

REVINGTON

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FITTING INSTRUCTION FI009 FOR REVINGTON TR REAR TELESCOPIC DAMPER CONVERSION WITH EITHER [SUPERPRO](#) POLYURETHANE or SPHERICAL BEARING LOWER JOINT TR4A IRS-6 PART NO. RTR3003SPK/RJ1K/RJ2K

This set of instructions covers three installations. The installations are common except for the type of lower damper bush employed.

Please read all of these instructions before commencing work.

WARNING 1: *If your chassis is weak in the upper spring location area do not commence work until satisfactory repairs have been made.*

WARNING 2: *This damper conversion is intended for use primarily with uprated springs of at least 420 lb/in rate. When lower rate springs are used, the dampers must be set to an appropriate lower setting otherwise serious damage to the spring top support may occur.*

*Remember that the damper is only present to prevent the spring from developing sinusoidal motion, in other words, to allow only one motion of the spring against the force acting upon it. **THE DAMPER IS NOT INTENDED TO STIFFEN THE SUSPENSION.** If these dampers are fitted with weak springs then they will be doing the job of the springs, hence the potential damage to the top of the spring support as the damper pin top tries to punch its way out!*

Unless stated otherwise these instructions apply to one side only. The instructions are the same for both sides.

Preparation

Jack up the rear of the car, place on axle stands and remove both rear road wheels. Place a jack under the trailing arm and take the weight. Undo the existing damper link where it attaches to the trailing arm. Remove two bolts securing the damper and remove this assembly complete.

Lower the jack and the spring should be free enough to remove. If not, it will be necessary to remove the drive shaft and/or hub unit to allow the trailing arm to be lowered sufficiently. Remove in accordance with the workshop manual.

Remove and retain two spring insulators. If these are in poor condition replace with [Superpro](#) polyurethane items part # SPF2327K.

When refitting the springs there is an opportunity here to level a car that sits with a list, as these spring insulators are available in +5mm thickness too. They can be fitted in any combination, i.e. two standard, one +5mm upper or lower with one standard in the other position, or with one +5mm in both top and bottom positions. Please order part # SPF2327-5K for the +5mm piece.

Be sure to clean out the base of the trailing arm and the upper support saddle in the chassis.

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Damper top attachment plate Tack weld the top plate in place with the off centre hole outer most, and with the plate set in the bottom of the top spring locator dish (offered in from the top). This is a compromise as the top pin of the damper should ideally be in the centre of the spring. Unfortunately, on standard cars, the lip of the wheelarch is in the way. Should your car be non-standard, or if you are prepared to move the lip, you can insert a similar plate with the hole centrally placed.

This is important: if you are fitting this kit with the body removed, and the hole in the top plate is set anywhere else other than outboard, the body will foul the top of the damper when you come to mate the body with the chassis.

If you are content to alter the body a little then a top plate can be made and welded in with the hole centralised. For reference the area of the body what needs altering to accommodate the pin top of the damper is 114mm (4.5inch) from the vertical lip of the wheelarch / rear floor seam.

Tack-weld the triangular strengthening supports to the sides of the vertical spring support and the top spring support. Note that these are different sizes and should be offered up and tack welded in place with the larger one forward. The trailing arm should be moved up until the trailing arm/bump stop/body meet one another before welded on fully to ensure they are correctly positioned and cannot foul the trailing arm and especially the brake pipe.

See part number RTR3003RJ1K on our website (<http://www.revingtontr.com>) to view pictures of this. Type in RTR3003 in the 'Enter code or description' box and press 'Go!' This will take you to all versions of the kit. The 'MORE' link will enable you to view related pictures.

Using a half round file open out the rough cast hole in the base of the spring pan to 50mm diameter or large enough to ensure the body of the damper will not touch the trailing arm at all throughout its travel.

From the kit take two horseshoe plates and place these in the base of the trailing arm where the spring would sit.

Superpro polyurethane bush type PART NO. RTR3003SPK

Assemble the *Superpro* polyurethane bush to the damper lower eye using grease supplied. This can be achieved using a vice and two different size sockets; one small to push the bush in and one larger then the flange of the bush to allow it to expand into on exiting the other side of the eye. Copiously grease the inside of the bush and the sleeve and insert the sleeve into the bush. Pass the damper through the trailing arm from the top, eye end first. From below fasten the damper mounting bracket loosely with a 1/2" bolt, washer and nyloc nut, with the flat face of the bracket upper most.

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Spherical bearing type PART NO. RTR3003RJ1K/RJ2K

Assemble a circlip to one side of the lower eye. Press in the spherical bearing. This can be done in a vice using a socket as a mandrel to ensure the bearing is pressed home on the circlip previously fitted. Fit the second circlip. It is imperative that the circlips are correctly seated in their grooves.

