

## 2.6 STOCK 1000 TECHNICAL SPECIFICATIONS

The following rules are intended to permit limited changes to the homologated motorcycle in the interests of safety and improved competition between various motorcycle concepts.

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

#### **If a change to a part or system is not specifically allowed in any of the following articles, then it is forbidden**

Stock 1000 motorcycles require a Superstock 1000 FIM homologation. (see FIM homologation procedure for Superstock, Supersport and Superbike motorcycles). All motorcycles must comply in every respect with all the requirements for road racing as specified in these technical regulations unless they are already equipped as such on the homologated model.

Once a motorcycle has obtained homologation, it may be used for racing in the corresponding class for a maximum period of eight (8) years (see Homologation art 1.4.4), or until such time that the homologated motorcycle is disqualified by new rules or changes in the technical specifications of the corresponding class.

The appearance from the front, rear and the profile of Stock 1000 motorcycles must (except when otherwise stated) conform to the homologated shape (as originally produced by the manufacturer). The appearance of the exhaust system is excluded from this rule.

### 2.6.1 Motorcycle specifications

All parts and systems not specifically mentioned in the following articles must remain as originally produced by the manufacturer for the homologated motorcycle.

**2019-2022 Ducati V4R is accepted as homologated for MotoAmerica competition. Effective 6-26-2020 the Ducati V4R will be balanced per Article 2.6.3 adjusting the minimum weight to 180 kg.**

### 2.6.2 Engine configurations and displacement capacities

The following engine configurations comprise the Stock 1000 class:

Over 750cc up to 1000cc	4-stroke	3 and 4 cylinders
Over 850cc up to 1200cc	4-stroke	2 cylinders

The displacement capacity, bore and stroke (new), must remain at the homologated size. All machines must be normally aspirated.

### 2.6.3 Balancing various motorcycle concepts

To equalize the performance of motorcycles used in the Stock 1000 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.

### 2.6.4 Minimum weight

All machines (unless balanced) 170 kg (374 lbs.)

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.

### **2.6.5 Numbers and number plates**

The background colors and figures (numbers) for Stock 1000 are red (pantone 186c) background with white numbers:

The sizes for all the front numbers are:	Minimum height:	140 mm
	Minimum width:	80 mm
	Minimum stroke:	25 mm
	Minimum space	
	between numbers:	10 mm

The sizes for all the side numbers are:	Minimum height:	120 mm
	Minimum width:	70 mm
	Minimum stroke:	20 mm
	Minimum space	
	between numbers:	10 mm

The allocated number (& plate) for the rider must be affixed on the motorcycle as follows:

- a. Once on the front, either in the center of the fairing or slightly off to one side. The number must be centered on the red background with no advertising within 25 mm in all directions.
- b. Once, on each side of the motorcycle. The preferred location for the numbers on each side of the motorcycle is on the lower rear portion of the main fairing near the bottom. The number must be centered on the red background. Any change to this position must be pre-approved a minimum of two (2) weeks before the first race by the Technical Director.
- c. The numbers must use the fonts as detailed after Art. 2. Any numbers not using these fonts must have the design of the numbers and the layout pre-approved by the MotoAmerica Technical Director a minimum of two (2) weeks before the first race. All digits must be of standard form.
- d. Any outlines must be of a contrasting color and the maximum width of the outline is three (3) mm. The background color must be clearly visible around all edges of the number (including outline). Reflective or mirror type numbers are not permitted.
- e. Numbers cannot overlap

In case of a dispute concerning the legibility of numbers, the decision of the Technical Director will be final.

### **2.6.6 Fuel**

- a. The designated fuel is VP Racing Fuels MGP.
- b. Please refer to Article 2.10 for additional details

## 2.6.7 Tires

- a. The maximum number of tires, of any type, available to each rider during the event will be specified in Article 2.3.7.1.
- b. A maximum of six (6) tires per rider can be mounted at any time.
- c. For Stock 1000 races only, wet tires will not need to be marked with a tire sticker. They will not be considered in the total number of tires available for use; however, normal allocation limits still apply.
- d. During free practices, qualifying practices, warm-up session and races, front and rear tires are required to be marked with tire stickers.
- e. see article 2.3.7

## 2.6.8 Engine

### 2.6.8.1 Fuel injection system

#### 2.6.8.1.1 Fuel injection systems refer to throttle bodies, fuel injectors, variable length intake tract devices, fuel pump and fuel pressure regulator.

