



**RADICAL WORLD FINALS 2023**  
**PORTIMAO PORTUGAL**  
AUTODROMO INTERNACIONAL ALGARVE  
OCTOBER 16-22, 2023

**TECHNICAL REGULATIONS**  
**ISSUE 1**

ISSUED COPY Signed: <hr/> Date:
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## 5. TECHNICAL REGULATIONS

### 5.1. Introduction

5.1.1. The following Technical Regulations are set out in accordance with the organizer's specified format and it must be clearly understood that if the following texts do not clearly state that an action or modification is permitted, then it is prohibited.

### 5.2. General Description

5.2.1. The Radical World Finals 2023 is a single make series for eligible racing cars manufactured by Radical Motorsport as specified below:

Class	Model	Model Variants
PRO SR1	SR1	All
PRO 1340	SR3	RSX and newer fitted with 1340cc engine
PRO 1500	SR3	RSX and newer fitted with 1500cc engine
PLATINUM	SR10	All
	SR8	MY2017 and newer, fitted with 2.7L V8
	SPYDER	All
	RXC	All
Invitational (Non-Championship)	All approved by the Championship Organizers and deemed eligible by the Championship Scrutineer.	

### 5.3. Safety Requirements

Equipment	Standard	Additional
Fire Extinguisher	FIA approved	Fitted charged and operational. Label must show valid date within two years of manufacture or service and recertification. The external trigger must be marked.
Circuit Breaker	FIA approved	Located outside, and marked.
Seat Belts	FIA 8853-2016	Must show valid date.
Helmets	FIA 8860-2018 & ABP FIA 8860-2010 FIA 8859-2015 Snell SA2020/SAH2020 + FIA 8858-2010 anchors Snell SA2015/SAH2015 + FIA 8858-2010 anchors Snell SAH2010 + FIA 8858-2010 Snell SA2010 + FIA 8858-2010 Snell SA2010 + FIA 8858-2002 Snell SA2015 Snell SA2020	Standards according to FIA Technical List Nº25 and current Snell Foundation Certifications. Must be full face.
Frontal Head Restraint	FIA Standard 8858-2002 FIA Standard 8858-2010 SFI 38.1	The installation angle must be as homologated.

Drivers Overalls	FIA Standard 8856-2000 with Hologram* FIA Standard 8856-2018 SFI 3.4 or higher	*Date of manufacture on FIA label must be within 10 years (i.e. 2013 or newer).
Drivers Underwear (long sleeve top and long pant bottom)	FIA 8856-2000* FIA Standard 8856-2018 SFI 3.3 or higher	*Date of manufacture on FIA label must be within 10 years (i.e. 2013 or newer).
Gloves	FIA 8856-2000* FIA Standard 8856-2018 SFI 3.3 or higher	*Date of manufacture on FIA label must be within 10 years (i.e. 2013 or newer).
Socks	FIA 8856-2000* FIA Standard 8856-2018 SFI 3.3 or higher	*Date of manufacture on FIA label must be within 10 years (i.e. 2013 or newer).
Balaclava	FIA 8856-2000* FIA Standard 8856-2018 SFI 3.3 or higher	*Date of manufacture on FIA label must be within 10 years (i.e. 2013 or newer).
Shoes	FIA 8856-2000 FIA Standard 8856-2018 SFI 3.3 or higher	*Date of manufacture on FIA label must be within 10 years (i.e. 2013 or newer).

#### 5.4. General Technical Requirements & Exceptions

5.4.1. It is strictly forbidden for a Competitor's vehicle to depart from the official Radical Motorsports factory specification. All parts must be supplied by Radical Motorsport, fitted only to the appropriate designated model variant, retained, in their original position, as supplied, and in working order, unless specifically permitted by :

- a) These Sporting and Technical Regulations
- b) The latest versions of the Global Radical Cup Scrutineering Guides for each model published at [www.radicalmotorsport.com](http://www.radicalmotorsport.com)
- c) Technical Bulletins published by Radical Motorsport Ltd at [www.radicalmotorsport.com](http://www.radicalmotorsport.com)
- d) Supplemental Regulations for an individual event
- e) Official Bulletin
- f) A Work Order written and issued by the Eligibility Scrutineer acknowledging a temporary breach for a limited period

5.4.2. In the event the above documents contradict each other, and unless otherwise specifically stated, the definitive interpretation will be the last listed. For example, c) Technical Bulletin will supersede b) the Global Radical Cup Scrutineering Guide.

