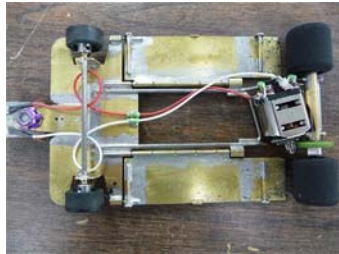


Retro Anglewinder



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 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:** 0.790" (20.64mm).
5. **Minimum Front Tire Width:** 0.225" (5.72mm). Wheels with O-ring 'tires' are prohibited. 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). Tire edges may be rounded to a maximum 1/16" radius.
6. **Minimum Front Tire Diameter:** 0.625" (15.88mm).
7. **Minimum Chassis Clearance:** 0.050" (1.27mm). The entire chassis and gear must meet this clearance. Clearance will be measured with front and rear tires sitting flat on the test block without the guide. The guide flag and the tires are the only chassis parts that do not have to clear the track by .050".
8. **Axles (Front & Rear):** 3/32" (2.38mm) minimum diameter, solid steel. Hollow axles are not allowed. Axles may only be flattened in the areas where the wheels and gear are secured.
9. **Bushings/Bearings:** Oilite/bronze bushings or ball bearings may be used in the front and/or the rear.
10. **Minimum Weight:** 100 grams ready to race.
11. **Drive Type:** Anglewinder.
12. **Drive Gears:** Any drive gear and ratio may be used.
13. **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.
14. **Maximum Rear Body Height:** 1.375" (34.93mm) measured with the car on all four wheels on a tech block (unsupported by the guide flag), from the tech block surface to the top of the highest point of the rear of the body, excluding any add-on spoiler. Severe raking of the body for aerodynamic effect is not allowed.
15. All chassis parts, including the guide flag, must be covered by the unmodified body.
16. The wheels shall be located in relation to the wheel arches in the body.
17. **Tires – Rear:** Any commercially-available black natural rubber tire, chemically-treated or untreated, on any size hub.
18. **Tires – Front:** Must be made of two pieces, i.e. a wheel and a tire. 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). Front tires must be glued to the wheels and be made of black rubber; only SBR, Wonder, and natural rubber type materials are acceptable. Front tires may be coated with cyanoacrylate adhesive ("Super Glue") or nail polish.

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 are allowed. Pans, if used, must be brass.
 - Steel: Wire, rod, and tube are allowed. Steel sheet is allowed for guide tongues only.

- The use of spring steel is not allowed
 - Steel commercial guide tongues are allowed and are limited to a maximum 1" (25.4mm) total width and 1.50" (38.1mm) total length.
 - 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).
 - Each car must have a brass rear axle tube that can be notched to clear the motor. No "pillow block" (bearing holders made where only a piece of brass or steel holds the bearing place) type rear ends allowed.
 - Motors may be mounted with or without a bracket. If a bracket is used, it must be made of brass.
 - The motor can or endbell cannot be notched or cut.
 - Pre-made steel motor to axle braces are not allowed.
 - Floating pin tubes inside another tube are allowed.
3. **Hinged Movements:** Hinges are unrestricted/unlimited. The number of individual hinges is not restricted. Centerline hinges are NOT allowed.
 4. **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.
 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 .086" (2.20mm) wide x 1.060" (27.18mm) long.

Motor

1. **Motor types:** May use any one of the following motors, which must remain unopened and unmodified. Note that regional groups using IRRA rules are permitted to use a subset of these motor types (for example, only the Falcon 7 and TSR D3 or only the Pro Slots) for these classes, if desired.
 - **Falcon 7**
 - **Pro Slot Euro Mk 1 4002, Sealed** with Chinese arm. May be refurbished by an IRRA Refurbishing Center
 - **Pro Slot Euro Mk 1 4002B, Sealed** with American arm. May be refurbished by an IRRA refurbishing center
 - **TSR D3**
2. **Note:** No other motors will be allowed unless approved by the IRRA and added to the approved motor list.
3. **Exclusion Clause:** Clear violation of the motor-tampering rule will result in permanent exclusion from future IRRA events of any kind. 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. 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. If the motor is legal and can be refurbished, it will be sent to an approved IRRA refurbishing program at no cost to the racer. Non-refurbishable motors found legal will be replaced at no cost to the racer. Racers wishing to have their motor refurbished for continued use can participate in the IRRA Motor Refurbishing Program.
4. A motor may not be changed after tech inspection at any time unless it fails during the race. A motor change between heats is NOT allowed unless the motor change was begun during an active heat. Motor changes must be approved and re-inspected by the Tech Director.

Body:

1. This class can have either the approved Can-Am bodies used or the GT Coupe bodies used as determined prior to a scheduled race and announced in advance. The two types of bodies are not allowed in the same race.

2. All approved Can-Am and GT Coupe bodies are listed in the “Approved Body Lists” section. All bodies must be representative of pre-1970 cars. Note: It is requested, in keeping with the spirit of retro racing, that bodies not be any less than .007” thick on the sides. Any body found to be flimsy or a detriment to marshaling will need to be corrected by the racer. Tape or body armor may be used to achieve the desired side thickness.
3. **Body style:** Racers are encouraged to present cars with scale realism. Bodies must be those on the approved body list. No “flattened” or “aerodynamically-improved” bodies allowed (i.e. no molded-in spoilers, wings, etc., that were not on the original full-size car or original mold). Note: molded-in spoilers may not exceed the allowed specification governing the maximum width of the body. Front wheel arches must be cut out. Rear wheel arches may be left closed if the original full-size car ran with closed wheel arches. 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 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. 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. 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).
4. **Spoilers and Air Control:** A single, flat plastic spoiler set at any angle may be added to the rear of the body only. 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. No additional bends are allowed except for the one used to set the initial angle. No side dams of any type are allowed. Front diplanes are not allowed. High-mounted wings are allowed if they are used on the original full-size car. Such wings must be securely attached to the body and/or chassis.
5. **Cockpit:** All bodies must carry a painted (at least two colors), fully-molded three-dimensional interior comprising a driver (helmet, shoulders, and arms), a steering wheel, and cockpit representation. No paper interiors. 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.