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## IC GENERAL RULES

### C1 ROOKIE PRIZE

C1.1 Rookie Prizes will only consider first year Circuit I.C. National Competitors (There is a Rookie prize for each scale class and not for each body in that class, i.e. 1 for 1/8th, 1 for 1/10th 2WD and 1 for 1/10th 4WD, three in total). Calculation of the Rookie Prize shall use both Qualification position and Final position (with only the Rookie Drivers considered). The points shall be allocated 1, 2, 3...points for Qualification and 2, 4, 6, 8...points for the final positions (with the higher points for the better position).

### C2 RAIN PROCEDURE

C2.1 Heats to be run on a “drying track” - up to the discretion of Race Director.

C2.2 Finals to be started on a dry track - up to the discretion of Race Director.

C2.3 In the event of rain, the track must return to 100% dry conditions before racing can recommence. The 100% dry conditions will be determined by the Race Director.

C2.4 If weather and time permit and there is no time restriction on track use, every endeavour should be made by the Race Director to run as many rounds of heats as possible.

C2.5 The Race Director can decide the final will be cancelled due to wet weather. In this instance, if two dry rounds of heats have been completed for any class, the Final results for that class will be based on the single best qualifying time (i.e. we need two dry rounds of heats before we can decide a Final result in this way).

### C3 RACE INTERRUPTIONS

C3.1 Any decisions on race interruptions due to rain are to be made by the Race Director.

C3.2 In the case of an interruption of a heat the entire heat will be re-run.

C3.3 In case of an interruption of sub-final or a final the following procedure will be used;

- If less than 25% of a final has been run, the results will be cancelled and a new start given for the total time of the final. Vehicles may be repaired before the new start.
- If more than 25% of the final has been run, the results at the moment of the interruption will be kept. At the moment of the interruption of the final, the drivers will leave their vehicles on the start-line under the control of the Race Director. They may switch off the radio and stop the engine. There will be no repairs carried out to the vehicle or changing tyres (refuelling is not deemed to be a repair and therefore is allowed). Any driver who does not observe this rule will be immediately disqualified. The new start will be given for the time that remains to complete the final. The two results will be added to give the final and definitive placing. If the second start cannot be given for any reason, the results from the first part will be used as the final and definitive placing.
- When the interruption takes place after 75% or more of the final is past the results as at the time of the interruption becomes the final result.

C3.4 If a race meeting is stopped and cannot be resumed, overall placing will take

into account the finals that have been completed and the qualifying order for the uncompleted finals.

#### **C4 STARTING AND FINISHING PROCEDURES FOR HEATS**

- C4.1 Starts of heats to be of a staggered start nature.
- C4.2 Order of starting sequence to be juggled to enable a fair selection of starting positions for each competitor. Restarts during a race to be made from the pit lane only.
- C4.3 All cars are permitted to start, one by one, by the starter at an interval of approximately one-second. If a car misses the starters signal, it may start at the start line as long as it starts before the first car away completes its first lap, (the late starting car or its pit man must not hinder the progress other cars racing). If a start at the start line is not possible the car will start from the pit lane after the last car to start has gone past the pit area.
- C4.4 Heat timing/counting starts for each car separately the first time that car passes the start-line (pick-up coil). The computer indicates: lap 000, total time 0.00.00.0 and lap time 00.0. Actual start therefore has to be a few meters before the start-line (pick-up coil).
- C4.5 Failure to complete the last lap after the heat or final time is completed shall mean the result will be the number of laps and time at which the car completed the previous lap (e.g. in a 10 minute race the previous completed lap might have been at 9:43).
- C4.6 There must be a three-minute gap between the end of one heat and the start of the next heat. Also a minimum of two minutes must be allowed between issuing the transmitters and the start of the race. There will be an audible warning at two minutes prior to the start of a heat. Then a visual or audible form of warning at 30 seconds.
- C4.7 Under no circumstances will the race be stopped due to a jump-start.
- C4.8 The Starter may only interrupt the race and make a restart in the event that he/she considers the starting procedure or start was not carried out correctly.
- C4.9 When the heat time is over, an audible signal is given. A car finishes a heat when its individual split time is complete and it subsequently passes the finish line. When all cars in the heat are finished then the finish signal is given; the car must immediately return to the pits and may not hinder other cars still racing.
- C4.10 In case of doubt (on the finish line when time is over), a car may race one more lap and finish. Whether he/she finishes or did not finish when time was over, is up to the timekeepers and cannot be disputed.
- C4.11 After returning to the pits, the engine must be stopped immediately and the transmitter turned off and impounded with the car.

#### **C5 QUALIFICATION ORDER FOR NZRCA NATIONALS**

- C5.1 On-road Nationals Qualifying Format:
- C5.2 Heats: There must be a minimum of four (4), maximum of six (6) five (5) to ten (10) minute heats. In the event of five (5) minute heats being run there must be a minimum of six (6) rounds with the exception of weather interruptions in which case it can be reduced to a minimum of four (4) at the race director's discretion.
- C5.3 In each round of qualifying, drivers will score points based on the laps and times achieved. The maximum number of points awarded to the best driver will be equal to the total number of participants at the event plus 5 (five). Fastest in each

round will score: number of participants, plus 5 (five) points. Second fastest will score: points of fastest driver, minus 2 (two) points. Third fastest will score: points of fastest driver, minus 3 (three) points. Points for subsequent finishing positions differ from the position above by 1 (one) point.

C5.4 In every round, in case of a tie, the points will be equally awarded to each driver, and the first driver not to tie will receive one point less per tie.

