



International Retro Racing Association

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Please visit the IRRA® website for updates as they occur.

www.irraslotracing.com

2015 Official Rules

Quick Reference

This is a quick reference of the major specifications for each class.

Can-Am



- **Total Weight** = 100 grams minimum
 - **Chassis Width** = 3.125" maximum
 - **Body Width** = 3.250" at the wheel arches
 - **Body Thickness** = .010" with .007" minimum on sides
 - **Track Width, F & R** = 3.125"
 - **Chassis Clearance, F & R** = .015" / .050" minimum
 - **Front Tire Diameter** = .750" minimum
 - **Front Tire Width** = .225" minimum
 - **Rear Tire Diameter** = .8125" minimum
 - **Rear Tire Width** = .810" maximum
 - **Motor Type** = PS4002B, PS4002B-B, Topline or JK Falcon 7, JK Hawk Retro FK, TSR D3, Slick 7
 - **Gears** = Production only; no modifications except sanding diameter
 - **Body Height** = 1.375" maximum
 - **Front Grille** = .063" (1/16") except Ti22
 - **Spoiler Size / Height** = no wider than body; .500" maximum
 - **Driver Figure / Interior** = 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. An interior may be mounted in any manner as long as it fully covers the chassis when viewed from above. Interiors are to be mounted with the driver facing in the proper direction.
- **Gears** = Production only; no modifications except sanding diameter
 - **Body Height, Lotus 49 style** = 1.375" maximum
 - **Front Wings, Lotus 49 style** = Width across front wings 2.875" maximum.
 - **Body Height, All Others** = 1.125" maximum
 - **Front Grille** = .125" (1/8")
 - **Driver Figure / Interior** = 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. An interior may be mounted in any manner as long as it fully covers the chassis when viewed from above. Interiors are to be mounted with the driver facing in the proper direction.

GT Coupe - Pro



- **Total Weight** = 110 grams minimum
- **Chassis Width** = 3.125" maximum
- **Body Width** = 3.250" at the wheel arches
- **Body Thickness** = .010" with .007" minimum on sides
- **Track Width, F & R** = 3.125"
- **Chassis Clearance, F & R** = .015" / .050" minimum
- **Front Tire Diameter** = .750" minimum
- **Front Tire Width** = .225" minimum
- **Rear Tire Diameter** = .8125" minimum
- **Rear Tire Width** = .810" maximum
- **Motor Type** = PS4002B, PS4002B-B, Topline or JK Falcon 7, JK Hawk Retro FK, TSR D3, Slick 7
- **Gears** = Production only; no modifications except sanding diameter
- **Body Height** = 1.375" maximum
- **Front Grille** = .063" (1/16")
- **Spoiler Size / Height** = no wider than body; .500" maximum
- **Rear Window** = Painted, tinted, or covered with interior.
- **Driver Figure / Interior** = 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. An interior may be mounted in any manner as long as it fully covers the chassis when viewed from above. Interiors are to be mounted with the driver facing in the proper direction.

Formula 1



- **Total Weight** = 100 grams minimum
- **Chassis Width** = 1.625" maximum
- **Body Width** = 1.685" excluding front wings if present
- **Minimum Wheelbase** = 3.875"
- **Maximum Wheelbase** = 4.250"
- **Body Thickness** = .010 with .007 minimum on sides
- **Track Width, F & R** = 3.250"
- **Chassis Clearance, F & R** = .015" / .040" minimum with .790" tire diameter. .050" rear clearance with .812 tire at designated events.
- **Front Tire Diameter** = .750" minimum
- **Front Tire Width** = .375" minimum
- **Rear Tire Diameter** = .790" minimum or .812" minimum if announced by track owner.
- **Rear Tire Width** = .810" maximum
- **Motor Type** = PS4002B, PS4002B-B, Topline or JK Falcon 7, JK Hawk Retro FK, TSR D3, Slick 7

GT Coupe - FK



- **Racer Eligibility** At IRRA® Premier events, racers on the IRRA® "GTC-PRO Only" list may enter *only* GTC-PRO races. Racers not on the list may only enter the GTC-FK race.
- **Total Weight** = 110 grams minimum
- **Chassis Width** = 3.125" maximum
- **Body Width** = 3.250" at the wheel arches
- **Body Thickness** = .010" with .007" minimum on sides
- **Track Width, F & R** = 3.125"
- **Chassis Clearance, F & R** = .015" / .050" minimum
- **Front Tire Diameter** = .750" minimum
- **Front Tire Width** = .225" minimum
- **Rear Tire Diameter** = .8125" minimum
- **Rear Tire Width** = .810" maximum
- **Motor Type** = Topline or JK Falcon 7, JK Hawk Retro FK, TSR D3, Slick 7
- **Gears** = Production only; no modifications except sanding diameter
- **Body Height** = 1.375" maximum
- **Front Grille** = .063" (1/16")
- **Spoiler Size / Height** = no wider than body; .500" maximum
- **Rear Window** = Painted, tinted, or covered with interior.
- **Driver Figure / Interior** = Fully molded, minimum two-color, presentably / realistically painted, no paper interiors

Can-Am Plus



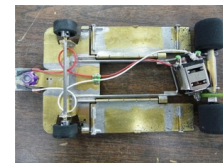
- **Total Weight** = None
- **Chassis Width** = 3.125" maximum
- **Body Width** = 3.250" at the wheel arches
- **Body Thickness** = .010" with .007" minimum on sides
- **Track Width, F & R** = 3.125"
- **Chassis Clearance, F & R** = .015" / .047" minimum
- **Front Tire Diameter** = .600" minimum
- **Front Tire Width** = .225" minimum
- **Rear Tire Diameter** = None
- **Rear Tire Width** = .810" maximum
- **Motor Type** = PS4002 FK
- **Gears** = No restrictions
- **Body Height** = None. No material, including flash plastic from the vacuum-forming process, may be added to the vertical portion of the body to increase body height
- **Spoiler Size / Height** = no wider than body; .500" maximum
- **Driver Figure / Interior** = Fully molded, minimum two-color, presentably / realistically painted, no paper interiors

Stock Car



- **Total Weight** = 120 grams minimum
- **Chassis Width** = 3.00" maximum
- **Wheelbase** = 4.50" minimum
- **Guide Lead** = .750
- **Body Width** = 3.250" at the wheel arches
- **Body Thickness** = .015 with .010 minimum on sides
- **Track Width, F & R** = 3.00" maximum
- **Chassis Clearance, F & R** = .050" / .050" minimum
- **Tire Diameter, F & R** = .8125" minimum
- **Front Tire Width** = .375" minimum
- **Rear Tire Width** = .810" maximum
- **Motor Type** = Topline or JK Falcon 7, JK Hawk Retro FK, TSR D3, PS4002, Slick 7
- **Gears** = Production only; no modifications except sanding diameter
- **Driver Figure / Interior** = 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. The interior must be attached to the body with the driver facing in the proper direction and fully cover the chassis when viewed from above.

Retro Anglewinder



- **Total Weight** = 100 grams minimum
- **Chassis Width** = 3.125" maximum
- **Body Width** = 3.250" at the wheel arches
- **Body Thickness** = .010" with .007" minimum on sides
- **Track Width, F & R** = 3.125"
- **Chassis Clearance, F & R** = .015" / .050" minimum
- **Front Tire Diameter** = .750" minimum
- **Front Tire Width** = .225" minimum
- **Rear Tire Diameter** = .790" minimum
- **Rear Tire Width** = .810" maximum
- **Motor Type** = PS 4002B, PS4002B-B, Topline or JK Falcon 7, JK Hawk Retro FK, TSR D3, Slick 7
- **Body Height** = 1.375" maximum
- **Front Grille** = .063" (1/16") except Ti22
- **Spoiler Size / Height** = no wider than body; .500" maximum
- **Driver Figure / Interior** = Fully molded, minimum two-color, presentably / realistically painted, no paper interiors. The rear window must be painted, tinted, or covered with interior on GTC bodies



Mission and General Rules

Mission Statement

The purpose of this organization is:

- to promote a return to the spirit of slot car racing fun from the '60s, using scratchbuilt slot cars
- to define slot cars that reflect the appearance of actual racing cars from the above time period
- to provide a unified set of rules for regional, national, and international competition, and
- to create a rules structure that is cost-effective for the racer as well as the raceways.

These rules were developed after a careful review of all regional Retro style rule sets, in a process begun at the first national Retro race held in Chicago in 2007.

Based upon the success of that event, a group of racers representing various regions agreed that a unified set of rules for major events could be established to ensure that all cars currently running under regional rules would be legal to run in national or international events with little, if any, modification. The primary goal was inclusiveness. Regions running Retro series are encouraged to adopt these rules for their regional events.

Though the result of careful consideration by a body of experienced slot racing participants, these rules will undergo revision if required and therefore may evolve over time. However, the intent of this organization is to revise these rules **only** when doing so is clearly necessary and beneficial for all parties concerned.

Announcements and the latest rules updates and decisions will be posted on the [IRRA® website](http://www.irra.org).

