

**Part Number: PT843-1C170****Kit Contents**

Item #	Quantity Req'd.	Description
1	2	Front Springs
2	2	Rear Springs
3	1	Hardware Bag
4	1	Instruction Form

**Hardware Bag Contents**

Item #	Quantity Req'd.	Description
1	2	Nut, Lock (Front Shock)

**Additional Items Required For Installation**

Item #	Quantity Req'd.	Description
1		

**Conflicts**

None
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**General Applicability**

2018 and newer C-HR models
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**Recommended Sequence of Application**

Item #	Accessory
1	

\*Mandatory

**Recommended Tools**

Personal & Vehicle Protection	Notes
Fender Covers	2
Safety Glasses	
Special Tools	Notes
Wall Mounted Spring Compressor	SST 09727-00051 SST 09727-30022
Molding Remover Tool	
Tall Jack Stand	(3 if available)
Screwdriver	Wrap tip w/protective tape
Brake Hold Tool	
Crowfoot Torque Wrench	37 ft·lb
Torque Wrench Adaptor	SPX 09249-63010-01
Installation Tools	Notes
Torque Wrench	3/8" & 1/2" drive
Sockets 3/8" drive	14mm deep, 17mm, 19mm 12-point
Sockets 1/2" drive	17mm, 19mm, 21mm deep, 22mm
Crowfoot socket 1/2" drive	19mm
1/2" Impact Gun	Only for removing fasteners
3/8" Air Ratchet Wrench	Only for removing fasteners 10mm, 14mm, 17mm
Nylon Pry Tool	
Special Chemicals	Notes
None	

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

Item #	Quantity Req'd.	Description
1	2	48331-F4010 Fr Spring Bumper
2	2	90177-14005 Nut, Lock (Front)
3		

**Legend****STOP:** Damage to the vehicle may occur. Do not proceed until process has been complied with.**OPERATOR SAFETY:** Use caution to avoid risk of injury.**CAUTION:** 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.**TOOLS & EQUIPMENT:** Used in Figures calls out the specific tools and equipment recommended for this process.**REVISION MARK:** This mark highlights a change in installation with respect to previous issue.**SAFETY TORQUE:** 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 Toyota dealer for a copy of this document.

## 1. Remove the Windshield Wiper Motor and Link Assembly.

(a) Remove the wiper arm head caps (Fig. 1-1).

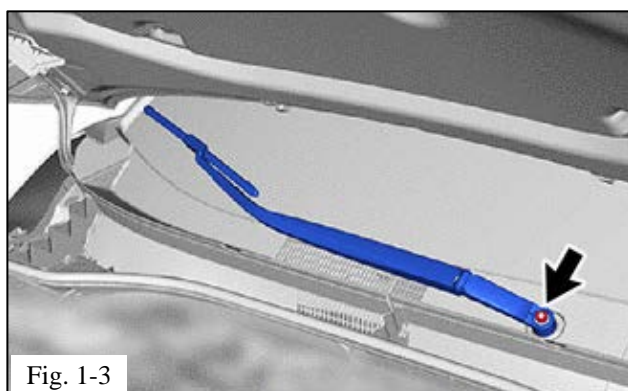
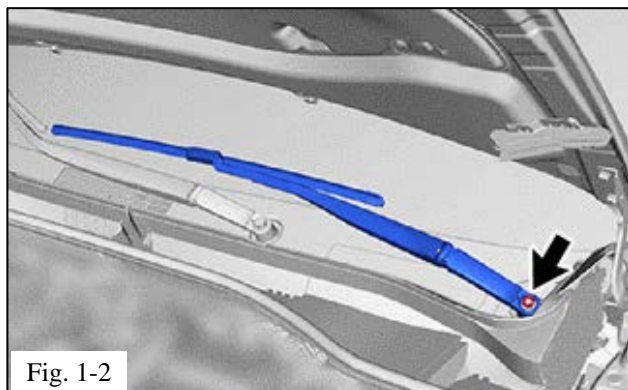
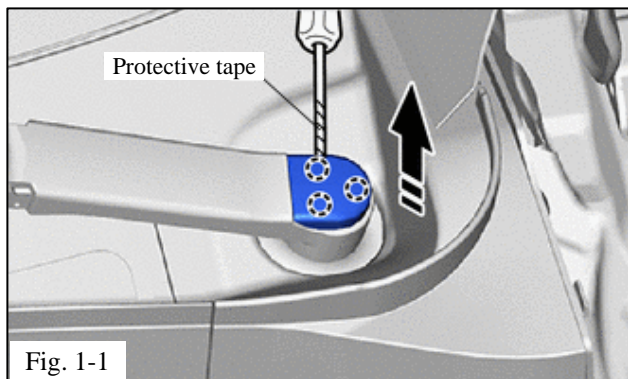
(1) Using a screwdriver with its tip wrapped in protective tape, disengage the 3 claws.

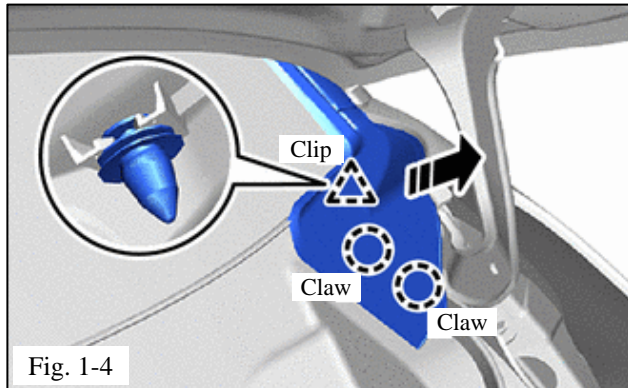
(2) Remove the front wiper arm head cap.

**NOTE:** Use the same procedure for the RH and LH sides.

(b) Mark the wiper position alignment marks on the windshield with a wax pencil or tape.

(c) Remove the nut, front wiper arm, and blade assembly (LH & RH) (Fig. 1-2 and Fig. 1-3).

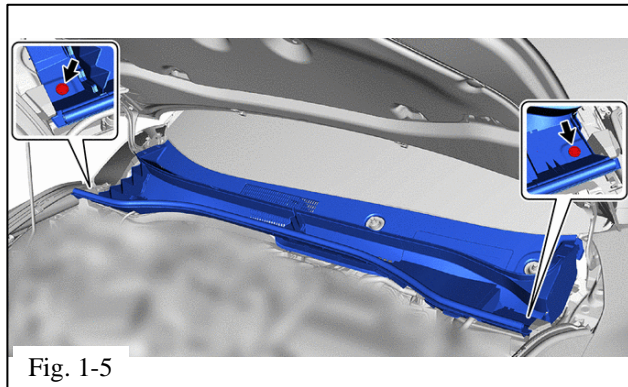




(d) Raise the hood.

(e) Remove the windshield outside moldings (LH & RH) by disengaging the claws and clip (Fig. 1-4).

**NOTE:** Use the same procedure for the RH and LH sides.



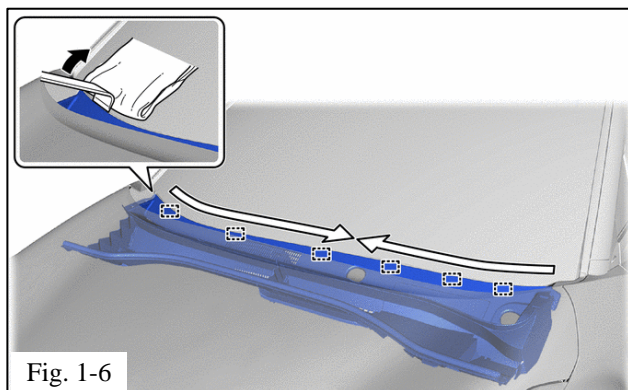
(f) Remove the cowl top ventilator louver sub-assembly (Fig. 1-5).

(1) Remove the 2 clips (Fig. 1-5).

**CAUTION:** To prevent damage to the windshield, remove any foreign matter (sand, dust, etc.) from around the contacting surfaces of the cowl top ventilator louver sub-assembly & windshield.

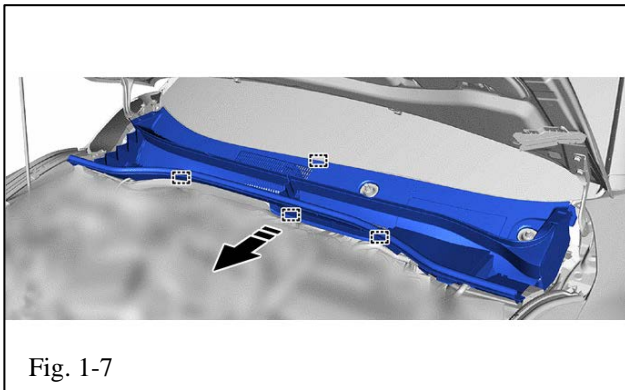
(2) Close the hood sub-assembly.

