

DIVISION "C" – TECHNICAL RULES

C 1. DEFINITIONS

The following terms, with their meanings, are used throughout these Rules.

Automobile means a land vehicle propelled by its own means, running on at least four wheels not in a line, which must be normally in contact with the ground and of which at least two must effect the steering and at least two the propulsion.

Bodyshell means the main structure of an automobile which constitutes the fundamental structure of the automobile. Components such as doors, bonnet, bootlid and mudguards, which are readily demountable, are not deemed to be part of the body shell.

Bodywork means:

externally: all the entirely suspended parts of the Car licked by the airstream including the underside of the floorpan; and

internally: all other parts of the bodyshell and the doors.

Car means a V8 Supercar, which are those motor racing automobiles conforming to the eligibility requirements in these Rules.

Engine Capacity means the total volume swept by the upward and downward movement of the pistons in the cylinders of an engine. Engine Capacity will be expressed in cubic centimetres. For all calculations relating to the Engine Capacity of an engine, the symbol π will be regarded as having a value of 3.1416.

Engine Control Unit (ECU) means the electronic unit that controls the spark and fuel settings of an engine.

Family of a Vehicle means different series models belonging to one and the same production series of the same manufacturer. At least the number of automobiles specified in Rule C 2.1 for the category of Car with identical external general lines of the bodywork must have been produced in 12 consecutive months. Unless specifically detailed in these Rules or in the Vehicle Specification Document, the material of the bodywork, the general external lines of the bodywork and the wheelbase dimension must be identical.

All models must be available through the normal commercial channels of the manufacturer.

The general external lines of the bodywork may vary in the following details:-

shape and material of front and rear bumpers;

front body panels fitted to automobiles, of which 3500 are produced in twelve consecutive months by the accredited manufacturers of Ford's and Holden's "Special Vehicles";

removable aerodynamic devices (spoilers, wings, sill mouldings);

control and comfort equipment (sun roof, auxiliary lamps, door handles, exterior mirrors, etc); and

decorative strips and mouldings.

Ferrous Material means a material containing at least 80 % of pure iron by weight.

ID means inside diameter.

Inlet Manifold means all of the parts collecting air from the air intake and extending to the ports of the cylinder head.

OD means outside diameter.

ROPS means the Roll Over Protection Structure fitted to a Car in accordance with these Rules.

Vehicle Specification Document means the documents containing the relevant dimensions for a particular model of Car. These documents are detailed in the table below:

Make / Model	Document Title	Approved by
Holden VX & Ford AU	Homologation Papers	TEGA
Holden VY, VZ & Ford BA, BF	Vehicle Specification Document	TEGA

C 2. GENERAL

All Cars must remain identical in all respects to the specific model from the Family of a Vehicle on which they are based except for the freedoms allowed, and to the extent permitted, by these Rules and the Vehicle Specification Documents.

In all circumstances the primary function of any component, even if all or part of its design is free, is the overriding factor in determining its compliance with these Rules.

Any secondary function/s, unless specifically permitted by these Rules, are not permitted.

For clarification, in these rules, unless it says that you can, then you cannot.

C 2.1 Technical Definition and Class

2.1.1 The requirements of this Division C apply to V8 Supercars, which are defined as large-scale Production Touring Cars comprising a specialised class of 5 litre, Australian produced, right hand drive, four door Cars, fitted with pushrod two-valve normally-aspirated V8 engines.

2.1.2 There is only one class of Car – the V8 Supercar – with engines of up to 5000cc capacity fitted to Cars of which at least 25,000 examples, meeting the definition of Family of a Vehicle (Rule C 1), must have been produced.

C 2.2 Vehicle / Component Approval

2.2.1 To be considered eligible for a Meeting, Cars, cylinder blocks, cylinder heads and aero kits must be as approved by TEGA and detailed in the relevant Vehicle Specification Documents.

2.2.2 All Cars must comply with all aspects of the relevant Vehicle Specification Documents and the requirements of this Division C.

2.2.3 Subject to the approval of TEGA, to be considered eligible for a DVS Meeting, a Car must use a body shell that has been used in no less than six (6) VCS Meetings.

C 2.3 Amendments to the Formula

During its life the V8 Supercar formula will be subject to amendment by the Board of V8 Supercars to maintain exciting and entertaining competition.

C 2.4 Jurisdiction for Interpretation

Unless otherwise provided in these Rules, jurisdiction for the interpretation of the requirements in Division C lies entirely with the Stewards who, in cases where a technically complex issue arises, will refer the technical issue to the ~~Category Technical Panel~~CTD who will determine the technical issue and any determination will be binding (Rule C 3.3); and any question to be determined judicially will be determined by the judicial system as provided by Rules B 2 and C 3.3.

C 2.5 Repairs

2.5.1 Any repairs or replacements must take full account of engineering integrity and safety.

2.5.2 The CTD has the right to consider the engineering integrity and safety of any modifications carried out and to require corrective action if appropriate.

C 2.6 Responsibility for Safety

Each Competitor is responsible for all safety aspects of that Competitor's Car/s at all times.

C 2.7 Car Models

While it is permitted to update a model of a Car to a later model of the same Car, it is forbidden to back-date a model of a Car to any previous model of the same Car at any time.

C 2.8 Model Eligibility

Only the following makes/models of Cars as detailed in the table below are eligible for competition in each series:

Eligible models of Cars		
Year / Series	Ford	Holden
2005		
VCS	BA	VY, VZ
DVS	AU, BA	VX, VY
2006		
VCS	BA, <u>BF</u>	VY, VZ
DVS	AU, BA	VX, VY, <u>VZ</u>
2007		
VCS	BA, <u>BF</u>	VY, VZ
DVS	AU, BA	VX, VY, <u>VZ</u>

TEGA reserves the right to add additional models as they are submitted for approval by each manufacturer.

~~Please note – From 1 January 2005, all Holden Commodore VYs competing in any round of the DVS must only be fitted with a Holden 18 Degree Engine.~~

C 3. COMPLIANCE

C 3.1 General

- 3.1.1 All Cars must comply with the relevant Vehicle Specification Documents and technical regulations of this Division C.
- 3.1.2 The Competitor is responsible for ensuring that their Cars comply with the conditions of eligibility contained in these Rules throughout each Meeting and all V8 Supercars/TEGA authorised activities including all Rides and Testing.
- 3.1.3 The presentation of a Car for scrutineering will be deemed to be an implicit statement by the Competitor of conformity with all the Rules in this Division C.

C 3.2 Examination for Eligibility

- 3.2.1 Should the CTD suspect at any time that a Car does not comply with these Rules, the Competitor, or ~~nominated~~ Authorised Representative, must be so advised and given the opportunity to comment on the suspected or alleged ineligibility.
- 3.2.2 Any comment so made may be recorded by the CTD, and subsequently may be presented at any Stewards' Hearing ~~and/or to the Category Technical Panel~~.
- 3.2.3 Should the CTD fail to receive an adequate comment on the suspected or alleged ineligibility, which the CTD alone has sole discretion to consider as adequate or satisfactory, the CTD may require the Car to be impounded and examined, including such dismantling as may be necessary, to determine the points of eligibility in question.
- 3.2.4 At the direction of the Stewards, any components or parts of a Car may be sealed by the CTD for examination ~~by the Category Technical Panel or by the CTD~~.

C 3.3 Disputes

In the case of a dispute about a Car's compliance with any of the provisions of Division C:

- 3.3.1 Any technical issue, including the eligibility, of Cars will be referred to the Stewards by the IPO for determination
- 3.3.2 The Stewards will conduct a Hearing into the issue and may make any decision thereon.
- 3.3.3 If, during any such Hearing, the Stewards determine that the matter is of a technically complex nature the Stewards may:
 - 3.3.3.1 refer only the technical issue to the ~~Category Technical Panel~~ CTD for a determination;
 - 3.3.3.2 adjourn the Hearing until the determination of the ~~Category Technical Panel~~ CTD is received; and
 - 3.3.3.3 subsequently resume and complete the Hearing and make a decision taking into account the determination of the ~~CTD~~ Category Technical Panel.
- 3.3.4 The determination of the ~~Category Technical Panel~~ CTD will be unconditionally binding on any ~~V8 Supercar National Court of Appeal hearing or Stewards' Hearing~~ in regard to that issue.
- 3.3.5 Any dispute regarding the compliance of a Car with this Division C will be assessed, where appropriate, by the inspection of random samples of the relevant Family of a Vehicle.

C 3.4 Minor Non-Compliance

- 3.4.1 The CTD, having noted an area of minor non-compliance, may endorse the Car's CAMS Log Book with an entry regarding rectification of the non-compliance.
- 3.4.2 Having so endorsed the Car's CAMS Log Book, before the Car is permitted on to the race track, the CTD must send to the Stewards the Log Book and a note in the following form:

"In my view, the minor non-compliance noted in the Log Book of this Car does not improve the performance to such an extent that the Car should be excluded from this Meeting, and thus it may compete in this condition for this Meeting only."

- 3.4.3 Upon receipt of the note referred to in Rule C 3.4.2, the Stewards may then permit the Car to participate in the Meeting subject to the endorsement being countersigned by the Stewards in the Car's Log Book.
- 3.4.4 If the Stewards have specifically approved the participation of a Car notwithstanding an endorsement in its CAMS Log Book pursuant to Rule C 3.4.1, then no Protest or complaint on that ground by any other person will be accepted in respect of that Meeting.

C 4 SCRUTINEERING

C 4.1 Onus on Competitor

The onus is on each Competitor to present their Car for scrutineering at the appropriate times, in a complete and finished state, in 'ready to race' condition and with race numbers, advertising signs and the correct functioning of fully charged timing transmitters must be in position on the Car before the Car is presented for scrutineering.

C 4.2 Cars must be Submitted

All Cars must be submitted to the CTD before practice, and thereafter including post race scrutineering or otherwise as required.

C 4.3 Scrutineering a Precondition

No Car will be permitted to participate in any practice or qualifying session or in any race unless the Car has been checked and approved by the CTD.

C 4.4 Location of Scrutineering

Scrutineering will be carried out at each Competitor's assigned paddock area.

C 4.5 Equipment to be Scrutineered In addition to presentation of the Car for scrutineering, the following equipment must also be presented to the CTD for inspection and approval at all:

- 4.5.1 Meetings: all driver's equipment such as helmet, HANS® device, overalls, underwear, balaclava, gloves, shoes and 2 x 4.5Kg fire extinguishers and,
- 4.5.2 Meetings requiring refuelling during a race: all pit crew apparel and refuelling towers (including all components thereof).

C 4.6 Additional Scrutineering

- 4.6.1 The CTD has unfettered discretion to carry out or require additional scrutineering.
- 4.6.2 The CTD may authorise or carry out at any time:
 - 4.6.2.1 check the conditions of eligibility of a Car;
 - 4.6.2.2 require a Car to be sealed and/or dismantled to ensure that the conditions of eligibility and/or safety are fully satisfied;
 - 4.6.2.3 require a Competitor to supply to the CTD or the Stewards such parts or samples as may be specified by the CTD; and
 - 4.6.2.4 require that any components or parts of a Car be sealed for examination by the Stewards or by the CTDCategory Technical Panel.

C 4.7 Post-Scrutineering Changes

If at any time after a Car has been examined and approved, it is dismantled or modified in any way which may affect the safety of the Car or which raises any question about its eligibility, or which is involved in an accident or on-track incident which has similar results, it must be re-presented to the CTD for scrutineering approval prior to being permitted back on the race track.

C 4.8 Prohibition of Unsafe Cars

Any Car may be prohibited by the CTD from participating in any Rides, practice session, qualifying session, warm up or any Race for safety reasons.

C 4.9 On Track Incidents

The Race Director or the CTD may require any Car involved in an accident or an on-track incident to be stopped at its pit bay to be further examined and checked.

C 4.10 No Replacement Cars

Unless otherwise specified in the Supplementary Regulations, replacement Cars are not permitted, and a Competitor must only use the one Car which had been originally approved by the CTD at scrutineering for use on the race track.

C 4.11 Delegation by CTD

- 4.11.1 References to the CTD in Division C automatically includes all nominees appointed by the CTD pursuant to Rule A 10.4.
- 4.11.2 Checks, examinations and scrutineering will be carried out by duly appointed nominees responsible to the CTD, and such nominees will be responsible and authorised to give instructions to Competitors for the operation of the Parc Ferme.

C 4.12 Accidents and Scrutineering

- 4.12.1 Any body damage incurred by a Car during a practice session, qualifying session, warm up or Race may render it liable to being shown the black flag with orange disc and consequently requiring an immediate return to the pits for examination by the CTD.
- 4.12.2 Following any necessary rectification and subsequent to a satisfactory examination by the CTD, the Car may rejoin the race track at the discretion of the Race Director.
- 4.12.3 Any Car withdrawn from any practice session, ~~or~~ qualifying session, warm up or Race due to accident damage must be inspected by the CTD before it is permitted to continue to participate in the Meeting.

