

Superbike – TECHNICAL SPECIFICATIONS 2018

Rules that allow changes to the bikes manufactured for motorcycles used are made for ensuring the safety, lowering the costs ja limit the power output.

EVERYTHING THAT IS NOT AUTHORIZED AND PRESCRIBED IN THIS DOCUMENT IS STRICTLY PROHIBITED.

1. General direction

1.1. Motorcycles must be produced by FIM approved manufacturer. All bikes must comply with the requirements stated in the “Road Racing Technical Rules”, except when the equipment is installed by the manufacturer.

1.2. Motorcycles exterior shape (from front, rear and sides) must correspond to the original product of the manufacturer, unless stated otherwise.

1.3. Superbike cylinder volume:

750 to 1299 cm³ 4 stroke 2 cylinders.

650 to 900 cm³ 4 stroke 3 cylinders.

650 to 750 cm³ 4 stroke 4 cylinders.

750 to 1199 cm³ 4 stroke 4 cylinders.

1.4. The volume of the cylinder must remain unreplaced from the original model.

1.5. Increasing the diameter of the cylinder to fit into the limits of the class is prohibited.

2. Requirements for racing equipment

2.1. Closed bike helmet with a double „D“-ring strap.

2.2. Natural or imitation leather bike gloves with knuckle protection.

2.3. Bike boots with shin guard with length equal to or longer than the sole length.

2.4. Stand-alone back protector – instead of the protector incorporated to the suit.

2.5. One- or two-piece leather bike racing suit with a zipper, which incorporates at least shoulder, elbow and knee protectors..

2.5.1. In case two-piece leather suit the zipper must remain closed during the race.

3. Minimum weight

3.1. The minimum weight is 165kg

3.2. Final weighing after the race will be conducted of the bikes in the condition they finished the race.

3.3. A bike must meet the requirements of the minimum weight in the condition it finished the race. Nothing may be added to the motorcycle, including water, oil, fuel, tyres etc.

3.4. The weight of a motorcycle, including the fuel tank and its contents, must not be lower than the minimum weight limit during the whole event, including training, qualification and race.

3.5. During training and qualification the technical committee has a right to ask riders to submit their motorcycle to additional weight control.

3.6. See 3.4.

4. Number plate colors

4.1. Superbike numbers are black (RAL 9005; RGB 003, 005, 010) on a white background (RAL 9010; RGB 250, 255).

4.2. Dimensions of the front numbers:

Minimum height of the number plate: 140 mm
Minimum width of the number plate: 80 mm

4.3. The allocated number must be visible on two locations of the bike – on the front fairing (nose) and on the upper section of the back fairing (tail) or on the back side part of the bellypan on both sides.

4.4. If the background of the fairing is light, there must be black stripes with minimum 8 mm width, which gives the fairing required dimensions.

4.5. In case of a dispute concerning the legibility of numbers, the decision of the head of the technical committee will be final.

5. Fuel

5.1. The engine of a motorcycle used must function on regular fuel meeting the requirements of the retail fuel sold at a public gas station.

6. Specifications of motorcycle

6.1. All parts not listed below must remain in the original condition produced by the manufacturer and must be available to buy from stores.

6.2. Main frame and its parts

6.2.1. The frame must remain as originally produced by the manufacturer.

6.2.2. None of the stiffness connections or piping can be removed. Holes can be drilled only for fastening the permitted components.

6.2.3. All motorcycles must display a vehicle identification number (chassis number) punched on the frame-body.

6.2.4. The sides of the frame-body may be covered by protective parts made of composite material. These protectors must fit the form of the frame. Holes can be drilled only for fastening the permitted components.