5.4.3. Radical Motorsport reserves the right to adjust all official car specifications at any time during the Championship, including in the interest of equalizing competitiveness between models or model variants.

5.4.4. Alternatively sourced fasteners may be substituted but their design, diameter, thread pitch, type and material must remain as original. The grade of material of a substituted fastener must always be equivalent to or superior to the original.

- 5.4.5. The responsibility to prove the eligibility of a vehicle, and ensures its safety, is that of the Entrant/Competitor at all times.
- 5.4.6. The Eligibility Scrutineer shall be the sole arbiter and sole judge of fact as to the eligibility of a vehicle.
- 5.4.7. In the event of a dispute concerning the compliance of a vehicle with these Regulations, the onus will be on the Entrant/ Competitor to satisfy the Organizers with regards to such compliance, and not the Organizers to prove non-compliance.
- 5.4.8. Where it is suspected that a component or structure fitted to the competing vehicle, may render the vehicle ineligible under these regulations, the component or access to the component may be sealed or marked by the Eligibility Scrutineer prior to subsequent examination. Where ineligibility is subsequently proven, all points accrued by the Competitor from and including the date of sealing or marking the said component, to the date of the examination, shall be forfeited.
- 5.4.9. Where costs are incurred as a result of any eligibility check, as may be reasonably requested either by the Eligibility Scrutineer or the Championship Organizers, these will be borne by the Competitor / Entrant concerned.
- 5.4.10. Any infringement of these Technical Regulations will render the Competitor liable to penalties as defined in the Sporting Regulations.
- 5.4.11. Minor infractions may be dealt by issue of a Written Repair Order from the Eligibility Scrutineer, expected to be carried out as specified, prior to the next session, day of competition or event.

## **5.5. Chassis**

- 5.5.1. Towing eyes/towing points front and rear must be fitted.
- 5.5.2. Radical Chassis of all seating positions– LHD (left hand drive), CHD (center seat) and RHD (right-hand drive)– are permitted.
- 5.5.3. Any chassis repair work not carried out by Radical Motorsport Ltd is unauthorized and is at the sole risk of the Competitor. Radical Motorsport Ltd accepts no liability or responsibility for injury or death as a result of unauthorized repairs.

## **5.6. Bodywork**

### **5.6.1. General**

- 5.6.1.1. Unless permitted by the Radical Cup Scrutineering Guide, only bodywork and aerodynamic devices manufactured by Radical motorsport for the particular model variant may be fitted to that model variant.

### **5.6.2. Interior**

- 5.6.2.1. Unless permitted by the Radical Cup Scrutineering Guide, only interior components manufactured by Radical motorsport for the particular model variant may be fitted to that model variant.

### 5.6.3. Exterior

- 5.6.3.1. All skid blocks must be installed.
- 5.6.3.2. Tape may only be used to directly cover bodywork fasteners, or aid in a temporary repair.
- 5.6.3.3. Bodywork may not be strengthened or reinforced beyond a typical repair, nor additionally braced or supported, or attached with substitute or additional fasteners.

### 5.6.4. Silhouette

- 5.6.4.1. May not be altered with the exception of the above.

### 5.6.5. Ground Clearance

- 5.6.5.1. The minimum ground clearance is 40mm. With the exception of skid blocks and breather hose(s), under no circumstance can any part of the bodywork, or of the suspended part of the car, be below a horizontal plane passing 40mm above the ground, the car being in normal racing trim.
- 5.6.5.2. Official measurements are taken with an official tool of 40mm on the official flat patch or designated area determined and communicated by the Scrutineers at each event
- 5.6.5.3. Ground Clearance will be measured without driver and at a standard pressure of 28psi. Air/nitrogen may only be added under the guidance of the Eligibility Scrutineer
- 5.6.5.4. At the sole discretion of the Eligibility Scrutineer, measurement allowances may be made for a car with severe body damage, chassis damage or suspension damage. A written warning may be issued and any allowance given will expire prior to the subsequent session

