

**Part Number: PTR11-21100  
PTR11-21100-50**

**Kit Contents**

Item #	Quantity Req'd.	Description
1	2	Front Spring
2	2	Rear Spring
3	2	Locking Nut
4	2	Spring Bumper, Front
5	1	Instruction Form

**Hardware Bag Contents**

Item #	Quantity Req'd.	Description
1		
2		
3		

**Additional Items Required For Installation**

Item #	Quantity Req'd.	Description
1		
2		
3		

**Conflicts**

None
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**General Applicability**

2011 and newer tC models
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**Recommended Sequence of Application**

Item #	Accessory
1	TRD Springs
2	TRD Sway Bar Set
3	TRD Strut Tie Bar
4	TRD 19" Wheels

\*Mandatory







**Recommended Tools**

<b>Personal &amp; Vehicle Protection</b>	Notes
Fender Covers	2
Safety Glasses	
<b>Special Tools</b>	Notes
Wall mounted spring compressor	
Tall jack stand	
<b>Installation Tools</b>	Notes
Torque wrench	3/8" & 1/2" drive
Sockets 3/8" drive	14mm deep, 17mm
Sockets 1/2" drive	17mm, 19mm, 21mm deep, 22mm
1/2" Impact gun	Only for removing fasteners
3/8" Air ratchet	Only for removing fasteners
Wrench	10mm, 22mm
Nylon pry tool	
<b>Special Chemicals</b>	Notes
None	

**Vehicle Service Parts** (may be required for reassembly)

Item #	Quantity Req'd.	Description
1	2	48341-06050 Spring Bumper
2		
3		

**Legend**

	<b>STOP:</b> Damage to the vehicle may occur. Do not proceed until process has been complied with.
	<b>OPERATOR SAFETY:</b> Use caution to avoid risk of injury.
	<b>CAUTION:</b> A process that must be carefully observed in order to reduce the risk of damage to the accessory/vehicle and to ensure a quality installation.
	<b>TOOLS &amp; EQUIPMENT:</b> Used in Figures calls out the specific tools and equipment recommended for this process.
	<b>REVISION MARK:</b> This mark highlights a change in installation with respect to previous issue.
	<b>SAFETY TORQUE:</b> This mark indicates that torque is related to safety.

Care must be taken when installing this accessory to ensure damage does not occur to the vehicle. The installation of this accessory should follow approved guidelines to ensure a quality installation.

These guidelines can be found in the "Accessory Installation Practices" document.

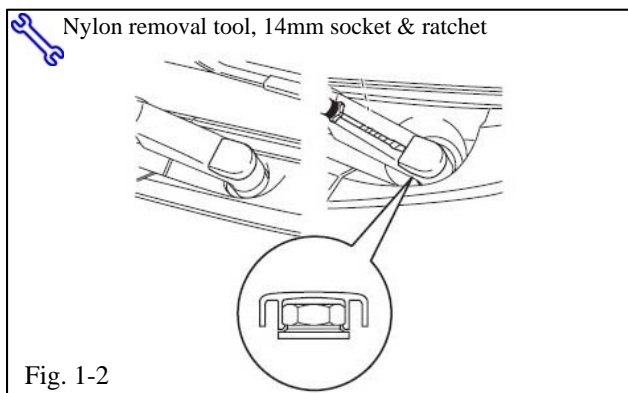
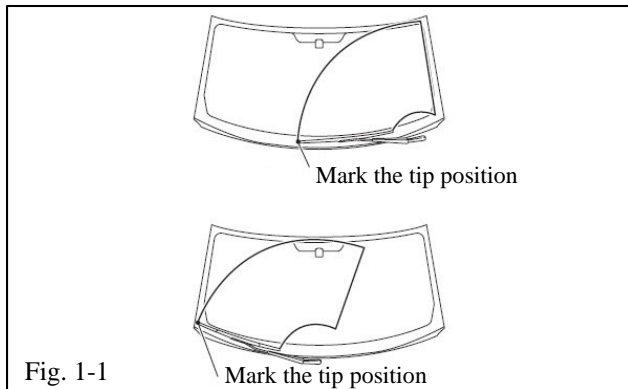
This document covers such items as:-

- Vehicle Protection (use of covers and blankets, cleaning chemicals, etc.).
- Safety (eye protection, rechecking torque procedure, etc.).
- Vehicle Disassembly/Reassembly (panel removal, part storage, etc.).
- Electrical Component Disassembly/Reassembly (battery disconnection, connector removal, etc.).

Please see your Scion dealer for a copy of this document.

### 1. Remove the Cowl.

- (a) Raise the hood.
- (b) Place fender covers over the fenders.
- (c) Remove the windshield wiper arms.
  - (1) Mark the position of the wiper tips (Fig. 1-1).



- (2) Remove the nut & remove the wiper arm from the wiper drive stud (Fig. 1-2).

