

**2009
TECHNICAL
REGULATIONS
FOR
OVAL RACING**

IMPORTANT NOTICE

These regulations have been prepared for and on behalf of the oval racing clubs, promoters, officials and competitors that are affiliated to MSA. The content hereof is accordingly the property of those individuals. These regulations may not be used by other bodies unless MSA is credited as the source.

WHICH RULES APPLY

In respect of each class of racing there will be five sets of regulations that apply. These regulations are the following: -

- The general vehicle regulations that would apply to all vehicles;
- The engine building rules that applies to all classes. In this regard it must be noted that each class will specify which engine building regulations apply to the class;
- The Safety standards that apply to all vehicles;
- The general construction rules that relate to the particular class. In this regard it must be noted that each class will specify which construction regulations apply to the particular class; and
- The specific class regulations that will set out the limitations and modifications that applies.

Two classes, being micro midgets and quads are sufficiently different to warrant their own regulations. These are published at the end of the book. This rule book does not apply to banger racing. Venues and organisers that wish to present bangers shall furnish the Exco with a detailed set of driving and construction regulations for the class.

WHAT APPLIES IF THERE IS A CONTRADICTION

While every effort has been made to avoid conflicting regulations the following shall apply in the event of a conflict between the various regulations: -

- If the conflicting regulations concern a performance related issue the specific class regulations will apply;
- If the conflicting regulations concern the way an engine is built the relevant engine building regulations will apply; and
- If the conflicting regulations concern safety class regulations will defer to the safety standards, then the construction regulations and then the general regulations.

INTERPRETATION OF REGULATIONS AND SPECIFICATIONS

The following GCR is the basis to interpreting all the regulations that apply to motor sport.

GCR 226 states: *In interpreting motorsport regulations and specifications "what is not specifically permitted is disallowed" is the normal concept in keeping with the French regulations on which all motor sporting regulations are based.*

This means that you may only do something if the rules say you may. Competitors and officials alike shall adopt the following principle when reading and applying the rules: *They should only be concerned with the normal plain meaning of the wording of the regulations and shall pay no attention to any claim as to what the regulations were intended to mean.*

CURRENCY OF THESE REGULATIONS

These regulations will govern the technical aspects of oval racing until 30 June 2010.

CHANGES TO THESE REGULATIONS

These regulations are administered by the persons elected and appointed to oversee oval racing. They are the controllers of these regulations. They have a responsibility to the broad competitor base to address or clarify issues as and when they arise. They may make changes to the regulations by way of a properly published circular. That circular will only become effective 2 weeks after it is published.

WHAT DO YOU DO IF YOU SUSPECT YOUR FELLOW COMPETITOR IS ILLEGAL

You have the right to protest. You would need to specify what you think is illegal on the vehicle. Race officials will have the car examined by the technical team. Should you be correct the other competitor will be excluded and your money will be returned.

WHAT IS CHEATING

There is a vast difference between being found to have contravened technical regulations and deliberately planning to be outside the regulation and taking premeditated steps to disguise these irregularities. A good example of cheating is where a electronic control unit on a vehicle is opened and altered internally, contrary to regulations or where another control unit is wired into the harness and hidden.

Where technical consultants believe that the line between being illegal and cheating has been crossed they shall report this to the race officials, having excluded the competitor from the results. A competitor found guilty of cheating shall be banned from racing for at least 6 months without the option of having the ban suspended.

GENERAL VEHICLE REGULATIONS – APPLICABLE TO ALL CLASSES

CR 1 DEFINITIONS

- 1.1 The only GCR's that apply to the interpretation of these class and construction regulations or the duties of officials and competitors in respect thereto are **GCR's 226, 245,249,255, and 257.**
- 1.2 Throughout these class regulations there will be reference to different types of engine builds being:
 - 1.2.1 The **stock** engine – which means that all the parts in the engine shall be standard or generally accepted replacement parts for stock vehicles;
 - 1.2.2 The **modified** engine – which means that the parts utilized may at the discretion of the competitor be either standard or race parts; and
 - 1.2.3 The **open** engine – which as the name implies means that there are almost no restrictions to the manner in which the engine is built.
- 1.3 The regulations also refer to differing vehicle construction as follows:
 - 1.3.1 **Original road going vehicle** – these vehicles are ordinary road going vehicles that have been converted to race cars. The key element of this type of vehicle is that the suspension pick up points have not been altered or connected to any of the roll cage pipes;
 - 1.3.2 **Semi-space frames** – these vehicles are original road going bodies that have evolved to a point where the suspension pick up points have been altered or where these points are connected to the roll cage pipe work. Included in this class of vehicle is the front wheel drive body shell that has been made rear wheel drive;
 - 1.3.3 **Space frames** – these are purpose built racing chassis; and
 - 1.3.4 **Open wheelers** – these are purpose built chassis designed for open wheel racing.
- 1.4 The regulations will refer to the following types of body shells: -
 - 1.4.1 **Stock bodies** – this means that the vehicle must be clearly recognizable as an original road going vehicle as the rear fenders, roof, all fender walls; bulkheads and roof pillars must still be present;
 - 1.4.2 **Replica bodies** – this means that the whole body or sections thereof may be replaced with a moulded copy of a vehicle. These are typically used with space frames;
 - 1.4.3 **Plated bodies** – these vehicles are also typically space frames and have flat metal sheet or other materials as permitted in their class regulations fitted to cover the frame. These vehicles typically present in a wedge design; and
 - 1.4.4 **Open wheel bodies** – these vehicles have a cover over the engine bay and a separate cover over the rear fuel tank area. The sides of the vehicles are usually plated.
- 1.5 The following applies in respect of the type of part that may be used:
 - 1.5.1 **Purpose made parts** – these parts are those that the competitor makes himself or has made.
 - 1.5.2 **Race parts** – these parts are made specifically for racing.
 - 1.5.3 **Standard parts** – these are original equipment or generally accepted, commercially available, proprietary branded, replacement parts, which specifically excludes any purpose made or racing parts. These parts may be further limited to: -
 - 1.5.3.1 **Vehicle specific standard parts** - which means that parts specified for the particular make of vehicle or engine must be used;
 - 1.5.3.2 **Brand specific standard parts** - which means that parts specified for the particular brand of vehicle or engine may be used. By way of example this means that any component from any Ford may be used in a Ford.
 - 1.5.3.3 **Class specific standard parts** - means that any part which in it's own right would qualify as a standard part may be used. These parts are used when for instance the regulations specify that the choice of brakes is free within the general choice restrictions of the class.
- 1.6 Throughout these regulations frequent reference is made to fibre glass. The term “fibre glass” must be regarded as a collective word for all forms of suitable composite materials, including carbon fibre and Kevlar™.
- 1.7 Throughout these regulations references is made to sheet metal. Aluminium sheet may also be used instead of metal sheet.
- 1.8 Throughout these regulations reference is made to the inside or outside as it relates to vehicles. Over and above the plain meaning of the words relating to whether or not something is inside or outside something the words, depending on the context, relate to a specific side of the vehicle. The term outside relates to the left side of the vehicle that is raced in a clockwise direction.

CR 2 ANNUAL INSPECTIONS

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- 2.1 All competitors are required to present their vehicles for an annual technical inspection. At this inspection a detailed technical report of the vehicle will be compiled which will be used as a point of reference for all subsequent technical evaluations of the vehicle.
- 2.2 Competitors will be required to pay an annual inspection fee as determined by his region, taking into account the cost of the facilities in the region.
- 2.3 These technical inspections shall be done by either the regional technical consultant or any inspector that has registered with MSA. A list of these inspectors will be found at the back of this book.
- 2.4 Inspections shall be done where the vehicle can be inspected carefully. It is recommended that inspections are done at workshops that have hoist facilities or at very least an inspection pit.

CR 3 NUMBERS, NAMES, MARKINGS, ADVERTISING AND SLOGANS ON VEHICLES/PAINTING OF VEHICLES

3.1 **Please also refer to GCR's 246 to 249.**

3.2 Numbers:

- 3.2.1 Competitors must realise that the number is the primary means of identification in respect of scorers, officials, fellow competitors and the spectator. A look at any track will reveal many similar looking and similarly painted vehicles – only the numbers are unique. Competitors should strive towards making the number a feature of their vehicle.
- 3.2.2 Vehicles will be identified by means of a number as per the National number system. The venue prefix, as allocated by MSA, to reflect the competitor's registered home base is compulsory. A list of the prefixes is to be found in the back of this book.

NOTICE NATIONAL NUMBERING SYSTEM EXPLAINED

NN 1 The objectives of the system are:

- 1.1 To create a unique race number for each competitor;
- 1.2 To aid competitors in creating awareness about themselves;
- 1.3 To assist event officials by removing duplicate numbers and thereby potential errors; and
- 1.4 To assist commentators and the public by improving the identification of the competitor.

NN 2 Due to the many duplications that have developed over time the system has been started by grouping existing competitors into the following combined class groups:

- 2.1 1600 saloons – dirt;
- 2.2 1600 saloons – tar;
- 2.3 2100 saloons and hotrods – dirt;
- 2.4 2100 saloons, 2L hotrods and hotrods – tar
- 2.5 American saloons – dirt
- 2.6 Junior / Development formulae – dirt;
- 2.7 Junior / Development formulae – tar;
- 2.8 Super saloons – tar;
- 2.9 Midgets – dirt;
- 2.10 Midgets – tar;
- 2.11 Micro and ninja midgets – tar;
- 2.12 Sprint Cars – tar

NN 3 The numbers remain allocated to a competitor as long as he or she races.

- 3.1 Where the competitor becomes an SA champion (ends second or third in the series) the race number will remain allocated to him even though he is entitled to use the SA number.
- 3.2 The number will remain allocated to a competitor for 13 months after his licence expires.
- 3.3 Competitors may buy and sell numbers amongst each other. In this case written proof of purchase must be submitted.
- 3.4 The EXCO may declare certain numbers off limits either permanently or for a period in honour of competitors who may have passed away or retired.
- 3.5 Should an existing competitor move to another class he may take his number into that class if it is open in that class. Where a competitor participates in more than one class he will be required to have a single number in all the classes and will be reallocated a number.

NN 4 Numbers are allocated as follows:

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- 4.1 It is recorded that there has been a process whereby competitors who have achieved success in the sport have been given preference. This process is now complete. From now onwards it is first come first served.
- 4.2 As stated, competitors who are already on the National Number data base who continue to compete in the same class or classes will automatically be reallocated their number on a year by year basis.
- 4.3 New competitors as well as those whose information is not yet on the data base should contact the Numbers administrator by following the relevant links on the MSA website.
- 4.4 The number selected will be reserved for 14 days in order to allow the competitor to obtain his licence. Thereafter the number will be free.

NN 5 The number system is being unified as follows:

- 5.1 When one of the drivers cease competing or fails to renew his licence the number in that class will be closed. This process will continue until each number is used only once.
- 5.2 New numbers are allocated to a driver and are immediately closed to all other classes.

- 3.2.3 Numbers shall be positioned as set out in the relevant class regulations.
- 3.2.4 There are two definite styles of numbering permitted being:
 - 3.2.4.1 The typical USA / UK oval racing style where the numbers are very stylish and very large on the door panels of the car. The numbers are applied directly onto the bodywork. These numbers shall always be of contrasting colours and be highly visible in the prevailing race conditions and light conditions.
 - 3.2.4.2 The typical circuit racing / rally style where the number is placed on a white rectangular shape decal, often with sponsors' branding. This is typically smaller than the oval style. These numbers shall always be black numbers on a white background.
- 3.2.5 The minimum dimensions of the numbers are as follows:
 - 3.2.5.1 When applied directly on the bodywork – **400** mm high with a stroke of **75** mm;
 - 3.2.5.2 When applied onto a background decal – **300** mm high with a stroke of **50** mm;
 - 3.2.5.3 On the sun visor panel or front wing (specific to open wheelers) – As large as the dimensions will allow.
 - 3.2.5.4 The size of the prefix is free.
- 3.2.6 All numbers shall be in position when the vehicle is presented for scrutiny. Modifications may be required because of observations made by the lap scorers.
- 3.2.7 The South African Champion or the National Class champion shall carry the number "SA 1" on his vehicle. The competitors who finished second and third in the National Championship Series shall carry the numbers "SA 2" and "SA 3" on their vehicles.
- 3.2.8 The numbers 1, 2 and 3 may not be used outside of the above regulations. No number that would create the impression that the competitor is a champion may be used. It follows that for instance the number 001, 002, and 003 cannot be used under any circumstances.
- 3.3 Names:-
 - 3.3.1 The name and surname of the competitor shall be painted or sign written as follows:
 - 3.3.1.1 Saloon vehicles - onto either the whole of the sun visor panel, or on the spectator side of the roof just above the door or on the replacement window panel in the rear door that faces the spectators.
 - 3.3.1.2 Onto the lower, forward area of the end plate of open wheeled vehicles on the spectator side.
 - 3.3.1.3 Dimensions of letters to be a minimum of 150mm high with a 25 mm stroke.
- 3.4 Advertising, Logos and slogans:-
 - 3.4.1 The club logo may be added alongside the name.
 - 3.4.2 Advertising is permitted on all vehicles. The advertising shall not interfere with the numbers at all.
 - 3.4.3 In respect of advertising GCR246, 247 and 248 apply.
 - 3.4.4 No rude or offensive logos, signs, slogans or similar are permitted.
 - 3.4.5 As a guide to competitors and officials the following:
 - 3.4.5.1 Swear words, even if disguised by asterisks and other symbols are regarded as rude;
 - 3.4.5.2 Any blatant reference to sex, the sexual act or the naked body shall be regarded as offensive;
 - 3.4.5.3 Any reference to race is offensive;
 - 3.4.5.4 Any reference that belittles or pokes fun at the belief or religion of another shall be offensive. It is however acceptable to state your own personal beliefs (irrespective of what that is).
- 3.5 Specific markings required: -

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- 3.5.1 Competitors using methanol as fuel shall display a luminous orange dot, with a minimum diameter of 300 mm on both sides and on the roof of the vehicle. The wording “Me” or a black lightning bolt shall be printed on the dot. The letters or the bolt shall be at least 175 mm high and have a stroke of 30 mm.
- 3.5.2 Rookie competitors in saloon classes will mount a 45 x 30 cm yellow flag to the middle of the boot lid. Rookie competitors in the open wheel classes will mount the flag into the top of the rear push bar. In the micro midget class the flag will mount onto the rear wing. In all cases the flag pole used shall have a suitable means of preventing the flag from becoming dislodged.
- 3.6 Vehicles shall be neatly painted and presented in an acceptable condition to the Scrutineers of an event. Competitors who are part of teams must ensure that steps, other than the numbers, are taken to differentiate between the team mates.

CR 4 MIRRORS

- 4.1 Rear view mirrors are not permitted in open wheel classes. Rear view mirrors may be fitted to other classes but may not protrude outside the widest point of the vehicle. Mirrors may not exceed 300 cm²

CR 5 WHEELS AND RIMS

- 5.1 Double wheels are not permitted. Hence all vehicles must have two front and two rear wheels only.
- 5.2 All wheel nuts shall be machined in order that the scrutineer can determine the length of the studs. All wheel nuts are to be fitted. The stud thread shall be in good order and when the nut is in place at least 100% of the diameter of the nut or 20-mm of thread shall be engaged whichever is the greater. In cases where the wheel is fastened by a stud turned into the hub or drum the same regulations in respect of the engagement of the stud shall apply.
- 5.3 The width of the rim may not exceed the tread width of the tyre utilised with that rim. Officials and competitors should note that this measurement is taken where the tyre seats and is not the distance between the outside edges of the rim.
- 5.4 Bead lock rims are only permitted on open wheel vehicles and in the classes where they are specifically permitted.

CR 6 WHEEL SPACERS AND WHEEL ADAPTERS

- 6.1 Wheel adapters and spacers are permitted.
- 6.2 Wheel adapters must be made of steel and may not exceed 25-mm in thickness.
- 6.3 Wheel spacers may be made of steel or aluminium and shall be flat and have a maximum thickness of 65-mm.
- 6.4 Adapters and spacers must be stepped to locate the wheel.
- 6.5 Both these parts may not be fitted to the same wheel simultaneously.
- 6.6 High tensile steel cap screws shall be utilised to replace wheel studs, affix adapters, or fit the wheel if any form of spacer or adapter is used.

CR 7 TYRES AND SUSPENSIONS

- 7.1 Tyres may not protrude beyond the wheel arches or bodywork in all saloon class categories.
- 7.2 Tyres other than slicks shall have a minimum of 2 mm of standard tread pattern visible and capable of measurement across at least 75% of the width of the tyre when submitted at scrutineering. Scrutineers shall refuse any tyre that has reached the tread wear indicator.
- 7.3 All tyres and replacement wheels shall be presented unmarked at scrutineering and may be marked at scrutineering, if they comply with these regulations.
- 7.4 The tyre manufacturer's original extruded side wall markings, indicating manufacturer's details, size, profile, country of origin, ratings, serial numbers and batch codes may not be removed or altered.
- 7.5 Any chemical treatments or any means to artificially enhance tyre performance is prohibited. Buffing or skimming is permitted. No grooving is permitted.
- 7.6 Wherever a class regulation refers to a tyre size, such tyre size shall be determined by reference to the extruded tyre markings made by the manufacturer and not physical measurement. Notwithstanding this regulation, a scrutineer or a technical representative shall be entitled to measure tyres for compliance with manufacturer's specifications. The only exception to this regulation is retreaded tyres where the width of the retreaded portion shall be measured for compliance with width regulations.
- 7.7 The tyre aspect ratio is free.

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- 7.8 The use of nitrogen in tyres is permitted.
- 7.9 The following tyre types are, subject to the stipulations contained in the specific class regulations, available to competitors: -
- 7.9.1 Road legal tyres**, described as tyres which are designed for road going use in terms of accepted International standards. Any tyre that has an inscription specifying that it is only for competition use or is not permitted on highways is a race tyre and may not be used. It is brought to the attention of competitors that the commonly used "M+S" inscription relates to the tyre's performance in mud and snow and does not signify a race tyre. Please also note that tyres that only comply with the USA DOT certification are not considered road legal in South Africa and hence do not comply with this regulation.
- 7.9.2 **Race tyres**, described as tyres manufactured by a recognised tyre manufacturer, which are designed for race use only. These tyres can be slick tyres for use on tar or treaded for use on dirt. Such tyres must be generally available to all competitors. Please refer to the specific class for details of the tyres that are permitted.
- 7.9.3 **Retreaded tyres**, described as tyres, retreaded in the Republic of South Africa by recognised locally domiciled retreaders. These tyres shall comply with the relevant Traffic Act/SABS standards and be distributed to the general public for that purpose. It follows that such tyres must be generally available to the public at reputable commercial tyre dealers or retreaders. Imported casings are permitted. Race tyres may not be used as casings. These tyres are not permissible for tar events.
- 7.10 Control tyres** are used in many classes. In such a case tyre choice is limited to the tyre or tyres per the class regulations. The other way in which tyres are controlled is by regulating the maximum purchase price of the tyre used. In this case the class regulation will specify the price. This price shall mean the after discount price a member of the public would pay at recognised nationally branded tyre fitment centres. The price would include VAT. This regulation accepts that the tyre fitment trade practices a suggested retail price less discount structure and therefore the published price will be after the application of the maximum discount available to the ordinary citizen. The effect of this regulation is that there is no need for complex regulations about countries of origin or similar models. In simple terms this means that the scrutineer, organiser or technical may impound your tyre and be able to purchase that exact same tyre for the stated maximum price or less.

CR 8 SUSPENSION/RIDE HEIGHT

- 8.1 **Suspension** design is free subject to class regulations.
- 8.2 Coil and leaf spring rates are free.
- 8.3 Front and or rear strut towers may be braced from one front strut to the opposite strut.
- 8.4 **Ride height** may be made adjustable by using a threaded pipe to adjust the spring saddle.
- 8.5 Ride height is free. Vehicles are not permitted to scrape on the track at any time including cornering and braking. Vehicles that cause sparks due to being too low shall be stopped by the race officials.

CR 9 EXHAUST & SILENCER

- 9.1 The exhaust pipe shall be securely fitted to the vehicle and shall preferably be mounted above the floor pan of the vehicle to avoid the loss thereof.
- 9.2 A suitable metal plate mounted away from the exhaust in order that it acts, as an effective heat shield shall cover the pipe inside the driver's compartment.
- 9.3 Vehicles that have the exhaust below the floor pan shall fit saddles to the front and rear of the vehicle to retain the **exhaust system** should it break or fail in any other manner. Material to be 25 mm wide and 3 mm thick metal. Saddles to be properly bolted to the vehicle.
- 9.4 Competition **exhaust manifolds** are permitted.
- 9.5 Exhaust tail pipes passing over the side of the car may only do so at a maximum height as measured from the top of the pipe of 300mm on Tar cars and 450mm on Dirt cars. This rule is clarified to mean that the maximum height of the exhaust is reflected in the rule. It may be lower than the height.
- 9.6 All saloon vehicles as well as all rotary engined midgets shall have a silencer.
- 9.7 GCR 245 and the environmental code of MSA shall apply. The measurement shall be done with the sound meter installed 5 metres beyond the start line (in the direction of the first corner). The maximum reading for an individual vehicle shall be 105 dB. The maximum dB level for a field of 20

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vehicles shall be 75 dB, when measured 130 metres away from the track surface. For further guidance about noise please consult the Environmental Code of MSA.

CR 10 BRAKES

- 10.1 Effective braking is mandatory on all 4 wheels of saloons. For open wheelers please refer the specific class regulations.
- 10.2 Only driver operated brake balance / bias adjustment systems are permitted.
- 10.3 ABS is not permitted in any class.
- 10.4 Copper brake lines or pipes are not allowed.
- 10.5 Pedal boxes are free.

CR 11 TRANSMISSION

- 11.1 Only two-wheel drive is permitted.
- 11.2 Differentials may be locked.
- 11.3 No sequential gearboxes or traction control systems are allowed.
- 11.4 Clutch driven plates are free

CR 12 CARBURETION / FUEL INJECTION / IGNITION

- 12.1 The use of Nitrous oxide or water injection is not permitted.
- 12.2 Swirl pots /anti surge tanks are permitted, provided that they in no way aid fuel cooling.
- 12.3 No fuel cooling whatsoever is allowed.
- 12.4 Fuel pressure regulators are permitted.
- 12.5 Induction and ram tubes are free unless specified by a class regulation.
- 12.6 Fuel and air filters are free and may be fitted at the discretion of the competitor.
- 12.7 Fuel pumps are free in respect of means of operation and capacity;
- 12.8 Mechanical fuel injection is permitted unless prohibited by class regulations.

12.9 Carburettors

- 12.9.1 The class regulations state the limitations that apply to carburettors and intake manifolds. Subject to these limitations the carburettors and intake manifolds are free.
- 12.9.2 Carburettor jets and needles are free and the carburettor may be modified but the operating principle must remain as standard.
- 12.9.3 Dellorto and Weber carburettor parts may be interchanged.
- 12.9.4 The internal diameter of choke tubes is subject to class regulations. The internal shape of the choke tube shall have a radius curve leading from the outside of the choke tube to a point where the internal diameter is at the minimum size set out in the applicable class regulation. The parallel section shall remain at that diameter for at least 2 mm. It is recognised that most choke tubes are purpose made. However, it is imperative that the choke tube retains a smooth finish and no grooves or holes may be drilled or cut into the internal portion of the choke tube. Otherwise stated it is the clear intention of the regulations that all air that passes into the carburettor (directly or indirectly) shall pass the section of the choke tube where the diameter of the tube reaches the minimum set out in the applicable class regulation.

12.10 Fuel Injection

- 12.10.1 These regulations and the class regulations may limit various aspects of fuel injection systems and intake manifolds. Subject to these limitations the fuel injection systems and intake manifolds are free.
- 12.10.2 Only butterfly type throttles are permitted – no slides or rollers.
- 12.10.3 Competitors may elect to install two injectors per cylinder in classes where fuel injection is permitted, provided they operated from a single controlling source.
- 12.10.4 No secondary injection systems are permitted, unless permitted in class regulations. Secondary injection is defined as:
 - 12.10.4.1 The use of more system to activate / operate more than one injector per cylinder to input the fuel into the cylinder; or
 - 12.10.4.2 The injection of water or methanol together with the fuel utilised with the latter option only being available to turbo charged engines.
- 12.10.5 Subject to these limitations and the relevant class regulations the injection is free.

12.11 Ignition

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- 12.11.1 The ignition regulations are specified within each class regulation.
- 12.11.2 In all cases where standard (original equipment) or specified ignition units are stipulated these units shall remain completely unaltered. Any sign of tampering or unauthorised modification will be regarded as cheating.
- 12.11.3 Where standard ignition is stipulated all the sensors that make up the ignition system shall be standard parts specified for the particular engine utilised. The crankshaft position sensor may be removed from the flywheel and replaced with a timing disc and pickup at the crank shaft pulley. In this case steps must be taken so that the unit can be sealed by the technical team.
- 12.11.4 The ignition system must be visible and accessible for removal. The technical consultant is authorised to check the unit and the wiring at any time during an event.
- 12.11.5 All engines must have a fixed T.D.C. mark on the front of the engine.
- 12.11.6 Aftermarket ignition is permitted unless prohibited in a class.
- 12.11.7 Ignition systems may incorporate rev limiters and may be programmable for timing only.
- 12.11.8 Engines that do not have distributors in standard donor form must use a sensor on the crankshaft pulley or crankshaft damper only.
- 12.11.9 Any electronic device that controls more than just the supply of spark to the engine (and the permitted rev limiting function) is deemed to be an engine management system.

12.12 Electronic / Engine management

- 12.12.1 Whenever the regulations allow engine management systems these systems are (unless otherwise stated) limited to systems that are sold, serviced and supported in South Africa.
- 12.12.2 No system that would permit any form of traction control or administer any form of control over the braking system is permitted.
- 12.12.3 No electronic attachments or sensors may be affixed to the axles or wheels.
- 12.12.4 In all cases all auxiliary inputs and outputs should have values set to have absolutely no effect on the operation of the engine, gearbox, differential or brakes.
- 12.12.5 The system shall have a plug where a computer or controller can be plugged into the system.
- 12.12.6 Telemetry systems are not permitted. DATA LOGGING is defined to be the recording of engine information such as temperature and pressure in electronic format capable of being accessed by computer. Displays indicating such information are permitted
- 12.12.7 The control unit for the ignition/engine management may not be connected to carburettors, brakes, manifolds, gearbox, drive train or wheels through means other than the permitted sensors. The unit as well as all wires connected thereto shall be visible and accessible for removal.

