

DMSB Technical Regulations 2024 for the Supersport 300 class

As at: 04.03.2024 – Modifications are shown in *italic type*

In case of any contradiction regarding interpretation of the regulations, the official German text will prevail.

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).

The DMSB reserves the right to approve parts subsequently submitted by the manufacturers and/or released by the FIM for the following year only, or by bulletin.

The following reference parts must be submitted to the DMSB until *30 days* before the first event:

- 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 technical stewards 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:

Kawasaki Ninja 400 (EX400)

Kove Moto 2023 Basis 321 RR

KTM RC390

KTM RC390R

Yamaha YZF-R3

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.
- Approved parts (see "[Eligible Parts for Competition](http://www.fim-moto.com)" on www.fim-moto.com) including restrictors

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

Balancing parts and modifications will be documented in the "[Eligible Parts for Competition List](#)" published on www.fim-moto.com and supersede all following regulations.

4. Minimum weight

The minimum weight for each model is as follows:

	Bike Weight		Combined Minimum Bike and Rider Weight*
	„hard“ minimum	„soft“ maximum	
Kawasaki Ninja 400	137 kg	150 kg	210 kg
<i>Kove Moto Basis 321 RR</i>	<i>137 kg</i>	<i>150 kg</i>	<i>206 kg</i>
KTM RC390	133 kg	146 kg	202 kg
KTM RC390R	133 kg	146 kg	202 kg
Yamaha YZF-R3	137 kg	150 kg	204 kg

Combined weight is the weight of the rider (in full racing equipment) and bike, as used on track.

*If the bike has achieved or exceeded the 'Soft Maximum Weight' then the combined minimum weight does not need to be reached. The bike alone may never at any time be below the 'Hard Minimum Weight'. This limits the maximum amount of ballast that can be added to the machines.

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 and riders 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 practice and qualifying, riders may be requested to have the minimum weight checked. 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.

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

The start numbers must comply with the following requirements:

Front number:

- white background
- height of the figures: *minimum* 140 mm
- *width of the figures: minimum 80 mm*
- *space between figures: 10 mm*

Side numbers (free 1 x seat seen from the rear in driving direction):

- *white background*
- *height of the numbers: minimum 120 mm*
- *width of the figures: minimum 70 mm*
- *space between figures: 10 mm*

Contrast and legibility must be guaranteed.

The final decision on the admissibility of the start numbers design is made by the *chief technical steward*.

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 technical steward*.

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

7. Tyres

Standard tyres according to IDM championship regulations are mandatory.

The depth of the tyre tread over the whole pattern at pre-event scrutineering must be at least 2.0 mm. For slick tyres, the wear indicator must show at least 2.0 mm.

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

The use of tyre warmers is permitted.

8. Engine

A maximum of 3 engines may be used per season. Any change of engine must be declared to the *technical stewards* in advance.

Sealing

Each engine will be sealed by the *technical stewards* before it may be used during an event.

Seals may only be removed under the supervision of the *technical stewards*. Any removed or damaged seal will be considered a new engine and count towards the total number of engines allowed. Moreover, the engine will be considered as not complied within the rules and all imposed penalties will be applied retrospectively for all races this engine was used with this seal.

A team must request the *technical stewards* to seal 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, *if applicable*, 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, *if applicable*, 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. Software may not be modified, and all the safety systems and procedures designed by the original manufacturer must be maintained.

The idle adjustment screw may be replaced or modified.

8.2. Cylinder head

The exhaust *air bleed system* (secondary air system) must be *deactivated* and the connections on the *valve cover* may be replaced with *covers*.

Valve shims are free. *Valve spring washers may be replaced.*

Cylinder head and cylinder base gasket – see “*Eligible Parts for Competition*” at www.fim-moto.com for allowed cylinder head gaskets (*depending on manufacturer*).

The installation of a restrictor in form of a flat plate between the cylinder head and inlet manifold may be required. It will be a flat plate. No blending or filling will be allowed with sealant or otherwise. See also “Eligible Parts for Competition” at www.fim-moto.com.

The minimum gap dimension (depending on manufacturer) will be listed in the “Eligible Parts for Competition”, see www.fim-moto.com.

8.3. Camshaft

The camshafts must remain as produced by the manufacturer for the homologated model. Modifications are not permitted.

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.

8.4. Cam sprockets and gears

Cam sprockets may be *modified* to allow the adjustment of cam timing.