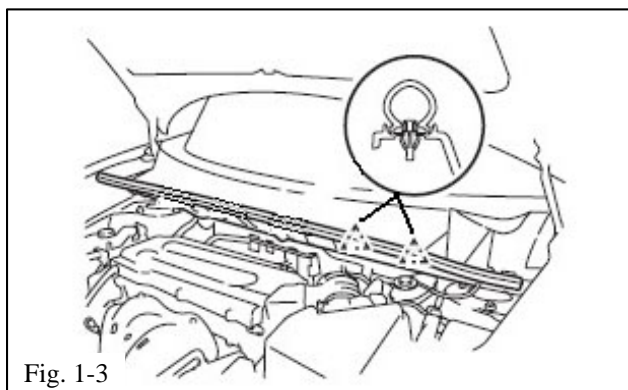


Fig. 1-3

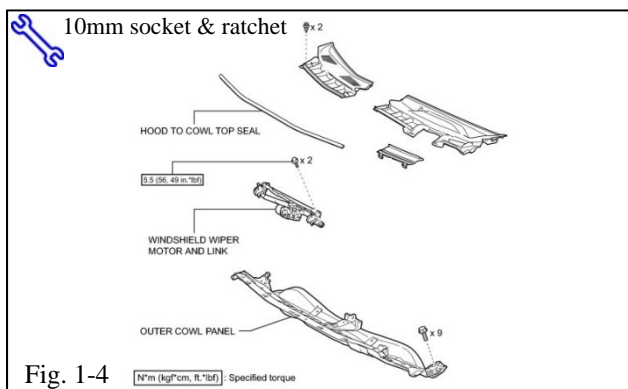


Fig. 1-4

(d) Disconnect the driver side of the cowl to hood seal (Fig. 1-3).

(e) Remove the cowl covers (Fig. 1-4).

(1) Convex dots in the plastic indicate the location of the clips.

(2) Do not force the clips on the front edge of the cover.

(f) Tape the lower edge of the windshield for protection.

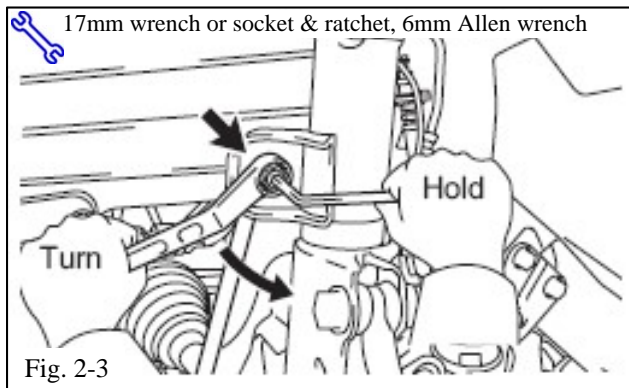
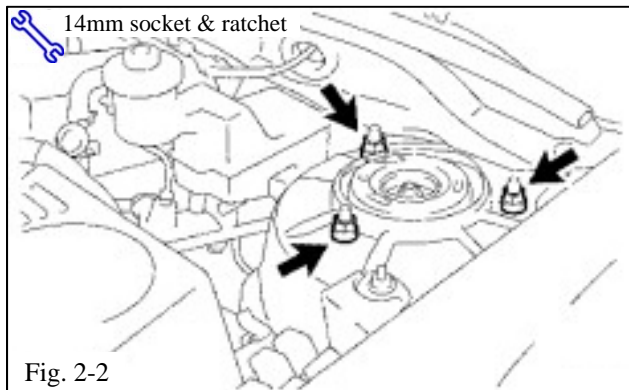
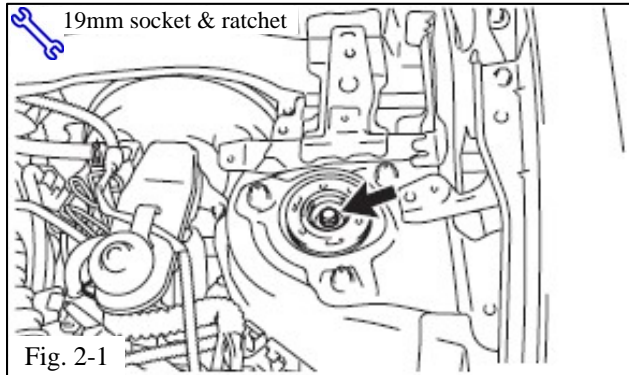
(g) Remove the wiper link/motor assembly (Fig. 1-4).

(1) Disconnect the wire connector.

(2) Remove the 2 screws.

(h) Remove the wire harness from the plastic fastener.

(i) Remove the outer cowl panel (Fig. 1-4).



## 2. Remove the Front Strut Assemblies.

- (a) Remove the suspension support dust cover.
- (b) Loosen the front support to front shock absorber nut (Fig. 2-1).

**⚠ CAUTION:** Do not remove nut.

- (c) Raise the vehicle so the front tires are off the ground.

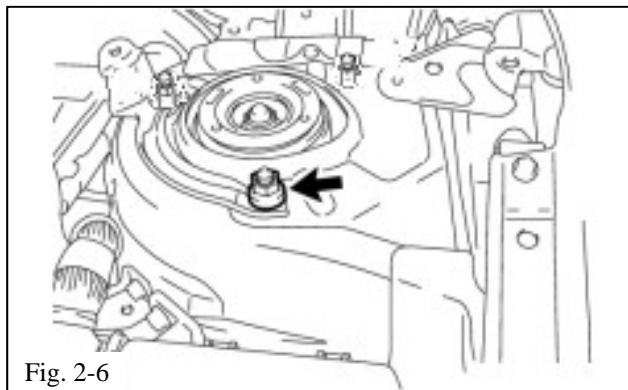
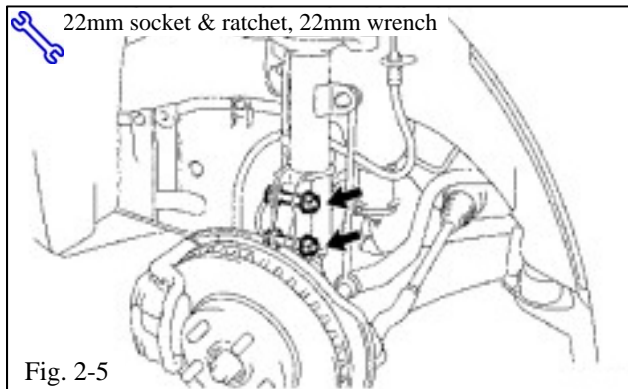
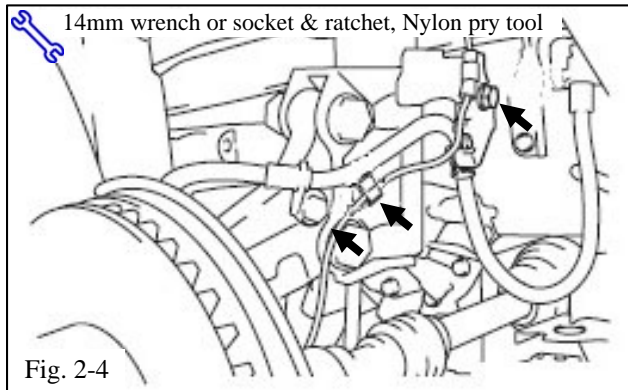
- (d) Remove the rear two support nuts and loosen the forward nut (Fig. 2-2).

