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QUATTRO Group

BRITISH GP2

SPORTING AND TECHNICAL REGULATIONS 2024

MSVR
MOTORSPORT VISION RACING

[TO BE READ IN CONJUNCTION WITH THE 2024 MCRCB YEARBOOK]

PLEASE NOTE: *The Promoter/Organiser reserves the right to issue amendments to this document from time to time.*

E1.11 MCRCB BRITISH GP2 TECHNICAL SPECIFICATIONS

Machines competing in the British GP2 Championship must comply with the MCRCB BRITISH GP2 CHAMPIONSHIP REGULATIONS. These are as follows and are correct as of the printing of these regulations but which are subject to any amendments made by the MCRCB which will be issued by means of an MCRCB Bulletin.

1.11.1 The British GP2 class is intended to accommodate non-homologated chassis specifications and technology.

For clarification purposes these will be described as follows:
British GP2 machines may use a full prototype, or donor chassis, swing arms, upper and lower yokes, bodywork and fuel tanks, using any three or four cylinder engine, listed on the FIM Supersport or Superstock homologation list, plus any engines stipulated in these class regulations. The use of Externpro Honda CBR 600 engines is permitted but these must have electric starters fitted.

The organiser further reserves the right to prohibit the use of certain parts and materials on the grounds of cost and availability if they deem it not to be in the interests of the class. MSVR are the sole arbiter regarding this.

Moto2 Machines that have previously competed in the Moto2 World Championship or Moto2 European Championship (CEV) equipped with Honda CBR 600 engines and were manufactured before 1st January 2019. These machines must only use the Honda CBR 600 engine or Honda CBR 600 engines built to the Extempro specification and must have electric starters fitted. Proof of previous ownership must be provided.

GP 2 CLASS SPECIFICATIONS

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

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

The use of MMC (Metal Matrix Composite) and FRM (Fibre Reinforced Metal) materials is forbidden on any part of the motorcycle. 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.

1.11.1.1 **Machine Specifications**
Selected items mentioned in the following must be homologated by MCRCB/MSVR. A list of homologated parts will be supplied to the teams and manufacturers.

1.11.2 **Balancing various motorcycle concepts**

In order to equalize the performance of motorcycles with different engine configurations changes in the minimum weight, rev limits, air restrictors and electronic throttle programming can be applied according to their respective racing performances. The decision about applying a handicap system to a respective team or machine type can be taken by MCRCB/MSVR at any time.

A review of the results will take place after the third, sixth and ninth championship rounds between MSVR (the series promoters/organisers) and the GP2 teams and management groups. MSVR will then present their recommendations to the MCRCB.

1.11.3 **Engine configurations and Displacement capacities**

Over 400cc up to 650cc 4 stroke 4 cylinder
Over 500cc up to 675cc 4 stroke 3 cylinders
The displacement capacities must remain at the homologated size.
Modifying the bore and stroke to reach class limits is not allowed.
Machines outside of these classifications will be considered upon application by the MCRCB. They must be equipped with a Ride by Wire throttle system (OEM or as part of a compulsory kit)

1.11.4 **Minimum Weight**

A combined rider and machine minimum weight of 222 kg for 600cc 4 cylinder.

A combined rider and machine minimum weight of 227 kg for all other machines.

Machine will be weighed with rider dressed as to race including helmet. The addition of weight, including fuel or water after practice or race is not allowed.

There is no tolerance on the minimum weight.

During the practice and qualifying sessions every rider may be asked to submit his motorcycle to weight control, in any case the rider and team must comply with this request

The use of ballast is allowed to stay over the minimum weight limit the use of ballast and weight must be declared to the Chief Technical Officer at the preliminary checks.

1.11.5 **Number Plate Colours**

Front: White background, Red numbers
Side: Any colour background with a contrasting colour number that is clearly defined from the background and complies with E1.4.22. To help

identification the numbers should be surrounded by a single black line of at least 5mm thickness.

In case of dispute concerning the legibility of numbers, the decision of MCRCB will be final.

1.11.6 **Fuel**

The MCRCB Control Fuel must be used in every practice, qualifying session and race. This is supplied by Panta; see D-Championship Conditions and any Bulletins issued by MSVR.

1.11.7 **Tyres**

The MCRCB will impose a selection of Pirelli controlled tyres. Further conditions will be stated in any Bulletins issued by MSVR/Series Organisers.The use of tyre warmers is allowed.

