ASSOCIATION OF AUTHORISING BODIES

NATIONAL AUTOGRASS SPORT ASSOCIATION LTD.

NASA
WEBSITE INFORMATION SHEETS
VEHICLE CONSTRUCTION
RULES & REGULATIONS

2015 EDITION

CLASS 1

"The Association reserve the right to alter/amend the NASA Information Sheet as required, and that the Association has the right to review and amend any Class or Construction Rules at the end of each racing year."

VALID FROM JANUARY 2015
UNTIL FURTHER NOTICE.

ALL PREVIOUS EDITIONS ARE INVALID.

NEW REGULATIONS ARE MARKED #.

IT IS THE RESPOSIBILITY OF THE DRIVER/COMPETITOR/CONSTRUCTOR TO ENSURE THAT ALL VEHICLES CONFORM FULLY TO THE RULES CONTAINED WITHIN THE NASA RULEBOOK.

THIS NASA WEBSITE INFORMATION SHEET – VEHICLE CONSTRUCTION RULES & REGULATIONS; IS NOT A SUBSTITUTE FOR THE NASA RULES & REGULATIONS BOOK. THE RULES AS STATED IN THE NASA RULES & REGULATIONS BOOK WILL APPLY.

COMPETITORS WILL BE REQUIRED TO OBTAIN A NASA RULE BOOK AND NASA COMPETITION LICENCE PRIOR TO TAKING PART IN AUTOGRASS RACING.

CLASS 1

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CLASSES

Class 1 Under 1000cc Front Wheel Drive Saloons of specified type and manufacturer.
Class 2 Up to 1300cc, limited modification vehicles
Class 3 Over 1421cc, front-engined rear wheel drive, modified saloons
Class 4 Up to 1130cc modified vehicles
Class 5 1131cc - 1420cc modified vehicles
Class 6 Front wheel drive modified vehicles – Restricted minimum capacity.
Class 7 Over 1421cc rear wheel drive, modified vehicles
Class 8 Up to 1420cc Specials
Class 9 1421cc - 2070cc Specials
Class 10 Over 2071cc Specials
Junior Specials Under 1200cc Vauxhall Corsa Engined Special - Restricted Drivers Only.

Ladies Classes.
Recommendations for Club/League Racing.
It is recommended that Ladies are given the same amount of racing as Men.
Class 11. Classes 1 & 2 will race together duly handicapped /Staggered.
Class 12. Classes 4, 5 & 6 will race together duly handicapped /Staggered.
Class 13. Classes 3 & 7 will race together duly handicapped/Staggered.
Class 14. Classes 8, 9 & 10 will race together duly handicapped/Staggered.

Class Races - Maximum amount of vehicles allowed on a single straight-line start is, (refer to Members Handbook Track Construction General, rule 2 regarding track width):
All Classes = 8 Vehicles.
NB. Where classes are mixed the maximum number of vehicles allowed on a straight-line start reduces to the lower number applicable to the classes above. E.g.: Specials & Saloons mixed 8 vehicles on a straight-line start.

LICENCE

1. All drivers must hold a NASA Licence obtained through an Affiliated Autograss Club, **before** they can race. (For a listing of affiliated Clubs see NASA Website and/or NASA Fixture List).

   The driver's NASA issued racing Club and League prefix and number identification shall be confirmed within the NASA Licence.
   The NASA permitted number identification shall be a 3 figure numerical figure from 1 to 999.
   For any number less than 1 or greater than 999 an application must be made to NASA for permission to be allocated the number before it can be used. It is not permitted to prefix any number identification by the figure zero (0) e.g. 0001, 001, 01… etc.

   NOTE. Racing on pink application slips will not be allowed.

2. A person over 18 years of age may be issued with a NASA competition licence.

3*. A person under 18 years of age and over 16 years of age may be issued with a NASA Competition Licence provided that the official letter of consent to compete is received from his/her parent or legal guardian.

4*. A person under 16 years of age and over 12 years of age may be issued with a NASA Junior Competition Licence provided that the official letter of consent to compete is received from his/her parent or legal guardian.

5. A Junior Competition Licence holder whose 16th birthday is **on or before** 1st February **must** cease racing as a Junior before his/her birthday.
   A Junior Competition Licence holder whose 16th birthday is **after** 1st February **may** continue racing as a Junior until the end of that season.

6*. All NASA Competition Licence holders under 18 years of age and over 12 years of age must produce their copy of the letter of consent signed by their parent or legal guardian to any official when required.

* **All application forms and letters of consent for under 18's are available from your Club Secretary.**

7. A Men's Licence entitles you to race in Men's Classes only, and Men's Championships.

8. A Ladies Licence entitles you to race in Ladies Classes only, and Ladies Championships. (A lady may apply for a Men's Licence, and then MUST race in Men's Classes only). **Note.** A Lady competitor will not be allowed to change her competition licence (ie Men's to Ladies or Ladies to Men's) during any one season.

9. **Junior Drivers** must use **either** a Class One vehicle and **or** a Junior Special vehicle **only**, in Junior races. They **must not** compete with Men or Ladies, or race any other Class of vehicle.

10. A competitor/driver must produce his/her licence to any official when required.

11. NASA reserves the right to refuse a licence to any driver who has been refused a current road licence for medical reasons.

12. NASA reserves the right to refuse or cancel any issued identification numbers and letters.
    Frivolous or obscene number/letter combinations are prohibited.

13. NASA reserve the right to refuse or cancel a Junior Licence or refuse permission for a Junior driver to race a vehicle at any race meeting where the Junior driver's stature is a factor in that Junior driver's ability to control his/her race vehicle. For this reason **ALL** Junior drivers must accompany their race vehicle(s) at scrutineering, and must demonstrate their ability to control the vehicle(s) particularly in relation to the steering wheel, foot control pedals, brakes and forward vision through the vehicle windscreen.

14. All licences must have a current photograph of the Licence holder affixed to the Licence at all times.

15. If you lose your Licence, please contact your own Club Secretary for details of reapplication.

GENERAL INSTRUCTIONS FOR APPLYING FOR A NASA LICENCE

No one is allowed to race in a NASA Class until they have received their licence or a day licence has been issued.

1. You must obtain an Application Form for your Licence from your Club Secretary, giving to that Secretary your subscriptions for your Licence. The Club Secretary must sign and date the form and also stamp it with the Club Stamp, if the club has one.

2. You will also receive an envelope with the address of the person to whom you must send the Application Form.

3. The Form is in quadruplicate and when filled in you should hand the yellow copy back to your Club Secretary, keep the pink copy for yourself and send the two white forms to the Registration Secretary for your League together with a STAMPED SELF-ADDRESSED ENVELOPE. FAILURE TO SEND A STAMPED SELF-ADDRESSED ENVELOPE WILL RESULT IN YOUR LICENCE NOT BEING ISSUED.

4. When filling in the Application Form, please print all the details and mark the appropriate Licence that you are applying for. Obviously Full Men's is for a Man's Licence and likewise with the Full Ladies, although if a lady wishes to race with the men only and wishes to compete at the Men's Championships and not at the Ladies' Championships then she too must apply for a Full Men's Licence. A Mechanics Licence is for persons who wish to be mechanics and/or officials and a Membership card is for Officials. (If applying for a Junior Licence then the Application Form must be countersigned by a Parent or Guardian.) A copy of the NASA letter of consent for Juniors and drivers under 18 when they apply for a licence, must also be sent with the application form, otherwise the application will not be processed.

5. If you have any problems regarding the above, and with your Application then please contact the person to whom you will send or have sent your Licence application.

PLEASE NOTE FAILURE TO COMPLETE THE APPLICATION FORM CORRECTLY WILL RESULT IN IT BEING RETURNED TO YOU UNTIL IT HAS BEEN COMPLETED SATISFACTORILY.

DEFINITIONS

Aerofoil/Spoiler - Any device or part of a vehicle, which affects airflow over a vehicle to create an aerodynamic advantage.

Ambulance – A vehicle constructed to take a stretcher, which carries sufficient First Aid equipment and personnel to cover all foreseeable accidents at an event, and is capable of transporting a stretcher case to hospital in comfort and safety.

Authorised Personnel – Driver, Mechanic, Marshal, Scrutineer or Official who has signed on.

Ballast - Non-functional material added to increase weight.

Bulkhead A Bulkhead is a partition or panel separating any two vehicle compartments.
e.g. Engine compartment and driver's compartment.
Luggage compartment and driver's compartment.

Class - Vehicles grouped together governed by specified Rules.

Cross Over Rule - Vehicles must hold a straight line until the appropriate marker has been passed.

CWP/cwp - Crown Wheel Pinion.

Driver's Compartment – **Saloons:** The driver's compartment is deemed to finish/end/cease at an imaginary line, across the vehicle immediately behind the driver's seat. i.e. at the rear face of the driver's seat.

Enclosed Space - An area which is fully enclosed by material such to prevent access to any point within that area for fire extinguishant.

Engine - An internal combustion device for the production of motive power, consisting of one or more fuel combustion chambers with a common rotating internal output shaft, as produced by a NASA recognised manufacturer.

Engine Ancillaries – Carburettor/Throttle Bodies/Injection, inlet manifold, exhaust manifold, exhaust system.

Event – A continuing competition held over a period of one or more days.

False Start – Vehicles commencing a race before the start of race signal is given.

Gauge - In all references to measurements, 'gauge' refers to British Standard Wire Gauge. (See Table for gauge details).

Local or Slight Modification - The absolute minimum modification or alteration to an original manufacturer's vehicle body panel.

Official Vehicle – Vehicles such as Tractors, Breakdown vehicles or other vehicles in the custody or control of the Club/League.

Oil tank – A container for the storing of oil including breather system catch tank, oil reservoir and or dry sump tank.

Pump Fuel - A type sold to the public in the United Kingdom at roadside Filling Stations. L.P.G. / Methanol are not allowed.

Proprietary / Proprietary Manufactured. – An item or component that is produced, manufactured and marketed by a NASA recognised manufacturer.

Re-Run - A repeat of the previous race minus offenders and non-runners, with original grid positions being maintained.

Rev Limiter – A device that controls and or restricts engine maximum RPM.

Private Vehicle – Vehicles that are not owned by the Club/League and not in the custody or control of the Club/League.

Restrictor - A device of metal used for controlling the passage of the air/fuel mixture between two points.

Silhouette - The silhouette is the shape of the vehicle when viewed from the front, back and side elevation, and when viewed from the top.

Track - The area within the confines of the spectator barrier.

Traction / Launch Control - An automatic and/or electrical and/or optical and/or mechanical and/or pneumatic and/or hydraulic method of controlling:
a. The vehicle driving wheel or wheels rotational speed in relation to the distance travelled by the vehicle.
b. The vehicle suspension system in relation to differing start-line settings and racing settings.
By means other than direct human driver action upon the accelerator and/or throttle and/or engine fuel delivery activator.

SAFETY ROLL CAGE

Roll cage specifications stipulated within this rule book are the minimum acceptable. Members should take account of the condition, physical strength and style of the vehicle and of any structural modifications to the body-shell that have been carried out and fit additional bars to the safety roll cage to satisfy themselves in respect of the overall safety of the vehicle. NASA are not responsible for the failings of any roll cage as a result of its lack of design strength or manufacturing integrity.

The basic purpose of a roll cage is to protect the driver if the car should overturn, or be involved in a serious accident. This purpose should always be borne in mind during Roll Cage selection. All Roll Cages must comply with the NASA Design and material thickness specification. The NASA design is a minimum requirement for Autograss Racing only. Extra bars to provide further protection – material steel only, may be fitted, design free. Roll Cages designed and / or manufactured for use in other forms of motor sport may not be suitable for Autograss Racing.
The roll cage design including additional and or extra bars fitted to the roll cage and or vehicle structure, and component mounting bars must not impede driver access to or egress from the vehicle or access for marshals/medical personnel/assistance in the event of a roll over or on-track incident.
Note.
a). All Roll Cages must be constructed of steel with the individual component bars welded together (i.e. 'Weld In' roll cages).
b). 'FIA Copy' or 'Other Motorsport Copy' type 'Weld in' Roll Cages are prohibited.
c). The use of a Roll Cage with the individual component bars bolted together (i.e. a "Bolt Together" roll cage) is prohibited.
d). All Door bars must be as NASA requirements. 'FIA' or 'FIA Copy' or 'Other Motor sport Copy' 'X (cross) type door' bars on their own are prohibited.

1. Whenever bolts and nuts are used, they must be of steel and a minimum of R or S quality. Square headed bolts must not be used.

2. Welding.
   a). All welding must be of the highest quality possible, with full penetration.
   b). Where any bars are welded together the joint mating surfaces must be entirely welded.
   NASA via a designated scrutineer reserves the right to reject any welding that may be deemed insufficient and or incorrect.

3. An inspection hole must be drilled in each of the mandatory component bars of the complete cage, i.e. uprights, roof bars, bracing bars, diagonal bars, driver side bars 3/16" (5mm) size in diameter, at least 3" (75mm) away from any weld, and encircled in an contrasting/outstanding colour paint.

4. The roll cage MUST be of steel, including all nuts/bolts etc.

5. The roll cage, including side bar and brace bar tubing, must not be used as a medium for the flow of liquids, oil, water, fuel or the internal passage of electrical wiring.

6. Where any bars are welded together the joints must be completely welded.

7. The use of a proprietary manufactured steel roll cage is permitted. See Rule 8.

8. All NASA permitted proprietary manufactured roll cages must comply with NASA design, complete with the correct proprietary manufactured additional bars (e.g. Door bars and Diagonals) fitted as required. All tube to be cold drawn seamless carbon steel, with a minimum yield strength of 350N/mm.
   Permitted minimum diameter and tube wall thickness sizes:
   32 (1¼") / 38 / 42mm Diameter with an absolute minimum wall thickness = 2.5mm.
   50mm Diameter with an absolute minimum wall thickness = 2.0mm.
   See rule 11 for associated material tolerances.
   See Figure 1 for roll cage design.

9. The NASA permitted proprietary manufactured roll cage additional bars (Only door bars and diagonals) must be fixed by welding.

10. If a NASA permitted proprietary manufactured roll cage has been modified from its original form by fitting of additional bars to suit NASA Rules requirements (Only door bars and diagonals) and these bars being welded in place by persons other than the original roll cage manufacturer, then the additional bars must comply in all respects, including stated minimum thicknesses 2.5mm and or 3.0mm and associated tolerances, to the NASA required design. See Rule 11.

11. All NASA permitted non-proprietary manufactured roll cages must comply with NASA design.
The main roll cage structure will comprise:
   Two main hoops (See rule 13).
   Roof centre bar, roof cross bar and roof side bars (See rule 16).
   Floor level front to rear bars (See rule 16).
   Front and rear cross bars (See rule 17).
   Bracing bars (See rule 18).
   Door bars (See rule 19).
   Diagonal bars (see rule 20).

   Material
   The main roll cage structure must be constructed of either:
   (a). Steel circular section tube with a minimum diameter of 32mm(1¼") and with a minimum wall thickness of 2.5mm.
   Or
   (b). Steel box section tube with a minimum size of 30mm x 30mm and with a minimum wall thickness of 3.0mm

   Wall thickness tolerances.
   i. Steel circular section tube: maximum tolerance = 0.2mm. I.e. the absolute minimum thickness at any point = 2.3mm.
   ii. Steel box section tube: maximum tolerance = 0.5mm. I.e. the absolute minimum thickness at any point = 2.5mm

Note.
The tolerances specified in i. and ii. above are only to take account of local variations and imperfections in the wall thickness of manufactured steel tube.
It is not permitted to construct a roll cage from material that has been manufactured, sourced and or supplied with a specified wall thickness that is less than the minimum requirement indicted in (a) or (b) above.
Each component bar of the roll cage must measure at or above the dimensions stated in (a) or (b) at one or more points. The measurements will not be taken on "seams" or "bends".

12. No protection bars are to be connected to the roll cage.

13. A Roll Cage must be made of two main hoops and associated mandatory construction bars. (See Fig. 1.).
One hoop at or as close as possible to following the front windscreen pillars ("A" Posts).
One hoop at or as close as possible to, following the "B" Posts - If forward of "B" post then within 75mm (3") - If behind the "B" post not more than 254mm (10") to the rear of the driver's helmet, when the driver is seated.
The linear distance of the bar between and joining the front hoop and rear hoop must be of a length as necessary to join the two hoops at the top of the "A" and "B" posts. i.e. at each of the points where the "A" and "B" posts join the body-shell roof panel.

The main roll bar hoops and joining bars must be placed as near as possible to the roof, in order to limit crushing in the event of a somersault or roll-over.
Note.
i. Each of the roll cage individual component bars must be of a single continuous length of tube. i.e. One length bar per part.
The forming of a length of tube from two or more lengths by welding and concealing the welded joins by grinding/smoothing is prohibited.

14. The underside of the top bar of the roll cage must be placed as near as possible to the roof, and be not less than 75mm (3") above the helmet of the seated driver.

15. The rear roll cage hoop uprights must be straight and must be vertical +/- 50mm (2") measured at the top of the hoop when viewed from the side.. (See Fig. 2.).

16. Front and rear hoops must be connected by a minimum of:
At the top:
Three front to rear bars fitted as near as possible underside of the vehicle roof, one along each side of the roof, and one along the middle. (See Fig. 1.).
The box shape and or frame formed by the roll cage roof bars must be such that the driver's body, including torso is within the box and or frame perimeter when seen in plan view from above (See Rule 13.).
The fitting of an additional diagonal or two diagonal bars from either or both of the front upright top corners to either or both of the rear upright top corners is permitted.
Note. The Two diagonal bars may be a substitute for the centre bar.

At the base or bottom:
Two front to rear bars, one along each side, consisting of a steel tube (30mm x 30mm box section minimum, 50mm x 50mm maximum 32mm(1¼") circular section minimum, 50mm circular section maximum) – with wall thickness as specified in rule 11 fitted (by means of welding).
Steel plates (minimum surface area 6 sq ins) (3871 sq mm) to be fixed to the frame at a maximum of 450mm (18") centre's and bolted (Min 2 No. 10mm Dia. per plate) through the floorpan to a steel plate of equal size.
The front to rear bars must not be directly connected to the front & rear sub-frame.
See also Chassis/Body-shell Rule 2.18.

17. Cross bars
The front nearside upright and front offside upright of the hoop must be connected by one front cross bar, consisting of a steel tube box section 30mm x 30mm minimum, 50mm x 50mm maximum, 32mm(1¼") circular section minimum, 50mm circular section maximum – with wall thickness as specified in rule 11 fitted (by means of welding), at either "dash panel" level or floor or low level. See Fig. 1.
Note. If a floor level cross bar of the specified size is fitted, then a steering column support cross bar of a minimum size of 25mm box or circular section may also be fitted at "dash panel" level.

The rear nearside upright and rear offside upright of the hoop must be connected by one rear cross bar consisting of a steel tube box section 30mm x 30mm minimum, 50mm x 50mm maximum, 32mm(1¼") circular section minimum, 50mm circular section maximum – with specified thickness fitted (by means of welding), at either floor or low level. See Fig. 1.

Cross Bar Floor Plates.
Where the above bars are fitted at floor or low level then steel plates (minimum surface area 150mm x 150mm) to be fixed to the frame at a maximum of 450mm (18") centre's and bolted (Min 2 No. 10mm Dia. per plate) through the floorpan to a steel plate of equal size.
The side to side floor bars must not be directly connected to the front & rear sub-frame. See Rule 23 also Chassis/Bodyshell Rule 2.18.

18. Bracing Bars.
Two straight bracing bars must be fitted from the rear hoop, one (1) on each side, towards the rear of the vehicle, at an angle not exceeding 60 degrees with the horizontal. The bars MUST be fixed within 100mm (4") of the point of intersection of the rear upright and the top rear bar. (See Rule 11 & Fig. 1).
Note.
Each of the individual component bars must be of a single continuous length of tube.
It is not permitted to mount any rear bracing bars to the vehicle rear parcel shelf or rear seat bulkhead.

Brace bars cannot pass through the vehicle floor pan or bulkhead except for the following. Where a roll cage has been specifically designed to incorporate fixing points, which involves brace bars passing through a specific section of a particular bulkhead, then it is permitted for such a brace bar to pass through the affected bulkhead.

19. Door / Side bars.
Two side bars (Sb) each consisting of a single continuous length of tube must be fitted inside the driver's door and the passenger's door for the complete length of the doors, on the outside of the main roll bar uprights. They must be fitted as close as possible to the "A" and "B" posts. They cannot be fixed on the vehicle coachwork itself. They must be fitted such that the upright rather than any 'Weld' is subject to the stress loadings of any side impact.
The angle of the side-bar with the horizontal must not exceed 5 degrees, and be mounted between 100mm (4") and 150mm (6") apart, for the protection of the lower half of the drivers body. (See Rule 11 & Fig. 3).
It is recommended that 3 No. or more vertical upright bars joining the bottom side bar to the top side bar at regular intervals be fitted. The fitting of additional side cross bars made to the same specification as the roll cage requirements is permitted.

20. Diagonal Bar.
There must be a minimum of one diagonal bar fitted from the point of intersection of the offside rear upright with the nearside to offside rear hoop top bar to the bottom of the nearside rear upright. Or vies-versa. (See Rule 11 & Fig.1). The fitting of two diagonal bars to form a cross is permitted.

21. Triangulation Bar.
There must be a minimum of one Triangulation bar (Tb) fitted on each side at high level to brace and or gusset the nearside top bar and the nearside rear upright and the offside top bar and offside rear upright - steel tube circular or box section 25mm minimum 2.5mm minimum wall thickness (by means of welding). The point of connection on each top bar and upright must be a minimum of 100mm (4") from the point of intersection of each top bar with each rear upright. See Fig. 1a, 1b, 1c, & 3.

22. Front Upright brace bar (Fb)
There may be a minimum of one additional Front Upright brace bar (Fb) fitted on each side at a near vertical angle from the vehicle floor/floor frame, to the top of the roll cage hoop, steel tube 32mm(1¼") circular or box section 30mm minimum with specified thickness (by means of welding). The point of connection on each top bar must be a minimum of 100mm (4") from the point of intersection of each top bar with each front upright. See Fig. 1a, 1b, 1c, & 3.
The front upright brace bar may be connected to and pass through the door bars to connect to the floor frame or be directly connected to the floor frame.

23. Floor Plates – Uprights, Brace Bars & Floor bars.
All roll bar uprights and bracing bars must have adequate steel plates welded to the bottom, with a contact area of at least 6 sq. ins (3871 sq mm), and have the same thickness as the tube.
The plates must be bolted through the floor to a steel plate of equal size. The plates shall be joined together by at least two bolts, minimum 10mm (3/8") diameter.
Note.
When or where a roll bar rests on a box member, the latter must be locally reinforced by a structure of welded bolts or tube ends. (See Fig. 4).

