

DIVISION “C” – TECHNICAL RULES

C 1. GENERAL

All Cars must remain identical in all respects to the specific model from the Family of a Vehicle on which they are based and must be constructed in accordance with The Manufacturer Supplied CAD except for the freedoms allowed, and to the extent permitted, by these Rules and the VSD.

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 it's 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 1.1 Technical Definition and Class

- 1.1.1 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.
- 1.1.2 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, must have been produced.

C 1.2 Vehicle / Component Approval

- 1.2.1 To be considered eligible for a Meeting, Cars, cylinder blocks, cylinder heads and aero kits must be as approved by V8 Supercars and detailed in the relevant VSD..
- 1.2.2 All Cars must be constructed in accordance with the Manufacturer Supplied CAD and comply with all aspects of the relevant VSD and the requirements of this Division C.
- 1.2.3 Any manufacturer produced or supplied non catalogue components must be readily available for purchase by all Teams that compete using that manufacturer's model Car.
- 1.2.4 Subject to the approval of V8 Supercars, 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 1.3 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 1.4 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 CTM who will determine the technical issue and any determination will be binding; and any question to be determined judicially will be determined by the judicial system as provided by these Rules.

C 1.5 Repairs

- 1.5.1 Any repairs or replacements must take full account of engineering integrity and safety.
- 1.5.2 The CTM has the right to consider the engineering integrity and safety of any modifications carried out and to require corrective action if appropriate.

C 1.6 Responsibility for Safety

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

C 1.7 Car Models

- 1.7.1 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 unless otherwise approved by V8 Supercars.
- 1.7.2 Any Competitor or Driver that has upgraded to a later model Car (by way of example only from a Holden Commodore VZ to a Holden Commodore VE) for competition in either the VCS or the DVS, must continue to use a Car of the later model at all subsequent Meetings unless otherwise approved by V8 Supercars.

C 1.8 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
2011		
VCS	FG	VE,VEII
DVS	BF,FG	VZ,VE
2012		
VCS	FG	VE,VEII
DVS	BF,FG	VZ,VE,VEII
2013		
VCS	<u>COF</u>	<u>COF</u>
DVS	<u>FG</u>	<u>VEII</u>

V8 Supercars reserves the right to add additional models as they are submitted for approval by each manufacturer.

C 1.9 VSD

VSD's are available for the Cars detailed below:

Make	Model
Holden	VZ VZ,VE VEII
Ford	BA ,BF,FG

C 2. COMPLIANCE

C 2.1 General

- 2.1.1 All Cars must comply with the relevant VSD and technical regulations of this Division C.
- 2.1.2 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 authorised activities including all Rides and Testing.
- 2.1.3 The ~~presentation~~ acceptance of the Targeted Scrutiny Declaration conditions (Schedule C17) will be deemed to be an implicit statement by the Competitor of conformity with all the Rules in this Division C.

C 2.2 Examination for Eligibility

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

C 2.3 Disputes

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

- 2.3.1 Any technical issue, including the eligibility, of Cars will be referred to the Stewards by the IPO for determination
- 2.3.2 The Stewards will conduct a Hearing into the issue and may make any decision thereon.
- 2.3.3 If, during any such Hearing, the Stewards determine that the matter is of a technically complex nature the Stewards may:
 - 2.3.3.1 refer only the technical issue to the CTM for a determination;
 - 2.3.3.2 adjourn the Hearing until the determination of the CTM is received; and
 - 2.3.3.3 subsequently resume and complete the Hearing and make a decision taking into account the determination of the CTM.
- 2.3.4 The determination of the CTM will be unconditionally binding on any Stewards' Hearing in regard to that issue.
- 2.3.5 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 and/or a V8 Supercars identified sample Car and/or the manufacturer supplied CAD.

C 2.4 Minor Non-Compliance

- 2.4.1 The CTM, 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.
- 2.4.2 Having so endorsed the Car's CAMS Log Book, before the Car is permitted on to the Circuit, the CTM 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."

- 2.4.3 Upon receipt of the note referred to in Rule C 2.4.2, 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 CAMS Log Book.
- 2.4.4 If the Stewards have specifically approved the participation of a Car notwithstanding an endorsement in its CAMS Log Book pursuant to Rule C 2.4.1, then no Protest or complaint on that ground by any other person will be accepted in respect of that Meeting.
- 2.4.5 Where a question of eligibility is raised during or after competition and that matter would have been treated as a "minor ineligibility" if raised at scrutiny the Stewards of the Meeting may treat the matter post event in the manner as determined above.

C 3. SCRUTINEERING

C 3.1 Targeted Scrutiny

All Cars will be subject to the provisions of the Targeted Scrutiny Program for all Meetings conducted within Australia. The Targeted scrutiny Program is an ongoing program which is based on a combination of routine and random audits of Cars and Driver's apparel to ensure that all equipment remains in compliance with all relevant regulations. Routine audits will be conducted on a car every 12 months or at every 4th Meeting, whichever comes first.

C 3.2 Onus on Competitor

The onus is on the Competitor to ensure full compliance with all provisions of the Targeted Scrutiny Program as follows:

- 3.2.1 By Signing the Series Registration form and the Team Managers Briefing attendance form for any Meeting the authorised representative of the Car ~~described on the Entry Form and presented at a meeting~~ agrees all conditions described in Schedule 17 of Division C.
- 3.2.2 Each Car that is selected for an audit at a Meeting under the Targeted Scrutiny Program must be presented in a complete and finished state at the time advised by the CTM.
- 3.2.3 All Driver's apparel will be subject to random audits throughout the Meeting and must be made available for inspection at any time as requested by the CTM.

C 3.3 Location of Targeted Scrutiny

All Targeted Scrutiny audits will be carried out at each Competitor's assigned Pit Garage or paddock area.

C 3.4 Equipment to be Scrutineered

In addition to the audits carried out under the Targeted Scrutiny Program, the following equipment must also be presented to the CTM for inspection and approval at all:

- 3.4.1 Meetings, all Driver's equipment such as helmet, HANS® device, overalls, underwear, balaclava, gloves, shoes and 2 x 9 Kg fire extinguishers, Pressure Vessel certification and,
- 3.4.2 Meetings requiring refuelling during a race, all pit crew apparel and refuelling towers (including all components thereof).

C 3.5 Additional Scrutineering

- 3.5.1 The CTM has unfettered discretion to carry out or require additional scrutineering.
- 3.5.2 The CTM may authorise or carry out at any time:
 - 3.5.2.1 check the conditions of eligibility of a Car;
 - 3.5.2.2 require a Car to be sealed and/or dismantled to ensure that the conditions of eligibility and/or safety are fully satisfied;
 - 3.5.2.3 require a Competitor to supply to the CTM or the Stewards such parts or samples as may be specified by the CTM; and
 - 3.5.2.4 require that any components or parts of a Car be sealed for examination by the Stewards or by the CTM.

C 3.6 Changes/Modifications to Cars

If at any time after the commencement of a Meeting, a Car has been 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 CTM for scrutineering approval prior to being permitted back on the Circuit.

C 3.7 Prohibition of Unsafe Cars

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

C 3.8 On Track Incidents

The Race Director or the CTM 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 3.9 No Replacement Cars

Unless otherwise specified in the Supplementary Regulations, replacement Cars are not permitted, and a Competitor must only use the one (1) Car which had been originally entered for the Meeting.

C 3.10 Prohibited Work

During any race, it is forbidden to change cylinder blocks (crankshaft case and cylinders) or the bodysell structure, under penalty of exclusion.

C 3.11 Delegation by CTM

- 3.11.1 References to the CTM in Division C automatically includes all nominees appointed by the CTM pursuant to Rule A 10.3.
- 3.11.2 Checks, examinations and scrutineering will be carried out by duly appointed nominees responsible to the CTM, and such nominees will be responsible and authorised to give instructions to Competitors for the operation of the Parc Ferme.

C 3.12 Accidents and Scrutineering

- 3.12.1 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 Pit Lane for examination by the CTM.
- 3.12.2 Following any necessary rectification and subsequent to a satisfactory examination by the CTM, the Car may rejoin the Circuit at the discretion of the Race Director.
- 3.12.3 Any Car withdrawn from any practice session, qualifying session, warm up or Race due to accident damage must be inspected by the CTM before it is permitted to continue to participate in the Meeting.

C 4. CONSTRUCTION AND MODIFICATION

C 4.1 Minimum Weight

- 4.1.1 The minimum weight of a Car is 1345 (VCS) and 1355kg (DVS) excluding the Driver and the Driver's apparel.
- 4.1.2 The minimum weights stated in C 4.1.1 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.
- 4.1.3 In addition to the requirements of C 4.1.1 and C 4.1.2 above, all Cars competing in the VCS must achieve a minimum weight of 1445 kg including the weight of the Driver wearing his complete Driver's apparel, as recorded by the CTM at the Driver's first Meeting for the year, both during and immediately after all practice, qualifying sessions and Races.
- 4.1.4 The minimum front axle weight of a Car, measured at the front axle centreline, is 750kg (VCS) and 740kg (DVS). This minimum weight must be achieved at all times, without fuel, Driver or Driver's apparel on board.
- 4.1.5 V8 Supercars reserves the right at all times to amend the weights of Cars in the interests of equitable competition.

C 4.2 Freedoms Permitted

- 4.2.1 Where in these Rules a freedom is permitted to fit specific parts:
 - 4.2.1.1 Holes providing minimal clearance may be drilled/made, solely to allow the passage or fixing of that part;
 - 4.2.1.2 The minimum local modifications, solely for clearance or mounting purposes only, may be made in the surrounding area; and
 - 4.2.1.3 If the permitted part requires modifications to be made to "mating" parts, then those modifications are authorised.
 - 4.2.1.4 Such local modifications as permitted in accordance with these Rules must be submitted for approval to the CTM.
- 4.2.2 Modifications permitted under these Rules are allowed only on condition that the weights and/or dimensions contained in these Rules and the relevant VSD are respected.
- 4.2.3 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.
- 4.2.4 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 4.3 Damage Repairs

- 4.3.1 Restoration of body shape and chassis geometry following accidental damage is permitted only using approved panels and parts or by the addition of materials necessary to effect the repairs (eg, body filler, weld metal).
- 4.3.2 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 4.4 Composite Material Permitted

- 4.4.1 "Composite Material" is defined as being a blend of material reinforced with fibreglass, E Glass aramid fibres, polypropylene carbon fibre threads and/or a combination of any or all of these materials.
- 4.4.2 In addition to the approved components of the aero kit/body work, as approved for use by V8 Supercars, 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
- Dry break fuel fitting to bodywork adaptor
- False floor (driver comfort)
- Passenger floor (for Meeting Rides only)
- Foot rest
- 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
- Driver Cooling Systems
- Left hand mirror cover (Where Permitted)
- Pit stop light Mounts

All external body panels which are manufactured from a composite material (front bumper, rear bumper, front wheel guards & side skirts), must be constructed in a way to ensure that any debris does not pose a risk of punctures to other Cars.

Note: Where the Layup of a particular component is specified as RA 175 T it is permitted to replace the specified material with Innegra® where appropriate.

C 4.5 Exotic Materials

The following materials must not be used in the construction or modification of a V8 Supercar, except as specifically permitted by these Rules:

- Titanium / Titanium alloy
- 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
- Ceramic Components and ceramic coatings – (excluding spark plugs, bodywork insulation coatings, exhaust coatings, piston coatings, front bumper under trays)

C 4.6 Manufacturing and Measuring Tolerances

- 4.6.1 When a Car is being examined, all measurements and tolerances will be those stated in these Rules or the relevant VSD.
- 4.6.2 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.
- 4.6.3 All measurements will be taken at ambient temperature.
- 4.6.4 Any dispute regarding the compliance of a Car with any measurements in this Division C or the relevant VSD will be assessed, where appropriate, by the inspection of random samples of the relevant Family of a Vehicle and/or a V8 Supercars identified sample Car and/or the Manufacturer supplied CAD.

C 4.7 Vehicle Datums

- 4.7.1 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.
- 4.7.2 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.
- 4.7.3 **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 V8 Supercars. This plane also passes through the specified upper and lower rear trailing arm pivot points. Forward is positive.
- 4.7.4 **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.
- 4.7.5 **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 V8 Supercars. Up is positive.

~~C 4.8 V8 Supercars Data Monitors Moved to C 14 and C15~~

C 4.8 Traction Control

- 4.8.1 Traction control is prohibited.
- 4.8.2 The CTM 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 5. SAFETY EQUIPMENT

C 5.1 Driver's Seat

- 5.1.1 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 or 8862/2009

Note: The validity of these seats expires five (5) years for 8855/1999 and ten (10) years for 8862/2009 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.

- 5.1.2 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 ISC of the FIA. The mounting of the seat/s directly to the ROPS or dedicated integral replacement seat anchorage points is highly recommended. All other seats must be removed.
- 5.1.3 The replacement driver's seat must be located as specified in the relevant VSD.
- 5.1.4 All VCS Teams must have a Car which can be fitted with a passenger's seat, safety harness etc when required.

C 5.2 Safety Harness

- 5.2.1 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 5.2.
- 5.2.2 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.
- 5.2.3 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 ISC of the FIA.
- 5.2.4 The safety harness of any Car involved in any accident must be inspected by the CTM at the relevant Meeting. If appropriate, the CAMS Log Book will be endorsed with a requirement by the CTM that the safety harness be replaced. At the Car's next Meeting, the CTM must be satisfied that the safety harness has been replaced.

C 5.3 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 Circuit, 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 ISC of the FIA in addition to the following:

- 5.3.1 they must be permanently attached to the ROPS along the lower edge of the net;
- 5.3.2 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.
- 5.3.3 the window net when released from its operational position must retract so as not to impinge on the door opening when the Car is inverted.

C 5.4 Roll Over Protection Structure "ROPS"

- 5.4.1 Approval applications for a ROPS must be made to CAMS with a copy provided to the CTM on the same date.
- 5.4.2 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 ISC of the FIA in the year that the Car was first issued with a CAMS Log Book, or comply with the Homologation Roll Over Protection Document issued by CAMS in that year, except as follows:

- 5.4.2.1 No part of any 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
- 5.4.2.2 With the exception of a single diagonal member, extending from the top of the windscreen pillar on the right hand 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. 253-48.
- 5.4.2.3 An additional Vertical member must be fitted from the centre of the Door cross to the sill or sill bar and suitably gusseted inline with FIA Article 253 of Appendix J to the ISC 8.2.14
- 5.4.2.4 Where appropriate drivers side door cross joints must be gusseted inline with FIA Article 253 of Appendix J to the ISC 8.2.14

5.4.3 All Cars with a CAMS Log Book first issued on or after the 01/01/2007 must comply with the following:

- 5.4.3.1 The basic design of the ROPS must comply with FIA Article 253 of Appendix J to the ISC Drawing No. 253-7
- 5.4.3.2 The minimum tube sizes and thicknesses for the various members must comply with the following table:

Member	Metric Tube Minimum (mm)	Imperial Tube Minimum (inches)
Main hoop	50 x 1.5	2.000 x 0.065
Front leg	45 x 1.5	1.750 x 0.065
Door crosses	45 x 1.5	1.750 x 0.065

5.4.3.3. Dimension A on FIA Article 253 of Appendix J to the ISC Drawing No 253-49 must be a minimum of 255.0mm

5.4.4 All Cars with a CAMS Log Book first issued on or after the 01/01/2008 must comply with the following:

- 5.4.4.1 The basic design of the ROPS must comply with FIA Article 253 of Appendix J to the ISC Drawing No. 253-7
- 5.4.4.2 The door bar crosses must comply with FIA Article 253 of Appendix J to the ISC Drawing No. 253-9 as a minimum.
- 5.4.4.3 The minimum tube sizes and thicknesses for the various members must comply with the following table:

Member	Metric Tube Minimum (mm)	Imperial Tube Minimum (inches)
Main hoop	50 x 1.5	2.000 x 0.065
Front leg	45 x 1.5	1.750 x 0.065
Door crosses	45 x 1.5	1.750 x 0.065
Main hoop crosses	40 x 1.0	1.500 x 0.049
Roof Diagonals	40.x 1.0	1.500 x 0.049
Upper windscreen	40 x 1.0	1.500 x 0.049
Rear back stays	40 x 1.0	1.500 x 0.049

5.4.4.4. Dimension A on FIA Article 253 of Appendix J to the ISC Drawing No 253-49 must be a minimum of 255.0mm

Note: For Cars Log booked on or after 1/3/09 It is not permitted to drill and insert any type of bobbin into the main structure of the ROPS. The main structure is defined as any tube that is of a specified size in the V8 Supercar Operations Manual.

- 5.4.4 All Cars with a CAMS Log Book first issued on or after the 01/01/2011 must comply with the following:
- 5.4.4.1 The basic design of the ROPS must comply with FIA Article 253 of Appendix J to the ISC Drawing No. 253-7
- 5.4.4.2 The door bar crosses must comply with FIA Article 253 of Appendix J to the ISC Drawing No. 253-9 as a minimum.
- 5.4.4.3 The minimum tube sizes and thicknesses for the various members must comply with the following table:

Member	Metric Tube Minimum (mm)	Imperial Tube Minimum (inches)
Main hoop	50 x 1.5	2.000 x 0.065
Front leg	45 x 1.5	1.750 x 0.065
<u>Windscreen Pillar reinforcement</u>	<u>40 x 1.5</u>	<u>1.500 x 0.065</u>
Door crosses	45 x 1.5	1.750 x 0.065
Main hoop crosses	<u>40 x 1.5</u>	<u>1.500 x 0.065</u>
Roof Diagonals	<u>40 x 1.5</u>	<u>1.500 x 0.065</u>
Upper windscreen	<u>40 x 1.5</u>	<u>1.500 x 0.065</u>
Rear back stays	<u>40 x 1.5</u>	<u>1.500 x 0.065</u>
<u>Rear back stay diagonal</u>	<u>40 x 1.5</u>	<u>1.500 x 0.065</u>

All other tubes have a minimum wall thickness of 1 mm

- 5.4.4.5. Dimension A on FIA Article 253 of Appendix J to the ISC Drawing No 253-49 must be a minimum of 255.0mm

C 5.5 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 ISC of the FIA in addition to the following:

- 5.5.1 All fire extinguisher systems must be:
- 5.5.1.1 minimum of 4.0 litres in capacity or 2.25kg of gaseous extinguishant;
- 5.5.1.2 fitted as per the manufacturer's instructions;
- 5.5.1.3 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 6. BODYWORK

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

C 6.1 Bodywork - General

- 6.1.1 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.
- 6.1.2 Specific modifications to the bodyshell panels/components are allowed only to the extent permitted under these Rules.
- 6.1.3 Only the parts listed in the Delete Panel List or the Replacement Panel List contained in the VSD for each Car may be removed from the production bodyshell.
- 6.1.4 Any repair work must conform to all requirements of all Rules in this Division C.
- 6.1.5 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 CTM, to increase the rigidity of the Car.
- 6.1.6 Weld flanges may be removed from the front chassis rails and the joint butt welded.
- 6.1.7 Any non-metallic insulating, sound deadening or sealing material may be removed.
- 6.1.8 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.
- 6.1.9 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.
- 6.1.10 Reinforcement of the front suspension pivot points to the bodyshell may be installed, subject to:
 - 6.1.10.1 No part of such reinforcement extending forward of a plane located at X = 2420.0 mm.
- 6.1.11 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 CTM. The ballast must be attached to the bodyshell via 8.8 class bolts, with a minimum diameter of 8mm for each fixing point. Ballast may be added to removable components that have a specified minimum weight.

The maximum relative density of any material used as ballast is twelve (12).
- 6.1.12 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.
- 6.1.13 It is permitted to remove the central locking component of the door locking mechanism
- 6.1.14 It is permitted to remove a section of the front of the 100 x 100 box section Sill to create an angle on the front face the measurements on any such modification must not be more than 60 x 60 mm and must have prior written approval on the CTM

C 6.2 Bodywork - External

- 6.2.1 All approved aerodynamic aids and exterior components must be identical to the samples submitted by each manufacturer to V8 Supercars and be used exclusively and in their entirety and are to be used only for authorised V8 Supercar activities.

