



## Thunder Rods – 2023 Rules & Specifications



### INTRODUCTION

The Thunder Rods are now an integral part of the racing at DMC Race Promotions, with the emphasis on providing close and enjoyable non-contact racing at a reasonable cost.

Strict controls are enforced in the formula, with the emphasis always being to keep the costs down for the drivers.

## **VIOLATIONS**

When referring to the engine, gearbox, differential, mechanical or construction, rules and regulations the principle will always be: Unless permission is specifically granted to make modifications, or any variation, nothing may be done to alter or change in any way the standard parts.

Unless these rules state you can do it, you CANNOT DO IT.

Cars, Engines and Fuel will be checked on a random basis.

Violations will result in an immediate suspension of all racing facilities and any refusal will also result in an immediate suspension.

N.B. Drivers are reminded that scrutineer checks can be carried out at any time. If parts are suspected of being illegal make sure you leave them with the promotion if you do not agree. If you refuse it will automatically make the parts illegal. It is the responsibility of the driver to prove to the promotion that the part is legal by the way of written proof of where the part originated. This must be done within seven days, otherwise the part(s) in question will be deemed to be illegal and will result in immediate suspension from racing and referral for disciplinary action.

**2023 rule changes in red bold.**

### **1. CARS**

Only 1600cc, 3-door, 4-door or 5-door cars can be used, please see list below.

The car must have all steel body.

#### **Cars eligible for use:**

Vauxhall Astra Mk 2, 3, 4 and 5, Belmont, Cavalier or Vectra.

Peugeot 306, 307, 309, 207(4-door model only).

Citroen ZX, Zsara.

Ford Sierra, Escort Mk 4, 5 and 6, Orion, Focus.

VW Golf Mk 2 and 3.

Cars must be brightly coloured and neat and tidy at all times. This standard is required to be kept up throughout the drivers racing season. Cars with tatty, dented and badly battered panels will not be passed by the scrutineer.

## **2. ENGINE**

All engines will be 1600cc.

Engines must remain in original position and on original mountings.

Engines must be the type originally fitted to the car.

No turbos or fuel injections.

Only 8 valve engines permitted.

Fuel injected engines may be used but with a manifold and carburettor from the same manufacturer as the car. The manifold may be modified to fit, either by slotting bolt fitting holes or by manufacturing an adaptor plate and either welding or bolting to original manifold.

All engine internals must match engine codes stamped on block and code must be known and visible to the scrutineer.

Mixing and matching of components is NOT allowed, except for the camshaft. Any standard camshaft from the manufacturer is permitted.

An after-market camshaft may be used, but must not exceed the manufacturers' original specification.

It is permissible to have the cylinder head skimmed.

No other machining of any other components is allowed.

## **3. EXHAUST SYSTEM**

Standard exhaust system downpipe must be used, with single pipe and at least one silencer fitted. This must terminate no further forward than the back axle

## **4. CARBURETTOR**

Must be as listed for car type:

Vauxhall must use 20-24 Pierburg 2E3

Peugeot/Citroen must use 24-27 Zolex Z2 32/34

VW must use 22-26 Pierburg 2E2 28/30 chokes

Ford Escort/Focus CVH 28-32 chokes TLDM21/23 venturi dia.

Ford Sierra 26-27 DGAV

Only modifications permitted are:

Main jets and air correctors may be changed

Needle valve/ fuel inlet valve no bigger than 1.80

Cold start devices may be removed

A secondary fixing on the fuel feed inlet is required

An electric fuel pump may be used

Air filter may be removed and replaced with performance type

No forced air intake.

Vacuum unit for 2nd choke butterfly operation may be changed to spring operation but not allowed to open together.

## **5. RADIATOR**

Any radiator and cooling fan may be used, located in original position by bracketing.

## **6. SUSPENSION**

Suspension must remain standard except where stated.

