



2020 REGULATIONS AND SPECIFICATIONS FOR THE FORMULA "M" CLUB CHAMPIONSHIP (162077)

VALIDITY OF THESE REGULATIONS

NOTE: ALL SAFETY INFORMATION (MATERIAL SIZES ETC.) CONTAINED IN THESE REGS ARE BASED ON EXPERIENCE GAINED THROUGH YEARS. NO CRASH TESTS OF ANY KIND HAS BEEN PERFORMED.

These regulations apply for the calendar year of 2020.

RULES OF COMPETITION

1. CONTROLLERS

- 1.1 The controllers of the championship shall be Motorsport South Africa (Pty) Ltd (herein referred to as MSA) which has delegated control to the Northern Regions Motorsport Committee and the South African Formula "M" Racing Club Championship Committee (herein referred to as the COMMITTEE) as provided for in these regulations.
- 1.2 The Controllers reserve the right to amend, alter or introduce additional regulations and to issue interpretation of these regulations if deemed necessary, in the form prescribed by MSA.
- 1.3 All representations of the South African Formula "M" Racing Club competitors to the CONTROLLERS shall be made through the chairman of the COMMITTEE. Non-compliance with this article shall result in disciplinary action by the COMMITTEE as provided for in the constitution.

2. AIM OF THE CHAMPIONSHIP

To declare Club Champions as provided for in these regulations.

3. REGULATIONS

- 3.1 All qualifying races shall be held under the GENERAL COMPETITION RULES and STANDING SUPPLEMENTARY REGULATIONS OF MSA, these standing regulations and the supplementary regulations are issued by the promoters/organisers of events;
- 3.2 References to the male gender in these regulations include the female gender.

4. CHAMPIONS

The following champions will be declared:

SAFMRC Club Champion Class A
SAFMRC Club Champion Class B
SAFMRC Club Champion Class C
SAFMRC Club Champion Class D
SAFMRC Senior Champion
SAFMRC Junior Champion
SAFMRC Index Winner
SAFMRC Master Champion (45+ years old)

5. ELIGIBILITY OF CARS

- 5.1 Formula "M" racing cars are of the open wheel, single seater, rear engine, rear wheel drive design, powered by motorcycle engines, restricted to one engine per car.
- 5.2 The driver shall be seated on the centre line of the vehicle.
- 5.3 The vehicle may be of space frame or monocoque design, but subject to article 23.
- 5.4 The Championship shall be open to all cars complying with the specifications and regulations referred to in these standing regulations.

- 5.5 Each competing vehicle shall be subject to an inspection, which will cover general compliance, finish and appearance, as and when required by THE COMMITTEE.
- 5.6 A member of a Technical Committee appointed by the COMMITTEE will carry out this inspection.
- 5.7 Successful completion of this inspection will result in the issue of a registration certificate.
- 5.8 The COMMITTEE shall hold a record of all chassis.
- 5.9 Subject to 14 (fourteen) days' notice in writing, the certificate mentioned in article 5.7 may be withdrawn if the standard of turn-out of the vehicle falls below the acceptance limit.
- 5.10 Should, during the season, any of the information on the certificate change, which will include, but not limited to, a change of engine or dimension of the chassis or a change of class in which the car competes, the car shall be submitted by the competitor for the issue of a new certificate. In the event of non-compliance with this regulation it shall be deemed that the change took place immediately after the existing certificate was issued, and in which event such competitor shall forfeit all points accumulated since the issuing of the certificate, should the car not comply with the prescribed specifications.

6. ELIGIBILITY OF DRIVERS

- 6.1 All entrants and drivers entering a Formula "M" event must:-
 - 6.1.1 Be a registered paid up member of the South African Formula "M" Racing Club;
 - 6.1.2 Be in possession of a valid club circuit car competition licence issued by MSA;
 - 6.1.3 Comply with the regulations for the specific class entered.
- 6.2 Minimum age limits in respect of the different racing classes are the following:
 - 6.2.1 Class D – **Not less than 8** (eight) and not more than 13 (thirteen) years of age;
 - 6.2.1.1 The COMMITTEE shall classify a competitor older than the maximum age limit prescribed per class, should such competitor have had no or such limited experience, as a novice. Such competitor shall only be entitled to compete in that class for a period of 2 (two) years after the date of his first race in that class.
 - 6.2.2 Class C – **Not less than 12** (twelve) years old.
 - 6.2.3 Class B – **Not less than 15** (fifteen) years of age;
 - 6.2.4 Class A – **Not less than 16** (sixteen) years of age. Preference will be given to drivers progressing thru class-B. All drivers under the age of 18 will prove to the committee that they have enough skills to be able to safely control and race a class-A car ALL new drivers in Class-A, will be subject to a probation period of at least 6 months. During this period, the committee reserve the right to cancel a person's Class-A membership to race in class-A, at any point.
- 6.3 A driver shall be deemed to be of the required minimum/maximum age by the 31st July of the year concerned.
- 6.4 Notwithstanding the minimum ages imposed in this article, the COMMITTEE may allow, in its discretion, a younger competitor to compete in a higher class, after having taken into consideration his age, experience, competence, previous participation and results and competitiveness in motorsport.
- 6.5 No person being of the required age shall automatically become entitled to participate in a class. The COMMITTEE shall in each case consider an applicant's age, experience, competence and competitiveness in motorsport, and, especially in the case of minor applicants, shall give the principle of progression through the junior classes to the senior classes serious consideration. The safety of other competitors shall always be taken into account when considering an application.
- 6.6 Before entering his first race, a new member shall satisfy an appointed member of the COMMITTEE that he is capable to race safely and knows and understands the applicable rules and flags. The Committee member shall issue a competency certificate, without which no competitor shall be entitled to compete in his first race. All new drivers will have a yellow ribbon attached to the rear of their race car. The ribbon must be visible to all drivers competing and officials to indicate to them that it is a novice driver. The ribbon must be worn for at least 3 race meetings and can only be removed with permission of the club Chairman.
- 6.7 There is no restriction on the domicile of competitors scoring towards club championship.

