



2024 BTRDA CLUBMAN'S RALLYCROSS CHAMPIONSHIP
Appendix 2b
All 4 Mini (Modified 4x4) Technical Regulations

This class adapts the All 4 Mini Technical Regulations as published by the Motorsport UK British Rallycross Championship, from page 17 to 26 inclusive.

The BTRDA Clubman's Rallycross Championship Regulations apply.

Changes in the Motorsport UK British Rallycross Championship regulations are highlighted in yellow.

For the purpose of clarity, the term 'the organisers', refers to the event or Championship organisers only.

Telemetry / Voice communications

Any form of wireless data transmission between the vehicle and any person and/or equipment (other than that required by the timekeepers) is prohibited while the car is on the track. Pit to car radio by any means, including the use of mobile phones, whilst on track is not permitted.

Data transmission through a temporary physical connection is allowed in the paddock only.

Spinning of wheels

In line with Motorsport UK Regulation N.5.2.3, the spinning of wheels (tyre cleaning) before the start is only permitted in the designated area clearly defined on the Track licence and should be under supervision of the start Marshals. It cannot be performed when a Marshal or any other person is standing in front of or behind the Vehicle.

Exceptions to the adapted regulations

There are some exceptions to the rules as highlighted below:

5.13.1 - For the purposes of this Championship, tyres are not free. The controlled tyre manufacturer will be MRF Tyres. The **only** permitted tyre for use is the MRF ZTR Rx Tyre. Tyres must be purchased from Waltham Services – these tyres will be stamped to prove place of purchase and this will be monitored. Non-compliance will be considered a breach of these technical regulations.

5.13.2 – does not apply.

5.15.2 – Pump fuel is also permitted for use, as per the Motorsport UK definition (See Motorsport UK 2024 Common Regulation: Nomenclature and definitions).

6 ALL4 SUPER MINI TECHNICAL REGULATIONS

6.1 Introduction

The following Technical Regulations are set out in accordance with the Motorsport UK specified format, and it should be clearly understood that if the following texts do not clearly specify that you can make a modification, you should work on the principle that you cannot.

6.1.1 The Championship is only open to the Mini Cooper S All4 2010-2016 models. All parts from the models may be interchanged, although the engine and running gear are mandatory to be from the Cooper S models. ~~(not JWC Models)~~

6.2 General Technical Regulations and Requirements

6.2.1 Cars shall comply with the Technical Regulations published by the Organisers for The Championship throughout official practice, qualifying heats and finals.

6.2.2 All cars shall comply fully with the current Motorsport UK Yearbook J Common Regulations for Competitors: Vehicles and Rallycross Technical Regulations N6 and these regulations.

6.2.3 No approved modification may give rise to an unapproved one.

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

6.3 Safety Requirements

6.3.1 Roll over structure to N6.12.1 as a minimum is mandatory. K1.6.1 Appendix 2, drawing 12 (g) or (h).

6.3.2 All cars shall be fitted with an FIA fixed extinguisher system plumbed to the engine bay and the cockpit.

6.3.3 Seats. Be fitted with a driver's seat FIA Homologated and mounted in accordance with K.2.2. For national events, FIA homologated seats manufactured to FIA Standard 8855-1999 may be used for up to two years beyond the expiration of the original homologation label validity. FIA homologated seats manufactured to FIA Standard 8862-2009 may be used until 31st December of the year stated on the label.

6.3.4 Currently FIA homologated Seat Belts are mandatory. With two separate fixing points for the shoulder straps.

6.3.5 In addition to the minimum apparel standards set out in Motorsport UK General Regulations K9 following are mandatory:

- flame-resistant race suit homologated to FIA 8856-2000 or FIA 8856-2018 standard
- flame-resistant gloves and shoes
- flame-resistant underwear
- flame resistant balaclava
- Frontal Head Restraint (FHR)

6.3.6 The side windows on the driver's side of the car shall remain closed A sliding window in the side windows of the driver's and passenger's doors may be fitted. The opening shall be a minimum of 130mm x 130mm and a maximum of 150mm x 150mm. The sliding windows shall be closed at the start of the race.