C 5 CONSTRUCTION AND MODIFICATION

C 5.1 Minimum Weight

- 5.1.1 The minimum weight of a Car ~~in the VCS~~ is 1355kg excluding the Driver and the Driver's apparel. ~~The minimum weight of a Car in the DVS is 1455kg excluding the driver and the driver's apparel.~~
- 5.1.2 The minimum weights stated in C 5.1.1 above must be achieved at all times throughout a Meeting with the exception that during any session or Race in which refuelling is permitted, the minimum weights must be achieved without fuel.
- 5.1.3 In addition to the requirements of C 5.1.1 & C 5.1.2 above, all Cars competing in the VCS must achieve a minimum weight of 1435 kg including the weight of the Driver wearing his complete ~~racing~~ Driver's apparel, as recorded by the CTD at the Driver's first Meeting for the year, both during and immediately after all practice qualifying sessions and Races.
- 5.1.4 The minimum front axle weight of a Car, measured at the front axle centreline, is 740kg. This minimum weight must be achieved at all times, without fuel, Driver or Driver's apparel on board.
- 5.1.5 TEGA reserves the right at all times to amend the weights of Cars in the interests of equitable competition.

C 5.2 Freedoms Permitted

- 5.2.1 Where in these Rules a freedoms is permitted to fit specific parts:
- 5.2.1.1 Holes providing minimal clearance may be drilled/made, solely to allow the passage or fixing of that part;
 - 5.2.1.2 The minimum local modifications, solely for clearance or mounting purposes only, may be made in the surrounding area; and
 - 5.2.1.3 If the permitted part requires modifications to be made to "mating" parts, then those modifications are authorised.
 - 5.2.1.4 Such local modifications as permitted in accordance with these Rules must be submitted for approval to the CTD.
- 5.2.2 Modifications permitted under these Rules are allowed only on condition that the weights and/or dimensions contained in these Rules and the relevant Vehicle Specification Documents are respected.
- 5.2.3 Throughout the Car, the use of any nut, bolt, screw, rivet, weld or adhesive may be replaced by the use of one of the other methods of attachment contained in this Rule.
- 5.2.4 Under all circumstances the primary function of any component, even if its design is free, is the overriding factor in determining its eligibility. Secondary functions unless specifically authorised in this Division C are not permitted.

C 5.3 Damage Repairs

- 5.3.1 Restoration of body shape and chassis geometry following accidental damage is permitted only using original production panels and parts or by the addition of materials necessary to effect the repairs (eg, body filler, weld metal).
- 5.3.2 Other parts, which are worn or damaged, may not be repaired by the addition or attaching of material unless specifically allowed in these Rules.

C 5.4 Composite Material Permitted

- 5.4.1 "Composite Material" is defined as being a resin based blend of material reinforced with fibreglass, aramid fibre ~~Kevlar~~, carbon fibre threads and/or a combination of any or all of these materials.
- 5.4.2 In addition to the approved components of the aero kit, as approved for use by TEGA, the following items may be constructed from a composite material:
- Drivers / passengers seat

- Intake trumpets (however not the inlet manifold)
- Engine air box and inlet air ducting
- Engine drive belt covers
- Engine component heat shields
- Cooling ducts
- Fuel tank outer skin
- Fuel tank outer skirts
- Door trims
- Instrument fascia, gear box boot cover panel
- Electrical isolation switch
- Steering wheel switch mounts
- Engine management system mounting plate
- Data acquisition mounting plate
- Dry break fuel receiver/vent covers
- False floor (driver comfort)
- Passenger floor (for Meeting Rides only)
- Foot rest
- Left hand mirror "filler" panel
- External fresh air duct
- Attachments to roll-over protection structure for anti side intrusion purposes
- Rocker covers
- Rain light mount
- Rear window brake light housing
- Dashboard filler and airbag cover
- Air conditioner mounts and covers

All external body panels which are manufactured from a composite material (front bumper, rear bumper & side skirts), must contain a sufficient proportion of aramid ~~Kevlar~~ fibres in their structure to ensure that any debris does not pose a risk of punctures to other Cars.

C 5.5 Exotic Materials

The following materials must not be used in the construction or modification of a V8 Supercar:

- Titanium / Titanium alloy – (except as specifically permitted by these Rules).
- Metal matrix composite (MMC) materials
- Inter-metallic materials (Ti-Al, Fe-Al, Ni-Al, Ni-Co)
- Iridium alloys (excluding spark plug electrodes)
- Rhenium alloys
- Alloys containing more than 5% Beryllium

C 5.6 Manufacturing and Measuring Tolerances

- 5.6.1 When a Car is being examined, all measurements and tolerances will be those stated in these Rules or the relevant Vehicle Specification Document.
- 5.6.2 Where a measurement is specified as a maximum or a minimum value, this represents the limit of the permitted variation and no further tolerance will be applied.
- 5.6.3 All measurements will be taken at ambient temperature.
- 5.6.4 Any dispute regarding the compliance of a Car with any measurements in this Division C or the relevant Vehicle Specification Document will be assessed, where appropriate, by the inspection of random samples of the relevant Family of a Vehicle.

C 5.7 Vehicle Datums

- 5.7.1 All dimensions relating to the construction and or modification of a Car will be taken in race condition without the driver on board and will be expressed, where appropriate, in terms of a distance from a fixed datum as specified below.
- 5.7.2 For all items that are duplicated symmetrically about the vehicle centreline, the position of the item on the right hand side of the Car only has been stated.
- 5.7.3 **X or Longitudinal datum** – is located on a vertical plane, at right angles to the vehicle centreline, at a specified distance from tooling holes or fixed points in the production bodyshell as determined by TEGA. This plane also passes through the specified upper and lower rear trailing arm pivot points. Forward is positive.
- 5.7.4 **Y or Lateral datum** – is the vertical plane which passes through, and is parallel to the longitudinal centreline of the production bodyshell, with values on the right hand side of the Car, as viewed from the rear, being positive.
- 5.7.5 **Z or Vertical datum** – is the horizontal plane located at a specified vertical distance from tooling holes or fixed points in the production bodyshell as determined by TEGA. Up is positive.

C 5.8 TEGA Data Monitors

5.8.1 All Cars must be fitted with a correctly functioning TEGA Data Monitor, of a type specified by the CTD at all times while participating in any Meeting, Rides day or Test day. Access to the data monitor must be provided to the CTD at any time upon request.

The Competitor is responsible for ensuring that the wiring loom and sensors that provide input signals to the TEGA Data Monitor are adequately maintained and remain working at all times.

5.8.2 This TEGA Data Monitor must, at all times;

5.8.2.1 not be disassembled or modified in any way and any seals and markings must remain intact and legible, and

5.8.2.2 only receive inputs from sensors as specified in the TEGA Data Monitor sensor list, and

5.8.2.3 only be connected to the TEGA Data Monitor loom as specified in the requirements for the TEGA Data Monitor loom.

5.8.3 The TEGA Data Monitor always remains the property of TEGA and must be returned to TEGA upon the request of the CTD.

The TEGA Data Monitor must only be used for TEGA/V8 Supercars authorised activities.

5.8.4 TEGA Data Monitor Sensors

Each Car must only be fitted with type and quantity of TEGA Data Monitor sensors detailed in the table below which must be the only components that provide input signals to the TEGA Data Monitor.

Sensor Type	Qty	Manufacturer	Part number
Crankshaft position	1	Magnetti Marelli	MSE-S03-01
		Bosch	0 261 210 002
Rear wheel speed	1	Magnetti Marelli	MSE-S03-01
Throttle position	1	CTS	518-06500
		CTS	518-06502
		Bosch	0261 211 003
		Bosch	0280 122 001
		Novatechnic	SP2841S0002
		Gefran	PZ150
		Spectrol	971-0002
		MSE	MSE-S09-01
G force	1	MSE	MSE-S33-01
Coil lead	1	MSE	MSE-S01-01
Fuel pressure	1	MSE (no longer available)	MSE-S32-01
		MSE	MSE-S32-02
Brake	1	Digital output from vehicle - TTL compatible	
Lap beacon	1		
Front wheel speed	1		

Please note – Mk I Monitors require only a single coil lead sensor for operation

- 5.8.5 All TEGA Data Monitor sensors must remain identifiable and unmodified, except as required solely to facilitate mounting.
- 5.8.6 TEGA Data Monitor loom
The wiring loom which connects the TEGA Data Monitor to the TEGA Data Monitor sensors must conform to the TEGA Data Monitor loom schematic as contained in Schedule C 5.
- 5.8.7 Except for connectors which are only connected “pin to pin”, the TEGA Data Monitor loom must not contain any additional wiring, circuitry, connectors, break outs or components except as detailed in the TEGA Data Monitor loom schematic.
- 5.8.8 The TEGA Data Monitor loom must remain visible along its length, be separate from all other wiring and be easily removed from Car.
- 5.8.9 The CTD will make all decisions in relation to all determinations regarding the installation and operation of the Data Monitor and any interpretation arising there from.

C 5.9 Traction Control

- 5.9.1 Traction control is prohibited.
- 5.9.2 The CTD in his sole discretion, which will not be subject to any protest or appeal, has the right to deem any form of program, device, system, component(s), mechanism(s) as traction control.

C 6. SAFETY EQUIPMENT

6.1 Driver's Seat

- 6.1.1 The driver's seat and any seat used by a passenger in any Rides session must be replaced by another of a type homologated by the FIA to the 8855/1999 standard.
Note: The validity of these seats expires five (5) years from the date of manufacture shown on the seat. A two (2) year extension of this validity may only be granted by the seat manufacturer and provided the seat is returned to the manufacturer for inspection.
- 6.1.2 All seats must be fitted in accordance with the requirements of Article 16: Seats, Attachment and Supports Belts - Article 253 of Appendix J to the ~~International Sporting Code~~ISC of the FIA. The mounting of the seat/s directly to the ROPS is highly recommended. All other seats must be removed.
- 6.1.3 The replacement driver's seat must be located as specified in the relevant Vehicle Specification Document.
- 6.1.4 All ~~Level One~~VCS Teams must have ~~at least one~~ Car which can be fitted with a passenger's seat, safety harness etc when required.

6.2 Safety Harness

- 6.2.1 All Cars must be fitted with a safety harness for each seat fitted in the Car, which safety harness/s complies in all respects with all parts of this Rule C 6.2.
- 6.2.2 The safety harness must comply with the requirements of FIA Standard 8853/98 or 8854/98 and must be fitted and worn as required by Car and Meeting regulations.
Note: The validity of these harnesses expires five (5) years from the date of manufacture shown on the harness. No extension can be granted.
- 6.2.3 The harness/es must be installed and used in compliance with Articles 6.2 and 6.3: Safety Belts - Article 253 of Appendix J to the ~~International Sporting Code~~ISC of the FIA.
- 6.2.4 The safety harness of any Car involved in any accident must be inspected by the CTD at the relevant Meeting. If appropriate, the CAMS Log Book will be endorsed with a requirement by the CTD that the safety harness be replaced. At the Car's next Meeting, the CTD must be satisfied that the safety harness has been replaced.

C 6.3 Window Nets

All Cars are required to have fitted a driver's side window net, and where any Car is used to carry a passenger while on the race track, the Car must also be fitted with a passenger's side window net.

All window nets must comply with the requirements of Article 11: Window / Nets - Article 253 of Appendix J to the ~~International Sporting Code~~ISC of the FIA in addition to the following:

- 6.3.1 they must be permanently attached to the ROPS along the lower edge of the net;
- 6.3.2 they must be affixed to the ROPS above the relevant window by means of a rapid release system so that, even with the Car inverted, it must be possible to detach the window net with one hand.

C 6.4 Roll Over Protection Structure "ROPS"

- 6.4.1 Approval applications for a ROPS must be made to CAMS with a copy provided to the CTD on the same date.
- 6.4.2 All Cars must be fitted with a ROPS which must comply with the requirements of Article 8: Rollover Structures – Article 253 of Appendix J to the ~~International Sporting Code~~ISC of the FIA in the year that the Car was first issued with a CAMS Log Book, except as follows:

- 6.4.2.1 No part of any ~~roll over protection structure~~ROPS is to extend more than 100 mm past the top front or the top rear shock absorber mounting point on any Car with a CAMS Log Book first issued after 1 April 1999; and
- 6.4.2.2 With the exception of a single diagonal member, extending from the top of the windscreen pillar on one side of a Car to the bottom of the windscreen pillar on the opposite side, all Cars must comply with the requirements of FIA drawing No. 253-17E.

C 6.5 Fire Extinguisher Systems

All Cars must be fitted with a fire extinguisher system, which complies with the requirements of Article 7.2: Extinguisher Systems - Article 253 of Appendix J to the ~~International Sporting Code~~ISC of the FIA in addition to the following:

6.5.1 All fire extinguisher systems must be:

- 6.5.1.1 minimum of 4.0 litres in capacity or 2.25kg of gaseous extinguishant;
- 6.5.1.2 fitted as per the manufacturer's instructions;
- 6.5.1.3 mounted:
 - on the left hand side of the rear passengers seat floor.
 - between the tailshaft tunnel and the left hand rear upper trailing arm box.
 - no further forward than the start of the horizontal section of the rear passengers seat floor.
 - with the height being determined by the location of the fire extinguisher on the unmodified original panel.

