

# MALAYSIA CHAMPIONSHIP SERIES 2024

## TECHNICAL REGULATION

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### C. TECHNICAL REGULATION

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## MALAYSIA CHAMPIONSHIP SERIES 2024

### C. TECHNICAL REGULATIONS

#### NOTE:

#### **FIA Group N and Group A Cars must have current and valid homologation**

Eligible cars must be mass-produced, Series Production cars, having at least 4 seats and in accordance with the dimensions defined by the FIA for Touring Cars.

Hybrid cars are defined by vehicle having two power sources to power the vehicle. The control system on these vehicles is free; however, the other mechanical parts of the car are subject to this regulation.

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.

READ IT, do not rely on memory. The clauses in the regulation are to be read as follows:

'shall', 'must' and 'will' indicate a compulsory requirement.

'Should' indicates a recommendation.

'May' indicates an option.

All parts of the car shall be identical to those used in the production model except where otherwise permitted by these regulations.

**Standard:** The word 'Standard' used within these technical regulations as a description of components is to be interpreted as 'The specified component from the manufacturers' or partners' original parts list for the model / engine shown on the entry form or registration form. No modifications permitted beyond the repair or adjustment processes specified by the manufacturer. Checking will be by comparison to spare parts supplied by the manufacturers official agent'.

**Production:** refers to original specification parts and components intended for a certain market and/or country. To avoid dispute, the competitors must clearly states in the vehicle specification sheet, the actual market and/or country for which the vehicle was intended.

**Original Equipment/ Stock:** refers to optional accessories made by the chassis manufacturer. The accessories must be mass produced and offered for sale to the general public.

**STANDARD PART:** Is a part, the specification, features, location and method of operation of a part are as provided when new by the motor manufacturer for the model and date of car.

**STANDARD PATTERN PART:** Replacement part that has a similar form shape and features as the standard part and is made using similar materials and manufacturing processes e.g. A standard part manufactured by a non-original equipment supplier that is fully interchangeable with the standard part.

Where clearly permitted in these regulations a part may be:

- (a) Re-worked, provided that the part remains identifiable as to its origin. The extent of the rework will only be as allowed by these regulations. Complete substitution is forbidden, or
- (b) Removed, or
- (c) Added, or
- (d) Substituted, by another of similar function but different performance characteristics. The limitations on the specification of the substituted part will be stated.

Where a part is defined as 'free' then it may be reworked, removed, added or substituted.

Rework of adjoining parts is only permitted where specifically allowed by these regulations.

It is permitted to repair a part, however the method of repair shall be such that the physical characteristics related to its function shall be the same as a new standard part.

Lightening of a component is allowed provided the component is non-structural and it is done in a neat and safe manner (e.g. no rough finishing etc). The scrutineers will have the right to ask a competitor to replace part(s) and/or component(s) that are deemed dangerous.

Threaded fasteners are free, provided the material type is not changed.

Titanium is prohibited for any parts.

The words "Variable Cam Engine" refers to engines, which have a device that alters the characteristic of the cam timing or advance. This may be actuated via hydraulic pressure or electrically.

**CHASSIS:** Chassis must be as per manufacturer's dimensions and design. VIN numbers will be checked to ensure the chassis is that of a standard car. VIN numbers must be clearly visible and readable by the Technical Director / Scrutineer.

**It is the responsibility of the entrant to ensure that the car meets the criteria set forth in this technical regulation.**

## **SECTION A**

### **1) GENERAL**

Art. 1 The Organiser reserves the right to amend the present regulations in agreement with the local ASN. The regulations are subject to change, which will be published via Additional Supplementary Regulations.

Art. 2 To be eligible, all cars must comply with the prescriptions of the present technical specifications. Any unauthorised modification is strictly prohibited.

Art. 3 Only the organiser decides on the admission of a car and the decision taken is final. This point is explicit and completely accepted by all the competitors and drivers by submitting their entry. Any protest against the classification of admission of a car following the organiser's decision is consequently not possible.

### **2) ELIGIBLE CATEGORIES**

A) Categories eligible for the 2024 Malaysia Championship Series are as follows:

**2.1 T – Production (TP)**

**2.2 M – Production (MTC)**

**2.3 S – Production 1 (SP 1)**

**2.4 S – Production 2 (G) (SP 2 (G))**

**2.5 S – Production 2 (V) (SP 2 (V))**

### **3) STANDARD TECHNICAL REQUIREMENTS**

#### **3.1 GENERAL**

The provisions of Art. 253 for Group N of Appendix J of the FIA International Sporting Code apply in full.

#### **3.2 ADDITIONAL FASTENERS**

Two additional safety fasteners must be fitted for each of the bonnet and boot lids. The original locking mechanisms must be rendered inoperative or removed.

#### **3.3 DRIVER'S SEAT**

The original driver's seat must be replaced by an FIA-homologated competition bucket seat (8855/1999 standard) with five (5) passages for the safety harness straps.

The original seat mountings may be removed. This is not considered as a structural part. The use of the competition seat mountings homologated with the bucket seat is recommended. Hans compatible seats are recommended.

### 3.4 TOWING DEVICE

All cars will be equipped with a rear and front towing-eye. It can be steel tow hook with minimum 50mm inside diameter or Strap type. This towing-eye will only be used if the car can move freely. It will be clearly visible and painted in yellow, red or orange. For steel tow hook maximum protrude from the front body work is 6cm and 3cm at the rear part.



### 3.5 SAFETY HARNESS

A safety harness equipped with a turn buckle release system and having a minimum of five (5) anchorage points, homologated by the FIA in accordance with Article 253.6 of Appendix J, is compulsory. Hans compatible harness are recommended.

### 3.6 EXTINGUISHERS – EXTINGUISHING SYSTEMS

Automatic extinguishers homologated in accordance with Article 253.7.2 of Appendix J are recommended. During events, all plumbed-in extinguisher systems must be in an 'Armed' condition (ie be capable of being operated without the removal of any safety device) at all times whilst taking part in practice sessions or races including until released from parc ferme. (Manual should be armed).

### 3.7 HEAD AND NECK SUPPORT (HANS)

Head and Neck Supports (HANS) safety device is compulsory for all categories.

### 3.8 HELMETS (FIA Appendix L Chapter III Art. 1)

All drivers must wear crash helmets which meet one of the standards listed in FIA technical list N° 25 of Appendix J.

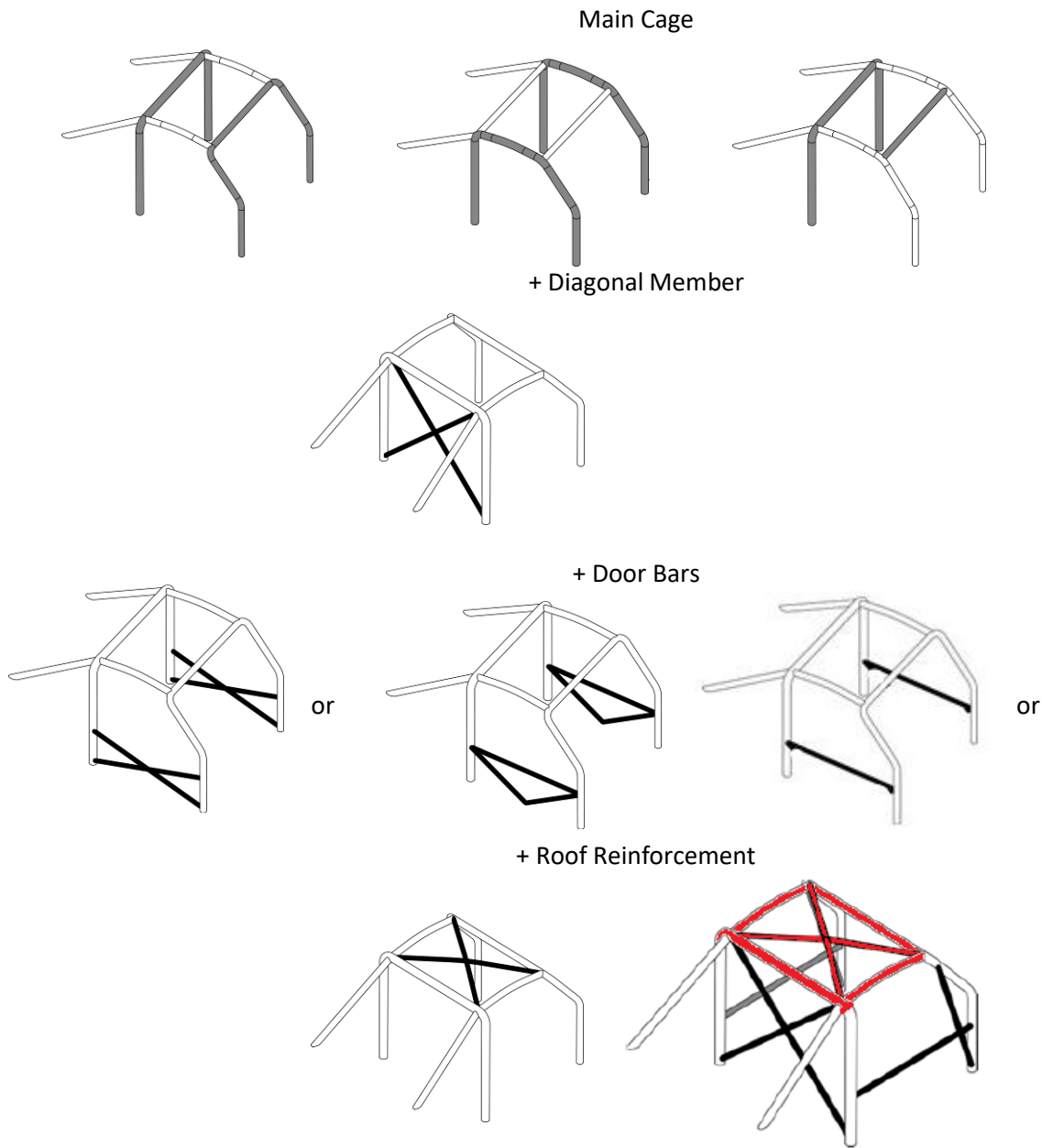
Only helmets approved in accordance with FIA standard 8858 (Technical List N°41), 8860 (Technical List N°33) or 8859 (Technical List N°49) are authorised.

