INSTALLATION GUIDE

TOYOTA PRADO 150 Series

2009+

Suspension Installation Instructions

NOTE: Occupational Health & Safety procedures must be observed at all times.

IMPORTANT: *Installations should only be done by a qualified person and it is the responsibility of this person to ensure correct fitment.*

181017

Product			Part No.	Qty Req
FRONT SUSPENSION				
SHOCK ABSORBER				
Nitro Gas Strut			**12750GR**	2
Foam Cell Strut			**24750FE**	2
Foam Cell Pro Strut			**45750FE**	2
• Height adjustable with Ironman 4x4 Strut Trim Packers				
COIL SPRINGS	Est. Lift	Additional Load		
Performance Petrol	45mm	0 - 50kg	**TOY065B**	1
Constant Load or Diesel	45mm	50 - 110kg	**TOY065C**	1
STRUT MOUNTS				
Steel Strut Top			**ISST001**	2
TRIM PACKERS				
5mm Strut Trim Packer	(Nitro Gas / Foam Cell)		**HILFR05 / HILFR05F**	2
10mm Strut Trim Packer	(Nitro Gas / Foam Cell)		**HILFR10 / HILFR10F**	2
15mm Strut Trim Packer	(Nitro Gas / Foam Cell)		**HILFR15 / HILFR15F**	2
• ONLY Compatible with Ironman 4x4 Struts (except Pro), lift height subject to 1:2 motion ratio. Unnecessary fitment may lift vehicle too high				
SPACER KIT				
Sway Bar Spacer			**1198K**	1
REAR SUSPENSION				
SHOCK ABSORBER				
Nitro Gas			**12682GRC**	2
Foam Cell			**24682FEC**	2
Foam Cell Pro			**45682FEC**	2
COIL SPRINGS	Est. Lift	Additional Load		
Performance SWB	45mm	0 - 300kg	**TOY056A**	1
Performance LWB	45mm	0 - 300kg	**TOY056B**	1
Constant Load	45mm	300kg - GVM	**TOY056C**	1
COIL SPACER				
Polyurethane 20mm			**LCPR20**	2
Polyurethane 25mm			**LCPR25**	2
SWAY BAR LINK				
Extended Sway Bar Link			**SBEXT006**	2

SUSPENSION KIT

Performance SWB Petrol w/ Gas Shocks	**TOY065AKG**
Performance SWB Petrol w/ Foam Cell	**TOY065AKF**
Performance SWB Petrol w/ Foam Cell Pro	**TOY065AKP**
Performance SWB Diesel w/ Gas Shocks	**TOY065AKG1**
Performance SWB Diesel w/ Foam Cell	**TOY065AKF1**
Performance SWB Diesel w/ Foam Cell Pro	**TOY065AKP1**
Performance LWB Petrol w/ Gas Shocks	**TOY065BKG**
Performance LWB Petrol w/ Foam Cell	**TOY065BKF**
Performance LWB Petrol w/ Foam Cell Pro	**TOY065BKP**
Performance LWB Diesel w/ Gas Shocks	**TOY065BKG1**
Performance LWB Diesel w/ Foam Cell	**TOY065BKF1**
Performance LWB Diesel w/ Foam Cell Pro	**TOY065BKP1**
Constant Load LWB Petrol w/ Gas Shocks	**TOY065CKG**
Constant Load LWB Petrol w/ Foam Cell	**TOY065CKF**
Constant Load LWB Petrol w/ Foam Cell Pro	**TOY065CKP**
Constant Load LWB Diesel w/ Gas Shocks	**TOY065CKG1**
Constant Load LWB Diesel w/ Foam Cell	**TOY065CKF1**
Constant Load LWB Diesel w/ Foam Cell Pro	**TOY065CKP1**

SUSPENSION KIT CONTENTS

Shock Absorbers
Strut Shock Absorbers

Coil Springs

INSTALLATION FORM

Always ensure you have all the correct parts before beginning installation.
Installing suspension often requires special tools and expert knowledge. All fitment should be performed by a qualified and experienced fitter.
Always tighten bushed components after the vehicle is let down onto the ground at normal ride height, otherwise damage from torsional stresses can occur.
Brake proportioning valves should only be adjusted by a qualified brake specialist if necessary.
Ironman recommends a wheel alignment after fitment of new suspension, consideration to natural spring settling should be taken into account before alignment is done.
Always adhere to vehicle manufacturers torque specification when tightening fasteners.
Always grease polyurethane bushes prior to fitment, Ironman 4x4 recommends a molybdenum based grease or grease specified for polyurethane.

