



## **ALPE ADRIA MOTORCYCLE UNION ROAD RACING TECHNICAL REGULATIONS 2017 (AARRTR)**

<b>AARR 0.</b>	<b>GENERAL .....</b>	<b>2</b>
<b>AARR 0.1</b>	<b>PROTECTIVE CLOTHING AND HELMETS .....</b>	<b>2</b>
<b>AARR 0.2</b>	<b>ADDITIONAL EQUIPMENT .....</b>	<b>2</b>
<b>AARR 0.3</b>	<b>TYRES .....</b>	<b>3</b>
<b>AARR 0.4</b>	<b>STARTING NUMBERS AND BACKGROUNDS .....</b>	<b>3</b>
<b>AARR 0.5</b>	<b>FUEL .....</b>	<b>4</b>
<b>AARR 0.6</b>	<b>HOMOLOGATION .....</b>	<b>4</b>
<b>AARR 0.7</b>	<b>SOUND LEVEL CONTROL .....</b>	<b>4</b>
<b>AARR 0.8</b>	<b>TIMEKEEPING TRANSPONDERS .....</b>	<b>4</b>
<b>AARR 1</b>	<b>CLASS 125cc SPORT PRODUCTION .....</b>	<b>4</b>
<b>AARR 2</b>	<b>CLASS 125cc GRAND PRIX .....</b>	<b>11</b>
<b>AARR 3</b>	<b>CLASS Moto3 .....</b>	<b>13</b>
<b>AARR 4</b>	<b>CLASS SUPERSPORT .....</b>	<b>14</b>
<b>AARR 6</b>	<b>CLASS SUPERSTOCK 600 / 1000 .....</b>	<b>14</b>
<b>AARR 7</b>	<b>CLASS SUPERBIKE .....</b>	<b>24</b>
<b>Appendix A:</b>		
	<b>STARTING NUMBERS .....</b>	<b>25</b>
<b>Appendix B:</b>		
	<b>LIST OF HOMOLOGATED CDI AND WIRE HARNESS MODELS .....</b>	<b>26</b>
<b>Appendix C:</b>		
	<b>MINIMUM WEIGHTS .....</b>	<b>27</b>
<b>Appendix D:</b>		
	<b>FUEL, OIL AND COOLANTS .....</b>	<b>28</b>
<b>Appendix E:</b>		
	<b>SOUND LEVEL CONTROL .....</b>	<b>31</b>

Each modification is prohibited, if it is not allowed expressively

Everything printed in **bold** is new or changed for **2017**

## **AA RR 0 GENERAL**

- a. **Amendments to the technical regulations may be made by the Alpe Adria Road Racing Commission at any time.**
- b. **Each rider can pass the Technical Control with one motorcycle only. The Technical Stewards should re-inspect any motorcycle that has been involved in any accident, and if it is necessary to issue a new technical control sticker for a rebuilt motorcycle. If a motorcycle is completely damaged, the Chief Technical Steward can allow the rider to pass the Technical Control with a second motorcycle. But at any time of the event only one motorcycle per rider and class is allowed.**
- c. **During practices: If a motorcycle is found not to be in conformity with the technical regulations during or after the practices, its rider will be given a penalty for the event such as a ride-through, a drop of any number of grid positions for the next race, suspension and/or withdrawal of Championship or Cup points.**
- d. **After a race: If a motorcycle is found not to be in conformity with the technical regulations after a race, its rider will be given a penalty such as time penalty or disqualification.**
- e. If during the practice sessions or the race itself a Technical Steward states a fault in a motorcycle that could represent a danger for the other riders, he must immediately inform the Clerk of the Course.  
Random technical controls may be carried out during practices and at the end of practices in the technical control area.  
The rider is at all times responsible for his motorcycle.

### **AA RR 0.1 - PROTECTIVE CLOTHING AND HELMETS**

0.1.1 Riders and passengers must wear a complete leather suit with additional leather padding or other protection on the principal contact points, knees, elbows, shoulders, hips etc.

0.1.2 Linings or undergarments must not be made of a synthetic material which might melt and cause damage to the rider's skin.

0.1.3 Riders must also wear leather gloves and boots, which with the suit provide complete coverage from the neck down.

0.1.4 Leather substitute materials may be used, provided they have been checked by the Chief Technical Steward.

0.1.5 Use of a back protector is mandatory.

0.1.6 Riders must wear a helmet which is in good condition, provides a good fit and is properly fastened.

0.1.7 Helmets must be of the full face type and must conform to one of the recognised international standards:

- Europe: ECE 22-05, (P)
  - Japan: JIS T 8133 : 2007 (valid until 31.12.2019); **JIS T 8133 : 2015**
  - USA: SNELL M 2010 (valid until 31.12.2019); **SNELL M 2015**
- Helmets with double D-Ring fasteners are mandatory!**

0.1.8 Visors must be made of a shatter-proof material.

0.1.9 Disposable "tear-offs" are permitted.

0.1.10 Any question concerning the suitability or condition of the riders clothing and/or helmet should be decided by the Chief Technical Steward, who can, if he wishes so, consult the manufacturers of the product before making a final decision.

### **AA RR 0.2 ADDITIONAL EQUIPMENT**

0.2.1 Brake lever protection:

Motorcycles must be equipped with a brake lever protection, intended to protect the handlebar brake lever from being accidentally activated in case of collision with another motorcycle. Composite materials for handlebar protection are not permitted. The Chief Technical Steward has the right to refuse any guard not satisfying this safety purpose.

#### 0.2.2 Chain guard:

All motorcycles must be equipped with a chain guard in such a way to reduce the possibility that any part of the rider's body may become trapped between the lower chain run and the final drive sprocket at the rear wheel.

#### 0.2.3 Rear safety light:

All motorcycles must be equipped with a functioning red light mounted at the rear of the seat, to be used during Wet Races or in low visibility conditions, as declared by the Race Direction.

All lights must comply with the following:

- a. Lightning direction must be parallel to the motorcycle centre line (motorcycle running direction), and be clearly visible from the rear at least 15 degrees to both left and right sides of the motorcycle centre line.
- b. The rear light must be mounted near the end of the seat/rear bodywork and approximately on the motorcycle centre line, in a position approved by the AA Chief Technical Steward. In case of dispute over the mounting position or visibility, the decision of the AA Chief Technical Steward will be final.
- c. Power output/luminosity equivalent to approximately 10-15 W (incandescent) or 0.6-5 W (led).
- d. The output must be continuous - no flashing safety light whilst on track is allowed. The flashing is allowed in the pit lane when the pit limiter is active.
- e. The safety light power supply may be separated from the motorcycle.
- f. The Chief Technical Steward has the right to refuse any light system not satisfying this safety purpose.

#### 0.2.4 Kill switch:

All 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.

### **AARR 0.3 TYRES**

If competitors use tyres of Dunlop or Pirelli brand, these are distributed or approved exclusively by the official tyre suppliers during the event only: Dunlop tyres only by Maco Racing, s.r.o. I.D. 35804241 and Pirelli tyres only by IVRacing, s.r.o. I.D. 26921961. All tyres to be used must be easily identifiable with a colour marking, to be applied by the official tyre suppliers in case of Dunlop or Pirelli. This rule is not valid for Vintage / Classic bikes. The special price for a set of tyres from official suppliers will be offered.

- a) Any modification or treatment of the tyres (cutting, grooving) is forbidden.**
- b) Wet tyres and intermediate tyres can only be used when the race or practice has been declared "wet" by the Race Direction.**

### **AARR 0.4 STARTING NUMBERS AND BACKGROUNDS**

The colours of the starting numbers and backgrounds are defined separately in the regulation of the class concerned. The number must be clearly visible and in a good shape.

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

- One on the front, either in the centre of the fairing or slightly off to one side;
- One, on each side of the motorcycle, the location for the number is on the lower rear portion of the main fairing near the bottom; see Appendix A.
- ~~• In addition, a number can be placed at the top of the rear seat section with the top of the number towards the rider. These numbers must have the same size as the front numbers.~~
- **Numbers must be easily legible in a clear simple font and contrast strongly with the background colour.**
- **Backgrounds must be of one single colour and must be clearly visible around all edges of the number (including outline).**
- **Any outlines must be of a contrasting colour and the maximum width of the outline is 3 mm.**

- **Reflective or mirror type numbers are not permitted.**
- **Numbers cannot overlap.**

In case of a dispute concerning the legibility of numbers, the decision of the Chief Technical Steward will be final.

The sizes for all the front numbers are:	Minimum height Minimum width Minimum stroke Minimum space between numbers	<b>120</b> mm <b>60</b> mm <b>20</b> mm 10 mm
The sizes for all the side numbers are:	Minimum height Minimum width Minimum stroke Minimum space between numbers	<b>100</b> mm <b>50</b> mm <b>15</b> mm 10 mm

## **AARR 0.5 FUEL**

- All engines must function on normal unleaded fuel with a maximum lead content of 0.005 g/l (unleaded) and a maximum MON of 90 based on the FIM SBK 2016 Rules, Art. 2.7 and its sub articles 2.7.1 – 2.7.6 (see Appendix D).
- Normal unleaded fuel from any public petrol station and racing fuels according to the FIM SBK 2016 Rules, Art. 2.7 and its sub articles 2.7.1 – 2.7.6 (see Appendix D) can be used.
- At the technical control each rider has to declare the brand and type of fuel he is using.
- At least 1 litre fuel must remain in the fuel tank of all the motorcycles that finished the race to take samples if needed.

## **AARR 0.6 HOMOLOGATION**

For AA-classes Superstock 600/1000, Supersport and Superbike all motorcycles must have been - now or earlier - homologated by the FIM.

## **AARR 0.7 SOUND LEVEL VONTROL**

For AA-classes Superstock 600/1000, Supersport and Superbike look at the F.I.M. Road Racing World Championship Superbike & Supersport Regulations 2016, Art. 2.11 (see Appendix D).

For all AA classes the methods of measurement will be according to the methods described in the F.I.M. Road Racing World Championship Superbike & Supersport Regulations 2016, Art. 2.11.

## **AARR 0.8 TIMEKEEPING TRANSPONDERS**

**All machines must have a correctly-positioned timekeeping transponder. The transponder must be supplied or approved by the official Timekeeper and fixed to the motorcycle in the position advised by the official Timekeeper and approved by the Chief Technical Steward.**

# **AARR 1 - Class 125 SPORT PRODUCTION**

## **1.1 Specifications**

These rules are exclusively intended to limit changes to the homologated motorcycle in the interests of safety only.