CR 13 FUEL AND FUEL ADDITIVES

- 13.1 Generally please refer to GCR 240.
- 13.2 Throughout these regulations pump fuel shall mean a petroleum fuel dispensed from a filling station pump, in terms of the fuel sale and distribution regulations of the Republic of South Africa. Such fuel may be of unleaded or lead replacement type.
- 13.3 Fuels are allocated per class – please refer to the annexure at the end of each class.
- 13.4 Organisers who run Non National championship club classes shall specify the fuel to be used in that class.
- 13.5 No diesel is permitted
- 13.6 Methanol is permitted provided: -
 - 13.6.1 That the specific methanol safety features are in place at the venue; and
 - 13.6.2 That the specific clothing regulations are complied with; and
 - 13.6.3 That the vehicle is marked for methanol; and
 - 13.6.4 It is permitted in the class regulations.
- 13.7 Only a single type of fuel is permitted, meaning that, as an example, no methanol may be introduced into race fuel by any means at any stage of the induction/combustion process. Different brands of fuels may be used
- 13.8 The only permitted additives to fuel are:
 - 13.8.1 To race fuel (inclusive of LL100) – Proprietary branded upper cylinder lubricants/ two stroke oil;
 - 13.8.2 To pump fuel (as the specified fuel) - Proprietary branded upper cylinder lubricants/two stroke oil;
 - 13.8.3 To pump fuel (when other fuels are also permitted) – proprietary branded octane boosters and Proprietary branded upper cylinder lubricants/ two stroke oil;
 - 13.8.4 To methanol - Proprietary branded oils / two stroke oil/ castor oil/vegetable oil

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13.9 Fuel testing

- 13.9.1 Fuel shall in the first instance be checked by using a Digitron fuel conductivity meter. The results of this method of testing shall be used by all race officials to decide whether fuels are compatible with clean fuels supplied by organisers.
- 13.9.2 A competitor shall have the right to invoke the testing procedure set out in GCR 240. Such procedure shall be at his expense. In order to invoke this procedure he shall lodge a deposit of R10 000 (ten thousand Rand) with MSA through the stewards of the event.

CR 14 TOW HOOKS & REMOVAL OF VEHICLES

- 14.1 All vehicles shall be fitted with a clearly marked towing eye, painted bright yellow, front and back, in order that recovery vehicles may drag stranded vehicles off the circuit with the least delay. Such towing eye shall not protrude from the front or back of the vehicle. It is suggested that properly supported flat bar attached to the roll cage post would provide an ideal means of dragging a stricken car of the circuit using a webbed towrope.
- 14.2 All vehicles shall be fitted with eyes or hoops in the engine compartment, painted bright yellow that would enable the vehicle to be lifted by a breakdown vehicle. This is especially necessary in space-framed vehicles. These eyes or hoops shall be affixed in line with the chassis rails. The hoops may be replaced by permanently fixed straps that are mounted onto a suitable point in the vehicle.
- 14.3 Vehicles may also fit an overhead, roll cage mounted towing eye. The eye must be able to accept a D shackle.
- 14.4 This regulation shall not apply to classes that have external bumpers.

CR 15 WEIGHT REGULATIONS

- 15.1 Each set of class regulations specifies a minimum weight for the class – please refer.
- 15.2 Ballast weight may be made non removable by being poured into the pipe work of the chassis.
- 15.3 The following applies to removable ballast weights:
 - 15.3.1 Lead blocks shall be used and mounted above the floor;
 - 15.3.2 The ballast shall mount under or immediately in front of the driver's seat; and
 - 15.3.3 The ballast will be secured with 10 mm high tensile bolts and tear plated. There shall be at least two bolts per 10 kg block.
- 15.4 Where weights are to be checked the SR's for the event shall stipulate which scales are to be used and these scales shall be the only point of reference for all matters arising from any weighing. The organisers shall be obliged to have properly certified test weights available.
- 15.5 Weight shall include the driver and the vehicle will be in an as raced condition.

ENGINE REGULATIONS THAT APPLY TO ALL VEHICLES

CR 16 SPECIFICATIONS OF A STOCK ENGINE

- 16.1 Any normal production type engine is allowed. The class regulations should be consulted for minimum number of engines that have had to be manufactured for an engine to be used. The onus is on the entrant to prove the source and history of an engine.
- 16.2 A STOCK engine is viewed as a single unit comprising a cylinder block and a cylinder head (or heads) that were designed and manufactured by the manufacturer concerned for use with each other. Hence cylinder heads from another type of engine may not be substituted, irrespective of whether or not they fit onto each other. Similarly cylinder blocks from another type of engine may not be substituted.
- 16.3 The following modifications may be made to stock engines: -
- 16.3.1 The cylinder head may be skimmed.
- 16.3.2 Compression ratios are free.
- 16.3.3 The cylinder head ports may be modified no further in than a distance of 20mm inwards of the valve seat outer edge. Cylinder head port faces and manifold port faces may be blended together for a maximum of 10 mm into either the cylinder head port or manifold port.
- 16.3.4 Pistons may be pocketed for valve head clearance.
- 16.3.5 Camshaft profiles are free but the number of lobes and their location may not be altered. **The cylinder head may be relieved if required by a change of camshaft.**
- 16.3.6 The adjustment of valve timing by means of vernier gears or offset keys is permitted.
- 16.3.7 Camshaft timing adjustment is free and the camshaft drive may be modified for adjustment purposes.
- 16.3.8 The cylinder head valve seats may be modified. **However only 3 angled seats permitted.**
- 16.3.9 Valve seats inserts are permitted to address unleaded fuel concerns.
- 16.3.10 The method of valve tappet clearance may be modified.
- 16.3.11 Tappet or valve covers are free as long as the cover is not a part of the valve train.
- 16.3.12 Solid valve lifters may be substituted for hydraulic valve lifters and vice versa.
- 16.3.13 The cylinder block may be skimmed / decked.
- 16.3.14 Oil sumps, baffles and oil pickups are free. Sumps are free in respect of volume and design.
- 16.3.15 The removal of metal to balance internal engine reciprocating components is allowed. To clarify this means that the crankshaft may be drilled/ground to balance. Pistons and connecting rods may be machined to achieve equality of weight. However one piston and one connecting rod, that need not be attached to each other, must be left untouched.
- 16.3.16 The shot peening and nitriding of internal engine components is allowed. Knife edging however is not allowed.
- 16.3.17 A flywheel shall be fitted. Please consult the class regulations for weights and type permitted.
- 16.3.18 All fasteners (Nuts & Bolts) are free. The gudgeon pin may be made floating.
- 16.3.19 Pulley sizes are free.
- 16.3.20 Flexible engine mountings may be made solid.
- 16.3.21 No forced induction such as turbo charging or supercharging is allowed.
- 16.3.22 Oil flow restrictors in the cylinder head are permitted.
- 16.4 The following restrictions are imposed on modifications to stock engines: -
- 16.4.1 The inlet and exhaust valve head and stem diameters shall remain as specified for the engine utilised. **The valve may not be flowed.**
- 16.4.2 **The cylinder block may be bored to fit the standard piston stipulated in the manufacturer's specifications plus 1.52 mm;**
- 16.4.3 **Pistons shall be as per original manufacturers specifications in respect of sizes and shape. The maximum oversize is the manufacturer's specification for standard plus 1.52 mm.**
- 16.4.4 Connecting rods may not be substituted and shall remain standard, but for balancing.
- 16.4.5 Crankshafts shall remain as standard but the journals may be resized to manufacturer's specification.
- 16.4.6 All parts other than the camshafts and cam drive gear shall be according to standard specifications.
- 16.4.7 Roller rockers, billet steel crankshafts and cast steel connecting rods are not permitted even if the donor engine had these fitted in original equipment form.
- 16.5 The following applies to the ancillaries of stock engines: -
- 16.5.1 Only standard water pumps are permitted.
- 16.5.2 Alternators, power steering pumps and air conditioning pumps may be removed.

ENGINE REGULATIONS THAT APPLY TO ALL VEHICLES

CR 17 SPECIFICATIONS OF A MODIFIED ENGINE

- 17.1 Any normal production type engine is allowed. A minimum of 5000 of such engines shall have been manufactured internationally and the onus is on the entrant to prove the source and history of an engine. In view of the fact that cylinder heads may be changed the legality or otherwise of an engine will be determined by the cylinder block.
- 17.2 The cylinder head may be substituted with another cylinder head from the same manufacturer's brand. This is clarified to mean that any cylinder head of the same manufacturer's brand as the cylinder block can be interchanged as long as the cylinder head and the cylinder block comply with the engine units criteria set out above and absolutely no modification to **anything other than minor modification to improve the alignment** of the oil and water passages is required on either the block or the head to fit the cylinder head. The bolt pattern of the head and the block must be identical.
- 17.3 The following modifications may be made to modified engines: -
- 17.3.1 The cylinder head may be skimmed.
- 17.3.2 The cylinder head ports may be modified.
- 17.3.3 Porting and polishing of cylinder heads and manifolds is permitted.
- 17.3.4 Camshaft profiles are free provided the number of lobes and their location are not altered.
- 17.3.5 Camshaft timing adjustment is free and the camshaft drive may be modified for adjustment purposes.
- 17.3.6 The adjustment of valve timing by means of vernier gears or offset keys is permitted.
- 17.3.7 The cylinder head valve seats may be modified.
- 17.3.8 Valves are free.
- 17.3.9 The inlet and exhaust valve head and stem diameters are free.
- 17.3.10 The method of valve tappet clearance may be modified.
- 17.3.11 Solid valve lifters may be substituted for hydraulic valve lifters or vice versa
- 17.3.12 Roller rockers are permitted.
- 17.3.13 Tappet or valve covers are free as long as the cover is not a part of the valve train;
- 17.3.14 Pulley sizes are free;
- 17.3.15 The cylinder block may be skimmed /decked.
- 17.3.16 Pistons may be pocketed for valve head clearance.
- 17.3.17 Pistons are free.
- 17.3.18 Piston rings are free.
- 17.3.19 Connecting rods are free.
- 17.3.20 Compression ratios are free.
- 17.3.21 Bore and stroke ratios are free.
- 17.3.22 Crankshafts are free, but for the fact that they must remain cast iron, unless the engine used was manufactured with a cast steel crankshaft. No billet steel crankshafts permitted.
- 17.3.23 Crankshafts may be knife edged.
- 17.3.24 Flexible engine mountings may be made solid;
- 17.3.25 Oil sumps, baffles and oil pickups are free. Sumps are free in respect of volume and design.
- 17.3.26 Dry sump lubrication is permitted
- 17.3.27 The lightening of internal reciprocating components is permitted.
- 17.3.28 Cast iron main bearing caps may be replaced by steel bearing caps;
- 17.3.29 The removal of metal to balance internal engine reciprocating components is allowed.
- 17.3.30 The shot peening and nitriding of internal engine components is allowed.
- 17.3.31 A flywheel shall be fitted but the design and specification is free. **Aluminium flywheels are permitted.**
- 17.3.32 All fasteners (Nuts & Bolts) are free. The gudgeon pin may be made floating.
- 17.3.33 The application of a heat deflecting coating is permitted to the exhaust manifold and exhaust pipes, between the bolt up face of the exhaust manifold and the tail pipe.
- 17.3.34 Oil flow restrictors in the cylinder head are permitted.
- 17.4 The following restrictions are imposed on modifications to modified engines: -
- 17.4.1 No forced induction such as turbo charging or supercharging is allowed UNLESS permitted specifically by class regulations.
- 17.5 The following applies to the ancillaries of modified engines: -
- 17.5.1 Water pumps are free.
- 17.5.2 Alternators, power steering pumps and air conditioning pumps may be removed.

CR 18 SPECIFICATIONS OF AN OPEN ENGINE

- 18.1 Any normal production type engine is allowed.

ENGINE REGULATIONS THAT APPLY TO ALL VEHICLES

18.2 The following modifications may be made to OPEN engines: -

18.2.1 The material of which any engine component is manufactured may be changed.

18.2.2 The cylinder head may be substituted, even with that from another manufacturer or brand.

18.2.3 The cylinder head may be skimmed.

18.2.4 The cylinder head ports may be modified.

18.2.5 Porting and polishing of cylinder heads and manifolds is permitted.

18.2.6 Camshafts are free.

18.2.7 Camshaft timing adjustment is free.

18.2.8 The adjustment of valve timing by means of vernier gears or offset keys is permitted.

18.2.9 The cylinder head valve seats may be modified.

18.2.10 The inlet and exhaust valve head and stem diameters are free.

18.2.11 Valves are free.

18.2.12 The method of valve tappet clearance may be modified.

18.2.13 Solid valve lifters may be substituted for hydraulic valve lifters and vice versa

18.2.14 Roller rockers are permitted.

18.2.15 Tappet or valve covers are free.

18.2.16 Pulley sizes are free;

18.2.17 The cylinder block may be skimmed/decked.

18.2.18 Pistons may be pocketed for valve head clearance.

18.2.19 Pistons are free.

18.2.20 Piston rings are free.

18.2.21 Connecting rods are free.

18.2.22 Compression ratios are free.

18.2.23 Bore and stroke ratios are free.

18.2.24 Crankshafts are free.

18.2.25 Flexible engine mountings may be made solid;

18.2.26 Oil sumps, baffles and oil pickups are free. Sumps are free in respect of volume and design.

18.2.27 Dry sump lubrication is permitted

18.2.28 The lightening of internal reciprocating components is permitted.

18.2.29 Cast iron main bearing caps may be replaced by steel bearing caps;

18.2.30 The removal of metal to balance internal engine reciprocating components is allowed.

18.2.31 The shot peening and nitriding of internal engine components is allowed.

18.2.32 A flywheel shall be fitted but the design and specification is free. Aluminium flywheels are permitted.

18.2.33 All fasteners (Nuts & Bolts) are free.

18.2.34 The use of heat deflective coatings is free.

18.3 Oil flow restrictors in the cylinder head are permitted.

18.4 The following restrictions are imposed on modifications to open engines: -

18.4.1 No forced induction such as turbo charging or supercharging is allowed UNLESS permitted specifically by class regulations.

18.5 The following applies to the ancillaries of OPEN engines: -

18.5.1 Water pumps are free.

18.5.2 Alternators, power steering pumps and air conditioning pumps may be removed.

CR 19 SPECIFICATIONS OF ROTARY ENGINE

19.1 Any twin rotor production type engine is allowed. The onus is on the entrant to prove the source and history of an engine.

19.2 Any modification that is permitted outside the engine (as stipulated in the open engine specifications) shall be permitted for rotary engines.

19.3 The following modifications may be made to rotary engines: -

19.3.1 Porting is allowed.

19.3.2 Peripheral port engines are permitted.

19.3.3 Porting may extend past the face of the rotor.

19.3.4 The water seal may be modified.

19.3.5 The water jackets may be filled.

19.4 **The following limitations apply:-**

19.4.1 No forced induction such as turbo charging or supercharging is allowed.

ENGINE REGULATIONS THAT APPLY TO ALL VEHICLES

- 19.4.2 The maximum internal diameter of the last 30 cm of the tail pipe shall be 72 mm. Only a single tail pipe is permitted.
- 19.4.3 No titanium rotors are permitted.
- 19.4.4 No aluminium housing plates are permitted.

SAFETY REGULATIONS THAT APPLY TO ALL VEHICLES

CR 20 GENERAL SAFETY

- 20.1 No ballast, other than weights fitted to comply with minimum weight regulations is allowed. Any such ballast shall be fitted as set out in CR 15 above.
- 20.2 All bonnets and fenders shall be in place at the commencement of every race.
- 20.3 Competitors must be able to exit their vehicles and reach a point no less than 10 (ten) meters from the vehicle within 30 seconds.

CR 21 CRASH HELMETS

- 21.1 Helmets must fit properly, be secured and be suitable for the purpose intended.
- 21.2 Helmets as deliberately constructed so as to absorb the energy of an impact. It therefore stands to reason that if, following such impact, the helmet is damaged (even if the damage is not readily apparent) it must be replaced.
- 21.3 Painting or the use of solvents on helmets can damage them and is therefore potentially dangerous. Helmets should be cleaned with a weak solution of soap and water.
- 21.4 Helmets should be as closely fitting as possible, consistent with comfort. No sideways movement should be possible, nor should the helmet be able to be pulled off the head in a forwards direction with the strap secured.
- 21.5 When not in use helmets should be stored in a cool, dry place away from sunlight, preferably in a helmet bag.
- 21.6 Visors must provide clear vision.
- 21.7 When there is doubt about a helmet's fitness, the chief scrutineer shall be empowered to impound the helmet for the duration of the event. Once the event is complete the helmet may be returned. Helmets not claimed within 7 days will be destroyed.
- 21.8 Full face helmets are compulsory.

CR 22 COCKPIT AREAS / FIREWALLS

- 22.1 All vehicles must have a properly constructed cockpit area. The material used to make the firewall, shaft tunnel and cockpit area shall be not be combustible.
- 22.2 This cockpit area must house the seat and the controls of the vehicle. The cockpit area must separate the competitor from the engine compartment as well as from compartments where the fuel tank is housed.
- 22.3 The cockpit must have a floor covering the full area where the driver is seated and it must part of the original vehicle's body in the case of original road going vehicles or must be welded into place in space frame vehicles.
- 22.4 Properly constructed firewalls are a vital part of the mechanisms required to prevent the passage of flame into the driver's compartment. All firewalls, regardless of vehicle construction must be complete in all respects. This specifically requires the area behind the rear axle to be covered as well. Their construction must be such that they, the firewalls, would be fluid-proof. This implies that firewall will be constructed in such a fashion that all pipes, parts of chassis or any other item that needs to pass through the firewall, pass through with the smallest hole possible. All firewalls shall be constructed of metal - hence materials such as rubber and fibreglass are not acceptable as firewalls.
- 22.5 Bonnets shall be so designed and fitted that they would prevent the passage of flame into the cockpit. Hence no gaps are permitted between the bonnet and the dashboard / window aperture area.
- 22.6 All pipes and wires that pass through the firewall shall have rubber grommets.
- 22.7 The cockpit area on the passenger side of the driver may be enclosed. The following shall apply:
 - 22.7.1 The material used shall be folded downward from the horizontal plane on the driver's side.
 - 22.7.2 The cover may slope downwards from the engine bay to the gear lever. At that point it shall be horizontal and shall be no higher than 50 cm above the original floor or chassis beams. The cover may slope upward to the parcel shelf / rear window / tailgate sill as the case may be from a point 50 cm behind the seat. For existing vehicles a 500 mm gap must exist. This gap must be wide enough to extricate the competitor on a back board.
 - 22.7.3 The cover shall be removable.
 - 22.7.4 The cover shall be able to support a weight of 100 kg.

SAFETY REGULATIONS THAT APPLY TO ALL VEHICLES

CR 23 ROLL CAGES AND SIDE IMPACT (“SISSY”) BARS

- 23.1 The safety cage must be designed and constructed so that it substantially reduces body shell deformation and so reduces the risk of injury to occupant. The essential features of a safety cage are sound construction, design to suit the particular vehicle, adequate mountings, and a close fit to the body shell. The side impact bars shall be placed so that they offer the most strength and protection in the event of a side impact.
- 23.2 The specifications for the roll cages and side impact bars can be found in the followings sections of the rule book: -
- 23.2.1 Saloons – in the section dealing with saloons
 - 23.2.2 Midgets – in the midget class regulations
 - 23.2.3 Micro midgets in the micro midget regulations
 - 23.2.4 Sprint cars – in the sprint car regulations.
- 23.3 The roll cage pipes should be a straight as possible. Where the construction of the vehicles necessitates bowed or curved pipes these shall be reinforced by triangulation.
- 23.4 The safety cage shall be padded in the immediate vicinity of the competitor's body with a fire retardant foam material.
- 23.5 The cage shall be fitted with a base plate, welded, or bolted onto the floor, sill, or wheel arch of the vehicle if the original body of a standard vehicle is utilised. The cage of a purpose built chassis shall form an integral part of the chassis itself and shall accordingly be welded directly onto the chassis legs.
- 23.6 No holes or slots or any type of measure intended to reduce the weight of the pipe work utilised is permitted.
- 23.7 None of the legs of the roll cage may rely on another element of the roll cage for support.

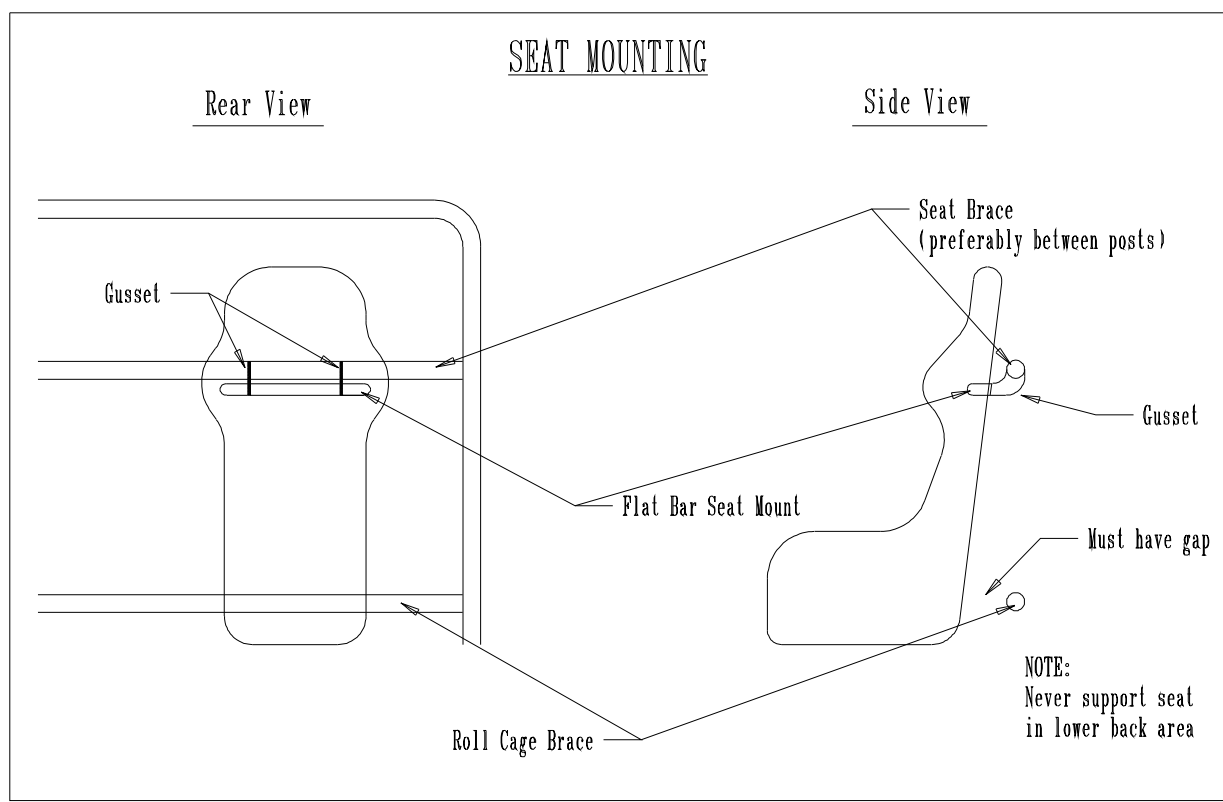
CR 24 SAFETY BELTS

- 24.1 The seat belts and the installation must comply with the MSA specification printed as an annexure to these rules.
- 24.2 Arm straps are optional, but must be of the quick release type.

CR 25 SEATS.

- 25.1 It is recommended that FIA approved competition seats be fitted.
- 25.2 Only racing type seats are allowed. It follows that no conventional passenger vehicle seats may be used in their original or modified state.
- 25.3 Non-FIA approved seats shall be reinforced by clearly visible aluminium or metal backing fitted directly behind the seat if it does not mount flush against a properly constructed panel. Such backing shall be properly shaped in accordance with the seat of the vehicle and shall have no sharp edges and form an integral part of the mounting of the seat itself. Fibreglass seats shall be covered. The minimum thickness of materials for non FIA seats is as follows:
- 25.3.1 Fibre glass / composite materials – 8 mm
 - 25.3.2 Aluminium – 2.5 mm
- 25.4 Seats must be bolted with tear plates as set out for safety belts above as follows: -
- 25.4.1 When original road going vehicles are used – to the floor pan of the vehicle – provided that the complete floor plan is still of sound construction and free of rust;
 - 25.4.2 In all other cases - to specifically constructed seat mounting legs that are in turn mounted to the chassis of the vehicle.
- 25.5 No cracked or broken seats are permitted.
- 25.6 The driver must sit to one side of the centreline in all saloon vehicle classes.
- 25.7 A properly braced and triangulated cradle shall be installed if a seat needs to be raised. The triangulation shall be on both lengthways sides (to protect against a forward failure) and at least one of the other sides. The cradle shall in turn be fitted as if it were a seat.

SAFETY REGULATIONS THAT APPLY TO ALL VEHICLES



CR 26 CLOTHING

- 26.1 Properly accredited single layer fire retardant race suits are mandatory. Multi layer suits are highly recommended. Please refer to the MSA circular in respect of labelling that would be required on all locally produced race suits. It is printed at the back of this book for the convenience of officials and competitors. Please note this regulation does not require new overalls to be purchased and should rather be seen as a measure to protect the competitor against unscrupulous purveyors of inferior racewear.
- 26.2 Approved fire retardant gloves are compulsory.
- 26.3 The use of fire retardant socks and balaclavas is highly recommended for all competitors. **Competitors are ADVISED that they will be permitted to race without these socks and balaclavas but in doing so they knowingly assume the risks associated with being involved in a fiery incident without these safety garments.**
- 26.4 Ideally fire resistant clothing should carry the FIA/SFI approval label.
- 26.5 Clothing must be in good condition and must fit properly.

CR 27 DRIVER CONTROLS

- 27.1 All vehicles shall be operated by means of a steering wheel, which shall not be of wood.
- 27.2 The steering wheel may be removable. Generally competitors should be aware that a removable steering wheel aids the extraction of the driver in the event of medical intervention.
- 27.3 The steering column may be repositioned to suit the driver. He shall however remain seated to one or other side of the centreline of a saloon car.
- 27.4 The steering column may be replaced with a purpose made column. No straight through column are permitted. There must at least be one joint in the column, preferably at an angle to the main column.
- 27.5 The brakes, accelerator, and clutch shall be operated by means of suitably sized and mounted foot pedals. **Pedal boxes are free.**
- 27.6 MSA may upon application allow certain specified modifications to be made in order to accommodate the needs of a handicapped competitor. Such application is to be fully motivated in writing. The MSAORC shall in its deliberations consider the rights of the handicapped as well as those of the organisers and other competitors.
- 27.7 **All vehicles fitted with dual throttle return springs.**
- 27.8 It is recommended that clutch less vehicles shall have a dual cable system attached to the throttle. Such a system must close the throttle without relying on a spring if the driver lifts the pedal.

SAFETY REGULATIONS THAT APPLY TO ALL VEHICLES

- 27.9 No in car adjustments, other than brake bias, permitted.
- 27.10 Telemetry systems are not permitted. DATA LOGGING is defined to be the recording of engine information such as temperature and pressure in electronic format capable of being accessed by computer. Displays indicating such information are permitted.

CR 28 KILL SWITCHES

- 28.1 An effective kill switch system must be fitted. The switch must:
- 28.1.1 Be clearly marked in red and externally with a regulatory blue triangle with a red flash therein.
 - 28.1.2 Be within the driver's reach, when seated and strapped in.
 - 28.1.3 Be operational from outside the vehicle for use by marshals. This can be achieved by activating the main switch by way of a pull cable;
 - 28.1.4 Have an operating key/lever that is not be made of plastic, nylon, or other flammable material.
 - 28.1.5 Break the neutral or negative circuit from the battery to the engine and chassis
 - 28.1.6 Break the ignition and electric fuel pump circuits.