24. It is prohibited to directly connect any mechanical component to the roll cage.

VEHICLE CONSTRUCTION RULES - CLASS 1

CLASS SPECIFICATION

Must be a OHV Engine, Front Wheel Drive Saloon of specified type and manufacture, for which a Technical Services Data Sheet must be published in either of the following publications.
TECHNICAL SERVICES DATA MANUAL – PALGRAVE 1970 to 1985.
TECHNICAL SERVICES DATA MANUAL – GLASS'S GUIDE 1986 to 2000.
Note.
The vehicle must be listed on the contents page of the relevant Technical Services Data manual, and the Data Sheet page MUST be headed with the vehicle title.
Specified Vehicles – "Right Hand Drive" and "Manual" versions only. "Automatic" versions prohibited.
All Light Van, Dual Purpose (Pick Up and Estate) models of vehicles are prohibited.

i. Leyland/Austin Rover/Rover Mini 998cc A and A+ engine.
Excluding all 850cc engines. Mini Cooper, Cooper 'S', Rally & Homologation, and Mini Metro or Metro variants.

ii. Citroen AX – 1987 to 1997 - 954cc (TU9) engine AX 10E, 10RE, or Debut 954cc 3 or 5 door bodyshells
Excluding 1124cc, 1360cc and AX GT/AX Forte and GTi, Rally & Homologation model variants.

iii.. Peugeot 106 954cc (TU9) engine 3 or 5 door bodyshells.
Excluding 1124cc, 1360cc and Rallye and GT/GTi, Rally & Homologation model variants.

iv. Citroen Saxo 954cc (TU9) engine 3 or 5 door bodyshells.
Excluding 1124cc, 1360cc and GT/GTi, Rally & Homologation model variants.

v Nissan Micra 998cc 16V (CG10DE) engine 3 or 5 door bodyshells.
Excluding 1300cc and GT/GTi, Rally & Homologation model variants.
The Donor car must be of a build date manufactured after 1st January 1993 and before 1st January 2000.
The chassis-Vin number and engine number-code must be displayed as manufactured by the manufacturer.
Note.
There are additional restricted and specific rules for this vehicle.
Do not assume that all 'Mini' or 'Class 1 general' type preparation rules apply.
If in doubt please ask before building vehicle.

vi Toyota Yaris 998cc VVTi 16V (1SZ-FE) engine 3 or 5 door bodyshell.
Excluding: 1000cc (1KR-FE) &1300cc (2SZ-FE) & (2NZ-FE) model variants.
The Donor car must be of a build date manufactured after 1st January 1999 and before 1st January 2006.
The chassis-Vin number and engine number-code must be displayed as manufactured by the manufacturer.
Note.
There are additional restricted and specific rules for this vehicle.
Do not assume that all 'Mini' or 'Class 1 general' type preparation rules apply.
If in doubt please ask a scrutineer before building vehicle.

NASA reserves the right to amend the above list of vehicles giving 12 months notice regarding the addition or deletion of vehicles.

VEHICLE CONSTRUCTION RULES - GENERAL

1. Competitors **must** ensure that their racing vehicle conforms to NASA Rules and Regulations.
Where a competitor is under 18 years of age the responsibility is shared with the parent/guardian.

2. Only methods of construction and modifications as listed are permitted. Any further modifications, other than those permitted, are prohibited.
Components used must be NASA Scrutineers Committee permitted "Standard production" or "Standard production replacement" items.
Unless the NASA Rules and Regulations state that any part can be fitted or removed or that removal or modification, including a change of material from original, of any standard or standard production part is allowed, then the part cannot be fitted or removed, and the standard and or standard production part cannot be removed or modified or altered or changed or substituted in anyway whatsoever.
Components fitted to or specifically manufactured for; including low volume/number, 'Rally', 'Rally Special', 'Motorsport', 'Competition' 'Homologation' and 'Limited Edition' models or variants of vehicle by the original vehicle manufacturer or manufacturer appointed organisation or company are prohibited.
Any further modifications other than those listed are prohibited.
Due to the different vehicles used in this Class, do not assume that what is permitted for say a Mini is permitted for say a Micra. There are specific construction rules for certain vehicles only.
In the event of any doubt a NASA Scrutineer must be contacted for clarification before fitting and or using the component concerned.
Note.
Unless the rules and regulations specifically permit a method of construction and or modification or material change then it should be assumed that other type of construction, materials, modifications are not permitted. Intentional or deliberate (Including concealment) non-compliance with NASA vehicle construction rules will make the competitor and or member concerned subject to disciplinary action.

3. A vehicle must not be derived from a Special or a sports car or a vehicle constructed for contact motorsports.
Original manufacturer's convertible or cabriolet or soft top or sports car vehicles cannot be fitted with a metal roof or converted in any way for use as a Saloon or closed car.

4. A vehicle must not be capable of seating any person other than the driver.

5. All driver controls must be operated from, and remain within, the drivers compartment at all times.

6. Traction / Launch Control (See definitions) systems prohibited.

7. NASA reserves the right via an appointed Official and or Scrutineer to request a competitor (Note. For under 18 years of age this includes the parent/guardian), to remove any component part of the vehicle for inspection and or measurement for compliance with the regulations.

   The removal of the component shall be carried out by the competitor concerned and or competitor's mechanic under the supervision of the appointed Official and or Scrutineer.

   Refusal to comply with such a request and or provide the item for inspection will immediately deem the vehicle as being in contravention of the NASA vehicle construction rules and make the competitor and or member concerned subject to disciplinary action.

8. NASA reserves the right via an appointed Official and or Scrutineer to retain any component part of the vehicle for inspection and or measurement for compliance with the regulations.
Such components may be returned to the competitor concerned or confiscated at the discretion of the NASA Chief Scrutineer.

9. Component Sealing.
NASA reserves the right via an appointed Official and or Scrutineer to seal any component part of the vehicle. See Rule 1.18.
Seals can be fitted to any component or part of a vehicle by a NASA designated official.
Refusal to comply with a request to fit a "seal" will immediately deem the vehicle as being in contravention of the NASA vehicle construction rules and make the competitor and or member concerned subject to disciplinary action.

10. The vehicle must be maintained in good order. Vehicles in poor condition may not be permitted to race at the discretion of the scrutineer.

11. The vehicle must be able to drive to scrutineering and to, around and within the pit area without any assistance.
If the vehicle suffers damage due to an on track incident then assistance as necessary to return it to the pit area for repairs and or to transporter for removal from meeting is permitted.

12. Driver Arm Restraints.
It is the responsibility of all competitors to ensure that their arms are restrained from extending outside of their vehicle in the event of an accident or roll. This must be done by the use of either a permitted arm restraint or window net or by their seating position within their car.
It is the driver's responsibility to ensure that any adjustments are correct and that the necessary equipment is properly fitted. Drivers will be checked in their cars by scrutineers. Officials will monitor the use of this equipment as they do with other safety equipment.
Drivers who appear to be flagrantly ignoring the intended safety considerations of these rules will be penalised.
Note:
a). All restraint systems must not impede, entangle, unlock, unfasten, disengage nor prevent the correct reach and or access to and or operation of any safety harness or driver operated vehicle controls (e.g. Steering. Ignition switch. Cut off switch. Gear lever, etc.).
Arm restraints should be released by the single opening of the seatbelt fastening mechanism.
It is the competitor's responsibility to ensure compliance when making the choice of restraint system.
The restraint System must be in the form of either 'Arm Restraints' or 'Window Webbing'.
The both may be used separately or together.
Proprietary manufacture Arm Restrains for motorsport only permitted.
Simpson/Sparco/TRS Arm Restraints permitted.
For window webbing details see rule 3.4.
b). It is Competitors responsibility to contact a scrutineer and or designated official to confirm the particular restraint system form of construction is eligible. i.e. permitted by the NASA Scrutineers Committee **before** using it and or them.
c). When a restraint system and or construction is inspected and is not to the satisfaction of a scrutineer and or designated official then it is deemed as being in contravention of the NASA vehicle construction rules and will not be eligible for use. Therefore it must be removed immediately. The competitor is not permitted to race until a permitted 'Restraint System' is used.
d). The 'Restraint System' form of construction must be only as permitted by NASA. The types of construction will be subject to regular review by NASA to ensure suitability for Autograss racing.
NASA reserves the right to amend the permitted 'Restraint System' construction requirements at any time.

13. The Scrutineer's decision, as to the eligibility of any component or part and or suitability of a vehicle for racing is final.

1. ENGINE and TRANSMISSION/GEARBOX

1.1 a.) The engine, engine ancillaries (See Definitions) and transmission and gearbox must remain as per the vehicle Manufacturer's original specification.
b). All parts used must comply with the permitted vehicle manufacturer's original specification and permitted vehicle's Glasses Guide Technical Services Data Sheet (T.S.D.) and the NASA Vehicle Check Sheet (See Section 19). The vehicle manufacturer's parts specifications and T.S.D. sheet and the NASA Vehicle Check Sheet will be used as a reference when checking the eligibility and legality of the engine and transmission/gearbox and their components.
c). Standard production original manual transmission engine and gearbox components and NASA Scrutineers Committee permitted replacement engine/gearbox components only must be used and be correctly fitted.
d). The interchanging of any unspecified components between the specified vehicle manufacturer's engine & gearbox and any other engine & gearbox is prohibited.
e). The modification or alteration of any part or component using any standard production parts to alter its working design is prohibited.
f). NASA reserve the right to have any part removed from a competitor's vehicle and retain that part for examination to ensure compliance with the original vehicle manufacturers standard production component specifications and detail.

1.2 Engine & Bodyshell combinations
i. Mini 998cc.
Any Leyland/Austin Rover/Rover Mini 998cc manual transmission engine & gearbox may be used in any mark or year of Mini or Mini Clubman bodyshell. It is not permitted to fit the engine into any Metro or BMW Mini model variants. It is not permitted to convert an 850cc or 1100cc or 1298cc engine to 998cc.

ii. Citroen AX 954cc
Any Citroen AX 954cc manual transmission engine & gearbox may be used in any year of Citroen AX 10E, 10RE, or Debut 954cc 3 or 5 door bodyshell. It is not permitted to fit the engine into any AX GT/AX Forte and GTi model variants.

iii. Peugeot 106 954cc
Any Peugeot 106 954cc manual transmission engine & gearbox may be used in any year of Peugeot 106 954cc 3 or 5 door bodyshell. It is not permitted to fit the engine into any Peugeot 106 Rallye and GT/ GTi model variants.

iv Citroen Saxo 954cc (TU9) engine 3 or 5 door bodyshells**.**
Excluding 1124cc, 1360cc and GT/GTi model variants.

v Nissan Micra 998cc 16V (CG10DE) engine 3 or 5 door bodyshells.
Excluding 1300cc model variants.
Note.
There are additional restricted and specific rules for this vehicle.
Any Nissan Micra 998cc 16 valve manual transmission engine & gearbox may be used in any 1993 to 1999 year of Nissan Micra 998cc 16v 3 or 5 door bodyshell. See Rule 1.20 for permitted gearbox & CWP combinations.
The Donor car must be of a build date manufactured after 1st January 1993 and before 1st January 2000.

vi Toyota Yaris 998cc VVTi 16V (1SZ-FE) engine 3 or 5 door bodyshells.
Excluding: 1000cc (1KR-FE) &1300cc (2SZ-FE) & (2NZ-FE) model variants.
Note.
There are additional restricted and specific rules for this vehicle.

Any Toyota Yaris 998cc 16valve manual transmission engine & gearbox may be used in any 1999 to 2005 year of Toyota Yaris 998cc 16v 3 or 5 door bodyshell.
The Donor car must be of a build date manufactured after 1st January 1999 and before 1st January 2006.

1.3 Crankshaft Stroke.
The crankshaft stroke must remain as fitted to provide the original engine cubic capacity.
It is not permitted to alter or modify the crankshaft original stroke or interchange a crankshaft between different cc of engine. e.g. For a Mini it is not permitted to fit a 998cc engine with an 850cc engine crankshaft.
Note.
Nissan Micra 998cc 16V (CG10DE) engine
Toyota Yaris 998cc VVTi 16V (1SZ-FE) engine
As above plus Crankshaft journals/ bearings are not permitted to be reground and or polished.

1.4 Cylinder Bore
For all vehicles excluding the Nissan Micra 16v & Toyota Yaris 998cc 16v.
For Micra & Yaris see part - iv.
The maximum permitted overbore is restricted to that for which standard replacement oversize pistons and/or pistons and liners are available.
The overbore or re-bore is on the original vehicle manufacturer's original engine size as fitted to the make and model of the vehicle, and is NOT on the class cubic capacity limit.
Standard replacement pistons only are permitted.
Note.
i. Where a standard production replacement piston is not available in the specified maximum stated permitted overbore sizes then, it is not permitted to engage specialist piston manufacturers to produce a piston to such a size or to modify non-standard replacement pistons to fit.
ii. Only pistons originally designed by the original vehicle manufacturer to protrude above the cylinder block top face into a cylinder head combustion chamber may protrude above the cylinder block top face.

For each of the specified vehicles the following will apply.
i. Mini 998cc
A maximum of + 0.060" oversize bore is permitted.
ii. Citroen AX 954cc
Matched pistons and liners to standard manufacturer's various standard & oversize bore must be fitted. See Check sheet for sizes.
iii. Peugeot 106 954cc
Matched pistons and liners to standard manufacturer's various standard & oversize bore must be fitted. See Check sheet for sizes.
iv Nissan Micra 998cc 16V (CG10DE) engine 3 or 5 door bodyshells.
Toyota Yaris 998cc 16v (1SZ-FE) engine 3 or 5 door bodyshells.
The engine is to remain as originally manufactured.
Overbore/Re-bore and or oversize piston not permitted.
Cylinder block height decking or cylinder block re-facing is not permitted.

1.5 Balancing.
For all vehicles excluding the Nissan Micra 16v & Toyota Yaris 998cc 16v
For Micra & Yaris see part - vii.
The permitted engine's original manufacture's connecting rods, crankshaft, pistons, flywheel and clutch cover plate may be "Balanced".
Lightening of components is prohibited. Excessive "Balancing" including multiple hole drilling in any single component will be judged as lightening and deemed illegal.
Note.
i. One assembly/set consisting of one connecting rod and big end cap from the same cylinder must remain as standard (not balanced or lightened). The remaining units and components may be balanced to match.
ii. Pistons: One Piston to remain as standard. The remaining pistons may be balanced to match. To be balanced by means of spot drilling only.
iii. Conrods: To be balanced to manufacturers standard only. Removal of metal by spot grinding or spot drilling for "balancing purposes" is permitted for "little end" and "big end cap" only. Removal of metal from "H" section part of conrod prohibited.
iv. The crankshaft, flywheel and clutch cover plate to be balanced by means of either or spot grinding or spot drilling.
vi. Crankshaft webs: A minimum of one crankshaft web must remain as factory finish. Crankshaft webs must not be chamfered, radiused, narrowed, knife edged, or smoothed or polished. If, in the opinion of the scrutineer, the crankshaft has been modified during the balancing process to improve its performance in other areas then it will be deemed illegal.
vii. Balancing for the Nissan Micra 16V (CG10DE) engine.
Toyota Yaris 998cc 16v (1SZ-FE) engine.
After market balancing or reconditioning balancing and lightening /polishing of any components is not permitted.

1.6 Water pump. - See Rule 11.10.

1.7 Camshaft.
A standard production and/or standard production replacement camshaft obtained from either a bona-fide Manufacturer's Dealer or OE is permitted.
A replacement camshaft as manufactured by a NASA permitted aftermarket camshaft manufacturer is permitted.
The camshaft must remain in its original standard production form.
The production or adaptation or modification of a camshaft to provide standard production and/or T.S.D. manual listed valve timing and/or valve lift, but non-standard timing and/or valve lift at regular degrees of rotation is prohibited.
Note.
a). The use of a cam obtained via others such as "Piper" or any unspecified or non-NASA permitted aftermarket cam manufacturer is prohibited.

b). The use of a camshaft found to have identification markings that are false or misleading or "tampered with", will result in the competitor or where a vehicle is shared, competitors concerned (i.e. ALL drivers of the particular vehicle involved), being subject to disciplinary action.
NASA reserves the right to have a camshaft removed from a competitor's vehicle and retain that camshaft for examination to ensure compliance with the original vehicle manufacturers standard production details.

Camshafts for the Nissan Micra 16V (CG10DE)engine.
& the Toyota Yaris 998cc 16v (1SZ-FE) engine..
Camshafts must be as made by the engines original manufacturer and the correct specification for the engine it is being used in.
The camshaft identification reference or code number must remain.
After market and or re-profiled and or reproduction/copy camshafts are not permitted.

Valve & Cam Lift.
For each of the specified vehicles the following will apply.
i. Mini 998cc
Maximum Valve lift @ "As raced" valve clearance shall be:
Inlet: = 8.08mm or 7.24mm - See Camshaft type.
Exhaust: = 7.62mm – or 7.24mm – See Camshaft type.
NASA permitted camshaft; Kent Cams:
NASA 1 or NASA 1 99.
Allitt Class 1 Camshaft as supplied by: Allitt Mortorsport.
ii. Citroen AX 954cc & Peugeot 106 954cc & Saxo 954cc.
Maximum Valve Lift shall be:
Inlet: = 8.0 mm. Exhaust: = 8.0 mm.
NASA permitted camshaft = None permitted.

Cam/Valve Timing. – All Vehicles.
The standard production cam/valve timing only shall be used.
Timing Gear & components must be original standard production OE.
Note. The following are prohibited.
Non-OE timing gear including adjustable and or vernier types.
Keyway machining/modification and or use of shims/shimming and or offset dowel.
Cutting of alternative keyway to the original standard production one.

For each of the specified vehicles the following will apply.
i. Mini 998cc
Either 5° BT/45° AB/40° BB/10° AT (A Series & Early A+) with 7.24mm In & Ex valve lift.
Or 9° BT/41° AB/49° BB/11° AT (Late A+) with 8.08mm Inlet valve lift 7.62mm Ex valve lift.
ii. Citroen AX 954cc & Peugeot 106 954cc & Saxo 954cc
Either 9°16' BT/11°10'AB/31°21'BB/6°55'AT.
Or 2°3' BT/21°56'AB/39°36'BB/0°53'AT.
iv. Nissan Micra 998cc 16V (CG10DE) engine 3 or 5 door bodyshells.
TDC - 16°AB - 16°BB - TDC
v. Toyota Yaris 998cc 16v (1SZ-FE) engine.3 or 5 door bodyshells.
VVT – As Standard Production.

1.8 Ignition System.
a). The standard production Distributor and/or Distributor less (DIS) system / Electronic Control Unit (ECU) shall be correct for the engine fitted and must be retained in its entirety and remain in its original standard production form. It must be complete with the correct engine system sensors. E.g. Engine RPM & TDC etc.
The adaptation of any other distributors Distributor less (DIS) system or ECU, or sensors where they are fitted to other vehicle makes and/or models is prohibited.
Modification including disconnection and or removal and or sealing of any part of the vacuum advance system to prevent or enhance operation prohibited.
b). The standard production Distributor and/or Distributor less (DIS) system / Electronic Control Unit (ECU) and associated
sensors and "reader"/"interrogator" "plug in" connections must remain in their original standard production locations.
c). The ECU shall be marked with identification showing the vehicle club prefix and vehicle number.
d). The placing of or use of devices, whether within the wiring system or elsewhere, to provide false information to the ECU or any part of the fuel delivery control system is prohibited.
e). For ECU's that are fitted with a vehicle immobiliser facility, the particular ECU immobiliser function MUST be overridden or disconnected. The method of modification to achieve this is free, provided no other function of the ECU is affected. ECU rewriting, remapping, chipping and or performance enhancing modification are not permitted. NASA shall not be held responsible for the performance or damage of the above unit.
Citroen AX 954cc & Peugeot 106, 954cc & Saxo 954cc
The Distributor-less Electronic Control Unit (ECU) system must be retained.
Nissan Micra 998cc 16V (CG10DE). & Toyota Yaris 998cc 16v (1SZ-FE) - Immobiliser may be retained or removed.
f). Ignition Leads & Spark Plugs & Coil – Free.

Note.
NASA reserves the right to:
i. Remove and or retain the ECU fitted to the competitor's vehicle and retain that unit for inspection.
ii. Remove the ECU and substitute it for NASA supplied unit for a set time period. e.g. the duration of a race meeting or a stated number of races.
iii. Remove the ECU and substitute it for a unit as used by another competitor.
iv. Place a "Scrutineers Seal" onto the ECU for a specified period of time chosen by the Chief Scrutineer.
v. Connect a "reader" to read and or check ECU settings.
vi. NASA shall not be held responsible for the performance or damage of the above unit.

1.9 Cylinder Head.
The cylinder head MUST be the correct type for the engine concerned.

i. Reconditioning of the cylinder head and its associated components must be carried out in accordance with the original manufacturer's recommendations and accepted "reconditioning and repair" practice. Excessive removal of metal or reconditioning and or chamber radiusing that is carried out to the extreme will result in the components etc; being deemed as outside the Class regulations and thus illegal.

ii. Cylinder Head Thickness.
For each of the specified vehicles the following will apply.

a. Mini 998cc
For the Mini 998cc the cylinder Head thickness shall be not less than a minimum of 68.58mm (2.70").

b. Citroen AX 954cc & Peugeot 106 954cc & Saxo 954cc
For the AX 954cc & Peugeot 954cc & Saxo 954cc the cylinder Head thickness shall be not less than a minimum of 110.5mm.
Note. Use of the "multipoint injection" cylinder head is prohibited.

c. Nissan Micra 1.0 16V (CG10DE)
The cylinder Head thickness shall be not less than a minimum of 121.0mm.
Cylinder block height decking or cylinder block re-facing is not permitted.

d. Toyota Yaris 998cc 16v (1SZ-FE)
The cylinder Head thickness shall be not less than a minimum of 114.30mm.
Cylinder block height decking or cylinder block re-facing is not permitted.

iii. Inlet & Exhaust Ports
The inlet port and exhaust port surfaces, within the cylinder head, must remain as manufacturers original standard production finish and dimensions (See drawing No. 3).
Cleaning up or smoothing by removing metal or polishing of the original standard production finish is not permitted.
A "3 angle cut" to valve & valve seat permitted.
Cylinder head "lead free conversion" permitted.
N.B. The top face of any valve insert fitted must be below or in line with the combustion chamber face.
Reshaping and or cutting into the combustion chamber base or vertical surface adjacent to a valve insert as part of the "3 Angle Cut" process is prohibited. Top cut max 1.14 (0.045") mm beyond valve. See Drawing 4 & 6.
Note.
Nissan Micra 998cc 16V (CG10DE)
Toyota Yaris 998cc 16v (1SZ-FE)
Replacement valve seats are not permitted.
Valve seat and valve head must remain as original manufacture. Reconditioning and or alterations from standard production finish are prohibited.

iv. Valve Head Diameter
For each of the specified vehicles the following will apply.
Also see Check Sheets.

a. Mini 998cc
Maximum Valve Diameter shall be:
Inlet: = 27.88mm. Exhaust: = 25.53mm.

b. Citroen AX 954cc & Peugeot 106 954cc & Saxo 954cc
(C1A TU9/K) (CDZ/CDY (TU9M)
Maximum Valve Diameter shall be:
Inlet: = 34.80mm. Exhaust: = 27.90mm.

c. Valve Guides
A standard production OE or NASA permitted reconditioned and or replacement type only is permitted.
'K-lined' valve guides permitted.
See Check sheet rules for location and depth from Cylinder Head Face to valve guide nose.
Note.
Nissan Micra 1.0 16V (CG10DE).
Toyota Yaris 998cc 16v (1SZ-FE)
'K-lined' valve guides not permitted

v. Cylinder Head Gasket.
Competition and or "One piece" types prohibited. Standard replacement types only permitted.
Note.
Standard replacement "Sandwich" types (metal/heat resistant material/metal) permitted.