C 7 BODYWORK

The following Rules apply to the approved bodyshell, including bodywork:

C 7.1 Bodywork - General

- 7.1.1 All bodywork and bodyshell panels/components must remain unmodified and must be of the same shape, material and thickness as the Family of a Vehicle on which the V8 Supercar is based.
- 7.1.2 Specific modifications to the bodyshell panels/components are allowed only to the extent permitted under these Rules.
- 7.1.3 Only the parts listed in the Delete Panel List contained in the Vehicle Specification Document for each Car may be removed from the production bodyshell.
- 7.1.4 Any repair work must conform to all requirements of all Rules in this Division C.
- 7.1.5 Strengthening of the fully sprung components of the chassis and bodywork is allowed provided that the material used follows the original shape and is in contact with it. The reinforcements must not create hollow sections and must not allow two separate parts to be joined together to form one. Except as specifically permitted in these Rules, no body cavities may be filled with any substance that is deemed, by the CTD, to increase the rigidity of the Car.
- 7.1.6 Weld flanges may be removed from the front chassis rails and the joint butt welded.
- 7.1.7 Any non-metallic insulating, sound deadening or sealing material may be removed.
- 7.1.8 It is permitted to make the minimum modifications to the production bodyshell in and around the rear axle assembly only in order to provide sufficient clearance for the rear axle assembly to achieve maximum wheel travel.
- 7.1.9 It is permitted to reinforce each rear chassis rail with a single tube of a maximum size of 30mm OD x 1.5mm wall thickness, extending from the chassis rail to the roll cage, subject to no part of such reinforcement extending rearward of a plane located at X = -1450.0 mm.
- 7.1.10 Reinforcement of the front suspension pivot points to the body shell may be installed, subject to:
 - 7.1.10.1 No part of such reinforcement extending forward of a plane located at X = 2420.0 mm; and
 - 7.1.10.2 In the case of a MacPherson strut suspension, an upper bar may be fitted provided that the maximum distance between the anchorage point of the bar and the upper articulation point does not exceed 150mm.
- 7.1.11 It is permitted to complete the weight of the Car by one or several units of ballast provided that they are strong and unitary blocks, fixed by means of tools with the possibility of affixing seals, and capable of being sealed by the CTD. The ballast must be attached to the shell / chassis via 8.8 class bolts, with a minimum diameter of 8mm for each fixing point.

The maximum relative density of any material used as ballast is twelve (12).
- 7.1.12 It is permitted to modify the front chassis rails forward of a point X=2420.0 mm, and the rear chassis rails rearward of a point X=- 1450.0 mm, solely to facilitate repairs to the chassis rails in the event of an accident. The original chassis rail sections must be retained in all respects forward and rearward of these points as appropriate.

C 7.2 Bodywork - External

- 7.2.1 All approved aerodynamic aids and exterior components must be identical to the samples submitted by each manufacturer to TEGA and be used exclusively and in their entirety.
- 7.2.2 For the purpose of providing clearance to front suspension components or the fuel tank, it is permissible to remove material from the front/rear undertray provided that the cut area is suitably reinforced.

- 7.2.3 For all makes/models other than the Ford Falcon BA/BE and the Holden Commodore VY/VZ, the "wing" fitted to the rear of the Car must be contained within the perimeter of the original bodywork when viewed from above. Its lateral projection, including end plates etc., must be contained within a square of 260 mm, at any given point. Mountings may extend below that square but must not be of a design likely to act as an "aerodynamic aid" and must remain within the perimeter of the device in plan view. Holes in the approved rear wing mountings are permitted to be added on Cars without approved wing mounting holes, provided that they are less than 10 mm in diameter and the wing is contained entirely within the 260mm square, above. All other Cars must use only the approved holes. The upper edge of the 260 mm square is to lie in a plane parallel with the TEGA "Z" datum and 140 mm below the vertical extremity of the roof panel.
- 7.2.4 For the Ford Falcon BA/BE and the Holden Commodore VY/VZ, the rear wing must be fitted so that it complies with all dimensions contained in the relevant Vehicle Specification Document.
With the exception of any modifications required, solely to achieve the dimensions contained in the relevant Vehicle Specification Document, the holes provided in the rear wing and the rear wing mounts to facilitate adjustment, must remain identical to those contained in the samples approved and retained by TEGA and must be used exclusively.
- 7.2.5 The sealing of holes in the mudguards is permitted.
- 7.2.6 Windscreen wiper motors, their position and the blades and mechanism are free subject to there being at least one windscreen wiper provided in the driver's line of vision. The windscreen washer device, the washer bottle and their location is free.
- 7.2.7 Door protective mouldings, front and rear windscreen sealing mouldings and external decorative strips, the maximum vertical height of which is less than 25mm, may be removed.
- 7.2.8 The fitting and use of pneumatic jacks and the necessary modifications for their fitment is permitted, but no "compressed air" bottle can be carried on board.
- 7.2.9 All external air line fittings must be located in or near the "B" pillar and must be recessed so they are not likely to cause injury, and the air jacks must always be manually operated from the Pit Garage side of the Car during any pit stop.
- 7.2.10 Covering lights
- 7.2.10.1 All external lights with lenses made of glass must be covered by a transparent adhesive film applied to the glass which must effectively prevent any broken glass from being spread onto the race track.
- 7.2.10.2 Headlamp covers may be fitted solely to protect the headlamp glass, and must effect no improvement to the Car's aerodynamic efficiency.
- 7.2.11 The registration plate mountings may be removed.
- 7.2.12 In order to comply with the requirements of Rule C 12.3 or the relevant Vehicle Specification Document as appropriate, the mudguard sheetmetal may be "stretched" by the minimum amount necessary to give 10 mm clearance on the tyre whilst respecting the maximum bodywork width.
- 7.2.13 Any components which act as vibration insulators (eg. engine mounts, gearbox mounts, crossmember mounts) may be replaced with components of similar dimensions and free material.
- 7.2.14 All original closing mechanisms on the bonnet and boot lid must be rendered inoperative, and the fitting of at least two (2) separate fasteners for the front bonnet and rear boot lid are compulsory, notwithstanding the hinging arrangements. The fasteners must be of adequate strength and limited extensibility which must simultaneously hold the bonnet and bootlid closed.
- 7.2.15 The fasteners for the bonnet must be of the design under British Patent 2089877 and all bonnet pins must be made of steel.

- 7.2.16 The windscreen must be of laminated glass.
- 7.2.17 If because of damage it is necessary to remove the front windscreen., ~~the rear window must also be removed, and the Driver then must wear either a full face helmet and visor or goggles. A replacement front windscreen will be required to be fitted. The fitment and retention of the replacement windscreen must be inspected by the CTD prior to that vehicle being allowed to rejoin the circuit.~~
- 7.2.18 Any window mounted "NACA" duct must only be used for cooling the Driver and must therefore only have the effect of circulating air within the cockpit.

C 7.3 Bodywork – Internal

- 7.3.1 All carpets, padding, insulation material and lining must be removed from the cockpit.
- 7.3.2 The original heater and/or air conditioning unit may be removed together with its associated equipment.
- 7.3.3 Pipes carrying fluid through the cockpit must be of adequate strength and quality and must have no connections other than those on the front and/or rear bulkhead. Pipes carrying fluids to authorised accessories, e.g. power steering, may have connections within the cabin.
- 7.3.4 The Driver's compartment must be sealed from both the engine and luggage compartments to prevent the passage of flame and/or fluids into the Driver's compartment in the event of any leakage. This sealing must include the Car's "C" pillars.
- 7.3.5 Components of the dashboard below a horizontal plane at the top of the glovebox lid may be removed. Fascia panels containing instruments, switches, and controls may be replaced by others of free design.
- 7.3.6 The centre console may be removed.
- 7.3.7 Only the minimum modifications necessary may be made to the dashboard to facilitate the fitting of any data display devices permitted.
- 7.3.8 For all Cars with a CAMS Log Book first issued after 1st January 2002, with the exception of clutch fluid reservoirs, windscreen washer bottles, drivers drink bottles and Driver cool suit units, all fluid reservoirs must be mounted outside of the cockpit.
- 7.3.9 It is permitted to make the top of the radiator support panel removable solely to facilitate changing the engine.
- 7.3.10 It is permitted to fit a brace, extending from the lower edge to the upper edge of the front windscreen opening, the sole purpose of which is to support the windscreen in the event of its breakage.

C 7.4 Modification for Mufflers

- 7.4.1 It is permitted to modify the shape of the floor pan to accommodate mufflers, but any such modifications are limited to those surfaces of the floor pan which are located: (a) longitudinally, more than 100 mm behind the joint where the front bulkhead (which isolates the engine compartment from the cockpit) meets the floorpan; and (b) laterally, between the inner edges of the sills.
- 7.4.2 It is permitted to: (a) remove material from the approved side skirt/s to permit the protrusion of the exhaust through the skirt; and (b) fold or remove the seam of the rocker panel to assist with exhaust pipe placement, subject to only the barest work necessary to facilitate this modification being undertaken.
- 7.4.3 Particular attention should be paid to the retention of the original strength and rigidity of the floor.
- 7.4.4 For all makes/models except the Ford Falcon BA/BF, the modifications may not vary the height of the floor plan by more than 100 mm.

- 7.4.5 For the Ford Falcon BA/BF, the maximum height of the modifications permitted under C 7.4 is detailed in the relevant Vehicle Specification Document.
- 7.4.6 The modifications permitted under C 7.4 must not be used for any purpose other than to allow the fitment of mufflers and no other components may impinge on the surface defined by the original floor pan.

C 7.5 Doors

- 7.5.1 The side anti-intrusion bars may be removed from doors subject to the ROPS providing lateral protection in the same general area.
- 7.5.2 It is strongly recommended that all Cars ~~must~~ be fitted with all side impact protection devices as detailed in Schedule C 7.
- 7.5.3 The window winder mechanism may be removed from all doors.
- 7.5.4 The sliding windows in all doors must be removed and replaced with a clear polycarbonate insert. The polycarbonate insert fitted to the front doors and rear doors must be the same size, shape and follow the same contour as the production window that it replaces. The Driver window may be removed partially or completely. All sliding door windows are permitted to be fitted with "NACA" ducts or ventilation holes.
- 7.5.5 The inner door panels may be removed from all doors except for the Driver's door.
- 7.5.6 The original interior door trim may be re-manufactured provided the external shape is similar. The interior door trim may be locally modified to permit the fitment of the ROPS.

C 7.6 Windows

Subject to freedoms permitted in these Rules, all windows must remain identical to those of the production automobile upon which the Car is based; windows must not be coloured or tinted. It is however permitted to fit transparent anti-fog protection film to the inside surface of the windows.

C 7.7 Rear Vision Mirrors

- 7.7.1 All Cars must be fitted with an internal rear vision mirror which has a reflecting surface of at least 5000 square mm, and the mirror must provide an unobstructed view to the rear of the Car.
- 7.7.2 All Cars must also be fitted with at least one external rear vision mirror on the Driver's side of the Car.
- 7.7.3 All external mirrors fitted must remain as supplied on the production vehicle on which the V8 Supercar is based.

C 7.8 Tailshaft Loops

- 7.8.1 All Cars must be fitted with full circle tailshaft loops which must be constructed so that, in the event of tailshaft failure, the tailshaft, its components and mountings will be effectively prevented from contact with the ground.
- 7.8.2 The tailshaft loops must be made of steel strap of 30 x 5 mm minimum and be securely attached to a reinforced area of the bodyshell.

C7.9 Tow Hooks and Vehicle Recovery

- 7.9.1 All tools necessary for the removal of the front and rear bumper bars must be securely attached to the passenger side anti intrusion bar and be clearly identifiable to any recovery crew members.
- 7.9.2 All Cars must be equipped with at least one front and one rear external towing hook or strap which must conform to the following:
 - 7.9.2.1 permit the insertion of a round bar of diameter 40mm

- 7.9.2.3 be clearly visible, the chosen colour must be in contrast to the colour of the bodywork immediately adjacent to the towing eyes;
 - 7.9.2.4 the front towing eye must be inside the plan of the original bodywork when viewed from above and must be a "deformable" structure.
 - 7.9.2.5 be constructed and fitted in such a way that they are capable of withstanding the loads applied during a recovery.
- 7.9.3 In addition to the requirements of C 7.9.2 above, all Cars must be fitted with two (2) secondary tow points, located inside the boot, which will be used in more difficult recoveries.
- These secondary tow points must:
- 7.9.3.1 be securely attached to the bodyshell, adjacent to the rear shock absorber mounting points.
 - 7.9.3.2 permit the insertion of a round bar of diameter 40mm have an internal diameter of at least 40mm;
 - 7.9.3.3 have adequate clearance around all components located in the boot to allow the TEGA tow straps, as detailed in Schedule C 6, to be used without interference.
- Please note: the "gas struts" that are fitted to the production car to hold the boot lid open must remain in place and be fully operational.

C 7.10 Additional Accessories

- 7.10.1 All accessories which have no influence on the Car's behaviour are allowed, for example equipment which improves the aesthetics or comfort of the Car interior (lighting, heating etc). In no case may these accessories increase the engine power or influence the steering, transmission, brakes or road holding even in an indirect fashion.
- 7.10.2 The horn may be removed or replaced.
- 7.10.3 Other than the Bodywork, and the approved aerodynamic aids, no part of a Car is permitted which, in the opinion of the CTD, actually or potentially increases downforce or reduces drag; and no Appeal or Protest will lie against the written opinion of the CTD in this regard.