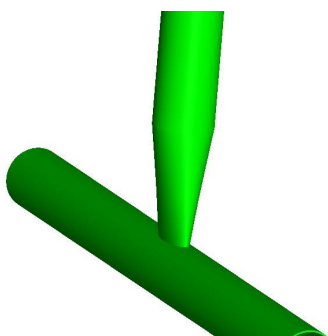
CR 29 FLUID RETENTION

- 29.1 All vehicles shall have their sump, gearbox and differential/axle plugs wired, and all the oil filters clamped or strapped.
- 29.2 A radiator water catch tank of a minimum capacity of 2 litres shall be fitted to the cooling system.
- 29.3 An oil catch tank, with a minimum capacity of 2 litres, capable of accepting surplus oil and fumes from the engine shall be fitted. The catch tank shall be connected to each breather outlet by means of a flexible pipe or similar conveyance, designed to feed the oil or fumes to the tank. The catch tank is to be emptied between races.
- 29.4 A drip tray shall be installed beneath the engine. The tray shall be securely mounted and shall have a lip all round.

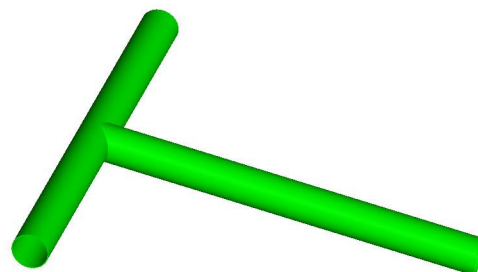
CR 30 PIPE WORK

- 30.1 All joints and seams in the construction of the vehicle are to be properly mitred and shall be welded.

INCORRECT



CORRECT



CR 31 PROP SHAFT / DRIVE SHAFT / RUNNING GEAR PROTECTION

- 31.1 Drivers must be protected from open running prop shafts by two steel bands, with a minimum width of 50 mm. The bands shall be at least five mm thick and shall be bolted or welded to the chassis. The object of these bands is to prevent a broken shaft from rising and coming into the cockpit area. The one band shall be 150 mm behind the front yoke.
- 31.2 All vehicles shall have a collar/hoop that would prevent the front end of the running gear (prop shaft or torque tube) to lodge in the track should it break while the vehicle is in motion. To be effective this hoop or collar should be approximately 25% along the distance of the shaft as measured from the front. It is not necessary to install this hoop if the construction of the vehicle already fulfils this function by having the prop shaft run above the chassis.

CR 32 BATTERIES

- 32.1 All batteries must be securely fixed into the vehicle in a battery box secured by bolts with a diameter of at least 8 mm and reinforcing plate.

CR 33 EXHAUSTS AND SILENCERS

SAFETY REGULATIONS THAT APPLY TO ALL VEHICLES

- 33.1 All vehicles and SR's shall comply with GCR 245 and the Environmental code of MSA
- 33.2 A suitable metal plate mounted away from the exhaust in order that it acts, as an effective heat shield shall cover the pipe inside the driver's compartment.

CR 34 FUEL PIPES AND FUEL TANKS

- 34.1 It is highly recommended that properly designed and manufactured racing fuel tanks, especially bag tanks are utilised. The use of fuel tank foam is also highly recommended. Metal fuel tanks shall be made of metal at least 1 mm thick. Boating tanks are permitted, provided they comply with the balance of this regulation.
- 34.2 A fuel tank breather, which shall vent externally, must be fitted to all fuel tanks. A non-return valve shall be fitted to the breather. The non-return valve must not be airtight.
- 34.3 The fuel tank shall have a non-vented cap. The cap may not be mounted into the bodywork of the vehicle. Where a conventional road going vehicle or space frame vehicle is used the cap shall be fitted directly to the tank and be housed within the boot space. In all other cases, a rubber hose from the tank to the cap will be allowed. The fuel filler hose will terminate into the cap fitting which shall be flush mounted to the upper horizontal portion of the body shell or panelling as the case may be.
- 34.4 Fuel tanks must be mounted in a separate compartment to the driver. A complete, sealed firewall must be constructed to separate the competitor from the fuel tank and the fuel pumps. Where conventional road going vehicles are used the fuel tank will mount inside the boot area. In hatch type vehicles the fuel tank will be placed in the spare wheel well. In these cases a firewall will be constructed from the driver's side of the tank to the tailgate sill.
- 34.5 Fuel tanks must be securely mounted to the boot floor or the chassis of the vehicle with bolts or metal straps. Tanks may not be welded into place.
- 34.6 The fuel tank shall preferably be mounted on the driver's side of the rear axle. If the tank is fitted behind the rear axle and below the boot floor a hoop shall be welded into place between the chassis rails to protect the tank. The material used shall be pipe with an outside diameter of 38 mm and a wall thickness of 2 mm. The hoop will be braced.
- 34.7 There may only be a single fuel tank which shall be the only source of fuel to the carburettors or fuel injection system. The fuel line may be branched to allow dual or spare pumps to be fitted
- 34.8 The fuel pumps shall be securely mounted.
- 34.9 Fuel pumps may not be fitted in the cockpit. All fuel lines in the cockpit must be of copper or steel tubing.
- 34.10 Inlets and outlets into and out of the tank shall be securely connected to the fuel lines, with special care being taken if the outlet is below the tank.

CR 35 DRY SUMP TANKS AND OIL LINES

- 35.1 Where dry sump lubrication is permitted the dry sump tank may be fitted inside the cockpit of saloon cars.
- 35.2 All oil lines shall be properly shielded.
- 35.3 The competitor must be shielded from the tank / oil cooler.
- 35.4 **All hoses to be hydraulic hoses.**

CR 36 FIRE EXTINGUISHERS

- 36.1 Every competitor shall have an operational 1.5 kg fire extinguisher at his pit/service vehicle at all times.
- 36.2 For competitors using methanol as a race fuel a mechanically or electronically operated on-board fire extinguisher system, with a minimum capacity of 2.5 kg, that is specified for use on inter alia fuel fires, is highly recommended. The system so fitted shall have a minimum of three nozzles. The nozzles shall be located in the engine bay, the driver compartment, and the fuel cell compartment. The extinguisher trigger must be located in a position where it can be activated by both the driver and the rescue personnel and shall be marked with a red "E". The system shall comply with and be checked in accordance with GCR 257.

SAFETY REGULATIONS THAT APPLY TO ALL VEHICLES

NOTICE

Competitors and scrutineers are warned that the practice of customizing hand held extinguishers for this purpose is incorrect and dangerous. These types of extinguishers have pick up pipes that collect the extinguishing material from the bottom of the cylinder when in an upright position. They do not function in an upside down position for example. Suitably designed pressurised canisters are available from specialist Motorsport shops and fire safety suppliers.

CONSTRUCTION REGULATIONS SPECIFIC TO SALOON VEHICLES

PLEASE NOTE

THIS SECTION ONLY APPLIES TO SALOON VEHICLES. THE REGULATIONS IN RESPECT OF THE TOPICS ADDRESSED IN THESE REGULATIONS ARE FOUND IN THE INDIVIDUAL REGULATIONS OF THE VARIOUS OPEN WHEEL CLASSES – PLEASE CONSULT THOSE IF YOU RACE AN OPEN WHEEL CLASS.

CR 37 VEHICLE TYPES DEFINED

37.1 These regulations envisage 3 specific types of vehicle being:-

37.1.1 The original road going vehicle that has had a roll cage fitted and is now used as a race car.

37.1.2 The conventional road going vehicle that has been extensively modified and has had changes made to the suspension pick up points. These are termed semi space frames.

37.2 The fully fledged purpose built racing frame.

37.3 These three types have been separated in these rules as certain classes are limited to original road going vehicles.

37.4 ORIGINAL ROAD GOING VEHICLES

37.4.1 These are vehicles that were designed and built for road going use by commercially recognised motor manufacturers.

37.4.2 These vehicles are converted to oval racing vehicles.

37.4.3 They do not include the semi-space frame or space frame vehicles.

37.4.4 This use of this type of vehicle is seen as a limitation. Therefore whenever this class is specified semi space frames and space frames are not permitted.

37.5 SEMI SPACE FRAME VEHICLES

37.5.1 These include vehicles are converted from the original road going vehicles.

37.5.2 Major structural changes have been made and the roll cage and pipe work inserted into the vehicle have effectively mounted the drive train and the suspension.

37.6 SPACE FRAME VEHICLES

37.6.1 These are purpose built tubular steel chassis.

37.6.2 Wherever the class rules permit space frames original road going cars and semi space frames are also permitted, with the same modifications as those permitted for space frames.

CR 38 GENERAL RULES REGARDING THE EXTERNAL BODY SHELL – APPLICABLE TO ALL SALOONS

38.1 Roadster type bodies may be used provided they were built with a top by the manufacturer. A soft top must be replaced by a replica fibre glass top.

38.2 Measurements of the body shell shall be made across the driver's seat in respect of the width of the vehicle and in the centre of the vehicle in respect of the length of the vehicle. Such measurements shall exclude wheel arches and flares.

38.3 The maximum thickness of the front and grille panels of vehicles shall be: -

38.3.1 Metal -1.2-mm

38.3.2 Aluminium – 1.6 mm

38.3.3 Fibreglass – 4-mm.

38.4 Should the height of the door impair access it shall not be cut away but shall have a hinge arrangement whereby it folds, at or near the top sissy bar. Doors may be made fully removable, provided they are securely fitted during races. The securing pins shall be removable from the outside.

38.5 The construction, safety, and finish of the original steel body or replacement panels to be to the satisfaction of the scrutineers. No sharp edges are permitted. Please also see the CR 22 regarding sharp edges inside the cockpit.

38.6 The front panels must retain the original grille and light apertures, provided that both of these may be blanked off. Ducts to supply cool air to the carburettor / fuel injection system or the brakes may be installed into these panels, always subject to the class regulations that control the intake of air into the engines

38.7 The rear boot panels (meaning the portion between the tail lamps) shall be retained.

CONSTRUCTION REGULATIONS SPECIFIC TO SALOON VEHICLES

- 38.8 Boot lids and tailgates shall in place. They must be adequately secured in the closed position with fasteners
- 38.9 All panels, irrespective of whether or not they are replacement panels shall be securely fixed and no loose or flapping panels shall be permitted when a vehicle starts a race. The driver shall ensure that steps are taken between races to secure body panels that have become loose or damaged.
- 38.10 Bonnets and boot lids shall be secured by means of either four pins or two pins and two corner plates. The area around the pin must be reinforced in order to avoid tearing. Operational doors must be fitted with working latches to prevent them opening during races. The latches must be operational from outside the vehicle. Latches must be fitted so that they do not present a hazard to other competitors, especially on the sides.
- 38.11 The roof shall be complete. The roof must be the original shape of body being used.
- 38.12 Wheel arches may be modified to accommodate wheels. Wheel arches may not be reinforced with steel pipes or any other material. The wheel arches may be reinforced using the same material as the rest of the wheel arch. The object of the permitted reinforcement is to protect the wheel area and any reinforcement that is designed to be used as a weapon is prohibited.
- 38.13 No fastener situated on the front, rear or side panels of the vehicle shall protrude more than 30 mm beyond the bodywork

CR 39 CONSTRUCTION RULES APPLICABLE TO ORIGINAL ROAD GOING VEHICLES

- 39.1 Further restrictions on replacement, repair, and modifications allowed are found in the class regulations.
- 39.2 Bodies may not be lengthened, shortened, or narrowed;
- 39.3 The silhouette as seen from the front shall remain symmetrical, with no offset being permitted. The silhouette as seen from the sides, the front and the back shall remain the same as the original vehicle, with latitude being allowed for repaired accident damage only.
- 39.4 Vehicles of this type may not be re-bodied. The process of re-bodying requires the entire outer shell of the vehicle to be separated from the monocoque. Once this has been done to a vehicle it shall be considered a semi space frame.
- 39.5 All interior trim must be removed.
- 39.6 The roof may not be lowered and any hole caused by the fitment of for instance a sunroof in the donor vehicle shall be closed.
- 39.7 The front valance and radiator carrier may be mounted as per space frame regulations.
- 39.8 The internal fender walls and wheelhouses shall be retained front and rear. The shaft tunnel shall be retained. The boot floor shall be retained.
- 39.9 The engine bay / cockpit bulkhead / firewall shall be retained but may be altered to accept another gearbox should class regulations permit an alternative gearbox. The material utilized shall be sheet metal with a minimum thickness of 1-mm mounted on at least a 15 x 15 x 2mm frame.
- 39.10 The complete roof pillar structure of the vehicle shall be retained.
- 39.11 The vehicle may be finished by the fitment of either the original plastic bumper or a fibreglass replica of the bumper.
- 39.12 The inner portion of all doors may be removed. In all cases, care must be taken to avoid edges that could cause injury. Doors may be replaced with sheet metal or fibreglass replicas. In such cases, they shall retain the same shape and curve as the original door. These replica panels may be made of a one-piece construction. These replacements shall be properly mounted into place. The use of shapeless one-piece side sections, typically flat sheets, is not allowed.
- 39.13 Rear doors must be adequately secured in the closed position with fasteners.
- 39.14 The metal of the body may be replaced with metal or aluminium sheeting not exceeding 1.2 mm for metal and 1.6 mm for aluminium. Where fibreglass is used to replace sections of the external body shell it shall comply with the regulations for the replica bodies described below. In both cases, the repair or replacement shall still resemble the replaced part. In both cases the contours of the body shall be retained.
- 39.15 Only the bonnet, the front fenders, the 2/4 doors and the tailgate/boot lid may be replaced with exact replica parts. The "B" and "C" pillars may be repaired with fibre glass replicas. Once all the pillars have been replaced with fibre glass the car will be classified as a semi space frame.
- 39.16 The roll cage may not extend beyond the cockpit.
- 39.17 Under trays may NOT be fitted.
- 39.18 All suspension parts (excluding shock absorbers) shall remain standard, albeit that they may be modified in accordance with class regulations. Therefore a vehicle with a rose jointed, A-arm front suspension shall be classed as a semi space frame if it still has the original body.

CONSTRUCTION REGULATIONS SPECIFIC TO SALOON VEHICLES

CR 40 CONSTRUCTION RULES APPLICABLE TO SEMI SPACE FRAME VEHICLES

- 40.1 Further restrictions on replacement, repair, and modifications allowed are found in the class regulations.
- 40.2 Bodies may not be lengthened, shortened, or narrowed.
- 40.3 The silhouette as seen from the front shall remain symmetrical, with no offset being permitted. The silhouette as seen from the sides, the front and the back shall remain similar to the original vehicle, with latitude being allowed for repaired accident damage.
- 40.4 All interior trim must be removed.
- 40.5 Vehicles of this type may be re-bodied. The process of re-bodying requires the entire outer shell of the vehicle to be separated from the monocoque.
- 40.6 The roof may not be lowered and any hole caused by the fitment of for instance a sunroof in the donor vehicle shall be closed.
- 40.7 The front valance and radiator carrier may be mounted as per space frame regulations.
- 40.8 The internal fender walls and wheelhouses may be removed.
- 40.9 The vehicle may be finished by the fitment of either the original plastic bumper or a fibreglass replica of the bumper.
- 40.10 The inner portion of all doors may be removed. In all cases, care must be taken to avoid edges that could cause injury.
- 40.11 The use of shapeless one-piece side sections, typically flat sheet metal, to replace doors and fenders is not allowed.
- 40.12 The body may be removed in its totality and replaced with a replica body shell.
- 40.13 The metal of the body may be replaced with metal or aluminium sheeting not exceeding 1.2 mm for metal and 1.6 mm for aluminium. Where fibreglass is used to replace sections of the external body shell it shall comply with the regulations for the replica bodies described below. In both cases, the repair or replacement shall still resemble the replaced part. In both cases the contours of the body shall be retained.
- 40.14 The removal of the floor pan is permitted, provided that a replacement pan is made for the driver's area and the seat and roll cage posts are properly mounted as per the regulations for space frames.
- 40.15 Under trays may be fitted if they do not exceed the under floor area of the engine bay.
- 40.16 The tunnel and part of the firewall may be modified, using metal with a thickness of 2 mm, when converting front wheel drive to rear wheel drive.
- 40.17 The original floor pan, the interior floor area of the boot and the firewall, may be strengthened for the purposes of rigidity. The material used for this purpose shall be a square tube not exceeding 15 mm x 15 mm x 2 mm.

CR 41 SPACE FRAME VEHICLES

- 41.1 The body may consist of a single continuous shell or loose panels. The driver's door shall be a separate item.
- 41.2 The silhouette as seen from the front shall remain symmetrical, with no offset being permitted.
- 41.3 The vehicle may be finished by the fitment of either the original plastic bumper or a fibreglass replica of the bumper.
- 41.4 Vehicles shall in essence retain the same shape and form as the vehicle on which it is modelled and must still be easily recognisable as being such a vehicle.
- 41.5 Bodies are to be secured to the chassis by means of support plates that shall not be more than 2 mm thick. The length and width of these plates are free. These plates shall mount to support pipes or the chassis.
- 41.6 Continuous mounting plates, running the full length of the joint areas are not permitted. It follows that the mountings shall be designed to secure the bodywork in a safe manner without creating reinforcements.
- 41.7 No ribbing or reinforcing is allowed in any fibreglass body panels or sections, except the boot lid, roof, and bonnet.
- 41.8 Under trays may be fitted if they do not exceed the under floor area of the engine bay.
- 41.9 There shall be a properly reinforced floor pan for the driver's area of the cockpit.

CR 42 SPACE FRAME CHASSIS CONSTRUCTION

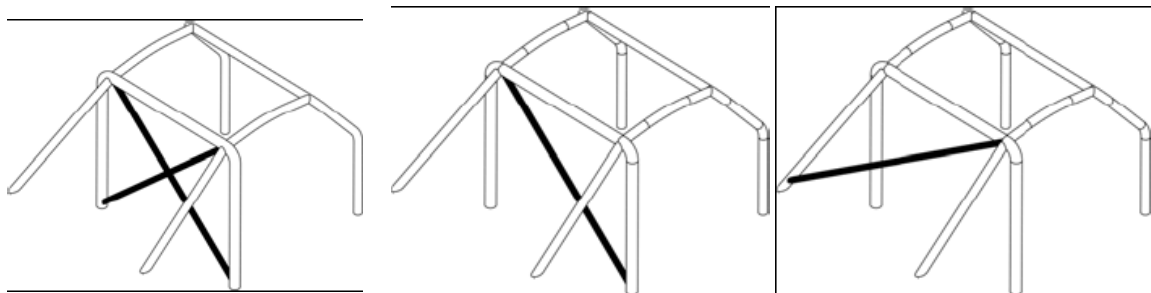
- 42.1 The material used to build the chassis and frame shall be suitable steel tubing.
- 42.2 The chassis shall incorporate the following: -

CONSTRUCTION REGULATIONS SPECIFIC TO SALOON VEHICLES

- 42.2.1 A roll cage as set out in CR 43 below
- 42.2.2 Properly triangulated mounting points for the suspension, engine and drive train; and
- 42.2.3 Structural soundness that will withstand the rigors of racing.
- 42.3 The minimum specifications for the materials used to the chassis and frame of Saloon classes are:
 - 42.3.1 Round Tubing: Minimum 38 x 2 mm
 - 42.3.2 Square Tubing: Minimum 38 x 38 x 2 mm
 - 42.3.3 Roll Cage, Sissy Bars, and all other pipe work on the frame: As per CR 43 below.
 - 42.3.4 MSAORC may, on terms and conditions it deems appropriate, exempt registered chassis builders from the need to have every vehicle it, the chassis builder, produces inspected.

CR 43 ROLL CAGES

- 43.1 The minimum requirements for roll cages in all classes are:
 - 43.1.1 The cage shall have four down (vertical) pipes or legs, two of which must be in front of the driver. The other two shall be behind the driver's seat. Four horizontal pipes fitted at the top of the down pipes shall join the four down pipes to each other.
 - 43.1.2 Two cross braces must be fitted, one in front of the driver, above the steering column, and one behind the driver, supporting the backrest of the seat. This brace shall be just below the shoulder of the driver when seated and shall support the seat belt/harness so that the belts would pull the driver down into the seat. Should the seat have belt slots the bar shall be mounted at the exit point of the slots.
 - 43.1.3 The roll cage must be reinforced as follows: -
 - 43.1.3.1 Two rearward facing, downward sloping pipes that mount from the top of the cage to the floor, wheel arch or chassis shall be fitted; and
- 43.2 A cross pipe, that triangulates (from left to right or right to left, top to bottom as viewed from behind the vehicle) either the roll cage down posts or the rearward facing downward sloping pipes, shall be fitted. This pipe is in black on the attached drawings.
- 43.3 All joints and seams in the construction roll cage are to be properly mitred (see diagram in regulation CR 30 above) and shall be welded as follows: -
 - 43.3.1 When original, conventional factory built road or semi-space framed vehicles are used - 100% in all assessable areas provided that a gusset is fitted where joints can not be fully welded; and
 - 43.3.2 When a purpose built chassis is utilised - 100%.
- 43.4 The Roll cage itself as described in regulation must be constructed of the following materials: -
 - 43.4.1 Cold rolled tubing with a minimum diameter of 38 mm and a minimum wall thickness of 2 mm.
 - 43.4.2 The additional obligatory bracing, as described in regulation CR 43.1.3 above as well further specified bracing shall be of: -
 - 43.4.2.1 Pipe with a minimum diameter of 33 mm and a minimum wall thickness of 2 mm; or
 - 43.4.2.2 Square tubing with a minimum width of 33 mm and a minimum wall thickness of 2 mm.
- 43.5 All piping between the various mounting points and joints shall be completely straight, except for the front down pipes or legs of the roll cage which may be shaped in accordance with the profile of the front window, as seen in side elevation. In such case they shall be straight between the floor and the cross brace above the steering wheel and between that brace and the upper horizontals.
- 43.6 Additional cross pipe bracing may be added to the cage.
- 43.7 The piping of the cage, constructed as an integral part of a purpose built chassis, may be shaped to provide a close fit to the body shell. Such cages shall have all the elements of the above chassis as well as additional, triangulated, bracing to reinforce the cage. This bracing is especially required where the cage may have lost some of the strength due to the bends made to obtain a closer fit.



CONSTRUCTION REGULATIONS SPECIFIC TO SALOON VEHICLES

The above sketches are courtesy of the FIA website and depict the acceptable style of cross bracing (the black pipe) for roll cages. Obviously these drawings assume proper base plates and welding.

CR 44 SIDE IMPACT PROTECTION (“SISSY”) BARS

- 44.1 Two sissy bars, fitted horizontally, on the inside of the two front doors, must be fitted between the two down pipes or legs of roll cage and affixed to the roll cage.
- 44.2 The sissy bars must be a minimum of 50 mm apart. A minimum of one vertical support pipe, in the centre of the sissy bar is compulsory. The sissy bar may not protrude past the roll cage down bars. The sissy bar shall preferably follow the contour of the door, especially on the driver's side.
- 44.3 Sissy bars shall be fitted in such a manner that the competitor's hips and knees are completely protected when he is strapped into his seat. In order to achieve this the top horizontal bar must be in the middle of the door, as measured from the floor sill to the bottom of the window aperture. The sissy bars must be constructed so that the internal / external bumper of a competing vehicle would collide with the sissy bar in the event of a T-bone type collision.
- 44.4 The sissy bar shall have two vertical supports, welded or bolted to the sill or the chassis, spaced so that they divide the area between the back of the seat and the front lower corner of the driver's side door into three equal areas.
- 44.5 The sissy bars may be replaced by a cross arrangement, securely welded together at the cross over point. The cross shall be installed in such a fashion that the top ends are in line with the top of the door panel. The bottom ends shall be at least 75 mm above the sill height. The cross point shall be gusseted with 2 mm plate for a distance of 100 mm from the crossover point.

CR 45 GLASS – WINDOWS AND LIGHTS

- 45.1 All windows, except the front windscreen, shall be removed for vehicles competing on tar.
- 45.2 Windscreens are not permitted on dirt.
- 45.3 If window or windscreens are fitted, only laminated windscreens will be permitted with additional duct tape or metal brackets securing the four corners being compulsory. No cracked windscreens will be allowed if visibility is in any way affected.
- 45.4 All glass and / or plastic indicators or lights shall be removed from the body of the vehicles that participate in racing where contact is permitted. They may be retained for non contact racing but shall be properly secured.
- 45.5 The rear side windows may be replaced with side-panels of clear lexan¹ or polycarbonate. The panels must however remain transparent, without sign writing or advertising, other than the competitor's surname and a regional or club logo. The number may not be fitted here.

CR 46 COOLING SYSTEMS

- 46.1 Radiators shall be mounted within the engine compartment of vehicles participating in tar events.
- 46.2 **The radiators of vehicles participating in dirt events** may be moved within the engine bay or may be mounted elsewhere provided that: -
 - 46.2.1 The fitment of the radiator does not obscure the drivers rearward or sideways vision;
 - 46.2.2 The fitment of the radiator would not hamper the extraction of the driver from the vehicle in the event of an accident and shall be screened as set out in CR-A 33.2 above;
 - 46.2.3 All piping to and from the radiator, other than the joints and the overflow pipes shall be of steel. The pipes must be mounted on the floor between the firewall and the radiator. All joints are to be enclosed by a rubber sock and all hoses are to be double clamped or cladded.
 - 46.2.4 The radiator is covered on three sides with the open side being the side furthest from the competitor.
 - 46.2.5 Steps are taken to ensure that the water and steam associated with ruptured pipes or radiators vent downwards and away from the competitor.
- 46.3 No onboard radiator spraying equipment is permitted.

CR 47 TRACK / WHEELBASE / ENGINE PLACEMENT

- 47.1 Track and wheelbase² are free within the confines of what is allowed in terms of suspension regulations and restrictive class regulations. However all four wheels of the car must fit within the body of the car, which in turn must comply with the maximum dimensions of the vehicles as set out

¹ **LEXAN™** is a registered trademark for General Electric's brand of highly durable polycarbonate resin thermoplastic.

