

# CANADIAN NATIONAL SOLOSPORT REGULATIONS **AutoSlalom Regulations**

Effective March 1, 2021

## Appendix E SCCA

### CLASS PREPARATION RULES

These regulations are intended to assist in the conduct of national competitions.

Canadian territories and regions may adopt these regulations for use within their jurisdictions if they choose to do so including the sole responsibility for the administration thereof.

These regulations are a guide to further general safety and in no way a 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 publication of or compliance with these Regulations.

**Go-karts are not allowed in SoloSport competitions.**



## 12. AUTOMOBILE DEFINITIONS

The following definitions shall apply to these Rules regardless of any other definitions or interpretations.

**active/reactive suspension** An active/reactive suspension is a system in which the weight of the car is carried or assisted by an actively adjustable/programmable medium such as a hydraulic or pneumatic ram.

**anti-lock braking system (ABS)** An electronically controlled system that can reduce braking force to one or more wheels during deceleration with the goal of preventing wheel lockup when the brakes are applied.

**automobile (car)** An automobile or car is a self-propelled land vehicle, running on at least four (4) wheels, not in a line, which must be in contact with the ground when at rest.

**blow-off valve (BOV) / pop-off valve (POV)** A device intended to limit maximum boost pressure in the engine inlet system by opening to vent the inlet system to the outside atmosphere when a preset boost value is reached.

**canard** A three-dimensional (3D) attachment to the front fascia with air passing over the top and bottom surfaces, which is intended to provide aerodynamic downforce to the front of the vehicle. Unlike a wing, one (1) edge must be flush to the attachment surface. No portion of a canard may extend vertically above the front fascia/bodywork.

**car** (see automobile)

**chassis** A chassis is the minimal configuration of a car necessary to contain all of the running gear (drivetrain, suspension, steering, etc.) and to provide support for the body.

**closed car** A closed car is one with a full roof, a targa top-type car with a full windshield, a T-top-type car with a full windshield.

**compressor bypass valve (CBV)** A device intended to allow a supercharger or turbocharger's compressor output to recirculate back to the supercharger or turbocharger inlet when the throttle plate is closed. The purpose of this recirculation is to reduce boost lag when the throttle plate is reopened. A CBV is referenced to intake manifold vacuum and opens when manifold vacuum exceeds a preset value. It is closed under boost. CBVs installed by OEMs operate as described above. Some aftermarket CBVs vent to the atmosphere, and are marketed as Blow-Off Valves or Pop-Off Valves, although their operation is otherwise identical to the OEM CBVs.

**driver/passenger compartment** The driver/passenger compartment is the interior area of the car in which original driver control devices and all original seating were/are located.

**drivetrain** The combination of components that provide the force that allows the car to move including the engine, clutch, transmission, driveshaft(s), differential(s), axles, etc. This does not include wheels or spindles.

**floor pan** The floor pan is defined to include all surfaces which would support the driver's or passenger's feet, body, or seat in the original car, extending laterally from (but not including) door sill to door sill

and longitudinally from (but not including) front bulkhead to rear bulkhead.

**frame rails** An integral part of the chassis; frame rails are boxed, channeled, or tubular structural members of the car which may provide attachment points for one or more of the following: subframe/cross member, body, suspension, and drivetrain of the vehicle. Frame rails are present in unibody, tub-based, and tube-frame cars.

**mid-engine** A mid-engine configuration is defined as one in which the engine is located behind the passenger compartment and in front of the rear axle.

**model** A group of cars of a given make which have virtually identical bodies and chassis but are readily distinguished from other models of the same make by virtue of a major difference in body appearance and/or chassis design. The names by which the manufacturer designates these groups have no bearing on this definition even though two (2) groups may be designated identically.

**open car** An open car is a convertible (with or without a full windshield), a car with a retractable hardtop, a targa-top-type car with less than a full windshield, or a T-top-type car with less than a full windshield.

**roll bar / roll cage** A tubular steel structure designed to provide the passenger compartment with additional crush resistance in the event of an accident. A roll bar/cage will always include a hoop behind the driver that provides crush resistance from overhead forces and may additionally include structure that provides crush resistance from other directions. Roll bar/cage structures may be used to provide additional chassis rigidity and attachment for suspension and other components, if preparation rules allow for it. See Appendix C or the Club Racing General Competition Rules for additional requirements & design methodologies.

**sedan** A sedan is a car capable of transporting four (4) or more average-size adults in normal seating positions.

**shock/strut towers** Sheet metal components which are part of a tub or unibody car that provide the top mounting point for shocks and struts and may provide mounting points for other components such as upper control arms. They may also serve as an inner fender liner.

**solid rear axle** A dependent rear suspension system in which the wheels are mounted at each end of a solid, or undivided, axle or axle housing; includes live axles and beam axles as found on both RWD and FWD cars.

**standard part** An item of standard or optional equipment that could have been ordered with the car and delivered through a dealer in the United States. Manufacturer options that are dealer-installed, port-installed, or parts provided by the manufacturer are considered to be the



## 12. DEFINITIONS

same as those installed on the factory production line. Manufacturer options which are dealer-installed must be specifically listed in Appendix A in order to be eligible. Dealer options, accessories, or deletions (except as required by factory directives), no matter how common or what their origin, are not included in this definition. This definition does not allow the updating or backdating of parts.

**subframe / cross-member** A component welded or bolted to the frame/tub/chassis of a car in order to increase its strength and which may serve as a platform for mounting suspension or drive train components.

**suspension** The combination of components that connect a vehicle chassis to its wheels. Any item that controls wheel location relative to the chassis and which is designed to move when a wheel is deflected vertically is part of the suspension. This includes shocks/struts, control arms, steering knuckles, uprights, tie rods, live axle housings, etc., but not steering racks, subframes, halfshafts, etc.

**suspension mount** Components to which individual suspension components attach and which are rigidly attached to the chassis via non-permanent means. With the exception of integral bushings/ bearings, they do not move as the suspension travels in its range of motion. Subframe/cross members are not suspension mounts.

**strut bar** A transverse member connecting the upper or lower suspension mounting points at the front or rear of the car. Strut bars may be mounted only transversely across the car from upper left to upper right suspension mounting point and from lower left to lower right suspension mounting point. A two-point strut bar fastens only at the left and right suspension mounting points. A triangulated strut bar has *one or more* attachments at the firewall/bulkhead *in addition to the attachment points at each strut tower*. All connections to the vehicle must be bolted. No connection point to the chassis can be welded.

**track** The distance between the centerlines of the wheels as competed without driver, measured as follows: From centerline to centerline of wheels. Alternatively, it may be measured from the inside of one wheel at the hub centerline height to the outside of the other wheel, then conversely from the outside of the first wheel at hub centerline to the inside of the second wheel. The two dimensions obtained are to be added together and divided by two (2) to obtain the average. Measurements are to be taken at both front and rear of the wheels and averaged to compensate for toe in/out. Wheel rim width shall be measured at the base of the bead seat.

**traction/stability control (TSC)** A system that which adjusts engine power, braking force, and/or torque distribution in response to detection or prediction of understeer, oversteer, or throttle-induced wheel-spin. Conventional limited slip differentials (e.g., viscous, passive



clutch, helical/worm gear, locker) are explicitly excluded, but “active” differentials and their controllers are included.

**trunk area** An area intended for the storage luggage or other items during normal street going usage.

For front-engine cars, this is defined as the area behind the vertical plane of the rearmost seatback of the vehicle. For 2-seat vehicles, this is defined by the vertical plane of the front seats of the vehicle. If a transverse bulkhead/panel is located in this area, the bulkhead/panel defines the start of the trunk area. Vehicles equipped with a fold-down rear seat, must consider the vertical plane of the seat in its upright position.

For rear-engine cars, this is defined as the area in front of the passenger compartment, forward of a transverse bulkhead/panel separating the passenger compartment from the front of the car.

For mid-engine cars, this is defined as both the area per the rear-engine cars, as well as the area behind the engine and separated from the engine compartment by a transverse bulkhead/panel.

**tub** The assembly of panels which form the basic structure of the vehicle’s passenger compartment.

**tub-based car (non-tube-frame)** A non-tube-frame car has a standard tub or unibody as the central component of the car. A tub-based car may have subframes at either end attached to the tub/unibody by bolts or welds. Full-frame cars in which the tub sits atop frame rails are also considered to be tub-based.

**tube-frame car** A car whose chassis is fabricated from a non-standard assembly of tubes, welded into the desired configuration, that are designed to carry the running gear (drivetrain, suspension, steering, etc.) loads.

**unibody (unit-body)** A type of construction in which the chassis and tub are fabricated from an assembly of stressed panels and reinforcements permanently fastened together into a single unit.

**variable valve timing (VVT)** VVT is any system that dynamically alters the timing of valve events while engine is operating.

**wing area computation** The area of a wing element shall be computed by multiplying the maximum chord (straight line distance from leading edge to trailing edge) by the maximum span (width). Curvature of the element (camber) and angle of attack when mounted on the vehicle will not affect the area measurement. The area for multiple-element wings will be the sum of the individual areas of each of the elements.

## 13. STREET CATEGORY

### CATEGORY OBJECTIVE

This category should provide the lowest barrier of entry and appeal to the largest segment of potential and existing members.

### CATEGORY VALUES

Preparation allowances with a minimal impact on daily public highway use of the vehicle.

### CORE MODIFICATIONS

Primary allowances permit changes to shocks, anti-roll bars, and tires.

### CLASSES

Sports cars and other high-performance vehicles classed by performance potential.

- SUPER STREET R-TIRE (SSR)
- SUPER STREET (SS)
- A STREET (AS)
- B STREET (BS)
- C STREET (CS)
- E STREET (ES) – Very affordable older sports cars with an emphasis on low cost entry and acceptable availability. Class stability is a priority.

Sedans and Coupes classed by performance potential

- D STREET (DS)
- G STREET (GS)
- H STREET (HS)
- F STREET (FS) – Heavy, high-horsepower RWD vehicles in the spirit of “V8 Pony Cars.”

Cars running in Street Category must have been series produced with normal road touring equipment capable of being licensed for normal road use in the United States and normally sold and delivered through the manufacturer's retail sales outlets in the United States. A Canadian-market vehicle is eligible for Street category if it is identical to the US-market counterpart except for comfort and convenience modifications as allowed per Section 13.2.A.

A member may request classing for any car models not specifically listed in Street Category, provided that vehicle was produced in quantities of at least 1,000 in that model year.

A car will remain eligible for National events through the end of the 30th calendar year after the manufacturer-designated model year of the car. This eligibility limitation applies only to the Street classes.

Except for modifications authorized below, Street Category cars must be run as specified by the manufacturer with only standard equipment as de-

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finished by these Rules. This requirement refers not just to individual parts, but to combinations thereof which would have been ordered together on a specific car. Any other modifications or equipment will place the car in Street Touring®, Street Prepared, Street Modified, Prepared, or Modified Categories as appropriate. Configurations involving damaged parts (e.g., blown fuses) are not typically authorized by the manufacturer and hence are not allowed.

Option package conversions may be performed between specific vehicles of a particular make and model, but only between configurations from within a particular model year. Such conversions must be totally complete and the resultant car must meet all requirements of this Section. These requirements are not met by simply pulling a fuse to disable a feature which distinguishes one model from another.

Updated parts, replacement parts, or any other changes by the manufacturer documented in the parts catalog or other manufacturer documentation as superseding the original part number used when manufactured are considered to be standard parts.

Alternate parts (parts that may fit due to common platforms) listed in a factory parts manual are not authorized unless their use is specifically referenced in the factory service manual or in a service bulletin for the specific model and/or option package.

See Sections 3.8 and 8.3.1 for documentation requirements.

Alternate components which are normally expendable and considered replacement parts (e.g., engine and wheel bearings, seals, gaskets, filters, belts, bolts, bulbs, batteries, brake rotors, clutch discs, pressure plates, suspension bushings, drivetrain mounts, fenders, trim pieces, fuel filler caps, etc.) may be used provided they are essentially identical to the standard parts (e.g., have the same type, size, hardness, weight, material, etc.), are used in the same location, and provide no performance benefit. The allowance for use of such replacements does not include camshafts, differential covers, or ring-and-pinion sets, nor does it authorize the use of piston rings having different configurations (e.g., "Total Seal®") from those of the original.

Hardware items (nuts, bolts, etc.) may be replaced by similar items of unrestricted origin. Safety wire, threadlocker compounds, and locking nuts are permitted. These allowances are strictly to allow components to be replaced from alternate sources other than the original manufacturer. They should not be construed as an allowance to replace components with those which could be considered a "higher performance" alternative. Parts available as replacements through the dealers parts department, the factory, or any other source which do not meet standard part specifications (e.g., hardness, size, etc.) are non-compliant in Street Category, except as specifically provided elsewhere in these rules.

Specific vehicle classifications are located in Appendix A of these rules.



### 13.1 AUTHORIZED MODIFICATIONS

If a modification is not specifically authorized in this or previous Sections of these Rules, it is not allowed.

The addition of small holes for attachment hardware for authorized modifications is implicit (e.g., holes for fasteners to mount additional gauges, holes for brackets to mount shock absorber remote reservoirs). However, these holes may serve no other purpose.

All repairs must comply with factory-authorized methods and procedures, or industry standard methods, as follows: If the OEM does not provide an appropriate method of repair, industry standard methods and procedures may be used. Such repairs may not result in a part or combination of parts that provides a competitive advantage (e.g., significant change to weight, suspension control, power, etc.) as compared to the standard part(s). Competitors are strongly cautioned to use this allowance to make common-sense repairs only.

Front bumpers, rear bumpers, body trim pieces and attachment points may be reinforced to prevent or repair damage from hitting cones. Reinforcements that are not visible to the exterior of the car are allowed. Such repairs and/or reinforcements may serve no other purpose.

It is not permitted to use non-compliant parts even if they have been set to OE specifications.

Refer to Appendix F for past clarifications of these rules.

### 13.2 BODYWORK

- A. Accessories, gauges, indicators, lights and other appearance, comfort and convenience modifications which have no effect on performance and/or handling and do not materially reduce the weight of the car are permitted. This does not allow driver's seat substitutions, or the removal of "tow hooks" or "tie-down loops." Delayed shutdown devices such as the "Turbo Timer," which perform no function while the car is in motion, are permitted. This does permit the installation of an additional mirror (e.g., Wink®), but does not allow the removal of the original mirror.
- B. Data acquisition systems (including video cameras) and the accompanying sensors are allowed but may serve no other purpose during a run than real-time display and data recording.
- C. Hood straps or fasteners may be added.
- D. Alternate steering wheels are allowed, provided the outside diameter is not changed by more than one inch from the standard size. Steering wheels with an integral airbag may not be changed.
- E. Alternate shift knobs or paddles are allowed.
- F. Spare tires, tools, and jacks may be removed. Any fastening hardware and/or other pieces that can no longer be firmly secured in the absence of the spare tire may be removed if necessary to ensure compliance with

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#### Section 3.3.3.B.1, Safety Inspection Requirements.

#### G. Roll Bars and Roll Cages

1. Roll bars may be added. Roll bars may be welded in. Standard roll-over hoops and covers may be removed if the resulting installation meets Appendix C.A, Basic Design Considerations. The total weight of components added must not be less than that of components removed.
2. Roll cages may be added. It is strongly recommended that roll cages be constructed according to the Club Racing GCR, though they must be bolted (not welded) into the automobile and be contained within the driver/passenger compartment. A roll cage has more than four attachment points to the body or frame or has bracing both fore and aft of the main hoop.

H. Driver restraints as outlined in Section 3.3.1 are allowed. Seats may not be cut to allow for the installation of alternate seat belts or harnesses. Passive restraint systems may be disabled but may not be removed. Removeable seat headrests may be repositioned using the original mounting hardware only if the OE components permit it with no modifications. This includes removing a headrest and reinstalling it backwards. A horizontal "harness bar" may be used as part of the installation hardware for allowed driver restraints provided it has no more than 2 attachment points to the chassis and is bolted at those locations. A C-type harness bar may also be used. It may have 4 bolted attachment points to the chassis (2 primary and 2 supporting connections to resist rotation). Truss-type harness bars with more than two (2) attachment points are not allowed.

I. Cars may add one rear trailer hitch. The resulting weight addition is allowed. The hitch may serve no other purpose. Factory tie downs and cosmetic pieces (e.g., diffusers) may be modified or removed to facilitate hitch installation. Complete or partial removal of the hitch is allowed for competition, provided it does not result in a reduction in weight compared to the unmodified standard configuration.

J. Tow bar brackets may be installed but may serve no other purpose.

K. Any item that cannot be held permanently in place by factory-installed fasteners may be removed.

### 13.3 TIRES

Tires may be replaced with any size that fit the allowable wheels and fender wells without modification. Tires may be excluded for, but not limited to, low volume production, extensive availability limitations, and specialty design. Tires must meet the following requirements to be eligible for use in Street category. No tire model will be eligible for Solo® competition until it meets all requirements of this Section. Tire models not meeting the



requirements by April 30 are not eligible for Solo® competition until after the Solo® National Championships of the year.

#### A. Specifications

1. Minimum UTQG Treadwear Grade of 200.
2. Minimum molded tread depth of  $7/32$ " as specified by the manufacturer.
3. Listed in a current year or prior 2 years of the "Tire Guide®" and/or the "Tread Design Guide®" ([www.tireguides.com](http://www.tireguides.com)).
4. US Department of Transportation (DOT) approval.
5. Tires must be designed for highway use on passenger cars.

#### B. Eligibility Requirements – The following are prerequisites before a tire can be used in competition at National Solo® events.

1. Tire availability – Tires are considered available when competitors can take possession through retail channels. Pre-orders are not considered available.
2. Tires must be equally available to all competitors. Tires that are in short supply do not specifically violate Section 13.3. Extensive shortages may result in the tire being placed on the exclusion list until supply is replenished. Tire variations differing from standard specification, delivered only on a limited basis, or only to selected competitors may not be used.
3. Tire models must have tires available in at least 4 rim diameters and in at least 6 sizes which meet these requirements.
4. Material Change – Tires which previously met the eligibility requirements that undergo a significant compound change, tread pattern change, or other significant redesign reset the requirement for eligibility described in Section 13.3.B.
5. A tire model which was previously allowed by these rules continues to be eligible for competition until specifically disallowed.
6. Re-introduction – Models that were once discontinued will be considered a new model once reintroduced and must meet all the requirements of Section 13.3.

#### C. Other

1. Any tire which is OE on a car eligible for Street Category may be used on that car in Regional Solo® events. OE tires must meet all requirements of Section 13.3 to be eligible for National Solo® events.
2. Tires may be shaved evenly and parallel to the axis of rotation, but may not otherwise be siped, grooved, or modified.
3. No recap and/or retread tires may be used.
4. The tire must not appear on the following list, which may be altered at any time by the SEB upon notification of membership.
  - No tire models are currently listed.



## 13.4 WHEELS

Any type wheel may be used provided it complies with the following:

- A. It is the same width as standard and as installed it does not have an offset more than  $\pm 7.00$  mm ( $\pm 0.275$ " ) from a standard wheel for the car. The resultant change in track dimensions is allowed.
- B. Wheel (rim) diameter may be increased or decreased 1" from the standard part. This change may be applied to the front, rear, or both axles.

Wheel spacers are permitted provided the resultant combination complies with the offset requirements of this Section. On vehicles supplied with an OE wheel spacer, the wheel spacer shall be considered as a part of the wheel. Wheel studs, lug nuts, valve stems (including pressure-relief types), and/or bolt length may be changed. Wheel bolts may be replaced with studs and nuts but the number of fasteners may not be changed. Tire pressure monitoring sensors may be removed.

Centerlock/Spline Drive/Knock-off type hubs may be converted to lug type hubs provided the resultant combination complies with the offset requirements of this Section.

## 13.5 SHOCK ABSORBERS/STRUTS

- A. The make of shock absorbers, struts, and strut housings may be substituted providing that the number, type (e.g., tube, lever, etc.), system of attachment and attachment points are not altered, except as noted below. The interchange of gas and hydraulic shocks absorbers is permitted. The following restrictions apply:
  - 1. No more than 2 (two) separate external shock damping adjustment controls are allowed. This permits the use of shocks which originally came with more than two external adjustments, which have been converted to double-adjustables, only if the additional adjustment controls have been permanently disabled (e.g., via welding, epoxying, grinding off). Gas pressure adjustment is not considered a damping adjustment.
  - 2. Suspension geometry and alignment capability, not including ride height, may not be altered by the substitution of alternate shock absorbers. Aftermarket strut housings are allowed provided that they meet the Street category shock requirements defined herein (i.e., that no suspension geometry changes result). This includes the position of the steering arm attachment point in the case of struts with integrated steering arms.
  - 3. Adjustable spring perches are allowed, but the spring loadbearing surface must be in the same location relative to the hub as on the standard part. Shims may be used to achieve compliance.
  - 4. The fully extended length must be within  $\pm 1$ " ( $\pm 25.4$  mm) of the dimension of the standard part.
  - 5. Electronically controlled shocks may not be used on vehicles that

did not have an option for them from the manufacturer. A full option package upgrade, including OE electronics and other components, could be completed to add electronic shocks if they were not installed from the manufacturer.

6. Vehicles equipped with electronic shocks can replace them with non-electronically-controlled shocks subject to Sections 13.5 and 13.9. Devices may be added to satisfy the ECU that the OEM shocks are still installed; such devices may perform no other function.
  7. On cars with available electronically-controlled shocks, aftermarket electronic shocks may be substituted but may only be controlled by an OE shock control unit and may not contain independent or additional control logic within the shock itself. No additional electronic modifications can be made to facilitate the installation of aftermarket electronic shocks, and the OE controller may not be modified or re-programmed.
  8. Vehicles in Super Street class (SS) originally equipped with an adaptive ride control system (MSRC, MRC, PASM, AMS, etc.) may alter the calibration using an OEM-provided re-flash or the entire controller may be replaced. The calibration or replacement controller may not perform any function not present in the OE controller. OEM shock/strut bodies and internals must remain unaltered. Additional sensors are not allowed. No modifications to the wiring harness are allowed.
- B. The mounting hardware shall be of the original type. The use of any shock absorber bushing material, including metal, is permitted. Pressed or bonded bushings may be removed from standard parts to facilitate the use of alternate bushings which fit in the original location without alterations to the part. This does not permit the use of an offset shock bushing. A shock absorber bushing may be implemented as a spherical bearing. The bushing attaching the end of a strut to the body or frame on a strut type suspension is a suspension bushing, not a shock bushing.
- For cars with a bayonet/shaft-type upper shock mount, this allowance permits the removal of the shock bushing from the upper mounting plate (e.g., drilling, cutting, burning out the bushing) and replacing it with another bushing. This also includes shock bushings located in control arms, etc. This does not allow other modifications to the plate itself or use of an alternate plate.
- C. To facilitate the installation of commonly available aftermarket shock absorbers, struts, or strut inserts whose shaft size is larger than the center hole of an upper shock mount assembly, that hole may be enlarged by the minimum necessary to accommodate the shock shaft size, provided the following restrictions are met:
1. The enlarged hole must remain concentric with the original configu-



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- ration.
- 2. The enlargement of the hole does not require modification of a bearing (as opposed to a washer, sleeve, or plate).
- 3. Neither the hole enlargement nor the location of the shock shaft changes any alignment parameter. Provided these constraints are met, this permits enlarging of the center hole in an upper shock mount with an integrated rubber bushing, where the bushing is integral to the mount and bonded to the plate and the mount is provided by the OEM as an assembly. This includes drilling out and/or removal of the metal sleeve.
- D. A suspension bump stop is considered to be performing the function of a spring. Therefore, the compressed length of the shock at the initial point of contact with the bump stop may not be increased from the standard part, although the bump stop may be shortened. Bump stops installed externally and concentric with the shaft of a shock may be drilled out to fit a larger diameter shock shaft. Bump stops may be substituted provided they meet the length requirements and are in the same location as stock.
- E. A hole may be added through the bodywork to route the reservoir and hose to a remote mounting location. Such holes may serve no other purpose.
- F. A hole may be added to interior body panels, the engine compartment, the trunk, and/or a strut bar to provide access to the adjustment mechanism on a shock absorber. The hole may serve no other purpose and may not be added through the exterior body panels.

### 13.6 BRAKES

- A. The make and material of brake linings may be changed.
- B. Substitution of clutch and brake hydraulic lines with solid metal or braided metal is allowed on all cars manufactured before model year 1992.
- C. Alternate brake bleeder fittings (e.g., Speedbleeders®) are permitted. They may serve no other purpose.

### 13.7 ANTI-ROLL (SWAY) BARS

- A. Substitution, addition, or removal of a single anti-roll bar and supporting hardware (brackets, endlinks, bushings, etc.) is permitted. The use of any bushing material is permitted. A bushing may be implemented as a bearing.
- B. Substitution, addition, or removal of anti-roll bars may serve no other purpose than that of an anti-roll bar.
- C. No modification to the body, frame, or other components to accommodate anti-roll bar addition or substitution is allowed except for the drilling of holes for mounting bolts. Non-standard lateral members which connect between the brackets for the bar are not permitted.



