5.2.4 MCRCB BRITISH SUPERBIKE TECHNICAL REGULATIONS

Machines competing in the 2009 British Superbike Championship must comply with the 2009 FIM SUPERBIKE CHAMPIONSHIP 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.

5.2.4 FIM SUPERBIKE 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.

5.2.4.1 **Machine Specifications**

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

5.2.4.2 **Balancing various motorcycle concepts**

- In order to equalize the performance of motorcycles with different engine configurations, changes in the minimum weight and air restrictor sizes are applied according to their respective racing performances.
- These handicaps are applied only to the '1200 cc 2 cylinder' machines homologated as from 01.01.2008.
- At first, a weight handicap is applied according to the relevant provisions in Art. 2.4.4.2. The minimum weight may be reduced twice by 3 kg to a maximum reduction of 6 kg, or increased once and by 3 kg maximum.
- If this measure proves to be insufficient, then a second handicap will be applied: the size of the intake ports will be changed by means of air restrictors. These changes to the size of the air restrictor diameter will be applied in 2 mm steps, according to the relevant provisions described in Art. 2.4.8.1.3.

NB For the British Superbike Championship this will be applied by MCRCB/MSVR not the FIM

5.2.4.3 **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
Until 2006 (included)	5 Years	Over 750 cc up to 1000 2 cylinders ** (1000 cc 2 cylinders)	162 kg	n/a (*)
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	50 mm

(*) 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.

5.2.4.4 **Minimum Weights**

5.2.4.4.1 The minimum weight will be:

1000cc 2 cylinders	162 kg
1000cc 3 cylinder & 1000cc 4 cylinder	162 kg
1200cc 2 cylinder	168kg (**)

(**) See handicap rule for further information

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.

5.2.4.4.2 **Minimum weight adjustments**

The minimum weights will be increased or decreased in steps of 3 kg according to the following procedure:

1) By taking the race points of the riders of the best two 1000 cc 4 cylinders and best two 1200 cc 2 cylinders in each race an average will be calculated after every event, the 'event average'.

   If there is only one finisher from one of the configurations, the 'event average' will be calculated from the first rider of each configuration in each race.

   No 'event average' points will be calculated if one of the configurations has no finishers. The 'event average' will then be calculated, based on the results of the other race from the same event.

   If neither race has any finishers from one of the configurations, the event will not be considered.
2) 'Wet' races (as declared by the Race Director) are not taken in account for the calculation of an 'event average'.
3) After 3 events, the average value of the 'event averages' of each configuration will be calculated.

The score of the 1000 cc 4 cylinders and the score of the 1200 cc 2 cylinders will be compared as follows:

Should the average value of the 'event averages' over 3 events favour the 1200cc 2 cylinders by more than 5 points, and if a rider of a machine with this configuration is leading the British Superbike Championship riders standings at that time, then the minimum weight of all 1200cc 2 cylinders will be increased by 3 kg. The upper limit is 171 kg.

Should average value of the 'event averages' over 3 events favuor the 1000cc 4 cylinders by more than 5 points, and if a rider of a machine with this configuration is leading the British Superbike Championship riders standings at that time, then the minimum weight of all 1200 cc 2 cylinders will be reduced by 3 kg. The lower limit is 162 kg.

If the minimum weight is not updated, then the results of three more events will be considered, and a new average value of the 'event averages' will be calculated over six events and so on, over multiples of three events, until the points gap of the average value of the 'event averages' from the last minimum weight update is higher than 5.

The Race Director will inform all the teams about the possible minimum weight adjustments, within 48 hours from the end of the last event where the average value of the 'event averages' was calculated. The new minimum weight adjustments must be applied from the first following event.

5.2.4.5 **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.

5.2.4.6 **Fuel**

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

5.2.4.7 **Tyres**

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

The use of tyre warmers is allowed.
Any modification (cutting, grooving) is forbidden.

5.2.4.8 **Engine**

The following engine components may not be altered from the homologated machine except as noted.

- The homologated engine design model cannot be changed.
- Homologated materials and castings for the crankcase, cylinder, cylinder head and gear-box housing must be used.
- Material for the crankcase, cylinder, cylinder head and gear-box housing may only be added by welding or removed by machining.
- The method of cam drive must remain as homologated unless a complete kit is available through normal commercial channels. These kits must be available in significant quantity and be listed in the racing spare parts book.