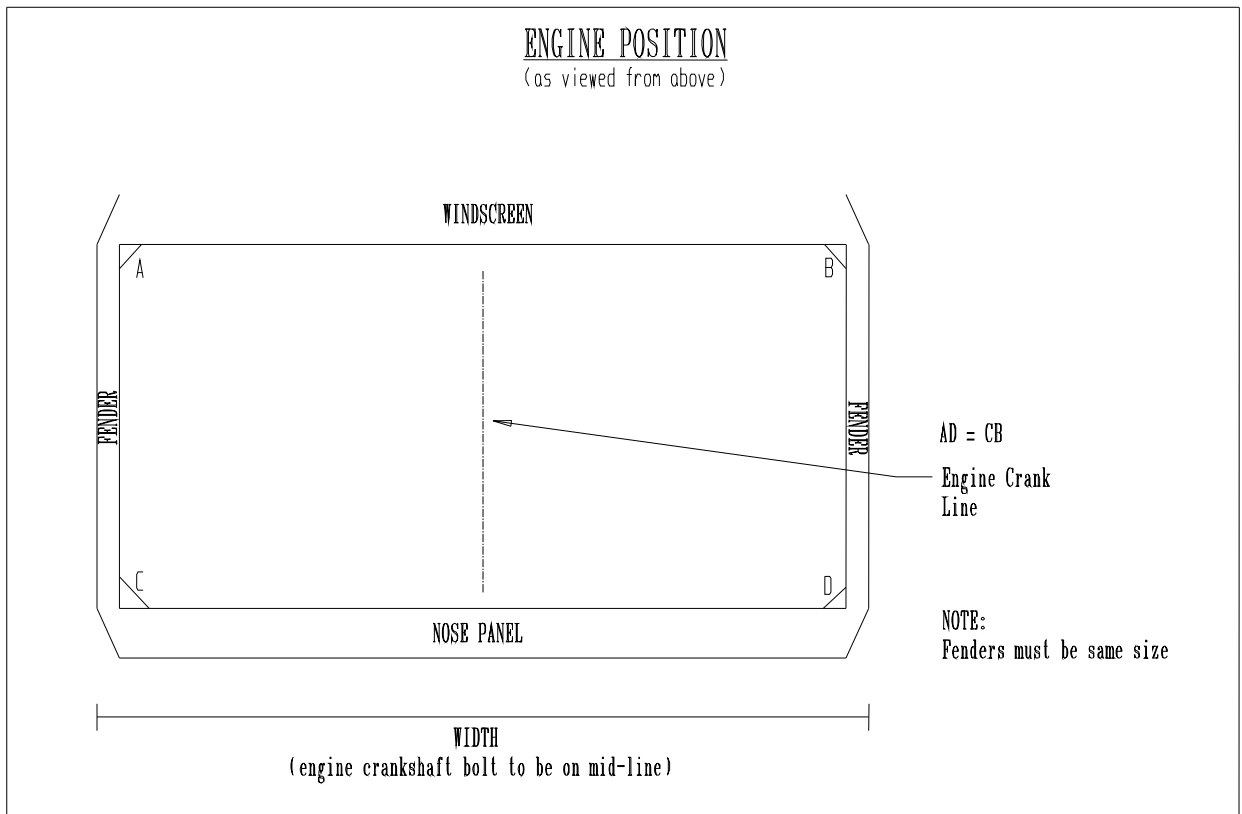
CONSTRUCTION REGULATIONS SPECIFIC TO SALOON VEHICLES

in the appendices for the three classes. No part of the vehicles may be outside the total width and length as published. Competitors are urged to take special care of the outside front wheel of their car when checking for compliance with this rule.

- 47.2 Engines may be tilted (by up to 20° from standard) provided all other position regulations are complied with.
- 47.3 Due to the difficulties in obtaining a true measuring point the placement of the engine will be measured from the centre line of the wheel base. Each of the class regulations will specify the forward distance between the centreline of the wheelbase to the lower front edge of the bell housing. The calculation would be made as follows.

EXAMPLE CALCULATION (all measurements in cm)	
Wheel base of particular vehicle (average of two sides)	238.00
Therefore 50% of wheelbase	119.00
Add forward distance per individual class rules	78.00
Sub total	197.00
Deduct tolerance	-5.00
Minimum distance from axle centre line to the lower front edge of the bell housing	192.00

- 47.4 In all front engine, rear wheel drive applications the centre of the crankshaft shall be on the centre line of rear wheel drive vehicles. A tolerance of 50 mm is permitted. See sketch below for means of measurement.



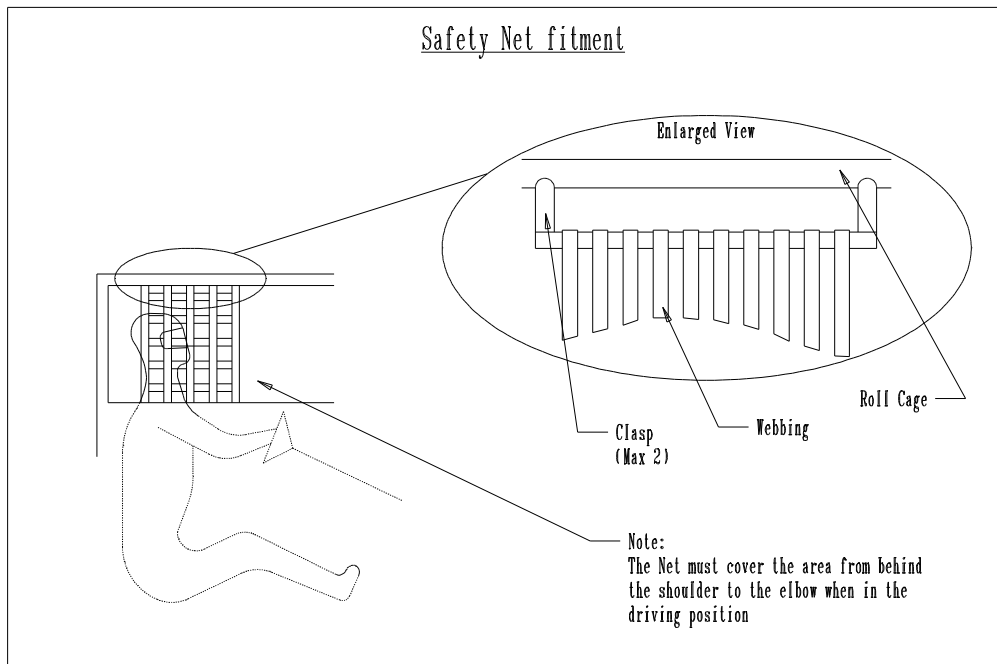
CR 48 WINDOW NETS

- 48.1 Window nets are optional. If fitted they shall comply with the following regulation.
- 48.2 Window nets shall be made of either: -
- 48.2.1 Non inflammable webbing with a minimum width of 25 mm and a maximum width of 35 mm that has been properly woven and stitched together in a block pattern, with gaps of no more than 75 mm; or

² **wheelbase** is the horizontal distance between the center of the front wheel, and the center of the rear wheel.

CONSTRUCTION REGULATIONS SPECIFIC TO SALOON VEHICLES

- 48.2.2 Non-inflammable cord with a diameter of 2 mm that has been properly knotted together with gaps of no more than 60 mm. The woven cord shall be stitched into webbing or other suitable material and affixed to the vehicles via properly reinforced eyelets.
- 48.3 Window nets shall cover:
- 48.3.1 The full window area from top to bottom
- 48.3.2 From the edge of the seat at the driver's shoulder to his elbow, measured with the driver seated at the controls with his hands on the steering wheel.
- 48.4 The net shall
- 48.4.1 Be firmly mounted into place using suitable using luggage clips;
- 48.4.2 Mount to the roll cage and sissy bar in the window space – top and bottom
- 48.4.3 Not be affixed to the release mechanism by parcel elastic, ropes or cable ties.
- 48.5 When a safety net is installed, it must still be possible to open / remove the door or remove the safety net in an emergency.



CR 49 BRAKE LIGHT

- 49.1 The brake light shall be operational at all times.
- 49.2 One rearward facing red brake light must be fitted in the rear window space. The lens of the light shall be at least 50 mm in length or diameter and must be intact. The lights may be replaced by a non-flashing LED of at least 200 mm in length.
- 49.3 The brake lights / tail lamps must operate by a standard pedal operated switch. No other switches or modifications are allowed. The bulbs must be effective.
- 49.4 As a general rule brake lights may not be fitted in the bodywork of the vehicle.
- 49.5 Care must be taken during the installation of the lights in order that flickering and malfunction may be minimised.

CR 50 WHEEL AND BODY PROTECTOR

- 50.1 A wheel and body protector, fitted between the front and the rear wheels at sill height, may be fitted.
- 50.2 The wheel and body protector shall be straight. In other words it may only curve inwards once at each end when it mounts.
- 50.3 The thickness of material used must not exceed 2 mm. The protector may not protrude more than 30 mm beyond the wheel and must **be flush** with the bodywork.
- 50.4 All leading and trailing edges to be smooth and angled back to the sill unless incorporated into the wheel arch.
- 50.5 No straight round pipe sections are permitted, as these must be rounded back to the chassis/mounting point.

CR 51 MUD FLAPS – ALL DIRT CLASSES

CONSTRUCTION REGULATIONS SPECIFIC TO SALOON VEHICLES

- 51.1 Mud flaps are compulsory on the driven wheels when competing on dirt.
- 51.2 Rubber mud flaps, with a minimum thickness of 6 mm, must be fitted as close to the wheels as possible. Purpose made, commercially available mud flap material is strongly recommended.
- 51.3 Mud flaps must: -
 - 51.3.1 Cover the whole width of the wheel;
 - 51.3.2 Form part of the rear wheel arch to cover the full rearward-facing portion of the rear tyre;
 - 51.3.3 Not be attached to the bumper;
 - 51.3.4 Be more than 50 mm but less 75 mm from the ground, when measured with the rear tyres inflated at 1.5 bar and the driver seated at the controls; and
 - 51.3.5 Not drag on the ground and be supported to be effective;
- 51.4 Front wheel drive vehicles must have mud flaps of similar design on all four wheels.

CR 52 RADIATOR PROTECTION

- 52.1 All vehicles shall be allowed a radiator protection bar that may be fitted either above or below the bumper if the radiator is fitted in the front of the vehicle, ahead of the engine.
- 52.2 The bar shall have no more than 4 mounting points.
- 52.3 The bar may in addition form an integral part of the radiator cradle and/or the bumper system.
- 52.4 The bar and all mounting pipes shall be made of round pipe with a maximum size of 38 x 2 mm.

CR 53 GENERAL BUMPER REGULATIONS

- 53.1 Bumpers are considered to be an integral part of the structure of the vehicle and are compulsory. Please refer to the attached sketches.
- 53.2 The horizontal element of the bumper shall be 30 cm above ground level for tar and 35 cm above ground level for dirt. In each case a 2.5 cm tolerance either way will be allowed.
- 53.3 The bumper shall have a single horizontal pipe. Unless otherwise stated in the class regulations the bumper shall be mounted with two pipes that mount onto or form part of the vehicle's chassis. The ends of the horizontal pipe shall rounded off and shall be mounted back onto the same chassis element.
- 53.4 The design of the bumper support between the roll cage and the wheel hubs (as referred to above) is free. The bumper may not be connected to the roll cage uprights unless the support structure complies with the triangulation requirement below. Bumpers may be connected to the four roll cage uprights. The bumper itself may not mount to the horizontal roll cage pipes on the driver's side of the vehicle. It is again stressed that the bumper mounting must be braced where it mounts onto the roll cage.
- 53.5 The bumper mounting pipes must be triangulated. The triangulation for the front of the vehicle shall be to the horizontal brace of the roll cage. In the rear of the vehicle the triangulation shall be to brace bar fitted between the two mounting pipes. The triangulation shall connect to two points at least 150 mm away from the 90° joint to the brace pipes. The triangulation shall be between the roll cage down pipes and the wheel hubs. The support may be braced vertically in space frames and semi space frames.
- 53.6 In order to reduce damage to the roll cage in an accident a crumple zone must be inserted into the pipe work between the roll cage and the bumper. These zones must be fitted forward of the wheel hubs in respect of the front bumper and rearward of the wheel hubs in respect of the rear bumper. This is achieved by bending the bumper mounting pipe by at least 10°. A second bend is required to return the pipe to the original albeit slightly lower horizontal path.
- 53.7 The path of the bumper mounting pipe may be broken by the suspension turrets.
- 53.8 All bumpers shall be constructed in accordance with the specifications for each class.
- 53.9 The bumper mounting pipes may not exceed the thickness of the roll cage pipes they mount onto.
- 53.10 The scrutineer, technical consultant and the Race Controller may, as a body, instruct the removal of any bumper arrangement that is regarded as being beyond the spirit of the regulations.
- 53.11 No dual bumper systems are allowed. In other words – if contact is permitted in the class to be raced an election must be made between fitting an internal bumper or an external bumper, but not both!
- 53.12 Bumpers must have rounded ends. No sharp points or edges are allowed.
- 53.13 All elements of the chassis shall end 100 mm inside the bodywork, front and back. Unless otherwise stated only the bumpers and the wheel and body protectors may be hard up against the inside of the body. The chassis may not be used as or be part of a bumper system.
- 53.14 No bumpers may be reinforced with gussets. The main bumper pipe may have a body mounting plate attached to it. No additional reinforcing shall be permitted.

CONSTRUCTION REGULATIONS SPECIFIC TO SALOON VEHICLES

- 53.15 No standard, original equipment steel bumpers are allowed.
- 53.16 The only material used for the construction of the bumpers, their support pipes and mounting points **SHALL** be round tube with a maximum OD of 38 mm having a maximum wall thickness of 2 mm.
- 53.17 Bumpers must be fitted and fashioned in such a way that it is possible for a scrutineer to check compliance with these regulations. Similarly all cosmetic covers that are constructed over any portion of the bumpers or their support pipes shall be capable of removal for the purposes of scrutiny.
- 53.18 Bumpers may not be connected extended to form wheel arch protections as these are expressly prohibited. As wheel arch protection pipes are not permitted it follows that bumpers can not mount to them.
- 53.19 All vehicles are allowed to fit plastic or fibre glass bumper covers to improve the aesthetic appearance of the vehicle, subject to the following:-
- 53.19.1 A single original non-metal or replica bumper cover is permitted front and back.
- 53.19.2 Replica covers from another vehicle may also be used.
- 53.19.3 The cover shall be the original manufactured plastic bumper cover or it shall be a replica made of fibre glass.
- 53.19.4 The cover shall not be reinforced and shall not be more than 4-mm thick and shall be removable.
- 53.19.5 The cover must be properly secured to the internal bumper of space frames / semi space frames and shall be fitted with standard bumper brackets and the standard stiffener in original road going vehicles. In the latter case additional bolts onto the stiffener / body / brackets must be introduced to prevent loss of the bumper.

CR 54 INTERNAL BUMPER REGULATIONS

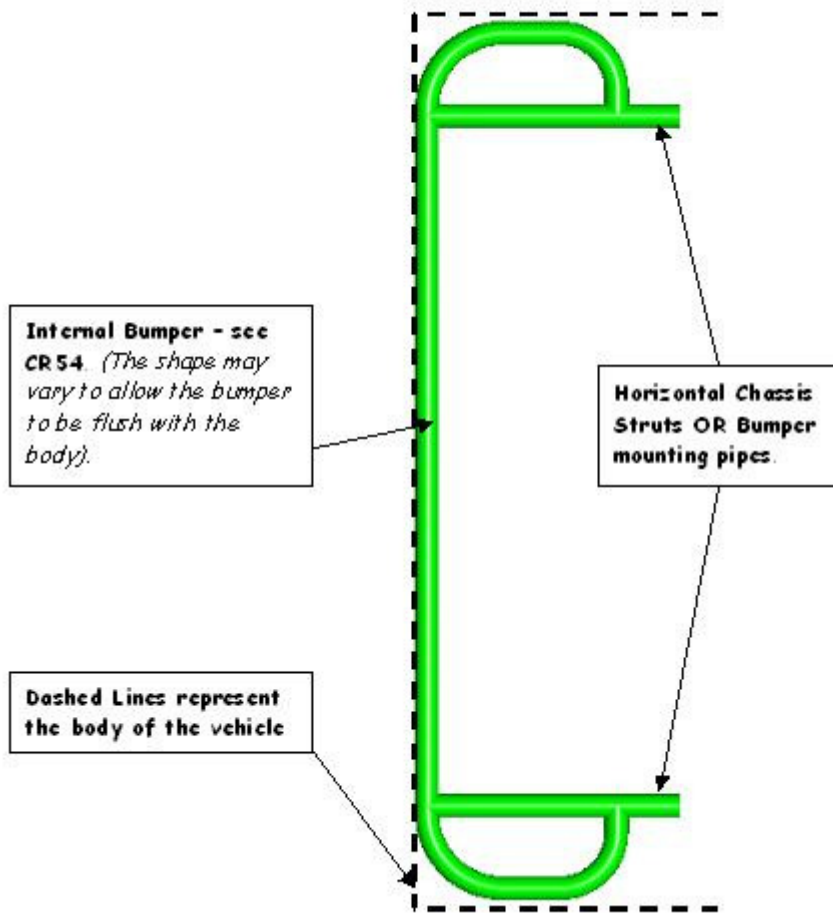
- 54.1 The horizontal element shall be placed within the vertical spacing zone of the vehicle's original bumper.
- 54.2 The bumpers shall be shaped in accordance with the shape of the vehicle and shall be mounted flush against the inside of the body.
- 54.3 The bumpers shall be allowed to mount to the chassis of the vehicle and do not require bolts.
- 54.4 The triangulated construction of the chassis shall end at least 100 mm away from the bumper.
- 54.5 It is recommended that a body panel / bumper cover mounting plate is fitted to the bumper bar.
- 54.6 It is highly recommended that competitors take steps to aid the swift removal of the ends of the bumper bars in the event of them being pushed onto the wheel.

CR 55 EXTERNAL BUMPER REGULATIONS – CLASSES PARTICIPATING CONTACT RACING

- 55.1 These bumpers are only permitted on vehicles participating in races where contact is allowed.
- 55.2 All bumpers must be attached to their mounting and support pipes by bolts or by welding. The bumper must be connected to the mounting pipe as specified by means of a flange.
- 55.3 The space between the bumper and the bodywork, measured from the nearest point of the body to the inside of the bumper may not exceed 50 mm, front and back of the vehicle. The maximum space measured, as above, shall be 30 mm in respect of the sides of the vehicle.

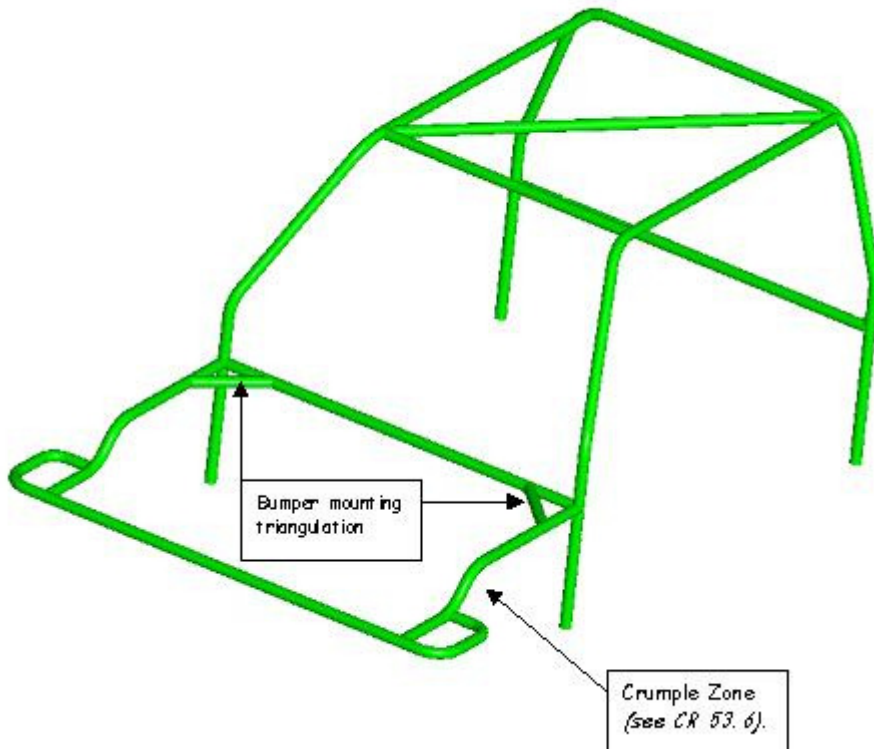
CONSTRUCTION REGULATIONS SPECIFIC TO SALOON VEHICLES

Internal Bumper: Top View

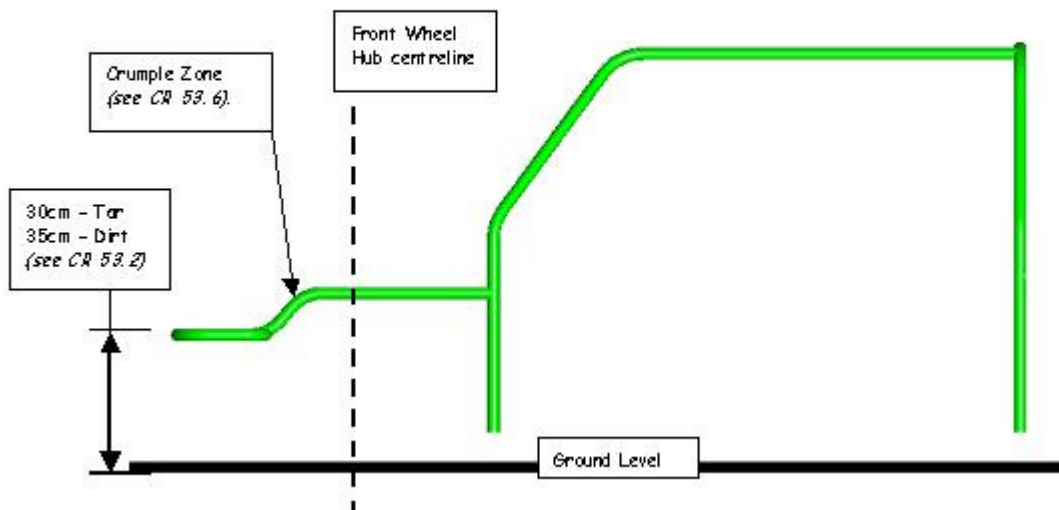


CONSTRUCTION REGULATIONS SPECIFIC TO SALOON VEHICLES

General Bumper Regulation (see CR 53): 3D View

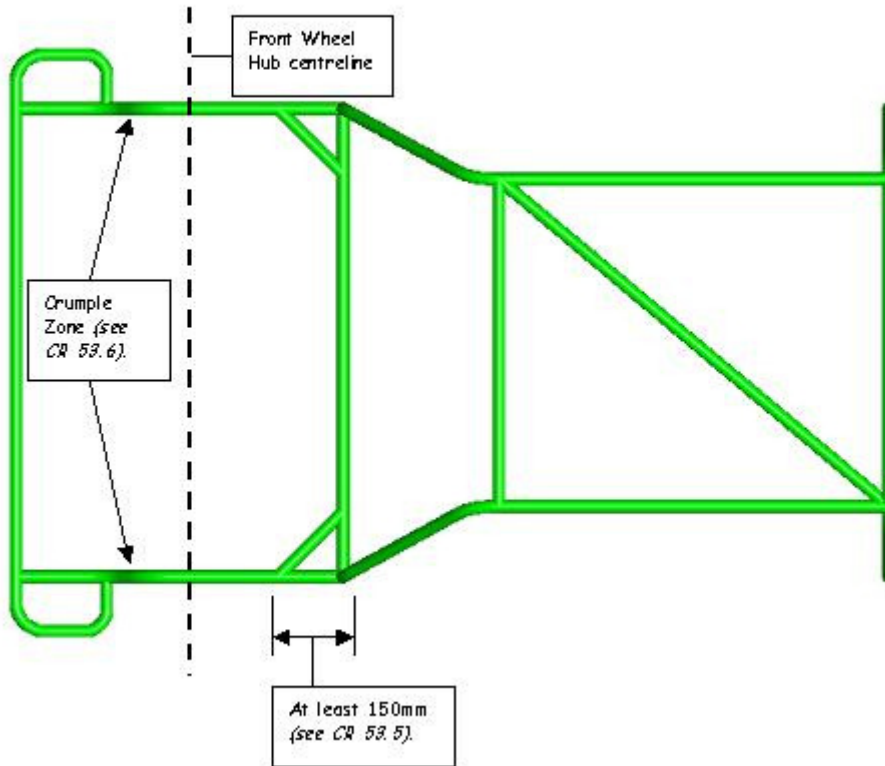


General Bumper Regulation (see CR 53): Side View

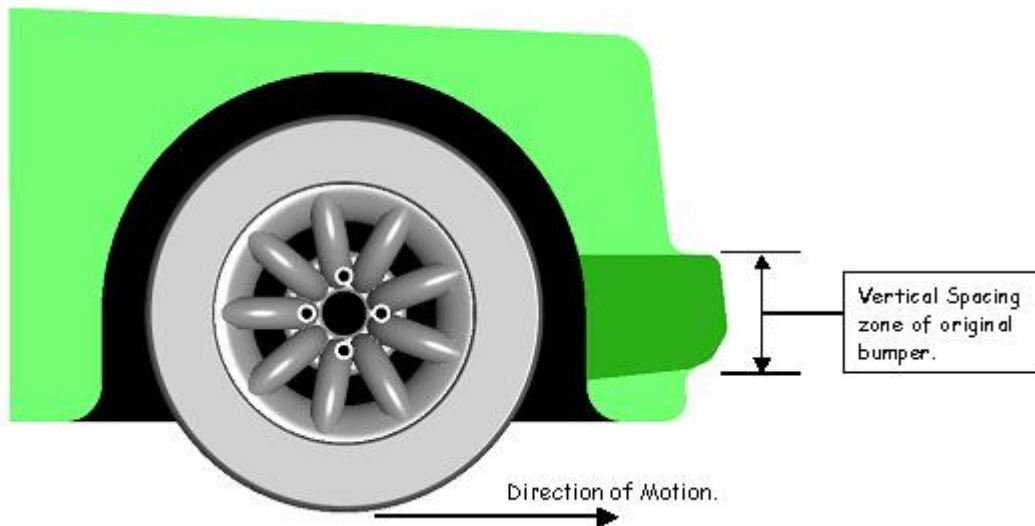


CONSTRUCTION REGULATIONS SPECIFIC TO SALOON VEHICLES

General Bumper Regulation (see CR53): Top View



Vertical Spacing zone of Internal Bumper



HOW TO APPLY THESE CLASS REGULATIONS

DO THE CLASS REGULATIONS STAND ON THEIR OWN?

The class regulations are not stand alone regulations – in each case the general vehicle regulations, the engine building regulations and the safety standards apply. In respect of saloon classes the general saloon regulations also apply.

Two classes, being micro midgets and quads are sufficiently different to warrant their own regulations.

WHAT APPLIES IF THERE IS A CONTRADICTION?

While every effort has been made to avoid conflicting regulations the following shall apply in the event of a conflict between the various regulations: -

- If the conflicting regulations concern a performance related issue the specific class regulations will apply;
- If the conflicting regulations concern the way an engine is built the relevant engine building regulations will apply; and
- If the conflicting regulations concern safety class regulations will defer to the safety standards, then the construction regulations and then the general regulations.

WHAT ARE THE SO CALLED VARIABLE REGULATIONS?

This is a section that is found at the end of each class. These variable regulations deal with matters such as weights and tyres that could be changed to address performance issues in the classes.

INTERPRETATION OF REGULATIONS AND SPECIFICATIONS

The following GCR is the basis to interpreting all the regulations that apply to motor sport.

GCR 226 states: *In interpreting motorsport regulations and specifications “what is not specifically permitted is disallowed” is the normal concept in keeping with the French regulations on which all motor sporting regulations are based.*

This means that you may only do something if the rules say you may. Competitors and officials alike shall adopt the following principle when reading and applying the rules: *They should only be concerned with the normal plain meaning of the wording of the regulations and shall pay no attention to any claim as to what the regulations were intended to mean.*

CLASS REGULATIONS – JUNIOR STOCK

JS 1 DESCRIPTION

- 1.1 This is a formula for children between the ages of 10 and 18.
- 1.2 The class runs on dirt and tar.
- 1.3 The vehicle shall comply with the general vehicle rules (CR 1 to CR 15), the safety regulations (CR 20 to CR 36) and the Construction regulations applicable to saloon vehicles (CR 37 to CR 55).
- 1.4 It is the intention of the controllers to allow certain limited yet inexpensive modifications to the Minis in order to make them competitive with the Golf. This process will be managed by the Controllers and does not give the Mini competitors a free hand. The Controllers will also institute further restrictions on the Golf until there is parity.