Pressed on cam sprockets may be replaced with *adjustable* cam sprockets.

The timing chain, the timing chain rails and the timing chain tensioner must be as homologated.

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 *damage sustained in a crash*.

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 on the engine cases*.

Oil containing engine covers must be *secured with steel bolts*.

The *chief technical steward* has the right to refuse any cover not satisfying *this safety requirements*.

8.12. Transmission/gearbox

Must be the originally fitted and homologated parts with no modification allowed except:

- a) The *mechanism for direct selection of neutral gear* may be removed.
- b) The *lever/holder/roller of the shift star/the gear selector drum and their springs* may be replaced but must function as originally designed.

A downshift blipping is not allowed (*quick-shift systems: see Article 9.1*).
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.
The original clutch inner assembly may be modified or replaced by an aftermarket clutch, *also including slipper-clutch function*.

8.15. Cooling system

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. An additional water radiator may be fitted but the appearance of the front, the rear and the profile of the motorcycle must not be changed. Extra mounting brackets to accommodate the additional radiator are permitted.

8.16. Airbox

The airbox must remain as produced by the manufacturer for the homologated model and remain fitted. Modifications are only permitted in accordance with the list "Eligible Parts for Competition".
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.

8.17. Fuel supply

The fuel pump and fuel pressure regulator must remain as produced for the homologated model. Modifications are not permitted.
The fuel pressure must remain as on the homologated model.
Fuel lines from the fuel tank to the fuel distributor (fuel distributor excluded) may be replaced but must be *installed 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.

8.18. 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 for Supersport 300 is 107 dB/A with a 3 dB/A tolerance after the race only.
The noise will be measured at the following speeds:

Model	Rev.
Kawasaki Ninja 400 (EX400)	6.500 rpm
<i>Kove Moto Basis 321 RR</i>	<i>7.000 rpm</i>
KTM RC390	5.500 rpm
KTM RC390R	5.500 rpm
Yamaha YZF-R3	7.500 rpm

9 Electric and electronics

9.1. Electronic Control System

The complete electronics system must comply with article 9.2.

Maximum revs:

Model	Rev.
Kawasaki Ninja 400 (EX400)	10.350 rpm
<i>Kove Moto Basis 321 RR</i>	<i>12.800 rpm</i>
KTM RC390	11.150 rpm
KTM RC390R	11.150 rpm
Yamaha YZF-R3	13.300 rpm

9.2. Supersport 300 Control Electronics System

The ECU/Dashboard/Harness must be the Supersport 300 approved Control Electronic System. The sole official supplier of the Control Electronics System is Solo Engineering. www.soloengineering.com, sales@soloengineering.com.

The ECU must be the Supersport 300 Mectronik MKE Unit with seal sticker fitted.

The system is supplied including switchgear and setting cables.

The software and firmware used must be from the list of legal software/firmware versions. *The teams are themselves responsible for any updates.*

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.

At any time during an event the *chief technical steward* has the right to make a team substitute their ECU with an DMSB sample. Sensors may not be replaced, modified or substituted unless noted and the allowed OEM ECU sensors/channels are:

- a) Throttle position Sensor(s)
- b) Map sensor, Map Sync (pressure sensor on the intake port used to synchronize the engine during the start)
- c) Airbox pressure
- d) Engine pick-ups (cam, crank)
- e) Twist grip position
- f) Front speed
- g) Rear speed (from ABS sensor)
- h) Gearbox output shaft speed
- i) Gear position
- j) Air pressure
- k) Water temperature
- l) Air temperature
- m) Oil pressure switch
- n) Tip-Over switch (internal to ECU)

The following may be added:

- o) Gear shift load cell/switch (signal to ECU only)
- p) Lambda sensor (Bosch LSU4.9)
- q) Left- and right-hand switches (may be replaced from kit)

- r) Fork position (teams' choice)
- s) Shock position (teams' choice)
- t) Front brake pressure sensor (teams' choice)
- u) Transponder/lap time signal
- v) GPS unit (built into dashboard)

No external modules may be fitted (except as part of a quickshifter where it may only provide a signal to the approved ECU).

The Data logger must either:

- a) The Supersport 300 internal data logger (requires activation). or
- b) Must be from the DWO/FIM approved Supersport 300 approved logger list. The firmware/software of any data logging units must be an FIM/DWO approved version. A copy of the software and documentation must be submitted by the manufacturer to the *chief technical steward* before it can be approved for use.
 - The logger may only connect to the “Logger” connections in the harness. These supply CAN and *12V Power*;
 - No other connections can be made.
- c) The analysis software must be *freely available*.

