

2025 KIRKISTOWN MINI COOPER CUP TECHNICAL REGULATIONS

5.1 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 do it, you should work on the principal that you cannot. Where nothing is listed for a reference number and heading, the subject is 'free' within Motorsport UK NCR..

5.2 GENERAL DESCRIPTION

The Championship is for competitors competing in the Mini Cooper class.

5.2,1 Eligibility, Only R50 (2002 – 2006 model year) Mini Cooper 1.6 Petrol (W10 are eligible providing they comply with these Technical Regulations.

Any R50 Mini One donor car may be converted to be eligible for the Championship, but it should be noted that the gearbox and engine ECU mapping will need to be converted to those of the 'Cooper' to fully comply.

5.3 SAFETY

All Motorsport UK. NCR safety criteria regulations apply as relevant. Particularly competitors should note; (the following are minimum requirements)

K1	Roll bar drawing Ch7 .App3.
K2	Seatbelts – 6-point Ch7. App7
K3	Fire extinguisher Ch7. App 6
K5	Rear light Ch7.App 5. Art 6
K6	Tank Fillers, Vents and Caps. Ch7.App4.Art 2
K8	Circuit breaker Ch7.App2. Art5
K9	Overalls Ch9.Arts 3,4
K10	Helmet Ch9.Arts5-9
K11	Goggles or visor Ch9. Art 11
K13	Head restraint Ch7. App 2 Art 16
K14	Fuel Tank NCR Ch (

Please note regulations in Ch7.App2.Art 6

Also Ch12.App 13. Art 13 with reference to towing eyes.

The wearing of the following FIA flame resistant racewear is mandatory for this series K14 i.e. gloves, balaclava, socks and shoes. The wearing of flame-resistant underwear is recommended.

NCR Ch 12 App 4.Art 4.17. Mobile phone or tablet devices are prohibited from being carried or used in the competing vehicle whilst on the circuit

RE-SCRUTINY: All vehicles reported involved in contact incidents during qualifying, races or practice must be re- presented to the Scrutineers before continuing in the races or practice.

5.4 GENERAL TECHNICAL REQUIREMENTS AND EXCEPTIONS

5.5 CHASSIS;

5.5.1 The chassis must remain to the original BMW Mini specification in construction and material. Reinforcing, removing or adding material to the chassis is not permitted unless otherwise specifically allowed in these regulations.

Page 6 of 13 – Issue No.1 December 31. 2024 –

Published by the 500 MRCI Ltd. Kirkistown Mini Cooper Cup

5.5.2 All original 'spot' welded seams attaching both front chassis legs to the bulkhead and

both front suspension turrets may be 'stitch' welded, this is defined by approx. 25-30mm of weld, then 25-30mm of no welding, seam welding, continuous welding along the seam, is not permitted.

5.6 BODYWORK

5.6.1 The body must be standard in all respects and must not be modified unless stated.

A Multi Point bolt in roll cage in accordance NCR Chapter 7. App13., Diagram 15

App 3.Art 12 side protection longitudinal members, these must be fitted at each side of the vehicle (Ch7.App13. Diagram 18and 21).

A Safety Devices six-point bolt in roll cage with double door bars (Part No B023) is recommended. The fitment of the cage to the chassis of the car is to be bolted, not welded, and the cage must only contact the chassis at the six mounting points.

5.6.2 Mounting plates and brackets must be welded to the floor for "bolt in" roll cage fitment. All welding for these plates and brackets and the original seams may be "seam welded", continuously welded, within 200mm of the centre line of the corresponding "leg" of the roll cage. No welding permitted outside this 200mm limit.

No additional welding, mounting points or bars may be used. No chassis modification or stiffening is permitted except that derived from the fitting of the roll cage. Seam welding or the addition of spot welds to the shell is prohibited. NCR Ch7 App13.Diagram 15

Welding is allowed re fitment of bonnet pins.

5.6.3 Flat bar or plates may be welded or bolted to the floor directly under the drivers' seat to provide secure seat mounting point below. Bodywork in whole or part may not be removed, modified or lightened.

Interior

5.6.4 The drivers and passengers air bag units, SRSA control unit and side impact sensors must be removed completely.

5.6.5 It is permitted for throttle, clutch and brake pedal extensions to be added to aid foot control provided this does not enhance performance.

