TECHNICAL REGULATIONS - SCHEDULE V GOVERNING THE 2026-27 NEW ZEALAND FORMULA FIRST CHAMPIONSHIP

PREAMBLE

MotorSport New Zealand Inc hereby declares the following Technical Regulations to be those governing Competition for Competitors in the MotorSport New Zealand NZ Formula First Championship.

These Technical Regulations are at all times to be read in conjunction with:

- The MotorSport New Zealand National Sporting Code (NSC) and its appropriate Appendices and Schedules, specifically Schedule Z being the Standing Regulations applicable to all Races;
- The Sporting Regulations; and
- The Event Supplementary Regulations.

The Championship is held under a MotorSport New Zealand Sanctioning Permit No: **269023**

~~Formula First is for single-seater open wheel race cars based on standard Volkswagen 1200 Series Type 1 mechanical components – as fitted to New Zealand model (imported by VW Motors NZ Ltd) 1954-65 sedan cars, being restrictive in specification, to emphasise driver ability as opposed to mechanical advantage.~~

COMPETITOR RECORD OF AMENDMENTS ISSUED TO THIS SCHEDULE

~~Use this table to keep a record of all official Amendments issued during the season relative to this Schedule;~~

MotorSport New Zealand may amend or clarify these Technical Regulations by issuing Amendments, authorised by the Chief Executive Officer or their representative.

All Amendments issued during the season are recorded in the table below:

Amendment Number	Issue/Effective Date	Article Reference	Subject/Notes

1.0 GENERAL CONDITIONS

1.1 ~~This Schedule~~ These Technical Regulations shall be read in conjunction with the safety schedule as detailed in Appendix Two, Schedule A of the current MotorSport New Zealand Manual.

1.2 All text changes from the previous issue of ~~this Schedule~~ these Technical Regulations are highlighted such. Text changes for grammatical and/or formatting reasons are not highlighted.

1.3 ~~Formula First/Vee racing cars~~ All vehicles competing in Events to which these Technical Regulations apply shall have a valid MotorSport New Zealand Logbook.

1.4 TECHNICAL ELIGIBILITY AND SAFETY EQUIPMENT ENQUIRY:

1.4.1 Where any doubt may exist in understanding any regulation contained within these Technical Regulations ~~this Schedule~~ it will be understood that it is the Competitors obligation to enquire as to the correct interpretation. All technical eligibility and/or safety equipment enquiry shall be submitted in writing to:

(1) The Championship Scrutineer, as detailed in the Championship Articles, then to

(2) The MotorSport New Zealand Technical Manager

1.4.2 All enquiries should detail the Article in question and the specific subject matter.

1.4.3 A written reply will always be given to a written enquiry.

1.4.4 On matters of technical eligibility and/or safety compliance, a verbal statement will have no validity.
~~The Technical Manager~~
~~MotorSport New Zealand Inc,~~
~~P.O. Box 133,~~
~~Paraparaumu, 5032.~~
~~**Phone:**04 815 8015~~
~~**Email:** devan@motorsport.org.nz~~

1.5 Any Component and/or parts of the engine, the transmission, the front suspension and the brakes may not be altered, modified or changed, in any way unless specifically permitted in the Technical Regulations ~~authorised hereinafter~~.

2.0 DEFINITIONS

2.1 Definition of terms used within ~~this Schedule~~ these Technical Regulations shall ~~only~~ be referenced from the National Sporting Code, Appendix Two Schedule A, and as detailed below.

'Article(s)' means a numbered provision within these Regulations or within the National Sporting Code, as identified by its number (and sub-number, where applicable). Article headings/titles are included for ease of reference only. References to an Article include all sub-clauses of that Article unless otherwise stated.

'Championship' means the New Zealand Formula First Championship for vehicles complying with these Technical Regulations - Schedule V.

~~**'FVANZ'**~~ **'Club'** means the Formula First (Vee) Association of New Zealand (Inc.).

'Direct replacement' means a component sourced from another manufacturer, to that of the original manufacturer, which is a 'direct' replacement in level of duty, function and design to the component it replaces, and can be fitted without making any additional modifications.

'National Sporting Code' or **'NSC'** means the National Sporting Code issued by MotorSport New Zealand from time to time.

'Race trim' means the condition in which the car competes and shall include the driver, all safety apparel, all vehicle fluids and any ballast necessary to maintain weight compliance.

'Regulation(s)' means a formal body of rules, or any distinct set of provisions within such a body, approved by MotorSport New Zealand, governing any aspect of a Series or Championship.

'Round' means the race meeting at which Drivers may score points towards the Series.

'Standard' means as supplied and/or manufactured by Volkswagen.

~~**'Schedule A'** means the 'Driver and Vehicle Safety' requirements as detailed in Appendix Two Schedule A of the current MotorSport New Zealand Manual.~~

3.0 MOTORSPORT NEW ZEALAND OFFICIAL SEALS/SEALING REQUIREMENTS

3.1 Official seals:

3.1.1 The definitive text regarding official seals is detailed in Appendix Two – Schedule A, Part One, Article 3.7 of the ~~current~~ MotorSport New Zealand Manual.

3.2 Category 'C' seals may be applied to the following components or assemblies of components at any time at the sole discretion of the Championship Scrutineer~~ or their appointed representative~~:

3.2.1 Engine crankcase halves

3.2.2 Engine crankcase to bell housing: ~~not~~ Starter motor mounting bolts are not acceptable

3.2.3 Cylinder head to crankcase: only one side required

3.2.4 Differential covers on both sides

3.3 It is the Competitor's responsibility to ensure that fixations/flanges are pre-drilled with 3mm holes.

3.4 Seal Maintenance requirements:

3.4.1 Should a Competitor require permission to remove a Category 'C' seal for maintenance purposes, it is essential that prior authorisation be sought from the Championship Scrutineer prior to the seal being broken.

3.4.2 Away from a Round, all requests to remove seals must be in writing and submitted to the Championship Scrutineer.

3.5 MotorSport New Zealand reserves the right to apply a surcharge for such requests away from a Round of the Championship to cover any expenses incurred. ~~by its volunteer Officials. Refer Championship Articles for Championship Scrutineer contact details.~~

4.0 SAFETY EQUIPMENT/SAFETY ITEMS

4.1 A Protective Helmet in combination with a Frontal Head Restraint device (FHR) shall be worn by all Competitors.

4.1.1 The helmet shall comply and be labelled with the standards outlined in Appendix Two Schedule A Part One Article 4.1 Protective Helmets (2) Approved Helmet Standards and

4.1.2 The Frontal Head Restraint device (FHR) shall comply and be labelled with the standards outlined in Appendix Two Schedule A Part One Article 4.2 Frontal Head Restraints (FHR) (2) of the MSNZ Manual.

4.2 Protective Clothing shall be worn in compliance with Appendix Two Schedule A of the MSNZ Manual for National status Championship events.

