

## Appendix A: 2017 ICTSC GRANDFATHERED GS TECHNICAL REGULATIONS

Revision Date: **April 26 2017**

### SECTION 1 – GENERAL

#### 1-1 SPECIFICATIONS

Grandfathered GS Cars must comply with the requirements and technical specifications of these Regulations. The BoP Table and Declaration Form are part of the Regulations and shall govern in the event of a conflict between these Regulations. For specifications not adequately described in the Regulations, IMSA may refer to maintenance manuals, part books, and general performance catalogs published by the OEM.

#### 1-2 OVERVIEW

The Regulations do not permit variations, changes, alterations or modifications to any component produced by the OEM unless specifically authorized in these Regulations, BoP Table, or Component Declaration Form.

For any question or doubt regarding the eligibility of any component, variation, specification or procedure, it is the Member's responsibility to obtain written approval of the component, variation, specification or procedure from IMSA prior to its use.

### SECTION 2 - CAR ELIGIBILITY

#### 2-1 Eligibility

2-1.1  
All automobiles, chassis, bodywork and/or engines presented to IMSA for competition must be approved by IMSA and conform to these Regulations.

2-1.2  
All engine, component changes, or modifications not previously approved, must be submitted in writing to IMSA in a timely manner to be considered.

2-1.3  
Equipment is not considered as having been approved by reason of having passed inspection unobserved.

#### 2-3 Recognition/Configuration

2-3.1  
IMSA may use any legitimate forms, publications, original components and/or vehicles describing the OEM specifications of eligible makes and models to verify compliance with the Regulations. IMSA may require Entrant to furnish factory specifications prior to competing.

2-3.2  
IMSA may establish specifications that are not per the OEM specification.

2-3.3  
Each Car must conform to the standard configuration as delivered to U.S. consumers by the OEM except where these Regulations require or permit modifications.

2-3.4  
IMSA may require Competitors to exchange or replace parts with those of another Competitor, an OEM replacement part, or as otherwise stipulated by IMSA. Modification, alternate component(s), and/or deletion is prohibited unless specifically permitted in these Regulations.

2-3.5  
All approved components (including but not limited to cars, brakes, wheels, dampers, driveline components, body parts, etc) must be available for sale to the public in a regular product offering.

2-3.6

Entrants must complete the Component Declaration Form and obtain written approval from IMSA prior to participation in any IMSA Event

- a. The Component Declaration Form cannot be revised or changed by the Entrant once approved
- b. The Component Declaration Form must be respected at all times

## SECTION 3 - AUTHORIZED MODIFICATIONS

### 3-1 Items required for removal

3-1.1

Air conditioners, compressors, hoses, condenser, cruise control and other related components.

3-1.2

Radios, antennas, and stereo system components, provided a metal or carbon fiber plate covers the remaining hole(s).

3-1.3

Sun visors, interior headliners, carpeting, passenger and rear seats, trim panels, center consoles, inner front door panels and door window mechanisms.

3-1.4

Inside bracing and/or panels from doors

3-1.5

Hubcaps, wheel trim, spare wheel, jack and any related tools.

3-1.6

Air bags and related components.

3-1.7

The driver and passenger door glass.

3-1.8

OEM door locks and mechanisms

### 3-3 - Other permitted modifications

3-3.1

Wiper blades are free.

3-3.2

Mirrors within the Driver compartment are free.

3-3.3

Fittings are free unless otherwise specified.

3-3.4

Nuts, bolts and fasteners are free unless otherwise specified.

3-3.5

Inner fender liners may be removed or modified for air ducting, tire clearance, or damper installation.

3-3.6

Header wrap and self-adhesive "film" style insulation may be added. Coatings may only be used with IMSA approval.

3-3.7

OEM wiring harness, relay blocks, and fuse blocks may be modified or omitted to correspond with items removed.

3-3.8

Sound deadening and rust preventative materials may be removed.

3-3.9

Openings created from the removal of OEM interior panels may be covered with aluminum or carbon fiber where appropriate.

## SECTION 4 - BODYWORK REGULATIONS

### 4-1 - Bodywork

#### 4-1.1

Tires and wheels must be inside the bodywork, as viewed from above to the satisfaction of the Officials. Fender and quarter panel edges MAY be "rolled" or flattened enough for tire clearancing purposes only while maintaining the original external profile to the satisfaction of the Officials.

#### 4-1.2

The bodywork must cover all mechanical components when seen from above or from the side. Bodywork must be contiguous.

#### 4-1.3

Bodywork, joints and/or seams must not be taped or covered.

#### 4-1.4

Removable die-cut vinyl sponsorship decals may be applied with the approval of IMSA.

#### 4-1.5

Seam welding is permitted provided no metal is added.

#### 4-1.6

Jacking points are permitted. A maximum of four (4) plates, less than 30 square inches each, may be added.

#### 4-1.7

IMSA approved air jack systems are permitted and must be used as delivered. Systems must lift the car at maximum 550 psi operating pressure.

4-1.7A – The following air jack systems are approved:

- Staubli Air Jack System (p/n TBD)
- Krontec Air Jack System (KRO.AJ.LL22)
- Airjax.com Gen3
- Genesis Technologies Air Jack Kit (GC1011)

4-1.7B – Minimal modifications necessary for installation of air jacks, lines, and connectors are permitted provided they serve no other purpose. Air jack system installations must be approved by IMSA prior to competition.

4-1.7C – Air wand receptacles must be mounted between and above the axle centerlines of the car (when viewed in profile.) Minimal modifications necessary for installation of the receptacle are permitted, provided they serve no additional purpose and do not require the replacement of a component with a non-compliant part. Two (2) receptacles maximum permitted, one (1) each on the right or left side of the Car.

4-1.7D - The use of high speed dump valve systems is permitted.

#### 4-1.8

OEM hood and trunk latches must be removed. There must be a minimum of two (2) pins or latches each on both the hood and trunk. The pins or latches must retain the hood and trunk in its normal position and location. Hood and trunk pins must be secured by a cable to the Car, where applicable. Removal or opening of the hood and trunk without use of tools is required. Hood and trunk pins/latches must function to the satisfaction of the Officials.

#### 4-1.9

Door latches must function as OEM. The dimensions and functions of the doors must be as OEM.

#### 4-1.10

Doors must remain unlocked.