- 6.2.1.1 The front guards for All Cars must be identical in shape as those samples held by V8 Supercars. The composition of the front guards must comply with Schedule C11.
- 6.2.1.2 It is permitted for cars in the DVS to use original steel Front Guards that comply with Rule C 6.2.12.
- 6.2.1.3 It is permitted for the for All Cars in the VCS to be fitted with rear quarter panels that must be identical in shape as those samples held by V8 Supercars. The composition of the rear quarter panels must comply with Schedule C16.
- 6.2.2 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.
- 6.2.3 For the All Cars the rear wing must be fitted so that it complies with all dimensions contained in the relevant VSD. With the exception of any modifications required, solely to achieve the dimensions contained in the relevant VSD, 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 V8 Supercars and must be used exclusively.
- 6.2.4 The sealing of holes in the mudguards is permitted.
- 6.2.5 Windscreen wiper motors, their position and the blades and mechanism are free subject to there being at least one (1) windscreen wiper provided in the Driver's line of vision. The windscreen washer device, the washer bottle and their location is free.
- 6.2.6 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. Other external mouldings/trims that have no aerodynamic effect may be locally modified for aesthetic reasons.
- 6.2.7 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.
- 6.2.8 All external air line fittings must be located in or rearward of the "B" pillar (but in the general vicinity of 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.
- 6.2.9 Covering lights
 - 6.2.9.1 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.
 - 6.2.9.2 Headlamp covers may be fitted solely to protect the headlamp glass, and must effect no improvement to the Car's aerodynamic efficiency.
- 6.2.10 The registration plate mountings may be removed.
- 6.2.11 In order to comply with the requirements of Rule C 11.3 or the relevant VSD 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.
- 6.2.12 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.
- 6.2.13 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 boot lid closed.

- 6.2.14 The fasteners for the bonnet and boot must comply with the following:
- 6.2.14.1 The bonnet fasteners used must be of the design under British Patent 2089877 and all bonnet pins must be made of steel.
 - 6.2.14.2 The boot fasteners used must be of the design under British Patent 2089877 and may be modified to suit the application subject to the locking pin being retained on the boot lid catch whilst not engaged.
- 6.2.15 It is permitted to remove or modify the rear wheel mudguard sheet metal material along the edge of the rear screen so as to facilitate the removal of the rear mudguard without removing the rear windscreen.
- 6.2.16 The windscreen must be of laminated glass.
- 6.2.17 If because of damage it is necessary to remove the front windscreen. A replacement front windscreen will be required to be fitted. The fitment and retention of the replacement windscreen must be inspected by the CTM prior to that Car being allowed to rejoin the Circuit. Refer to Schedule C8 for the minimum requirements of this retention system.
- 6.2.18 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.
- 6.2.19 The front bumper retaining bolts on the exposed face of the bumpers must be either button heads or recessed into a retaining washer and all fixings must be able to be removed with a 5mm allen key only.
- 6.2.20 The original engine bay scuttle/plenum seal which seals the engine compartment must be used where possible. If it is not possible to use the original scuttle/plenum seal in its entirety, the Car must be fitted with a scuttle/plenum seal of a design as nominated by the Homologation Team for that model of Car and approved by V8 Supercars.
- 6.2.21 Front Bumper Mounting
The front bumper shall be securely mounted to the bodyshell and must remain in compliance with all dimensions detailed in the relevant VSD at all times. No system or device, the intention of which is to permit relative movement between the front bumper and the bodyshell is permitted. It is permitted to support the rear of the undertray from the bodyshell or crossmember provided their sole purpose is to support the undertray. For The VCS The mounting system for the front bumper bar must consist of a horizontal beam constructed of a minimum of 1.6mm thick aluminium or 1.2 mm thick steel and be round, square or rectangular in section between the front chassis rails and be designed in such a way in the event of a frontal impact the bar mount will make contact prior to the chassis rails and provide reasonable load spreading characteristics. Systems must be approved by the CTM. (Effective 1st September 2011)
- 6.2.22 The minimum weight for any front bumper bar excluding its mounting system in the VCS is 12.5kg
- 6.2.23 Rear Bumper Mounting
The rear bumper mounting is free.
- 6.2.24 Front Bumper Bar Air Intakes
It is permitted for air intakes in the front bumper to be partially or completely blanked provided that any blanking complies with the following:
Radiator Intake and Brake Ducts:
Blanking must only be fitted behind the homologated trim line of the radiator intake or brake ducts and must be either flat sheet or tape.
Front Bumper Bar Grill/s:
Blanking must only be affixed to the rear face of such grill/s

C 6.3 Bodywork – Internal

- 6.3.1 All carpets, padding, insulation material and lining must be removed from the cockpit.

- 6.3.2 The original heater and/or air conditioning unit may be removed together with its associated equipment.
- 6.3.3 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.
- 6.3.4 The Driver's compartment must be:
- 6.3.4.1 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. The rear firewall from the parcel shelf to the floor pan must comply with these minimum material thicknesses and be fixed by either welding or a minimum of 5/32 inch steel rivets with a maximum spacing of 50mm between each rivet: (September 2011)
- | Material Type | Minimum Thickness |
|---------------|-------------------|
| Aluminium | 1.2mm |
| Steel | 0.6mm |
- 6.3.4.2 Any Drivers compartment vent ducting passing through the front or rear firewalls must comply with the material specifications in Rule C 6.3.4.1 or be constructed of stainless steel and have a total effective area of no more than 315cm² in each fire wall.
- 6.3.5 Components of the dashboard below a horizontal plane at the top of the glovebox lid or as defined in the relevant VSD may be removed. Fascia panels containing instruments, switches, and controls may be replaced by others of free design.
- 6.3.6 The centre console may be removed.
- 6.3.7 Only the minimum modifications necessary may be made to the dashboard to facilitate the fitting of any data display devices is permitted.
- 6.3.8 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.
- 6.3.9 It is permitted to make the top of the radiator support panel removable solely to facilitate changing the engine.
- 6.3.10 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 6.4 Modification for Mufflers

- 6.4.1 For all makes/models except Holden VE and Ford Falcon FG
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.
- 6.4.2 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.
- 6.4.3 Particular attention should be paid to the retention of the original strength and rigidity of the floor.

- 6.4.4 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.
- 6.4.5 For the Ford Falcon BA/BF, the maximum height of the modifications permitted under C 7.4 is detailed in the relevant VSD.
- 6.4.6 The modifications permitted under C 6.4 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.
- 6.4.7 On the Holden VE and the Ford Falcon FG it is permitted to remove material from the left hand sill no higher than Z+35mm and with a forward dimension of X +600 on the inner side and X + 500mm on the outer side of the rail the resulting hole must be capped with steel no less than 2 mm thick and must be used for tailpipe clearance only. This modification must in no way compromise where the main hoop of the ROPS mounts to the sill
- 6.4.8 The area of the original floor on the FG Ford and VE Commodore between X 150 and X 700 and Y -150 and Y -600 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 these measurements

C 6.5 Doors

- 6.5.1 The side anti-intrusion bars may be removed from doors subject to the ROPS providing lateral protection in the same general area.
- 6.5.2 It is mandatory that all Cars be fitted with a side impact protection device in both front and rear doors located on the Drivers side as detailed in Schedule C 7.
- 6.5.3 The window winder mechanism may be removed from all doors.
- 6.5.4 The sliding windows in all doors must be removed and replaced with the following:
 - 6.5.4.1 A clear polycarbonate insert.
 - 6.5.4.2 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.
 - 6.5.4.3 The Drivers and passengers windows may be removed partially or completely.
 - 6.5.4.4 All sliding door windows are permitted to be fitted with "NACA" ducts or ventilation holes.
 - 6.5.4.5 The front drivers and passengers door window inserts must only be retained with the specified Christmas tree clip as detailed in Schedule C9 and also must have a handle hole which is located in the poly carbonate insert that complies with the provisions of Schedule C9.
 - 6.5.4.6 The drivers and passengers door window inserts must be able to be removed by an official at anytime if so required.
- 6.5.5 The inner door panels may be removed from all doors and the Driver's door may be modified to accommodate the fitment of a side impact protection structure as detailed in Schedule C7.
- 6.5.6 The original interior door trim may be replaced with an alternative panel.
- 6.5.7 It is permitted to replace the steel Holden Commodore VE/Ford FG rear and LH front door skin with a composite replacement as specified in Schedule C14.
- 6.5.8 It will be permitted to remove or replace the standard manufacturer supplied chassis mounted door sealing rubber with an alternative aftermarket sealing rubber provided it is visually similar and performs the same function as the standard rubber

C 6.6 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;

- 6.6.1 It is permitted to fit Tear offs to the Front Windscreen
- 6.6.2 It is permitted to fit a clear film to the outside surface Rear Screen.

- 6.6.3 It is permitted to fit transparent anti-fog protection film to the inside surface of the windows.

C 6.7 Rear Vision Mirrors

- 6.7.1 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.
- 6.7.2 All Cars must be fitted with both a left and right hand side external rear vision mirror.
- 6.7.3 All external mirrors fitted must remain as supplied on the production vehicle on which the V8 Supercar is based. It is permitted to remove the standard adjustment mechanism and replace with fixed support for the glass.

C 6.8 Tailshaft Loops

- 6.8.1 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.
- 6.8.2 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.

C 6.9 Tow Hooks and Vehicle Recovery

- 6.9.1 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.
- 6.9.2 All Cars must be equipped with at least one (1) front and one (1) rear external towing strap which must conform to the following:
- 6.9.2.1 be constructed of nylon webbing material with a minimum width of 50mm
 - 6.9.2.2 permit the insertion of a round bar of diameter 40mm
 - 6.9.2.3 be fitted forward of the front axle and rearwards of the rear axle;
 - 6.9.2.4 be clearly visible, the chosen colour must be in contrast to the colour of the bodywork immediately adjacent to the towing straps;
 - 6.9.2.5 be constructed and fitted in such a way that they will not damage other Cars
 - 6.9.2.6 are capable of withstanding the loads applied during a recovery.
- 6.9.3 In addition to the requirements of C 6.9.2 above, all Cars must be fitted with secondary internal tow straps, located inside the boot and under the bonnet, which will be used in more difficult recoveries.
- These secondary internal tow straps must:
- 6.9.3.1 be located in the boot and be securely attached to the bodyshell, adjacent to the rear shock absorber mounting points and form a V or Y configuration with a single connection point which extends past the extremities of the rear bumper bar and permits the insertion of a round bar of 40mm;
 - 6.9.3.2 be located under the bonnet with two (2) individual straps that are securely attached to the front shock mounting point or adjacent ROPS and be a minimum length of 200mm and permit the insertion of a round bar of diameter 40mm;
 - 6.9.3.3 have adequate clearance around all components located in the boot and under the bonnet when being used.
 - 6.9.3.4 be rated to a minimum load rating of 1.5 ton.

NOTE: the “gas struts” that are fitted to the production car to hold the boot lid open or similar must be in place and be fully operational.

C 6.10 Additional Accessories

- 6.10.1 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.
- 6.10.2 The horn may be removed or replaced.
- 6.10.3 Other than the Bodywork, and the approved aerodynamic aids, no part of a Car is permitted which, in the opinion of the CTM, actually or potentially increases downforce or reduces drag; and no Appeal or Protest will lie against the written opinion of the CTM in this regard.

C 6.11 V8 Supercars Roof Duct

- 6.11.1 The fitment of the V8 Supercars Roof Duct is mandatory for the VCS and optional for the DVS. This must be fitted 100 mm +/- 10 from the upper edge of the windscreen aperture and in accordance with any instructions as advised by the CTM.
- 6.11.2 The V8 supercars Roof Duct must not be modified and blanking of the V8 Supercars Roof Duct on the Cars roof surface is forbidden.
- 6.11.3 The attachment of additional ducting to the V8 Supercars Roof Duct is permitted and the design of this ducting is free as long as it is being utilised for driver cooling.
- 6.11.4 V8 Supercars Roof Ducts are available from: Lightning Composites Ph (07) 5571 7348

C 7. ENGINE

C 7.1 Engine – General

- 7.1.1 Each make/model of Car must only be fitted with a cylinder block and cylinder heads as detailed in the relevant VSD;
7.1.1.1 All engines used during a VCS Meeting must comply with all the additional dimensions specified in the ECSD and these Rules.
- 7.1.2 The maximum Engine Capacity permitted is 5000cc;
- 7.1.3 The compression ratio must not exceed 10.0:1.
- 7.1.4 The engine must not produce power above 7500 rpm.
- 7.1.5 All engines must have suitable provision for the cylinder heads, sump and Distributor to be sealed to the cylinder block so that the cylinder heads, sump and Distributor are not able to be removed. Once an engine has been sealed by the CTM, the seals must remain intact and legible at all times. These seals must only be removed by the CTM or with the express prior approval of, and subject to the conditions of, the CTM.
- 7.1.6 The minimum engine component weights stated in Rules C 7.5, C 7.6 & C7.7 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.
- 7.1.7 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 V8 Supercars.
- 7.1.8 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 V8 Supercars.
- 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.
- 7.1.9 All Cars with a CAMS Log Book first issued on or after the 01/01/2007 must only mount and locate the engine, bell housing and gearbox combination by means of the engine mounts and the rear gearbox cross member mount.
- 7.1.10 No engine component or accessory is permitted to be constructed of magnesium alloy

C 7.2 Specification, Availability and Transparency

7.2.1 Objectives and Implementation

The purpose of this regulation C7.2 is to reduce the cost of competitively running a V8 Supercar team, and systematically eliminating engine research and development expenditure. The implementation provisions are structured so as to minimise redundancies of existing components.

From 1 January 2007, for the duration of any Meeting, a VCS Team will only be permitted to use Performance Engine Components that respect the provisions of Rule C7 and that are detailed and listed as Specified Performance Engine Components in the ECSD when building Engines for use in the VCS.

VCS Teams will be required to ensure that the components listed as Transparency Components in the ECSD ~~Rule C7.17~~ are able to be inspected by a technical representative of any Team during a V8 Supercars Open Scrutineering Session or at such other time as may be permitted by these Rules.

7.2.1.1 Specified Components

For a component to be eligible for inclusion as a Specified Component in Rule C7.16 the component must:

- (a) Have been advised to V8 Supercars in the form required by 30 November 2006 or such other time as approved by V8 Supercars; and
- (b) If required by V8 Supercars, be verified by appropriately detailed engineering drawings and or samples so as to allow the component/s to be assessed for appropriateness, and scrutineered for compliance.

7.2.1.2 Availability of Specified Components

The Specified Components detailed in Rule C7.16 and Transparency Components detailed in Rule C7.17 must be available at normal commercial rates and in a timely manner to any Team wishing to purchase the component:

- (a) In the circumstances where the Specified Component is manufactured by a Team (the “**Manufacturing Team**”) or a Related Entity of a Team; in the event of a dispute over what constitutes ‘normal commercial rates’ V8 Supercars at its absolute discretion shall establish what it considers to be the appropriate commercial rate by reviewing the component against other comparable, similarly commercially available components.
- (b) A ruling made by V8 Supercars on what constitutes ‘normal commercial rates’ will be binding on all Teams for a period of 12 months from the time of such ruling being issued.
- (c) In circumstances where the Specified Component is manufactured to a specification determined or approved by a Team or it has a unique serial number and/or such Specified Component has been available for supply only to that Team or to a number of Teams less than all of the Teams that compete in the VCS by an unrelated manufacturer or supplier; the Team that has been able to purchase the Specified Component will be required to ensure supply of the Specified Component to other Teams and will:
 - i. Provide V8 Supercars with the relevant contact details of such Manufacturer or Supplier. Such details are to include; telephone, facsimile and email address; and
 - ii. Advise such Manufacturer or Supplier that the Specified Component must be supplied to any VCS Team wishing to purchase it in accordance with these rules; and
 - iii. In the absence of a suitable Australian supply arrangement for any Specified Component, if required by V8 Supercars, the Team that has specified the Specified Component will be required to provide supply of the Specified Component; and
 - iv. If the Specified Component is not available to another Team wishing to purchase and use it within a reasonable time frame (having due consideration to the normal lead time for the supply of a similar commercially supplied component) as determined by V8 Supercars; or
 - v. In circumstances where the Specified Component is manufactured by a Manufacturing Team or a Related Entity of a Manufacturing Team; or
 - vi. Where the Specified Component is manufactured to specifications determined by or in conjunction with a Manufacturing Team or a Related Entity of a Manufacturing Team; or
 - vii. Where the Manufacturing Team refuses to sell the Specified Component to another Team at normal commercial rates and/or
 - viii. The Specified Component is not available to another Team wishing to purchase and use it within a reasonable time frame (having due

- consideration to the normal lead time for the supply of a similar commercially supplied component) as determined by V8 Supercars; then
- ix. The Specified Component will not be permitted to be used by the Manufacturing Team until such time as it is available to such Team or Teams that wishes to purchase it.
- x. If a Team or Teams believe that a Manufacturing Team is unreasonably withholding supply of the Specified Component, it may apply to V8 Supercars for a ruling as to whether the Manufacturing Team is able to continue to use such component during the period that the Manufacturing Team is not able to supply it to the other Team or Teams.
- xi. In making its ruling V8 Supercars will take into account amongst other things, normal supply and demand effects including the consideration of the volume of Specified Components required to be supplied by the Manufacturing Team.
- xii. Any ruling once made by V8 Supercars will be binding on all Teams.

7.2.1.3 Review and Revision to Specified Components

- (a) The Specified Components detailed in Rule C7.16 will be periodically reviewed by V8 Supercars to determine their suitability to be retained as a Specified Component permitted for use in the VCS.
- (b) A Specified Component will be retained on the Specified Component List contained in Rule C7.16 if:
 - i. The Specified Component remains generally available to all teams that may wish to purchase it; and
 - ii. The Specified Component's cost, versus its durability and where appropriate, the effect that such Specified Component has on the durability of other Engine components is considered by V8 Supercars to be appropriate and meeting the objectives of Rule C7.2.1. and/or
- (c) An evolution of the Specified Components may be included on the list in Rule C7.16 if:
 - i. Such evolution of the Specified Component is submitted to V8 Supercars for approval by a Team; and
 - ii. Such evolution is in the form of a revision to the Specified Component engineering drawings or sample provided to V8 Supercars in accordance with Rule 7.2.1.1(b); and
 - iii. Such evolution will reduce the cost at which such Specified Component is available to a Team or Teams; and / or;
 - iv. Such evolution will result in increased reliability and or durability of the Specified Component or other components within the engine; and
 - v. The evolution of the Specified Component is generally available to all teams that may wish to purchase it
- (d) Any evolution of a Specified Component that is approved by V8 Supercars in accordance with Rule C7.2.1.3(c) will be then considered to be a Specified Component, it will be included in the Specified Component list in Rule C7.16 and will be advised to all Teams along with a date from which it will be permitted to use such Specified Component.

7.2.1.4 Additional Specified Components

- (a) Additional Specified Components may be added to the lists of Specified Components in Rule C7.16 if:
 - i. Such potential Specified Component is submitted to V8 Supercars for approval by a Team; and

- ii. The detail of such potential Specified Component is in the form of detailed engineering drawings and/or a sample provided to V8 Supercars in accordance with Rule 7.2.1.1(b); and
 - iii. Such potential Specified Component will reduce the cost at which such Specified Component will be available to a Team or teams; and/or;
 - iv. Such potential Specified Component will provide increased reliability and or durability of the component or other components within the engine; and
 - v. The potential Specified Component is generally available to all teams that may wish to purchase it
- (b) Any potential Specified Component that is approved by V8 Supercars in accordance with Rule 7.2.1.4(a) will be then considered to be a Specified Component, it will be included in the Specified Component list in Rule 7.16 and will be advised to all Teams along with a date from which it will be permitted to use such Specified Component.

7.2.1.5 Evaluation of Evolution and Potential Specified Components

- (a) So as to evaluate that an evolution of a Specified Component meets the criteria for inclusion as a Specified Component in accordance with rule 7.2.1.3(c) or that a potential Specified Component meets the criteria for inclusion as a Specified Component in accordance with Rule 7.2.1.4(a), V8 Supercars may determine that such component requires validation under race conditions.
- (b) In these circumstances, V8 Supercars will:
 - i. Permit the component under consideration to be used in a single engine of at least one Car for sufficient period of time to enable V8 Supercars to determine that the component generally meets the criteria in Rules 7.2.1.3(c) iii and iv or 7.2.1.4(a) iii and iv;
 - ii. Advise all teams that such evaluation is being undertaken
- (c) Following such evaluation, V8 Supercars will determine if the component should be included in the list of Specified Components in Rule 7.16.