- a. The original homologated fuel injection system must be used without any modification.
- b. The fuel injectors must be stock and unaltered from the original specification and manufacture.
- c. Air funnels must remain as originally produced by the manufacturer for the homologated motorcycle.
- d. Butterfly valves cannot be changed or modified.
- e. Variable intake tract devices cannot be added if they are not present on the homologated motorcycle, and they must remain identical and operate in the same way as the homologated system. All the parts of the variable intake tract device must remain exactly as homologated.
- f. Air and air/fuel mixture can go to the combustion chamber exclusively through the throttle body butterflies.
- g. Electronically controlled throttle valves, known as 'ride-by-wire', may be only used if the homologated model is equipped with the same system. Software may be modified but all the safety systems and procedures designed by the original manufacturer must be maintained.

### 2.6.8.2 Cylinder head

- a. **Cylinder head must be the originally fitted and homologated part. The following modifications are allowed:**
  - i. **Original valve seats must be used, but modifications are permitted to the shape in the valve contact area, but not to the internal diameter of the main seal material.**
  - ii. **Rocker arms (if any) must remain as homologated.**
  - iii. **The valves must remain as originally equipped and homologated.**
  - iv. **The shim buckets / tappets must remain as originally equipped and homologated.**
- b. **The exhaust air bleed system must be blocked and the external fittings on the cam cover(s) may be replaced by plates.**
- c. **Compression ratio is free**

- d. **It is forbidden to add any material to the cylinder head unless as described above.**

#### **2.6.8.3 Camshaft**

- a. The camshaft must be the originally fitted and homologated part with no modification.
- b. At the technical checks: for direct cam drive systems, the cam lobe lift is measured; for non-direct cam drive systems (i.e. with rocker arms), the valve lift is measured.

#### **2.6.8.4 Cam sprockets or gears**

- a. Cam sprockets may be slotted to allow the adjustment of cam timing.
- b. Pressed on cam sprockets may be replaced with an adjustable boss and cam sprocket.
- c. The cam chain must remain as homologated.
- d. The cam chain tensioner must remain as homologated.

#### **2.6.8.5 Cylinders**

- a. Must be the originally fitted and homologated part with no modification.

#### **2.6.8.6 Pistons**

- a. Must be the originally fitted and homologated part with no modification.

#### **2.6.8.7 Piston rings**

- a. Must be the originally fitted and homologated part with no modification.
- b. All piston rings must be fitted.

#### **2.6.8.8 Piston pins and clips**

- a. Must be the originally fitted and homologated part with no modification.

#### **2.6.8.9 Connecting rods**

- a. Must be the originally fitted and homologated part with no modification.

#### **2.6.8.10 Crankshaft**

- a. Must be the originally fitted and homologated part with no modification.
- b. The balancer shaft must be the originally fitted and homologated part with no modification.

#### **2.6.8.11 Crankcase / Gearbox housing**

- a. Must be the originally fitted and homologated part with no modification (including painting, polishing, and lightening).
- b. It is not allowed to add a pump used to create a vacuum in the crankcase. If a vacuum pump is installed on the homologated motorcycle, then it may be used only as homologated.

##### **2.6.8.11.1 Lateral covers and protection**

- a. Lateral (side) covers may be altered, modified or replaced. 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 the same or higher specific weight and the total weight of the cover must not be less than the original one.
- b. Oil containing engine covers cannot be secured with aluminum bolts.
- c. 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. Each side (left and right) of the engine must have at least one (1) protective cover installed on the farthest protruding engine cover containing oil. Composite covers are not permitted. FIM approved covers will be permitted without regard of the material or dimensions.

- i. The secondary cover must cover a minimum of 1/3 of the original cover. It must not have sharp edges that could damage the track surface. Covers must be fixed properly and securely with a minimum of three (3) case cover screws that also mount the original covers/engine cases to the crankcases.
  - ii. Heavy duty engine case covers may be used in lieu of secondary case covers.
- d. The Technical Director has the right to refuse any cover not satisfying this safety purpose.

#### **2.6.8.12 Transmission / Gearbox**

- a. No modifications are allowed except shimming.
- b. Quick-shift systems are allowed (including wire and potentiometer).
- c. Countershaft sprocket, rear wheel sprocket, chain pitch and size may be changed.
- d. The sprocket cover may be modified or eliminated.
- e. The chain guard, if it is not incorporated in the rear fender, may be removed.

