

specialists that offer roadside or home-based replacement windscreens. They will also deal with your insurance company directly and the whole experience should be painless and only cost you a small excess fee. Just as with larger insurance companies, you may find that the Seven is not listed on mainstream glaziers' websites — or is covered with so little detail and is so vague that any confidence in them soon evaporates.

Tim Camm, Technical Training Manager, Autoglass® explains why this is the case. "Autoglass® has comprehensive stock that provides a list of options for windscreen repair work on Caterham vehicles, however this is dependent on the age of the vehicle and size of the body. Confirmation around this would therefore need to be discussed on a case-by-case basis at the time of booking a windscreen repair or replacement."

But what about the heated elements? "A common request from owners is to upgrade to a heated windscreen", adds Tim, "Autoglass® supplies a wiring conversion kit which is sourced from an appropriate supplier that meets the Belron® quality standard. As well as considering the age and condition of the vehicle, the removal and refitting is dependent on the condition of the frame and also the fixings and any wiring. If a customer had conducted the retro fit themselves, or had it conducted by a third party, they would need to agree

the betterment with their own insurance provider, unless paying in full outside of an insurance claim." So it seems that with Autoglass at least, Seven owners will need to take care to ensure the correct size and style of glass is selected prior to ordering. With such a bespoke vehicle, perhaps a specialist approach would be better? Andy Noble, Director at Sevens and Classics, offers his own solutions to the cracked glass problem. "We keep heated glass for both the SV and the S3 cars. We can supply just the glass, (although I'm always reluctant to post it) from just £300. The whole screen assembly with refurbished surround and new rubbers, and everything in between can also be replaced from £468 (fitted). We do a lot of insurance jobs too, meaning the customer only pays a windscreen excess (or nothing in some cases, depending on their insurance policy)." For owners who want to retain the patina-look on their car, Sevens and Classics also offer options to exchange screen surrounds and stanchions for refurbished versions.

"As a broker, we use a panel of different insurers and these insurers will have their own approved repairers for windscreen replacements," adds Carlie Norwell at A-Plan. "As our insurers are specialists, they do understand that these vehicles are not 'the norm' and therefore they do take a flexible approach when it comes to sourcing and fitting glass — including if you'd prefer to do



the work yourself." So as an owner you do should have a choice on how and where to source your replacement screen — but speak to your insurance provider first if you are planning to claim on your policy.

It is worth noting that new build cars — both factory and home constructed — require a heated screen to pass the Individual Vehicle Approval (IVA) test to ensure the windscreen will demist safely. Although not currently required for the MOT test in the UK, meaning owners are able to replace the glass with non-heated, or even the race-friendly Plexiglas, the recommendation to retain the heated element for a road car remains...

As you tailor your Seven to maximise your enjoyment, just don't forget to include modifying the insurance on your upgrade path.

## THE ESSENTIAL UPGRADE FOR YOUR SEVEN

**Graham Howard** recently took his Seven to Northampton Motorsport to have the suspension set up, ready for a season of speed events.

**W**hen we think of upgrades, the things that immediately come to mind are engine modifications, dampers, tyres, wheels, brakes... things you can touch and feel and see where your money has been spent. However, something every owner should do is spend time, money (or both) setting up the suspension properly. Unlike more normal production cars, the suspension on a Caterham is highly adjustable, the downside of which is that it is possible to have a car whose suspension is set up badly, making the driving experience nowhere near as good as it should be. Of course, it also provides the potential to adjust the setup to make the car into the fine-handling machine that it was designed to be.

There are some members who have the knowledge and equipment to do this in their garage, but there are also many companies with Caterham knowledge that will do this work for you. Northampton Motorsport, who sponsor the Club's Speed Championship, are probably best known for their rolling road engine set up work, but they are also particularly well equipped for suspension work with all the necessary knowledge and



equipment. I recently took my car there for a pre-season alignment check, having had my dampers serviced, and replaced the top wishbone ball joints and track rod ends.

Normally, a customer would first be asked if he wanted a road or a track-focused set up, but

as a repeat customer, James, who was working on my car, already knew what I wanted.

The first job was to check the tyre pressures, as even a small error can throw out the corner weighting. With me sitting in the car, the ride heights were checked, setting



the rake angle front to rear. In general, raising the rear will give more oversteer.

After this, the corner weights were measured using scales under each wheel, linked to a computer where the measurements were displayed. In an ideal world, the weight of the car would be even from side to side, but this is clearly only possible in a single-seater. In a Caterham, there is always going to be more weight on the driver's side, so the objective is to get the sum of the diagonals equal by making small adjustments to the spring platforms. This will ensure that the handling balance is similar on right and left hand turns. After some small adjustments to the spring platforms, this was achieved to within 1 Kg or 49.92% and 50.08%.

The next job was to check that the wheels are all pointing in the right direction... more technically known as the camber, castor and toe. At Northampton Motorsport, this

is done using a very clever Hunter Hawkeye machine which measures all aspects of wheel alignment. Plates are attached to each wheel, aligned with some HD imaging cameras pointing at the front of the car. The various angles are then displayed on a computer screen in graphic form.

It was a quick job to collect all the current measurements and see where adjustment was needed. Unsurprisingly, the front camber and toe angle needed some adjustment after the recent work on my car. This was set for being track focused with perhaps more camber than many cars, and some toe out.

At my last visit, the rear had also been adjusted, so this time no changes were needed. But the rear suspension camber and toe can be a surprisingly long way out, with tolerances on the de Dion tube and rear suspension mountings. This can be corrected by placing shims between the ear and the flange on the end of the tube.

Also checked is the castor angle. This is the angle the swivel axis on the front uprights lean backwards and is adjusted on a Caterham with washers that pack out the lower wishbone mounts. Because of tolerances on the chassis, to get the castor angles equal on both sides does not always mean the equal placement of packing washers — my car has four behind the wishbone on one side and two on the other.

Not requiring adjustment this time was the bump steer. This is the tendency for toe angle to change as the front suspension moves up and down, meaning that on a bumpy road, the car can feel as though it wants to change direction. This can be adjusted by using shims to change the height of the steering rack.

So, a couple of hours' work at Northampton Motorsport gave me the confidence that my car will be ready for a season of speed events, and respond as it should. As for the driver, that may be another matter! **LF**