**⚠ HINT:** Raise the vehicle to remove pressure from the assembly to remove the rear support nuts.

- (e) Remove the front wheels.

- (f) Separate the front stabilizer link from the strut assembly (Fig. 2-3).

**⚠ NOTE:** If the ball joint turns with the nut, use a 6mm Allen wrench to hold the center stud in place.



(g) Separate the front flexible hose and speed sensor wire, if equipped (Fig. 2-4).

(h) Disconnect the strut assembly from the knuckle (Fig. 2-5).

**⚠ NOTE:** Take careful note of the orientation and location of these bolts so that they can be reinstalled the same way they were removed.

(i) Remove the strut assembly.

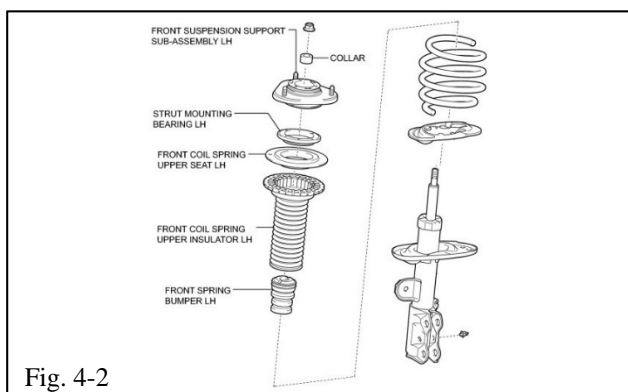
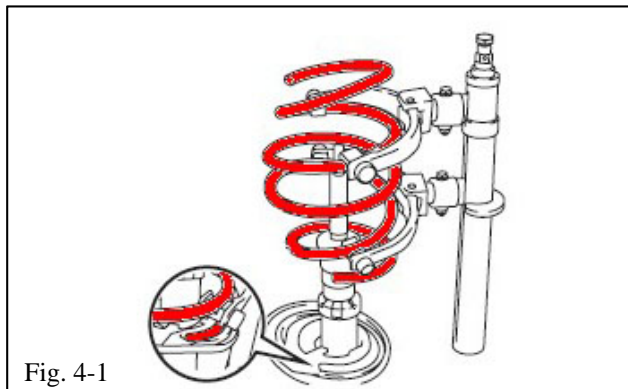
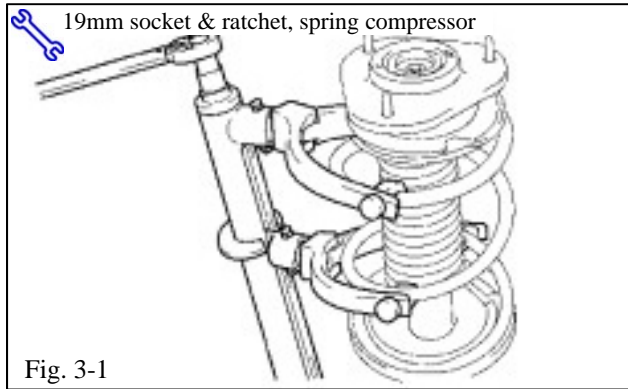
**⚠** (1) Support the weight of the strut assembly and remove the top nut by hand (Fig. 2-6).

(2) Pull the strut assembly out of the wheel well.

**⚠ WARNING:** Take care to not put any stress on the speed sensor wire while removing the strut assembly.

**⚠ HINT:** Take care to not allow the knuckle to fall too far from the vehicle because the inner drive axle joint may pull away from drive assembly.

(j) Repeat Steps 2(b) through 2(i) on the other side.



### 3. Disassemble the Strut Assemblies.

- ✚ (a) Compress a spring in a spring compressor.
- (b) Remove the upper nut, coil spring seat, and insulator (Fig. 3-1).
- (c) Remove and discard the original spring and spring bumper.
- (d) Repeat Step 3 on the second strut assembly.

### 4. Assemble the Strut Assemblies.

- (a) Install a front TRD spring.
    - (1) The spring coil end with the slightly smaller diameter faces upward and the spring coil end with the large gap faces downward (Fig. 4-1).
    - (2) Fit the lower end of the coil spring into the pocket of the shock absorber lower seat.
  - (b) Install a supplied front spring bumper (Fig. 4-2).
- ⚠ NOTE:** Install the spring bumper onto the shock absorber piston shaft.
- (c) Install the coil spring upper seat with the coil spring insulator onto the spring.
  - (d) Install the support sub-assembly and dust seal.