JS 2 CHOICE OF VEHICLE AND COMPONENTS

- 2.1 The class presently comprises Leyland /BMC Mini (hereinafter referred to as “Mini(s)”) and VW Golf 1 vehicles. These are the only two vehicles permitted in this class. As a phasing in dispensation competitors who have campaigned VW Jetta, Fox or other Golf derivatives shall be permitted to use those vehicles.
- 2.2 The class presently permits the use of 1600 engines in the Golf class. This is also viewed as a phasing in measure. Competitors are advised that the 1600 engine will only be permitted until 30 June 2010.

JS 3 DIMENSIONS AND WEIGHT

- 3.1 The overall length, breadth, width, wheelbase and track of the vehicles shall comply with the manufacturers specifications, with a reasonable allowance permitted for accident repair.
- 3.2 Weight – The vehicle must comply with the variable regulations at JS 17 below.

JS 4 CAR CONSTRUCTION

- 4.1 **Only** original road going vehicles permitted. See CR 37 to CR 39.
- 4.2 Only front wheel drive permitted.
- 4.3 This is a saloon class and therefore the vehicle shall comply with the general regulations for saloon vehicles.

JS 5 SAFETY CONCERNS

- 5.1 The vehicle and driver must comply with each and every general safety regulation – see CR 20 to CR 36.

JS 6 BUMPERS

- 6.1 The Golf must have internal bumpers.
- 6.2 The Mini shall have an external bumper, with a single horizontal pipe and two vertical mounting pipes. The horizontal pipes shall turn back into the vehicle through the headlight apertures.
- 6.3 The mounting to the roll cage shall be in accordance with the bumper regulations contained in CR 53 to 55. The pipe used shall be 38 x 2 round tube.

JS 7 STEERING AND SUSPENSION

- 7.1 The vehicle must comply with CR 8.
- 7.2 Only standard components specific to the vehicle brand used are permitted front and rear.
- 7.3 The suspension must be mounted to the original position and may not be supported /strengthened by pipe work.
- 7.4 On the inside front the following modifications are permitted: -
 - 7.4.1 A tolerance of 25 mm from the standard wheelbase is permitted.
 - 7.4.2 Camber is free.
 - 7.4.3 The standard anti roll bar / tie rod / bush may be modified.
- 7.5 On the outside front the following is permitted: -
 - 7.5.1 The track rod may be extended by up to 25 mm.
 - 7.5.2 The steering rack arm (end) may be extended by up to 25 mm.
 - 7.5.3 The standard anti roll bar / tie rod / bush may be modified.
 - 7.5.4 Negative camber is permitted.
 - 7.5.5 On the Mini the suspension pickup points on the chassis may be reinforced and the suspension parts themselves may be strengthened, provided they remain within the original mounting points and comply with the above measurements.
- 7.6 No rose type joints are permitted.

CLASS REGULATIONS – JUNIOR STOCK

7.7 Only South African made Gabriel and / or Armstrong shock absorbers may be used. No modifications are allowed to the shock absorbers.

JS 8 WHEELS AND TYRES

8.1 The vehicle must comply with CR 5 to CR 7.

8.2 Tyre and wheel restrictions:

8.2.1 Maximum wheel diameter is 14" for VW and 10" for Mini

8.2.2 Maximum tyre width is 175 mm for VW and 145 mm for Mini.

8.3 Tyre choice: Any **road legal** tyre within the above sizing that has a price of less than **R560** may be used

JS 9 BRAKES

9.1 The vehicle must comply with CR 10.

9.2 Only standard components specific to the vehicle brand used are permitted at the wheels. This means that any component from any Leyland / BMC Mini may be used. The same applies to Golf.

9.3 Any standard master cylinder may be used. However only a single master cylinder is permitted.

9.4 Only original brand specific stock brakes of the drum type are permitted on the rear wheels.

9.5 Should the donor vehicle be equipped with drum brakes at the front they may be replaced with disk brakes from a later model of the same brand meaning Mini brakes on Minis.

JS 10 ENGINE

10.1 **Please pay careful attention to the phasing in allowances in JS 2.2.**

10.2 The only engines permitted are:

10.2.1 The 1000, 1100 and 1275 cc Mini engine fitted in a Mini.

10.2.2 The 1400 cc VW Golf engine – provided it is fitted with a restrictor plate as specified in JS 15 below.

10.2.3 The 1600 cc VW Golf engine – provided it is fitted with a restrictor plate as specified in JS 15 below.

10.3 The engine shall fit in the standard position.

10.4 **The engines must be built in terms of the stock engine regulations to be found at CR 16.**

10.5 The maximum engine capacity for the engines are as follows:

ENGINE	STANDARD			MAXIMUM	MAXIMUM	MAXIMUM
	BORE	STROKE	CAPACITY	BORE	CAPACITY	CAPACITY
	(in mm)	(in mm)	in cc)	1.52 mm (over)	(calculated)	PERMITTED
MINI 948	62.9	76.2	948	66.1	1046	1055
MINI 997	62.43	81.28	997	63.95	1045	1055
MINI 998	64.58	76.2	998	66.1	1046	1055
MINI 997 (stroked)	62.43	82.88	997	63.95	1065	1075
MINI 998 (stroked)	64.58	77.8	998	66.1	1068	1075
MINI 1071	70.64	68.26	1071	73.5	1159	1160
MINI 1098	64.58	83.72	1098	66.1	1150	1155
MINI 1071 (Stroked)	70.64	69.85	1071	73.5	1186	1195
MINI 1275	70.64	81.3	1275	72.16	1330	1340
GOLF 1400	76.5	77.4	1423	78.02	1480	1490
GOLF 1600 - EARLY	79.5	80	1588	81.02	1650	1660
GOLF 1600 – LATE	81	77.4	1595	82.52	1656	1665

10.6 Due to many variations of Mini cylinder blocks and crankshafts any of the crankshafts that would give the standard stroke (for Mini) listed below may be used. The calculated capacity of the engine may not exceed 1075 cc for the 948, 997 and 998 Mini. The calculated capacity of the engine may not exceed 1195 cc for the 1071 and 1098 Mini. The Mini block may be bored with an offset to accommodate the maximum piston size. The maximum diameter for the piston of the 1071 an 1098 engine is 73.5 mm. Notwithstanding anything to the contrary the Mini engine may be

CLASS REGULATIONS – JUNIOR STOCK

stroked to the maximum stroke for the specified engine. These figures are in bold in shaded cells under the stroke column.

JS 11 TRANSMISSION

- 11.1 The vehicle must comply with CR 11 and differentials may **NOT** be locked.
- 11.2 Only standard, brand specific gearboxes are permitted. This means that any gearbox from any Leyland / BMC Mini may be used in a Mini. The same applies to Golf.
- 11.3 Gear ratios are free but no straight cut gears are permitted.
- 11.4 Any standard differential as fitted within the vehicle brand is permitted. Limited slip type differentials are not permitted.
- 11.5 Differential gear ratios are free.
- 11.6 Rear axles to remain standard.

JS 12 EXHAUST

- 12.1 Refer CR 9 and CR 33.
- 12.2 The internal diameter of the exhaust pipe will be 42 mm.

JS 13 BODY

- 13.1 Body work shall comply with CR 38 and CR 39.
- 13.2 No slots or holes to aid air flow are permitted in the rear of the vehicle.

JS 14 WINGS

- 14.1 Wings are not permitted.

JS 15 FUEL / INJECTION / CARBURETION

- 15.1 Only pump fuel is permitted.
- 15.2 Minis are permitted to use any standard, brand specific inlet manifold for a single carburettor application.
- 15.3 Any single SU carburettor up to a maximum of **1½" (1.5")** may be fitted to a Mini.
- 15.4 Golf vehicles are only permitted to use a single Keihin carburettor with 20/26 venturis. The second stage of the Keihin carburettor may be altered to a mechanical operation from the throttle pedal.
- 15.5 The Golf shall have a blanking plate fitted to blank off the injector apertures.
- 15.6 The Golf 1400 engine shall have a restrictor plate with round holes, with diameters of 19mm and 23mm fitted between carburetor and intake manifold. The Golf 1600 engine shall have a restrictor plate with round holes, with diameters of 17mm and 20mm fitted between carburetor and intake manifold. **The restrictor plates for all the VW engines shall comply with the following:**
 - 15.6.1 They may not be thinner than 1mm;
 - 15.6.2 They may not be thicker than 5 mm;
 - 15.6.3 Inside sides of the holes of the restrictor to be parallel to each other;
 - 15.6.4 No machining of the inside side / edge – only deburring allowed;
 - 15.6.5 No other device may be installed between the carburettor and the restrictor plate.
 - 15.6.6 If the restrictor causes the butterfly to jam a spacer, not exceeding 5mm in thickness may be fitted. The spacer must follow the exact shape of the carburetor's throat.
- 15.7 Air may not be ducted to any component, especially not to the carburetors.

JS 16 IGNITION/ENGINE MANAGEMENT

- 16.1 Any brand specific standard distributor may be used. On the Golf the fixed distributor must be exchanged for a conventional distributor with mechanical advance.
- 16.2 An electronic ignition may be fitted. No programmable Aftermarket ignition is permitted.
- 16.3 The Golf may use the original equipment engine management system from the vehicle, duly modified for use with carburetors. The use of the 1600, 1800 and 2000 cc VW engine management is not permitted.
- 16.4 The electronic system must not be able to retard the timing. The electronics may not be connected to the throttle pedal or be able to determine the throttle position in any way.
- 16.5 No other engine management system permitted.

JS 17 NUMBER PLACEMENT

- 17.1 The number shall be placed on both front doors of the vehicle, the roof and on the visor panel (for line up purposes).

JS 18 APPENDIX "A" - VARIABLE REGULATIONS

CLASS REGULATIONS – JUNIOR STOCK

18.1 Minimum Weight, including the driver:

18.1.1 Mini – 650 kg

18.1.2 Golf – 800 kg.

JS 19 SPECIAL PERMISSIONS

19.1 The radiator of the Mini participating on dirt may be installed behind the rear seat fire wall. The radiator tanks shall be on the boot side of the fire wall, leaving only the radiator core and the hoses visible. In such case no more than 50% of the boot lid may be cut out and replaced with mesh. Steps need to be taken to isolate the fuel tank.

19.2 The Mini engine may use any commercially available stock piston, even though it may be specified for another manufacturer's engine, provided that it is not a racing part.

CLASS REGULATIONS – 1660 SALOONS

SH 1 DESCRIPTION

- 1.1 In respect of the age of the competitor this is an open formula with a minimum age of 16 years.
- 1.2 On dirt this class is restricted to original road going vehicles. On tar the choice in respect of the type of car construction is free.
- 1.3 The vehicle shall comply with the general vehicle rules (CR 1 to CR 15), the safety regulations (CR 20 to CR 36) and the Construction regulations applicable to saloon vehicles (CR 37 to CR 55).

SH 2 CHOICE OF VEHICLES AND COMPONENTS/PARTS

- 2.1 In order for the vehicle, engine or any component thereof to be used 5000 of the particular make and model (reasonable facelifts included) had to be sold in the Republic of South Africa. The onus is on the entrant to prove the source and history of a vehicle or component.
- 2.2 Throughout reference is made to standard parts or components. Please see CR 1.5 above. For clarity this means that when the rules for this class specify a standard part it may be from any vehicle that complies with this choice criteria and need not be a combination with the body shell or engine. In other words if a Nissan engine is used you may use a Ford brake rotor, a BMW brake calliper and a Toyota gearbox – provided each of the donor vehicles complies with SH2.1.

SH 3 DIMENSIONS AND WEIGHT

- 3.1 The original road going vehicles (tar and dirt) shall comply with the dimensions of the relevant make and model set out in the Auto Data Digest with a tolerance for accident repair accepted.
- 3.2 Semi space frames and space frames (on tar) shall not exceed a length of 5 metres and a width of 2 metres.
- 3.3 Weight – The vehicle must comply with the variable regulations at SH 18.

SH 4 CAR CONSTRUCTION

- 4.1 See CR 37 to CR 39.
- 4.2 **On dirt - Only** original road going vehicles permitted. That means no space frames and no semi space frames are allowed.
- 4.3 **On tar – Space frames permitted – This means Original road going vehicles and semi space frames are permitted and are allowed to make the same modifications that are permitted for space frames, subject to generally specified safety standards.**
- 4.4 Front and rear wheel drive permitted. However if a car has been converted from front wheel drive to rear wheel drive it is regarded as a semi space frame and is not permitted on dirt.
- 4.5 This is a saloon class and therefore the vehicle shall comply with the general regulations for saloon classes.

SH 5 SAFETY CONCERNS

- 5.1 The vehicle and driver must comply with each and every general safety regulation – see CR 20 to CR 36.

SH 6 BUMPERS

- 6.1 Only internal bumpers may be fitted.

SH 7 STEERING AND SUSPENSION

- 7.1 The vehicle must comply with CR 8.
- 7.2 Only South African made Gabriel and / or Armstrong shock absorbers may be used. No modifications are allowed to the shock absorbers.
- 7.3 Power steering is permitted.
- 7.4 The following applies to dirt (but is permitted on tar):
 - 7.4.1 Only standard components specific to the vehicle used are permitted front and rear.
 - 7.4.2 The suspension must be mounted to the original position and may not be supported /strengthened by pipe work.
 - 7.4.3 On the inside front the following modifications are permitted: -
 - 7.4.3.1 A tolerance of 25 mm from the standard wheelbase is permitted.
 - 7.4.3.2 Camber is free.
 - 7.4.3.3 The standard anti roll bar / tie rod / bush may be modified.
 - 7.4.4 On the outside front the following is permitted: -
 - 7.4.4.1 The track rod may be extended by up to 25 mm.
 - 7.4.4.2 The steering rack arm (end) may be extended by up to 25 mm.
 - 7.4.4.3 The standard anti roll bar / tie rod / bush may be modified.
 - 7.4.4.4 Negative camber is permitted.

CLASS REGULATIONS – 1660 SALOONS

- 7.4.5 No rose type joints are permitted.
- 7.5 On tar the following applies:
 - 7.5.1 Steering racks / boxes are free.
 - 7.5.2 Suspension design is free but only standard suspension uprights may be used.
 - 7.5.3 The use of rose type joints is permitted.
 - 7.5.4 Suspension may be designed with an off set.
 - 7.5.5 A maximum of 6 links may be used on the rear suspension and must be of the live axle type if rear wheel drive is used.
 - 7.5.6 No wish bone type suspensions are allowed in this class.

SH 8 WHEELS AND TYRES

- 8.1 The vehicle must comply with CR 5 to CR 7.
- 8.2 Tyre and wheel restrictions:
 - 8.2.1 Maximum wheel diameter is 15"
 - 8.2.2 Maximum tyre tread width 205 mm.
- 8.3 Tyre choice: **Any road legal tyre within the above sizing that has a price less than R750 may be used.**

SH 9 BRAKES

- 9.1 The vehicle must comply with CR 10.
- 9.2 Only standard components are permitted at the wheels. The brake callipers are restricted to single pot and two pot types.
- 9.3 The master cylinder is free. Twin master cylinder is permitted.
- 9.4 Drum brakes may be converted to disc brakes.

SH 10 ENGINE

- 10.1 On dirt the engine shall fit in the standard position for original road going vehicles.
- 10.2 On tar the following shall apply:
 - 10.2.1 To rear wheel drive vehicles - the rear face of the engine block must be at least 78 cm forward of the centreline between the front and rear axles. See CR 47 above.
 - 10.2.2 To front wheel drive vehicles – the engine shall fit in the standard position.
- 10.3 The maximum capacity of the engine shall be 1660 cc.
- 10.4 The engine shall have no more than 4 cylinders with no more than 2 valves per cylinder. Engines with a capacity below 1450 cc shall be allowed to have 4 valves per cylinder. Engines with a capacity below 1550 cc but above 1451 cc shall be allowed 3 valves per cylinder.
- 10.5 The engines must be built in terms of the modified engine regulations to be found at CR 17 above. **On tar the components of the sub-assembly shall be recognised stock replacement parts with no race parts being permitted.** Competitors and venues may elect to build engines in terms of the stock engine regulations (to be found at CR 16 above). Should sufficient vehicles be built according to the stock regulations they will be afforded an equal opportunity of becoming SA Champion by running the two classes separate from each other with the highest scorer becoming Champion.

SH 11 TRANSMISSION

- 11.1 The vehicle must comply with CR 11
- 11.2 Only standard gearboxes are permitted.
- 11.3 Gear ratios are free but no straight cut gears are permitted.
- 11.4 Any standard differential and axle is permitted.
- 11.5 Limited slip type differentials are not permitted. Only standard or locked differentials permitted.
- 11.6 Differential gear ratios are free.
- 11.7 Flex plates are not permitted.
- 11.8 **The original cast iron flywheel or a replacement steel / aluminium flywheel is permitted.**

SH 12 EXHAUST

- 12.1 Refer CR 9 and CR 33.

SH 13 BODY

- 13.1 Body work shall comply with CR 38 and CR 39.

SH 14 WINGS

- 14.1.1 Wings are not permitted.

CLASS REGULATIONS – 1660 SALOONS

SH 15 FUEL / INJECTION / CARBURETION

- 15.1 Pump fuel, race fuel, LL100 or methanol is permitted.
- 15.2 Carburetion is limited to a pair of side draught carburettors, with a maximum throttle body diameter of 40 mm. The choke shall be a maximum of 34 mm in diameter.

SH 16 IGNITION/ENGINE MANAGEMENT

- 16.1 Any standard distributor may be used.
- 16.2 An standard electronic ignition may be fitted.
- 16.3 Engine management is permitted. Please consult CR 12 above.
- 16.4 No MSD may be fitted if the stock engine option is utilised.

SH 17 NUMBER PLACEMENT

- 17.1 The number shall be placed on both sides of the vehicle, the roof and on the visor panel (for line up purposes).

SH 18 APPENDIX “A” - VARIABLE REGULATIONS

- 18.1 Minimum Weight, including the driver: 800 kg

SH 19 SPECIFIC PERMISSIONS

- 19.1 The Datsun /Nissan A15 engine is permitted for use.
- 19.2 The cylinder head may be substituted with another cylinder head from the same manufacturer's brand. This is clarified to mean that any cylinder head of the same manufacturer's brand as the cylinder block can be interchanged as long as the cylinder head and the cylinder block comply with the engine units criteria set out above and absolutely no modification is required on either the block or the head to fit the cylinder head. The bolt pattern of the head and the block must be identical. If a cylinder head is substituted the substitute head must have the same camshaft and valve configuration as the cylinder head originally fitted. Cross flow heads may be substituted for reverse flow heads and vice versa.
- 19.3 A specific permission is granted for the BMC / Leyland Mini to participate in this class with the following restrictions:
 - 19.3.1 The vehicle may only be run in original manufacturer body configuration;
 - 19.3.2 A single 45 mm throttle body carburettor must be fitted;
 - 19.3.3 Carburettor choke tubes may not exceed 38mm;
 - 19.3.4 The cylinder head must be a 5 port head;
 - 19.3.5 The weight shall be 650 kg including the driver; and
 - 19.3.6 The vehicle must have a Leyland / BMC Mini engine.
 - 19.3.7 Should the vehicle fail to comply with any one of the above specific restrictions it will be permitted to race at a weight of 800 kg.

CLASS REGULATIONS – 2 LITRE HOTRODS (ON DIRT)

2LHR-D 1 DESCRIPTION

- 1.1 In respect of the age of the competitor this is an open formula with a minimum age of 16 years.
- 1.2 This class is for vehicles that comply fully with the hotrod specifications, except for the engine which is restricted to any 4 cylinder engine with a capacity of 2100 cc or less. Please refer to the Hotrod regulations for all the specifications other than the engine.

2LHR-D 2 ENGINE

- 2.1 Any normally aspirated 4 cylinder engine with a capacity of 2100cc or less may be used.
- 2.2 Engines with more than 2 valves per cylinder are permitted.
- 2.3 The engine is to be built to the modified regulations as found at CR 17.
- 2.4 The rear face of the engine block must be at least 82 cm forward of the centreline between the front and rear axles. See CR 47 above.

CLASS REGULATIONS – 2 LITRE HOTRODS (ON TAR)

2LHR-T 1 DESCRIPTION

- 1.1 In respect of the age of the competitor this is an open formula with a minimum age of 16 years.
- 1.2 This class is for Tar Saloon cars with a 2.0 litre Ford Pinto SOHC engine where standard bodies, semi space frames and space frames may be used.

2LHR-T 2 CHOICE OF VEHICLES AND COMPONENTS

- 2.1 Any Saloon, GT or Coupe type car or body of which a minimum of 500 have been sold in South Africa may be used.
- 2.2 Any standard drive train, cooling, axle or brake component may be used provided that the donor vehicle complies with 2.1 above.
- 2.3 Only rear wheel drive vehicles are permitted.
- 2.4 Only Ford 2.0 litre Pinto SOHC engines may be used. Gearboxes must be Ford.
- 2.5 Any reference to standard parts in respect of the engine shall refer to Ford production parts or accepted commercial aftermarket parts specifically for the **Ford 2.0 litre Pinto SOHC engine** and **NOT** competition parts or parts from other engines. References to standard measurements shall mean the measurements of the standard component for the **Ford 2.0 litre Pinto SOHC engine** and **NOT** competition parts or parts from other engines
- 2.6 Any reference to standard parts in respect of the rest of the vehicle shall refer to production parts or accepted commercial aftermarket parts for a **vehicle described in 2LHR-T 2.1** and NOT competition parts.

2LHR-T 3 DIMENSIONS AND WEIGHT

- 3.1 Vehicles shall not exceed a length of 5 metres and a width of 2 metres.
- 3.2 Weight – The vehicle must comply with the variable regulations at 2LHR-T 18 below.

2LHR-T 4 CAR CONSTRUCTION

- 4.1 See CR 37 to CR 39.
- 4.2 Space frames permitted – This means Original road going vehicles and semi space frames are permitted and are allowed to make the same modifications that are permitted for space frames, subject to generally specified safety standards.
- 4.3 Only rear wheel drive permitted.
- 4.4 This is a saloon class and therefore the vehicle shall comply with the general regulations for saloon classes.

2LHR-T 5 SAFETY CONCERNS

- 5.1 The vehicle and driver must comply with each and every general safety regulation – see CR 20 to CR 36.

2LHR-T 6 BUMPERS

- 6.1 Only internal bumpers may be fitted.

2LHR-T 7 STEERING AND SUSPENSION

- 7.1 The vehicle must comply with CR 8.
- 7.2 Steering racks / boxes are free.
- 7.3 Suspension design is free but limited to either standard suspension uprights as fitted to vehicles described in 2LHR-T 2 above or locally fabricated components. Adjustable spring platforms may be fitted. Competition springs are permitted.
- 7.4 The use of rose type joints is permitted.
- 7.5 Shock absorbers are free but may have only one adjustment for either bump or rebound. Limit is 4 in total, one per corner.
- 7.6 No remote shock absorber reservoirs may be used.
- 7.7 Power steering is permitted.
- 7.8 Suspension may be designed with an off set.
- 7.9 A maximum of 6 links may be used on the rear suspension.
- 7.10 Independent rear suspensions are NOT permitted.

2LHR-T 8 WHEELS AND TYRES

- 8.1 The vehicle must comply with CR 5 to CR 7.
- 8.2 Wheels rim size is restricted to 13".
- 8.3 Only Nankang 205/13 tyres may be used.

CLASS REGULATIONS – 2 LITRE HOTRODS (ON TAR)

2LHR-T 9 BRAKES

- 9.1 The vehicle must comply with CR 10.
- 9.2 Only standard components, sourced from a vehicle that complies with 2.1 are permitted at the wheels.
- 9.3 The master cylinder is free.

2LHR-T 10 ENGINE

- 10.1 The engine shall fit in the standard position for original road going vehicles.
- 10.2 The rear face of the engine block must be at least 78 cm forward of the centreline between the front and rear axles. See CR 47 above.
- 10.3 The stock engine regulations (as set out in CR 16) apply should the following be silent on any issue.

10.4 Choice and size

- 10.4.1 Any Ford 2 litre SOHC engine may be used.
- 10.4.2 The bore may not exceed 90.84 mm plus an allowance for a 1,5mm overbore. Sleeving back to standard (90.84 mm) is permitted. Sleeves may be overbored to a maximum of 1.5mm.
- 10.4.3 The stroke may not exceed 77 mm.
- 10.4.4 The cylinder block may be skimmed but pistons may not protrude above the cylinder block upper deck.
- 10.4.5 Cylinder blocks may be in-line bored.
- 10.4.6 No other modification permitted.

10.5 Crankshaft/Connecting rods/Balancing

- 10.5.1 Only standard cast iron crankshafts may be used.
- 10.5.2 Spot machining of the crankshaft to achieve balance is permitted.
- 10.5.3 Tufriding and nitriding permitted, but polishing outside of the journals is not permitted
- 10.5.4 The minimum weight of the crankshaft is 12.7 kg.
- 10.5.5 The number of bearings may not be altered. Bearings may not be less than Ford specified minimum width. Oversize bearings of standard or heavy-duty material permitted.
- 10.5.6 Cross drilled crankshafts not permitted.
- 10.5.7 No forged steel crankshafts or connecting rods are permitted.
- 10.5.8 Engine components may be balanced and spot drilling is permitted for that purpose only. At least 1 component of each shall remain standard and unaltered.
- 10.5.9 The connecting rod bolts may be changed but the connecting rod may not be drilled or modified to accept the replacement bolt.

10.6 Pistons

- 10.6.1 Only standard Ford or standard replacement pistons (Karl Schmidt, Hepolite, Wellworthy, AE or Mahle) may be used.
- 10.6.2 Pistons may not be modified, other than for balancing. No forged pistons are allowed. Gudgeon pins may be made floating
- 10.6.3 Pistons may not protrude above the cylinder block.
- 10.6.4 Pistons may not be skimmed and identification marks on the pistons may not be removed.
- 10.6.5 Lightening (other than for balancing purposes above) and stress relieving is not allowed.
- 10.6.6 Choice of piston rings is free but the number of rings must be as standard. No machining of the piston is permitted. Accepted ring gapping permitted.

10.7 Lubrication system

- 10.7.1 Dry sump and semi-dry sumps not permitted
- 10.7.2 Oil filter must be clamped and must be in it's original position, but with a sandwich plate permitted.
- 10.7.3 Oil galleries in the cylinder block and cylinder head must remain unaltered.
- 10.7.4 Sumps may be modified to hold more or less oil and may be baffled to prevent surge.
- 10.7.5 The oil pickup must terminate within the confines of the sump.
- 10.7.6 Aluminium sumps are permitted.
- 10.7.7 High pressure oil pumps are permitted. High capacity oil pumps are not allowed
- 10.7.8 An oil cooler may be fitted in the engine compartment, using a sandwich plate fitted between the oil filter and the block.
- 10.7.9 The oil pump and distributor drive may be replaced by a suitably modified Allen key tool.

10.8 Gaskets

- 10.8.1 Only standard Ford or replacement gaskets designed specifically for the above engine may be used.
- 10.8.2 No copper Gaskets.

