



# SuperSport Technical Rules

# **SUPERSPORT TECHNICAL RULES**

**Everything that is not authorised and prescribed in this rule is strictly forbidden.**

These regulations apply to SUPERSPORT MACHINES, run under Bermuda Charge rules. All motorcycles must comply in every respect with all the requirements for Road Racing as specified in the Technical Regulations. The appearance from front, rear and the profile of SuperSport motorcycles must (except when otherwise stated) conform to the homologated shape (as originally produced by the manufacturer).

The appearance of the exhaust system and engine case guards is excluded from this rule.

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

## **REAR SAFETY LIGHT:**

**All motorcycles must have a Functioning Red Light mounted at the rear of the seat to be used during wet races or in low visibility conditions as declared by Clerk of Course.**

### **The rear safety light must comply with the following;**

- a) The lighting direction must be parallel to the centre line of the motorcycle (running direction) and must be clearly visible from the rear, at least 15 degrees to both the right and left sides of the centre line of the motorcycle.
- b) It must be safely mounted on the very end of the seat/rear bodywork and approximately on the centre line of the motorcycle. In case of dispute over the mounting position of or visibility of the Rear Safety Light, the decision of the Technical Steward or Scrutineer will be final.
- c) 10-15W The power output/luminosity must be equivalent to approximately (incandescent) or 3-5W (led).
- d) The light must be able to be switched on and off.

**HANDLE BAR LEVERS:** Motorcycles must be equipped with a brake lever protection, intended to protect the handlebar brake lever from being accidentally activated in case of collision with another motorcycle.

### **1. Supersport Class:**

400cc - 600cc 4 stroke 4 cylinder

600cc - 750cc 4 stroke 2 cylinder

600cc - 675cc 4 stroke 3 cylinder

200cc - 250cc 2 stroke motorcycles may also be eligible for entry on request to the organisers.

### **2. Minimum Weights:**

- The minimum weights will be:

600 cc four cylinders > 161 kg

675 cc three cylinders > 161 kg

750 cc two cylinders > 161 kg

- 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. There is no tolerance on minimum weight of a motorcycle.
- In the final inspection at the end of the race, the checked machines will be weighed in the condition they were at the end of the race.
- The established weight limit must be met in the condition the machine finished the race.
- Nothing can be added to the machine including water, oil, fuel or tires.
- During the practice and qualifying sessions every rider may be asked to submit his motorcycle to a weight control in any case the rider and team 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 Chief Technical Officer at the preliminary checks

### **3. Number Plate Colours:**

- The background colours and figures for SuperSport are white background with blue numbers. With the Pantone colour values being blue 5010 and white being 9010.
- In case of a dispute concerning the legibility of numbers, the decision of the Technical Steward will be final. The allocated number for the rider must appear three times on the machine. The number on the front may be affixed only once, either in the centre of the fairing or to one side. The two side numbers must be located on the left and right sides of the seat on the fairing or lower rear portion of the lower fairing.

### **4. Fuel:**

- Only control fuel is permitted at the event. Fuel details are contained in the Supplementary Regulations.

## **5. Frame Body and Rear Sub Frame:**

- Frame must remain as originally produced by the manufacturer for the homologated machine.
- Nothing can be added or removed from the frame body.
- All motorcycles must display a vehicle identification number on the frame body (chassis number)
- Engine mounting brackets or plates must remain as originally produced by the manufacturer for the homologated machine.
- Rear sub frame may be changed or altered, but the type of material must remain as homologate or of higher specific weight.
- Additional seat brackets may be added but none may be removed. Bolt-on accessories to the rear sub frame may be removed.
- The paint scheme is not restricted but polishing the frame body or sub frame is not allowed.
- The sides of the frame body may be covered by a protective part made of a composite material.
- These protectors must fit the form of the frame.