For example, with 150 drivers racing, maximum number of points is 155

- 1st driver will score 155 points
- 2nd driver will score 153 points
- 3rd driver will score 152 points
- 4th driver will score 151 points
- 5th driver TIE will score 150 points
- 6th driver TIE will score 150 points
- 7th driver TIE will score 150 points
- 8th driver will score 147 points

In a case of two or more drivers having the same point score, the next best point score determines position. If still unable to resolve with the next best round, then the driver with the fastest laps and times in a qualifying attempt will determine position. If a driver does not start a heat, they receive no points. For the purposes of this rule, a driver is considered to have started a race once they cross the start line (loop) for the first time.

C5.5 Qualifying results will calculated on the number of rounds as follows:

- Out of 6 (six) rounds, the best 4 (four) points will be taken to establish a driver's ranking.
- Out of 5 (five) rounds, the best 3 (three) points will be taken to establish a driver's ranking.
- Out of 4 (four) rounds, the best 2 (two) points will be taken to establish a driver's ranking.
- Out of 3 (three) rounds, the best 2 (two) points will be taken to establish a driver's ranking.
- Out of 2 (two) rounds, the best 1 (one) points will be taken to establish a driver's ranking.
- Out of 1 (one) round, the points of that round will be taken to establish a driver's ranking.

## C6 START & FINISHING PROCEDURES FOR FINALS

C6.1 Starting for Sub Finals and Final will be "Le Mans" type grid, with the faster Qualifier starting in front of the slower.

C6.2 During sub finals and final, a trial lap is issued to avoid frequency problems and to check transponders.

C6.3 C6.3 Grid layout for finals: Starting boxes labelled 1 to 11, 13 or 16 depending on size of finals are located on the edge of the track at an angle of 20-45 degrees with a spacing of between 1.5 & 4 meters. The boxes should be 70-100cm long x 30-40cm wide.

C6.4 Starting Procedure:

- Audible warnings will be given in English language at one (1) minute and at thirty (30) Seconds before the race start.
- Anytime from thirty (30) seconds until three (3) seconds before the race start the cars may be placed in the starting boxes.

- c. If a car is not in the starting box at the three (3) second mark, it will be considered as a late starter (see rule 6.5 below).
- d. From ten (10) seconds until three (3) seconds, time is counted down either in English language or with audible beeps, second by second.
- e. At three (3) seconds, cars must be released by the mechanics who must all step back behind the hold line. The cars must remain in the boxes, no part of the car touching the starting line.
- f. From 3 seconds, the counting stops and the start signal will be given by the starter between 0 and 5 seconds.
- g. If the grid is not to the satisfaction of the starter, he may command a restart, beginning count down from 30 seconds.
- h. The official starting signal will be audible by means of a horn operated by the starter. This signal will also start the timing systems.

C6.5 Late Starters of Sub Finals or Finals. If a car is not placed in the starting box by the time the three second warning sounds, the car must start from pit lane. The late starting car must not gain any advantage from starting out of pit lane, with this in mind it must not exit the pits until all remaining running cars (i.e. not stalled, broken or off the track) have passed the pit exit for their first time. If there is more than one car starting from pit lane at the same time then they must exit the pits in the order they qualified.

C6.6 Early start (i.e. any car touching the starting line before the start horn sounding) will be penalised with a stop and go penalty. This penalty is issued by the Race Director or the time-keeping official and has to be announced immediately after the start. The penalty will be marked on the result sheet. Under no circumstances will the race be stopped due to an early start. Only the Race Director may interrupt the race and order a restart in the event.

C6.7 When the final time is over, an audible signal is given. A car finishes a final when the set time is complete and it subsequently passes the finish line. The car must immediately return to the pits and may not hinder other cars still racing. When all cars in the final are finished, then the finish signal is given.

C6.8 In case of doubt as to whether it is finished or not, a car may race one more lap and finish. Whether he/she finishes or did not finish when the race time was over, is up to the timekeepers and cannot be disputed.

C6.9 After returning to the pits, the engine must be stopped immediately and the transmitter turned off and impounded.

C6.10 Duration of finals will be as follows:
 

- a. The 'A' final for all I.C. On-Road classes will be a minimum of 30 to a maximum of 45 minutes
- b. The 'B' Final for all I.C. On-Road classes will be a minimum 20 minutes
- c. The 'C' and lower Finals for all I.C. On-Road classes will be a minimum of 15 minutes.
- d. The length of these finals will be decided by the host Club. These times will be stated on the entry form, only the Race Director can change these times due to rain, entry numbers, etc.

C6.11 Finals are to be of 10, 12 or 15 drivers at the discretion of the Race Organiser or Race Director.

## **C7 DELAYED START OF FINALS**

C7.1 DELAYED START - A ten (10) minute delay can be called only prior to the starter calling the cars to the starting line at the 30-second countdown announcement. Only participants of the, semi-finals or final may request a delay. One only delay will be granted for each final. The track is shall be closed to all cars and all engines will be shut off for the duration of the delay period. The driver requesting the delay for whatever reason, except an error in frequencies by Race Control, must start off the back of the grid as directed by race control. A 10-minute delay period can be reduced only if all drivers competing in the race are in full agreement. The race schedule start will resume from the two (2) minutes warm up countdown sequence.

## **C8 CARS**

C8.1 All cars must have a declutching device and an operating brake capable of stopping the car and holding it motionless with the engine running.

C8.2 Tyres must be black in appearance (except for writing on sidewalls) and treatment of the tyre with additives is prohibited. The selection of the type of tyre is "open".

C8.3 Any part of a car may be substituted during a race meeting except the chassis. The chassis may be changed with approval of the Race Director. The essence of this is that a car cannot be replaced or substituted once entered into a race meeting.