Please note that anyone running any of the classes defined in these rules who choose to establish alternative rules is prohibited from announcing that the class is being run under IRRA® rules unless the rules are used exactly as defined.

General Rules

Allowable Use of the IRRA® Trademark

- IRRA® is a trademark of the International Retro Racers Association (IRRA®) and may not be used without express written permission.
- IRRA® is a rules-making body only and does not sanction, approve, sponsor, or hold slot racing events. For this reason, the trademark IRRA® **may not** be used in the names of races, i.e. the Mid-Alaska IRRA® Moose Maul or the Golden Grain IRRA® Nats.

- The IRRA® trademark may be used specify the rule set being enforced at a slot racing event, i.e. the Moose 500 Retro Can-Am run under IRRA® Rules, the Cheater Crash-o-Rama for IRRA® Can-Am Cars, or IRRA® style Can-Am racing every Friday night.

Allowable Use of the IRRA® Rules

Permission to use and publish the copyrighted IRRA® rules is granted if and only if the rules are unchanged and unmodified in any manner. The notice of "Copyright IRRA®" also must be included.

IRRA® Board of Directors

Joe Neumeister - *Body & Tech chairs*

Mike McMasters - *Competition & Co-Component chairs*

Tony Pryzbilowicz (Tony P) - *Motor & Co-Chassis chairs*

Mike Swiss - *Co-Component & Co-Chassis chairs*

Greg Wells - *Sergeant at Arms & Marketing chair*

- Samples of any new items for use under IRRA® rules (such as motors and bodies) must be sent to the appropriate committee chair for further review by the board and committee members. Items must be available to raceways from the manufacturer, through the manufacturer's distribution system, or via the normal distributor network.
- Any part, material, technique, or rules interpretation not specifically allowed under IRRA® rules is not legal and is prohibited! The IRRA® reserves the right during technical inspection to disallow any car that does not meet the intent of the rules.

Tier Grouping

The various classes within IRRA® have been divided into two tier groups to guide race organizers in selecting the classes to run, especially at large events.

Tier 1 Classes – to be run at all large events (these are the IRRA® Premier classes)

- Can-Am
- Formula 1
- GT Coupe-Pro

Tier 2 Classes – to be selected by the race organizers as additional classes

- GT Coupe-FK
- Retro Stock Car
- Can-Am Plus
- Retro Anglewinder

- A "GTC-Pro Only" list will be maintained and published by IRRA® stipulating which racers will **not** be permitted to run in the GTC-FK Class at IRRA® Premier and other large events, based on the racers' previous performances at past events. Please refer to the [IRRA® website](#) for the current "GTC-Pro Only" drivers list.
- Racers not on the GTC-Pro list can only enter the GTC-FK Class event.
- If a racer wins the GTC-FK class at a Premier event then that racer will be added to the list and can **only** race in the GTC-Pro Class at future Premier events.

Hand-out Motors

- At designated large scheduled races using IRRA® rules, the track owner/Race Director 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 and install his hand-out motor. If a race for this class is conducted using hand-out motors then the racer must use only the hand-out motor(s) assigned to him/her.
- Should a racer's hand-out motor fail during the qualifying run or warm-up, the racer will be given the opportunity to change to another hand-out motor without penalty, if a second hand-out motor purchased by the racer is available.

Entry Fee

- The entry fee amount will be determined by the Race Committee in concert with the raceway owner and will be announced in advance of the event.
- Every effort will be made to include track time in this fee. If that is not possible, then an announcement will be made as to the cost of track time or "pit pass".

Tech Inspection

- The starting and closing times for tech inspection will be announced by the Tech Director prior to the event.
- Any driver whose car is not teched-in by the close of tech inspection will not race in that class.
- All cars will be impounded after tech inspection and cannot be touched or worked on until the Tech Director distributes them immediately before the beginning of each race.
- Any driver found working on his car during the impound period will be disqualified.
- The Race Director, at his discretion, may perform a second technical inspection after the race is completed.

Track Condition

- Drivers are prohibited from gluing the track before or during any races. The Race Committee and the track owner will ensure the tracks are properly set-up on race day. Glue boards are not allowed.

Tire Cleaning and other Fluids

- 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.
- Any racer transferring tire cleaner to the track surface will be disqualified.
- 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.
- 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.
- Racers cannot leave any residue on the track from either braid juice or oiling of the car. Braid juice is to be used sparingly on the car's braid and is not allowed to be placed on the track's braid. Racers should not oil their cars over the track's surface or use excess amounts that can leave a residual amount on the track's surface.

Race Formats

- All heats will be a minimum of 3 minutes in length.
- The length of the break between heats will normally be 2 minutes, although this may be increased by the Race Committee in consideration of the facility layout at the particular event's raceway.
- All drivers are required to utilize Lane Change Cards to mark the stopping position of their cars at the end of each heat. Drivers who fail to use Lane Change Cards as required will have their cars moved to start the next heat from a position immediately past the lap counter's dead strip.

Option A – 11 or less entrants

- Applies when there are 11 or less entrants
- Qualifying is optional.
- If qualifying held, lane choices selected in order of fastest qualifier to slowest qualifier with appropriate sit-outs allowed if following a round-robin format.

Option B – A, B, C Mains with Move-ups

- Qualifying is held.
- Mains are determined by qualifying order with 6 sit-outs spots for each Main allowing for 2 move-up from a lower Main, with the last Main being the remaining racers.
- Lane selection for each Main will be determined qualifying order.

Option C – Main seeding from A and B Semis

- Qualifying is held.
- Seed top 8 into two Semis, using format 1, 3, 5, 7 in the A Semi and 2, 4, 6, 8 in the B Semi.
- Seed remaining qualifiers into Consis using the same format.
- Top finishers from Consis move into the A and B Semis.
- Top 4 finishers from each Semi move into the Main.

Option D – Equally-Distributed Mains

- Qualifying is optional.
- If qualifying is held, seeding the Mains will be by qualifying order, equally dividing the field of entrants.
- If qualifying is held, lane choices selected in order of fastest qualifier to slowest qualifier with appropriate sit-outs allowed following a round-robin format if more than 8 racers per Main.
- Alternatively, if qualifying is held, top 8 seeded into A Main, with remaining qualifiers equally distributed into Semis.
- If qualifying is not held, then the formation of the Mains and the lane designations will be done randomly.
- In all cases, results will be based overall laps/sections totals.

Black Flag

- Any car suffering damage that makes it a hazard to other drivers, due to constant de-slotting, or that is damaged in a manner making it illegal under IRRA[®] rules (such as a loss of part of the body, loss of interior, or dragging on the track surface) will be black-flagged.
- A car that is black-flagged must be immediately removed from the track until proper repairs are made. Failure to comply with a black flag will result in the driver's disqualification from the race.

Conduct

- The Race Director, at his sole discretion, will issue a warning to a driver exhibiting unsportsmanlike conduct. A second offense will cause

the driver to suffer a ten-lap penalty. A third offense will result in the driver's disqualification from the race.

Marshaling

- All entrants are expected to marshal and/or to assist the Race Director if unable to marshal due to physical or medical reasons.
- Any driver failing or refusing to marshal as directed in a class in which he is competing will receive a five-lap penalty for his race in that class.

Track Calls

- Track calls will be permitted **only** under the following conditions:
 - an unmarshalable car in the straight in front of the drivers, or on an inaccessible part of the racing surface.
 - an unmarshalable car under a bridge or on the floor in an inaccessible location. A car on the floor is NOT automatically a track call.
 - a car landing in another racer's lane, i. e. a "rider".

Note: The situation where a marshal has more than one car to re-slot is NOT a track call.

- When a track call is made, the Race Director may, at his discretion, ask the driver calling "track" his reason for doing so. If the Race Director determines the track call to have been unwarranted and/or in violation of the rules, the driver's car will be moved to a position immediately past the lap counter's dead strip before racing is resumed.

Missed Laps

- Mid-race lap total adjustment will be made at the discretion of the Race Director, as each track and lap counting system is different. Race officials will review the missed laps adjustment policy at each event and communicate it to the racers.

Photographs

- Racers entering IRRA[®] events must grant the IRRA[®] the right to photograph all cars (including the chassis), and to publish such photos for the benefit of fellow racers, the betterment of the hobby, and the promotion of IRRA[®] racing.

Motor Rules

Approved Motors for use in IRRA[®] Racing

Topline Falcon 7, part number ATCD302
JK Falcon 7, part number JK30207



- 65 turns (nominal) of 30 AWG wire (nominal)
- Stack length - .375"
- Arm timing - 15 degrees nominal
- Diameter - .513"
- Magnets - Neodymium
- Internal brushes and springs
- Oilite bushings

JK Retro Hawk FK, part number JKHR



- 65 turns (nominal) of 30 AWG wire (nominal)
- Stack length - .390"
- Arm timing - 15 degrees nominal, commutator tied
- Diameter - .513"
- Magnets - Neodymium
- Internal brushes and springs
- Oilite bushings

The armature shaft on the endbell side of JK Hawk Retro motors *may not* be cut or shortened.

