



FUZZ TOWNSHEND'S GUIDE TO...

FITTING SEATBELTS TO CLASSIC CARS

For owners who want to clunk-click every trip

There is one aspect of classic motoring that always provokes discussion – safety belts and their use in older classics.

Purists say seatbelts spoil both the aesthetics and the originality. But if you use a classic regularly, you should consider fitting them. Horrific injuries can occur at such low speeds that we owe it to our passengers to offer the best protection we can.

But it is not always a simple task to fit belts to a classic car. Some problems can arise when attempting to find suitable anchorage points, especially with wood-framed bodies and those made from glassfibre [1, over].

The fitting of front seatbelts became a legal requirement in the UK for cars built from October 1964. There was no compulsion to actually use them until 1983. Rear passengers remained unprotected by legislation until 1987, although by this time most car makers

were fitting front and restraints. Again, only front passengers had any obligation to use them, until 1989 when all passengers were finally required to belt up. Seatbelt condition and security made their way into the MoT test in 1979. If fitted, your classic's belts must comply with legislation, even if the car was built before the date required for such items to be installed. You'll notice there are lots of 'ifs' in the rules...

EQUIPMENT NEEDED

Tape measure, protractor, spirit level, drill (cordless is best), welding equipment for making brackets

Solutions

When it comes to kitting out a car, different models need

differing solutions. Indeed, there may well be different solutions for the same model of car, depending whether it is a two-door or four-door version, an estate or a convertible.

Any car to be fitted with belts must be structurally sound – There should be no rust or degradation anywhere near to mounting points. Where no suitable structure is present, additional brackets will need to be made to transmit any stress and strain to a point capable of taking it [2, over].

Mounting points (Fig 1)

Retractable automatic belt reels must be mounted in a position where they can operate correctly. In some positions the locking mechanism will not operate.

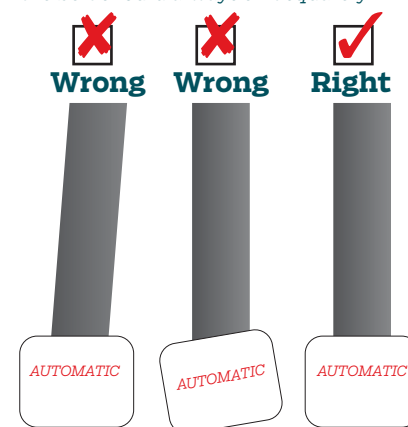
The angle of approach of the seatbelt is also a vital factor. On a standard, three-point mounted restraint, the belt should approach the shoulder of the passenger horizontally from the rear. Thus, even though reels are often mounted low down behind the B-pillar or rear seat, the belts are fed vertically to a point behind the shoulder before coming forward [3, over].

Choose the most substantial part of the car's structure on which to mount the belts. If no suitable point is available, fabricate brackets on which to mount reels or guide/feed buckles [4, over]. It must first be determined where the belt needs to be in order to approach the passenger's shoulder. From this point – note the temporary



Retractors (Fig 1)

Correctly aligning automatic belt retractors is crucial. A number of different versions are available, but the belt should always exit squarely.



position marker screws [5, over] – the trajectory of the belt to the reel may be determined. This dictates exactly where the reel must be mounted [6, over].

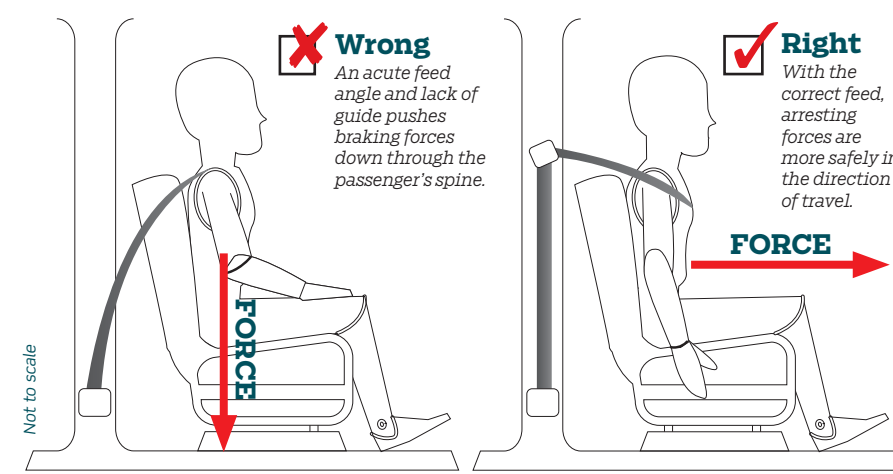
If a guide is fitted low down, or, even worse, a reel is fitted and the belt isn't fed through a guide, the wearer's shoulder becomes the third point of the three-point system. In a frontal collision, the force will be transferred down through the wearer's shoulder, potentially causing damage to the spine and, in extreme cases, forcing the seat down through the floor [Fig 2].