#### 4-1.11

A metal panel of equal size and shape must replace the transparent portion of an OEM sunroof. Sunroof slide mechanism may be removed. Roof shell may be replaced with a non-sunroof shell of identical material and thickness as OEM.

#### 4-1.12

A removable strut between the opposite strut tower points, front and/or rear, and/or two (2) symmetrical rearward running struts from the shock towers to the center of the front firewall are permitted.

#### 4-1.13

A single Driver cooling duct is permitted in each open side window, provided it does not extend beyond the inner plane of the window. Duct and mounting surround size is 10 inches L X 6 inches H.

#### 4-1.14

Body panel seals may be removed.

## **4-2 - Glass / Windshield / Rear Window**

- 4-2.1  
All greenhouse glass must remain as OEM.
- 4-2.2  
Windshield and rear window must mount using OEM adhesive. Windshield and rear glass supplemental retention clips or straps may be added.
- 4-2.3  
Damaged or cracked windshields or rear glass must be approved by the IMSA CTSC Technical Manager prior to on-track use.
- 4-2.4  
OEM tinted windows are permitted, additional tinting glass is prohibited.
- 4-2.4  
Self-adhesive defrosters are permitted on the windshield and rear window.

## **4-3 - Lights**

- 4-3.1  
IMSA shall specify via bulletin when headlights must be used.
- 4-3.2  
Standard headlight beams may be replaced with aftermarket units of equal dimension and specification.
- 4-3.3  
Headlight, taillight, side marker and turn signal lenses must remain as OEM.
- 4-3.4  
Standard headlights and parking lights may be removed and replaced with a plate of identical shape and size of the lens for daytime use only.
- 4-3.6  
Daytime running lights and reverse lights may be disconnected.
- 4-3.7  
Taillights (and headlights when required) must remain functional and on when the Car is stopped and/or if the engine is not running.
- 4-3.8  
Flashing or strobe effect headlights are prohibited. Flashing or strobe lights may be used only in conjunction with the speed limiter in pit lane, subject to IMSA approval.

## **4-4 Mirrors**

- 4-4.1  
External mirrors must not be altered in any manner from the OEM installation

## **4-5 Aerodynamic devices**

- 4-5.1  
Any device that is not OEM installed shall not be permitted.
- 4-5.2  
IMSA may approve the use of, deny the use of, or determine specific settings for OEM aerodynamic devices at any time.

## SECTION 5 – CHASSIS

### 5-1 Suspension - Shocks/Dampers/Struts, Springs, Suspension Components.

#### 5-1.1

Springs (maximum two per wheel, consisting of one main spring and one “helper” spring) may be replaced with commercially available aftermarket or OEM units provided they are used without modification to any other suspension component. Coil-over style may be used provided the OEM mounting points are utilized. Spring medium must not consist solely of flexible arms or bushings. There must be suspension travel in excess of any flexibility in the attachments. Bump stops, spring rubbers, and packers are permitted.

##### 5-1.1.1

Teams must declare spring sizes and rates to be used during the 2017 season, maximum of three (3) complete sets. Sets must be used in their entirety.

#### 5-1.2

Dampers - one (1) per wheel. Any form of Driver adjustment is prohibited. Metallic or compressible fluids are prohibited. Manufacturer and brand of Dampers are not limited provided they meet the following requirements:

##### 5-1.2.1

Maximum Two (2) way external adjustment, One (1) adjustment for compression and One (1) adjustment for rebound. Any Damper or canister or combination of both damper or canister with more than Two (2) adjustment mechanisms regardless of the working order are not permitted.

##### 5-1.2.2

Maximum of One (1) remote canister per Damper permitted.

##### 5-1.2.3

Driver accessible canisters and adjusters prohibited.

##### 5-1.2.4

Damper and/or mounting hardware modification is prohibited unless specifically permitted in the SCR.

##### 5-1.2.5

All external and internal components, including mounting hardware, must be of standard design and must be commercially available to all competitors from the manufacturer.

##### 5-1.2.6

Teams must declare damper models, sizes, and rates (complete with dyno plots) to be used during the 2017 season, maximum of one (1) complete set.

#### 5-1.4

Cross-connected shocks are prohibited.

#### 5-1.5

Alternative damping/mass damper applications. Electrical, hydraulic, pneumatic or mechanical connection (other than the anti-roll bars/links) between the shock absorber(s) and the suspension is prohibited. Suspension components utilizing “Cambridge”, “j-style” or “inserter” technology are prohibited. Any attenuation device involved in suspension or tire control other than gas/fluid damper must be specifically approved in writing by IMSA.

#### 5-1.6

Suspension Components – Suspension components must be made from homogeneous metallic materials and approved by IMSA. Type, number of mounting points, components and uprights must remain as approved. Chromium plating of suspension parts is prohibited.

#### 5-1.7

Front and rear anti-roll bars may be removed, added or replaced with aftermarket bolt-on units affixed to the OEM mounting points.

##### 5-1.7.1

Teams must declare anti-roll bars to be used during the 2017 season, maximum of one (1) complete set.

#### 5-1.8

Welded in anti-roll bars are not permitted unless OEM, in which case modifications are prohibited.

#### 5-1.9

Cockpit/Driver adjustable anti-roll bars are prohibited.

#### 5-1.10

Suspension and sub-frame bushings may be replaced with non-metallic substitutes of identical dimensions that do not require modification to any other component. Replacement bushings must not change and/or offset the location of any other component.

#### 5-1.11

Unless specified in the SCR, spherical rod ends or similar applications are prohibited with the exception of damper and/or anti-roll bar ends.

5-1.12

Camber and caster adjustments may be made by the approved fitting of camber plates to a permitted limit of negative three and one half (3.5) degrees or as specified by IMSA. Localized minimal modification of shock tower is permitted for installation and obtaining permitted camber and caster, no other modifications to the Car are permitted for camber or caster adjustment.

5-1.13

Offset ball joints may be used for camber adjustment.

5-1.14

Minimum ride height is 3.5", measured at any point on the car.

## 5-2 - Car Weight/Ballast

5-2.1

Minimum weight is less fuel and Driver, as raced.

5-2.2

Ballast must be carried in a ballast box (if installed) constructed of metal with a minimum thickness of .100 inch and must utilize the passenger seat mounts for anchoring. Box must fully enclose the ballast with a top that bolts in place. Ballast must be secured inside the ballast box.

5-2.3

Weights must be in solid form (no pellets) and weigh a minimum 5 lbs.