6.2.5. Engine mounting brackets or plates must remain as originally produced by the manufacturer.

6.2.6. The rear end of the frame must remain as manufacturer provided.

6.2.7. The rear subframe can be changed.

6.2.8. Bolt-on accessories to the rear sub-frame may be removed.

6.2.9. Color scheme is not fixed but polishing of the frame is not allowed.

6.3. Front forks

6.3.1. Front fork can be changed as also the internals and top parts.

6.3.2. The upper and lower triple trees can be changed.

6.3.3. A steering damper may be added or replaced with an after-market damper

6.3.4. The steering damper cannot act as a steering lock limiting device.

6.4. Rear fork (swingarm)

6.4.1. Swingarm and the rear wheel attachment bolt can be changed.

6.4.2. The use of carbon or kevlar is not allowed unless it is provided by the manufacturer as original fitment.

6.4.3. Rear wheel stand brackets may be added to the rear fork. Brackets must have rounded edges. Fastening screws must be recessed.

6.4.4. A chain guard must be fitted.

6.5. Rear suspension

6.5.1. Rear suspension (shock absorber) may be modified or replaced, but the original system must remain unreplaced (i.e., dual or mono).

6.5.2. Rear suspension attachments may be replaced or modified. The linkage parts must remain as originally produced by the manufacturer for the homologated motorcycle.

7. Wheels (rims)

- 7.1. Wheels can be changed but the original size must remain.
- 7.2. Carbon or other composite material wheels are not allowed.

8. Brakes

- 8.1. Manufacturers original front master cylinder can be changed.
- 8.2. Manufacturers original rear master cylinder can be changed.
- 8.3. The mount of the front and rear brake caliper must remain as originally produced by the manufacturer.
- 8.4. Front and rear brake pads and calipers can be changed.
- 8.5. Front and rear hydraulic brake lines may be replaced.
- 8.6. Front and rear brake discs can be changed. The material and connections must remain the same.
- 8.7. The use of exotic (for example aluminium beryllium etc) materials in the brake discs or calipers is prohibited.

9. Tires

- 9.1. Tires may be changed, but they have to suit for the motorcycle.
- 9.2. Slick tires are allowed.
- 9.3. The use of tire warmers or special warming of the tires is prohibited.
- 9.4. Only in case the race has been declared as "WET", special wet tires are allowed to be used. These tires don't have to have a DOT or E- markings, but they must have a text: "NOT FOR HIGHWAY USE" written on them.
- 9.5. Any modification or treatment (cutting, grooving) of tires is prohibited.

10. Foot rests / Foot controls

- 10.1. Foot rests / foot controls may be relocated but brackets must be mounted to the frame in the original mounting points.
- 10.2. Foot rests must be positioned to the front of the rear axle.
- 10.3. Foot rests may be rigidly mounted or a folding type, which must incorporate a device to return them to the normal position.
- 10.4. The end of the foot rest must have at least an 8mm solid spherical radius.
- 10.5. Non folding footrests must have an end (plug), which is permanently fixed, made of plastic, Teflon or an equivalent type material (minimum radius 8mm).

11. Handlebars and hand controls

- 11.1. Handlebars, hand levers, wiring may be replaced. The ends of handlebars must be rounded.
- 11.2. Electric starter switch and killswitch must be equipped on the handlebars.

12. Fairing / bodywork

- 12.1. Fairing, front mudguards and bodywork must appear to be as originally produced by the manufacturer for the homologated motorcycle.
- 12.2. Windscreen may be replaced.
- 12.3. The original air ducts running between the fairing and the air box may be modified or replaced.
- 12.4. The lower fairing must be constructed to hold, in case of an engine breakdown, at least half of the oil and cooling fluids inside the engine, minimum 5 litres. The lower edge of all the openings in the fairing must be positioned at least 50mm above the bottom of the fairing.
- 12.5. The lower fairing must incorporate maximum of two openings of 25mm diameter. These holes must remain sealed in dry conditions and must be only opened in wet race conditions, when declared "WET" by the Race Director.
- 12.6. Small modifications are permitted to allow usage of a bigger jack for wheel changing and adding a small plastic guard for frame or engine.
- 12.7. The mudguards designed by the manufacturer for the motorcycle may be replaced or modified.
 - a. Front mudguard may be replaced but the visual must remain as originally produced by the manufacturer.

b. Rear mudguard may be replaced but the visual must remain as originally produced by the manufacturer.