### 5.7. Engine

- 5.7.1. All accepted engine, throttle and airbox combinations for specific model variants are listed in the Radical Scrutineering Guide.
- 5.7.2. All engines, including any integral gearbox and clutch units, are only to be prepared, repaired, rebuilt and sealed by Radical Motorsport or its authorized engine rebuilders.
- 5.7.3. Radical technicians are at liberty to take random oil samples at their discretion to confirm adherence to oil specifications. Failure to conform to recommended oil specification and service intervals would render the engine warranty null and void.

#### **5.7.4. Oil/Water Cooling**

- 5.7.4.1. Taping off the radiators or ducting inlets to control the temperature is permitted.
- 5.7.4.2. Pre-heating of oil and water is permitted.
- 5.7.4.3. Hanging radiators with brackets to prevent them from wearing through the sidepod is permitted.
- 5.7.4.4. Adding rubber or sleeves to protect oil and water lines from chaffing is permitted

#### **5.7.5. Induction Systems**

- 5.7.5.1. Polishing the inside of the throttle bodies is not permitted.
- 5.7.5.2. Heat resistant tape or foil applied to the air box is permitted.
- 5.7.5.3. Organizers may mandate the use of foam blocks in the air box to aid in meeting sound restrictions. These blocks must be used as supplied and may not be modified in any way.

#### **5.7.6. Exhaust Systems**

- 5.7.6.1. The exhaust system including silencer may only be fitted to the specific model variant.
- 5.7.6.2. Coating or wrapping of the exhaust is not permitted.
- 5.7.6.3. Organizers may mandate the addition of a noise quietening product to the exhaust systems. These must be used as supplied and may not be modified in any way. Minor modification of the original standard system to attach the prescribed noise quieting product is permitted.

#### **5.7.7. Ignition Systems**

- 5.7.7.1. Only ECU reprogramming by Radical Motorsport is permitted.
- 5.7.7.2. Organizers may mandate the reprogramming of ECUs to alter performance of a specific model or model variant.
- 5.7.7.3. The Eligibility Scrutineer may on a regular basis supply a replacement ECU, which the Competitor must use if requested.
- 5.7.7.4. Heat shielding of the ECU is permitted, but it must not restrict removal when required.

#### **5.7.8. Fuel Delivery Systems**

- 5.7.8.1. Heat shrink, heat insulation, or the addition of rubber, to prevent chaffing of the fuel lines is permitted.
- 5.7.8.2. Each car must be fitted with an FIA approved dry break valve fitted to the fuel line to facilitate safe fuel testing.

## **5.8. Suspensions**

- 5.8.1. Spring rates front and rear are free.
- 5.8.2. Alternative front and rear anti-roll links supplied by Radical Motorsport may be used.
- 5.8.3. Competitors are permitted to disconnect the rollbar by removing the bolt at one end, however the rollbar must remain in place.
- 5.8.4. Factory supplied bump rubbers and packers are permitted. Non-factory bump rubbers, packers and spring platforms are not permitted.
- 5.8.5. Adjustable rear push-rods, if available on newer model variants may be used on older model variants.
- 5.8.6. No modifications to internal specifications of the dampers are permitted, including altering canister pressure.
- 5.8.7. Any seals fitted to dampers may not be tampered with or removed.

## **5.9. Transmissions**

- 5.9.1. A Radical pneumatic paddle operated shift system may be fitted to older model variants.
- 5.9.2. The reverse drive system must be retained and operational by the driver when seated in the driving position.
- 5.9.3. Drive ratios may only be adjusted by changing sprockets/gears supplied by Radical Motorsport.
- 5.9.4. Officials may mandate or restrict the drive ratios which may be used by specific models or model variants.

## **5.10. Electrics**

### **5.10.1. Head Lights**

- 5.10.1.1. LED arrays must be retained in model variants featuring them, and must be turned on.
- 5.10.1.2. Cars may run with or without additional headlights offered for their specific model variant.
- 5.10.1.3. In all cases, headlight covers and light buckets must be fitted.