OWNER DETAILS

NAME: ..... PHONE: .....

ADDRESS: .....

VEHICLE DETAILS

MAKE: .....MODEL: .....REG / VIN:..... MILEAGE: .....

ENGINE TYPE: ..... BODY TYPE: .....

PRE EXISTING MODIFICATIONS OR WEIGHTED ACCESSORIES: .....

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PART NUMBERS TO BE INSTALLED

PART # ..... TYPE: ..... PART # ..... TYPE: .....

PART # ..... TYPE: ..... PART # ..... TYPE: .....

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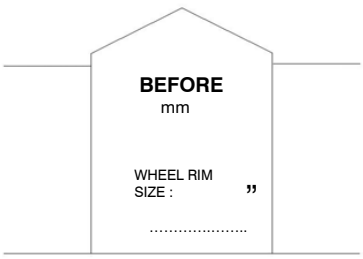
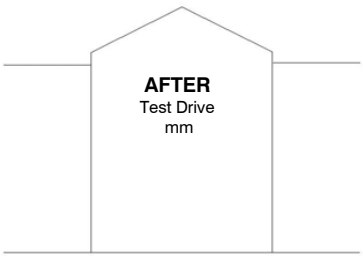
SUSPENSION MEASUREMENTS

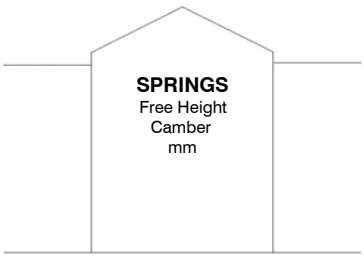
VEHICLE HEIGHT
LOWER OF WHEEL RIM TO GUARD





SUSPENSION MEASUREMENTS

ACTUAL MEASUREMENT OF NEW SPRINGS
PRIOR TO INSTALLATION



NOTES AND COMMENTS

NOTES: .....

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All measurements to be taken prior to installation, immediately after initial test drive and again at 500km check.
All vehicle height measurements to be taken from lower of wheel rim to guard unless otherwise stated. Up to 10 mm height reduction in springs can be considered normal setting over time. All measurements are metric except wheel rim size. Warranty period is 3 years or 60,000 km unless otherwise stated.

Front Suspension – Removing components

1. Raise the vehicle on the hoist.
2. Remove the wheels

- Ensure all new components received are correct before removal of existing parts
- Coil Springs store massive amounts of energy when compressed, extreme care must be used when handling.
- Retain all OE hardware.
- Perform the following procedures one side at a time, unless otherwise shown.

STRUT REMOVAL

3. Remove the radiator protection plate, disconnect the sway bar link rod and remove the sway bar “D” brackets from both sides of the vehicle. Move the sway bar up and out of the way.
4. Undo the castellated nut and release the steering arm, on both sides.
5. Remove 3 nuts from top strut plate.
   (DO NOT remove centre rod nut at this time)

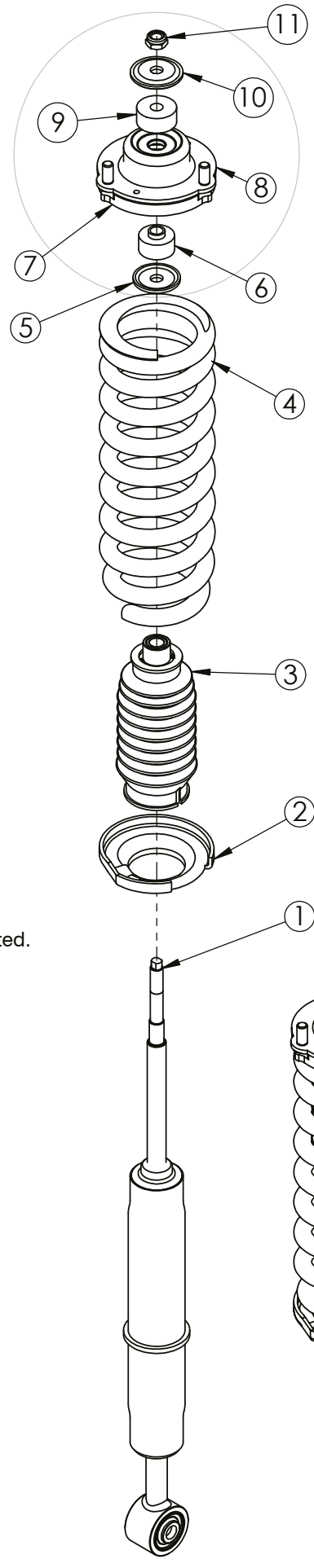
5.b Mark one of the 3 studs and its corresponding hole on the chassis with a paint pen or similar, this will aid in the orientation upon re-installation.