5-2.4

It is prohibited to add or remove weight or change to a lighter component during any on-track Session.

5-2.5

IMSA reserves the right to check weight at any time during an Event.

5-2.6

IMSA reserves the right to adjust minimum weights at any time.

## 5-3 - STEERING SYSTEM

5-3.1

Steering wheel may be replaced with any non-wood steering wheel. Quick release steering wheel adapters are permitted with prior approval from IMSA.

5-3.2

Steering wheel locks must be removed.

5-3.3

Power steering must be retained, if so equipped as OEM.

## 5-4 Roll Cage

5-4.1

Cars must be equipped with a full roll cage made from a minimum of round magnetic, 1.750 inch X .090 inch DOM seamless steel tubing, welded and constructed per normal industry standard. Roll cage must include a horizontal bar between the main hoop upright, at shoulder height, to facilitate seat bracing/mounting. Roll cage structure must not extend forward beyond the firewall. Please contact IMSA for roll cage construction clarification. Reference 5-4.8 for drawing.

5-4.2

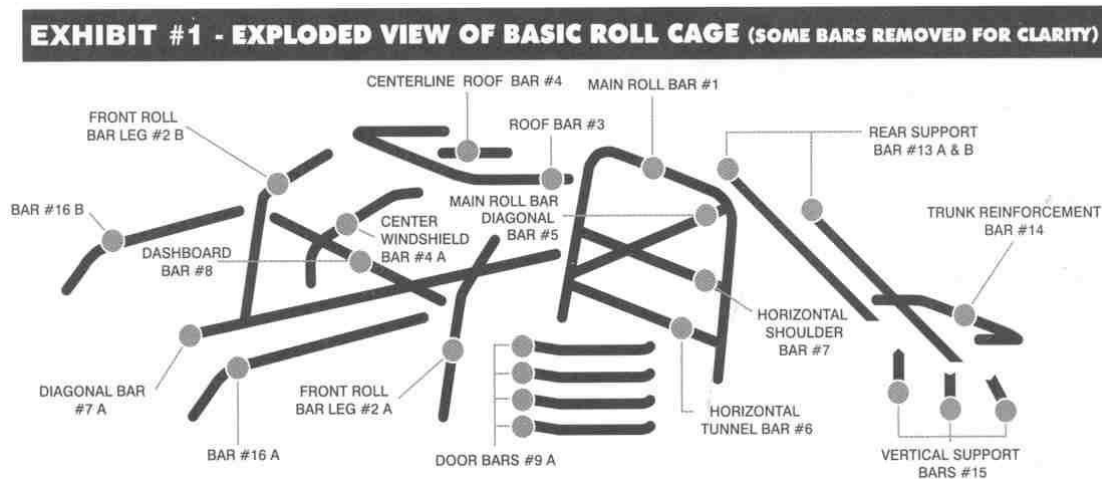
Roll cage must include: Main roll bar #1. Front roll bar legs #2 A&B. Roof halo bar #3. Roof center bar #4. Main roll bar diagonal bar #5. Horizontal tunnel bar #6. At least three (3) door bars #9A are required on both the right and left sides as applicable. Bars #4A, 6 and 8 are optional. The door bars' rear-mounting point must be at the main roll hoop bulkhead and the front mounting point must be at the Front roll bar legs #2 A or B. The door bars must include at least three (3) equally spaced vertical uprights and at least two (2) horizontal bars on the Driver's side that must extend outward to the outer door skin from the lower door bar down to the mainframe rail/rocker panel. Vent window bar #10 A&B. Rear support bars #13 A&B plus a diagonal, or X cross bars. All bars must be round magnetic seamless steel tubing at least 1.750 inch diameter X 0.095 inch minimum wall thickness. See Exhibit #2 exploded view of basic roll cage, Ref: Roll Cage diagram, Reference 5.3-10 for drawing.

5-4.3

Bars numbered 6, 7, and 8 may also be 1.750 inch square tubing X 0.095 inch minimum wall thickness. Reference 5.3-10 for drawing.

- 5-4.4 Proof of material and structural design is the responsibility of the Entrant and must be acceptable to IMSA.
- 5-4.5 Composite material as a structural component is prohibited.
- 5-4.6 Door bars and/or a roll cage of an alternate configuration may be approved by IMSA.
- 5-4.7 A specific FIA-approved manufacturer-installed roll cage may be permitted following IMSA review of FIA homologation papers. These must be provided by the Entrant. IMSA may require additional structure and/or material dimension and support changes to such roll cage prior to approval.
- 5-4.8 OEM impact bumpers may be replaced with DOM tubing with IMSA approval. Replacement bumper weight must be within 10% of OEM weight except on front-wheel drive cars wherein the DOM tubing of at least 1.750 inch diameter X 0.095 inch minimum wall thickness may be substituted for the OEM impact bumpers and bumper brackets

**5-4.8 EXHIBIT #1 - EXPLODED VIEW OF BASIC ROLL CAGE (SOME BARS REMOVED FOR CLARITY)**



**SECTION 6 – ENGINE**

- 6-1.1 Pulleys and Belts are free unless otherwise specified in the SCR.
  - 6-1.1.1 Pulleys and belts must be Declared and approved by IMSA prior to competition
- 6-1.2 Engine mount bushings may be replaced with non-metallic substitutes of the same dimensions that do not require modification to any other component. The replacement bushings cannot change and/or offset the location of any other component.
- 6-1.3 The air box must remain as original. Air filters are free.
  - 6-1.3.1 Air Filter must be Declared and approved by IMSA prior to competition
- 6-1.4 Oil lines must be armor-braided, with AN threaded couplings.
- 6-1.5 Engines must have a clearly visible serial number (duplicate numbered engines may result in a minimum \$10,000 fine to the Entrant).
- 6-1.6 Filters, lubricants and fluids are free. (Glycol based additives are prohibited).

6-1.7

Hoses are free.

6-1.8

Gaskets, bearings and piston rings are free.

6-1.9

Replacement head gasket must be OEM thickness.

## **6-2 Engine Air Restrictors**

6-2.1

IMSA shall provide restrictor(s) when required. Competitors are responsible for gaskets and bolts to attach the restrictors. If requested by IMSA, return of restrictor(s) is mandatory following each Event. Modification of restrictor(s) is prohibited.

