



## Thunder Rods – 2017 Rules & Specifications



### INTRODUCTION

The Thunder Rods are now in their third season 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. **2017 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/ Citroen 306, 307, 309, 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.**

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 Zolox 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.

### 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 permitted up to 10 degrees.~~

**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".

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 only may be skinned.

Front grilles must be fitted

No strengthening of chassis

No tow bars

All glass must be removed from the car prior to arriving at the race venue.

## **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 T1R 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. 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 must be Black 9" high in 1½" strokes minimum. The fin plate must be white, 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.

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.

All tanks must be fitted with a breather system which prevents spillage if a car is inverted.

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.

The Irish Champion will carry a green roof and will always start from the Red grade.

All cars must have 90% of their roof painted in their roof grade colours.

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.

Silver stripe denotes Points Champion.

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**

### **Helmets**

Helmets must be of a minimum standard as directed by British Oval Racing Safety Executive (B.O.R.S.E).

These are FIA8860-2004, Snell SA2005, Snell SA2010, SFI Foundation 31.1A, SFI Foundation 31.2A.

The E2205 European standard helmet may be used in Fibreglass, Carbon or Tri-Composite form only i.e. NO POLYCARBONATE helmets are allowed.

It is important that the helmet fits the driver correctly.

Shatterproof goggles/visors must be worn although tinted visors are not advisable.

Your helmet must display the current ORCi (ORC15) sticker.

### **Clothing & Equipment**

Drivers must wear bright coloured racing overall type clothing of flame retardant Proban, or a high specification material, and this must be maintained in a clean and tidy condition in view of the public. N.B. If wet weather clothing is used this must be worn IN ADDITION TO and NOT INSTEAD OF the regulation flame retardant overall type of clothing described above.

Neck braces are recommended.

Fireproof balaclavas are MANDATORY and must be marked appropriately.

Fire retardant gloves are MANDATORY and must be marked appropriately.

### **Safety Belts**

A minimum of 3" (75mm) wide safety belts (1.75" (40mm) sub-strap) are mandatory.

This must be a full five point buckle release harness (including NASCAR type) with sub-strap and must be fitted and bolted to the floor and/or the roll cage.

Shoulder belts with a sternum protection latch are highly recommended.

The sub-strap must be used at all times and all belts must connect to the quick release buckle.

In the case of NASCAR lever latch buckles it is advisable to fit a secondary means of detent to prevent overall sleeves accidentally unhooking buckles during racing. A small section of Tubegrip elasticated bandage slid over the hooked buckle serves this purpose.

Special attention must be paid to the condition of seat belts and fixings once fitted.

An extra bar is to be fitted to roll cage behind driver's seat approx 4" below shoulder height of driver.

Your seat belts may be fixed to this bar. The bar is to be of roll cage material specification.

A quick release cloth window net must be fitted to the driver's door window aperture. The netting should have holes not larger than 7.5cm or 3" wide.

It should come down level with the steering wheel, and should be flexible and easily removable separate to the movement of the door.

### **Fire Extinguishers**

A 1kg dry powder gauge fire extinguisher is highly recommended and, if fitted, this should be in a tube with a spring top and should be within easy reach of the driver. Old type BCF (green) fire extinguishers are not permitted. All tow vehicles must carry a minimum of a 2kg fire extinguisher dry powder or gas, which must be within easy reach of the driver and mechanics at all times, especially when refuelling.

## **20. 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.

## **21. 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.

## **22. 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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