OLD MAN EMU | FITTING INSTRUCTIONS

FORD RANGER 22.75MY

(Excluding Ranger Raptor)

Suspension System Replacement

WARNING

- This product must be installed exactly as per these instructions using only the hardware supplied.
- Some components have their own detailed instructions. Use component instructions in conjunction with these over-all instructions.
- 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 specialised tools and/or techniques.
- Specialised tools e.g., torque wrenches are required to be calibrated.
- This product must only be installed by trained personnel.
- These instructions are correct as per the publicised revision. 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 & replace any worn component/fastener(s).
- Work safely at all times.

Note: These fitting instructions should be read in conjunction with the Ford Workshop Manual. Unless otherwise specified, the manufacturer's (Ford OE) torques shown are for Reference only. The Ford Workshop Manual reflects the correct torque applicable by vehicle VIN.

ABBREVIATIONS

UCA – Upper Control Arm	OME – Old Man Emu	FWM – Ford Workshop Manual
ESC – Electronic Stability Control	Nm – Newton metres	OE – Original Equipment e.g., Ford
LCA – Lower Control Arm	 – Torque wrench	Lbf-ft – Pound Feet


OLD MAN
EMU

VEHICLE PREPARATION - FRONT
(REMOVING STRUT)

Use the following steps as a guide to remove strut. FWM may also be used where available to remove the strut.

1. Remove wheel.

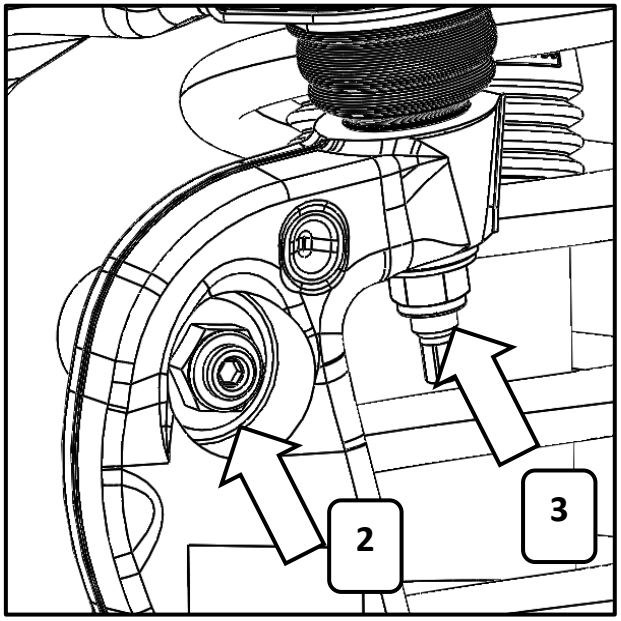
2. Detach Sway bar link from knuckle.

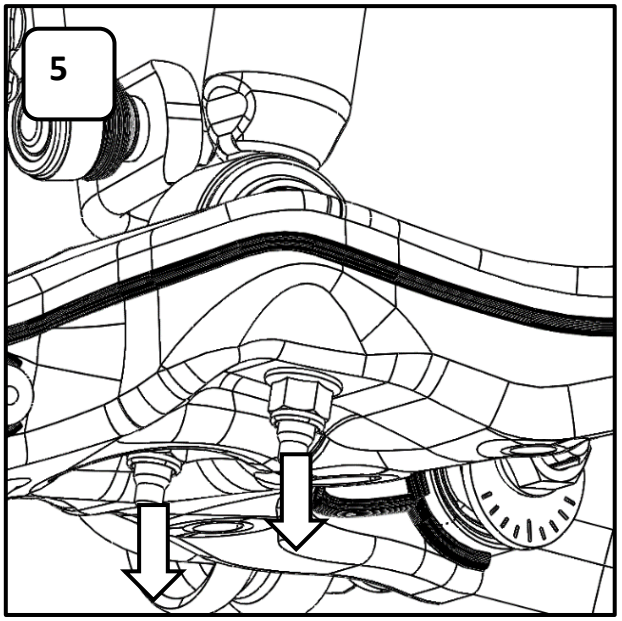
3. Loosen Upper Control Arm (UCA) nut.
   NOTE: Do not remove.

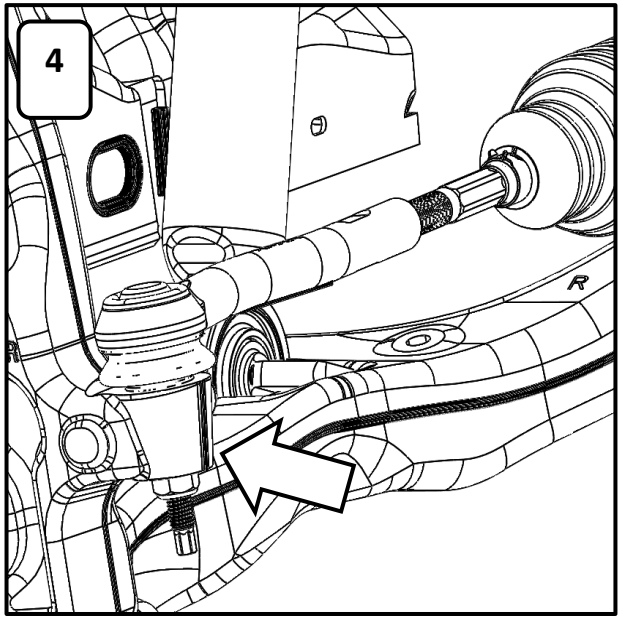
4. Detach tie rod from knuckle using ball joint puller.
   NOTE: Do not use a hammer.

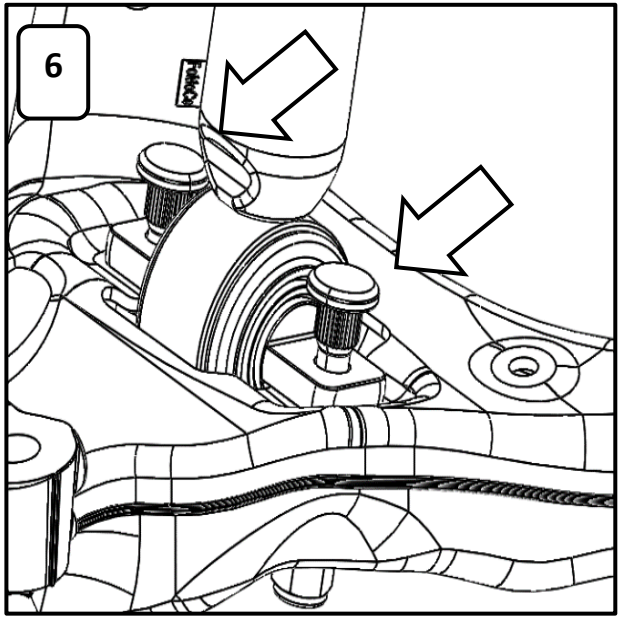
5. Remove lower shock mounting nuts (X2).

6. Using a soft hammer (nylon), drive the studs out of the lower shock cross pin.









VEHICLE PREPARATION
(REMOVING STRUT) Cont…

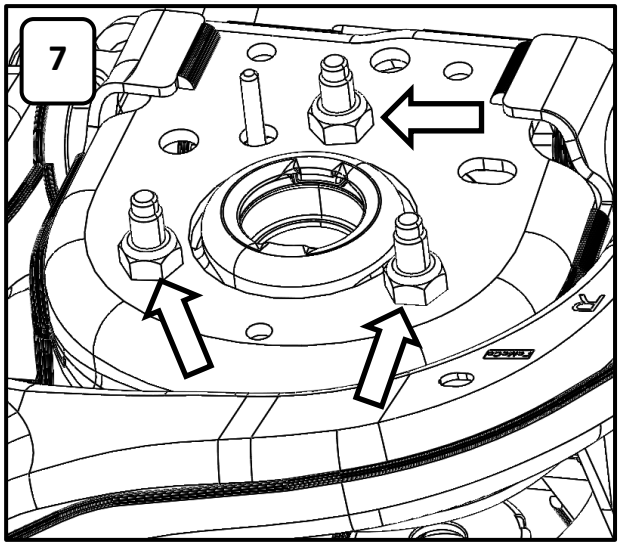
7. Remove top hat nuts (x3)