## **C9 BODIES**

C9.1 Bodies must be readily available and commercially produced (i.e. no one-offs).

C9.2 The body entered for Concours judging must be the body shell used for at least one race during the meeting.

C9.3 The body must be made of a flexible material and be painted properly. When initially entered in a meeting the body must be neatly finished.

C9.4 A realistic driver made to the appropriate scale must be fixed in the correct position in an open cockpit car. The windscreens and windows must be translucent (i.e. not completely painted in), or authentically decorated.

C9.5 All bodies must have the front and rear wheel arches cut out if the original was so designed.

C9.6 The front of the vehicle must be equipped with a bumper in such a manner that it will minimise an injury in the case of it entering into contact with other participants or members of the public. The bumper must be made from a flexible material with all corners and sharp edges rounded off. The contour of the bumper will follow the contour of the body with which it is being used. At no point may the bumper protrude more than 5mm in front and 13mm on the sides of the body (up to the discretion of the race director).

C9.7 The aerial must be made of a flexible material not likely to inflict injury to anybody (i.e. no thick piano wire).

## **C10 IC ON-ROAD NATIONAL CHAMPIONSHIPS**

C10.1 The NZRCA I.C. Onroad Nationals should take place over a minimum of three (3) days plus an additional rain day must be set aside.

C10.2 The NZRCA I.C. Onroad Championships will include the following classes only: 1/10th 4WD Saloon, 1/10th 2WD Saloon and 1/8th 4WD CanAm.

C10.3 New host Clubs that are to be added to the round robin will be voted in

by the current NZRCA participating I.C. hosting Clubs (ARCCC, CRCCC and TRCCC) and inserted in prior to the current hosting Club (i.e. they will currently wait 3 years to host).

C10.4 Free practice on the day of racing may be allowed by the organisers till 30 minutes before the start of the first heat. This is not compulsory.

C10.5 Specifically for I.C. On road racing, no fuel, or fuel system (gun or bottle) will be allowed over the pit lane (above the pit lane surface) during racing. Infringements of this rule can incur a stop go penalty or loss of laps, at the discretion of the race director. The only exemption to this rule will be at tracks where access is required over the pit lane (above the pit lane surface) to facilitate start procedures. Exemption will be at the discretion of the Race Director, but must be spelt out at the drivers briefing.

## 1/10TH 4WD CIRCUIT

### C11 GENERAL

C11.1 The class run will be the “200mm NITRO TOURING CAR” which will be 4WD. Only one brake, working on the central power transmission, is allowed. No second or individual brake system(s) for front and/or rear axles or single wheels is allowed.

### C12 DIMENSIONS

C12.1 The Dimensions of 1/10th 4WD Circuit Class must be within the following:

Overall Dimensions & Weight	Minimum	Maximum
Wheelbase	230mm	270mm
Width (without Body)	170mm	200mm
Width (with Body)	175mm	205mm
Length (including body and wing)	360mm	460mm
Height (at top of roof measured with a 10.00mm spacer under the chassis plate on level)	120mm	175mm
Wing Width Inclusive	125mm	200mm
Wing		50mm
Wing Endplate 35.00mm x 50mm equal size		
Wing Overhang (at rear)		10mm
Weight <small>Minimum weight with no fuel but with transponder</small>	1650g	
<b>Wheels and Tyres</b>		
Wheel Diameter (excluding tyre bead)	46mm	50mm
Wheel Width including bead		30mm
Tyre Width (across sidewalls)		30mm

### C13 MUFFLER

C13.1 A muffler of double chamber design, including silencer chamber must be fitted having the following dimensions:

C13.2 Tail pipe maximum internal diameter\* 5.20mm.

C13.3 Tail pipe minimum length 10.00mm.

C13.4 The tail pipe must be oriented on or below the horizontal.

C13.5 If for some reason the exhaust or manifold becomes dislodged during a

race, and produces above the normal operating noise level, the car must be returned to the pits for repairs immediately.

- a. \*This dimension includes a tolerance to account for manufacturing variations in commercially available tubing.

## **C14 BODY**

C14.1 Bodies eligible for the 1/10th - 4WD Circuit I.C. Saloon class must be included in the current IFMAR 200mm IC body list.

C14.2 Bodies are not to be cut above the lower bumper line at the front or the back or above the bottom line of the doors. Details of all front and rear lights, grills, air intakes and windows must be clearly contrasted from the surrounding paintwork.

C14.3 Only the following air holes and sizes are permitted in the body shells:

- a. One (1) cooling hole may be cut in the front windscreen only (not intruding on either the roof or bonnet) with a maximum dimension in any direction of 60.00mm. Exception: If the cooling / refuelling hole extends from the window into the roofline, there may be one hole only of 50.00mm diameter to facilitate both cooling and fuelling.
- b. One (1) 15.00mm maximum diameter hole in the roof for glow plug access.
- c. Both front side windows and the rear window can be removed for ventilation. Rear side windows must remain intact.
- d. Re-fuelling hole maximum dimension in any direction of 50.00mm.
- e. Small holes can be made for the following:
  - a. Exhaust pipe
  - b. Mixture adjusting screw
  - c. Transponder
  - d. Radio antenna
  - e. Body posts.

C14.4 These holes must be kept to the minimum required for their function. No other holes are permitted.

C14.5 No parts of the car, except the muffler outlet may protrude outside of the body shell when viewed from above.

C14.6 Under body/chassis aerodynamic aids of any nature are not allowed.