TSR D3, part number TD301



- 65 turns (nominal) of 30 AWG wire (nominal)
- Stack length - .375"
- Arm timing - 3 degrees nominal
- Diameter - .513"
- Magnets - Neodymium
- Internal brushes and springs
- Oilite bushings

Pro Slot Euro Mk 1, sealed, with Chinese-made arm, part number PS4002 – refurbishable



- 60 turns (nominal) of 31 AWG wire (nominal)
- Stack length - .400"
- Diameter - .513"
- Arm timing - 20 degrees nominal
- Magnets - ceramic
- External brushes and springs
- Oilite bushings

Pro Slot Euro Mk 1, sealed, with Chinese-made arm, part number PS4002FK – not refurbishable



- 65 turns (nominal) of 30 AWG wire (nominal)
- Stack length - .400"
- Diameter - .513"
- Arm timing - 15 degrees nominal
- Magnets - Neodymium
- External brushes and springs
- Oilite bushings

Pro Slot Euro Mk 1 "Puppy Dog", sealed, with American-made arm, part number PS4002B or PS4002B-B – refurbishable



- 75 turns of 31 AWG wire
- Stack length - .400"
- Diameter - .513"
- Arm timing - 25 degrees nominal
- Magnets - ceramic
- External brushes and springs
- Oilite bushings

Slick 7 Mini Brute, part number S7-588A



- 82 turns (nominal) of 31 AWG wire (nominal)
- Stack length - .375"
- Arm timing - 5 degrees nominal
- Diameter - .513"
- Magnets - ceramic
- Internal brushes and springs
- Oilite bushings

Note: armature dimensions exclude any coatings, if present.

Notes:

- 1) Both the specified winds and wire sizes are nominal figures, with allowances for production variances to be permitted.
- 2) A protested FK motor (Falcon 7, Retro Hawk, and TSR D3) armature will be deemed legal if the sum of wire winds counted on all three poles is no less than 193 winds and if no single pole has less than 63 winds. In other words, a variance of -2 total wires winds from the nominal total winds spec will be permitted. For example, an FK armature with wire wind counts of 65, 64, 64 on the three poles would be deemed legal, as would an armature with wire wind counts of 65, 65, 63. An armature with wind counts of 65, 64, 63 would not be legal.
- 3) A protested Pro Slot PS4002 Chinese armature will be deemed legal if the sum of wire winds counted on all three poles is no less than 178 winds and if no single pole has less than 58 winds.
- 4) A protested Slick 7 Mini Brute armature will be deemed legal if the sum of wire winds counted on all three poles is no less than 244 winds and if no single pole has less than 80 winds.
- 5) The specified AWG wire sizes on all motors are nominal values and minor allowances from the exact AWG specification will be permitted at the discretion of the IRRA[®] Board of Directors.

If a manufacturer releases a new or modified version of a previously-approved IRRA[®] motor without informing the IRRA[®] of such changes, the IRRA[®] Board, at its discretion, may remove that motor from the list of motors approved for use in IRRA[®] competition. IRRA[®] also reserves the right to add new motors or to remove any previously-approved motor from the list of approved motors.

Any motors with changed specifications submitted for IRRA[®] approval must carry a new part number. The IRRA[®] reserves the right to ask manufacturers for unique tags and/or can markings for identification purposes on motors submitted for inclusion in the IRRA[®] approved motors list.

Approved refurbishers for Pro Slot Motors:

Fast Ones: contact is [Ron Hershman](#)

Pro Slot Ltd: contact is [Dan DeBella](#)

IRRA[®] Motor Refurbisher Requirements

Applies to: Pro Slot Ltd and Fast Ones, as designated IRRA[®] Service Centers performing refurbishing work on Pro Slot PS4002, PS4002B, and PS 4002B-BB motors

IRRA[®] Service Center operators are NOT permitted to enter IRRA[®] events using Pro Slot motors that they themselves have refurbished. Refurbishers will be required to race ONLY using Pro Slot motors that have been refurbished and sealed by another approved IRRA[®] Service Center, or new motors obtained from factory-sealed packaging.

IRRA[®] Service Centers must certify that any motor submitted in one or more of the following conditions will **not** be refurbished:

- 1) A motor that is unassembled, modified, and/or where work obviously was done elsewhere, i.e. not by one of the two IRRA[®] Service Centers.
- 2) A motor received with a damaged seal that doesn't cover at least two screws. Older production motors using foil seals or that were produced without endbell screws will be refurbished at the refurbishers discretion pending validation of specifications.
- 3) Refurbishers will **not** "verify and seal" motors as the only "work" performed.
- 4) Refurbishers will not seal any out-of-spec motors. Any motor with parts found to be illegal and out-of-spec with evidence of tampering will be destroyed. Parts found to be out-of-spec without signs of tampering will be replaced by Pro Slot.
- 5) The Service Centers will communicate to IRRA[®] BoD receipt of **any and all** motors with out-of-spec or illegal parts.

IRRA® Motor Specifications and Rules

Applies to: Pro Slot 4002B and Pro Slot 4002B-B motors.

- 1) All motors must remain unmodified and as produced by Pro Slot.
- 2) "Pre-furbished" motors, i.e. new motors that are refurbished before being used, are not allowed.
- 3) Armatures are to be tagged "PD".
- 4) Armatures are to be wound with 75 turns of 31 gauge wire.
- 5) Minimum armature diameter is .512"; minimum armature stack length is .390".
- 6) Commutator timing is not to be modified from the factory "25 degrees nominal" setting. Arms with over 30 degrees timing will be replaced by Pro Slot if no evidence of tampering is detected; if tampering is detected, the arm will be destroyed.
- 7) Armatures are to be balanced, rebalanced, and commutators re-trued by authorized IRRA® Service Centers **only**.
- 8) Motor cans must remain unmodified and as produced by Pro Slot. Grinding where the can is soldered to the motor bracket is permitted.
- 9) Motor air gap is not to be changed/modified from its factory specifications, which is a nominal .530". Air gap must measure between .525" and .540".
- 10) Magnets must be unmodified stock Pro Slot factory production units only and cannot be honed or ground. Magnets will be retained in place using clear CA ("Super Glue") only. Magnet recharging is allowed.
- 11) Ball bearing is allowed on can side of motor only. No endbell ball bearings allowed. Can ball bearing and can oilite bushing may be soldered in place.
- 12) Endbells are to remain unmodified. Stock factory endbell hardware is to be used unmodified (any grinding of the hoods done at the Pro Slot factory for commutator clearance is allowed). Hardware screws maybe be changed in case of a stripped endbell.
- 13) Only three-coil motor springs of any brand are allowed. Springs may be "tweaked" to adjust tension.
- 14) Any 36D size motor brushes may be used. Brushes may be radiused but any other cutting, slotting, drilling, or modification of the brush face contacting comm is **not** allowed. Narrowing of brush height or width is **not** allowed. Shunt wires and spring insulation are **not** allowed.
- 15) Can to endbell screws must be used, with an unmodified refurbisher's seal covering the screws. Only Pro Slot and Fast Ones seals may be used. Seals may be protected with clear coating. Damaged seals must retain a single piece of seal material covering at least two endbell screws.
- 16) External clip-on motor heatsinks and commutator arm-shaft mounted coolers are allowed.

IRRA® Motor Rules

Applies to: Topline & JK Falcon 7, JK Retro Hawk FK, TSR D3, and Slick 7 Mini Brute

- 1) All motors must remain unmodified and as produced by the manufacturer.
- 2) Motor cans must remain unmodified and as produced by the manufacturer. Factory external motor can dimensions may not be changed by crushing or other methods. Grinding where the can is soldered to the motor bracket is permitted.
- 3) Factory armature timing must remain unmodified.
- 4) Endbells may not be removed and reinstalled.
- 5) External clip-on motor heatsinks and commutator arm-shaft mounted coolers are allowed.
- 6) The armature shaft on the endbell side of JK Hawk Retro motors *may not* be cut or shortened.

Motor Protest Procedure

Any competitor racing in the same class/race as another competitor may protest another racer's motor. The protest **must** be filed with the official in charge of event **before the completion of the race in which the suspect motor is being raced/used**.

The fee for protesting another motor varies with the type of motor:

For Pro Slot motors (i.e. PS4002, 4002B, PS4002B-B), protest fee is **\$75**.

For all other motors (i.e. Topline or JK Falcon, Hawk Retro, TSR D3, Slick 7 Mini Brute), protest fee is **\$40**.

The protest fee must be paid in cash immediately after the race finishes.

At the conclusion of the race, the protested motor will be removed from the car by the race official or in front of the race official. Once the motor is out of the car the race official will mark the motor, which will be impounded by the official in charge to be sent in for teardown and verification. The impounded motor will be sent to the IRRA® Motor Chair or his designate for verification.

The race results will stand, to be amended later if the protested motor is found to be illegal or out of spec.