### 13.8 SUSPENSION

- A. Standard, as defined herein, suspension springs must be used. They may not be cut, shortened, or collapsed. Spring perches may not vary from the OE shape within the working part of the perch.
- B. Both the front and rear suspension may be adjusted through their designed range of adjustment by use of factory adjustment arrangements or by taking advantage of inherent manufacturing tolerances. This encompasses both alignment and ride height parameters if such adjustments are provided by the standard components and specified by the factory as normal methods of adjustment. However, no suspension part may be modified for the purpose of adjustment unless such modification is specifically authorized by the factory shop manual.
- C. Suspension bushings, including but not limited to those which carry the weight of the vehicle and determine ride height, may not be replaced with bushings of a different material or dimension.
- D. Replacement control arms for vehicles having integral bushing/arm assemblies must be standard manufacturer parts as per Sections 12 and 13.0.
- E. If offered by the manufacturer for a particular model and year, the use of shims, special bolts, removal of material to enlarge mounting holes, and similar methods are allowed and the resulting alignment settings are permitted even if outside the normal specification or range of specifications recommended by the manufacturer. If enlarging mounting holes is specifically authorized but no material removal limits are specified, material removal is restricted to the amount necessary to achieve the maximum factory alignment specification.

### 13.9 ELECTRICAL SYSTEM

- A. The make of spark plugs, points, ignition coil and high tension wires is unrestricted including spark plug wires having an in-line capacitor. Substitution or addition of ignition coil mounting brackets is permitted, provided they affix to the original standard location and serve no other purpose. (Modification of the distributor cap for the purpose of installing allowed non-standard components is not permitted.)
- B. On cars made prior to January 1, 1968, any ignition system using a standard distributor without modification may be used.
- C. Ignition settings may not be adjusted outside factory specifications.
- D. No changes are permitted to electronic engine management systems or their programming.
- E. Additional battery hold-down hardware may be added to supplement the standard equipment in order to meet Section 3.3.3.B.18, Safety Inspections Requirements. It may serve no other purpose.
- F. Tire pressure monitoring systems (TPMS) may be disabled. Altering the signal to the TPMS is permitted.

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- G. On cars without the ability to turn off electronic stability control and/or traction control (ESC/TC) from the manufacturer, modifications to defeat the ESC/TC are permitted. These modification are limited to altering the inputs to the ESC/TC processor (e.g., removing fuses, unplugging yaw or steering angle sensors, altering signals) and may serve no other purpose. Any codes or error lights resulting from ESC/TC modifications are permitted.

### 13.10 ENGINE AND DRIVETRAIN

- A. The engine air filter element may be removed or replaced provided the air flow path remains as originally designed (i.e., no additional openings). No other components of the air induction system may be removed, replaced, or modified.
- B. Engines may be rebored to the manufacturer's 1st standard overbore, not to exceed 0.020" (0.508 mm). Sleeving is allowed to repair to the standard bore. Only OE-type standard or 1st overbore pistons of the same configuration and of the same or greater weights are permitted. No interchange between cast and forged pistons is allowed.
- C. Any part of the exhaust system beyond (downstream from) the last catalytic converter, if so equipped, may be substituted or removed provided the system exits the car in the original location and meets the requirements of Section 3.3.3.B.16, Section 3.5 and Appendix I where applicable. Vehicles equipped with exhausts that exit in multiple locations may change to a single outlet in any of the original locations. Stainless steel heat exchangers are permitted only if the physical dimensions and configuration remain unchanged.
- Modifications of any type, including additions to or removal of, the catalytic converters, thermal reactors, or any other pollution control devices in the exhaust system are not allowed and the system must be operable. Replacement catalytic converters must be OE if the vehicle has not exceeded the warranty period as mandated by the EPA. Converters must be of the same type and size and used in the same location as the original equipment converter(s). This does not allow for a high performance unit. If the vehicle has exceeded the warranty period, replacement catalytic converters must be OE-type as per Section 13.0. Exhaust hangers which are bolted or welded on the car are considered part of the body and may not be changed or removed.
- D. Any oil filter may be added if not originally equipped. Canister-type oil filters may be replaced with a spin-on type filter using a minimum amount of hardware and connecting lines.
- E. The installation of fluid catch tanks, catch cans, or oil separators is allowed provided the function and performance of the system (e.g., PCV system) is not altered.
- F. Thermostats may be added or substituted. A thermostat is a device which controls the passage of water.

- G. Silicone replacement hoses are permitted as alternate components provided they meet the requirements of Section 13.0 with regard to size, shape, location, and performance equivalence. Replacement induction system air intake hoses must also match the standard part in stiffness, contour, and internal wall texture.
- H. Any oil or grease, including synthetic, is permitted.
- I. Valve seats and guides in older engines originally designed for leaded fuel may be only substituted with alternate components if the dimensions are the same as those of the standard components.
- J. On cars equipped with computer-aided gear selection or “skip-shift” features from the manufacturer, modifications to defeat the “skip-shift” feature are permitted any may serve no other purpose.
- K. On cars with electronically-controlled exhaust pipe valving downstream of the catalytic converter, devices may be added to satisfy the PCM/ECU the the OE component is still enstalled. Such devices shall perform no other function.



## 14. STREET TOURING® CATEGORY

### CATEGORY OBJECTIVE

Street Touring allowances and modifications build upon existing Street category allowances. Competitors in this class are looking to add performance to a select group of vehicles based on performance potential.

### CATEGORY VALUES

- Vehicle modifications should not prevent daily use on public roads. “Daily use” is subjective criterion; competitors will interpret this differently. “Street legal” is a category goal. Some states may require more stringent requirements. It is not the intention of “street legality” to be an absolute. It is intended for the majority of the membership. Drive-train configuration variances are balanced through limited slip differential and wheel/tire allowances.
- Performance Improvements Through “Bolt-On” Modifications
  - Modifications should not require cutting, drilling, or permanent alterations to body panels.
  - Modifications that enhance the performance for Solo® and street driving.
    - Suspension
    - Differentials
    - Bolt-On Engine Parts
    - Aftermarket/Larger Brake Kits
    - Wheel/Tire Upgrades
- Vehicle Safety Systems.
  - ABS may be electronically disabled, but otherwise must remain unaltered.
- Required Diagnostic Systems.
  - OBD2 systems should remain functional.
  - Retention of specific emissions systems.
- Engine Tuning.

### CLASSES

- STREET TOURING SPORT (STS) – Naturally Aspirated Front-Wheel Drive sedans and coupes, and similar performance light/older RWD and AWD cars. Emphasis on momentum and handling over power.
- STREET TOURING ROADSTER (STR) – Low to medium HP Rear-Wheel Drive roadsters and coupes. Generally, sports car based chassis.
- STREET TOURING XTREME (STX) – Medium HP coupes and sedans. Primarily RWD with some performance matching AWD *mixed in*.
- STREET TOURING ULTRA (STU) – Higher power and performance sports cars and coupes, along with similarly high performance AWD sedans.
- STREET TOURING HATCHBACK (STH) – Turbo hatchbacks and sedans.

#### 14. STREET TOURING®

The Street Touring® category of vehicle modifications is meant to fit between the current Street and Street Prepared categories. This category provides a natural competition outlet for auto enthusiasts using affordable sports cars and sedans equipped with common suspension and engine modifications compatible with street use.

Under the provisions of Section 1.1 of these rules, SCCA® Regions are free to allow any other version of the Street Touring® concept which meets local needs. In particular, some leeway in the area of bodywork allowances (e.g., wings/spoilers beyond those allowed in Section 14.2.F) is encouraged at SCCA® Regional Solo® events.

See Sections 3.8 and 8.3.1 for documentation requirements.

### 14.1 AUTHORIZED MODIFICATIONS

All Street Category section 13 allowances, plus all allowances contained in Section 14 are permitted.

### 14.2 BODYWORK

- A. Pedal cover kits and other interior cosmetic accessories may be added. “Dress-up” items such as chrome dipsticks and non-standard filler caps are permitted, provided they serve no other purpose.
- B. The driver and front passenger seats may be replaced with the following restrictions. The seating surface must be fully upholstered. The top of the seat, or an attached headrest, may not be below the center of the driver’s head. The seat, including mounting hardware, must weigh at least 25 pounds and must be attached using the OE body mounting holes/studs. Additional mounting points may be added.
- C. Factory rub strips, emblems, mud flaps, bolt-on front valance lips/spoilers, and fog lights (except those integral to a headlight or turn signal) may be removed. Rear wings may be removed so long as the vehicle retains any federally-mandated third brake light.
- D. Any steering wheel may be used. An alternate steering wheel assembly, including all mounting hardware which replaces an airbag-equipped wheel, is not required to have an airbag but must weigh at least as much as the standard assembly. An alternate steering wheel is not required to have a horn button.
- E. Fenders may not be cut or flared but the inside lip may be rolled to gain additional tire clearance. (The outer fender contour may not be changed.) Plastic and rubber wheel well splash shields may be modified for tire clearance and to accommodate a rolled inside fender lip. The modifications may serve no other purpose (e.g., air intake, etc). No other changes to the standard fenders or wheel wells are permitted.
- F. Addition of spoilers, splitters, rear wings, bumper covers, valances, side skirts, and non-functional scoops/vents is allowed provided that either:
  - 1. It is a production part which is standard or optional equipment of a US model of the vehicle. (“Model” is defined in Section 12.)

2. It is listed in the vehicle manufacturer's US accessory catalog for that vehicle for normal highway use. This does not allow for parts sold through a manufacturer's performance catalog (e.g., Ford Racing, HPD, Mazdaspeed, Mopar Performance, Mugen, NISMO, SPT, TRD, etc).

Parts must be installed as directed by the manufacturer. Exact replicas, including weight, from alternate sources are also permitted.

G. Strut bars per Section 12 are permitted with all types of suspension, subject to the following constraints:

1. A 2-point strut bar may be added, removed, modified, or substituted, but only with another 2-point strut bar.
2. A triangulated (3-point) strut bar may be removed, modified, or substituted; substitution may be with either a triangulated or a 2-point strut bar. The connection to the chassis (e.g., firewall, bulkhead) must be in the standard location.
3. Lower suspension braces must be attached to the lower suspension pickup point locations on the chassis within 2" (50.8mm) in any direction of the actual suspension attachment to the chassis.
4. Except for standard parts, no connections to other components are permitted.

Additional holes may be drilled for mounting bolts. Only "bolt-on" attachment is permitted. Interior trim panels may be modified to allow installation of strut bars. Holes or slots may be no larger than necessary and may serve no other purpose. This does not permit any modifications to the frame or unibody beyond the allowed mounting holes.

H. Longitudinal (fore-aft) subframe connectors ("SFCs") are permitted with the following restrictions:

1. They must only connect previously unconnected boxed frame rails on unibody vehicles.
2. Each SFC must attach at no more than 3 points on the unibody (e.g., front, rear, and one point in between such as a seat mount brace or rocker box brace).
3. SFCs must be bolted in place and not welded.
4. No cutting of OE subframes or floorpan stampings is permitted. Drilling is permitted for mounting bolts only.
5. No cross-car/lateral/triangulated connections directly between the driver's side and passenger's side SFCs are permitted. Connections to OE components such as tunnel braces or closure panels via bolts are allowed and count as the third point of attachment. No alteration to the OE components is permitted.
6. SFCs may not be used to attach other components (including but not limited to torque arm front mounts or driveshaft loops) and may serve no other purpose.



**14.3 TIRES**

Tires must meet the eligibility requirements of the Street category with the following additional restrictions:

Tires shall have a section width up to and including the following (mm):

STR (AWD), STS .....	225
STX (AWD), STH (AWD).....	245
STR (2WD) .....	255
STX (2WD), STH (2WD).....	265
STU (AWD, RWD mid-engine, & RWD forced induction) .....	295
STU (RWD N/A & FWD) .....	315

**14.4 WHEELS**

Any wheels are allowed with widths up to the following (OE wheels exceeding these maximums are not permitted) (in.):

STR (AWD), STS .....	7.5
STX (AWD).....	8.0
STR (2WD), STX, STH.....	9.0
STU .....	11.0

**14.5 SHOCK ABSORBERS/STRUTS**

A. Shock absorber bump stops may be altered or removed.

B. Any shock absorbers may be used. Shock absorber mounting brackets which serve no other purpose may be altered, added, or replaced, provided that the attachment points on the body/frame/subframe/chassis/suspension member are not altered. This installation may incorporate an alternate upper spring perch/seat and/or mounting block (bearing mount). The system of attachment may be changed. The number of shock absorbers shall be the same as standard. No shock absorber may be capable of adjustment while the car is in motion, unless fitted as original equipment. MacPherson strut equipped cars may substitute struts and/or may use any insert. This does not allow unauthorized changes in suspension geometry or changes in attachment points (e.g., affecting the position of the lower ball joint or spindle). It is intended to allow the strut length changes needed to accommodate permitted modifications which affect ride height and suspension travel.

**14.6 BRAKES**

A. Non-standard brake rotors may be used provided they are of equal or larger dimensions (diameter and overall thickness) and made of ferrous material (e.g., iron). The diameter for replacement rotors is measured at the minimum outside dimension. Aluminum rotor hats are allowed. Cars originally equipped with solid (non-vented) rotors may utilize vented rotors. Cross-drilled and/or slotted brake rotors may be fitted provided all such voids are within the disc area and comprise no more than 10% of that area.

- B. Brake lines may be substituted with alternate DOT-approved flexible brake lines.
- C. Air ducts may be fitted to the brakes provided the air directed to the brake rotor originates forward of the wheel well. Modifications to fender liners, undertrays, and splash guards for routing of ducts is permitted. No new holes may be made in the bumper cover. Backing plates and dust shields may be substituted, modified, or removed. Deflectors that mount to components within the wheel well and serve to direct air towards the rotors are permitted. Modifications for brake ducting may serve no other purpose.
- D. Original equipment ABS braking systems may be electrically disabled but may not be removed or altered in any other way.
- E. Disc brake calipers and mounting brackets may be replaced provided they bolt to the standard locations and the number of pistons is equal to or greater than standard. A functioning emergency brake of the same type, operation, and actuation as OE must be present.
- F. Drum brakes may be replaced with disc brakes of a diameter equal to or greater than the inside diameter of the standard drum. Such conversions must be bolted, not welded, to the axle/trailing arm/upright and must include an integral, redundant emergency brake. The emergency brake must utilize the OE actuation method (e.g. pedal vs handle) and components. The emergency brake must be integral to the new caliper, a drum brake style assembly within the new rotor, or a separate emergency brake caliper must be used. Changes to backing plates/dust shields/brake lines/emergency brake cables to accommodate these changes are permitted but may serve no other purpose.
- G. A single brake master cylinder brace may be added provided it is bolt-on and serves no other purpose.

#### **14.7 ANTI-ROLL (SWAY) BARS**

Substitution, addition, or removal of any anti-roll bar(s) is permitted. Bushing material, method of attachment, and locating points are unrestricted. This does not authorize the cutting of holes to route the bar(s) or links. Components such as anti-roll bars and strut housings that serve dual purposes by also functioning as suspension locators may not be modified in ways that change the suspension geometry or steering geometry. Non-standard lateral members which connect between the brackets for the bar, including allowed strut bars per Section 14.2.G, are permitted.

#### **14.8 SUSPENSION**

- A. Ride height may only be altered by suspension adjustments, the use of spacing blocks, leaf spring shackles, torsion bar levers, or change or modification of springs or coil spring perches. This does not allow the use of spacers that alter suspension geometry, such as those between the hub carrier and lower suspension arm. Springs must be of



#### 14. STREET TOURING®

the same type as the original (e.g., coil, leaf, torsion bar, bellows) *unless noted below* and except as noted herein, must use the original spring attachment points. This permits multiple springs, as long as they use the original mount locations. Coil spring perches may be changed or altered and their position may be adjustable. Spacers are allowed above or below the spring. Coil springs may incorporate spring rubbers. Suspension bump stops may be altered or removed. *For cars originally equipped with transverse leaf springs, spring type may be changed to a coil spring. Spring perches may be added to shock absorbers for mounting coil springs in a "coilover" configuration.*

- B. Suspension bushings may be replaced with bushings of any materials (except metal) as long as they fit in the original location. Offset bushings may be used. In a replacement bushing, the amount of metal relative to the amount of non-metallic material may not be increased. This does not authorize a change in type of bushing (e.g., ball and socket replacing a cylindrical bushing) or use of a bushing with an angled hole whose direction differs from that of the original bushing. If the standard bushing accommodated multi-axis motion via compliance of the component material(s), the replacement bushing may not be changed to accommodate such motion via a change in bushing type, for example to a spherical bearing or similar component involving internal moving parts. Pins or keys may be used to prevent the rotation of alternate bushings but may serve no other purpose than that of retaining the bushing in the desired position.
- C. The following allowances apply to strut-type suspensions. Adjustable camber plates may be installed at the top of the strut and the original upper mounting holes may be slotted. The drilling of holes in order to perform the installation is permitted. The center clearance hole may not be modified. Any type of bearing or bushing may be used in the adjustable camber plate attachment to the strut. The installation may incorporate an alternate upper spring perch/seat and/or mounting block (bearing mount). Any ride height change resulting from installation of camber plates is allowed. Caster changes resulting from the use of camber plates are permitted.
- D. Differential mount bushings may be replaced but must attach in the standard location(s) without additional modification or changes. Differential position may not be changed. The amount of metal in a replacement bushing may not be increased relative to the amount of metal found in a standard bushing for the particular application. Solid metal bushings are specifically prohibited.
- E. Steering rack bushings may be replaced but must attach in the factory location(s) without additional modification or changes. Steering rack position may not be changed. The amount of metal in a replacement bushing may not be increased relative to the amount of metal found in



a standard bushing for the particular application. Solid metal bushings are specifically prohibited. This does NOT allow shimming or otherwise relocating the steering rack.

- F. Camber bolts may be installed providing these parts use the original, unmodified mounting points and meet the restrictions specified in Section 14.5.B. Caster changes resulting from the use of camber bolts are permitted.
- G. Solid axle rear wheel drive (RWD) suspension allowances:
  - 1. Addition or replacement of suspension stabilizers (linkage connecting the axle housing or DeDion to the chassis, which controls lateral suspension location) is permitted.
  - 2. Traction bars or torque arms may be added or replaced.
  - 3. A Panhard rod may be added or replaced.
  - 4. The upper arm(s) may be removed, replaced, or modified and the upper pickup points on the rear axle housing may be relocated.
  - 5. The lower arms may be replaced or modified and the lower pickup points on the rear axle housing may be relocated.
  - 6. Differential covers and attaching hardware may be replaced.
  - 7. Methods of attachment and attachment points are unrestricted but may serve no other purpose (e.g., chassis stiffening). This does not authorize removal of a welded on part of a subframe to accommodate the installation.
- H. Camber kits (also known as camber compensators) may be installed. These kits consist of either adjustable length arms or arm mounts (including ball joints) that provide a lateral adjustment to the effective length of a control arm. Alignment outside the factory specifications is allowed. The following restrictions apply:
  - 1. On double/unequal arm (e.g., wishbone, multi-link) suspensions, only the upper arms OR lower arms may be modified or replaced, but not both. Non-integral longitudinal arms that primarily control fore/aft wheel movement (e.g., trailing arm(s) or link(s) of a multi-link suspension) may not be replaced, changed, or modified.
  - 2. On arm-and-strut (MacPherson/Chapman) suspensions, the lower arms may be modified/replaced OR other methods of camber adjustment as allowed by Sections 14.8.B, C, or F may be used, but NOT both.
  - 3. On swing or trailing arm suspensions, the main arms may not be modified or replaced, but lateral locating links/arms may be modified or replaced.
  - 4. Front wheel drive (FWD) cars with rear beam axles may use shims between the rear axle and hubs.
  - 5. The replacement arms or mounts must attach to the original stan-

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standard mounting points. All bushings must meet the requirements of Section 14.8.B. Intermediate mounting points (e.g., shock/spring mounts) may not be moved or relocated on the arm, except as incidental to the camber adjustment. The knuckle/bearing housing/spindle assembly cannot be modified or replaced.

6. Changes in suspension geometry are not allowed except as incidental to the effective arm length change.

**NOTE:** Many modern suspension designs known by other names, actually function as double A-arm designs. These include the rear suspensions on 1988-on Honda Civic/Integra, Chrysler/Plymouth/Dodge Neon, BMW E36, and most “multi-link” and are covered by Section 14.8.H.1.

- I. On strut-equipped cars, the strut’s lower integral mounting bracket, for attachment to the upright or spindle, is unrestricted provided it attaches to the standard location. Any resulting change to the position of the strut centerline is allowed. Such brackets shall serve no other purpose. This does not allow for changes to the integral steering arm on cars that have the steering arm integrated with the strut body.
- J. Changes in alignment parameters that result directly from the use of the allowed components are permitted. For example, the dimensional changes resulting from the use of a cylindrical offset bushing that meets the restrictions of Section 14.8.B are allowed, including those resulting from a change in the pivoting action to:
  - About the mounting bolt, or
  - About the bushing itself.
- K. Subframe mount bushings may be replaced, but must attach in the standard location(s) without additional modification or changes. Subframe position may not be changed. The amount of metal in a replacement bushing may not be increased relative to the amount of metal found in a standard bushing for the particular application. Solid metal bushings are specifically prohibited.

### 14.9 ELECTRICAL SYSTEM

- A. The make, model number, and size of the battery may be changed but not its voltage. Relocation of the battery or batteries is permitted but not into the passenger compartment. If the battery is relocated and the original battery tray can be removed by simply unbolting it, the tray may be removed or relocated with the battery. Holes may be drilled for mounting or passage of cables. Longer cables may be substituted to permit relocation. The number of battery or batteries may not be changed from standard. The area behind the rearmost seat is not considered to be within the passenger compartment. The area under the rearmost seat is considered to be within the passenger compartment. Battery allowances do not apply to electric and hybrid-electric vehicles.



- B. The addition of electrical grounding cables and associated distribution blocks/terminals is permitted. Holes may be drilled for mounting only. This does not permit the use of electrical enhancement components such as condensers, voltage controllers, etc.

#### 14.10 ENGINE AND DRIVETRAIN

- A. Oil pans, oil pickups, and differential covers may be modified or substituted. Addition or modification of windage trays or crankshaft scrapers is not allowed. Engine oil, transmission fluid, differential fluid, and power steering fluid coolers may be added or substituted (including oil to coolant heat exchangers) but may not serve any additional purpose. *Modifications necessary to route fluids to an appropriate heat exchanger (modification of oil and coolant lines, addition of oil cooler sandwich adapters, addition of fluid pumps, etc.) is allowed provided they serve no other purpose.*
- B. Original equipment traction control systems may be electrically disabled, but not removed or altered in any other way.
- C.
  1. The air intake system up to, but not including, the engine inlet may be modified or replaced. The engine inlet is the throttle body, carburetor, compressor inlet, or intake manifold, whichever comes first. The existing structure of the car may not be modified for the passage of ducting from the air cleaner to the engine inlet. Holes may be drilled for mounting. Emissions or engine management components in the air intake system, such as a PCV valve or mass airflow sensor, may not be removed, modified, or replaced, and must retain their original function along the flow path.
  2. *STU and STH only:* As utilized only on engines originally equipped with forced induction, induction charge heat exchangers (also known as “intercoolers” or “charge air coolers” [CACs]) are unrestricted in size and shape. Air-to-air CACs and radiators for air-to-liquid CACs must be cooled only by the atmosphere except for standard parts. Body panels, fascias, or structural members may not be cut or altered to facilitate CAC installation. Removal of vehicle components to facilitate installation is not allowed. Holes may be drilled for mounting.
  3. *STU and STH only:* Charge pipes may be modified or replaced. Replacement charge pipes may delete or block off factory pipes designed to enhance intake sounds (“noisemakers”). Modification or deletion of vehicle components (e.g. plastic shrouds, wheel well liners) to permit routing of alternate charge pipes is not allowed.
  4. Compressor Bypass Valves (CBVs), blow-off valves, and pop-off valves may be replaced or modified.
  5. Boost regulation systems, either electronic or mechanical, and electronic fuel cuts referencing boost pressure may be modified, replaced,



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*or removed. This does not allow for changes to the turbocharger or wastegate (including wastegate spring).*

- D. Exhaust manifolds, headers, downpipes, and associated EGR tubes may be replaced with alternate units. Exhaust exit may be relocated provided it meets Section 3.3.3.B.16. Relocation of the oxygen sensor on the header is permitted, *including lengthening or shortening oxygen sensor wiring*. Exhaust heat shields which cover only, and attach solely to, these parts may also be replaced, removed, or modified. All other exhaust heat shields may be modified the minimum amount necessary to accommodate allowed alternate exhaust components. Mounting brackets/hardware which serve no other purpose are considered part of the exhaust components.

- E. Any catalytic converters are allowed with the following constraints. Multiple catalytic converters may be replaced by a single unit. The inlet(s) of the replacement converter(s) must be located between the cylinder head and a point 6" (152.4 mm) further along the exhaust flow path from the original exit of the final OE converter.