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

The Motorcycle must be homologated by the original manufacturer only, except new motorcycles from the year 2015 on. For these motorcycles, a complete technical documentation, including tolerances, must be published by the manufacturer.

As the name Sport Production implies, the motorcycles used are allowed limited modifications. Most modifications are allowed for safety reasons.

All motorcycles must comply in every respect with all the requirements for Road Racing as specified in FIM Road Racing Technical Rules.

All parts of a motorcycle must consist of that year of production as the motorcycle is homologated.

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

Cubature's over 80cc up to 125 cc max. and 1 cylinder and max. 6 gears (7 gears in case of Cagiva Mito, subject to year of construction), are permitted.

## **1.2 Weight**

The minimum weight of the motorcycle is 110 kg without oil and fuel.

In the final inspection at the end of the race, the checked motorcycles will be weighed in the condition they were at the end of the race.

At any time of the event, the weight of the whole motorcycle (including the tank) must not be less than the minimum weight.

There is no tolerance on the minimum weight.

During the final inspection at the end of the race, the selected motorcycles will be weighted 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.

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.

## **1.3 Number Plate Colours**

The background colours and figures for 125 cc SP motorcycles are black background with white numbers, with the RAL colour table values being 9005 for black and 9010 for white.

## **1.4. Fuel, oil and coolants**

- a. All engines must function on normal unleaded fuel with a maximum lead content of 0.005 g/l (unleaded) and a maximum MON of 90 (See also Appendix D below).
- b. The only liquid engine coolants permitted other than lubricating oil shall be water or water mixed with ethyl alcohol.

## **1.5 Specifications**

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

### **1.5.1 Frame Body and Rear Sub Frame**

- a. Frames must remain as originally produced by the manufacturer for the homologated motorcycles.
- b. The sides of the frame-body may be covered by a protective part made of plastic or composite material. These protectors must fit the form of the frame.
- c. Nothing can be added by welding or removed by machining from the frame body.
- d. All motorcycles must display the manufacturers' vehicle identification number on the frame body (chassis number).
- e. Engine mounting brackets or plates must remain as originally produced by the manufacturer for the homologated motorcycle.
- f. The rear sub frame must remain as originally produced by the manufacturer for the homologated motorcycles.
- g. Protrusive, not-stressed brackets can be removed on request of the Chief Technical Steward if he supposes they can be dangerous.
- h. Additional seat brackets may be added but none may be removed. Bolt-on accessories to the rear sub-frame may be removed.
- i. The paint scheme is not restricted but polishing the frame body or sub frame is not allowed.
- j. It is allowed to remove the top engine mount connecting the cylinder to the frame of the motorcycle.

### **1.5.2 Front Forks**

- a. The fork structure (spindle, stanchions, bridges, stem, etc.) must remain as originally produced by the manufacturer for the homologated motorcycle.

- b. Standard original internal parts of the forks may be modified.
- c. Aftermarket damper kits/cartridges or valves may be installed but the external view of the fork must remain as homologated.
- d. The fork caps can be modified or changed to add spring preload/compression adjusters.
- e. Any quality and quantity of oil can be used in the front forks.
- f. The height and position of the front fork in relation to the fork crowns is free.
- g. The upper and lower fork clamps (triple clamp, fork bridges) must remain as originally produced by the manufacturer on the homologated motorcycle.
- h. A steering damper may be added or replaced with an after-market damper.
- i. The steering damper cannot act as a steering lock limiting device.

### **1.5.3 Rear Fork (Swing arm)**

- a. Each part of the rear fork must remain as originally produced by the manufacturer for the homologated motorcycle (including rear fork pivot bolt and rear axle adjuster).
- b. The swing arm can be modified to permanently fix the rear brake calliper support by welding, drilling or using thread repair inserts.
- c. Rear wheel stand positioning (support) brackets may be added to the rear fork by welding or by bolts. Brackets must have rounded edges (with a large radius) viewed from all sides. Fastening screws must be recessed.
- d. For safety reasons it is compulsory to use a chain guard made of plastic rigid material fitted in such a way as to prevent trapping between the lower chain run and the final drive sprocket at the rear wheel.

### **1.5.4 Rear Suspension Unit**

- a. The rear suspension unit (shock absorber and its spring) may be modified or replaced.
- b. The original attachments to the frame and rear fork (swing arm) must be used and the rear suspension linkage must remain as originally produced by the manufacturer of the homologated motorcycle.

### **1.5.5 Wheels**

- a. Wheels must remain as originally produced by the manufacturer at the time of sale into the dealer/distributor network for the homologated motorcycle.
- b. The speedometer drive may be removed and replaced with a spacer.
- c. No modification of the wheel-axles or any fixing and mounting points for front and rear brake calliper are authorized. Spacers can be modified. Modifications of the wheels to keep spacers in place, are permitted.
- d. If the original design includes a cushion drive for the rear wheel, it must remain as originally produced for the homologated motorcycle.
- e. Wheel diameter and rim width must remain as originally homologated.

### **1.5.6 Brakes**

- a. It is allowed to use the front and rear brake disc, including the follower, from another manufacturer as it was on the homologated motorcycle. Brake disc and follower must be of the same material as the homologated ones. The outer and inner diameter of the disc must remain the same as the homologated one. The thickness of the brake disc may be increased by 20%, but the original brake calliper must be used without any modifications. The method of attachment of the followers to the wheel must remain the same as on the homologated motorcycle.
- b. Front discs can be made floating, using original rotors and mounting points.
- c. The front and rear brake calliper (mount, carrier, hanger) must remain as originally produced by the manufacturer for the homologated motorcycle.
- d. 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. A modification of these parts is authorized. 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 thread repair inserts.
- e. Front and rear master cylinder must remain as originally produced by the manufacturer for the homologated motorcycle.
- f. Front and rear brake fluid reservoir can be changed with an aftermarket product.

- g. Front and rear hydraulic brake lines may be changed. The split of the front brake lines for both front brake calipers must be made above the lower fork bridge (lower triple clamp).
- h. "Quick" (or "dry-brake") connectors in the brake lines are authorized.
- i. Front and rear brake pads may be changed. Brake pad locking pins may be modified to quick-change type.
- j. Additional air scoops or ducts are not allowed.

#### **1.5.7 Tyres**

- a. Tyres must be fully moulded, carrying all size and sidewall marking of the tyres for sale to the public. Tyres of V to Z rating must be used. The tyres must have a DOT and/or E mark.
- b. Wet weather tyres may only be used after the race or practice is declared "wet" by the Clerk of Course.
- c. Wet tyres do not need to carry DOT or E mark; however, these tyres must be marked "Not for Highway Use" or "NHS".
- d. The use of tyre warmers is allowed.

#### **1.5.8 Foot Rest/Foot Controls**

- a. Foot rest/foot controls may be relocated but brackets must be mounted to the frame at the original mounting points.
- b. The foot controls linkage may be modified. The original mounting points must remain. Their two original points of fixture (on foot controls and on the shift shaft) must remain as original.
- c. Disburdening support staff of the foot rests is allowed.
- d. Foot rests may be rigidly mounted or of a folding type which must incorporate a device to return them to the normal position.
- e. The end of the foot rest must have at least an 8 mm solid spherical radius.
- f. Non-folding metal footrests must have an end (plug), which is permanently fixed, made of plastic, Aluminium, Teflon or an equivalent type material (minimum radius 8mm).
- g. The plug surface must be designed to reach the widest possible area of the end of the footrest. The Chief Technical Steward has the right to refuse any plug not satisfying this safety aim.

#### **1.5.9 Handle Bars and Hand Controls**

- a. Handle bars may be replaced (this does not include brake master cylinder).
- b. Handle bars and hand controls may be relocated.
- c. Throttle assembly and associated cables may be modified or replaced.
- d. Clutch and brake lever may be exchanged by an after-market copy.
- e. Switches can be changed but engine stop switch must be located on the handle bars.

#### **1.5.10 Fairing/Body Work**

- a. Fairing, front mudguards and body work may be replaced with the exact cosmetic duplicates of the original parts but must appear to be as originally produced by the manufacturer for the homologated motorcycle, with the slight differences due the racing use (different pieces mix, attachment points, fairing bottom, etc.). The material may be changed. The use of carbon fibre, Kevlar or carbon composite materials is not allowed.
- b. Overall size and dimensions must be the same as the original parts.
- c. Windscreen may be replaced with a duplicate of transparent material. The height is as original with a tolerance of + 40 mm on the vertical distance from to the upper fork bridge.
- d. Motorcycles that were not originally equipped with streamlining are not allowed to add streamlining in any form, with the exception of a lower fairing device, as described in (g and h). This device cannot exceed above a line drawn horizontally from axle to axle.
- e. The original combination of instrument/fairing brackets may be replaced. All other fairing brackets may be altered or replaced.
- f. The original air ducts running between the fairing and the air box must remain as homologated, as the front meshes. Carbon fibre and other exotic materials are forbidden. The wire mesh/plastic grills at the entrance of the air intake(s) in the front of the fairing can be taken away.

- g. The lower fairing has to be constructed to hold, in case of an engine breakdown, at least half of the total oil and engine coolant capacity used in the engine (minimum 2 litres).
- h. The lower fairing must incorporate an opening of Ø 25 mm diameter in the front lower area. These holes must remain closed in dry conditions and must only be opened in wet race conditions as declared by the Clerk of the Course.
- i. Front mudguard may be replaced with a cosmetic duplicate of the original parts and may be spaced upward for increased tyre clearance.
- j. Rear mudguard fixed on the swing arm that incorporate the chain guard can be modified to accommodate larger diameter rear sprockets.
- k. All exposed edges must be rounded.
- l. It is allowed to remove a side deflector from both front sides of the fairing.

#### **1.5.11 Fuel Tank**

- a. Fuel tank filler cap may be altered or replaced from those fitted to the homologated motorcycle, by a 'screw-on' type fuel cap. The fuel tank valve petcock must remain as originally produced by the manufacturer for the homologated motorcycle.
- b. The sides of the fuel tank may be covered by a protective part made of a composite material. These protectors must fit the shape of the fuel tank.
- c. All fuel tanks must be completely filled with fire-retardant material (open-celled mesh, i.e. "Explosafe®").

#### **1.5.12 Seat**

- a. The seat can be changed, but it's forbidden to use of carbon fibres and Kevlar if they are not present in the homologated motorcycle.
- b. The top portion of the rear body work around the seat may be modified to a solo seat.
- c. The appearance from both front rear and profile must conform to the homologated shape.
- d. The seat/rear cowl replacement must allow space for proper number display.