### **5.10.2. Brake Lights**

- 5.10.2.1. Must be fitted and in working order and must not be wired in a way that allows them to be switched off or signal delayed.



### **5.10.3. Rain Lights**

- 5.10.3.1. The Radical high intensity LED central Rain Light must be turned on when wet tires are fitted.
- 5.10.3.2. For older model variants it is permitted, and highly recommended, a Radical or FIA high intensity FIA centrally mounted LED lamp be fitted, however two standard tail lights installed equally spaced about the vehicle centerline emitting a minimum intensity of 21w and with a surface area between 20 and 50cm<sup>2</sup> is permitted.

### **5.10.4. Batteries**

- 5.10.4.1. Battery(s) must be retained, located in their original position(s), operable by the driver when normally seated and capable of repetitive starts.

### **5.10.5. Generators**

- 5.10.5.1. Alternator/generator must be retained and operational.
- 5.10.5.2. The addition of ductwork to cool the alternator/generator is permitted.

### **5.10.6. Starter Motor**

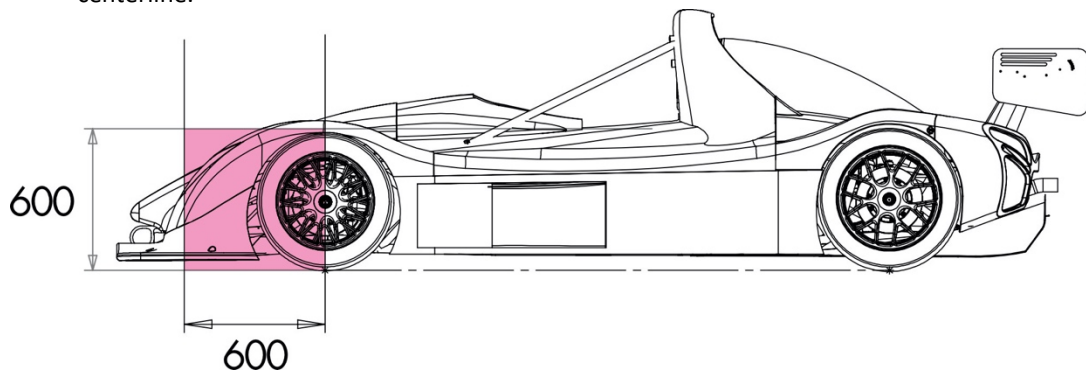
- 5.10.6.1. Starter motor must be retained, operational and capable of repetitive starts.
- 5.10.6.2. The addition of ductwork to cool the starter motor is permitted.

### **5.10.7. Data Monitoring**

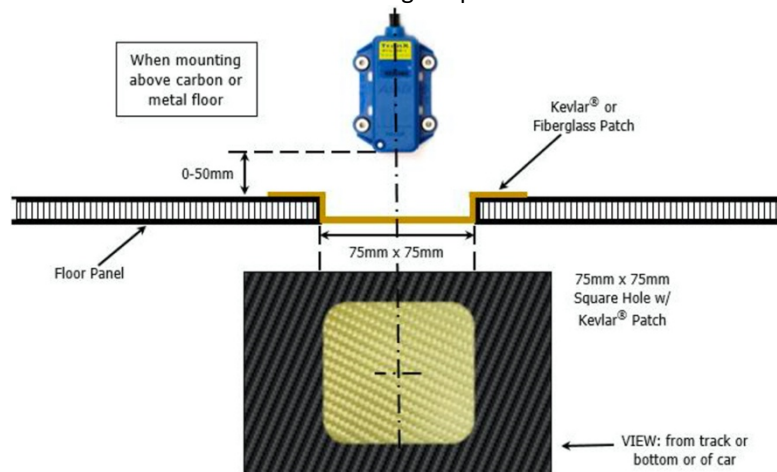
- 5.10.7.1. Only Radical supplied digital displays and data loggers are permitted, and must be in full working order.
- 5.10.7.2. All vehicles are required to record data for series officials and Competitors must provide that data upon request.
- 5.10.7.3. A stopwatch or other timing device may be added to aid in Pitstop timing.
- 5.10.7.4. Minor modification to the dash-display mounting to improve angle/visibility is permitted.