1.10 Air Box & Filter Box & Air Filter/Air Cleaner & Air Entry Ductwork.
All Vehicles.
The standard production air box and/or air filter/cleaner box or air filter/cleaner casing or air filter enclosure/assembly, including inlet metal/plastic ductwork, must be retained in its entirety and remain in its standard production form, without any modification, and be fitted in its standard production location. Repositioning or reshaping or cutting or slitting or shortening or enlarging or lengthening and or replacing with non-standard components are prohibited.

Air Filter/Cleaner element type – All vehicles.
Free.
However it must be fitted and secured within the standard production air box and/or air filter box or air filter casing or air filter enclosure in the standard production location.
All the air must enter the air box and/or air filter/cleaner box or air filter/cleaner casing or air filter/cleaner enclosure via the standard production entry tube and orifice and plastic ductwork only.

Citroen AX 954cc & Peugeot 106, 954cc.
The Air Temperature Control valve Assembly must be retained. The hot air intake flexible metal duct from exhaust manifold to Air Temperature Control Valve and cold air intake plastic duct may be removed leaving the Air Temperature Control Valve open to atmosphere at its hot and cold entry orifices. The standard production plastic ductwork including plastic plain duct (Carburettor)/plastic venturi duct (F. Injection) from Air Temperature Control valve to Air Cleaner housing must be retained and remain connected as standard production See Fig. 14. It is not permitted to fit the plain duct in place of the venturi duct or vies versa. All plastic duct/hoses must be securely fixed.

1.11 Fuel Injection Unit/Throttle Body.
Type number and size is restricted.
The standard production Fuel Injection Unit/Injector/Throttle body must be retained in its standard production form. I.e. If a single-point fuel injection system is fitted, then it must be retained.
Modifications to Fuel Injection Unit/Injector/Throttle body prohibited.
The standard production single “accelerator” or “Throttle” pedal, including “Accelerator/throttle cable” must be retained to control the operation of the fuel delivery system to the engine.
The Fuel Injection Unit/Throttle body must be fitted with a throttle return spring of sufficient size, strength and movement such that the throttle closes once the ‘accelerator’ or ‘throttle’ pedal is released.
Note. The accelerator cable/connection system must be sufficiently routed, shielded from any heat source, and lubricated to minimise the risk of seizure.

The fuel injector must be retained in its standard production form and be correct for the model and make of vehicle concerned. The fitting of an injector from a different model or make of vehicle is prohibited. E.g. use of “Nissan Almera” injector on “Nissan Micra” prohibited.

1.12 Carburettor.
Type number and size is restricted.
The standard production carburettor must be retained in its standard production form.
Modifications to carburettor including butterfly and choke system prohibited.
The standard production single “accelerator” or “Throttle” pedal, including “Accelerator/throttle cable” must be fitted to control the operation of the fuel delivery system to the engine.
The carburettor must be fitted with a throttle return spring of sufficient size, strength and movement such that the throttle closes once the ‘accelerator’ or ‘throttle’ pedal is released.
Note. The accelerator cable/connection system must be sufficiently routed, shielded from any heat source, and lubricated to minimise the risk of seizure..

Carburettor Needle:
Free. A needle must be fitted and must be of standard production material.

1.13 Engine Fuel System
a). The standard production engine fuel system shall be retained and remain in its standard production form.
The adaptation of any other systems, where they are fitted to other vehicle makes and/or models is prohibited.
b). Fuel Sensors shall be retained and remain in their standard production form.
c). Inlet Manifold.
The standard production inlet manifold shall be retained and remain in its standard production form.
d). Fuel Pump.
The original vehicle manufacturers fitted fuel pump may be retained or removed.
Fuel pump and fuel regulator type and capacity free. See Rule 9.2 & 10.3.
Note.
Nissan Micra 1.0 16V (CG10DE).
Nissan fuel Regulator only is permitted
The original Nissan fuel pump may be retained or removed.
Permitted alternative pump to original is Bosch 038 (Vauxhall 2.0l cavalier) pump.
Also the replacement fuel pump – Sytec FP603 (3 Bar).
Adjustable pressure type prohibited.
Toyota Yaris 1.0 16V (1SZ-FE).
Toyota fuel Regulator only is permitted
The original Toyota fuel pump may be retained or removed.
Permitted alternative pump to original is (Audi A3 1.6l) pump.
Also the replacement fuel pump – Sytec FP604-15 (5 Bar).
Adjustable pressure type prohibited.
e). Carbon/Charcoal Canister.
Nissan Micra 1.0 16V (CG10DE)
Toyota Yaris 1.0 16V (1SZ-FE).
The original vehicle manufacturers fitted “Evaporative carbon/charcoal canister” may be retained or removed.
If removed remaining hose connections must be blanked off with metal.

1.14 Engine Oil System.
a). The standard production engine oil system shall be retained and remain in its standard production form.
The adaptation of any other systems, where they are fitted to other vehicle makes and/or models is prohibited.
b). The engine oil pump may be uprated to increase flow capacity and pressure.
c). The oil pick up pipe may be repositioned and/or modified to increase oil entry location and/or suction unit orifice diameter.
d). The fitting of a sump oil baffle plate or plates permitted.
e). Oil breather catch tank permitted.
f). Oil Cooler/radiator is permitted. Type – restricted.
If an oil cooler radiator is used it must be of a proprietary manufactured type only.
g). The fitting of an oil windage tray and or crankshaft scraper prohibited.
h). Dry sump systems prohibited.

Note.
Nissan Micra 1.0 16V (CG10DE).
Toyota Yaris 1.0 16V (1SZ-FE).
Items b), c), d), e), f). do not apply to these vehicles and are not permitted.

1.15 Engine Sealing
The engine must have provision for the fitting of at least one readily accessible scrutineer’s wire seal, such that the fitting of the wire seal prevents access to internal engine components.
A minimum of two adjacent engine cylinder head retaining studs or bolts must have a single 1.2mm (1/16”) diameter hole pre-drilled in each of them.

i. Where the method of cylinder head retention is by means of stud and locking nut the hole must be located above a cylinder head retaining locknut but below the top surface of the stud. (See Fig 31).
ii. Where the method of cylinder head retention is by means of a bolt the hole must be located through two adjacent edges of the hexagon head of the bolt.
iii. Where cylinder head retaining studs and bolts are inaccessible, then a single 2mm (1/16") diameter hole must be pre-drilled in two accessible parts or areas of the engine.

Nissan Micra 1.0 16V (CG10DE).
Toyota Yaris 1.0 16V (1SZ-FE).
Two bolts on cam cover to be pre-drilled for sealing purposes.

1.16 Timing Cover & Clutch Housing Sealing.
There must be provision for the fitting of a wire seal on both the Timing Cover and the Clutch Housing.
A minimum of 1 fixing bolt on each of the Timing Cover and the Clutch Housing must have a single 1.5mm (1/16") diameter pre-drilled into it.

1.17 Component Sealing Purpose.
The purpose of sealing is for identification and to prevent the engine or key parts being substituted for another unit prior to the inspection of the unit by a designated official. Seals can be fitted to any component or part of a vehicle by a NASA designated official.
Refusal to comply with a request to fit a "seal" will immediately deem the vehicle as being in contravention of the NASA vehicle construction rules and make the competitor and or member concerned subject to disciplinary action.

1.18 Seal Removal.
Once a seal has been placed by the duly appointed official the competitor and or member concerned must seek permission to remove or "break" such seals. A seal must not be removed without the express permission of the NASA designated official or NASA Chief Scrutineer.
The person that removes or "breaks" a seal must be able to demonstrate to any official that permission has been granted for seal removal.
The unauthorised removal or "break" of a seal will immediately deem the vehicle as being in contravention of the NASA vehicle construction rules and make the competitor and or member concerned subject to disciplinary action.

1.19 Transmission/gearbox.
a). The standard production transmission/gearbox, drive-shafts, drive shaft vibration dampers and wheel hubs shall be retained in their standard production location and shall remain in their standard production form.
b). Standard production originals and NASA Scrutineers Committee permitted replacement transmission/gearbox drive-shaft and wheel hub components only must be used.

1.20 Gearbox/Transmission.
The transmission or gearbox must remain as per the manufacturer's original specification, complete with all gears including reverse gear and speedometer drives retained.
The 'Clutch' foot pedal assembly must be of standard production materials.
a). Gear Selector mechanism.
The standard production gear lever and gear selector system must be retained to control the operation of the transmission system "gear change" mechanism.
Mini 998cc - Rod Change Gearbox Gear Linkage: The Steady Shaft & Selector Rod must be steel. (Alloy prohibited).
Steering wheel mounted or operated gear change devices are prohibited.
"Quick Shift" gear lever or gear selector devices are prohibited.
b). Gear Ratios.
As listed on the Permitted vehicle's Palgrave/Glasses Guide Technical Services Data Sheet, NASA Vehicle Check Sheet or specified vehicle transmission system list.
For each of the specified vehicles the following will apply.

i. Mini 998cc- As listed on Check Sheet.
ii. Citroen AX 954cc / Peugeot 106 954cc / Saxo 954cc
MA4 - 4 Speed.
1st 3.42:1 12/41 teeth
2nd 1.81:1 21/38 teeth
3rd 1.13:1 31/35 teeth
4th 0.81:1 43/35 teeth or 1.05:1 (37/39 teeth)

MA5 - 5 Speed.

Either		Or	
1st	3.42:1	12/41 teeth	1st 3.42:1 12/41 teeth
2nd	1.95:1	20/39 teeth	2nd 1.81:1 21/39 teeth
3rd	1.36:1	28/38 teeth	3rd 1.276:1 29/37 teeth
4rd	1.05:1	37/39 teeth	4rd 0.975:1 40/39 teeth
5th	0.85:1	41/35 teeth	5th 0.767:1 43/33 teeth

Final Drive Ratio.
3.58:1 or 3.76:1 or 4.06:1 or 4.286:1 (14/60 teeth).

iii. Nissan Micra 998cc 16v.
RS 5F 41A - 5 Speed (Up to 1998)
1st 3.4118:1
2nd 1.9583:1
3rd 1.3226:1
4th 1.0278:1
5th 0.850:1
Final Drive Ratio 4.05:1

RS 5F30A - 5 Speed (1998-2000)
1st 3.062:1
2nd 1.9826:1
3rd 1.207:1
4th 0.927:1
5th 0.756:1
Final Drive Ratio 4.471:1

RS 5F30A - 5 Speed (2000+)
1st 3.333:1
2nd 1782:1
3rd 1.207:1
4th 0.902:1
5th 0.756:1
Final Drive Ratio 4.471:1

Note
Use of other differentials including 3.895:1.Prohibited.
Use of all Automatic model differentials including - 5.247:1. 5.246:1. 6.140:1 & 6.305:1 prohibited.

iv. Toyota Yaris 998cc 16v. (1SZ-FE).
C551 - 5 Speed
1st 3.545:1
2nd 1.913:1
3rd 1.310:1
4th 1.027:1
5th 0.850:1
Rev 3.214:1
Final Drive Ratio 4.294:1

c). Differential.
The differential must be free revolving at all times.
Locked, Welded, Limited Slip, Power-lock, Quaife ATB, Gripper type differentials prohibited.

d).Differential Turning Torque.
The differential must have a turning torque of a maximum of 3 lbf/ft at all times, when measured at the wheel hub.
i.e. When the transmission is set to neutral and the nearside wheel and tyre raised off the ground whilst the offside wheel and tyre assembly remains on the ground, and vice-versa, then when a torque wrench is applied onto the wheel hub nut the maximum turning torque of the differential and driveshaft assembly must not exceed the stated maximum regardless of the temperature of the unit.

e). Crownwheel & Pinion Ratio.
As listed on the Permitted vehicle's Palgrave/Glasses Guide Technical Services Data Sheet or NASA Check Sheet or Specified vehicle transmission system list.
The interchanging of CWP ratios is permitted. i.e. any listed permitted CWP ratio may be used with any listed permitted gearbox.
Nissan Micra 998cc 16v. Toyota Yaris 998cc 16v
Interchanging/Swapping of differential CWP ratios between gearboxes prohibited.
The correct differential CWP and ratio must be fitted in the correct gearbox.

f). Constant Velocity (C.V.) Joints.
The original standard production C.V. joints and flanges must be retained.

g). Oil Cooler - Transmission/gearbox.
Where a transmission/gearbox oil cooler is fitted as a standard production item it must be retained.
The fitting of a non-standard production or aftermarket type or fitting a cooler where one was not originally fitted is prohibited.

1.21 Transmission Location.
The transmission must be located such that it is connected to the engine as per original manufacturer's specification.

1.22 Clutch.
Standard production original and replacement clutch cover & plate only permitted.
The clutch cover plate may be balanced to the original manufacturer's standard only. See Rule 1.5.

1.23 Engine Stabilisers.
The standard production engine stabilisers shall be retained in their standard production location and shall remain in their standard production form.

2 CHASSIS BODYSHELL

2.1 All vehicles must be of metal and retain their original shape and silhouette (Including height, width and length) as per manufacturer's original specifications, including engine compartment bonnet or cover. De-Seaming prohibited.

The bodyshell must remain as its original type as produced by the original manufacturer. The conversion of a 2 or 3 door model to a 4 or 5 door model and vies-versa is prohibited. e.g. If a vehicle as originally manufactured is a 5 door hatchback it must remain as a 5 door hatchback the conversion to a 2 door saloon or a 3 door hatchback or non-original door configuration is prohibited.

i. Vehicle Size & Dimensions – Restricted
As manufacturers original standard productions specification.
ii. Vehicle Wheelbase – Restricted.
As manufacturers original standard production specification.

iii. Vehicle Track.
For each of the specified vehicles the following will apply.
Mini 998cc
As manufacturers original specifications + 6.0mm. (3mm each side).
Citroen AX 954cc. Peugeot 106 954cc. Saxo 954cc.
Nissan Micra 998cc 16v. Toyota Yaris 998cc 16v.
As manufacturers original standard production specifications.

2.2 The bodyshell must be complete in its ENTIRETY, including all inner and outer wings, bonnet/engine cover, luggage compartment lid (boot/tailgate), doors, door pockets, rear seat bulkhead & backrest panel, rear inner wheel arches, rear seat pan, rear parcel shelf, boot floor, battery box/tray, rear valance and seams fitted.
Note.
i). Replacement panels.
Standard production or NASA permitted proprietary manufactured replacement body panels only to be used
The removal of any vehicle panel including engine cover/bonnet/luggage compartment lid/boot lid and replacement of the same with non-proprietary replacement metal panels is prohibited.
ii). Composite material panels.
The use of non metal automotive "composite material" panels attached to a metal bodyshell are permitted only on vehicles with such panels fitted by the original vehicle manufacturer as a standard production item to that make or model
iii). Reinforcement of panels.
Reinforcement of panels is prohibited.
Foam filling of panels is prohibited.
iv). Removal of bodyshell panels (Part of) and fixings.
The following may be removed:
Mini:
Rear side pockets part of - Protrusion above and forward of seat pan inc front "curve" only.
Rear seat pan part of - "front lip" only.

Citroen AX 954cc. Peugeot 106 954cc. Saxo 954cc.
Nissan Micra 998cc 16v. Toyota Yaris 998cc 16v.
Nil.
The bodyshell is to remain complete in its entirety.
Tailgate hinges to be retained.
Removal of components or fixings on the body shell or its mechanicals is not permitted nor is the modification / relocation of same.
Removal of 'Seam sealer' and or under-seal material where fitted is prohibited.
Treatment of bodyshell by Sand-blasting or Acid clean prohibited.

2.3 The vehicle bodyshell, panels, wings, front bulkhead and floorpan etc; must be kept in good repair at all times. Apertures formed as a result of the removal of interior "trim", "audio equipment/speakers" etc; and/or metal corrosion and/or accident damage must be made good by "filling in" with steel 20-gauge maximum.

2.4 Bonnet.
The vehicle engine compartment bonnet or engine cover must retain its original shape and silhouette as per the original vehicle manufacturer's original specification. Removal or "skinning" of strengthening braces/ribs prohibited.
Nissan Micra 998cc 16v & Toyota Yaris 998cc 16v.
Bonnet hinges to be retained.

2.5 Doors.
All doors must be retained and securely welded closed with each having a minimum of three 25mm (1") length visible welds on each upright with one 25mm (1") length visible weld on the bottom. The welding must be carried out such that the welds are either on the outside or inside surface of the doors. Door hinges may be Retained or removed.

Side door tops (window frames).
These may be retained or removed.
Note.
Nissan Micra 998cc 16v. & Toyota Yaris 998cc 16v
Door tops (Window Frames):
The outer window top skin must be retained and remain in situ.
The inner window "U" shaped runners and internal frame/skin may be removed.

Drivers Compartment Doors.
i. The driver's compartment doors (nearside and offside) may be modified to leave the outer door "skin" only.
Note. If the above modification is carried out then there must be two side bars fitted inside the driver's door and one side bar fitted inside the passenger's door as described in Rule 19 – Safety Roll Cage.
ii. The door skin may also be substituted by a replacement panel to the original vehicle manufacturer's design and/or as permitted by the NASA Scrutineers Committee.
iii. The driver's door MUST be retained at the standard production manufactured height.
iv. To facilitate entry and exit to the driver's compartment, the front nearside (passenger's) side door may be cut down no more than 1/4 (One quarter) the height of the original standard production manufactured height. I.e. a minimum height of ¾ (Three quarters) of the original door height must remain.
v. The driver's compartment doors (Nearside and offside) may have a metal door brace bar fitted at the top of the door (And also cut down nearside door), between the front and rear door pillars only. The brace bar to be steel tube box section maximum 25mm x 25mm (1") or 25mm (1") circular section.

Note.
Nissan Micra 998cc 16v & Toyota Yaris 998cc 16v.
For above items.

Item i – Only lower part of front doors may be 'Skinned'.
Item ii. - Original vehicle manufacturer's replacement doors only.
Item iv. – Door skin to be 'Rolled over' and not cut off or removed.

Rear passenger Compartment Doors.
All Vehicles
For "4 door" and or "5 door" vehicles the rear passenger's compartment doors (Nearside and offside) and tailgate must remain as original. "skinning" prohibited. See Rule 2.1.

2.6 Bumpers.
For each of the specified vehicles the following will apply.

i. Mini 998cc .
The original standard production front and rear bumpers may be removed. If they are removed the front bumper brackets and support lip ONLY may be removed. (See drawing 9). If the front bumper is removed and the support lip is retained or remains in place, then in order to minimise the risk from the sharp edge hazard, it must be bent and/or folded downwards at 90 degrees, for its whole length.

ii. Citroen AX 954cc ,.Nissan Micra 998cc 16v
Peugeot 106 954cc, Saxo 954cc. Toyota Yaris 998cc 16v.
The original standard production front and rear bumpers must be retained and remain in the standard production location. Non standard or aftermarket front and/or rear bumpers prohibited.
It is permitted to fit 2 additional bumper support brackets, constructed of maximum of 25mm steel flat, 3mm thickness. Each with 8mm bolt fixings.
Or the rear protection bar may be used as a support for the rear bumper. See Rule 18.3.

2.7 All opening bonnet/engine covers/boot/luggage compartment lids must have secondary fastenings to keep them securely closed during racing.
Note.
Failure to ensure that the above remain closed during racing is a Black Flag (Race Disqualification) offence.
The use of bonnet pins with aluminium posts/pins, elasticised luggage straps, string, rope, wire, padlocks, or any fastening that requires the use of a tool to gain access is prohibited.

2.8 All light fittings/units must be removed.

2.9 Apertures remaining following the removal of vehicle light fittings and/or units, metal and/or plastic grilles may be filled in by a metal covering of 20 gauge (0.91mm) maximum.

2.10 All exterior and internal trim must be removed.
Windscreen wiper assemblies must be removed. (See Rule 2.11).
Lock and lock assemblies must be removed.
Window winder assemblies must be removed.
Instrument dashboard may be retained or removed.
(See Rule 3.1b.).

2.11 Scuttle.
The vehicle engine compartment scuttle must retain its original shape and silhouette as per the original vehicle manufacturer's original specification.
All air vents/grilles or apertures remaining following removal of trim, wiper assemblies etc; that are located in the front windscreen scuttle panel, must be filled in with a suitable metal covering.
Note.
For vehicles fitted with automotive plastic scuttle the plastic scuttle may be retained or removed. If removed it must be replaced with plain metal of equivalent shape and size.

2.12 No protection may be fitted to vehicles other than that as specified under "PROECTION".

2.13 No part of the body shell shall have any sharp projecting surfaces, which might cause a hazard, either internally or externally.

2.14 Motifs/mascots/aerofoils/spoilers are not allowed.
Note.
Nissan Micra 998cc 16v
The standard production tailgate spoiler may be retained or removed.

2.15 The covering or infilling of side windows or rear window apertures is prohibited.

2.16 Sunroofs:
Where a bodyshell has been fitted with a sunroof the following applies.
a). If the original integral sliding/tilting steel sunroof is retained, the steel sunroof panel must be securely welded closed by "Spot" or "Seam" welds around the edge of the panel.
b). If the sunroof is constructed of a non-steel panel e.g. glass, plastic, alloy etc; then the original sunroof must be removed and the remaining aperture must be filled in with a steel covering of 20 gauge maximum thickness welded in place as described in (a).
c). If a sunroof has been removed remaining aperture must be filled in with a steel covering of 20 gauge maximum thickness welded in place as described in (a).

2.17 Towing Eye.
The fitting of a 'Towing Eye' at the front and rear of the vehicle is mandatory. Specified metal 'Eye' diameter is 50mm. For other materials a minimum 50mm, maximum100mm "Loop" is specified. The 'Towing Eye' must not protrude beyond the vehicle bodyline. 'Towing Eyes' and 'Towing Eye fixings' that are excessively sized or that can be regarded as 'ballast' or 'protection' are prohibited. The original standard production item may be retained or removed or bent downwards so as not to protrude beyond the bodyline

2.18 Floor Frame.
A steel "floor frame" formed by the construction of materials as specified and described in roll cage rules 16 & 17 must be fitted.
Note.
The "floor frame" must not be directly connected to the front sub-frame or any framework supporting the front suspension.

2.19 Ballast
The fitting of and/or use of ballast is not permitted at any time.

3. WINDSCREEN / GLASS

3.1 a). All glass (Excluding gauges) must be removed.
The removal must be carried out in accordance with original vehicle manufacturer's guidelines and/or instructions & recommendations.
b). All instrumentation (Gauges and/or instruments) fitted with a glass fascia or lens must have the glass fascia or lens covered with adhesive tape or similar material such that the glass pieces are retained in the event of breakage.

3.2 A covering of steel weld mesh 25mm x 25mm (1" x 1") made up of a minimum 2.64mm (0.104") (12 gauge) diameter wire, must be fitted over the full windscreen aperture ONLY, and be securely fixed to the vehicle.
Note.
There must be adequate clearance between the windscreen mesh and the steering wheel to prevent injury to the driver's hands.

3.3 Perspex/Lexan/Clear Polycarbonate may be fitted to the outside of the mesh on the front windscreen, provided that there is a suitable aperture cut in front of the driver, in his/her line of vision. The aperture must be at least 100mm (4") high, 300mm (12") wide, or the equivalent area within an imaginary circle of 300mm (12") diameter.
Perspex/Lexan/Clear Polycarbonate is not permitted to be fitted anywhere else on the vehicle.

