

**MCRCB SUPERBIKE-EVOLUTION (“BSB-EVO”)  
TECHNICAL REGULATIONS**

Machines competing in the 2010 British Superbike-Evo Championship must comply with the 2010 MCRCB SUPERBIKE-EVOLUTION TECHNICAL REGULATIONS. These are as follows and are correct at the time of printing but are subject to any amendments made by the FIM or MCRCB which will be issued by means of an MCRCB Bulletin.

**5.2.6 MCRCB SUPERBIKE-EVO TECHNICAL SPECIFICATIONS**

Rules intended to give freedom to modify or replace some parts in the interest of safety, research and development.

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

Superbike motorcycles require an FIM homologation (see article 5.2.9). All motorcycles must comply in every respect with all the requirements for road racing as specified in the **MCRCB Technical Regulations (G)**, unless it is equipped as such on the homologated machine.

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

The MCRCB may accept any motorcycle model which appears on the FIM Superbike or Superstock homologation list for the relevant year.

**5.2.6.1 Machine Specifications**

All items not mentioned in the following articles must remain as originally produced by the manufacturers for the homologated machine.

**5.2.6.2 Balancing various motorcycle models**

As a new championship class MCRCB reserves the right to review the race results and to handicap any model(s) that have an identifiable performance advantage. This may be achieved by one or more of the following applications:

- a) weight
- b) air restrictors
- c) electronic rev limit

A review of results will take place after the third, sixth and ninth championship rounds between MSVR (the series promoters/organisers) and the BSB Team and Manufacturer Liaison Groups. MSVR will then present their recommendations to the MCRCB.

‘Model’ defines machines of same manufacturing specification not simply year, so a 2007,2008 GSXR1000K7, K8 will be considered as one model.

**5.2.6.3 Engine configurations and displacement capacities**

The following engine configurations compose the Superbike Class:

Homologation Year	Homologation valid for	Engine configuration and displacements	Minimum weight	Diameter of restrictor
As from 2006	5 Years	Over 750cc up to 1000cc 3 cylinders and 1000 4 cylinders ** (1000cc 3 & 4 cylinders)	162 kg	n/a (*)
As from 2008	5 Years	Over 850cc up to 1200cc 2 cylinders ** (1200cc 2 cylinders)	168 kg	n/a (*)

(\*) n/a = not applicable

(\*\*) Reference used in the articles hereunder

The displacement capacities must remain at the homologated size. Modifying the bore and stroke to reach class limits is not allowed.

**5.2.6.4 Minimum Weights**

The minimum weight starting the season will be:

1000cc 3 cylinder & 1000cc 4 cylinder	162kg
1200cc 2 cylinder	168kg

At any time of the event, the weight of the whole machine (including the tank and its contents) must not be less than the minimum weight with a tolerance of 1 kg.

During the final inspection at the end of each race, the machines chosen will be weighed in the condition they finished the race.

The established weight limit must be met in the condition the machine has finished the race; nothing can be added to the machine. This includes water, oil, or fuel.

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 a handicap system. The use of ballast and weight handicap must be declared to the MCRCB Chief Technical Officer at the preliminary checks.

#### **5.2.6.5 Number Plate Colours**

See MCRCB General Technical Regulations (G-3.29).

In case of a dispute concerning the legibility of numbers, the decision of the MCRCB will be final. The front number must be black numbers on a yellow background.

#### **5.2.6.6 Fuel**

Only MCRCB Control Fuel is permitted for all practice and race. This will be BSBK A1 or Premium, this must be supplied by ENI, see F- Championship Conditions for details of supply.

#### **5.2.6.7 Tyres**

The MCRCB will impose a controlled tyre. Further conditions will be stated in F - Championship Conditions and any Bulletins issued by MSVR.

The use of tyre warmers is allowed.

Any modification (cutting, grooving) is forbidden.

#### **5.2.6.8 Engine**

##### **5.2.6.8.1 Carburetion Instruments / Fuel Injection System**

Carburetion instruments refer to throttle bodies and variable length intake track devices.