For 1000 cc 3 & 4 cylinders and 1200cc 2 cylinders

- Aftermarket or modified cam drive components are allowed, however the cam drive must be in the homologated location **and the system must be as homologated**.
- The method of valve retention must remain as the homologated model (no pneumatic valve retention devices are allowed unless fitted to the homologated model).
- All moving internal engine, gear-box and clutch parts may be altered or replaced including materials from those fitted on the homologated motorcycle (unless not allowed by the individual section covering the parts in question).
- Polishing and lightening of engine parts is permitted, except for carburetion instruments (unless not allowed by the individual section covering the parts in question).

For all configurations

- The sequence in which the cylinders are ignited (i.e. 1-2-4-3), must remain as originally designed on the homologated model. Simultaneous (*) firing

of 2 cylinders is also forbidden if not adopted on the homologated motorcycle.

*up to 5 degrees firing difference in 2 cylinders is regarded as 'simultaneous' firing.

5.2.4.8.1 **Carburetion Instruments/Fuel Injection System**

5.2.4.8.1.1 **For 1000cc 2 cylinders**

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

- Carburetion instruments must be used un-modified either as the original homologated carburetion instrument or as the homologated optional carburetion instrument.
- The only modifications allowed to the homologated carburetion instruments original or optional are jets, needles, throttle valves, fuel injectors and bell mouths **including their fixing points**.

The original manufacturer must use the following criteria for the designing and making of the optional homologated carburetion instruments.

a) There is no limit for the intake size of an engine equipped by fuel injection systems.
b) The optional injector body material must remain the same as used on the original homologated carburetion instruments.
c) A minimum number of optional carburetion instruments must be available as spare parts and be included in the manufacturer's racing parts lists. All manufacturers must have a minimum of 15 sets available through traditional distributorships worldwide (**and must be made available to any BSB team using that manufacturers machines)** for the life of the homologation. The price of the optional carburetion instruments to the public must not exceed twice the manufacturers suggested retail price of the original homologated carburetion instrument in the country of origin. This price must be indicated on the FIM Homologation Form.
d) The motorcycle manufacturer may submit only one optional carburetion instrument for each model at the time of homologation.
e) The motorcycle manufacturer must supply a sample set of the original and optional carburetion instruments to the FIM **(and MCRCB)** for use as comparison samples at the events.
f) The motorcycle manufacturer must provide evidence that the minimum of 15 sets of optional carburetion instruments have been manufactured **and are available to all BSB teams using that machine.**
g) The optional carburetion instruments must be available for at least three years after the homologation date.
h) The carburetion instrument homologation will be valid for the same period as the homologated motorcycle.
i) An additional model of optional carburetion instruments may be homologated during the life of the machine's homologation. These carburetion instruments must meet the same requirements as the original

modified instruments. This is to allow development after the original homologation.

- The optional carburetion instruments may only be homologated at the same time as a new homologation. (see section i) above for additional optional carburetion instruments]

5.2.4.8.1.2 **Carburetion Instruments for 1000 cc 3 & 4 cylinders and 1200cc 2 cylinders**

Carburetion instruments refers throttle bodies and variable length intake tract devices.

- The original homologated carburetion instruments must be used un-modified.
- The use of optional homologated carburetion instruments is not allowed.
- The fuel injectors may be replaced, however they must fit without modification to the homologated throttle body.
- The carburetion instruments intake insulators may be modified.
- Bell mouths **(including their fixing points)** may be altered or replaced.
- Vacuum slides may be fixed in the open position.
- Secondary throttle valves and shafts may be removed or fixed in the open position and the electronics may be disconnected or removed.

Only for motorcycles homologated after the 1 January 2010

- Electronically controlled throttle valves, known as 'ride-by-wire' systems, may be used exclusively if the homologated model is equipped with this system. Software may be modified but all safety systems and procedures designed by the original manufacturer must be maintained.

Application as from 2011

5.2.4.8.1.2 Carburetion Instruments for 1000 cc 3 & 4 cylinders and 1200cc 2 cylinders

Carburetion instruments refers throttle bodies and variable length intake tract devices.