## **6. Front Forks**

- Forks must remain as originally produced by the manufacturer for the homologated machine.
- Standard original internal parts of the forks may be modified or changed.
- After-market damper kits or valves may be installed.
- Fork Springs may be replaced or modified.
- Fork Caps may be modified or replaced to allow external adjustment.
- The fork tubes (stanchions, fork pipes) surface may be changed or modified. Additional surface treatments are allowed.
- The upper and lower fork clamps (triple clamp, fork bridges) must remain as originally produced by the manufacturer on the homologated machine.
- Steering damper may be added or replaced with an aftermarket damper.
- The steering damper cannot act as a steering lock limiting device.
- Dust seal can be modified, changed or removed if the fork is totally oil sealed.
- No aftermarket or prototype electronically controlled suspension can be used.

## **7. Rear Fork (Swing Arm):**

- Rear fork must remain as originally produced by the manufacturer for the homologated machine. A chain guard must be fitted in such a way as to reduce the possibility that any part of the rider's

body should become trapped between the power chain and the rear wheel sprocket.

- Rear fork pivot bolt must remain as originally produced by the manufacturer for the homologated machine.
- Rear axle adjuster (chain adjuster) can be modified or changed.
- Rear wheel stand brackets may be added to the rear fork by welding or by bolts. An anchorage system or point(s) to keep the original rear caliper in place may be added to the rear fork.

#### **8. Rear Suspension Unit:**

- Rear suspension unit may be changed or modified. The original attachments of the frame and rear fork must be as homologated.
- Rear suspension unit spring(s) may be changed. No aftermarket or prototype electronically-controlled suspension unit may be used. If original electronic unit is used, it 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 competitions.
- Rear suspension linkage must remain as originally produced by the manufacturer for the homologated machine.

#### **9. Wheels:**

- Wheels must remain as originally produced by the manufacturer at the time of sale into the dealer/distributor network for the homologated machine.
- The speedometer drive may be removed and replaced with a spacer
- If the original design included a cushion drive for the rear wheel, it must remain as originally produced for the homologated machine
- Front and rear wheel axles must remain as originally produced by the manufacturer for the homologated machine
- Wheel diameter and rim width must remain as originally homologated.

#### **10. Brakes:**

- Front and rear brake discs may be changed but must fit the original caliper and mounting.
- However, the outside diameter, the ventilation system must remain as originally produced by the manufacturer for the homologated machine.
- Internally ventilated discs are not allowed if not homologated on the original model.
- The brake disc carriers may be changed, but must retain the same off set and same type of mounting to the wheels.
- Replacement brake discs must be of ferrous material.
- Front and rear brake calipers as well as all the mounting points and mounting hardware
- (mount, carrier, hanger) must remain as originally produced by the manufacturer for the homologated machine (see Art. 2.5.10.3)

- The front master cylinder must remain as originally produced by the manufacturer for the homologated machine, hand lever excluded.
- Rear master cylinder must remain as originally produced by the manufacturer for the homologated machine
- Front and rear hydraulic brake lines may be changed. The brake fluid reservoir may be replaced and/or repositioned. Quick connectors may be used. The split of the front brake lines for both front brake calipers must be made above the lower edge of fork bridge (lower triple clamp).
- Front and rear brake pads may be changed. Brake pad locking pins may be modified for quick change type. Additional air ducts are not allowed.
- ABS may be used only if installed on the homologated model for road use, however it must be completely standard

### **11. Tires:**

- Tires V or Z rating must be used. Only tires on general sale to the public as road legal fitments will be permitted. The depth of the tire tread must be at least 2.5 mm, over the whole tire tread (pattern) width, at pre-race control.
- The tire must have an “E” mark and/or DOT (American Department of Transportation) approval and the DOT number must appear on the tire sidewall.
- Only when a race or practice has been declared “wet” the use of a special tire, commonly known as a “full wet” tire, is allowed. These tires do not need to carry the “DOT” or “E” mark and must be marked “NOT FOR HIGHWAY USE”. Wet tires must be a fully moulded tire. No hand cutting is allowed on moulded tires. The use of hand cut tires is not allowed.

### **12. Foot Rest / Foot Controls:**

- Foot rest/foot controls may be relocated but brackets must be mounted to the frame at the original mounting points.
- 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 8mm solid spherical radius.
- Non folding footrests must have an end (plug) which is permanently fixed, made of aluminium, plastic, Teflon® or an equivalent type material (minimum radius 8mm). The plug surface must be designed to reach the widest possible area.