7.2.1.6 Transparency Provisions

- (a) Every Engine used in the VCS must have the Specified Components and the Transparency Components used in its build accurately and fully recorded on an Engine Component Specification and Usage Log.
- (b) So as to verify the durability of the Specified Components used in each VCS Engine, each team will be required to fully complete an Engine Component Specification and Usage Log as contained in Division F of these Rules for each engine in the Team's possession. The completed form, in its entirety, must be submitted to the CTM or his delegate no later than 1600 hours on the Thursday in the week which a Meeting is conducted.
- (c) Failure to accurately and fully complete an Engine Component Specification and Usage Log within the specified timeframes will be a breach of these Rules.
- (d) At the first Domestic Championship event in any Season all VCS Teams will be required to place one Engine built to comply with these Rules in a secure location to be advised by the CTM.
- (e) Such Engine will be sealed and will be required to be the first replacement engine that the Team will use for any of its Cars following first Domestic Championship event in the current season unless approved by the CTM it must be presented ~~complete with exhaust~~ but with the air box removed and with a fully completed Engine Assembly Specification Sheet that clearly and accurately

- identifies the Specified Components and the Transparency Components used to build the engine.
- (f) Such engine will be required to be available for viewing by a technical representative of other VCS Teams at a time nominated by the CTM.
 - (g) Periodically V8 Supercars will conduct Open Scrutineering Engine Inspection Sessions wherein a technical representative of any VCS Team will be permitted to ~~be in attendance~~ and may inspect the components of the engine/s following scrutineering.
 - (h) ~~The Specified Components listed in Rule C7.16 and the Transparency Components listed in Rule C7.17~~ All engine components contained within the Engine Component Specification Document (ECSD) including 'specified performance engine components' will be considered to be Transparency Components and must be able to be inspected by a technical representative of any Team during a V8 Supercars Open Scrutineering Engine Inspection Session or at such other time as may be permitted by these Rules.
 - (i) Such inspection by technical representatives of any VCS Team will only entail a visual inspection of such components and for the avoidance of doubt, no person other than the CTM or his nominated representative/s will be permitted to use any measuring, weighing and recording equipment of any kind at any V8 Supercars Open Scrutineering Engine Inspection session.

C 7.3 Cylinder Block

The following conditions apply to the approved cylinder block:

- 7.3.1 The bore size must be 101.473mm or greater;
- 7.3.2 The fitment of sleeves to the cylinders is permitted;
- 7.3.3 The nominal section of each cylinder must be circular;
- 7.3.4 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 VSD
- 7.3.5 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 V8 Supercars "Z" datum;
- 7.3.6 The engine mounts are free but not their number nor position.
 - 7.3.6.1 It is permitted on the Ford cylinder block to utilise additional engine block mounting points. The additional engine block mounting points 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.
 - 7.3.6.2 It is permitted to mount the engine by the sump to the front suspension cross member complying with Schedule C 10. All designs of this type are required to be submitted to the CTM prior to being implemented by a Team.
 - 7.3.6.3 No other component or accessory is permitted to locate or mount the engine to the chassis.
- 7.3.7 The cylinder head face must remain at 90° to the cylinder bore centreline.
- 7.3.8 It is permitted to add or remove material to or from the cylinder block, subject to:
 - 7.3.8.1 the integrity of the original casting of the cylinder block being respected; and
 - 7.3.8.2 that no attempt is made to vary the basic design of the cylinder block beyond modifications permitted in these Rules; and
- 7.3.9 It must always be possible for the cylinder block to be identified as the approved cylinder block.
- 7.3.10 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.

- 7.3.11 The camshaft lifter bores must remain in the same location as specified by the manufacturer and the samples held by V8 Supercars on the Ford M 6010 Boss 302 and the Holden Motor Sport 22534350 cylinder blocks.
- 7.3.12 Cylinder Block Weight
 - 7.3.12.1 The Minimum weight of any cylinder block used in the VCS will be 70 kg. The weight of the block will include any Core/oil gallery and Rear Cam tunnel plugs Cam Bearings and any internal oil feed or scavenge lines and removable rear main seal carrier.
 - 7.3.12.2 A block that is less than 70kg is permitted to have ballast weight to bring it up to 70kg placed on either:
 - (a) on the Chassis rail no further rearward than X+ 1855, no lower than the underside of the front Chassis rail and must not protrude more than 25mm from the inner face of the Front Chassis rail and be equally distributed side to side of the vehicle; or
 - (b) on the block itself in a position approved by the CTM that does not lower the centre of gravity of the block.
 - 7.3.12.3 The maximum relative density of any material used as ballast is twelve (12).

C 7.4 Cylinder Head

Subject to the Rules contained in Division C and the dimensions contained in the relevant VSD.

- 7.4.1 Modifications to the cylinder head are free, save for the following:
- 7.4.2 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.
- 7.4.3 The original spark plug location must be retained in all respects.
- 7.4.4 It is permitted to use valves, valve spring retainers and collets manufactured from Titanium alloy.
- 7.4.5 Valves must only be opened by mechanical action and closed by means of coil springs.
- 7.4.6 For all Ford, and Holden Motor Sport engines, the maximum inlet valve diameter is 53.97mm (2.125 inches).
- 7.4.7 The minimum inlet and exhaust valve stem diameter is 7.0mm
- 7.4.8 The inlet and exhaust valve heads and stems must be solid.
- 7.4.9 Cylinder Head Weight
 - 7.4.9.1 The Minimum weight of any plain bare Cylinder Head used in the VCS will be 13.5 kg. The weight of the head will include valve seats, valve guides and rocker cover studs.
 - 7.4.9.2 A head that is less than 13.5kg is permitted to have ballast weight to bring it up to 13.5kg placed at the rear of that head attached by bolts or studs.
 - 7.4.9.3 The maximum relative density of any material used as ballast is twelve (12).

C 7.5 Pistons

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

C 7.6 Connecting Rods

- 7.6.1 Connecting rods must only be made of Ferrous Material.
- 7.6.2 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.

C 7.7 Crankshaft

- 7.7.1 The crankshaft must respect the approved crankpin phasing and throw angles as detailed in the relevant VSD.
- 7.7.2 The stroke of the crankshaft must be a maximum of 77.22 mm and a minimum of 75.18mm.
- 7.7.3 The minimum crankshaft 'big end' journal diameter is 47.45 mm.
- 7.7.4 The minimum crankshaft 'main' journal diameter is 56.65 mm.
- 7.7.5 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 7.8 Other Engine Components

- 7.8.1 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.
- 7.8.2 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.
- 7.8.3 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 three (3) litres capacity.
- 7.8.4 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.
- 7.8.5 the only Camshaft and Valve train Components permitted to be used in the VCS Is the V8 Supercar Control Camshaft and Components as detailed in the ECSD
- 7.8.6 The flywheel must be made of steel.
- 7.8.7 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.
- 7.8.8 The ignition distributor may be removed from its original location. The drive for the relocated distributor must be used exclusively by the distributor.

C 7.9 Inlet System

The inlet/induction system is free, except that:

- 7.9.1 The engine must be normally aspirated;
- 7.9.2 With the exception of ambient atmospheric air and the specified control fuel, approved for use in the category by V8 Supercars, no other substance may be added to the intake charge of the engine.
- 7.9.3 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;
- 7.9.4 Throttle actuation must be exclusively by "butterfly" for all Cars.
- 7.9.5 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;
- 7.9.6 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;

- 7.9.7 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.
- 7.9.8 The maximum fuel pressure permitted at any time is 5.5 bar.
- 7.9.9 Only one fuel injector per cylinder is permitted which must inject fuel directly into the side or the top of the, manifold or trumpet only.

C 7.10 Exhaust System

- 7.10.1 All Cars must be fitted with an exhaust system, the outlet pipe/s of which must be directed either rearwards or sideways.
- 7.10.2 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.
- 7.10.3 If directed sideways, outlet pipe orifices must be located aft of a vertical plane passing through the midpoint of the wheelbase.
- 7.10.4 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~~ 20mm outside the adjacent Bodywork.
- 7.10.5 All exhaust pipes must be adequately protected in order to prevent burns.
- 7.10.6 The exhaust system must be a complete and contiguous unit and exhaust gas may exit only at the end of the system.
- 7.10.7 No component of the chassis may be used to evacuate exhaust gases.
- 7.10.8 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 Circuit by approved measuring equipment.
- 7.10.9 The exhaust primary headers on all Cars competing in the VCS must have a minimum wall thickness of 1.2mm (18 gauge)

C 7.11 Cooling System

- 7.11.1 Subject to the provisions of Rule C 7.11, the cooling system, including the water pump, fans, screens and catch tanks are free.
- 7.11.2 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.
- 7.11.3 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.
- 7.11.4 A replacement radiator may be fitted subject to:
 - 7.11.4.1 There being no modification to the bodywork; and
 - 7.11.4.2 It being fitted in the same general location relative to the engine.
- 7.11.5 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.
- 7.11.6 Ducting of air from the rear of the water radiator is prohibited.
- 7.11.7 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.
- 7.11.8 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 7.12 Engine Control Moved to C 14 and C 15

C 7.13 Pit Lane Speed Limiter Moved to C 14 and C 15

C 7.12 Engine Eligibility – VCS and DVS

~~7.14.1 All Holden Commodores competing in the VCS must be fitted with a HMS Engine at all VCS Meetings unless otherwise approved by V8 Supercars.~~

~~7.12.2 1~~ 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 V8 Supercars.

C 7.13 Cylinder Head and Block Eligibility

7.13.1 The Ford D3 Cylinder Head is permitted for use in the VCS and DVS.

7.13.2 All ~~BA/BF~~ Ford Falcons or Drivers in the VCS 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 V8 Supercars.

7.13.3 The Ford 6010 Boss 302 cylinder block is permitted for use in the VCS and DVS.

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

~~**C 7.16 Specified Performance Engine Components (Specified Components). Refer to the ECSD.**~~

~~**C7.17 Transparency Components**~~

~~7.17.1 All engine components contained within the Engine Component Specification Document including 'specified performance engine components' will be considered to be Transparency Components:~~

C 8. TRANSMISSION / DRIVELINE

C 8.1 General

- 8.1.1 With the exception of those matters contained in Schedule C 1, the final drive ratios listed in Rule C 8.6.10 and the following matters listed in this Rule, all other components of the drive train, including the axles are free.
- 8.1.2 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 8.2 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.

C 8.3 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 V8 Supercars. The Clutch must comply with the following requirements:

- 8.3.1 The clutch must only have three (3) driven plates that transmit torque directly to the input shaft of the gearbox.
- 8.3.2 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 V8 Supercars under exceptional circumstances;
- 8.3.3 The clamping force which acts on the friction surfaces must be derived solely from a diaphragm spring;
- 8.3.4 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;
- 8.3.5 The clutch driven plate/s must be of at least 180mm diameter;
- 8.3.6 The use of titanium and carbon fibre components within the clutch is permitted;
- 8.3.7 Any device which allows or facilitates any aspect of clutch operation to be monitored in any way is forbidden;
- 8.3.8 The force required to disengage the clutch must only be applied towards the flywheel; and
- 8.3.9 The machining of surfaces for the purpose of achieving clutch plate pre load is permitted.

C 8.4 Gearbox

8.4.1 For the Holinger HS6 model of gearbox the following Rules apply:

With the exception of modifications permitted in Rule C 8.1.2, or minor modifications specifically approved by the CTM, all Cars must only be fitted with gearbox casings which are identical to the samples retained by V8 Supercars. The gearbox must comply with all of the requirements of the gearbox specification contained in Schedule C 1 of these Rules and:

8.4.1.1 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
3 rd	xxxxx	1.60:1	19/28 (optional)
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

Note: All Teams are required to notify the CTM if they update 3rd gear to 19/28. It will not be permitted to revert back to the (19/29) 3rd gear ratio once a Car has been updated.

8.4.1.2 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;

8.4.1.3 There must be a minimum of five (5) dogs of uniform design that must be evenly spaced around the gear dog face;

8.4.1.4 The maximum gear side angle from root to tip will be 11.0°

8.4.1.5 The gearbox must have an operable reverse gear;

8.4.1.6 The gearshift selector shafts must be solid.

8.4.1.7 the input shaft being in line with the output shaft; only one other shaft is permitted;

8.4.1.8 the maximum dimension from the cylinder block/ timing cover face to the rear of the gearbox casing (excluding the extension housing) being 1298.5 mm.;

8.4.1.9 all gears being selected by the driver exclusively via a non-sequential mechanical linkage which permits "H" pattern gear change mechanisms only;

8.4.1.10 the use of any electronic, hydraulic or pneumatic gear selection device or assistance thereto is prohibited;

8.4.1.11 the rear gearbox to chassis crossmembers and mountings are free; subject to the rear mounting attaching to the gearbox intermediate or rear casings mounting areas supplied by the manufacturer.

8.4.1.12 dry sump gearboxes using pressurised lubrication systems are forbidden;

8.4.1.13 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 6800 rpm.

8.4.21 All Cars competing in the VCS & DVS are only permitted to be fitted with the Holinger RD6H or RD6S except where approved and subject to all restrictions imposed by the CTM the Holinger H6S Gearbox may be fitted to a Car in the DVS:

8.4.21.1 The Holinger RD6H & RD6S are to be used in their entirety and the only modifications permitted are industry accepted polishing and detailing which must not change the basic design or operation of the component being detailed and the items listed in C8.4.2.12.

- 8.4.21.2 It is permitted to use gears and dogs of a different manufacturer subject to them being identically similar to the original components and complying with the samples held by V8 Supercars.
- 8.4.21.3 All replacement parts (other than gears,dogrings,bearings and Gear position sensor) will be required to be purchased through Holinger Engineering and conform to the parts listed in the gearbox drawing exploded views titled RD6-H and RD6-SF which are held by the CTM.
- 8.4.21.4 The internal gearbox pump is the only pump allowed to be used for the purposes of lubrication and the transfer of fluid to and from a gearbox cooler.
- 8.4.21.5 There must be six (6) forward gears, the ratios of which must be those listed in the following table.

Gear	Ratio	Tooth Count
1 st	2.57:1	14/33
2 nd	1.99:1	17/31
3 rd	1.60:1	19/28
4 th	1.35:1	21/26
5 th	1.14:1	23/24
6 th	1.00:1	Constant Mesh 22/24

Note: ~~It will not be permitted to revert back to a Gearbox fitted with the (19/29) 3rd gear ratio once a Car has been updated.~~

- 8.4.2.1.6 the maximum dimension from the cylinder block/timing cover face to the rear of the gearbox casing (excluding the extension housing) being 1291.5mm
- 8.4.2.1.7 all gears being selected by the driver exclusively via a sequential or “H” pattern gear change mechanisms only dependant on gearbox model.
- 8.4.2.1.8 the use of any electronic, hydraulic or pneumatic gear selection device or assistance there to is prohibited;
- 8.4.2.1.9 the rear gearbox to chassis crossmembers and mountings are free; subject to the rear mounting attaching to the gearbox intermediate or rear casings mounting areas supplied by the manufacturer.
- 8.4.2.1.10 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 6800 rpm.
- 8.4.2.1.11 it is permitted change the tailshaft drive output flange of the gearbox.
- 8.4.2.1.12 Permitted modifications to the RD6S and RD6H Gearbox.
- use another type of Gear position sensor provided it can be fitted to the Gearbox in the same position with no modification to the Gearbox casings or internals.
 - add a magnet to the drain plug
 - use double roll pins on the selector forks
 - use lock wire, locktite, vibration proof washers
 - change casing nuts
 - modify the ratchet pawl spring retention plug from slot drive to hex drive.
 - modify gearshift lever to suit driver position/comfort and accommodate the various gear cut activation switches available.
 - repair any damaged threads
 - It will be permitted to modify the gearbox in the area where the shift mechanism mounts to the rear of the gearbox casing provided any such modification has no effect other than to strengthen the mounting of the shift mechanism. Any such modification must have prior written permission from the CTM.
 - Non standard drain plug

C 8.5 Tail shaft

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

C 8.6 Rear Axle Assembly

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

- 8.6.1 The minimum weight of the rear axle assembly is 115 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).
 - 8.6.1.1 The components referred to in Rule C 8.6.1 must be disconnected at the joint nearest the rear axle housing; and
 - 8.6.1.2 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
 - 8.6.1.3 The tailshaft must remain connected at both ends.
- 8.6.2 The final drive must contain a spool made of Ferrous Material and the complete rear axle assembly must not incorporate any differential action.
- 8.6.3 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.
- 8.6.4 The minimum pinion bearing surface diameters must be:

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

- 8.6.5 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	<u>7.9</u> 8.0 kg
3.50 : 1	8.0 kg
3.25 : 1	7.5 kg
3.15 : 1	7.9 kg

- 8.6.6 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.
- 8.6.7 The minimum weight for a pair (right hand and left hand) of axles must be 7.0kg.
- 8.6.8 The rear axles will be permitted to be either hollow or solid.
- 8.6.9 The use of drop gears are not permitted anywhere in the rear axle assembly.

8.6.10 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
Hamilton	3.7:1	37/10
Hidden Valley	3.5:1	35/10
Phillip Island	3.25:1	39/12
Townsville	3.5:1	35/10
Queensland Raceway	3.5:1	35/10
Sandown	3.5:1	35/10
Surfers Paradise	3.5:1	35/10
Sydney Street Circuit	3.5:1	35/10
Symmons Plains	3.5:1	35/10
Winton	3.7:1	37/10
Yas Marina Abu Dhabi	3.25:1	39/12

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 9. SUSPENSION

C 9.1 General

The suspension is free except that:

- 9.1.1 The type of suspension and springing medium must always be as stated in the relevant VSD.
- 9.1.2 The number and position of the suspension pivot points, as detailed in the relevant VSD, must be used in their entirety and exclusively.
- 9.1.3 The lateral location of the rear axle may be by Watts link only
 - 9.1.3.1 the mounting points for which are free all parts other than the adjusting mechanism must not be located forward of the rear axle centreline. Please refer to Schedule C6 for a schematic definition of a Watts link.
 - 9.1.3.2 the Watts Linkage mounting rail on both the VE Commodore and FG Falcon may be constructed using chrome molly with the following maximum dimensions 2" square RHS with a maximum wall thickness of .065" as an alternative to the specifications currently detailed in the VSD's and CAD
 - 9.1.3.3 The position of the watts rail In the X Dimension may be varied to suit the various Watts pivot bracket designs and may be installed between Z 300mm and Z 315mm to the bottom face on both vehicles.
- 9.1.4 The detachable front suspension cross-member is free, on condition that:
 - 9.1.4.1 It is possible to remove it from the Car (no attachment by welding), and
 - 9.1.4.2 The suspension pivot points are not altered from the approved location, save for those freedoms allowed in Rule C 9.2; and
 - 9.1.4.3 It utilises the two (2) rear mounting points as provided for this purpose in the automobile from which the Car was derived. It is permissible to relocate these two (2) rearward mounting points forward so as the mounting hole centres are no further forward than 2085.0mm.
 - 9.1.4.4 It is not permitted to have additional mountings for the cross member rearward of the rear mounting points as defined in C 9.1.4.3
 - 9.1.4.5 Must not constructed or modified in any way that in the opinion of the CTM improves its aerodynamic effect on the vehicle

C 9.2 Suspension Pivot Points

- 9.2.1 For the All Cars 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).
- 9.2.2 It is not permitted to use devices which vary the motion ratio on any suspension links unless specifically allowed by these Rules.

C 9.3 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:

- 9.3.1 Adjustment of the stiffness of the anti roll bars from within the cockpit is permitted and is the only adjustment which can be made by the Driver to the roll bar mechanism. The adjustment of stiffness must only be achieved by the rotation of either one (1) or two (2) spring steel blades or telescopic arms attached directly to either end of the torsional tube/bar of the roll bar mechanism.
- 9.3.2 Anti roll bars must only be mounted to the underside of the body shell or to the rear axle housing.

- 9.3.3 All links connecting the anti roll bar to the suspension or the bodyshell must be of a fixed length.
- 9.3.4 A rocker, which varies the motion ratio between the anti roll bar and bodyshell or suspension is permitted.

C 9.4 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*		TTX40* MkII
Sachs**	Formula Matrix	Formula Matrix TRD*		

* Shaft through design

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

The specified Shock Absorbers and their internal components as available and supplied by the manufacturer must be equally available to all Teams.