Spark plug sockets must remain as homologated.

Spark plugs may be replaced.

Battery is free.

9.4. 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 *marking*. 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 technical steward*.

The pre-assembled spare part frame must be presented to the *chief technical steward* 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/lever system and spring strut*
- 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 technical steward*.

The rebuilt motorcycle must be *technically inspected* before its use by the technical stewards for safety checks *and a new control label (marking) will be applied*.

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.

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: 30 mm). Without exception, the wheel axles cannot be modified.

The side stand bracket may be cut or removed.

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 subframe:

- a) If removable it may be changed or altered, but the type of material must remain as homologated, or be material of a higher specific weight.
- b) If part of the main frame assembly then it may not be altered except as noted below.
- c) 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:

- 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 *and* bushes but excepting oil and fitting, the price limit is **€800** 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 **€935** excluding tax.

The approved products from the suspension manufacturers must be available to all participants at least one month before the first round of the *International German Motorcycle Championship (IDM)* and remain available all season. The products must be available within 6 weeks of a confirmed order.

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.

Only approved 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 to the rear swing-arm 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 with an approved unit, 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

The wheel may be overpainted, but the original finish cannot be removed. 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.

Aluminium or steel inflation valves are compulsory. Angled valves are recommended.

The wheel axle nut must be secured as original or may be replaced by a self-locking nut. Cotter pins are not permitted.

10.7. Brakes

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

- a) Brake discs must retain the same material as the homologated disc or be steel (max. carbon content 2.1 %).
- b) Non-floating or single piece discs may be replaced with floating discs.
- c) The outside diameters of the brake disc may not be larger than the ones on the homologated disc.
- d) 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.
- e) The fixing of the carrier on the wheel must remain the same as on the homologated disc.
- f) 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 and/or to replace light alloy pistons with steel pistons.

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 technical steward* 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 technical steward* 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/*tank extension* 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 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 pitch of the fairing parts*, fixing points, fairing bottom, etc.). The material may be changed. The use of carbon fibre or carbon composite materials is not allowed. Reinforcements in Kevlar® or carbon are allowed *in the area of holes/fastenings* and in the area of *higher load*. Headlights must be included even when considered external.

For all bodywork paint and decal design is free.

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 *chief technical steward* 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 dimension* of the vertical distance from/to the upper fork bridge. The screen must conform to the same profile from the front as the original – no *double bubble* or wide types.

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.

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. *Air ducts must not be added if they are not originally installed.* The lower fairing must 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 fairing floor. The angle between this wall and the fairing 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 $> 60\%$.

Inside the fairing, motorcycles may be equipped with an *air duct* 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. *If the chain guard is part of the rear mudguard, it may be removed or modified in the area of the sprocket to allow the fitting of a larger diameter sprocket. Further information is published on the "Eligible Parts for Competition List".*

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.

These fasteners may be drilled for safety wire for its *mounting*, but *intentional weight-reduction modifications are not allowed*.

Thread repair using inserts of different material such as *helicoils* and time-sets 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 technical steward*. In case of dispute over the mounting position or visibility, the decision of the *chief technical steward* will be final.

Power output/luminosity equivalent to approximately: 10 – 15 *W (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's on-board power supply*.
The *chief technical steward* 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.
- 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 (*O² sensors, components for air intake*)
- Bolt-on accessories *of the* 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 rail
- Safety bars, centre and side stands must be removed (fixed brackets must remain, *with the exception of the bracket for the side stand*)
- Catalytic converter.
- *Rear mudguards/wheel covers attached to the seat unit*

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.

Further permitted modifications and authorised parts are published in the "Eligible Parts for Competition" list at www.fim-live.com.

15. Equipment and protective clothing

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

It is mandatory for the leather suit to be fitted with an Airbag system. Alternatively, commercially available airbag vests will also be permitted. Every rider must start each track session with a functional Airbag system. Once the airbag has been deployed, the responsibility for continuing the practice or race rests with the rider. The rider's name must appear on the right arm of the rider's clothing near the wrist (embroidered, patch).

16. Camera / Camera mounting

The use of cameras is only permitted in free practice. These must have a double attachment (e.g. pad + wire rope) and must be presented at scrutineering.

Any use outside the free practice sessions will only be authorised by the promoter in exceptional cases.