

## 2.5 SUPERSPORT AND SUPERSPORT NEXT GENERATION TECHNICAL SPECIFICATIONS

The following rules are intended to give freedom to modify or replace some parts in the interest of safety, research and development and improved competition between various motorcycle concepts.

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

**If a change to a part or system is not specifically allowed in any of the following articles, then it is forbidden.**

Supersport motorcycles require the relevant ~~an~~ FIM **Phase 2** homologation (see Appendix FIM Homologation procedure) ~~for Superstock, Supersport and Superbike motorcycles~~. All machines must be normally aspirated. All motorcycles must comply in every respect with all the requirements for road racing as specified in these Technical Regulations, unless they are already equipped as such on the homologated model.

Once a motorcycle has obtained the homologation, it may be used for racing in the corresponding class for a maximum period stated in (see Homologation art 1.4.4). Or until such time that the homologated motorcycle is disqualified by new rules or changes in the technical specifications of the corresponding class.

The appearance from the front, rear and the profile of Supersport 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.

### **2.5.1 Motorcycle specifications**

All parts and systems not specifically mentioned in the following articles must remain as originally produced by the manufacturer for the homologated motorcycle.

### **2.5.2 Engine configurations and displacement capacities**

The following engine configurations comprise the Supersport class:

Over 400cc up to 600cc	4 stroke	4 cylinders
Over 500cc up to 675cc	4 stroke	3 cylinders
Over 600cc up to 750cc	4 stroke	2 cylinders

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

**Machines outside of these classifications will be considered upon application by the FIM and DWO. They must be equipped with a Ride by Wire throttle system (OEM or as part of a compulsory kit). If approved these machines will be known as Supersport Next Generation Machines. Manufacturers may resubmit currently homologated machines as Supersport Next Generation.**

**2023: All machines must meet requirements of the Supersport Next Generation regulations**

### 2.5.3 Balancing various motorcycle concepts

In order to equalize the performance of motorcycles used in the Supersport World Championship, A system of performance enhancements or restrictions '**balancing factors**' may be applied – including but not limited to:

- Concession Parts
- Torque limited map with Rev Limit
- Minimum Weight
- Air restrictor
- Modifications

~~but not limited to concession parts, minimum weight, air restrictor or Rev Limit) may be developed or applied according to their respective racing performances.) The decision to apply a balancing system to a motorcycle will be taken by the Superbike Commission at any time deemed necessary to ensure fair competition.~~

The eligible concession parts **(and modifications)** supersede all the following regulations (Supersport).

The **range of** concession parts are decided by mutual agreement of SBK Commission ~~and the manufacturers.~~

~~These agreed concession parts will be declared eligible and~~ will be documented in the Eligible Parts for Competition List.

**The specification of Supersport Next Generation machines will be agreed between the machine manufacturer and the FIM SBK Technical Director. The specification will be published in the Eligible Parts for Competition List and will supersede all of the following regulations. The specification will be fixed for the entire season.**

Balancing level will be continued between seasons.

#### 2.5.3.1 Balancing Calculation

- 1) The DWO algorithm will be used to analyse the performance of the machines relative to one another.
- 2) The algorithm may include but not be limited to the following signals:
  - a. Lap time relative to all other competitors
  - b. Speed traps
  - c. Number of riders per brand
  - d. Anticipated individual rider performance
    - i. Per track
    - ii. Considering preceding rounds
  - e. Race results
  - f. Laps led
  - g. Overall race time
  - h. Change in balance following any rpm limiter changes
  - i. Bias towards recent results reflecting current performance
  - j. Any concession part updates being applied
- 3) The balancing factors may be updated (according to Art. 2.5.3) at the end of every 3<sup>rd</sup> event provided at least 3 events remain in the season. The balance will be weighted to the data collected during the previous 6 events.
- 4) The primary method of balancing will be torque limited maps updated in increments of +- x %
- 5) The balancing factors may also be updated at the end of the season.
- 6) FIM/DWO reserves the right to update the ~~rpm~~ balance at their discretion in the case of an imbalance.

### 2.5.3.2 Rev Limit

RPM Limit		
Brand	Type	Limit
Ducati Panigale V2*	2cy 955cc	11,xxx rpm
Honda CBR600RR	4cy 600cc	16,400 rpm
Kawasaki ZX-6R	4cy 600cc	16,400 rpm
Kawasaki ZX-636R**	4cy 636cc	16,xxx rpm
MV Agusta F3	3cy 675cc	15,800 rpm
MV Agusta F3 800*	3cy 800cc	14,xxx rpm
MV Agusta F3 Superveloce*	3cy 800cc	14,xxx rpm
Suzuki GSX-R600	4cy 600cc	16,400 rpm
Suzuki GSX-R750***	4cy 750cc	xx,xxx rpm
Triumph 675R	3cy 675cc	15,500 rpm
Triumph ST765RS*	3cy 765cc	14,xxx rpm
Yamaha YZF-R6	4cy 600cc	16,400 rpm

\* As Supersport Next Generation

- \*\* 2023
- \*\*\* Pending

## 2.5.4 Minimum weight

Weight Limit		
Brand	Type	Limit
Honda CBR600RR	4cy 600cc	<del>160 kg</del>
Kawasaki ZX-6R	4cy 600cc	<del>161 kg</del>
MV Agusta F3	3cy 675cc	<del>160 kg</del>
Suzuki GSX-R600	4cy 600cc	<del>161 kg</del>
Triumph 675R	3cy 675cc	<del>161 kg</del>
Yamaha YZF-R6	4cy 600cc	<del>164 kg</del>

Brand	Bike Weight		Combined Minimum Bike and Rider Weight*
	Hard Minimum	Soft Maximum	
Ducati Panigale V2*	161 kg	173 kg	242 kg
Honda CBR600RR	161 kg	173 kg	242 kg
Kawasaki ZX-6R	161 kg	173 kg	242 kg
Kawasaki ZX-636R**	161 kg	173 kg	242 kg
MV Agusta F3	161 kg	173 kg	242 kg
MV Agusta F3 800*	161 kg	173 kg	242 kg
MV Agusta F3 Superverloce*	161 kg	173 kg	242 kg
Suzuki GSX-R600	161 kg	173 kg	242 kg
Suzuki GSX-R750***	161 kg	173 kg	242 kg
Triumph 675R	161 kg	173 kg	242 kg
Triumph ST765RS*	161 kg	173 kg	242 kg
Yamaha YZF-R6	161 kg	173 kg	242 kg

- a. **Combined weight is the weight of the rider (in full racing equipment) and motorcycle, as used on track.**
- b. **IF the motorcycle has achieved or exceeded the 'Soft Maximum Weight' then the combined minimum weight does not need to be reached. The motorcycle alone may never at any time be below the 'Hard Minimum Weight'.**
- c. At any time during the event, the weight of the whole motorcycle (including the tank and its contents) must not be less than the minimum weight.
- d. There is no tolerance on the minimum weight of the motorcycle ~~or rider~~.