## **C15 SPOILERS AND WINGS**

C15.1 One wing and one spoiler may be mounted to any car (if the original fullsize car had more, it is allowed to do the same). Wing and spoiler must be made from a flexible material. Wing and spoiler must be mounted to body directly (i.e. no solid mounting fixtures such as piano wire). Wing and spoiler (including the side dams) may not protrude outside the maximum height and width of the body. Rear wings must be mounted in the same place as was intended by the body manufacturer. The rear overhang must not exceed 10.00mm at the furthest point, to be measured from boot lid.

C15.2 The height of the wing may be adjusted but the wing, including endplates must not extend higher than the roofline to be measured with a 10mm block under the chassis. Wings (excluding endplates) are to be of single moulded construction (no flat- packs/bend your own). Gurney strip (if allowed) may not exceed the width of the wing and have an edge not more than 5.00mm high. Total cord of wing, plus the strip is 55.00mm

## **C16 ENGINE**

C16.1 The use of .12 engines only will be permitted. They shall be air-cooled, with front rotary valve, two-stroke induction. The engines may have a maximum of four (4) ports, including the exhaust port. No form of forced induction is allowed or any form of variable port timing. Only glow plug ignition is allowed. No holes in the piston and no additional holes in the liner. The carburetor size is to be 5.50mm. The exhaust port height is to be 4.50mm.

C16.2 Engine capacity is to be maximum .12 (2.11cc) only.

C16.3 Standard pull-start is optional.

C16.4 Engine internal modifications are allowed as long as they are within the parameters of Rules 16.1 and 16.2

C16.5 Engine must be fitted with a throttle return mechanism that closes the carburetor should the throttle servo lose connection with the carburetor. The mechanism can be either a throttle return spring or elastic band device.

## **C17 TRANMISSION**

C17.1 Maximum 2-speed gearbox allowed.

C17.2 All cars must have a de-clutching device and have an operating brake capable of stopping the car and holding the car motionless with the engine running.

## **C18 ROLL BARS**

C18.1 Roll-bars (roll-over bars) must be kept under the body.

## **C19 TYRES**

C19.1 Foam and/or Rubber tyres may be used. Any materials used in, or on, the tyres must not damage the racing surface. Treatment of the tyres with additives is prohibited.

## **C20 FUEL**

C20.1 The fuel tank including filter and fuel pipes up to the carburetor may hold a maximum of 75cc. No loose inserts allowed inside the tank.

C20.2 Fuel will only contain methanol, oil/lubricant and nitro methane.

C20.3 The specific gravity of the fuel mixture may not be more than 0.87 for the 1/10th -4WD Circuit Class. Based on normal oil densities this will give a maximum 16% nitro for the 1/10th - 4WD Circuit Class.

C20.4 The following additives are formally prohibited for all on road classes:  
Hydrazine, Hydrogen Peroxide, Toluene, Propylene Oxide

C20.5 The fuel collection procedure.

- Fuel samples will be taken and tested in clear vision of either, the driver or his mechanic/ re-fueller.
- During heats and finals each mechanic/ re-fueller will be allowed only one fuel container, one re-fuelling bottle and/ or one re-fuelling gun in the pit area.
- The fuel scrutineer will preferably be an independent non competitor. If this is not possible at least two fuel scrutineers will be required from different classes. No fuel scrutineer/ competitor will be allowed to test fuel of fellow competitors in the same class (this must be done by a fuel scrutineer/ competitor from another class).

d. Fuel samples can be requested at any time by the race officials as long as it does not impede the driver or his mechanic/ re-fueller

C20.6 The actual fuel testing procedure.

a. Ensure that the instructions that come with the fuel testing kit are strictly adhered to, including but not limited to the following. Rinse glass container & calibrated float with methanol before each use, drain any excess methanol from container, carefully insert the calibrated weight into glass container, and pour a sample of the fuel to be tested into the container (only needs about 4cc). Very gently shake the container to ensure the weight isn't sticking. If the nipple on top of calibrated weight penetrates the fuel surface, the fuel is considered to be over the nitro limit and the appropriate action is to be taken by the Race Director.

C20.7 At the end of a final, all finalists' cars, fuel containers, re-fuelling bottles and/ or re-fuelling guns must remain in the pit lane with either, the driver or his mechanic/ re-fueller until such time as the race officials have satisfied their fuel testing requirements.

## 1/10TH 2WD CIRCUIT

### C21 DIMENSIONS

C21.1 The Dimensions of 1/10th 2WD Circuit Class must be within the following:

Overall Dimensions & Weight	Minimum	Maximum
<i>Overall Length Maximum</i>		490mm
<i>Overall Width Maximum</i>		250mm
<i>Height Maximum (Excluding Aerial)</i>		180mm
<i>Wheelbase</i>	260mm	280mm
<i>Weight</i> <i>Minimum weight with no fuel but with transponder</i>	1825g	
<b>Wheels and Tyres</b>		
<i>Wheel Diameter</i>		54mm
<i>Front Tyre Diameter</i>		75mm
<i>Front Tyre Width</i>		30mm
<i>Rear Tyre Diameter</i>		80mm
<i>Rear Tyre Width</i>		51mm

### C22 MUFFLERS

C22.1 The engines must be fitted with an adequate silencing system and must not exceed 82db at 10 metres from the vehicle.

C22.2 If for some reason the exhaust or manifold becomes dislodged during a race, and produces above the normal operating noise level, the car must be returned to the pits for repairs immediately.

C22.3 If a Db meter is to be used, a qualified person must operate it and notification to entrants must be made prior to the event via the entry forms.

C22.4 The exhaust tailpipe maximum internal diameter will be 5.00mm with 0.2mm tolerance and it must be a minimum of 15mm long.

