



SPECIFIC REGULATIONS FOR AFRICA RALLY 1 (AR1)

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11/11/2023

Article No	Regulations
00-0	<u>INTRODUCTION</u>
00-1	This document must be used with FIA Appendix J Articles 250, 251, 252, 253, 256E-2020, 254A-2010, 2017 Homologation Regulations R4 Kit, 2010 Homologation Regulations Super 2000 Kit (Rallies)
00-2	<u>Objectives</u> The introduction of an exciting, competitive but sustainable four-wheel drive rally formula in Africa with the following objectives: <ul style="list-style-type: none">- Cars to be built in Africa for Africa to leverage favourable African free trade opportunities.- Reduce the barrier of entry and running costs for competitors in Africa wishing to compete in a top category car.- To provide optimized reliability, availability and maintainability within African conditions at affordable cost.- To support local industry through locally sourced parts and development of dependable local suppliers.- Technology transfer to the African motorsport industry in collaboration with strategic partners.
01-1	<u>DEFINITIONS</u>
01-2	Touring Cars of Large-Scale Series Production Cars, turbo charged "Group N" engine, maximum engine capacity 2000cc, 4-wheel drive. MSA homologated.
01-3	<u>Definition of body baseline dimensional axes and origins</u> The standard bodyshell reference planes for all dimensional body modifications will be defined as follows: <ul style="list-style-type: none">- X-axis(longitudinal): zero at the lateral-vertical plane through the standard front suspension subframe bolt mounting points, or similar accessible standard feature. Approved by the TC.- Y-axis(lateral): zero on the car longitudinal-vertical centreline plane, as determined from two symmetrical points left and right on the underbody, front and rear, eg. subframe mounting points. Approved by the TC.- Z-axis(vertical): Determine the lowest point of the bodyshell. Lift the bodyshell so the side sills are horizontal, typically measured at the spotwelded joints underneath. A plane through the lowest point, parallel to the sill as determined, is the Z dimension zero. Approved by the TC.- Lowest point reference definition. Appendix A. All bodyshell modifications to be homologated.
01-4	<u>Definition and position of suspension free volumes in the bodyshell</u> <ul style="list-style-type: none">- Front suspension free volume.<ul style="list-style-type: none">- Front axle position determined by the standard car wheelbase measured from the reference standard car rear axle centreline.- X origin of the free volume at front axle centreline as homologated.- Y origin of the free volume at the car longitudinal centreline as homologated.- Z origin of the free volume at the lowest point of the bodyshell as defined above and homologated. Height of the free volume = 720 mm from the lowest point.- front suspension free volume as per Appendix B.- Rear suspension free volume.<ul style="list-style-type: none">- X origin of the free volume at the standard car rear axle centreline as homologated.- Y origin of the free volume at the standard car longitudinal centreline as homologated.- Z origin of the free volume at lowest point of the bodyshell as defined above. Height of the free volume = 755 mm from the lowest point.- rear suspension free volume as per Appendix B.- All bodyshell modifications and dimensions to be homologated.

01-5	<p><u>Performance Criteria</u></p> <p>Maximum Power: 245kw</p> <p>Maximum Torque: 450Nm</p> <p>Maximum Engine Rpm: 6 800 rpm, or as required by BOP</p> <p>Top Speed Limiting: Ensure adherence to ASN specific regulations by means of homologated gear ratios.</p>
01-6	<p><u>Balance of Performance (BOP)</u></p> <p>Will be applied by MSA Technical Consultant (TC) to limit ongoing performance enhancing which leads to additional development cost.</p> <p>Will be applied by MSA Technical Consultant (TC) to create an exciting competitive environment for competitors to test their skill and teamwork on equal terms.</p>
02-1	<u>HOMOLOGATION</u>
02-2	<p>Written approval for the intended type homologation must be obtained from the NRC TC before commencing design and build.</p> <p>Manufacturers are urged to clarify any uncertainty regarding the interpretation of these regulations with the NRC TC prior to their final design implementation.</p>
02-3	At least 2500 identical examples of the standard production cars must have been manufactured in 12 consecutive months. (OEM -original equipment manufacturer)
02-4	<p>The basic FIA Group A homologation must be completed, together with the MSA homologation and the specific VO's. The VO application process is specified in the NRC SSR's.</p> <p>All parts (free and homologated) must be in conformity with Article 252 Art 1 of FIA Appendix J.</p> <p>The MSA Technical Consultant (TC) will have final authority to approve all aspects of the application of these regulations, as well as the applicable FIA Articles during the homologation process.</p>
02-5	<p>Interpretation: - original as homologated means the OEM component has been homologated and may not be replaced by a different component, or reworked. eg. crankshaft.</p> <p>- original or as homologated means the OEM component can be used, or it can be modified or it can be replaced by a different component, but it has to be homologated.</p> <p>- homologated means a component specified by these regulations eg. clutch assembly, which the manufacturer has to homologate. Or a free component eg. ECU. The choice is free, but once homologated, no changes.</p> <p>- Homologation is for a make of car eg. Toyota Yaris. Not for individual cars. All Toyota Yaris's fall under one homologation.</p> <p>- Free is free, eg. wiring harness.</p>
03-1	<p><u>AUTHORISED MODIFICATIONS AND ADDITIONS</u></p> <p>These regulations are written in terms of authorisation; therefore, what is not expressly authorised hereinafter is prohibited.</p>
03-2	<p><u>Repair and replacement of Homologated Parts</u></p> <p>Welding: Non safety critical parts may be repaired by welding, but must be limited strictly to the repair area, must respect the shape and must not change the function or performance of the part.</p> <p>Damaged threads can be repaired by means of "helicoil" or similar, providing that the original inside diameter is maintained.</p> <p>Nuts and Bolts: Throughout the car, any nut, bolt or screw may be replaced by any other nut, bolt or screw and have any kind of locking device (washer, lock nut, etc.)</p> <p>Sensors / Actuators / Electrical connections: Addition of insulation material and / or glue is permitted for sealing and strengthening purposes.</p>
03-3	<p><u>Materials:</u></p> <p>The use of magnesium alloy is prohibited except in the case of parts fitted on the series model.</p> <p>The use of ceramics and titanium alloy is not authorised unless these materials are present on the series production vehicle, in which case these original series production parts must be used without modification.</p> <p>Ceramic coatings are permitted on the exhaust and on heatshields.</p> <p>The use of carbon and/or Kevlar is authorised on condition that only one layer of fabric is used and is affixed to the visible face of the part.</p> <p>The use of several layers of Kevlar, Kevlar/carbon hybrid or fibreglass for the manufacture of the front- and rear bumpers and the front- and rear outer fenders is authorised.</p> <p>The use of plastic, rubber or several layers of Kevlar, Kevlar hybrid or fibreglass for the protections of the bodywork parts (side, floor, inner fender) is authorised.</p> <p>The fuel tank protections may be made from several layers of Kevlar, carbon fibre or fibreglass.</p>

201-0	<u>MINIMUM WEIGHT</u>
201-1	<p><u>Cars must have at least the following minimum weight at all times during the competition:</u></p> <p>The weight of the car shall be no less than 1330 kg or as specified in the NRC SSR's, and weighed with:</p> <ul style="list-style-type: none"> - 1 spare wheel, one jack, one wheel spanner or nut runner. - The TC may request all fluids to be at specified levels except fuel tank and windscreen washer bottles which should be drained. <p>During events cars will be weighed as raced, but without driver, navigator, helmets and Hans-devices.</p> <p>The use of ballast is permitted under the following conditions:</p> <ul style="list-style-type: none"> - It is permitted to complete the weight of the car by one or several ballasts provided that they are strong and unitary blocks, fixed by means of tools with the possibility to fix seals, placed on the floor of the cockpit, visible and sealed by the scrutineers.
205-1	<p><u>GROUND CLEARANCE</u></p> <p>No part of the car must touch the ground when two tyres on one side are deflated.</p> <p>This test must be carried out on a flat surface under race conditions (occupants on board).</p>
300-0	<u>ENGINE</u>
300-1	<p>The AR1 class will have a standard production car (OEM, Gp N) engine. It will be a turbocharged petrol engine, capacity not exceeding 2000cc and not more than 4 cylinders. Homologated.</p> <p>Certain specific items listed in this specification may be changed and homologated.</p> <p>Written approval for the intended engine must be obtained from the NRC TC before commencing design and build.</p>
300-2	<p><u>General</u></p> <p>Engine shields made of plastic material, the purpose of which is to hide mechanical components in the engine compartment, may be removed if they have a solely aesthetic function.</p> <p>Soundproofing material and trim fitted under the bonnet and not visible from the outside may be removed.</p> <p>It is permitted to close the unused apertures in the cylinder block, if the only purpose of this operation is that of closing.</p> <p>The auxiliary systems pulleys, belts and tensioners are free.</p>
301-1	<p><u>Engine / Gearbox Mountings</u></p> <p>The engine and gearbox mountings must be original or homologated. The material of the elastic part may be replaced. Refer gearbox mountings art 602-1.</p>
302-1	<p><u>Turbocharger</u></p> <p>The turbocharger original or as homologated.</p> <p>The wastegate original or as homologated.</p> <p>The blow-off valve original or as homologated.</p> <p>Heat shielding is authorised:</p> <ul style="list-style-type: none"> - directly on the turbocharger, if it is removable. - on components in close proximity to the turbocharger, if it is removable. <p>No additional supercharging device relative to the original is authorised.</p> <p>If an air restrictor is required in terms of BoP, all the air necessary for feeding the engine must pass through this restrictor.</p> <p>The maximum boost pressure for each engine type will be determined by BoP.</p>