7. CHAMPIONSHIP MEETINGS, VENUES, DATES AND POINTS

- 7.1 The championship meetings, venues and dates are listed in the MSA calendar.
- 7.2 All meetings listed as per article 7.1 will be point-scoring Championship meetings.
- 7.3
- 7.4 Each Championship race meeting has the same point's value and counts for the same Championship points as determined in article 9, notwithstanding the number of heats per Championship race meeting.
- 7.5 BONUS POINTS: 12(twelve) Bonus points will be awarded to all drivers participating in official timed practice of an "away" race meeting. "Away" race meetings will be seen as meetings at the following circuits, Phakisa (Welkom), Dezzi Raceway
- 7.5.1 Bonus points will be awarded to members that, actively, participate at a motor show(promotional event). The driver must be present at the event to score the points. The events will be nominated by the

committee and must be events like the annual Cars in the park show, Gauteng Motor show etc. Minor events do not count towards the bonus points, unless if nominated by the committee. A maximum of 12 Bonus points will be added to the points (overall and class). All members/drivers must be given an equal opportunity during the season to participate in a show.

7.5.1a A competitor that improves the lap record at a circuit, in an official race will score 2 bonus points.

7.6 **It shall be deemed that a competitor is classified as a starter, if he/she crossed the start line under the car's own power, during a official qualifying session or race heat.**

7.7 No car from a specific class shall be used to make up numbers for another class . No car shall be entitled to be entered for more than one class per race meeting.

7.7.1 Classes A, B, C & D will compete separately for the purposes of a class Champion.

7.7.2 Points will be scored separately, in accordance with article 9, for each separate class.

7.7.3 Where classes A, B & C are combined the competitor with the highest number of points, regardless of class, shall be declared senior champion.

7.7.5 No driver or vehicle change will be allowed after scrutineering unless approved in writing by the club Chairman and with the consent of all competitors in the class.

8. RACE DURATION

The number of laps for each heat during a race meeting shall be determined by the Organisers on the basis that it shall be a minimum of **24 kilometers** per heat.

9. APPROVED POINT SCALES

The only points scale to be used in the Championship is the following:-

9.1 Each Championship race meeting shall have the same points value, notwithstanding the number of heats run.

There will be three point scoring systems:

9.1.1 Class position points as per the conventional way, counting towards class championships.

9.1.2 Index points that are specifically implemented to overcome the following problems and thereby ensuring that a less advantaged competitor can be rewarded for his skill –
less powerful engine;
older tyres;
older design;
all other money = speed influences

NOTE : Index points will only count towards the Index winner and will have no influence towards the class or overall Championship.

9.2 POINTS

9.2.1 Subject to article 9.4, the index points value of a championship race heat (two heats per event), shall be as follows:

	Class A, B & C	Class D
1 st place	12	6
2 nd place	11	5
3 rd place	10	4
4 th place	9	3
5 th place	8	2
6 th place	7	1
7 th place	6	
8 th place	5	
9 th place	4	
10 th place	3	
11 th place	2	
12 th place	1	

9.2.2 The position points value of a championship race heat (two heats per event), shall be as follow:

9.2.3 Class A, B, C & D ,Class- Championship

1 st place	12
2 nd place	10
3 rd place	8

4 th place	6
5 th place	4
6 th place	2

Overall Senior Club Championship

To determine the overall Senior Champion, the following sliding scale will be used:

6 or more Starters in a class per race/heat :

1 st place	12 points
2 nd place	10 points
3 rd place	8 points
4 th place	6 points
5 th place	4 points
6 th place	2 points

5 Starters in a class per race/heat:

Scoring start from 2nd place down.

4 Starters in a class per race/heat:

Scoring start from 3rd place down.

3 Starters in a class per race/heat:

Scoring start from 4th place down.

2 Starters in a class per race/heat:

Scoring start from 5th place down.

1 Starter in a class per race /heat:

2 points.

A starter will be a car that passes the start line, under its own power, after the official start of the timed practice or any race heat.

- 9.3 Should there be more than two heats per Championship race meeting, the total points multiplied by two referred to in article 9.2 shall be divided by the number of heats, each heat to score points individually and equally and to be added up to obtain the final results of the day. A one-heat event will score total points multiplied by two.
- 9.4 Points awarded per CLASS Championship(A,B AND C) heat and race meeting will not be subject to the amount of cars participating.
- 9.4.1 Index points remain unchanged.
- 9.5 **Index application:**
The following will apply:
- 9.5.1 $(\text{fastest lap} * \text{laps completed} / (\text{racetime}) - \text{credit}) * 100 = \text{index}$
- 9.5.2 Highest index scores highest points
- 9.5.3 A credit of 0.5 seconds will be given per position behind the first position. This credit is for time lost on the start line and 9.6.4 is to prevent abuse.
- 9.5.4 In the event of a competitor recording a lap time 3% higher than his qualifying time, he will be excluded from the index of that heat.
- 9.6 Trophies for 1st, 2nd and 3rd place in each class (Club Championship) will be handed out after the results have become final for the day. Depending on the organisers of an event
- 9.7
- 9.8 Separation of ties at the end of a Championship season will be dealt with in accordance with GCR229.
- 9.9

10. JUMPED STARTS

10.1 Any competitor jumping a start shall :-

10.1.1 Be penalised by 30 seconds or as decided by the COC of the day.

10.1.2 A start shall be deemed to be a jumped start if there is any movement after the 5 second board is displayed.

11. GRID POSITIONS

11.1 The grid position for the first heat of a meeting shall be determined by the official timed practice held before the first heat.

11.2 Subject to article 10.1.2, grid positions for subsequent heats during a race meeting will be determined by the finishing order of each previous heat.

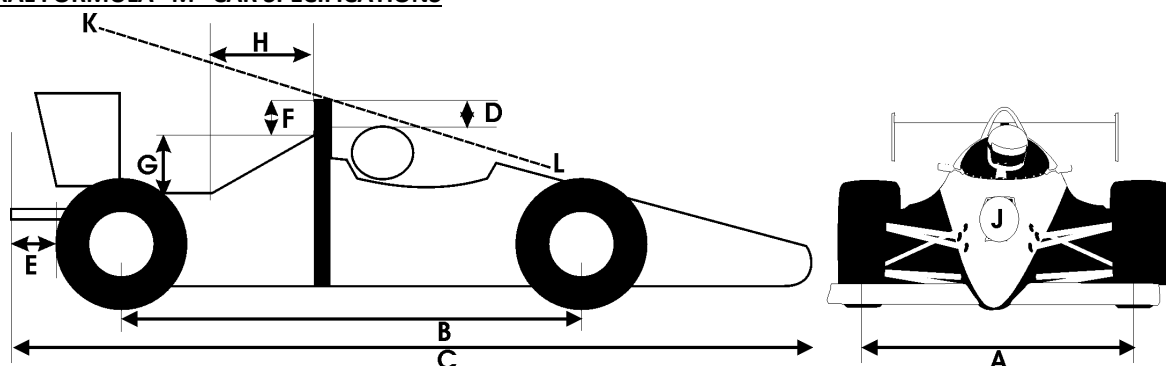
12. LEGALITY/STRIPPING PROCEDURE

12.1 Apart from the officials authorised in the GCRs to impound cars for legality checks, the Clerk of the Course shall at any race meeting, consider impounding and checking a car having broken the lap record for compliance with the

regulations. The Clerk of the Course shall make his decision in consultation with the scrutineers, appointed technical consultant and Chairman of the COMMITTEE.