The IRRA® BoD will be notified of the results of the motor inspection and verification process. IRRA® will release an official statement of the findings within ten days. Said statement may include notification that the racer using the illegal motor was found in violation and subject to the statement in the Exclusion Clause of the rules.

If the motor is found to be illegal or out of spec, the protester will get his protest fee returned in full.




If the motor is found to be legal and in spec, the motor's owner will receive the full protest fee.



International Retro Racing Association

IRRA[®] Approved Body Lists

Can-Am & Retro Anglewinder Classes

	<p>Chapparal</p> <p>Chaparral 2H - Dilworth</p>
	<p>Ferrari</p> <p>Ferrari 312 - Electric Dreams MACV16 Ferrari 330 - Lancer-163 Ferrari 330 - TrueScale Ferrari 350 - Dilworth Ferrari 350 - Vintage OS455 Ferrari 350P4 - Red Fox Ferrari 612 - Champion Ferrari 612 - Dilworth Ferrari 612 - JK 7086B Ferrari 612 - OS410 Ferrari 612 - OS410L Ferrari 612 - OS414 Ferrari 612 - Parma 1142B Ferrari 612 Bloom/Waters - OS451 Ferrari 612 - Vintage OS466 Ferrari 612 - TSR03 Ferrari 712 - OS470</p>
	<p>Honker</p> <p>Honker - Vintage OS465 Honker - Red Fox</p>

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	<p>Lola T70</p> <p>Lola T70 - Dilworth Lola T70 - TrueScale TSR08 Lola T70 Spyder (Donohue) - OS412 Lola T70 Spyder (Gurney) - OS470</p>
	<p>Lola T160</p> <p>Lola T160 Mini Wheels - Dilworth Lola T160 - Electric Dreams MACV15 Lola T160 - OS407 Lola T-160 - Parma 1141B Lola T160 - Vintage OS467 Lola T160 - TrueScale TSR05</p>
	<p>Lola T163</p> <p>Lola T163 - Dilworth Lola T163 - Parma 1036B Lola T163 - OS407L Lola T163 MO - OS474 Lola T163 - Vintage OS464</p>
	<p>Lotus</p> <p>Lotus 40 Dynamic - ED ELEB029 Lotus 40 - OS450 Lotus 40 - OS472 Lotus 40 Russkit - ED ELEB30 Lotus 40 - TrueScale TSR06</p>



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	<p>McLaren</p> <p>McLaren Mk 6 VK - Elec Dreams MES01 McLaren M6 - JK 7087B McLaren M6 - Red Fox McLaren M6A - Vintage OS466 McLaren M8 - Champion/Parma McLaren M8 Lancer - Elec Dreams ELEB03 McLaren M8 - OS413 McLaren M8A - TrueScale McLaren M8A - Vintage OS463 McLaren M8B - OS411 McLaren M8B - TrueScale TSR01</p>
	<p>McLeagle</p> <p>McLeagle - OS409</p>
	<p>McKee</p> <p>McKee - OS405 McKee - TrueScale</p>
	<p>Porsche</p> <p>Porsche 908 Spyder - Dilworth Porsche 908 - Red Fox Porsche 908R - TrueScale TSR07 Porsche 908 - Vintage OS456 Porsche 908 Flunder - OS418 Porsche 917PA short - OS419 Porsche 917PA long - OS419L Porsche 917PA - TrueScale TSR25</p>

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	<p>Ti22 - Short</p> <p> Ti22 short - Electric Dreams V03 Ti22 short - OS408 Ti22 short - TrueScale TSR27 Ti22 Kirby - G-Force GFR100B Ti22 Kirby short - TrueScale Ti22 Kirby - OS415 Ti22 narrow nose - OS475 Ti22 short - Parma 1143B </p>
	<p>Ti22 - Long</p> <p> Ti22 - JK 7081B Ti22 - JK 70812B Ti22 Kirby long - TrueScale TSR24 - non-ribbed version Ti22 Kirby Associated long - OS415L Ti22 long - OS408L Ti22R - OS473 Ti22RL long - OS476 Ti22 narrow nose long - OS477 Ti22 - Parma 1041B Ti22 narrow nose - Parma 1043B </p>



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GT Coupe & Retro Anglewinder Classes

	<p>Chaparral</p> <p>Chaparral 2D - Electric Dreams ELEB031 Chaparral 2F - Red Fox Chaparral 2F - OS423 Chaparral 2F short - OS425</p>
	<p>Chevron</p> <p>Chevron B16 - OS420 Chevron B16R - OS426</p>
	<p>Ferrari</p> <p>Ferrari 312GT - Dilworth Ferrari 330P4 - Dilworth Ferrari 330P4 GT - G-Force GFR200B Ferrari 330P4 - OS424 Ferrari 330P4 - Red Fox Ferrari 330P4 - TrueScale TSR11</p>
	<p>Ford GT</p> <p>Ford GT40 - JK 7082B Ford GT40 - Red Fox Ford GT Mk IV - Electric Dreams ELB08 Ford GT Mk IV - JK 1091 Ford GT Mk IV - TrueScale TSR26</p>

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	<p>Ford P68</p> <p>Ford P68 - Dilworth</p>
	<p>Lola</p> <p>Lola T70 - JK Lola T70 Sunoco - JK 719081B Lola T70 - Red Fox Lola T70 - OS421 Lola T70 - TrueScale Lola T70 - Parma 1039B</p>
	<p>Marcos Mantis</p> <p>Marcos Mantis - Parma -1037B Marcos Mantis - TrueScale</p>
	<p>McLaren</p> <p>McLaren Mk 6 - TrueScale TSR12</p>

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Mirage



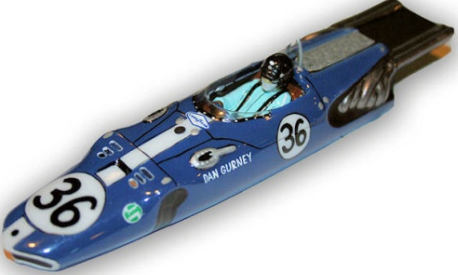

Mirage M1C - TrueScale TSR23
Mirage M2 - TrueScale TSR15



Porsche

Porsche Carrera - JK 1903
Porsche 908 - TrueScale TSR09

Formula 1

	<p>BRM</p> <p>BRM P138 - Parma 1049B</p>
	<p>Cooper Maserati</p> <p>Cooper Maserati wide - Lancer 881 Cooper Maserati narrow - Lancer 981 Cooper Maserati - OS430 Cooper Maserati - Red Fox Cooper Maserati - TrueScale TSR35</p>
	<p>Eagle</p> <p>Eagle - TrueScale TSR33</p>
	<p>Ferrari</p> <p>Ferrari narrow - Lancer 980 Ferrari - Red Fox Ferrari Lancer - TrueScale TSR18 Ferrari Dynamic - TrueScale TSR17 Ferrari Lancer - Vintage OS432N Ferrari Dynamic - Vintage OS434N</p>

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Honda

Honda RA301 - TrueScale TSR36



Lotus 43

Lotus 43 - Dilworth



Lotus 49

Lotus 49 - Lancer 975
 Lotus 49 - OS431
 Lotus 49 - TrueScale TSR21
 Lotus 49B - OS435



Matra

Matra - Lancer 976
 Matra - Vintage OS433N
 Matra MS80 - Parma 1038B
 Matra - TrueScale TSR20

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McLaren

McLaren - Chicagoland M7C
McLaren M7C - OS436
McLaren M9A - OS437







Lotus 56 Turbine

Lancer
True Scale TSR19
OS 438B

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Stock Car

	<p>Ford Fairlane</p> <p>'67 Ford Fairlane - OS602</p>
	<p>Ford Torino</p> <p>Ford Torino - OS604</p>
	<p>Ford Torino Talladega</p> <p>Talladega - OS651</p>
	<p>Chevy</p> <p>Chevy Chevelle – VFC D33 Chevy Chevelle - OS652 '65 Chevy Impala - VFC N04</p>

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	<p>Dodge Charger</p> <p>'68 Charger RT - OS601 '67 Charger - OS600</p>
	<p>Dodge Daytona Charger</p> <p>Dodge Daytona - OS650</p>
	<p>Mercury</p> <p>Mercury Cyclone - Parma 1040C</p>
	<p>Pontiac</p> <p>Pontiac GTO - OS603</p>

Can-Am Plus

	<p>True Scale Abarth</p>
	<p>M.A.C. Autocoast Ti22</p> <p>Electric Dreams V002 Parma 925</p>
	<p>M.A.C. Ferrari 612</p> <p>Electric Dreams V005 Parma 924</p>
	<p>M.A.C. Gulf Mirage</p> <p>Electric Dreams V007 Parma 1057B O/S 491</p>