13. Fuel tank

13.1. Fuel tanks must remain as originally produced by the manufacturer for the motorcycle.

13.2. Fuel tanks must be fully filled with porous foam.

13.3. Fuel tank must be equipped with a breather and a flap to prevent floating back from the 250cm³ collector tank made of appropriate materials.

13.4. Fuel cap can be changed.

13.5. In addition the cap must be safely locked to stay on the tank in case of an accident and must not leak.

13.6. Composite protectors can be installed on the sides of the fuel tank but the most follow the shape of the tank.

14. Seats

14.1. Seats, seat base, seat frame and associated bodywork may be replaced with parts of similar appearance as originally produced by the manufacturer for the motorcycle.

14.2. Two seater can be rebuilt to a single seater.

14.3. Single seater must allow the number plate to be installed correctly.

14.4. The appearance of the seat / fairing and the distance from front to back and sides and shape must conform to the homologated motorcycle.

15. Radiator and oil cooler

15.1. Radiator must remain as originally produced by the manufacturer

15.2. Additional radiators are not allowed.

15.3. Piping can be changed and the use of water or ethyl alcohol mixture is allowed.

15.4. The expansion tank can be replaced.

16. Air box

16.1. The air box must remain as originally produced by the manufacturer on the motorcycle but the internals can be changed.

16.2. The air filter element may be modified, replaced or removed.

16.3. The air box drains must be sealed.

16.4. All 4-stroke motorcycles must have a closed breather system. All the oil breather lines must be connected and discharge in the air box.

16.5. The breather system (airbox + the oil expansion tank) must be possible to empty during the event through an emptying pipe and the capacity of the system (airbox + the oil expansion tank) must be 1000 cm³.

17. Carburetors

17.1. Carburetors must be original.

17.2. Carburetor number must remain the same as original.

17.3. Polishing or lightening of the carburetors is not allowed.

17.4. Injectors must not be changed or modified.

17.5. Carburetor's choke plates, throttle valves, needles / floating needles may be replaced.

17.6. The original difusors can be modified or replaced by parts made for the motorcycle.

18. Fuel injection systems

18.1. Changes are prohibited.

18.2. Lambda can be added.

18.3. The amount of injectors must remain as manufactured originally.

18.4. Polishing and lightening of the throttle body is not allowed.

18.5. The computer chip that controls fuel injection (EPROM) may be replaced.

18.6. Fuel pump and regulator can be changed or modified.

19. Fuel supply

- 19.1. Fuel pipes and hoses may be replaced with products meant for this usage.
- 19.2. Fuel ventilation pipes and hoses may be replaced.
- 19.3. Fuel filters may be added.
- 19.4. The fuel cut-off valve must be produced by the manufacturer of the motorcycle.

20. Engine

- 20.1. Engine must remain homologated and no changes are allowed.
- 20.2. The original constructions cannot be changed.
- 20.3. The same materials must be used for the crankcase, cylinder, cylinder head and gearbox.
- 20.4. Camshaft mechanism must remain as originally manufactured.
- 20.5. The mechanics of the valve system must remain original.
- 20.6. *Cylinderhead*
 - 20.6.1 Cylinderhead must remain original, modifications are not allowed.
 - 20.6.2. Inlet and outlet channels and flaps must remain as original.
- 20.7. *Camshaft*
 - 20.7.1. Camshaft must remain original.
- 20.8. *Camshaft gearwheels*
 - 20.8.1. The camshaft gearwheels are not allowed to be changed, the tensioner can be changed.
- 20.9. *Crankshaft*
 - 20.9.1. The crankshaft must remain original.
 - 20.9.2. The stroke of the crankshaft must remain original.
 - 20.9.3. The balancing of the crankshaft, rods and pistons is prohibited.
- 20.10. *Oilpump and piping*
 - 20.10.1. The original oilpump cannot be changed or replaced.
 - 20.10.2. Oil pipes can be changed, the pipes with positive pressure must have a metal re-enforcement and pressed connections.
- 20.11. *Rods*
 - 20.11.1. The rods must remain original.
- 20.12. *Pistons*
 - 20.12.1. The pistons must remain original.
 - 20.12.2. The balancing of the pistons is not allowed.
 - 20.12.3. Polishing and weight reduction is not allowed.
- 20.13. *Pistonrings*
 - 20.13.1. Pistonrings must remain original.
- 20.14. *Piston stoppers*
 - 20.14.1. Originals must remain.
- 20.15. *Cylinder*
 - 20.15.1. The cylinder diameter must remain original, nothing can be changed.
- 20.16. *Crankcase*
 - 20.16.1. The crankcase must remain original.
- 20.17. *Powertrain/gearbox*
 - 20.17.1. Gearbox must remain original.
 - 20.17.2. Quickshifters can be installed.
 - 20.17.3. Engine side countershaft sprocket, rear wheel sprocket, chain pitch and size may be replaced.
- 20.18. *Clutch*
 - 20.18.1. The clutch must remain as homologated.
 - 20.18.2. Clutch springs can be replaced.
 - 20.18.3. Clutch plates can be replaced but their number must remain as original.
 - 20.18.4. Clutch system (wet or dry type) and the method of operation (by cable or hydraulic) may not be changed.
- 20.19. *Ignition and Engine Control Unit (ECU)*
 - 20.19.1. The CDI can be changed or modified.
 - 20.19.2. The sparkplugs and sparkplug wiring can be changed.

