

IRRA™

International Retro Racing Association

**Can-Am
Formula 1
GT Coupe – PD
GT Coupe – FK
Stock Car
Anglewinder
Flexi GT**

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

www.irraslotracing.com

Please note that you will find links to the R&C Jail Door Rules and the JK Cup Spec Rules. While they are truly representative of scratchbuilding and the intent of this form of slot racing, they are not governed by the IRRA™.

2011 Official Rules

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International Retro Racing Association

Our 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.

The organization also supports a companion racing class utilizing non-scratchbuilt cars:

- to encourage slot racers to become involved in the retro form of slot racing,
- to develop basic car set-up, driving, and soldering skills,
- to promote the scale appearance of racing cars from a specific time period, and
- to be part of a nationally-run event only as a non-ranking warm-up or closing event.

These rules were developed after a careful review of all regional D3 and Retro rules 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.

Please note that anyone running any of the classes defined in these rules who choose to establish alternative rules are prohibited from communicating that the class is being run under IRRA™ rules unless the rules used are 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 expressed 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 2008 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.

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 decisions are updated within the **IRRA™** website at www.irraslotracing.com

IRRA™ Board of Directors:

Bodies Committee: chair - Joe Neumeister
Motors Committee: chair - Ron Hershman
Chassis Committee: chair - Tony Pryzbilowicz (Tony P)
Components Committee: chair - Mike Swiss
Sergeant-at-Arms: Greg Wells

- 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 are to be available to raceways through the distributor network, either directly from the manufacturer, the manufacturer's distribution system or 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 the 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™**'s premier classes)

- Can-Am
- Formula 1
- GTCoupe-PD

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

- GT Coupe-FK
- Flexi GT
- Retro Stock Car
- Retro Anglewinder

- At big events, a list will be published for the GTC-FK Class that has been developed by the BoD based on previous performance at past premier events that will stipulate that those racers cannot run in this class. Please refer to the **IRRA™** website for the latest list.
- If a racer wins the GTC-FK class at a premier event then that racer will be added to the list and must run the GTC-PD Class at future premier events.
- Regionally, it is up to the race / series director(s) to determine if they want to allow all to run in the GTC-FK class or run follow the above rules and run both classes.

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 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.

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 Format

The following formats are the ones recommended to be followed regionally or for large events. The race / series

director will determine what format will be used and announce it well in advance.

Option A – 11 or Less Entrants

- Applies when there are 11 or less entrants
- Qualifying can be held or not held.
- If qualifying held, lane choices selected in order of fastest qualifier to slowest qualifier with appropriate sit-outs allowed following a Round Robin format.
- 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 B – A,B,C Main Format with Move-ups

- Qualifying is held.
- Mains are determined by qualifying order with 6 sit-outs spots for each main allowing for two move-up from a lower main with the last main being the remaining racers.
- Lane selection for each main will be determined qualifying order.
- 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 C – Main Seeding with a Final A and B Main

- Qualifying is held.
- Mains are determined by qualifying order with 8 sit-outs spots for each main with the last main being the remaining racers.
- All heats run with the top 8 in lap totals going to a final A Main and the next going to a final B Main. Separate awards for the A and B Mains.

- Lane selection for each main will be determined qualifying order.
- 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 D – Equally Distributed Mains

- Qualifying can be held or not held.
- If qualifying held, the formation of the mains will be done by qualifying order equally dividing the field of entrants.
- If qualifying 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.
- If qualifying not held, then the formation of the mains and the lane designations will be done randomly.
- Results will be based overall laps/sections totals.
- All heats will be 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.

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.

Marshalling

- 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 unmarshalled car in the straight in front of the Drivers, or on an inaccessible part of the racing surface.
 - An unmarshalled 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 as the organization sees fit, for the benefit of fellow racers and the betterment of the hobby.

Motor Rules

The IRRA™ BoD has decided that the current motor rules will remain in place as is and are therefore removing the previous allowance for motor submissions from the IRRA™ rules. The BoD reserves the right to reexamine this decision should it become necessary due to unforeseen circumstance beyond our control. It is BoD's belief that the current motor rules have proven to be effective and that there is no need for additional approved motors at this time.

