



2026
MSA NATIONAL CHALLENGE
STANDING SUPPLEMENTARY
SPORTING AND TECHNICAL
REGULATIONS

FORMULA VEE



VERSION 1
1 JANUARY 2026
WWW.MOTORSPORT.CO.ZA

REVIEW AND AMENDMENTS

Motorsport South Africa (MSA) will periodically review these rules and will present the revised version to all members for agreement to publish the updated version.

Amendments and updates to the rules will be recorded in the Amendment Record, detailing the updated version, date of approval of the amendment and a short summary of the amendment.

AMENDMENT RECORD

<i>Modified SSR / ART</i>	<i>Date applicable</i>	<i>Date of Publication</i>	<i>Clarifications</i>

INDEX TO SPECIFICATIONS AND REGULATIONS

ART. SPECIFICATION

1. DEFINITION
2. DIMENSIONS
3. FRAME
4. BODY
5. DRIVERS COMPARTMENT
6. UNDERTRAY
7. FIRE EXTINGUISHER
8. FUEL TANK, FILTERS AND FUEL
9. FRONT SUSPENSION
10. STEERING
11. REAR SUSPENSION
12. TRANSMISSION & REAR AXLE
13. FLYWHEEL, CLUTCH, PRESSURE PLATE & ADAPTOR
14. BRAKES
15. WHEELS, HUBS AND TYRES
16. ENGINE & AUXILIARIES
17. EXCEPTIONS

ART. SERIES REGULATIONS

1. CONTROLLERS
2. AIM OF THE SERIES
3. RULES AND REGULATIONS
4. ELIGIBILITY OF CARS
5. SERIES SERIES
6. SEPARATION OF TIES
7. COMPETITION NUMBERS
8. ADVERTISING
9. POST RACE SCRUTINEERING

ART.

1. DEFINITION

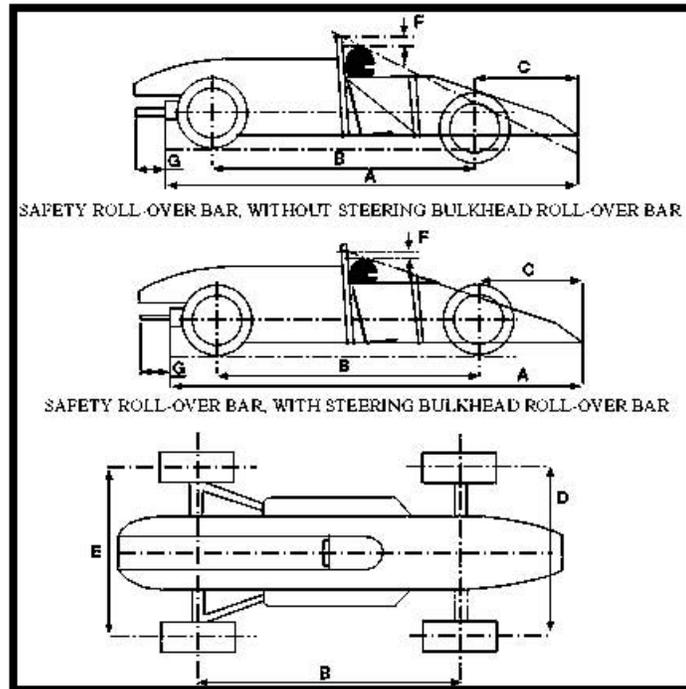
- 1.1 A Formula VEE is a single-seater racing car based on Volkswagen Type 1 front suspension, transmission, rear axle and a water-cooled VW "AGY" or "GY" engine with a nominal capacity of 1423 (one thousand four hundred and twenty-three) cc.
- 1.2 All Formula VEE cars must be registered with the FVA. On registration, a chassis identification plate will be issued, which must be attached to the car using rivets or bolts. It must be attached inside the cockpit of the car so that it is visible at all times. No car will be allowed to compete without the identification plate attached as per the regulations.
- 1.3 The engine shall be fitted via an adaptor plate (see Article 13.4) directly to and ahead of the transmission.
- 1.4 No MODIFIED parts or COMPETITION parts are permitted, except where specifically stated.
- 1.5 The abbreviation "FVA" shall stand for "Formula VEE Association of South Africa".
- 1.6 For cars constructed and registered before the 31st of January 2002, see Article 17 for possible exceptions.
- 1.7 Unless otherwise stated, the term "Welded" shall imply either Welding or High-tensile Alloy Brazing.
- 1.8 Unless otherwise stated, all suspension and harness bolts and cap screws used must be of at least Grade 8.8 High Tensile Steel.
- 1.9 Safety decals shall be applied to the car as per GCRs and SSRs.
- 1.10 Provision must be made for mounting a rear facing red warning light which must comply with the following:
 - 1.10.1 Must be permanently mounted not more than 600 (six hundred) mm from the ground and be visible to cars approaching from the rear.
 - 1.10.2 Must be able to be switched on or off by the competitor while he/she is fully strapped into the car.
 - 1.10.3 Must be operative at any stage of practice, qualifying or racing when visibility levels are low or when the Clerk of the Course or a FVA Committee member warrants its use on the grounds of safety.

2 DIMENSIONS

- 2.1 Overall length - from front of body to rear of transmission selector housing bush: Maximum 4000 (four thousand) mm Minimum 3100 (three thousand, one hundred) mm
- 2.2 Maximum front body overhang - measured from the front of the top tube of the axle beam: 1050 (one thousand and fifty) mm
- 2.3 Wheelbase - from centre of front wheel to centre of rear wheel (with front wheels in the straight-ahead position): Maximum 2550 (two thousand five hundred and fifty) mm Minimum 2070 (two thousand and seventy) mm
- 2.4 Track – measured from the centre line of one tyre to the centre line of the opposite side tyre (must be measured at the topmost point of the tyres with the competitor seated in the car):
 - Front - Maximum: 1 380 (one thousand three hundred and eighty) mm
 - Rear - Maximum: 1 380 (one thousand three hundred and eighty) mm
- 2.5 Minimum Mass:
 - 2.5.1 Including ballast but without driver and helmet: 428 (four hundred and twenty-eight) kg
 - 2.5.2 With driver, helmet and ballast: five hundred and thirty-five (535) kg
 - 2.5.3 Ballast must be permanently secured between the main roll-over bar and steering roll-over bar by either welding or bolting, and a manner as to be that is deemed safe by the FVA.
 - 2.5.4 The vehicle mass may be checked at the finish of a race or at any time during qualifying.
 - 2.5.5 The scales present on the day shall, be deemed correct, the calibration allowance shall be taken into effect, should there not be a calibration allowance available a deemed value of +/- 1 (one) kg will be used.
 - 2.5.6 No ballast, fuel, oil, brake fluid or coolant may be added prior to checking the mass. The competitor may not consume any liquid or food before being weighed. Once the competitor has left the weighing area the car may not be re-weighed. The car may be immediately rolled off and back onto the scale to be re-weighed if the car is underweight, the car may not be weighed more than 3 (three) times.
- 2.5.7 Only bodywork that has been displaced during a race / qualifying session may be retrieved and refitted prior to weighing. Only the actual displaced bodywork may be used for this purpose, not replacement parts.

2.6 FORMULA VEE DIMENSIONS – DRAWINGS

- A) Overall length – see ART. 2.1
- B) Wheelbase – see ART. 2.3
- C) Front body overhang – see ART. 2.2
- D) Front track – see ART. 2.4
- E) Rear track – see ART. 2.4
- D) Roll - over bar clearance to driver’s helmet – see ART 3.7.4
- G) Exhaust length – see ART. 16.15



3 FRAME

On completion of the entire frame or replacement of any tubes in the frame, the frame must be inspected for compliance by the FVA Technical Committee. For inspection the frame shall: Have all welding completed and the cleaning up thereof shall be done. Have the seatbelt mountings, tube inserts, triangulation etc. completed. Not be sandblasted or painted. The frame design and construction are unrestricted except that:

- 3.1 It shall be constructed of mild steel tubing welded together. The only exception will be the main Roll Bar for which Chrome-Moly may be used.
- 3.2 It may be braced by panels which are welded, bolted or riveted to the frame. In this regard see also ART 4.3
- 3.3 All holes drilled through the frame tubes shall be fitted with inserts which must be welded in.
- 3.4 Chassis tubes may not be used as a means of ducting any liquid.
- 3.5 Where a roll-over bar, or a front or rear roll-over bar support is attached to an unsupported point on a longitudinal member of the frame, it must have additional supports from a point directly below the point of attachment back to the roll-over bar (in the instance of a support) or nearest bulkhead node point, in such a way that effective frame triangulation is achieved.
- 3.6 It shall have a main roll-over bar which must comply with one of the following specifications:
 - Conventional single roll-over bar (see ART 3.7);
 - Pyramid roll-over structure (see ART 3.8);
 - A roll-over bar conforming to FIA specifications (see ART 3.9)

Conventional single roll-over bar must meet the following criteria:

- 3.6.1 Have the design approved by the FVA Technical Committee for compliance to the requirements of ART 3.7 only, before manufacture.
- 3.6.2 Be of sufficient height that the top of the apex of the roll-over bar shall not be less than 50mm above the driver’s helmet when seated in the car (See ART 18F).
- 3.6.3 Be bent into an inverted “U” shape, with a rounded apex at the top of the roll-over bar.

