

## 2010 Ma5da MX5 Cup

### Technical Regulations

#### 5.1 INTRODUCTION

The following Technical Regulations are set out in accordance with the MSA 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.

The words '**standard**' used within these technical regulations as a description of components is to be interpreted as: - 'The replacement part has the same form, shape and features as the standard part and is constructed using the same materials and manufacturing process'.

#### 5.2 GENERAL DESCRIPTION

- 5.2.1 Only the 2005 > Mazda MX-5 2.0i sport is eligible to compete in the MX-5 Cup. Homologation specials will not be permitted. All vehicles must be of sound construction and mechanical condition and be well maintained. There is no requirement for an MOT Certificate, Road Tax or Insurance. Vehicles must be operated in an "open" condition i.e. without the hard or soft top.

These Technical Regulations are applicable to all competitors competing in the Championship.

Mazda MX-5 vehicles must remain standard with the exception of the following restrictions or specifically allowed modifications.

Unless specifically mentioned or approved in these regulations, no modifications may be made. These regulations are not intended as guidelines or suggestions and they will be vigorously enforced.

Vehicles must comply with MSA General Technical Regulations contained within Sections **C, H, J, K, L & Q** of the current MSA Yearbook.

#### 5.2.2 EXAMINATION OF VEHICLES

The organisers (in addition to any other powers they may have under these Regulations) reserve the right before or after any race in the championship/series to designate any one or more of the competing cars for special eligibility scrutineering. Upon such election being made the competitor shall immediately place the car under the control of the organisers and be deemed to have permitted all such scrutineering, examination and testing as the organisers may responsibly require to undertake. The organisers have the right to:

- a Examine the car at the circuit for such period as they may reasonably require and take fuel samples and/or
- b Retain the car for detailed examination at premises chosen by the organisers. If the organisers elect to retain the car they shall make it available for collection by the competitor at least seven days prior to the qualification session for the next race in the championship/series unless the car is found to be in breach of these regulations and/or
- c Seal the car and its components in such a manner as they may choose and require the competitor at their own expense to present the car at any other premises chosen by the organisers for detailed examination within a specified period and/or remove the car by transporter at no expense to the competitor to an appointed location. The competitor will be advised in writing of the time, date and location of the subsequent testing or eligibility examination.



The stripping of an engine or any required component will be undertaken by the competitor and/or mechanic/technician nominated by the competitor under the direction of the Championship Eligibility or another nominated MSA Scrutineer Scrutineer

The organisers reserve the right to re-inspect vehicles at any time during the course of the season, should there have been a regulation infringement or circuit incident.

Competitors will be personally and solely responsible for ensuring that their cars comply with their registration details and with these regulations for each event at which they are entered. Failure to comply in either respect will be a breach of these regulations. Queries concerning eligibility should be referred in writing to the Organisers/Championship/Series Eligibility Scrutineer at least seven days prior to an event entered, to permit a ruling in advance of any meeting at which it is intended to compete.

5.2.3 The colour scheme for any car is free but the car must be presented in a good, clean condition and any damage sustained must be made cosmetically good, to the approval of the Eligibility Scrutineer before the next race. Failure to do so will be considered non-compliant

5.2.4 Cars must have all championship decals affixed as per the issued decal sheet The Championship Eligibility Scrutineer will deem any cars not carrying all decals to be non-compliant.

### 5.3 SAFETY REQUIREMENTS

The following Articles of MSA Regulation **Section K** will apply - **K1.2.1 7 K1.2.2 - K1.2.4 - K1.3.2 or K1.3.3 - K3.1.2 (a) & K5 - K6 - K8 - K9 - K10 - K11 , K12 & K13**, MSA Regulation **J** and **Q** subject to these Championship Regulations.

In addition, the following will apply:

Six point bolt-in cage manufactured by "Safety Devices International" (with twin door bars and roof diagonal) must be fitted as per MSA Regulations **Section K** Drawing 10 & 12(g)].

- Door panel, door glass and mechanical hardware may be removed.
- Quarter light glass may be retained or replaced in 4mm clear plastic material. As per MSA Regulation **J5.20.8**.
- It is recommended that the battery be relocated to the centre of the boot.
- Arm restraints are advised but not mandatory.

## **5.5 GENERAL TECHNICAL REQUIREMENTS AND EXCEPTIONS**

### **5.6 CHASSIS**

No modifications permitted except

The 3-piece front strut tower brace that comes with the sport package maybe removed

### **5.6 BODYWORK**

#### **5.6.1 MODIFICATIONS PERMITTED**

##### **GENERAL**

Both Fuel Filler Door and Boot release mechanisms may be modified.

All bodywork must be in good condition. The Championship Eligibility Scrutineer may deem any previous un-repaired bodywork to be non-compliant.

Gauges and instruments may be added, replaced or removed. They may be installed in the original instrument(s) location using a mounting plate(s) or any other location using a secure method of attachment. Other than minimal modifications made to mount instruments and provide for roll cage installation, the remainder of the dash "board" or panel shall remain intact.