#### **1.5.13 Wiring Harness**

- a. The original wire-loom may be modified as indicated hereafter: The unused wire loom elements supplying current to direction indicators, horn, ignition contact and key-lock, etc., may be unplugged and/or removed (no cutting is allowed, but to disconnect connectors is allowed).

#### **1.5.14 Electrical Equipment**

- a. The disposition of the different components could be repositioned.
- b. The electrical commands on the handle bars could be eliminated. The engine stop switch must be fixed.
- c. The Electronic Control Unit (ECU) is free.
- d. The mechanisms that could allow interventions in order to change the declared curve (map) or ignition timing during the race are not allowed.
- e. It's absolutely not allowed to change the ignition timing by piercing (enlarging) fixing holes of the pickup or by reducing the diameter of the fixing screws.
- f. The loading circuit of the battery could be off during the race.
- g. The removal of the starter box is allowed. In the electric device, it is allowed to remove the relative electrical wiring together with all those parts that enable the operation and activation, including flywheel gear
- h. The motorcycle should be equipped – besides the disconnection switch – by a tug-device linked to the driver who – in the case of a slump (crash) – switches off the main electrical circuit, if there is an electrical pump for the carburettor fixed on the motor – as in the case of injection devices.

#### **1.5.15 Air Filter**

- a. The air filter can be removed; the box of the filter can be removed or used, completely or partially maintaining the original attachments.
- b. It's allowed to add to the filter box eventual linkages connecting the vents, carburettor and fuel tank.
- c. It's allowed to change parts of the original filter box so that it can serve as air conveyer.

#### **1.5.16 Carburettor and Reed valves**



- a. It's allowed to use the carburettor homologated for a new model of motorcycle in all older models of the same make.
- b. The maximum diameter of the carburettor in the venturi section must be 28 mm.
- c. Carburettor jets, slide spring and needles may be replaced.
- d. The slide metering holes may not be changed.
- e. Electronic or mechanical cold start devices must remain installed but may be deactivated.
- f. The bell mouth (trumpet) of the carburettor can be modified, removed or replaced.
- g. The number and thickness of the reed valve plates is free. The stoppers can be modified, removed or replaced.
- h. It is allowed to use any complete suction valves (reed valve case, plates, stops) with any filler flap. It is allowed to modify the original intake manifold (works between carburettor and reed valve case).

#### **1.5.17 Lubrication and cooling system**

- a. The system of lubrication is free. It's allowed to remove the oil - gasoline mixer and all its parts.
- b. The radiator cap is free; you can remove the expansion tank with on tubing.
- c. Protection network and an air conveyor attached to the radiator to improve cooling could be installed.
- d. The air conveyor set below the bottom plate fork may be modified or replaced.
- e. Removing the thermostatic valve is allowed.
- f. The installation of a water thermometer is allowed.

#### **1.5.18 Cylinder and Cylinder head, piston**

Cylinder: No modifications except written below are allowed.

- a. The cylinders cannot be replaced and must remain original.
- b. The cylinders can be rebuilt only on manufacturer's limits.
- c. The number of the cylinder ports must remain as original.
- d. The size, shape of the exhaust port, scavenging and inlet ports are free.
- e. The exhaust port polishing is allowed to reduce the gas residue deposits.
- f. The flattening of the cylinder is permitted provided that the limit of the compression ratio remains unchanged; it's allowed to install the antiknock ring of any material on the same cylinder.
- g. Cylinder - crankcase joint faces may be machined to make the flow linkage from crankcase to cylinder, but the crankcase has to remain in original version without any modification.

Cylinder head: Compression ratio must not exceed the value of 13, 5:1. The measuring of the volume of combustion chamber is carried out by a cylinder in the vertical position (without a spark plug) and piston in the top dead centre. The oil will be poured through the spark plug hole into the combustion chamber oil with viscosity class SAE 10W, until it reaches its last thread and this volume must be at least 12.3 cm<sup>3</sup>. It is allowed to use any cylinder head insert with any shape of the combustion chamber.

Piston: The piston may be the original one or one of the kit or any available aftermarket, but it must be the same dimension as the homologated one to retain the original bore and stroke indicated on the homologation list.

#### **1.5.19 Crankshaft / Crankcase and all other Engine Cases (i.e. ignition case, clutch case.)**

- a. The crankshaft flywheel must be the same as the original one.
- b. The Connecting rod could be changed with any available aftermarket, but the length must be same as by the original one.
- c. The installation of aluminium or bronze bushings to restore the seats of the bearings of the crankshaft is allowed.
- d. These bushings must have a cylindrical shape and maximum diameter of 70mm.
- e. The measures of the bearings must remain original.
- f. Painting, polishing and lightening are not allowed.

### **1.5.20 Clutch, transmission**

- a. No modifications are allowed.
- b. Only friction and drive discs may be changed, but their number must remain as in original version.
- c. Clutch springs may be changed.
- d. It is not allowed to change the clutch system. A slipper clutch or back-torque clutch may be used only if it is standard equipment on the homologated model.
- e. The final drive (drive and driven sprocket, chain) is free.
- f. It is allowed to use any sprockets and chain for any end-chain transmission.

### **1.5.21 Generator**

No modifications are allowed.

### **1.5.22 Exhaust System**

- a. The exhaust can be replaced.
- b. The noise limit for 125 cc Sport production s will be 96dB/A at 7000 RPM with a tolerance of + 3dB/A after the race only.
- c. The location of the silencer must remain as in original version.
- d. Wrapping of the exhaust system is not allowed.
- e. Titanium and carbon exhaust pipes and silencers are allowed.
- f. For safety reasons the exposed edge(s) of the exhaust pipe(s) outlet must be rounded to avoid any sharp edges.

### **1.5.23 Fasteners**

- a. Standard fasteners may be replaced with the 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 it is replacing.
- b. Fasteners may be drilled only for mounting a safety wire, but intentional weight-saving modifications are not allowed.
- c. Fairing/body-work fasteners may be changed to a quick disconnect type.
- d. Aluminium fasteners may only be used in non-structural locations.

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

- a. Any type of lubrication, brake or suspension fluid may be used.
- b. Any type of spark plug may be used.
- c. Any inner tube (if fitted) or inflation valves may be used.
- d. Wheel balance weights may be discarded, changed or added.
- e. Gaskets and gasket materials (with the exception of cylinder gaskets).
- f. Painted external surface finishes and decals.

### **1.5.25 The Following Items MAY BE removed**

- a. Instrument and instrument bracket and associated cables.
- b. Horn.
- c. Tool box.
- d. Tachometer.
- e. Speedometer.
- f. Light switch.
- g. Signal (Horn) switch.
- h. Turn signal switch.
- i. Radiator fan and wiring.
- j. Chain guard as long as it is not incorporated in the rear fender.
- k. Bolt on accessories on a rear sub frame.

### **1.5.26 The Following Items MUST BE removed**

- a. Headlamp, rear lamp and turn signal indicators (when not incorporated in the fairing).
- b. Openings must be covered with suitable materials.
- c. Rear-view mirrors.

- d. License plate bracket.
- e. Helmet hooks and luggage carrier hooks.
- f. Passenger foot rests.
- g. Passenger grabs rails.
- h. Safety bars, centre and side stands must be removed (fixed brackets must remain).

### **1.5.27 The Following Items MUST BE altered**

- a. Motorcycles must be equipped with a functional ignition kill switch or button mounted at least on one side of the handlebar (within reach of the hand while on the hand grips) that is capable of stopping a running engine.
- b. Throttle controls must be self-closing when not held by the hand.

## **AARR 2 - Class 125 GRAND PRIX (125 GP)**

### **2.1 125 GP Class specifications**

125 Over 80cc up to 125cc – Maximum one cylinder.

### **2.2 Engines**

Engines may operate on the two -stroke principle only.

Engines must be normally aspirated.

Cubic capacity of the engine will be defined by the swept volume of the cylinder, i.e. the area of the bore of the cylinder multiplied by the stroke.

Cubic Capacity =	$\frac{D^2 \times 3,1416 \times S}{4}$
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D = Diameter

S = Stroke

No tolerance on capacities is permitted.

Engine capacity must be measured at ambient temperature.

### **2.3 Gears**

There **is** a maximum of six gears.

### **2.4 Weight**

The minimum weight permitted:

The minimum weight in the 125GP class is: Motorcycle 70 kg.

There is no tolerance on the minimum weight.

During the final inspection at the end of the race, the selected motorcycles will be weighted 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.

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

### **2.5 Fuel Tank**

- a. Fuel caps must be leak proof and have a positive closing device.
- b. Fuel tank breather pipes must include a non-return valve. Fuel tank breather pipes must discharge into a suitable container, one per motorcycle with a minimum capacity of 200cc and a maximum capacity of 250cc.
- c. Fuel tanks of all construction types must be completely filled with fire-retardant material (open-celled mesh, i.e. "Explosafe®") or be lined with a fuel cell bladder. Except for the case that a fuel tank is fixed on the chassis with bolts, all fuel lines from the fuel tank to the engine/carburettor system should have a self-sealing breakaway valve. This valve must separate at less than 50% of the load required to break any part of the fuel line or fitting or to pull it out of the fuel tank.

### **2.6 Safety and construction criteria**

#### **2.6.1 Throttle twist grips**

Throttle twist grips must close automatically when released.

### **2.6.2 Steering**

- a. Handlebars must have a width of not less than 450mm and their ends must be solid or rubber covered. The width of the handlebar is defined as the width measured between the outside of the handlebar grips or throttle twist grips.
- b. There must be at least 15 degrees of movement of the steering each side of the centre line.
- c. Stops must be fitted to ensure a clearance of at least 30mm between the handlebar and the fuel tank frame and/or bodywork when at the extremes of steering lock.
- d. Motorcycles must be equipped with a functional ignition kill switch or button mounted at least on one side of the handlebar (within reach of the hand while on the hand grips) that is capable of stopping a running engine.

### **2.6.3 Brakes**

- a. Motorcycles must have a minimum of one brake on each wheel that is independently operated.
- b. Only brake discs of ferrous material are allowed.

### **2.6.4 Exhausts**

- a. The outlet of the exhaust must not extend behind a line drawn vertically through the edge of the rear tyre.
- b. For safety reasons the exposed edge of the exhaust pipe must be rounded to avoid any sharp edges.

