

## G. FORMULA 1000 (FB) PREPARATION RULES

Formula 1000 is a restricted class. Therefore, all allowable modifications, changes, or additions are as stated herein. There are no exceptions. IF IN DOUBT, DON'T. Homologation is required for all cars. *All FB Sport Racing Cars competing in Majors Races must have the AIM part #DNKTKPFSOL5 data box mount installed on their vehicle to provide the necessary mounting of the AIM Solo Data box. The mounting surface is to be approximately oriented either horizontally or vertically either parallel or perpendicular to the longitudinal axis of the car and must be accessible from the exterior of the car with the driver on board -- it should have a view of the sky, and not be located under carbon fiber or metallic bodywork. In addition the mount must not be on wings, and or wing end plates and where possible should be in the cockpit. The purpose of this requirement is to allow the random placement of data boxes on cars on pre-grid by SCCA assigned personal and the collection of the box when the car exits the race track. Effective date March 1, 2014. Contact AIM and their distributors for direct purchase.*

### 1. Definition

A formula for purpose built, open-wheel, open cockpit racing cars. F1000 allows converted Formula Continental, Formula 2000, Formula F, and purpose-built motorcycle-powered tube frame chassis. Re-homologation as an F1000 is required for all converted cars.

### 2. Chassis

- A. The chassis shall be of tubular steel construction only. Composite construction (defined as carbon fiber, Kevlar, honeycomb or fiber-glass) in a structural application is prohibited, except as specifically allowed in these rules. Stress bearing panels are not permitted except as specifically allowed in these rules. Stress bearing panels are defined as sheet metal affixed to the frame by welding, bonding, rivets, bolts, or screws which have centers closer than 150mm.
- B. The soles of the driver's feet shall not extend beyond the front edge of the wheel rims (in normal position; i.e., pedals not depressed) and shall remain behind the front bulkhead. The lower mainframe tubes shall be a minimum of 25cm apart (inside dimension) from the front bulkhead to the rear roll hoop.
- C. The area between the upper and lower main frame tubes from the front instrument/dash roll hoop bulkhead to the rear roll hoop bulkhead shall be protected by at least one of the following methods to prevent the intrusion of objects into the cockpit. Panels may extend to the forward most bulkhead, but must otherwise comply with these regulations.
  1. Panel(s), minimum of either .060 inch heat treated aluminum (6061-T6 or equivalent) or 18 gauge steel, attached to the outside of the main frame tubes.
  2. Reinforced body, consisting of at least two layers of 5 ounce, bi-directional, laminated Kevlar material incorporated into the body which shall be securely fastened to the frame. (5 or more layers are highly recommended.)  
 For either method, fasteners shall be no closer than 6 inch centers (no stress-bearing panels). The material used for the chassis braces in this area shall be at least equivalent to the roll hoop brace material.
3. Flat composite panels of uniform thickness and construction

attached to the outside of the main frame tubes. Shaping of these panels to conform to the outer perimeter of the main frame tubes is permitted. Carbon fiber is permitted; however, it must be used in conjunction with another "anti-ballistic" type material (e.g., Kevlar, Zylon, etc). Such material shall be at least 1.5mm (.060 inches) in thickness not including the carbon fiber.

Composite anti-intrusion panels shall be attached with no more than eight fasteners per side. Fasteners shall be AN or superior grade of not more than 0.25 inch diameter. Two flat or countersunk Mil Spec or SAE washers of no more than 1 inch diameter may be employed with each fastener. Ten fasteners per side are permitted if the panels extend to the front bulkhead.

Alternatively, FIA mounting is permitted as follows:

One panel shall be permitted per side. It shall be fastened to the frame at its extreme corners, the upper, lower, forward and rearward edge halfway between the corners, and halfway along each diagonal tube. The attachment should consist of an 8mm U-bolt and an aluminum plate 3mm thick, 20mm wide and 12mm longer than the U-bolt span.

Composite panel mounting must comply with one or the other above prescribed methods. It may not be a combination of the two.

- D. A stress-bearing floor pan/undertray is permitted between the front bulkhead and the rear axles. Composite or stabilized materials shall not be used for stress-bearing panels. The mountings for brake and clutch pedals and cylinders (front bulkhead), instruments, (front roll hoop bulkhead), and rear roll hoop bulkhead (behind the driver) may be stress bearing panels, also. The firewall portion of the rear roll hoop bulkhead (panel) shall extend the full width of the cockpit. Forward facing air ducts may be installed to deliver air directly to the engine area. Air duct openings may be located within the cockpit provided the firewall is extended to prevent flame and debris from reaching the driver. (Any shape may be used to form the firewall extension.) All firewall inlets shall prohibit passage of flame and debris.
- E. Brackets for mounting components, such as the engine, transmission, suspension pickups, instruments, clutch and brake components, and body panels may be ferrous, aluminum alloy, or magnesium alloy, of any shape, and fastened to the frame in any manner.
- F. No engine oil or water tubes are permitted within the cockpit.
- G. It is not permitted to construct any suspension member in the form of an asymmetrical airfoil or to incorporate a spoiler in the construction of any suspension member. Symmetrical streamlining of suspension members is permitted.
- H. *Front impact attenuation structures are required and rear impact attenuation structures are highly recommended.* Impact attenuation structures shall be securely attached to the entirely sprung part of the car. Attachment of any front impact attenuation structure shall not extend more than 50mm to the rear of the front bulkhead. Impact attenuation structures may be fabricated from metallic and/or composite materials.

