coolant capacity used in the engine (min. 5 liters water-cooled/ 2.5 liters air-cooled).

#### **2.7.10.12 Seat**

- a. Seat may be altered or replaced.

#### **2.7.11 The following items MAY BE altered or replaced from those fitted to the homologated motorcycle.**

- a. Any type of lubrication, brake or suspension fluid may be used.
- b. Gaskets, seals, and gasket material.
- c. Bearings (ball, roller, taper, plain, etc.) of any type or brand may be used.
- d. Bearing race are free
- e. Fasteners (nuts, bolts, screws, etc.), but internal engine bolts must remain of

standard homologated materials or materials of higher specific weight.

- f. Thread repair using inserts of different material such as helicoils and timeserts.
- g. External surface finishes and decals.

**2.7.12 The following items MAY BE removed**

- a. Instrument and instrument bracket and associated cables.
- b. Tachometer.
- c. Speedometer and associated wheel spacers.
- d. Chain guard.

**2.7.13 The Following Items MUST BE Removed**

- a. Rear-view mirrors.
- b. Horn.
- c. License plate bracket.
- d. Toolbox.
- e. Safety bars, center and side stand brackets welded to the main frame may be removed. If the side stand is not removed it must be held in the up position by a secondary device.