# NZSCA Slot Car Drag racing - Vehicle rules

Version 2012-13 (final)

# **General Car rules**

### General look and feel:

- Cars are to be 1/24<sup>th</sup> or 1/25<sup>th</sup> scale.
- All cars etc to be of 'scale appearance', unless it can be proven that a real car raced in that form. It is the drivers obligation to provide <u>evidence</u> of the real car in order to enter a race meeting.
- Motorbikes and vehicles other than cars are excluded unless specified. They may run as exhibition.
- If a body is not commercially available, you must apply to club host for approval to run.
- Only one driving motor per car unless specific class rules state otherwise (eg Nost/Ex).
- Maximum of four driven wheels unless specific class rules state otherwise (eq Nost/Ex).
- · No part of the car is to rub, roll or run on the track tapes except for the guide and braid
- Any car that tends to de-slot will not be allowed to run until such action has been taken to remedy the cause.
- Only one device to be in the slot per car.
- The <u>only</u> allowable modifications are stated in the specific bracket or General Car rules. If the rules do not <u>expressly</u> say you can do or use something, then it is prohibited.

## **General Body rules:**

### Full Body Cars

• The body must be the widest part of the car - ie wheels, tyres, wings, wheelie wheels and chassis parts may not be wider than the body. Items permitted outside the width of the body are body mounting pin-heads and or body tape, decals, scale exhaust pipes, canard wings (where allowed)...

Exception: where proof can be given that a real car raced in that form (eg canard wings, gassers...)

### Open Wheeled Cars (eg Dragsters, Altereds etc)

· Rear wheels, motor detailing etc allowed outside body on open wheeled cars

#### All Cars

- The body should cover the guide where possible.
- Transparent bodies are prohibited
- Wheel arches on lexan bodies must be either cut out or remain clear
- Windows must be transparent, however decals, class marking and tinting is permitted and The rear window on a FunnyCar is allowed to be painted, Dragster & Altered cowlings may be painted.
- Windows may have holes if the real cars raced in that form.
- Minimum height from track surface to top of car is 38.0mm.
- Must have a painted 3 dimensional 1/24<sup>th</sup> or 1/25<sup>th</sup> scale driver placed in a normal driving position unless specific car rules exempt (eg Nitro). Drivers should represent Head/Helmet, shoulders, arms
- Wings mounted directly to the body are to be no higher than 7.0mm above the top of the roofline and no further rearward from the body than 15.0mm for all cars except where specific car rules state (eg ProMod, Nitro). Wings (including sideplates) must not extend further forward than the front of the rear wheel arch.

### **General Wheel rules**

#### Front Wheels

- Wheels must be mounted to the chassis in a vertical position and line up with wheel arch
- Wheels must be a full circle (ie no semi circle or flats to allow lowering of body)
- Minimum diameter wheel/tyre 15.0mm unless specific class rules state otherwise (eg Nitro)

## Rear wheels

- Wheels must line up with wheel arch
- · Minimum wheel/tyre diameter 23.0mm unless specific class rules state otherwise (eg Nitro, N/classes)
- Minimum tyre track contact width specified in some Category 3 brackets (eg N/classes, Top Street)

#### Wheelie Wheels

- Maximum distance between rear axle and wheelie wheel axle is 130.0mm unless specific class rules state otherwise (eg N/FD SS/N)
- Wheelie wheels must rotate and must not run on the track tape/braid

# Other Parts

- Parts must be commercially available from any manufacturer but some may be freely modified <u>provided</u> that any minimum stated bracket specifications are maintained (eg wheel diameter...).
- These 'free parts' include guide, guide nut, braid, lead wire, lead wire connectors, axle bushes, gears, pinions, ballast weight, spacers, front and rear wheels, wheelie wheels, chassis type, body.

### **Replacement Parts**

Certain parts may be replaced by the racer during competition, during their allowable time frame

Unrestricted: Axles, gears, spacers, pinion, braid, guide, lead wires.

Scrutineering recheck mandatory: Ballast weight, body, bearings, motor & or motor marts, wheels/tyres.