## **SECTION 7 - Turbocharging/Supercharging**

**N/A**

## **8-7 - ELECTRICAL SYSTEM**

8-7.1

RPM Limits. Cars may be assigned maximum RPM limits as listed for each Car in the SCR. The limit is considered to be exceeded when either of these conditions are found:

An event over the regulated limit for more than 250 ms which occurs when the throttle is above 6% of maximum

An event with the throttle above 60% of the maximum that is greater than .1% beyond the regulated amount for more than 100 ms. (Example an 8000 rpm limit would mean beyond 8080 rpm)

8-7.2

A master electrical disconnect switch is required within reach of the Driver normally seated and belted.

8-7.3

Batteries must be 12-volt systems only, securely mounted, sealed, able to start the Car at all times and insulated. Only lead-acid technology; either wet cell, AGM, or gel-cell matrix, are permitted. Other forms of electrochemical energy storage are prohibited. Batteries must be the minimum standard dimension of 10 inch L X 6.7 inch W X 7.6 inch H. Batteries must not exceed the dimensions of the production battery for the Car. Battery must be standard OEM size and weight as delivered or the above minimum standard dimension.

8-7.4

The starter must be in working order at all times. Driver must be able to operate the starter when normally seated and belted.

8-7.5

Electronic or digital dashes are permitted.

8-7.6

IMSA may specify ECU calibration.

8-7.7

Engine mapping and control must not be affected by the speed of a non-driven wheel. Any trigger that influences engine calibration must be accomplished exclusively from a driven wheel. These triggers must only influence the RPM cut and no other channel or calibration. The trigger must not be used in any way to implement any traction control or power manipulation process at any time.

## **8-8- Ignition**

8-8.1

Spark plugs, wires, distributors and ignition wiring are free.

8-8.2

Traction Control management systems and/or processors are prohibited.



## SECTION 9 – COOLING SYSTEM

- 9-1.1  
Only mechanically driven water pumps are permitted.
- 9-1.2  
Only electric radiator cooling fans are permitted if used.
- 9-1.3  
An Expansion tank, located in the engine compartment, is permitted with IMSA approval.
- 9-1.4  
Engine radiators are free provided only the OEM mounting points are utilized and no other modifications are made for installation.
- 9-1.4.1  
Radiators must be Declared and approved by IMSA prior to competition
- 9-1.5  
Additional engine, transmission and differential oil coolers are permitted, mounting is free provided no bodywork modifications are required and is within the perimeter of the bodywork. Ducting must be approved by IMSA.
- 9.1.5.1  
Heat exchangers must be Declared and approved by IMSA prior to competition
- 9-1.6  
Glycol based coolants and/or additives are prohibited.
- 9-1.7  
Radiators – OEM ducting must be retained without addition or modification. Openings in the OEM duct and areas left “open” by the removal of items must be closed only by small, independent and flat pieces of metal or plastic affixed to the OEM duct. These pieces may have a flange no greater than 3/8” but must not have any other bends. The OEM radiator duct may be sealed to front of radiator with foam rubber only to close the gap.
- 9-1.8  
Thermostats are free. Thermostat housings may not be modified in any way.

## SECTION 10 – EXHAUST

- 10-1.1  
Catalytic converters must be removed unless otherwise specified in the SCR.
- 10-1.2  
Exhaust pipes must exit behind the Driver and extend to the perimeter of the bodywork.
- 10-1.3  
Exhaust systems on naturally aspirated Cars are free beyond the OEM exhaust manifold.
- 10-1.4  
Sound levels generated by the Car may be limited to 106 dba. Compliance is determined by static measurement taken at 18” above the ground, 5’ rearward and 5’ offset to the exhaust outlet.
- 10-1.5  
The use of Titanium for exhaust components is prohibited.
- 10-1.6  
Exhaust type, design, and specifications must be declared and approved by IMSA prior to competition.

## SECTION 11 - DRIVE TRAIN / GEAR BOX / DIFFERENTIAL

- 11-1.1  
Driveshaft - On front-engine rear-wheel drive Cars, a sufficient metal loop must be mounted to the chassis to retain the drive shaft in case of drive shaft coupling failure.
- 11-1.2  
Cars must have a working reverse gear, which must be selectable by the Driver, normally seated and belted, while the engine is running.

### 11-1.3

Gearbox and/or differential mounts may be replaced with non-metallic substitutes of the same dimensions that do not require modification to any other component. The replacement bushing must not change and/or offset the location of any other component.

### 11-1.4

Limited slip or posi-traction differentials are permitted.

#### 11.1.4.1

Differential type, design, and specifications must be Declared and approved by IMSA prior to competition.

### 11-7.5

Clutch may be replaced with an aftermarket clutch interchangeable (using the same mounting holes) and of the same dimensions of the OEM component. This change must be approved by IMSA prior to use.

### 11-1.6

OEM flywheel/clutch assembly may be replaced with an aftermarket assembly provided it is within 80% of the weight of the original and utilizes the OEM starter motor.

### 11-1.7

Clutch and Flywheel must be Declared and approved by IMSA prior to competition.

## SECTION 12 – BRAKES

### 12-1.1

May use OEM brake master cylinder or aftermarket dual master cylinder with balance bar for proportioning. All installations must be approved by IMSA. Cars using the dual master cylinder option will have the base weight of the car raised by 25lbs.

### 12-1.2

The emergency brake system may be removed.

### 12-1.3

Brake rotor dust shields may be modified or removed.

### 12-1.4

Fluid or fan cooling of the brakes is prohibited.

### 12-1.5

Brake fluid re-circulating systems are prohibited.

### 12-1.6

Brake lines and hoses are free provided standard I.D. and routing are maintained.

### 12-1.7

Quick-disconnect or dry-break brake line connectors are prohibited.

### 12-1.8

Air ducting to the front brakes is permitted through the front OEM parking/fog light openings. A maximum two (2) individual brake ducts per front corner and rear corner are permitted.

12-1.8.1 Brake duct type, design, and specifications must be Declared and approved by IMSA prior to competition.

### 12-1.9

Cockpit brake fluid bias adjustment is permitted.

### 12-1.10

Brake pad material must be metallic.

### 12.1.11

Backing plate must retain OEM specifications.

### 12.1.12

Only steel is permitted as a backing plate material.

## 12-2 – ABS

### 12-2.1

ABS brake components and system may be deactivated and/or removed.