JK Falcon 7, part number JK30207, Topline Falcon 7, part number ATCD302 – Max Price \$15



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



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

TSR D3, part number TD301 - - Max Price \$15



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

Slick 7 Mini Brute, part number S7-588A – Max price \$15



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

Pro Slot Euro Mk1, sealed, with Chinese-made arm, part number PS4002 - - Max Price \$19 - Refurbishable



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

Note: arm dimensions exclude any coatings, if present.

If a manufacturer releases a modified or new 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. The IRRA™ also reserves the right 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 ProSlot Motors:

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

ProSlot: Contact is [Dan DeBella](#)

Pro Slot Euro Mk1 "Puppy Dog", sealed, with American-made arm, part number PS4002B or PS4002B-B (ball bearing version) – Max price \$48 - Refurbishable

IRRA™

International Retro Racing Association

Approved Body List

CAN-AM & Retro Anglewinder Class

Chaparral 2H – Howmet (Dilworth)



Ferrari 312–Electric Dreams MAC V16



Ferrari 330-Lancer-163



Ferrari 330-True Scale



Ferrari 350-Howmet (Dilworth)



Ferrari 350 VINTAGE OS 455



Ferrari 350P4-Red Fox



Ferrari 612-Champion



Ferrari 612 Howmet (Dilworth) (Dilworth)



Ferrari 612-JK-7086B



Ferrari 612-OS-410



Ferrari 612-OS-410L



Ferrari 612-OS-414



Ferrari 612 Bloom Waters OS 451



Ferrari 612 VINTAGE OS 466



Ferrari 612 TSR 03



Ferrari 712 OS 470



Honker-Red Fox



Honker VINTAGE OS 465



Lola T-70-Howmet (Dilworth)



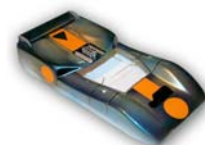
Lola T70-True Scale-TSR08



Lola T-70-OS 412



Lola T-70 Spyder (Donohue)-OS 416



Lola T-70 Spyder (Gurney)-OS 417



Lola T-160 Mini Wheels Howmet (Dilworth)



Lola T163-OS 407L



McLaren M6 – JK – 7087B



Lola T160-Electric Dreams-MACV15



Lola T163 Vintage OS 464



McLaren M6 – Red Fox



Lola T160-OS-407



Lotus 40 JK 7090B



McLaren M6A VINTAGE OS 466



Lola T160 VINTAGE OS 467



Lotus 40 Dynamic – ED - ELEB-029



McLaren M6 – Toy Tech TR200



Lola T160-Toy Tech-TR 195



Lotus 40 Outsight Part 450



McLaren M8 Champion/Parma



Lola T160-True Scale-TSR 05



Lotus 40 – OS 472



McLaren M8 Lancer ED ELEB 03



Lola T-163 Howmet (Dilworth)



Lotus 40 Russkit – ED – ELEB30



McLaren M8 OS 413



Lola T163 – Parma – 1036



Lotus 40 TSR06



McLaren M8 Toy Tech TR179



McLaren MK6 VK – ED – MES01



McLaren M8A True Scale



McLaren M8A VINTAGE OS 463



Porsche 908 VINTAGE OS 456



TI22 Short True Scale TSR 27



McLaren M8B OS 411



Porsche 908 Flunder OS 418



TI22 – Kirby – G-Force -GFR100B



McLaren M8B True Scale TSR 01



Porsche 917PA True Scale TSR 25



TI22 – Kirby True Scale



McLeagle OS 409



Shelby King Cobra Toy Tech TR180



TI22 – Kirby OS 415



McKee Howmet (Dilworth)



TI22-Kirby - ELEB - 037



TI22 – Kirby Long True Scale TSR 24



McKee OS 405



TI22 JK 7081B



TI22 - Kirby Associated Long OS415L



Porsche 908 Spyder - Howmet (Dilworth)



TI22 Short ED V03



TI22 –Long OS 408L



Porsche 908 Red Fox



TI22 Short OS



TI22 Toy Tech TR194



Porsche 908R True Scale TSR 07



GT Coupe / Flexi GT Class

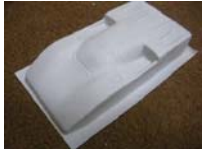
Chaparral 2F Red Fox



Chaparral 2F OS 423



Chaparral 2F Short - OS 425



Chaparral 2D ED ELEB 031



Chevron B16 OS 420



Ferrari 312 GT Howmet (Dilworth)



