



ATLANTIC REGION MOTOR SPORTS GRAND TOURING SEDAN CLASS REGULATIONS

Edited: October 26th, 2025

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These Specifications were established by ARMS which reserves unto itself the right at any time to alter these as required, promulgate special rules in emergency and periodically to revise any appendices hereto. Such alterations or additions will be published in the form of revised manuals or bulletins and/or on the ARMS official website.

These Grand Touring Sedan Class Regulations are intended to assist in the conduct of competitions and to further general safety. They are a guide and in no way guarantee against injury or death to participants, spectators or others. No express or implied warranties of safety or fitness for a particular purpose shall be intended or result from this publication or compliance with these specifications. By participation in these competitions all participants are deemed to have complied with these regulations.



ARMS Code of Conduct

ARMS clubs, members and participants in ARMS sanctioned events shall conduct themselves according to the highest standards of behaviour and sportsmanship and in a manner that shall not be prejudicial to the interests and the reputation of ARMS or its Clubs or of motorsport generally. Failure to do so shall be considered a breach of the ARMS GCRs and may result in penalties being applied.

The following statements further define the beliefs, expectations, ideals and principles of individual conduct that ARMS believes should be exemplified:

1. Participants in ARMS sanctioned activities shall be bound by this Code of Conduct;
2. Participants in ARMS sanctioned activities shall accept that motorsports can be dangerous and entails inherent risks;
3. Participants in ARMS sanctioned activities shall be treated with consideration and respect, and shall treat fellow participants with the same consideration and respect;
4. Participants in ARMS sanctioned activities shall endeavour to portray a positive image of motorsports through their exemplary driving habits;
5. Participants in ARMS sanctioned events shall not knowingly place themselves or others in a position of undue risk. Consideration of safety shall be placed before competitive goals;
6. ARMS members shall strive to set exemplary standards of behaviour as they are all ambassadors for motorsports;
7. ARMS members shall pledge to demonstrate with their actions care and concern for the environment.



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1. SEDAN ELIGIBILITY

1.1 SEDAN DEFINITION

The word “sedan” refers to all vehicles that generally includes “fenders over wheels” or “enclosed wheels”. This includes production-built sedans, coupes, convertibles, and trucks. It also includes purpose-built tube-frame and semi tube-frame race cars.

1.2 PERMISSIBLE SEDANS

Any sedan vehicle that meets the minimum ARMS safety criteria is permitted for competition. This also includes station wagon, all wheel drive and turbo vehicles.

1.3 GUEST AND LEGEND CARS

1.3.1 GUEST CARS

Upon applying to the Race Committee, other series cars may run at a regularly scheduled event as long as the vehicles meet their class rules and the ARMS Regional rules re driver safety (section 5 ARMS Regional Road Race GCR) and vehicle safety (section 6 ARMS Regional Road Race GCR and sections 5, 6, 7 and 8 of these GT Sedan Class Regulations).

1.3.2 INEX Legends CARS

Legends cars may compete with sedans as long as they continue to meet current INEX rules and updates and conform to the ARMS Regional rules re driver safety (section 5 ARMS Regional Road Race GCR) and vehicle safety (section 6 ARMS Regional Road Race GCR and sections 5, 6, 7 and 8 of these GT Sedan Class Regulations) and run a tire with a section width not exceeding 210mm on stock 13X7 INEX wheels.

NOTE Section’s 8.11.1 regarding Fire Systems and 12.13 regarding fenders will not apply to Legends.

1.4 SEDAN RACING

All sedan road race cars are raced together at the same time on the same track. With six classes of race cars all competing at the same time, there is a large difference in speed from the fastest class to the slowest class. Each race has an overall winner as well as individual class winners.



2. SEDAN CLASSIFICATION

2.1 Intent

The TRAC Series PWR (**P**ower to **W**eight **R**atio) class is designed to be open to many different makes of race cars with minimal restrictions and ease of complying with the class rules. Cars will be classed primarily based on Horsepower to Weight Ratio. The PWR Class will earn TRAC Series Championship points and be eligible for annual awards.

The PWR class was initially envisioned to attract currently existing race cars that were built for some other class or organization utilizing rules that are simple and fair to all. As PWR class racers now begin to entertain optimizing or building new cars for the PWR class, please keep in mind that any car that attains a significant advantage over other cars in class and in violation of the spirit of the rules will prompt a rapid change of rules in order to neutralize the advantage.

2.2 Rules

- A. Specific Rules for the PWR class are contained in this document and will take precedence over any other ARMS Grand Touring Sedan Class Regulations.
- B. The PWR Class is intended to allow a wide range of existing race cars to race competitively regardless of initial build target class for the car. The PWR class will be subject to on-going rules modifications, in order to facilitate a fair and level playing field.
- C. **Safety** – All requirements from the Safety sections of the current ARMS Grand Touring Sedan Class Rule book must be followed.
- D. **Competition/General** – All General Race and procedural rules from the current ARMS Grand Touring Sedan Class Regulations will apply to the PWR class.
- E. **PWR Rules Process** – The PWR class will strive for a consistent and fair ruleset. A dedicated PWR Class rules committee consisting of at least 3 active PWR class racers will be responsible for the PWR class ruleset. The rules may be updated on a quarterly basis in order to quickly address oversights, errors and ensure fair competition.
- F. **Rules Convention** – many race classes operate under the guidance of “if the rules don’t specify that you can do it, then you can not”. The PWR class is different in that the primary competitive differentiator is HP to Weight.
- G. **Eligibility** – Any car built to the safety specifications of the ARMS Grand Touring Sedan Class Regulations is allowed. Cars built off production chassis will be classed based on their respective PWR + accumulated modifiers. Purpose built tube frame or semi tube frame chassis cars with spec bodies and aero will carry a -2 modifier on their base PWR. Any car that does not have, or wishes to race without an approved PWR Disclosure, will be automatically classed in PWR1 for scoring purposes.
- H. **Classing** will be determined by a (**Wheel Horsepower to Weight Ratio + Modifier**) system. For ease of conversion, PWRX can be replaced with GTX for class naming and decals.



1.

Class	LBS/WHP Ratio + Modifier
PWR1	Less than 7
PWR2	Greater than or equal to 7 and less than 10
PWR3	Greater than or equal to 10 and less than 14
PWR4	Greater than or equal to 14 and less than 18
PWR5	Greater than or equal to 18 and less than 21
PWR6	Greater than or equal to 21

2. **Declared Weight** – a car’s declared weight is defined as raced with driver and all safety equipment and for compliance reasons, any remaining fuel in the car following a race or qualifying session.
 - i. Ballast may be added to align to a class but is limited to the peak HP of the car multiplied by 1 lbs.
 - ii. Ballast to meet weight must be placed entirely in the front and/or rear passenger side floor area and/or the spare tire well in the trunk and must be securely bolted to the chassis. Each segment of ballast must weigh not more than 50 pounds and must be fastened with a minimum of two 12 mm bolts and positive lock nuts of metric grade 10.9 or better, and must utilize large diameter, load-distributing washers. Ballast may not be added or removed during any officially timed session.

3. **Declared Wheel Horsepower** – As measured for the current engine configuration at the wheels by a dynamometer. Please see requirements of the dynotest documentation in section I.1 below.
 - i. Declared WHP must be at least 85% of the manufacturer’s published HP(crank).
 1. All PWR class cars must conform to the 85% rule with respect to the engine currently installed in the car.
 - a. Cars with engines as originally delivered from the factory will utilize the factory published HP (crank) for the particular model raced for the 85% calculation.
 - b. Cars with engine swaps will utilize the factory published HP (crank) for the model engine used for the 85% calculation. No other source of HP ratings will be accepted.

4. **Modifiers - Performance** modifiers which will add or subtract from the WHP to Weight ratio to yield a final classing number. If a higher performance modifier is declared, the racer is permitted to use a lower performance item. For example, if the disclosure sheet was approved for a Non DOT slick, a lesser performance tire can be used (but with no change to the officially declared ratio). Also note in the event rain tires are used, the same classification of tires must be used. For



example: If the disclosure sheet was approved for a DOT Greater than 100 TW tire, then a rain tire must also be a 100 TW or higher tire.

- i. **Aerodynamic improvements** – any component or modification that is added to a car to increase downforce or otherwise improve airflow related handling characteristics will be assessed a **modifier of -0.5**. This includes but is not limited to: Wings, splitters, diffusers, canards, dive planes, wheel arch vents, etc. Note: hood vents alone are not considered an Aero improvement.
- ii. **Tires (note: if you are not certain on the tire types, please see the definitions section for clarification). Rain tires must be consistent with the selected Dry tire modifier category.**

Tire	Modifier
Non DOT Slick	-2.0
DOT R Compound 0-99 TW	0.0
DOT R Compound 100-199 TW	+1.0
DOT R COMP 200+TW	+2.0

- iii. **Transmission** – any transmission other than a traditional H pattern manual with a 3rd pedal clutch will have a **-0.5 modifier**. This includes but is not limited to: DCT, SMG, Automatic, and Sequential race transmissions.
- iv. **Purpose built tube frame race cars** with spec bodies and aero will have a **-2 modifier**.
- v. **Brakes**. Any changes to stock brake calipers and rotors (size, piston count etc) will have a modifier of **-0.25 per end**.
- vi. **Drive wheels**. RWD 0, FWD/AWD +1.0
- vii. **The PWR class reserves the right to add additional modifiers or adjust existing modifiers to enable fair competition.**

Note: A competitor is always free to use a lower performance category tire than their official tire modifier during a given event. This will have no effect on the official modifier and their PWR declared class. A permanent change to the tire modifier requires a petition to the PWR Rules committee and new disclosure filing.

