IMSA RULES 2015
Revision Date: January 15, 2015

THE DAYTONA PROTOTYPE TECHNICAL REGULATIONS
of the
TUDOR UNITED SPORTSCAR CHAMPIONSHIP

Sanctioned by

INTERNATIONAL MOTOR SPORTS ASSOCIATION
ARTICLE 1. REGULATIONS .............................................................. 4
  1.1. General ................................................................. 4
  1.2. Definitions ......................................................... 4
ARTICLE 2. DEFINITION OF DAYTONA PROTOTYPES .......... 5
  2.1. General ................................................................. 5
  2.2. Homologation Process ............................................. 5
  2.3. Modifications ...................................................... 5
  2.4. Automobile Makes and Identification ....................... 5
ARTICLE 3. DIMENSIONAL CONSTRAINTS ......................... 6
  3.1. Coordinate System and Reference .......................... 6
  3.2. Overall Dimensions ............................................. 6
  3.3. Overhangs ......................................................... 6
  3.4. Weight .............................................................. 6
ARTICLE 4. MATERIALS ........................................................... 7
  4.1. Restricted Materials ............................................. 7
  4.2. Permitted Materials ............................................... 7
ARTICLE 5. CHASSIS ............................................................... 7
  5.1. Chassis Construction ............................................. 7
  5.2. Chassis Materials .................................................. 7
  5.3. Chassis Bulkheads ............................................... 7
  5.4. Chassis Floor ...................................................... 8
  5.5. Cockpit ............................................................ 9
  5.6. Air Jack Systems .................................................. 9
ARTICLE 6. ROLL CAGE & SAFETY STRUCTURE ................. 9
  6.1. Roll Cage Design .................................................. 9
  6.2. Roll Cage Raw Materials ....................................... 9
  6.3. Roll Cage Structural Elements ............................... 10
  6.4. Roll Cage Construction ......................................... 13
  6.5. Roll Cage Restrictions ........................................... 13
  6.6. Side Pod Crash Structure ....................................... 13
  6.7. Attenuator ........................................................ 14
ARTICLE 7. ENGINE ................................................................. 14
  7.1. Eligibility and Specifications .................................. 14
  7.2. Engine Homologation ........................................... 14
  7.3. Engine Materials ................................................ 14
  7.4. Major Components .............................................. 15
  7.5. Cylinder Block .................................................... 15
  7.6. Cylinder Heads .................................................... 15
  7.7. Throttle ............................................................ 15
  7.8. Intake: All Engine Types ...................................... 15
  7.9. Intake: Normally Aspirated Engines ....................... 16
  7.10. Intake: Turbo- and Super-charged Engines ............. 16
  7.11. Air Restrictors ................................................... 16
  7.12. Exhaust .......................................................... 17
  7.13. Engine Control Unit .......................................... 17
ARTICLE 8. COOLING SYSTEM ................................................. 17
  8.1. Engine Water Radiator .......................................... 17
  8.2. Coolers ............................................................ 17
  8.3. Fans ................................................................. 18
  8.4. Plumbing .......................................................... 18
  8.5. Additives .......................................................... 18
ARTICLE 9. FUEL SYSTEM ....................................................... 18
  9.1. Fuel Cell ........................................................... 18
  9.2. Fuel Pumps ........................................................ 18
  9.3. Fuel Lines .......................................................... 18
  9.4. Refueling System ................................................ 19
  9.5. Fuel Capacity .................................................... 19
  9.6. Fuel System Inspection ........................................ 19
ARTICLE 10. DRIVETRAIN ......................................................... 19
  10.1. Clutch ............................................................. 19
  10.2. Flywheel ........................................................ 19
  10.3. Gearbox .......................................................... 19
  10.4. Differential .................................................... 20
  10.5. Bell housing/Adapter Plate ................................... 20
  10.6. Drive .............................................................. 20
ARTICLE 11. BRAKE SYSTEM .................................................... 20
  11.1. General .......................................................... 20
  11.2. Front and Rear Brake Circuits .............................. 21
  11.3. Brake Calipers .................................................. 21
  11.4. Brakes Discs and Pads ........................................ 21
  11.5. Brake System Restrictions ................................... 21
ARTICLE 12. STEERING SYSTEM .............................................. 21
  12.1. General .......................................................... 21
ARTICLE 13. DRIVER INTERFACE ........................................... 21
  13.1. Seat ............................................................... 21
  13.2. Driver Adjustable Components ........................... 22
ARTICLE 14. SUSPENSION ....................................................... 22
  14.1. Suspension Design .............................................. 22
  14.2. Suspension Members ......................................... 22
  14.3. Spring Elements ................................................ 22
  14.4. Damper Elements .............................................. 22
  14.5. Anti-Roll Bars .................................................... 23
  14.6. Ride Height Control ............................................ 23
ARTICLE 15. UPRIGHTS ............................................................ 23
ARTICLE 16. WHEELS ................................................................. 23
16.1. Wheel Hubs ...................................................................... 23
16.2. Wheel Nuts ...................................................................... 23

ARTICLE 17. TIRES ................................................................. 24
17.1. Pressure ........................................................................... 24
17.2. Technical Inspection ......................................................... 24
17.3. Sensors ............................................................................. 24

ARTICLE 18. BODYWORK & EXTERNAL SURFACES .............. 24
18.1. Homologated Bodywork .................................................... 24
18.2. General Bodywork ............................................................ 24
18.3. Greenhouse ...................................................................... 25
18.4. Bodywork Cross Sectional Limits ...................................... 25
18.5. Bodywork Dimensional Limits .......................................... 26
18.6. Body Panels ..................................................................... 26
18.7. Side Pods ......................................................................... 27
18.8. Rear Valance .................................................................... 27
18.9. Underside ......................................................................... 27
18.10. Doors ............................................................................. 28
18.11. Fenders .......................................................................... 28
18.12. Wheel Arch Openings ..................................................... 28
18.13. Wheel Wells .................................................................... 28

ARTICLE 19. WINDSHIELD & WINDOWS ................................. 29
19.1. Windshield ...................................................................... 29
19.2. Rear Window .................................................................... 29
19.3. Attachment ...................................................................... 29
19.4. Tint and Glazing ............................................................... 29
19.5. Windshield Wipers ........................................................... 30

ARTICLE 20. AERODYNAMIC DEVICES ................................. 30
20.1. Ducts, Openings and Vents .............................................. 30
20.2. Air Extractors ................................................................... 30
20.3. Louvers .......................................................................... 31
20.4. Wickers and Gurneys ...................................................... 31
20.5. Splitter/Underwing .......................................................... 31
20.6. Side Pod Tunnel ............................................................... 31
20.7. Rear Wing Assembly ....................................................... 31
20.8. Rear Spoiler ..................................................................... 32
20.9. Diffuser .......................................................................... 32

ARTICLE 21. ELECTRONICS AND DATA ACQUISITION .......... 34
21.1. General Wiring and Electronics ....................................... 34
21.2. Master Electrical Disconnect ......................................... 34
21.3. Grounding ...................................................................... 34
21.4. Data Acquisition and Telemetry Systems ....................... 34
21.5. Electronic Control .......................................................... 34
21.6. IMSA Data Logger ........................................................ 34
21.7. Electronics Inspection .................................................... 35

ARTICLE 22. LIGHTING ............................................................ 35
22.1. Driving Lights ............................................................... 35
22.2. Rain Light ....................................................................... 35

ARTICLE 23. SAFETY EQUIPMENT ........................................... 35
23.1. Safety Belts ..................................................................... 35
23.2. Fire Extinguisher Systems ............................................. 36
23.3. Single Bottle Fire Extinguisher Systems .......................... 36
23.4. Dual Bottle Fire Extinguisher Systems ............................ 36
23.5. Emergency Switches ....................................................... 37
23.6. Mirrors ........................................................................... 37
23.7. Bulkheads ...................................................................... 37
23.8. Padding .......................................................................... 37
23.9. Side Nets ........................................................................ 37
23.10. Wheel Tethers ............................................................... 38
23.11. Towing Eyes ............................................................... 38
23.12. Delphi Safety Light System ......................................... 38

ARTICLE 24. ADJUSTMENT OF PERFORMANCE .................... 39
24.1. Aerodynamic Adjustment of Performance ....................... 39
ARTICLE 1. REGULATIONS

1.1. General

1.1.1. Regulation Compliance

a. What is not expressly permitted by the present regulations is prohibited.

b. Changes made on grounds of safety may be enforced immediately without notice.

1.1.2. Competitor Responsibility

a. It is the duty of each Competitor to satisfy the Technical Officials that his car complies with these regulations in their entirety at all times during an event.

1.1.3. Clarification of Regulations

a. Should a Manufacturer want to introduce a new design or system or feel that any aspect of these regulations is unclear, clarification may be sought from the IMSA Technical Director.

b. If clarification relates to any new design or system, correspondence must include:

i. A full description of the design or system;

ii. Drawings or schematics where appropriate;

iii. The Manufacturer's opinion concerning the immediate implications on other parts of the car of any proposed new design;

iv. The Manufacturer’s opinion concerning any possible long term consequences or new developments which may come from using any such new designs or systems;

v. The precise way or ways in which the Manufacturer feels the new design or system will enhance the performance of the car.

1.2. Definitions

1.2.1. Mechanical Components

a. All those necessary for the propulsion, suspension, steering and braking, as well as all accessories, whether moving or not, which are necessary for their normal working.

1.2.2. Main Structure / Chassis

a. Entirely sprung part of the structure of the vehicle, to which all the suspension and/or spring loads are transmitted, extending longitudinally from the foremost suspension mounting point on the chassis to the rearmost suspension mounting point on the chassis.

b. Mechanical components are not part of the main structure even if they are fully or partially load-bearing.

1.2.3. Bodywork

a. The bodywork concerns all entirely sprung parts of the car in contact with the external air stream apart from parts in relation to the mechanical functioning of the engine, of the drive train and of the running gears.

1.2.4. Cockpit

a. Internal volume of the car to accommodate the driver and the passenger.

1.2.5. Closed Car

a. The cockpit is the internal volume inside the main structure which is defined by the top of the car, the floor, the doors, the side panels, the glass areas and the front and rear bulkheads.

1.2.6. Electronic Systems

a. Unless expressly permitted within these rules, i.e. traction control, any automatic or electronic control system or function is forbidden: chassis control, automatic or semi-automatic transmissions, clutches, final drive differential system, shock absorbers, suspension or ride height adjustment, four wheel steering, etc.
b. A simple open-loop non automatic electrical switch activated by the driver acting on one or more system(s) is not considered to be an electronic control.

i. The AGS system is exempt from this regulation.

c. A closed-loop electronic control system is a system in which:

i. An actual value (controlled variable) is continuously monitored;

ii. The "feedback" signal is compared with a desired value (reference variable);

iii. The system is then automatically adjusted according to the result of that comparison.

d. Unless specified in these regulations and apart from engine monitoring systems, no such system is permitted.

ARTICLE 2. DEFINITION OF DAYTONA PROTOTYPES

2.1. General

2.1.1. Definition of Cars

a. Daytona Prototype (DP) is a racing car with no production minimum required.

b. The cars are closed-cockpit coupes, with a non-stressed mid-engine, and a complete frame.

2.1.2. Definition of Class

a. Daytona Prototype coupes compete in the Prototype category of the TUDOR United Sportscar Championship.

