

## CASTOR CORRECTION KIT

MGB, GT, V8 & RV8



The MGB has always suffered from heavy steering.

The problem is caused by the castor angle.

This is even more exaggerated by modern tyres and increased grip from suspension conversions.

Furthermore, the problem was not addressed when the RV8 was introduced.

The MGB was designed with approximately 6.5 degrees of trailing castor. This was required with old fashioned tyres that had a slip angle of 10 or 11 degrees (the slip angle is the amount the tyre has to turn before it makes the car turn). Typically though, modern tyres have a slip angle of around 2 to 3 degrees so the result on the MG is that the steering loads up and gets increasingly heavy the harder you corner.

The castor angle built into all suspension designs is there primarily to self-centre the steering at speed. As modern tyres are far more directional, less self-centring force is required and therefore less castor is required.

Frontline's innovative castor wedges fit between the chassis and the front crossmember. They are designed to rotate the crossmember forwards by around 3 degrees and so reduce the castor angle.



The result gives a noticeably lighter steering which does not load up or get heavier when cornering. You also get more feedback through the steering and improved directional control.

### Castor Wedge Fitting Instructions

It is advisable to check the feel of the steering with the wheels off the ground and by physically turning one of the road wheels from side to side before any work is started. This will make you aware of any tight or binding suspension parts before you start and will also allow you to compare the feel after shimming the rack as any incorrect shimming will cause the steering to be tight and notchy.

1. With the front end of the car securely supported on a two post ramp or axle stands, remove the four bolts securing the steering rack to the crossmember so that the rack is free to move. This will need some shimming later when it is re-fitted.

2. From above remove all 4 nuts (one at a time) that secure the crossmember to the chassis and replace them with the new half nuts supplied, but only spin them on to within 4 to 5 threads of the end of the bolt. Now the crossmember can be lowered down but not actually detached from the car completely. The crossmember should be supported at all times during this process. **NOTE: Before removing the front nuts insert screwdrivers (min 6" long) into the small holes on the front of the crossmember, just below the steering rack and in line with the crossmember bolts. This is to prevent the bolts from dropping when the top nuts are removed. The screwdrivers can be removed when the new nuts have been fitted.**
3. With the nuts slackened raise the car or lower the crossmember so it hangs down leaving a small gap between the chassis and the crossmember.
4. From underneath separate the mounting bushes so that they are resting on the crossmember.
5. Cover the castor wedges with some silicone sealant or similar and slide them, from the front, between the crossmember and the chassis. The thin end should be towards the rear. (The silicone has 2 functions: firstly it helps the wedges to slide in and secondly it will prevent electrolytic corrosion taking place between the aluminium and the steel).
6. Line the front edge of the castors up with the front edge of the crossmember so they are even on both sides of the car.
7. From above, tighten the four nuts retaining the crossmember to the chassis and torque to approximately 45 to 55lb ft.
8. From underneath loosely position two of the steering rack bolts so that the rack is sitting on its mounts and visually check the gap that should now be apparent between the rack and the mounts.
9. There will be a small gap under the front of the rack mount and not at the rear. <sup>see note</sup> Place one of the washers supplied to act as a spacer between the rack and the mount. Then refit the four bolts securing the rack, using the new nylock nuts supplied for the front bolts.
10. Re set the tracking to 2 to 3mm toe in overall. This setting can vary depending on tyres and wheel sizes so use this as a base setting and be prepared to experiment if you feel it could improve further.
11. Check all fixings are secure before testing or driving the car.

**NOTE:** The rack must sit freely in place. It must not be pre loaded in any direction. If the gap is larger than one of the washers supplied, use more as required in both front and rear. When correctly fitted there should be no abnormal resistance in the rack movement. If there is abnormal resistance check the shimming of the rack to the crossmember again and if necessary slacken the steering column universal joint. Retighten when finished.

When first testing your new suspension we recommend you take time to get used to the difference. We suggest that trying out the limits of this, and any other product, should be done in a safe place. After the initial tests we strongly recommend re checking all fixing points and further tightening if required.

