

MX5 RACE SERIES Technical Regulations 2024

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 principle that you cannot.

5.2 GENERAL DESCRIPTION:

The MX5 Race Series is for competitors participating in MX5 cars. Eligible cars are Mazda MX-5/Eunos/Miata origin 1989 – 2005.

5.3 SAFETY REQUIREMENTS:

All cars must comply with the Technical Regulations set by MOTORSPORT UK, Section J.5 and K and with the minimum safety requirements listed in Section Q. Extinguishers must comply with MOTORSPORT UK regulation K3.1.2a (plumbed in). REGULATION UPDATE re Fire Extinguishers see page 164 section 3 2018 MOTORSPORT UK regulations. Seat belts must be to FIA standards in accordance with K.2.1.2 (3" 4 point), K.2.1.3 (5 point) or K.2.1.4 (6 point).

3. 3.1: Full front and rear roll cage must be fitted to the car complying with MOTORSPORT UK regulation K1 with side impact bars and spreader plates welded to the floor.

5.3.2: Vehicles must be equipped with an externally operated circuit breaker having positive ON OFF positions clearly marked (K8).

5.3.3: The internal ignition cut-off must be operable when the driver is normally seated irrespective of whether a safety harness is worn or not.

5.3.4: Apart from the ECU it is not permitted to have any ignition components, coils, chokes or black boxes located in the cockpit area in racing cars.

5.3.5: The fuel system must be equipped with an effective method of stopping fuel supply and be operable by the driver when normally seated. This can be incorporated into 5.3.3. above or be located adjacent to internal ignition cut-off switch.

5.4 GENERAL TECHNICAL REQUIREMENTS & EXCEPTIONS:

All cars must comply with the requirements of Sections J5, K and Q19 of the current MOTORSPORT UK regulations.

All vehicles must be of sound construction and mechanical condition and be well maintained.

5.4.1: The word 'Standard' is as defined in Section B of the current MOTORSPORT UK regulations. The word 'standard' used within these technical regulations as a description of components is to be interpreted as: - 'the specified component from the manufacturers parts list for the model/engine shown on the entry form or registration form. It is permitted to use components from the early model on the late model and vice versa. This includes engines. Checking will be by comparison to spare parts supplied by the manufacturer's official agent or by any other means. Parts/engines etc may be interchangeable between early and late model cars.

5.6 BODYWORK

5.6.1: Boot and bonnet catches should be removed, and bonnet pins and boot pins/springs added. Door glass may be replaced with 4mm Lexan/polycarbonate, or the original glass may have clear colourless safety film fitted.

5.6.2: Doors are to remain steel items, but the internal panel may be removed if a door bar is fitted to your roll over cage. Removal is allowed of head-cloth, carpets and rear interior trim.

5.6.3: A plumbed in fire extinguisher should be mounted in the passenger foot-well.

5.6.4: Airbag to be removed. Steering wheel may be changed. The steering lock is to be disabled. The steering lock housing must be fitted to the column by headed bolts (no shear bolts permitted) to allow ease of replacement for eligibility purposes.

5.6.5: Driver's seat should be correctly located and securely anchored to allow no movement in squab or backrest. As the standard seat can move it is not permitted. Front passenger seat to be removed.

5.6.6: The use of lightweight materials or fibreglass is permitted for use on all other exterior panels (front guards, quarter panels, front and rear bumpers, bonnet and boot lid but must be accurate reproductions of the original bodywork as per original factory finish.

5.6.7: Use of spoilers: Chin spoilers and alternative nosecones permitted, as are side skirts. Rear spoilers permitted but must not be higher than 18cms from the original OEM factory boot lid.

5.6.8: Windscreen frame must be present and unmodified other than gusseting to the roll cage. A standard OEM unmodified laminated glass windscreen must be used.

5.6.9: It is not permitted to change the silhouette of the car by the fitting of a Coupe/fastback style hardtop.

5.6.10: The fitting of a flat undertray and rear diffuser to aid aerodynamics is permitted though the original floor and chassis rails must remain complete and intact.

5.6.11: Bonnet vents/louvres for the extrusion of hot air from the engine bay are permitted. Vents are also permitted on the front wing/wheel arch but the original arch radius and overall factory profile must remain. Exterior door skins and quarter panel skins must not be cut, vented or modified in any way from originals

5.6.12: The ground clearance is measured as the distance between the ground and the bottom of the cars lowest point, minimum of 40mm.

5.6.13: A hardtop of the OEM type or a lightweight copy may be used, and a Lexan/polycarbonate rear window fitted. Note All hardtops must be securely fitted.

5.6.14s: Wheels must remain inside lines of body and not protrude beyond the arches.

5.6.15: It is permitted to fit extensions and/or non-slip material to the pedals.

5.6.16: No wide wheel arch extensions. The body must be no wider than the standard factory OEM unit.