## **C23 BODY**

C23.1 Bodies eligible for the Saloon Class are those raced in the British, European, Australian or American Touring Car series, past or present.

C23.2 One cooling hole may be cut in the front windscreen only (not intruding on either the roof or bonnet) with a maximum dimension in any direction of 60.00mm

C23.3 Exception: If the cooling/refuelling hole does extend from the window to the roofline, there may be one hole only of 50.00mm diameter to facilitate both cooling and fuelling

C23.4 A 30mm maximum diameter round hole for the 1/10th - 2WD class may be cut for the following;

- Muffler outlet
- Radio switch
- Glow plug access.

C23.5 Specifically for the 1/10th –2WD Saloon classes, Rear of the body may not be cut away higher than 45mm measured with a 10mm spacer under the chassis plate, and the rear sidelight details must remain.

C23.6 For all classes, 10 mm round holes may be cut for the following;

- Aerial
- The mixture adjusting screw
- Brake lever assembly.

C23.7 All parts of the vehicle must be covered, except:

- Cooling head of engine
- Air filter
- Rollover bar
- Only if these parts are extending the body. Cut-outs for the above mentioned parts are to have no more than 10mm clearance.

## **C24 SPOILERS AND WINGS**

C24.1 Only rear spoilers/wings may be added to the car.

C24.2 Spoilers/wings dimensions may be no greater than 75mm chord; the width is to be no greater than 230mm and it is to be no greater than 10mm max, above the highest point of the body of the car (the chord for bi-wings is to be the total of the chords added together).

C24.3 Side dams may be added to the rear wing Max.75mm chord x 50mm high.

## **C25 ENGINE**

C25.1 Engine Type Maximum displacement .152ci - 2.50cc. Only single-cylinder, two-stroke, normally aspirated, air-cooled, glow-ignition engines utilizing standard or turbo plugs are permitted. No forced aspiration systems, liquid cooling systems or fuel pressurization systems (other than by means of exhaust pressure applied directly to the vehicle's fuel tank) are allowed. Any carburetor may be used as long as the bore does not exceed the maximum allowable for the engine size. (7.0mm) Restrictors may be used to achieve the legal diameter, but must be securely fastened in place. Other than in the bearings, ceramic parts are not allowed in any engine.

C25.2 Engine must be fitted with a throttle return mechanism that closes the carburetor should the throttle servo lose connection with the carburetor. The mechanism can be either a throttle return spring or elastic band device.

## **C26 TRANSMISSION**

C26.1 Fully independent suspension and two speed transmission systems are allowed.

C26.2 Both drive and braking must be effected through the two rear wheels only.

## **C27 FUEL**

C27.1 The fuel tank including filter and fuel pipes up to the carburetor may hold a maximum of 75cc. No loose inserts allowed inside the tank.

C27.2 Fuel will only contain methanol, oil/lubricant and nitro methane.

C27.3 The specific gravity of the fuel mixture may not be more than 0.87 for the 1/10th-2WD Circuit Class. Based on normal oil densities this will give a maximum 16% nitro for the 1/10th -2WD Circuit Class.

C27.4 The following additives are formally prohibited for all on road classes:  
Hydrazine, Hydrogen Peroxide, Toluene, Propylene Oxide

C27.5 The fuel collection procedure.

- Fuel samples will be taken and tested in clear vision of either, the driver or his mechanic/ re-fueller.
- During heats and finals each mechanic/ re-fueller will be allowed only one fuel container, one re-fuelling bottle and/ or one re-fuelling gun in the pit area.
- The fuel scrutineer will preferably be an independent non competitor. If this is not possible at least two fuel scrutineers will be required from different classes. No fuel scrutineer/ competitor will be allowed to test fuel of fellow competitors in the same class (this must be done by a fuel scrutineer/ competitor from another class).
- Fuel samples can be requested at any time by the race officials as long as it does not impede the driver or his mechanic/ re-fueller.

C27.6 The actual fuel testing procedure.  
Ensure that the instructions that come with the fuel testing kit are strictly adhered to, including but not limited to the following. Rinse glass container & calibrated float with methanol before each use, drain any excess methanol from container, carefully insert the calibrated weight into glass container, and pour a sample of the fuel to be tested into the container (only needs about 4cc). Very gently shake the container to ensure the weight isn't sticking. If the nipple on top of calibrated weight penetrates the fuel surface, the fuel is considered to be over the nitro limit and the appropriate action is to be taken by the Race Director.

C27.7 At the end of a final, all finalists' cars, fuel containers, re-fuelling bottles and or re-fuelling guns must remain in the pit lane with either, the driver or his mechanic/ re-fueller until such time as the race officials have satisfied their fuel testing requirements.

## 1/8TH 4WD CIRCUIT

### C28 DIMENSIONS

C28.1 The Dimensions of 1/8th 4WD Circuit Class must be within the following:

Overall Dimensions & Weight	Minimum	Maximum
Width		267mm
Wheelbase	270mm	330mm
Weight <i>Minimum weight with no fuel but with transponder</i>	2350g	
Wheels and Tyres		
Diameter (Front & Rear)		54mm
Front Tyre Width		37mm
Rear Tyre Width		64mm

### C29 MUFFLERS

C29.1 The engines must be fitted with an adequate silencing system and must not exceed 82db at 10 meters from the vehicle.

C29.2 If for some reason the exhaust or manifold becomes dislodged during a race, and produces above the normal operating noise level, the car must be returned to the pits for repairs immediately.

C29.3 If a Db meter is to be used, a qualified person must operate it and notification to entrants must be made prior to the event via the entry forms.

### C30 BODY

C30.1 Group C, Can Am: Bodies eligible for this class are those raced in these particular Championships. The outer edge of the wheels must be covered at the centre of the axles when viewed from above.