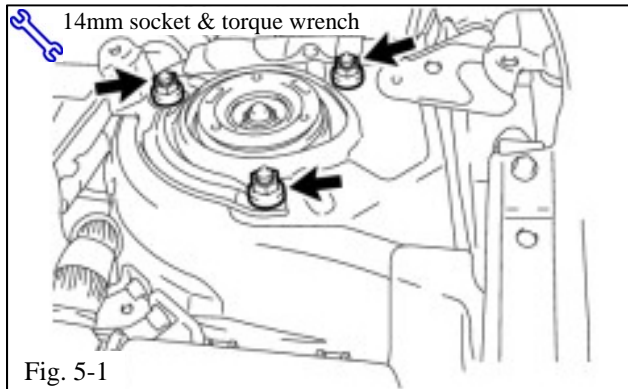
- (e) Install a **new** shock absorber nut and the original collar.
  - (1) Do not force the nut, causing the shock absorber piston shaft to rotate.
  - (2) This nut will be torqued later, once the strut assembly is installed on the vehicle.
- (f) Repeat Step 4 on the second strut assembly.

**5. Install the Front Strut Assemblies.**

- (a) Raise the strut into the wheel well and fasten the 3 nuts removed in Step 2 (Fig. 5-1).

**⚠ NOTE:** Confirm the TRD strut brace or original strut reinforcement is in place.

**⚠ Torque: 50 N·m (37 ft·lbf)**

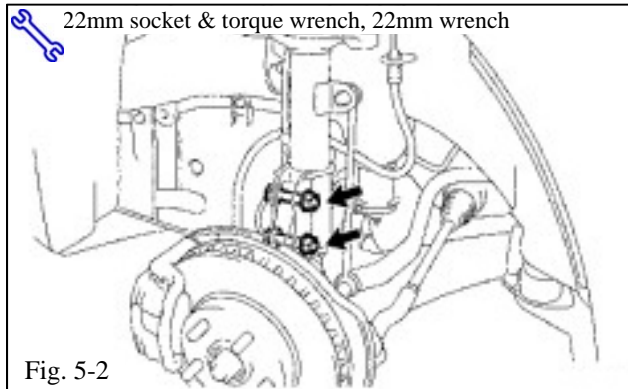


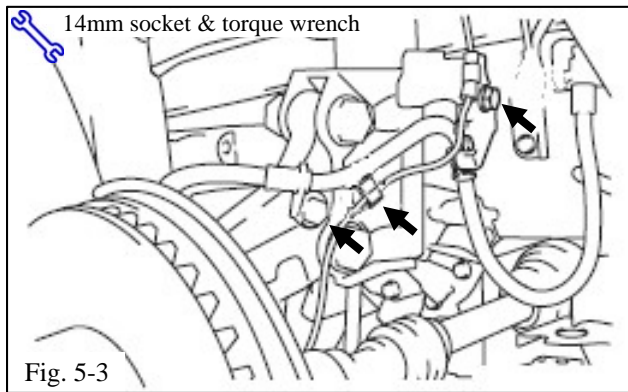
- (b) Attach the strut assembly to the knuckle with the 2 bolts and 2 nuts removed in Step 2(h) (Fig. 5-2).

**⚠ CAUTION:** Install the bolts in the same orientation they were in prior to removal.

**⚠ NOTE:** Push inward on the strut assembly for maximum negative camber while tightening the nuts.

**⚠ Torque: 240 N·m (177 ft·lbf)**





(c) Attach the front flexible brake hose and speed sensor, if equipped (Fig. 5-3).

**⚠ CAUTION:** Ensure the flexible hose and speed sensor wire are not twisted.

**⚠ Torque: 29 N·m (21 ft·lbf)**

(d) Attach front stabilizer link assembly.

**⚠ Torque: 74 N·m (55 ft·lbf)**

**⚠ NOTE:** If the ball joint turns with the nut, use a 6mm Allen wrench to hold the center stud in place.

**⚠ NOTE:** Repeat Steps 5(a) to 5(d) on the other side of the vehicle.

(e) Install the front wheel/tire assemblies onto the vehicle. Hand start the lug nuts.

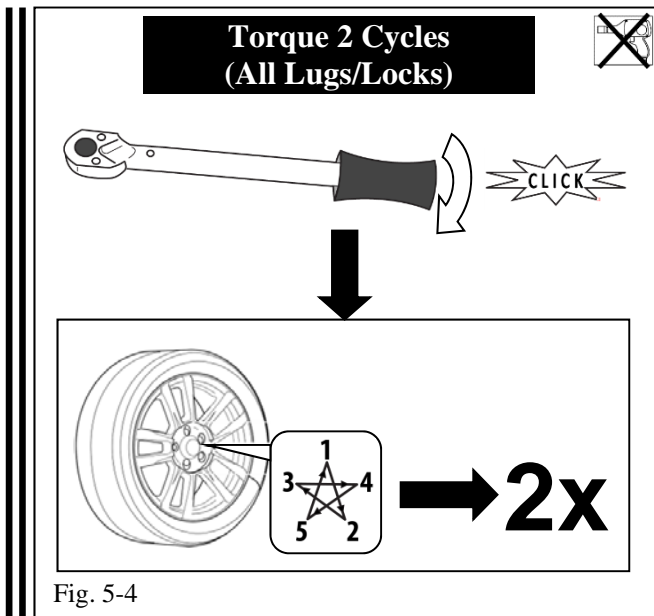
(f) Use a torque wrench to tighten the lug nuts in sequence 1 through 5 to 103N·m (76 ft·lbf) (Fig. 4-5).

