NEW ZEALAND SLOT CAR ASSOCIATION INC.

NZSCA RULE BOOK

2017

(includes revisions from July 2017 remit round)

STANDARDS, PROCEDURES AND SPECIFICATIONS

(A) STANDARDS FOR RUNNING NZSCA CHAMPIONSHIP EVENTS

A1. PUBLICATION AND PROGRAMME

1.1 - Each year NZSCA will publish a calendar of scheduled championship events. Detailed information and a programme for each of these events will be sent to all NZSCA Clubs at least eight weeks prior to each event.

A2. COMPETITOR ELIGIBILITY

2.1 - Competitors who compete in a NZSCA championship event must either:-

- Be a member of a club that is a paid up member of NZSCA, or:-
- Pay an individual annual affiliation fee of $30, or a single event fee of $10 per event.

A3. TRACK REQUIREMENTS

3.1 - Any track used for a NZSCA championship event must have a minimum of four lanes, with each lane divided into 100 equal parts *(segments)* and each lane marked separately.

3.2 - The track power supply must be adequate for all classes of cars being raced. Voltage should not drop below 12 volts DC when each lane is drawing 4 amps when measured at the tapes or braid. This is a minimum and it is recommended that voltage not drop below 12 volts when each lane is drawing 10 amps. Track voltage should not exceed 13.2 volts.

3.3 - A computerised race control system is required, which must be able to run the qualifying and racing procedures that are detailed in section B of these rules.

3.4 - If a track has not been previously used for a championship meeting, NZSCA may require the host club to hold an open meeting catering for all classes no less than one month before the championship meeting.

A4. CERTIFICATES TROPHIES AND FEES

4.1 - NZSCA will supply certificates for all National Championship events. NZSCA will provide simple keepsake mementos (like car box stickers or plaques) to all competitors in National Championship events, and small keepsake trophies to all place getters. NZSCA will consult with the host clubs to ensure the entry fee levy is sufficient to fund these items.

Host clubs of National Championship events will pay NZSCA the levy per competitor, out of entry fees. *(The amount of this levy is reviewable annually at the NZSCA AGM).* NZSCA will apply this levy to paying for the mementos, place getter trophies trophy engraving costs on the permanent trophies, and to other costs as seen fit.

A5. EVENT OFFICIALS

5.1 - For each NZSCA Championship event the NZSCA Executive will appoint a Chief Steward and a Race Controller.

5.2 - The Chief Steward will manage the running of the meeting in accordance with NZSCA rules. He will appoint the scrutineers, decide on restarts and all other contestable issues, and will apply the rules fairly to all racers. The Chief Steward's decision in all matters is final.

5.3 - The Race Controller will manage the practice periods, keep the race program moving on schedule, run qualifying and lane allocation, control the warm up periods, control when races start, record laps and segments covered, and cut the track power in response to track calls.

(B) RACE MEETING PROCEDURE

B1. PRACTICE

1.1 - At Championship meetings, the host club will provide the equivalent of a full day of practice time before racing commences. The track opening time for practice must be published to all competitors in the event programme. The track will be closed for general practice once the race program gets underway. Prior to each class or category of racing there will be at least fifteen minutes of practice for that class or category only.

B2. SCRUTINEERING

2.1 - Prior to qualifying, cars will be presented for scrutineering with the body off. Once the body has been attached and scrutineering is completed, the car will be impounded in parc ferme.

2.2 - At the completion of each race, cars will be returned to parc ferme and may be re-scrutineered, this may involve motors being stripped down for inspection. Cars must remain in parc ferme until all placings have been confirmed.

2.3 - Cars may be checked on the start line immediately before each race. A non-compliant car will have to be corrected "on the green light" during racing.

B3. QUALIFYING

3.1 - Qualifying will be run using a computerised race control system. Each car will be placed on the track by the grid marshals prior to qualifying. At the end of their qualifying time, drivers may be asked to drive their car back to a convenient point on the track, where the car can be removed and returned to parc ferme.

3.2 - A driver will have a single run of not less than 1 minute on the designated lane, *(or on a lane of their choice if the race control system permits)*. A driver's best single lap time posted within the qualifying period will determine the qualifying order. A driver's best three lap times will be recorded for qualifying and ties will be broken firstly by the greatest number of equal times a driver records, then by the next best time and so on. If a tie cannot be broken, the drivers involved will each have an additional qualifying run with their fastest lap determining their qualifying position relative to the other driver or drivers who were tied for position.

3.3 - A competitor may qualify only one car in each class that they have entered. A competitor whose car breaks down during qualifying will, at the discretion of the Chief Steward, be given time to make repairs, have the car re-scrutineered, and complete qualifying before racing commences.

B4. FORMAT OF RACES

4.1 - Racing will be run using a computerised race control system. A race will consist of a number of heats equal to the number of lanes, each heat of equal duration, with each competitor running on each of the lanes. Each heat will be a minimum of two minutes duration. Lane rotation will follow normal practice at the host club.

4.2 - All races in all classes or categories are finals. The Chief Steward and the Race Controller determine the make-up of the finals depending on the number of entries in each class or category. Every endeavour will be made to have an equal numbers of competitors in each final, and when numbers are uneven, the greater number of competitors in the A final.

4.3 - Starting lane choice for each race is in order of qualifying time, the fastest qualifier in each race having first choice of lane. Racing in each class or category starts with the slowest group of qualifiers and progresses towards the A final. A competitor's accumulated distance over the all the heats in their race determines their overall finishing position, so a competitor could win a class or category from a B or C final, if they cover the greatest distance.

B5. RACING

5.1 - At the beginning of each race, cars will be placed on the grid by the grid marshals and competitors will have two minutes to warm up. Competitors are responsible for putting the correct lane sticker on their car before the warm up.

5.2 - Starts may be power on or power off starts, controlled by the computerised race control system and the Race Controller. If a power on start is used, in the event of jumped starts the chief steward's decision is final. In the first heat of a race, if less than half the cars are still racing after the first corner, the heat will be restarted, or a track call used when the Chief Steward determines this preferable. The Chief Steward will determine where the first corner ends and rule on any issues arising from this.

5.3 - The interval between heats for lane change will be one minute, with power on directly after the interval.
During the lane change interval, competitors must move their controllers to the next lane, and competitors or their mechanics must change lane stickers and move their cars to their next lane, replacing the car at the same relative position on the track.

B5. RACING continued…

5.4 - At the end of each race, each car's partial lap position on the track will be recorded and cars will then be returned to parc ferme by the grid marshals. If the nose of a car is across a track distance marker, that distance will apply.

B6. WORKING ON CARS DURING RACING, AND CAR DAMAGE

6.1 - During the warm up period, a racer or their mechanic may work on their car at the track or in the pits.
During a heat a racer or their mechanic may work on their car at the track or in the pits.
During a lane change interval a racer or their mechanic may work on their car at the track or in the pits, but it is up to them to replace their car in the correct relative position on the track, and be ready to drive when the power comes on again.

6.2 - If a racer or their mechanic is still working on their car when the track power comes on after a lane change interval, they must take care to replace the car on the track in a position where it will not be a hazard to other cars. *(i.e. on a straight well away from the corner exit)*. Causing an accident by replacing a car in an unsafe position may be penalized by the deduction of laps.

6.3 - A car that is dragging, damaged, broken, or appears to no longer comply with the car rules, may be permitted to finish the heat at the discretion of the Chief Steward. Notwithstanding this, the Chief Steward or the Race Controller are permitted to "Black Flag" a car if it is deemed to be at risk of damaging the track or impeding other cars.