No helmet may be modified from its specification as manufactured, except in compliance with instructions approved by the manufacturer and one of the FIA listed standards organisations, which certified the model concerned.

Any other modification will render the helmet unacceptable for the requirements of the present article.

### 3.9 ROLLOVER STRUCTURES

A recommended rollcage complying with Article 253.8 of Appendix J. Minimum requirement Art 8.2.



FIA Appendix J – 253-68

Roll cage mounting points may be welded or bolted to the body. They may be attached to the boot and rear wheel arches. Minimum number of points must be 6 for touring cars. No inferior quality tubing will be accepted.

Safety roll bar that is near longitudinal and near to vertical single piece tubular hoop located along the right or left side of the vehicle, the front pillar must follow the windscreen pillar (pic 2.6 (ii)).



Pic. 2.6(ii)



Should removable members be used in the construction of a safety cage, the dismantlable joints used must comply with a type under FIA Article 253.

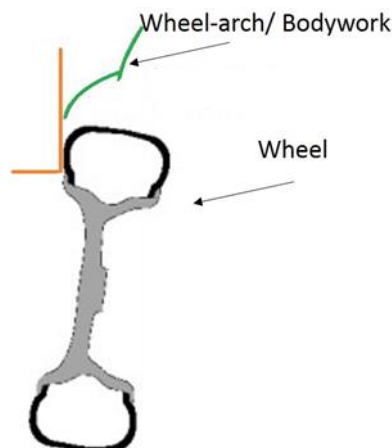
### 3.10 LIGHTS

All front, tail and brake lights must be operating at all times during the race or practice. Cars with malfunctioning lights will be flagged in with mechanical flag (Black with Orange Disc) to carry out repairs on lights. The Clerk of the Course shall immediately inform the Competitor, who must remedy the situation during the next pit stop, unless the Clerk of the Course, for safety reasons at his own discretion, decides to order the immediate stopping of the car in order for repairs to be carried out.

**Note: Any kind of flashing light either in front or at the rear of the car is not permitted. This is reserved for official cars only.**

### 3.11 WHEEL VISIBILITY

The upper part of the tyre, down to the flange over the wheel must be within the perimeter of the wheel-arch/ bodywork when in plan view and viewed from the front. Kindly refer to the respective article(s) of each category/ class for the specification/ dimension.





### 3.12 CHECKING TOOLS

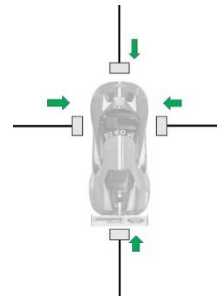
The organiser will have a stock of equipment/ tools at event(s) for use in eligibility checks on the following components:

- Ground Clearance
- Vehicle Weight
- Bore & Stroke
- Fuel Tester

#### Ground Clearance Measurement

Measuring location:

The measurement will be conducted in a designated area during technical scrutineering. The measuring tools are available to the participating teams to check the minimum ground clearance after consultation with the technical director.



### 3.13 ANTI-THEFT SYSTEM

The locking system of the anti-theft steering lock at the steering wheel column must be rendered inoperative.

### 3.14 BALLAST

Any ballast required must be attached to the shell/chassis via at least 4 mounting points using bolts. Where ballast is fitted, it must be fitted in the passenger's location. Refer diagram to Appendix 1.

### 3.15 MINIMUM WEIGHT

Minimum racing weight will not include non-compulsory items such as driver cooling system, team camera, radio, etc.

### 3.16 FUEL

Only RON 97 fuel sold by Petronas ROVR Fuel Service kiosk at the Paddock is allowed to be used thru-out the event.



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## SECTION B - T-PRODUCTION (TURBO)

### **SPECIFIC MODIFICATION (UNDER ARTICLE 277 OF FIA APPENDIX J) VALID FOR T-PRODUCTION CAR**

(Other specification not mentioned, please refer to respective articles of FIA at [www.fia.com](http://www.fia.com))

### GENERAL PRINCIPLE

#### Permitted Vehicles

<b>FIA Article 254 :</b>	<b>Group N Cars</b>
<b>FIA Article 255 :</b>	<b>Group A cars</b>
<b>FIA Article 277 :</b>	<b>Non FIA Homologated Touring Cars (2500 minimum annual production)</b>

The T-Production cars are based on Turbo charged mass production engines, models and are fundamentally different from each other. Engine capacity for any Two Wheel Drive (2WD) vehicle **or Four Wheel Drive (4WD)**. However, entries must able to produce document(s) should any conversion from 4-wheel drive to 2- wheel drive is made and it must be remained for the rest of the season. It is NOT permitted to convert a front wheel drive car to rear wheel drive or vice versa.

**The nominal cylinder capacity is limited to 2000 cm<sup>3</sup> maximum.  
Only the Standard supercharged / turbocharged unit is allowed.  
Chassis and engine must be from end production of 2015 and above.**

All family brand of mass production engine, transmission, suspension and body parts are allowed.

To create a more level playing field for competition, the organiser has the ability to apply fine adjustments in the performance of individual makes to allow each model to be competitive. A calculation tool allows the targets for balancing the different car models to be met, without human interpretation or decision-making, using mathematical formulas based on the quantified, public, specific, measured data obtained during each race.

The following modifications may be applied either reduce or add to:

- i) Minimum weight of the car
- ii) Ride height
- iii) Restrictor
- iv) Any other technical modification that the organiser may deem necessary.

### **T1. MINIMUM WEIGHT**

The following minimum Car dry weight (excluding Driver and fuel) must be respected at all times during the Event. **BOP can/ will be implemented after the Official Practice of Round 1**

<b>General Model</b>	<b>- 2WD 1600 cc – 1800cc</b>	<b>1,100kg</b>
	<b>- 2WD 1801cc – 2,000cc</b>	<b>1,250 kg</b>
	<b>- 4WD additional 60kg from the minimum weight.</b>	

**The organiser has the right to accept any turbo vehicles below 1600cc, subject to the MCS Committee's agreement.**

**Specific Model (with BOP)**

<b>Make</b>	<b>Model</b>	<b>BOP Ballast Weight (kg)</b>	<b>Turbo Inlet Restrictor (mm)</b>	<b>Total min. Racing Weight (kg)</b>
TBA	TBA	TBA	TBA	TBA

The weight of any car may be checked at any time during the Events. The minimum qualifying and finishing from race(s) weight for cars shall be the specific weight of car plus success/ penalty weight ignoring the fuel factor. These weights are official for whatever weighing taken when the driver is not present.

If a car loses a part during a Qualifying Session or a Race, the weight of this part may be taken into account during weighing at the discretion of the Clerk of the Course, following consultation with the Technical Director.

**T2. INTERIOR**

- T2.1** The steering wheel is free.
- T2.2** The front seat may be changed for a racing type in order to use 4-point seat belt, minimum. All other seats may be removed.
- T2.3** The air-conditioner and radio equipment (including wiring) may be removed.
- T2.4** All carpets and sound proofing material and interior trim may be removed.

**T3. ENGINE**

The Engine as supplied in the respective model may be modified, provided that the original intake manifold and/or throttle body are used. These may be freely modified internal turbo/supercharged and will be rated according to FIA coefficients. The Scrutineers reserve the right to seal any engine they see fit to do so. Any such seal must only be broken by the Scrutineers, breach of this will be penalised with exclusion from the Race.

The addition of a supercharger not complying with the original system is consequently not eligible.

Balance of Performance device (data logging weight & ride height) appointed by the Organiser is mandatory. A bulletin will be issued for further update.

**T3.1 CYLINDER HEAD**

- T3.1.1** MUST remain to standard specifications. No material may be added to or removed from the cylinder head; inlet and exhaust ports may not be modified in any way and must remain as cast and as per standard specification..
- T3.1.2** The camshaft and cam timing must remain standard.

## **T3.2 IGNITION**

**T3.2.1** The spark plugs/igniters (glow plugs) are free.

**T3.2.2** The high tension plug wires are free.

**T3.2.3** Modification to advance the ignition curve of the distributor is permitted provided the distributor is the original part.

## **T3.3 COOLING SYSTEM**

**T3.3.1** The thermostat is free or may be removed. The control system at which the fan cuts in is free. All water bypass hoses on the engine block and cylinder head may be sealed off.

**T3.3.2** Larger radiator and/or Intercooler is permitted provided it fits in the original location.

**T3.3.3** Oil coolers may be fitted. Metal braided hoses must be used to avoid bursting in aftermarket oil coolers.

**T3.3.4** The pipes between the supercharging/ turbocharging device, the intercooler and the manifold are free but their only function must be channel air.

**T3.3.5** The liquid cooling lines external to the engine block and their accessories are free. Lines of a different material and/ or diameter may be used.

**T3.3.6** The radiator fans are free. Any water spraying system is prohibited.

**T3.3.7** All air openings must have the sole effect of inducing the necessary air for the cooling of the radiator, and must not have any aerodynamic effect.

**T3.3.8** The radiator frame should look original from the top view.

**T3.3.9** Radiator & intercooler mounting position are free but must be within the original body work.

## **T3.4 INDUCTION SYSTEM**

**T3.4.1** The original fuel injection system must be retained but may be modified. Air filters are free.

**T3.4.2** The inlet manifold may be internally modified.

**T3.4.3** Injection nozzles are free.

**T3.4.4** Fuel pressure regulators are free.

**T3.4.5** Only the originally equipped fuel tank or an FIA FT3 1999, FT3.5 or FT5 is allowed. Additional fuel containers to avoid fuel starvation is not permitted to use with the original fuel tank.

### **T3.5 LUBRICANTS**

**T3.5.1** Choice of lubricant is free.

**T3.5.2** Replacement oil filters of any brand are permitted.

**T3.5.3** The oil sump may be baffled.

### **T3.6 EXHAUST**

**T3.6.1** Free after the Turbo down pipe

**T3.6.2** The exit of the exhaust may be on the right or left side of the car, behind the mid-point of the wheelbase and below the door sill. No exhaust pipe may protrude beyond the perimeter of the car's bodywork.

### **T3.7 TACHOMETERS**

Tachometers may be fitted to cars that are not fitted with one as standard.