These will be identified by the means of detailed drawings, photographs specifications and samples held by V8 Supercars.

No modification is permitted to any catalogue part that may effect the passage of oil within the Shock Absorber

The pistons designated in the table below by part number are the only pistons allowed in the specified Shock Absorbers and must function as the manufacturer intended.

OHLINS TTX 40 Mk1 and Mk2		SACHS Formula Matrix and TRD	
06113-01	Mk1. And Mk2	001706-999015	Digressive/digressive
06128-01	blow off Mk2	001706-999016	Linear/digressive
06234-01	HF Mk2	001706-999027	Linear/digressive
06234-10	Blow off Mk2	001706-999056	Linear/Linear
06234-11	HF+ Blow off.Mk2	001706-999057	Linear/Linear w Bleed

The Shock Absorbers must comply with the following requirements:

- 9.4.1 Adjustment of any shock absorber from the cockpit is forbidden;
- 9.4.2 All damper units must function independently of each other, i.e. no connections are permitted between units;
- 9.4.3 The shock absorber mounts on the body/chassis may be relocated within a 20 mm radius of the approved point
- 9.4.4 The use of electronically adjustable shock absorbers is forbidden;
- 9.4.5 Only one (1) shock absorber per wheel is permitted; and
- 9.4.6 Only four (4) shock absorber characteristics that can be adjusted from the outside of each shock absorber are permitted, but this number does not include shock absorber gas pressure adjustment.
- 9.4.7 The only form of droop control permitted is a solid spacer internal in the shock absorber controlling the open length of the shock absorber.
- 9.4.8 For all Cars:
- 9.4.8.1 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 Rule C 9.4.3, and
- 9.4.8.2 The coil springs fitted to the front and rear suspension must only be mounted on the shock absorber in a "coil over" configuration, and

- 9.4.8.3 The shock absorber / spring assembly fitted to the front suspension must be mounted to the body/chassis as detailed in Rule C 9.4.3 and must attach directly to the lower wishbone.
- 9.4.8.4 The shock absorber / spring assembly fitted to the rear suspension must be mounted to the body/chassis as detailed in Rule C 9.4.3 and must attach directly to the rear axle assembly.

C 9.5 Suspension Adjustment

- 9.5.1 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:
 - 9.5.1.1 By a member of the Team permitted to work on the Car, while the Car is stationary; or
 - 9.5.1.2 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.
- 9.5.2 Any device which allows the front or rear roll centre of a Car to be altered or adjusted from the cockpit is forbidden.
- 9.5.3 Any device or system which does, or has the capacity to adjust the ride height of a moving Car is forbidden.

C 9.6 Front Upright

- 9.6.1 The minimum weight of the front upright must be 10.5 kg.
- 9.6.2 The weight of the upright will be determined after disconnecting the upright from the outer joints of the upper and lower wishbones and steering arm. The disc and caliper 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 10. BRAKES AND STEERING

C 10.1 Brakes

- 10.1.1 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 (2) wheels.
- 10.1.2 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.
- 10.1.3 The complete brake hydraulic system (including calipers, lines and hydraulic cylinders) is free except for the following restrictions:
- 10.1.3.1 The maximum number of pistons in each caliper is restricted to six (6);
 - 10.1.3.2 Only one (1) brake caliper and two (2) brake pads per wheel are permitted;
 - 10.1.3.3 No system will be permitted on a Car which can retract the caliper pistons for the purpose of a pad change.
 - 10.1.3.4 During a brake pad change, all displaced fluid must return to the master cylinder reservoir through the master cylinder.
- 10.1.4 Brake caliper bodies must only be made of aluminium materials with a modulus of elasticity no greater than 80 GPa.
- 10.1.5 The brake caliper pistons may be made of titanium alloy.
- 10.1.6 Brake discs must be made of Ferrous Material and conform to the following specifications:
- 10.1.6.1 the maximum brake disc diameter must not exceed 376 mm; and
 - 10.1.6.2 the maximum brake disc thickness must not exceed 35.56 mm.
- 10.1.7 At any Meeting, all Cars competing in the VCS must only be fitted with Alcon Front Brake Rotors listed in the table below and complying with Schedule C12:

DISC	LEFT	RIGHT
Front	DIV2211X252A36L	DIV2211X252A36R

10.1.7.1-At any Meeting, all Cars competing in the DVS must only be fitted with Alcon Front Brake Rotors listed in the table below and complying with Schedule C12:

DISC	LEFT	RIGHT
Front	DIV2211X252A36L	DIV2211X252A36R
Front	DIV2211X252C48L	DIV2211X252C48R

- 10.1.8 At any Meeting, all Cars competing in the VCS must only be fitted with Alcon Rear Brake Rotors listed in the table below and complying with Schedule C13:

DISC	LEFT	RIGHT
Rear	DIV2202X595S12L	DIV2202X595S12R
Rear	DIV2202X595S6L	DIV2202X595S6R

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

DISC	LEFT	RIGHT
Rear	DIV2202X595C12L	DIV2202X595C12R
<u>Rear</u>	<u>DIV2202X595S6L</u>	<u>DIV2202X595S6R</u>

10.1.9 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.

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

Front		Rear	
Left	Right	Left	Right
CAR9529ZG51NSLT	CAR9529ZG51NSRT	CAR4940AE50DSL	CAR4940AE50DSRT
		CAR4940AE50NSLT	CAR4940AE50NSRT

Note : Both the Billet and Forged Calipers designated by the above part numbers are acceptable

Note: The only modifications allowed to the Alcon Calipers listed in the above table are:

- anti knock back springs may be deleted.
- a bleed nipple guard may be fitted
- drilling and tapping to fit brake duct. Any-drilling—must be approved by the CTM.
- For endurance races the brake pad retaining springs may be modified for ease of operation this modification is not permitted to change the way the spring operates or retains the pad in the Caliper

10.1.11 At any Meeting, all Cars competing in the VCS must only be fitted with any of the Brake Pads designated in the following table: ~~and supplied by PWR Performance Products Pty Ltd:~~

Front
PFC01
Project Mu H16-03
Rear
PFC97
Ferodo DS3000E
Pagid RS4-4

NOTE: it will be only permitted to modify the brake pad backing plate for ease of extraction and replacement. Care should be taken not to remove the V8 Supercars identification.

10.1.12 The specified Brake Rotors, and Calipers will be identified by the means of detailed drawings, photographs and specifications held by V8 Supercars. The specified Brake Pads will be identified by a unique mark.

10.1.13 In order to provide air for the cooling of the brakes of each wheel, it is permitted to fit a duct to each wheel which must comply with the following:

- 10.1.13.1 the intake for the front brake ducts must only be the brake duct opening in the approved front bumper.
- 10.1.13.2 the intake for the rear brake ducts must be situated wholly within the perimeter of the bodywork and not below any point on the lower edge of the front bumper.
- 10.1.13.3 forced induction or extraction systems are not permitted.
- 10.1.13.4 any system or device which varies the air flow in such brake ducts is not permitted
- 10.1.14 A system which sprays a mist of water into such air ducts is permitted. The reservoir for this system must be wholly located in the boot/luggage compartment.
- 10.1.15 Brake calipers incorporating liquid cooling/recirculating systems are prohibited.
- 10.1.16 The fitment of a handbrake/brake lock valve is optional, however the operation of the hand brake/brake lock valve if located on the steering wheel must only be operated by an on/off switch. If cable or hydraulic in operation must only be located and operated by a lever located on either side of the Drivers seat. The handbrake/brake lock mechanism must not be used for any other purpose than to stop the vehicle rolling from a standing start.
- 10.1.17 Brake anti-lock systems are prohibited.
- 10.1.18 Maximum brake pad thickness must not exceed 30 mm.
- 10.1.19 The braking system pressure in both front calipers must remain equal at all times.
- 10.1.20 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.
- 10.1.21 Any system which adjusts the brake balance whilst the brakes are being operated is not permitted.
- 10.1.22 For Cars competing in the VCS no Device, Valve or System however described that has an effect on the hydraulic operation or pressure within the Braking System, other than specifically allowed by the rules contained in Section C10.1 or generated and controlled by the Driver seated normally in the Car with the safety harness correctly fastened is permitted.

C 10.2 Steering

- 10.2.1 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.
- 10.2.2 If the original steering column is utilised, the steering locking device must be removed.
- 10.2.3 Power steering may be added or deleted, but must only be hydraulic in its operation and control.
- 10.2.4 Four-wheel steering is prohibited.

C 11. WHEELS / WHEEL NUTS

C 11.1 General

11.1.1 All Cars must use only wheels which conform to this Rule C 11.

11.1.2 All Cars are required to have a minimum of twelve (12) wheels, four (4) for permanently mounted wet control tyres and eight (8) for dry control tyres.

C 11.2 Complete Wheel Dimensions

All the measurements for Schedule C4A must be made with at least 1.8 bar pressure in the tyre.

11.2.1 The complete wheels fitted to All Cars must conform to all of the requirements of the V8 Supercar Complete Wheel Specification contained in Schedule C 4A.

C 11.3 Centre-lock spindles and wheel nuts

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

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

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

11.3.3 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:

11.3.1.1 be in place on the wheel nut at all times while a Car is on the Circuit; and

11.3.2.2 be replaced/reset after each wheel change; and

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

11.3.3.4 for the VCS must not protrude past the sidewall of the tyre the horizontal plane in ready to race condition.

11.3.4 All Cars that participate in any VCS Race, must only be fitted with wheel nuts that conform to all of the requirements of the V8 Supercars Wheel Nut Specification as contained in Schedule C 3.

C11.4 Control Wheel

11.4.1.1 VCS Teams will only be permitted to use the V8 Supercar Control Wheel as detailed in Schedule C4B during all Qualifying Sessions and Races

11.4.1.2 Teams are not required to use the V8 Supercar Control Wheel when using Wet weather Control Tyres.

11.4.1.3 It will be permitted to Paint/Powder coat the V8 Supercar Control wheel however it not be permitted to fill or cover the identification markings on the outer side of the rim for clarification the markings on the Rim must remain legible regardless of any coatings.

C 12. ELECTRICAL SYSTEM

C 12.1 Master Isolation Switch

12.1.1 A battery master isolation switch is mandatory and must:

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

12.1.2 The external trigger must be;

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

C 12.2 Circuits

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

12.2.2 Cars may only be fitted with one power control module to perform the circuit switching and protection functions in place of cables, fuses and relays. Only the following power control modules are permitted:

Brand	Model
Motec	Motec PDM
ADD	IPU Motorsport
PI Research	PCM Hyllus
Note; the maximum amount of outputs for any one or combined units is 32	

12.2.3 Power control module system configurations may be requested by the CTM at anytime and this request will not be subject to Protest or Appeal.

C 12.3 Battery

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

C 12.4 Alternator

The alternator is free except that:

C12.4.1 it must be mounted at the front of the engine (to either side) and be belt driven.

C 12.5 Lights

12.5.1 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:

12.5.2 Disconnect and remove the rear number plate lights, side indicator lights, reversing lights and all interior lights.

12.5.3 The hazard function of the indicator lights may be removed.

12.5.4 Coloured or sign written headlights are permitted.

12.5.5 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 V8 Supercars.

C 12.6 Starter Motor

- 12.6.1 The starter motor is free except that it must:
- 12.6.1.1 be exclusively electrically powered, and
 - 12.6.1.2 engage directly with the flywheel as in the original automobile from which the Car was derived; and
 - 12.6.1.3 be capable of starting the engine at all times.
- 12.6.2 The starter motor may be mounted in front of, or behind, the flywheel the ring-gear of which must comply with Rule C 7.8.6.
- 12.6.3 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 12.7 Rain Light - Moved to C 14 and C 15

C 12.8 Computers on the Grid

Unless the specific permission is first obtained from the CTM 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 12.9 Electrically Heated Windscreen

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

C 12.10 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)~~ two (2) seconds absence of crankshaft revolution.

C 12.11 Electronic Data – Logging, Display & Telemetry- Moved to C 14 and C 15

C 12.12 ~~Pit Stop~~ Identification light

- 12.12.1 High intensity ~~Pit Stop~~ identification lights as ~~supplied~~ defined by V8 Supercar must be fitted in the positions advised by the CTM.
- 12.12.2 The Driver must be able to turn the Pit Stop Identification lights on or off while driving.

C 13. FUEL SYSTEM

C 13.1 Fuel Tank Requirements - General

- 13.1.1 All Cars must be fitted with a fuel tank conforming to the FIA specification FT3, FT3 - 1999, FT3.5-1999 or FT5 and be ethanol compatible.
- NOTE: The validity of these tanks expires five (5) years from the date of manufacture shown on the tank. An additional two (2) year waiver may be granted provided the tank is returned to the fuel tank manufacturer for inspection.
- 13.1.2 Fuel tanks must be mounted inside, under or through the floor of the luggage compartment.
- 13.1.3 No part of the fuel tank may be situated forward of the rear axle centreline.
- 13.1.4 All openings in the fuel tank bladder must only be located in the top surface of the tank.
- 13.1.5 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 except where C13.1.7 applies.
- 13.1.6 Cars with a CAMS Log Book first issued on or after the 1 January 2007 must have a fuel bladder with the following nominal dimensions: Width: 850mm x Length: 430mm x Height: 315mm except where C13.1.7 applies.
- 13.1.7 in all VCS Sprint Rounds unless otherwise advised by Supplementary Regulation it will be mandatory to use the V8 Supercar "Control Sprint Race" Fuel cell.
- 13.1.7.1 the V8 Supercar control sprint race fuel cell must remain unmodified in anyway from the sample held by V8SA, except in accordance with these Rules or with the express permission of the CTM.
- 13.1.7.2 It will be permitted to;
- 1) enlarge the standard production holes in each diagonal internal baffle to allow the passage of fuel with the dimensions of no more than 25 mm high and 50 mm long. This hole must be as close as possible to the front face of the control fuel cell
- 2) fit saddles within the fuel cell to retain wiring/hoses etc
- 13.1.7.3 The V8 Supercar "Control Sprint Race" Fuel cell. must be fitted in compliance with C 13.2 symmetrically about the Y axis and with the filler/vent orifices to the rear of the car. when this Fuel Cell is fitted it is mandatory to fit false sides within the Fuel Tank Housing to the specifications listed in Rule C13.2.1.1 and comply with all requirements of schedule C18
- 13.1.8 The total capacity of the entire fuel system must not exceed the marked volume of the V8 Supercars fuel tank capacity checking vessel which is approximately:
- 13.8.1.1 120 Litres for VCS Endurance Races
- 13.8.1.2 75 Litres for VCS Sprint Races
- 13.8.1.3 120 Litres for DVS

C 13.2 Fuel Tank Housing

- 13.2.1 For all Cars the fuel tank must be mounted in a metal container of which each of the four (4) sides and the base conforms to one of the following specifications; either
- 13.2.1.1 if made of aluminium, a minimum thickness of 1.6 mm; or
- 13.2.1.2 if made of steel, a minimum thickness of 1.2 mm.
- In addition to the above, each fuel tank mounting container must be wrapped in Kevlar with a minimum layup as detailed in Schedule C 18 (September 2011 VCS 2012 DVS)
- 13.2.2 Any gap between the fuel bladder and its housing must be filled with semi rigid energy absorbing material such as polyurethane foam.

- 13.2.3 The underside of the fuel tank housing must not be any higher than Z=15.0mm and remain parallel to the "Z" datum (+/- 2.0 degrees). For the VCS the front face of the fuel tank housing must be no further forward than X-930
- 13.2.4 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 any such structure must be housed within the homologated rear diffuser.
- 13.2.5 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.
- 13.2.6 It is mandatory for the Ford Falcon BF to be fitted with a crushable structure which must be the width of the fuel tank housing fitted to the Car, complying with Rule C13.2.5 and extend directly rearwards to meet the lower edge of the rear bumper in a single plane.
- 13.2.7 For the VCS the size for the Fuel Tank Housing will be 855 +/-5 mm wide and 435 +/- 5 mm long

C 13.3 Filler/Vent Units

- 13.3.1 Refuelling must only be carried out using a single man, "siamese" filler/vent unit as detailed in Schedule D 6.
- 13.3.2 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.
- ~~13.3.3 All fillers/vents that extend to the exterior Bodywork must be flexible in nature.~~
- 13.3.4 ~~When the V8 Supercar Sprint Race Fuel Cell is fitted~~ all fillers/vents that extend to the exterior Bodywork must have a maximum Outside Diameter of no more than 2.5" and must include 450 mm of Premier boot hose 2.25" of which 350mm must be flexible No part of the filler or vent tube is permitted to protrude below the gasket face of the fuel cell and must only be fitted to the small orifices in the fuel cell.
It will also be acceptable to radius the filler and vent tubes flange plates at the gasket face of the fuel cell the radius may be no larger than R 10mm external and the flange plate must be no thicker than 5mm.
- 13.3.5 a spring as specified by V8 Supercars may be fitted internally to the filler Hose

C 13.4 Fuel Collector Pot

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

C 13.5 Fuel Tank Vent

The fuel tank must be vented externally of the bodywork.

C 13.6 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.

C 13.7 Fuel Cooling

- 13.7.1 The use of any device or substance to decrease the temperature of the fuel at anytime during a Meeting is forbidden
- 13.7.2 It will be permitted to insulate the fuel system on the Car with heat barrier insulating materials.

C 14. ENGINE CONTROL & DATA ACQUISITION SYSTEMS – FULL UPDATE

C14.1 General

- 14.1.1 A unified engine control and scrutineering monitor was introduced in 2009 – the V8 Supercars M800 Control ECU (“Control ECU”). No other ECU or system is defined as a Control ECU.
- 14.1.2 A Car log booked from 1 January 2009 must comply with section C 14 in both the VCS and DVS.
- 14.1.3 All cars competing in the VCS must comply with Section C14 only.

C14.2 Engine Control

- 14.2.1 All Cars must only be fitted with one (1) Control ECU at all times while participating in any Meeting, Rides day or Test day. Access to the Control ECU must be provided to the CTM at any time upon request.
- 14.2.2 The Control ECU must, at all times;
 - 14.2.2.1 Not be disassembled or modified in any way and seals and markings must remain intact and legible, and
 - 14.2.2.2 Run only the approved version of software as loaded into the ECU when supplied by V8 Supercars, and
 - 14.2.2.3 Exclusively control the spark and fuel settings of the engine, and
 - 14.2.2.4 Only be connected to the ECU loom as specified in the requirements for the Control ECU loom.
- 14.2.3 The Control ECU always remains the property of V8 Supercars and must be returned to V8 Supercars upon the request of the CTM. The Control ECU must only be used for V8 Supercars authorised activities.
- 14.2.4 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.
- 14.2.5 All parameters measured and controlled by the Control ECU will be made available via the CAN Connector to the data recording system of rule C 14.6.1 with the exception of Wheel Speed Rear, Aux1, Aux2, Spark Sensor and RS232 GPS Input and their derivatives.
- 14.2.6 Control ECU Actuators and Sensors
The component required to perform each ECU function must comply with the table below. If the table below does not specify a component for a particular function, then that component is free so long as its sole purpose is to perform the required function.

ECU Function	Qty	Manufacturer	Part number
Crankshaft position	1	Honeywell	IGT101DC
		Delco	10456555 (Note 1)
Camshaft position	1	Honeywell	2AV Series
		Honeywell	4AV series
		Siemens	HKZ101 / HKZ121 (Note 2)
		Nanjing Huamin Electronics Co Ltd	HME 101 / HME 301 (Note 3)
Throttle Position	1	CTS	518-06500
		CTS	518-06502
		Bosch	0261 211 003
		Bosch	0280 122 001
		Novatechnic	SP2841S0002/SP28411002001
		Gefran/Arrow	Linear Potentiometer
		Spectrol	971-0002
<u>Throttle position*</u>	1	<u>Novatechnic</u>	<u>RSC 2800 - 600</u>
		<u>Penny and Giles</u>	<u>SRH 280P</u>
		<u>Variohm</u>	<u>Euro X 28</u>
Engine air temperature	1	Keystone Thermometrics	25037334
		Keystone Thermometrics	25037388
		Delco	2503 7388
Manifold air pressure	1	Delphi	12219931
Engine coolant temperature	1	Bosch	028 013 0026
		Bosch	028 013 0023
Aux1	1	See rule C 14.2.7	
Aux2	1	See rule C 14.2.7	
Rain Light	1 or 2	MSE	MSE-A04-02
Spark Sensor	1	MSE	MSE-S01-01
Ignition Module	1	M&W Bosch	CDI 010/M BIM 124
Ignition Coil	1	Crane Cams Bosch	PS 92 MEC 718
Injectors	8	Bosch	0280 150 351 / 0280 150 363 (Note 4)
		Siemens	F111405
Rear wheel speed		Honeywell	IGT101DC
Please note the following: It is permitted to permanently attach the wiring to this sensor subject to it being fitted with a DTM 04 3P connector. Siemens Part No. HKZ121 supersedes HKZ101 Nanjing Huamin Electronics Co Ltd Part No. HME 301 supersedes HME 101 Bosch Part No. 0280 150 363 supersedes 0280 150 351 *All throttle position sensors are permitted to have a maximum of 3 Wires.			