## 5.10.8. Timing Transponder

- 5.10.8.1. A MyLaps timing transponder must be used and operating properly during all un-official and official sessions. Lap times recorded on in-car systems are for drivers reference only and are not considered official. Cars without operating transponders may not receive official times and/or classification.
- 5.10.8.2. A label with the Transponder number must be affixed to the inside of the cockpit, and visible at all times.
- 5.10.8.3. Wired transponders shall be directly connected to master electrical switch, with no other switches inline.
- 5.10.8.4. Transponders must be orientated vertically (arrow pointing down towards track) and LED visible, mounted less than 600mm from the ground and less than 600mm forward of the front axle centerline.



- 5.10.8.5. Transponder must have clear view to track surface. If mounted above a carbon or metal floor, a 75mm x 75mm square hole is permitted and required for clear transmission. This hole can be covered with a Kevlar or Fiberglass patch.



**5.10.9. Radios and Information Systems**

- 5.10.9.1. Cars are permitted to carry an electronic information or flagging system if mandated by the organizers.
- 5.10.9.2. Cars are permitted to carry a radio for communication from the team to driver.
- 5.10.9.3. No communication from one car to another car is permitted.
- 5.10.9.4. Any radios fitted must comply with local radio licenses, if applicable.

**5.10.10. Video Cameras**

- 5.10.10.1. The fitment of a forward-facing cameras is mandatory, recording at a minimum resolution of 180p at 30fps with super wide FOV.
- 5.10.10.2. Camera must be securely mounted on the roll bar, positioned to record an unobstructed view of both the driver's hands on the steering wheel and the forward field of view from the cockpit.

**5.11. Brakes**

- 5.11.1. Only brake discs, calipers and master cylinders supplied by Radical Motorsport for the specific model variant are permitted, as described by the Radical Scrutineering Guide.
- 5.11.2. Only brake pads supplied by Radical Motorsport with compounds as specified by the Radical Scrutineering Guide may be fitted.
- 5.11.3. The fitting of a cockpit brake bias adjuster as supplied by Radical Motorsport on cars where it is not fitted as standard equipment is permitted.
- 5.11.4. The removal of brake duct grilles is permitted.
- 5.11.5. The addition of tape to the brake duct inlet to control brake temperature is permitted.

**5.12. Wheels/Steering**

- 5.12.1. Only wheels supplied by Radical Motorsport are permitted.
- 5.12.2. The fitment of newer wheel designs to older model variants is permitted.
- 5.12.3. Steering wheels of alternate diameters supplied by Radical Motorsport, if available for that model variant, are permitted.

### 5.13. Tires

- 5.13.1. Organizers will nominate an official tire supplier for the Championship. Only tires purchased from the official supplier, with specific markings and of the approved compounds are permitted for all official Championship testing, practice, qualifying and race sessions. This regulation may not be superseded by the Global Scrutineering Guides.
- 5.13.2. Restrictions on the quantity of tires used per event are as follows:
- For Practice prior to Qualifying the quantity of Dry tires used is unrestricted.
  - For Qualifying and the Races the quantity of Dry tires used may not exceed the maximum set by the Organizers. This may vary per class.
  - Wet Weather tire usage is unrestricted.
- 5.13.3. Serial numbers from all Dry tires used must be declared via the official Tire Declaration Form (which may be in electronic format or in the form of an electronic scanner). Should it be paper form, a copy of the form will be retained by the team, and a copy handed to the Eligibility Scrutineer prior to the start of qualification or the first time of use. Once tires have been declared they cannot be exchanged except should the Eligibility Scrutineer deem one or more of the declared tires unsafe in which case the Competitor will be permitted to either:
- Nominate and present to Officials for verification and approval replacement tire(s) of similar wear, or
  - Purchase new replacement tire(s), in which case the Competitor will forfeit 5 Championship points per tire in the subsequent race.
- 5.13.4. Any modification or treatment to the tyre including cutting, grooving, the application of water, tyre treatments, compounds, solvents or softeners, the use of heat/cool generating or retaining devices on or near the tyre, or any means to artificially enhance the tyre performance is prohibited. Samples may be taken from the tyre tread for analysis and comparison with a tyre taken directly from the supplier's stock.
- 5.13.5. Tyres may only be inflated with air or nitrogen.
- 5.13.6. Front tyres can only be used on the front axle and rear tyres can only be used on the rear axle.
- 5.13.7. All tires must remain accessible to the Eligibility Scrutineer at all times.
- 5.13.8. When necessary the Organizers may set a maximum wheel camber setting, toe settings and tyre pressures to be adhered to at a particular event. This will be communicated by Championship Bulletin and may require parts to be sealed by the Eligibility Scrutineer. Failure to comply with specified values will warrant the vehicle ineligible.

