

# UKRRA 2017

## UK Retro Racing Association

### Can-Am Cars

#### Technical Regulations

##### **A. General Specifications.**

1. **Maximum Overall Car Width: 3.250" (82.55mm)** with the body fitted ready to race.
2. **Maximum Overall Chassis Width: 3.125" (79.38mm)**, measured across any part of the chassis including the front and rear axles, wheels and tyres.
3. **Wheelbase: No maximum or minimum is specified** (but see rules A15 & D1A).
4. **Rear Wheels and Tyres:**
  - A. **Maximum Rear Tyre Width: 0.810" (20.57mm).**
  - B. **Minimum Rear Tyre Diameter: 0.8125" (20.64mm).**
  - C. **Wheels can be made from any material and be of any diameter.**
  - D. **Rear Tyre Material: Free choice but must be black and not be made from, contain, or be coated with silicone.**
  - E. **Speed rubber is prohibited.**
5. **Front Wheels and Tyres:**
  - A. **Minimum Front Tyre Width: 0.225" (5.72mm).**
  - B. **Minimum Front Tyre Diameter: 0.750" (19.05mm).**
  - C. **Must be made of two pieces, i.e. a Wheel and a Tyre.**
  - D. **Wheels can be made from any material and be of any diameter.**
  - E. **Tyres must be glued to the wheels and be made of black rubber.**  
Only SBR, Wonder, and natural rubber type materials are acceptable.
  - F. **Tyres made from, containing, or coated with, silicone, urethane or other similar compounds must not be used.**
  - G. **Tyres may be coated with cyanoacrylate adhesive ("Super Glue") or nail polish.**
  - H. **Wheels with O-ring 'tyres' are prohibited.**
  - I. **Tyre contact patch must touch the track across the full width of the tyre. Coning, angling or knife-edging is not allowed.**
  - J. **Tyre edges may be rounded to a maximum 1/16" (1.6mm) radius.**
6. **Minimum Chassis Clearance:**

Measured with the car sitting on its tyres on a flat tech block and without the guide.

  - A. **Rear: 0.050" (1.27mm).** The entire motor bracket, gear, and all parts of the chassis, including pans, aft of the motor mounting face of the motor bracket must meet this clearance.
  - B. **Front: 0.015" (0.38mm)**, measured under the most forward part of the chassis.
  - C. **The bottom surface of the whole chassis** (including the motor, but excluding the guide flag) **must be flat and straight in all directions**, with no bowing or drooping of any parts below the plane defined by the front and rear clearance specifications. This will be checked by applying a straight edge to the underside of the car both across the frame and along the length of the frame.
  - D. **Touch and Roll Check.** Scrutineers are instructed to ensure that all cars are checked, in the slot on the track being used for the event, to ensure that the Front Wheels touch the track surface and roll when the car is pushed forward.

7. *Axles (Front & Rear):*
  - A. **Minimum diameter 3/32" (2.36mm).**
  - B. **Both axles must be straight, one piece and made from solid steel.**
  - C. **Hollow axles are not permitted.**
  - D. **Front axles do not have to rotate but both front wheels must be mounted onto the same axle.**
  - E. **Front wheels may rotate independently.**
  - F. **Maximum front axle side play: 0.125" (3.18mm) as part of the maximum front track. At no time can the front wheels or tyres extend out past the body.**
  - G. **Axles must not protrude beyond the outer face of any wheel or tyre.**
  - H. **Axles may only be flattened in the areas where the wheels and gear are secured.**
8. *Bushings and Bearings: Free Choice.*
9. *Drive Type:*
  - A. **'Inline' only, with the motor shaft at 90° to the rear axle.**
  - B. **Offset motors are not permitted, i.e. the armature shaft of the motor must be located on the longitudinal centre line of the chassis.**
10. *Drive Gears: Free choice.*
11. *Minimum Weight: 100 grams ready to race.*
12. *Rear Body Height:*

Measured with the car sitting on its tyres on a flat tech block and without the guide.