- 12.2 In the event of any competitor protesting the legality of the car of a competitor, such protestor shall, when lodging his protest in accordance with GCR 198 and apart from the fees payable as from time to time prescribed by MSA, pay to the Chairman of the COMMITTEE, in the event of-
- 12.2.1 A strip requested for a car with a four-stroke engine, R5 000.00 (FIVE THOUSAND RAND), should the stripping of a head be required, and R10 000.00 (TEN THOUSAND RAND) in the event that the dismantling of the engine be required; and
- 12.2.2 A strip of a two-stroke single cylinder car be requested, R1000.00 (ONE THOUSAND RAND), should the stripping of head/barrel be required and R1500.00 (ONE THOUSAND FIVE HUNDRED RAND) in the event of a total strip by splitting the gearbox casing;
- 12.2.3 These amounts shall be paid to the competitor whose car has been protested should his vehicle, after the legality check, be found to be legal, in order to cover costs for the replacement gaskets and other necessities, and repaid to the protestor in the event of the car protested be found illegal.
- 12.2.4 A strip requested by the COMMITTEE has no fees payable.
- 12.2.5 If a member lodge a protest for a strip/inspection, both cars, the car been protested and the protesters car will be stripped/inspected.
- 12.3 Class Representatives may from time to time call for a partial or comprehensive strip/check to insure fair competition in his class. This must be done in consultation with the Technical Chairman and the technical advisor to ensure correct procedures and with the approval of the Club Chairman to ensure the absence of victimization.
- 12.4 Any member whose vehicle has been found to be illegal at a legality check shall be liable for payment of all fees levied to the club for services rendered, which amount shall be paid before such member shall be entitled to enter for any subsequent event. Should more than one member be involved, the costs shall be shared equally?

GENERAL FORMULA "M" CAR SPECIFICATIONS



GENERAL FORMULA "M" CAR SPECIFICATIONS

13. CLUB DECALS

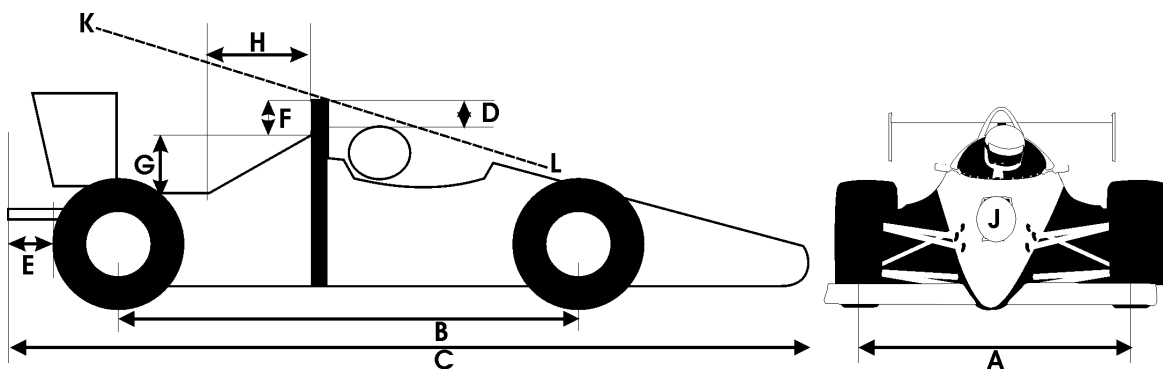
Decals advertising Formula "M" and the website shall be purchased and displayed by all members as indicated as "J" on the sketch under article 15.

14. COMPETITION NUMBERS

- 14.1 Cars shall be identified by means of a number, to be allocated by the COMMITTEE. The class symbol must appear next to or directly under the number to identify the class.
- 14.2 Numbers shall be displayed in a durable and legible manner to show forward and on each side of the car.
- 14.3 Numbers must be black on a yellow back ground.

15. BASIC CAR DIMENSIONS

The different classes shall comply to the minimum and maximum dimensions as stipulated by the following drawing:



15.1 Classes B & C

A	Minimum – Maximum track	1000 – 1600mm
B	Minimum – Maximum Wheel base	2700 mm
C	Maximum overall length – all inclusive	4100 mm
D	Minimum clearance between top of roll-over and top of helmet, measured in horizontal plane	50mm
E	Maximum exhaust length beyond rear point of car excluding aerofoil	150mm
F	Maximum height from top of roll-over bar to centre of adjoining staybar	150mm
G&H	To suite new gen motor dimension and be approved by TC	
J	Club decal	
K&L	Safety roll-over bar to steering bulkhead roll-over bar – driver's head not to protrude the imaginary line	

NOTE: Existing cars which were built in accordance with the original Class A Formula Super M rules, which dimensions exceed A, B and C, will be allowed as is, subject thereto that their certificates (see 5.7) are duly endorsed.

15.2 Class D

A	Minimum – Maximum track	840 – 1010mm
B	Minimum – Maximum Wheel base	1370 – 1620mm
C	Maximum overall length – excludes exhaust and rear aerofoil but includes tyres	2850mm
D	Minimum clearance between top of roll-over and top of helmet	50mm
E	Maximum exhaust length beyond rear point of car excluding aerofoil	150mm
F	Maximum height from top of roll-over bar to centre of adjoining staybar	150mm
G	Open dimension	
H	Minimum 70% of dimension G	

16. MINIMUM WEIGHT LIMIT

All cars will be weight as and when required by the Technical Consultant

The following minimum weight limits will apply to the different classes:

- 16.1.1 **Class D:** for vehicles using engines \pm 16 Kw (21HP) and not exceeding 21 kW – minimum weight 190kg
Two-stroke – 125cc maximum
Four-stroke – 250cc maximum. The Jonway Hawk 250.
- 16.1.2 **Class C:** for vehicles using engines 48 kW max (64HP) – minimum weight 350kg
Two-stroke – not allowed

Class B:

- 16.1.1 For vehicles using engines 80 kW max (107HP) – minimum weight 425kg. A weight penalty of 4kg per kilowatt will be added to cars with motors that exceed 80 kW, the maximum weight that a car is allowed to weigh, depends on the structural strength of the vehicle and will be determined by the Technical Chairman and noted on the scrutineering sheet.