2.1.3. Eligibility

a. Generation 3 (Gen3) cars are the only eligible cars permitted to compete. The approved constructors of DP-based chassis for the 2015 season are:

Riley Technologies
Bill Riley
(704) 526-8758
bill.riley@rileytech.com

Dallara
Luca Bergianti
003-938-07075496
l.bergianti@dallara.it

Coyote Cars
Gary Nelson
(704) 483-1485
gary@coyotepm.com

2.2. Homologation Process

2.2.1. General

a. Effective at the beginning of the 2014 racing season, all DP-based cars are subject to a homologation process, which will require the specifications to be fully defined.

b. Cars built before 1/1/2014 may either be raced in their original as-delivered configuration, or may be updated to the new specifications from time to time.

2.3. Modifications

2.3.1. General

a. The specifications listed in the Homologation Form and all the aerodynamic elements of the car can be changed only by the car Manufacturer and with specific written approval from IMSA.

2.4. Automobile Makes and Identification

2.4.1. Automobile Make

a. An automobile make corresponds to a complete car.

b. The automobile make will be identified first by the name of the engine manufacturer and then by the chassis constructor.

c. Gen3 cars may have a specific name issued by the OEM, thus a chassis Constructor’s name is not required.
2.4.2. Engine Identification Requirements

a. If the engine manufacturer is approved for the Manufacturer’s Championship, the name of the engine manufacturer, or the term “powered by (the name of the engine manufacturer must be displayed across the upper portion of the windscreen with the manufacturer’s name in letters at least 6.0 inches high.

b. Additionally, the same term (or name) or manufacturer’s logo, of minimum size 32.0 square inches, must be displayed in a prominent location, on the centerline of the car at the front and on each side of the engine cover rearward of the side window openings.

c. If the engine manufacturer is NOT approved for the Manufacturer’s Championship, the car must display an IMSA supplied windshield banner on the front windscreen.

ARTICLE 3. DIMENSIONAL CONSTRAINTS

3.1. Coordinate System and Reference

3.1.1. Reference Plane

a. The underside of the flat bottom will serve as the reference plane for all subsequent measurements unless otherwise stated.

3.1.2. Origin

a. The origin of the coordinate system for car dimensions is:

\[ x = 0: \text{Front wheel centerline} \]
\[ y = 0: \text{Vehicle centerline} \]
\[ z = 0: \text{Flat bottom reference plane} \]

3.2. Overall Dimensions

3.2.1. Overall Length

a. 4680 mm +/- 20 mm

3.2.2. Overall Width

a. 2025 mm +/- 25 mm

3.2.3. Overall Height

a. Minimum roof height 1029 mm, measured from the reference plane at the rearmost surface of the main roll hoop.

b. This height will be determined by the top of the spec greenhouse when it is located correctly.

3.2.4. Wheelbase

a. 2770 mm +/- 30 mm

3.2.5. Ground Clearance

a. Minimum ground clearance from the lowest point on the chassis floor is 1.5 inches.

3.2.6. Nose

a. The foremost part of the bodywork (nose) must be between 940 mm and 990 mm forward of the front wheel centerline.

3.3. Overhangs

3.3.1. Front Overhang

a. The front overhang is measured along the vehicle centerline from the front wheel centerline to the most forward part of the vehicle.

b. The front overhang includes the splitter length.

c. The maximum front overhang is 1010 mm.

3.3.2. Rear Overhang

a. The rear overhang is measured along the vehicle centerline from the rear wheel centerline to the most rearward part of the vehicle.

b. The rear overhang includes the rear wing assembly.

c. The rear overhang must be between 900 mm and 950 mm.

3.4. Weight

3.4.1. Minimum Weight

a. Minimum car weight, less fuel and driver, presented in a race ready condition is 1039 kg.
b. IMSA reserves the right to adjust the weight of any car.

3.4.2. Ballast

a. Ballast may be used to reach minimum weight requirements.
b. Ballast must be securely attached and in solid form.
c. Ballast that moves when the car is in motion is not permitted.

3.4.3. Camera Ballast

a. When not running a camera system, all cars must run 9 lb of ballast simulating the complete camera system weight, i.e., cockpit and roof cameras, electronics, wiring, and batteries.
b. Camera ballast may be placed in the passenger compartment, but must not be located in the footwell.

ARTICLE 4. MATERIALS

4.1. Restricted Materials

4.1.1. Titanium

a. Titanium is approved for use in engine valves, valve spring retainers, heat shielding (0.045 inch maximum thickness), brake caliper pistons/mounting bobbins and exhaust systems.
b. Titanium is not approved for use in any other vehicle components.

4.1.2. Magnesium

a. Magnesium is prohibited unless specified in these regulations.

4.2. Permitted Materials

4.2.1. General

a. Unless stated otherwise all other materials are permitted.

ARTICLE 5. CHASSIS

5.1. Chassis Construction

5.1.1. Chassis Design

a. The chassis must be of semi-monocoque and/or tube frame construction.

5.1.2. Stressed Engines

a. The engine must not be a stressed member of the chassis.
b. The engine must mount to the rear framework and the bell housing or the adapter plate.
c. With the engine removed the car must be capable of rolling.

5.2. Chassis Materials

5.2.1. Permitted Materials

a. Structural elements of the chassis must be made from aluminum honeycomb (minimum dimensions for honeycomb 0.04-inch skin X 0.5-inch core X 0.03-inch skin), and/or steel tubing, or a combination of the above.

5.2.2. Restricted Materials

a. Structural elements made from carbon fiber, fiberglass, or Kevlar are prohibited.

5.3. Chassis Bulkheads

5.3.1. General Bulkhead Layout

a. The four main bulkheads of the chassis are the Front, Dash, Cockpit firewall and Engine/main roll hoop, and must be located as described below.
b. The distance from the front of the dash bulkhead to the rear of the main roll hoop must be 49.0 inches.

5.3.2. Front Bulkhead

a. The front bulkhead must be perpendicular to the flat floor and be solid (no air may pass through the bulkhead).
b. The front bulkhead must attach to the flat floor so that no air may pass through, around or over the floor.

c. The minimum size of the front bulkhead is 30.0 inches wide by 14.0 inches high and 1.0 inch thick.
d. The front bulkhead must be located 4.0 inches +/- 2.0 inches forward of the front axle centerline.
e. If 1.0 inch square tubing is used, a center divider of equal size must be included and the forward face must be covered with a minimum of 6000 series aluminum with a minimum thickness of 0.090 inches.
f. The front bulkhead may have a localized area surrounding the master cylinder hardware that protrudes beyond the vertical surface of the bulkhead provided all other dimensional constraints are maintained.

5.3.3. Dash Bulkhead

a. The dash bulkhead must be perpendicular to the flat floor.
b. The dash bulkhead must be located 16.0 +/- 2.0 inches rearward of the front axle centerline.
c. The dash bulkhead must have a minimum height of 22.0 inches above the flat floor reference plane across the entire bulkhead width of 53.5 inches.

5.3.4. Cockpit Firewall Bulkhead

a. The cockpit firewall bulkhead must separate the cockpit from the fuel cell compartment.
b. The cockpit firewall bulkhead and engine/main roll hoop bulkhead must be one continuous plane with a minimum height of 18.0 inches above the reference plane across the entire bulkhead width of 53.5 inches.

5.3.5. Engine/Main Roll Hoop Bulkhead

a. The Engine/Main roll hoop bulkhead must separate the fuel cell compartment from the engine compartment.
b. The engine/main roll hoop bulkhead and the main roll hoop must be perpendicular to the flat floor.
c. The engine/main roll hoop bulkhead must be located 64.0 inches +/- 2.0 inches rearward of the front axle centerline.

5.4. Chassis Floor

5.4.1. Floor Definition

a. The floor is defined as the bottom of the chassis.

5.4.2. Floor Design

a. With the exception of side pod and diffuser tunnels the floor must be flat from the front bulkhead rearwards to rear axle centerline.
b. The tolerance on flatness is +/- 0.25 inches.
c. The floor must be continuous and rigid, lie on one plane, and form an integral part of the chassis/bodywork unit.

5.4.3. Floor Panels

a. It is permitted to divide the flat floor into five panels: central cockpit floor panel, left and right side-pod floor panels, rear floor trapezoid, and diffuser panel.
b. The center cockpit floor panel includes the area under the center cockpit from the engine/main roll hoop bulkhead to the front bulkhead and across to the #6 floor bars right and left.
c. The left and right side pod floor panels include the areas directly under the left and right side pods, with the exception of the defined side pod tunnel area.
d. The rear floor trapezoid - the area aft of the engine/main roll hoop bulkhead up to the edges of the diffuser – may be constructed of carbon fiber in order to fit the diffuser more effectively.

Figure 1: Rear floor trapezoid
e. The fifth floor panel, the diffuser floor panel, is comprised of the flat portions of the IMSA specified diffusor, as defined in 20.9 Diffuser.

5.5. Cockpit

5.5.1. Cockpit Definition

a. The cockpit is defined as the region extending from the front bulkhead rearwards to the engine/main roll hoop bulkhead.

b. The cockpit is divided into two areas: the foot well, and the seating space.

5.5.2. Foot Well

a. A minimum inside width of 30.0 inches is required from the pedal pivot axis to 50 percent of the distance to the front face of the dash bulkhead.

b. A minimum inside height of 14.0 inches is required from the front bulkhead to 50 percent of the distance to the front face of the dash bulkhead.

c. The required foot well volume must be symmetrical to the longitudinal centerline of the car.

d. The driver’s feet must be behind the front axle centerline when the pedals are fully depressed.

5.5.3. Seating Space

a. The seating space must have a flat floor.

b. The minimum width of the seating space/flat floor at the base of the firewall bulkhead is 44.0 inches.

5.5.4. Cockpit Restrictions

a. Lines containing coolant, oil, or fuel may not pass through the cockpit.

5.6. Air Jack Systems

5.6.1. General

a. On board air jacking systems are permitted.

5.6.2. Configuration

a. A maximum of 4 air jacks may be installed.

b. The maximum opening diameter for each jack in the floor is 3.750 inches.

5.6.3. Restrictions

a. On board compressed air bottles are prohibited with the exception of those required for the AGS system.

ARTICLE 6. ROLL CAGE & SAFETY STRUCTURE

6.1. Roll Cage Design

6.1.1. Roll Cage Structure

a. The roll cage structure must include the elements shown in the diagram shown below.

b. The roll cage structure must be symmetrical to the longitudinal centerline of the car.

6.2. Roll Cage Raw Materials

6.2.1. Required Tubing and Material

a. All required roll cage bars #1, #2, #3, #4, #4 A, #5 upper, and #13 A & B must be round magnetic seamless steel tubing, 1.75 inches diameter X 0.095-inch wall thickness.

b. All #6 floor bars, #7, #8, and #8 A bars must be fabricated using square steel tubing 1.75 inches X 1.75 inches X 0.095-inch wall thickness.

c. Square steel tubing 1.75 inches X 1.75 inches X 0.095-inch wall thickness may be used for the lower portion of the #5 and #2 A & B bars.

d. The #9 sidebars may be a minimum of 1 X 1.75 X 0.095-inch wall thickness rectangular tubing.
6.2.2. Tubing Restrictions
   a. Standard tubing tolerances will be recognized.
   b. Grinding, honing or any other conditioning of tubing to reduce wall thickness is prohibited, regardless of tube shape.