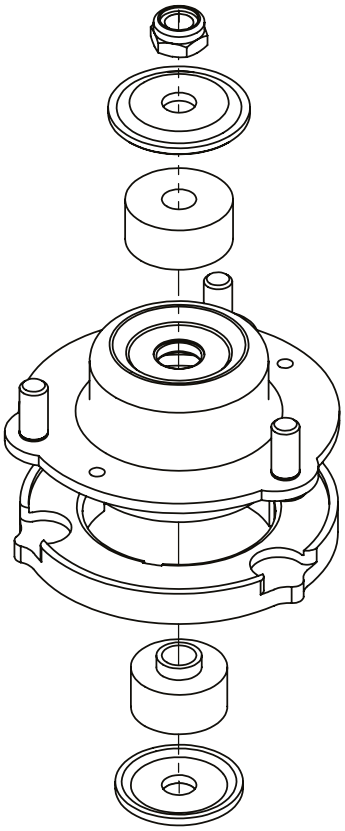
6. Remove lower shock absorber bolt.
7. Remove strut from vehicle.

8. Place strut in high quality strut spring compressor. Ironman 4X4 recommends a wall mounted or free standing compressor system, NOT hand held screw type. Compress spring in strut compressor until the strut assembly is loose with all pressure contained by the compressor.
9. Remove centre rod nut, top plate and strut away from coil. Carefully and gradually release pressure from spring.

IRONMAN 4X4 STRUT
SUIT TOYOTA
24730FE

Assembly Instructions





Detail View, Upper Assembly

Refer to vehicle manufacturers workshop manual for detailed removal and installation instructions.

Expert knowledge and special tools will be required

These instructions provide additional specific information relevant to the Ironman 4x4 strut.

WARNING:
DO NOT LOOSTEN OR REMOVE CENTRE TOP NUT UNTIL ALL SPRING TENSION HAS BEEN CONTAINED USING A HIGH QUALITY STRUT SPRING COMPRESSOR.

Follow assembly order, as indicated (Right).

Trim packers should NOT be fitted.

Use newly supplied bushes and washers during re-assembly. Assemble in the order shown above.

Align cutout in spring plate toward front of vehicle to provide clearance to sway bar,

Align coil to match helix in lower spring plate.

Carefully align the top plate and lower strut bush to suit vehicle mount before releasing from strut spring compressor.

Ensure top nut is tightened fully with coil still compressed by a strut spring compressor.

Lower bush must only be tightened after vehicle is lowered to the ground at final ride height. Failure to do so can prematurely damage the bush.

Part No. ISST001

Suitable for Toyota: Hilux, Prado 120, Prado 150, FJ Cruiser, Fortuner, 4Runner, Tacoma