##### **INTERIOR**

The driver's seat must be replaced with an MSA approved seat suitable for competition, factory seat tracks may be modified, reinforced or removed to facilitate replacement mountings provided they perform no other function.

Air Conditioning system, heater core and blower may be removed.

Carpets, centre consoles, cargo bins, driver's seat belt, floor mat, radio system, headliners, dome lights, grab handles, canopy hood mounting posts to rear of passenger and driver seating, rear edge trim and their insulating and attaching materials may be removed.

The door window glass and window operating mechanisms shall be removed.

The top portion of the door panels(or Similar) containing the door latch release handle must be fitted

Any removable covers used to cover spare tyres, tools, bins, etc. to be removed along with attaching hardware and brackets. Carpets, mats and their insulating or attaching materials to be removed from the floor and recesses of the Boot/spare tyre area.

Interior and exterior door handles are required to remain operable. Door locks to be disabled

Passenger seat may be removed. If retained must colour match the driver's seat.

##### **EXTERIOR**

Antenna, side repeater/indicator in front wings and emblems may be removed.

The OE driving lights may be removed. The resultant openings may be used to direct air to the front brakes.

##### **SILHOUETTE**

Mirrors may be replaced but only in matching pairs

#### **5.6.2 MODIFICATIONS PROHIBITED**

##### **GENERAL**

It is not permitted to allow or modify bodywork or use any other material to force or channel air into the engine air intake.

The use of adhesive tape or any other medium to cover or bridge body gaps or to improve the aero dynamics of the body is prohibited.

##### **INTERIOR**

Other than to provide for the installation of required safety equipment or other authorized modifications, no

other driver/passenger compartment alterations are is permitted.

Instrument clusters shall be unmodified OE parts.

The driver's door must retain the opening mechanism or means of opening from inside. Door cappings must be fitted, these may be from the original vehicle or constructed from aluminium or composite material.

#### EXTERIOR

No air dams, wings or spoilers are allowed

*Left and right front inner wing liners must remain intact. Inner wing liners may be riveted in place. The Left and right wing liners may be removed only if the large excess holes are closed off using .040" - .060" aluminum and securely fastened into place using rivets.*

Wings and wheel openings shall remain unmodified except rolling or flattening of inner wing lip for tire clearance.



## 5.7 ENGINE

The only permitted engine is the 2.0i as fitted to the Mk3 MX5 sport

### 5.7.1 PERMITTED MODIFICATIONS

None

### 5.7.2 PROHIBITED MODIFICATIONS

Lighten of the flywheel is prohibited however it is permitted to remove material to reface the clutch area.

Machining or polishing of bottom end components is not allowed. Localised drilling and grinding is permitted to gain the correct balance of crankshafts and con rods following the recovery of a damaged components only. Heavy metal may be added to the crankshaft for the same purpose if required after repair.

It is only permitted to use a standard dimension camshaft

It is not permitted to use a non standard exhaust manifold

The use of vernier cam pulley wheels is prohibited

Porting or polishing of the inlet or outlets exhaust ports of the cylinder heads is prohibited

### 5.7.3 LOCATION

The engine location and orientation must remain as the original manufacturer specification

### 5.7.4 OIL/WATER COOLING

Only standard metal-type radiator may be used mounting to standard location. Thermostats are free

### 5.7.5 INDUCTION SYSTEMS

The standard induction system must be fitted with only the following modifications permitted. An air filter must be fitted; this may be of the free flow type.

### 5.7.6 EXHAUST SYSTEM

The standard Manicat must be retained, fitted with an operational lambda sensor

A Klarius race exhaust must be fitted and must comply with MSA Regulation **J5.16 to J5.18** noise regulations.

The exhaust must exit in the normal position.

### 5.7.7 IGNITION SYSTEM

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The type and grade of spark plug is free provided that they are a direct replacement for the standard plug.

High tension leads are free.

It is not permitted to modify the operation of the ECU by the fitment of components either internally or externally

Ma5da MX5 Championship will hold a number of ECU units to match the unit being used. At the discretion of the Eligibility Scrutineer it will be requested that the competitor remove their own ECU unit and replacing it with one supplied by Ma5da MX5 Championship. No competitor will be permitted to leave that event with the respective Ma5da MX5 Championship ECU unit. Failure to comply may result in the loss of championship points

### 5.7.8 FUEL DELIVERY SYSTEM

Unleaded fuel filler trap door and restrictor plate in filler neck may be removed.

### 5.8 SUSPENSIONS

#### PERMITTED MODIFICATIONS

The only permitted dampers are GAZ professional Gold

Springs must be a single piece unit of the 2.25 inch type for the front and a 2.25 "pigtail spring to the rear. Springs rates are free

It is permitted to use a flat spring assister supplied by GAZ shocks, Part No. GAZTM-mk3 to maintain the spring caps in position. Progressive springs are not permitted.