3.4 Window Webbing/Net/Mesh..
It is the responsibility of all competitors to ensure that their arms are restrained from extending outside of their vehicle in the event of an accident or roll. This must be done by the use of either a permitted restraint or window net or by their seating position within their car (see also Rule 12).

If a arm restraint system is not used then a non-metal webbed/meshed net on the drivers door window aperture (Either wholly or partially), is mandatory and must befitted. See Fig. 15.
If the driver's seating position within the vehicle is such that there is a risk of their arms extending out of either side of the vehicle then a window net must be fitted to both nearside and offside driver's compartment window apertures.

If an arm restraint system is used then the driver's compartment access window aperture may also have a non-metal webbed/meshed net covering (Either wholly or partially).

Webbing/Mesh Type.
The window aperture webbed/meshed net covering must be of a NASA permitted proprietary brand and or construction.
It must be fixed by quick release clips as supplied by the window webbing/meshed net manufacturer or be retained/fixed by the use of "R" clips ('Bolted with hinge' types prohibited) or 'Heavy duty' Velcro.

The window webbing MUST be easily and completely removable from both inside and outside of the vehicle either by the driver or marshals and or medical personnel.

The net mesh construction shall be of a mesh size of a minimum of 50mm up to a maximum of 100mm.
The mounting or support bars may be of metal 6mm minimum and maximum 10mm circular section metal tubing. There shall be no sharp or pointed edges that may cause potential injury to driver or marshals in the event of deformation or breakage. See Fig. 15.
Note:
a). When a 'Window net' construction is inspected and is not to the satisfaction of a scrutineer and or designated official then it is deemed as being in contravention of the NASA vehicle construction rules and will not be eligible for use. Therefore if it is fitted to a vehicle it must be removed immediately. The competitor is not permitted to race until a compliant 'Restraint System' is used.
b). It is Competitors responsibility to contact a scrutineer and or designated official to confirm the particular 'Window net' form of construction is eligible. i.e. permitted by the NASA Scrutineers Committee **before** using it and or them.
c). 'Window net' form of construction must be only as permitted by NASA. The types of construction will be subject to regular review by NASA to ensure suitability for Autograss racing.
NASA reserves the right to amend the permitted 'Window net' construction requirements at any time.
OMP & TRS & RJS Oblong and or Trapezoid (angular) full size window safety net permitted.
Full metal tube support bar/border and "gate opening" types prohibited.

3.5 A rear view mirror may be fitted, number and type free, however it/they must not be made of glass, and must be directly fixed to the vehicle.

4 STEERING

4.1 It is a requirement that all vehicles are able to steer at all times.
NASA reserves the right via an appointed Official and or Scrutineer to request that a competitor's vehicle undergoes a steering capability test.

Where the vehicle cannot perform or complete the steering capability test to the satisfaction of the designated official then it is deemed as being in contravention of the NASA vehicle construction rules and will not be eligible to race.

Reasons for the failure of a vehicle to pass the steering capability test will be given to the driver/competitor concerned who will be allowed to make adjustments etc, and present the vehicle for re-testing within the specified time period allocated
at the event for the steering capability testing and or scrutineering of vehicles.

Refusal to comply with a request to take part in a steering capability test will immediately deem the vehicle as being in contravention of the NASA vehicle construction rules and make the competitor concerned subject to disciplinary action.

4.2 The steering system from the steering wheel to the front wheels must remain as originally fitted to the vehicle make and model by the original vehicle manufacturer.
The fitting and use of a "Quick Rack" or devices that alter the standard production steering wheel to front wheel turning ratio are prohibited.
The steering column must be as standard production and of correct standard production material.
Power steering may be removed or retained i.e. rack and associated parts.
If removed the steering rack must not be replaced with a "quick" rack.
For a non power steering model the replacement with a power steering rack is not permitted.
Steering wheel locking devices must be removed.

4.3 The use of Steering wheel mounted Safety Air Bag(s) is prohibited. Where they are fitted as a standard production item, they must be disconnected and removed. The disconnection & removal must be carried out in accordance with original vehicle manufacturer's guidelines and/or instructions & recommendations.

4.4 The original standard production steering wheel may be retained or removed. If removed a full circumference steering wheel must be used – diameter free.
Note. It is the driver's responsibility to ensure that the steering wheel is secure at all times. Steering wheels may be subject to random spot checks of steering wheel fixings whilst on the starting line.

4.5 The original standard production steering wheel boss may be retained or removed.
A "Quick Release" steering wheel boss of proprietary manufacture only is permitted, provided the boss locates onto the steering column without affecting the original manufacturers steering wheel location.
It is recommended that a "Quick release" steering wheel hub of proprietary manufacture be used.

4.6 The steering column may be retained in its original standard production location or be lowered by means of the fitting of a single NASA permitted proprietary manufactured "lowering bracket" only.
Note.
Nissan Micra 998cc 16v Toyota Yaris 998cc 16v.
The standard production column mounting bracket may be retained or removed.
If retained - The original bracket must be fitted with padding for protection of driver legs.
If removed - The column must be mounted from the front roll cage cross bar. The column must be mounted such that it remains at the standard production height and location.

Note.
The steering wheel height/angle adjustment bracket/lever must be securely fixed in its chosen height/angle location by welding or secondary fastening.

5 SAFETY HARNESS

5.1 All vehicles must be fitted with a proprietary manufactured full harness seat belt to BSI standards and be adjustable so as to securely fit the driver, with one quick release buckle and a crutch strap and a minimum of 5 point fixing. The use of a 6-point fixing harness is recommended.
The whole harness seat belt must be supplied by the manufacturer of that harness seat belt and be fitted in accordance with the manufacturer's installation recommendations.
N.B. Inertia type harness seat belt prohibited.
Note.
The driver's seat must have the correct "seat harness holes", adjustable as necessary to enable the choice of harness to suit the stature of the driver to be correctly fitted.

5.2 The shoulder straps of the harness seat belt must pull back at an angle of between 45 degrees and straight back. (See Fig.19a and 19b).
It is recommended that a harness "strap guide" be fitted to ensure that the harness remains in position in the event of a roll over.

5.3 Proprietary manufactured Safety Harness "extension pieces" only are permitted. "Homemade" extensions prohibited.

5.4 Attachment bolts for seat belts must be minimum diameter of 10mm (3/8") high tensile steel.

5.5 The original vehicle manufacturer's seat belt fixing points or mountings may be used as a safety harness fixing points or mountings.
Where the original seat belts fixing points or mountings are not used, safety harness fixing bolts or fixing rings/eyes must be adequately plated.
Note. Whilst racing or in the event of an accident the safety harness fixing points or mountings may be subject to severe stress loading. This must be borne in mind during safety harness fixing point and mounting location choices. All safety harness fixing and mounting points must be sound and secure.

5.6 Safety harness fixings must not be mounted on the vehicle rear parcel shelf, or rear seat panel other than at a point, which must be steel, plated and supported from the rear passenger compartment seat floor and reinforced. This point must be no higher than 50mm from the rear passenger compartment seat floor. (See Fig. 12).

5.7 A safety harness-fixing bar may be fitted either between the two rear roll cage brace bars or across the inside between each side of the bodyshell. (See Fig. 13).

6 SEAT

6.1 Seat - Restricted
All vehicles must be fitted with a driver's seat to securely hold the driver in place. The seat must incorporate a head restraint / headrest, a full-length backrest, left & right sides for thigh support and a bottom panel. Left & right rib supports may be fitted. All padding used must be securely fixed.
Seat material, type and design is free see rule 6.2, & 6.3.
A proprietary manufactured "Car" or "Racing" or "Competition" or "Motor sport" car seat only must be used.
The seat must be installed in accordance with the particular seat manufacturer's recommendations and instructions and be in good order and or condition and be free of damage.

Whilst racing or in the event of an accident or roll over the seat may be subjected to severe shock and stress loading. This must be borne in mind during seat choices.

A steel seat support bar must be fitted, minimum size 25mm circular or box section, with minimum wall thickness 2.5mm, directly to the rear of the seat backrest.
The back of the seat must be fixed (Bolted/welded) to the seat support bar in two (2) places adjacent to the safety harness apertures.
Note.
The use of a seat designed and manufactured for "Kart" racing is prohibited.
The use of a folding or hinging type seat is prohibited.
The seat must have the correct "Seat harness holes", adjustable as necessary to enable the choice of harness to suit the stature of the driver to be correctly fitted.
The seat head restraint/headrest must be an integral part of the driver's seat construction and be such that it provides a support for the driver's head, regardless of the stature of any driver and will prevent the driver's head from being violently jerked backwards during an impact thus reducing the risk of neck injuries.

6.2 The seat must be adjustable for fit and location and harness location to securely hold the driver in place and to ensure correct control of the vehicle regardless of the stature of any driver. Any padding used must be securely fixed.

6.3 The driver's seat or seat frame must be securely fixed (Bolted/welded/riveted) to the vehicle, back and front (See Fig. 6). Where a proprietary seat is used it must be fitted in accordance with the particular manufacturer's recommendations.
The seat, seat to seat frame or seat frame to vehicle support brackets must be located such that they cannot puncture or pass through the seat in the event of any impact. Non-proprietary and or "Home made non-steel types prohibited.
Whilst racing or in the event of an accident or roll over the seat, seat frame, seat mounting brackets and fixings may be subjected to severe shock and stress loading. This must be borne in mind during seat and/or frame and mounting bracket choices.

6.4 NASA reserves the right via an appointed Official and or Scrutineer to reject a seat (including mounting support frame/brackets), particularly "Thin", "Lightweight" or "Ultralight" types that are marketed as a "Race seat" but deemed as not fit for purpose and unsuitable for the shock and stress loadings of the 'Autograss racing environment'.

7 FIRE EXTINGUISHER

7.1 All competitors must be in possession of a fire extinguisher which is in good working order.
a) The extinguisher must be present while the vehicle is in the pits area and must be within easy reach of the driver and mechanics at all times, especially when refuelling.
b). It is optional for the extinguisher to be carried in the vehicle during racing. If the extinguisher is to be carried in the racing vehicle it must be securely fixed with the manufacturer's clamp and bracket. The use of secondary fixings to retain the extinguisher within its bracket is permitted, but the use of any fastening that requires a tool to remove the extinguisher is prohibited.

7.2 Extinguishers must be minimum 1 kg (2.2 lbs) dry powder or 0.9 litre foam spray AFFF or Zero 2000. The "use by" date must be current and the "stored pressure" indicator must be within the manufacturer's recommended limits. For extinguishers subject to regular inspection and service, a current record of inspection/test must be shown. All inspection and servicing must be carried out by a "competent person" in accordance with BS 5306 (current edition).

8 IDENTIFICATION

8.1 All vehicles must have the competitor's NASA registered/recognised Club letters and racing numbers, displayed (See Rule 8.5) on each side of the vehicle and on each side of a specified roof structure, at a point forward of the rear roll cage upright, to a minimum size of 230mm (9") in height, with a minimum 25mm (1") width. The Identification (Club letters & Racing number) must match that stated in the competitor's NASA Licence. i.e. if AA123 in Licence then it is AA123 Not 123AA or A123A on vehicle. (See Fig. 7).

8.2 It is the responsibility of the competitor to ensure that the identification letters and numbers of his/her race vehicle are displayed, clear, upright and legible at all times.
Identification must be "Clean" and visible at the beginning of any particular race particularly during wet/inclement weather/track conditions.
Note.
The purpose of the vehicle identification requirement is to ensure that race lap scorers and officials can easily and correctly identify each vehicle from their race observation locations during any race. This must be borne in mind during identification font sizing and layout choices.

8.3 All NASA registered/recognised racing numbers, club letters and class numbers must be displayed the colour black on a white panel background. i.e. a background that is displayed so as to be the colour white. Iridescent or chameleon effect (Colour Change) Letters or Numbers or panels prohibited.

8.4 All NASA registered/recognised racing numbers, club letters and class number font is free however they must be sized so as to be proportioned such that they are clear and legible, and upright.
i. There must be a minimum of 50mm – Side Identification, 5mm – Roof Identification, clearance between the outside border and/or edge of the letter and/or number characters, regardless of font, and the outside border and/or edge of the white panel background.
ii. There must be a minimum of 25mm between the club identification letters and race number grouping of characters. E.g. for AAC 123 there must be a minimum of 25mm between the character "C" and "1".
iii. The shading, blocking, outlining, overlapping, use of disproportionate sizing and/or leaning at an angle other than vertical of the letters and numbers is prohibited. (See Fig. 7).

8.5 Identification Sizes
Vehicle Side.
A minimum size of 230mm (9") in height, with a minimum 25mm (1") width. (See Fig. 7).

Vehicle Roof.
A minimum size of 150mm (6") in height, with a minimum 12mm (1/2") width. (See Fig. 7).
Note.
The roof display structure size must be appropriate for the size and type of font used.

8.6 Roof Display Structure
The stand up structure MUST be made of 0.71mm (0.028") (22 gauge) aluminium, to the dimensions shown on Fig. 8. The length being discretionary within the vehicle roof area.
Note.
The roof display structure size must be appropriate for the size and type of font used.

8.7 The vehicle must have the NASA registered/recognised racing class identification number painted/displayed upon the vehicle roof over both the nearside and offside driver's compartment access aperture to a maximum height of 50mm (2"), minimum 25mm (1").

8.8 Identification letters and numbers and panel background may be printed on self adhesive vinyl film to the colours and sizes specified.

8.9 The use of magnetic white panels and/or magnetic identification numbers and letters is prohibited.

8.10 Vehicle paint and decoration is free, however stickers, logos, decals, drawings, phrases etc., which may be considered, obscene, offensive or intimidating are prohibited.

9 ELECTRICAL / INSTRUMENTS

9.1 The standard production general wiring harness and battery charging system, including Dynamo and or Alternator, may be retained or removed.
Note.
The standard production engine crankshaft pulley must be retained in its original standard production location and form.

9.2 A single ignition switch of proprietary manufacture must be fitted to control the electrical and ignition system to the engine. The ignition switch must be within reach of the vehicle driver when the driver is seated in the vehicle and is in his/her normal driving position, with his/her safety harness fastened.
Note. When an electrical fuel delivery pump is fitted, then the fuel pump must be wired through the ignition switch.

9.3 The standard production self-starting system must be retained and be capable of starting the engine when operated.

9.4 Instrumentation and Gauges
Standard production instrumentation and gauges may be retained or removed. If retained they must be firmly secured to the vehicle. The speedometer and associated speedometer cable up to the external gearbox connection point may be retained or removed. Non-standard production oil/water/tachometer/rev counter gauges of proprietary manufacture only may be used. The use of an engine/fuel system "Rev limiter" and/or gear "Shift light" system prohibited.

9.5 Isolator Switch.
A single electrical system & battery isolator switch of proprietary manufacture must be fitted in either the Positive (+) or Negative (-) electrical "Live" or "Earth) circuit. On operation of the battery isolator switch, the electrical system and engine must stop. The switch "On/Off" positions must be clearly identified & displayed/painted a minimum size of 25mm (1") in height.

Location – Restricted.
The battery isolator switch must be fitted on the offside of the vehicle, at the base of the front offside windscreen pillar, adjacent to the point where it meets the scuttle panel. (See Fig. 9).

9.6 Battery type – Restricted.
A single 12 Volt electrical battery only must be used. - Type and capacity free.
Note.
For all vehicles "large car", "SUV" 4 x 4, commercial vehicle, agricultural and or leisure vehicle battery prohibited.
The use of a "large" dimension size battery may be deemed as ballast and prohibited.
The suitability of the type of battery for use with or without a charging system and it's ability to hold a sufficient electrical charge for the duration of a race and any required race re-runs must be borne in mind during battery type choices. See Rule 9.7.

Nissan Micra 1.0 16V (CG10DE).
Toyota Yaris 998cc 16v (1SZ-FE)
A single 12 Volt electrical battery of a maximum dimension size that is equal or similar to the standard production item only must be used. Electrical capacity free.

9.7 Battery Enclosure & location – Restricted.
A battery must be secured within a metal enclosure box/container of sufficient strength not to burst open upon any impact and that is made as leak-proof as possible. Maximum wall thickness = 3mm.
The enclosure box/container must be firmly secured to the vehicle.
The enclosure box/container must not be fitted under the vehicle wings. i.e. No part of the enclosure shall be within and or beneath any part of any of the vehicle wings. Deformation of inner wings prohibited.
The enclosure box/container must not be fitted anywhere on the vehicle at a point that is forward of an imaginary line, across the vehicle from the most forward part of the engine block and or gearbox and clutch housing casing.

9.8 Brake Light.
A minimum of One (1) number Brake light, of 21 watts output and lens size 70mm x 70mm must be fitted to all vehicles.
The mandatory brake light to be mounted facing rearwards (towards an imaginary marshal standing at the vehicle rear) at a point as near to the rear most point of the vehicle as practicable. It is permitted to fit a secondary brake light, mounted onto the offside roll cage upright facing outwards (towards an imaginary marshal standing at the vehicle side). All brake lights must be covered with a red plastic lens and be clearly visible when in
operation. “LED” lamps that emit a light that is the colour red of a minimum size 50mm x 50mm and that is clearly visible when in operation are permitted.

10 FUEL

10.1 Pump fuel only to be used.
Proprietary manufactured petrol Lead & Octane Replacement and Anti-Wear Additives may be used.
Note. Millers Oils – VSP and CVL Fuel Additives are permitted. However their use must be in compliance with the particular manufacturers recommendations and instructions.

10.2 The use of Nitrous Oxide (N_20) injection is prohibited.

10.3 Fuel Pump.
Type and capacity of fuel pump and fuel filter free. See Rule 9.2.
Type and capacity of fuel regulator up to the carburettor and or Fuel Injection Unit free.
Note.
Nissan Micra 1.0 16V (CG10DE). & Toyota Yaris 998cc 16v.
Original Manufacturer Fuel-Regulator only is permitted.
The original fuel pump may be retained or removed.
See Rule 1.13 for permitted alternative pump.

10.4 Fuel Tank Type - Restricted
The original vehicle manufacturers fitted fuel tank must be removed.
A single non-spill proprietary metal fuel tank or NASA permitted proprietary “Fuel cell”, with a maximum capacity of two (2) gallons (10 litres) and which is fitted with a secure filler cap including gasket or ‘O’ ring seal must be fitted.
Fixings:
For a metal fuel tank the fixings must be such that the tank and fill pipe & cap are secure. The use of non-metal fixing straps, wire, etc is prohibited.
For a “Fuel cell” the original fuel cell manufacturers “Fixing kit” only must be used and the “Fuel cell” must be secure.

10.5 The fuel tank filler pipe (And if fitted, the fuel delivery “Fuel shut – off” tap) must be fitted so as to be an integral part of the fuel tank or “Fuel cell”.

10.6 Fuel Tank Location – Restricted.
i. The fuel tank or “Fuel cell” and or fuel filler pipe and or filler cap, must not be fitted in the driver's compartment and or under the vehicle wings and or anywhere on the vehicle at a point that is forward of an imaginary line, across the vehicle from the most forward part of the engine block and or gearbox and clutch housing casing.
ii. Where a fuel filler pipe and or filler cap is located beneath or under a vehicle panel or bonnet or luggage compartment lid there must be clearance above the pipe and or cap to allow for panel etc; deformation in the event of a roll over.
iii. If the fuel tank or “Fuel cell” including filler cap is fitted within a totally enclosed space, then a 50mm diameter hole MUST be provided as near to the tank as possible in one accessible face of the enclosure, for accessibility of a fire extinguishant in the event of a fire.

10.7 There must be a metal fire shield between the driver and all fuel related components, including the fuel tank and or “Fuel cell” and filler cap.

10.8 The fuel tank or “Fuel cell” must have an external vent pipe fastened in a downward position, to a point below the floor of the vehicle. This vent pipe must not protrude into the fuel tank or “Fuel cell” more than 6mm (1/4"). It is recommended that a one way (non return) valve be fitted in the vent pipe.
Note:
Where a “Fuel cell” is used the vent pipe must be connected to the fuel cell by proprietary fittings and in a manner approved by the fuel cell manufacturer.

10.9 Fuel Pipe
Fuel delivery pipes must be of metal or proprietary fuel flexible hose and be securely fixed.
Note:
Where a “Fuel cell” is used the fuel delivery pipes must be connected to the fuel cell by proprietary fittings and in a manner approved by the fuel cell manufacturer.

11 COOLING SYSTEMS

11.1 The standard production cooling system shall be correct for the engine fitted and must be retained in its entirety and remain in its original standard production form.

11.2 The water-cooling system radiator must remain in the original standard production location and position, and be as originally fitted to the vehicle make and model, by the original vehicle manufacturer.
Standard production replacement radiator only permitted.
The use of an aftermarket and/or specialist fabricated radiator is prohibited.
Note.
Mini 998cc. - The use of 2 Core and or 3 Core radiator types is permitted. 4 Core radiator types prohibited.

11.3 A secondary water-cooling system expansion tank may be fitted. Maximum capacity 1 Litre. See rule 11.4.

11.4 Water radiators or expansion tanks must be fitted with a pressure cap and overflow pipe fastened in a downward position to a point below the floor of the vehicle.

11.5 Water pipes must be of metal or proprietary flexible hose. Type free. However hoses must have the same connections as standard production. Connection points must not be blanked off or re-routed.

11.6 Heater/ventilation/ a/c systems.
The original manufacturer's heater/ventilation/ system may be retained or removed. If retained, they must remain in their original standard production location. If removed the hose connections may be blanked off or looped.

Air conditioning system.
Where an air conditioning system is fitted as a standard production item, it must be disconnected and removed. The disconnection & removal must be carried out in accordance with original vehicle manufacturer's guidelines and/or instructions & recommendations.

11.7 Oil Cooler/radiator type – restricted. If an oil cooler radiator is used it must be of a proprietary manufactured type only.
Nissan Micra 1.0 16V (CG10DE). Toyota Yaris 998cc 16v.
Engine oil cooler/radiator prohibited. See Rules 1.14 & 1.20. g.

11.8 All oil coolers/oil radiators must be fitted within the vehicle silhouette and must be completely shielded from the driver's compartment. The shield must be as leak proof as possible in case of spillage in an incident.

11.9 Oil hoses and pipes must be of the correct oil resistant type with suitable high-pressure oil connections/fittings.

11.10 Standard production original and replacement engine mounted water pump only permitted.
Modifications to water pump or pump pulley and/or impeller prohibited.
The use of an additional or remote water pump is prohibited.

12 BRAKES

12.1 The standard production braking system must be retained and be in good working order.
The 'Brake' foot pedal assembly must be of standard production materials.
Brakes may be subject to random spot checks of foot pedal operation whilst on the starting line.
Note.
i. The braking system must be as listed in the T.S.D. Manual for the vehicle used. Where a vehicle is listed as having "drum" brakes, then it is not permitted to fit "disc" brakes and vies-versa.
ii. The rear brake compensator may be removed
iii. The original standard production brake pipes and hoses may be replaced with aftermarket "Braided" brake hoses.
iv. The practice of "Thinning" or lightening brake discs or drums or other braking components by "Thinning" and or "Diameter reduction" and or "Grooving", "Slotting" or "Drilling" and or other machining is prohibited.
v. The practice of adjustment of drum brakes shoes to an absolute minimum setting, regardless of shoe thickness, to reduce friction is prohibited.
Brake shoes must be adjusted such that they operate correctly upon the brake drum on the initial depression of the foot brake pedal at all times.