The extents of an OE converter are defined by the expansion chamber in which the catalyst is contained, regardless of placement within larger exhaust sections. Replacement converters must have a minimum catalyst density of 100 cells per inch and minimum substrate length of 3" (76.2 mm).

- F. The engine management system parameters and operation of internal combustion engines may be modified only via the methods listed below. Any OE OBD2 or newer communications port functionally must remain. The Check Engine Light (CEL) or Malfunction Indicator Light (MIL) may be disabled via software. Only sensors equipped from the manufacturer may be used for engine management.

1. For all model years, the following allowances apply:
  - a. The standard PCM/ECU may be re-programmed without restriction.
  - b. Fuel pressure regulator(s) may be replaced in lieu of electronic hardware or software alterations. It is not permitted to mechanically alter the fuel pressure regulation AND make other hardware or software changes to engine operation.
  - c. Ignition timing may be set at any point on factory-adjustable distributor ignition systems.
2. For 2005 and older model year vehicles:
  - a. A supplementary ("piggyback") ECU is permitted. It must be plug-compatible with the standard PCM/ECU (no splices) and must connect only between the standard PCM/ECU and its wiring harness.

- b. Electronic components may be installed in-line between the engine sensors and PCM/ECU. These components may alter the signal from the sensor in order to affect the PCM/ECU operation.  
EXAMPLE: Fuel controllers that modify the signal from an airflow sensor.
  - c. VTEC controllers and other devices may be used which alter the timing of manufacturer electronic variable-valve systems.
- 3. 1995 and older vehicles may implement a replacement "stand-alone" PCM/ECU.
- G. Any mechanical shift linkage may be used.
- H. Any accessory pulleys and belts of the same type (e.g., V-belt, serpentine) as standard may be used. This allowance applies to accessory pulleys only (e.g., alternator, water pump, power steering pump, and crankshaft drive pulleys). It does not allow replacement, modification, or substitution of pulleys, cogs, gears, or belts which are part of cam, layshaft, or ignition drive or timing systems, etc. Any crankshaft damper or pulley may be used. SFI-rated dampers are recommended. Supercharged cars may not change the effective diameter of any pulley which drives the supercharger.
- I. Upper engine shields made of plastic material, the purpose of which is to hide mechanical components in the engine compartment, may be removed if they have a solely aesthetic and/or acoustic function.
- J. Any engine or transmission mount is allowed provided it attaches only to the original mounting points, does not relocate the engine/transmission (other than incidental to changes in compliance material), and weighs no less than the OE mount. All components between the engine/transmission and the mounting structure are considered to be part of the mount assembly.
- K. Limited Slip Differentials
  - 1. STS class: No limited slip differentials are permitted except for factory standard viscous coupler-type units.
  - 2. STU, STR, and STX classes: 2WD vehicles may use any mechanical LSD unit. AWD vehicles may substitute one differential (front, rear, or center) with an aftermarket mechanical LSD.  
*STH: 2WD vehicles may use any mechanical LSD unit.*
- L. Engine cooling radiators may be replaced with alternate parts subject to the following restrictions:
  - 1. Radiator core dimensions (width, height, thickness) cannot be smaller than the standard part.
  - 2. Radiator must mount to OE radiator mounts.
  - 3. Fluid capacity and dry weight of the radiator must be no less than that of the standard part. Installation of an alternate radiator may serve no other purpose (e.g., to allow a cold air intake passage).

- 4. A replacement radiator may contain an integrated oil cooler provided the portion of the radiator that is utilized for coolant conforms to the remainder of 14.10.L.*
- 5. Installation of an alternate radiator may serve no other purpose (e.g. to allow a cold air intake passage).*

*M. Cars with combustion chamber oil injection systems (such as those in rotary engines) may supplement the standard engine lubrication with additional oil supplied through the standard fuel delivery system and/or an oil-metering-pump (OMP) adaptor plate. An oil storage tank may be added to provide oil to the OMP. Holes may be drilled for mounting.*

*N. A single clutch master cylinder brace may be added provided it is bolt-on and serves no other purpose.*

*O. The clutch disk and pressure plate may be modified or replaced.*

*P. The Transmission Control Unit (TCU) may be re-programmed. This allowance only applies to modification of transmission behaviors and does not extend to re-programming any other components.*

*Q. Except for AWD cars in STH, electronic differentials may be re-programmed. This allowance only applies to changing differential behaviors and does not extend to re-programming any other components.*

#### **14.11 OUT-OF-PRODUCTION CARS**

Where a car is out of production and the manufacturer is either out of business, stocks no parts or no longer has a required part, a part of any origin but as similar as possible to the original may be substituted. The entrant must be prepared to show documentary evidence that one of the three circumstances above applies and that the substituted part is as similar as possible under the circumstances. Substitute parts which provide improvements in performance (e.g., superior gearing, lighter weight, better camshaft profile, etc.) are not permitted under this allowance.



## 15. STREET PREPARED CATEGORY

### CATEGORY OBJECTIVE

Street Prepared builds on the Street allowances to provide opportunities for vehicles with more extensive modifications that may not be suitable for public highway use.

### CATEGORY VALUES

Provide a level of modification which encompasses lower-prep category allowances plus a moderate level of fabrication and a greater range of bolt-on alternatives.

### CORE MODIFICATIONS

- DOT R-compound tires.
- Permanent alteration to the body, such as modification of fenders via cutting and/or flaring for tire clearance.
- Drilling trunks/hatches for spoiler mounting.
- Front splitters and rear spoilers.
- Update/Backdate allowances to interchange of parts among selected models.
- Engine tuning with stock internals.
  - Aftermarket ECU.
  - Unrestricted Induction.
  - Emissions system removal.
  - Unrestricted exhaust systems.
- Weight reduction (A/C removal, steering wheel airbag removal, etc.).
- Suspension Updates.

### CLASSES

- **SUPER STREET PREPARED (SSP)** – High Performance sports cars.
- **A STREET PREPARED (ASP)** – AWD turbo sedans and medium performance coupes and sports cars.
- **B STREET PREPARED (BSP)** – Medium performance 2 seater and 2+2 sports cars.
- **C STREET PREPARED (CSP)** – Lower powered 2 seat sports cars and FWD cars.
- **D STREET PREPARED (DSP)** – Heavier RWD sports sedans/coupes and FWD cars.
- **E STREET PREPARED (ESP)** – Muscle cars and foreign grand touring cars.
- **F STREET PREPARED (FSP)** – FWD cars with some lower power RWD and AWD cars.

Cars running in Street Prepared Category must have been series produced with normal road touring equipment, capable of being licensed for normal

road use in the United States, and normally sold and delivered through the manufacturer's retail sales outlets in the United States. Cars not specifically listed in Street, Street Touring, or Street Prepared Category classes in Appendix A must have been produced in quantities of at least 1000 in a 12-month period to be eligible for Street Prepared Category.

A vehicle may compete in Street Prepared Category if the preparation of the vehicle has not exceeded the allowable modifications of Street Category, except as specified below. However, the distinction between different years/models used in Street Category does not apply in Street Prepared Category. Example: Porsche 911 models that are listed on the same line are considered the same.

Vehicles denoted with “\*Limited Prep\*” in Appendix A will run under the normal Street Prepared rule set with exceptions as follows: Subsections denoted “Full Prep” do not apply.

Cars listed as eligible in and prepared to the current Club Racing Improved Touring (IT) rules are permitted to compete in their respective Street Prepared classes. Neither Street Prepared nor Improved Touring cars are permitted to interchange preparation rules. Improved Touring cars may use tires which are eligible under the current IT rules even if they are not eligible in Street Prepared.

Cars listed as eligible in and prepared to the current Club Racing American Sedan (AS) rules are permitted to compete in Street Prepared class B (BSP). Neither Street Prepared nor American Sedan cars are permitted to interchange preparation rules. American Sedan cars may use tires which are eligible under current AS rules even if they are not eligible in Street Prepared.

Cars listed as eligible in and prepared to the current Club Racing Touring T2-T4 Category rules are permitted to compete in their respective Street Prepared classes. Neither Street Prepared nor Touring cars are permitted to interchange preparation rules. Touring cars may use tires which are eligible under current Touring rules even if they are not eligible in Street Prepared.

Cars listed as eligible in and prepared to the current Street Touring® category rules are permitted to compete in their respective Street Prepared classes, with the additional allowance that they may use any tire which meets the requirements of 15.3 and fits on the Street Touring® compliant wheels and within the Street Touring® compliant bodywork.

Cars eligible for the current Club Racing Spec Miata class are permitted to compete in Street Prepared class D (DSP), with the additional allowance that they may use any size of any tire which meets the requirements of 15.3 and fits on the Spec Miata compliant wheels and within the compliant bodywork. Spec Miata cars in DSP may not intermix use of the Spec Miata and Street Prepared allowances. The competitor is responsible for

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being in possession of the Spec Miata rules and for proving that his/her car conforms to the rules.

Cars listed as eligible in and prepared to the current Club Racing B-Spec Regulations are permitted to compete in their respective Street Prepared Classes. Neither Street Prepared nor B-Spec cars are permitted to interchange preparation rules. B-Spec cars may use tires which are eligible under current Club Racing B-Spec rules even if they are not eligible in Street Prepared.

While the rules of the Street Prepared Category have remained essentially the same, the laws governing various aspects of street-driven vehicles have changed over time. The original concept of this category as made up predominantly of street-driven vehicles has been rendered inappropriate. SCCA® does not encourage or condone the breaking of laws governing pollution control systems or the alteration of street-driven vehicles contrary to state and federal laws regarding their use. It continues to be the responsibility of the individual to comply with such state and federal laws. See Sections 3.8 and 8.3.1 for documentation requirements.

Specific vehicle classifications are located in Appendix A of these rules.

### 15.1 AUTHORIZED MODIFICATIONS

- A. All Allowable modifications permitted in Section 13, Street Category are allowed.
- B. Street Prepared vehicles may only be modified in excess of Street Category rules in the following ways. Any modification not specifically authorized by the Street Category or Street Prepared rules is prohibited. No unauthorized modifications are permitted in order to accommodate authorized modifications (e.g., non-standard hood scoops or holes necessary for carburetor clearance). Structural modifications, such as the addition of members known as “jacking rails,” are not permitted unless specifically authorized herein.
- C. **FULL PREP:** Equipment and/or specifications may be exchanged between different years and models of a vehicle if:
  - 1. The item is standard on the year/model from which it was taken, and
  - 2. The years/models are listed on the same line of Appendix A, Street Prepared Classes.

The updated/backdated part or the part to which it is to be attached may not be altered, modified, machined, welded, or otherwise changed to facilitate the updating/backdating allowance. Standard factory installation methods, locations, and configurations are allowed. The updating and/or backdating of engines, transmissions, transaxles, and/or unibodies must be done as a unit; component parts and specifications of these units may not be interchanged. Cars not listed in the Street Prepared Sections of Appendix A may not be updated/backdated until approved by the SEB and published in the official SCCA® publication.



- D. Alternate computer control modules may be used whenever an equivalent change to the conventional system is allowed. For example, alternate computer module control of ignition settings or fuel injection is allowed.
- E. Air conditioning systems may be removed in whole or in part. This rule should not be interpreted to allow modification of the heater system.
- F. On all forms of suspension, camber/caster adjustment within factory specifications may be achieved by the use of shims or eccentric bushings. The intent of this allowance is to permit cars to be restored to within factory-allowed specification ranges, not to provide an additional method beyond those permitted in Section 15.8, Suspension, to obtain alignment settings beyond the factory specifications.

Refer to Appendix F for past clarifications of these rules.

## 15.2 BODYWORK

Vehicles may only exceed the allowances of Street Category section 13.2 as specified herein.

- A. **FULL PREP:** Fenders and bumpers may be modified for tire clearance. This includes the portion of a hood which serves as a fender/wheel well, where applicable. This does not permit modifications to the chassis or bodywork inboard of the vertical plane of the hub/wheel mounting face (at rest, with front wheels straight ahead). Flares may be added although tires may extend beyond the bodywork. Replacement of complete hood, flared fenders, or quarter panels is prohibited. Plastic and rubber wheel well splash shields may be modified or removed for tire clearance and for installation of fender flares as allowed herein.

Hardware may be added to the steering system outside the passenger compartment to limit steering travel, provided it does not alter steering or suspension geometry within the limited range of motion and serves no other purpose.

**LIMITED PREP:** Fenders may not be cut or flared but the inside lip may be rolled to gain additional tire clearance. (The outer fender contour may not be changed.) Plastic and rubber wheel well splash shields may be modified for tire clearance and to accommodate a rolled inside fender lip. The modifications may serve no other purpose (e.g., air intake, brake ducts, etc.). No other changes to the standard fenders or wheel wells are permitted.

- B. Factory rub strips, emblems, mud flaps, rear wings, and/or spoilers may be removed.
- C. Strut bars (per Section 12.18) are permitted with all types of suspensions, subject to the following constraints:
  1. A 2-point strut bar may be added, removed, modified, or substituted, but only with another two-point strut bar.
  2. A triangulated (3-point) strut bar may be removed, modified, or sub-

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stituted; substitution may be with either a triangulated or a 2-point strut bar. The connection to the chassis (i.e., firewall, bulkhead) must be in the standard location.

3. Lower suspension braces must be attached to the lower suspension pickup point locations on the chassis within two inches (2", 50.8 mm) in any direction of the actual suspension attachment to the chassis.
4. Except for standard parts, no connections to other components are permitted.

Additional holes may be drilled for mounting bolts. Interior trim panels may be modified to allow installation of strut bars. Holes or slots may be no larger than necessary and may serve no other purpose. This does not permit any modifications to the frame or unibody beyond the allowed mounting holes.

D. **FULL PREP:** Subframe mount bushings may be replaced, but must attach in the standard location(s) without additional modification or changes. Subframe position may not be changed.

E. Longitudinal (fore-aft) subframe connectors (SFCs) are permitted with the following restrictions:

1. They must only connect previously unconnected boxed frame rails on unibody vehicles.
2. Each SFC must attach at no more than three points on the unibody (e.g., front, rear, and one point in between such as a seat mount brace or rocker box brace).
3. **FULL PREP:** SFCs must be bolted or welded, but welding must be to the OE subframe stampings, not to the floor pan in between.

**LIMITED PREP:** SFCs must be bolted.

4. No cutting of OE subframes or floorpan stampings is permitted. Drilling is permitted for mounting bolts only.
5. No cross-car/lateral/triangulated connections directly between the driver's side and passenger's side SFCs are permitted. Connections to OE components such as tunnel braces or closure panels via bolts are allowed and count as the third point of attachment. No alteration to the OE components is permitted.
6. SFCs may not be used to attach other components (including but not limited to torque arm front mounts or driveshaft loops) and may serve no other purpose.

F. The driver and front passenger seats may be replaced with the following restrictions: Seats must be securely mounted per Section 3.3.3.B.3. The seating surface must be fully upholstered. Any replacement seat must be a full back, bucket-type automobile seat incorporating a functional headrest. Kart seats, low-back dune buggy seats, and other similar types of seat are expressly prohibited. Cars may have no fewer than the standard number of seats. The seat tracks are considered part of the



seat and may be substituted. Alternate seat tracks may serve no other purpose. The standard seat belts may be removed to facilitate the installation of alternate restraints complying with safety requirements. An alternate seat which replaces an airbag-equipped seat is not required to have an airbag.

G. Any steering wheel may be used. An alternate wheel which replaces an airbag-equipped wheel is not required to have an airbag. An alternate wheel is not required to have a horn button.

H. Airbags may be electrically disabled but not removed unless explicitly allowed.

I. **FULL PREP:** Spoilers/splitters and cosmetic trim pieces are permitted. Side skirts may not be used. Spoilers/splitters must comply with the following:

1. A spoiler/splitter may be added to the front of the car below the bumper. It may not extend rearward beyond the front most part of the front wheel well openings, and may not block normal grille or other openings, or obstruct lights. Splitters may not protrude beyond the bumper. Openings may not be used for the purpose of ducting air to the radiator or oil cooler, but they may allow air to flow through a permitted oil cooler provided no ducting is used. The spoiler may not function as a wing. This allows a vertical air dam/spoiler above a horizontal splitter, but splitter fences or longitudinal vertical members that serve to trap air on top of the splitter by preventing it from flowing around the sides of the car are not allowed.
2. A spoiler may be added to the rear of the car provided it complies with either of the following:
  - a. It is a production rear spoiler which is standard or optional equipment of a US model of the vehicle or an exact replica in an alternate material.
  - b. It is a non-production rear spoiler which is mounted to the rear-most portion of the rear hatch, deck, or trunk lid. The spoiler may extend no more than 10" (254 mm) from the original bodywork in any direction. Alternatively, in a hatchback, the spoiler may be mounted to the rear hatch lid at or near the top of the hatch; in such a configuration the spoiler may extend no more than 4" (101.6 mm) from the original bodywork in any direction. The spoiler shall not protrude beyond the perimeter of the original bodywork as viewed from above. The use of endplates is prohibited. Angle of attack is free. The spoiler may not function as a wing.

**LIMITED PREP:** Addition of spoilers, splitters, rear wings, bumper covers, valances, side skirts, and non-functional scoops/vents is allowed provided that either:

1. It is a production part which is standard or optional equipment of a



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US model of the vehicle. ("Model" is defined in Section 12.)

2. It is listed in the vehicle manufacturer's US accessory catalog for that vehicle for normal highway use. This does not allow for parts sold through a manufacturer's performance catalog (e.g., Ford Racing, HPD, MazdaSpeed, Mopar Performance, Mugen, NISMO, SPT, TRD, etc.). Parts must be installed as directed by the manufacturer. Exact replicas, including weight, from alternate sources are also permitted.

#### J. Rollover structures

1. Roll bars must comply with Section 13.2.G.1 in Street category.
2. Roll cages must comply with the following:
  - a. The roll cage need not be removable. It shall be bolted or welded to the car.
  - b. The cage shall attach to the car at no more than 8 points, consisting of the basic cage with 6 attachment points and 2 additional optional braces.
  - c. The forward part of the cage shall be mounted to the floor of the vehicle. If used, the 2 optional braces referred to in (2) shall be mounted, one on either side, from the forward section of the cage to the firewall or front fender wells. No braces shall pass through the front firewall.
  - d. Roll cages that utilize NASCAR-style door bars that protrude into the door cavity must comply with the GCR roll cage requirements for production-based cars.
  - e. Roll cages which utilize door bars that protrude into the door panel must comply with all Club Racing GCR requirements for roll cages.

Installation of roll cages in Street Prepared cars must follow the same standards for interior modifications to accommodate the cage installation as those which are applicable to Touring cars in Club Racing.

#### K. FULL PREP: The use of a fuel cell which complies with GCR requirements is permitted, provided all of the following additional restrictions are met:

1. The capacity of the cell may differ by no more than 20% from that of the original tank.
2. The location of the cell may differ from that of the original tank by no more than 6" in any direction.
3. The car meets all applicable Club Racing Time Trials Level 3 Track Trials and/or Level 4 Hillclimbs safety standards, including those for rollover protection and the installation of a fire extinguisher.

#### L. FULL PREP: Fuel tank changes are permitted only as allowed under Sections 15.1.C and 15.2.K. No additional tanks or reservoirs may be used.

- M. Accelerator, brake, and clutch pedals may utilize substitute covers of unrestricted origin, shape, and size provided they meet the following requirements: covers must be securely attached, provide a non-slip surface, not interfere with each other's operation, and must be deemed safe at Tech Inspection. A clutch pedal stop may be added.
- N. **FULL PREP:** The OE radio may be removed. The OE sound system components, except wiring, may be removed. Any visible holes which result from the removal of such equipment must be covered.
- O. **FULL PREP:** Sunroof-equipped cars may be converted to a solid-roof configuration provided a model without a sunroof is listed on the same line in Appendix A.
- P. **FULL PREP:** A non-OE sunroof replacement panel may not be used in place of the OE sunroof.
- Q. Fog lights may be removed.
- R. **FULL PREP:** Interior rear view mirror and sun visors (and mounting hardware provided it serves no other purpose) may be removed or replaced.
- S. Suspension and drivetrain mounting, including subframes, locations may be reinforced in order to improve durability and reliability. Any modifications are subject to the following restrictions:
1. Material may only be added, not removed.
  2. Mounting locations may not be moved in any direction.
  3. The method of attachment to other components may not be changed.
  4. Any added material may not inhibit any motion that would otherwise be uninhibited.
  5. Any modification must remain in the area of the attachment point to be reinforced. This does not allow for braces or cross connection between otherwise unconnected locations.
  6. Modifications may serve no purpose other than to increase durability and reliability. This allowance is intended to improve durability without improving performance. Modifications are not to be made to allow for increased power or larger tires but to fix or prevent common failures of the vehicle structure or subframes. This rule is intended to permit modifications to prevent common failures such as suspension mounting location tear-outs or cracking shock towers/subframes.

### 15.3 TIRES

Tires must meet the requirements for Street Category with the exception of Sections 13.3.A.1 (minimum UTQG Treadwear Grade), 13.3.A.2 (minimum molded tread depth), and 13.3.A.5 (must be designed for highway use). The restriction that tires must be designed for highway use also does not apply; purpose-built DOT-approved competition tires are allowed.

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Section 13.3.C.4 is replaced with the following list, which may be altered at any time by the SEB upon notification of membership.

- Kumho Ecsta W710

## 15.4 WHEELS

Vehicles may only exceed the allowances of 13.4 as specified herein.

- A. Wheels of any diameter, width, or offset may be used. Aftermarket wheels may be modified to install OE tire pressure sensors.
- B. Wheel spacers are permitted. Wheel studs and knock-off wheel drive pegs may be changed in length and diameter. Wheel bolts may be replaced with studs and nuts.

## 15.5 SHOCK ABSORBERS/STRUTS

Vehicles may only exceed the allowances of Section 13.5 as specified herein.

- A. Shock absorber bump stops may be altered or removed.
- B. On cars with lever-type shock absorbers, a tube-type shock absorber may be added. If the lever-type shock serves no other purpose, it must be removed. If the lever-type shock serves any other purpose, it must be retained.
- C. Any shock absorbers may be used. Shock absorber mounting brackets which serve no other purpose may be altered, added or replaced provided that the attachment points on the body/frame/subframe/chassis/suspension member are not altered. The installation may incorporate an alternate upper spring perch/seat and/or mounting block (bearing mount). The system of attachment may be changed. The number of shock absorbers shall be the same as standard. No shock absorber may be capable of adjustment while the car is in motion unless fitted as original equipment. MacPherson strut equipped cars may substitute struts and/or may use any insert. This does not allow unauthorized changes in suspension geometry or changes in attachment points (e.g., affecting the position of the lower ball joint or spindle). It is intended to allow the strut length changes needed to accommodate permitted modifications which affect ride height and suspension travel. This allowance differs from the Club Racing Improved Touring Allowance 9.1.3.D.5.b.1.
- D. On strut suspensions using a non-standard lower control arm (as defined by Section 15.8.H.2), an alternate upper spring perch/seat and/or mounting block (bearing mount) as described in Section 15.5.C may be used provided it offers no camber/caster adjustment beyond standard.

## 15.6 BRAKES

Vehicles may only exceed the allowances of Section 13.6 as specified herein.

- A. FULL PREP: Any brake line, master cylinder, vacuum brake booster, or brake proportioning valve that meets the requirements of Section



3.3.3.B.13 may be used. This does not allow multiple separate cylinders. A single master cylinder brace may be added provided it is bolt-on and serves no other purpose. One additional hole may be drilled in brake pedal arm for relocation of the master cylinder pushrod.

- B. "Safety brakers" and units such as the "Brake Guard System" are permitted.
- C. **FULL PREP:** ABS braking systems may be disabled, but not removed; brake boosters may be removed, modified, substituted, or added.  
**LIMITED PREP:** Any brake line may be used.
- D. Alternate brake rotors are permitted subject to the following restrictions:
  - 1. Rotors must be ferrous metal except for standard parts. Aluminum rotor hats are allowed. Rotor dimensions (diameter and thickness) must be equal to or greater than standard parts. Cars originally equipped with solid (non-vented) rotors may utilize vented rotors.
  - 2. Cross-drilled and/or slotted brake rotors may be used. Slots/holes are permitted only in the braking area of the rotor. Rotors featuring a drum-type parking brake in the hat area of the rotor may not be drilled or slotted in the parking brake area.
- E. Drum brakes may be replaced with disc brakes. Disc brake rotors for such a conversion must be equal to or greater in diameter than the inside diameter of the standard brake drum. Changes to backing plates/mounting brackets/brake lines to accommodate this change are permitted but may serve no other purpose. Drum-to-disc brake conversions must be bolted, not welded, to the axle/control arm/upright.
- F. Air ducts may be fitted to the brakes provided that no changes are made in the body/structure for their use. They may serve no other purpose. Backing plates and dirt shields may be modified or removed.
- G. A functional, redundant emergency (parking) brake must be present.
- H. Brake calipers may be replaced, provided the number of pistons is equal to or greater than the original number of pistons. Caliper mounting brackets may be replaced to accommodate this change, but may serve no other purpose. Alternate caliper brackets must bolt to the original caliper bracket mounting location(s).