The following weight penalty will be applied to all current out of spec motors. 4Kg for every Kw over 80 Kw and 2Kg for every Newton meter over 70nm.

- 16.1.2 **The minimum weight of a class-B car, will be determined by the model of engine used.**
The following minimum weights for the homologated motors will be used:

MAKE AND MODEL	YEAR MODEL	MINIMUM WEIGHT
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SUZUKI GSR 600	2006/2007	425 KG
SUZUKI GSXR 600	2006/07	425 KG
SUZUKI GSXR 600	2007/08	425 KG
KAWASAKI ZX600	2007	478 KG.

In the event that another model or make of engine wants to be used, the specification as found on www.motorcyclespecs.co.za will be used to determine the minimum weight of the car.

. If a member does not agree with these specifications, he/she can request a Dynamometer test to determine the motor's power output. The following terms and conditions will be applicable:

The committee can decide at any time to do a Dynamometer test on any car to ensure that the output is as stipulated.

1. A test must be requested at least 2 months before the first race.
 2. The same dynamometer must be used, for the 2020 season.
 3. The member will be responsible for the cost of the test.
 4. The test will be done at own risk and the club will not take any responsibility if anything goes wrong (e.g. Blown motor etc). All test are done at OWN RISK.
 5. A power run will be made on the dynamometer and the results will be used to determine the weight of the car. The test is only to be done to determine the minimum weight of the car. The decision of the Technical Chairman/TC is FINAL.
 6. After the test, all the components (as decided by the technical committee) will be sealed to prevent modifications and tuning done to improve the output of the motor). The seals must be intact at all times and will be checked at every race meeting. In the event of a broken seal, the car will be deemed to be illegal. If work needed to be done to the motor or any other component that was sealed, the member must approach the technical committee to request that the seal can be broken, This permission must be given in writing. After the work has been completed, the vehicle might need to be tested again to ensure that the power output has not increased since the last test.
 7. At least 2 members of the committee must be present when the testing is done.
 8. Random dyno tests can be done on cars to ensure that the output power of the motor is the same at any time seemed necessary by the technical committee. If there are a 2% difference between the test and the original test, a motor will be checked to determine the legality of the motor. No cost will be paid by the club(to the competitor) if it is a committee decision to do these checks.
 9. NO MODIFICATIONS will be allowed to improve the kilowatt output of a motor if the test indicates that a motor puts out less kilowatts that is allowed in the regulations.
Any modifications, other than what is covered in these regulations must be approved by the technical committee as well as ALL the current competitors in the class.
- A) **The correct procedures that will be followed is:**
- The member must apply to the technical committee, in writing stating all the facts of what needs to be modified as well as a motivation why.
 - This application must be handed to the committee at least 60 days before a competitor will be allowed to race if permission is granted.
 - Expert and proven facts must be stated in the application.
 - After investigating the application, the committee may seek information from a qualified person/specialist. The member doing the application will undertake to pay all cost in this event.
 - The committee will make a decision and will keep the following in mind, cost involved, availability of parts/components, feasibility and will ensure that there will be no improvement on the output/performance. After the modifications, the car will be dyno tested and if the output is higher than calculated, the car will be raced in A-class.
 - Before permission is granted for the modification, all the current members in the class will agree to it by signing a notice of it and this notice will be binding. If 1 member do not agree, the modification will not be allowed.
 - The modification will be noted on the technical sheet of the specific car. Only the technical information noted on the certificate will be legal. Any other modification will be seen as illegal and the car will be disqualified.

Class A: - minimum weight 500kg. As far as possible, the weight must be part of the car's structure to assist in the strengthening of the car. A maximum of 30kg ballast weight may be used for additional

weight. The weight ballast must be secured with more than one bolt, not more than 100mm apart, with washers to prevent it from pulling through in the case of an impact. Properly secured heavier under trays will not be considered ballast weight

- 16.2 The weight prescribed in 16.1 includes the driver with full racing gear;
- 16.3 Cars must comply with the weight limit from commencement of timed practice until completion of the final race of the day and the release of cars from *parc ferme*;
- 16.4 It is the duty of each competitor to ensure that his car complies with the weight limit according to the scales at a specific racetrack before the meeting commences. The reading at scales shall indisputably be deemed to be correct unless determined to the contrary by the Clerk of the Course before commencement of the timed practice;
- 16.5 All weight in cars shall be as far as possible structural in nature, and no non-structural ballast of more than 30 kilograms shall be allowed and not more than 10 kilograms on any 100 millimeter wide transverse portion. Ballast may form part of the floor tray but shall not be secured to or supported by the floor tray. The floor tray may be accepted as structural ballast, depending on the manner fixed to the chassis.

Infringement will result in exclusion of all events completed for the day.

All motors must comply with regulation 35 and 37 of the 2020 Formula "M" regulations.

17. WHEELRIM & TYRE RESTRICTIONS

- 17.1 Rim diameters of Classes B and C cars may not exceed 13 inches.
- 17.2 Rim diameters of cars of Class D shall be 8 inches.
- 17.3 The rim widths of Class D cars are limited to a maximum of 150 mm.
- 17.4 Class D tyres shall be between 4,0 inch width x 8,0 inch diameter and 6,5 inch width x 8,0 inch diameter.
- 17.5 Classes B & C are allowed to use any racing slick tyres up to a maximum width of 255 mm that are locally commercially available. Semi slick tyres are not allowed. The use of wet weather tyres are allowed and the size must be the same as the allowed slick tyre (13" rim size, maximum width 255mm) . **There are no width restrictions for Class A.**
- 17.6 The use of tyre warmers is prohibited.
- 17.7 Remoulded or retreaded tyres are prohibited.
- 17.8 ALL Classes must have at **least 1mm thread** on tyres at pre-scrutineering over the whole surface of the tyre. The class Chairman will be entitled to check tyre wear during the race day to ensure safety.
- 17.9 Application may be made to the COMMITTEE for the use of locally available road tyres or rims of a different specification. The application will be viewed in the light of cost, safety, performance and availability.