12.2 Standard production original and replacement brakes and brake components only permitted. After market "Minifin" brake drums prohibited.

12.3 The original vehicle handbrake and or parking brake, including the cable and its associated components may be removed or retained.
If retained the handbrake/parking brake components must remain as original manufacture and operate the rear wheel braking system only. The conversion of a cable system to hydraulic prohibited.
Note.
Nissan Micra 1.0 16V (CG10DE). Toyota Yaris 998cc 16v.
It is not permitted to remove and or modify the handbrake/parking brake. It must be retained and remain as manufactured and work sufficiently to prevent the vehicle from rolling. i.e. pushed or rocked by the inspecting scrutineer.

12.4 All wheels must lock on grass (On application of the single foot brake pedal only) at all times.

12.5 Brake Warning Lights must be activated by the depression of the foot brake pedal only – See Rule 9.8.

13 WHEELS

13.1 Wheels – Restricted.
All wheels must be in good order and or condition and be free of damage. Steel or alloy wheels are permitted.
Modification of a proprietary manufactured wheel by "Thinning" and or "Diameter reduction" and or "Grooving", "Slotting" or "Drilling" and or other machining is prohibited.
The wheels must be standard production or NASA permitted proprietary replacement wheel of a maximum of 5" width. Offset/Inset is restricted. The wheel rim must not protrude more than 15mm beyond the original wheel arch.
The diameter of the wheel must be as listed in the T.S.D. manual for the vehicle used.
Where a vehicle is listed as having 10" diameter wheels only, then it is not permitted to fit 12" or 13" diameter wheels and vies-versa. Mini Clubman vehicles must use 10" diameter wheels only.
"Beadlock" and/or Beadlock type wheels are not allowed.
Wheel centre's must be fitted to hubs the correct way.
The use of hub caps and or dust/mud shield and any attachments prohibited.
Wheels must have a single tyre inflation valve orifice in its standard production location.
The standard production wheel Pitch Circle Diameter (PCD) must be retained.
The use of wheel adaptors to fit wheels of a different PCD is not permitted.
Note.
Nissan Micra 1.0 16V (CG10DE).
Steel or alloy wheels permitted.
Size 13" x 5.5" maximum.
Offset from rear face of wheel rim.
Minimum offset 125mm.
Maximum offset 102mm.
See rule 14.1 for permitted tyre sizes.

Toyota Yaris 998cc 16v
Steel or alloy wheels permitted.
Size 13" x 5.5" maximum.
Size 14" x 5.5" maximum.
Offset as standard.
See rule 14.1 for permitted tyre sizes.

Wheel fitment
All axles/hubs on the vehicle must be fitted with wheels that are of the same diameter.
It is permitted to mix types of wheels on a vehicle, provided the same type of wheel is fitted on each pair of axles.
i.e. Front axles steel, rear axles alloy or vies-versa. (It is not permitted to use a steel wheel on the front offside with an alloy wheel on the front nearside or vies-versa nor a steel wheel on the rear offside with an alloy wheel on the rear nearside or vies-versa).
Note.
The suspension systems and braking systems must be appropriate for the diameter of wheel used.

13.2 Wheel Spacers – Restricted.
For each of the specified vehicles the following will apply.

i. Mini 998cc
For vehicles fitted with 10" wheels the standard production original ⅛" (3mm) thickness Leyland rear wheel steel spacer or aftermarket solid one-piece type complete with integral backing plate 3mm thickness alloy spacer is permitted. It is permitted to be fitted on all wheels (a single spacer per wheel).
For vehicles fitted with 12" wheels the standard production original integral wheel mounted spacer only are permitted. They are permitted to be fitted on all wheels. (a single spacer per wheel).

ii. Citroen AX 954cc, Peugeot 106 954cc, Citroen Saxo 954cc.
Wheel spacers prohibited.

iii. Nissan Micra 1.0 16V (CG10DE). Toyota Yaris 998cc 16v.
Thickness Size 3mm but on standard production manufacturer steel wheels only.

13.3 Where a wheel nut and stud fixing is used, the wheel nut must be completely penetrated and threaded by the wheel stud. "Half nuts" and/or non-steel nuts prohibited.
Where NASA permitted proprietary replacement wheels of either "Steel 8 Spoke" or alloy are used, then the correct steel wheel nut & wheel stud must be used to match the nut taper and stud bore of the wheel concerned.

13.4 For all types of wheel the correct size and type of wheel studs and/or wheel nuts must be used to match the nut taper and stud bore and depth of the particular wheel (including spacer if used) concerned. All studs must be of a one-piece type.
Locking wheel nuts/bolts are prohibited.
The wheel nut must be completely penetrated and threaded by the wheel stud. "Half nuts" and/or non-steel nuts prohibited.

14 TYRES

14.1 Tyres are restricted.
For "drive axles" and/or "drive wheels" Control Tyres will apply. The application of control Tyres will remain effective until 31 December 2018. NASA reserve the right to modify these regulations without notice at any time
There are 3 options. "A" and "B" and "Wet Weather".
A competitor may use tyres on that comply with either option on a "Drive axle". Mixing & matching of Option "A" and Option "B" and or "Wet Weather" tyres on the same drive axle is permitted.

i. All tyre identification markings must be present and visible on each of the tyre sidewalls.
Removal of identification markings is not permitted.
The hardness value must be marked upon all Option "A" tyres.
Such marking is to be clearly visible, non removable and applied during the tyre manufacturing process.

'Sticky labels' applied by the retailer or "Branding iron" markings are not acceptable.
Tyres that are not marked with hardness value will be deemed as Option "B" Tyres and then must comply with Option "B" rules.

ii. The tread block/pattern/profile must be pre-formed. i.e. made during the original manufacturing process.
Note.
Alteration or modification to original manufacturer's tread pattern by "Tyre cutting" is not allowed.

iii. All tyres whether Control Tyres or other, must have a speed rating of a minimum of 75 mph ("L" speed symbol).
"Town and Country", and "M & S" (Mud & Snow) tyres are permitted subject to drive & non drive axles and Control Tyre restrictions. Motorbike and/or Motorcycle tyres prohibited.

iv. All tyres must be fitted to the wheel correctly and be in good condition. i.e. Be within wheel rim and or be free of damage to main tread pattern and sidewalls, including cuts, bulges, tears, rips, loose and or separated tread.

v. Tyre Hardness - Restricted.
Tyre hardness must comply with the following. Random checks of hardness will be carried out by means of a Durometer.
For non-Control Tyres the shore hardness is free.
Control Tyres Option "A" must have an absolute minimum shore hardness of 60.
Control Tyres Option "B" must have an absolute minimum shore hardness of 55.

vi. Tyre Size - Restricted.
Mini 998cc
145 x 10, 145/70 x 12 & 155/70 x 12
Citroen AX 954cc & Saxo 954cc & Peugeot 106 954cc
145 x 13, 155/70 x 13
Nissan Micra 1.0 16V (CG10DE)
135/80 x 13, 145/80 x 13, 155/70 x 13.
Toyota Yaris 1.0 16V (1SZ-FE)
155/70 x 13. 155/80 x 13.
165/65 x 14. 175/65 x 14.

14.2 Tyre Option Description & Application.

i. Drive Axles
For 'Drive Axles' Control tyres will apply. There are 2 choices of tyre - Option "A" and or Option "B".
A competitor may use tyres on that comply with either option on a 'Drive axle'. Mixing & matching of Option "A" and Option "B" tyres on the same drive axle is permitted.

Option "A" Tyres
Tyres must be of a type supplied by a manufacturer/supplier as shown on the NASA permitted list of suppliers only. (The current NASA permitted suppliers are:
Maxsport Competition Tyres, Sportway Tyres, Kinsley, & Liam Evans Tyres).
Note. The tyre tread pattern must be of a type as permitted by NASA.

Option "B" Tyres.
Tyres must be an "E" marked Car road going "New" or "Remould" tyres that are permitted in law for road use only. available from any regular UK tyre distributor or Internet seller. They must have a shore hardness rating of a minimum of 55. The cost of the tyre must be such that it has, or has had an initial sales value inclusive of VAT of less than £60. Tyres must also comply with Rule 14.3.

NASA will maintain a register of approved Option B tyre makes/patterns. Tyres not on the approved listing are prohibited.

Where any "Option B" tyre is found to be below the stipulated hardness, the user will be reported for disciplinary action. The fact that an "Option B" tyre is on the approved list maintained by NASA does not mean that NASA agrees that all tyres of that make/pattern will necessarily conform to their hardness requirements. The responsibility lies with the competitor to ensure his "Option B" tyres comply with the NASA minimum hardness requirements

Wet Weather Tyres.
Wet weather tyres are listed separately by NASA are exempt from hardness control.
Wet Weather tyres may be fitted to any axle/wheel.
Wet Weather tyres must also comply with Rule 14.3.

Examples of permitted Wet Weather Tyre patterns are:
Maxsport: *RB 1, RB 3, Hakka II+. Hakka.*
Sportway: *AT1, AT2, Rallygrip, Ultragrippa.*

ii. Non-Drive Axles.
Tyres fitted to **non-drive axles** must be:
Either: Car road going tyres that are permitted in law for road use only
Or: Control Tyres Option "A", "B" or "Wet weather tyres".
Tyres must also comply with Rule 14.3.

iii Pre January 2012 Tyres.
Tyres in use prior to January 2012, currently in circulation and not marked "60" but of a pattern previously sold by an "Option A" seller will be deemed to be "Option B" and come under the "Option B" regulation making the user responsible for their hardness.

14.3 Eligibility

a). When a tyre is inspected and is not to the satisfaction of a scrutineer and or designated official then it is deemed as being in contravention of the NASA vehicle construction rules and will not be eligible for use.

b). It is Competitors responsibility to contact a scrutineer and or designated official to confirm that tyres are eligible. i.e. permitted by the NASA Scrutineers Committee **before** using them.

c). Tyres tread patterns must be only as permitted by NASA. Tyre tread patterns will be subject to regular review by NASA to ensure suitability for Autograss racing. (See d). iii.). NASA reserves the right to amend the permitted tyre tread pattern requirements at any time.

d). The following tyres are not permitted:

i. Option "A" Tyres sourced from a supplier not on the NASA permitted supplier list.
ii. Option "B" and or "Wet Weather" Tyres not on the NASA permitted tyre list.
iii. Tyres with an aggressive tread pattern. i.e. As a "Rule of Thumb" the "Tread Block" must be greater than the gap between the individual tread blocks.
iv. Tyres fitted with studs and/or attachments.
v. Implement. Industrial, Horticultural and or Agricultural tyres.
vi. "Hand-cut" tyres.
vii. Barum, Monarch Bartrack, Bridgestone Potenza RE39 R or 606, Yokohama MT14, Hoosier tyres.

e). Any tyre manufacturer wishing to introduce a new size and or pattern for use in Autograss Racing must contact the NASA Scrutineers Committee for approval. Patterns and Sizes must have been originally available at 30th September of the preceding year and as per the manufacturers submitted lists.

f). NASA reserves that right to trial tyres at any time - of any type from any supplier and will dictate at the time if any car using a trial tyre may be included within race results.

g) NASA reserve the right to consider and or appoint additional suppliers of "Option A" tyres at any time – Subject to them meeting the NASA Tyre criteria.

14.4 Tyres may be fitted with inner tubes. The placing of liquid into a tyre or inner tube is prohibited.

14.5 The use of any substance to enhance or improve the adhesion and/or softness & hardness properties of tyres is prohibited.

15 EXHAUSTS

15.1 All vehicles must be fitted with an efficient silencer capable of reducing the noise level to within the NASA specified noise limit 102 Db (A). For method of noise level measurement see SILENCING.

a). It is the competitor's responsibility to:

i). Ensure that his/her vehicle complies with sound testing regulations and it is recommended that competitors make themselves aware of any additional regulations imposed by clubs which they may visit before attending.
ii). Ensure that his/her vehicle is constructed such that noise testing may be readily and easily carried out.
iii).Familiarise themselves with the NASA Noise Test Chart showing the different engine r.p.m. test levels for different types of engines.

b). Test Engine RPM

The noise test engine r.p.m. shall be notified by NASA to each affiliated club's Chief Scrutineer by means of a list showing the different levels for different types of engines cc. NASA reserves the right to amend and or revise the engine test r.p.m. at any time.

Note.

i. A vehicle considered noisy by any official during racing may be disqualified notwithstanding that they may have passed the initial static test.
ii Where a silencer's performance is found to be insufficient to comply with the above, the use of any temporary modifications, including inserting drink's cans, extra wire wool etc., into the silencer outlet pipe etc; is prohibited.
iii. For further detailed information see also Members Handbook – SECTION – SILENCING.

15.2 Exhaust System - Restricted

The standard production original exhaust manifold and system must be retained in their entirety and remain in their original standard production position. (Vehicles fitted with Catalytic Converters see also Rule 15.4).

Note.

a. Standard production original and replacement system components only permitted.
b. "Single" (One) or "dual" (Two) silencer box replacement exhaust systems permitted.
c. The fitting and/or use of "Exhaust Wrap" or "Exhaust Blanket" or "Heat Screen" or "Heat Shield" or "Pipe Shield" or "Insulating Material" or "Heat Barrier" or "High Temperature Coating" or any non standard production material or covering or coating or device that controls exhaust temperatures or affects exhaust scavenging is prohibited.
d. Exhaust mounting rubbers may be modified to retain vehicle exhaust system
e. Any device(s) that acts as a valve and or regulator, whether adjustable or not, upon the exhaust gas flow within the exhaust system is/are prohibited.

15.3 Fuel Injection – Lambda Sensor.

For vehicles fitted with Fuel Injection as a standard production item the Exhaust Lambda (Oxygen) Sensors shall be retained in their standard production location and remain in their standard production form.

15.4 Catalytic Converters

Catalytic Converters may be retained or removed. If removed the space remaining in the exhaust system pipe-work, following removal of the catalytic converter must be filled in with a piece of exhaust pipe that is of round circular section of a diameter that is the same as or not greater than the remaining standard production exhaust pipe-work.

Note. The use of a proprietary replacement system from the exhaust manifold connection through to the rear incorporating the standard silencer but without a catalytic converter is permitted. Such a system must match the standard production exhaust system in pipe internal diameter and shape/profile including twists and turns.

15.5 The exhaust system must not protrude beyond the vehicle bodyline. The rear tailpipe may be shortened / cut, at any point after the standard production rearmost support bracket, to prevent it protruding beyond the vehicle bodyline.
Nissan Micra 1.0 16V (CG10DE). Toyota Yaris 998cc 16v.
Shortening point is from 25mm after rear silencer box.

16 SAFETY SHIELDS

16.1 All vehicles must be fitted with a metal fire shield that completely separates and protects the driver from the engine unit.

16.2 Sump guards are permitted. Material of guard is free. The guard shape and dimensions is restricted to the following:
Plan area: Absolute minimum necessary to protect the engine/gearbox sump pan only. There shall be no vertical surface extending above the base of the vehicle chassis or front sub frame. The sump guard area shall not be extended to incorporate suspension system and/or suspension component protection.
Nissan Micra 1.0 16V (CG10DE). Toyota Yaris 998cc 16v.
Sump Guard prohibited.

16.3 Oil, water and fuel pipes, when fitted inside the driver's compartment, must be secure, completely encased in a suitable material and of continuous length, from the point it enters to the point it leaves the driver's compartment. The material must be of sufficient strength to act as a mechanical protection.

17 SUSPENSION

17.1 Suspension type is restricted.
The standard production suspension system must be retained. “Concentric Strut Top” mountings prohibited.
It is not permitted to modify any suspension component unless the alteration of the component concerned is specified within the rules.
Note.
Nissan Micra 1.0 16V (CG10DE).
Rear Panhard rod (Panhard bar/Track bar) may be fitted with “Gusset” and or reinforcing bar/plate along lower edge of the “U” section only.
The modification of panhard rod, including enabling it to become adjustable, is prohibited.
The replacing of the panhard rod by a non standard item or non-steel item is prohibited.

17.2 Wheel Camber & Wheel Castor
As Palgrave/Glasses Guide Technical Services Manual Data Sheet for the vehicle concerned.
It is not permitted to alter the camber / geometry of the suspension.

Slight deviation from standard as a result of race track conditions are acceptable. Excessive deviation of the camber angle from standard prohibited.

Wheel Alignment (Toe in/out). – Free.

17.3 Front and Rear Suspension Springs – The standard production suspension springs must be retained.
“Concentric Strut Top” mountings prohibited.

17.4 Rear Suspension Bushes – The standard production suspension bushes must be retained.
Bump Stops – The standard production bump stops must be retained.
Competition/Poly/Nylon/upgraded bushes & Stops prohibited.

17.5 Standard production original and standard replacement front and rear dampers that are of the oil and/or gas filled type only are permitted. Uprated and or Modified and or Competition and or adjustable and or ‘remote reservoir’ and or ‘piggy-back’ type dampers and/or shock absorbers are prohibited.
Standard production replacement units as manufactured by: “KYB – Excel/Ultra”; Monroe – Original/Reflex” permitted.
Note.
Nissan Micra 1.0 16V (CG10DE). Toyota Yaris 998cc 16v.
‘Bilstein’, ‘Spax’ or Gmax or similar equivalent and or equal type units prohibited.

17.6 Wheel Hubs shall be retained in their standard production location and shall remain in their standard production form.
Standard production originals and NASA Scrutineers Committee permitted replacement wheel hub components only must be used.
Devices which alter the mounting angle of the rear hub assembly from the standard production settings are prohibited

17.7 Citroen AX 954cc, Peugeot 106 954cc, Saxo 954cc
Nissan Micra 998cc 16v. Toyota Yaris 998cc 16v.
A proprietary manufactured “Strut Brace” may be fitted transversely between the engine compartment suspension top turret housings.

17.8 Vehicle ride height.
Any car where the ride height is felt to be high or to low to enhance the cars performance will be ordered and required to alter its ride height in respect of safety. Failure to comply will result in disqualification and disciplinary action..
No minimum or maximum ride heights will be given, except for specified vehicles. The ride height will be compared to cars in full road spec trim.
Note.
Nissan Micra 1.0 16V (CG10DE)
Centre of wheel hub to arch lip vertical distance minimum. Front = 340mm. Rear = 365mm.
Toyota Yaris 998cc 16v
Centre of wheel hub to arch lip vertical distance minimum. Front = 380mm. Rear = 380mm.

18 PROTECTION

18.1 Front Protection / Reinforcement.
No internal or external protection or reinforcement is permitted on the front of vehicles, other than DISTRIBUTOR protection.

18.2 Side Protection / Reinforcement.
No internal or external protection or reinforcement is permitted on the side of vehicles.

18.3 Rear Protection.
Restricted to one 25mm x 25mm (1" x 1") steel tube box section bar fitted either inside of the rear panel, or bolted flush to the outside of the panel. The width to be not more than to the centre line of the rear wheels. (See Fig.10). It is not permitted to connect the protection bar to the roll cage or brace bars.

18.4 Rear Protection Support Bars.
Restricted to a no more than two (2) brace bars 25mm x 25mm (1" x 1") maximum steel tube box section that may be used to support the protection bar. (See Fig.10).
Note.
Where the protection bar is fixed flush to the outside of the rear panel, the support bars may pass through the rear panel. The support bars must be connected to the rear boot/luggage compartment floor only. It is not permitted to connect the support bars to the roll cage or brace bars or main chassis rails.

18.5 Distributor Protection.
Restricted to one 25mm x 25mm (1" x 1") maximum steel tube box section bar fitted in the local distributor area. The top of the bar to be bolted to the engine, the bottom to be sub-frame or lower chassis.
Note. The use of non steel bar material, or other forms of construction prohibited.

19 VEHICLE CHECK SHEETS – CLASS 1.

All VEHICLES.
NASA reserves the right to designate the information reference source and the method of component checking.
Note.
The 'Vehicle Check Sheet' data and other designated information source will be used in conjunction with the particular vehicle Palgrave / Glasses Guide Technical Services Data Sheet as a reference when checking the eligibility and legality of the vehicle and or any of its components.

Components used must be NASA Scrutineers Committee permitted "Standard production" or "Standard production replacement" items.
Components specifically manufactured for and or fitted to "Rally", "Homologation" "Motorsport", and "Competition" including low volume/number(e.g. less than 5,000) "Limited edition" and or "Special" type models or variants of vehicle by the original vehicle manufacturer or manufacturer appointed organisation or company are prohibited.
The replacing of any steel component with a steel or non-steel lightweight material component is prohibited.

In the event of any doubt a Scrutineer must be contacted for clarification before using the component concerned.

In order that an engine, engine ancillaries, and gearbox may be checked to ensure standard components have been used, given below are a set of dimensions and details.

THESE DIMENSIONS GIVEN ARE TO CHECK THE LEGALITY OF THE VEHICLE, ENGINE, ENGINE ANCILLARIES, AND GEARBOX, NOT TO BUILD A VEHICLE, ENGINE, ETC. TO.

All dimensions given, either maximum or minimum, include tolerances to cover all manufacturing deviations.

Any standard component checked will be within the dimensions given, hence any deviation at all above a maximum or below a minimum shows an ILLEGAL COMPONENT.

As all dimensions given include a tolerance for manufacturing deviations, where an engine is checked and found to have 10% of dimensions, to the absolute limit given, this unit will be deemed ILLEGAL.

The suspension dimensions have been given so that if it is felt a vehicle may be outside variations through normal wear and tear, a check may be carried out to ensure standard components have been used and correctly fitted.

DIMENSIONS AND DETAILS ARE GIVEN IN ORDER OF AN ENGINE STRIP and or VEHICLE CHECK.

SPECIFIED VEHICLES.

VEHICLE CHECK SHEET - CLASS 1 - MINI 998cc

CYLINDER HEAD
Permissible casting numbers: 12A1456 or CAM4810 (Mini type only).
The cylinder head MUST be complete with standard by-pass hose fittings.
Head Thickness Minimum 2.7".

VALVE LIFT & VALVE TIMING
The following valve lift & valve timing combinations only are permitted. A camshaft that complies with the stated later A+ Series engine Valve Lift and Timing details may be used in an earlier A series engine and vies-versa.
The timing for cam full lift and opening & closing figures must be within.
+/- 5 degrees of stated figures below when measured at rocker. i.e. camshaft fitted within engine complete with all valve operating components.
+/- 2 degrees of stated figures below when measured direct off cam lobe. i.e. camshaft without all valve operating components.

Either:
VALVE LIFT- At "as raced" valve clearance.
Maximum Inlet Valve Lift = 7.24mm (0.285").
Maximum Exhaust Valve Lift = 7.24mm (0.285").

VALVE TIMING
At 0.021" tappet clearance.
5° BTDC - 45° ABDC - 40° BBDC - 10° ATDC.
(As originally fitted to the A series engines and early A+ Series engines).
Or
VALVE LIFT - At "As raced" valve clearance.
Maximum Inlet Valve Lift = 8.08mm (0.318").
Maximum Exhaust Valve Lift = 7.62mm (0.300").

VALVE TIMING
At the 0.019" tappet clearance.

9° BTDC - 41° ABDC - 49° BBDC - 11° ATDC.
(As originally fitted to the later A+ Series engines).

