Part Number: PTCCY-34000

Kit Contents

Item #	Quantity Reqd.	Description
1		See page 2 for full kit contents
2		
3		

Hardware Bag Contents

Item #	Quantity Reqd.	Description
1		See page 2 for full kit contents
2		
3		

Additional Items Required For Installation

Item #	Quantity Reqd.	Description
1		N/A
2		
3		

Conflicts

TRD pro, TRD sport vehicles equipped with: 2WD, active (AVS) shock absorbers, air suspension, 8.1ft bed (WB: 4180mm, 164.6in)

Recommended Tools

Personal & Vehicle Protection	**Notes**
Special Tools	Notes
Coil Spring Compressor	SC-4000 Strut Compressor (QSP DB-8000-XL)
Alignment Equipment	Turn Plates needed
Paint Marker	
Techstream	w/ latest software version
SSTs:	
09960-20010	Tie rod extraction tool
09961-02080	Tie rod extraction tool spacer (SST spacer B)
09628-62011	Upper ball joint extraction tool
09922-10010	Wrench
09520-32040 (or equivalent)	Driveshaft extraction tools
09520-01010 (or equivalent)	
09950-40011	Lower ball joint - puller
09955-04071 (or equivalent)	Lower ball joint - Claw A
09955-04031	Lower ball joint - Claw B
Installation Tools	Notes
Sockets	10mm, 12mm, 14mm, 17mm, 19mm, 21mm, 22mm, 24mm
Wrench	19mm, 25mm, 26mm
Ratcheting Wrench	14mm, 21mm, 22mm
Union Wrench	10mm
Allen Key	2.5mm
Ratchet	3/8” & 1/2” Drive
Adjustable Wrench	Regular & small
Torque Wrench	3/8” & 1/2” Drive

Recommended Tools (continued)

Screw Driver	Phillips
Air tools	**NOTE:** Do not use for final assembly
Clip Removal Tool	
Channel-lock Pliers	
Tape Measure	
Shears	OE undercover, felt (51410-0C050)
Rotating Cut-Off Tool	OE undercover, plastic polymer (51410-0C050)
Sandpaper	OE undercover, plastic polymer (51410-0C050)
Special Chemicals	Notes

General Applicability

MY22 and newer Tundra V6T, V6T+HV, 4WD, 5.5 ft bed (WB: 3700mm, 145.7in), 6.5ft bed (WB: 4005mm, 157.7 in)

Recommended Sequence of Application

Item #	Accessory
1	

*Mandatory

Vehicle Service Parts (may be required for reassembly)

Item	Accessory
1	90304-94001 Seal, dust (For front axle hub) 53851-0C080 Pad, front wheel opening extension, RH 53852-0C080 Pad, front wheel opening extension, RH 75696-0C030 Pad, body outside molding, NO1

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.

REGULATORY MARK: This mark indicates the component is related to regulatory compliance

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Kit Contents

Item #	Quantity Reqd.	Part Number	Description
1	1	PT985-34310	Arm assy., suspension, RH
2	1	PT985-34320	Arm assy., suspension, LH
3	1	PT981-34310	LWR knuckle attachment, RH
4	1	PT981-34320	LWR knuckle attachment, LH
5	2	PTR13-34310	Absorber, shock, FR
6	2	PTR62-34310	Spring
7	1	PT362-34310	shaft assy., FR drive, RH
8	1	PT362-34320	Shaft assy., FR drive, LH
9	2	PT983-34330	Spacer, front stabilizer
10	1	PT983-34310	Link assy., front stabilizer, RH
11	1	PT983-34320	Link assy., front stabilizer, LH
12	2	PT983-34340	Cap, link adapter
13	1	PT985-34330	End sub-assy., tie rod, No.1
14	1	PT985-34340	End sub-assy., tie rod, No.2
15	2	PT595-34310	Sleeve, tie rod
16	2	PT266-34220	Jounce bumper
17	2	PT595-34320	Spacer, jounce bumper
18	2	PT302-34310	Hose, flexible
19	1	PT302-34320	Hose, flexible
20	1	PT302-34330	Hose, flexible
21	2	PTR13-34330	Absorber, shock, RR
22	1	PT595-34330	Stopper, bumper assy., RR, RH
23	1	PT595-34340	Stopper, bumper assy., RR, LH
24	2	PT985-34350	Spacer, RR spring
25	2	PT767-34310	Bracket, W/H
26	4	90119-A0467	Bolt, w/washer
27	2	90105-A0232	Bolt, w/washer
28	2	90119-A0536	Bolt, w/washer
29	1	PT595-34220	Bracket, height sensor lock
30	1	PT413-34220	Bracket, wiring harness clamp
31	1	PT720-34310	Cover, front bumper hole, RH
32	1	PT720-34320	Cover, front bumper hole, LH

Kit Contents (Continued)

Item #	Quantity Reqd.	Part Number	Description
33	4	90468-08040	Clip
34	4	90468-08035 OR 90468-A0007	Clip
35	4	90177-A0019	Nut, lock
36	2	90171-16011	Nut, castle
37	2	90252-04003	Pin, cotter
38	2	90171-A0012	Nut, castle
39	2	90468-16029 OR 90468-A0003	Clip
40	2	90171-A0013	Nut, castle
41	2	90252-03015	Pin, cotter
42	2	90179-32007	Nut
43	2	43525-0C010	Cap, FR wheel adjusting lock
44	2	43514-0C020	Cap, FR hub grease
45	2	95381-04045	Pin, cotter

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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. Prepare the Vehicle

(a) Place the vehicle in park and turn off the ignition.

(b) Change radiator shutter control state (w/ grille shutter).

NOTE: To ensure safety, before removing the radiator shutter assembly, change the grille shutter control mode to maintenance mode.
When the grille shutter system is in maintenance mode, the grille shutter will not operate when operation signals are received.

(1) **When using Global Tech Stream, change the control mode to maintenance mode.**

- **Connect the GTS to the DLC3.**
- **Turn the ignition switch to ON.**
- **Turn the GTS on.**
- **Enter the following menus: *Powertrain >> Engine >> Utility >> Switch Grille Shutter Control Mode***
- **According to the display on the GTS, change the grille shutter control mode from normal mode to maintenance mode.**

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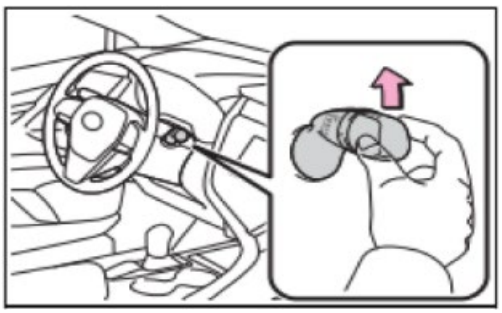

Fig. 1-1

(c) Turn off the ignition switch

(d) Deploy the front active spoiler (if equipped):

(1) Hold wiper stalk to “mist” position for two seconds (within 45 seconds of turning the ignition off) (Fig. 1-1).

(2) Front active spoiler will deploy, allowing access to the engine undercover.

(e) Disconnect the negative terminal on the battery.

(f) Remove the front wheels.

(g) Remove Front Active Spoiler

(h) Ensure the front spoiler is in the deployed position (Fig. 1-2).

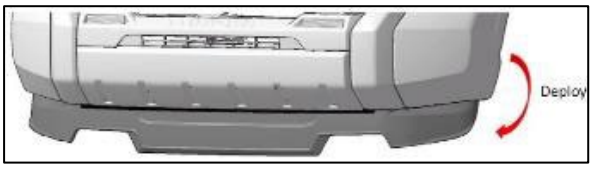

Fig. 1-2

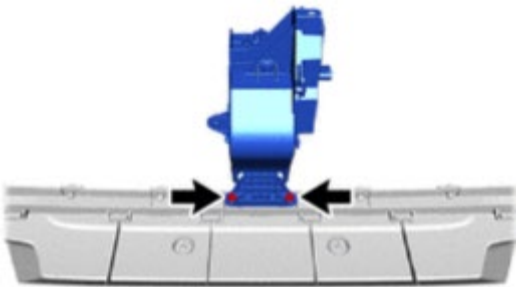

Fig. 1-3

(i) Remove and discard front spoiler link motor bolts (Fig. 1-3).

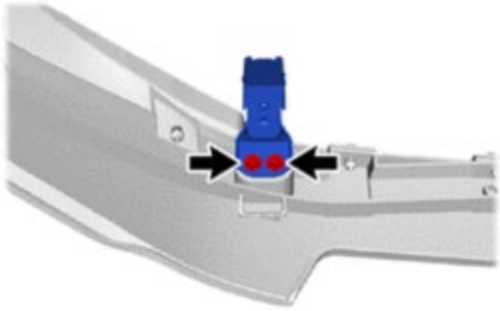

Fig. 1-4

(j) Remove and discard front spoiler side link bolts (Fig. 1-4).

(1) Repeat for the opposite side.

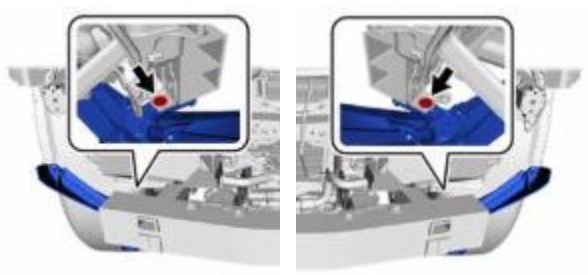

Fig. 1-5

(k) Remove and discard front spoiler side hinges from front bumper reinforcement.

(1) Remove bolt (Fig. 1-5).

(2) Repeat for the opposite side.

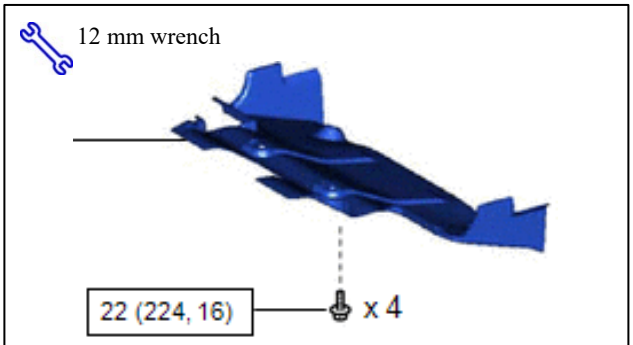

Fig. 2-1

2. Remove Engine Undercover

(a) Remove and retain the bolts retaining the engine undercover (Fig. 2-1).

Fig. 3-1

3. Remove LH & RH Side Engine Airbox

(a) Remove and retain V-bank cover (Fig. 3-1).

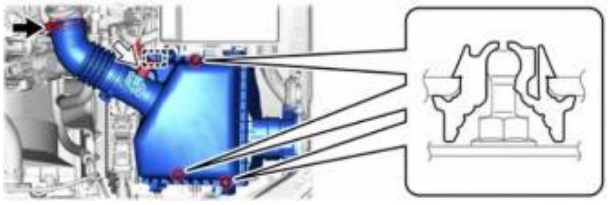

Fig. 3-2

(b) Remove and retain air cleaner assembly LH and air cleaner hose (Fig. 3-2).

(1) Unplug intake mass air flow meter assembly LH.

(2) Loosen air cleaner hose clamp.

(3) Remove air cleaner assembly from the clips.

(4) Repeat on RH side engine airbox

(5) Retain both engine airboxes

4. Remove LH ECM Assembly

(a) Ensure the negative terminal on the battery is disconnected.

(b) Remove LH ECM

(1) Detach the two wire connector clamps (Fig. 4-1).

(2) Push in the locks on the 3 levers, raise the 3 levers, and disconnect the 3 ECM connectors (Fig. 4-1).

NOTE: After disconnecting the ECM connectors, make sure that dirt, water and other foreign matter does not contact the connecting parts of the ECM connectors.

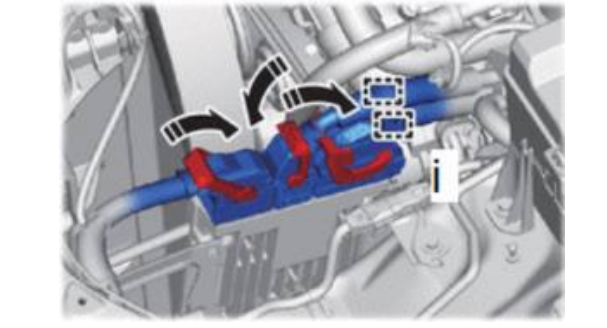

Fig. 4-1

(3) Detach the two wire harness clamps (Fig. 4-2).

(4) Remove and retain the three bolts and ECM (Fig. 4-2).

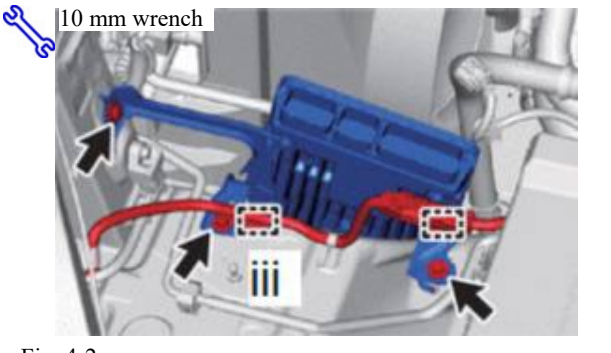

Fig. 4-2

5. Remove OE Fog Light Assemblies

CAUTION: With the TRD Lift Kit installed, the OE fog lights will no longer comply with most US State lighting regulations for fog light height position. The OE fog lights must be disabled & removed to comply with these US States' lighting regulations for on-road usage (at the time of writing these instructions): AL, AR, AZ, CA, CO, CT, DC, FL, GA, ID, IN, KS, LA, MD, ME, MI, MN, MT, ND, NM, NV, OH, OR, SC, TX, WA, WV

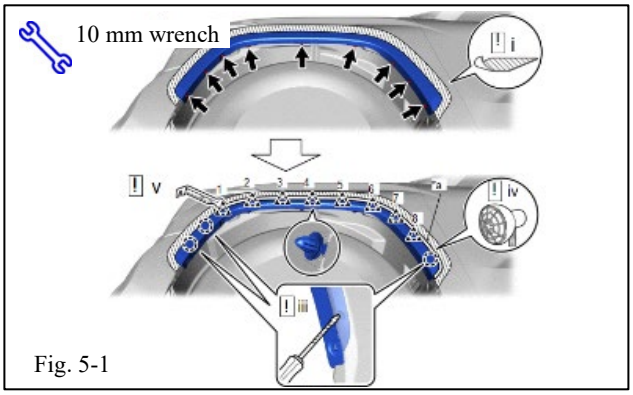

Fig. 5-1

(a) Remove front fender wheel opening molding sub-assembly (w/ over fender) (Fig. 5-1).

(1) Put protective tape around the front fender wheel opening molding sub-assembly.

(2) Remove and retain the 9 screws.

(3) Insert a screwdriver with its tip wrapped with protective tape into the gap and detach the claw.

(4) Heat the adhesive of the front fender wheel opening molding sub-assembly using a heat light (Fig. 5-1).

NOTE:

- **When removing the front fender wheel opening molding sub-assembly, if the double-sided tape is difficult to remove, heat the adhesive of the front fender wheel opening molding sub-assembly using a heat light.**

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- **Do not heat the front fender wheel opening molding sub-assembly excessively.**

(5) Using molding remover B, detach the clip and double-sided tape in the order shown in the illustration and remove the front fender wheel opening molding sub-assembly as shown in the illustration (Fig. 5-1).

NOTE: Detach the clips one by one.

(6) Repeat for opposite side.

(b) Remove front No. 1 wheel opening extension pad (Fig. 5-2).

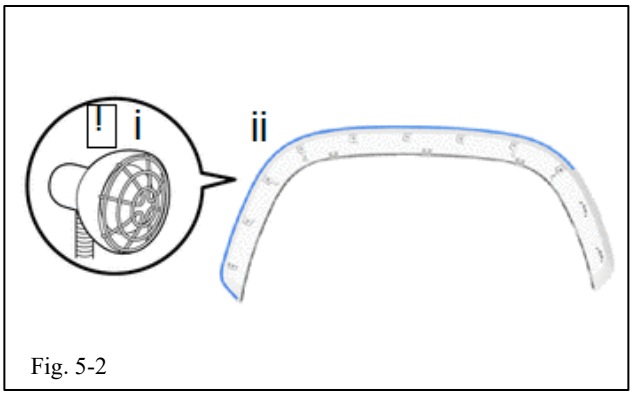


Fig. 5-2

(1) Heat the adhesive of the front No.1 wheel opening extension pad using a heat light.

NOTE:

- **When removing the front No.1 wheel opening extension pad, if the double-sided tape is difficult to remove, heat the adhesive of the front No.1 wheel opening extension pad using a heat light.**
- **Do not heat the front No.1 wheel opening extension pad excessively.**

(3) Repeat for opposite side.

(c) Remove front bumper assembly (Fig. 5-3).

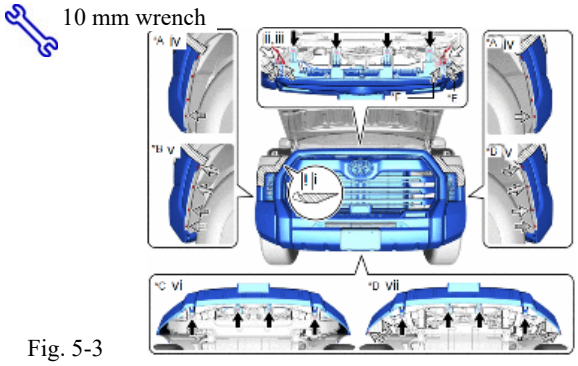


Fig. 5-3

(1) Put protective tape around the front bumper assembly.

(2) Remove the four bolts and two clips at the top of the front bumper assembly.

(3) Disconnect connectors at the top of the front bumper assembly.

(4) w/ over fender: Remove and retain the two screws.

(5) w/o over fender: Remove and retain the 8 screws.

(6) If the vehicle does not have a front spoiler; Remove and retain the four bolts along the bottom outer edges of the bumper (Fig. 5-3)

(7) Place your hand at the positions shown in the illustration and detach the claw as shown in the illustration (Fig. 5-4).

(8) Use the same procedure for the other side.

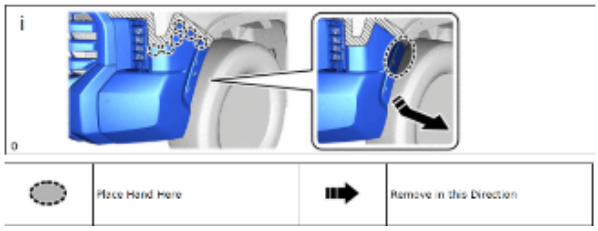


Fig. 5-4

(9) Place your hand at the positions shown in the illustration and detach the claw and remove the front bumper assembly as shown in the illustration (Fig. 5-5).

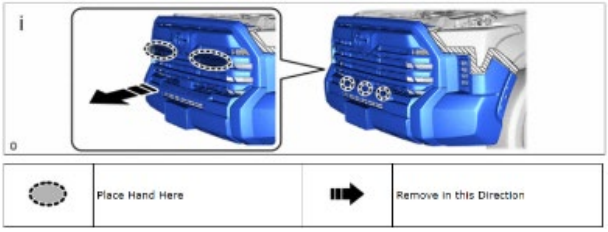


Fig. 5-5

(d) Remove radiator grille outside.

(1) Remove and retain the radiator shutter assembly (Fig. 5-6).

NOTE: The orientation for the RH side is the opposite of the LH side.

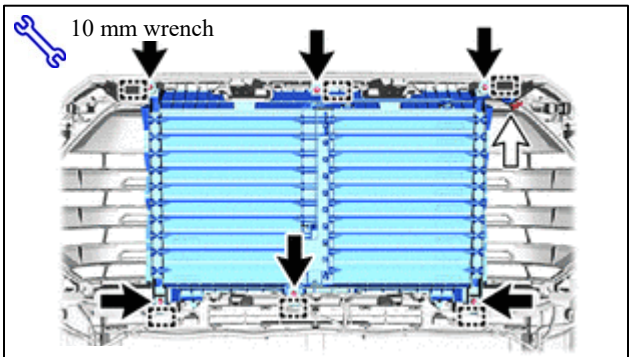


Fig. 5-6

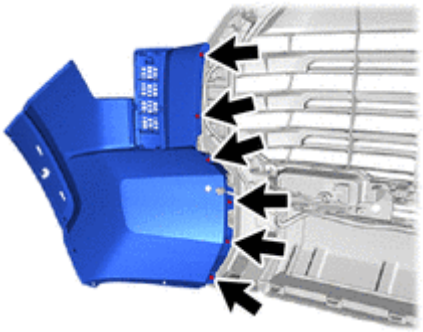


Fig. 5-7

(2) Remove front bumper extension LH & RH (Fig. 5-7).

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

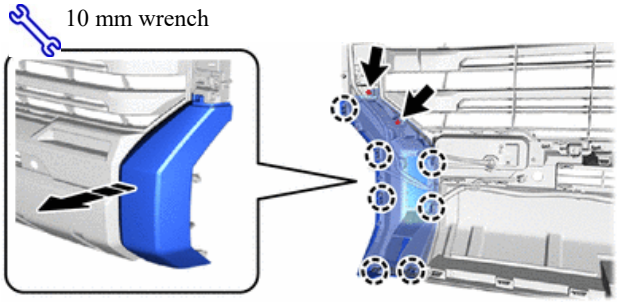


Fig. 5-8

(3) Remove front bumper side molding LH & RH (Fig. 5-8).

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

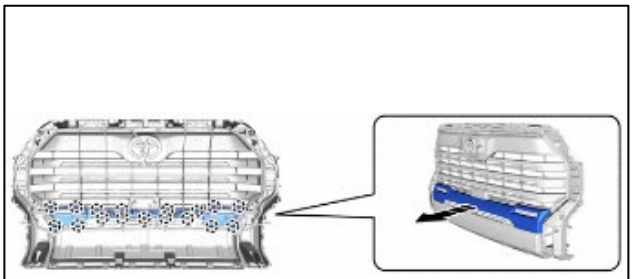


Fig. 5-9

(4) Remove the front bumper upper extension (Fig. 5-9).