B7. TRACK CALLS

7.1 - Track calls are permitted to be made in the event of unfair or dangerous situations. These are:-

- 'Rider' *(a car in the wrong lane).*
- An 'un-marshalable' car *(e.g. under a bridge, or on the floor)*.
- Debris in the slot.
- Track problems including braid up, lap-counter failure, and power failure.

In any of these events, a racer may call 'track', and the race controller will immediately turn off the power without questioning the call.

7.2 - During a track call, cars may be marshaled but racers may not commence work on their cars. A racer who was already working on their car prior to the track call may continue doing so.

7.3 - Decisions about what constitutes a real or spurious track call rest with the Chief Steward and the Race Controller. Repeated spurious calls may be penalized by the deduction of laps.

B8. PROTESTS AND PENALTIES

8.1 - In the event of a protest, a Protest Committee will be convened and chaired by the Chief Steward, and it will include one non-executive representative from each affiliated club present at the race meeting. This committee will deliberate and determine the outcome of the protest. Competitors losing a protest have the right of appeal to the NZSCA Executive Committee.

8.2 - Any protest or appeal should be made to the Chief Steward, and must be accompanied by a fee of $10.00. *(The amount of this fee is reviewable annually at the NZSCA AGM).* The fee is refunded only if the protest or appeal is upheld.

8.3 - The Chief Steward has the right to apply penalties to competitors in the event of bad behaviour, or unsporting conduct. Penalties may also be applied in the event that a car is found to be non-compliant at post race scrutineering. Penalties may involve the deduction of laps, or disqualification, as deemed appropriate by the Chief Steward. Competitors receiving a penalty have the right of appeal to the Protest Committee.

8.4 - The Chief Steward has the right to determine how best to deal with behavior issues for a particular race meeting. He may form a three person behavior group to determine on any issues, or determine these matters himself, or with the Race Controller. In the event of bad behavior problems arising, the Chief Steward will apply the following consequences:-

- First instance – issue a verbal warning and a reminder of next consequence.
- Second instance – deduction of five laps from the competitor's current heat. Or if competitor is not currently racing, deduction of five laps from their most recent, or next heat.
- Third instance – the competitor must step outside for a cooling off period until the end of the current heat, and the laps lost as a result are not reinstated. Or if a competitor is not currently racing, step outside to cool off, and deduction of fifteen laps from their most recent, or next heat.

Competitors receiving a penalty have the right of appeal to the Protest Committee.

B9. CONCOURS D'ELEGANCE

9.1 - Each competitor must enter one car from any class that they have entered for the meeting. Any car entered for concours must be qualified and raced in the exact state presented for concours.

9.2 - Judging for Concours d'elegance will be carried out by every competitor, one vote per competitor before the start of the first qualifying of the meeting. Cars will be judged on: Body, Interior, Wheels, Chassis, and Overall appearance.

9.3 - The winner of Concours d'elegance will be the competitor who gains the most votes. In the case of a tie then the competitors that have tied will be voted on again by all competitors until there is a winner.

(C) RULE CHANGE PROCEDURE

C1. SUMMARY

1.1 - There is a three-step process for changing NZSCA rules that govern events, racing procedure and car specifications:-

(1) Proposed changes *(Remits)* are voted on by the Member Clubs by digital ballot. *(a digital ballot may be conducted by email or skype or any other digital method, and may be run at any point in the year)*

Remits may be raised and discussed at a General Meeting, but unless the matter is exceptionally pressing, voting will be done by a subsequent digital ballot.

(2) Remits that find support are forwarded to the NZSCA Committee for review and to ensure the clarity and consistency of the proposed rule.

(3) After consideration by the NZSCA Committee and when approved, rule changes and implementation dates are published on the NZSCA website.

C2. PROCESS

2.1 - The process is intended to ensure there is ample opportunity for clubs who are affected by a proposed rule change to consider, discuss and decide how they want to vote on that proposed change. The preferred process is to have remits circulated in advance by email, so there is time to consider them before voting occurs, and then voted on by digital ballot.

2.2 - When remits are considered at a General Meeting, it is desirable that a change affecting 32nd scale racing would be considered at a 32nd scale meeting, a change affecting 24th scale racing would be considered at a 24th scale meeting, and a change affecting RTR scale racing would be considered at an RTR meeting. However, this is not prescriptive, and is not always possible – so any Remit proposing change may be raised and discussed at any General Meeting.

C3. REMITS

3.1 - Remits should be submitted to the NZSCA Secretary and may only be submitted by member clubs of NZSCA. Individuals who are club members should channel ideas and suggestions through their club delegate or to a NZSCA committee member.

3.2 - Remits should be submitted at least three weeks in advance of a General Meeting or digital ballot so that the Secretary can circulate them, member clubs can assess the merits of proposals, and absent clubs can instruct proxy votes. Notwithstanding the preferred three-week notice period, remits may be raised from the floor at meetings.

C4. VOTING

4.1 – With email voting each financial member club has one vote. Email voting results are compiled by the NZSCA committee and may be made available to member clubs upon request to ensure transparency.

4.2 - At meetings each club present appoints a delegate, and absent clubs may appoint a proxy. At meetings, only those delegates and proxies may vote.

C5. TECHNICAL OFFICERS

5.1 – Technical Officers for metal chassis racing, and for RTR racing are appointed annually at the NZSCA AGM:

- Technical Officers are responsible for the clarity and consistency of the rules.
- They may propose wording and format changes and other improvements to rules.
- They may formulate rules in response to specific issues *(like a parts shortage)* or for specific events.
- They are at all times accountable to the NZSCA Executive and Committee.

C6. IMPLEMENTATION DATES

6.1 - Rule changes will usually become applicable at the commencement of the next calendar year, but when appropriate, a Technical Officer may recommend specific changes become applicable sooner, *(e.g. prior to a forthcoming National Event).*

(D) MOTOR SPECIFICATIONS

D1. FK

"FK" type motors must be: ProSlot 4002FK sealed motor, part number PS4002FK

1.1 - Shaft – The shaft on either end of the motor may be shortened.

1.2 - Can – The can **may not** be notched to clear the rear axle.

1.3 - Seal – **The motor must remain sealed as manufactured**. Minor damage to the seal, resulting from reasonable wear and tear, or from soldering in the motor, will not compromise acceptance as a sealed motor. The test will be: "is the seal sufficiently intact to provide assurance that the motor has not been opened"

1.4 - Endbell Retaining Lugs – The two endbell retaining lugs must be in their original position and not show any sign of having been tampered with.

1.5 - Brushes and Springs – Brushes & springs may be changed. The tips of the brushes may be filed flat so as to restore the "as new" face profile of the brush. Brushes cannot be timed, drilled, friction cut or fitted with shunts.

1.6 - Brush Hoods – Only the original PS4002FK endbell hardware may be used. Brush hoods must remain in the manufacturers intended position, and must remain unmodified. (This means brush hoods **may not** be repositioned on the end bell in such a way as to advance the timing of the motor)

1.7 - Bearings – The original can and endbell bearings must be used. Can and endbell bearings may be retained with Loctite or super glue, and/or the can bearing may be soldered in place.

1.8 - Magnets and Retaining Tabs – Magnets may be retained in their original position with Loctite or superglue. The magnet retaining tabs may be crimped against the magnets to help keep the magnets in their original position.

1.9 - Cooling Devices – No cooling devices may be attached to the motor or motor shaft.

1.10 - No motor modifications other than those detailed above will be permitted.

D2. SUPER 16D

2.1 - Set Ups – Parma, Slotworks, RJR, Fastones, Camen, Red Fox and Proslot S16D cans and magnets permitted. Any S16D end bell permitted.