Ferrari 330P4 GT – G-Force GFR200B



Ferrari 330 P4 – OS 424



Ferrari 330P4 Red Fox



Ferrari 330P4 Toy Tech TR181



Ferrari 330P4 True Scale TSR 11



Ford GT40 JK 7082B



Ford GT40 Red Fox



Ford GT40 Toy Tech TR177



Ford GT MKIV ED ELB 08



Ford GT MKIV JK JK1091



Ford GT MKIV True Scale TSR26



Lola T70 JK



Lola T70 Sunoco JK 719081B



Lola T70 Red Fox



Lola T70 OS 421



Lola T70 True Scale



Lola T70 Toy Tech TR173



Marcos Mantis – Parma -1037



Marcos Mantis – True Scale



McLaren MK6 True Scale TSR12



Mirage M1C True Scale TSR23



Mirage M2 True Scale TSR 15



Porsche Carrera JK JK 1903



Porsche 908 True Scale TSR09



Porsche 908 Toy Tech TR206



Porsche 917 SH ED ELEB 024



Formula 1 Class

Cooper Maserati (Wide) Lancer 881



Cooper Maserati (Narrow) Lancer 981



Cooper Maserati OS 430



Cooper Maserati Red Fox



Copper Maserati - True Scale TSR 35



Eagle True Scale - TSR 33



Ferrari (Wide) Lancer 880



Ferrari (Narrow) Lancer 980



Ferrari Red Fox



Ferrari Lancer True Scale TSR18



Ferrari Dynamic True Scale TSR 17



Ferrari - Lancer VINTAGE OS 432N



Honda RA301 - True Scale TSR 36



Ferrari - Dynamic VINTAGE OS434N



Lotus 43 Howmet (Dilworth)



Lotus 49 Lancer 975



Lotus 49 Outisight



Lotus 49 True Scale TSR 21



Lotus 49B – OS 435



Matra Lancer 976



Matra VINTAGE OS 433N



Matra True Scale TSR 20



Stockcars

68 Charger RT OS 601



67 Charger OS 600



Chevy 1966 Chevelle - VFC



Chevy Chevelle OS 650



Chevy Chevelle OS652



1965 Chevy Impala - VFC N04



Dodge Daytona OS-650



67 Ford Fairlane OS 602



Ford Torino OS 604



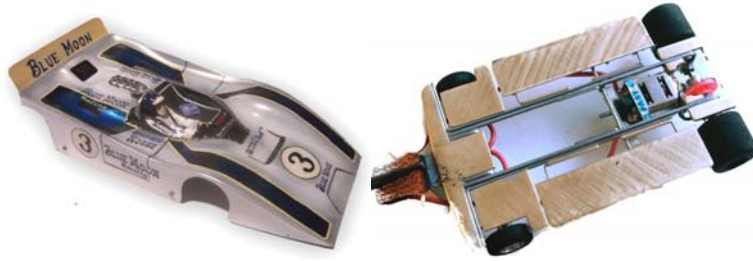
Pontiac GTO OS 603



IRRA™

International Retro Racing Association

Can-Am Rules-Tier 1



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
- F & R Track Width = 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 = PD 4002B, PS4002B-B, PS 4002, F7, TSR D3, S7
- Body Height = 1.375" maximum
- Front Grill = .063" (1/16th) except TI22
- Spoiler Size / Height = no wider than body; .500" maximum
- Driver Figure / Interior = Fully Molded, minimum two-color, presentably / realistically painted, no paper

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 without the guide.
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 without the guide.
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.
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 those 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 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 cyanoacrylate 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:** Brass: sheet, rod, and tube; 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 travel 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

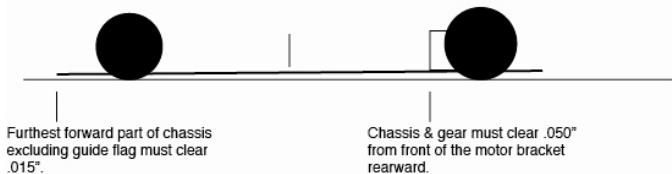
the bottom, but no more than 20% of the rail diameter may be removed.

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 now 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.

