

TWIN SPARK CUP **(Standard Production 2000cc** **4 Cylinder 16v Twin Spark)**

NOTE: The following are RACE Regulations - they are NOT written to impose requirements on entry level Supersprint Competitions wherever they may be held.

These Regulations are written so that a Supersprint Competitor will have a clear 'road map' IF and WHEN they wish to progress to full Race events



The only cars eligible are 2 litre 16 valve Twin Spark models from the 147, 156, GTV and Spider ranges up to 2000cc. JTS models are not eligible. Cars must be to Australian specification as supplied by Alfa Romeo Australia/ATECO. If the car being raced is of non-Australian market origin it must be converted so that ALL parts are of Australian specification. There is no parts inter-changeability with other model ranges, with other models within the same range or with models that are or were not available from Alfa Romeo Australia/ATECO.

Direct all Enquiries for the TS Cup to: Email: ts_cup@internode.on.net
Victoria: Evan Botcher 0400 013 175 ACT: John Burkhart 0416 112 187
NSW: Richard McKee 0419 267 998

2018 Alfa Romeo Twin Spark Regulations

Issued by: TS Cup Organisers

Version: RELEASE 180514

1 Body / Chassis

Apart from references to seam welding under "chassis" - references to the bodyshell includes (but not exclusively) doors, bonnet, boot/tailgate, front & rear bumpers, front and rear wings, floor pan and roof panel.

1.1 Modifications Permitted

1.1.1 Chassis

Seam welding of the bodyshell is permitted.

1.1.2 Interior

Trim, headlining and passenger seats may be removed.

The fascia must remain standard except for modifications essential for the fitment of a full Roll Cage.

Heaters may be removed.

Heated screens are permitted.

Roll cages are free (within CAMS Regulations) but no part of the Roll Cage may pass through the front bulkhead or the exhaust/transmission tunnel.

No part of the Roll Cage may attach directly to any points where the suspension attaches to the bodyshell

NOTE: The minimum requirement for 'Race' format (as against Supersprint) is a CAMS Mid Level - State Race Meeting.

Replacement internal door coverings may be fitted (e.g. carbon fibre/ plastic/aluminium) but these should be easily removable (e.g. must not be riveted to the doors) to show that no metal has been removed from the doors etc. In three door models this also applies to internal rear quarter panel coverings.

It is permitted to remove the standard seat runners on the front driver's side only to enable the fitting of the driver's seat in a lower position for safety reasons. Modified seat mountings must be substantial and should not result in a net weight loss. The seat/mounts cannot be mounted directly to the floor.

A current FIA/CAMS homologated race seat must be fitted

A current FIA/CAMS homologated harness must be fitted.

Airbag systems must be removed.

An alternative steering wheel may be fitted.

1.1.3 Exterior

Front bonnet and boot lid retaining pins may be used in place of the standard internal catch.

1.1.4 Silhouette

Must remain Standard. However where "face-lift" models were produced during the life cycle of any model, front panels and grille may be used as replacements on earlier cars.

The 147 may use the roof mounted rear wing as fitted to the 147 GTA but no other after-market version.

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1.2 Modifications Prohibited

1.2.1 Bodywork

Bodywork specification must remain Standard (including glass).

1.2.2 Interior

The fascia must remain standard except for modifications essential for the fitment of a full roll Cage. Original instruments must remain in the standard location. Standard instrument stalks must be fitted and working.

1.2.3 Exterior

All doors, bonnet, boot and hatchback openings must maintain the ability to open as standard and must fully close as originally intended (i.e. bonnets must fully close).

Bumpers may not be removed or altered in any way.

Front doors and front side windows must maintain the ability to be opened from inside the car.

Two external mirrors (one on either side) must be in place and usable throughout both qualifying and racing.

1.2.4 Ground Clearance

No part of the car may touch the ground if any one tyre is deflated.

Cars must retain a minimum ground clearance of 10cm.

2 Engine

2.1 Modifications Permitted

Cylinder Block: The cylinder block and cylinder head must be to the Specification of the model being raced. This is the engine of specification – 1970cc Bore 83mm Stroke 91mm. The engine may be re bored to allow fitting of a +0.4mm oversize Alfa replacement part or equivalent specification piston only.

Pistons must be of the same Alfa replacement part or equivalent type.

