



## 2020 BTRDA CLUBMAN'S RALLYCROSS CHAMPIONSHIP

### Appendix 4

### Production Car Technical Regulations

#### 5.5.1 INTRODUCTION.

The following Technical Regulations are set out in accordance with the Motorsport UK specified format. It should be clearly understood that unless a modification or removal/change of an item is specifically permitted by these regulations, that any modification or removal/change or repositioning of an item is prohibited. The provision of evidence to determine eligibility is the responsibility of the entrant/driver.

The term 'make' refers to the manufacturer of the vehicle.

The term 'model' refers to the product ONLY. It does not refer to the model variants, trim level or specification. As per the Motorsport UK yearbook, the term **standard** implies that the specification, features, location and method of operation of a part are as supplied when new by the motor manufacturer for the model and date of car as shown on the entry form.

Eligibility reference for any parts or assemblies is by reference to manufacturer's official publications, the relevant Haynes manuals, and Autodata Workshop Application ONLY.

**5.5.1.a** Production cars are 2-wheel drive four seater cars that must meet the definition of a series production car. The Production Car Class is for cars that are, or have been available on general sale to the public in the UK and, in a) and b) below are at least 3 years old. Competitors must be able to produce proof of date of registration and production upon request. Forced induction and turbo charging is prohibited. All vehicles must meet the definition of a series production car as set out in Motorsport UK Nomenclature and Definitions. **HOMOLOGATION SPECIALS OR MANUFACTURER 'SPECIAL EDITIONS' WHEREBY THE NUMBER OF CARS PRODUCED IS LESS THAN 1000 ARE NOT PERMITTED**

**5.5.1.b** The production cars permitted and class splits are:

- a) Cars with engine capacities up to 1600cc having no more than 2 valves per cylinder.
- b) Cars with engine capacities up to 1600cc having more than two valves per cylinder.
- c) Cars with engine capacities 1601cc to 2000cc (inc all VVT cars)

**5.5.1.c** Any vehicles affected by any changes made by the organisers will be notified at the earliest opportunity. The Championship Organiser reserves the right to adjust regulations &/or car specification including power, weight, ride height and rpm limit specifications in the interest of equalizing competitiveness between models at any time during the championship.

#### 5.5.2 GENERAL TECHNICAL REQUIREMENTS AND EXCEPTIONS.

**5.5.2.a** Cars must comply with the Technical Regulations published by the Organisers for the event throughout official practice, qualifying heats and finals.

**5.5.2.b** All cars must comply fully with the current Motorsport UK Yearbook sections; J, K, and N.6.1 to N.6.14.3. and these supplementary regulations.

**5.5.2.c** No approved modification may give rise to an unapproved one.

**5.5.2.d** The use of magnesium alloy sheet is not permitted. Titanium sheet may only be used for heat shields.

#### 5.5.3 SAFETY REQUIREMENTS.

**5.5.3.a** Minimum, all cars must comply fully with the 2020 Motorsport UK Blue Book sections J, K, and N.6.1 to N.6.14.3 as appropriate. Double longitudinal door bars must be fitted to the driver's side of the roll cage in accordance with Section K Appendix 2 Drawing No 12(g) or 12(h).

In addition:

**5.5.3.b** The seat must comply with N6.13.6 and K2.2 to K2.2.3 inclusively. It is recommended that seats are FIA homologated, although the timing may have lapsed.

**5.5.3.c** The seat must be entirely mounted to one side of the vehicles centreline.

**5.5.3.d** Seat Belts minimum requirement: complying with K2.1 and K2.1.3.

**5.5.3.e** From a 'race ready' position with seat belts fastened, the driver must be able to vacate the car in 5 seconds.

**5.5.3.f** A fire extinguisher MUST be fitted; the minimum specification must be to current Motorsport UK Regulations. (K3.1.2. (b) or (c) not necessarily plumbed in)

**5.5.3.g** Clothing and personal safety equipment as per Motorsport UK regulations N5.9 to N5.9.6 inclusive.

#### 5.5.4 CHASSIS and BODYWORK.

**5.5.4.a** The standard body shell MAY NOT be strengthened except for the following: -

- i) The fitting of the roll cage as 5.5.3.a & b
- ii) The reinforcing of the standard suspension mounting points may NOT extend to more than a radius of 100mm from the center of the suspension point.
- iii) To prolong the life of the body shell it is permitted to carry out seam welding.

**5.5.4.b** The exterior of the car MUST remain as standard including mirrors, door handles and bumpers, although it is permitted to remove body moldings, badges and the radio aerial.

