

**TF236: TERRAFIRMA 5" EXTREME 4 STAGE ADJUSTABLE DISLOCATION KIT****DEFENDER 110 / 130****FITTING INSTRUCTIONS**

1. Put the car into gear or park and apply the hand brake, loosen the front wheel nuts on one side, raise the vehicle on a trolley or bottle jack under the axle and then support the vehicle with an axle stand under the chassis. It's easier and safer to do this job one side at a time.
2. Remove the front wheel.
3. Remove the plastic cover on the inner wheel arch and expose the top of the turret.
4. Undo the nut on the bottom of the shock absorber remove all bushes and washers.
5. Undo the 4 nuts securing the shock absorber turret to the chassis bracket then Pull the turret and shock absorber out through the hole in the inner wing.
6. Undo the nut on the top of the shock absorber and then pull out of the turret removing all bushes and washers.
7. Gently lower the axle on the jack, the axle will lower the spring away from the chassis and the spring will become loose. Once this happens stop lowering the axle. Take care not to stretch the brake lines.
8. Push the standard turret securing ring down out of the chassis mounting. There should be enough of a gap at the top above the spring now you have lowered the axle, if not the spring will need to be removed.
9. Fit the new Terrafirma turret securing ring up over the new Terrafirma dislocation cone and then both up into the chassis mounting.
10. Gently raise the axle back up using the jack and ensuring the spring relocates over the dislocation cone and then into the top chassis mount.
11. Remove one of the bolts that secure the spring bottom seat to the axle.
12. Re-use this bolt to secure the new spring retaining plate (the plates are shaped to go around the shock absorber) to the spring seat and the axle case on top of the bottom most coil of the spring but do not fully tighten.
13. Remove the second bolt, then slide the spring retaining plate across into place and then refit the second bolt and then tighten them both to the manufacturers torque setting. (It is easier to remove the bolts one at a time to ensure the spring seat remains correctly located).
14. Fit the new shock absorber in through the new Skeleton turret, with the new washers and bushes in the correct order, then tighten the top nut.
15. Drop the new turret and shock absorber back through the hole in the inner wing, fit the washers and nuts and tighten down the turret onto the chassis bracket.

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16. Fit the upper bottom washers and bush, before pulling the lower part of the shock down through the spring seat. Then fit the lower bottom washers and bush and the securing nut, Tighten the bottom securing nut.
17. Re-fit the plastic cover on the inner wheel arch.
18. Remove the bolts that secure the bump stop to the chassis.
19. Bolt the bump stop spacer to the chassis.
20. Bolt the bump stop back on to the bump stop spacer.
21. Lower the car so the axle stand takes most of the cars weight but leave the jack under the axle to support the axle's weight
22. Clean all 3 mountings nuts and bolts for the radius arm and treat with a penetrating fluid if necessary.
23. Undo and remove the rearmost (chassis end) nut and mounting bush.
24. Remove the split pin, then loosen and remove the nut and washer securing the track rod ball-joint to the swivel housing. Then remove the ball joint from the tapered hole on the rear of the swivel housing.
25. Slacken and remove the nuts and bolts retaining the radius arm to the axle, It is recommended that if the bolts are worn they should be replaced.
26. Drop the radius arm down and out of the axle brackets and then pull the back end forwards through the chassis bracket.
27. Take your new castor corrected radius arm with the new bushes you have fitted in the axle end, fit the first of the chassis end washers bushes and then push the arm through the chassis mount from the front.
28. Lift the axle end up into the brackets and re-fit the bolts and nuts loosely.
29. Re-connect the track rod ball joint to the tapered hole in the swivel housing, tighten up the nut to the correct torque setting and then fit a new split pin.
30. Slide the second, rear most mounting bush then the washer and nut on from the back side of the chassis mounting and tighten the nut to the correct torque setting.
31. Tighten the two axle end mounting bolts up to the correct torque setting.
32. Refit the wheel, lower the car off of the axle stand and torque the wheel nuts correctly.
33. Repeat the procedure on the other side.
34. Put the car into gear or park and apply the hand brake, loosen the rear wheel nuts on one side, raise the vehicle on a trolley or bottle jack under the axle and then support the vehicle with an axle stand under the chassis. It's easier and safer to do this job one side at a time.
35. Remove the rear wheel