6.3.7 The use of FIA-approved 8863-2013 safety racing nets (see FIA Technical List No. 48) on both sides of the driver is recommended. Where used, racing nets shall be fitted in accordance with "FIA Racing Nets Installation Specification for Touring and Grand Touring Cars". Window nets shall not be used where racing nets are used.

6.4 Chassis & Bodywork

6.4.1 The outward appearance of the car shall remain unaltered. The bodyshell/chassis to be standard R60 Mini range (2010-2016 models only). All brackets and fixings may be removed. The internal door steel may be removed with the exception of the driver's door. The steel driver's door shall be retained, although the outer skin may be ~~covered~~ replaced by a composite panel moulded from the standard part.

6.4.2 Fibreglass bonnet, front and rear bumpers, front wings, doors and tailgate may be used, provided they are securely fixed and shall be the same shape and size as standard fitments (with the exception of wheel arches).

6.4.3 The car's exterior body panels may be substituted for composite ones (fibreglass). The visual appearance of these parts shall be identical to the standard panels except for the wheel arches and side sills. Bonnets vents may be fitted.

6.4.4 Side skirts maybe replaced or modified, but the width shall not exceed beyond the front and rear wing extensions when viewed from above and shall not contain metal.

6.4.5 The rear wing assembly is optional but if fitted shall be identical to the original Mini or Championship optional rear wing free (add in wording regarding silhouette)

6.4.6 Glass sunroofs are not permitted. The sunroof aperture shall be closed by a panel permanently fixed in place of steel or composite material.

6.4.7 All lights shall be removed, and the apertures blanked off.

6.4.8 It is not permitted to reinforce the bumpers or their mountings.

6.4.9 Front door handles shall be retained. Bonnet and rear tail gate shall be fitted with additional catches /straps. The tail gate electric catch shall be removed. Rear door handles may be removed and the rear door panel may be incorporated into the rear quarter panels but shall retain the standard appearance.

6.4.10 Plastic inner wing liners may be replaced with other materials except steel.

6.4.11 The front bulkhead shall be effectively fireproofed, so as to seal off the driver's compartment from fire within the engine compartment. Tape is not considered acceptable. Refer J 5.2.2.

6.4.12 Front windscreen to be laminated glass or a minimum of 4 mm polycarbonate. An operative windscreen wiper/washer system is required. A rear screen and side windows are mandatory. Consideration shall be given to driver's compartment ventilation for this purpose only, it is permitted to cut a maximum of 4 x 50 mm diameter holes in each rear side and or tailgate windows. A vented hole may also be added to the driver's window large enough to accept the driver's arm.

6.4.13 The reinforcing of the standard suspension mounting points may extend to a maximum of 100mm from the centre of the suspension point. The roll cage may be extended onto the front suspension tower side, except for front strut braces. Rear suspension points may be removed, and new rear towers may be installed to the approved design. (See appendix 1.1 for design). The crumple area of the left and right front chassis legs may be reinforced.

6.4.14 All interior trim shall be removed, including floor covering, head linings, front & rear passenger seats, audio equipment, spare wheel, and standard seat belts. Door trim panels shall be removed and may be replaced with aluminium or fibreglass panels. Driver and passenger airbags shall be removed. The heater system is optional.

6.4.15 The instruments are open to free choice. The original Dashboard may be removed but shall be replaced with a moulded fibreglass unit similar in shape to the original unit.

6.4.16 All cars shall be fitted with one internal rear-view mirror of at least 50sq. cm securely mounted and positioned to give a clear view to the rear. The edges of the mirror shall be protected by a suitable cover

to reduce the possibility of injury in the event of an accident. External door mirrors shall be fitted and can be aftermarket units. All cars shall be fitted with towing eyes front and rear, which shall not protrude beyond the body's limits. Their position should be marked clearly in a contrasting colour other than black or white. (refer- N.6.14.3)

6.4.17 It is permitted to fit protective guards to the sump. Any guards may protect but not strengthen. These protections shall be made from either aluminium alloy, steel or composite material and have a minimum thickness of 3mm for alloy and composite materials and 2mm for steel. Individual protections' total weight shall not exceed 20kg maximum each (FIA279 appendix J page 7, 3.2.5).

6.4.18 Radiators shall remain within the engine compartment, Electric fans and water pumps are permissible. All pipework is free. Modification or removal of the radiator shield/cowl is permitted. Metal brackets shall retain radiators.

