

DMSB Technical Regulations 2024 for the IDM Supersport class

As per: 28.03.2024 – 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.

The permitted modifications are general and only apply if the model-specific provisions in the list of permitted parts (Eligible Parts List IDM) do not contradict them.

Supersport motorcycles require a phase 2 FIM homologation (see attachment FIM homologation procedure). Only naturally aspirated engines are permitted. All motorcycles must comply in all respects with all road sport requirements as set out in these Technical Regulations, unless the homologated model is already so equipped.

Once a motorcycle has been homologated it may be used to race in the relevant class for a specified period of time (see homologation art. 1.4.4) or until such time as the homologated motorcycle is no longer available due to new regulations or changes in the technical specifications of the corresponding class is excluded.

The appearance of supersport motorcycles must generally (unless otherwise specified) conform to the homologated form (as originally produced by the manufacturer) from the front, rear and profile. The appearance of the exhaust system is exempt from this provision.

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 before the first event:

- Cylinder head – *if no machining is allowed*
- *Intake and exhaust camshaft(s)*
- *Camshaft sprockets - if not free*
- *Bucket tappets and/or rocker arms, finger rocker arm*
- *Intake and exhaust valve including valve springs, valve discs, valve keys*
- Pistons *including piston rings*, pins and clips
- Connecting rods

If the reference parts are not available by the deadline, the motorcycles in question will be approved with reservations.

If an inspection cannot be carried out due to missing reference parts, the components in question can be secured by the technical stewards and the inspection will be carried out when the required reference parts are available.

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.

2.5.3 Balancing various motorcycle concepts

In order to equalize the performance of motorcycles used in the Supersport World Championship and IDM, 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

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

The range of concession parts are decided by mutual agreement of FIM-SBK Commission.

These agreed concession parts 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.

Necessary adjustments during the season will be published with a minimum of 4 weeks’ notice.

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 3rd 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 and DMSB reserves the right to update the balance at their discretion in the case of an imbalance.

2.5.3.2 Rev Limit

Rev Limits will be noted as a feature of the legal balance in the Eligible Parts for Competition List.

2.5.4 Minimum weight

Brand	Bike Weight		Combined Minimum Bike and Rider Weight
	„Hard“ minimum	„Soft“ maximum	
Ducati Panigale V2	166 kg	175 kg	244 kg
Honda CBR600RR	161 kg	170 kg	239 kg
Kawasaki ZX-6R	161 kg	170 kg	239 kg
MV Augusta F3	161 kg	170 kg	239 kg
MV Augusta F3 800	161 kg	170 kg	239 kg

MV Augusta F3 Superveloce	161 kg	170 kg	239 kg
Suzuki GSX-R600	161 kg	170 kg	239 kg
Suzuki GSX-R750	161 kg	170 kg	239 kg
Triumph 675R	161 kg	170 kg	239 kg
Triumph ST76RS	161 kg	170 kg	239 kg
Yamaha YZF-R6	161 kg	170 kg	239 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) Die 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 IDM Chairman of the Technical Stewards at the preliminary checks.

2.5.5 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 design is free, provided the following requirements are met:

- white background
- height of the front figures: *minimum* 140 mm
- *width of the figures: minimum 25 mm*
- *space between figures: minimum 10 mm*
(free 1 x seat from rear view in driving direction 120 mm)
- contrast and legibility must be guaranteed
- minimum space between figures: 10 mm.

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

2.5.6 Fuel

See DMSB 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.

2.5.7 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.

2.5.8 Engine

No modifications may be made to the engine (as per 2.5.8 and 2.5.9) unless stated in the text or in the list of eligible parts for the competition.

The *permitted* number of engines is calculated by the number of events, divided by the applicable factor and rounded to the nearest whole number. (minimum of 2 engines):

Engine Limit		
Capacity	Rounds/Engine	Permitted number in case of 7 events (example)
400-600 cc	2,5	$7 : 2,5 = 2,8 \Rightarrow 3 \text{ engines}$
601-799 cc	3	$7 : 3,0 = 2,3 \Rightarrow 2 \text{ engines}$
800 cc and over	3,5	$7 : 3,5 = 2,0 \Rightarrow 2 \text{ engines}$

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 from FIM, DWO and DMSB staff or their delegates, only one team representative may attend the test.

Engine sealing:

The engines must be prepared in advance so that the sealing can take place on the right in direction of travel.

The total number of engines that a rider may use during the entire championship is limited the "allocated number". When a permanent rider changes teams during the championship, his engine limit should not change, but in extra-ordinary circumstances will be reviewed by the Chairman of the Stewards.

The total number of engines that a team may use during the entire championship is limited to the "*permitted number*" per permanent registration. When a permanent rider is replaced during the championship, the total engine allocation for the teams' entry will not change. Should a new team enter the championship part way through the season, the *permitted* number of engines will be proportional to the season remaining.