(3) Using the molding remover D, disengage the cowl top ventilator louver sub-assembly from the windshield (Fig. 1-6).



**NOTE:**

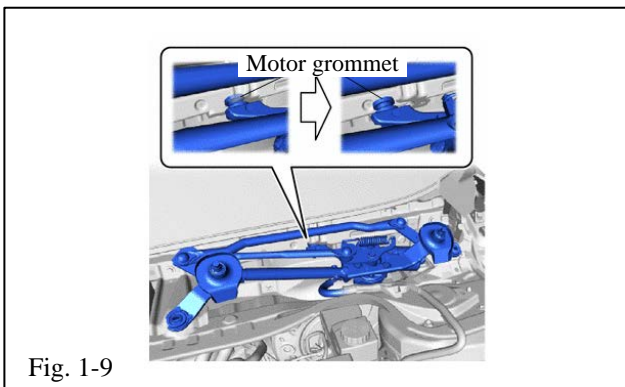
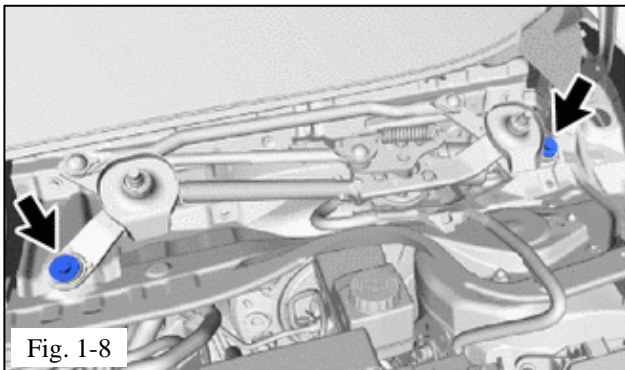
- To prevent damage to the windshield, set a piece of cloth between the molding remover and the windshield.
  - Do not pry up the cowl top ventilator louver sub-assembly forcibly as it may be deformed or damaged.
- (4) Open the hood sub-assembly and place protection over fenders.



- (5) Disengage the guides to remove the cowl top ventilator louver sub-assembly (Fig. 1-7).

**⚠ NOTE:** When removing the cowl top ventilator louver sub-assembly, it may contact the brake master cylinder reservoir filler cap assembly and cause it to fall off. Check the installation condition of the brake master cylinder reservoir filler cap assembly after removing the cowl top ventilator louver sub-assembly.

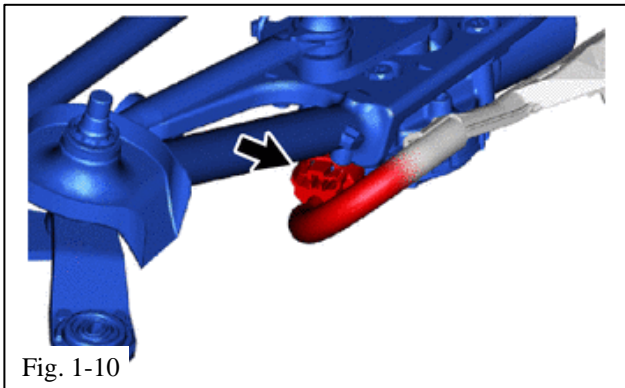
- (g) Remove the 2 bolts (Fig. 1-8).



- (h) Disengage the motor grommet (Fig. 1-9).

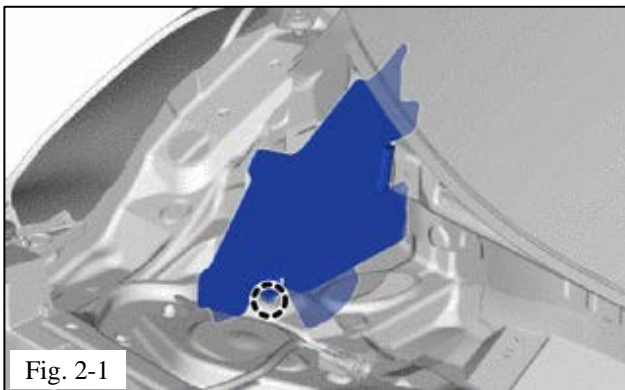
**⚠ NOTE:** Be careful not to damage the windshield glass when removing the windshield wiper motor and link assembly.



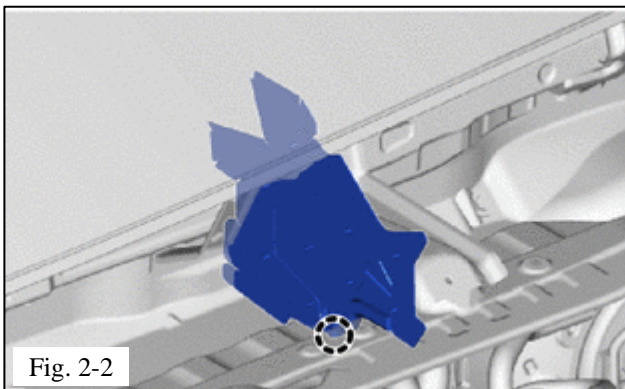


- (i) Disconnect the connector to remove the windshield wiper motor and link assembly (Fig. 1-10).

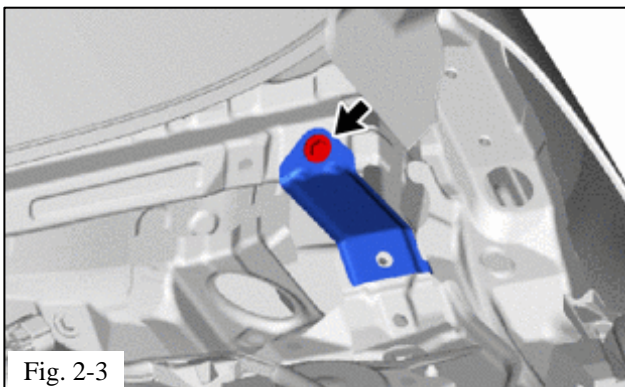
## 2. Remove the Outer Cowl Top Panel Sub-assembly.



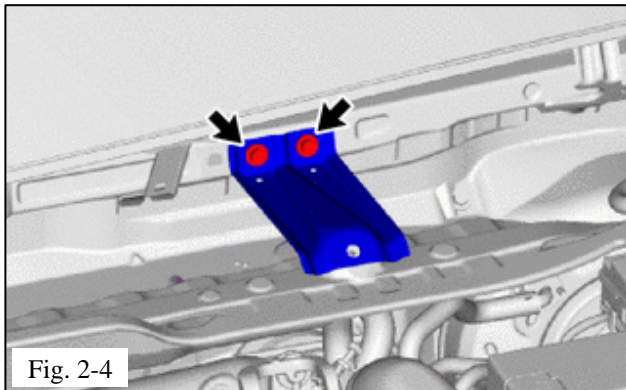
- (a) Remove the No.1 heater duct splash shield seal. Disengage the claw to remove the No. 1 heater duct splash shield seal from the outer cowl top panel sub-assembly (Fig. 2-1).



- (b) Remove the water guard plate (LH). Disengage the claw to remove the water guard plate LH (Fig. 2-2).

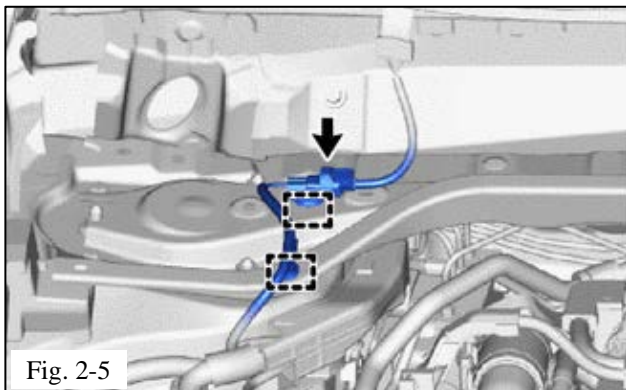


- (c) Remove the cowl body mounting reinforcement LH (Fig. 2-3). Remove the bolt and cowl body mounting reinforcement LH from the vehicle body.

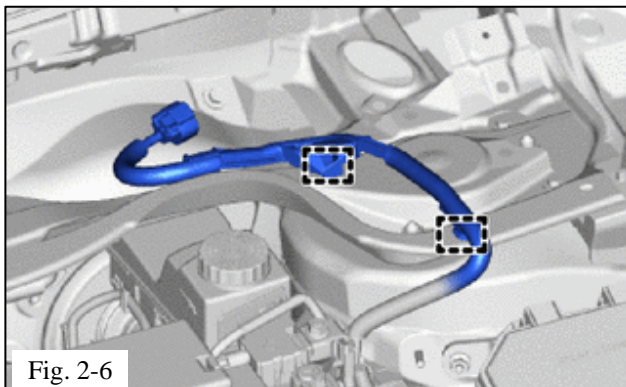


- (d) Remove the cowl body mounting reinforcement RH (Fig. 2-4). Remove the 2 bolts and cowl body mounting reinforcement RH from the vehicle body.
- (e) Remove outer cowl top panel sub-assembly.