- Carburation instruments must remain as homologated.
- Bell mouths (including their fixing points) may be altered or replaced
- The injectors must remain standard units as on the homologated motorcycle.

##### **5.2.6.8.2 Cylinder Head**

- No modifications are allowed.
- No material may be added or removed from the cylinder head.
- The cylinder head gaskets may be changed.
- The valves, valve seats, guides, springs, tappets, oil seals, shims, cotter valve, spring base and retainers must be as originally produced by the manufacturer for the homologated machine. Only normal maintenance interventions as prescribed by the Manufacturer in the model's Service Manual are authorized.
- Valve springs shims are not allowed.

##### **5.2.6.8.3 Camshaft**

- No modifications are allowed.
- At the technical checks: for direct cam drive systems, the cam lobe lift is measured; for non direct cam drive systems (i.e. rocker arms) the valve lift is measured.
- The timing of the camshaft is free.

##### **5.2.6.8.4 Cam Sprockets or Gears**

- No dimensional modifications are allowed.

- Machining of camshaft sprocket to 'slot' the bolt holes to enable cam timing adjustment is authorised. No other modifications are allowed to the cam sprockets.
- A small 'Tig' weld is permitted to ensure that camshaft sprockets or bosses do not move once set.
- Camchain Tensioners must remain as standard.

### **5.2.6.8.5 Cylinders**

- No modifications are allowed.
- The Cylinder base gasket may be changed.

### **5.2.6.8.6 Pistons**

- No modifications are allowed (including polishing and lightening).

### **5.2.6.8.7 Piston Rings**

- No modifications are allowed.

### **5.2.6.8.8 Piston Pins and Clips**

- No modifications are allowed.

### **5.2.6.8.9 Connecting Rods**

- No modifications are allowed (including polishing and lightening).

### **5.2.6.8.10 Crankshaft**

- No modifications are allowed (including polishing and lightening).

### **5.2.6.8.11 Crankcase and all other Engine Cases (i.e. ignition case, clutch case)**

- No modification to the crankcases are allowed (including painting, polishing and lightening).
- Side cover fasteners can be changed to lightweight metals ie titanium.
- The original lateral (side) covers may be modified without modification to the position and dimensions of the covered parts. The modified cover must have at least the same resistance to impact.
- 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.
- 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 of composite material, type injection moulded Nylon 6.6 long glass fibre 60%, carbon or Kevlar® approved by the MCRCB, aluminium or steel plates and/or bars are also permitted. All these devices must be designed to be resistant against sudden shocks and all devices are fixed by bolts onto the engine covers/cases not stuck.
- No damaged cases will be permitted unless approved by the Chief Technical Officer.

#### **5.2.6.8.12 Transmission/Gearbox**

- The material and heat treatment of the highest 2 gear pinions may be changed, but the number of teeth and design have to be kept as homologated.
- Other modifications or additions to the gearbox or selector mechanism, systems are not allowed.
- External Quick shift systems are allowed.
- Only countershaft sprocket, rear wheel sprocket, chain pitch and size can be changed.
- The sprocket cover can be modified or eliminated.

#### **5.2.6.8.13 Clutch**

- No modifications are allowed.
- Only Friction and drive discs may be changed but their numbers must remain as original.
- Clutch springs may be changed.

#### **5.2.6.8.14 Oil Pumps and Oil Lines**

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

#### **5.2.6.8.15 Radiator and oil coolers**

- The original radiator or oil cooler may be altered or replaced from those fitted to the homologated motorcycle.
- Additional radiators may be added.
- Oil coolers can be added to those machines not fitted with one as standard. An adaptor may be fitted between the oil filter and the engine to provide supply and return to an oil cooler. The standard heat exchanger may be removed.
- Radiator fan and wiring may be changed, modified or removed
- Oil cooler must not be mounted on or above the rear mudguard.
- The appearance from the front, rear and profile of the machine must in principle conform to the homologated shape after the addition of additional radiators or oil coolers.

