

DMSB Technical Regulations 2018 for the Supersport 300 class

As at: 13.04.2018 – Changes are shown in italics

In case of doubt only the German text of the Regulations is binding.

The following rules are intended to give freedom to modify a homologated model in the interest of safety and improved competition between various motorcycle concepts.

Everything that is not explicitly authorised and prescribed in the following rules is forbidden.

Supersport 300 motorcycles require an FIM homologation or a DMSB homologation. All engines must be normally aspirated. All motorcycles must comply in every respect with the following Technical Regulations and the Technical Regulations for road racing (see DMSB Motorcycle Yearbook, orange section), unless they are already equipped as such on the homologated model.

As soon as a homologation is granted for a motorcycle, it may be used in races in the corresponding class for the maximum of 8 years (see FIM Homologation Regulations, Article 1.4.4) or up to the moment at which the homologated motorcycle is no longer eligible due to new regulations or changes in the technical specifications for the corresponding class.

The appearance of Supersport 300 motorcycles from the front, rear and the profile must, except when otherwise stated, conform to the homologated shape (as originally produced by the manufacturer).

Any homologation extension of parts submitted by the manufacturer and approved by the FIM will only be eligible in the following year and after verification and approval by the DMSB.

The following reference parts must be submitted to the DMSB until **15th April**:

- Cylinder head
- Intake and exhaust camshaft(s)
- Camshaft sprockets
- Intake and exhaust valves including valve springs, retainers, collets and tappets
- Pistons including piston rings, pins and clips
- Connecting rods

Should the reference parts not be submitted until the given deadline, a provisional approval of the corresponding motorcycles is issued. If a check cannot be carried out due to missing reference parts, the corresponding parts will be secured by the scrutineers and the check will be carried out as soon as the required reference parts are available.

1. Motorcycle specification

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

2. Eligible motorcycles

The following models are eligible to start:

Honda CBR500R

Kawasaki Ninja 300 (EX300A/D/F)

Kawasaki Ninja 400 (EX400G/H/J)

KTM RC390

KTM RC390R

Yamaha YZF-R3

Yamaha YZF-R3A

3. Balancing various motorcycle concepts

The DMSB reserves the right to equalize the performance of machines in the class at its own discretion in order to equalize the machines. This application may include, but is not limited to:

- REV limitation
- Change of minimum weight.

The decision to apply the handicap will be taken by the DMSB at any time deemed necessary to ensure fair competition.

4. Minimum weight

The minimum weigh for each model is as follows:

Honda CBR500R	156 kg
Kawasaki Ninja 300 (EX300A/D/F)	140 kg
Kawasaki Ninja 400 (EX400G/H/J)	150
Yamaha YZF-R3	140 kg
Yamaha YZF-R3A	140 kg
KTM RC390	136 kg
KTM RC390R	136 kg

At no time during the event may the weight of the whole motorcycle (including the tank and its contents) be less than the minimum weight.

There is no tolerance on the minimum weight of the motorcycle.

During the final technical inspection at the end of each race, the selected motorcycles will be weighed in the condition in which they finished the race and they must comply with the prescribed minimum weight in this condition. Nothing may be added to the motorcycle. This includes all fluids.

During the practice and qualifying sessions, riders may be asked to submit their motorcycle to a weight control. In all cases, the rider must comply with this request.

The use of ballast is allowed to stay over the minimum weight limit and may be required due to the handicap system. The ballast must be securely connected with screws.

5. Start numbers

All start numbers must be visibly displayed on the front (1 x in the centre or 1 x on each side) and at least once on each side of the motorcycle.

- *Height of the front figures: 160 mm*
- *Height of the side figures at wedge/fairing pan 150 mm*
(free 1 x tail unit from rear view in driving direction 150 mm)

The colour combinations: white background / blue figures

Accepted typefaces:

- *Verdana / Bold*
- *Futura Heavy / Bold*

Figures may only consist of one or two figures (#1-99).

See also DMSB Motorcycle Yearbook, blue section, drawings to the Technical Regulations.

6. Fuel

See DMSB Motorcycle Yearbook, blue section, FIM fuel regulations.

Each participant/team must declare the make and exact type of fuel to be used, the source of supply and the manufacturer in the scrutineering certificate at the preliminary checks and declare any changes before the event to the chief scrutineer.

