

# IRRA®

*International Retro Racing Association*

## Can-Am PLUS Specifications & Rules



### A. Simplified Specifications Reference

- **Total Weight** = No minimum.
- **Chassis Width** = 3.125" maximum.
- **Body Width** = 3.250" at the wheel arches.
- **Body Thickness** = Of 0.010" base material, with minimum 0.008" on hood and 0.007" on sides.
- **Track Width, F & R** = 3.125".
- **Chassis Clearance, F & R** = 0.015" / 0.047" minimum.
- **Front Tire Diameter** = 0.600" minimum.
- **Front Tire Width** = 0.225" minimum.
- **Rear Tire Diameter** = No minimum.
- **Rear Tire Width** = 0.810" maximum.
- **Motor Type** = JK Hawk Retro, Chicagoland Stage 2
- **Body Height** = None.
- **Spoiler Size / Height** = No wider than body; 0.500" (12.7mm) maximum height.
- **Driver Figure / Interior** = Fully molded, minimum two-color, presentably/realistically painted, no paper interiors and be mounted to the body in a realistic position. Lead wires cannot be seen running through the interior.

### B. General Specifications

1. **Maximum Overall Chassis Width:** 3.125" (79.38mm), measured across any part of the chassis, as well as across the front and rear tires and axles.
2. **Maximum Body Width:** 3.250" (82.55mm), measured at the front and rear wheel arches.
3. **Maximum Rear Tire Width:** 0.810" (20.57mm).
4. **Minimum Rear Tire Diameter:** No minimum.
5. **Minimum Front Tire Width:** 0.225" (5.72mm).

5a. Wheels with O-ring 'tires' are prohibited.

5b. The front tire contact patch must touch the track across the full width of the tire (i.e. no coning, angling or knife-edging is allowed).

5c. Tire edges may be rounded to a maximum 1/16" radius.

6. **Minimum Front Tire Diameter:** 0.600" (19.05mm) across the full width of the tire.

7. **Minimum Rear Chassis Clearance:** 0.047" (1.27mm).

7a. The entire motor bracket, gear, and all parts of the chassis (including pans) aft of the motor mounting face of the bracket must meet this clearance.

7b. Clearance will be measured with front and rear tires sitting flat on the test block with the guide unsupported.

8. **Minimum Front Chassis Clearance:** 0.015" (0.38mm).

8a. This will be measured at the most forward part of the chassis.

8b. Clearance will be measured with front and rear tires sitting flat on the test block with the guide unsupported.

9. **Axles, Front & Rear:** 3/32" (2.38mm) minimum diameter, one piece, solid steel.

9a. Hollow axles are not allowed.

9b. Axles may only be flattened in the areas where the wheels and gear are secured i.e. Chicagoland style axles.

10. **Bushings/Bearings:** Oilite/bronze bushings or ball bearings may be used in the front and/or the rear.

11. **Minimum Weight:** No minimum.

12. **Drive Type:** Inline drive only, with the motor shaft at 90° to the rear axle.

- 12a. The armature shaft of the motor must be located on the longitudinal center line of the chassis, i.e. offset motors are not permitted.
13. **Drive Gears:** Any drive gear and ratio may be used. Crown gears must be commercially available.
- 13a. The only gear modifications allowed (other than making your own sleeve) are sanding of the diameter of the gear and heating/burning it in for a smoother gear mesh.
- 13b. Disallowed modifications would include, but are not limited to, lightening, drilling, reversing the gear on the hub, repositioning the set screw hole, changing or reconfiguring the hub, and/or any other changes to the gear's size or appearance as compared to the stock production gear.
- 13c. **Exception:** on Parma gears **only**, racers may drill gears and lighten hubs; the hub may not be removed and the original set-screw holes must be used.
14. **Maximum Front Axle Play:** 0.125" (3.18mm), as part of the maximum front track width.
- 14a. At no time can tires extend out past the body.
15. **Maximum Rear Body Height:** No maximum. No material, including flash plastic from the vacuum-forming process, may be added to the vertical portion of the body to increase body height.
- 15a. Severe raking of the body for aerodynamic effect is not allowed.
16. Cars must have four (4) wheels/tires at all times. If a car loses a wheel or a tire, front or rear, it must be replaced before continuing.