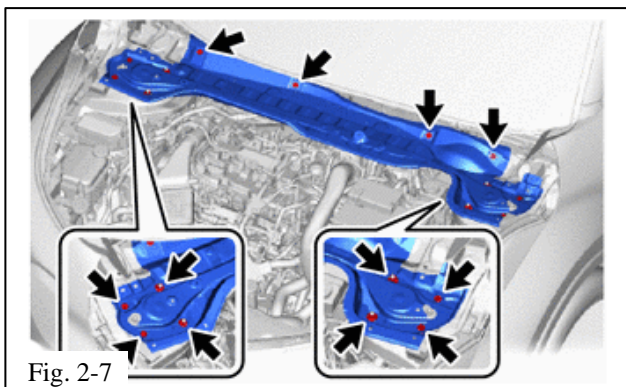
**⚠ If equipped with Windshield De-icer:**



- (1) Disconnect the connector (Fig. 2-5).
- (2) Disengage the 2 clamps to separate the wire harness from the outer cowl top panel sub-assembly.



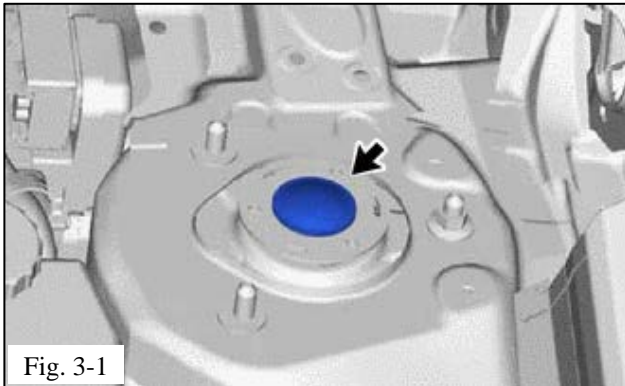
- (f) Disengage the 2 clamps to separate the wire harness from the outer cowl top panel sub-assembly (Fig. 2-6).



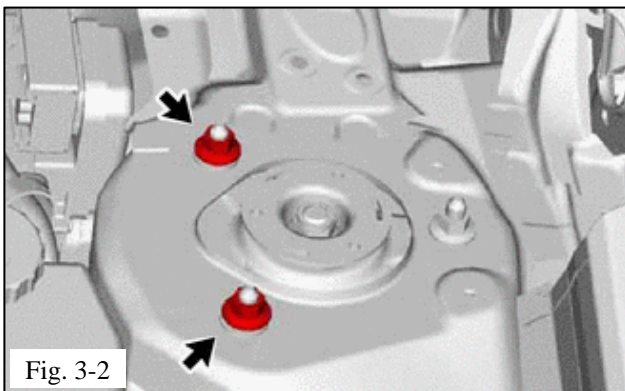
- (g) Remove the 8 bolts, 4 nuts and outer cowl top panel sub-assembly (Fig. 2-7).

### 3. Remove the Front Strut Assemblies.

- (a) Remove the front suspension support dust cover from the front shock absorber assembly (Fig. 3-1).



- (b) Temporarily reinstall the 2 LH and 2 RH nuts removed during Step 2(g) (Fig. 3-2).



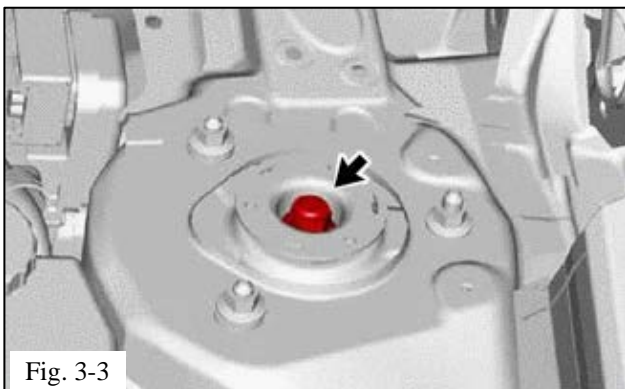
- (c) Loosen the front support to front shock absorber nut (Fig. 3-3).

**⚠ NOTE:** Do not completely remove the nut.

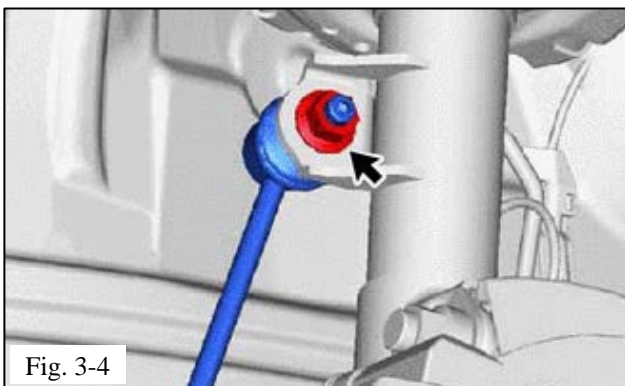
- (d) Remove the front wheels.

(1) Install the brake hold tool.

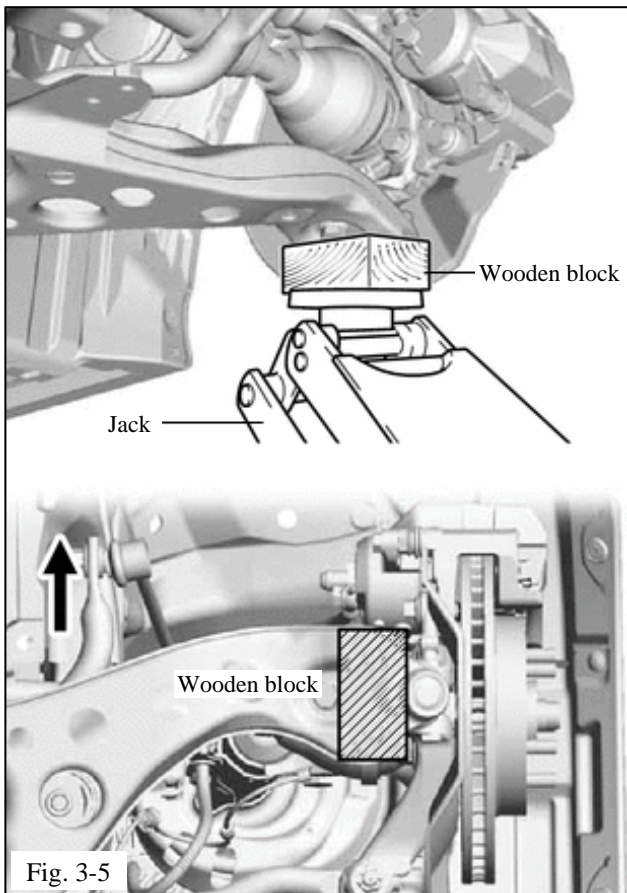
(2) Raise the vehicle.



- (e) Separate the front stabilizer link from the strut assembly. If the ball joint spins use a 6mm Allen wrench to hold the center stud in place (Fig. 3-4).





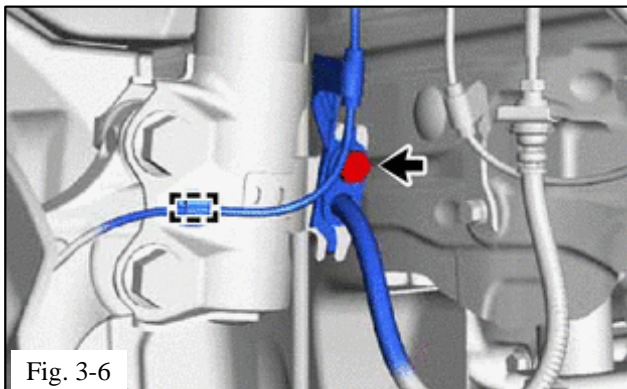


- (f) Support the front lower No. 1 suspension arm sub-assembly using a jack and wooden block (Fig. 3-5).

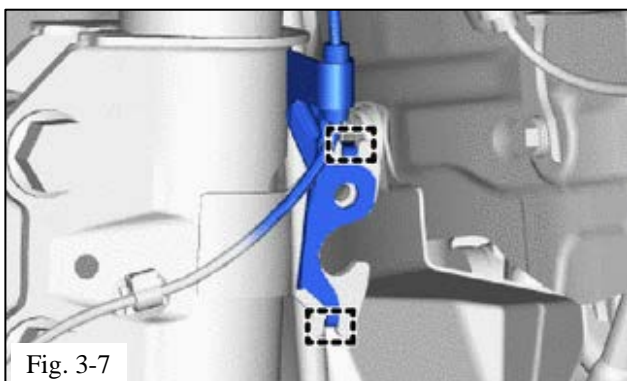
- (g) Separate the front flexible hose and speed sensor.

