

Australian Excel series

Round 1, Sydney Motorsport Park, April 19/20

This event aims to offer Excel Competitors a unique format with live TV coverage. Excel Circuit Racing format is fun and provides a competitive environment where drivers can develop their race craft.

*If you have any questions regarding these Regulations, please contact
Brett Peters*

No alteration or modification to the standard factory production state of the vehicle is allowed unless it is specifically mentioned or permitted within these regulations.

The Competitor:

The competitor must hold a current AASA Racing License and either a AASA vehicle passbook or MA Log Book

The Race:

The event will be conducted over two days as part of the Hi-Tec Oils Super Series at SMP. There will be 4 races, 3 x 10 laps, and the feature race. Two of these races will be telecast live on Fox Sports/Kayo.

Practice:

There will be practice sessions conducted on Friday.

Qualifying & Grid Positions:

There will be one/ or two* individual 10 minute back to back Qualifying sessions conducted on Saturday morning. These qualifying sessions will determine the starting grid for Race 1. Further races will be gridded from the previous race result. * Dependent on final entry numbers

Any questions regarding car specifications which are not previously addressed in this document must be directed to Track Attack Aust. technical officer (Dave McClure - 0434 263 187) for clarification. Please be aware that there will be penalties for any cars which do not pass compliance inspections.

Any vehicle found to not comply will be stripped of points from the event.

1.1 VEHICLE BODY SHELL

- The body shell of any Hyundai Excel built from July 1994 to June 30, 2000, with any number of doors.
- The body shell is to remain standard and not modified unless permitted by the following.
- Fitment of a roll cage as per rule 1.15
- No cutting of any sheet metal or bracing. (If the roll cage is positioned between the two rear strut towers this WILL not be considered bracing).
- All bolt on panels to remain standard.
- The strut towers must not be modified – except see 1.22 coil over suspension.
- Seam welding is not permitted except for the bracket that attaches the front lower control arm to the body.
- Sound deadener can be removed.
- Minor reshaping or rolling of the wheel arches to reduce tyres rubbing on the body.

1.2 ENGINE SPECS

- 1994-1996 Excel with G4EK engine 1.5L
 - 1997-2000 Excel with G4FK engine 1.5L
- Engines stamped G4FK which include LC cast block and head castings will not be permitted.
- See Figure 1 for Twin Cam

1.3 DRIVELINE

- Factory standard manual excel 5 speed gearbox. Gearbox ratios and diffs shall remain standard.
- The final drive ratio can be either 3.842 or 3.656.
- Excel X3 1994 – 2000 gear ratios –

1 st	3.61
2 nd	2.05
3 rd	1.37
4 th	1.03
- Locked, Limited Slip, Drexler style and Over-tightened differentials are not permitted. (Refer Appendix B of these regulations for the approved method of testing differentials)
- Only single plate clutches are permitted. A commercially available aftermarket heavy duty clutch is permitted. It must be of similar design and construction to the original clutch. Racing type clutches are not permitted
- Raising of gearstick and lengthening lever throw is permitted

1.4 BRAKE SPECS

Each front disc brake assembly must be either:

Standard Hyundai Excel brake rotor, caliper and hub axle combination

J2 Hyundai Lantra brake rotor, caliper and hub axle combination

XD Hyundai Elantra brake rotor, caliper and hub axle combination

- Front disc pads are a control item DBA 1252HR, Winmax W4, W5 or W6.5 are accepted. N.B. The elantra rotors and pads are not available from TAA, but Winmax pads can be purchased direct from Motorsport Brakes.
- Cross drilled rotors are not permitted
- Steel brake lines must be original equipment but it is permitted to replace flexible brake hoses with approved stainless steel flexible hoses of same length and size.