Prohibited: Chassis – no <u>replacement</u> of <u>any</u> chassis parts between the car's guide and rear axle (excluding body mounts) repairs

may be made only

## Blueprinted S16D motor rules

Only Parma S16D (500's series) or Parma Rotor motors (490's series) may be used

**Armature** – Parma, green stack, machine wound, armatures manufactured in China. These are installed in factory complete motors PARMA (498, 499, 501 & 502). Individual replacement armatures are not tagged, but when purchased, labels state they are made in China. Armature shaft may be shortened and/or comm trued and/or balanced, Pinion may be soldered to shaft. Armature spacers permitted. No other modifications are allowed.

Arm Specs: 60 Turns of 28 Gauge Wire on stack length .500"

**Bearings/Bushes** – Only unmodified Parma oilite type bushings are allowed and these may be soldered or glued in place. No other modifications are allowed.

**Brushes and springs** – Unmodified Parma horizontal brush set up and endbell hardware permitted. Any brushes allowed, Stock Parma springs and any 2.5-3.5 coil springs. Springs may be bent, shunt wire and spring insulation prohibited. Brushes may be radiussed but must retain full surface area for contact with Armature (ie grooving, shaving and drilling prohibited). Original Parma spring posts may be sleeved and/or MURA brass spring posts may be used. No other modifications are allowed.

**Can** – Only Parma '16D' or 'Super 16D' can. Can material may not be removed except that, plating or paint may be removed to facilitate soldering or marking etc. No other modifications are allowed

**Endbell** – Only Parma '16D' or 'Super 16D' endbells may be used. Screws to mount endbell hardware, and endbell-to-can mounting screws may be added or substituted. Endbell material must not be removed. No other modifications are allowed.

**Magnets** – Only Parma full can height, single <u>ceramic</u> magnets may be used. Magnets can be matched & zapped. They must use original retainers to hold them in place in their original position. Magnet shimming, gluing/epoxy prohibited. All other magnets are prohibited (ie other brands, multi segment, radial, non-standard orientation etc). No other modifications are allowed.

The <u>only</u> allowable modifications are stated. If the rules do not <u>expressly</u> say you can do or use something, then it is prohibited.

## **Modified 16D motor rules**

<u>All</u> motor components and parts must be commercially available. Can, Endbell, Arm & Magnets produced by the following approved panel of manufacturers only: BOW, Camen, Champion, DRS, Fast Ones, Kelly Racing Products, Koford, MURA, Parma, Pro Slot, RJR, Red Fox, Slick7, Slotworks, Trinity or Viper. When rules state "any", this is restricted to the panel of approved manufacturers.

**Armature** – Any production armature tagged as "16D", "S16" or "S16D". Armature- shaft may be shortened and/or comm trued and/or balanced. Stack may be dyed. Pinion may be soldered to shaft. Armature spacers permitted. No other modifications are allowed.

Armature minimum specifications:

16D - 70 Turns of 30 Gauge Wire on stack length .600"

S16D - 60 Turns of 28 Gauge Wire on stack length .500"

**Bearings/Bushes** – Unmodified Oilite type bushes are allowed and these may be soldered or glued in place. Bushes may be relieved in order to facilitate tyre clearance in sidewinder cars. Ball bearings prohibited. No other modifications are allowed.

**Brushes and springs** – Only horizontal brush set up permitted. Any brushes and springs, heat sinks, buss bars, shunt wire and spring insulation may be used. Brushes may be radiussed, grooved, shaved or drilled. Springs may be bent. No other modifications are allowed.

**Can** – Any '16D' or 'Super 16D' can, Can may be straightened. Can material may not be removed, except the can and rear magnet may be grooved or notched to facilitate axle clearance in angle and sidewinder cars. Plating or paint, which coats the can, may be removed to facilitate soldering or marking etc, bush/bearing hole may be centered and relieved in order to fit replacement bush/bearing. No other modifications are allowed

**Endbell** – Any plastic 'D' can endbell may be used – no aluminium endbells. Endbell hardware, screws, and endbell to can mounting screws may be added or substituted, endbell material must not be removed except bush/bearing retainer may be relieved in order to facilitate tyre clearance in sidewinder cars. No other modifications are allowed.

**Magnets** – Any full can height, single <u>ceramic</u> magnets may be used. Magnets can be honed, matched, zapped, shimmed and may be glued in place. All multi segment and Radial (or any non-stndard orientation) magnets are prohibited. No other modifications are allowed.