302-2	<p><u>Turbocharging air heat exchanger (Intercooler)</u></p> <p>The intercooler core must be original or must originate from a model of vehicle of a manufacturer produced in a quantity of more than 2500 units. Homologated.</p> <p>The intercooler core volume may not exceed V1max of 10,0 litre.</p> <p>The intercooler core must have a maximum of six flat faces.</p> <p>The total volume of the core is determined by its external dimensions (length cm x width cm x thickness cm).</p> <p>Air inlet and outlet tanks may be replaced or modified.</p> <p>Reinforcements, mounting frames and brackets are free.</p> <p>The intercooler must be installed inside the engine bay. The chassis may be minimally modified to this effect. Approved by the TC.</p> <p>Intercoolers of the air-water type are prohibited, unless the series vehicle is so equipped, in which case it must be used unmodified.</p> <p>The pipes between the turbo charger, the intercooler and the throttle valve are free (on condition that they remain in the engine bay), but their only function must be to channel air and to join various parts together. The pipe inner diameter may not exceed 80 mm.</p> <p>The pipes upstream of the turbocharger inlet are free.</p> <p>The cooling air ducting to the intercooler core is free, respecting the body regulations.</p>
303-1	<p><u>Cylinder block</u></p> <p>OEM cylinder block original as homologated. May be bored or sleeved to first oversize. May be decked, but compression volumes, compression ratio and squish must remain OEM standard to approval of the TC. Main bearing tunnel may be bored to OEM specified oversize.</p>
303-2	Number of cylinders limited to 4.
303-3	Compression ratio original as homologated.
303-4	Complete piston original as homologated including minimum weight. Minimal machining to piston crown allowed to adjust for head and block skim. Art 321-1. TC approved and homologated.
303-5	Connecting rod original as homologated including minimum weight.
303-6	Crankshaft original as homologated including minimum weight.
303-7	Engine flywheel original or as homologated to suit 7,25" twin plate metallic clutch assembly and gearbox bellhousing(art 601-1 and 603-2). Steel only. Minimum weight to be determined by the TC during homologation, based on OEM flywheel component weight as a guideline.
303-8	Balancing Shafts original as homologated.
321-1	<p><u>Cylinder head</u></p> <p>Original as homologated. Combustion chamber may be minimally machined to restore volume after cylinder head or block skim. Squish to remain OEM standard, all with approval of TC.</p> <p>It is authorised to close the unused openings in the cylinder head, if closing them is the only purpose of this operation.</p> <p>All devices for recycling the exhaust gases or equivalent systems (e.g. an additional air pump, active carbon filters) may be removed and the openings resulting from that operation sealed.</p>
322-1	<p><u>Cylinder head gasket</u></p> <p>Original or as homologated. Compression ratio and original OEM squish must remain . Maximum thickness/es per engine type homologated with approval of the TC.</p>
324-1	<p><u>Fuel Injection system</u></p>
324-2	Any additional injection system (i.e. water ...) is prohibited.
324-3	<p><u>Injectors</u></p> <p>Original as homologated.</p> <p>For direct fuel injection, the direct injection pump original as homologated. For indirect injection the fuel pump is free. Refer art 402-3.</p>

324-4	<u>ECU, PDU and Data Logger</u> Homologated, location is free. Inputs to the ECU (sensors, actuators, etc.), including their functions, must be homologated. Only homologated sensors / actuators must be used. All cars must be fitted with an engine rpm limiter to ensure that the maximum allowed engine rpm is not exceeded. Max rpm to be determined for the different engines during BoP tests.
324-5	<u>Ignition</u> The make and type of the spark plugs, ignition coils and the HT cables are free.
324-6	<u>Wiring harness</u> Free.
325-1	<u>Camshaft / Pulleys</u>
325-2	Valvetrain original as homologated.
325-3	“VVT” and “VALVETRONIC” etc. type systems are authorised if original. They may be rendered inoperative. If the original engine is fitted with automatic belt (or chain) tensioners, it is permitted to lock them in a given position by means of a mechanical device. The timing belt/chain must be original as homologated.
325-4	<u>Tappets / Buckets/Rocker arms</u> Original as homologated. Valve clearance adjustment shims are free.
326-1	<u>Intake System</u> The intake manifold original as homologated. A connection between the intake and the exhaust manifold is not allowed, even if it is fitted on the series engine. Variable geometry intake is prohibited. If the series-produced car is equipped with one, it has to be deactivated <i>or removed</i> .
326-2	<u>Accelerator pedal</u> Free. Electronic may be changed to cable and vice versa.
326-3	<u>Air filter</u> The air filter, its box and the plenum chamber are free but must remain in the engine compartment. If the air intake ventilating the driving compartment is in the same zone as the air intake for the engine, the compartment zone must be isolated from the air filter unit in case of fire.
326-4	<u>Throttle valve</u> OEM throttle valve size not to be exceeded. Actuation by cable or electronic, as homologated.
327-1	<u>Intake Valves</u> Original as homologated.
327-2	Cotters and valve guides are free.
327-3	Valve spring pre-load spacers allowed.
327-4	Intake valve spring original as homologated.
327-5	Intake valve spring cup original as homologated.

328-1	<u>Exhaust Valves</u> Original as homologated.
328-2	Cotters and valve guides are free.
328-3	Valve spring pre-load spacers allowed.
328-4	Exhaust valve spring original as homologated.
328-5	Exhaust valve spring cup original as homologated.
328-4	<u>Exhaust manifold</u> Original or as homologated to suit the turbocharger. Only ferrous materials allowed. To be attached to the cylinder head with no modifications to the head.
328-5	<u>Exhaust system</u> Free downstream of the turbocharger. The material thickness of the pipes used for the exhaust system must be greater than or equal to 0.9 mm, measured in the uncurved parts. The flow area of these pipes may not exceed the equivalent of a tube with inner diameter of 76 mm. The rear exhaust exit position is free. Refer Art 900-18 Additional parts for the mounting of the exhaust are authorised. Heat shielding is authorised directly on the manifold or exhaust, if it is removable, and on components in close proximity to the manifold or exhaust, if it is removable.
331-0	<u>Engine water cooling:</u>
331-1	<u>Water pump</u> Original as homologated. The drive system original or as homologated. The water pump bracket is free.
331-2	<u>Radiator</u> The radiator core must originate from a model of vehicle of a manufacturer produced in a quantity of more than 2 500 units. The core may be trimmed in size by removing rows of tubes, as homologated. The inlet and outlet tanks of the radiator may be modified or replaced. New frames and mounting points for the radiator and engine cooling fan may be added. The radiator must be mounted in the front of the engine bay, in the same/similar location as the original production radiator. Any type of liquid spraying system onto the engine water radiator is prohibited. The brackets and water hoses are free. The fan(s) are free. The upstream and downstream cooling air ducting to the radiator core is free, respecting the body regulations. The fitting of a water expansion tank is compulsory. The original water expansion tank may be replaced with another, with a maximum capacity of 2 litres and it must be fitted in the engine bay. The thermostat is free, as is the control system of the electric fan(s) and the temperature at which the fan(s) are activated. The liquid cooling lines external to the engine block and their accessories are free.

333-0	<p><u>Lubrication system:</u></p> <p>Oil/air and oil/water heat exchangers, pipes, thermostat and strainers (including the number) are free (without modifying the bodywork).</p> <p>The oil heat exchanger cannot be situated outside the bodywork.</p> <p>If the lubrication system includes an open type sump breather, it must be equipped in such a way that the oil flows into a catch tank. The catch tank must have a minimum capacity of 1 litre.</p> <p>Oil cooling fan free, but must have no aerodynamic effect.</p> <p>Oil dip stick free, but must be present at all times and have no other function. It may be moved from its original position.</p> <p>Oil filter free. The fitting of an oil filter in working order is mandatory, and the entire oil flow must pass through this filter. An adapter between the oil filter and the oil filter housing, or between the oil filter support and the engine block, is permitted. This adapter may also have oil cooling and temperature and/or pressure sensor connections.</p> <p>Oil pump original as homologated.</p> <p>Oil sump original or as homologated. Its sole function must be that of containing the engine oil. The number of mounting points must not exceed the original.</p> <p>Dry sump is not allowed.</p> <p>The fitting of baffles in the oil sump is authorised.</p> <p>An oil deflector may be added or the series deflector may be replaced, provided that the distance between the oil sump seal surface and that of the engine block is increased by no more than 6 mm.</p>
400-0	<u>FUEL SYSTEM</u>
401-1	<p><u>Fuel Tank</u></p> <p><i>The fuel tank must comply with FIA FT-3 specifications. One single fuel tank may be homologated (minimum capacity of 60 litres and maximum capacity of 100 litres).</i></p>
401-2	<p><u>Protection</u></p> <p><i>The FT-3 bladder must be contained in a leakproof box (minimum specification: GRP+kevlar outer layers, with an intermediate layer of absorbent material, wall thickness 10 mm minimum).</i></p> <p><i>The bladder and box must be shaped like a prism, with a single tunnel below for the transmission and the exhaust system. The height of the assembly (tank + leakproof box) must not exceed 600 mm.</i></p> <p><i>Two inspection openings is allowed in the top of the tank box to access the hatches in the FT3 bladder, containing the collector pot and fuel pumps and accessories. The inspection openings must be leakproof sealed to the FT3 bladder top.</i></p> <p><i>A leak-proof and flameproof cover in order to allow the checking of the validity expiry date of the fuel tank must be available as described in App J Article 253-14.3.</i></p>
402-1	<p><u>Fuel Circuit</u></p> <p>The fuel circuit must include only the following parts:</p> <p>One fuel supply outlet for the engine.</p> <p>One fuel return into the tank.</p> <p>Two quick-action couplings for refuelling (these couplings must be situated inside the <i>Safety Cage</i>) is mandatory.</p> <p>One breather in conformity with Art. 253 of Appendix J.</p> <p>Fuel level gauges (two maximum), independent of the ECU.</p> <p>The fuel lines must be of aviation quality.</p> <p>The installation of fuel lines is free provided that the prescriptions of Article 253-3 of Appendix J are respected.</p> <p>Fuel cooling is not allowed.</p>
402-2	<p><u>High pressure fuel feed pump</u></p> <p>Free. Installed inside the fuel tank. The maximum pressure is 8.0 bar. The pump bracket is free.</p>
402-3	<p><u>Fuel lift pumps</u></p> <p>Fuel lift pumps (including their number) are free, provided that they are installed inside the fuel tank.</p>
402-4	<p><u>Fuel filters</u></p> <p>Fuel filters with a maximum unit capacity of 0.5 l may be added to the fuel feed circuit.</p>