- 5. **Vintage cars** – Certain race cars with an established history of competing in a vintage racing series may apply for pre-classing and will not require a dyno test. Pre-classing will be determined by the PWR class rules committee under the guidance of the ARMS Race Committee.
- 6. **Calculating Class Example** – (Declared Weight/Declared Horse Power) + Modifier. A RWD car weighing **2650 lbs** with **200 WHP** is **13.25 LBS/WHP** and using 200 TW Tires gets a +2 modifier equals **15.25** therefore would be **PWR4**.

I. Dynamometer Testing

- 1. Dyno test documentation
 - i. Dyno results must be submitted in a pdf format generated by the dyno system or



alternatively a printout may be scanned (at 400dpi or higher) and saved in pdf format. Pictures (jpg files) of the dyno system monitor or printout are not acceptable.

- ii. Dyno results should clearly indicate the Racer's name, Car model, Engine code and date of testing. This should be printed by the Dyno operator's software at the time of the test. Adding this information by hand after the fact will not be accepted.

2. Required Dynamometer: Dynojet

- i. Alternatively if no Dynojet is available, a Mustang Dyno test may be substituted with the following conditions: the Declared Weight of the PWR class car must be input as the vehicle weight for Mustang Dyno testing. Mustang WHP results will need to be multiplied by 1.1 to **approximate** a Dynojet Dyno test result. Note: Competitors are strongly encouraged to utilize a Dynojet Dynamometer for Disclosure Form testing. In cases where a Dyno is utilized for compliance testing at the track, the Dynojet will be used and the results are the official results! No exceptions.
3. Correction: SAE J1349 rev JUN90 (29.23 in/hg, 77F, zero humidity, dyno smoothing plot set to 5)
4. Testing must be performed at operating temperatures and with the same engine modifications, specifications, and configuration as used in competition. Testing must be completed in the gear closest to 1:1 ratio. The dyno results must be with the engine installed in the car as it will be raced i.e. dyno results prior to an engine swap are not valid.
5. The **Declared WHP** will be no less than the highest power recorded of 3 pulls all performed within 10 minutes.
6. Replacement of any part that can have an effect on performance such as but not limited to fuel injectors, headers, intake manifold, camshaft(s), etc. will require a new dyno submission and recalculation of LBS:WHP rating for classing.
7. Dyno test results expire on December 31 of the year following the date the dyno test was performed. Example: a dyno test performed on January 1, 2023 will expire on December 31, 2024. A dyno test performed on December 15, 2023 will also expire on December 31, 2024.
8. For **initial entry** into the PWR class, an existing Dyno sheet dated within the prior 18 months of an approved application will be accepted. Note: If a dyno test sheet is submitted for **initial entry** in the PWR class that was performed on a date that would be deemed to be expired by #6 above at the time of submission, it will be valid until December 31 of the year the disclosure is accepted.

J. Vintage/Historic Cars

1. Vintage cars may be classed like any other car based on Dyno measured HP and Declared minimum weight
2. Alternatively, Vintage Race cars with a documented history of competing in vintage race series recognized by GDS/ASN/FIA (HSR, VRG, VDCA, etc) will be eligible to apply for Pre-Classing
 - i. Pre classing will be determined by the PWR Rules Committee (under the direction of the ARMS Race Committee).
 - ii. An application for Vintage Pre-Classing will be required which includes:
 1. Indication of existing classing in a vintage/historic series.
 2. Documented race results within the last 12 month clearly showing lap times



achieved from at least 2 venues in Canada.

K. Appearance

1. Livery and Sponsor Decal Display must be in accordance to the currently published requirements in the ARMS Grand Touring Sedan Class Regulations. Documented Vintage/Historic cars are exempt from sponsor decal requirements.
2. PWR class cars must display the PWR X (or GTX) class designation and car number on both door panels. These designations must be of significant size and color differentiation from the background color so as to be clearly seen by event officials. Side numbers shall be a minimum of 8 inches high with a 1.5- to 2-inch stroke. Class identification shall be near the numbers and be a minimum of 3 inches high.
3. PWR class cars must also display their declared min weight on both rear windows in 1 inch (min) white letters.

PWR Class Race Procedures

4. Each PWR class racer will require an officially approved PWR Disclosure sheet that will remain with the car along with the logbook and a copy of the official dyno graph.
5. Each PWR class car will be presented to Tech along with logbook, disclosure sheet and dyno graph. The car may be subjected to a weigh-in to verify the declared weight prior to the first on track session of a race weekend. Any deviation in weight showing the car lighter than the declared weight will need to be corrected before competitive track sessions.
6. PWR class cars may be subjected to impound following randomly selected competitive track sessions (qualification and/or race).

L. Disclosure Sheet

1. Completed Disclosure Sheets (including dyno test) **must be submitted for approval no less than 10 working days prior to the planned race weekend.** If a disclosure sheet is submitted within the 10 business day window prior to the planned race weekend, the possible approval of the late disclosure sheet is on a best effort basis. There is no guarantee of processing/approving a Disclosure sheet within the 10 business day window prior to a race.
2. The officially approved TRAC Series PWR class disclosure sheet must be available to Tech at each race weekend **Failure to have the PWR disclosure sheet available for tech at a race event will result in disqualification.**
3. The Declared WHP must be equal to or greater than the included Dyno result which must be the most recent dyno test of the car's current engine and installed in the current race car. A reminder, the Declared WHP must be at least 85% of the manufacturer's published crank HP. Example a 2004 BMW M3 has a factory Crank HP rating of 333. The declared WHP must be at least 0.85 times 333. Accordingly, the Declared WHP must be greater than or equal to 283 WHP.
4. Once a disclosure sheet has been submitted and a car class determined by an official approval, it cannot be re-classed or change declared modifiers (even within a specific PWR class) during that season without submitting a petition to the PWR Rules committee.

M. Compliance

1. Official Weight and HP confirmations may occur at impound during TRAC Series Racing Events.



- i. Impounded cars must go directly to the impound area as directed by the tech stewards. The driver may exit the car, but the car must remain untouched until movement is directed by the stewards. Any car that does not go directly to impound will be disqualified.
 - ii. Impounded cars may be weighed to validate the declared weight
 - iii. Impounded cars may have WHP verified by Dyno per Section I. Cars will be operated by an appointed official.
 - iv. The racer must be prepared to direct the dyno operator to connect a tachometer lead prior to the dyno runs. If work is required to do this, the racer will need to supply tools to accomplish the task.
 - v. Ballast will be checked and may be required to be removed for weight verification of the ballast itself.
 - vi. Any and all other PWR class rules compliance may be checked during impound.
- 2. TRAC Series officials may move any car to another PWR class OR mandate ballast if it has a demonstrated history of significantly under- or over- performing in its current class. Unless an oversight or omission occurred during the classing process, a car will be moved to another class only after review by the PWR rules committee.
- 3. Impound
 - i. The following impound penalty scenarios apply to competition sessions:
 - 1. Impound Weight:
 - a. Failure to meet minimum declared weight at impound shall result in the disqualification of the competitor for that session in accordance with the ARMS Grand Touring Sedan Class Regulations. Racers shall make weight adjustments to bring the car into compliance for the remainder of race weekend.
 - 2. Impound Dynotest:
 - a. If the maximum impound HP exceeds the declared maximum HP,
 - a. Power to Weight calculation (including modifiers) shall be made by the assigned tech steward, using the impound maximum HP and impound weight.
 - b. Failure to meet the minimum declared ratio for the subject class based on such calculation shall result in the disqualification of the competitor for that session in accordance with the general ARMS Grand Touring Sedan Class Regulations.
 - c. In such case, it is the Driver's responsibility to acquire the new minimum weight calculations after each Dyno impound and make changes to the car accordingly. For example, this may be done by adding ballast in accordance with the established PWR rules, and getting re-weighed before the next competitive session.
 - 3. Each driver is encouraged to carry enough ballast in the car to satisfy any potential Dyno variance and meet declared weight. There is no grace allowance for weight or HP/WT ratio



N. Prohibited elements

1. Electric powered cars are not allowed.
2. Compressed fuel powered cars are not allowed.
3. Driver or automatically controlled Aerodynamic devices are not allowed.
4. Cockpit/Driver adjustable Fuel Management Systems are not allowed.
5. Adjustment of the power, torque or maximum RPMs electronically (remotely or wired) or by any other means during a race weekend is not allowed.
6. During the race weekend, it is not permitted to connect (by any means including wirelessly) any device to the engine management system that is capable of altering the engine control data or program.
7. Cockpit/Driver adjustable Suspension Systems are not allowed,
8. Nitrous Fuel Assist systems are not allowed.
9. Methanol/Alcohol-water injection systems are not allowed.

O. Definitions

1. Documented Historic/Vintage race car – Any car that has a valid Vintage Organization logbook, issued prior application to the PWR class and with actual race results in the last 5 years.
2. DOT R compound Tires – A non-or Semi-treaded race compound tire that is frequently used in club racing and High Performance Driving Schools. These tires typically have a Treadwear rating between 40 and 100 along with a Temp and Traction Rating. Sizing is in a standard metric format such as 245/40/17. To avoid confusion, these should not be referred to as a “slick” in spite of the fact they have little or no tread. Examples of these tires are: BFG R1 (NLA), Hankook Z214, Hoosier A7, Hoosier R7, Yokohama A055, etc.
3. Non DOT Slicks - Also referred to as road racing slicks. In addition to having no tread, these tires have no DOT rating as required to be street legal and generally carry a European size format such as 280/650/18. They are purely a racing tire. Examples are: Hoosier Road Racing Slicks S80/S100, Michelin Racing Slicks SM8/9 , Hankook F200, Yokohama A005 and Pirelli DHB.
4. Aerodynamic elements:
 - i. Any element (wing, splitter, diffuser, canards etc) that is added or modified from stock which serves to alter the forces and interactions of air moving around a race car, focusing on using its design to control these forces to improve performance.