Suspension alignments (camber, caster, toe) are unrestricted within the limits of the unmodified factory adjustments.

Ride height is free

#### PROHIBITED MODIFICATIONS

The use of non standard front and or rear anti-roll bars is prohibited.

#### WHEELBASE/TRACK

It is not permitted to fit spacers or to remove material to alter the vehicle track from standard.

### 5.9 TRANSMISSIONS

#### PERMITTED MODIFICATIONS

Clutch disk and pressure plate are free, providing that they are a plate type (not paddle) and mount on the standard flywheel.

#### PROHIBITED MODIFICATIONS

It is not permitted to modify the transmission in any way that will alter the operation of any of the internal components.

### 5.09 TRANSMISSION & DRIVE RATIOS

The standard 2006-2010 6-speed gearbox, internal parts and ratios shall be used by all cars.

Gear Ratios:

1st - 3.82; 2nd - 2.26; 3rd - 1.64; 4th - 1.18; 5th - 1.00; 6th - 0.83

The OE limited slip differential or OE open differential may be used.

Final Drive Ratio: 4.10:1

## 5.10 ELECTRICS

### EXTERIOR LIGHTING

All standard rear lamps must remain in place and the rear lamps and brake lamps must be fully functional at all times.

Front marker / indicator lights may be removed and replaced with lens covers. These must be securely fitted and occupy the same aperture as the original light

Headlamps complete with their operating mechanisms may be removed but standard headlamp covers must be fixed securely and remain flush with surrounding body panel

### BAD WEATHER LIGHT

A bad weather light is required to be fitted above the boot lid facing rearward and within 10cm of the vehicle centre line. This lamp must have a minimum surface area of 49 sq cm. and a maximum area of 98 sq cm. The bulb rating must be of at least 21 watts intensity or equivalent LED unit. The lamp must be capable of operation at all times.

### MSA

**Regulation K5.**

### BATTERIES

A battery and electric starter motor must be fitted and capable of at least 3 repetitive starts. The battery is free as is the location within MSA Regulation **J5.14**.

It is recommended that the battery is relocated to the centre of the boot area. The ground lead must be indicated with a yellow colour coding and both battery terminals must be covered with insulating materials.

### GENERATORS

A fully working standard alternator must be fitted and electrically connected so that the standard battery charging function is providing to the onboard battery at all times when the engine is running.

## 5.11 BRAKES

### PERMITTED MODIFICATIONS

Any brake pad that fits the standard, unmodified caliper may be used. Brake pad friction material is free but must retain the original size and shape.

Steel braided flexible hoses must be used.

Backing plates may be removed.

Cars with anti-lock braking systems must have the system disabled or removed

The OE driving lights may be removed. The resultant openings may be used to direct air to the front brakes.

### PROHIBITED MODIFICATIONS

The handbrake must remain as standard and be in working order

It is prohibited to use any brake caliper or disc other than the standard or standard spec replacement units.

## 5.12 WHEELS & STEERING

### PERMITTED OPTIONS

| Any steering wheel may be used except wood rimmed type in compliance with MSA Regulation **J5.7**.

| The steering lock must be removed.

| Wheel nuts are free providing they are manufactured from steel and of equal or better quality than OEM. **MSA**

### Regulation Q19.7.

Manual or power steering may be used provided that the steering ratio remains as standard

It is permitted to convert power steering rack to manual

Steering angles are free provided that only the standard mounting points and adjusters are used.

All wheels shall be one of the *three* OE Mazda MX-5 17"x7" wheels.

Style 1: (p/n: 9965-38-7070)

Style 2: (p/n: 9965-36-7070)

Style 3: (p/n: 9965-45-7070)

Or Rota wheel Type ----- 17" x 7"

## 5.13 TYRES

### SPECIFICATIONS

The control tyre for the Championship will be Federal 595 RSR (size 215x45x17)

No alteration to any of the tyres from the manufacturer's specification is permitted. Re-cutting, re-grooving or in any other way modifying the tread pattern is not permitted. All the manufacturers' data must be clearly visible. Buffing of sidewalls to remove data is prohibited.

All tyres must be road legal at the end of each race.

### NOMINATED MANUFACTURER

Federal

## 5.14 WEIGHTS

The minimum weight including driver will be 1125kg for the duration of the race meeting up to and including post event

scrutineering. Should any ballast be required to achieve this minimum it must be securely bolted to the passenger foot well, in accordance with MSA regulation **J5.15**.

## 5.15 FUEL TANK / FUEL

### TYPES

Original fuel tank must be used as per factory specification.

### LOCATIONS

Fuel filler trap door and restrictor plate in filler neck may be removed.

### FUEL

Only pump fuel as defined in [MSA Regulations 'The Terminology (see Pump Fuel)] may be used. The use of power

## 5.16 SILENCING

Must comply with MSA Regulation **J5.16** and **J5.17 & J5.18**.

boosting or octane boosting additives by competitors in any fuel is prohibited. A minimum of 3 litres of fuel must be available.