403-1	<p><u>The location of the fuel tank must respect the following conditions:</u></p> <p><i>It must be situated in the cockpit area inside the safety cage.</i></p> <p><i>The floor of the cockpit may be modified in order to install the fuel tank in the rear seat area. The maximum dimensions of the resulting hole in the floor is 1000 x 500 mm. A 1,2 mm sheet steel box cover, open to the bottom, and five flat sides only, must be welded leakproof and flameproof into the floor. The side rails cannot be modified.</i></p> <p><i>The tank box assembly (art 401-2) must be inserted from the bottom into the cover box, attached to the floor by at least two steel straps minimum 1,2 mm thick, minimum 50 mm wide, held in place by M8 grade 8.8 bolts and 6cm x 6cm 3mm steel support plates.</i></p> <p><i>The tank box must be at least 50 mm behind the obligatory rear diagonal plane of the main rollbar.</i></p> <p><i>The tank box must be forward of the rear axle centre-line.</i></p> <p><i>The bottom of the tank box must be at least 80 mm higher than the horizontal plane through the lowest point of the chassis. Refer App A.</i></p> <p><i>Two leakproof and flameproof inspection hatches with a total surface area of 800 cm² are allowed in the top of the steel tank box cover to allow access to the fuel pumps and accessories.</i></p> <p><i>The modifications of the chassis / bodyshell (design and fitting) must be homologated and approved by the TC.</i></p> <p><u>NON FT3 fuel tanks:</u> <i>The TC may allow a VO to use a plastic fuel tank on written request for NRC events only. Most of art 400-0 will remain applicable for safety, and to allow simple conversion to a FT-3 fuel bladder.</i></p>
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500-0	<p><u>ELECTRICAL EQUIPMENT</u></p> <p>Fuses, circuit breakers and / or electronic power distribution modules (PDU's) may be added to the electrical system. Original fuse boxes may be moved or removed.</p> <p>The horn may be changed and/or an additional one added within reach of the passenger.</p>
501-1	<u>Battery</u>
501-2	<p><u>Make and type of battery:</u></p> <p>The make of battery and the battery cables are free. Only one vehicle battery is permitted.</p> <p>The battery must be taken from a large scale production catalogue or from a competition parts catalogue.</p> <p>"Wet" batteries will not be allowed.</p>
501-3	<p><u>Location of the battery(ies)</u></p> <p>The battery location must be homologated. The battery may not be moved from the homologated location.</p> <p>The battery must be of the sealed type if it is not located in the engine compartment. If the battery is located in the cockpit, it must be situated behind the base of the driver's seat or the co-driver's seat.</p>
501-4	<p><u>Battery fixing</u></p> <p>The battery must be securely fixed and the positive terminal must be protected.</p> <p>Should the battery be moved from its original position, it must be attached to the body using a metal seat and two metal clamps with an insulating covering.</p> <p>For attaching these clamps, metallic bolts of at least M8 grade 8 must be used, and under each bolt, must be a steel counterplate at least 3 mm thick and with a surface of at least 20 cm² beneath the metal of the bodywork.</p>
501-5	A power take-off connected to the battery is permitted in the cockpit.
502-1	<p><u>Alternator and Starter</u></p> <p>The alternator must be from an original production car.</p> <p>The starter motor must be from an original production car.</p> <p>The mountings are free.</p> <p>The driving pulleys and pinions are free.</p>
503-1	<p><u>Lighting system</u></p> <p>Headlamps must be original or standard replacement part.</p> <p>A maximum of 6 additional headlights are authorised, including the corresponding relays, on condition that this is accepted by the laws of the country. If the original series fog lamps are kept, they are counted as additional headlights.</p> <p>Additional headlights may not be housed within the bodywork.</p> <p>Protective headlight covers may be fitted, provided that their only function is to cover the glass and that they have no influence on the car's aerodynamics.</p> <p>The fitting of a reverse light is authorised, provided that it only switches on when the reverse gear is engaged and that it complies with the traffic laws of the country.</p>

600-0	<u>TRANSMISSION</u>
601-1	<u>Clutch</u> The clutch shall be a 7.25" twin plate cerametallic assembly, available from a racing catalogue. The clutch shall be homologated. The clutch control shall be part of the homologated pedal box assembly. Refer art 802-3 Pedal box and art 303-7 Flywheel.
602-1	<u>Gearbox and rear Differential Mountings</u> - original or as homologated. Refer engine mountings art 302-1
603-1	<u>Gearbox and front and rear Differentials</u>
603-2	<p style="color: red;">Written approval for the intended transmission system must be obtained from the NRC TC before commencing design and build.</p> <u>Gearbox</u> A mechanical, sequential shift, 4 wheel drive gearbox and differentials must be homologated. The front to rear 4 wheel drive must be locked. The gearbox must have a maximum of 6 forward ratios and 1 reverse gear. A single gearbox housing made from aluminium alloy must be homologated. Two sets of forward ratios and reverse gear may be homologated. Alternatively one set of forward ratios and reverse gear plus two drop gear ratios may be homologated. The ratios must be chosen from the list provided by the NRC. A set of ratios must always be used in its entirety. A clutch bell housing or an adapter to enable the gearbox to be mounted to the engine may be homologated.
603-3	<u>Front and Rear Differentials</u> Differentials must be manufactured by the gearbox manufacturer. A single rear differential housing made from aluminium alloy must be homologated. There may only be one crown wheel and pinion final drive ratio homologated front and rear. A mechanical limited-slip clutch with ramps and plates must be homologated for the front and rear differentials. No electronic controls allowed. The mechanical parts of the front and rear I-s clutch units must be identical and homologated. 2 different ramp angle sets may be homologated. Belville washer pre-loads and spacers are free. The number of friction plates are free and may be assembled in any order, but the housing may not be modified. Negative preload prohibited. No external adjustment for positive preload. Coating of the friction discs is free, except carbon which is forbidden No bearing with rolling elements inside the self-locking system, nor for guiding the exits. Bearings with rolling elements only for guiding the <i>crown wheel and pinion</i> in the differential housing and to set the side bevel gear play (needle bearing only). No removable differential cassettes.
603-4	<u>Gearbox control</u> (sequential linkage) must comply with the following conditions : Mechanical sequential control by linkages. Gear lever must be fixed on the floor and position can be adjustable. Modifications to the bodywork for the passage of the gearshift control linkages and levers are authorised only if they are not in contradiction with other points of these regulations. Gear changes must be made mechanically. The only electronic control allowed will be a shift signal from the gear lever system to the ECU for a flat-shift power cut.
604-1	<u>Transmission hydraulics</u> Gearbox oil cooler and lubrication pump may be fitted. Hydraulic actuation system of the rear drive disconnect must be homologated. Actuation of the rear drive disconnect must be manually controlled by the driver using the handbrake lever. Clutch master cylinders for controlling the disconnect system must come from a large scale production catalogue or from a competition parts catalogue. The fluid tank of the rear final drive disconnect device may be located in the cockpit or in the boot. It must be made from a flame-proof material, or be protected by a leak and flame-proof cover.

605-1	<p><u>Driveshafts</u></p> <p>Transverse shafts:</p> <ul style="list-style-type: none"> - Steel shafts with splined ends. Homologated. - CV joints on the wheel side. Homologated. - Tripod joints or CV joints on the inside as required by the differentials. Homologated. - Front and rear CV joints must be interchangeable. - CV joints must be from a production car of which more than 2500 are produced annually. <p>Longitudinal shaft:</p> <ul style="list-style-type: none"> - two piece tubular steel shaft with centre carrier bearing. Homologated. - universal joints and slip joint or CV joints. Homologated.
700-0	<p><u>SUSPENSION - FRONT AND REAR AXLES</u></p> <p>All suspension components and suspension-body dimensions must be homologated. Approved by the TC.</p> <p>Rear suspensions to be changed to Macpherson strut independent type and homologated.</p> <p>All homologated suspension components must be used without any modification.</p> <p>All suspension body modifications to comply with art 900-0 BODYWORK-BODYSHELL. Design previously approved by the TC and homologated.</p> <p>Complete drawings or a dimensional 3D scan of the bare standard bodyshell may be required with proposed modifications for fitting the suspension and drivetrain indicated.</p>
701-1	<p><u>General suspension dimensions:</u></p> <p><i>Overall car width: not to exceed 1820 mm excluding wing mirrors. Refer 900-12.</i></p> <p><i>Overall car length: Reference standard car length + 20mm. Measured from the furthestmost point on the perimeter at the front, to the furthestmost point on the perimeter at the rear.</i></p> <p><i>Wheelbase: Standard car \pm 50 mm. From rear axle position as per standard reference car.</i></p> <p><i>Track width: Not specifically specified, but the wheels should be covered by the fenders at ride height and race suspension settings. The bottom halves of the wheels may protrude. Refer art 900-20. Art 701-1 takes preference:</i></p> <ul style="list-style-type: none"> - The track width will be determined by the homologated suspension components and the 1820 mm car width as follows: <ul style="list-style-type: none"> - Lateral distance between inner wishbone ball joint centre mounting points on the suspension subframes. - Overall maximum wishbone length from ball joint centre to ball joint centre homologated. <ul style="list-style-type: none"> - Wishbone welded assy maximum length ball joint flange to ball joint flange. - Ball joint dimensions: Overall dimension ball centre to end of shank. Thread shank diameter. - The ball joint threaded part to be screwed in a minimum length of one thread diameter, excluding lock nut. This determines the ball joint centre to ball joint centre maximum homologated wishbone length. - Lateral offset dimension between wishbone outer ball joint centre and wheel rim mount flange. Refer art 705-1 and 705-2. - Rim offset dimension mount flange to wheel centre. Refer art 801-2 - The above dimensions as mounted determine the maximum track width as designed and homologated to be inside the 1820mm width dimension. Drawing to be supplied for homologation.
702-1	<p><u>Mounting points for the front subframe:</u></p> <p>Refer front free volume art 01-4 and Appendix B.</p> <p>Define the front axle centreline as per art 01-4, which then defines the X-position of the front free volume.</p> <p>The position of the subframe mounting points is free inside the free volume, but the side members may only have limited modifications to clear driveshafts, suspension and steering components as per Appendix C. New mounting points may be fabricated onto the side members, or machined threaded inserts may be welded into the side members. Refer Appendix D.</p> <p>Steel plates shaped to follow the original body contours may be added for strength. The subframe must be bolt-on with at least four M10 gr8.8 bolts.</p> <p>The additional mounting points on the shell must be reinforced so that, under all circumstances, they can withstand the loads independently of the safety cage. Any modification to the side members must guarantee the same rigidity as the original chassis leg.</p>
702-2	<p><u>Mounting points for the rear subframe:</u></p> <p>Refer rear free volume art 01-4 and Appendix B for the possible modifications of the shell to fit a rear subframe and strut suspension as well as the fuel cell. The modifications are limited to the volume specified in Appendix B. No opening to the cockpit is authorised in the zone defined by Appendix B.</p>