- 14.2.7 The Aux1 and Aux2 inputs to the Control ECU are scrutineering specific inputs. The CTM in his sole discretion reserves the right to electronically monitor any device, system, component(s), mechanism(s) and this request will not be subject to Protest or Appeal.
- 14.2.8 All Control ECU Actuators and Sensors must remain identifiable and unmodified, except as required solely to facilitate mounting.
- 14.2.9 All Control ECU Actuators and Sensors may be subjected to destructive testing.

C14.3 Control ECU Loom (“Loom” for this section)

- 14.3.1 The wiring loom connected to the Control ECU must conform to the Loom schematic as contained in Schedule C 15.
- 14.3.2 Except for connectors which are only connected “pin to pin”, the Loom must not contain any additional wiring, circuitry, connectors, break outs or components except as detailed in the Loom schematic.
- 14.3.3 The Loom must remain visible along its length, be separate from all other wiring and be easily removed from the Car.
- 14.3.4 Any sensors connected to the Loom:
 - 14.3.4.1 Must be powered from the Loom if the sensor/actuator is shown in the Loom schematic.
 - 14.3.4.2 May be powered from a power source that is not directly derived from the Loom for sensors/actuators not shown in the Loom schematic.
 - 14.3.4.3 Must be exclusively connected to the Loom with the exception of Wheel Speed Front, Brake Pressure, Steering Angle and Gear Position which may also be connected to the data recording unit specified in C 14.6.1.

C14.4 Pit Lane Speed Limiter

The Control ECU has an in-built Pit Lane speed limiter (“Limiter”), which must only operate as follows:

- 14.4.1 The Limiter function of the ECU must be configured the same as the final drive ratio being used in the Car and must only be activated by a switch operated by the Driver.
 - 14.4.2 The switch that is used to activate the Limiter must be connected exclusively to the Pit Limit Switch input of the Control ECU and a fixed zero-volt reference.
 - 14.4.3 The Limiter must be activated at all times while the Car is moving in Pit Lane.
 - 15.4.4 The Car must be in 1st gear while 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.

C14.5 Rain Light

- 14.5.1 The rain light must be fitted into the highest part of the rearward face of the boot lid so that its face is at 90 degrees to the road surface.
- 14.5.2 The Control ECU performs a rain light function. A dual position “Rain Light” switch must be fitted to select either the Rain Light output or the Pit Limit Light output from the Control ECU, which will ensure that the rain light flashes at all times when the Pit Lane Speed Limiter is activated.

C14.6 Electronic Data – Logging, Display & Telemetry

- 14.6.1 Each Car may only be fitted with one (1) data recording unit in addition to the data recording capacity of any unit specifically required or approved by the CTM. The data recording unit must be one of the following:

Brand	Model
Motec	ADL/ADL 2/ADL3
Motec	ACL
PI Research	Sigma

- 14.6.2 The following sensors and systems are permitted to be connected by the means of hard wiring only to the electronic data systems listed in Rule C 14.6.1. The sensors and systems must only perform the function stated in these Rules. No other sensor or systems are permitted, unless otherwise allowed:

Sensor	<u>Quantity</u>
Crankshaft position	1
Throttle position	1
Coolant level	1
Coolant pressure	1
Oil pressure	1
Oil temperature	1
Crankcase Pressure	1
Fuel usage	2
Front wheel speed (see Note 1)	2
Power steering pressure	1
Power steering temperature	1
Gearbox oil temperature	1
Gear cut strain gauge	1
Diff oil temperature	1
G – Force – Triple Axis (see Note 2)	1
Suspension position (external linear or rotary sensors only)	4
Brake light	1
Brake disc temperature	2
Brake line pressure (front & rear)	2
Cockpit temperature / driver cooling systems	2
Brake balance bar position	1
Brake master cylinders travel (external linear or rotary sensors only)	2
Anti roll bar position (front & rear)	2

Note 1: 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.

Note 2: If the data recording unit listed in Rule C 14.6.1 has an internal G - Force sensor, then that sensor may be used instead of an external sensor. In all cases the G – Force sensor is only permitted to measure bodyshell acceleration.

It is permitted to log the following functions of the systems listed below:

System	Functionality permitted to be logged.
Power control modules (see Note 3)	voltage, current draw temperature & diagnostics
Pit stop light function (dual pole switch)	Status
Driver cooling system operation	Status

Note 3: It is not permitted to use any information available from the Power control module as a sensor, the information is for diagnostic and protection functions only

- 14.6.3 The sensors listed in Rule C 14.6.2 are in addition to any switches, carrier detect signal for telemetry or any sensors specifically required or approved by the CTM.
- 14.6.4 The sensors listed in Rule C 14.6.2 are in addition to the sensors permitted solely as inputs to the Control ECU.
- 14.6.5 The data gathered from the sensors listed in Rule C 14.6.2 may then be recorded, displayed or transmitted by any means permitted under these Rules.
- 14.6.6 Heads up dash displays are not permitted
- 14.6.7 Data and system configurations may be requested by the CTM at anytime and this request will not be subject to Protest or Appeal.

C14.7 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
Lap Beacon	Yes	No

C15. ENGINE CONTROL & DATA ACQUISITION SYSTEMS – MINIMAL UPDATE

C15.1 General

- 15.1.1 A unified engine control and scrutineering monitor was introduced in 2009 the V8 Supercars M800 Control ECU (“Control ECU”).
- 15.1.2 For the DVS A Car log booked prior to 1 January 2009 is permitted to comply with either section C 14 or section C 15.
- 15.1.3 ~~For season 2010 only,~~ A Car log booked prior to 1 January 2009 may compete in the DVS using a combination of the Control loom as defined in Rule C14.3 (Schedule C15) while also compiling with the Section C15. Any such variation must have prior approval of the CTM.

C15.2 Engine Control

- 15.2.1 All Cars must only be fitted with one (1) V8 Supercars Control ECU at all times while participating in any Meeting or Test day.
- 15.2.2. The Control ECU must, at all times;
- 15.2.2.1 Not be disassembled or modified in any way and seals and markings must remain intact and legible, and
 - 15.2.2.2 Run only the approved version of software as loaded into the ECU when supplied by V8 Supercars, and
 - 15.2.2.3 Exclusively control the spark and fuel settings of the engine, and 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
 - 15.2.2.4 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
 - 15.2.2.5 Only be connected to the ECU loom as specified in the requirements for the Control ECU loom.
- 15.2.3 The Control ECU always remains the property of V8 Supercars and must be returned to V8 Supercars upon the request of the CTM. The V8 Supercars Control ECU must only be used for V8 Supercars authorised activities.
- 15.2.4 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 position	1	CTS	518-06500
		CTS	518-06502

		Bosch	0261 211 003
		Bosch	0280 122 001
		Novatechnic	SP2841S0002 SP28411002001
		Gefran/Arrow	Linear Potentiometer
		Spectrol	971-0002
Throttle Position	1	<u>Novatechnic</u>	<u>RSC 2800 - 600</u>
		<u>Penny and Giles</u>	<u>SRH 280P</u>
		<u>Variohm</u>	<u>Euro X 28</u>
Engine air temperature	1	Keystone Thermometrics	25037334
		Keystone Thermometrics	25037388
		Delco	2503 7388
Fuel Temperature	1	various	
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 - * It is permitted to permanently attach the wiring to this sensor subject to it being fitted with a DTM 04 3P connector.			

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

15.2.6 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 Bosch	CDI 010/M BIM 124
Ignition Coil	1	Crane Cams Bosch	PS 92 MEC 718
Injectors	8	Bosch	0280 150 351 / 0280 150 363
		Siemens	F111405
Please note the following: - Bosch Part No. 0280 150 363 supersedes 0280 150 351 - ECU actuators may be subjected to destructive testing			

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

C15.3 Control ECU loom

- 15.3.1 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, Schedule C2A or Schedule C 15.
- 15.3.2 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.
- 15.3.3 The Control ECU loom must remain visible along its length, be separate from all other wiring and be easily removed from Car.
- 15.3.4 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.
- 15.3.5 Looms complying with Schedule C2 may also connect Lambda sensors to the Control ECU.

C15.4 Pit Lane Speed Limiter

The Control ECU has an in-built Pit Lane speed limiter (“Limiter”), which must only operate as follows:

- 15.4.1 The Limiter function of the ECU must be configured the same as the final drive ratio being used in the Car and must only be activated by a switch operated by the Driver.
- 15.4.2 The switch that is used to activate the Limiter must be connected exclusively to the Pit Limit Switch input of the Control ECU and a fixed zero-volt reference.
- 15.4.3 The Limiter must be activated at all times while the Car is moving in Pit Lane.
- 15.4.4 The Car must be in 1st gear while 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.

C15.5 Rain Light

- 15.5.1 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.
- 15.5.2 The rain light must be mounted so its face is at 90 degrees to the road surface.
- 15.5.3 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.
- 15.5.4 Cars with Loom complying with Schedule C15 may operate the rain light according to rule C 14.5.2

C15.6 V8 Supercars Data Monitors

- 15.6.1 All Cars must be fitted with a correctly functioning V8 Supercars Data Monitor, of a type specified by the CTM at all times while participating in any Meeting, Rides day or Test day. Access to the data monitor must be provided to the CTM at any time upon request.
The Competitor is responsible for ensuring that the wiring loom and sensors that provide input signals to the V8 Supercars Data Monitor are adequately maintained and remain working at all times.
- 15.6.2 This V8 Supercars Data Monitor must, at all times;
 - 15.6.2.1 not be disassembled or modified in any way and any seals and markings must remain intact and legible, and

15.6.2.2 only receive inputs from sensors as specified in the V8 Supercars Data Monitor sensor list, and

15.6.2.3 only be connected to the V8 Supercars Data Monitor loom as specified in the requirements for the V8 Supercars Data Monitor loom.

15.6.3 The V8 Supercars Data Monitor always remains the property of V8 Supercars and must be returned to V8 Supercars upon the request of the CTM. The V8 Supercars Data Monitor must only be used for V8 Supercars authorised activities.

15.6.4 V8 Supercars Data Monitor Sensors

Each Car must only be fitted with type and quantity of V8 Supercars Data Monitor sensors detailed in the table below. The CTM in his sole discretion reserves the right to electronically monitor any device, system, component(s), mechanism(s) and this request will not be subject to Protest or Appeal.

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 SP28411002001
		Gefran/Arrow	Linear potentiometer
		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		

15.6.5 All V8 Supercars Data Monitor sensors must remain identifiable and unmodified, except as required solely to facilitate mounting.

15.6.6 V8 Supercars Data Monitor loom

The wiring loom which connects the V8 Supercars Data Monitor to the V8 Supercars Data Monitor sensors must conform to the V8 Supercars Data Monitor loom schematic as contained in Schedule C 5.

15.6.7 Except for connectors which are only connected “pin to pin”, the V8 Supercars Data Monitor loom must not contain any additional wiring, circuitry, connectors,

break outs or components except as detailed in the V8 Supercars Data Monitor loom schematic.

15.6.8 The V8 Supercars Data Monitor loom must remain visible along its length, be separate from all other wiring and be easily removed from Car.

15.6.9 The CTM will make all decisions in relation to all determinations regarding the installation and operation of the Data Monitor and any interpretation arising there from.

C15.7 Electronic Data – Logging, Display & Telemetry

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

Brand	Model
Motec	ADL/ADL 2/ADL 3
Motec	ACL
PI Research	Sigma

15.7.2 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 CTM.

15.7.3 The following sensors and systems are permitted to be connected by the means of hard wiring only to the electronic data systems listed in Rule C 15.7.1. The sensors and systems must only perform the function stated in these Rules. No other sensor or systems are permitted, unless otherwise allowed:

Engine Sensors

Sensor	Quantity
Crankshaft position (see Note 1)	1
Throttle position (see Note 1)	1
Air temperature	1
Coolant temperature	1
Coolant level	1
Coolant pressure	1
Oil pressure	1
Oil temperature	1
Crankcase Pressure	1
Fuel pressure	1
Fuel temperature	1
Fuel usage	2
Lambda	2
Manifold air pressure	1

Note 1: Access to the crankshaft position and throttle position signals generated by the sensors which are a part of the “V8 Supercar” data monitoring system will be made available on Cars fitted with such a system, subject to the approval of the CTM. If these signals are used, then the relevant sensors listed in Rule C 15.6.3 are deleted.

General Sensors

Sensor	Quantity
Front wheel speed – (see Note 2)	2
Steering angle	1
Power steering pressure	1
Power steering temperature	1
Gearbox oil temperature	1
Diff oil temperature	1
G – Force – longitudinal (see Note 3)	1
G – Force – lateral (see Note 3)	1
G – Force – vertical (see Note 3)	1
Suspension position (external linear or rotary sensors only)	4
Brake light	1
Brake disc temperature	2
Brake line pressure (front & rear)	2
Cockpit temperature / driver cooling systems	2
Brake balance bar position	1
Brake master cylinders travel (external linear or rotary sensors only)	2
Anti roll bar position (front & rear)	2
Gear selector position	1

Note 2: 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.

Note 3: G - Force sensors must only be mounted to the Bodyshell.

Other Systems

It is permitted to log the following functions of the systems listed below:

System	Functionality permitted to be logged.
Power control modules (see Note 4)	voltage, current draw temperature & diagnostics
Pit stop light function (dual pole switch)	Status
Pit lane speed limiter function	Status
Gear cut strain gauge	voltage output
Driver cooling system operation	Status

Note 4: It is not permitted to use any information available from the Power control module as a sensor, the information is for diagnostic and protection functions only

15.7.4 The sensors listed in Rule C 15.7.3 are in addition to any switches, carrier detect signal for telemetry or any sensors specifically required or approved by the CTM.

15.7.5 The sensors listed in Rule C15.7.3 are in addition to the sensors permitted solely as inputs to the Control ECU.

15.7.6 The data gathered from the sensors listed in Rule C15.6.3 may then be recorded, displayed or transmitted by any means permitted under these Rules.

15.7.7 Heads up dash displays are not permitted

- 15.7.8 Data and system configurations may be requested by the CTM at anytime and this request will not be subject to Protest or Appeal.

C15.8 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
Lap Beacon	Yes	No

C16 Car Of the Future

V8 Supercars Australia will introduce the Car of The Future (COF) for the commencement of the 2013 V8 Supercar Championship Season.

The COF will be a V8 Supercar with external body work representative of production based medium to large, four door passenger cars and suitable for adaption to the V8 Supercar Control Chassis.

Engines will be normally aspirated and of a V8 configuration and will subject to approval under the requirements of the V8 Supercar Engine Equalisation Program.

C16.1 Eligible Vehicles

COF will be limited to manufacturers of a Vehicle that complies with the rules of the COF listed below and the relevant V8 Supercars approved Vehicle Specification Document (VSD) for that model.

For a model of vehicle to be considered eligible for approval as for the COF it must:

- Be based on a four door production car;
- Be commercially available in Australia and have a minimum production volume of 5000 vehicles;
- Be of suitable size for the body work of the model car to be adapted to the V8SA Control Floor and Control Chassis;
- Right hand drive in race configuration;
- Rear wheel drive in race configuration; and
- Be equipped with an engine contained in the approved list of V8 Supercar Engines and comply with the relevant Engine Specification Document.

No Rule or Specification within Division C will apply unless specifically referred to within the vehicles VSD or ESD.

C16.2 V8 Supercar Control Chassis

16.2.1 From 1st January 2013 all Cars entered in the VCS must be built using the V8 Supercar Control Chassis.

16.2.2 The only permitted variations to the Control Chassis will be those permitted in the relevant VSD for each model of car eligible for COF.

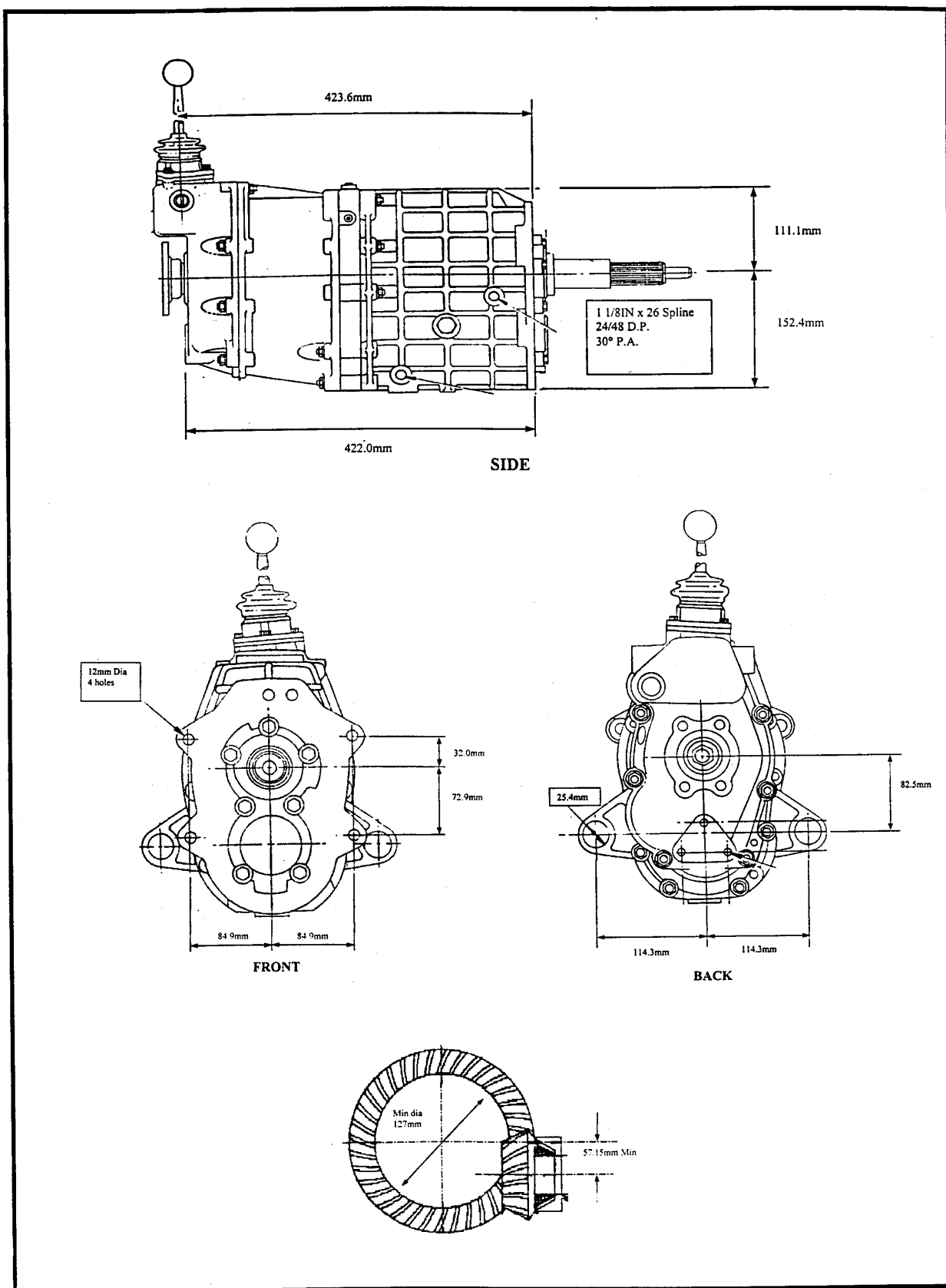
C16.3 Engines

16.3.1 Only engines that are contained in the approved list of V8 Supercar Engines are permitted.

16.3.2 Engines must be normally aspirated of V8 configuration and conform to all specifications and requirements as set out in the relevant ESD.