3. SERIES DESCRIPTION

3.1 OFFICIAL NAME

The official name will be the ARMS Grand Touring Sedan Championships.

3.2 RACE SERIES

The following car classes will compete for the Sedan GT Championships:

- PWR1
- PWR2
- PWR3
- PWR4
- PWR5

All Sedan competitors may compete in any, or all of these events. Each series/class champion is determined by the competitor with the highest points in his/her class. These race series are as below:

3.2.1 GT Sprint Series A

GT Sprint A Series – 15 lap sprint race (all classes)GT Sprint Series B

3.2.2 GT Sprint B Series – 15 lap sprint race (all classes)

3.2.3 Atlantic Challenge Series

Atlantic Challenge Endurance Series – 1-hour Endurance race (all classes)

The Atlantic Challenge Endurance Series shall operate under the following additional rules:

- Includes a mandatory 5-minute pit stop.
 - All competitors must completely stop their race car in pit lane for a minimum of 5 minutes.
 - Timing of the 5-minute pit stop is the responsibility of the competitor.
 - The 5-minute pit stop cannot take place during the warmup lap(s), on the first lap after taking the green flag, ~~very first lap~~ or begin after the last 10 minutes of the race have begun.
 - Mandatory pit stops may not begin, but may continue, under safety car or red flag.
 - In the event of a red flag, the race lap count shall revert to the previous completed lap of the leader at the time of red. This is advantageous to those already in the pits, but no advantage to those entering pits. Pits do not close.
 - Failure to make the pit stop shall be result in a ten (10) lap penalty, except in the case where the race concludes under safety car or red flag, either by the allotted 1 hour expiring or race officials ending the race for safety reasons.
 - In such circumstances, the competitors not having previously made the mandatory pit stop will have their final lap count reduced by four (4) laps with the good faith



assumption that they would have intended to make the stop if allowed.

- o Shorting the pit stop shall result in a one (1) lap penalty for each 10 seconds (or part thereof) the pit stop has been shorted.
e.g. 9.2 seconds short = 1 lap penalty; 10.6 seconds short = 2 lap penalty; 13.9 seconds short = 2 lap penalty; 21.0 seconds short = 3 lap penalty.

- Driver changes are allowed. However, all points awarded will go to each driver that competes in this race.
- Technical flags (mechanical, driver behavior/warning) do not prevent the driver from completing their allotted pit stop if they are required to come in at the direction of the track staff. Drivers may not begin a pit stop when directed in by the black flag without first completing another lap.

3.2.4 Unlimited Series

Unlimited Series – 15 lap sprint race (all competitors combined in a single class)

MODIFY RACE ARRANGEMENT/DURATION

ARMS officials and/or event organizers have the right to modify the arrangement and/or the duration of any race as required.

4. SCORING

4.1 POINTS

The scoring in a series championship is as follows:

1st – 30 Points

2nd – 27

3rd – 24

4th – 22

5th – 20

6th – 18

7th – 16

8th – 14

9th – 12

10th – 10

11th – 8

12th – 6

13th – 4

14th – 2

15th – 1

Every competitor shall complete a minimum of 50% of the race to be considered a finisher and awarded championship points. During a 15-lap race, each competitor must complete a minimum of 8 laps to be considered a finisher and awarded championship points. During a timed race, competitors must complete a minimum of 50% of the total laps accumulated by the overall winner to be considered a finisher and awarded championship points.

Penalties accumulated in a race that result in the competitor having a net total of fewer than 50% of laps completed shall result in a NS (Not Scored) for that race and the competitor will not score series points.



All race vehicles must be equipped with transponders compatible with the ARMS MyLaps timing system to be scored for Championship points. Display of all TRAC Series Sponsor decals which will be distributed to all teams shall be mandatory. Decals shall not be modified in any way. The description and required orientation of the mandated decals shall be specified via special bulletin. No series points will be awarded for cars that are run without the required decals applied as per the instructional bulletin. If no decals are available and unavailability has been verified at tech inspection), points may still be awarded.

4.1.1 Qualifying Points

Competitors shall be awarded 1 point for qualifying first in class.



4.2 MINIMUM CLASS ENTRIES

A minimum of three competitors are required in any one class to be considered a full class for that particular race.

4.3 BELOW MINIMUM CLASS ENTRIES

If there is not a minimum of three competitors in a class, points will be awarded as follows.

One competitor – 24 points for a race win.

Two competitors – 27 & 24 points.

4.4 RACE WINNER & CHAMPIONSHIPS

Each race has an overall winner as well as individual class winners. Series Class Championships are awarded to an individual with the most points in his/her class at the end of the year.

4.5 TIES

Ties in the final point totals shall be resolved on the basis of each driver's record of first place finishes; then if necessary, second place finishes; then if necessary, third place finishes, including those finishes in excess of a driver's best six, if any. If two or more drivers have accumulated the same number of first, second and third place finishes in the races counted, they shall be considered tied for the position in the standings.

5. VEHICLE SAFETY EQUIPMENT

5.1 GENERAL

All vehicles competing in any ARMS sanctioned Road Racing Event shall require minimum installed safety components specified herein. Below is a list of these items.

- Roll cage
- Race seat
- Fire extinguisher
- Kill switch
- Window net
- Driver restraint system

5.2 GENERAL TECHNICAL & SAFETY PREPARATION PROVISIONS

Additional to the above safety items, all vehicles must conform to section 8.



6. ROLLAGE REQUIREMENTS

6.1 GENERAL

The basic purpose of the roll cage is to protect the driver if the car rolls over or is involved in a serious accident. Roll cages may be of two designs, low front hoop (top of steering wheel), or high front hoop (top of windshield). Specific installations are subject to the approval of the Chief Scrutineer at each event. (Refer to appendix A)

6.1.1 New Builds

As of 2020, ARMS requires that new local builds comply with FIA 253 Appendix J rules. The requirements laid out in Appendix B remain only for the purpose of clarity and review of existing cars.

7. FUEL AND FUEL CELLS/TANKS

7.1 PERMITTED FUELS

All cars shall run on petroleum-based fuel produced by a recognized commercial manufacturer unless otherwise specified by class, series or supplementary regulations.

7.2 ADDITIVES

The addition of compounds containing nitrogen and/or oxygen is prohibited.

NOTE: Competitors are advised that some chemicals used as fuel additives are classified as probable or suspected human carcinogens or have been implicated in several deaths. These chemicals are propylene oxide, ethylene oxide and para-dioxane, also known as 1.4 dioxane.

7.3 FUEL CELLS/TANKS

A fuel cell is defined as consisting of an inner bladder/tank, manufactured to a minimum of FIA FT3 specifications or equivalent, approved fuel cell foam and a metal container as specified herein.

Fuel tank is defined as consisting of a cross-linked polymer tank intended for use as a fuel tank in a race car, approved fuel cell foam and a metal container as specified herein.

7.4 CLASS REQUIREMENTS

7.4.1 Model Year 1981 or Earlier

Fuel cells/tanks as defined above, are required for all Sports Racers, tube-frame GT cars, and GT cars built from a production road car, model year 1981 or earlier.



7.4.2 Model year 1981 or Later

Cars built from a production road car, model year 1982 or later, may use a fuel cell/tank as specified above, or, if a minimum of 30 cm of the original structure surrounding the stock fuel tank is retained and this structure is welded to the adjacent tubular steel replacement frame members, the stock tank may be used. Fuel cell foam may be added to the stock tank.

7.4.3 GT1 and GT2 Requirements

Fuel cells/tanks as defined above are required for all tube-frame race cars and any race car classed in GT1 and GT2. See exception below;

Exception: Production Showroom Stock cars as well as production road cars regardless of class may retain their original gas tank providing:

- no modifications to the original gas tank assembly are performed.
- no modifications to the original floor assembly surrounding the gas tank are performed.
- gas tank assembly is in good mechanical repair.
- and approval from ARMS official Technical Scrutineer.

7.4.4 Recommendation

It is highly recommended that all race cars have a fuel cell/tank as defined above.

7.5 SIZE, NUMBER AND CAPACITY

7.5.1 Dimensions

The dimensions and capacity of fuel cells are free unless otherwise specified by class, series or supplementary regulations.

7.5.2 Number of Fuel Cells

The installation of more than one fuel cell is permitted.

7.6 LOCATION

7.6.1 Proximity to Original Tank Location

Fuel cells shall be installed as close as possible to the location of the standard tank(s), except when safety considerations, dimensional limitations, or other factors make this impractical, impossible or undesirable.



7.6.2 Driver/Passenger Compartment

Fuel cells shall not be located in the driver/passenger compartment.

7.6.3 Proximity to Ground

Fuel cells shall be installed not less than 15cm (6in) from the ground unless enclosed within the bodywork or chassis.

7.6.4 Bulkhead

A metal bulkhead shall separate the driver/front passenger compartment from the compartment containing the fuel cell. This includes fuel cells that are flush mounted with driver/passenger compartment panels or otherwise exposed to the driver/passenger compartment.

7.7 VINTAGE CARS

ARMS may approve alternative locations for individual cars upon request.

7.8 DESIGN DETAILS AND MATERIAL SPECIFICATIONS

7.8.1 Bladders

Bladders shall be manufactured to a minimum of FIA FT3 specifications or equivalent. Foam internal baffling is required.