CLASS REGULATIONS – 2 LITRE HOTRODS (ON TAR)

- 10.8.3 All gaskets must be unmodified with no sealing aids.
- 10.8.4 No competition gaskets allowed on any part of the engine or ancillaries
- 10.9 Camshaft**
- 10.9.1 Camshaft type is free.
- 10.9.2 Vernier timing gears permitted.
- 10.9.3 Standard length cam belts, used with the standard tensioner must be used. No modifications permitted
- 10.9.4 Centre drilled cam shafts are permitted. The oil spray bar may be removed and a splash shield may be fitted.
- 10.9.5 Roller cam bearings are not permitted.
- 10.9.6 Rocker arms are free but the use of roller rocker is not permitted.
- 10.9.7 Rockers may have the ends nipped.
- 10.9.8 Heavy duty rocker arm retaining springs are permitted.
- 10.9.9 The rocker arm pedestal stud is free.
- 10.10 Cylinder head**
- 10.10.1 Any Ford 2.0 litre Pinto SOHC casting allowed.
- 10.10.2 The cylinder head must not be modified (other than the skimming and valve spring fitment permitted) and material may not be removed from or added to the ports or the combustion chamber.
- 10.10.3 Valve guides must occupy their original position and must be standard parts. No bronze or competition guides permitted. Thin wall bronze inserts into existing guides are permitted. Valve guides may be changed to address unleaded fuel concerns.
- 10.10.4 Valves must be standard parts of standard length (110.65-111.65 for inlet valves and 110.10-112.05 for exhaust valves) The valve head size shall be 42 mm for the inlet valve and 36 mm for the exhaust valve.
- 10.10.5 The head gasket face may be skimmed.
- 10.10.6 Any single or double valve spring may be fitted and the head may be modified to allow them to fit.
- 10.10.7 Only standard spring tops and standard length ball studs permitted.
- 10.10.8 Heavy duty rocker arm retaining springs are permitted.
- 10.10.9 No "O" rings permitted.
- 10.10.10 Three angle valve seats are permitted.
- 10.10.11 The slight lip where the back of the valve meets the valve seat may be ground away at a 30° angle to a maximum width of 2.5 mm.
- 10.10.12 Oil flow restrictors are permitted.
- 10.11 Inlet manifold**
- 10.11.1 Only Ford 2.0 litre Pinto SOHC engine permitted.
- 10.11.2 The manifold may not be faced to alter the angle of the manifold or the carburettor.
- 10.11.3 No inlet port matching from the carburettor flange face or from the manifold ports to the head will be permitted.
- 10.11.4 No material may be added to or removed from the gas flow area.
- 10.11.5 Water circulation holes may be blanked off.
- 10.11.6 A stabiliser may be fitted to support the manifold
- 10.12 External modifications**
- 10.12.1 Any production type starter motor, excluding competition types, may be used.
- 10.12.2 Power grip type pulleys are permitted. The crankshaft pulley is free.
- 10.12.3 Manual fuel pumps may be removed and replaced with remotely positioned electric pumps.
- 10.12.4 No electric water pumps permitted.
- 10.13 Retention of standard parts**
- 10.13.1 All other parts appertaining to the engine, which have not been specifically mentioned must remain the standard Ford 2.0 litre Pinto SOHC engine part.

2LHR-T 11 TRANSMISSION.

- 11.1 The vehicle must comply with CR 11.
- 11.2 Any standard Ford 2.0 litre Pinto SOHC engine flywheel, which may be lightened, may be used. Cast iron flywheels may be replaced with steel/aluminium flywheels.
- 11.3 Clutch plates are free but no competition types are permitted. Copper plate type permitted.
- 11.4 Flywheels may be doweled to the crankshaft.
- 11.5 Only standard Ford pressure plates allowed.

CLASS REGULATIONS – 2 LITRE HOTRODS (ON TAR)

- 11.6 Only standard Ford gearboxes as fitted to vehicles described in 2LHR-T 2 above may be used. Quaife or any form of racing gearbox is prohibited.
- 11.7 Any standard rear axle (as fitted to any car described in above may be used.
- 11.8 Any standard differential (as fitted any car described in 2LHR-T 2 above) may be used. No limited slip type differentials are permitted. The differential must be locked. Gear ratios are free.
- 11.9 Only space frame cars may convert from a front wheel drive system to a rear wheel drive system.
- 11.10 Flex plates not allowed

2LHR-T 12 EXHAUST.

- 12.1 Refer CR 9 and CR 33.
- 12.2 Exhaust manifolds are free.

2LHR-T 13 BODY

- 13.1 Body work shall comply with CR 38 and CR 41 above.
- 13.2 No roadster open type bodies may be used.
- 13.3 Bodywork must be centrally placed on the chassis and may not be offset.

2LHR-T 14 WINGS

- 14.1 Wings may not protrude beyond the width of the car.
- 14.2 Wing end plates may not exceed 500mm x 500mm and may be offset
- 14.3 The uppermost edge (attack edge) of the upper horizontal vane shall not be more than 300 mm above the roof line of the vehicle
- 14.4 Wings may not protrude forward of the B post of the vehicle.
- 14.5 The size of the wing is to be contained within the dimensions of the end plates.
- 14.6 The number of vanes (elements) is free but they must all be within the dimensions of the endplates.

2LHR-T 15 FUEL / INJECTION / CARBURETION

15.1 Pump fuel, race fuel, LL100 or methanol is permitted.

15.2 Carburettor

- 15.2.1 Only the standard Weber 32/36 DGVA carburettor may be used. The choke sizes on these carburettors are restricted to a maximum of 27.2 mm for the primary and second stage respectively.
- 15.2.2 No polishing or re-profiling is allowed.
- 15.2.3 No modification to the carburettor body or original design is permitted.
- 15.2.4 Gaskets must be original or replacement replicas of the original meaning no modified gaskets are permitted.
- 15.2.5 A single adaptor/insulator block must be fitted between the carburettor and the inlet manifold. The insulator/adaptor block, with the two gaskets should be a maximum of 8 mm thick.
- 15.2.6 Main jets, primary jets, air jets, auxiliary venturis and emulsion tubes may be changed.
- 15.2.7 Pump jets may be changed but must face downward towards the butterflies.
- 15.2.8 Butterflies may be modified to open together.
- 15.2.9 Replacement spindles may be fitted with standard screws.
- 15.2.10 Cold starting devices may be removed, with the retaining lugs and the subsequent holes blanked off.
- 15.2.11 Air and fuel galleries may not be enlarged or modified.
- 15.2.12 Fuel may enter the needle valve/float chamber from either side.
- 15.2.13 Floats may not be modified or weighted and must control the fuel flow.
- 15.2.14 Needle valves may not be larger than 250 and may not be enlarged or modified.
- 15.2.15 The power valve must be fitted in the base of the fuel bowl, but may be sealed off. The diaphragm may be removed.
- 15.2.16 No trumpets are allowed.
- 15.2.17 The calibrated brass bush which controls the high speed enrichment, as fitted on the secondary venturi side of the carburettor between the top and base of the carburettor, may be sealed off or enlarged, but must be fitted.
- 15.2.18 A secondary fixing on the fuel feed line is required and fuel may enter the carburettor from either side.
- 15.2.19 It is permitted to use a grub screw, or similar device, to fix the auxiliary venturi to the carburettor

2LHR-T 16 IGNITION

16.1 Distributors

CLASS REGULATIONS – 2 LITRE HOTRODS (ON TAR)

- 16.1.1 Either the Ford 2.0 litre Pinto SOHC engine distributor (Motorcraft or Bosch), complete with points and condenser or a standard Ford electronic ignition system that uses a conventional coil must be used.
- 16.1.2 The mechanical or vacuum advance may be altered. The vacuum advance may be removed.
- 16.1.3 Notwithstanding the above the only Lumenition electronic ignition systems that are permitted are:
 - 16.1.3.1 Ford Bosch fitting kit FK 221 with power module PMA50; and
 - 16.1.3.2 Motorcraft fitting kit FK9 with power module PMA50
 - 16.1.3.3 VW TP100
- 16.1.4 The Sierra/Sapphire “black box” ECU is not permitted.

16.2 **Spark plugs**

- 16.2.1 Any standard heat range spark plug for a Ford 2.0 litre Pinto SOHC engine may be used.
- 16.2.2 Competitors are allowed to manufacture an insert at the existing spark plug hole for the sole purpose of fitting a different diameter plug, in order to fit a plug from a wider heat range.

2LHR-T 17 NUMBER PLACEMENT

- 17.1 The number shall be placed on both sides of the vehicle, the roof and on the visor panel (for line up purposes).
- 17.2 The number on the side may be moved to the wing end plates.

2LHR-T 18 APPENDIX A – VARIABLE REGULATIONS

- 18.1 The minimum weight shall be 800KG

CLASS REGULATIONS – MODIFIED SALOONS (DIRT AND TAR)

MS 1 DESCRIPTION

- 1.1 In respect of the age of the competitor this is an open formula with a minimum age of 16 years.
- 1.2 This class is for Dirt and Tar Saloon cars with a maximum engine capacity of 2100cc and where standard bodies, semi space frames and space frames may be used.
- 1.3 The vehicle shall comply with the general vehicle rules (CR 1 to CR 15), the safety regulations (CR 20 to CR 36) and the Construction regulations applicable to saloon vehicles (CR 37 to CR 55).

MS 2 CHOICE OF VEHICLES AND COMPONENTS/PARTS

- 2.1 In order for the vehicle, engine or any component thereof to be used 5000 of the particular make and model (reasonable facelifts included) had to be sold in the Republic of South Africa. The onus is on the entrant to prove the source and history of a vehicle or component.
- 2.2 Throughout reference is made to standard parts or components. Please see CR 1.5 above. For clarity this means that when the rules for this class specify a standard part it may be from any vehicle that complies with this choice criteria and need not be a combination with the body shell or engine.

MS 3 DIMENSIONS AND WEIGHT

- 3.1 The dimensions of Original road going vehicles shall remain according to the specifications of the manufacturer / as per the Auto Data Digest with a tolerance for accident repair accepted.
- 3.2 Semi space frames – as for original road going vehicles.
- 3.3 Space frame shall not exceed a length of 5 metres and a width of 2 metres.
- 3.4 Weight – The vehicle must comply with the variable regulations at MS 18 below.

MS 4 CAR CONSTRUCTION

- 4.1 See CR 37 to CR 39.
- 4.2 Space frames permitted – This means Original road going vehicles and semi space frames are permitted and are allowed to make the same modifications that are permitted for space frames, subject to generally specified safety standards.
- 4.3 Front and rear wheel drive permitted. However if a car has been converted from front wheel drive to rear wheel drive it is regarded as a space frame.
- 4.4 This is a saloon class and therefore the vehicle shall comply with the general regulations for saloon classes.

MS 5 SAFETY CONCERNS

- 5.1 The vehicle and driver must comply with each and every general safety regulation – see CR 20 to CR 36.

MS 6 BUMPERS

- 6.1 Only internal bumpers may be fitted.

MS 7 STEERING AND SUSPENSION

- 7.1 The vehicle must comply with CR 8.
- 7.2 Steering racks / boxes are free.
- 7.3 Suspension design is free but limited to either standard suspension uprights as fitted to vehicles described in MS 2 or locally fabricated components. Adjustable spring platforms may be fitted. Competition springs are permitted.
- 7.4 The use of rose type joints is permitted.
- 7.5 Shock absorbers are free but may have only one adjustment for either bump or rebound. Limit is 4 in total, one per corner.
- 7.6 No remote shock absorber reservoirs may be used.
- 7.7 Power steering is permitted.
- 7.8 Suspension may be designed with an off set.
- 7.9 A maximum of 6 links may be used on the rear suspension.
- 7.10 Independent rear suspensions are permitted.

MS 8 WHEELS AND TYRES

- 8.1 The vehicle must comply with CR 5 to CR 7.
- 8.2 Tyre and wheel restrictions:
 - 8.2.1 Maximum wheel diameter is 15"
 - 8.2.2 Maximum tyre tread width is 205 mm.

CLASS REGULATIONS – MODIFIED SALOONS (DIRT AND TAR)

- 8.3 Tyre choice: Any road legal tyre within the above sizing that has a price less than R850 may be utilised.

MS 9 BRAKES

- 9.1 The vehicle must comply with CR 10.
9.2 Only standard components are permitted at the wheels.
9.3 The master cylinder is free.
9.4 Drum brakes may be converted to disc brakes.

MS 10 ENGINE

- 10.1 Only normally aspirated reciprocating engines are permitted.
10.2 The engine shall fit in the standard position for original road going vehicles.
10.3 The rear face of the engine block must be at least 78 cm forward of the centreline between the front and rear axles. See CR 47 above.
10.4 The maximum capacity of the engine shall be 2100 cc.
10.5 The engine shall have no more than 4 cylinders with no more than 2 valves per cylinder. Engines with more than 2 valves per cylinder are permitted on an experimental basis provided the capacity of the engine is 1660 cc or less.
10.6 The engines must be built in terms of the modified engine regulations to be found at CR 17.

MS 11 TRANSMISSION

- 11.1 The vehicle must comply with CR 11.
11.2 Quaife (or similar) gears / gearboxes are permitted.
11.3 Gear ratios are free.
11.4 Any standard differential and axle is permitted.
11.5 Limited slip type differentials are permitted.
11.6 Differential gear ratios are free.

MS 12 EXHAUST

- 12.1 Refer CR 9 and CR 33.

MS 13 BODY

- 13.1 Body work shall comply with CR 38 and CR 39.
13.2 Slots or holes to aid air flow are permitted in the rear of the vehicle.

MS 14 WINGS

- 14.1 Wings may not protrude beyond the width of the car.
14.2 Wing end plates may not exceed 500mm x 500mm and may be offset
14.3 The uppermost edge (attack edge) of the upper horizontal vane shall not be more than 300 mm above the roof line of the vehicle.
14.4 Wings may not protrude forward of the B post of the vehicle.
14.5 The size of the wing is to be contained within the dimensions of the end plates.
14.6 The number of vanes (elements) is free but they must all be within the dimensions of the endplates

MS 15 FUEL / INJECTION / CARBURETION

- 15.1 Methanol, Aviation fuel (LL100), pump fuel (with octane booster) and Race fuel allowed.
15.2 Fuel injection is allowed but is restricted to either a single throttle body not exceeding 64 out mm or individual throttle bodies not exceeding the maximum carburettor size of 48 mm.
15.3 When a single throttle body is used the intake manifold may be modified to accept the throttle body and change the direction of air intake.
15.4 Carburettors are limited to a pair of side draught carburettors with a maximum throttle body size of 48 mm.
15.5 Chokes tubes shall not exceed 40 mm in diameter.

MS 16 IGNITION

- 16.1 Ignition systems are free.
16.2 Engine management systems are allowed – please consult CR 12 above.

MS 17 NUMBER PLACEMENT

- 17.1 The number shall be placed on both sides of the vehicle, the roof and on the visor panel (for line up purposes).

CLASS REGULATIONS – MODIFIED SALOONS (DIRT AND TAR)

17.2 The number on the side may be moved to the wing end plates.

MS 18 APPENDIX “A” - VARIABLE REGULATIONS

18.1 Minimum Weight, including the driver: 800 kg

MS 19 SPECIFIC PERMISSIONS

19.1 A specific permission is granted for the BMC / Leyland Mini to participate in this class with the following restrictions:

19.1.1 The vehicle may only be run in original manufacturer body configuration;

19.1.2 A single 45 mm throttle body carburettor must be fitted;

19.1.3 Carburettor choke tubes may not exceed 38mm;

19.1.4 The cylinder head must be a 5 port head;

19.1.5 The weight shall be 650 kg including the driver; and

19.1.6 The vehicle must have a Leyland / BMC Mini engine.

19.1.7 Should the vehicle fail to comply with any one of the above specific restrictions it will be permitted to race at a weight of 800 kg.

CLASS REGULATIONS – HOTROD (DIRT AND TAR)

HR 1 DESCRIPTION

- 1.1 In respect of the age of the competitor this is an open formula with a minimum age of 16 years.
- 1.2 This is an open class for Dirt and Tar Saloon cars where only semi space frames and space frames may be used.
- 1.3 The vehicle shall comply with the general vehicle rules (CR 1 to CR 15), the safety regulations (CR 20 to CR 36) and the Construction regulations applicable to saloon vehicles (CR 37 to CR 55).

HR 2 CHOICE OF VEHICLES AND COMPONENTS/PARTS

- 2.1 Body shells are limited to series production vehicles available internationally.
- 2.2 Throughout reference is made to standard parts or components. Please see CR 1.5 above. For clarity this means that when the rules for this class specify a standard part it may be from any vehicle that complies with this choice criteria and need not be a combination with the body shell or engine.

HR 3 DIMENSIONS AND WEIGHT

- 3.1 Semi space frames – according to the specifications of the manufacturer / as per the Auto Data Digest with a tolerance for accident repair accepted.
- 3.2 Space frame shall not exceed a length of 5 metres and a width of 2 metres.
- 3.3 Weight – The vehicle must comply with the variable regulations at HR 18 below.

HR 4 CAR CONSTRUCTION

- 4.1 See CR 37 to CR 39.
- 4.2 Space frames permitted – This means Original road going vehicles and semi space frames are permitted and are allowed to make the same modifications that are permitted for space frames, subject to generally specified safety standards.
- 4.3 Front and rear wheel drive permitted.
- 4.4 This is a saloon class and therefore the vehicle shall comply with the general regulations for saloon classes.

HR 5 SAFETY CONCERNS

- 5.1 The vehicle and driver must comply with each and every general safety regulation – see CR 20 to CR 36.

HR 6 BUMPERS

- 6.1 Only internal bumpers may be fitted.

HR 7 STEERING AND SUSPENSION

- 7.1 The vehicle must comply with CR 8.
- 7.2 Power steering is permitted.
- 7.3 Steering racks / boxes are free.
- 7.4 Suspension design is free.
- 7.5 The use of rose type joints is permitted, but must be at least 12 mm type.
- 7.6 Shock absorbers are free but may not be adjustable from inside the cockpit.

HR 8 WHEELS AND TYRES

- 8.1 The vehicle must comply with CR 5 to CR 7.
- 8.2 Tyre and wheel restrictions:
 - 8.2.1 Maximum wheel diameter on tar is 13"
 - 8.2.2 Maximum wheel diameter on dirt is 15".
 - 8.2.3 Maximum tyre tread width on tar is 9"
 - 8.2.4 Maximum tyre tread width on dirt is 205 mm.
- 8.3 **Bead lock rims are permitted.**
- 8.4 Tyre choice:
 - 8.4.1 **On tar until 31 December 2008 the only tyre permitted at any event is the Hoosier H10SA 20.0 x 9.0 x 13 slick racing tyre. The tyre is available from Raceparts Distribution CC. Their contact details are: Brian Cook – 082 491 5210 Colin Clay - 072 447 4502**
 - 8.4.2 **On tar after 1 January 2009 the only tyre permitted at any event is the NA Carrera**
 - 8.4.3 **On dirt - Any road legal tyre within the above sizing that has a price of less than R930 may be used.**

HR 9 BRAKES

CLASS REGULATIONS – HOTROD (DIRT AND TAR)

9.1 Brakes are free within the confines of CR 10.

HR 10 ENGINE

10.1 The rear face of the engine block must be at least 78 cm forward of the centreline between the front and rear axles. See CR 47 above.

10.2 The following engines are permitted:

10.2.1 Any 4 cylinder engine of which more than 5000 were sold internationally. The only proviso being that the vehicle it was fitted to had to be considered a series production car. The engines must be built in terms of the open engine regulations to be found at CR 18.

10.2.2 A rotary engine that complies with CR 19.

10.3 The engine capacity for normally aspirated engines is free in respect of vehicles competing on tar. On dirt the capacity is restricted to 2450 cc for engines with more than 2 valves per cylinder and 2750 cc for those engines with 2 valves per cylinder.

10.4 Turbo chargers may be fitted to 4 cylinder reciprocating engines. On dirt this permission is only granted to vehicles with a capacity of less than 2000 cc.

HR 11 TRANSMISSION

11.1 The vehicle must comply with CR 11.

11.2 Limited slip type differentials are permitted.

11.3 Gearbox and differential gear ratios are free.

11.4 Flex plates are permitted.

HR 12 EXHAUST

12.1 Refer CR 9 and CR 33.

HR 13 BODY

13.1 Body work shall comply with CR 38 and CR 39.

13.2 Slots or holes to aid air flow are permitted in the rear of the vehicle.

HR 14 WINGS

14.1 Wings may not protrude beyond the width of the car.

14.2 Wing end plates may not exceed 500mm x 500mm and may be offset

14.3 The uppermost edge (attack edge) of the upper horizontal vane shall not be more than 300 mm above the roof line of the vehicle.

14.4 Wings may not protrude forward of the B post of the vehicle.

14.5 The size of the wing is to be contained within the dimensions of the end plates.

14.6 The number of vanes (elements) is free but they must all be within the dimensions of the endplates

HR 15 FUEL / INJECTION / CARBURETION

15.1 Methanol, Aviation fuel (LL100), pump fuel (with octane booster) and Race fuel is allowed.

15.2 Fuel injection and carburetors are free subject to CR 12.

15.3 Secondary injection is permitted, please see CR 12.10 for clarification.

15.4 No slide or roller injection allowed.

HR 16 IGNITION

16.1 Ignition systems are free.

16.2 Engine management systems are free in respect of where they are purchased, supported or serviced but must comply with CR 12 above.

HR 17 NUMBER PLACEMENT

17.1 The number shall be placed on both sides of the vehicle, the roof and on the visor panel (for line up purposes).

17.2 The number on the side may be moved to the wing end plates.

HR 18 APPENDIX “A” - VARIABLE REGULATIONS

18.1 Minimum Weight, including the driver: 800 kg

HR 19 SPECIFIC PERMISSIONS

19.1 None

CLASS REGULATIONS – AMERICAN SALOONS (DIRT AND TAR)

ASD 1 DESCRIPTION

- 1.1 In respect of the age of the competitor this is an open formula with a minimum age of 16 years.
- 1.2 This class is for Dirt cars with six or eight cylinder engines and where standard bodies, semi space frames and space frames may be used.
- 1.3 The vehicle shall comply with the general vehicle rules (CR 1 to CR 15), the safety regulations (CR 20 to CR 36) and the Construction regulations applicable to saloon vehicles (CR 37 to CR 55).

ASD 2 CHOICE OF VEHICLES AND COMPONENTS/PARTS

- 2.1 In order for an engine or any component thereof to be used 5000 of the particular make and model (reasonable facelifts included) had to be sold internationally. The onus is on the entrant to prove the source and history of a vehicle or component.
- 2.2 Throughout reference is made to standard parts or components. Please see CR 1.5 above. For clarity this means that when the rules for this class specify a standard part it may be from any vehicle that complies with this choice criteria and need not be a combination with the body shell or engine.

ASD 3 DIMENSIONS AND WEIGHT

- 3.1 The dimensions of Original road going vehicles shall remain according to the specifications of the manufacturer / as per the Auto Data Digest with a tolerance for accident repair accepted.
- 3.2 Semi space frames – as for original road going vehicles.
- 3.3 Space frame shall not exceed a length of 5.2 metres and a width of 2.1 metres.
- 3.4 The height at boot and bonnet level shall not exceed 1000 mm. **This height shall include any aerodynamic device incorporated into the boot lid area.**
- 3.5 Weight – The vehicle must comply with the variable regulations at ASD 18.
- 3.6 The maximum wheelbase allowed is 3050mm.

ASD 4 CAR CONSTRUCTION

- 4.1 See CR 37 to CR 39.
- 4.2 Space frames permitted – This means Original road going vehicles and semi space frames are permitted and are allowed to make the same modifications that are permitted for space frames, subject to generally specified safety standards.
- 4.3 Only rear wheel drive permitted. However if a car has been converted from front wheel drive to rear wheel drive it is regarded as a space frame.
- 4.4 This is a saloon class and therefore the vehicle shall comply with the general regulations for saloon classes.
- 4.5 The following are the maximum sizes permitted for materials used in the fitment of the bodywork :
 - 4.5.1 Sheet Metal - 1.0mm
 - 4.5.2 Sheet Aluminium - 1.6mm
 - 4.5.3 Fibreglass Panels - 6.0mm
 - 4.5.4 Square Steel Tube - 75 x 75 x 3 mm
 - 4.5.5 Round Steel Tube - 50 x 3 mm
- 4.6 **This class is exempted from the application of CR 22.7 provided that the specific vehicle has a opening roof that is wider than the driver / medical evacuation board.**

ASD 5 SAFETY CONCERNS

- 5.1 The vehicle and driver must comply with each and every general safety regulation – see CR 20 to CR 36.
- 5.2 Roof type door flaps are permitted however the driver must be able to exit the vehicle from another aperture as per CR 2020.2.

ASD 6 BUMPERS AND NERF BARS

- 6.1 Bumpers may not be part of the chassis. This means that there must be pipe work connecting the bumpers to the main chassis structure.
- 6.2 Bumpers must be mounted with four mounting points on the front of the car and six at the rear and may be bolted or welded into position.
- 6.3 **Bumpers must have at least a single horizontal bar but no more than two horizontal bars and four vertical bars.**
- 6.4 **The bumper horizontal bars shall be between 130mm and 170mm apart and the centre line of the bumper at the centre of the bumper shall be 500mm from ground level subject to a tolerance of 50mm. If a single bar is fitted it must comply with these measurements.**

CLASS REGULATIONS – AMERICAN SALOONS (DIRT AND TAR)

- 6.5 The front bumper may not extend rearward of the rear edge of the front tyres and must be rounded back to the internal bumper mounting tube via a bolt on flange against the fender.
- 6.6 The rear bumper may not extend forward of the centre of the rear tyres and must be rounded back to the internal bumper mounting tube via a bolt on flange against the fender.
- 6.7 Nerf Bars are permitted along the sides of the vehicle. The bar shall be fitted in the horizontal plane between the top edge of the tyre and the centre of the hub. The maximum pipe diameter is 38 mm with a wall thickness of 2 mm

ASD 7 STEERING AND SUSPENSION

- 7.1 The vehicle must comply with CR 8.
- 7.2 Beam type or split beam type front axles are permitted.
- 7.3 Only standard commercially available steering racks and steering boxes or quick ratio versions thereof as fitted to vehicles described in ASD 2.1 may be used.
- 7.4 Suspension design is free but limited to either standard suspension uprights as fitted to vehicles described in ASD 2.1 or locally fabricated components. Adjustable spring platforms may be fitted. Competition springs are permitted.
- 7.5 The use of rose type joints is permitted.
- 7.6 Only South African made shock absorbers may be used. No modifications are allowed to the shock absorbers. Limit is 4 in total, one per corner.
- 7.7 No remote shock absorber reservoirs may be used.
- 7.8 Power steering is permitted.
- 7.9 Suspension may be designed with an off set.
- 7.10 A maximum of 6 links may be used on the rear suspension.
- 7.11 Independent rear suspensions are permitted, provided they were fitted to a production vehicle distributed in South Africa by a recognised motor manufacturer.
- 7.12 No quick change midget or sprint car differentials allowed.

ASD 8 WHEELS AND TYRES

- 8.1 The vehicle must comply with CR 5 to CR 7.
- 8.2 Tyre and wheel restrictions:
 - 8.2.1 Maximum wheel diameter is 15"
 - 8.2.2 Maximum tyre tread width is 205 mm.
- 8.3 Tyre choice: Any road legal tyre within the above sizing that has a price of less than R930 may be used.