	<p>New mounting points for fitting the rear subframe may be made. A structure to carry the subframe loads may be fabricated and welded onto and between the rear chassis side members. The side members may only have limited cut-outs as necessary. The mounting of the fabricated structure on the chassis may be strengthened with hollow areas if necessary. The fabricated structure must carry the threaded mounting points for the bolt-on subframe. The subframe must be bolt-on with at least four M10 gr8.8 bolts. The additional mounting points on the shell must be reinforced so that, under all circumstances, they can withstand the loads independently of the safety cage. Any modification to the side members must guarantee the same rigidity as the original chassis leg.</p>
703-1	<p><u>Mounting plates for the front struts:</u></p> <ul style="list-style-type: none"> - X position of the centre of rotation of the strut top is free, based on the suspension design, the homologated front axle lateral centreline and inside the free volume. - Y position of the centre of rotation of the strut top is free, based on the the suspension design and inside the free volume. - Z position of the centre of rotation of the strut top is free, but limited in the Z-direction to the top of the homologated free volume. Refer art 900-14.
703-2	<p><u>Mounting plates for the rear struts:</u></p> <ul style="list-style-type: none"> - X position of the centre of rotation of the strut top is free, based on the suspension design, the homologated rear axle lateral centreline and inside the free volume. - Y position of the centre of rotation of the strut top is free, based on the the suspension design and inside the free volume. - Z position of the centre of rotation of the strut top is free, but limited in the Z-direction to the top of the homologated free volume. Refer art 900-14.
704-1	<p><u>Front and rear suspension subframes</u></p> <p>Free, made in steel, one-piece, bolt-on. Homologated.</p> <p>Front subframe to carry two mounting points per side for the front wishbone mountings. To carry mountings for the steering rack.</p> <p>Rear subframe to carry two mounting points per side for the rear wishbone mountings. To carry one mounting for the toe-link each side.</p> <p>All wishbone mountings to be below the centre of the driveshaft outputs.</p>
705-1	<p><u>Front and rear hubcarriers</u> Refer art 701-1</p> <p>Free, made in aluminium, interchangeable front to rear, left to right with bolt-on brackets for hubs, suspension, steering, brakes, etc. Homologated.</p>
705-2	<p><u>Front and rear hubs</u> Refer art 701-1</p> <p>Front and rear hub assemblies are homologated Control Parts. Only the following factory part numbers, or freely available direct replacement parts (aftermarket parts) may be used:</p> <p>Wheel hub assembly: VW/Audi Part Number 4H0 498 625 A (or direct replacement part).</p> <p>Wheel bearing: VW/Audi Part Number 8K0 407 613 B (or direct replacement part).</p> <p>Wheel studs are free, but to fit the wheel hub flange without modification.</p>
705-3	<p><u>Front and rear wishbones</u></p> <p>Free made in steel, as homologated.</p>
706-1	<p><u>Anti roll bars front and rear</u></p> <p>Anti-roll bars that can be adjusted from the cockpit are prohibited.</p> <p>Diameter of the anti-roll bar is free.</p> <p>Anti-roll bars must be made from iron-based alloy.</p> <p>Anchorage points on the bodyshell and the anti-roll bar links are of free design, but must comply with art 900-0 BODYWORK-BODYSHELL.</p> <p>Under no circumstances may the anti-roll bars be connected to one another.</p> <p>Anti-roll bars must be of a purely mechanical type (no part that is of a hydraulic type may be connected to the antiroll bar or to one of its components).</p> <p>Anti-roll bars may be removed or disconnected.</p> <p>Anti-roll bar assemblies must be homologated.</p>
707-1	<p><u>Strut dampers</u></p> <p>Dampers are free, but must comply with the following conditions:</p> <p>Dampers must be coil spring-damper strut configuration using the hydraulic-orifice gas-filled principle of operation.</p> <p>Dampers must be freely available for sale in a distributor's network, or available from a motor sport catalogue.</p> <p>Only one damper per wheel is authorised.</p> <p>Dimensions of the dampers are free, but the maximum internal diameter of the top mount ball joint is 32 mm.(shaft diameter)</p> <p>Plain metallic bearings in the damper tubes are mandatory. No roller or ball bearings.</p> <p>Water cooling systems are forbidden.</p> <p>Under no circumstances may the dampers be connected to one another.</p>

707-2	<p>There may be no external control of the damping characteristics whatsoever. Adjustments may only be made with hand tools when the car is stationary. No electronic systems whatsoever.</p> <p>If the dampers have separate fluid reservoirs located in the crew compartment, these must be strongly mounted and must have a protective cover to protect against oil spills.</p> <p><u>The following may be checked to verify the operating principles of the shock absorbers:</u></p> <p>Once the springs and the torsion bars are removed, the vehicle must sink down to the bump stops in less than 5 minutes.</p>
707-3	<p><u>Springs</u></p> <p>Coil springs are free, but must be made in steel.</p> <p>The spring seats may be height adjustable, but adjustments may only be made with hand tools when the car is stationary.</p>
800-0	<p><u>RUNNING GEAR</u></p>
801-1	<p><u>Wheels</u></p> <p>Complete wheels are free provided that they must be housed within the homologated bodywork. Refer art 900-12.</p> <p>Under no circumstances may the rim and tyre assembly exceed a width of 9" and a diameter of 650 mm.</p> <p>Rims must imperatively be made from cast aluminium alloy.</p> <p>At least one spare wheel is compulsory. Spare wheels and tools must be securely fixed. Exterior modification of the bodywork to enable the spare wheel installation is prohibited.</p> <p>The fitting of air extractors on the wheels is prohibited under all circumstances.</p> <p>The use of any device allowing a tyre to conserve its performances with a pressure equal to or lower than atmospheric pressure is prohibited. The inside of the tyre (the space included between the rim and the inside of the tyre) may only be filled with air/nitrogen.</p> <p>801-2 <u>For gravel rallies</u> Only 6.5 x 15" or 7 x 15" rims are authorised, and the minimum weight of a 6.5 x 15" or 7 x 15" rim is 8.6 kg. The rim width and offset must be homologated. Refer art 701-1.</p> <p>802-1 <u>Braking system</u></p> <p>Brakes lines and fittings may be changed for aviation type components.</p> <p>802-2 <u>Brake linings</u></p> <p>Brake linings are free, as well as their mountings (riveted, bonded, etc.) provided that the contact surface of the brakes is not increased.</p> <p>802-3 <u>Pedalbox</u></p> <p>The series pedalbox may be replaced by a new homologated pedalbox from a competition parts catalogue. The pedal box may have a manually operated balance bar. Refer art 601-1 Clutch.</p> <p>802-4 <u>Handbrake</u></p> <p>The mechanical handbrake may be replaced with a hydraulic system. Homologated.</p> <p>802-5 <u>Master cylinders</u></p> <p>Master cylinders must come from a large scale production catalogue or from a competition parts catalogue.</p> <p>The brake fluid tanks may not be inside the cockpit. If there is no other way, they must be securely fastened and be protected by a leak- and flame-proof cover.</p> <p>802-6 <u>Brake servos, braking effort limiters, anti-lock braking systems (pressure limiters)</u></p> <p>Forbidden</p> <p>802-7 <u>Air intake for cooling the brakes</u></p> <p>As part of the allowed front bumper cooling opening, air ducts are permitted to cool the front brakes. One on each side. <i>Refer art 900-18.</i></p> <p>The air duct must be circular at least 2/3 of the length. Maximum 100 mm diameter per side.</p> <p>The use of fans for cooling the brakes is forbidden.</p> <p>802-8 <u>Stone screens and mud scrapers</u></p> <p>Stone screens to protect the brakes may be fitted. A device for scraping away the mud which collects on the brake discs and / or the wheels may be added.</p> <p>802-9 <u>Front and Rear Calipers</u></p> <p>The calipers must be aluminium and from a large scale production catalogue or from a competition parts catalogue. Maximum of 4 pistons per caliper. Only calipers with a 180mm mounting pitch is allowed. Calipers including piston sizes and caliper mounting brackets <i>to be homologated.</i></p> <p>It is permitted to add a spring in the <i>piston</i> bore of the caliper.</p> <p>802-10 <u>Front and rear brake discs (including bells)</u></p> <p>The discs from a competition parts catalogue, ferrous only. Brake bells are free. Maximum disc diameter: 300 mm. Maximum disc thickness: 35 mm. All to be homologated.</p>

803-0	<u>Steering System</u> Hydraulic or electrically assisted power steering systems are allowed.
803-1	<u>Steering mechanism</u> (rack, pinion and housing) The steering mechanism (rack, pinion and housing) free. Homologated.
803-2	<u>Hydraulic power steering pump</u> The hydraulic power steering pump and its position is free. The steering pump shall be located in the engine compartment. The lines linking the power steering pump to the steering rack may be replaced with lines conforming to Article 253-3.2.
803-3	<u>Tank for hydraulic power steering fluid</u> The fluid container must be in the engine compartment and must: Originate from a model of vehicle of a manufacturer produced in a quantity of more than 2500 units, or a new steering oil tank made from aluminium alloy may be used.
803-4	<u>Power steering - Cooling device</u> An oil radiator, as well as a system for circulating the oil without generating pressure, may be added.
803-5	<u>Electric power steering</u> The electrical power steering actuator may be located in the engine or passenger compartment. Free. Homologated.
803-6	<u>Steering rods</u> Steering tie rods. Homologated.
803-7	<u>Steering wheel</u> The steering wheel is free. The locking system of the anti-theft steering lock must be rendered inoperative. A quick release mechanism is compulsory from a competition parts catalogue, and must consist of a flange concentric to the steering wheel axis, coloured yellow through anodising or any other durable yellow coating, and installed on the steering column <i>shaft</i> behind the steering wheel. The release must be operated by pulling the flange along the steering wheel axis.
803-8	<u>Steering column</u> The steering column as well as its mounting system may be replaced. The steering column shall be fitted with an unmodified OEM energy absorbing device. Homologated. The steering column mounting system. Original or homologated with the safety cage.
803-9	<u>Bulkhead opening</u> A new position and a new opening in the bulkhead for the steering column may be added. The original openings must be closed by metal sheet and welding. Bodysell homologated.
803-10	<u>Driving side</u> The inversion of the driving side is allowed as long as all other clauses of section 804 above is adhered to.