The <u>only</u> allowable modifications are stated. If the rules do not <u>expressly</u> say you can do or use something, then it is prohibited.

## **CEE** can motor rules

<u>All</u> motor components and parts must be commercially available. Can, Endbell, Arm & Magnets produced by the following approved panel of manufacturers only: BOW, Camen, Champion, DRS, Fast Ones, Kelly Racing Products, Koford, MURA, Parma, Pro Slot, RJR, Red Fox, Slick7, Slotworks, Trinity or Viper. When rules state "any", this is restricted to the panel of approved manufacturers.

**Armature** – Any production tagged & standard wound Group 12 to Group 20 Armature, with a full sized stack, minimum of Group 12

Armature- shaft may be shortened and/or comm trued and/or balanced. Stack may be dyed. Pinion may be soldered to shaft. Armature spacers permitted. No other modifications (or non standard wound arms) are allowed.

Armature minimum specifications:

Group 12 - 50 Turns of 29 Gauge Wire on stack length .350"

Group 15 - 50 Turns of 29 Gauge Wire on stack length .440"

Group 20 - 38 Turns of 27 Gauge Wire on stack length .440"

Notes on Tags:

"X" in the tag relates to eXtra high timing, "X" tags are permitted,

"BW", "D", "MM", "N" and "SP" relate to non-standard winds, these and others are not permitted.

**Bearings/Bushes** – Unmodified Oilite type bushings or ball bearings are allowed and these may be soldered or glued in place. Bushes may be relieved in order to facilitate tyre clearance in sidewinder cars. No other modifications are allowed.

**Brushes and springs** – Only horizontal brush set up permitted. Any brushes and springs, heat sinks, buss bars, shunt wire and spring insulation may be used. Brushes may be radiussed, grooved, shaved or drilled. Springs may be bent. No other modifications are allowed.

**Can** – Any 'C' can, can may be straightened but material may not be removed except the can and magnet may be grooved or notched to achieve axle clearance in angle and sidewinder cars, plating or paint may be removed to facilitate soldering or marking etc, bearing hole may be centered and relieved in order to fit replacement bearing. No other modifications are allowed

**Endbell** – Any 'C' can endbell only may be used – no aluminium endbells. Endbell hardware, screws, and endbell to can mounting screws may be added or substituted, endbell material must not be removed except bush/bearing retainer may be relieved in order to facilitate tyre clearance in sidewinder cars. No other modifications are allowed.

**Magnets** – Any full can height, <u>ceramic</u> magnets may be used. Quads permitted. Magnets can be honed, matched, zapped, shimmed and may be glued in place. Multi segment greater then quads and radial (or any non-standard orientation) magnets are prohibited. No other modifications are allowed.

The <u>only</u> allowable modifications are stated. If the rules do not <u>expressly</u> say you can do or use something, then it is prohibited

# Category 1 cars

These are the premiere 'Pro' brackets where cars must meet strict bracket rules but race heads up, with no breakout penalties. This promotes innovation, within rules and ultimate performance.

Box Stock (B/S)

Body: Any style car, vacuum formed lexan permitted.

Chassis: Restricted to PARMA Edge chassis - inline motor mounting in front of rear axle only, ball bearings prohibited. Hole in

motor mount may be filed to achieve correct gear alignment. Horizontal rib above rear axle bushes may be removed to fit large diameter wheels. No other mass may be removed from the chassis. Motor & bushes may be soldered in place.

Motor: Maximum allowable: Blueprinted S16D (refer Blueprinted S16D rules)

Weight: Minimum racing weight of car 105.0g

Wheels: Front – 15.0mm min diameter. Rear – 23.0mm min diameter. Axles may be shortened.

Wings: Max length from rear of body- 15.0mm

Max height above body - 7.0mm

Max forward position (incl sideplates) – front edge of rear wheel arch

Other: Refer <u>general car rules</u> for generic minimum requirements & specs eg body, driver, wings etc.

Hard Body (H/B)

Body: Any style car – must be a <u>cast</u> Styrene kitset or resin body

Must not be trimmed below window line allowed to permit car to be lowered (unless than it can be proved a real car

raced in that form)

Chassis: Any chassis, ball bearings prohibited

Motor: Maximum allowable: Blueprinted S16D (refer <u>Blueprinted S16D rules</u>)

Weight: Minimum racing weight of car 150.0g

Wheels: Front – 15.0mm min diameter. Rear – 23.0mm min diameter

Wings: Max length from rear of body- 15.0mm Max height above body – 7.0mm

Max forward position (incl sideplates) – front edge of rear wheel arch

Other: Refer general car rules for generic minimum requirements & specs eg body, driver, wings etc.