C 7.11 TEGA Roof Duct

- 7.11.1 The fitment of the TEGA Roof Duct is mandatory for the VCS and must be fitted in accordance with the instructions as advised by the CTD.
- 7.11.2 The TEGA Roof Duct must not be modified and blanking of the TEGA Roof Duct on the Cars roof surface is forbidden.
- 7.11.3 The attachment of additional ducting to the TEGA Roof Duct is permitted and the design of this ducting is free as long as it is being utilised for driver cooling.
- 7.11.4 TEGA Roof Ducts are available from: Lightning Composites Ph (07) 5571 7348

C8 ENGINE

C8.1 Engine – General

- 8.1.1 Each make/model of Car must only be fitted with a cylinder block and cylinder heads as detailed in the relevant Vehicle Specification Documents;
- 8.1.2 The maximum Engine Capacity permitted is 5000cc;
- 8.1.3 The compression ratio must not exceed 10.0:1.
- 8.1.4 The engine must not produce power above 7500 rpm.
- 8.1.5 All engines must have suitable provision for both the cylinder heads and the sump to be sealed to the cylinder block so that the cylinder heads and the sump are not able to be removed. Once an engine has been sealed by the CTD, the seals must remain intact and legible at all times. These seals must only be removed by the CTD or with the express prior approval of, and subject to the conditions of, the CTD.
- 8.1.6 The minimum engine component weights stated in Rules C8.4, C8.5 & C8.6 must be complied with at all times during any Meeting. It is permitted to use components which do not comply with these minimum weights during Rides and Testing.
- 8.1.7 All Ford engines fitted with D3 Cylinder Heads and all HMS Holden Engines, must maintain the same positioning of the Cylinder Heads in relation to the Cylinder Bore centre line. The bore centre line must be in the same position as specified by the engine manufacturer and the sample cylinder blocks held by TEGA.
- 8.1.8 All Ford D3 and HMS Holden inlet and exhaust valve positions in the cylinder head must remain as specified by the engine manufacturer and the sample cylinder heads held by TEGA.

NOTE: A radial tolerance of 1.0mm will be applied to both inlet and exhaust valve centre lines with this dimension being measured at the cylinder head face.

C 8.2 Cylinder Block

The following conditions apply to the approved cylinder block:

- 8.2.1 The bore size must be 101.473mm or greater;
- 8.2.2 The fitment of sleeves to the cylinders is permitted;
- 8.2.3 The nominal section of each cylinder must be circular;
- 8.2.4 The location of the cylinder block within the body shell, as measured from the front edge of the oil pan mounting flange must be as stated in the relevant Vehicle Specification Document.
- 8.2.5 The axis of the crankshaft (the pitch angle of the engine) must be a minimum of 2 degrees and a maximum of 4 degrees downwards to the rear with respect to the TEGA "Z" datum;
- 8.2.6 The engine mounts are free but not their number nor position, however it is permitted on the Ford cylinder block to add an additional engine mount. The additional engine mount must be placed in the pan rail and must not be located past the 2nd and 3rd main bearing journals on either side of the cylinder block; and
- 8.2.7 The cylinder head face must remain at 90° to the cylinder bore centreline.
- 8.2.8 It is permitted to add or remove material to or from the cylinder block, subject to: the integrity of the original casting of the cylinder block being respected; and that no attempt is made to vary the basic design of the cylinder block beyond modifications permitted in these Rules; and
- 8.2.9 It must always be possible for the cylinder block to be identified as the approved cylinder block.
- 8.2.10 The minimum deck height of all Ford and Holden Motorsport Cylinder blocks is 207.0mm. It is permitted to use components that do not comply with this dimension during Rides and Testing only.

C 8.3 Cylinder Head

Subject to the Rules contained in Division C and the dimensions contained in the relevant Vehicle Specification Document,

- 8.3.1 Modifications to the cylinder head are free, save for the following:
- 8.3.2 It is permitted to add material to the cylinder head provided that the integrity of the original casting is respected and that no attempt is made to vary the basic design of the approved component beyond the permitted modifications and that it must always be possible for the cylinder head to be identified as the approved part.
- 8.3.3 The original spark plug location must be retained in all respects.
- 8.3.4 It is permitted to use valves, valve spring retainers and collets manufactured from Titanium alloy.
- 8.3.5 Valves must only be opened by mechanical action and closed by means of coil springs.
- 8.3.6 For all Ford, and Holden Motor Sport engines, the maximum inlet valve diameter is 53.97mm (2.125 inches).
- 8.3.7 The minimum inlet and exhaust valve stem diameter is 7.0mm
- 8.3.8 The inlet and exhaust valve stems must be solid.

C 8.4 Pistons

- 8.4.1 No part of the piston may protrude beyond the cylinder head face of the cylinder block when the piston is at TDC.
- 8.4.2 The minimum weight of each piston including the piston pin, but not including the piston rings or retainers, is 500 grams.

C 8.5 Connecting Rods

- 8.5.1 Connecting rods must only be made of Ferrous Material.
- 8.5.2 The minimum weight of each connecting rod including the connecting rod bolts, nuts and washers but not including the 'big end' bearings is 500 grams.

C8.6 Crankshaft

- 8.6.1 The crankshaft must respect the approved crankpin phasing and throw angles as detailed in the relevant Vehicle Specification Document.
- 8.6.2 The stroke of the crankshaft must be a maximum of 77.2 mm and a minimum of 75.2mm.
- 8.6.3 The minimum crankshaft 'big end' journal diameter is 47.45 mm.
- 8.6.4 The minimum crankshaft 'main' journal diameter is 56.65 mm.
- 8.6.5 The minimum weight of any crankshaft is 16.5 kg including the spigot bearing/bush, but not including any keys, bolts or other external drive components.

C 8.7 Other Engine Components

- 8.7.1 Subject to these Rules, all of the other components necessary for the functioning of the engine including exhaust systems, and the lubrication system are free.
- 8.7.2 Where a dry sump system is utilised, the engine oil pressure/scavenge pump assembly must be mounted at the front of the cylinder block (to either side) and be belt driven via an adaptor, off the nose of the crankshaft.
- 8.7.3 All Cars must be fitted with crankcase/oil tank breather/s discharging to the atmosphere and have fitted to such breather/s an oil-trap container (which must be empty at the start of competition) of at least 3 litres capacity.
- 8.7.4 Camshafts are free, but not their number and location, which must remain as approved, and any device which varies the valve timing whilst the engine is operating is prohibited.
- 8.7.5 The flywheel must be made of steel.

- 8.7.6 The flywheel ring-gear must either be an integral part of the flywheel itself or must be attached to the flywheel in the same manner as in the original automobile from which the Car has been derived.
- ~~8.7.7 The primary drive for the ignition distributor must originate from the original drive mechanism and position.~~
- 8.7.7 The ignition distributor may be removed from its original location. The drive for the relocated distributor must be used exclusively by the distributor.

C 8.8 Inlet System

The inlet/induction system is free, except that:

- 8.8.1 The engine must be normally aspirated;
- 8.8.2 With the exception of ambient atmospheric air and the specified control fuel, approved for use in the category by TEGA, no other substance may be added to the intake charge of the engine.
- 8.8.3 Any device which alters the configuration of the inlet manifold, induction system (eg, moveable inlet rams) or exhaust while the engine is operating is prohibited;
- 8.8.4 Throttle actuation must be exclusively by "butterfly" for all Cars.
- 8.8.5 There must be a direct mechanical connection from the accelerator pedal to the throttle/s of the engine, so the energy used to activate the throttle/s must be exclusively generated and controlled by the driver's foot. This mechanical link must maintain a fixed relationship between the throttle pedal and the butterfly;
- 8.8.6 With the exception of the full throttle stop and idle adjuster, any device which allows the throttle to be artificially positioned by resisting the force of either the driver's foot or the throttle return mechanism is prohibited;
- 8.8.7 The throttle linkages must be fitted with suitable return springs, which in the event of a failure in the throttle linkage, will return each throttle bank to the closed position.
- 8.8.8 The maximum fuel pressure permitted at any time is 5.5 bar.
- 8.8.9 Only one fuel injector per cylinder is permitted which must inject fuel directly into the side or the top of the inlet port, manifold or trumpet only.

C 8.9 Exhaust System

- 8.9.1 All Cars must be fitted with an exhaust system, the outlet pipe/s of which must be directed either rearwards or sideways.
- 8.9.2 If directed rearwards, outlet pipe orifices must be between 100mm and 450mm above the ground and they must not protrude by more than 50mm beyond the rearmost portion of the Car.
- 8.9.3 If directed sideways, outlet pipe orifices must be located aft of a vertical plane passing through the midpoint of the wheelbase.
- 8.9.4 In any case, outlet pipe orifices must neither project in any way beyond the maximum width of the Bodywork, nor terminate at a point more than 50mm outside the adjacent Bodywork.
- 8.9.5 All exhaust pipes must be adequately protected in order to prevent burns.
- 8.9.6 The exhaust system must be a complete and contiguous unit and exhaust gas may exit only at the end of the system.
- 8.9.7 No component of the chassis may be used to evacuate exhaust gases.
- 8.9.8 All Cars must be fitted with effective mufflers which diminish the sound of the engine exhaust so that the maximum exhaust noise does not exceed 95dB(A) measured at 30 metres from the side of the track by approved measuring equipment.

C 8.10 Cooling System

- 8.10.1 Subject to other parts of this Rule C 8.10, the cooling system, including the water pump, fans, screens and catch tanks are free.

- 8.10.2 The water pump must be driven directly by the crankshaft via a belt and must be mounted in the same position as in the production automobile from which the Car is derived.
- 8.10.3 The cooling system must be arranged so the general direction of flow of engine coolant is from the radiator to the cylinder block and then to the cylinder heads.
- 8.10.4 A replacement radiator may be fitted subject to:
- 8.10.4.1 There being no modification to the bodywork; and
 - 8.10.4.2 It being fitted in the same general location relative to the engine.
- 8.10.5 Ducting to the front face of the water radiator is permitted within the perimeter of the bodywork but not lower than the lower edge of the front bumper.
- 8.10.6 Ducting of air from the rear of the water radiator is prohibited.
- 8.10.7 Engine oil radiators are free and ducting to them is permitted, subject to the radiator/s and associated ducting being located within the perimeter of the bodywork and not lower than the lower edge of the front bumper.
- 8.10.8 No part of any ducting – whatever the purpose of such ducting – is permitted forward of a line drawn between the upper and lower edges of the rear opening in the approved front bumper.

C 8.11 Engine Control

- 8.11.1 All Cars must only be fitted with one (1) TEGA Control ECU at all times while participating in any Meeting or Test day.
- 8.11.2 This TEGA Control ECU must, at all times;
- 8.11.2.1 Not be disassembled or modified in any way and seals and markings must remain intact and legible, and
 - 8.11.2.2 Run only the approved version of software as loaded into the ECU when supplied by TEGA, and
 - 8.11.2.3 Exclusively control the spark and fuel settings of the engine, and
 - 8.11.2.4 only receive inputs from sensors as specified in the approved ECU sensor list in addition to the gear change ignition cut and the pit lane limit switch, and
 - 8.11.2.5 only provide output signals to the ignition module and injectors as specified in the ECU actuator list in addition to the Control ECU warning light and the fuel pump relay, and
 - 8.11.2.6 Only be connected to the ECU loom as specified in the requirements for the Control ECU loom.
- 8.11.3 The TEGA Control ECU always remains the property of TEGA and must be returned to TEGA upon the request of the CTD. The TEGA Control ECU must only be used for TEGA/V8 Supercars authorised activities.
- 8.11.4 Control ECU Sensors
- Each Car must only be fitted with type and quantity of ECU sensors detailed in the table below which must be the only components that provide input signals to the Control ECU.

ECU Sensor	Qty	Manufacturer	Part number
Crankshaft position	1	Honeywell	IGT101DC
		Delco	10456555
Camshaft position	1	Honeywell	2AV Series
		Honeywell	4AV series
		Siemens	HKZ101 / HKZ121
		Nanjing Huamin Electronics Co Ltd	HME 101 / HME 301
Throttle	1	CTS	518-06500

position		CTS	518-06502
		Bosch	0261 211 003
		Bosch	0280 122 001
		Novatechnic	SP2841S0002
		Gefran	PZ150
		Spectrol	971-0002
Engine air temperature	1	Keystone Thermometrics	25037334
		<u>Keystone Thermometrics</u>	<u>25037388</u>
		Delco	2503 7388
Manifold air pressure	1	Delphi	12219931
Engine coolant temperature	1	Bosch	028 013 0026
		Bosch	028 013 0023
Please note the following:			
- Siemens Part No. HKZ121 supersedes HKZ101			
- Nanjing Huamin Electronics Co Ltd Part No. HME 301 supersedes HME 101			
- ECU sensors may be subjected to destructive testing			

8.11.5 All ECU sensors must remain identifiable and unmodified, except as required solely to facilitate mounting.

8.11.6 Control ECU Actuators

Each Car must only be fitted with type and quantity of ECU actuators detailed in the table below which must be the only components that receive signals from the Control ECU.