6.4.19 Intercooler radiators are free but shall be fitted in the engine bay **or behind the front bumper**.

6.4.20 Spraying of water onto the intercooler system/radiator is not allowed.

6.4.21 Mudflaps are to be fitted behind all four wheels, extending to a minimum of 38mm on either side of the tyre tread and a maximum of 76mm above the ground.

6.5 ENGINE

The cylinder head, engine block and sump shall remain standard as supplied by Mini unless specifically permitted by these regulations Note: Throughout this section, the words 'standard' and 'production' refer specifically to items manufactured by the Mini Group and OEM suppliers and no other manufacturer.

6.5.1 The engine shall be of the type originally fitted to the Cooper S models 2007-2016.

6.5.2 The head gasket is free. The original terrain shall be visible in the inlet, exhaust ports, and combustion chambers.

6.5.3 A production crankshaft and standard con rods **or steel rods part No BW SKU: 4-EPR-168-00** are mandatory, although balancing is permitted. Machining the crankshaft in any other way to reduce weight or any other benefit is not permitted.

6.5.4 Pistons shall be unmodified standard production or **Wossner SKU: K9552DA** replacement pistons.

6.5.5 Camshafts are to be standard Cooper S or **Cat Camshaft - R56 - 1302603** replacements. The timing of the camshafts is to remain standard.

6.5.6 The Flywheel is free.

6.5.7 It is permitted to baffle the standard sump and modify the oil pick-up pipe. Dry sumping is not allowed.

6.5.8 It is permitted to fit a remote oil filter assembly but shall be located in the engine bay.

6.5.9 It is permitted to fit an oil cooler within the engine compartment.

6.5.10 **All direct injection engine Inlet manifolds shall be standard; all port injection engines shall use a CNC MINI COOPER S N14 N18 R55 R56 R58 R60 SIDE-FEED BILLET INTAKE MANIFOLD.** It is permitted to remove/replace the original air filter with a performance or induction kit. All engine breather pipes that do not re-circulate shall go to a breather catch tank. Modifying the throttle mechanism, throttle body or plate is prohibited and shall remain standard.

6.5.11 Spark plugs and **ignition coils** are open to free choice.

6.6 All direct injection engine turbos are free. All port injection engines shall use a Garrett GTX2860R Gen II Turbo 0.64 A/R - T25 WG - 856800-3 Turbo. All cars will be fitted with an approved restrictor with a (TBC) mm dimension. These will be sealed into the turbos with an MSA championship seal.

6.7 Injection system: All direct injection engines shall use a standard Mini All4 Cooper S fuel system, and all port injection engines shall use 750cc injectors –Nitrous oxide or water injection is not permitted.

6.7.1 The clutch is free.

6.7.2 Water pumps are free but shall remain within the engine compartment.

6.7.3 Standard drive shafts or standard aftermarket units shall be retained.

6.7.4 Short-shift gear linkage is permitted.

6.7.5 Engine/gearbox mounts may be uprated to competition items but shall be fitted to standard mounting points.

6.7.6 All drive pulleys and the drive belts and tensioners are free.

6.8 Transmission

6.8.1 The gearbox shall be of the type initially fitted and be in the original position.

6.8.2 Transfer boxes shall be of the originally fitted type and in the original position.

6.8.3 Rear differentials shall be of the type originally fitted and be in the original position.

6.8.4 Limited-slip differentials are allowed to be fitted front and rear.

6.8.5 Standard Electromagnetic centre differential shall be used, although a centre viscous coupling may be fitted into the centre prop shaft.

6.8.6 Standard gearbox casing and all internals shall be retained, and only 6-speed gearboxes are permitted.

6.8.7 Gearbox ratios and final drive shall be the same as originally supplied for a standard Mini All 4. Gearboxes may be rebuilt with stronger bearings.

6.9 Suspension & Steering

6.9.1 The ride height may be altered with a minimum clearance of 40mm.

6.9.2 Shock absorbers are to be BC-approved kit part number front 0034146 & rear 0034505 only or standard units, and spring rates are free. Rose-type joints may be used in the top and bottom mounts of shock absorbers. The front top mounting point may be modified/re-drilled.