- e. During the final technical inspection at the end of the race, the selected motorcycles will be weighed in the condition they finished the race, and the established weight limit must be met in this condition. Nothing may be added to the motorcycle. This includes all fluids.
- f. 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.
- g. The use of ballast is allowed to stay over the minimum weight limit and may be required due to the handicap system. The use of ballast and weight handicap must be declared to the **FIM SBK** Technical Director at the preliminary checks.

### 2.5.5 Numbers and number plates

The background colours and figures (numbers) for Supersport are a white background with blue numbers:

The sizes for all the front numbers are:	Minimum height:	140 mm
	Minimum width:	80 mm
	Minimum stroke:	25 mm
	Minimum space	
	between numbers	10 mm

The sizes for all the side numbers are:	Minimum height:	120 mm
	Minimum width:	70 mm
	Minimum stroke:	20 mm
	Minimum space	
	between numbers	10 mm

The allocated number (& plate) for the rider must be affixed on the motorcycle as follows:

- a. The numbers must use the design/font and precise colours prescribed by DWO in for the season (Industry Ultra Italic). The reigning World Champion if using the number one plate is excepted from this but the design must be approved by the **FIM SBK** Technical Director in advance.
- b. Only single or double digit numbers will be allowed.
- c. Once on the front, either in the centre of the fairing or slightly off to one side. The number must be centered on the white background with no advertising within 25mm in all directions.
- d. Once on each side on the lower rear portion of the lower fairing. The number must be centred on the white background. Any change to this

position must be pre-approved a minimum of 2 weeks before the first race by the **FIM** SBK Technical Director.

- e. A single outline is permitted and the outline must be of a contrasting colour and the maximum width of the outline is 3mm. The background colour must be clearly visible around all edges of the number (including outline). Reflective or mirror type numbers are not permitted.
- f. Numbers cannot overlap.
- g. No machine may enter the circuit if it does not meet the above regulations. If the rider does enter the circuit then no lap times will be recorded and Race Direction will at their discretion black flag the rider.

In case of a dispute concerning the legibility of numbers, the decision of the **FIM** SBK Technical Director will be final.

### 2.5.6 Fuel

See article 2.8 for full Fuel regulations – **Only the official World Supersport fuel may be used.**

### 2.5.7 Tyres

**a. For single race events:**

~~For 2021 the maximum number of tyres, of any type, available to each rider during the event will be 15 (7 front tyres– 8 rear tyres).~~

**For 2022 the maximum number of tyres, of any type, available to each rider during the event will be 13 (6 front tyres– 7 rear tyres).**

**For double race events:**

~~For 2021 the maximum number of tyres, of any type, available to each rider during the event will be 17 (8 front tyres– 9 rear tyres).~~

**For 2022 the maximum number of tyres, of any type, available to each rider during the event will be 15 (7 front tyres– 8 rear tyres).**

- b. A maximum of 9 tyres per rider can be mounted per rider at any time.
- c. The maximum number of each type or option of tyre is according to the 'allocation list' at each event. This is event specific and supplied to teams by the official tyre supplier. It is the same for every rider in the class. Tyre types may not be exchanged between riders. The official tyre supplier will ensure that each riders allocation limits are adhered to.
- d. **The official tyre supplier must supply a minimum of 2 front and 2 rear options with a minimum allocation of 6 of each type.**
- e. With the consultancy of the **FIM** SBK Technical Director and the official tyre supplier only Race Direction may alter the 'allocation list' during an event.

- f. Every tyre used during the event must be marked with an adhesive sticker with a number allocated by the **FIM** SBK Technical Director. The sticker will be a different colour front and rear.
- g. For both the Supersport races only, Wet and Intermediate tyres will not need to be marked with a tyre sticker. They will not be considered in the total number of tyres available for use, however normal allocation limits still apply.
- h. The tyres used to ride to the grid during the sighting lap of normal start procedures do not need to be marked with a tyre sticker. Tyre stickers MUST be fitted to race tyres before the 5 minute board.**
- i. The tyre stickers will be collected by the teams in a sealed envelope, on the day before the first practice after which the teams will be responsible for their use.
- j. The stickers must be applied to the left sidewall of the tyre. Officials will check that all the motorcycles in the pit lane are fitted with tyres carrying the sticker.
- k. The use of motorcycles without the official stickers will be immediately reported to the Race Direction whom will take appropriate action.
- l. One (1) size for the front and two (2) sizes for the rear are allowed. Each tyre, front and rear, must be available with the same size for all riders. The manufacturers may only submit one front and rear pattern (or slick tyre) for approval (for both wet and for dry tyres).
- m. All tyres to be used must be easily identifiable with a colour marking or a numerical system to be applied by the Official Supplier at the time of manufacture.
- n. At the discretion of the rider, intermediate or wet weather tyre (if allocated) may be used. Wet-weather tyres must be a fully moulded tyre. The use of hand cut tyres is not allowed. Wet-weather tyres must be marked "Not for Highway Use" or "NHS".
- o. Any modification or treatment (cutting, grooving) is forbidden.
- p. At the beginning of the event, the Official Supplier may be requested by the **FIM** SBK Technical Director to deliver to him four (4) samples of each type of tyre to be used at the event.
- q. The allocation of individual tyres will be made on a random basis, with no involvement of any representative from the tyre supplier, teams or riders. Those tyres will be individually identified and may not be exchanged between riders, including between team mates, and may not be exchanged by the tyre supplier after the allocation, except with the permission of the Race Direction.
- r. In exceptional cases, should the sticker be damaged or applied in the wrong way, up to 2 extra stickers may be provided at the sole discretion of the **FIM** SBK Technical Director. However, the damaged sticker must be returned to the **FIM** SBK Technical Director and/or the tyre it was applied to, must be absolutely intact.