1.5 Brake cooling is allowed via flexi duct connected to existing fog light sockets on front bumper bar

1.6 EXHAUST/INTAKE

- 1.6.1 Exhaust Manifold must be standard.
- 1.6.2 The exhaust is free after the first juncture but is subject to site noise requirements
- 1.6.3 Extractors are expressly forbidden.
- 1.6.3.1 Intake manifold is to be standard original excel, the rest of the air intake is free before the original throttle body and air flow meter.
- 1.6.4 Pod filters are permitted.
- 1.6.5 Throttle body is to be standard - factory as per model (i.e. Twin-Cam throttle body on twin cam motor).
- 1.6.6 Forced Induction is not permitted, either by way of ducting or body / panel removal.
- 1.6.7 Air boxes are permitted although no ducting is allowed to feed into the air box.
- 1.6.8 The entire induction system must be fully contained within the engine bay.
- 1.6.9 NB. The decision of the eligibility officer is final

1.7 FUEL AND IGNITION

- 1.7.1 Fuel injection is to be the standard factory system. The fuel injection system must be standard for that engine type.
- 1.7.2 Injectors are to be standard - for that engine type.
- 1.7.3 Ignition is to be standard - for that engine type (a push button starting switch can be fitted).
- 1.7.4 Spark plugs and leads are free.
- 1.7.5 Computer is to be factory standard for that engine type and not modified in anyway. – i.e. Twin Cam has Twin Cam computer, Single Cam to use Single cam computer – see section 1.8 for further clarity
- 1.7.6 Fuel pressure regulators are free.
- 1.7.7 Fuel pumps are to be factory Excel as per model of the car.
- 1.7.8 Fuel lines are to be factory standard.
- 1.7.9 Surge Tanks / SWIRL Pots are not permitted

1.8 BATTERY

- 1.8.1 The Battery can remain in the factory position or be relocated to the inside of car and to be secured
- 1.8.2 Battery type is free
- 1.8.3 Positive Battery terminals must be insulated
- 1.8.4 Battery location must be marked with Blue triangle

1.9 COMPUTER ECU AND MODULES

Chipping, Flash Tuning and wiring harness modifications are not permitted

- 1.9.1 At any time during any event, (which includes practice, qualifying or racing) the series scrutineer can check your vehicles computer, and swap it with a series/or competitor's computer. For ease of removal it is mandatory to mount your ECU on the side of tunnel or firewall of passenger side.
- 1.9.2 Any vehicle found to contain any after-market performance enhancing device will be removed from the event
- 1.9.3 Any driver to be found to be in control of a race car regardless of ownership to be found to contain any after-market performance enhancing device will be removed from the event
- 1.9.4 The OBD connector must be left in harness, connected and easy to access.

1.10 FUEL

- 1.10.1 Racing fuel is not permitted
- 1.10.2 Fuel additives are not permitted
- 1.10.3 Octane boosters are not permitted
- 1.10.4 Fuel must be purchased onsite through Hi Tec Fuels Octane levels 91, 95, 98 are permitted.
- 1.10.5 Any fuel found to be over 98 octane can receive an immediate disqualification.

1.11 AERODYNAMICS

- 1.11.1 The factory Hyundai Excel low profile rear wing may be maintained or fitted.
- 1.11.2 All other aerodynamic aids are not permitted

1.12 STEERING

- 1.12.1 Power steering can be added or deleted
- 1.12.2 Either the manual or power steering rack can be used
- 1.12.3 Steering wheels are free but must meet ADR, FIA or SFI standards.
- 1.12.4 Power Steering coolers are permitted

1.13 STRUT BRACES

- 1.13.1 Front strut braces is permitted
- 1.13.2 The rear suspension towers may be braced by either the safety cage or a strut brace.

1.14 LIGHTS

- 1.14.1 The original headlights, brake lights, tail lights and indicators are to be kept in place,
- 1.14.2 brake lights are to be functional, no spray tint or dark film is to be applied
- 1.14.3 indicators are to be in position but are not required to be functional
- 1.14.4 All cars must have a rain light on the centre of the rear boot/hatch, mounted centrally to the rear key access point.
- 1.14.5 Headlight sponsor sticker must have hole cut in it if racing at night.

Note: During rain events headlights must be illuminated during the event, the direction of same will be at the digression of the race controller – if working head lights are not in place your exclusion from the race will be enforced.