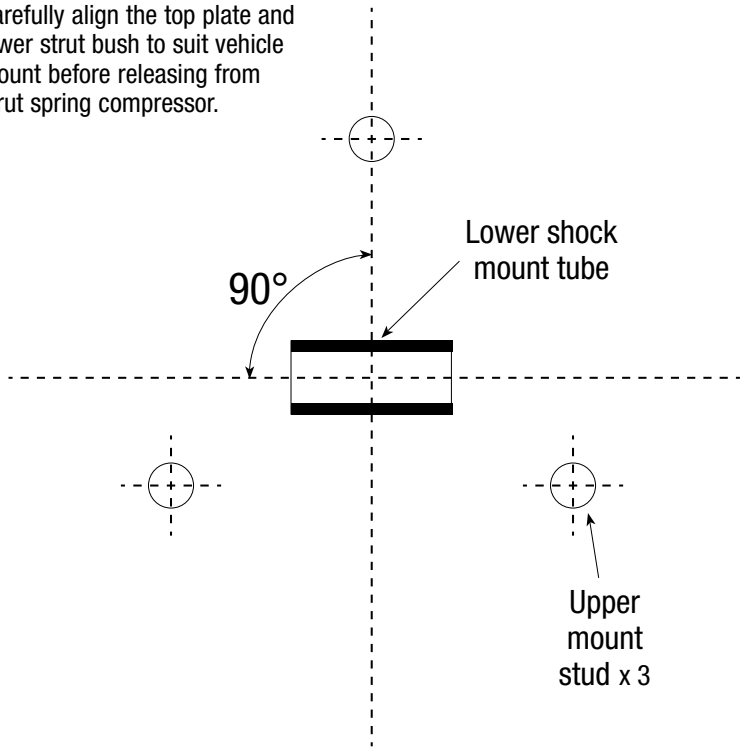
Struts:
12710GR, 24710FE, 45710FE
12730GR, 24730FE, 45730FE
12750GR, 24750FE, 45750FE

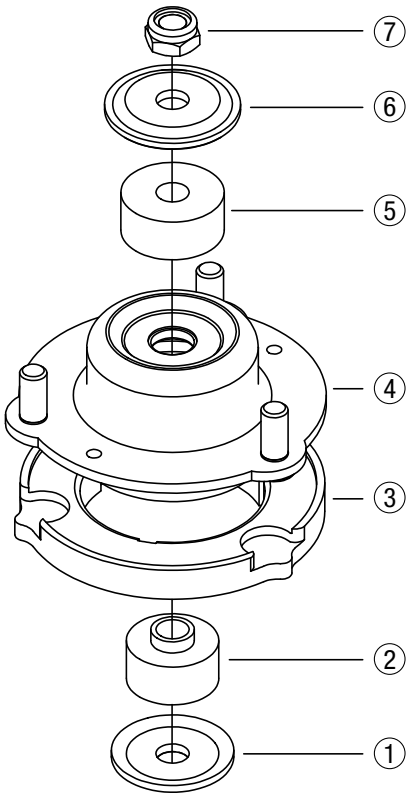
Springs:
TOY038B, TOY038C,
TOY055A, TOY055B, TOY055C,
TOY065A, TOY065B, TOY065C

WARNING:
DO NOT LOOSEN OR REMOVE CENTRE TOP NUT UNTIL ALL SPRING TENSION HAS BEEN CONTAINED USING A HIGH QUALITY STRUT SPRING COMPRESSOR.

- Refer to vehicle manufacturers workshop manual for detailed removal and installation instructions.
- Expert knowledge and special tools will be required
- Follow assembly illustration as a guide only.
- Use newly supplied bushes and washers during re-assembly. Assemble in the order shown below.
- Ensure top nut is tightened fully with coil still compressed by a strut spring compressor.

Carefully align the top plate and lower strut bush to suit vehicle mount before releasing from strut spring compressor.





Warranty will be voided by damage or failure caused by incorrect procedure.
Before proceeding to install strut mounts please fully read guidelines above and ensure that necessary tools are on hand.

Always wear personal safety protection ie. Safety glasses and gloves to prevent injury.

Front Suspension – Installing components

STRUT INSTALLATION

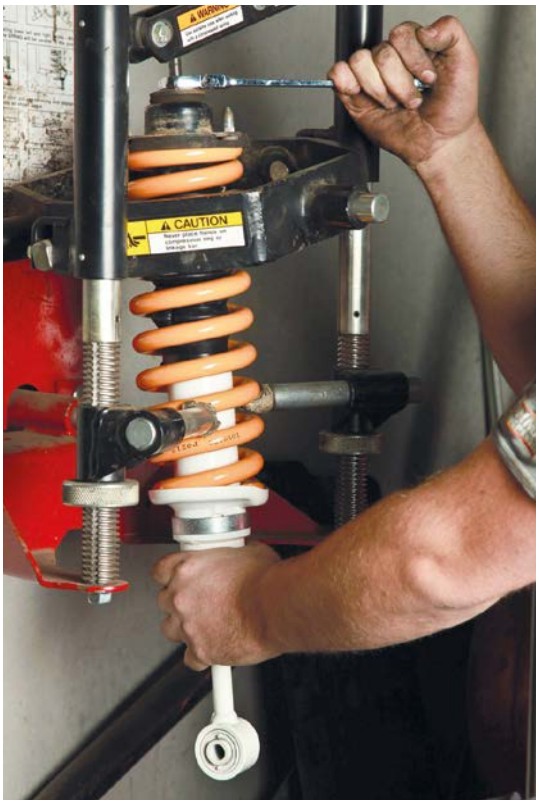
(See Page 5 for strut component detail)

10. Place TOY055/TOY065 spring in compressor and compress to approximately the same length required to remove the OE coil.