18. SUSPENSION

The design and construction of the suspension is unrestricted, subject thereto that rose joints under bending motion shall be a minimum of 12mm (Recommended 20mm). ROSE JOINTS must Be clean and free of any paint and dirt.

19. BRAKES

- 19.1 Each car shall have a foot-operated hydraulic brake system operating all four wheels.
- 19.2 Two single master cylinders or one tandem type master cylinder shall be used, splitting front and rear.
- 19.3 Any standard motorcycle or car discs and calipers may be used. These may be modified for fitment purposes only. ABS and aftermarket performance brake components are not allowed.

20. STEERING

- 20.1 All cars shall be controlled by a steering wheel, which shall be of an approved construction.
- 20.2 Only steering mechanisms which are safe in the opinion of the member of the technical committee referred to in article 5.6 and the scrutineers at each meeting shall be allowed. Steering controlled by cables and monorail chains is specifically prohibited.
- 20.3 The steering mechanism must be well secured to the chassis and easily accessible for purpose of inspection.

21. BODYWORK

- 21.1 The shape and design of the bodywork is unrestricted but shall incorporate the requirements of this article.
- 21.2 All cars shall be fitted with a body, at least underarm height in height, surrounding the driver and extending to the firewall behind the driver.
- 21.3 The bodywork may extend rearwards to enclose the engine or incorporate the rear aerofoil.
- 21.4 The bodywork shall be of a neat and clean appearance and all cars shall be fitted with a cosmetic or functional rear aerofoil.
- 21.5 All removable body panels shall be adequately fastened.

- 21.6 It shall be constructed of mild steel, fibre glass (E-glass), aluminium, stainless steel, or other material acceptable to the COMMITTEE, no other materials permissible.
- 21.7 The driving compartment shall be so designed and constructed that the driver can get out of the driving seat and safety belt in less than 10 seconds. The driver shall be able to get into or out of the safety belt and driving seat without having to remove or manipulate any part of the car, other than a removable steering wheel.
- 21.8 All cars shall be fitted with a seat mounted independently from, and not supported in any way, by the floor (undertray).
- 21.9 Air ducting may be attached to or incorporated in the bodywork.
- 21.10 The attachment of aerodynamic devices is permitted.
- 21.11 Wheels shall remain external to the bodywork. Full nosecones shall be allowed.

22. FLOORING

All cars shall be fitted with a floor, extending from the front of the vehicle to a point not shorter than the beginning of the driver's seat and shall be a minimum thickness of either 0,8mm steel, 1.6mm aluminium, 6mm fibreglass in single skin, or 6mm plywood; other materials must be approved by the Technical Committee.

23. CHASSIS AND SPACE FRAMES

- 23.1 No load or stress-bearing part of any chassis constructed of steel, shall use material –
 - 23.1.1 Class D - thinner than 1.6 (one comma six) mm and rectangular less than 20 x 20 mm.
 - 23.1.2 Class C - thinner than 1.6 (one comma six) mm and rectangular less than 32 x 20 mm.
 - 23.1.3 Class B - thinner than 2 (two) mm and rectangular less than 32 x 20 mm.
- 23.2 No integral part of the chassis shall be of a material thinner than 1,6 (one comma six) mm and less than 16 (sixteen) mm square.
- 23.3 A leg/foot protection cage, depending on vehicle design, shall form part of the front of the chassis and be of a construction to the satisfaction of the Technical Committee;
- 23.4 Cars built before the end of the 1996 season not complying with article 23.1 - 3 can be passed by the Technical Committee on such conditions as it may deem fit.
- 23.5 There shall be two roll bars: –
 - One to be fitted directly behind the driver and designed to protect the driver's helmeted head
 - AND
 - A bulkhead roll-over bar at a point between the hips and ankles of the seated driver.
- 23.6 In respect of Classes A, B and C the roll-bars shall be constructed of a minimum of 32 (thirty two) mm diameter steel tubing with a wall thickness of 3 (three) mm minimum. The rear roll-bar must be supported by two straight stay bars manufactured from 19 (nineteen) millimetre round or square steel tubing of a wall thickness of not less than 1,6 mm (from the rear of the chassis to the roll bar) from a point not lower than 150 (one hundred and fifty) mm from the top of the roll bar to a substantial part of the chassis. The roll-bars must form part of the bottom part of the chassis.
- 23.7 In respect of Class D cars, roll-bars must be constructed of minimum 25 (twenty-five) mm diameter steel tubing with a wall thickness of 2 (two) mm minimum. The roll bar must be supported by two stay bars, one on either side from the rear of the chassis to the roll bar from a point not lower than 150 (one hundred and fifty) mm from the top of the roll bar to a substantial part of the chassis, measured rearwards from the centre line of the roll-bar to the centre line of the rear stay bar fixing point, at a distance of not less than 70% of the vertical height, measured along the roll-bar, from the roll-bar upper chassis fixing point to the centre line of the upper mounting point of the stay bar.
- 23.8 Where staybars are bolted on, high- tensile steel bolts not smaller than 8 (eight) millimetres diameter shall be used.
- 23.9 The roll-bar and stay bars must each have an inspection hole at least 3 (three) mm in diameter.
- 23.10 The Formula "M" technical adviser may, at the recommendation of a member of the Technical Committee, approve any deviation from this rule on condition that such deviation will not affect the strength of the roll-bar and supports as provided for in this article. The technical adviser's decision shall be final. The certificate referred to in article 5.7 shall be accordingly endorsed and produced at scrutineering whenever required.
- 23.11 All chassis shall be constructed of mild steel only, or fibreglass (E-glass) in the case of tube construction, no other materials, not approved by the committee, being permissible.

24. SEATBELTS AND SAFETY GEAR

- 24.1 A four- or five-point approved safety harness(FIA) of a quick-release type that releases at least all but one points, and which holds the Driver firmly under all racing conditions and in good working condition shall be mandatory. Class D are allowed to use the 50mm wide belts.
 - 24.1.1 Seat belt anchor points shall be lower than the shoulder height of the seated driver.
 - 24.1.2 The seat belt anchor must be retained with a minimum bolt diameter of 8 (eight) mm high-tensile steel.
 - 24.1.3 The anchor point must be a suitable and substantial part of the chassis.