2.2 - Armatures –Only tagged Pro-Slot S16D arms, [part PS700] permitted Tags must be attached to the armature and readable at the time of scrutineering. Tag must read S16D, *(60 turns of #28 AWG per pole).* Any armature timing is allowed. Spacers may be added to limit armature endplay.

2.3 - Can – Can material may not be removed, except the motor can and magnet may be grooved to achieve axle clearance.

2.4 - Brushes, Springs and Hoods – Brushes & springs may be changed. Brushes cannot be timed, drilled, friction cut or fitted with shunts. Brush hoods must remain standard & in the standard horizontal position

2.5 - Bearings – The can may be drilled to allow the fitting of a replacement bearing. Any oilite may be fitted to the end bell as long as the end bell is not modified. Can end ball bearings are permitted.

2.6 - Blueprinting – The motor may be blueprinted. Super glue may be used to secure magnets but magnets may not be shimmed with tape or any shim stock. Magnets may not be honed

2.7 - No motor modifications other than those detailed above will be permitted.

D3. GROUP 12/15

3.1 - Set Ups - Any unmodified commercially available BOW, Cahoza, Camen, Champion *(Force or Xterminator)*, Kamen, Kelly, Koford, Mura, Proslot, RJR, TWP, Red Fox or Viper full size 'C' can set up is allowed *(no strap cans).*

3.2 - Armature – Any production tagged Group 12 or Group 15 Armature with a minimum of 50 series wound turns of 29 gauge *(AWG)* wire may be used. Tags must be attached to the armature and readable at the time of scrutineering. Minimum Armature diameter is 0.500".

3.3 - Endbell – 'C' can endbell only may be used – no aluminium endbells. Endbell hardware, screws, and endbell to can mounting screws may be added or substituted, but the endbell may not be modified in any other way.

3.4 - Can – Can material may not be removed except the can and magnet may be grooved to achieve axle clearance, and plating or paint may be removed to facilitate soldering. No other can modifications are allowed.
Can dimensions: length 23.5mm, width 21.2mm, height 14.2mm.

3.5 - Magnets – Any full can height, single piece ceramic magnets may be used. No quads or multi segment magnets allowed except Proslot SMQ.

3.6 - Brushes and Springs – Any brushes and springs may be used, and heat sinks, buss bars, shunt wire and spring insulation may be used.

3.7 - Bearings – Oilite type bushings or ball bearings are allowed and these may be soldered or glued in place.

3.8 - Blueprinting – Can may be straightened, bearing hole centered, magnets honed, & armature spacers used.

3.9 - No motor modifications other than those detailed above will be permitted.

D4. OPEN

4.1 - Any open strap motor may be used. No restrictions on modifications.

1/32nd SCALE

(E) 1/32nd SCALE CLASS AND CHAMPIONSHIP RULES

E1. CLASSES AND CATEGORIES

1.1 - In 2017, 1/32nd scale NZSCA Championship meetings will be run for the following nine classes:-

- *Class 3 Group:*
  Production Saloon - Parma International 32 chassis and FK motor
  Production GP (GP3) - JK F1 chassis and FK motor
  Production Sports/GT - Parma International 32 chassis and FK motor

- *Class 2 Group:*
  Intermediate Saloon - free chassis and FK motor
  Intermediate GP (GP2) - free chassis and FK motor
  Intermediate Sports/GT - free chassis and FK motor

- *Class 1 Group:*
  Group 12 Saloon - free chassis and Group 12/15 motor
  Open GP (GP1) - free chassis and Group 12/15 or Open motor
  Open Sports/GT - free chassis and Group 12/15 or Open motor

1.2 - Competitors may compete in as many classes as they choose.

E2. CHAMPIONSHIPS

2.1 - Championship points of 50,47,45,44,43,42……3,2,1 will be awarded to drivers who compete in each class. To gain these points drivers must start the race they have qualified for. Overall results in each class group will be determined by the total points accrued in the three races in that class group.

2.2 - The **Class 1 Group** overall winner will have the title of New Zealand Slot Car Champion.

2.3 - The **Class 2 Group** will have an award for the best result from any junior or intermediate driver up to and including those who turn 18 during the year of the championship meeting.

2.4 - The **Class 3 Group** will include Championships for Novice, Junior and Intermediate.

- **The Novice Championship** will be open to all Class 3 entrants who are competing in their first Championship meeting

- **The Junior Championship** is open to all Class 3 entrants who are attending primary or intermediate school up to and including year 8.

- **The Intermediate Championship** is open to all Class 3 entrants who are attending secondary school, year 9 and above, and includes any drivers who turn 18 during the year of the championship meeting.

2.5 - The **Graeme Mitchell Memorial Constructors Trophy** will be awarded annually at the 1/32nd Scale Nationals to the racer who achieves the highest standard in construction at the event.

Two judges will be appointed by NZSCA at the event, and the class of car eligible for the trophy will rotate annually – ***in 2017 Class 3 will be eligible.***

Only one car may be entered per competitor and it must be one that will be raced in that class.

Judging criteria will include:-

- Chassis – soldering, lack of corrosion or rust, cleanliness, condition of lead wires guide braids etc.
- Motor – general tidiness, springs, shunts, soldering, lack of corrosion etc.
- Body – mounting accuracy, level of wing parallel to track, front body height even, etc.
- Race Reliability – did the car finish all heats without major repairs not caused by an accident.

Race placing will not be taken into account.

(F) 1/32nd SCALE CAR SPECIFICATIONS

GENERAL CAR SPECIFICATIONS

(these apply to all classes of cars unless variations are specified in individual class rules)

F1. DIMENSIONS

1.1 - Width - Maximum chassis width is 64mm and car bodies are not to exceed 65mm in width, except for Grand Prix cars where the maximum width is 68mm.

1.2 - Clearance - Minimum clearance is 0.5mm under the rear axle and gear at the beginning of each race. The gear may not protrude below the chassis.

F2. GUIDE

2.1 - **One Guide** - Only one guide flag allowed, with a blade not more than 27mm long. No other projections capable of guiding the car are allowed underneath it. Guide flag colour is free, except that on tracks that use optical sensors and the cars guide blade for lap counting, the guide must be black or made of graphite. It is the racer's responsibility to ensure that the guide blade's colour reliably causes laps to be counted.

2.2 – **Spacers, Nut etc.** - Guide nut, spacers, clips, lead-wire and earring backs are free.

2.3 - Guide Lead Dimension – The distance from the center of the rear axle to the center of the guide pivot for Sports and Saloon cars is a maximum of 107mm, and for Grand Prix cars is a maximum of 110mm. Parma International 32 chassis cars and JK Grand Prix cars must keep the guide lead dimension the same as provided by the manufacturer.

F3. WHEELS AND TYRES

3.1 - **Four Visible Wheels** - All cars must have a total of four visible wheels when viewed from the two sides when the body is attached in racing position, each wheel to be not less than 12.5mm diameter. Wheels and tyres may not protrude beyond the body at the top of the wheel arches by more than 0.5mm at each side.

3.2 - **Front Wheels** – Where class rules allow, rubber front wheels may be attached to the inside of the body. Front wheels must be within the front wheel arches and in a near vertical position, no more than 15 degrees from vertical.

3.3 - **Sticker Fronts** - Class One and Two Sports and Saloon cars may use realistic looking sticker fronts, in lieu of wheels, provided that they are attached to the body in a realistic position, and are no less than 12.5mm diameter.

3.4 - Tyre Goop – The use of any tyre goop or glue on the rear tyres is prohibited. *(Spray glue may be applied to the track from time to time as the race organisers see fit).*

F4. BODIES

4.1 - Body Classes:–

- **Saloon** - Saloon cars.
- **Grand Prix** - Formula One cars.
- **Sports/GT** - Open or closed cockpit Can Am, Group C, IMSA and GT type sports cars.