### 3. Bodywork and Airfoils

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- A. See Table 5. (Airfoils are a requirement for this class.) Forward-facing roll bar/roll cage bracing and required padding will not be considered in the cockpit opening dimensions shown in the table.
- B. The driver's seat shall be capable of being entered without the manipulation or removal of any part or panel, except the steering wheel and/or driver's head surround structure. The steering wheel and head surround must be removable by the driver without the use of any tools.
- C. Carbon fiber is prohibited in any external panels or any panels licked by the airstream (e.g., radiator ducting or engine air inlet), with the exception of impact attenuation structures. Carbon fiber may be used in internal panels and components (e.g., instrument panel, radio boxes) unless otherwise restricted.
- D. The entrant shall designate a flat rectangular reference area with minimum dimensions of 30cm by 30cm. This reference area is located on the lower surface of the car (the surface licked by the air stream) between the rear of the front tire and the front of the rear tire. The center of the reference area must be no more than 75mm from the longitudinal centerline of the vehicle.

Between the rear of the front tire and the front of the rear tire, no point on the lower surface of the car (the surface licked by the air stream) shall be more than 25mm above the plane determined by the reference area designated by the entrant and on a line perpendicular to that reference plane. No point on the lower surface of the car may be below the plane determined by the reference surface on a line perpendicular to that reference plane, except as specifically permitted herein. Compliance with these requirements shall be accomplished by placing a straight edge on the reference surface designated by the entrant and verifying that the requirements are met. A maximum of four (4) rub blocks of maximum dimension 75mm by 125mm are allowed anywhere on the lower surface of the chassis, and may extend below the reference plane.

- E. A diffuser is permitted behind the front of the rear tires. The diffuser may be divided internally into multiple sections. The radius of transitions between the diffuser sides and adjacent horizontal structures may be up to 25mm. The width of the diffuser, as measured between its sides and above any radiused transitions, may not exceed 95cm in any lateral section. Strakes within the diffuser are allowed.
  - F. Movable aerodynamic devices, including aerodynamic skirts, are prohibited.
  - G. The maximum permitted width of the bodywork is 150cm. The width of the entire lower surface of the car between the rear of the front tires and the front of the rear tires shall not exceed the maximum width of the bodywork by more than 50mm and shall not exceed 150cm.
  - H. The safety roll bar/roll cage and engine air box are not included in the maximum height restriction (dimension C in Table 5).
  - I. There shall be no forward facing gaps or openings in the bodywork with the exception of those necessary for engine cooling, engine air inlet, shock, or brake cooling. All bodywork shall be firmly attached to the chassis.
4. **Engines**
- A. Motorcycle-based 4-cycle up to 1000cc.

- B. Engine components (including cylinder heads and blocks) must remain stock, except as specifically permitted in these rules. No material may be removed from any engine component, except as specifically permitted in these rules. Valve jobs are permitted, but the valve seat diameter must not be changed. The competitor must present, on demand, an original factory manual for the specific engine make, model and year to allow compliance verification.
- C. The stock ECU shall be used. The ECU fuel map may be changed. Devices that modify inputs to the ECU (e.g., Power Commander) may be used. Stand-alone after market ECUs are not permitted.
- D. Turbochargers and superchargers are prohibited.
- E. Carburetion and fuel injection are unrestricted.
- F. The exhaust system and exhaust manifold are unrestricted, within SCCA safety regulations.
- G. The lubrication system is unrestricted. A dry sump system is permitted; any oil pan and/or baffling is permitted.
- H. Oil coolers are unrestricted.
- I. The cooling system is unrestricted. Radiators, if housed in or incorporating a cowl air-scoop deflector, shall comply with bodywork rules.
- J. The stock chain tensioner may be replaced with any mechanical chain tensioner.

#### 5. Inlet Restrictors

The air inlet system is unrestricted at this time. However, the CRB may require the use of an inlet restrictor at any time by publishing the requirements in FasTrack.

#### 6. Fuel system

The fuel system is unrestricted within the following limitations:

- A. Fuel Cell Vents: Fuel tank air vents shall be located at least 25cm to the rear of the cockpit.
- B. Fuel capacity: maximum 10.83 gallons.

