

A Write-off at 6 m.p.h!



6 m.p.h. crash costs £4,600

The combined front and rear repair costs amount to over £4,600 for a typical, minor, front and rear shunt in a Suzuki Swift. That's more than half of the total value of the car, and would be written off by many insurers.

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**Thatcham
Bumper
Ratings**

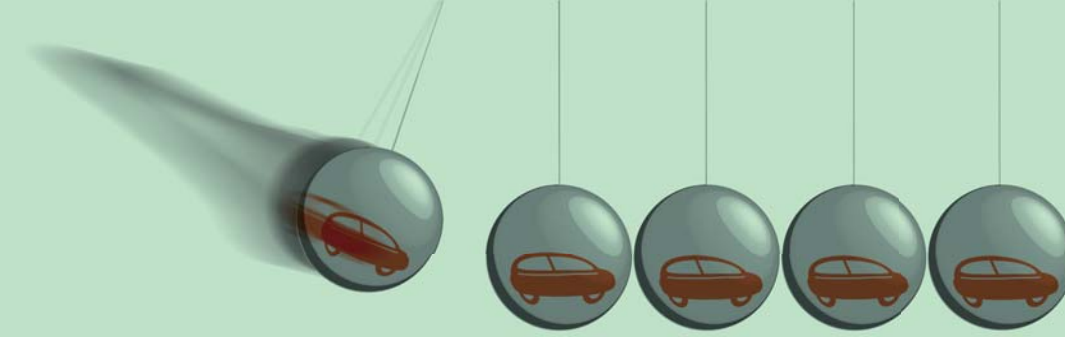


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**Good bumpers
need not hurt
pedestrians**



continued...



What's the damage?

In Thatcham's new bumper test, the Suzuki Swift was rated as the worst performer in the front test. With the highest repair cost of nearly £2,300 the car only achieved

a 'Poor' rating. This was due to the bumper beam being too flimsy and small, causing expensive damage not only to the bumper itself, but also to the grille, wings, bonnet, radiator and headlights. At the rear, the Suzuki Swift also received a 'Poor' rating, due to costly damage to the bumper, tailgate, fog light, and boot floor, amounting to another repair cost of nearly £2,300. The bumper systems on the front and

Suzuki Swift front **£2,300**: Top picture: with bumper cover in place. Bottom picture: cover removed to show bumper beam

You might think that your bumper is designed to protect your car from damage during low speed collisions. However, Thatcham's latest test results show that bumpers are failing to protect cars from costly minor damage. Such collisions account for 85% of all crashes.

rear of this car are clearly not able to fulfil the function of protecting expensive components.

Many bumpers don't bump

Typical low speed shunts occur in traffic queues or at junctions. At such slow speeds, often less than 10 m.p.h, serious injuries are thankfully rare and the most common complaint is a few days of neck stiffness.

But what about your car? You expect your car to be protected by its bumper system. However, in reality, most bumpers fail to absorb the energy of a minor crash.

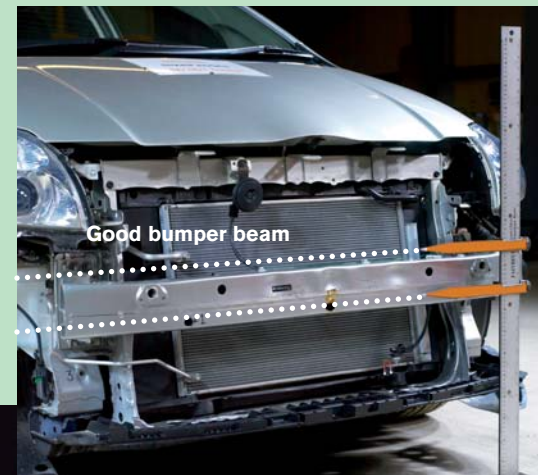
Many bumper systems do not protect the rest of the car from damage because they are too weak, poorly aligned, too small or in some cases, not there at all.



Nissan Qashqai: Poor bumper system with no bumper beam at all

Bumper covers hide the problem

The large plastic component that most drivers think is their bumper, is, in reality, just a cover. The real bumper is a metallic beam structure hidden underneath. Good examples are normally 100mm high and have energy absorbers to dissipate the crash forces. However, some new bumper covers reveal beams only 20mm high or, in some cases, no beams at all.



Toyota Auris: Good Bumper beam protecting the front of the vehicle



Underride and override

This is a common scenario and is often seen at the side of the road. One vehicle has run into the back of another but due to heavy braking, the bumpers slipped off one another. The front of the impacting car's bonnet is folded, its lights are smashed and it is often undriveable. However, the bumper appears to be largely undamaged.



Real world underride crash

The problem is that even where bumpers initially appear to engage during a crash, they often slip off one another. This is due to poor alignment of the beam structure or a very curved cover that promotes instability.