Tyre Limitations ~~for dry weather tyres~~:

s. Minimum tyre pressure:

Minimum Tyre Pressure	
Period	Pressure
At all times	1.60bar
No tolerance	

- t. At the 3 minute board the pressure will be checked on the grid for a minimum of three riders using the Pirelli approved tyre gauge. If the tyre is below the minimum limit according to the Pirelli approved gauge then the machine will be removed from the grid to the pitlane to have the pressure corrected and the rider will start the warm up lap from the pitlane (and the race from the back of the grid).
- u. Riders may be stopped in the pitlane at any time by the **FIM** SBK Technical Director or his appointed staff to check the tyre pressure.
- v. Limits for wet and intermediate tyres will be published separately.

## 2.5.8 Engine

**For Supersport Next Generation: No modifications may be made to the engine (all of 2.5.8 and 2.5.9) unless noted in the text or in the Eligible Parts for Competition List.**

~~The allocated number of engines is 5 for the World Championship.~~

~~The allocated number of engines is 3 for the European Championship.~~

**The allocated number of engines is calculated by the number of events and rounded to the nearest whole number (minimum of 3 engines):**

Engine Limit	
Capacity	Rounds/Engine
400-600cc	<b>2.5</b>
601-799cc	<b>3</b>
800cc and over	<b>3.5</b>

See Art. 2.3.9 for Sealing and Usage Details

**Engines may be chosen and impounded for Dyno testing (during events, between events or after the season) at an approved balancing facility and for comparison to the reference engine (see homologation). **Apart FIM and DWO staff, only one** team representative may attend the test.**

~~The following engine specifications and components may not be altered from the homologated motorcycle except as noted:~~

### **2.5.8.1 Fuel injection system**

- a. The original homologated fuel injection system must be used without any modification.
- b. The fuel injectors must be stock and unaltered from the original specification and manufacture.
- c. Air funnels (including their fixing points) may be altered or replaced.
- d. Butterflies cannot be changed or modified.
- e. Variable intake tract devices cannot be added if they are not present on the homologated motorcycle and they must remain identical and operate in the same way as the homologated system (excepting the air funnels). Variable intake tract devices may be replaced with fixed air funnels.
- f. Vacuum slides may be fixed in the open position.
- g. Secondary throttle valves and shafts may be removed or fixed in the open position and the
- h. Electronically controlled throttle valves, known as 'ride-by-wire', may be only used if the homologated model is equipped with the same system. Software may be modified but all the safety systems and procedures designed by the original manufacturer must be maintained.

### **2.5.8.2 Cylinder head**

Cylinder head must be the originally fitted and homologated part. The following modifications are allowed:

- a. 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. Welding is not allowed. No machining or modification is allowed in the cam box / valve mechanism area.
- b. The throttle body intake insulators may be modified.
- c. Modifications of the inlet and exhaust ports by taking off or adding material (welding is forbidden) epoxy may be used to shape the ports.
- d. Surface grinding of the cylinder head surface on the head gasket side.
- e. Original homologated valves guides may be cut or modified, but only on the intake or exhaust port side
- f. Polishing of the combustion chamber
- g. Original valve seats must be used, but modifications are allowed to the shape
- h. Compression ratio is free, but the combustion chamber may be modified only by taking material off.
- i. It is forbidden to add any material to the cylinder head unless as described above.
- j. Rocker arms (if any) must remain as homologated.
- k. The valves must remain as homologated.

- l. Valve springs may be changed but the number must remain as homologated.
- m. Valve spring retainers may be replaced or modified, but their weight must be the same as, or higher than, the original ones.
- n. The shim buckets / tappets must remain as homologated.
- o. The exhaust air bleed system must be blocked and the external fittings on the cam cover(s) may be replaced by plates.

### **2.5.8.3 Camshaft**

- a. Only the originally homologated or the championship eligible concession camshafts from the Eligible Parts for Competition List may be used.
- b. The method of drive must remain as homologated.
- c. The duration is free but the maximum lift must remain as homologated.
- d. The camshafts must be available from the concession parts supplier (art 2.3.16, 2.3.19 and 2.3.20). The price limit is €1000 per camshaft in an inline 3 or 4 cylinder engine and €650 per camshaft in a V engine. The concession camshafts must include the parts listed in 2.5.8.4 if required for use.

### **2.5.8.4 Cam sprockets or cam gears**

- a. Cam sprockets or cam gears may be modified or replaced to allow the degreeing of camshafts.
- b. The cam-chain/cam-belt tensioning device(s) can be changed or modified.

### **2.5.8.5 Cylinders**

- a. Cylinders must be the originally fitted and homologated parts with only the following modification allowed.
  - i. Cylinder head gasket surface may be machined to allow the adjustment of compression ratio or resurfacing to repair a warped cylinder surface deck.
- b. The surface finish of the cylinder bore must remain as homologated.

### **2.5.8.6 Pistons**

- a. Pistons must be the originally fitted and homologated parts with no modification allowed.
- b. Polishing and lightening is not allowed.

### **2.5.8.7 Piston rings**

- a. Piston rings must be the originally fitted and homologated parts with no modification allowed.
- b. All piston rings must be fitted.

### **2.5.8.8 Piston pins and clips**

Piston pins and clips must be the originally fitted and homologated parts with no modification allowed.

### **2.5.8.9 Connecting rods**

- a. Connecting rod assembly must be the originally fitted and homologated parts with no modification allowed.

### **2.5.8.10 Crankshaft**

- a. Crankshaft must be the originally fitted and homologated parts with no modification allowed.
- b. Polishing and lightening is not allowed.
- c. Modifications of the flywheels are not allowed.

### **2.5.8.11 Crankcase / Gearbox housing**

- a. Crankcases must be the originally fitted and homologated parts with no modification allowed.
- b. It is not allowed to add a pump used to create a vacuum in the crankcase. If a vacuum pump is installed on the homologated motorcycle then it may be used only as homologated.
- c. One thread may be altered or created to allow for oil pressure/temperature measurement. The sensor must be positioned so it cannot sustain impact in the case of a crash.

#### **2.5.8.11.1 Lateral covers and protection (including Supersport NG)**

- a. 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.
- b. Titanium bolts may be used to fasten lateral covers.
- c. 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 metal, such as aluminium alloy, stainless steel or steel or titanium, composite covers are not permitted.
- d. The secondary cover must cover a minimum of 1/3 of the original cover. It must have no sharp edges to damage the track surface.
- e. Plates or crash bars from aluminium or steel also are permitted in addition to these covers. All these devices must be designed to be resistant against sudden shocks, abrasions and crash damage.

- f. Covers from the Eligible Parts for Competition List will be permitted without regard of the material or dimensions.
- g. These covers must be fixed properly and securely with a minimum of three (3) with case cover screws that also mount the original covers/engine cases to the crankcases.
- h. Oil containing engine covers cannot be secured with aluminium bolts.
- i. The **FIM** SBK Technical Director has the right to refuse any cover not satisfying this safety purpose.