#### **2.6.4.1 Noise level**

The maximum noise levels at all times is 105 dB/A

Due to the similarity of the piston stroke in different engine configurations within the capacity classes, the noise test will be conducted at a fixed RPM, 7000 RPM.

### **2.6.5 Footrests**

Footrests must have rounded ends with a minimum solid spherical radius of 8 mm.

### **2.6.6 Handlebar Levers**

Levers must not be longer than 200mm measured from the pivot point.

### **2.6.7 Bodywork**

- a. The windscreen edge and the edges of all other exposed parts of the streamlining must be rounded.
- b. The maximum width of bodywork must not exceed 600mm. The width of the seat or anything to its rear shall not be more than 450mm (except exhaust pipes).
- c. Bodywork must not extend beyond a line drawn vertically at the leading edge of the front tyre and a line drawn vertically at the rearward edge of the rear tyre. The suspension should be fully extended when the measurement is taken.
- d. When viewed from the side, it must be possible to see:
  - i. At least 180 degrees of the rear wheel rim.
  - ii. The whole of the front rim, except the part covered by the mudguard, fork or removable air-intake.
  - iii. The rider, seated in a normal position with the exception of the forearms.
- e. Note: No transparent material may be used to circumvent the above rules.
- f. No part of the motorcycle can be behind a line drawn vertically at the rearward edge of the rear tyre.
- g. The seat unit shall have a maximum height of the (approximately) vertical section behind the rider's seating position of 150mm. The measurement will be taken at a 90° angle to the upper surface of the flat base at the rider's seating position, excluding any seat pad or covering.
- h. Any on-board camera/antenna mounted on the seat unit is not included in this measurement.

- i. Mudguards are not compulsory. When fitted, front mudguards must not extend:
  - i. In front of a line drawn upwards and forwards at 45 degrees from a horizontal line through the front wheel spindle.
  - ii. Below a line drawn horizontally and to the rear of the front wheel spindle.
- j. The mudguard mounts/brackets and fork-leg covers, close to the suspension leg and wheel spindle, and brake disc covers are not considered part of the mudguard.
- k. Wings may be fitted provided they are an integral part of the fairing or seat and do not exceed the width of the fairing or seat or the height of the handlebars. Any sharp edges must be rounded.
- l. Moving aerodynamic devices are prohibited.

#### **2.6.8 Clearances**

- a. The motorcycle, unloaded, must be capable of being leaned at an angle of 50 degrees from the vertical without touching the ground, other than with the tyre.
- b. There must be a clearance of at least 15mm around the circumference of the tyre at all positions of the motorcycle suspension and all positions of the rear wheel adjustment.

#### **2.6.9 Breather Pipes**

Any breather pipe from the engine or gearbox must discharge into a suitable container with a minimum capacity of 250cc. There must be a separate container for each breather pipe.

#### **2.6.10 Materials**

The use of titanium in the construction of the frame, the front forks, the handle-bars, the swinging arm spindles, and the wheel spindles is forbidden. For wheel spindles, the use of light alloys is also forbidden.

#### **2.6.11 Chain Guards**

A guard must be fitted in such a way as to prevent trapping between the lower drive chain run and the final drive sprocket at the rear wheel.

#### **2.6.12 Suspension and Dampers**

Electric/electronic controlled suspension, ride height and steering damper systems are not allowed. Adjustments to the suspension and steering damper systems may only be made by manual human inputs and mechanical/hydraulic adjusters.

#### **2.7. Rims**

Maximum rim widths are as follows:

	Front	Rear
125 GP	2,5" maximum	3,5" maximum

#### **2.8. Starting Number**

The background colours and figures for 125 cc SP motorcycles are black background with white numbers, with the RAL colour table values being 9005 for black and 9010 for white.

#### **2.9. Fuel, oil and coolants**

- c. All engines must function on normal unleaded fuel with a maximum lead content of 0.005 g/l (unleaded) and a maximum MON of 90 (See also Appendix D below).
- d. The only liquid engine coolants permitted other than lubricating oil shall be water or water mixed with ethyl alcohol.

### **AARR 3 - Moto3**

Look at the code FIM Europe Road Racing (RR028/2014).

## **AARR 4 - SUPERSPORT (SSp)**

Look at the code F.I.M. Road Racing World Championship Superbike & Supersport Regulations 2013 and its annexations except the following:

### FIM 2.5.7 Tyres

**See Art. AARR 0.3**, and the number of tyres are free.

### FIM 2.5.7 Engines

The total number of engines that can be used by each rider is free.

### FIM 2.5.10.5 Wheels

Metal valve stems with metal stem caps are highly recommended.

### FIM 2.5.10.6 Brakes

The front brake master cylinder can be changed or replaced.

## **AARR 5 – SUPERSTOCK 600 / 1000**

Rules are intended to limit changes to the homologated motorcycle in the interests of safety.

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

As the name Stocksport implies limited modifications are allowed to the Motorcycles. Most modifications are only allowed for safety reasons.

Stocksport motorcycles require a FIM homologation (see Art. FIM 2.9 and AARR 0.6). All motorcycles must comply in every respect with all the requirements for Road Racing as specified in these Regulations, unless it is equipped as such on the homologated motorcycle.

The appearance from both front, rear and the profile of Superstock 600 / 1000 motorcycles must (except when otherwise stated) conform to the homologated shape (as originally produced by the manufacturer).

The appearance of the exhaust system is excluded from this rule.

### **5.1 Discipline Specifications Superstock 600 / 1000**

#### **Superstock 600**

4 cylinders	over 401 cc up to 600 cc	4-stroke
3 cylinders	over 401 cc up to 675 cc	4-stroke
2 cylinders	over 401 cc up to 750 cc	4-stroke

#### **Superstock 1000**

3 and 4 cylinders	over 750 cc up to 1000 cc	4-stroke
2 cylinders	over 850 cc up to 1200 cc	4-stroke

The displacement capacities must remain at the homologated size. Modifying the bore and stroke to reach class limits is not allowed. All engines must be normally aspirated.

### **5.2 Minimum Weights**

The dry weight of a homologated motorcycle is defined as the total weight of the empty motorcycle as produced by the manufacturer (after removal of fuel, vehicle number plate, tools and main stand when fitted). To confirm the dry weight a minimum of three (3) motorcycles are weighed and compared. The result is rounded off to the nearest digit.

In the final inspection at the end of the race, the checked s will be weighed in the condition they were at the end of the race.

At any time of the event, the weight of the whole motorcycle (including the tank) must not be less than the minimum weight.

There is no tolerance on the minimum weight.

During the final inspection at the end of the race, the selected motorcycles will be weighted 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.

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.

**Superstock 600:** minimum weight ~~= dry weight minus 12 kg.~~ **see APPENDIX C: MINIMUM WEIGHTS.**

**Superstock 1000:** minimum weight ~~= dry weight minus 12 kg.~~ In any case the minimum weight of SStk 1000 motorcycles cannot be lower than 165 kg! **see APPENDIX C: MINIMUM WEIGHTS.**

### **5.3 Starting Number**

**Superstock 600:** Red background with yellow numbers, with the RAL colour table values being 3020 for red and 1003 for yellow. (see Appendix A).

**Superstock 1000:** Red background with white numbers, with the RAL colour table values being 3020 for red and 9010 for white. (see Appendix A).

### **5.4 Fuel**

All engines must function on normal unleaded fuel with a maximum lead content of 0,005 g/l (unleaded) and a maximum MON of 90 (see also Appendix D below).

### **5.5 Tyres**

**Superstock 600:**  
**See Art. AARR 0.3.**

AA Road Racing Committee decided to accept the maximum tyre size 190/55/17 for the whole season.

Tyres must be a fully moulded type carrying all size and sidewall marking of the tyres for commercial sale to public.

Tyres with a maximum W rating must be used.

The depth of the tyre treads must be at least 2.5 mm. over the entire tyre pattern width at a pre-race control. The tyres must have a positive and negative tread of 96 % and minimum 4 % negative (land and sea ratio) The maximum distance from the external edge of the tyre to 50 % of the tread elements is 35 mm. Each size, front and rear, must be available with the same tread pattern as the commercial tyres for road use.

The tyres must have a DOT and/or E-Mark, the DOT and/or E-mark must be on the tyre sidewall. Only when a race or practice has been declared "wet" the use of a special tyre commonly known as a full wet tyre is allowed.

Wet tyres must be a fully moulded tyre, no hand cutting is allowed on the moulded tyres.

The use of hand-cut tyres is not allowed.

Wet tyres do not need to carry a DOT and/or E-marks; however these tyres must be marked "not for highway use" or "NHS".

**Superstock 1000:**  
**See Art. AARR 0.3.**

Slick tyres are allowed, wheel size 17".

### **5.6 Engine**

#### **5.6.1 Fuel Injection System**

Fuel injection systems refer to throttle bodies, fuel injectors, variable length intake tract devices, fuel pump and fuel pressure regulator.

- a. The original homologated fuel injector system must be used without any modification.
- b. The fuel injectors must be stock and unaltered from the original specification and manufacture.
- c. Bell mouths must remain as originally produced by the manufacturer for the homologated .
- d. Butterfly valves 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. All parts of the variable intake tract device must remain exactly as homologated.
- f. Air and air/fuel mixture can go to the combustion chamber exclusively through the throttle body butterflies.

- g. 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.

#### **5.6.2 Cylinder Head**

- a. No modifications are allowed.
- b. No material may be added or removed from the cylinder head.
- c. The gaskets can be changed.
- d. The valves, valve seats, guides, springs, tappets, oil seals, shims, cotter valve, spring base and spring retainers must be as originally produced by the manufacturer for the homologated .
- e. Additional Valve spring shims are not allowed.
- f. Only normal maintenance interventions as prescribed by the Manufacturer in the Service Manual of the motorcycle are authorized.

#### **5.6.3 Camshaft**

- a. No modifications are allowed.
- b. At the technical checks for direct valve operation systems the cam lobe lifts is measured; for indirect valve operation systems (i.e. where cam followers are fitted), the valve lift is measured.
- c. The timing of the camshafts is free; however no machining of the camshaft is authorized.

#### **5.6.4 Cam sprockets or gears**

- a. Cam sprockets may be slotted to allow the adjustment of cam timing.
- b. Pressed on cam sprockets may be replaced with an adjustable boss and cam sprocket.
- c. The cam chain / cam drive system must remain as homologated.

#### **5.6.5 Cylinders**

No modifications are allowed.