7.8.2 Bladder Containers

Bladders shall be installed in containers fully surrounding the bladder, constructed of 0.036-inch thick steel or .059in thick aluminum. All seams of this container shall be securely fastened.

In Sports Racing Cars, the containers may form part of the structure of the bodywork of the car.

In Closed Wheel Cars internal body panels may be modified to accommodate the installation of fuel cells provided such modifications serve no other purpose.

7.8.3 Bladder Fittings

All fittings shall be built into the bladder and bonded and cured as an integral part of the bladder.



7.9 FILLER CAPS AND VENTS

A positive locking fuel filler cap (no Monza/flip type) shall be used. Fuel pickup openings and lines, breather vents, and fuel filler lines shall be designed and installed so that if the car is partially or totally inverted, fuel shall not escape. Fuel filler necks, caps, or lids shall not protrude beyond the bodywork of the car.

If the fuel filler cap is located directly on the fuel cell, a check valve is not required, provided the filler cap is a positive locking type and does not use an unchecked breather opening. If the filler cap is not located on the fuel cell, a check valve must be installed on the fuel cell to prevent fuel from escaping if the cap and filler neck are torn from the tank.

Fuel cell breathers shall vent outside the car. The cell need not incorporate a drain fitting. It is recommended that all lines, filler openings, and vents be incorporated in a single fitting located at the top of the fuel cell.

8. GENERAL TECHNICAL & SAFETY PREPARATION PROVISIONS

8.1 GENERAL

8.1.1 Compliance

To compete in an ARMS sanctioned event; Cars shall comply with the GCR, with these Regulations and Specifications, and with the Class Regulations and Specifications.

8.1.2 FIA homologated Cars

FIA homologated cars will be dealt with on a case by case basis. Homologation papers shall be presented by the entrant/driver when the car is scrutineered.

8.1.3 Manufacturer Recommendations

It is the responsibility of Entrants/Drivers to follow the manufacturer's recommendations for all safety equipment.

8.2 APPEARANCE

Best effort should be made to keep cars be neat and clean. Cars which are dirty either externally or in the engine and passenger compartments, or that show bodywork damage, or that are partially or totally in primer, or that do not bear the prescribed identification marks shall not be approved for competition.

8.3 NUMBERS, MARKINGS AND ADVERTISING

8.3.1 Identification



Cars shall carry identification numbers or other marks required by the Regulations.



8.3.2 Legibility of Car Numbers

Any competitor whose car numbers are judged to be illegible by the Chief Timekeeper and the Clerk of the Course shall not be scored or allowed to compete until the numbers are acceptable.

8.3.3 Placement of Numbers

Numbers shall be placed on the front, rear, and on the driver's and passenger's doors.

8.3.4 Visibility

These numbers shall be clearly visible to the timing tower of the circuit at which the competition is taking place.

8.3.5 Front and Side Number Size

Front and side numbers shall be no less than 250mm (10in.) high with a 50mm (2in.) stroke.

8.3.6 Rear Number Size

Rear numbers shall be no less than 150mm (6in) high with a 38mm (1 ~~1/2~~ in) stroke.

8.3.7 Distance Between Digits

The distance between the digits shall be no less than the stroke of the digits.

8.3.8 Space Around Numbers

A clear space shall be left around all numbers no less than 65mm (2.5in.) wide.

8.3.9 Class Letter Size

Class letters shall be no less than 100mm (4in.) high with a 13mm (1/2in.) stroke.

Numbers, class letters and other marks required by the Regulations shall have a sharply contrasting background. It is highly recommended that competition numbers shall be black on a white background of adequate area to accommodate the numbers. Metallic numbers are prohibited.

8.4 ARMS IDENTIFICATION

Cars shall display the official ARMS logo unobstructed and prominently on both sides of the car ahead of the side numbers. The logo shall be displayed on the front of the car unobstructed and prominently near the front number.



8.5 ADVERTISING

Advertising, names, and symbols may be displayed on cars provided they are in good taste and do not interfere with identification marks.

8.6 DRIVER RESTRAINT SYSTEMS

8.6.1 Harness Manufacturing Standards

With the exception of Driver Schools, all drivers shall utilize a restraint harness manufactured to current FIA/ISO or SFI specifications:

- ~~— FIA/ISO Standard No. 8853/98 or 8854/98,~~
- ~~— SFI Spec 16.1, or SFI Spec 16.5~~

FIA publishes technical Technical List lists # 24 lists containing all the Safety Harnesses currently Homologated by the FIA to FIA Standards ~~8853/98 or 8854/98~~. Reference the appropriate list for six-point or better harnesses.

List of manufactures meeting SFI Spec 16.1 and 16.5 for ~~Safety safety Harnesses harnesses~~ can be found at www.sffoundation.com/

8.6.2 ~~Harness~~ Installations

~~Restraint harness installations are subject to the approval of the Chief Scrutineer at each Event. Details of installation shall be according to the manufacturer's instructions. You may be required to produce a copy of the instructions to the scrutineer when requested.~~

8.6.3 Design

A minimum five-point system is required for use in cars where the Driver is seated in an upright position, consisting of a lap belt, two shoulder straps and an anti submarine strap. A minimum six-point system is required for use in cars where the driver is seated in a semi-reclining position, consisting of a lap belt, two shoulder straps and two anti-submarine straps. HANS specific shoulder straps are permitted, but only when used in conjunction with a HANS device.

8.6.4 Materials

The material of all straps shall be in good condition. The buckles shall be of metal to metal quick release type except in the case of the leg straps of the six-point system where they attach to the seat belt or shoulder harness straps.

8.6.5 Types of Shoulder Straps

Only separate shoulder straps are permitted. "V" and "Y" type shoulder straps are not allowed. "H" type configuration is allowed.



8.6.6 Installation

~~Details of installation shall be according to the manufacturer's instructions. Where manufacturer's instructions are unavailable, generic installation instructions are shown in Appendix B.~~

~~8.6.7~~ 8.6.6 Function

All straps shall be free to run through intermediate loops or clamps/buckles.

~~8.6.8~~ 8.6.7 Hardware

The minimum acceptable bolt used for mounting all belts and harnesses are 3/8in SAE Grade 5 or 5/16in Grade 8, which shall properly fit both the car mounting points and the belt end attachments. To achieve the required proper snug fit, shouldered steel bushings may be used if necessary. A Scrutineer shall approve, and note in the vehicle logbook, all installations using 5/16in bolts. Where possible, seat belts, shoulder harness, and anti-submarine strap(s) should be mounted to the roll structure or frame of the car. Where this is not possible, large diameter mounting washers or equivalent reinforcing shall be used to spread the load. Bolting directly to floor panels etc., without adequate reinforcement, is not acceptable.

~~8.6.9~~ 8.6.8 Validity

All driver restraint systems shall meet one of the following: SFI specification 16.1, 16.5, or FIA specification ~~8853/98 or 8854/98~~ 8853/2016.

Restraint systems meeting SFI 16.1 or 16.5 – The expiry date is two years from the date of manufacture which is on the SFI label which is affixed to each part of the harness. Belts expiring after April 30 will be accepted until end of current race season.

Restraint systems homologated to FIA specification ~~8853/98 and 8854/98~~ 8853/2016 will have a label containing the type of harness designation ('C-###.T/98-16 or D-###.T/9816) and date of expiration which is the last day of the year marked. All straps in this FIA restraint system will have these labels.

If a restraint system has more than one type of certification label, the label with the latest expiration may be used.

8.6.9 Incidents

In the event of an incident where the vehicle in which the driver restraint system has been installed results in impact one may reasonably assume put significant load on the restraint system. ARMS scrutineers may remove the belt tags and decertify the restraint system as fit for competition use.

8.7 WINDOW NETS

Window safety nets with a dual-front attachment shall be installed on the driver's side window of closed cars. (See Appendix 'E-D').

Window safety nets with a single-front attachment shall be installed as per FIA Racing Nets Specification, which can be found at:



https://www.fia.com/sites/default/files/racing_nets_installation_specification_v8.pdf

The window net shall be equipped with a quick-release device. If attached to the door rather than a roll cage, the door shall be pinned shut. The material of window nets shall be of an approved fire-resistant material.

Window nets which bear an “SFI Spec 27.1 Label” or better are required.

Window nets do not require an expiry date. If a window net has had a long exposure to UV sunlight and has deteriorated it shall be replaced.

8.8 CIRCUIT BREAKER (KILL SWITCH)

8.8.1 General

Cars shall be equipped with a general circuit breaker easily accessible from outside the car. This circuit breaker will cut all electrical circuits (ignition, fuel pumps, lights, alternator, etc.) but shall not affect the operation of an on-board fire extinguisher.

8.8.2 Location

Location of the circuit breaker shall be clearly marked by the official international marking – a red spark in a white-edged blue triangle and shall be mounted in the following standard locations. The OFF position shall be clearly indicated at the master switch location.

8.8.3 Sedan GT Cars

Circuit breaker must be mounted on a bracket attached by welding or clamps to the roll cage, easily accessible through the driver’s side open window, and reachable by both driver and safety crew. Drilling holes in the roll cage for this purpose is prohibited.

8.8.4 Open GT Cars (convertibles)

In any of the above locations.

8.9 SCATTERSHIELDS

The installation of scatter shields or explosion-proof bell housings is recommended where the failure of the clutch or flywheel could create a hazard to the driver.

8.10 DRIVESHAFT LOOPS

A minimum of 2 steel 360-degree loops per driveshaft section shall be installed of sufficient strength to prevent the driveshaft(s) from contacting the ground or injuring the driver in the event of shaft and/or U-joint failure. These loops shall be located as close as practical to each end of the driveshaft section(s).