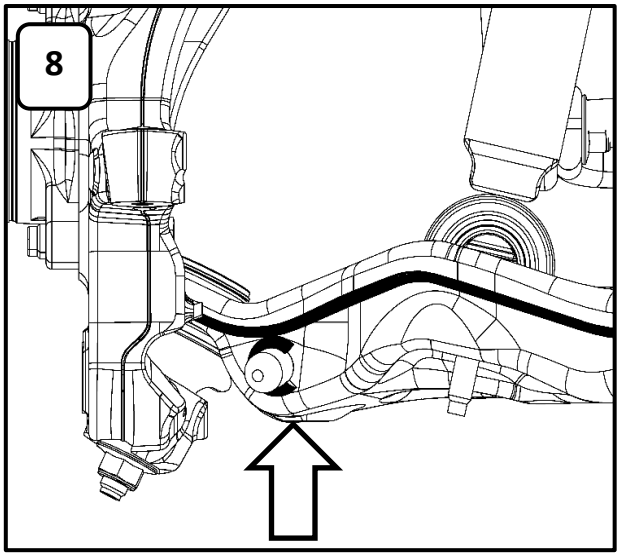
8. Support Lower Control Arm (LCA) with jack stand or similar

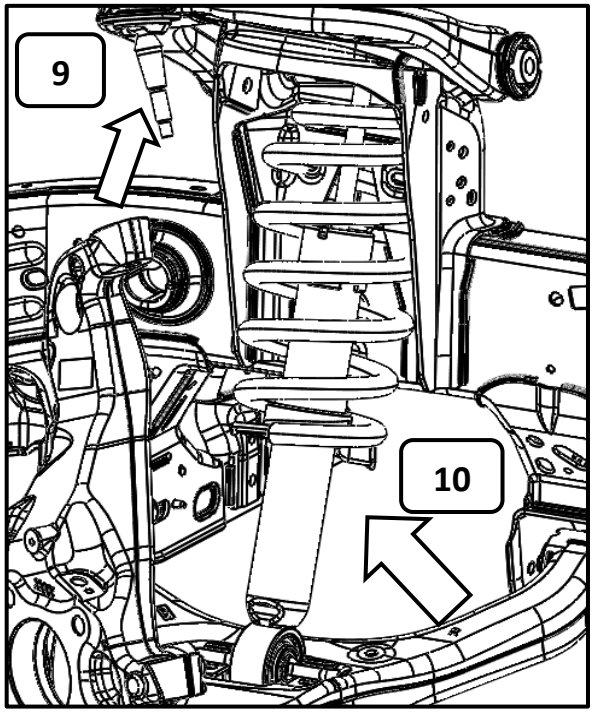
9. Detach UCA from Knuckle using a ball joint puller.
   NOTE: Do not use a hammer.

10. Remove Strut

    NOTE: Take care to prevent the drive shaft from dropping out. Re-attach the upright to the upper control arm (refer to step No.9) loosely until the OME Strut is ready to be installed.







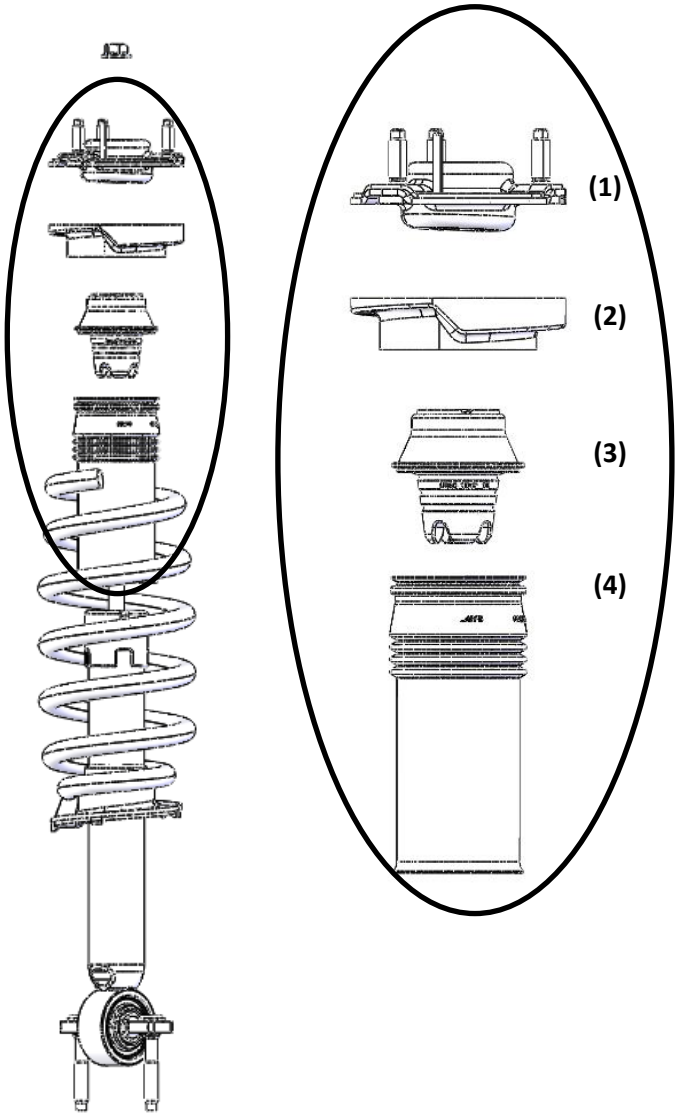
OME STRUT ASSEMBLY PROCESS

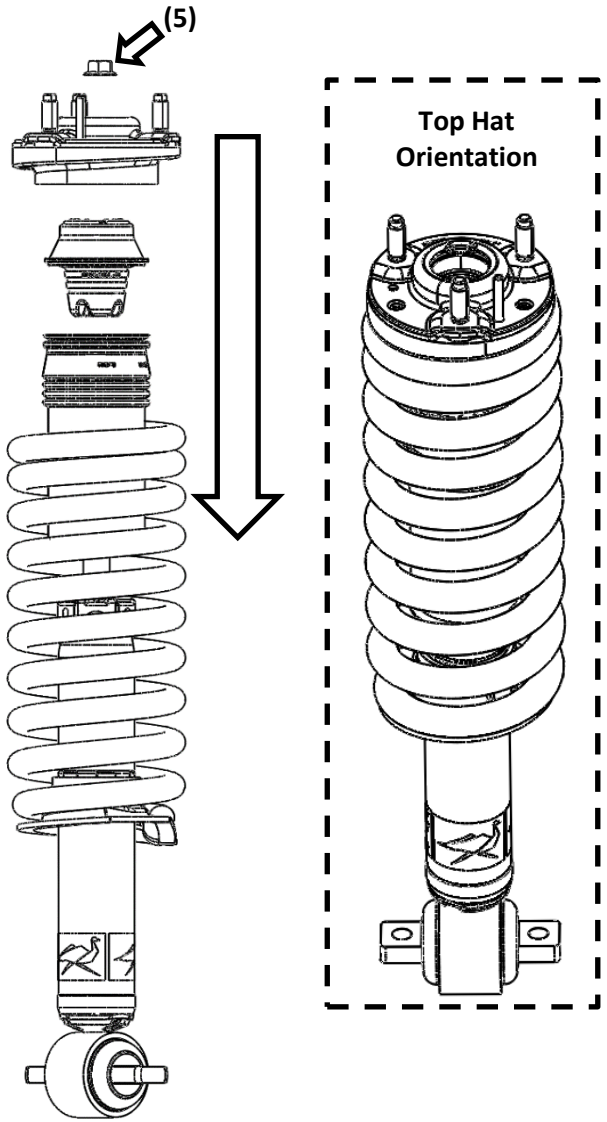
1. Secure OE Strut in Spring compressor and disassemble. Maintain,
   (1) OE Top Hat (w/nuts)
   (2) Coil Isolator
   (3) Bump Stop
   (4) Dust Shield.

   Discard remaining components.

2. Assemble OME Strut and Coil using OE components retained and M12 nut (5) from fitting kit supplied with Strut.

   NOTE: Refer to Top Hat Orientation image to ensure pins are aligned for fitment into vehicle.