C30.2 A 30mm maximum diameter round hole for the 1/8th – 4WD class may be cut for the following;

- Muffler outlet
- Radio switch
- Glow plug access.

C30.3 Specifically for the 1/8th class (all body classes), cut-outs rear of the back axle shall be free, but side profile must remain.

C30.4 For all classes, 10 mm round holes may be cut for the following;

- Aerial
- The mixture adjusting screw
- Brake lever assembly.

C30.5 All parts of the vehicle must be covered, except:

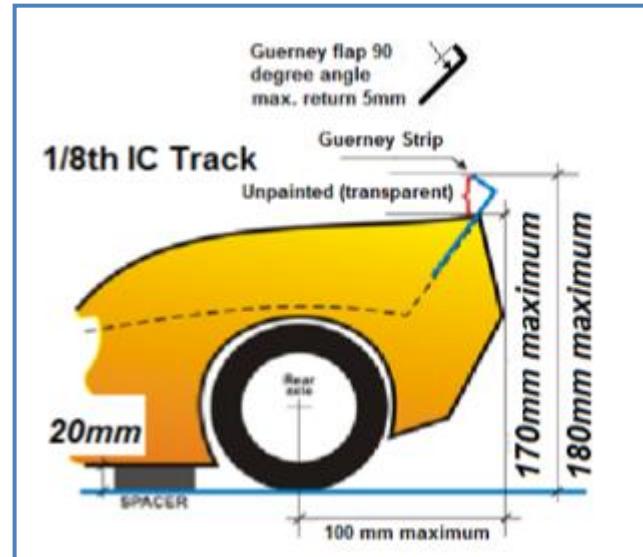
- Cooling head of engine
- Air filter
- Rollover bar

C30.6 Only if these parts are extending the body. Cut-outs for the above mentioned parts are to have no more than 10mm clearance.

## C31 SPOILERS AND WINGS

C31.1 A spoiler/wing which conforms to IFMAR regulations may be fitted

C31.1 Spoiler/wing sizes for sports cars/prototypes:  
Overall width of body and spoiler max 267mm (measured on top).  
Separate Wings or spoilers are not allowed. Only a Gurney strip directly mounted on the rear of the body is allowed.  
No additional items may be fastened to the body exterior other than a rear Gurney strip. All measurements for the wing height will be taken with the chassis raised on 20mm blocks. The Gurney strip return should not be greater than 5mm with a 90 degrees angle.  
Maximum height for the body, side and rear wing is 170 mm, with the chassis placed on 20 mm spacer blocs. The maximum overall height including the Gurney strip is 180 mm, the Gurney strip, must be attached directly to the body. No independently mounted wings are allowed.  
The maximum overhang behind the rear axle measured from the rear axle centre point is 100mm.  
If body stiffeners are used they cannot cause the body to be wider than 277mm at any point.



## C32 INS BOX

C32.1 Specifically for the 1/8th class: each engine must be equipped with an inlet silencer (INS box), or commercially available equivalent, to reduce the amount of noise generated by the cars induction system.

## C33 ENGINE

C33.1 The Engine for the 1/8th class may have a total capacity of not more than 3.5cc.

C33.2 Engine must be fitted with a throttle return mechanism that closes the carburetor should the throttle servo lose connection with the carburetor. The mechanism can be either a throttle return spring or elastic band device.

## C34 REAR BUMPER

C34.1 If a rear bumper is fitted to a car, it must finish not more than 50mm behind the rear axle.

## C35 ROLL BAR

C35.1 A roll bar may be fitted but must not project more than 30mm above the engine cooling fins or roof, whichever is the highest.

## C36 FUEL

C36.1 The fuel tank including filter and fuel pipes up to the carburetor may hold a maximum of 125cc. No loose inserts allowed inside the tank.

C36.2 Fuel will only contain methanol, oil/lubricant and nitro methane.

C36.3 The specific gravity of the fuel mixture may not be more than 0.91 for the 1/8th Circuit Class. Based on normal oil densities this will give a maximum 25% nitro for the 1/8th Circuit Class.

C36.4 The following additives are formally prohibited for all on road classes:  
Hydrazine, Hydrogen Peroxide, Toluene, Propylene Oxide

C36.5 The fuel collection procedure.

- Fuel samples will be taken and tested in clear vision of either, the driver or his mechanic/ re-fueller.
- During heats and finals each mechanic/ re-fueller will be allowed only one fuel container, one re-fuelling bottle and/ or one re-fuelling gun in the pit area.
- The fuel scrutineer will preferably be an independent non competitor. If this is not possible at least two fuel scrutineers will be required from different classes. No fuel scrutineer/ competitor will be allowed to test fuel of fellow competitors in the same class (this must be done by a fuel scrutineer/ competitor from another class).
- Fuel samples can be requested at any time by the race officials as long as it does not impede the driver or his mechanic/ re-fueller.

C36.6 The actual fuel testing procedure.  
Ensure that the instructions that come with the fuel testing kit are strictly adhered to, including but not limited to the following. Rinse glass container & calibrated float with methanol before each use, drain any excess methanol from container, carefully insert the calibrated weight into glass container, and pour a sample of the fuel to be tested into the container (only needs about 4cc). Very gently shake the container to ensure the weight isn't sticking. If the nipple on top of calibrated weight penetrates the fuel surface, the fuel is considered to be over the nitro limit and the appropriate action is to be taken by the Race Director.

C36.7 At the end of a final, all finalists' cars, fuel containers, re-fuelling bottles and/ or re-fuelling guns must remain in the pit lane with either, the driver or his mechanic/ re-fueller until such time as the race officials have satisfied their fuel testing requirements.