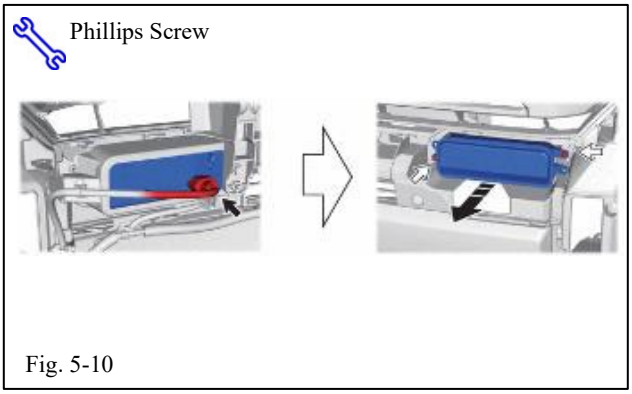


Fig. 5-10

(5) Unclip the fog light wire harness connector from fog light assemblies (Fig 5-10).

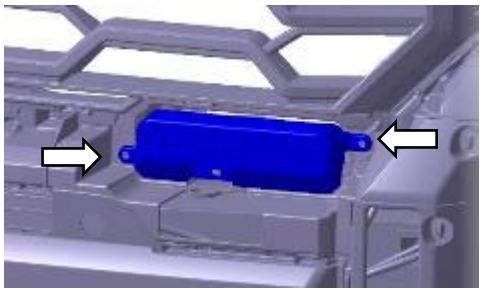


Fig. 5-11

(6) Remove and discard the fog light assemblies (Fig. 5-11). Retain screws.

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

6. Install TRD Front Bumper Hole Covers

(a) Install the TRD front bumper hole covers.

(1) Install the two previously removed screws.

(2) Plug-in fog light wire harness connector.

(3) Repeat for opposite side.

(b) Install front bumper upper extension.

(c) Install front bumper side molding LH.

(d) Install front bumper side molding RH.

(e) Install front bumper extension LH & RH.

(f) Plug-in LH & RH front corner ultrasonic sensors into wire harness (Fig. 6-1).

(g) Install radiator grille outside.

(1) Install the radiator shutter assembly.

(h) Install front bumper assembly.

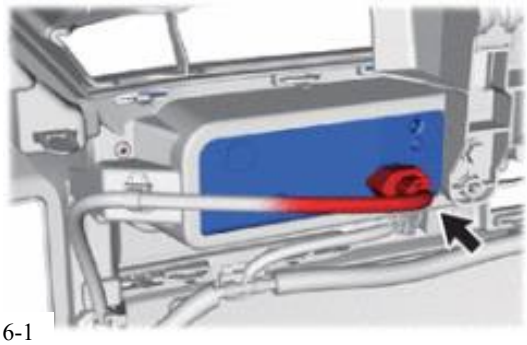


Fig. 6-1

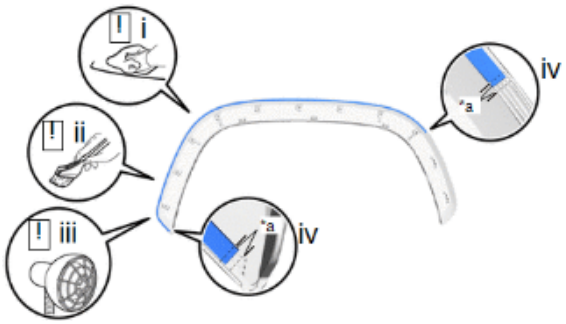


Fig. 6-2

(i) Install front No. 1 wheel opening extension pad (Fig. 6-2).

(1) Remove remaining double-sided tape from the front fender wheel opening molding sub-assy.

(2) Clean the surface of the front fender wheel opening molding sub-assembly (Fig. 6-2).

NOTE: Installing the front No. 1 wheel opening extension pad with some double-sided tape remaining may cause poor adhesion. Perform this procedure until the tape is sufficiently removed. Make sure to use a cloth when removing. Using a screwdriver, etc., may cause damage and poor adhesion. Clean the surface of the new front fender wheel opening molding sub-assembly.

(3) Using a heat light, heat the front fender wheel opening molding sub-assembly surface.

NOTE: Do not use excessive heat.

(4) Wipe off any tape adhesive residue with cleaner.

(5) Apply primer to the front fender wheel opening molding sub-assembly on the installation area of the front No. 1 wheel opening extension pad using a brush or felt.

NOTE: Replace the brush or felt if it is dirty or has become hardened. Keep any painted surface free from primer. If the primer contacts a painted surface, it may leave light primer marks. Therefore, use protective tape when using liquid primer. Do not touch surfaces to which primer has been applied until the front No. 1 wheel opening extension pad has been attached.

(6) Let the primer dry sufficiently

NOTE: Do not touch applied surfaces until the primer is dry. Recommended drying time: 10 minutes or more (at 23°C or 73°F).

(7) Using a heat light, heat the front fender wheel opening molding sub-assembly LH and a new front No. 1 wheel opening extension pad.

(8) Install the front No. 1 wheel opening extension pad in the position shown in the illustration.

NOTE: The application strength of the front No. 1 wheel opening extension pad will weaken if reapplied. If reapplication is necessary, be sure to replace it with a new one.

HINT: Make sure that the end of the front No. 1 wheel opening extension pad is between the mark-off lines. Apply pressure so that it does not lift up from the front fender wheel opening molding sub-assembly.

(9) Use same procedure for other side.

(j) Install Front Fender Wheel Opening Molding Sub-Assembly

NOTE: When installing the front fender wheel opening molding sub-assembly, heat the front fender sub-assembly and front fender wheel opening molding sub-assembly using a heat light.

CAUTION:

Do not touch the heat light and heated parts. Touching the heat light may result

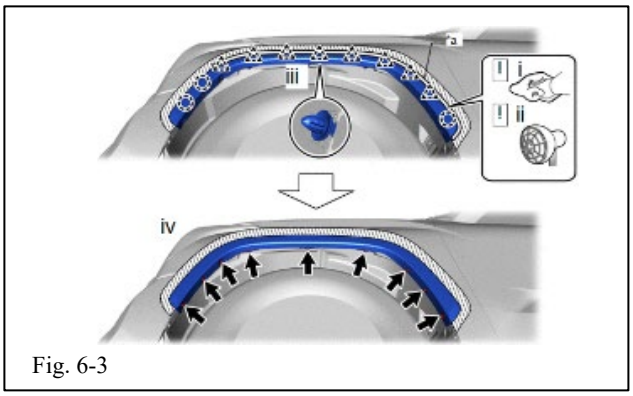


Fig. 6-3

in burns. Touching heated parts for a long time may result in burns.

NOTE: Do not heat the front fender sub-assembly and front fender wheel opening molding sub-assembly excessively.

(1) Clean the surface of the front fender sub-assembly (Fig. 6-3).

- Using a heat light, heat the front fender sub-assembly surface.
- Remove any remaining double-sided tape from the front fender sub-assembly.
- Wipe off any tape adhesive residue with cleaner.

NOTE: Installing the front fender wheel opening molding sub-assembly with some double-sided tape remaining may cause poor adhesion. Perform this procedure until the tape is sufficiently removed. Make sure to use a cloth when removing. Using a screwdriver, etc., may cause damage and poor adhesion.

(2) Using a heat light, heat the front fender sub-assembly and front fender wheel opening molding sub-assembly.

(3) Attach the claw, clip and double-sided tape and install the front fender wheel opening molding sub-assembly (Fig. 6-3).

NOTE: The application strength of the front fender wheel opening molding sub-assembly will weaken if reapplied.

If reapplication is necessary, be sure to replace it with a new one.

HINT: Apply pressure so that it does not lift up from the front fender sub-assembly.

(4) Install the 9 screws (Fig. 6-3).

(5) Use same procedure for other side.

7. Remove Front Knuckle Assemblies

(a) Remove the nut, bolt, and OE front stabilizer bar link assembly. Discard the OE links and bolt. Retain the nut for reinstallation (Fig. 7-1).

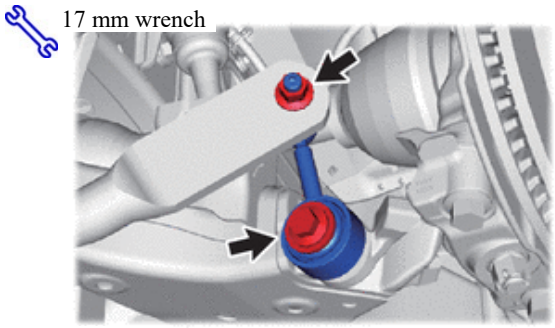


Fig. 7-1

HINT: If the ball joint turns together with the nut, use a 6 mm hexagon wrench to hold the stud in place.

(b) Repeat for the opposite side of the vehicle.

(c) Remove OE stabilizer bar (Fig. 7-2).

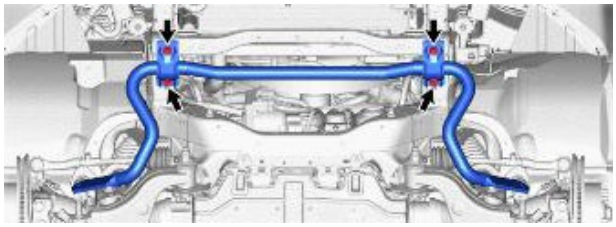


Fig. 7-2

(d) Disconnect the wheel speed sensor wire harness from the knuckle & upper control arm.

NOTE:

- **Take care of the loose wiring harness and do not damage.**
- **Keep the tip of the front speed sensor and installation hole free of foreign matter.**
- **Do not rotate or apply excessive force to the front speed sensor when removing it from the steering knuckle. Rotating or applying excessive force may result in damage to the front speed sensor.**

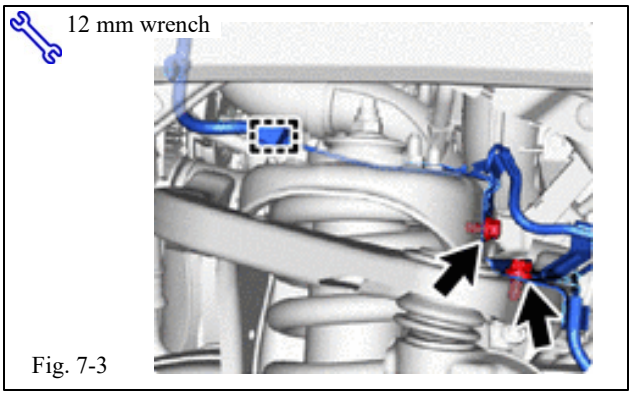


Fig. 7-3

(1) Remove the bolt on the top surface of the OE upper control arm and disconnect the speed sensor wiring harness from the upper control arm. Retain bolt for reinstallation (Fig. 7-3).

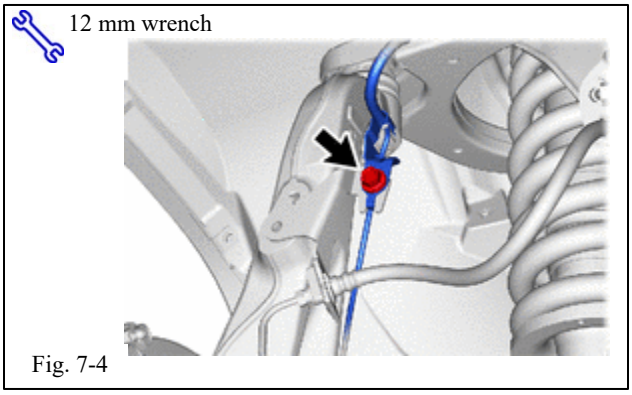


Fig. 7-4

(2) Remove the bolt and disconnect the speed sensor wiring harness from the flexible hose bracket. Retain the bolt for reinstallation (Fig. 7-4).

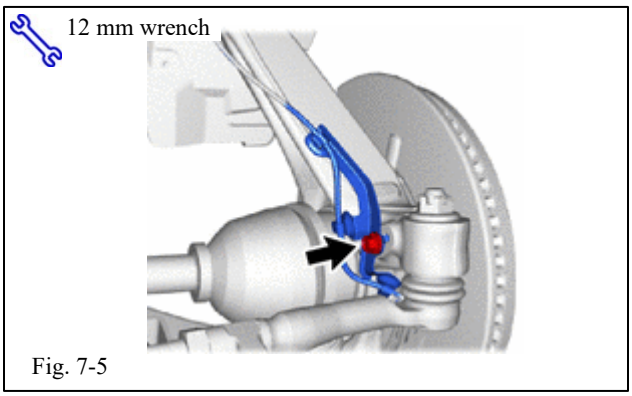


Fig. 7-5

(3) Remove the bolt from the lower part of the front steering knuckle. Retain the bolt for reinstallation (Fig. 7-5).

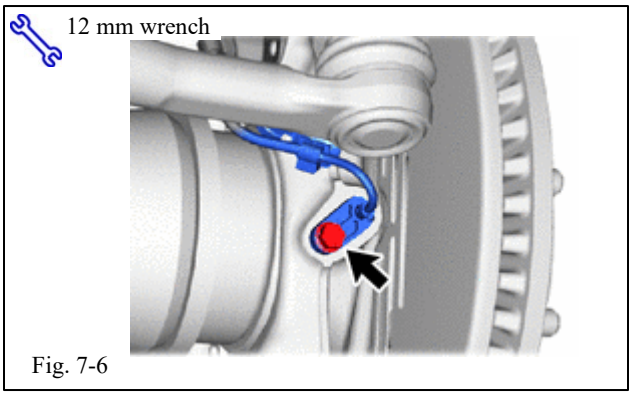


Fig. 7-6

(4) Remove the bolt and disconnect the front speed sensor from the steering knuckle. retain for reinstallation (Fig. 7-6).

(5) Repeat for the opposite side of the vehicle.

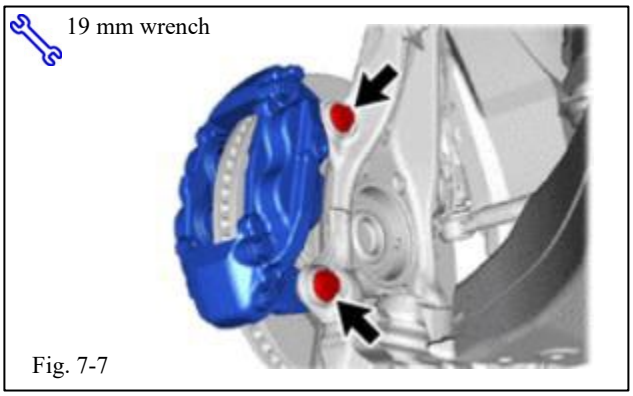


Fig. 7-7

(e) Remove caliper and rotor (Fig. 7-7)

(1) Remove caliper bolts

(2) Suspend and support the brake caliper

CAUTION:
Do not kink or damage the brake tube. Do not let the caliper hang unsupported.

(3) Repeat this process for the opposite side.

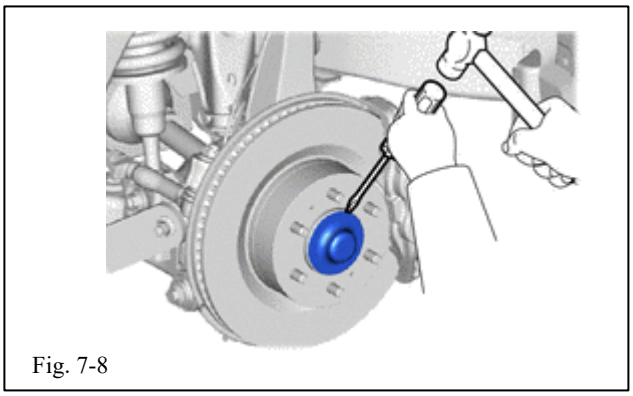


Fig. 7-8

(f) Remove the front axle hub grease cap (Fig. 7-8).

(1) Using a screwdriver and hammer, remove and discard the front axle hub grease cap.

CAUTION: Do not damage the axle hub.

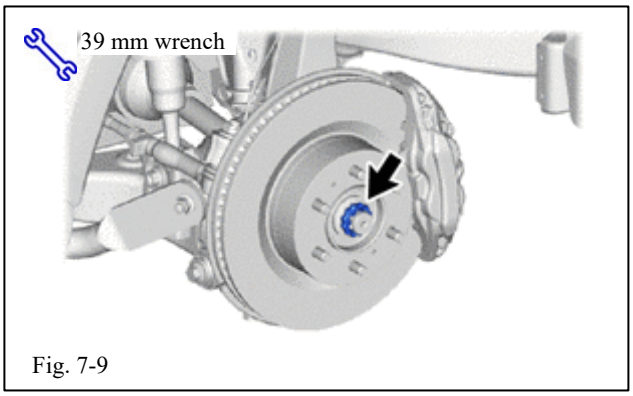


Fig. 7-9

(2) Remove the clip and front wheel adjusting lock cap. Discard (Fig. 7-9).

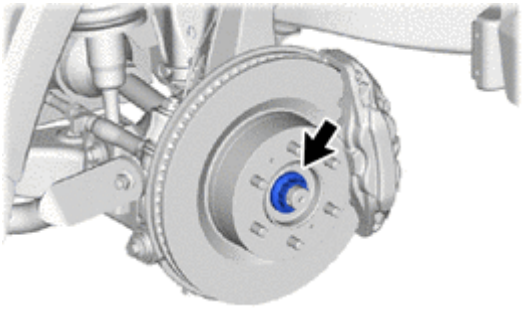


Fig. 7-10

(3) Remove front axle shaft nut. Discard (Fig. 7-10).

(4) Repeat for opposite side.

(g) Partially drive-out the front driveshaft spline out of the hub assembly.

(1) Repeat for the opposite side.

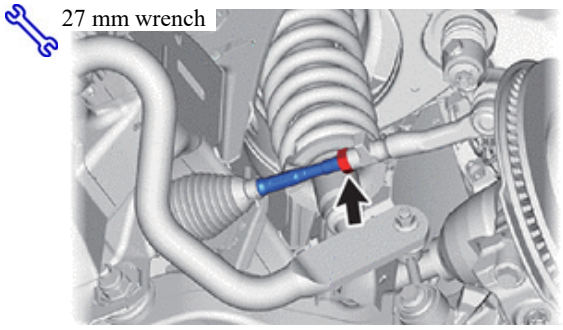


Fig. 7-11

(h) Loosen outer tie rod jam nut.

(1) Repeat for the opposite side (Fig. 7-11).

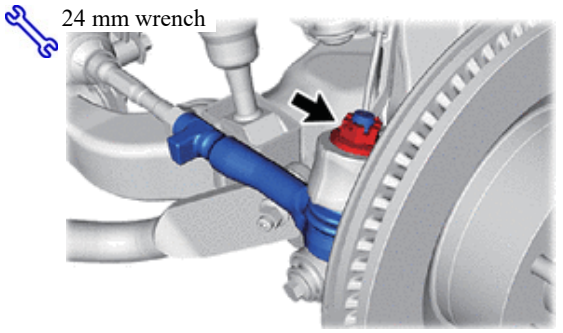


Fig. 7-12

(i) Disconnect and remove the outer tie rod.

(1) Remove the clip and nut. Discard (Fig. 7-12).

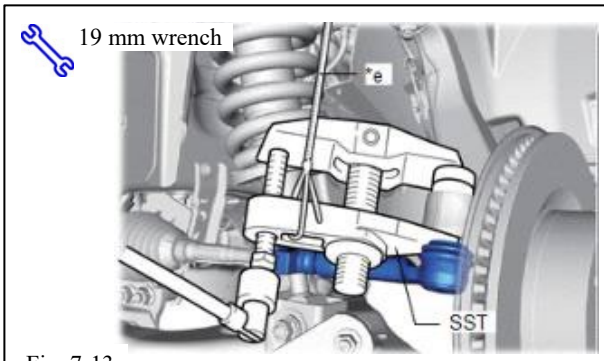


Fig. 7-13

(2) Install 2 spacers (SST spacer B) to the steering knuckle as shown in the illustration (Fig. 7-13).

SST: 09961-02080

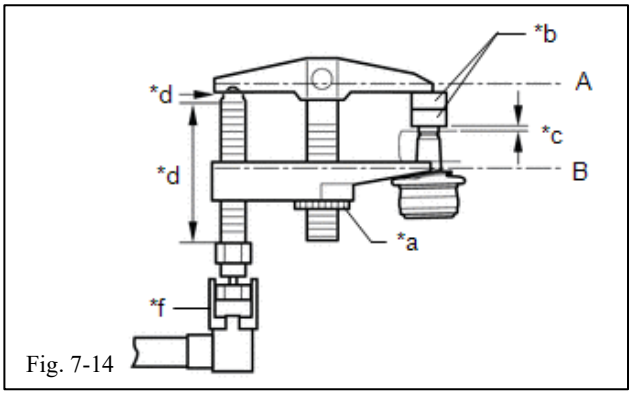


Fig. 7-14

*a	Center Nut	*b	SST (Spacer B)
*c	1 mm (0.0394 in.)	*d	Molybdenum grease application area
*e	String	*f	Place wrench here

NOTE: Make sure that the clearance between the tie rod assembly and spacers (SST spacer B) is 1 mm (0.0394 in.) or more to prevent damage to the SST.

(3) Using SST, disconnect the tie rod end sub-assembly from the steering knuckle.

SST: 09960-20010

CAUTION: Apply molybdenum grease to the bolt threads and the tip of the SST.

NOTE:

- **Be sure to tighten the string firmly to secure SST to the steering knuckle to prevent SST from falling off.**
- **Install SST so that (A) and (B) shown in the illustration are parallel. Otherwise, the ball joint dust cover may be damaged.**
- **Be sure to place the wrench on the part shown in the illustration.**
- **Do not damage the ball joint dust cover.**
- **Do not damage the steering knuckle.**
- **Do not damage the front disc brake dust cover.**

(4) Unscrew the outer tie rod from the inner tie rod to remove the outer tie rod from the steering rack.

(5) Unscrew and remove the jam nut from the inner tie rod.

Repeat for the opposite side of the vehicle.

(j) Remove front shock absorber lower bolt and nut. Retain for reinstallation (Fig. 7-15).

(1) Repeat for the opposite side

22 mm wrench

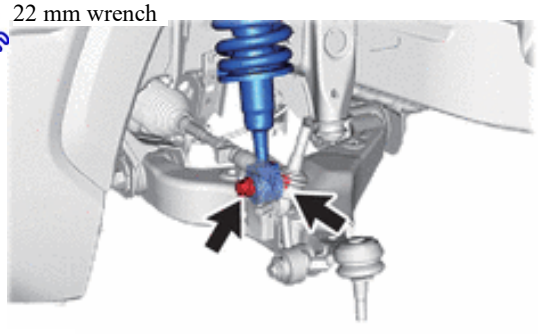


Fig. 7-15

(k) Remove the two-lower ball-joint attachment bolts. Retain the bolts for reinstallation (Fig. 7-16).