It is permitted to fit guards to engine sump and fuel tank. Any guards may protect but NOT strengthen.

It is NOT permitted to reinforce the bumpers or their mountings.

**5.5.4.c** Glass sunroofs MUST be replaced as per Motorsport UK Yearbook Regulation Q19.14.6.



**5.5.4.d.** Must have a windscreen as N.6.2.4 and J.5.20.  
8.. All side and rear windows may be replaced with polycarbonate of minimum 4mm thickness.

**5.5.4.e** The interior of the car MUST have the roof lining, carpets and all the seats, apart from the driver's (See 5.5.3.c), removed. It is also required that any audio equipment, spare wheel, tools and standard seat belts be removed. It is permitted to remove the door trim panels and the window regulators (the windows must then be fixed to prevent them opening). It is recommended that trim panels are replaced by aluminum or Kevlar panels.

**5.5.4.f** An interior mirror of a minimum of 50 sq. cm. MUST be fitted. The original dashboard MUST be retained although instruments may be replaced. Dashboard may be modified to allow fitment of roll cage.

**5.5.4.g** Racing type bonnet and boot lid clips can be used

5.5.4.h The bonnet may have second skins and bracing removed.

5.5.4.i Front and rear bumpers MUST remain as standard, although it is permitted to remove any trim. In addition, it is prohibited to fit any additional reinforcement within, or behind, the bumpers.

#### **5.5.5 ENGINE.**

**5.5.5.a** The engine and gearbox must be as originally fitted as original equipment to the car and be in the original location.

**5.5.5.b** Pistons must be unmodified standard production or approved replacement pistons subject to a maximum oversize of +0.5mm. (even if this increases the capacity beyond 1400/1600/2000) Competition pistons are prohibited. Stroke must comply with Manufacturer's original specification. Material may be removed from the skirt area only for balancing purposes. In this case ONE piston must remain unmodified.

**5.5.5.c** Lightening of crankshaft or con rods is prohibited. Balancing may be carried out by pin drilling only.

**5.5.5.d** Camshaft must be standard as originally supplied for type of engine used. It may not be machined or reprofiled. Original timing gear must be used. Offset keys or adjustable vernier drives may not be used, unless fitted to the original engine.

**5.5.5.e** Cylinder head must be standard as originally fitted to the type of engine used. No gas flowing or polishing is allowed. The original terrain must be visible in the inlet & exhaust ports and in combustion chambers. Heads may be skimmed for maintenance purposes only and may not be less than Manufacturer's minimum dimension.

**5.5.5.f** Competition flywheels are not permitted. The standard unit may not be lightened or machined.

**5.5.5.g** It is permitted to baffle the standard sump and modify the oil pick up pipe. Dry sumping is not allowed.

**5.5.5.h** It is permitted to fit an oil cooler within the engine compartment.

**5.5.5.i** It is permitted to remove/replace the original air filter and filter housing with a performance filter or induction kit. Where engine breather pipes cannot be refitted to the induction system, breather pipes must go

to a breather catch tank of adequate size. It is permitted to change carburetor jets or injectors.

It is NOT permitted to modify the inlet manifold system including the throttle mechanism, carburetor, fuel pressure regulators, and throttle body apart from fitting an additional external throttle spring

**5.5.5.j** The standard ignition/engine management system MUST be retained but it is permitted to fit a modified "chip". Secondary/Piggy Back ECU systems are NOT permitted. Rev. limiters may be fitted or removed. Spark plugs and ignition leads are free. It is NOT permitted to add additional ignition systems. The ignition system must not perform any functions not intended by the manufacturer. 3D Management systems are not permitted.

**5.5.5.k** All water radiator and hoses are free but the original radiator location MUST be retained. Heater may be removed and pipe work blanked off or linked together in the engine compartment.

**5.5.5.l** Forced induction and turbo charging is prohibited

#### **5.5.6 TRANSMISSION.**

**5.5.6.a** The standard gearbox casing and all internals MUST be retained. Gear ratios & final drive ratios must be the same as originally supplied for that make and model of car. Torque bias and limited slip differentials are not permitted even if fitted as original equipment.

**5.5.6.b** Torque bias and limited slip differentials must be replaced by a normal differential with the correct ratio.

**5.5.6.c** All forms of traction control are prohibited.

- All sensors on the wheels, drive shafts and differential are prohibited.

- In order to measure the speed of the car, a single sensor on one driven wheel may be used.

- Whatever their positions, optical sensors for measuring the speed of the vehicle are prohibited.

**5.5.6.d** Standard drive shafts must be retained.

**5.5.6.e** The clutch drive plate and cover may be up rated by a standard pattern type. It must fit without any modification to the flywheel. Friction material is free providing it is to the original configuration.