Fuel samples may be taken by the DMSB at any time during an event for checking purposes.

7. Tyres

The use of moulded, commercially available treaded tyres and rain tyres is permitted. The tyres must be commercially available on the free market to the public. Like for commercial tyres, both side walls of the tyres must be marked with the manufacturer's name, the product specification, the dimensions, a DOT and/or an E identification etc. The marking of the tyres must take place during the heating process and must not be applied subsequently in form of stickers or rubber labels etc.

The depth of the tyre tread over the whole pattern at pre-event scrutineering must be at least 2.0 mm.

All tyres must comply with the general safety standards of the corresponding manufacturer.

The use of tyre warmers is permitted.

8. Engine

Any change of engine must be declared to the scrutineers in advance.

Sealing

Each engine will be sealed by the scrutineers before it may be used during an event.

Seals may only be removed under the supervision of the scrutineers. Any removed or damaged seal is considered as an unauthorised change of engine. A team must request sealing of an engine before its use.

The crankcases will be sealed in such a way not to allow the disassembly for repair, replacement or adjustment of the crankshaft, connecting rods and/or associated bearings, pistons, piston pins or piston rings.

The cylinder, cylinder head(s) and head cover/cam cover will be sealed to prevent repairs, replacement or adjustment on the cylinder head, valves, valve seats or any other repairs or service work on the valve train.

The cassette gearbox door and/or crankcases will be sealed to control the gearbox use.

The right and left hand engine side covers will not be sealed as to allow repair or adjustment to the generator, clutch system, water pump or other accessory systems located behind these covers.

If an engine is found not to be in compliance with the regulations, any penalties imposed will apply retrospectively to each race this engine was used in.

8.1. Fuel injection system

Fuel injection systems refers to throttle bodies, fuel injectors, variable intake tract devices, fuel-pump and fuel pressure regulator and may not be modified.

Secondary throttle valves may be removed or fixed in the open position and the electronics may be disconnected or removed. The secondary throttle valve shaft(s) must remain at its(their) position.

All the parts of the variable intake tract device must remain exactly as homologated and operate in the same way. They may not be added if they are not present on the homologated motorcycle.

Air and air/fuel mixture must go to the combustion chamber exclusively through the throttle body valves. Electronically controlled throttle valves, known as "ride-by-wire", may be only used if the homologated model is equipped with the same system.

8.2. Cylinder head

The cylinder head gasket may be replaced.

8.3. Camshaft

At the technical checks: for direct cam drive system, the cam lobe lift is measured, for non-direct cam drive systems (i.e. with rocker arms), the valve lift is measured.

8.11.1. Lateral covers and protection

Lateral (side) covers may be altered, modified or replaced. If altered or modified, the cover must have at least the same resistance to impact as the original one. If replaced, the cover must be made in material of same or higher specific weight and the total weight of the cover must not be less than the original one.

All lateral covers/engine cases containing oil and which could be in contact with the ground during a crash must be protected by a second cover made from metal, such as aluminium alloy, stainless steel, steel or titanium, composite covers are not permitted.

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.

Plates or crash bars made from aluminium or steel also are permitted in addition to these covers. All of these devices must be designed to be resistant against sudden shocks, abrasions and crash damage.

FIM approved covers are permitted without regard of the material or the dimensions.

These covers must be fixed properly and securely with a minimum of three (3) case cover screws that also mount the original covers/engine cases to the crankcases.

Oil containing engine covers must be secured with steel bolts.

The chief scrutineer has the right to refuse any cover not satisfying this safety purpose.

8.12. Transmission/gearbox

Quick-upshift systems are allowed (including wire and potentiometer). The unit must be the FIM/DWO approved quick-shift system/REV limiter according to Article 9.1.

No "downshift blipping" add-on is allowed.

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

The sprocket cover may be modified or eliminated.

Chain guard as long as it is not incorporated in the rear fender may be removed.

8.13. Clutch

Friction and drive discs may be changed.

Clutch springs may be changed.

The clutch basket (outer) must be the originally fitted and homologated part but may be reinforced.

It is permitted to use anti-hopping clutch systems.

8.14. Radiator, cooling system and oil cooler

The only liquid engine coolants permitted is water.