22 mm wrench

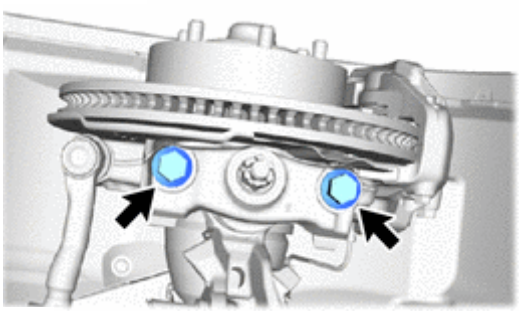


Fig. 7-16

CAUTION:
Do not use the column steering lock to resist loosening torque. If necessary, steer the hubs to the full RH steering lock to break the lower ball joint bolts loose.

(1) Repeat for the opposite side

(l) Place matchmarks on the camber and toe adjustment cams for reference (Fig. 7-17).

(1) Repeat for the opposite side.

24 mm wrench

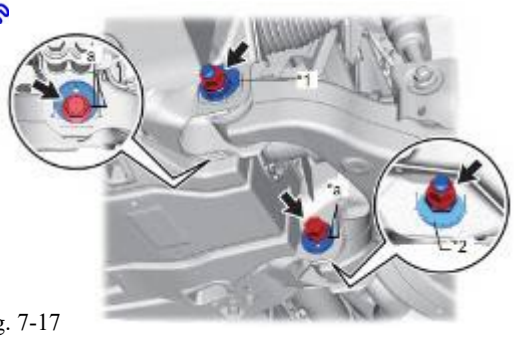


Fig. 7-17

(m) Loosen camber and toe adjustment cam bolts. Do not remove.

(1) Repeat for the opposite side.

(n) Disconnect the upper ball joint from knuckle (Fig. 7-18).

(1) Support the lower arm with a jack or stand.

(2) Remove the Clip and Nut. Discard.

19 mm wrench

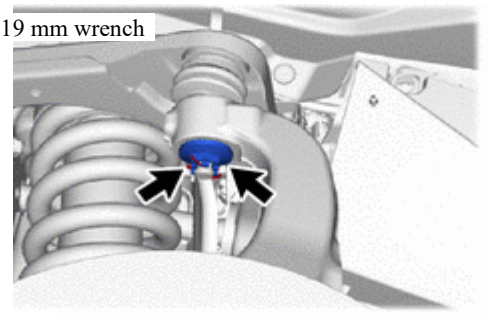


Fig. 7-18

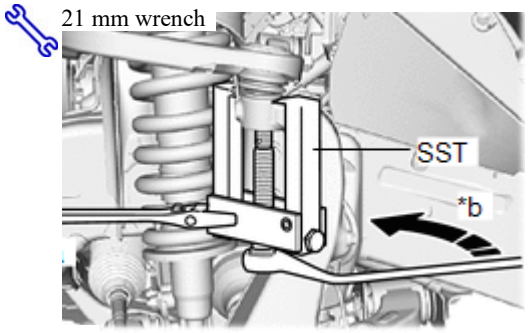


Fig. 7-19

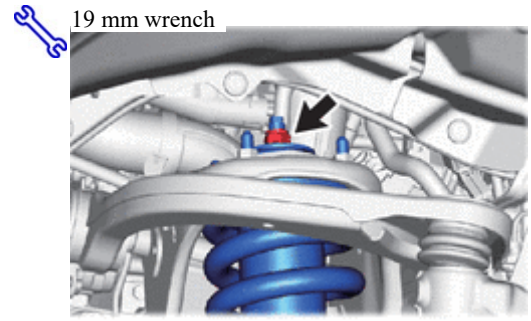


Fig. 8-1

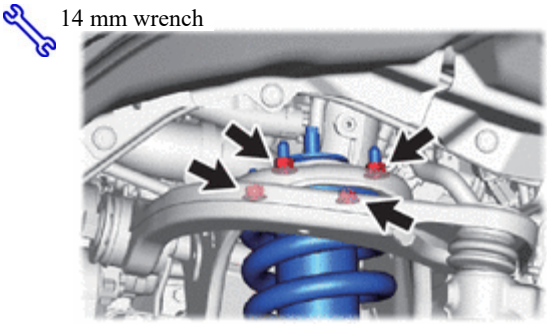


Fig. 8-2

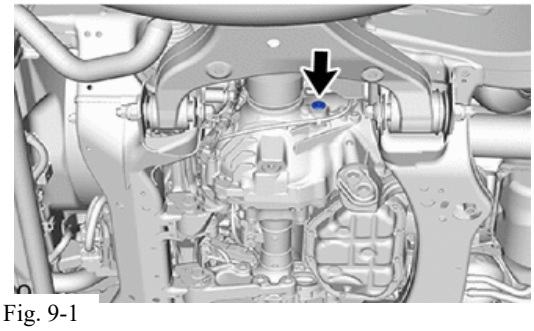


Fig. 9-1

(3) Using SST, disconnect the upper ball joint from the knuckle.

SST: 09628-62011

(o) Remove the knuckle assembly from the vehicle (Fig. 7-19).

(p) Repeat for the opposite side of the vehicle.

8. Remove Front Shock Absorbers

(a) Loosen the shock absorber lock nut (Fig. 8-1).

SAFETY:
Only loosen the lock nut, do not remove it. If the lock nut is removed with the front coil spring under tension, components of the shock absorber with the coil spring may fly off.

(b) Remove the 4 nuts from the shock absorber's upper side. retain nuts for reinstallation (Fig. 8-2).

(c) remove shock absorber and coil spring assembly from the vehicle.

(d) Repeat for the opposite side.

9. Remove Front Driveshafts

(a) Drain differential oil

(1) Using a 10 mm hexagon wrench, remove the filler plug and gasket (Fig. 9-1).

(2) Using a 10 mm hexagon wrench, remove the drain plug, and drain the oil.

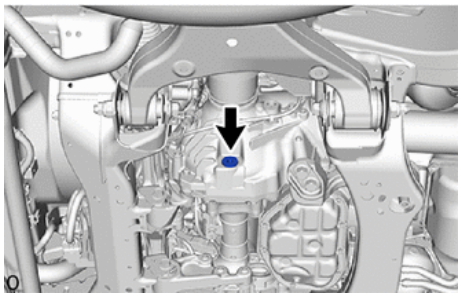


Fig. 9-2

(3) Using a 10 mm hexagon wrench, reinstall the drain plug with a new washer (Fig. 9-2).

Torque: 39.2 N·m (400 kgf·cm, 29 ft·lbf)

(4) Temporarily reinstall the oil filler plug.

(b) Using SST, remove the OE front driveshaft assembly and discard.

SST: 09520-01010
SST: 09520-32040

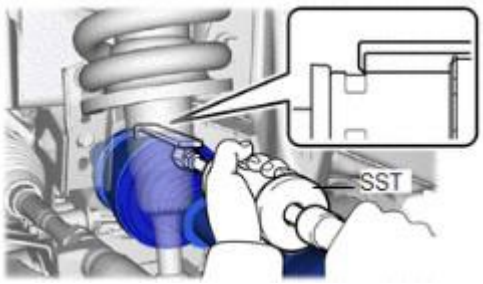


Fig. 9-3

NOTE:
Do not damage the differential side gear shaft oil seal, inboard joint boot and front driveshaft dust cover.
Do not drop the front driveshaft assembly when carrying the front driveshaft Assembly, hold it horizontally (Fig. 9-3).

HINT: Hook the SST claw at the position shown in the illustration to remove the front driveshaft assembly.

(1) Repeat for the opposite side of the vehicle.

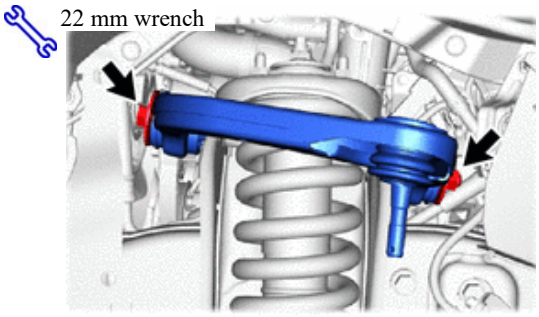


Fig. 10-1

10. Remove OE Front Upper Control Arm

(a) Remove the bolt, nut, and 2 washers from the control arm. Retain them for installation (Fig. 10-1).

(b) remove front upper control arm from vehicle.

(c) Repeat for the opposite side

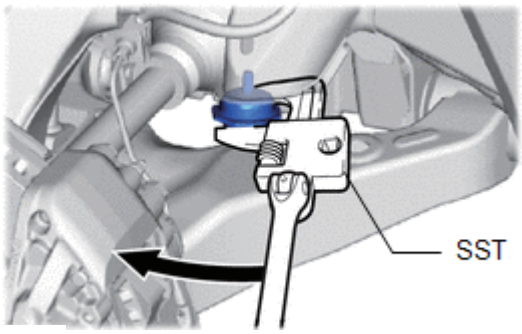


Fig. 11-1

11. Remove OE Fr Jounce Bumpers

(a) Using SST, remove the front No. 1 spring bumper from the vehicle (Fig. 11-1) and discard.

SST: 09922-10010

(b) Use same procedure for other side.

12. Install TRD Fr Jounce Bumpers & TRD Fr Jounce Bumper Spacers

(a) Install TRD Fr jounce bumper spacer onto TRD Fr jounce bumper by sliding it onto the TRD Fr jounce bumper stud.

(b) Using SST, install the trd jounce bumper assembly onto the vehicle (Fig. 12-1).

SST: 09922-10010

Torque: 31 N·m (316 kgf·cm, 23 ft·lbf)

HINT: Calculate the torque wrench reading when changing the fulcrum length of the torque wrench. When using SST (fulcrum length of 118.25 mm (4.656 in.)) + torque wrench (fulcrum length of 180 mm (7.087 in.)): 18.7 N·m (191 kgf·cm, 14 ft. ·lbf)

(c) Repeat for the opposite side of the vehicle.

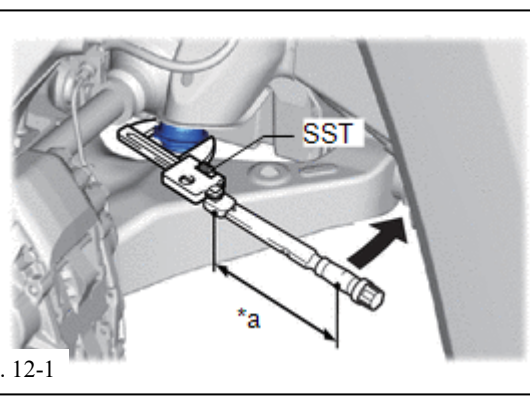


Fig. 12-1

13. Remove Front Lower Ball-Joint Attachment

14. Remove the cotter pin, loosen nut and leave on thread to catch spindle. Once spindle is removed discard cotter pin and nut (Fig. 14-1).

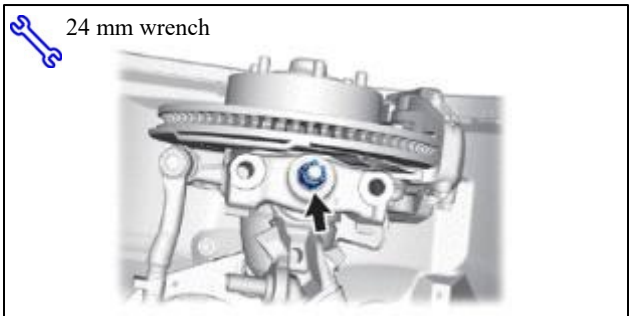


Fig. 14-1

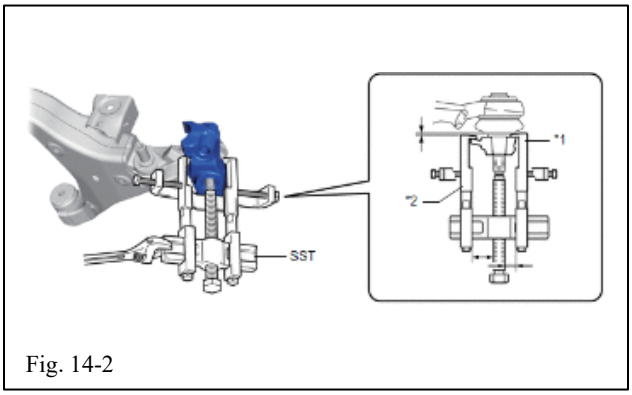


Fig. 14-2

(a) Using SST, remove the front lower ball-joint attachment (Fig. 13-2).

SST: 09950-40011
SST: 09955-04090

HINT:
Claw A (*1) 09955-04071
Claw B (*2) 09955-04031

15. Install TRD Front Lower Ball-Joint Attachment

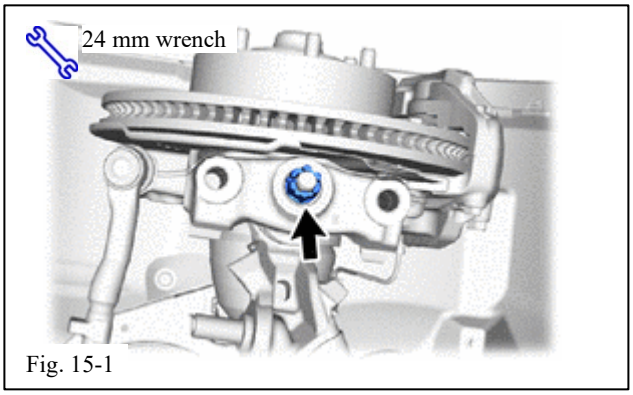


Fig. 15-1

(a) Identify the correct lower ball-joint attachment for the correct side of the vehicle. Confirm by locating the “L” or “R” mark on the end faces of the TRD lower ball-joint attachment (Fig. 15-1).

PT981-34310: RH
PT981-34320: LH

(b) Install onto the lower ball joint located on the lower control arm.

(1) Use a new Nut (90171-A0013) provided in the kit.

Torque: 167 N·m (1703 kgf·cm, 123 ft·lbf)

(2) Install a new Cotter Pin (90252-03015) provided in the kit.

(c) Repeat for the opposite side.

16. Install TRD Front Upper Control Arm

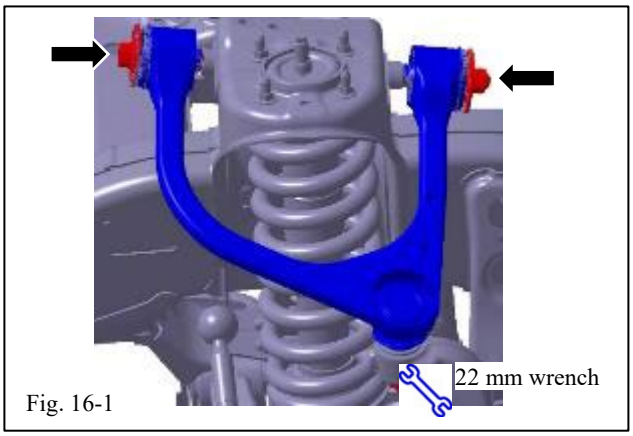


Fig. 16-1

(a) Temporarily install the TRD front upper control arm reusing the bolt, nut, and 2 washers. Identify the correct part for the side of the vehicle:

PT985-34310: RH
PT985-34320: LH

HINT: Upper ball joint will point towards the rear of the vehicle on RH and LH sides.

NOTE:
Temporarily install the nut. Tightening will occur later.

(b) Repeat for the opposite side.

17. Install TRD Front Driveshafts

(a) TRD front driveshafts can be identified by its silver shaft color. Select the correct Driveshaft by identifying the part number:

PT392-34310: RH
PT392-34320: LH

(b) Coat the splines of the inboard joint with differential oil.

NOTE:
Do not apply lubricants to the threaded portion of the driveshaft.

(c) Coat the snap ring of the inboard joint with MP grease.

NOTE:
Do not apply lubricants to the threaded portion of the driveshaft.

(d) Align the splines and tap in the front driveshaft assembly with a brass bar and hammer (Fig. 17-1).

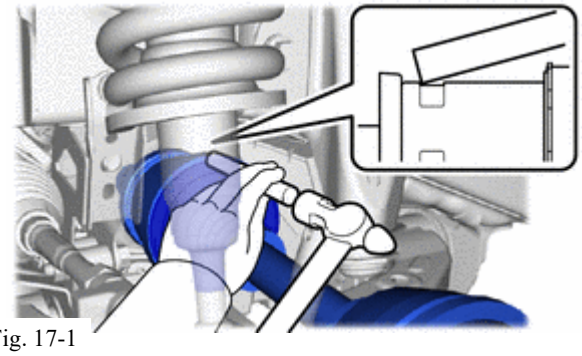


Fig. 17-1

NOTE:

- Using MP grease, set the front driveshaft hole snap ring in the groove with the opening facing downwards and centered radially.
- Do not damage the inboard joint boot, front Driveshaft cover and differential side gear shaft oil seal.
- Make sure to follow the proper handling and installation procedures. If the front driveshaft assembly is installed at too large an angle or slides too much, it may fall out of the groove of the tripod joint.
- Do not tap the end of the front drive outboard joint assembly with a hammer, etc.

HINT: Determine whether the front driveshaft assembly is completely tapped in by checking for changes in the tapping sound or the reaction of the brass bar.

(e) Support TRD driveshaft.

CAUTION:
Do not allow driveshaft to hang as it may overextend.

(f) Repeat for the opposite side of the vehicle.

Fig. 18-1

18. Remove Front Coil Spring from OE Shock Absorber Assembly

Secure shock absorber assembly in the essential tool strut compressor (Fig. 18-1).

Essential Tool: SC-4000 Strut Compressor

HINT: Make sure that the front coil spring is installed so that the distance between the top plate and lower hooks of the coil spring compressor is at the maximum. (Fig x) Ensure that the claws of the hooks are securely attached. Ensure that a solid top plate is use (Fig x)

(a) Using the coil spring compressor, compress the front coil spring.

SAFETY:

- If the front coil spring bends during the compression, immediately stop the compression and adjust assembly positioning in compressor.
- Do not compress the spring until the spring coils contact each other.
- Do not use an impact wrench. It may damage the compressor.
- Do not remove the front support to front shock absorber nut when the front coil spring is not free.

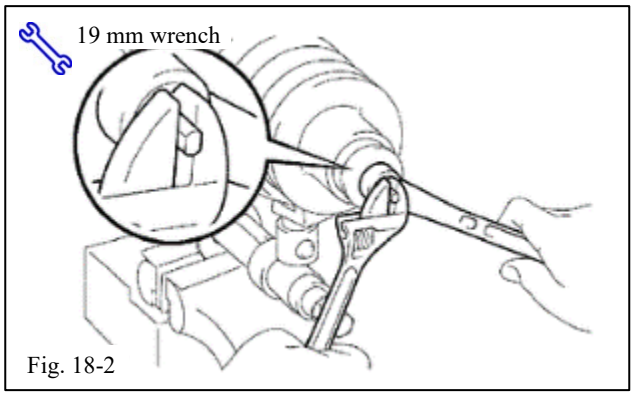


Fig. 18-2

(b) Remove lock nut from shock absorber rod and discard (Fig. 18-2).

HINT: Use an adjustable wrench to hold the Shock Rod steady if necessary.

(c) Remove shock absorber from coil spring.

(d) Carefully decompress coil spring and discard OE coil spring.

(e) Set aside and retain upper bushing w/ washer, upper support, washer and lower spring seat isolator.

(f) Repeat for opposite side.

19. Assemble TRD Front Shock Absorber

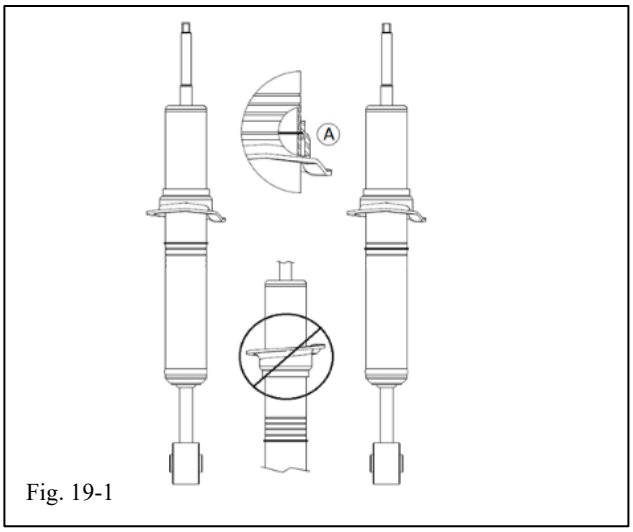


Fig. 19-1

(a) Remove rubber band from TRD shock spring seat (Fig. 19-1).

(b) Move pre-installed circlip into the designated groove on the Shock Absorber:

- Upper groove: Hybrid powertrain equipped vehicles only
- Lower groove: V6-T powertrain equipped vehicles only

CAUTION:

- Circlip groove selection is based on powertrain. Confirm and do not mix-up.
- RH and LH front shock absorbers are to use same groove setting. Confirm on both absorbers. Do not mix-up.

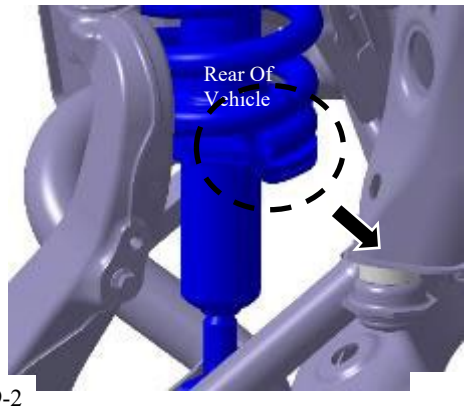


Fig. 19-2

- The circlip must fit completely in the groove and inside the spring seat (A). Improper installation will cause permanent damage to the Shock (Fig. 19-2).