### 12-2.2

ABS, if used, must only be as OEM unless specified in the SCR. IMSA may specify an aftermarket ABS unit, systems are limited to either the Tevis system or Bosch system as authorized for Cars as specifically listed in SCR.

### **12-3 - Brake Rotors**

- 12-3.1  
Only magnetic cast iron or cast steel rotors are permitted.
- 12-3.2  
Replacement brake rotors may be used provided the replacement is of the same material as OEM and within 5% of OEM rotor diameter.
- 12-3.3  
Rotor width is free provided no modifications are made to calipers or carriers.
- 12-3.4  
1-piece rotors may be replaced with 2-piece design (hat and disc).
- 12-3.5  
IMSA may specify rotor size in the SCR.
- 12-3.6  
Brake rotor type, brand, and dimensions must be declared by the Team prior to competition. Teams may declare one (1) rotor per corner for the season.

### **12-5 – Brake Calipers**

- 12-5.1  
Front: Front calipers may remain OEM or teams may utilize a commercially available aftermarket 2-piece (split into two halves) design, maximum four (4) piston caliper of aluminum alloy, with a maximum of two (2) pads per caliper is permitted. The caliper and its mounting location must not require modification other than an adapter between the facing mounting surfaces. Brake Caliper type, brand, part number, specifications, and dimensions must be declared by the Team prior to competition. Teams may declare one (1) caliper per corner for the season.
- 12-5.2  
Rear: Rear calipers may remain OEM or teams may utilize a commercially available aftermarket 2-piece (split into two halves) design, with a maximum four (4) piston caliper constructed of aluminum alloy, maximum of two (2) pads per caliper is permitted. The caliper and its mounting location must not require modification other than an adapter between the facing mounting surfaces. Brake Caliper type, brand, part number, specifications, and dimensions must be declared by the Team prior to competition. Teams may declare one (1) caliper per corner for the season.

## **SECTION 13 – TIRES / WHEELS**

### **13-1 Control - IMSA controls the eligibility of tires.**

- 13-1.1  
IMSA publishes the required tire size for each eligible Car in the SCR.
- 13-1.2  
IMSA may mark, impound, and/or exchange tires at any time.
- 13-1.3  
The Official Tire is Continental Tire. No other tire is permitted. Competitors must use the specified tire, as supplied by the Official Tire Supplier at the Event.
- 13-1.4  
Responsibility- It is responsibility of the Entrant to order and confirm with the Official Tire supplier that the competitor's tires are available at each Event. TIRES MUST BE ORDERED AT MINIMUM TWO (2) WEEKS PRIOR TO THE EVENT.
- 13-1.5  
Artificial Heating - Use of tire warmers or any other means of artificially heating the wheels, tires and/or tire inflation gas is prohibited.
- 13-1.6  
Tire air pressure control valves are prohibited.

### 13-3 Wheels

#### 13-3.1

Carbon fiber wheels are prohibited.

#### 13-3.2

Wheel lugs may be lengthened up to 2" to accommodate thicker wheels. The lug type is free, i.e. bolt vs. stud. The lug/nut assembly must not protrude more than 2" from the mounting face or protrude beyond the outer plane of the wheel.

#### 13-3.3

Wheels must be Declared and approved by IMSA prior to competition

#### 13-3.4

If updating wheel type/design/inventory, the GT4 homologated wheel must be used.

## SECTION 15 - FUEL / FUEL SYSTEM / FUEL DISPENSING

### 15-1 - Fuel Tank / Cell

#### 15-1.1

Fuel tank must remain OEM unless an approved fuel cell is permitted per the SCR.

#### 15-1.2

Safety fuel cell foam is permitted in the OEM fuel tank.

#### 15-1.3

When permitted, fuel cell must be commercially manufactured and meet at least FIA Specification FT3. The bladder must have a printed code indicating the name of the manufacturer, the specification to which it is manufactured and the date of manufacture. Fuel cell must contain fuel cell foam to a minimum of 80% of the enclosed volume. The top or side mounted fuel cell fill/cover plate must be removable for inspection. Bottom fill panels are prohibited.

#### 15-1.4

Fuel cells become obsolete five (5) years after date of manufacture and must be replaced, unless inspected and recertified by the manufacturer for an additional two (2) year period. Entrant must provide proof of certification at each Event.

#### 15-1.5

Officials may reject any fuel cell, container or check valve that appears to be damaged, defective, or does not function properly.

#### 15-1.7

There must be a valve, supplied by the manufacturer, in the fuel cell top cover that seals in the case of the filler hose being knocked off.

#### 15-1.8

All fittings in the rubber fuel cell bladder including air vents, inlets, outlets, tank fillers, inter-tank connectors and access openings must be of metal and bonded to the bladder.

#### 15-1.9

Fuel cell installations, fittings and bulkheads must be approved by IMSA prior to competition. Pictures and/or drawings must be supplied.

### 15-2 - Fuel Fillers/Vents

#### 15-2.1

Fueling system dry break hose must be 1.5" ID.

#### 15-2.2

Cars must be fueled using single or double dry-break fueling systems utilizing unmodified ATL Red-Head, part number RE105 or equivalent dry-break, or unmodified Red Head Valves part number PP125DVR10 or equivalent dry-break.

The dry-break coupling must not incorporate any retaining device when in open position. The cars fueling receptacle must be accessed by opening the trunk, hatch, or OEM fuel door.

#### 15-2.3

Modifications necessary for a dry-break installation are permitted. OEM fuel doors must be operational.

#### 15-2.4

Fuel tank filler lines to fuel cell must be flexible and vents must not protrude beyond the bodywork, or positioned in any vulnerable location. Fill tube must not have swirl pots, diffusers or any other augmentation.

15-2.5

Any breather pipe connecting the tank to atmosphere must exit outside Driver compartment and must be fitted with a gravity-activated rollover valve to control fuel loss under any condition.

15-2.6

Fuel filler system must be Declared and approved by IMSA prior to competition

### 15-3 - Fuel Capacity

15-3.1

Any device, system, procedure, construction or design, for the purpose and/or effect of which is any increase whatsoever, even temporarily, of the total fuel storage capacity beyond the maximum, is prohibited.

15-3.2

Fuel capacity is specified in the SCR and may be adjusted by IMSA.

15-3.3

Reductions to capacity must be accomplished by use of in-cell displacement media (blocks or balls). The fuel bladder and container must not be altered to achieve reduced capacity.