(1) Disengage the clamp (Fig. 3-6).

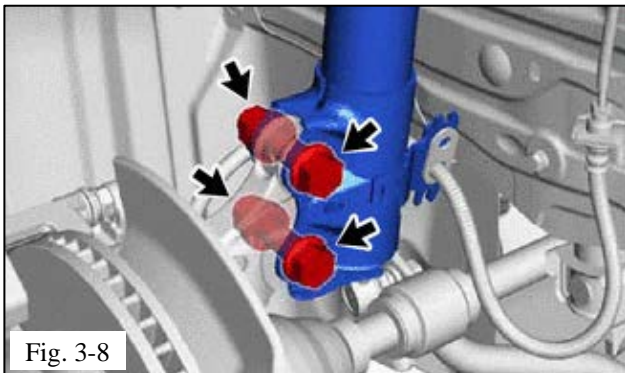
(2) Remove the bolt (Fig. 3-6).



- (3) Disengage the 2 hooks to separate the front speed sensor and front flexible hose from the front shock absorber assembly (Fig. 3-7).



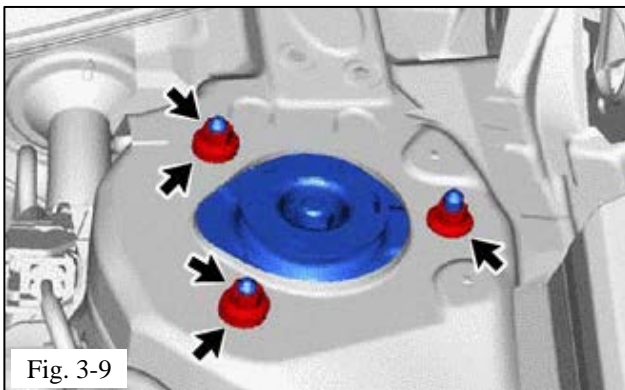




- (h) Disconnect the strut assembly from the knuckle. Remove the 2 bolts and 2 nuts (Fig. 3-8).

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

**⚠ CAUTION:** Do not allow top of knuckle to pull too far away from the vehicle as inner cv joint can pull apart. If there is difficulty pushing drive axle back into place, shift transmission into the “N” position.



- (i) Remove the 2 nuts and 2 spacers on each side. Loosen, but do not remove the remaining nut (Fig. 3-9).
- (j) Lower the jack.
- (k) Hold the strut assembly by hand while loosening the remaining nut (Fig. 3-9).
- (l) Supporting the weight of the strut assembly, pull the strut assembly out of the wheel well.

**⚠ NOTE:**

- Take care during removal to prevent paint damage to edge of fender opening.
- Do not put any stress on the speed sensor wire.

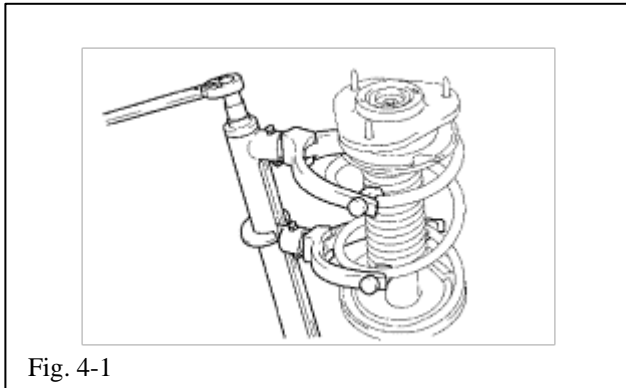


Fig. 4-1

#### 4. Disassemble the Strut.

- (a) Compress the spring in a spring compressor.
- (b) Remove the lock nut, spacer, upper support assembly, spring seat, bumper, and insulator (Fig. 4-1).

#### ⚠ NOTE:

- When removing the upper lock nut, use an SST or jig to prevent assembly rotation.
- Do not damage the threads on the upper support when removing the upper lock nut.

- (c) Remove the original spring.
- (d) Discard the lock nut.

#### 5. Assemble the Strut.

- (a) Install the front TRD spring (Fig. 5-1).

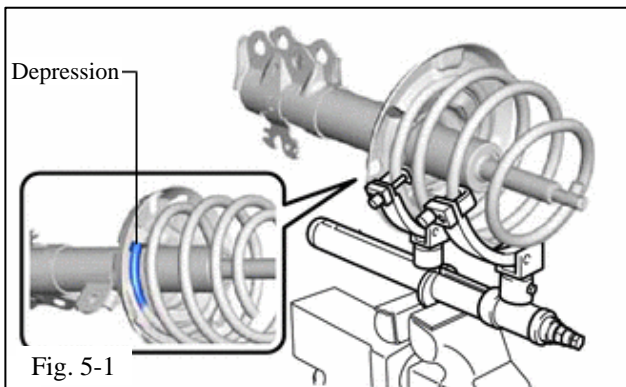


Fig. 5-1

- (1) Fit the end of the front coil spring that has the larger diameter into the depression of the front lower coil spring insulator.
- (2) Align the end of the front coil spring with the flange of the front lower coil spring insulator and install the front coil spring.

- (b) Install the front spring seat sub-assembly with insulator to the front shock absorber assembly (Fig. 5-2).

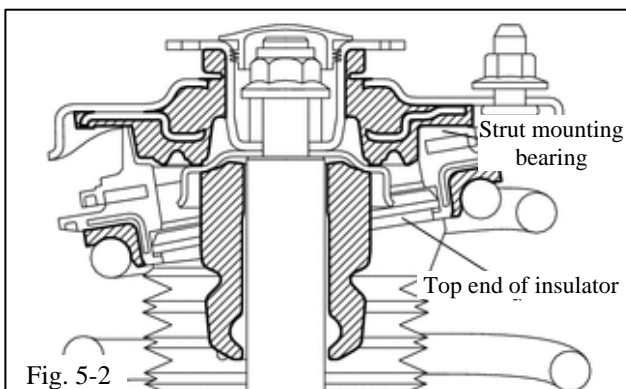
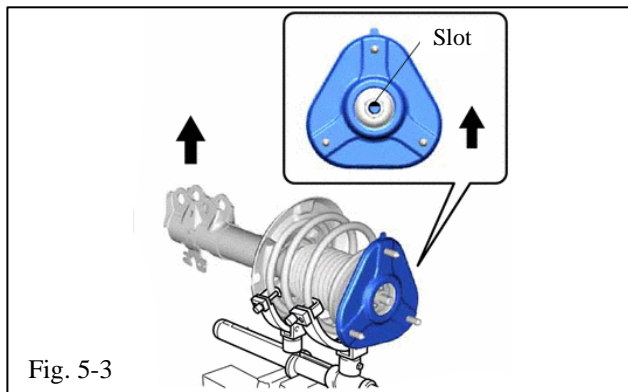
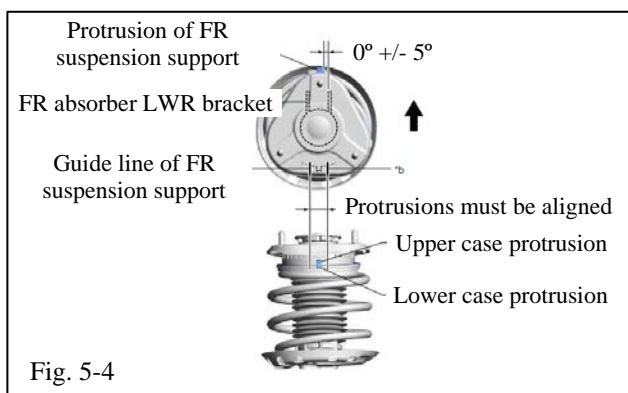


Fig. 5-2



- (c) Install the front suspension support sub-assembly as shown in the illustration (Fig. 5-3).

**NOTE:** Check that the slot on the piston rod and the slot on the front suspension support sub-assembly are aligned.



- (d) Align the protrusion of the front suspension support sub-assembly with the front shock absorber lower bracket and align the protrusions of the upper case and lower case of the strut mounting bearings (Fig. 5-4).

- (e) Install the collar and **new** supplied lock nuts.

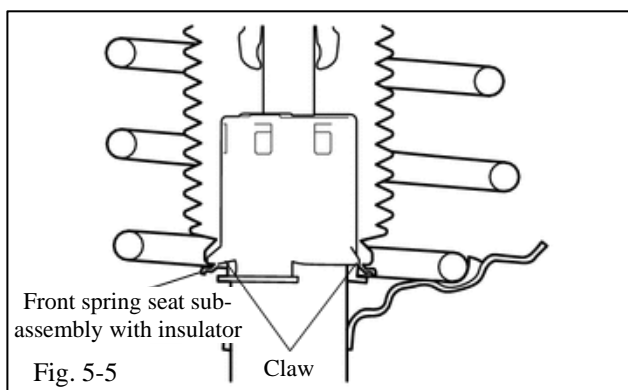
(1) Temporarily tighten a new front support to front shock absorber nut.