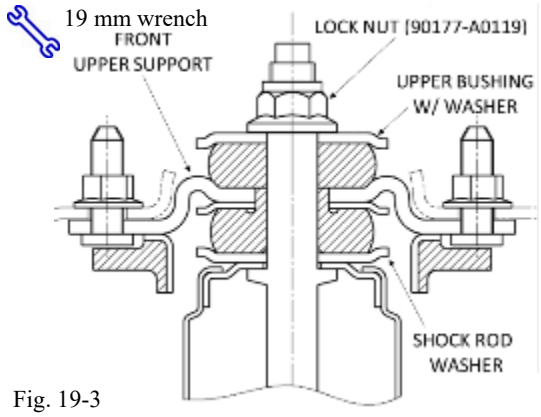


Fig. 19-3

(c) Install previously removed lower spring seat isolator onto lower spring seat.

(d) rotate lower spring seat and isolator such that the end of the bottom of the coil faces the rear of the vehicle (opposite the TRD logo, which faces forward) (Fig. 19-3).

(e) Repeat for the other front shock.

20. Install TRD Front Coil Spring onto TRD Front Shock Absorber

(a) Using SST, compress the TRD front coil spring (Fig. 20-1).

Essential Tool: SC-4000 Strut Compressor

(b) Fit the lower end of the front coil spring onto the shock absorber's lower spring seat.

(c) Install the front upper support.

(1) Slide on the shock rod washer.

(2) Slide on the upper support. Arrange upper support "OUT" arrow such that it is perpendicular to the shock absorber's lower eyelet axis. See Fig X.

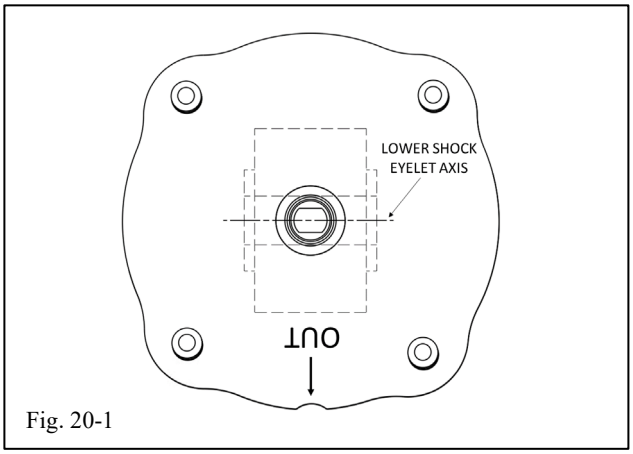


Fig. 20-1

HINT: Take note on the orientation of the front upper support relative the shock absorber decal. When shock absorber is installed on the vehicle, the TRD decal should face forwards.

(3) Install upper bushing w/ washer.

(4) Install and tighten a new lock nut (90177-A0019) provided in the kit.

Torque: 65 N·m (663 kgf·cm, 48 ft·lbf)

(d) Carefully decompress the TRD coil spring.

(e) Repeat for the other shock absorber assembly.

21. Install TRD Front Shock Absorber Assembly

(a) Temporarily install front shock absorber assembly onto vehicle. Temporarily tighten the 4 nuts on the upper side of the front shock absorber assembly (Fig. 21-1).

(b) Repeat for the opposite side of the vehicle.

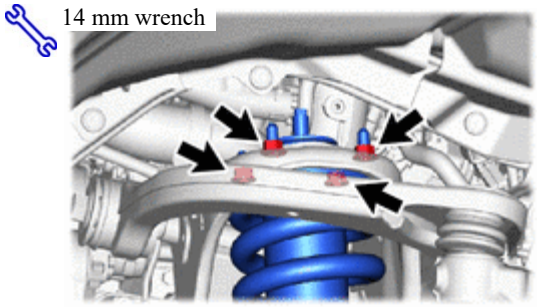


Fig. 21-1

22. Install TRD Tie Rod System

(a) Install inner portion of the TRD tie rod sleeve onto the inner tie rod. Do not tighten set screw until alignment is complete (Fig. 22-1).

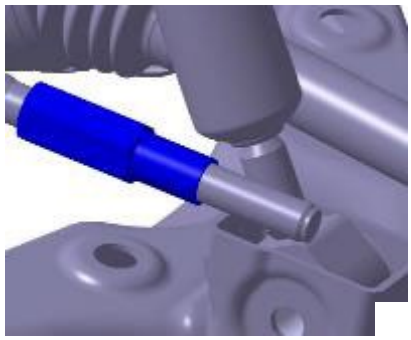


Fig. 22-1

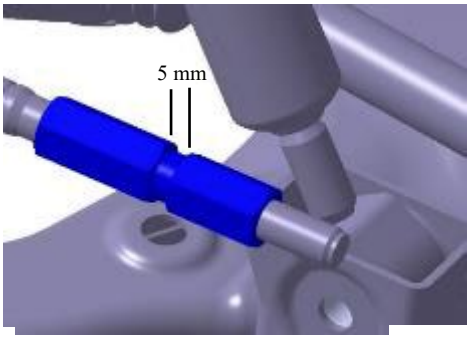


Fig. 22-2

(b) Install outer, threaded portion of the TRD tie rod sleeve onto the inner tie rod. Tighten until roughly 5mm of the sleeve is visible (Fig. 22-2).

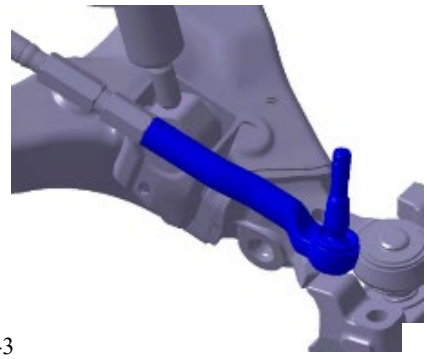


Fig. 22-3

(c) Install the TRD outer tie rod onto the inner tie rod. Select the correct TRD tie rod for the side of the vehicle by confirming the part number and marking (Fig. 22-3):

PT985-34330: RH
PT985-34340: LH

(d) Repeat for the opposite side of the vehicle

23. Install Front Steering Knuckle Assembly

(a) Align and insert driveshaft spline into the front steering knuckle's hub.

(b) Attach the steering knuckle to the upper arm (upper ball joint) and hand tighten using a new nut (90171-A0012) provided in the kit.

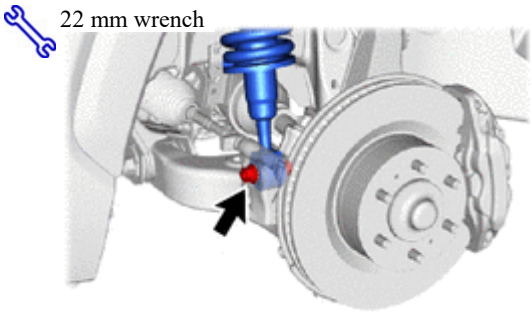


Fig. 23-1

(c) Align lower shock absorber bushing eye to the lower control arm by raising the lower control arm to meet the shock absorber (Fig. 22-1).

(d) Install the previously removed shock absorber lower eye bolt and nut. Ensure the bolt head is facing the rear of vehicle, and the nut is on the forward side of the vehicle.

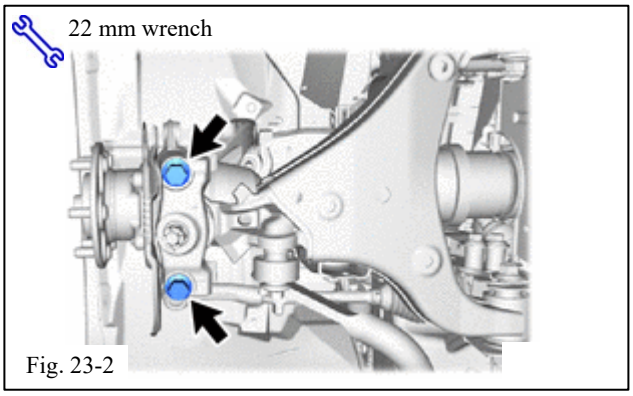


Fig. 23-2

(e) Temporarily tighten the bolt and the nut on the lower side of the front shock absorber assembly.

(f) Connect the front lower ball joint attachment to the steering knuckle with the two bolts previously removed. Tighten (Fig. 23-2).

Torque: 260 N·m (2651 kgf·cm, 192 ft·lbf)

CAUTION: Do not use the column steering lock to resist loosening torque. If necessary, steer the hubs to the full LH steering lock to tighten the lower ball joint bolts.

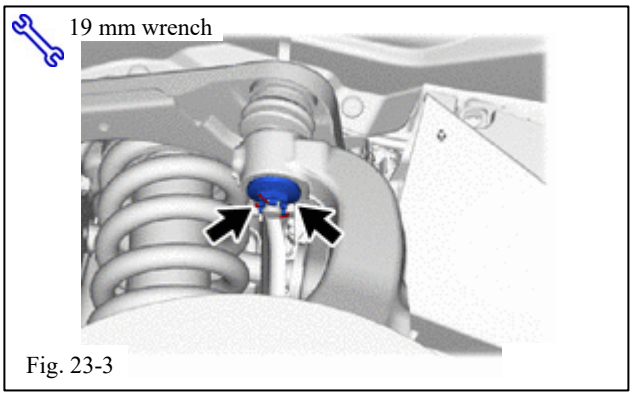


Fig. 23-3

(g) Tighten the TRD upper control arm ball joint nut (Fig. 23-3).

Torque: 125 N·m (1275 kgf·cm, 92 ft·lbf)

(h) Install a new Clip (90468-16029 or 90468-A0003) for the upper control arm.

HINT: If the holes for the clip are not aligned, tighten the nut up to another 60°.

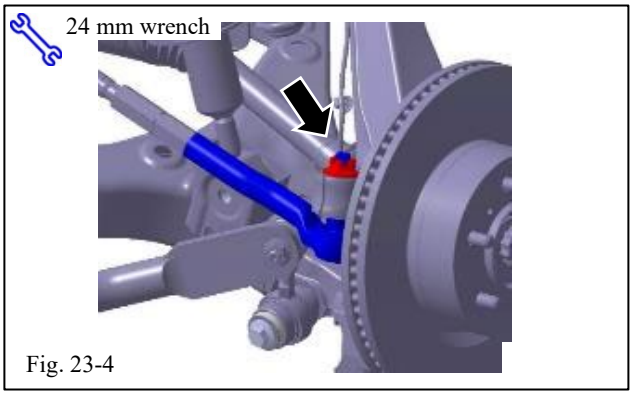


Fig. 23-4

(i) Connect the TRD steering rack tie rod onto the steering knuckle with a new nut (90171-16011) (Fig. 23-4).

Torque: 120 N·m (1224 kgf·cm, 89 ft·lbf)

(j) Install a new Clip (90252-04003) for the tie rod.

HINT: Further tighten the nut up to 60° if the holes for the clip are not aligned.

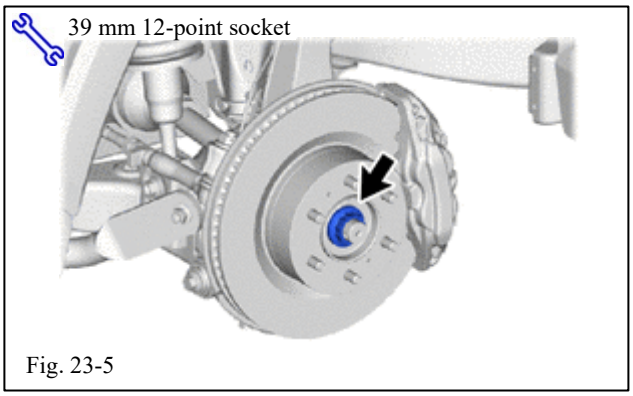


Fig. 23-5

(k) Install a new front axle shaft nut (90179-32007) as supplied in the kit (Fig. 23-5),

Torque: 340 N·m (3467 kgf·cm, 251 ft·lbf)

(l) Install a new front wheel adjusting lock cap (43525-0C010) as supplied in the kit.

(m) Install a new clip (95381-04045) for the front axle as supplied in the kit.

(n) Install new axle hub grease cap (43514-0C020) as supplied in the kit (Fig. 23-6).

NOTE:
Make sure to securely fit the grease cap to the axle hub.

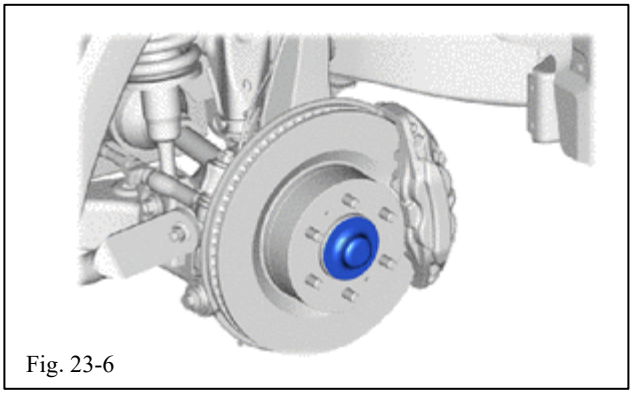


Fig. 23-6

(o) Repeat for opposite side.

(p) Install TRD Stabilizer Bar System

(q) Install the TRD FR stabilizer link assembly onto the Fr stabilizer bar. Reuse the nut. Locate the correct part for the side of the vehicle. An “R” or “L” marking is present on back side of the link’s ball-stud (Fig. 24-1):

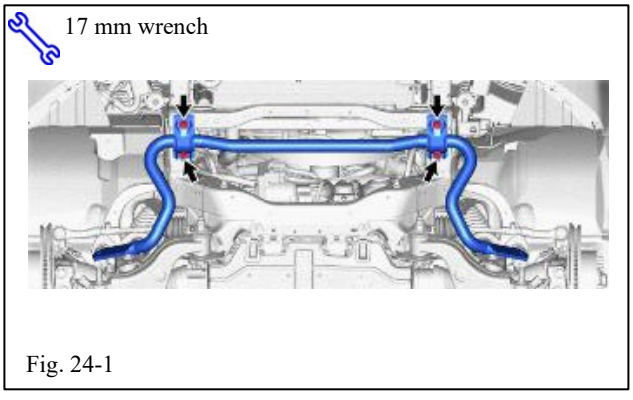


Fig. 24-1

PT983-34310: RH
PT983-34320: LH

Torque: 150 N·m (1530 kgf·cm, 111 ft·lbf)

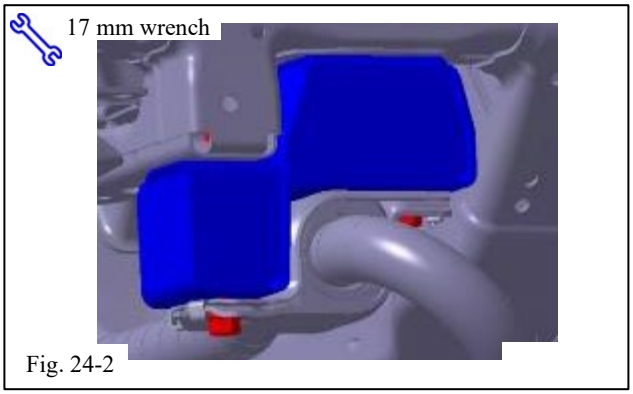


Fig. 24-2

(r) Install the OE stabilizer bar assembly onto the vehicle with TRD fr stabilizer bar spacers between the stabilizer bar brackets and frame. Install with the 4 bolts (90119-A0467) included with the kit (Fig. 24-2).

Torque: 80 N·m (816 kgf·cm, 59 ft·lbf)

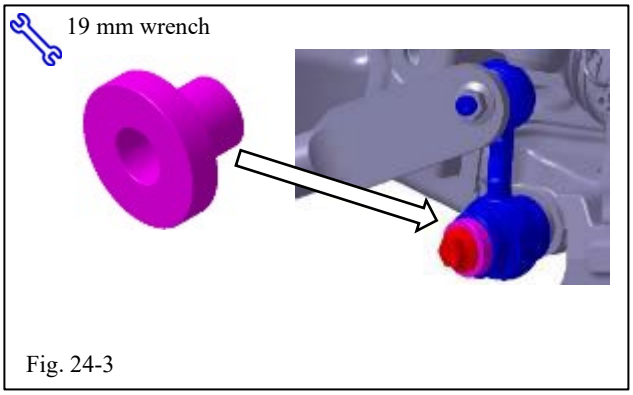


Fig. 24-3

(s) Install the Fr TRD stabilizer link assembly onto the lower control arm pin. Install with bolt (90105-A0232) and TRD Fr stabilizer bar link adapter included in the kit (Fig. 24-3).

Torque: 150 N·m (1530 kgf·cm, 111 ft·lbf)

(t) Repeat on opposite side

24. Reinstall Brake Rotor & Caliper

a) Install brake rotor (Fig. 25-1).

b) Install and torque brake caliper

Torque: 205 N·m (2090 kgf·cm, 151 ft·lbf)

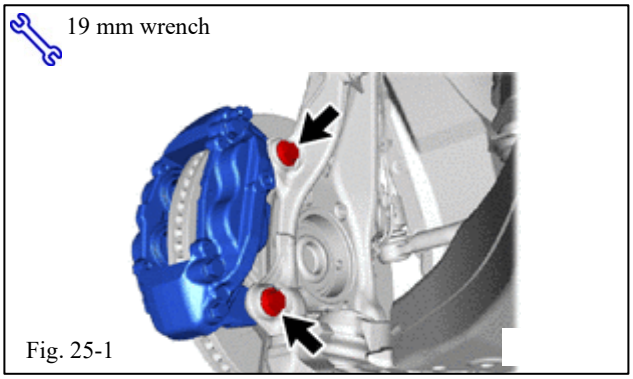


Fig. 25-1

25. Remove OE Front Brake Hose

(a) Remove frame side front fender apron trim to provide access to the front brake hose. Retain the four trim clips for reinstallation (Fig. 26-1).

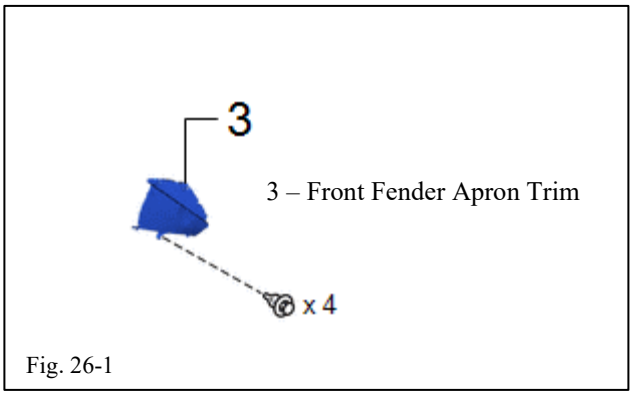


Fig. 26-1

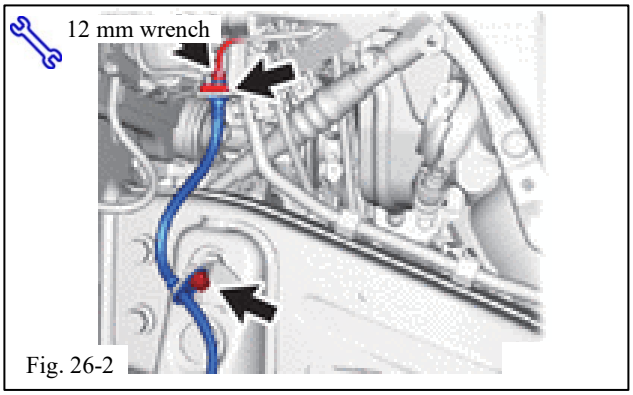


Fig. 26-2

(b) Using a union nut wrench, disconnect the frame side brake tube while holding the front flexible hose with a wrench (Fig. 26-2).

NOTE:

- Do not kink or damage the brake tube.
- Do not allow any foreign matter such as dirt or dust to enter the brake tube.

(c) Remove the clip and discard OE hose.

(d) Repeat for opposite side of the vehicle.

26. Install TRD Brake Hose

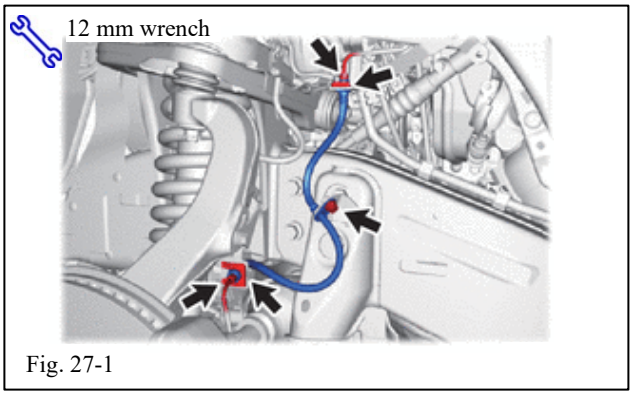


Fig. 27-1

27. Identify front TRD brake hose with PINK color ID mark (Fig. 27-1).

PT302-34310: RH & LH

Install the TRD front brake hose onto frame with the bolt.

Torque: 28 N·m (286 kgf·cm, 21 ft·lbf)

NOTE:
Do not twist the front flexible hose when installing it.

(a) Install the TRD flexible hose ends onto its respective brackets with 2 new clips (90468-08040) supplied in the kit.

NOTE:
Install the clip as far as it will go.

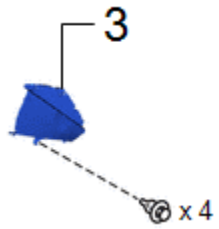
(b) Using a union nut wrench, connect brake tubes to both ends of the TRD flexible hose

while holding the TRD flexible hose with a wrench.

Torque: 15.2 N·m (155 kgf·cm, 11 ft·lbf)

NOTE:

- Do not kink or damage the brake tube.
- Do not allow any foreign matter such as dirt or dust to enter the brake tube from the connecting parts.



3 – Front Fender Apron Trim

Fig. 27-2

(c) Reinstall the front fender apron trim by reapplying the four trim clips.

(d) Repeat for the opposite side of the vehicle (Fig. 27-2).

28. Reinstall Wheel Speed Sensor Wiring Harness

29. Reinstall the wiring harness along the front upper control arm (Fig. 28-1 & 28-2).

(a) Reinstall the wiring harness along the front steering knuckle.

Torque:
Bolt A: 8.5 N·m (87 kgf·cm, 75 in·lbf)
Bolts B: 12.5 N·m (127 kgf·cm, 9 ft·lbf)

NOTE:

- Keep the tip of the speed sensor and installation hole free of foreign matter.