4.2 - Paint - Bodies must be fully painted and sufficiently opaque so that no chassis or components can be seen through the body when viewed from above. Windscreens and windows must be left clear. A clear strip may separate the wing from the main body.

4.3 - Interior – All cars must have a non-transparent 3D driver figure, consisting of at least head, shoulders, arms and steering wheel, painted with at least two colours.

4.4 - Numbers – All cars must have at least two readable numbers, of the same numeral and size, except Grand Prix cars which need to have only one number.

4.5 - Wheel Arches – Front wheel arches must be clear, or cut to at least the horizontal centerline of the front wheels. Trimming for front or rear wheel clearance may not extend into the top surface of the body

4.6 - Cover Chassis - The chassis and guide must be completely covered by the body when viewed from above – the only exception to this is front suspension arms and lead wires for Grand Prix cars.

F4. BODIES continued…

4.7 - Trimming and Cutouts - Body shape is to remain as manufactured except for the necessary cutouts to clear axles and wheels:-

- The front of the body may not be cut so high as to lose the shape and detail of the front.
- Cutting out the rear of the body is permitted on Sports GT and Grand Prix cars.
- Grand Prix cars may have the vertical body material above the front and rear edges of the side pans cut out, so long as the cutout does not extend into the top surface of the body.
- No other cutouts are allowed except areas normally cut out on full size race cars, *(e.g. air intakes)*

4.8 - Saloon Bodies – The height of the lower edge of the rear bumper may not exceed 10mm when measured with the car on a recessed board.

4.9 - Body Mounting – Bodies may be fixed to the chassis by any combination of tape, clips or pin tubes. Where pin tubes are used they must be located in the existing body fixing chassis holes

4.10 - Body Lists - The Executive Committee of the New Zealand Slot Car Association Inc. will publish a list of eligible, Saloon, Sports, GT and Grand Prix Bodies by the 1st January each year.

The eligible lists will be compiled in consultation with financial Member Clubs and approved by the NZSCA Committee.

Any bodies that Member Clubs want considered to be added or removed from the approved lists must be submitted to the NZSCA Committee Secretary no later than 1st December each year.

1/32nd SCALE BODY LIST - 2016

SALOON

Body:	Manufacturer:	Part No:
Subaru Impreza	SS (AB Slot Sport)	
Dodge Daytona	Cat	
Opel Calibra 1996	Betta	
2012 BMW M3 DTM	Betta	

GRAND PRIX

Body:	Manufacturer:	Part No:
2001 McLaren MP4 13	Red Fox	
2005 McLaren MP4 20	Red Fox	
2007 McLaren	Red Fox	#RFSC36C
2007 McLaren F1	Red Fox	#RFSC36CM
2010 McLaren F1 ISRA	Red Fox	RF ISRA F1 12
Red Bull F1	Cat	
F 1 Ferrari	Red Fox	#SC36CF

SPORTS/GT

Body:	Manufacturer:	Part No:
Intrepid	Parma	#842
1998 Toyota 010 GT1 LM	Betta	
Audi R8	BSP/Cat	
Audi R10	BSP	
Audi R10	Red Fox	
Porsche P917 Cup	BPA	022/2

(F) INDIVIDUAL CLASS SPECIFICATIONS

F5. PRODUCTION FK SPORTS/GT AND SALOON (CLASS 3)

The intention of this class is to that it be one of the two entry-level classes, with a single chassis and sealed motor.

5.1 - General Specifications - Must comply with all General Car Specifications F1 – F4 inclusive, or variations below.

5.2 - Chassis Type – Parma International 32 brass pan chassis part #575 only.

5.3 - Replacement Parts – Only the following parts may be replaced with aftermarket products:-

- Guide flag, guide shims and retaining nut.
- Pickup braid and clips.
- Front wheel retainers – springs or soldered washers.
- Front and rear wheel spacers.
- Front axle – must be 1/16" piano wire.
- Rear axle – must be solid drill blank 3/32" diameter.
- Rear wheels and tyres.
- Motor lead wire.

5.4 - Blueprinting – Chassis may be flattened and straightened, wheel towers straightened to ninety degrees, guide tongue leveled, rear bearing holes filed out to enable rear axle to be set level and at ninety degrees to direction of movement, sharp edges rounded to avoid track damage, and chassis assembled to allow pans to move freely.

5.5 - Rear Axle Bearings – Oilites or brass only. These may be located in an axle housing tube and soldered in the original holes. The minimum distance between the top of the axle and the bottom of the chassis must be 8.9mm.

5.6 - Front Axle – Must have a 1/16" diameter front axle. It may be braced to prevent it revolving, but it must remain free to move laterally, and must not alter or inhibit the movement of any chassis component.

5.7 - Front W**idth and Side-Play** – The width across the front wheels when extended against the outer axle wheel retainers may not exceed 64mm, and the front axle side-play may not exceed 1.0mm.

5.8 - Front Wheels and Tyres – Must use Parma aluminium "O" ring type front wheels with 12.7mm outside diameter – part #672A, revolving on the axle.

5.9 - Body Mounting – May use Parma body clips part #738, may use tape over the body clips to retain them, or may use fixed pin tubes located in the original holes of the chassis. **May not** use floating pin tubes.

5.10 - Motor Mounting - May enlarge the existing motor can bearing slot to allow for proper motor fit and gear mesh. May solder motor in place in the standard factory position, and brace it to the chassis in a rearward direction only.

5.11 - Gears – Any 48 or 64 pitch gears allowed, except that the pinion must be straight cut. **May not** use angled pinions.

5.12 - Tape and Weight - May apply tape to the underside of the chassis center section and pans to prevent shorting of the chassis on the track, and may add lead weight except that it must not overhang the chassis outline and it must not inhibit the movement of any chassis component.

5.13 - May not alter chassis movement or remove chassis material, except as specified above *(the original manufacturers method of joining the chassis pieces together and articulating their movement must be retained).*

5.14 - No chassis modifications other than those detailed above will be permitted.

5.15 - Motor – Must be FK motor as specified in Section D MOTOR SPECIFICATIONS – **D1. FK.**

5.16 - Bodies – May use any body included in the current Saloon and Sports/GT body lists.

F6. PRODUCTION FK GRAND PRIX – GP3 (CLASS 3)

The intention of this class is that it be one of the two entry-level classes, with a single chassis and sealed motor.

6.1 - General Specifications - Must comply with all General Car Specifications F1 – F4 inclusive, or variations below

6.2 - Chassis Type – JK 1/32nd F1 chassis part #JK25141 only.

6.3 - Grand Prix Car Dimensions – Maximum overall width is 68mm.

6.4 - Unrestricted Parts – Only the following parts are free:-

- Guide flag, guide shims and retaining nut.
- Pickup braid and clips.
- Front wheel retainers.
- Front and rear wheel spacers.
- Rear axle – must be solid drill blank 3/32" diameter.
- Rear wheels and tyres.
- Motor lead wire.
- Gears.

6.5 - Blueprinting – Chassis may be flattened and straightened, wheel towers straightened to ninety degrees, guide tongue leveled, front and rear bearing holes filed out to enable axles to be set level and at ninety degrees to direction of movement, sharp edges rounded to avoid track damage, and chassis assembled to allow pans to move freely.

6.6 - Front and Rear Axle Bearings – Oilites or brass only. These must be soldered in the original holes. The front axle may be soldered to the front uprights.

6.7 - Front Axle – Must have a solid 3/32" diameter front axle. The minimum distance from the top of the front axle to the underside of the chassis is 8.65mm.