#### **2.6.8.13 Clutch**

- a. Aftermarket or modified clutches are permitted.
- b. Only friction and drive discs may be changed, but their number must remain as original.
- c. Clutch springs may be changed.
- d. The clutch basket (outer) must be the originally fitted and homologated part but may be reinforced.

#### **2.6.8.14 Oil pumps and oil lines**

- a. No pump modifications are allowed.
- b. Oil lines may be modified or replaced. Oil lines containing positive pressure, if replaced, must be of braided reinforced construction with swaged or threaded connectors.

#### **2.6.8.15 Radiator, cooling system and oil cooler**

- a. The only liquid engine coolant permitted is water.
- b. Protective meshes may be added in front of the oil and/or water radiator(s).
- c. The cooling system hoses and catch tanks may be changed.
- d. Radiator fans and wiring may be removed. Thermal switches, water temperature sensors and thermostats may be removed inside the cooling system.
- e. Radiator cap is free.
- f. An additional water radiator may be fitted but the appearance of the front, the rear and the profile of the motorcycle must not be changed. Extra mounting brackets to accommodate the additional radiator is permitted.

#### **2.6.8.16 Air box**

- a. The air box must remain as originally produced by the manufacturer on the homologated motorcycle, but the air box drains must be sealed.

- b. The air filter element may be modified or replaced but not removed and must be mounted in the original position.
- c. The air box drains must be sealed.
- d. All motorcycles must have a closed breather system. All oil breather lines must be connected and discharge in the air box.
- e. Additional heat shielding is not allowed (e. g. gold or silver heat tape).

#### **2.6.8.17 Fuel supply**

- a. The fuel pump and fuel pressure regulator must remain as homologated.
- b. The fuel pressure must be as homologated.
- c. Fuel lines from the fuel tank to the delivery pipe assembly (excluded) may be replaced.
- d. Quick connectors or dry break connectors may be used.
- e. Fuel vent lines may be replaced.
- f. Fuel filters may be added

#### **2.6.8.18 Exhaust system**

- a. Exhaust pipes and silencers may be modified or changed. Catalytic converters must be removed.
- b. The number of the final exhaust silencer(s) must remain as homologated. The silencer(s) must be on the same side(s) of the homologated model.
- c. For safety reasons, the exposed edges of the exhausts pipe(s) outlet must be rounded to avoid any sharp edges.
- d. Wrapping of exhaust systems is not allowed except in the area of the rider's foot or an area in contact with the fairing for protection from heat.
- e. The noise limit for Stock 1000 will be **115 dB/A** (with a three (3) dB/A tolerance after the race only) except for where local rules prevail.

### **2.6.9 Electrics and electronics**

#### **2.6.9.1 Ignition / Engine Control System (ECU)**

- a. The engine control system (ECU) must be an ECU (Kit or OEM) applicable to the specific homologated model. The ECU may have its software changed, but the ECU may not be physically modified. The Ducati V4R must use the homologated ECU with control software provided by Ducati. No other software will be allowed for usage. The rider is responsible for using the most recent version of the control software.
- b. The system may have FIM/DWO/MotoAmerica approved external ignition and/or injection module(s) added. Ducati V4R may not use any external ignition modules this includes quick shift modules that connect directly to the ignition harness.
- c. The total combined retail price (software and tuning tools included) on sale to the general public cannot be higher than €3000 (tax excluded) or €3750 if it is a kit ECU than includes data logging facility.
- d. Central unit (ECU) may be relocated.
- e. Optional equipment sold by the motorcycle manufacturer for the homologated model is considered not homologated with the bike and must follow the requirements for approved electronics/data loggers.