- 3.6.4 Be constructed of a continuous length round tubing, either:
 - 3.6.4.1 38 (thirty-eight) mm outside diameter mild steel with a minimum wall thickness of 2 (two) mm or
 - 3.6.4.2 40 (forty) mm outside diameter chrome-moly with a minimum wall thickness of 2(two) mm
- 3.6.5 Be at least 350 (three hundred and fifty) mm wide at a point 350 (three hundred and fifty) mm from the top of the apex.
- 3.6.6 Must be welded to the frame.
- 3.6.7 Be fitted with double front support tubes which shall:
 - 3.6.7.1 Be made of a straight length of at least 18 (eighteen) mm diameter round steel tubing with a minimum wall thickness of 1.6 (one point six) mm.
 - 3.6.7.2 Be mounted not more than 200 (two hundred) mm from the top of the apex of the roll- over bar.
- 3.6.8 Be supported from the rear by supports taking the form of either an inverted “U” or two support tubes in such a way as to meet the following criteria:
 - 3.6.8.1 Where two supports are used:
 - 3.6.8.1.1 They must be made of at least 25 (twenty-five) mm diameter round steel tubing with a minimum wall thickness of 1.6 (one point six) mm.
 - 3.6.8.1.2 They must be mounted not more than 50 (fifty) mm from the top of the apex of the roll-over bar.
 - 3.6.8.1.3 They must be straight over their full, unsupported length.
 - 3.6.8.2 Where the support is in the form of an inverted “U”:
 - 3.6.8.2.1 It must be made of at least 32 (thirty-two) mm diameter round steel tubing with a minimum wall thickness of 2 (two) mm.
 - 3.6.8.3 Must be welded to the frame.
 - 3.6.8.4 Must extend down on either side of the centre line of the frame.
 - 3.6.8.5 Where, for space reasons, it is impractical for a frame to comply with the above criteria a special dispensation can be applied for from the FVA Technical Committee. An official letter of authorization from the FVA must be kept with the car’s logbook.
- 3.7 Pyramid roll-over structure must meet the following criteria:
 - 3.7.1 Have the design approved by the FVA Technical Committee for compliance to the requirements of ART 3.8 only, before manufacture.
 - 3.7.2 Be made up of two individual roll-over bars each constructed of a continuous length round tubing, either:
 - 3.7.2.1 38 (thirty-eight) mm outside diameter mild steel with a minimum wall thickness of 2 (two) mm or
 - 3.7.2.2 40 (forty) mm outside diameter chrome-moly with a minimum wall thickness of 2 (two) mm
 - 3.7.3 Have one roll-over bar at least 350(three hundred and fifty) mm wide at a point 350(three hundred and fifty) mm from the top of its apex.
 - 3.7.4 Be of sufficient height that the top of the apex of the roll-over structure shall not be less than 50 (fifty) mm above the driver’s helmet when seated in the car - see ART 2.6.
 - 3.7.5 Have the top of the roll-over bars bent into inverted “U” shapes, with rounded apices.
 - 3.7.6 Have the apex of each roll-over bar abutting against the other, joined together by a welded steel plate of at least 1.5 (one point five) mm thickness. The steel plate shall cover at least 60 (sixty) % of the arc of the rounded shape of the roll-over bar apex.
 - 3.7.7 Have an included angle between the individual roll-over bars of not less than 30 (thirty) degrees and not greater than 45 (forty-five) degrees.
 - 3.7.8 Must be welded to the frame.
- 3.8 FIA specification roll-over bar which must meet the following criteria:
 - 3.8.1 It must conform in all respects to the requirements of Article 227 - Appendix J of the FIA Yearbook.
 - 3.8.2 In the case of cars supplied by an official car manufacturer registered with MSA, conformance to the requirements of Art 3.9 will have to be submitted, in writing, in a form acceptable to MSA.
 - 3.8.3 Any cars designed and constructed by any party not registered as an official manufacturer with MSA and whose roll-over bar features require conformance to Art 3.9, will be required to submit written proof of such conformance in a manner acceptable to MSA. Such written proof shall furthermore be required to be counter-signed by a registered engineer in terms of Act 114 of the Republic of South Africa.
- 3.9 A Steering bulkhead roll-over bar shall be provided that must be welded in and comply with the following criteria: The top of the roll over bar shall be bent into an inverted “U” shape, with a rounded or flat apex. Be

constructed of at least 32 (thirty-two) mm outside diameter mild steel tubing with a minimum wall thickness of 1.6mm.

- 3.9.1 Must be fitted with a minimum of two front support tubes that must be welded in and meet with the following criteria: Must be made of at least 19 (nineteen) mm outside diameter mild steel tubing with a minimum wall thickness of 1,6 (one point six) mm. The supports may not be attached more than 50 (fifty) mm from the top of the apex of the roll over bar. They must be straight over their full, unsupported length. Must be constructed so that, when a straight line is taken between the apexes of the main and steering bulkhead roll bars, crash helmet clearance is provided (see Art 18).
- 3.10 A metal heel support plate at least 150 (one hundred and fifty) mm wide, and not less than 1(one) mm thick, shall be fixed to the top or sides of the lower chassis tubes.

4 BODY

The shape and design of the bodywork shall incorporate the following requirements:

- 4.1 It shall encase the frame on all four (4) sides from a plane ahead of the front suspension to the firewall, except for the driving compartment which shall be open at the top.
- 4.2 It shall also provide cover for the engine and transmission from the firewall to at least the centre line of the rear axle tubes.
- 4.3 It shall be constructed of fibreglass only.
- 4.4 Specifically, Kevlar or carbon fibre bodywork components are not permitted.
- 4.5 Air ducting may be attached to and/or incorporated in the bodywork for cooling purposes only
- 4.6 No ground effect or downforce-enhancing front or rear aerofoil wings will be permitted.
- 4.7 There may be no fixed or moveable appendages sealing the longitudinal apertures between the sprung part of the car and the track.
- 4.8 Wheels shall remain external to the bodywork.
- 4.9 The height of the nose of the body may not exceed 360 (three hundred and sixty) mm when measured at the extreme front - most point to the ground directly below at 90 (ninety) degrees to the surface the car is standing on) on a level surface.

5 DRIVERS COMPARTMENT

- 5.1 The driving compartment shall be so designed and constructed that the driver can get out of the safety belt and driving seat within 5 (five) seconds without having to remove or manipulate any part of the car with the exception of a quick release steering wheel.
- 5.2 All cars shall be fitted with a seat mounted independently from, and not supported in any way, by the under-tray, approved by the FVA technical committee.
- 5.3 A metal or aluminium firewall shall be fitted between the driving compartment and the engine compartment which shall extend from the bottom of the frame to the top of the engine cover over the full width of the body. If the engine cover extends to the top of the roll bar the firewall shall have a minimum height of 590 (five hundred and ninety) mm and shall not have a gap between the driver and the engine compartment through which flames could come into contact with the driver. No holes may be drilled in the firewall to duct air onto the heat exchangers.
- 5.4 Seat belts of the double shoulder full harness type incorporating crotch straps, shall be fitted and must have either four, five or six attachment points to the frame, and shall hold the driver firmly in place when seated in the car. Crotch straps shall be used at all times.
- 5.5 Engine oil or water tubes including radiators and oil coolers are permitted within the driver's compartment provided they are totally screened from the driver by aluminium or fibreglass.

6 UNDER TRAY

All cars must be fitted with a mild steel or Aluminium under tray, which shall meet the following criteria:

- 6.1 Must be riveted, bolted, welded or high-tensile alloy brazed to the frame, and may not extend outside the confines of the frame and radiator side pods
- 6.2 Must cover the area from the steering bulkhead to the main rollover bar.
- 6.3 A single ground effect floor tray must be fitted, provided it complies with the following criteria:
- 6.3.1 Must be constructed of plywood with a minimum thickness of 6 (six) mm.
- 6.3.2 May not extend further forward than the vertical plane of the front-most point of the front axle beam.
- 6.3.3 May not extend further back than the vertical plane of the gearbox selector housing bush.

- 6.3.4 Minimum width of 500 (five hundred) mm and a maximum width of 1200 (one thousand two hundred) mm.
- 6.3.5 Radius of curvature is allowed in one vertical plane only,
- 6.3.6 All mounting points must be substantially strong enough to withstand the pressures exerted. Mild Steel bolts are acceptable, but cable ties are not permitted,
- 6.3.7 May not have apertures whose sole purpose is to enhance the aerodynamic performance of the car.
- 6.3.8 The profile is free, within the above constraints.
- 6.3.9 A single "gurney flap" may be added to the rear of the floorboard for structural support for mounting the floorboard to the gearbox, it may be no higher than twenty-five (25) mm.