1.15 INTERIOR

- 1.15.1 The front door trims must remain in place or be replaced by a suitable safe material.
- 1.15.2 The original dash/ or fibreglass replacement. Relief cuts may be made for fitment of roll cage.
- 1.15.3 Race seat and harness are mandatory. Replacement seats and harness must comply with a suitable design standard, eg ADR, SFI, FIA. The seats and harness must be suitable for motorsports applications. Fitting must be to the manufacturers recommendations. Seats are to be fixed back style. Five point harnesses are a minimum safety requirement. Minimum fitment standards are to be adhered to
- 1.15.4 Original bolts must be used – no less than GR 8.8 bolt tensile
- 1.15.5 Original bolt mounting holes must be used to secure mounting plates if required to floor
- 1.15.6 A minimum of four (4) mounting points must be in use at all times, seat to mounting plate or seat to sub frame
- 1.15.7 Minimum of 50 mm or 2 inch diameter plate must be in use on the underside of both hex bolt and hex nuts
- 1.15.8 Minimum thickness of ANY mounting plates is to be five (5) mm, preferably 50 x 50 x 5 angle

1.16 ROLL CAGES

- 1.16.1 Roll cages must be 6 point for racing.
- 1.16.2 Driver's intrusion bars must be fitted.
- 1.16.3 All bars must be contained within the Cabin.
- 1.16.4 Bar-work must be welded in.
- 1.16.5 Steel must be CDS or CDW.
- 1.16.6 Molly cages are not permitted.
- 1.16.7 Cages must be manufactured to a minimum recognized regs.
 - 1.16.8 Approved Bolt in Roll Cages that have full certification are allowed.

1.17 MINIMUM WEIGHT

- 1.17.1 The minimum racing weight of the car is measured with driver and all his race apparel. At no time during an event can the car weigh less than the following;
- 1.17.2 Minimum wet weight is to be 1000kg
- 1.17.3 Any Ballast weight must be mounted/secured directly to the body of the vehicle on the passenger side of the vehicle

1.18 GLASS

- 1.18.1 ADR compliant Glass must be maintained
- 1.18.2 Use of light weight window materials is not permitted. No Perspex (polycarbonate) materials
- 1.18.3 Vehicles must not have any tint on any side windows or the rear windscreen.

1.19 TELEMETRY

- 1.19.1 Live telemetry is not permitted
- 1.19.2 No Bluetooth connection of any kind permitted
- 1.19.3 Stored Video & other GPS style telemetry is permitted - eg performance box or video box etc.
- 1.19.4 Water temp and Oil pressure gauges or warning lights are permitted
- 1.19.5 After - market Tacho may be fitted
- 1.19.6 Pit to car radio communication is permitted
- 1.19.7 Race control radio devices are to be positioned on person not to car, not to the vehicle or part there of

1.20 COOLING

- 1.20.1 Oil Coolers are permitted
- 1.20.2 A Larger radiator may be fitted provided that the original fixing points are used
- 1.20.3 Radiator Hoses are free
- 1.20.4 Brake ducts are permitted

1.21 TYRES

- 1.21.1 The Nankang 195/50/15 AR1- Series Control tyre, available from the Nankang importer at \$165 each plus freight or your local Tyrepower/Nankang dealer. (Nankang importer - Troy 0432 494 695).
- 1.21.2 If only competing in one or two rounds the Dunlop Direzza is allowed, but if competing for championship points over all 3 rounds you must use the Nankang
- 1.21.3 Wet weather tyres must be either Nankang or Dunlop

1.22 WHEELS

- 1.22.1 Wheels must be maximum 15" diameter/7.5" width
- 1.22.2 Alloy wheels are permitted
- 1.22.3 Wheel Spacers are permitted but must not exceed a thickness of 10mm.
- 1.22.4 Long wheel studs must be fitted if spacers are used, ie. thread must stick out of wheel nut

1.23 SUSPENSION

- Supashock or MCA is mandatory.

Camber must not exceed 4.0 degrees negative and minimum ride height with competing driver in driving seat must be 100mm excluding exhaust.

The ride height will be measured with the car parked on level ground. No part of the car except the exhaust is to be under 100mm when measured at the cross member with tyres inflated to a minimum of 35 pounds.

The use of replacement adjustable strut tops is permitted, providing that each use the standard body shell mounting points. The removal of metal from the suspension tower is forbidden, except that a hole in each strut tower may be enlarged to a maximum of 60mm diameter and remain circular and concentric with the original hole.