## 1/8TH GT

## C37 GENERAL

C37.1 The class run will be the NZRCA IC Onroad 1/8th GT

C37.2 The official measurements in these Technical Specifications are the metric measurements.

C37.3 All measurements referred to in these rules are maximum or minimum values.

C37.4 It is the object of these rules to ensure that the NZRCA IC 1/8th GT On road Championship be a test of driver skill.

- C37.5 It is the responsibility of the driver to ensure that their car complies with the rules and regulations at all times it is on the track. The organiser may check any car at any time during the championship for compliance with the regulations. On checking immediately after a race, if a car is found to be under the minimum weight or has incorrect dimensions, positive proof of race damage may prevent disqualification.
- C37.6 NZRCA may use any method deemed necessary to implement these technical rules.

## **C38 ENGINE**

- C38.1 The engine shall have a total capacity of not more than 3.5cc (0.21 Cu.In).
- C38.2 The engine shall be air-cooled, with front rotary valve, two-stroke induction.
- C38.3 The engine on or off road based shall have a maximum of Five (5) inlet ports in the liner, seen with the piston at its lowest position. Additional slits or openings in the liner are allowed as long as they do not reach the top of the piston at its lowest position.
- C38.4 The carburetor size is to be a maximum diameter of 7mm, as measured directly above the spray bar or needle of the carburetor.
- C38.5 A mechanical or electrical starting mechanism is optional.
- C38.6 Clutch must be a buggy style throw clutch of 2 or more clutch shoes. Single shoe or thrust (aka centax) type clutches are not permitted.

## **C39 EXHAUST**

- C39.1 Homologated mufflers, of a 3 chamber type, and a homologated INS box, must be used.
- C39.2 The muffler and INS box must be IFMAR listed as homologated by IFMAR, ROAR, EFRA, FEMCA or FAMAR, and must bear its homologation number during the entire competition.
- C39.3 With a fitted INS box, the muffler may not produce more than eighty five (85) decibels (dBA) measured at ten (10) metres distance and one (1) metre high. NZRCA's definition of a noise level is always final.
- C39.4 Muffler and INS box measurements and design, both internally and externally, may be checked for compliance with homologation drawings and/or samples at the completion of a qualifying heat and/or final.
- C39.5 The IFMAR Muffler and Inlet Noise Silencer Box Lists, where possible with detailed drawings, should be available in Technical Control.
- C39.6 The outlet or tailpipe of the muffler must project horizontally or downward. No upward or vertical muffler outlet or tailpipe is allowed.
- C39.7 Extensions to the outlet or tailpipe are permitted. Where the extension protrudes through the body, it must be within the maximum width of the car.

## **C40 BODY**

- C40.1 Bodies are to be any commercially available 1/8th scale GT1, GT2, Super GT, DTM, or V8 Supercar cars. Prototype (LM) P1, (LM) P2 and open cockpit bodies are not permitted.
- C40.2 The entire chassis, wheels, engine and exhaust must be covered by the body when mounted to the car as viewed from above.
- C40.3 The body must be made from a flexible material and painted. Where used, the gurney strip must remain transparent.

C40.4 Bodies must include full front and rear fascia's, and conform to the rules herein that limit openings in the body for the purposes of re-fuelling, starting, engine tuning, and antenna holes.

C40.5 Front side windows and the rear window may be removed. They may not be reshaped to provide any advantage.

C40.6 Bodies must be reasonably detailed. The body must have visible window, body panel and trim markings. Light tinting of the windows is permitted.

C40.7 Cut-outs in the body that were not in the original full scale version will be allowed for the following:

- C40.7.1 Bodies are not to be cut above the lower bumper line at the front or the back, or above the bottom line of the doors. Maximum 70mm cutout at rear on 20mm blocks.
- C40.7.2 The aerial hole will be no larger than 10.0mm in diameter.
- C40.7.3 An opening with a maximum diameter of 25.0mm is allowed above the cooling head, for easy glow plug access.
- C40.7.4 The cut-out for the exhaust outlet or tailpipe must be no greater than 45mm in any direction. Where the exhaust opening cuts through the side lower edge of the body, a slotted opening is allowed.
- C40.7.5 All bodies must have the front and rear sides cut out for the wheels, the radius of the cut-out must not exceed the tyre by more than 20mm.
- C40.7.6 One opening may be made in the front windscreens/roof/bonnet with a maximum dimension of 110.0mm in any direction for refueling and engine cooling.

C40.8 Bodies may have either an integrated rear spoiler or a single affixed rear wing or spoiler, but not both. Side dams on integrated spoilers must not extend forwards beyond the lower line of the rear window

C40.9 Gurney strips may only be used on bodies with an integrated spoiler.

C40.10 Maximum width of body and wing/spoiler is 330 mm.

C40.11 Wing or spoiler, must have a chord of no more than 79 mm.

C40.12 Additional cut-outs in rear built-in spoilers are not allowed.

C40.13 No additional items may be fastened to the body exterior other than the rear gurney strip, or rear wing/spoiler.

C40.14 Maximum height for the body, including the wing/spoiler/gurney strip is 200mm with the chassis raised on a 20.0mm spacer.

C40.15 If body stiffeners are used they cannot cause the body to be wider than 330mm across the lower edges of the body. Body or wheel flares are not allowed.

## C41 CHASSIS

C41.1 The chassis may be any shaft driven 1/8 scale buggy, truggy or GT based nitro powered vehicle.

C41.2 All cars must have a de-clutching device and operating brake(s) capable of stopping the car and holding the car motionless with the engine running.