All belts, pulleys and tensioners, excluding balancer belt/tensioner & air conditioning system must be as per Alfa replacement part or equivalent, fitted and working.

Balance shafts must be fitted but the belt and tensioner can be removed.

The air conditioning system may be removed.

Cambelt covers are optional.

The oil pump must be of same Alfa replacement part or equivalent specification.

The engine sump must remain as per the Alfa replacement part or equivalent.

An engine oil cooler may be fitted.

The Alfa replacement part or equivalent alternator must be fitted and be working at all times.

Both camshaft pulleys must be of Alfa replacement part or equivalent specification and be unchanged in any way.

The variator must be working and must not be modified or altered in any way. Cam timing must remain as per Alfa replacement part or equivalent.

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2.2 Modifications Prohibited

No machining or any removal of metal is permitted to any of the following:

- 2.2.1 Cylinder block (other than that required to rebore to +0.4mm)
- 2.2.2 Pistons
- 2.2.3 Valves (other than minimum required to cut the valve seats)
- 2.2.4 Valve Springs
- 2.2.5 Connecting Rods
- 2.2.6 Crankshaft
- 2.2.7 Flywheel
- 2.2.8 Clutch assembly
- 2.2.9 Camshafts
- 2.2.10 Cam Followers

The only machining allowed to the cylinder head (other than the minimum required to cut the valve seats) is that the cylinder head mating surface can be skimmed. The maximum compression ratio is 10.5 to 1 with no tolerance. No engine parts may be lightened. No lighter alternatives to Alfa replacement part or equivalent may be fitted. Engines cannot be balanced as this involves the removal of metal.

2.3 Location

The engine must be in the standard location and must use only the standard engine mounts.

2.4 Cooling System

The radiator and water pump must be of standard specification. The radiator cooling fan must be fitted and working. The standard engine oil cooler may be removed or replaced with an aftermarket version.

2.5 Induction System

Fuel injection system parts must remain standard. On models with a plastic plenum chamber vane adjustment it must be connected and working. The standard air box can be replaced with an aftermarket air filter. This should remain located under the bonnet and within the engine bay. No additional air ducting under the bonnet is permitted. No holes in the bodywork may be made to allow extra air flow under the bonnet.

The following components must all be unmodified, fitted and working as standard:

- 2.5.1 Knock sensor
- 2.5.2 TDC sensor
- 2.5.3 Camshaft position sensor
- 2.5.4 Throttle position sensor
- 2.5.5 Air flow sensor
- 2.5.6 Water temperature sensor
- 2.5.7 Air temperature sensor
- 2.5.8 Lambda probe

2.6 Exhaust System

A standard exhaust manifold must be fitted.

The exhaust is free beyond the manifold.

Catalytic converters can be removed.

Silencing systems are free provided they comply with local track requirements.

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2.7 Ignition System

Other than the changes permitted within these regulations to increase the rev limit the ignition system must remain as standard.

The engines must remain as "twin spark" – i.e. all 8 spark plugs must work as standard.

The ECU (and all its component parts) must remain standard but it may be re-programmed. In order to permit reprogramming, the chip fitted to early GTV and Spider models may be replaced with a re-programmed chip that fits the original location within the ECU.

No alternative or additional ECUs may be fitted.

The make of Air Mass Meter (also known as the Air Flow Meter) is free subject to the following - An Air Mass Meter must be fitted in the standard location. The sensor must be unmodified.

The pipe between the Air Mass Meter and the throttle body must be the standard pipe for the model being raced and must be unmodified.

2.8 Fuel Delivery System

Must remain as standard for the model to be raced.

The fuel pump and pressure regulator must be standard and unmodified.

Fuel lines may run within the car.

The fuel cut off/inertia switch **MUST** be removed.

3 Suspension

3.1 Modifications Permitted

Suspension must remain as standard subject to the following:

3.1.1 Category 1

Road springs are free provided that the number remains the same, they are of the same overall diameter and are fitted in the same position as standard.

Suspension retaining straps are permitted where coiled springs have been shortened. These straps should not be capable of imparting any load on the springs during normal use and must not themselves be under any load at any time, other than when the car is lifted off the ground. Suspension anti-vibration dampers may be removed.

Dampers / Shock absorbers may be replaced with a steel replacement damper but may not have remote reservoirs and may have a maximum of one method of adjustment on each damper.