**⚠ Torque: 103N·m (76 ft·lbf)**

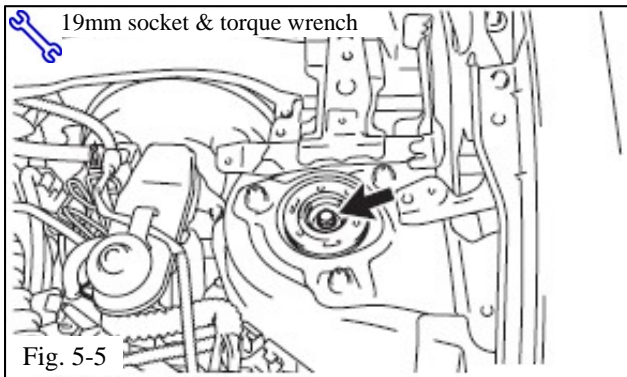
**⊘ STOP** (g) Re-torque all of the lug nuts in same the 1-5 sequence (Fig. 5-4).

**⚠ Torque: 103N·m (76 ft·lbf)**

**⊘ STOP CAUTION: DO NOT USE AN IMPACT WRENCH TO INSTALL OR REMOVE WHEEL LOCKS.**







- (h) With vehicle weight on the tires, tighten the upper shock absorber nuts (Fig. 5-5).

**⚠ Torque: 47 N·m (35 ft·lbf)**

- (i) Install the front suspension support dust covers.

## 6. Replace the Cowl and Wiper Assembly.

- (a) Replace the outer cowl panel (Fig. 6-1).

**Torque: 6.0 N·m (53 in·lbf)**

- (b) Replace the wiper link/motor assembly (Fig. 6-1).

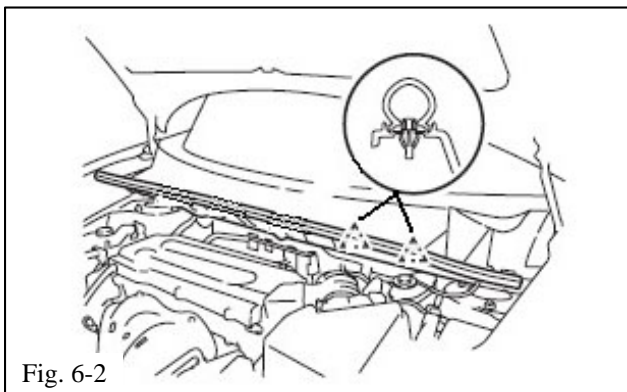
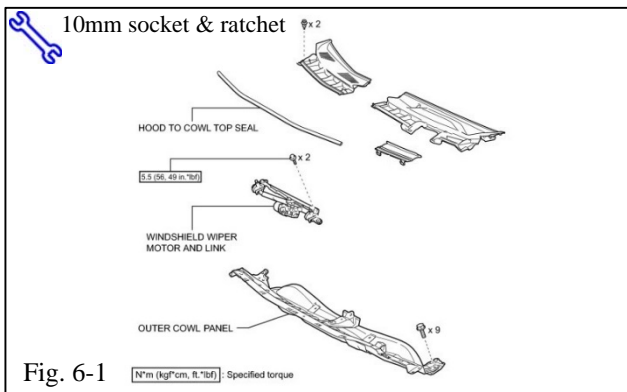
- (1) Replace the 2 screws.

**Torque: 5.5 N·m (49 in·lbf)**

- (2) Connect the wire harness and clip the harness to the cowl panel.

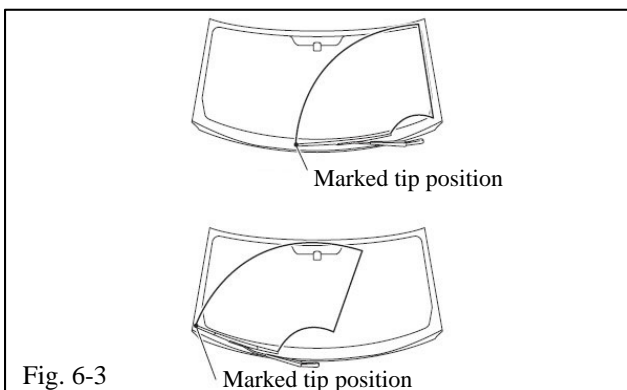
- (c) Replace the cowl top vent louvers (Fig. 6-1).

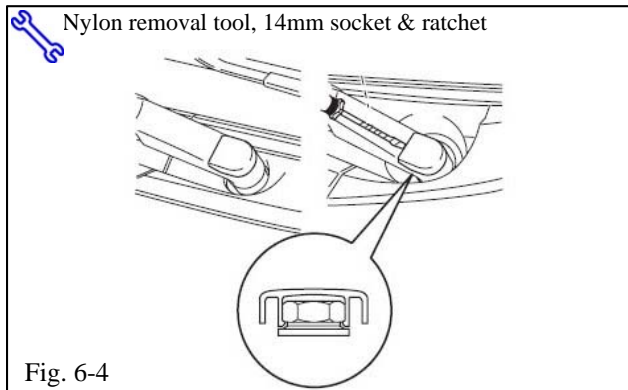
- (d) Reconnect the driver side of the cowl to the hood seal (Fig. 6-2).



- (e) Replace the windshield wiper arms.

- (1) Place the wiper tips at the position marked in Step 1(c) (Fig. 6-3).





(f) Replace and tighten the nuts (Fig. 6-4).