15-3.4

Capacity is measured using IMSA measuring devices/procedures.

15-3.5

Regardless if fuel system/cell has been sealed or not, IMSA may perform checks at any time.

### 15-4 - Fuel Lines

15-4.1

Standard fuel hoses and lines may be replaced by armored lines maintaining standard ID & routing. Fuel lines may not be present in the passenger compartment. Mechanical fuel pressure gauges are prohibited.

15-4.2

When flexible, lines must have threaded connectors and be armor braided.

15-4.3

Lines must be fitted in such a way to prevent leakage.

15-4.4

Fuel Sample Ports - Competitors must install a Spec fuel sampling/pump out fitting at the fuel rail. The Spec fitting is Staubli: CBI06.7251/IA/JKV.

15-4.5

Fuel pressure regulators are permitted.

- a. Fuel Pressure Regulators must be declared (if non-OEM) and approved by IMSA prior to competition

15-4.6

Port injection fuel injectors may be replaced with direct fit replacements. Direct injection injectors must remain OEM.

### 15-5 - Fuel Pumps

15-5.1

Fuel pumps are free except they must not be mounted in Driver compartment.

15-5.2

Fuel pumps must shut off when engine stops running. Fuel pumps may have a by-pass system for start-up.

15-5.3

Fuel pump system must be Declared and approved by IMSA prior to competition

## 15-7 Fuel / Fuel Dispensing

### 15-7.1

Official Fuel - The Official Fuel of IMSA is VP Race Fuels. The only permitted fuel is IMSA100.

### 15-7.2

Competitors must use only the Official Fuel as supplied by the Official Fuel Supplier at the Event.

### 15-7.3

IMSA may specify alternative fuels that are not gasoline.

### 15-7.4

Only air may be mixed with the fuel as an oxidant.

### 15-7.5

Sampling - IMSA may sample fuel for compliance at any time.

## 15-8 Refueling System

### 15-8.1 Fuel Transfer

15-8.1.1 Fuel may be transferred from the autonomous supply tank to the Car using the equipment and methods defined in this Article.

- a. Approved equipment as defined herein must be:
  - i. Unmodified.
  - ii. Installed and operational.
- b. Approved method:
  - i. Gravity.

### 15-8.2 Pit Tank

15-8.2.1 Construction of the Autonomous Supply Tank must:

- a. Comply with FIA Appendix J Drawing n° 252-7 with the exception of the top plate shape and dimensions.
- b. Have a simple cylindrical internal shape.
- c. Not have any additional internal parts that could improve flow.
- d. Have a tolerance on bottom flatness of less than 3 mm inside the tank.
- e. Have the flow restrictor top face at the level of the internal surface of the bottom of the supply tank.

15-8.2.2 Refueling tank height is measured from the top surface of the vessel, not including vent, cover plate or fasteners, to the track surface where the refueling takes place.

15-8.2.3 Maximum refueling tank heights are:

- a. 6.0 feet or as listed on the Balance of Performance Chart

15-8.3 Peripheral Connections

- 15-8.3.1 Tanks must be equipped with the IMSA-specified peripheral connections between the tank outlet and the refueling hose.  
a. Parts must be purchased from RPXpress:

Part Number	Part	Description
BSR-FR FN40	Restrictor Housing	Bottom Tank 12-bolt housing
ATL-TF 147	12-Bolt Gasket	
BSR-FR 1981	Bottom 80 deg. Elbow	Female Camlock x 2" Male
BSR-P5K56	Adapter	Adapter 2" Male to 1 1/2" Camlock
1 Deadman Valve:		
BSR-FR-R003	Deadman Valve (new design)	Stainless Deadman Valve
BSR-FR-R002	Deadman Valve (old design)	Brass Deadman Valve
Also available:		
BSR-FR-RXX	Individual Restrictors	XX indicates restrictor diameter in mm

15-8.3.2 Deadman valve and bottom 80 deg. elbow assembly must be securely braced to remain attached to the tank in the event of an incident.

- a. Mechanisms preventing normal operation of the deadman valve are prohibited.

15-8.3.3 During refueling the air vent outlet must be connected using an appropriate coupling to the tank.

15-8.3.4 A sight glass may be installed to the outside of the supply tank, and must be equipped with isolating valves mounted as close as possible to the tank.

15-8.4 Refueling Hose

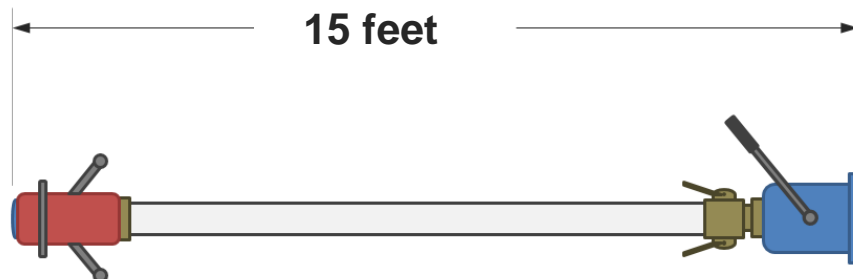
15-8.4.1 Refueling hose must have one end equipped with a self-sealing connector to fit the autonomous supply tank outlet.

15-8.4.2 Refueling hose maximum inside diameter must be less than 1.5 inches.

15-8.4.3 Refueling hose minimum length must be greater than 15 feet.

15-8.4.4 Minimum length is measured from the most distant plane of the dry break/fuel probe to the most distant plane of the cutoff/deadman valve.

15-8.4.5 Cars employing an approved offside refueling system, must have a refueling hose with a minimum length of six (6) meters, connectors included.



15-8.5 Trolley

15-8.5.1 The tank must be attached, through a tower, to a trolley meeting the following requirements:

15-8.5.2 All tower components must be assembled without any degree of freedom in relation to the trolley.

15-8.5.3 The base of the trolley must:

- Have a surface area greater than two (2) square meters.
- Be installed with four (4) self-braking casters.
- Be ballasted with a weight exceeding that of the tank when filled with fuel.

- 15-8.5.4 A system for weighing the fuel may be applied by:
- Placing a weighing plate underneath tank.
  - Ensuring the characteristics set out above are respected.