VALVE GUIDES
A standard production OE or NASA permitted reconditioned and or replacement type only is permitted. 'K-lined' valve guides permitted.
Bronze valve guides not permitted.

CAMSHAFT
A standard production OE (BL and/or Rover) or NASA authorised replacement camshaft only is permitted. The camshaft must remain in its original standard production form and be complete with identifying rings and or markings.
The production or adaptation or modification of a camshaft to provide the listed valve timing and/or valve lift, but non standard timing and/or valve lift at regular degrees of rotation is prohibited

NASA Authorised and permitted camshaft
'NASA 1' or "NASA 1 99" as manufactured by 'Kent Cams.
Allitt Class 1 Camshaft as supplied by Allitt Mortorsport.
Note.
A. The use of a camshaft found to have identification markings that are false or misleading or 'tampered with', will result in the competitor or where a vehicle is shared, competitors concerned (i.e. **ALL** drivers of the particular vehicle involved), being subject to disciplinary action.

B. NASA reserve the right to have a camshaft removed from a competitor's vehicle and retain that camshaft for examination to ensure compliance with the original vehicle manufacturers standard production details. The camshaft may be returned to the competitor concerned or confiscated at the discretion of the NASA Chief Scrutineer.

CARBURETTOR – Must remain as standard production.
Drawing no. 1, check sharp corners, undercuts, machined bore, butterfly for smoothing or thinning and butterfly screws for shortening or smoothing.

'J'	CARBURETTOR JET DIA.	'J'	0.090" MAX
'C'	CARBURETTOR BORE	'C'	1.502" MAX
'U'	BUTTERFLY THICKNESS	'U'	0.060" MIN

CARBURETTOR NEEDLE
A carburettor needle must be fitted.
Material = As standard production.
Size/Shape (Length & Diameter) = FREE

CARBURETTOR SPACER (1 ¼" & 1 ½")
Alloy & Polypropylene types permitted.
Check all internal surfaces of spacer, must be as original standard production finish. Must not be bored out, or polished, or reshaped, or formed.
The 1 ½" version must retain the internal lip.

INLET/EXHAUST MANIFOLD
Check all internal surfaces of inlet and exhaust manifold, should be rough as cast with exception of localised machining as shown in drawing no.3.

'EM' EXHAUST OUTLET	'EM'	1.160" MAX
'IM' INLET INLET	'IM'	1.590" MAX

ROCKER ARM – Type Restricted.
The use of a "pressed steel" rocker arm is NOT permitted.
The use of a "Cooper 'S' cast rocker arm is NOT permitted.
All engines must be fitted with the CAM289 sintered rocker arm.

ROCKER SHAFT – Type Restricted.
Rocker Shaft – Standard production replacement "thin" or "thick" wall shaft permitted. "thick" wall shaft (Part No. C-AEG399) or equal prohibited.

CYLINDER HEAD AND VALVES
All port and combustion chamber surfaces to be rough 'as cast' with the exception of localised machining shown in Drawings 4, 5, 6 and 7.

Cylinder head 'lead free conversion' permitted.
A '3 angle cut' to valve and valve seat permitted.
N.B. - The top face of any valve insert must be fitted below or in line with the combustion chamber face.

'HT'	Head Thickness	'HT'	2.7" MIN
'V'	Length of Taper	'V'	7/16" MAX
'X'	Diameter of Inlet Port Entry	'X'	1.190 MAX
F'	Diameter Of Inlet Port	'F'	0.950" MAX
'EG'	Depth of Exhaust Valve Guide (From Cylinder Head Face to valve guide nose)	'EG'	1.150" MAX
'EGB'	Exhaust Guide Boss	'EGB'	1.187" MAX
'IG'	Depth of Inlet Valve Guide (From Cylinder Head Face to valve guide nose).	'IG'	1.150" MAX
'ET'	Diameter of Exhaust Throat	'ET'	0.920" MAX
'IT'	Diameter of Inlet Throat	'IT'	1.013" MAX
'EW'	Exhaust Seat Width	'EW'	0.070" MIN
'IW'	Inlet Seat Width	'IW'	0.050" MIN
'EV'	Exhaust Valve Thickness	'EV'	0.055"MAX
'IV'	Inlet Valve Thickness	'IV'	0.065"MAX
'EX'	Exhaust Valve Head Diameter		AS T.S.D. MANUAL
'IN'	Inlet Valve Head Diameter		AST.S.D. MANUAL
VALVE SEAT ANGLE			AS T.S.D. MANUAL
VALVE SPRING FREE LENGTH			2.080" MAX
ENGINE BORE			2.608" MAX
ENGINE STROKE			3.005" MAX

PISTONS.
Standard production original and replacement pistons only permitted. The piston must not protrude above the top of the cylinder block top face.
Where 3 ring pistons are used, 3 rings MUST be fitted.
Where 4 ring pistons are used, 4 rings MUST be fitted.
Piston skirts must not be modified or shortened.
The replacing of the original manufacturers phosphor bronze conrod bush and replacing it with a steel bush to convert from 'circlip' to 'press fit' gudgeon pins in pistons is permitted.
The fitting of 'Teflon buttons' is not allowed.

DISTRIBUTOR
As T.S.D. Manual.
The adaptation of the listed distributors, where they are fitted to other vehicle makes and/or models is prohibited.

The standard production original distributor must be retained in its entirety and remain in its original standard production form.
Modification including disconnection and or removal and or sealing to prevent or enhance operation prohibited.

Check for vacuum system & base-plate modifications.

FLYWHEEL AND CLUTCH.
The starter ring gear must be the correct type for the flywheel used.
Standard production original and replacement clutch only permitted

MAIN BEARINGS.
Machining of the A+ cylinder block main bearing and main bearing cap is permitted to suit the fitting of A series main bearings.

GEARING FULL STRIP CHECK.
During a full strip, given below are the numbers of teeth in gearbox.

4 Synchro gearboxes only permitted.

	1970 to 1981		1981 to 1983		1984 to 1992	
	Lay gear	gear	Lay gear	gear	Lay gear	gear
1st	15	31	15	31	15	31
2nd	20	26	21	26	21	25
3rd	25	21	26	21	27	20
4th	29	17	30	17	31	16
1st motion shaft gear			29 or 24 teeth			
Idle gear			37 or 31 teeth			
Primary gear			29 or 24 teeth			

"Overall "drop gear" ratio must be as standard production**.** i.e. 1:1"
The input and output gear must have the same number of teeth.
Input Gear & Output gears are available with either 28 or 27 teeth.

Rod Change Gearbox Gear Linkage: – Steady Shaft & Selector Rod must be steel.

DIFFERENTIAL RATIO
The following ratios only may be fitted. 2.95:1 3.105:1 3.44:1 3.765:1

DIFFERENTIAL FULL STRIP CHECK.
During a full strip, given below are the numbers of teeth on the Crown Wheel and Pinion.

Ratio	2.95:1	3.105:1	3.44:1	3.765:1
Crown Wheel Teeth	59	59	62	64
Pinion Teeth	20	19	18	17

DIFFERENTIAL TURNING TORQUE
The differential must have a turning torque of a maximum of 3 lbf/ft (36 lbf/in) (0.34 Nm) at all times, when measured at the wheel hub. i.e. When the transmission is set to neutral and the nearside wheel and tyre raised off the ground whilst the offside wheel and tyre assembly remains on the ground, and vice-versa, then when a torque wrench is applied onto the wheel hub nut the maximum turning torque of the

differential and driveshaft assembly must not exceed the stated maximum regardless of the temperature of the unit.
See T.S.D Manual Sheet for other measurements.

SUB-FRAMES
The front and rear sub-frames must remain in their standard production form.
All connections, fittings and brackets must remain.
The cutting and modification of the sub-frame under the guise of “Repairs” and or “Replacing rusted areas” is prohibited.
The use of an ‘Automatic Mini’ sub-frames is prohibited.

SUSPENSION – REAR RADIUS ARMS
The rear radius arm assembly must remain in its standard production form.
Lightening or thinning of shaft and or stub axle prohibited.

SUSPENSION – RIDE HEIGHT
Any car where the ride height is felt to be high or to low to enhance the cars performance will be ordered to alter its ride height in respect of safety. The stating of a maximum rear wheel centre to wheel arch distance is under consideration.

VEHICLE CHECK SHEET CLASS 1 - CITROEN AX 954cc
Engine type: C1A (type TU9/K)
Head Thickness Minimum 110.5mm.
954cc Cylinder Head Casting number 'xxxxxxx110'
Cylinder Heads marked "M+" and or of the 1124cc engine are prohibited.
Inlet port diameter (as measured at the gasket face) = 25mm
Inlet valve head diameter = 34.80mm
Exhaust valve head diameter = 27.90mm

Overall Length/Depth of valve guide = 47.5 +/- 0.3mm
Internal Diameter of Valve Guide = 7mm
Depth of Valve Guide from top to head face
Inlet = 14.57 +/- 0.1mm
Exhaust =14.07 +/- 0.1mm
Valve Spring Free Length = 54mm

Piston Diameter = 69.94
(Oversize's A+0.01mm, B+0.02mm, C+0.03mm)
No of Piston rings = 3
Piston Liner Internal Diameter = 70.00mm
(Oversize's A+0.01mm, B+0.02mm, C+0.03mm)

Crankshaft Stroke = 62.00mm

Carburettor Type = Weber 32 IBSH 16/100
Or Solex 32 PBISA 16 412
Note.
It is not permitted to use a carburettor from the 1124cc or 1360cc engines on the 954cc engine.

Fuel Injection Single Point = Bosch mono motronic MA3.0
Injectors must be standard and correct for engine.
Injectors from other models and or vehicles prohibited.

Front Suspension Coil Spring: Free length = 339mm
Spring Wire Diameter = 11mm

Brakes
Front Brake Disc:- Standard production diameter = 238mm.
Front Brake Disc:- Standard production thickness = 8.0mm Maximum. 6.0mm Minimum.

See T.S.D Manual Sheet for other measurements.

VEHICLE CHECK SHEET CLASS 1 – PEUGEOT 106 954cc & CITROEN SAXO
Engine type: C1A (type TU9/K) (Carb). CDZ & CDY (TU9/M) (Inj).

Head Thickness Minimum 110.5mm.
954cc Cylinder Head Casting number 'xxxxxxx110'
Cylinder Heads marked "M+" and or of the 1124cc engine are prohibited.
Inlet port diameter (as measured at the gasket face) = 25mm
Inlet valve diameter = 34mm
Inlet valve head diameter = 34.80mm
Exhaust valve head diameter = 27.90mm
Overall Length/Depth of valve guide = 47.5 +/- 0.3mm
Internal Diameter of Valve Guide = 7mm
Depth of Valve Guide from top to head face
Inlet = 14.57 +/- 0.1mm
Exhaust =14.07 +/- 0.1mm

Valve Spring Free Length = 54mm

Piston Diameter = 69.94
(Oversize's A+0.01mm, B+0.02mm, C+0.03mm)
No of Piston rings = 3

Piston Liner Internal Diameter = 70.00mm
(Oversize's A+0.01mm, B+0.02mm, C+0.03mm)
Crankshaft Stroke = 62.00mm

Carburettor Type = Weber 32 IBSH 16/100
Or Solex 32 PBISA 16 412
Note.
It is not permitted to use a carburettor from the 1124cc or 1360cc engines on the 954cc engine.

Fuel Injection Single Point = Bosch mono motronic MA3.0 / MA3.1
Injectors must be standard and correct for engine.
Injectors from other models and or vehicles prohibited.

Brakes
Models without ABS/Power Steering:
Front Brake Disc - Solid:- Standard production diameter = 238mm.
Front Brake Disc - Solid:- Standard production thickness = 8.0mm Maximum. 6.0mm Minimum.

Models with ABS/Power Steering:
Front Brake Disc - Solid:- Standard production diameter = 247mm.
Front Brake Disc – Solid:-Standard production thickness = 10.0mm Maximum. 8.0mm Minimum

Front Brake Disc - Vented:- Standard production diameter = 247mm.
Front Brake Disc – Vented:-Standard production thickness
= 20.4mm Maximum. 18.4mm Minimum

See T.S.D Manual Sheet for other measurements.

VEHICLE CHECK SHEET CLASS 1 - NISSAN MICRA 998cc 16V.
Engine type: CG10DE
Head Thickness Minimum 121mm
Inlet valve head diameter (Max) = 27.6mm
Exhaust valve head diameter = 22.6mm
Valve Guide height above head (Max) = 11.7mm
Valve Spring Free Length = 40mm
Piston Diameter = 70.98
No of Piston rings = 3
Crankshaft Stroke = 63.00mm

Fuel Injection Multiple Point = ECCS
Injectors must be standard and correct for engine.
Injectors from other models and or vehicles prohibited.
“Almera” type prohibited.
“Rev Limiters” must operate at standard production rpm maximum.
Check for holes drilled and slits cut into air box & duct air intake system.

Brakes
Front Brake Disc - Solid:- Standard production diameter = 237mm.
Front Brake Disc - Solid:- Standard production thickness = 12.0mm Maximum. 10.0mm Minimum.
Rear Brake Drum - Standard production diameter = 180mm minimum. 181.5mm Maximum.
Rear Brake Disc (ABS):-Standard production diameter = 240mm

Suspension
Front Wheel Camber = -0º 26’ / 1º 04’ Max.
Rear Wheel Camber = -0º 35’ / 0º 05’ Max.

Front Spring Coil Diameter = 106.5mm Max.
Front Spring Wire Diameter = 11mm Max.
Rear Spring Coil Diameter = 113mm Max.
Rear Spring Wire Diameter = 11mm Max.

Wheels/Tyres
Diameter = 13” only.
Width = Size 13” x 5.5” maximum
Tyre size = 135/80 x 13, 145/80 x 13, 155/70 x 13.
Check correct tyres & wheels fitted.

See T.S.D Manual Sheet for other measurements.

VEHICLE CHECK SHEET CLASS 1 - TOYOTA YARIS 998cc 16V.
Engine type: 1SZ-FE
Head Thickness Minimum 114.30mm.

Inlet valve head diameter (Max) = 26mm.
Exhaust valve head diameter (Max) = 22.6mm.
Valve Spring Free Length = 55.5mm

Camshaft VVT Controller & System must be as standard production.
Modification is prohibited.
“Rev Limiters” must operate as standard production rpm maximum.

Piston Diameter = 68.972
No of Piston rings = 3
Piston Crown must remain as standard complete with ‘Fitment Dot’.

Cylinder Bore = 69.0/69.012mm
Crankshaft Stroke = 66.70mm

Fuel Injection Multiple Point.
Check for holes drilled and slits cut into air box &air intake duct systems.
Injectors must be as standard and correct for engine.
Injectors from other models and or vehicles prohibited.

Brakes
Front Brake Disc - Solid:- Standard production diameter = 235mm.
Front Brake Disc - Solid:- Standard production thickness = 18.0mm Maximum. 16.0mm Minimum.

Rear Brake Drum - Standard production diameter = 200mm minimum. 201mm Maximum.

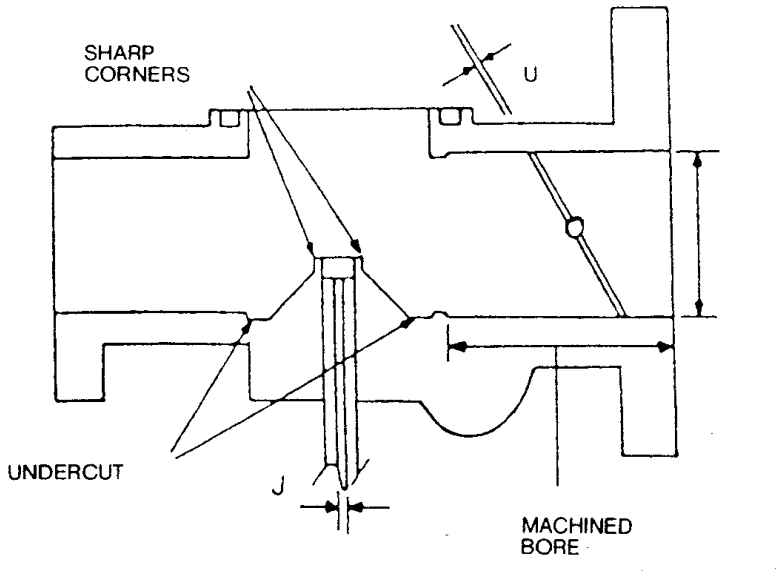
Suspension
Front Wheel Camber = -0º 35' -/+45' Max.
Rear Wheel Camber = -1º 00' -/+ 45' Max.

Wheels/Tyres
Diameter = 13" or 14"
Width = Size 13" x 5.5" maximum
Size 14" x 5.5" maximum
Tyre size = 155/70 x 13. 155/80 x 13.
Or 165/65 x 14. 175/65 x 14
Check correct tyres & wheels fitted.

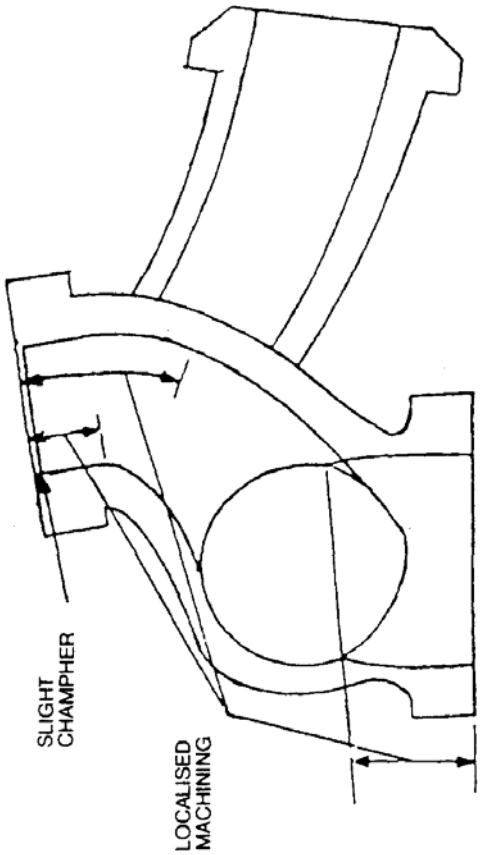
See T.S.D Manual Sheet for other measurements.

DRAWINGS

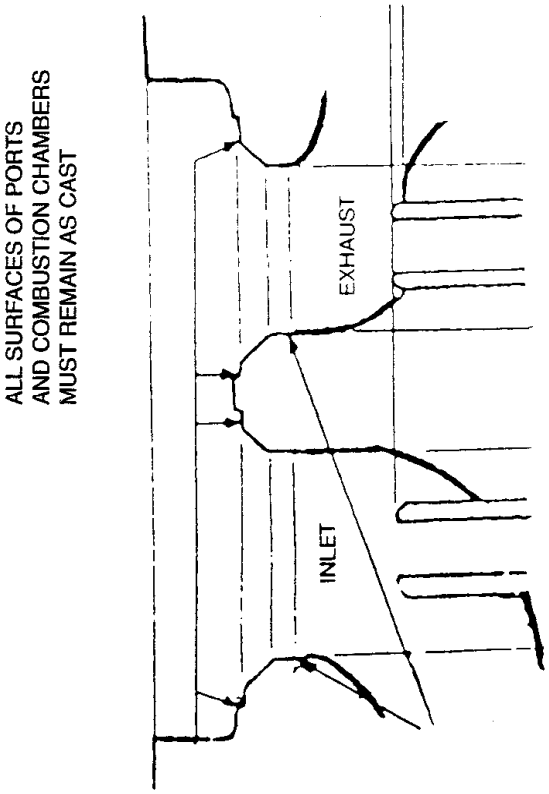
DRAWING No. 1 CLASS 1 - MINI: CARBURETTOR



DRAWING No. 2 CLASS 1 - MINI: INLET – EXHAUST MANIFOLD

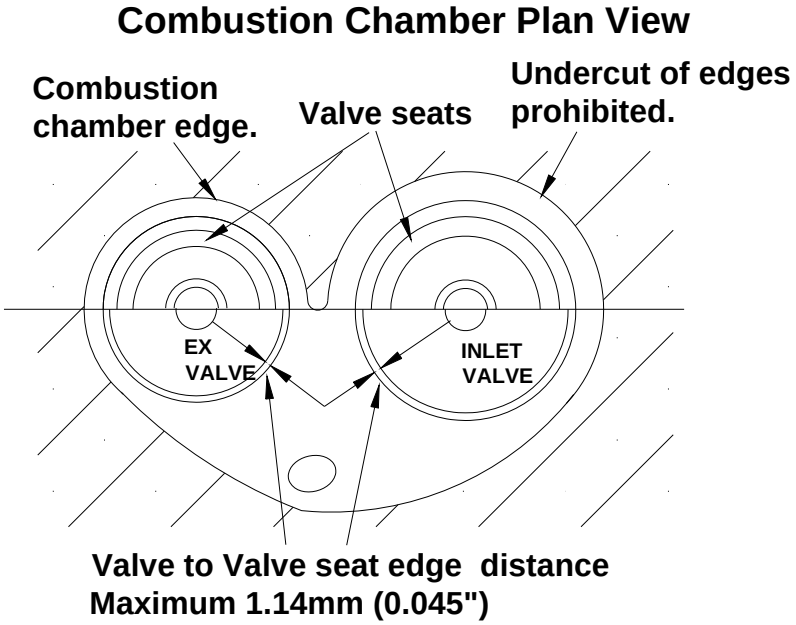


DRAWING No. 3 CYLINDER HEAD INLET & EXHAUST PORTS



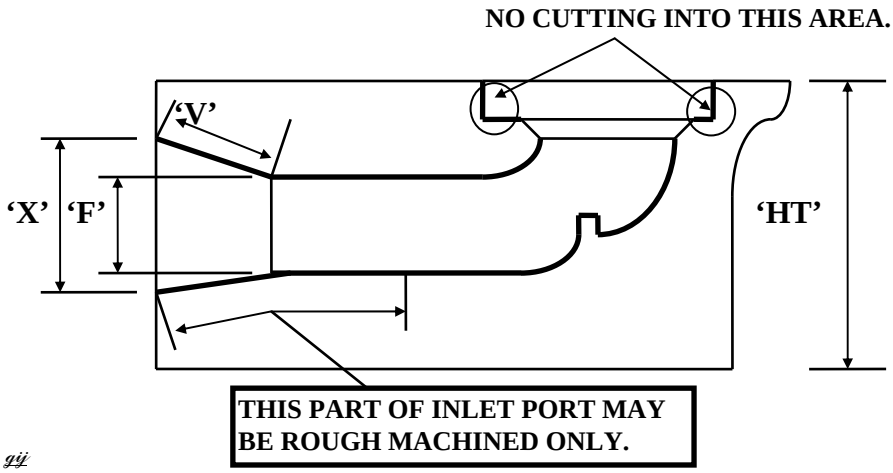
The surfaces of the combustion chamber and inlet port must remain as produced by the original vehicle manufacturer.
i.e. “Rough as cast”
Polishing and or Machining and or Grinding and or Reshaping of surfaces is prohibited.
Valve Seat angle to be as T.S.D. Manual.
Valve seat and or insert must not be offset.
Valve guide nose depth from Cylinder Head face as check sheet.