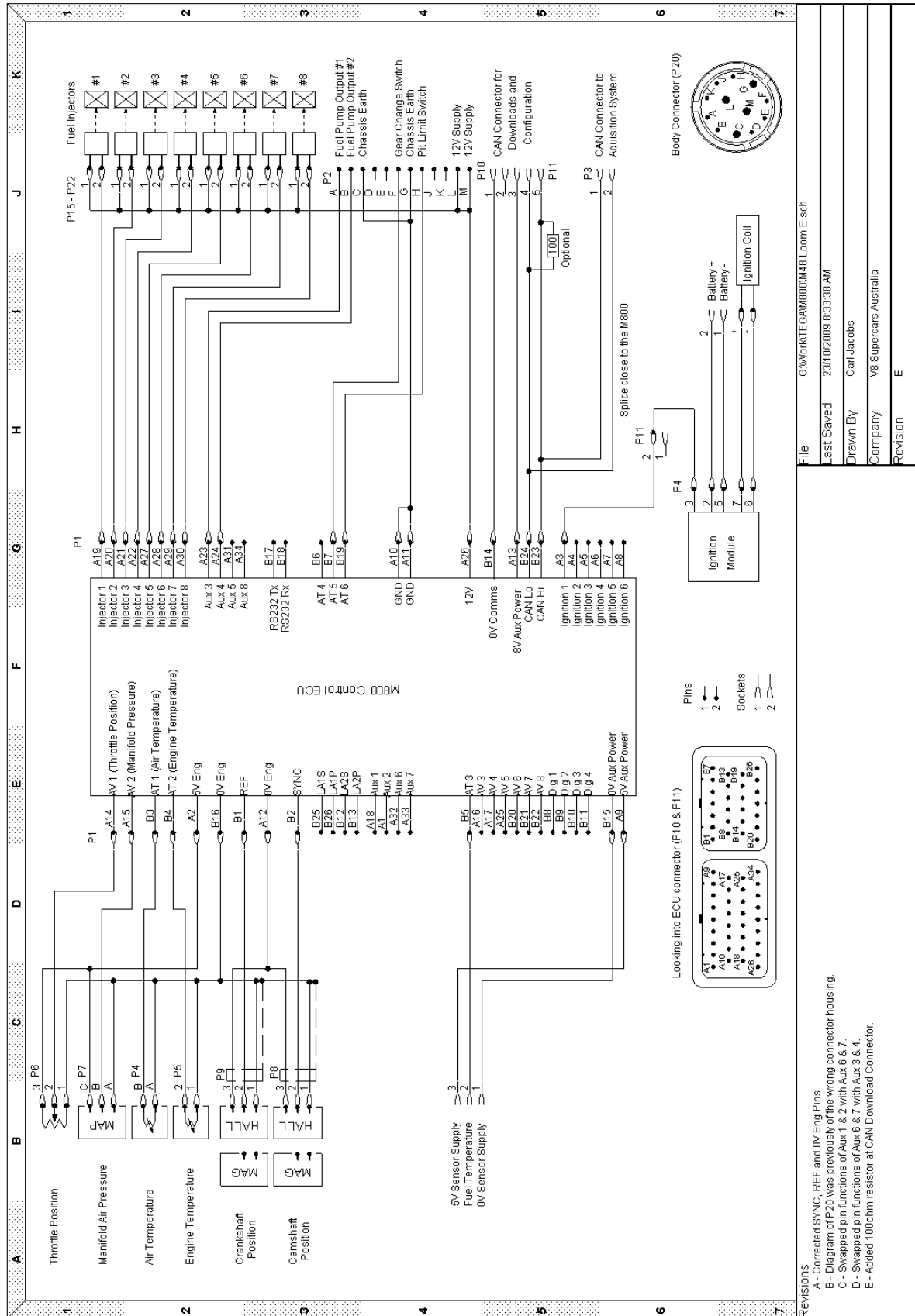
16.3.3 Engines will be issued with an ESD following completion of a V8 Supercar Engine Equalisation Test.

SCHEDULE C 1
GEARBOX & FINAL DRIVE SPECIFICATIONS
(Rule C 8.4.1)



Please note that this drawing is a graphical representation of a typical gearbox only to clearly demonstrate the dimensions contained in this Schedule C1

SCHEDULE C 2 CONTROL ECU LOOM



File	G:\Work\TEGAM800M48 Loom E.sch
Last Saved	23/10/2009 8:33:38 AM
Drawn By	Carl Jacobs
Company	V8 Supercars Australia
Revision	E

- Revisions
- A - Corrected SYNC, REF and DV Eng Pins.
 - B - Diagram of P20 was previous of the wrong connector housing.
 - C - Swapped pin functions of Aux 1 & 2 with Aux 6 & 7.
 - D - Swapped pin functions of Aux 6 & 7 with Aux 3 & 4.
 - E - Added 100ohm resistor at CAN Download Connector.

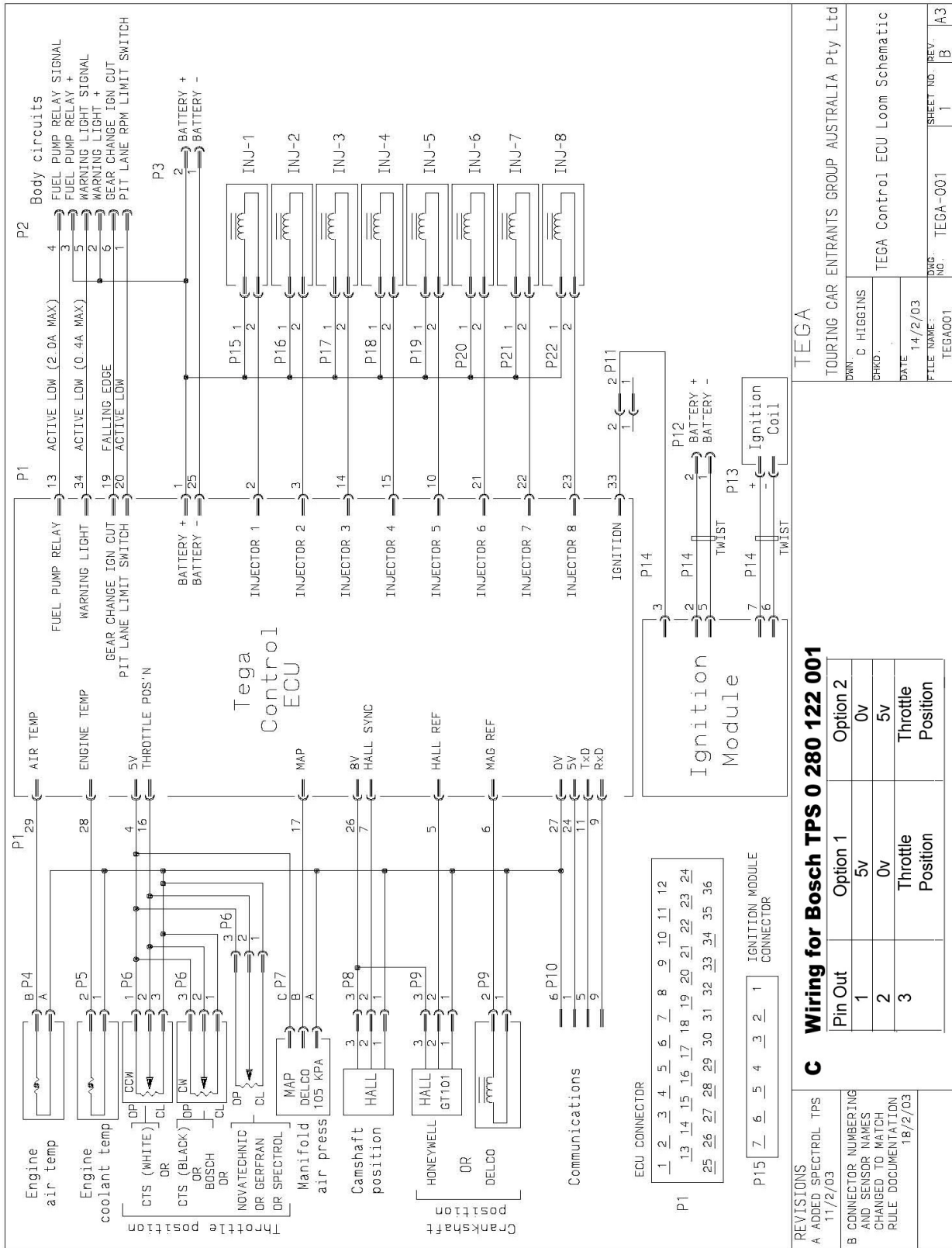
SCHEDULE C2
V8 SUPERCAR_CONTROL ECU LOOM SCHEMATIC MATERIAL LIST

Connector	Description	Qty	Manufacturer/ Supplier	Part No.	
				Housing	Pins/Contacts
P1A	ECU – 34 pin	1	Tyco	4-1437290-0	
P1B	ECU – 26 pin	1	Tyco	3-1437290-7	
P2	Body circuits	1	Deutsch	AS6-14-97PN	
			-or-		
			Souriau	8STA-1497PN	
P3	CAN to Dash	1			
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	CAN Communications	1	Deltron	716-0-0501	
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	

Note : It is permitted to change the electrical connector on these sensors to a Motorsport Connector with the sensor flying lead being fitted with a AS007-98PN connector.

SCHEDULE C 2A

CONTROL ECU LOOM



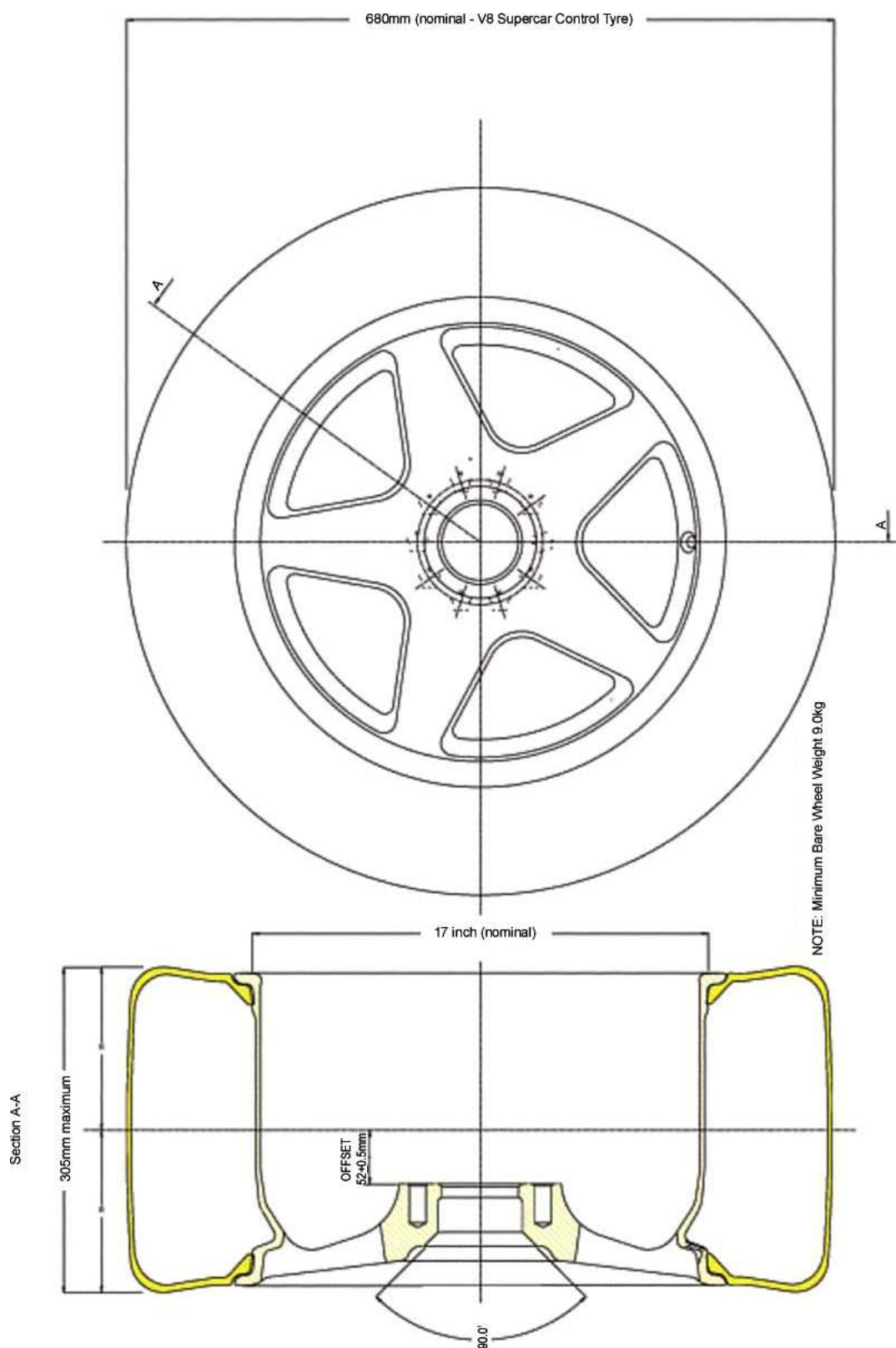
SCHEDULE C2A
TEGA CONTROL ECU LOOM SCHEMATIC MATERIAL LIST

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]

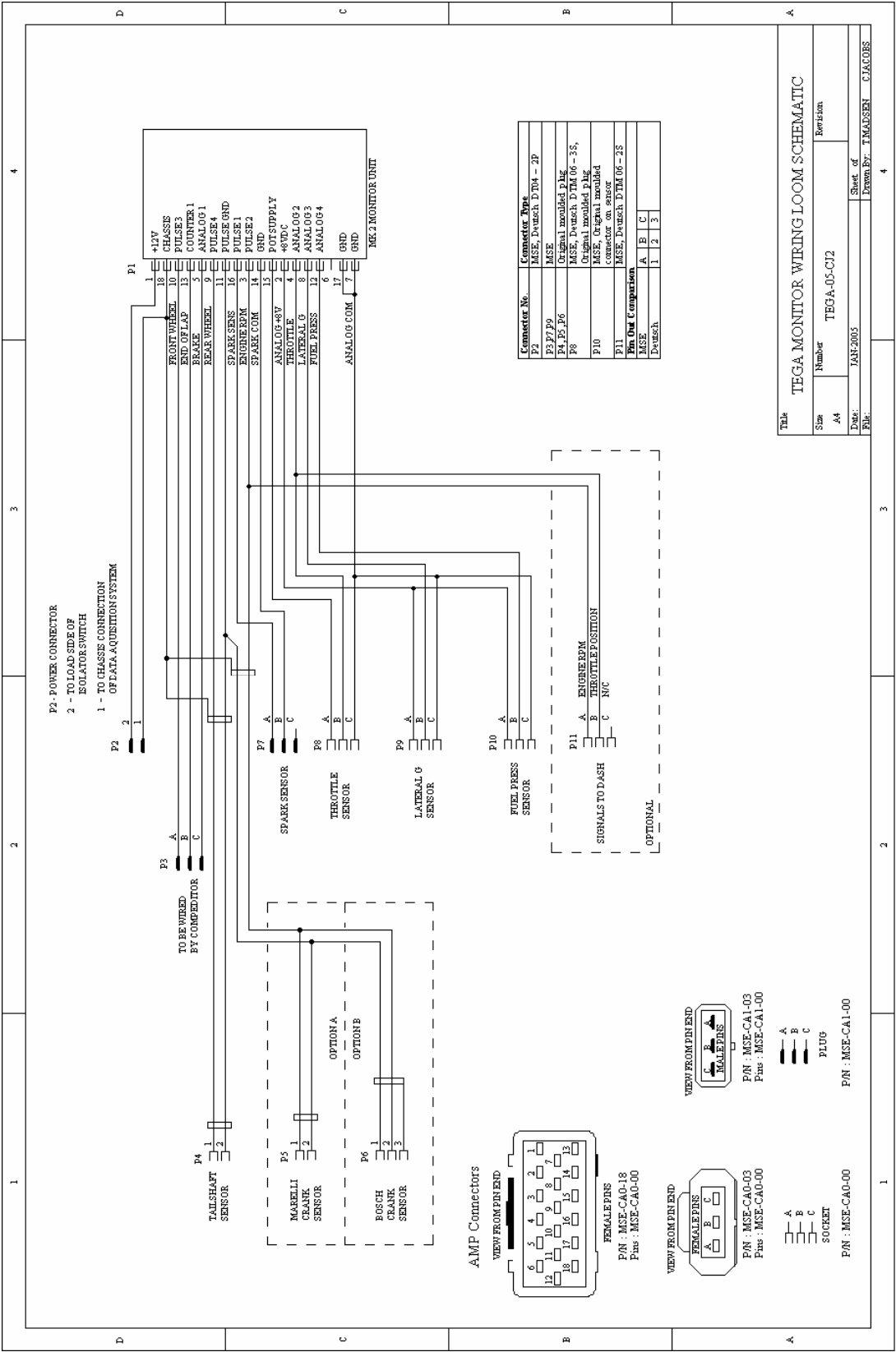
SCHEDULE C 4A **COMPLETE WHEEL SPECIFICATION** **(Rule C 11.2)**

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.



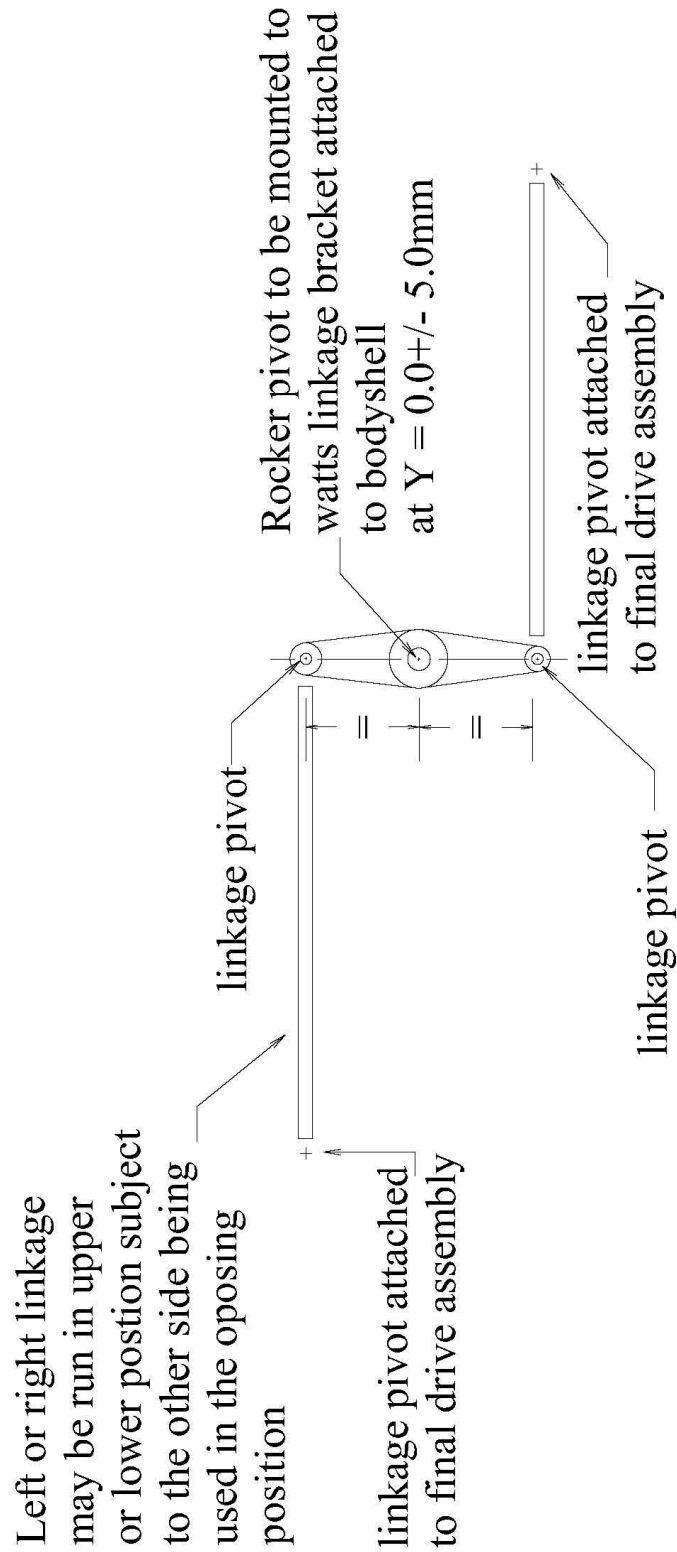
Page C 65

SCHEDULE C 5
MK II MONITOR LOOM SCHEMATIC
(Rule C 4.8.6)

