

**2011 MDA Minicross**

**Vehicle Regulations**

**Published Copy**

# PUBLISHED 2011 MDA Minicross Vehicle Regulations

The Following M.S.A. Vehicle & Technical Regulations apply:-

All the following references, relate to the MSA 2011, Competitors and Officials Yearbook (MSA Bluebook)

Section : C complete. J 1.1 and J 5.20.13

Section : K 1. to K 1.8 (excluding K 1.6.2, K 1.6.3, K 1.6.4, 1.6.6, and 1.7., K 2.2 complete. K 3.1.1. (Table 3, page 171), plus K 3.4. complete. K 5. complete. K 8.1, K 8.2, K 8.5. K 9. complete, except K 9.1.1 and K 9.1.2., K 10 complete. K 14.3.

Section : J 5.13.4. (Table on page 64). N 6.1 – N 6.14.3. Q 19.1.3

## PLEASE READ THESE REGULATIONS THOROUGHLY. IF IN DOUBT ASK.

### 1. SAFETY

- 1.1 A full roll cage with one diagonal brace to Drawings 5 or 6, (page 173), and door bar protection complying with drawing 9 (page 174) and sections K 1, to K1.8 (excluding K 1.6.2, K 1.6.3, K 1.6.4, 1.6.6, and 1.7). is the mandatory minimum; an additional bar may be fitted to the rear diagonals for the fitting of seat belts, this bar will be a minimum of 40 x 2 mm or 38 x 2.5 mm.
- 1.2 A fire extinguisher with a minimum capacity of 1.75 litres AFFF is the mandatory minimum. Refer to K 3.1.1 (Table 3, page 171), plus K 3.4. complete.
- 1.3 Front windscreen to be laminated glass or a minimum of 4 mm polycarbonate. An operative windscreen wiper/washer system is required. A rear screen and side windows are mandatory. Consideration **MUST** be given to driver's compartment ventilation for this purpose only, it is permitted to cut a maximum of 4 x 50 mm diameter holes in each rear side and or tailgate windows. A vented hole may also be added to the driver's window large enough to accept the driver's arm.
- 1.4 Seat Belts. Refer to K 2.1.complete (except K 2.1.1., 3 point not allowed) 4 point is mandatory minimum. Anchor points must not rely solely on the large washers supplied with many seat belts but **MUST** be reinforced over a suitable area to give the sufficient strength.
- 1.5 A competition seat with a built-in headrest is mandatory. Refer K 2.2 complete.
- 1.6 An ignition cut-off switch having positive on/off positions clearly marked, must be fitted in a position to be operable by the driver when normally seated. It must also isolate the fuel pump(s). A spark proof master cut-off switch must be fitted externally below the windscreen and be readily accessible whatever the attitude of the vehicle following an accident. The switch must be clearly marked with a red spark on a white edged blue triangle and On/Off positions clearly marked.
- 1.7 The front bulkhead **MUST** be effectively fire proofed, so as to seal off the drivers compartment from fire within the engine compartment. Tape is not considered acceptable. Refer J 5.2.2.
- 1.8 Crash Helmet. Refer K 10 complete. All drivers must wear an approved visor or goggles if the car driven, has a laminated glass windscreen. We strongly recommend that drivers wear a neck brace.
- 1.9 Overalls. Refer K 9. complete, except K 9.1.1 and K 9.1.2.
- 1.10 Vehicles must be equipped with a positive method of throttle closing in the event of a linkage failure, by means of an external spring to the throttle spindle. A secondary throttle return spring is strongly recommended.