4.2.1 Gloves must be of a colour which contrasts with the predominant colour of the car, so that the Driver can clearly draw the attention of Officials ~~the race starter~~ in case of difficulties.

4.3 Roll protection – cars with a logbook issued prior 30 September 2005:

4.3.1 A rollbar shall be incorporated in the design of the chassis frame positioned immediately behind the driver's seat.

4.3.2 The top of the rollbar shall be at least 50mm above the top of the driver's helmet when in their normally seated driving position.

4.3.3 Additionally, the chassis/frame design should incorporate a substantial support structure (front rollbar) forward of the main rollbar, such that the driver's head will at all times remain below an imaginary line taken between the tops of both bars.

4.4 Roll protection – cars with a logbook issued post 30 September 2005:

4.4.1 Two rollbars shall be incorporated as follows:

(1) The first being positioned in front (front rollbar) of the steering wheel, not more than 250mm forward of, and at least as high as the top of the steering wheel rim.

(2) The second (rear rollbar) shall be at least 500mm behind the first and high enough to provide a minimum of 50mm clearance between the driver's helmet and the top of the rollbar.

(3) The measurement shall be checked by drawing an imaginary line between the tops of both rollbars with the driver in their normally seated position. See Appendix One ~~(refer~~ Diagram 1 ~~4.1)~~ of these Technical Regulations.

(4) The rear rollbar shall have a minimum height of 920mm measured from the base of the seat and a minimum width of 330mm, measured between the two vertical bars at a height of 600mm above the seat base.

(5) There shall be at least one (1) rearward brace of the same diameter as the rollbar, extending from the top of the rear rollbar at an angle not exceeding 60° with the horizontal.

(a) If two (2) rear braces are fitted the tube diameter may be reduced to a minimum of 20mm.

4.4.2 The material shall have a minimum tensile strength of 350 Mpa.

4.4.3 MotorSport New Zealand Homologation is mandatory as set out in Appendix Two Schedule A Part One Article 4.6, Safety Structures (Roll Protection) (3) Certification Requirements of the MSNZ Manual.

4.5 Roll protection – vehicles with a logbook issued post 30 June 2021:

4.5.1 Designs shall incorporate a main rollbar being the principle rollbar, a front rollbar, being the forward most rollbar and lateral bracing stay/s in compliance with the following:

(1) The main rollbar and the front rollbar shall be positioned symmetrically to the longitudinal centre-line of the vehicle, with the main rollbar positioned rearward of the driver, and the front rollbar positioned forward of the steering wheel, and

(2) The main rollbar shall extend transversely across the cockpit with the outer most edge extending at least 100mm beyond the drivers' helmet when in their normal seated position, and

(3) The minimum height of the main rollbar shall be dictated by the calculated height necessary to ensure that the drivers' helmet remains 50mm below an imaginary line drawn between the tops of the main and front rollbars. See Appendix One ~~refer~~ Diagram 1 ~~4.1)~~ of these Technical Regulations, and

(4) Either two (2) rearward or two (2) forward facing bracing stays shall be fitted with symmetrical connection to the main rollbar within 150mm of the top bend; or

(5) Alternatively, a single rearward facing bracing stay is authorised where its top connection is positioned centrally to the top of the main rollbar. Braces shall exceed an angle of 30° from the vertical and be straight, and

(5) The bracing stays shall be directly welded or have demountable joints.

(6) The tubes used for the main and front rollbars shall be made from SAE 4130 CDS tube or equivalent material and be at least 35mm in diameter and have a wall thickness of at least 2.5mm. The tubes used for the braces shall be of the same material and wall thickness, however the diameter may be reduced to not less than 26mm.

4.6 Alternative Design:

4.6.1 Safety Cages that may differ from the minimum material and design specifications of this Schedule shall be classified as 'Alternative Design'.

4.6.2 Constructors shall submit details of their alternative design to MotorSport New Zealand for consideration, prior to construction.

4.6.3 All of the design variations must be identified, in particular the material specification and dimensions, the optional reinforcing members, and the mounting details.

4.6.4 Construction under alternative design shall also require certification by a qualified Engineer, representing the constructor.

4.6.5 The design must be shown to withstand the stress minima outlined in Appendix Two Schedule A Part Two Article 5.7 (2) of the MSNZ Manual with an engineering report supporting the calculations.

4.6.6 This engineering report must accompany the Safety Cage Homologation Application.

4.7 A six strap safety harness with current standard shall be installed in compliance with Appendix Two Schedule A of the MSNZ Manual.

4.8 The fitment of head restraints and/or padding along the inner top edge of the cockpit opening is highly recommended.

4.9 A fire extinguisher shall be installed in compliance with Appendix Two Schedule A of the MSNZ Manual.

4.10 All fluid pipes passing through the cockpit shall comply with Appendix Two Schedule A of the MSNZ Manual.

4.11 A high intensity red LED rear rain light which is mandatory to be in operation when the session and/or race is declared 'WET' shall be fitted as follows:

4.11.1 The light shall be operated from the cockpit; and

4.11.2 Approved by FVANZ; or

4.11.3 The light shall be at least 15 watts, or equivalent LED, and

4.11.4 The rain light must have a minimum of 75% of individual LEDs operable; and

4.11.5 The light shall be mounted facing rearwards within 100mm of the car's centreline, and no lower and further forward than the rear axle centreline; and

4.11.6 The light shall be clearly visible 30 degrees either side of the car's centreline.

4.12 An electrical circuit breaker, easily reached from inside as well as outside the vehicle ~~car~~ shall be fitted in compliance with Appendix Two Schedule A of the MSNZ Manual.

4.12.1 The location of the circuit breaker shall be indicated by a 'blue triangle/spark symbol' situated on the outside of the vehicle ~~car~~.

5.0 FUEL

5.1 **Fuel:** The only fuels permitted for use in a vehicle are:

5.1.1 Unleaded 91 Octane (RON) Regular Grade petrol commercially available from retail service station forecourt pumps throughout New Zealand and complying with the specifications as detailed in the current edition of the MotorSport New Zealand Manual, or

5.1.2 Unleaded 95 Octane (RON) Premium Grade petrol commercially available from retail service station forecourt pumps throughout New Zealand and complying with the specifications as detailed in the current edition of the MotorSport New Zealand Manual, or

5.1.3 Unleaded 98 Octane (RON) Premium Grade petrol commercially available from retail service station forecourt pumps throughout New Zealand and complying with the specifications as detailed in the current edition of the MotorSport New Zealand Manual.

5.2 Additives of any kind, specification or chemical composition shall not be added to the fuel nor may a blend of two (2) or more fuels be used.

6.0 RACING WEIGHT AND VEHICLE DIMENSIONS

6.1 **The minimum racing weight** is 480 kg.

6.2 **The racing weight** is the complete weight of the car in 'race trim' which may be measured at any time during the competition, on the official weigh scales of the meeting.