12 mm wrench

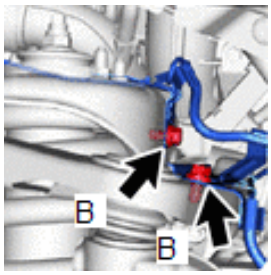


Fig. 28-1

12 mm wrench

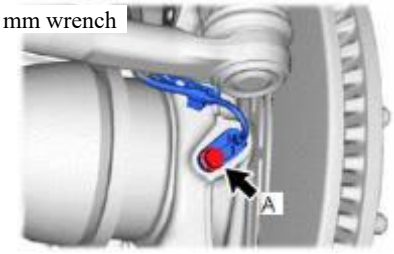


Fig. 28-2

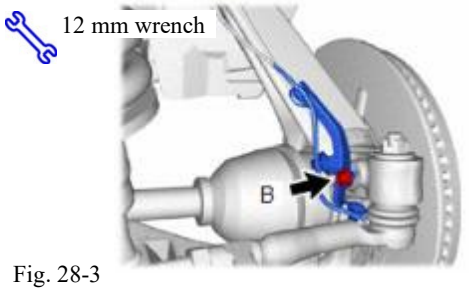


Fig. 28-3

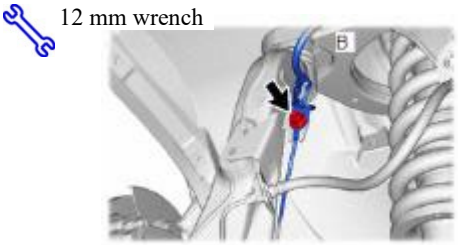


Fig. 28-4

- Firmly insert the speed sensor body into the steering knuckle before tightening the bolt (Fig. 28-3).
- After installing the speed sensor to the steering knuckle, make sure there is no clearance between the speed sensor stay and steering knuckle. Also, make sure that no foreign matter is stuck between the parts.
- Do not twist the speed sensor wire harness when installing it (Fig. 28-4).

Repeat for the opposite side of the vehicle.

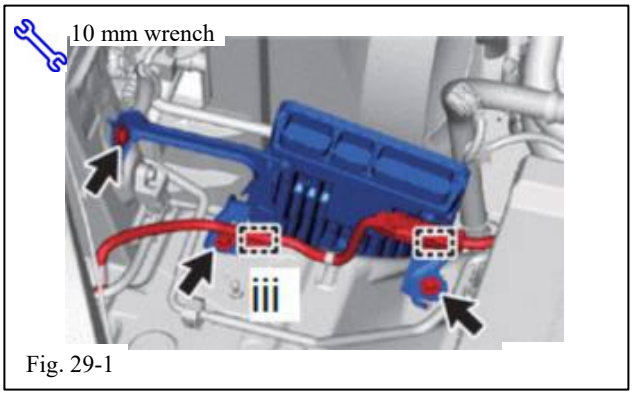


Fig. 29-1

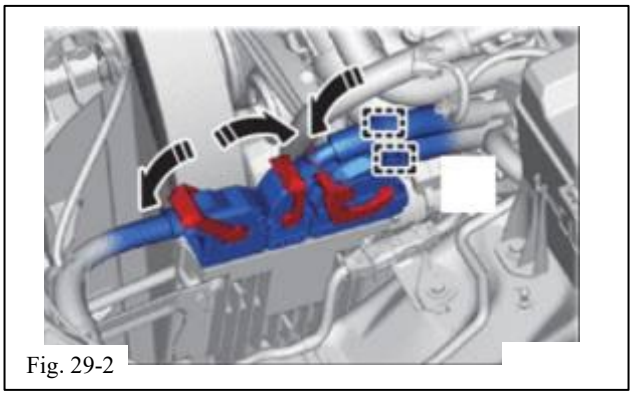


Fig. 29-2

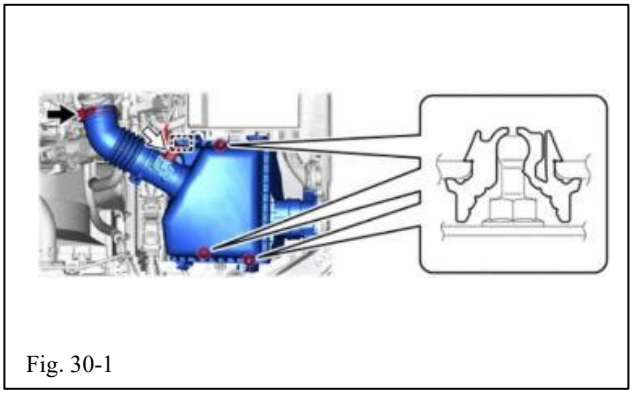


Fig. 30-1

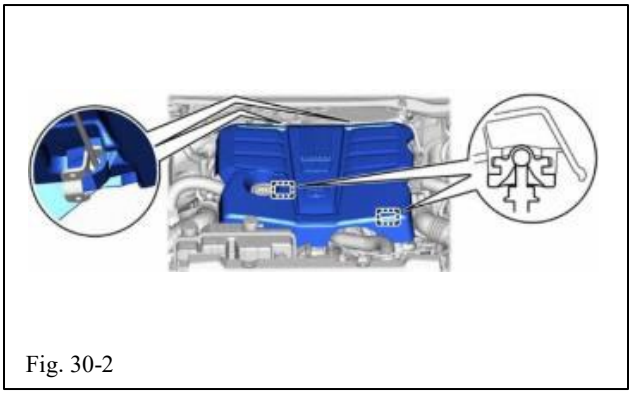


Fig. 30-2

30. Reinstall LH ECM Assembly

(a) Install LH ECM (Fig. 29-1).

(1) Install the three OE fasteners and ECM.

(2) Attach the two wire harness clamps.

(3) Attach the three ECM wire harness connectors. Push down on the levers to engage and lock the connectors (Fig. 29-2).

(4) Attach the two wire connector clamps.

31. Reinstall RH & LH Engine Air Cleaner Assembly

(a) Install air cleaner assembly onto the clips.

(b) Install air cleaner hose clamp (Fig. 30-1).

Torque: 2.8 N·m (29 kgf·cm, 25 in·lbf)

(c) Install mass airflow meter assembly, LH.

(1) Attach the clamp.

(2) Connect the connector.

(d) Install V-Bank Cover (Fig. 30-2).

(e) Repeat on opposite side.

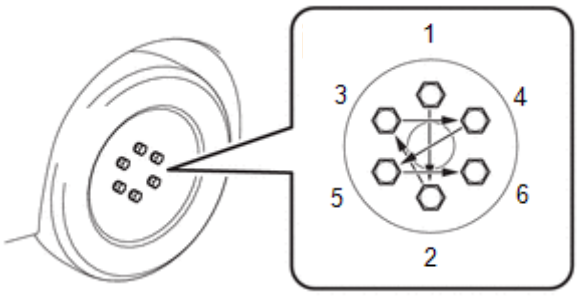


Fig. 31-1

32. Complete Front Suspension Install

(a) Align matchmarks on lower control arm x frame adjustment cam bolts (Fig. 31-1).

(b) Temporarily tighten adjustment cam bolts and nuts.

(c) Install front wheel assemblies following the pattern shown.

Torque:
Steel Wheels: 209 N·m (2131 kgf·cm, 154 ft·lbf)
Aluminum Wheels: 131 N·m (1336 kgf·cm, 97 ft·lbf)

33. Trim OE Engine Undercover

(a) Verify which engine undercover vehicle has:

51410-0C050: Felt Type Undercover

51410-0C060: Plastic-polymer Type Undercover


Fig. 32-1

(b) Print out the cut template corresponding to the vehicle engine undercover (Fig. 32-1).

NOTE:
Verify print settings are set to “do not scale”. cut templates must be printed in 1:1 scale. Once printed use scale to measure grid on cut plates to ensure proper scale.

(c) Cut out engine undercover cut templates.

(d) place engine undercover on work surface oriented such that the side with the part number is facing downward (Fig. 32-1).

(e) Place cut template on engine undercover corners (Fig. 32-2).


Fig. 32-2

NOTE: RH and LH side labels on cut templates correspond to vehicle RH and LH sides.

(f) Carefully align edges of cut template to edges of engine undercover and fold over "Fold Over" tabs on cut templates.

NOTE:

When aligning edges of cut template to edges of engine undercover ensure that cut template is conforming to engine undercover contours. Use one hand to hold cut template tight against contours of engine undercover.

(g) Tape cut templates into place on engine undercover.

(h) Carefully trace "Cut Here" line with marker onto engine undercover (Fig. 32-3).

NOTE:

When tracing cut template use one hand to hold cut template tight against contours of engine undercover.


Fig. 31-3

(i) Remove cut templates from engine undercover.

(j) Carefully trim engine undercover (Fig. 32-4).

HINT: use a cutting tool appropriate for the material. For plastic polymer type, a cut-off wheel is recommended. Use proper PPE as the plastic polymer contains glass fiber.


Fig. 32-4

(k) Remove burrs and sharp edges from areas that were cut using sandpaper or file.

(l) Install trimmed Engine Undercover onto vehicle.

Torque: 22 N·m (224 kgf·cm, 16 ft·lbf)

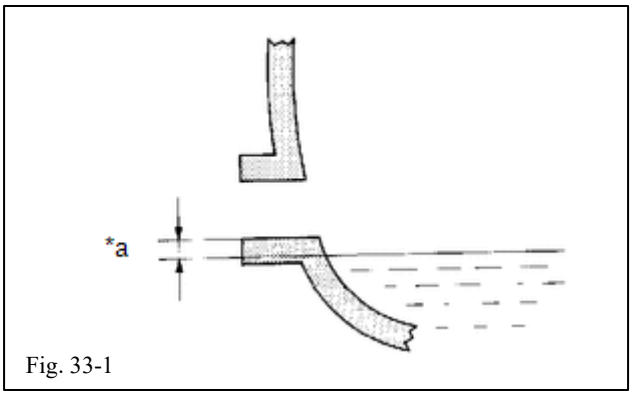


Fig. 33-1

34. Refill Front Differential

(a) Add differential oil so that the oil level is between 0 to 5 mm (0 to 0.197 in.) from the bottom lip of the differential filler plug hole (Fig. 33-1).

NOTE:
Too much or too little oil will lead to differential problems.
When vehicle is complete and ready, drive the vehicle and check the oil level again.

Differential oil type and viscosity:
Toyota Genuine Differential gear oil LT 75W-85 LG-5 or equivalent.
Front differential capacity:
1.24 to 1.34 liters (1.32 to 1.12 US qts, 1.10 to 1.17 Imp. qts).

(b) After refilling the front differential, install the filler plug with a new washer and tighten:

Torque: 39.2 N·m (400 kgf·cm, 29 ft·lbf)

NOTE: Completion - Lift Kit Front Suspension

(c) All Lift Kit components have been installed for the front suspension. Continue for rear suspension installation.

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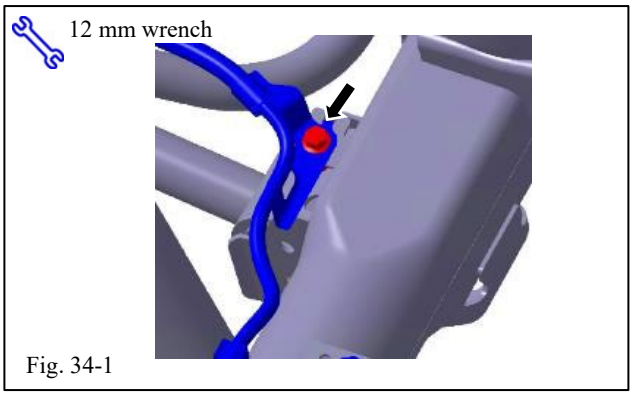


Fig. 34-1

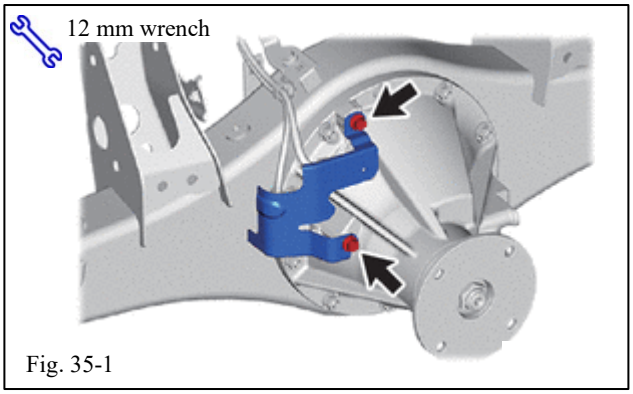


Fig. 35-1

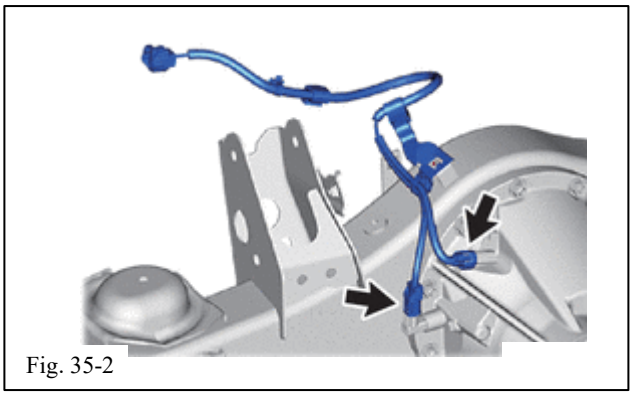


Fig. 35-2

35. Unbolt OE Parking Brake Wire Harness from Rear Axle.

(a) Remove the single bolt connecting the OE wire harness bracket to the Rr axle. Retain the bolt for reinstallation (Fig. 34-1).

(b) Repeat for the opposite side.

(c) Leave the wire harness unattached.

Take care not to pull or damage the loose wire harness.

(d)

36. Remove OE Differential Wire Harness Bracket (if equipped).

(a) Remove the two bolts attaching the Rr differential protector (Fig. 35-1). Retain the bolts for reinstallation.

(b) Unplug the two electrical connectors of the wire harness from the differential (Fig. 35-2).

(c) Remove the single bolt connecting the OE wire harness bracket to the Rr differential/axle. Retain the bolt for reinstallation.

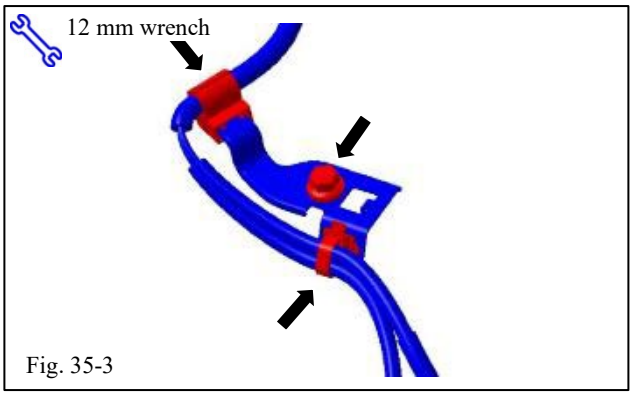


Fig. 35-3

(d) Separate the OE wire harness bracket from the wire harness itself. Disengage the two attachment clips between the wire harness and the wire harness bracket. Depress the tab on the plastic connector to disengage the clip at the tip of the metal bracket. Pinch the legs of the other clip to detach the wiring harness. Discard the OE differential wire harness bracket (Fig. 35-3).

(e) Leave the wire harness unattached.

CAUTION:
Take care not to pull or damage the loose wire harness.

37. Unclip OE Rr Brake Hose for Articulation

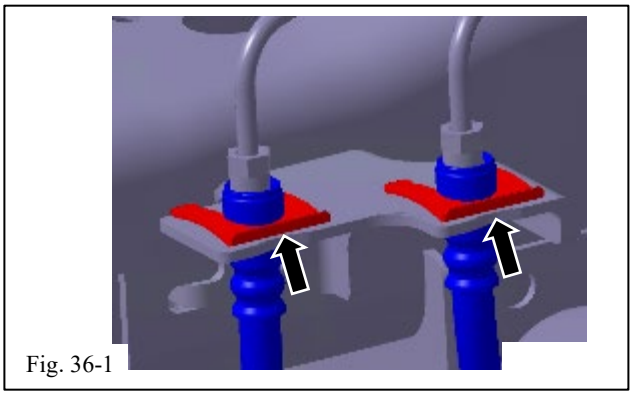


Fig. 36-1

(a) Remove the four clips which secure the two rear brake hoses from their attachment brackets. This allows the rear suspension to be manipulated without damage to the brake hose or its mounting brackets. Discard OE clips (Fig. 36-1).

NOTE:

Do not disconnect brake hose from the brake tube.

At this stage, removing the brake hoses or changing to TRD brake hoses is not advised (Fig. 36-2).

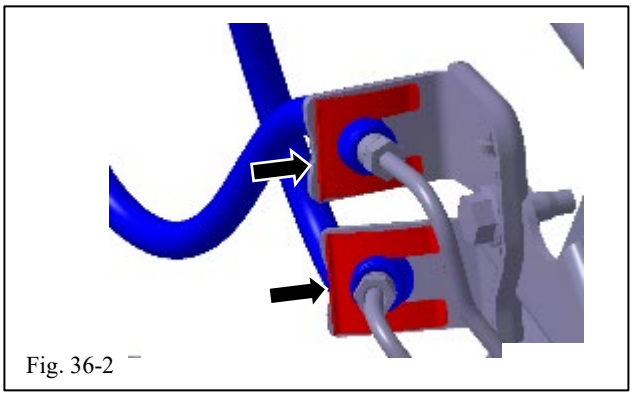


Fig. 36-2

38. Remove OE Headlight Height Sensor Linkage (if equipped)

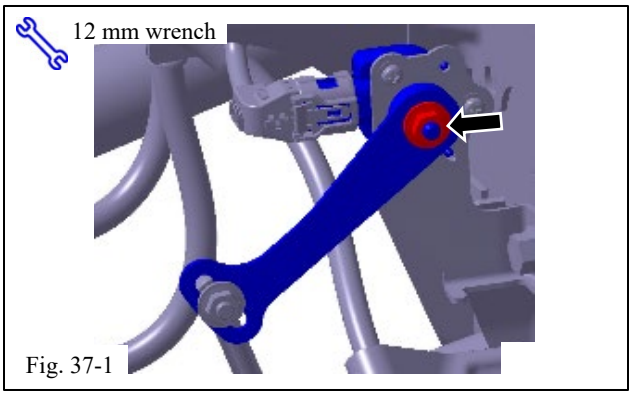


Fig. 37-1

(a) Remove linkage lock nut from height sensor shaft. Retain the nut for reinstallation (Fig. 37-1).

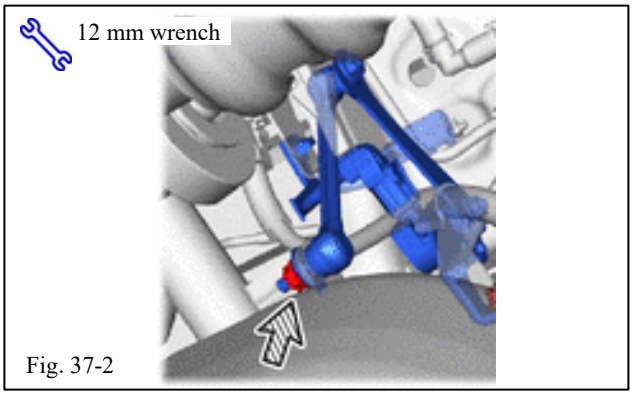


Fig. 37-2

(b) Remove linkage lock nut from Rr upper control arm RH attachment bracket. Discard the OE nut (Fig. 37-2).

(c) Remove OE headlight height sensor linkage and discard.

39. Install TRD Headlight Height Sensor Lock Bracket (if equipped)

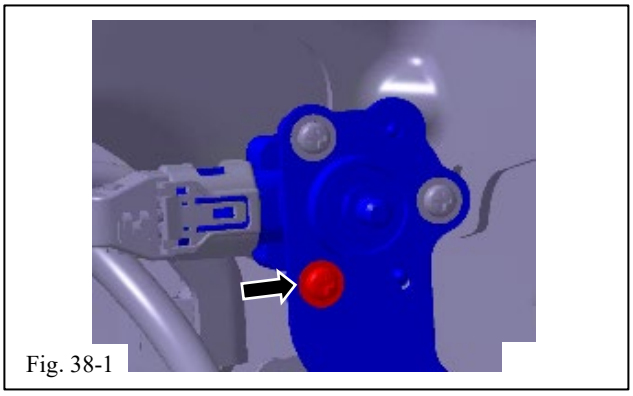


Fig. 38-1

(a) Remove rearmost Philips head headlight height sensor mounting screw. Retain OE screw for reinstallation.

(b) Carefully rotate headlight height sensor shaft keyway orientation to match the TRD headlight height sensor lock bracket (Fig. 38-1).

(c) Slide on the TRD headlight height sensor lock bracket onto headlight height sensor assembly.

NOTE:

Ensure that the TRD headlight height sensor lock bracket is fully engaged with the keyway on the headlight height sensor shaft.

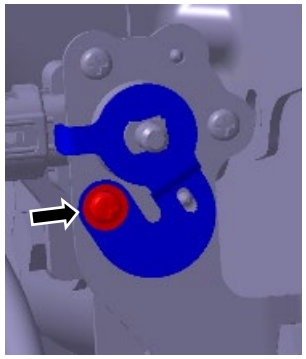


Fig. 38-2

(d) Install the rearmost Philips head headlight height sensor mounting screw (Fig. 38-2).

40. Rr Coil Spring Assemblies

(a) Disconnect the OE Rr stabilizer bar link assemblies from the frame attachment by removing the nut. Retain the nut for reinstallation (Fig. 39-1).

(b) Repeat for the opposite side.

(c) Lower the vehicle so that the Rr tires are touching the ground.

(d) Disconnect the rear absorber from the frame by removing the nut and rear No.1 shock absorber cushion. Retain the absorber cushion to reuse (Fig. 39-2).

(e) Repeat for the opposite side.