7 FIRE EXTINGUISHER

- 7.1 A fire extinguisher or fire extinguishing system of at least one-kilogram extinguishing capacity shall be fitted within the bodywork of the car so that it can be operated by the driver when strapped into the seat.
- 7.2 A Fire Stryker may ONLY be used in **addition** to the fire extinguisher.
- 7.3 No fire extinguisher containing carbon tetrachloride is allowed.
- 7.4 Evidence must be furnished to prove that the extinguisher was purchased new or serviced in the period prescribed in GCR 257.
- 7.5 If an on-board fire extinguishing system is used, it must comply with the following:
 - 7.5.1 All nozzles, pipes and bends shall be of fire-resistant material.
 - 7.5.2 At least one (1) nozzle must be aimed at the engine and at least one (1) nozzle must be aimed at the fuel tank.
 - 7.5.3 The system must be capable of staying intact during the release of extinguishant.
 - 7.5.4 The system must have prior approval from the FVA Technical Representative.

8 FUEL TANK, FILTERS AND FUEL

8.1 Fuel tanks

The shape, position and installation of the fuel tank is unrestricted, but the following shall apply:

- 8.1.1 Fuel tank may not protrude beyond the confines of the chassis.
- 8.1.2 Shall be constructed of metal, or other material acceptable to the FVA.
- 8.1.3 Shall be securely fitted to the frame.
- 8.1.4 The filling port and its cap shall not protrude beyond the bodywork.
- 8.1.5 The filling port cap shall have an efficient locking action to reduce accidental opening on crash impact or incomplete locking after refuelling.
- 8.1.6 Tank must be fitted with fuel breather pipe of 4mm maximum bore. These must be routed from the tank to the highest convenient point in the car (must be higher than the top of the fuel tank) and return to a position external to the cockpit and below the level of the tank. A motocross style one way breather valve is permitted.

8.2 Fuel filters

- 8.2.1 Fuel filters must be placed away from any point which is vulnerable in case of a crash.

8.3 Fuel

- 8.3.1 Only commercial fuel 93 or 95 octane is allowed. See GCR 240.
- 8.3.2 For fuel testing purposes these must be a min of 1 (one) liter fuel left in the tank.
- 8.3.3 The addition of **any** additive to either the fuel or air is prohibited.
 - 8.3.3.1 An additive is defined as any agent that improves the volumetric efficiency and/or heat of combustion.
 - 8.3.3.2 The testing of fuel may be done at any given time during a race weekend at the discretion of the Technical Consultant in consultation with the Clerk of the Course.

9 FRONT SUSPENSION

The standard Volkswagen Type 1 (one) front suspension (Link and Kingpin type), conforming in all respects to Volkswagen specifications, shall be used, except for the following modifications:

- 9.1 The beam mounting brackets may be re-located in any position on the beam.
- 9.2 The original rubber bump stops, and metal supports may be removed.
- 9.3 The use of coil-over (shock absorber) springs is prohibited

- 9.4 Front shock absorber uprights may be removed; the cuts shall not be closer than 10 (ten) mm from the upper torsion tube and must be boxed and welded.
- 9.5 Any make or type of telescopic shock absorber(s) may be used and shall:
 - 9.5.1 Be mounted either directly to the chassis or through push or pull rod systems
 - 9.5.2 Be a totally self-contained integral unit without any facility for varying pre-set damping and stroke parameters from within the drivers' cabin. Any adjustment mechanisms must be totally mechanical, not via an electronic interface.
 - 9.5.3 Not be adjustable by the competitor when he/she is seated in the cockpit
- 9.6 The lower link arms may have:
 - 9.6.1 The shock absorber mounting may be removed or modified.
 - 9.6.2 A bracket may be welded on for mounting the shock absorber or push / pull rods used to activate the shock absorber.
- 9.7 Negative camber on each front wheel shall be unlimited.
- 9.8 To enable the adjustment of the ride height of the car, adjusting mechanisms may be fitted.
 - 9.8.1 These mechanisms must be of such a configuration that the ride height of the vehicle may be adjusted externally, with the vehicle stationary and without any dismantling of the front suspension components.
 - 9.8.2 The locating bush at the midpoint of the axle tubes cannot be wider than 35 (thirty-five) mm.
 - 9.8.3 Competitors may apply to the Formula Vee Technical Consultant/s for a ruling on any ride height adjustment mechanism they wish to use. Should there be any doubt on the technical conformance to the regulations of the mechanism, the controllers will act as sole arbitrators.
- 9.9 Anti-roll bars may be fitted.
- 9.10 To facilitate the fitting of an internal anti-roll bar, the locating bush at the midpoint of the axle tube may be removed.
- 9.11 Torsion Bars:
 - 9.11.1 One torsion bar may be removed and the other modified by removing or adding spring blades (half or full) as supplied standard by Volkswagen and specified by the manufacturer for this use only. The maximum number of leaves in a spring pack cannot exceed the number in a standard pack.
 - 9.11.2 Shortening of the torsion bar by any method is strictly forbidden.
 - 9.11.3 The ends of the torsion bar spring packs must be square with a suitable countersunk conical drilling which will ensure firm location and fixing inside the link arms by the standard grub screws as fitted by Volkswagen
 - 9.11.4 To increase the stiffness of the torsion bar system, mild steel or aluminium tube sleeves not greater than 3mm thick may be placed over the section of spring pack stretching between the end of the link arms and the central pivoting bush inside the carrier tubes. These sleeves cannot be fixed in any way to the link arms, the central pivot/locating bush or any other areas of the suspension tube internals.
- 9.12 External lateral locating bushes or bearings may be fitted.
- 9.13 Internal Bushes:
 - 9.13.1 The lateral location of the internal bushes by means of suitable fasteners will be allowed.
 - 9.13.2 The internal bushes may be replaced but must be of the same configuration width and location as the original fibre bushes.
- 9.14 Link-pin shims may be cut for ease of adjustment.
- 9.15 Locating screws may be fitted to the uprights to keep the link pin bushes in place.
- 9.16 The link pin bushes may be machined with an angled centre hole to accommodate for camber changes.

10 STEERING

- The steering mechanism shall either be of rack and pinion type or standard Volkswagen Type 1 (one) system.
- 10.1 The castor angle and toe in/out settings are free.
 - 10.2 The steering column is unrestricted
 - 10.3 Any steering wheel may be used.
 - 10.4 The tie rod ends may be replaced with:
 - 10.4.1 Aircraft or racing type spherical joints not less than 10 (ten) mm (or the imperial equivalent) in diameter
 - 10.4.2 Industrial type spherical joints not less than 12 (twelve) mm in diameter.
 - 10.5 The hub steering arms may be re-drilled to mount the tie rod ends below the arms.
 - 10.6 Any spacer used between the steering arm and the tie rod end must not be thicker than 15 (fifteen) mm unless the steering arm encases the tie rod end.

- 10.7 To permit the mounting of steering mechanisms in front of the axle beams, front wheel hubs may be interchanged and mounted so that the hub steering arms are orientated towards the front of the car.
- 10.8 To permit commercially available rack and pinion assemblies to be used, it will be permissible to shorten the horizontal distance (nominally 130 (one hundred and thirty) mm) between the tie rod end hole centre in the steering arm and the centreline of the kingpin housing to a minimum of 80 (eighty) mm. This may be achieved by either:
- 10.8.1 Fitting a bracket mounted onto the front wheel assembly using both the brake backing plate mounting bolt holes and the existing hole in the steering arm, or
- 10.8.2 Using an assembly that allows the existing steering arm to be removed. In either case, the system used must be approved by the FVA Technical Representative prior to it being fitted or used. Photographic evidence may be taken, and written confirmation of the approval given will be provided to the driver, with a copy being retained by the FVA committee.

11 REAR SUSPENSION

- 11.1 Only a 'zero-roll' 'mono-shock' system is permitted. A coil spring surrounding telescopic shock absorber or torsion bars shall provide the main springing medium. The original mounting points on the axle bearing housing may be removed.
- 11.2 Fore and aft location of the suspension may be provided by a single or twin radius arm/s on each side, the mounting points for these being unrestricted.
- 11.3 Metal, rubber or fabric devices may be used to control the suspension travel.
- 11.4 An Anti-Roll device may be fitted to the rear suspension.
- 11.5 Camber and toe-in/out settings are free.
- 11.6 Shock absorber may not be computer controlled, nor may it be adjustable by the competitor when he/she is seated in the cockpit.