6.3 **Ballast** may be used to achieve the racing weight requirement.

6.3.1 All ballast shall be securely bolted using a minimum of a M8 grade 8.8 bolts for each 3 kilograms of ballast.

6.3.2 The ballast shall be affixed to a substantive mechanical structure such as the chassis, floor, engine or gearbox with provision made for the application of official seals as required.

6.4 **Wheelbase:**

6.4.1 The maximum wheelbase is 2220mm and the minimum wheelbase is 2070mm.

6.5 **Front and rear track:**

6.5.1 The maximum front and rear track is 1580mm.

6.5.2 The measurement shall be taken between the outermost points of the wheel rims at centre height of the rim, with the wheels steered straight ahead.

6.6 **Overall length:**

6.6.1 The maximum overall car length is 4070mm, ~~(overall length~~ including all parts of the vehicle ~~car)~~.

7.0 CHASSIS

7.1 **The chassis** shall be a space-frame design, constructed of steel tubing/box being a maximum diameter/width of 100mm, and shall be of a safe and suitable design.

7.1.1 Monocoque construction is not authorised.

7.2 **Seating position:**

7.2.1 With the driver in their normal driving position, no part of their body may extend forward of the front axle centre line.

7.2.2 The driver's feet shall be positioned forward of their head.

7.3 Cockpit design:

7.3.1 The driver shall be able to enter/exit their seat without the need to remove any part of the car, excepting a quick-release steering wheel.

7.3.2 The cockpit design shall enable the driver to exit the car from a belted-in position within seven (7) seconds in compliance with Appendix Two Schedule A of the MSNZ Manual.

8.0 BODYWORK AND DUCTING

8.1 Bodywork shall comply with Appendix Two Schedule A of the MSNZ Manual and shall incorporate removable panels to permit inspection of all mechanical components.

8.1.1 Air intake openings, scoops, ducts, and deflectors may be incorporated into the bodywork.

8.2 The body shape is free, providing no part extends laterally more than 714mm beyond the vehicle's longitudinal centreline.

8.3 Any aerofoils/spoilers shall comply with Appendix Two Schedule A of the MSNZ Manual.

8.4 A bulkhead shall be fitted to provide a sealed firewall between the cockpit and the engine compartment, to a minimum height of 635mm above ground level.

8.5 An engine cover is optional but recommended.

8.6 Trailing arm rear pivot mounting points: their position being free.

8.7 ~~With the exception~~ Ducting of air is free subject to the provisions of Article 8.7.1 below~~ ducting of air is free.~~

8.7.1 The use of radiators/heat exchangers to cool the air to the carburettor inlet is not authorised.

9.0 ENGINE

9.1 Engine Type:

9.1.1 Shall be a standard flat four VW 1200 (41.5 hp) Type 1 engine, as fitted to VW sedans imported by VW Motors Ltd and respect the following requirements:

(1) Any engine part listed by Volkswagen New Zealand as a current or superseded replacement engine part is authorised.

(2) Any Type 1 crankcase is allowed.

(3) The fitment of sleeve inserts is allowed and machining of the crankcase to accommodate the inserts is permitted to facilitate the installation of VW 1200 cylinder barrels in larger crankcases.

(a) This ensures the cylinder barrel spigot aligns correctly in the crankcase.

(b) Refer to Appendix One Diagram 2 of these Sporting Regulations for the unmodified version; and Fig~~ure 9.1(1) and~~

(c) Refer to Appendix One Diagram 3 and Diagram 4 of these Sporting Regulations for the version with sleeves installed. ~~Figures 9.1(2) and 9.1(3) below)~~.

(4) Machining of the crankcase is permitted to allow fitment of inserts to facilitate the installation of VW 1200 cylinder barrels in order for the cylinder barrel to spigot correctly into the crankcase.

(a) Refer to Appendix One Diagram 2 and Diagram 3 of these Sporting Regulations for the version with sleeves installed. ~~(refer Figure 9.1(1) [unmodified] and Figure 9.1(2) [sleeve inserted] below).~~

9.2 Engine mountings are free.

9.3 Engine balancing:

9.3.1 Standard reconditioning practice shall be respected when balancing reciprocating and rotating parts of the engine ~~(including the clutch assembly)~~.

9.3.2 Component minimum weights shall be respected during the reconditioning process.

9.4 CYLINDER HEADS:

9.4.1 Intake Ports may be modified as follows:

(1) Polishing:

(a) The intake port may be polished.

(2) Size:

(a) The diameter of the intake port shall not exceed 29mm, measured at the port face.

(3) Port Face:

(a) The surface of the head, at the port/inlet manifold mating face, shall remain horizontal.

(b) The inlet port may be modified by argon welding provided that the port face is not higher than 12mm above the top of the edge of the rocker cover mounting face and no part of the port (at the port/inlet manifold mating faces) shall extend laterally more than 17mm past the centreline position of the studs affixing the inlet manifold. The centreline of these studs shall remain standard and coincides with the centres of the shroud bolt mounts.

(4) Intake manifold 'O' rings are optional.

(5) The 'O' ring recess in the cylinder head may be enlarged to accept model 'D type' 'O' rings or the recess may be filled.

9.4.2 Cylinder Head Combustion Chamber Flat Face/Cylinder Barrel Interface Surface:

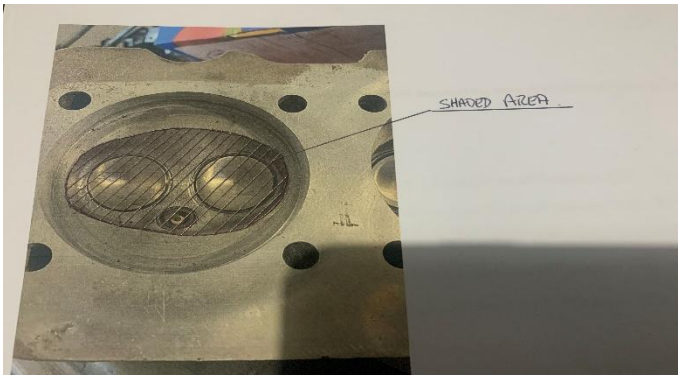
(1) The flat surface of the combustion chamber shall remain as one with the cylinder head/cylinder barrel interface surface and on the same plane.

(2) It is prohibited to machine a recess into the combustion chamber flat face to accommodate the cylinder barrel.

(3) A tolerance of 0.05mm is permitted on this surface to account for wear and tear.

9.4.3 As one of the ways of controlling the maximum compression ratio, the cylinder head combustion chamber shall be deemed to be the volume under the *'shaded area'* in the picture below and that may be modified provided a minimum volume of 39cc is maintained.

Picture showing the shaded area described in Article 9.4.3 above.