DAMPER MOUNTING SEQUENCE

Top Mount:

1. Install the damper and secure the top mount. Finger tight only.

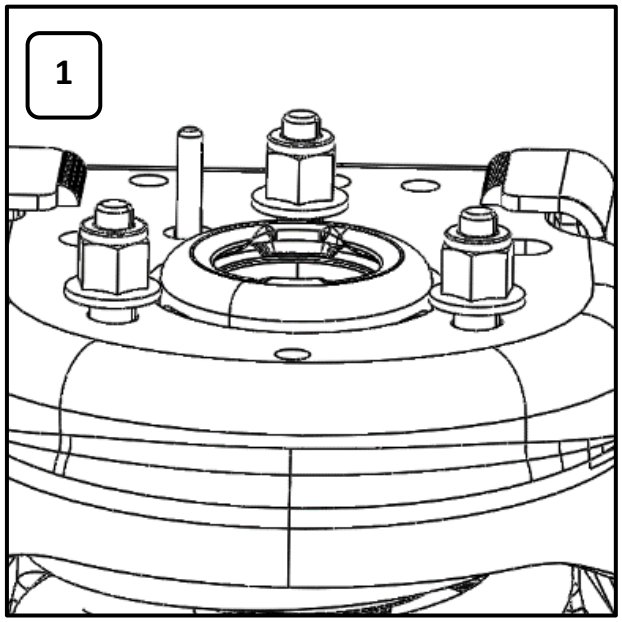
Bottom Mount:

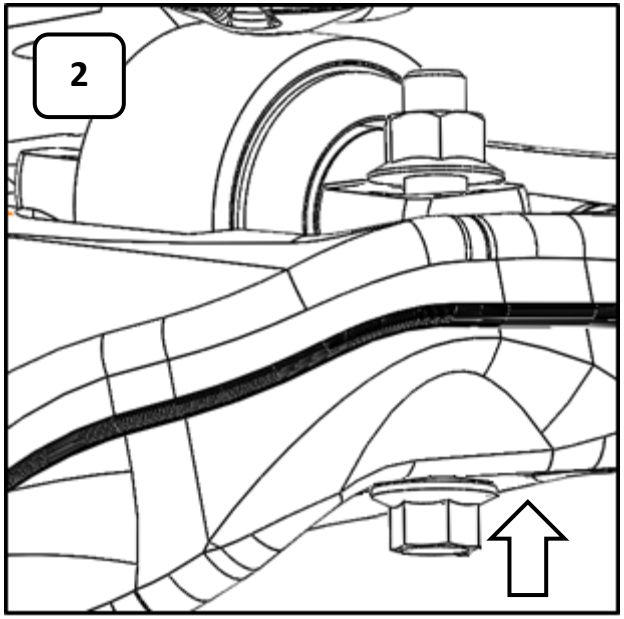
2. Install the M12 Flange bolts in the lower strut mount and secure using the flange nuts supplied. Bolts MUST be installed from the bottom.
   Finger tight only

NOTE: The use of a transmission jack to slightly lift the LCA will allow the M12 Flange bolts to be installed easier.

Torque Marking

3. Ensure that each fastener is marked across three surfaces **immediately** after torquing to specification. Do not wait until all fasteners are torqued before marking.







DAMPER MOUNTING SEQUENCE

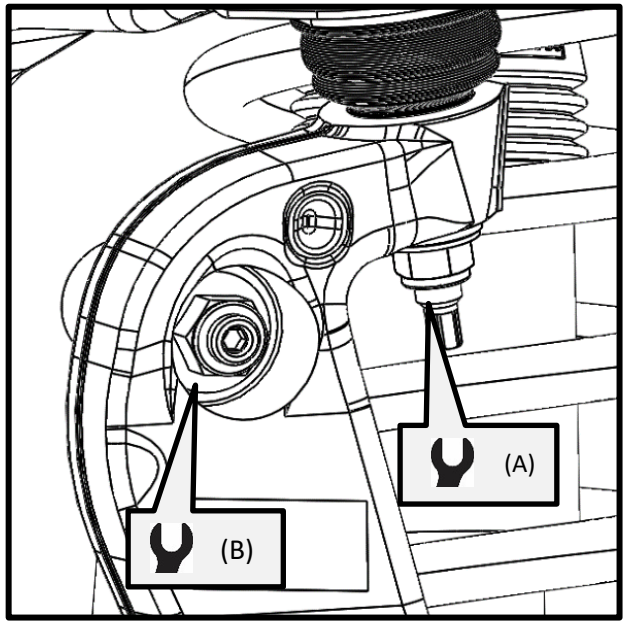
4. Reattach all the components to the vehicle in the reverse way of detaching them

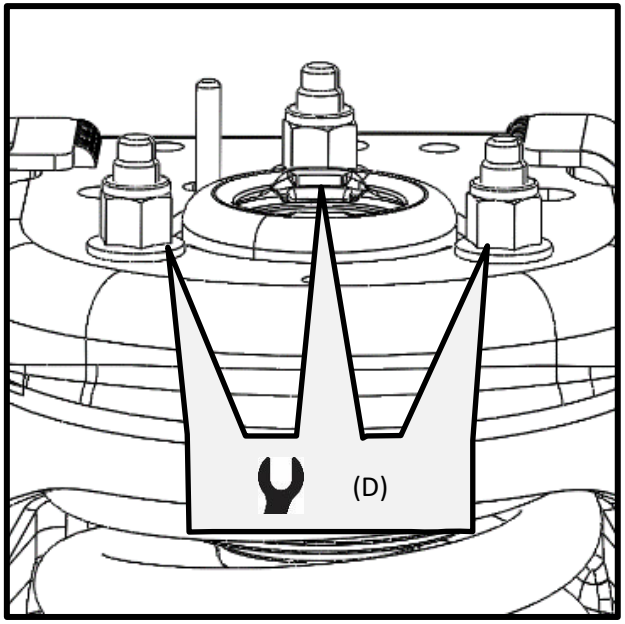
    A. Upper control arm
    B. Sway bar link
    C. Lower strut bolts
    D. Top Hat Studs
    E. Steering tie rod to knuckle

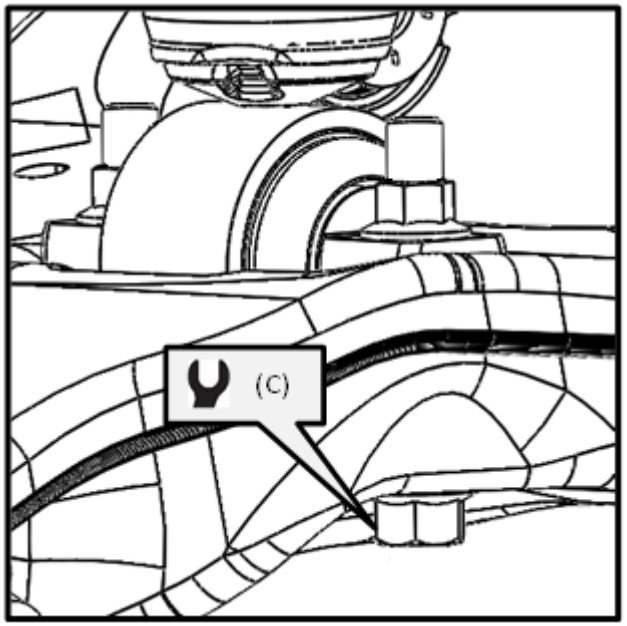
Fastener Torque settings	
Fastener	**Torque N.m (ft.lbf)**
Upper Control Arm	63 (47)
Sway Bar Link	175 (129)
Steering tie rod (Aluminium)	48(36)
Steering tie rod (Steel)	63 (47)
Top Shock Tower	63 (47)
Lower Shock bolts	100 (74)
Wheel Nuts	135 (99)

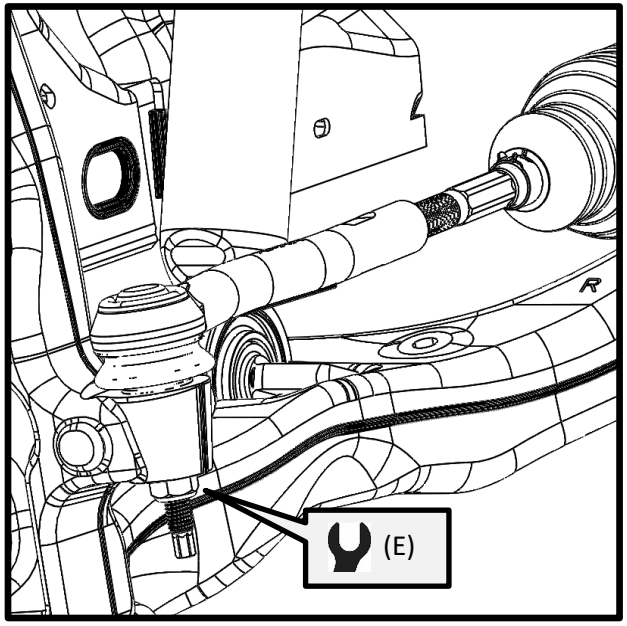
NOTE: These fitting instructions should be read in conjunction with the Ford Workshop Manual. Unless otherwise specified, the manufacturer's (Ford OE) torques shown are for Reference only.

The Ford Workshop Manual reflects the correct torque applicable by vehicle VIN.









VEHICLE PREPARATION - REAR
(REMOVING SHOCK AND LEAF SPRING)

Use the following steps as a guide to remove rear shock and leaf spring. FWM may also be used where available to assist with the removal process.