(2) Hand tighten nut onto threads as far as possible (it will be torqued down after strut assembly is on the car).

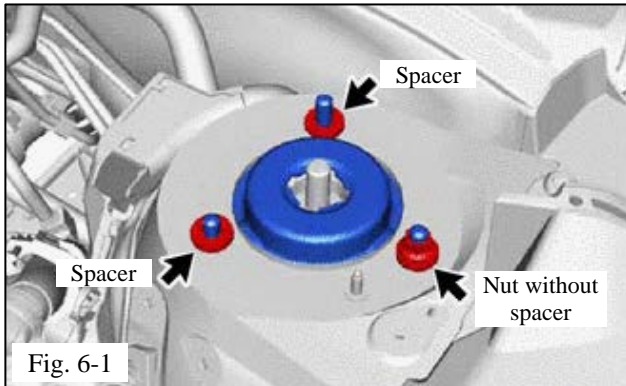
- (f) Slowly unwind coil spring compressor or SST to release spring.

- (g) Connect the front spring seat sub-assembly with the insulator (Fig. 5-5). Connect the end of the insulator of the front spring seat sub-assembly with insulator with the claws of the front shock absorber assembly.

**NOTE:** Make sure that the end of the insulator is securely attached to the claws of the front shock absorber assembly; and that there is no excessive damage to the bellows of the insulator.

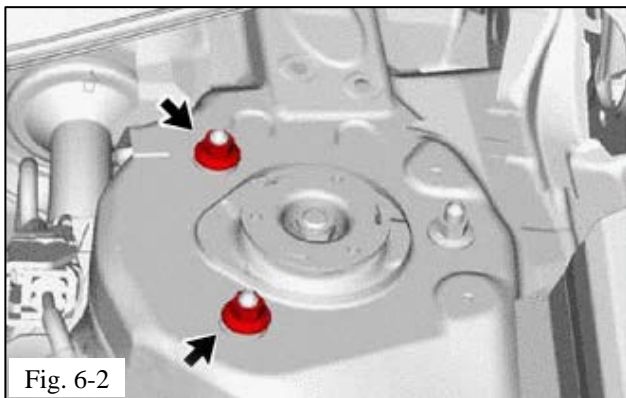




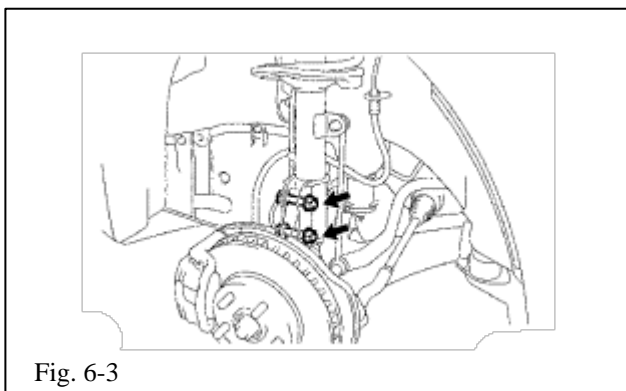


## 6. Install the Front Strut Assembly.

- (a) Raise the strut up into the wheel well; install the outboard nut and 2 spacers on each side (Fig. 6-1).



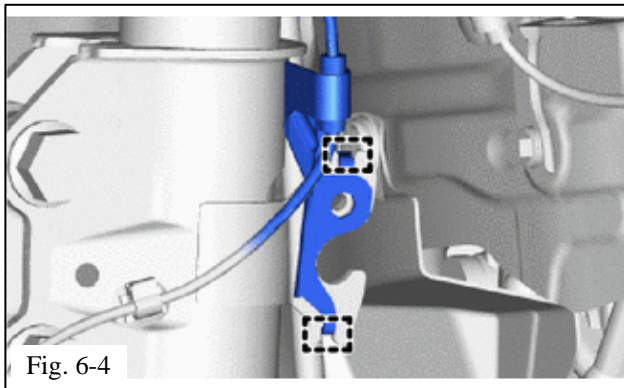
- (b) Temporarily install the remaining 2 nuts on each side to upper support studs (Fig. 6-2).
- (c) Confirm the TRD logo on the coil springs are facing outboard on both sides.



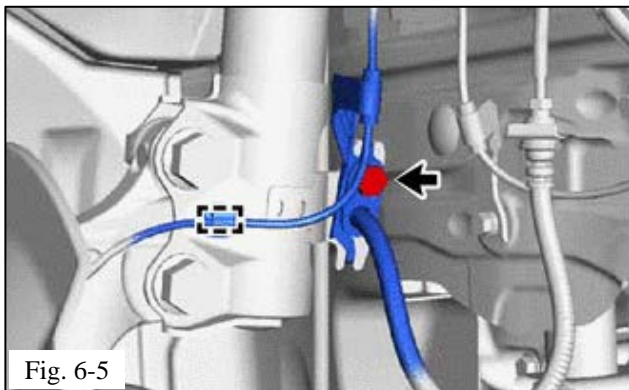
- (d) Attach the strut assembly to the knuckle with 2 bolts and 2 nuts. Install the bolts the same way they were removed (Fig. 6-3).

**NOTE:** Push inboard on the strut assembly while tightening the nuts to maximize the camber settings.

**Torque:** 270 N·m (2753 kgf·cm, 199 ft·lbf)



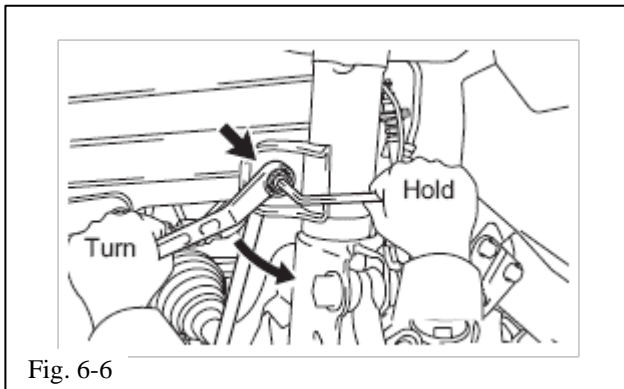
- (e) Engage the 2 front speed sensor hooks to the front shock absorber assembly (Fig. 6-4).



- (f) Attach front flexible brake hose and speed sensor (Fig. 6-5).

**⚠ NOTE:** Install the flexible hose and speed sensor without twisting them.

**⚙ Torque:** 29 N·m (296 kgf·cm, 21 ft·lbf)



- (g) Attach the front stabilizer link assembly (Fig. 6-6).

**⚠ NOTE:** If the ball joint turns together with the nut, use a 6 mm allen wrench or hexagon socket wrench to hold the stud.

**⚙ Torque:** 74 N·m (755 kgf·cm, 55 ft·lbf)

- (h) Fully tighten the front absorber shaft nuts (Fig. 3-3).

**⚙ Torque:** 47 N·m (479 kgf·cm, 35 ft·lbf)

- (i) Install the front suspension support dust cover (Fig. 3-1).

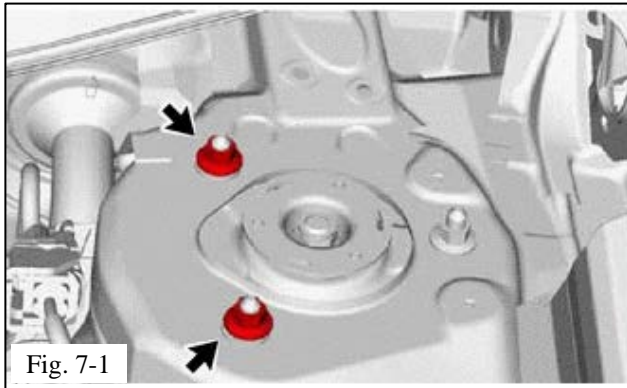


Fig. 7-1

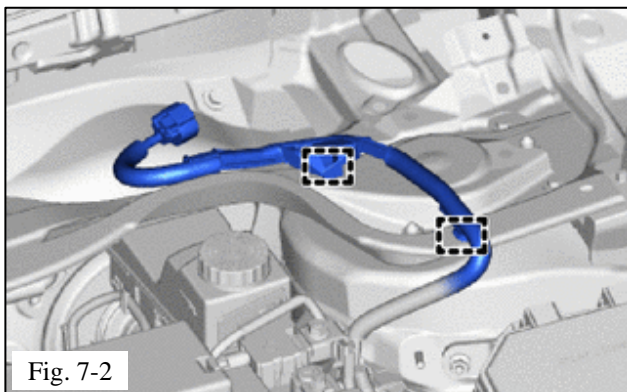


Fig. 7-2

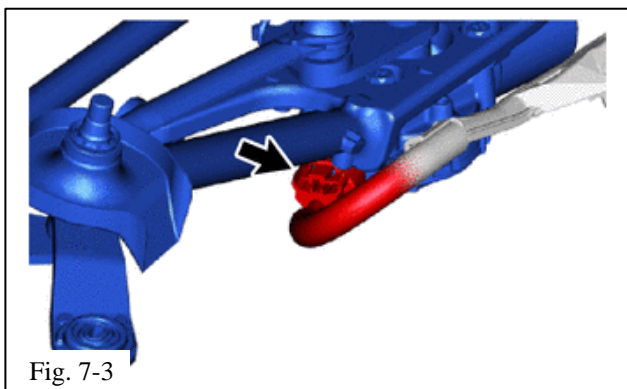


Fig. 7-3

## 7. Install the Outer Cowl Top Panel Sub-assembly.

- (a) Remove the 2 nuts on each side temporarily installed from the upper support studs (Fig. 7-1).