(1) The following method of measurement shall be employed ensuring that a minimum of 20 minutes has elapsed after the engine has been running:

(a) **Equipment:**

- Burette
- Transparent flat plate with suitable holes to allow both filling/air bleeding.
- Checking fluid being a 50/50 mix of Kerosene and ATF.

(b) **Method:**

- Seal the plate to the cylinder head/barrel interface with a thin smear of grease.
- Fill combustion chamber from burette to establish volume.

(2) ~~Note:~~ Carbon may be removed from the combustion chamber prior to the measurement being performed.

9.4.4 Exhaust ports may be polished provided, the diameter of the exhaust port shall not exceed 33mm, within 5mm of the port face.

9.4.5 **Valves:**

(1) Valves may be polished and/or contoured.

(2) Valve material is free however titanium valves are not permitted.

(3) The following maximum valve dimensions shall be respected:

(a) Inlet valve maximum diameter: 31.5mm

(b) Exhaust valve maximum diameter: 30.0mm

9.4.6 Valve springs and shims are free, provided only one spring per valve is used.

9.4.7 **Valve guides:**

(1) The guides shall have a nominal bore of 8mm.

(2) That portion of guide that extends into the port may be modified or may be removed and contoured to the port.

9.4.8 **Rocker shafts:**

(1) Solid aftermarket rocker shafts are authorised.

(2) The Standard 'wave' spacers may be replaced with solid spacers. ~~Additionally,~~

(3) The shaft pedestals may be shimmed to enable valve lift adjustment.

9.4.9 Valve retainers and retainer cotters are free provided they are of ferrous material.

9.4.10 **Rockers:**

(1) The following ratios are authorised:

(a) 1.0 to 1.0; or

(b) 1.1 to 1.0.

9.4.11 Rocker covers may be modified to enable breathing.

9.5 **Cylinder barrels and Pistons:**

9.5.1 The following standard dimensions and tolerances shall be respected:

9.5.2 **Nominal Bore:** 77.0mm

9.5.3 Pistons – 77.0mm:

(1) Any flat-top piston conforming to VW 1200 specifications can be used.

(2) The minimum weight of each piston is 260 grams.

(3) Pistons shall not be modified except as prescribed in Article 9.5.4 and 9.5.5 and for re-grooving to fit piston ring inserts.

9.5.4 Piston balancing and minimum weight may only be achieved by machining the inside of the piston.

(1) Pistons are to be weighed:

(a) without rings, gudgeon pins, gudgeon pin circlips or Teflon bushes;

(b) ~~but shall include~~ with a ring insert when one is fitted.

9.5.5 Piston to barrel (deck height):

(1) At no time shall the piston be less than 1mm below the top face of the cylinder barrel.

(2) The 'deck height' may only be achieved by machining any previously machined surface including the top face of the piston, providing that the total surface is machined on the same plane as the previously machined surface or by placing shims under the cylinder barrels.

(3) The following method of measurement shall be employed ensuring that a minimum of 20 minutes has elapsed after the engine has been running:

(a) The deck height may be measured ~~after a minimum 20-minute cool down period~~ using a MotorSport New Zealand approved 1mm step gauge (torqued to 12 ft lbs).

(b) An effort of no more than 20 ft lbs applied at the front engine pulley shall enable the engine to be turned through top dead centre (TDC).

(c) The method of checking this shall be by the respective piston being brought up to TDC (as close as possible to the step tool) and then the engine must turn over (pass through TDC) with 20 ft lbs of torque or less.

(d) Carbon may be removed from the top face of the piston.

(e) The spark plugs and rocker gear on opposing cylinders maybe removed prior to performing the measurement.

9.5.6 Stroke: 64.00mm +/- 0.02mm.

9.5.7 Gudgeon pin circlips may be replaced by Teflon bushes.

9.5.8 Gudgeon pin minimum weight shall be 86 grams.

9.5.9 Compression rings shall be either a nominal 2.0mm width or a nominal 2.5mm width and of standard VW configuration, but of any make.

(1) First (top) ring shall be either a nominal 2.0mm width or a nominal 2.5mm width and of standard VW configuration, but of any make.

(a) The width shall be measured where the ring touches the bore.

(b) The compression ring ~~it~~ must be one piece.

(2) Second ring shall be either a nominal 2.0mm width or a nominal 2.5mm width and of standard VW configuration, (one piece), but of any make.

(3) Third (Oil) ring may be of 2 or 3-piece configuration.

9.5.10 Barrels may be relieved where they overlap the combustion chamber ends in the cylinder heads

9.6 Connecting Rods:

9.6.1 A minimum weight of 460grams shall be respected ~~to include.~~

(1) The minimum weight shall include the gudgeon pin bush and big end cap/bolts

(2) The big end caps may be dowelled.

(3) Polishing is specifically prohibited.

9.6.2 Direct replacement VW Connecting Rods that meet the specifications in Article 9.6.1 above may be used.

(1) The original size of the big and little end is to remain as per the original VW Connecting Rod specification

9.7 Crankshaft:

9.7.1 The crankshaft may only be machined to accommodate standard factory oversize/undersize crankshaft bearings;

9.7.2 The case may be machined to accommodate the use of standard factory oversize/undersize crankshaft bearings provided the crankshaft location is not changed.

9.7.3 Only the bearing journals may be polished.

9.7.4 Centre main bearing support may be dowelled.

9.8 The flywheel may be lightened respecting a minimum weight of 5.443kg.

9.8.1 An 'O' ring groove may be machined as per standard VW dimensions.

9.8.2 Dowels may be fitted between the flywheel and the crankshaft flanges

9.9 The crankcase may be machined to permit the use of standard VW camshaft bearing inserts, provided that the camshaft location is not changed.

9.9.1 Oil galleries within the crankcase may be enlarged and fitted with threaded end plugs.

9.9.2 Baffles may be introduced provided they are completely housed within the original oil sump and crankcase.

(1) Pushrod tube baffles may be installed.

(2) Older model crankcases may have the oil baffle beneath the generator tower relieved respecting later model crankcases.

9.9.3 Oil sump extension may be fitted to the crankcase at the oil strainer opening. The extension may be of any size or shape, except it may not protrude beyond the sides and/or end of the crankcase. The oil sump pickup pipe may be extended into the sump extension.

9.10 Oil pump:

9.10.1 Any VW oil pump is authorised provided it may be fitted without modification to the engine casing.

9.10.2 The oil pump may be modified as follows:

(1) The rear of the pump body may be machined for an 'O' ring seal.

(2) The cover plate is free.

(3) The side port in pump body may be plugged.

9.11 Oil Coolers and oil filters are free.

9.11.1 ~~Additionally, a~~ An oil temperature sensor may be fitted.