#### **5.2.6.8.16 Air Box**

- The air box must remain as originally produced by the manufacturer for the homologated machine but the air box drains must be sealed.
- The air filter element may be removed or replaced.
- All motorcycles must have a closed breather system. The oil breather line must be connected and discharge in the airbox.

#### **5.2.6.8.17 Fuel Supply**

- Fuel pump and fuel pressure regulator must remain as homologated.
- No mechanical fuel pump is allowed unless installed in the homologated model.

- Fuel lines from fuel tank up to the injectors (fuel hoses, joints, clamps, delivery pipe, fuel canister) may be replaced.
- The fuel line(s) going from the fuel tank to the carburetion instruments must be located in such a way that they are protected from possible crash damage.
- Fuel vent lines may be replaced.
- Fuel filters may be added.
- Fuel petcock may be altered or replaced from those fitted to the homologated motorcycle

### **5.2.6.8.18 Exhaust System**

- Exhaust pipes and silencers may be modified or changed from those fitted to the homologated motorcycle.
- 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.
- Catalytic converters must be removed
- For safety reasons, the exposed edges of the exhausts pipe(s) outlet must be rounded to avoid any sharp edges.
- Wrapping of exhaust systems is not allowed except in the area of the riders foot or an area in contact with the fairing for protection from heat.
- The noise limit for Superbikes is 107 dB/A (with a 3 dB/A tolerance after the race). There is also an equipment tolerance of 2dB/A, the actual maximum reading before race or practice is 109 dB/A and after race or Practice 112dB/A.

### **5.2.6.9 Electrics and Electronics**

#### **5.2.6.9.1 Ignition System**

- Spark plugs may be replaced.
- Plug caps and coils must remain as homologated.
- Battery is free.
- All engine sensors must remain as standard.

#### **5.2.6.9.2 ECU**

- Only the electronic ignition/fuel injection control units (ECU) supplied by the official Supplier (MoTec) are allowed. This ECU must remain unmodified in hardware and software as delivered by the official Supplier, with the exception of the normal tuning adjustments allowed only by the standard software 'Setting Tool' supplied as part of the BSB Evo ECU solution.
- There will be a dashboard offered in conjunction with the control ECU.
- The download connector will be as specified to allow scrutineering confirmation of BSB legal firmware.
- No additional electronics forming control systems will be allowed (i.e. external ignition cut traction control systems, engine throttle blipper servo motors, ignition expanders or injector modules).
- The ECU will have a fixed rev limit acting at 500rpm above the homologated rev limit of the standard road bike.
- The Chief Technical Officer may inspect all ECU hardware and software at

- any time, including access to all stored information. The Chief Technical Officer may require the team to change the ECU on any machine for another identical standard one at any time.
- The use of the ECU team logging is optional, the ECU will include scrutineering logging which is fixed.
- The Chief Technical Officer may inspect and access the scrutineering datalogger system at any time, including the reading and downloading of data. MSVR reserve the right to publish all scrutineering data.

### **5.2.6.9.3 Generators**

- No modifications allowed.
- The electric starter must operate normally and always be able to start the engine during the event (including at pre and post race inspections). The engine must start and run when the electric starter has stopped its procedure.

### **5.2.6.9.4 Additional Equipment**

- Additional electronic hardware equipment not on the original homologated motorcycle may be added. (i.e. data acquisition, computers, recording equipment etc.).
- The addition of a device for infra red (IR) transmission of a signal between the racing rider and his team, used exclusively for lap timing, is allowed.
- The addition of a GPS unit for lap timing/scoring purposes is allowed.
- Telemetry is not allowed.

### **5.2.6.9.5 Wiring Harness**

- The wiring harness is free. A recommended suppliers list will be published.

### **5.2.6.10 Frame and Body**

- The use of titanium in the construction of the front forks, the handlebars and the swing-arm spindle is forbidden.