#### **5.6.6 Pistons**

No modifications are allowed (including polishing and lightening).

#### **5.6.7 Piston Rings**

No modifications are allowed.

#### **5.6.8 Piston Pins and Clips**

No modifications are allowed.

#### **5.6.9 Connecting Rods**

No modifications are allowed (including polishing and lightening).

#### **5.6.10 Crankshaft**

No modifications are allowed (including polishing and lightening).

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

- a. Crankcases must remain as homologated. No modifications are allowed (including painting, polishing and lightening).
- b. It is not allowed to add a pump or any other device 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. 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 from material of the same or higher specific weight and the total weight of the cover must not be less than the original one.



- d. 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.
- e. 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.
- f. Plates or crash bars made from aluminium or steel are also permitted in addition to these covers. All of these devices must be designed to be resistant against sudden shocks, abrasions and crash damage.
- g. FIM approved covers will be permitted without regard of the material or its dimensions.
- h. These covers must be fixed properly and securely with a minimum of three (3) case cover screws that also mount the original covers/engine cases to the crankcases.
- i. The Chief Technical Steward has the right to refuse and forbid any cover not satisfying this safety purpose, if the evidence shows that the cover is not effective.
- j. Oil containing engine covers must be secured with steel bolts.

#### **5.6.12      Transmission/Gearbox**

- a. No modifications are allowed.
- b. An external quick-shift system on the gear selector (including wire and potentiometer) is allowed.
- c. Other modifications to the gearbox or selector mechanism are not allowed.
- d. Countershaft sprocket, rear wheel sprocket, chain pitch and size can be changed.
- e. The sprocket cover can be modified or eliminated.
- f. Chain guard as long as it is not incorporated in the rear fender may be removed.
- g. Transmission gear shifter shaft supporting brackets can be added.

#### **5.6.13      Clutch**

- a. Clutch system (wet or dry type) and the method of operation (by cable or hydraulic) must remain as homologated.
- b. Only friction and drive discs may be changed, but their number must remain as original.
- c. Clutch springs may be changed.

~~Only for AA:~~ The clutch can be changed by an anti-hopping clutch system.

#### **5.6.14      Oil Pumps and Oil Lines**

- a. No pump modifications are allowed.
- b. Oil lines may be modified or replaced. Oil lines containing positive pressure, if replaced, must be of metal reinforced construction with swaged or threaded connectors.

#### **5.6.15      Radiator and oil coolers**

- a. The only liquid engine coolants permitted will be water or water mixed with ethyl alcohol.
- b. Protective meshes may be added in front of the oil and/or water radiator(s).
- c. The cooling system hoses/pipes and catch tanks may be modified or changed.
- d. Radiator fan and wiring may be removed. Thermal switches, water temperature sensor and thermostat can be removed inside the cooling system.
- e. Radiator cap is free.
- f. Additional radiators and/or oil coolers are not allowed.
- g. The original water radiator must be used without any modifications.**
- h. The original oil radiator must be used without any modifications.**

#### **Only for SStk 1000:**

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.

#### **5.6.16      Air Box**

- a. The air box must remain as originally produced by the manufacturer on the homologated, but the air box drains must be sealed.
- b. The air filter element may be modified or replaced but must be mounted in the original position.

- c. All motorcycles must have a closed breather system. The oil breather line must be connected and discharge in the air box.
- d. No heat protection may be attached to the air box.

#### **5.6.17 Fuel Supply**

- a. Fuel pump and fuel pressure regulator must remain as homologated.
- b. The fuel pressure must be as homologated.
- c. Fuel lines from the fuel tank to the delivery pipe assembly may be replaced.
- d. Quick connectors or dry break quick connectors may be used.
- e. Fuel vent lines may be replaced.
- f. Fuel filters may be added.

#### **5.6.18 Exhaust System**

- a. Exhaust pipes and silencers may be modified or changed. Catalytic converters must be removed.
- b. The number of the final exhaust silencer(s) must remain as homologated. The silencer(s) must be on the same side(s) as on the homologated motorcycle.
- c. For safety reasons the exposed edge(s) of the exhaust pipe(s) outlet must be rounded to avoid any sharp edges.
- d. Wrapping of the exhaust system 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 will be 107 dB/A with a tolerance of + 3dB/A after the race only.
- f. Titanium and carbon exhaust and silencers are allowed.

#### **5.6.19 Noise control**

See AARR 0.7 (see also Appendix E).

### **5.7 Electrics and Electronics**

#### **5.7.1 Ignition / Engine control system (ECU) / Electronics**

- a. The engine control system (ECU) must be either:
  - i. The original system as homologated, with a change of software being allowed.
  - ii. The original system (with the production ECU) (option i) may have FIM/DWO approved external ignition and/or injection module/s added. The total combined retail price (software and tuning tools included) on sale to the general public cannot be higher than € 3.000,- (tax excluded). A special connector may be used to connect the module/s and the ECU.
  - iii. An FIM/DWO approved "Superstock Kit" model (produced and/or approved by the motorcycle manufacturer) may be used. A special connector/adaptor may be used to connect the ECU(s) and the original wiring harness. The combined retail price of the full system including software, tuning tool, download / connection cable any activations, upgrades and wiring harness(s) must be less than € 3.000,- (tax excluded).
- b. Central unit (ECU) may be relocated.
- c. Optional equipment sold by the motorcycle Manufacturer for the homologated model is considered not homologated with the motorcycle and must follow the requirements for approved electronics/data loggers.
- d. During an event the Chief Technical Steward has the right to ask the rider to substitute their ECU or external module with the sample received from the Manufacturer. The change has to be done before Sunday warm up.
- e. No extra sensors may be added for control strategies except shift rod sensor, speed sensors and lambda sensors. Wheel speed sensors must be included in the Kit ECU and Harness package if required.
- f. The addition of an infrared (IR) or GPS based lap timing system is allowed.
- g. The Data Logging system is free.
- h. Telemetry is not allowed.
- i. No remote or wireless connection to the motorcycle for any data exchange or setting is allowed whilst the engine is running on the track.
- j. Harness:

- a. The main wiring harness may be replaced by the kit wire harness as supplied for the Kit ECU model, produced and/or approved by the manufacturer of the motorcycle and by FIM/DWO
- b. The key/ignition lock may be relocated, replaced or removed.
- c. Cutting of the original main wiring harness is allowed.
- k. The original speedometer and tachometer may be altered or replaced (see also 2.6.11).
- l. Spark plugs may be replaced.
- m. The battery is free.
- n. External modules may only control the fuelling and ignition timing, it may not be used for throttle blipping/actuation or any other function.

### **5.7.2 Generator Alternator and Electric Starter**

- a. No modifications are allowed.
- b. The electric starter must operate normally and always be able to start the engine during the event. The engine must start and turn on its own power when the electric starter has stopped its procedure.

## **5.8 Frame Body and Rear Sub Frame**

- a. During the event, each rider can bring a second complete motorcycle to the technical Control.
- b. The frame must remain as originally produced by the manufacturer for the homologated motorcycle.
- c. The sides of the frame body may be covered by a protective part made of plastic or composite material. These protectors must fit the form of the frame.
- d. Nothing may be added by welding or removed by grinding from the frame body.
- e. All motorcycles must display a vehicle identification number punched on the frame body (chassis number).
- f. Engine mounting brackets or plates must remain as originally produced by the manufacturer for the homologated motorcycle.
- g. Additional seat brackets may be added, but none may be removed.
- h. 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.
- i. Holes may be drilled in the frame and rear sub frame only for fixing of allowed components (i.e. fairing brackets, steering damper mount, etc.).
- j. The paint scheme is not restricted but polishing the frame body or sub frame is not allowed.
- k. Rear sub frame may be changed or altered, but the type of material must remain as the homologated one or of higher specific weight. Repairing and welding of the sub frame is allowed.

### **5.8.1 Front Forks**

- a. Forks structure, stanchions, stems, wheel spindle, upper and lower crown must remain as the original one produced by the manufacturer for the homologated motorcycle.
- b. The upper and lower fork clamps (triple clamp, fork bridges and stem) must remain as originally produced by the manufacturer on the homologated motorcycle
- c. Steering stem pivot position must remain in the homologated position (as supplied on the production motorcycle). If the standard motorcycle has inserts then the orientation/position of the original inserts may be changed but the insert cannot be replaced or modified.
- d. A steering damper may be added or replaced with an after-market damper.
- e. The steering damper cannot act as a steering lock limiting device.
- f. Fork caps may be modified or replaced to allow external adjustment.
- g. Dust seals may be modified, changed or removed if the fork remains totally oil-sealed.
- h. Mechanical Forks: Original internal parts of the homologated forks may be modified or replaced. After market damper kits or valves may be installed.
- i. Electronic Suspensions: No aftermarket or prototype electronically controlled suspension may be used, unless such suspension is already present on the production model of the homologated motorcycle, and it must remain completely standard (all mechanical or electronic parts must remain as homologated, with the exception of shims and springs). The electronic front suspension may be replaced with a mechanical system from a similar homologated model from the same manufacturer.

- j. The original surface finish of the fork tubes (stanchions, fork pipes) may be changed. Additional surface treatments are allowed.
- k. Any quality and quantity of oil can be used in the front forks.
- l. The protrusion (height and position of the front fork in relation to the fork crowns) is free.
- m. Fixing and mounting points for front brake calliper must remain as homologated.

### **5.8.2 Rear Fork (swing arm)**

- a. Every part of the rear fork must remain as originally produced by the manufacturer for the homologated motorcycle (including rear fork pivot bolt).
- b. Rear axle/chain adjuster can be changed to an aftermarket product.
- c. Rear swing arm pivot position must remain in the homologated position (as supplied on the production motorcycle). If the standard motorcycle has inserts then the orientation/position of the original inserts may be changed but the inserts cannot be replaced or modified.
- d. A chain guard must be fitted in such a way to reduce the possibility that any part of the rider's body may become trapped between the lower chain run and the rear wheel sprocket.
- e. 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) viewed from all sides. Fastening screws must be recessed. An anchorage system or point(s) to keep the original rear brake calliper in place may be added to the rear swing arm.

