# Trackday Rollbars Part 2

Last month, we talked about the different types of rollbar and rollcages which were available to owners, and discussed some of the pros and cons of the different designs. The Lotus Seven Club requires that participants on its trackdays drive cars equipped with a rollbar of the type commonly referred to as a "trackday rollbar" (or a full cage), so we thought it would be useful to explore the process to change from a standard bar to a trackday design.

Before we start though, there are some clarifications and corrections which need to be made to last month's rollbar article. We incorrectly stated that the standard Caterham rollbar is constructed from "seam welded" steel. This is not now the case – around the time that the metric chassis was introduced, the design of the standard Caterham rollbar was improved and changed to use thicker gauge, "cold drawn" steel tube. Caterham also highlights that the standard SV rollbar offers additional head clearance compared to the S3 design. Secondly, we reiterate our strong recommendation that for track use, harnesses are preferable to standard seatbelts, both from a safety and driving dynamics perspective. Standard seatbelts are only designed to be effective in a frontal impact and do not offer lateral support, whereas most track incidents include a sideways element. **The combination of a standard seatbelt with a petty strut is highlighted as being particularly dangerous as in such an incident, the driver's head is at risk of making contact with the strut.** Finally, we are pleased to report that Caterham tell us they are not aware of any road accident where a driver's head has come into contact with a bar on a full cage. When using a helmet on the road, any perceived safety benefit should be weighed against risks which the more limited visibility when wearing a helmet may entail.


Caterham Cars were kind enough to welcome Lowflying to their Crawley workshops, where technician Alex Betts took us through the upgrade process. It's an upgrade which should be well within the capabilities of most owners, although needless to say, if you have any doubts about your abilities, please do engage the services of a professional to do this for you. This article only aims to provide a general guide to the process and should not be relied on as definitive instructions. Please refer to the assembly guide for your particular model of car as specifications have changed over the years. However, this guide should provide a high-level indication of the process, and be applicable to all De Dion models.

So, onto the upgrade.

## Fitting the Kit

### What you get with the kit

The trackday rollbar kit comes complete with the appropriate fastener kit containing the bolts necessary to mount it on the car. Beware however – there are differences between the trackday rollbars for metric and imperial chassis, and again for S3 and SV variants, so be sure to order the correct kit.

Correctly fitting a trackday rollbar requires an additional pair of bolts to be inserted from below. Access to these requires the rear dampers to be removed. Start by jacking the car up safely, supporting it such that the De Dion tube / hubs are allowed to hang freely. Remove both rear wheels.

**WARNING:** Never work alone underneath a car without supporting it on axle stands or equivalent. Do not rely on a jack alone.


1. Wheels off

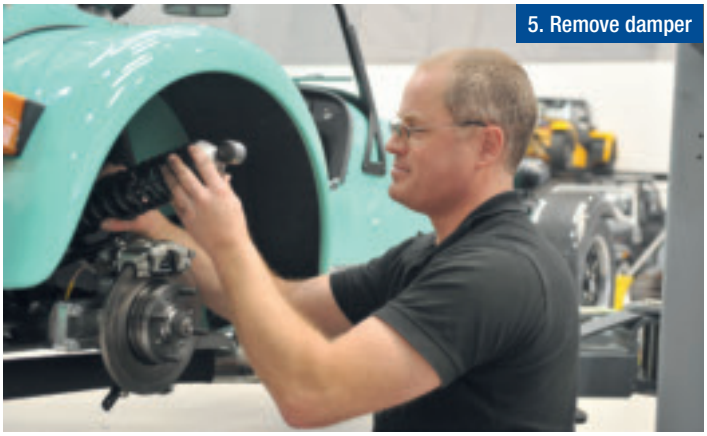
2. Dampers will need to be removed

With the wheels removed, access is offered to the lower damper bolts, which should be loosened and removed (image 3).

Next, reveal and remove the top damper bolts which can be found through access holes either side of the seat back panel (image 4). With the top damper bolts out, the dampers can then be eased out of the top brackets and removed (image 5). Be careful not to lose the sleeves which locate the bolts through the top damper eyes.

3. Bottom damper bolt out

4. Reveal and remove top damper bolt



5. Remove damper

The standard rollbar is secured via two bolts vertically into the chassis, and by two bolts / nyloc nuts which secure the diagonals into mounting brackets at the rear of the boot compartment. Remove the front bolts (image 6), followed by the rear ones (image 7), and the rollbar should be able to be eased away from the chassis (image 8).


6. Remove front rollbar bolt


7. Remove rear rollbar bolt


8. Remove rollbar

The trackday rollbar can now be put into position (image 9). To allow the bolt holes to be correctly aligned, and avoid the risk of any cross-threading, it is advisable to first fit all of the bolts finger tight only before all are tightened to their final torque settings.

Starting within the wheel arch, loosely fit the securing bolts which go up into the threaded holes of the vertical members of the rollbar (image 10). To help with this, it may be useful to locate the diagonals within the mounting brackets at the rear of the boot with screwdrivers or equivalent, allowing the bar's position to be adjusted such that the fixings are all correctly aligned.

With the bottom bolts loosely inserted, next secure the rear diagonals with the appropriate bolt / nyloc nut / washer combination (image 11).

Finally, attach the front rollbar bolts on either side (image 12). Once all bolts are confirmed properly aligned and engaged in their threads, torque them up to the appropriate figures, which for the metric chassis are:

**Underneath bolts – 47 Nm**
**Rear diagonals bolts - 47 Nm**
**Front mounting bolts – 20 Nm**

**NOTE:** When torqueing up the underneath bolts, there is an important difference between imperial and metric chassis designs. The trackday rollbar for the metric chassis is attached using standard Allen key bolts. The imperial design however uses special shallow-headed hex bolts. It may be necessary to grind down the face of a socket to remove the radius, so that the full depth of the bolt head can be held by the socket hex.


9. Position trackday rollbar


10. Insert bolt from below


11. Tighten rear bolts


12. Tighten top bolts and job done

Finally, refit and torque up the dampers. Wheels back on and it's job done!