6.8 - Front Wheels and Tyres:-

- Must have two front wheels, part #JK87461PF, minimum width 6.35mm.
- May be ground down in diameter to allow front ride height adjustment.
- Front wheels may rotate independently.
- Front wheels must support the chassis. The test for this is when placed on a level board with a braid recess that emulates the track braid recess, and when the guide is subjected to light downward pressure to compress braid springiness, both front wheels must touch the board before the front of the chassis touches.

6.9 - Front Wheels Width and Side-Play – The width across the front wheels when extended against the outer axle wheel retainers may not exceed 68mm, and the front wheel side-play may not exceed 0.5mm.

6.10 - Body Mounting – May use fixed pin tubes located in the original holes of the chassis. **May not** use floating pin tubes.

6.11 - Motor Mounting – Must mount the motor in the original manufacturers inline position, fixed to the chassis by screws or soldering or a combination of both.

6.12 - Bracing – May add bracing to support the rear axle uprights and may add bracing from the motor mounting bracket rearward to the axle uprights. May brace the guide tongue only with JK guide tongue brace part # JKGTB.

6.13 - Tape and Weight - May apply tape to the underside of the chassis center section and pans to prevent shorting of the chassis on the track, and may add lead weight except that it must not overhang the chassis outline and it must not inhibit the movement of any chassis component.

6.14 - Gears – Free.

6.15 - May not alter chassis movement or remove chassis material, except as specified above *(the original manufacturers method of joining the chassis pieces together and articulating their movement must be retained).*

6.16 - No chassis modifications other than those detailed above will be permitted.

6.17 - Motor – Must be FK motor as specified in Section D MOTOR SPECIFICATIONS – **D1. FK.**

6.18 - Bodies – May use any body included in the current Grand Prix body list.

F7. INTERMEDIATE SPORTS/GT AND SALOON (CLASS 2)

The intention of this class is that it be a step up from the production classes, with scope for chassis building and tuning skills to be developed.

7.1 - General Specifications - Must comply with all General Car Specifications F1 – F4 inclusive, or variations below.

7.2 - Chassis Type – Free.

7.3 - Rear Axle – Must be solid drill blank 3/32" diameter.

7.4 - Rear Axle Bearings - Oilites or brass only.

7.5 - Gears – Free.

7.6 - Front Wheels – Front wheels are optional, but must use realistic looking stickers if front wheels not used.

7.7 - Motor – Must be FK motor as specified in Section D MOTOR SPECIFICATIONS – **D1. FK.**

7.8 - Bodies – May use any body included in the current Saloon and Sports/GT body lists.

F8. INTERMEDIATE GRAND PRIX – GP2 (CLASS 2)

The intention of this class is that it be a step up from the production classes, with scope for chassis building and tuning skills to be developed.

8.1 - General Specifications - Must comply with all General Car Specifications F1 – F4 inclusive.

8.2 - Chassis Type – Must be inline, otherwise free.

8.3 - Grand Prix Car Dimensions:-

- Maximum overall width is 68mm.
- Maximum chassis width *(at any point between the front and rear axles)* is 54mm.
- Maximum guide lead is 110mm.
- Minimum tyre width is 4mm.
- Minimum tyre diameter is 14mm.

8.4 - Front Wheels, Width and Side-Play – Must have front wheels. The width across the front wheels when extended against the outer axle wheel retainers may not exceed 68mm, and the front wheel side-play may not exceed 0.5mm.

8.5 - Rear Axle – Must be solid drill blank 3/32" diameter.

8.6 - Axle Bearings – Oilites or brass only.

8.7 - Gears – Free.

8.8 - Motor – Must be FK motor as specified in Section D MOTOR SPECIFICATIONS – **D1. FK.**

8.9 - Bodies – May use any body included in the current Grand Prix body list.

F9. GROUP 12 SALOON (CLASS 1)

The intention of this class is that it be a step up from the intermediate classes, with scope for advanced chassis building and motor building skills to be developed.

9.1 - General Specifications - Must comply with all General Car Specifications F1 – F4 inclusive, or variations below.

9.2 - Chassis Type – Free.

9.3 - Axle Bearings – Free.

9.4 - Gears – Free.

9.5 - Front Wheels – Front wheels are optional, but must use realistic looking stickers if front wheels not used.

9.6 - Motor – Must be G12/15 motor as specified in Section D MOTOR SPECIFICATIONS – **D3. GROUP 12/15.**

9.7 - Bodies – May use any body included in the current Saloon body list.

F10. OPEN SPORTS/GT (CLASS 1)

The intention of the open class is to that it be a step up from all other classes, with scope for advanced chassis tuning and motor building skills to be developed.

Exactly as for F7 INTERMEDIATE SPORTS/GT AND SALOON (CLASS 2) **except**:

10.1 - **Axle Bearings** – Free.

10.2 - **Motor** - May be any Group 12/15 or Open motor as specified Section D MOTOR SPECIFICATIONS - **D3** and **D4.**

10.3 - Bodies – May use any body included in the current Sports/GT body list.

F11. OPEN GRAND PRIX – GP1 (CLASS 1)

The intention of the open class is to that it be a step up from all other classes, with scope for advanced chassis tuning and motor building skills to be developed.

Exactly as for F8 INTERMEDIATE GRAND PRIX (CLASS 2) **except**:

11.1 - **Axle Bearings** – Free.

11.2 - **Motor** - May be any Group 12/15 or Open motor as specified Section D MOTOR SPECIFICATIONS - **D3** and **D4.**

1/24th SCALE

(G) 1/24th SCALE CLASS RULES

G1. CLASSES

1.1 1/24th scale NZSCA Championship meetings are run for the following Classes, and competitors may compete in as many classes as they choose.

- Flexi FK LMP
- Indy/F1 FK
- Flexi S16D Saloon
- Flexi S16D GTP
- G12 Eurosport
- G12 Wing
- Open Eurosport

(H) 1/24th SCALE CAR SPECIFICATIONS

GENERAL CAR SPECIFICATIONS

these apply to all classes of cars unless variations are specified in individual class rules

H1. DIMENSIONS

1.1 - Width - Maximum chassis width is 82.5mm excluding body pins. Except for Wing Cars which may be 83mm wide.

1.2 - Clearance - Minimum clearance is .6mm under the rear axle and gear at the beginning of each race. The gear may not protrude below the chassis.

H2. GUIDE FLAG

2.1 - **One Guide** - Only one guide flag allowed, with a blade not more than 27mm long. No other projections capable of guiding the car are allowed underneath it. Guide flag colour is free, except that on tracks that use optical sensors and the cars guide blade for lap counting, the guide must be black or made of graphite. It is the racer's responsibility to ensure that the guide blade's colour reliably causes laps to be counted.

2.2 – **Spacers, Nut etc.** - Guide nut, spacers, clips, lead-wire and earring backs are free.

H3. WHEELS

3.1 - **Four Visible Wheels** - All cars must have a total of four visible wheels when viewed from the two sides when the body is attached in racing position, of not less than 12.5mm diameter *(Where class rules allow, front wheels may be stickers but must meet visibility requirements specified above).*

3.2 - Rear Wheels and Tyres - Rear tyre width may not exceed 20.5mm.

3.3 - Tyre Goop – The use of any tyre goop or glue on the rear tyres is prohibited. *(Spray glue may be applied to the track from time to time as the race organisers see fit).*

H4. BODIES

4.1 - Body Classes:-

- **GTP** – High downforce body with long side plates. Open or closed cockpit sports cars.
- **LMP** – Lower downforce body with short side plates. Open or closed cockpit sports cars.
- **Classic and Can Am** – Low downforce 'scale' body. Open or closed cockpit sports cars from the late '60's.
- **Saloon** – VE Holden Commodore *(#VE 24830)* and FG Ford Falcon *(#FG 24660).*
- **F1/Indy** – Formula One and Indy Car type open wheel cars.
- **Eurosport** – As GTP plus BMW LMR *(BPA K021).*
- **Wing** - Any commercially available 'wing' slot car' body.

