



# OLD MAN EMU FITTING INSTRUCTIONS

## TOYOTA PRADO 150 SUSPENSION SYSTEM

### WARNING

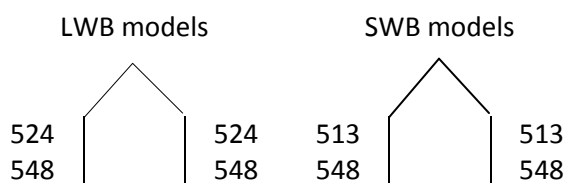
- ◆ This product must be installed exactly as per these instructions using only the hardware supplied.
- ◆ In the event of damage to any suspension component, contact your nearest authorised ARB stockist. Repairs or modifications to the suspension system components must not be attempted.
- ◆ Do not use this product for any vehicle make or model, other than those specified by ARB.
- ◆ Do not remove labels from suspension components.
- ◆ This product or its fixing must not be modified in any way.
- ◆ The installation of this product may require the use of specialized tools and/or techniques
- ◆ It is recommended that this product is only installed by trained personnel
- ◆ These instructions are correct as at the publication date. ARB Corporation Ltd. cannot be held responsible for the impact of any changes subsequently made by the vehicle manufacturer
- ◆ During installation, it is the duty of the installer to check correct operation/clearances of all components
- ◆ Work safely at all times

**Note:** These fitting instructions should be read in conjunction with the vehicle workshop manual or torque reference chart.

### RIDE HEIGHTS REFERENCE

Manufacturer's specified ride heights, measured from **centre of hub to guard**, as published by the Australian government in Road Vehicle Descriptor documents. RVD's can be accessed on the web via these sites:

<http://myrta.com/rvd/welcome.do> or [http://rvcs-prodweb.dot.gov.au/pls/wwws/pubrvcs.Notify\\_Search](http://rvcs-prodweb.dot.gov.au/pls/wwws/pubrvcs.Notify_Search)



# FITTING REQUIREMENTS

## HAND TOOLS REQUIRED

Ring open end spanner set metric  
Socket set metric  
Ball joint puller  
Lever bar  
Paint Marker  
Clamp / Multi Grips

## OPTIONAL HAND TOOLS

Ratchet spanners metric

## WORKSHOP TOOLS REQUIRED

Vehicle hoist or jack and axle stands  
Spring compressor  
Tape measure  
Trolley jack  
Rubber Grease

## OPTIONAL WORKSHOP TOOLS

Vehicle hoist  
Impact driver  
Axle stands

## SAFETY EQUIPMENT REQUIRED

Protective eyewear



Hearing protection



**Note:** 'WARNING' notes in the fitting procedure relate to OHS situations, where to avoid a potentially hazardous situation it is suggested that protective safety gear be worn or a safe work procedure be employed. If these notes and warnings are not heeded, injury may result.

# GENERAL CARE AND MAINTENANCE

By choosing Old Man Emu suspension, you have bought a product that is one of the most sought after 4WD products in the world. Your suspension system is a properly engineered, reliable, quality accessory that represents excellent value. To keep your suspension in original condition it is important to care and maintain it following these recommendations:

- As part of any Pre Trip Preparation, or on an annual basis, it is recommended that a thorough visual inspection of all components is carried out. Make sure that all bolts and other components are torqued to the correct specification. Also check that all bushings, mountings, and fasteners are free of damage. Replace any components as necessary. This service can be performed by your local authorized Old Man Emu licensed workshop.
- Vehicles fitted with leaf springs require leaf spring liners and polyurethane bushes to be greased as part of the annual regular maintenance. Follow instructions in Old Man Emu suspension maintenance guide for detailed procedures.

## Front Suspension Fitment



Before starting, check all part numbers match invoice, Old Man Emu catalogue, or application guide.

Measure hub to guard heights and note rim diameter.

Fill out warranty form.

Note accessories already fitted.



Raise front of vehicle and remove front wheels.

Tools:  
Jack and axle stands or vehicle hoist  
Wheel brace or 21mm socket



Remove split pin and nut that secures front steering arm ball joint.

Loosen taper on ball joint with ball joint puller.