**Torque: 26 N·m (19 ft·lbf)**

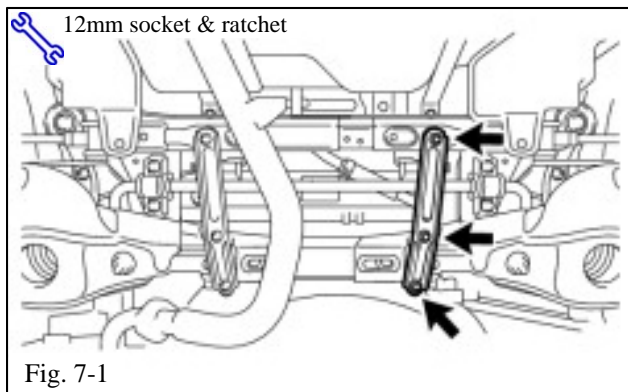
## 7. Remove the OE Rear Springs.

(a) Remove the rear wheels.

(b) Remove both rear suspension member braces.

(1) Remove the 3 bolts and rear suspension member brace LH from the rear suspension member sub-assembly (Fig. 7-1).

(2) Repeat the process on the RH side.

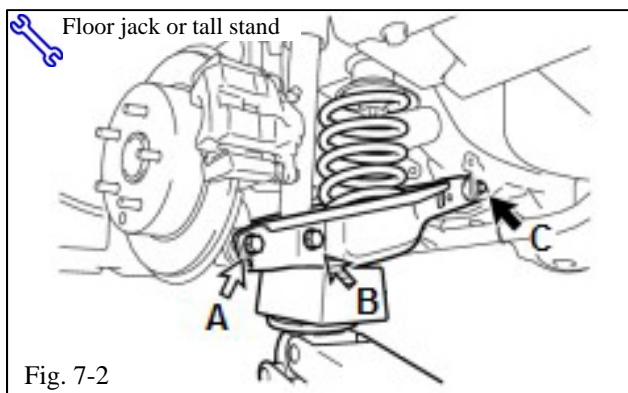


(c) Remove the rear coil spring (Fig. 7-2).

(1) Use a floor jack or tall stand to raise the rear No. 2 suspension arm assembly by 2 inches (protect the painted surface with a rag or rubber pad).

(2) Remove bolt A.

**⚠ CAUTION:** The nut has a locking feature. Turn the **BOLT** while the nut is held in place.



(3) Remove bolt B.

**⚠ NOTE:** Lower the arm to remove the load from the bolt.

**⚠ CAUTION:** The nut has a locking feature. Turn the **BOLT** while the nut is held in place.

(4) Remove the coil spring.

(5) Remove the upper insulator and save it for reuse with the TRD spring.

(d) Repeat Step 5(c) on the other side.

### 8. Install the Rear TRD Springs.

(a) Install the upper spring insulator onto an F-Sport spring (Fig. 8-1).

**⚠ NOTE:** The upper end of the spring has a smaller diameter coil than the lower end. Install the coils with the smaller gaps upward.

(b) Confirm the lowering spring insulator is free of debris and in place on the lower control arm.

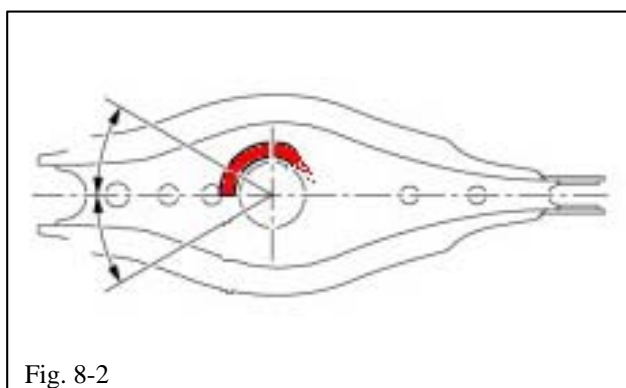
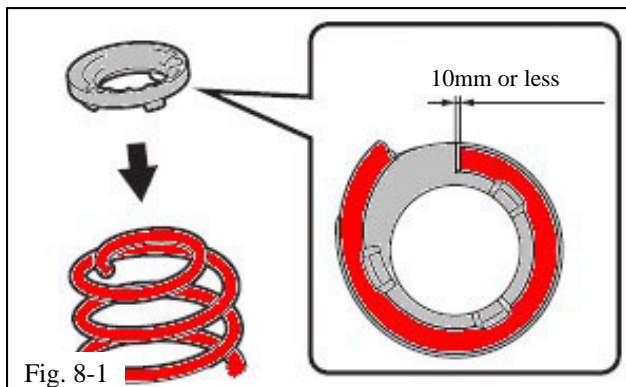
(c) Install the rear spring so that the lower end of the coil is indexed to line up within 30° of the wheel (Fig. 8-2).

(d) Repeat Steps 6(a) to 6(c) on the other side.

**⚠ NOTE:** Install both springs before reconnecting the shock absorber and rear axle assembly to the lower control arm.

(e) Temporarily install bolt B and nut onto the rear No. 2 suspension arm assembly.

**⚠ CAUTION:** The nut has a locking feature. Turn the **BOLT** while the nut is held in place.



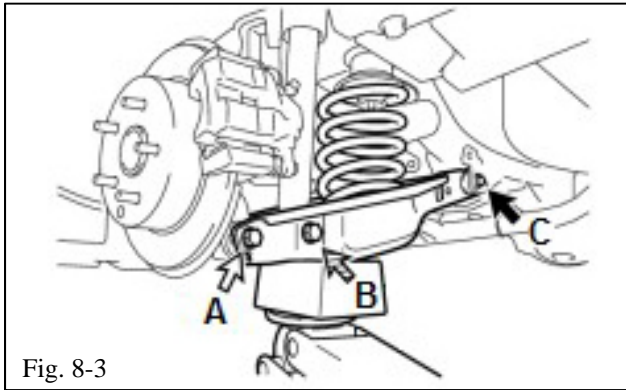


Fig. 8-3

- (f) Fasten the rear No. 2 suspension arm assembly to the rear axle assembly with bolt A and nut (Fig. 8-3).