DRAWING No. 4 CYLINDER HEAD COMBUSTION CHAMBER



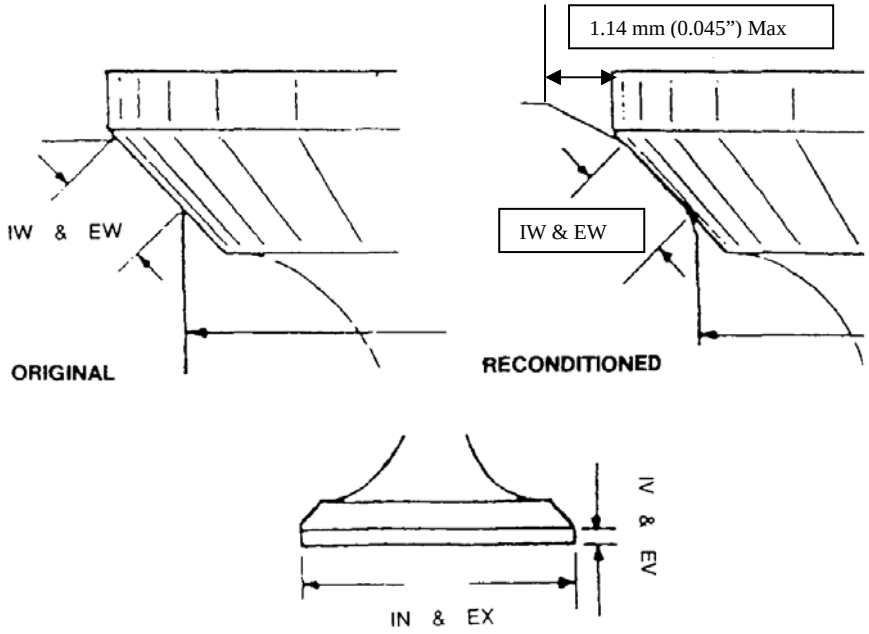
The surfaces of the combustion chamber must remain
as produced by the original vehicle manufacturer.
i.e. “Rough as cast”
Polishing and or Machining and or Grinding and or
Reshaping and or cutting of surfaces is prohibited.
Reshaping and or cutting into the combustion chamber base and or sides
adjacent to a valve insert is prohibited.

DRAWING No. 5 CLASS 1 - CYLINDER HEAD INLET & EXHAUST PORTS



The surfaces of the inlet and exhaust ports must remain
as produced by the original vehicle manufacturer. i.e. “Rough as cast”
Polishing and or Machining and or Grinding and or Reshaping
of surfaces other than shown is prohibited.
“3 Angle cut” to valve and valve seat permitted.
Reshaping and or cutting into the combustion chamber base
adjacent to a valve insert as part of the “3 Angle Cut” process is prohibited

DRAWING No. 6 VALVE & VALVE SEATS

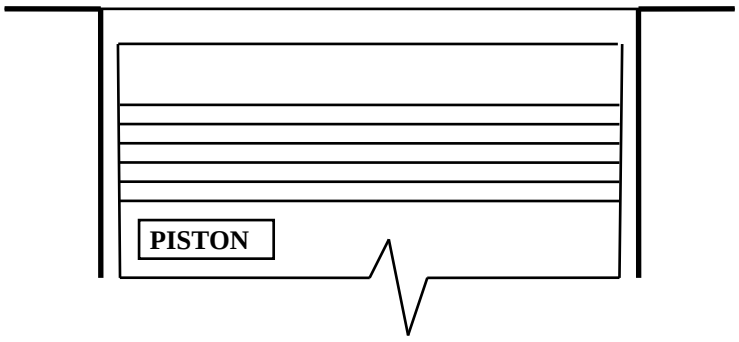


Valve Insert top face must be below or In Line with Combustion Chamber Face.
"3 Angle cut" to valve and valve seat permitted.
(Top cut max =1.5mm beyond valve rim).
Reshaping and or cutting into the combustion chamber base and or sides adjacent to a valve insert as part of the "3 Angle Cut" process is prohibited

DRAWING No. 7 PISTON IN CYLINDER BORE

Pistons to be as standard production original and replacement complete with identification marks.
Piston skirts must not be modified or shortened.

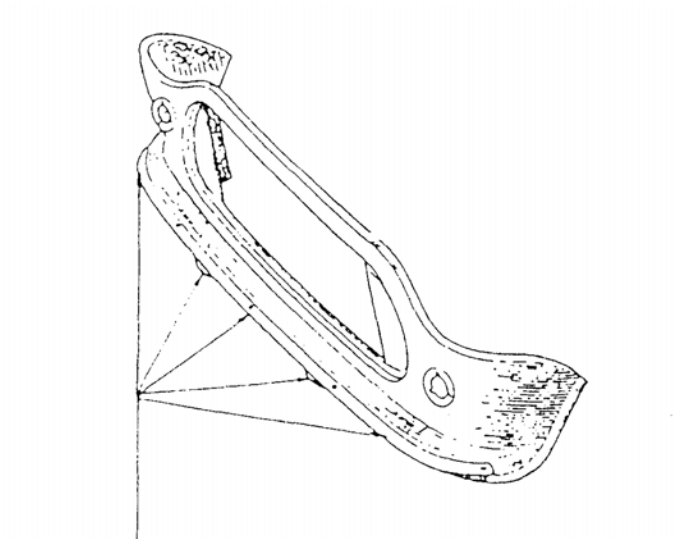
Piston Rings.
The omission of any piston ring is prohibited.
Where 3 ring pistons are used, 3 rings MUST be fitted
Where 4 ring pistons are used, 4 rings MUST be fitted



THE PISTON MUST NOT PROTRUDE ABOVE THE CYLINDER BLOCK TOP FACE.

gjj

DRAWING No. 8 CLASS 1 - MINI: FRONT PANEL



The front bumper brackets and
Support lip ONLY may be removed

Figure 1a Roll Cage – Side Elevation

All Bars - Minimum sizes and specified wall thickness as Rule 11.

Bar Tb is mandatory. Bar Fb is optional.

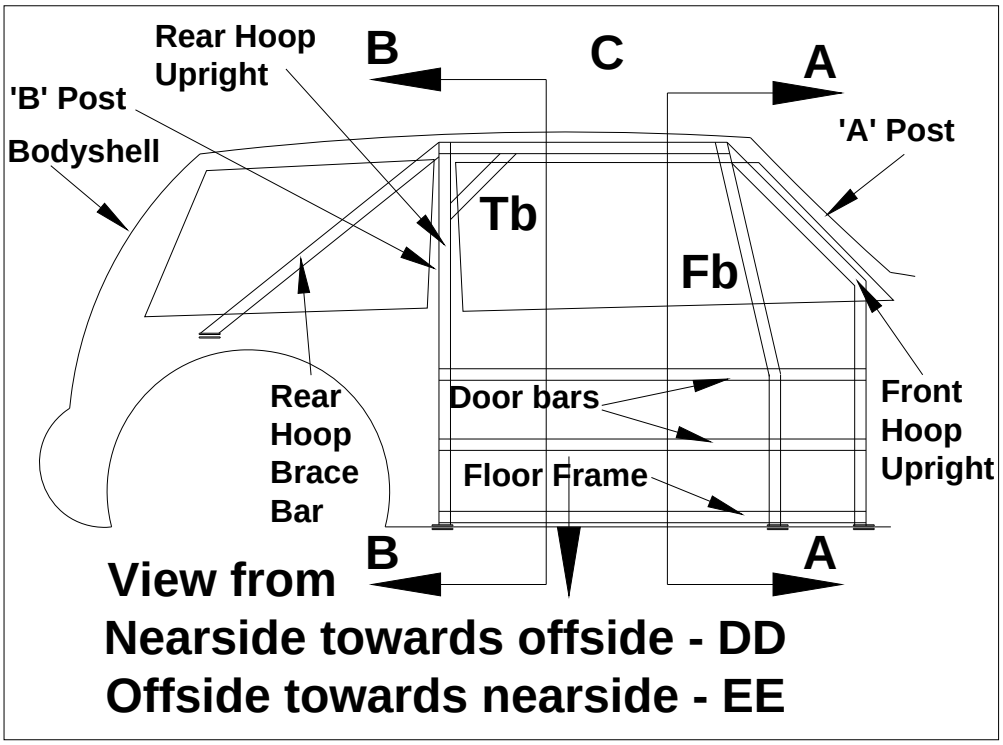


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Figure 1b Roll Cage - Front & Rear view

All Bars - Minimum sizes and specified wall thickness as Rule 11.

Bar Fb is optional.

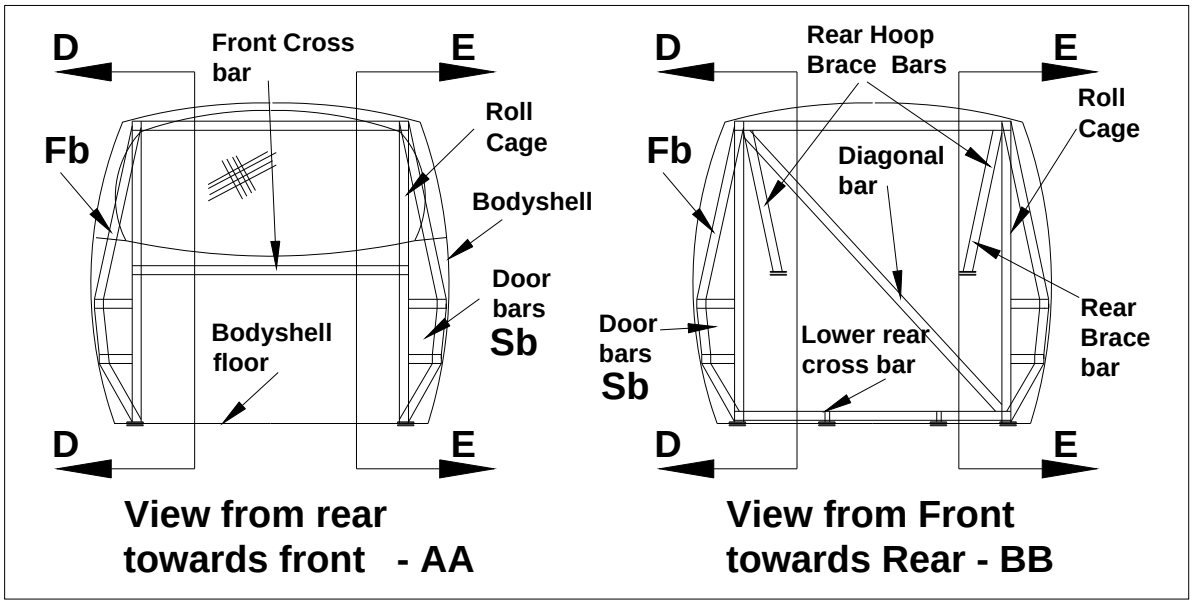

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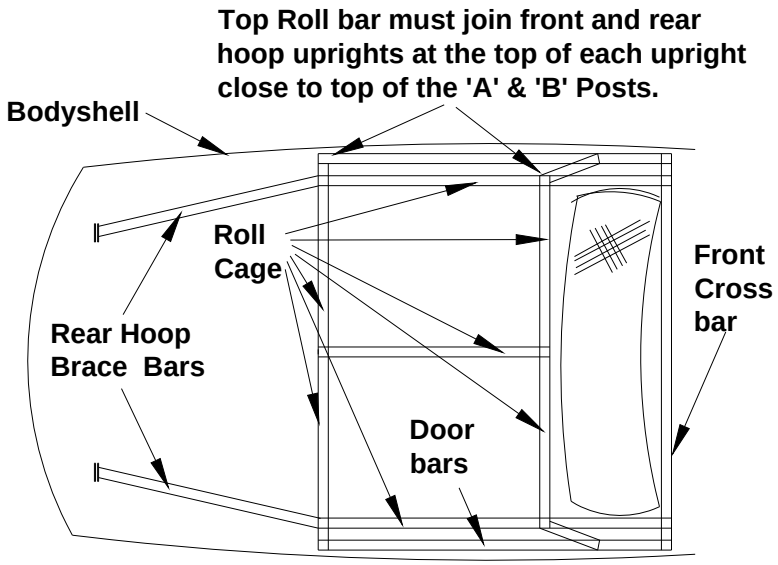
Figure 1c Roll Cage - Plan View – Centre Bar

All Bars - Minimum sizes and specified wall thickness as Rule 11.

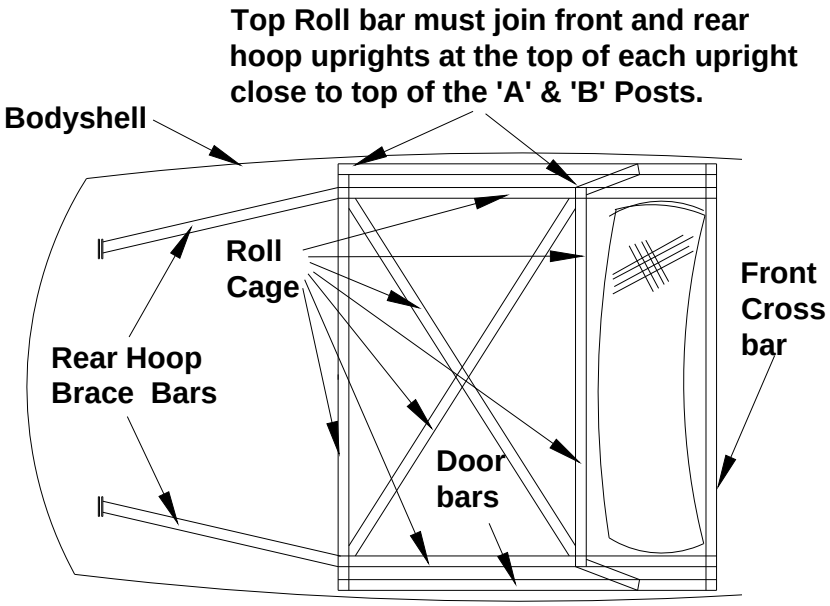


View from above - C

~~gjj~~

Figure 1d Roll Cage - Plan View – Cross bars

All Bars - Minimum sizes and specified wall thickness as Rule 11.



View from above - C

~~gjj~~

Figure 1e Roll Cage - Plan View Centre & Cross Bars Combined
All Bars - Minimum sizes and specified wall thickness as Rule 11.

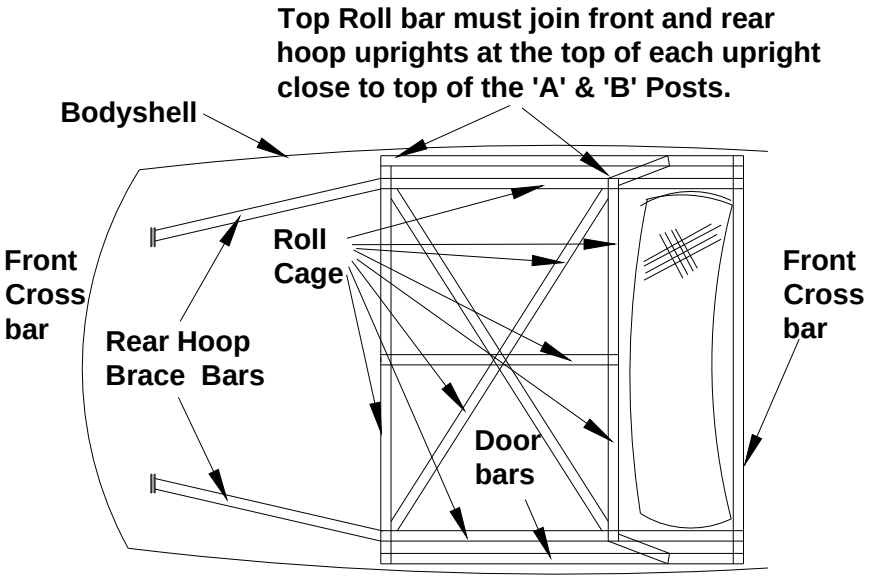


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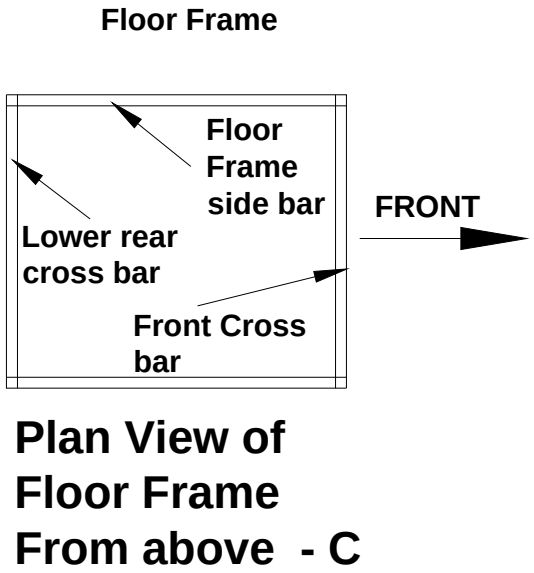
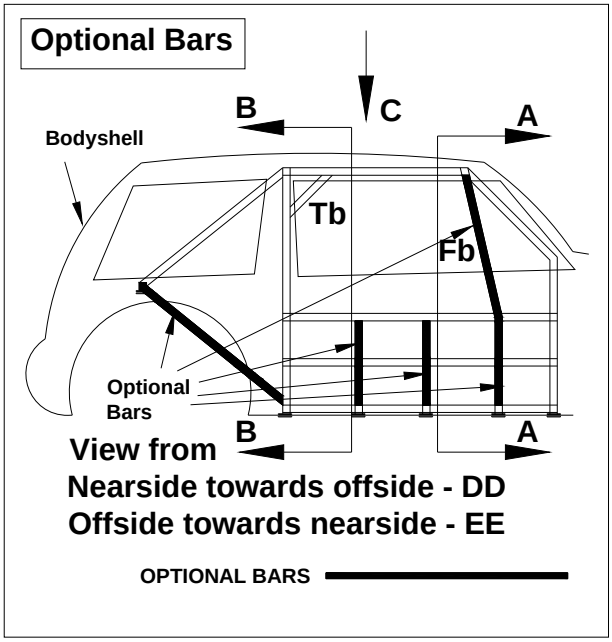
Figure 1f Floor Frame
All Bars - Minimum sizes and specified wall thickness as Rule 11 & 16.



gij

Figure 1g Optional Bars

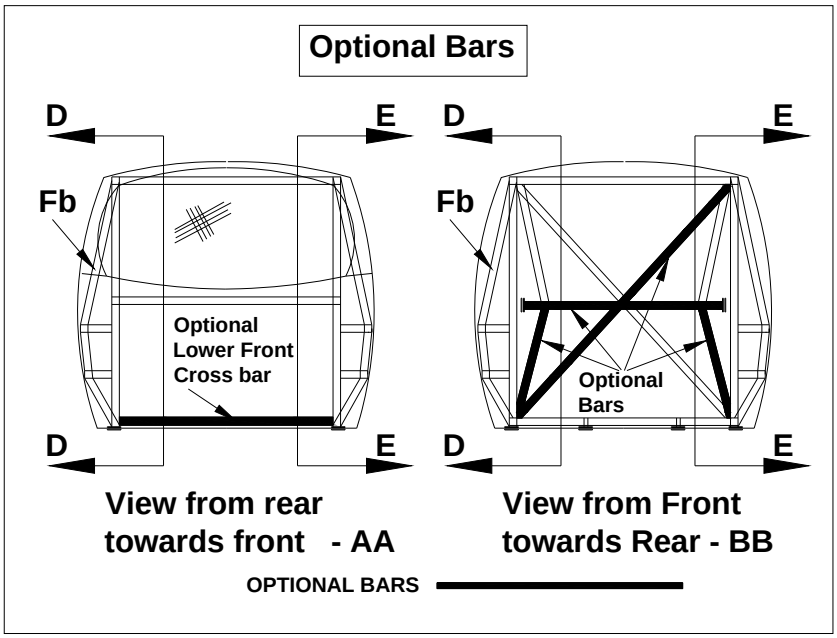
All Bars Minimum sizes and specified Wall Thickness & as Rule 11.
Bar Tb is mandatory.



~~gjj~~

Figure 1h Optional Bars

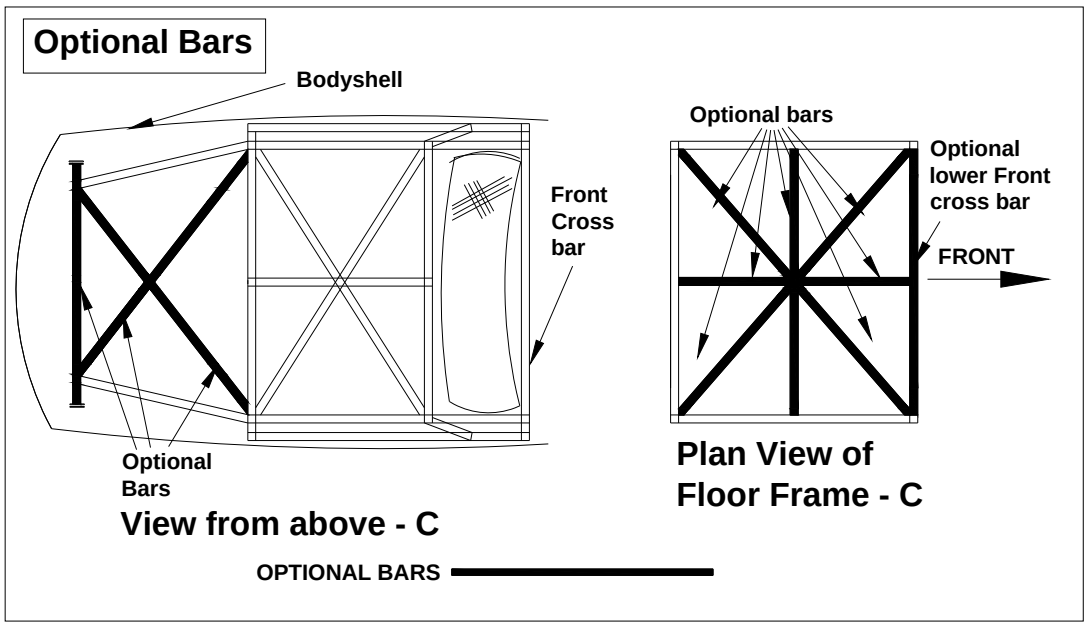
All Bars Minimum sizes and specified Wall Thickness & as Rule 11.
Bar Tb is mandatory.



~~gjj~~

Figure 1i Optional Bars

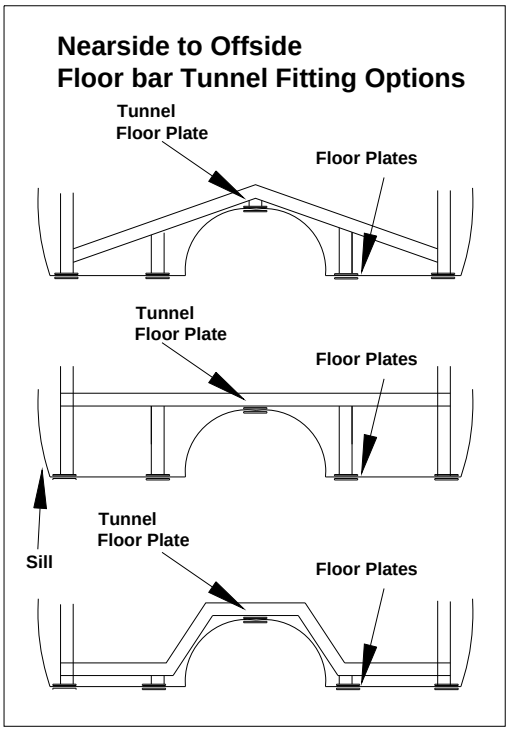
All Bars Minimum sizes and specified Wall Thickness & as Rule 11.
Bar Tb is mandatory.