1. Raise vehicle on hoist and support rear diff housing with axle/wheel stand.

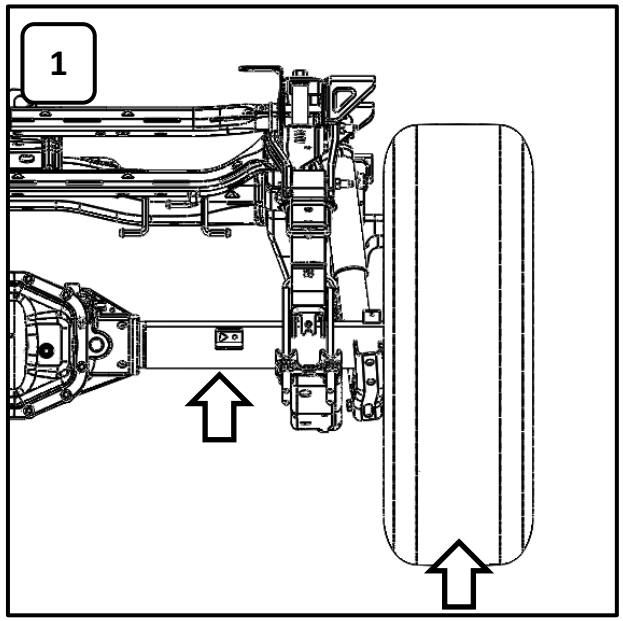
2. Remove upper and lower shock bolts.

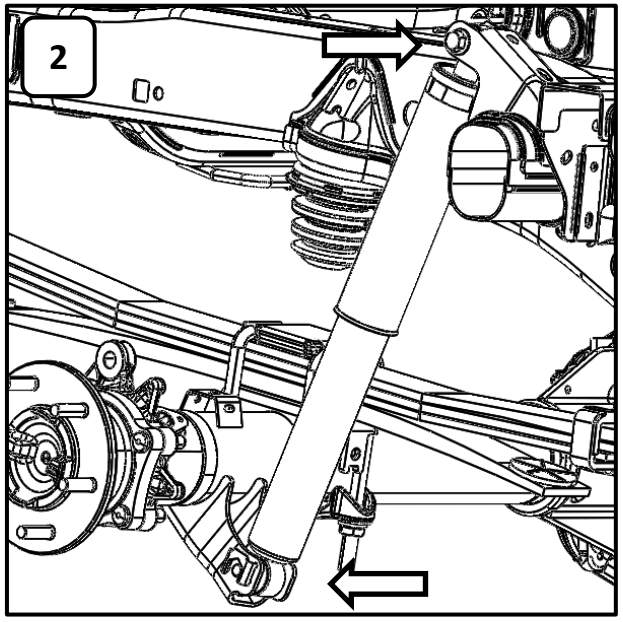
3. Ensure items that may become tight when lifting vehicle are detached from the chassis or axle housing.

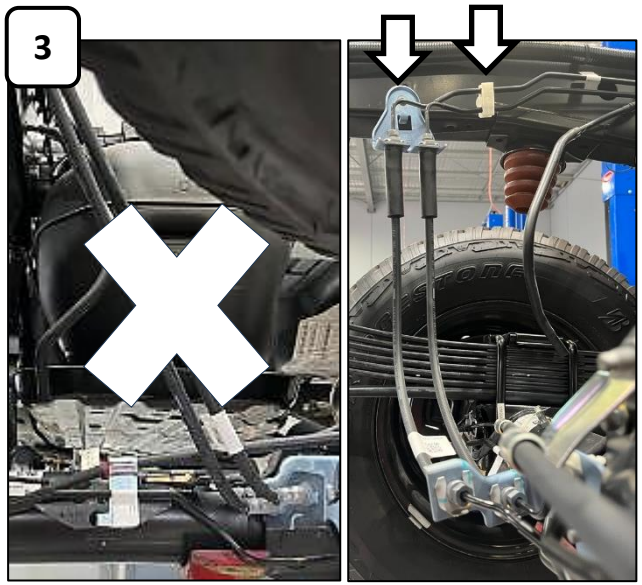
    a. Handbrake cable
    b. Brake lines
    c. Breather hoses

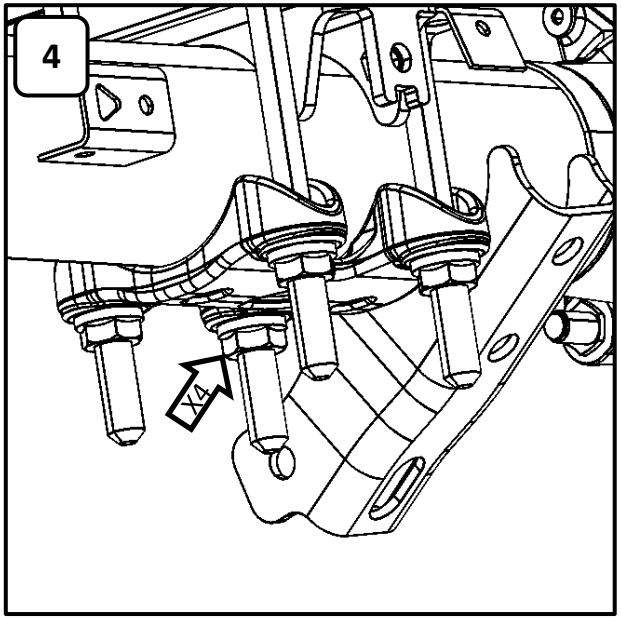
    NOTE: Brake lines must NOT be allowed to stretch. It is critical that the brake hose/tube mounting brackets and retaining clips are removed from the chassis rail before spring removal.

4. Remove U-Bolts









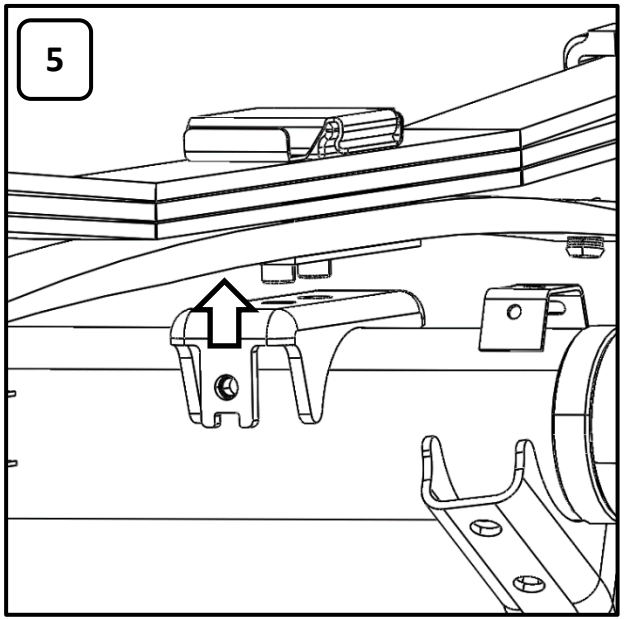
VEHICLE PREPARATION - REAR
(REMOVING SHOCK AND LEAF SPRING) Cont.

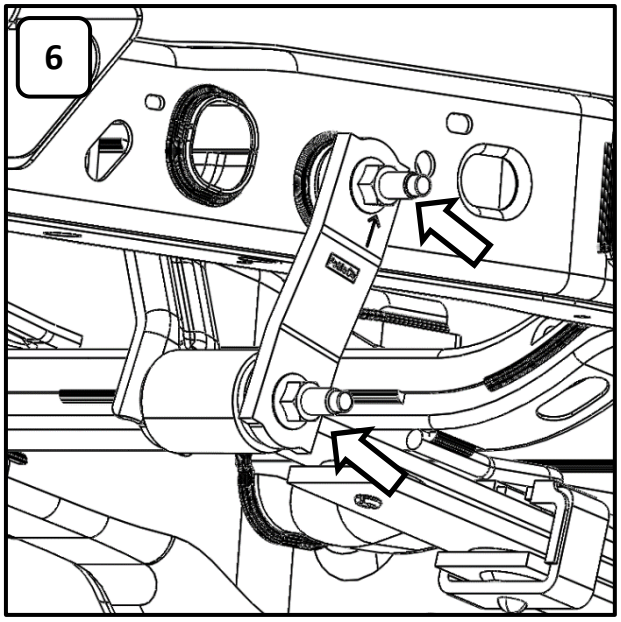
5. Raise vehicle to unload leaf spring and unseat from diff housing.
   NOTE: Care must be taken to when raising vehicle to ensure brake lines/breathers are not overextended.