12 TRANSMISSION AND REAR AXLE

- 12.1 The standard Volkswagen Type 1 transmission and swing axle assembly conforming in all respects to Volkswagen specifications shall be used, except for the modifications listed below.
- 12.2 The ratios shall be:
- | | |
|--------------------|------------------|
| Final drive ratio: | 4,125:1 |
| Fourth gear ratio: | 0,93:1 |
| Third gear ratio: | 1,26:1 |
| Second gear ratio: | 2,06:1 |
| First gear ratio: | 3,78:1 or 3,80:1 |
- 12.3 Only components from Volkswagen gear sets listed in Art 12.2 may be used or unless otherwise stated in Art 12.4. They may only be used if they can be fitted without any modification to any of the components in the transmission or in the gear set itself with the exceptions listed below.
- 12.4 Gear types allowed:
- Standard VW Beetle Gears
 - Imported Weddle gears
 - Locally manufactured straight cut gears (as approved by the FVA in accordance with Article 12.2)
- 12.5 Modifications are permitted, if necessary, to accept the 0,93:1 fourth gear and 1,26:1 third gear ratios respectively.
- 12.6 The third and fourth gears may be welded and/or pinned (a hole spark eroded, and a pin inserted) to aid reliability of the gears.
- 12.7 The worn helixed teeth on any gear where the sliding hub connects may be removed to prevent the sliding hub jumping out of the gear, worn sliding hub teeth may be healixed to prevent jumping out of gear.
- 12.8 The drive pinion shaft and clutch gear may be machined, if necessary, to accept the third gear ratio sets mentioned in Art. 12.2.
- 12.9 All synchromesh components must be in place and operating.
- 12.10 Any rear bearing housing may be used with suitable bearing spacers.
- 12.11 The crown wheel must be transposed to provide the required direction of side shaft rotation. The transmission may not be inverted.
- 12.12 For the purpose of re-adjusting selector fork positions on selector shafts without dismantling the gearbox, two holes not larger than 20 (twenty) mm in diameter may be drilled in the side of the gearbox housing. The

openings must be properly tapped and plugged to avoid oil leaks. The selector fork locking bolts may be substituted with cap screws.

- 12.13 The use of locked or limited-slip differentials/final drives is prohibited.
- 12.14 It is not required for the vehicle to be able to select reverse gear, and the reverse gear can be removed from the gearbox. This includes all the gears and mechanisms involved that can be removed for reverse gear.
- 12.15 The gearbox shall be ventilated to the engine oil catch tank or a separate container of no less than 50 (fifty) ml capacity.
- 12.16 Any make or type of lubricant commercially available through a recognised South African stockist may be used.
- 12.17 Any bearing, nuts, bolts, screws, gaskets and oil seals may be used provided these are supplied as normal replacement parts in place of Volkswagen components and that they are freely available.
- 12.18 Any replacement gear set maybe used also long as the ratio confirms to the rules and the gear has a helical pattern.
- 12.19 Aftermarket replacement bearings may be used.
- 12.20 A bearing retainer plate as supplied by the FVA maybe fitted in between the nosecone and bearing carrier.

13 FLYWHEEL, CLUTCH, PRESSURE PLATE AND ADAPTOR

- 13.1 **Flywheel:** The flywheel may be obtained from any source but must be able to accept the standard type VW Type 1 180 (one thousand one hundred and eighty) mm or 200 (two hundred) mm clutch plate and pressure plate. It must have a ring gear that can be driven by a 6 (six) volt or 12 (twelve) volt Type 1 (one) starter motor. The air-cooled engine flywheel may be altered so that it can bolt onto the AGY or GY crankshaft.
 - 13.1.1 The minimum mass of the 180 (one hundred and eight) mm flywheel shall not be less than 4.8 (four point eight) kg, excluding all flywheel retaining bolts.
 - 13.1.2 The minimum mass of the 200 (two hundred) mm flywheel shall not be less than 4.37 (four pint three seven) kg, excluding all flywheel retaining bolts.
- 13.2 **Clutch:** The clutch mechanism may be either cable or hydraulically operated.
 - 13.2.1 Any clutch plate, pressure plate and thrust bearing may be used provided they are supplied as normal replacement parts in place of the Volkswagen components and that they are freely available in South Africa through a recognised local stockist.
 - 13.2.2 A FVA approved and supplied clutch plate may be used and must, at all times, conform to the following specifications:
 - 13.2.2.1 Must be a 3 (three) or 4 (four) button sintered clutch plate.
 - 13.2.2.2 Ceramic Copper pad type sintered buttons shall be used.
 - 13.2.2.3 The minimum mass shall not be less than: 550 (five hundred and fifty) grams for the 180 (one hundred and eighty) mm diameter clutch; or 580 (five hundred and eighty) grams for the 200 (two hundred) mm diameter clutch plate.
- 13.3 **Pressure plate:**

The minimum mass of the pressure plate shall be not less than

 1. 2,7 (two point seven) kg for the 180 (one hundred and eighty) mm diameter pressure plate; or
 2. 3,1 (three point one) kg for the 200 (two hundred) mm diameter pressure plate.
- 13.4 **Adaptor Plate:**

The adaptor plate is free, but the thickness thereof may not be less than 15 (fifteen) mm or greater than 25 (twenty-five) mm.

14 BRAKES

- 14.1 The braking system shall consist of a double circuit, one controlling the front wheels and the other controlling the back wheels, operated by a single pedal.
 - 14.1.1 In the case of a failure or leakage in either of the braking circuits, the pedal shall still control two wheels, i.e. either the front brakes or back brakes.
 - 14.1.2 Disc brakes shall be utilised on all four wheels as per Art 14.2 below.
- 14.2 **Disc brakes**
 - 14.2.1 The brake calliper and disc will be as used Volkswagen Chico Golf.
 - 14.2.2 Callipers are to be fixed with high tensile bolts to a suitable mounting bracket. The mounting bracket must in turn be fixed with high tensile bolts to the existing backing-plate mounting points.
 - 14.2.3 The disc assembly must be mounted onto the existing hub carriers and splined shafts in such a way that the stress pattern onto the carriers is similar to the drum brake configuration.
 - 14.2.4 Prior to any non-approved disc brake system being fitted, a drawing showing the details of such a system must be submitted to the FVA Technical Committee for approval.

- 14.2.5 Minimum disc thickness is 7 (seven) mm.
- 14.2.6 Any brake pad not manufactured specifically for motorsport application may be used provided they are normal replacement parts supplied by a recognised stockist in place of genuine Volkswagen components.
- 14.2.7 Not more than two (2) holes with a maximum diameter of 10 (ten) mm may be drilled through the rear brake discs for the sole purpose of accessing the bearing housing retaining bolts or cap screws.

14.3 General – Brakes

Standard Volkswagen components need not be used in the braking systems except as specified in Art 14.2 above.

15 WHEELS, HUBS AND TYRES

15.1 Wheels and Hubs

- 15.1.1 Wheels shall be 15 (fifteen) inch diameter with a maximum rim width of 7 (seven) J and a minimum mass of 6 (six) kg. Wheels may be either pressed steel or aluminium alloys. No machining is permitted for the purpose of removing weight.
- 15.1.2 Wheel spacers may be used to widen the track up to the maximum allowed in the regulations (see Art 2.4)
- 15.1.3 Bolts or screw in Studs used to secure the wheels must be flush with or protrude through the rear face of the hub when screwed in.
- 15.1.4 Where studs and nuts are used to secure the wheels, the nuts must be open on the outer end. The stud must be flush with, or protrude through, the nut when tightened up. The length of thread in the nuts may not be less than 20 (twenty) mm. It is recommended that the studs be made out of at least Grade 8.8 high tensile steel.
- 15.1.5 Wheel bolts or nuts must match the type of wheels used.
- 15.1.6 Rear hubs may not be reversed when fitted.
- 15.1.7 The rear hub profile may not be altered and must remain a uniform circle.
- 15.1.8 Not more than two (2) holes with a maximum diameter of 17 (seventeen) mm may be drilled in the hub for the sole purpose of accessing the bearing housing retaining bolts or cap screws.

15.2 Tyres

- 15.2.1 Tyres will be registered to a competitor and not to a car.
- 15.2.2 Three (3) race sets of tyres will be allowed per driver during a racing season; each race (i.e. qualifying, race 1 one and race (two) 2) drivers must declare (in writing to the TC before the start of qualifying) which of the controlled tyres they will be using at the given event. ~~Drivers~~ Competitors may use one (1); or two (2); or all three (3) sets per race.
The amount of practice sets per year is open.
- 15.2.3 All tyres used for qualifying and racing shall be registered by the competitor with the FVA and controlled in accordance with procedures from time to time advised by the FVA and ATS.
- 15.2.4 Competitors must ensure that their tyres are registered with the FVA prior to the commencement of a race meeting.
- 15.2.5 Only tyres that are marked and registered may be used for the duration of any qualifying or race session having National, Regional and/or Club status counting towards any Formula Vee series or point's log.
- 15.2.6 A tyre's identification may be checked at any time during a race meeting.
- 15.2.7 Any tyre rendered unusable in the opinion of the FVA Committee and ATS may, at the latter's discretion, be replaced by the competitor without affecting his/her allocation.
- 15.2.8 Competitors have the choice of the following tyres, although availability is not guaranteed:
 - 15.2.8.1 Supplied by ATS only:
 - 15.2.8.2 Dunlop Direzza 195/55/15R front and rear.