#### **2.5.8.12 Transmission / Gearbox**

- a. Must be the originally fitted and homologated parts (including but not limited to shafts, selector mechanism, gears and primary gears) with the following exceptions:
  - b. **Supersport:** 1<sup>st</sup> gear shaft and counter gear may be changed and must be declared before the start of the season. **Only one option may be used for the whole season.**
  - c. **For Supersport Next Generation the manufacturer will be responsible for nominating and supplying the first gear.**
  - d. Undercutting and re-shimming are allowed
  - e. The positive neutral selector mechanism may be removed.
  - f. Shift star/indexer, spring, roller and detent may be replaced or modified but must function as originally designed.
  - g. Polishing, surface treatment, and heat treatment of all gearbox components is allowed.
  - h. It will not be allowed to change the gearboxes at the track - a broken Gearbox will equal a broken engine.
  - i. Countershaft sprocket, rear wheel sprocket, chain pitch and size may be changed.
  - j. The front sprocket cover may be modified or eliminated.
  - k. Chain guard as long as it is not incorporated in the rear fender may be removed.

#### **2.5.8.13 Clutch (including Supersport NG)**

- a. Clutch system (wet or dry type) and the method of operation (by cable or hydraulic) must remain as homologated.
- b. Friction and drive discs may be changed.
- c. Clutch springs may be changed.
- d. The clutch basket (outer) must be the originally fitted and homologated part but may be reinforced.
- e. The original clutch inner assembly may be modified or replaced by an aftermarket clutch, also including back torque limiting capabilities (slipper type).

- f. No power source (i.e. hydraulic or electric) can be used for gear selection, if not installed in the homologated model for road use. Human power is excluded from the ban.

#### **2.5.8.14 Oil pumps, water pumps and oil lines**

- a. Modifications are allowed but oil pump housing, mounting points and oil feed points must remain as original.
- b. Oil lines may be modified or replaced. Oil lines containing positive pressure, if replaced, must be of braided reinforced construction with swaged or threaded connectors. **(including Supersport NG)**

#### **2.5.8.15 Cooling System (including Supersport NG)**

- a. The only liquid engine coolants permitted will be water.
- b. The water pump must remain as homologated.
- c. The radiator may be changed with an aftermarket radiator or an additional radiator added that fits in the standard location and does not require any modifications to the main frame or to the fairings' outer appearance.
- d. Modifications to the homologated oil-cooler are allowed only **if** they do not require any modifications to the main frame or to the fairings' outer appearance. A heat exchanger (oil/water) may be replaced with an oil-cooler.
- e. The cooling system hoses and catch tanks may be changed.
- f. Radiator fan and wiring may be changed, modified or removed.
- g. The oil cooler must not be mounted on or above the rear mudguard.

#### **2.5.8.16 Airbox**

- a. The airbox must be the originally fitted and homologated part with no modification allowed.
- b. The air filter element may be removed or replaced.
- c. The airbox drains must be sealed.
- a. All motorcycles must have a closed breather system. All oil breather lines must be connected, may pass through an oil catch tank and must exclusively discharge in the airbox. Only the original breather vents may be used.
- d. No heat protection may be attached to the airbox.

#### **2.5.8.17 Fuel supply**

- a. Fuel pump and fuel pressure regulator must be the originally fitted and homologated parts with no modification allowed.
- b. The fuel pressure must be as homologated.

- c. Fuel lines from the fuel tank up to the injectors (fuel hoses, delivery pipe assembly, joints, clamps, fuel canister) may be replaced and must be located in such a way that they are protected from crash damage.
- d. **Fuel level sensors may be removed or fixed in position.**
- e. Quick connectors or dry break connectors may be used.
- f. Fuel vent lines may be replaced.
- g. Fuel filters may be added.

#### 2.5.8.18 Exhaust system (including Supersport NG)

- a. Exhaust pipes, silencers and exhaust mounts may be altered or replaced from those fitted on the homologated motorcycle. Catalytic converters must be removed.
- b. The number of final exhaust silencer(s) must remain as homologated. The silencer(s) must be on the same side(s) as on the homologated model.
- c. For safety reasons, the exposed edge(s) of the exhaust pipe(s) outlet(s) must be rounded to avoid any sharp edges.
- d. 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.
- e. The noise limit for Supersport will be 107 dB/A (with a 3 dB/A tolerance after the race only).
- f. **Supersport Next Generation machines will have limitations on the exhaust specification defined at the time of the balance test and specified in the Eligible Parts list for Competition. If an exhaust system manufacturer wishes to make eligible a system that does not match the Manufacturers defined specification (or point b) then they may pay to have the (Phase 2) balancing test performed with their system. Once approved the system and its map ID will be added the Eligible Parts for Competition List.**

#### 2.5.9.1 Electrics and electronics (including Supersport NG)

- a. The ECU must be the Supersport ~~600~~-control ECU – the Mectronik MKE7 (part number WSS600\_A). The sole official supplier of the ECU is Solo Engineering. [www.soloengineering.com](http://www.soloengineering.com), [sales@solengineering.com](mailto:sales@solengineering.com)
- b. The firmware and manufacturer (engine) map must be declared eligible by the championship and from the Eligible Parts for Competition List.
- c. The ECU must have the 'FIM Settings' section up to date at all times – it is the team's responsibility to ensure that this is done.
- d. External quickshift modules/sensors may be fitted but may only provide a signal to the Control Supersport ECU
- e. No other external modules may be fitted except:
  1. Part of a quickshifter where the module may only provide a signal to the control ECU.
  2. Championship mandated devices (e.g. 2 way RF system).
  3. Datalogger.