  - A. **Maximum: 1.375" (34.93mm) measured from the tech block surface to the top of the highest point of the rear of the body, excluding any add-on spoiler.**
  - B. **Severe raking of the body for aerodynamic effect is not allowed.**
13. *Guide lead:* No maximum is specified but the guide flag must be covered by the unmodified body when viewed from above.
14. *All chassis parts, including the guide flag, wheels, tyres and all other running gear must be covered by the unmodified body when viewed from above.*
15. *All wheels must be located centrally in relation to the wheel arches in the body.*

## B. Chassis.

1. *Chassis Type:*

Any chassis, built from scratch or from a commercially available kit or parts, and conforming to these specifications is allowed.
2. *Chassis Materials:*

**Brass: sheet, rod, and tube.**  
**Steel: wire, pin tubing, and commercial guide tongues.**  
**Solder and Glues: may only be used for assembly of components.**  
**No other materials are allowed.**

Chassis parts, such as pans, brackets, guide tongues, etc., that are made using EDM, laser, or water-cutting techniques are allowed only if they are individual commercially-available components or components of chassis kits, i.e. these techniques may not be used in the private manufacture of one-off components. **Materials** such as printed circuit board, glass fibre and carbon fibre are not permitted.
3. *Chassis Construction:*
  - A. **Each car must have a one-piece brass rear bracket consisting of at least three sides (vertical or horizontal), with each connected side having a minimum width or height of at least 0.200" (5.08mm).**
  - B. **The motor bracket must support the motor and extend to touch the rear axle tube.**
  - C. **The rear axle tube does not need to travel through the motor bracket.**
  - D. **The motor can be fixed to the motor bracket with screws and/or solder.**

- E. Wire or tubing rails must connect the front and rear sections of the chassis. Using metal strip for this purpose is not permitted. A rail is defined as that which connects the motor bracket to the front of the chassis.**
- F. Main chassis rails constructed of round steel or brass wire maybe ground or sanded flat on the bottom, but no more than 20% of the rail diameter may be removed.**
- G. Pieces of steel used for guide tongues are limited to a maximum 1.00" (25.4mm) total width and 1.50" (38.1mm) total length. Steel tongues cut from a flexi or wing car chassis are not considered "commercial guide tongues" and are not allowed**
- H. Floating pin tubes inside another tube are allowed.**
- I. Tape is not allowed on the bottom of the chassis at any point, except as a temporary repair during a race (see also rule B6C).**
- 4. Hinged Movements:**
- A. Other than a drop arm, all hinged movements must be oriented in only one direction on any individual chassis.**
- B. A chassis may have transverse hinges (examples: Iso-fulcrum hinges and plumber hinges) OR it may have longitudinal hinges (example: side pan hinges) but a chassis may not have both types.**
- C. The total number of individual hinges is not restricted.**
- D. Centre line hinges are NOT allowed.**
- E. NO hinged front wheel movements are allowed (i.e. no "L" arms).**
- F. 'Rattle Pan' designs are permitted.**
- Any such design must consist of only two parts:**
- The 'Central Chassis', onto which the rear axle U bracket, the motor, the front axle and the guide must be mounted, and the 'Rattle Pan' on to which the body must be mounted. Other than a Drop Arm no hinged movements are allowed for this type of chassis.**
- 5. Guide:**
- A. A single guide flag only is allowed.**
- B. The guide must be centred on the longitudinal axis of the chassis. (i.e. no sideways "free float" or offset).**
- C. The guide blade must be no larger than 0.086" (2.20mm) wide and 1.060" (27.18mm) long.**
- 6. Tape/Lead:**
- A. Lead Weight may only be added to the top side of a chassis and must be securely attached.**
- B. Strapping or other tape to control or restrict movements is allowed but may only be affixed to the top side of the chassis.**
- C. Taping a damaged body to a pan to finish a heat is permitted but the body must be repaired, and the tape removed, before the start of the competitor's next heat.**
- D. Only Clear Sellotape may be applied to the Bottom of the Chassis to prevent Tarnishing of Brass. This must not modify the movement of any chassis component.**
- 7. Centre line Torsion Bars will only be legal if they are solidly and visibly soldered at both ends either to pockets in the main chassis components or if soldered into tubes at either or both ends have a "free wire" distance of 4mm minimum between the tubes, additionally the tubes to be slotted crosswise and soldered, to openly display to scrutineers that it is a Torsion Bar and not a pivot.**