Protective meshes may be added in front of the oil and/or water radiator(s).

The cooling system hoses and catch tanks may be changed.

Radiator fan and wiring may be removed. Thermal switches, water temperature sensor and thermostat may be removed inside the cooling system.

The radiator cap is free. *It is permitted to use an additional water radiator.*

8.15 Airbox

The air filter element may be modified or replaced but not removed and it must be mounted in the original position.

The air box drains must be sealed.

All motorcycles must have a closed breather system. All the oil breather lines must be connected, may pass through an oil catch tank and must exclusively discharge in the airbox.

No heat protection may be attached to the airbox.

8.16. Fuel supply

Fuel lines from the fuel tank to the delivery pipe assembly (excluded) may be replaced and must be located in such a way that they are protected from crash damage.

Quick connectors or dry break connectors may be used.

Fuel vent lines may be replaced.

Fuel filters may be added.

8.17 Exhaust system

Exhaust pipes and silencers may be modified or changed. Catalytic converters must be removed. The number of the final exhaust silencer(s) must remain as homologated. The silencer(s) must be on the same side(s) of the homologated model.

For safety reasons, the exposed edges of the exhausts pipe(s) outlet must be rounded to avoid any sharp edges.

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 noise limit is 107 dB/A with a 3 dB/A tolerance after the race only.

The noise will be measured at the following speeds:

Model	Speed
Honda CBR500R	5.000 rpm
Kawasaki Ninja 300 (EX300A/D/F)	6.500 rpm
Kawasaki Ninja 400 (EX400G/H/J)	6.500 U/min
Yamaha YZF-R3	7.500 rpm
Yamaha YZF-R3A	7.500 U/min
KTM RC390	5.500 U/min
KTM RC390R	5.500U/min

9 Electric and electronics

9.1. Ignition / Engine Control Unit (ECU)

The engine control unit (ECU) must be either:

- The original *engine management* system as homologated, with no change of software or with a 'Kit' Software approved by the manufacturer.
The manufacturer may alter the Kit Software so that all the safety systems and procedures designed by the manufacturer are maintained. Fuel-mappings may be modified by the manufacturer. Only KIT-ECU which are clearly marked by the motorcycle manufacturer may be used.
- The original *engine management* system (with the *original* ECU and with no change of software or a *software changed by the manufacturer*) (option a), a FIM/DWO/DMSB approved fuel injection module may be added.
- ECU manufactured by GET, types GK-ECULMB48-0003 und GK-ECULMB48-0004

Central unit (ECU) may be relocated.

Optional equipment sold by the motorcycle Manufacturer for the homologated model is considered not homologated with the bike and must follow the requirements for approved electronics/data loggers.

During an event the chief scrutineer has the right to ask a team to substitute their ECU or external module with the sample received from the Manufacturer. The change must be done before warm-up.

The allowed OEM ECU sensors / channels are:

- Throttle position (multiple allowed)
- Map sensor, Map Sync (pressure sensor on the intake port used to synchronize the engine during the start)
- Airbox Pressure
- Engine pick-ups (Cam, crank)
- Twist grip position
- Rear Speed Only (from ABS sensor, no front speed sensor permitted)
- Gearbox output shaft speed
- Gear position
- Air pressure
- Water temperature
- Air temperature
- Tip-Over Switch

m) Gear shift load cell / switch

The sensors may not be replaced, modified or substituted.

No extra sensors may be added for control strategies except shift rod sensor.

External fuel injection modules may not alter any sensor signal relating to the ride by wire system or control/actuate any part of the machine excepting the fuel injectors. No fuel module may add traction control strategies. The modules may only connect to the fuel injectors and to the power supply and they may not change the signals for throttle position, gear and RPM ("piggyback").

A compulsory rev limiter/quickshift unit must be fitted. It is the teams' discretion whether to use the quickshift function. This unit must remain fitted at all times. The price is €500 + taxes + delivery.