- 1.23.1 After-market springs are permitted provided that they are readily available at retail outlets
- 1.23.2 After-market shocks are permitted provided that they are readily available at retail outlets
- 1.23.3 Cut springs are allowed camber pins are permitted to achieve negative camber
- 1.23.4 Original mounting points must be maintained for all components
- 1.23.5 Bottom of struts may be slotted but must be reinforced by locating washers to be welded to strut ears
- 1.23.6 Longer wheel studs must be fitted if using wheels spacers
- 1.23.7 Track Measurement will be carried out by measuring from the centreline of each tyre across the axle at the point where the tyre contacts the ground.
- 1.23.8 Max front track is 1515mm
- 1.23.9 Max rear track is 1485mm
- 1.23.10 It is permissible to fit off set caster bushes

1.24 SWAYBARS

- 1.24.1 It is permissible to install readily retail available after market sway bars up to 18mm in thickness on the rear and 22mm thick on the front
Original mounting points must be maintained for all components
Sway bars must be non-adjustable.

1.25 RACE SEAT

- 1.25.1 Fixed back race seat to SFI, FIA or Australian Standards
- 1.25.2 Seat mountings to a minimum ADR requirements and 1.14 section of this document
- 1.25.3 The series scrutineer or eligible officer can direct changes to be made to seat mount if considered unsafe.

1.26 RACING HARNESS

- 1.26.1 Minimum 5 point racing harness to SFI, FIA or Australian Standards
- 1.26.2 Mountings to ADR requirement

1.27 WINDOW NETS

1.27.1 Are mandatory and may be installed on the driver's door (when installed on the driver's door the door must be able to be opened with the window net in place). However, it is recommended that the window net be attached at top and bottom to the roll cage, not the body of the vehicle. No triangle nets are allowed.

1.28 APPAREL

- 1.28.1 Helmets must comply with, or exceed, the standards AS1698.
- 1.28.2 Full face helmet, goggles or visors must be worn in open cars – no glass is permitted in accord with AS 1609-

1.28.3 Must wear one piece overalls, socks, shoes, balaclavas and gloves, made of Nomex or a similar a flame protecting material to FIA Standard 1986 or Australian Standards

1.28.4 Please be aware that HANS's devices or equivalent are mandatory at this event.

1.29 OIL CATCH CAN

1.29.1 Oil catch cans are mandatory, preferably within a drain back to the sump.

1.29.2 A minimum holding capacity of 2L is required. No plastic vessels are permitted, Must be of a metal construction – with a minimum of two mounting points, - no plastic ties allowed

1.30 BATTERY ISOLATOR/ENGINE KILL SWITCH

1.30.1 Battery isolator/ignition kill switch must be fitted and must isolate the battery and kill the engine simultaneously

1.30.2 Battery isolator/ignition kill switch must be able to be operated by the driver when in normal seated position

1.30.3 Battery isolator/ignition kill switch must be fitted with a remote cable which is to be located near the drivers A pillar and be able to operate from the exterior of the vehicle remote battery isolator/ignition kill switch cable must be identified by a blue triangle with red lightning bolt sticker

1.31 TOW POINTS

1.31.1 Suitable tow points to front and rear are required – **ENSURE FRONT TOW HOOKS CAN BE REACHED BY RECOVERY VEHICLES**

1.31.2 Tow points to be marked with red tow stickers

1.32 IN CAR camera

- A. All cars can have a forward facing (action) camera. Footage must be made available at DSO request. Memory cards must be emptied each round. Failing to provide footage on request can result in a penalty.



1.31B Jacking Points

- A. The reinforcement of jacking points under the automobile is permitted by the addition of metal plate/s provided reinforcing does not exceed a surface area of 150 mm x 150 mm and follows the contours of the original.

1.33 Fuel testing

Fuel samples may be drawn for testing from a competing automobile at any time during the period of time from the commencement of the event until the vehicle is released from parc fermé at the conclusion of the event, should one be organized.

It is the competitor's responsibility to provide the means by which fuel samples may be taken from the Automobile; the method being subject to the approval of the Chief Scrutineer. Sampling requiring the disconnection of hoses containing fuel under pressure is not acceptable under any circumstances.

Whilst the fuel samples for testing are being taken, the competitor, or his nominated representative must be in immediate attendance to observe the process.