6.3. Roll Cage Structural Elements

6.3.1. Main Roll Bar [#1]
   a. Definition
      i. The #1 main roll bar is the main rollover bar of the roll cage.
   b. Construction
      i. Any new chassis must use one single piece of continuous tubing to form the #1 main roll bar.
      ii. The #1 main roll bar must be perpendicular to the flat floor in side view.
      iii. The #1 main roll bar has three sections (for naming purposes only): upper section, central section, and lower section.
   c. Upper Section
      i. The upper portion of the main roll bar consists of the portion of tubing above the #7 horizontal shoulder bar.
      ii. The #1 main roll bar must have a minimum height of 39.0 inches above the reference plane.
   d. Upper Section Contour and Bends
      i. The #1 main roll bar must use 6.0 inch centerline bend radii at each upper corner.
      ii. The upper corner radii centers must be located 22.0 inches apart laterally and 32.625 inches above the reference plane.
      iii. The upper portion of the #1 main roll bar may follow the contour of the roof with the highest point of the hoop in the middle no higher than 2.0 inches above the corner bends.
   e. Central Section
      i. The central section of the main roll bar refers to the portion of tubing between the #7 horizontal shoulder bar and the #9 A&B side bars.
      ii. The #1 main roll hoop bar must attach to the #9 A&B side bars at a minimum width of 51.75 inches.
   f. Lower Section
      i. The lower section of the #1 main roll bar refers to the vertical tubing between the #7 horizontal shoulder bar, and the #6 floor bar.
      ii. The lower sections must extend vertically down from the #7 bar to the top of the #6 floor bar to create a 360-degree structural hoop.
   g. Main Roll Bar [#1] – Pre-2014
      i. For chassis built prior to 2014 the #1 main roll bar may be cut at the #9 A&B side bars for the purpose of updating the chassis to 2014 and beyond specifications.
      ii. The updated chassis must have one single new piece of tubing added from 16.0 inches up and around the top of the roll bar.

6.3.2. Front Roll Bar Legs [#2 A&B]
   a. Definition
      i. The #2 A&B front roll bar legs extend forwards from the #1 main roll bar, over the cockpit, to the dash bulkhead.
      ii. These bars act as the forwards support structure for the #1 main roll bar.
   b. Attachments
      i. At their rear, the #2 A&B front roll bar legs attach to the #1 main roll bar
      ii. These bars attach to the #3 windshield bar at the transition from the roof to the front windshield.
      iii. At their front, these bars attach to the front section of the roll cage.
c. Construction

i. The #2 A&B front roll bar legs must be symmetrical.

ii. The #2 A&B front roll bar legs have three sections (for naming purposes only): side window header bars, A-pillar bars, and lower front roll bar legs.

d. Side Window Header Bars

i. The portion of the #2 A&B front roll bar legs between the #1 main roll bar, and the #3 windshield top bar that form the sides of the top of the roll cage are referred to as “side window header bars.”

ii. The side window header bars must contain a straight section of tubing on each side that is parallel to the reference plane in side view and parallel to the vehicle centerline in plan view over a length of 12.0 inches.

iii. The entire 12.0 inch straight section must have a fore/aft location between 4.0 and 18.0 inches forward from the centerline of the main roll bar.

iv. The minimum distance between the two tube sections must be 30.25 inches laterally center to center, at a minimum height of 38.125 inches above the reference plane to the center of the tubes.

v. At the forward and rear ends, these lateral roll hoop tubes may be bent using a 6.0 inch radius.

vi. An alternative configuration is allowed where these tubes are not parallel to the vehicle centerline in the plan view, and the rear dimension is 31.25 inches laterally, center to center.

e. A-pillar Bars

i. The A-pillar bars refer to any portion of the #2 A&B front roll bar legs connecting the #3 windshield top bar to the front section of the roll cage.

f. A-pillar Attachments

i. There are three options for connecting the A-pillar bars to the top of the roll cage where they meet the #3 windshield top bar:

ii. Tubes may be used that extend from these nodes down to the top of the #8 dashboard bar.

iii. Tubes may be used that extend from these nodes down to the top of the #9 A&B side bars.

iv. Tubes may be used that extend from these nodes down to the top of the #6 A&B side floor bars.

v. For tubes connecting the #3 top windshield bar in the area of the A-pillars at least two (2) attachments must be used per side from among the 3 options described above.

vi. If the tubes that attach to the top of the #8 dashboard bar are chosen, they must attach at a minimum width of 45.0 inches center to center.

vii. For chassis designs requiring a narrower dimension to fit inside the spec greenhouse, this dimension may be 43.0 inches minimum, center to center.

g. Lower Front Roll Bar Legs [#2 A&B]

i. The #2 A&B lower front roll bar legs form part of the dashboard bulkhead.

ii. These bars are the portion of the front roll bar legs extending downwards from the #8 dashboard bar to the #8A lower dashboard bar.

h. Additional Front Roll Bar Leg Tubing

i. Additional tubes may be added as needed, to attach to the #1 main roll bar at the rear and the top of the #2 A&B A-pillar bars at the front.

6.3.3. Windshield Top Bar [#3]

a. Definition

i. The #3 windshield top bar extends laterally across the top of the windshield.

b. Construction

i. The endpoints of this bar must be located at a width of 31.0 inches, and a height of 37.0 to 37.3 inches above the reference plane as measured to the top of the tube.

ii. The front edge of the tube must be between 38.625 and 39.375 inches aft of the front wheel centerline. See Figure 9 at the end of this manual.

iii. Where the #3 windshield top bar crosses the vehicle centerline:
iv. The height must be at least 39.0 inches above the reference plane to the top of the #3 tube.

v. The front edge of the tube must be between 35.375 and 36.250 inches aft of the front wheel centerline. See Figure 10 at the end of this manual.

6.3.4. Centerline Roof Bar [#4]
   a. Definition
   i. The #4 centerline roof bar runs along the centerline and splits the roll structure halo into two symmetrical halves.
   b. Construction
   i. The minimum height of the centerline roof bar at the forward halo/roof bar attachment point is 38.5 inches.

6.3.5. Centerline Windshield Bar [#4A]
   a. Definition
   i. The #4A centerline windshield bar runs along the vehicle centerline and splits the windshield opening into two symmetrical halves.
   b. Construction
   i. The #4 A centerline windshield bar may be straight or curved as needed to fit the windshield contour.

6.3.6. Main Roll Bar Diagonal Bar [#5]
   a. Definition
   i. The #5 main roll bar diagonal bar forms part of the engine/main roll hoop bulkhead.
   ii. This bar runs from the upper corner of the #1 main roll bar to the lower node where the #1 main roll bar meets the #6 floor bar.
   b. Attachment
   i. The #5 main roll bar diagonal bar must attach at the top of the driver's side.

6.3.7. Floor Bar [#6]
   a. Definition
   i. The #6 floor bar forms the lower portion of the engine/main roll hoop bulkhead.
   ii. This bar runs between the lower points of the #1 main roll bar to create a 360-degree structural loop.
   b. Attachment
   i. The #6 floor bar must be on the top of the flat floor.
   ii. This bar must be connected along its length across the bottom of the car.

6.3.8. Side Floor Bars [#6 A&B]
   a. Definition
   i. The #6 A&B side floor bars run between the lower points of the #1 main roll bar to the front bulkhead.
   b. Attachment
   i. The #6 A&B side floor bars must be on the top of the flat floor.
   ii. These bars must be connected along their lengths across the bottom of the car.
   iii. The #6 A&B floor bars must also connect the #2 A&B lower front roll bar legs and the #1 main roll bar at floor level at a width of 51.75 inches, center to center, and parallel to the centerline of the chassis.

6.3.9. Horizontal Shoulder Bar [#7]
   a. Definition
   i. The #7 horizontal shoulder bar forms part of the engine/main roll hoop bulkhead.
   ii. This bar runs laterally across the #1 main roll bar where the bars bend inwards to follow the greenhouse contour.
   b. Construction
   i. The #7 horizontal shoulder bar must be located at a minimum height of 24.0 inches above the reference plane.
6.3.10. Dashboard Bar [#8]
    a. Definition
       i. The #8 dashboard bar forms part of the upper portion of the dashboard bulkhead.
       ii. This bar sits at the top of the dashboard bulkhead.
    b. Construction
       i. The #8 dashboard bar must be installed between the #2 A&B front roll bar legs.

6.3.11. Lower Dashboard Bar [#8A]
    a. Definition
       i. The #8 lower dashboard bar forms part of the lower portion of the dashboard bulkhead.
    b. Construction
       i. The #8A lower dashboard bar of the dash bulkhead must be installed between the #2 A&B front roll bar legs across the floor.

6.3.12. Side Bars [#9 A&B]
    a. Definition
       i. The #9 A&B side bars form part of the side-impact crash structure.
    b. Construction
       i. These bars must be installed 16.0 inches above the #6 A&B floor bars, outside to outside dimension.
       ii. These bars may not have any bends.

6.3.13. Rear Support Bars [#13 A&B]
    a. Definition
       i. The #13 A&B rear support bars extend rearwards from the #1 main roll bar, over the engine bay.
       ii. These bars act as the rearwards support structure for the #1 main roll bar, and prevent the engine from being a stressed member.
    b. Attachments
       i. These bars must attach to the rear side of the #1 main roll bar on the upper horizontal section.
       ii. The attachment point on the #1 main roll bar must be 28.5 inches wide center to center (+/- 2.0 inches).
       iii. The lower/rear end of the #13 rear support bars must attach rearward of the engine, either to the main chassis framework, the engine bell housing / adapter plate, and/or the gearbox / suspension mounting plate.
       iv. Rod ends are not allowed for attachment of the #13 rear support bars.

6.4. Roll Cage Construction

6.4.1. Gussets
    a. Flat plate steel gussets are highly recommended at the intersection of roll cage bars #1, #3, #2 A&B bars, #4, #4A, #5 upper, #7, #8, and #9A, and at the intersection of #1 to #13 A&B.
    b. These gussets are to be triangular, flat, solid steel gussets welded on one side to the centerline of the tube in the joint intersection.

6.5. Roll Cage Restrictions

6.5.1. Drilling of Holes
    a. It is prohibited to drill holes in the rollover structure without approval.

6.6. Side Pod Crash Structure

6.6.1. General
    a. All cars must use the Crawford Composites side pod crash structure, part number CCDP411.
    b. Any modifications to the side pod crash structure must be approved in writing by the IMSA Technical Director.

6.6.2. Dimensions
    a. The outside pod dimensions are 11.0 inches wide, by 16.0 inches high, by 49.0 inches long.
6.6.3. Mounting

a. The side pod must mount to the car at the engine/main roll hoop bulkhead, the dash bulkhead, the #6 A or B floor bars, and the #9 A or B side bars.

b. The side pod must be mounted parallel to the chassis centerline and perpendicular to the reference plane, per Crawford Composites mounting specifications.

c. IMSA may approve the addition of suitable steel structure rearward of the dash bulkhead and engine/main roll hoop bulkhead for the purpose of mounting this component up to 1.5 inches rearward.

i. This provision is only permitted on the Riley and Dallara chassis.

6.7. Attenuator

6.7.1. General

a. The gearbox must be fitted with the Riley Technologies rear gearbox attenuator mounted per the constructor’s specifications.