5.6.6 Steering wheel: Free

5.6.7 The main dashboard must remain. However, it is permissible to remove the following:

Lower dashboard shelves/glovebox

In-car entertainment system and all speakers

Headlining, insulation, sound deadening and all carpets

Sun visors

All interior plastic trims

Rear windscreen wiper arm, and mechanism/motor assembly

All original seat belt mountings, front and rear

Any non-structural mounting brackets e.g. rear seat locking brackets, SRS, ECU mounting may be removed. Rear parcel shelf, Passenger front seat and rear seats.

Exterior

5.6.8 The bodywork/exterior must be standard in all respects except for amendments specified in these regulations

5.6.9 The bonnet must have catches removed and bonnet retaining pins and/or straps fitted Retaining pins/straps must be fitted to the rear tailgate and the electric catch must be removed.

5.6.10 Under bonnet sound proofing may be removed.

5.6.11 Mini silhouette to be maintained.

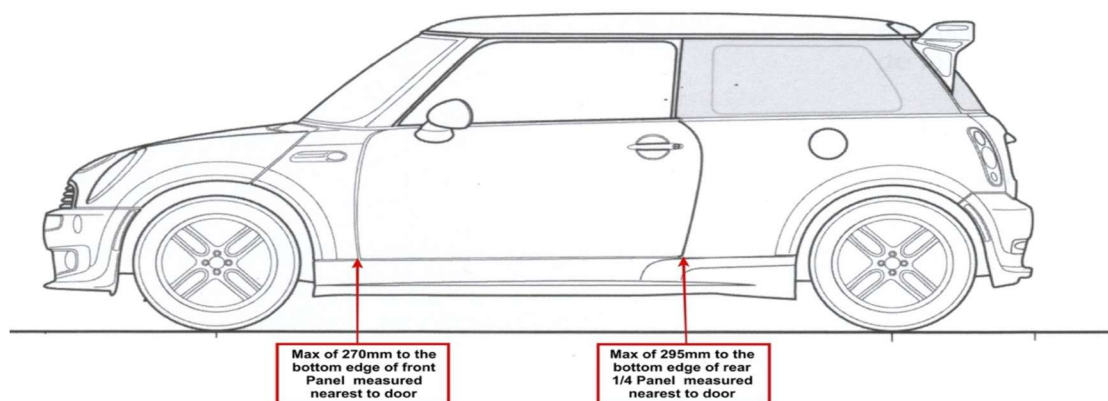
Page 7 of 13 – Issue No.1 December 31, 2024 –

Published by the 500 MRCI Ltd. Kirkistown Mini Cooper Cup

Ride Height

5.6.11 The minimum ride height for all chassis will be
Front – 270mm Rear - 295mm.

With the driver normally seated. The organisers reserve the right to amend the minimum ride height dimensions during the season.



5.7 ENGINE

5.7.1 Only the standard W10 1.6 petrol engine as fitted to the 2001-2006 Mini Cooper may be used.

5.7.2 All engine components must remain as standard as supplied by BMW MINI and be 'as cast' and completely standard in every respect, except as permitted in these regulations.

5.7.3 It is permitted to skim a cylinder head and engine block. It is not permitted to skim a cylinder block by more than 0.1mm from standard block height. Minimum Cylinder Block Height 204.65mm

The maximum compression ratio is 10.7 to 1. Pistons must remain standard.

5.7.4 No machining or polishing of any other part, including the combustion chamber, is permitted. All engine components must remain standard, and as supplied by BMW.

5.7.5 Engines may be sealed by the Championship Organisers or their nominated agents at any time during the season. Seals must not be broken under any circumstances. If seals are broken the engine will be ineligible unless a full inspection is carried out by the Organisers or their nominated agents. The inspection will be at the competitors' cost. Additionally, seals may be fitted to engines at any time. It is strictly forbidden for a competitor or his agent to remove or tamper with the seals. Should these seals be damaged or removed for whatever reason except under the direction of the Eligibility Scrutineer the car must not be used in competition or in practice until the Eligibility Scrutineer has inspected the engine and refitted the correct seals.

5.7.6 The eligibility Scrutineer may require that the engine be removed and/or stripped for inspection and compared with standard parts held for this purpose or supplied by BMW. The cost of this and any subsequent rebuild will be borne by the competitor. All instances of broken seals will be logged and reported to the CoC/Championship Organisers.

5.7.7 Only NGK spark plugs may be used. These must be NGK BKR 6 EQUIP or the BMW branded equivalent (BMS Part No 12129071003)

5.7.8 Air filter make is free. Only a foam air filter may be used, and no additional ducting is allowed before or after the filter. Air Filter to stay inside engine bay.