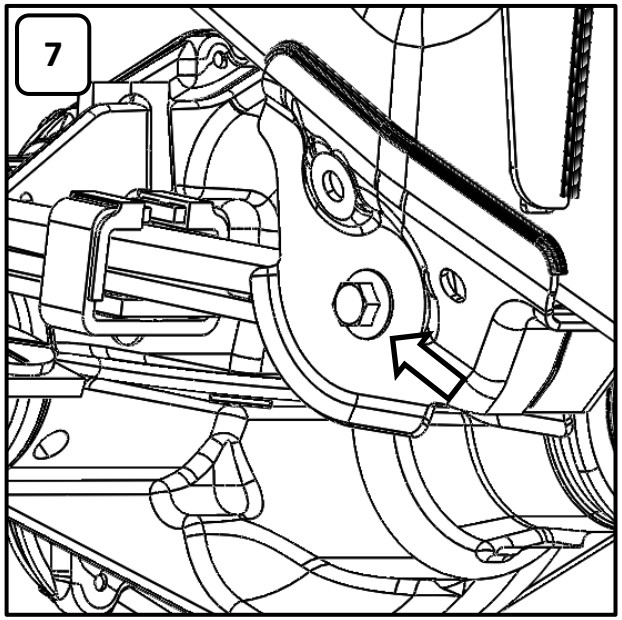
6. Remove OE Shackle. Retain if not using OME Greaseable Shackle Kit.

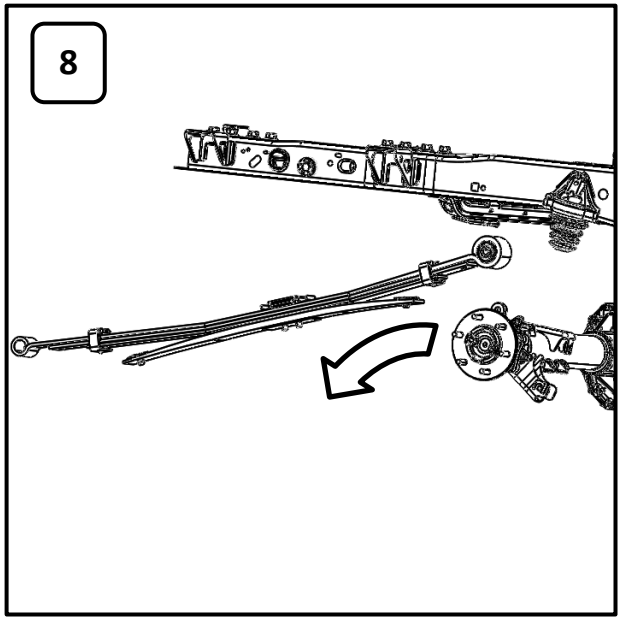
7. Remove fixed end bolt.

8. Remove Leaf Spring from vehicle.









OME LEAF SPRING ASSEMBLY PROCESS

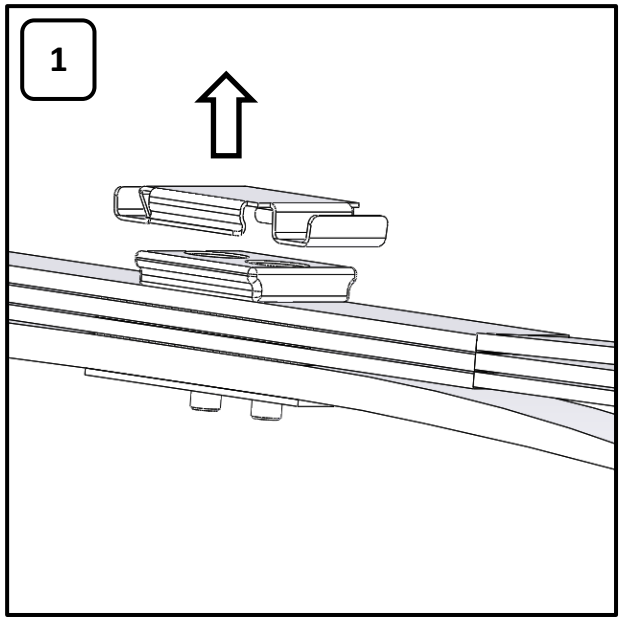
1. Remove bump plate from OE leaf Spring.

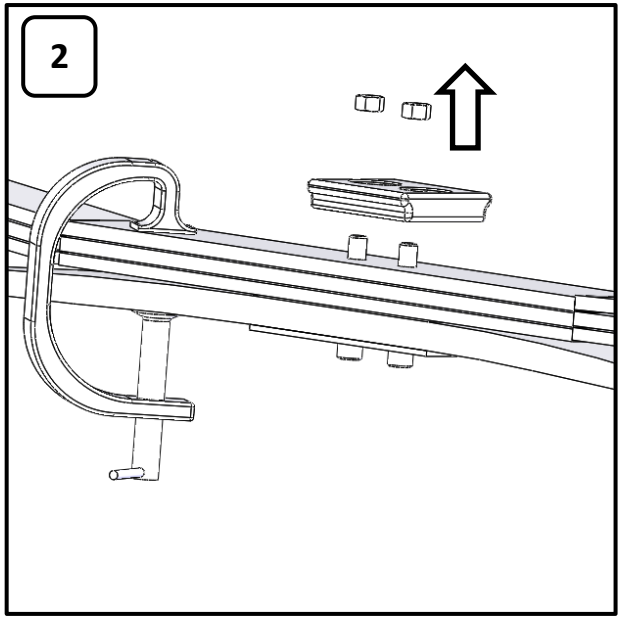
NOTE: If using FK115, refer to instructions provided and skip to step 4.

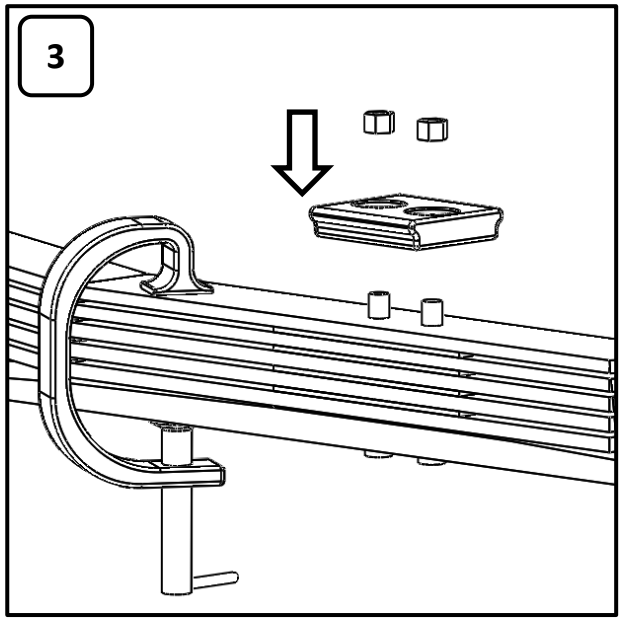
2. Secure leaf spring with G-clamp and remove Bump Stop Spacer. Reassemble OE spring and discard.

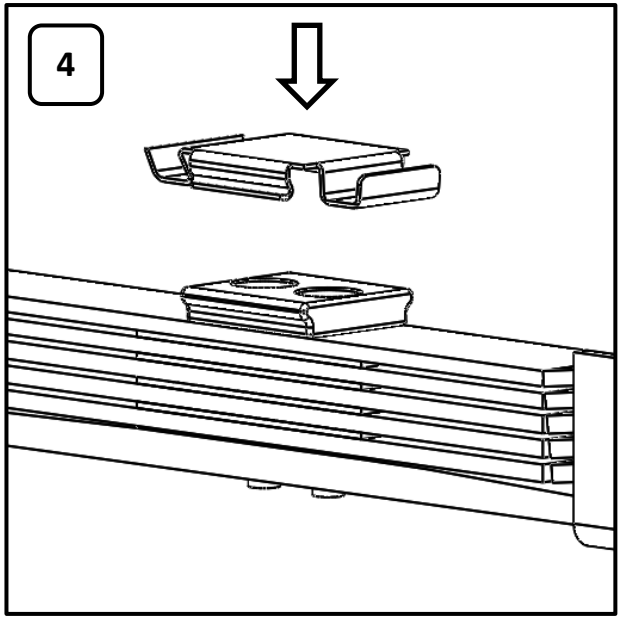
3. Secure OME leaf spring with G-Clamp and remove Centre bolt nuts. Place OE Bump Spacer onto spring and reassemble.