#### 5.14. Weight

- 5.14.1. The minimum weight of the car plus driver and driver equipment at any time during all official sessions shall be that as prescribed by the Radical Cup Scrutineering Guide.
- 5.14.2. To balance performance, the championship Organizers reserve the right to at any time instruct teams to add, and to enforce, 'BoP' weight to any car in addition to the base minimum weights described above.
- 5.14.3. Any ballast installed must be located in the passenger compartment. It is recommended the Radical ballast mounting system is used.
- 5.14.4. The Scrutineer may request drivers to weigh-in at the beginning of their first event, and/or subsequent events, so they need not be present during official weighing. Should a result be marginal the Scrutineer may request the driver's presence and re-weighing to verify results. Any subsequent measurement taken will supersede the previous one.
- 5.14.5. Exceptions to the above regulations may be given should the Eligibility Scrutineer deem the deficiency in weight results from the accidental loss of a component of the car.

#### 5.15. Fuel Tank / Fuel

- 5.15.1. Fuel tanks and fuel cells may be upgraded or replaced with newer designs.
- 5.15.2. Aluminium fuel tanks may be replaced with FIA fuel cells as supplied by Radical Motorsport if available for that specific model variant.
- 5.15.3. FIA fuel cells must carry a valid certification and certificates must be presented upon request.

##### 5.15.4. Fuel

- 5.15.4.1. Organizers will nominate an official fuel supplier for the Championship. Only fuel purchased from the official supplier and of the approved type are permitted for all official Championship testing, practice, qualifying and race sessions.
- 5.15.4.2. Compliance will be verified by fuel testing carried out throughout the season.
- 5.15.4.3. To allow comparison testing to be carried out, competitors must be able to pump out a minimum of 1 litres of fuel from the fuel tank at the end of any session.
- 5.15.4.4. Fuel must be used at ambient temperature. It is not permitted to cool the fuel or fuel tank.

#### 5.16. Silencing

- 5.16.1. Vehicles must conform to any sound limits set by event organizers.

### 5.17. Numbers & Championship Decals

- 5.17.1. Each car must carry the racing number of its driver in the design and without modification, as issued by Radical Motorsport, and in the location specified by the Series Style Guide.
- 5.17.2. Each car must any series sponsors in the design and without modification, as issued by Radical Motorsport, and in the location specified by the Series Style Guide.
- 5.17.3. Each car will be required to affix colored Class stripes in the locations specified by the Series Style Guide.
- 5.17.4. Each car must display the Driver's name and national flag on the outside of the cockpit. These decals may not be provided by the Series.
- 5.17.5. Each car must display the Driver's national or region flag covering the outwards facing sides of each end plate. These decals may not be provided by the Series.
- 5.17.6. Radical nose badge must be affixed to the vehicle. These decals may not be provided by the Series.
- 5.17.7. Drivers must display on their overalls any patches required and issued by the Organizers.
- 5.17.8. Radical Motorsport may, in its sole discretion, rule as to the suitability of a particular car, team or driver livery. This may include, but not be limited to any livery advertising not in keeping with the spirit of the Championship. Competitors are required to consult with Radical Motorsport in case of any questions.
- 5.17.9. Decals, sponsors, patches and logos that are out of date, from another Series or manufacturers other than those associated with the Series are not permitted, unless granted with the prior permission of the Organizers.