Front coil springs are free. The front suspension bottom spring seat can be modified to accept a competition spring but must be welded to strut casing. The original top must be used but can be modified to accept springs of different diameter.

Rear springs are free, but must have a secondary fixing made of metal i.e. chain or steel band with the ends bolted.

Negative camber on passenger side front wheel is free. This may be achieved by slotting or re-drilling of cross members/ bottom of suspension units. The standard driveshaft for the car must be used, but washers may be added. The driveshaft must have at least one thread protruding through an untampered nut.

Top strut pick up point may be slotted.

Driver's side must remain unaltered apart from coil springs.

Wheelbase must be as standard for type of car, +/- 1.5".

Gas shocks can be used if originally fitted

If unable to repair accident damage at a meeting, it must be completed for the next meeting and to the original spec.

## **7. BODYWORK**

No welding for strength.

Front and rear doors (driver's side) may be seam welded for safety.

All other panels tack welded only – this is defined as 2" of weld with 6" gap before next weld.

All bulkhead holes must be closed off to provide a firewall between driver and engine.

All doors and bonnet must be secured shut.

Headlamp and rear lamp apertures may be closed off with 20 gauge aluminium.

Original bumpers must be fitted at all times.

Doors and bonnet only may be skinned.

Front grilles must be fitted

No strengthening of chassis

No tow bars

All glass must be removed from the car

## **8. GEARBOX & DIFFERENTIALS**

Gearboxes must be as manufactured to the vehicle range.

Ratios can be changed within range and must be as manufactured i.e. no removal of 3<sup>rd</sup> or 4<sup>th</sup> gear.

No locked differentials.

Driveshafts must remain as standard for car type.

A flywheel inspection hole must be cut on gearbox bellhousing for scrutineering purposes. This hole or slot (approx 50mm x 50mm) should be located in an appropriate position on the bellhousing that allows both sides of the flywheel to be checked.

## **9. BRAKES**

Brakes must be as for 1600 model of car (i.e. no brakes from 2000cc model can be used if higher spec.)

Brakes must work on all 4 wheels

Handbrake must be working

## **10. WHEELS & TYRES**

Any standard road wheel to the car can be used.

Alloys are permitted.

No competition wheels.

Maximum width of rim is 6".

All balance weights must be removed.

The only tyre that is permitted is the Toyo Proxes TR1 195/50/15.

No tyre softening is allowed – tyres will be checked on a random basis.

## **11. ROLL CAGES**

The minimum requirement is a four post roll cage with down bars in support of the A&B posts, constructed from mild steel members, minimum size of 32mm x 32mm x 38mm x 2.5mm box or tube, all securely welded at all joints and must include the following:

A 230mm square plate, minimum 3mm thick, welded between the base of the uprights and the floor for additional strength.

One horizontal bar between A post (at dashboard level).

One horizontal bar between B post at approximately mid height and adapted to form support to the seat/seat headrest or a seat hoop.

Two "chicken" bars in the driver's door aperture and two in the passenger door aperture.

There must be two connecting bars between the chicken bars on each side of the car.

Chicken bars are to fit between A&B post support down bars and no further. Bars that lay on the sills will not be classed as chicken bars.

Two down bars, one each side from the roll cage top, to either the rear suspension turret or into the boot well, terminating 100mm short of the back panel.

The following members may be added (to the same material specification as the roll cage):

Two bars, one each side, from the B post down bar base, rearward to the suspension turret.

A cross bar fitted across the rear suspension turrets; this may be cranked and welded to the floor panel in a central location.

Members may be positioned from the roll cage, forward through the bulkhead and connected to the front suspension turrets. Members must be within the engine bay aperture and horizontal (within practical limits).

Strut braces are optional.

Additional bars in passenger side to support front roll bar, rear mounting area (in the foot well). Bars must be positioned low down such that access to the driver is not limited.