### 2. Body Work and General

- 2.1 The outward appearance of the car must remain unaltered. Body shell to be standard Rover Mini Saloon shell only but excluding the Clubman shell. No material may be removed from the car which would substantially lighten it or detract from the vehicle's strength other than for the fitment of a one piece front as detailed in 2.3. Lightening or modification to the bulkheads, doors (see also 2.8), Roof Panel, Floor Panel,

wings or any other body panel is prohibited, excepting longitudinal and transverse strengthening which is allowed within the driver's compartment only. 1" square box or 1.25" tubing can be used. Angle iron will not be permitted except longitudinally along the centre tunnel. The 'A' panels may be gusseted with maximum 1.6 mm (16swg) sheet metal. The front bulkhead between the engine compartment and driver may be modified to accept an air box, the maximum dimensions of which shall be those of a standard Mini battery box, mounted horizontally, with a centre line corresponding to that of the speedometer aperture. The rear side pockets may be removed down to the level of the floor together with the unsupported part of the rear seat pan. If not used, battery box may be removed and floor area plated over. **Original profile of boot floor must be retained.** De-seamed body shells will be permitted provided the Scrutineers are satisfied with the welding. No frontal reinforcement or any form of nudge bar will be allowed. Bumpers must be removed. The bumper mounting lip must either be removed or covered with a protective material (any other method that will ensure that the edge is not sharp will also be allowed)

2.2 Lightweight or fibreglass boot and bonnet may be used provided they are securely fixed.

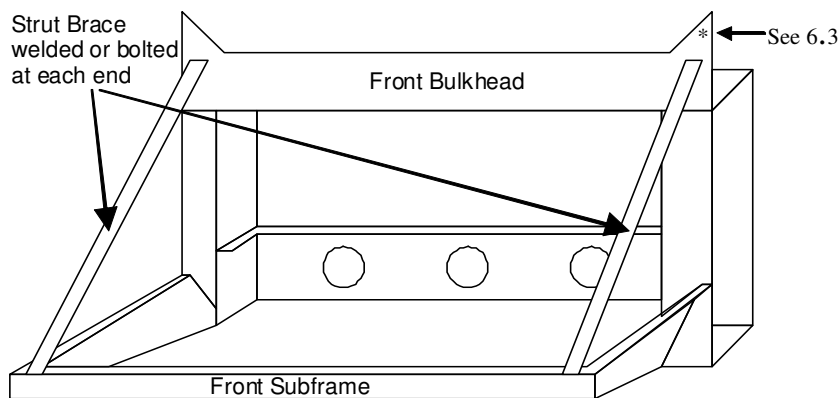
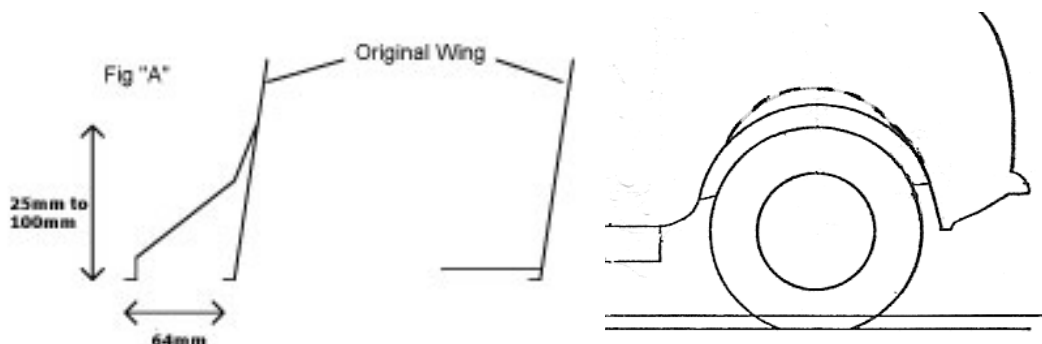


Fig. 2.3

2.3 A detachable one piece front (front panel, wings etc.) of fibreglass or metal may be used provided it is securely attached to the body and subframe. A panel of maximum thickness 2.0mm (14swg) may be fitted to the rear of the front valance no wider than the width of the front subframe to support the detachable front. Fixings at the front of the subframe to be by two individual vertical pins. Brackets to be made from sheet material 2.0mm thickness and to form a box section. Such fronts must retain the appearance of the original body. Inner wings may be removed subject to fitment of strut braces as detailed (Fig 2.3)