A rubber boot is now fitted, part # RTR3490. The fitting of these boots will assist in keeping the bearings in good condition for longer. Fitting these looks to be an impossible task but can be done as follows: -

Ease two fingers into the 'neck' of the boot and stretch the boot open as far as possible without tearing it. Moisten the end of the spherical bearing end of the damper and feed the boot over. Align the two 'arm holes' of the boot to the hole in the bearing. Fill the boot with general-purpose grease. Insert a bearing spacer, small diameter first, into each side of the boot so that the spacers are held in place by the boots' 'arm holes'

Pass the damper through the trailing arm from the top, eye end first. From below fasten the damper mounting bracket loosely with a 1/2" bolt, washer and nyloc nut, with the flat face of the bracket upper most.

Common assembly

Whilst supporting the damper, position the bracket centrally and aligned in such a way that the lower damper pivot is parallel with the trailing arm swivel bush pivot line (TR4A IRS type). Where the trailing arm has a cast in bulge (TR5-6 type), the bracket will be positioned with the gap in the bracket straddling the bulge. This places the two axis not quite parallel but the angular movement in the lower swivel joint will accommodate this.

It may be necessary at this stage to further relieve the trailing arm aperture to allow clearance for the damper body. 1-2mm clearance throughout its travel should be sufficient.

Pilot drill from below two 5mm holes through the trailing arm and check that the top plates will line up. Secure the lower plate, trailing arm and top plates with 2 off 2BA screws and nuts provided, drill the remaining pilot holes and once again check lining up. Finally drill through from the top plate 6.35mm (1/4") progressively two at a time, each of the six fixing holes. After drilling each pair it is good practice to insert and nip up two 1/4" UNF CKS screws with plain nuts to help alignment, finally removing the 2 x 2BA screws to allow drilling the last two holes.

Now fit the damper to the upper mounting, without the spring or factory fitted bump stop installed and ensure that the arrangement works without undue side load throughout its complete travel.

The damper has a bump stop fitted (marked 2494) not visible unless the shroud is removed. This **must not** be left out under any circumstances. Although these are only safety devices to protect the foot valve, the factory fitted bump stop must perform this task, otherwise the top spring support will be damaged.

For reference the rebound stop is internal in the damper.

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Pin top assembly

Fit the top *Superpro* polyurethane cushions as follows with the dust shroud removed. Lower bush marked '201' with the collar uppermost, with the lower tapered face going down onto the washer welded on to the damper stem. No other washer is used below the lower bush. Push the damper threaded stem through the top plate tacked in place in the tower earlier. Fit the upper bush marked '2495' above the top plate over the protruding stem. Next fit one small cup washer and one plain half nut.

Tighten so that the gap between the under face of the cup washer and the plate welded on to the chassis bridge is 8mm-9.5mm.

Move the trailing arm up and down a few times over its entire travel to ensure full and free movement, i.e. no interference with triangular strengtheners or trailing arm aperture. 1-2mm clearance all round is ideal. The trailing arm may again need to be relieved to achieve this.

Check also that with the trailing arm fully upward, the factory fitted bump stop would come into effect at the same time or just before the damper bump stop. If possible remove the cars bump stop so that the damper can be seen to close up more than would be allowed by the cars bump stop.

If this is not so, pack out the cars bump stop.

Now move the trailing arm up and down once again over its entire travel to ensure that all the preliminary checks and adjustments are complete.

Damper adjustment

To facilitate adjustment of the damper a small hole needs to be drilled through the trailing arm to enable a screwdriver (hex key on later dampers) to be inserted. This hole is drilled along the same axis as the mounting bolt. Please refer to Drawing # JNR0202. (Page 5)

Final Assembly

Remove the damper and reinstate the damper shroud and the cars' bump stop.

When fully satisfied with the installation, complete welding of the upper damper mount to spring support and triangular strengtheners. Paint all unprotected areas.

Remove the bracket and plates sandwiching the trailing arm and clean out the holes. Remove all swarf and prepare for final assembly. Finally install with nyloc nuts provided.

Pass the damper back through the trailing arm and attach to the bracket with the bolt, washer and nyloc nut. (Don't forget the spacers; Spherical bearing type only).

Tighten the lower bracket attachment nuts, along with damper lower pivot bolt; ensuring a plain washer is employed under the nyloc nut.

Please read manufacturer specific instructions before finally fitting the damper paying particular attention to the need for the damper adjustment to be suitably set. For fitment with our RTR3101REAR 450 lb/in springs (black with red & yellow stripes) we recommend setting the adjustment half way as a starting point.