- f. A CAN connection must be made available for Championship devices. **One They** must be located in the rear of the seat unit of the **motorcycle**. It must be connected to the ECU CAN bus and the TPMS system (if fitted) **must be connected to the same bus**. 12v power should be available switched by the main switch (not switched by the ignition switch). **The devices may be championship mandated or nominated by the FIM SBK Technical Director.**

**Connector spec: JST 04R-JWPF-VSLE-S**

1. **Ground**
  2. **CAN Lo**
  3. **CAN Hi**
  4. **12v Main Switch**
- g. **The rain light must be powered by the ECU (as detailed in the harness schematics).**
- h. The ECU may be freely located but must be fitted securely, in a damped mounting without vibration.
- i. During an event the **FIM SBK Technical Director** has the right to ask a team to substitute their ECU. The change has to be done before Sunday warm up.
- j. **During an event the FIM SBK Technical Director or his appointed deputy has the right to read and save the teams calibration file (amp), it will not be shared except for conformity checks with control electronics system partners, but may be used in Dyno tests.**
- k. The following sensors must be connected directly to the ECU only **and must be the original OEM sensors unless stated.**
1. Throttle position (multiple allowed)
  2. Map sensor, Map Sync (pressure sensor on the intake port used to synchronize the engine during the start)
  3. Airbox Pressure
  4. Engine pick-ups (Cam, crank)
  5. Twist grip position
  6. Front Speed (add only if not available OEM)\*
  7. Rear Speed (add only if not available OEM)\*
  8. Gearbox output shaft speed (if on OEM machine)
  9. Gear position
  10. Air pressure
  11. Water temperature
  12. Air temperature
  13. Tip-Over Switch (No lean angle – **except from ECU**) ~~For 2020~~ (all ECU's will feature crash detection (by IMU).
- The following can be added (and not OEM sensors)**
14. Gear shift load cell / switch (Non-OEM parts must be from the Eligible Parts for Competition List (Shift controlled by ECU only)
  15. Lambda - Bosch LSU4.9 only (one sensor only).
  16. Fork position

- 17. Shock position
  - 18. Front brake pressure
  - 19. Rear brake pressure
  - 20. Fuel pressure (not temperature)
  - 21. Oil pressure
  - 22. Oil temperature
  - 23. Switches (Left and right)
  - 24. Rear TPMS Monitor (Temperature and Pressure, **must be CAN**)\*\*
  - 25. Front TPMS Monitor (Temperature and Pressure, **must be CAN**)\*\*
- \* The OEM phonic/speed sensor rings must be used (ZX636 for ZX6)
- \*\* **Must be from the Eligible Parts for Competition – List**

- I. The data logger must be from the Eligible Parts for Competition List (Data Logger list). The characteristics of eligible data logging systems must be the following:
  - 1. Maximum retail price of the unit (hardware + software, excluding sensors and wiring harness) cannot exceed €3.000 Euro (VAT excluded) unit. The 'unit' may consist of multiple parts, input module, recording module etc.
  - 2. The Data Logger unit must be available for sale to the public.
  - 3. The data logger may ONLY be connected to the CAN bus and to those sensors listed in section 2.5.9.1.k.
  
- m. Only the following may be connected directly to the logging system.
  - a. GPS Unit (Lap timing and track position)
  - b. Transponder / Lap time signal
  - c. Rear tyre temperature (Infra-Red)(External)(Maximum 3)
  - d. Any exceptions noted in Eligible Parts For Competition List.**
  
- n. Telemetry is not allowed.
- o. No remote or wireless connection to the **motorcycle** for any data exchange or setting is allowed whilst the engine is running or the **motorcycle** is moving.
- p. The dashboard is free, it may also contain the datalogger. There must remain a working Tachometer display. **The dashboard must display compulsory flags and messages. This is the team's responsibility.**
- q. **All shift lights must be only 'White'.**
- r. Plug caps and coils must remain as homologated.
- s. Electric cables, harness, connectors, battery and switches are free but the harness must comply with the wiring schematic that is available from [www.soloengineering.com](http://www.soloengineering.com).
- t. Spark plugs and wires may be replaced.

#### 2.5.9.2 Generator, alternator, electric starter **(including Supersport NG)**

- a. The generator (ACG) must be the originally fitted and homologated part with no modification allowed.
- b. The stator must be fitted in its original position and without offsetting.
- c. The electric starter must operate normally and always be able to start the engine during the event.
- d. During parc fermé the starter must crank the engine at a suitable speed for starting for a minimum of 2 seconds without the use a boost battery. No boost battery may be connected to the machine after the end of the session.

#### **2.5.10 Main frame and pre-assembled spare frame**

During the entire duration of the event, each rider can only use one (1) complete motorcycle, as presented for Technical Control, with the frame clearly identified with a seal. In case the frame needs to be replaced, the rider or the team must make a request to the **FIM** SBK Technical Director to use the spare frame.

The pre-assembled spare frame must be presented to the **FIM** SBK Technical Director to receive the permission to rebuild the motorcycle. The pre-assembly of the frame shall be strictly limited to:

- Main frame
- Bearings (steering pipe, swing-arm, etc)
- Swing-arm
- Rear suspension linkage and shock absorber
- Upper and lower triple clamps
- Wiring harness

The spare frame will not be allowed in the pit box before the rider or the team has received authorisation from the **FIM** SBK Technical Director.

The rebuilt motorcycle must be inspected before its use by the technical stewards for safety checks and a new seal will be placed on the motorcycle frame.

**No complete spare machine may be at the track. If found penalties will be applied. For the remainder of the event the machine will be impounded and no part of that machine may be used for spare parts.**

#### **EXPLANATION OF THE PROCEDURES**

Only one (1) complete motorcycle may be presented for the preliminary technical checks and it will be the only motorcycle allowed on the track and in the pit box during the practices, qualifying, warm up and race.

The frame of this motorcycle will be officially sealed by the **FIM** SBK Technical Director or by his appointed staff. The seal will bear a serial number, which will be recorded. Any attempt made to remove the seal will damage it irreparably.

At any time during the event the technical stewards, under the direction of the **FIM SBK Technical Director**, may check the seal and verify that it conforms to the motorcycle and rider it was assigned to. For cross reference, every frame must have a unique number punched on it, preferably on the steering-head.

If the motorcycle is damaged in a crash or in any other incident, it is allowed to use the pre-assembled spare frame to rebuild the motorcycle.

The spare frame may be pre-assembled with the following items: main frame assembly, swing-arm, rear suspension linkage, shock-absorber, steering head bearings, upper and lower triple clamps and wiring harness.

When a team decides that a crashed or damaged motorcycle requires a change of frame, it must inform the **FIM SBK Technical Director**. Only once authorized may the pre-assembled spare frame be brought into the pit box.

Parts may be transferred from the damaged motorcycle for the assembly of the replacement motorcycle.

Once the assembly of the replacement motorcycle is completed, the machine must undergo technical and safety checks and it will be officially sealed. The seal on the damaged motorcycle will be destroyed by the technical staff and the chassis of this motorcycle must not be used for the remainder of the event. The new serial number will be recorded by the **FIM SBK Technical Director**.

The replacement motorcycle may be used on the track only after the end of the practice and qualifying sessions or race in which the damage occurred. The damaged motorcycle must be removed from the pit box as soon as possible and put in storage outside the pit box.