Any modification (cutting, grooving) is forbidden.

A tyre usuage limit applies for the race weekend (free and qualifying practices, warm up and race) which is as follows:
5 (Five) Rear (dry) tyres and Four Front (dry) tyres which apply only to the use of Pirelli Slick tyres.
The use of full wet tyres is not restricted.

No tyre change is permitted during a dry race in a Red Flag interruption (including a dry race interrupted with less than 3 laps of its duration completed by the leader), other than when the race status is changed to "Wet" and/or authorisation to change tyres is announced by race control – see C; 1.10.

In the event of a exceptional tyre change authorised by the Chief Technical Official in the case of a proven tyre failure, the rider must start the re-start from the back of the grid or the pit lane exit.

Any other unauthorised tyre change will result in a penalty.

1.11.8 **Engine**

All engines must comply with BSB Superstock 600 Technical regulations unless stated otherwise.

The series has a power ceiling of **132BHP** as defined by the BSB Dyno**. It is the riders responsibility to ensure that this power ceiling is not exceeded.**
All machines will be tested on the BSB Dyno. Weight and/or rev limit and/or other sporting penalties will be applied to breaches of this.

The Triumph 765 RS Next Generation engines must be built exactly to MCRCB **Supersport NG** regulations.

The engines of the Kramer GP2-R and KTM RC8-C must be built exactly to MCRCB Superstock regulations.

1.11.9 **Fuel injection systems**

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

The original homologated fuel injection system must be used as was supplied with the original donor engine.

For machines without fly by wire throttle controls, the throttle body must remain as homologated but the intake insulators or intake runners may be modified to allow the fitment of one air bleed stub per cylinder (maximum ID of 8mm). If the throttle body is fitted with one air bleed stub as standard per cylinder, this may be opened to a maximum of 8mm ID, if multiple stubs/air bleeds are utilised per cylinder, the total maximum area of the holes must not exceed that of a single 8mm hole.

The injectors must be standard units as on the homologated engine. Bell mouths, including their fixing points, may be altered or replaced from those fitted by the manufacturer on the original homologated donor engine.

Butterflies cannot be changed or modified.

1.11.10 **Cylinder Head**

~~No modification are allowed.~~

For 3 and 4 cylinder Superpsort Engines AND the Kramer engine the Cylinder head may be modified in the following way:

a.Porting and polishing of the cylinder head normally associated with individual tuning such as gas flowing of the cylinder head, including the combustion chamber is allowed. Welding is not allowed. No machining or modification is allowed in the cam box / valve mechanism area.

b. The throttle body intake insulators must remain as homologated.

c.Modifications of the inlet and exhaust ports by taking off or adding material (welding is forbidden) epoxy may be used to shape the ports.

d. Surface grinding of the cylinder head surface on the head gasket side.

e.Original homologated valves guides may be cut or modified, but only on the intake or exhaust port side

f. Polishing of the combustion chamber

g. Original valve seats must be used, but modifications are allowed to the shape

h. Compression ratio is free, but the combustion chamber may be modified only by taking material off.

i. It is forbidden to add any material to the cylinder head unless as

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

For Triumph 765 engines: The Supersport NG regulations apply

~~No material may be added or removed from the cylinder head~~

~~Valves, Valve seats, Valve guides, Valve springs, Tappet buckets, cotters, spring base, shims, Oil Seals, spring retainers must be as originally produced by the manufacture for the homologated engine.~~

~~(Honda Extempro specification is exempt and must use the Honda Extempro cylinder head.)~~

1.11.11 **Camshaft**

No modification allowed. (Honda Extempro specification is exempt and must use the Honda Extempro cams) .

Cam timing of engines up to 600cc with 4 cylinders may be altered from the engine manufactures homologated timing and the sprockets on those engines may be altered to achieve this.

The method of drive and the cam sprockets or gears must remain as homologated.

1.11.12 **Cylinders**

Cylinders no modifications are allowed.

1.11.12.1 **Pistons**

No modifications are allowed.

1.11.12.2 **Piston Rings**

No modifications are allowed.

1.11.12.3 **Piston Pins and Clips**

No modifications are allowed.

1.11.12.4 **Connecting Rods**

No modifications are allowed.

1.11.13 **Crankshaft**

No modifications are allowed. Polishing and lightening is not allowed.

1.11.14 **Crankcase/Gearbox and all other Engine Cases (i.e. ignition case, clutch case).**

Crankcases must remain as homologated. No modifications are allowed (including painting, polishing and lightening).