### **13. Handle Bars and Hand Controls:**

- Handle bars and hand controls may be replaced (does not include brake master cylinder).
- Handle bars and hand controls may be relocated. Throttle control must be self-closing when not held by the hand.
- Electric starter switch and engine stop switch must be located on the handle bars. A functional ignition kill switch or button mounted on the right hand handlebar that is capable of stopping a running engine must be fitted and be **RED**.

#### 14. Fairing / Body Work:

- Fairing, front mudguards and body work must appear to be as originally produced by the manufacturer for the homologated machine.
- Fairing and body work may be replaced with cosmetic duplicates of the original parts. The material may be changed. The use of carbon fibre or Kevlar® materials is not allowed in fairing, fuel tank cover, seat, seat base and associated body work construction.
- Size and dimensions must be the same as the original parts without any addition or subtractions of design elements.
- Wind screen may be replaced with transparent material only.
- The original combination instrument/fairing brackets may be replaced. All other fairing brackets may be altered or replaced.
- The original air ducts running between the fairing and the air box may be altered or replaced.
- The original air ducts into the airbox may be altered or replaced. Original openings for cooling in the lateral fairing/bodywork. Sections may be partially closed only to accommodate sponsors' logos/lettering. Such modification shall be made using wire mesh or perforated plate. The material is free but the distance between all opening centres, circle centres and their diameters must be constant. Holes or perforations must have an open area ratio > 60%.
- 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 (minimum 5 liters). The lower edge of openings in the fairing must be positioned at least 50 mm above the bottom of the fairing
- Minimal changes are allowed to permit the use of an elevator (stand) for wheel changes and to add a small plastic protective cone to the frame or engine.
- Front mudguard must appear as originally supplied by the manufacturer for the homologated machine.
- Front mudguard may be replaced with cosmetic duplicates of the original parts. The use of carbon fibre or Kevlar composites is allowed.
- Front mudguard may be spaced upward for increased tire clearance
- Rear mudguard fixed on the swing-arm may be replaced with cosmetic duplicates of the original parts. The use of carbon fibre or Kevlar composites is allowed.
- Rear mudguards fixed on the swing-arm which incorporate the chain guard may be modified to accommodate larger diameter rear sprockets.
- The existing rear mudguard under the seat may be removed. A mudguard may be fitted directly onto the swing-arm (it may not cover more than 120 degrees of the wheel).

### **15. Fuel Tank:**

- It is permitted to modify the standard manufacturers tank provided the silhouette of the tank remains as homologated and the capacity does not exceed 24 litres.
- Fuel tank must contain fire retardant material (open celled mesh i.e. explososafe)
- Fuel tanks with tank breather pipes must be fitted with non-return valves that discharge into a catch tank with a minimum volume of 250cc made of suitable material.
- Fuel caps may be changed. Fuel caps when closed, must be leak proof. Additionally, they must be securely locked to prevent accidental opening at any time.

### **16. Seat:**

- Seat, seat base and associated body work may be replaced with parts of similar appearance as originally produced by the manufacturer for the homologated machine. The use of carbon fibre or carbon composite materials is allowed.
- 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 principal to the homologated shape.
- The seat / rear cowl replacement must allow for proper number display.
- All exposed edges must be rounded.
- Holes may be drilled in the seat or cowl to allow additional cooling. Holes bigger than 10mm must be covered with metal gauze or fine mesh. Paint to match surrounding material.

### **17. Wiring Harness:**

- The wiring harness may be altered or replaced. Additional wiring harnesses may be added. Cutting of the wiring harness is allowed.

### **18. Battery:**

- The size and type of battery may be changed and relocated. Additional batteries may be added.

### **19. Radiator and Oil Coolers:**

- The radiator may be changed only if it fits in the standard location and does not require any modifications to the frame or to the fairings outer appearance.
- Modifications to the existing oil cooler are allowed only if it does not require any modifications to the main frame or to the fairings outer appearance. A heat exchange (oil/water) can be exchanged by an oil cooler.
- Additional oil coolers are not allowed.
- Radiator fan and wiring may be changed, modified or removed.