- f. During an event, the Technical Director has the right to ask a team to substitute their ECU or external module with the sample received from the manufacturer. The change must be done before Sunday warm-up.
- g. No extra sensors may be added for control strategies except shift rod sensors, wheel speed sensors and lambda sensors. Wheel speed sensors must be included in the Kit ECU and harness package if required.
- h. Other additional electronic hardware equipment not on the original homologated motorcycle cannot be added with the exceptions noted below.
- i. The characteristics of approved data logging systems must be the following:
  - i. Maximum retail price of the unit (hardware + software, excluding sensors and wiring harness) cannot exceed €3.000 (VAT excluded) if it is a standalone unit.
  - ii. Maximum retail price of the unit if incorporated into the ECU (hardware + software, excluding sensors and wiring harness) is €3750.
  - iii. The data logger unit must be available for sale to the public and on the list of FIM/DWO/MotoAmerica approved data loggers.
  - iv. A maximum of seven (7) simultaneously working sensors (connected to the additional data logger) may be added to the original sensors on the motorcycle.  
The sensors must be from the following list:
    - 1. Lambda (must be supplied in the kit if used for strategy)
    - 2. Fork position
    - 3. Shock position
    - 4. Front brake pressure
    - 5. Rear brake pressure
    - 6. Fuel pressure (not temperature)
    - 7. Oil pressure
    - 8. Oil temperature
    - 9. Transponder / lap time signal
    - 10. GPS unit (lap timing and track position)
- v. The sensors must be simple function.
- vi. Approved data loggers with internal inertial platforms (IMU or gyros) may be used for data collection but may not be used for control strategy. Also see 2.6.9.1/i./vii.
- vii. CAN (or other data) communication from the ECU to an approved data logger (logger can receive data only; no data transmission is allowed) is allowed without any limitation in CAN channel logger number.
- j. The maximum total price of other active/control/calculation units such as lambda driver modules, quick shifter, and analogue to CAN and traction control units is €750. These devices must be approved by FIM/DWO/MotoAmerica.
- k. Telemetry is not allowed.
- l. 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.

m. Harness:

- i. The main wiring harness may be replaced by the kit wire harness as supplied for the Kit ECU model, produced and/or approved by the manufacturer of the motorcycle and by FIM/DWO/MotoAmerica.
- ii. The Kit wiring harness may incorporate the data logging harness.
- iii. A kit harness that incorporates the data logging harness may only accommodate seven (7) additional sensors.
- iv. A sample of the kit wiring harness may be requested by the FIM/MotoAmerica.
- v. The key/ignition lock may be relocated, replaced or removed.
- vi. Cutting of the original main wiring harness is allowed.

n. Data logger harness:

- i. The data logger wire harness cannot include any other sensors except for the seven (7) sensors that are allowed. The only function of the approved data logger wire harness is to connect the seven sensors to the data logger, to transmit the data and supply the power.
- o. For the Stock 1000 Kit to be approved, samples of the ECU kits, kit harnesses and external modules with their tuning tools must be sent by the manufacturers to the MotoAmerica Technical Director with technical data and selling price.
- p. For the ignition and/or injection module, quick shifter or standalone data logger to be approved, samples must be sent by the manufacturer of the device to the MotoAmerica Technical Director with technical data and selling price.
- q. Spark plugs may be replaced.
- r. The original speedometer and tachometer may be altered or replaced.
- s. Battery is free

**2.6.9.2 Generator, alternator, electric starter**

- a. Must be the originally fitted and homologated part with no modification.
- b. The electric starter must operate normally and always be able to start the engine during the event.
- c. During parc fermé, the starter must crank the engine at a suitable speed for starting for a minimum of two (2) seconds without the use of a boost battery. No boost battery may be connected to the machine after the end of the session.

**2.6.10 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 with a seal.**
- b. **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. The participants recognize the need for Technical Director to make decisions that require judgment and the exercise of discretion. The decision of the Technical Director is final.**
- c. **One (1) spare complete motorcycle is allowed per rider. The spare motorcycle may only be used once your original frame has been deemed unusable by the Technical Director. (For example, you may not go to your spare motorcycle for a complete engine failure.)**
- d. **The spare motorcycle will not be allowed in the pit box before the rider, or the team has received authorization from the Technical Director.**



- e. The motorcycle must be inspected before its use by the technical stewards for safety checks and a new seal will be placed on the motorcycle frame.
- f. A team may opt to have one (1) spare machine shared by two or more riders.

#### **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 and in the front of pit box during the practices, qualifying, and races.

The frame of this motorcycle will be officially sealed by the Technical Director or by his appointed staff. The seal will bear a serial number, which will be recorded. Any attempt made to remove the seal will damage it irreparably.

At any time during the event the technical stewards, under the direction of the Technical Director, may check the seal and verify that it conforms to the motorcycle and rider it was assigned to. For cross reference, every frame must have a unique number (VIN) punched on the steering-head.

If the primary or active motorcycle is damaged in a crash or in any other incident and is declared unrepairable (safely and in the available time) by the Technical Director or his appointed staff, then the seal on the damaged motorcycle will be destroyed by the technical staff and the chassis of this motorcycle must not be used for the remainder of the event. The new serial number will be recorded by the Technical Director.

The spare motorcycle must be of the same manufacturer and same displacement, changes to manufacturer or displacement may be allowed at the discretion of race direction and may be accompanied by grid position penalties.