### **5.8.3 Rear Suspension Unit**

- a. Rear suspension unit (shock absorber and its spring) may be modified or replaced, but the original attachments to the frame and swing arm must be used and the rear suspension linkage must remain as originally produced by the manufacturer for the homologated motorcycle.
- b. All the rear suspension linkage parts must remain as originally produced by the manufacturer for the homologated motorcycle.
- c. 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 to adjust the ride height.
- d. Mechanical Suspensions: Rear suspension unit may be changed.
- e. Electronic Suspensions: No aftermarket or prototype electronically-controlled suspension unit may be used, unless such suspension is already present on the production model of the homologated motorcycle and it must remain completely standard (any mechanical or electronic part must remain as homologated, with the exception of shims and spring). If the standard system has no facility for ride height adjustment the standard shock may be modified to allow shock length change if no hydraulic parts are modified. The original suspension system must work properly safe in the event of an electronic failure. The electronic shock absorber can be replaced with a mechanical one.

### **5.8.4 Wheels**

- a. Wheels must remain as originally produced by the manufacturer for the homologated motorcycle.
- b. A non-slip coating/treatment may be applied to the bead area of the rim.
- c. If the original design includes a cushion drive for the rear wheel, it must remain as originally produced for the homologated motorcycle.
- d. No modifications of the wheel-axles are authorized. Spacers can be modified. Modifications to keep spacers in place are permitted.
- e. Wheel balance weights may be discarded, changed or added to.
- f. Metal valve stems with metal stem caps are highly recommended.

### **5.8.5 Brakes**

- a. Brake discs may be replaced by aftermarket discs which comply with the following requirements:
  - i. Brake discs and carrier must retain the same material as the homologated disc and carrier.
  - ii. The outside diameter of the brake disc may be increased but the disc must fit into the homologated brake calliper without any modification.

- iii. 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.
  - iv. The fixing of the carrier on the wheel must remain the same as on the homologated disc.
- b. Front and rear brake calliper (mount, carrier, hanger) must remain as originally produced by the manufacturer for the homologated motorcycle.
- c. 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
- d. 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.
- e. 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 thread repair insert.
- f. Front and rear master cylinder must remain as originally produced by the manufacturer for the homologated motorcycle. Front and rear brake fluid reservoir may be changed with an aftermarket product.
- g. Front and rear hydraulic brake lines and fluid reservoir may be changed with aftermarket products.
- h. The split of the front brake lines for both front brake callipers must be made above the lower fork bridge (lower triple clamp).
- i. "Quick" (or "dry-brake") connectors in the brake lines are allowed.
- j. Front and rear brake pads may be changed. Brake pad locking pins may be modified.
- k. Additional air scoops or ducts are not allowed.
- l. The Antilock Brake System (ABS) may be used only if installed in the homologated model for road use. However it must be completely standard (any mechanical or electronic part must remain as homologated, brake discs and master cylinder levers excluded) and only the software of the ABS may be modified.
- m. The Antilock Brake System (ABS) may be disconnected and its ECU can be dismantled. The ABS rotor wheel can be removed, modified or replaced.
- n. Hand lever adjusters are permitted.

#### **5.8.6 Foot Rest/Foot Controls**

- a. Foot rest/foot controls may be relocated but brackets must be mounted to the frame at the original mounting points.
- b. Foot rests may be rigidly mounted or a folding type which must incorporate a device to return them to the normal position.
- c. The end of the foot rest must have at least an 8 mm solid spherical radius.
- d. Non-folding footrests must have an end (plug) which is permanently fixed, made of plastic, Teflon or an equivalent type material (Alloy) (minimum radius 8mm). The plug surface must be designed to reach the widest possible area in order to decrease the risk of injuries to the rider in the case of an accident. The Chief Technical Steward has the right to refuse any plug not satisfying this safety aim.
- e. Foot controls linkage may be modified. The original mounting points must remain. Their original points of fixture (for the footrest, foot controls and on the shift shaft) must remain as original.

#### **5.8.7 Handle Bars and Hand Controls**

- a. Handle bars may be replaced (does not include brake master cylinder).
- b. Handle bars and hand controls may be relocated.
- c. Throttle grip can be modified or substituted.
- d. Throttle controls must be self-closing when not held by the hand.
- e. Throttle assembly and associated cables can be modified or replaced but the connection to the throttle body and the throttle controls must remain as homologated. Cable operated throttles (grip assembly) must be equipped with both an opening and a closing cable including when actuating a remote drive by wire grip/demand sensor.
- f. Clutch and brake lever may be exchanged by an after-market model. An adjuster to the brake lever is allowed.
- g. Switches can be changed but electric starter switch and engine stop switch must be located on the handle bars.

### **5.8.8 Fuel Tank**

- a. Fuel tank must remain as originally produced by the manufacturer for the homologated motorcycle.
- b. All fuel tanks must be completely filled with the 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 250cc made of a suitable material.
- d. Fuel tank filler cap may be altered or replaced from those fitted to the homologated motorcycle, by a 'screw-on' type fuel cap. Fuel cap when closed must be leak proof.
- e. The sides of the fuel tank may be protected with a cover made of a composite material. These protectors must fit the shape of the fuel tank.

### **5.8.9 Seat**

- a. Seat, seat base and associated bodywork may be replaced with parts of similar appearance as originally produced by the manufacturer for the homologated motorcycle. The appearance from front rear and profile must conform to the homologated shape.
- b. The top portion of the rear body work around the seat may be modified to a solo seat.
- c. The homologated seat locking system (with plates, pins, rubber pads, etc.) can be removed.
- d. The seat/cowl replacement must allow for proper number display.

### **5.8.10 Fairing / Body Work**

- a. Fairing, front mudguards and body work may be replaced with cosmetic duplicates of the original parts, which must appear to be as originally produced by the manufacturer for the homologated motorcycle, or with slight differences due to the racing use permitted (different pieces mix, attachment points, fairing bottom, etc.).
- b. The material may be changed. The use of carbon fibre or carbon composite materials is not allowed with the following exceptions: Local specific reinforcements made of Kevlar or Kevlar-carbon is allowed around the holes and other stressed points.
- c. Overall size and dimensions must be the same as the original parts, with a tolerance of +/- 10 mm, respecting the design and features of the homologated fairing as far as possible. The overall width of the frontal area may be +10 mm maximum. The decision of the Chief Technical Steward is final.
- d. Wind screen may be replaced with an aftermarket product. The height of the windscreen is free, with a tolerance of + 40 mm (FIM +/- 15 mm) measured on the vertical distance from to the upper fork bridge. The screen must conform to the same profile from the front as the original. From a top view the length of the windscreen may be shortened by 25 mm to allow clearance for the rider. The screen must have no sharp edges.
- e. Motorcycles that were not originally equipped with streamlining are not allowed to add streamlining in any form, with the exception of a lower fairing device, as described in (g and h). This device cannot exceed above a line drawn horizontally from axle to axle and must follow the specifications described at point g).
- f. The original combination of instrument/fairing brackets may be replaced, regardless of the material. All other fairing brackets may be altered or replaced.
- g. The original air ducts running between the fairing and the air box may be altered or replaced. Particle grills or "wire-meshes" originally installed in the openings for the air ducts may be taken away.
- h. The lower fairing must be constructed to hold, in case of an engine breakdown minimum 6 litres. The lower edge of all the openings in the fairing must be positioned at least 70 mm above the bottom of the fairing.
- i. The lowest point of the rear transverse wall of the lower fairing must be at least 70 mm above the bottom. The angle between this wall and the floor must be  $\leq 90^\circ$ .
- j. Original openings for cooling in the lateral fairing/bodywork sections may be partially closed only to accommodate sponsors' logos/lettering. Such modifications 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 %.

- k. The lower fairing must incorporate at least a hole of 25 mm (minimum) diameter in the bottom front lower area. This hole must remain closed in dry conditions and must be opened only in wet race conditions as declared by the Clerk of the Course.
- l. Front mudguard may be replaced with a cosmetic duplicate of the original parts and may be spaced upward for increased tyre clearance.
- m. Rear mudguard fixed on the swing arm can be modified, changed or removed.
- n. Motorcycles can be equipped with inner ducts to improve the air stream towards the radiator but the appearance of front, rear and the profile must not be changed.

#### **5.8.11 Bolts and Fasteners**

- a. Standard bolts and fasteners may be replaced with fasteners of any material and design, but titanium bolts and fasteners cannot be used. The strength and design must be equal to or exceed the strength of the standard fastener it is replacing.
- b. Fasteners may be drilled only for mounting a safety wire, but intentional weight-reduction modifications are not allowed.
- c. Thread repair using inserts of different material such as Helicoil and Time-Sert are allowed.
- d. Fairing/body-work fasteners may be changed to a quick disconnect type.
- e. Aluminium fasteners may only be used in non-structural locations.

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

- a. Any type of lubrication, brake or suspension fluid may be used.
- b. Gaskets and gasket materials.
- c. Instruments, the instrument brackets and associated cables.
- d. Painted external surface finishes and decals.
- e. Material for brackets connecting non original parts (fairing, exhaust, instruments, etc.) to the frame (or engine) cannot be made from titanium or fibre reinforced composites (with exception of exhaust bracket).
- f. Protective covers for engine, frame, chain, footrests, etc. can be made in other material like fibre composite material if these parts do not replace original parts mounted on the homologated model.
- g. Any type of spark plug.
- h. Any tyre inner tube (if fitted) or inflation valves may be used, but metal valve stems with metal stem caps are highly recommended.
- i. Wheel balance weights may be discarded, changed or added.

#### **5.8.13 The Following Items MAY BE removed**

- a. Emission control items (anti-pollution) in or around the air box and engine (O<sub>2</sub> sensors, air injection devices)
- b. Tachometer
- c. Speedometer
- d. Light switch
- e. Signal (Horn) switch
- f. Turn signal switch
- g. Radiator fan and wiring
- h. Chain guard as long as it is not incorporated in the rear fender. If the original chain guard is removed, a device, taking over this function in order to secure the marshals while they are removing the motorcycle, must be mounted.
- i. Bolt on accessories on a rear sub frame.
- j. The isolating mat between the engine and the fuel tank.

#### **5.8.14 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. Toolkit.
- f. Helmet hooks and luggage carrier hooks.

- g. Passenger foot rests.
- h. Passenger grabs rails.
- i. Safety bars, centre and side stands must be removed (fixed brackets must remain).

#### **5.8.15 The Following Items MUST BE altered**

- a. Motorcycles must be equipped with a functional ignition kill switch or button mounted on a side of the handlebar (within reach of the hand while on the hand grips) that is capable of stopping a running engine (see AARR 0.2.4, page 3)
- b. Throttle controls must be self-closing when not held by the hand.
- c. All drain plugs must be wired. External oil filter(s) screws and bolts that enter an oil cavity must be safety wired (i.e. on crankcases, oil lines, oil coolers, etc.).
- d. All motorcycles must have a closed breather system. The oil breather line must be connected and discharge in the air box.
- e. 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.
- f. Motorcycles must be equipped with a red light on the instrument panel that will illuminate in the event of oil pressure drop.