### **T3.8 TELEMETRY**

The use of telemetry is forbidden

## **T4. SUSPENSION**

**T4.1** The suspension may be modified provided that the system and mounting point locations are not changed.

**T4.2** No part of the Car (with exception of tyres) must touch flat ground when 2 tyres on the same side of the Car are deflated.

**T4.3** MacPherson struts and shock absorbers may vary in size and brand.

**T4.4** Altering the front camber with adjustable top mounts is permitted even though this item is also part of the steering system. Camber and castor settings are free.

**T4.5** Adjustable spring cups are permitted.

**T4.6** Fitting of transversal strut to the top absorber mounting is permitted. This must not alter the mounting points.

**T4.7** Rose joints are permitted.

**T4.8** Shock absorbers and Springs free, External shock canisters allowed.

**T4.9** The reinforcing of the structural parts of the suspension (with the exception of anti-roll bars) and its anchorage points by the addition of material is allowed.

**T4.10** Bushings and Mountings should conform to original design and size, uprated material is allowed.

## T5. BRAKING SYSTEM

- T5.1** Front braking system is free provided they are mounted on the fixation points of the original brakes and they are comply with the following prescriptions:
- (i) The master cylinder(s) is (are) free
  - (ii) The maximum number of pistons per wheel is 6 (six) Front caliper and 2 (two) Rear caliper
  - (iii) The diameter of brake disc is 380mm (width free)
  - (iv) Brake disc must be made of from ferrous metallic material
- T5.2** ABS may be disconnected or removed.
- T5.3** Brake Pads are Free but original shape and Dimension to be maintained. Brake fluid free. Brake hoses braided hoses are allowed.
- T5.4** Brake dust cover may be altered in shape or removed.
- T5.5** Cooling ducts, from the bumper only or beneath the floor for rear brakes leading to the brakes only are permitted.

## T6. GEARBOX AND CLUTCH

- T6.1** Mechanical limited slip differentials are permitted provided that it can be fitted in the series housing without any modification.
- T6.2** Clutch plate, pressure plate and flywheel are free. **Carbon clutch is prohibited.**
- T6.3** Gear ratios are free provided their numbers of gear are not increased or decreased. Straight cutgears are allowed. Gearbox oil coolers are permitted.
- T6.4** **An alternative non-production or sequential gearbox with maximum 6 gears may be fitted in replacement to the original gearbox. Paddle shifts are permitted.**

## T7. WHEELS AND TYRES

- T7.1** The upper part of the tyre, down to the flange over the wheel must be within the perimeter of the wheel-arch/ bodywork when viewed vertically from above. The wheel diameter may be increased or decreased from original specifications provided they fit in the original wheel arches.
- T7.2** Hub caps on standard wheels must be removed.
- T7.3** The maximum dimensions of the 4 rims + flanges are 9.5" x 17" and 9.5" x 18".
- T7.4** The tyre supplied by the tire supplier appointed by the Organiser **MUST** be used by all competitors during the event. Refer to section **B. Sporting Regulations Art. 31**

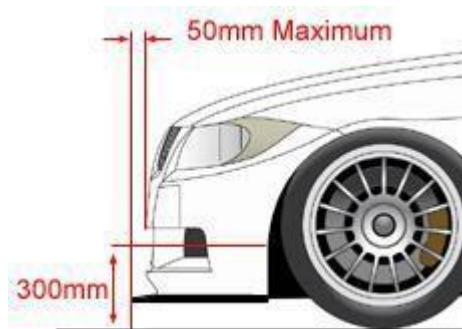
**T8. SAFETY EQUIPMENT/BODYWORK**

- T8.1** (i) Cars must be fitted with laminated windscreens. Perspex or Lexan may be used for other glass areas. Securing rivets may be used. Air induction to the driver's window is permitted.
- (ii) It is allowed to have net window covering the driver's door window opening forward till the centre of steering wheel if item T8.1 (i) above does not apply. Details:
- (a) The window net must cover the opening forward to the centre of the steering wheel and be able to withstand any load applied at any point.
  - (b) The net may be locally modified to preserve the driver's view of the external mirror.
  - (c) The net must be affixed by means of a rapid release system so that, even with the automobile inverted it must be possible to detach the mechanism with one hand.
- T8.2** All Cars must be fitted with a cut-off switch to stop all electrical supply to the engine and fuel system.
- T8.3** The cut-off switch must be able to operate from inside and outside and must be located in front of the driver's side of the car. The outside switch must be marked by a red spark in a white edged, blue triangle with a base of a least 12cm.
- T8.4** The body may be painted or wrapped in any colour scheme.
- T8.5** For the avoidance of doubt the transversal cross bar fitted to the roll cage will not be treated as reinforcement to suspension mounting points.
- T8.6** Extra welding to parts of the bodywork is permitted. However, the use of strengthening plate on the original body panels and suspension points is prohibited.
- T8.7** The placement of taillights must be of the original car.
- T8.8** Engine section bonnet/hood openings are permitted up to a maximum surface area of 1100cm<sup>2</sup>, including any the original opening, but must be covered by wire netting.

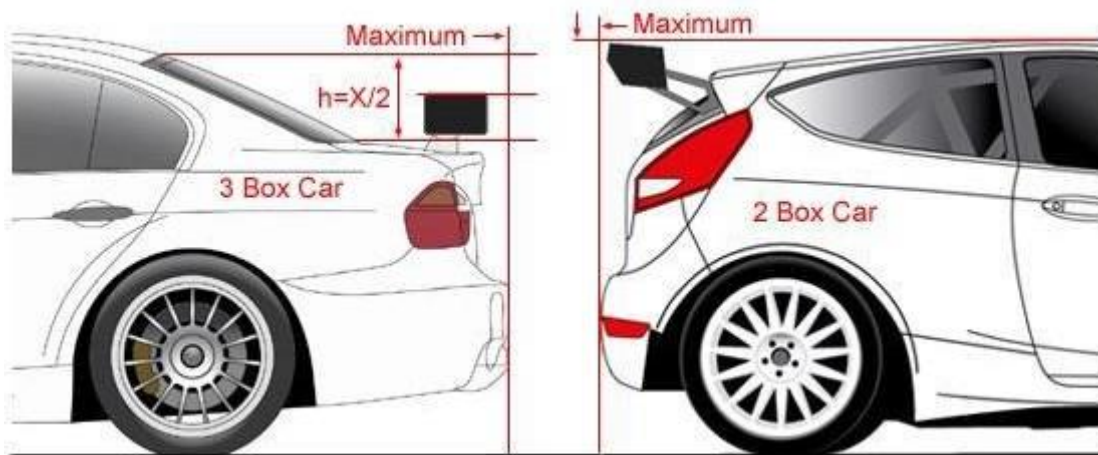
**T9. AERODYNAMIC DEVICES**

- T9.1** Only those aerodynamic devices which are permanently mounted on the bodywork and which are Series Production parts on the 2,500 units produced for normal road use in the country of origin are permitted.
- T9.2** It is permitted to fit a spoiler or air dam on the front of the car such that no part of it shall extend more than 50mm overall width of the bodywork, measured perpendicular to the coachwork at any measured point and it shall be no wider than the front flares/mudguards. A front diffuser or an air dam under-tray may be installed. No part of the front diffuser or under-tray shall extend further rearward than the vertical centreline of the front wheel hubs. Each part of the diffuser or under-tray shall be within the vertical projection of the car, including any modified coachwork. No dive planes allowed.

wheelhouse measuring not more than 300mm from level ground. The size and the dimension of the apertures on the original front bumper must be respected. (See technical drawings).



- T9.3** It is permitted to fit a rear spoiler provided that it complies with the following:
- For a three-box car, the spoiler must be mounted on the boot. The position of the spoiler must not be more than 50% the height of the rear screen.
  - For a two-box car, the spoiler must be mounted on the rear hatch/boot lid. The position of the spoiler must not protrude above the highest point of the car when viewed from the side.
  - The spoilers must not protrude outside the perimeter of the bodywork.
  - For a non-original equipment rear spoiler, the spoilers must be made in one (1) single piece, two (2) side plates and two (2) brackets (see technical drawings).
  - The angle of the spoiler may be adjusted.
  - The spoiler must be completely contained within the front projection of the car without its rear-view mirrors.



**T10. FUEL**

As mention in Section A and/ or **racing fuel** comply with FIA article 252.9 can be used for the event.

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## SECTION C - M-PRODUCTION (MODIFIED)

### **SPECIFIC MODIFICATION (UNDER ARTICLE 277 OF FIA APPENDIX J) VALID FOR M-PRODUCTION CAR**

(The regulations are subject to change, which will be published via Additional Supplementary Regulations – ASR)

#### **1) GENERAL SPECIFICATION**

Eligible Cars are those cars of which at least 2,500 identical units must have been produced in 12 consecutive months and which have been available for sale. The model must be for public sale or produced in the year 2007 and after. The organizer will have the right to grant special dispensation for cars which do not fit the above criteria. To ensure stability and to safeguard the investment of the competitors, the minimum production date will be pegged at the year 2006 until the year 2023 in the Gregorian calendar.

Only cars with two-wheel drive (Front Wheel or Rear Wheel Drive) are eligible. Cars with forced induction are not eligible.

#### **Permitted Vehicles**

FIA Article 254 : Group N Cars 1401cc to1600cc

FIA Article 255 : Group A Cars 1401cc to1600cc

FIA Article 277 : National Series Production Cars 1401cc to 1600cc  
**(2,500 units minimum production)**

All family brand of mass production engine, transmission, suspension and body parts are allowed.

#### **2) SPECIFIC MODIFICATONS**

##### **M1. SEALING**

Engines must have two bolts on the camshaft covers drilled with 3mm holes for the purposed of sealing. Similarly, two bolts on the oil sump pan must also be drilled with 3mm holes. It is the competitor's sole responsibility to ensure that all metal seals and any additional paint seals, are kept in a clean and unbroken condition. Only the scrutineer can give permission for seals to be broken and / or removed.

##### **M2. MINIMUM WEIGHT**

The minimum weight of the car with all fluids at as race level and excluding the driver is \_\_\_\_ kg.

- |    |   |        |
|----|---|--------|
| i. | 1600cc - Engine currently in Production - | 1000kg |
|    | - Engine out of Production -              | 1050kg |
| ii | 1500cc - Engine currently in Production - | 970kg  |
|    | - Engine out of Production -              | 1020kg |

This is measured with a maximum of 3 litres of fuel.