Dampers may be race valved/shortened for race use.

Only shock absorbers from the following manufacturers are permitted – Koni, Bilstein, AVO, GAZ, Spax

All other suspension components including wishbones, lower arms, subframes, suspension location points, top mounts and spring seats must be standard and unmodified.

All bushes must be standard Alfa Romeo rubber parts – there may be no additional washers, spacers etc. No rubber parts may be replaced with nylon or powerflex type bushes. However, should some standard bushes be no longer available they may be replaced with an alternative which will be stipulated in a Technical Bulletin.

All other suspension components including wishbones, lower arms, subframes, suspension rubbers, top mounts and spring seats must be standard and unmodified.

No Camber angles may exceed 3 degrees negative with NO tolerance

Ride height is free subject to limitations of 1.2.4

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3.1.2 Category 2 – Controlled Race Setup

Damper and spring parts of the suspension may be replaced with a Controlled Coilover Package (CCP). The CCP details are contained within Appendix A.

The CCP will remain in place until 31 December 2018 at which time the CCP will be reviewed.

Any submissions to alter/add the available CCP must be submitted to the Organisers by 31 October 2018 via email: ts_cup@internode.on.net

All other suspension components including wishbones, lower arms, subframes, suspension location points, top mounts and spring seats must be standard and unmodified.

All bushes must be standard Alfa Romeo rubber parts – there may be no additional washers, spacers etc. No rubber parts may be replaced with nylon or powerflex type bushes. However, where some standard bushes are no longer available these may be replaced with an alternative which will be stipulated in a Technical Bulletin.

Camber angles may not exceed 3 degrees negative with NO tolerance – to be ratified via Technical Bulletin following final testing.

Ride height is free subject to limitations of 1.2.4

3.2 Modifications Prohibited

The standard mounting points and position of the suspension components to the chassis/bodyshell must be used and must not be altered from standard.

Anti-roll bars must be of standard specification and be unmodified. Anti-roll Bars, links and rubber bushes must be fitted and be working to production specification. No alterations may be made to increase / decrease the effect of anti-roll bars (other than the possible consequential effect of fitting race springs)

The location, type and number of dampers must remain standard. They must fit the standard mounting points without modification (The shock absorber will be considered as the complete part that bolts between the suspension and the chassis).

Spherical bearings of any kind ("Rose" type joints) are not permitted in any Part of the suspension including shock

4 Transmission

4.1 Modifications Permitted

The transmission components must all be as standard for the 2 litre versions of the model to be raced these include gearbox casing and internals, gear ratios, differential, final drive, driveshafts and gear selector mechanism. However, driveshaft anti-vibration dampers may be removed.

4.2 Modifications Prohibited

4.2.1 Clutch:

Pressure plate, driven plate and release bearing must remain standard or be of a recognised Alfa Romeo pattern. Paddle plates, sintered Materials and racing clutches of all types are prohibited. The method of clutch actuation must not be altered in any way.

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4.2.2 Transmission and Drive Ratios

Gear and final drive ratios will remain standard for the model as sold by Alfa Romeo Australia/Ateco on the AUSTRALIAN market.

Limited Slip Differentials are not permitted. Automatic transmissions and the use of Q2/Quaiffe Torsen type differentials are not permitted. Championship organisers may request that halfshafts are removed for eligibility checks.

SeleSpeed gearchange systems are permitted on models sold to this specification on the AUSTRALIAN market.

All cars must have a fully functioning reverse gear.

5 Electrics

5.1 Exterior Lighting

The lighting system must remain as standard and be in full working order. Rear lights, brake lights and front and rear indicators must all be functioning.

5.2 Battery

Battery location must be standard. The standard battery may be replaced by a smaller alternative or by a sealed racing type battery.

5.3 Alternator

A standard specification alternator must be fitted and be working at all times.

5.4 Electronics

The only non-standard items of electronic equipment permitted are those proprietary data logging and timing units meeting the following requirements:

Any such units must be freely available through normal retail channels and must remain unmodified from the manufacturer's Specification. The Championship Organisers reserve the right to return any such unit to the manufacturer for verification.

They must not be capable of performing any function other than recording time and engine derived data. ALL components used for any other purpose must be removed for official qualifying and the race.

For models equipped with standard traction control & stability control systems (ESP/ASR etc) these may remain functional to the original specification.

