

How To: Replace front struts

This procedure takes about 2 hours a side.

Warning – the procedures involve compressing the suspension spring. This stores a lot of energy, so if your jack is not secure in operations 8 & 9, or the spring compressors are not firmly attached, the spring can release and cause severe injury and damage.

Change BOTH struts – do not try to save money/time by changing only one side as this will unbalance the suspension components and cause handling problems.

If you can, take a picture of the “before” setup, so that you have an idea of how it should look when reassembled.

1. Loosen the main top nut (22mm) on the strut. This is the one you can see from under the bonnet. (If you leave this till you have taken the strut off you won't have any leverage on the nut and will have to reinstall it)
2. Jack up the car, and insert an axle stand under the subframe mount



3. Remove the wheel



4. Carefully apply some WD40 and remove the top locking nut (18mm) on the anti-roll bar link (where it attaches to the strut). It will not be possible to remove the link at the moment – see operation 8. You might find this comes off easily but it might not. If the nut just turns the threaded part, try using the hexagon hole in the end of the threaded part which takes an allen key. This still might still not work to stop the rotation of the threaded shaft. In my case the allen key stripped the flats in the hole, so I had to use mole grips between the link and the strut to hold the threaded shaft while removing the nut.



5. Remove the 2 (10mm) bolts holding the clips for the brake hoses and pad wear sensors – this is just to help improve access and allow you to remove/refit the parts



6. Remove the locking nut on the pivot clamp bolt (16mm) and remove the bolt.

7. Insert a spreader tool in the slot in the pivot, and open the pivot. There's a special tool for this, but I was able to use an impact screwdriver bit. Basically you need something that's thin enough to go into the slot, but which when turned through 90degrees forces the gap to open, and stays in place when you let it go.

8. Place a jack under the suspension unit with a piece of wood between the jack pad and the bottom pivot nut and jack up the suspension. In doing this you are compressing the spring. This will allow the anti-roll bar link to be removed from the strut.

9. Place spring compressors on the coils, and tighten the compressors. Use either a cup-type compressor (recommended) or two or three hook type compressors which you hook over the coils. Be SURE the compressor is firmly attached, or you risk injury and/or damage.

10. Loosen but don't remove the three torx screws attaching the top of the strut to the body.

11. Slowly lower the jack so that the spring compressors keep the spring from expanding. This will start to make the bottom of the strut come free from the suspension lower pivot.

12. Check to ensure the spreader tool is still in place and holding open the gap in the bottom pivot.

13. Remove the bottom of the strut from the bottom pivot. I found it was useful to put a jubilee clip tightly around the bottom of the strut and use this to help lever the strut out of the pivot.

14. Release the 3 torx screws at the top of the strut and lower the strut. You will probably need an assistant at this point, either to release the screws, or to hold the strut. Push the bottom of the strut inwards towards the body and backwards, until you can manoeuvre the top of the strut out from under the wheel arch.

15. Carry the strut to a clean work top where you can dismantle it. DO NOT DROP THE STRUT as this can cause the spring compressors to come off and dangerously release the spring tension.

16. DO NOT release the spring compressors – it's not necessary.

17. Remove the 22mm nut from the top of the strut and remove the washer and the top spring cup. This will allow the strut to be withdrawn from the "bottom" end of the spring.

18. Note the order of fitting of the components on the strut.

From the top you have:

a. 22 mm nut

b. Washer

c. Top spring cup

d. Washer

e. Rod protector (black plastic corrugated sleeve)

f. Bump rubber (white rubber)

The new strut comes complete with the bottom spring support.

Make sure you have the correct strut (i.e. the anti-roll bar connection is on the same side as the one you have just taken off)

19. Look at the bottom end of the strut. Old and new struts might be slightly different in detail design, but the same main features should be present. The bottom section (about 2 inches or so) is slightly narrower and has a locating tag on it. The reduced diameter section is designed to fit into the bottom pivot and the tag should fit into the slot which is held open by the spreader tool (see step 7).



20. Fit the strut components f, e, and d to the new strut, and insert into the spring.

21. Place the top cup (c) onto the spring and fit the top washer (b) and a NEW nut (a) (usually supplied with the new strut). Line up the bottom end of the spring roughly in place with the bottom spring cup which is part of the new strut. You can't get a tight fit at this stage because the spring's compressed.

22. Insert the new strut into place on the car – put the bottom end in first, behind the drive shaft and inboard of the brake pipe and pad wear cables, then manoeuvre the top of the strut into the wheel arch.

23. Call on some help, and lift the strut into place. Make sure the conical pip on the top of the top spring pad fits onto the corresponding hole on the body, and loosely insert one or two of the three torx screws. Do not tighten at this stage.

24. Ensure that the spreader is still holding the pivot slot open. Push the bottom of the strut into the hole in the bottom pivot. This might take a bit of levering and cursing. The jubilee clip trick (see step 13) might come in handy here too. On the LEFT side of the car you might find that the inboard end of the driveshaft slips out of the oil seal and causes a small transmission oil leak for a few minutes. This should slip back into place as you rebuild the suspension. Be sure that the bottom end of the strut goes fully into the hole in the bottom pivot, and that the “tag” lines up with the slot.

25. While the spring is still held by the spring compressor, move the bottom spring end into its proper place. The end of the spring should line up with the raised tag on the spring cap.

26. Place the jack and the wood under the suspension bottom pivot and raise the jack to re-load the spring. Check that the strut bottom end is fully in place and that the tag is still located in the slot, and that the bottom spring end is still in place.

27. Carefully slacken off the spring compressors and remove them.

28. Carefully lower the jack. As it goes down, fit the anti-roll bar link into the bracket on the strut.

29. Check that the strut bottom end is fully in place and that the tag is still located in the slot, and that the bottom spring end is still in its correct place.

30. Remove the spreader and fit a NEW pinch bolt and nut.

31. Fit a NEW nut on the anti-roll bar link – see details under step 4 if you have a problem keeping the threaded part from turning.

32. Refit the brake pipe bracket.

33. Fully tighten the 3 torx bolts at the top of the strut.

34. Fully tighten the centre strut nut.

35. Refit the wheel, remove the axle stand, and lower the car.