Wild card riders (and one event riders) will be allowed to use two sealed engines during the event in which they take part. Should the same rider choose to enter a second event as a wildcard, one extra engine will be added. For any further entry, the rider and/or team will be considered a permanent registration.

The technical stewards must be notified of all engine changes and therefore know at all times which engine is in current use.

The number of engines that may be used during each event is only limited by the "*permitted number*". Each engine must be sealed by the technical stewards before it may be used during an event.

An engine is considered in use or active from the moment it crosses the line at the pit exit.

Seals will bear a serial number, which will be recorded.

Any attempt made to remove the seal will damage it irreparably. Seals may only be removed under the supervision of the technical stewards.

A broken or damaged seal will be considered as if the engine has been used and will be counted as part of the rider's allocation for the season. Moreover, the engine will be considered as not complied within the rules and all imposed penalties will be applied retrospectives for all races this engine was used with this seal.

A team must request sealing of an engine/engines before its/their use.

A previously sealed engine may be resealed following repair or revision; this will be considered a new engine and count towards the total number of engines allowed.

All seals including the seals on an engine that has completed its life cycle or is in need of repair may only be broken in front of a technical steward. At the time of the breaking of the seals the technical steward may ask for this engine to be disassembled to check for compliance of the technical rules. 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.

Valve clearance adjustments may be made after approval of the *chief technical steward* and under the supervision of a technical steward. Approval must be requested in advance to the *chief technical steward*. A new seal will subsequently be applied.

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.

2.5.8.1 Fuel injection system

Unless otherwise declared in the list of permitted parts:

- 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 electronics may be disconnected or removed.
- 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

Unless otherwise declared in the list of permitted parts:

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 *connections on the valve cover* may be replaced by plates.

2.5.8.3 Camshaft

Unless otherwise declared in the list of permitted parts:

Only the originally homologated or the championship eligible concession camshafts from the Eligible Parts for Competition List may be used.

- a) The method of drive must remain as homologated.
- b) The duration is free but the maximum lift must remain as homologated.
- c) The camshafts must be available from the concession parts supplier. The price limit is €1000 per camshaft in an inline 3 or 4 cylinder engine and €650 per camshaft in a V engine (VAT excluded). 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 adjustment of the *camshaft timing*.
- 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

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 (engine-) covers and protection

Unless otherwise declared in the list of permitted parts:

- 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 technical stewards have 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) 1st gear shaft and counter gear may be changed.
- c) Undercutting and re-shimming are allowed.
- d) The positive neutral selector mechanism may be removed.
- e) *Lever/holder/roller of the shift star/the gear selector drum and their springs* may be replaced or modified but must function as originally designed.

- f) Polishing, surface treatment, and heat treatment of all gearbox components is allowed.
- g) *A replacement of the gearbox* is equivalent to a damaged engine.
- h) Chain sprocket, *chain wheel*, chain pitch and size may be changed.
- i) The front sprocket cover may be modified or eliminated.
- j) Chain guard as long as it is not incorporated in the rear fender may be removed.

2.5.8.13 Clutch

- 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 from IDM series partners, 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.

2.5.8.15 Cooling system

- a) *Only water without additives may be used as the liquid for cooling the engine.*
- 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 replaced.
- c) The airbox drains must be sealed.
- d) 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.
- e) 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 systems

- 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 may 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

- a) The ECU must be the FIM Supersport control ECU – the Mectronik MKE7 (part number SS600_A). The sole official supplier of the ECU is Solo Engineering. www.soloengineering.com, sales@solengineering.com.
- b) The firmware and manufacturer (engine) map must be declared eligible by 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:
 - i) Part of a quickshifter where the module may only provide a signal to the control ECU.
 - ii) Championship mandated devices (e.g. 2 way RF system).
 - iii) Datalogger.
- f) A CAN connection must be made available for Championships devices. 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 IDM Chairman of the Technical Stewards or his delegates.

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

1. Ground
2. CAN Lo
3. CAN Hi 4.
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 technical stewards or *their* delegates have the right to ask a team to substitute their ECU. The change has to be done before Sunday warm up.
- j) During an event, *only* the technical stewards or *their* delegates have 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) (all ECU's feature crash detection by IMU).

The following sensors can be added (and not OEM sensors)

14. Gear shift load cell/switch (may only provide a signal to the control ECU)
15. Multi-Lambda – Bosch LSU4.9 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.

- l) 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.
- m) Not applicable
- n) Only the following may be connected directly to the logging system.
 - a) GPS Unit (Lap timing and track position).
 - b) Transponder / Lapt time signal.
 - c) Rear tyre temperature.
 - d) Any exceptions noted in Eligible Parts for Competition List.
- o) Telemetry is not allowed
- p) 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.
- q) The dashboard is free, it may also contain the datalogger. There must remain a working *Tachometer display*. This is the team's responsibility.
- r) All shift *indicator lights* must be only "White".
- s) If handlebar switches are replaced from those supplied in the kit then they must meet the specification documented on www.soloengineering.com. Their basic layout, switch function, position and colour must follow those supplied in the kit.
- t) *Plug caps and coils* must remain as homologated.
- u) 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.
- v) Spark plugs and wires may be replaced.