~~gij~~

Figure 1j

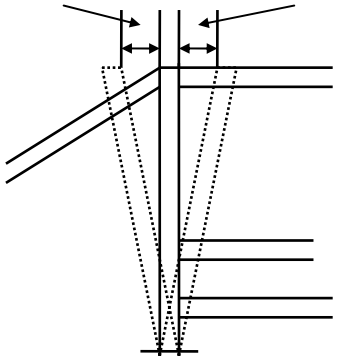
All Bars Minimum sizes and specified Wall Thickness & as Rule 11 16 & 17.



~~gij~~

FIGURE 2

ROLL CAGE REAR UPRIGHT:
MAXIMUM PERMITTED
DEVIATION FROM VERTICAL.
- 50mm(2”) + 50mm(2”)



UPRIGHT BAR MUST BE STRAIGHT.

FIGURE 3 SIDE BAR POSITIONS ON SALOONS

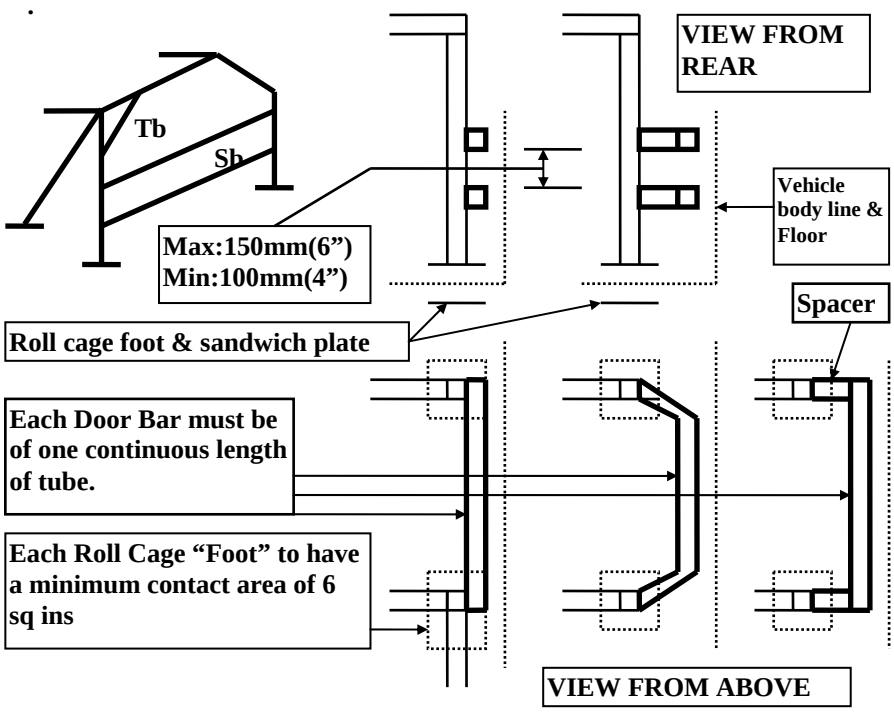


FIGURE 4a ROLL BAR FOOT

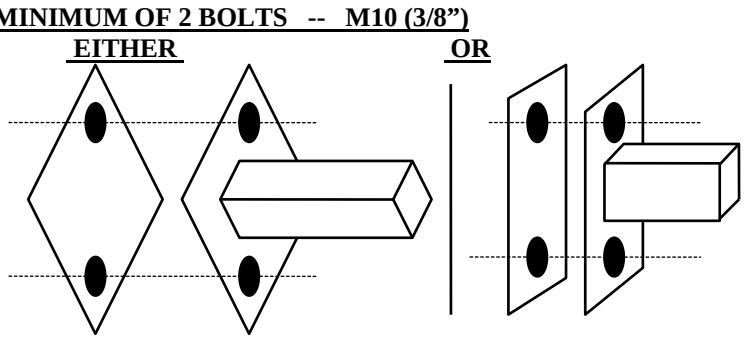


FIGURE 4b HOLLOW CHASSIS ATTACHMENTS

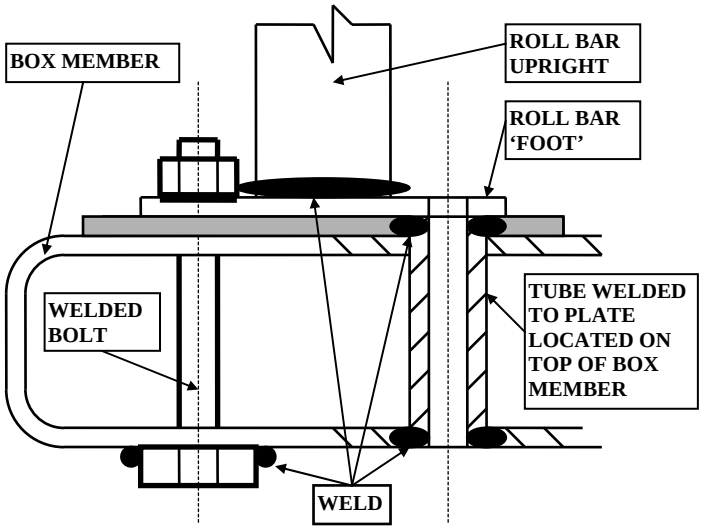


FIGURE 4c INNER CILL FIXING

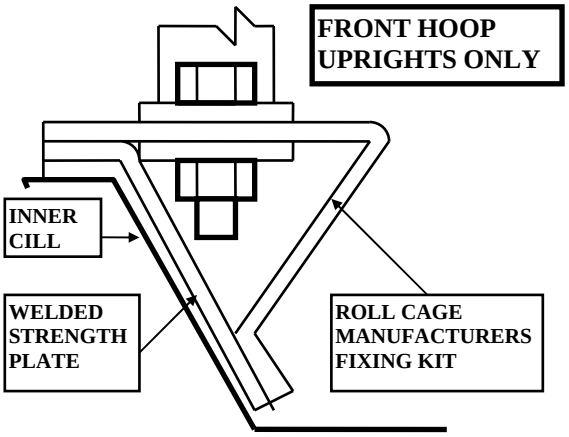
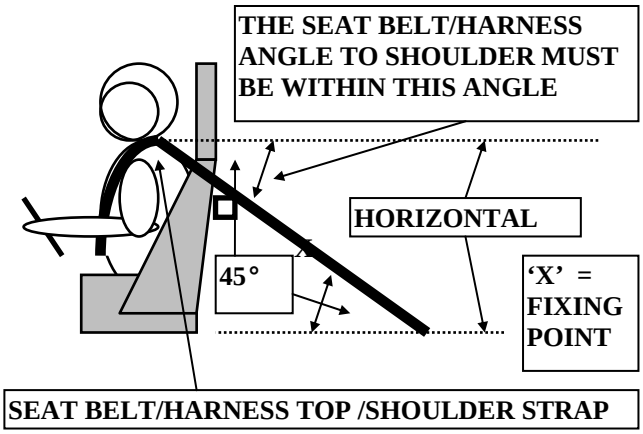
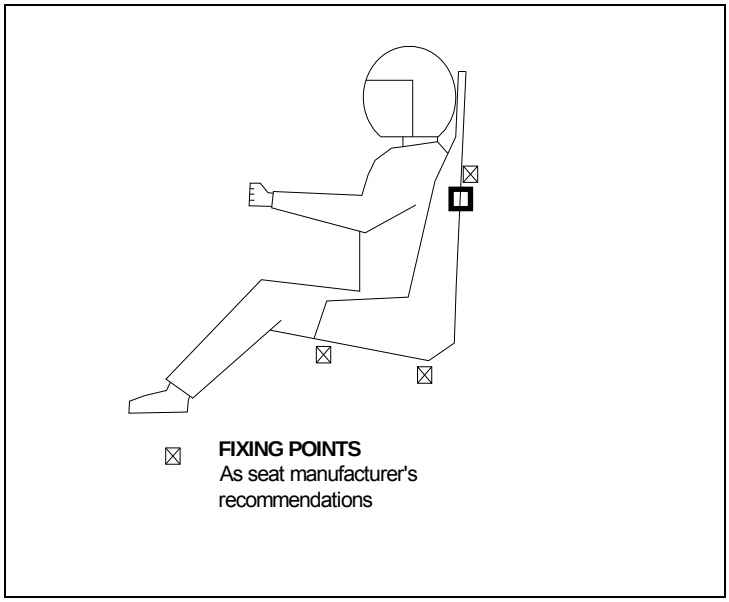


FIGURE 5 SEAT BELT HARNESS TOP STRAP



Seat Support Bar ☐

FIGURE 6 DRIVER'S SEAT FIXING POINTS



Seat & Harness Support Bar. ☐
Connected direct to rear roll cage upright.
Minimum Box Section = 25 mm x 25 mm x 2.5mm Wall Thickness
Minimum Circular Section = 25 x 2.5mm Wall Thickness

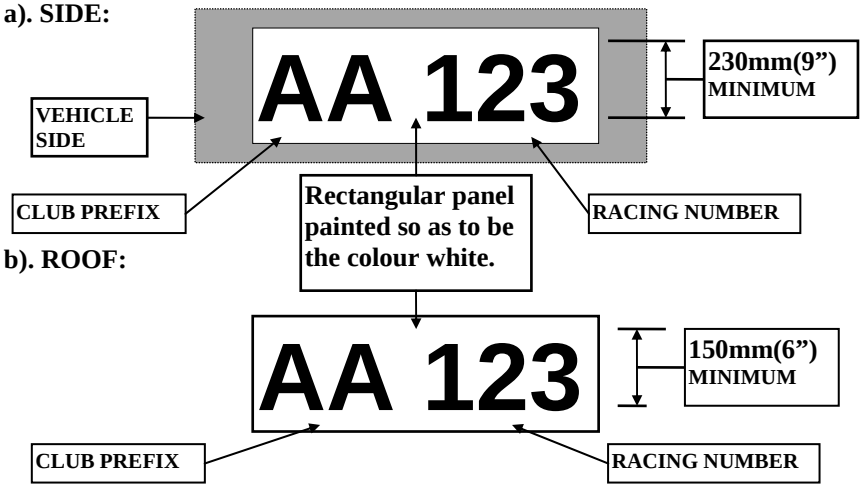
FIGURE 7 VEHICLE IDENTIFICATION

PLAIN BLACK LETTERS AND NUMBERS ON A SINGLE PLAIN WHITE PANEL BACKGROUND

Example: ANY AUTOGRASS CLUB -- Vehicle No - 123

NASA recognised Club & League prefix & numbers = AA 123

a). SIDE:



b). ROOF:

The Identification (Club letters & Racing number) must match that stated in the competitor's NASA Licence. i.e. if AA123 = AA123 Not 123AA or A123A.
Identification must be located forward of Rear Roll Cage upright.
All letters & Numbers must be clear, legible and upright.
Clearance between outside edge of letter and or number to outside edge of white panel:
Side: = 50mm
Roof: = 5mm

~~gij~~

FIGURE 8 METAL ROOF NUMBER PANEL

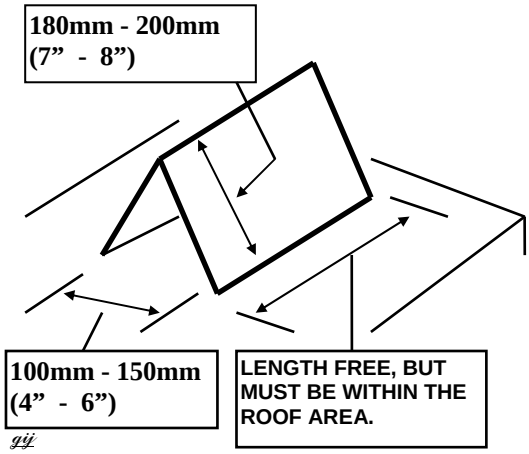


FIGURE 9 POSITION / LOCATION OF BATTERY CUT OFF SWITCH

POSITION OF BATTERY CUT OFF SWITCH

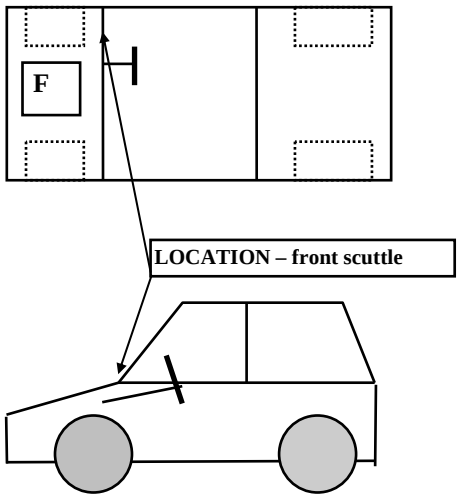


FIGURE 10 PERMITTED REAR PROTECTION

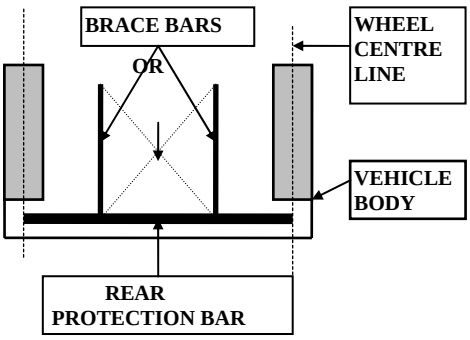


FIGURE 11 – ENGINE SEALING

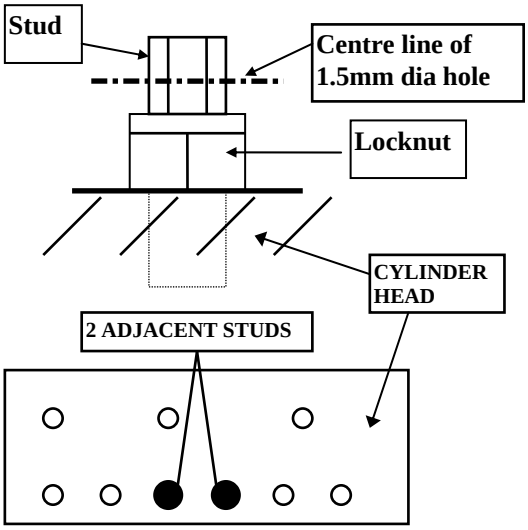


FIGURE 12 HARNESS STEEL EYE BOLT MOUNTING PLATE
REAR SEAT/BOOT FLOOR

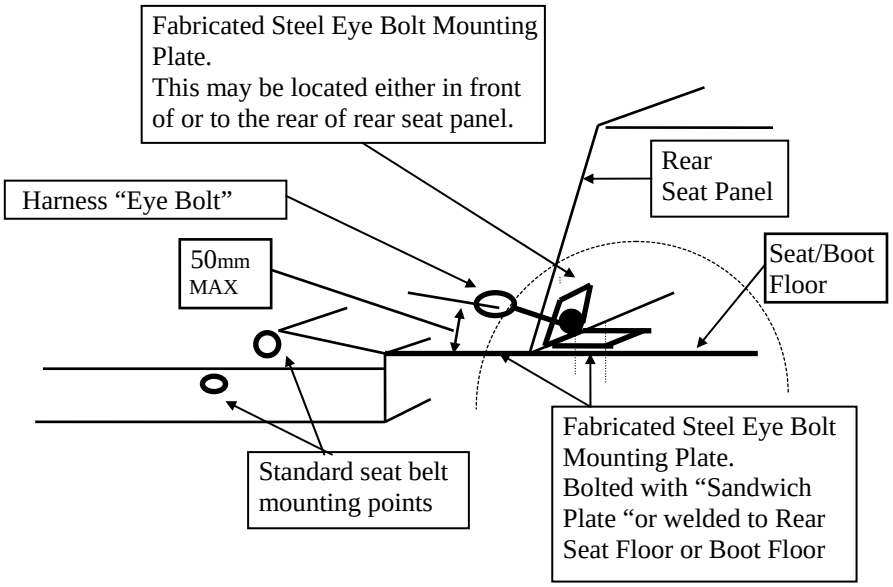


FIGURE 13 HARNESS STEEL EYE BOLT MOUNTING PLATE
ROLL BAR FIXINGS

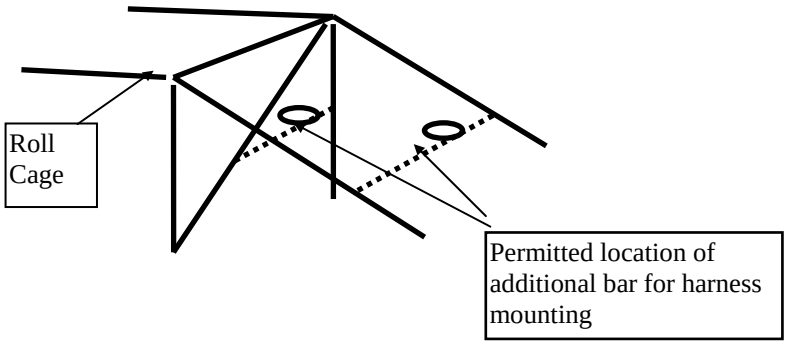
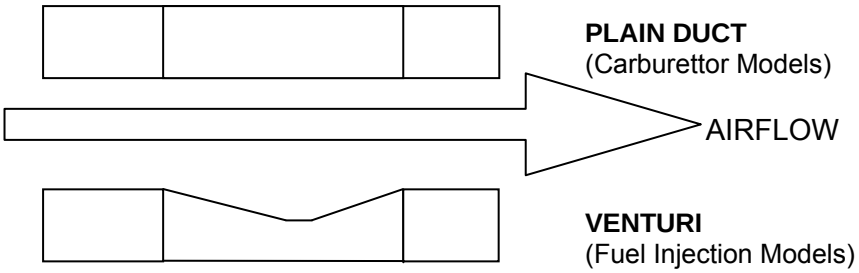
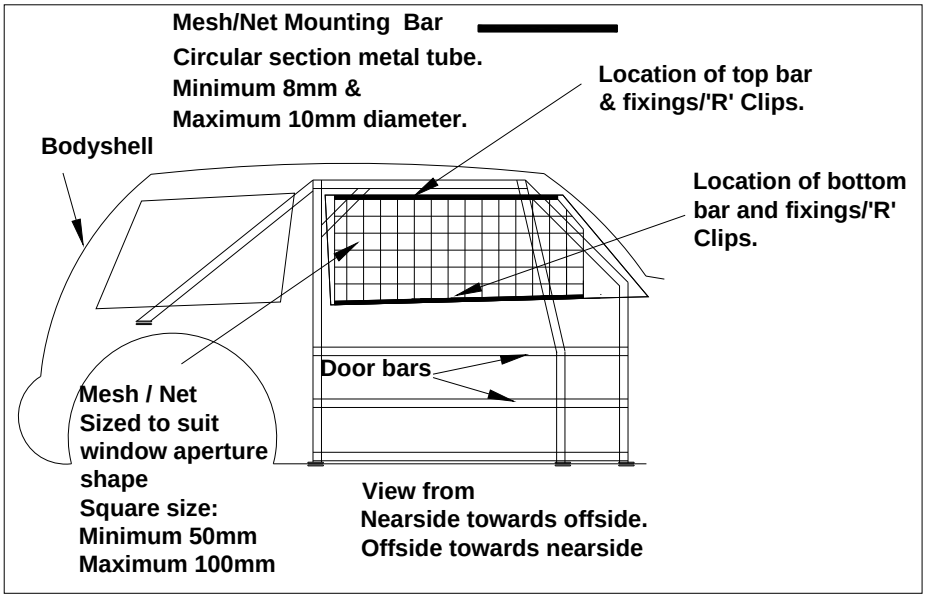


FIGURE 14 CLASS 1 - AIR INTAKE DUCT REQUIREMENT
Citroen AX & Saxo, Peugeot 106



It is not permitted to fit Venturi Duct to Carburettor intake duct and or Plain Duct to Fuel Injection intake duct.

FIGURE 15 CLASS 1 - SIDE WINDOW WEBBING/MESHED NET REQUIREMENTS
See Rule 3.4.



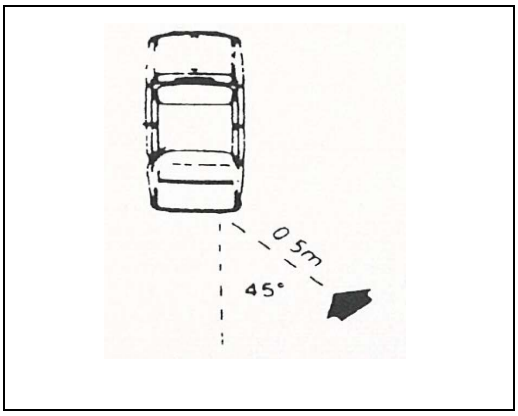
SILENCING
The maximum noise permissible for all vehicles is 102 Db (A).

Sound level meter readings shall be taken at 0.5 of a metre from the exhaust outlet with the microphone of the Noise Meter at 45 degrees to the exhaust axis, and with the car engine running at the appropriate r.p.m. A list of engines/r.p.m's. is available from the scrutineers.

Noise Meter Standards (minimum requirements):

Type 1 or 2 instrument.
International Standard IEC 651
British Standard BS 5969.
Range 70-120dB(A)
Time constants Fast/Slow.
Maximum "Hold" recommended.

NB - Please see Members Book for more detailed information



TABLE

British Standard Wire Gauges

Gauge	Diameter	(mm)
0	0.324	8.23
1	0.300	7.62
2	0.276	7.01
3	0.252	6.41
4	0.232	5.89
5	0.212	5.38
6	0.192	4.87
7	0.176	4.47
8	0.160	4.06
9	0.144	3.65
10	0.128	3.25
11	0.116	2.95
12	0.104	2.64
14	0.080	2.03
16	0.064	1.62
18	0.048	1.22
20	0.036	0.91
22	0.028	0.71

NASA NOISE TEST CHART 2015

CLASS	ENGINE	TEST RPM
1	4 Cyl	4500
2	4 Cyl	4500
3	4 Cyl	5000
	V4 / V6 / V8	4500
4	4 Cyl	5000
5	4 Cyl	5000
6	4 Cyl	5000
	V4 / V6 / V8	4500
7	4 Cyl	5000
	M'Bike	8000
	V4 / V6 / V8	4500
	Chevy V8	3500
	Twin M'Bike	8000
	M'Bike V8	8000
8	4 Cyl	5000
	M'Bike	8000
9	4 Cyl	5000
	V4 / V6 / V8	4500
10	4 Cyl	5000
	V4 / V6 / V8	4500
	Chevy V8	3500
	Twin M'Bike	8000
	M'Bike V8	8000

The construction rules in this book are intended for use by Autograss cars taking part in Autograss events as defined by the NATIONAL AUTOGRASS SPORT ASSOCIATION on a natural surface and are not necessarily considered safe for other forms of motor sport.

Drivers are advised that if they intend using their cars at events, other than events as defined by the NATIONAL AUTOGRASS SPORT ASSOCIATION They should ensure that their cars comply with the organiser's construction rules.