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M.A.C. Lola T292

Electric Dreams V004
Parma 923



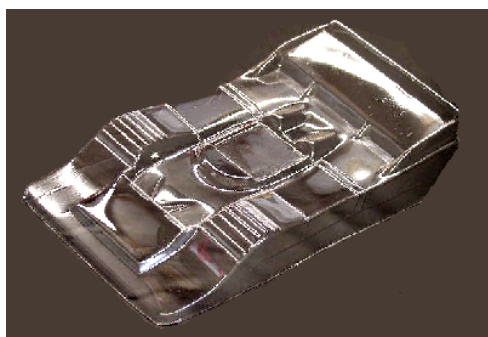
M.A.C. McLaren M20

Electric Dreams V009
Parma 932



M.A.C. Porsche 917-30

Electric Dreams V008
Parma 1
OS 490



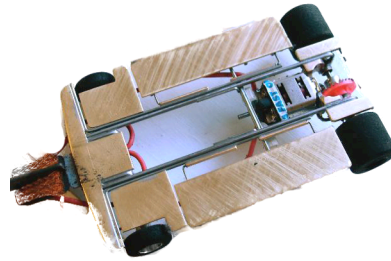
Porsche 917-10

Truescale TSR 16



International Retro Racing Association

Can-Am Specifications & Rules



A. Simplified Specifications Reference

- **Total Weight** = 100 grams minimum
- **Chassis Width** = 3.125" maximum
- **Body Width** = 3.250" at the wheel arches
- **Body Thickness** = .010" with .007" minimum on sides
- **Track Width, F & R** = 3.125"
- **Chassis Clearance, F & R** = .015" / .050" minimum
- **Front Tire Diameter** = .750" minimum
- **Front Tire Width** = .225" minimum
- **Rear Tire Diameter** = .8125" minimum
- **Rear Tire Width** = .810" maximum
- **Motor Type** = PS4002B, PS4002B-B, JK Hawk Retro, Topline or JK Falcon 7, TSR D3, Slick 7
- **Body Height** = 1.375" maximum
- **Front Grille** = .063" (1/16") except Ti22
- **Spoiler Size / Height** = no wider than body; .500" maximum height
- **Driver Figure / Interior** = Fully molded, minimum two-color, presentably / realistically painted, no paper interiors

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:** 0.8125" (20.64mm) across the full width of the tire.
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:** 0.750" (19.05mm) across the full width of the tire.

7. **Minimum Rear Chassis Clearance:** 0.050" (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.

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

11. **Minimum Weight:** 100 grams ready to race.

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 and the only 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. 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.
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:** 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.
 - 15a. Severe raking of the body for aerodynamic effect is not allowed.
16. **Tires – Rear:** Any commercially-available black natural rubber tire, chemically-treated or untreated, on any size hub.
 - 16a. Speed rubber is prohibited.
 - 16b. Tires may not be changed during a race. 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 under the green and present the car to the tech inspector at the end of the heat for checking before the racer will be allowed to continue.
 - 16c. 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.
 - 16d. 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.
 - 17a. 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).
 - 17b. 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.

- 17c. Front tires may be coated with cyanoacrylate adhesive ("Super Glue") or nail polish.
- 17d. Tires may be cleaned during the race, in between heats, and during lane changes.
- 17e. 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**. Any racer transferring tire cleaner to the track surface will be disqualified.
- 17f. 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.
- 17g. 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.

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; Bronze: rod; Steel: wire, pin tubing, and commercial guide tongues are allowed. 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 boards are not legal.
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 or contain the rear bushings/bearings.
 - 3c. The axle tube, if used, 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.

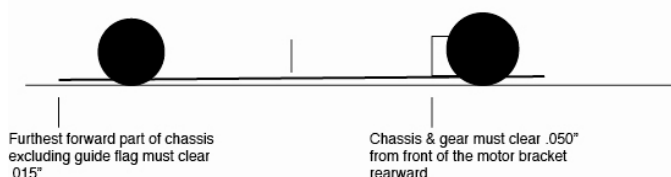
3h. Main chassis rails constructed of round steel or brass wire maybe ground or sanded flat on the bottom, but no more than 20% of the rail diameter may be removed.

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.

No part of chassis including pans, hinges, main rails, nose piece, motor (excluding seal), etc may extend below the plain created by the .015"-.050" tech points.

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



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

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 .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 remains in place.

D. Motor

1. **Motor types:** May use any one of the following motors, which must remain unopened and unmodified.

- **Pro Slot Euro Mk 1 4002B and 4002B-B**, sealed, with American arm, with bushing or ball bearing in can. May be refurbished by an approved IRRA® Service center
- **Topline or JK Falcon 7**
- **JK Hawk Retro FK**
- **TSR D3**
- **Slick 7 Mini Brute**

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 motor(s) assigned to him/her.
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.
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.
- 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 hand-out motor without penalty, if a second

hand-out motor purchased by the racer is available.

E. Body

1. All approved Can-Am bodies are listed in the "Approved Body Lists" section. All bodies must be representative of pre-1970 Can-Am/USRRC cars.
 - 1a. Bodies may 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.
 - 1b. Maximum body length is 6-3/4" (171.5mm).
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 full-size car or original mold). Note: molded-in spoilers may not exceed the allowed specification governing the maximum width of the body.
 - 2b. 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.
 - 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. There should be a minimum 1/16" (1.59mm) vertical component and/or part of the grille along the front edge of the body unless this element was not on the original car (example: Ti22).
 - 2f. Area of body behind rear wheel wells must not project below the center of rear axle.
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 diaphanes are not allowed.

3e. 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.

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

The .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.

Straight - no holes - on the section above the bend line.



Cut outs above the bend line not allowed.
No punched holes.

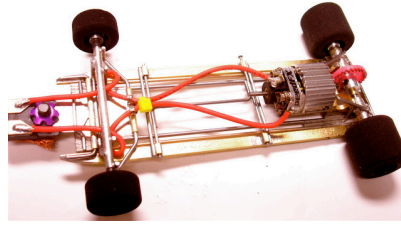


4. **Cockpit:** All bodies must contain a painted (at least two colors), fully-molded, three-dimensional interior comprising a driver (helmet, shoulders, and arms), a steering wheel, and cockpit representation. An interior may be mounted in any manner as long as it fully covers the chassis when viewed from above. Interiors are to be mounted with the driver facing in the proper direction.
 - 4a. Interiors must be presentably painted and realistically detailed. No paper interiors.
 - 4b. 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.
 - 4c. Bodies with molded-in interiors also must have an interior that covers the view of the chassis through the window.
 - 4d. Minimal notches in the window of Can-Am bodies to allow for the proper placement of the interior and clearance for the roll bar is permitted.

IRRA®

International Retro Racing Association

Formula 1 Rules



A. Simplified Specification Reference

- **Total Weight** = 100 grams minimum
- **Chassis Width** = 1.625" maximum
- **Body Width** = 1.685" excluding front wings if present
- **Minimum Wheelbase** = 3.875"
- **Maximum Wheelbase** = 4.250"
- **Body Thickness** = .010" with .007" minimum on sides
- **Track Width, F & R** = 3.250"
- **Chassis Clearance, F & R** = .015" / .040" minimum. .050" minimum may apply for designated events
- **Front Tire Diameter** = .750" minimum
- **Front Tire Width** = .375" minimum
- **Rear Tire Diameter** = .790" minimum. .812" may apply for designated events
- **Rear Tire Width** = .810" maximum
- **Motor Type** = PS4002B, PS4002B-B, Topline or JK Falcon 7, JK Retro Hawk, TSR D3, Slick 7
- **Body Height, Lotus 49 style** = 1.375" maximum
- **Front Wings, Lotus 49 style** = 2.875" maximum width across front wings
- **Body Height, all others** = 1.125" maximum
- **Front Grille** = .125" (1/8")
- **Driver Figure / Interior** = Fully molded, minimum two-color, presentably / realistically painted, no paper interiors

B. General Specifications

1. **Maximum Overall Car Width:** 3.25" (82.55mm), measured across front and rear axles.
2. **Maximum Body Width:** 1.685" excluding front wings as on the Lotus 49 and similar bodies.
3. **Maximum Rear Tire Width:** 0.810" (20.57mm).
4. **Minimum Rear Tire Diameter:** .790" across the full width of the tire. .812" may be required along with .050" rear clearance at designated events.
5. **Minimum Front Tire Width:** 0.375" (9.53mm).

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:** 0.750" (19.05mm) across the full width of the tire.
7. **Minimum Wheelbase:** 3.875" (98.43mm).
8. **Maximum Wheelbase:** 4.250" (107.95mm).
9. **Minimum Rear Chassis Clearance:** 0.040" (1.27mm).
 - 9a. If .812" diameter rear tires are required, minimum rear clearance will be 0.050".
 - 9b. Clearance will be measured with front and rear tires sitting flat on the test block with the guide unsupported.
 - 9c. 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.
10. **Minimum Front Chassis Clearance:** 0.015" (0.38mm)
 - 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 with the guide unsupported.
11. **Maximum Chassis Width:** 1.625" (41.28mm), excluding axle tubes and axles.
12. **Axles (Front & Rear):** 3/32" (2.38mm) minimum diameter, one-piece, solid steel.
 - 12a. Hollow axles are not allowed.
 - 12b. Axles may only be flattened in the areas where the wheels and gear are secured.
13. **Bushings/Bearings:** Oilite/bronze bushings or ball bearings may be used in the front and/or the rear.
14. **Minimum Weight:** 100 grams ready to race.
15. **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.
16. **Drive Gears:** Any drive gear and ratio may be used. Crown gears must be commercially available and the only 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. 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.
17. **Maximum Front Axle Play:** 0.125" (3.18mm), as part of the maximum front track width.
18. **Tires – Rear:** Any commercially-available black natural rubber tire, chemically-treated or untreated, on any size hub.
- 18a. Speed rubber is prohibited.
- 18b. Tires may not be changed during a race. 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 under the green and present the car to the tech inspector at the end of the heat for checking before the racer will be allowed to continue.
- 18c. 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.
- 18d. 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.
19. **Tires – Front:** Must be made of two pieces, i.e. a wheel and a tire.
- 19a. 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).
- 19b. 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.
- 19c. Front tires may be coated with cyano-acrylate adhesive ("Super Glue") or nail polish.
- 19d. 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**.