**⚠ CAUTION:** The nut has a locking feature. Turn the **BOLT** while the nut is held in place.

**⚠ Torque: 90 N·m (66 ft·lbf)**

- (g) Reinstall the rear suspension member braces.

**⚠ Torque: 35 N·m (26 ft·lbf)**

- (h) Install the rear wheel/tire assemblies onto the vehicle. Hand start the lug nuts.

- (i) Use a torque wrench to tighten the lug nuts in sequence 1 through 5 to 103N·m (76 ft·lbf) (Fig. 8-4).

**⚠ Torque: 103N·m (76 ft·lbf)**

- (j) Re-torque all of the lug nuts in same the 1-5 sequence (Fig. 8-4).

**⚠ Torque: 103N·m (76 ft·lbf)**

**⛔ CAUTION: DO NOT USE AN IMPACT WRENCH TO INSTALL OR REMOVE WHEEL LOCKS.**

- (k) Torque bolt B.

**⚠ HINT:** Use a ramp or jack stands to place the weight of the vehicle on the rear tires or control arms.

**+ WARNING:** Be sure to chock the front wheels if jack stands are used.

**⚠ CAUTION:** The nut has a locking feature. Turn the **BOLT** while the nut is held in place.

**⚠ Torque: 90 N·m (66 ft·lbf)**

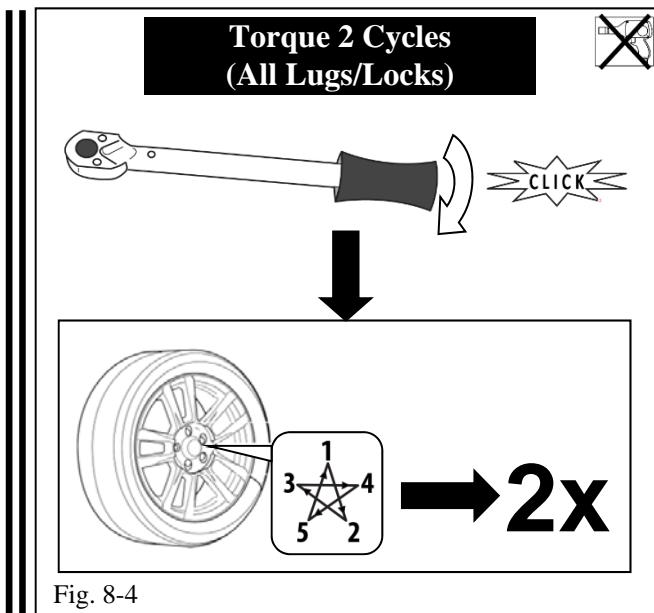


Fig. 8-4

(l) Loosen and re-torque bolt C.

**⚠ CAUTION:** The nut has a locking feature. Turn the **BOLT** while the nut is held in place.

**⚠ Torque: 90 N·m (66 ft·lbf)**

## 9. Adjust the Wheel Alignment.

Toe adjustment is necessary after installing the TRD lowering springs. Specifications are listed below for reference.

- (a) Park the vehicle on an alignment rack at the designated location, with the steering wheel pointed straight ahead.
- (b) Install a steering wheel holding tool. Insure that the steering wheel is completely straight.