Lap belts

If you have opted for lap belts in the rear of your car be aware that if the mounting points are too high up, the belts are likely to dig or cut into the stomach area of the wearer under rapid deceleration conditions, instead of restraining the pelvic area from

Feed angle (Fig 2)

The feed angle of a seat belt can mean the difference between life and death. There are a couple of simple rules to obey in order to make your car a safer place to be.



Child Safety...

WHAT THE LAW SAYS

The law says that all children up to 1.35m tall (4ft 5in) or the age of 12 in the front or rear seats in cars, vans and other goods vehicles must travel in the correct child restraint for their weight.



Booster seat: check it has the BSI Kitemark.

EXCEPTIONS TO THE RULES

In limited circumstances, children can travel in a classic car without the correct child restraint.

1 In a licensed taxi or licensed private hire vehicle. If the correct child restraint is not available, then, in the rear seat only, children under the age of three may travel unrestrained. Children aged three years and over must use an adult seat belt.

2 In cases of unexpected necessity over a short distance. If the correct child restraint is not available then, in the rear seat only, a child of three years or more must use an adult belt. This exemption does not apply to children under three years and does not cover regular school runs or other journeys that are planned in advance.

3 Where two occupied child restraints in the rear seat prevent you fitting a third. In this case, provided the front seat is occupied, a third child aged three years and over can use an adult seat belt (lap or lap and diagonal) in the rear. If the front seat is free, then they must sit there, using the correct child restraint.

4 In older vehicles with no rear seat belts. In this case, children three years and over may travel unrestrained.

OVER

DID YOU KNOW?

Seatbelts should be replaced if they have been involved in accident, as they will be weakened. Frayed belts should be replaced as a matter of course.

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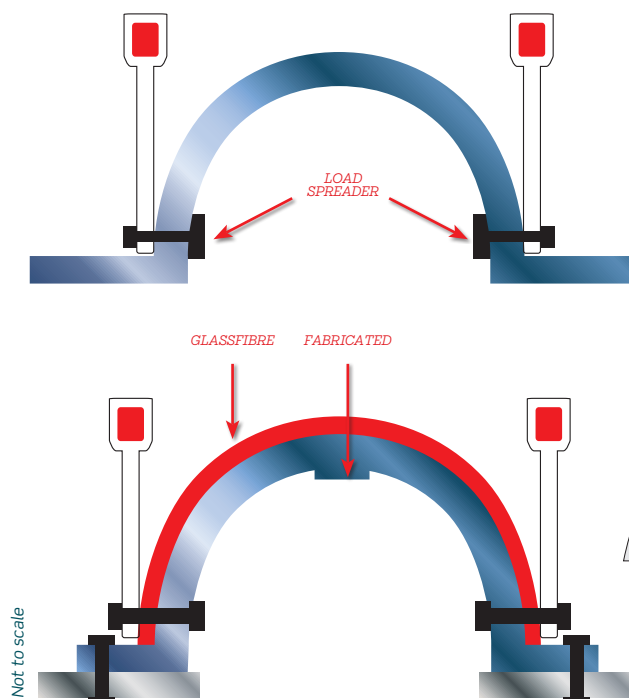
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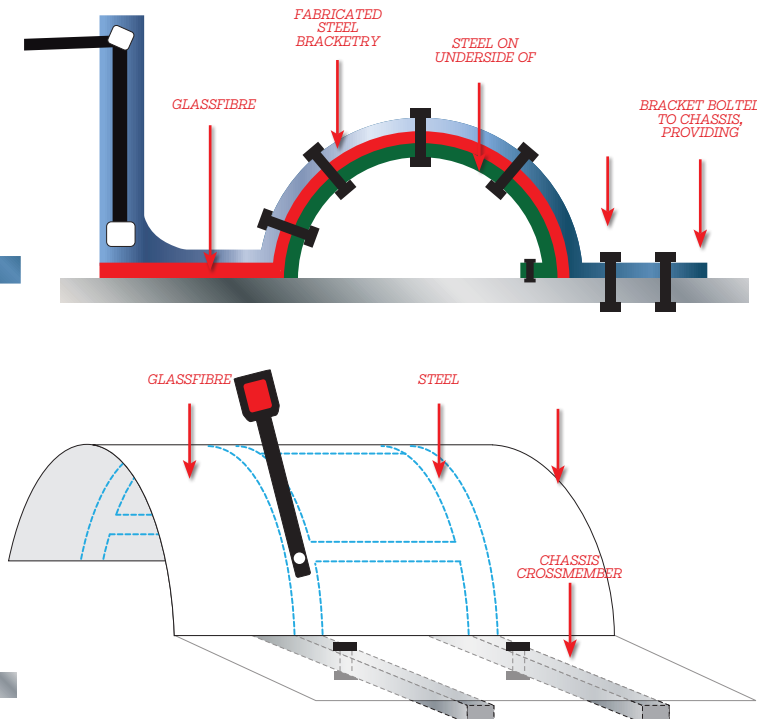
Problem areas – answers to tricky fitting situations