5.6.17: Chassis from the front of the front subframe mounting point forward is open to modification, but standard production bonnet slam panel must remain. Front shock absorber mountings must remain standard and unmodified. The use of a strut brace is permitted.

5.6.18: Chassis from rear of the rear subframe mounting point to the rear light panel is open to modification. Rear shock absorber mountings must remain standard and unmodified. The use of a rear strut brace is permitted. Rear light panel must remain, and rear lights also must remain and have working brake lights as per OEM.

Rear bumper must be present but may be trimmed to suit diffuser if used.

5.7. ENGINE:

5.7.1: Engines permissible: any from 89-05

1.6 B6ZE (RS). 1.8BP5 1.8 BP4W. 1.8 BPZ3(SVT)

5.7.2 Power Plant Frame, Standard OEM and unmodified.

5.7.3: Standard OEM single throttle body

5.7.4: Standard OEM inlet manifold

5.7.5: Standard OEM inlet and exhaust valves

5.7.6: Camshafts must be standard and unmodified. Camshaft wheels must be always visible for inspection. this can be achieved simply, by removing the top plastic timing belt cover.

5.7.7: Heads and manifolds open to port matching.

Heads may be skimmed. (see 5.7.25)

5.7.8: The fuel injection system must be standard no modifications permitted. No additives allowed to pump fuel as per MOTORSPORT UK regulations.

5.7.9: Crankshaft, Conrods, pistons, oil pump, crankshaft pulley, water pump, alternator must remain standard OEM Mazda or pattern parts and unmodified in any way.

5.7.10: Alternator and water pump must be driven from the crankshaft pulley with the standard sized belt which is 4pk884 or 12.5 X 900 v belt on the appropriate pulley.

5.7.13: Engine Management:

Standard and unmodified OEM ECU and wiring loom appropriate for engine being used.

Competitors must remount the ECU in such a way as to allow easy access for the scrutineers to inspect quickly and efficiently. ECUs may be swapped out for known standard units or swapped between race cars on the race day.

5.7.14: Standard OEM unmodified Airflow/mass meter

5.7.15: Air feed pipe that joins AFM to the throttle body and air filter are free from restrictions.

5.7.16: Standard OEM unmodified throttle position sensor

5.7.17: Standard OEM unmodified cam angle sensor

5.7.18: Standard OEM unmodified crankshaft sensor in original position on block.

5.7.20: Standard OEM unmodified temperature sensor

5.7.21: Standard OEM unmodified fuel pressure regulator

5.7.22: Standard OEM unmodified fuel injectors

5.7.23: Standard OEM unmodified fuel pump in original position.

5.7.24: Standard OEM unmodified fuel tank in original position

5.7.25: Cylinder heads must be a minimum of 133.4 mm high from machined face to machined face.

This allows for reclamations by skimming to a typical maximum of 0.4mm or 0.016inch. Skimming ("decking") of the engine block is not permitted and piston protrusion must be as standard. The only permitted head gasket is a standard OEM Mazda BP6d-10-271 or standard pattern replacement. It is the competitor's responsibility to ensure that any pattern parts have the same compressed height as an OEM Mazda head gasket. The standard throttle body water circuit may be bypassed. All inlet and exhaust valves, valve seats and valve guides must be of standard pattern and material and valve seat profiles/angles may not be modified.

5.7.26: Items open to modification.

5.7.26A: Heads (see 5.7.25)

5.7.26B: Inlet manifold

5.7.26C: Exhaust manifold

5.7.26D: Flywheel

5.7.26E: Clutch

5.7.26F: Oil coolers

5.7.26G: Coolant radiator and fans

5.8 Suspension and Subframes

5.8.1: Front subframe assembly:

5.8.1A: Standard OEM unmodified chassis mounting points must be used.

5.8.1B: Standard OEM unmodified front subframe

- 5.8.1C: Standard OEM unmodified upper and lower wishbones
- 5.8.1D: Standard OEM unmodified upper and lower ball joints
- 5.8.1E: Standard OEM unmodified front upright and hubs
- 5.8.1F: Standard OEM unmodified camber bolts
- 5.8.1G: Standard OEM unmodified steering rack
- 5.8.1H: Standard OEM unmodified steering column
- 5.8.1J: Standard OEM unmodified inner and outer track rod ends must be used
- 5.8.1K: Steering column top mounting may be fitted to roll cage cross bar, but must remain OEM length and angle.
- 5.8.1L: Wishbones may be fitted with FLOFLEX polyurethane bushes.
- 5.8.1M: Spherical bearings/Rose joints/metal bearings of any kind anywhere in the suspension are not permitted.
- 5.8.1N: Permitted coil over -TA Technix part number for MK1 is EVOGWMA01 and for the MK2/2.5 is EVOGWMA02. (Readily available on eBay at approximately £210 per set brand new).
- 5.8.1P: Springs free

5.8.2: Rear subframe assembly:

- 5.8.2A: Standard OEM unmodified chassis mounting points must be used.
- 5.8.2B: Standard OEM unmodified rear subframe
- 5.8.2C: Standard OEM unmodified upper and lower wishbones
- 5.8.2D: Standard OEM unmodified rear uprights and hubs
- 5.8.2E: Wishbones and uprights may be fitted with FLOFLEX polyurethane bushes.
- 5.8.2F: Spherical bearings/Rose joints/metal bearings of any kind anywhere in the suspension are not permitted.