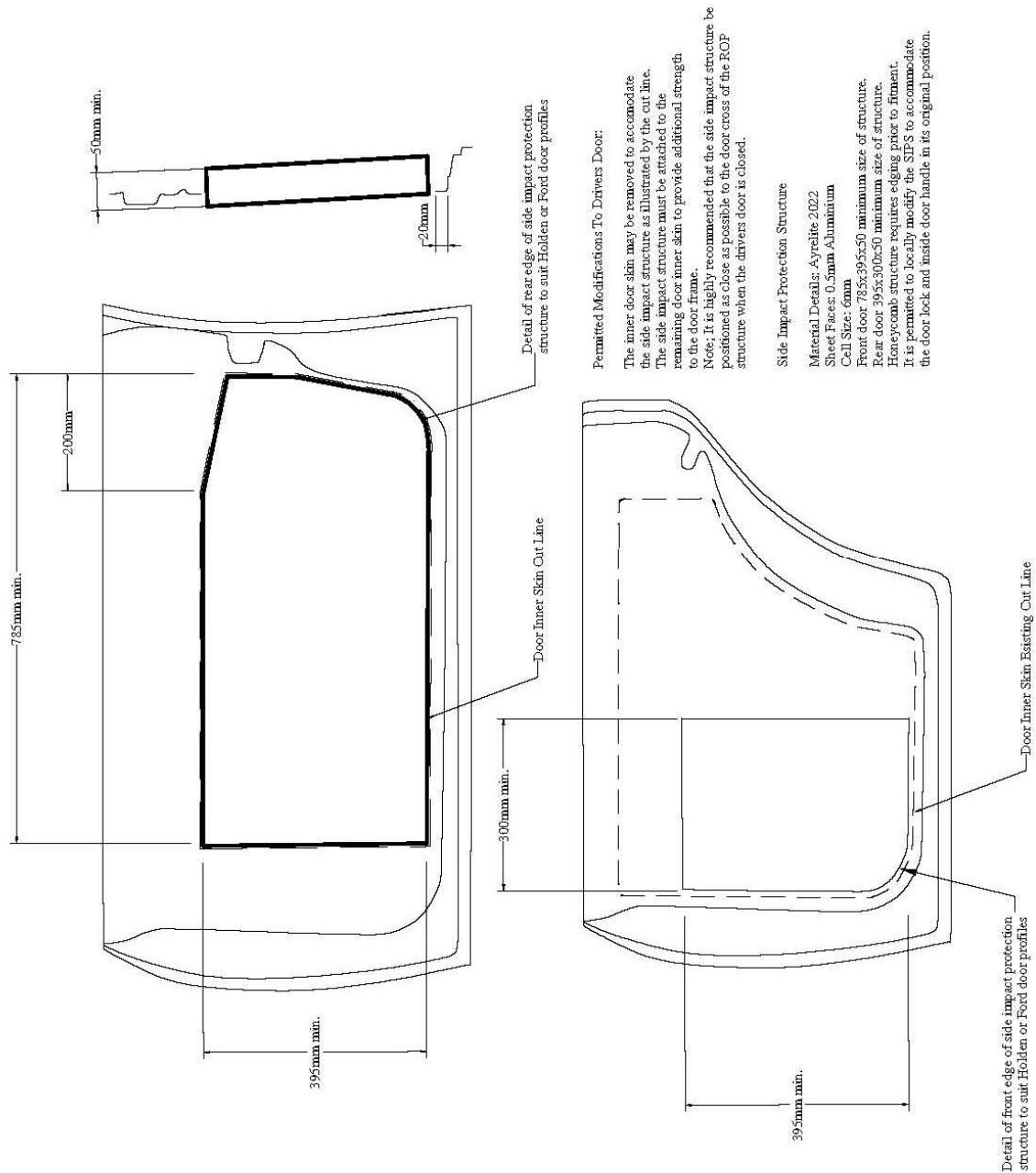


SCHEDULE C 6
SCHEMATIC DEFINITION OF WATTS LINKAGE
(Rule C9.1.3)

WATTS LINKAGE SCHEMATIC



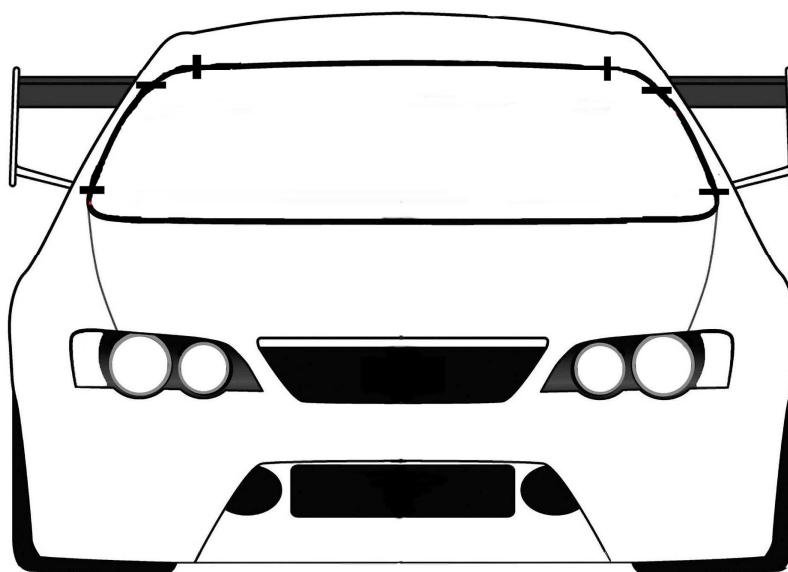
SCHEDULE C 7 **DRIVERS SIDE IMPACT PROTECTION – FRONT & REAR DOOR** **(Rule C 6.5.2)**



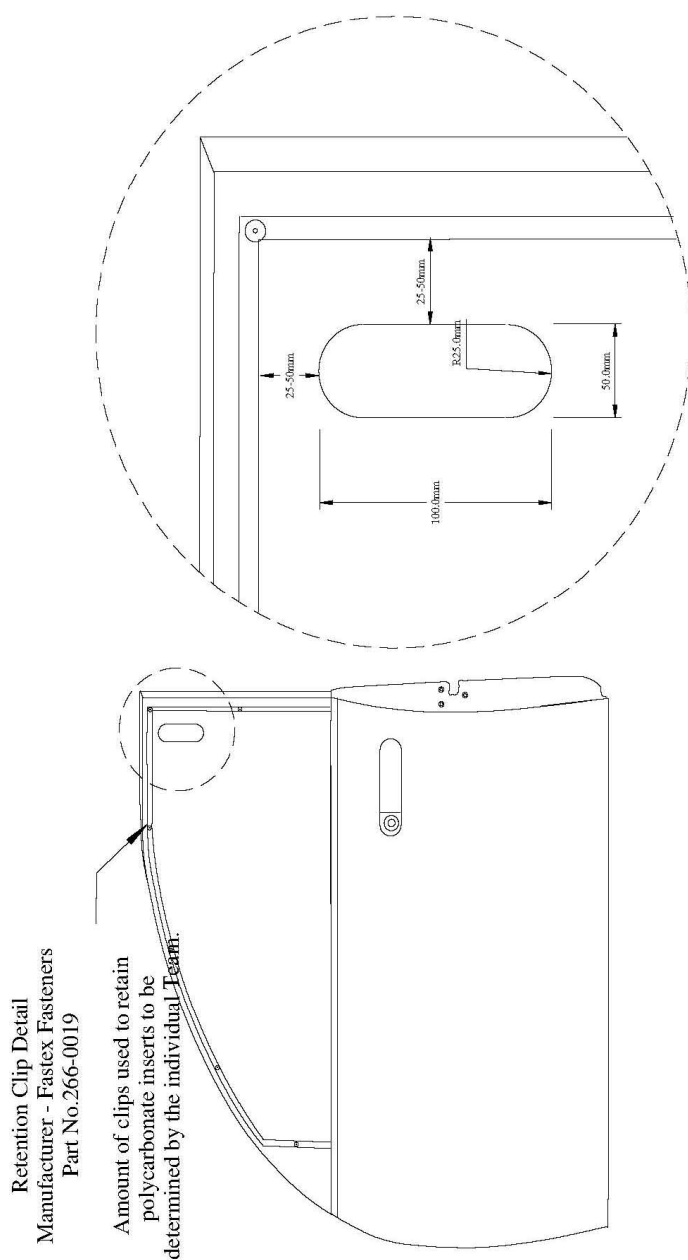
SCHEDULE C 8
FRONT WINDSCREEN RETENTION
(Rule C 6.2.18)

The permitted modification to Cars for the front window retention system will be the fixture of flush mounted M5(minimum size) rivnuts inserted in the A pillars and leading edge of the roof or predrilled holes where retention brackets could be either bolted or riveted in place when the screen is required to be changed. The minimum number of retention brackets would be 6 and these would be required to be made from aluminium strap 25 x 3mm (minimum) and overlap the windscreen by a minimum of 25mm.

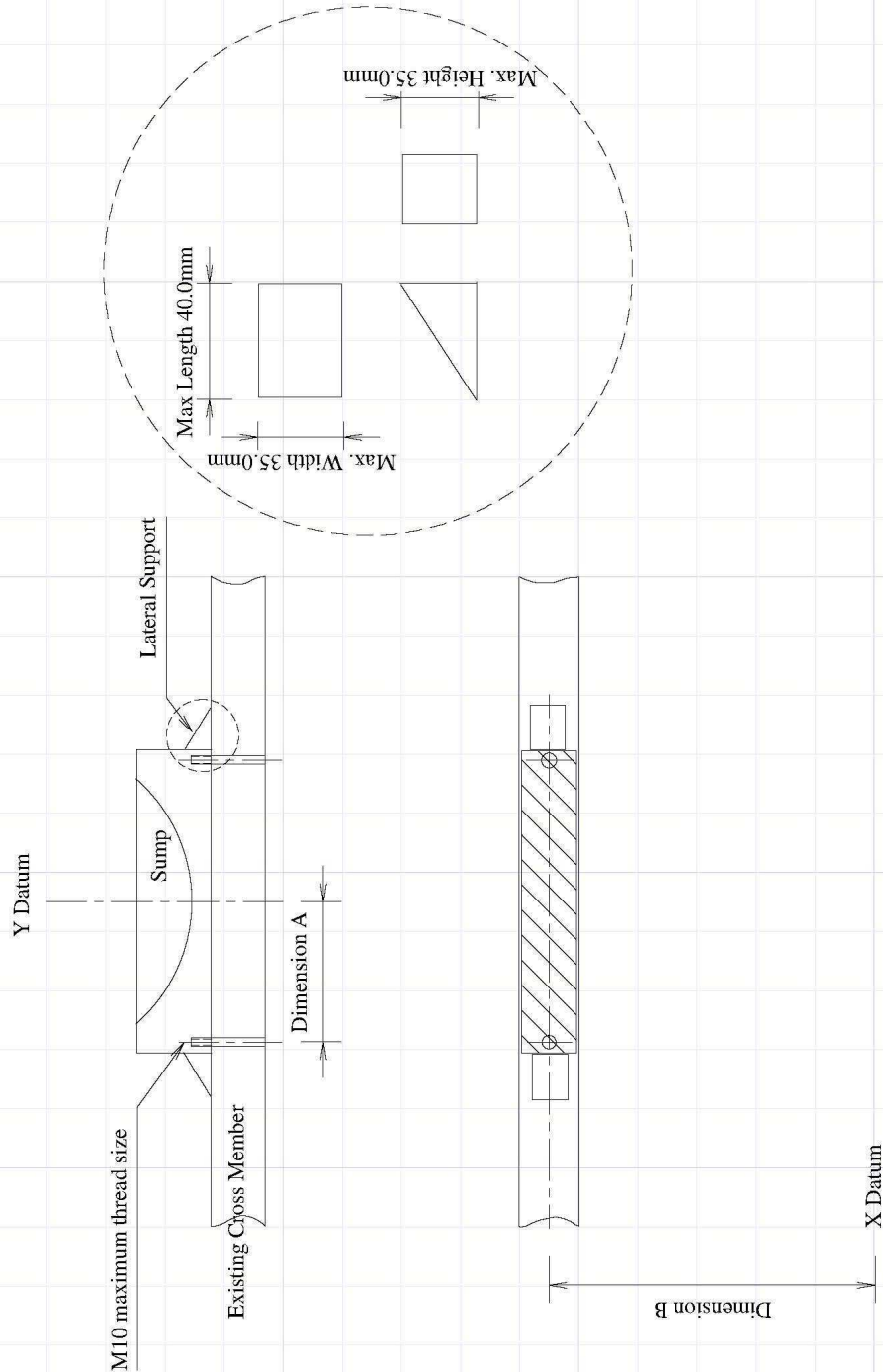
See diagram below:



SCHEDULE C 9
FRONT WINDOW POLYCARBONATE INSERT RETENTION AND HANDLE HOLE
DIMENSIONS
(Rule C 6.5.4)

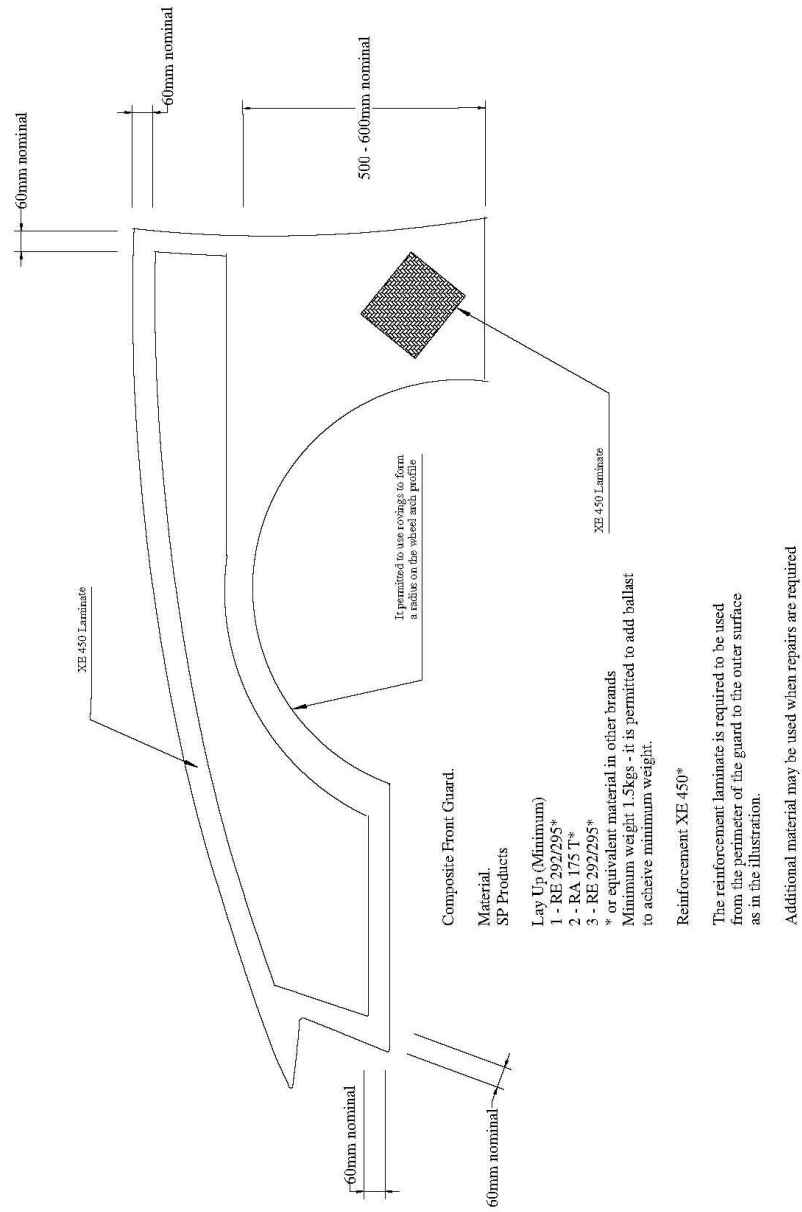


**SCHEDULE C 10
ENGINE SUMP MOUNT
(Rule C 7.3.6.2)**



Dimension	Min	Max
A	Y = 105.0mm	Y = 130.0mm
B	X = 2080.0mm	X = 2090.0mm
Hatched Area Of Sump Mounting		Width 280.0mm Length 55.0mm

SCHEDULE C 11 **FRONT GUARD** **(Rule C 6.2.1.1)**



TYPE	LEFT HAND	RIGHT HAND
GROOVED (x36)	DN2211X252A36L	DN2211X252A36R

Part number: DN2211X252A36

Ø375

Ø261

2

Ø2.33

19 (REF)

36.6

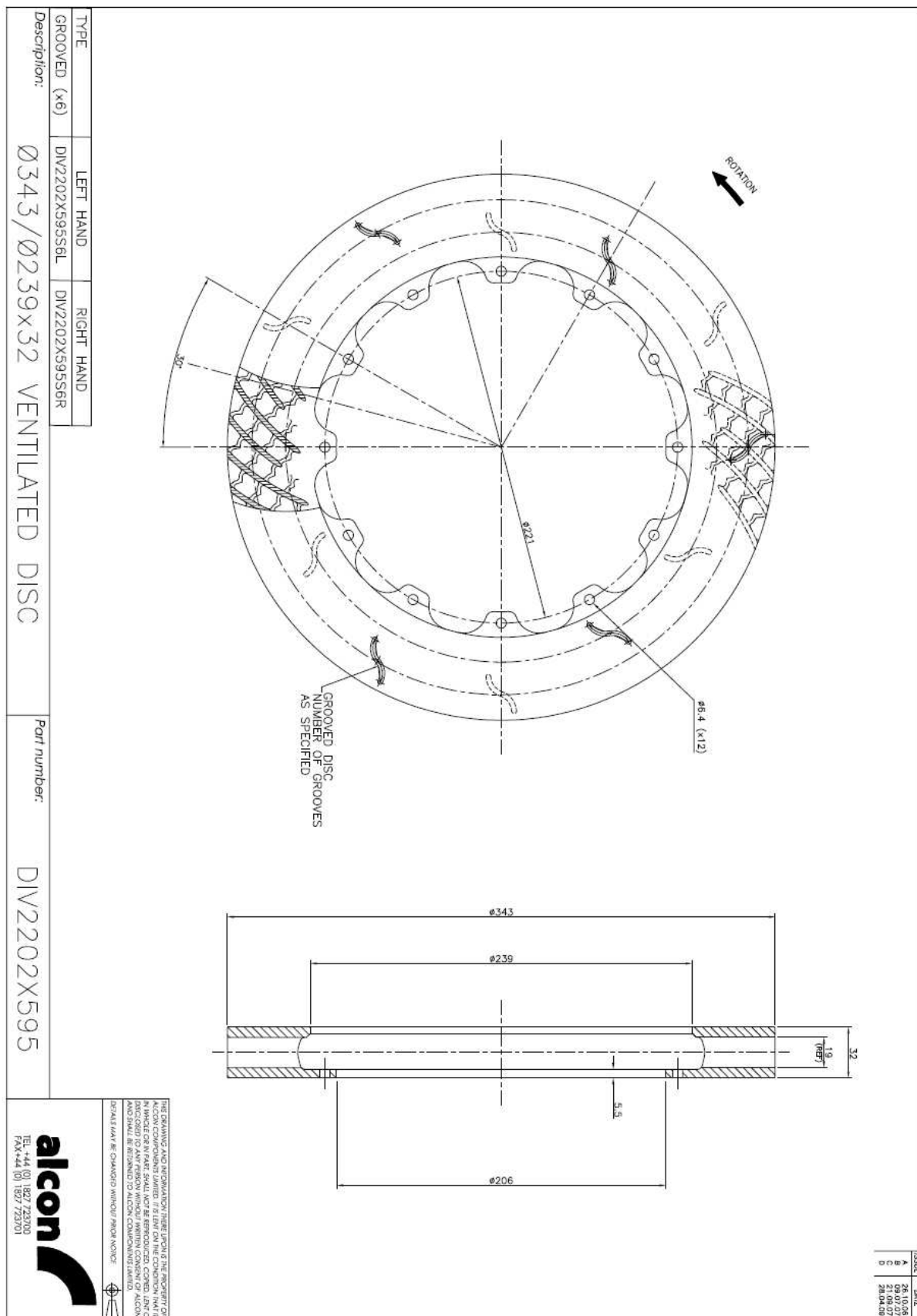
GROOVED DISC
NUMBER OF GROOVES
AS SPECIFIED