The competitor must declare to the scrutineers, at the time of sampling, the brand and type of fuel that is in the automobile's fuel tank. Any additive, including lubricants, must also be disclosed to the scrutineers

1.34 RACE NUMBERS

1.34.1 Race numbers are mandatory and are to be supplied by the competitor. Refer to the table below for details. Refer to the TAA website on how to secure your race number.

Item	Size	Colour	Positioning
Race Number	150mm high	Yellow (Fluro)	Side back window, both sides (optional)
Race Number	150mm high	Yellow (Fluro)	Top left windscreen

1.35 EVENT SPONSORS

1.35.1 **Category Windscreen & front number plate Sponsorship decals must be displayed on the front Windscreen. These two series locations are compulsory and must be in place prior to Qualifying (stickers are provided by sponsors) No stickers – NO POINTS**



1.36 DRIVING STANDARDS / PENALTIES

All drivers must get a copy of the AASA manual from the AASA website, read and understand this document.

A. In addition, TAA have the following critical driver and team code for all competitors.

1. Multiple defensive movements across the track will be considered blocking. No weaving, no trying to break the tow.
2. "Bump and Run" will not be tolerated.
3. Racing Room - Giving your competitors racing room is one of the first rules. NEVER force your competitor off the track by squeezing or failing to allow them adequate track space.
4. Protecting your line – To protect your racing line into a corner you are allowed ONE movement to position your car. Multiple defensive movements across the track will be considered blocking. Once there is overlap you cannot keep moving over.
5. If you are being overtaken and the overtaking car is beside you and you contribute to car to car contact by moving across and steering towards that car (no conceding the pass) you will also get the same penalty as the overtaking car.
6. Where a competitor is given an AASA penalty no points awarded for that race/or round whichever is applicable.

Engine Sealing.

N.B. All engines must be sealed by the TAA or MA accredited eligibility officer. Any competitor that has an engine built or rebuilt must have the engine inspected/sealed at time of assembly. Any car not inspected and sealed cannot get points in the series championship, and at any time can be instructed to have their engine inspected to continue to race in the series.

1. Engines being rebuilt must be inspected and sealed by the series Engine eligibility officers, Brisbane Dave McClure 0434 263 187, Gold Coast Lloyd Evans 0415 742 542. The cost is \$160 + small travel cost. Previously sealed engines with sealing sheet are acceptable.
2. NAMSC can direct any competitor to have its Engine or Gearbox sealed, at a cost to the competitor.
3. If you wish to seal or break a seal, you **MUST** notify our category scrutineer by calling him.
4. be aware that if you do not notify before you break the seal, you will incur a championship point's penalty. If re-sealing is required at a location/time other than a scheduled race meeting, this will be done at the competitor's expense. See below for specific sealing procedure.

Engine sealing Procedure

- Engines requiring a full check and seal are to be separate from the race car.
- All machining is to be completed, and components are to be clean and organised ready for efficient assembly, but with the cylinder head, camshafts, and sump removed.
- The crankshaft, conrods, and pistons must be fitted, but the engine sealer will ask for one piston of his choice to be removed for checking, then be refitted.
- The cylinder head should be fitted with all valves, springs, and retainers, but without camshafts, and the engine sealer will ask for some valves of his choice to be removed for checking.
- At any time the engine sealer can supply camshafts on an exchange basis from the Category, the supplied camshafts will have been checked and measured against standard camshaft specifications. The camshafts must be fitted in the presence of the engine sealer, along with the timing components.
- Various engine components will be checked by the engine sealer during the assembly of your engine. Components checked will include, but not be limited to crankshaft, conrods, pistons, bore, stroke, castings, valves, cylinder head and ports, timing components.
- The engine components must be pre-drilled to accommodate sealing wire in the areas of Engine sump rail to block, cylinder head block casting to cylinder head casting, and bolts for two camshaft bearing caps.
- The engine builder must check that all components conform to the current Excel Cup Series Regulations before an appointment is made for the engine sealer to attend, and in the event that an engine is unable to be completed or sealed, a full sealing fee is due and payable for that visit by the engine sealer.
- Efficient and timely assembly of the engine in the presence of the engine sealer is requested.

APPENDIX B

TESTING OF DIFFERENTIALS

the initial method of checking that differentials comply with "Mechanical Items - Item L" of these regulations shall be as follows:-

The engine of the car is to be turned off and the gearbox placed in neutral and the handbrake fully off.