19e. Any racer transferring tire cleaner to the track surface will be disqualified.

19f. 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.

19g. 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.

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; Bronze: rod; Steel: wire, pin tubing, and commercial guide tongues are allowed. 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 boards are not legal.
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.

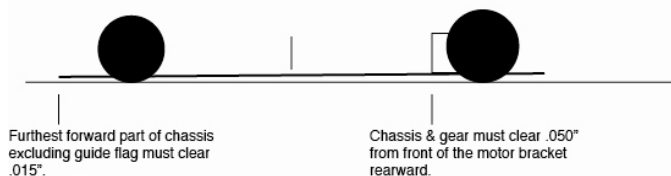
3h. Main chassis rails constructed of round steel or brass wire maybe ground or sanded flat on the bottom, but no more than 20% of the rail diameter may be removed.

3i. Wire or tubing rails must connect the front and rear sections of the chassis. Using metal strip for this purpose is 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.

No part of chassis including pans, hinges, main rails, nose piece, motor (excluding seal), etc may extend below the plain created by the .015"-.050" tech points.

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



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

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 .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 remains in place.

D. Motor

1. **Motor types:** May use any one of the following motors, which must remain unopened and unmodified.

- **Pro Slot Euro Mk 1 4002B and 4002B-B**, sealed, with American arm, with bushing or ball bearing in can. May be refurbished by an approved IRRA® Service center
- **Topline or JK Falcon 7**
- **JK Retro Hawk FK**
- **TSR D3**
- **Slick 7 Mini Brute**

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 page 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 handout motors then the racer must use the motor(s) assigned to him/her.

3. **Exclusion Clause:** Clear violation of the motor-tampering rule will result in permanent exclusion from future IRRA® events of any kind.

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. 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.

3d. 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 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.
 - 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 hand-out motor without penalty, if a second hand-out motor purchased by the racer is available.

E. Body

1. All approved Formula 1 bodies are listed in the Approved Body Lists section. All bodies must be representative of pre-1970 Formula 1 cars.
 - 1a. Bodies may 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.
2. **Body style:** Racers are encouraged to present cars with scale realism. Bodies must be those on the Approved Body List.
 - 2a. No air-control devices may be added to the bodies
 - 2b. 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.
 - 2c. All chassis parts, to include the guide flag, must be covered by the unmodified body with the following exceptions: the guide may be visible on the sides of the body when the guide is turned and scale-appearing suspension or other cosmetic devices are allowed. The chassis can be visible through or on the sides of the rear sections of the body only if the full-size car was open in that area. For example, flat areas between the exhaust pipes may be left clear (but not removed), and chassis parts may be visible on the sides of bodies where the exhaust pipes gather in the center over the gear area. Chassis

visible from the top via a legal opening, such as the front or rear axle area, are permissible in this class, providing no part, other than the axles and/or axle tubes, exceeds the maximum 1.625" chassis width.

2d. Legal openings, such as air vents, etc., may be cut out.

2e. A minimum 1/8" (3.18mm) high front grille/air intake (if present) must remain visible on the trimmed body.

2f. F1 bodies may not be "wedged" or "raked" and must be mounted as level as possible. Width across front wings (where present) must be no wider than 2.875".

2g. All bodies with ducktail type rears (i.e. Lotus 49/49B) cannot exceed 1.375" in height at the highest point. All other F1 bodies cannot exceed 1.125" in height at the highest point.

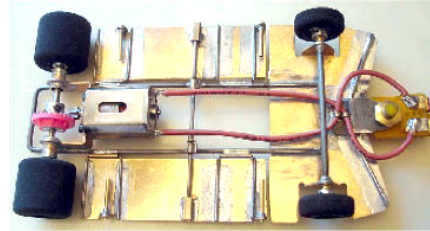
2h. Area of body behind rear wheel wells must not project below the center of rear axle.

3. **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. An interior may be mounted in any manner as long as it fully covers the chassis when viewed from above. Interiors are to be mounted with the driver facing in the proper direction
 - 3a. Molded-in cockpits are allowed as long as they have dimensional scaling (not flat).
 - 3b. Interiors must be presentably painted and realistically detailed
 - 3c. No paper interiors.
 - 3d. If a Formula 1 body does not have a molded-in driver, then the body must be totally cut out so the interior is in full view.



International Retro Racing Association

GT Coupe-FK & GT Coupe-Pro Rules



A. Simplified Specification Reference

- **Racer eligibility:** At Premier events, racers on the IRRA® "GTC-Pro Only" list may enter **only** GTC-Pro races. Racers not on that list may only enter the GTC-FK races. The current "GTC-Pro Only" list is available on the [IRRA® website](http://www.irra.org)
- **Total Weight** = 110 grams minimum
- **Chassis Width** = 3.125" maximum
- **Body Width** = 3.250" at the wheel arches
- **Body Thickness** = .010" with .007" minimum on sides
- **Track Width, F & R** = 3.125"
- **Chassis Clearance, F & R** = .015" / .050" minimum
- **Front Tire Diameter** = .750" minimum
- **Front Tire Width** = .225" minimum
- **Rear Tire Diameter** = .8125" minimum
- **Rear Tire Width** = .810" maximum
- **Motor Type** = For **GTC-FK**: Topline or JK Falcon 7, JK Hawk Retro FK, TSR D3, Slick 7.
For **GTC-Pro**: All of the above and Pro Slot PS4002B, PS4002B-B.
- **Body Height** = 1.375" maximum
- **Front Grille** = .063" (1/16")
- **Spoiler Size / Height** = no wider than body; .500" maximum
- **Rear Window**: Painted, tinted, or covered with interior
- **Driver Figure / Interior** = Fully molded, minimum two-color, presentably / realistically painted, no paper interiors

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 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:** 0.8125" (20.64mm) across the full width of the tire.
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:** 0.750" (19.05mm) across the full width of the tire.
7. **Minimum Rear Chassis Clearance:** 0.050" (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.
10. **Bushings/Bearings:** Oilite/bronze bushings or ball bearings may be used in the front and/or the rear.
11. **Minimum Weight:** 110 grams ready to race.

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 and the only 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. 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.
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:** 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.
 - 15a. Severe raking of the body for aerodynamic effect is not allowed.
16. All chassis parts, including the guide flag, must be covered by the unmodified body.
17. The wheels shall be located in relation to the wheel arches in the body.
18. **Tires – Rear:** Any commercially-available black natural rubber tire, chemically-treated or untreated, on any size hub.
 - 18a. Speed Rubber is prohibited.
 - 18b. Tires may not be changed during a race. 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 under the green and present the car to the tech inspector at the end of the heat for checking before the racer will be allowed to continue.
 - 18c. 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.
 - 18d. 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.
19. **Tires – Front:** Must be made of two pieces, i.e. a wheel and a tire.

19a. 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).

19b. 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.

19c. Front tires may be coated with cyano-acrylate adhesive ("Super Glue") or nail polish.

19d. 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**.

19e. Any racer transferring tire cleaner to the track surface will be disqualified.

19f. 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.

19g. 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.

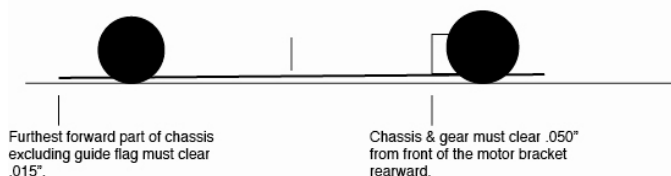
C. Chassis

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; Bronze: rod; Steel: wire, pin tubing, and commercial guide tongues are allowed. 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 boards are not legal.
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.

No part of chassis including pans, hinges, main rails, nose piece, motor (excluding seal), etc may extend below the plain created by the .015"-.050" tech points.

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



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

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 remains in place.

D. Motor

1. **Motor types:**

1a. For the **GTC-FK** class, may use any one of the following motors, which must remain unopened and unmodified.

- **Topline or JK Falcon 7**
- **JK Hawk Retro FK**
- **TSR D3**
- **Slick 7 Mini Brute**

1b. For the **GTC-Pro** class, may use any one of the following motors, which may be refurbished by an approved IRRA® Service center.