5.7.9 Failure to comply with the following will be considered to be a breach of regulations. Before starting any event, the following bolts must be drilled for MotorsportUK wire sealing. - two sump bolts, two rocker cover bolts, two timing cover bolts, two gear box bolts, and two bolts drilled for sealing to secure engine to gearbox.

Page 8 of 13 – Issue No.1 December 31 2024 –

Published by the 500 MRCI Ltd. Kirkistown Mini Cooper Cup

5.7.10 Only R50 (2001 – 2006 Model Year) MINI Cooper 1.6 Petrol (W10 engine) fuel injectors and fuel pump may be used.

5.7.10.A Standard Throttle valve must be used - diameter 52mm

5.7.11 Only R50 (2001 – 2006 Model Year) MINI Cooper 1.6 Petrol (W10 engine) coil packs may be used.

5.7.12 On Raceday, at morning scrutiny, the scrutineers (by random draw) will supply each car with an Engine Control Unit (ECU) that will have had the immobiliser software removed and an upgraded map installed. The 500MRCI ECU's will all be identical and may be swapped or changed by scrutineers throughout the day. Each ECU will also have its software checked after each track session. The software on these 500MRCI ECUs shall be regarded as the only map software permitted to be installed and used. After a cars last session on the track the ECU will be removed in Park Ferme and returned to the scrutineers. It is not permitted to change the strength or form of any of the sensor signals to or from the ECU or ignition amplifier unit.

It will be considered a breach of these regulations if anyone tampers with ECU software or adds or removes additional software to the ECU.

All engine control sensors and actuators must be standard, connected and operational as originally designed for road use. The engine wiring harness from the ECU multiplug to all sensors and control functions must remain standard in all respects. With the only exception being for deletions or additions for the fitment of the following: - battery master switch, rev counter, shift light or cooling fan override switch. No aftermarket performance control boxes may be fitted.

An after-market oil pressure warning light may be fitted.

If the original car was fitted with air conditioning, the air conditioning pump and radiator may be removed and a shorter drive belt may be used.

Engine and gearbox rubber mounting bushings may be upgraded to a harder rubber or fitted with polyurethane bushes. No solid unit bushes can be fitted.

5.8 SUSPENSION

5.8.1 The standard suspension components and configuration as supplied by BMW MINI must remain unaltered except as specified below. Front lower suspension to remain as standard.

5.8.1.a Fixed Offset top mounts can be fitted – these can be purchased from Murry Motorsport, Top Mounts: OBPMM-R5014

5.8.1.b If fitted with set adjustable top mounts - these will be sealed by scrutineers and made no longer adjustable.

5.8.2 Rear upper damper isolator bush may be changed for a competition bush (Powerflex PFF5-115BLK) however the pick-up point and mounting plates must remain completely standard.

5.8.3 Negative wheel camber angles, measured with driver seated, must not exceed:

Front – 3 degrees negative Rear – 3 degrees negative

5.8.4 Front control arm rear carrier mounting bolts, inner ball joint mounting bolts and steering rack mounting bolts may be replaced with bolts and nuts.

5.8.5 A rear anti-roll bar may be fitted and if fitted be connected to the trailing arm drop link at both ends and be operational at all times.

5.8.6 The front anti-roll bar must remain standard in all aspects and must be connected to the damper mounted drop links at both ends and be operational at all times, it is permitted to replace the standard front anti-roll bar bushes with polyurethane bushes.

Front antiroll bars sizes in mm, 24, 22.5, 16 and rear anti roll bar sizes 16 and 17 or none fitted to rear. These can be used in any combination. But if fitted they have to be connected.

5.8.7 It is permitted to fit a front strut brace. This must only attach to the chassis at the strut top mounting holes, and no other point.

5.8.8 It is permitted to fit a polyurethane bush (Powerflex) in place of the standard bush to

the rear of the front lower wishbone. No other modifications to this wishbone are permitted. This means that the specification of the rubber can be changed to polyurethane and an offset bush is therefore NOT permitted. The optional support kit for this bush is permitted.

5.8.9 It is mandatory to use the following shock absorbers:

Standard springs and shocks unaltered

Sachs Shocks: Fronts Part No 290236009 and 290237009

Rear Part No 290238009

Bilstein R4 Fronts Part No 22 119193(RHS) and 22 119186 (LHS)

Rears Part No 19-119205

5.8.10 It is mandatory to use the Eibach spring kit (Part No EIBE – 10- 57-001-03-22 unless using standard springs and shocks, these Springs must remain unmodified.