6.9.3 Camber angle on the front and rear wheels shall not exceed 4 degrees negative.

6.9.4 Competition bushes or rose joints are permitted.

6.9.5 Pressed steel suspension arms may be strengthened.

6.7.8 Anti-roll bars may be fitted, providing they are standard Mini parts.

6.7.9 Front upper and lower strut braces are permitted, and their design and material are free.

6.7.10 Choice of the steering wheel is free.

6.7.11 Quick release steering wheels are mandatory. The quick-release device shall be coloured yellow.

6.8 The standard steering column shall be retained, and the steering locks shall be rendered inoperative. It is permissible to remove the PAS unit.

6.10 Brakes

6.10.1 Brake pads shall be standard fitment & standard type, **and competition pads are permitted.**

6.10.2 Brake discs shall be standard diameter/ pattern; aftermarket ferrous discs may be used.

6.10.3 ABS braking is not permitted; therefore, ABS braking is to be disabled or removed. It is allowed to fit pressure limiting / portioning valves to the rear brakes.

6.10.4 Brake hoses are free.

6.10.5 Brakes shall be operative on all four wheels. Handbrakes are free, and their operation is efficient enough to hold the car on a slight gradient.

6.10.6 Pedal box assemblies are free, and servo units may be removed.

6.11 Wheels

6.11.1 The wheel design and manufacture/supplier are free, but the diameter/width shall not exceed 17 x 8 and offsets are free.

6.11.2 Wheel nuts shall match the wheel used.

6.11.3 Wheel Spacers as per J5.8.2

6.12 Tyres

6.12.1 The Championship uses a control which shall be used for all championship events. There is no limit on the number of tyres used during a meeting.

6.12.2 The tyres are a control molded tyres and cannot be hand-cut at any time.

6.13 Electrics

6.13.1 An ignition cut-off switch having positive on/off positions clearly marked, shall be fitted in a position to be operable by the driver when normally seated. It shall also isolate the fuel pump(s). A spark proof master cut-off switch shall be fitted externally below the windscreen and be readily accessible whatever the attitude of the vehicle following an accident. The switch shall be clearly marked with a red spark on a white-edged blue triangle, and On/Off positions should be clearly marked.

6.11.12 **All direct injection engines ECU is free, with engine mapping free. All port injection engines shall use a link G4X extreme ECU with a controlled **Championship Map.** A competitor might be asked to use a championship-controlled ECU or map.**

6.11.13 **All direct injection engines shall use standard Mini sensors/ actuators. All port injection engines shall use items as listed in Annex 1.2.**

6.11.14 All injectors must be controlled directly from the ECU with no external devices.

6.11.15 Each car shall be fitted with two RED brake lights, of the anti-crash type as used in fog, with a

minimum of 21-Watt bulbs fitted (or LED equivalent). The lights should be clearly visible from behind when the foot brake is applied.

6.11.16 A 'poor visibility' light shall be fitted. Refer K5 complete.

6.11.17 Both charging and starting circuits shall function efficiently.

6.11.18 A battery and self-starter shall be fitted and in working order and not of a temporary nature. The battery may be located either next to the engine or in the passenger compartment in a sealed box. The battery earth lead shall be coloured yellow. Battery terminals SHALL be covered with insulating material. The battery shall be securely mounted to the vehicle.

6.11.19 External circuit breaker shall be fitted. Refer: - K 8.1, K 8.2, K 8.5.

6.11.20 Deleted

6.11.21 Deleted

6.11.22 Deleted

6.11.23 Wheel sensors shall be removed.

6.11.24 Wiring harness may be removed.

6.11.25 Launch control may be fitted via the engine ECU.

6.11.26 Anti-lag systems are **not** allowed.

6.14 Weight

6.14.1 Weight limits the minimum weight for car and driver, full racing apparel to be 1150kg.

6.15 Fuel Tank & Fuel

6.15.1 The standard petrol tank shall be used and shall be located in its original position. The fuel tank shall have a protective guard.

6.16 Exhaust & Silencing

6.16.1 The exhaust is free after the outlet of the turbo but shall exit at the rear of the vehicle and incorporate a catalytic converter. An effective silencer shall be fitted to the vehicle at all times in accordance with Section J, page148, appendix 1, chart 5.18, section F.

