



TF247: TERRAFIRMA MEGA SPORT 11" TRAVEL SHOCK COMPETITION KIT
DEFENDER 90, DISCOVERY 1 & RANGE ROVER CLASSIC
FITTING INSTRUCTIONS

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.

Remove the front wheel.

Undo the nut on the bottom of the shock absorber remove all bushes and washers.

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.

Compress the shock absorber upwards to allow the spring to be removed. Undo the 4 nuts securing the turret and then pull the shock absorber and turret up out of the way.

Remove the spring seat retaining bolts in the axle mount.

Fit the new Terrafirma turret securing ring up over the new Terrafirma dislocation cone and then both up into the chassis mounting.

Bolt the turrets to the chassis with the flat bit of the turret base pointing inwards. The side plates of the turret are angled, it doesn't matter which side you wish to mount them on however the position dictates which way the reservoir pipe exits the turret, so decided where to mount your reservoir before bolting them down. You may need to cut a section out of the inner wing for these to mount correctly.

Place the spring on the spring seat and mount the lower shock mount with the spring retaining tags pointing front to back rather than side to side. This mount holds both the shock and spring in place. Using an M16 Nyloc with washer tighten down the mount to the axle.

The turret has five mounting holes at one inch increments this is to allow a wide range of positions depending on which shocks and lift you have on your vehicle. If you are using an 11" Travel shock with a 2" lift then use the top hole, if you are using a 9" travel shock with 2" lift use the middle hole.

Bolt the top of the shock into the turret using the M16x140 bolt with washers and Nyloc. You must also put an aluminium spacer either side of the shock top eye. The sides may need to be manipulated to fit the shock as the welding process can close the side up.

At the bottom, use the M16x80 bolt, you can usually get this through the gaps between the spring coils, tighten fully.

You can either mount the reservoir near the turret on the body or the turret sides have two holes down each edge which the reservoir mounting plate can attach to. It is better to mount the reservoirs pointing up for easy access.

Different vehicles weigh differently and handle differently. Terrafirma Mega Sport shock absorbers come pre gassed to suit the average Land rover however you may wish to fine tune these.

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Refit the wheel, lower the car off of the axle stand and torque the wheel nuts correctly.

Repeat the procedure on the other side.

NOTE: Defender 90/110 - some modification of the inner wings is required!

NOTE: Discovery 1 /Range Rover Classic - extensive body modifications are required!

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.

Remove the rear wheel.

Remove the old shock absorber and mount. If the axle still has the cups on for the shock absorber bottom bushes to sit in then these need to be removed (try drilling the spot welds and using a sharp chisel).

The rear turrets are handed and identified by the large 'L' shape gusset should be at the rear of the mount. Bolt the turrets to the chassis using the M10x120 hex bolts. Make sure you put the spreader on the inside of the chassis rail.

The turret has five mounting holes at one inch increments this is to allow a wide range of positions depending on which shocks and lift you have on your vehicle. If you are using an 11" Travel shock with a 2" lift then use the top hole, if you are using a 9" travel shock with 2" lift use the middle hole.

Offer up the top shock mount clamp to the required position and secure loosely using the M10x30 Hex bolts.

Place the top of the shock into the aperture and secure with an M16x80 Hex bolt. Ensure the 6mm spacer is fitted between the shock top eye and the main mount, otherwise the shock body will foul the mount on full articulation. Tighten the M16 and M10 bolts fully.

The lower shock mount needs to be bolted to the lower axle shock mount, this must be done with the shock mounting holes running from left to right NOT front to back.

Position the lower shock mount into the lower mount using a M16x80 Hex bolt .

Fully tighten all bolts.

Using the supplied reservoir mounting plate attach this to a position nearby and secure the reservoir fully. Make sure you can access the valve in case you need to re-gas them.

Different vehicles weigh differently and handle differently. Terrafirma Mega Sport shock absorbers come pre gassed to suit the average Land rover however you may wish to fine tune these.

Refit the wheel, lower the car off of the axle stand and torque the wheel nuts correctly. Repeat the procedure on the other side.

NOTE: Defender 90 - Not hi-cap!

NOTE: Discovery 1 /Range Rover Classic - extensive body modifications are required!

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Firstly you need to fit the chassis plate which fits as shown below. On the driver's side, you will need to remove the four bolts out of the steering box, don't worry it won't fall off.