ARTICLE 7. ENGINE

7.1. Eligibility and Specifications

7.1.1. Engine Eligibility

a. Engines must be production based.

b. Eligible turbocharged or supercharged engines are limited to production OEM engines.

c. All engines must have a clearly visible OEM casting number and serial number which must be retained.

d. Engines must be produced in a suitable quantity that IMSA approves.

7.1.2. Engine Specifications

a. The table below shows the permitted engine specifications for various engine types.

<table>
<thead>
<tr>
<th>Engine Type</th>
<th>Fuel Type</th>
<th>Maximum Capacity &amp; No. of Cylinders</th>
<th>Compression Ratio</th>
<th>Bore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normally Aspirated</td>
<td>Petrol</td>
<td>5.5 L 8 Cylinders</td>
<td>12.5:1</td>
<td>4.070&quot;</td>
</tr>
<tr>
<td>Turbo-charged</td>
<td>Petrol</td>
<td>3.5 L 6 Cylinders</td>
<td>TBD</td>
<td>TBD</td>
</tr>
<tr>
<td>Super-charged</td>
<td>Petrol</td>
<td>3.5 L 6 Cylinders</td>
<td>TBD</td>
<td>TBD</td>
</tr>
<tr>
<td>Turbo-charged</td>
<td>Diesel</td>
<td>2.5 L 6 Cylinders</td>
<td>TBD</td>
<td>TBD</td>
</tr>
</tbody>
</table>

7.2. Engine Homologation

7.2.1. General

a. Eligible engines must be homologated by IMSA.

7.2.2. Homologation Form

a. A homologation form must be completed by the Engine Builder/Manufacturer.

b. All engine details/specifications shall be specified in the homologation form.

b. The homologation shall be approved after submission to IMSA for testing and analysis.

d. The engine Builder/Manufacturer must pay all expenses for the homologation of the engine.

7.3. Engine Materials

7.3.1. Restricted Materials

a. The use of ceramic engine components or applying ceramic coating to internal components is prohibited except as stated below.

7.3.2. Permitted Materials

a. Only solid magnetic steel connecting rods are permitted unless another material is used in the production engine.

b. Only magnetic steel crankshafts are permitted and must use the OEM crank throw angle.

c. Ceramic components are permitted within charging devices for turbo and supercharged engines only for bearings, variable diameter inlets, and adjustable internal vanes.
7.4. Major Components

7.4.1. OEM Production Components

a. All major components that are major automotive OEM production designed and supplied must be made available to the public for purchase in a regular product offering.

7.4.2. Aftermarket Components

a. The following items may be replaced with aftermarket components:
   i. Rocker arms
   ii. Lifters
   iii. Steel pushrods
   iv. Steel crankshaft
   v. Round aluminum pistons
   vi. Titanium or steel valves
   vii. Steel valve springs
   viii. Camshafts
   ix. Cam followers
   x. Timing chain/cam drive
   xi. Dry sump oil pump and system

b. Any aftermarket components must be specified in the engine homologation form.

7.4.3. Component Approval

a. IMSA must approve all components/parts prior to being used in competition.

7.5. Cylinder Block

7.5.1. General

a. The stock production cylinder block must be used.

7.5.2. Configuration

a. The number and angle of cylinders, material, number of main bearings and type, location of camshaft, and overall configuration must remain as the homologated production engine.

7.5.3. Cylinder Bore

a. The cylinder bore center must remain as the homologated production engine.

b. A maximum of 0.030 inch overbore is permitted.

7.6. Cylinder Heads

7.6.1. General

a. The stock production cylinder heads must be used.

7.6.2. Configuration

a. Cylinder heads must retain the same number and location of intake and exhaust ports, spark plugs, and camshafts (if used) as the homologated production engine.

b. Valve location, valve size and angles must remain stock as on the homologated production heads.

7.6.3. Variable Valve Timing

a. Any device that permits the modification of the valve opening timing and/or lift is considered variable valve timing and is not permitted.

7.6.4. Porting and Polishing

a. Intake/exhaust porting and polishing is permitted.

7.7. Throttle

7.7.1. General

a. Free

7.8. Intake: All Engine Types

7.8.1. General

a. Any faulty functioning of the intake plenum(s) is the Competitor's responsibility.

b. Active variable length intake manifolds are prohibited.
c. Other than fuel – for the normal purpose of combustion in the engine – internal and/or exterior spraying or injection of water or any substance is prohibited.

7.8.2. Air Tightness

a. The intake plenum(s) must be totally air tight in all circumstances.

b. If the intake plenum(s) is(are) made of several parts, they must be put together in such a way as to ensure total air tightness.

c. No pipe containing air is permitted to intrude into or to exit from the intake plenum(s).

7.9. Intake: Normally Aspirated Engines

7.9.1. Intake Plenum Pressure Measurements

a. A standard connection "Dash 3 male" is mandatory on the air box of normally aspirated engines for the possible connection of pressure measuring equipment.

b. The minimum diameter of the air outlet must be 2.4 mm (3/32 inch).

c. This connection must be:
   i. Easily accessible.
   ii. Outside the air flow above the induction trumpets, preferably facing the air intake(s).
   iii. Sealed when the measuring equipment is disconnected.

7.10. Intake: Turbo- and Super-charged Engines

7.10.1. Boost Pressure

a. Maximum permitted boost pressure will be defined by Competition Bulletin for each event.

7.10.2. Boost Pressure Measurement

a. For turbo-, and super-charged engines the air box pressure sensor delivered with the IMSA data logger kit must be fitted after the restrictor and before the turbo (see drawing below).

b. For cars with two charging devices, the sensor is mandatory on both charging devices.

c. To assist with engine mapping, it is permitted to add a pressure sensor in the restrictor area (pressure sensor #1).

d. In all cases (pressure sensor #1 and #2) the maximum opening diameter is 1 mm.

7.11. Air Restrictors

7.11.1. General

a. Inlet manifolds must be fitted with air restrictors made of metal or metal alloy.

b. All air feeding the engine must pass through the restrictor(s).

c. The length of the air restrictors must be a minimum 3 mm (as published in the Adjustment of Performance Bulletin).
7.11.2. Turbo- and Super-charged Engines

   a. A one-piece and airtight cone must be fitted between the restrictor(s) and the inlet diameter of the charging device.
   
   b. The cone must have a mandatory minimum opening of seven (7) degrees.
   
   c. To each base of the cone, over 10 mm in length, a round shape is permitted within the diameter of the restrictor and the charging device inlet.

7.11.3. Engine Stall

   a. Sealing the intake plenum directly at the air intake for the restrictor(s) must begin to stall the engine immediately.
   
   b. The pressure measured in the air box when the engine stops (engine RPM = 0) must be:
      
      i. Equal to the atmospheric pressure at the place where the test is carried out minus 150 mbar during the first half second.
      
      ii. Equal to the atmospheric pressure at the place where the test is carried out minus 100 mbar during the second half second.
      
      iii. Equal to the atmospheric pressure at the place where the test is carried out minus 50 mbar during the third half second.

7.12. Exhaust

7.12.1. General

   a. The exhaust is free except as stated below.

7.12.2. Configuration

   a. The exhaust system must be of round tubing.
   
   b. The exhaust system must remain within the perimeter of the bodywork when viewed from above.
   
   c. The exhaust must exit at a location forward of the rear wheel as defined in the side pod bodywork definition [18.7].
   
   d. Variable exhaust systems are prohibited.

7.13. Engine Control Unit

7.13.1. Traction Control

   a. Traction Control is permitted.

7.13.2. ECU Inspection

   a. IMSA may request the ECU or ECU data at any time.

ARTICLE 8. COOLING SYSTEM

8.1. Engine Water Radiator

8.1.1. Position

   a. The radiator must be mounted forward of the front bulkhead.

8.1.2. Mounting

   a. The radiator must be securely mounted at a maximum angle of 35 degrees off of the plane of the flat floor.
   
   b. Both the radiator and the splitter/underwing must be firmly attached to each other and retained in such a manner as to absorb maximum energy in a frontal impact.

8.1.3. Radiator Exhaust

   a. The engine water radiator must exhaust the hot air out of the bodywork forward of the windshield.
   
   b. The radiator may be visible when viewed from above.
   
   c. The radiator exhaust duct area may be adjustable in length but may not extend above surrounding body surfaces or be visible in side profile.

8.2. Coolers

8.2.1. General

   a. Additional engine, transmission and differential oil coolers are permitted provided no external bodywork modifications are required.
8.3. Fans

8.3.1. Radiator Cooling Fans
   a. Electric radiator cooling fans are the only type permitted.

8.4. Plumbing

8.4.1. Water Pumps
   a. Mechanically driven water pumps are the only type permitted

8.4.2. Expansion Cooling Tank
   a. An expansion cooling tank in the engine compartment is permitted.

8.4.3. Oil Reservoir Tank
   a. Oil reservoir tanks must be mounted within the main chassis framework.

8.5. Additives

8.5.1. Restrictions
   a. Glycol based additives are prohibited.

9.1. Fuel Cell

9.1.1. Specification
   a. Cars must use a safety fuel cell meeting FIA FT-5 or FIA FT-3.5 specifications.

9.1.2. Location
   a. The fuel cell must be contained in the volume between the cockpit firewall bulkhead and the engine/main roll hoop bulkhead and may not be located further than 25 inches from the centerline of the car.

9.1.3. Sealing
   a. The fuel cell must be sealed from the engine and cockpit compartments.

9.1.4. Fuel Cell Filler
   a. The fuel cell filler may not protrude beyond the bodywork.
   b. The fuel cell filler must not be located in the rear windows or any other vulnerable location.
   c. Bottom fill panels are prohibited.

9.1.5. Fuel Cell Venting
   a. Fuel cell vents may not protrude beyond the bodywork.
   b. Fuel cell vents must not be located in the rear windows or any other vulnerable location.

9.1.6. Breather Pipe
   a. Any breather pipe connecting the tank to the atmosphere must exit outside the bodywork.
   b. The breather pipe must be fitted with a gravity activated rollover valve to control fuel loss under any condition.

9.1.7. Fuel Cell Fittings
   a. All fittings in the fuel cell bladder must be metal fittings which are bonded to the bladder.

9.2. Fuel Pumps

9.2.1. General
   a. Fuel pumps are free except they may not be mounted in the driver compartment.

9.2.2. Shut Off
   a. The fuel pump must shut off when the engine stops running.
   b. The fuel pumps may contain a bypass system for startup.

9.3. Fuel Lines

9.3.1. General
   a. Fuel lines are free.
9.3.2. Sealing
   a. The fuel lines must be sealed from the engine and cockpit compartments

9.4. Refueling System

9.4.1. Fuel Probe
   a. The only permitted fuel probe system is the unmodified ATL red head #RE105.

9.4.2. Filler and Vent
   a. The probe must be fitted with a dual probe fuel tank filler and vent system.
   b. Both the filler and the vent must be equipped with a leak proof probe coupling complying with the dead man principle.
   c. The couplings must not incorporate any retaining device when in an open position.

9.4.3. Dry Break
   a. A twin probe dry break fueling/vent system must be used.
   b. The installed dry break must have the ability to be changed from the right to the left side of the car.
   c. The dry break must be installed on a metal plate firmly attached to the main roll bar of the car.

9.5. Fuel Capacity

9.5.1. Maximum Onboard Fuel Capacity
   a. The maximum onboard fuel capacity is specified in the Adjustment of Performance Bulletin(s).
   b. This capacity considers all components of the onboard fuel delivery system.

