

OPERATIONS MANUAL

1/5th Scale Mini Class

The purpose of this set of rules is to enable drivers to compete in a controlled class, which offers both a low cost and a level playing field. This class of racing and rule set allows for a very limited amount of option, aftermarket parts or modifications that can be done to your car.

Any aftermarket or option parts have been selected because they offer improved durability or safety, not because they offer an increase in performance. The reason behind this is to limit the cost to all racers.

No modifications are permitted other than the modifications, option and aftermarket parts as listed.

The intent of this class is, that it be an out of the box class with minimal modification allowed. Each approved modification from stock will be listed in these rules, approved optional parts will be shown with **. Basically it is either Black or White. If a modification is not listed, it is not allowed. i.e. Aftermarket alloy screws, coloured washers, home built parts etc.

If you have the need to individualise your car, there is another class that allows modifications i.e. Large scale modified sedan class. The intent of running a stock class will override any grey areas of the rules exploited by others and harsh penalties apply if these rules are not adhered to.

The following rules are to be read in their entirety and to be interpreted with the intent that they were written.

1.1 TECHNICAL SPECIFICATIONS

1. The large scale 4WD 1/5TH Mini, apart from the listed optional parts, must be presented in stock condition.
 - The term 4WD 1/5TH Mini - ***Refers to the original (OEM) 1/5TH 4WD Mini Cooper***
 - The term OEM - ***Refers to original specified parts or specification from the manufacturer***
 - The term Stock Condition - ***As supplied from the original (OEM) Mini 1/5TH, 4 wheel drive manufacturer in stock condition (without upgrades)***

1.2 GENERAL SPECIFICATIONS

1. The large scale 4WD 1/5TH Mini body has to be a genuine scale in appearance and be a true represented model of a 1:1 racing Mini Cooper.
2. Maximum fuel tank capacity: 700 cc
3. Minimum weight, without fuel: 10kg
4. Mini Wheel Base: 510mm

1.3 MINI COOPER

1. The 4WD 1/5TH Mini Cooper has to have a functioning mechanical brake, which has to be capable of keeping the car stationary whilst the engine is running.
2. An electrical failsafe Kill Switch must be fitted to the car. The only function this switch can perform is shutting the engine off remotely via the transmitter or automatic engine shut off if radio contact is lost. **(This function must be demonstrated at Technical Inspection)**
3. Variable ratio transmission is not allowed.
4. The 4 Wheel Drive system (drivetrain) and chassis for the 4WD 1/5TH Mini are to be of the originally specified design and manufactured using the materials, as supplied by the manufacturer.
5. No other function/s, other than steering, throttle/brake are permitted to be used on the radio controller by the driver. Any other electronic or hydraulic systems is not allowed in on the car, with the exception of a transponder and electronic kill switch, to stop the Mini in case of radio failure.
6. The position of the ignition cut-out switch must be marked on the body shell with a white circular decal, 30mm in diameter, outlined in red with a red E in the centre. The switch must remain in the manufacturers original position and not be modified.
7. Side intrusion bars if fitted must be made of nylon, plastic or carbon fibre only.

1.4 SERVO'S & RADIO

1. Maximum two servos are allowed, a single steering, and one brake /throttle servo.
2. Transmitter radio, servos and batteries are open.

1.5 BODY

1. Bodies have to be properly fixed to the chassis and must cover the outer edge of the wheels at the center of the axle when viewed from the top.
2. It is compulsory to cut out the 2 front side door windows.
Option #1: To remove rear windscreen
Option #2: Cut out one or both side rear windows – **Rear windscreen must remain**

****Only one option can be selected not both. Front windscreen must remain at all times****

3. The body shell must be painted or wrapped with all windows to remain clear.
All parts of the Mini Cooper have to be covered by the body. Only the radio antenna, body costs, body pins and body options ie. Mirrors, wipers etc. may protrude outside of body. **You are not allowed to modify the Mini-body by cutting it over the marked trim lines or to widen it by heating it or parts of it.**

Only the OEM 4WD 1/5TH Mini Cooper body is approved for use. *i.e. (Original Equipment Specified from the Manufacturer)*

An optional body mount for the bonnet may be used: **Part Number: FG-090

1.6 WING / SPOILER

1. Only wings or spoilers supplied with the original 4WD 1/5TH Mini bodyshell are permitted.

1.7 BUMPER

1. Foam must be attached to front bumper securely and fitted to suit front of the 4WD 1/5TH Mini body with a minimum 15mm foam overhang forward of plastic bumper