9.12 The camshaft is a control part and shall be fitted.

9.12.1 The current authorised control part supplier is:

Name: Colt Cams Ltd

Phone: (06) 357 1952

Address: 599-601 Roberts Line, Palmerston North

9.12.2 Camshaft timing may be achieved by use of offset keyways in the drive gears.

9.12.3 Maximum valve lift for both the inlet and the exhaust valves is 9.30mm. The valve lift shall be measured after a minimum 20-minute period has elapsed after the Qualifying session and/or Race finish with the valve stem to rocker clearance unchanged.

9.12.4 Where the maximum lift is exceeded on any one valve, then the lift of all four respective valves (being either the 4 inlet valves or 4 exhaust vales) shall be averaged. The average lift may not exceed the authorised maximum valve lift. If two inlet or two exhaust valves are found to exceed the maximum valve lift, then the foregoing averaging does not apply.

9.12.5 A groove or grooves may be machined into the camshaft gear.

9.12.6 Replacement camshaft gears may be bolted onto the camshaft provided that this does not allow any form of cam timing adjustment once the crankcase has been assembled.

9.12.7 Cam followers are free provided they are solid ferrous (not hydraulic) and respect a minimum weight of 80grams.

9.13 Fan, fan-housing and engine shrouds:

9.13.1 The following is authorised:

(1) Standard fan rotors of either 16 blade or 28 blade are authorised.

(2) The standard-fan housing shape may be modified but must remain fully enclosed except for:

(a) The base area which shall remain open to the cylinder heads; and

(b) The inlet opening for the fan.

(c) The base of the housing must extend to at least 75mm from the centreline of each inlet port.

(d) Holes may be introduced for the passage of gearbox, clutch and throttle mechanisms and rollbar members.

(3) ~~Alternatively, t~~ The Standard fan housing may be substituted provided the provisions of this Article 9.13 are respected.

(4) The Standard engine shrouds may be removed in part or full.

10.0 FUEL SYSTEM

10.1 Carburettor:

10.1.1 The following makes and models of carburettor are authorised:

(1) Solex 28 PCI; or

(2) Solex 28 PICT; or

(3) Brazilian Weber 30BVC as supplied by Weber Specialists (Auckland).

10.1.2 The following modifications are permitted to the ~~authorised~~ Solex carburettors detailed in Article 10.1.1 above:

(1) **Position:**

(a) The position of the carburettor/s is free.

(2) Jets:

(a) Replacement jets and any emulsion tubes are authorised.

(b) Adjustable jets are specifically prohibited.

(3) Accelerator pump:

(a) If used, the removable jet in the accelerator pump nozzle ~~(if used)~~ may be drilled or removed; or

(b) if the removable jet in the accelerator pump ~~none~~ is not present, the nozzle itself may be drilled oversize.

(4) Venturi:

(a) Direct replacement venturis are authorised for the 28 PCI carburettor/s or a venturi may be omitted entirely.

(5) Floats:

(a) Any float and float arm may be used. The standard plastic float and arm may be modified.

(6) Choke shafts/butterflies may be removed and resulting holes plugged.

(7) Choke/throttle operating mechanism may be modified or removed.

(8) Screws attaching the butterfly to the throttle shaft may be filed flush with the shaft, but no modification of the shaft or butterfly is permitted.

10.1.3 The following modifications are permitted to the ~~authorised~~ Weber carburettor detailed in Article 10.1.1 above:

(1) Position:

(a) The position of the carburettor/s is free.

(2) Replacement jets and any emulsion tubes may be used. Adjustable jets are prohibited.

(3) High speed bleed circuit shall be blanked by Weber Specialists (Auckland).

(4) Power valve bleed circuit shall be blanked by Weber Specialists (Auckland).

(5) Solenoid shall be removed and the hole plugged by Weber Specialists (Auckland).

(6) Accelerator pump and its operating system is free.

(7) Choke shafts and butterflies shall be removed and resulting holes plugged by Weber Specialists (Auckland).

(8) Butterfly and shaft shall not be modified.

(9) Throttle operating mechanisms are free.

10.2 Intake Manifold is free.

10.3 Fuel tank shall be of a FVANZ approved type and shall be positioned within the chassis/frame between the bulkhead/firewall and the rear of the seat.

10.4 Fuel tank breather:

10.4.1 Shall be fitted and shall incorporate a one-way valve to prevent fuel spillage.

10.4.2 An appropriate fuel tank cap with integral breather and one-way valve may be utilised.

10.5 Fuel cooling radiators are not authorised.

10.6 Water injection into any part of the fuel system is not authorised.

10.7 The engine shall be naturally aspirated and forced induction (turbo-charging or super-charging) is prohibited.

11.0 EXHAUST SYSTEM

11.1 Exhaust system:

11.1.1 The exhaust system is unrestricted, provided the maximum car length is respected and the exit is at least 130mm rearward of the rear axle centreline.

11.2 Noise emission as detailed in Appendix Two Schedule A of the MSNZ Manual shall be respected.

12.0 TRANSMISSION

12.1 Clutch:

12.1.1 Any Standard VW clutch assembly is authorised provided no modification of the bellhousing/flywheel is necessary to enable its fitment.

12.1.2 The minimum weight for the Clutch Cover (Pressure Plate) shall be 2.85kg.

12.1.3 Standard reconditioning practice shall be respected when balancing reciprocating and rotating parts of the clutch assembly.

(1) Component minimum weights shall be respected. ~~Balancing refer to Article 9.1.2.~~

12.2 Friction linings are free.

12.3 Operation by mechanical or hydraulic means is authorised.

12.4 Gearbox/differential assembly:

12.4.1 The Gearbox/differential assembly shall be standard VW ‘tunnel case’ type as fitted to sedan and transporter models.

12.4.2 Lightening of any standard component is prohibited.

12.4.3 Oil grooves may be added to the 4th gear thrust washer.

12.5 Mounting:

12.5.1 The transmission shall be mounted in the chassis directly behind the engine. Any mounting means may be used and mounting at an angle to horizontal is permitted.

12.6 Crown wheel gear may be transposed to the opposite side of the case to provide proper axle rotation. The transmission may not be inverted.

12.7 Synchromesh components shall be in place and operating on at least three gears. Third and fourth gear ‘dog teeth’ may be welded to their respective gears and the ‘large tooth’ on the ‘dog rings’ may be removed.

12.8 Reverse gear shall be operable from the driver’s seat.

12.9 Differential shall be standard and shall function freely. Use of limited-slip type differentials is prohibited.

12.10 Vents:

12.10.1 The transmission case may be vented to a catch tank and the baffle of the early model tail housing may be removed.

12.11 Exterior of the case may be modified to permit attachment of shifter guard, exhaust pipe supports, battery boxes, frame braces, body brackets, etc.