ASD 9 BRAKES

- 9.1 The vehicle must comply with CR 10.
- 9.2 Only standard components are permitted at the wheels.
- 9.3 The master cylinder is free.
- 9.4 Drum brakes may be converted to disc brakes.
- 9.5 In view of the wedge construction of the cars in this class the brake light shall be fitted just below the horizontal section above the boot area, but shall be forward of the rear bumper.

ASD 10 ENGINE

- 10.1 The rear face of the engine block must be forward of the centreline between the front and rear axles. See CR 47 above.
- 10.2 Only 6 and 8 cylinder engines allowed.
- 10.3 The engines must be built in terms of the open engine regulations to be found at CR 18 above

ASD 11 TRANSMISSION

- 11.1 The vehicle must comply with CR 11.
- 11.2 Transmissions are free except that only standard components as fitted to vehicles commercially sold in South Africa may be used.
- 11.3 Flywheels and clutches may be removed but the vehicle must be able to be started and moved forward without outside assistance.

ASD 12 EXHAUST

- 12.1 Refer CR 9 and CR 33.

ASD 13 BODY

- 13.1 Body work shall comply with CR 38 and CR 39.

CLASS REGULATIONS – AMERICAN SALOONS (DIRT AND TAR)

- 13.2 Space frame vehicles (flexi) with wedge type bodies are allowed.
- 13.3 Space frame vehicles (flexi) with replica saloon bodies are allowed
- 13.4 Slots or holes to aid air flow are permitted in the rear of the vehicle.

ASD 14 WINGS

- 14.1 Wings may not protrude beyond the width of the car.
- 14.2 Wing end plates may not exceed a maximum of 2500cm² in surface area and may be offset. In any event the maximum height of the end plate shall be 500mm. This is clarified to permit the end plates of the wings of wedge bodied vehicles to be incorporated into the body of the car.
- 14.3 The uppermost edge (attack edge) of the horizontal vane shall not be more than 300 mm above the roof line of the vehicle.
- 14.4 Wings may not protrude forward of the centre of the wheelbase.
- 14.5 Only a single horizontal element is permitted.
- 14.6 The width of the horizontal section shall not exceed 300mm.
- 14.7 There shall be a minimum of 100mm clearance between the horizontal element and any part of the vehicle. This is clarified to mean that the 100 mm clearance must exist between the horizontal element of the wing and any other horizontal part of the vehicle.

ASD 15 FUEL / INJECTION / CARBURETION

- 15.1 Methanol, Aviation fuel (LL100), pump fuel (with octane booster) and Race fuel allowed.
- 15.2 Fuel injection and carburettors are free subject to CR 12.
- 15.3 Turbo chargers are permitted on 6 cylinder engines with no more than 2 valves per cylinder.

ASD 16 IGNITION

- 16.1 Ignition systems are free.
- 16.2 Engine management systems are permitted but must comply with CR 12 above.

ASD 17 NUMBER PLACEMENT

- 17.1 The number shall be placed on both sides of the vehicle, the roof and on the visor panel (for line up purposes).
- 17.2 The number on the side may be moved to the wing end plates.

ASD 18 APPENDIX “A” - VARIABLE REGULATIONS

- 18.1 Minimum Weight, including the driver - 1050 kg

ASD 19 SPECIFIC PERMISSIONS

- 19.1 The radiators of vehicles from this class that participate on tar may remain in the cockpit.

CLASS REGULATIONS – SUPER SALOONS (TAR)

SST 1 DESCRIPTION

- 1.1 In respect of the age of the competitor this is an open formula with a minimum age of 16 years.
- 1.2 This class is for tar cars with six or eight cylinder engines and where standard bodies, semi space frames and space frames may be used.
- 1.3 The vehicle shall comply with the general vehicle rules (CR 1 to CR 15), the safety regulations (CR 20 to CR 36) and the Construction regulations applicable to saloon vehicles (CR 37 to CR 55).

SST 2 CHOICE OF VEHICLES AND COMPONENTS/PARTS

- 2.1 In order for an engine or any component thereof to be used 5000 of the particular make and model (reasonable facelifts included) had to be sold internationally. The onus is on the entrant to prove the source and history of a vehicle or component.
- 2.2 Throughout reference is made to standard parts or components. Please see CR 1.5 above. For clarity this means that when the rules for this class specify a standard part it may be from any vehicle that complies with this choice criteria and need not be a combination with the body shell or engine.

SST 3 DIMENSIONS AND WEIGHT

- 3.1 The dimensions of Original road going vehicles shall remain according to the specifications of the manufacturer / as per the Auto Data Digest with a tolerance for accident repair accepted.
- 3.2 Semi space frames – as for original road going vehicles.
- 3.3 Space frame shall not exceed a length of 5.2 metres and a width of 2.1 metres.
- 3.4 The height at boot and bonnet level shall not exceed 1000 mm. This height shall include any aerodynamic device fitted into/onto the boot lid or bonnet.
- 3.5 Weight – The vehicle must comply with the variable regulations at SST 18 below.
- 3.6 The maximum wheelbase allowed is 3050mm.

SST 4 CAR CONSTRUCTION

- 4.1 See CR 37 to CR 39.
- 4.2 Space frames permitted – This means Original road going vehicles and semi space frames are permitted and are allowed to make the same modifications that are permitted for space frames, subject to generally specified safety standards.
- 4.3 Only rear wheel drive permitted. However if a car has been converted from front wheel drive to rear wheel drive it is regarded as a space frame.
- 4.4 This is a saloon class and therefore the vehicle shall comply with the general regulations for saloon classes.
- 4.5 Chassis may not be built with offset.

SST 5 SAFETY CONCERNS

- 5.1 The vehicle and driver must comply with each and every general safety regulation – see CR 20 to CR 36.
- 5.2 Roof type door flaps are permitted however the driver must be able to exit the vehicle from another aperture as per CR 20.2.

SST 6 BUMPERS AND NERF BARS

- 6.1 The car may be equipped with one rear and one front steel internal bumper up against the inside of the body panels. This material may not exceed 38 mm x 2 mm thick tubing. Please see CR 54 above.
- 6.2 The bumpers shall be 450 mm above ground level with the driver seated at the controls.
- 6.3 Wheel and body protectors (refer CR 50 above) are permitted.
- 6.4 A hoop, protecting the radiator, with two mounting points onto the front bumper is optional.

SST 7 STEERING AND SUSPENSION

- 7.1 The vehicle must comply with CR 8.
- 7.2 Suspension design is free subject to the constraints hereof.
- 7.3 The front suspension is limited to the wishbone and strut type.
- 7.4 Adjustable spring platforms may be fitted. Competition springs are permitted.
- 7.5 The use of rose type joints is permitted but may not be less than the 12mm type.
- 7.6 Shock absorbers are free.
- 7.7 Power steering is permitted.
- 7.8 Suspension may not be designed with an off set.

CLASS REGULATIONS – SUPER SALOONS (TAR)

- 7.9 Independent rear suspensions are permitted, provided they were fitted to a production vehicle distributed in South Africa by a recognised motor manufacturer.
- 7.10 Rear suspension, live axles are allowed.
- 7.11 Axles to be utilized in 3 link, 4 link, 5 link or leaf spring configuration.

SST 8 WHEELS AND TYRES

- 8.1 The vehicle must comply with CR 5 to CR 7.
- 8.2 Tyre and wheel restrictions:
 - 8.2.1 Maximum wheel diameter is 15"
- 8.3 Tyre choice: Tyre as permitted for "Wesbank V8" in the circuit racing facet.

SST 9 BRAKES

- 9.1 The vehicle must comply with CR 10.
- 9.2 Brake system free.

SST 10 ENGINE

- 10.1 Engine mounting position can be from standard to a point where the back face of the crankshaft damper is a maximum 250mm rearwards of a line drawn through the centreline of the front stub axle.
- 10.2 Only 6 and 8 cylinder engines allowed.
- 10.3 The maximum engine capacity shall be 360 cubic inches.
- 10.4 Oil systems are free, subject to compliance with CR 29 above
- 10.5 The engines must be built in terms of the open engine regulations to be found at CR 18.

SST 11 TRANSMISSION

- 11.1 The vehicle must comply with CR 11.
- 11.2 Gearboxes are free. No sequential boxes are permitted.
- 11.3 No quick change midget or sprint car differentials allowed.
- 11.4 All cars must have a working starter and clutch at all times.

SST 12 EXHAUST

- 12.1 Refer CR 9 and CR 33.

SST 13 BODY

- 13.1 Body work shall comply with CR 38 and CR 39.
- 13.2 Space frame vehicles (flexi) with replica saloon bodies are allowed
- 13.3 Slots or holes to aid air flow are permitted in the rear of the vehicle.
- 13.4 A driver's door opening must be fitted.

SST 14 WINGS AND BOOT SPOILERS

- 14.1 Either a wing or a boot spoiler may be fitted, but not both.
- 14.2 Wings may not protrude beyond the width of the car.
- 14.3 Wing end plates may not exceed a maximum of 2500cm² in surface area and may be offset.
- 14.4 The uppermost edge (attack edge) of the horizontal vane shall not be more than 300 mm above the roof line of the vehicle.
- 14.5 Wings may not protrude forward of the B post of the vehicle.
- 14.6 The maximum height of a boot spoiler, if fitted, 300mm.
- 14.7 The number of vanes (elements) is free but they must all be within the dimensions of the endplates

SST 15 FUEL / INJECTION / CARBURETION

- 15.1 Methanol, Aviation fuel (LL100), pump fuel (with octane booster) and Race fuel allowed.
- 15.2 Fuel injection and carburetors are free subject to CR 12.
- 15.3 Turbo chargers are permitted on 6 cylinder engines with no more than 2 valves per cylinder.

SST 16 IGNITION

- 16.1 Ignition systems are free.
- 16.2 Engine management systems are free in respect of where they are purchased, supported or serviced but must comply with CR 12 above.

SST 17 NUMBER PLACEMENT

CLASS REGULATIONS – SUPER SALOONS (TAR)

- 17.1 The number shall be placed on both sides of the vehicle, the roof and on the visor panel (for line up purposes).
- 17.2 The number on the side may be moved to the wing end plates.

SST 18 APPENDIX “A” - VARIABLE REGULATIONS

- 18.1 Minimum Weight, including the driver: 1050 kg

SST 19 SPECIFIC PERMISSIONS

- 19.1 A tolerance of 30 mm is permitted in respect of the requirement (CR 47) that requires the wheels to be inside the body of the vehicle.

GENERAL REGULATIONS – MIDGETS AND SPRINT CARS

OW 1 BODIES

- 1.1 Closed body panels are required on both front and rear sections.
- 1.2 Body panels may be made of either fibreglass or sheet metal and must be constructed to retain the traditional midget / sprint car profile.
- 1.3 The bonnet and tailpiece may be constructed of fibreglass or any composite material.
- 1.4 No vehicle will be allowed to enter a race without a bonnet and tailpiece.

OW 2 CHASSIS FRAME AND ROLL CAGE

- 2.1 The chassis frame may be constructed of round or square steel tube. Chro-moly is allowed as an alternative, subject to the use of the same minimum sizes.
- 2.2 The roll cage shall be round tube only.
- 2.3 The minimum dimensions for the chassis and roll cage materials are:
 - 2.3.1 Midget chassis - 30 x 2 mm (30 x 30 x 2 mm if square tube is used)
 - 2.3.2 Midget roll cage – 30 x 2 mm
 - 2.3.3 Sprint Car chassis – 34 x 3 (34 x 34 x 3 mm if square tube is used)
 - 2.3.4 Sprint Car roll cage – 34 x 3 mm
- 2.4 No alloy aluminium or composite material will be allowed for the frame or roll cage.
- 2.5 Local and imported frames are allowed.
- 2.6 The roll cage must enclose the driver with four down pipes. (Cross braces optional)
- 2.7 The minimum clearance of 50 mm must exist between the driver's helmet and any part of the roll-cage.

OW 3 NUMBER PLACEMENT

- 3.1 The number shall be placed on both sides of the tail section of the vehicle.
- 3.2 The number shall be placed on the horizontal section of the top wing.
- 3.3 The number shall be placed on the top right hand side of the top wing end plate on the outside of the vehicle.

OW 4 SAFETY EQUIPMENT

- 4.1 Vehicles shall be fitted with anti submarine type (five or six point) safety belts that comply with MSA seat belt regulations.
- 4.2 Competitors shall wear neck braces or an MSA specified HANS device.
- 4.3 Wrist restraints or safety nets are compulsory.
- 4.4 Seats must be constructed in such a way to protect the right hand side of the drivers body.
- 4.5 A floor pan is compulsory under driver's feet.
- 4.6 A clip off steering wheel is compulsory.
- 4.7 Radiators must be fitted between chassis beams.

OW 5 SUSPENSIONS

- 5.1 Suspension design is free. Springs are free.
- 5.2 Coil Springs must be tethered to the main frame by steel cable.
- 5.3 Only torsion bar, coil over, and cross over leaf springs are allowed on the front suspension.
- 5.4 The front axle must be solid. No independent suspension will be allowed.
- 5.5 Only torsion bar or coil over suspension allowed in the rear.
- 5.6 Any rear axle system will be allowed as long as the rear end is solid – no independent suspension will be allowed.
- 5.7 No electronic device to aid traction or electronic traction control will be allowed.

OW 6 BRAKE REQUIREMENTS

- 6.1 Brakes are free.
- 6.2 The vehicle must have effective operational braking power on a minimum of 3 wheels.
- 6.3 A single brake calliper on a solid one piece rear axle shaft is permitted.

OW 7 ENGINES

- 7.1 Engines shall be solid mounted.
- 7.2 The feet of the driver must be behind the rear face of the engine block.

OW 8 TRANSMISSIONS

- 8.1 Drivers must be protected from open prop shafts by steel bands with a minimum size of 50mm x 5mm.
- 8.2 Drivelines must run between the driver's legs.

GENERAL REGULATIONS – MIDGETS AND SPRINT CARS

8.3 Only rear wheel drive is permitted.

OW 9 WINGS AND AEROFOILS

- 9.1 Wings must be bolted on and not welded into position.
- 9.2 Only a single nose wing and a single top wing is permitted.
- 9.3 The wings may not impede the driver's forward vision in any way whatsoever.
- 9.4 Wings may be adjustable from inside the cockpit while the car is in motion.
- 9.5 The shape of the wings are free, but is limited to a single horizontal.
- 9.6 The wings may not protrude outside the wheels adjacent to them. In other words the front wing must fit within the confines of the front wheels and the top wing must fit within the confines of the rear wheels.

OW 10 BUMPERS

- 10.1 Front and rear bumpers are compulsory.
- 10.2 The shape of the front bumper is optional, but may not protrude beyond the width of the chassis at the front.
- 10.3 The fitment of shock absorber protectors are permitted, provided that they are constructed behind the line between the two front tyres with no sharp edges protruding. Their ends shall be turned back to the chassis.
- 10.4 The bumper/push bar shall be designed in accordance with the body shape and shall protect the fuel cell. The bumper shall protect the area behind the rear axle.
- 10.5 The rear bumper/push bar mounting points may not exceed the width of the chassis at the rear. The rear vertical element of the bumper shall mount to a solid point on the vehicle or the other vertical elements.

OW 11 NERF BARS

- 11.1 Nerf bars must be fitted to both sides of the vehicle.
- 11.2 The nerf bars shall: -
 - 11.2.1 Be constructed of pipe with a maximum measurement of 38 mm x 2 mm;
 - 11.2.2 Be designed to protect the full width of the rear wheels of the vehicle;
 - 11.2.3 Bolt onto the vehicle;
 - 11.2.4 Not protrude more than 50 mm past the outside edge of the rear wheels;
 - 11.2.5 Not be more than 50 mm inside the outside edge of the rear wheels; and
 - 11.2.6 The nerf bar may not be covered in any manner.
- 11.3 Single or twin tubes may be used to construct the nerf bar assemblies however the upper bar, if a twin tube system is used, may not extend above a line drawn between the front and rear wheel hubs
- 11.4 The nerf bar may be closer to the chassis in front and become progressively wider at the back.

OW 12 FUEL TANKS / FUEL

- 12.1 Fuel cells are permitted, as are Neoprene/Plastic tanks
- 12.2 Aluminium, Stainless Steel or Steel tanks are allowed provided they have a minimum wall thickness of 1 mm.
- 12.3 Tanks must be securely mounted.

CLASS REGULATIONS – MIDGETS (DIRT AND TAR)

MDT 1 DESCRIPTION

- 1.1 In respect of the age of the competitor this is an open formula with a minimum age of 16 years.
- 1.2 The vehicle shall comply with the general vehicle rules (CR 1 to CR 15), the safety regulations (CR 20 to CR 36) and the Construction regulations applicable to open wheel vehicles (OW 1 to OW 12).
- 1.3 Two classes are permitted. The classes differ on engines, transmissions and tyres. A competitor may not compete in both classes on the same day unless he has entered 2 distinct cars for the two classes. The classes shall be termed Super Midgets and Midgets.

MDT 2 CHOICE OF VEHICLES AND COMPONENTS/PARTS

- 2.1 In order for an engine or any component thereof to be used 5000 of the particular make and model (reasonable facelifts included) had to be sold internationally. The onus is on the entrant to prove the source and history of a vehicle or component.
- 2.2 Throughout reference is made to standard parts or components. Please see CR 1.5 above.

MDT 3 DIMENSIONS AND WEIGHT

- 3.1 The wheelbase shall not exceed 2100 mm nor shall it be less than 1600 mm.
- 3.2 The maximum overall length is defined as being measured from the extreme front point to the extreme rear point of the vehicle and this measurement must not exceed 3300 mm.
- 3.3 The maximum width of the body or chassis may not exceed 1000mm at its widest point.
- 3.4 The maximum height of the vehicle, measured from the top of the roll cage to the ground must not exceed 1600 mm.
- 3.5 The minimum weight is set out in MDT 18 below

MDT 4 CAR CONSTRUCTION

- 4.1 The roll cage and chassis frame must be constructed with a minimum of suitable 30mm x 2mm round steel tube and shall be triangulated at all points. The two lower main rails may be constructed of square of the same dimensions as the round tube.
- 4.2 The roll cage must enclose the driver and consist of four down pipes and a minimum of two cross braces.
- 4.3 There is no discrimination between locally produced and imported frame.

MDT 5 SAFETY CONCERNS

- 5.1 The vehicle and driver must comply with each and every general safety regulation – see CR 20 to CR 36 as well as OW 4 above.

MDT 6 BUMPERS AND NERF BARS

6.1 FRONT BUMPERS

- 6.1.1 Front bumpers are compulsory and must be constructed of pipe with a maximum measurement of 40mm x 2 mm. The bumper shall be between 350 mm and 450 mm from the ground
- 6.1.2 The bumper shall also not protrude (rearward) more than 150 mm beyond a line drawn immediately in front of the two front tyres. A tolerance of 50 mm shall be permitted.
- 6.1.3 The bumper pipe shall be a straight pipe that shall be parallel to the axle, with no deliberately constructed kinks or bends. Accident damaged pipes shall be replaced.

6.2 REAR BUMPERS

- 6.2.1 The rear bumper shall be made of pipe having a maximum diameter of 50mm x 2 mm. The bumper/push bar centre height shall be 400mm from the ground and may extend between 250mm and 600mm above the ground.
- 6.2.2 The bumper/push bar shall not be more than 100 mm from the nearest body component.

6.3 NERF BARS

- 6.3.1 Nerf bars are compulsory. See OW 11 above

MDT 7 STEERING AND SUSPENSION

- 7.1 The vehicle must comply with OW 5 but need not comply with CR 8.
- 7.2 Competition springs are permitted.
- 7.3 The use of rose type joints is permitted.
- 7.4 Shock absorbers are free for the Super midget class but are restricted to SA manufactured shocks for the midget class.
- 7.5 Power steering is permitted.

CLASS REGULATIONS – MIDGETS (DIRT AND TAR)

- 7.6 Suspension may be designed with an off set.
- 7.7 Imported bird cages are not permitted in the midget class.

MDT 8 WHEELS AND TYRES

- 8.1 Each competitor may only use a single set of rear tyres. Competitors are entitled to bring a spare set of properly marked and mounted rear tyres which will be impounded by the technical consultants. These spare tyres will only be released to a competitor who is able to satisfy the technical consultants that their original tyres have been punctured or damaged in a racing incident.
- 8.2 The vehicle must comply with CR 5 to CR 7.
- 8.3 The following tyre restrictions apply to dirt:
 - 8.3.1 Super Midget Class:
 - 8.3.1.1 Only American Racer tyres with a width, per manufacturer's marking, not exceeding 12 inches will be allowed on the right rear wheel;
 - 8.3.1.2 The compound of the right rear tyre may not be softer than SD 44. Bear in mind that the lower the numeric value of the compound number the softer the tyre;
 - 8.3.1.3 Only American Racer tyres with a width, per manufacturer's marking, not exceeding 10 inches will be allowed on the left rear wheel;
 - 8.3.1.4 The compound of the left rear tyre may not be softer than SD 33. Bear in mind that the lower the numeric value of the compound number the softer the tyre;
 - 8.3.1.5 The front tyres are free, but limited to a 13" wheel rim.
 - 8.3.2 Midget :
 - 8.3.2.1 Any road going, race or rally tyre not exceeding 225 mm is permitted. The maximum rim diameter is 15".
- 8.4 The following tyre restrictions apply to tar:
 - 8.4.1 Maximum tyre width is 13"
 - 8.4.2 Maximum Wheel Diameter is 13"

MDT 9 BRAKES

- 9.1 The vehicle must comply with CR 10.
- 9.2 The vehicle must have effective operational braking power on a minimum of 3 wheels.
- 9.3 A single brake calliper on a solid one piece rear axle shaft is permitted.

MDT 10 ENGINES

- 10.1 Midgets:
 - 10.1.1 Any normally aspirated 4 cylinder engine with a capacity of 2100cc or less may be used.
 - 10.1.2 Engines with more than 2 valves per cylinder are permitted.
 - 10.1.3 The engine is to be built to the modified regulations as found at CR 17.
 - 10.1.4 Bridge port rotary engines are permitted, provided no alteration has been made to the standard water jackets and water seals and the port has not been moved.
- 10.2 Super Midgets:
 - 10.2.1 Any 4 cylinder engine of which more than 5000 were sold internationally. The only proviso being that the vehicle it was fitted to had to be considered a series production car. The engines must be built in terms of the open engine regulations to be found at CR 18.
 - 10.2.2 A rotary engine that complies with CR 19.
 - 10.2.3 The engine capacity for normally aspirated engines is free in respect of vehicles participating on tar. On dirt the capacity is restricted to 2450cc for engines with more than 2 valves per cylinder and 2750 cc for engines with 2 valves per cylinder.
 - 10.2.4 Turbo chargers may be fitted to 4 cylinder reciprocating engines. On dirt this permission is restricted to engines with a capacity of 2000 cc or less. This particular rule is included on dirt to accommodate existing vehicles. It is however noted that unless these vehicles participate in at least 6 club events and at least one of the National Championship events on dirt the use of turbo chargers (on dirt) will be phased out on 30 June 2009.

MDT 11 TRANSMISSION

- 11.1 The vehicle must comply with CR 11.
- 11.2 The gearbox must be solid mounted.
- 11.3 Clutch systems allowed.
- 11.4 Operational starters are optional.
- 11.5 The midget class on dirt may not have quick change differentials, irrespective of whether or not the system was produced locally or overseas.

CLASS REGULATIONS – MIDGETS (DIRT AND TAR)

MDT 12 EXHAUST

12.1 Refer CR 9 and CR 33.

12.2 Twin exhausts are permitted but in the case of rotary engines the combined area of the circles formed by the internal diameter of the edge of the tail pipes shall not exceed that of a circle with a diameter of 72mm.

MDT 13 BODY

13.1 See OW 1.

MDT 14 WINGS

14.1 The wing must comply with OW 9.

14.2 The horizontal component of wing may not exceed 1300 mm x 1300 mm if a nose wing is fitted and may not exceed 1500mm x 1500mm if a nose wing is not fitted.

14.3 The side component (end plate) of a wing may not exceed 1700 mm x 1000 mm.

14.4 A nose wing is permitted. The wing must not exceed a width of 610 mm.

MDT 15 FUEL / INJECTION / CARBURETION

15.1 Methanol, Aviation fuel (LL100), pump fuel (with octane booster) and Race fuel is allowed in the Super Class. Methanol is prohibited in the midget class.

15.2 Fuel injection and carburetors are free subject to CR 12, but fuel injection is prohibited in the midget class.

15.3 No slide or roller injection allowed.

15.4 Secondary injection is permitted in the Super Midget class, please see CR 12.10 for clarification.

MDT 16 IGNITION

16.1 Ignition systems are free.

16.2 Engine management systems are free in respect of where they are purchased, supported or serviced but must comply with CR 12 above.

16.3 In the midget class engine management is prohibited and only locally produced ignition systems are permitted.

MDT 17 NUMBER PLACEMENT

17.1 See OW 3 above

MDT 18 APPENDIX “A” - VARIABLE REGULATIONS

18.1 Minimum weights:

18.1.1 The minimum weight for a super midget is 500 kg.

18.1.2 The minimum weight for a midget is 575 kg.

MDT 19 SPECIFIC PERMISSIONS

19.1 Motorcycle midgets are allowed provided they meet the engine criteria (in respect of the number produced) and the rest of these regulations in respect of midgets specifically.

19.2 On the advise of the technical consultants consulted it is accepted that the aluminium Mopar Midget engine can be accepted into the class as the engine per se does not produce more power in it's aluminium form. It is made very clear that the Technical Consultants have only expressed an opinion on the aluminium and have not made a formal study in respect of how the engine complies with the other regulations applicable to engines.

CLASS REGULATIONS – SPRINT CARS

SP 1 DESCRIPTION

- 1.1 In respect of the age of the competitor this is an open formula with a minimum age of 16 years.
- 1.2 The vehicle shall comply with the general vehicle rules (CR 1 to CR 15), the safety regulations (CR 20 to CR 36) and the Construction regulations applicable to open wheel vehicles (OW 1 to OW 12).
- 1.3 A sprint car is defined as: -
 - 1.3.1 A single seater American Sprint Car;
 - 1.3.2 With a front mounted "V8" engine;
 - 1.3.3 With or without wing.

SP 2 CHOICE OF VEHICLES AND COMPONENTS/PARTS

- 2.1 Free – provided the vehicle stays within internationally accepted sprint car standards.

SP 3 DIMENSIONS AND WEIGHT

- 3.1 The maximum track as measured from the outside of left front wheel to the outside of the right front wheel shall not be more than 2050 mm.
- 3.2 The maximum track as measured from the outside of left rear wheel to the outside of the right rear wheel shall not be more than 79 inches. (Not more than 2007 mm.)
- 3.3 The maximum wheel base is 2286 mm (90 inches).

SP 4 CAR CONSTRUCTION

- 4.1 The vehicle must comply with OW 2.

SP 5 SAFETY CONCERNS

- 5.1 See OW 4 above.
- 5.2 See CR 20 to CR 36

SP 6 BUMPERS AND NERF BARS

- 6.1 OW 10 and OW 11.