During set up day (usually the day before first official practice session) no restrictions apply regarding the location of the spare motorcycle. From the start of the first practice session, any spare motorcycle must be kept out of view. It is recommended that team working areas incorporate an area for this purpose. During an event, minor adjustments may be made to the spare motorcycle, the intent being to allow teams to maintain parity with the primary bike.

In the event the spare motorcycle is used in competition, the primary machine is taken out of competition. At that time, the damaged machine must be kept out of view.

The spare machine can only be used in the next session to which the incident occurred

rendering the primary bike not able to be used. In a race situation, if the primary bike is required to be replaced with the spare machine at any time during Race 1, the first opportunity to use the spare machine is the next session or race. A race will be deemed to have begun when the rider exits pit lane for the sighting laps. All restarts, including those three laps or less, are a continuation of the original race or session.

The team may rebuild the original primary machine, however only in the case of TOTAL PROVEN WRECKAGE with the spare bike can an application be made to utilize the original machine. The decision of the Technical Director regarding this is final.

The damaged frame may be impounded by the Technical Director for later examination.

#### **2.6.10.1 Frame body and rear sub frame**

- a. The frame must remain as originally produced by the manufacturer for the homologated motorcycle.

- b. Holes may be drilled on the frame only to fix approved components (i.e. fairing brackets, steering damper mount, sensors).
- c. The sides of the frame-body may be covered by a protective part made of a composite material. These protectors must fit the form of the frame.
- d. Nothing else may be added or removed from the frame body.
- e. All motorcycles must display a vehicle identification number punched on the frame body (a proper “legal VIN” by the team to which the Technical Director may choose to append). No detachable plates are permitted.
- f. Engine mounting brackets or plates must remain as originally produced by the manufacturer for the homologated motorcycle.
- g. Front sub frame / fairing mount may be changed or altered.
- h. Rear sub frame may be changed or altered, but the type of material must remain as homologated, or material of a higher specific weight.
- i. Additional seat brackets may be added. Non-stressed protruding brackets may be removed if they do not affect the safety of the construction or assembly. Bolt-on accessories to the rear sub-frame may be removed.
- j. The paint scheme is not restricted but polishing the frame body or sub frame is not allowed.

#### **2.6.10.2 Suspension - General**

- a. Participants in the Stock 1000 class must only use the approved and listed suspension units for that season. The price limits are:
  - i. Fork: For the fork kit, including all parts such as but not limited to cartridge, springs (1 set), adjusters, fork caps, blanking inserts, seals, bushes except oil and fitting the price limit is **€2420** excluding tax.
  - ii. Shock absorber/RCU: For the complete shock absorber / RCU including but not limited to spring (1 of), pre-load adjuster and length/ride height adjuster the price limit is **€2000** excluding tax.
- b. The approved products from the suspension manufacturers must be available to all participants at least one month before the first round of the MotoAmerica Stock 1000 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. Teams may not modify any part of the forks or shock absorber; 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 the 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 must be removed.
- g. Electronic controlled steering dampers cannot be used if not installed in the homologated model for road use. However, it must be completely standard (any mechanical or electronic part must remain as homologated).

### 2.6.10.3 Front suspension

- a. Forks must remain as originally produced by the manufacturer for the homologated motorcycle.
- b. Original internal parts of the homologated forks may be modified or changed. After-market damper kits or valves may be installed.
- c. The original surface finish of the fork tubes (stanchions, fork pipes) may be changed. Additional surface treatments are allowed.
- d. Fork caps and external damping adjusters may be modified or replaced.
- e. The upper and lower fork clamps (triple clamp, fork bridges, and stem) must remain as originally produced by the manufacturer for the homologated motorcycle.
- f. Steering head pivot position must remain in the homologated position (as supplied on the production bike). If the standard bike has inserts, then the orientation/position of the original insert may be changed but the insert cannot be replaced or modified.
- g. A fork brace may be installed. Fork bottoms may be modified for speed and suspension sensors.
- h. Fender brackets may be modified to maintain stock tire to fender clearance when using race tires or to provide clearance for caliper mounting brackets.
- i. A steering damper may be added or replaced with an after-market damper.
- j. The steering damper cannot act as a steering lock limiting device.
- k. Electronic forks may have their complete internal parts (including all electronic control) replaced with a conventional damping system and it will be considered as a mechanical fork.