After the pre-assembled spare part frame has been used, should it become necessary to replace the frame again because of a further crash or damage, the assembly work must be done using a bare frame with no components attached. The **FIM SBK** before work can start.

Any actions contrary to these procedures will result in a penalty as described in the Sporting Regulations

#### **2.5.10.1 Frame body and sub-frames**

- a. The frame must be the originally fitted and homologated part with no modification allowed.
- b. Holes may be drilled on the frame only to fix approved components (i.e. fairing brackets, steering damper mount, sensors).

- c. 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.
- d. Crash protectors may be fitted to the frame using existing points (max. length: 50 mm), or pressed into the ends of the wheel axles (max. length: 30mm). Without exception, the wheel axles cannot be modified.
- e. Nothing else may be added or removed from the frame body.
- f. All motorcycles must display a vehicle identification number punched on the frame body.
- g. Engine mounting brackets or plates must remain as originally produced by the manufacturer for the homologated motorcycle.
- h. Front sub frame / fairing mount may be changed or altered, **the material is free.**
- i. Rear sub frame may be changed or altered. **The material must be metal, no composites are allowed. but the type of material must remain as homologated, or material of a higher specific weight.**
- j. Additional seat brackets may be added, non-stressed protruding brackets may be removed if they do not affect the safety of the construction or assembly. Bolt-on accessories to the rear sub-frame may be removed.
- k. The paint scheme is not restricted but polishing the frame body or sub-frame is not allowed.

#### 2.5.10.2 Suspension - General

- a. Participants in the Supersport class must only use units from the Eligible Parts for Competition List.  
The **retail** price limits (**excluding taxes**) are:
  - a. Fork: For the fork kit, including all parts such as but not limited to cartridge, springs (1 set), adjusters, fork caps, blanking inserts, seals, bushes but excepting oil and fitting the price limit is €2200 excluding tax
  - b. Shock Absorber/RCU: For the complete shock absorber / RCU including but not limited to spring (1 of), pre-load adjuster and length/ride height adjuster the price limit is €2000 excluding tax
- b. The eligible products from the suspension manufacturers must be available to all participants at least one month before the first round of the World Superbike season, and remain available all season. The products must be available within 6 weeks of a confirmed order.
- c. Setting parts and tuning parts must be provided by the suspension manufacturers to all customers/ teams/ participants using the manufacturer's products. These parts can be used by all participants during the season. These parts shall be available for immediate delivery to all teams/customers.
- d. Teams may not modify any part of the forks or shock absorber; all setting parts must be supplied by the Suspension manufacturer and available to all teams/riders.

- e. The suspension manufacturers are allowed to offer service contracts when the team is using the eligible suspension products. The suspension manufacturers cannot demand a service contract for a customer or participant in order to obtain a suspension product.
  - i. No aftermarket or prototype electronically-controlled suspensions may be used. Electronically-controlled suspension may only be used if already present on the production model of the homologated motorcycle.
  - ii. The electronically-controlled valves must remain as homologated. The shims, spacers and fork/shock springs not connected with these valves can be changed.
  - iii. The ECU for the electronic suspension must remain as homologated and cannot receive any motorcycle track position or sector information; the suspension cannot be adjusted relative to track position.
  - iv. The electronic interface between the rider and the suspension must remain as on the homologated motorcycle. It is allowed to remove or disable this rider interface.
  - v. The original suspension system must work safely in the event of an electronic failure.
  - vi. Electro-magnetic fluid systems which change the viscosity of the suspension fluid(s) during operation are not permitted.
- f. 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).

### 2.5.10.3 Front forks

- a. Forks must be the originally fitted and homologated parts with the following modifications allowed:
- b. Original internal parts of the homologated forks may be modified or changed.
- c. Only aftermarket damper kits or valves from the Eligible Parts for Competition List may be installed (2.5.10.2.a)
- d. Fork springs may be modified or replaced.
- e. Fork caps may be modified or replaced to allow external adjustment. **They may extend the clamping area of the fork leg a maximum of 18mm above the standard fork tube. The fork 'drop' must never be set allowing the fork to be submerged in the top yoke/clamp. The full clamping area of the top yoke/clamp must be used.**
- f. **The fork stroke will be a maximum of 125mm to the bump stop plus a maximum of 5mm bump stop stroke.**
- g. **The fork kit manufacturer will be wholly responsible for ensuring the safe operation of the fork.**
- h. Dust seals may be modified, changed or removed if the fork is totally oil-sealed.

- i. The original surface finish of the fork tubes (stanchions, fork pipes) may be changed. Additional surface treatments are allowed.
- j. The front fender mounts integrated in the fork lower may be modified or removed and replaced.
- k. The axle bore in the fork lower cannot be modified. The front axle nut/sleeve may be added or modified and/or made captive.
- l. The upper and lower fork clamps (triple clamp, fork bridges) must remain as originally produced by the manufacturer on the homologated motorcycle.
- m. A steering damper may be added or replaced with an aftermarket damper.
- n. The steering damper cannot act as a steering lock limiting device.

#### **2.5.10.4 Rear fork (swing-arm)**

- a. The rear fork must be the originally fitted and homologated part with no modification allowed.
- b. Rear fork pivot bolt must be the originally fitted and homologated part with no modification allowed.
- c. Rear axle chain adjuster may be modified or changed. The wheel axle nut may be replaced and/or made captive.
- d. Rear axle chain adjuster slot may be enlarged to allow the brake calliper mounting to become captive.
- e. A solid protective cover (shark fin) shall be fixed to the swing-arm, and must always cover the opening between the lower chain run, swingarm and the rear wheel sprocket, irrespective of the position of the rear wheel.
- f. 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. An anchorage system or point(s) to keep the original rear brake calliper in place may be added to the rear swing-arm.
- g. Wheel support rails/guides may be added to permit quick wheel changes.
- h. The sides of the swing-arm may be protected by a thin vinyl cover only, no composite or structural covers are allowed.

#### **2.5.10.5 Rear suspension unit**

- a. Rear suspension unit (shock absorber) may be replaced with a unit from the Eligible Parts for Competition List (see 2.5.10.2.b).
- b. The original attachment points to the frame and rear fork (or linkage) must be as homologated.
- c. All the rear suspension linkage parts must be the originally fitted and homologated parts with no modification allowed.
- d. Removable top shock mounts must remain as homologated. A nut may be made captive on the top shock mount and shim spacers may be fitted behind it.