These minimum weights must be respected at all times during the event, in particular when the car crosses the finish line. It is permitted to complete the weight of the car by one or several ballast, provided that they are strong and unitary blocks, fixed by means of tools with the possibility of affixing seals, and placed on the floor of the cockpit or the luggage compartment,



**ACCEPTED**

**DATE:** 28th February 24

visible and sealed by the Scrutineers. The ballast must be attached to the shell/chassis via 8.8 class bolts, with a minimum diameter of 8 mm, and counterplates, according to the drawing below. The minimum area of contact between shell/chassis and counterplate is 40 cm<sup>2</sup> for each fixing point. The ballast must not have sharp edges. The scrutineer would have the rights to reject any ballast which is deemed unsafe.

If a car loses a part during a Qualifying Session or a Race, the weight of this part may be taken into account during weighing at the discretion of the Stewards, following consultation with the Technical Delegate/ Technical Director.

### **M3. ENGINE**

#### **M3.1 GENERAL**

Any four stroke piston engine with the cylinder capacity not exceeding respective class limit can be freely chosen from the manufacturer range of engine provided that the said engine must be in production as of 1st January 2007. The position of the engine must be in accordance to the original layout from the original model that the engine came from.

Replacement engine and transmission mounts are permitted. The number and attachment points to the bodyshell must remain as standard production (e.g. 3 mountings, 1 located on the sub-frame, 1 located on the left chassis beam and 1 located on the right chassis beam). The position of the mounting may be moved within this boundary.

Where a minimum component weight is specified, this must be respected unless the production component is lighter than the specified minimum. Should a production component be chosen, this component must not be altered or modified in any way.

The organizer may at its sole discretion approve base engines of a different capacity.

#### **M3.2 MAXIMUM ENGINE CAPACITY**

The volume generated in the cylinders as defined as:

$$V=0.7854 \times \text{Bore}^2 \times \text{Stroke} \times \text{No. of Cylinders.}$$

The results would be rounded up to 2 decimal places.

The maximum capacity is 1600cc with tolerance of  $\pm 0.5\%$  allowable.

#### **M3.3 CYLINDER HEAD**

The material and thickness of the cylinder head gasket are free. The cylinder head may be adjusted by planning. The valve springs and their retainers are free but the springs must be made of steel and the retainers made of an identical material to the original. The intake and outlet ports in the cylinder head, as well as the ports in the intake manifold, may be machined and modified however the respective ports flow and purpose may not be changed; reverse direction cylinder heads are not allowed. The valve seats are free, as are the valve guides, but the respective angles of the valve axes must be retained. Compression ratio is free.

#### **M3.4 CAMSHAFT**

The pulleys for driving the camshaft are free (**subject to 3.12**) provided that the original timing belts and/or chains are used. The camshaft(s) are free. The number and diameter

of the bearings must remain unchanged. Variable valve timing systems may be removed.

### **M3.5 VALVES**

The material must be steel. The diameters of the stem and the head of the valves must be the same size as stock valves (standard part).

### **M3.6 CYLINDER BLOCK**

May be planed parallel to the original face for the purpose of increasing the compression ratio. The cylinder bores may also be increased to achieve the maximum cylinder capacity of the permitted class. Ceramic and nikasil sleeve is prohibited. Main bearing caps maybe replaced and/or strengthened by additional straps and/or additional bolts.

### **M3.7 PISTONS AND RINGS**

Free, provided that:

- a) The piston is manufactured from the same type of material i.e aluminium, as the production part.
- b) The piston must have at least 3 rings – 1 oil control and 2 compression rings.

### **M3.8 CRANKSHAFT**

Must be standard part production.

### **M3.9 CONNECTING ROD**

Free, provided that the material must be steel.

### **M3.10 ENGINE BEARINGS**

Must be standard however service is allowable limited to 0.25mm.

### **M3.11 FLYWHEEL**

Free provided that the material is the same as the original flywheel. Minimum weight: 4000 grams

### **M3.12 ENGINE PULLEYS**

Must be made from metal unless different material comes from standard production

### **M3.13 TELEMETRY**

The use of telemetry is forbidden

#### **M4. AIR INTAKE SYSTEM**

##### **M4.1 IDLE UP AND COLD RUNNING ENRICHMENT COMPONENTS AND EXHAUST GAS RECIRCULATOR**

May be removed, provided that any aperture downstream of the throttle body(s), created by their removal, is plugged.

##### **M4.2 INTAKE MANIFOLD**

- a) The intake manifold is **standard** with a diameter of 60mm at the throttle valve opening. The single-valve unit is free but the operating principal must be of a butterfly valve. The thickness of the throttle valve must be constant. The use of composite material is authorised, provided that it is fire-retardant. Electronic throttle valve maybe changed to mechanical mechanism. Variable geometry intake manifold is prohibited.
- b) If the production intake manifold includes a variable geometry mechanism, this can be retained. (subject to 4.3).
- c) The flange for the throttle body toward inside by maximum 47mm may be machined, modified and without added additional material. An additional maximum of 15mm thickness adaptor to the flange of the original intake maybe added by bolt for use with the non-series production throttle body.

##### **M4.3 THROTTLE BODY**

One air intake only with a max. diameter of 60mm is authorized. The single-valve unit is free but the operating principal must be of a butterfly valve. Electronic throttle body maybe changed to mechanical mechanism.

##### **M4.4 AIR FILTER**

The air lines upstream of the air filter box are free and the air lines downstream of the air filter box towards the throttles are free. The air filter box is free under the following conditions:

- a) There must be a filtering cartridge in the box. This cartridge is free as long as it filters the dust particles. All the air admitted to the engine must pass through this air filter.
- b) Only one air outlet from the filter to the throttle body. Engine breather from the engine to the intake must be rendered inoperative and must be completely blocked.
- c) The use of fiber glass and/or composite material is authorized provided that it is fire-resistant. The position of installation of the air filter box in the engine compartment is free.
- d) K&N type filter units do not require a filter box

#### **M5. FUEL & IGNITION SYSTEMS**

Spark Plugs, high tension cables, ignition coils are free.

**M5.1 FUEL INJECTORS**

- i) Any commercially available fuel injectors may be used but the number is limited to one injector per cylinder.
- ii) Fuel regulators and fuel rail are free
- iii) Engine Control Unit (ECU) are free

**M6. EXHAUST SYSTEMS**

The exhaust system is free from the exit of the cylinder. The exhaust tail pipe must exit at the rear of the vehicle.

The section of the exhaust silencers or of the catalyst itself must always be round or oval.

**M7. LUBRICATION SYSTEMS****M7.1 CATCH TANK**

(Oil/Air Separator): Compulsory. Minimum capacity; 2000cc.

**M7.2 CAM COVER(S)**

May be internally baffled to inhibit oil being dispersed into breather hose(s). Breather hose adapter fitting are free. However, the outside appearance and dimensions of the rocker cover(s) shall remain original.

**M7.3 LUBRICATION OIL WAY/GALLEY**

May be enlarged or restricted.

**M7.4 OIL SUMP**

The original sump may be reworked to:

- a) Increase the oil capacity
- b) To fit internal baffles, and/or gates.

**M7.5 OIL PUMP**

The original oil pump may be reworked and modified to:

- a) Increase its capacity provided that it remains in the original location.
- b) The discharge valve spring may be substituted to vary the oil pressure.
- c) The oil pickup may be reworked or substituted.

**M7.6 ENGINE OIL COOLERS AND OIL COOLER DUCTING**

Free, provided that:

- a) They are located within the body work, and
- b) The ducting serves only to deliver air to the oil cooler.

## **M8. COOLING SYSTEM**

**M8.1** Radiator, ducting, header tank, fans and thermostat are free.

### **M8.2 WATER PUMP**

Must retain original standard, but the water pump drive pulley is free.

## **M9. TRANSMISSION**

### **M9.1 GENERAL**

- i) If the series production gearbox for the respective model has more than five (5) forward gears, the gear wheels as from the sixth (6th) forward gears can be rendered operative.
- ii) The gears and the method of engagement (syncromesh or dog clutch) is free.
- iii) The interior of the gearbox is free.
- iii) **An alternative non-production or sequential gearbox with maximum 5 gears may be fitted in replacement to the original gearbox. Paddle shifts are permitted.**
- iv) LSDs are permitted

### **M9.2 GEAR RATIOS**

Gear ratios are free. However entry/entrance need to submit their gearbox ratio and final drive as a declaration.

### **M9.3 GEAR SELECTION**

Modifications to the bodywork for the mounting and passage of any new gearshift control are authorised only if they are not at variance with other points of these regulations.

### **M9.4 DIFFERENTIAL**

Free. Electronically and hydraulically control differential are not allowed.

### **M9.5 TRACTION CONTROL/ LAUNCH CONTROL SYSTEMS**

Only Factory OEM control systems are allowed. All forms aftermarket or motorsport of traction control and launch control are prohibited. All sensors on the wheels, drive shafts and differential are prohibited.

### **M9.6 CLUTCH**

Size and the number of plates are free. The friction disc(s) must not be made from carbon. The clutch must be fixed to the engine flywheel. The original location of the clutch must be retained.

## **M9.7 TRANSMISSION COOLER**

Additional oil radiators, as well as a system for circulating the oil are authorised.

## **M10. SUSPENSION**

### **M10.1 FRONT RUNNING GEAR**

Limitations and modifications allowed:

- a) The joints may be of a different material from the original ones (e.g. harder silent blocks, aluminium, Uniball joints, etc.).
- b) It is permitted to move the suspension pick-up points within a radius of 20mm from the original points.
- c) The original suspension part may be modified to allow adjustments to the camber/caster angle.
- d) The steering rods, the steering joints and their connecting parts are free but must be made from ferrous material.
- e) The upper joints of McPherson suspension parts of the front running gear are free provided that the original mounting points, on the bodyside, are retained. Adjustable upper mounts on the struts are permitted but this must not allow adjustments of more than 20 mm in relation to the original articulation point.

### **M10.2 POWER-STEERING**

The driving pulley of a hydraulic power-steering pump is free. A hydraulic power-steering pump may be replaced with an electric power-steering pump, provided that this electric pump is fitted on any series vehicle and is commonly on sale.