Pro Stock (P/S)

Body: 2000 or later, full bodied Doorslammer car with forward facing scoop or a pick-up with induction cowl, no

super/turbocharger or fuel injection (Funny Cars & roadsters prohibited), vacuum formed lexan permitted.

Chassis: Unlimited chassis, ball bearings prohibited

Motor: Minimum allowable: tagged 16D or S16D or S16D arm\*

Maximum allowable: Modified S16D (refer Modified 16D rules)

\*Any competitor competing at their 1st NZ National event will be permitted to use a Blueprinted S16D

Weight: Minimum racing weight of car 80.0g

Wheels: Front – 15.0mm min diameter. Rear – 23.0mm min diameter

Wings: Max length from rear of body- 15.0mm

Max height above body – 7.0mm

Max forward position (incl sideplates) - front edge of rear wheel arch

Other: Refer general car rules for generic minimum requirements & specs eq body, driver, wings etc.

Pro Mod (P/M)

Chassis: Motor:

Body: Any year full-bodied Doorslammer car with scoop, induction cowl, super/turbo charger (Funny Cars & roadsters

prohibited), vacuum formed lexan permitted.
Unlimited chassis, ball bearings permitted
Minimum allowable: tagged Group 12 CEE can\*

Maximum allowable: tagged Group 20 (refer CEE can rules)

\*Any competitor competing at their 1st NZ National event will be permitted to use a Blueprinted S16D

Weight: Minimum racing weight of car 75.0g

Wheels: Front – 15.0mm min diameter. Rear – 23.0mm min diameter

Wings: Length from rear of body 50.0mm max Max height above body – 7.0mm

Max forward position (incl sideplates) – front edge of rear wheel arch

Other: Refer <u>general car rules</u> for generic minimum requirements & specs eg body, driver, wings etc.

Nitro (T/F)

Body: Any style car, vacuum formed lexan permitted. Chassis: Unlimited chassis, ball bearings permitted

Motor: Minimum allowable: an open/strap motor or motor with 6 or more segment magnets, rare earth magnets & or motors

with aluminium endbells &/Or vertical brush hardware

Maximum: Unrestricted slot car motor.

Weight: no minimum weight

Wheels: Unlimited

Wings: Length from rear of body 50.0mm max

Max height above body - 7.0mm

Max forward position (incl sideplates) - front edge of rear wheel arch

Other: Flat (2 dimensional) driver permitted. Refer general car rules for generic minimum requirements & specs eq body,

wheelie bars, etc.

\*Any competitor competing at their 1st NZ National event will be permitted to use a Blueprinted S16D in both Pro Stock and Pro Mod

# **Category 2 cars**

These are the 'Sportsman' brackets where there are simple rules and cars race either on a fixed index or Dial-Your-Own basis. It is intended to allow a wide range of cars to be engineered and to compete fairly.

#### **Hard Body DYO**

Body: Any style car – must be a cast kit or resin body

Must not be trimmed below window line that would permit car to be lowered (unless than it can be proved a real car

raced in that form)

Chassis: Unlimited chassis, ball bearings permitted

Motor: Unlimited

Weight: No minimum racing weight

Wheels: Front – 15.0mm min diameter. Rear – 23.0mm min diameter

Wings: Max length from rear of body- 15.0mm

Max height above body - 7.0mm

Max forward position (incl sideplates) - front edge of rear wheel arch

Other: Refer general car rules for generic minimum requirements & specs eg body, driver, wings etc.

Notes: Specialist classes can run in this.

## SuperGas (.990 index)

Body: Any style car, vacuum formed lexan permitted. Chassis: Unlimited chassis, ball bearings permitted

Motor: Unlimited

Weight: No minimum racing weight

Wheels: Front – 15.0mm min diameter. Rear – 23.0mm min diameter

Wings: Max length from rear of body- 15.0mm

Max height above body - 7.0mm

Max forward position (incl sideplates) - front edge of rear wheel arch

Other: Refer general car rules for generic minimum requirements & specs eg body, driver, wings etc.