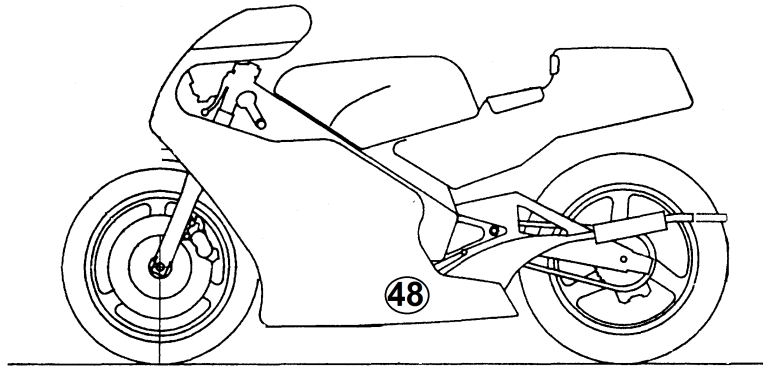
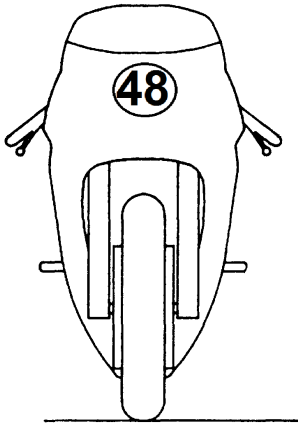
### **AARR 6 - SUPERBIKE**

Look at the code F.I.M. Road Racing World Championship Superbike & Supersport Regulations 2013 and its annexations except the following:

- a. FIM 2.4.4 Minimum Weight: The minimum weight will be 165 kg.
- b. FIM 2.4.7 Tyres: **See Art. AARR 0.3.** the number of tyres are free
- c. FIM 2.4.10.5 Wheels: Only wheels made from aluminium alloy are allowed.  
Wheel diameter and rim width must remain as originally homologated. It can also be used rim with dimensions 3.5 x 16.5" (17") or 3.75 x 16.5"(17") for the front wheel and 6.25 (6)x 16,5"(17") for the rear wheel.



## APPENDIX A: STARTING NUMBERS



The sizes for all the front numbers are:	Minimum height	<b>120</b> mm
	Minimum width	<b>60</b> mm
	Minimum stroke	<b>20</b> mm
	Minimum space between numbers	10 mm
The sizes for all the side numbers are:	Minimum height	<b>100</b> mm
	Minimum width	<b>50</b> mm
	Minimum stroke	<b>15</b> mm
	Minimum space between numbers	10 mm

**APPENDIX B – rel.1: LIST OF HOMOLOGATED CDI AND WIRE HARNESS MODELS (PROVISIONAL)**

Make and Model	ECU		Wiring harness		Price (€)
	Std	Kit	Std	Kit	Kit
DUCATI 749 R	28641121D	28640421A (a)	51013232A	51013041A	
HONDA CBR 600RR (2007)	38770-MFJ-D04	38770-N1A-D00	32100-MFJ-D02	32100-MFJ-R00	
HONDA CBR 600RR (PC40) JAN 2009		38700-MFJ-R11		32100-MFJ-R00	325,50 (ECU)+ 304.50 (W.H)
HONDA CBR600RR (PC40) JAN 2012		38770-MJC-R11		32100-MFJ-R00	433,24 (ECU) + 304,50 (W.H)
KAWASAKI ZX 600 (2008)	27008 - 5030	21175 - 0145	26031 - 0665	26031 - 0558	712 €
KAWASAKI ZX600R F (ZX6R) JAN. 2011		21175-0248		26031-0790** 26031-0327 26031-0955	405.65 (ECU) + 283.20 (W.H.)
MV Agusta F3 - FEB 2013	8000B5431	RREM018078 KIT01			500.00 (ECU)
SUZUKI GSX 600 (2006)		490-568-0000		406-568-0000	
SUZUKI GSX 600 (2008)	32920 – 37H00	----	36610 – 37H10	----	
SUZUKI GSX-R 600 L1 JAN. 2011	32920-14J00	3290-14-JR0	36610-14J10 36620-14J00 36630-14J00	36610-14JR0	2510 (ECU+W.H.)
TRIUMPH 675	T1292102/ T1293100	A9618070	T2501666/ T2501659	A9618071	625 €
TRIUMPH 675R JAN 2011-	T1293300	A9618098		A9618100	
TRIUMPH 675R/675 FEB 2013	T1290281	A9828019	T2508085 (ABS) T2508080 (no ABS)	A9828021 (ABS) A9828020 (no ABS)	374.50 (ECU) + 228.43 (W.H.)
YAMAHA R6 (2006)	2CO-8591A-00	2CO-F533A70	2C0-82590-00	2C0-F2590-70	
YAMAHA R6 (2008)	13S-8591A – 00	2C0-8591A - 80	13S-82590 – 00	13S-8533A – 70	533 €
YAMAHA R6 JAN 2011	13S-8591A-B0	2C0-8591A-92	13S-82590-30	13S-F2590-71	450,12 (ECU) + 232,21 (W.H)
YAMAHA R6 JAN 2012	13S-8591A-F0	2C0-8591A-93	13S-82590-40	13S-F2590-71	450,12 (ECU) + 232,21 (W.H)

- (a) With: Timing gears cod. 171.2.017.1B + pick up kit
- (b) With: Connecting unit cod. 3880-NL3-750
- (c) With: Assy. kill switch cod. 35130-NL3-750
- (d) With: Adapter cod. 26031-0327 for ECU kit
- (e) With: PC con. unit cod. 26031-240

**APPENDIX C: MINIMUM WEIGHTS (update: 24-02-2017)**

Motorcycle / Make	Model Year	Minimum weight	Throttle body dia.
Superstock 600			
Honda CBR 600RR	2009 on	160 kg	40 mm
Honda CBR 600RR (ABS)	2013 on	169 kg	40 mm
Kawasaki ZX 6 R	2009 on	164 kg	38 mm
MV Agusta F3 675	2013 on	166 kg	50 mm
Suzuki GSXR 600	2008 - 2010	170 kg	40 mm
Suzuki GSXR 600	2011 on	160 kg	40 mm
Triumph Daytona 675	2009 - 2012	165 kg	44 mm
Triumph Daytona 675	2013 on	161 kg	44 mm
Triumph Daytona 675 (ABS)	2013 on	163 kg	44 mm
Triumph Daytona 675R	2011 - 2012	161 kg	44 mm
Triumph Daytona 675R (ABS)	2013 - 2015	163 kg	44 mm
Yamaha YFZ-R6	2008 - 2011	165 kg	41 mm
Yamaha YFZ-R6	2012 - 2016	166 kg	41 mm
Yamaha YFZ-R6	2017 on	tba	41 mm
Supersport			
Honda CBR600RR	2008 on	161 kg	see <b>Superstock 600</b> for specific Model and Model Year
Kawasaki ZX600 R F	2009 on		
MV Agusta F3 675	2013 on		
Suzuki GSXR600	2008 on		
Triumph 675	2009 on		
Yamaha YFZ-R6	2008 on		
Superstock 1000			
Aprilia RSV 4 Factory (all)	2009 on	170 kg	48 mm
BMW S1000 RR (ABS)	all	176 kg	48 mm
BMW S1000 RR	all	170 kg	48 mm
BMW S1000 RR HP4	all	170 kg	48 mm
Ducati 1199 R	2013 on	170 kg	75.6 x 48 mm
Ducati Panigale R	2015 on	170 kg	75.6 x 48 mm
Honda CBR1000 RR	2009 - 2013	169 kg	44 mm
Honda CBR1000 RR (ABS)	2009 - 2011	174 kg	44 mm
Honda CBR1000 RR SP	2014 - 2015	171 kg	44 mm
Honda CBR1000 RR SP2	2017 on	tba.	48 mm
MV Augusta F4 RR	2013 - 2014	178 kg	50 mm
MV Augusta F4 RR	2015 on	172 kg	50 mm
Kawasaki ZX10R	2008 - 2010	174 kg	47 mm
Kawasaki ZX10R	2011 - 2015	170 kg	47 mm
Kawasaki ZX10R	2016 on	171 kg	47 mm
KTM RC8R	2009 on	165 kg	52 mm
Suzuki GSXR1000 K9	2009 - 2011	173 kg	44 mm
Suzuki GSXR1000 L2	2012 on	170 kg	44 mm
Yamaha YFZ-R1	2012 - 2014	182 kg	45 mm
Yamaha YFZ-R1	2015 on	172 kg	45 mm
Superbike			
Aprilia RSV 4 Factory	all	165 kg	see <b>Superstock 1000</b> for specific Model and Model Year
BMW S1000 RR			
Ducati 1199 R / Panigale R			
Honda CBR1000 RR			
Kawasaki ZX10R			
KTM RC8R			
MV Augusta F4			
Suzuki GSXR1000			
Yamaha YFZ-R1			

## APPENDIX D: FUEL, OIL AND COOLANTS - 2016 FIM-Regulations

### 2.7 FUEL; OIL AND COOLANTS

- a) All motorcycles must be fuelled with unleaded petrol, as this term is generally understood.
- b) All riders/teams must declare to the Superbike Technical Director the make and type of fuel to be used during practices and race(s), by Thursday before technical control begins.