SP 7 STEERING AND SUSPENSION

- 7.1 The vehicle must comply with OW 5 but need not comply with CR 8.
- 7.2 Competition springs are permitted.
- 7.3 The use of rose type joints is permitted.
- 7.4 Shock absorbers are free.
- 7.5 Power steering is permitted.
- 7.6 Suspension may be designed with an off set.

SP 8 WHEELS AND TYRES

- 8.1 The right rear tyres are restricted to a 15" tyre produced as a Sprint Car tyre by the manufacturer of the tyre.
- 8.2 The other tyres are free.
- 8.3 At National Championship events a competitor is restricted to using a single right rear tyre. His spare wheel will be impounded by the technical team and will only be released if the Technical consultant is satisfied that the original tyre was damaged by a racing incident or a puncture.

SP 9 BRAKES

- 9.1 The vehicle must comply with CR 10.
- 9.2 The vehicle must have effective operational braking power on a minimum of 3 wheels.
- 9.3 A single brake calliper on a solid one piece rear axle shaft is permitted.

SP 10 ENGINES

- 10.1 Any make of V8 Engine is allowed.
- 10.2 No engine will be allowed in excess of 410 cubic inches. .
- 10.3 Cylinder blocks are free.
- 10.4 No turbo chargers or superchargers will be allowed.
- 10.5 The engines may be built according to the open engine regulations found at CR 18 above, although any internal modification within the engine is permissible.
- 10.6 No transverse mounted engines permitted.

SP 11 TRANSMISSIONS

CLASS REGULATIONS – SPRINT CARS

- 11.1 Any Gearbox/Slider is permitted.
- 11.2 Only rear wheel drive is permitted.

SP 12 EXHAUST

- 12.1 Refer CR 9 and CR 33.

SP 13 BODYWORK

- 13.1 See OW 1 above.

SP 14 WINGS.

- 14.1 The wings will comply with OW 9.
- 14.2 The following applies to top wings:
 - 14.2.1 Any shape or design permitted
 - 14.2.2 The maximum size shall be 4000 square inches after assembling and as ready to race.
- 14.3 The following applies to nose wings:
 - 14.3.1 Any shape or design permitted
 - 14.3.2 The maximum size shall be 900 square inches after assembling and as ready to race.
- 14.4 Adjustment of wings whilst car is in motion is permitted.

SP 15 FUEL / INJECTION / CARBURETION

- 15.1 Only methanol allowed.
- 15.2 Fuel injection and carburetors are free subject to CR 12.
- 15.3 Down Port Injection is permitted

SP 16 IGNITION

- 16.1 Ignition systems are free.
- 16.2 Engine management systems are free in respect of where they are purchased, supported or serviced but must comply with CR 12 above.

SP 17 NUMBER PLACEMENT

- 17.1 See OW 3 above.

SP 18 APPENDIX “A” - VARIABLE REGULATIONS

- 18.1 None

SP 19 SPECIFIC PERMISSIONS

- 19.1 None

CLASS REGULATIONS – MICRO MIDGETS

MM 1 DESCRIPTION

- 1.1 In respect of the age of the competitor this is an open formula with a minimum age of 12 years.
- 1.2 The micro midget is a single seater, which has its engine mounted on the right hand side, next to the driver.

MM 2 CHOICE OF VEHICLES AND COMPONENTS/PARTS

- 2.1 The chassis must be factory built (local or imported) or closely built to factory specifications, and must be constructed of tubular metal with a minimum wall thickness of 2mm (chromoly 1.5 mm). No square tubing may be used.
- 2.2 Only 100 cc Yamaha or PCR PV 50 engines complete with their own, standard, Walbro series WB3 single carburettor and exhausts are permitted. The Briggs and Stratton 200cc 5.5hp engines are also allowed

MM 3 DIMENSIONS AND WEIGHT

- 3.1 The front track of the Micro midget is measured from the outside of the left front tyre to the outside of the right front tyre and must not exceed 1100 mm.
- 3.2 The rear track of the Micro midget is measured from the outside of the left REAR tyre to the outside of the right REAR tyre and must not exceed 1400 mm.
- 3.3 The wheelbase of the Micro midget is measured from the centre of the front hub to the centre of the rear hub and must not exceed 1270 mm.
- 3.4 The maximum overall length of the Micro midget is measured from the extreme front point to the extreme rear point and must not be greater than 1850mm
- 3.5 The maximum height of the Micro midget is measured from the top of the roll cage to the ground and may not exceed 1500 mm.
- 3.6 The minimum total weight of driver and Micro midget may not be less than 160 kg if using a PV 50 PCR engine and 150 kg if using a 100cc Yamaha or 4 stroke engine.
- 3.7 Additional weight required bring the Micro midget up to the specified minimum weight must be secured to the body work with nyloc nuts and bolts or bracket harness. In addition duct tape and tie-straps will be used.

MM 4 CAR CONSTRUCTION

- 4.1 The feet of the driver of the mm must not protrude further forward than the front tube of the chassis.
- 4.2 No limb, limb protection or any part of the driver's body may protrude beyond the perimeter of the Micro midget.
- 4.3 Additional holes may not be drilled through any part of the original chassis
- 4.4 Floor pans are compulsory and must be as per the original floor pan supplied by the factory.
- 4.5 Petrol tanks must be factory-moulded plastic or steel tanks.
- 4.6 Petrol tanks must be mounted on the floor pan between the steering column stays or on the top of the 4 stroke engines.
- 4.7 The maximum tank capacity permitted is 5 litres.
- 4.8 The seat must be constructed of fibreglass and must be supported by a minimum of 4 (four) stays mounted to the seat and chassis. Padded seat covers are permitted as long as the padding is securely attached to the seat.

MM 5 SAFETY CONCERNS

- 5.1 All drivers will wear a suitable racing helmet, racing overall, gloves and boot- type shoes, which cover the driver's ankles.
- 5.2 Neck braces are compulsory.
- 5.3 Roll cages are compulsory and must be constructed of tubular section, with a minimum diameter of 25mm and a minimum wall thickness of 1,2mm. No square tubing may be used.
- 5.4 All joints / seams of the roll cage must be welded 100%.
- 5.5 The roll cage must enclose the driver and consist of four down pipes and a minimum of one cross brace behind the driver.
- 5.6 A minimum clearance of 50mm must exist between the driver's helmet and the top of the roll cage.
- 5.7 Safety nets must be fitted to the right hand side of the roll cage and must be constructed of webbing. No steel mesh or netting will be permitted. (See figure mm – c and d).
- 5.8 At least a four point, single lever type safety belt or harness must be fitted to the chassis and or roll cage.

CLASS REGULATIONS – MICRO MIDGETS

- 5.9 PVC side pods (plastic moulded sections as from the factory) OR double nerf (sissy) bars are compulsory and must be fitted to both sides of the Micro midget. Side pods or nerf bars must not protrude more than 50mm past the outside side of the wheel. Additionally.
- 5.10 Nose cones (plastic moulded sections as from the factory) are compulsory and may not protrude, forward, from the front wheels by more than 50mm. The wheels may not protrude from the nose cone at all.
- 5.11 The shape of the nose cone is optional but be an original as moulded in the factory.

MM 6 BUMPERS AND NERF BARS

- 6.1 Front and rear bumper bars are compulsory and must be constructed of tubular section, with a diameter of 20mm and a wall thickness of 1.6mm. All sharp edges must be rounded off.
- 6.2 Rear bumper bars must be designed in accordance with the chassis width. The rear bumper bar mounting points may not protrude beyond the width of the chassis at the rear. It must cover at least 75% of the width of the micromidget, including the tyres.

MM 7 STEERING AND SUSPENSION

- 7.1 To comply with the specifications of the chassis manufacturer.

MM 8 WHEELS AND TYRES

- 8.1 Only slick tyres or wet weather tyres are permitted – tyre choice is free but all four tyres will be either slick tyres or wet weather tyres.
- 8.2 No double wheels are permitted.
- 8.3 Only five-inch wheels will be permitted.
- 8.4 All competitors must use the same size tyres. (Front and rear.)

MM 9 BRAKES

- 9.1 No front brakes permitted.

MM 10 ENGINES

- 10.1 No super karts or engines will be allowed.
- 10.2 The engine must be solidly mounted onto the right hand side of chassis when seated in the driver's seat.
- 10.3 Only 100 cc Yamaha or PCR PV 50 engines complete with their own, standard, Walbro series WB3 single carburettor and exhausts are permitted. The Briggs and Stratton 200cc 5.5hp engines are also allowed
- 10.4 The PCR PV 50 must use their original standard exhausts silencers. No modifications whatsoever may be carried out to this exhaust system. Gaskets may be removed on the PV 50. The PCT PV 50 must run with a minimum head gasket of 2 mm.
- 10.5 Yamaha engines must be fitted with a 0.8 mm (tolerance of 0.1 mm allowed) head gasket and a standard exhaust silencer.
- 10.6 No modifications or blue printing is permitted. All components must be standard factory parts.
- 10.7 No additional material may be placed internally in any part of the engine, with the exception of gaskets. With regards to gaskets, should the replacement of such gaskets affect another dimension stated on the relevant MSA Karting commission specifications for PCR PV 50 engines, this measurement shall comply with the specifications inclusive of the gaskets. It is permitted to add additional base gaskets for the purpose of achieving the correct T.D.C. and BDC piston height specifications. 4 stroke engines = 11 h.p.
- 10.8 No modifications to the crankcase are allowed. No `stuffing` is allowed. Both the earlier type 8 fin and the later type 6 fin crankcases are permitted.
- 10.9 Grinding is not permitted to any portion of the port duct contained in the aluminium cylinder on 2 strokes only.
- 10.10 The top land of the piston may not be lowered.
- 10.11 Port timing is not permitted.
- 10.12 Replacement parts must be affixed and orientated in the same way, as supplied originally by the manufacturer. Any part or dimension of any part not specified on the specification sheet must be the same as the genuine standard part obtained from the MSA. Accredited Karting dealer for PCR engines.
- 10.13 No additional supplementary power source, such as super charging or nitrous oxide or double carburettors will be permitted.
- 10.14 The only alterations permitted or required are as follows:
- 10.15 Boring of the sleeve is permitted to oversize pistons of up to 50.44 mm and 0.40 on a 4 stroke.

CLASS REGULATIONS – MICRO MIDGETS

- 10.16 Re-sleeving of the cylinder is permitted, provided the re-sleeved cylinder complies with the MSA. Karting commission specifications and that no machining or grinding of the port windows in the cylinder or sleeve is done, with the exception of the exhaust port, as detailed in the MSA. Karting commission specifications.
- 10.17 Notwithstanding the above, competitors who have purchased any parts which do not conform to the specifications can take corrective action by machining these to the correct specifications.
- 10.18 Grinding of the sides but not the top or bottom of the intake port window on the earlier type sleeves is permitted in order to widen the port window in the sleeve to the current specifications supplied by MSA. PCR PV 50 engine specifications.
- 10.19 Gaskets other than standard may be used, provided they comply with the relevant MSA. Karting commission specifications.
- 10.20 It is permitted to add additional base gaskets for the purpose of achieving the correct T.D.C. and BDC piston height specifications.
- 10.21 The hooks on the standard circlips may be removed, or hookless circlips fitted.
- 10.22 Damage to the internal or external ports of the engine may be repaired by the use of metal or epoxy fillers provided such repair is done without affecting the original internal dimensions of the part been repaired i.e. creating a `scuffing` effect. No repair, which has the effect of altering any actual dimension of the engine, will be permitted i.e. blueprinting under the guise of repair.
- 10.23 Damaged or worn crankshaft journals may be re-claimed by hard chroming.
- 10.24 Seize marks on the skirts of the pistons may be removed.
- 10.25 Both the earlier type two ring or later type pistons may be used.
- 10.26 Matting surfaces may be lightly refaced for the purpose of preventing leaks; as long as this does not alter any dimension by more than 0.1 mm and that all the dimensions still comply with the dimensions stated on the specification sheet.
- 10.27 Alternate make oil seals and bearings of the same type as the original may be used. Main bearings must be of single row, and must be the deep groove nylon cage type.
- 10.28 The fitting of securing brackets to any existing bolt or bolt holes, on the engine assembly, is permitted.
- 10.29 Studs, bolts, nuts, washers and rivets may be replaced with non- standard parts of different dimensions, provided these are similar and perform the same function as the original.
- 10.30 The repairing of damaged threads by means of helicoils is permitted.
- 10.31 No radiator will be permitted. Only air-cooling is permitted.
- 10.32 The engine may not be changed without the express written approval of the Race Controller or Technical Consultant.
- 10.33 No ducting of air is allowed.

MM 11 TRANSMISSIONS

- 11.1 Only rear wheel drives will be permitted.
- 11.2 Sprockets and drive gears are free.
- 11.3 No clutches will be permitted on two stroke engines. Only four stroke engines may have clutches.
- 11.4 No gearboxes will be permitted.
- 11.5 The chain and sprocket of the Micro midget must be covered by a chain and sprocket guard, constructed of either plastic, (with a thickness of no less than 3mm), aluminium or mild steel (with a wall thickness of no less than 1.6mm) and must cover the full length of the chain and sprockets.

MM 12 EXHAUST

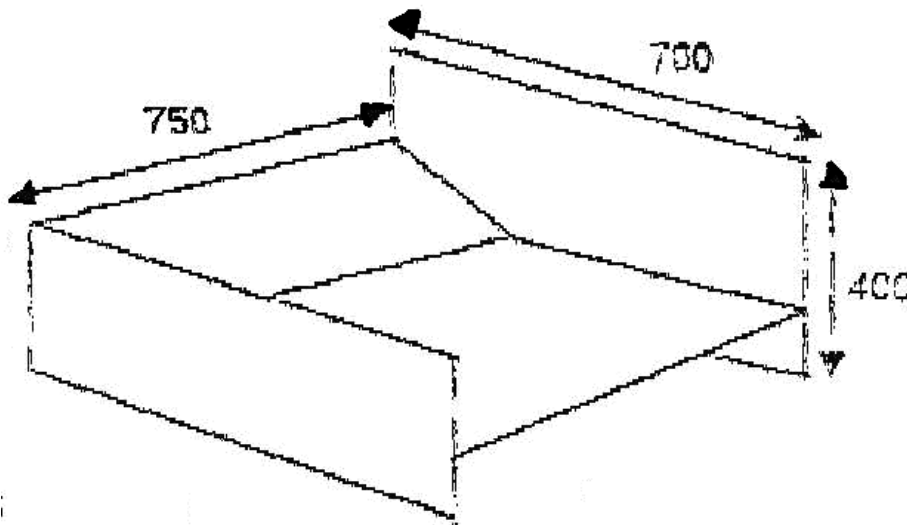
- 12.1 Silencers shall be standard units as supplied by the manufacturer for these engines and must conform to the MSA Karting commission specifications
- 12.2 The position the silencer is attached to the engine must remain as supplied by the factory and will not protrude beyond the perimeter of the micro midget.
- 12.3 The silencer end cap will be mounted to the silencer body in the same rotational orientation as a new standard unit i.e. the outer pipe must be 180 degrees opposite the outlet of the reducing cone.
- 12.4 The use of external non-standard retaining springs; clamps; studs; nuts or locking wire are permitted.
- 12.5 The connecting length between the silencer and the exhaust bend may be varied by fitting different lengths of flexible or rigid connector spacers. Variation of the length by any other means or a mechanism that could vary the length whilst the Micro midget is in motion is prohibited.
- 12.6 Engines must be silenced to the MSA Specifications – 110 db

MM 13 BODYWORK

- 13.1 No mudguards or mud flaps will be permitted.

MM 14 WINGS

- 14.1 Top roll cage wings are compulsory.
- 14.2 The size of the wing must not be smaller than 550 mm long and should not exceed 700 mm long and should not be smaller than 700 mm in width. The maximum sizes are stipulated in the attached sketch. The horizontal element may have a single bend.
- 14.3 The wings must be bolted down, and not welded, onto the roll cage assembly.
- 14.4 The inside (left side) end plate may not exceed a measurement of 700 mm long by 400 mm high and the outside (right hand side) may not exceed a measurement of 700 mm long by 300 mm high.
- 14.5 The wing construction must be of aluminium or chromodek only.
- 14.6 The wings may be adjustable.
- 14.7 Front metal wings are deemed to be a safety hazard and are thus not permitted.



MM 15 FUEL / INJECTION / CARBURETION

- 15.1 No boosters will be permitted in the fuel.
- 15.2 Only pump fuel (bought from a filling station garage), mixed with synthetic two-stroke oil will be permitted.
- 15.3 The standard Walbro series WB3 unit as supplied with a new engine is the only type carburettor permitted on the PCR PV 50 engine. No W32a or equivalent carburettors are allowed on the PCR PV 50 or Yamaha engines.
- 15.4 The carburettor must be mounted with the pulse pipe cover, uppermost.
- 15.5 Ram tubes, deflectors and air filters may be fitted to the carburettor. No dry ice is permitted in air filters or air boxes. Air may not be ducted into the carburettor by any means.
- 15.6 Additional fuel pumps are not permitted.
- 15.7 The carburettor and spacers must be run in standard form, as supplied by the manufacturer or distributor and no modifications will be permitted at all, unless specified hereunder.
- 15.8 Additional or altered butterfly return springs may be fitted. A 1 mm hole may be drilled in the top section of the carburettor butterfly.
- 15.9 To facilitate the use of ram tubes; deflectors or filters, the standard carburettor mounting studs or bolts may be replaced by longer studs or bolts.
- 15.10 Screws, washers and circlips may be replaced with non-standard parts, provided these are similar and perform the same function as the original parts. The screw and washer attaching the butterfly to the shaft may not be smaller or shorter in any dimension when compared to the original supplied with the carburettor.
- 15.11 The mesh filters in the carburettor pump and metering chambers and the high-speed non-return valve may be removed.
- 15.12 The metering lever height may be adjusted and metering lever spring may be modified to adjust release pressures.

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- 15.13 The metering needle seat may be refaced or an insert made from the same or alternate metal may be fitted, provided the needle seat diameter and the fuel orifice diameter remain the same size as standard.

MM 16 IGNITION

- 16.1 Any make of spark plug may be used, but no modifications other than electrode gap settings are permitted and the standard spark plug washer must be used.
- 16.2 Coils may be reinforced with epoxy. No alterations or adjustments are permitted.
- 16.3 The earlier type Motoplat or Ducati as well as the current PVL mod 105458 ignition systems may be used.

MM 17 NUMBER PLACEMENT

- 17.1 Numbers should be clearly visible and placed on the nose bib, the rear bumper and outside of the right hand side end plate of the wing. The size of the lettering and number must be at least 200 mm by 200 mm.

MM 18 APPENDIX “A” - VARIABLE REGULATIONS

- 18.1 None

MM 19 SPECIFIC PERMISSIONS

- 19.1 None

APPROVED INSPECTORS

Due to the unique requirements of quad motorcycle racing these rules shall in the first instance regulate such racing. Where this rule is silent regarding any particular issue, the balance of the oval track regulations, read with the GCR's shall apply. In respect of technical regulations the regulations that apply to non circuit motorcycles and quads shall apply.

For ease of reference the balance of the regulation refers to motor cycle racing, which is stated to include quads.

QMR 1 CLASSIFICATION OF MEETINGS

- 1.1 In general motorcycle meetings are grouped as follows:
 - 1.1.1 An Individual Competition which is described as a competition between individuals to determine which of them shall score the most points and be considered the winner for an event, cup, series or championship.
 - 1.1.2 A Team Competition is described as a competition between two or more teams to determine the best team. All such team events will be described in the SR's for the event and will include all relevant details such as numbers, eligibility of riders, exclusions, reserves, etc.

QMR 2 TRACK SPECIFICATIONS

- 2.1 Motorcycle racing is only permitted on a dirt surface, which may be the regular dirt oval track or a specifically constructed track inside an oval.
- 2.2 Motorcycle racing is only permitted on tracks that have solid concrete barriers, block wall barriers or closely spaced Armco. The spaces between the Armco shall not exceed 50 mm. The Armco shall have no loose ends.

QMR 3 COMPULSORY DRESS

- 3.1 Every rider shall wear:
 - 3.1.1 Full motorcycle racing leathers in good condition;
 - 3.1.2 Full face helmet with at least an SABS approval;
 - 3.1.3 Gloves;
 - 3.1.4 Proper motorcycle racing or motocross boots; and
 - 3.1.5 Approved chest protectors.
- 3.2 Every machine shall be fitted with a lanyard type cut off switch.

QMR 4 VEHICLE CLASSIFICATION

- 4.1 The event regulations shall clearly set out classes for the machines so that the power output of the machines will be broadly similar on a class-by-class basis, failing which reference shall be made to the classes in other non circuit motorcycle racing.
- 4.2 The regulations as they apply to non circuit motorcycles and quads apply.

QMR 5 PRACTICE

- 5.1 The organisers shall permit every motorcycle that has not participated on a particular track during the then current season a period to practice prior to the commencement of racing.
- 5.2 Any rider that has had an accident and damaged his machinery so that it requires major repairs to the framework shall practice on that machine prior to competing at his next meeting.
- 5.3 New riders, or riders of unknown ability, may be required to pass a test consisting of four (4) laps solo, two (2) laps of group riding, and a demonstration of his ability to stop the machine in an emergency, under racing conditions.

QMR 6 DIRECTION OF RACING

- 6.1 The races shall be run in a clockwise direction.

QMR 7 STARTING POSITIONS

- 7.1 No more than 4 motorcycles shall be permitted per race. The event will be run as follows:
- 7.2 Assuming 32 competitors there will be 8 races of 4 motorcycles, with the first and second placed competitor going through to the second round. The grids for round one will be by way of a draw. In round two the first two competitors from race one in the first round will race against the first two from race two and so on. After the second round there will be two semi-final races with the first two from the first race in round two against the first two from the second race in round two and so on. Thereafter there will be a final of 4 motorcycles.
- 7.3 Where there is a withdrawal by any of the first and second placed competitors their grid slot will be filled by the third placed competitor from their race.

QMR 8 NUMBER OF LAPS

- 8.1 All races are 4 lap races

QMR 9 STARTING PROCEDURE

- 9.1 The races shall commence by means of a standing start.
9.2 Races will be started by means of the flags and/or lights.
9.3 The motorcycles shall start at the beginning of the straight and shall maintain a straight course until they pass a cone place on the track to police this regulation.
9.4 Failure to maintain a straight course may be good cause for the Race Controller to: -
9.4.1 Consider the start to be incorrect, thereby ordering a new start;
9.4.2 Exclude the offending rider for unfair riding;
9.4.3 Order a complete restart with all riders.
9.5 The starter places the motorcycles under starter's orders by raising the start flag or illuminating the red light.
9.6 The starter must move off the track surface at this time.
9.7 After a pause, sufficient to enable the riders to rev up their engines and fix their attention on the starting mechanism, the starter shall start the race by dropping the start flag or switching off the red light.
9.8 Once a start has been made, riders should maintain a straight course from their starting position up to the marker.
9.9 No handicap starts are to be allowed.

QMR 10 FALSE STARTS

- 10.1 A rider, who allows his machine to move forward whilst under starter's orders, shall be adjudged to have false started.
10.2 He will be moved back to a penalty position, which shall be 5 metres from the start line. He shall be excluded for the second offence in the same event.
10.3 The race must then be started properly.
10.4 A wheel is considered to have crossed the starting line if its wheel spindle has passed over the line.
10.5 The first rider to breach this rule shall be the rider excluded and a new start will be ordered by the Race Controller.
10.6 If a stall occurs prior to riders being under starter's orders, the rider, by raising his right arm, may call for a restart. The machine must be pushed back and then restarted in the direction of the race. Failing to restart within the marker distance will result in the machine being excluded from the race.
10.7 If a stall occurs after the start of the race, the race will not be restarted and the machine must either be started and rejoin the race or must be pushed off the track into the centre area.

QMR 11 DELAYING THE START

- 11.1 A rider who fails to ride directly and without delay from the pits to the starting line, delays the start in any other manner or who prevents the start may be excluded from the race.

QMR 12 FAULTY STARTING GATE

- 12.1 The Race Controller shall stop the race by using the red flag or lights and order a restart with all the riders competing if he considers the start incorrect.

QMR 13 RE-STARTS

- 13.1 Any rider who, for any reason, is deemed the primary cause of the race being stopped shall be eligible to take part in the re-start at the discretion of the Race Controller. The Race Controller may penalise him in accordance with these rules before such restart or after the completion of the restarted race.
13.2 The Race Controller may permit any rider who has fallen as a result of having been fouled or who have otherwise left the course in the interest of safety to take part in the re-start.
13.3 When taking part in a re-start, riders must start from their original starting positions. Any rider who failed to start, retired from (which includes not proceeding under power when the race was stopped), or had been excluded from a race, which was stopped, shall be ineligible to take part in the re-start.

APPROVED INSPECTORS

QMR 14 OUTSIDE ASSISTANCE

- 14.1 No time allowance or outside assistance may be given to any rider once he has come under starter's orders. This sub-rule therefore applies while the race is in progress as well.

QMR 15 LEAVING THE COURSE

- 15.1 A rider whose machine crossed the inner edge of the track with two wheels shall be penalised.
- 15.2 The Race Controller may refrain from imposing a penalty if he is satisfied that the action was taken in the interest of safety of other riders or the rider concerned was forced off the course by another rider.
- 15.3 This rule also applies to the crossing of the marking of the outer edge of a track that is surrounded by a run-off zone.
- 15.4 The Race Controller may rely on the input of corner marshals, assistant clerks of the course and judges of fact in formulating his opinion.
- 15.5 A rider, who returns to the track and continues to race when he is not entitled to, shall be excluded.

QMR 16 NOISE EXCLUSION

- 16.1 A motorcycle shall be halted by the Race Controller if: -
- 16.1.1 Any part of the motorcycle's exhaust system: -
 - 16.1.2 Becomes displaced;
 - 16.1.3 Becomes detached; or
 - 16.1.4 Is damaged or fails in any other way. Or
 - 16.1.5 Not all the exhaust gases pass through the exhaust in a proper manner.

QMR 17 FOUL OR DANGEROUS RIDING

- 17.1 No foul, unfair or dangerous riding shall be permitted.
- 17.2 The Race Controller may stop the race concerned if, in his opinion, such conduct produces an advantage to the rider involved or affects the chances of one or more riders.

QMR 18 FINISH

- 18.1 A rider shall only be classified as a finisher if he is on board the machine when it crosses the finish line.
- 18.2 The scoring shall be as follows: -
- 18.3 In the heats: 3 points for a win reducing by one point for every position to a minimum of 1 for third place;
- 18.4 In the final: 6 points for a win reducing by one point for every position to a minimum of 3 for fourth place.

QMR 19 EVENT WINNER

- 19.1 Due to the knockout system the winner of the event will be the winner of the final.

APPROVED INSPECTORS

The following persons / bodies have been approved to perform the annual inspections:

- Racing 41 (Piet Venter) – Polokwane
- James (based at Spedeworth Pretoria)
- Shane de Beer
- Maurice Rosenberg – 011 793 55 66
- Johan Coetzee – 011 979 29 59
- Nick van Rensburg -
- Willie Bitzer -
- John Duncan -
- Wayne Duncan -
- Sydney van Rensburg
- Pieta Victor
- Matty Maartens
- Marius Neveling
- TIG Welding – Cape Town
- Chris Viljoen
- Lightning Racing
- Robert Petzer
-