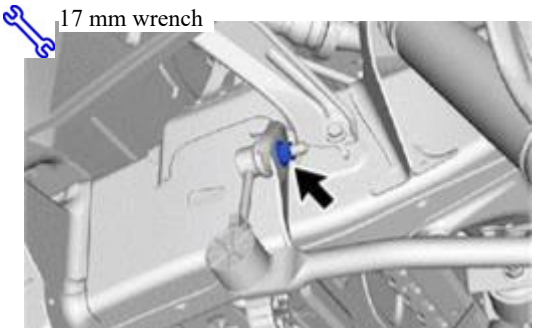


Fig. 39-1

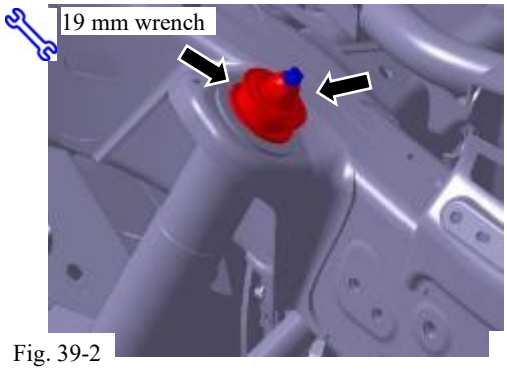


Fig. 39-2

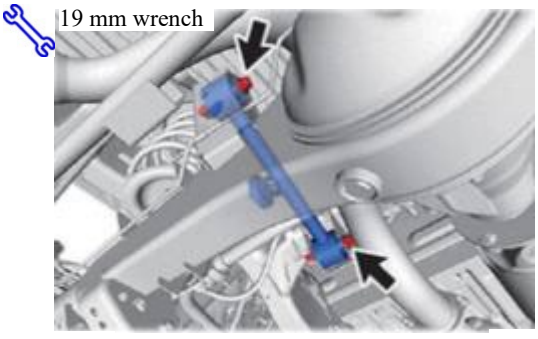


Fig. 39-3

(f) Prepare Rear RH upper control arm.

(1) Loosen the Rear RH upper control arm assembly at the frame by holding the nut, and loosening the bolt. Do not remove the bolt (Fig. 39-3).

(2) Remove the bolt from the Rear RH upper control arm assembly at the Axle by holding the nut and loosening the bolt.

Remove the bolt. Retain for reinstallation.

(g) Raise the vehicle enough so that the OE coil spring and OE hollow spring assembly is loose. Ensure wheels are still supported by the ground.

CAUTION: Take care not to over stretch brake hose or any wire harnesses.

(h) Remove the OE coil spring and the OE hollow spring assembly from the vehicle. Retain OE coil spring and OE hollow spring for reinstallation.

(i) Repeat for the opposite side.

41. Remove OE Rear Shock Absorbers

(a) Remove the OE rear shock absorber lower mounting Bolt. Retain for resinstallation.

(b) Repeat for the opposite side.

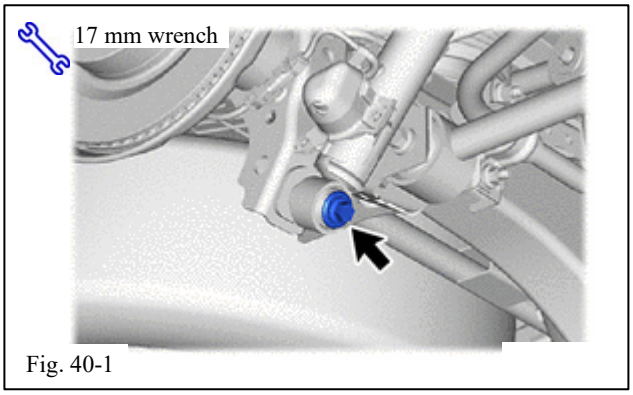


Fig. 40-1

(c) Separate the OE Rr shock absorber from the Rr axle housing and remove the shock absorbers (Fig. 40-1).

CAUTION: Ensure that the rear axle is still being supported by the ground and the brake hoses and wiring harnesses are not stretched.

(d) Repeat for the opposite side.

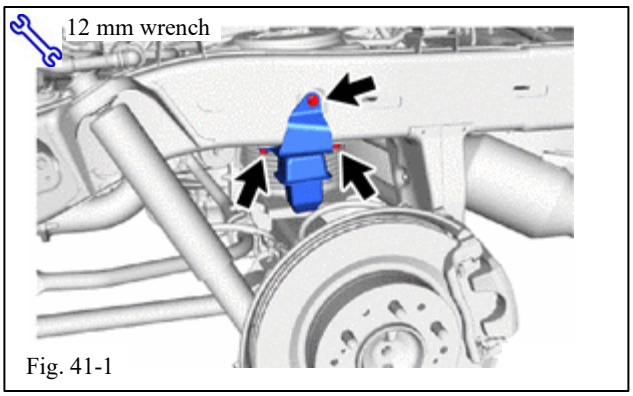


Fig. 41-1

(e) Remove the OE Rear Jounce Bumper.

(f) Remove all three bolts from each OE jounce bumper. Retain the Bolts for reinstallation. Discard OE jounce bumper (Fig. 41-1).

(g) Repeat for the opposite side.

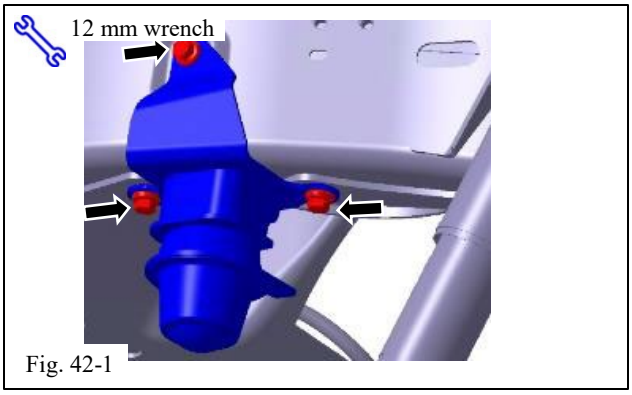


Fig. 42-1

42. Install TRD Rear Jounce Bumper.

(a) Confirm the correct Jounce Bumper by identifying the “R” or “L” mark on the bracket of the jounce bumper (Fig. 42-1).

PT595-34330: RH
PT595-34340: LH

Torque: 25 N·m (255 kgf·cm, 18 ft·lbf)

(b) Repeat for the opposite side.

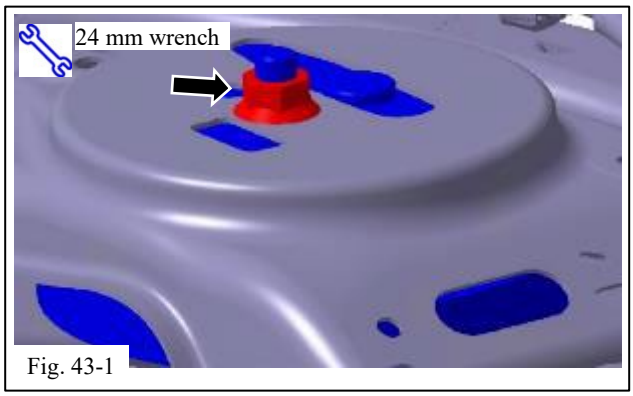


Fig. 43-1

43. Install TRD Rr Coil Spring Spacer

(a) Remove the pre-installed nut from both TRD Rr coil spring spacer. Retain for installation.

(b) Install the TRD Rr Coil Spring Spacer into the frame (Fig. 43-1).

Torque: 30 N·m (306 kgf·cm, 22 ft·lbf)

Ensure alignment pin is within slot on frame as shown in (Fig. 43-1).

HINT: hold spacer in place while tightening the nut to ensure it is seated in frame correctly.

(c) Repeat for the opposite side.

(d) Install coil spring and hollow spring assembly onto the vehicle (Fig. 43-2).

HINT: To allow for more space to install the RH spring, have another person push down on the axle/wheel assemble while another person installs the coil spring

HINT: before installing the coil spring, check that the coil spring end is in the correct position. If not, reinstall it (Fig. 43-3).

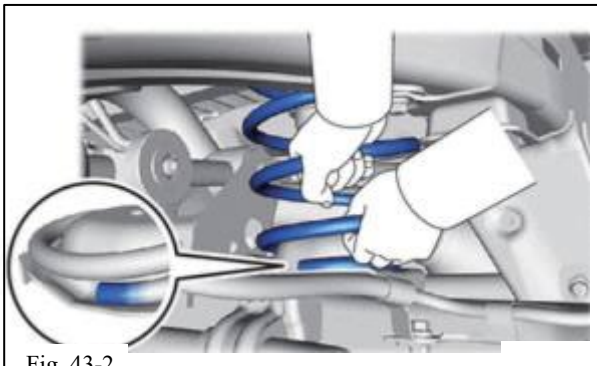


Fig. 43-2

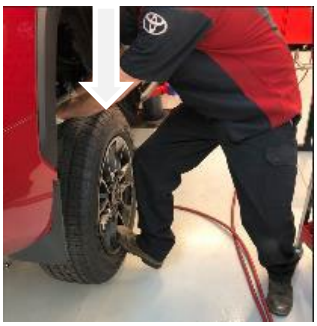


Fig. 43-3

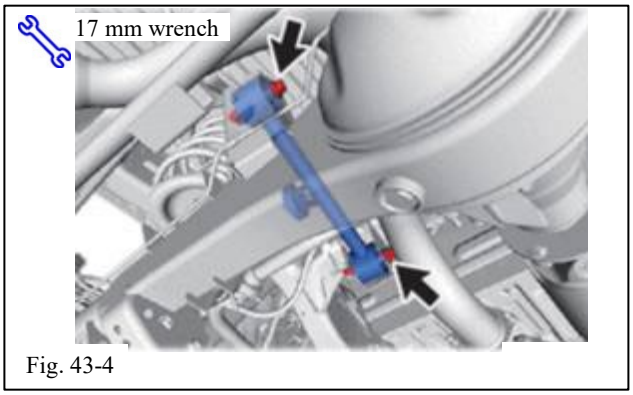


Fig. 43-4

(e) Lower vehicle so that the RH Rr upper control arm assembly is aligned with the axle (Fig. 43-4).

(f) Holding the nut, temporarily tighten the bolt connected the RH Rr upper control arm assembly with the axle.

44. Install TRD Rr Shock Absorbers

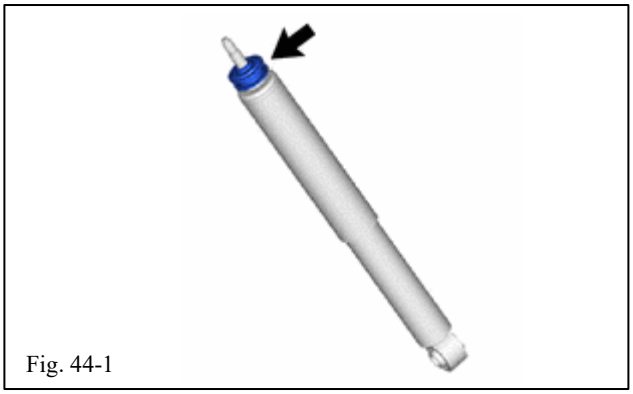


Fig. 44-1

(a) Install the rear No. 2 shock absorber cushion to the TRD Rr shock absorber (Fig. 44-1).

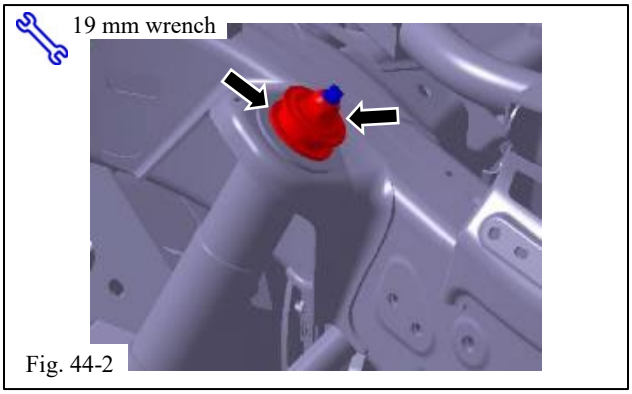


Fig. 44-2

(b) Temporarily install the TRD Rr shock absorber and Rr No. 1 shock absorber cushion above the frame with a new nut supplied. Do not tighten the Nut (Fig. 44-2).

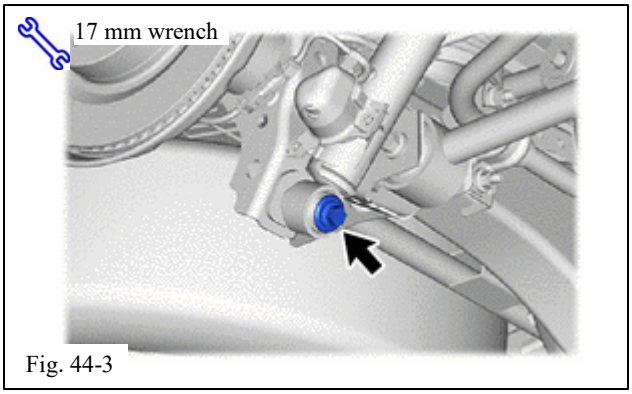


Fig. 44-3

(c) Install the lower side of the TRD Rr shock absorber onto the axle mounting pin.

(d) Install and temporarily tighten the lower shock absorber bolt (Fig. 44-3).

HINT: Adjust the height vehicle on the hoist as needed to facilitate rear shock absorber installation. Take care not to over stretch brake hoses or wiring harnesses.

(e) Repeat for the opposite side.

(f) Reconnect the OE Rr stabilizer bar link with the OE nut.

HINT: Adjust the height of the vehicle on the hoist as needed to facilitate rear stabilizer bar link attachment. Take care not to over stretch brake hoses or wiring harnesses.

(g) Repeat for the opposite side

(h) Tighten the shock rod nut at the frame (Fig. 44-4).

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

(i) Repeat for the opposite side

(j) Tighten the stabilizer bar link nut.

Torque: 75 N·m (765 kgf·cm, 55 ft·lbf)

(k) Repeat for the opposite side

(l) Raise the vehicle to perform the remaining installation steps

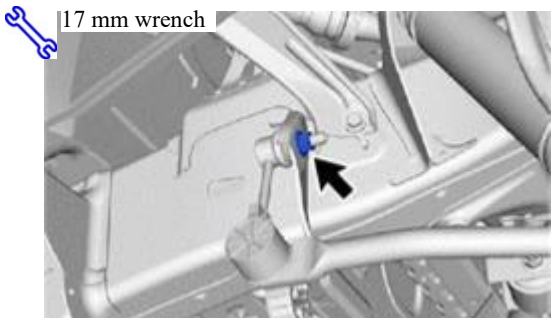


Fig. 44-4

45. Remove OE Rr Frame-To-Axle Brake Flex Hose

(a) Using a union nut wrench, disconnect the brake tube while holding the rear No. 2 brake hose with a wrench (Fig. 45-1).

CAUTION: Do not kink or damage the brake tube. Do not allow any foreign matter such as dirt or dust to enter the brake tube from the connecting parts.

NOTE:
If Brake Fluid leaks onto any painted surface, immediately wash it off (Fig. 45-2).

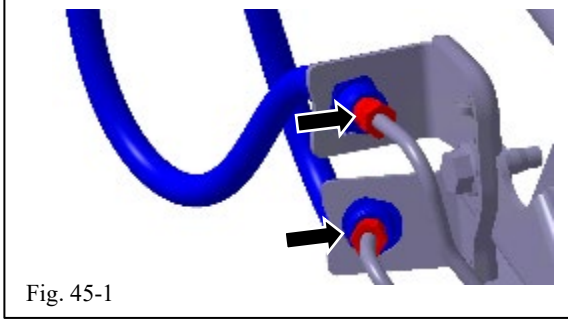


Fig. 45-1

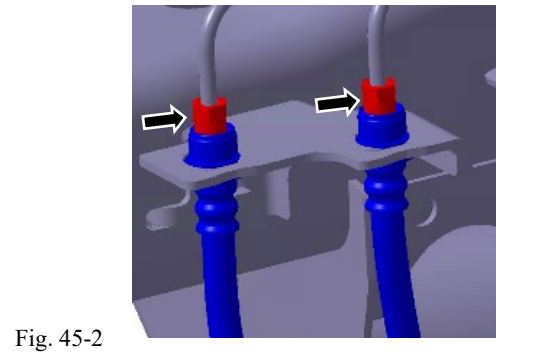


Fig. 45-2

(b) Remove the frame-to-axle brake hose, repeat for the second Hose.

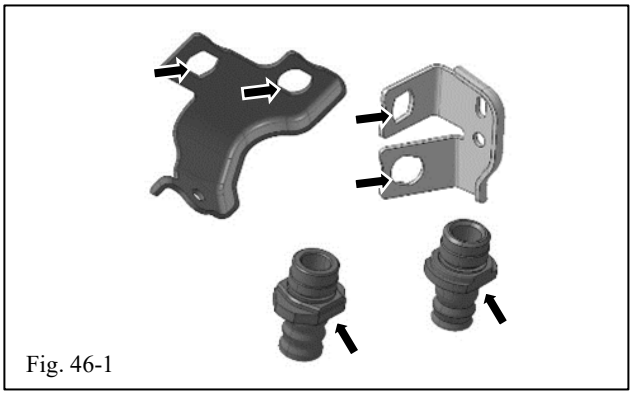


Fig. 46-1

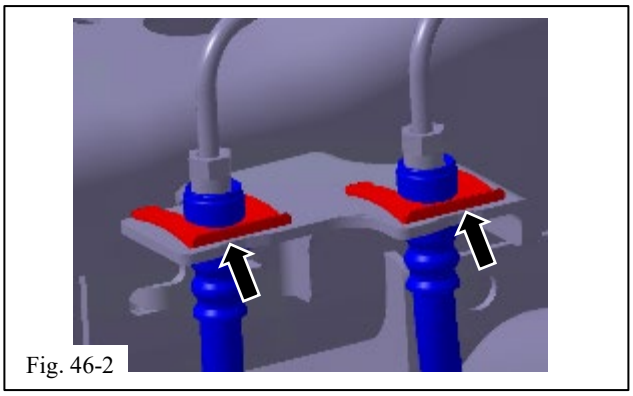


Fig. 46-2

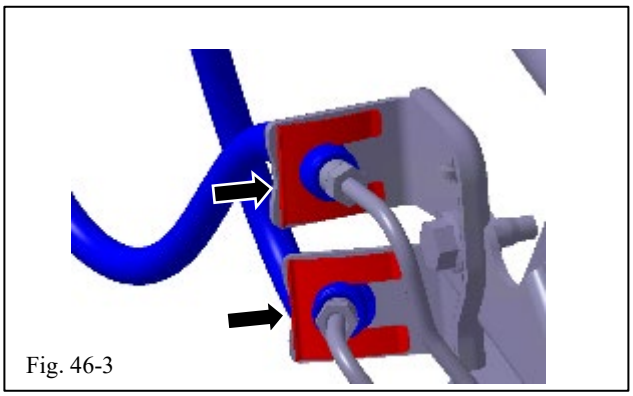


Fig. 46-3

46. Install TRD Rr Frame-To-Axle Brake Flex Hose

(a) Confirm that the correct hose is selected for the proper location by matching the hose end fitting shape to the corresponding frame side and axle side bracket shape. Identify the rear brake hose by the ID mark color on each part (Fig. 46-1):

PT302-34320: Blue
PT302-34330: Green

(b) Ensure the TRD brake flex hose fits securely within the designated shape on both frame side bracket and Axle side bracket.

(c) Install the TRD brake flex hose with two new clips (90468-08035 OR 90468-A0007) supplied in the kit (Fig. 46-2).

NOTE:
Install the clip as far as it will go.

Using a union nut wrench, connect the brake tube to the flex hose while holding the flex hose with a wrench.

Torque: 15.2 N·m (155 kgf·cm, 11 ft·lbf)

CAUTION: Do not kink or damage the brake tube. Do not allow any foreign matter such as dirt or dust to enter the brake tube from the connecting parts (Fig. 46-3).

(d) Repeat for the second TRD brake flex hose.

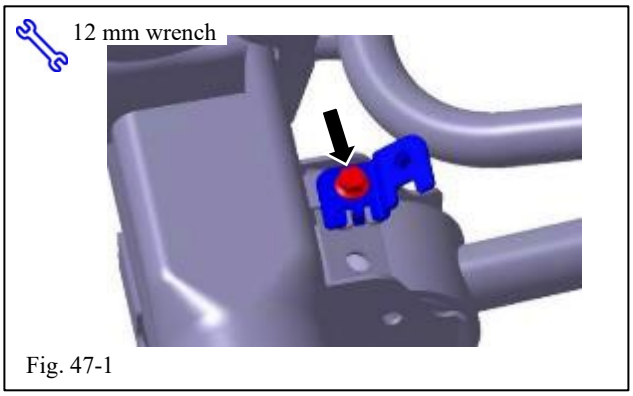


Fig. 47-1

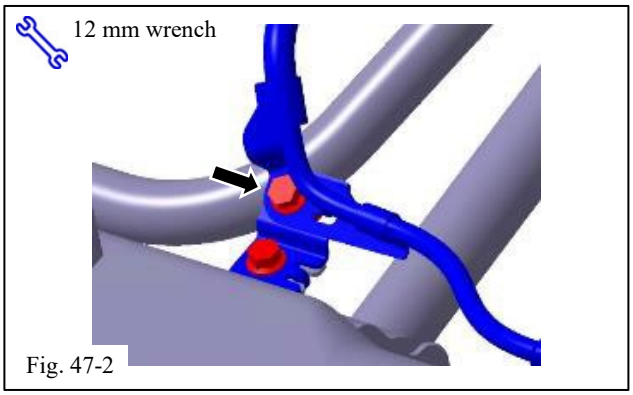


Fig. 47-2

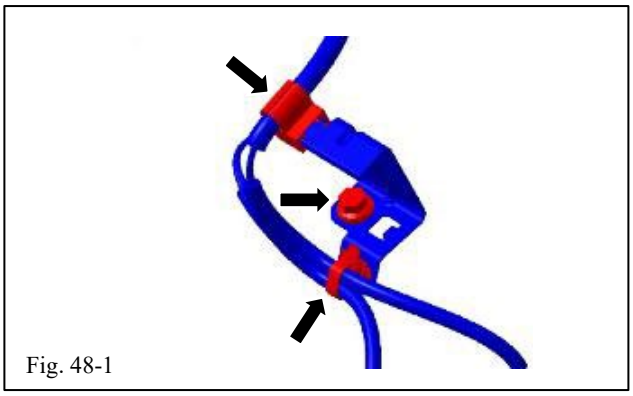


Fig. 48-1

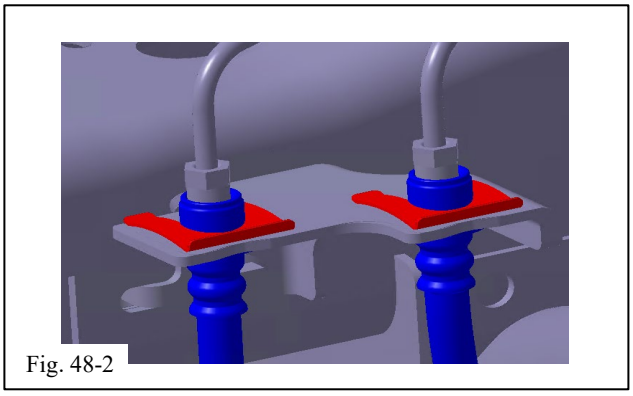


Fig. 48-2

47. Install TRD Parking Brake Wire Harness Bracket.

(a) Bracket onto Rr axle, using OE fastener (Fig. 47-1).