Actuators	Qty	Manufacturer	Part number
Ignition Module	1	M&W	CDI 010/M
Ignition Coil	1	Crane Cams	PS 92
Injectors	8	Bosch	0280 150 351 / 0280 150 363
		Bosch	0280 150 036
		Rochester	D 04917104 988
		Rochester / Delphi	D 04917104 989 / 3213 17113744

Please note the following:

- Bosch Part No. 0280 150 363 supersedes 0280 150 351
- Delphi Part No. 3213 17113744 supersedes Rochester
- Part No. D 04917104 989
- ECU actuators may be subjected to destructive testing

8.11.7 All ECU actuators must remain identifiable and unmodified, except as required solely to facilitate mounting.

8.11.8 Control ECU loom

The wiring loom which connects the Control ECU to the ECU sensors, ECU actuators and the rest of the car through the body connector, must conform to the Control ECU loom schematic as contained in Schedule C 2.

8.11.9 Except for connectors which are only connected "pin to pin", the Control ECU loom must not contain any additional wiring, circuitry, connectors, break outs or components except as detailed in the Control ECU loom schematic.

- 8.11.10 The Control ECU loom must remain visible along its length, be separate from all other wiring and be easily removed from Car.
- 8.11.11 The ignition timing of any engine must not vary by more than six (6) degrees while the engine is above 4,000 rpm and above ten percent (10%) throttle opening.

C 8.12 Pit Lane Speed Limiter

At all Meetings Cars must be fitted with a functioning pit lane speed limiter ("Limiter"), which must only operate as follows:

- 8.12.1 The Limiter must only operate using a secondary engine speed limit (rpm limit) which must always be set below 3000 rpm and must only be activated by a switch operated by the Driver.
- 8.12.2 The switch that is used to activate the Limiter must be connected directly to an engine management system input and must not be connected to any other device.
- 8.12.3 The Limiter must be activated at all times while a Car is moving in Pit Lane.

Note: Regardless of the Limiter, each Team always remains responsible for ensuring that the pit lane speed limit is respected; the Limiter does not use a road speed input for any part of its operation.

C8.13 Engine Eligibility – VCS and DVS

- 8.13.1 The HMS Engine will be permitted for competition in the DVS from 1 January 2006.
- 8.13.2 All Holden Commodores competing in the VCS must be fitted with a HMS Engine at all VCS Meetings, unless otherwise approved by TEGA.
- 8.13.3 All VY/VZ Holden Commodores or Driver's competing in the DVS that have upgraded to an HMS Engine must use an HMS Engine at all subsequent Meetings unless otherwise approved by TEGA.

C8.14 Cylinder Head Eligibility

- 8.14.1 The Ford D3 Cylinder Head is only permitted for use in the VCS.
- 8.14.2 All BA/BF Ford Falcons or Drivers that have upgraded to the Ford D3 Cylinder Head must use engines fitted with Ford D3 Cylinder Heads at all subsequent Meetings unless otherwise approved by TEGA.

NOTE: Drivers and Cars will not be upgraded to the Ford D3 Cylinder Head until the vehicle has been presented at a Race Meeting with Ford D3 Cylinder Heads fitted.

C 9. TRANSMISSION / DRIVELINE

C 9.1 General

- 9.1.1 With the exception of those matters contained in Schedule C 1, the final drive ratios listed in Rule C 9.5.6 and the following matters listed in this Rule, all other components of the drive train, including the axles are free.
- 9.1.2 Additional oil radiators and pumps for the gearbox and final drive assembly are allowed within the external perimeter of the bodywork, and air may be ducted to them but no aerodynamic benefit may be derived from such ducting and the external appearance of the Car must remain unchanged.

C 9.2 Flywheel

All Cars must be fitted with a steel flywheel, the minimum weight of which will be 2.0kg, including clutch cushioning buttons and crank trigger teeth attached to the flywheel.

C9.3 Clutch

All Cars competing in the VCS must only be fitted with any of the carbon clutch's designated in the following table:

Brand	Model			
AP	CP7203	CP6623	CP8033	CP8083
Tilton	OT II 7.25			
Alcon	KKC 1803	KKC 1843		
Sachs	F3/184ý			

The specified Clutches will be identified by the means of detailed drawings, photographs and specifications held by TEGA. The Clutch must comply with the following requirements:

- 9.3.1 The clutch must only have 3 driven plates that transmit torque directly to the input shaft of the gearbox.
- 9.3.2 The clutch must be controlled exclusively by the driver's foot via a mechanical and/or hydraulic actuation system. Systems other than this may be approved by TEGA under exceptional circumstances;
- 9.3.3 The clamping force which acts on the friction surfaces must be derived solely from a diaphragm spring;
- 9.3.4 With the exception of the fixed pedal stops, any device which allows the clutch to be artificially positioned, or its speed of engagement to be varied by resisting the force of either the driver's foot or the diaphragm spring, is prohibited;
- 9.3.5 The clutch driven plate/s must be of at least 180mm diameter;
- 9.3.6 The use of titanium and carbon fibre components within the clutch is permitted;
- 9.3.7 Any device which allows or facilitates any aspect of clutch operation to be monitored in any way is forbidden;
- 9.3.8 The force required to disengage the clutch must only be applied towards the flywheel; and
- 9.3.9 The machining of surfaces for the purpose of achieving clutch plate pre load is permitted.

C 9.4 Gearbox

With exception of modifications permitted in Rule C9.1.2, or minor modifications specifically approved by the CTD, all Cars must only be fitted with gearbox casings which are identical to the samples retained by TEGA. The gearbox must comply with all of the requirements of the gearbox specification contained in Schedule C 3 of these Rules and:

- 9.4.1 There must be six (6) forward gears, the ratios and minimum weight of which must be those listed in the following table.

Gear	Min weight (grams)	Ratio	Tooth Count
1 st	1440	2.57:1	14/33
2 nd	1485	1.99:1	17/31
3 rd	1505	1.66:1	19/29
4 th	1290	1.35:1	21/26
5 th	1590	1.14:1	23/24
6 th	2130	1.00:1	Constant Mesh 22/24

- 9.4.2 The minimum tooth width of the gears at the root of the tooth is 23.5 mm for all forward gears plus the constant mesh gear;
- 9.4.3 There must be a minimum of 5 dogs of uniform design that must be evenly spaced around the gear dog face;
- 9.4.4 The maximum gear side angle from root to tip will be 11.0°
- 9.4.5 The gearbox must have an operable reverse gear;
- 9.4.6 The gearshift selector shafts must be solid.
- 9.4.7 the input shaft being in line with the output shaft; only one other shaft is permitted;
- 9.4.8 the maximum dimension from the cylinder block/bell housing face to the rear of the gearbox casing (excluding the extension housing) being 745 mm.;
- 9.4.9 all gears being selected by the driver exclusively via a non-sequential mechanical linkage which permits "H" pattern gear change mechanisms only;
- 9.4.10 the use of any electronic, hydraulic or pneumatic gear selection device or assistance thereto is prohibited;
- 9.4.11 gearbox to chassis crossmembers and mountings are free;
- 9.4.12 dry sump gearboxes using pressurised lubrication systems are forbidden;
- 9.4.13 a gear lever mounted switch, which must only provide a gear shift cut signal to the ECU may be fitted. This gear shift cut must only operate above an engine speed of 7250 rpm.

C 9.5 Tail shaft

- 9.5.1 The tail shaft must be made of Ferrous Material:
- 9.5.2 It must have a minimum weight (not including the centre bearing mounting system) of 9.7 kg;
- 9.5.2 The minimum tube size of the tail shaft will be 2.25" (nominal);
- 9.5.3 Universal (Cardan Joints) or CV joints (Rzeppa CV Joints) are the only joints permitted to be used in the Tail shaft assembly.

C 9.6 Rear Axle Assembly

The rear axle assembly is free except for the following matters:

- 9.6.1 The minimum weight of the rear axle assembly is 1150 kg, which is the unsprung weight of the unit as it would be used in practice, qualifying and racing, with the complete rear wheels removed and with all ancillary components disconnected (eg. shock absorbers, lateral suspension and anti-sway bar links, brake lines, electrical wiring lubrication hoses etcetera).
 - 9.6.1.1 The components referred to in Rule C 9.6.1 must be disconnected at the joint nearest the rear axle housing; and
 - 9.6.1.2 The longitudinal suspension trailing arms must be attached at both the body/chassis unit and the rear axle housing and all pivot arrangements must move freely; and
 - 9.6.1.3 The tailshaft must remain connected at both ends.
- 9.6.2 The final drive must contain a spool made of Ferrous Material and must not incorporate any differential action.

- 9.6.3 The crown wheel and pinion must be of hypoid design and must conform to the requirements of the final drive specification contained in Schedule C 1.
- 9.6.4 The minimum pinion bearing surface diameters must be:

Front bearing surface diameter	28.14 mm nominal
Rear bearing surface diameter	33.35 mm nominal

- 9.6.5 The crown wheel and pinion must have a minimum weight as stipulated in the following table. The addition of ballast to the pinion is strictly prohibited:

Ratio	Combined Weight CWP
3.70 : 1	8.0 kg
3.50 : 1	8.0 kg
3.25 : 1	8.0 7.5 kg
3.15 : 1	7.9 kg

- 9.6.6 The rear axles (drive shafts) must be co-axial to each other and be parallel to the ground for a distance of 600mm each side of the longitudinal centre line of the Car.
- 9.6.7 The minimum weight for a pair (right hand and left hand) of axles must be 7.0kg.
- 9.6.8 The rear axles will be permitted to be either hollow or solid.
- 9.6.9 The use of drop gears are not permitted anywhere in the rear axle assembly.
- 9.6.10 Only the following listed final drive ratios will be permitted at the following circuits:

Circuit	Final Drive Ratio	Teeth
Adelaide Parklands	3.7:1	37/10
Albert Park	3.7:1	37/10
Bahrain	3.25:1	39/12
Barbagallo	3.5:1	35/10
Bathurst	3.15:1	41/13
China	3.25:1	39/12
Hidden Valley	3.5:1	35/10
Mallala	3.7:1	37/10
Oran Park	3.7:1	37/10
Phillip Island	3.25:1	39/12
Pukekohe	3.25:1	39/12
Queensland Raceway	3.5:1	35/10
Sandown	3.5:1	35/10
Surfers Paradise	3.5:1	35/10
Symmons Plains	3.5:1	35/10
Wakefield Park	3.7:1	37/10
<u>Winton</u>	<u>3.7:1</u>	<u>37/10</u>

Note: The ratios nominated above may be varied with other ratios from the above table at a Team Test Day for running in purposes only.

C 10 SUSPENSION

C 10.1 General

The suspension is free except that:

- 10.1.1 The type of suspension and springing medium must always be as stated in the relevant Vehicle Specification Document.
- 10.1.2 The number and position of the suspension pivot points, as detailed in the relevant Vehicle Specification Document, must be used in their entirety and exclusively.
- 10.1.3 The lateral location of the rear axle may be by Panhard rod or Watts link only, the mounting points for which are free.
- 10.1.4 The detachable front suspension cross-member is free, on condition that:
 - 10.1.4.1 It is possible to remove it from the Car (no attachment by welding), and
 - 10.1.4.2 The suspension pivot points are not altered from the approved location, save for those freedoms allowed in Rule C 10.2; and
 - 10.1.4.3 It utilises the two (2) rear mounting points as provided for this purpose in the automobile from which the Car was derived.

C 10.2 Suspension Pivot Points

- 10.2.1 For the Ford Falcon BA/BF and the Holden Commodore VY/VZ only, the suspension pivot points on the body/chassis may only be relocated up to 20mm vertically from the approved point. This point must be used as the pivot point for the suspension (eg, no extension or relocation of this part of the suspension is permitted).
- 10.2.2 For all makes/models other than the Ford Falcon BA/BF and the Holden Commodore VY/VZ, the suspension pivot points on the body/chassis may be relocated within a 20mm radius of the approved points and such points must be used as the pivot point for the suspension (eg, no extension or relocation of this part of the suspension is permitted).

C 10.3 Anti-Roll Bars

Anti roll bars must be of the same basic design as those fitted to the production automobile on which the Car is based, except for the following:

- 10.3.1 Adjustment of the stiffness of an anti roll bar from within the cockpit is permitted.
- 10.3.2 Anti roll bars must only be mounted to the underside of the body shell or to the rear axle housing.
- 10.3.3 All links connecting the anti roll bar to the suspension or the bodyshell must be of a fixed length.
- 10.3.4 A rocker, which varies the motion ratio between the anti roll bar and bodyshell or suspension is permitted.

C 10.4 Shock Absorbers

All Cars competing in the VCS must only be fitted with any of the Shock absorbers designated in the following table:

Brand	Model			
Ohlins	TT44	TTX 40*	TT40	
Penske	8760	8765	8770	TSD-02*
Sachs**	Formula Matrix	Formula Matrix TRD*		
EXE. T.C	E 03			
Koni	2822			

* Shaft through design

** Teams using the Formula Matrix must utilise the adjuster block with Part No. 001706999019

The specified Shock Absorbers will be identified by the means of detailed drawings, photographs and specifications held by TEGA.

Note: EXE.T.C. are to be requested to nominate a shaft through model shock absorber prior to ratification of the Rules.