Tools:  
Pliers  
19 mm socket / spanner  
Ball joint puller hammer

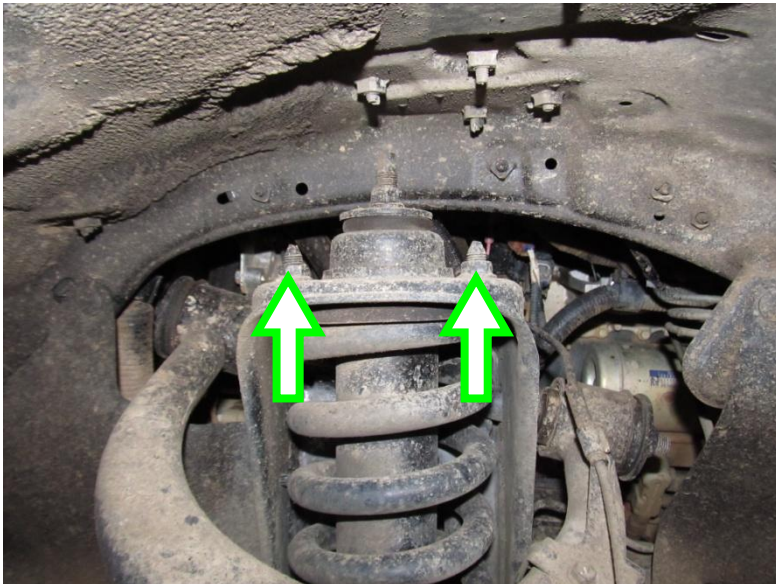




Remove sway bar nut and remove link from mount.

At this stage complete this step on both left and right hand sides of the vehicle.

Tools:  
17mm spanner or socket



Remove 3 nuts that secure strut assembly.

DO NOT loosen centre nut that secures the damper to the top hat.

Tools:  
14mm spanner (ratchet spanner is best)



Remove nut that secures strut assembly to bottom arm.

Tools:  
19mm spanner  
19mm socket & ratchet or rattle gun



Remove sway bar saddle bolts.

Complete this step on both left and right hand sides of the vehicle.

Remove under body pan to increase access if required.

Secure sway bar so that the links are away from the suspension arms.

Tools:  
17mm socket and ratchet



Using Lever bar between chassis and upper arm as shown pull down upper arm to help remove bottom strut bolt.



Remove strut assembly.





Note alignment of studs on top hat and eye direction. Mark eye position with paint marker.

When assembled the OME damper must be oriented in the same manner.

Tools:  
Paint Marker



Using a strut compressor disassemble the strut assembly.

Tools:  
Strut compressor  
17mm spanner  
8mm spanner



Note components that make up the OE strut assembly.

The top hat, bushing and washers must be retained to be fitted with the Old Man Emu components.



Check condition of all bushes including bushing bonded to underside of top hat, replace as necessary.



New Old Man Emu parts supplied are the damper, spring, spring seat, top nut and washer.



Fit the spring seat as shown.





Fit the OE washer to the OME damper as shown.



Fit OE top hat and OME spring to spring compressor.



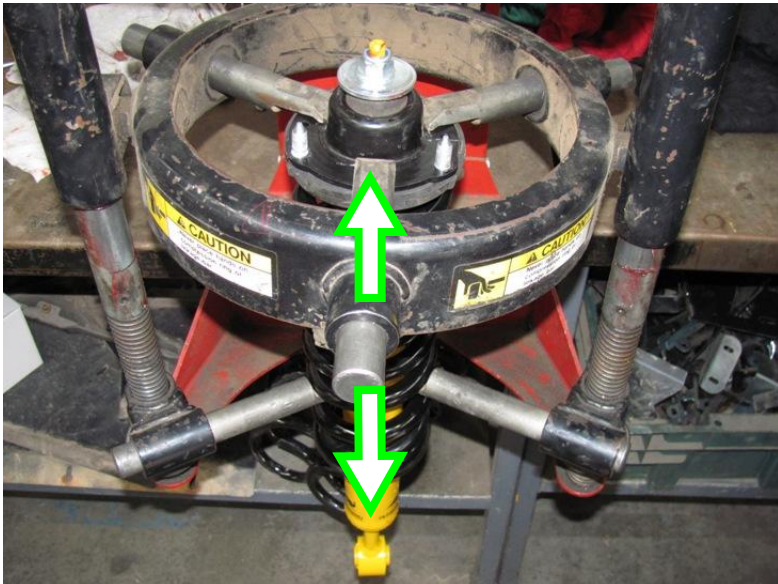
Compress spring such that strut can be pushed all the way into the top hat without the spring touching the spring seat.