Torque: 15 N·m (153 kgf·cm, 11 ft·lbf)

(b) Install OE parking brake wire harness Bracket onto TRD parking brake wire harness bracket, using new fastener (90119-A0536) (Fig. 47-2).

Torque: 15 N·m (153 kgf·cm, 11 ft·lbf)

(c) Repeat for the opposite side.

48. Install TRD Differential Wire Harness Bracket (if equipped)

(a) Connect the two plastic clips onto the TRD differential wire harness bracket. Engage the legs of the clip to attach the wiring harness.

(b) Fasten the differenatial wire harness bracket to the Rr differential/axle (Fig. 48-1).

Torque: 29.5 N·m (301 kgf·cm, 22 ft·lbf)

(c) Plugin the two electrical connectors of the wire harness into the differential (Fig. 48-2).

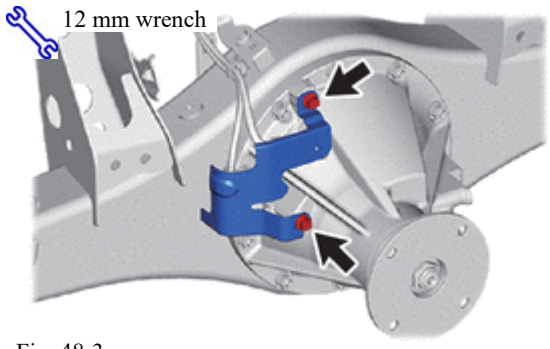


Fig. 48-3

(d) Install the two bolts attaching the Rr differential protector (Fig. 48-3).

Torque: 18.5 N·m (189 kgf·cm, 14 ft·lbf)

49. Completion – Lift Kit Rear Suspension

(a) This completes rear suspension installation. Continue to complete lift kit installation and configuration of the overall vehicle.

50. Remove All Tire-Wheel Assemblies for Brake Caliper Access.

(a) Fill the reservoir with brake fluid.

(1) Remove the brake master cylinder reservoir filler cap assembly.

(2) Fill the reservoir with brake fluid.

Brake Fluid:

SAE J1703 or FMVSS No.116 DOT3

SAE J1704 or FMVSS No.116 DOT4

NOTE:

Make sure that there is sufficient brake fluid in the Reservoir.

Do not remove the Filter from the Reservoir and be sure to fill the reservoir with new brake fluid to avoid any potential contamination of the brake system. Contamination, for example by dirt particles or mineral oil, could lead to functional brake problems.

(b) Bleed the brake system.

(1) Remove the bleeder plug cap at the brake caliper.

(2) Connect a vinyl tube to the bleeder plug.

(3) Depress the brake pedal several times, and then loosen the bleeder plug and release the brake pedal.

(4) Repeat steps c-2 and c-3 until air bubbles cannot be seen coming out of the brake caliper.

(5) Tighten the bleeder plug completely.

Torque: Front Disc Brake Bleed Plug:
10.8 N·m (110 kgf·cm, 8 ft·lbf)

Torque: Rear Disc Brake Bleed Plug:
8.3 N·m (85 kgf·cm, 73 inch·lbf)

(6) Install the bleed plug cap.

(7) Repeat the above steps to bleed the brake lines for each wheel.

(8) Inspect for brake fluid leaks.

(9) Adjust the brake fluid level in the reservoir.

(10) Install the brake master cylinder reservoir filler cap assembly.

51. Install Tire-Wheel Assemblies

(a) Install all four-wheel assemblies following the pattern shown (Fig. 51-1).

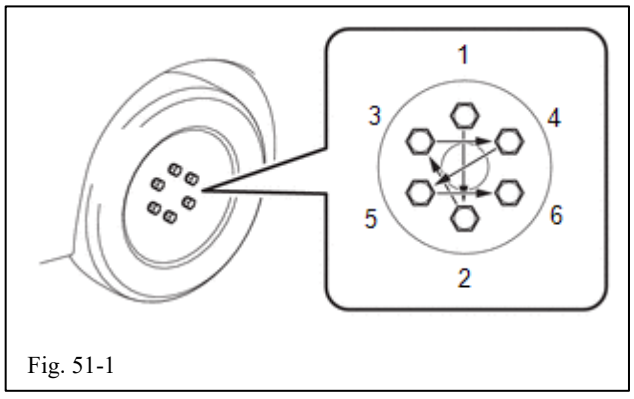


Fig. 51-1

Torque:
Steel Wheels: 209 N·m (2131 kgf·cm, 154 ft·lbf)
Aluminum Wheels: 131 N·m (1336 kgf·cm, 97 ft·lbf)

52. Wheel Alignment

(a) Adjust the tire inflation pressure.

(b) Loosen all suspension member fasteners with bushings:

- Fr upper control arm at frame
- Fr lower control arm at frame

- Fr shock absorber lower bolt
- Rr – All four links at frame
- Rr – All four links at axle
- Rr – Lateral link at frame and at axle

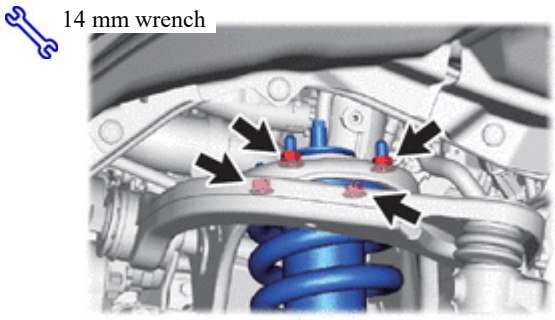


Fig. 52-1

(c) With the vehicle on the ground, tighten the four-shock absorber to frame nuts. Perform for both sides of the vehicle (Fig. 52-1).

Torque: 45 N·m (459 kgf·cm, 33 ft·lbf)

(d) Bounce the vehicle about five times to settle the suspension

(e) Torque the following suspension member fasteners with the vehicle on a level surface, at curb height:

- Fr upper control arm at frame

Torque: 185 N·m (1886 kgf·cm, 136 ft·lbf)

- Fr shock absorber at frame

Torque: 45 N·m (459 kgf·cm, 33 ft·lbsf)

- Fr shock absorber at lower arm

Torque: 165 N·m (1683 kgf·cm, 122 ft·lbf)

- Rr – All four-trailing links at frame

Torque: 140 N·m (1428 kgf·cm, 103 ft·lbf)

NOTE:
Rotate the bolt while holding the nut steady.

- Rr – All four-trailing links at axle

Torque: 140 N·m (1428 kgf·cm, 103 ft·lbf)

NOTE:
Rotate the bolt while holding the nut steady.

- Rr- Lateral link at frame, at axle

Torque: 140 N·m (1428 kgf·cm, 103 ft·lbf)

(f) Inspect wheel alignment using the wheel alignment tester or equivalent.

(g) Adjust camber and caster (Fig. 52-2).

(1) Turn the adjustment cam to adjust the camber and caster to the target value

Target values:
Caster: 5°23’ ± 45’(5.39° ± 0.75°)
Camber: 0°00’ ± 36’ (0.00° ± 0.60°)
Toe: 0°19’ ± 10’ (0.32° ± 0.16°)
Total Toe

HINT:

The No. 1 to (+) by 1 notch changes the caster by +0°07’ and camber by +0°05’.

The No. 2 to (+) by 1 notch changes the caster by +0°06’ and camber by +0°03’.

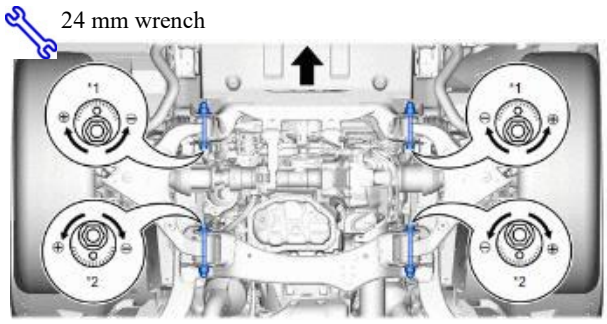


Fig. 52-2

*1	Front Adjusting Cam	*2	Rear Adjusting Cam
➡	Front of the Vehicle	-	-

(2) Tighten the bolt and nut.

Torque:
280 N·m (2855 kgf·cm, 207 ft·lbf)

(h) Adjust Toe-In.

(1) Remove the clip from the steering rack boot.

(2) Loosen the TRD outer tie rod sleeve (Fig. 52-3).

(3) Turn both steering rack ends the same amount to adjust the toe.

(4) Hold the TRD inner tie rod sleeve and tighten the TRD outer tie rod sleeve.

- Utilize SST to tighten the TRD outer tie rod sleeve to the specified torque.

SST: 09922-10010

Torque: 67 N·m (683 kgf·cm, 49 ft·lbf)

HINT: Calculate the torque wrench reading when changing the fulcrum length of the torque wrench. Refer to the Toyota Repair Manual for details.

(5) Tighten the set screw in the TRD inner tie rod sleeve (Fig. 52-4).

Torque: 3 N·m (31 kgf·cm, 27 in·lbf)

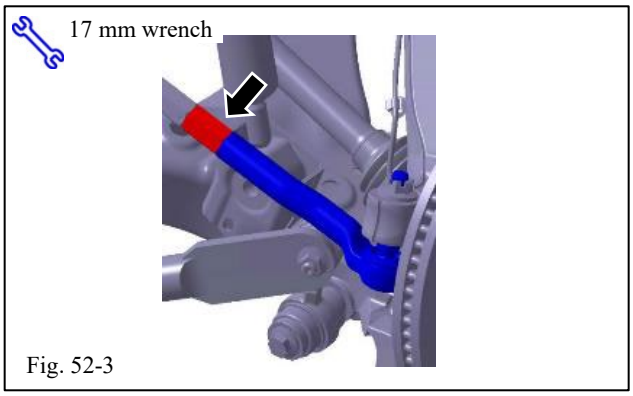


Fig. 52-3

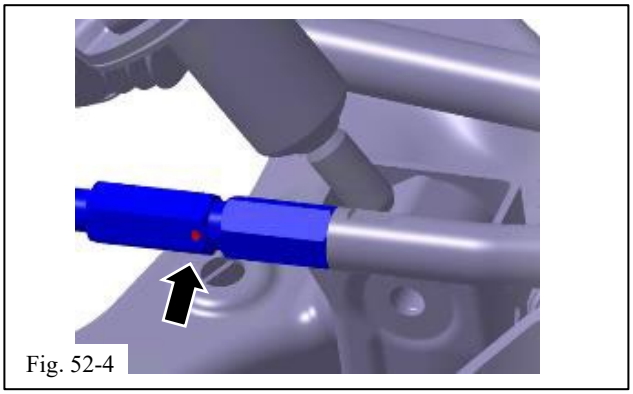


Fig. 52-4

(6) Fix twisted steering rack boot and install the clip with the tabs toward the front of the vehicle.

(7) Check that the TRD outer tie rod is at the ball joint movable range center.

53. Reconnect Battery

(a) Reconnect the battery's negative terminal.

Torque: 5.4 N·m (55 kgf·cm, 48 in·lbf)

54. Change Radiator Shutter Control Mode

(1) Using Global Tech Stream, change the control mode to normal mode

- Connect the GTS to the DLC3.
- Turn the ignition switch to ON.
- Turn the GTS on.
- Enter the following menus: *Powertrain >> Engine >> Utility >> Switch Grille Shutter Control Mode*
- According to the display on the GTS, change the grille shutter control mode from maintenance mode to normal mode.

55. Configure Toyota Safety Sense

(a) Due to a change in vehicle height, it is required to reconfigure the TSS system. Refer to the Toyota Repair Manual for step-by-step instructions on reconfiguration, however, use the below values for front radar and camera height values.

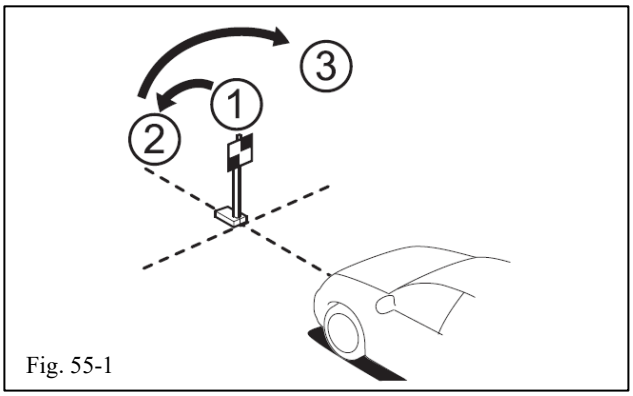


Fig. 55-1

(1) Front Radar Height:

- OE Tires: 783 mm (2.57 ft.)
- 35” Tires: 811 mm (2.66 ft.)

(2) Camera Height:

- OE Tires: 1799 mm (70.83 in.)
- 35” Tires: 1825 mm (71.85 in.)

NOTE:

For TSS camera reconfiguration, use the sequential recognition method and target.

56. Check and Configure Panoramic View Monitor (if equipped)

(a) Confirm image generated by PVM system. Vehicle height may impact the system’s ability to generate a smooth image from multiple cameras. If adjustment is required, refer to the Toyota repair manual for model specific instructions to adjust PVM:

Repair Manual >> Audio/Visual/Telematics >> Park Assist / Monitoring >> Panoramic View Monitor System >> Calibration

57. Headlight Assembly Initialization

(a) For vehicles equipped with auto leveling headlight system, refer to repair manual for headlight assembly initialization procedure:

Vehicle Exterior >> Lighting (Ext) >> Lighting System (w/ Headlight ECU) >> Registration

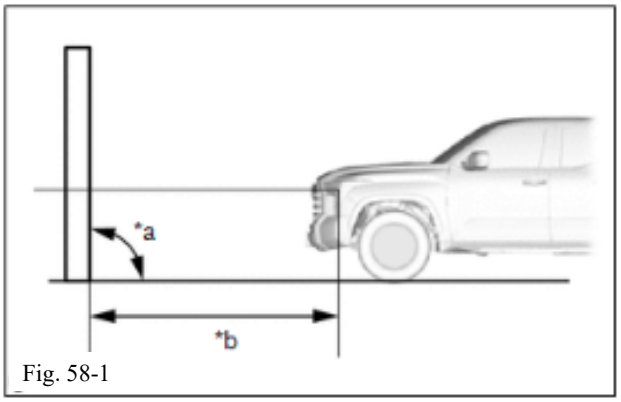


Fig. 58-1

*a	90°
*b	7.62 m or 3 m (25 ft. or 9.84 ft.)

58. Adjust the Vertical Headlight Aim

(a) Prepare the vehicle

(1) Place the vehicle in a location that is dark enough to clearly observe the cutoff line. The cutoff line is a distinct line, below the light from the headlights can be observed and those that cannot be observed (Fig. 58-1).

(2) Place the vehicle at a 90° angle to the wall.

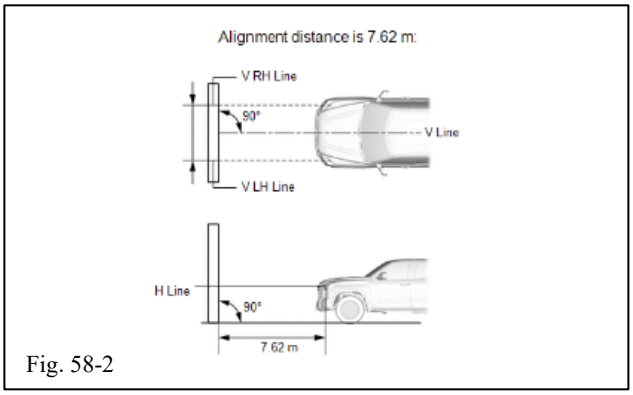


Fig. 58-2

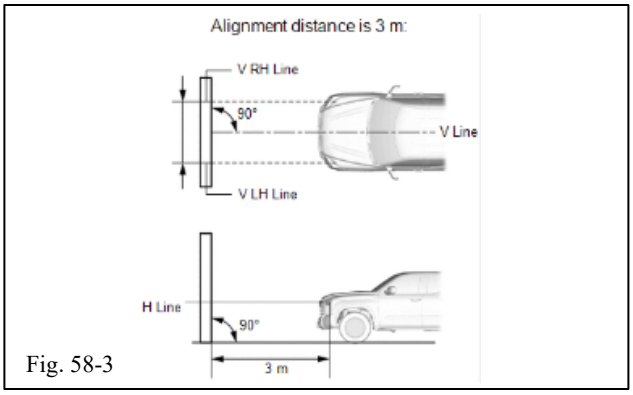


Fig. 58-3

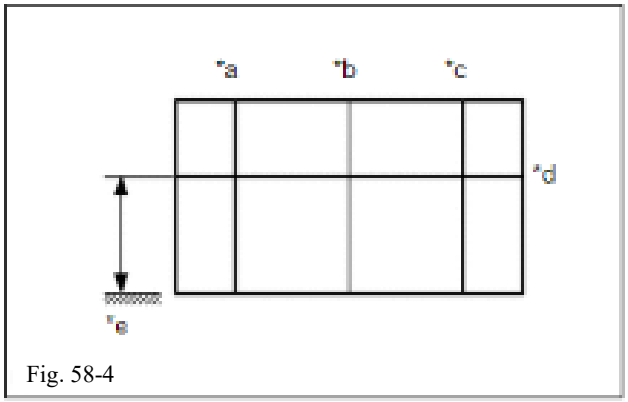


Fig. 58-4

*a	V LH Line
*b	V Line
*c	V RH Line
*d	H Line
*e	Ground

(3) Create a 7.62 m (25 ft.) distance between the vehicle (center marks of the headlight) and the wall (Fig. 58-2).

NOTE:
If sufficient space is not available, secure a distance of exactly 3 m (9.84 ft.) to allow for checking and adjustment of headlight aim. (The size of the target zone will change with the distance, so follow the instructions in the illustration)

(4) Make sure that the vehicle is on a level surface (Fig. 58-3).

(5) Bounce the vehicle up and down to settle the suspension.

(b) Prepare a piece of thick white paper approximately 2 m (6.56 ft.) (height) x 4 m (13.1 ft.) (width) to use as a screen.

(c) Draw a vertical line down the center of the screen (V line).

(d) Set the screen as shown in the illustration (Fig. 58-4).

HINT: Stand the screen perpendicular to the ground. Align the V line on the screen with the center of the vehicle.

(e) Draw base lines (H, V LH, and V RH lines) on the screen as shown in the illustration (Fig. 58-4).

HINT: The base lines differ for "low beam inspection" and "high beam inspection". Mark the headlight assembly center marks on the screen. If the center mark cannot be observed on the headlight, use the center of the headlight unit as the center mark (Fig X).

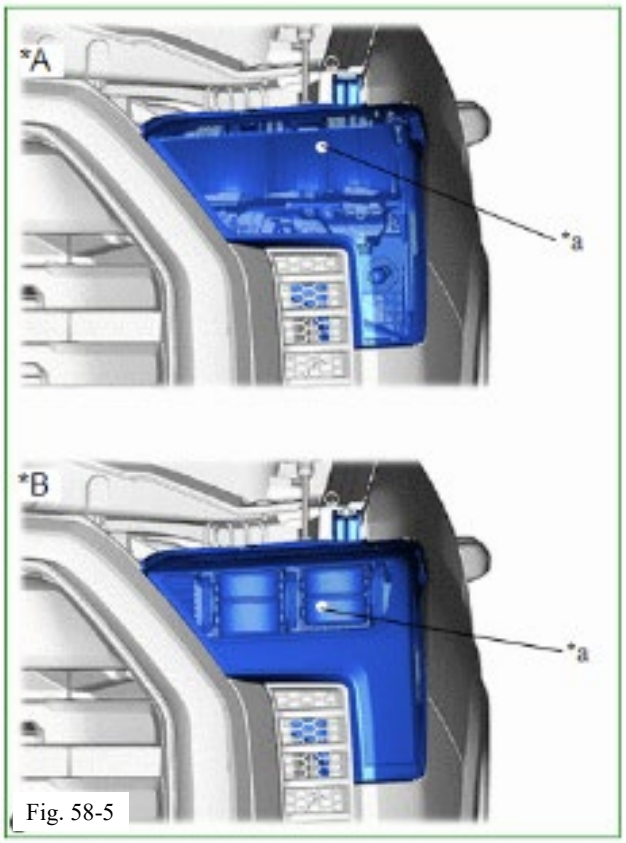


Fig. 58-5

*A	for Bulb Type Turn Signal Light
*B	for LED Type Turn Signal Light
*a	Center Mark

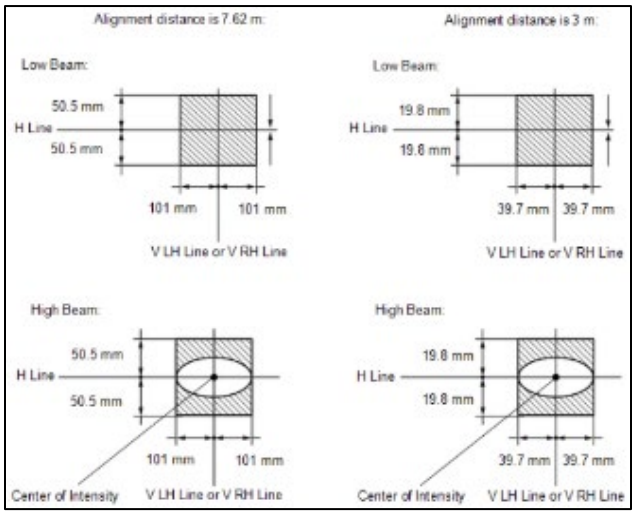


Fig. 59-1

(1) H Line (Headlight height): Draw a horizontal line across the screen so that it passes through the center marks. The H line is at the same height as the headlight center marks.

(2) V LH Line and V RH Line (Center mark position of left-hand (LH) and right-hand (RH) headlights): Draw 2 vertical lines so that they intersect the H line at each center mark (aligned with the center mark of the headlight).