2.5.9.2 Generator, alternator, electric starter

- 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 chief technical steward to use the spare frame.

The pre-assembled spare frame must be presented to the chief technical steward 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 chief technical steward.

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

No complete spare machine may be in the *pit garage*. 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 *marked/identified* by the technical stewards. Any attempt made to remove the *marking/identification* will damage it irreparably.

At any time during the event the technical stewards, under the direction of the chief technical steward, 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 chief technical steward. 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 marked. The *marking* 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 *frame number* will be recorded by the Technical Stewards.

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 technical stewards must be informed before work can start.

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: 30 mm).
- 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.
- 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) Only units from the Eligible Parts for Competition List must be used.

The retail price limits are:

- i) 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 **€2450** excluding tax.
- ii) 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 *fluid* 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

Unless otherwise stated in the Eligible Parts of Competition List:

- 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 18 mm 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 125 mm to the bump stop plus a maximum of 5 mm 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) *The recess* for the rear axle chain adjuster may be enlarged *in order to fix the brake caliper bracket*.
- e) A solid protective cover (*shark fin*) shall be fixed to the swing-arm so that it covers the opening between the lower chain run, the 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 caliper 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.
- 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 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. Angled aluminium or steel inflation valves are compulsory.

- i) 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 manufacturer/importer and the *chief technical steward*.

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 320 mm. However, the 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. *Brake pistons are free.*
- f) The front brake master cylinder 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 limit for the front master cylinder (including lever) is €350 (VAT excluded). *The brake lever design is free.*
- g) The rear brake master cylinder 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
	(VAT excluded)

The use of thumb or hand brakes is allowed in addition to 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 technical stewards have the right to refuse any guard not satisfying this safety purpose.

2.5.10.8 Handlebars and hand controls

- a) Handlebars may be replaced.
- b) Handlebars and hand controls may be replaced and relocated.
- c) Throttle controls must be self-closing when not held by the hand.
- d) Motorcycle with *Throttle Cables*:
 - i) Throttle assembly and associated *Bowden 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.
 - ii) Throttle valves with *Bowden cable actuation* must be equipped with both an opening and a closing cable *including when actuating a remote ride-by-wire grip/demand sensor*.
- e) Motorcycle with Ride By Wire throttle "Grip" sensor:
 - i) Only the OEM unit may be used *or optional units (motorcycle specific) from the Eligible Parts for Competition List*.
- 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 *and/or* hangers/brackets 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 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*.
- e) Non folding footrests must have an end (*plug*) *which is permanently fixed, made of aluminium, plastic, Teflon® or an equivalent type material*. The plug surface must be designed so that it *covers the end of the footrest sufficiently*. The IDM Technical Stewards have 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) If the tank has a *filler "neck" (tube) reaching into the interior of the tank* that restricts its complete filling, then the neck may be removed or have vent holes drilled through it.
- f) 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.
- g) The tank may not have a cover fitted over it unless the homologated machine also features a full cover.
- h) 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.
- i) 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 constructions*. Specific reinforcements in Kevlar® or carbon are allowed *in the area of higher load and in the area of holes*. Headlights must be included even when considered external.
- b) For all bodywork paint and decal design is free.
- c) not applicable
- d) The fairing has a tolerance of +/-8 mm 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 +5 mm maximum. The decision of the IDM Chairman of the Technical Stewards 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) not applicable
- i) The original air ducts running between the fairing and the airbox may be replaced by exact cosmetic replicas of the original parts. If the part serves another function (ie. Dash Mounting) then the airflow passage must retain the homologated internal shape and the part must be listed in the Eligible Parts for Competition List. Material is free.
- j) 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 homologated machine*.
- k) 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.
- l) 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 conditions.
- m) Minimal changes are allowed in the fairing to allow clearance for protective engine covers.
- n) *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.
- o) The front *mudguard* must conform in principle to the homologated shape originally produced by the manufacturer. The front *mudguard may* be replaced and the use of carbon fibre or Kevlar® composites are allowed.
- p) Front mudguard may be spaced upward for increased tyre clearance.
- q) The rear 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.
- r) 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 *sprockets*.
- s) The chain guard may be removed as long as it is not incorporated in the rear fender.
- t) The existing rear mudguard under the seat may be removed.
- u) 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.
- v) Supersport Next Generation: in the event that the *machine intended to be used* 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 *or by agreement with MPS and the chief technical steward*. A bellypan 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 supports/attachment bolts* must remain of standard homologated materials or materials of higher specific weight.
- d) *Special steel fastening elements 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 are permitted*.
- 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 IDM Technical Stewards. In case of dispute over the mounting position or visibility, the decision of the IDM Technical Stewards 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 of the 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 IDM Technical Stewards have the right to refuse any light system not satisfying this safety purpose.
- g) *See also Art. 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/drives*.
- 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.

3.1 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).

3.2 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.