**NOTE:** Do not remove spacers below the nuts.

- (b) Install the outer cowl top panel sub-assembly with the 8 bolts and 4 nuts.

### **S** Torque:

**Bolt: 12 N·m (122 kgf·cm, 9 ft·lbf)**

**Nut: 50 N·m (510 kgf·cm, 37 ft·lbf)**

- (c) Engage the 2 clamps to install the wire harness to the outer cowl top panel sub-assembly (Fig. 7-2).

- (d) w/ Windshield De-icer:

- (1) Engage the 2 clamps to install the wire harness to the outer cowl top panel sub-assembly (Fig. 7-2).

- (2) Connect the connector (Fig. 7-3).

## 8. Install the Cowl Body Mounting Reinforcement RH.


- (a) Install the cowl body mounting reinforcement RH to the vehicle body with the 2 bolts.

**S Torque: 12 N·m (122 kgf·cm, 9 ft·lbf)**



**9. Install the Cowl Body Mounting Reinforcement LH.**

- (a) Install the cowl body mounting reinforcement LH to the vehicle body with the bolt.

 **Torque: 12 N·m (122 kgf·cm, 9 ft·lbf)**

**10. Install the Water Guard Plate LH.**


- (a) Engage the claw to install the water guard plate LH to the outer cowl top panel sub-assembly.


**11. Install the No. 1 Heater Air Duct Splash Shield Seal.**

- (a) Engage the claw to install the No. 1 heater air duct splash shield seal to the outer cowl top panel sub-assembly.

**12. Install the Windshield Wiper Motor and Link Assembly.**

- (a) Engage the motor grommet (Fig. 12-1).

 **NOTE:** Be careful not to damage the windshield glass when installing the windshield wiper motor and link assembly.

 **Torque: 5.5 N·m (56 kgf·cm, 49 in·lbf)**

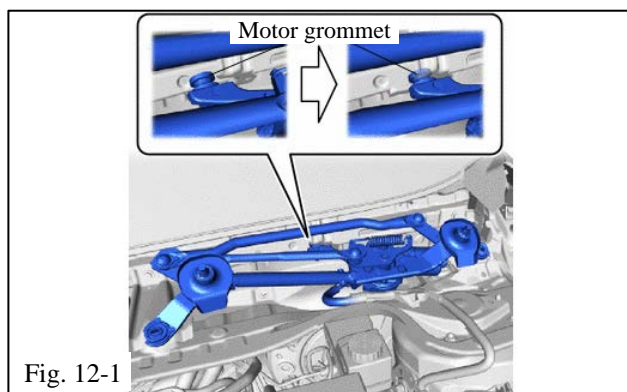


Fig. 12-1

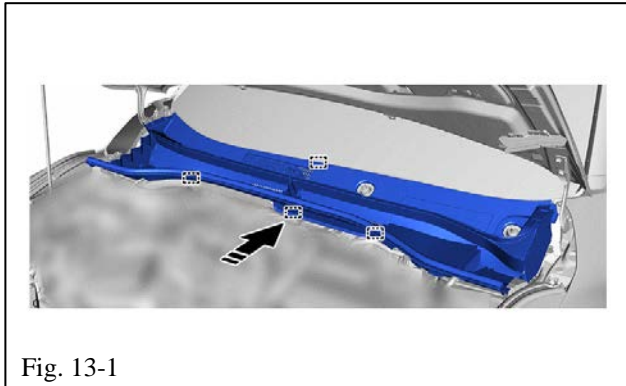


Fig. 13-1

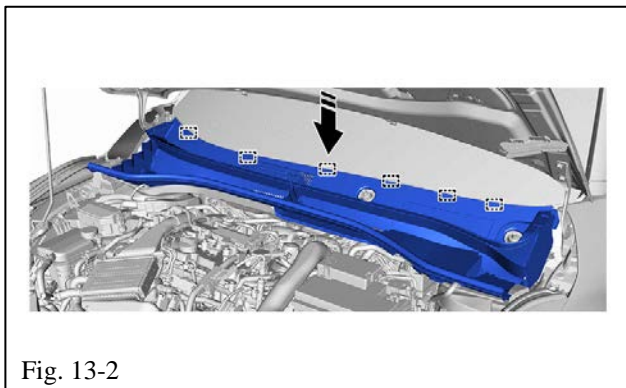


Fig. 13-2

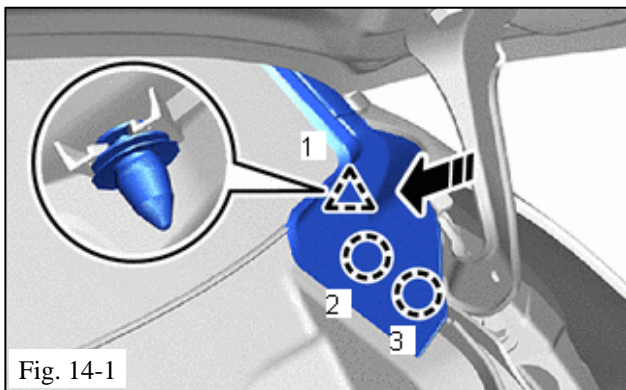


Fig. 14-1

### 13. Install the Cowl Top Ventilator Louver Sub-assembly.

- (a) Engage the guides (Fig. 13-1).

**⚠ NOTE:** When installing the cowl top ventilator louver sub-assembly, it may contact the brake master cylinder reservoir filler cap assembly and cause it to fall off. Check the installation condition of the brake master cylinder reservoir filler cap assembly after installing the cowl top ventilator louver sub-assembly.

- (b) Engage the guides to install the cowl top ventilator louver sub-assembly as shown in the illustration (Fig. 13-2).

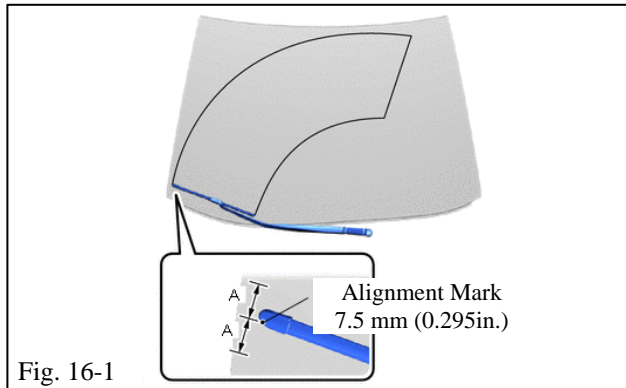
- (c) Install the 2 clips.

### 14. Install the Windshield Outside Moulding LH.

- (a) Engage the clip and claws to install the windshield outside moulding LH as shown in (Fig. 14-1).

### 15. Install the Windshield Outside Moulding RH

**⚠ NOTE:** Use the same procedure that was used for the LH side.



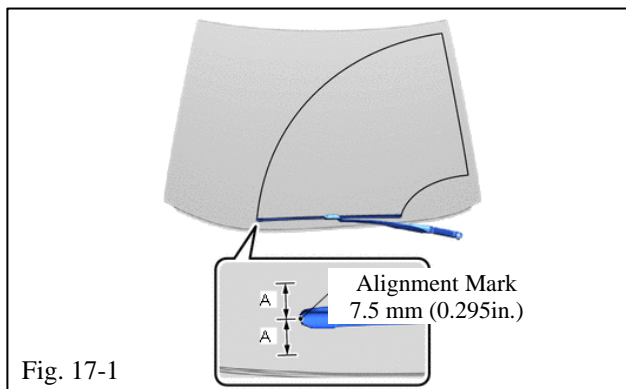
## 16. Install the Front Wiper Arm and Blade Assembly RH.

- (a) Install the front wiper arm and blade assembly RH with the nut to the position as shown in the illustration (Fig. 16-1).