2.4 In order to ensure that the tyre does not extend beyond the bodywork, additions to the wheel arches are permitted, but must not extend by more than 64mm horizontally from the original line of the arch, when measured immediately above the centreline of the axle - Refer to Figure A. Also the additions should extend vertically by between 25mm and 100mm and blend into the original wheel arch. The new arch is to cover the tyre around an arc of 120 degrees. Straight horizontal extensions of the type shown in Figure B are not permitted. The original front wheel arch profile must remain in place, that is, no metal may be removed. It is permissible to raise the outer rear wheel arch to a line level with the top of the inner arch (Figure C). Plastic wheel arch additions of the type sold by Rover dealers and accessory dealers are preferred. **ANY SHARP EDGES MUST BE PROTECTED BY PLASTIC OR SIMILAR MATERIAL.**



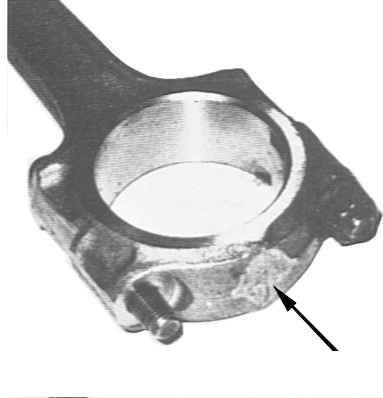
- 2.5 Rear valences may be removed.
- 2.6 When a non-detachable front is retained part of the inner wing panel on the offside front may be removed to facilitate easier removal of the clutch, provided the rigidity and strength of the inner wing is not impaired.
- 2.7 All lights must be removed and the apertures blanked off.
- 2.8 All interior trim must be removed, including floor covering, head linings, passenger seats, padding, door panels and the like. Metal door pockets or internal panels may be removed provided the doors are suitably strengthened.
- 2.9 All cars must be fitted with one internal rear view mirror of at least 50sq. cm securely mounted and positioned to give a clear view to the rear. The edges of the mirror must be protected by a suitable cover to reduce the possibility of injury in the event of an accident. External mirrors are allowed.
- 2.10 All cars must be fitted with towing eyes front and rear which must not protrude beyond the limits of the body. Their position should be marked clearly in a contrasting colour other than black or white.
- 2.11 Non standard petrol tanks may be used if securely fitted to the boot floor. Fibreglass or plastic materials are prohibited. Spill trays must be fitted to prevent spillage into the boot area during refuelling.
- 2.12 Door handles must be retained, if the early type of moving door handles are used they must point rearwards.
- 2.13 The exhaust outlet must be below the level of the floor and to the rear of the driver. The exhaust tail pipe is to terminate outside the bodywork periphery in plan view, not beneath.
- 2.14 An effective silencer must be fitted to the vehicle at all times in accordance with Section J appendix 1 - Chart 5.18 - section F.
- 2.15 Choice of steering wheel is free.
- 2.16 The standard steering column must be retained and the steering locks must be rendered inoperative.
- 2.17 Instruments are open to free choice.
- 2.18 A sump guard may be fitted, but **MUST NOT** protrude beyond the bodywork.
- 2.19 Radiators must remain within the engine compartment. Electric fans are permissible.
- 2.20 Competition numbers will be black, minimum height of 230mm with a width of 38mm placed on the sponsors background supplied by the MDA. It is also necessary for the competition number to be repeated on the nearside front of the roof.
- 2.21 The drivers name is to appear using 75mm high white self adhesive letters in both rear side windows.
- 2.22 Provision should be made for fitting of Sponsors decals as defined in Championship regulations. Decals will be supplied by the Championship organisers. Cars not complying to this regulation will not be awarded Championship points.
- 2.23 Mudflaps are to be fitted behind all four wheels, extending to a minimum of 38mm either side of the tyre tread and to a maximum of 76mm above the ground.

**NOTE:** Throughout this section, the words 'standard' and 'production' refer specifically to items manufactured by the Rover Group (or under its other previous names) and OEM suppliers and no other manufacturer.

### 3. Engine and Gearbox

- 3.1 A standard Mini / Metro 1275 cylinder block is mandatory. Bore 70.61 mm (2.78") stroke 81.28 mm (3.2"). The block may be planed.

