

MANUAL OF 4WD MOTOR SPORT  
SECTION 4 – VEHICLE SPECIFICATIONS



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## 4 VEHICLE SPECIFICATIONS

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### 4.1 ALL CLASSES

#### 4.1.1 OVERALL RULING

Vehicle modifications not expressly authorised by these Vehicle Specifications shall be prohibited. The following specifications for this section "All Classes" are the minimum requirements for, and shall apply to, all classes of vehicles.

#### 4.1.2 VEHICLE REGISTRATION

Except for Open & Challenge class vehicles, all vehicles participating in the Event shall be legally registered as a motor vehicle in their State, Territory or Country of origin for use on public roads and shall be maintained in a roadworthy condition.

#### 4.1.3 OCCUPANT PROTECTION

Vehicles competing in Group A Events shall be fitted with lap/sash type seat belts for all occupants with belting that is not frayed or damaged and all mountings shall be secure in accordance with the original vehicle specifications.

Vehicles competing in Group B Events shall be fitted with original vehicle seat belts that is not frayed or damaged and all mountings shall be secure in accordance with the original vehicle specifications.

Vehicles competing in Group C Events shall be fitted with a minimum four point racing harness for all occupants fitted with harness belting that is not frayed or damaged and all mountings shall be secure in accordance with the harness manufacturer's instructions.

Vehicles fitted with 4 or 5 point harnesses must use seats that maintain the correct position of the harness shoulder straps

Unless required by supplementary regulations, window nets are not compulsory in Group A Events. Whilst competing in Group B and Group C Events window nets are required to be fitted to the drivers' and passengers' window aperture. The nets must cover at least 70% of the opening and be readily opened from the bottom or top, from inside and outside the vehicle. The nets may be of the "string" variety with mesh size no greater than 50mm x 50mm.

The location of the net is optional and it may be fitted to the window frame so as not to inhibit egress.

Station Wagon short wheelbase (SWB) and long wheelbase (LWB) type vehicles shall be fitted with rigid cargo safety barriers securely mounted behind the passenger seats. Any equipment, parts and tools carried forward of the cargo safety barrier shall be securely fixed to prevent movement or dislodgment during competitive or transport stages of an Event.

Cargo safety barriers shall not be fabricated from webbing, strapping or any other flexible material. Soft-top, FRP, plastic or open top vehicles, shall have roof protection installed to protect the Crew from intrusions. Roof protection shall consist of a 3mm minimum thickness aluminium sheet or 2mm minimum thickness steel plate or high impact plastic roof panel extending the full width of the vehicle from the windscreen frame to the rollover protection and shall terminate behind the heads of the Crew.

Sunroofs are not permitted on any vehicle competing in timed Events.

Vehicles competing in timed events other than Group A & B events shall be fitted with six point roll-over protection. Refer to Section 5 of this manual. Rollover protection is not compulsory for vehicles competing in Group A events however it is highly recommended.

The minimum design for any rollover protection fitted for Group B events shall be Type 2 (CAMS Manual Schedule J) half cage except that the diagonal brace may be removable, including back stays.

All vehicles shall have a seatbelt cutter secured inside the cabin of the vehicle accessible by both driver and navigator.

#### **4.1.4 BAR WORK**

Bars may be added to the front of vehicles for the mounting of recovery points, winch, lights and aerials. Bars may be added to the sides and rear of vehicles for added protection. All bar work is to be capped with no sharp edges.

#### **4.1.5 RECOVERY POINTS**

Recovery points shall be mounted at the front and rear of the vehicle chassis with at least two of 12mm or four of 10mm grade 5 or M8.8 bolts or sufficiently welded to the chassis. Recovery points shall be painted red or yellow and shall be capable of carrying a load at least twice the vehicle mass. Eyebolts are not considered as satisfactory recovery points.

Monocoque frame vehicles shall have each recovery point mounted such that the load is applied evenly to the vehicle frame, or have recovery points linked to achieve even load application.

Roof racks/bars where fitted shall be securely fastened. Loads carried on roof racks/bars shall not exceed 70kgs, including the mass of the rack, and no fuel or gas shall be carried thereon.

#### **4.1.6 ACCESSORIES**

UHF (477mhz) operational radios shall be fitted to all vehicles.

Portable radios with optional headsets may be used during competition Stages.

Power winches shall be fitted if the Supplementary Regulations specify they are required.

Recovery equipment shall be carried if the Supplementary Regulations specify that such equipment is required and shall be in first class condition and rated at least to be greater than the capacity of the winch and double the weight of the vehicle, Vehicles weighing more than 2000kg shall require the higher specification of the respective equipment items listed below:

- One snatch strap: 60mm width rated 8000kg

- One snatch block: 7000kg

- Two suitable "D", bow or "soft" shackles, 3.25t or 4.75t

- One winch extension strap, 75mm width rated 8000kg or Synthetic Rope 10mm, 8500kg

- One tree trunk protector: 75mm width rated 12000kg. Two tree protectors may be required.

- At least one cable dampener measuring at least 900 x 500mm and weighing at least 1kg when dry.

- Fire extinguishers as required. Refer to Rule 2.49.

- Jack and jacking plate with capacity to lift the vehicle to change a wheel.

- Tools and spares as required to maintain the vehicle.

- Two pairs of winching gloves.

The interior of the vehicle shall be a safe operating environment for the Crew and all heavy objects shall be carried in secure storage lockers mounted securely to the body.

Seating type is free provided the seats are securely fitted to the body of the vehicle or rollcage.

Any video cameras fitted inside cabins shall be securely fastened in a way not to pose an injury risk to occupants.

With the exception of standard factory fitted heater systems, any engine cooling system line that runs through the cabin must be totally sealed from the occupants by means of a metal or aluminium shield. No, non welded, piping joins shall exist in the cabin area.

#### **4.1.7 SUSPENSION**

Except in Open Class powered and manually operated active suspension that adjusts each wheel individually shall not be permitted.

#### **4.1.8 TYRES**

Supplementary Regulations shall nominate the allowable tread pattern and tread depth on tyres permitted to be fitted to vehicles in the Event.

Tyres may be fitted with tubes. Valves shall not protrude beyond the outer edge of the tyre profile. Tyre tread shall have a minimum contact ratio of 50%.

#### **4.1.9 WHEELS AND HUBS**

Unless specified otherwise in the Supplementary Regulations only vehicles with four wheel drive configuration may be entered in the competitions governed by these Rules.

#### **4.1.10 SPARE WHEELS**

Unless specified otherwise in supplementary regulations, a spare wheel shall be carried and securely fastened behind the cargo barrier or on the rear of the vehicle.

#### **4.1.11 WINCHES**

Powered winches for all classes except Challenge and Open shall be as purchased from the supplier with limited modifications allowed. Refer to vehicle specifications for details.

Powered winches shall have an operational braking system to prevent unspooling when not in operation and to hold the vehicle when winching pauses.

Winches shall be mounted in a secure manner to the chassis or to an engineered sub-frame in a monocoque vehicle.

Rear Mounted winches shall be permitted provided that the Crew whilst in the cabin are protected and isolated from the cable by 1.5mm minimum thickness of steel or 3mm minimum thickness of aluminium.

Power for winches shall only be taken from the vehicle engine, driveline or vehicle electrical system. Auxiliary engines shall not be permitted.

Hand winches may be used.

Winch cables shall be rated synthetic rope, free of damage or excessive degradation.

Synthetic ropes shall have a load rating of at least twice that of the winch SWL rating or four times the nominal vehicle weight, whichever is the least.

Specifications of the winch cable or rope shall be supplied by the Competitor at scrutineering.

Loops or eyes shall be spliced or professionally swaged and be rated at the same, or greater capacity than, the cable or rope.

Winch hooks must be rated and have a working self-retaining safety catch

Vehicle mounted hooks, eyes and fittings shall have a load rating of at least twice the weight of the vehicle and greater than the winch capacity. Loose coupling hooks or eyes shall be rated at or above the capacity of the cable or rope.

There shall be no sharp protruding pins forward nor upward on the front of the vehicle.

#### **4.1.12 BATTERIES**

Batteries are free. Fitting and location of additional batteries is free.

All batteries shall be securely fastened and if they are in the cabin they shall be secured in an enclosure and vented to the outside of the vehicle unless the battery is a sealed unit.

All terminals must be covered by an insulating material.

Production, Challenge and Open Class vehicles shall be fitted with two mechanical battery isolation switches.

The first shall be fitted to winching power system(s) and must terminate all power to the winch(s) when activated.

The second shall be fitted to the vehicle's primary electrical system thus terminating the running of the engine and all primary power throughout the vehicle when activated with the sole exception being a fused, low current circuit that allows activation of an interior light, (max 10w), GPS unit(s) and UHF radio.

Both switches may be incorporated into a single physical isolator.

#### **4.1.13 SUPPLEMENTARY FUEL CONTAINERS**

Supplementary fuel containers or auxiliary fuel tanks may be carried or fitted provided they comply with Australian Standard/New Zealand Standard 2906:2001 or international standards of equal or greater specification.

Supplementary fuel containers shall be securely fastened outside of the passenger compartment and away from heat sources such as any type of heat exchanger, exhaust etc.

The original fuel tank may be supplemented, relocated or replaced with a long-range fuel tank.

There shall be a firewall of equivalent material to original between any fuel tank or container and occupants.

#### **4.1.14 FUEL**

Fuel used shall be limited to that available from retail fuel outlets.

#### **4.1.15 WINDSCREEN**

Should a windscreen be broken during the course of an event, the vehicle may continue, at the discretion of the Event Scrutineer or Chief Scrutineer, in consultation with the Event Organiser, under the following conditions;

(a) all loose glass has been removed from the vehicle; and

(b) the crew shall compete, thereafter, wearing long sleeves long pants and goggles, or a helmet with a full face visor.

Note: The Event Scrutineer or Chief Scrutineers decision takes precedence.

## **4.2 STANDARD CLASS**

### **4.2.1 TYRES**

Tyre sizes shall be limited to those originally specified by the vehicle manufacturer.

Tyres shall be enclosed within the width of mudguards and flares as viewed from directly above.

### **4.2.2 WHEELS**

Wheels shall be limited to the same size and offset as those originally specified by the vehicle manufacturer for the vehicle.

Bead locks shall not be permitted.

Wheel spacers shall not be permitted.

### **4.2.3 AXLES**

Axle housings shall be original but may be protected.

Axle internal components shall be original and extension breathers may be fitted.

### **4.2.4 BRAKES**

The original braking system shall be retained unmodified except for the composition of the brake pads/linings.

The handbrake (park brake) shall be as originally fitted and shall be operational.

### **4.2.5 DIFFERENTIALS**

The original differential system shall be retained unmodified.

Differential ratios shall not be changed.

Should differential locks be fitted to the vehicle as original equipment the vehicle shall not be eligible to compete in this class but may be eligible to compete in any class above this vehicle class.

### **4.2.6 GEARBOX**

The original gearbox shall be retained unmodified.

### **4.2.7 TRANSFER CASE**

The original transfer case system shall be retained unmodified.

Transfer case ratios shall be those available for that vehicle model and year.

The transfer case and differentials shall be operative and capable of driving all four wheels.

### **4.2.8 STEERING**

Original steering boxes shall be retained in their original location and shall be unmodified.

Original steering linkages and components shall be retained unmodified but may have protection fitted to them.

### **4.2.9 SUSPENSION**

Shock absorbers and bushes shall be retained unmodified (except for normal service replacement with non-genuine parts) and the original number and location shall be retained.

The original spring design shall be retained unmodified. Original suspension linkages/pins shall be retained unmodified.

### **4.2.10 ENGINE**

The original engine shall be retained unmodified.

Snorkels and aftermarket air filters are free.

Oil filters are free except the original method of attachment shall be retained.



#### **4.2.11 ELECTRICAL**

Alternators shall be retained unmodified.

Headlight inserts and globes are free.

Tail lights, stop lights and reversing lights shall be retained unmodified.

#### **4.2.12 EXHAUST SYSTEMS**

The original exhaust system shall be retained unmodified except for normal service replacement with non-genuine parts.

#### **4.2.13 CHASSIS**

The original chassis shall be retained unmodified.

Protection plates may be added for protection but not for strengthening purposes.

#### **4.2.14 BODY**

The original body shall be retained unmodified except that additional mud flaps, door sills and flares may be added for protection.

#### **4.2.15 LIGHTS**

Vehicles may be fitted with up to four driving lights in addition to the original headlights and driving lights.

Driving lights shall be mounted at the front of the vehicle and shall operate with the high/low beam switch in conjunction with the headlights and shall be fitted in accordance with relevant registration requirements.

A brake and tail light, or lights, shall be installed and working.

In events where there are multiple vehicles on course at night, all vehicles are to be fitted with an additional, flashing red or amber light, with its own power supply, mounted on the rear of the vehicle as close as practical to the roof line. Clearly visible from 100m away at night with a flash rate of 1 flash per second minimum. (e.g. bike light etc). This light shall be activated prior to starting the stage to allow approaching vehicles to identify that a vehicle is ahead even with the electrical system isolated.

It is strongly recommended that a dust lamp be fitted to the rear of the vehicle.

#### **4.2.16 FUEL**

The original fuel system shall be retained.

#### **4.2.17 WINCHES**

All vehicles must be fitted with one (and only one) operational powered winch when competing in an event where winching is required.

Electric winches may have some additional bracing, improved bearings, improved lubrication and an alternative DC motor with upgraded controls, but must remain in its original configuration. PTO and Hydraulic winches must be as designed by the supplier.

### 4.3 TOURING CLASS

#### 4.3.1 TYRES

Tyre sizes shall be limited to 33x12.5 or metric equivalent and must pass through a gauge with internal dimensions of 840mm and 320mm at 20psi or 1.4bar.

Track increase shall be limited to 50mm.

Tyres shall be enclosed within the width of mudguards and flares as viewed from directly above.

#### 4.3.2 WHEELS

Wheels shall be limited to a rim width of 203mm (8") and any offset shall be such that the tyre shall be enclosed within the width of mudguards and flares.

Bead locks shall not be permitted.

Wheel spacers shall not be permitted.

#### 4.3.3 AXLES

Axle housings shall be original but may be protected.

Axle internal components shall be original and extension breathers may be fitted.

#### 4.3.4 BRAKES

The original braking system shall be retained unmodified except for the composition of the brake pads/linings.

The handbrake (park brake) shall be as originally fitted and shall be operational.

#### 4.3.5 DIFFERENTIALS

The original differential system shall be retained unmodified except that differential locks may be fitted.

Differential ratios are free.

#### 4.3.6 GEARBOX

The original gearbox shall be retained unmodified.

#### 4.3.7 TRANSFER CASE

The original transfer case system shall be retained unmodified.

Transfer case ratios shall be those available for that vehicle make.

The transfer case and differentials shall be operative and capable of driving all four wheels.

#### 4.3.8 STEERING

Original steering boxes shall be retained in the original location and shall be unmodified.

Original steering linkages and components shall be retained unmodified but may have protection fitted to them.

#### 4.3.9 SUSPENSION

Selection of shock absorbers and bushes is free except that the original number and location shall be retained.

The original spring design shall be retained except that components may be modified or replaced with aftermarket units.

Original suspension linkage or pin configuration, length and positioning shall be retained but may be strengthened.

Vehicle may be lifted by up 50mm from standard trim height.

#### **4.3.10 ENGINE**

The original engine shall be retained unmodified except that alternative engine management systems, and in the case of diesel engines an aftermarket turbocharger, supercharger and intercooler, may be fitted.

Snorkels and aftermarket air filters are free.

Oil filters are free except the original method of attachment shall be retained.

#### **4.3.11 ELECTRICAL**

Original alternators shall be retained unmodified.

Headlight inserts and globes are free.

Tail lights, stop lights and reversing lights shall be as originally fitted.

#### **4.3.12 EXHAUST SYSTEMS**

The exhaust system is free.

Exhaust systems on tray back utes must terminate a minimum of 300mm past the rear of the cab. Exhaust systems on all other vehicles must terminate past the rear diff.

#### **4.3.13 CHASSIS**

The original chassis shall be retained unmodified.

Strengthening with the additional bracing is permitted.

Spring and shock absorber mountings may be strengthened.

Protection plates may be added for strengthening and protection purposes.

#### **4.3.14 BODY**

The original body shall be retained unmodified except that additional mud flaps, door sills and flares may be added for protection.

#### **4.3.15 LIGHTS**

Vehicles may be fitted with up to four driving lights in addition to the original headlights and driving lights.

Driving lights shall be mounted at the front of the vehicle and shall operate with the high/low beam switch in conjunction with the headlights and shall be fitted in accordance with relevant registration requirements.

A brake and tail light, or lights, shall be installed and working.

In events where there are multiple vehicles on course at night, all vehicles are to be fitted with an additional, flashing red or amber light, with its own power supply, mounted on the rear of the vehicle as close as practical to the roof line. Clearly visible from 100m away at night with a flash rate of 1 flash per second minimum. (e.g. bike light etc). This light shall be activated prior to starting the stage to allow approaching vehicles to identify that a vehicle is ahead even with the electrical system isolated.

It is strongly recommended that a dust lamp be fitted to the rear of the vehicle.

#### **4.3.16 FUEL**

The original fuel system shall be retained.

Alternative fuel such as LPG may be fitted in accordance with State and National Regulations.

#### **4.3.17 WINCHES**

All vehicles must be fitted with one (and only one) operational powered winch when competing in an event where winching is required.

Electric winches may have some additional bracing, improved bearings, improved lubrication and an alternative DC motor with upgraded controls, but must remain in its original configuration.

PTO and Hydraulic winches they must be as designed by the supplier.

## 4.4 PRODUCTION CLASS

### 4.4.1 TYRES

Tyre sizes shall be limited to 35.5 x 13.5 and must pass through a gauge with internal dimensions of 900mm and 343mm at 20psi or 1.4bar.

Tyres shall be enclosed within the width of mudguards and flares

### 4.4.2 WHEELS

Wheel options are unlimited, except that tyres shall be enclosed within the width of mudguards and flares as viewed from directly above.

Bead locks are allowed.

Wheel spacers shall not be permitted.

### 4.4.3 AXLES, HOUSINGS AND HUBS

Axle housings shall be the original equipment for that series/model of vehicle except that they may be strengthened and protected.

Extension breathers may be fitted.

Hubs are free except that drop axles and reduction hubs shall not be permitted.

### 4.4.4 BRAKES

The braking system may be modified provided that the braking performance of the vehicle meets or exceeds the vehicle's original braking performance.

The composition of the brake pads/linings is free.

A secondary or emergency braking system (a.k.a. park brake) shall be fitted and shall be operational.

### 4.4.5 DIFFERENTIALS

The differential system for that series/model of vehicle shall be retained unmodified except that differential locks may be fitted.

Differentials may be strengthened which includes up rated axles and CV's.

Differential ratios are free.

### 4.4.6 GEARBOX

Gearboxes shall be the original equipment for that make of vehicle except that they may be strengthened and protected and they may be replaced by an automatic or manual from that make of vehicle.

Gearbox ratios are free.

### 4.4.7 TRANSFER CASE

The transfer case system for that make of vehicle shall be retained except that transfer case ratios are free.

### 4.4.8 STEERING

Steering boxes shall be limited to power assisted mechanical system. No External power assisted ram to be used.

Steering linkages and components are free and may have protection fitted to them.

### 4.4.9 SUSPENSION

One shock absorber and spring per corner (4 in total)

One spring per corner and independent of shock absorber

Shock absorber and spring be mounted in the original mount. Shock absorber tower may be spaced to allow for the fitting of a taller shock absorber.

Suspension lift shall be limited to a maximum of 100mm from original.

Control arm configuration shall be retained including mounting points but may be strengthened. Arm length may be extended by a maximum of 20mm.

Panhard Rod configuration shall be retained including mounting points but may be strengthened. Arm length may be extended by a maximum of 20mm and may be adjustable.

The axle position shall be retained within 50 mm of its original location to retain substantially the same wheel base.

#### **4.4.10 ENGINE**

The original engine for that vehicle series/model shall be retained unmodified except that alternative engine management systems can be used.

Diesel engines may be fitted with a factory turbocharger, factory fitted intercoolers may be retained. Alternatively diesel engines may be fitted with an aftermarket turbocharger on a cast iron manifold without an intercooler.

Petrol engines, no intercoolers, supercharges or turbocharger to be fitted.

Snorkels and aftermarket air filter arrangement are free.

Oil filters are free except the original method of attachment shall be retained.

#### **4.4.11 ELECTRICAL**

Alternators are free.

Headlight inserts and globes are free.

Taillights, stop lights and reversing lights are free.

#### **4.4.12 EXHAUST SYSTEMS**

The exhaust system is free.

Exhaust systems on tray back Ute must terminate a minimum of 300mm past the rear of the cab below door handle height on a downward angle at the extremities of the vehicle.

Exhaust systems on all other vehicles must terminate past the rear diff below door handle height on a downward angle at the extremities of the vehicle.

#### **4.4.13 CHASSIS**

The original chassis for that model of vehicle shall be retained unmodified.

Strengthening with the additional bracing is acceptable.

Spring and shock absorber mountings may be strengthened.

Protection plates may be added for strengthening and protection purposes.

#### **4.4.14 BODY**

The body of the make and model of the vehicle shall be retained but can be modified.

All glass must be retained in the body forward of the B pillar with door trims fitted to front doors.. Polycarbonate or Acrylic (Perspex) may be used rear of the B pillar provided that it is approved for automotive use and must be see through.

Body lifts shall be limited to 50mm and shall be completed in a safe and secure manner and the spacers shall be a non-crushable material and the bolts shall be the same diameter as the original body mounting bolts and at least grade 8.8 There shall be the same number of body mounts and supports as the original chassis and body combination.

Aftermarket composite or fibreglass panels are not permitted. Original engine bay internal structure shall be retained.

Wheel base must remain standard

Additional mudflaps, flares and door sills may be added for protection.

#### **4.4.15 LIGHTS**

Vehicles may be fitted with any number of supplementary lights including driving lights and light bars etc.

All additional lighting must dip by means of a single action, be it the original high beam 'stalk' or an additional single switch other than the vehicle or winch isolator.

Low beam headlights of some sort, providing suitable light to operate the vehicle without impeding others, must be retained.

Long course events where the vehicle is to be driven on a public road require the vehicle to have functioning low beam headlights with a standard low beam pattern. A brake and tail light, or lights, shall be installed and working.

In events where there are multiple vehicles on course at night, all vehicles are to be fitted with an additional, flashing red or amber light, with its own power supply, mounted on the rear of the vehicle as close as practical to the roof line. Clearly visible from 100m away at night with a flash rate of 1 flash per second minimum. (e.g. bike light etc). This light shall be activated prior to starting the stage to allow approaching vehicles to identify that a vehicle is ahead even with the electrical system isolated.

It is strongly recommended that a dust lamp be fitted to the rear of the vehicle.

#### **4.4.16 FUEL**

The original fuel system shall be retained.

Fuel tanks shall have devices installed so as to not leak in case of roll over, but still allow the tank to breathe as needed. A physical rollover valve or routing of fuel tank breather to rise above the tank a distance equal to (or greater than) the deepest dimension of the tank, across the tank to the side opposite of attachment and be downwards to a point at least 150mm below the lowest point of the tank.

Alternative fuel such as LPG may be fitted in accordance with State and National Regulations. LPG may be fitted to petrol engines only.

#### **4.4.17 WINCHES**

All vehicles must be fitted with one (and only one) electrically operated 12volt winch when competing in an event where winching is required. Winch must be front mounted

Winches may have some additional bracing, improved bearings, improved lubrication, upgraded brake shaft & upgraded controls, but must remain in its original configuration with standard gear ratios. Upgraded wiring is permitted.

Motor must be a standard commercially available unmodified winch motor.

Winch must be fitted with one (1) 12 volt winch motor and winch can run on 12 volt system only.

Winch must retain standard drum in length & diameter, however you may upgrade the flange thickness

No remotely operated free spools

Synthetic type winch rope must be used.

## 4.5 MODIFIED PRODUCTION CLASS

### PREFACE/SPIRIT OF THE CLASS.

The intention of this class is to provide competitors with a grass roots, entry level option for Winch Challenge, with an aim to keep the cost of racing down to a minimum without sacrificing vehicle and occupant safety. This class is largely designed to reduce the advantage of anyone having a big budget. If an alteration is not listed in the rules below, then it is considered not allowed.

Rule amendments must be passed by the CCDA and can only come into effect in the next calendar year of racing.

### DEFINITIONS:

**4WD vehicle:** A vehicle that was made available in the Australian market, compiled by the manufacturer or representative with a high/low transfer case from factory.

**Make:** Original manufacturer of the vehicle.

**Series:** The series of vehicle is defined as the marketing series

- Patrol MQ, GQ, GU, Y62 etc.
- Landcruiser 40, 60, 80, 100 etc.

**Model:** Defined as the model designation

- Patrol, GQ is different to a GU
- Landcruiser 80 is different to a 100

Note: Rollover Protection for Modified Production class is a 6 point cage as per Rule 4.1.3 above.

### 4.5.1 TYRES

Tyre sizes shall be limited to 37.5 x 13.5 and must pass through a gauge with internal dimensions of 950mm and 350mm at 20psi or 1.4bar.

A minimum of 70% of the tyres shall be enclosed within the width of mudguards, flares and/or barwork viewed from directly above at scrutineering.

### 4.5.2 WHEELS

Wheel options are unlimited, except that tyres shall be 70% enclosed within the width of mudguards and flares as viewed from directly above.

Bead locks are allowed.

Wheel spacers shall not be permitted.

### 4.5.3 AXLES, HOUSINGS AND HUBS

The rear axle housing shall be the original equipment for that series/model of vehicle except that they may be strengthened and protected.

The front axle housing may be changed using an alternate housing from another make, model or series. This housing must be an original equipment housing off a full production vehicle available to the Australian market. Aftermarket housings are not permitted.

Strengthened CV's and axles may be fitted

Extension breathers may be fitted.

Hubs are free except that drop axles and reduction hubs shall not be permitted.

### 4.5.4 BRAKES

The braking system may be modified provided that the braking performance of the vehicle meets or exceeds the vehicle's original braking performance.



The composition of the brake pads/linings is free.

The factory secondary or emergency braking system (a.k.a. park brake) shall be fitted and shall be operational.

Cutting brakes are not allowed

#### **4.5.5 DIFFERENTIALS**

The rear differential system for that make, model and series of vehicle shall be retained unmodified except that differential locks may be fitted.

Front differential may be from another make model or series as per Rule 4.4.3 above however the differential shall be retained unmodified except that differential locks may be fitted.

Differentials may be strengthened which includes up rated axles and CV's.

Differential ratios are free.

#### **4.5.6 GEARBOX**

Gearboxes shall be the original equipment for that make, model and series of vehicle except that they may be strengthened and protected and they may be replaced by an automatic or manual from that make and model of vehicle. Automatic transmissions may be manualized.

Gearbox ratios are free.

#### **4.5.7 TRANSFER CASE**

The transfer case system for that make, model and series of vehicle shall be retained.

Transfer case ratios are free.

#### **4.5.8 STEERING**

Steering boxes shall be limited to power assisted mechanical system. No external power assisted ram to be used. The box may be swapped with an alternate unit, however it must be bolted to the factory mounting location. Changing the bolt pattern for the box in the chassis is allowed, however the same location must be used

Steering linkages and components are free and may have protection fitted to them.

#### **4.5.9 SUSPENSION**

Springs must only be mounted to factory chassis mounts. The chassis mounts must be in original location and may only be strengthened. They may not be lifted or have their positions changed.

Only one shock absorber per corner mounted to factory chassis mounts. Mounts may be strengthened but must be in factory location. Factory shock towers that allow a bolt in spacer to be fitted can be installed to allow a longer shock. These spacers must be able to bolt to existing mountings and shall be no longer than 50mm.

Remote reservoir shocks may be used. Bypass shocks may not be used. Coil-over shocks may not be installed unless the vehicle came with factory coil-over shocks.

The use of adaptors to change the mounting design of shocks is not permitted.

Hydraulic bump stops are not allowed.

The addition of steel fabricated plate on the chassis and diff housing to prevent the axle from hitting the engine sump in the case of full suspension failure is allowed.

Control arm configuration and location shall be retained including mounting points but may be strengthened. Bolt on drop boxes may be fitted provided that the wheelbase stays within

specification. "Hybrid" style front lower control arms are allowed in conjunction with drop boxes provided that the wheelbase stays within specification for the make and model.

Arm length may be extended by a maximum of 20mm.

Panhard Rod configuration shall be retained including mounting points but may be strengthened. Arm length may be extended by a maximum of 20mm and may be adjustable.

The axle position shall be retained within 50 mm of its original location to retain substantially the same wheel base.

#### **4.5.10 ENGINE**

The original make engine for that vehicle can be used, so long as it is within 0.3L capacity, the same cylinder arrangement and number as what was fitted to the core make, model and series of vehicle and using the same induction type and sourced from a factory 4WD vehicle that was available in the Australian market. Thus allowing a GQ patrol that came with a TB42 to be fitted with a TB45, A Suzuki that came with a G13A to be fitted with a G16B, but not allowing a GQ that came with a TB42 inline 6 to be fitted with a VK56 V8.

Alternative engine management systems can be used, camshafts, pistons, rods etc. installed, however the factory block capacity must remain standard and factory spec crank shaft must be retained.

Diesel engines may be fitted with a factory turbocharger, factory fitted intercoolers may be retained.

No aftermarket intercooler, supercharger or turbocharger to be fitted.

Maximum alternator charge rate allowed of 28.8V

Snorkels and aftermarket air filter arrangement are free.

Oil filters are free except the original method of attachment shall be retained.

#### **4.5.11 ELECTRICAL**

Alternators are free. Maximum alternator charge rate allowed of 28.8V

Headlight inserts and globes are free.

Taillights, stop lights and reversing lights are free.

#### **4.5.12 EXHAUST SYSTEMS**

The exhaust system is free.

Exhaust systems on tray back Ute must terminate a minimum of 300mm past the rear of the cab below door handle height on a downward angle at the extremities of the vehicle.

Exhaust systems on all other vehicles must terminate past the rear diff below door handle height on a downward angle at the extremities of the vehicle.

#### **4.5.13 CHASSIS**

The chassis of the make, model and series of vehicle shall be retained but can be modified.

The chassis must remain factory standard apart from strengthening from the rear axle forward. It may not be trimmed, bent or modified. The front of the chassis may not be removed or altered apart from strengthening. Crush cones may be removed from the tip of chassis.

Spring and shock absorber mountings may be strengthened.

Protection plates may be added for strengthening and protection purposes.

Wheel base must remain standard as per Rule 4.5.9.

#### 4.5.14 BODY

The body of the make, model and series of vehicle shall be retained but can be modified.

All panels must be retained in the body forward of the B pillar.

The front of the vehicle panels may be "bobbed" however a full factory width grille and factory style headlights must be retained. The grille may be modified to accommodate winch fitting.

Body lifts shall be limited to 50mm and shall be completed in a safe and secure manner. Body spacers shall be a non-crushable material and the bolts shall be the same diameter as the original body mounting bolts and at least grade 8.8 There shall be the same number of body mounts and supports as the original chassis and body combination.

Aftermarket composite or fibreglass panels are not permitted forward of the B pillar.

Original engine bay internal structure shall be retained. There may be no modification for body length between the B pillar and the radiator support panel.

The body may be trimmed for weight reduction or tyre clearance, however the A and B pillars and floor must remain standard from the B pillar forward. Door sills may be replaced and strengthened.

Front and rear guards can be trimmed for tyre clearance, the rear body behind the B pillar may be modified or removed provided that a rear wall meeting specification and wheel guards are installed.

Additional mudflaps, flares and door sills may be added for protection.

Radiator may be rear mounted, coolant hoses must be outside of the passenger compartment to protect occupants

#### 4.5.15 LIGHTS

Vehicles may be fitted with any number of supplementary lights including driving lights and light bars etc.

All additional lighting must dip by means of a single action, be it the original high beam 'stalk' or an additional single switch other than the vehicle or winch isolator.

Low beam headlights of some sort, providing suitable light to operate the vehicle without impeding others, must be retained. A brake and tail light, shall be installed and working.

In events where there are multiple vehicles on course at night, all vehicles are to be fitted with an additional, flashing red or amber light, with its own power supply, mounted on the rear of the vehicle as close as practical to the roof line. Clearly visible from 100m away at night with a flash rate of one(1) flash per second minimum. (e.g. bike light etc). This light shall be activated prior to starting the stage to allow approaching vehicles to identify that a vehicle is ahead even with the electrical system isolated.

It is strongly recommended that a dust lamp be fitted to the rear of the vehicle.

#### 4.5.16 FUEL

The original fuel system shall be retained.

Fuel tanks shall have devices installed so as to not leak in case of roll over, but still allow the tank to breathe as needed. A physical rollover valve or routing of fuel tank breather to rise above the tank a distance equal to (or greater than) the deepest dimension of the tank, across the tank to the side opposite of attachment and be downwards to a point at least 150mm below the lowest point of the tank.

Alternative fuel such as LPG may be fitted in accordance with State and National Regulations. LPG may be fitted to petrol engines only.

Only pump fuel may be used available at any fuel station. No racing fuels. No methanol or similar injection.

#### **4.5.17 WINCHES**

All vehicles must be fitted with one (and only one) electrically operated 12v or 24V commercially available winch when competing in an event where winching is required. Winches may have some additional bracing, improved bearings, improved lubrication, upgraded brake shaft and upgraded controls, altered ratios, air free spool and upgraded wiring is permitted. Housings may be replaced with a commercially available unit.

Single speed winch transmissions only.

The winch braking system must be one that is commercially available.

Motor must be a standard commercially available unmodified winch motor. Brushed winch motors only.

One (1) winch motor only limited to a maximum commercial rating of 9hp.

Winch rope length is limited to 50m

Winch must be front mounted

Synthetic type winch rope shall be used.

A maximum of two batteries to run the winch size limited to 350mm case length.

Batteries are restricted to Lead, AGM style or Calcium batteries. Lithium Polymer batteries etc are not permitted.

## **4.6 CHALLENGE CLASS**

### **4.6.1 TYRES**

Tyre sizes shall be limited to 37.5 x 13.5 and must pass through a gauge with internal dimensions of 950mm and 350mm at 20psi or 1.4bar.

A minimum of 70% of the tyres shall be enclosed within the width of mudguards and flares as viewed from directly above when the wheels are pointing straight ahead.

### **4.6.2 WHEELS**

Wheel options are unlimited.

Bead locks are allowed.

Wheel spacers shall not be permitted.

### **4.6.3 AXLES AND HUBS**

Axle housings are free.

Axle internal components are free.

Hubs are free.

### **4.6.4 BRAKES**

The braking system may be modified provided that the braking performance of the vehicle meets or exceeds the vehicle's original braking performance.

The composition of the brake pads/linings is free.

A secondary or emergency braking system (a.k.a park brake) shall be fitted and shall be operational.

Additional independent braking systems (Cutting brakes) are permitted, providing they do not impede the operation of the primary braking system.

### **4.6.5 DIFFERENTIALS**

The differential system is free.

Differentials may be modified and strengthened.

Differential ratios are free.

### **4.6.6 GEARBOX**

The gearbox options are open.

### **4.6.7 TRANSFER CASE**

The transfer case system is free.

Transfer case ratios are free.

The transfer case and differentials shall be operative and capable of driving all four wheels.

### **4.6.8 STEERING**

Steering is free. Where steering boxes are used they shall be securely fastened to the chassis.

Steering linkages and components are free and may have protection fitted to them.

### **4.6.9 SUSPENSION**

Selection of shock absorbers and bushes is free including number and location.

The spring configuration and position on the chassis is free.

Control arm configuration is free including arm length and mounting points.

Suspension mounting points may be strengthened.

The axle position is free.

#### **4.6.10 ENGINE**

Any replacement engine is permissible.

Engine management systems are free.

Snorkels and aftermarket air filters are free.

Oil filters are free.

#### **4.6.11 ELECTRICAL**

Alternators are free.

Fitment of additional electrical systems (such as independent 24v systems) is permitted. Provided they are less than 36 volt.

Headlight inserts and globes are free.

Tail lights, stop lights and reversing lights are free.

#### **4.6.12 EXHAUST SYSTEMS**

The exhaust system is free.

Exhaust systems on tray back ute must terminate a minimum of 300mm past the rear of the cab below door handle height on a downward angle.

Exhaust systems on all other vehicles must terminate past the rear diff below door handle height on a downward angle at the extremities of the vehicle.

#### **4.6.13 CHASSIS**

The original chassis for that make of vehicle shall be used. The chassis may be modified however, the original chassis must remain intact from the front firewall to the rear passenger compartment bulkhead.

Strengthening with the additional bracing is acceptable.

Spring and shock absorber mountings may be strengthened.

Protection plates may be added for strengthening and protection purposes.

#### **4.6.14 BODY**

The body of the make of the vehicle shall be readily recognised and shall be the same manufacturer as the chassis.

The combination of body and chassis may be updated with body and chassis elements from later models of the same make of vehicle.

Body lifts shall be limited to 75mm and shall be completed in a safe and secure manner and the spacers shall be a non-crushable material and the bolts shall be the same diameter as the original body mounting bolts and at least grade 8. There shall be the same number of body mounts and supports as the original chassis and body combination.

Additional mudflaps flares and door sills may be added for protection.

#### **4.6.15 LIGHTS**

Vehicles may be fitted with any number of supplementary lights including driving lights and light bars etc.

All additional lighting must dip by means of a single action, be it the original high beam 'stalk' or an additional single switch other than the vehicle or winch isolator.

Low beam headlights of some sort, providing suitable light to operate the vehicle without impeding others, must be retained.

Long course events where the vehicle is to be driven on a public road require the vehicle to have functioning low beam headlights with a standard low beam pattern.

A brake and tail light, or lights, shall be installed and working.