- Injectors must be stock and unaltered from the orignal specification and manufacture.

5.2.4.8.1.3 **Air restrictors for 1200cc 2 cylinders**

Definition:

An air restrictor is a metallic device with a tract of constant controlled section and which is placed in the induction duct **between** the carburetion instrument (throttle body) **and the cylinder head**. The length of the controlled tract must be at least 3 mm. No air and/or air-fuel mixture to the engine must by-pass the restrictor. No carburetion part (injector, needle, slide, etc) must extend through the restrictor.

Application:
Only the 1200 cc 2 cylinders will be fitted with air restrictors. The initial air restrictor size to be installed is equivalent to a 50 mm circular area (1963,5 mm^2). Air restrictor size will be adjusted (in steps equivalent to a change of 2 mm in diameter or equivalent circular area, upwards to 52 mm and then to no restrictor at all, downwards to a minimum of 46 mm), if needed during the Championship, as described below in Art. 5.2.4.8.1.4.

The Manufacturer must supply the MCRCB with 2 sets of plug-calibers (-gauges) to check the diameter of the air restrictor when using one of the prescribed sizes (52, 50, 48, 46 mm).

A Manufacturer may have a non-circular air restrictor, provided that the area of this restrictor is equivalent to the area of a nominal circular restrictor. **In this case, the Manufacturer must supply the MCRCB with 2 sets of plug-calibers (-gauges) for measuring the restrictor during the technical verifications.**

The FIM and **MCRCB** may also request the Manufacturer to supply a cut section of the air restrictor(s) in each of the prescribed sizes.

5.2.4.8.1.4 **Air Restrictor adjustment**

The minimum air restrictor size is increased or decreased in 2 mm steps in diameter of equivalent circular area, according to following procedure:

1) If the minimum weight of the 1200cc 2 cylinders configuration has reached the lower limit of 162kg **and**,
   - if the resulting gap in the average value of 'event averages' is more than 5 points in favor of the 1000cc 4- cylinders and,
   - if a rider of a 1000cc 4 cylinder is leading the riders' British Superbike Championship standings at that time, then the initial air restrictor size of the 1200cc 2 cylinders will be increased by one size, to a Ø 52 mm (or the equivalent area 2123.7 mm^2), or as a last step, the air restrictor will be withdrawn.

2) If the minimum weight for 1200cc 2 cylinder configuration has reached the upper limit of 171 kg **and**,
   - if the resulting gap of the average value of 'event averages' is more than 5 points in favor of the 1200cc 2 cylinders and,
   - if a rider of a 1200cc 2 cylinder is leading the riders' British Superbike Championship standings at that time, then the initial air restrictor size of the 1200cc 2 cylinders will be reduced by one size, to a Ø48 mm (or the equivalent area 1809,6 mm^2), or, as last step, to a minimum of Ø46 mm (or the equivalent area 1661,9 mm^2).

If the air restrictor size is not updated, then the results of three more events will be considered, and a new average value of the 'event averages' will be calculated over six events and so on, over multiples of three events, until the

points gap of the average value of the 'event averages' from the last air restrictor size update is higher than 5.

The BSB Race Director will inform all the teams about the possible air restrictor size adjustments, within 48 hours from the end of the last event, where the average value of the 'event averages' was calculated. The new air restrictor size adjustments must be applied as from the first following event.

5.2.4.8.2 **Cylinder Head**

The homologated cylinder head can be modified as follows:

- Homologated materials and castings for the cylinder heads must be used.
- Material for these parts may only be added by welding or removed by machining.
- The homologated cylinder head cover may be modified.
- The induction and exhaust system including the number of valves and or ports (intake and exhaust) must be as homologated.
- 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.
- The compression ratio is free.
- The combustion chamber may be modified.
- The valves may be altered or replaced from those fitted to the homologated motorcycle.
- The valve seats may be altered or replaced from those fitted to the homologated motorcycle.
- The valve guide may be altered or replaced from those fitted to the homologated motorcycle.
- Valve springs may be altered or replaced from those fitted to the homologated motorcycle.
- The valve tappets and retainers may be altered or replaced from those fitted to the homologated motorcycle.