#### **2.5.10.6 Wheels**

- a. Wheels must be the originally fitted and homologated parts with no modification allowed.
- b. The wheels may be overpainted but the original finish cannot be removed.
- c. A non-slip coating / treatment may be applied to the bead area of the rim.
- d. If the original design included a cushion drive for the rear wheel, it must be the originally fitted and homologated parts with no modification allowed.
- e. Wheel axles may be modified or replaced but must be of the same material as the originally homologated part. The shank section of the axle must remain the same diameter as the originally homologated axle but the threaded area may be reduced in diameter.
- f. Wheel spacers can be modified or replaced.
- g. Bearing spacers are free.
- h. Wheel balance weights may be discarded, changed or added to.
- i. **Angled** aluminium or steel inflation valves are compulsory. ~~valves are compulsory.~~
- j. **The only allowed rim sizes are:**

Wheels Size	
Front	3.5"
Rear	5.5"

**In the case the machine is not fitted with the aforementioned sizes, a single alternative wheel will be agreed between the manufacture and the FIM SBK Technical Director.**

**The inertia must be within 10% of the originally fitted wheel.**

**The inertia must be within the range of homologated wheels in the other machines.**

#### 2.5.10.7 Brakes

- a. Front and rear brake discs may be replaced with aftermarket brake discs that must fit the original calliper and mounting. **The maximum outside diameter is 320mm.** However, the ~~outside diameter~~, offset, wheel mounting and the ventilation system must remain the same as on the homologated motorcycle. Internally ventilated discs are not allowed if not present on the homologated motorcycle.
- b. Only Steel (max. carbon content 2.1 wt%) is allowed for replacement brake discs.
- c. Front brake callipers as well as all the mounting points and mounting hardware (mount, carrier, hanger) must be the originally fitted and homologated parts with no modification allowed. (see Art. 2.5.10.3). **Spacers may be fitted between the caliper and fork lower to fit larger diameter discs.**
- d. Rear brake callipers must be the originally fitted and homologated parts with no modification allowed. The mounting points must remain as homologated

but the mounting hardware (mount, carrier, hanger) may have the axle bore sleeved to capture the brake calliper assembly to the swingarm to permit quick wheel changes.

- e. In order to reduce the transfer of heat to the hydraulic fluid it is permitted to add metallic-shims to the callipers, between the pads and the callipers, and/or to replace light alloy pistons with steel pistons made by the same manufacturer of the calliper.
- f. The front brake master cylinder ~~must~~ can be the originally fitted and homologated part with no modification allowed, ~~excluding the hand lever.~~ **or may be replaced with a unit from the Eligible Parts for Competition List. The retail price limit for the front master cylinder (including lever) is €350**  
**The brake lever design is free.**
- g. The rear brake master cylinder ~~must~~ can be the originally fitted and homologated parts with no modification allowed **or may be replaced with a unit from the Eligible Parts for Competition List. The retail price limits are:**
  - a. **Thumb brake (including lever and mounts) €450**
  - b. **Hand brake €450**
  - c. **Foot operated master cylinder €200****The use of thumb or hand brakes is allowed in addition to or instead of the foot operated system. An adaptor may be fitted to the reservoir input of the OEM master cylinder to facilitate this.**
- h. Front and rear hydraulic brake lines may be changed. The brake fluid reservoir may be replaced and/or repositioned. Quick connectors may be used **but only between the master cylinder and the brake hose split.** The split of the front brake lines for both front brake callipers must be made above the lower edge of the fork bridge (lower triple clamp). Brake line hose fittings (including banjo bolts) can only be Steel or Titanium.
- i. Front and rear brake pads may be changed. Brake pad locking pins may be modified for quick change type.
- j. Additional air ducts are not allowed.
- k. The ABS System must be removed.
- l. Motorcycles must be equipped with brake lever protection, intended to protect the handlebar brake lever from being accidentally activated in case of collision with another motorcycle. Composite guards are not permitted. Guards from the Eligible Parts for Competition List will be permitted without regard to the material. The **FIM** SBK Technical Director has the right to refuse any guard not satisfying this safety purpose.

#### 2.5.10.8 Handlebars and hand controls

- a. Handlebars may be replaced (~~except for the brake master cylinder~~).
- b. Handlebars and hand controls may be **replaced and** relocated.
- c. Throttle controls must be self-closing when not held by the hand.

- d. Throttle assembly and associated cables may be modified or replaced but the connection to the throttle body and to the throttle controls must remain as on the homologated motorcycle.
- e. Cable operated throttles (grip assembly) must be equipped with both an opening and a closing cable including when actuating a remote drive by wire grip/demand sensor.
- f. Clutch **assy** and brake lever may be replaced with an after-market model. An adjuster to the brake lever is allowed.
- g. Switches may be changed but the electric starter switch and engine stop switch must be located on the handlebars.
- h. Motorcycles must be equipped with a functional ignition kill switch or button mounted on the right hand handlebar (within reach of the hand while on the hand grips) that is capable of stopping a running engine. The button or switch must be red.

#### **2.5.10.9 Foot rest and foot controls**

- a. Foot rests, hangers/brackets and hardware may be replaced and relocated but the hangers/brackets must be mounted to their original frame mounting points.
- b. Foot controls; gear shift (**and rear brake, if kept**) must remain operated manually by foot.
- c. Foot rests may be rigidly mounted or a folding type which must incorporate a device to return them to the normal position.
- d. The end of the foot rest must have at least an 8 mm solid spherical radius. (see diagram A & C).
- e. 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. The **FIM** SBK Technical Director has the right to refuse any plug not satisfying this safety purpose.

#### **2.5.10.10 Fuel tank**

- a. Fuel tank must be the originally fitted and homologated parts with no modification allowed.
- b. All fuel tanks must be completely filled with fire retardant material (open-celled mesh, i.e. "Explosafe®").
- c. Fuel tanks with tank breather pipes must be fitted with non-return valves that discharge into a catch tank with a minimum volume of 250 cc made of a suitable material.
- d. 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.
- e. A rider spacer/pad may be fitted to the rear of the tank with non-permanent adhesive. It may be constructed of foam padding or composite material.

- f. The tank may not have a cover fitted over it unless the homologated machine also features a full cover.
- g. The sides of the fuel tank may be protected with a cover made of a composite material. These covers must fit the shape of the fuel tank.
- h. Fuel tank may have heat reflective sheet attached to its bottom surface.