This leads to a problem called 'underride'.

Another issue is that many crashes involve a vehicle braking heavily before the crash. This leads to brake dive, the braking vehicle tipping forward on the front wheels. Research has shown that this pitching

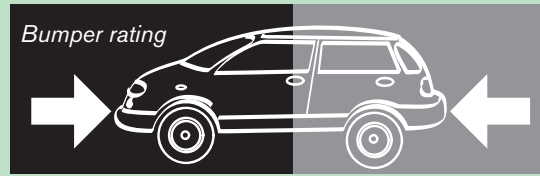
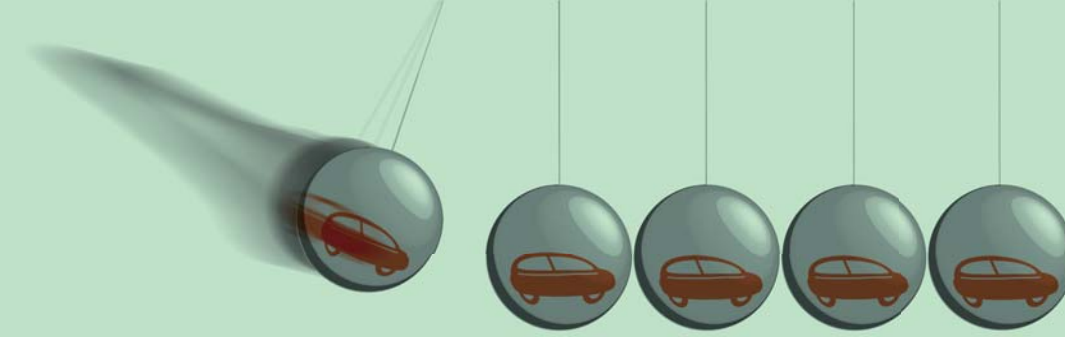
often moves a vehicle down by 5-7cm whilst the rear of the vehicle lifts by a similar amount. Therefore, the misalignment is further exacerbated and there is less chance that your shallow bumper beam will engage a similarly shallow beam and avoid costly cosmetic damage. Finally, the high repair costs are also caused by high prices for some replacement parts used to fix the damage after this type of accident.

4x4s – Tough?

Most 4x4s have a much higher bumper, so in a crash they 'override' an ordinary car's bumper, causing massive repair costs. But don't think that 4x4s are undamaged in this scenario. Often in a low speed crash, their repair costs can be disproportionately high, due to the high cost of vulnerable mechanical components under the bumper.



4x4's often override smaller cars causing expensive damage to both



Thatcham Bumper Ratings

Thatcham, on behalf of the British insurers, has helped develop an insurance crash test that will encourage manufacturers to fit deeper, wider and more energy absorbing beams to their vehicles in the future, both to the front and rear. This will lead to better control of repair costs, saving money for motorists.

Ratings

The bumper ratings are generated from the repair cost (excluding VAT) associated with the collision. These costs are then translated into ratings, 'Good', 'Acceptable', 'Marginal', or 'Poor'. The bumper system receives a downgrade if the test reveals that it underrides or overrides the bumper barrier. The bumper systems at the front and rear of the car are given separate ratings.

Repair cost		Bumper rating
(excl VAT)	(incl VAT)	
£0-349	£0-409	Good
£350-799	£410-939	Acceptable
£800-1,349	£940-1589	Marginal
£1,350+	£1590+	Poor

Note that all repair costs used in ratings are exclusive of VAT to allow for international comparison. In the main body of the text, the repair costs given include VAT.

Model	Front	Rear
Citroen C4 Picasso	Poor	Poor
Ford S-Max	Marginal	Good
Honda CR-V	Poor	Poor
Landrover Freelander 2	Poor	Poor
Nissan Qashqai	Marginal	Poor
Peugeot 107	Marginal	Marginal
Peugeot 407	Marginal	Poor
Suzuki Swift	Poor	Poor
Toyota Auris	Acceptable	Marginal
Vauxhall Corsa	Marginal	Poor

The bumper test



Front bumper test with bumper cover removed to show beam alignment



Front
455mm



Rear
405mm

Thatcham bumper tests are run with bumper covers fitted



The Thatcham bumper tests are based on a new international standard bumper test from RCAR (the Research Council for Automobile Repairs). The test uses a standardised bumper beam that is 100mm tall with a flexible, energy absorbing cover that replicates a real bumper on a car. A backplate 200mm tall is fitted to the top surface of the bumper barrier, 25mm behind the front

face, and this represents the upper structure of the impacting vehicle. The tests are run at 6 m.p.h. with the bumper barrier height set to 455mm from the ground for the front, and 405mm for the rear. This is to recreate the underride phenomenon seen in real world crashes and encourages the car manufacturers to produce tall bumper beams that are at least 100mm tall, and that overlap at front and rear. The RCAR test only recommends testing beams that are

at least 75mm tall within the test zone; however, Thatcham is testing all bumpers to illustrate the problems, where manufacturers choose not to fit a sufficient bumper beam. Ten new vehicles have been tested by Thatcham, representing the very newest car designs on our roads in 2007.