12.12 Shifter rod may be drilled for securing shift linkage. Any linkage may be used.

12.13 Clutch lever and fork assembly is free.

12.14 Gear ratios:

12.14.1 Only the following gear ratios are authorised:

Gear	Tooth count	Ratio
1st	10 : 38	3.80
2nd	17 : 35	2.06
3rd	22 : 29	1.32
3rd (option)	23 : 29	1.26
3rd (option)	23 : 28	1.22
4th	27 : 24	0.89
4th (option)	28 : 23	0.82
Crown-wheel/Pinion	8 : 35	4.375
Crown-wheel/Pinion (option)	8 : 33	4.125

12.15 Oiling grooves may be added to the fourth (4th) gear thrust washer and fourth (4th) gear thrust side.

13.0 ELECTRICAL/IGNITION SYSTEM

13.1 Electrical system may be either 6 volt or 12 volt.

13.2 Generator and mount:

13.2.1 The mounting 'tower' may be modified providing the generator remains in its original position.

13.2.2 The generator armature, brushes, brush holders, field coil and voltage regulator may be removed.

13.2.3 The generator housing and its mounting strap are free providing the housing is retained and mounted in its original position.

13.3 Distributor:

13.3.1 Any distributor is authorised provided the original drive and location are retained. The advance mechanism may be 'locked'.

13.4 Electronic ignition is authorised provided the LT is triggered within the distributor unit and no variable and/or cockpit adjustment is employed when the car is competing, other than the mechanical or vacuum system contained in the distributor.

13.5 Ignition coil is free.

13.6 Rev limiters/tachometers/shift-lights are authorised.

14.0 FRONT SUSPENSION

14.1 The front suspension shall be Standard VW (link-pin beam) as defined hereinafter, with the following modifications authorised:

14.2 Torsion bars may be modified and/or one set of torsion bars may be substituted by an anti-sway bar, or a free tie-rod which shall have a satisfactory retention at either end.

14.2.1 The rubber seals on the torsion arms may be replaced with thrust washers.

14.2.2 The torsion bar to link-pin arms shall remain but may be modified solely for the attachment of the anti-sway bar and/or shock absorber.

14.3 Sway bars are free.

14.4 Shock absorbers (dampers) are free, as is their position provided, they solely perform a damping function.

14.4.1 The Standard top mounts (horns) may be removed.

14.5 Front beam:

14.5.1 The front beam to chassis mounting is free and may incorporate adjustment for caster.

(1) The rebound bump horns and the pressed metal stanchions separating the axle tubes may be removed, with any resulting holes made good.

(2) Where these stanchions are removed an alternative method of retaining the original tube spacing must be employed.

(3) The beam tubes may be rotated/bent for caster/camber adjustment in compliance with Article 14.7.

14.5.2 Front beam (option to Article 14.5.1 above):

(1) The manufacture of a new front suspension beam is authorised under the following provisions:

(a) The beam and stanchions shall be fabricated from steel.

(b) The main tubes shall be a minimum OD of 50.5mm (nominal OD 2.0”).

(c) The wall thickness of the tubes shall be a minimum of 3.0mm excluding any machined recesses for bearings.

(d) The maximum width of the beam shall be 865mm, excluding the suspension arms and spacers.

(e) Centre to centre distance between the beams shall be 120mm +/- 1mm.

(f) The beam to chassis mounting is free & may incorporate caster adjustment.

(g) Shall use a minimum of 1-set of VW torsion bars.

(h) The beam tubes may be bent for caster/camber adjustments in compliance with Article 14.7.

14.6 The fitting of an aftermarket standard replacement steel beam.

14.6.1 Only one (1) ride height adjuster can be used.

14.7 Castor is free.

14.8 Camber is free, provided adjustment is achieved by:

14.8.1 varying the spacers on the torsion arms or shims or link pins and/or

14.8.2 realigning the axle tubes and/or

14.8.3 the use of off-set link pin bushes and resurfacing the swing arms.

14.9 Attachments to the beam:

14.9.1 Brackets/supports may be fitted to the front beam for the following components: the chassis, a steering box or rack, hydraulic lines, hydraulic reservoirs/cylinders, electrical looms, pedal assemblies, bodywork and aerodynamic shapes.

14.10 Ride height adjustor:

14.10.1 Either axle beam may be cut for the installation of a ride height adjuster, provided all the dimensions remain Standard.

14.11 Bushes and bearings are free.

14.12 Front stub axles:

14.12.1 Replacement steering arm/stub axles may be manufactured providing they conform to the Standard VW specifications, excepting the position of the point of connection between the steering arm and the tie rod end, which is free. The steering arm may be strengthened and/or changed side to side.

14.12.2 Reinforcement of the stub axle (left hand) by the fitment of an 8mm diameter high tensile bolt (grade 8.8 minimum) is compulsory. Such bolt shall pass from end to end through the hole originally provided for the speedometer cable and is to be held in place by a nyloc nut.

14.13 Wheel spacers compliant with Appendix Two Schedule A of the MSNZ Manual are authorised.

15.0 REAR SUSPENSION

15.1 The rear suspension/hub assemblies shall be Standard VW as defined herein.

15.1.1 The type of spring medium may be coil, torsion or leaf design.

15.2 Suspension links:

15.2.1 Each axle shall be located by one or more arms pivotally attached to the frame, either forward or rearward of the axle, their design being free.

15.2.2 The cross-sectional shape of the material used to fabricate the arms is free.

15.3 Coil spring medium and damping shall utilise one or more coil over shock units. The units are free provided that not more than one coil spring per shock unit is used. The method of shock unit mounting, and actuation is free.

15.4 Torsion/leaf spring medium and damping:

15.4.1 The mounting design is free as is the method of shock unit mounting and actuation.

15.5 Axle tube beams may have the Standard shock absorber mounts replaced with brackets to support ancillary components.

15.6 Camber is free.

15.7 Sway bar and/or camber controlling devices are free.

15.7.1 Wheel spacers compliant with Appendix Two Schedule A of the MSNZ Manual are permitted ~~authorised~~.

16.0 BRAKING SYSTEM

16.1 A dual circuit braking system is mandatory, operated by a single pedal.

16.1.1 In case of hydraulic failure in either circuit, braking shall be maintained in the other circuit.

16.1.2 Air scoops and deflectors are not authorised.

16.2 Master cylinders, pedal and linkages are free.

16.3 The braking system shall be either:

16.3.1 Brake drums, backing plates and wheel cylinders as fitted to Standard VW 1200 sedan models, as defined herein, excepting standard 'five rib' rear drums are authorised. The backing plates may be drilled solely for the purpose of providing shoe adjustment; or

16.3.2 ~~FVANZ~~ The Club approved brake disc assemblies, hubs, mounting brackets, calipers and wheel spacers are authorised to be fitted as a complete package.

16.4 Friction materials are free.

16.5 Hydraulic brake lines shall comply with Appendix Two Schedule A of the MSNZ Manual.

16.6 Handbrake components may be removed and the resulting holes in the backing plates filled.

17.0 STEERING

17.1 Steering box/rack and the location is free.

17.2 Pitman arm is free.

17.3 Tie rods:

17.3.1 Only one right hand and one left hand tie rod is ~~are~~ permitted ~~authorised~~.

17.3.2 Tie rod ends are free.

17.4 Steering arms**,** tie rod end links, as attached to the stub axles may be modified to provide an alternative tie-rod end position.