    Assemble 12750GR, 24750FE or 45750FE strut and top plate into the new coil spring. Using new Ironman 4x4 hardware supplied, fit centre rod nut finger tight. Rotate strut and top plate relationship so lower mount and 3 top studs are positioned correctly for installation into vehicle, take care to position your paint marked stud in the right location (See Page 5).

    This relationship must be accurate to within 2mm for successful installation. Tighten centre top nut until it bottoms out, then torque to 30Nm, using a torque wrench, NOT an impact gun.

    Note: Spring seat height measurement on 45750FE should be the same as the OE strut.

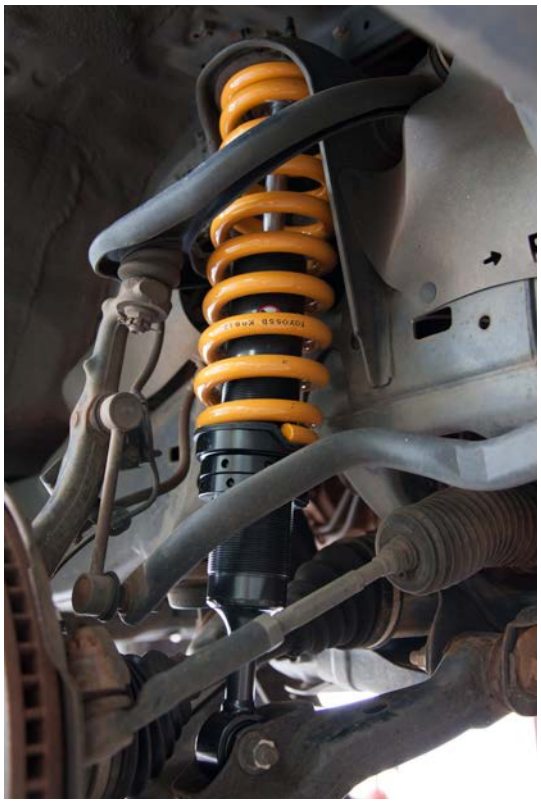


11. Install the new strut assembly into the vehicle, reverse of removal. Repeat Step 10. for other side of vehicle. Re-attach all previously removed hardware. Tighten top studs (40Nm), sway bar Links (70Nm) and D Brackets (48Nm) and steering arm using a new split pin. Refit radiator protection plate (28Nm).

    DO NOT Tighten lower strut bolts at this time. Leave only finger tight until the vehicle is lowered to the ground and at ride height.

    Note: If extra clearance is required, between front sway bar and strut spring seat use Front Sway Bar Spacer Kit P/N: 1198K.

    Perform same operation to both sides of vehicle.



INSTALLATION GUIDE

Part Number 1198K

Front Sway Bar Spacer Kit

15mm Thickness with Forward Shift

Toyota Hilux 2005 - 2015
Toyota Prado 120/150 ***(Without KDSS)***

Allow 20 - 30 Mins Installation Time.

This kit is intended to increase clearance between sway bar and strut spring seat.

1. Raise vehicle with wheels hanging, ensure the vehicle is supported with suitable jacks / hoist and vehicle stands.

2. Remove both original bolts from the sway bar D-Bracket, both sides of vehicle (Fig 1).

3. Position spacer under chassis as shown (Fig 2) aligning the relevant counterbore holes with the threaded holes in chassis. (Refer Digram Below)

   The spacer plates contain more holes than required to provide compatibility with other vehicle models. Only one pair of holes is used.

4. Install newly supplied cap head bolts using a small amount of thread locking compound.
   Tension bolts to 70Nm.
   Use thread locking compound
   DO NOT OVERTIGHTEN

5. Using newly supplied hex bolts and flat washers, install D-bracket onto threaded holes nearest to the utilised cap head bolts (Fig 4).
   Tension bolts to 70Nm.
   Use thread locking compound
   DO NOT OVERTIGHTEN

6. Check all fasteners for tension and surrounding components for clearance.
7. Test drive vehicle.

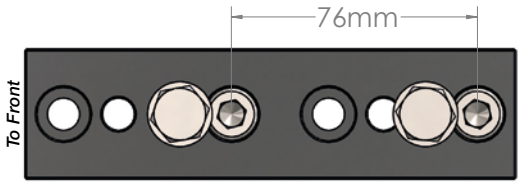

Fig 1


Fig 2

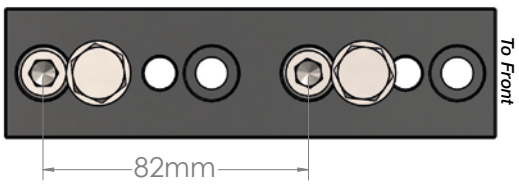

Fig 3


Fig 4

Hilux 76mm

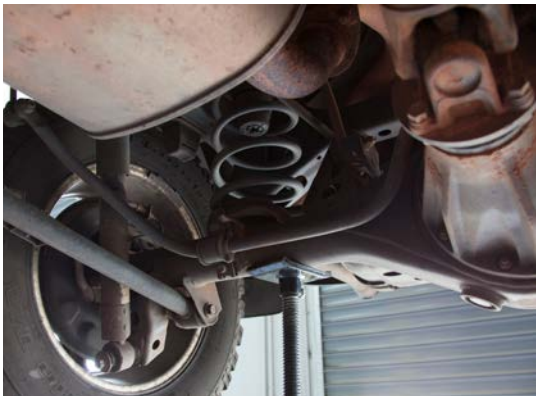


Prado 82mm



Rear Suspension – Removing Components

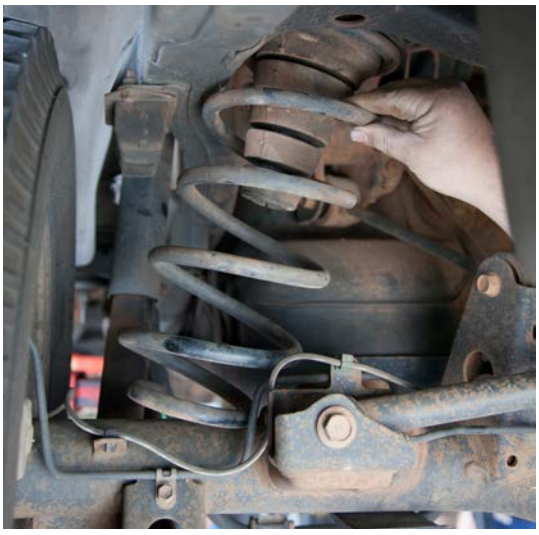
1. With the vehicle on the hoist, support rear differential with floor stand/s to prevent damage to brake hoses from over stretching.



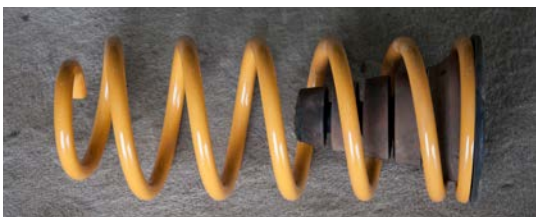
2. Working on one side at a time, remove OE shock absorber.

   Disconnect sway bar.

3. Lower floor stand to release coil from location and remove coil from vehicle.



4. Transfer bump stop from OE coil to new coil.



Rear Suspension – Installing components

5. Install new coil ensuring correct location on spring seat.

6. Raise floor stand to compress coil and fit new shock absorber.

   It is recommended to loosely assemble the upper mount into place first, then tap the lower mount into position.

   Note: Lower mount has an offset eye and spacer washer to keep shock body away from axle housing.
   Correct orientation is required.

   Once lower mount securing bolt is re-installed, tighten upper mount.

7. Repeat for other side.

8. Once springs and shock absorbers have been installed to both sides, reconnect the sway bar.

   Note: Refit wheels, check tension of all fasteners at ride height.

   Test drive vehicle, and record after fitment measurements.