900-0	<p><u>BODYSHELL</u></p> <p>A complete drawing or dimensional 3D scan of the bare standard bodyshell may be required with proposed modifications for fitting the suspension and drivetrain indicated.</p> <p>The Safety Cage must be designed and manufactured according to the latest version of the FIA Homologation Regulations for Safety Cages. This document is available from the MSA Website in the FIA document section.</p> <p>The Safety Cage must be Homologated / Certified by MSA in accordance with the FIA regulations.</p> <p>Only parts authorised by the present regulations may be removed from the bodyshell.</p> <p>It is possible to seal the holes in the cockpit, the engine and luggage compartments and in the fenders with metal sheet or plastic materials by welding, bonding, riveting. Holes in the firewall (between the engine bay and the cockpit) must be closed with sheet metal and welding.</p> <p>Holes and welded brackets are authorised for passing or fixing hoses, lines, wiring looms and cables. Supports for fixing additional accessories may be fixed or welded to the bodyshell.</p> <p>The split lines between bodywork panels must remain as on the original bodywork, except over those surfaces that may explicitly be different from the original.</p>
900-1	<p><u>Strengthening of the suspended parts of the chassis and bodywork through the addition of parts and/or material is allowed under the following conditions :</u></p> <p>The shape of the reinforcing part/material must follow the surface of the part to be reinforced, having a shape similar to it (see App J art 255-8) and the following maximum thickness measured from the surface of the original part : 4 mm for steel parts, 12 mm for aluminium alloy parts.</p> <p>For bodywork parts, the reinforcing part/material must be on the area not visible from the outside.</p> <p>The reinforcing part/material must not have any other function than that of a reinforcement and its thickness must be constant.</p> <p>It is permitted to fold back the steel edges or reduce the plastic edges of the fenders if they protrude inside the wheel housing. The plastic soundproofing parts may be removed from the inner-fenders.</p> <p>The soundproofing material or the material for the prevention of corrosion may be removed.</p> <p>Elements made from synthetic materials may be changed for aluminium or plastic elements of the same shape. The removal of external decorative strips, following the contour of the car and less than 25 mm high, is authorised.</p>
900-2	<p><u>Additional opening on the bonnet or on one front fender (for installation of a Snorkel only):</u></p> <p>Authorised for the sole purpose of allowing the air supply to the engine, and to place a duct with a maximum section of 250 cm² (see App J art 261-2). This opening must have a maximum surface of 250 cm² , and it must be completely covered by the duct.</p> <p>The connection between the opening and the duct must be completely sealed. The air inlet of the duct must point towards the rear of the car.</p>
900-3	<p><u>Jacks</u></p> <p>The jacking points may be strengthened, moved and increased in number. These modifications are limited exclusively to the anchorage points of the jack.</p> <p>The jack must be operated exclusively by hand (either by the driver, or by the co-driver), i.e. without the help of a system equipped with a hydraulic, pneumatic or electric energy source.</p> <p>The wheel gun must not allow the removal of more than one nut at a time.</p>
900-4	<p><u>Underbody protection</u></p> <p>The fitting of underbody protection which are removable and which are designed specifically in order to protect the underbody is authorised. Approved by the TC.</p>
900-5	<p><u>Sump guard</u></p> <p>The sump guard is mandatory and may extend the whole width of the underside part of the front bumper only in front of the front wheel axis. The sump guard must be made from either aluminium alloy or steel.</p>
900-6	<p><u>Fuel tank guard</u></p> <p>The fuel tank guard is mandatory.</p> <p>The fuel tank guard may be made from several layers of Kevlar, carbon fibre or fibreglass. Aluminium alloy with a minimum thickness of 6 mm, or 3mm steel is also permitted.</p>
900-7	<p><u>Stone Guards</u></p> <p>The fitting of stone guards to protect the underbody and the suspension is authorised. These guards may be made from plastic and/or rubber and/or Kevlar and/or carbon and/or fibreglass and/or aluminium alloy. Aerodynamic advantage not allowed. Approved by the TC.</p>
900-8	<p><u>Side panel protection</u></p> <p>The use of plastic and/or rubber and/or Kevlar and/or carbon and/or fibreglass and/or aluminium alloy and/or steel is authorised. Aerodynamic advantage not allowed. Approved by the TC.</p>
900-9	<p><u>Mud Flaps</u></p> <p>Mudflaps will be mandatory if specified in the event supplementary regulations, or the country specific sporting regulations.</p> <p>Fitted mudflaps must conform to the following minimum requirements:</p> <ul style="list-style-type: none"> - be made of a flexible plastic material at least 4 mm thick with a minimum density of 0.85 g/cm³. - be fitted to the bodywork.

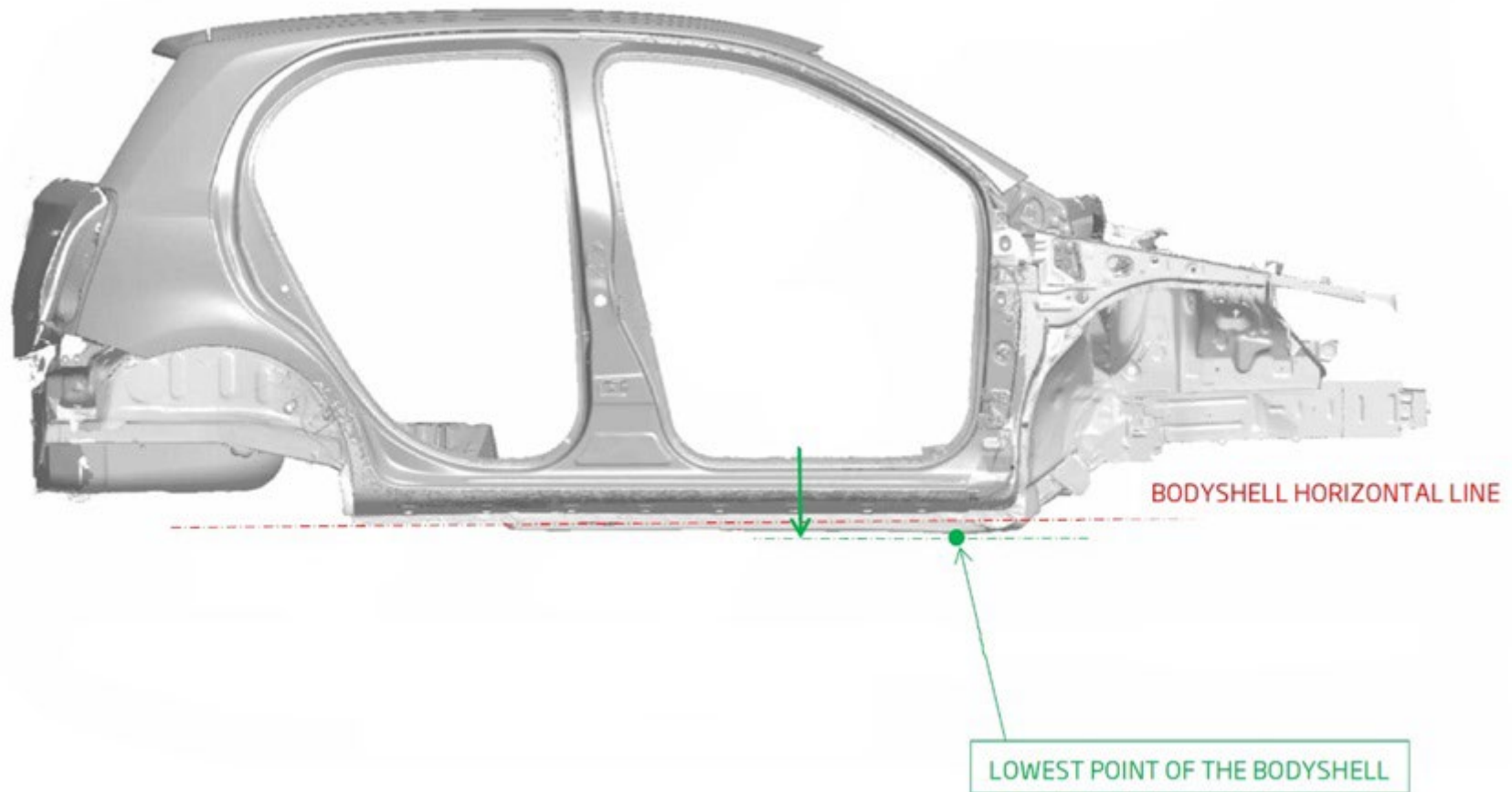
	<ul style="list-style-type: none"> - cover at least the width of each wheel, but must have at least 900 mm gap between left and right flaps. - bottom of the flaps must be no more than 100 mm from the ground, when the car is stopped with nobody on board.
900-10	<u>Original plastic protection parts</u> fitted under the bodyshell (licked by the air flow) may be removed.
900-11	<u>Front impact protection ("bull-bar")</u> The front impact protection must be removable and must be specifically designed to protect the front bumper, headlights and cooling elements of the car. The front impact protection must be made of a tubular structure and must have no influence on the cars aerodynamics. No part of this protection may present sharp edges or pointed parts. Local modifications of the front bumper are permitted for the sole purpose of installing this protection. The front impact protection and its fixations are not considered during the measurement of the front overhang.
900-12	<u>Overall width</u> The overall width of the car body may not exceed 1820 mm excluding the side mirrors and the bottom halves of the wheels. Refer art 701-1
900-13	<u>Engine and gearbox installation</u> The angle of inclination of the engine in its original compartment may be retained, or the engine may be tilted by a maximum of 25° to the vertical around its crankshaft axis. The engine bulkhead and the side members may be modified only locally for the sole purpose of installing the engine and the gearbox. Refer App C. For each type of car, all modifications must be approved by the TC and homologated. It is permitted to modify the side members for the sole purpose of allowing the travel of the suspension wishbones, steering rods and drive shafts. Any modification to the side members must guarantee the same rigidity as the original side member. Refer art 701-1 The engine/gearbox mountings may be welded to the bodywork and/or side members and their position is free.
900-14	<u>Macpherson strut turrets</u> Within the context of freedom for the inner fender, it is allowed to recreate a strut turret to accommodate the mounting of the suspension. Position of the front and rear suspension turrets must be within the free volumes defined by Appendix B. The geometric centre of the strut top ball joint must be below the upper boundary of the free volume at all times. Refer Arts 703-1, 703-2 and 900-19
900-15	<u>Scuttle panel</u> For the sole purpose of cooling the crew, one or more openings may be homologated in the scuttle panel. These openings must be sealed flame-proof from the engine compartment.
900-16	<u>Transmission tunnel</u> The transmission tunnel of the series car may be modified. The dimensions of the transmission tunnel must be sufficient only to allow the passage of the transmission and the exhaust line and the dimensions may not exceed those specified in Appendix B. The minimum thickness of all the steel sheet replacing the original steel sheet is 1.2 mm. All sheet metal work must be welded.
900-17	<u>Floor</u> The rear part of the floor may be modified by removing the spare wheel housing and adding a steel sheet with some beading reinforcements in its place. If, as a consequence of this modification, the original overpressure outlets are removed, these may be repositioned in different places on the bodyshell provided their sole purpose is to ventilate the cockpit. The position of these new openings must be behind the rear axle centreline, below the highest point of the bottom line of the rear window and in an area of underpressure. The overpressure device must come from a model of automobile of a manufacturer produced in a quantity of more than 2500 units.
900-18	<u>Front and Rear Bumpers</u> The shape of the front and rear bumpers must be identical to the original production bumpers except: The original grille/s may be replaced with wire mesh. Modification of the lateral parts of the bumpers as defined to allow the widening of the fenders. One or more openings may be made in the front bumper together with the side elements of the front fenders, approved by the TC. The total surface of all the openings in <i>the front bumper</i> must be no more than 3000 cm². This includes the intakes for the brake cooling ducts. Refer art 803.7 These openings must not affect the structural integrity of the bumper. In residual areas near openings, series removable decorative elements (e.g. mesh, grill, ribs, trimmings) may be replaced with a flat surface forming an integral part of the bumpers. The material of the bumpers must remain unchanged (plastic remaining plastic, including composite materials).