It is not allowed to add a pump used to create a vacuum in the crankcase. If a vacuum pump is installed on the homologated motorcycle then it may be used only as homologated.

1.11.14.1**Lateral covers and protection**

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

All lateral covers/engine cases containing oil and which could be in contact with the ground during a crash, must be protected by a second cover made from metal such as aluminium alloy, stainless steel, steel or titanium. Plates or crash bars from aluminium or steel also are permitted in addition to these covers. All of these devices must be designed to be resistant against sudden shocks, abrasions and crash damage.

MCRCB approved covers will be permitted without regard of the material. The Chief Technical Officer has the right to forbid any cover, if the evidence shows the cover is not effective.

1.11.15 **Transmission/Gearbox**

All transmission/gearbox ratios, shafts, shift drum and selector forks may be altered or replaced. The design concept must remain the same as the original homologated parts.

Only one set of gear ratios may be selected for the season. The chosen ratios must be declared to MSVR technical control. Should a team subsequently present a determinable engineering or other, unavoidable, proven hardware supply issue then a once only change of gearbox ratios may be authorised by the Chief Technical Official. In the event of a team taking this once only option the rider(s) concerned must start the first race at the first event using the new ratios with a +6 grid position penalty.

Primary gears (and ratio) must remain as homologated.

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

1.11.16 **Clutch**

An aftermarket slipper clutch may be used (Wet or Dry) and the operating method (Cable or Hydraulic) must remain as the homologated donor engine.

~~No throttle blipper systems can be used~~

The addition of an air bleed system may be used.

Back control torque springs and there number may be changed.

1.11.17 **Oil Pumps, water pumps and Oil Lines**

Oil lines may be modified or replaced. Oil lines containing positive pressure, if replaced, must be of metal reinforced construction with swaged or treaded connectors.

Oil pump and water pump no modifications are allowed.

1.11.18 **Radiator and oil coolers**

Design and construction of the cooling system is free, provided it only uses an aluminium alloy throughout its construction.

It is the teams/riders responsibility to ensure that the radiator meets the engine operating parameters specified by the official Supplier or those of the homologated engine used as a donor.

The standard homologated oil cooler for the donor engine is mandatory, additional oil coolers are not permitted.

1.6.19 **Air Box**

The air box must remain as originally produced by the manufacturer of the donor engine.

The resonance chamber on top of the airbox lid may be changed, modified or removed (this applies only to Moto2 machines made before 1st January 2018)

The air filter element may be removed or replaced.

The air box drains must be sealed.

All motorcycles must have a closed breather system. The oil breather line must be connected and discharge in the airbox.

A catch-tank may be fitted in the engine breather between the engine and airbox. The catch tank is solely for the purpose of collecting engine fluids, no other functions (such as pressure modification) are permitted and breather connections may only be directly between the engine, catch tank and airbox. The catch tank and connections must be visible for inspection at all times (that is, not permanently built into the chassis or other parts).

1.11.20 **Fuel Supply**

The fuel pump may be changed to accommodate the prototype tank.

The fuel pressure must be as was originally designed on the original donor engine.

Fuel lines from the fuel tank up to the injectors (fuel hoses, delivery pipe assembly, joints, clamps, fuel canister) may be replaced.

The fuel line(s) going from the fuel tank to the fuel injection system must be located in such a way that they are protected from possible crash damage.

Quick connectors or dry brake quick connectors may be used. Fuel vent lines may be replaced.

Fuel filters may be added.

1.11.21 **Exhaust System**

Exhaust pipes and silencers may be modified or changed. Catalytic converters must be removed.

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

Wrapping of exhaust systems is not allowed except in the area of the riders foot or an area in contact with the fairing for protection from heat.

The noise limit for all classes will be 107 dB/A (with a 3 dB/A tolerance after the race. There is also an equipment tolerance of 2dB/A, the actual maximum reading before race or practice is 109 dB/A and after the race or practice is 112dB/A.

1.11.22 **Electric and Electronics**

1.11.22.1 **ECU/ Engine Control Unit**

For 4 cylinder 600cc machines a manufactures original ECU or “Kit ECU” may be used from the GP2 class Approved Parts list.

For all other machines **600-675cc** a MoTec control ECU of a specification set by MSVR must be used. The electronic throttle settings will be set by MSVR in order to equalize the performance of motorcycles with different engine configurations according to their respective racing performances.