#### **5.2.6.10.1 Frame Body and Rear Sub-Frame**

- The main frame must remain as originally produced by the manufacturer for use on the homologated machine.
- The main frame may only be altered by the addition of gussets or tubes. No gussets or tubes may be removed.
- Holes may be drilled on the frame only to fix approved components (i.e. fairing brackets, steering damper mount).
- The homologated dimensions and position of bearing seats in the steering head column, and the engine, swing arm, rear shock, and suspension linkage mounting points must remain as original.
- Steering angle changes are permitted by fitting inserts onto the bearing seats of the original steering head, but no part of the insert must protrude axially more than 3 mm. from the original steering head.
- All motorcycles must display a vehicle identification number on the main frame body (chassis number).
- Rear sub frame may be changed or altered, but the type of material must remain as homologated or of higher specific weight.

- The paint scheme is not restricted.

#### **5.2.6.10.2 Front Forks**

- Front fork in whole or part may be changed but must be the same type homologated (leading link, telescopic, etc.).  
NB - Upside down is a type of telescopic.
- No aftermarket or prototype electronically-controlled suspensions can be used. If original electronic suspensions are used, they must be completely standard (any mechanical or electronic part must remain as homologated). The original electronic system must work properly in the event of an electric/electronic failure otherwise it cannot be homologated for FIM/MCRCB competitions.
- The upper and lower fork clamps (triple clamp, fork bridges) can be changed or modified.
- Steering damper may be added or replaced with an after market damper.
- The steering damper cannot act as a steering lock limiting device.
- Electronic controlled steering damper 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).

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

- The rear fork may be altered or replaced from those fitted to the homologated motorcycle. The use of carbon fibre or Kevlar® materials is not allowed if not homologated on the original machine.
- A chain guard must be fitted in such a way to reduce the possibility that any part of the riders' body must become trapped between the lower chain run and the rear wheel sprocket.
- 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.

#### **5.2.6.10.4 Rear Suspension Unit**

- Rear suspension unit can be changed but a similar system must be used (i.e. dual or mono).
- No aftermarket or prototype electronic ally-controlled suspensions can be used. If original electronic suspensions are used, they must be completely standard (any mechanical or electronic part must remain as homologated). The original electronic system must work properly in the event of an electric/electronic failure otherwise it cannot be homologated for FIM/MCRCB competitions
- The rear suspension linkage may be modified or replaced.
- The original fixing points in the frame (if any) must be used to mount the shock absorber, linkage and rod assembly fulcrum (pivot points).

#### **5.2.6.10.5 Wheels**

- Wheels may be replaced and associated parts may be altered or replaced from those fitted to the homologated motorcycle.
- Carbon fibre or carbon composite wheels are not allowed, unless the manufacturer has equipped the homologated production model with this type of wheel.
- 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).
- Wheel balance weights may be discarded, changed or added to.
- Any inner tube (if fitted) or inflation valves may be used.
- Only two rim sizes (3.50 x 16.5 and 3.75 x 16.5 ) shall be allowed for the Front Tyre.
- Only one rim size (6.25 x 16.5 ) shall be allowed for the Rear Tyre.

#### **5.2.6.10.6 Brakes**

- Front master cylinder may be altered or replaced from those fitted to the homologated motorcycle.
- Rear master cylinder may be altered or replaced from those fitted to the homologated motorcycle.
- Front calipers may be altered or replaced from those fitted to the homologated motorcycle.
- Rear calipers may be altered or replaced from those fitted to the homologated motorcycle.
- Brake pads or shoes may be altered or replaced from those fitted to the homologated motorcycle.
- Brake hoses and brake couplings may be altered or replaced from those fitted to the homologated motorcycle.
- The split of the front brake lines for both front brake calipers must be made above the lower fork bridge (lower triple clamp).
- Brake discs may be altered or replaced from those fitted to the homologated motorcycle. Only ferrous materials are allowed for brake discs. The use of exotic alloy materials for discs and brake calipers (i.e. aluminum beryllium, etc.) is not allowed.
- ABS (Antilock Brake System) may be used only if installed in the homologated model for road use. However, it must be completely standard (any mechanical or electronic part must remain as homologated, brake discs and master caliper levers excluded), and only the software of the ABS may be modified.