### **M10.3 REAR RUNNING GEAR**

Limitations and modifications allowed:

- a) The joints may be of a different material from the original ones (e.g. harder silent blocks, aluminium, Uniball joints, etc.).
- b) The original suspension part may be modified to allow adjustments to the camber/toe angle.
- c) It is permitted to move the suspension pick-up points within a radius of 20mm from the original points.

### **M10.4 SINGLE-LINK REAR SUSPENSION/BEAM AXLE**

The limitations and modifications for a single link/beam axle type rear suspension system are as follows:

- a) The original suspension parts may be modified in order to allow the adjustment of the camber and the toe. The addition of material is allowed.
- b) The combination and the standard fitting of the spring and of the shock absorber may be modified.
- c) It is permitted to move the suspension pick-up points within a radius of 20mm from the original points.

#### **M10.5 REAR RUNNING GEAR – GENERAL**

Any other modifications to the bodyshell, apart from those modifications authorised to the rear running gear, are prohibited.

#### **M10.6 OTHER PROVISIONS**

The geometry of the running gear is free within the limits of the original adjustment possibilities set out in these regulations.

#### **M10.7 STABILIZERS/ANTI-ROLL BARS**

The original anti-roll bars and their links may be replaced by anti-roll bars and links of free design. The operating principle must be solely mechanical. The anti-roll bars and their links must be made from metallic material and must not be adjustable from the cockpit.

#### **M10.8 TRACK**

The tracks are free. Track extenders may be used if they are immovably attached to the wheel hubs. The wheels above the hub centre line must be covered by the bodywork

#### **M10.9 REINFORCEMENTS**

Strengthening of the suspension parts and the suspension mounting points through the addition of material is allowed provided that the material used follows the shape of the original part and is in contact with it. The suspension reinforcements must not create hollow sections and must not allow two separate parts to be joined together to form one.

#### **M10.10 WHEEL BEARING**

The wheel bearings may be replaced by strengthened bearings of the same type and same diameter as the original ones.

#### **M10.11 SILENT BLOCK – ARTICULATION**

The silent blocks for the mounting of the cradles/subframes and/or the cross members may be of a different material from the original (e.g. harder silent blocks, aluminium, nylon rings) as long as the position of the cradle/subframes and/or cross members in relation to the bodyshell remains identical to that of the original following the three (3) axes of reference. The cradles/subframe and/or cross members, the bodyshell and the original mounting points may in no way be modified by this action.

#### **M10.12 SUSPENSION TRAVEL LIMITER**

A strap or cable for limiting the suspension travel may be affixed to each suspension. To this end, holes of a maximum diameter of 8.5 mm may be bored on the bodyshell side and on the suspension side.



## M10.13 SPRINGS

### (i) COIL SPRINGS

Coil springs are free, provided that they fulfil the following conditions:

- a) Their number is free, provided that they are mounted in line with one another and that their type corresponds to the original type of spring.
- b) The shape, dimensions and material of the spring seats are free.
- c) The spring seats may be made adjustable if the adjustable part forms part of the seats and is distinct from the other original parts of the suspension and the chassis (it may be removed).

### (ii) LEAF SPRINGS

The length, width, thickness and vertical curve are free.

### (iii) TORSION BARS

Torsion bars may be replaced but the replacements must be made from steel. For vehicles with torsion bars, coil springs may be added on the axle concerned, provided that they are concentric to the shock absorbers.

## M10.14 MISCELLANEOUS

Parts for preventing the springs from moving in relation to their mounting points are authorised.

## M10.15 SHOCK ABSORBERS

Free, provided that their number, their type (telescopic, arm, etc.), their working principle (hydraulic, friction, mixed, etc.) and their attachment points remain unchanged.

In the case of an oil-pneumatic suspension, the spheres may be changed as regards their dimension, shape and material, but not their number. A tap, adjustable from the outside of the car, may be fitted on the spheres.

## M10.16 REINFORCEMENT BARS

- (i) Reinforcement bars may be fitted on the suspension mounting points to the bodyshell or chassis of the same axle.
- (ii) For the fixation of a transversal strut between two upper points of the bodyshell, a maximum of three (3) holes on each side, of a maximum diameter of 10.5 mm, will be authorised. The mounting rings of the upper transversal struts may be welded to the bodyshell. Apart from these points, the upper bar must not be mounted on the bodyshell or the mechanical parts.

## M11. BRAKES

### M11.1 GENERAL

All parts of the brake callipers must be made from aluminium materials with a modulus of elasticity no greater than 75 GPa. The internal parts of the brake callipers may be made from steel or titanium.

The following prescriptions apply to the complete braking system:

- a) The brake lines and their fitting method are free;
- b) The original handbrake may be removed or replaced by a hydraulic valve operated manually and without any intermediate system by the driver;
- c) If, in its original version, a car is equipped with servo brakes, this device may be disconnected or removed.
- d) If, in its original version, a car is equipped with an anti-lock braking system, the control unit unit may/can be removed or substituted.
- e) The location of the brake lines is free provided that the prescriptions of Article a. 253-4 of Appendix J are respected. The brake lines may be replaced by aircraft-quality lines. The connection of the dual braking circuit is free.
- f) Original apertures in the bodywork, e.g. for fog lamps, may be used to bring the cooling air to the brakes; the connection of the air lines to the original apertures in the bodywork is free provided that these apertures remain unchanged; if these apertures are not required they may be closed 10mm behind the external surface
- g) If the car does not have any original apertures, two (2) circular apertures of a maximum diameter of 10 cm may be made in the front bumper.
- h) The disc protection plates may be removed or their shape modified.

#### **M11.2 FRONT BRAKES**

The front brakes are free, provided that they are mounted on the fixation points of the original brakes and that they comply with the following prescriptions:

- a) The maximum number of pistons per wheel is four (4);
- b) The maximum diameter of the brake disc is 295 mm;
- c) The brake discs must be made from ferrous metallic material.

#### **M11.3 REAR BRAKES**

The rear brakes are free provided that they comply with the following prescriptions:

- a) The maximum number of pistons per wheel is two (2);
- b) The maximum diameter of the brake disc is 295mm.
- c) The brake discs must be made from ferrous metallic material.

#### **M11.4 MASTER CYLINDERS/PEDAL BOX**

Free. Modifications to the body shell are authorised provided they have no other function than to allow the fixing of the master cylinder and/or the pedal box. The balance of the braking forces between the front and rear axles may only be adjusted by the driver through:

- a) Direct intervention on the position of the centre of the joint, on the linkage lever of the hydraulic pumps of the front and rear circuits.
- b) Direct intervention on a proportional valve, in which the intake pressure of the rear circuit is adjusted through a pre-loaded spring, variable according to the position of the manual linkage system.

## **M12. BODYWORK**

### **M12.1 EXTERIOR**

Exterior decorative trim parts may be removed provided that all fixing holes are neatly filled and painted to vehicle colour.

#### **M12.1.1 WHEEL ARCHES**

The original production car contours of the wheel arch /wing must remain but may be increased up to maximum total of 30mm of the original dimensions. The organiser retains the right to reject any wheel arches that do not confirm with this article.

### **M12.2 INTERIOR**

#### **M12.2.1 DASHBOARD**

The original dashboard moulding must be retained, although air vents and control panels inset into this moulding may be removed and neatly covered.

#### **M12.2.2 INSTRUMENTS**

The instruments are free. However, their installation should not present any risk. Standard switches may be replaced by switches of different design and may be fitted at different locations on the dashboard or on the centre console. Any openings that result from their removal must be covered.

#### **M12.2.3 ACCESSORIES**

Removal of additional accessories which have no effect on the car's behaviour, such as those which render the interior of the car more aesthetic or comfortable (lighting, heating, radio, etc.), are authorised provided that they do not influence, even in a secondary manner, the performance of the engine, steering, transmission, brakes or road-holding.

#### **M12.2.4 INTERIOR TRIMS**

All internal coverings and trims, including the headlining, sounddeadening material, the standard seat belts, rear parcel shelf trim and carpets, must be removed from the cockpit, engine compartment, and luggage compartment. It is permitted to remove the weather strips from around the door and boot/tailgate openings. The inner door panels and inner side panels may be replaced by other fire resistant panels which completely cover the window winder and door catch mechanisms. These panels must be neat and cover the entire door opening.

#### **M12.2.5 WINDOWS**

- (i) Manual window winders may replace electrical system if fitted. Driver's window must remain fully functional by manual or electronic. The total mechanism may be removed from the front passenger and rear doors with the windows sealed shut. Cooling ducts for interior cooling may be added to rear side windows. It is permitted to replace the glass side and rear windows with polycarbonate, 3mm minimum thickness for side and the rear window.

- (ii) It is allowed to have net window covering the driver's door window opening forward till the centre of steering wheel if item 12.2.5 (i) above does not apply. Details:
- (a) The window net must cover the opening forward to the centre of the steering wheel and be able to withstand any load applied at any point.
  - (b) The net may be locally modified to preserve the driver's view of the external mirror.
  - (c) The net must be affixed by means of a rapid release system so that, even with the automobile inverted it must be possible to detach the mechanism with one hand.

#### **M12.2.6 STEERING WHEEL**

The steering wheel is free, but it must be closed. The locking system of the anti-theft device must be rendered inoperative; a removable steering wheel is permitted.

#### **M12.2.7 GEAR CHANGE MECHANISM**

The gear change lever and linkage may be altered or replaced to improve the ease of use together with the pedals, which may be strengthened or replaced with stronger units. Modifications to the bodywork for the mounting and passage of the new gear shift control are authorised only if they are not at variance with other points of these regulations.

#### **M12.2.8 OTHER PROTECTIONS**

All production under-body and under-engine protection may be removed.

#### **M12.2.9 WIPERS**

The windscreen wiper system is free in location and method of operation, providing that it is fully operational at all times and capable of satisfactorily clearing the area of the screen ahead of the driver. Any rear screen wiper and mechanism may be removed.