Once compressed fit Old Man Emu damper.





Align spring seat with the end of the coil.



Align damper bottom mount and top hat studs as per OE.

Fit OE bush and washer to the top and secure with new nut supplied.

Tighten until nut contacts shoulder on stud.

Tools:  
19mm spanner  
8mm spanner



Refit strut assembly.



Hold strut assembly in place with one or more nuts secured finger tight.



Use a lever bar in top arm as before to aid alignment of the bottom strut mount in the lower arm.

Tools:  
Lever bar



Using screwdriver in the bottom eye, align the bottom shock mount bushing.

Tools:  
Lever bar  
Screwdriver

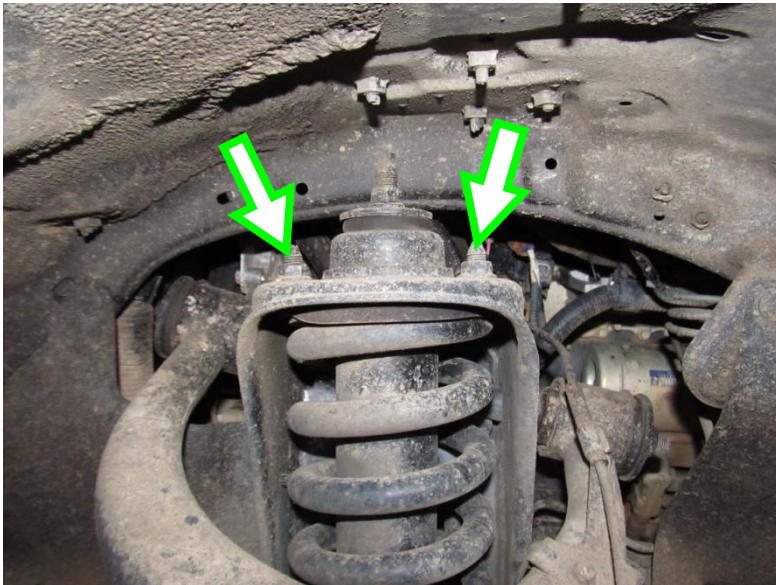




Secure with OE nut and bolt finger tight.

This lower nut and bolt will be tightened to specified torque when the vehicle is back on the ground and suspension has settled at ride height.

Tools:  
19mm spanner



Replace and tighten all three top hat nuts.

Torque nuts to manufacturer's specification.

Tools:  
14mm ratchet spanner  
14mm socket and torque wrench



When both left and right hand sides have been fitted, refit and tighten sway bar links and saddles.

Torque to manufacturer's specification.

Replace under body pan if removed.

Tools:  
17mm spanner or socket  
14mm spanner or socket  
Torque wrench



Fit and tighten ball joint nut.

Torque nut to manufacturer's specification.

Secure with split pin.

Check all fasteners tightened then re fit front wheels.

Tools:

17mm spanner or socket

Wheel brace or 21mm socket

Torque wrench



## Rear Suspension Fitment



Before raising vehicle, loosen the top nut on the rear shock absorber. Prevent shock from spinning by using 19mm spanner on the flat section below the top stud.

**DO NOT** completely remove nut at this stage.

Tools:  
17mm spanner / socket  
Clamp / Multi Grips



Raise vehicle on hoist and support rear wheels with axle stand.

If you do not have a hoist use trolley jacks.

Tools:  
Vehicle Hoist  
Axle Stands



Remove rear sway bar saddle bolts. Once removed let unhook saddles from axle and let sway bar sit on top of differential housing away from rear axle.

Tools:  
14mm spanner or socket



Remove brake line and ABS sensor cable retainer brackets from the axle housing.

There are two brackets to remove, mounted on the upper control arm mount on each side of the axle.