- 3.2** Maximum permitted overbore is 1.52 mm (0.060"). Modifications to the cylinder block which are designed to provide clearance for valves (e.g. pocketing) are not permitted. Machining for a main bearing centre strap is allowed. Drilling of the block to accept a further head studs is allowed (eleven bolt fixing). Drilling into oil pick-up gallery to facilitate the fitment of external oil pre-filter system is permitted. Dry sumping is not permitted. **No other machining or drilling of cylinder block is allowed.**
- 3.3** A production crankshaft with standard stroke 81.28 mm (3.2") is mandatory. Balancing is permitted by means of "Pin Drilling" that is holes up to 6.35 mm (0.25"). Machining the crankshaft in any other way to reduce weight or any other benefit is not permitted. Polishing is not permitted. Crankshaft dampers are permitted.
- 3.4** Pistons must be unmodified Mini/Metro production or approved replacement pistons subject to maximum oversize 1.52mm (0.060"). Forged or Race / Competition orientated pistons are forbidden.



- 3.5** Standard connecting rods must be used. Connecting rods may only be modified by the removal of metal from the cap area to balance. See Diagram 3.4a. **No other machining or drilling allowed.**
- 3.6** A control camshaft must be purchased from the MDA. All camshafts are numbered and recorded. The price for 2011 is £74.00. Camshaft lobes must not be re-profiled or retimed in any way. The camshaft must retain the standard method of valve train mechanism. Timing of the cam is free. Offset keys or adjustable Duplex chain or toothed belt camshaft drive is permissible.
- 3.7** Alloy competition flywheels are not permitted. A steel replacement or the standard unit, may be lightened by machining and or drilling.
- 3.8** A standard Mini / Metro 1275 cylinder head is mandatory. Head gasket is free. Rough casting marks must be seen on both inlet and exhaust ports and in the combustion chamber. No gas flowing or polishing is allowed. The cylinder head may be drilled to accept a further head stud (eleven bolt fixing). Valve seat inserts may be fitted. The only machining allowed is to; a) block mating surface to raise compression ratio. b) valve seats for routine maintenance which may have two clearly defined angles cut, the standard one at 45° and a lower one at 60°. Radiused valve seats and any widening of the throats is not permitted.
- 3.9** Rocker gear may be either standard production items with or without offset bushes or 1.5:1 forged or roller rocker assemblies providing a maximum valve lift of 0.415" is not exceeded.
- 3.10** Valves are to be standard and vertical with a maximum size of 35.71 mm (1.407") inlet, and 29.4 mm (1.156") exhaust. Valve springs are open to free choice. Valve guides must remain unmodified. After market guides may be fitted. Valve centres may not be moved.
- 3.11** Exhaust and inlet manifolds are open to free choice.
- 3.12** Carburation must be by one of the following:-  
 a) Any single S.U. carburettor with a maximum throat diameter of 1.5" which may be modified.  
 b) A standard single 1.75" S.U. carburettor, to which the only permitted changes are to the needle, piston spring, jet and mixture enrichment device.

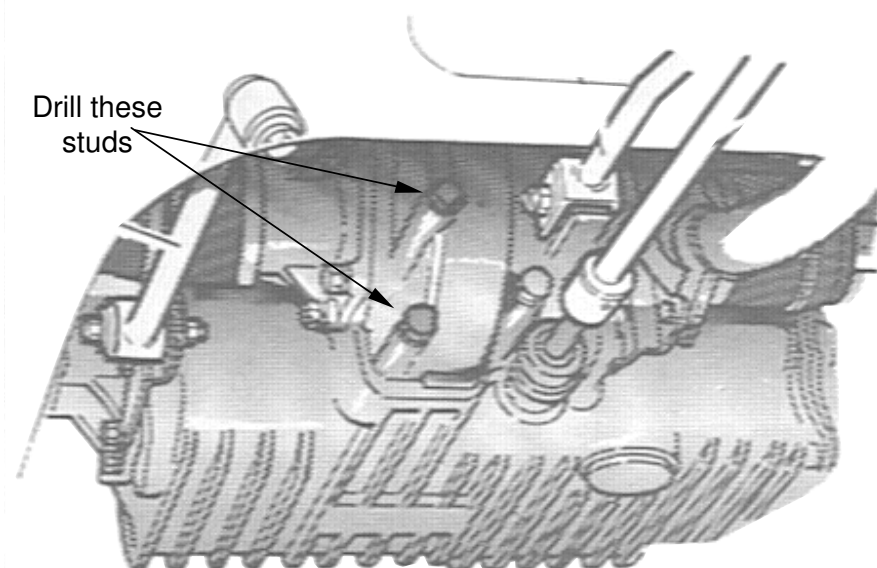
In both cases, the principal of operation of the carburettor must remain unchanged, including the butterfly and piston. Air filters or ram pipes are open to free choice.