6.16.2 **All direct injection engines shall use the standard Mini R60 exhaust manifold. All port injection engines shall use the SAS MINI 1.6 Turbo R55 R56 R57 Stainless Steel Tubular Manifold - Turbo Flange : T25-Wastegate exhaust manifold.**

6.17 Eligibility checks

6.1.5.1 **Random eligibility checks will be made at any meeting and engine/gearbox assemblies checked or sealed for subsequent checking by the licensed eligibility Scrutineer. All eligibility costs shall be covered by the competitor.**

6.1.5.2 **Engines and gearboxes will be sealed by the licensed eligibility scrutineer, using only Motorsport UK numbered seals.**

6.1.5.3 **Motorsport UK Vehicle Logbooks/Vehicle Passports are compulsory in accordance with J2 of the Motorsport UK General Regulations.**

6.1.5.4 **Non-production of the Vehicle Logbook/Vehicle Passport will render the vehicle unable to start.**

6.1.5.5 The top 4 and any other nominated competitors must have all engines and gearboxes used during the season stripped and checked for eligibility by the Championship Eligibility Scrutineer. This will occur at the agreed central location within 30 days of the final round.

7 Commercial

7.1. Championship Sponsors' branding shall also be carried on each car. The position of branding to be carried on cars and clothing will be specified in the Championship Branding Guide, which may be varied from time to time.

7.2. Two sets of Championship sponsor decals will be provided for the season. Any additional decals required may need to be purchased.

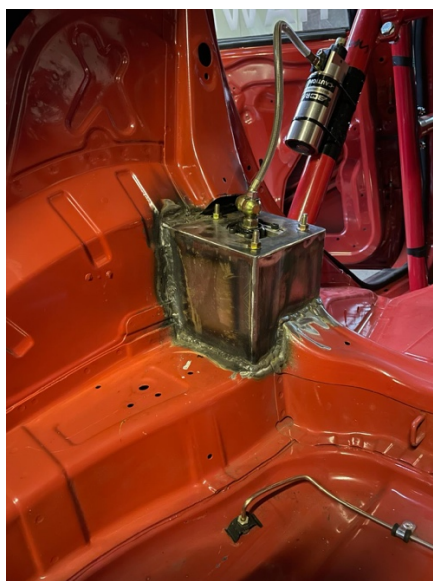
7.3. The organisers reserve the right to refuse the start of any competitor not carrying the correctly positioned decals, vehicles shall present at scrutineering in a ready to race condition with branding in place as per the championship branding guide.

8 Towing Eye

8.1 There shall be substantial towing eyes securely fixed to the vehicle's main structure, front and rear. Towing eyes must be made of steel wire rope at least 6mm thick.

Annexe 1 Championship approved parts list.

1.1 Rear suspension points



(Dimensions to be added)

1.2 Port Injection sensors/actuators.

Coolant temp
Bosch 0 280 130 026

Oil temp/pressure
Bosch 0 261 230 340

Intake air temp
Link IAT 1-8 101-0045

Coils
Honda k20 denso 099700-115

Cam position sensor
Bosch 0 232 103 064

Crank position sensor
Bosch 0 986 280 442

Knock sensor
Bosch 0 261 231 197

Map sensor
Titan Motorsports ENG-STA-3.5Bar

Boost control valve
MAC BCMAC3P001AC2

Appendix 2



A socially-minded standard of behaviour is expected from everyone within the motorsport community.

By participating in a Motorsport UK event in any capacity you agree to follow the values of the Respect Code:

[Motorsportuk.org/racewithrespect](https://motorsportuk.org/racewithrespect)
[#RaceWithRespect](https://twitter.com/RaceWithRespect)

The Values

- Respect
- Integrity
- Self-Control
- Fair play
- Good Manners

I pledge to #RaceWithRespect and:

- Contribute to a welcoming and friendly environment that ensures the safety and welfare of all participants.
- Always behave with integrity and uphold fairness in the sport; play your part in keeping the sport safe through your actions
- Treat everyone with respect, regardless of their gender, ethnic or social background, language, religious or other beliefs, disability, sexual identity or other status
- Recognise that we all represent the sport and therefore have a duty to be polite and respectful to all staff, officials, fellow competitors, volunteers, as well as fans and supporters
- Respect the rules, regulations and authority of the officials and Motorsport UK

Any breach of these obligations may result in disciplinary action.