

LETTER

ENGINEERING AND LEGISLATION WITH JOHN VARETIMIDIS

INTERIOR MODIFICATIONS

There are very few modified vehicles that have not had modifications carried out to the interior of the vehicle. Interior modifications cover many categories, such as seating, instrumentation, steering wheels, seatbelts, sound systems, re-trimming and visual displays.

There are many Australian Design Rules (ADRs) that cover interior modifications, and these may be either directly affected or contravened if you don't use either ADR-approved components or comply with the ADRs when installing.

SEATING

Seating modifications generally directly affect compliance to two rules – ADR 3 Seat Anchorages and ADR 22 Head Restraints. ADR 3 covers the structural integrity of the seat base when it is secured to the original anchor points in the floor pan provided by the vehicle manufacturer.

Where non-original anchor points are to be used, advice from an engineering signatory is recommended prior to installation.

ADR 22 covers the minimum requirements for location size and the structural stability for the head restraint when fitted to the seat frame. Manufacturers of an aftermarket seat must test the head restraint to resist the specified forces in accordance with ADR 22.

When purchasing any aftermarket seats for your vehicle, you must enquire if the seats are manufactured to these rules prior to purchase and receive documentation from the supplier or, alternatively, the seat will be marked with the relevant standards.

In some applications where SRS airbags are installed in the original seats, you must replace them with the original seats supplied by the manufacturer of the vehicle.

Further to complying with the strength requirements of the ADR, a signatory will evaluate the location of the seat for seatbelt anchorage location, visibility to instrumentation and visibility to the rear-vision mirrors.

Reclining seats are compulsory on all later-model vehicles to provide adjustability for varying body sizes and to correctly position the driver to access all controls of the vehicle and visibility to instrumentation.

Vehicles that are originally manufactured as a two-door or coupe configuration must retain release mechanisms as per original manufacture to allow any rear passengers to exit the rear of the vehicle without assistance from the front passengers.

There are many other areas that may be affected, and these are just some recommended guidelines to keep in mind when purchasing replacement seats. It is strongly advised that you consult with an approved signatory first prior to any purchase.

INSTRUMENTATION

Replacing the original manufacturer's equipment is generally not recommended unless all the instruments are retained in the original location.

ADR 18 Instrumentation and ADR 21 Instrument Panel are the most likely ADRs to be affected by any changes to the original instrumentation and dash pad.

ADR 18 specifies the requirements for the provision and the location of certain 'Visual Indicators' and also the requirements for speedometers and odometers in motor vehicles since 1973.

There is a set standard for the provision and location of gauges and visual warning devices that must be fitted to all passenger vehicles and their visibility from the driver's seated position.

All compulsory gauges, including speedometer in km/h, odometer with six-digit reading, fuel, temp, indicators, lights, high-beam, brake fail and so on, must be retained or replaced to meet the minimum construction and visibility requirements.

STEERING WHEELS

Replacement steering wheels must continue to comply with the requirements of ADR 10 Collapsible Steering Columns.

Manufacturers of all vehicles since 1971 have designed their vehicle to allow the steering column to meet impact criteria in the event of an impact. Some vehicles were built with impact-absorbing steering wheels as part of the compliance to ADR 10.

A replacement steering wheel must also meet a minimum outer-diameter dimension so as not to obstruct visibility to instruments and not affect access to controls. A recommended guideline is no less than 350mm, though this may vary between various models of vehicle.

Aftermarket or replacement steering wheels should not be fitted to any vehicles that were manufactured with an SRS (airbag) system. These steering wheels must only be replaced with original replacement parts supplied by the original manufacturer.

BELTS

Seatbelts must be retained in a serviceable condition and maintain compliance with the applicable version of ADR 4 Seat Belts and maintain compliance with seatbelt location to ADR 5 Anchorages for Seat Belts.

Any replacement seatbelts must comply with ADR 4 and must self-retract if the vehicle was originally fitted with retractable seatbelts. Any four-point harnesses are generally not accepted in most vehicles manufactured to comply with ADR 4 and self-retracting inertia-reel seatbelts.

Relocation of seatbelt anchor points is not recommended unless additional seatbelts are retrofitted to early model vehicles, which requires consultation and advice from an engineering signatory.

We've run out of space this month, but I'll talk more about popular interior modifications undertaken by car modifiers next month.

It is important both to ensure driver and passenger safety, and to keep your car on the road, that everyone knows and understands what the ADRs mean to your car. It's better to compromise than spend a fortune only to have to change it later. *SC*