15.3 The use of tyre warmers is prohibited.

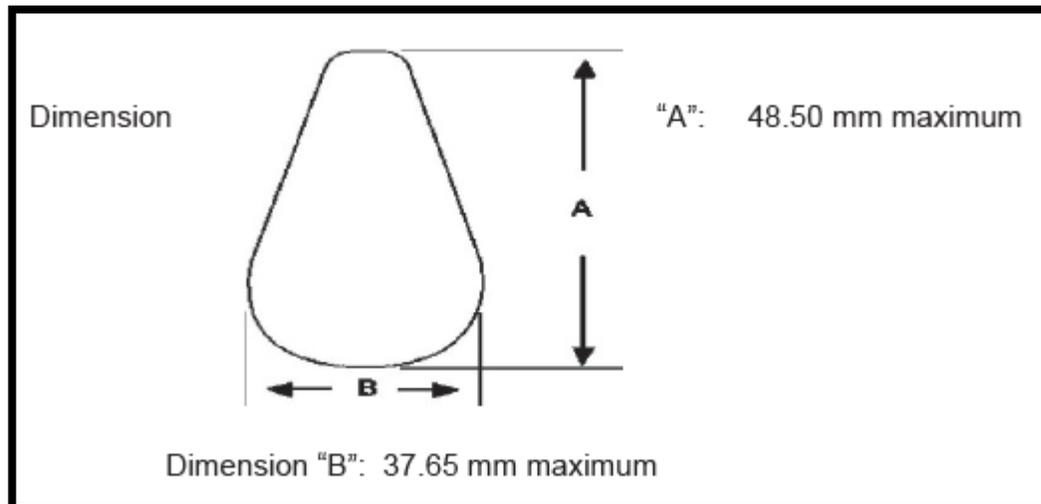
16 ENGINE AND AUXILIARIES

16.1 Specifications

- 16.1.1 The engine shall be naturally aspirated,
- 16.1.2 The engine shall have a nominal capacity of 1423 (one thousand four hundred and twenty-three) cc.

- 16.1.3 The engine shall be the GY or AGY or any VW cast iron block, range as fitted in the VW Citi Golf or Polo and shall have the following dimensions:
 - 16.1.3.1 Bore: 76,5 (seventy-six point five) mm with a tolerance of – 0.005 (minus zero point zero zero five) mm and + 0.2554 (plus zero point two four four) mm
 - 16.1.3.2 Stroke: 77,4 (seventy-seven point four) mm
 - 16.1.4 Engine components shall be assembled in the standard configuration and shall comply in all respects with the VW AGY or GY specifications except for the modifications listed below. Unless otherwise stated, all tolerances or nominal dimensions listed in Section 16 will be in accordance with Volkswagen works specification.
 - 16.1.5 The engine shall be mounted in the upright position.
 - 16.1.6 Re-sleaving of the cylinder chambers is permitted, provided it conforms to the original specification.
 - 16.1.7 No offset or angle boring may be permitted.
 - 16.1.8 The cylinder head gasket be the standard part supplied by VWSA with one of the following the part number's part no
 - 16.1.8.1 056/103/383J
 - 16.1.8.2 056/103/383L,
 - 16.1.8.3 026/103/383P or
 - 16.1.8.4 FSU 103383,
 - 16.1.8.5 or the equivalent replacement part. In this regard see Art's 16.4.2.1 and 16.4.2.2 of this document.
 - 16.1.9 The following components, emanating from sources other than Volkswagen SA, may be used, provided that they are recognised standard replacements (and not especially made for racing), that they do not require any unauthorised modification thereto (or of any other component) in order to fit them, and that they are freely available in South Africa through a recognised local stockist.
 - 16.1.9.1 Nuts, bolts, screws, etc. The threads of bolts and studs must protrude fully through Nyloc 'y' type nuts.
 - 16.1.9.2 Electric wiring.
 - 16.1.9.3 Gaskets and seals.
 - 16.1.9.4 Spark plugs. Any heat range in the standard long reach (14 (fourteen) mm diameter) plug may be used and double washers or spacers may be used to eliminate thread exposure.
 - 16.1.9.5 Connecting rod bearings, camshaft bearings and crankshaft bearings.
 - 16.1.9.6 Pistons & Piston Rings.
 - 16.1.9.7 Valves of the same profile as standard valves.
 - 16.1.9.8 Mechanical fuel pump.
 - 16.1.9.9 Water Pump
 - 16.1.9.10 Any conrod and head bolts may be used
 - 16.1.10 Components may not be strengthened, reinforced or hardened either structurally or by any type of treatment which inherently increases their strength or hardness other than as specified in ART 16.8.5.
 - 16.1.11 The fitting of Heli-coils, plugs, inserts, stud inserts, carburettor bushes, oil seals, etc., the welding of any cracks and the re-sizing of worn parts constitutes a repair and is acceptable providing no other regulations are contravened in so doing.
 - 16.1.12 For the purpose of sealing the engine by the scrutineers or FVA technical representatives using locking wire, it is recommended that a hole 2 (two) mm in diameter be drilled through a sump bolt head on each side of the engine. It is further recommended that two cam cover studs be cross drilled on either side of the cylinder head.
- 16.2 Ceramic Coating**
- 16.2.1 Ceramic coating is ONLY permitted on the intake/exhaust manifold.
- 16.3 Balancing**
- 16.3.1 The following moving parts may be balanced: crankshaft, flywheel, pressure plate, front pulley, pistons, valve spring tension, connecting rods and the layshaft. Refer to the respective articles regarding restrictions.
- 16.4 Volumes**
- The total volume shall not be less than 45.5 (forty-five point five) cc.
- 16.4.1 Volumes must be measured using a grade "A" burette filled with paraffin. Total volume shall be obtained by measuring the volume in the cylinder (See ART 16.4.3) plus the volume in the combustion chamber in the cylinder head, plus the volume in the gasket (See ART 16.4.2).
 - 16.4.2 Volume of the cylinder head gasket:

- 16.4.2.1 If a standard VW supplied 1400cc (Part no. 17S 103 383A) or 1600cc (Part no.17S 103 383B) cylinder head gasket is used and the gasket has not been altered in any respect, a volume of 8.00 (eight) cc for the 1400cc and 8.40 (eight point four) cc for the 1600cc gasket must be used.
- 16.4.2.2 For non-standard gaskets, the volume will be arrived at by measuring the metal ring thickness in four (4) different places as well as measuring the metal ring inside diameter in four (4) different places and obtaining an average measurement.
- 16.4.3 The volume in the cylinder is measured with the piston wound down 2 (two) mm from TDC. As the volume between the top of the piston and the first compression ring will not be included in this calculation the gap between the outer diameter of the piston and the cylinder wall must be plugged with a film of grease or petroleum jelly.
- 16.4.4 Material may be removed from the centre of the top of the piston for the sole purpose of equalising volumes and maintaining the required volume specified provided:
- 16.4.4.1 The indentation made is within a maximum diameter of 63 (sixty-three) mm.
- 16.4.4.2 The lowest point of the indentation shall be in approximately the centre of the piston.
- 16.5 Camshaft**
- 16.5.1 Camshafts will only be supplied by the Formula Vee Association or its approved supplier.
- 16.5.2 Cam timing may only be altered by means of an adjustable camshaft pulley.
- 16.5.2.1 The duration between cam lobes may not be altered in any way.
- 16.5.3 Cam measurement:



Intake / Exhaust common measurements:

Dimension "A": 48.50 (forty-eight point five) mm maximum

Dimension "B": 37.65 (thirty-seven point six five) mm maximum

Maximum Lobe centre separation: 111.0 (one hundred and eleven) camshaft degrees ± 1 (one) degree

Intake train measurements:

Duration: 253.00 (two hundred and fifty-three) crankshaft degrees ± 2 (two) degrees

Maximum camshaft lift: 11.20 (eleven point two) ± 0.10 (zero point one) mm

Net valve lift: 10.95 (ten point nine five) ± 0.10 (zero point one) mm

Exhaust train measurements:

Duration: 253.0 (two hundred and fifty-three) crankshaft degrees ± 2 degrees

Maximum camshaft lift: 11.20 ± 0.10 mm

Net valve lift: 10.90 (ten point nine) ± 0.10 (zero point one) mm

16.5.3.1 All camshaft measurements to be done using a Cam Doctor Analysis System (except common measurements "A" and "B" where a micrometre is to be used).