- **Falcon 7**
- **Pro Slot Euro Mk 1 4002, Sealed** with Chinese arm. May be refurbished by an IRRA™ Refurbishing Center
- **Pro Slot Euro Mk 1 4002B and 4002B-B, Sealed** with American arm; with regular busing or ball bearing in can. May be refurbished by an IRRA™ refurbishing 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 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 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.

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, 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.

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 grill along the front edge of the body unless this element was not on the original car (example: Ti22).

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 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.

Here is an illustration. The .500" shown 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 carry a painted (at least two colors), fully-molded three-dimensional interior comprising a driver (helmet, shoulders, and arms), a steering wheel, and cockpit representation.

4a. Interiors must be presentably painted and realistically detailed

4b. No paper interiors.

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

4d. Bodies with molded in interiors must still have something to cover the view of the frame through the window.

IRRA™

International Retro Racing Association

Formula 1 Rules-Tier 1



A. Simplified Specification Reference

- Total Weight = 100 grams minimum
- Chassis Width = 1.625" maximum
- Minimum Wheelbase: 3.875"
- Maximum Wheelbase: 4.250"
- Body Thickness = .010 with .007 minimum on sides
- F & R Track Width = 3.250"
- Chassis Clearance, F & R = .015" / .050" minimum
- Front Tire Diameter = .750" minimum
- Front Tire Width = .375" minimum
- Rear Tire Diameter = .8125" minimum
- Rear Tire Width = .810" maximum
- Motor Type = PD 4002B, PS4002B-B, PS 4002, F7, TSR D3, S7
- 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 Grill = .125" (1/8th)
- Driver Figure / Interior = Fully Molded, minimum two-color, presentably / realistically painted, no paper

B. General Specifications

1. **Maximum Overall Car Width:** 3.25" (82.55mm), measured across front and rear axles.
2. **Maximum Rear Tire Width:** 0.810" (20.57mm).
3. **Minimum Rear Tire Diameter:** 0.8125" (20.64mm") across the full width of the tire.
4. **Minimum Front Tire Width:** 0.375" (9.53mm).
 - 4a. Wheels with O-ring "tires" are prohibited.
 - 4b. 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).
 - 4c. Tire edges may be rounded to a maximum 1/16" radius.
5. **Minimum Front Tire Diameter:** 0.750" (19.05mm) across the full width of the tire.
6. **Minimum Wheelbase:** 3.875" (98.43mm).

7. **Maximum Wheelbase:** 4.250" (107.95mm).
8. **Minimum Rear Chassis Clearance:** 0.050" (1.27mm).
 - 8a. The entire motor bracket, rear chassis section, and gear must meet this clearance.
 - 8b. 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.
9. **Minimum Front Chassis Clearance:** 0.015" (0.38mm)
 - 9a. This will be measured at the most forward part of the chassis.
 - 9b. Clearance will be measured with front and rear tires sitting flat on the test block without the guide.
10. **Maximum Chassis Width:** 1-5/8" (41.28mm), excluding axle tubes and axles.
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:** 100 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.
16. **Maximum Front Axle Play:** 0.125" (3.18mm), as part of the maximum front track width.
17. All front 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. Otherwise, no front chassis component (uprights, wire, or any other part) can extend past the chassis width and the only

part that can be wider than the chassis width is the axle/axle tube itself.

18. 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. No chassis parts may be visible behind the rear end of the body.
19. **Tires – Rear:** Any commercially-available black natural rubber tire, chemically-treated or untreated, on any size hub.
 - 19a. Speed Rubber is prohibited.
 - 19b. 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.
 - 19c. For those 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 clearance.
20. **Tires – Front:** Must be made of two pieces, i.e. a wheel and a tire.
 - 20a. 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).
 - 20b. 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.
 - 20c. Front tires may be coated with cyanoacrylate adhesive (“Super Glue”) or nail polish.
 - 20d. 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; 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 travel 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.

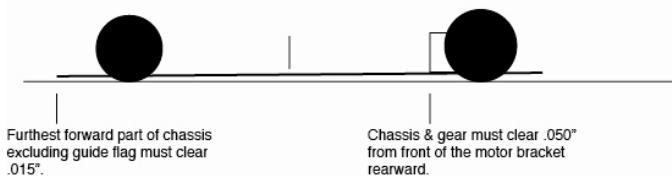
3h. Main chassis rails constructed of round steel or brass wire maybe ground or sanded flat on the bottom, but no more than 20% of the rail diameter may be removed.