The standard diagnostic capability must be retained.

6 Brakes

6.1 Modifications Permitted

Brake discs, callipers and master cylinder must be of standard specification. However, the fitting of an alternative option brake disc may be permitted by the Championship panel during the season. Competitors will be informed Via a Technical Bulletin.

The standard ABS system must be fitted and be working at all times.

A brake bias system may be fitted but may not be able to be operated by the driver whilst seated in the driving position..

Brake pad material and backings are free so long as the pads fit a standard, unmodified calliper.

Rubber flexible brake hoses may be replaced with braided metal hoses.

Brake fluid type is free.

Any brake ducting must use existing "holes" in the front panel/bumper (e.g. fog light holes).

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6.2 Modifications Prohibited

Apart from those freedoms previously mentioned the braking system must remain standard both as regards components and location for the model to be raced.

It is not permitted to make any modifications to the braking or electrical system that allow the disabling of the ABS system.

7 Wheels and Steering

7.1 Wheel Diameter

All cars must use 16" diameter wheels.

7.2 Wheel Width

Maximum rim width 7"

7.3 Wheel Type

Wheel type is free. Competitors MUST ENSURE that wheels are suitable for racing purposes and should be inspected regularly for cracks, rim damage etc.

7.4 Modifications Prohibited

Steering must not be altered from standard specification as regards method and position/mounting points of components. The bending of steering arms is not permitted under any circumstances. The steering ratio must remain as standard for the model. On models fitted with power steering as standard it must always be in full working order. However, the standard Power Steering oil cooler may be removed and/or replaced by an aftermarket oil cooler.

8 Tyres

8.1 Specification – Nominated Control Tyre

Federal 595 RSR are the nominated control tyre to be used by all competitors until 31 December 2018 – this stipulation may be changed by the Steering Group during the 2018 year

R Spec tyres are not permitted.

8.2 Modifications Prohibited

A minimum tread depth of 1.6mm must remain at the start of qualifying and the race. Re-grooving of tyres is not permitted.

The use of any heating/heat retention devices, tyre treatments and compounds is prohibited during qualifying and the race.

9 Fuel Tank and Fuel

9.1 Type of Fuel tank

The standard fuel tank must be used. The carbon canister/fuel vapour recovery box (E.G.R. system) may be removed.

9.2 Location of the Fuel Tank

The fuel tank must be in its original location.

9.3 Fuel

All cars must run either 95 or 98 Octane – no exceptions

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10 Minimum Weight Limit

The following MINIMUM WEIGHT LIMITS inclusive of fully kitted driver have been set for 2018;

147/156/GTV/Spider	1180 kg
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Competitors must ensure that holes are drilled in any ballast to allow a scrutineering seal to be affixed.

The organisers reserve the right to change the minimum weights per model during the season and to set a minimum weight for any new model entering the series for which a weight does not appear in the regulations.

11 Competition Numbers / Decals

Must comply with current CAMS regulations.

12 Twin Spark Cup Branding

The Branding material to be used on all TS Cup Competitor Vehicles is contained within the documents:

- Approved TS Cup Master Artwork
- The TS Cup Branding must be applied:
 - The Windscreen Banner: on the windscreen
 - The TS Cup door/panel material: 4/5 Door models - on the rear door and rear quarter panel
3 Door models – on the rear 'quarter' panel

13 Sponsors

Competitors will be supplied with a full set of the required decals by the Event Organisers free of charge at the time of registration.

The following locations are reserved for Sponsors

- Front and Rear Bumper Bars on each corner only

Any changes to the Sponsors branding material will be advised via Technical Bulletins

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APPENDIX A

Category 2 Suspension Control Specification

FRONT SUSPENSION

Custom Spax Coilover shocks GR068
Custom King springs
Custom Tender springs
Pillow ball strut mounts

REAR SUSPENSION

Custom Spax Coilover shocks TR042
Custom King springs
Custom Tender springs
Offset pillow ball strut mounts (for extra negative camber)

The above Controlled Coilover Package (CCP) is ordered as ARTSCCP18.

AVAILABILITY:

Following the final testing of this package - expected by the end of June 2018, the distribution and Supplier contact details will be published

ALL Competitors are encouraged to make NO modifications to their vehicles until the final testing is completed and the above package confirmed