17.5 Steering wheel, shaft and universal joints are free.

18.0 WHEELS

18.1 Wheel type and offset is free subject to the following~~, respecting~~:

18.1.1 Diameter: 13 inch (330mm)

18.1.2 Maximum width: 6 inch (152mm)

18.1.3 Minimum weight: 5kg (including washers)

18.2 Wheel balancing shall be achieved only by the attachment of appropriate balance weights.

18.3 Brake adjuster:

18.3.1 A hole, corresponding to that in the brake drum may be drilled in each wheel for the sole purpose of brake adjustment.

19.0 TYRES

19.1 Tyre type:

19.1.1 Only such tyres as are specified by MotorSport New Zealand from time to time may be used.

19.1.2 The Control Tyre approved for the Championship ~~current season~~ is:

(1) Hifly HF201 175 / 70 x 13; and

(2) Hifly HF201 185 / 70 x 13.

19.2 Control Tyre modification and treatments as follows are prohibited:

19.2.1 Hand cut tread grooves.

19.2.2 Filing, buffing, or any other disguising of the tyre sidewall however, shaving, skimming, and trueing of the tyre tread is allowed.

19.2.3 Tyre warmers, chemical treatments or any means to attempt to artificially enhance tyre performance.

19.3 Tyre tread groove depth:

19.3.1 At the commencement of any Qualifying session or Race all Control Tyres must have a tread pattern, excluding any tie-bar or tread depth indicator strip, of not less than 1.0 mm in depth within all principle grooves containing moulded tread depth indicators, and around the entire circumference of the Control Tyre.

20.0 AUTHORISED (NON-STANDARD) PARTS

20.1 The following non-standard replacement parts are authorised provided no modification is required to enable fitment:

20.1.1 Fasteners, gaskets and seals (the use of titanium fasteners, fixtures and fittings is prohibited)

20.1.2 Spark plugs/HT leads/fan belt

20.1.3 Engine bearings/valve guides of the same specification

20.1.4 Rocker shafts/spacers

20.1.5 Oil pump front cover

20.1.6 Power pulley (of minimum diameter 146mm)

20.1.7 Rocker covers/push rod tubes and push rods

20.1.8 Crankshaft gland nut

20.1.9 Diagonal stays from bottom suspension (rear axle) unit to inner axle to be optional

20.1.10 Wheel bearings

20.1.11 Approved fuel/hydraulic lines

20.1.12 Wiring.

21.0 DATA LOGGING/ACQUISITION SYSTEMS

21.1 **Data acquisition systems** are free.