900-19	<p>The lower part of the front bumper may be detachable. The lower detachable part may be removed. Refer Appendix E. When the detachable part is included, the overall dimensions of the assembly may not exceed that of the original bumper.</p> <p>The original cut-out of the rear bumper for the exhaust may be modified, it is also allowed to create a new cut-out of maximum 130 cm².</p> <p><u>Widening of the fenders, inner fenders, bumpers</u></p> <p>An increase in the width of the front and rear fenders and bumpers is permitted. See Art 900-12</p> <p>This increase may be obtained by means of an extension or new parts.</p> <p>The widening of the front fenders may be done by cutting sufficient material out of the original fender to allow the wheel freedom of movement. A wider fender extension may then be made out of GRP to add to the modified original fender. Alternatively complete new front fenders may be made. The extended fenders must retain the original shape where it mounts on the body, retaining the original split lines between fender and bonnet, and fender and doors(fr & rr). The extended lateral parts of the front and rear bumpers must follow the profile of the fenders. The fenders must be continuous, with no air intakes or outlets.</p> <p>The inner fenders may be modified or replaced in order to accommodate the wheels at full suspension and steering travel. The material may not be changed. Steel remains steel. Minimum thickness 1,2 mm. All parts welded. No rivets or glue. The new or modified inner fender can also accommodate a new or modified damper turret. Art 900-14. The side members may be minimally modified to adapt the inner fenders. Original rigidity must be restored. Within the context of the freedom of the inner fender, it is permitted to partially cut the upper side member to increase the upper level of the wheel arch. Original rigidity must be restored.</p> <p>If the enlarged radius of the rear inner fender intrudes into the rear door, the necessary portion of the rear door may be modified to suit. The door must be able to be opened and closed normally. The rigidity of the door and the dust and water sealing must be restored. These modifications must not extend by more than 700 mm in front of the axis of the rear wheels.</p> <p>The lower inner fender separating the wheel well from the cockpit may be hammered or modified for the sole purpose of allowing the passage of the wheel. All modifications approved by the TC and homologated.</p>
900-20	<p>At ride height, the steering straight ahead, the suspension settings as raced, the fenders and bumpers must cover the wheels entirely from at least 30° in front to 50° behind the vertical axis passing through the outer horizontal centre of the wheel. <i>Refer Art 701-1 which takes preference.</i></p>
900-21	<p><u>Mounting of bumpers</u></p> <p>The systems for attaching the bumpers may be replaced and may be in composite material.</p> <p>For the sole purpose of mounting the front bumper, it is allowed to modify the front side member end. Approved by the TC. Homologated.</p> <p>The safety beam allowing impacts to be absorbed by the front bumper and the chassis may be replaced by a tubular structure of not less than ID 40 mm by 2mm thick. Approved by the TC and homologated.</p>
900-22	<p><u>Rear aerodynamic device</u></p> <p>A rear aerodynamic device(wing) conforming to the following may be added: Must be straight, single piece, no slots, no holes, and made from fibre glass. Length inside end plates not more than 1200 mm. Chord length ≤ 190 mm, recommended wing profile to Be 183-176 (2010 Homologation Regulations for Super 2000 Kit-Variant (Rallies). Alternatively the FIA R4 kit profile may be used. The wing must be homologated.</p> <p>Wing, endplates included, must fit into a box with inside dimensions 1220 mm length, 200 mm width and 200 mm height.</p> <p>The wing to be mounted securely onto the hatch door, the wing leading edge behind the top edge of the hatch door window. The centre of the wing not higher than the longitudinal centre of the roof of the car when the car is horizontal measured on the door sills. The wing attachments may protrude above the roof if top mounted in the centre. Refer Appendix G.</p>
900-23	<p><u>Bonnet Openings</u></p> <p>Cut-outs are allowed with a maximum total surface of 1300 cm²</p> <p>Openings on the engine bonnet must be fitted with mesh having a maximum hole size of 10mm.</p> <p>It is permitted to add a plastic part serving as trim around the bonnet openings. The maximum height of this trim in relation to the bonnet is 20 mm.</p>
900-24	<p><u>Front lower cross-member</u></p> <p>A new cross-member made from steel and its mountings may be added, with the following conditions:</p> <p>It must be mounted between the front side-members.</p> <p>The lateral tube size minimum 40mm, wall not less than 2mm. Support tube size minimum 32mm, wall not less than 2mm. Material S355 or <i>higher</i>.</p>
900-25	<p><u>Upper radiator support</u></p> <p>The upper radiator support may be cut or modified between the headlamps.</p> <p>This cutting or modification must not affect the rigidity of the chassis structure. This support may be replaced with a new support in steel with improved rigidity to carry the loads.</p>