One horizontal bar each side between A&B post support down bars at sill height and between B post (to protect legs/feet in a side impact situation)

One diagonal member between either B post support uprights or rearward member.

No suspension components may be fixed directly to roll cage/support members.

All members must be positioned within the body lines and fitted as supports/protection NOT armouring.

No other members must be added as the list above describes the full limit of roll cage construction that is allowed.

## **12. STOP LIGHTS**

Either two stop/brake lights or one single stop/brake strip-light must be fitted onto the rear parcel shelf or hung from the roof.

If two lights, they must be a minimum of 30 inches (762 mm) apart facing rearward.

Lamp(s) must be operated by the standard stop light switch as fitted to the particular model of car. No other switches or modifications to switches to be made.

Bulbs to be of 21 watt intensity.

## **13. SEATS**

You must have a competition type Driving Seat with a head restraint.

The seat should occupy its original position where possible and properly bolted at shoulder height and on both of the sides and back, with a suitable framework or seat stiffeners.

## **14. NUMBERS**

Numbers must be displayed on both sides of the car in contrasting colours with a minimum of 12" high in 2" strokes.

Regulation fin numbers 9" high in 1½" strokes minimum (see '17 Roof Colours' for grading & fin plate colours). The fin plate must be fitted on or above the roof line but be no higher than 12" in total from the roof.

All numbers must be of professional appearance and can be painted on the roof itself in addition to the fin plate.

The drivers name must appear across a visor.

Scrutineers will instruct drivers to change their numbers if lap scorers find it difficult to read them.

## **15. BATTERIES**

Batteries must be securely clamped in place and covered with a leak proof material to prevent spillage of acid.

They must be fitted inside the car, but the floor cannot be cut to accommodate them.

They must be fitted at least 6" from the fuel tank.

An electrical cut/off switch must be fitted to the R/N/S corner of the car.

**Cars with an alternator fitted must have the correct isolator switch fitted so as the engine will cut out when required.**

If the car is fitted with an electrical fuel pump, a switch must also be within easy reach of the driver.

Starter motors must be fitted and in working order at all times

## **16. FUEL SYSTEM**

Petrol tanks must be fitted in the rear seat area and must be securely fixed with metal straps and bolts.

Tanks must be metal and must not be more than 10 litres capacity; they must have screw type metal caps.

An electric pump may be fitted in place of the mechanical fuel pump.

The original petrol tank of the car must be removed.

A manual shut off tap must be fitted in the new system, within easy reach of the driver.

Fuel lines must be of steel or copper type.

A breather pipe, which must incorporate a one-way valve, must be fitted.

The lower end should go down through the floor close to the inner sill on the side of the car furthest away from the exhaust outlet.

The pipe should be of steel or copper but can be joined with metal covered flexible fuel pipe and secured with good quality hose clips. The pipe should be held securely in place with pipe clips or cable ties.

All petrol pick up pipes must draw through a stand pipe from the top of the fuel tank.

Four 2" holes must be drilled at the lowest point under tanks to allow spilled petrol to drain.

A firewall between fuel tank (including filler cap/pump) and driver must be fitted.

## **17. ROOF COLOURS**

All cars must start from the correct grade as notified by the promotion.

Novice drivers start as White grade, and progress through Yellow, Blue and Red.

Thunder Rods must signify their grades via their roof fins. The fins must be as follows:-

- White Grade – Black numbers on White background
- Yellow Grade – Black numbers on Yellow background
- Blue Grade – White numbers on Dark Blue background
- Red Grade – White numbers on Red background
- Points Champion – Black numbers on Silver background

The rear of the fin must be plain & white in colour, the roof of a car cannot have a championship status unless the driver is the reigning champion & a roof colour has been designated to that championship i.e. Green or Green & White Chequered for Irish Champion.

Not having the correct roof grade displayed will mean starting from the rear of the grid.

The Steward of the meeting reserves the right to re-grade any driver, at his discretion, at any time.