No Traction control is allowed, any ECU with this capacity must have the functionality disabled.

Kit ECU’s may not use a front wheel speed sensor,
Motec and Solo sytems may use a front wheel speed sensor.

For the Triumph 765RS, Supersport NG specification engine then the relevant Supersport Next Generation control system must be used according to the BSS regulations in 1.6.8.2.
The manufacturer map / balance settings may be set differently by the Championship.

For the Kramer GP2-R and the KTM RC8C will have a control electronic system equivalent to the Supersport Next Generation control system.
See BSS regulations in 1.6.8.2.

Maximum Rev Limit:

600cc 4 cylinder models	Standard plus 750rpm not exceeding 16,000rpm
650cc 4 cylinder models	Standard plus 750rpm not exceeding 15,500rpm
675cc 3 cylinder models	Standard plus 600rpm not exceeding 14,500rpm
Triumph 765 (BSS Spec)	**13,750rpm**
Kramer GP2-R (Stock)	**12,000rpm**
KTM RC8-C (Stock)	**TBC**

1.11.22.2 **Generator, alternator, electric starter**

Aftermarket generators/alternators are allowed
The electric starter must operate normally and always be able to start the engine during the event. This also applies to the Moto2 machines that have previously competed in the Moto2 World Championship or Moto2 European Championship (CEV) equipped with Honda CBR 600 engines.
Triumph, KTM and Kramer must remain as homologated.

1.11.22.3 **Additional Equipment**

Additional electronic hardware equipment may be added (e.g. data acquisition, , computers, recording equipment)

The addition of a device for infra-red (IR) transmission of a signal between the racing rider and his team, used exclusively for lap timing, is allowed.

The addition of a GPS unit for lap timing/scoring purposes is allowed.

Telemetry is not allowed.

No other electronic equipment may be carried.

An aftermarket quick shifter / blipper may be fitted to bikes with Kit ECU and must be from the MCRCB Authorised Parts list.

Load cell for quickshift blipper may be fitted to the bikes with Motec ECU or Supersport Next Generation System.

1.11.22.4 **Wiring Harness**

The wiring harness may be altered or replaced. Additional wiring harnesses may be added. Cutting of the wiring harness is allowed.

1.11.22.5 **Battery**

The size and type of battery may be changed and relocated.

1.11.23 **Frame Body**

The main frame must be a prototype chassis or a modified version of a production homologated chassis.

1.11.23.1 **Frame Body and Rear sub-frame**

The chassis can be a prototype design or a production homologated chassis. Material is free.

The rear subframe must be of a prototype design the construction of which is free ~~or a modified version of a production homologated chassis.~~

A Carbon Fibre monocoque seat unit is allowed and free in its construction. Kevlar may be used around the frame mounting and any fixing points only.

All exposed edges must be rounded.

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

1.11.23.2 **Front Forks**

Forks or other suspension units used at the front must be from the GP2 class Approved Parts list or the OEM forks from machines homologated for the Supersport and Superstock classes with fork kits from the MCRCB Authorised Supersport and Superstock list.

The price limit for the race type forks is €6400 exc taxes.

Honda 600 based Moto 2 Machines manufactured before 1st January 2018 may utilise the units supplied with the machine but if replaced must be from the GP2 class Approved Parts list.

A steering damper may be added.

The steering damper cannot act as a steering lock limiting device.

1.11.23.3 **Rear Fork (Swing arm)**

The Swing Arm may be a prototype the design and construction of which is

free but may only be constructed from aluminium alloy.

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

1.11.23.4 **Rear Suspension Unit**

Rear suspension unit used must be from the MCRCB authorised parts list for Supersposrt and Superstock shock absorbers (RCU). ~~in accordance with the GP2 class Approved Parts list.~~

Honda 600 based Moto 2 Machines manufactured before 1st January 2018 may utilise the unit supplied with the machine but if replaced must be one from the GP2 class Approved Parts list.

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Rear suspension unit spring(s) may be changed.

No aftermarket or prototype electronically-controlled suspensions can be used.

Rear suspension linkage is free. ~~May be an adjustable unit. Link plate design is open.~~

1.11.23.5 **Wheels**

Must be made from an aluminium alloy.

Wheel rim diameter size Front and Rear 17 inch

Front wheel rim width 3.50 inches or 3.75 inches
Rear wheel rim width 5.50 inches or 6.00 inches

1.11.23.6 **Brakes**

Motorcycles must have a minimum of one brake on each wheel that is independently operated.