5.8.1 “Facelift” MINIs (2004 models onwards) came with camber adjustable rear trailing arms and “pre-facelift” cars may be fitted with the later style trailing arms to allow this feature.

5.9 TRANSMISSION

5.9.1 The Clutch may be replaced with an uprated competition lining specification.

5.9.2 Either ‘Midland’ type gearbox (BMW Transmission code GS6-65BH) or ‘GETRAG – type gearboxes (BMW Transmission code GS5- 52BG) are eligible provided they are standard in every respect with the following exceptions:

In ‘Midland’ type and ‘GETRAG’ type gearboxes, it is recommended that 5th drive gears (input and output) are removed and access is blocked to 5th gear selector fork; all other gears including reverse gear must remain standard and selectable at all times

5.9.3 Gear oil type is free.

5.9.4 The gear ratios must remain standard and gears must remain standard and helical cut (with the exception of reverse which is straight cut as standard.

The gear ratios are as follows:

Gear	Midland	GETRAG
Transmission Code	G55 658H	G5-52BG BFA
1 st	3.417:1	3.308:1
2 nd	1.947:1	1.913:1
3 rd	1.333:1	1.258:1
4 th	1.054:1	0.943:1
5 th (if fitted)	0.846:1	0.805:1
Final Drive	3.97:1	4.158:1 Getrag 79 and 19 teeth on the pinion.

It is recommended that the GETRAG final drive ratio is checked as there is an optional final drive with 74 and 17 teeth which is not identifiable from gearbox serial numbers and not eligible for this series.

5.9.5 The drive shafts must remain standard in all respects

5.9.6 The minimum weight of the **bare** flywheel is 7.4kg.

5.9.7 Limited slip differentials are not permitted. Standard differential and casing.

5.9.8 The lower mounting on the rear of the engine to assist in stabilising the gearbox may be upgraded to a harder rubber or to a Powerflex bush.

5.10 ELECTRICS;

5.10 1 Exterior lighting, working headlamps are optional and maybe replaced with full size aluminium or fibreglass blanking plates to the same dimension as the glass headlamp. These plates may not have additional holes in them and must be securely located. Working front sidelights are also optional, and maybe replaced with full size solid blanking plates made from aluminium or fibreglass, which must be securely located with no additional vents in them.

The rear lighting must be operative.

Cars must have 2 working rearward facing brake lights with bulbs of 21 watts minimum or FIA approved LED equivalent.

5.10 2 Rear fog light; One FIA-spec high intensity LED must be fitted in the centre line of the rear screen. It must be clearly visible, fitted at the bottom of the rear screen outside the car.

5.10 3 Batteries. A lightweight racing battery may be fitted.

5.10 4 The original battery box may be removed and all plastic scuttle panels on the bulkhead may be removed. If this is done, the battery must be securely located inside the car. Also, the air intake on the bulkhead for the heating and ventilation system must be covered by a flameproof material to conform to firewall safety regulations.

5.10.5 The alternator must remain standard, fitted and operational at all times

5.10.6 Front windscreen wipers must remain standard and both wiper blades must park in the position as intended by the manufacturer.

5.10.7 Data logging is permissible, provided the data is stored 'on board' during practice, qualifying or races, and not transmitted from the vehicle.

5.10.8 External circuit breakers must be fitted as per Chapter 7.App 5. Art 5.

5.10.9 Any unnecessary wiring may be removed, but any additional wiring must not be connected to the engine or ECU wiring and must not be performance enhancing in any way.

5.10.10 The fuse for the automatic central locking must be removed.

5.11 BRAKES;

5.11.1 Prohibited modifications: The braking system must remain standard and fully operational in all respects apart from items listed below.

5.11.2 It is permitted to use brake cooling ducting subject to it being fitted through the front panel taking air from the front fog light aperture in the front bumper. This ducting must not protrude beyond the bodywork and the internal diameter of the ducting must not exceed the diameters of the fog lamp apertures (53mm) assembly, control unit or wheel speed sensors are permitted.

5.11.3 The only modifications that can be made to the standard brake ABS system fitted is to fit an ABS bypass brake piping system.