Contact: info@hmquickshifter.com, +44 (0) 1795 429168

Model	Part number
Honda CBR500R	HMGP-HO1016
Kawasaki Ninja 300 (EX300A/D/F)	HMGP-KA1016
<i>Kawasaki Ninja 400 (EX400G/H/J)</i>	<i>HMGP-KT1712</i>
Yamaha YZF-R3	HMGP-YA1016
<i>Yamaha YZF-R3A</i>	<i>HMGP-YA1016</i>
<i>KTM RC390 (euro4)</i>	<i>HMGP-KT1712</i>
<i>KTM RC390R</i>	<i>HMGP-KT1712</i>

Installation instructions are separately detailed with the units.

The following strategies are not allowed:

- Traction control (including anti-spin / rate of change of rpm)
- Launch control
- Anti-wheelie
- Closed loop engine brake control
- Corner by Corner / Distance based adjustments
- Rider adjusted trims

Other additional electronic hardware equipment not on the original homologated motorcycle may not be added with the exceptions noted below.

The maximum permitted revs for each machine is as follows:

Model	Max revs
Honda CBR500R	10.500 rpm
Kawasaki Ninja 300 (EX300A/D/F)	13.000 rpm
<i>Kawasaki Ninja 400 (EX400G/H/J)</i>	<i>12.000 U/min</i>
Yamaha YZF-R3	13.000 rpm
<i>Yamaha YZF-R3</i>	<i>13.000 U/min</i>
<i>KTM RC390</i>	<i>11.000 U/min</i>
<i>KTM RC 390R</i>	<i>11.000 U/min</i>

The characteristics of the approved complete data logging systems must be the following:

- a) Must be from the DWO/FIM approved WorldSSP 300 logging Kit list.
- b) Maximum retail price of the complete kit (hardware, software, sensors and wiring harness) must not exceed €1500 Euro (VAT excluded). The sum price of the components individually must not exceed €1650 (VAT excluded).
- c) If any sensors are supplied as options, then the total price including all options must respect Article 9.1.b).
- d) The Data Logger kit must be available for sale to the public. The datalogging kit supplier must apply to the FIM for approval before January 31st.
- e) The kit may only include following sensors:
 1. Fork position
 2. Shock position
 3. Front brake pressure switch (not pressure sensor)
 4. Transponder/Lap time signal

5. GPS Unit (Lap timing and track position)
6. Rear wheel speed (if not fitted to OEM machine)
- f) The kit may only log the following (by connecting to or “piggybacking” the original sensor):
 1. Fork position
 2. Shock position
 3. Front brake pressure switch (not pressure sensor)
 4. Lap time
 5. Rear wheel speed
 6. Engine RPM
 7. Throttle Position
 8. Water temperature
 9. Transponder/Lap time signal
 10. GPS Position/time/speed

Telemetry is not allowed.

No remote or wireless connection to the bike for any data exchange or setting is allowed whilst the engine is running or the bike is moving.

Harness:

- a) The key/ignition lock may be relocated, replaced or removed.
- b) Cutting and removal of excess and unused wiring in the original wiring harness is allowed. All connectors must remain as originally fitted. No wires may be added.
- c) DWO/FIM approved manufacturer Kit Harness is allowed.

Data logger harness:

- a) The Data Logger wire harness may not connect any sensors other than those specified. The harness may connect to or “piggyback” the OEM sensors that it is allowed to log. The only function of the approved data logging wiring harness is to connect the specified sensors to the Data Logger, to transmit the data and supply the power. It may not be connected to the motorcycles CAN bus.

Dashboard, display and tachometer are free. However, if it incorporates the datalogger or is part of the logging system, then the “WorldSSP 300 datalogging kit” price limit will still be applied to the whole system. No logging option/upgrade in the dash, display, tachometer is allowed. The complete unit price will be considered.

A lap timer may be fitted from the FIM approved lap timer list.

Spark plugs may be replaced.

The battery is free, but the use of lithium polymer batteries is prohibited.

If lithium-ion batteries are used, they must be provided with appropriate and approved BMS protection circuit.

9.2. Generator, alternator, electric starter

The electric starter must operate normally and always be able to start the engine during the event.

During parc fermé the starter must crank the engine at a suitable speed for starting for a minimum of 2 seconds without the use of a boost battery. No boost battery may be connected to the machine after the end of the session.

10. Main frame

During the entire duration of the event, each rider may only use one (1) complete motorcycle, as presented for Technical Control, with the frame clearly identified with a seal. In case the frame will need to be replaced, the rider or the team must request the use of a spare frame to the chief scrutineer.