The Shock Absorbers must comply with the following requirements:

- 10.4.1 Adjustment of any shock absorber from the cockpit is forbidden;
- 10.4.2 All damper units must function independently of each other, i.e. no connections are permitted between units;
- 10.4.3 Material may be removed from MacPherson strut towers solely in order to facilitate the use of adjustable shock absorbers;
- 10.4.4 The shock absorber mounts on the body/chassis may be relocated within a 20 mm radius of the approved point except where MacPherson strut suspension is specified;
- 10.4.5 Where MacPherson Strut suspension is specified, the shock absorber mounts must remain fixed as stated in the relevant Vehicle Specification Document;
- 10.4.6 The use of electronically adjustable shock absorbers is forbidden;
- 10.4.7 Only one (1) shock absorber per wheel is permitted; and
- 10.4.8 Only four (4) shock absorber characteristics that can be adjusted from the outside of each shock absorber is are permitted, but this number does not include shock absorber gas pressure adjustment.
- 10.4.9 For the Ford Falcon BA/BE and the Holden Commodore VY/VZ models only:
 - 10.4.9.1 The shock absorbers will be deemed to pivot and mount to the body/chassis at the same point. The location of this point must comply with all other parts of C 10.4, and
 - 10.4.9.2 The coil springs fitted to the front and rear suspension must only be mounted on the shock absorber in a "coil over" configuration, and
 - 10.4.9.3 The shock absorber / spring assembly fitted to the front suspension must be mounted to the body/chassis as detailed in C10.4 and must attach directly to the lower wishbone.

C 10.5 Suspension Adjustment

- 10.5.1 Where these Rules permit the adjustment of the suspension of a Car, the force required to make such an adjustment must only be generated and controlled as follows:
 - 10.5.1.1 By a member of the Team permitted to work on the Car, while the Car is stationary; or
 - 10.5.1.2 By the Driver, seated normally in the Car with the safety harness correctly fastened, when these Rules permit such an adjustment by the Driver or from within the cockpit.
- 10.5.2 Any device which allows the front or rear roll centre of a Car to be altered or adjusted from the cockpit is forbidden.
- 10.5.3 Any device or system which does, or has the capacity to do, adjust the ride height of a moving Car is forbidden.

C 10.6 Front Upright

10.6.1 The minimum weight of the front upright must be 10.5 kg.

10.6.2 The weight of the upright will be determined after disconnecting the upright from the outer joints of the upper & lower wishbones and steering arm. The disc and calliper will be removed and all the ducting and electrics will be disconnected at the closest joint to the upright. The upright weight will include all mounting bolts, nuts, washers and spacers removed during disassembly of the upright from the Car.

C 11 BRAKES AND STEERING

C 11.1 Brakes

- 11.1.1 All Cars must be fitted with a dual circuit braking system operated by the same pedal. The pedal shall normally control all the wheels. In the case of leakage at any point of the brake system, its pipes or any kind of failure in the brake system, the pedal must still control at least two wheels.
- 11.1.2 Pedals and pedal boxes are free, and the firewall and/or floorpan may be locally modified only to the extent required to facilitate the fitment of master cylinders and/or pedal boxes.
- 11.1.3 The complete brake hydraulic system (including calipers, lines and hydraulic cylinders) is free except for the following restrictions:
- 11.1.3.1 The maximum number of pistons in each caliper is restricted to six (6);
 - 11.1.3.2 Only one (1) brake caliper and two (2) brake pads per wheel are permitted;
 - 11.1.3.3 No system will be permitted on a Car which can retract the caliper pistons for the purpose of a pad change.
 - 11.1.3.4 During a brake pad change, all displaced fluid must return to the master cylinder reservoir through the master cylinder.
- 11.1.4 Brake caliper bodies must only be made of aluminium materials with a modulus of elasticity no greater than 80 GPa.
- 11.1.5 The brake caliper pistons may be made of titanium alloy.
- 11.1.6 Brake discs must be made of Ferrous Material and conform to the following specifications:
- 11.1.6.1 the maximum brake disc diameter must not exceed 376 mm; and
 - 11.1.6.2 the maximum brake disc thickness must not exceed 35.56 mm.
- 11.1.7 All Cars competing in the VCS must only be fitted with any of the Front Brake Rotor's designated in the following table:

Brand	AP Mounting	Brembo Mounting	Brembo Mounting	Alcon Mounting	PFC Mounting	PFC Mounting
AP	CP5772- 6076/7		CP5772-104/5	CP5772-1076/7		
Brembo		09.A009.50/60	09.8528.51/61			
Alcon	DIV2145B453B48L/R			DIV2145B252C52L/R		
PFC	375.35.0052.03(04)				370.35.0051.01(02)	370.35.0055.07(08)
Harrop	99-ROT8055-00			99-ROT8061-00		

- 11.1.8 All Cars competing in the VCS must only be fitted with any of the Rear Brake Rotor's designated in the following table:

Brand	1	2	3	4	5
AP	CP 3581-1118/9	CP 3581-1038/9	CP 3047-372/3	CP 3581-1116/7	<u>CP 3581 – 1118/9 grooved</u>
Brembo	XA2.91.34/35	09.5683.50/60			
Alcon	DIV2198B437C24L/R	DIV2171B2493GL/R	DIV2146B502L4/R4	DIV2137B507L4/R4	
PFC	340.32.0048.01(02)	323.32.0046.07(08)	355.32.0047.07(08)	348.32.0048.03(04)	
Harrop	99-ROT1119-00	99-ROT6256-00			

- 11.1.9 Machining of the brake rotor surface to extend the usable life of the rotor is permitted provided that the disc groove design remains identical to the original rotor as supplied by the manufacturer.

11.1.10 All Cars competing in the VCS must only be fitted with any of the Front and Rear Brake Calipers designated in the following table:

Calipers		Specification/Part Number			
Front	AP	CP6360	CP6361	CP6055	CP6065
	Alcon	CAR9529	CAR9549		
	Brembo	X99 F7 21/24	XA3 02 11/14	XA3 02 31/34	
	Harrop	99 - ACAL 5866 - 00			
	PFC	ZR 27.378.410.440.03(04)		ZR 27.378.410.440.17(18)	
		ZR 27.378.410.440.13(14)		ZR 27.378.410.440.07(08)	
Rear	AP	CP6215	CP6070		
	Brembo	20.8271.30/40	20.4548.13/14		
	Alcon	CAR4940	CAR6349		
	Harrop	99 - ACAL 6334 - 00			
	PFC	ZR22.355.290.365.01(02)		ZR22.355.290.365.11(12)	

- 11.1.12 The specified Brake Rotors, ~~Pads~~ and Calipers will be identified by the means of detailed drawings, photographs and specifications held by TEGA.
- 11.1.13 In order to provide air for the cooling of the brakes of each wheel, it is permitted to fit a duct to each, the intake of which must be situated wholly within the perimeter of the bodywork and not below any point on the lower edge of the front bumper.
- 11.1.14 A system which sprays a mist of water into such air ducts is permitted.
- 11.1.15 Brake calipers incorporating liquid cooling/recirculating systems are prohibited.
- 11.1.16 The fitment of a handbrake/brake lock is optional.
- 11.1.17 Brake anti-lock systems are prohibited.
- 11.1.18 Maximum brake pad thickness must not exceed 30 mm.
- 11.1.19 The braking system pressure in both front calipers must remain equal at all times.
- 11.1.20 A system, which allows the brake balance of a Car to be adjusted manually by the Driver, is permitted only if the force required to make such an adjustment is generated and controlled by the Driver, seated normally in the Car with the safety harness correctly fastened.

C 11.2 Steering

- 11.2.1 The steering is free including the steering wheel, column, tie rods, rack, etc., save that the original mechanical principal (eg, rack and pinion, recirculating ball) must be retained.
- 11.2.2 If the original steering column is utilised, the steering locking device must be removed.
- 11.2.3 Power steering may be added or deleted, but must only be hydraulic in its operation and control.
- 11.2.4 Four-wheel steering is prohibited.

C 12 WHEELS / WHEEL NUTS

C12.1 General

12.1.1 All Cars must use only wheels which conform to this Rule C 12.

12.1.2 All Cars are required to have a minimum of twelve wheels – four for permanently mounted wet control tyres and eight for dry control tyres.

C 12.2 Complete Wheel Dimensions

All the measurements for Rule C 12.2 must be made with at least 1.8 bar pressure in the tyre.

12.2.1 The complete wheels fitted to a Ford Falcon AU or a Holden Commodore VX must conform to the following dimensions:

12.2.1.1 Maximum width of the complete wheel: 305 mm

12.2.1.2 Maximum rim diameter: 17"

12.2.1.3 The minimum weight of any bare wheel is: 9 kg.

12.2.2 The complete wheels fitted to a Ford Falcon BA/BE or a Holden Commodore VY/VZ must conform to all of the requirements of the TEGA Complete Wheel Specification contained in Schedule C 4.

C 12.3 Covered by Bodywork

For the Ford Falcon AU and the Holden Commodore VX only, subject to the provisions of Rule C12.2.1, the complete wheel is free provided that its upper part, located vertically over the wheel hub centre, is covered by the bodywork when measured vertically.

C 12.4 Centre-lock spindles and wheel nuts

All Cars that are fitted with a centre-lock wheel retention system must conform to the following:

12.4.1 The centre-lock spindle thread must be M72 x 2.5 (left or right hand as appropriate); and

12.4.2 The angle of any taper where the wheel nut engages with the wheel must be 90° (included angle); and

12.4.3 All centre-lock spindles must be fitted with a safety clip/spring which must effectively prevent the wheel nut from coming loose at any time. This safety clip/spring must:

12.4.3.1 be in place on the wheel nut at all times while a Car is on the race track; and

12.4.3.2 be replaced/reset after each wheel change; and

12.4.3.3 the clip/mechanism must be coloured red or orange where appropriate.

12.4.4 All Cars that participate in any Race, which has a compulsory requirement to change wheels/tyres (CPS), must only be fitted with wheel nuts that conform to all of the requirements of the TEGA Wheel Nut Specification as contained in Schedule C 3.

C 13 ELECTRICAL SYSTEM

C 13.1 Master Isolation Switch

13.1.1 A battery master isolation switch is mandatory and must:

- 13.1.1.1 disconnect all electrical circuits, battery, alternator, lights, horns, ignition, electrical controls etcetera; and
- 13.1.1.2 also stop the engine; and
- 13.1.1.3 be spark proof and able to be triggered from inside and outside the Car.

13.1.2 The external trigger must be;

- 13.1.2.1 situated near the lower part of the windscreen, on the driver's side; and
- 13.1.2.2 marked by a red spark in a white edged blue triangle with a base of at least 120mm.

C 13.2 Circuits

With the exception of the requirements of the Control ECU, the electrical circuits including cables, fuses and relays are free.

C 13.3 Battery

The battery and its location are free save that it must not be placed in the passenger compartment.

C 13.4 Alternator

The alternator and its drive system are free.

C 13.5 Lights

- 13.5.1 All lighting and signalling devices must remain operational and as originally provided in the production automobile from which the Car is derived, save that it is permitted to:
- 13.5.2 Disconnect and remove the rear number plate lights, side indicator lights, reversing lights and all interior lights.
- 13.5.3 The hazard function of the indicator lights may be removed.
- 13.5.4 Coloured or sign written headlights are permitted.
- 13.5.5 Coloured or sign written headlights must have either the main beam or high beam, operational and are not permitted to be coloured any shade of the colour red except where specific permission has been granted by TEGA.

C 13.6 Starter Motor

13.6.1 The starter motor is free except that it must:

- 13.6.1.1 be exclusively electrically powered, and
- 13.6.1.2 engage directly with the flywheel as in the original automobile from which the Car was derived; and
- 13.6.1.3 be capable of starting the engine at all times.

13.6.2 The starter motor may be mounted in front of, or behind, the flywheel the ring-gear of which must comply with Rule C 8.7.6.

13.6.3 At all times the driver – when seated and secured in the Car as for competition – must be able to activate the starter motor without outside or external assistance.

C 13.7 Rain Light

13.7.1 A high intensity rain light (Motor Sport Electronics P/N - MSE-A04-02) must be fitted into the highest part of the rearward face of the boot lid.

13.7.2 The rain light must be mounted so its face is at 90 degrees to the road surface.

13.7.3 All Cars must be fitted with a rain light flasher unit (Motor Sport Electronic P/N – MSE-A05-02) which must ensure that the rain light flashes at all times when the Pit Lane Speed Limiter is activated.

C 13.8 Computers on the Grid

Unless the specific permission is first obtained from the CTD computers of any description, other than computers which are an integral part of a Car, are forbidden to be taken onto the grid by any person at any time.

C 13.9 Electrically Heated Windscreen

It is permitted to replace a laminated front windscreen with a laminated front windscreen incorporating a heating element.

C 13.10 Fuel Pump Power Supply

All Cars must be fitted with a system that cuts off the power supply to all fuel pumps after a maximum of six (6) seconds absence of crankshaft revolution.

C 13.11 Electronic Data – Logging, Display & Telemetry

13.11.1 All Cars must only be fitted with any of the data recording units designated in the following table:

Brand	Model
Motec	ADL/ADL 2
PI Research	Sigma

13.11.2 Each Car must only be fitted with one (1) data recording unit in addition to the data recording capacity of the Control ECU or any unit specifically required or approved by the CTD.

13.11.3 In addition to the sensors permitted solely as inputs to the Control ECU, and unless otherwise specified, each Car must only be fitted with one (1) of each of the sensors listed in Rules C 13.11.6 and C13.11.7 which must only perform the function stated in each of the respective Rules; and no other sensors are permitted.

13.11.4 The sensors listed in Rule C 13.11.6 and C13.11.7 are in addition to any switches, carrier detect signal for telemetry or any sensors specifically required or approved by the CTD.