- 3.13 The ignition system must use a standard Mini distributor using points for switching of the low tension circuit or a standard A+ distributor using its' electronic trigger for switching of the low tension circuit. It is permissible to replace points with an electronic trigger using either Lumenition Magnetric or Aldon Ignitor (not Ignitor 2). Ignition advance and retard must only be controlled by "bob-weights" and springs, with or without vacuum means. Any other form of electronic management / control to modify ignition advance/retard is not permitted.
- 3.14 Spark plugs are open to free choice.
- 3.15 The ignition system may be protected from mud and water with card, plastic or a sheet metal deflector not exceeding 18 cm x 18 cm in area, with a maximum thickness of 0.8 mm. Corrugation of the deflector is not permissible. Any additional material (including the deflector) placed in the area in front of the distributor, that is not part of the vehicles bodywork, must be seen to deflect under hand pressure. Consideration as to whether the deflector or its mountings are armourment is at the discretion of the Scrutineer.
- 3.16 Fuel pump(s) are open to free choice, but are not to be located in the passenger compartment / interior of the car.
- 3.17 Superchargers, turbo-chargers, injection of nitrous oxide or water are not permitted.
- 3.18 Fuel: Petrol as defined as 'Pump fuel' J5.13.4. (Table on page 64).
- 3.19 Gearbox and final ratios are free within the range of standard production parts of the "A" series engine and gearbox. No other parts are permitted. Five speed gearbox conversions are not permitted.
- 3.20 Standard transfer gears must be used.
- 3.21 Locked or limited slip differentials or any other device intended to give a similar effect is not permitted.
- 3.21.1 After market conversions to stronger differential pins are allowed as is the conversion to quad pin set-ups as long as 3.21 is adhered to.
- 3.22 The clutch is free as long as the same number of driven plates as the production item are retained. The backplate is free within the range of standard Rover Cars parts. The diaphragm is free.
- 3.23 Water pumps are free. When mounted inside the car they must be sealed to prevent spillage into the driver compartment.
- 3.24 Engine mountings are free. Additional engine steady bars may be fitted.

#### **4. Suspension and Brakes**

- 4.1 Standard mini front and rear subframes must be used and may be strengthened. Flexible subframe mountings may be replaced with solid equivalents. Suspension parts must be standard Mini, retaining rubber suspensions, standard top arms and standard rear swinging arms. Standard suspension bushes may be replaced with uprated competition equivalents. Rear rubber cones may be softened. Negative camber bottom arms are permitted. Front tie rods are free choice. Adjustment is permitted to front and rear track (providing 2.4 is complied with), caster and camber angles. Rose jointed components are prohibited.
- 4.2 There is free choice of brake linings and drums provided that the tyre does not protrude beyond the top edge of the wheel arch, including extensions. Brakes must be operative on all four wheels. Hand brakes must be operable and be of sufficient efficiency to hold the car on a slight gradient. A TANDEM brake system is preferable so that in the event of a failure of one system, braking is maintained on at least 2 wheels on the vehicle. Brake bias valves are permitted but must not be capable of adjustment from the drivers seat.
- 4.3 Mini Cooper and Cooper 'S' brakes may be used as long as the vehicle complies with 2.4. It is permissible to modify callipers & discs designed for 12" wheels to fit inside 10" wheels providing modification does not compromise safety. Drilled & grooved discs are permissible.
- 4.4 Power braking is not permitted.