If you win a race at a meeting you will start the remaining races from the rear of your grade.

Should you win another race at the same meeting - you will be automatically upgraded.

## **18. SIGN WRITING**

The drivers name must appear plainly on the sun visor. Other writing is confined to sponsors or mechanics names, which must have the approval of the promotion at all times.

## **19. SAFETY EQUIPMENT**

### **ORCi Driver Safety Equipment Specification Regulations**

The "Driver Safety Equipment Specification Regulations" are a common set of regulations, produced by the ORCi, governing the safety equipment used by drivers, and applicable to all ORCi sanctioned formulas.

These regulations are located in the "Technical" section of the ORCi website where they can be accessed by anyone, and managed in a controlled fashion to ensure integrity and consistency across formulas.

Drivers should regularly consult the ORCi website for the latest applicable regulations and updates:

**ORCi Website Technical Section:** <http://www.orci.co.uk/Content/Technical>

**ORCi Website Home-page:** <http://www.orci.co.uk/Home>

**Follow the ORCi on Social Media:**

**Facebook - @OvalRacingCouncilInternational**



## **21. PERSONAL SAFETY**

Drivers are advised that under Health & Safety, they are responsible for their own and their Mechanic's actions.

Promoters have had complaints made about Registered Drivers & Mechanics consuming large amounts of alcohol at meetings, which could affect their judgement or be detrimental to their health, when medical attention has to be administered by Paramedics, St John's or Hospital Staff.

Should an incident occur that proves fatal on the raceway and you are involved, it is likely that the Police will want to interview you.

### **If you drive, don't drink!**

Scrutineers and Officials will report to the Clerk of the Course anybody they believe is under the influence of drink or drugs. Drivers whom it is thought are under the influence may be breathalysed. You have been warned!

## **22. PETROL**

In line with ORCi directives, only fuel obtained from normal roadside pumps is permitted for use.

Petrol must only be brought to the event in a metal (Jerry can) type containers.

## **23. RACE RECEIVERS**

Race Receivers are now mandatory for all Thunder Rods drivers.

These are a one way communication link from the Steward to the drivers on track.

The system enables the Steward to give instructions or warnings to a specific driver, or to all drivers warning of possible track hazards etc.

When the Steward transmits via this system, his instructions/warning are heard by every driver at the same time.

Any driver whose Race Receiver is not working when forming the grid prior to a race will not be allowed to race, unless it can be repaired before the race start.

## **24. TRANSPONDERS**

**During 2023, DMC Race Promotions will be investigating the possibility of making transponders compulsory in the Thunder Rods formula for the 2024 season. Discussions will take place with licenced drivers.**

## **25. GENERAL RULES OF RACING**

Each driver is only permitted one car per meeting and each car is only permitted one driver per meeting- this will be strictly enforced.

### **Flag Signals**

- Waved Green Flag – Go, the race is on.
- Waved Red Flag – Stop racing slow down & stop.
- Chequered Flag – Race winner has crossed the line, **continue to race until the Red Flag is shown.**
- Held Yellow Flag – Beware, you are approaching a hazard on the track, continue to race.
- Waved Yellow – Slow down to 15mph, hold your position, and do not overtake any other cars.
- White Flag with a Blue spot – Oil on the track.
- Waved Black Flag - You are disqualified, pull off the track immediately.
- Black cross on a White board – You have committed an infringement and may be penalised in the results.
- White Flag with a Red Cross – Technical Disqualification, leave track immediately

## **26. RULE CHANGES**

The Promotion may, at any time, make amendments to the specifications in the interests of safety. It may also make amendments in the interest of expense to the driver or in areas that are determined to be detrimental to the future of the formula, and also if unnecessary advantage has been deemed. Additionally, if it is felt the formula is drifting away from its original concept. Current registered drivers will be notified automatically, but if you are building a new car from these specifications, please check with DMC Race Promotions, who will advise of any amendments.

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