5.9 TRANSMISSIONS

- 5.9.1: Gearbox and prop shaft: Standard OEM unmodified units from the Mazda MX-5 range spanning 1989-2005. Either the 5spd or 6spd is permitted.
- 5.9.2 Differential, half shafts, rear uprights, wheel hubs and CV joints must remain Standard OEM and unmodified. Ratios available 3.6:1. 3.9:1, 4.1:1, 4.3:1
- 5.9.3: Differential mounting: Differential mounting must remain in standard OEM position. The use of FLOFLEX polyurethane bushes is permitted. Also, the aluminium arms of the casing may be boxed in order to strengthen or repair.
- 5.9.4: Standard mechanical MX5 LSDs allowed, the use of plated aftermarket LSD is prohibited.

5.10 ELECTRICS

- 5.10.1: headlights may be removed but the aperture must be covered. Brake-lights must remain as standard and be operational.
- 5.10.2: A 21w rear fog/rain light must be fitted and operational.
- 5.10.3: It is permitted to replace the standard battery with a competition type and to move the battery inside the vehicle and locate it in the passenger area. Where a battery is located in this area it must be of sealed construction.
- 5.10.4: the standard alternator must be fitted, connected and providing a charge when the engine is running.

5.11 BRAKES - NO DRILLED OR GROOVED DISCS ALLOWED

- 5.11.1A: Brakes: Standard OEM unmodified callipers
- 5.11.1B: Standard OEM unmodified discs
- 5.11.1C: Disc diameter available front 234,256 and 275

5.11.1D: Disc diameter available rear...230,255 and 274

Note: small, medium and large discs need to be used in conjunction with the appropriate calliper and pad carrier combination. Also, if fitting the larger MK2.5 brakes it is advisable to also change the brake master cylinder to suit.

5.11.1E: Handbrakes are not required 5.11.1F:

Hydraulic hand brakes are permitted.

Pad material is free.

5.11.1H: It is permitted to replace the standard brake fluid with a higher temperature fluid.

5.11.1L: Diagonal front-rear split braking must be retained.

5.11.1M: It is permitted to replace the standard brake hoses with Aeroquip/braided replacement pipes.

5.12 WHEELS/STEERING

5.12.1: No modifications are permitted to the steering system/mechanism.

5.12.2: Max of 15inch alloy wheels allowed.

5.13 TYRES

5.13.1: Toyo Proxes R888R (control tyre).

5.13.2: Competitors are permitted 7 tyres per season.

5.14.1: **Minimum weight car and driver 1000kg will be firmly imposed from the start of 2024 season.**

5.15 FUEL & FUEL DELIVERY

5.15.1: The car must be run on standard pump fuel. No fuel additives are permitted.

5.15.2: The fuel tank and location must remain as standard.

5.15.3: the fuel supply system (pump & pressure regulator) must remain as standard.

5.16 SILENCING -

5.16.1: Exhaust system free but must meet MOTORSPORT UK sound regulations.

See MOTORSPORT UK regulation (J)5.16.7

5.17 Cameras: All competitors are required to carry an onboard car camera that records to an SD or micro SD card and must be capable of recording HD footage that can be played back on a standard laptop. Recordings from cameras may be used where there is an incident which is subsequently brought before the Clerk of the Course for investigation.

It is the competitor's sole responsibility to ensure safe installation and effective operation of the camera equipment. At all times cameras must be fitted in accordance Motorsport UK regulations and be approved by the Chief Scrutineer in accordance with the MSUK yearbook.

Cameras must be mounted in a position such that the steering wheel and track are in clear view when the car is on track during any official free practice, qualification session and race.

The onus is on the competitor to ensure that the camera unit battery is charged, the camera is switched on to record and ensure that the SD card has enough capacity to record the above-mentioned sessions. The SD card must only contain the files from the event in question.

If no recording is available when requested by the Organisers or Clerk of the Course for judicial purposes, then the following penalties will be applied by the Clerk of the Course.

- A First offence – Championship Reprimand
- B Championship Points Deduction equivalent to a 6th place finish.
- C DISQUALIFICATION

5.17 NUMBERS AND RACE SERIES DECALS

5.17.1: Numbers: As per MOTORSPORT UK regulations

APPENDIX

6.00 ORGANISERS

6 00.1: Race organising clubs and contacts.

500MRCI Ltd. Kirkistown Circuit, 130 Rubane Road, Kirkubbin, Co. Down, BT22 1AU

Phone 028 42771325. Email info@kirkistown.com

Series Co-ordinator David Cousins

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