- 4.5 The ride height may be altered provided adequate clearance exists between tyres and body. 'Hi-Lo' type suspension units are permitted.
- 4.6 Dampers are open to free choice. Coil spring / damper units are prohibited.
- 4.7 Anti roll bars may be fitted.
- 4.8 10" diameter Mini road wheels with a 6" maximum width are permitted providing they are acceptable to the scrutineer and section 2.4 is complied with (damaged alloy wheels will not be accepted.) Cooper 'S' and reverse rim Cooper wheels are allowable. Banded or welded wheels are not permitted. Wheel nuts must match the wheel used.
- 4.9 Yokohama Tyres A008 control tyre is mandatory.
- 4.10 Up to 0.375" wheel spacers are permitted provided they are one piece not laminated and bear on the full wheel hub area. Spacers may not be used with Cooper 'S' discs and drums or any other drum with a built in spacer.
- 5.0 **Electrical Equipment**
- 5.1 Each car must be fitted with two RED brake lights, of the anti crash type as used in fog, with a minimum of 21 Watt bulbs fitted. The lights should be a minimum of 12" apart on the rear parcel shelf or HIGHER and clearly visible from behind when the foot brake is applied.
- 5.2 A 'poor visibility' light should be fitted according to Refer K5.
- 5.3 The use of a dynamo, alternator or generator is open to free choice.
- 5.4 A battery and self starter must be fitted and in working order and not of a temporary nature. The battery may be located either in the boot or in the passenger compartment. The battery earth lead must be coloured yellow. Battery terminals **MUST** be covered with insulating material. Insulating tape will not be permitted. **Battery must be securely mounted to the vehicle.** If mounted within the passenger compartment, battery must be fitted in a sealed non-conductive battery box.
6. **Eligibility Checks**
- 6.1 Random eligibility checks maybe made at any meeting and engine / gearbox assemblies checked or sealed for subsequent checking. The Minicross Drivers Association will reimburse Scrutineers travelling expenses when a sealed engine / gearbox assembly is subsequently checked and found legal. All other expenses to be borne by the Entrant / Competitor. If the engine / gearbox assembly is found to be illegal all expenses must be covered by the Entrant / Competitor. (Refer:- Judicial, section C ). Random fuel check will be made.



**6.2** Sealing of engine / gearbox assemblies shall only be by means of wire and official M.S.A. numbered seals and / or paint. All cars **MUST** have following studs, nuts and bolts drilled to enable seals to be affixed. Drillings must be of at least *3mm* diameter. Failure of to have the following drilled is deemed to be a breach of vehicle eligibility.

**Clutch Cover** – The heads of two adjacent bolts on the top/front.

**Cylinder Head** – The centre front and one adjacent stud.

**Rocker Cover** – Both retaining screws.

**Differential** – Refer to studs as per drawing.

**Carburettor** – Any 2 fixing studs to the inlet manifold.

Drivers may, if they wish, elect at their own expense to have the above items sealed by and Eligibility Scrutineer during assembly. A sealing certificate would then be issued for the vehicle. Providing the original seals are in place, and the original certificate is produced at any subsequent eligibility inspection, the need for further stripping will be removed.

**6.3** MSA vehicle log books are required in accordance with Section J 2.1 – J 2.1.5.

**6.4** The triangulation panel adjacent to the left hand front subframe top mounting **MUST** be drilled on the angled flange with a 2mm diameter hole. Refer to figure 2.3. An MSA numbered seal will be fitted, and the number recorded in the vehicle log book.

**6.5** Non production of the Vehicle Log Book will be deemed a breach of vehicle eligibility

## **IMPORTANT SAFETY CHANGES**

Please pay particular attention to the sections on Fire Extinguishers, Seats and their Fixings, Harnesses and Helmets. The regulations covering these may have changed from last year in the MSA Competitors Yearbook.