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 now 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.
 - **Falcon 7**
 - **Pro Slot Euro Mk 1 4002, Sealed** with Chinese arm. May be refurbished by an IRRA™ Refurbishing Center
 - **Pro Slot Euro Mk 1 4002B and 4002B-B, Sealed** with American arm; with regular busing or ball bearing in can. May be refurbished by an IRRA™ refurbishing 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 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. No part of the chassis, with the exception of scale-appearing suspension or other cosmetic devices may be seen when looking down on the car from above. Legal openings, such as air vents, etc., may be cut out.
 - 2d. A minimum 1/8" (3.18mm) high front grill/air intake (if present) must remain visible on the trimmed body.

2e. 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".

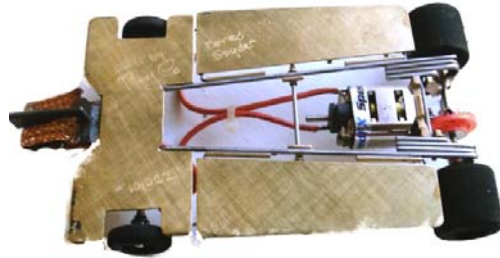
All bodies with ducktail type rears (i.e. Lotus 49/49B) cannot exceed 1.375" in height at the highest point. All other F1 bodies cannot exceed 1.125" in height at the highest point.

3. **Cockpit:** All bodies must carry a painted (at least two colors), fully-molded three-dimensional interior comprising a driver (helmet, shoulders, and arms), a steering wheel, rollbar and cockpit representation.
 - 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.
- 4d. Bodies with molded in interiors must still have something to cover the view of the frame through the window.

IRRA™

International Retro Racing Association

GT Coupe-PD Rules (GTC-PD Class – Tier 1)



A. Simplified Specification Reference

- 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
- F & R Track Width = 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 = PD 4002B, PS4002B-B
- Gears: Production only; no modifications
- Body Height = 1.375" maximum
- Front Grill = .063" (1/16th)
- 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

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 without the guide.
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 without the guide.
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:** Only production gears are allowed but any ratio is allowed. The only

modification allowed is the addition of a 1/8" reducing sleeve for use with a 3/32" axle. **Gears may not be sanded or ground.**

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 those 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 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 cyanoacrylate 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:** Brass: sheet, rod, and tube; 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 travel 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.

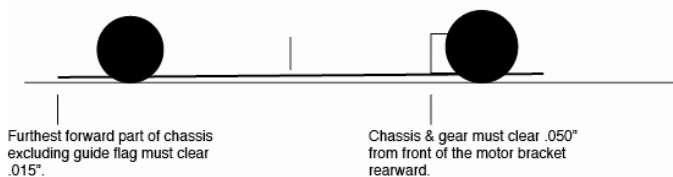
3h. Main chassis rails constructed of round steel or brass wire maybe ground or sanded flat on the bottom, but no more than 20% of the rail diameter may be removed.

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 now 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 regular busing or ball bearing in can. May be refurbished by an IRRA™ refurbishing center

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 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, 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.
 - 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 grill along the front edge of the body unless this element was not on the original car (example: Ti22).

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 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.

Here is an illustration. The .500" shown 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.

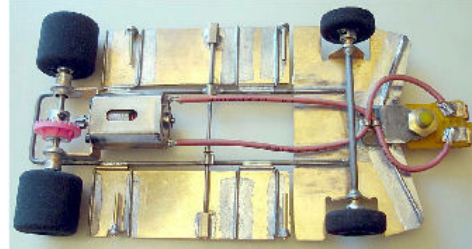


4. **Cockpit:** All bodies must carry a painted (at least two colors), fully-molded three-dimensional interior comprising a driver (helmet, shoulders, and arms), a steering wheel, and cockpit representation.
 - 4a. Interiors must be presentably painted and realistically detailed
 - 4b. No paper interiors.
 - 4c. Rear windows must be painted, tinted, or covered or have the interior under them.