4.2 - Height – Maximum body height including rear wing is 44mm when measured with the car on a recessed board, except when specified lower for saloon and can am.

H4. BODIES continued…

4.3 - Paint - Bodies must be fully painted and sufficiently opaque so that no chassis or components can be seen through the body when viewed from above. Windscreens and windows must be left clear. A clear strip may separate the wing from the main body.

4.4 - Interior – All cars must have a 3D driver figure painted with at least two colours, and a sufficiently full interior so that no chassis or components can be seen through the windows.

4.5 - Numbers – All cars must have at least two readable numbers, of the same numeral, except Grand Prix cars which need to have only one number.

4.6 - Wheel Arches – Front wheel arches must be clear, or cut to at least the horizontal centerline of the front wheels. Trimming for front or rear wheel clearance may not extend into the top surface of the body.

4.7 - Cover Chassis - The chassis and guide must be completely covered by the body when viewed from above – the only exception to this is front suspension arms and lead wires for Formula One cars.

4.8 - Trimming and Cutouts - Body shape is to remain as manufactured except for the necessary cutouts to clear axles and wheels.

The front of the body may not be cut so high as to lose the shape and detail of the front.

Cutting out the rear of the body is OK on GTP, LMP and Formula One cars.

No other cutouts are allowed except areas normally cut out on full size race cars, *(e.g. air intakes).*

4.9 - Saloon Bodies – The saloons, VE Holden Commodore *(#VE 24830)* and the FG Ford Falcon *(#FG 24660)* are molded with cut lines.

These bodies must be cut to these lines, which will give the correct height for the front air dam and rear bumper when mounted onto chassis.

The line at the base of both the front and rear side doors must be at least 1mm above the lower edge of the body on both sides of the car.

4.10 - Body Mounting – Bodies may be fixed to the chassis by any combination of tape, clips or pin tubes. Where pin tubes are used they must be located in the existing body fixing chassis holes.

4.11 - Body Lists - The Executive Committee of the New Zealand Slot Car Association Inc. will publish a list of eligible, Saloon, LMP, Classic and Can Am, GTP, F1/Indy, Gp12 Eurosport and Open Eurosport Bodies by the 1st January each year.

The eligible lists will be compiled in consultation with financial Member Clubs and approved by the NZSCA Committee.

Any bodies that Member Clubs want considered to be added or removed from the approved lists must be submitted to the NZSCA Committee Secretary no later than 1st December each year.

1/24th SCALE BODY LIST - 2016

GTP

Body:	Manufacturer:	Part No:
Caddy WSC	Parma	70525
Caddy HD	Parma	70526
Lola HD	Parma	70524
Peugeot Open Cockpit	JK Products	JK70701A
Cadillac	OS	OS.067
Bentlee	OS	OS.069

LMP

Body:	Manufacturer:	Part No:
Toyota GT1	JK Products	JK7176
Toyota 010 GT LMP	Hobbies Plus	HP2011
Bentley	Red Fox	RF-SC26C7
Bentley EXP GB	BPA	K044
Cadillac LMP 02	BPA	K052
BMW V12 LMR	JK Products	JK7184A

CLASSIC AND CAN AM (10 thou bodies only)

Body:	Manufacturer:	Part No:
Ford GT40	JK Products	JK7082B
Porsche 917	JK Products	JK7084B
Ferrari 612	JK Products	JK7086B
McLaren M6	JK Products	JK7087B
Lotus 40 CLR	JK Products	JK7090B
Autocoast Ti22 (short version)	JK Products	JK70811B
McLaren M8A	JK Products	JK70871B
4" Shadow Can Am	JK Products	JK1905B
Lola Sunoco	JK Products	JK719081B
Lola T163	Parma	1036B

SALOON

Body:	Manufacturer:	Part No:
VE Commodore	Hobbies Plus	VE 24830 .007" & .010"
FG Falcon	Hobbies Plus	FG 24660 .007" & .010"

F1/INDY

Body:	Manufacturer:	Part No:
F1 Williams	JK Products	JK6108
Champ Car (CH7 chassis)	JK Products	JK61192
Lola Champ Car (CH7 chassis)	JK Products	JK61152
McLaren F1 MP4-25	Hobbies Plus	HP24601
Ferrari	Red Fox	RFSC29C
Indy	Red Fox	RFSC35C

EUROSPORT (G12 and Open classes)

Body:	Manufacturer:	Part No:
BMW LMR	BPA	K021
Caddy WSC	Parma	70525
Caddy HD	Parma	70526
Lola HD	Parma	70524
Peugeot Open Cockpit	JK Products	JK70701A
Cadillac	OS	OS.067
Bentlee	OS	OS.069

WING

Body:	Any commercially available 'wing' slot car' body.

(H) INDIVIDUAL CLASS SPECIFICATIONS

H5. FLEXI FK LMP

The intention of this class is that it be one of the two entry level classes, with a simple chassis and sealed motor.

5.1 - General Specifications – Must comply with all General Car Specifications H1 – H4 inclusive, or variations below.

5.2 - Chassis Type – Either Champion Turbo Flex chassis (standard & light weight pans allowed) or JK C43 chassis.

5.3 - Blueprinting
CTF: Chassis may be flattened and straightened, wheel towers and cotter pin upright straightened to ninety degrees, guide tongue leveled and doubled, rear bearing holes filed out to enable rear axle to be set level and at ninety degrees to direction of movement, sharp edges rounded to avoid track damage, and chassis assembled to allow pans to move freely. May remove chassis material from the rectangular slot in the rear pan cross piece to allow pans to move freely. May remove chassis material from the underside of the front hooks above the front pan cross piece to allow pans to move freely and equalize pan roll.

C43: Chassis may be flattened and straightened, wheel towers straightened to ninety degrees, guide tongue leveled and doubled, rear bearing holes filed out to enable rear axle to be set level and at ninety degrees to direction of movement, sharp edges rounded to avoid track damage, such rounding not to exceed 25% of chassis thickness, and chassis assembled to allow pans to move freely. Must use original J bars (front .039" and rear .047" diameter). J bar holes must remain unmodified. May not sand or grind the underside of the chassis or pans.

5.4 - Motor Mounting - May enlarge CTF motor bracket holes to clear the motor bushing, but the full bracket outline must remain. May solder motor in place, and brace it to the chassis. May space the motor back from the motor bracket to achieve desired gear mesh. On the JK C43, only the original JK motor brace supplied with the chassis may be used, and this must be soldered flat to the chassis behind the motor.

5.5 - Bracing - May add bracing to support the rear axle uprights.

5.6 - Rear Axle Bearings – Oilites or brass only, may solder or glue axle bushings into place.

5.7 - Gears – Any 48 or 64 pitch gears allowed.

5.8 - Tape and Weight - May apply tape to the chassis and add lead weight.

5.9 - Front Wheels – Front wheels and front axle are optional. Must use realistic looking stickers if front wheels not used. If front wheels are used on the CTF, must have two front wheels that rotate on the axle and, when chassis rocked, will contact the track before the chassis grounds.

5.10 - Front Axle – On the CTF, may solder front axle to front wheel towers.

5.11 - Body Mounting – May use fixed or floating pin tubes located in the original holes of the chassis, or body clips.

5.12 - May not alter chassis movement or remove chassis material, except as specified above *(the original manufacturers method of joining the chassis pieces together and articulating their movement must be retained).*

5.13 - No chassis modifications other than those detailed above will be permitted.