8.11 FIRE EXTINGUISHER SYSTEMS

8.11.1 GT1 and GT2

All GT1 and GT2 race cars shall be equipped with an on-board fire system as specified herein.

8.11.2 GT3-GT6

All GT3 - GT6 race cars shall be equipped with an on-board fire system or a handheld fire extinguisher as specified herein.

8.11.3 On-Board Fire System Recommendation

It is highly recommended that all race cars be equipped with an on-board fire system.

8.11.4 On-Board Fire System Requirements – 1/1/09 or Later

Cars registered after 1/1/09 shall comply with the following on-board fire system requirements:

- Systems certified to SFI specification 17.1
- Those listed by the FIA on Technical List No. 16

The following information must be visible of the unit:

- Certification label
- Capacity
- Type of extinguishing agent
- Weight, or volume, of the extinguishing agent

8.11.5 On-Board Fire Systems Requirements – 1/1/09 or Earlier

The following is acceptable for cars registered before 1/1/09:

On-board fire systems shall use Halon 1301 or 1211, with a five-pound minimum capacity (by weight). Alternatively, on-board fire systems may use AFFF or equivalent surfactant foam material, 2.25-liter minimum capacity (by volume). All AFFF fire system bottles shall incorporate a functional pressure gauge and shall be marked with the manufacturer's recommended "filled weight." CO2 cartridge propellant fire extinguishing systems are permitted provided that the seal of the manufacturer specified CO2 cartridge is not punctured and the fire bottle is equal to the weight specified by the system manufacturer.

8.11.6 Fire System Cylinder

The fire system cylinder shall be securely mounted in such a manner that it can be checked during a technical inspection and may be removed for weighing periodically for compliance to full weight shown on the cylinder. (Weight is without valve assembly.)



8.11.7 Release Mechanism

Manual or automatic release is allowed. The release mechanism shall be within reach of the driver when belted in the car.

8.11.8 Identification

All on-board fire systems shall be identified with a circle "E" decal.

8.11.9 Nozzle Locations

There shall be a minimum of two nozzle locations – one in the driver's compartment and one in either the engine area or the fuel cell area. The nozzles shall be suitable for the type of extinguishing agent used.

8.11.10 Pressure Gauge

All AFFF fire system bottles shall incorporate a functional pressure gauge. This does not apply to non-pressurized AFFF systems with CO2 propellant.

8.11.11 Safety Pins

The firing safety pin(s) shall be removed from all on-board fire systems prior to going on track. It is recommended that a warning tag be attached to the safety pin to remind the driver to remove the safety pin before entering the racing surface.

8.11.12 Service and Expiry

All fire systems shall be serviced according to manufacturer's specifications. Fire systems shall be charged and in good condition. Systems do not expire.

8.11.13 Hand-Held Fire Extinguisher Requirements

The following are acceptable for all GT2-GT6 Classes:

- Halon 1301 or 1211, two (2) pound minimum capacity by weight.
- Dry chemical, two (2) pound minimum with a positive indicator showing charge. Chemical: 5 BC Underwriters Laboratory rating, potassium bicarbonate (Purple K) recommended, 1A5BC Underwriters Laboratory rating multipurpose, ammonium phosphate and barium sulfate or Monnex.

The fire extinguisher shall be securely mounted in the cockpit. All mounting brackets shall be metal and of the quick-release type.



8.12 BODYWORK

All major body components such as front and rear hoods, fenders, doors and wind shield shall be maintained in normal position throughout competition.

8.13 FENDERS

8.13.1 Mounting

Fenders shall be securely mounted. Fender skirts and hubcaps shall be removed.

8.13.2 Clearance and Alteration

In order to provide clearance for wheels, tires and the installation of brake and oil cooler ducting, the interior of the fenders may be altered, except for the removal of panels separating the wheel wells from the engine, passenger, and/or luggage compartments.

8.13.3 Inner Fender Panels

The inner fender panels may be replaced with a panel of the same material and thickness as the original, provided that the replacement provides the required separation.

8.13.4 Fender Flares

Fender flares are allowed. Should tires extend out past the bodywork, fender flares shall be installed to extend out past the tire when viewed from above.

INEX Legends Cars are exempt from this rule.

8.14 MIRRORS

Mirrors shall provide driver visibility to the rear and both sides of the car.

8.15 DETACHABLE PANELS

Detachable hardtops, panels and detachable doors (e.g., Lotus 7 doors) shall be removed or be permanently attached in a manner requiring tools for removal.

8.16 HOOD

The hood and all parts in the engine compartment shall be securely fastened.



8.17 NOSE COVERS

Hood/nose covers, “bras”, are prohibited.

8.18 SUNROOFS

Sunroofs are permitted. The inside and outside of glass shall be taped. If there is an interior cover installed, it shall be securely closed at all times. Sheet metal may be used to cover the exterior glass instead of tape, provided the metal is properly secured.

8.19 T-BAR ROOFS

T-Bar roofs shall be removed and replaced with metal of the exact shape and dimension as the original pieces.

8.20 OPEN GT CARS

The top and frame shall be removed from all open (convertible) GT cars.

8.21 PASSENGER COMPARTMENT

GT cars shall have a metal bulkhead separating the driver/passenger compartment from the compartment(s) containing the fuel cell/tank and the engine.

8.22 BUMPERS

Bumpers may be removed, except when they are an integral part of the coachwork, in which case they may be replaced with replicas of a different material. If the bumper is removed, all projecting hardware, brackets and fixtures shall be removed.

8.23 WINDOWS

Windows shall be clear and uncolored.

8.24 WINDSHIELDS

8.24.1 Cracked Windshields

Cracked windshields need not be replaced providing that visibility is not impeded. Severely broken glass and/or “spider webbed” cracked glass shall be replaced.



8.24.2 Window Glass Replacement

If window glass is removed it shall be replaced with plexiglass, lexan or other recognized transparent plastic material.

8.24.3 Windshield Replacement

If the windshield is removed it shall be replaced with one of approved polycarbonate material, e.g. lexan. Alternate windshields shall be identical in size and curvature to the original. Alternate material windshields shall have three inner supports to prevent the windshield from collapsing inward. These supports shall be 0.75in x 0.125-in. min straps of aluminum. Spacing between these supports shall be 6in. min. and 8in max.

8.24.4 Safety Clips

Windshield safety clips and rear window safety straps shall be installed on all GT1 and GT2 classed race cars. It is highly recommended for all race cars.

Three (3) clips (3 inch x 1 inch x 1/8 inch) shall be bolted or riveted to the body at the top of the windshield.

Two (2) clips (3 inch x 1 inch x 1/8 inch) shall be bolted or riveted to the cowl and extend over the bottom edge of the windshield. Clips shall be spaced a minimum of twelve (12) inches apart.

8.24.5 Windshield Materials for Open Gt Cars

If the windshield on an open GT car is removed a replacement windshield shall be fitted made of transparent material, not exceeding the height or width of the standard windshield and not extending rearward past a vertical plane at the rearmost part of the standard windshield/windshield frame. If the windshield is removed, the entire windshield (both halves of a divided windshield), including all brackets and mounting fixtures shall be removed.

8.25 TIRES

ARMS recognized tires at a minimum 190kph rating.

8.26 LIGHTS

8.26.1 Headlights & Marker Lights

Headlights and marker lights may be removed. When headlights and marker lights are removed, the opening shall be covered with a solid panel of steel, aluminum, plastic, fiberglass or carbon fibre. Headlight openings (holes) may be fabricated into the headlight panel. The resulting hole shall be covered by a mesh of 1/2"x1/2" (or smaller).

When headlights and marker lights are retained, they shall be taped.



8.26.2 Brake Lights and Taillights

At the start of any race, cars shall have two operating red brake lights which shall be actuated only by application of the brake pedal. Lights shall be visible to other competitors with minimal pressure to the brake pedal. A minimum of 50 percent of the brake light area shall be exposed. The rest shall be taped over. Cars may continue during the race with a minimum of one operating brake light.

8.26.3 Rain Lights

To be approved to run in a rain race, drivers must have at least one FIA approved or similar (red) LED light.

Rain Light(s) must be:

- either a "Steady on" OR a "consistent flash" during the entire time on track.
- on the rear, in the centerline of the vehicle with nothing obstructing the light being viewed from behind.
- able to be switched on by the driver in the vehicle during a race.
- a separate light from the tail lamps.
- unaffected/changed by the brake lights.
- illuminated anytime the racing surface is wet/damp.

If a rain light fails or becomes damaged during a race, race officials will determine if the competitor is able to continue in the race.

It is recommended but not required to have the vehicle tail lamps on during a rain race.

8.27 BRAKES

Brakes shall be pedal-operated, working on each wheel. Cars shall have a dual circuit braking system operated by a single control so that effective braking is maintained on at least two wheels.

8.28 THROTTLE SPRINGS

A minimum of two throttle return springs are required on carbureted engines.

8.29 EXHAUST

8.29.1 Exhaust Pipe Exit

The exhaust pipe shall not exit in the fuel filler area.



8.29.2 Exhaust System Termination

Exhaust systems shall be directed away from the body and shall terminate at the rear of the vehicle or underneath the car at the midway point or aft of the fuel tank.

8.30 STARTERS

Cars shall be fitted with a self-starter capable of being operated by the driver sitting in the normal driving position.

8.31 BATTERIES

8.31.1 Battery Location

Battery location is free within the bodywork. Flooded lead acid type batteries located in the driver/passenger compartment shall be in a nonconductive marine-type container or equivalent. The hot terminal shall be insulated.