IRRA™

International Retro Racing Association

GT Coupe-FK Rules (GTC-FK Class – Tier 2)



A. Simplified Specification Reference

- **Racer eligibility:** To be determined by race director for local events or the IRRA™ BoD for large events. It will be announced well ahead of the event. Some racers, based on past performance, may be excluded from running this class.
- **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**
- **F & R Track Width = 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 = F7, TSR D3, S7**
- **Gears: Production only; no modifications**
- **Body Height = 1.375" maximum**
- **Front Grill = .063" (1/16th)**
- **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**

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 without the guide.
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 without the guide.
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:** Only production gears are allowed but any ratio is allowed. The only modification allowed is the addition of a 1/8" reducing sleeve for use with a 3/32" axle. **Gears may not be sanded or ground.**
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 those 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 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 cyanoacrylate 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:** Brass: sheet, rod, and tube; 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 travel 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.

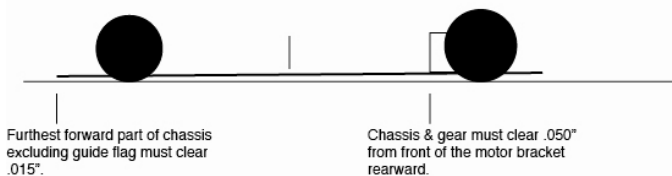
3h. Main chassis rails constructed of round steel or brass wire maybe ground or sanded flat on the bottom, but no more than 20% of the rail diameter may be removed.

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 now 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.

- **Falcon 7**
- **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. 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, 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.
 - 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 grill along the front edge of the body unless this element was not on the original car (example: Ti22).

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.

Here is an illustration. The .500" shown 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.

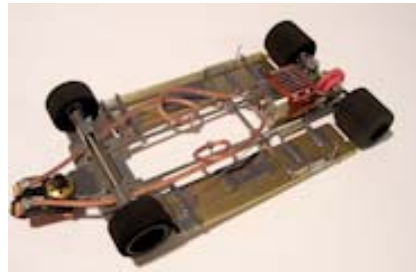


4. **Cockpit:** All bodies must carry a painted (at least two colors), fully-molded three-dimensional interior comprising a driver (helmet, shoulders, and arms), a steering wheel, and cockpit representation.
 - 4a. Interiors must be presentably painted and realistically detailed
 - 4b. No paper interiors.
 - 4c. Rear windows must be painted, tinted, or covered or have the interior under them.

IRRA™

International Retro Racing Association

Stock Car Rules – Tier 2



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
- F & R Track Width = 3.00"
- Chassis Clearance, F & R = .050" / .050" minimum
- Front & Rear Tire Diameter = .8125" maximum
- Front Tire Width = .375" minimum
- Rear Tire Width = .810" maximum
- Motor Type = F7, TSR D3, PS4002, S7
- Gears: Production only; no modifications
- Driver Figure / Interior = Fully Molded, minimum two-color, presentably / realistically painted, no paper

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.
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.
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:** Only production gears are allowed. The only modification allowed is the addition of a 1/8" reducing sleeve for use with a 3/32" axle. **Gears may not be sanded or ground.**

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 those 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 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; 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 travel 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 IRRATM measurement specifications.

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

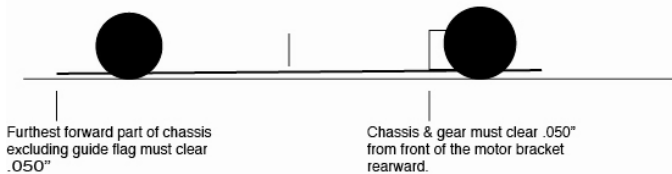
3h. Main chassis rails constructed of round steel or brass wire maybe ground or sanded flat on the bottom, but no more than 20% of the rail diameter may be removed.

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 now 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:
 - **Falcon 7**
 - **Pro Slot Euro Mk 1 4002, Sealed** with Chinese arm. May be refurbished by an approved IRRA™ Refurbishing Center
 - **TSR D3**
 - **Slick 7 Mini Brute**

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. **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.

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. Front and rear wheel arches must be cut out and not exceed the molded wheel opening.

2b. Bodies must be presentably painted and carry at least three racing numbers, one on each side, and one (large one) on the roof, as in standard Stockcar practice.

2c. No part of the chassis may be seen when looking on the car from its top. Bodies cannot be trimmed above the lower door lines.

2d. The full bumper must remain intact except for trimming to provide clearance for the guide flag. Bodies such as the OS Daytona must have the full front spoiler intact.

2e. All bodies must be fully opaque on all sides except for those areas deemed to be windows.