5.5.6.f The standard gear change mechanism must be retained, except after market "turret" type quick change kits may be used provided all other parts remain standard.

#### **5.5.7 SUSPENSION and STEERING.**

**5.5.7.a** It is permitted to fit non-standard shock absorbers and springs provided that they mount onto the body at the standard suspension mounting points. Any shock absorber units may only have a single method of damping adjustment. Multi-adjustable and/or remote reservoir types are prohibited

**5.5.7.b** The ride height may be altered. Adjustable spring platforms are permitted

**5.5.7.c** It is permitted to fit up rated bushes to the suspension (No rose type joints permitted)

**5.5.7.d** It is permitted to fit, remove or up rate anti-roll bars. (No rose type joints permitted)

**5.5.7.e** It is not permitted to have adjustable suspension geometry. I.E. Camber, Caster unless fitted as standard to the original car, the car MUST retain the type of



suspension fitted as original equipment. Camber must at all times be no more than 1 degree more or less than the original manufacturers specified figure. Competitors must be able to provide manufacturers data to prove the original camber of their car.

**5.5.7.f** Strut braces are permitted and their design and material are free, but they must not connect to any part of the front bulkhead.

**5.5.7.g** The steering lock must be removed.

**5.5.8 BRAKES.**

**5.5.8.a** The standard braking system must be retained.

**5.5.8.b** Friction material is free.

**5.5.8.c** Standard pattern aftermarket ferrous discs and drums may be used.

**5.5.8.d** It is not permitted to use cross-drilled or grooved brake discs/drums, EXCEPT where fitted as standard.

**5.5.8.e** Brake lines may be re-routed. It is recommended that flexible braided brake lines be installed.

**5.5.8.f** It is permitted to replace/add a brake pressure limiting valve. Any such valve must not be able to be adjusted by the driver while driving the car. It must comply with Motorsport UK Yearbook Regulation N6.8.2.

**5.5.8.g** It is permitted to remove or deform brake back plates and add additional ducting to aid brake cooling.

**5.5.8.h** ABS Braking systems must be removed

**5.5.8.i** Handbrakes:

- i) No hydraulic systems unless fitted as standard to the same make/model/year.
- ii) Operation must remain as standard (i.e. no changing to vertical handbrake)
- iii) Exception: operation may be changed to "fly off".

**5.5.9 WHEELS.**

**5.5.9.a** Wheels MUST retain standard diameter for the make and model of the vehicle and offset and be of maximum rim width of 5.5", unless the standard rim width of the model is greater. Nonstandard wheels may be fitted but standard diameter and offset must be retained.

**5.5.9.a(1)** Where a control tyre of correct dimension is not made, the organisers may, at their discretion authorise a wheel with a different diameter and/or width.

**5.5.9.b** Have all nuts securing road wheels, excepting those of centre-lock type, of steel and in thread contact over a minimum length of 1.5 bolt/stud diameters reference N.6.9.1. Extended or composite wheel bolts/studs are permitted. Safety wheel nuts to prevent wheels pulling over the standard nuts are strongly recommended.

**5.5.9.c** Wheel spacers are prohibited.

**5.5.10 TYRES (For all cars up to 1600cc)**

**5.5.10.a** Any tyre from Motorsport UK lists 1A, 1B or 1C can be used throughout 2020 unless specified in Championship Regulations. 2020 will act as a transition year to allow competitors to make use of remaining tyre supplies. For 2021 and 2022, the controlled tyre manufacturer will be Cooper Tires. The **only** permitted tyre for use for 2020 and 2021 will be the Cooper branded RS3-R.

**5.5.10.b** Tyres must be road legal in every respect.

**5.5.10.c** The use of tyre heating/heat retention devices, tyre treatments and compounds are prohibited.

**5.5.10.d** No alteration to the tyre from the manufacturer's specification is permitted.

**5.5.10.e** Re-cutting, re-grooving or in any way modifying the tread pattern is not permitted.

**5.5.10.f** All the manufacturer's data must be clearly visible. Buffing of the sidewalls to remove data is prohibited.

**5.5.10 TYRES (For all cars 1601cc to 2000cc)**

**5.5.10g** Tyres are free for 2020. 2020 will act as a transition year to allow competitors to make use of remaining tyre supplies. For 2021 and 2022, the controlled tyre manufacturer will be Cooper Tires. The **only** permitted tyre for use for 2021 and 2022 will be the Cooper branded RS3-R.