- 20.19.3. The ignition coils must remain original.
- 20.20. *Generator, alternator, electric starter*
- 20.20.1. Must remain original and must be in working order.

21. Exhaust

- 21.1. Exhaust pipes and silencers may be modified or replaced.

22. The following items MAY be modified or replaced from those fitted to the homologated motorcycle

- 22.1. Any type of lubrication, brake or suspension fluid may be used.
- 22.2. Any type of spark plugs and spark plug boots may be used.
- 22.3. Wheel balance weights may be replaced, added to or removed.
- 22.4. Every type and mark of bearings is allowed.
- 22.5. Fasteners (nuts, bolts, screws, etc.).
- 22.6. Electronical equipment, electric wiring, connectors, batteries and switches.
- 22.7. Colour coated exterior surfaces and decals.

23. The following items MAY be removed

- 23.1. Gauges and gauge console with additional cables.
- 23.2. Tachometer.
- 23.3. Speedometer and connected wheel hub and sensors.
- 23.4. The vent and it's wiring.
- 23.5. Chain guard.
- 23.6. Ignition.

24. The following items MUST BE removed

- 24.1. Signal
- 24.2. Rearview mirrors
- 24.3. Numberplate
- 24.4. Toolbag
- 24.5. Helmet and luggage holders
- 24.6. Passengers footrests
- 24.7. Passengers handle
- 24.8. Safety stands, centre stands must be removed
- 24.9. Front light, rear light, indicators.
- 24.10. Replace coolant with water or ethyl alcohol mix.

25. Mandatory

- 25.1. Motorcycles must be equipped with a functional ignition kill switch or button that stops the running engine and is mounted on a handlebar within reach of the hand while on the hand grips.
- 25.2. Throttle controls must be self-closing when not held by the hand.
- 25.3. Electric fuel pump must be connected to the fuel flow cut off switch that activates automatically in case of an accident when the motorcycle is on its side. That switch must deactivate the fuel pump and ignition system within 2 (two) second.
- 25.4. Fuel pump and ignition system cut-off switch may be examined by the head of the technical committee at any given time during the competition.
- 25.5. The oil cap, oil filter bolts and pipes must be retained with stopper wire
- 25.6. All motorcycles must have a closed levelling system that is connected to the airbox where it empties.
- 25.7. 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.
- 25.8. Installed oil system's pressure levelling pipe's discharge opening must open to the oil cavity which must be emptied before every start.
- 25.9. The minimum volume of the oil cavity must be 250cc for transmission oil and 500cc for engine oil.

26. Accessories and Telemetry

26.1. Accessories and sensors that have not been produced by the manufacturer for the motorcycle may not be used.

26.2. Tachometer and speedometers sensors can be changed. Suspension sensors are not allowed. Only the mentioned sensors are allowed, everything else is prohibited.

26.3. Additional sensors mounted to the motorcycle can remain but must be disconnected.