### 2.6.10.4 Swing arm (rear fork)

- a. The rear fork must remain as originally produced by the manufacturer for the homologated motorcycle.
- b. The rear fork pivot bolt must remain as originally produced by the manufacturer for the homologated motorcycle.
- c. Rear pivot position must remain in the homologated position (as supplied on the production bike). If the standard bike has inserts, then the orientation/position of the original insert may be changed but the insert cannot be replaced or modified.
- d. **Rear wheel stand brackets may be added to the rear fork by welding or by bolts. Brackets must have rounded edges (with a large radius). Fastening screws must be recessed. An anchorage system or point(s) to keep the original rear brake caliper in place may be added to the rear axle blocks.**
- e. Rear axle adjusters must remain as originally produced by the manufacturer for the homologated motorcycle.
- f. The sides of the swing-arm may be protected by a thin vinyl cover only; no composite or structural covers are allowed.

### 2.6.10.5 Rear suspension unit (shock)

- a. The rear suspension unit may be changed but a similar system must be used (i.e. dual or mono).
- b. All rear suspension linkage parts must remain as originally produced by the manufacturer for the homologated motorcycle.
- c. Mechanical Suspension: Rear suspension unit (shock absorber) may be modified

or replaced, but the original attachments to the frame and rear fork (swing arm) must be as homologated.

- d. Electronic suspension may be used if such suspension is already present on the production model of the homologated motorcycle, and it must remain completely standard (all mechanical and electronic parts must remain as homologated except for shims and springs). The original suspension system must work properly and safely in the event of an electronic failure. The electronic shock absorber can be replaced with a mechanical one.

#### **2.6.10.6 Wheels**

- a. Wheels may be replaced but not modified (see article 2.3.5) and associated parts may be altered or replaced from those fitted to the homologated motorcycle.
- b. Aftermarket Wheels Maximum retail price \$2600 USD.
- c. See Eligibility list for list of approved aftermarket wheels
- d. Aftermarket wheels must be made from aluminum (aluminum) alloys.
- e. The use of the following alloy materials for the wheels is not allowed: Beryllium ( $\geq 5\%$ ), Scandium ( $\geq 2\%$ ), Lithium ( $\geq 1\%$ ).
- f. Each specific racing wheel model must be approved and certified according to JASO (Japanese Automotive Standards Organization) T 203-85 where W (maximum design load) of art. 11.1.3 is 195 kg for front wheel and 195 kg for rear wheel, K = 1.5 for front and rear wheels. Static radius of tire: front 0.301 m, rear 0.331 m.
- g. Wheel manufacturers must provide copy of the certificate for their wheel(s) as proof of compliance to the Technical Director when requested.
- h. The homologated road bike wheel and sprocket carrier assembly may be used with no modification irrespective of material. They must meet article 2.4.10.6(d)(e). Bearings and spacers may be changed.
- i. On motorcycles equipped with a double-sided swing arm (rear fork), the rear sprocket and brake rotor must remain on the rear wheel when the wheel is removed.
- j. Bearings, seals, 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).

Wheel rim diameter size (front and rear)	17 inches
Front wheel rim width:	3.50
Rear wheel rim width:	6.00

- k. Wheel axles must remain as homologated; wheel spacers may be modified or replaced.

#### **2.6.10.7 Brakes**

- a. Brake discs may be replaced by aftermarket discs which comply with following requirements:
  - i. Only steel (max. carbon content 2.1 wt. %) is allowed for brake discs.
  - ii. The carrier must retain the same material as the homologated disc and carrier.
  - iii. The outside and inner diameters of the brake disc must not be larger than the ones on the homologated disc.
  - iv. The thickness of the brake disc may be increased but the disc must fit into the homologated brake caliper without any modification. The number of floaters is free.