59. Inspect Headlight Aiming

(a) Cover the headlight on the opposite side to prevent light from the headlight that is not being inspected from affecting the headlight aiming.

NOTE:
Do not keep the headlight covered for more than 3 minutes. The headlight lens is made of synthetic resin, which may melt or be damaged due to excessive heat.

(b) Start the engine.

(c) Turn on the headlight and check if the cutoff line matches the preferred cutoff line in the following illustration.

HINT: The low beam and high beam headlight are a unit. Adjusting the aim on the low beam to the correct position should result in the high beam adjustment being correct (Fig. 59-1).

If the alignment distance is 7.62 m (25 ft.):

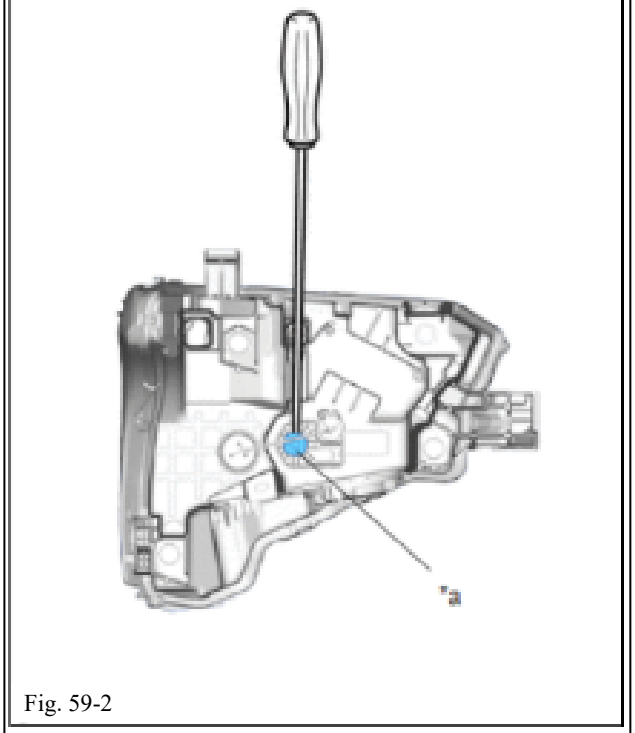


Fig. 59-2

*a	Vertical Aiming Screw

Target aim is -0.15°. The Nominal Vertical Aim is -22 mm from the H line (below H line). The low beam cutoff line should be within 50.5 mm (1.99 in.) above or below the H line as well as 101 mm (4.00 in.) left or right of the V LH or V RH line (SAE J599).

If the alignment distance is 3 m (9.84 ft.):

Target aim is +0.20°. The Nominal Vertical Aim is +11 mm from the H line (above H line). The low beam cutoff line should be within 19.8 mm (0.780 in.) above or below the H line as well as 39.7 mm (1.56 in.) left or right of the V LH or V RH line (SAE J599) (Fig. 59-2).

60. Adjust Headlight Aim

(a) For LED Type Turn Signal Light:

(1) Using a screwdriver, adjust the aim.

Adjust the aim of each headlight so that it is within the specified range by turning aiming screw with a screwdriver (Fig. 60-1).

NOTE:

The final turn of the aiming screw should be made in the clockwise direction. If the screw is tightened excessively, loosen it, and then retighten it so that the final turn of the screw is in the clockwise direction.

Fig. 60-1

*a	Center Mark

HINT: The low beam and high beam headlight are a unit. Adjusting the aim on the low beam to the correct position should also result in the high beam adjustment being correct.

If it is not possible to correctly adjust the headlight aim, check the headlight assembly and headlight unit installation.

The headlight aim moves up when turning the vertical aiming screw clockwise and moves down when turning the vertical aiming screw counterclockwise. The headlight aim moves right when turning the horizontal aiming screw clockwise, and moves left when turning the horizontal aiming screw counterclockwise.

(b) For Bulb Type Turn Signal Light:

(1) Using a screwdriver, adjust the aim.

Adjust the aim of each headlight so that it is within the specified range by turning aiming screw with a screwdriver (Fig. 60-2).

NOTE:

The final turn of the aiming screw should be made in the clockwise direction. If the screw is tightened excessively, loosen it, and then retighten it so that the final turn of the screw is in the clockwise direction.

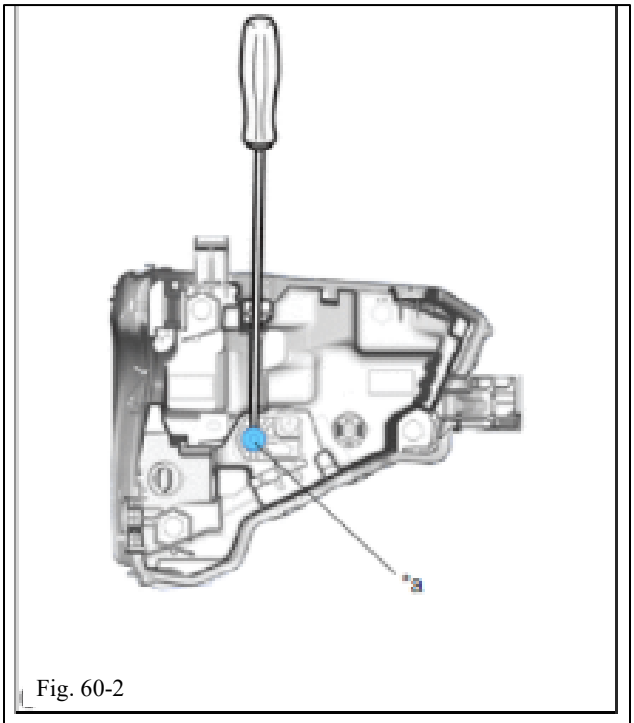


Fig. 60-2

*a	Vertical Aiming Screw

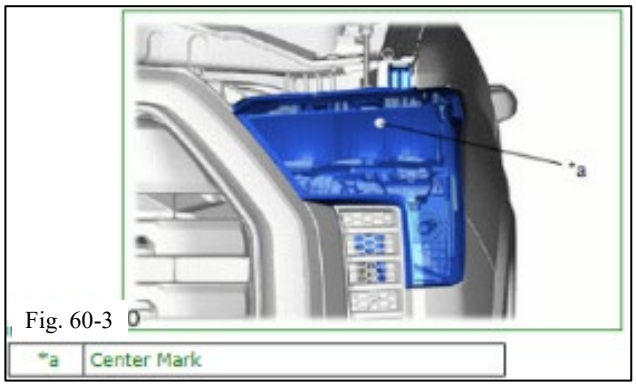


Fig. 60-3

*a	Center Mark

HINT: The low beam and high beam headlight are a unit. Adjusting the aim on the low beam to the correct position should also result in the high beam adjustment being correct.

If it is not possible to correctly adjust the headlight aim, check the headlight assembly and headlight unit installation.

The headlight aim moves up when turning the vertical aiming screw clockwise and moves down when turning the vertical aiming screw counterclockwise. The headlight aim moves right when turning the horizontal aiming screw clockwise and moves left when turning the horizontal aiming screw counterclockwise.

61. Completion

(a) TRD lift kit installation and configuration is complete. Perform final checks as shown on the last page.

CAUTION: DO NOT SKIP the final checks.

Accessory/Part Level Checks

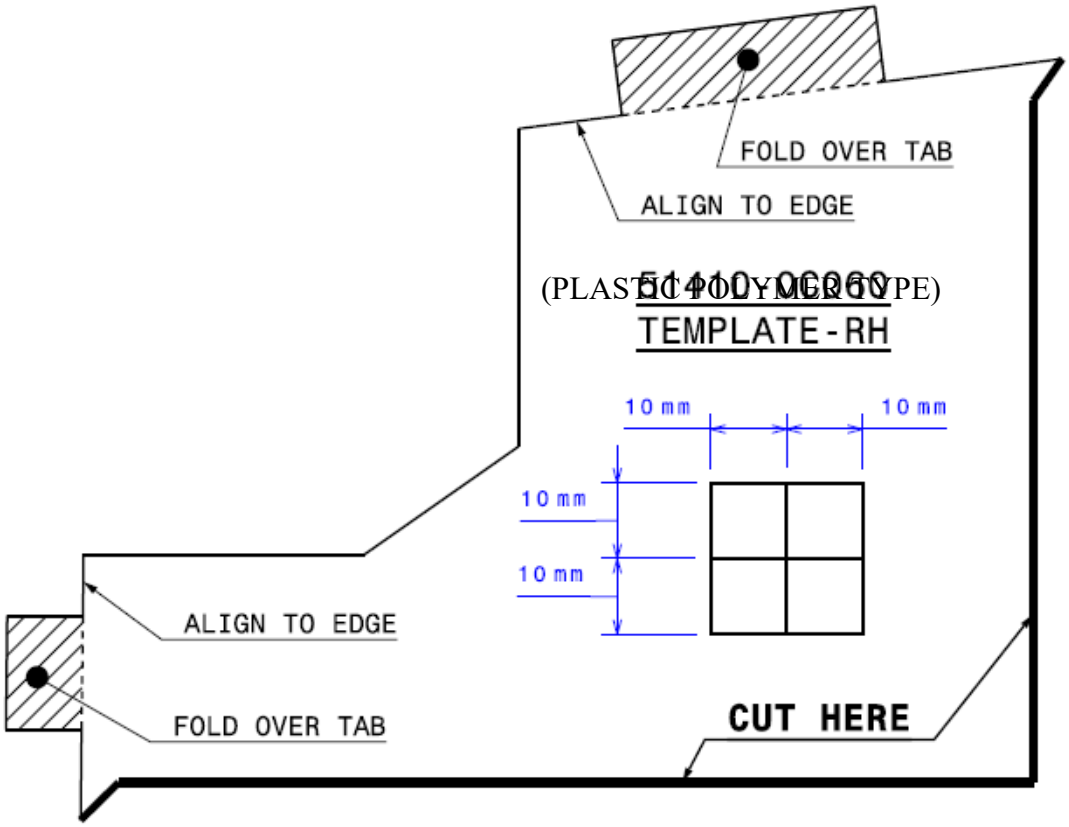
- ☐ All fasteners torqued according to spec. Safety critical torques verified
- ☐ Permanently removed components have been discarded
- ☐ Fr & Rr brake hoses are not twisted, and hose routing appears natural
- ☐ Brake rotors are clean and free of contamination
- ☐ All wire harness disconnected during install have been reconnected
- ☐ Air dam and its side hinges have been removed. Air dam motor hinge can move freely
- ☐ Tires properly inflated
- ☐ All components removed from engine bay are properly secured

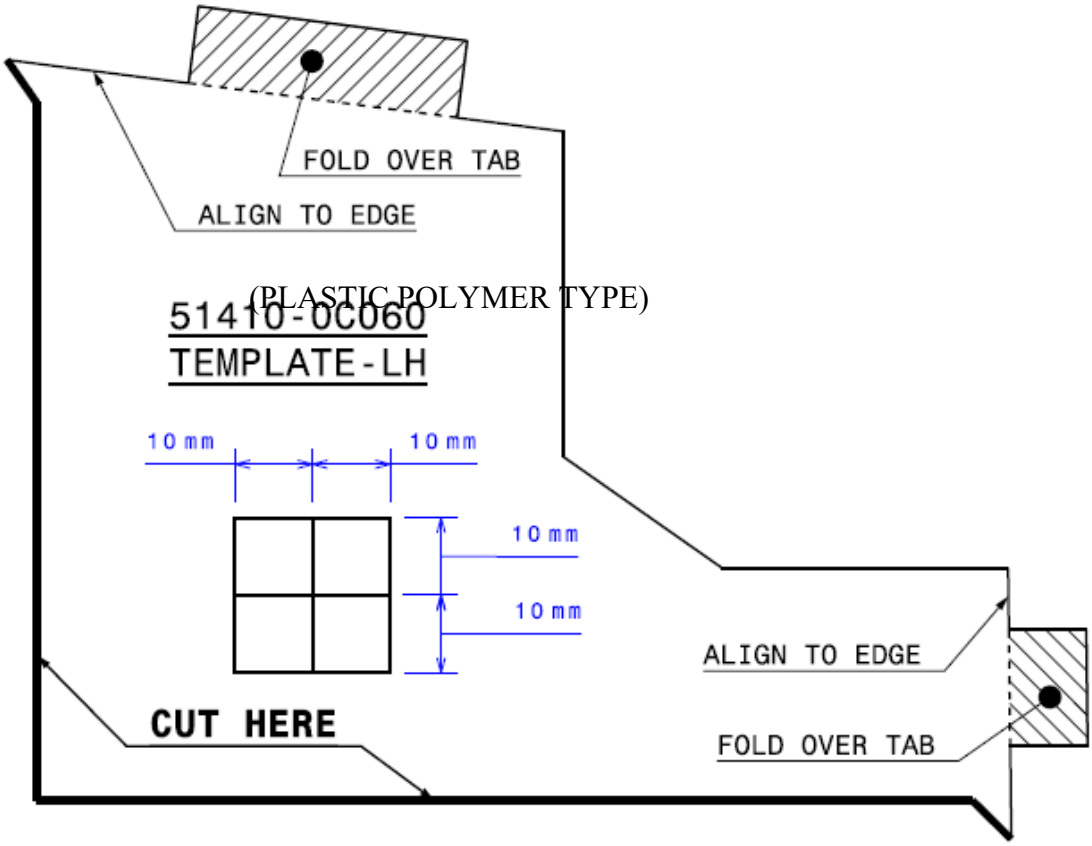
Vehicle/System Level Checks

- ☐ Brake system is filled and bleed
- ☐ Front differential oil is topped-off
- ☐ TSS is configured for appropriate vehicle height
- ☐ (If equipped) Rear differential lock can be engaged without issue.
  Perform with tires off the ground
- ☐ No warning lights or error messages displayed
- ☐ Headlights are properly aimed and within specification
- ☐ Perform visual inspection and ensure no damage
  (including scuffs and scratches) was caused during the installation process

Test Drive Vehicle

- ☐ Check brake application
- ☐ Front wheel alignment
- ☐ No abnormal suspension noises
- ☐ Parking brake function
- ☐ Dynamic Radar Cruise Control (DRCC) & Lane Trace Assist (LTA) operation


FOLD OVER TAB
ALIGN TO EDGE
(PLASTIC POLYMER TYPE)
TEMPLATE-RH
10 mm
10 mm
10 mm
10 mm
ALIGN TO EDGE
FOLD OVER TAB
CUT HERE


FOLD OVER TAB
ALIGN TO EDGE
(PLASTIC POLYMER TYPE)
51410-0C060
TEMPLATE-LH
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ALIGN TO EDGE
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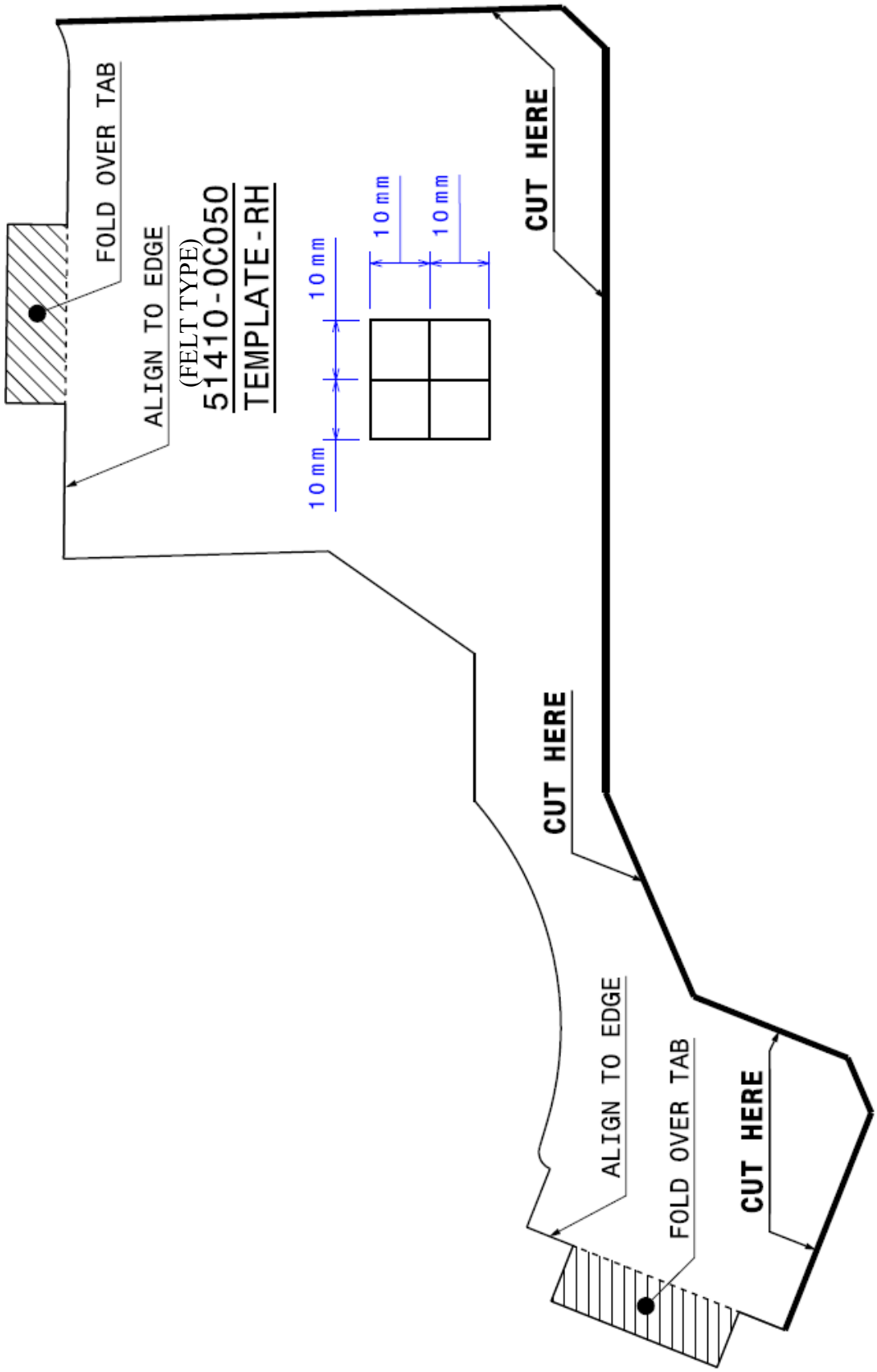
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ALIGN TO EDGE
(FELT TYPE)
51410-0C050
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CUT HERE
ALIGN TO EDGE
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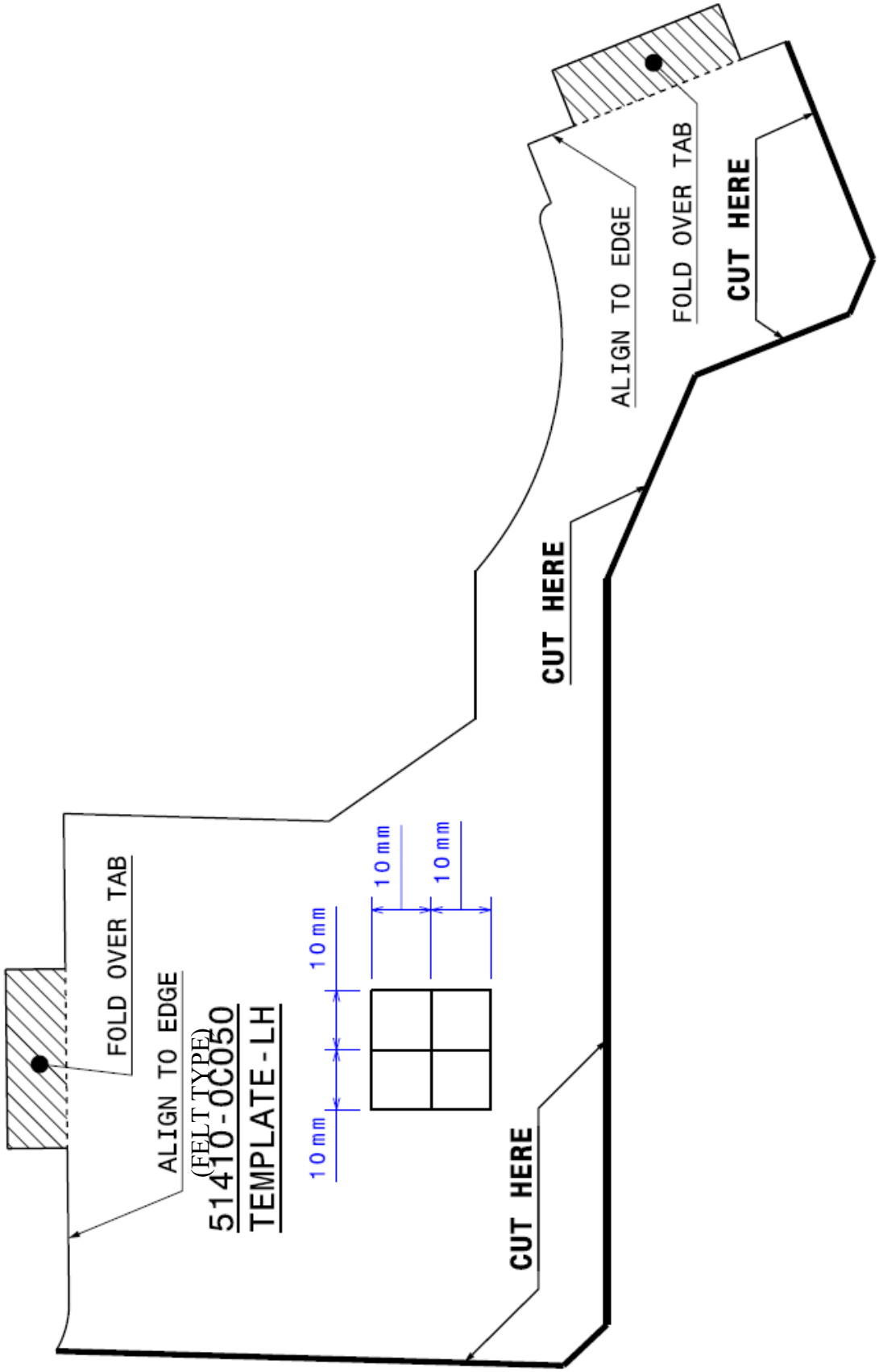
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51410-0C050
(FELT TYPE)
TEMPLATE-LH
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