In events where there are multiple vehicles on course at night, all vehicles are to be fitted with an additional, flashing red or amber light, with its own power supply, mounted on the rear of the vehicle as close as practical to the roof line. Clearly visible from 100m away at night with a flash rate of 1 flash per second minimum. (e.g. bike light etc). This light shall be activated prior to starting the stage to allow approaching vehicles to identify that a vehicle is ahead even with the electrical system isolated.

It is strongly recommended that a dust lamp be fitted to the rear of the vehicle.

#### **4.6.16 FUEL**

The fuel system is free but shall be in a sound condition with all fittings tightly fastened.

Fuel tanks shall have devices installed so as to not leak in case of roll over, but still allow the tank to breathe as needed. A physical rollover valve or routing of fuel tank breather to rise above the tank a distance equal to (or greater than) the deepest dimension of the tank, across the tank to the side opposite of attachment and be downwards to a point at least 150mm below the lowest point of the tank.

Alternative fuel such as LPG may be fitted in accordance with State and National Regulations.

#### **4.6.17 WINCHES**

All vehicles must be fitted with operational powered winch(s) when competing in an event where winching is required.

Electric winches may be modified including multiple motors and gearboxes and upgraded controls. PTO and Hydraulic winches may be modified.

Synthetic type winch rope must be used.

## **4.7 OPEN CLASS**

### **4.7.1 TYRES**

Tyre size is free.

### **4.7.2 WHEELS**

Wheel options are unlimited.

Bead locks are allowed.

### **4.7.3 AXLES AND HUBS**

Axle housings are free.

Axle internal components are free.

Hubs and hub spacers are free.

### **4.7.4 BRAKES**

The braking system may be modified provided that the braking performance of the vehicle meets or exceeds the vehicle's original braking performance.

The composition of the brake pads/linings is free.

A secondary or emergency braking system (a.k.a. park brake) shall be fitted and shall be operational.

### **4.7.5 DIFFERENTIALS**

The differential system is free.

Differentials may be modified and strengthened.

Differential ratios are free.

### **4.7.6 GEARBOX**

The gearbox options are free.

### **4.7.7 TRANSFER CASE**

The transfer case system is free.

Transfer case ratios are free.

The transfer case and differentials shall be operative and capable of driving all four wheels.

### **4.7.8 STEERING**

Steering boxes are free but shall be securely fastened to the chassis.

Steering linkages and components are free and may have protection fitted to them.

### **4.7.9 SUSPENSION**

Selection of shock absorbers and bushes is free including number and location.

The spring configuration and position on the chassis is free.

Control arm configuration is free including arm length and mounting points.

Suspension mounting points may be strengthened.

The axle position is free.

Independently adjustable suspension is free

### **4.7.10 ENGINE**

Any replacement engine is permissible.

Engine management systems are free.

Snorkels and aftermarket air filters are free.



Oil filters are free.

#### **4.7.11 ELECTRICAL**

Alternators are free.

Headlight inserts and globes are free.

Taillights stoplights and reversing lights are free.

#### **4.7.12 EXHAUST SYSTEMS**

The exhaust system is free.

Exhaust systems on tray back Ute must terminate a minimum of 300mm past the rear of the cab below door handle height on a downward angle at the extremities of the vehicle.

Exhaust systems on all other vehicles must terminate past the rear diff below door handle height on a downward angle at the extremities of the vehicle.

#### **4.7.13 CHASSIS**

The chassis is free.

Chassis construction shall meet or exceed the current CCDA Challenge Class Rollover Protection System (ROPS) strength requirements. Suitable engineering certification shall be provided for scrutineers to confirm this requirement.

#### **4.7.14 BODY**

The body is free.

Body lifts are free and shall be completed in a safe and secure manner and the spacers shall be a non-crushable material and the bolts shall be at least the same diameter as the original body mounting bolts and at least grade 8.

Additional mudflaps flares and doorsills may be added for protection.

#### **4.7.15 LIGHTS**

Vehicles may be fitted with any number of supplementary lights including driving lights and light bars etc.

All additional lighting must dip by means of a single action, be it the original high beam 'stalk' or an additional single switch other than the vehicle or winch isolator.

Low beam headlights of some sort, providing suitable light to operate the vehicle without impeding others, must be retained.

Long course events where the vehicle is to be driven on a public road require the vehicle to have functioning low beam headlights with a standard low beam pattern. A brake and tail light, or lights, shall be installed and working.

In events where there are multiple vehicles on course at night, all vehicles are to be fitted with an additional, flashing red or amber light, with its own power supply, mounted on the rear of the vehicle as close as practical to the roof line. Clearly visible from 100m away at night with a flash rate of 1 flash per second minimum. (e.g. bike light etc). This light shall be activated prior to starting the stage to allow approaching vehicles to identify that a vehicle is ahead even with the electrical system isolated.

It is strongly recommended that a dust lamp be fitted to the rear of the vehicle.

#### **4.7.16 FUEL**

The fuel system is free but shall be in a sound condition with all fittings tightly fastened.

Fuel tanks shall have devices installed so as to not leak in case of roll over, but still allow the tank to breathe as needed. A physical rollover valve or routing of fuel tank breather to rise above the

tank a distance equal to (or greater than) the deepest dimension of the tank, across the tank to the side opposite of attachment and be downwards to a point at least 150mm below the lowest point of the tank. Alternative fuel such as LPG may be fitted in accordance with State and National Regulations.

#### **4.7.17 WINCHES**

All vehicles must be fitted with operational powered winch(s) when competing in an event where winching is required.

Electric winches may be modified including multiple motors and gearboxes and upgraded controls.

PTO and Hydraulic winches may be modified.

Synthetic type winch rope must be used.