- v. The fixing of the carrier on the wheel must remain the same as on the homologated disc.
- b. The front and rear brake caliper (mount, carrier, hanger) must remain as originally produced by the manufacturer for the homologated motorcycle.
- c. To reduce the transfer of heat to the hydraulic fluid, it is permitted to add metallic shims to the calipers between the pads and the calipers and/or to replace light alloy pistons with steel pistons made by the same manufacturer of the caliper.
- d. The rear brake caliper bracket may be mounted fixed on the swing- arm, but the bracket must maintain the same mounting (fixing) points for the caliper as used on the homologated motorcycle. Also see Article 2.6.10.4 e.
- e. Refer to "Supersport Master Cylinder" eligibility list for all approved Stock 1000 front master cylinders.
- f. Front and rear hydraulic brake lines may be changed.
- g. The split of the front brake lines for both front brake calipers must be made above the lower fork bridge (lower triple clamp).
- h. "Quick" (or "dry-brake") connectors in the brake lines are allowed.
- i. Front and rear brake pads may be changed. Brake pad locking pins may be modified for quick change type.
- j. Front brake system cooling airducts are allowed.
  - i. Air ducts shall be routed to cool the discs or directed onto the brake caliper bodies. Viewed from the side, the airducts opening shall not pass the vertical line drawn by the front axle shaft. Viewed from the front, the airducts must fall inside the shape drawn by the fairing (aerodynamic winglets excluded) and must be positioned as close as possible to the front fork leg/foot. For safety reasons, the airflow shall not be directed onto the brake pads.
  - ii. air-ducts may be made of composite materials. The complete assembly must be presented and validated by the Technical Director in prior of its use.
- k. The anti-lock brake system (ABS) must be removed.

#### **2.6.10.8 Handlebars and hand controls**

- a. Handlebars may be replaced.
- b. Handlebars and hand controls may be relocated.
- c. Throttle controls must be self-closing when not held by the hand.
- d. Throttle assembly and associated cables may be modified or replaced but the connection to the throttle body and to the throttle controls must remain as on the homologated motorcycle.
- e. The clutch and brake lever may be replaced with an after-market model. An adjuster to the brake lever is allowed.
- f. Switches may be changed but the electric starter switch and engine stop switch must be located on the handlebars.
- g. 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.

#### **2.6.10.9 Footrest / Foot controls**

- a. Footrests, hangers/brackets, and hardware may be replaced and relocated but the hangers/brackets must be mounted to their original frame mounting points.

- b. Foot controls: gear shift and rear brake must remain operated manually by foot.
- c. Footrests may be rigidly mounted or a folding type which must incorporate a device to return them to the normal position.
- d. The end of the footrest must have at least an eight (8) mm solid spherical radius.
- e. Non-folding footrests must have an end (plug) which is permanently fixed, made of aluminum, plastic, Teflon® or an equivalent type of material (minimum radius 8 mm). The plug surface must be designed to reach the widest possible area.
- f. The Technical Director has the right to refuse any plug not satisfying this safety aim.

#### **2.6.10.10 Fuel tank**

- a. The fuel tank must begin as originally produced by the manufacturer for the homologated motorcycle. If the standard tank is of insufficient capacity to achieve full race distance, then with the prior agreement of the Technical Director, the tank may be modified to increase its fuel capacity but must maintain its original external appearance.
- b. All fuel tanks must be completely filled with fire retardant material (i.e. fuel tank foam).
- c. Fuel tanks with tank breather pipes must be fitted with non-return valves that discharge into a catch tank with a minimum volume of 250cc made of a suitable material.
- d. Fuel caps may be changed. Fuel caps when closed must be leak proof. Additionally, they must be securely locked to prevent accidental opening at any time.
- e. A spacer/pad may be fitted to the rear of the tank with non-permanent adhesive. It may be constructed of foam padding.
- f. The tank may not have a full cover fitted unless the homologated machine also features a full cover.
- g. The sides and rear of the fuel tank may be protected with a cover made of vinyl or a composite material. These covers must follow the shape of the fuel tank exactly.

#### **2.6.10.11 Fairing / Bodywork**

- a. Fairing and bodywork may be replaced with exact cosmetic duplicates of the original parts but must appear to be as originally produced by the manufacturer for the homologated motorcycle, with slight differences due to the racing use (different pieces mix, fixing points, fairing bottom, etc.). The material may be changed. The use of carbon fiber or carbon composite materials is not allowed. Specific reinforcements in Kevlar® or carbon are allowed locally around holes and stressed areas.
- b. Overall size and dimensions must be the same as the original part.
- c. The windscreen may be replaced.
- d. Motorcycles that are not originally equipped with streamlining are not allowed to add streamlining in any form, except for a lower fairing device, as described in point (g). This device cannot exceed above a line drawn horizontally from wheel axle to wheel axle and must follow the specifications described at point (g).
- e. The original combination instrument/fairing brackets may be replaced, but the use of titanium and carbon (or similar composite materials) is forbidden. All other fairing brackets may be altered or replaced.
- f. The original air ducts running between the fairing and the air box may be altered or

replaced. Carbon fiber composites and other exotic materials are forbidden. Particle grills or “wire-meshes” originally installed in the openings for the air ducts may be removed.