16.5.3.2 Camshaft checking height set at 1 (one) mm.

16.5.3.3 Camshaft indexed using split lobe centrelines measurements with lash settings as follows:

Intake valve: 0.25 (zero point two five) mm

Exhaust valve: 0.30 (zero point three) mm

16.5.3.4 All other dimensions (journal thickness etc.) to remain as per VW camshaft

Part no: 049 109 101K or 049 109 101W.

16.5.3.5 All components in the operating train gear, including their dimensions, tolerances, quality and design must be as per standard production, especially with regards to their operating geometry relative to each other.

16.5.4 The cam followers may not be modified in any respect.

16.5.5 Holes may not be drilled in the tappet adjustment shims.

16.6 Cylinder Head and Block

16.6.1 No polishing of ports or combustion chambers are allowed. Furthermore, no material may be added to or removed from within the confines of the combustion chambers and ports.

16.6.2 The cylinder head may be skimmed. In this regard see Art 16.3.

16.6.3 The location of the inlet and exhaust port holes may not be altered.

16.6.4 The valve head protrusion into the combustion chamber shall not be less than 0,20 (zero point two) mm and not more than 1,5 (one point five) mm when measured from the valve head face to the combustion chamber face. This measurement shall be taken between the inlet and exhaust valve heads with valves fully closed.

16.6.5 Damaged or worn valve guides and valve seat inserts may be replaced or relined with any material, provided that the dimensions comply with the original parts except for the valve guide length.

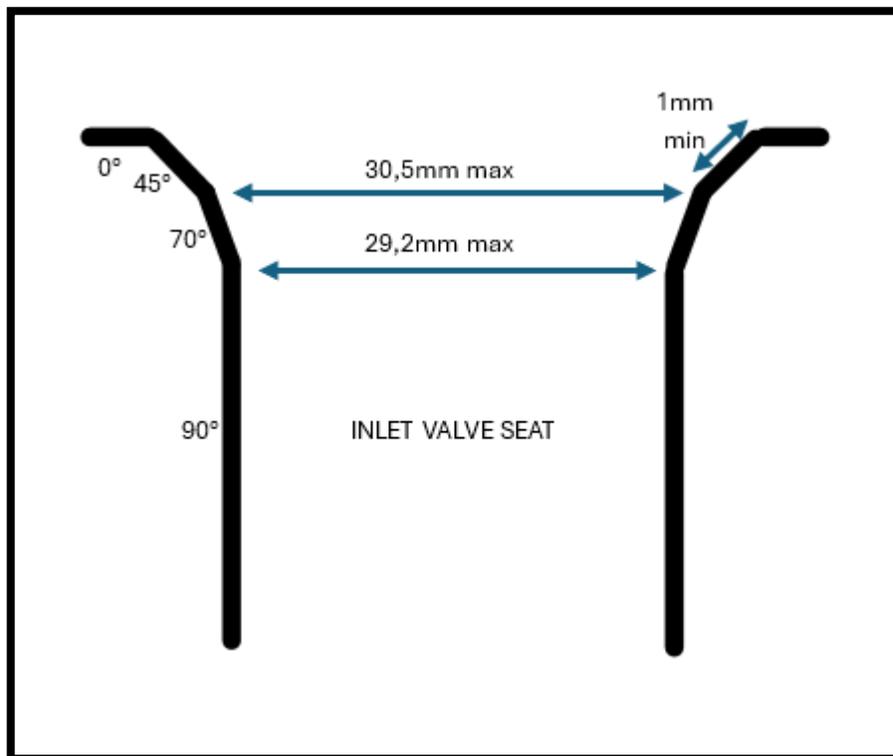
16.6.5.1 The maximum protrusion of the valve guide from the spring boss allowed is 9,0 (nine) mm.

16.6.5.2 The minimum length of the valve guides permitted is 36.0 (thirty-six) mm. Valve Guide lengths may be modified, but may not be shorter than 36 (thirty-six) mm.

16.6.5.3 Valve Guides may only be machined 90 (ninety) degrees to the Valve Guide length.

16.6.5.4 The maximum permitted valve guide protrusion, measured from the spring seat, is 9 (nine) mm.

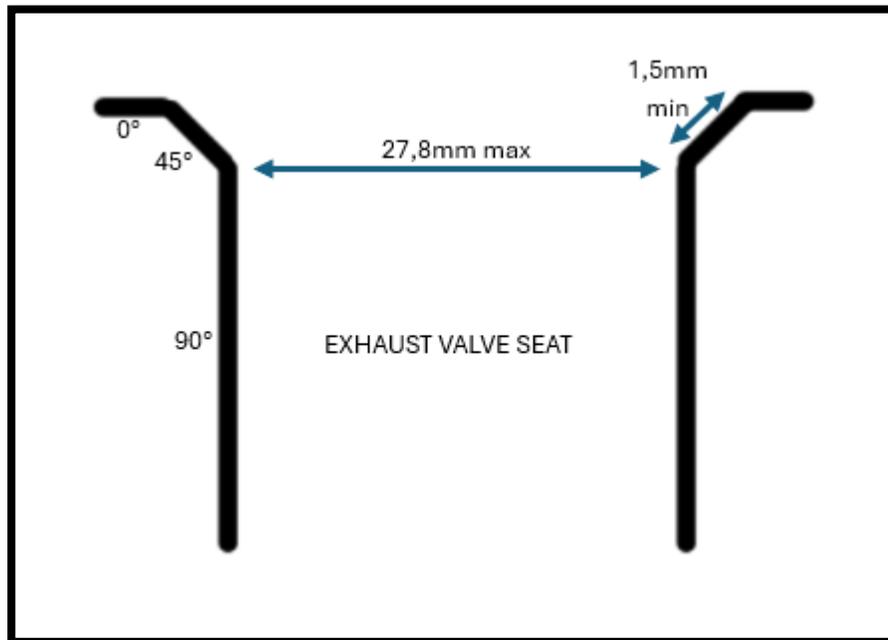
16.6.6 Inlet & Exhaust Valve seats:



16.6.7 The Maximum permitted inlet valve seat insert throat diameter measured at the apex of the 45° (forty-five) seat angle, and the 70° (seventy)° throat angle may not be greater than 30,5 (thirty point five) mm. and when measured at the apex of the 70° and 90° throat angles shall not exceed 29,2 (twenty-nine point two) mm.

16.6.7.1 The Width of the inlet valve seat must not be less than 1 (one) mm.

16.6.7.2 The Valve seat insert diameter must be the same throughout its cylindrical length and must conform to the Volkswagen specifications in all respects.



- 16.6.8 The Maximum exhaust valve seat insert throat diameter measured at the apex of the 45 (forty-five) ° seat angle and the 90 (ninety)° throat angle may not be greater than 27,8 (twenty-seven point eight) mm. Width of exhaust valve seat must not be less than 1,5 (one point five) mm. The Valve seat insert diameter must be the same throughout, in its cylindrical length and must conform to Volkswagen specifications in all respects.
- 16.6.9 Inlet and exhaust port sizes shall not exceed the maximum dimension shown in Art 16.6.18. The foundry casting ridges may not be removed.
- 16.6.10 All valves may have material added/welded up to be lengthened to run a minimum size shim of 3.5 (three point five) mm per valve bucket. However, to allow for grinding, the minimum height of the vertical face of the valve head, measured from the apex of the 45 (forty-five) ° seat angle to the top of the valve head must not be less than 1.0 (one) mm.
- 16.6.11 Exhaust valve head diameter (maximum): 31.4 (thirty-one point four) mm
- 16.6.12 Inlet valve head diameter (maximum): 34.3 (thirty-four point three) mm
- 16.6.13 Valve springs and their retainers must be standard VW GY components. Spacers may be fitted under all valve springs to equalise spring pressure.
- 16.6.14 Non-standard camshaft covers are permitted provided that they do not improve the performance of the engine and are first approved by the FVA prior to being fitted.
- 16.6.15 The oil orifice on the front camshaft bearing saddle may be elongated in the direction or rotation of the camshaft to improve lubrication.
- 16.6.16 An additional tapped hole and corresponding stud may be fitted on the manifold side of the cylinder head for the purpose of securing the VW or DAW inlet manifold.
- 16.6.17 Re-shaping of the cylinder head combustion chamber is not permitted.
- 16.6.18 Port Measurements**



Four (4) measurements are to be taken in exhaust and inlet ports in the positions as indicated above and When the four (4) measurements are added together and divided by 4 (four), the average measurement for exhaust port must not exceed 30,6 (thirty point six) mm and the inlet port measurement must not exceed 33 (thirty-three) mm.

16.6.19 The dimensions of the standard block from the crankshaft centre line to the top face of the block must be 220.0 (two hundred and twenty) mm \pm 0.1 (zero point one) mm.

16.7 Pistons and Rings

16.7.1 Only standard VW pistons, part no. 6KS 107 065B or the equivalents (subject to the approval by the FVA technical committee) with a maximum diameter of 76.49 (seventy-six point four nine) mm (as way, except to balance and equalise volumes).