**Tires – Rear:** Any black natural rubber tire, chemically-treated or untreated, on any size non-'waffled' hub.

17a. Speed rubber is prohibited.

17b. Should a racer encounter a damaged tire/wheel (stripped screw, bent hub, or chunked tire), the racer will be afforded the opportunity to make the repair during a lane change and present the car to the tech inspector before the start of the next heat for checking before the racer will be allowed to continue

17c. Tires may be cleaned during the race, in between heats, and during lane changes. Racers and their pit crews may **only** clean tires using the supplied cleaner (lighter fluid/naphtha) provided by the hosting raceway/race director/series director. The approved cleaner and supplied rag(s) that will be placed in a designated area prior to the race and tires must be cleaned in that designated area **only**.

17d. Any racer transferring tire cleaner to the track surface will be disqualified.

17e. Tire treatments such as Zip Grip, Sticky Fingers, or any other tire treatment may only be applied before the car is teched-in. No treatments will be allowed at any time after tech. The rear tires must be dry when the car is presented at tech.

17f. Any racer or pit crew found applying tire treatments after tech, or cleaning tires with anything other than the supplied cleaner and rags, will result in racer disqualification.

17g. For races where there is a move-up from one main to another, tires can be changed and the car will go through a full tech inspection.

17h. Those racers making a move-up from one main to another and not choosing to change tires will still be subject to tech inspection for legal tire diameter and chassis clearance.

17. **Tires – Front:** Must be made of two pieces, i.e. a wheel and a tire. Wheel stickers are not permitted.

18a. Front wheels may be made of any material and can have any size hub (as long as the front wheel and tire dimensions listed elsewhere in these rules are observed).

18b. Front tires must be glued to the wheels and be made of black rubber; only SBR, Wonder, and natural rubber type materials are acceptable. Tires made from, or coated with, silicone, urethane, or other similar compounds, may not be used.

18c. Front tires may be coated with cyanoacrylate adhesive ("Super Glue") or nail polish.

## C. Chassis

1. **Chassis Type:** Any personally-built or commercially-available scratchbuilt chassis in kit form or built conforming to these specifications is allowed.
2. **Chassis Materials:** Brass: sheet, rod, and tube; brass is defined as generic "yellow" brass containing copper and zinc, with minimal amounts of tin and lead, yellowish in color, non-plated, non-painted, non-coated (except for clear coating to prevent corrosion). Bronze: rod. Steel: wire. Steel commercial guide tongues and stainless steel pin tubing (to be used only for body mounting) are allowed.
  - 2a. Other materials, such as nickel/German silver, printed circuit boards, or composites such as carbon fiber, are **not** allowed.
  - 2b. 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 that are not commercially available).

### 3. **Chassis Construction:**

3a. The motor can be screwed to a motor bracket if used and/or can also be soldered in place.

3b. Pillow blocks can be used in the front and rear. They are limited to being .500" (12.7mm) long and .500" (12.7mm) wide with the full length captured between piano wire, brass or bronze rails when used in either the front or the rear of chassis.

3c. Floating pin tubes inside another tube are allowed.

3d. Pieces of steel used for guide tongues are limited to a maximum 1" (25.4mm) total width and 1.50" (38.1mm) total length. Steel tongues cut from the flexi and wing car chassis are not considered "commercial guide tongues" and are not allowed.