Fit the chassis plates with the vertical plate towards the back of the vehicle. Attach this using the two rear bolts only (M12x100 with washers) align the plate using the original bolts through the front holes and fully tighten the new rear bolts. Remove the front alignment bolts.

Offer the appropriate bump-stop mount up. If you still have the inner wings you will need to trim the area to allow the bump-stop and mounts to sit flat on the mounts, hence mark the area first and check twice before cutting.

Using 2x M12x110 bolts and washers loosely position the bump-stop mount. Through the two holes pointing rearwards fit 2x rear M10x30 bolts with a washer either side of the two plates and M10 Nyloc nut, fully tighten these.

Now fully tighten the front two steering box bolts.

The bump-stop tube has been zinc plated for protection however we recommend you use some oil, copper slip or similar to assist removal of the bump-stop in the future.

Fit the bump-stop with appropriate spacers, as a guide a good place to start is 1 spacer for each inch of lift, but this depends on your suspension system. Once positioned and using the black bolts with attached nuts, fully tighten this. Remember these bolts only hold the bump-stop in place and they do not need to be excessively tightened.

Much the same as the driver side but as you don't have the captive threads of the steering box, we have provided a spreader plate and appropriate M12 Nyloc nuts and washers.

The strikers locate on the outside of the two radius arm bolts and face inwards. Depending on how your bolts have been fitted it may be as simple as removing the nuts, fitting the plate then refitting and tightening the nuts. Or you may need to remove the bolt if it has been fitted from outside in. either way ensure all nuts are tightened fully after fitting.

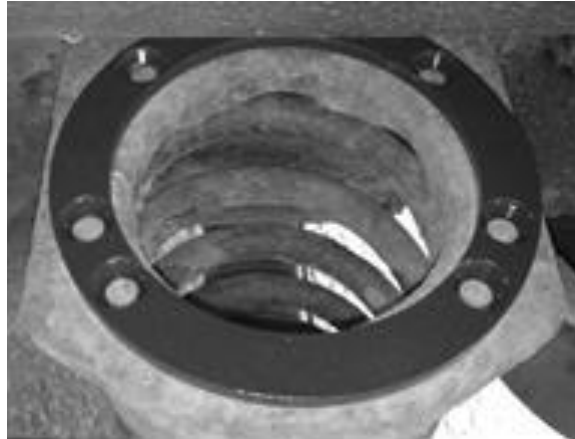
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FOR THE REAR:

Remove the spring, spring seat and any spring retaining devices fitted.

Take the round ring with the countersunk holes in it and place on top of the spring mount. There are six holes in the mount, position the ring with the four holes outwards and align them.



Mark the four holes on the outer edge of the ring. Drill these through with a 9mm drill.

The inner holes can only be accessed from underneath the spring mount, so using the countersunk bolts mount the ring underneath the spring mount (with countersunk holes downwards). Use all four bolts to locate the ring and nip them up.

Mark the inner holes and either drill though using the ring as a guide or remove the ring to drill.

Dress the holes and ensure no burrs are present as these will prevent the plate sitting flat.

Place the bump-stop mount on top of the spring mount and locate in-line with the drilled holes.

Refit the retainer ring underneath the mount and fully tighten using the M8x30 countersunk bolts with washers and nuts provided.

Using light oil, copper ease or similar, coat the inside of the bump-stop tube to make it easier to remove in the future.

Fit the bump-stop into the tube, using the appropriate steel spacers. As a guide two rings for a 2" lift, but this will depend on your suspension system and height.

Using two M10x50 hex bolts with washers and nuts tighten the bump-stop in place, these do not need to be excessively tightened as these don't see any strain and only hold the bump-stop in place.

Clean all 3 mounting nuts and bolts for the radius arm and treat with a penetrating fluid if necessary.

Undo and remove the rearmost (chassis end) nut and mounting bush.

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.

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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.

Drop the radius arm down and out of the axle brackets and then pull the back end forwards through the chassis bracket.

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.

Lift the axle end up into the brackets and re-fit the bolts and nuts loosely.

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.

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.

Tighten the two axle end mounting bolts up to the correct torque settings

Clean all mounting nuts and bolts and treat with a penetrating fluid if necessary.

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.

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.

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.

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.



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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.

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.

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.

Lift the axle end up to the bracket and re-fit the bolt and nut to the correct torque setting. Refit the wheel, lower the car off of the axle stand and torque the wheel nuts correctly. Repeat the procedure on the other side of the car.



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