9.6. Fuel System Inspection

9.6.1. Fuel Cell Certification
   a. All rubber bladders must have a printed code naming the manufacturer, the specifications to which the tank has been manufactured, and the date of manufacture.
   b. Entrants must provide proof of certification upon demand.

9.6.2. Fuel Cell Inspection
   a. The fuel cell compartment must have an easily accessible panel located on top of the car above the cell, through which fuel cell inspections may be made.
   b. The top or side mounted fuel cell cover plate must be removable for inspection.

9.6.3. Fuel Sampling
   a. IMSA has the right to sample a Competitor's fuel at any time.
   b. Cars must be fitted with a self-sealing connector which can be used by IMSA to take a sample of fuel from the tank.
   c. This connector must be fitted immediately before the injector nozzles and approved by IMSA in writing.

ARTICLE 10. DRIVETRAIN

10.1. Clutch

10.1.1. Configuration
   a. The clutch must be a heavy-duty multiple-disc type.
   b. The clutch may use three or more discs with a minimum diameter of 5.5 inches.

10.1.2. Clutch Materials
   a. Clutch disc materials are free.

10.2. Flywheel

10.2.1. Flywheel Material
   a. The flywheel must be steel.

10.3. Gearbox

10.3.1. Configuration
   a. A maximum of six forward gears are permitted.
   b. A reverse gear is mandatory.
10.3.2. Gear Ratios
   a. Gear ratios are free.

10.3.3. Gear Selection
   a. Gear change systems initiated by manual lever (with direct mechanical linkage) or steering wheel mounted paddle shift levers (which control either an engine mounted electronic throttle controller or a pneumatic based engine throttle controller) are the only systems permitted.
   b. It must be possible that when seated and belted in a normal position the driver is able to select the reverse gear while the engine is running.

10.4. Differential

10.4.1. General
   a. The differential must be approved by IMSA.

10.4.2. Configuration
   a. Mechanical limited slip differentials are the only units permitted.
   b. The following groups are of this type:
      i. Non-ramp type
      ii. Limited slip
      iii. Clutch plate differential
      iv. Ramp type
   c. Hydraulic or electric systems are not permitted.

10.4.3. Ramp Angles
   a. Differential ramp angles are free.

10.4.4. Friction Materials
   a. Differential friction materials are free.

10.5. Bell housing/Adapter Plate

10.5.1. Material
   a. The engine to transaxle adapter plate must be made of steel or aluminum.

10.5.2. Configuration
   a. Suspension mounting points on/to the gearbox case(s) are prohibited.

10.6. Drive

10.6.1. Drive Type
   a. The vehicle must be driven from the rear wheels.
   b. Four-wheel drive is prohibited.

10.6.2. Axle Assembly
   a. The axle assembly includes output flanges, tripod joints, axles and hubs.
   b. The complete axle assembly must be approved.

10.6.3. Approved Axle Suppliers
   a. IMSA approved axle system suppliers are

   EMCO Gears, Inc.
   703 South Girlschool Rd.
   Indianapolis, IN 46231
   317 -243-3836

   Pankl Racing Systems
   16615 Edwards Road
   Cerritos, CA 90703
   562-677-7254

   Xtrac Inc.
   6183 West 80th Street
   Indianapolis IN 46278
   317-472-2454

ARTICLE 11. BRAKE SYSTEM

11.1. General

11.1.1. The brake system is free except as stated below.
11.2. Front and Rear Brake Circuits

11.2.1. Configuration

a. At least two separated circuits operated by the same pedal are compulsory.

b. The only connection between the two circuits is a mechanical system for adjusting the brake force balance between the front and rear axles.

c. No device or system is permitted between the master-cylinders and the calipers.

d. Sensors to collect information, brake light switches or mechanical brake pressure controls adjustable by means of tools are not considered as “systems” and must be fitted at the very exit of the master cylinders.

11.3. Brake Calipers

11.3.1. Configuration

a. Only one caliper per wheel is permitted.

11.3.2. Material

a. The caliper body must be made from aluminum alloy with a modulus of elasticity no greater than 80 GPa.

11.3.3. Caliper Pistons

a. The maximum number of caliper pistons is six.

b. The section of each caliper piston must be circular.

c. Titanium caliper pistons are permitted.

11.4. Brakes Discs and Pads

11.4.1. Configuration

a. One Disc per wheel maximum.

11.4.2. Material

a. Brake disc and pad material is free.

11.4.3. Dimensions

a. The front brake disc maximum diameter is 380 mm.

b. The rear brake disc maximum diameter is 355 mm.

c. The maximum caliper stack (disc plus pads) for all brake materials is 96 mm.

11.5. Brake System Restrictions

11.5.1. Anti-lock/ABS Braking Systems

a. ABS systems are prohibited.

11.5.2. Brake Cooling

a. Liquid and/or gas cooling of the brakes is prohibited.

b. Brake fluid re-circulating systems are prohibited.

ARTICLE 12. STEERING SYSTEM

12.1. General

12.1.1. Steered Wheels

a. Only the two front wheels may be used for steering.

12.1.2. Configuration

a. There must be a continuous metal linkage between the steering wheel and the steered wheels.

12.1.3. Steering Column

a. A magnetic steel collapsible steering shaft is required

12.1.4. Steering Wheel Coupler

a. A quick release metal steering wheel coupler is required.

12.1.5. Power Steering

a. Permitted

ARTICLE 13. DRIVER INTERFACE

13.1. Seat

13.1.1. Seat Construction

a. Seats must be carbon fiber shell

13.1.2. Seat Location

a. The driver’s seat must be located so that the inside edge of the seat is no more than 0.750 inch from the chassis centerline.
13.1.3. Seat Mounting
   a. Seats must be rigidly mounted to the chassis at the base and seatback.
   b. The gap between seat back and firewall must be filled with padding to prevent shell deflection in rear impacts.

13.1.4. Lateral Head Support
   a. If used, the lateral head support may be a part of the seat or may be mounted to the chassis.

13.2. Driver Adjustable Components

13.2.1. Spring and Damper Adjustments
   a. Spring and damper adjustments from inside the cockpit are prohibited.

13.2.2. Brake Bias Assembly
   a. Brake bias must be controlled by a manual adjuster.

13.2.3. Mirror Adjustment
   a. It is recommended the mirrors are capable of being adjusted by the driver when seated normally at the wheel, safety belts fastened.

ARTICLE 14. SUSPENSION

14.1. Suspension Design

14.1.1. Configuration
   a. Suspension must be four-wheel independent design.
   b. Suspension components must be utilized as homologated.

14.1.2. Materials
   a. Suspension members must be made from magnetic steel material.
   b. Chromium plating of steel suspension parts is prohibited.

14.2. Suspension Members

14.2.1. Front Suspension Members
   a. Front A-arms (wishbones) must contain anti-intrusion bars.

14.2.2. Rear Suspension Members
   a. All rear suspension and damper mounting/pickup points must be attached to the main chassis framework, the engine bell housing/adapter plate, and/or the gearbox/suspension mounting plate.

14.3. Spring Elements

14.3.1. Corner Springs
   a. Corner spring refers to a metallic coil spring which mounts onto a damper in a coil over style.
   b. Only one corner spring element per wheel is allowed.

14.3.2. Bump Rubbers
   a. Bump rubbers and/or packers are free.

14.3.3. Center Springs
   a. Third or center spring technology is prohibited.

14.4. Damper Elements

14.4.1. Corner Dampers
   a. Dampers must be of a conventional technology.
   b. Cambridge, J-Dampers, inerters, g-sensing technologies, and metallic or compressible fluids are prohibited.

14.4.2. Center Damper Elements
   a. Third or center damper technology is prohibited.

14.4.3. Cross-connected Damper Elements
   a. Cross-connected dampers are prohibited.

14.4.4. Damper Configuration
   a. Dampers with a maximum of four (4) external adjusters and one remote canister are permitted.
14.4.5. Approved Damper Models

a. The following brands and models of damper are approved:
   i. Dynamic Suspension DSSV
   ii. Penske 8760/8780

b. IMSA will maintain checking components in order to verify compliance and identical configuration.

c. Approved part listings will be provided upon request.

14.4.6. Damper Modifications

a. Except as listed below, Competitor modifications to or fabrications of complete damper components which are not produced by approved damper manufacturers are prohibited.

b. The following modifications are permitted:
   i. Oil bleeding vacuum machining port addition to the shaft bearings (Penske).
   ii. Machining of piston ID from .500 to .625 (in order to accept Penske decoupled top-out plate assembly AS-SCP454 or digressive blow off components P-DIG-A and D-PIG-B.

14.5. Anti-Roll Bars

14.5.1. Configuration

a. When used, anti-roll bars must be connected to the suspension by a solid link.

b. Links may be adjustable in length except during on-track operation, where the length must be fixed.

c. The use of rod end bearings is permitted.

14.5.2. Anti-roll Bar Adjustment

a. Driver adjustable anti-roll bars are permitted.

b. The adjustment mechanism may only consist of mechanically operated levers acting on “blade” style adjusters or connecting lengths moving on the length of the anti-roll bar “leg” or “arm”.

14.6. Ride Height Control

14.6.1. General

a. Active suspension is not permitted.

b. Hydraulic ride height adjustment of any kind is not permitted.

c. Any form of driver controlled ride height adjustment is not permitted.

ARTICLE 15. UPRIGHTS

15.1. Wheel Hubs

15.1.1. General

a. Cars must use the approved Riley Technologies front and rear spindle, drive pins, bearings, spools, and retainers as per design drawings.

15.2. Wheel Nuts

15.2.1. Permitted Types

a. Cars may use the Riley Technologies wheel nut or splined wheel nuts.

b. In both cases the locking device is required.

ARTICLE 16. WHEELS

16.1. Wheel Design

16.1.1. Configuration

a. Wheels must be 1, 2 or 3-piece design.

16.1.2. Material

a. Wheels must be manufactured using cast or forged aluminum only.

16.1.3. Identification

a. Wheels must have the car number permanently marked on the wheel centers.

16.1.4. Structural Inspection

a. It is recommended that competitors perform a thorough structural analysis of all wheels prior to use.
16.2. Dimensions

16.2.1. Diameter
a. All wheels must be 18-inch diameter.

16.2.2. Wheel Offset
a. Wheel offset is free.

16.2.3. Mass
a. The minimum weight for a single wheel with the tire removed is:
   i. Front: 22.5 lbs. or 10.21 kg
   ii. Rear: 23.5 lbs. or 10.66 kg

16.2.4. Complete Wheel and Tire Dimensions
a. The complete wheel and tire measured at the hub level must have a:
   i. Maximum width of 14.0"
   ii. Maximum diameter of 28.0"

ARTICLE 17. TIRES

17.1. Pressure

17.1.1. Pressure Control Valves
a. Tire pressure control valves are prohibited.

17.2. Technical Inspection

17.2.1. Tire Type
a. Technical Inspection will only be done on dry-type tires.

17.2.2. Tire Pressure
a. For inspection measurements IMSA will use dry-type tires set to a pressure of 28.0 psi.

17.3. Sensors

17.3.1. Tire Pressure Sensors
a. Sensors for the pressure and internal air temperature of the tires when the car is in motion are strongly recommended.
b. If these sensors are used, there must be at least one warning light to notify the driver of a possible failure.