This is to remove potential braking problems that have become apparent in some earlier Mini models. If a brake bias valve is fitted it must be mounted in the engine bay and not adjustable by driver whilst driving.

5.11.4 Brake callipers must remain as standard.

5.11.5 Front brake pad and material are free, but the friction area must not exceed that of the original BMW part (No 34116770332) The rear brake pad and material are free, but the friction area must not exceed that. of the original BMW pad (No 34216762871)

5.11.6 Brake pipes may be replaced by braided brake hoses. Brake lines may be re-routed inside the car.

5.11.7 Brake fluid type and make is free.

5.12 WHEELS/STEERING;

5.12.1 Wheels: Permitted options: All four rims must be no more than a maximum 15" x 7" size. A standard wheel may be used, a part number will be advised by bulletin.

5.12.2 Tyres: The only tyres eligible are Toyo Tires 195/50/R15 PXR 888R

5.12.3 The minimum tread depth shall be 1.6 mm across the full width of each tyre at start of timed practice, qualifying or any race

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

5.12.5 The organisers reserve the right to restrict the number of tyres used at each event and throughout the Championship.

5.13 WEIGHTS;

5.13.1 Minimum weight: - The minimum weight for the car and driver combined before, during or after practice, timed practice, qualifying or race must be no less than 1100 kilograms. Failure to meet this minimum weight will be considered an offence under these regulations.

Ballast: – Any ballast carried must be securely fixed and be capable of being sealed, location of ballast: in (passenger location,.

5.13 FUEL TANK/FUEL;

5.13.1 Fuel. Permitted Fuel only to be used. A maximum of 99octane should be used.

5.13.2 Fuel Testing: - At the end of timed practice/qualifying or races, there must be at least 3 litres of fuel left in the tank of the competing car to made available to the scrutineers for analysis. Compliance with minimum weight for the car will be taken before the fuel is removed. Fuel Sampling: – A dry break coupling must be fitted in the pressured fuel line to allow safe sampling/draining of the fuel tank providing it complies with all safety regulations. Each car must have available for sole use of that car a sampling fuel hose length minimum of 300mm. **YOU CANNOT SHARE THIS FUEL HOSE.**

5.14 SILENCING;

5.14.1 The upper exhaust system must retain the standard catalyser casing and manifold assembly (BMW Part No 18407525272or 18407527819). The assembly must be complete from cylinder head mating surface to the centre section mating flange. No machining, polishing, reshaping or any other modifications are permitted to this assembly with the exception of replacing the flexi section with a weld-in 'like for like' replacement providing no performance advantage.

5.14.2 The upstream and downstream oxygen sensors (lambda sensors) must be standard (BMW Part No 11780872674, fitted correctly and fully functioning at all times.

5.14.3 Lower Exhaust System: – The exhaust system design, make and layout from the manifold assembly rear flange to the exit is free, but must have a silencer and comply with Motorsport UK regulations.

5.15 NUMBERS

5.15.1 Numbers must be displayed in accordance with NCR Ch 12.App 4Art 5.

6 APPENDICES:

6.1 Race organising clubs and contacts;

500 MRCI office, Kirkistown Race Circuit, Rubane Rd., Cloughy, Kircubbin, Co. Down

SPECIFICATION SHEET:

Cylinder Bore - 77.00mm

Cylinder Stroke - 85.80mm

Inlet Valve Head Diameter - 30.40mm

Stem Diameter - 5.9mm

Overall Length - 109.7mm

Exhaust Valve Head Diameter - 23.3mm

Stem Diameter 5.9mm

Overall Length 118.4mm

Valve Spring

Overall Diameter - 25.9mm

Overall Length - 51.0mm

Wire Diameter - 4.0mm

No of Coils - 8

Camshaft Inlet Lobe Dimensions

d 30.00mm D 35.20mm

Camshaft Exhaust Lobe Dimensions

d 30.00mm D 35.58mm

Minimum Cylinder Head Combustion Chamber Volume - 32.00cc

Minimum Cylinder Head Thickness - 96.80mm

Inlet Ports - must be as cast

Exhaust Ports - must be as cast

Minimum Cylinder Block Height - 204.65mm

Minimum Crankshaft Weight complete with timing chain sprocket - 12.630kg

Minimum Piston/Connecting rod weight complete with cap, bolts and rings but excluding shells - 700gms

Minimum bare Flywheel weight - 7400gms

Camshaft sprocket must be fitted correct way round - (part no must be to front)

Throttle valve diameter 52mm