### **M12.3 SPOILERS AND AESTHETIC ACCESSORIES**

#### **M12.3.1 AERODYNAMIC DEVICES**

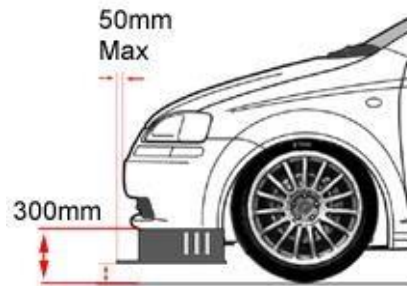
Other than those allowed in this regulation, only those aerodynamic devices which are permanently mounted on the bodywork and which are Series Production parts on the 2,500 units produced for normal road use in the country of origin are permitted. The organiser will be the sole arbiter in any dispute concerning the eligibility of aerodynamic devices.

#### **M12.3.2 FRONT**

The only body parts that can be replaced and changed in shape are:

- Front bumper; shape resembles to original and no dive planes allowed.
- Front fenders' lower edge behind the wheel may not be higher than front door's bottom border (no louvres allowed)
- Side sills (these may be added if not present in the production car)
- Non-metal material.

Front spoilers may be fitted but may not extend forward from the bodywork by more than 50mm and may not extend past the overall width of the bodywork. The areas that are defined as front spoilers are the front bumper area before the opening of the wheelhouse measuring not more than 300mm from the level ground. The underside of this spoiler may be covered and extended to the centreline of the front wheels. (pic.12.3.2)



Pic.12,3.2

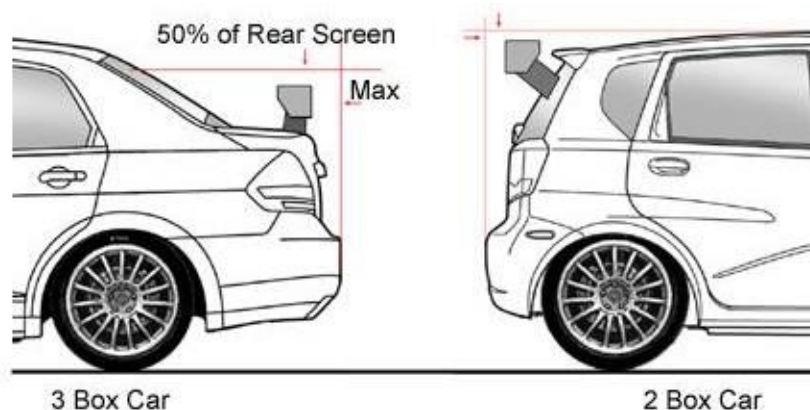
### M12.3.3 MINIMUM HEIGHT

No part of the car or its suspended parts must touch the ground when two tires on the same side are deflated (5 psi pressure). No system for changing ground clearance when the car is in motion is allowed.

### M12.3.4 REAR SPOILER

It is permitted to fit a rear spoiler provided that it follows the following:

- a) For a three box car, the spoiler must be mounted on the boot. The position of the spoiler must not be more than 50% the height of the rear screen.
- b) For a two box car, the spoiler must be mounted on the rear hatch. The position of the spoiler must not protrude above the highest point of the car when viewed from the side.
- c) The spoilers must not protrude outside the perimeter of the bodywork.
- d) The spoiler must be made in one single piece (a single profile and no adjustment flap), two side plates and two brackets.
- e) The spoiler must be completely contained within the front projection of the car without its rear-view mirrors.
- f) The angle of the spoiler may be adjusted.



Pic.12.3.4

### **M12.3.5 ORIGINAL EQUIPMENT BODY ACCESSORIES**

It is permitted to fit original equipment accessories side sill extension and rear bumper extension.

## **M13. ELECTRICS**

- M13.1** The electrical wiring harness assembly of car must be based on the production unit. Unused wires and relays may be removed.
- M13.2** Fuses and/or circuit breakers may be added to the electrical circuit. The fuse box may be moved or removed.
- M13.3** All lights must be fitted as supplied by the Manufacturer for that make and model and must be fully operative at all times. Front fog lights may be removed and the apertures must be sealed or used in accordance with Article 12.1.1.
- M13.4** All rear lights including a rear fog lights must remain functional.
- M13.5** Only one vehicle battery may be fitted, make and type is free. It must be a sealed unit and may be mounted inside the vehicle. It must be possible at all times to start the engine with the energy of the battery transported on board the vehicle. Should the battery be positioned inside the driving compartment, it must be covered with liquid proof protective cover that fully enclosed the battery.
- M13.6** Alternators are free but must remain fully operational.

## **M14. WHEELS & TYRES**

- M14.1** The maximum dimensions of the 4 rims + flanges are 8" x 15". Refer to section **B. Sporting Regulations Art. 31**
- M14.2** In all other respects the wheels are free provided that they are made of cast aluminium and in a single unit. Metal inserts are allowed for the passage of the drive to the wheel.
- M14.3** Wheel bolts may be changed to a stud type however the numbers of the fixation point have a minimum number of 4.
- M14.4** The tyre supplied by the tyre supplier appointed by the Organiser **MUST** be used by all competitors during the event. Refer to section **B. Sporting Regulations Art. 31**

## **M15. FUEL TANK & PUMP & FUEL**

- M15.1** Only the originally equipped fuel tank or an FIA FT3 1999, FT3.5 or FT5 or Organisers approved tank that complies with FIA (FT3 1999, FT3.5 or FT5) is allowed. An add-on fuel cell (FT3 1999, FT3.5 or FT5 or organiser's approved) on the top of the main fuel cell and installed in a housing corresponding to this regulation may be used up to the total maximal fuel volume. The total maximum capacity of the tank(s) is 60 litres.

- M15.2** Fuel pump(s), fuel filter(s) and fuel lines are free. Aviation quality steel braided hose or

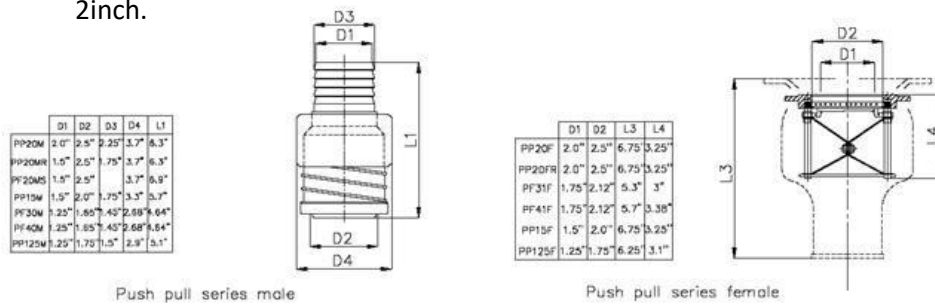
equivalent is highly recommended.

**M15.3** An additional anti-surge tank maybe complemented to the fuel system. The volume of this tank must not be more than 5 litres. **However, original manufacture fuel tank are not permitted to use with the anti-surge tank.**

**M15.4** The fuel tank, pump, filters, anti surge tank and lines must be fully shielded from the driving compartment. These may be in the form of a liquid-proof bulkhead or by a liquid-proof case.

**M15.5** Original fuel tank **CANNOT** be modified to suit FIA refuelling equipments. Only FIA or Organizer approved fuel tank are allowed to be use with FIA refuelling equipment.

**M15.6** Only FIA approved refuelling couplings as per drawing 252-5 (Version A) are allowed to be use with the FIA refuelling rig. The internal diameter of D1 must not exceed 50mm or 2inch.



Drawing 252-5 version A

**M15.7** The location of the fuel filler inlet must not be higher that the lower edge of the rear glass.

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## SECTION D - S-PRODUCTION (STOCK)

### **SPECIFIC MODIFICATION (UNDER ARTICLE 277 OF FIA APPENDIX J) VALID FOR S-PRODUCTION CAR**

(The regulations are subject to change, which will be published via Additional Supplementary Regulations – ASR)

#### **1) GENERAL SPECIFICATION**

Eligible Cars are those cars of which at least 2,500 identical units must have been produced in 12 consecutive months and which have been available for sale **in Asia**. The model must be for public sale or produced in the year 2006 till 2024.

For avoidance of doubt, ‘standard specification’ will always be made with reference to vehicles sold through the applicable time periods. Special edition models are not eligible. Special/ Limited versions are not deemed to constitute a specification reference source for the purposes of these regulations.

Only cars with two-wheel drive (Front Wheel or Rear Wheel Drive) are eligible. Cars with forced induction are not eligible.

Eligible Car	<b>S- Production 1</b>	1901cc up to 2000cc (SP 1)
	<b>S- Production 2 – Honda GK</b>	1401cc up to 1600cc (SP 2 (G))
	<b>S- Production 2 – Other Make</b>	1401cc up to 1600cc (SP 2 (V))

#### **Permitted Vehicles**

FIA Article 254 :	Group N Cars above 1900cc
FIA Article 255 :	Group A cars above 1900cc
FIA Article 277 :	Non FIA Homologated Touring Cars Above 1900cc (2,500 units minimum production)
FIA Article 254 :	Group N Cars 1401cc to 1600cc
FIA Article 255 :	Group A Cars 1401cc to 1600cc
FIA Article 277 :	National Series Production Cars 1401cc to 1600cc (2,500 units minimum production)

#### **2) SPECIFIC MODIFICATIONS**

##### **S1. INTRODUCTION**

**S1.1** The following Technical Regulations are set out in accordance with the Organiser 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.

**S1.2** Everything that is not explicitly authorised and anything that is not specified:  
(i) In these Regulations,



- (ii) In the Manufacturers' Technical manual,
  - (iii) In any official Technical Bulletin that maybe published, is strictly forbidden.  
The technical modifications specified in these Regulations relate to the use of the vehicle as a race car.
- S1.3** Competitors will be personally and solely responsible for ensuring that their cars comply with these regulations for each Event/ Round at which they are entered. Queries concerning eligibility should be referred in writing to the Organiser at least 1 Round prior to an Event/ Round entered, to permit a ruling in advance of any meeting at which it is intended to compete.
- S1.4** All Entrants/Drivers are reminded that it is their responsibility to ensure that their vehicle and equipment complies with the entirety of the Technical Regulations at all times during Official free practice, qualifying session and races and that they have taken account of all the safety requirements of these Regulations and Event in which they are participating
- S1.5** The Organiser reserves the right to issue additional statements clarifying the Regulations from time to time (Technical Bulletins). These numbered statements will be issued to all registered Entrants/Drivers by email or by formal communication at the Event (e.g. Drivers' briefing, etc.).
- S1.6** It is the intention of The Organisers to equalise the performance of the cars by setting minimum weights. The Organisers reserve the right to amend any of the minimum weights specified at any stage of the season. The minimum weights will be reviewed after each round. If changes are to be made subsequent to this review, 7 days' notice will be given. There is no appeal against the application or addition of ballast or other restrictions.
- S1.7** Examination of Vehicles
- (i) The Organisers (in addition to any other powers they may have under these regulations) reserve the right before or after any race in the Malaysia Championship Series to designate any one or more of the competing cars for special eligibility scrutineering.
  - (ii) The Competitor shall immediately place the car under the control of The Organiser/ Scrutineer and be deemed to have permitted all such scrutineering, examination, testing and any relevant procedure/ measure as The Organiser may responsibly require to undertake.
  - (iii) Competitors must be prepared, with tools and spare parts as necessary, to enable inspection of components, or to have units sealed at the circuit for later inspection by the Scrutineer at the Competitor's expense.
  - (iv) Any stripping of the engine or any required component will be undertaken by the Competitor and / or mechanic / technician nominated by the Competitor.