## 15.7 ANTI-ROLL (SWAY) BARS

Vehicles may only exceed the allowances of Section 13.7 as specified herein.

Substitution, addition, or removal of any anti-roll bar(s) is permitted. Bushing material, method of attachment, and locating points are unrestricted. This does not authorize removal of a welded-on part of a sub-frame to accommodate the installation, or the cutting of holes to route the bar or links. Non-standard lateral members which connect between the

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brackets for the bar, including allowed strut bars per Section 15.2.C, are permitted.

The bar may serve no other purpose which is not explicitly permitted elsewhere herein. Components such as anti-roll bars and strut housings which serve dual purposes by also functioning as suspension locators may not be modified or substituted in ways which change the suspension geometry or steering geometry, and may not be installed in positions (e.g., upside down) other than that of the original configuration.

### 15.8 SUSPENSION

Vehicles may only exceed the allowances of Section 13.8 as specified herein.

- A. Ride height may only be altered by suspension adjustments, the use of spacing blocks, leaf spring shackles, torsion bar levers, or change or modification of springs or coil spring perches. This does not allow the use of spacers which alter suspension geometry such as those between the hub carrier and lower suspension arm. Springs must be of the same type as the original (coil, leaf, torsion bar, etc.) and except as noted herein, must use the original spring attachment points. This permits multiple springs as long as they use the original mount locations. Coil spring perches originally attached to struts or shock absorber bodies may be changed or altered and their position may be adjustable. Spacers are allowed above or below the spring.
- B. Suspension bump stops may be altered or removed.
- C. Suspension bushings may be replaced with bushings of any materials as long as they fit in the original location. Offset bushings may be used. *Bushing type may be changed to alternate types (e.g. spherical bearing).* Pins or keys may be used to prevent the rotation of alternate bushings but may serve no other purpose than that of retaining the bushing in the desired position. Differential mount bushings are not considered to be suspension bushings and are not covered by this allowance.
- D. Differential mount bushings may be replaced but must attach in the factory location(s) without additional modification or changes. Differential position may not be changed.
- E. Steering rack bushings may be replaced but must attach in the factory location(s) without additional modification or changes. Steering rack position may not be changed. Solid metal bushings are specifically prohibited. This does NOT allow shimming or otherwise relocating the steering rack.
- F. The following allowances apply to strut-type suspensions: Adjustable camber plates may be installed at the top of the strut and the original upper mounting holes may be slotted. The drilling of holes in order to perform the installation is permitted but the center clearance hole may not be modified. Any type of bearing or bushing may be used in the ad-



justable camber plate attachment to the strut. The installation may incorporate an alternate upper spring perch/seat and/or mounting block (bearing mount). Any ride height change resulting from installation of camber plates is allowed. Caster changes resulting from the use of camber plates are permitted.

G. Camber bolts may be installed providing these parts use the original, unmodified mounting points. Caster changes resulting from the use of camber bolts are permitted.

H. Camber kits, also known as camber compensators, may be installed. These kits consist of either adjustable length arms, arm mounts, or *ball joints* that provide a lateral adjustment to the effective length of a control arm. Alignment outside the factory specifications is allowed. Caster changes resulting from the use of camber kits are permitted. The following restrictions apply:

1. On double/unequal arm (e.g., wishbone, multi-link) suspensions, only the upper arms OR lower arms may be modified or replaced, but not both. Non-integral longitudinal arms that primarily control fore/aft wheel movement (e.g., trailing arm(s) or link(s) of a multi-link suspension) may not be replaced, changed, or modified.
2. On arm-and-strut (MacPherson/Chapman) suspensions, the lower arms may be modified/replaced OR other methods of camber adjustment as allowed by Sections 15.8.C, F, or G may be used, but NOT both.
3. On swing or trailing arm suspensions, the main arms may not be modified or replaced but lateral locating links/arms may be modified or replaced.
4. The replacement arms or mounts must attach to the original standard mounting points. All bushings must meet the requirements of Section 15.8.C. Intermediate mounting points (e.g., shock/spring mounts) may not be moved or relocated on the arm, except as incidental to the camber adjustment. The knuckle/bearing housing/spindle assembly cannot be modified or replaced.
5. Changes in suspension geometry are not allowed except as incidental to the effective arm length change.

NOTE: Many modern suspension designs known by other names actually function as double A-arm designs. These include the rear suspensions on 88+ Honda Civic/Integra, Dodge/Plymouth Neon, BMW E36, and most “multi-link” and are covered by Section 15.8.H.1.

I. Solid axle suspension allowances:

1. Addition or replacement of suspension stabilizers (linkage connecting the axle housing or De Dion to the chassis, which controls lateral suspension location) is permitted.
2. Traction bars or torque arms may be added or replaced.



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3. A panhard rod may be added or replaced.
4. The upper arm(s) may be removed, replaced, or modified and the upper pickup points on the rear axle housing may be relocated.
5. The lower arms may be replaced or modified and the lower pickup points on the rear axle housing may be relocated.
6. Differential covers and attaching hardware may be replaced.

Methods of attachment and attachment points are unrestricted, but may serve no other purpose (e.g., chassis stiffening). This does not authorize removal of a welded-on part of a subframe or bodywork to accommodate the installation.

- J. On strut-equipped cars, the strut's lower integral mounting bracket, for attachment to the upright or spindle, is unrestricted provided it attaches to the standard location. Any resulting change to the position of the strut centerline is allowed. Such brackets shall serve no other purpose. This does not allow for changes to the integral steering arm on cars that have the steering arm integrated with the strut body.
- K. Changes in alignment parameters which result directly from the use of allowed components are permitted. For example, the dimensional changes resulting from the use of a cylindrical offset bushing which meets the restrictions of Section 15.8.C are allowed, including those resulting from a change in the pivoting action to
  1. About the mounting bolt, or
  2. About the bushing itself.

Eccentric bolts are permitted for suspension adjustment only if they are as specified by the factory, per the last paragraph of Section 13.8.

- L. Suspension components may be replaced with aftermarket components in order to improve durability and reliability. Any replaced components are subject to the following restrictions:
  1. Replacement components may not be lighter than the original component.
  2. Replacement components must install without modification to the mating part.
  3. Replacement components may not differ from the original beyond improved strength, alternate manufacturing techniques, or replacement with larger components.
  4. Components around or connected to the replaced component may not be relocated or modified unless permitted elsewhere in section 15.
  5. Heat treatment may be used to increase the durability of an original part and the resulting part will be considered a replaced component.
  6. Metal components may not be replaced with non-metal components. However a non-metal component may be replaced with a metal com-

ponent so long as this does not violate other rules. For example the bushing metal content rule still applies.

7. Replaced components may not alter the suspension geometry unless otherwise permitted in section 15. Replacement hubs may relocate the wheel mating surface to widen the track width but may not relocate the wheel mating surface to narrow the track width.
8. Replaced components may serve no purpose other than to increase durability and reliability. This allowance is intended to improve durability without improving performance. Components are not to be replaced to allow for increased power or larger tires but to replace common component failures. For example, hubs often become wear items that require frequent replacement to avoid failure. Hubs may be replaced with larger, stronger hubs to reduce the chance of failure and increase the life of the component.

M. For cars originally equipped with transverse leaf springs, spring type may be changed to a coil spring. Spring perches may be added to shock absorbers for mounting coil springs in a “coilover” configuration.

## 15.9 ELECTRICAL SYSTEM

Except for those with electric and hybrid powertrains, vehicles may only exceed the allowances of Section 13.9 as specified herein.

- A. Any ignition setting, adjustment, or system may be used subject to the requirements of Section 15.10.D. This does not prohibit the use of “two-step” rev limiters used when the car is stationary.
- B. The make, model number, and size of the battery may be changed but not its voltage.
- C. Relocation of the battery or batteries is permitted but not into the passenger compartment. If the battery is relocated and the original battery tray can be removed by simply unbolting it, the tray may be removed or relocated with the battery. Holes may be drilled for mounting or passage of cables. Longer or shorter cables may be substituted to permit relocation. The number of battery or batteries may not be changed from standard. The area behind the rearmost seat is not considered to be within the passenger compartment. The area under the rearmost seat is considered to be within the passenger compartment.
- D. **FULL PREP:** Any starter, generator, or alternator may be used in the original position. An alternator or generator must have an electrical output (including amperage) equal to or greater than the original equipment unit. Any generator or alternator pulley and belt of the same type as standard may be used (see Section 15.10.Y).
- E. Wiring harnesses may not be removed in whole or in part. Wiring connectors for emissions control devices are considered part of the harness, not part of the emissions control system, and may not be removed. Connectors may be changed for compatibility with allowed aftermarket



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components such as ignition coils. Pigtails may be used.

- F. A hole may be drilled in the firewall to permit passage of electrical wiring. It should be no larger than necessary and shall serve no other purpose.

### 15.10 ENGINE AND DRIVETRAIN

Except for those with electric and hybrid powertrains, vehicles may only exceed the allowances of Section 13.10 as specified herein.

- A. Engines must retain standard type lubricating system, but may have any oil pan (Accusump®-type systems allowed), oil pump and pickup, oil cooler(s), or oil or fuel filters. Fuel filters must be of automotive type and may serve no other purpose; a substituted fuel filter may not be used as a reservoir. Substituted fuel filters may not exceed one quart total capacity. A permitted oil cooler may be positioned in an opening in an allowed spoiler, provided no unauthorized modifications are made in order to perform the installation. Any power steering fluid cooler may be added.

- B. Heat shields may be added.

- C. Induction allowances are as follows:

1. *Fuel injection systems and carburetors are unrestricted, including throttle bodies, manifolds, and plumbing/piping between the inlet port at the cylinder head and the atmosphere, subject to 15.10.C.4.* Alternate throttle linkage and connections to facilitate installation of allowed induction systems are permitted but may serve no other purpose. If an induction system item is allowed to be removed and its original mounting bracket can be removed by simply unbolting it, the bracket may be removed as well.
2. Except for standard parts as defined in these rules, the external use while on course of liquids, ice, dry ice, refrigeration systems, vaporized compressed gases, etc. to reduce the temperature of the intake air charge is prohibited. Wrapping of intakes with liquid-soaked fabric is not permitted.
3. As utilized only on engines originally equipped with forced induction, induction charge heat exchangers (also known as “intercoolers” or “charge air coolers” [CACs]) are unrestricted in size and configuration. Air-to-air CACs and radiators for air-to-liquid CACs must be cooled only by the atmosphere except for standard parts. Body panels, fascias, or structural members may not be cut or altered to facilitate CAC installation.
4. Turbochargers and/or superchargers (forced induction) may not be added, changed, or modified (this does not allow ceramic coating of turbochargers). On vehicles originally equipped with forced induction:
  - a. No hardware changes or alterations to turbocharger(s) or

- supercharger(s), in size or number, are permitted. Turbochargers or superchargers may be updated/backdated only in conjunction with the accompanying complete engine unit.
- b. No changes are allowed to waste gate(s) size, number, or location. No changes are allowed to variable-geometry turbine (VGT) hardware.
  - c. Supercharger pulleys and belts of the same type as standard may be replaced with alternate pulleys allowing drive ratio changes. Belt tensioners may be added/changed to reduce belt slip.
  - d. Compressor bypass valves (CBVs), blow-off valves, and pop-off valves are considered part of the air intake system and may be added, replaced, or updated/backdated independently of the other components of a forced induction system.
  - e. Boost regulation systems, either electronic or mechanical, and electronic fuel cuts referencing boost pressure may be altered or modified except as prohibited herein. Boost pressure changes resulting from authorized changes are permitted.
- D. Traction and/or stability control systems, as defined in Section 12.12, must be standard parts at standard settings or electronically disabled.
- E. Air cleaner(s) may be changed or removed; velocity stacks may be added.
- F. Emission control devices may be modified or removed. This permits the oil filler cap to be modified or substituted but does not allow valve covers or cam covers to be altered to install a breather or for any other purpose.
- G. Intake water injection systems are allowed.
- H. Fuel lines and pumps are unrestricted except as specified herein, as long as they do not pose a safety hazard. Fuel lines may be no larger than 1/2" (12.7 mm) i.d. (inside diameter) and may only connect to the original fuel tank or allowed fuel cell. They may be no longer than necessary for reasonable and safe installation, and may serve no other purpose. A single fuel feed line may be used. A single fuel return line may be used and a fitting for connecting it may be added at or near the top of the fuel tank. This does not authorize "cool-cans."
- I. Exhaust manifolds and muffler systems are free, except that they must be quiet and terminate behind the driver (Section 3.3.3.B.16). Exhaust heat shields may be removed. Rear- and mid-engine cars without exhaust headers/manifold systems may use any exhaust system that meets the requirements of Section 3.5. This permits the removal of "heater boxes" in order to install headers on such cars.
- J. Engine and transmission mounts may be replaced but must attach in the factory location(s) without additional modification or changes. Engine position may not be changed. Hydraulic shock type rear engine



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locators, or bobble struts, may be replaced by manufacturer's performance part or aftermarket replacement part. This part must retain factory dimensions and attachment points, including factory design. (Example: If factory locator/bobble strut is gas or hydraulic piston type, replacement part must be gas or hydraulic piston type.) If one or more non-OE engine or transmission mounts are used, Section 15.10.K does not apply and a torque suppression device may not be used.

- K. One bolt-on torque suppression device may be used. A torque suppression device attaches from the engine to the body, frame, or subframe in one location and controls engine movement at that location along a single axis only. It may serve no other purpose.

Examples of permitted devices:

- A chain
- A rod with spherical bearings at each end

Examples of devices not permitted:

- Any link which confines movement along more than one axis.
- An engine mounting plate, or one or more plates rigidly bolted between the engine and the frame. Holes may be drilled to mount a torque suppression device. The installation may not include the welding of any plate(s) to the bodywork or to the motor mount(s) nor may it include multiple non-parallel links.

If a torque suppression device is used, Section 15.10.J does not apply and replacement engine mounts may not be used.

- L. Engine cooling radiators may be replaced with alternate parts subject to the following restrictions:

1. Radiator dimensions (width, height, thickness, etc.) must be no smaller than the standard part.
2. Radiator must mount to OE radiator mounts.
3. Fluid capacity and dry weight of the radiator must be no less than that of the standard part. Installation of an alternate radiator may serve no other purpose (e.g., to allow a cold air intake passage).

- M. The engine fan and fan shroud (unless it serves another purpose, e.g., as an alternator/generator mount) may be removed, modified or replaced. Electrically driven fans are allowed. Flex fans are not allowed.

- N. On two-cycle engines, the ports must be of standard heights, size and configuration; crankcase volume and reed plates must not be altered.

- O. FULL PREP: Any metal clutch assembly, metal flywheel, or metal torque converter that uses the standard attachment to the crankshaft may be used. Non-metallic friction surfaces (e.g., clutch discs) are permitted. Dowel pins may be added. Any hydraulic clutch line may be used. Replacement or substitution of the *clutch master cylinder and clutch slave cylinder* is permitted.

**LIMITED PREP:** Any metal clutch assembly, metal flywheel, or metal torque converter that uses the standard attachment to the crankshaft may be used. Non-metallic friction surfaces (e.g., clutch disks) are permitted. Dowel pins may be added. Any hydraulic clutch line may be used. Replacement or substitution of the clutch slave cylinder is permitted. Clutch/Flywheel friction surface diameter must be the same as original equipment.

- P. Any mechanical shift linkage may be used.
- Q. Limited slip differentials are permitted. This permits locked differentials either by design, welding, or mechanical means. Differential cases, internal differential parts, and axle stubs may be machined as required for clearance and installation to the extent that material may only be removed, not added, and the exterior of the case may not be altered in any way. This machining may serve no other purpose. Any other modifications or substitutions to accommodate the installation of the limited slip differential must meet the requirements of Section 15.1.B and 15.1.C.
- R. **FULL PREP:** Cylinders may be rebored to no more than 0.0472" (1.20 mm) over standard bore and the appropriate standard oversize piston may be substituted. This overbore dimension is an absolute limit; no additional tolerance is permitted to accommodate wear. Cast or forged, non-standard pistons of the same dimensions and configuration as original equipment pistons may be used. Additionally the replacement pistons must be of the same weight or greater as the original equipment pistons. Replacement pistons must match OE piston configuration exactly including quench area. The allowance for the use of aftermarket forgings vs. OE castings does not permit alternate piston dome designs. This allowance does not permit alternative ring configurations.
- S. **FULL PREP:** Rotating and reciprocating parts may be balanced but not lightened.
- T. **FULL PREP:** Intake and exhaust ports and manifold openings may be matched provided no change is made more than one inch from the port/manifold interface. Material may be removed to facilitate port matching, but no material may be added.
- U. Any transmission and/or differential oil coolers may be used. Differential covers may be modified or substituted for cooling.
- V. The engine cylinder head(s) may be milled only to that amount specified in the manufacturer's workshop manual. If no amount is specified then a maximum of 0.010" (0.254 mm) may be milled.
- W. Axle/halfshaft and driveshaft retention/location devices may be installed for safety reasons to control the motion of attached shafts upon the failure of a coupling or universal joint. They may serve no other purpose. This allowance does not include "C-clip eliminators."



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- X. Any crankshaft damper or pulley may be used. SFI-rated dampers are recommended.
- Y. Any accessory pulleys and belts of the same type (e.g., V-belt, serpentine) as standard may be used. This allowance applies to accessory pulleys only (e.g., alternator, water pump, power steering pump, and crankshaft drive pulleys). Alternate pulley materials may be used. Idler pulleys may be used for belt routing in place of items which the rules specifically allow to be removed such as smog pumps and air conditioning compressors. They may serve no other purpose.
- Z. Camshafts and related parts must remain standard except that alternate cam drive pulleys or gears may be used to adjust cam timing if no variable cam and/or valve timing system exists as standard. Timing covers or valve covers may be altered for pulley clearance or access to adjustment. Type of cam drive (chain, belt, gear) must remain as standard. Alternate parts of the same general type (e.g., roller chain in place of "silent" chain) may be substituted. Mating parts (block, heads, covers, retainers, etc.) may not be altered except as mentioned above. Vehicles equipped with a variable cam and/or valve timing system as standard may use alternate computer calibration to adjust cam and/or valve timing but may not change or substitute cam drive components (hardware).
- AA. Upper engine shields made of plastic material, the purpose of which is to hide mechanical components in the engine compartment, may be removed if they have a solely aesthetic and/or acoustic function.
- BB. Cruise control systems may be removed in whole or part.
- CC. Engine oil tanks for dry sump lubrication systems may be replaced with alternate parts subject to the following restrictions:
  - 1. Fluid capacity and dry weight of the oil tank must be no less than that of the standard part.
  - 2. Oil tank must mount in the OE location.
- DD. Drivetrain components may be replaced with aftermarket components in order to improve durability and reliability. Any replaced components are subject to the following restrictions:
  - 1. Replacement components may not be lighter than the original component.
  - 2. Replacement components must install without modification to the mating part.
  - 3. Replacement components may not differ from the original beyond improved strength, alternate manufacturing techniques, or replacement with larger components.
  - 4. Components around or connected to the replaced component may not be relocated or modified unless permitted elsewhere in section 15.

5. Internal engine components such as pistons, connecting rods, or valve train components may not be replaced under this rule.
  6. Heat treatment may be used to increase the durability of an original part and the resulting part will be considered a replaced component.
  7. Metal components may not be replaced with non-metal components. However a non-metal component may be replaced with a metal component.
  8. Replaced components may serve no purpose other than to increase durability and reliability. This allowance is intended to improve durability without improving performance. Components are not to be replaced to allow for increased power or larger tires but to replace common component failures. For example, axle shafts or CV joints are often broken on launch. Under this rule these may be replaced with larger components or components made of stronger materials to avoid these breakages. Alternatively a vehicle may not replace a turbocharger with a larger or stronger part as this would increase the performance potential of the vehicle.
- EE. Cars with combustion chamber oil injection systems (such as those in rotary engines) may supplement the standard engine lubrication system with additional oil supplied through the standard fuel delivery system.

### **15.11 OUT-OF-PRODUCTION CARS**

Where a car is out of production and the manufacturer is either out of business, stocks no parts, or no longer has a required part, a part of any origin but as similar as possible to the original may be substituted. The entrant must be prepared to show documentary evidence that one of the three circumstances above applies and that the substituted part is as similar as possible under the circumstances. Substitute parts which provide improvements in performance (e.g., superior gearing, lighter weight, better camshaft profile) are not permitted under this allowance.



## 16. STREET MODIFIED CATEGORY

### CATEGORY OBJECTIVE

Street Modified allows competitors to modify vehicles using advanced fabrication and tuning with specific limitations. Street Modified provides the allowances of the lower-prep categories with the addition of major modifications to the drivetrain, suspension, and body as well as sophisticated aerodynamic components.

### CATEGORY VALUES

Freedom to improve vehicles using a variety of methods including suspension geometry changes, extensive powertrain conversions and/or modifications.

### CORE MODIFICATIONS

- Powertrain swaps.
- Open Engine Tuning.
- Open Driver aid tuning (Traction control, ABS, Stability, Differential, etc.).
- Minimum weights based on displacement.
- Limited interior removal.
- SRS system removal.
- Modifications may require cutting, drilling, or permanent alteration to the body, such as cutting fenders for tire clearance, and drilling trunks/hatches for spoiler/wing mounting.
- DOT R-compound tires.
- Front splitters and rear wings.
- Custom suspension components.
- Weight reduction (A/C removal, steering wheel airbag removal, lightweight body panels, etc.).

### CLASSES

- **SUPER STREET MODIFIED (SSM)** – 2-seat vehicles, FWD, RWD, and AWD.
- **STREET MODIFIED (SM)** – 4-seat vehicles, FWD, RWD and AWD.
- **STREET MODIFIED FWD (SMF)** – FWD vehicles only.

The purpose of this category is to serve as a membership recruitment and retention tool by providing a natural competition outlet for auto enthusiasts using streetable sport sedans equipped with drivetrain and suspension modifications that are beyond those allowed in the Street Prepared category.

Cars identical to the US-market counterpart except for comfort and convenience modifications as allowed per Section 13.2.A.

See Sections 3.8 and 8.3.1 for documentation requirements.

**16.1 ALLOWED MODIFICATIONS**

- A. All Street, Street Touring®, and Street Prepared category modifications are authorized. Except as noted by these rules and the referenced rules, vehicles must be as originally delivered including all road-going components such as lights, wipers, interior, heater, etc.
- B. Competitors may pick and choose between all Street, Street Touring®, Street Prepared, and Street Modified category allowances when preparing a Street Modified category car. Apparent conflicts between inherited rule sets from Section 16.1.A shall not prohibit any specific inherited allowance. Allowances inherited from Section 16.1.A may not incorporate Street Modified-specific allowances. Foreign spec parts may not be used to substitute for parts which are required to remain standard.
- C. Brakes, including calipers, caliper mounts, discs, drums, lines, backing plates, pedals, boosters, master cylinders, handles, ABS, proportioning valves, etc., are unrestricted. Brake rotor/drum friction surfaces must be 100% ferrous metallic. Carbon or ceramic composite brake components (except pads) are expressly prohibited. Standard parts, as defined per Section 12, are exempt from this restriction. A functional, redundant emergency (parking) brake must be present.
- D. Drivetrain and related components (e.g., induction, ignition, fuel systems) are unrestricted except for the following limitations:
  - 1. Engine block (or housings of rotary engines) must be a production unit that can be sourced from a production automobile.
  - 2. Fuel System
    - a. Any fuel line(s) may be used. All non-standard fuel line(s) passing through the passenger compartment shall be made of metal, metal braided hose, or equivalent (e.g., Nomex, Kevlar, or nylon braided hose) with AN Series threaded couplings, or entirely covered and protected with a metal cover.
    - b. Any fuel pump(s), filter(s), and pressure regulator(s) may be used. Such components may not be located in the passenger compartment but their location within the bodywork of the car is otherwise unrestricted. If a mechanical pump is replaced, a blanking plate may be used to cover the original mounting point.
    - c. A cool-can, not exceeding one gallon in volume, may be used. The cool-can may not be installed in the passenger compartment.
    - d. The fuel tank may be modified or replaced. If the fuel tank is modified or replaced, the following restrictions apply:
      - 1. The fuel tank/cell may be located within the same area as the OE tank.
      - 2. If the fuel tank/cell does not fit within the same area as the OE tank, the requirements of Section 3.3.3.B.27 must be met.

Engine and drivetrain mounts are considered part of these allowances



and any material is permitted. The allowances of Section 16.1.O may be used to affix brackets, but these brackets shall serve no purpose other than engine and drivetrain mounting (e.g., they may not provide chassis stiffening).