16.7.2 For the purposes of balancing, material may only be removed from the following internal surfaces of the piston:

16.7.2.1 Below the lowest point of the gudgeon pin housing.

16.7.2.2 From the underside of the piston crown.

16.7.2.3 One piston must remain untouched for balancing purposes.

16.7.2.4 Also see Art. 16.3.4 for equalising of volumes.

16.7.3 The measurement of the highest squish landing protrusion of the piston beyond the top of the cylinder block, with the piston at TDC must be 0.5 (zero point five) mm \pm 0.3 (zero point three) mm.

This measurement may be taken in either of the following ways:

16.7.3.1 The mean of two measurements taken at the widest point of one landing. The piston may be rocked for sequential measurement.

16.7.3.2 By placing a flat bar with a machined surface over the landings of the piston and then winding the piston down until the bar is resting on the cylinder block. Then place a dial gauge in the centre of the bar, zero the gauge and wind the piston up to TDC.

16.7.4 The outer profile of the piston may not be altered in any way.

16.7.5 Gudgeon pins may be fixed in position by either circlips or Teflon buttons.

16.7.6 Oversize piston rings are permitted and allowed modified to suit the bore.

16.8 Connecting Rods

16.8.1 Connecting rods shall be standard VW components, Part No. 053 105 401C.

16.8.2 The minimum mass of a connecting rod assembly, including bolts, nuts and small end bearing but excluding big end bearing shells shall not be less than 627 (six hundred and twenty-seven) grams for a machined assembly.

16.8.3 Machining of a connecting rod assembly will only be allowed on the circumference of the small end and off the big end cap.

16.8.4 No metal may be removed from the shank of the connecting rod.

16.8.5 Polishing is prohibited.

16.9 Crankshaft

16.9.1 The crankshaft shall be the standard VW component, Part No. 0261051013.

16.9.2 The profile may not be altered except for spot machining to achieve balancing. No polishing or deburring is allowed, other than of the bearing journals.

16.9.3 The width of the connecting rod bearing journals may not be altered.

16.9.4 The "groove type" main bearing shell halves are permitted on both upper and lower bearing saddles.

16.9.5 The crankshaft journals may be hard chromed or Nitrided to improve wear characteristics.

16.10 Lubricating System

16.10.1 The standard GY or AGY Oil Pump must be used and may not be modified, except that the relief valve springs may be modified to change oil pressure and the fixing of the retaining plate is free.

16.10.2 The oil pump pick-up may be changed or modified.

16.10.3 Baffles and a windage trays may be fitted.

16.10.4 An external oil cooling system may be fitted were convenient. Any suitable fittings may be used to house the oil filter and the external oil cooling system.

16.10.5 An additional oil drain plug may be fitted to the sump.

16.10.6 The fitting of an oil temperature sensing device is free.

16.10.7 The crankcase breather pipe may be altered but shall be connected to an oil catch tank of at least one (1) litre capacity.

16.10.7.1 The catch tank shall be clearly visible and easily accessible to be checked for oil content and firmly secured.

16.10.7.2 This catch tank must be made of Aluminium or Mild Steel.

- 16.10.8 Any make or type of lubricant commercially available in South Africa through a recognised stockist may be used.
- 16.10.9 The use of high-pressure oil hoses and fittings is compulsory.
- 16.10.10 Oil filter bodies shall be locked or clamped to prevent them coming loose.
- 16.10.11 Sump plugs must be wire-locked.
- 16.10.12 The larger capacity standard sump off current model VW Golfs, Polos and Jetta's, is permitted.

16.11 Electrical

- 16.11.1 The alternator may be removed.
- 16.11.2 The ignition system shall comprise any single coil with either a contact breaker system as found on the VW Golf, Passat and Jetta range or the standard electronic ignition system as used on the GY motor.
- 16.11.3 On the distributor for the GY motor, or its equivalent, the vacuum advance mechanism may be removed, and the advance springs and weights may be modified.
- 16.11.4 The VW Polo solid shaft-type distributor, or its equivalent, may be used.
- 16.11.5 The Hall sender unit and the TCI-H, or their equivalents, may only be used with the standard electronic ignition system and may not be changed in any way.
- 16.11.6 Only 6 (six) or 12 (twelve) volt battery systems may be used.
- 16.11.7 A Circuit Breaker Master switch shall be installed in the main positive battery lead as per SSR 2 vii a.
- 16.11.8 The battery must be secured in a fixed and firm manner.
- 16.11.9 Any form of non-standard engine electronic management system is prohibited and no form of electronic pit to car, or car to pit, communication will be permitted while the car is on track.

16.12 Carburettors

- 16.12.1 Only Weber 40 (forty) DCOE side-draught carburettors may be used. They may not be modified in any way, except as stated below.
- 16.12.2 Only 34 (thirty-four) mm choke tubes may be used and must remain standard as supplied by the manufacturer (with a variable of +/- 0.2 (zero point two)mm).
- 16.12.2.1 If 34 (thirty-four) mm choke tubes are unobtainable then a set of choke tubes may be submitted to the FVA Technical representative for machining out to 34 (thirty-four) mm.
- 16.12.2.2 If a set of smaller choke tubes have already been machined to 34 (thirty-four) mm, they must be submitted to the FVA Technical Committee for approval prior to being installed.
- 16.12.2.3 All machined choke tubes must comply with the profile gauge held by the FVA, if not they shall be ineligible for use in this series.
- 16.12.3 Only F9 (nine) or F16 (sixteen) emulsion tubes may be used. These must remain standard as supplied by the manufacturer.
- 16.12.4 Only 4.5 (four point five) auxiliary venturis may be fitted
- 16.12.4.1 These must remain standard as supplied by the manufacturer, excepting that the external flanging may be machined for the purpose of fitting the ram tubes.
- 16.12.4.2 Grub screws may be used to secure the auxiliary venturis.
- 16.12.5 Air cleaners and air boxes are unrestricted.
- 16.12.6 For the purpose of controlling carburettor bowl ambient pressure, any system may be used, that does not require the carburettor body to be modified in any way, (2) other than blocking or obstructing the existing bowl vent.
- 16.12.7 The throttle spindle may be shortened externally to accommodate the gap between the two (2) carburettors when mounted on the manifold.
- 16.12.8 The choke mechanism (starting device) may be rendered inoperative or removed.
- 16.12.9 The vibration mountings used between the carburettor and inlet manifold may not be thicker than 10 (ten) mm.

16.13 Inlet Manifold

Only the following cast alloy manifolds are allowed:

- i) The original DAW Racing manifold.
 - ii) The VW locally manufactured manifold.
 - iii) The Formula Vee Association Manifold.
 - iv) Any manifold manufactured with similar measurements to the manifolds above.
- 16.13.1 The inlet manifold ports may be re-profiled to match the cylinder head ports, and the carburettor throats.
- 16.13.2 Dowel pins may be used, or bushes may be counter sunk in the manifold to accurately match manifold and cylinder ports.

- 16.13.3 Carburettor or manifold support brackets may be fitted.
- 16.13.4 The length of the manifold when measured externally from the top of the carburettor flange side to a plane parallel to the cylinder head flange side must be no longer than 95 (ninety-five) mm:
 - 16.13.4.1 DAW racing manifold: 65 (sixty-five) mm \pm 4 (four) mm.
 - 16.13.4.2 VW manifold: 76.5 (seventy-six point five) mm \pm 4 (four) mm.
 - 16.13.4.3 FVA manifold: 86 (eighty-six) mm \pm 4 (four) mm.
- 16.13.5 Only the FVA Manifold may be mounted with a spacer plate which fits between the manifold and cylinder head.
 - 16.13.5.1 The thickness of the spacer plate must be 15 (fifteen) mm \pm 2 (two) mm.
 - 16.13.5.2 The spacer plate may be machined to accept "O" rings for the purpose of sealing against the cylinder head and manifold.

16.14 Cooling System

- 16.14.1 Heat exchangers (Radiators) are unrestricted.
- 16.14.2 The overflow pipe from the cooling system must be directed into a separate catch tank of at least one (1) litre capacity.
- 16.14.3 Fenner or equivalent tooth belt taper lock couplings and pulleys may be used to drive the water pump from the crankshaft, and the standard "V" belt pulleys may be removed.
- 16.14.4 If "V" belt pulleys are retained, Jockey pulleys may be fitted to tension the "V" belt. Any "V" belt and pulley combination may be utilised.
- 16.14.5 Coolant / water tubes including radiators are permitted within the driver's compartment, provided they are totally screened from the driver by aluminium or fibreglass.
- 16.14.6 Chassis tubes may NOT be used as a means of ducting coolant / water.