2f. Windows may be tinted.

2g. 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. No part of the chassis may be seen when viewing the car from above.

2i. Windows may not be cut out

3. **Spoilers and Air Control:** No add-on spoilers are allowed.

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

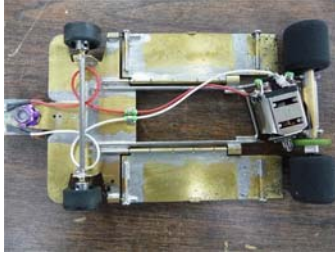
4a. Interiors must be presentably painted and realistically detailed

4b. No paper interiors.

IRRA™

International Retro Racing Association

Retro Anglewinder Rules – Tier 2



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
- F & R Track Width = 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 = PD 4002B, PS4002B-B, PS 4002, F7, TSR D3, S7
- Body Height = 1.375" maximum
- Front Grill = .063" (1/16th) except TI22
- Spoiler Size / Height = no wider than body; .500" maximum
- If a GTC body is used, then Rear Window: Painted, Tinted, or covered with interior.
- Driver Figure / Interior = Fully Molded, minimum two-color, presentably / realistically painted, no paper

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 without the guide.
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 without the guide.
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.
Drive Type: Anglewinder
12. **Drive Gears:** Any drive gear and ratio may be used.
13. **Maximum Front Axle Play:** 0.125" (3.18mm), as part of the maximum front track width.
 - 14a. At no time can tires extend out past the body.
14. **Maximum Rear Body Height:** 1.375" (34.93mm) measured with the car on all four wheels on a tech block (unsupported by the guide flag), from the tech block surface to the

top of the highest point of the rear of the body, excluding any add-on spoiler.

15a. Severe raking of the body for aerodynamic effect is not allowed.

15. All chassis parts, including the guide flag, must be covered by the unmodified body.

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

17. **Tires – Rear:** Any commercially-available black natural rubber tire, chemically-treated or untreated, on any size hub.

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 those 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 clearance.

18. **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 cyanoacrylate 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 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 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 IRRA™ measurement specifications.**

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

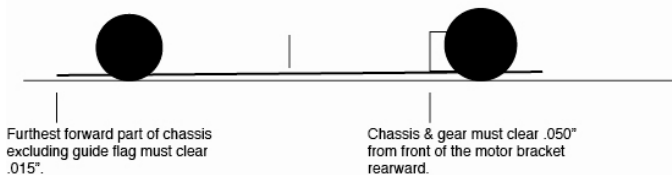
2o. Main chassis rails constructed of round steel or brass wire maybe ground or sanded flat on the bottom, but no more than 20% of the rail diameter may be removed.

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 now 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.
 - **Falcon 7**
 - **Pro Slot Euro Mk 1 4002, Sealed** with Chinese arm. May be refurbished by an IRRA™ Refurbishing Center
 - **Pro Slot Euro Mk 1 4002B and 4002B-B, Sealed** with American arm; with regular busing or ball bearing in can. May be refurbished by an IRRA™ refurbishing 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 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. 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, 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.
 - 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 grill along

- the front edge of the body unless this element was not on the original car (example: Ti22).
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.

Here is an illustration. The .500" shown 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.

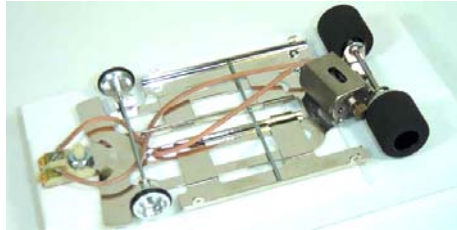


4. **Cockpit:** All bodies must carry a painted (at least two colors), fully-molded three-dimensional interior comprising a driver (helmet, shoulders, and arms), a steering wheel, and cockpit representation.
 - 4a. Interiors must be presentably painted and realistically detailed
 - 4b. No paper interiors.
 - 4c. If a Can-Am body does not have a molded-in driver, then the body must be totally cut out so the interior is in full view.
 - 4d. Bodies with molded in interiors must still have something to cover the view of the frame through the window.

