

**6 August 2011**

## **MSVR announce new British Superbike Championship Technical Regulations**

Over a period of twenty four months MSVR has engaged in detailed discussions with teams, manufacturers and other interested parties to formulate the BSB 2012-2015 technical rules.

During this period the broader economic climate continues to be difficult and within world motorsport there have been many examples of manufacturers and teams reducing their activity as a consequence.

In 2010 the lower technical specification EVO category was introduced, pioneering the use of a series specified ECU, with no traction control, launch control and anti wheelie strategies as well as a one bike rule.

The quality and quantity of teams and riders in the British Superbike Championship is at an all time high, however in order to develop it even further it is clear that decisive ground breaking technical regulations are required.

The objectives of the new, MCRCB approved BSB technical rules are to:

- 1) Create a stable regulations platform of minimum four years validity.
- 2) Reduce the requirement for and use of certain technologies.
- 3) Improve the spectacle of the competition.
- 4) Increase the opportunity for private teams to compete competitively.
- 5) Limit performance by using the limits of the standard components together with allowing limited modifications to improve reliability and durability and to create parity amongst motorcycle models and types.

Summary of modifications.

Retaining the standard piston and valves to control tuning excesses, only the following modifications to be allowed.

1. Camshafts with free profile, increased duration and lift.
2. Valve springs, seats and their retainers (maintaining original materials),
3. Porting of the inlet and exhaust ports with epoxy fillers allowed if necessary.
4. Machining of the cylinder head gasket surface to adjust compression.
5. Re machining of combustion chambers, but no material to be added.
6. Rev limit 750rpm above standard, set by spec ECU – standard level determined by street product on official dyno.
7. Aftermarket connecting rods of the same or greater weight than the original. Material to be either as homologated or steel. Centre to centre length to be standard.

8. Crankshaft can be re balanced, but only by the original method.
9. An aftermarket gearbox with a single set of gear ratios nominated for the season. Design concept to be the same as the homologated item.
10. Oil sumps and pumps can be modified to improve reliability.

Pistons and valves remain standard. Maintaining the standard piston crown design is a critical part of limiting the tuning possibilities, together with mandated use of a series specified ECU and a rev limit.

**The 2012 BSB technical regulations comprise the current 2011 BSB-EVO technical regulations with the following modifications.**

#### **5.2.6.8.2 Cylinder head**

The homologated cylinder head may be modified as follows:  
Homologated materials and castings for the cylinder heads must be used.

The addition of material in the ports is allowed. Welding is forbidden. No other material may be added to the cylinder head. Material for these parts may only be removed by machining.

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, but the combustion chamber may be modified only by taking material off.

The rocker arms (if any) must remain as homologated.

The Cylinder head gasket surface may be machined to allow the adjustment of compression ratio or resurfacing to repair a warped cylinder surface deck.

The induction and exhaust system including the number of valves and or ports (intake and exhaust) must be as homologated.

Valves must remain in the same location and at the same angle as the homologated model.

Valves must remain as homologated.

Valve seats can be modified or replaced.

Valve guides must remain as homologated. Modifications to the port area are allowed.

Valve springs may be altered or replaced from those fitted to the homologated motorcycle. The material must remain as homologated.

Valve spring seats, spring retainers and cotters may be altered or replaced from those fitted to the homologated motorcycle. The material of the valve spring seat must remain as homologated.

The tappets/buckets must remain as homologated.

#### **5.2.6.8.3 Camshaft**

The method of drive must remain as homologated.

The duration and lift are free.

The cam chain or cam belt tensioning devices(s) are free.

#### **5.2.6.8.4 Cam Sprockets**

Cam sprockets or cam gears may be altered or replaced to allow the degreeing of the camshafts.

#### **5.2.6.8.9 Connecting Rods**

Connecting rod may be altered or replaced from those fitted to the homologated motorcycle. The weight must be the same or greater than the original homologated part.

The material can be the same as the original homologated item or steel.

The centre to centre length of the rod must be the same as the original homologated item.

#### **5.2.6.8.10 Crankshaft**

No modifications are allowed (including lightening).

The balance shaft must remain as homologated.

Bearing surfaces may be polished or surface treated.

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.)

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

All transmission/gearbox ratios, shafts, shift drum and selector forks may be altered or replaced. The design concept must remain the same as the original homologated parts.

Only one set of gear ratios may be selected for the season. The chosen ratios must be declared to MSVR technical control and MoTeC at the first event.

Primary gears (and ratio) must remain as homologated.

External quick shift systems are allowed.

Countershaft sprocket, rear wheel sprocket, chain pitch and size can be changed.

#### **5.2.6.8.14 Oil Pumps, Oil Sumps, Oil Lines and Water Pumps**

Original equipment oil pumps are required but may be modified:

Modifications may include

- a. Blueprinting.
- b. Changing the pressure relief spring.
- c. Reducing gear and housing thickness.

The external appearance must remain as homologated.

Aftermarket oil sumps and the associated pump pick up will be allowed.

Oil lines may be replaced with high pressure braided stainless or equivalent for durability purposes.

The internal parts of the water pump may be changed or modified. The drive ratio may be changed. The external appearance must remain as homologated. Water pipes may be modified or replaced

#### **5.2.6.8.16 Airbox**

Airbox must remain as originally produced by the manufacturer on the homologated motorcycle (exception: motorcycles homologated pre 1.1.10 - \*\*provisional\*\*)

Air filters, internal flap type valve, and vacuum fittings may be removed, modified, or replaced with aftermarket parts.

Any holes in the airbox to the outside atmosphere resulting from the removal of components must be completely sealed from incoming air.

Ram air tubes or ducts may be modified, replaced with aftermarket parts or removed. If tubes/ducts are utilized, they must be attached to the original airbox inlets.

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

#### **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 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 750rpm above standard street limit as prescribed by the MCRCB/MSVR whose decision will be final.

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.

Only standard sensors may be fitted throughout the motorcycle. The fitment of an oil pressure sensor is allowed.

Secondary butterflies may be removed if required along with associated parts, just the butterfly may also be removed leaving the remaining parts for engine braking control.

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.

#### **5.2.6.10.10 Fairing/Bodywork**

Fairings, mudguards and body work must conform in principle to the homologated shape as produced by the manufacturer, irrespective of the model year to encourage the most up to date visual impression.

Approved by:

