

## SPECIFICATIONS OF AUTOMOBILES

3rd Category – Touring Cars

Group 3K – Saloon Cars

Modified Article	Date of Application	Date of Publication

### PART 1: TECHNICAL REGULATIONS – EA/EB FORD FALCON AND VN/VP HOLDEN COMMODORE

#### 1. DEFINITIONS

- 1.1 These regulations are based on VN/VP Holden Commodore V6 3.8 litre sedans and EA/EB Ford Falcon six cylinder 3.9 litre sedans, and components from said vehicles marketed and manufactured in Australia by General Motors Holden and the Ford Motor Company during the period 1988 to 1993 and restricted in specification to those listed herein. The vehicles are to be representative of mass produced family sedans with limited modifications permitted, all of which are designed to make the cars more suitable for competition use. The intention of these regulations is to emphasise driver ability in a production based vehicle with limited modifications permitted, therefore producing a relatively affordable entry to motor sport.
- 1.2 All vehicle parts and specifications are to remain consistent with the nominated model as supplied by the vehicle manufacturer or authorised supplier at any one time except as otherwise permitted in the present regulations.
- 1.3 Any aspect relating to the construction and/or modification of the vehicle which is not expressly permitted in these regulations is forbidden. Modifications permitted are allowed only on the condition that the weights, specifications and/or dimensions mentioned on the relevant CAMS Vehicle Recognition Document are adhered to. Each modification or alteration must be undertaken with application of automotive engineering standards.
- 1.4 The use of any carbon fibre or titanium components is prohibited unless specifically authorised in these regulations. Unless specifically authorised in the present regulations or supplied as standard by the manufacturer, the use of any coatings other than conventional or high temperature paints on any component of the complete vehicle is prohibited.
- 1.5 Each engine, engine Electronic Control Unit (ECU), transmission and final drive assembly shall be sealed prior to the commencement of any official practice, qualifying session or race. The only seal recognised for this purpose shall be a seal supplied and recorded by The Saloon Car Racing Association (SCRA). Each seal shall only be affixed by a CAMS-approved sealer as detailed in Appendix H. This shall not prohibit the addition of a seal by an event official for judicial or scrutiny purposes. The presence of a seal will not protect the car from being subject to a protest, or from examination by scrutineers.
- 1.6 Wherever an ACL component is specified, a Mahle or Nason-branded component with the same part number may be utilised as an alternative.

#### 2. ELIGIBILITY

##### 2.1 Holden Commodore:

- (a) Vehicles eligible are the four-door VN/VP Holden Commodore sedans (non-IRS) with 3.8 litre V6 engines, fivespeed (T5) manual transmissions, and four-wheel disc brakes. The eligible vehicles are described by the manufacture VIN prefix 6H8VNK19,6H8VNL19 and 6H8VNX19, 6H8VPK19, 6H8VPL19.

##### Ford Falcon

- (b) Vehicles eligible are the four-door EA/EB (Series 1 EB only) Ford Falcon sedans with 3.9 litre six-cylinder MPI engines, five-speed (T50D) manual transmissions and four-wheel disc brakes. The eligible vehicles are 18733, 18933, 18133, 18734, 18934, 18134, 18737, 18937, 18132.

- 2.2 Scrutineers may refer to the workshop manuals and the parts catalogues published by General Motors-Holden and the Ford Motor Company of Australia, specifically for the VN/VP Holden Commodore sedan and the EA/EB Ford Falcon sedan respectively. Scrutineers may also carry out direct comparison of vehicle

components.

### 3. COACHWORK

**3.1 External body trim (decorations) e.g., side protection mouldings may be removed. Where the vehicle was originally equipped with external embellishments which may have an aerodynamic effect, such as spoilers, wings, skirts etc., these must be removed. Additional fastening bolts may be added to the trailing edge of the front bumper fascia, and the front of the rear bumper fascia. Said bolts must be for securing of bumper only.**

### 3.2 INTERIOR

- (a) The following interior trim and fittings may be removed:
  - (i) armrests;
  - (ii) centre console;
  - (iii) pinch weld mouldings;
  - (iv) door opening seals; and
  - (v) windscreen washer reservoir, hoses and jets
- (b) The following interior trim and fittings must be removed:
  - (i) The spare wheel and jack;
  - (ii) Hood and pillar linings and sun visors; and
  - (iii) Floor coverings including underfelt and deadener material.
  - (iv) Parcel shelf covering
- (c) The original door trims may be replaced with flat metal trims; e.g., fabricated from sheet aluminium. The door trims must be fastened with screws and be readily removable.
- (d) It is permitted to remove the lower dashboard panels and glove box to enable the fitment of the safety cage. The original dashboard crash pad must be retained and all cables, wiring and ducting must be secured in a neat and tidy fashion.
- (e) It is permitted to remove all heater and air conditioning components.
- (f) The driver's seat must be replaced by one complying with Schedule C (refer "General Requirements for Cars and Drivers" in the CAMS Manual of Motor Sport); all other seats must be removed.
- (g) The complete steering wheel assembly must be replaced by one that complies with Schedule B. It is permitted to weld an adaptor to the original steering shaft to facilitate the fitment of a quick-release steering wheel assembly. When a quick-release steering wheel assembly is fitted, the original upper steering shaft (column) length shall be maintained ( $\pm 50$ mm). The quick-release steering wheel assembly adaptor shall not exceed 75mm in length.
- (h) A footrest may be fitted to the left of the clutch pedal. A floor covering of anti-slip type may be fixed to the floor of the driver's compartment, forward of the driver's seat. Replacement pedal pads are permitted.
- (i) A clutch and/or accelerator pedal stop may be fitted.
- (j) It is permitted to have fitted a radio for the purpose of driver to pit communication.
- (k) It is permitted to fit a video camera system, in which case the fitment must be approved by the Scrutineer.

### 3.3 EXTERIOR

- (a) A front strut brace may be fitted between the front suspension towers. If fitted, the strut brace shall be attached by bolting only at the suspension towers.
- (b) It is permitted to cut a hole in the passenger floor, not forward of the front door hinge, for the fitment of a Timing transmitter holder.

- (c) The edges of the mudguard panels may be folded back if they protrude inside the wheel housing. Plastic wheel arch splash guards may be removed.
- (d) The windscreen may incorporate electric heating elements.
- (e) All bodywork including any subsequent repair of race-day damage shall be to a tradesman-like standard and must permit the vehicle to be presented in as near to original condition as is possible and is subject to the approval of the Chief Scrutineer.
- (f) It is permitted to strengthen the original Commodore panhard bar mounting bracket on the bodyshell.
- (g) The original primary bonnet fasteners and release mechanisms must be removed and an adequate alternative retention system is must be fitted in accordance with Schedules B and C (refer "General Requirements for Cars and Drivers" in the CAMS Manual of Motor Sport). Boot lid fasteners may be removed provided an alternative closing system is fitted.
- (h) It is permitted to relocate the interior door opening devices to allow for the fitment of a safety cage structure. The interior door opening mechanisms must remain functional.
- (i) It is permitted to fit a high intensity rain light at the rear of the automobile.
- (j) It is permitted to fit an insert of a clear polycarbonate material in part of the glazed area of each rear door. The polycarbonate material may incorporate a single ventilation duct. The original window glass must be retained and must secure the polycarbonate material insert.

#### 4. SUSPENSION

- (a) The following specified components must be utilised in each respective vehicle. All such components must be supplied by Pedders Suspension and be identifiable by the Pedders Suspension part number:
  - (i) Road springs
  - (ii) strut inserts and Suspension dampers
  - (iii) stabiliser bar
  - (iv) pan hard bar
  - (v) front camber adjustment kit (Falcon)\*\*.

\*\*\* It is permitted to fit XF Falcon eccentric camber adjustment pins to the EA/EB Falcon models.
- (b) Front suspension tension rods are free and may be adjustable.
- (c) The maximum negative camber at each front wheel is 5°. On the Commodore, it is permitted to reposition the lower control arm inner pivot point on the "K" frame an equal amount on both sides, on the same horizontal plane as the original pivot points in accordance with Appendix D
- (d) of these regulations.
- (e) It is permitted to remove the original spring insulators. Solid spacers of uniform section may be fitted between the springs and their unmodified mounting points to achieve a desired ride height.
- (f) It is permitted to fit an oil cooler to the power steering system. It is permitted to vent the power steering fluid reservoir into a catch tank.
- (g) It is permitted to remove or render the stabiliser bars and associated hardware inoperative.

#### 4.2 VN/VP SUSPENSION COMPONENTS

Component	Part Number
Front shock absorber	9795 Pedders Sportsryder Cartridge
Rear shock absorber	9094 Pedders Gas Sports Ryder
Front Spring	5623 Pedders Racing Coil Spring

Rear Spring	2129 Pedders Sportsryder Coil Spring
Swaybar Front	4803 Pedders Swaybar
Swaybar Rear	OEM 16mm or 19mm
Panhard bar	4633 Pedders Adjustable Panhard Rod
Strut top	Pedders CBPR Commodore Bearing Plate RHS/LHS or Kmac

#### 4.3 EA/EB SUSPENSION COMPONENTS

Component	Part Number
Front shock absorber	9899 Pedders Gas Sports Ryder Strut
Rear shock absorber	9080 Pedders Gas Sports Ryder Strut
Front Spring	5622 Pedders Racing Coil Spring
Rear Spring	2181 Pedders Sportsryder Coil Spring
Swaybar Front	4812 Pedders Swaybar
Strut top	5800 Pedders Castor/camber kit or Kmac

## 5. BRAKES

- (a) Both the Commodore and the Falcon must use ferrous front brake rotors with the maximum dimensions of 330mm diameter and 32mm thickness. Brake hats are free. For both EA and VN models it is permitted to use either the PBR-C4 or PBR-C5 twin piston front caliper.
- (b) Original brake flexible hoses may be replaced by others of adequate strength and quality.
- (c) It is permitted to fit a variable brake pressure valve in the rear brake line. This valve may be mounted within reach of the driver whilst racing. The rear brake line may be modified to accomplish the fitment.
- (d) The brake pads are free provided that the contact surface area of the pad is not greater than that supplied by the manufacturer of the caliper assembly. The maximum permitted thickness of the backing plate is 6mm. The retention of the pad assembly in the caliper must be by the method prescribed by the manufacturer of the caliper assembly.
- (e) Brake rotor protection shields may be modified or removed for brake cooling. If removed a brake hose support bracket must be fitted. The handbrake and all associated components may be disconnected or removed.
- (f) It is permitted to fit one flexible pipe (maximum 100mm internal diameter) to carry air to each front brake. All air must be supplied through the air intake ducts and be for brake cooling only as described in Appendix A, Part 1 of these regulations. The front air intake ducts must be located in the front bumper bar and be a maximum diameter of 100mm. Fittings at the exhaust end of the pipe are free, subject to no modifications being made to other components to allow fitment of the ducting. The fitment of rear cooling ducts is free.
- (g) Master cylinders: The master cylinder must be as supplied by the manufacturer, save that the bore size and valving is free. Sleeving is permitted.
- (h) Anti-lock braking systems (ABS) must be removed.

## 6. ELECTRICAL

### 6.1 GENERAL

- (a) The location of the battery is free, save that it may not be located in the habitacle. The maximum battery size must be that which can fit the standard battery tray in each vehicle. The battery box must be a maximum weight of 2kg and be permanently fastened.
- (b) It is permitted to remove the central locking components, radio and the interior lights and any non-functional electrical wiring, modules and connectors. It is permitted to replace the wiring loom save

that the following electrical equipment remains operational – windscreen wipers, head and tail lights, stoplights including the high level brake light. A high-level brake light is mandatory. Fuses and a master electrical circuit breaker may be added to the electrical system.

- (c) The use of telemetry is prohibited.
- (d) Supplementary switches and instruments may be fitted. The original instrument cluster may be removed.

## **6.2 ECU and IGNITION**

- (a) The only ECU permitted is the sealed model 4424 Stinger® or SCRA E80, as supplied by Engine Management Systems Pty Ltd (EMS). The specified ECU must be located in the front passenger area and be readily accessible. The original ECU connector (plug) in the vehicle wiring harness (as fitted by the manufacturer) must be removed.
- (b) It is permitted to remove the map sensor and idle control motor; a blanking plate must be fitted to the resulting apertures.
- (c) It is permitted to relocate the ignition coil (Falcon) to the left hand inner mudguard skirt.
- (d) It is permitted to fit an ignition module supplied by EMS.
- (e) The maximum engine rpm for both the EA/EB Falcon and the VN/VP Commodore is 5600rpm. Maximum engine rpm must be set and sealed in the control Stinger 4424 ECU as supplied by Engine Management Systems P/L (EMS) for the specific model.

## **6.3 DATA DEVICES**

- (a) It is permitted to fit a data storage device, including a multi-display dash with only ability to store vehicle data. Data logging shall be limited to lap timing, drive line and engine function only.
- (b) Any device which has capability of outputting any signal or data to the vehicle ECU, or that is capable of altering the vehicle engine functions in any way, irrespective of whether it is being used or not will be considered to be an ECU and therefore in breach of these regulations. Any such unit is specifically not permitted in the vehicle during competition. The data storage unit must be mounted in a visually accessible position.
- (c) The software for the data storage device must not show any pin allocations set-up to read sensors other than those permitted.
- (d) The use of any form of real time telemetry or the transmission of any data other than a lap trigger signal to or from the vehicle is specifically prohibited.
- (e) A lap timing device which has the sole function of timing each lap or laps is permitted.

## **7. FUEL AND FUEL TANKS**

### **7.1 FUEL**

- (a) Only Commercial Fuel as defined by CAMS may be used. Refer Schedule G. With the exception of ambient atmospheric air, no other substance may be added to the intake charge of the engine.
- (b) It is mandatory that a Jiffy-Tite 2000 series fuel-sampling coupling (female coupling only) be fitted to the fuel system (under bonnet).
- (c) The Technical Commissioner and/or scrutineers may require a fuel sample at any time.

### **7.2 FUEL SYSTEM**

- (a) Original equipment fuel injectors may be replaced by other interchangeable units. Fuel pressure must not exceed 400kPa.
- (b) The main fuel tanks must be as provided by the manufacturer. The fuel tank may be filled with anti-spray foam.
- (c) Fuel caps are free. Baffling of the fuel tank is permitted.
- (d) It is permitted to fit one anti-surge fuel tank of 5.5 litre maximum capacity and one additional electric fuel pump.
- (e) The anti-surge tank and pump must only be fitted in the rear of the vehicle.

- (f) If the anti-surge tank/pump kit components are mounted inside the rear luggage compartment (boot) area, a fireproof and liquid-proof bulkhead must separate the cockpit from the rear luggage compartment.

## 8. TYRES AND RIMS

- (a) Each automobile shall only be fitted with Bridgestone Potenza RE11 Type SR2 225/50R16 or 235/45R17 tyres.
- (b) Wheels are free save that they must be 16" x 8" or 17" x 8", and when fitted, the vehicle must comply with the track dimensions detailed in Article 14. The minimum weight for each wheel rim is 9kg for 16 inch and 10kg for 17 inch. All four wheels fitted must be of the same style and size.
- (c) At the commencement of practice, qualifying or racing the tread, shall be not less than 1.5mm depth when measured at any point, save that this does not apply to the shoulder of the tyre.

## 9. ENGINE – VN/VP HOLDEN COMMODORE

It is only permitted to use the Holden V6 engine as fitted to the Commodore VN Series 1 and 2, and Commodore VP Series 1.

### 9.1 CYLINDER HEADS:

- (a) It is permitted to machine the valve seats in the cylinder heads at 45° with the overcut angles/radii being free. The valve seat faces must be re-cut at 45°. Back cutting of the valves is permitted.
- (b) The maximum inlet valve size is 43.56mm and the exhaust is 37.97mm.
- (c) It is permitted to reclaim the valve seats as per the manufacturer's specifications, including through the use of a seat insert.
- (d) It is permitted to refurbish valve guides using thin wall type valve guides (K-Line or equivalent).
- (e) It is permitted to machine the cylinder head face parallel to the original to obtain a minimum combustion chamber volume of 36cc for ACL part number 3800 pistons and 37.5cc for ACL part number 9380 pistons and Precision Parts Australia part number PHO38006040MMS pistons.
- (f) It is permitted to machine the ports from the valve seat to the untouched valve guide boss with the largest diameter of any taper at the valve seat. All machine work must be concentric with the centre line of the original valve guide.
- (g) The use of hardened or machined valve collets and retainers is permitted.
- (h) The valve springs are free subject to there being a maximum of two springs per valve. It is permitted to fit shims under the valve springs.
- (i) It is permitted to machine the valve spring seats to obtain the correct valve spring installed height.
- (j) It is permitted to de-burr the valve spring seats locally after machining, provided it is to industry standards. Other hand or mechanical finishing of the valve spring seats is not permitted.
- (k) Head gasket: The cylinder head gaskets must be of standard configuration type and dimensions for the model with a minimum thickness of 0.95mm.
- (l) Valve train: It is permitted to shim the rocker arm pedestals to obtain the correct tappet settings.
- (m) It is permitted to fit an external timing pointer to the timing chain cover. It is permitted to slot the crank angle sensor to permit timing adjustment.
- (n) Cylinder Head stud fasteners may replace cylinder head bolts.

### 9.2 CAMSHAFT:

- (a) All cars must be fitted with the Crow Cams part number SCRA3800 camshaft or a Clive Cams part number VNSSTC3800. Each camshaft must match the Crow Cams cam doctor report specific for that camshaft.

NOTE: Camshafts available from:

Clive Cams Ph. (03) 9758 5977

- (b) It is permitted to remove the balance shaft and gears.
- (c) The timing chain and gears are free. The camshaft phase angle in relation to the crankshaft is free.

**9.3 CRACKSHAFT AND RODS:**

- (a) The crankshaft journals may be reground a maximum of 1.0mm undersize, with a maximum stroke of 86.36mm. The crankshaft minimum weight shall be 16.00kg bare (VN) or 15.50 (VP).
- (b) The connecting rods may be re-sized and machined to provide additional side clearance and to attain the correct piston height, and to facilitate the use of replacement rod bolts. The connecting rod minimum weight is 640.0 grams. Shot peening treatment of connecting rods is permitted.
- (c) Main and connecting rod bearings are free save that they must maintain the original external dimensions.
- (d) It is permitted to dowel the flywheel to the crankshaft.

**9.4 BALANCING:**

- (a) All rotating and reciprocating components may be balanced by the removal of metal only from the locations so provided by the manufacturer.
- (b) Piston balancing will be achieved by removal of metal from the underside of the piston only.
- (c) The flywheel may be machined on the friction surface only and balanced to a minimum weight of 9.50kg. It is permitted to use a Powerbond torsional damper (Harmonic balancer).

**9.5 INTAKE MANIFOLD:**

- (a) The intake manifold may be glass bead blasted. It may be machined on the cylinder head and block mating faces to obtain correct fitment to the engine.
- (b) Match porting of the inlet manifold ports for a maximum distance of 6mm from each left and right hand face is permitted in accordance with Appendix B.
- (c) The original air cleaner box must be removed and replaced with a cone-type replacement air element directly attached to the unmodified front snorkel tube mounted in its original location. The PVC system must be removed, and the resulting holes in the inlet manifold and throttle body must be mechanically sealed.

**9.6 LUBRICATION:**

- (a) Baffling of the sump is permitted, save that the external appearance of the sump is as supplied by the manufacturer as standard.
- (b) The oil pressure relief valve spring may be shimmed.
- (c) It is permitted to fit an engine oil cooler provided that the bodywork is not altered for the purpose of its fitment, nor may it be fitted outside the confines of the standard bodywork.

**9.7 ENGINE BLOCK:**

- (a) The engine block may be re-bored to a maximum of 1.0mm oversize.
- (b) The only pistons permissible shall be ACL part number 6MKRY3800 or part number 6MKRY9380 and Precision Parts Australia part number PHO38006040MMS pistons. The minimum permissible piston weight, with gudgeon pin, is 555g.
- (c) The piston rings shall comply with the following requirements:
  - (i) There must be two compression rings and a segmented oil ring on each piston;
  - (ii) 'Gapless' piston rings are not permitted;
  - (iii) The piston ring gaps may be adjusted, however the ends of each compression ring must be parallel to the centre line of the cylinder bore.
- (d) Where ACL pistons are fitted, piston ring pack ACL part number MP1727 (for 6MKRY3800 pistons) or M1812 (for 6MKRY9380 pistons) shall be used.

- (e) The engine block face may be machined in a plane perpendicular to the cylinder bores. The pistons must not protrude from the engine block face at TDC.
- (f) For the sole purpose of achieving equal piston deck heights, it is permitted to machine a minimal amount of material from the top surface (crown) of any four (4) pistons per engine.
- (g) It is permitted to fit extra engine breathers, but all breathers must discharge to a catch tank that is vented to the atmosphere.

## **10. ENGINE – EA/EB FORD FALCON**

### **10.1 It is only permitted to use the Ford 3.9 litre multi-point electronic fuel injected engine as fitted to the Falcon EA and EB Series 1.**

#### **10.2 CYLINDER HEAD:**

- (a) It is permitted to machine the valve seats in the cylinder head at 45° with the overcut and undercut angles/radii being free. The valve seat faces must be re-cut at 45°. Back cutting of the valves is permitted. The maximum inlet valve size is 47.0mm and the exhaust is 39.0mm.
- (b) It is permitted to reclaim the valve seats as per the manufacturer's specifications, including through the use of a seat insert.
- (c) It is permitted to machine the cylinder head face to obtain a minimum combustion chamber volume of 55cc (for 6MKRY2809 and 6MKRY3900 pistons) and 57cc for 6MKRY9390 pistons and Precision Parts Australia part number PFO39006040MMS pistons. Angle milling is not permitted.
- (d) It is permitted to machine the ports from the valve seat to the untouched valve guide boss with the largest diameter of any taper at the valve seat. All machine work must be concentric with the centre line of the original valve guide.
- (e) The following dimensions must be respected:
  - (i) Valve guide total length: minimum 62.2mm.
  - (ii) Valve guide protrusion: maximum 19.1mm above guide boss on top of cylinder head.
- (f) The use of hardened and/or machined collets and retainers is permitted. The valve springs are free subject to there being a maximum of two springs per valve. It is permitted to fit shims under the valve springs.
- (g) It is permitted to machine the valve spring seats to obtain the correct valve spring installed height. It is permitted to de-burr the valve spring seats locally after machining, provided it is to industry standards.
- (h) Other hand or mechanical finishing of the valve spring seats is not permitted.
- (i) It is permitted to use camshaft rocker arms as fitted to Ford Falcon six-cylinder models EA to EF.
- (j) The cylinder head gasket must be of standard configuration type and dimensions for the model with a minimum thickness of 0.70mm.
- (k) Cylinder Head stud fasteners may replace cylinder head bolts.

#### **10.3 CAMSHAFT:**

- (a) The camshaft shall be Crow Cams part number SCRA3900 or Clive Cams part number SSTC3900.

NOTE: Camshafts available from:

Clive Cams Ph. (03) 9758 5977

Crow Cams Ph. (03) 9357 0469

- (b) Each camshaft must match the Crow Cams cam doctor report specific for that camshaft.
- (c) The timing chain and gears are free. The camshaft phase angle in relation to the crankshaft is free.



#### 10.4 CRANKSHAFT AND RODS:

- (a) The crankshaft journals may be reground to a maximum 1.0mm undersize with a maximum stroke of 99.31mm. The crankshaft minimum weight shall be 25.75kg.
- (b) The connecting rods may be re-sized and machined to provide additional side clearance and to attain the correct piston height, and to facilitate the use of replacement rod bolts. The connecting rod minimum weight is 610g. Shot peening treatment of connecting rods is permitted.
- (c) Main and connecting rod bearings are free save that they must maintain the original external dimensions.

#### 10.5 BALANCING:

- (a) All rotating and reciprocating components may be balanced by the removal of metal only from the locations so provided by the manufacturer.
- (b) Piston balancing will be achieved by removal of metal from the underside of the piston only.
- (c) The flywheel may be machined on the friction surface only, and balanced to a minimum weight of 11.00kg. The minimum torsional damper weight shall be 4.40kg.

#### 10.6 INTAKE MANIFOLD:

- (a) The intake manifold may be glass bead blasted. The manifold may be machined on the cylinder head mating face to match the cylinder head and thus obtain correct fitment to the engine.
- (b) Match porting of the inlet manifold ports for a maximum distance of 6mm from the mounting face is permitted as per Appendix B. The inlet manifold must be Ford part number 87DA9425.
- (c) The original air cleaner box must be removed and replaced with a cone-type replacement air element attached directly to the unmodified front snorkel tube, elbow and external support bracket.

#### 10.7 LUBRICATION:

- (a) Baffling of the sump is permitted. Save that the external appearance of the sump is as supplied by the manufacture as standard.
- (b) The oil pressure relief valve spring may be shimmed.
- (c) It is permitted to fit an engine oil cooler provided that the bodywork is not altered for the purpose of its fitment, nor may it be fitted outside the confines of the standard bodywork.

#### 10.8 ENGINE BLOCK:

- (a) The engine block may be rebored to a maximum oversize of 1.0mm.
- (b) The only pistons permissible shall be ACL part number 6MKRY2809, 6MKRY3900 or 6MKRY9390 and Precision Parts Australia part number PFO39006040MMS.
- (c) The minimum weight of each piston and gudgeon pin shall be 600 grams for 6MKRY2809 pistons, 562g for 6MKRY3900 pistons or 558g for 6MKRY9390 and PFO39006040MMS pistons.
- (d) The piston rings shall comply with the following requirements:
  - (i) There must be two compression rings and a segmented oil ring on each piston;
  - (ii) 'Gapless' piston rings are not permitted;
- (e) The piston ring gaps may be adjusted, however the ends of each compression ring must be parallel to the centre line of the cylinder bore.
- (f) Where ACL pistons are fitted, piston ring pack ACL part number MP1717 shall be used.
- (g) The engine block face may be machined in a plane perpendicular to the cylinder bores. The pistons must not protrude from the engine block face at TDC.
- (h) For the sole purpose of achieving equal piston deck heights, it is permitted to machine a minimal amount of material from the top surface (crown) of any four (4) pistons per engine.
- (i) It is permitted to fit extra engine breathers, but all breathers must discharge to a catch tank vented to the atmosphere.

## 10.9 ACCESSORIES DRIVE:

- (a) It is permitted to fit an additional idler pulley to support the power steering pump drive belt.
- (b) It is permitted to fit a single serpentine belt and pulley/tensioner components to drive engine accessories.

## 11. EXHAUST

### 11.1 EXHAUST SYSTEM:

- (a) The exhaust system is free from the exit of the cylinder head.
- (b) It is permitted to modify the pinch weld flanges under the sill panel (locally) to facilitate the exit of the exhaust.
- (c) The exhaust system may be coated with materials other than paint (e.g., ceramic/high-temperature coatings).

## 12. COOLING SYSTEM

### 12.1 ENGINE:

- (a) It is permitted to remove the original fan and fit a replacement electric radiator fan. The fan shroud may be removed.
- (b) The thermostat is free as is the control system of the fan.
- (c) The original radiator may be replaced provided that the original mounting points are utilised, the front plane of the radiator remains in the same location as the original and that no modifications are carried out for its fitment. The radiator design, construction and fitment must serve no purpose other than to cool the engine coolant. A protective mesh screen may be fitted in front of the radiator.
- (d) A water filter may be fitted to the top radiator hose.

### 12.2 TRANSMISSION:

- (a) It is permitted to fit a transmission lubricant cooler, filter and pump.
- (b) The cooler, filter and pump must be fitted beneath the vehicle in the rear seat well area and must be utilised only for the cooling of the transmission lubricant.
- (c) It is permitted to drill and tap a thread into the transmission casing to accommodate the cooler return line.

## 13. TRANSMISSION

### 13.1 GEARBOX:

- (a) The only permitted gear ratios are:

	Commodore	Falcon – Option 1	Falcon – Option 2
1st	3.25:1	3.50:1	3.25:1
2nd	1.99:1	2.14:1	1.99:1
3rd	1.29:1	1.39:1	1.29:1
4th	1.00:1	1.00:1	1.00:1
5th	0.72:1 or 0.83:1	0.72:1 or 0.78:1 or 0.83:1	
Reverse	3.15:1	3.39:1	

- (b) **VN/VP Commodore:** Only the T5 manual five-speed Borg-Warner gearbox as fitted by GMH as original equipment may be used (Production option M78-V6).

- (c) **EA/EB Falcon:** It is permitted to use the T5 five-speed manual five-speed gearbox as fitted by Ford Motor Company as original equipment in the XF/EA and EB/AU model Falcon vehicles.
- (d) Internal gearbox components are free save that they shall perform the original operation of the T5 for the Holden Commodore and T50D for the Ford Falcon; i.e., synchromesh operation. Dog-tooth engagement is prohibited.
- (e) It is permitted to use non-genuine rotating gearbox components as supplied by Pfitzner Performance Gearbox.
- (f) Falcon part no. SL-T5-34-S-F; Commodore part no. SL-T5-34-S-C.
- (g) It is permitted to replace the original rear countershaft bearing and primary shaft bearing retainers with an aftermarket unit.
- (h) It is permitted to carry out local modification of the gearbox casing to allow the fitment of alternate bearings.
- (i) A circular hole of 50mm diameter must be made in the bottom of the bell housing to facilitate inspection of the clutch assembly and flywheel.
- (j) The breathers for the gearbox and the final drive assembly may have extensions fitted by way of a length of tubing.

### 13.2 REAR AXLE ASSEMBLY:

- (a) The differential action of the rear axle must be disabled. A28-spline “mini spool” may be fitted to the existing differential casing or a full spool may replace the original differential carrier assembly.
- (b) It is permitted to fit mechanically-identical replacement rear axles.

### 13.3 CLUTCH:

- (a) The clutch assembly may be replaced by authorised parts (refer article 15), save that the pressure plate assembly cover must be of steel construction.
- (b) It must use a single driven plate; said driven plate must be of the same diameter as the original unit as fitted by the manufacturer.

### 13.4 GEAR SHIFTER:

It is permitted to fit an aftermarket gear shifter subject to the original shift pattern being retained.

## 14. SAFETY CAGE

The safety cage design must be in compliance with Schedule J (refer “General Requirements for Cars and Drivers”). The minimum thickness of all safety cage members shall be 2.5mm. It is not permissible to use additional members which would require CAMS homologation.

No part of the safety cage may penetrate the front or rear firewall or luggage compartment, save for mounting bolts. The safety cage must be attached to the bodyshell at only those locations shown in drawings J-12, J-29 to J-46, or to the “A” and “B” pillars. No other connection to the bodyshell is permitted.

## 15. WEIGHTS AND DIMENSIONS

		Commodore	Falcon
<b>15.1 Racing Weight (MIN):</b>		1350kg	1430kg
<b>15.2 Racing Track (MAX):</b>	<b>Front</b>	1780mm	1875mm
	<b>Rear</b>	1760mm	1820mm

- (a) All fully-sprung components of the vehicle, in as raced condition (excluding the complete exhaust system) shall be at least 100mm above the ground.
- (b) Ballast may be used to achieve the minimum weight requirements, and, if used, shall comply with CAMS requirements.

- (c) The maximum Racing Track dimension shall be the distance between the outermost parts of the walls of each tyre on the same axle measured in line with the axle centreline as presented for competition.

## 16. AUTHORISED PARTS

The following service parts may be from any source provided that their use does not result in unauthorised modification of any other component:

gaskets	clutch driven plate
fasteners	clutch throw outbearing
nuts, bolts, screws and other fasteners	seals
lamps	engine cylinder head valves
battery	bearings
battery clamps and leads	gearbox, rear axle and differential bearings
fluid filters, engine ancillary drive belts, water hoses and clamps	differential gears
water pump	head and tail light assemblies
idler pulleys	brake caliper kits
auxiliary gauges	shims and spacers
spark plugs and leads	universal joints and CV joints
coil packs	wheel bearings
auxiliary bonnet fasteners	fuel pumps
gear shifter	valve rocker covers
tie rods	valve guides and pushrods
suspension stabiliser/sway bar link pin kits	suspension bushes
clutch pressure plate	brake rotors and rear brake caliper mounting brackets and harmonic balancers
Rear view mirror/s	

## 17. NON-GENUINE PARTS

The following replacement parts must be mechanically, functionally and dimensionally identical replacement for the original parts:

tie rod ends	water pump
ball joints	water glass

## 18. AMENDMENTS

CAMS reserves the right to amend these regulations at any time, including, but not limited to, such items as may affect the performance parity between the vehicle models.

# SPECIFICATIONS OF AUTOMOBILES

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**ALL VEHICLES IN RACES AND OTHER SPEED EVENTS MUST COMPLY WITH THE GENERAL REQUIREMENTS OF AUTOMOBILES (SEE “GENERAL REQUIREMENTS FOR CARS AND DRIVERS” IN THE CAMS MANUAL OF MOTOR SPORT).**

## 3rd Category – Touring Cars

### Group 3K – Saloon Cars

#### Part 2: Technical Regulations – AU Ford Falcon / VT Holden Commodore

##### 1. PHILOSOPHY

- 1.1 These regulations are based on VT Holden Commodore V6-3.8 litre sedans and AU Ford Falcon six cylinder-4.0 litre sedans marketed and manufactured in Australia by General Motors Holden and the Ford Motor Company respectively, and restricted in specification to those listed herein.  
The vehicles are to be representative of mass-produced family sedans with limited modifications permitted, all of which are. The intention of these regulations is to use large scale production based vehicles with limited modifications designed to make the cars more suitable for competition use, therefore producing a relatively affordable entry to motor sport. It is intended that the vehicles shall have even performance and thus emphasise driver ability over vehicle tuning and preparation.
- 1.2 All vehicle parts and specifications are to remain consistent with the nominated model as supplied by the vehicle manufacturer or authorised supplier at any one time, except as otherwise permitted in these regulations. Each modification or alteration must be undertaken with application of automotive engineering standards.
- 1.3 Any aspect relating to the construction and/or modification of the vehicle which is not expressly permitted in these regulations is forbidden. Modifications permitted are allowed only on the condition that the weights, specifications and/or dimensions as documented in the relevant Appendices of these regulations and relevant CAMS Vehicle Homologation Documents are adhered to.
- 1.4 The use of any carbon fibre or titanium components is prohibited unless specifically authorised in these regulations. Unless specifically authorised in the present regulations, or supplied as standard by the manufacturer, the use of any coating other than conventional or high temperature paints on any component of the complete vehicle is prohibited.
- 1.5 Each engine, transmission, final drive assembly and the engine Electronic Control Unit (ECU) shall be sealed prior to the commencement of any qualifying session or race. The only seal recognised for this purpose shall be a seal supplied and recorded by SCRA (Saloon Car Racing Association). Each seal shall only be affixed by a CAMS-approved sealer as detailed in Appendix H. This shall not prohibit the addition

of a seal by an event official for judicial or scrutiny purposes. The presence of a seal will not protect the car from being subject to a protest, or from examination by scrutineers.

- 1.6** Wherever an ACL component is specified, a Mahle or Nason-branded component with the same part number may be utilised as an alternative.

## **2. ELIGIBILITY**

### **2.1 Holden Commodore**

- (a) Vehicles eligible are the four-door VT Holden Commodore sedans with 3.8 litre V6 engines and five-speed manual transmissions.
- (b) It is permitted to use a four-door VY Holden Commodore sedan bodyshell in which case each requirement and regulation for the VT Holden Commodore must be applied, except where specified in these regulations.

### **Ford Falcon**

Vehicles eligible are the four-door AU Ford Falcon sedans with 4.0 litre six-cylinder MPI engines, five-speed manual transmissions, live rear axle assemblies and four-wheel disc brakes.

### **2.2 Component Specifications**

Scrutineers may refer to the workshop manuals (in printed and electronic formats) and the parts catalogues published specifically for the VT Holden Commodore sedan and the AU Ford Falcon sedan respectively. Scrutineers may also carry out direct comparison of vehicle components.

## **3. COACHWORK**

### **3.1 Each VT Commodore and AU Falcon must be fitted with the specified front bumper fascia and boot lid wing as per the following:**

- (a) Each VT Commodore must be:
  - (i) fitted with either a VT - SS front bumper fascia and boot lid wing as fitted to the Series 1VT-SS model by GM Holden, or an aftermarket replacement that retains the original external shape, dimensions and pitch. The original (OEM) mounting/attachment points must be used. It is permitted to fit a standard VT Holden Commodore front bumper bar providing that it is fitted with VT-SS lower front lip; or
  - (ii) updated to a VY Commodore only by the fitment of each VY-SS panel (i.e. doors, boot, bonnet etc.) and fittings (i.e. headlights, taillights etc.) as a complete package as supplied by GM Holden including the VY – SS front bumper fascia and bootlid wing.
- (b) It is permitted to fit a VX-SS Commodore front bumper fascia as fitted by GM Holden or an aftermarket replacement which retains the original external shape.
- (c) Each AU Falcon must be fitted with either an AU XR6 front bumper fascia and boot lid wing as fitted to the AU XR-6 model by Ford Australia, or an aftermarket replacement that retains the original external shape and dimensions.
- (d) The original (OEM) mounting/attachment points must be used. It is permitted to remove the inner headlights provided that a blanking plate is secured to cover the resulting apertures. It is permitted to remove the front indicator assemblies. Additional fastening bolts may be added to the trailing edge of the front bumper fascia, and the front of the rear bumper fascia. Said bolts must be for securing the bumper bars only.
- (e) The only bonnet and mountings permitted for the AU Falcon shall be as fitted to the AU Falcon Forte series 1 or XR6 series 2.

### **3.2 INTERIOR:**

- (a) The following interior trim and fittings may be removed:
  - (i) armrests;
  - (ii) centre console;

- (iii) parcel shelf covering;
  - (iv) pinch weld mouldings; and
  - (v) door opening seals.
- (b) The following interior trim and fittings must be removed:
- (i) the spare wheel and jack;
  - (ii) hood and pillar linings and sun visors; and
  - (iii) floorcoverings including underfelt and deadener material.
- (c) It is permitted to remove the lower dashboard panels and glove box to enable the fitment of the safety cage. The original dashboard crash pad must be retained and all cables, wiring and ducting must be secured in a neat and tidy fashion.
- (d) Original interior door trims must be replaced with flat metal trims; i.e., fabricated from sheet aluminium. The door trims must be fastened with screws and be readily removable.
- (e) External body trim (decorations), e.g., side protection mouldings, may be removed
- (f) It is permitted to remove all heater and air conditioning components.
- (g) The driver's seat must be replaced by one complying with Schedule C (refer "General Requirements for Cars and Drivers" in the CAMS Manual of Motor Sport); all other seats may be removed. It is permitted to remove the original seat mounting structure to enable the fitment of a transverse cross member seat mounting as per Appendix F of these regulations.
- (h) The complete steering wheel assembly must be replaced by one that complies with Schedule B. It is permitted to weld an adapter to the original steering shaft to facilitate the fitment of a quick-release steering wheel assembly. The VT Commodore upper steering shaft (column) may be replaced with a VY Commodore upper steering shaft.
- (i) When a quick-release steering wheel assembly is fitted, the original upper steering shaft (column) length shall be maintained ( $\pm 50\text{mm}$ ). The quick-release steering wheel assembly adaptor shall not exceed 75mm in length.
- (j) A footrest may be fitted to the left of the clutch pedal. A floor covering of anti-slip type may be fixed to the floor of the habitacle, forward of the driver's seat. Replacement pedal pads are permitted.
- (k) A clutch and/or accelerator pedal stop may be fitted.
- (l) It is permitted to have fitted a radio for the purpose of driver to pit communication.
- (m) It is permitted to fit a video camera system, in which case the fitment must be approved by the Scrutineer

### 3.3 EXTERIOR

- (a) A front strut brace may be fitted between the front suspension towers. This may be added by bolting only, and must be attached to the body shell only at the suspension towers.
- (b) It is permitted to cut a hole in the passenger floor well for the fitment of a Dorian transmitter holder as per Appendix C of these regulations.
- (c) The edges of the mudguard panels may be folded where they protrude inside the wheel housing. Plastic wheel arch splash guards may be removed. The width of each VT Holden Commodore measured between the outer edges of both front and rear mudguards shall be: front – 1820mm and rear – 1840mm measured at the axle centre line.
- (d) The windscreen may be replaced by another one of laminated glass, possibly incorporating electric heating elements. It is permitted to fit aftermarket windscreen demisters.
- (e) All bodywork including any subsequent repair of race-day damage shall be to a tradesman-like standard and must permit the vehicle to be presented in as near to original condition as possible and is subject to approval by the Chief Scrutineer.

- (f) The original primary bonnet fasteners and release mechanisms must be removed and an adequate alternative retention system fitted. The boot lid fasteners may be removed provided an alternative system is provided.
- (g) It is permitted to remove the side indicator lamp assemblies (located at rear of front mudguards), the resultant hole must be covered or filled.
- (h) It is permitted to remove the VT Commodore rear seat lower mounting bracket.
- (i) It is permitted to re-locate and/or modify the interior door opening devices to allow for the fitment of rollover protection. The interior door opening mechanisms must remain functional.
- (j) It is permitted for a hole to be cut in the boot floor of the VT Commodore to allow access to the fuel pump. This hole must be covered when the automobile is in use.

#### 4. SUSPENSION AND STEERING

- (a) The following specified components shall be utilised in each respective vehicle:
  - (i) road springs
  - (ii) suspension dampers, including strut inserts
  - (iii) Each unit shall be part numbered as per the automobile homologation documents.
- (b) It is permitted to fit an aftermarket suspension stabiliser bar link pin. It is permitted to reinforce the AU Falcon front stabiliser bar mounting brackets.
- (c) Each suspension bush shall be of elastomeric construction.
- (d) It is permitted to fit adjustable front suspension tension rods, supplied by Croft Engineering.
- (e) It is permitted to fit wheel spacers with a maximum thickness of 6mm between the hubs and the front wheels. Wheel spacers must comply with all requirements of Schedule E (see "General Requirements for Cars and Drivers").
- (f) It is permitted to remove the original rubber spring insulators. Solid spacers of uniform section may be fitted between the springs and their unmodified mounting points to achieve a desired ride height, with a maximum spacer/s thickness of 30mm in total on any one spring.
- (g) Wheel alignment on the front wheels is free within the limits of the specified components, save that the maximum negative camber at each front wheel is 5°.
- (h) It is permitted to remove or render the stabiliser bars and associated hardware inoperative.
- (i) Each bump stop may be modified or replaced, but where they are replaced they shall be constructed of elastomeric material.
- (j) It is permitted to fit an oil cooler to the power steering system. It is permitted to vent the power steering fluid reservoir into a catch tank.

#### 4.2 VT COMMODORE

- (a) It is permitted to:
  - (i) Reposition the lower control arm inner pivot point on the "K" frame an equal amount on both sides, on a horizontal plane in line with the centre of the original pivot points. The distance between the horizontal centre line of this pivot point and the upper mounting surface of the K frame to the chassis rail shall be 92mm (± 3mm), as per Dimension A of Appendix D of these regulations.
  - (ii) Relocate the bolt holes on the front strut mounting perches to obtain the desired negative camber and ride height measurement. After achieving the desired measurement it is required to weld a washer over any slotted hole to prevent movement.
  - (iii) Fit a front strut bearing retainer.
  - (iv) Secure the top of the rear springs to their original mounting points.
  - (v) Shorten the rear shock absorber dust cover by a maximum of 120mm.



- (vi) Machine the top section of the front strut shaft to reduce its effective length by a maximum of 10mm, as per Appendix G of these regulations.
- (b) The only rear spring permitted for the VT Commodore shall be King Springworks P/L - COM-SAL R/C. The use of spherical bearing tie-rod ends (rose joints) is prohibited.

#### 4.3 AU FALCON:

- (a) The Falcon front suspension uprights must be as fitted to the series two AU model (front mounted brake caliper).
- (b) The AU Falcon top inner camber kits are free save that they must utilise the original mounting points and respect the vertical height. The centre of the top wishbone pivot point on the camber kit may be lowered by 15mm from standard or be a minimum of 10mm and a maximum of 25mm from the centre of the mounting stud as per Appendix E of these regulations.
- (c) The minimum ride height for the AU Falcon is 90mm.
- (d) It is permitted to relocate the AU Falcon front damper assembly lower mounting hole a maximum of 20mm to achieve the desired ride height.

#### 4.4 VT SUSPENSION COMPONENTS

Component	Part Number
Front strut	9435L & R Pedders Gas Sports Ryder Strut
Rear shock absorber	9195 or 9095 Pedders Gas Sports Ryder Strut
Front Spring	5601 Pedders Racing Coil Spring
Rear Spring	S0108378VT King Springs Racing Coil Spring
Swaybar Front	OEM Part Number 92048203

#### 4.5 AU SUSPENSION COMPONENTS

Component	Part Number
Front strut	9434 Pedders Gas Sports Ryder Strut
Rear shock absorber	9180 Pedders Gas Sports Ryder Strut
Front Spring	5626 Pedders Racing Coil Spring
Rear Spring	2181 Pedders Sportsryder Coil Spring

### 5. BRAKES

- (a) The brake pads are free. The retention of the pad assembly in the caliper must be by the method envisaged by the manufacturer of the caliper assembly.
- (b) Anti-lock braking systems (ABS) must be removed.
- (c) It is permitted to fit a residual line pressure valve to the braking system.
- (d) Original brake pipes and flexible hoses may be replaced by others of adequate strength and quality.
- (e)

#### 5.2 FRONT BRAKE SYSTEM

- (a) Both models shall use ferrous front brake rotors with the maximum dimensions of 330mm diameter and 32mm thickness. Brake hats are free.
- (b) For both AU and VT models it is permitted to use the PBR-C4 or PBR-C5 twin piston front brake caliper or Wilwood front brake caliper - Wilwood part number 120-13267-N (RH) and 120-13267-N (LH).

- (c) It is permitted to fit one flexible pipe (maximum 100mm internal diameter) to carry air to each front brake. It is only permitted to locate the air intake ducts into the driving light apertures in the VT-SS front bumper bar or where a standard VT Commodore front bumper bar with a VT-SS lower front lip is fitted it is only permitted to fit air intake ducts into the central radiator air intake. No other apertures are permitted for brake air intake ducts. All air must be for brake cooling only. The fitting at the exhaust end of the pipe is free, subject to the only modifications made to other components being those required to provide attachment of the fitting. Brake rotor protection shields may be removed or modified for brake cooling.

### **5.3 MASTER CYLINDERS:**

The master cylinder may be replaced by one interchangeable with the original. The bore size and internal valving are free.

### **5.4 REAR BRAKE SYSTEM:**

- (a) It is permitted to modify the AU Falcon rear braking system with the fitment of 328mm x 26mm brake rotors and Ford brake calipers part numbers SX2K327A and SX2K328A(Ford Territory).
- (b) It is permitted to modify the VT Commodore rear braking system with the fitment of 316mm x 18mm brake rotors and any Holden single-piston rear brake calipers (i.e., a caliper which was originally designed to be used on the rear). In order to fit the permitted rear brake modification, it is permitted to fit an aftermarket caliper mounting bracket in accordance with Article 15.
- (c) It is permitted to fit rear cooling ducts.
- (d) It is permitted to fit a variable brake pressure proportioning valve in the rear brake line. This valve may be mounted within reach of the driver whilst racing.
- (e) The handbrake and all associated components, linkages, brackets, cables and return springs may be disconnected or removed.

## **6. ELECTRICAL**

### **6.1 GENERAL:**

- (a) The location of the battery is free, save that it may not be located in the habitacle. The maximum battery size must be that which can fit the standard battery tray in each vehicle. The battery box must be a maximum weight of 2kg and be permanently fastened to the vehicle.
- (b) It is permitted to remove the central locking components, radio, interior lights and any non-functional electrical wiring, modules and connectors. It is permitted to replace the wiring loom save that the following electrical equipment remains operational: windscreen wipers, head and tail lights, stop lights including the high-level light. Fuses and a master electrical circuit breaker may be added to the electrical system. Data logging shall be limited to lap timing, drive line and engine functions only. The use of telemetry is prohibited.
- (c) Supplementary switches and instruments may be fitted. The instrument cluster may be removed.
- (d) A high-level brake light is mandatory.

### **6.2 ECU and IGNITION**

- (a) The only ECU permitted is the sealed model 4424 Stinger or SCRA EM80, as supplied by Engine Management Systems P/L (EMS). The Specified ECU must be located in the front passenger area and be readily accessible for inspection. The original ECU connector (plug) in the vehicle wiring harness (as fitted by the manufacturer) must be removed. It is permitted to fit an ignition module supplied by EMS.
- (b) On both models, it is permitted to remove the MAP and MAF sensor and idle control motor; a blanking plate must be fitted to the resulting apertures.
- (c) It is permitted to relocate the coil packs of the AU Falcon within the engine compartment.
- (d) The maximum engine rpm for the VT Commodore is 6250 rpm.
- (e) The maximum engine rpm for the AU Falcon is 5800 rpm.
- (f) Maximum engine rpm must be set and sealed in the control Stinger ECU by Engine Management Systems P/L (EMS).

### 6.3 DATA DEVICES

- (a) It is permitted to fit a data storage device, including a multi-display dash with only ability to store vehicle data. Data logging shall be limited to lap timing, drive line and engine function only.
- (b) Any device which has the capability of outputting any signal or data to the vehicle ECU, or that is capable of altering the vehicle engine functions in any way, irrespective of whether it is being used or not will be considered to be an ECU and therefore in breach of these regulations. Any such unit is specifically not permitted in the vehicle during competition. The data storage device must be mounted in a visually accessible position.
- (c) The software for the data storage device must not show any pin allocations set-up to read sensors other than those permitted.
- (d) The use of any form of real time telemetry or the transmission of any data other than a lap trigger signal to or from the vehicle is specifically prohibited.
- (e) A lap timing device which has the sole function of timing each lap or laps is permitted.

## 7. FUEL AND FUEL TANKS

### 7.1 FUEL

- (a) Only Commercial Fuel as defined by CAMS may be used. With the exception of ambient atmospheric air, no other substance may be added to the intake charge of the engine.
- (b) To facilitate both fuel sampling and pressure testing, a Jiffy-Tite 2000 series “dry break” coupling (female coupling only) shall be fitted to the fuel system under the bonnet. Each competitor shall furnish the appropriate matching connector to facilitate such sampling and pressure testing.
- (c) The Technical Commissioner and/or scrutineers may require a fuel sample at any time.

### 7.2 FUEL SYSTEM

- (a) Fuel tanks must be as provided by the manufacturer. The fuel tank may be fitted with anti-spray foam.
- (b) It is permitted to fit one anti-surge fuel tank of 5.5 litre maximum capacity and one additional electric fuel pump.
- (c) The anti-surge tank and pump must only be fitted in the rear of the vehicle.
- (d) If the anti-surge tank/pump kit components are mounted inside the rear luggage compartment (boot) area, a fireproof and liquid-proof bulkhead must separate the cockpit from the rear luggage compartment.
- (e) Fuel caps are free. Baffling of the fuel tank is permitted.
- (f) Original equipment fuel injectors may be replaced by other interchangeable units. Fuel rail pressure must not exceed 400kPa.

## 8. TYRES AND RIMS

- (a) Each automobile shall only be fitted with Bridgestone Potenza RE11 Type SR2 235/45R17 tyres.
- (b) Wheels are free save that they must be 17” x 8”, and when fitted to the vehicle must comply with the vehicle track dimensions as detailed in Article 14. The minimum weight for each wheel rim is 10kg. All four wheels fitted must be of the same style and size.
- (c) At the commencement of practice, qualifying or racing the tread, shall be not less than 1.5mm depth when measured at any point, save that this does not apply to the shoulder of the tyre.

## 9. ENGINE – VT HOLDEN COMMODORE

### 9.1 The only permitted engine is the V6 Ecotec engine as fitted to the VT Holden Commodore.

### 9.2 CYLINDER HEAD:

- (a) The maximum inlet valve size is 45.7mm and the exhaust 38.6mm.

- (b) Cylinder heads: It is permitted to machine the valve seats in the cylinder heads at 45° with the overcut/ undercut angles/radii being free. It is permitted to reclaim the valve seats as per the manufacturer's specifications, including through the use of a seat insert.
- (c) It is permitted to machine the top of the valve guides to a minimum height of 20mm above the spring seat.
- (d) It is permitted to machine the ports from the valve seat to the untouched valve guide boss with the largest diameter at the valve seat. All machine work must be concentric with the centre line of the original valve guide.
- (e) It is permitted to machine the cylinder head face parallel to the original surface to obtain the minimum combustion chamber volume.
- (f) The use of hardened or machined valve collets and retainers is permitted.
- (g) The valve springs are free subject to there being a maximum of two springs per valve. It is permitted to fit shims under the valve springs.
- (h) It is permitted to machine the valve spring seats to obtain the correct valve spring installed height. It is permitted to de-burr the valve spring seats locally after machining, provided it is to industry standards. Other hand or mechanical finishing of the valve spring seats is not permitted.
- (i) Cylinder head stud fasteners may replace cylinder head bolts.

### **9.3 CAMSHAFT:**

- (a) The only camshaft permitted shall be Crow Cams part number TASCCO3800 or Clive Cams part number VTSSTC3800. Each camshaft must match the Crow CAMS cam doctor report for that specific camshaft.

NOTE: Camshafts available from:

Clive Cams Ph. (03) 9758 5977

Crow Cams Ph. (03) 9357 0469

- (b) It is permitted to remove the internal balance shaft and gears, whereupon the rear balance shaft bearing oil supply hole may be blocked. The timing chain and gears are free. The camshaft phase angle in relation to the crankshaft is free.

### **9.4 CRANKSHAFT & CONNECTING RODS:**

- (a) The crankshaft journals may be reground a maximum of 1.0mm (.040") undersize, with a maximum stroke of 86.4mm.
- (b) The crankshaft minimum weight shall be 15.20kg.
- (c) The connecting rods may be re-sized and machined to provide additional side clearance and to attain the correct piston height. The connecting rod minimum weight is 610g. Localised machining is authorised to facilitate the use of replacement rod bolts. Shot peening treatment of connecting rods is permitted.
- (d) Main and connecting rod bearings are free save that they must maintain the original external dimensions. It is permitted to dowel the flywheel to the crankshaft.

### **9.5 BALANCING:**

- (a) All rotating and reciprocating components may be balanced by the removal of metal only from the locations so provided by the manufacturer.
- (b) Piston balancing will be achieved by removal of metal from the underside of the piston only.
- (c) Only the specified flywheel as supplied by Adelaide Clutch Service (part number FGM112C) is permitted. The flywheel may be machined on the friction surface only, and balanced to a minimum weight of 9.50kg.
- (d) The minimum torsional damper weight shall be 3.50kg.
- (e) It is permitted to use a Powerbond torsional damper (Harmonic balancer).

#### **9.6 INTAKE MANIFOLD:**

- (a) The intake manifold may be glass bead blasted. It may be machined on the cylinder head and block mating faces to obtain correct fitment to the engine.
- (b) Match porting of the inlet manifold ports for a maximum distance of 6mm from each left and right hand face is permitted, as per Appendix B of these regulations.
- (c) The original air cleaner box must be removed and replaced with a cone-type replacement air element. The element must be attached directly to the controlled air intake tube as supplied by Pacemaker – part number 5100. It is permitted to remove the inlet manifold mounting lug to obtain correct fitment of the intake tube. It is permitted to fit the air temperature sensor to the Pacemaker tube. The original air flow meter must be removed and any device, bracket or component used to enclose or partly enclose the air intake element is prohibited.
- (d) The PCV system must be removed, and the resulting holes in the inlet manifold and throttle body must be mechanically sealed.

#### **9.7 LUBRICATION:**

- (a) Baffling of the sump is permitted save that the external appearance of the sump is as supplied by the manufacturer as standard. The oil pressure relief valve spring may be shimmed. It is permitted to fit an engine oil cooler provided that the bodywork is not altered for the purpose of its fitment, nor may it be fitted outside the confines of the standard bodywork.

#### **9.8 ENGINE BLOCK:**

- (a) The engine block may be re-bored to a maximum of 1.00mm (0.040") oversize.
- (b) The only pistons permissible shall be ACL/Nason part number 6MKRY3802 or 6MKRY9381S or Precision Parts Australia part number PHO3800L6040MMS. For ACL 6MKRY3802 and Precision Parts Australia part number PHO3800L6040MMS pistons the minimum cylinder head combustion chamber volume is 50cc. For ACL/Nason 6MKRY9381S pistons the minimum cylinder head combustion chamber volume is 54cc.
- (c) The minimum permissible piston weight, with gudgeon pin, is 474g.
- (d) The piston rings shall comply with the following requirements:
  - (i) There must be two compression rings and a segmented oil ring on each piston;
  - (ii) 'Gapless' piston rings are not permitted;
  - (iii) The piston ring gaps may be adjusted, however the ends of each compression ring must be parallel to the centre line of the cylinder bore.
- (e) The engine block face may be machined in a plane perpendicular to the cylinder bores. The 6MKRY93802 and PHO3800L6040MMS pistons must not protrude above the block face any more than 0.25mm (0.010") from the engine block face at TDC.
- (f) For the sole purpose of achieving equal piston deck heights, it is permitted to machine a minimal amount of material from the top surface (crown) of any four (4) pistons per engine.
- (g) The ACL6MKRY9381 pistons must not protrude above the block face at TDC.
- (h) It is permitted to fit extra engine breathers, but all breathers must discharge to a catch tank which is vented to the atmosphere.

#### **9.9 HEAD GASKET:**

The cylinder head gaskets must be of standard configuration type and dimensions for the model with the following minimum thickness: 0.95mm

#### **9.10 VALVE TRAIN:**

- (a) It is permitted to shim the rocker arm pedestals to obtain the correct tappet settings.
- (b) It is permitted to fit an external timing pointer to the timing chain cover.

## 10. ENGINE – AU FORD FALCON

### 10.1 ENGINE TYPE:

The only permitted engine is the 4.0 litre MPI engine as fitted to the AU Ford Falcon.

### 10.2 CYLINDER HEAD:

- (a) The valves' seat faces must be re-cut at 45°. Back cutting of the valves is permitted.
- (b) The maximum inlet valve size is 47.0mm and the exhaust 41.0mm.
- (c) Cylinder head: It is permitted to machine the valve seats in the cylinder head at 45° with the overcut and undercut angles/radii being free. It is permitted to reclaim the valve seats as per the manufacturer's specifications. It is permitted to machine the ports from the valve seat to the untouched valve guide boss with the largest diameter at the valve seat. All machine work must be concentric with the centre line of the original valve guide.
- (d) It is permitted to machine the cylinder head face to obtain a minimum combustion chamber volume of 50cc for part number 6MKRY4002 pistons, and a minimum combustion chamber volume of 57cc for part number 6MKRY9414S and Precision Parts Australia part number PFO3986L6040MMS pistons. It is permitted to fly cut the 6MKRY4002 piston to facilitate exhaust valve clearance.
- (e) Machining of the head face is permitted provided it is parallel to the original surface.
- (f) The use of hardened and/or machined collets and retainers is permitted. The valve springs are free subject to there being a maximum of two springs per valve. It is permitted to fit shims under the valve springs.
- (g) It is permitted to machine the valve spring seats to obtain the correct valve spring installed height. It is permitted to de-burr the valve spring seats locally after machining, provided it is to industry standards. Other hand or mechanical finishing of the valve spring seats is not permitted.
- (h) Cylinder head stud fasteners may replace cylinder head bolts.

### 10.3 CAMSHAFT:

- (a) The only camshaft permitted shall be Crow Cams part number TASCCO3900AU or Clive Cams part number SSTC4000. Each camshaft must match the Crow CAMS cam doctor report for that specific camshaft.

NOTE: Camshafts available from:

Clive Cams Ph. (03) 9758 5977

Crow Cams Ph. (03) 9357 0469

- (b) The timing chain and gears are free.
- (c) The camshaft phase angle in relation to the crankshaft is free

### 10.4 CRANKSHAFT & CONNECTING RODS:

- (a) The crankshaft journals may be reground to a maximum stroke of 99.3mm.
- (b) The crankshaft minimum weight shall be 29.40kg.
- (c) The connecting rods may be re-sized and machined to provide additional side clearance and to attain the correct piston height.
- (d) The connecting rod minimum weight is 615g. Localised machining is authorised to facilitate the use of replacement rod bolts. Shot peening treatment of connecting rods is permitted.
- (e) Main and connecting rod bearings are free save that they must maintain the original external dimensions.
- (f) It is permitted to dowel the flywheel to the crankshaft.

### 10.5 BALANCING:

- (a) All rotating and reciprocating components may be balanced by the removal of metal only from the location so provided by the manufacturer. Piston balancing will be achieved by removal of metal from the underside of the piston only.

- (b) The flywheel may be machined on the friction surface only and be balanced to a minimum weight of 9.100kg.
- (c) It is permitted to use an after-market flywheel as supplied by Adelaide Clutch Service part number FFD112C.
- (d) The minimum torsional damper (harmonic balancer weight shall be 4.30kg.
- (e) It is permitted to use a Powerbond torsional damper (Harmonic balancer).

#### **10.6 INTAKE MANIFOLD:**

- (a) The intake manifold may be glass bead blasted. It may be machined on the cylinder head mating face to obtain correct fitment to the engine.
- (b) Match porting of the inlet manifold ports for a maximum distance of 6mm from the mounting face is permitted, as per Appendix B of these regulations.
- (c) The original air cleaner box must be removed and replaced with a cone-type replacement air element attached directly to the controlled air intake tube as supplied by Pacemaker – part number 4100AU.
- (d) It is permitted to remove the inlet manifold mounting lug to obtain correct fitment of the intake tube. Any device, bracket or component used to enclose or partly enclose the air intake element is prohibited.
- (e) It is permitted to fit an after-market vacuum tank.

#### **10.7 LUBRICATION:**

- (a) Baffling of the sump is permitted save that the external appearance of the sump is as supplied by the manufacturer as standard.
- (b) The oil pressure relief valve spring may be shimmed.
- (c) It is permitted to fit an engine oil cooler provided that the bodywork is not altered for the purpose of its fitment, nor may it be fitted outside the confines of the standard bodywork.

#### **10.8 ENGINE BLOCK:**

- (a) The engine block may be rebored to a maximum oversize of 1.0mm (.040”).
- (b) The only pistons permissible shall be ACL/Nason part number 6MKRY4002 or 6MKRY9414S and Precision Parts Australia part number PFO3986L6040MMS. The minimum weight of each piston with gudgeon pin shall be 499g.
- (c) The piston rings shall comply with the following requirements:
  - (i) There must be two compression rings and a segmented oil ring on each piston;
  - (ii) ‘Gapless’ piston rings are not permitted;
  - (iii) The piston ring gaps may be adjusted, however the ends of each compression ring must be parallel to the centre line of the cylinder bore.
- (d) The engine block face may be machined in a plane perpendicular to the cylinder bores. The pistons must not protrude from the engine block face at TDC.
- (e) For the sole purpose of achieving equal piston deck heights, it is permitted to machine a minimal amount of material from the top surface (crown) of any four (4) pistons per engine.
- (f) It is permitted to fit extra crankcase breathers but all breathers must discharge to a catch tank that is vented to the atmosphere.

#### **10.9 CYLINDER HEAD GASKET:**

The cylinder head gasket must be of standard configuration type and dimensions for the model with the following minimum thickness: 0.70mm.

### **11. EXHAUST**

#### **11.1 EXHAUST SYSTEM:**

- (a) The exhaust system is free from the exit of the cylinder head.

- (b) It is permitted to modify the pinch weld flanges under the sill panel (locally) to facilitate the exit of the exhaust. The exhaust system may be coated with materials other than paint (eg, ceramic/high temperature coatings).
- (c) It is permitted to raise the rear passenger footwell on one side of the vehicle only to a maximum vertical height of 75mm and a maximum width of 300mm to accommodate the muffler. Such modification shall be fully welded to the remaining floor pan, which can extend into the underside of the rocker panel box section of no more than 30mm deep by 300mm wide cut out of the underside of the rocker panel and shall serve no purpose other than to accommodate the muffler.

## 12. COOLING SYSTEM

### 12.1 ENGINE:

- (a) It is permitted to remove the original fan and fit a replacement electric fan. The fan shroud may be removed. The thermostat is free as is the control system of the fan.
- (b) The original radiator may be replaced provided that the original mounting points are utilised, the front plane of the radiator remains in the same location as the original and that no modifications are carried out for its fitment.
- (c) The radiator design, construction and fitment must serve no purpose other than to cool the engine coolant. A protective mesh screen may be fitted in front of the radiator. A water filter may be fitted to the top radiator hose.
- (d) It is permitted to fit radiator air ducting to the front of the radiator to aid engine cooling, provided that the bodywork is not altered for the purpose of its fitment, nor may it be fitted outside the confines of the standard bodywork.
- (e) All ducting must serve no other purpose other than radiator coolant cooling.

### 12.2 TRANSMISSION:

- (a) It is permitted to fit a transmission lubricant cooler, filter and pump. The cooler, filter and pump must be fitted beneath the vehicle in the "seat well" area as per Appendix I of these regulations, and must only be utilised for the cooling of the transmission lubricant.
- (b) Local machining of the bell housing is permitted on the Commodore to facilitate clearance for the starter motor. A circular hole of diameter 50mm must be made in the bottom of the bell housing to facilitate inspection of the clutch assembly and flywheel.
- (c) It is permitted to drill and tap a thread into the transmission casing to accommodate the cooler return line.

## 13. TRANSMISSION

### 13.1 GEARBOX:

- (a) **VT Holden Commodore:** Only the T5 manual five-speed Borg-Warner gearbox and bell housing from the VN/V5 Series 1 models or the Tremec six speed manual gearbox may be used.
- (b) **AU Ford Falcon:** It is permitted to use the T5 five-speed manual gearbox as fitted by Ford Motor Company as original equipment in the XF/EA and EB/AU model Falcon vehicles or the Tremec six speed manual gearbox.
- (c) To facilitate the fitment of the T5 (VT) and T50D (AU) manual transmissions it is permitted to modify the rear transmission mounting and cross-member, and the gear change aperture in the floor pan.
- (d) It is permitted to replace the original rear countershaft bearing retainer with an aftermarket unit.
- (e) It is permitted to carry out local modification of the gearbox casing to allow the fitment of alternate bearings.
- (f) Internal gearbox components are free save that they shall perform the original operation of the T5 for Holden Commodore and the T50D for the Ford Falcon, i.e., synchromesh operation. Dog tooth engagement is prohibited.

The only permitted gear ratios are:



	Commodore	Falcon 1	Falcon 2	Tremec
1st	3.25:1	3.25:1	3.50:1	2.97:1
2nd	1.77 or 1.99:1	1.99:1	2.14:1	1.78:1
3rd	1.29:1	1.29:1	1.39:1	1.30:1
4th	1.00:1	1.00:1	1.00:1	1.00:1
5th	0.72:1 or 0.83:1	0.78:1 or 0.83:1	0.78:1 or 0.83:1	0.80:1
6th	N/A	N/A	N/A	0.63:1 or 0.50:1
Reverse	3.15:1	3.39:1	3.39:1	ANY

### 13.2 FINAL DRIVE ASSEMBLY:

The breathers for the gearbox and final drive assembly may have extensions fitted by way of a length of tubing.

### 13.3 REAR AXLE ASSEMBLY:

- The differential action of the rear axle must be disabled. A “mini spool” may be fitted to the existing differential casing or a full spool may replace the original differential carrier assembly. It is permitted to fit mechanically identical replacement rear axles or half shaft assemblies. It is permitted to fit a VT Commodore V8 differential housing and gears to the Commodore.
- The final drive ratio must be 3.45:1 for the AU Falcon and either 3.73:1 or 3.7:1 for the VT Commodore.
- It is permitted to fit one flexible pipe (maximum 100mm internal diameter) to carry air to the VT final drive assembly.
- It is permitted to fit the Harrop “Enduro” differential cover (Harrop part no. 99-ACVR6941-00) to the VT Commodore.
- Rear axle bearing retainer plates are free.

### 13.4 CLUTCH:

- The clutch assembly may be replaced by one in accordance with Authorised Parts (refer Article 16).
- The pressure plate assembly cover must be of steel construction. It must use a single driven plate. The minimum diameter of the clutch driven plate for both models is 240mm.
- It is permitted to modify the Commodore clutch actuating system.
- It is permitted to fit a clutch pedal stop.
- It is permitted to fit an aftermarket gear shifter subject to the original shift pattern being retained. The gear change lever is free, save that the replacement must serve only as a gear change lever, and it must be attached in the original manner.
- It is permitted to shorten the front section of the Commodore tailshaft, or utilise the front section of a V8 automatic (VT) tailshaft to obtain the correct fitment to the T5 manual transmission. It is permitted to elongate the VT Commodore tailshaft centre bearing mounting bolt holes to facilitate the correct fitment of the tailshaft.
- It is permitted to replace the front tailshaft yoke (VT) with the yoke suited to the T5 manual transmission as fitted to the VN-VP model Commodores.

## 14. SAFETY CAGE

The safety cage design must be in compliance with Schedule J (see “General Requirements for Cars and Drivers”). No part of the safety cage may penetrate the front or rear firewalls, save for mounting bolts.

## 15. WEIGHTS AND DIMENSIONS

		Commodore	Falcon
<b>15.1 Racing Weight (MIN):</b>		1450kg	1450kg
<b>15.2 Racing Track (MAX):</b>	<b>Front</b>	1900mm	1854mm
	<b>Rear</b>	1846mm	1825mm
<b>15.3 Wheelbase (MAX):</b>		2840mm	2792mm

- (a) All fully-sprung components of the vehicle, in as raced condition (excluding the complete exhaust system) shall be at least 100mm above the ground.
- (b) Ballast may be used to achieve the minimum weight requirements, and, if used, shall comply with CAMS requirements.
- (c) The maximum Racing Track dimension shall be the distance between the outermost part of the walls of each tyre on the same axle measured in line with the axle centreline as presented for competition.

## 16. AUTHORISED PARTS

The following parts may be from any source provided that their use does not result in unauthorised modification of any other component:

gaskets	clutch driven plate
fasteners	clutch throw outbearing
nuts, bolts, screws and other fasteners	seals
lamps	engine cylinder head valves
battery	bearings
battery clamps and leads	gearbox, rear axle and differential bearings
fluid filters, engine ancillary drivebelts, water hoses and clamps	differential gears
water pump	head and tail light assemblies
idler pulleys	brake caliper kits
auxiliary gauges	shims and spacers
spark plugs and leads	universal joints and CV joints
coil packs	wheel bearings
auxiliary bonnet fasteners	fuel pumps
gear shifter	valve rocker covers

tie rods	valve guides and pushrods
suspension stabiliser barlink pin kits	suspension bushes
clutch pressure plate	brake rotors and rear brake caliper mounting brackets
AU Falcon rear trailing arms	Rear view mirror/s

## 17. NON-GENUINE PARTS

The following replacement parts must be mechanically, functionally and dimensionally identical replacements for the original:

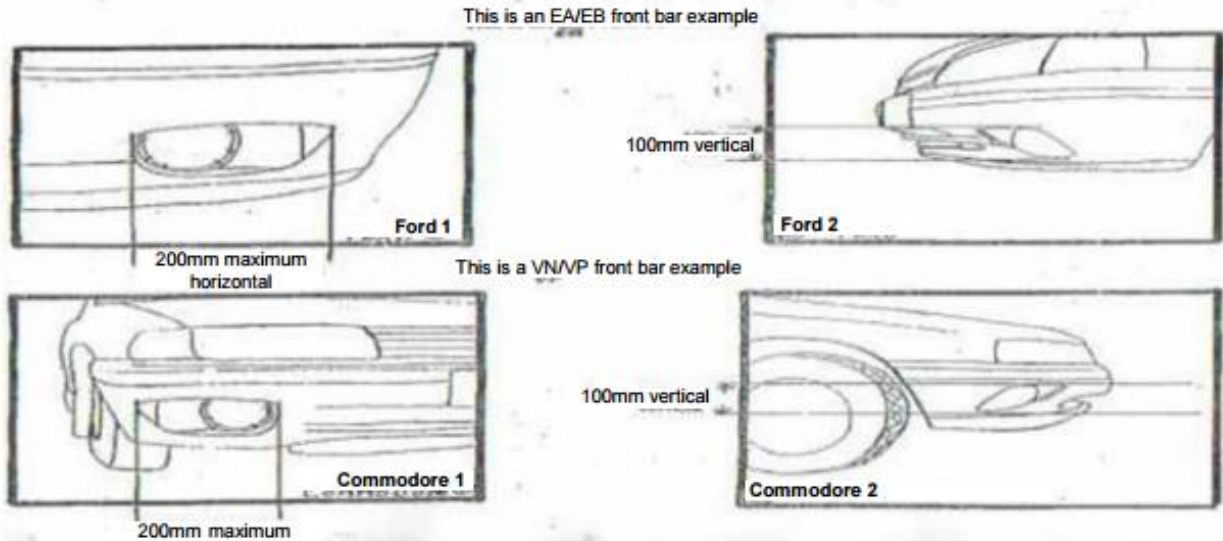
tie rod ends	water pump
ball joints	water glass

## 18. AMENDMENTS

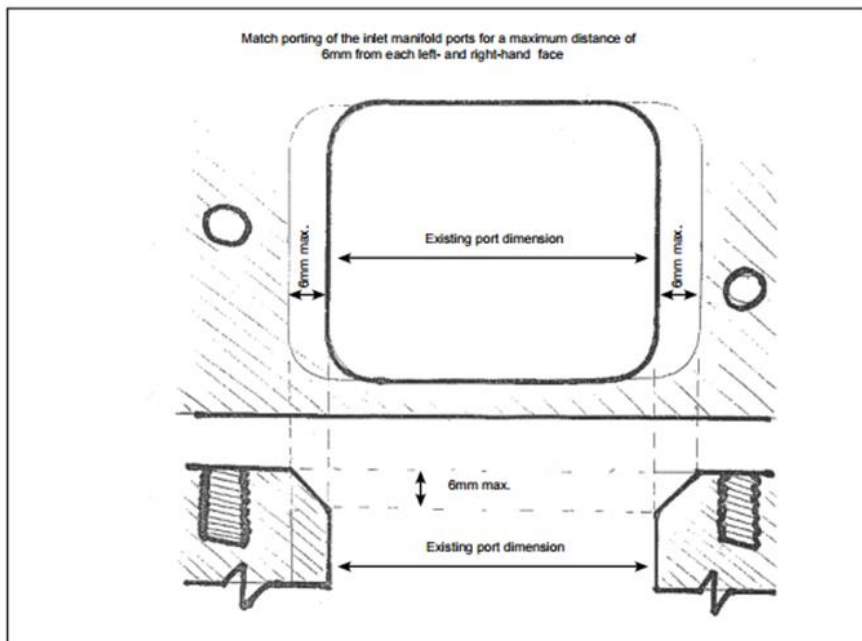
CAMS reserves the right to amend these regulations at any time, including, but not limited to, such items as may affect the performance parity between the vehicle models.