## **S2 SAFETY REQUIREMENTS**

- S2.1** Kindly refer to Article 3 Safety Requirement Section A of 2023 Technical Regulation.
- S2.2** The presentation of the car is fundamental to the image of the Malaysia Championship Series. Thus cars entered must be of a standard specification appearance and exhibit all items of external trim associated with the appropriate eligible model.
- S2.3** In case of serious accident, an alternative age or model body shell may be used provided:
- (i) no weight or other benefit is derived,
  - (ii) the finished car's appearance corresponds with that of the eligible model. The age of the replacement bodyshell dictates the type of external trim to be fitted in order that the car does not present the image of a hybrid, and
  - (iii) the use of titanium, ceramics, carbon fibre, Kevlar, composites thereof (with the exception of the Drivers' seat) and magnesium is prohibited.
- S2.4** Only parts listed at the time of manufacture of the vehicle may be used. If parts have been superseded since the date of vehicle manufacture the replacement part may be used prior consent from The Organiser. Competitors must provide the detail of parts should he be required to.

## **3. CHASSIS**

- S3.1** No chassis stiffening is permitted except that derived from the fitting of a roll cage. Minimum six mounting feet inside the car are permitted, and a 3mm thick plate welded to the chassis to which the cage should be bolted/ welded. Seam welding, strengthening of mounting points and changes in component material of the bodyshell or panels is prohibited. Bodywork repairs to be conducted in structural areas should involve Competitor dialogue with the Malaysia Championship Series Scrutineer to ensure ongoing bodyshell compliance.
- S3.2** The following modifications are prohibited:
- (i) Unless specifically authorised in these regulations, the lightening of components or panels in any way, whether via removal of metal or otherwise is prohibited. Specifically but not exclusively this includes removal of any unused bracketry welded to the bodyshell or other components: seat rails, seat front cross member, rear seat base frame, roof tin supports, seat belt anchor backplates, rear seat hinge and retaining brackets. Removal of any unused bracketry rear of the main roll over bar is permitted.
  - (ii) Inner wheel arch modification is prohibited and material may not be removed to allow clearance for suspension components, driveshafts and linkages.
  - (iii) Front turret central cone repositioning.
  - (iv) Removal of bonded metal plugs in the floorplan or other areas of the interior and exterior.
- S3.3** SP-2 car(s) that fail to comply with the article's requirements will be promoted to MTC category available.

#### S4. BODYWORK and MEASUREMENTS

##### S4.1 Modifications:

- (i) In general it must be of the standard specification for the vehicle, with no additions or omissions. Mandatory fitment of laminated windscreen. Seam welding, strengthening of mounting points and changes in component material are prohibited.
- (ii) Interior: Must be of the standard specification for the vehicle. Rear quarter panel trims, boot side panels, tailgate trim panel and weather proofing plastic sheets can be removed. A basic door trim manufactured from plastic or aluminium only must be fitted to the inside of the Driver's door – this must be to a high standard with no sharp edges and a smooth surface. Windows must be fully operable – either manual lever or electric types allowed.  
Driver's seat must be replaced with the competition seat fitted.  
Passenger and rear seats must be removed. Headlining and carpets must be removed. The inner sunroof steel sleeve and mechanism may be removed. Dashboard fascia must remain standard with the exception of minimal material trimming to accommodate rollcage fitment around the A-pillars, but must otherwise remain as originally fitted. Air-Conditioning System can be removed (Air Conditioning Vent Panel must be remained). An interior rear view mirror must be fitted.
- (iii) Exterior: As per standard specification for the eligible vehicle as manufactured.
  - a. The bonnet must be secured by surface-mounted bonnet pins; the rear hatch must be secured either by surface-mounted bonnet pins and locks can be removed.
  - b. Unless specifically authorised in these regulations, the use, substitution of, and / or addition of, any parts, material or processes is prohibited, other than welding or repairing material or the fitting of standard replacement parts, for the sole purpose in every respect of restoring the vehicle to the manufacturer's standard specification or to comply with safety requirements.
  - c. All, door rubbing strips, weather strips/channels must be retained.
  - d. Two external rear-view mirrors, one on the left-hand side and one on the right hand side must be fitted and be a standard part pertaining to that model.
  - e. Bumper mountings are free provided the bodywork and the shape and position of the bumpers remain unchanged.
  - f. Bonnet / engine cover must remain in the normal position and, when closed, must not have any non- standard gaps at any of their edges. Fitment of tape etc. to close body gaps (e.g. bonnet to wing) is prohibited.
  - g. It is not permitted to increase the width of the wheel arch by the addition of material to, or the deformation of, the outside or inside of the wheel arch. No additional holes may be cut into the bodywork or spoiler to aid cooling, brake ducting, air intake etc. Apertures may not be enlarged.
  - h. The removal of underseal from vehicle wheel arches and any areas outside the vehicle wheelbase is prohibited.
- (iv) The car, being in normal racing trim with the Driver in the normal seated position, under no circumstance can any part of the bodywork, or of the suspended part of the car including the exhaust system, be below a horizontal plane passing \_\_\_\_\_ above the ground,
  - i. S-Production G (SP-G) 90mm (Honda GK5 only)
  - ii. S-Production V (SP-V) 70mm (other makes/ models)Note: at Maximum 250 kpa pressure

## **S5. ENGINE**

Must be of the standard type and specification for the exact vehicle and made of the standard material. All components must be used in their production positions, with no additions or omissions unless expressly stated in these regulations. No modifications are permitted. It is the Competitor's responsibility to ensure that no prohibited modifications have been carried out, even if they are using an engine not assembled by them.

### **S5.1 ENGINE MODIFICATIONS**

- (i) Reciprocating parts may not be altered in anyway, this includes lightening or balancing.
- (ii) Replacement valves & valve guides may be fitted but must be production or standard (shape, profile and material).
- (iii) Fitment of oil catch tank, of minimum capacity 1 litre.
- (iv) The fitting of higher specification grade con-rod cap bolts.
- (v) Cylinder head - MUST remain to standard specifications. No material may be added to or removed from the cylinder head; inlet and exhaust ports may not be modified in any way and must remain as cast and as per standard specification.
- (vi) The head casting material cannot be ground, smoothed, welded or in any way altered, whether to achieve optimisation of gas flow or otherwise. Any attempt to alter the shape of the ports, valve throats or the valve seats is prohibited.
- (vii) Standard pistons may not be replaced by forged pistons or 'machined-from-billet' pistons. Piston crowns must not be machined from standard in shape or profile.
- (viii) Valve sizes must not be altered from standard specification.
- (ix) Uprated lifters and lightweight spring caps are prohibited.
- (x) Fitment of an oil pump from a different production model is prohibited.
- (xi) Modification of oil pick-up pipe prohibited.
- (xii) Fitment of a nonstandard head gasket whether sourced from other vehicles within the model range or elsewhere is prohibited.
- (xiii) Fuel injectors cannot be substituted for non-standard parts.
- (xiv) The swapping of engine components or any ancillary components between models is prohibited. This is inclusive of any components in the engine bay such as, but not exclusively, pistons and electronics.
- (xv) Standard inlet manifold must be retained and may not be modified by the removal or addition of material.

### **S5.2 LOCATION**

Position and mounting method must be of standard specification. All engine mounts must be of standard design and material rigidity grade. Voids in these standard engine mounts cannot be filled with any material to attempt to stiffen the mounts. No additional engine/transmission supports may be fitted, whether chassis mounted, or otherwise.

## **S.6 COOLING SYSTEMS**

Water radiators must remain of standard mass production for the model being raced, in design, size and position. The standard radiator fan and fan cowling must also be retained. No modifications are permitted. Radiator conversion within family brand is allowed (i.e MT Radiator to AT Radiator)

**S7. INDUCTION SYSTEMS**

The complete induction system must be of the standard specification for the vehicle and be retained in its entirety; Components must be used in their standard positions, with no additions or omissions except for the following:

- (i) Aftermarket air filter can be used to replace the standard part. This must be of the correct specification for the model to which it is fitted.
- (ii) No other modifications are permitted.

**S8. EXHAUST SYSTEMS**

- (i) Exhaust emission control devices such as air pumps, associated lines, nozzles, canisters, and electrical/mechanical devices may be removed. Any holes remaining after removing such devices shall be completely plugged. If fitted catalytic converter(s) may be removed.
- (ii) Exhaust manifold(s) are unrestricted. Exhaust tubing design is unrestricted, as long as the exhaust exits behind the driver, directed away from the car.

**S9. ENGINE MANAGEMENT – Fuelling, Ignition & ValveTiming**

Components must be of standard specification for the vehicle and used in their standard positions, with no additions or omissions. Remapping of ECU is allowed. Piggy back is allowed only to Toyota Vios 1.5 & MyVi 1.5 only.

**S10. SUSPENSION**

- 1) SP1
  - (i) Shock Absorber and its Spring is free.
  - (ii) Rear camber adjustment link is allowed only with the original type of material i.e. rubber bush.
- 2) SP2

The standard specification suspension configuration must be retained and the standard mounting points and position of the suspension components to the bodyshell and related suspension units must be used and remain as standard. All suspension components (uprights, wishbones, hubs, bottom ball joints, suspension top mounts, steering arms, rear beams, anti-roll bars, supports bolted to the bodyshell or subframe) must be standard, unmodified and remain in their standard position, with no omissions, additions, lightening or modifications allowed to the mounting points and be manufactured from the standard material type except where specifically allowed in these regulations. No additions or modifications may be made to the mounting points. Suspension must be controlled to avoid fouling of wheels on chassis or bodywork.