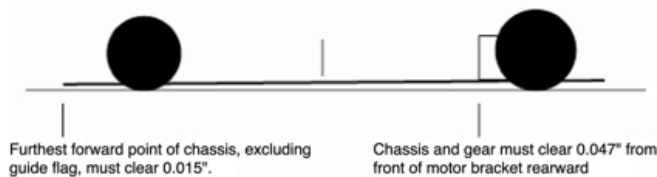
3e. Main chassis rails constructed of round steel or brass wire maybe ground or sanded flat .

3f. 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. No steel center sections.

3g. The bottom surface of the whole chassis (including the motor, but excluding the motor seal and 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.

No part of chassis, including pans, hinges, main rails, nosepiece, motor, etc., may extend below the plane created by the 0.015"-0.047" tech points.

Tape is not allowed on the bottom of the chassis at any point.



### 4. **Hinged Movements:**

4a. Chassis may have hinges oriented in multiple directions.

4b. The number of individual hinges is not restricted.

4c. Centerline hinges are allowed.

5. **Front axle:** A single straight, 3/32" (2.38mm) minimum diameter, one-piece front axle is required, carrying both front wheels. The axle may be fixed or in a tube. No hinged front wheel movements are allowed (i.e. no "L" arms). Front wheels may rotate independently.
6. **Guide:** A single guide flag is allowed, centered on the longitudinal axis of the chassis (i.e. no sideways "free float" or offset) and with a blade no larger than 0.086" (2.20mm) wide by 1.060" (27.18mm) long.
7. **Tape/Lead:** Lead weight may be added to a chassis but may only be affixed to the top side of the chassis. Strapping or other tape to control or restrict movements is allowed but may only be affixed to the top side of the chassis.

7a. Taping a damaged body to a pan to finish a heat is permitted. The body must be repaired, and the tape removed, before the start of the next heat of racing. Otherwise, the prohibition against the use of tape of any kind on the bottom of the chassis applies.

## D. Motor

1. **Motor Types:** Must use any one of the following motors, which must remain unopened and unmodified:
  - JK Retro Hawk FK
  - Chicagoland Stage 2

**Note:** No other motors will be allowed unless approved by the IRRRA® and added to the approved motor list. **Please refer to the Motor Rules for more information on motors.**
2. At designated large IRRRA® scheduled races, the track owner may elect to utilize a hand-out motor system, using one of the approved motors. This will be announced well in advance and ample time will be allowed on the day of the race for the racer to obtain the motor and install it. If a race for this class is conducted using hand-out motors then the racer must use the numbered motor(s) assigned to him/her.
3. **Exclusion Clause:** Clear violation of the motor-tampering rule will result in the racer being excluded/suspended from future IRRRA® Premier Events for a period of one (1) year. Multiple infractions may result in permanent exclusion from IRRRA® Premier Events. Should a Premier Event host raceway knowingly allow an excluded racer to compete, IRRRA® Premier Event status may be revoked. In regional series, it is strongly recommended that suspended racer be excluded from the series for the length of the series.

3a. Racers will be required to sign a tech sheet giving permission for the Race Director, at his

discretion, to tear their motors down for inspection to prove legality.

3b. If a motor is deemed illegal due to unapproved modifications (including, but not limited to, incorrect armature, bushing alterations, magnet shimming, magnet change, timed brush hoods, etc.), the racer will be disqualified from the event and future events until reinstated by IRRA® officials.

3c Motors found legal will be replaced at no cost to the racer. If a protested motor is found to be legal, the motor's owner will receive the \$40 protest fee in lieu of a replacement motor.

4. A motor may not be changed after tech inspection or during a race except as follows:
  - 4a. For those races where there is a move-up from one main to another, motors can be changed and the car will go through a full tech inspection.

## E. Body

1. All approved Can-Am bodies are listed in the "Approved Body Lists" section. All bodies must be representative of 1970 and later Can-Am cars.

1a. Bodies must meet the following dimensions: 0.008" minimum thickness on the nose of the body without any tape and 0.007" minimum thickness on the sides of the body, which may be accomplished using tape that must cover the entire side from wheel well to wheel well.