For 1000cc 3 & 4 cylinders and 1200cc 2 cylinders

Aftermarket or modified valves, springs, tappets, retainers and other valve train components are permitted. The original number of valves must be maintained.

a) Valve diameters, including stem, must remain as homologated.
b) Valves must be made of the same basic material as the homologated valves.
c) Valves must remain in the homologated location and at the same angle as the homologated valves, except for normal valve maintenance.
d) Rocker arms (if any) must remain as homologated (material and dimensions).

5.2.4.8.3 **Camshaft**

Camshafts may be altered or replaced from those fitted to the homologated motorcycle (see also article 2.4.8).

5.2.4.8.4 **Cam Sprockets or Gears**

Cam sprockets or cam gears may be altered or replaced to allow the degreeing of the camshafts (see also Art. 2.4.8).

5.2.4.8.5 **Cylinders**

- Homologated materials and casting for the cylinder block must be used.
- The material for the cylinder block may only be added by welding and/or removed by machining.
- The sleeves or liner material may be changed and the surface finish is free.
- The original bore size must be retained.

5.2.4.8.6 **Pistons**

For 1000cc 2 cylinders, 1000cc 3 & 4 cylinders

Pistons may be altered or replaced from those fitted to the homologated motorcycle.

For 1200cc 2 cylinders

Standard piston or the piston kit (*) must be used.

(*) The piston kit must have the same price as the standard one and must be listed in the current racing parts list of the Manufacturer and be on sale for customers. Within 90 days from the order, the customer must receive the piston kit set.

5.2.4.8.7 **Piston Rings**

Piston rings may be altered or replaced from those fitted to the homologated motorcycle.

5.2.4.8.8 **Piston Pins and Clips**

Piston pins and clips may be altered or replaced from those fitted to the homologated motorcycle.

5.2.4.8.9 **Connecting Rods**

For 1000cc 2 cylinders and 1000cc 3 & 4 cylinders

- Connecting rod may be altered or replaced from those fitted to the homologated motorcycle.
- Carbon composite or carbon fibre materials are not allowed if not used in the homologated motorcycle.

For 1200cc 2 cylinders

Connecting rod must remain as homologated. Polishing and lightening is not allowed.

5.2.4.8.10 **Crankshaft**

For 1000cc 2 cylinders

- Crankshaft may be altered or replaced from those fitted to the homologated motorcycle.
- Crankshaft stroke must remain as homologated.

For 1000cc 3 & 4 cylinders and 1200cc 2 cylinders

The following modifications are allowed to the homologated crankshaft:

a) Bearing surfaces may be polished or a surface treatment may be applied.
b) Balancing is allowed but only by the same method as the homologated crankshaft (for example heavy metal i.e. Mallory metal inserts are not permitted unless they are originally specified in the homologated crankshaft.)
c) Attachment of aftermarket ignition components or sensors is permitted.
d) Balance shaft may be altered, removed or modified.

5.2.4.8.11 **Crankcase/Gearbox housing and lateral covers**

- Homologated materials and castings for crankcase and gearbox housing must be used. Material for crankcase and gearbox housing may only be added by welding or removed by machining.
- Oil-pan (sump) may be altered or replaced.
- 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 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 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 must be fixed properly and all devices are fitted by bolts onto the engine cover/case.
  All devices must be approved by MCRCB and it is recommended that for composite material, Nylon 6.6 long carbon fibre 60% is used and all devices are fixed by bolts onto the engine covers/cases not stuck

5.2.4.8.12 **Transmission/Gearbox**

- All transmission/gearbox ratios, shafts, drums, selector forks are free.
- Primary gear ratios are free**.**
- The number of gears must remain as homologated.
- Additions to gearbox or selector mechanism, such as quick shift systems, are allowed.
- Countershaft sprocket, rear wheel sprocket, chain pitch and size can be changed.
- Any power source (i.e. hydraulic or electric) cannot be used for gear selection, if not installed in the homologated model for road use. Human power and so called quick shift systems are excluded from the ban.

5.2.4.8.13 **Clutch**

- Aftermarket or modified clutches are permitted.
- Back torque limiter is permitted.

For 1000cc 2 cylinders - Clutch system (wet or dry type) and method of operation (cable/hydraulic) may be altered or replaced from those fitted to the homologated motorcycle.