- g. The lower fairing must be constructed to hold, in case of an engine breakdown, a minimum six (6) liters. The lower edge of all the openings in the fairing must be positioned at least 70 mm above the bottom of the fairing.
- h. The upper edge of the rear transverse wall of the lower fairing must be at least 70 mm above the bottom. The angle between this wall and the floor must be  $\leq 90^\circ$ .
- i. Original openings for cooling in the lateral fairing/bodywork sections may be partially closed only to accommodate sponsors' logos/lettering. Such modification shall be made using wire mesh or perforated plates. The material is free but the distance between all opening centers, circle centers and their diameters must be constant. Holes or perforations must have an open area ratio  $> 60\%$ .
- j. The lower fairing must incorporate a single opening of  $\varnothing 25$  mm diameter in the front lower area. This hole must remain sealed in dry conditions and must be only opened in wet race conditions as declared by the race director.
- k. Front fender may be replaced with a cosmetic duplicate of the original parts and may be spaced upward for increased tire clearance.
- l. The rear fender fixed on the swing arm may be modified, changed or removed.
- m. Motorcycles may be equipped with inner ducts to improve the air stream towards the radiator but the appearance of the front, the rear and the profile of the motorcycle must not be changed.

#### **2.6.10.12 Seat**

- a. The seat, seat base and associated bodywork may be replaced with parts of similar appearance as originally produced by the manufacturer for the homologated motorcycle. The appearance from the front, rear and profile must conform to the homologated shape.
- b. The top portion of the rear bodywork around the seat may be modified to a solo seat.
- c. The homologated seat locking system (with plates, pins, rubber pads etc.) may be removed.

#### **2.6.10.13 Rear safety light**

All motorcycles must have a functioning red light mounted at the rear of the machine; this light must be switched on any time the motorcycle is on the track or being ridden in the pit-lane and the session is declared WET. All lights must comply with the following:

- a. Lighting direction must be parallel to the machine center line (motorcycle running direction) and be clearly visible from the rear at least 15 degrees to both left and right sides of the machine center line.
- b. The rear light must be mounted near the end of the seat/rear bodywork and approximately on the machine center line, in a position approved by the Technical Director. In case of dispute over the mounting position or visibility, the decision of the Technical Director will be final.
- c. Power output/luminosity equivalent to approximately: 10 – 15 (incandescent), 0.6 – 1.8 W (LED).
- d. The output must be continuous; no flashing safety light is allowed whilst on track. Flashing is allowed in the pit lane when the pit limiter is active.

- e. The safety light power supply may be separated from the motorcycle.
- f. The Technical Director has the right to refuse any light system not satisfying this safety purpose.

#### **2.6.10.14 Fasteners**

- a. Standard fasteners may be replaced with fasteners of any material and design, but titanium fasteners cannot be used. The strength and design must be equal to or exceed the strength of the standard fastener.
- b. Fasteners may be drilled for safety wire, but intentional weight-reduction modifications are not allowed.
- c. Thread repairs may be made using inserts of different material such as Helicoils and Timeserts.
- d. Fairing / bodywork fasteners may be replaced with the quick disconnect type.
- e. Aluminum fasteners may only be used in non-structural locations.

#### **2.6.11 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 materials
- c. Instruments, instrument bracket(s) and associated cables
- d. Painted external surface finishes and decals
- e. Material for brackets connecting non-original parts (fairing, instruments, etc.) to the frame (or engine) cannot be made from titanium or fiber reinforced composites except for the exhaust silencer hanger that may be made from carbon.
- f. Protective covers for the frame, chain, footrests, etc. may be made in other materials like fiber composite material if these parts do not replace original parts mounted on the homologated model.

#### **2.6.12 The following items MAY BE removed**

- a. Emission control items (anti-pollution) in or around the air box and engine (O2 sensors, air injection devices)
- b. Chain guard if it is not incorporated in the rear fender
- c. Bolt-on accessories on a rear sub frame

#### **2.6.13 The following items MUST BE removed**

- a. Headlamp, rear lamp and turn signal indicators (when not incorporated in the fairing). Openings must be covered by suitable materials.
- b. Rear-view mirrors
- c. Horn
- d. License plate bracket
- e. Toolkit
- f. Helmet hooks and luggage carrier hooks
- g. Passenger footrests
- h. Passenger grab rails
- i. Safety bars, center and side stands must be removed (fixed brackets must remain).