## **20. Air Box:**

- The air box must remain as originally produced by the manufacturer on homologated machine.
- The air filter element may be removed, or replaced.
- The air box drains must be sealed.
- All 4 stroke motorcycles must have a closed breather system. The oil breather line must be connected and discharge in the air box.
- The original air ducts running from the fairing to the box may be altered or replaced.
- The original air ducts to the air box may be altered or replaced.

## **21. Fuel injection system:**

- Fuel injection systems refer to throttle bodies and variable length intake tract devices, fuel pump and fuel pressure regulator.
- The original homologated fuel injection system must be used without any modifications.
- Throttle bodies intake insulators may be modified.
- The injectors must be standard units as on the homologated motorcycle.
- Bell mouths, including their fixing points, may be altered or replaced from those fitted by the manufacturer on the homologate machine.
- Butterfly cannot be changed or modified.
- Air or air-fuel mixture can enter or exit to/from the combustion chamber only passing through the original throttle body butterflies.
- Variable intake tracts devices cannot be added if they are not present on the homologate motorcycle.
- Vacuum slides may be fixed in the open position.
- Secondary throttle valves and shafts may be removed or fixed in the open position and all electronics may be disconnected or removed.

## **22. Fuel Supply**

- Fuel lines may be replaced from the fuel petcock (excluded) to the delivery pipe assy (excluded). Quick connectors or dry brake quick connectors may be used.
- Fuel vent lines may be replaced.
- Fuel filters may be added.
- Fuel pump pressure regulator must remain the same as on the homologated motorcycle. The fuel pressure must be as homologated.

## **23. Cylinder Head:**

- Cylinder head must be as homologated
- The following modifications are allowed: -

- Grinding of the cylinder head surface on the side of the gasket.
- Modification of the inlet and exhaust ports by taking off or adding material (welding is forbidden)
- Original homologated valve guides may be cut or modified, but only on the intake or exhaust port side.
- Polishing of the combustion chamber.
- Original valve seats must be used, but modifications are allowed to the shape.
- Compression ratio is free, but the combustion chamber can be modified only by taking material off.
- It is forbidden to add any material to the cylinder head unless as described above. The combustion chamber may be modified.
- Rocker arms (if any) must remain as homologated (materials and dimensions)
- Valves must be as homologated.
- Valve springs can be changed but the numbers must remain as homologated.
- The valve spring retainers may be replaced or modified but their weight must be the same or higher than the original ones.

#### **24. Camshaft:**

- The method of drive must remain as homologated.
- The duration is free but the lift must remain as homologated. - The cam chain or cam belt tensioning device(s) are free.
- At Technical checks: for direct cam drive systems, the cam lobe lift is measured for non-direct cam drive systems, the valve lift is measured.

#### **25. Cam Sprockets:**

- Cam sprockets or cam gears can be modified or replaced to allow the degreing of camshafts.

#### **26. Crankshaft:**

- Crankshaft must remain as homologated without modification.
- Polishing and lightening is not allowed.
- Modifications of the flywheels are not allowed.

#### **27. Oil Pumps and Oil Lines and Water Pumps:**

- Modifications are allowed, but housing, mounting points and oil feed points must stay as original.
  - 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.

### **28. Connecting Rods:**

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

### **29. Pistons:**

- Pistons must remain as homologated.
- Polishing and lightening is not allowed.

### **30. Piston Rings:**

- Piston rings must remain as homologated. No modifications are allowed.

### **31. Piston Pins and Clips:**

- Piston pins and clips must remain as homologated. No modifications are allowed.

### **32. Cylinders:**

- Cylinders must remain as homologated.
- Only the following modifications to the cylinders are allowed. Cylinder head gasket surface may be machined to allow the adjustment of compression ratio or resurfacing to repair a warped cylinder surface deck.
  - Homologated materials and castings for cylinders must be used. The surface finish of the cylinder bore must remain as homologated
- Cylinder capacity must remain at the homologated size.