APPENDIX ONE

Diagram 1: Height of Roll Structures

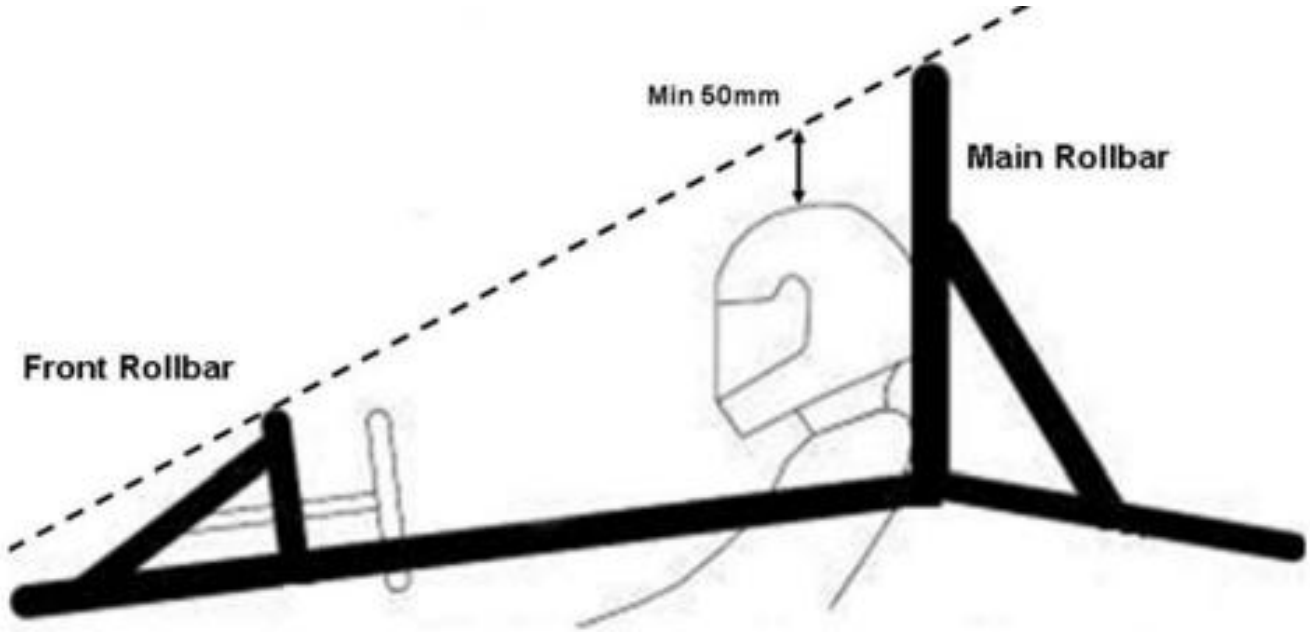


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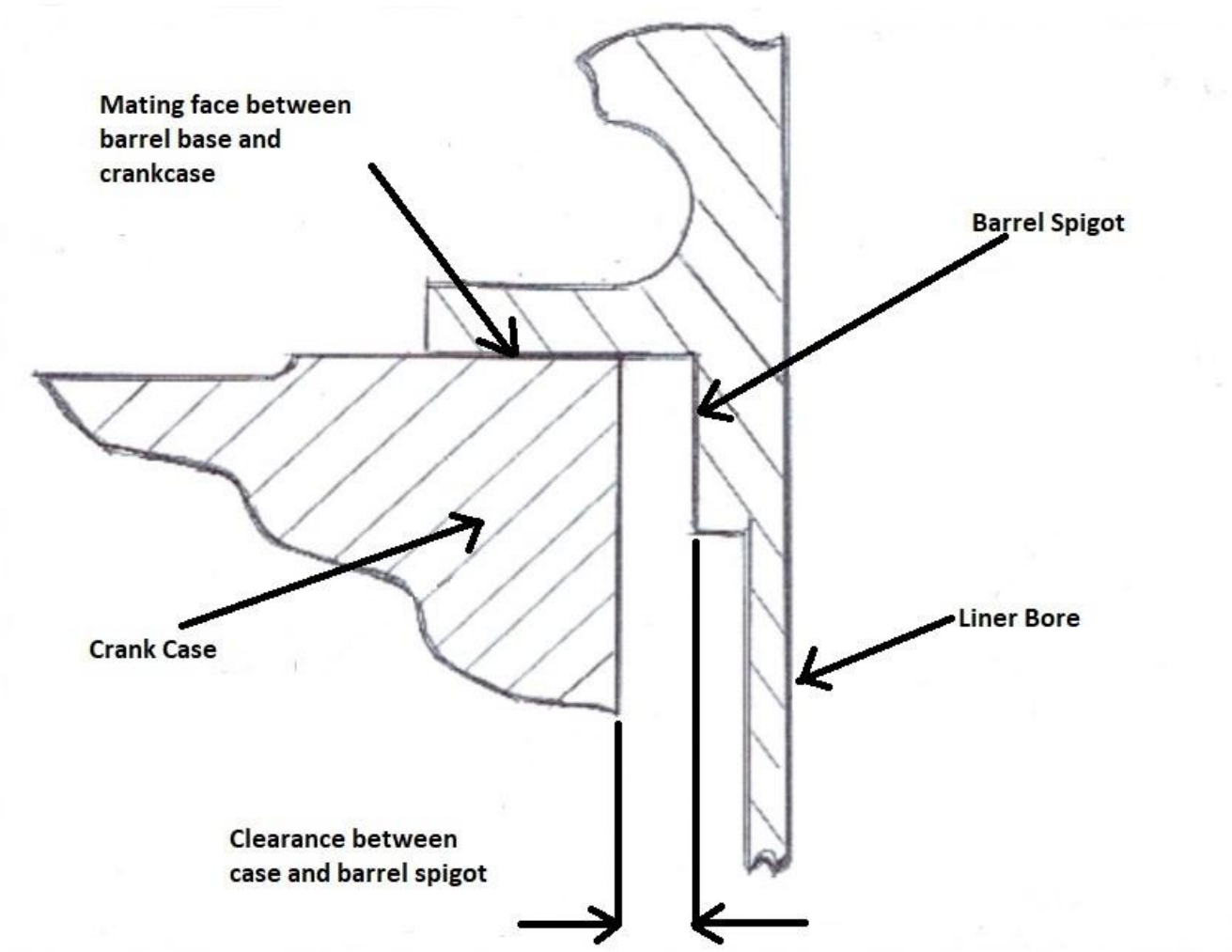


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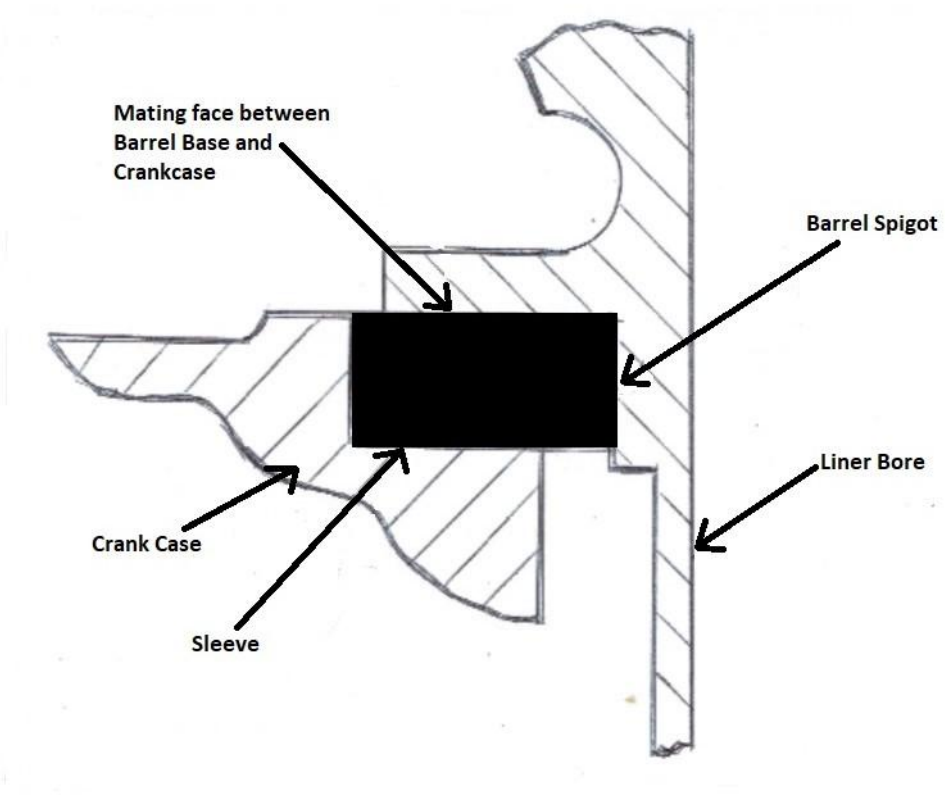
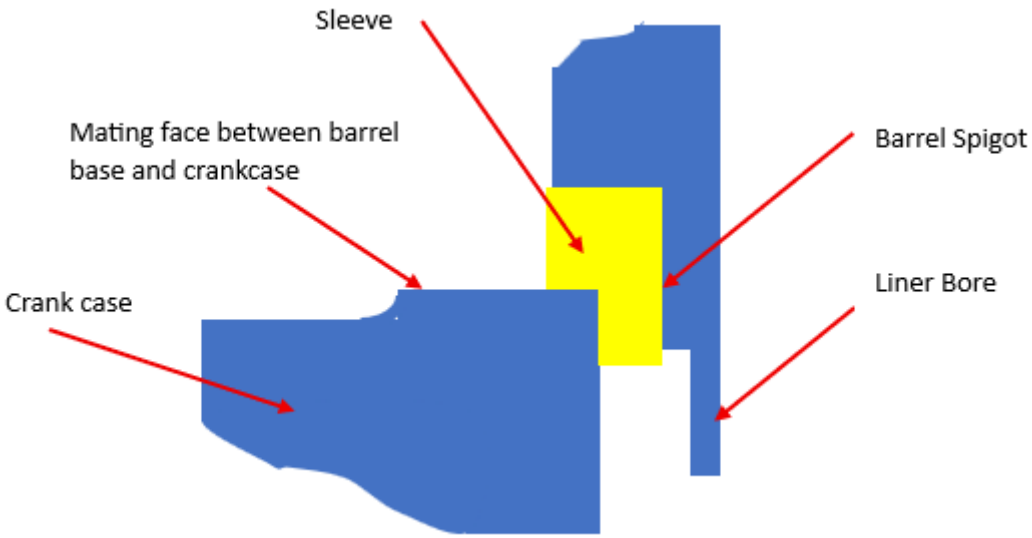


Diagram 4:



NOTE: *IMAGE IS INDICATIVE AND NOT TO SCALE*