1.8 CLUTCH

1. The clutch must be a non-modified standard two-shoe clutch as per OEM specified with the 4WD 1/5TH Mini with no adjustment capability.
2. **An optional aftermarket clutch spring is allowed, it must not exceed 9500 RPM with a tolerance of + 5% on engagement.
3. ***Clutch engagement will be checked at Technical Inspection***

1.9 BRAKES

1. **Front** – Only cable activated brakes with pressed steel rotors are permitted – as per 4WD 1/5TH Mini OEM specification.
2. **Rear** – Lay shaft brake only as per OEM specification.

1.10 SHOCKS and SPRINGS

1. Original Shock absorbers must not be modified in any manner.
2. Only the following optional springs are allowed:
 - **Part Number: 07182 – Yellow
 - **Part Number: 07183 – Red
 - **Part Number: 07184 – Blue
 - **Part Number: 07185 – Violet
3. Shock oil open.
4. Plastic shock adjusting 16mm rings can be used as an optional part:
 - **Part Number: 07205/06.

1.11 SWAY BARS / ANIT ROLL BARS

1. Only original sway bars as per OEM specification for the 4WD 1/5TH Mini may be fitted front and rear.

1.12 WHEELS and TYRES

1. The treatment of tyres by adding any other chemicals/additives to enhance traction of the tyre is not allowed.
2. Tyre cleaners are not allowed.
3. No tyre warmers of any type are permitted
 - a. Dry Weather Tires: A maximum of two complete sets (4 pairs) of any GRP "C" compound equivalent tire is permitted for each event. Tires must be commercially available and identified as "C" compound equivalent by GRP through the large scale executive. Older versions of the "C" compound tire are permitted for use as long as they can accurately be identified as "C" compound with the original manufacturer mark.
 - b. Wet Weather Tires: A maximum of one set (two pairs) GRP wet weather compound tires. **Only when the track is declared wet**
4. All tyres must be presented **prior** to scrutineering for security marking. Once tires are presented a compound change cannot be made during the event. Only the tires that are marked can be used.

1.13 DIFFERENTIAL

1. Only original OEM specified 4WD 1/5TH Mini differentials with plastic cover and housing. For durability the following optional parts are approved for use as well.
 - **Part Number: 08484 – ALLOY DIFFERENTIAL CONVERSION KIT
 - **Part Number: 68405/01 – 4WD ALLOY DIFFERENTIAL CONVERSION KIT
2. Alloy Housing open centre diffs are permitted
3. No adjustable differentials or limited slip type differential or inserts are permitted. Also no mechanical modifications i.e. springs, washers are to be used in the differential.
4. Differentials must not be locked.
5. **No Front One-Way Clutch Differentials allowed.**
6. Output gear on differential is to be as original OEM specified – 48 Teeth.

1.14 GEAR RATIO

1. OEM specified gear ratio to remain being – 24/40 (LAY SHAFT), 15/48 (DIFFERENTIAL)
2. For durability the following optional parts are approved for use
 - **Part Number: 07439 – ALLOY GEAR CARRIER 52mm – SPECIAL
 - **Part Number: 07439/05 – ALLOY GEAR CARRIER 52mm

1.15 BEARINGS

1. Only standard bearings as original OEM specified with the 4WD 1/5TH Mini are to be used
2. High speed and ceramic bearings are not permitted.

1.16 ENGINE

1. The engine is to be a stock 2 bolt, Zenoah G270, G260 or CY26 26cc non-modified single cylinder, 2 stroke, maximum 26 cc, pull start.
2. Permitted Carburetors include WT603, WT688 & WT997. The WT990 Carburetor is not permitted for use on any of the approved engines.
3. All ignition timing must be mechanically fixed as originally supplied by OEM 4WD 1/5TH Mini manufacturer.
4. No Battery operated ignition allowed. Only a passive ignition system using R.P.M. as the single input parameter is allowed.
5. The Cylinder block must be of a single casting. No independent liners or slipping liners are allowed.
6. The maximum number of admission/transfer ports is limited to four (4).
7. Engine must be air-cooled, the air being driven directly by the flywheel. The flywheel is not to be modified in anyway.
8. The crankshaft must be of split shaft configuration, with enclosed big end. No half crankshafts allowed.
9. An air filter must be fitted to the carburetor. The maximum venturi diameter of the carburetor is limited to 13mm/0.51 inch.
10. An air filter outer cover may be used.
11. All engines to be presented for sealing and should an engine require repair or replacement then that engine is to be presented with replacement parts to scrutineering for sealing prior to racing. **(See Paragraph - 1.16 Item 16)**
12. The original engine as supplied by the OEM 4WD 1/5TH Mini manufacturer must not be tampered with in any manner including the red cowling supplied for Australian identification.
13. All engines must be presented with an engine seal with serial number at scrutineering
14. Any engine presented without **official** red cowling must be stripped down, confirmed eligible and fitted with a red engine cowling, presented to scrutineering and sealed.
15. ****Optional alloy small engine mount can be used:**
 - Part Number: 06485/01 in place of OEM supplied plastic mount.
16. **In the event of major engine issues rules allow replacement of, barrel, piston, ring, gaskets, standard carburettor or other issues at the discretion of appointed scrutineering group and under scrutineering supervision.**