Only brake discs of ferrous materials are allowed.

Callipers & master cylinder are free ~~open~~ but must be homologated by the series organiser.

Motorcycles must be equipped with brake lever protection, intended to protect the handlebar brake lever(s) from being accidentally activated in case of collision with another machine.

Such devices must be strong enough to function effectively and designed so that there is no risk for the rider to be injured or trapped by it, and it must not be considered a dangerous fitting (at the sole discretion of the Technical

Director).

Anti-lock Brake Systems (ABS) are not permitted. Braking inputs must be powered and controlled solely by the rider's manual inputs. Conventional hydraulic hand/foot controls such as master/slave cylinders for brake systems are allowed.

No increase or control of brake pressure by electronic or mechanical systems apart from the rider's direct manual inputs are allowed. Specifically, brake systems designed to prevent the wheel from locking when the rider applies the brake are forbidden

Front and rear hydraulic brake lines must be of braided steel type and readily available on the open market from an established manufacturer. Quick connectors may be used. The split of the front brake lines for twin front brake callipers must be made above the lower edge of the fork bridge (lower triple clamp).

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

Additional air ducts are allowed.

1.11.23.7 **Handle Bars and Hand Controls**

Handle bars, throttle assembly and associated cables, hand controls and levers must be readily available on the open market from an established manufacturer.

1.11.23.8 **Foot Rest/Foot Controls**

Foot rest/foot controls must be readily available on the open market from an established manufacturer.

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

The end of the foot rest must have at least an 8mm solid spherical radius. Non folding footrests must have an end (plug) which is permanently fixed, made of aluminium, plastic, Teflon® or equivalent type of material (min. radius of 8mm). The plug surface must be designed to reach the widest possible area of the footrest. The Chief Technical Officer has the right to refuse any plug not satisfying this safety aim.

1.11.23.9 **Fuel Tank**

Fuel tanks are open in design but must be made from aluminium or steel. Other materials will be considered upon application a require written approval by the MCRCB technical committee.

The Technical Director may require the team to exchange any parts of the fuel system for another standard part, at any time.

No exotic materials maybe used to include Carbon Fibre.

All fuel tanks must be filled with fire retardant material (open- celled mesh, i.e. “Explosafe®”).

Fuel tanks with tank breather pipes must be fitted with non-return valves that discharge into a catch tank with a minimum volume of 250 cc made of a suitable material.

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

1.11.23.10 **Fairing/Body Work**

All bodywork is of an open design but must be produced from fibreglass. All exposed edges must be rounded.

The bodywork cannot be the design or shape of a homologated production machine in the Supersport class.

The lower part of the fairing must be constructed to hold in case of an engine breakdown, at least half the total oil and coolant capacity (minimum 5 litres).

The lower edge of any openings must be positioned at least 50mm above the bottom of the fairing.

1.11.23.11 **Fasteners**

Fasteners of any material and design maybe used.

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

Titanium fasteners may be used in structural locations, but the strength and design must be equal to or exceed the strength of the standard fastener it is replacing.

Special steel fasteners may be used in structural locations, the strength and design must be fit for purpose.

Fasteners may be drilled for safety wire.

Fairing/body work fasteners may be of the quick disconnect type.

1.11.24 **The following items MUST BE PRESENT**

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.

It is recommended that machines be equipped with a red light on the instrument panel. This light must flash in the event of oil pressure drop.

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.)

All motorcycles must have a closed breather system. The oil breather line must be connected and discharge in the airbox.

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.

1.11.25 **RAIN LIGHT**

All motorcycles must have a functioning red light mounted at the rear of the machine to be used in rain or low visibility conditions as instructed by Race Control. The team must ensure that the light is switched on whenever a rain tyre is fitted on the motorcycle and/or when any practice or race is declared “wet” by Race Control.

Lights must comply with the following:
a) lighting direction must be parallel to the machine centre line (motorcycle running direction), and clearly visible from the rear at least 15 degrees to both left and right sides of the machine centre line.
b) mounted on the seat/rear bodywork approximately on the machine centre line, in a position approved by the Chief Technical Officer. In case of dispute over the mounting position or visibility, the decision of the Chief Technical Officer will be final.
c) power output/luminosity equivalent to approximately: 10 – 15W (incandescent) 0.6 – 1.8 W (LED).
d) the switch must be accessible.
e) rain light power supply may be separated from the motorcycle main wiring and battery.