5.14 - Motor – Must be FK motor as specified in Section D MOTOR SPECIFICATIONS – **D1. FK.**

5.15 - Bodies – May use any body included in the current LMP body list.

H5A. FLEXI FK CLASSIC AND CAN AM

The intention of this class is to reflect the appearance of Classic and Can Am cars from the late 1960's, for the purposes of commemorating the 50th anniversary year of NZSCA. This rule set has been left in the rules for use at one off events if desired.

5A.1 - General Specifications – Must comply with General Car Specifications H1 – H4 inclusive, or variations below.

5A.2 - Class Specifications - As for H5 Flexi FK LMP using the CTF chassis, **except:**

5A.3 - Front Wheel Arches – Front wheel arches must be cut out to the full height of the front wheels, so that the front wheels are centered in the arches.

5A.4 - Front Wheels and Tyres – Must have two front wheels with black rubber or plastic tyres, not O ring fronts:-

- Minimum width 6mm, Minimum diameter 15.9mm (nominal 5/8").
- Front wheels may rotate independently.
- Front wheels need not support the chassis
- Must have both front wheels at all times.

5A.5 - Front Axle – Must have a front axle:-

- Front axle must pass through the upper set of .063" holes in the Turboflex front axle uprights without modifying those holes.
- Front axle may be soldered in place, or braced to prevent it revolving.
- Front axle may be straight, or bent to achieve a negative camber.

5A.6 - Front W**idth and Side-Play** – The width across the front wheels when extended against the outer axle wheel retainers may not exceed 82.5mm, and the front wheel side-play may not exceed 1.0mm.

5A.7 - Body Height – Maximum body height including rear spoiler from track surface is 35mm, when the body is measured with the car on a recessed board.

5A.8 - Body Trimming and Cutouts – Must retain rear body detail as per full sized car:-

- Where there is a cut line moulded into the rear of the body, the body-work above the cutline must be retained.
- Where there is no cut line, or the moulded cut line is higher than half the body height, all body work behind the rear wheels must be cut to no less than half the height (17.5mm) from the top of the rear spoiler to the track, when the body is measured with the car on a recessed board.

5A.9 - Body Type – May use any body in the current Classic and Can Am body list. Only 10 thou bodies may be used.

H6. INDY/F1 FK

The intention of this class is that it be one of the two entry level classes, with a simple chassis and sealed motor.

6.1 - General Specifications – Must comply with all General Car Specifications H1 – H4 inclusive, or variations below.

6.2 - Chassis Type – either: JK 4" Indy F1 Cheetah 7 chassis, kit Part No JK25117, or JK 4" Indy F1 Cheetah 21 chassis, kit Part No JK251171

6.3 - Blueprinting – Chassis may be flattened and straightened, wheel towers straightened to ninety degrees, guide tongue leveled and doubled, rear bearing holes filed out to enable rear axle to be set level and at ninety degrees to direction of movement, bite bar replaced, sharp edges rounded to avoid track damage, and chassis assembled to allow pans to move freely.

6.4 - Motor Mounting - May solder motor in place, and brace it to the chassis. May space the motor back from the chassis lip to achieve desired gear mesh. Motor bracket on Cheetah 21 chassis must be left intact and in original position. May file a flat on the axle side of the can end bronze bearing of the FK motor to facilitate achieving a gear mesh, while keeping the motor bracket intact.

6.5 - Bracing - May add bracing to support the rear axle uprights.

6.6 - Rear and Front Axle Bushings – Oilites or brass only, may solder or glue axle bushings into place.

6.7 - Gears – Any 48 or 64 pitch gears allowed.

6.8 - Tape and Weight - May apply tape to the chassis and add lead weight.

6.9 - Front Wheels – Must have two front wheels, JK F1/Indy Plastic Rim Part No JK8745PF:-

- Minimum width 9mm.
- May be ground down in diameter to allow front ride height adjustment.
- Front wheels may rotate independently.
- Front wheels must support the chassis. The test for this is when placed on a level board with a braid recess that emulates the track braid recess, and when the guide is subjected to light downward pressure to compress braid springiness, both front wheels must touch the board before the front of the chassis touches.
- Must have both front wheels at all times. If a car loses a front wheel it must immediately stop and be repaired before continuing racing. It may not finish the heat until repaired.

6.10 - Front Axle – One piece straight solid 3/32" diameter.

6.11 - Front Axle Height – The minimum distance from the top of the front 3/32" diameter axle and the underside of the chassis shall be 9.45mm.

6.12 - Front Wheels Width and Side-Play – When the front wheels are extended against the outer axle wheel retainers, the overall width must not be greater than 82.5mm, and the front wheel side-play may not exceed 0.5mm.

6.13 - Body Mounting – May use fixed or floating pin tubes located in the original holes of the chassis, or body clips.

6.14 - May not alter chassis movement or remove chassis material, except as specified above *(the original manufacturers method of joining the chassis pieces together and articulating their movement must be retained).*

6.15 - No chassis modifications other than those detailed above will be permitted.

6.16 - Motor – Must be FK motor as specified in Section D MOTOR SPECIFICATIONS – **D1. FK.**

6.17 - Bodies – May use any body included in the current Grand Prix body list.

H7. FLEXI S16D

The intention of this class is that it be a step up from the production classes, with scope for motor building and tuning skills to be developed.

(Note there are two Flexi S16D classes raced, Saloon and GTP)

7.1 - General Specifications – Must comply with all General Car Specifications H1 – H4 inclusive, or variations below.

7.2 - Chassis Rules – Champion Turbo flex chassis only, otherwise as for Flexi FK LMP rules 5.2 to 5.6, and 5.8 to 5.13.

7.3 - Gears – Free.

7.4 - Motor – Must be Super 16D motor as specified in Section D MOTOR SPECIFICATIONS – **D2. SUPER 16D.**

7.5 - Bodies - For S16D Saloon, may use any body included in the current Saloon Body List. For S16D GTP, may use any body included in the current GTP Body List.

H8. G12 EUROSPORT

The intention of this class is that it be a step up from the S16D classes, with scope for advanced chassis tuning and motor building skills to be developed.

8.1 - General Specifications – Must comply with all General Car Specifications H1 – H4 inclusive, or variations below.

8.2 - Chassis Type – Free.

8.3 - Axle Bearings – Free.

8.4 - Gears – Free.

8.5 - Front Wheels – Front wheels are optional, but must use realistic looking stickers if front wheels not used.

8.6 - Motor – Must be G12/15 motor as specified in Section D MOTOR SPECIFICATIONS – **D3. GROUP 12/15.**

8.7 - Bodies – May use any body included in the current Eurosport Body List.

H9. G12 WING

The intention of this class is that it be a step up from the S16D classes, with scope for advanced chassis tuning and motor building skills to be developed.

9.1 - General Specifications – Must comply with all General Car Specifications H1 – H4 inclusive, or variations below.

9.2 - Chassis Type – Free.

9.3 - Axle Bearings – Free.

9.4 - Gears – Free.

9.5 - Front Wheels – Front wheels are not required.

9.6 - Motor – Must be G12/15 motor as specified in Section D MOTOR SPECIFICATIONS – **D3. GROUP 12/15.**

9.7 - Width - Maximum over all width excluding body pins, but including side dams must not exceed 83mm when car is at rest.

9.8 - Bodies – Any commercially available 'wing car' body.

9.9 - Air Control Devices - No part may exceed 63.5mm in height, measured from the racing surface

9.10 - Side Dams - May be a maximum of 63.5mm high aft of the rear wheel centerline and continue on a taper making them a maximum of 51mm high at a point 93.5mm forward of the rear wheel centerline. The same taper must continue ahead of the front wheels.