- 24.2 The Driver must be suitably dressed for safe competitive motor racing. A fireproof racing suit, shoes, gloves and helmet are compulsory and these must be in good condition with no tears and gaps and/or cracks. A fireproof balaclava is also recommended for all classes. In the case of class D, a neck brace is compulsory, and is recommended for senior classes. The Driver's protective clothing will form part of the racing season commencement scrutineering, but will be monitored by Class Chairmen throughout the year for race worthiness.
- 25. IGNITION SWITCH**
- 25.1 All cars shall have an ignition switch inside the cockpit, which shall be accessible by the driver when belted in and from the outside.
- 25.2 In addition to the requirement of 25.1, cars using a battery shall have an electric circuit breaker in the main positive or negative(either) battery leads and shall be easy to operate from outside the car all in compliance with SSR 2.7. All electrical equipment(fuel pump, mist light etc) must be disabled by cutting the emergency circuit breaker. Class D cars with batteries must have cut-off switches as well.
- 26. HEADER TANK**
- 26.1 Cars may be fitted with header tanks.
- 26.2 The header tank must be of steel or aluminium construction with a minimum wall thickness of 1,6mm.
- 26.3 All pipes fitted thereto must be welded.
- 26.4 The tank, if fitted, and not including the breather, must be below the top edge of the firewall.
- 27. FUEL TANK**
- 27.1 The fuel tank, (the capacity of which must conform to article 28.4) which includes the Class D header fuel tank, shall be housed within the framework, and shall be firmly and adequately secured, temporary fixings being specifically prohibited;
- 27.2 Fuel tanks which are side-mounted, shall be within a crash-proof frame.
- 27.3 The tank may be constructed of steel, aluminium or plastic (motocross type).
- 27.4 The filling port cap shall have an efficient sealing action.
- 27.5 Non-metallic fuel pipes shall be flexible and adequately clamped at all joints to prevent leakage. No plastic fuel pipes shall be allowed.
- 27.6 A breather overflow pipe shall be fitted, venting from the highest point of the tank, routing upwards to the highest point within the main roll-bar, but not protruding above it (to prevent siphoning) and then down and venting out of the car to a point below the bottom of the chassis.
- 27.7 The breather shall not be larger than 8mm in diameter.
- 27.8 In the event of a car becoming inverted, fuel shall not leak from the tank.
- 27.9 Fuel lines and filters must be placed away from points which are vulnerable in the case of a crash.
- 28. FUEL**
- 28.1 Only 93/95 Octane fuel(commmercially available at fuel pumps ,shall be used —. NO ADDITIVES,OCTANE BOOSTERS ,MENTHANOL OR RACING FUELS ARE ALLOWED.
- 28.2 **The COMMITTEE has the right to empty out fuel and replace it with controlled fuel before a race in pre race paddock**
- 28.3 Should a fuel test arise from a protest, the protester shall, in addition to the prescribed protest fees, pay to the organisers the fee charged by the approved agent to conduct a test. Should the protest be successful, such amount shall be refunded to him by the protested competitor.
- 28.4 Fuel shall be drained from the fuel pipe connected to the carburetors or as indicated by the Technical Committee.
- 28.5 Every competitor shall indicate to an official, if required, the position of the fuel tank/s of the protested car.
- 28.6 Two-stroke competitors shall supply fully detailed information regarding the two-stroke oil and fuel ration mixed.
- 28.7 In addition to fees to be paid in terms of article 28.6, any competitor protesting the legality of fuel used by another competitor, shall pay to MSA all such monies as required by MSA to conduct the fuel test as prescribed by the relevant GCR. In the event of fuel being found to be illegal by a final court, or should there be no appeal against the decision of a lower tribunal, all monies expended by a protestor on instruction of MSA, including costs which might be borne by the COMMITTEE shall be repaid by the party protested, who shall not be entitled to enter subsequent race before such payment has been made in full.
- 29. FIREWALL**
- 29.1 Space frame chassis shall have a firewall of a thickness of not less than 0,8mm for Classes A, B & C cars, and 0,5mm for class D cars fitted between the driver and the engine compartment from the floor pan to a minimum of 100 (one hundred)) mm below the top of the driver's helmet, and shall seal off the engine compartment from the cockpit.
- 29.2 Cars with monocoque fibreglass design shall have a fibreglass firewall between the driver and the engine

- compartment of a minimum of 3mm thickness. Metal of 1,6mm may also be used.
- 29.3 The firewall shall be airtight as far as possible save for holes for cables, gear levers, pipes and other ancillaries, such holes to be sealed as far as possible;
- 29.4 Class D cars using header fuel tanks shall have a firewall which continues up the roll-bar between the driver's head to a point not less than 30mm above the fuel tank filler opening, excluding breather. The width of such plate shall not be less than that of the roll-bar.
- 30. EXHAUST**
Except to comply with GCR 245, and the sketch (article 15) the design and construction of the exhaust pipes are free, provided the tail pipe does not run parallel to the centre line so that a degree impact will bend the system or it must be kinked.
- 31. CATCH TANKS**
All breathers and overflow pipes from the engine must discharge into a transparent container or one with a level indicator of a minimum of 500ml capacity. There shall be separate catch tanks for oil and water.
- 32. OIL FILLER CAPS AND DRAIN PLUGS**
All oil filler caps and drain plugs shall be wire-locked.
- 33. CHAINGUARD**
Chainguards are compulsory and must be minimum width of 30 (thirty) mm, covering the top vertical rear and horizontal from the rear to the engine.
- 34. REAR-VIEW MIRRORS**
All cars shall be fitted with two rear-view mirrors, giving the driver adequate view to the back of his vehicle.
- 35. ENGINE**
- 35.1 Subject to article 35.2, only engines as homologated by the COMMITTEE for the different classes (see articles 36.1, 37.1 and 38) shall be used.
- 35.2 Competitors shall be entitled to apply to the COMMITTEE to homologate other engines, and the COMMITTEE may approve such applications subject to such conditions as they may deem fit, alternatively to decline such applications.
- 35.3 The COMMITTEE shall prepare an official detailed specification document (herein referred to as THE SPECIFICATION MANUAL) which shall inter alia include:
- 35.3.1 The standard specifications applicable to the engine for use in competition.
- 35.3.2 The minimum weight of the car using the applicable engine.
- 35.4 The onus shall rest on all competitors to obtain a copy of THE SPECIFICATION MANUAL applicable to his engine which shall be the only THE SPECIFICATION MANUAL referred to in the event of engine specifications.
- 35.5 All amendments, additions or explanations to each SPECIFICATION MANUAL, formally signed by the Technical Chairman, shall form part of THE SPECIFICATION MANUAL.
- 35.6 All information contained in each SPECIFICATION MANUAL, as amplified by the COMMITTEE, shall, should it be contrary to any regulation of this article, override such regulation.
- 35.7 It shall be the duty of the Technical Committee to prepare SPECIFICATION MANUALS in respect of engines in use by competitors. Any competitor intending to use an engine not in use shall notify the technical committee timeously and shall give all assistance required to obtain the necessary technical information to enable the technical committee to issue such SPECIFICATION MANUAL.
- 35.8 The COMMITTEE shall furnish MSA with copies of all SPECIFICATION MANUALS compiled, which shall form part of this regulation.
- 35.9 Unless to the contrary stipulated in these standing regulations or SPECIFICATION MANUALS:
- 35.9.1 **No modifications are allowed.**
- 35.9.2 Engine components must remain completely standard and unmodified.
- 35.9.3 When determining the legality of engines, reference will be made to these regulations and the SPECIFICATION MANUAL referred to in article 35.3.
- 35.9.4 For comparison purposes, a part made available by an official motorcycle dealer of the type of engine under consideration, together with a certificate that such part is genuine and, if applicable, freely locally available, shall be *prima facie* accepted as such.
- 35.9.5 It must be possible to identify all components as original manufacturer parts, where applicable, as specified unless otherwise herein specified.
- 35.9.6 It is recorded that due to a scarcity of certain engine parts, and to ensure that competitors have access to parts and at the cheapest possible prices, the Formula "M" technical committee shall be entitled, at any stage during the racing season, to either *mere motu* or at the request of a competitor, approve the use of a part other than the original manufacturer's part, on condition

