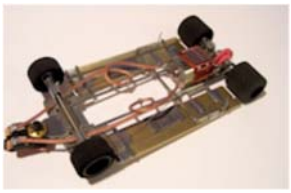
IRRA®

International Retro Racing Association

Stock Car Rules



- **Total Weight** = 120 grams minimum.
- **Chassis Width** = 3.00” maximum.
- **Wheelbase =** 4.50”.
- **Guide Lead** = 0.750”.
- **Body Width** = 3.250” at the wheel arches.
- **Body Thickness** = Of 0.015” base material, with minimum 0.012” on hood and 0.008” on sides without tape.
- **Track Width, F & R** = 3.00” maximum.
- **Chassis Clearance, F & R** = 0.050” / 0.050” minimum.
- **Tire Diameter, F & R** = 0.8125” minimum.
- **Front Tire Width** = 0.375” minimum.
- **Rear Tire Width** = 0.810” maximum.
- **Motor Type =** JK Hawk Retro, Chicagoland Stage 2
- **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. ***Wheelbase*:** 4.50” (114.3mm) desired +/- with a tolerance of .015”
2. ***Guide Lead*:** .740”/18.79mm minimum to .760"/19.3mm maximum with the .750" being the target measurement
3. ***Maximum Overall Chassis Width*:** 3.00” (76.02mm), measured across any part of the chassis, as well as across the front and rear axles).
4. ***Maximum Body Width*:** 3.250” (82.55mm), measured at the front and rear wheel arches.
5. ***Maximum Rear Tire Width*:** 0.810” (20.57mm).
6. ***Minimum Rear Tire Diameter*:** 0.8125” (20.64mm) across the full width of the tire.
7. ***Minimum Front Tire Width*:** 0.375” (9.53mm).

   7a. Wheels with O-ring ‘tires’ are prohibited.

   7b. 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).

   7c. Tire edges may be rounded to a maximum 1/16” radius.
8. ***Minimum Front Tire Diameter*:** 0.8125” (20.64mm) across the full width of the tire.
9. ***Minimum Rear Chassis Clearance*:** 0.050” (1.27mm).

   9a.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.

   9b. Clearance will be measured with front and rear tires sitting flat on the test block without the guide being supported.
10. ***Minimum Front Chassis Clearance*:** 0.050” (1.27mm).

    10a. This will be measured at the most forward part of the chassis.

    10b. Clearance will be measured with front and rear tires sitting flat on the test block without the guide being supported.
11. **Axles, Front & Rear:** 3/32” (2.38mm) minimum diameter, one-piece, solid steel.

    11a. Hollow axles are not allowed.

    11b. Axles may only be flattened in the areas where the wheels and gear are secured i.e. Chicagoland style axles.
12. ***Bushings/Bearings*:** Oilite/bronze bushings or ball bearings may be used in the front and/or the rear.
13. ***Minimum Weight*:** 120 grams ready to race.
14. ***Drive Type*:** Inline drive only, with the motor shaft at 90° to the rear axle.

    14a. The armature shaft of the motor must be located on the longitudinal center line of the chassis, i.e. offset motors are not permitted.

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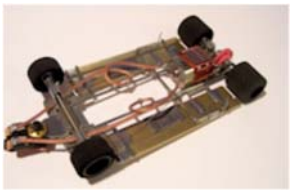

15. ***Drive Gears*:** Any drive gear and ratio may be used. Crown gears must be commercially available.

    15a. 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.

    15b. 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.

    15c. **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.

16. ***Maximum Front Axle Play*:** 0.125" (3.18mm), as part of the maximum front track width. At no time can tires extend out past the body.

17. ***Minimum Body Height*:** Body may not be trimmed above the lower door lines.

    17a. Severe raking of the body for aerodynamic effect is not allowed.

18. All chassis parts must be covered by the unmodified body.

19. 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.

20. The wheels shall be located in relation to the wheel arches in the body.

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

    21a. Speed rubber is prohibited.

    21b. 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.

    22c. 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**.

    22d. Any racer transferring tire cleaner to the track surface will be disqualified.

    22e. 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.

    22f. 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.

    21g. 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.

    21h. 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.

22. ***Tires – Front*:** Must be made of two pieces, i.e. a wheel and a tire.

    22a. 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).

    22b. 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,

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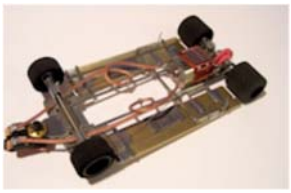


silicone, urethane, or other similar compounds, may not be used.

22c. Front tires may be coated with cyano-acrylate 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. 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 .200".