IRRA™

International Retro Racing Association

Retro Flexi GT Rules – Tier 2



A. Simplified Specification Reference

- Total Weight = 100 grams minimum
- Chassis Width = 3.250" maximum
- Body Width = 3.250" at the wheel arches
- Body Thickness = .010 with .007 minimum on sides
- F & R Track Width = 3.250"
- Chassis Clearance, F & R = .015" / .050" minimum
- Front Tire Diameter = .600" minimum
- Rear Tire Diameter = .750" minimum
- Rear Tire Width = .810" maximum
- Motor Type = F7, TSR D3, S7, PS 4002
- Body Height = 1.375" maximum
- Front Grill = / .063" (1/16th)
- 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

B. General Specifications

1. **Maximum Overall Chassis Width:** 3.25" (82.55mm), measured across any part of the chassis, body, and the front and rear axles.
2. **Maximum Rear Tire Width:** 0.810" (20.57mm).
3. **Minimum Rear Tire Diameter:** 0.750" (19.05mm) across the full width of the tire.
4. **Minimum Front Tire Diameter:** 0.600" (15.88mm).
 - 4a. Wheels with O-ring "tires" are allowed.
 - 4b. Front tires must be black in color and may be coated.
5. **Minimum Rear Chassis Clearance:** 0.050" (1.27mm)
 - 5a. This will be measured under the chassis and gear.
 - 5b. Clearance will be measured with front and rear tires sitting flat on the test block without the guide.

6. **Minimum Front Chassis Clearance:** 0.015" (0.38mm)
 - 6a. This will be measured under the front axle.
 - 6b. Clearance will be measured with front and rear tires sitting flat on the test block without the guide.
7. **Rear Axles:** 3/32" (2.38mm) minimum diameter, solid steel.
 - 7a. Hollow axles are not legal.
 - 7b. Axles may only be flattened in the areas where the wheels and gear are secured.
8. **Front Axles:** 0.047" (1.19mm) minimum diameter and one-piece
9. **Bushings/Bearings:** Oilite/bronze bushings only in the rear.
 - 9a. May use eyelet bushings and solder or glue them into the chassis for the front axle.
10. **Minimum Weight:** 100 grams ready to race.
11. **Maximum Rear Body Height:** 1.375" (34.93mm) measured with the car on all four wheels on a tech block (unsupported by the guide flag), from the tech block surface to the top of the highest point of the rear of the body, excluding any add-on spoiler. Severe raking of the body for aerodynamic effect is not allowed.
12. All chassis parts, including the guide flag, must be covered by the unmodified body.
13. The wheels shall be located in relation to the wheel arches in the body.
14. **Minimum Weight:** 100 grams ready to race.
15. **Drive Type:** Anglinder
16. **Drive Gears:** Any drive gear and ratio may be used.
17. **Maximum Front Axle Play:** 0.125" (3.18mm), as part of the maximum front track width.
 - 17a. At no time can tires extend out past 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 those 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 clearance.

18e. 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 commercially-available 4" (101.6mm) stamped steel 1/24 scale production "Flexi"-type chassis is allowed. May use lightweight replacement pans and center sections from the same manufacturer. No prototype chassis allowed!
2. May solder or glue motor in place.
3. May file motor opening/bracket area to fit motor properly but the bracket cannot be removed.
4. May reinforce rear uprights with a brace.
5. May use a motor brace and may connect to the rear brace.

6. Pin tubes (which may be floating pin tubes) located in the original body mount location and lead wire retainers are allowed.
7. May reinforce guide tongue but the guide hole may not be moved or modified.
8. Guide: 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.
9. Front axle must pass through the uprights.
10. 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.
11. **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 now 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.
 - **Falcon 7**
 - **Pro Slot Euro Mk 1 4002, Sealed** with Chinese arm. May be refurbished by an approved IRRA™ Refurbishing 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 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. 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, 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.

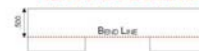
2d. No part of the chassis may be seen when looking down on the car from above. Legal openings, such as air vents, etc., may be cut out.

2e. There should be a minimum 1/16" (1.59mm) vertical component and/or part of the grill along the front edge of the body unless this element was not on the original car (example: Ti22).

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.

Here is an illustration. The .500" shown 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 carry a painted (at least two colors), fully-molded three-dimensional interior comprising a driver (helmet, shoulders, and arms), a steering wheel, and cockpit representation.
 - 4a. Interiors must be presentably painted and realistically detailed
 - 4b. No paper interiors.
 - 4c. Rear windows must be painted, tinted, or covered or have the interior under them.