#### 2.5.10.11 Fairing / Bodywork

- a. Fairing, mudguards and body work must conform in principle to the homologated shape as originally produced by the manufacturer. The use of carbon fibre or Kevlar® materials is not allowed in fairing, fuel tank cover, seat, seat base and associated bodywork construction. Specific reinforcements in Kevlar® or carbon are allowed locally around holes and stressed areas. Headlights must be included even when considered external.
- b. For all bodywork paint and decal design is free.
- c. The fairing has a tolerance of +/-10mm from the original homologated road fairing, respecting the design and features of the homologated fairing and any articles below. The overall width of the frontal area may be +10mm maximum. The decision of the FIM SBK Technical Director is final.
- d. For Supersport Next Generation - The fairing has a tolerance of +/-8mm from the original homologated road fairing, respecting the design and features of the homologated fairing and any articles below. The overall width of the frontal area may be +5mm maximum. The decision of the FIM SBK Technical Director is final.**
- e. Wind screen may be replaced.
- f. Fairing brackets may be altered or replaced.
- g. The ram-air intake must maintain the originally homologated shape and dimensions.
- h. **For Supersport:** The original air ducts running between the fairing and the airbox may be altered or replaced. ~~Carbon fibre composites and other exotic materials are forbidden.~~ Particle grilles or “wire-meshes” originally installed in the openings for the air ducts may be removed. Air ducts cannot be added if they are not present on the original machine.
- i. For Supersport Next Generation: The original air ducts running between the fairing and the airbox may replaced by exact cosmetic replicas of the original parts (also see approved Eligible parts list for Competition).** ~~Carbon fibre composites and other exotic materials are forbidden.~~ Particle grilles or “wire-meshes” originally installed in the openings for the air ducts may be removed. **Flap valves systems may be removed.** Air ducts cannot be added if they are not present on the original machine.
- j. 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.

- k. The lower fairing must incorporate one hole of 25 mm in the bottom of the front lower area. This hole must remain closed in dry conditions and must be opened only in wet race conditions, as declared by the Race Director.
- l. Minimal changes are allowed in the fairing to allow clearance for protective engine covers.
- ~~m. 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.~~
- ~~n. 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%.~~
- o. Motorcycles may be equipped with a radiator shroud to improve the air stream towards the radiator but the appearance of the front, the rear and the profile of the motorcycle must not be changed.
- p. Front mudguard must conform in principle to the homologated shape originally produced by the manufacturer. Front mudguards may be replaced and the use of carbon fibre or Kevlar® composites are allowed.
- q. Front mudguard may be spaced upward for increased tyre clearance.
- r. Rear hugger type mudguards fixed on the swing-arm may be replaced with a cosmetic duplicates of the original part. The use of carbon fibre or Kevlar® composites are allowed.
- s. The chain guard may be removed as long as it is not incorporated in the rear hugger. If the chain guard is incorporated in the hugger then the chain guard section may be removed or modified to accommodate larger diameter rear sprockets.
- t. The chain guard may be removed as long as it is not incorporated in the rear fender.
- u. The existing rear mudguard under the seat may be removed. ~~A mudguard may be fitted directly onto the swing-arm however it may not cover more than 120 degrees of the wheel.~~
- v. The exact appearance, shape, size and location of the front headlights of the homologated motorcycle must be respected, and should be obtained by applying a plastic or metallic film on the front of the motorcycle.
- w. Supersport Next Generation, in the event that the proposed machine is not fitted with a fairing, then a fairing from the manufacturers range may be used by agreement with DWO and the FIM SBK Technical Director. A bellypan according to 2.5.10.11.j is compulsory.**

#### 2.5.10.12 Seat

- a. Seat, seat base and associated bodywork may be replaced. The appearance from front, rear and profile must conform in principle to the homologated shape.
- b. The top portion of the rear body work around the seat may be modified to a solo seat.
- c. Holes may be drilled in the seat or rear cowl to allow additional cooling. Holes which are bigger than 10 mm must be covered with metal gauze or fine mesh. Mesh must be painted to match the surrounding material.
- d. Same materials as fairing must be used (article 2.5.10.11.a)
- e. All exposed edges must be rounded.

#### **2.5.10.13 Fasteners**

- a. Standard fasteners may be replaced with fasteners of any material and design.
- b. Aluminium fasteners may only be used in non-structural locations.
- c. 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, internal engine bolts must remain of standard homologated materials or materials of higher specific weight.
- d. 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.
- e. Fasteners may be drilled for safety wire, but intentional weight-saving modifications are not allowed.
- f. Thread repair using inserts of different material such as helicoils and timeserts.
- g. Fairing/bodywork fasteners may be changed to the quick disconnect type.

#### **2.5.10.14 Rear Safety Light**

All motorcycles must have a functioning red light mounted at the rear of the machine, this light must be switched on any time the motorcycle is on the track or being ridden in the pit lane and the session is declared WET. All lights must comply with the following:

- a. Lighting direction must be parallel to the machine centre line (motorcycle running direction), and be clearly visible from the rear at least 15 degrees to both left and right sides of the machine centre line.
- b. The rear light must be mounted near the end of the seat/rear bodywork and approximately on the machine centre line, in a position approved by the **FIM** SBK Technical Director. In case of dispute over the mounting position or visibility, the decision of the **FIM** SBK Technical Director will be final.
- c. Power output/luminosity equivalent to approximately: 10 – 15 (incandescent), 0.6 – 1.8 W (LED).

- d. The output must be continuous - no flashing safety light whilst on track, flashing is allowed in the pit lane when pit limiter is active.
- e. Safety light power should be supplied by the control ECU.
- f. The **FIM** SBK Technical Director has the right to refuse any light system not satisfying this safety purpose.
- g. **Also see 2.5.9**

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

- a. Any type of lubrication, brake or suspension fluid.
- b. Bearings (ball, roller, taper, plain, etc.) of any type or brand may be used.
- c. Gaskets and gasket materials.

**2.5.12 The following items MAY BE removed**

- a. Emission control items (anti-pollution) in or around the airbox and engine (O2 sensors, air injection devices).
- b. Speedometer and related wheel spacers.
- c. Bolt on accessories on a rear sub frame.

**2.5.13 The following items MUST BE removed**

- a. Headlamp, rear lamp and turn signal indicators (when not incorporated in the fairing). Openings must be covered by suitable materials.
- b. Rear-view mirrors.
- c. Horn.
- d. License plate bracket.
- e. Tool box.
- f. Helmet hooks and luggage carrier hooks
- g. Passenger foot rests.
- h. Passenger grab rails.
- i. Safety bars, centre and side stands must be removed (fixed brackets must remain).
- j. Catalytic convertors
- k. Rear mudguards affixed to the seat unit