**NOTE:** Ensure the tip of the wiper lines up with the alignment mark made in Step 1(a).

**Torque:** 26 N·m (265 kgf·cm, 19 ft·lbf)

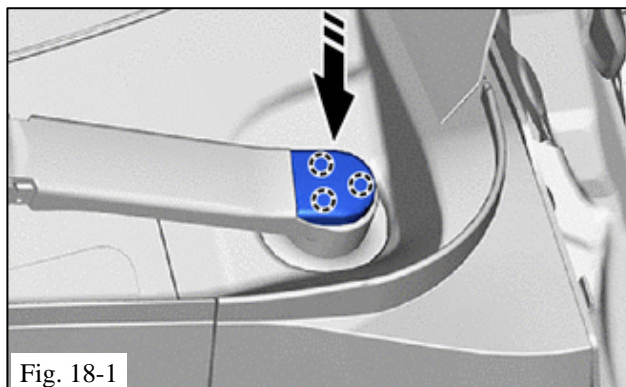
**HINT:** Hold the wiper arm by hand while tightening the nut.



## 17. Install the Front Wiper Arm and Blade Assembly LH.

- (a) Install the front wiper arm and blade assembly LH with the nut to the position as shown in the illustration (Fig. 17-1).

**Torque:** 26 N·m (265 kgf·cm, 19 ft·lbf)



## 18. Install the Front Wiper Arm Head Cap.

- (a) Engage the claws to install the front wiper arm head cap as shown in the illustration. (Fig. 18-1).

**HINT:** Use the same procedure for the RH side and LH side.



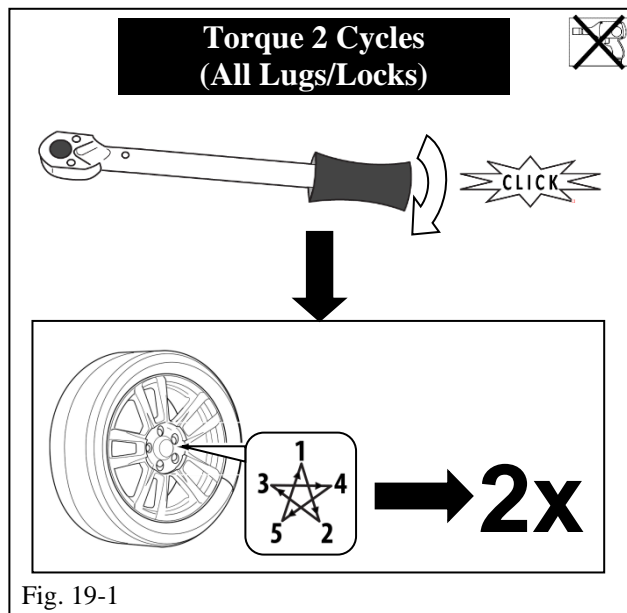


Fig. 19-1

## 19. Install the Front Wheel.

- Install the front wheel onto the vehicle. Hand start the lug nuts.
- Use a torque wrench to tighten the lug nuts in sequence 1 through 5 to 103N·m (76 ft-lbf) (Fig. 19-1).

**S Torque: 103N·m (76 ft-lbf)**



- Re-torque all of the lug nuts in same the 1-5 sequence (Fig. 19-1).

**S Torque: 103N·m (76 ft-lbf)**



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



## 20. Remove the rear OE Springs.

- Remove rear wheels.
- Raise the vehicle overhead and place a tall jack stand under front sub-frame of vehicle for support (Fig. 20-1).

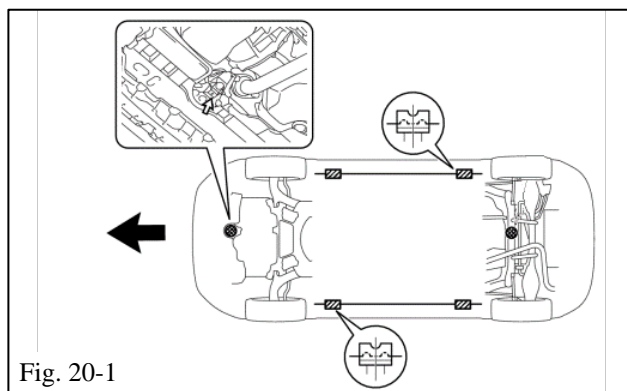


Fig. 20-1

- Equipped with height control Sensor:

Remove Rear Height Control Sensor Sub-assembly LH (Fig. 20-2)

- Disconnect the connector.
- Disengage the clamp.
- Remove the 2 bolts.
- Disengage the hook to remove the rear height control sensor sub-assembly LH.

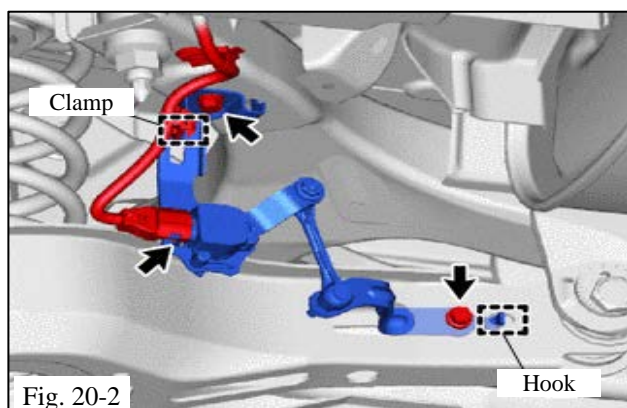
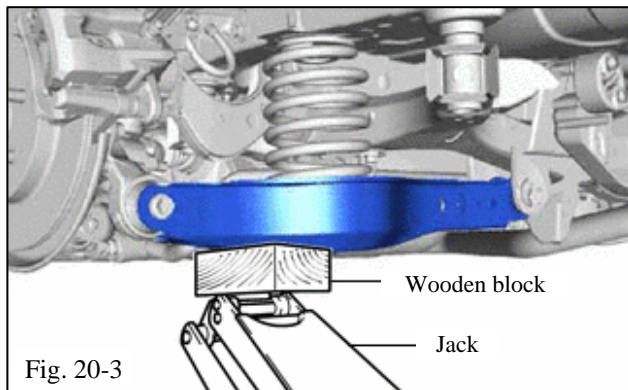
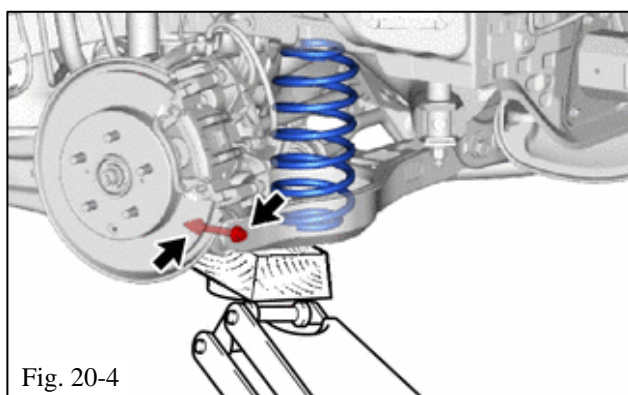


Fig. 20-2



(d) Remove the rear coil spring (Fig. 20-3).

- (1) Support the rear No. 2 suspension arm assembly using a jack or tall stand.  
(protect the painted surface with a wooden block or rubber pad).
- (2) Raise the arm approximately 2 inches.



- (3) Remove the bolt and nut, and separate the rear No. 2 suspension arm assembly from the rear axle carrier sub-assembly (Fig. 20-4).

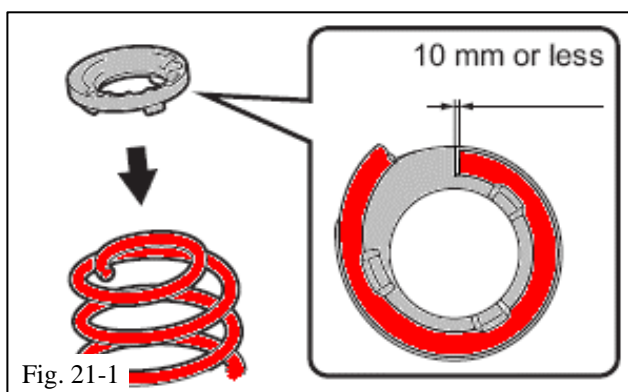
**CAUTION:** The nut has a locking feature. Turn the **BOLT** while the nut is held in place.

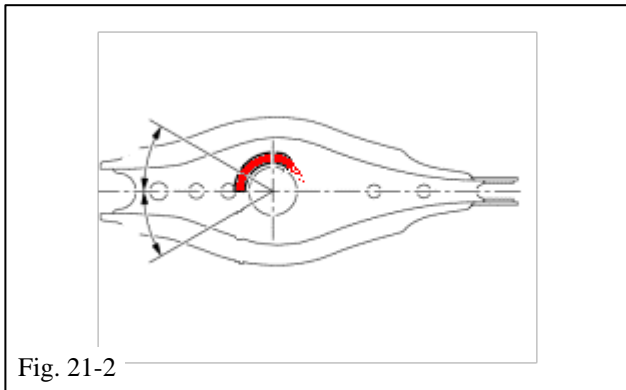
- (4) Slowly lower the rear No. 2 suspension arm assembly, then remove OE coil spring.
- (5) Remove upper insulator and save for TRD spring.