Notes: Nostalgia /FC and /PS classes naturally fit in here with their .990 index.

## Nostalgia/Exhibition (DYO)

Body: Unlimited (Any style/configuration vehicle) – cast kit or resin body and vacuum formed styrene or lexan bodies allowed.

This class covers all vehicles including Motorbikes, Wheelstanders, Thrust, multi motored & FWD vehicles; Any

category3 nostalgia vehicle.

Chassis: Unlimited chassis, ball bearings permitted

Motor: Unlimited

Weight: No minimum racing weight

Wheels: Unlimited Wings: Unlimited

Other: Refer <u>general car rules</u> for generic minimum requirements & specs eg body, driver, wings etc, however where a car

does not meet all or any rules it can run in this bracket.

Notes: Nostalgia specialist classes can run in this.

# **Category 3 cars** (Specialist)

These are the 'Specialist' brackets where there are simple construction rules with more specific detailing rules. Cars race either on a fixed index or Dial-Your-Own basis. It is intended focus the look of particular brackets on a specific type of real racing vehicle, and have them compete together under Sportsman rules (Sportsman rules are created so that these sub sets of specialist cars are also encouraged to race in the general sportsman brackets).

Nostalgia Fuel Dragster N/FD (Heads Up)

Body: 1968-1971 Front engine Dragster only to represent a centre driver Slingshot Dragster that would have been able to

compete in NHRA/AHRA/IHRA Dragster classes in that era.

Must be a cast kit/resin or vacuum formed lexan/styrene body mounted with ride height and attitude appropriate for

the era

Chassis: Unlimited in-line chassis, ball bearings permitted – 180.0-230.0mm wheelbase mandatory

Wheelie Bars/wheels or and device to prevent car wheelstanding freely is prohibited.

Motor: Unlimited

Weight: No minimum racing weight

Wheels: Appearance must be appropriate for the relative era

Front - 15.0mm min diameter.

Rear - 12.0mm wide (track contact) x 33.0mm diameter minimum

Wings: Must look appropriate for the era

Other: Direct drive only (ie no clutch or similar device)

Cars must race on a completely clean track every run, glue or lubricant only allowed on the tyres, and not applied

directly to the track, other than on the tyres.

Mandatory detailing, full upper motor (including blower/injector/manifold, heads/ rocker covers, distributor/magneto;

header pipes) chute.

Refer general car rules for generic minimum requirements & specs eg body, driver, wings etc.

Notes: Can also compete in Sportsman brackets

## Nostalgia Funny Car N/FC (.990)

Body: 1968-1979 Funny Car only to represent a flip top 'style' centre driver Funny Car that would have been able to compete

in NHRA/AHRA/IHRA Funny Car classes in that era.

Must be a cast kit or resin body mounted with ride height and attitude appropriate for the era.

Chassis: Unlimited chassis, ball bearings permitted

Motor: Unlimited

Weight: No minimum racing weight

Wheels: Appearance must be appropriate for the relative era

Front – 15.0mm min diameter.

Rear – 12.0mm wide (track contact) x 30.0mm diameter minimum

Wings: Must look appropriate for the era

Other: Mandatory detailing, blower/injectors, header pipes, chute.

Refer general car rules for generic minimum requirements & specs eg body, driver, wings etc.

Notes: Can also compete in Sportsman brackets.

#### Nostalgia Pro Stock N/PS (.990)

Body: 1968-1979 Pro Stock only to represent cars that would have been able to compete in NHRA/AHRA/IHRA Pro Stock class

in that era

Must be a cast kit or resin body mounted with ride height and attitude appropriate for the era.

Chassis: Unlimited chassis, ball bearings permitted

Motor: Unlimited

Weight: No minimum racing weight

Wheels: Appearance must be appropriate for the relative era

Front - 15.0mm min diameter.

Rear – 10.0mm wide (track contact) x 30.0mm diameter minimum

Wings: Must look appropriate for the era

Other: Mandatory detailing, 70's type Pro Stock lump/scoop/snorkel.

Refer <u>general car rules</u> for generic minimum requirements & specs eg body, driver, wings etc.

Notes: Can also compete in Sportsman brackets.