ARTICLE 18. BODYWORK & EXTERNAL SURFACES

18.1. Homologated Bodywork

18.1.1. General
a. Each car must utilize homologated bodywork as defined during the AoP Aerodynamic testing.
b. A team may change bodywork a single time during a season; once the change is made they must utilize the changed bodywork from that point forward.

18.1.2. Manufacturer-specific Bodywork
a. Manufacturer-specific bodywork must correlate to the respective engine manufacturer, i.e. Corvette bodywork must only be utilized with Corvette engine, Ford bodywork only with Ford engine.
b. Unattributed bodywork must only be used by an engine manufacturer not currently paired with manufacturer-specific bodywork.

18.2. General Bodywork

18.2.1. General
a. Except what is permitted below, inside and outside measurements (length, width, overhangs, wheelbase, windscreen, windows, etc.) and the general shape of the bodywork elements must be maintained as in the Homologation Form.
b. As viewed from above (plan view), in side elevation, from the front and from the rear, the bodywork must not allow mechanical components to be seen, unless explicitly authorized by the present regulations.
c. Movable bodywork parts/elements are forbidden when the car is in motion.
d. Any system operated automatically and/or controlled by the driver to modify the airflow on the rear wing when the car is in motion is forbidden.

18.2.2. Air Intakes and Extractors

a. Air intakes are part of the bodywork.

b. If air intakes or air extractors make mechanical parts visible, they must be fitted with louvres or mesh about 10 mm (to Technical Officials’ approval).

18.2.3. Bodywork Materials

a. Bodywork may be made from fiber glass, carbon fiber, or Kevlar.

18.2.4. Surface Profiles

a. All outer body surfaces forward of the front wheel centerline must be principally convex.

b. Concave surfaces are only permitted with specific approval from IMSA.

c. This relates primarily to downforce created by a concave surface in front of the front tire opening.

18.2.5. Joints & Seams

a. Bodywork joints in the vicinity of the fueling connections must be designed in such a way as to prevent any leakage of fuel into the engine compartment or cockpit.

b. Bodywork joints/seams may not be taped or covered in any way other than to seal the specific bodywork area around the fuel filler to reduce leakage into the bodywork.

18.2.6. Bodywork Attachment

a. Bodywork must be rigidly secured to the sprung part of the car (chassis/body unit).

b. Bodywork must be securely fixed and remain immobile while the vehicle is in motion.

c. Any device or construction that is designed to bridge the gap between the sprung part of the car and the ground is prohibited.

18.2.7. Bodywork Restrictions

a. Bodywork must fully cover the circumference of all of the wheels and tires above the axle centerlines, as viewed from above, and all other mechanical components, except the radiator, including a valance to cover the rear of the car.

18.3. Greenhouse

18.3.1. Spec Greenhouse

a. All cars must use a greenhouse that is equal to the IMSA “Spec Greenhouse” which is available from IMSA.

18.3.2. Dimensions and Location

a. The Spec Greenhouse defines the minimum greenhouse surface from 23.0 inches above the reference plane to the top of the car.

b. It must be placed on the overall vehicle centerline, at 23.0 inches above the reference plane, and 0.2 inches behind the front wheel centerline on all cars.

18.3.3. Permitted Deviation

a. The maximum allowed deviation from the Spec Greenhouse is 1.0 inches at any location.

b. Deviations may be used for styling purposes only and should not create a significant aerodynamic benefit.

c. Any deviation from the Spec Greenhouse must be approved by IMSA in writing.

18.3.4. Inspection Dimples

a. There are 3 molded “dimples” in the Spec Greenhouse which may be used by IMSA as references for body inspection.

b. These must be present in all roof body components.

18.4. Bodywork Cross Sectional Limits

18.4.1. General

a. Approved body surfaces must be outside of all Cross Sectional Limits described below.

b. CAD images of these sections are provided in Figure 7 and Figure 8 for reference.
18.4.2. Section A-A
a. A transverse plane 4.0 inches behind the intersection of the front bodywork (nose) and the vehicle centerline in plan-view.
b. At this section, the bodywork must be outside of a rectangle that is 11.0 inches high and 34.0 inches wide with 3.0 inch radius at each top corner.

18.4.3. Section B-B
a. A transverse plane 20.0 inches forward of the front wheel centerline.
b. At this section, the bodywork must be outside of a section 4.0 inches high and 70.0 inches wide, and also 15.0 inches high and 56.0 inches wide.

18.4.4. Section C-C
a. A transverse plane located 15.0 inches forward of the front wheel centerline.
b. At this section, the bodywork must be outside of a rectangle that is 11.0 inches high and 77.0 inches wide.

18.4.5. Section F-F
a. A transverse plane located at the front wheel centerline.
b. At this section, the bodywork must be outside of a rectangle that is 22.0 inches high by 55.0 inches wide.

18.4.6. Section M-M
a. A transverse plane located at the center of the wheelbase.
b. At this section, the bodywork must be outside of a rectangle that is 3.0 inches high and 77.0 inches wide, also 23.0 inches high and 75.5 inches wide, and which has an 8.0 inch by 45 degree chamfer on each top corner to allow for styling of the side pod.
c. These dimensional constraints will apply to the sides of the car between the front and rear wheel openings unless specific features are approved.

18.4.7. Section R-R
a. A transverse plane located at the rear wheel centerline.
b. At this section, the bodywork must be outside of a rectangle that is 23.0 inches high by 55.0 inches wide.

18.5. Bodywork Dimensional Limits
18.5.1. Aft Bodywork
a. Between section R-R and the rear spoiler, the bodywork may not be less than 23.0 inches above the reference plane.

18.5.2. Central Bodywork
a. The bodywork between the front and rear axle centerlines must be a minimum of 23.0 inches high measured from the reference plane.
b. The bodywork must extend horizontally (or may be angled upward) to the greenhouse / cockpit / engine cover bodywork.

18.6. Body Panels
18.6.1. Outer Panel
a. An outer (outboard) panel which is visible, painted, and available for decals, is required.
b. Near the rear tire, this panel must be no more than 3.0 inches above the reference plane.

18.6.2. Inner Panel
a. An inner panel which is principally vertical (may have a radius on the bottom), is required.
b. This panel must be no more than 2.0 inches rearward of the tire outer surface along its forward edge, and may extend farther forward and indeed cover the inside of the tire if desired.
c. It must be connected to a bottom panel described below, and must be mated to an upper surface in some way as to direct the air from behind each rear tire rearward.
d. At the leading edge (near the tire surface) the "y" value for this panel must be no more than 22.75 inches.

e. At the trailing edge (where this panel meets the rear surface) the "y" value may be no more than 29.75 inches.

18.6.3. Bottom Panel

a. A bottom panel which closes out this volume behind the rear tire and separates this volume from the ground is required.

18.6.4. Rear Panel

a. A rear panel which is no less than 7.0 inches wide is required.

b. The area directly behind the frontal projection of the rear tires may have an opening under the tail light, as defined by the respective constructor and noted in the homologation.

18.6.5. Dash Bulkhead Panel

a. At the dash bulkhead there must be a flat vertical panel extending outward to the body work 16.0 inches high from the top of the flat floor, perpendicular to the longitudinal chassis centerline to seal off all air flow except air that is passing out a duct.

18.7. Side Pods

18.7.1. Exhaust Exit

a. The exhaust system must exit at the rear of the car or at a location fore of the rear wheel in a lower area of the side pod

b. An area of 8 inches X 8 inches in the lowest corner of this region is reserved for the exhaust exit.

18.8. Rear Valence

18.8.1. Bottom Edge

a. The bottom edge of the rear bodywork valance must be as defined by the respective constructor and noted in the homologation.

18.8.2. Rear Valence Venting

a. The rear valance may be vented using louvers or screens with maximum dimension of 0.25 inches that does not permit viewing into the rear compartment.

b. The rear valence and/or screen must remain unobstructed.

18.9. Underside

18.9.1. General

a. The bottom of the car must be flat from the front bulkhead to the forward most point of the diffuser and the full width of the bodywork not including the side pod tunnel, side to side with a tolerance of + 0.25 or - 0.00 inches.

b. The flat floor (reference plane) may protrude to a maximum of 1.0 inch on either side.

18.9.2. Main Floor Rub Blocks

a. Rub blocks may be added to the underside of the flat bottom of the car between the front and rear axle centerlines.

b. There may be a maximum of six areas, each 3.0 inches X 3.0 inches to accommodate the installation of the rub blocks.

c. The maximum thickness of the rub blocks in the rub block area is 0.250 inch.

d. These rub blocks may protrude below the minimum ground clearance requirement of 1.5 inches.

18.9.3. Diffuser Rub Blocks

a. TBD

18.9.4. Underside Restrictions

a. Add on components are not permitted.

b. No sprung part of the car is permitted below the reference plane.
18.10. Doors

18.10.1. General

a. Two functioning doors are required providing access to the driver and passenger compartment.

18.10.2. Configuration

a. The doors must be of symmetrical shape and size.

18.10.3. Door Openings

a. The minimum measurement from the reference plane flat floor to the bottom of the door openings is 12.0 inches.
b. The rear inside of the door must be supported laterally by a horizontal panel at a height of 16.0 inches from the reference plane (top of #9 A&B bars).

18.10.4. Visibility

a. Doors must not obstruct the driver’s lateral vision.

18.10.5. Side Windows

a. Transparent polycarbonate side windows may be installed.
b. Refer to ARTICLE 19: WINDSHIELD & WINDOWS for more information.

18.10.6. Modifications

a. Modifications to doors for the purpose of installing ducts must be approved by IMSA.

18.11. Fenders

18.11.1. Vertical Face Spacing

a. The inner vertical faces of the inner fenders must be at least 45.5 inches apart symmetrically down the centerline of the car. In this area, no interior or exterior panels are permitted from the reference plane to the underside of the exterior body/valance.

18.11.2. Rear Fenders

a. Behind each rear tire must be a rear fender which is defined as one of several required bodywork elements.

b. The net result of these required bodywork elements is that the flow exiting the rear of the car is divided into 3 volumes—one in the center and one behind each rear tire.
c. Trimming of the rear fender is permitted provided the constructor’s specifications as defined by the homologation are respected.

18.12. Wheel Arch Openings

18.12.1. Clearance

a. The front and rear wheel arch may have no more than 2.0 inches of clearance between the outside of the tire and the bodywork at the wheel centerline.
b. For both the front and rear tires, this maximum gap must be satisfied at the rear of the tire (aft) by bodywork at a minimum width of 33.5 inches from the vehicle centerline on each side.
c. Stated another way, this gap must be satisfied no more than 5.0 inches inboard of the 77.0 inch wide side pod reference surface.
d. See Figure 2 and Figure 3 for reference.

18.13. Wheel Wells

18.13.1. General

a. Wheel wells must be complete, unmodified, and remain open as viewed from the side.
b. No covers or doors are permitted.

Figure 2: Front maximum wheel arch opening
ARTICLE 19. WINDSHIELD & WINDOWS

19.1. Windshield

19.1.1. Material

- The windshield must be made from clear polycarbonate, or D.O.T. type approved safety glass.

19.1.2. Thickness

- The minimum thickness of the windshield is 0.1875 inch.

19.1.3. Mounting

- The windshield must be mounted symmetrical to the longitudinal centerline of the car and must span the entire cockpit width.
- The top of the windshield must end forward of the halo bar.