The pre-assembled spare part frame must be presented to the chief scrutineer for the permission of rebuilding. The pre-assembly shall be strictly limited to:

- Main frame
- Bearings (steering pipe, swing-arm)
- Swing-arm
- Rear suspension linkage and shock absorber

- Upper and lower clamps (triple clamp, fork bridges)
- Wiring harness

The spare frame will not be allowed before the rider or the team has received authorization from the chief scrutineer.

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

10.1. Main frame and rear sub frame

Holes may be drilled on the frame only to fix approved components (i.e. fairing brackets, steering damper mount, sensors).

The sides of the frame-body may be covered by a protective part made of a composite material. These protectors must fit the shape of the frame.

All motorcycles must display a vehicle identification number punched on the frame body (chassis number). Front sub frame / fairing mount may be changed or altered.

Rear sub frame may be changed or altered, but the type of material must remain as homologated, or material of a higher specific weight may be used.

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.

The paint scheme is not restricted but polishing the frame body or sub frame is not allowed.

10.2 Suspension – General

Participants in the Supersport class may only use the approved and listed suspension units for that season. The price limits are:

- 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 €650 excluding tax.
- 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 €800 excluding tax.

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.

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.

The suspension manufacturers are allowed to offer service contracts when the team is using the approved and listed suspension products. The suspension manufacturers may not demand a service contract for a customer or participant in order to obtain a suspension product.

No type of electronic suspension may be used even when fitted to the homologated machine.

Electronic controlled steering damper may not be used if not installed in the homologated model for road use. However, it must always be completely standard (any mechanical or electronic part must remain as homologated).

10.3 Front forks

Steering stem pivot position must remain in the homologated position (as supplied on the production bike). If the standard bike has inserts, then the orientation/position of the original insert may be changed but the insert itself may not be replaced or modified.

Steering dampers may be added or replaced with after-market dampers.

The steering damper may not act as a steering lock limiting device.

Fork caps on the mechanical forks may only be modified or replaced to allow external adjustment. (This does not include the mechanical fork leg that is part of the homologated electronic fork set).

Dust seals may be modified, changed or removed if the fork remains totally oil-sealed.

Original internal parts of the homologated forks may be modified or changed.

After-market damper kits or valves may be installed. The original surface finish of the fork tubes (stanchions, fork pipes) may be changed. Additional surface treatments are allowed.

Electronic forks must have their complete internal parts (including all electronic control) replaced with a conventional damping system.

10.4 Rear fork (swing-arm)

Rear swing-arm pivot position must remain in the homologated position (as supplied on the production bike). If the standard bike has inserts, then the orientation/position of the original insert may be changed but the insert cannot be replaced or modified.

A chain guard must be fitted in such a way to reduce the possibility that any part of the riders' body may become trapped between the lower chain run and the rear wheel sprocket.

Rear wheel stand brackets may be added to the rear fork by welding or by bolts. Brackets must have rounded edges (with a large radius). Fastening screws for these devices 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.

The sides of the swing-arm may be protected by a thin vinyl cover only, no composite or structural covers are allowed.

10.5. Rear suspension unit

Rear suspension units (shock absorbers) may be modified or replaced, but the original attachments to the frame and rear fork (swing arm) (or linkage) must be as homologated.

A nut may be made captive on the top shock mount and shim spacers may be fitted behind it to adjust ride height.

Rear suspension unit and spring may be changed. An electronic shock absorber may be replaced with a mechanical one.

10.6. Wheels

A non-slip coating / treatment may be applied to the bead area of the rim.

If the original design includes a cushion drive for the rear wheel, it must remain as originally produced for the homologated motorcycle.

Wheel spacers of the wheel axis may be modified or replaced.

Wheel balance weights may be discarded, changed or added to.

Any inflation valves may be used.

10.7. Brakes

Brake discs may be replaced by aftermarket discs which comply with following requirements:

- a) *The outside and inner diameters of the brake disc may not be larger than the ones on the homologated disc.*
- b) *The thickness of the brake disc may be increased but the disc must fit into the homologated brake calliper without any modification. The number of floaters is free.*
- c) *The fixing of the carrier on the wheel must remain the same as on the homologated disc.*
- d) *Only brake discs made of steel are allowed (max. carbon content 2.1 %).*
- e) *It is permitted to use steel brake discs with aluminium inner rim*

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.