Bumper barrier



Rear bumper test with bumper cover removed to show beam alignment

The good, the bad and the ugly

The best performer at the front was the Toyota Auris with the lowest repair cost of **£810**. The Auris had stable engagement with the bumper barrier, courtesy of its deep bumper beam.



Toyota Auris front **£810**

The worst performer at the rear was the Nissan Qashqai, which had no bumper beam fitted to the rear of the vehicle. Whilst the Qashqai achieved an 'Acceptable' rating for the front of the car, it was rated as 'Poor' at the rear and had the highest rear repair cost of the group at **£2,830**. The vehicle is inadequately equipped for damage protection in a low speed collision, even though its 4x4 appearance makes it appear rugged and strong.



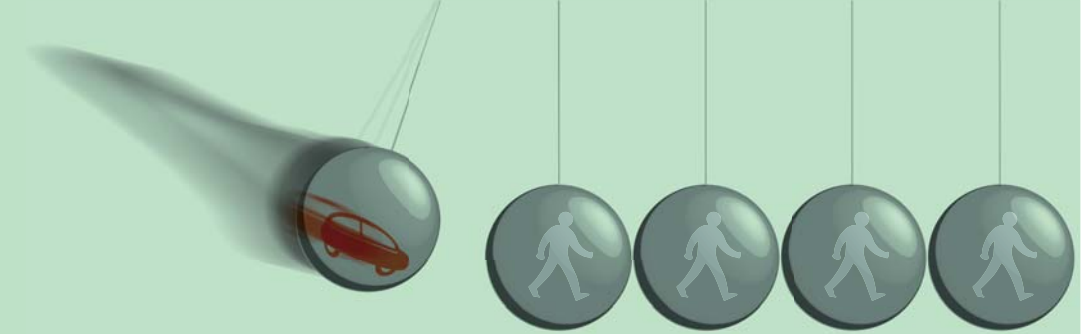
Override and no bumper beam: Nissan Qashqai rear **£2,830**

The best performer at the rear was the Ford S-Max, which was the only vehicle to achieve a 'GOOD' bumper rating. The repair at the rear of the S-Max was low at only **£310**. This bumper beam was deep and was aligned with the bumper barrier, so that it engaged in a stable manner and did not slip off. However, the front of the S-Max only received a 'Marginal' rating with a repair cost of **£1,570**.



Ford S-Max: 'Good' bumper beam

Headlights are costly items to replace in these low speed collisions. 5 of the 10 vehicles tested needed their headlights replacing after the test because the bumper systems were not able to provide protection. The Peugeot 407 headlamps were the most expensive to replace, and cost **£170** each. The bumpers should be protecting these expensive parts properly.



Good bumpers need not hurt pedestrians



You may think that if a deep bumper beam achieves a 'Good' rating in the bumper test, it will not protect a pedestrian if they step out in front of your car. Euro NCAP carry out a pedestrian test as part of their assessment, which involves simulating a pedestrian impact on the front of the car. The lower leg test by Euro NCAP is most indicative, since this involves impacting a lower legform against the bumper.

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Upper leg
Child head
Adult head
Leg

Good Adequate Marginal

Euro NCAP pedestrian test: lower leg impactor into the bumper region

However, a 'Good' rating in the bumper test and a high lower leg score in the Euro NCAP test are not mutually exclusive. The Toyota Auris scored 3 out of 4 stars in the pedestrian ratings by Euro NCAP. On the lower leg test, the Auris scored 5.81 points, which is very close to the maximum of 6 points. The Auris had the highest rating in the front bumper test from the group of vehicles tested and it rated as 'Acceptable' due to its deep and well aligned bumper beam.



Toyota Auris: deep bumper beam



Honda pedestrian test



The Suzuki Swift has poor bumper beam design. It is too weak to protect the rear of the car. This leads to **£2,300** in repair costs, following a crash at only 6 m.p.h.



No
Override

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 Amlin Insurance Services
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 AXA Insurance UK plc
 Brit Insurance Ltd
 Chaucer Insurance
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 Equity Red Star Motor Policies
 Esure Insurance Ltd
 Fortis Insurance Ltd
 Groupama Insurance Company Ltd
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 HSBC Insurance (UK) Ltd
 Illium Managing Agy Ltd
 Insurance Corp of Channel Islands Ltd
 Jubilee Motor Policies at Lloyd's
 KGM Underwriting Agencies Ltd
 Landmark Insurance Co Ltd
 Legal & General Insurance Ltd
 Liverpool Victoria Friendly Society Ltd
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