15.8.6 Boom

(Not Applicable)

15.8.7 Refueling Restrictor

- 15.8.7.1 During refueling, all fuel entering the Car must pass through the refueling restrictor.
- 15.8.7.2 IMSA may adjust the refueling rig restrictor diameter and refueling rig height via Balance of Performance Tables and associated Technical Bulletins.
- 15.8.7.3 Refueling restrictor must remain unmodified.
- 15.8.7.4 The following bolts must be drilled for safety-wire sealing of the restrictor
- Two (2) adjacent Bolt heads of the Restrictor Housing Flange
  - Two (2) Hinge Bolts (threaded section) of the Outlet Pipe Cam Lock
  - Two (2) Lock Lever Arms of the Outlet Pipe Cam Lock

## SECTION 16 - DATA ACQUISITION/RECORDING/DRIVER ID/ RADIO

### 16-1

Telemetry is prohibited.

#### 16-1.1

Data Acquisition Systems are permitted. All data acquisition equipment must use a separate visible and traceable wiring harness. Data acquisition systems must at minimum include: an accurate lap trigger signal, monitor engine RPM, speed in MPH, physical track map position and boost pressure (PSIG) on turbo cars. Systems may include engine monitoring functions (including oil pressure and temperature, water temperature, etc.) Additional inputs must only include one longitudinal and one lateral G load sensor, front and/or rear brake pressures, 4-wheel speed sensors, steering input, gear selected, throttle position and/or GPS.

(Note: This specifically excludes chassis parameters such as shock travel, load cells, tire temp., brake temp., ride height sensors and other higher order functions, as these are beyond the scope of expectation determined by IMSA.)

#### 16-1.2

IMSA reserves the right to view any/all data at any time. Cars must make provisions for a data recorder as required by IMSA upon request. IMSA may specify a wiring harness for the data logger as provided by IMSA.

#### 16-1-3

In the event of an accident, IMSA may download data from the recorder, photograph, film and document damage, or collect other information.

#### 16-1.4

Analysis may be performed by IMSA and/or an approved third party at the direction of IMSA and data retained.

#### 16-1.5

Entrants must present all series mandated data collection media to the IMSA Technical Inspection trailer within thirty (30) minutes of the completion of each session. Failure to present media within the specified window may result in a penalty including (but not limited to) a stop and hold plus five (5) minutes.

### 16-2 Driver ID Transmitter

The Driver ID timing and scoring transmitter or designated alternative must be located in the left front wheel well.

#### 16-2.1

Driver ID plugs MUST be located on the dash, the Driver's helmet(s) or IMSA approved location. If not functioning properly, the Car may be required to pit for repair. During a race, reasonable efforts must be made to repair and thereafter, IMSA may use its discretion to continue scoring the Car or not.



## 16-3 Radios

### 16-3.1

A single working two-way voice radio with car-to-pit communication capability is required at all times. Refer to radio requirements in the IMSA Sporting Regulations.

## SECTION 18 – MEASUREMENTS

18-1 - Measurements are made while Car is stationary on a flat horizontal surface or as provided by IMSA. IMSA templates may be used to check body dimensions or configuration.

18-2 - Equivalence Formulas - The following standard formulas are used with respect to the Regulations.

1 inch = 2.54 centimeters = 25.4 millimeters

1 foot = 12 inches = 0.3048 meters

1 mile = 1760 yards = 5280 feet = 1.60934 kilometers

1 square inch = 6.452 square centimeters

1 cubic inch = 16.387 cubic centimeters

1 U.S. gallon = 4 U.S. quarts = 231 cubic inches = 3.785 liters

1 pound = 16 ounces = 453.592 grams

1 mile per hour = 1.467 feet per second = 1.60934 kilometers per hour

1 millimeter = 0.1 centimeters = 0.03937 inches

1 meter = 3.281 feet = 1.0936 yards

1 kilometer = 1000 meters = 1093.6 yards = 0.62137 miles

1 cubic centimeter = 0.061 cubic inches

1 liter = 1000 cubic centimeters = 61.0255 cubic inches = 0.264 U.S. gallon

1 kilogram = 1000 grams = 2.2046 pounds

1 kilometer per hour = 0.62137 miles per hour

Cylinder volume = bore" X bore" X stroke" X 0.7854.

Cylinder volume = bore(mm) X bore(mm) X stroke (mm) X .0007854

Engine displacement = cylinder volume x number of cylinders

1 bar = 14.5 psi

Atmospheric Pressure = 29.92" HG = 14.696 psi = 1.013 bar

Average Speed = 3600 x length of track x number of laps / total of time in seconds

The following Appendices to the Technical Regulations provide IMSA-specific information and technical specifications. The Appendices are considered an integral part of the IMSA Technical Regulations for the relevant Series and/or class of Car. Where the Appendices are in conflict with the Technical Regulations, the language of the Appendices shall control. These Appendices are applicable only to IMSA sanctioned Events and are void in any other series.

## **APPENDIX: Safety Equipment**

Appendix A – Safety Equipment regulations shall be used in conjunction with the Technical Regulations for Continental Tire SportsCar Challenge.

### **1 Driver Restraint System**

#### 1.1

The driver harness must comply with FIA standard 8853-1998 or SFI 16.5-approved 6-point seat belt restraint system displaying a valid FIA or SFI label. (FIA Link: [FIA Standard 8853/98](#) )

- (A) FIA Homologated: Immediately following December 31st of the year printed on the label.
- (B) SFI Certified (punched/cut label) Expiration: Two years from the date as stated on label. If label is not properly “cut” by the manufacturer or their representative, the date for expiration shall be January 1st of the earliest year printed on the label + two years
- (C) SFI Certified (non-punched label): On June 30th or December 31st: of the year identified as the date for expiration

#### 1.2

The seat belt restrain system must be installed in accordance with the directions provided by the system supplier and/or manufacturer. In addition, please note the following guidelines:

- (A) Belts must be replaced after a severe collision and whenever the webbing is cut, frayed or weakened due to actions of chemicals or sunlight.
- (B) Belts must be replaced if any buckles are bent, deformed, rusted or not functioning correctly.
- (C) All belt components must be installed at each anchor point to prevent accidental release or opening.
- (D) Attaching individual belt straps to each other by any method is prohibited.

#### 1.3

It is the responsibility of the Driver and Team to ensure the seat belt restraint system and all associated components are correctly labeled, installed, maintained and properly used.

- (A) Elastic retention straps are prohibited on shoulder belts.