- E. Suspension components are unrestricted as long as they use the original attachment points. Cars equipped with MacPherson strut suspension may add or remove material from the top of the strut tower to facilitate installation of adjuster plate. The sides of the strut tower may not be modified.
- F. Steering modifications are permitted as follows:
  - 1. Steering components, including the steering rack and/or box, tie rods, idler arms, power assist devices, and related components may be replaced, added, moved, or removed. The steering column within the passenger compartment is specifically excluded from this allowance. This does not permit removal or modification of column-mounted accessories. Wheel-mounted electrical switches such as those for the horn, radio, cruise control, or shifter may be relocated and/or replaced, or eliminated.
  - 2. Rear-steer devices may be replaced with solid links.
  - 3. Supplemental steering gear boxes or steering quickeners are allowed as long as they are mounted in accordance with Section 16.1.F.1.
  - 4. Steering wheels and associated mounting hardware may be replaced. This does not permit removal or modification of the steering column or column-mounted accessories. OE wheel-mounted electrical switches such as those for the horn, radio, cruise control, or shifter may be relocated and/or replaced, or eliminated.
- G. Subframe connectors are allowed as per Street Prepared Section 15.2.E.
- H. Front hoods (engine covers), engine covers, trunk lids and hatches not containing glass, front fenders, rear fenders not part of chassis structure (unibody), front & rear bodywork, and side skirts may be modified or replaced, and may be attached with removable fasteners. Associated hardware including latches, hinges, window washer system, and hood liners may be modified, removed, or replaced. Non-metallic fender liners may be modified, replaced, or removed.
- I. Tires compliant in Street, Street Touring®, or Street Prepared categories are permitted.
- J. Rear passenger seat(s), including restraints and associated hardware may be removed. When rear seats are removed, the back of the front seats defines the end of the passenger compartment.
- K. Aerodynamic Aids: Wings may be added, removed, or modified. Non-OE wings may only be attached to the rear deck/hatch area behind the centerline of the rear axle. The total combined surface area of all wings shall not exceed 8 sq. ft. (0.7432 m<sup>2</sup>) as calculated per the Wing Area

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Computation in Section 12. The number of wing elements is limited to two (2).

Wings, and any component thereof, may not extend beyond the vehicle width, as defined by the outermost portion of the vehicle doors, less mirrors, door handles, rub strips, and trim. In addition, no portion of the wing or its components may be more than 6.0" forward of the rear axle, more than 0.0" beyond the rear most portion of the bodywork, or more than 6.0" above the roofline of the vehicle, regardless of body style. For convertibles and roadsters, the highest portion of the windshield frame will be considered the highest portion of the roof; however, a convertible or roadster utilizing a hardtop will use the highest portion of the hardtop as the roofline.

Reinforcements to the wing mounting area may be used, but may serve no other purpose. Body panels to which a wing mounts must remain functional (e.g., trunk lids and rear hatches must open). Wing endplate surface area is limited to 200 sq. in. (1290.3 cm<sup>2</sup>) each and limited to a maximum of two (2).

Except for standard parts, wings designed to be adjustable while the car is in motion must be locked in a single position.

Canards are allowed and may extend a maximum of 6.0" (152.4 mm) from the front bodywork as viewed from above. No portion of the canard may extend past the widest part of the front bodywork/fascia as viewed from above. Canard area will be measured in the same manner as wings using Section 12. Canard area may not exceed 15% of total wing allowance. The sum of canard area and rear wing area may not exceed the total wing allowance. Fore and aft variance in curvature and angle is open. Canards may have endplates. Canard endplate total surface area is limited to 30 sq. in. (193.5 cm<sup>2</sup>) for each side.

Diffusers that come as a standard OE part are allowed but may not be modified. They may be removed in their entirety to facilitate other allowed modifications. Aftermarket diffusers or other items acting as diffusers are not allowed.

- L. Front splitters are allowed and shall be installed parallel to the ground (within  $\pm 3^\circ$  fore to aft) and may extend a maximum of 6.0" (152.4 mm) from the front bodywork as viewed from above. Splitters may not extend rearward past the centerline of the front wheels. No portion of the splitter may extend beyond the widest part of the front bodywork as viewed from above. Aerodynamically functional vertical members, such as splitter fences or endplates, are not allowed.
- M. Removable OE hardtops, T-tops, targa tops, sunroofs, moonroofs, and similar roof-mounted panels may be removed/replaced with alternate panels provided that the area of interface is limited to the original perimeter of the t-top, sunroof, etc. or utilizes the OE panel mount points, and that the contour of any replacement panel surface does not vary



from the contour of the part being replaced by more than 1.0" (25.4 mm) in any direction. The material used to construct the alternate panel and the method used to attach it to the interface is unrestricted. Any actuation mechanism and the associated wiring, if any, may be removed. Vehicles utilizing alternate (non-OE) hardtops will be considered as open cars in regard to Section 3.3.1.

- N. Radio/Stereo and airbag equipment and/or its component parts, including wiring, control modules, antennas, amplifiers, speakers and their enclosures, etc. may be removed provided the part added, removed, or replaced serves no other purpose. Any visible holes that result from the removal of equipment must be covered with a cover of unrestricted material. Covers may be used to mount gauges, switches, etc. *Gauge clusters may be modified or replaced, provided any visible holes that results from the change must be covered with a cover of unrestricted material.*
- O. Any minor modification, intended to allow or facilitate any allowed modification, is permitted as long as it does not provide any intrinsic performance benefit in and of itself, does not provide a weight reduction of more than 1.0 lb., and is not explicitly prohibited elsewhere within these rules.

This rule is intended to allow minor notching, bending, clearancing, grinding; the drilling of holes; affixing, relocating, or strengthening of brackets; removal of small parts, and similar operations performed in order to facilitate the installation of allowed parts or modifications. Minor strengthening, without relocation, of original chassis/suspension pickup points is allowed. Examples include welding washers restricting control arm mounting bolt movement, local reinforcement of control arm chassis mounts, etc.

Competitors are strongly cautioned to make the minimum amount of modification required to affix a given part and to not make unduly tortured interpretations of this rule. Modifications to the firewall in order to allow for increased engine setback, and any modification that changes the location of a suspension pickup point, are explicitly forbidden. Plastic under-trays and covers below the vehicle may be removed or modified as necessary to facilitate other compliant modifications, but not added or enlarged.

- P. Ballast may be added. Ballast must be a maximum of 50 lbs. per segment. It must be securely mounted within the bodywork.
- Q. OE side mirrors may be replaced by aftermarket units, provided they mount in the same location, perform the same function as the OE mirrors, and have a reflective surface area greater than 15 sq. in. (96.8 cm<sup>2</sup>) per mirror.
- R. OE "pop-up" headlights may be replaced with static headlights, provided the replacement units are intended for automobile use on pub-

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lic roads as a primary means of illumination, and retain high and low beams as originally provided by the manufacturer. Minor repositioning of the headlights is allowed to accommodate the alternate headlight, but the unit may not be relocated and the repositioning may serve no other purpose. All associated hardware may be removed, replaced or modified.

- S. Alternate subframes are allowed to facilitate engine mounting only. Suspension pick-up points on the subframe must retain standard geometry. Weight of the subframe must be equal or greater than the standard unit.
- T. Bolt-on tow hooks and tie downs may be modified, removed, or replaced. Addition of tow hooks and tie downs are permitted and location is unrestricted. Non-standard tow hooks shall serve no other function.

## 16.2 MINIMUM WEIGHTS

Classes, displacements, and minimum weights are listed in Appendix A. For the purpose of determining minimum weights, a mid-engine vehicle is defined as one having a chassis configuration where the engine block is not located entirely in front of the driver's seat and is not far enough back to be considered a rear-engine vehicle. Adjustments to minimum weights are shown in Appendix A.



## 17. PREPARED CATEGORY

### CATEGORY OBJECTIVE

Competitors in this category are permitted broad modifications and fabrication opportunities in suspension, drivetrain, and engine with no expectation of public highway use.

### CATEGORY VALUES

Development levels for purpose-built competition vehicles based on production cars, including true racing slicks, weight reduction, and extensive modifications to chassis and powertrain.

### CORE MODIFICATIONS

- Non-DOT racing tires.
- Displacement-based minimum weight formulas.
- Purpose built competition vehicles based production chassis or other racing chassis.
- Performance through extensive modification and custom fabrication.
- Extensive chassis modification including:
  - Interior removal and replacement of body panels, doors, and windows.
  - Body panel modification for large tire fitment and suspension travel.
  - Custom suspension fabrication.
  - Relocation of components for optimizing weight distribution.
- Engine and drivetrain allowances including:
  - Extensive internal engine modifications.
  - Open transmission and differential allowances.
- *Specific* aerodynamic aids

### CLASSES

- X PREPARED (XP) – Open class for sports cars and sedans with additional allowances for engine swaps and increased aerodynamic modifications beyond the rest of the category.
- C PREPARED (CP) – American muscle cars.
- D PREPARED (DP) – Lightweight, 4-cylinder RWD sports cars and coupes.
- E PREPARED (EP) – FWD cars.
- F PREPARED (FP) – High performance sports cars and sedans.

### 17.0.A INTENT

It is the intent of these rules to allow modifications useful and necessary in the preparation of a high performance, production based non-street-driven vehicle which is of unibody or tub-based construction. Tube-frame

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cars are allowed, subject to the requirements of 17.11. SCCA® will use the following guidelines in the determination of suitability for classification in the Prepared Category:

1. Cars classified shall retain their original design, structure, and drive layout unless otherwise specified in these rules. If in doubt about a modification, competitors should ask. If the rules do not specifically authorize a modification, it is not permitted.
2. Cars running in Prepared Category must have been series produced with normal road touring equipment, capable of being licensed for normal road use in the United States, and normally sold and delivered through the manufacturer's retail sales outlets in the US. Cars not specifically listed in Prepared Category classes in Appendix A must have been produced in quantities of at least 1000 in a 12-month period to be eligible for Prepared Category.
3. SCCA® may also class suitable non-production, full-bodied, full-fendered, strictly-specified cars into this category. Production quantities, EPA approval, and DOT approval are not required. SCCA® may choose not to classify any such vehicle it deems unsuitable for the Prepared category.
4. Within the scope of these rules, the definitions provided in Section 12 apply.
5. Specific allowances in Appendix A for a listed model supersede the limitations of Section 17. Minimum weights shall be established making it possible for all cars to reach minimum weight with reasonable modifications. The SEB recognizes that low minimum weights ultimately result in higher costs to the competitor. The rules shall discourage the use of high technology/high cost equipment. In some cases, this is accomplished by an outright ban on the equipment. In other cases, this is accomplished through the adjustments to minimum weight. See Section 17.11 for weight adjustments.

#### 17.0.B SPECIFICATIONS

The SCCA® shall publish specifications for each car specifically classed in the Prepared Category Section of Appendix A. These specifications will at a minimum specify each vehicle's allowed minimum weight and maximum wheel sizes.

1. Equipment and/or specifications may be exchanged between different years and models of a vehicle if:
  - a. The item is standard on the year/model from which it was taken, and
  - b. The years/models are listed on the same line of Appendix A, Prepared Classes. The updated/backdated part or the part to which it is to be attached may not be altered, modified, machined, or otherwise changed to facilitate the updating/backdating allowance unless the modification is specifically allowed by these rules. Cars not listed in



the Prepared Category Sections of Appendix A may not be updated/backdated until approved by the SEB and published in the official SCCA® publication and/or on [www.scca.com](http://www.scca.com).

2. The SCCA® may recognize certain optional components. Some non-original components may be made mandatory to obtain an adjustment of competition potential. In all cases, these components shall be listed in Appendix A. No permitted or alternate component or modification shall additionally perform a prohibited function.
3. Requests for alteration, modification, and/or substitution of any specification or component shall be submitted for approval. The approval process will include, but not be limited to, an analysis of cost, availability, performance impact, rule enforceability, and competitor input.

See Sections 3.8 and 8.3.1 for documentation requirements.

## 17.1 AUTHORIZED MODIFICATIONS

The modifications defined here in the Prepared Category are the only allowed modifications. The rules in this Section stand on their own; they do not build upon the Street, Street Touring®, or Street Prepared category rules. Modifications shall not be made unless specifically authorized herein. No permitted component/modification shall additionally perform a prohibited function. If the rules do not specifically authorize a modification, it is not permitted.

- A. It is not permitted to make any changes, alterations, or modifications to any component produced by the manufacturer unless specifically authorized by these rules.
- B. Any minor modification, intended to allow or facilitate any allowed modification, is permitted as long as it does not provide any intrinsic performance benefit in and of itself, and is not explicitly prohibited elsewhere within these rules. This rule is intended to allow minor notching, bending, clearancing, and grinding; the drilling of holes; affixing, relocating, or strengthening of brackets; removal of small parts and similar operations performed in order to facilitate the installation of allowed parts or modifications. Competitors are strongly cautioned to make the minimum amount of modification required to affix a given part and to not make tortured interpretations of this rule which will invoke Section 17.11 weight adjustments (e.g., moving frame rails inboard, regardless of the reason, is considered to be a tortured interpretation.)

Refer to Appendix F for past clarifications of these rules.

## 17.2 BODYWORK AND STRUCTURE

The purpose of the following rules is to maintain recognizable external features of the manufacturer's make and model, while providing the necessary safety and performance modifications. Restrictions regarding external body shape and belly pans are aimed at preventing attempts to obtain ground effects or streamlining.

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- A. The external shape of the body may only be changed where specifically authorized. Standard window openings, rain gutters, or approved facsimiles shall be retained. All external trim and model identification may be removed. Grilles may be removed, modified, or substituted.
- B. Chassis, frame, or subframe may be reinforced provided components and attachments are not relocated except where specifically permitted. Reinforcing does not authorize the use of underbody or belly pans forward of the firewall or aft of the front edge of the rear wheel opening. It is permitted to have jack points recessed into the rocker panels or to have one tube per side extending downward through the bottom of the door provided they do not extend beyond the overall width of the car or in an unsafe or dangerous manner. No part of the bodywork or chassis, to the rear of the front wheel opening, shall touch the ground when both tires on the same side of the car are deflated.
- C. The chassis, frame, or subframe may be notched or cut and brackets may be added for the purpose of attaching alternate suspension, steering, or drivetrain components except that the firewall may not be modified for engine block or cylinder head clearance. Holes may be cut to provide clearance for authorized suspension, steering, and drivetrain components through their entire range of travel. Clearance between the modified chassis, frame, or subframe and the suspension, steering, and drivetrain components is not to exceed 4.0" (101.6 mm). Additional structure may be added in order to attach allowed components to the chassis. Relocation, notching, or cutting of the chassis, frame, or subframe for tire clearance or moving the wheels inboard is not allowed. Replacement of inner fenders or wheel wells to enable wider wheels and tires is allowed.
- D. Replacement of any chassis component (e.g., subframe) in its entirety by one of alternate construction, unless specifically permitted, shall result in the vehicle being "in excess" of these rules which will invoke Section 17.11 weight adjustments.
- E. The floor in the driver/passenger compartment may be modified for installation of subframe connectors, exhaust components, battery boxes, ballast weights, and drivetrain clearance. For the same reasons listed, the rear seat floor area, defined as the area extending rearward from the back of the driver's seat to the trunk and between the frame rails, may be removed, modified, or replaced. The driver/passenger compartment must remain separate from any exhaust and drivetrain components by a metal panel. Trunk floors may be modified, removed, or replaced. If replaced, the trunk floor must be replaced with metal panels of similar shape to the original. Removal of the trunk floor is allowable only when a metal bulkhead separates the trunk area from the passenger compartment. *The transmission tunnel may be modified for the purpose of installing a competition driver seat. The driver's side floor pan*



*may be modified to accommodate larger/taller drivers. All modifications shall be contained between the transmission tunnel, driver's side rocker, rear bulkhead and no more than 30" forward of the rear bulkhead. The modification shall not extend below the factory floor stiffener/frame rail. The steel used in the modification shall be no thinner than .058". All modifications shall be welded in place. This modification shall serve no other purpose other than seating position.*

- F. The firewall may be notched or recessed for clearance of exhaust headers, electric lines, coolant lines, fuel-carrying lines, fuel pumps, inter-cooling piping, carburetors, air horns, air cleaners, and distributor. Any material added to the firewall must be either steel or aluminum. This requires a sealed firewall between engine and passenger compartment. This rule is for driver's safety. Completely sealing all firewall openings is strongly encouraged, but no gap may be larger than 1/8 inch (0.125", 3.2 mm), except around dynamic devices extending through the firewall (e.g., throttle linkage, transmission linkage, or other mechanical devices) and should be sealed to the extent that functioning of the device is not impaired. No more than 8.0" (20.3 cm) clearance is allowed between modified firewall areas and above listed components. The engine block, cylinder head, turbochargers, and/or superchargers may not intrude into the clearance areas authorized herein.
- G. Bumper components not integral to the bodywork may be modified, substituted with a replica of alternate material, or removed provided all projecting hardware is also removed. Bumper bracket holes in the bodywork may be covered provided such covering serves no other purpose. Bumper fascias integral with the bodywork may be modified or substituted with a replica of alternate material. Internal bumper components may be removed, replaced, or modified. Modified or replica bumpers/fascias must be of similar shape as standard components, completely cover the area of the OE bumper/fascia, and not confuse the identity of the vehicle.
- H. All interior trim, dash boards, gauges, floor covering, carpet, upholstery panels, and similar non-performance comfort or convenience items may be removed or replaced.
- I. The driver's seat may be replaced with a seat of any origin. All passenger seats may be removed or replaced with seats of any origin. The driver's seat must remain on the standard side of the car and may not cross the centerline of the car. The seat may be relocated fore/aft by up to 12.0" (30.5 cm) based on the centerline of the original front and rear mounting points. Rear bulkhead of the driver/passenger compartment may not be removed to relocate the seat and the driver's seat may not extend rearward past the bulkhead.
- J. Doors may be lightened and may be replaced by ones of alternate materials. Doors may be pinned, but not bolted, to prevent their opening

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in case of an accident. Quick release fasteners (e.g., Dzus fasteners) are allowed. Standard door hinges and latch mechanisms may be removed, but the doors shall be capable of being opened or removed. Interior door panels may be removed or replaced and the door window slots may be covered. Alternate attachment devices may be added to hood and deck lid to supplement or replace the latches. Hood and deck lid hinges may be removed.

K. Windows

1. All windows may be replaced with polycarbonate material. The front windshield shall have a minimum thickness of  $\frac{1}{8}$  inch (0.125", 3.16 mm). Tinting of the upper portion of the front windshield and the entire portion of all other windows is allowed. All window replacements shall remain in the same position in the frame or opening as the original glass it replaces; rubber molding is optional.
2. All window channels and window winding mechanisms may be removed.
3. Closed cars: All side window glass may be removed. All rear hatchbacks and deck lids shall be completely closed; poor alignment of bodywork or any other means to prevent complete closure is not permitted.
4. Open cars: All windows and windshields (including windshield frames) may be removed. The resulting window slots may be covered.
5. The installation of windshield safety clips, rear window safety straps, and windshield safety straps is permitted.

L. The contour of the fender may be altered (flared) for tire clearance provided the modifications do not confuse the identity of the car. Only standard production ventilation openings on the specific recognized model are permitted. Tires may extend beyond the bodywork. Fender wheel openings may be trimmed to provide tire clearance throughout the full range of suspension travel, but no more than is necessary for this purpose.

M. Inner fender panels separating the wheel wells from the engine compartment may be altered, replaced, or removed. Rear inner fender panels may be altered, replaced, or removed provided there are panels providing total separation between driver/passenger compartment and wheels. A shock/strut tower integral to the inner fender panel is considered part of the inner fender panel and is included in this allowance. This does not allow modification of frame/frame stubs beyond Section 17.2.C.

N. Replacement, addition, or removal of accessories (gauges, switches, indicators, etc.), or other interior modifications for driver convenience, or to permit installation of required safety equipment, is authorized pro-



vided such modifications have no influence whatever on the mechanical performance of the car. Such modifications do not include the substitution or replacement of any bodywork or chassis component except those specifically authorized by these rules.

- O. The standard OE front spoiler or a non-standard front spoiler/splitter may be used. If a non-standard front spoiler/splitter is used it must comply with the following requirements: *Shall be installed parallel to the ground (within  $\pm 3^\circ$  fore and aft) and may extend a maximum of 6" (15.24 cm) forward of the front bodywork/fascia as viewed from above. Splitters may not extend rearward past the centerline of the front wheels. No portion of the splitter may extend beyond the widest part of the front bumper as viewed from above. The splitter and canards may have endplates. The endplates may connect the splitter and the canard. The splitter and canard endplate total surface area is limited to 100 sq. in. (645.2 cm<sup>2</sup>) for each side. Canards are allowed and may extend a maximum of 6" (15.24 cm) forward of front bodywork/fascia as viewed from above. No portion of the canard may extend past the widest part of the front bodywork/fascia as viewed from above. Canard area will be measured in the same manner as wings using Section 12.10. Canard area may not exceed 1.2 sq. ft. (1114.8 cm<sup>2</sup>).* Openings are permitted for the purpose of ducting air to the brakes, radiator, and/ or oil cooler(s); equal openings may be placed in the standard lower front panel directly behind openings placed in the spoiler/splitter. The spoiler/splitter may not function as a wing. This allows a vertical airdam/spoiler above a horizontal splitter, but splitter fences or longitudinal vertical members that serve to trap air on top of the splitter by preventing it from flowing around the sides of the car are not allowed.
- P. A spoiler or wing may be added to the rear of the car provided it complies with either of the following:
1. It is a production rear spoiler or wing which is standard or optional equipment of a US model of the vehicle or an exact replica in an alternate material.
  2. It is a non-production rear spoiler which is mounted to the rear portion of the rear hatch, deck, or trunk lid. The spoiler may extend no more than 10.0" (25.4 cm) from the original bodywork in any direction. Alternatively in a hatchback, the spoiler may be mounted to the rear hatch lid at or near the top of the hatch in such a configuration the spoiler may extend not more than 7½ inches (7.50", 19.1 cm) from the original bodywork in any direction. The spoiler may be no wider than the bodywork. The use of endplates is prohibited. Spoiler endplates are defined as any vertical (or semi-vertical) surfaces attached in front of the spoiler which have the result of capturing and redistributing air (downforce) along all or any portion of the spoiler.

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The angle of attack is free. The spoiler may not function as a wing.

3. *For Classes XP, DP, EP and FP, wings may be added, removed, or modified. OE or non-OE spoilers must be removed. Non-OE wings may only be attached to the chassis or body behind the centerline of the rear axle. The total combined surface area of all wings shall not exceed 8 sq. ft. (0.7432 m<sup>2</sup>) as calculated per Section 12. The number of wing elements is limited to 2. Wings designed to be adjustable while the car is in motion must be locked in a single position. Spoilers under 17.2.P and rear wings are mutually exclusive such that a builder may use one or the other, but not both. Wings, and any component thereof, may not extend beyond the vehicle width as defined by the outermost portion of the vehicle doors, less mirrors, door handles, rub strips, and trim. In addition, no portion of the wing or its components may be more than 6" (15.24 cm) forward of the rear axle, more than 0" (0.0 mm) beyond the rearmost portion of the bodywork, or more than 6" (15.24 cm) above the roofline of the vehicle, regardless of body style. Reinforcements to the wing mounting area may be used, but may serve no other purpose. Wing endplate surface area is limited to 200 sq. in. (1290.3 cm<sup>2</sup>) each and the number of endplates is limited to a maximum of 2. For convertibles/roadsters with no roof and targas with no rear window, no portion of the wing may be higher than 12" (30.48 cm) above the highest point of the body that is behind the centerline of the rear axle. In the event that a convertible/roadster with no roof or a targa-top with no rear window retains the OE windshield frame with a windshield of any material that meets Section 17.2.K.1, the top of the windshield frame shall be considered the top of the roofline and the car may use the wing mounting rules in Appendix A.1.c for a closed car.*
  4. Vehicles equipped with an OE rear wing may add a rear spoiler only if the OE wing and wing attachments are first removed.
- Q. The fuel tank may be modified, replaced, or relocated. If the fuel tank is modified or replaced, the following restrictions apply:
1. The fuel tank/cell may be located within the same area as the OE tank.
  2. If the fuel tank/cell does not fit within the same area as the OE tank, the requirements of Section 3.3.3.B.27 must be met.
- R. All mirrors and their associated mounting hardware may be removed or replaced.
- S. The hood, hatchback, deck lid, and fenders may be lightened or replaced by ones of alternate material provided the shape is similar to the original and does not confuse the identity of the vehicle. Factory bolt-on fenders may be replaced in their entirety. Cars with non-removable fenders may replace the front fender panels going forward from



the foremost door opening and the rear fender panels going rearward from the rearmost door opening. Closed cars must not remove standard material above the horizontal line placed at the lowest point of the driver's door window opening, with the exception that OE removable panels (e.g., T-tops, targa tops, sunroofs) may be removed or replaced with panels of alternate material provided that the dimensions of any replacement panel do not vary from those of the original by more than 1.0" (25.4 mm) in any direction. The approval of alternate body panels does not authorize the use of underbody or belly pans forward of the firewall or aft of the front edge of the rear wheel opening. Ground effect tunnels and/or attempts to gain ground effects are also not authorized. Any such elements incorporated in the otherwise approved components must be removed or disabled.

Front hoods and engine covers may be vented and/or louvered. The total area for all vents/louvers on a vehicle may not exceed 500 sq. in. (3225.8 cm<sup>2</sup>), unless provided as standard equipment. The total area is measured as the total open area or the perimeter of the louvers when viewed from above.