## Appendix A

### Front Brake Duct Installation



## Appendix B



Match porting of inlet manifold

## Appendix C



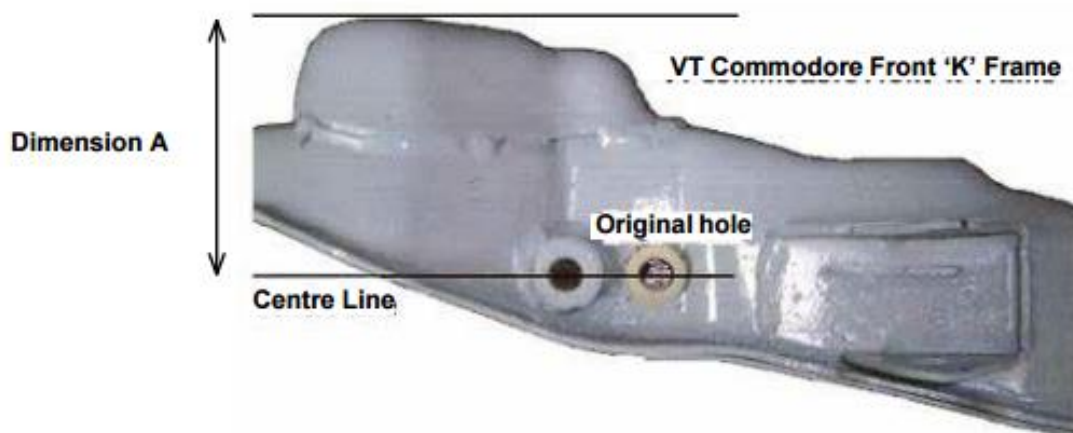
AU Falcon



VT Commodore

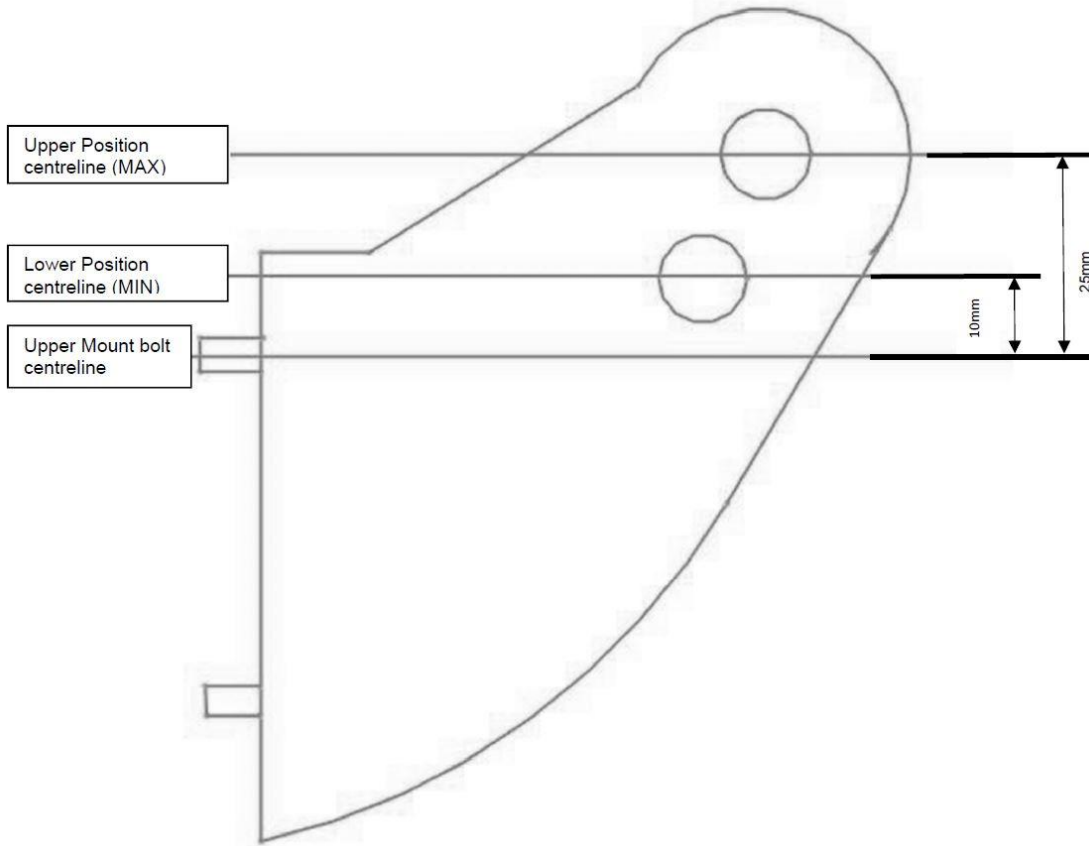
Dorian transmitter location

## Appendix D

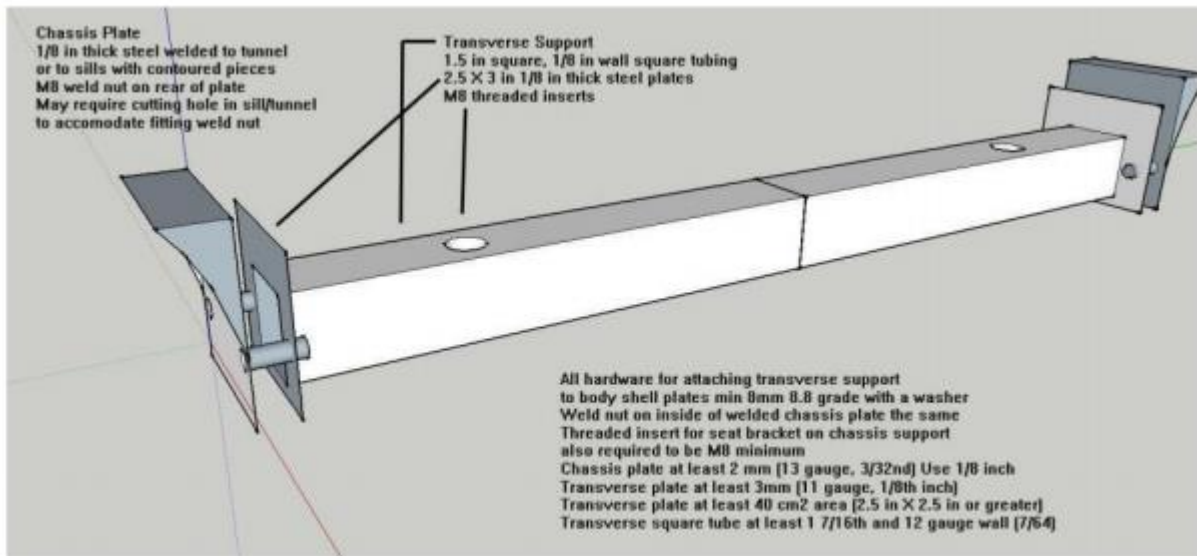


VT Commodore "K" Frame Modification

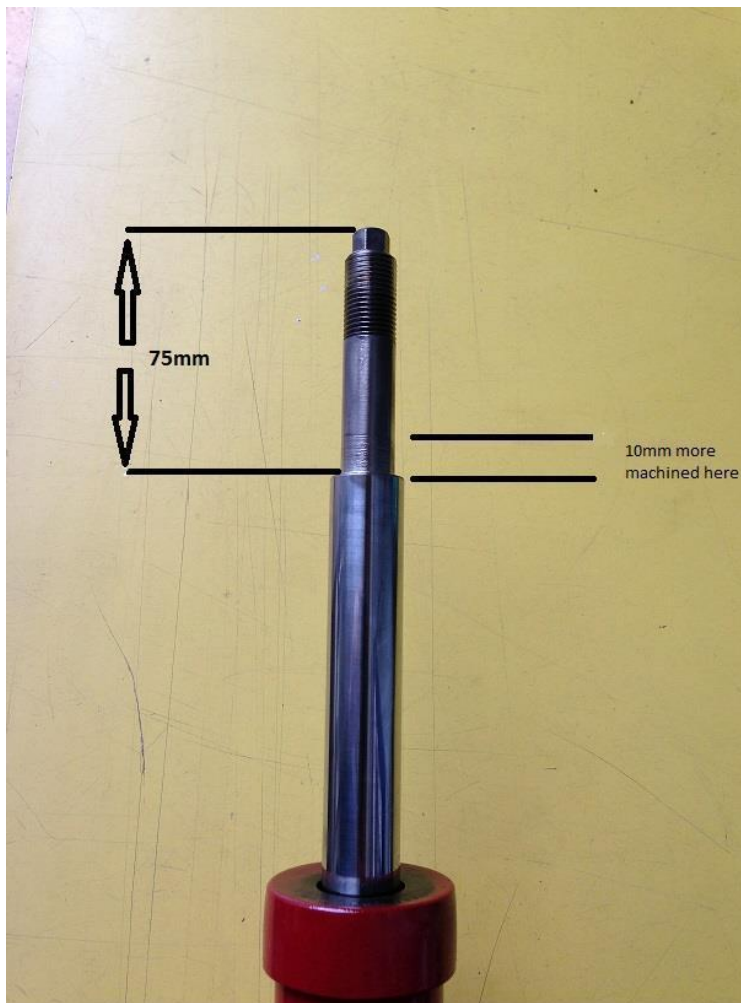
## Appendix E



## Appendix F



## Appendix G



## Appendix H – LIST OF APPROVED SALOON CAR SEALERS

### NATIONAL

Sealing Director – Craig Walkom  
Email: walkomauto@iprimus.com.au  
Mob: 0412 390 972

### QUEENSLAND

Kevin Lawrence  
Email: portergympie@pacific.net.au  
Tel: (07) 5482 9154  
(07) 5482 2777 (bus)  
Mob: 0419 112 040

Mark Lamberth  
Email: dimar@bigpond.net.au  
Mob: 0407 694 679

### NEW SOUTH WALES

Lorry Gatt  
Email: lorry.gatt@enersys.com.au  
Tel: (02) 9628 1824  
Mob: 0400 121 061

Brian Strange  
Email: brs1@optusnet.com.au  
Mob: 0417 355 512

Alan Hunt  
Mob: 0402 240 853

Manuel Dindakas  
Tel: (02) 9675 1414  
\*ECU Sealing only

### VICTORIA

Laurie Griffin  
Email: lauriegriffin@bigpond.com  
Mob: 0407 946 944

David Flaimer  
Email: flaimerd@alphalink.com.au  
Tel: (03) 9307 1450 (bus)

Ewan Cole  
Email: ewancole@bigpond.com  
Tel: 0428 348 345

Brenden McLean  
Email: promethius20@hotmail.com  
Tel: (03) 9593 7776  
Mob: 0432 239 857

### SOUTH AUSTRALIA

Cary McCarthy  
Email: carym@adam.com.au  
Tel: 0412 734 719

Henry Madden  
Email: chmadden@iprimus.com.au  
Mob: 0431 738 686

Craig Walkom  
Email: walkomauto@iprimus.com.au  
Mob: 0412 390 972

### WESTERN AUSTRALIA

Colin Roper  
Email: ciroper@bigpond.com  
Mob: 0417 355 512

Robert Mitchell  
Email: racmit@bigpond.net.au  
Tel: (08) 9248 8164 (ah)  
Mob: 0433 692 554 or 0413 701 686

Sean Arthur  
Email: adrenalineperf@bigpond.com.au  
Tel: 08 9726 2377



## APPENDIX I

Figure 1. Cooler, filter & pump installation

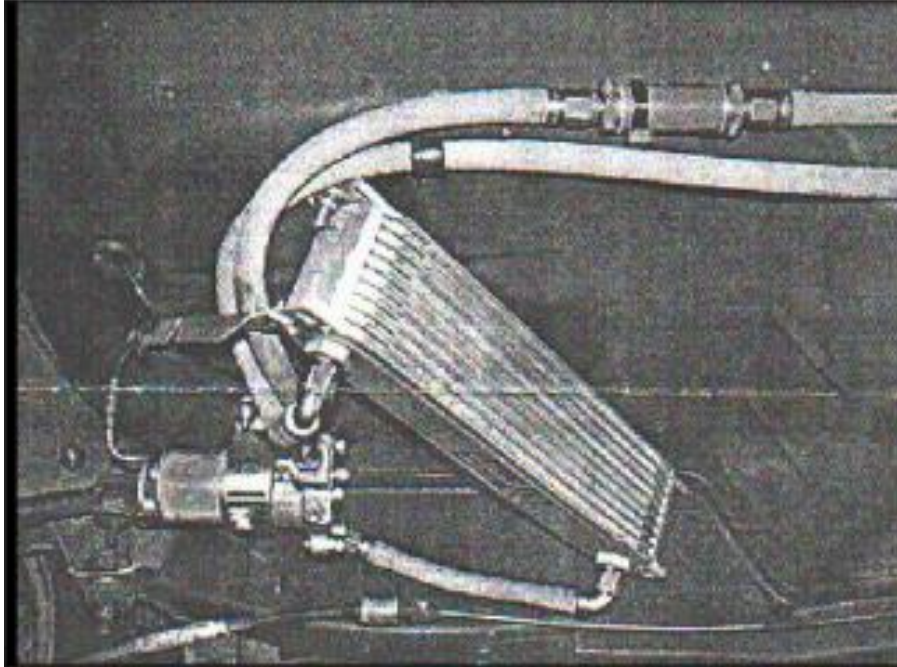


Figure 2. Return hose