## Nostalgia Fuel Altered N/FA (DYO)

Body: pre 1964 bodied Altereds only to represent a centre driver Altered that would have been able to compete in

NHRA/AHRA/IHRA Altered classes in that era.

Must be a cast kit or resin body mounted with ride height and attitude appropriate for the era.

Chassis: Unlimited chassis, ball bearings permitted – 105.0mm wheel base maximum

Motor: Unlimited

Weight: No minimum racing weight

Wheels: Appearance must be appropriate for the relative era

Front - 15.0mm min diameter.

Rear – 12.0mm wide (track contact) x 30.0mm diameter minimum

Wings: Must look appropriate for the era

Other: Mandatory detailing, blower/injectors/motor, header pipes, chute.

Refer general car rules for generic minimum requirements & specs eg body, driver, wings etc.

### Nostalgia Factory Experimental N/FX (DYO)

Body: 1964-1967 Altered Wheelbase car only, to represent cars that would have been able to compete in NHRA/AHRA/IHRA

A/FX class in that era. Glass optional

Must be a cast kit or resin body mounted with ride height and attitude appropriate for the era - must retain original

body length/height. Wheelbase must be altered.

Chassis: Unlimited chassis, ball bearings permitted - 115.0mm wheel base maximum.

Motor: Unlimited

Weight: No minimum racing weight

Wheels: Appearance must match the relative era

Front - 15.0mm min diameter.

Rear - 10.0mm wide (track contact) x 30.0mm diameter minimum

Wings: Prohibited

Other: Mandatory detailing, appropriate for the era - for cars with bonnet (full motor induction Injectors/blower) for cars with

no bonnet (full motor including induction and exhaust), chute. Refer general car rules for generic minimum

requirements & specs eg body, driver, wings etc.

Notes: Can also compete in Sportsman brackets.

#### Nostalgia Gasser N/GS (DYO)

Body: pre 1967 Door slammer only to represent a car which would have been able to compete in NHRA/AHRA/IHRA Gas

classes in that era.

Must be a cast kit or resin body mounted with ride height and attitude appropriate for the era.

Chassis: Unlimited chassis, ball bearings permitted

Motor: Unlimited

Weight: No minimum racing weight

Wheels: Appearance must be appropriate for the relative era

Front - 15.0mm min diameter.

Rear - 12.0mm wide (track contact) x 30.0mm diameter minimum

Wings: Must look appropriate for the era

Other: Mandatory detailing, blower/injectors, chute.

Refer general car rules for generic minimum requirements & specs eg body, driver, wings etc.

Notes: Can also compete in Sportsman brackets.

### Nostalgia Super Stock SS/N (DYO)

Body: 1962-1969 Super Stock only to represent cars that would have been able to compete in NHRA/AHRA/IHRA Super Stock

class in that era

Must be a cast kit or resin body mounted with ride height and attitude appropriate for the era.

Chassis: Unlimited chassis, ball bearings permitted, wheelie bars and wheels may not extend beyond the rear bumper.

Motor: Unlimited

Weight: No minimum racing weight

Wheels: Appearance must match the relative era

Front - 15.0mm min diameter.

Rear – 7.5mm wide (track contact) x 30.0mm diameter minimum

Wings: Prohibited

Other: Mandatory detailing, flat bonnet or low 60's type Super Stock scoop.

Refer general car rules for generic minimum requirements & specs eg body, driver, wings etc.

Notes: Can also compete in Sportsman brackets.

### Street (index notified before event)

Body: A "street" car – must be a cast kit or resin body

Must not be trimmed below window line that would permit car to be lowered (unless than it can be proved a real car

raced in that form)

Chassis: Unlimited chassis, ball bearings permitted

Motor: Unlimited

Wings:

Weight: No minimum racing weight Wheels: Front - 15.0mm min diameter.

Rear – 7.5mm wide (track contact) x 23.0mm diameter minimum Street type spoilers allowed, pro mod/pro stock type wings prohibited

Other: General appearance of a street car that could get a WOF if 1:1 (ie no racing scoops or racing motor top end -

blower/injectors showing, no racing sponsor type signwriting –( company car signwriting and contingency stickers

allowed)

Refer general car rules for generic minimum requirements & specs eg body, driver, wings etc.

Notes: Can also compete in Sportsman brackets