13.11.5 The data gathered from the sensors listed in Rule C 13.11.6 and C13.11.7 may then be recorded, displayed or transmitted by any means permitted under these Rules.

13.11.6 Engine Sensors

The sensor listed below are the only sensors allowable in the relevant Series

Sensor	VCS	DVS
*Crankshaft position	✓	✓
*Throttle position	✓	✓
Air temperature	✓	✓
Coolant temperature	✓	✓
Coolant level	✓	✓
Coolant pressure	✓	✓
Oil pressure	✓	✓
Oil temperature	✓	✓
Fuel pressure	✓	✓
Fuel temperature	✓	✓
Fuel usage (x2)	✓	✓
Lambda (x2)	✓	✓
Manifold air pressure	✓	✓

*Note: Access to the crankshaft position and throttle position signals generated by the sensors which are a part of the "TEGA" data monitoring system will be made available on Cars fitted with such a system, subject to the approval of the CTD. If these signals are used, then the relevant sensors listed in rule C13.11.6 are deleted.

13.11.7 General Sensors

The sensor listed below are the only sensors allowable in the relevant Series

Sensor	VCS	DVS
Front wheel speed – x2 (see note below)	✓	✓
Steering angle	✓	✓
Power steering pressure	✓	✓
Power steering temperature	✓	✓
Gearbox oil temperature	✓	✓
Diff oil temperature	✓	✓
G – Force – longitudinal	✓	✓
G – Force – lateral	✓	✓
G – Force – vertical	✓	✓
Suspension position x4	✓	✓
Brake light	✓	✓
Brake disc temperature (front & rear)	✓	✓
Brake line pressure (front & rear)	✓	✓
Cockpit temperature x2	✓	✓
Battery voltage	✓	✓
Beacon input	✓	✓
Brake balance bar position	✓	✓
Anti roll bar position (front & rear)	✓	✓

Please note: G – Force sensors must only be mounted to the Bodyshell.

Note: In order to provide wheel speed information for the exclusive use of display and data acquisition instruments it is permitted to fit two (2) of the non-driven wheel hub assemblies with the necessary equipment.

C 13.12 Signals to/from Cars

At any time only the following signals may be sent to or from a Car:

Signal	Send to Car	Send from Car
Any signal exclusively for television	Yes	Yes
Telemetry (transmission of data)	No	Yes
Driver voice communication	Yes	Yes
Driver visual communication	Yes	Yes

C 13.13 CPS light

- 13.13.1 High intensity CPS lights as supplied by TEGA, must be fitted in the positions advised by the CTD.
- 13.13.2 The Driver must be able to turn the CPS lights on or off while driving.
- 13.13.3 Unless advised otherwise in Supplementary or Further Regulations, the Green CPS light must be fitted at all Meetings where a CPS for Tyres is required.
- 13.13.4 Unless advised otherwise in Supplementary or Further Regulations, the Yellow CPS light must be fitted at all Meetings where a CPS for Fuel is required.

C 14 FUEL SYSTEM

C 14.1 Fuel Tank Requirements - General

- 14.1.1 All Cars must be fitted with a fuel tank conforming to the FIA specification FT3, FT3 - 1999, FT3.5-1999 or FT5. **Note:** The validity of these tanks expires five (5) years from the date of manufacture shown on the tank. An additional two year waiver may be granted provided the tank is returned to the fuel tank manufacturer for inspection.
- 14.1.2 Fuel tanks must be mounted inside, under or through the floor of the luggage compartment.
- 14.1.3 No part of the fuel tank may be situated forward of the rear axle centreline.
- 14.1.4 All openings in the fuel tank bladder must only be located in the top surface of the tank.
- 14.1.5 Cars with a CAMS Log Book first issued after 1 January 2002 must have a fuel tank which is rectangular in section in all planes with minimum inside corner radii and which must not exceed 115 litres capacity.
- 14.1.6 The total capacity of the entire fuel system must not exceed the marked volume of the TEGA fuel tank capacity checking vessel which is approximately 120 litres.

C 14.2 Fuel Tank Housing

- 14.2.1 For Cars with a CAMS Log Book first issued after 1 January 2001, the fuel tank must be mounted in a metal container of which each of the four sides and the base conforms to one of the following specifications; either
 - 14.2.1.1 if made of aluminium, a minimum thickness of 1.6 mm; or
 - 14.2.1.2 if made of steel, a minimum thickness of 1.2 mm.
- 14.2.2 Any gap between the fuel bladder and its housing must be filled with semi rigid energy absorbing material such as polyurethane foam.
- 14.2.3 The underside of the fuel tank housing must remain parallel to the "Z" datum (+/- 2.0 degrees).
- 14.2.4 It is permitted to fit a crushable structure to the rear of the fuel tank housing. The sole purpose of this crushable structure is to provide additional protection to the fuel tank in the event of a collision.
- 14.2.5 There must be a vertical step from the underside of the fuel tank housing to the start of the crushable structure of at least 10.0mm on the rear face of the fuel tank housing.

C 14.3 Filler/Vent Units

- 14.3.1 Refuelling must only be carried out using a single man, "siamese" filler/vent unit as detailed in Schedule D 6.
- 14.3.2 The position of the filler/vent unit may be changed so long as the new installation does not protrude beyond the bodywork and ensures that no fuel will leak into any of the interior compartments of the Car.
- 14.3.3 All fillers/vents that extend to the exterior Bodywork must be flexible in nature.

C 14.4 Fuel Collector Pot

A fuel collector pot of free design and material with a maximum capacity of eight (8) litres is permitted

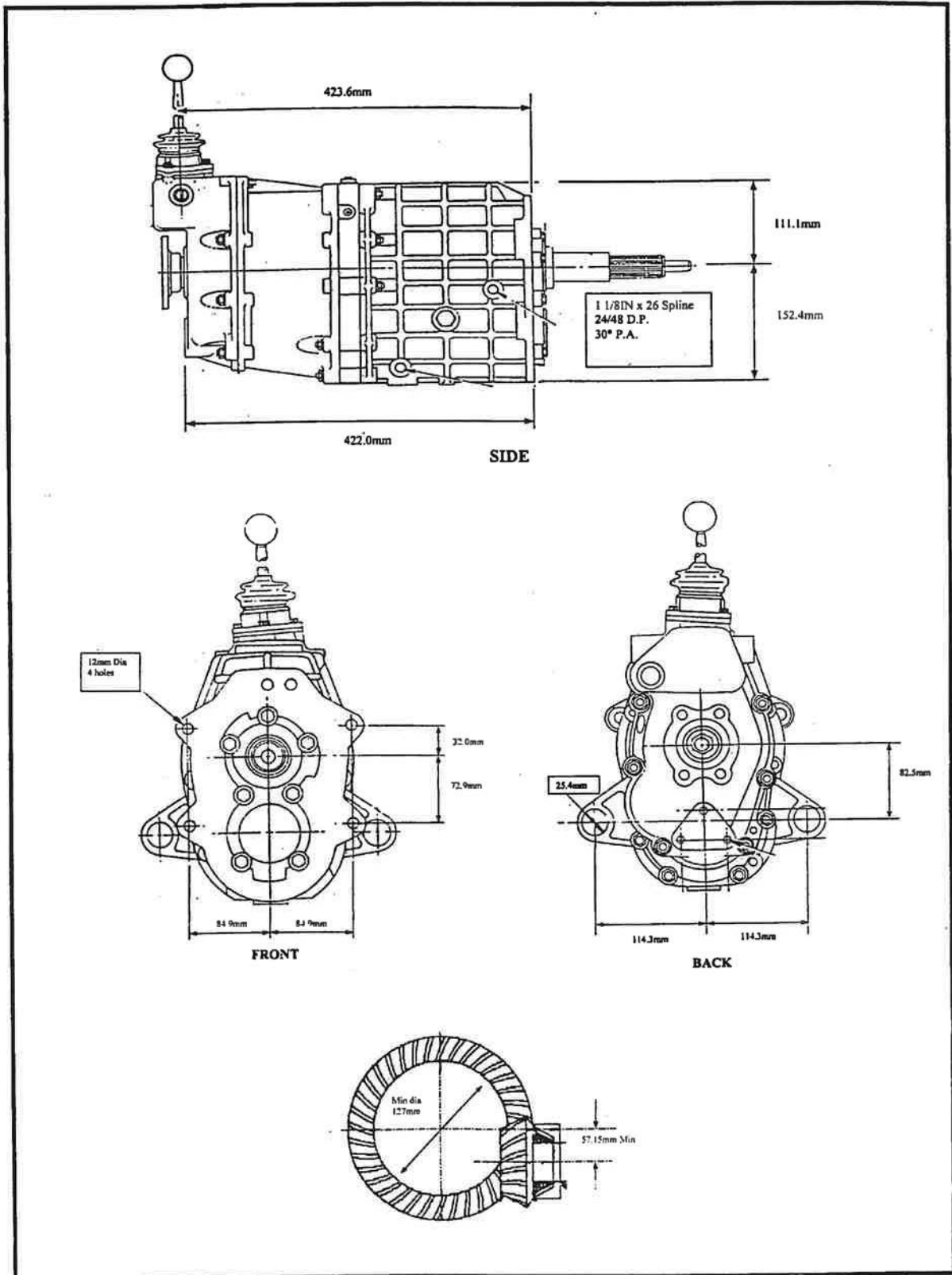
C 14.5 Fuel Tank Vent

The fuel tank must be vented externally of the bodywork.

C 14.6 Fuel Lines

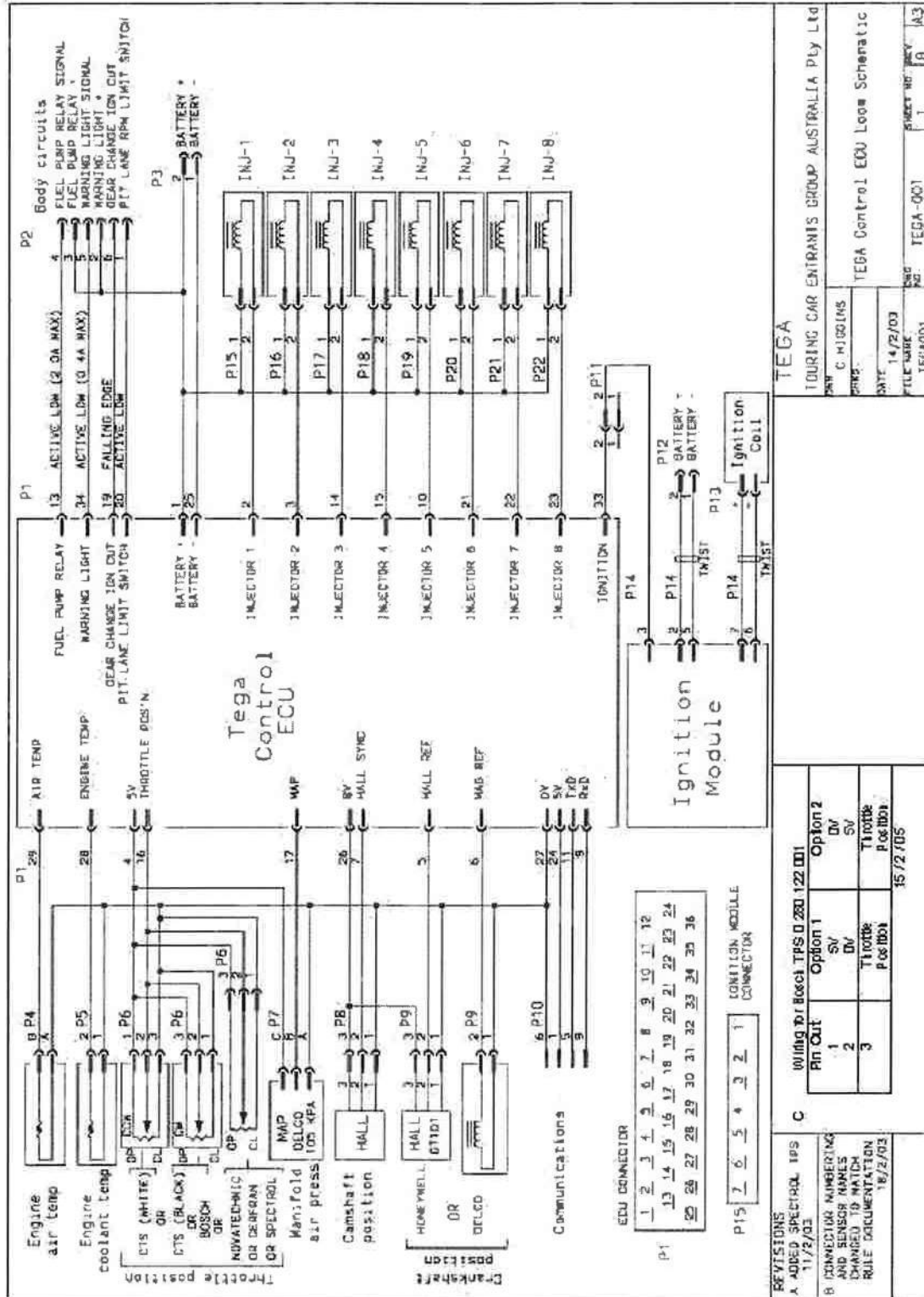
All Cars must be fitted with fuel lines made of suitable material which is of adequate strength and durability; e.g. metal tube or braided hose.