- **Pro Slot Euro Mk 1 4002B and 4002B-B**, sealed, with American arm, with bushing or ball bearing in can.

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 handout motors then the racer must use the motor(s) assigned to him/her.
3. **Exclusion Clause:** Clear violation of the motor-tampering rule will result in permanent exclusion from future IRRA® events of any kind.

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. Non-refurbishable motors found legal will be replaced at no cost to the racer.

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.

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 hand-out motor without penalty, if a second hand-out motor purchased by the racer is available.

E. Body

1. All approved GT-Coupe bodies are listed in the "Approved Body Lists" section. All bodies must be representative of pre-1970 cars.

1a. Bodies may 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.

1b. Windows may not be cut out.

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 full-size car or original mold). Note: molded-in spoilers may not exceed the allowed specification governing the maximum width of the body.

2b. 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.

2c. Bodies must be presentably-painted and carry at least three racing numbers. 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.

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

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

3. **Spoilers and Air Control:** A single, flat plastic spoiler set at any angle may be added to the rear of the body only.

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 diaphragms are not allowed.

3e. High-mounted wings are allowed if used on the original full-size car. Such wings must be securely attached to the body and/or chassis.

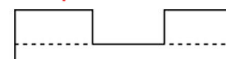
3f. No notches can be cut in the spoiler above the bend line.

The .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.

Straight - no holes - on the section above the bend line.



Cut outs above the bend line not allowed. No punched holes.



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. An interior may be mounted in any manner as long as it fully covers the chassis when viewed from above. Interiors are to be mounted with the driver facing in the proper direction

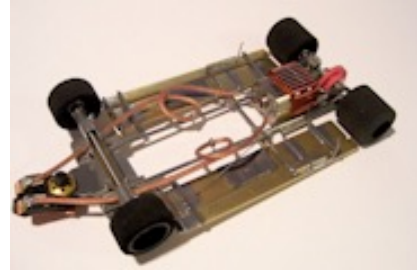
4a. Interiors must be presentably painted and realistically detailed. No paper interiors.

4c. Rear windows must be painted, tinted, or covered or have the interior under them.



International Retro Racing Association

Stock Car Rules



A. Simplified Specification Reference

- **Total Weight** = 120 grams minimum
- **Chassis Width** = 3.00" maximum
- **Wheelbase**: 4.50" minimum
- **Guide Lead** = .750
- **Body Width** = 3.250" at the wheel arches
- **Body Thickness** = .015" with .010" minimum on sides
- **Track Width, F & R** = 3.00" maximum
- **Chassis Clearance, F & R** = .050" / .050" minimum
- **Tire Diameter, F & R** = .8125" minimum
- **Front Tire Width** = .375" minimum
- **Rear Tire Width** = .810" maximum
- **Motor Type** = Topline or JK Falcon 7, JK Retro Hawk, TSR D3, PS4002, Slick 7
- **Gears**: Production only; no modifications
- **Driver Figure / Interior** = Fully Molded, minimum two-color, presentably / realistically painted, no paper interiors.

B. General Specifications

1. **Wheelbase**: 4.50" (114.3mm) minimum.
2. **Guide Lead**: Maximum of .750" (19.05mm) measured from the center of the front axle or 5.25" (133.35mm) when measured from the center of the rear wheels.
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.
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.
15. **Drive Gears**: Any drive gear and ratio may be used. Crown gears must be commercially

available and the only 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. 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.

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. The wheels shall be located in relation to the wheel arches in the body.
20. **Tires – Rear:** Any commercially-available black natural rubber tire, chemically-treated or untreated, on any size hub.
 - 20a. Speed Rubber is prohibited.
 - 20b. Tires may not be changed during a race. 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 under the green and present the car to the tech inspector at the end of the heat for checking before the racer will be allowed to continue.
 - 20c. 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.
 - 20d. 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.
21. **Tires – Front:** Must be made of two pieces, i.e. a wheel and a tire.
 - 21a. 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).
 - 21b. 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.
 - 21c. Front tires may be coated with cyanoacrylate adhesive ("Super Glue") or nail polish.

21d. 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**.

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

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.

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.

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; Bronze: rod; Steel: wire, pin tubing, and commercial guide tongues are allowed. 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 boards are not legal.
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.

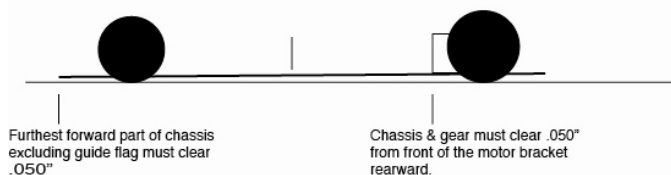
3h. Main chassis rails constructed of round steel or brass wire maybe ground or sanded flat on the bottom, but no more than 20% of the rail diameter may be removed.

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.

No part of chassis including pans, hinges, main rails, nose piece, motor (excluding seal), etc may extend below the plain created by the .050"-.050" tech points.

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



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

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 .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.

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 remains in place.

D. Motor

1. **Motor types:** May use any one of the following motors, which must remain unopened and unmodified:

- **Topline or JK Falcon 7**
- **JK Retro Hawk FK**
- **Pro Slot Euro Mk 1 4002**, sealed, with Chinese arm. May be refurbished by an approved IRRA® Service Center
- **TSR D3**
- **Slick 7 Mini Brute**

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 motor(s) assigned to him/her.
3. **Note:** No other motors will be allowed unless approved by the IRRA® and added to the approved motor list.
4. **Exclusion Clause:** Clear violation of the motor-tampering rule will result in permanent exclusion from future IRRA® events of any kind.
- 4a. 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.
- 4b. 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.

- 4c. Non-refurbishable motors found legal will be replaced at no cost to the racer.
- 5. A motor may not be changed after tech inspection or during a race except as follows:
 - 5a. 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.
 - 5b. 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 hand-out motor without penalty, if a second hand-out motor purchased by the racer is available.

- 3. **Spoilers and Air Control:** No add-on spoilers are 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. The interior must be attached to the body with the driver facing in the proper direction and fully cover the chassis when viewed from above.
 - 4a. Interiors must be presentably painted and realistically detailed
 - 4b. No paper interiors.

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 minimum.
 - 1a. Bodies may not be any less than .010" 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.
- 2. **Body style, Appearance, and Trim:** Racers are encouraged to present cars with scale realism.
 - 2a. All chassis parts, including the guide flag, must be covered by the unmodified body. No part of the chassis may be seen when looking down on the car.
 - 2b. Bodies cannot be trimmed above the lower door lines.
 - 2c. Front and rear wheel arches must be cut out and not exceed the molded 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.

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** = .010" with .007" minimum on sides
- **Track Width, F & R** = 3.125"
- **Chassis Clearance, F & R** = .015" / .047" minimum
- **Front Tire Diameter** = .600" minimum
- **Front Tire Width** = .225" minimum
- **Rear Tire Diameter** = No minimum
- **Rear Tire Width** = .810" maximum
- **Motor Type** = Pro Slot PS4002FK
- **Body Height** = None
- **Spoiler Size / Height** = no wider than body; .500" (12.7mm) maximum height
- **Driver Figure / Interior** = Fully molded, minimum two-color, presentably / realistically painted, no paper interiors
- **Approved bodies: RetroPro**
- **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.
- **Slight** trimming of the body beyond the cut line at the front outside corners is allowed to correct natural drooping
- **Body reinforcing material** may be fitted under the body and attached with clear tape and/or staples.
- **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.

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:** None
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.
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 and the only 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. 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.
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:** None. 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. **Tires – Rear:** Any commercially-available black natural rubber tire, chemically-treated or untreated, on any size hub.
- 16a. Speed rubber is prohibited.
- 16b. Tires may not be changed during a race. 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 under the green and present the car to the tech inspector at the end of the heat for checking before the racer will be allowed to continue.
- 16c. 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.
- 16d. Those racers making a move-up from one main to another will still be subject to tech inspection for legal chassis clearance.
17. **Tires – Front:** Must be made of two pieces, i.e. a wheel and a tire. Wheel stickers are not permitted.
- 17a. 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).
- 17b. 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.
- 17c. Front tires may be coated with cyanoacrylate adhesive ("Super Glue") or nail polish.
- 17d. Tires may be cleaned during the race, in between heats, and during lane changes.
- 17e. 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**. Any racer transferring tire cleaner to the track surface will be disqualified.
- 17f. 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.
- 17g. 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.

C. Chassis

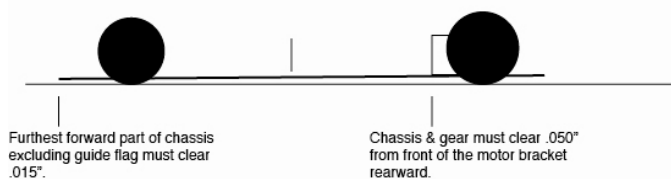
1. **Chassis Type:** Any personally-built or commercially-available scratchbuilt chassis in kit form or built conforming to these specifications is allowed.
2. **Chassis Materials:** Brass: sheet, rod, and tube; Bronze: rod; Steel: wire, pin tubing, and commercial guide tongues are allowed. Pillow blocks can be made of brass or steel. No other materials are allowed. Materials such as printed circuit boards are not legal.