that -

- 35.9.6.1 The Technical Committee is satisfied that the use of such part will not result in any performance benefit compared to the manufacturer's part;
- 35.9.6.2 The manufacturer's part is not freely available locally; alternatively that such part will result in a cost saving for all competitors.
- 35.9.6.3 Such part is freely commercially available.
- 35.9.6.4 No competitor shall be allowed to use such part before at least 20 days written notice of the Technical Committee's decision, with full detail, has been given to all affected competitors.

35.9.7 Internal polishing of any part or parts of the engine is prohibited and metal may not be removed.

- 35.9.8 Engine components shall be assembled in the standard configurations and shall comply in all respects with the applicable SPECIFICATION MANUAL and these standing regulations. No factory or other conversion kits, racing kits/parts or high performance parts may be fitted unless specifically allowed.
- 35.9.9 Air filters, cold air boxes and ram tubes are free.
- 35.9.10 Spark plugs, to be used only in the form as purchased, are free.
- 35.9.11 Sprocket (final drive) ratios are free.
- 35.9.12 Clutch springs are free.
- 35.9.13 Cylinder heads and engine casings may be welded as a result of breakage or damage subject thereto that the welding will not have the effect of altering the shape, structure or dimension of the broken part from the original manufacturer's specification. All such repair work will be subject to scrutiny and endorsement of the competitors certificate (see article 5.10) by the technical consultant or member of the technical committee prior to being used.
- 35.9.14 Engine parts may be lightly sand or bead blasted for cleaning purposes and chemical carbon remover may be used, subject thereto that it shall not have the effect of polishing any part and that casting, witness and/or riser marks shall remain visible at all times in default of which such part shall be deemed to have been modified.
- 35.9.15 The legality of any component will be valid only at the time of checking.

36. SPECIFIC REGULATIONS & SPECIFICATIONS RELATING TO CLASS D 2-STROKE ENGINES

36.1 The engines listed hereunder are homologated for use by Class D:

Yamaha DT / RD 125

Honda LS 125

Yamaha TZR (Kickstart)

The Jonway Hawk 250 fourstroke engine will be allowed and is in an experimental phase.

- 36.2 Re-sleeving is permitted providing the shape, size, profile and position of the ports are not altered from original manufacturer's specifications. The aluminium barrel and especially in the ports may not be ground, polished, blended or altered in any way to suit the new sleeve.
- 36.3 Balancing of the fly-wheel rotor and crankshaft may be done, provided it does not alter the part in shape or size from the original manufacturer's specification.
- 36.4 Fly-wheel rotors may be welded and rivets replaced to prevent breakage, and also repaired by the same means.
- 36.5 Crankshaft pins may be welded in position to prevent distortion.
- 36.6 All engine and gearbox bearings must be genuine factory replacement parts.
- 36.7 All engines shall have provision for sealing by cross drilling one stud or bolt-head in each listed component with a minimum of 2mm diameter hole to prevent the cylinder head, barrel, reed block/inlet, manifold, clutch cover and fly-wheel cover from being removed after sealing.

37. SPECIFIC REGULATIONS & SPECIFICATIONS FOR ENGINES - CLASSES B & C

37.1 The following engines are homologated for the following classes:

37.1.1 Class C

Suzuki GSXR 400

Honda CBR 400 NC23

Kawasaki ZX; ZXR, ZZR (400)

Yamaha YFZ, FZR, R (400)

37.1.2 Class B -

1. Only 599cc motors with a maximum of 93.5 kW (kilowatt) power and a maximum of 70 NM torque will be allowed.
2. *The following weight penalty will apply to all motors. 4kg for every kW over 80kW and 2kg for every NM over 70nm. These cars must go for structural scrutineering to ensure that they are safe with the additional weight.*
3. *A written application must be made to the committee before any new motor is fitted to a car, even if you replace it with exactly the same motor. The onus of supplying the committee with the correct specifications lies on the member and not the committee.*

4. For the 2020 season any motor bigger than 599cc must race in Class-A. Before a car is raced in class-A, the engine/chassis combination will be inspected by the Technical committee. If the technical committee decides that the combination is safe, only then can the car be raced in Class-A
5. *A maximum re bore of 1mm is allowed. A written application must be made to the committee before any re boring is allowed. At least 2 committee members must inspect the barrels and approve the necessity for the re bore. This will only be allowed if it is proven that it is necessary to do it to enable the motor to be "rescued" for racing. This application must be handed to committee at least 1 month before the next race event.*