The location, number, and shape of vents/louvers is unrestricted provided they are fully contained on allowed panels. For vehicles having original vents/louvers exceeding these dimensions, no further openings are permitted. Louver openings must face rearward and may stand no higher than 1.0" (25.4 mm) above the original surface. No additional scoops, cowls, bulges, or ducts are permitted unless specified in Appendix A.

- T. All headlights, front parking lights, and front signal lights may be removed. Headlight doors may be removed, replaced, or modified. Any remaining openings shall be covered with a wire mesh screen or panel of fiberglass, Plexiglas®, metal, or other nonflammable material. Ducts from headlights, headlight doors, front parking lights, and front signal lights may be used for ducting air to the engine, front brakes, and/or oil cooler(s). Any opening used for ducting may not be relocated. These ducts may pass through interior panels for this purpose. The cross section area of a single duct shall not exceed the cross sectional area of the original (single) headlight.
- U. All side marker lights and tail/stop lights may be removed. If such an item is removed, the resultant opening must be covered.
- V. Spare wheel and tire may be removed.

### 17.3 TIRES

Any tire (including recaps) meeting the Solo® safety requirements and the applicable portions of 3.3 is allowed.

### 17.4 WHEELS

- A. Any wheel may be replaced in accordance with the Prepared class list-



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- ings in Appendix A.
- B. Wheel spacers may be used.
- C. Any wheel mounting stud or bolt may be used.
- D. The use of center lock wheels and hubs is permitted.
- E. A manufacturer's standard wheel size exceeding the listing in Appendix A may be used, and must remain axle-specific relative to standard-size wheels with no additional weight. Track dimensions must comply with the listings in Appendix A.
- F. For classes CP, any diameter and width wheel may be used without additional weight adjustments.
- G. For classes DP, EP, and FP, wheels up to 10" wide are allowed with no weight increase. Wheels greater than 10" wide up to 11" wide will receive a 50 lb. increase. Wheels greater than 11" wide up to 12" wide will receive a 100 lb. increase.

### 17.5 SHOCK ABSORBERS/STRUTS AND SPRINGS

- A. Bump stop rubbers and bracketry may be removed or replaced with others of unrestricted origin.
- B. Electrically controlled active shocks are prohibited.
- C. Level 1 Preparation (Full Prep) Vehicles
  - 1. Any springs or torsion bars may be used. Spring seats and points of attachment may be replaced or altered. Adjustable spring perches are permitted.
  - 2. Alternately, all cars may fit "coil-over" type springs with tubular, load bearing shock absorbers or struts. The shock absorber or MacPherson/Chapman strut shall be installed inside the spring. Such items shall not exceed one shock/strut per wheel. When load bearing shocks are used, the original springs may be removed.
  - 3. Any shock absorbers may be used. The total number of shock absorbers installed shall not exceed the number originally installed by the manufacturer.
  - 4. Attachment points for the shock absorbers may be changed. There shall be a metal panel, covering, or bulkhead separating non-standard rear attachment points from the driver.
  - 5. Lever shock absorbers may be modified or entirely eliminated. When lever shocks are replaced with tubular shocks, the entire shock assembly may be removed and replaced with a control link and bracket that approximates the control function of the original lever shock.
- D. Level 2 Preparation (Limited Prep) Vehicles
  - 1. Any springs or torsion bars can be used provided the type of these items remains as standard. Springs and torsion bars must be installed in the standard location using the standard system of attachment.

2. Shock absorbers are unrestricted provided the quantity and type (i.e., tube, lever) of these items remains as fitted standard. Shock absorbers must be installed in the standard location using the standard system of attachment. The mounting of the remote reservoir of a remote reservoir shock absorber is unrestricted. No shock absorber can be capable of adjustment by the driver while the car is in motion, unless fitted as standard.

## 17.6 BRAKES

Brake systems, including calipers, caliper mounts, discs, drums, lines, backing plates, pedals, boosters, master cylinders, handles, proportioning devices, pads, linings, ABS (Anti-lock Braking Systems), etc. are unrestricted except for Section 3.3.3 requirements and as follows:

- A. Brake rotors/drums shall be located in the original position (i.e., in-board vs. outboard).
- B. Brake rotor/drum friction surfaces must be ferrous metal. Carbon or ceramic composite brake rotors/drums are expressly prohibited.

## 17.7 ANTI-ROLL (SWAY) BARS

Any anti-roll bar, camber compensating device, panhard rod, watts linkage, and/or other suspension stabilizer is permitted. Attachment points of such components are unrestricted. Components may pass through body panels, chassis panels, and frame members.

### A. LEVEL 1 PREPARATION (FULL PREP) VEHICLES

Components may extend into the driver/passenger/trunk compartments, but shall be covered with metal panels.

### B. LEVEL 2 PREPARATION (LIMITED PREP) VEHICLES

Components and mounting cannot be located in the trunk or driver/passenger compartment unless fitted as standard.

## 17.8 SUSPENSION/SUSPENSION CONTROL

- A. Spindles, hubs, bearings, bearing carriers, stub axles, etc. may be modified or replaced.

### B. Suspension Control

1. Original suspension control arms may be reinforced, modified, or replaced with components of unrestricted origin.
2. The manufacturer's original basic type of rear suspension (e.g., independent, live axle, swing axle, MacPherson strut, A-arm, etc.) shall be retained unless otherwise stated in Appendix A.
3. Suspension bushings are unrestricted. Adjustable spherical bearings or rod ends are permitted on all suspension components.
4. The wheelbase of the vehicle shall not be changed or relocated in a fore/aft direction by more than  $\pm 1.0"$  ( $\pm 25.4$  mm).
5. The minimum track for all prepared cars is the OE track dimension.

NOTE: This minimum also applies to cars utilizing Section 17.11.A to

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compete in Prepared.

### 6. LEVEL 1 PREPARATION (FULL PREP) VEHICLES

- a. Suspension pick-up points on the chassis or structure may be relocated. If such points are relocated, there shall be a metal panel, covering, or bulkhead separating the driver/passenger area from the suspension components.
- b. Front – Vehicles originally equipped with MacPherson strut front suspension may convert to double A-arm. Other vehicles must retain the manufacturer's system of front suspension. A-arm front suspension shall have the shocks attached outboard of the inner pickup point on the upper or lower control arm. Rocker arms, push-pull rods, etc., are prohibited unless otherwise stated in Appendix A.
- c. Rear – Rocker arms and push-pull rods may be used to augment the rear suspension members.

### 7. LEVEL 2 PREPARATION (LIMITED PREP) VEHICLES

- a. Suspension pick-up points on the chassis or subframe structure may not be relocated. Allowed alternate bushings/bearings must contain the pivot point within the space occupied by the OE bushing.
- b. Vehicles equipped with MacPherson/Chapman struts may slot the mounting holes or add additional adjustment plates provided that the center hole is not enlarged or relocated. The strut shaft must pass through the center hole. Mounting of adjustment plates is unrestricted.
- c. Camber and caster may be adjusted by modification or replacement of existing brackets which locate control pivots and bolt to the chassis or subframe structure. Any resulting change in the vertical position of the pivot points must remain within 1.0" (25.4 mm) of the original location.

## C. Steering

1. Steering arms, pitman arms, steering racks/gears, and steering linkage component parts may be modified, reinforced, or substituted. Power-assist steering components may be added, removed, or modified. The steering system may be relocated or changed.
2. The steering column is unrestricted. A collapsible-type steering column having a layout and design and/or a column structure with impact and energy absorbing characteristics is strongly recommended.
3. Any steering wheel and wheel quick-release mechanism may be used. Steering wheel rake and steering column length may be altered. Steering quickeners may be added to the steering column.

D. All spherical rod ends used on major suspension and steering components shall be retained either by the design of the mounting brackets,



a larger area captive washer, or the inherent mechanical design of the unit (circlip or Messerschmitt joints).

## **17.9 ELECTRICAL SYSTEM**

- A. The use of any driver operated electric starter is permitted.
- B. The use of any ignition system (except magneto ignition) is permitted provided the number of spark plugs remains the same as that of the standard production engine. If a distributor is removed, a blanking plate or breather may be fitted in its place.
- C. The original generator or alternator may be completely removed or replaced. Mounting location and drive system for the generator or alternator is unrestricted.
- D. The remaining components of the electrical system are unrestricted.
- E. It is recommended that all vehicles be equipped with an electrical system master cutoff switch.
- F. Any traction or stability control systems are permitted.

## **17.10 ENGINE AND DRIVETRAIN**

### **A. Component Modification**

- 1. Where allowed, original and alternate components of the engine may be lightened, balanced, and modified by any mechanical or chemical means, provided that it is always possible to identify required components as original. Such means include, but are not limited to, shot peening, glass beading, heat treatment or hardening, plating, and milling.
- 2. No material or mechanical extension may be added to any required original component unless specifically authorized by these rules. Any repair performed to a required original component shall clearly serve no other prohibited function. Compression ratio may not be increased via welding of combustion chambers.

### **B. Induction System**

- 1. Any air filter(s), velocity stack(s) and or air box(es) may be fitted. Air may be ducted to the carburetor or fuel injection provided that the ducting is contained within the engine compartment and that the air to be ducted is supplied through normal or specifically authorized openings in the bodywork. Headlight, front parking light, front signal light, and similar standard openings in the front of the car may be used for ducting air to the engine and ducts may pass through interior panels for this purpose. "Standard openings in the front of the car" includes ventilation system intake grilles.
- 2. Any throttle linkage may be used. All throttle linkages shall be equipped with more than one system of positive throttle closure. Any throttle pedal may be used.
- 3. All inducted air, with the exception of idle air, shall pass through the

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throttle venturi(s).

4. LEVEL 1 PREPARATION (FULL PREP) VEHICLES

- a. Unless specifically listed in Appendix A, carburetors and fuel injection systems are unrestricted.
- b. Intake manifolds are unrestricted except that no portion of any intake manifold may extend into the intake ports of the cylinder head or rotary engine end plate.

5. LEVEL 2 PREPARATION (LIMITED PREP) VEHICLES

- a. All inducted air must pass through the throttle body and be subject to control by the throttle butterfly. All single-carbureted cars may fit a permitted optional carburetor per Appendix A. The standard or permitted alternate carburetor must not be modified. Carburetor jets, needles, metering rods and needle valves are unrestricted. Choke mechanisms, plates, rods, and actuating cables, wires, or hoses can be removed. The number of carburetors must not be changed from OE.
- b. Standard or permitted alternate carburetor(s) can use an adaptor plate and/or a spacer in addition to any standard spacer between the carburetor(s) and the intake manifold. Material for the adaptor plate and spacer is unrestricted. No adaptor plate or spacer can serve any purpose other than to space out and/or mate the carburetor(s) to the permitted intake manifold. The adaptor or spacer cannot create a plenum or change the carburetor orientation. The maximum thickness for the adaptor, spacer, standard spacer, or combination of all is 1¼ inches (1.250", 31.75 mm). For the purpose of these rules an isolator is a spacer.
- c. Fuel Injection – The standard throttle body must be retained and may not be modified. The number of injectors must remain standard. The mounting position and injection point must be standard. In all other respects the fuel injection system is unrestricted.
- d. The intake manifold may be port matched on the port mating surface to a depth of no more than 1.0" (25.4 mm). Balance pipes or tubes on all intake manifolds can be plugged or restricted. The intake manifold cannot otherwise be modified.

C. Induction System – Turbocharged/Supercharged Engines

1. Turbocharging and supercharging is prohibited except for specific vehicles as listed in Appendix A.
2. Induction systems must have a restrictor on the inlet side. This restrictor orifice must not be more than 4.0" (10.2 cm) from the compressor inlet and must maintain the specified diameter for at least ½ inch (0.50", 12.7 mm). Induction system restrictors may be located within or be integral to the compressor housing, provided that all dimensional requirements of 17.10.C.2 are maintained. All inducted



air must pass through this restrictor. The diameter for the restrictor shall be as follows (unless specified otherwise in Appendix A):

- a. XP – No restrictor required
  - b. CP – 52 mm (2.047") restrictor
  - c. FP – 46 mm (1.811") restrictor
  - d. EP – 33 mm (1.299") restrictor
3. Only air-to-air intercoolers may be used. They must fit completely within the bodywork. They must be cooled only by the atmosphere. The use of coolants such as water, dry ice, ice, etc. is prohibited. Air may be ducted as long as it is supplied through normal or specifically authorized openings in the bodywork. Standard openings in the front of the car includes ventilation system intake grilles.
  4. All turbocharged/supercharged cars are restricted to a single turbocharger/supercharger. The type size and model of turbocharger/supercharger is unrestricted.

#### D. Fuel System

1. Any fuel line(s) may be used. All non-standard fuel line(s) passing through the passenger compartment shall be made of metal or metal-braided hose or equivalent (e.g., Nomex, Kevlar, or nylon-braided hose) with AN Series threaded couplings or entirely covered and protected with a metal cover.
  2. Any fuel pump(s), filter(s), and pressure regulator(s) may be used. Such components may not be located in the passenger compartment but their location within the bodywork of the car is otherwise unrestricted. If a mechanical pump is replaced, a blanking plate may be used to cover the original mounting point.
  3. A cool-can, not exceeding one gallon in volume, may be used. The cool-can may not be installed in the passenger compartment.
  4. No fuel shall be added after the exhaust valve on a piston engine or after the beginning of the exhaust port of a rotary engine.
- E. All emission equipment may be removed, in part or in whole. Removal is the only permitted modification to emission control equipment. When EGR air nozzles are removed from a cylinder head, the resultant holes shall be completely plugged.

#### F. Cylinder Head

1. The original or a specified alternate cylinder head shall be used.
2. Compression ratio may be altered by machining, using any head gasket(s), or elimination of head gasket(s).
3. LEVEL 1 PREPARATION (FULL PREP) VEHICLES
  - a. Any valve guides and valve seats may be used.
  - b. Heads may be modified per Section 17.10.A.1.
4. LEVEL 2 PREPARATION (LIMITED PREP) VEHICLES

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- a. Heads may be ported within 1.0" (25.4mm) of the manifold mounting surface.
- b. Fuel injector ports must be plugged if carburetors are used.
- c. Machining is allowed to accommodate the installation of O-rings to replace or supplement a cylinder head gasket.
- d. Valve seats are unrestricted. Valve seat angles are unrestricted. The valve seat insert can be no taller than 1/2 inch (0.50", 12.7 mm).
- e. Valve guide material is unrestricted, but must have standard external dimensions.

G. Camshaft and Valve Gear

1. Cam timing chains, gears, belts, sprockets, and associated covers are unrestricted.
2. A timing chain/belt tensioner may be added to those engines not originally so equipped, provided that it acts upon that portion of the chain/belt that travels from the crank drive to the first cam sprocket/gear. The timing chain cover may be modified to facilitate its use. Adjustable cam timing sprockets are permitted.
3. Any metal valves may be used. Valve springs, valve retainers, keepers, seals, and adjusting shims are unrestricted.
4. Pushrods are unrestricted except they must be made of metal.
5. Any cam followers may be used.
6. Any valve covers may be used.

7. LEVEL 1 PREPARATION (FULL PREP) VEHICLES

- a. Any camshaft(s) may be used.
- b. Valve sizes are unrestricted.
- c. Valve train rocker arms, shafts, and attendant assemblies (such as rocker stud girdles) are unrestricted.

8. LEVEL 2 PREPARATION (LIMITED PREP) VEHICLES

- a. Camshafts are unrestricted except for limits as described in Appendix A. Where maximum valve lift is specified, valve lift is measured at the valve with zero lash or clearance.
- b. Valve sizes are to remain standard unless specifically allowed in Appendix A.
- c. Rocker shafts, when utilized in the same standard system, can be replaced by an alternate shafts and are unrestricted. Valve train rocker arms, cam followers, rocker ratios, and rocker/follower ratios must be standard.

H. Block

1. The block may be rebored no more than 0.0472" (1.20 mm) over standard unless otherwise specified in Appendix A. US-produced



six-cylinder and eight-cylinder engines may be rebored no more than 0.060" (1.52 mm) over standard. Alternate blocks which are of the same material and nominal dimensions as standard are allowed. Critical dimensions for piston engines are deck height, cylinder bore, cylinder spacing, vee angle, and distance from crank centerline to cam centerline. Critical dimensions for rotary engines are epitrochoidal curve, working chamber volume, and eccentric shaft location.

2. Cylinder sleeves may be fitted to the block for repair purposes if they serve no other prohibited function. sleeving may not be used to create a new engine configuration (one which exhibits the same displacement as an allowed engine, but which has differing bore and stroke), unless authorized in Appendix A. Oil passages may be enlarged, restricted, or plugged.
  3. Any crankshaft main bearing caps and any additional main bearing cap bolts may be used provided that no material is added to the block for their use. Any crankshaft main bearing stud girdle may be used.
  4. The compression ratio may be increased by means of milling the block and the block may be machined to utilize O-rings to replace or supplement a cylinder head gasket.
  5. The block may be machined for the purpose of adding or substituting crankshaft oil seal(s) and related attachment devices.
  6. Balance shafts may be removed.
- I. Pistons and Rods**
1. Pistons, pins, clips and/or pin retainers, and piston rings are unrestricted. Pistons shall be constructed of metal.
  2. **LEVEL 1 PREPARATION (FULL PREP) VEHICLES**  
Alternate connecting rods made of ferrous material are permitted.
  3. **LEVEL 2 PREPARATION (LIMITED PREP) VEHICLES**
    - a. Standard connecting rods are required but can be lightened and balanced.
    - b. Connecting rod fasteners (bolts and nuts) are unrestricted.
- J. Crank and Flywheel**
1. The original direction of crankshaft rotation and firing order shall be maintained.
  2. The use of any external crankshaft vibration dampener is permitted.
  3. The linkage between the clutch pedal and the clutch housing/clutch actuating mechanism is unrestricted, but may serve no other purpose. A mechanical linkage may be replaced with a hydraulic system. Any clutch pedal may be used.
  4. **LEVEL 1 PREPARATION (FULL PREP) VEHICLES**
    - a. The crankshaft may be replaced with another of the same basic

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material provided the angles of the crank throws remain the same. No change in stroke is permitted unless authorized in Appendix A.

- b. Any clutch is permitted.
- c. Any steel or aluminum flywheel is permitted.

5. LEVEL 2 PREPARATION (LIMITED PREP) VEHICLES

- a. Standard crankshafts are required. The crankshaft may be lightened and balanced. Journal diameters can be a maximum undersize of 0.045" (1.14 mm) from standard diameter.
- b. Any flywheel of standard diameter or larger may be used provided it attaches to the standard or permitted alternate crankshaft at the standard location. Additional fasteners may be used. The diameter of the flywheel includes the diameter of the starter ring gear. Cars that are permitted a specific alternate transmission on the specification line may use a flywheel of standard diameter or larger for that alternate transmission.
- c. Clutch assemblies, clutch linkages, and release bearings are unrestricted. Carbon clutch components are prohibited.

K. Oiling System

- 1. The use of any oil pan/sump, scrapers, baffles, windage trays, oil pickup(s), pressure accumulator (Accusump®), and oil filter(s) is permitted. Filter and accumulator location is unrestricted but they shall be securely mounted within the bodywork.
- 2. So long as it meets the requirements in Section 3.3.3, the installation of any type of vent or breather on the engine is permitted.

3. LEVEL 1 PREPARATION (FULL PREP) VEHICLES

Any engine driven oil pump may be used including a dry sump system. The dry sump tank shall be mounted within the bodywork. If said tank is mounted in the driver/passenger compartment, it shall be isolated from the driver by means of a metal bulkhead or additional container that retains any spillage or leakage.

4. LEVEL 2 PREPARATION (LIMITED PREP) VEHICLES

Any mechanically driven oil pump can be used. Chassis components may be modified to allow installation of the oil pump. Dry sump systems are prohibited.

- L. The components of the exhaust system are unrestricted. Exhaust must be compliant with Section 3.3.3.B.16 and may exit through the bodywork. Rocker panels may be modified for exhaust routing.

M. Other Engine Components

- 1. The use of alternate engine components which are normally expendable and considered replacement parts, such as seals, bearings, water pumps, etc., is permitted. Fasteners may be substituted.
- 2. Bushings may be installed where none are fitted as standard pro-



vided they are concentric and that the centerline of the bushed part is not changed. The addition of alignment dowels is permitted. Bushings are required to be concentric so that unintended relocations and realignments are not permitted.

3. Gaskets may be replaced with others of unrestricted origin.
4. Alternator/generator, crankshaft, and water pump pulleys may be altered or replaced by others of unrestricted origin.
5. One or more engine torque suppressors may be fitted. Original torque suppressors may be altered, replaced, or removed.
6. Motor mounts of alternate design and/or material may be used.
7. The engine may be relocated *within the following constraints: Longitudinally mounted engines must locate the bell housing to block mounting surface no closer to the fore-aft center of the vehicle than the standard part. Vertical position of the longitudinal axis of the centerline of the crankshaft must be within  $\pm 1$  inch (25.4 mm) of the standard part. Transverse mounted engines must locate the centerline of the crankshaft  $\pm 1$  inch than the standard part, and no closer to the fore-aft center of the vehicle than the standard part  $\pm 1$  inch (25.4 mm).*

#### N. Engine, Rotary Piston (only) Modifications

1. No changes in the epitrochoidal curve of the motor are permitted.
2. The capacity of the working chambers shall not be changed.
3. The eccentric shaft may be replaced with another of the same basic material, but no changes in the eccentricity or bearing journal dimensions are permitted.
4. Rotors are unrestricted provided the material and number of lobes remains unchanged.

#### O. Cooling System

1. Cooling fan(s) may be modified, substituted, or removed. Electrically operated cooling fan(s) may be installed provided it (they) serve no other purpose. The use of any engine, transmission, and/or differential oil cooler(s) is/are permitted provided it/they is/are mounted completely within or under the bodywork, but not in the driver/passenger compartment. Associated oil cooler pumps and lines are permitted for the transmission and differential. Air ducts may be fitted to the oil cooler(s) as specifically authorized herein.
2. Any water radiator is allowed, provided there are no changes in the exterior bodywork to accommodate its use. It shall not be located in the driver/passenger compartment. Separate expansion or header tank(s) are permitted provided they are not mounted in the driver/passenger compartment. The heater core may be removed entirely but not modified or replaced. Water radiators may be filled with water, antifreeze, and/or nonflammable liquids the purpose of which

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is to transfer heat and/or inhibit freezing, boiling, and/or corrosion. A radiator may be relocated so long as the other applicable items in Section 17 are not violated (e.g., the exterior bodywork is not altered) to accommodate the change. *OE radiator support/mounts can be modified to accommodate an alternate radiator configuration.*

3. Sealing or shrouding the airflow area between the normal grill opening and the water radiator is permitted.
4. On water-cooled cars, thermostats may be removed, modified, or replaced with blanking sleeves or restrictors.
5. The direction of water flow through the engine shall not be changed from that which was original for the engine unless authorized in Appendix A.
6. Electrically driven water pumps are allowed. Alternate mechanical water pumps are not required to be of the same configuration as the original. Electric water pumps may be relocated.

## P. Transmission

1. The standard transmission without modification may be used.
2. Any mechanical shift linkage or mechanism for changing gears may be used including use of lockout mechanisms. The shift lever opening in the body of the car may be altered to allow the installation of an alternate shift linkage.

### 3. LEVEL 1 PREPARATION (FULL PREP) VEHICLES

- a. Any non-sequential manual transmission is allowed. Any automatic sequential transmission employing a torque converter is allowed.
- b. Hydraulic/electric shifting mechanisms may be modified in automatic sequential transmissions employing a torque converter.
- c. Pneumatic, hydraulic, or electronically-controlled shifting is not allowed for manual transmissions, except for electronically-controlled overdrive manual transmissions in cars which were originally equipped with them.
- d. Gear ratios may be modified.
- e. A functional reverse gear is not required.
- f. The transmission tunnel/cover may be altered to allow the installation of an alternate transmission and/or driveshaft. Cars originally equipped with a removable transmission tunnel/cover may substitute a tunnel/cover of an alternate material.

### 4. LEVEL 2 PREPARATION (LIMITED PREP) VEHICLES

- a. There is no weight increase for the use of a standard transmission utilizing standard case, gear ratios, and synchromesh style gear engagement.
- b. An alternate transmission that uses standard-type, circular, bev-



eled synchronizers, imposes a 2.5% weight increase.

- c. An alternate transmission that uses a gear engagement mechanism different than standard-type, circular, beveled synchronizers imposes a 5% weight increase.

#### Q. Final Drive

1. Alternate driveshaft(s) may be used. Any driveshaft assembly may be modified to permit the use of an alternate transmission.
2. Any gear ratio and/or differential (limited slip or locked) is permitted. Final drive units which permit gear ratio changes while the car is in motion are prohibited.
3. Any drive axle shafts, bearings, bearing carriers, hubs, and universal/CV joints may be used.
4. "Loops" may be installed to prevent the driveshaft from contacting the ground in the event of driveshaft and/or U-joint failure.

#### 5. Level 1 Preparation (Full Prep) Vehicles

Any axle tube or final drive housing is permitted.