C41.3 The front of the car must be equipped with a bumper in such a manner that it will minimise a wound in the case of it entering into contact with participants or members of the public. The bumper must be made from a flexible material with all corners and sharp edges rounded off. The contour of the bumper will follow the contour of the body with which it is being used. At no point may the bumper protrude in front of the body.

C41.4 The aerial support must be flexible. Carbon, GRP, steel, etc. are not permitted.

- C41.5 The minimum weight is **3500 grams**. The weight will be checked with an empty fuel tank with the body and a transponder installed.
- C41.6 Overall dimensions: Length Maximum: 590mm Width Maximum: 330mm Height: 200mm (on 20mm blocks) Wheelbase Maximum: 270mm - 380mm
- C41.7 Carbon fibre chassis are not permitted
- C41.8 The car must roll freely between the inspection measuring rails with any steerable wheel set in the straight ahead position, irrespective of the compression or extension of the suspension

## C42 TRANSMISSION AND DRIVETRAIN

- C42.1 A shaft-drive system with front and rear differentials is required. Belt driven cars are not permitted.
- C42.2 Single speed or two-speed transmission only.
- C42.3 Single speed configurations must include a solidly mounted spur gear to a standard bevel gear centre differential or a solid spool (no one-way bearing). No other differential types will be permitted.
- C42.4 Two-speed transmissions must use an automatic centrifugal shifting mechanism that is not remotely adjustable or programmable.
- C42.5 One-ways, spools, locking "Torsion-type," or externally adjustable differentials are not permitted. Differentials can only be tuned with the use of silicone-based oils.
- C42.6 Front and Rear differential gear ratios must be identical. Front or rear underdrive or overdrive is not permitted.
- C42.7 Only standard mechanical brakes are permitted. Up to two brake discs are permitted anywhere on the centre driveshaft's. Brakes may not be located on the outboard axles.

## C43 TYRES AND WHEELS

- C43.1 Tyres must be "production" tyres commercially available – hand cut tyres or those not available to the general public are not permitted. "Available" is defined as having been sold to consumers a minimum of 30 days prior to the official start of the event. Tyres must be molded rubber – no foam tyres are permitted in any GT class.
- C43.2 A controlled tyre is advised, a limit of 2 sets (4 per set) per driver/ competitor per NZRCA national event. An optional set will be made available for those that have qualified for the event final. All races must be completed on the same tyres used to start each race (qualifying and finals). Tyre changes are not permitted except when a wheel and/or tyre are determined by the race director or an NZRCA official, to be damaged. Excessive tyre wear does not constitute damage.
- C43.3 Tyres must be black, except for writing on sidewalls.
- C43.4 Wheels must use a 17mm hex hub consistent with the dimensions and function of the hubs used in 1/8 off road racing. The wheel must be affixed by a 17mm wheel nut, threaded on to the hex hub. Quick change mechanisms are not permitted.
- C43.5 Any materials used in, or on, the tyres must not damage the racing surface.

***Competitors found to be using additives will be disqualified from the event.  
NZRCA's decision for inspecting tyres is final.***

## C44 FUEL

C44.1 Fuel may be tested and samples and counter samples taken for testing at any time during the championship. Competitors whose fuel does not pass inspection will be disqualified. Competitors whose fuel samples are found to contain prohibited additives will be stripped of all results and further actions, including bans from future racing will be imposed.

C44.2 Fuel will only contain methanol (methyl alcohol), lubricating oil, coloring agent and a maximum of 25% nitro-methane in volume. Any other additives are strictly prohibited.

C44.3 The specific gravity of the mixture may not be heavier than 0.91. An IFMAR approved fuel tester, e.g. Nitromax 25, will be used to verify the fuel's conformity to the rules.

C44.4 Fuel capacity to be 150.00ml including fuel tank, fuel tubing up to the carburetor, filters, etc.

C44.5 Any fuel capacity found to be illegal (over 150ml) after a heat or final shall be inspected for a second time after an initial „cool down“ period of fifteen (15) minutes. The fuel tank, fuel tubing up to the carburetor, filters; etc may be removed from the car. This „cool down“ period is only necessary in the case of temperatures above 20oC.

## C45 TECHNICAL EXCLUSIONS

C45.1 It is not allowed to use any electronic devices with the exception of:

- C45.1.1 Two radio channels of the receiver which will be used to operate steering, throttle and brakes.
- C45.1.2 No more than two (2) servos.
- C45.1.3 A passive data recording or information system to record functions of the car can only be used up to the end of controlled practice.
- C45.1.4 A transponder.
- C45.1.5 An electronic failsafe.
- C45.1.6 A voltage regulator and/or battery level indicator.

C45.2 The use of traction control devices, active suspension devices and any steering control aided by gyroscopes/"G"-force sensors is strictly forbidden. Exemption may be granted for drivers with physical disabilities.

C45.3 Sensors are only allowed for the purpose of passive data recording and cannot be used for adjusting the performance of the car whilst in motion. Sensors may only be used up to the end of controlled practice.

C45.4 Not allowed:

- C45.4.1 4wheel brakes. Independent controlled braking on the front wheels is not allowed.
- C45.4.2 Liquid cooled engines.
- C45.4.3 Hydraulic braking systems.
- C45.4.4 More than 2-speed transmissions.
- C45.4.5 Quick change wheel systems are not allowed.
- C45.4.6 Body extenders or wheel flares
- C45.4.7 Carbon fibre chassis
- C45.4.8 Buggy/Truggy type wings
- C45.4.9 Centex style clutches
- C45.4.10 Treatment of the tyres with post-manufacturing additives is prohibited