The rear brake calliper bracket may be mounted fixed on the swing-arm, but the bracket must maintain the same mounting (fixing) points for the calliper as used on the homologated motorcycle.

The swing-arm may be modified for this reason to aid the location of the rear brake calliper bracket, by welding, drilling or by using a helicoil.

Front and rear brake fluid reservoirs may be changed.

Front and rear hydraulic brake lines may be changed.

The split of the front brake lines for both front brake callipers must be made above the lower fork bridge (lower triple clamp).

"Quick" (or "dry-break") connectors in the brake lines are **not** allowed.

Front and rear brake pads may be changed. Brake pad locking pins may be modified for quick change type.

The Antilock Brake System (ABS) must be removed. The ABS units electronic board may remain fitted to stop ECU errors.

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. FIM approved guards will be permitted without regard of the material. The chief scrutineer has the right to refuse any guard not satisfying this safety purpose.

10.8 Handlebars and hand controls

Handlebars may be replaced (except for the brake master cylinder).

Handlebars and hand controls may be relocated.

Throttle controls must be self-closing when not held by the hand.

Throttle assembly and associated cables may *not be modified* or replaced but the connection to the throttle body and to the throttle controls must remain as on the homologated motorcycle. 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.

Clutch and brake lever may be replaced with an after-market model. An adjuster to the brake lever is allowed.

Switches may be changed but the electric starter switch and engine stop switch must be located on the handlebars.

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.

10.9 Foot rest / foot control

Foot rests, hangers/brackets and hardware may be replaced and relocated but the hangers/brackets must be mounted to their original frame mounting points.

Foot controls, gear shift and rear brake must remain operated manually by foot.

Foot rests may be rigidly mounted or a folding type but folding tyre foot rests must incorporate a device to return them to the normal position.

The end of the foot rest must have at least an 8 mm solid spherical radius.

Non-folding foot rests must have an end (plug) which is permanently fixed, made of aluminium, plastic, Teflon[®] or an equivalent type material (minimum radius 8 mm). The plug surface must be designed to reach the widest possible area. The chief scrutineer has the right to refuse any plug not satisfying this safety aim.

10.10 Fuel tank

All fuel tanks must be completely filled with fire retardant material (preferably Explosafe[®]).

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 a suitable material.

Fuel caps may be replaced. Fuel caps when closed must be leak proof. Additionally, they must be securely locked to prevent accidental opening at any time.

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.

The tank may not have an additional cover fitted over it unless the homologated machine also features a full cover.

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.

10.11 Fairing / Bodywork

Fairing and bodywork may be replaced with exact cosmetic duplicates of the original parts, but must appear to be as originally produced by the manufacturer for the homologated motorcycle, with slight differences due to the racing use (different pieces mix, fixing points, fairing bottom, etc.). The material may be changed. The use of carbon fibre or carbon composite materials is not allowed. Specific reinforcements in Kevlar[®] or carbon are allowed locally around holes and stressed areas.

Overall size and dimensions must be the same as the original part, with a tolerance of ± 5 mm, respecting the design and features of the homologated fairing as far as possible. The overall width of the frontal area may be ± 5 mm maximum. The decision of the Technical Director is final.

The windscreen may be replaced with an aftermarket product. The height of the windscreen is free, within a tolerance of ± 15 mm referred to the vertical distance from/to the upper fork bridge. From a top view

the length of the windscreen may be shortened by 25 mm to allow clearance for the rider. The edge of the screen must have no sharp edges.

Motorcycles that are not originally equipped with streamlining are not allowed to add streamlining in any form, with the exception of a lower fairing device, as described below. This device may not exceed above a line drawn horizontally from wheel axle to wheel axle and must follow the specifications described below.

The original combination instrument/fairing brackets may be replaced, but the use of titanium and carbon (or similar composite materials) is forbidden. All other fairing brackets may be altered or replaced.

The ram-air intake must maintain the originally homologated shape and dimensions.

The original air ducts running between the fairing and the air box 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.