#### 6. Level 2 Preparation (Limited Prep) Vehicles

Substitution of the differential housing is only permitted on front-engine/front-drive or rear-engine/rear-drive cars through the use of an alternate transaxle.

#### R. Alternate Engine Allowance:

Prepared vehicles may make use of alternate engines from the engine originally delivered, with the following rules. Excluded from use of alternate engines are forced-induction engines, rotary engines, hybrid engine and drivetrains, and Prepared Limited Preparation Vehicles.

1. Alternate engines are to be from the same make as the make of the vehicle. Engine must be available in production automotive model(s) sold in the US. No alternate engines or parts of the engine are allowed that were offered in other markets than the US unless listed in Appendix A. Motorcycle, snowmobile, marine, or other engines of non-automotive design are not permitted.
2. Vehicle manufacturers that no longer exist may use any motor available in the use from corporate brands or via the following listings:
  - a. British makes may use Ford motors including Mazda.
  - b. Italian makes may use Fiat Chrysler motors.
3. Alternate engines are to retain the same piston count or less as the vehicle's engine was originally configured. Models classed with multiple piston counts on the same line may use any piston count that matches classed models.
4. Alternate engines must keep same cooling type as before. **EXAMPLES:** Air cooled stays air cooled and water cooled stays water cooled.
5. Alternate engine weights will be calculated using listed engine dis-

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placement of swapped engine.

### 6. Alternate engines may make use of allowances found in 17.10

The engine orientation (transverse stays transverse and longitudinal stays longitudinal) and the engine bay location must not be changed (front-engine stays front-engine, mid-engine stays mid-engine, and rear-engine stays rear-engine).

## 17.11 OTHER

- A. Vehicles competing in C Prepared (CP) class, should refer to section 17.11.B. Vehicles prepared in excess of Solo® allowances and prepared up to either the current Club Racing GT or Production Category rules are permitted to compete in X Prepared (XP) class. Tube-frame production cars and kit-cars specifically listed in Appendix A (i.e., Shelby Cobra) are subject to the requirements in the relevant Appendix. Tube-frame versions of production vehicles (e.g., a tube-frame Mazda RX-7) are considered in excess of the rules and must comply with the requirements in this Section. Section 17.8.B.5 minimum track requirements apply. Minimum weight will be GCR minimum plus any Solo® weight adjustments (wheel size weight increases, etc.). Vehicles taking advantage of this allowance may only use the Club Racing GCR (General Competition Rules) allowances in whole. Cars which are not listed in the GCR may not use this allowance and are limited to the modifications allowed in Section 17. For those cars which have been de-listed from the current year GCR, the appropriate specifications will be developed and added to Appendix A upon member request. An exception to the GCR will be that open cars are permitted provided they comply with all provisions of Section 17 pertaining specifically to open cars. The following items listed in the GCR, while recommended, are not required: Logbooks, annual inspections, roll cage, on-board fire systems, hand-held fire extinguisher, scattershield/chain guards, master switch, steering wheel lock removal, window safety net, windshield safety clips and rear window safety straps, and braided steel brake lines. Single Inlet Restrictor (SIR) is not required. Due to the extent of modifications permitted on GT-derived cars classed within the Prepared category, it is possible for a replica car to meet the legality requirements for the corresponding original model provided that the engine, track, and wheelbase remain within the allowed specifications. In such a case, the replica is considered compliant for Prepared, provided it correctly meets all of the applicable GCR specifications.
- B. C Prepared (CP) vehicles prepared in excess Solo® allowances and prepared up to either the current Road Racing GT or Production Category rules are permitted to compete in C Prepared (CP). Tube-frame production cars and kit-cars specifically listed in Appendix A are subject to the requirements in the relevant Appendix. Tube-frame versions of production vehicles (i.e., a tube-frame Camaro) are considered in ex-



cess of the rules and must comply with the requirements in this Section. Section 17.8.B.5 minimum track requirements apply. Minimum weight will be 110% of the Solo® minimum weight from Appendix A plus any Solo® weight adjustments (wheel size weight increases, etc.). Vehicles taking advantage of this allowance may use the Solo® Rules or the Road Racing GCR (General Competition Rules) allowances in whole, in part, or in combination. Cars which are not listed in the GCR may not use this allowance and are limited to the modifications allowed in Section 17. For those cars which have been de-listed from the current year GCR, the appropriate specifications will be developed and added to Appendix A upon member request. An exception to the GCR will be that open cars are permitted provided they comply with all provisions of Section 17 pertaining specifically to open cars. The following items listed in the GCR, while recommended, are not required: Logbooks, annual inspections, roll cage, on-board fire systems, hand-held fire extinguisher, scattershield/chain guards, master switch, steering wheel lock removal, window safety net, windshield safety clips and rear window safety straps, and braided steel brake lines. Single Inlet Restrictor (SIR) is not required. Due to the extent of modifications permitted on GT-derived cars classed within the Prepared category, it is possible for a replica car to meet the legality requirements for the corresponding original model provided that the engine, track, and wheelbase remain within the allowed specifications. In such a case, the replica is considered compliant for Prepared, provided it correctly meets all of the applicable GCR specifications. The 10% increase in minimum weight does apply to such cars.

#### C. Weight Calculations

Where there is a percentage addition as well as a specific weight addition, the percentage is added to the base weight before the specific weight addition. Examples:

- In Prepared class X (XP), the minimum weight for an AWD car with a 2.5L turbocharged engine is:  
 $2.5\text{L} \times 1.4 = 3.5\text{L} \times 250 \text{ lbs.} = 875 \text{ lbs.} + 1200 \text{ lbs.} = 2075 \text{ lbs.}$
- In Prepared class C (CP), the minimum weight for a car with a 302 ci (5.0L) engine prepared to Section 17.11 (e.g., GCR) allowances is:  
 $2700 \text{ lbs.} \times 1.10 = 2970 \text{ lbs.}$

#### D. Data acquisition/recording systems are permitted.

E. Except where there are specific requirements in these rules, any safe line for fuel, hydraulic fluids, oil, water or breather is allowed.

F. Ballast may be added to all cars as required to meet minimum weight provided it is securely mounted within the bodywork and serves no other purpose. Ballast plates may be installed beneath the floor pan so long as they do not protrude beyond its edges.

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### CATEGORY OBJECTIVES

- Provide a competitive outlet for the highest level of allowed modifications.
- Accommodate competitors with purpose built competition vehicles, with allowances for a wide variety of designs and origins.

### CATEGORY VALUES

- Maximum speed and handling for given car parameters.
- Rules stability to protect member investment and encourage commitment.
- Highest levels of drivetrain and suspension development (varies among the individual classes).
- Custom design and fabrication.
- Maximum tire adhesion with minimum constraint (varies among the individual classes).

### CORE MODIFICATIONS

- Chassis and suspension customization.
- Unconstrained automotive-based powertrain (varies among the individual classes).
- Minimum weights generally based on displacement.

### CLASSES

- A Modified (AM) – Least restricted class with significant aero allowances and unlimited drivetrain.
- B Modified (BM) – GCR-based formula cars and sports racers with a high power/weight and aero allowances.
- C Modified (CM) – GCR-based formula cars and sports racers with medium power/weight and restricted aero allowances.
- D Modified (DM) – Highly modified very lightweight production-based or approved kit cars with a maximum equivalent displacement of 2 liters and lower weights than EM.
- E Modified (EM) – Highly modified lightweight production-based or approved kit cars with no limit on displacement and higher weights than DM.
- F Modified (FM) – Small, very agile, GCR-based formula cars.

Sports cars and sedans altered in excess of Prepared Category, sports racing and two-seat specials, Formula cars, single-seat specials, dune buggies, and kit cars may compete in Modified Classes A through F (AM through FM).

Rules for Anti-lock Braking Systems (ABS), Traction Control Systems (TCS) and Stability Control Systems (SCS) in CM and FM are as dictated for those cars by the Club Racing General Competition Rules (GCR). ABS



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is explicitly prohibited in all other Modified classes with the exception of AM, where ABS specifically is allowed. RPM ramp rate limits, tuning of engine output using rpm based boost limits and similar systems that do not use wheel speed sensors, GPS, accelerometers, or other measures of car motion are excepted from limits on TCS and are allowed in classes AM, BM, DM and EM. The use of full TCS and SCS is permitted in DM and EM, with weight additions as shown in Appendix A, but is prohibited in AM and BM. Additionally, in DM and EM, a Stock Tub car (18.1.C.1) may use any ABS, TCS, and/or SCS with no weight adjustment as long as it was a standard option on the car and the original unmodified control unit and programming are used. Engine RPM limiting devices (rev limiters) and cooling fans are allowed in all Modified classes. Data acquisition systems are allowed in all Modified classes unless specifically prohibited by the applicable section(s).

Modified Category cars are divided into classes based on potential Solo® performance. They need not be licensed for or capable of street use. The Solo® Rules shall take preference over the Club Racing GCR concerning safety requirements for vehicles in this Category. Aerodynamic devices must be securely mounted on the entirely sprung part of the car and must not be moveable when the car is in motion. The use of any moving device (e.g., a fan, propeller, turbine) or hinged wing to create downforce is prohibited. Movable side skirts are not permitted except where noted herein or in Appendix A, Modified Category.

### 18.0.A. Sound Control Modifications

If a formula car or sports racer is restricted by a GCR-stated exhaust length or vehicle length and therefore prohibited from installing the necessary exhaust devices to quiet the car to meet local dB limits, the following shall apply:

The vehicle exhaust system length may be extended to allow for the installation of noise suppression devices. This allowance is provided solely to reduce the exhaust noise emanating from these cars by allowing the installation of (a) noise limiting device(s) and in so doing keep the total exhaust length to a minimum for safety reasons. The installation and the noise limiting device(s) shall serve no other purpose than that stated and this allowance only applies to an extension of the exhaust system, not the vehicle bodywork or frame.

### 18.0.B. Engine Classifications

1. Four-stroke cycle and two-stroke cycle, naturally aspirated, internal combustion engines will be classified on the basis of actual piston displacement.
2. Rotary Engines (Wankel) – These units will be classified on the basis of a piston displacement equivalent to *1.6 times* ( $1.6 \times$ ) the volume determined by the difference between the maximum and minimum capacity of the working chamber, times the number of rotors.

3. Turbocharged or supercharged versions of the above engines will be classified on a basis of 1.4 times (1.4 ×) the computed displacement.

#### 18.0.C. Aerodynamics

The area of a wing shall be computed by multiplying the width and depth of the wing assembly (top view) without regard to the curvature and/or inclination of the wing or number of elements. Any airfoil shadowed by another airfoil with more than six inches between them will have its own projected area added to the wing area calculation. Any diffuser-type aerodynamic device under the car which is used in downforce generation is not included in the wing area calculation. This specification supersedes Section 12, Wing Area Computation, for these classes.

#### 18.0.D. Tires

Any tire (including recaps) meeting the applicable portions of Section 3.3 is allowed.

#### 18.0.E. Safety Requirements

The following shall be required in all Modified Category vehicles:

1. **Scattershields/Chain Guard:** The installation of scattershields or explosion-proof bell housings shall be required on all cars where the failure of the clutch, flywheel, or torque converter could create a hazard to the driver or passengers. Chain drive cars shall be fitted with a protective case/shield to retain the chain in case of failure.

The following material requirements apply to scattershields/explosion-proof bell housings:

- 1/8 in. (0.125"; 3.18 mm) SAE 4130 alloy steel
  - 1/4 in. (0.250"; 6.35 mm) mild steel plate
  - 1/4 in. (0.250"; 6.35 mm) aluminum alloy
  - SFI or NHRA approved flexible shields
2. **MASTER SWITCH:** All cars shall be equipped with a master switch easily accessible from outside the car. Club Racing Spec Racer Ford vehicles shall be wired per RFSR II. The master switch shall be installed directly in either battery cable and shall cut all electrical circuits but not an on-board fire system if so equipped. It shall be clearly marked by the international marking of a spark in a blue triangle and mounted in a standard location. OFF position shall be clearly indicated at the master switch location. The standard locations shall be as follows:
    - a. **FORMULA AND SPORTS RACING CARS:** In proximity to the right-hand member of the roll bar but in a location so that it cannot be operated accidentally. It can be mounted on a bracket welded to the inside of the upright member or mounted so that the operating lever or knob is outside of the body panel immediately inboard of the upright member.
    - b. **CLOSED SPORTS RACING CARS, PRODUCTION CARS, AND GT CARS:** In



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front of the windshield on either the cowl or on top of the fender, but close enough to the windshield to be accessible if the car is overturned. Alternatively, it may be mounted below the center of the rear window or on a bracket welded, clamped or bolted to the roll cage or dash, easily accessible through the open window. (Drilling of holes in roll cage to attach the bracket is prohibited.)

c. OPEN PRODUCTION AND GT CARS: May exercise a choice among the above locations.

3. DRIVESHAFT HOOP: RWD DM and EM vehicles shall have a driveshaft hoop capable of preventing the shaft from entering the driver's compartment or damaging any fluid or electrical lines in the event of joint or shaft breakage. All cars in competition using open driveshafts must have a retainer loop with 360° of enclosure, 1/4 in. (0.250"; 6.35 mm) minimum thickness and 2.0 in. (50.8 mm) wide, or 7/8 in. (0.875") x 0.065" (22.23 mm x 1.65 mm) welded steel tubing, securely mounted and located so as to support and contain the driveshaft in event of U-joint failure. Vehicles that have a closed "tunnel" or other such structure which the driveshaft passes through such as the vehicle's frame, may be considered for an exemption from the SEB if that structure meets the criteria stated above.

NOTE: DM and EM vehicles are exempt from the scattershield, driveshaft hoop, and Master Switch requirements if they are using DOT-approved tires.

4. The roll bar structure must meet the requirements of either Appendix C or the Club Racing GCR required by class rules. Roll cages are strongly recommended.

Specials are required to have the roll bar extend at least 2.0" (50.8 mm) above the driver's helmet in the normal seated position and a head restraint keeping the driver's head from going under or behind the roll bar. It is strongly recommended that all cars adhere to this specification.

5. Firewalls and floors shall prevent the passage of flame and debris to the driver's compartment. For cars having fluid lines in a non-standard routing over the belly pan, the belly pan shall have drain holes to prevent the accumulation of fluids.
6. No fuel shall be added after the exhaust valve on a piston engine, or after the beginning of the exhaust port of a rotary engine.
7. *FSAE cars using electronic throttle control must be able to demonstrate throttle closure to zero when power is cut via kill switch.*
8. Ballast may be added to obtain minimum weight requirements. However, it must be attached and secured in a safe manner.
9. Club Racing GCR specific items and/or equipment not required in Modified Category are as follows:

- a. Fuel cells.
- b. Windscreens, side mirrors and tail/stop lights.
- c. Headlight covers, lenses, and bulbs.
- d. Log books.
- e. Fire retardant driver's suits.
- f. Homologation.
- g. Fuel test ports.
- h. Production-based dune buggies need not meet door requirements.
- i. Running lights.
- j. Deformable structures as defined by the GCR Formula Atlantic rules.
- k. On-board fire systems.
- l. Reverse gear in BM and FM vehicles.
- m. A front impact attenuation device (GCR Section 9.4.5.G) is not required in Solo® Modified Category vehicles.
- n. Driver restraint system aging requirements (GCR Section 9.3.19) do not apply.

The 180° vision rule is recommended.

NOTE: If any conflict exists between the Club Racing GCR and the Solo® Rules, the Solo® Rules shall take precedence.

See Sections 3.8 and 8.3.1 for documentation requirements.

Refer to Appendix A for additional class-specific vehicle preparation rules.

Refer to Appendix F for past clarifications of these rules.

The following types of cars are assigned to the Modified Category:

## 18.1 MODIFIED PRODUCTION-BASED CARS

### A. Eligibility

Modified classes D (DM) and E (EM) contain production-based cars which are permitted additional modifications beyond those allowed in Prepared classes CP through FP. Models must meet the requirements of Section 13 (first paragraph), be specifically listed in Appendix A, meet the specifications below, or be otherwise recognized by the SEB.

#### 1. Kit Cars

Kit cars, which were originally designed, constructed, and licensable for street use, may participate in DM and EM if they are approved by the SEB. Members desiring approval of a particular kit car should provide the SEB with detailed information regarding the kit model and contact info, if available, for the OE manufacturer. For obsolete kit cars, the member will be expected to provide construction specifications, dimensions, and photographs for the SEB to examine and keep on file. The SCCA® will evaluate each submitted kit model indi-



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vidually and the evaluation will ensure that the specific model:

- a. Follows current DM and EM allowances regarding minimum floor pan dimensions (see Section 18.1.C.1).
- b. Has no unusually advantageous aerodynamic features.
- c. Has no exceptionally low center of gravity.
- d. Has no exceptionally high strength-to-weight ratio.
- e. Has no other unique features that would upset the competitive balance in DM and EM.
- f. Has independently-verifiable evidence of at least 10 examples which meet the approved specification produced. Extremely limited production sports racer-type efforts are discouraged.

Constructed examples of approved kits are subject to the following:

- g. They will automatically take the Modified Tub weight penalty (see Appendix A).
- h. They will have the same weight-displacement scales and weight bias penalties as production-based cars.
- i. They will be allowed all, but no more than, the modifications that production-based cars are permitted, with the exception that minimum width for all kit cars shall be no less than 65" (165.1 cm) as measured at the narrower end of the car at the tire outer sidewalls with a minimum 14 psi of tire pressure.
- j. They are subject to the same engine and transmission restrictions as production-based cars.
- k. They must meet the same safety requirements as production-based cars.
- l. They must compete with full standard bodywork and that body must remain recognizable as that of the approved make and model. For these purposes, the chassis of exoskeleton type cars is considered part of the bodywork.
- m. Functional wings are not permitted even if they are part of the original kit manufacturer's specification and/or components. If present, they must meet section 18.1.F.6.

A newly-added model is not eligible for the current year's Solo® National Championships unless its listing was published no later than the July issue of the official SCCA® publication.

The list of currently approved models is as follows:

- Exomotive Exocet
- Factory Five Racing 818 (S & R)
- Sylvia Sports Cars J15

### 2. Clones

Clones/replicas of SCCA®-recognized production cars are permitted

to compete in DM and EM provided they comply with the following requirements:

- a. They are substantially similar to and recognizable as the original manufactured vehicle on which they are based.
- b. Their specifications do not violate any rule stated herein.
- c. A clone shall not benefit from kit car manufacturer “running changes” unless those changes have also been submitted and approved.

### 3. Other Models

The Panoz Roadster and Porsche 550 Spyder are eligible for competition in DM and EM as a modified production-based car using the Modified Tub minimum weights.

### 4. Specifications

Weight and displacement specifications are as shown in Appendix A.

## B. Bodywork

1. Respecting Section 18.1.F: Aerodynamic Aids, bodywork may be modified beyond the allowances of Section 17.2; however, the shape of the body must remain recognizable as that of the approved make and model. The body must be made of a fire resistant material. Doors, hoods, trunk lids, sunroofs, hatchbacks, etc. need not function as originally designed. Bumpers, grilles, lights, glass, and trim may be removed. Side mirrors and tail/stop lights are not required.
2. Firewalls and floors shall prevent the passage of flame and debris to the driver compartment. For cars having fluid lines in a non-standard routing over the belly pan, the belly pan shall have drain holes to prevent the accumulation of fluids.
3. The driver must be provided with clear and unobstructed access to the driver's compartment.
4. Interiors may be gutted. The driver's seat must be securely mounted. Steering and driver seating must be completely to the left or right of the vehicle longitudinal centerline. The seat must be mounted such that no part of the driver's body below the waist may cross the longitudinal centerline of the car.
5. Body panels may be altered and air ducting installed to accommodate the installation of the water radiator. If the radiator encroaches into the driver compartment, it must be separated from the driver by a metal bulkhead or enclosing container.
6. Hoods may be altered to allow for induction system changes without restriction. Such alterations shall serve no other purpose.
7. Standard bumpers may be retained, removed, or replaced with alternate materials. The bumper, if retained, will contribute its contour to the top view outline of the car for measurement purposes. Bum-



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pers made of alternate materials shall retain the shape and size of the original.

8. Doors may be replaced with ones of alternate materials. No other part of the original outside bodywork between the original passenger compartment fore and aft bulkheads, such as rocker panels, floor pan, or frame, shall have reduced thickness or be replaced with lighter material.

#### C. Body and Frame

##### 1. Stock Tub

- a. No part of the original outside bodywork between the original passenger compartment fore and aft bulkheads, such as rocker panels, floor pan, or frame, shall have reduced thickness or be replaced with lighter material.
- b. A bulkhead is defined as a transverse panel that is a separator or step between the driver's compartment and the engine or main luggage area.
- c. In cars where a rear luggage compartment is not totally closed off from the passenger compartment, the base of the floor pan step or base of a part-height panel that would limit rearward travel of the rearmost of seat bottoms is the rear bulkhead point. If there are built-in seat track catches or stops, they are assumed disabled for this definition of travel.
- d. Heavier gauge material repairs or heavier replacement sections are all allowed as long as they closely resemble the original.
- e. No removal of the interior sides of the pillars or tub to leave just an outer shell.
- f. Interior storage compartment doors, luggage/trunk compartment panels, parcel shelves may be modified or removed.
- g. Wheel wells and bulkheads are open to modification as long as the driver is protected from fire and debris.
- h. Floor pan width must match or exceed that between the insides of the original rockers. Length must be matched between the original passenger compartment bulkhead locations. Floor pan is defined in Section 12, Floor Pan. Longitudinal structure such as rockers may not cover or overlap the floor pan width. The full standard floor pan width or greater must be visible when viewed from directly above for at least the length of the door openings. The floor pan may only be cut for drivetrain/exhaust/tire/suspension clearance.
- i. Tunnels and other vertical floor pan features, as defined in Section 12, Floor Pan, are included as part of the floor pan of a Stock Tub and shall be at least the original size. They can be longer, wider, and taller.

- j. No car of any sort with a floor pan less than 37" (94.0 cm) wide for front-engine cars or less than 42" (106.7 cm) wide for mid- and rear-engine cars shall be allowed in DM or EM.
- k. A Stock Tub car over 93" (236.2 cm) in wheelbase may change its wheelbase and remain a Stock Tub car if the stock rear bulkhead location and floor pan length are retained.

No weight adjustment.

## 2. Modified Tub

- a. All attributes of a Stock Tub must be maintained in this category except as explicitly allowed below. There is a weight adjustment associated with a modified tub.
- b. A modified tub is one that mainly achieves a lower CG and improved strength to weight ratio.
- c. Lightweight replacement body panels, a thinned-down standard fiberglass body, or a lift-off lightweight shell attached to the main body structure are examples of a modified tub when done in the bulkhead-to-bulkhead region.
- d. Vertical features above the bottom floor pan plane do not have to satisfy original minimum size or shape. Note that the original width and length of the floor pan still have to meet the original dimensions. Drivetrain tunnels and seat mounting platforms may be made smaller than standard with a Modified Tub weight adjustment. A flat floor pan is legal.
- e. Floor pan material, thickness, and method of attachment are open under Modified Tub allowances.
- f. Rear passenger doors, if present, may be replaced with non-functional panels. Front and rear doors and door openings may be altered to accommodate compliant wheelbase changes.
- g. All other cars, Stock or Modified Tub, whose factory wheelbase are less than 93" (236.2 cm) may still change their wheelbase, but it must be done without violating the floor pan length as determined by both front and rear factory bulkhead locations.
- h. All series of Lotus 7, 7A, Super 7 and their clone or kit forms (such as Birkin, Westfield, Locost) are automatically classified as Modified Tubs. This also applies to the Shelby Cobra and its clones.
- i. Tube frame cars are included in this modified tub category.

## 3. Materials (all tubs)

- a. Except as specifically authorized, ferrous metal (containing iron) must be used for all primary load-bearing structures of the car. The primary load bearing structure is the main tub or chassis and its connections to the suspension. No aluminum cages or roll bars are allowed. Any ferrous or aluminum alloy is permitted for suspension arms, location links, and uprights/spindles. Beryllium



## 18. MODIFIED CATEGORY

and beryllium alloys are not allowed anywhere on the car.

- b. The exceptions to the above are parts of the donor production cars that were originally non-metal. In all cases, replacement of these parts or addition of more load bearing structure must be by metal. Lighter replacement sections may not be used between bulkheads in a Stock Tub without it becoming a Modified Tub.
- c. Except as specifically authorized, lightweight substitute materials such as carbon fiber are permitted only so long as they are clearly not load bearing in the primary structure or the suspension. For example, outer body panels in the central tub region must be attached in a flexible manner such as with Dzus® fasteners if non-standard material composition or non-standard material thicknesses are to be used.
- d. Cars that have been approved for DM and EM as clones do not have the freedom to use better strength per weight structural materials than those originally used in the corresponding places in the originals. The only exception is the use of high carbon or chromemoly steel in place of mild steel.