Fitting seatbelts to some classic cars can be awkward, especially where the car's body is fabricated from wood or glassfibre. Some steel areas may also need reinforcing before they are able to withstand braking forces. Here are some solutions...

Tunnel fitting solutions (Fig 4)



Seatbelts in glassfibre & wood-bodied cars (Fig 5)



CONT.

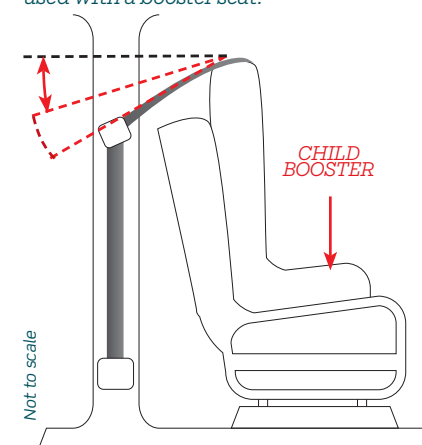
moving forward. The former can cause serious injury.

The child catch

Recent legislation demands that children below the age of 12 or under the height of 1.35m (4ft 5in) should not only be contained by belts, but also be strapped in a safety seat or perched on a booster seat. This is the reason behind a large

Booster (Fig 3)

The angle of the seatbelt shoulder bolt must be no more than 45° when used with a booster seat.



percentage of the decisions to fit safety belts to older cars.

Often, and especially in convertible cars, the seatbelts may well be in an ideal position for adult passengers, but add a booster or child safety seat into the equation and the belt may be forced to work from an acute angle and therefore endanger the junior passenger in the event of an accident [Fig 3].

If this is the case it might be tempting to forget about the child seat and just use the belt, as would be the case for an adult.

The problem here is that this is illegal. The only way around it is to remove the seat belts altogether, where legal, and then you're back to square one, with the sprogs at high risk, even at low speeds. Keep the belts in your two-seater sports jobbie and junior will have to perch on a booster in the breeze, with streaming eyes and at additional risk of spinal injury in a crash.

Security

The point at which the hasp section of the restraint is mounted must be determined by the strength of the surrounding area.

Often, but not always, the transmission tunnel can be put to use here. If the tunnel or nearby floor area are unsuitable, brackets need to be fabricated to transfer the forces

to more substantial areas [Fig 4]. Depending on the construction of the car being adapted, there may be a need to use brackets to secure the belts through to the chassis – often a factor in the aforementioned wood-framed or GRP bodied cars. See our diagram of a suggested theoretical solution to this problem [Fig 5].

To ensure that mounting points are substantial, thick, threaded mounting plates are fitted under the floor or transmission tunnel to help to prevent the bolts being pulled through under load [7, 8]. Remember that as soon as seatbelts are fitted, they must comply with VOSA regulations and are therefore under MoT scrutiny.

Aesthetics

Safety belt sets can be colour co-ordinated to a car's interior or to match the original specification [9]. Period-style fittings are available, so there's no need for a set of aftermarket belts to look out of place [10, 11].

Thanks to...

Quick Fit Safety Belt Services (0208 206 0101, www.quickfitsbs.com) for help with this feature.



QUICK FIT SOLUTIONS

Quick Fit Safety Belt Services has been in business since the early Sixties. Its wide range of belts and kits for classic cars is made to order and the firm will be happy to supply and fit belts for your particular car. Call for a quotation.

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