SCHEDULE C 1
GEARBOX & FINAL DRIVE SPECIFICATIONS
(Rules C 9.3)



Please note that this drawing is a graphical representation of a typical gearbox only to clearly demonstrate the dimensions contained in this Schedule C.3

SCHEDULE C 2 **CONTROL ECU LOOM** **(Rule C 8.11.8)**



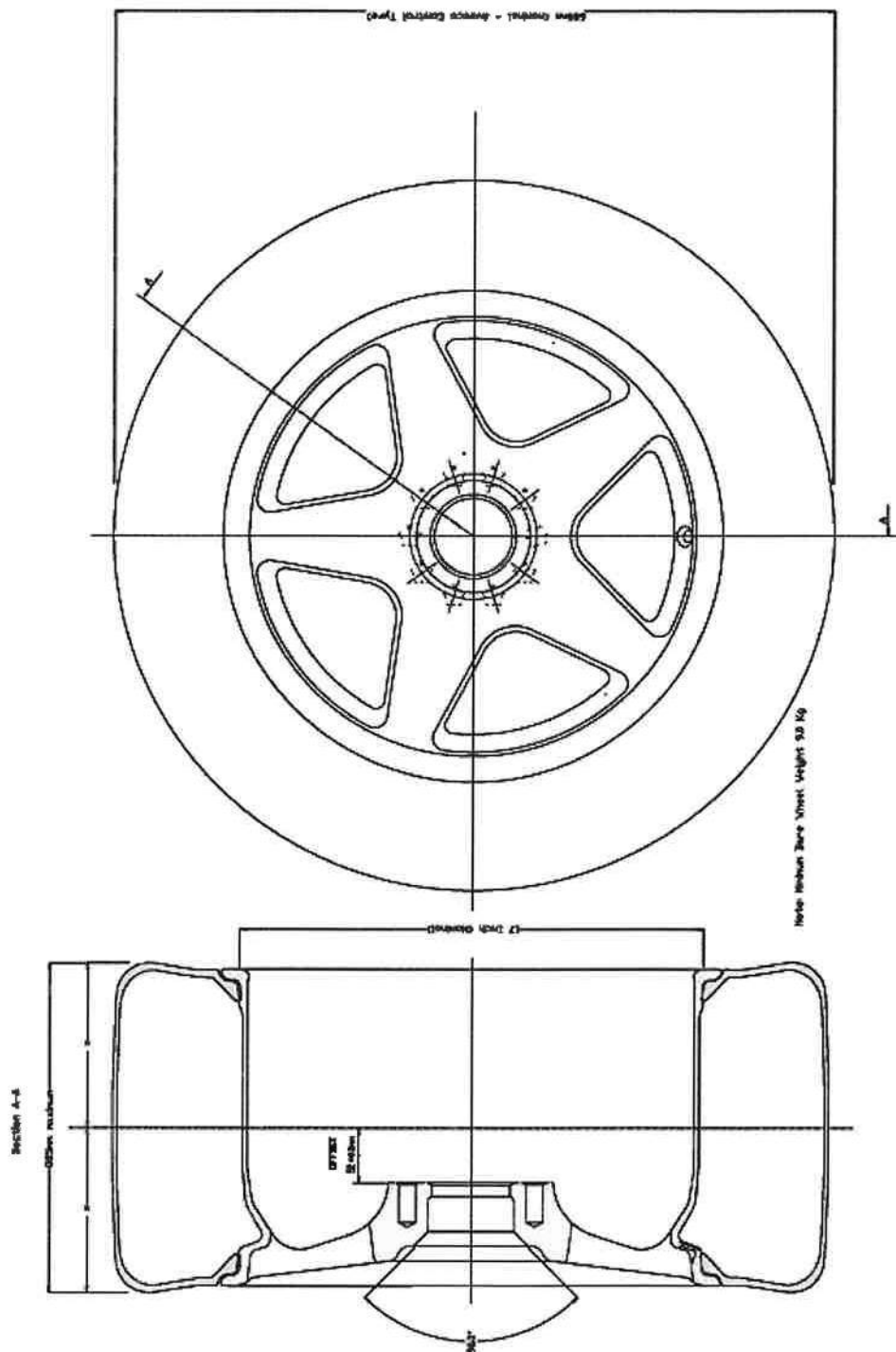
Schedule C2 – TEGA Control ECU Loom Schematic Material list

Connector	Description	Qty	Manufacturer/ Supplier	Part No.	
				Housing	Pins/Contacts
P1	ECU – 36 pin	1	AMP / AMG	0-344111-1	0-171662-5
P2	Body circuits	1	Deutsch	DTM04-6P	0460-202-2301
P3	Battery - ECU	1	Deutsch	DT04-2P	0460-202-1631
P4	Engine air temp	1	Delphi	12162197	12161184
P5	Engine coolant temp	1	AMP / AMG	0-827551-3	2-925590-2
P6	Throttle position	1	AMP / AMG	1-827578-1	0-925590-2
			-or-		
			Deutsch	DTM06-3S-E007	0462-201-2031
P7	Manifold air pressure	1	Carrol	1201-5793	
P8	Camshaft position	1	Deutsch	DTM06-3S-E007	0462-201-2031
P9	Crankshaft position	1	Deutsch	DTM06-3S-E007	0462-201-2031
			-or-		
			Delphi	12162193	12161184
P10	Communications	1	optional	9 pin D-sub male	
P11	Ignition signal	1	Deutsch (male)	DTM04-2P	0460-202-2031
			-and-		
			Deutsch (female)	DTM06-2SE007	0462-201-2031
P12	Battery – Ignition module	1	Deutsch	DT04-2P	0460-202-1631
P13	Ignition coil	1	Crane	Supplied with ignition coil	
P14	Ignition Module	1	AMP / AMG	0-827580-1	0-925590-2
P15 - 22	Injectors	8	AMP / AMG	0-827551-3	2-925590-2
			-or-		
			Bosch	9112-067-011	

[illegible]

SCHEDULE C 4
COMPLETE WHEEL SPECIFICATION
(Rule C 12.2.2)

Please note that this drawing is a graphical representation of a typical wheel only to clearly demonstrate the dimensions contained in this Schedule C 4 and in no does it serve to limit the number of spokes in the wheel.



AMP Connectors

VIEW FROM PIN END

FEMALE PINS

PIN : MSE-CA0-18
Pins : MSE-CA0-00

VIEW FROM PIN END

FEMALE PINS

PIN : MSE-CA0-03
Pins : MSE-CA0-00

VIEW FROM PIN END

PLUG

PIN : MSE-CA1-00

VIEW FROM PIN END

SOCKET

PIN : MSE-CA0-00

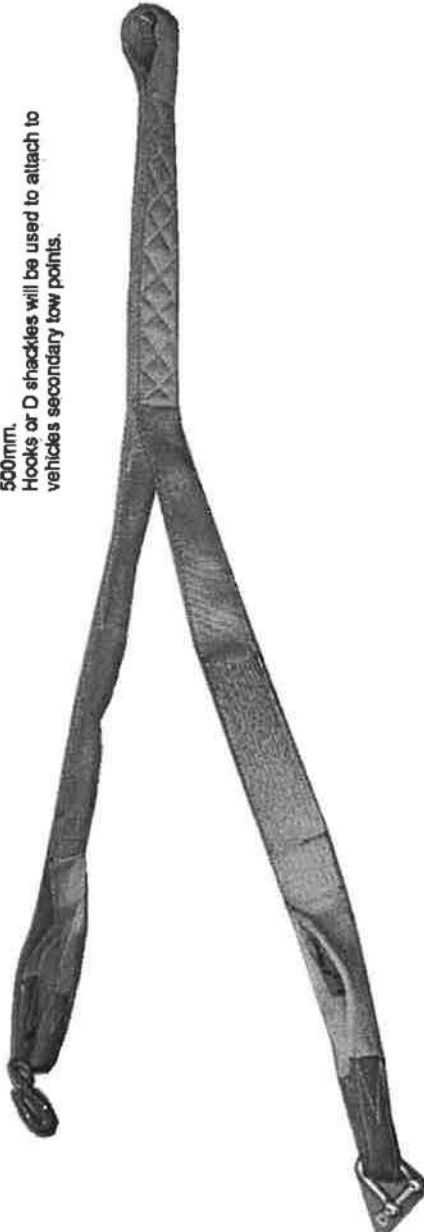
Table

Connector No	Connector Pins
P2	MSE, Deutsch DTM - 3P
P3	MSE
P4, P5, P6	Original modified DLR
P7	MSE, Deutsch DTM 06-3S, Original modified DLR
P10	MSE, Original modified connector on sensor
P11	MSE, Deutsch DTM 05-2S

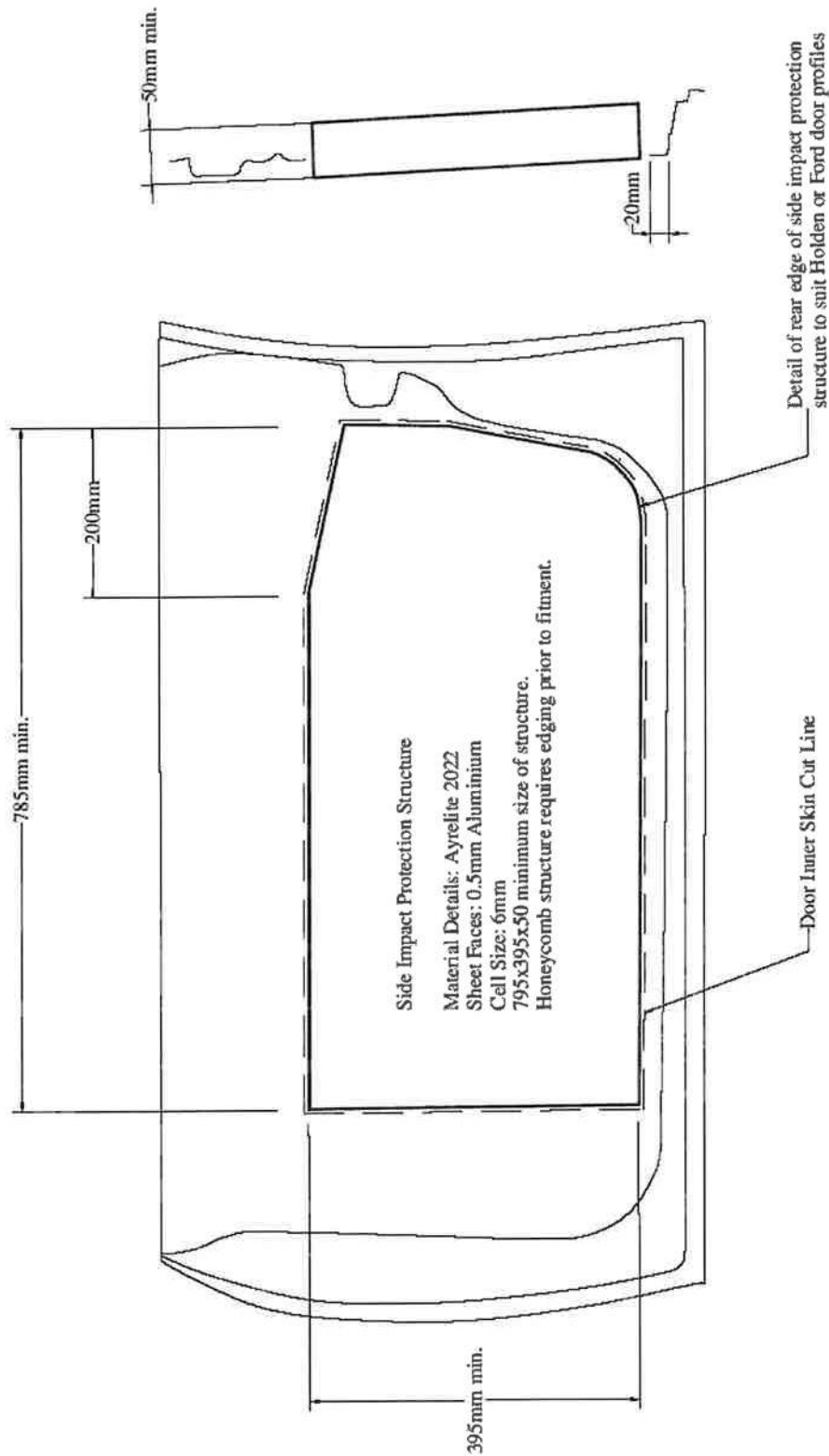
SCHEDULE C 6
TEGA TOW ROPE DIMENSIONS
(Rule C 7.9.3.3)

This picture represents the basic design of the tow strap which will be used by recovery crews to recover vehicle on difficult extractions.

Note: Straps which are attached to vehicle are 1000mm long prior to diverging for a further 500mm.
Hooks or D shackles will be used to attach to vehicles secondary tow points.



**SCHEDULE C 7
DRIVERS SIDE IMPACT PROTECTION
(Rule C 7.5.2)**



Permitted Modifications To Drivers Door:

The inner door skin may be removed to accommodate the side impact structure as illustrated by the cut line.
The side impact structure must be attached to the remaining door inner skin to provide additional strength to the door frame.
Note: It is highly recommended that the side impact structure be positioned as close as possible to the door cross of the ROP structure when the drivers door is closed.