#### 7. Electrical System

The electrical system is unrestricted within the following limitations:

- A. Self-starter: Cars shall be equipped with an on-board self-starter and an on-board power supply controlled by the driver while in a normal driving position.

#### 8. Transmission/Final Drive

- A. Rear wheel drive only is permitted.
- B. The final drive ratio is unrestricted. Internal transmission gears shall remain stock.
- C. Cars may use sequentially shifted motorcycle transmissions. Reverse gear is not required.
- D. All gear changes must be initiated by the driver. Mechanical gear shifters, direct-acting electric solenoid shifters, air-shifters and similar devices are permitted. Devices that allow pre-selected gear changes are prohibited.
- E. The clutch assembly is unrestricted.
- F. Any open, limited-slip, or locking differential is permitted. Electronic control of the differential is prohibited. A solid axle or spool

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is permitted.

#### 9. Suspension

- A. All suspension components shall be of steel or ferrous material, except that hubs, hub adapters, hub carriers, bell cranks, pivot blocks, bearings and bushings, spring caps, abutment nuts, anti-roll bar links, shock absorber caps, and nuts may be aluminum alloy or magnesium alloy.
- B. Springs: steel only.
- C. Shock absorbers: Steel or aluminum alloy body.
- D. Control arms and all associated items that attach directly to the chassis members shall be boxed in or captured to prevent intrusion into the cockpit.
- E. Front A-arms shall be equipped with anti-intrusion bars to limit intrusion into the cockpit.

#### 10. Brakes

Unrestricted, except:

- A. All pistons in a given caliper must be of the same size. Calipers must be ferrous or aluminum alloy.
- B. Brake rotors are restricted to ferrous material.

#### 11. Steering

Unrestricted.

#### 12. Wheels and Tires

Thirteen (13) inch diameter wheels with a maximum rim width of ten (10) inches are the only wheel sizes permitted. Material is unrestricted providing it is metal.

#### 13. Minimum weight

Minimum weight is 1000 lbs.

F1000 Dimensions - Table 5	
Dimension ( <i>Refer to Figure 7a and 7b</i> )	Measurement (cm)
A. Maximum rear overhang from rear wheel axis	80
B. Maximum front overhang from front wheel axis	100
C. Maximum height measured from the ground	90
D. Exhaust height measured from the ground	20-60
E. Maximum height of any aerodynamic device <i>forward of the front wheel axis.</i>	Rim height
H. Maximum width of entire car	185
I. Maximum rear aerofoil width (includes endplates)	95
J. Maximum width of body and lower surface of the car behind the front wheels	150
K. Maximum front wing width (includes endplates)	135
L. Minimum cockpit bodywork opening	45
M. Minimum cockpit parallel opening length	30
N. Minimum cockpit overall opening length	60
S. Maximum exhaust length from rear wheel axis	80
7. Minimum wheelbase	200
5 & 6. Minimum track	120
Maximum diffuser width	95

Note: Maximum height is measured with the driver aboard. The safety roll bar/roll cage and engine air box are not included in the maximum height restriction (dimension C).

Figure 7a

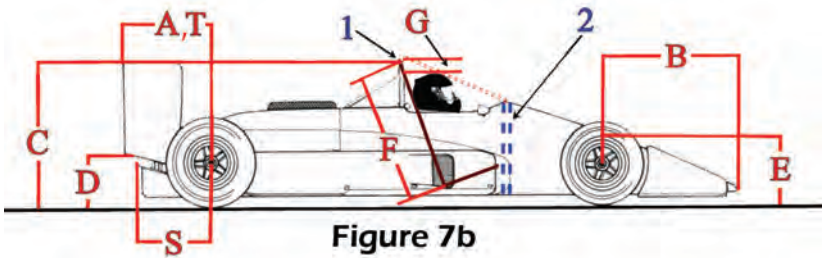
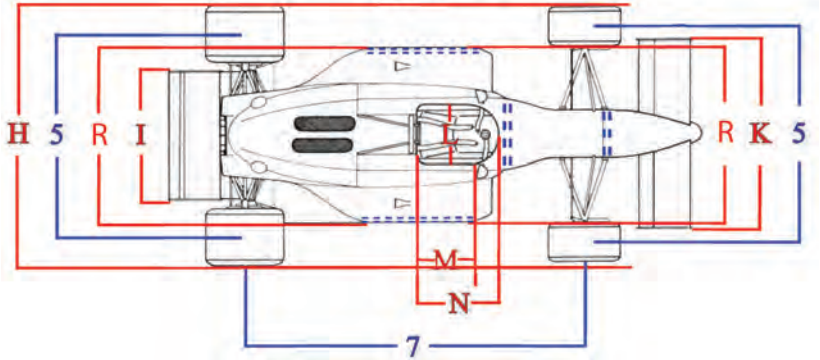


Figure 7b