For 1000cc 3 & 4 cylinders and 1200cc 2 cylinders - Clutch system (wet or dry type) and method of operation (cable/hydraulic) must remain as homologated.

5.2.4.8.14 **Oil Pumps and Oil Lines**

- Oil pump may be altered or replaced from those fitted to the homologated motorcycle.
- 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.

5.2.4.8.15 **Radiator/Oil Cooler**

- The original radiator or oil cooler may be altered or replaced from those fitted to the homologated motorcycle.
- Additional radiators or oil coolers may be added.
- 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.

5.2.4.8.16 **Air Box**

- The air box may be altered or replaced from those fitted to the homologated motorcycle (a special design for racing is allowed).
- If fuel injectors are attached to the cover of the air box, their position must remain as original.
- The air filter element may be removed.
- The air box must be completely closed around the induction bell mouth and all engine breather tubes. Carburetion instruments may be entirely within the air box.
- The air box drains must be sealed.
- All motorcycles must have a closed breather system. The oil breather line must be connected and discharge in the air box.
- The breather system (air box plus any breather oil collector box) must be capable in the event of drain pipe blockage, of retaining a minimum of 1000cc of discharged fluid.

Only for motorcycles homologated after the 1 January 2010

- **The air box must remain as originally produced by the manufacturer on the homologated motorcycle.**
- **Air filters, internal flap type valve, sensors and vacuum fittings may be removed, modified or replaced with aftermarket parts.**
- **Any holes in the air box to the outside atmosphere resulting from the removal of componenets must be completely sealed from incoming air.**
- **Ram air tubes or ducts running from the fairing to the air box may be modified, replaced or removed. If tubes/ducts are utilized, they must be attached to the original, unmodified air box inlets.**

- All motorcycles must have a closed breather system. All the oil breather lines must be connected and discharge in the air box.

5.2.4.8.17 **Fuel Supply**

- The engine control unit (ECU) may be modified or changed.
- Fuel pump and pressure regulator may be modified or changed. **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.

Application from 2011

5.2.4.8.17 Fuel Supply

Fuel pump and fuel pressure regulator must remain the same as on the homologated model. (Max pressure will be defined in the homologation papers and the fuel line must be modified to allow standardised checks by technical officials)

5.2.4.8.18 **Exhaust System**

- Exhaust pipes, catalytic converters and silencers may be altered or replaced 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.
- For safety reasons, the exposed edge(s) of the exhaust pipe(s) outlet(s) 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 will be 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**

5.2.4.9 **Electronics and Electrics**

Electric cables, connectors, battery and switches are free.

5.2.4.9.1 **Ignition/Engine Control System**

- Ignition/engine control system (ECU) may be modified or changed.
- Spark plugs and plug caps and wires may be replaced.

5.2.4.9.2 **Generator, alternator, electric starter**

The generator, starting system electrical or manual including kick lever, pedal, starter crank gear and starter shaft may be altered, replaced or removed from those fitted to the homologated motorcycle.

5.2.4.9.3 **Additional Equipment**

- Additional electronic hardware equipment not on the original homologated motorcycle may be added (**e.g**. data acquisition, computers, recording equipment, **traction control**).
- 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.

5.2.4.10 **Frame and Body**

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

5.2.4.10.1 **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.

5.2.4.10.2 **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)**

5.2.4.10.3 **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.

5.2.4.10.4 **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).

5.2.4.10.5 **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 (3.5 in. x 16.5 in. and 3.75 in. x 16.5 in.) shall be allowed for the front tyre.**
- **Only one rim size (6.25 in. x 16.5 in.) shall be allowed for the rear tyre.**

5.2.4.10.6 **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 used. 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.**

5.2.4.10.7 **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.

5.2.4.10.8 **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.

5.2.4.10.9 **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.

5.2.4.10.10 **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.

5.2.4.10.11 **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

5.2.4.11 **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.
- Bearings (ball, roller, taper, plain, etc.) of any type or brand may be used.
- Fasteners (nuts, bolts, screws, etc.).
- External surface finishes and decals.
- **Tachometer – NB this must be working so that noise limits may be measured (MCRCB Only)**

5.2.4.12 **The following items MAY BE removed**

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

5.2.4.13 **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).

5.2.4.14 **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.