#### **5.2.6.10.7 Handle Bars and Hand Controls**

- Handle bars, hand controls and cables may be altered or replaced from those fitted to the homologated motorcycle
- Engine stop switch must be located on the handle bars.

#### 5.2.6.10.8 Foot Rest/Foot Controls

- Foot rest/foot controls may be relocated, but the original mounting points must be used.
- Foot rests may be rigidly mounted or a folding type which must incorporate a device to return them to the normal position.
- The end of the foot rest must have at least an 8mm solid spherical radius.
- Non folding footrests must have an end (plug) which is permanently fixed, made of aluminum, plastic, Teflon® or equivalent type of material (min. radius of 8mm). The plug surface must be designed to reach the widest possible area of the footrest. The Chief Technical Officer has the right to refuse any plug not satisfying this safety aim.

#### 5.2.6.10.9 Fuel Tank

- Material of construction of the fuel tank may be altered or replaced from those fitted to the homologated motorcycle.
- All fuel tanks must be filled with fire retardant material, or be fitted with a fuel cell bladder.
- Fuel tanks made of composite materials (carbon fibre, aramid fibre, glass fibre, etc.) must have passed the FIM Standards for fuel tanks or be lined with a fuel cell bladder.
- Tanks made of composite material must bear the label certifying conformity with FIM Fuel Tank Test Standards. -Fuel tanks without a fuel cell bladder must bear a label certifying conformity with FIM Fuel Tank Test Standards.  
Such labels must include the fuel tank manufacturer's name, date of tank manufacture, and name of testing laboratory.
- Each manufacturer is requested to inform the FIM/CCR Secretariat of its fuel tank model(s) which have passed the FIM test standards, together with a copy of the fuel tank label. Full details of the FIM Fuel Tank Test Standards and Procedures are available from the FIM (See 'Fuel Tank Test Standards' below).
- Fuel cell bladders must conform to or exceed the specification FIM/FCB-2005.
- Full details of this standard are available from the FIM
- The fuel tank must be fixed to the frame from the front and the rear with a crash proof assembly system. Bayonet style couplings cannot be used, nor may the tank be fixed to any parts of the streamlining (fairing) or any plastic part. The Chief Technical Officer has the right to refuse a motorcycle if he is of the opinion that the fuel tank fixation is not safe.
- The original tank may be modified to achieve the maximum capacity of 24 litres, provided the original profile is as homologated.
- A cross over line between each side of the tank is allowed (maximum inside diameter 10 mm).
- Fuel tanks with tank breather pipes must be fitted with non-return valves which discharge into a catch tank with a minimum volume of 250 cc made of a suitable material.
- Fuel tank filler caps may be altered or replaced from those fitted to the homologated motorcycle, and when closed, must be leak proof.

Additionally, they must be secured to prevent accidental opening at any time.

- The same size fuel tank used in practice must be used during the entire event.

### **Fuel tank homologation**

- 1) Any fuel tanks, made of non ferrous materials (with the exception of aluminum) must be tested according to the test procedure prescribed by the FIM.
- 2) Each manufacturer is responsible for testing its own fuel tank model(s) and will certify that the fuel tank exceeds the FIM test standard, if it has passed the FIM test procedure for fuel tanks.
- 3) Each manufacturer must affix a quality and test label on each fuel tank type that is produced for competition use. This quality and test label will be the recognition of a fuel tank model which has passed the FIM test procedure.
- 4) All fuel tanks that are made to the same design, dimensions, number of fibre layers, grade of fibre, percentage of resin, etc, must be identified with the same quality and test label.
- 5) The quality and test label will include the following information on each label affixed to each fuel tank: name of the fuel tank manufacturer, date of fabrication, code or part number, name of testing laboratory, fuel capacity.
- 6) Each manufacturer is requested to inform the FIM/CCR Secretariat of its fuel tank model(s) which have passed the FIM test procedure, with a copy of the quality and test label, according to point 5.
- 7) Only fuel tanks that have passed the FIM test procedure will be accepted.