#### 1.4

Belt components must be used as designed by the manufacturer and tested by SFI or FIA. It is prohibited to “mix” belt components to include:

- (A) Belt components from different manufacturers.
- (B) Belt components certified by SFI and FIA.

### **2 Racing Seat**

2.1 Racing seats must meet FIA standard 8855-1999 (5-year expiration) (link: [FIA Standard 8855-1999](#) ) or FIA standard 8862-2009 (10-year expiration) (link: [FIA Standard 8862-2009](#) ) and not modified without manufacturer approval. Seats must not be used beyond the 31st day of December of the year of expiration as shown on the manufacturer’s label.

2.2 Adjustable seats must have positive retention in both forward and rearward directions to prevent sliding during impact. It is recommended that adjustable seats incorporate a structure or mechanism that provides lateral stability to the seat at shoulder level in all fore/aft positions. It is recommended that seats be rigidly mounted to the chassis at the base and seatback. If used, seat adjusters must be approved by IMSA. Single rail locking systems are prohibited.

### 3 Window Nets

#### 3.1

A Driver's side window net meeting SFI Specification 27.1 is required. It must latch in the upper forward corner with a seat belt style latch and the bottom of the net must be attached to the roll cage upper door bar (#9) and must not be mounted to the bodywork.

#### 3.2.

The use of cables and chains to secure the net to the driver side door bars is prohibited

#### 3.3

(C) The placement and size of the window net must be chosen to minimize the opening of the door window space providing the best protection for the driver.

#### 3.4

The system must be dated by the manufacturer and must not be used beyond two (2) years after date of manufacture.

### 4 Driver Containment Nets

#### 4.1

For all closed-cockpit Cars in this class, the use of center- and driver-side racing nets is mandatory.

#### 4.2

Only driver containment nets meeting SFI 37.1 specification or FIA standard 8863-2013 are permitted.

(FIA link: [FIA Standard 8863-2013](#) .)

#### 4.3

Containment nets must be replaced prior to the expiration date:

(A) FIA Homologated: Immediately following December 31st of the year printed on the label.

(B) SFI Certified (punched/cut label): Two years from the date as stated on label. If label is not properly "cut" by the manufacturer or their representative, the date for expiration shall be January 1st of the earliest year printed on the label + two years.

(C) SFI Certified (non-punched label): On June 30th or December 31st: of the year identified as the date for expiration.

#### 4.4

Racing nets must be installed in accordance with the directions provided by the system supplier and/or manufacturer. In addition, please note the following:

(A) Racing nets should be installed parallel to the centerline of the Car and as close to the helmet as possible, with minimal angular divergence permitted.

(B) The horizontal webbing should be located towards the Driver.

(C) The racing net must only be used as designed by its manufacturer. It is prohibited to alter the racing net. Signage, equipment, etc. attached to the racing nets that reduces the designed purpose of the net for the Driver is prohibited.

(D) The racing net must be installed with enough tension to provide the Driver adequate support in the event of an angular crash.

(E) The net must be installed as far forward as necessary to provide the Driver the best protection possible.

### 5 Protective Padding

#### 5.1

Where the Driver's body could come in contact with the safety cage, flame retardant padding must be provided for protection (FIA Appendix J 253)

#### 5.2

Padding used to protect the Driver must comply with FIA standard 8857-2001 or SFI 45.1. Padding must be securely affixed to prevent rolling or displacement. (FIA link: [FIA Standard 8857-2001](#) )

#### 5.3

It is permitted to add shielding to protect the Driver from equipment in close proximity to any portion of his/her body but must not hinder cockpit exit.

### 6 Fire Suppression System

#### 6.1

Cars must utilize a fire extinguisher system in accordance with FIA Article 253-7.2 or SFI 17.1. The fire suppression system must have a capacity of 10 pounds or equivalent of Novec 1230, FE 36 or AFFF suppression agents. (FIA link: [FIA Article 253-7.2](#))

6.2

A means of triggering from the outside, possibly combined with the circuit breaker, and operated by a single lever, must be located at the bottom of the windscreen near the left-side "A" pillar of the car.

6.3

The system must be securely mounted with an unobstructed view of the pressure gauge, if present, date of manufacture and the next required service date without the use of photography, tools or seat removal. The exception is if the fire bottle is removed during the scrutineering process for examination, if instructed by IMSA.

6.4

The nozzles must be suitable for the type of extinguishing agent and must not be installed to point directly at the Driver's face.

6.5

All system components must be used and serviced per manufacturer specifications.

6.6

Teams must be familiar with the operation of the fire suppression system and be able to:

(A) Demonstrate proper system function by using the "test" mode, if present. This includes both interior and exterior fire suppression activation mechanisms.

(B) Remove the fire bottle for inspection, if requested.

## 7 Exterior Safety Switches

7.1

The exterior switches for fire suppression system activation and electrical circuit breaker, whether separate or combined, must be located for easy identification and activation by emergency responders. Exterior safety switches must not be located under the engine cowl, wipers, behind bodywork or hidden in any way that may impede activation by emergency responders.

7.2

Activation of the exterior safety switches by a gloved finger or hook using a single action by the emergency responder is required. The installation must not require the responder to perform multiple actions to activate the switch. The safety switches may be secured only during scrutineering, in Paddock or when the Car is located near large crowds (during Fan Walk) but must be removed prior to on-track activity.

7.3

Master Electrical switch must be clearly identified by a self-reflective symbol of a red spark surrounded by a white-edged, blue triangle with a base greater than 30 mm. Exterior fire suppression activation mechanism must be marked with a self-reflective symbol with a red edge surrounding a red "E" inside a white circle at least 100 mm in diameter.

## 8 Towing Eyes

8.1

Cars must have a strong steel, steel cable, Kevlar rope or at least 6000 series aluminum, clearly marked tow eye front and rear sufficient to remove a Car, resting on its bottom, from a gravel bed. Tow eyes must have an ID of not less than 2" and not more than 4" with a minimum thickness of 0.250".

8.2

Tow eyes must be painted a contrasting color - red, yellow or orange.

## 9 Delphi Safety Light System

9.1

Cars must use the IMSA Delphi Course Condition in Car Safety System (IMSA Safety Light System). The system must be installed per the provided directions, including mounting of the external antenna. The receiver and complete mounting bracket must be installed as a system.

9.2

Cars must have the system properly functioning prior to any Session.

9.3

System remains the property of IMSA. If not returned upon request, Entrant bears the \$2000 replacement fee.