Tools:  
12mm spanner or socket

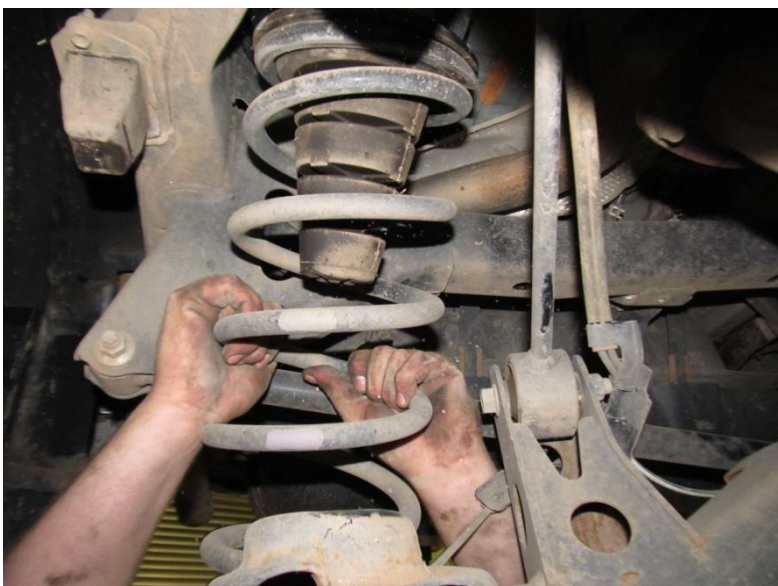


Remove bottom shock absorber bolts then finish removing top mount nut

Remove shock absorber.

Retain bottom bolt and washer.

Tools:  
17mm spanner or socket



Remove Rear Spring assembly.





Before fitting measure and note free height of both left and right hand springs.

Stand the spring, with the flat side down on a flat and level surface.

Measure the distance between the ground and the top point of the spring wire.

Check the measurement against the specification chart to ensure correct spring is used.



Note components of rear spring assembly.

Retain factory bump stop for fitment to Old Man Emu Spring



Fit factory bump stop to new Old Man Emu spring in original position as shown.



Fit new Old Man Emu spring assembly.

Some vehicles may require panhard rod to be loosened to allow enough axle drop to remove springs.



Align spring assembly on bottom seat. There should be approximately 15 mm between the end of the spring and the spring seat.



With another person's assistance, whilst slowly lowering vehicle, relocate spring to spring seat in original position.





Re hook sway bar saddles to the axle housing by pulling sway bar towards axle.



Replace sway bar saddle bolts and torque to manufacturer's specification.

Tools:  
14mm socket and ratchet or spanner  
Torque Wrench



Unpack and assemble new Old Man Emu shock absorber.

Press lower eye bushing into bottom eye of shock absorber.



Noting correct position of new shock absorber hardware, fit retainer washer and bushing as indicated to shock absorber top shaft.



Assemble OME661 stone shield kit according to instructions and slide loosely over lower shock absorber shaft.



Install new washer from Old Man Emu shock absorber on bottom shock absorber mount.





Compress new Old Man Emu shock absorber and fit to the bottom mount.

Lubricate inside of bushing and mounting stud with grease to aid installation

As shock extends guide the top stud of shock absorber so that it is aligned correctly with the top shock absorber mounts.



Fix new shock absorber to mount using original nut and washer.

Fasten securely with socket and ratchet.

Torque to manufacturer's specification.

Tools:  
17mm socket and ratchet or impact driver  
Torque wrench



Align stone shield to cover the front of shock absorber. Ensure that lower mount bushing and washer is completely covered.

Fasten nuts with socket and ratchet.

Refer to stone shield fitting instruction for more information.

Tools:  
10mm socket and ratchet or impact driver



Lower vehicle to partially compress suspension.

Fit upper shock absorber locating washer, bush and retaining washer then secure with nut.



Tighten using 19mm spanner.

Tighten until nut contacts shoulder on shock absorber stud.

Use 19mm open end spanner on flat section below stud to stop shock absorber from spinning.

Repeat shock absorber fitting for both sides.

Tools:

19mm socket and ratchet or spanner  
19mm open end spanner



Refit brake line and ABS sensor cable retainer brackets removed earlier to original positions

Torque bolts to manufacturer's specification.

Tools:

12mm spanner or socket  
Torque Wrench



## Post Fitment



Bounce the front a couple of times to cycle the suspension.

Tighten lower front strut mount bolts.  
Torque bolt to manufacturer's specification.

If panhard rod was loosened earlier torque bolts to manufacturer's specification

Tools:

19mm Spanner, 19mm socket and ratchet or impact driver, Torque wrench



Carry out wheel alignment to manufacturer's specifications.

Road test including brake check.

On return measure ride heights and check all bolts are secure.

Complete and submit warranty form.