8.31.2 Battery Attachment

All batteries shall be attached securely to the frame or chassis structure, independent of the marine type container.

8.32 OIL ACCUMULATORS

Accumulators (e.g. Accusumps) may be installed. Location is free. They shall be securely mounted within the bodywork.

8.33 FUEL CAPS, LINES AND VENTS, OIL LINES, WATER LINES

8.33.1 Leakage

No leakage of any fluid shall be allowed.

8.33.2 Driver/Passenger Compartment Plumbing

All fuel and oil lines, including gauge and vent lines that pass into or through the driver/passenger compartment shall be of steel tube or metal braided hose (e.g. 'Aeroquip').

8.33.3 Filler Cap

A positive locking fuel filler cap shall be used and fuel pick-up openings and lines, breather vents, and fuel filler lines shall be designed and installed so that if the car is partially or totally inverted, fuel shall not escape. If the fuel filler cap is located directly on the fuel tank, a check valve shall not be required provided the filler cap is of a positive locking type and does not incorporate an unchecked breather opening.



8.33.4 Flip-Top Caps

'Monza' (flip-top) gas caps are prohibited, except as allowed in Vintage rules.

8.33.5 Fuel Tank Air Vents

Fuel tank air vents shall vent outside the car and shall not be vented through the roll cage structure.

8.33.6 Fuel Tank Vents in Open GT Cars

Fuel tank vents on open GT cars shall be located at least 250mm behind the driver.

8.33.7 Location of Fittings and Lines

It is recommended that all fuel lines, filler openings, and vents be incorporated in a single fitting located at the top of the fuel tank. No oil or fuel line located to the rear of the transverse engine compartment firewall shall be located in a compartment or otherwise restricted area which also contains any component of the exhaust system.

8.33.8 On Sports Racing Cars

Fuel filler necks, caps, or lids shall not protrude beyond the bodywork of the car. Fuel tank vents shall be located at least 250mm behind the cockpit.

8.33.9 Header Tanks

Header tanks located in the driver/passenger compartment shall be shielded. 8.33.5 WATER LINES

Water lines passing through the driver/passenger compartment shall be shielded or be of metal braided hose.

8.33.10 Catch Tanks and Breathers

All engine crankcase breathers, whether directly or indirectly ventilating the crankcase, and all transmission/transaxle breathers shall be equipped with oil catch tanks.

Minimum catch tank capacity shall be one litre each for the engine and transmission/transaxle.

If a single catch tank is used for both the engine and the transmission/ transaxle, the minimum capacity shall be two litres.

Oil catch tanks shall not be mounted in the driver/ passenger compartment. Dry sump system oil holding tanks may be mounted in the driver/passenger compartment. A

metal bulkhead shall prevent exposure of the driver to oil spillage.

Crankcase vacuum breathers that pass through the oil catch tank(s) to exhaust systems or vacuum devices that connect directly to exhaust systems are prohibited.



8.34 SEATS

8.34.1 Seat Type and Attachment

The driver's seat shall be a one-piece bucket-type seat and shall be securely mounted. In cars where the seat is upright the back of the seat shall be firmly attached to the main roll hoop, or its cross bracing, so as to provide aft and lateral support. Bulkheads, firewalls, rear decks or similar structures of suitable strength may be used as a substitute for the main roll hoop or cross bracing to provide the required seat back support.

8.34.2 FIA Seat Mounting

Seats homologated to and mounted in accordance with FIA standard 8855-1999 or higher need not have the seat back attached to the roll structure. The homologation labels must be visible. Seat supports shall be of the type listed on FIA technical list No.12 (lateral, bottom, etc). Passenger seat back - if a folding seat, it shall be securely bolted or strapped in place.

8.34.3 Head Rest

A system of head rest to prevent whiplash and rebound, and also to prevent the driver's head from striking the underside of the main hoop shall be installed on all vehicles. Racing seats with integral headrests satisfy this requirement.

8.34.4 Head Rest on Non-Integral Seats

The head rest on non-integral seats shall have a minimum area of thirty-six (36) square inches and be padded with a minimum of one-inch thick padding. It is strongly recommended that padding meet SFI spec 45.2 or FIA Sports Car Head Rest Material. The head rest shall be capable of withstanding a force of two hundred (200) lbs. in a rearward direction. The head rest support shall be such that it continues rearward or upward from the top edge in a way that the driver's helmet can not hook over the pad.

8.34.5 Plastic Seats

Plastic seats are prohibited.

8.35 STEERING WHEEL MATERIALS AND LOCKS

8.35.1 Wood Rim Steering Wheels

Wood rim steering wheels are prohibited except as allowed in Vintage rules hereto.

8.35.2 Steering Wheel Lock

Steering wheel lock devices shall be removed.



8.36 ANCILLARY MOTORING EQUIPMENT

Hubcaps, wheel trims, spare tires, jacks, tool kits and floor mats shall be removed.

8.37 INTERIOR TRIM

It is recommended that interior trim, carpets, panels, headliner, stock seatbelts, and passenger seats are removed.

8.38 INTERIOR DOOR PANELS

Interior door panels may be altered, replaced, or removed to facilitate the installation of multiple sidebars (driver intrusion protection). When interior door panels are removed, all sharp edges or projections shall be protected. If the door glass is retained, any openings in the door panel must be covered by sheet aluminum.

8.39 VENTILATION AND ACCESS

GT vehicles shall run with the driver front door window fully open. They shall be constructed to allow rapid egress on both sides of the vehicle. When either door is permanently in the closed position, the window in that door shall be easily opened or removed from both the interior and exterior of the vehicle without tools.

8.40 FIREWALL AND FLOOR

Firewall and floor shall prevent the passage of flame and debris to the driver's compartment. Belly pans shall be vented to prevent the accumulation of liquids.

8.41 AIR BAGS

Air bags shall be deactivated.

8.42 CRUISE CONTROLS

Cruise controls shall be deactivated.

8.43 RADIO COMMUNICATION AND TELEMETRY

8.43.1 Telemetric Signals

Excepting the receiving of standard broadcast radio signals, telemetric signals transmitted from or received by cars during an on track session are prohibited, unless prior written consent is received from ARMS.



8.43.2 Allowable Communications

Two-way voice communications is permitted between driver and crew, when allowed by series regulations. In car voice communication between drivers is not permitted.

8.43.3 Radio Communications

Radio communication systems used by competitors shall not interfere with race control or any other race emergency radio networks. Competitors shall inform the Clerk of the Course of radio frequencies to be used prior to competition.

8.43.4 Magnetically Mounted Antennas

Magnetically mounted antennas shall be additionally secured with tape.

8.43.5 OEM Antennas

External original equipment antennas shall be removed, or if retractable, shall be fully retracted.

8.44 TOW HOOKS

8.44.1 Cars without Exposed Roll Bar

All cars without an exposed roll bar shall have a towing eye, hook or strap, front and rear, that does not dangerously protrude from the bodywork when a car is racing, to be used for hauling the car.

8.44.2 Accessibility

These towing eyes or straps shall be easily accessible without removal or manipulation of bodywork or other panels. Towing eye minimum ID shall be two (2) inches.

8.45 SOUND LEVELS

The recommended acceptable level is 98 dBA.

8.46 ANTIFREEZE

8.46.1 Glycol

The use of antifreeze (glycol) is prohibited.



8.46.2 Water Wetter

Water Wetter (or equivalent) used as a replacement of antifreeze is highly recommended.

8.47 TIMING TRANSPONDERS

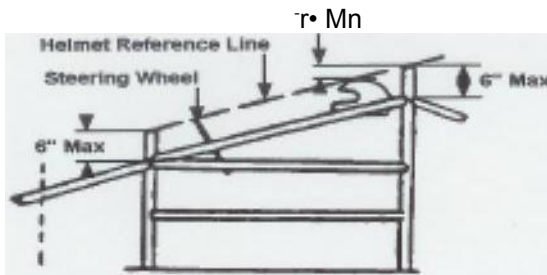
Transponders compatible with the ARMS MyLaps System are mandatory.

8.48 DRAIN PLUGS

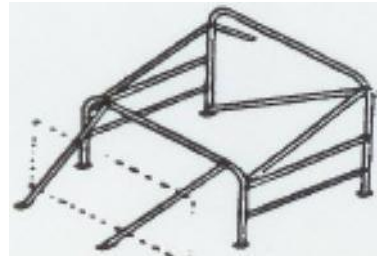
All vehicles must have their engine, transmission, and differential drain plugs secured in such a manner as to prevent accidental spillage on the track. Safety wiring or applying silicone are suggested as appropriate methods of securing plugs.