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36. Undo the top shock absorber retaining nut and pull the shock absorber off of the chassis mounting pin and remove all washers.
37. Undo the nut on the bottom of the shock absorber remove all bushes and washers.
38. Undo the 2 bolts which hold the spring retaining plate in place.
39. Discard the standard spring retainer if fitted.
40. Gently lower the axle on the jack, the axle will lower the spring away from the chassis and the spring will become loose. Once this happens stop lowering the axle and remove the spring
41. Place the cone onto the spring seat using the M10\*30 bolts and washers through the appropriate holes as indicated below and use a washer and Nyloc nut on the back (if applicable).
42. Re-seat the spring onto the spring seat, the re-location cone will now be inside the spring. Note: if using progressive springs (tighter coils at one end) ensure they are fitted upside down)
43. Place the large round disc on top of the upper spring seat, slide the long rectangular plate through the upper spring coil so as to sandwich the top coil and upper seat between the plates. Use the M10\*45 hex bolts with washers and Nyloc nuts to secure these. The spring should be clamped securely.
44. Undo the 3 bolts that hold the original top shock absorber mounting to the chassis and remove the whole assembly.
45. Using the 3 new bolts from the kit; fit the new TerrafirMa extreme long travel rear top shock mount. The hole for the shock absorber pin should face towards the front of the vehicle.
46. Fit the top of the new shock through the special TerrafirMa extreme long travel rear top shock mounts with the washers and bushes in the correct order, fit and tighten the securing nut.
47. Fit the upper bottom washers and bush, before pulling the lower part of the shock absorber down through the axle mounting bracket . Then fit the lower bottom washers and bush and the securing nut, Tighten the bottom securing nut.
48. Lower the car so the axle stand takes most of the cars weight but leave the jack under the axle to support the axle's weight.
49. Clean all mounting nuts and bolts and treat with a penetrating fluid if necessary.
50. It is usually easier to remove the 3 smaller nuts and bolts that hold the front triangular bush to the chassis mounting that the arm in-turn bolts through.
51. Undo and remove the nut and bolt retaining the radius arm to the axle, it is recommended that if the bolt is worn it should be replaced.
52. Carefully drop the radius arm down and out of the axle bracket and then remove the arm complete with the front triangular bush back through the chassis bracket.

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53. Clean the flat of the chassis mounting surface and then bolt the new mounting for the Johnny jointed end up to the chassis using the 3 nuts and bolts and torque to the correct setting. Make sure you get this the correct way around.



54. Ensure the rear axle is centralised in the rear wheel arch and then measure the distance from the centre of both mounting bracket holes to get the length your new adjustable arm needs to be. Make a note of this to ensure both sides are the same length.
55. Slacken the lock nut at the Johnny jointed end of the arm and then wind the Johnny joint in or out to get the distance between hole centres the same as the measurement you have just taken. Re-tighten the lock nut.
56. Take your new Johnny jointed rear radius arm, adjusted to the correct length with the new bush you have fitted into the axle end, and place the Johnny joint into the bracket you have just bolted to the chassis.
57. Lift the axle end up to the bracket and re-fit the bolt and nut to the correct torque setting.
58. Refit the wheel, lower the car off of the axle stand and torque the wheel nuts correctly.
59. Repeat the procedure on the other side of the car.



**NOTE – For long travel (+2" and longer) shocks it is an advantage to remove the metal bush cups found on post 1994 Defenders and Discovery rear axles, this will allow unrestricted movement of the lower shock mount.**

**Allowing the shock bush washers to contact the metal bush cup can cause premature shock failure.**

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Image left is a top view of the cone fitted on the **LH side** of the vehicle, note which holes are used.



Image left is a top view of the cone fitted on the **RH side** of the vehicle, again note which holes are used



Note: the cone is designed to sit towards the rear outside of the spring, this aids relocation.



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