## 21. Install the Rear TRD Springs.

- (a) Install the upper spring insulator onto the TRD spring (Fig. 21-1).

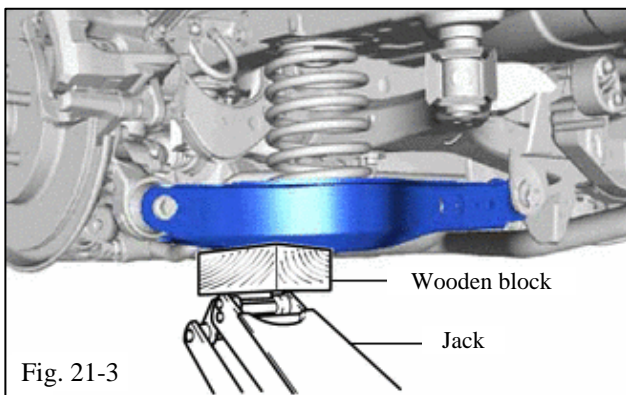
**NOTE:** (↑UP direction Arrows are printed on the springs next to part number.)



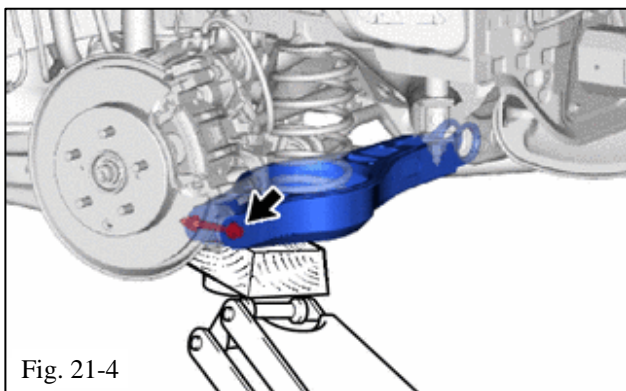


- (b) Confirm the lower spring insulator is free of any debris and in place on the lower control arm.
- (c) Install the rear springs so that the lower end of the coil is indexed to line up within 30° of the wheel (Fig. 21-2).

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



- (d) Slowly raise the rear No. 2 suspension arm assembly by using a jack and wooden block. Install the rear No. 2 suspension arm assembly to the rear axle carrier sub-assembly with the bolt and nut (Fig. 21-3).



- (e) Install the rear No. 2 suspension arm assembly (rear axle carrier sub-assembly side) with the bolt (Fig. 21-4).

**S Torque: 73 N·m (744 kgf·cm, 54 ft·lbf)**

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

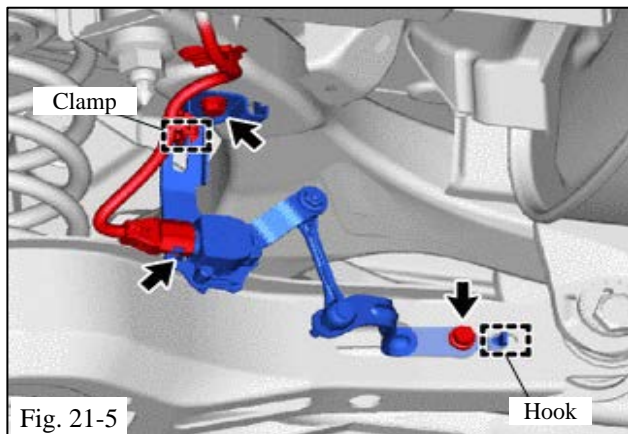


Fig. 21-5

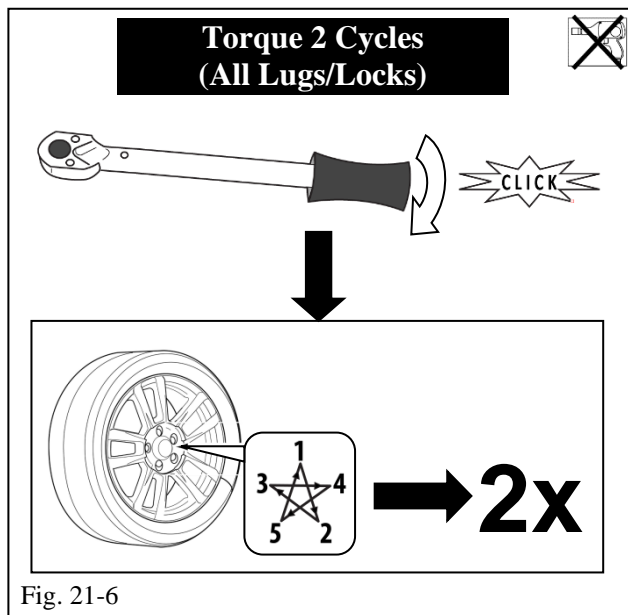


Fig. 21-6

- (f) If equipped with height control sensor: Install the rear height control sensor sub-assembly with the two bolts after engaging the hook (Fig. 21-5).
- (g) Engage the clamp.
- (h) Connect the connector.
- (i) Install the rear wheel onto the vehicle. Hand start the lug nuts.
- (j) Use a torque wrench to tighten the lug nuts in sequence 1 through 5 to 103N·m (76 ft-lbf) (Fig. 21-6).

**S Torque: 103N·m (76 ft-lbf)**



- (k) Re-torque all of the lug nuts in same the 1-5 sequence (Fig. 21-6).

**S Torque: 103N·m (76 ft-lbf)**




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





## 22. Verify the Alignment.

 **NOTE:** Alignment is necessary after installing the TRD lowering springs.

### Front:

Total Toe = 1.4 +/-2.0 mm (0.04 +/-0.08 in.)


Camber = -0°02' +/-45' (-0.03° +/-0.75°)

**Note:** Camber left and right must be within 0°45' (0.75°) of each other.


### Rear:

Total Toe = 3 +/-2 mm (0.12 +/-0.08 in.)

Camber = -1°12' +/-45' (-1.2° +/-0.75°) (Modified by TRD USA).

 **NOTE:** Camber left and right must be within 0°45' (0.75°) of each other.

## 25. Adjust the Milliwave Radar Sensor.

 **NOTE:** Radar Sensor Adjustment after may be necessary installing the TRD lowering springs.

Refer to the following section in TIS / Repair manual:

*Engine – Cruise Control – Millimeter Wave Radar Sensor - Adjustment*

### Torque Values:

Strut Top x3	<b>Torque: 50 N·m (510 kgf·cm, 37 ft·lbf)</b>
Strut to Knuckle x2	<b>Torque: 270 N·m (2753 kgf·cm, 199 ft·lbf)</b>
Brake Hose to Knuckle	<b>Torque: 29 N·m (296 kgf·cm, 21 ft·lbf)</b>
Sway Bar Link to Strut	<b>Torque: 74 N·m (755 kgf·cm, 55 ft·lbf)</b>
Front Wheel x5	<b>Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)</b>
Top Nut, Front Shock Assembly	<b>Torque: 47 N·m (479 kgf·cm, 35 ft·lbf)</b>
Lower Control Arm, Rear Bolt	<b>Torque: 73 N·m (744 kgf·cm, 54 ft·lbf)</b>
Height Control Sensor Bolts, Rear	<b>Torque: 8.0 N·m (82 kgf·cm, 71 ft·lbf)</b>
Rear Wheel x5	<b>Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)</b>

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

Check:	Look For:
<u>Accessory Function Checks</u>  <input type="checkbox"/>	
<u>Vehicle Function Checks</u>  <input type="checkbox"/> Torque on all fasteners  <input type="checkbox"/> Confirm upper and lower rear spring insulators are located properly per the instructions above.  <input type="checkbox"/> Confirm windshield wipers and windshield de-icers operate normally  <input type="checkbox"/> Confirm headlight aim has automatically adjusted / height sensor function	<p>The torque specs called out in these instructions are taken directly from the 2018 Toyota C-HR repair manual. Torque specs are expected to be accurate within the capability or range of the tool used during assembly.</p> <p>Insulator bent, folded, or squeezed out of position (refer to installation step 6).</p> <p>Windshield Malfunction Indicator Lamp, or loose connectors.</p> <p>Height control sensor Malfunction indicator lamp, loose or mis-installed height control sensor and/or wire harness connectors.</p>
<u>Vehicle Appearance Check</u>  <input type="checkbox"/> After accessory installation and removal of protective cover(s), perform a visual inspection.	<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>