APPENDIX A ROLLCAGE DETAILS

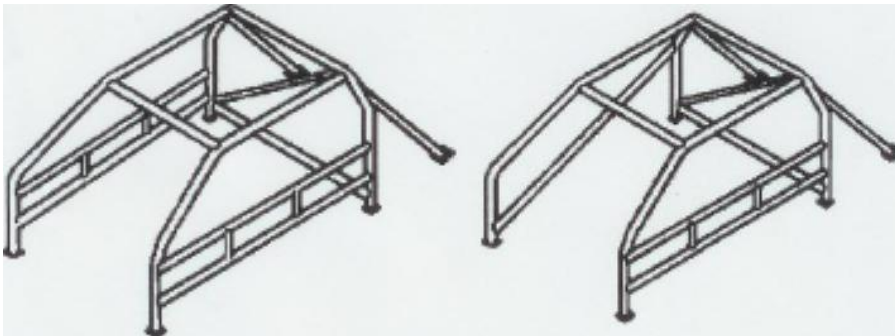
TYPICAL ROLL CAGE DETAILS



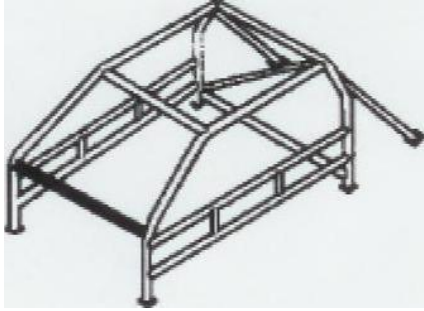
Sick'



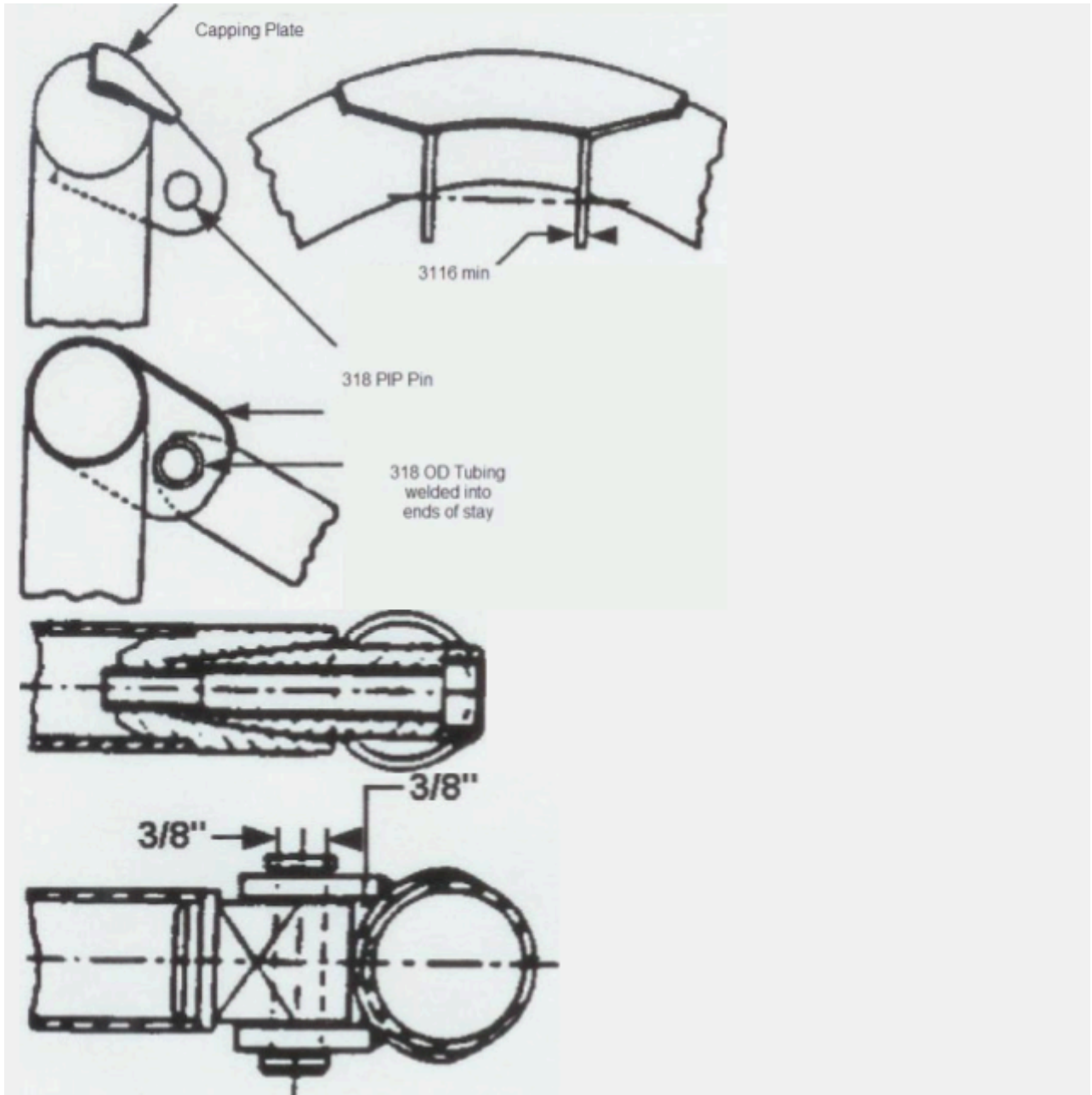
Vlow-Low Front Bar Forward Bracing



|



TYPICAL REMOVABLE BAR DETAILS



APPENDIX B – PREVIOUS ROLL CAGE REQUIREMENTS

10.100 INSIDE DIMENSIONS

The top of main hoop of the roll cage shall be a minimum of 2in above the top of the driver's helmet when the driver is sitting in a normal driving position or shall be located as near the roof as possible in closed cars. The top of the main hoop shall not be more than 5in behind the back of the driver's helmet when the driver is sitting in a normal driving position. A straight line drawn from the top of the main hoop to the top of the front hoop shall pass over the driver's helmet.

10.101 OPERATION

The roll cage shall be designed to withstand compression forces resulting from the weight of the car coming down on the roll cage and to take fore/aft and lateral loads resulting from the car skidding along on the roll cage.

10.102 PADDING

Parts of the cage subject to contact with the driver including the leg area shall be padded with SFI 45.1 or equivalent.

10.103 AERODYNAMIC RESTRICTIONS

No portion of the roll cage shall have an aerodynamic effect by creating a vertical thrust.

10.104 ENGINE INTRUSION

Roll cage or chassis design shall prevent engine intrusion into the driver compartment.

10.105 DIMENSIONS AND MATERIALS

The roll cage shall be of seamless DOM or alloy steel tubing (SAE 4125, 4130). It is recommended that mild steel tubing be used as alloys present difficulties in welding and must be normalized to relieve stress. Proof of the use of alloy steel is the responsibility of the Entrant. Unless otherwise specified herein, the minimum size of tubing to be used shall be as follows: (all dimensions are in inches).

CAR WEIGHT	MILD STEEL	ALLOY STEEL
Up to 2500 lbs.	1.500x.095	1.375x.095
Over 2500 lbs.	1.500x.120	1.500x.095
Or 1.750x.095		



10.106 GRANDFATHERING

Grandfathering of roll cage material, thickness and size in all previous and current registered ARMS race cars is accepted. The roll cages in previous and current race cars that have an official ARMS issued numbered plate need not conform to the current weight and sizes as described above, provided that:

- the official ARMS issued numbered plate is mounted in the race car as required.
- the official ARMS issued numbered plate matches the number in the race car's logbook.
- the roll cage is in good mechanical condition.
- passes the Annual Tech Inspection

10.107 WEIGHT

For purposes of determining tubing size, the car weight is as raced, without fuel or driver.

10.108 MINUS TOLERANCE

The minus tolerance for wall thickness shall not be more than .01 below the nominal thickness.

10.109 INSPECTION HOLE

An inspection hole of at least 3/16in diameter shall be drilled in a non-critical area of all tubing with a specified dimension, to facilitate verification of wall thickness.

10.110 BENDS

One continuous length of tubing shall be used for the main hoop with smooth continuous bends and no evidence of crimping or wall failure. The radius of bends in roll cages measured at centerline of the tubing shall not be less than three (3) times the diameter of the tubing,

10.111 MAIN HOOPS

Whenever possible, roll cage hoops should start from the floor of the car and in the case of tube frame construction, be attached to the chassis tubes by means of gussets or sheet metal webs with support tubes beneath the joints to distribute the loads. It is recommended that gussets be used at all joints.

10.112 JOINTS

All joints shall be fully welded. All welding shall be of the highest possible quality with full penetration and shall be done according to A.S.T.M. specifications for the material used. Arc welding, particularly heliarc, should be used whenever possible. Welds should be inspected by magnaflux or dye penetrant after fabrication. Alloy steels shall be normalized after welding.



10.113 BRAZING

Aluminum bronze or silicon bronze welding techniques are permitted, but extreme care shall be used in preparation of parts before welding and in the design of the attaching joints.

10.114 BASIC ROLL CAGE DESIGN

10.114.1 Full Width

Cars shall have full width roll cages either removable or welded to the car. Roll cages shall be contained within the driver/passenger compartment.

10.114.2 Removable Roll Cages

Removable roll cages shall be very carefully designed and constructed to be at least as strong as a welded installation. If one tube fits inside another tube to facilitate removal, the removable portion shall fit tightly and shall bottom on the permanent mounting, and at least two 3/8in diameter SAE grade 5 bolts shall be used to secure the joint. The telescope section shall be at least 8in in length.

10.114.3 Main Hoop

The main hoop shall extend the full width of the driver/passenger compartment.

10.114.4 Front and Side Hoops

The front and side hoops shall follow the line of the front pillars to the top of the windshield as close to the roof as possible then horizontally to the main hoop. A tube shall connect these two hoops over the top of the windshield.

10.114.5 Alternate Front Hoop

Alternatively, a front hoop following the lines of the front pillars and connected to the main hoop on each side at the top may be used.

10.114.6 Front Hoop in Open Cars

Open cars without full windshields may have a low front hoop.

10.114.7 Main Hoop Bracing

The main hoop shall have two braces of tubing extending to the rear attaching to the frame or chassis. This bracing shall be attached as near as practical to the top of the main hoop, no more than 6in below the top, and at an included angle of at least 30 degrees. The main hoop shall have a diagonal brace to prevent lateral distortion.



10.114.8 Horizontal Lateral Tube

A horizontal lateral tube connecting the right and left legs of the main hoop, as close to the floor of the car as possible, is highly recommended.