**⚠ HINT:** Line up the horn pad with the plastic garnish covering the steering column (Fig. 9-1).

### Front:

**Camber =  $-0^{\circ}13'$   $\pm$   $-45'$  ( $-0.22^{\circ}$   $\pm$   $-0.75^{\circ}$ )**  
(reference only)

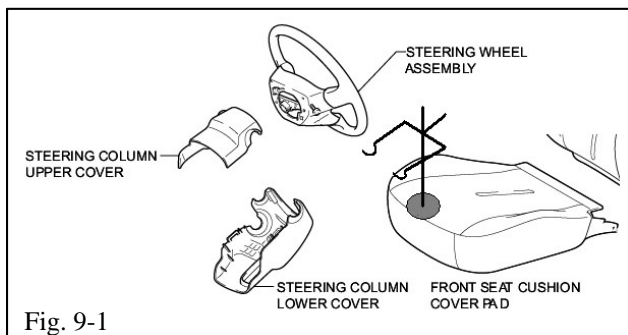


Fig. 9-1

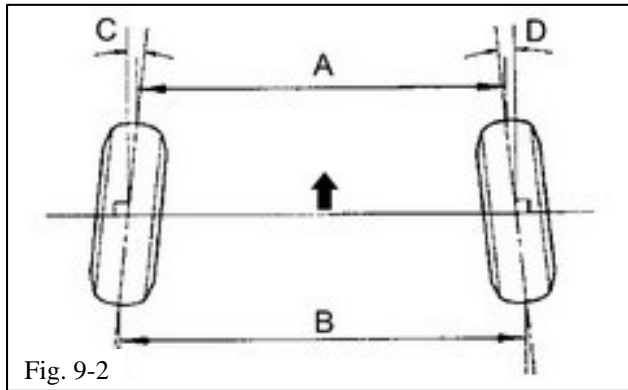


Fig. 9-2

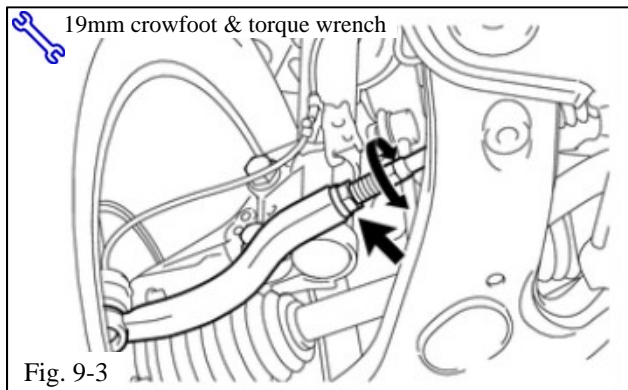


Fig. 9-3

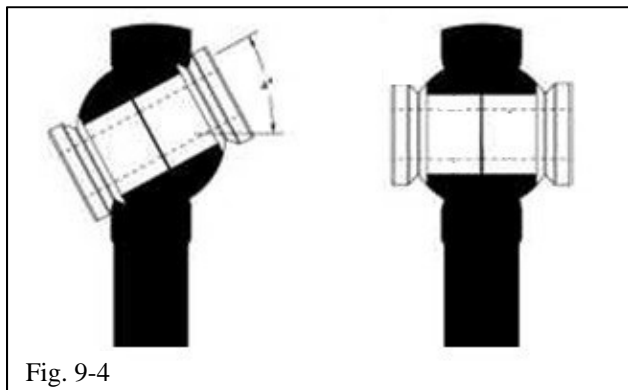


Fig. 9-4

(c) Measure the toe (Fig. 9-2). If necessary, adjust it by loosening the tie rod locking nuts and turning the inner tie rods (Fig. 9-3).

**Total Toe-in = 0°12' +/- 0°12' (0.20° +/- 0.20°)  
2.0 +/-2.0 mm (0.08 +/-0.08 in.)**

(d) Use a 19mm crowfoot to torque the locking nuts, taking care not to upset the final readings (See Fig. 9-3).

**⚠ HINT:** Turn the tie rod ends clockwise until they stop. Adjust the toe with additional “toe in” so that torquing the lock nut moves the wheel into specification.

**⚠ Torque: 74 N·m (55 ft·lbf)**

**⚠ NOTE:** After the lock nut is torqued, return the tie rod end to its neutral position on the ball joint (Fig. 9-4).

**Rear:**

**Camber = -2°0' +/-30' (-2.00° +/-0.50°)  
(reference only)**



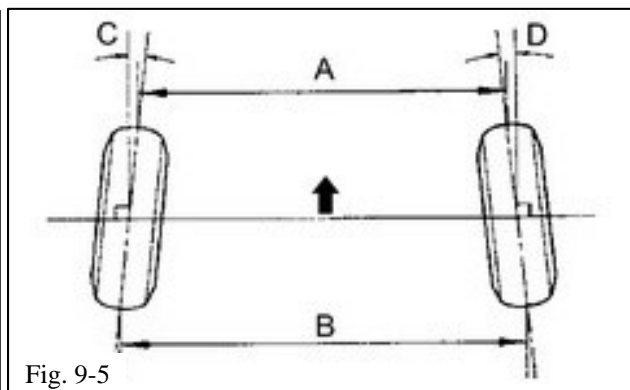


Fig. 9-5

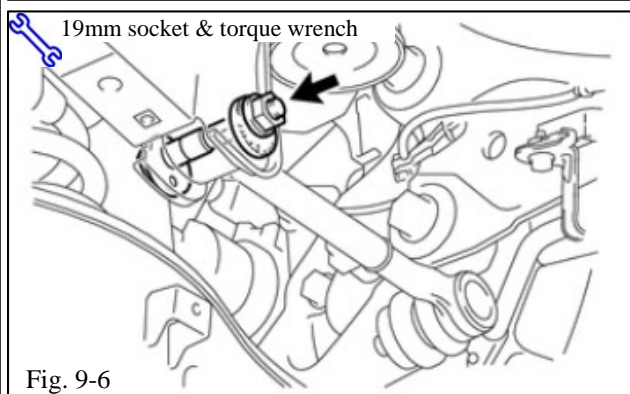


Fig. 9-6

- (e) Measure the toe (Fig. 9-5). If necessary, adjust it by loosening the cam locking nuts and turning the adjustment cams (Fig. 9-6).

**Total Toe-in = 0°12' +/- 0°12' (0.20° +/- 0.20°)**

**2.0 +/-2.0 mm (0.08 +/-0.08 in.)**

- (f) Use a 19mm socket to torque the locking nuts, taking care not to upset the final readings (Fig. 9-6).

**⚠ Torque: 100 N·m (74 ft·lbf)**

Checklist - these points **MUST** be checked to ensure a quality installation.

<p><u>Check:</u></p>	<p><u>Look For:</u></p>
<p><u>Accessory Function Checks</u></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Check for noise</li> <li><input type="checkbox"/> Upper and lower rear spring insulators are located properly</li> <li><input type="checkbox"/></li> </ul>	<p>Confirm all springs are seated properly</p> <p>Bent or folded condition; insulator squeezed out of position</p>
<p><u>Vehicle Function Checks</u></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Confirm VSC light is not on</li> <li><input type="checkbox"/> Confirm all hardware with torque values are tight</li> <li><input type="checkbox"/> Confirm wipers operate properly</li> </ul>	<p>Speed sensor wires are plugged in</p> <p>Loose hardware</p> <p>No contact with windshield seal</p>
<p><u>Vehicle Appearance Check</u></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> After accessory installation and removal of protective cover(s), perform a visual inspection.</li> </ul>	<p>Ensure no damage (including scuffs and scratches) was caused during the installation process. (For PPO installations, refer to TMS Accessory Quality Shipping Standard.)</p>