   3b. The motor bracket must support the motor and extend to touch the rear axle tube.

   3c. The axle tube does not need to pass through the motor bracket.

   3d. The motor can be screwed to the motor bracket and/or can also be soldered in place.

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

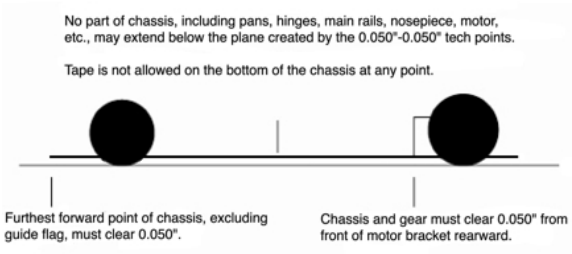
   3f. Pieces of steel used for guide tongues are limited to a maximum 1” (25.4mm) total width and 1.50” (38.1mm) total length. Steel tongues cut from the flexi and wing car chassis are not considered "commercial guide tongues" and are no longer allowed. All legal steel tongues must be purpose-built as steel tongues and meet all IRRA® measurement specifications.

   3g. The joining of brass sheet, plate, or strip parts via tab and slot or "keyed" construction is not permitted.

   3h. 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.

   3i. 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.

   3j. 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.



4. ***Hinged Movements:*** Other than a drop arm, all hinged movements must be oriented in only one direction on any individual chassis.

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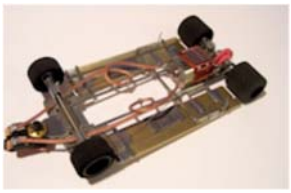

4a. A chassis may have transverse hinges (examples: Iso-fulcrum hinges and plumber hinges) **or** it may have longitudinal hinges (example: side pan hinges) but the chassis may not have both types.

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

4c. Centerline hinges are **not** 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 x 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 IRRA® and added to the approved motor list. **Please refer to the Motor Rules for more information on motors.**
2. At designated large IRRA® 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 IRRA® Premier Events for a period of one (1) year. Multiple infractions may result in permanent exclusion from IRRA® Premier Events. Should a Premier Event host raceway knowingly allow an excluded racer to compete, IRRA® 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.

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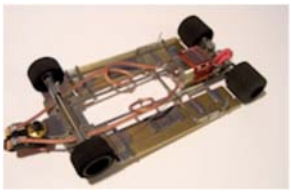

4b. Should a racer's hand-out motor fail during the qualifying run or the warm-up, the racer will be given the opportunity to change to another numbered hand-out motor without penalty, if a second hand-out motor purchased by the racer is available, and will be seeded with no qualifying time recorded.

E. Body

1. All approved Retro Stock Car bodies are listed in "Approved Body Lists" section. All bodies must be representative of pre-1970 cars and be 1/24 scale bodies with a wheelbase of 4.50 inches (114.3mm) minimum**.**

   1a. Stock Car bodies must meet the following dimensions: 0.012" minimum thickness on the hood without any tape and a minimum 0.008" thickness on the sides of the body no tape.

   Body style, Appearance, and Trim**:** Racers are encouraged to present cars with scale realism.

   2a. All chassis parts, excluding the guide flag, must be covered by the unmodified body. No part of the chassis may be seen when looking down on the car. Racers need to remember that Stock Car guide lead is limited to a maximum of .750" (19.1mm).

   2b. Bodies cannot be trimmed above the lower door lines. The area to the rear wheel well may not be below the center line of the rear axle.

   2c. Front and rear wheel arches must be cut out and not exceed the molded wheel opening. On the VFC Charger and Daytona bodies, the front wheel opening may be cut beyond the molded wheel opening but there must be .210" (5.3 mm) minimum of the body side as measured from the hood to the top of the wheel opening.

   2d. The wheels shall be located in relation to the wheel arches in the body.

   2e. Bodies must be presentably painted and carry at least three racing numbers, one on each side, and one large number on the roof, as in 1:1 Stock Car practice.

   2f. The full bumper must remain intact except for trimming to provide clearance for the guide flag. Bodies such as the O/S Daytona must have the front spoiler left fully intact.

   2g. All bodies must be fully opaque on all sides except for those areas deemed to be windows. The term opaque means covered with paint, tape, or other suitable material such that a finger is not visible through the paint or other covering under normal lighting.

   2h. Windows may not be cut out. Windows may be tinted.

2. ***Spoilers and Air Control*****:** Add-on spoilers are *not* allowed in this class.

3. ***Cockpit*****:** 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.

   4a. Interiors must be presentably painted and realistically detailed

   4b. No paper interiors.