The car will be jacked up so both front wheels are clear of the ground and each spins freely.

One front wheel will be rotated by hand, and the front wheel on the other side of the car will be observed.

Should the observed wheel rotate in the same direction to the wheel being rotated by hand, then the differential will be deemed to have failed this test. Additional tests may still be required to determine eligibility at the scrutineer's discretion including putting car on hoist/or jack stands, removing a drive shaft by dropping lower ball joint so not upsetting wheel alignment and inspecting plus if necessary post-race meeting checking.

Excel Twin Cam

1	Bore	76.0mm max
2	Stroke	83.5mm
3	Piston above Block	Std
4	Block Thickness Limit for correction of cylinder block upper face distortion	.010
5	Piston Dish - Volume	Std
6	Inlet Valve throat – It is permitted to machine valve seats and throats but they must only be machined with cutter concentric to the valve guide. No hand finishing is permitted whatsoever. Also see point 35.	26.5mm max
7	No machining within 12mm of valve guide tip	
8	Valves may have back cut 3 angle	
9	Valve Stem diameter	6mm
10	Valve Springs - Part No. 22221-22010 permitted	Std
11	Inlet Valve – no larger than	28.2mm
12	Inlet Port	Std
13	Inlet Manifold	Std
14	Inlet Manifold Throats	Std
15	Exhaust Valve – no larger than	25.1mm Max
16	Exhaust Valve throat - It is permitted to machine valve seats and throats but they must only be machined with cutter concentric to the valve guide. No hand finishing is permitted whatsoever. Also see point 35.	22.5mm
17	Exhaust Port	33.7mm max
18	Exhaust Manifold Inlet	35mm max
19	Exhaust Manifold Outlet	40.1mm max
20	Exhaust Pipe Flange	39.4mm max
21	Valve Springs set height/ permissible to shin	
22	Throttle body	Std
23	Cylinder Head Thickness – No angle milling permitted – Cylinder head face must remain flat within .125mm / 5 thou from inlet manifold to exhaust manifold side. This measurement will be determined from the two centre head bolt holes measured from the head face to an UN-machined head bolt face.	
24	Cylinder head combustion chamber capacity – with spark plug as raced	37.0cc min
25	Camshaft – The camshaft profile (lobes & their position) must remain standard. The timing of camshafts in relation to each other must remain standard. A Vernier adjustable camshaft gear is permitted.	Std factory
26	Flywheel thickness	29.0mm min
27	Flywheel weight	6.2kg min
28	Gearbox ratios & final drive ratio to be standard twin cam.	
29	Weight piston with pins & rings	318 grams min
30	Crank/conrod journal diameter may be machined to .5mm/020 thou Crankshaft main journal diameter may be machined to .5mm / 020 thou	
31	After market Hydraulic lifters may be used, but must remain hydraulic– Solid lifters are not permitted	
32	Spark plug	Free

33	Crank Shaft Weight – It is permitted to lighten the crankshaft by way of drilling the counterweights, and or turning down the ends of the crankshaft in a mill/lathe. No hand finishing is permitted whatsoever.	11kg min
34	Conrod weight includes piston, rings, pin, conrod with bolts and nuts and bearing – For the purpose of balancing it is only permitted to remove metal from the ends of the conrod.	839.5 +/- 30g
35	Abrasive or mechanical blasting of the cylinder head and inlet manifold is not permitted	
	Note: Hand finishing – includes by hand or with any form of hand held tool whether or not it is powered by any means. Thermal coating is not permitted.	

Race Points

Position	Points	Position	Points
1 st	50	19 th	18
2 nd	46	20 th	17
3 rd	43	21 st	16
4 th	40	22 nd	15
5 th	37	23 rd	14
6 th	35	24 th	13
7 th	33	25 th	12
8 th	31	26 th	11
9 th	29	27 th	10
10 th	27	28 th	9
11 th	26	29 th	8
12 th	25	30 th	7
13 th	24	31 st	6
14 th	23	32 nd	5
15 th	22	33 rd	4
16 th	21	34 th	3
17 th	20	35 th	2
18 th	19	36 th	1

Any finishing position after 36th place will receive 1 point