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Refit the spring with its insulators top and bottom. At this stage the damper will be attached at the bottom only. Fit the spring over the damper and push the assembly up to meet the top plate. Refer to '**Pin top assembly**' above to reinstall the pin top cushions.

Secure the pin top mounting with one plain half nut, one lock half nut, compressing the bushings so they are held firm but without over tightening, compressed to the dimensions stated above.

Refit the drive shafts and road wheels. Torque the road wheel nuts to manufactures recommendations. Road test the vehicle to ensure the system is operating satisfactorily.

Adjust the shock absorbers, harder and softer to experience the difference and then set them to suit your driving style.

RELATED INFORMATION

Readers may be interested in viewing the [Superpro](http://superpro.eu.com) websites for other polyurethane suspension products. Superpro Europe Ltd. is at superpro.eu.com and the Australian manufactures' site is superpro.com.au

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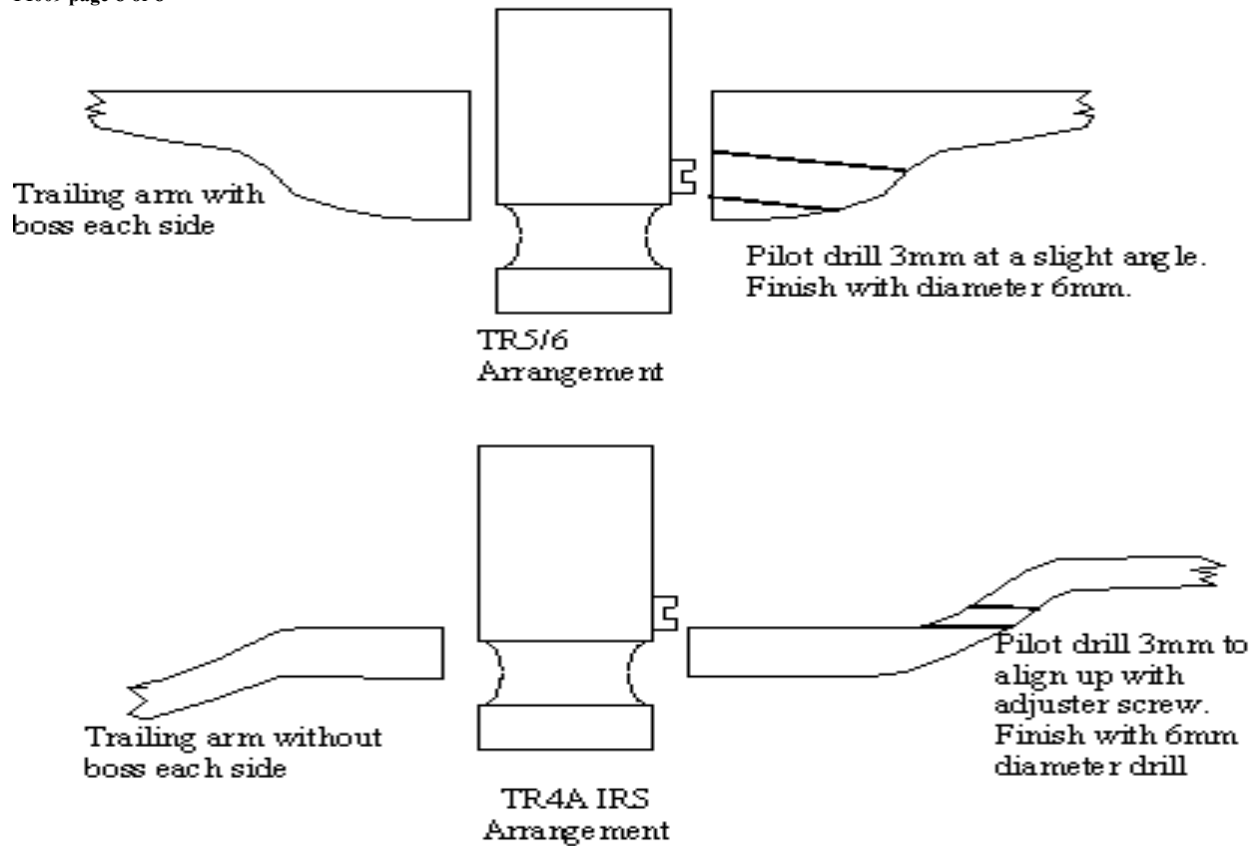
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JNR2002 : Fitting instruction FI0009 :
Drilling trailing arm for access to
adjusting screw

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