4. Fit bump plate to OME Leaf Spring







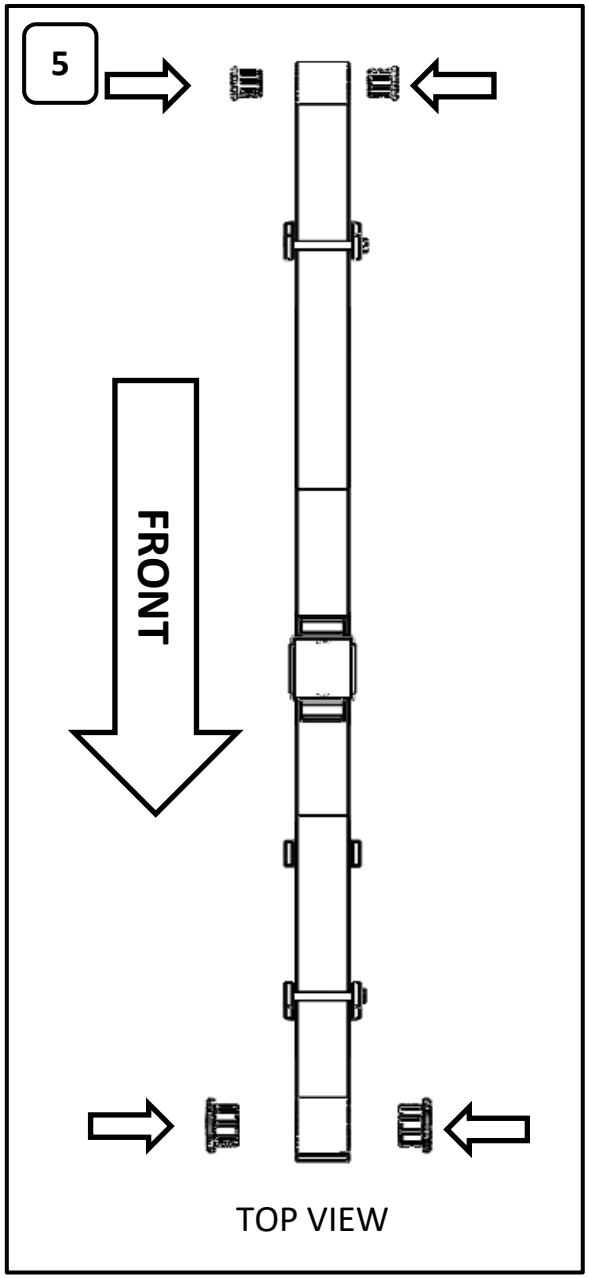


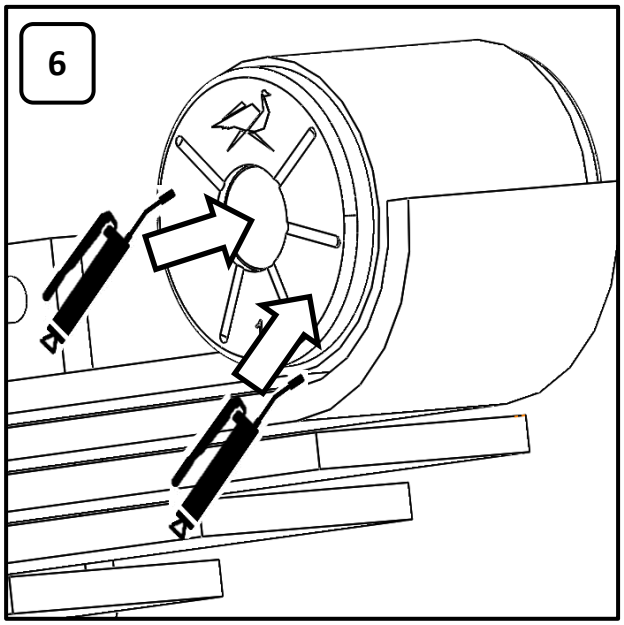
OME LEAF SPRING ASSEMBLY PROCESS Cont.

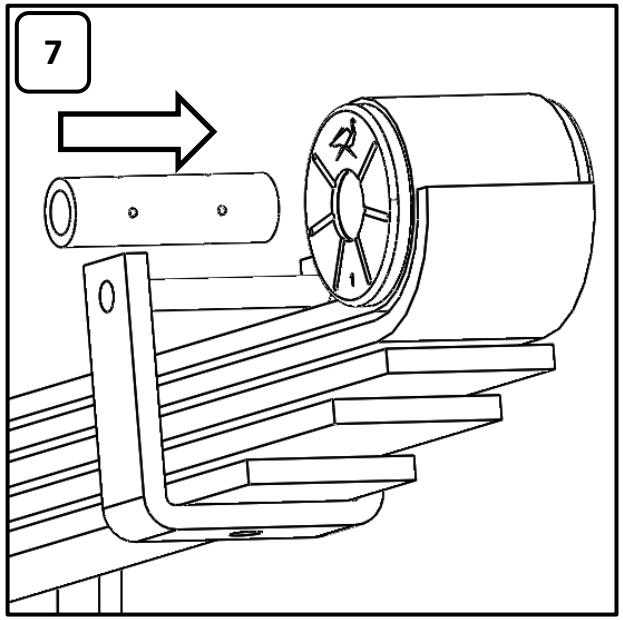
5. Fit OME Leaf Spring Bushes into leaf spring.

6. Thoroughly grease external flange and ID of bush
   NOTE: Ensure grease is thoroughly worked into knurling inside bush.

7. Insert sleeve into fixed eye.







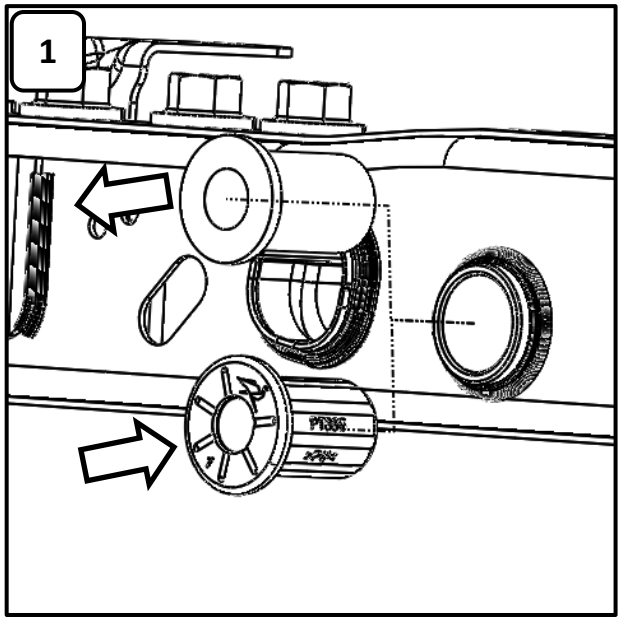
OME REAR SUSPENSION INSTALLATION

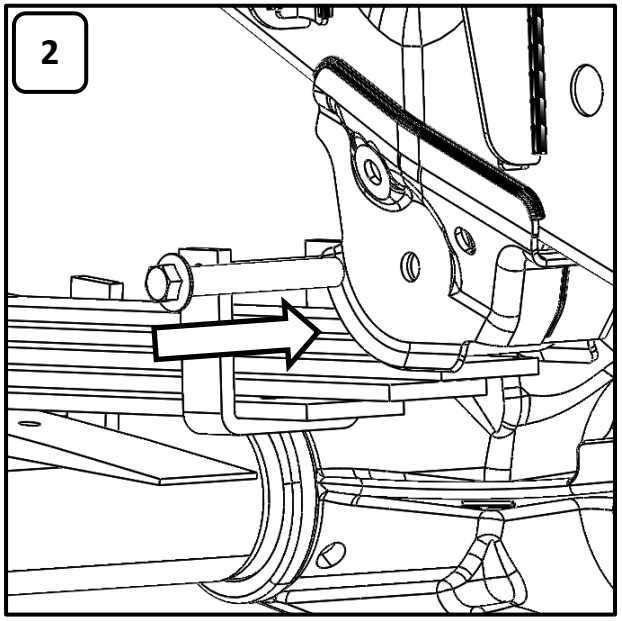
1. Remove OE Shackle bushes from Chassis. Replace with OME bushes and grease per spring bush procedure.

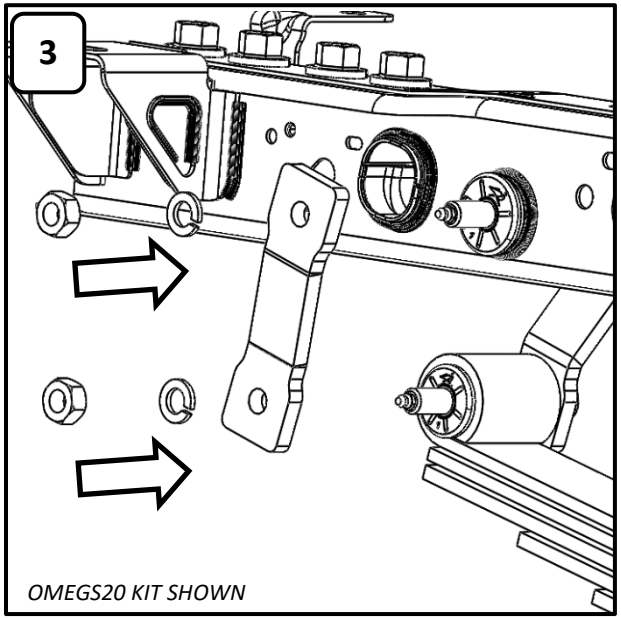
2. Insert leaf spring into vehicle and secure. **NOTE**: If using OME greaseable fixed pin, refer to fitting instructions supplied.

3. Refit shackle assembly to chassis/leaf spring. **NOTE:** If using OME greaseable shackles, refer to fitting instructions supplied

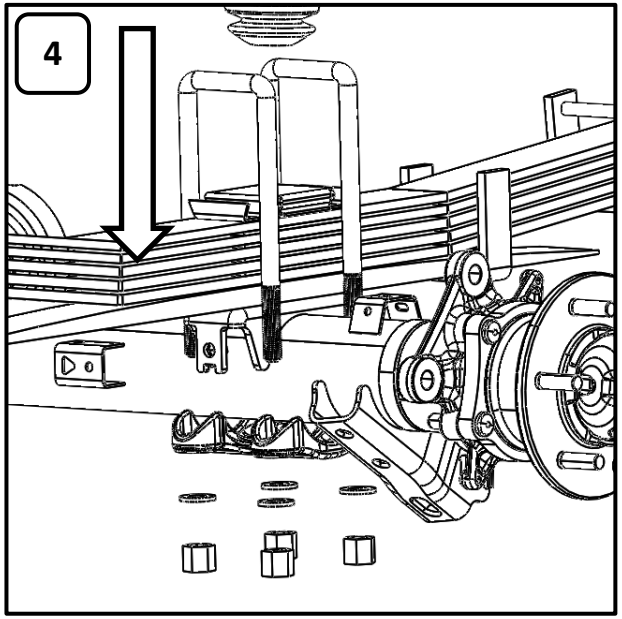
4. Slowly lower hoist until leaf spring contacts diff housing and align centre bolts. Install U-bolt specific to leaf spring selection and secure spring using OE fish plate and fasteners provided with U-bolts.







OMEGS20 KIT SHOWN



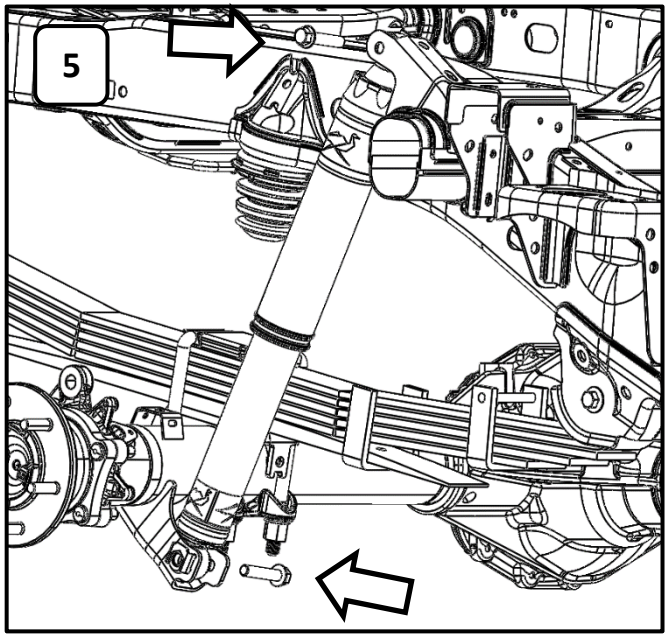
OME REAR SUSPENSION INSTALLATION cont.

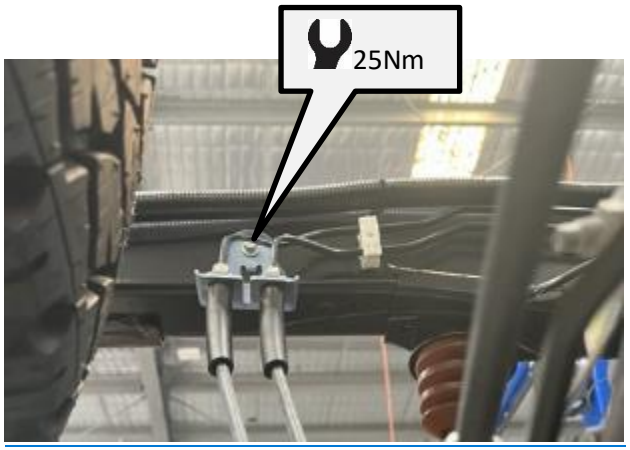
5. Install OME Shock and secure. Keep fasteners loose.
NOTE: Vehicle may need to be lowered further to allow fitment of shock. Take care not to disengage hoist pad from vehicle chassis.

6. Once shock has been secured, lift vehicle to unload spring. Remove Axle/wheel stand.

7. Refit previously detached items.
   a. Handbrake cable
   b. Brake lines and brake hose/tube mounting bracket and torque to spec.

8. Use FK116 to extend the diff breather and re-attach. Follow the instructions supplied in that kit so that the breather line does not go tight when at full extension.





OME REAR SUSPENSION INSTALLATION cont.

Torquing process

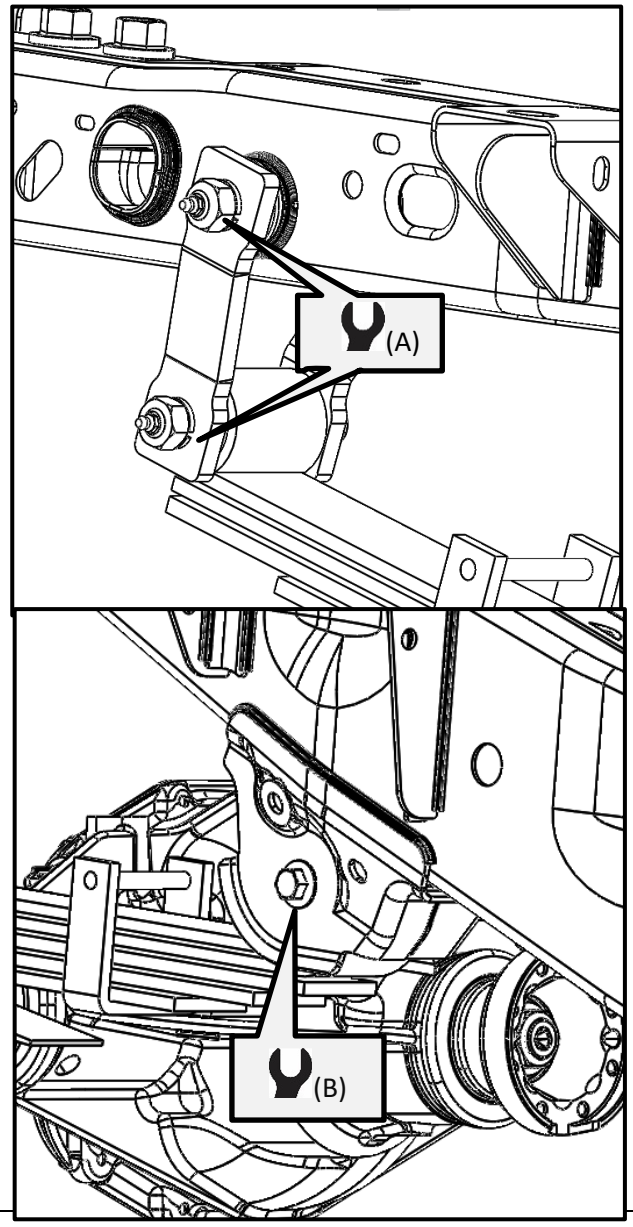
9. While vehicle is on the hoist. Torque,
   a. Rear Shackle (both sides)
   b. Fixed eye bolt

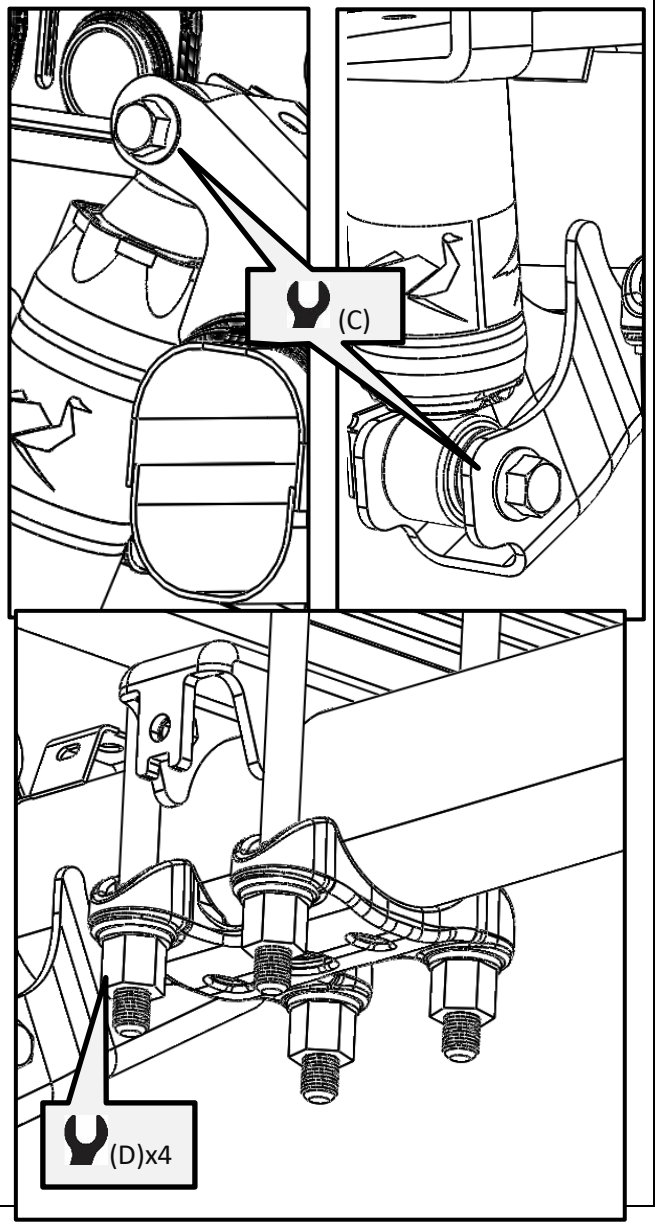
10. Lower Vehicle onto ground and roll back and forth to settle rear suspension.
NOTE: If 4-post hoist is available, carefully relocate vehicle to finalise torquing process.

11. Torque remaining fasteners per the below table, using images to further identify fastener, and ensure each fastener is torque marked.
   a. Rear Shock Bolts
   b. U-Bolts

Fastener Torque settings	
Fastener	**Torque Nm (lbf.ft)**
Rear Shackle OMEGS20	81 (59)
Rear Shackle Ford OE	103 (76)
Fixed Eye OMEGP10	125 (92)
Fixed Eye Ford OE	175 (129)
U-Bolts OME	126 (93)
Rear Shock Bolts	80 (59)
Wheel Nuts	135 (99)

NOTE: These fitting instructions should be read in conjunction with the Ford Workshop Manual. Unless otherwise specified, the manufacturer's (Ford OE) torques shown are for Reference only.





POST-INSTALLATION ITEMS

HEADLIGHTS AND WHEEL ALIGNMENT

Ensure vehicle is loaded according to the requirements of the springs fitted (eg: ensure all accessories are fitted, and add weights directly above the rear axle to bring the rear axle loading up to the minimum loading requirement for the springs fitted).

Settle the suspension by bouncing it or driving the vehicle over a speed hump several times.

Check hub to guard measurements.

Perform headlight aiming and wheel alignment, per the specifications and procedures in the Ford Workshop Manual.

Remove any weight bags that were put into the vehicle.





NOTE: If vehicle is to undergo additional modifications (e.g., addition of service body) which may subsequently affect headlight alignment, please install the mirror hanger per the WI-161 Ford Headlight Aim for ARB Stores in lieu of completing headlight aim.

500km CHECK STICKER

Fit the 500km check reminder sticker in the top right corner of the windscreen (marked in blue).

Tip: This sticker is temporary, so its position is not as important as the position of the in-vehicle warning labels required for GVM upgrade vehicles. If a GVM upgrade is being fitted, fit the GVM upgrade warning label (marked in red) before fitting the 500km check reminder sticker.



FRONT AXLE UPGRADE LABELS

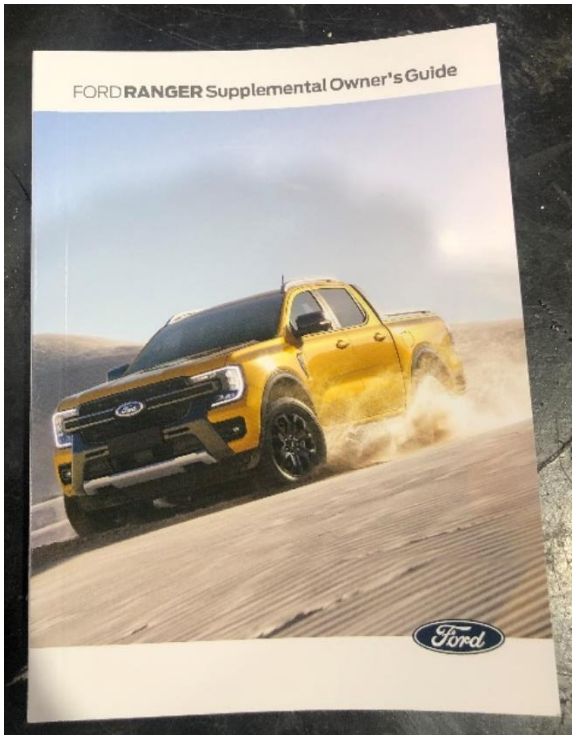
If a GVM upgrade is being fitted, skip this step (the labels in the GVM upgrade compliance pack replace the labels in this step).

For front axle rating upgrade, included with full suspension fitment:

1. An owner's manual label is included in the label kit and is to have the VIN number of the vehicle completed and then adhered inside the owner's manual (If the inside covers are unsuitable e.g.: the sticker would cover information, place the sticker onto the outer front or rear cover).

2. A silver door pillar label is included in the label kit and is to be placed inside the RHS B-pillar. Tip: there is no need to fit this label if a GVM upgrade is performed – it will have a replacement label supplied.

3. A Certification of Load Rating is also included in the label kit. The Certificate is to be included with other documents in the Customer Handover pack.





ITEMS SPECIFIC TO OME GVM UPGRADES

CAT-6 LIGHTS – Stage 2 3650kg GVM only

For the “Stage 2” GVM upgrade, fit the “Cat-6” indicators and wiring looms, per the fitting instructions provided with the GVM upgrade compliance kit.

Tip: Fitment of the wiring looms will be easiest if this step is done at the same time as bull bar fitment (if applicable).



COMPLIANCE STICKERS

Thoroughly clean the positions where the GVM upgrade stickers will be placed, as noted in the GVM Upgrade Checklist and GVM Upgrade Label Placement document.

Dry the cleaned areas, taking care to leave no residue.

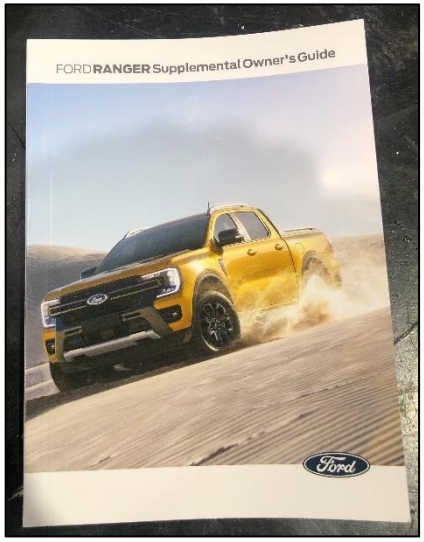
Compliance Label

Fit the compliance label onto the opposite B-pillar to the OE compliance label (ie: LHS B-pillar).

DO NOT remove the OE compliance label!





Windscreen Warning Label Fit the in-vehicle warning label in the top right corner of the windscreen. Place this sticker in the ideal position for it to remain in position permanently. **Tip:** place this sticker prior to placement of the 500km check label.	
Owner's Manual Label Fit the owner's manual label into the owner's manual. It is recommended that this label should be fitted to the inside front cover. If the inside covers are both unable to be used (ie: the sticker would cover information), place the sticker onto the outer front or rear cover.	

Tyre Placard Fit the tyre placard in place of the OE tyre placard (RHS B-pillar). DO NOT remove the OE compliance label!	
Axle Load Label Fit the axle load label onto the RHS B-pillar, near the OE compliance labe l and GVM upgrade tyre placard. DO NOT remove the OE compliance label! **Tip:** this sticker has front and rear axle ratings – there is no need to fit the individual front axle rating label supplied with the suspension components.	