- 37.2 No modification or addition to engine or gearbox is allowed except where specifically covered in these regulations (see regulation 16.1.2.10).
- 37.3 Mechanical starting mechanisms may be removed. Self-starters must remain functional to be activated by the seated driver.
- 37.4 Alternators and generators **may NOT** be removed or **disconnected** and must be in a 100% working order. No switches are allowed in the circuit, it must be a closed loop.
- 37.5 No data logging equipment are allowed.
- 37.6 Sumps may be baffled to prevent engine damage. No modifications are allowed to the shape and volume of the sump.
- 37.7 Oil Coolers may be used. If the oil cooler pick-up is from below the sump, it must be suitably protected.
- 37.7 The oil pump may be modified or replaced with a standard oil pump from another motor cycle to improve oil pressure. External pumps may be used.
- 37.8 Faces of cylinder heads must remain parallel.
- 37.9 Only original (unmodified) cam shafts are permitted.
- 37.10 All engines shall have provision for sealing by cross drilling two tappet cover bolts and two bolts on a side cover that will be indicated by the Technical Chairman, with 2mm diameter holes to prevent the engine from being disassembled after sealing.
- 37.11 Valve seat inserts may be replaced The insert may not protrude beyond the combustion chamber profile. The valve seat insert is defined as the metal insert on which the valve seats and does not form any part of the port.
- 37.12 Exhausts and inlets:
- (a) Exhaust and inlet ports are defined from the point immediately below the valve seat insert to the flange face of the cylinder head (the aluminium construction). Ports may not be modified in any way.
 - (b) Intake and exhaust valves may not be modified (Swirl grinding, valve profiling and polishing are strictly prohibited).
- 37.13 Valve guides may be replaced as long as the shape and dimension of the guide does not alter from original manufacturer's specifications. "K" liners are permissible.
- 37.14 Any carburetor or fuel injection system, issued as **standard** with the engine (refer to relevant SPECIFICATION MANUAL), will be allowed.
- 37.14.1 Fuel injection components must be **standard as per the original configuration** on the motorcycle, **sensors and pick-ups are prohibited from being moved to different positions.**
- 37.14.2 No turbo or supercharging is allowed.
- 37.14.3 No traction/skid control is allowed.
- 37.14.4 Only standard carburetors /throttle bodies etc. are allowed. These must be standard as found on the specific motor being used. NO mix and match.
- 37.15 Only standard, unmodified gearbox components are permitted; geardogs may be undercut, racing components being prohibited.
- 37.16 The clutch hub may not be modified in any way. Lightening of the clutch hub is specifically prohibited.
- 37.17 Barrels may be bored to a maximum as determined in the SPECIFICATION MANUALS. Also refer to point 37.1.2.5
- 37.18 Material may be removed from the underside of the crown of the piston only to achieve balance. One piston must remain untouched. Chamfering of piston skirts and shortening of piston skirts is prohibited. Exhaust and inlet valve pockets may be machined deeper.
- 37.19 **Only motor cycle ignition systems issued as standard with the engine may be used (refer to relevant SPECIFICATION MANUAL). No additional electronic devices are permitted. No re-mapping/programming of the Ecu or any other component is allowed.**
- 37.20 An suitable electrical water pump may be added to the cooling system of the motor. The Electrical pump **must** be run in conjunction with the mechanical pump to increase coolant flow, especially after the car is switched off and the electrical pump can still run for a minute or two to prevent Heat soak. **The mechanical pump may not be removed and must stay operative at all times.**

38. SPECIFIC CLASS A ENGINE SPECIFICATIONS

38.1 The following four-stroke motorcycle engines may be used In Class A:

38.1.1 Any four-stroke motorcycle engine that is approved by The Committee and that is commercially available in South Africa may be used.

38.1.2 A maximum of 4 cylinders may be used.

38.1.2

38.1.3 All motors must be normally aspirated, no turbos or super chargers allowed.

38.1.4 Performance ignition systems, e.g power commander, Dastek, Spittronics is allowed, if approved by the technical committee.

38.1.5

38.1.6 Data loggers are allowed, no electronic timing systems is allowed due to Monoposto participation.

38.1.7 All engine chassis combination must be approved by the technical committee to ensure safety.

39. SPECIFIC CLASS A CHASSIS SPECIFICATIONS

39.1 Any single seater / open wheel racing car driven by a motor cycle engine will be allowed, only approved chassis (for example;Ex Formula GTI,Formula Ford) will be allowed and no 2001 season and prior class A cars will be allowed unless approved by THE COMMITTEE.

39.2 The legs of the driver must be behind the front line of the front axle, unless if approved by the technical committee due to the power rating of the motor/chassis combination. The approval must be stipulated on the vehicles inspection sheet and is only applicable to that season.

39.3

39.4 Car dimensions:

TRACK (maximum)	1600 mm
WHEELBASE (maximum)	2700mm
OVERALL LENGTH (maximum)	4100mm

39.5 The Rose Joints/Rod ends on uprights must at least be of a 16mm thickness,it is suggested that it should be 18mm, with a lock washer to prevent the ball from pulling through.

39.6 For safety reasons, all car/engine combinations must be approved by THE COMMITTEE for feasibility

39.7 Wheel and tyre specifications must conform to article 17.

39.8 Braking System: All four wheels must be fitted with a working brake caliper. The minimum requirement for the type of brake calipers and disc used must be Vw Golf GTI or bigger.

39.9 ABS is not allowed.

39.10 Side Shaft: All side shafts must be for a VW Golf GTI type or stronger to prevent CV breakage under load conditions.

39.11 Traction/skid control is not allowed.

40. CONSTRUCTION OF CARS,ALL CLASES

40.1 Members constructing new cars shall report their intention to the COMMITTEE.

40.2 The design and constructions of cars shall be subject to on-going inspection by a technical subcommittee appointed by the COMMITTEE.

41. FIRE EXTINGUISHERS

41.1 A fire extinguisher/s as prescribed by the relevant GCR/SR with a minimum content of 1kg, and fitted to be accessible and removable by the seated driver(with his safety belts engaged), shall be fitted to each car. Its position shall be indicated by a red E on a white and red background on the outside of the body.

41.2 In respect of Class D, it is not required that the fire extinguisher be reached by the seated driver, but the fire extinguisher must be removable and directable from the outside.

41.3 **Fire Extinguishers must be serviced every 6 months.**

41.4 **Fire strikers may be used and do not need to be serviced every 6 months.**

NOTE:INTERPRETATION OF RULES

It is understood by all competitors that the philosophy behind and principle of Formula "M" racing is to provide competitive cost-effective and affordable racing using parts readily available in South Africa in their standard form. Regulations will be interpreted with this in mind and any convenient interpretation of rules on engine, gearbox, chassis or bodywork not within the spirit of these regulations will be regarded as an infringement with the resultant exclusion of the vehicle concerned.