1.17 FUEL

1. Only fuel allowed for use will be petrol/gasoline normally available at automobile service stations. Special fuel like avgas, race fuel etc. is strictly forbidden. The only additive allowed is oil.

1.18 EXHAUST

1. Standard OEM specified 1/5TH Mini (OEM Supplied) Alloy Tuned side mounted 3-unit (chamber) pipe.
2. If a car produces a noise level much in excess of the other Mini's, it is at the Race Director's discretion on whether this Mini is allowed to continue in the race. No open exhausts or pipes are allowed.
3. The total exhaust has to be inside the body.
4. A 7.5% + tolerance for pipe capacity allows for pipe repair work. i.e. 50mm +7.5%= 53.75mm , over this tolerance would requires pipe to be repaired or replaced.

1.19 DRIVE LINE

1. **Optional CV (Constant Velocity) joints for the front end drivetrain Part Number 68415 may be used in place of original front drive shafts

1.20 NOISE REDUCTION SYSTEMS

The application of this rule is at the discretion of the organising club through the Race Director and must be applied and advertised prior to issuing or accepting race entries.

1. All Mini Coopers to be equipped with OEM specified/supplied Foam Filter to reduce the intake noise of the carburettor.

“Cause for Disqualification”

DON'T DO ANY OF THE FOLLOWING > AS THEY ARE CONSIDERED AUTOMATIC BREACHES OF THE RULES AND YOU WILL BE DISQUALIFIED FROM THAT CURRENT EVENT AND FUTURE SANCTIONED EVENTS FOR A PERIOD OF 12 MONTHS AT THE DISCRETION OF THE STATE REPRESENTATIVES AND INVITED PANEL AS NOTED.

- ALTERING THE ORIGINAL GEAR RATIO OF THE MINI
- RUNNING AN AFTERMARKET CLUTCH.
- TAMPERING OR MODIFYING THE MOTOR, CARBURETOR, PISTON, FLY WHEEL, CLUTCH OR EXHAUST PIPE.
- RUN NON PUMP FUEL (E.G. NO RACE BLENDS ALLOWED)
- ***Deliberately breaking the rules, guidelines and intent of Mini Cooper Racing will result in harsh penalties be warned! If you are not sure of the rules ask before you do it.***

Note***

As batches of new minis may vary original specifications at times a chosen panel of experienced competitors will confirm originality of car for scrutineering and accept or decline car presented.

One representative of each club present will rule on any alteration, infringement, discrepancy or interpretation of rules for the 1/5TH 4WD Mini class.

The following panel are invited as interested parties to attend scrutineering and discussions to offer advice and help in maintaining the 4WD 1/5TH Mini class as its original intention of a stock class of large scale.

David W Dean, Victoria - Tel: 0418 360 821

Colin Grenenger, Importer, Queensland - Tel: 0411 468 098

Large Scale Executive representatives

Technical Inspection

Technical Inspection will be conducted on the 4WD 1/5TH Mini Coopers at random. If a 4WD 1/5TH Mini presented is found to be in breach of the rules or intent to breaching of the rules, no results will be awarded to that driver for any previous qualification/sub finals/final and if a subsequent breach is found instant disqualification from the meeting and further penalties awarded at the discretion of the State Representative Panel.

Scrutineering will consist of but not limited to the follow:

Original design and material as supplied by the OEM 4WD 1/5TH Mini manufacturer.