### C. Motor.

#### 1. *Eligible Motors:*

A. All cars must be powered by **one of the following motors:**

**Falcon 7: TSR D3: Slick 7 Mini Brute: JK Hawk 7: JK Hawk Retro: Trinity Evil 9:**

**Fast Ones Demon.**

#### 2. *Modifications:*

A. The **Armature Shaft** may be **shortened** to **clear the crown gear boss.**

B. All motors must remain **unopened** and **unmodified** in **any other way.**

### D. Body.

#### 1. *Body Type:*

A. Any vac' formed (Lexan, PETG etc) 1/24<sup>th</sup> scale replica of a real, two seat, open cockpit, Sports Car built and raced before the end of 1969 and not included on the 'Banned Bodies' list (see regulation D4) can be used.

B. No "flattened" or "aerodynamically-improved" bodies are allowed.

(i.e. no moulded-in spoilers, wings, etc., that were not on the original full-size car or original mould). **Note:** moulded-in spoilers may not exceed the allowed specification governing the maximum width of the body.

C. **Bodies may not be any less than .007" thick on the sides.** Any body found to be flimsy or a detriment to marshalling will need to be corrected by the racer. Tape or body armour may be used to achieve the required side thickness.

#### 2. *Body Finishing:*

A. Racers are encouraged to present cars with scale realism. Simple 2 tone fades, numbers drawn on with a pen and un-detailed interiors are not acceptable. It is however accepted that not all racers will wish to adopt strict scale colour schemes.

B. Front wheel arches must be cut out to reveal the whole of the front wheel and tyre or to match the shape of the full-size car.

C. Rear wheel arches must be cut out to reveal the whole of the rear wheel and tyre or to match the shape of the full-size car but may be left closed if the original full-size car ran with closed wheel arches.

D. There should be a **minimum 1/16" (1.59mm) vertical component** and/or **part of the grill** along the **front edge** of the **body** unless this element was not on the original car (example: Ti22).

E. **Bodies must be presentably-painted** and carry at least **three racing numbers, one on each side, and one on the front.**

To further clarify this regulation, all bodies must be fully opaque on all sides except for those areas deemed to be windscreens or windows.

The term 'opaque' means: Covered by paint, tape, or other suitable material, so that a finger is not visible through the paint, or other covering, under normal lighting.

F. **Openings, such as air vents and intakes, must be cut out or painted** to look realistic.

G. **Windscreens and windows** must remain **transparent** but may be **tinted.**

H. All cars must have the cockpit opening fully cut out along the upper edge of the windscreen and cockpit sides.

I. All bodies must carry a fully-moulded three-dimensional cockpit interior which includes a **correctly positioned driver** comprising of **at least a helmet, shoulders, arms, hands and the upper part of a steering wheel.**

- J. Interiors** must be **presentably painted** and **realistically detailed**.
- K. Paper interiors** are **not permitted**.
- L. No part of the chassis, including the tyres, guide and all other running gear, may be seen when looking down on the car from above, either outside the body or through the cockpit opening or engine bay.**
- 3. Add on Spoilers and Air Control:**
- A. A single, flat, plastic spoiler set at any angle** may be added to the **rear of the body** only.
- B. The spoiler's height** is limited to a **maximum of 1/2" (12.7mm)** above the **top rear edge of the body** and must be **no wider** than the **outer edges** of the **body**.
- C. No additional bends are allowed except for the one used to set the initial angle.**
- D. Side dams** of any type are **not allowed**.
- E. Notches cannot be cut** in the **spoiler** above the **bend line**.
- F. Front diplanes (splitters)** are **not allowed**.
- G. High-mounted wings** are **allowed** only if they were **used** on the **original full-size car**. Such wings must be **securely attached** to the **body and/or chassis**.
- 4. The Can-Am 'BANNED BODIES' List:**
- A. Guidelines for acceptable bodies.**  
**The Body shape must be a reasonable 1/24<sup>th</sup> scale representation of the real car, within the logical limits of vacuum formed production, and not grossly lowered in profile. See rules D1A, D1B & D1C above.**
- B. BANNED BODIES**
- There are currently no Bodies on this list.**
- C. The procedure for getting a body added to or removed from this list can be found in the SPORTING REGULATIONS.**