10.114.9 Horizontal Lateral Under Dash Tube

A horizontal lateral under dash tube connecting the right and left legs of the front hoop is highly recommended.

10.114.10 Over Tunnel Lateral Tube

A lateral tube, shaped over the tunnel, connecting the bottom of the right and left legs of the front hoop is highly recommended. A vertical tube may be installed between the under-dash tube and this tube to strengthen the shaped section over the tunnel.

10.114.11 Driver's Door

Two horizontal tubes, or one horizontal tube and one angled tube, or a fully gusseted "X" brace, connecting the front and main hoops across the driver's door are mandatory. Vertical tubes in this structure are highly recommended. Gussets shall be a minimum of 2 inches on the shortest side and made of plate steel twice the thickness of the tube wall, or formed from tubing of the same thickness and diameter as the cage, split and formed into gussets, or formed to a shape similar to the split tube from sheet steel the same thickness as the roll cage tubing. All gussets shall be fully welded all around.

10.114.12 Passenger's Door

One or more horizontal tubes or one diagonal tube connecting the front and main hoops across the passenger door are mandatory.

10.114.13 Interior Door Panels

Interior door panels may be altered, replaced or removed to allow for installation of side protection tubes or NASCAR-style door bars. Where door panels are removed, all sharp edges or projections shall be protected.

10.114.14 NASCAR-style Door Bars

If NASCAR-style door bars are installed, they should be constructed in the following manner: They should be constructed of several horizontal tubes attached to the main and front hoop, angled out into the door cavity as far as possible, spaced equally at intervals no more than 15 cm centre to 5.19 centre, with the top tube no lower than 1/3 of the height from floor to roof, but at no time higher than the top of the dashboard. Vertical tubes should be inserted between these tubes at equal intervals no greater than 30 cm centre to centre. A straight tube should be placed as close to the floor as possible but allowing the vertical tubes to connect from this tube to the lowest tube angling into the door.



10.114.15 Lateral Tubes with NASCAR-style Door Bars

The two lateral tubes should be installed when a NASCAR-style door bar assembly is used.

10.114.16 Tubing Size

All tubing shall be the same size as that which is specified for the weight of the car.

10.114.17 Mounting Plates

Mounting plates shall be no thinner than 1/8in and no thicker than 3/16in with no single edge longer than 6in and with back-up plates of equal size and thickness on the opposite side of the panel with the plates through-bolted together using a minimum of three bolts per mounting plate. The minimum acceptable bolts shall be SAE Grade 5 of 3/8in diameter. Mounting plates may be welded to the car. Wherever possible the mounting plate should be shaped to and welded to a vertical portion of the car.

Mounting plates shall not penetrate the firewall at any point. When the roll cage is attached to the floor, no contact plate on the car shall measure less than 20 sq. in on any given plane. 6.16.18 On specific models of cars where the floor construction will not permit a contact plate of this minimum area to be installed application shall be made to ARMS for a waiver to this rule. This will be noted in the car logbook.

10.114.18 Seat Back Fastening

Seat backs shall be securely mounted and fastened. In order to provide secure seat back fastening, a section of tubing equal to the roll cage tubing shall be installed horizontally from the main hoop upright to the diagonal brace. This tube shall be no higher than shoulder height.

10.115 ALTERNATIVE ROLL CAGE DESIGNS

The scrutineer may accept roll cages not complying with these specifications provided that the entrant can produce a certificate complying with the following requirements:

10.115.1 Load Certification

The certificate shall prove that the construction is capable of withstanding three simultaneously applied loads, the induced loads being carried over into the primary structure.

- 1.5 (x) laterally
- 5.5 (x) longitudinally in either direction
- 7.5 (x) vertically

(x) shall be the weight of the car in starting order with the driver aboard and full fuel tanks.



10.115.2 Illustration

The certificate shall be accompanied by a drawing or photograph of the roll cage and shall be signed by a Professional Engineer or other qualified technical person recognized by ARMS.

10.116 COMPOSITES

Safety structures of composite materials shall be recognized on an individual basis by ARMS.

10.117 INCREASING ROLL CAGE HEIGHT

The following procedure is approved for increasing the height of existing roll cages not meeting the 2-inch helmet clearance requirement:

The old main hoop shall be cut off near the chassis mounting and either a new main hoop of equal tube size or a section of equal sized tubing may be added. Inner tubing shall be used to mate all sections together. All braces shall be a minimum distance of 6in from the top of the hoop. The inner tubes shall be rosette welded at three points near the top and three points near the bottom.

Refer to appendix A.

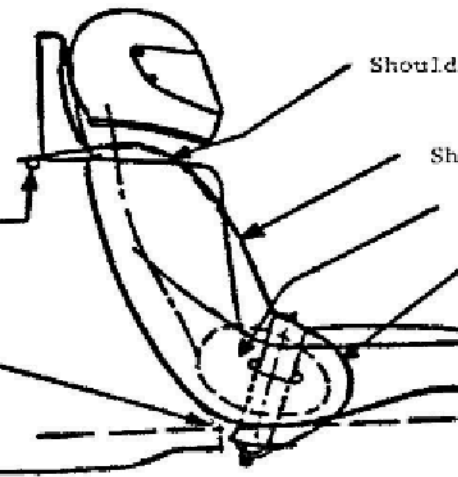


APPENDIX C – DRIVER RESTRAINT SYSTEM DETAILS

Shoulder Harness
Should Be Installed
90° To Spine At
Shoulder Line To
Minimize
Compression
Injuries Under
High "G" Loading

Shoulder Harness
Guide
Or Anchorage

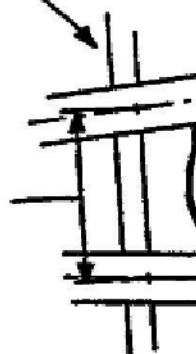
Seat Back/Bottom
Junction



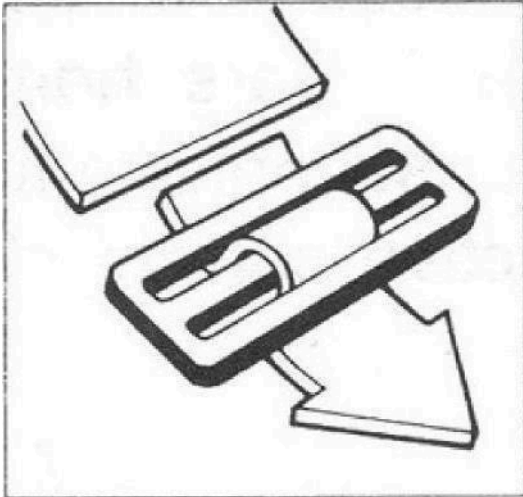
3.0 Min/Max To Centerline
Of Lap Belt At Seat Back
Seat Bottom Junction
Lap Belt Should Continue
In Straight Line To Anchorage

Guide

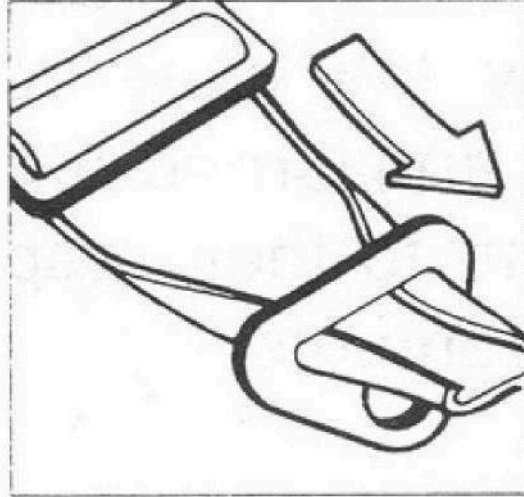
4-6" At Guide
Or Anchorage



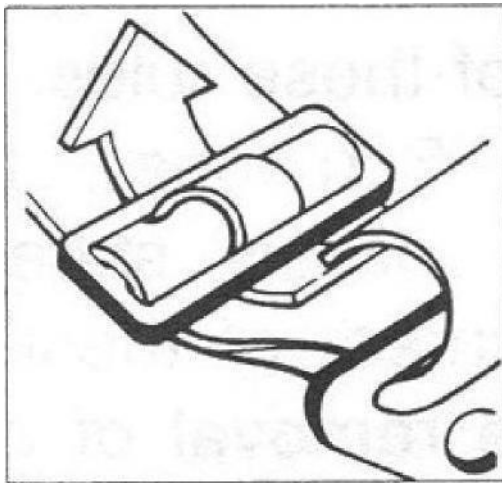
Threading Diagram



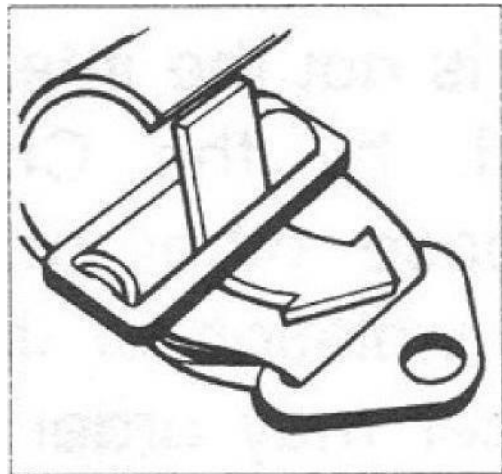
STEP 1: Insert strap through tightening buckle



STEP 2: Pull strap to 8'—t0' beyond buckle. Fold edges and insert into mounting bracket



STEP 3: Fold back strap and re-insert through buckle as shown.



STEP 4: Fold back strap again and insert through bottom portion of buckle.



APPENDIX D – WINDOW NET DETAILS