72

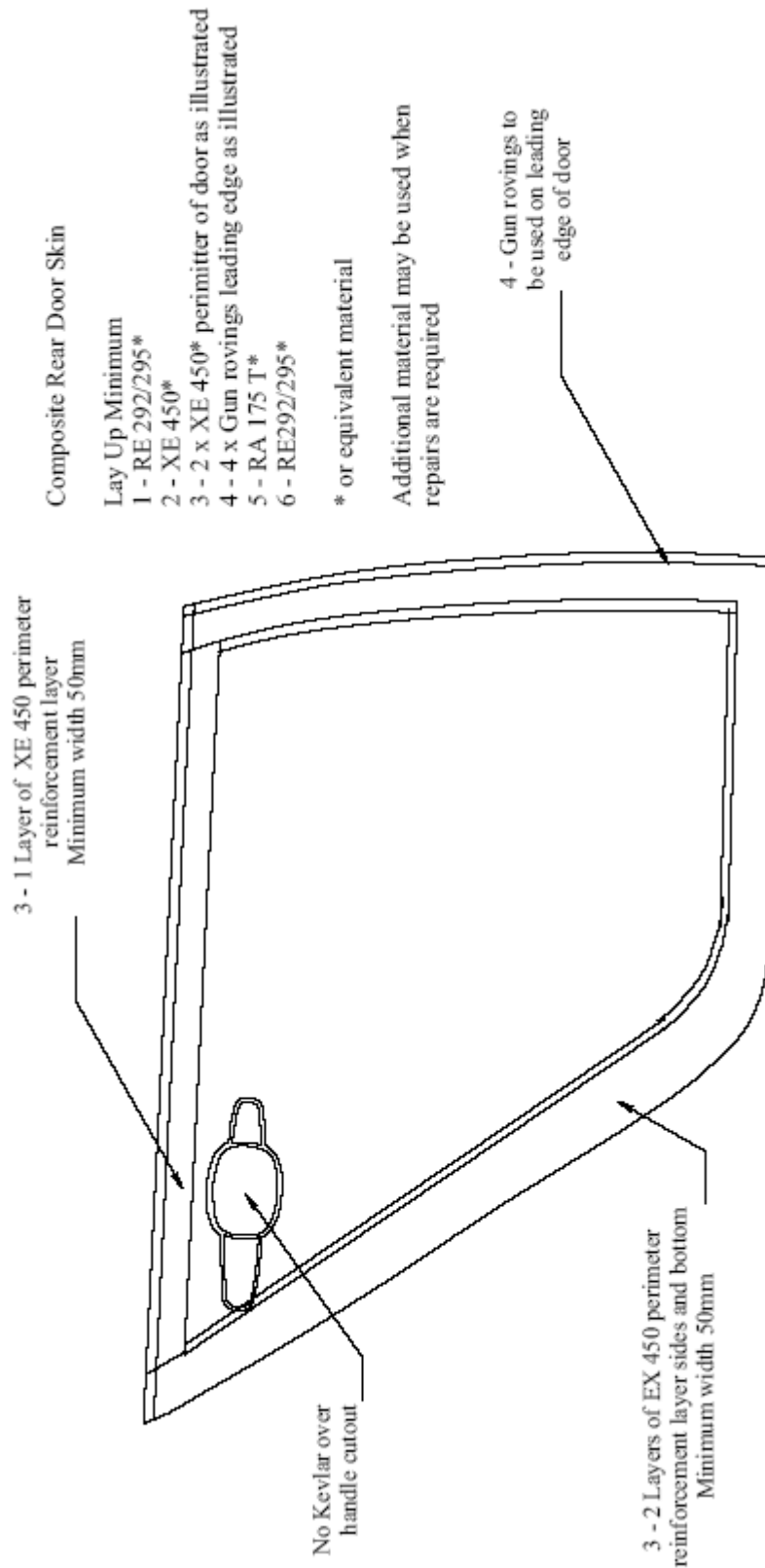
Ø4.4 (x12)

ROTATION

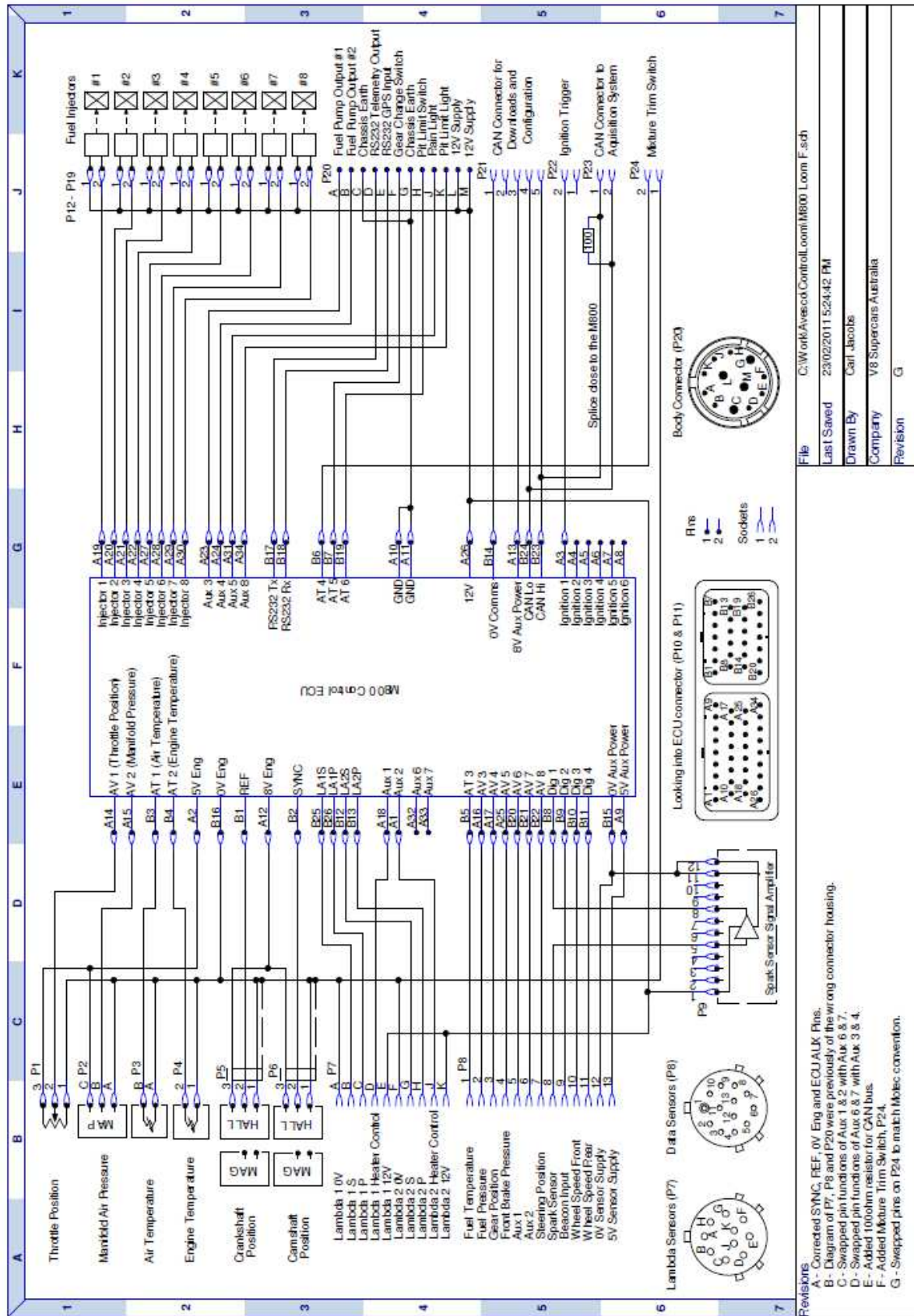
SCHEDULE C 13 **ALCON CONTROL REAR BRAKE ROTORS** **(RULE C10.1.8)**



SCHEDULE C 14 **REAR DOOR SKIN** **(Rule C 6.5.7)**



SCHEDULE C15 CONTROL ECU LOOM

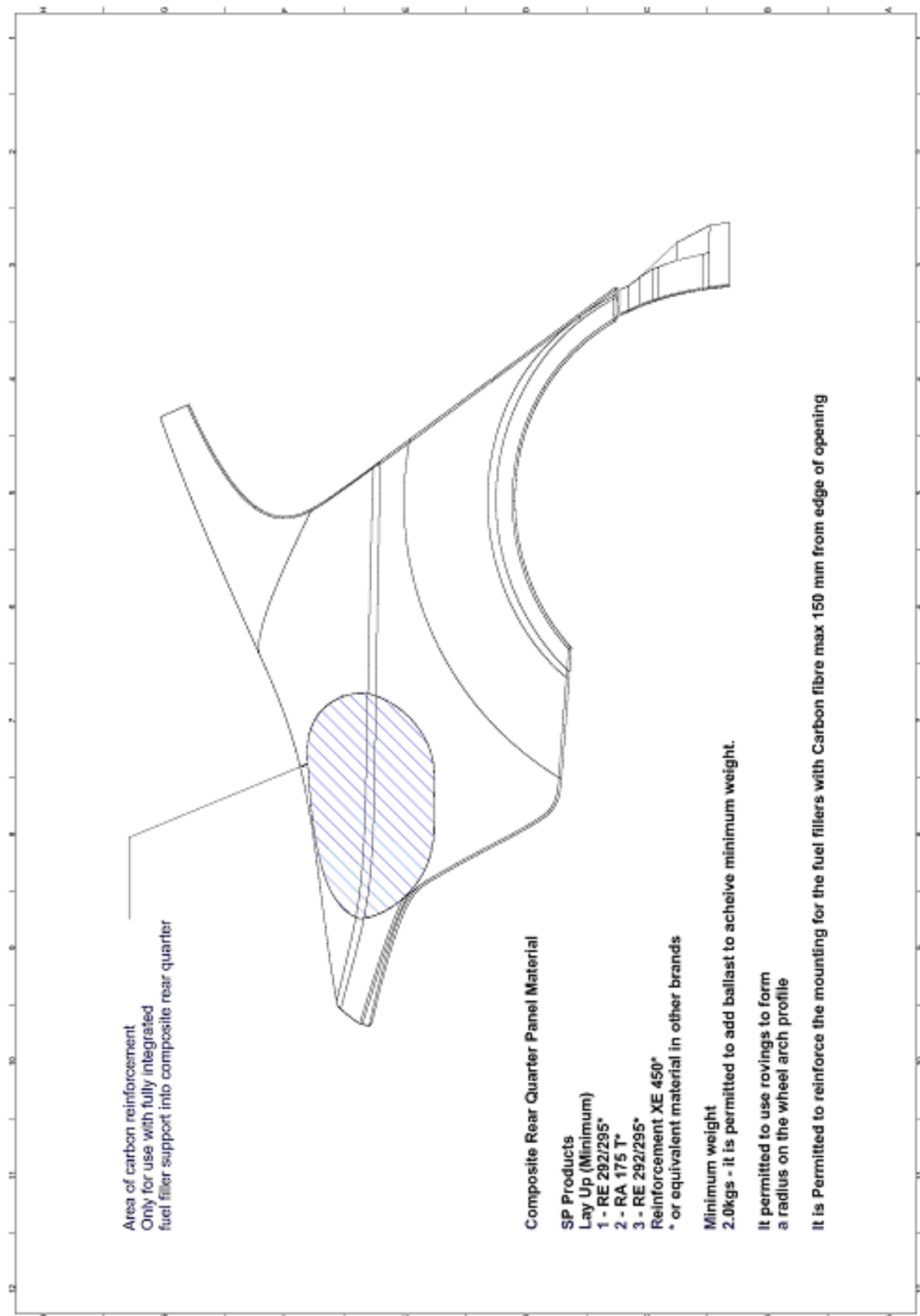


SCHEDULE C15
V8 SUPERCARS CONTROL ECU LOOM SCHEMATIC MATERIAL LIST

Connector	Description	Qty	Manufacturer/ Supplier	Part No.	
				Housing	Pins/Contacts
P1	Throttle position*	1	AMP / AMG	1-827578-1	0-925590-2
			-or-		
			Deutsch	DTM06-3S-E007	0462-201-2031
P2	Manifold air pressure	1	Carrol	1201-5793	
P3	Engine air temp	1	Delphi	12162197	12161184
P4	Engine coolant temp	1	AMP / AMG	0-827551-3	2-925590-2
P5	Camshaft position*	1	Deutsch	DTM06-3S-E007	0462-201-2031
P6	Crankshaft position*	1	Deutsch	DTM06-3S-E007	0462-201-2031
P7	Lambda Sensors	1	Deutsch	AS0-12-98SN AS1-12-98SN	
			-or-		
			Souriau	8STA0-1298SN	
P8	Data Sensors	1	Deutsch	AS0-10-35SN AS1-10-35SN	
			-or-		
			Souriau	8STA0-1035SN	
P9	Spark Sensor Circuit	1			
P10	ECU Connector A	1	Tyco	4-1437290-0	
P11	ECU Connector B	1	Tyco	3-1437290-7	
P12 - 19	Injectors	8	AMP / AMG	0-827551-3	2-925590-2
			-or-		
			Bosch	9112-067-011	
P20	Body Connector	1	Deutsch	AS6-14-97PN	
			-or-		
			Souriau	8STA-1497PN	
P21	CAN Connector	1	Deltron	716-0-0501	
P22	Ignition signal	1	Deutsch (male)	DTM04-2P	0460-202-2031
			-and-		
			Deutsch (female)	DTM06-2SE007	0462-201-2031
P23	CAN Telemetry	1	Deutsch	TBC	TBC
P24	<u>Fuel Trim</u>		<u>Deutsch</u>	<u>ASU-103-03SN</u> <u>or</u> <u>DTM 06-3S</u>	

Note : It is permitted to change the electrical connector on these sensors to a Motorsport Connector with the sensor flying lead being fitted with a AS007-98PN connector.

SCHEDULE C16 **COMPOSITE REAR QUARTER PANEL** **(Rule C6.2.1.3)**



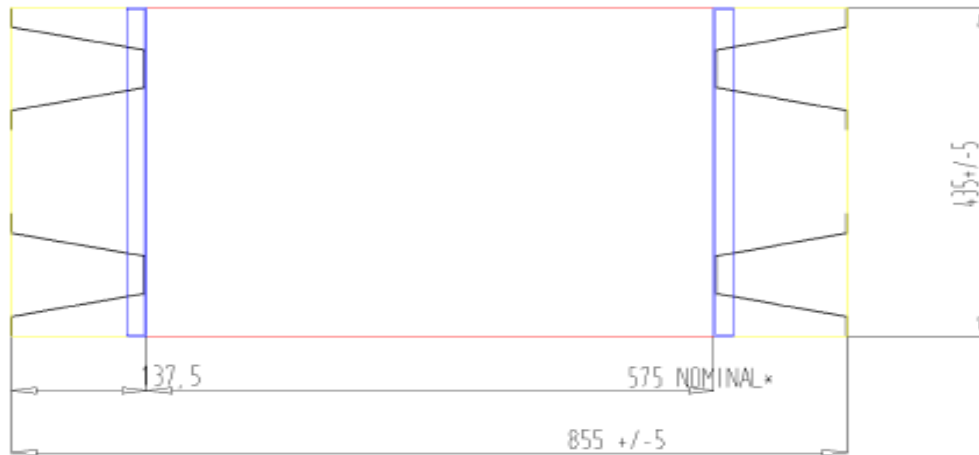
SCHEDULE C17
Declaration of Conformity

For Authorised Representative - I being the Authorised Representative of the vehicle described on The V8 Supercar Championship/Development Series Entry Form and legally authorised to enter the car described on this form, hereby declare and undertake to V8 Supercars Australia and the Confederation of Australian Motor Sport (CAMS) that the vehicle and all related equipment and components necessary for participation in this event shall be presented, at all times and in every respect, in a condition suitable for use in this activity, and that I have caused the vehicle to be inspected according to a maintenance schedule which I have developed and that it is free from mechanical defects, be they of preparation or structural integrity, that may render the vehicle unsafe for the proposed activity.

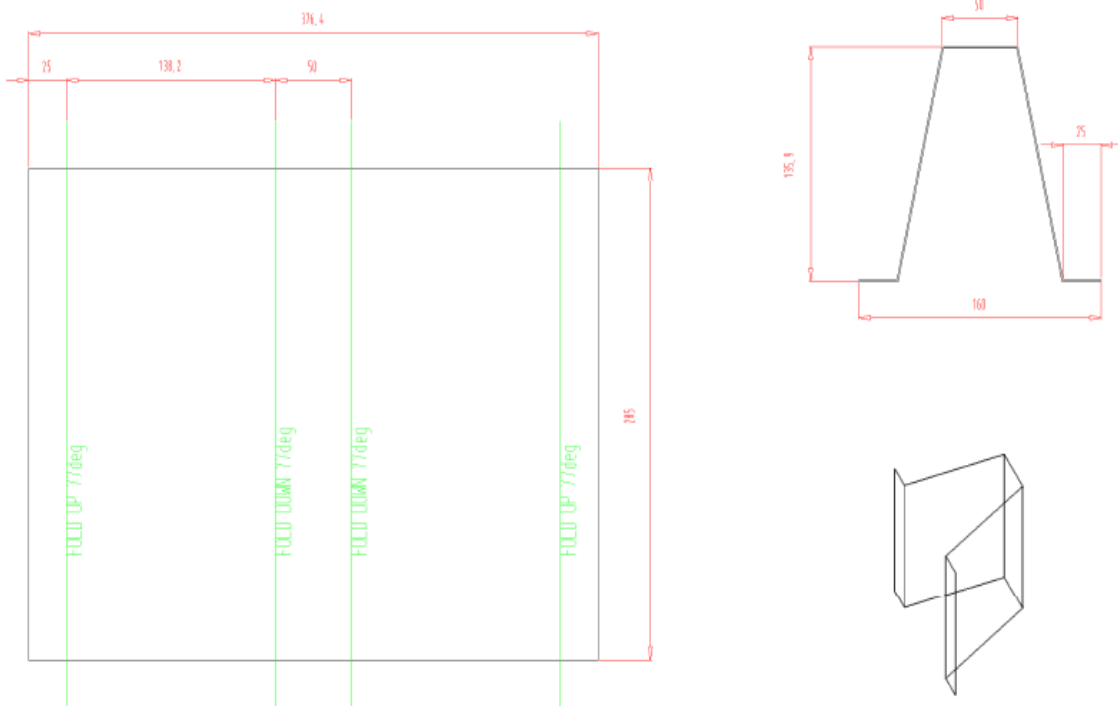
Further, I acknowledge and agree that where any aspect of the car or related equipment and components is found:

- to be in breach of the V8 Supercar Operations Manual and/or the Regulations of the Meeting, or;
- in the opinion of the Category Technical Manager, to be subject to a serious mechanical defect,
it will render me in breach of Rule C 2.3.1 of the V8 Supercars Operations Manual, and that I may be subject to penalties under Division B of the V8 Supercar Operations Manual

SCHEDULE C18
Fuel Tank Housing
(Rule C13.1.7)
Fuel Tank Housing



Fuel Cell Support



Material minimum 1 mm aluminium sheet

All dimensions of the fuel cell support may be varied slightly to suit individual applications

Composite Wrap Kevlar material Minimum Specification

3 x Layers 170 Gram Kevlar in one continuous piece with Epoxy resin wet layup.

Schedule C19
Control Parts

The following parts are covered by the definition of Control Part in Division A of the Operations Manual

Front Brake Rotors
Rear Brake Rotors
Front Brake Pads
Rear Brake Pads
Front Brake Calipers
Rear Brake Calipers
Engine ECU and wiring loom
Sprint Race Fuel Cell
Road Wheel Schedule C4B
V8 Supercar Control Camshaft