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

- Crankcases must remain as homologated. No modifications are allowed (including painting, polishing and lightening).
- Other engine cases must be made of the homologated material with exclusion of lateral side covers.
- 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.
- Engine case guards in the form of strengthened engine side covers may be installed. These covers must be no lighter in weight than the standard part.
- All lateral covers/engine cases containing oil and which could be in contact with the ground during a crash, must be protected by a second cover made from composite materials, type carbon or Kevlar®, aluminum 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 securely and cover a minimum of one third of the original cover

- Vacuum pumps are not allowed if not installed in the original engine

#### **34. Transmission / Gearbox:**

- All transmission/ gearbox ratios are free.
- Primary gears must remain as homologated.
- Countershaft sprocket, rear wheel sprocket, chain pitch and size can be changed.
- Quick shift systems are allowed
- Chain guard as long as it is not incorporated in the rear fender may be removed.

#### **35. Clutch:**

- Clutch type (wet or dry) and the way of operation (by cable or hydraulic) must remain as homologated.
- Friction and drive discs may be changed. Clutch springs may be changed.
- The clutch basket (outer) may be reinforced.
- The original clutch assembly may be modified for back torque limiting capabilities (slipper type).
- It is allowed to change to an aftermarket clutch with back torque limiting capabilities (slipper type).
- The use of electro-mechanical or electro-hydraulic actuating systems are not allowed.

#### **36. Ignition / Engine Control System:**

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

#### **37. Generator:**

- Generator must remain as homologated
- The electric starter must operate normally at pre and post-race inspections. The engine must start and run when the electric starter has stopped its procedure.

#### **38. Exhaust System:**

- Exhaust pipes and silencers may be modified or changed. Catalytic converters must be removed.
- The noise limit for Supersports will be 107 dB/A (with 3 DB/A tolerance after the race).
- Wrapping of exhaust systems is not allowed except in the area of the rider's foot or an area in contact with the fairing for protection from heat. - The number of exhaust (final) exists must remain as homologated.

#### **39. Fasteners:**

- Standard fasteners may be replaced with fasteners of any material and design.

- Aluminum fasteners may only be used in non-structural locations.
- Titanium fasteners may be used in structural locations, but the strength and design must be equal to or exceed the strength of the standard fastener it is replacing.
- Special steel fasteners may be used in structural locations, but the strength and design must be equal to or exceed the strength of the standard fastener it is replacing.
- Fasteners may be drilled for safety wire, but intentional weight saving modifications are not allowed.
- Fairing / body work fasteners may be changed to the quick disconnect type.

**40. 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.
- Any type of spark plug and plug cap may be used.
- Any inner tube (if fitted) or inflation valves may be used.
- Instrument and instrument brackets and associated cables.
- Wheel balance weights may be discarded, changed or added to.
- Bearings (ball, roller, taper, plain, etc.) of any type or brand may be used.
- Gaskets and gasket materials
- Painted external surface finishes and decals

**41. The following items may be removed:**

- Speedometer and related wheel spacers
- Bolt on accessories on a rear sub-frame
- Emission control items (anti-pollution) in and around the airbox and engine (oxygen sensor, air injection devices)

**42. The following items *MUST BE* altered:**

- Motorcycles must be equipped with a functional ignition kill switch or button mounted on either side of the handlebar (within reach of the hand while on the hand grips) that is capable of stopping a running engine.
- 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).
- Where breather or overflow pipes are fitted they must discharge via existing outlets.
- The original closed system must be retained, no direct atmospheric emissions permitted.
- All motorcycles must have a closed breather system. The oil breather line must be connected and discharge in the air box.

**43. The following items must be removed:**

- Headlamp and rear lamp.
- Turn signals indicators (when not incorporated in the fairing) openings must be covered with a suitable material.
- Rear view mirrors
- Horn
- Licence plate bracket
- Tool box
- Helmet hooks and luggage carrier hooks
- Passenger footrests
- Passenger grab rails
- Safety bars, centre and side stand must be removed (fixed brackets must remain).

**44. Additional Equipment:**

- Additional equipment not on the original homologated motorcycle may be added (i.e. data acquisition, computers, recording equipment, etc.)
- Telemetry is not allowed

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