The lower fairing must to be constructed to hold, in case of an engine breakdown minimum 4 litres. The lower edge of all the openings in the fairing must be positioned at least 70 mm above the bottom of the fairing.

The upper edge of the rear transverse wall of the lower fairing must be at least 70 mm above the bottom. The angle between this wall and the floor must be $\leq 90^\circ$.

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 $> 60\%$.

Motorcycles may be equipped with a radiator shroud (inner ducts) 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.

The lower fairing must incorporate a single opening of $\varnothing 25$ mm diameter in the front lower area. This hole must remain sealed in dry conditions and may be opened only when the Race Director has declared "wet ace" or "wet practice".

Front mudguards may be replaced with a cosmetic duplicate of the original parts and may be spaced upward for increased tyre clearance.

Rear mudguard fixed on the swing arm may be modified, changed or removed. The chain guard may be removed as long as it is not incorporated in the rear fender.

10.12 Seat

Seat, seat base and associated bodywork may be replaced.

The appearance from front, rear and profile must conform to the homologated shape.

The top portion of the rear bodywork around the seat may be modified to a solo seat.

The homologated seat locking system (with plates, pins, rubber pads etc.) may be removed.

Material as Fairing (Article 10.11).

All exposed edges must be rounded.

10.13. Fastening elements

Standard fasteners may be replaced with fasteners of any material and design but titanium fasteners may not be used. The strength and design must be equal to or exceed the strength of the standard fastener.

Fasteners may be drilled for safety wire, but intentional weight-reduction modifications are not allowed.

Thread repair using inserts of different material such as helicoils and time-serts are allowed.

Fairing/bodywork fasteners may be replaced with the quick disconnect type.

Aluminium fasteners may only be used in non-structural locations.

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:

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.

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 chief scrutineer. In case of dispute over the mounting position or visibility, the decision of the chief scrutineer will be final.

Power output/luminosity equivalent to approximately: 10 – 15 (incandescent), 0.6 – 1.8 W (LED).

The output must be continuous - no flashing safety light whilst on track, flashing is allowed in the pit lane when pit limiter is active.

Safety light power supply may be separated from the motorcycle.

The chief scrutineer has the right to refuse any light system not satisfying this safety purpose

11. The following items MAY be altered or replaced from those fitted to the homologated motorcycle

- Any type of lubrication, brake or suspension fluid may be used.
- Gaskets and gasket materials.
- Instruments, instrument bracket(s) and associated cables.
- Painted external surface finishes and decals.
- Material for brackets connecting non-original parts (fairing, exhaust, instruments, etc.) to the frame (or engine) may not be made from titanium or fibre reinforced composites, excepting the exhaust silencer hanger that may be in carbon.
- Protective covers for the frame, chain and footrests may be made in other materials like fibre composite material if these parts do not replace original parts mounted on the homologated model.

12. The following items MAY be Removed

- Emission control items (anti-pollution) in or around the air box and engine (lambda, air injection devices).
- Tachometer.
- Speedometer.
- Bolt-on accessories on a rear sub frame.

13. The following items MUST BE Removed

- Headlamp, rear lamp and turn signal indicators (when not incorporated in the fairing). Openings must be covered by suitable materials.
- Rear-view mirrors.
- Horn.
- License plate bracket.
- Toolkit.
- Helmet hooks and luggage carrier hooks.
- Passenger foot rests.
- Passenger grab rails.
- Safety bars, centre and side stands must be removed (fixed brackets must remain).
- Catalytic converter.

14. The following items MUST be altered

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.

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).

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.

Motorcycles must be equipped with a *warning* light on the instrument panel that will illuminate in the event of oil pressure drop.

15. Equipment and protective clothing

Rider clothing / equipment in compliance with FIM Article 1.65 is mandatory.

The rider's name must appear on the right arm of the rider's clothing near the wrist (embroidered, patch).

16. Camera / Camera mounting

It is permitted to mount a camera to the motorcycle. It must be solidly connected to the vehicle, e.g. using clamp brackets. The use suction pad mountings or magnetic foot mountings is prohibited. The camera must moreover be additionally secured, e.g. with a cable which is attached both to the camera housing and to the motorcycle. The camera must be fitted to the motorcycle when it is presented for scrutineering. It is at the discretion of the scrutineers to decide whether the camera is safely mounted.