#### 2.7.1 Physical properties for unleaded fuel

2.7.1.1 Unleaded petrol must comply with the FIM specification.

2.7.1.2 Unleaded petrol will comply with the FIM specification if:

- a) It has the following characteristics:

Property	Units	Min.	Max.	Test Method
RON		95.0	102.0	EN ISO 5164
MON		85.0	90.0	EN ISO 5163
Oxygen	% m/m		2.7	EN ISO 22584* or EN 13132
Nitrogen	% m/m		0.20	ASTM D4629
Benzene	% (V/V)		1.00	EN ISO 22854* or EN 238
Vapour pressure (DVPE)	kPa		95.0	EN 13016-1
Lead	mg/L		5.0	ICP-OES or AAS
Manganese	mg/L		2.0	ICP-OES or AAS
Density at 15 °C	kg/m <sup>3</sup>	720.0	775.0	EN ISO 12185
Oxidation stability	minutes	360		EN ISO 7536
Existent gum	mg/100mL		5	EN ISO 6246
Sulphur	mg/kg		10.0	EN ISO 20846* or 20884
Copper corrosion	Rating		Class 1	EN ISO 2160
Distillation				EN ISO 3405
at 70 °C	% (V/V)	20.0	52.0	
at 100 °C	% (V/V)	46.0	72.0	
at 150 °C	% (V/V)	75.0		
Final boiling point	°C		210	
Residue	% (V/V)		2.0	
Appearance	Clear and bright			Visual inspection
Olefins	% (V/V)		18.0	EN ISO 22854
Aromatics	% (V/V)		35.0	EN ISO 22854
Total diolefins	% (V/V)		1.0	GC-MS or HPLC
Oxygenates				

Road Racing FIM SBK and SS World Championships and FIM SST Cup Regulations 144 update 22 January 2015:

Property	Units	Min.	Max.	Test Method
Oxygenates:				EN ISO 22854* or EN 13132
Methanol	% (V/V)		3.0	
Ethanol (1)	% (V/V)		5.0	
Isopropanol	% (V/V)		12.0	
Isobutanol	% (V/V)		15.0	
tert-Butanol	% (V/V)		15.0	
Ethers (C5 or higher)	% (V/V)		22.0	
Others (2)	% (V/V)		15.0	

Notes:

\* Preferred method.

(1) Ethanol must be blended according to EN 15376.

(2) GC-MS methods may also be applied to fully deconvolute GC traces.

b) The total of individual hydrocarbon components present at concentrations of less than 5% (m/m) must constitute at least 30% (m/m) of the fuel. The test method will be gas chromatography and/or GC-MS.

c) The total concentration of naphthenes, olefins and aromatics classified by carbon number must not exceed the values given in the following table:

% (m/m)	C4	C5	C6	C7	C8	C9+
Naphthenes		5.0	10.0	10.0	10.0	10.0
Olefins	5.0	20.0	20.0	15.0	10.0	10.0
aromatics			1.2	35.0	35.0	30.0

The total concentration of bicyclic naphthenes and bicyclic olefins may not be higher than 1% (m/m). The test method used will be gas chromatography.

d) Only the following oxygenates are permitted:

Methanol, Ethanol, n-Propyl alcohol, Isopropyl alcohol, n-Butyl alcohol, sec-Butyl alcohol, Isobutyl alcohol, tert-Butyl alcohol; Methyl tertiary butyl ether, Ethyl tertiary butyl ether, Tertiary amyl methyl ether Diisopropyl ether.

Road Racing FIM SBK and SS World Championships and FIM SST Cup Regulations 145 update 22 January 2015:

e) Manganese is not permitted in concentrations above 2.0 mg/L. For the present this is solely to cover possible minor contamination by other fuels.

Lead replacement petrols, although basically free of lead, are not an alternative to the use of unleaded petrol. Such petrols may contain unacceptable additives not consistent with the FIM Fuel Regulations.

### 2.7.3 Air

Only ambient air may be mixed with the fuel as an oxidant.

### 2.7.4 Primary tests

2.7.4.1 The FIM may require tests of fuels to be administered before, or at the time of delivery to, an event at which such fuels are to be used.

2.7.4.2 Fuel companies supplying "race" fuels (fuels other than those obtained at public fuel stations) to participating teams must submit ten litres (2 x 5 L) to the laboratory appointed by the FIM/DWO for analysis in accordance with the specification. Providing the fuel is within the specification, a certificate containing a test report number will be issued to the fuel company. The fuel company must provide a copy of the test report number to the appropriate rider/teams before they take part in a race. Contact for fuel analysis:

[fimfuels@intertek.com](mailto:fimfuels@intertek.com)

### 2.7.5 Fuel sampling and testing

1. The FIM Superbike Technical Director has the sole responsibility for the administration and supervision during the taking of fuel samples.

2. The preferred fuel test method is gas chromatography or GC Fingerprint method.

Gas chromatography (GC) is an analytical technique for separating compounds based primarily on their volatility and polarity. Gas chromatography provides both qualitative and quantitative information for individual compounds present in a sample. Gas chromatography is widely used for the analysis of fuels.

The GC Fingerprint is a comparison between the given reference and the fuel drawn from the competitor. With the fingerprint method any changes in composition and concentration of the fuel against the reference is detected. The separation is done with a non-polar column suitable for fuels analysis. The detection of the components is done with a flame ionisation detector.

Road Racing FIM SBK and SS World Championships and FIM SST Cup Regulations 146 update 22 January 2015:

3. If other test methods are required, fuel samples will be transported to the appointed laboratory by an official courier, using the appropriate containers.
4. Riders selected for fuel controls will be directed with their motorcycles to the inspection area.
5. Only new sample bottles will be used for the fuel samples.
6. The fuel to be tested will be transferred into three bottles (3 small sample containers), marked A, B and C, and identified by reference to the motorcycle from which the sample was taken. The bottles will be closed, sealed and labelled by the FIM Superbike Technical Director and/or the Fuel Analysts.
7. The Fuel Sample Declaration form will be filled out immediately, containing all information as shown on the sample sheet, including the riders' name and race number, date and place of fuel sampling. A responsible team member will sign this declaration, after verifying that all the information is correct.
8. Sample A and B will be given to the appointed laboratory staff, present at the event for analysis or be sent to the respective laboratory by the organiser if no trackside laboratory is available. Sample B will be kept by the laboratory staff as a retained sample in case of a dispute. All samples will be accompanied by a copy of the Fuel Sample Declaration form. Costs for the analyses of sample A and B will be paid by the FIM.
9. Sample C will be handed over to the FIM for safeguarding in case of protests and/or requirement of a counter-expertise by the FIM appointed laboratory, accompanied by a copy of the Fuel Sample Declaration form. Costs for the analyses of sample C will be paid by the team concerned.
10. As soon as possible after receipt of the samples and completing the testing, the Fuel Analyst/FIM appointed laboratory will inform report the results of the fuel sample analyses directly to the FIM Superbike Technical Director, with a copy to the FIM CCR and CTI Secretariat ([sbk.technical.director@fim.ch](mailto:sbk.technical.director@fim.ch), [ccr@fim.ch](mailto:ccr@fim.ch), [cti@fim.ch](mailto:cti@fim.ch)).

Road Racing FIM SBK and SS World Championships and FIM SST Cup Regulations 147 update 22 January 2015:

11. In the case of non-conformity, the FIM Superbike Technical Director must notify the results to- the FIM, the Race Direction and the rider/ team representative concerned. Failure of the sample to correspond to the FIM fuel specifications will result in the disqualification of the competitor. The result of the competitor's fuel sample analysis ("A" or "B" sample) more favourable to the competitor will be taken into account.
12. Within 48 hours of the receipt of the notification of the results of the test of sample A and/or B, the team must notify the FIM and the FIM Superbike Technical Director if a counter-expertise is required (or not required) for sample C.
13. The Race Direction will take a decision at the Superbike, Supersport and Superstock Cup event immediately following the notification of the results of the final expertise. Any appeal against the decision of the Race Direction will be heard by the FIM Stewards appointed for the Superbike, Supersport and Superstock Cup event at which the Race Direction decision is taken. This will take place after the C sample has been analysed.

#### **2.7.6 Fuel Storage**

Fuel must only be stored in metal, sealable containers in the competitor's pit.

Fire fighting equipment, protective devices and staff must conform to the requirements imposed by the local authorities and by-laws. The organiser must have fire extinguishers of a size and type approved by the local by-laws, available to each competitor in the pit area.

#### **2.7.7 Coolants**

The only liquid engine coolants permitted other than lubricating oil shall be water or water mixed with ethyl alcohol.

## APPENDIX E: SOUND LEVEL CONTROL - 2016 FIM-Regulations

### 2.11 SOUND LEVEL CONTROL

#### Sound limits in force

The maximum sound level shall be measured at a mean piston speed of 11 m/sec. The fixed RPM specified in Art. 2.11.6 may be used.

**2.11.1** With the microphone placed at 50 cm from the exhaust pipe at an angle of 45° measured from the centre-line of the exhaust end and at the height of the exhaust pipe, but at least 20 cm above the ground. If this is not possible, the measurement can be taken 45° upwards.

**2.11.2** During a sound test, motorcycles not equipped with a gear-box neutral must be placed on a stand.

**2.11.3** The silencers will be marked when they are checked and it is not allowed to change them after the verification, except for any spare silencer which has also been checked and marked.

**2.11.4** The rider shall keep his engine running out of gear and shall increase the engine speed until it reaches the specified Revolutions Per Minute (RPM). Measurements must be taken when the specified RPM is reached.

**2.11.5** The RPM depends upon the mean piston speed corresponding to the stroke of the engine.

The RPM will be given by the relationship:

$$N = \frac{30,000 \times \text{cm}}{l}$$

in which: N = prescribed RPM of engine  
cm = fixed mean piston speed in m/s  
l = stroke in mm

#### 2.11.6 Noise control

Due to the similarity of the piston stroke in different engine configurations within the capacity classes, the noise test will be conducted at a fixed RPM. For reference only, the mean piston speed at which the noise test is conducted is calculated at 11 m/sec.

Displacement	2 Cylinders	3 Cylinders	4 Cylinders
up to 600 cc	5.500 RPM	6.500 RPM	7.000 RPM
over 600 cc up to 750 cc	5.500 RPM	6.000 RPM	7.000 RPM
over 750 cc	5.000 RPM	5.000 RPM	5.500 RPM

**2.11.7** The maximum sound level for engines with more than one silencer will be measured on each exhaust end.

**2.11.8** A motorcycle which does not comply with the maximum sound limits may be presented several times at pre-race control.

**2.11.9** The surrounding sound must not exceed 90 dB/A within a 5 metres radius from the power source during tests.

**2.11.10** Apparatus for noise control must be to international standard IEC 651, Type 1.

The sound level meter must be equipped with a calibrator for control and adjustment of the meter during periods of use.

**2.11.11** The "slow response" setting must always be used.

#### 2.11.12 Sound control after the competition

In a competition which requires a final examination of motorcycles before the results are announced, this examination must include a sound control measurement of at least the first three motorcycles listed in the final classification. At this final test, there will be a 3dB/A tolerance.

#### 2.11.13 Sound control during a competition

In a competition which requires noise control tests during the event, motorcycles must comply with the noise limits without the tolerance in Art. 2.11.