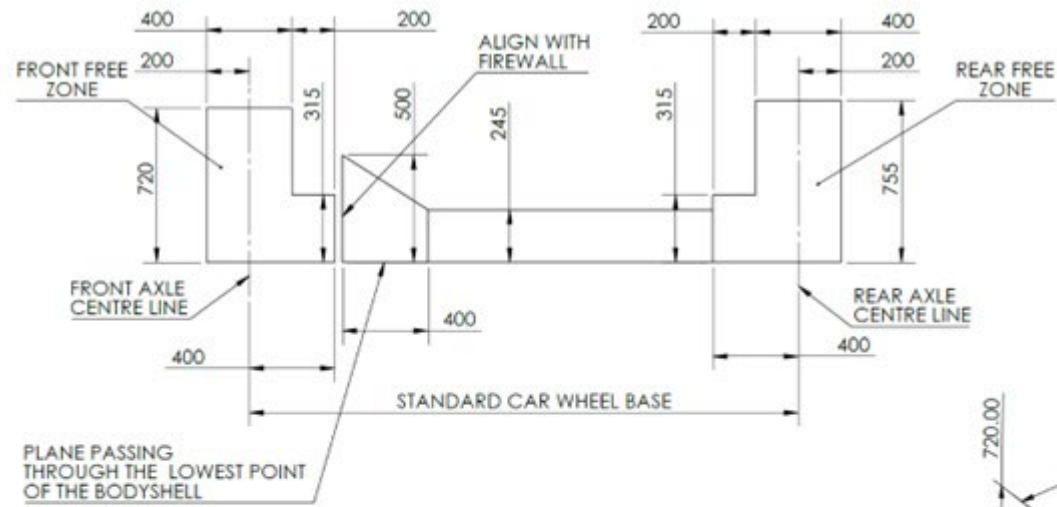
901-0	<u>INTERIOR</u>
901-1	<p><u>Seats</u></p> <p>Seats of type FIA 8855-1999 are mandatory as a minimum safety requirement, but seats of later / higher safety standard types FIA 8855-2021, or 8862-2009 may be used.</p> <p>The front seats may be moved backwards but not beyond the plane defined by the front of the safety cage main hoop. The above limit relating to the front seat position is defined by the rearmost point of the driver's / co-driver's <i>seat</i>.</p> <p>The rear seats may be removed.</p>
901-2	<p><u>Seat supports (mounting brackets) and anchorage points</u></p> <p>Seat supports (mounting brackets) must be from a competition catalogue and FIA compliant.</p> <p>The anchorage points for fixing the seat supports to the bodyshell must be installed as per App J art 253-16.2 in an H-frame format and the beams to Appendix F.</p>
901-3	<p><u>Safety Harnesses</u></p> <p>Safety harnesses with a minimum of six (6) mounting points of type FIA 8853-2016 are mandatory. The safety harnesses must be installed in compliance with App J art 253-6.</p> <p>The rear safety belts may be removed.</p>
902-0	<u>Additional interior accessories</u>
902-1	<p><u>Automatic extinguishing systems:</u></p> <p>Automatic systems in compliance with FIA 8865-2015 are mandatory, as stipulated in App J art 253-7.2.</p>
902-2	<p><u>Manual extinguishers:</u></p> <p>At least one manual extinguisher is mandatory, as stipulated in NRC SSR 600-12. Bottles in composite material are forbidden.</p>
902-3	<p><u>Accessories:</u></p> <p>All those which have no influence on the car's behaviour, for example equipment which improves the aesthetics or comfort of the car interior (lighting, heating, radio, etc.), are allowed.</p> <p>All controls must retain the role laid down for them by the manufacturer. They may be adapted to facilitate their use and accessibility, for example a longer handbrake lever, an additional flange on the brake pedal, etc.</p> <p>In no case may these accessories increase the engine power or influence the steering, transmission, brakes or road-holding, even in an indirect fashion.</p>
902-4	<p><u>Glove compartment:</u></p> <p>Additional compartments may be added to the glove compartment and additional pockets in the doors are allowed.</p>
902-5	<p><u>Rear shelf:</u> It is permitted to remove the movable rear shelf in two-volume cars.</p>
903-0	<u>Dashboard</u>
903-1	<p><u>The dashboard from the standard car:</u></p> <p>The trim situated below the dashboard and which is not a part of it may be removed. It is permitted to remove the part of the central console which contains neither the heating vents nor the instruments (according to the App J art 255-7).</p> <p>The dashboard hump(s) may be modified on the following conditions :</p> <p>The height of the dashboard hump(s) may be reduced by a maximum of 50 mm over a maximum width of 400 mm.</p> <p>The resulting opening must be closed.</p> <p>Supplementary panels for instruments and/or switches may be in composite material.</p>
903-2	<p><u>A new dashboard may be used on the following conditions :</u></p> <p>The material of the dashboard is free, but the general shape and the appearance of the original model must remain unchanged.</p> <p>With the sole object of improving forward visibility, the height of the dashboard or prominences on it may be reduced by a maximum of 50 mm over a maximum width of 400 mm.</p> <p>In the case of a dashboard equipped with a central instrument panel, the hump this causes may be removed.</p> <p>The resulting opening must be closed.</p> <p>The position (height) of the original model must be retained.</p> <p>The anchorage points may be modified for the sole purpose of installing the safety cage.</p>

904-0	<u>Cabin Heating and Demisting System</u>
904-1	<p>The original heating system may be replaced by a different unit.</p> <p>The internal heating system water supply may be closed off to prevent the spraying of water in case of accident. The OEM heating unit may be removed completely or partially, but must be replaced by an alternative windscreen demisting unit.</p> <p>Air ducts are free.</p>
904-2	<p><u>Air conditioning system:</u></p> <p>The air conditioning system may be removed. If elements are common with the heating system, they must be retained.</p>
905-0	<u>Doors:</u>
905-1	<p><u>Lateral impact protection:</u></p> <p>The original front door lateral crash bars must be retained.</p> <p>The door cavity must be filled with protective foam according to FIA 8866-2016 or similar commercial specification. The minimum required volume of foam is 40 litres per door.</p> <p>It must be possible for these windows to be removed without the use of tools. Front door windows must be transparent (non tinted).</p> <p>A sliding window or venting opening may be fitted to each window.</p> <p>The front quarter window may remain original.</p>
906-0	<u>Other interior systems</u>
906-1	<u>Floor:</u> Carpets are free and may be removed.
906-2	<p><u>Soundproofing materials and trim</u></p> <p>Except for those mentioned under the Articles pertaining to the Doors and the Dashboard, all soundproofing materials and trim may be removed. Insulating material may be added to the existing bulkheads to protect the occupants from heat and fire.</p> <p>The centralised door locking systems may be rendered inoperative or may be removed.</p>
906-3	<p><u>Roof hatch / vent:</u></p> <p>Roof hatch / vent may be added on the following conditions:</p> <p>The maximum number is two (2).</p> <p>Maximum height: 100 mm (protrusion from roof outer surface).</p> <p>Overall combined maximum width: 500 mm</p> <p>The overhang in relation to the upper edge of the windscreen is limited to 50 mm.</p> <p>Must be located within the front third of the roof.</p>
907-0	<u>Additional exterior accessories</u>
907-1	<p><u>Windscreen:</u></p> <p>Must be a series production or commercially available replacement item. A heated windscreen as fitted to the series production family is allowed.</p> <p>The windscreen must be marked with an SABS or equivalent approval identification mark.</p>
907-2	<p><u>Windscreen wiping mechanism:</u></p> <p>The windscreen wiper mechanism must be original from the series production vehicle family.</p> <p>For the sole purpose of installing the safety cage, it is authorised to move the windscreen wiping motor and mechanism (only along the longitudinal and transverse axes of the car).</p> <p>Wiper motor winding may be modified to increase rotation speed.</p> <p>The changing of the front and rear windscreen wiper blades is authorised.</p> <p>The rear window wiper mechanism may be removed.</p>
907-3	<p><u>Windscreen washer tank</u></p> <p>The capacity of the windscreen washer tank is free. The tank may be moved inside the cockpit in accordance with Article 252-7.3, or inside the boot or the engine bay.</p> <p>The pumps, lines and nozzles are free.</p>

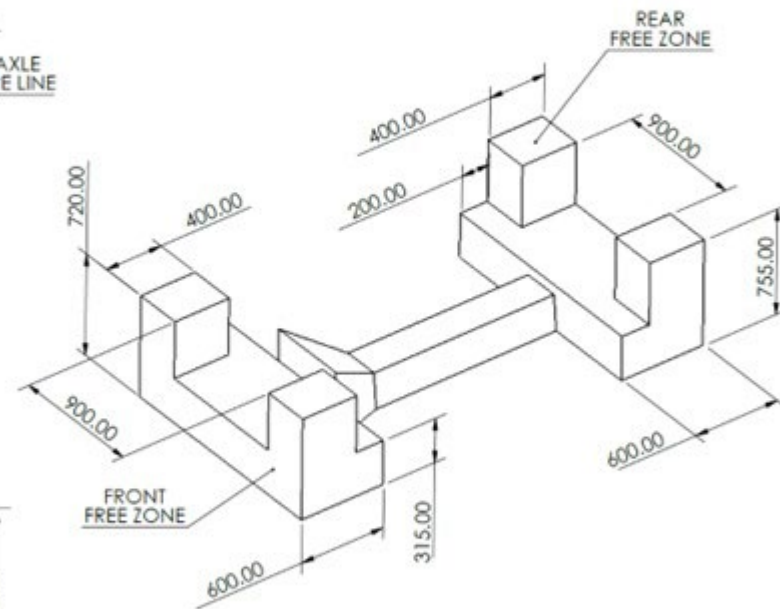
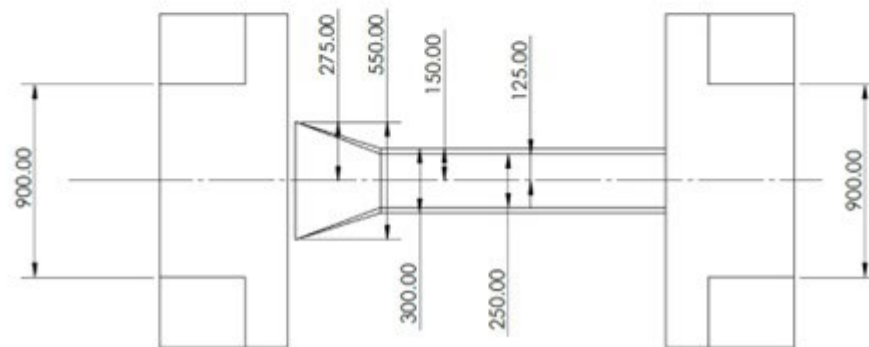
APPENDIX A