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.
- 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.

No part of chassis including pans, hinges, main rails, nose piece, motor (excluding seal), etc may extend below the plain created by the .015"-.050" tech points.

Tape is not allowed on bottom of 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 .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 remains in place.

D. Motor

1. **Motor types:** May use any one of the following motors, which must remain unopened and unmodified. Brushes and springs may be changed but only 3-coil springs may be used.

• **Pro Slot PS4002FK**

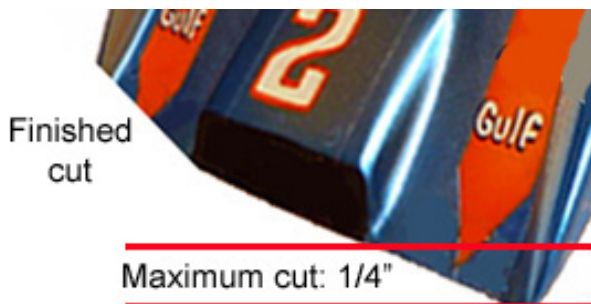
Note: No other motors will be allowed unless approved by the IRRA® and added to the approved motor list.

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 motor(s) assigned to him/her.

2. **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.
3. 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.
- 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 hand-out motor without penalty, if a second hand-out motor purchased by the racer is available.

E. Body

1. All approved Can-Am bodies are listed in the "Approved Body Lists" section. All bodies must be representative of 1970 and beyond Can-Am cars.
 - 1a. Bodies may 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.
 - 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. Slight trimming of the body beyond the cut line at the front outside corners is allowed to correct natural drooping, only as illustrated below:



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.



The above illustrations are courtesy of S.C.R.R.A.

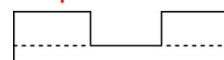
3. **Spoilers and Air Control:** A single, flat plastic spoiler set at any angle may be attached to the rear of the body or under the rear of the body on the vertical portion behind the body. Spoilers may not be attached on top of the body.
 - 3a. The spoiler's length is limited to a maximum of 1/2" (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 diaphragms are not 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 .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.

Straight - no holes - on the section above the bend line.

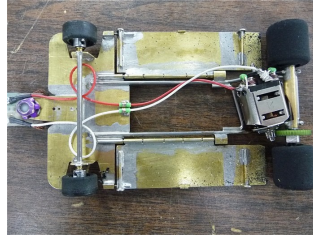


Cut outs above the bend line not allowed. No punched holes.



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. An interior may be mounted in any manner as long as it fully covers the chassis when viewed from above. Interiors are to be mounted with the driver facing in the proper direction
 - 4a. Interiors must be presentably painted and realistically detailed. No paper interiors.
 - 4b. 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.

Retro Anglewinder Rules



A. Simplified Specification Reference

- **Total Weight** = 100 grams minimum
- **Chassis Width** = 3.125" maximum
- **Body Width** = 3.250" at the wheel arches
- **Body Thickness** = .010" with .007" minimum on sides
- **Track Width, F & R** = 3.125"
- **Chassis Clearance, F & R** = .015" / .050" minimum
- **Front Tire Diameter** = .750" minimum
- **Front Tire Width** = .225" minimum
- **Rear Tire Diameter** = .790" minimum
- **Rear Tire Width** = .810" maximum
- **Motor Type** = PS 4002B, PS4002B-B, PS4002, JK Hawk Retro FK, Topline or JK Falcon 7, TSR D3, Slick 7
- **Body Height** = 1.375" maximum
- **Front Grille** = .063" (1/16") except Ti22
- **Spoiler Size / Height** = no wider than body; .500" maximum
- **GTC body** = Rear window must be painted, tinted, or covered with interior
- **Driver Figure / Interior** = Fully molded, minimum two-color, presentably / realistically painted, no paper 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 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) across the full width of the tire.
 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:** 0.750" (19.05mm) across the full width of the tire.

7. **Minimum Rear Chassis Clearance:** 0.050" (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.

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

11. **Minimum Weight:** 100 grams ready to race.

12. **Drive Type:** Anglewinder.

13. **Drive Gears:** Any drive gear and ratio may 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:** 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.
15a. Severe raking of the body for aerodynamic effect is not allowed.
16. All chassis parts, including the guide flag, must be covered by the unmodified body.
17. The wheels shall be located in relation to the wheel arches in the body.
18. **Tires – Rear:** Any commercially-available black natural rubber tire, chemically-treated or untreated, on any size hub.
18a. Speed Rubber is prohibited.
18b. Tires may not be changed during a race. 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 under the green and present the car to the tech inspector at the end of the heat for checking before the racer will be allowed to continue.
18c. 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.
18d. 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.
19. **Tires – Front:** Must be made of two pieces, i.e. a wheel and a tire.
19a. 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).
19b. 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.
19c. Front tires may be coated with cyano-acrylate adhesive ("Super Glue") or nail polish.
19d. 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**.
Any racer transferring tire cleaner to the track surface will be disqualified.

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.

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.

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:**
 - 2a. Brass: sheet, rod, and tube; Bronze: rod are allowed. Pans, if used, must be brass.
 - 2b. Steel: Wire, rod, and tube are allowed. Steel sheet is allowed for guide tongues only.
 - 2c. The use of spring steel is not allowed
 - 2d. Steel commercial guide tongues are allowed and are limited to a maximum 1" (25.4mm) total width and 1.50" (38.1mm) total length.
 - 2e. No other materials are allowed.
 - 2f. 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).
 - 2g. Each car must have a brass rear axle tube that can be notched to clear the motor.
 - 2h. No "pillow block" (bearing holders made where only a piece of brass or steel holds the bearing in place) type rear ends allowed.
 - 2i. Motors may be mounted with or without a bracket. If a bracket is used, it must be made of brass.
 - 2j. The motor can or endbell cannot be notched or cut.
 - 2k. Pre-made steel motor to axle braces are not allowed.
 - 2l. Floating pin tubes inside another tube are allowed.
 - 2m. 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 IRRAs[®] measurement specifications.

2n. The joining of brass sheet, plate, or strip parts via tab and slot or "keyed" construction is not permitted.

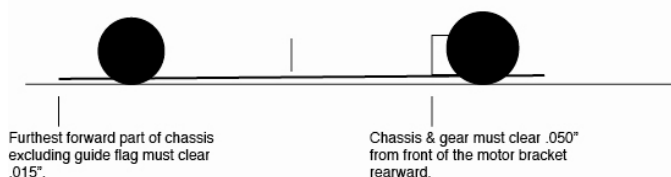
2o. Main chassis rails constructed of round steel or brass wire maybe ground or sanded flat on the bottom, but no more than 20% of the rail diameter may be removed.

2p. 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.

2q. 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, nose piece, motor (excluding seal), etc may extend below the plain created by the .015"-.050" tech points.

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



3. **Hinged Movements:** Hinges are unrestricted/unlimited.
 - 3a. The number of individual hinges is not restricted.
 - 3b. Centerline hinges are **not** allowed.
4. **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.
5. **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.
6. **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.

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 remains in place.

D. Motor

1. **Motor types:** May use any one of the following motors, which must remain unopened and unmodified.

- **Topline or JK Falcon 7**
- **JK Hawk Retro FK**
- **Pro Slot Euro Mk 1 4002, Sealed** with Chinese arm. May be refurbished by an IRRA[®] Service Center
- **Pro Slot Euro Mk 1 4002B and 4002B-B**, sealed, with American arm, with regular bushing or ball bearing in can. May be refurbished by an IRRA[®] Service Center
- **TSR D3**
- **Slick 7 Mini Brute**

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 handout motors then the racer must use the motor(s) assigned to him/her.
3. **Exclusion Clause:** Clear violation of the motor-tampering rule will result in permanent exclusion from future IRRA[®] events of any kind.
 - 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. 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.
 - 3d. 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 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.

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 hand-out motor without penalty, if a second hand-out motor purchased by the racer is available.

E. 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.

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.

1a. Bodies may 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.

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 full-size car or original mold). Note: molded-in spoilers may not exceed the allowed specification governing the maximum width of the body.

2b. 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.

2c. Bodies must be presentably-painted and carry at least three racing numbers. 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.

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

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

3. **Spoilers and Air Control:** A single, flat plastic spoiler set at any angle may be added to the rear of the body only.

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 diaphanes are not allowed.

3e. 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.

3f. No notches can be cut in the spoiler above the bend line.

The .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.

Straight - no holes - on the section above the bend line.



Cut outs above the bend line not allowed. No punched holes.



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. An interior may be mounted in any manner as long it fully covers the chassis when viewed from above. Interiors are to be mounted with the driver facing in the proper direction.

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

4b. 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.

4c. Bodies with molded-in interiors must still have something to cover the view of the chassis through the window.