16.15 Exhaust System

- 16.15.1 Any exhaust system may be fitted, but the following shall apply. The lower edge of the outlet orifice/s of the exhaust pipes shall not be less than 10 (ten) cm nor more than 60 (sixty) cm from the ground.
- 16.15.2 The outlet orifice/s shall not protrude more than 25 (twenty-five) cm beyond the rear of the transmission selector housing bush and may not deviate more than 22 (twenty-two) degrees from the horizontal axis.
- 16.15.3 Exhaust systems must comply with GCR 245 "Silencing of Vehicles".

17 EXCEPTIONS – ON THE CHASSIS

Only for cars constructed and registered before 31st January 2002, the article number referred to shall read as follows:

- 17.1 On cars constructed and registered before 1st January 2001, a continuous length of at least 35 (thirty-five) mm outside diameter round mild steel tubing with a minimum wall thickness of 2 (two) mm is permitted.
- 17.2 Must be welded, high-tensile alloy brazed or bolted in. Where a support is bolted in, the bolts or cap screws used must be at least 10 (ten) mm in diameter and be high-tensile with a minimum grade of 8.8. If a hole is drilled through a tube it must have an insert welded or high-tensile alloy brazed into it to prevent the tube distorting when bolts are fastened. Holes may **NOT** be made in the roll-over bar. It is preferred that tags (one (1) each side of the support tube in order to put the bolt into double shear) be utilized. The tags must be made of at least 3 (three) mm thick steel plate with a minimum square size of 30 (thirty) mm x 30 (thirty) mm in size. Where a support is attached to the engine the following will apply:
 - A steel plate not less than 5 (five) mm in thickness must be secured by two (2) or more high tensile bolts with a minimum diameter of 8 (eight) mm and Grade 8.8 material. (There are 8 (eight) mm tapped holes on the right-hand side and the front face of the block. This is also 10 (ten) mm tapped holes on both sides of the block that may be utilized.)
- 17.3 On cars constructed and registered before the 1st January 2001, two individual rollover bars can be made up of continuous length of at least 35 (thirty-five) mm outside diameter round mild steel tubing with a minimum wall thickness of 2 (two) mm.
- 17.4 On cars constructed and registered before the 31st January 1999, the supports shall be mounted not more than 1/3 (one third) of the roll bar height from the top of the apex.
- 17.5 Front shock absorber uprights may only be removed if a steering bulkhead roll-over bar is fitted, which complies with Art. 3.10

2026 FORMULA VEE NATIONAL CHALLENGE SERIES SPORTING REGULATIONS

ART

1. CONTROLLERS

MSA shall have overriding authority in respect of all aspects of the series series. The Formula Vee Association shall be responsible for the normal administration of the series, subject to the aforementioned and specifically subject thereto that each competitor shall take part in any competition voluntarily and at his/her own risk, acknowledging the risks, dangers and perils attendant upon motor racing, its rules and the technical specifications for competition vehicles.

2. AIM OF THE SERIES

To declare a 2026 SA Formula Vee National Challenge Winner.

3. RULES AND REGULATIONS

- 3.1. All qualifying races will be held under the General Competition Rules and Standing Supplementary Regulations of Motorsport SA, these standing regulations, and the supplementary regulations issued by the promoters.
- 3.2. The GCR's and SSR's must be read and understood in addition to these regulations and specifications. All competitors must be in possession of an MSA Regional Circuit Car licence.

4. ELIGIBILITY OF CARS AND DRIVERS

- 4.1. The series will be open to cars complying with the 2026 Regulations and Specifications for Formula Vee cars. Organisers may not accept any car that does not comply with these specifications.
- 4.2. All Formula Vee cars must be registered with the Formula Vee Association.
 - 4.2.1. On registration a chassis plate will be issued, which must be attached to the car with rivets or bolts and must be mounted inside the cockpit of the car so that it is always visible.
 - 4.2.2. No car will be allowed to compete without the registration plate attached as per the regulations.
- 4.3. Eligibility of cars will be checked at either a pre-season inspection or at the first event of the year, prior to the start of official qualifying session, or if a new car is joining in the association for the first time.
- 4.4. Competitors who are turning 15 years of age in the Series year of Competition, may apply for their licences at MSA as per SSR1 of the Circuit Racing Regulations. Competitors who have either previously raced in a National Kart Series or other Circuit Categories, or have sufficient other racing experience to the satisfaction of the Formula Vee Committee, Driver Coach, Technical Consultant and MSA Sporting Services Manager

5. SERIES

- 5.1. The 2026 Motorsport Calendar is available from MSA and gives details of all series event dates.
- 5.2. There will be two races for Formula Vee cars at all race meetings excepting where an organiser has obtained special permission from MSA to run a single longer race, or in cases of "force majeure", race heats will consist of 12 laps.
- 5.3. Coastal races will consist of 3 heat races. Racetracks that are eligible: Dezzi Raceway/East London/Port Elizabeth, Killarney & Maputo.
- 5.4. Refer SSR 82 (i) in connection with the minimum number of starters required.
- 5.5. Points will be scored in each race as follows:

1st	- 20 points	7th	- 11 points	13th	- 5 points
2nd	- 17 points	8th	- 10 points	14th	- 4 points
3rd	- 15 points	9th	- 9 points	15th	- 3 points
4th	- 14 points	10th	- 8 points	16th	- 2 points
5th	- 13 points	11th	- 7 points	17th	- 1 point
6th	- 12 points	12th	- 6 point		

An additional bonus point will be awarded to the competitor setting the fastest lap time at each race meeting.
- 5.6. Starting grid positions will be determined as per SSR XII 26 iii) & v): Grid positions shall be determined by qualifying times. Races 2 (two) and 3 (three) starting positions shall be determined by finishing order in the previous race.

- 5.7. An additional bonus point will be awarded to the competitor obtaining the overall fastest lap during official qualifying.
- 5.8. Where only one (1) race of a longer duration is scheduled in the event SR's, then double the number of points listed above will be scored.
- 5.9. All races will be scored towards the National Challenge series.

6. SEPARATION OF TIES

The competitor with the greatest number of first place points in all series races (not race meetings) will be declared the series winner. If this does not resolve the tie, then the greater number of seconds, failing these thirds and so on will be used to resolve the tie. If a tie still remains, then MSA will declare a winner on such basis as it deems fit.

7. COMPETITION NUMBERS

- 7.1. Competition numbers shall comply with SSR 4, with the exception that the width and height of the numbers may have a minimum size of 40 (forty) mm x 230 (two hundred and thirty) mm x 160 (one hundred and sixty) mm respectively.
- 7.2. Number "1" (one) shall be reserved for the current Formula Vee winner, but should the current winner not be competing, then this number will not be allocated.
- 7.3. Before a number is allocated to a competitor campaigning a newly constructed or rebuilt car, the car shall be inspected by a competent person/s appointed by the Association to examine the car for good engineering practice and general compliance with the specifications. The Association reserves the right to request that a car be presented for inspection at any time.
- 7.4. Cars not meeting the safety and aesthetic standards as judged by the Formula Vee Association will not be allowed to compete.

8. ADVERTISING

- 8.1. Where applicable, series sponsor decals must be prominently displayed on the car - one on the nose cone and one on each side of the car, above the wheel centre line and on the airbox **or where the sponsor dictates**.
- 8.2. Any competitor failing to display these decals in an approved position on the car or displaying decals conflicting with the agreements reached between the Association and the sponsor/s shall be precluded from receiving any benefits and prize or traveling monies paid out by those sponsors (see GCR 246).
- 8.3. Failure to display the series sponsorship decals will result in the competitor not being allowed to partake in any official race, up until such point that the decals are placed in the correct positions as requested by the sponsor(s)
- 8.4. A competitor not registered as a bona-fide member of the Formula Vee Association, irrespective of him/her displaying decals in compliance with this Article, shall be precluded from receiving any benefits, prize or traveling monies paid out by the sponsors.
- 8.5. These decals shall be supplied by the Formula Vee Association.
- 8.6. At the request of the FVA Committee, a FVA decal must be prominently displayed on the front of the car.
- 8.7. Sponsorship decal placements for 2026:
 - 8.7.1. FRONT & REAR VIEW

FRONT

ATS – to be displayed on the nose cone above the driver number as displayed below.

DOE – To be displayed on the nose underneath the driver number as displayed below.

REAR

ATS – to be displayed on the engine cover as displayed below.

8.7.2. SIDE VIEW

DOE Quality parts / CIM series logo – To be displayed on the airbox

1st Race – to be displayed on both side of the car between the wheels,

CIM Lubri Fuel – on both sides of the nose cone

Dunlop – on both sides of the nose cone

DOE Quality Parts/StartMyCar– must be prominently displayed on both sides of the car

Prolong – must be prominently displayed on both sides of the car

Basically Branding - must be prominently displayed on both sides of the car

9. POST RACE SCRUTENEERING

9.1. Scrutineering/stripping at the discretion of the TC.

9.1.1. Race meetings shall have post-race checks/stripping done after final race of the day or at the discretion of the TC. (see GCR 252 & 254)