**5.5.10.h** The use of tyre heating/heat retention devices, tyre treatments and compounds are prohibited.

**5.5.10.i** All the manufacturer's data must be clearly visible. Buffing of the sidewalls to remove data is prohibited.

**5.5.10.j** No alteration to the tyre from the manufacturer's specification is permitted.

**5.5.11 ELECTRICS.**

**5.5.11.a** Only one battery may be fitted. The type of battery is free but it must be sealed and can be located anywhere within the vehicle in accordance with J5.14.1.

**5.5.11.b** The battery must be capable of repeatedly starting the engine at any time when requested.

**5.5.11.c** It is recommended that all lights are removed and similar shaped covers are fitted to the resulting holes.

**5.5.11.d** Two high-level brake lights MUST be fitted to the inside of the rear window in accordance with the Motorsport UK yearbook regulation N6.7.2.

**5.5.11.e** A high intensity rear light must be fitted in accordance with Motorsport UK Yearbook regulations K5.

**5.5.11.f** Both charging and starting circuits must be as standard and function efficiently.

**5.5.11.g** All forms of data logging are banned.

**5.5.11.h** All switches must remain within dashboard area but may be replaced for suitable aftermarket items, (NOTE: no switches may be moved to other locations e.g. floor panels)

**5.5.12 WEIGHT.**

**5.5.12.1** A minimum weight, including driver, is set for individual makes and models of eligible cars and set out in the table below:

***The specified minimum weights will be regularly reviewed. Any adjustments will be published by championship bulletin a minimum of 7 days prior to the next championship round.***

Make/Model	Up to 1600cc 8v Class	Up to 1600cc 16v Class	1601cc to 2000cc Class
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Any make/model not specified in the table below.	900kg	920kg	950kg
<b>Citroen</b>			
C2		900	
Saxo 8V	880		
Saxo 16V		920	
Xzara			920
<b>Ford</b>			
KA	870	900	
<b>Honda</b>			
Civic			950
<b>Hyundai</b>			
Coupe			920
<b>MG</b>			
ZR		900	
<b>Peugeot</b>			
106 6v	875		
106 16v		920	
205	875		
<b>Proton</b>			
Satria			920
<b>Renault</b>			
Clio 172			940
Clio 182			950
Clio 197			960
Megane			940
<b>Vauxhall</b>			
Nova 1600	805		
Corsa		860	
<b>Volkswagen</b>			
Golf	845	900	920
Lupo		900	

**5.5.12.2** As the class is aimed at inexpensive and competitive racing BTRDA reserves the right to equalise performance by altering specific vehicle weights. A maximum of 30kg may be added at any time. Where this regulation is enforced the weight established will be published in a Championship Bulletin issued prior to the next event.

**5.5.12.3** Any ballast needed MUST be mounted as per GR J5.15

#### **5.5.13 FUEL TANK and FUEL.**

**5.5.13.a** Be equipped with an effective method of stopping the fuel supply that can be operated by the driver when normally seated with seat belts secured

**5.5.13.b** The fuel pump, filter and fuel lines are free.

**5.5.13.c** Cold start systems may be disconnected or removed.

**5.5.13.d** Only Pump Fuel as defined in section B of the Motorsport UK yearbook is permitted

**5.5.13.e** The original fuel tank may be replaced by another provided it is located in the original location OR as per 5.5.13.g

**5.5.13.g** An alloy fuel tank, maximum capacity 5 litres, fitted with fuel tank foam may be fitted inside the engine compartment.

#### **5.5.14 EXHAUST and SILENCING.**

**5.5.14.a** The standard exhaust manifold MUST be retained.

**5.5.14.b** The exhaust system beyond the existing manifold is free but it MUST exit from the rear of the car.

**5.5.14.c** Exhaust gas re-circulatory systems may be removed.

**5.5.14.d** Exhaust manifold must remain a complete component

**5.5.14.e** It is not permitted to fit a temperature sensor to the exhaust manifold to monitor exhaust gas temperature

**5.5.14.j** All cars MUST adhere with a 100db limit. Failure to comply to this rule will mean an immediate black flag from any practice, heat or final and could result in exclusion from the meeting/event.

#### **5.5.15 Eligibility Scrutineering Requirements**

**5.5.15.a** All cars MUST have the following studs, nuts and bolts drilled to enable seals to be affixed. Drillings must be of at least 3mm diameter. Failure to have the following drilled is deemed to be a breach of vehicle eligibility:

(i) at least two adjacent rocker cover fastenings so it is impossible to remove the head without disturbing the seals; and

(ii) at least two adjacent bolts connecting the gearbox to the engine block so it is impossible to separate the gearbox from the engine without disturbing the seals.