19.1.4. Openings

- No openings are permitted in the windshield.

19.2. Rear Window

19.2.1. General

- All cars must have a transparent polycarbonate rear window above the engine compartment.

19.2.2. Dimensions

- The minimum area of the rear window is 700.0 square inches.
- The minimum rear window thickness is recommended to be 0.266 inches.

19.2.3. Openings

- A maximum of two clear plastic flush NACA ducts may be installed in the rear window.
  - These NACA ducts may be transparent if required to achieve the minimum visible area rule but may be opaque if sufficient area is available to achieve the requirement.
  - They may not alter the profile of the roofline or rear window.
  - They may be used to direct air to the engine or direct air into or out of the engine compartment for the specific purpose of cooling a component.
  - The maximum size of each duct is 10.5 inches by 19.0 inches if a single duct is present and 12.0 inches by 9.0 inches if two ducts are present.

19.3. Attachment

19.3.1. General

- The windshield and rear window must be positively retained by cam locks or 10-32 threaded fasteners.
- A maximum spacing of 11” along top, sides, and bottom will be permitted.
- An alternate fastening method may be approved by IMSA upon request.

19.4. Tint and Glazing

19.4.1. Windshield

- The windshield must be clear.
- Any tear-off or film applied to the windshield must be clear.

19.4.2. Rear Window

- Transparent films may be added to the rear window.
19.4.3. Side Windows
   a. Transparent films may be added to the side windows, and, if present, the rear side windows.

19.4.4. Approval
   a. Any film applied to windows must meet the Technical Inspectors’ approval that the driver and cockpit interior are visible.

19.5. Windshield Wipers
19.5.1. General
   a. A windshield wiper must be installed at all times.
   b. This wiper must be functional at all times.

ARTICLE 20. AERODYNAMIC DEVICES

20.1. Ducts, Openings and Vents
20.1.1. Restrictions
   a. The only air allowed to pass through the inside of the car from the dash bulkhead to the engine/main roll hoop bulkhead must only pass above the side pod structure(s) or via the approved side exit duct, if present.
   b. Any air intake ducts/openings in the exterior bodywork must duct all of the air directly to the brakes, through a cooler, or directly into the engine compartment, intake, or cockpit for the purpose of cooling the driver or a component.
   c. These ducts may also exhaust air from the cockpit.
   d. Additional ducting may be added to the door windows upon the written approval of IMSA.
   e. Except where stated within these regulations, no ducts or openings are permitted from the front wheel well/arch to the engine/main roll hoop bulkhead along the vertical sides of the car and below a horizontal plane 20.0 inches above the flat floor reference plane.

20.1.2. Forward Side Exit Duct
   a. Up to two (2) openings per side are allowed in the side bodywork behind the front wheel.
   b. These openings must satisfy all other regulations, may be used exclusively for venting air out from under the body, and do not need to be associated with cooling of any component or system.
   c. Each opening must be completely surrounded by bodywork.
   d. Any such opening must be entirely within an area up to 28.0 inches behind the front wheel centerline and up to 22.0 inches above the reference plane.
   e. The total open area allowed is 50.0 square inches per side.
   f. Any such opening must not be connected to the front wheel arch bodywork.
   g. No mechanical components may be visible from the side view through such openings except the Crawford side pod crash structure.

20.1.3. Rearward Side Ducts
   a. All cars are allowed a single duct per side, behind the engine/main roll hoop bulkhead on the sides of the car below the 20-inch reference, with a maximum opening of 6.0 inches high by 12.0 inches long.

20.1.4. Engine Air Intakes
   a. Engine air intakes must be a single opening located aft of the rear window and fore of the rear spoiler along the centerline of the car.
   b. Additional engine compartment ventilation may also be ducted through clear NACA ducts located in the rear window.
   c. No other types of engine air intakes are permitted.

20.1.5. Cockpit Exhaust Vents
   a. A maximum of two 11.0 square inch vents may be installed in the roof for exhausting air from the cockpit.

20.2. Air Extractors
20.2.1. General
   a. Air Extractors above the front and rear wheels are mandatory.
20.2.2. Front Wheel Air Extractors
   a. As viewed from above they must:
      i. Leave the tire visible aft from the front wheel center line.
      ii. Utilize only the pre-existing louver opening as defined by the respective constructor and defined in the AoP.

20.2.3. Rear Wheel Air Extractors
   a. As viewed from above they must:
      i. Leave the tire visible.
      ii. Have a minimum surface area of 1200 cm² centered about the rear wheel center line.
      iii. Respect the constructors defined location template.

20.3. Louvers
   20.3.1. Front Wheel Louvers
            a. Louvers above the front wheels/tires shall be defined by the respective aerodynamic AoP.
   20.3.2. Rear Wheel Louvers
            a. Rear wheel louvers are not permitted.

20.4. Wickers and Gurneys
   20.4.1. Radiator Exhaust
            a. A 1.0 inch gurney may be added to the radiator exhaust duct area.
            b. Any added material must be painted to match the car color.
   20.4.2. Forward Side Exit Duct
            a. A wicker may be allowed or required at the leading edge of any forward side exit duct opening on each side by IMSA for Aerodynamic Balance.

20.5. Splitter/Underwing
   20.5.1. General
            a. For each homologated body specification, high down force and low down force, OEM Brand or Constructor Brand, one single splitter/underwing configuration will be homologated for each aerodynamic specification, regardless of which chassis it is utilized on.
            b. All components must be as specified on the Adjustment of Performance Bulletin (AoP), purchased from an approved manufacturer, and may not be modified by the Competitor.

20.6. Side Pod Tunnel
   20.6.1. General
            a. The side pod tunnels as supplied by the respective constructor and defined in the homologation are required and must be installed in the IMSA defined location.
   20.6.2. Modifications
            a. No modification to the tunnel shape, opening or location on the Car is permitted.
            b. Screen is permitted to be installed over the side pod tunnel opening to protect against debris entering the engine compartment.

20.7. Rear Wing Assembly
   20.7.1. General
            a. The rear wing assembly includes the rear wing main plane, rear wing flap, and endplates.
            b. The rear wing assembly must be as specified by IMSA.
   20.7.2. Mounting Position
            a. The rear wing assembly must be mounted at the rear of the car.
            b. The rear wing assembly must use the standard wing support mounting position as specified by IMSA, the respective constructor, and as defined in the homologation.
   20.7.3. Restrictions
            a. The rear wing assembly is subject to the following limitations:
i. The rear wing main plane must not be adjustable.

ii. The rear wing position must be symmetrical to the centerline of the car.

20.7.4. Rear Wing Supports

a. Wing supports must be manufactured of flat aluminum or steel plate with a simple radius at the leading and trailing edges.

b. Wing supports must be mounted to the sides of the gearbox.

c. No add-on aero covers or additions are permitted.

d. Wing supports must be unmodified and utilized as supplied by the respective constructor and as defined in the homologation.

20.7.5. Rear Wing Assembly Supplier

a. The exclusive approved rear wing assembly supplier is Multimatic Engineering, part #12962-02-0002.

20.8. Rear Spoiler

20.8.1. General

a. A single continuous rear lip spoiler may be added to the rear of the car provided it complies with the dimensional requirements for rearview mirror visibility.

b. Air must not pass under the bottom side of the spoiler.

c. Spoilers and spoiler wickers must not be slotted to accommodate interference with rear wing end plates.

20.8.2. Rear Spoiler Dimensions

a. The rear spoiler may be no wider than 77.0 inches.

b. An allowable chord (length) for the spoiler will be specified for each body, but the nominal value for design purposes is 5.0 inches.

c. A range of angle settings may also be specified for each approved chassis/body combination, as part of the aerodynamic balance process.

20.8.3. Rear Spoiler Profile

a. The rear spoiler may be curved as needed in the side view.

b. The rear spoiler must not have cupped ends.

20.8.4. Rear Spoiler Mounting

a. The rear spoiler must be symmetrically mounted to the rear of the car as per Constructors instructions.

b. The rear spoiler must be supported from the rear to withstand the test loads defined in 20.8.6.

c. IMSA reserves the right to review spoiler mounting strategy and may require additional bracing.

20.8.5. Rear Spoiler Pivot Axis

a. The pivot axis must be at least 23.0 inches above the reference plane.

b. Spoiler pivot location may not be changed once the bodywork has been homologated.

20.8.6. Rear Spoiler Deflection Test

a. IMSA will apply a vertical load of 35 lbs. by hanging a weight from the rear spoiler.

b. This will be accomplished by utilizing a 1 inch tab at various locations along the trailing edge of the rear spoiler.

c. Maximum deflection shall be 0.25 inches per 35 lbs.

d. Measurement shall be indexed from the top surface of the rear wing main plane to compensate for suspension deflection or tire compression.

20.9. Diffuser

20.9.1. Specified Part

a. The diffuser must be the specified IMSA fixed diffuser assembly (Multimatic Engineering, part #12962-02-0004) mounted in the manufacturer’s design position.

20.9.2. Position

a. The diffuser position must be symmetrical to the centerline of the car, and use the standard diffuser support mountings as specified by the respective constructor.
b. The flat surfaces of the diffuser from the leading edge of the diffuser to the leading edge of the gearbox access panel are considered extensions of the flat floor and must comply with the bodywork regulations in section 5.4 Chassis Floor (see Figure 4).

c. The trailing edge of the upper surface of the diffuser, as viewed from below, must be confined to the area within 287.5 mm +/- 6.0 mm as measured above the reference plane (see Figure 5).

d. The trailing edge vertical surface of the diffuser must lie within 914.4 mm +/- 3.0 mm as measured aft of the rear axle centerline (see Figure 6).

20.9.3. Permitted Modifications

a. The diffuser may be trimmed as specified by the manufacturer and the respective constructor, as defined in the design specification.

b. The joggle on the diffuser may be reversed.

c. Holes may be drilled for the purpose of air or quick jacks and ride height sensors.

d. No other modifications are permitted.
ARTICLE 21. ELECTRONICS AND DATA ACQUISITION

21.1. General Wiring and Electronics

21.1.1. Starter

a. A starter must be fitted and be in working order at all times.

b. The Driver must be able to operate the starter when seated normally.

21.1.2. Ignition System

a. The ignition system must be homologated.

b. Magneto's are prohibited.

c. The standard firing order, as declared on the engine homologation document, must be maintained.

21.1.3. Batteries

a. Batteries must be securely mounted, sealed, insulated, and able to start the car at all times.

b. 12 volt systems are the only type permitted.

21.1.4. Dash

a. Electronic or digital dashes are permitted.

21.2. Master Electrical Disconnect

21.2.1. General

a. A master electrical disconnect switch is required within the reach of the Driver.

21.2.2. Function

a. The master electrical disconnect is a contactor, i.e. a switch with physical contacts and NOT a semiconductor device.

b. The master electrical disconnect must function to:

   i. Cut off all electrical transmission of the auxiliary circuit (auxiliary battery and possibly the alternator to the loads such as lights, ignition, electrical controls, etc.) and

   ii. Stop the engine.

c. The master electrical disconnect must be activated by at least one trigger switch from inside or outside the vehicle.

21.3. Grounding

21.3.1. Chassis Ground, Vehicle Ground and Earth Potential

a. Chassis (Vehicle and Bodywork) Ground, hereinafter named “Chassis Ground”, is the electrical reference potential (earth potential) of all conductive parts of the bodywork including the chassis and the safety structure.

b. Ground must be connected to chassis ground.