Must have the front edges taped and rounded in a manner suitable to avoid injury to race participants and spectators.

Must be transparent, although suitable markings and decals may be affixed.

Must be vertical and not creased outwards when the car is at rest.

9.11 - Diaplanes - Maximum length is 12.7mm.

9.12 - Drivers - Wing car drivers are permitted: drivers may be flat but with the outline of the driver embossed and must look realistic.

9.13 - Rear Spoiler - Must be transparent, although suitable markings and decals may be affixed.

H10. OPEN EUROSPORT

The intention of this class is that it be a step up from all other classes, with scope for advanced chassis tuning and motor building skills to be developed.

10.1 - General Specifications – Must comply with all General Car Specifications H1 – H4 inclusive, or variations below.

10.2 - Chassis Type – Free.

10.3 - Axle Bearings – Free.

10.4 - Gears – Free.

10.5 - Front Wheels – Front wheels are optional, but must use realistic looking stickers if front wheels not used.

10.6 - Rear Wheels - Rear wheels and tyres a maximum width of .900” (22.85mm).

10.7 - **Motor** - Any open strap motor as specified in Section D MOTOR SPECIFICATIONS – **D4. OPEN.** No restrictions on modifications.

10.8 - Bodies – May use any body included in the current Eurosport Body List.

(I) 1/24th NATIONAL ENDURO RULES AND PROCEDURES – 2017

The event will run according to the NZSCA Standards and Procedures in sections A and B of this rule book.
In addition the following details will apply:

I1. EVENT PROCEDURE

1.1 - Race Duration – The race will be 12 hours long - any time lost through track repairs will not be made up – the 12 hours will be from the start to power off 12 hours later, and lost time will shorten the last heat.

Three hours of the enduro race will be "night driving" – essentially in darkness but with sufficient low levels of ambient lighting to provide for safe movement about the club room.

1.2 - Teams – The race is for six teams. Each team must have at least four drivers, and there is no restriction on the number of times an individual driver may drive for their team. Each team will race for a total of 2 hours on each of the six lanes, changing lanes and drivers at 30 minute intervals.

1.3 - Scrutineering – Prior to qualifying, cars, spare motors, and spare body with lighting kit fitted will be presented for scrutineering with the body off. Once the body has been attached and scrutineering is complete, cars will go into parc ferme. Both the chassis sections and bodies will be given identifying marks by being signed by the scrutineer with an ink pen and the signature covered with a piece of clear tape for protection, and these identifying marks will be checked at the end of the race to ensure only one chassis and the approved bodies have been used. Spare motors will also be given identifying marks so they can be identified in the event of a protest.

1.4 - Lane Choice – Each team will select one driver to qualify for them, and that driver will have one minute on blue lane to post their best qualifying lap. The team with fastest lap will have first choice of their starting lane, and so on to 6th fastest. Each team will be allocated a marshalling position for the duration of the race, based on their choice of starting lane.

1.5 - Drivers - Each driver must race for 30 minutes at a time, and each team must change drivers at the lane change. At no time may a team have more than one driver on the drivers stand.

1.6 - Lane Changes – After each 30 minute period the power will be switched off for 45 seconds. At this time it is the teams responsibility to change their car to the correct next lane and with the appropriate coloured sticker in place, while their next driver hooks up to the appropriate lane on the drivers stand. Work on the cars is permitted at lane change time – as well as changing the sticker, and moving the car to the next lane – but cars returning late to the track must be placed on a safe straight section. Penalties involving the deduction of laps will apply to breaches of this rule.

1.7 - Working on Cars – Teams may only work on their cars when the track power is on, or during lane change time. If a car is in the pits when the track power is turned off – for track repairs or any other reason - car work must cease until the track power is turned back on. Penalties involving the deduction of laps will apply to breaches of this rule.

1.8 - Team Pits – During the "hours of daylight" and during the "hours of darkness" team pits will be located in the same room as the track. During the hours of darkness, pit lights must be directed so as to not shine towards the drivers stand, and teams will be required to adjust their pit lights if so directed by race control or chief steward.

1.9 - Night Driving – Room lighting will be turned off at the start of heat number 14, and turned back on at the end of heat number 19. These times will be governed by the timing of the race computer, and may include any time needed for track repairs or resolving other issues.

1.10 - Lights – Each car must have two clear front lights and two red rear lights, and each car must have all four lights fully on during the hours of darkness. No on/off brake lights are permitted. If any of the four lights fail, the team must immediately stop the car and repair the lights. The front lights must be mounted in the area marked on the body for front lights, and the rear lights must be mounted on the back panel below the rear wing, in the area of the body marked for tail lights.

1.11 - Lighting Kits - Only the NZSCA approved lighting kits may be used - any car showing different brightness from the approved kit will be black flagged and required to fit the approved lighting kit.
Lighting kits are available from NZSCA at a cost of $20.00 per kit, and must be ordered at the time of entering the event and paying the entry deposit. Lighting kits from the enduro events of 2011, 2012, 2013 and 2014 are compliant and may be reused.

1.12 - Track Calls – There will be no track calls as the race computer will not be manned full time:-

- In the event a car lands on the floor it is the team's responsibility to retrieve it.
- In the event of a rider, a driver may call 'rider' and request other drivers to stop.

I2. CAR SPECIFICATIONS

Specifications are as detailed in General Car Specifications, H1 – H4, **with the following variations:**

2.10 - **One Chassis** – Only one chassis may be used for the entire event. The approved chassis for this event in 2017 is the JK C43.

2.11 - Blueprinting – Chassis may be flattened and straightened, wheel towers straightened to ninety degrees, guide tongue leveled and doubled, rear bearing holes filed out to enable rear axle to be set level and at ninety degrees to direction of movement, sharp edges rounded to avoid track damage, such rounding not to exceed 25% of chassis thickness, and chassis assembled to allow pans to move freely. Must use original J bars (front .039" and rear .047"). J bar holes must remain unmodified.

2.12 - Motor Mounting - May solder motor in place, and brace it to the chassis. Only the original JK motor brace supplied with the chassis may be used, and this must be soldered flat to the chassis behind the motor.

2.13 - Bracing - May add bracing to support the rear axle uprights.

2.14 - Rear Axle Bearings – Oilites or brass only, may solder or glue axle bushings into place.

2.15 - **Front Wheel stickers** – Front wheel stickers are required, minimum diameter 12.7mm.

2.16 - Gears – Free

2.17 - Tape and Weight - May apply tape or lexan to the chassis and add lead weight.

2.18 - Body Mounting – May use fixed or floating pin tubes located in the original holes of the chassis, or body clips.

2.19 - May not alter chassis movement or remove chassis material, except as specified above *(the original manufacturers method of joining the chassis pieces together and articulating their movement must be retained).* ***No chassis modifications other than those detailed above will be permitted.***

2.20 – **Motor –** Must be Super 16D motor as specified in Section D MOTOR SPECIFICATIONS – **D2. SUPER 16D.**

2.30 - **Body Type** – A Saloon body from ISRA 2014, 2015 or 2016 Prod 24 class must be used. Options are:

Attan Volvo S60, part number 1401
Attan BMW M4, part number 1501
Attan Mercedes AMG C63 DTM part number 1601

The body must not deviate from its shape as produced by the manufacturer
- Maximum overall height 35mm
- Maximum height from track surface to bottom of rear bumper 12.7mm
- Minimum vertical edge at front 1.0mm

All the above measured on a recessed block

2.31 - **Spare Bodies** – A second Saloon body of exactly the same type, painted the same as the #1 body, fitted with a NZSCA lighting kit, may be used. A third Saloon body of exactly the same type, painted the same as the #1 body, may be used.