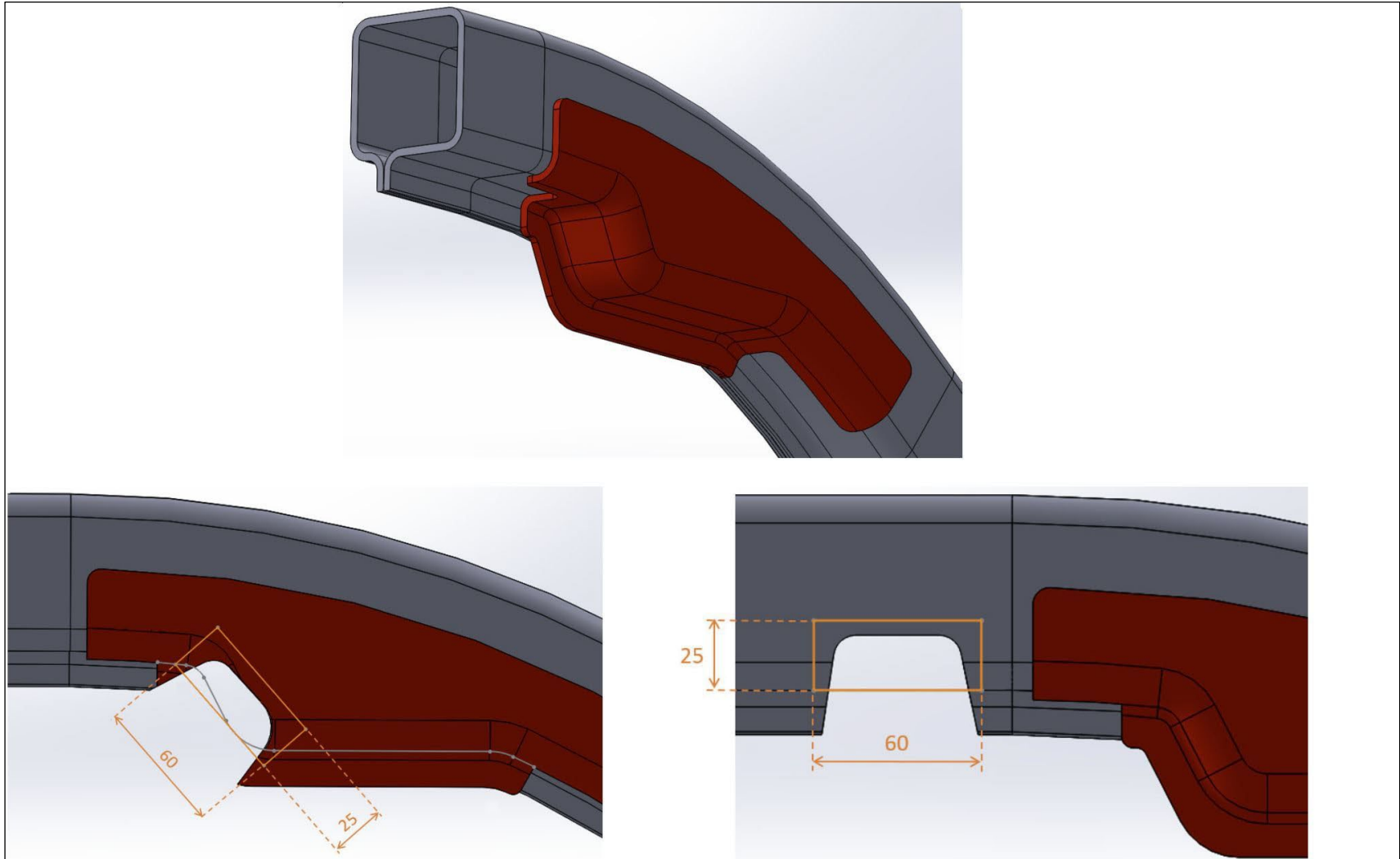
APPENDIX B



THE STANDARD CAR REAR AXLE POSITION IS THE X-REFERENCE FOR THE FREE VOLUMES REFER TO AR1 ARTICLE 01-4

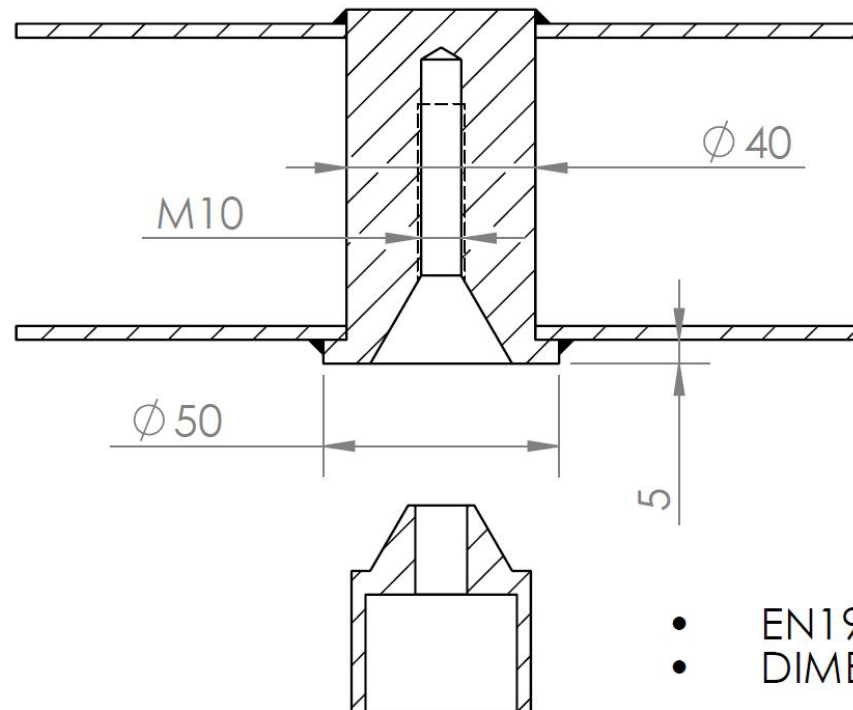


APPENDIX C



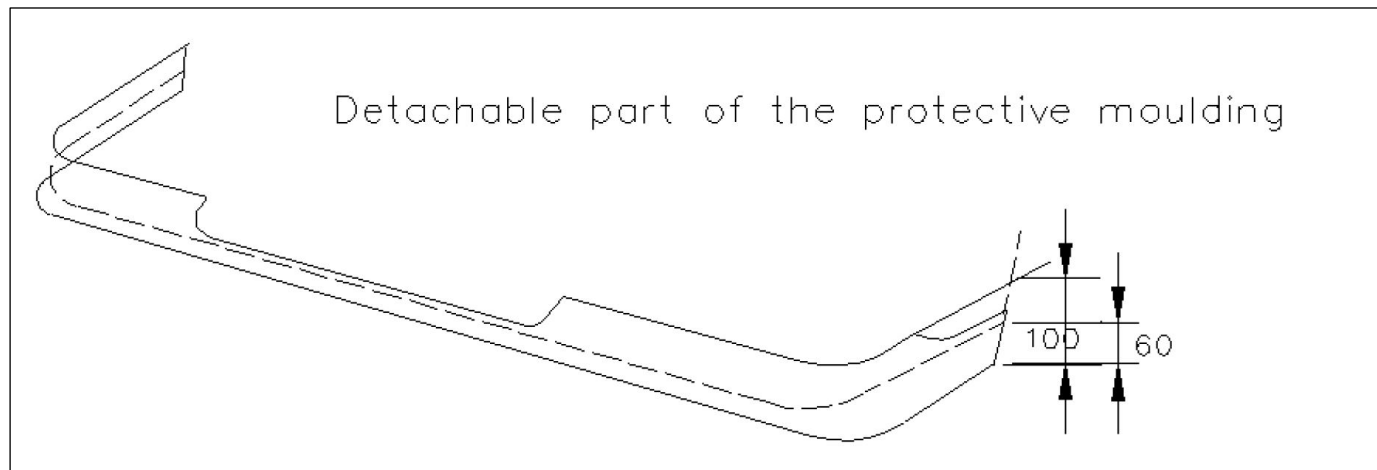
APPENDIX D

WELD INSERT IN SIDE MEMBERS

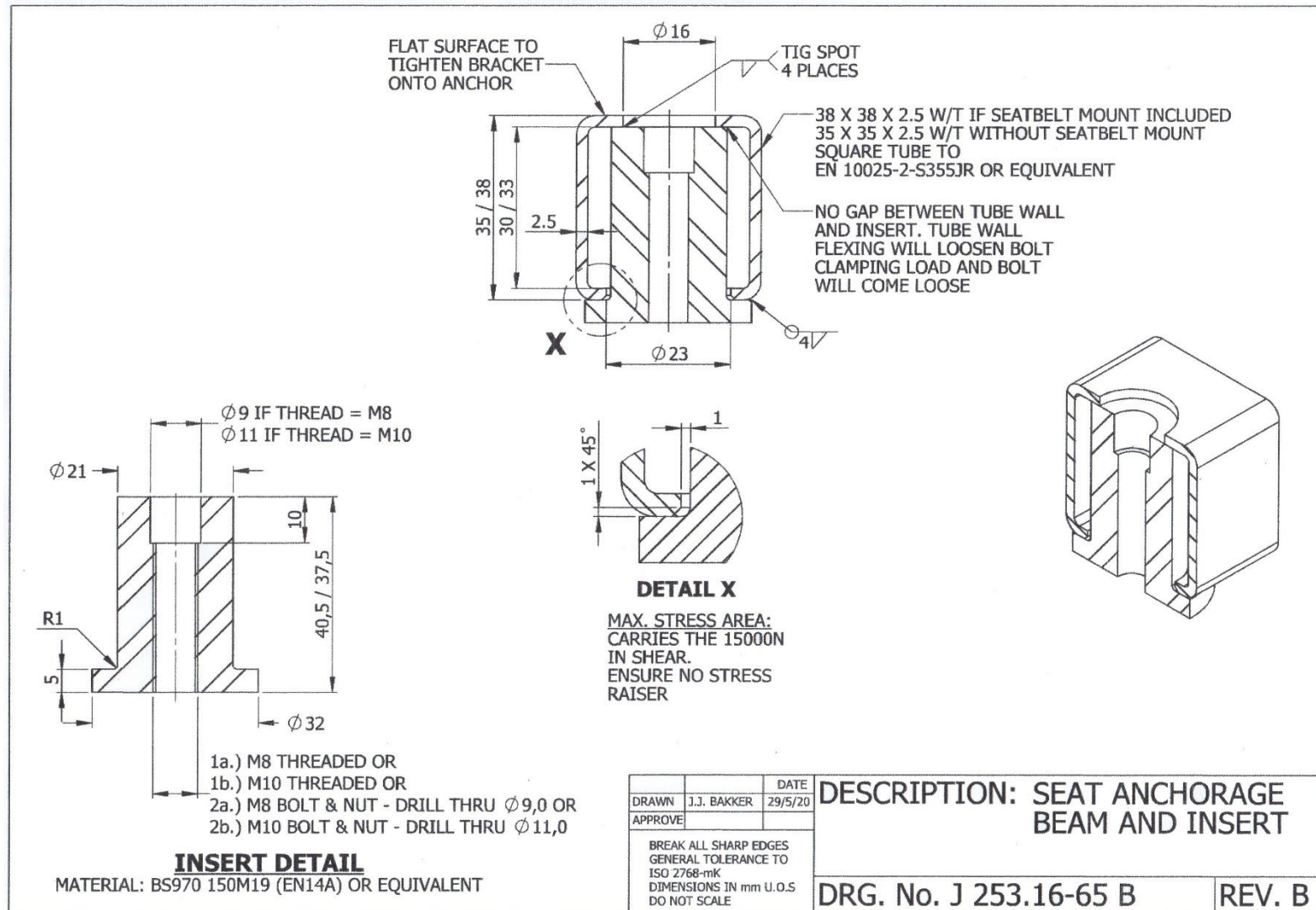


- EN19 STEEL
- DIMENSIONS, TYPICAL

APPENDIX E



APPENDIX F



APPENDIX G