21.4. Data Acquisition and Telemetry Systems

21.4.1. Data Transmission

a. Telemetry systems which communicate/transmit data from the car to the pit are permitted.

b. Two-way telemetry communication/transmission of data (pit to car) is not permitted.

21.4.2. Data Acquisition Systems

a. All Daytona Prototype-based race cars must use an IMSA approved ECU, engine, and chassis harness.

b. Data acquisition systems containing a separate wiring system with visible wire tracing ability are permitted.

21.5. Electronic Control

21.5.1. General

a. Automatic or electronic chassis control systems not specified in these regulations are not permitted.

21.6. IMSA Data Logger

21.6.1. General

a. Cars must be equipped with the data logger or telemetry system as specified by IMSA.

b. The IMSA data logger must be fitted and tested satisfactorily before the car undergoes Technical Inspection.
21.7. Electronics Inspection

21.7.1. General

a. IMSA may request chassis data from the primary data logger at any time.

b. Such requests must be respected by the Competitor.

ARTICLE 22. LIGHTING

22.1. Driving Lights

22.1.1. General

a. Lighting includes head lights, tail lights, and brake lights.

b. Headlights, tail lights and brake lights must be fitted and operational at all times, including when the car is stopped and/or if the engine is not running; as detailed in the IMSA Sporting Regulations.

22.1.2. Primary Headlights

a. Primary headlights must be located forward of and outboard of the inner edge of the front tire, and

22.1.3. Brake and Tail Lights

a. Brake and Tail lights must be located above the axle centerline and aft of and outboard of the inner edge of the rear tire.

22.1.4. Additional Driving Lights

a. Additional driving lights are permitted but must be approved and located within the bodywork.

22.2. Rain Light

22.2.1. General

a. All cars must have a red light of at least 21 watts or equivalent.

b. The rain light must be in working order throughout the event.

c. The driver must be able to switch on the rain light when seated normally in the car.

22.2.2. Specifications

a. The rain light must be in compliance with the ECE R38 road standard (or an equivalent or stricter standard from another country) or approved by the FIA (Technical List n°19).

b. The rain light must be clearly visible from the rear.

22.2.3. Location

a. The rain light must be mounted no more than 100 mm from the car center line.

b. The rain light must be at least 350 mm above the reference plane.

c. These two measurements will be taken to the center of area of the lens.

ARTICLE 23. SAFETY EQUIPMENT

23.1. Safety Belts

23.1.1. General

a. Two shoulder straps, one abdominal strap and two straps between the legs complying with either FIA standard 8853-98 or SFI standard 3" 16.1 or 2" 16.5 are mandatory.

b. Belts must be replaced as per the manufacturer specifications.

23.1.2. Mounting/Anchoring

a. The safety belt mounting points shall be capable of resisting a 25 g deceleration.

b. It is prohibited for the seat belts to be anchored to the seats or their supports.

23.1.3. Restrictions

a. Two buckle safety belts are not permitted.

b. Attachment of the individual straps to each other by any method other than Velcro is not permitted.

c. Elastic cords fixed to the shoulder straps are prohibited.
23.2. Fire Extinguisher Systems

23.2.1. General
a. Daytona Prototypes must utilize an IMSA approved fire extinguisher system.

23.2.2. Fire Extinguisher Actuation
a. The primary actuator for the fire extinguisher system must be mounted within reach of the driver when fully strapped in.
b. Triggering is by means of a PULL actuator or an Electric Push Button.

23.2.3. Fire Extinguisher System Components
a. Only approved supplier components may be used.

23.2.4. Servicing and Certification
a. All system components must be used and serviced per supplier’s specifications.
b. Systems are certified for a 2 year period.
c. All systems must be manufactured or recertified in this period and have the certification present on each extinguisher.

23.3. Single Bottle Fire Extinguisher Systems

23.3.1. Configuration
a. A single bottle fire extinguisher system may be used provided the system is homologated by the FIA in accordance with Article 253-7.2.
b. Cars utilizing a single bottle fire extinguisher must configure the system to deliver extinguishing medium to both the cockpit and engine/fuel compartment.
c. A single bottle system must include the fire bottle, multiple nozzles, thermally activated switch, and manual actuator.

23.3.2. Minimum Extinguishing Capacity
a. For bottles using foam (AFFF) the minimum extinguisher capacity is 3.0 L.
b. For bottles using gas (FE36 or Novec 1230 only) the minimum extinguisher capacity is 2.5 kg.

23.3.3. Nozzle Arrangement
a. A single bottle fire extinguisher must be configured to deliver the extinguishing medium to the cockpit and engine compartment in a ratio of 1:2, i.e. 2 nozzles in the cockpit, and 4 nozzles in the engine compartment.

23.3.4. Thermal Activation
a. The fire extinguisher system must use a remotely mounted, 140 - 180 degree Celsius, fast response thermal switch or thermal sensor.
b. Thermal sensors must be placed in the engine compartment and cockpit.

23.3.5. Approved Single Bottle Extinguisher Suppliers
a. Approved suppliers can be found on listed in the FIA Technical List N°16 “Extinguisher systems homologated by the FIA” (Published May 14, 2012).
b. This list can be found at:

23.4. Dual Bottle Fire Extinguisher Systems

23.4.1. Configuration
a. Cars utilizing a dual bottle fire extinguisher system must have separate fire bottles for the engine/fuel compartment and for the cockpit.

23.4.2. Cockpit System Fire Extinguisher
a. The cockpit system must consist of a minimum 2.5 lb capacity FE36 bottle.

23.4.3. Engine Compartment Fire Extinguisher
a. The engine compartment system consists of a minimum 10 lb capacity bottle or equivalent of Halon 1211, Novec 1230, or FE36 (Note: IMSA will phase out Halon 1211 in the future).
b. The engine compartment fire extinguisher must use a remotely mounted, 286 degree Fahrenheit, fast response, thermal sensor and optional cable mounted manual override.
The thermal sensor and nozzle must be mounted to the firewall above the fuel cell per the supplier's recommendations.

d. The optional manual override cable must be PULL actuated and mounted within easy reach of the driver when fully strapped in.

23.4.4. Approved Dual Bottle Extinguisher Suppliers

Firefox Industries
James Zwergel
3243 Old Frankstown Rd.
Pittsburg PA 15239
(724) 733-3936

Safecraft Inc.
Steven Baker
5165-C Commercial Circle
Concord, CA 94520
(925) 405-0307

a. No other system or extinguishing agents are approved for dual bottle extinguisher systems.

23.5. Emergency Switches

23.5.1. Electrical Disconnect

a. All cars are required to install an additional electrical switches located outside of the car on the cowl at the base of the Drivers side "A" pillar.

23.5.2. Fire Bottle Actuations

a. All cars are required to install an additional fire system trigger located outside of the car on the cowl at the base of the Drivers side "A" pillar.

23.6. Mirrors

23.6.1. General

a. Cars must be equipped with two functional outside/front fender/A-pillar rear view mirrors.

b. Mirrors must be consistent with each respective manufacturer.

23.6.2. Dimensions

a. The minimum mirror dimension is 2 5/8" X 5 5/8".

b. An open unobstructed area measuring 7" X 11" (with a 1" chamfer on each corner) must be maintained from the mirror to the rear of the car.

23.7. Bulkheads

23.7.1. Rear Engine Bulkhead

a. The rear engine bulkhead separating the driver compartment from the engine compartment must be maintained with no holes or openings of any kind.

23.8. Padding

23.8.1. General

a. All areas of the cockpit where the driver may come in contact must be padded with proper high-density energy absorbing material.

b. It is also permitted to add shielding to protect the driver from injury due to contact.

23.8.2. Lateral Head Support

a. If used, the lateral head support must be rigid and have minimum of 2 inches SFI 45.2 padding.

23.9. Side Nets

23.9.1. General

a. The use of center and door side nets is required.

b. Constructor supplied installation kits are required.

c. Side nets must be replaced as per the manufacturer specifications.

23.9.2. Side Net Installation – Without Lateral Head Support

a. For seats without lateral head supports the nets should be along the longitudinal centerline of car.

b. Net should be as close to helmet as possible, with minimal angular divergence permitted.

23.9.3. Side Net Installation – With Lateral Head Support

a. For seats with lateral head supports the installation is similar but net must be in contact with head support and attached slightly inboard at the rear so as to partially wrap around the support.
b. The nets should be installed with some tension.

c. It is the team’s responsibility that the upper strap of net is at or above center of gravity of helmet for all Drivers.

23.10. Wheel Tethers

23.10.1. General

a. It is mandatory that all Daytona Prototype-based race cars have the front and rear uprights linked to the frame using Vectran HS V-12 fiber cables (tethers).

23.10.2. Wheel Tether Kits

a. Each approved Daytona Prototype constructor has available an all-inclusive kit containing all wheel tether components and installation instructions.

b. The approved constructor kit must be used.

23.10.3. Wheel Tether to Chassis Attachment

a. On the chassis end the tether must either loop around a chassis tube or be otherwise securely retained.

23.10.4. Wheel Tether to Upright Attachment

a. On the upright end the tether may be looped through openings in the upright, or captured by a substantial bolt-on structure or dedicated mounting loop attached to the upright.

23.10.5. General Wheel Tether Attachment

a. These attachments must be as designed by the constructor and approved by IMSA for each chassis type.

b. Tether attachment points may not be common with any other suspension mounting points.

c. Attachment should be secured such that it exceeds the tensile strength of the tether.

23.11. Towing Eyes

23.11.1. General

a. All cars must be equipped with a strong steel, steel cable, Kevlar rope or at least 6000 series aluminum, clearly marked towing eye front and rear.

b. The towing eye must have an eye diameter of not less than 2 inches and not more than 4 inches with a minimum thickness of 0.312 inches.

c. Towing eyes must be painted a contrasting color, red, yellow or orange.

23.12. Delphi Safety Light System

23.12.1. General

a. All cars must use the Delphi Course Condition In-Car Safety System.

b. All cars must have the system functioning before any Session.

23.12.2. System Components

a. IMSA will supply each registered car with the receiver.

b. The wiring harness is available for purchase.

23.12.3. Installation

a. The system must be installed per the provided directions, including mounting of the antenna externally.

b. The receiver and complete mounting bracket must be installed as a system.

23.12.4. Ownership

a. Once issued by IMSA, the system remains the property of IMSA at all times.

b. If not returned upon request, the Entrant will be fined for replacement.
ARTICLE 24. ADJUSTMENT OF PERFORMANCE

24.1. Aerodynamic Adjustment of Performance

24.1.1. General

a. Daytona Prototype-based models may be evaluated and adjusted at any time.

b. Each submission must have aerodynamic properties that meet IMSA targets for aerodynamic performance.

c. For each Daytona Prototype, a series of specifications will be published that will govern body features that impact aerodynamic performance.

d. These specifications may require a precise setting or may specify a limited range of settings that must be adhered to at all times.

e. Aerodynamic changes shall be defined in the Adjustment of Performance Bulletin which shall supersede the regulations herein when specified in such a bulletin.
Figure 7: Daytona Prototype bodywork cross-sections for defining the cross-sectional limits
Figure 8: Daytona Prototype bodywork cross-sectional limits
Figure 9: #3 bar at endpoints

Figure 10: #3 bar at centerline