1b. Maximum body length is 7 inches.

2. **Body style:** Racers are encouraged to present cars with scale realism. Bodies must be those on the approved body list.

2a. No "flattened" or "aerodynamically-improved" bodies allowed (i.e. no molded-in spoilers, wings, etc., that were not on the original mold). Note: molded-in spoilers may not exceed the allowed specification governing the maximum width of the body.

2b. Rear wheel arches must be cut out. Front wheel wells can be left clear or cut out. If clear then the wheel must be centered in the opening and at least 75% of wheel must be visible.

2c. Bodies must be presentably-painted and carry at least three racing numbers. All bodies must be fully opaque on all sides except for those areas deemed to be windows. Windows may be tinted. The term opaque means covered by paint, tape, or other suitable material such that a finger is not visible through the paint or other covering under normal lighting.

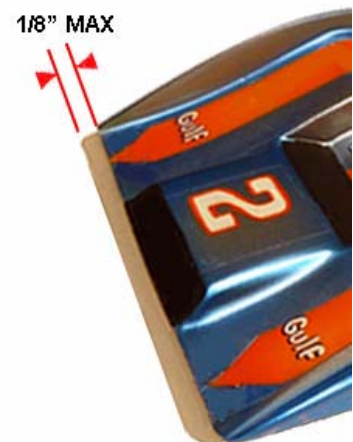
2d. No part of the chassis may be seen when looking down on the car from above. Legal

openings, such as air vents, etc., may be cut out.

2e. Area of body behind rear wheel wells must not project below the center of rear axle.

2f. Body reinforcing material may be fitted under the body and attached with clear tape and/or staples. No reinforcing material may be visible from the top of the body except as illustrated here.

2g. Slight trimming of the body beyond the cut line at the front outside corners is allowed to correct natural drooping, only as illustrated below:



3. **Spoilers and Air Control:** A single, flat plastic spoiler set at any angle may be attached to the rear of the body or under the rear of the body on the vertical portion behind the body. Spoilers may not be attached on top of the body.

3a. The spoiler's length is limited to a maximum of 1/2" (12.7mm) from the rear edge of the body and must be no wider than the outer edges of the body.

3b. No additional bends are allowed except for the one used to set the initial angle.

3c. No side dams of any type are allowed.

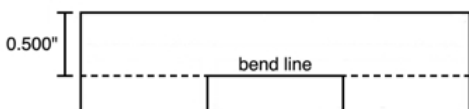
3d. Front diplanes are not allowed. Material to reinforce the front end mounted beneath the body and protruding no more than 1/8" (as illustrated above) is allowed.

3e. High-mounted wings are not allowed.

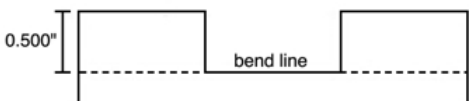
3f. No notches can be cut in the spoiler above the bend line. Punched holes in the spoiler are not allowed.

The 0.500" dimension shown below is the maximum allowed height of the spoiler from the edge of the body. This is where the bend line in the spoiler is positioned.

**Must be straight with no holes above bend line.**



**Cut-outs and/or holes above the bend line are not allowed.**



4. **Cockpit:** All bodies must contain a painted (at least two colors), fully-molded, three-dimensional interior comprising a driver (helmet, shoulders, and arms), a steering wheel, and cockpit representation.

4a. An interior must be mounted to the body and fully cover the chassis when viewed from above. Interiors are to be mounted to the body with the driver facing in the proper direction and realistic position and lead wires cannot be seen running through the interior. No interior shall be modified from its original configuration (i.e.) no squishing of heads or flattening.

4b. Interiors must be presentably painted and realistically detailed. No paper interiors.

4c. If a Can-Am body does not have a molded-in driver, then the body must be totally cut out so the interior is in full view.