- ›› Checking for any modifications to engine.
- ›› Original gear ratios
- ›› Original unmodified exhaust system fitted
- ›› Foam bumper fitted correctly
- ›› Acceptable body mount/side bracing material.
- ›› Correct control tyre fitted
- ›› Body presentation
- ›› Window cut out configuration
- ›› Overall safety operation of model
- ›› Clutch Engagement
- ›› Battery Mounting – Must be in OEM specified position
- ›› Operation of kill switch
- ›› Operation of brakes

Technical Inspection --- CONTINUED

Accepted of Listed options as follows:

- Alloy engine small mount - **OEM Part Number: 06485/01**
- Alloy gear carrier - **OEM Part Number: 07439 or 07439/05**
- Plastic shock adjusting ring - **OEM Part Number: 07205/06**
- Fuel line open
- Tank breather - as per OEM specification when supplied
- Front CV (Constant Velocity) joints allowed - **OEM Part Number: 68415**
- Front bonnet body mount - **OEM Part Number: FG-090** or a suitable aftermarket version similar to OEM Part Number: FG-090, utilizing either or all of the following materials - carbon fibre, nylon or plastic
- OEM option springs **OEM Part Number:**
 - 07182
 - 07183
 - 07184
 - 07185
- Non OEM side body intrusion guards – **Approved Materials:** plastic, nylon or carbon fibre
- Pre filter over existing air filter
- Alloy inner diff housing - **OEM Part Number: 08484**
- Non OEM clutch spring not exceeding 9,500 rpm engagement + 5%
- Non OEM steering stops
- Non OEM foam and nylon mounts for bumpers
- Additional bolt from chassis to bumper
- Body clips open
- Wheel nuts open
- Additional thread lock compound accepted.
- Grease or material for stiffening differential is allowable. However differential/s must not be locked.
- Radio controller open – Steering, Throttle/Brake and Engine Kill switch functions can only be used
- Servos open
- Servo horns open
- Receiver battery open
- Engine Kill switch is open – The only function this switch can perform is shutting the engine off remotely via the transmitter or automatic engine shut off if radio contact is lost.
- Use of plastic tie straps is open
- Use of high speed or duct tape to repair minor body damage and to foam bumper is allowed
- Shoe Goo allowed for use to repair body shell
- Alteration to brake and throttle linkage lengths, including shaping to ensure smooth operation
- Spacers under suspension arms are limited to a maximum of 6 times the original OEM size

RACE FORMAT:

FINAL A:

Top 10 drivers after a maximum of 6, 10-minute qualifying rounds, move to the main final - 30 minutes duration. Grid positions, determined from qualifying results 1 - 10

FINAL B:

Qualifiers 11 thru 15 (**minimum 5 cars**) or qualifiers 11 thru 24 (**maximum 14 cars**) - 15 minutes duration

Note***

- In the event of only 14 drivers (maximum) entered or remaining in the event. All drivers qualify for Final A. Grid positions, determined from qualifying results 1 - 14
- All remaining finals depending on numbers are to follow the Final B format
- Only **(1)** 10 minute delay can be called for Final A
- All cars must pass through Technical Inspection, on completion of all finals.
At the discretion of the state representative panel, the top 3 cars will have their car and or engine pulled down on completion of Final A

RAIN / WET TRACK IN RACE CONDITIONS

The use of a wet weather tyre with our 4 Wheel Drive cars is available and tested under extreme wet conditions and works great. Unlike most categories of RC racing it will enable racing to be completed over a wet weekend. This provides a result for drivers especially from interstate, who have spent a large sum of money traveling to the event.

Note***

- Wet weather tyres must not be used on a track deemed **(DRY)**
- Track is declared **(WET)** by the state representative panel
- In the case of wet running only, protection to the engine air intake is allowed to ensure no water enters the engine. This must be in the form of a cover over the original air intake device. Original air intake assembly must not be altered.
- One complete set (2 pair) of wet weather tyres allowed, must be presented to Technical Inspection for marking prior to racing **(start of event)**
- No falling rain and or puddles (standing water) on track
- Heat conditions to be counted only if each heat or round is run under similar conditions
- Cancellation of a heat or final, due to extreme weather conditions is to be decided by Race Director only
- If in the event a final has run for 15 minutes or more and is stopped. The race will be deemed as completed. Results will be determined from the lap prior to the cessation of the race.
- In the case of wet running only, protection to the engine air intake is allowed to ensure no water enters the engine. This must be in the form of a cover over the original air intake device. Original air intake assembly must not be altered