### D. Drivetrain

1. Engines must be derived from production automobiles available in the US or elsewhere. Complete race engines derived from production automobile block designs such as the Pontiac® Super Duty 4 and the Cosworth® 16-valve series are allowed. Motorcycle, snowmobile, marine, or any other initially non-automobile design is not allowed even if it was also made available in an automobile. Non-automobile engines are prohibited. 4-stroke automobile motors shall not be converted to 2-stroke.
2. Engine and/or drivetrain changes are permitted within the following limitations:
  - a. Original front-engine design must remain a front-engine design (i.e., no part of the engine block or cylinder head may extend rearward of the midpoint of the wheelbase).
  - b. Original rear- or mid-engine designs may be interchanged with each other, but no part of the engine block or cylinder head may extend forward of the midpoint of the wheelbase.
3. Non-automobile CVTs are prohibited. Automobile-based CVTs are only allowed with their matching factory engine.
4. Internal and external components of the engine, transmission, and rear differential are unrestricted. Any shifting mechanism or pattern is permitted. Driveshafts may be made of any material deemed safe. Supercharging and turbocharging are permitted without restriction but shall require the displacement specifics of Section 18.o.B.3.
5. For weight designations in EM, Mazda rotary engines are compared

to the piston engines listed (i.e., 3.2L OHC vs. 4.5L OHV) calculations as follows:

- 13B 2-rotor normally aspirated engine ( $1308 \text{ cc} \times 1.6 = 2093 \text{ cc}$ )
  - 13B 2-rotor forced induction engine ( $1308 \text{ cc} \times 1.6 \times 1.4 = 2930 \text{ cc}$ )
  - 20B 3-rotor normally aspirated engine ( $1962 \text{ cc} \times 1.6 = 3139 \text{ cc}$ )
  - 20B 3-rotor forced induction engine ( $1962 \text{ cc} \times 1.6 \times 1.4 = 4395 \text{ cc}$ )
6. Supercharging and turbocharging are permitted for all engines subject to the displacement factor of 18.B. In DM, such induction systems must have a restrictor on the inlet side of the turbo/supercharger. All inducted air must pass through this restrictor which must be constructed of metallic material. The minimum orifice (choke) of the restrictor shall be no greater than 33 mm (1.3"). The restrictor passage may be shaped fore and aft of the choke region. The restrictor choke region must be made of one piece without moving parts.

#### E. Minimum Weights

Minimum weights for cars in DM and EM and all adjustments to these weights are shown in Appendix A.

#### F. Aerodynamic Aids

1. These classes are restricted downforce classes. No aerodynamic tunnels, wings, or sealing skirts may be added. No bargeboards, ramps, vanes, wickerbills, or other aerodynamic devices are allowed except as specified herein or as part of an SCCA®-approved GT-1 bodywork package for the specific make and model.
2. The hood, tub, roof, rear fenders, and rear deck are not permitted to be reshaped to achieve downforce. The front of the car may be reshaped to accommodate the construction of spoilers, air dams, and splitters, and may be widened to rear body width as specified in Section 18.1.E.3.c below. Ramps joining the front fender flares to the splitter/spoiler/airdam assembly which are included as part of a SCCA®-approved GT-1 front bodywork package are allowed.
3. Front Aero
  - a. The standard OE or a non-standard front spoiler or air dam may be used. A non-standard front spoiler is not permitted to protrude forward beyond the overall outline of the car as viewed from above or aft of the forward most part of the front fender opening and shall not be mounted more than 4.0" (101.6 mm) above the horizontal centerline of the front wheel hubs.
  - b. The spoiler may cover the normal grille opening at the front of the car. Cooling duct openings are permitted. If the front radiator is removed or relocated, no aerodynamic use of the unobstructed front radiator pathway may be made. The front spoiler may be attached to the original bodywork or it may replace the bodywork it would otherwise cover.



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- c. The front spoiler may not be wider than either the front or rear bodywork, measured as the maximum distance between the outside edges of the wheel well openings or fender flares at axle height. The total fore-to-aft curvature or deviation of the rear spoiler, measured at the trailing edge, shall not exceed 10.0" (254.0 mm) as viewed from above. The front spoiler must be connected to bodywork above the spoiler across its full width. New bodywork may be added to close the gaps between the fenders, nose, and spoiler/splitter/airdam assembly on cars with open or irregular front bodywork such as the Ford® Model T, MG® TD, Morgan®, and Lotus® 7. When these or similar vehicles use a full-width front spoiler, the car's spoiler/airdam is required to be vertical (between 80-100°) for the lower 8.0" (20.3 cm) of its extent. The change in top view outline caused by these bodywork changes is allowed.
- d. Front splitters are allowed but must be installed parallel to the ground within ±1.0" (±25.4 mm) fore to aft. The splitter trailing edge must be fully sealed to the front bodywork/fender flair/spoiler and the splitter may not get wider as it extends forward. From each point on its trailing edge the splitter can extend no more than 8.0" (15.2 cm) directly forward of the top-view outline of the car. The splitter must be a single plane with the top and bottom surfaces parallel, with an overall height of 1.0" (24.5 mm) or less. The leading edge of the splitter may be rounded (the radius area may extend backwards no more than the splitter thickness). The bottom of the splitter may attach to the belly pan but is not required to do so.

Splitter endplate mounting location may be at the outside lateral end or inboard of the outside lateral end of the splitter. Additional mounting plates or strakes may be added inboard of the endplates but these must be no larger than the endplates.
- e. A front splitter and its associated features shall not function as a diffuser.
- f. An OE splitter which does not conform to these requirements may be used unmodified on the original make and model.

### 4. Rear spoilers

- a. If a rear spoiler is used, it shall be mounted to the rear hatch, deck, or trunk lid, and mount no further forward than the base of the rear window. The spoiler extension for the entire spoiler is set by one measurement at the lateral midpoint of the car. At that point, the spoiler may not extend more than 10.0" (25.4 cm) from the attachment point out to the outer or free edge. This sets the maximum height above ground at all other locations on the spoiler. The result may be a flat topped rather than contoured spoiler. Al-

ternatively, the spoiler may be mounted at the rear of the roof, or to the rear hatch lid at or near the top of the hatch; in such a configuration the spoiler may extend no more than 7.5" (19.1 cm) from the original bodywork, measured as described above. The spoiler angle of attack is free. The rear spoiler is measured from leading, attached edge to trailing or outermost, free edge. Its measurement is independent of its angle of attack.

- b. The spoiler may not be wider than the rear bodywork, measured as the maximum distance between the outside edges of the wheel well openings or fender flares at axle height. The total fore-to-aft curvature or deviation of the rear spoiler, measured at the trailing edge, shall not exceed 10.0" (25.4 cm) as viewed from above.
  - c. Aerodynamic aids permitted in Section 18.1.F shall not function as wings. Therefore, the spoiler may not overhang the bodywork such that air passes both over and underneath it. If the rear spoiler overhangs the side of the car, the lower edge of the spoiler shall be supported by bodywork that will prevent air from passing underneath the spoiler. This may be accomplished by extending the spoiler to join the bodywork or wheel opening/fender flare beneath the overhang.
5. Diffusers are allowed at the rear of the car only; no part of the rear diffuser shall cross the wheelbase centerline into the front half of the vehicle. The diffuser may protrude rearward beyond the top view outline of the car. The diffuser shall have no more than 25.0" (63.5 cm) front to back of expanding chamber; this 25.0" expansion chamber length is inclusive of all parts/components/body forward and rearward of the diffuser. A diffuser is defined as an expanding chamber between the vehicle and the ground for the purpose of accelerating air ahead of it to develop low pressure. Vanes or strakes are allowed inside the diffuser; sideplates and strakes may extend below the diffuser surface as long they do not attain a definite seal with the ground on level ground. Closed undersides or belly pans (lower surface) are permitted. The entire length of the underbody may be closed off to permit proper airflow to a rear diffuser or to smooth the underside of the car. The belly pan shall be flat within 1.0" (25.4 mm) total deviation. No tunnels or other underbody aerodynamic features are permitted. Chassis rake is free. Additionally, no side skirt or body side, etc., may extend more than 1.0 cm (0.394") below this lower surface anywhere on the car to the rear of the front axle unless specifically permitted by these rules.
  6. If a factory production car or kit car was supplied with tunnels or wings, they may remain but they must be blocked in a safe manner to prevent them from functioning to provide downforce. For example, foam or sheet metal may be firmly attached in tunnels or on wings to



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ruin their shape or to stop airflow.

7. Vanes, strakes, and/or endplates (elements) are permitted on front and rear spoilers. A minimum distance of 6.0" (152.4 mm) must separate adjacent elements. These do not have to be square or rectangular; the side profile shape is open. For each element, the total area may be no more than:
  - 56 sq. in. (362.9 cm<sup>2</sup>) for a roof spoiler;
  - 100 sq. in. (645.16 cm<sup>2</sup>) for a trunk spoiler;
  - 35 sq. in. (232.26 cm<sup>2</sup>) for a front splitter.

### G. Brakes

The use of any type brakes, pads, and components are permitted (disc or drum). The location of brake components (inboard vs. outboard) may be changed from original. The original "emergency" or hand brake may be removed.

### H. Tolerances

A tolerance of  $\pm 1/2"$  ( $\pm 12.7$  mm) shall be used when measuring floor pan dimensions from the car's original specifications.

### I. Other

1. At least 50% the width of each tire must be covered by the fenders, *for no less than 75% of the length of the tire*, when viewed from the top of the fender perpendicular to the ground. No sharp edges are permitted.
2. Suspension systems and wheels are free.
3. The use of a windscreen is not required.
4. Roll bar requirements for cars competing in DM and EM are as specified in Section 3.3.2.

## 18.2 SPORTS RACERS

Closed wheel vehicles are referred to as Sports Racers and are assigned to Modified classes A, B, and C (AM, BM, and CM). AM vehicles do not have to comply with any Club Racing GCR, while BM and CM vehicles must comply with the current year GCR. The competitor must indicate on his entry form to which set of specifications that the car is prepared.

Vehicles that qualify as Sports Racers are those listed in the GCR SRCS, dune buggies, and production-based automobiles whether or not from Appendix A.

Dune buggies and DM/EM cars are allowed in BM at Club Racing ASR, CSR, and DSR engine and weight rules as long as they do not exceed the DM/EM aero rule allowances and with the following noted specifics:

- A. Tire covering shall be as noted in the DM/EM rules.
- B. Minimum body width between front and rear tires does not have to extend to the mid plane of the rims.
- C. Suspension does not have to be covered when observed from above.

D. The BM minimum wheelbase of 80.0" (203.2 cm) is not required.

Any dune buggy, production, or non-production street car meeting all GCR SRCS rule requirements may alternately run in BM with full BM Solo® Rules aero allowances.

The following applies to all Sports Racers in AM, BM, or CM:

1. Minimum track is 42.0" (106.68 cm) front and rear.
2. Minimum wheel diameter is 10". No maximum wheel diameter. No minimum wheel width. Maximum rim width is 15".
3. All four wheels are sprung from the chassis.
4. Wing area shall be calculated as described herein.

### 18.3 FORMULA CARS

Single-seat, open-wheeled cars are referred to as Formula cars and are assigned to Modified classes B (BM), C (CM), and F (FM). BM cars must comply with the current year Club Racing GCR (except as noted by the Solo® Rules including Appendix A) and the competitor must indicate on his entry form to which set of specifications the vehicle was prepared. CM and FM cars must conform to the current year Club Racing GCR except Solo® Vee and Formula 440/500 vehicles which are allowed the additional modifications and exceptions listed in Appendix A. Formula cars not conforming to the GCR eligible for BM, CM, or FM are considered Specials. The competitor must have the referenced GCR in his possession during the event. Exceptions to the GCR are as follows:

A. Wing area shall be computed as described herein.

B. Front impact attenuation device (GCR Section 9.4.5.G) does not apply.

### 18.4 SPECIALS

Cars not otherwise classified which meet the following minimum specifications are considered as Specials and are assigned to Modified class A (AM).

#### A. Bodywork

1. Any bodywork used must be made of metal, fiberglass, or other suitable fire resistant materials. Body panels are not required except as specified in section 18.4.A.3.
2. Full and unobstructed access to the driver's seat must be provided.
3. 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.
4. Fenders are optional and design of same is free. Sharp edges are not allowed.
5. Minimum of one seat, capable of supporting the driver in an upright or semi-reclining position is required. Location of the driver's seat is unrestricted.

#### B. Chassis



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1. May be of any construction deemed safe.
2. Minimum wheelbase is 72.0" (182.88 cm).
3. Minimum track is 42.0" (106.68 cm) front & rear.
4. Minimum wheel diameter is 10".
5. All four wheels will be sprung from the chassis.
6. Brakes must conform to those specifications listed in Section 3.3.3.B.13. The brakes shall be a dual system, arranged in a manner to provide braking for at least two wheels in the event of failure in part of the system.
7. A roll bar conforming to Appendix C is required.
8. Five-, six-, or seven-point driver restraint systems are required per Club Racing GCR Section 9.3.19.
9. Vehicles shall have a Master Cutoff switch complying with Club Racing GCR Section 9.3.34.
10. Aerodynamic devices may not have an overall width greater than 75.0" (190.50 cm).
11. No aerodynamic device may extend more than 66.0" (167.64 cm) above the ground.
12. The total area of all wings shall not exceed 20 sq. ft. (129.03 cm<sup>2</sup>), computed as previously described in Section 18.0, Modified Category, "Aerodynamics."
13. Movable side skirts are allowed.
14. The sides, front, and back of the cockpit area must be at least as high as the driver's waist.

## 18.5 FORMULA SAE (FSAE)

- A. Vehicles constructed to any single year's Formula SAE rules (1985-on) to include all FSAE safety items for that single year are eligible to run in SCCA® Solo® events. The FSAE rulebook year shall be specified on the entry form and those rules shall be provided by the entrant for viewing.
- B. In addition to FSAE safety rules, SCCA® safety rules per the applicable portions of Sections 3.3 and 18.4.A shall be met. Passing vehicle inspection at a prior FSAE event is not required.
- C. Transponder and FSAE lettering shall not be required.
- D. These vehicles are assigned to Supplemental Class FSAE, which may run as a subgroup of AM but shall be scored separately. An FSAE car may only compete directly in AM if it meets all AM requirements and specifications. FSAE cars must also meet the following minimum criteria:

Current year FSAE restrictor plate and engine displacement rules. Intake restrictor requirements are as follows:

1. Gasoline fuel ..... 20.0 mm (0.7874")

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- 2. E85 fuel..... 19.0 mm (0.7480")
- 3. M85 fuel.....18.0 mm (0.7087")

E. FSAE vehicles may not mix and match specifications from multiple years except as specified above.

### 18.6 LEGENDS CARS AND DWARF CARS

Vehicles conforming to the US Legend Cars International ([www.uslegendcars.com](http://www.uslegendcars.com)) racing series specifications, with exceptions and requirements as noted in Appendix A, are eligible to compete in Modified class F (FM). (Bandolero and Thunder Roadster vehicles are not eligible for FM.)

Vehicles conforming to the Western States Dwarf Cars Association Specifications, with exceptions and requirements as noted in Appendix A, are eligible to compete in Modified class F (FM).



## 20. SOLO® SPEC COUPE (SSC)

**OBJECTIVE:** Provide an affordable autocross package that combines a street-able car and a capable autocross car using specified parts.

### 20.1 Eligible Vehicles

- Subaru® BRZ® (2013-16) (including 2015 Series.Blue and 2016 Series.HyperBlue models).
- Scion® FR-S® (2013-16) (including 2015 Release Series 1.0 and 2016 Release Series 2.0 models).

### 20.2 Mandatory Parts

A. Parts specified below (tires, wheels, and suspension) must be used. All components and parts (e.g., hardware) are required to be installed. Original equipment (OE) or equivalent components are not allowed. Required bumps stops are provided in the Eibach® PRO-PLUS Performance Handling Package.

B. Anti-roll (sway) bar end links may be substituted but may serve no other purpose.

To facilitate anti-roll bar installation and adjustment through the range of operation metal spacers (e.g., washers), may be added between the anti-roll bar bracket and the subframe. The spacers must be less than 7.00 mm (0.275") thick.

C. TIRES: *FALKEN AZENIS RT660*, size: 225/45R17.

#### D. WHEELS

1. Diameter and width (in.): 17x8 (OE 17x7 may be used only as a full set of 4 wheels.)
2. Offset, including wheel spacer (mm): +40 (40ET or ET40) or greater
3. Weight, without spacer if used, minimum (lbs.): 17, including:
  - Wheel weights
  - TPMS sensor if installed
  - Tire valve stem (type unrestricted)

#### E. SUSPENSION (available from the Tire Rack®)

1. Eibach® PRO-PLUS Performance Handling Package #TR82105.880:
  - a. 82105.001 spring front (2)
  - b. 82105.002 spring rear (2)
  - c. 1J0412303 (770343) bump stop front (2), ~53mm height
  - d. BS770143 bump stop rear (2), ~33mm height
  - e. 82105.320F anti-roll bar front (1)
  - f. UB0346 bushing front (2)
  - g. 82105.320R anti-roll bar rear (1)
  - h. UB0347 bushing rear (1)
  - i. 1J0412303
  - j. 82105.310HK hardware kit (1)
2. SPC Performance® Adjustable Alignment Kit, part #60620T:
  - a. 67655 adjustable toe arm rear (2)

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- b. 67660 adjustable lower control arm rear (2)
- c. 81305 EZCam® XR bolts, 14mm (2)
- 3. Koni® Sport (Yellow) struts/shocks with tamper proof seal:
  - a. 8741-1560LSSC left front (1)
  - b. 8741-1560RSSC right front (1)
  - c. 8041-1416SSC rear (2)

### 20.3 Authorized Changes/Modifications:

- A. If a change or modification is not specifically authorized, it is not allowed. All repairs must comply with factory-authorized methods and procedures, or industry standard methods, as follows: If the manufacturer does not provide an appropriate method of repair, industry standard methods and procedures may be used. Such repairs may not result in a part or combination of parts that provides a performance advantage (e.g., significant change to weight, suspension control, power, etc.) as compared to the standard part(s). Competitors are strongly cautioned to use this allowance to make common-sense repairs only.
- B. Front bumpers, rear bumpers, body trim pieces and attachment points may be reinforced to prevent or repair damage from hitting cones. Reinforcements that are not visible to the exterior of the car are allowed. Such repairs and/or reinforcements may serve no other purpose.
- C. Wheel spacers are allowed provided the resultant combination with the wheel complies with the offset requirements.
- D. Wheel lug studs (e.g., length) and lug nuts may be changed.
- E. Components which are normally expendable and considered replacement parts may be used provided they are essentially identical to the standard parts, used in the same location, and provide no performance benefit. Examples are:
  - 1. Clutch and related components (excluding flywheel).
  - 2. Hardware (nuts, bolts, clips, etc.).
- F. Parts superseded by Toyota®/Subaru® may be used on either vehicle.
- G. These allowances are strictly to permit components to be replaced from alternate sources other than the original manufacturer. They should not be construed as an allowance to replace components with those which could be considered a "higher performance" alternative.
- H. It is not permitted to use non-compliant parts even if they have been set to the manufacturer's specifications.

### 20.4 Bodywork

- A. Accessories, gauges, indicators, lights, and other appearance, comfort-and-convenience modifications which have no effect on performance and/or handling and do not materially reduce the weight of the car are permitted. This does not allow driver's seat substitutions, or the removal of "tow hooks" or "tie-down loops." Data acquisition systems (including video cameras) and the accompanying sensors are allowed but may serve no other purpose during a run than real-time display and data recording.



- B. Alternate shift knobs are allowed.
- C. Spare tires, tools, and jacks may be removed. Any fastening hardware and/or other pieces that can no longer be firmly secured in the absence of the spare tire may be removed if necessary to ensure compliance with Solo® Rules section 3.3.3.B.1, Safety Inspections, Inspection Requirements.
- D. Driver restraints as outlined in Solo® Rules section 3.3.1, Driver Restraints, are allowed. Seats may not be cut to allow for the installation of alternate seat belts or harnesses. A horizontal “harness bar” may be used as part of the installation hardware for allowed driver restraints provided it has no more than two (2) attachment points to the chassis and is bolted at those locations. A C-type harness bar may also be used; it may have four (4) bolted attachment points to the chassis (2 primary and 2 supporting connections to resist rotation). Truss-type harness bars with more than two (2) attachment points are not allowed.
- E. Cars may add one (1) rear trailer hitch. Factory tie downs and cosmetic pieces (e.g., diffusers) may be modified or removed to facilitate hitch installation. Complete or partial removal of the hitch is allowed for competition, provided it does not result in a reduction in weight compared to the unmodified standard configuration.
- F. Tow bar brackets may be installed and may serve no other purpose.
- G. Any item not permanently in place by manufacturer-installed fasteners may be removed (i.e., emergency tool kits).

#### 20.4 Brakes

The make and material of brake linings (pads) may be changed.

#### 20.5 Suspension

- A. Alignment: Both the front and rear suspension may be adjusted through their designed range of adjustment by use of the specified parts. No suspension part may be modified for the purpose of adjustment unless such modification is specifically authorized by the manufacturer service documentation.
- B. Bushings
  - 1. Suspension bushings as supplied in the kits are mandatory.
  - 2. Those not included in the supplied kits may not be replaced with bushings of a different material or dimension.

#### 20.6 Electrical System

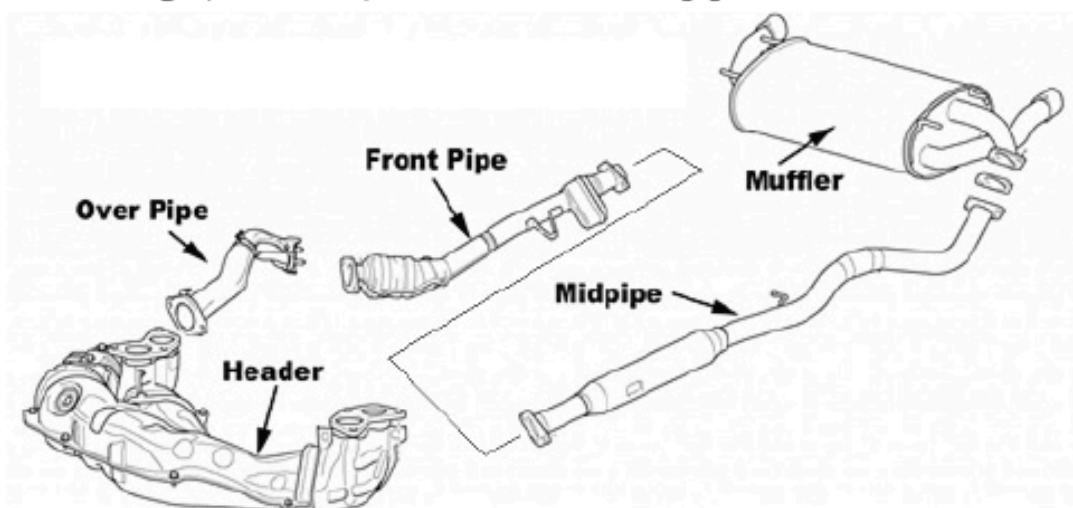
- A. The make of spark plugs is unrestricted.
- B. No changes are permitted to electronic engine management systems or their programming.
- C. Tire Pressure Monitoring Systems (TPMS) may be disabled. Altering the signal to the TPMS module is allowed.

#### Engine and Drivetrain

- A. The engine air filter element may be removed or replaced provided the air flow path remains as originally designed (i.e., no additional openings). No other components of the air induction system may be removed, replaced, or modified.

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- B. Oil filters are unrestricted.
- C. The installation of oil catch tanks or oil separators is allowed provided the function of the PCV system remains functional.
- D. An oil cooler is allowed provided no unauthorized modifications are made to perform the installation.
- E. The muffler and midpipe (as shown in the following figure) may be substituted provided the system exits the car in one or both original locations.
  - Weight, minimum, both muffler and midpipe (lbs.): .....18



- F. Silicone replacement hoses are allowed as alternate components provided they meet the requirements of Solo® Rules section 13, Street Category, with regard to size, shape, location, and performance equivalence. Replacement induction system air intake hoses must also match the standard part in stiffness, contour, and internal wall texture.
- G. Lubricants and fluids are unrestricted.
- H. Fuel must be Federally-approved for use on public highways and is widely distributed and typically sold in filling stations, commonly called "pump fuel" with typical octane ratings or AKI (Anti-Knock Index) (R+M/2) displayed on the pump between 87 and 93. The maximum octane rating allowed is what is typically delivered from a pump marked 93 octane\*. Fuels comprised of more than 15% ethanol may only be used when specified by the manufacturer (e.g., in the owner's manual for flex-fuel vehicles).

\* Octane verification: Octane levels will vary from the number listed on the pump. Octane testing has a "margin of error" and different testing procedures will produce similar but different results. For the purposes of testing gasoline, a result that exceeds 95.9 octane is not allowed and will result in a disqualification with no exceptions (hard limit). This limit gives competitors a 99.99+% confidence level that fuel purchased from a pump marked 93 octane is compliant. WARNING: Competitors attempting to approach the 95.9 octane limit through mixing or by any other means may inadvertently create fuel that appears compliant but may test above the 95.9 hard limit.