- (i) Modifications to the suspension pick up points are prohibited.
- (ii) Modification of the engine subframe or its mounting position prohibited.
- (iii) Spherical joints, rose joints and rod ends are prohibited.
- (iv) Seam welding of front wishbones or engine subframe is prohibited.
- (v) Dampers other than the control items, or control items with identification tags missing are prohibited.

- (vi) Any mechanism for changing the suspension geometry, other than ride height and camber, is prohibited
- (vii) No additional springing medium may be utilised.
- (viii) Rear suspension and stub axles must remain standard; no strengthening or addition / removal of material is permitted.

#### **S11. WHEELBASE /TRACK**

Wheelbase and track must remain as standard for the vehicle and separately, the acceptance of any minute changes arising solely from adjusting ride height and camber, within the scope of these regulations.

#### **S12. TRANSMISSIONS**

Must be of the standard coded type and specification for the vehicle. The method of clutch actuation must not be altered in anyway.

For clarity, final drive and gear ratios must remain as per standard and it is prohibited to mix and match any components. Gearbox casing codes must correspond with the gear ratios contained within. Entry/ Entrance need to submit their gearbox ratio and final drive as a declaration.

Gearbox casings cannot be altered by the addition or removal of material, internally, or externally. No modifications to driveshafts or constant velocity joints are permitted. The gearbox must always include a reverse gear, which can be engaged by the Driver sitting in his/her seat with his/her safety harness fastened.

Aftermarket Limited Slip Differentials are allowed.

External oil cooler is allowed only for automatic transmission (AT/CVT).

#### **S13. ELECTRICS**

S13.1 To standard manufacturer's specification for the vehicle which must all be fully functional. Spotlights and bumper mounted side lights may be removed.

S13.2 Electrical and Electronic Systems Modifications

- (i) The rear wiper, motor, mechanism and wiring may be removed. Rear washer, plumbing, bottle, wiring and switch may be removed.
- (ii) Removal of interior light electric components.
- (iii) Addition of auxiliary gauges and switches. The main speedometer binnacle must be standard. Any openings which result from alterations must be covered.
- (iv) The standard wiring loom must be retained
- (v) The vehicle air bags must be disabled and may be removed.
- (vi) All other electrical and electronic systems must remain in their standard positions and be of standard specifications.
- (vii) Substitution of ignition coils with high power ignition coils is prohibited.
- (viii) Fitment of non-standard distributors is prohibited.

## S14. BRAKES

S14.1 The vehicle's original brakes may be only be modified as follows:

- 1) S-Production 1 (SP1)
  - i. Brake calipers, rotors, hubs, hoses are unrestricted and mounting can be adjusted. Brake rotors may only be of a ferrous material.
  - ii. Any brake cooling method may be used. No modifications to the original bodywork are permitted, except that bumper grilles may be removed and existing openings may be utilized.
  - iii. Removal of handbrake system is allowed.
  - iv. The maximum number of pistons per wheel is 6 (six) Front caliper and 2 (two) Rear caliper
  - v. The diameter of brake disc is 380mm (width free)
- 2) S-Production 2 (SP2)
  - i. Brake calipers, rotors, hubs and hoses are unrestricted, provided that the brake components are attached at the manufacturer's original mounting points and that no modifications to the original mounting points are made. Brake rotors may only be of a ferrous material.
  - ii. Any brake cooling method may be used. No modifications to the original bodywork are permitted, except that bumper grilles may be removed and existing openings may be utilized.
  - iii. Removal of handbrake system is prohibited.
  - iv. The diameter of brake disc is 295mm (refer diagram below)

## S15. FUEL TANK / FUEL

- S15.1 Standard fuel tank must be retained and utilised. Additional baffles or foam in the tank are not permitted.
- S15.2 Tank location and fuel pump must be standard.
- S15.3 Fuel filler neck may be enlarged to accommodate the organiser fuel rig nozzle.

## S16. WHEELS & TYRES

- S16.1 S-Production 1 (SP-1)
- i. The upper part of the tyre, down to the flange over the wheel must be within the perimeter of the wheel-arch/ bodywork when viewed vertically from above. The wheel diameter may be increased or decreased from original specifications provided they fit in the original wheel arches.
  - ii. Hub caps on standard wheels must be removed.
  - iii. The maximum dimensions of the 4 rims + flanges are 9.5" x 17".
  - iv. The tyre supplied by the tire supplier appointed by the Organiser MUST be used by all competitors during the event. Refer to section B. Sporting Regulations Art. 31
- S16.2 S-Production 2 (SP-2)
- i. Only single unit wheel's construction is allowed
  - ii. Minimum weight 4.8kg
  - iii. No wheel spacer (metal insert) between wheel and hub
  - iv. On SAFETY ground, wheel hub and wheel bolt number must remain original, isprohibited to modify from 4 to 5 or 5 to 4.
  - v. Upgrade to higher grade steel bolt is allowed

- vi. The tyre supplied by the tire supplier appointed by the Organiser MUST be used by all competitors during the event. Refer to section B. Sporting Regulations Art. 31

### S17. VEHICLE WEIGHT

The principle is to equalise the performance of the cars. The minimum weights must be respected at all times during an Event. This is measured with a maximum of 3 litres of fuel. Ballast must be added inside the car with mounting points using all four fixing bolts. It is the Competitor's responsibility to provide and fit their own ballast if it is required. Minimum Weight (excluding Driver) =

S17.1	S-Production 1 (SP-1)	
	- without Mugen airbox	1150 kilograms
	- with Mugen airbox	1160 kilograms

S17.2	S-Production 2 (SP-2)	
	General Model	
	1500 cc - MT	1010 kilograms
	- AT	990 kilograms
	1600 cc - MT	1050 kilograms
	- AT	1010 kilograms

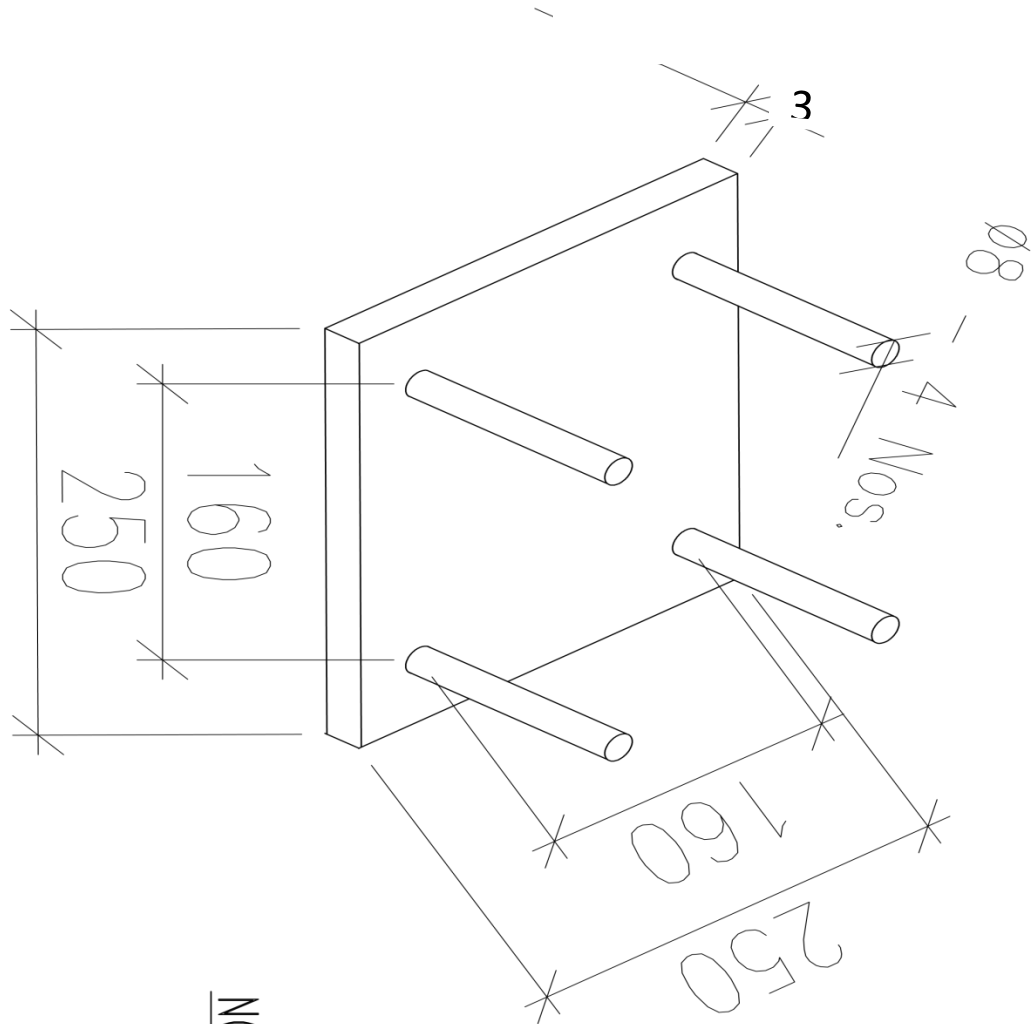
	Specific Model	
	Toyota Vios 1.5 (2NR-FE)	990 kilograms
	Honda GK5 1.5 – CVT (L15Z2)	1010 kilograms
	Honda GK5 1.5 – MT (L15B)	1050 kilograms
	Swift ZC32s (1.6cc) - MT	1030 kilograms
	Swift ZC31 (1.6cc) -MT	1010 kilograms
	Swift ZC32s (1.6cc) - AT	1010 kilograms
	MyVi 1.5 – AT	970 kilograms
	MyVi 1.5 – MT	990 kilograms

(Weight may be adjusted if it necessary to balance the lap times if needed for competitiveness purposes.)





**APPENDIX I**



**NOTE:**

- 1- Physical Dimension  
250mm(W) X 250mm(L)  
With Tolerances +/- 5mm
- 2- Physical Thickness  
16mm(Thk) With Tolerances  
+/- 2mm