### **5.2.6.10.10 Fairing/Body Work**

- a) Fairing, mudguards and body work must conform in principle to the homologated shape as originally produced by the manufacturer.
- b) Wind screen may be replaced.
- c) Original air ducts running between the fairing to the airbox may be altered or replaced from those fitted to the homologated motorcycle.
- d) The lower fairing has to 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 litres). The lower edge of openings in the fairing must be positioned at least 50 mm above the bottom of the fairing.
- e) Minimal changes are allowed in the fairing to permit the use of an elevator (stand) for wheel changes and to add plastic protective cones to the frame or the engine.
- f) Holes may be drilled or cut in the fairing or bodywork to allow additional increased intake air to the oil cooler. Holes bigger than 10mm must be covered with a particle grill or fine wire mesh. Grill/mesh must be painted to match the surrounding material.
- g) Front mudguard must conform in principle to the homologated shape originally produced by the manufacturer.

- h) Holes may be drilled in the front mudguard to allow additional cooling. Holes bigger than 10mm must be covered with metal gauze or fine mesh. Mesh must be painted to match the surrounding material.
- i) Rear mudguard may be added or removed.
- j) Material of construction of the front mudguard, rear mudguard and fairing may be altered or replaced from those fitted to the homologated motorcycle.

### **5.2.6.10.11 Seat**

- Seat may be altered or replaced from those fitted to the homologated motorcycle.
- The top portion of the rear body work around the seat may be modified to a solo seat.
- The appearance from both front rear and profile must conform in principle to the homologated shape.
- Holes may be drilled in the seat or rear cowl to allow additional cooling. Holes which are bigger than 10mm must be covered with metal gauze or fine mesh. Mesh must be painted to match the surrounding material.
- Material of construction of the seat may be altered or replaced from those fitted to the homologated motorcycle

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

- Any type of lubrication, brake or suspension fluid may be used.
- Gaskets and gasket material.
- Chassis Bearings (ball, roller, taper, plain, etc.) of any type or brand may be used.
- Engine bearings must be as homologated
- All Fasteners (nuts, bolts, screws, etc.) - EXCEPT internal engines bolts which must remain as homologated.
- External surface finishes and decals.
- Tachometer – NB this must be working so that noise limits may be measured (MCRCB Only)

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

- Instrument and instrument bracket and associated cables.
- Speedometer and associated wheel spacers.
- Chain guard.

### **5.2.6.13 The Following Items MUST BE Removed**

- Headlamp, rear lamp and turn signal indicators (when not incorporated in the fairing). Openings must be covered by suitable materials.
- Rear-view mirrors.
- Horn.
- License plate bracket.
- Tool box.
- Helmet hooks and luggage carrier hooks
- Passenger foot rests.
- Passenger grab rails.

- Safety bars, centre and side stands must be removed (fixed brackets must remain).

### **5.2.6.14 The following items MUST BE altered**

- Motorcycles must be equipped with a functional ignition kill switch or button mounted at least on one side of the handlebar (within reach of the hand while on the hand grips) that is capable of stopping a running engine.
- It is recommended that machines be equipped with a red light on the instrument panel. This light must flash in the event of oil pressure drop
- Throttle controls must be self closing when not held by the hand.
- All drain plugs must be wired. External oil filter(s) screws and bolts that enter an oil cavity must be safety wired (i.e. on crankcases, oil lines, oil coolers, etc.)
- All motorcycles must have a closed breather system. The oil breather line must be connected and discharge in the airbox.
- Where breather or overflow pipes are fitted they must discharge via existing outlets. The original closed system must be retained, no direct atmospheric emission is permitted.