

Part Number: PTR09-52080

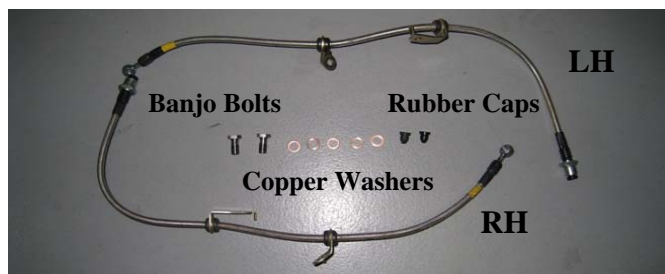
Kit Contents

Item #	Quantity Req'd.	Description
1	1	Brake Rotor, LH Front
2	1	Brake Rotor, RH Front
3	1	Brake Caliper Assembly, LH Front with 2 M12X30mm Self Locking Hex Head Flange Bolts
4	1	Brake Caliper Assembly, RH Front with 2 M12X30mm Self Locking Hex Head Flange Bolts



Hardware Bag Contents

Item #	Quantity Req'd.	Description
1	1	Stainless Steel Brake Hose, LH
2	1	Stainless Steel Brake Hose, RH
3	2	Banjo Bolt
4	2	Rubber End Cap
5	5	Copper Washer (1 spare washer is included)
6	1	Lug Wrench Warning Label
7	1	Installation Instructions
8	1	Mirror Hanging Tag
9	1	Owner's Document



NOTE: Part number of this accessory may not be the same as the part number shown.

Additional Items Required For Installation

Item #	Quantity Req'd.	Description
1		

Conflicts

The only Toyota wheels that will fit with the Big Brake Kit is P/N PTR20-52080 shown below.

CAUTION: If the OE wheels are not used, then see the brake caliper template included with these instructions. The brake caliper template must be used to insure there is adequate clearance between new brake components and non-OE wheels and balancing weights.



PTR20-52080

Recommended Tools

Personal & Vehicle Protection	Notes
Safety Glasses	Safety Glasses /face shield
Vehicle Protection	Seat & Floor Covers
Fender Covers	
Work Gloves	
Special Tools	Notes
Chassis Lift or	(Hydraulic Jack & Jack Stands)
Fluid Drip Trays	One per side
TRD Brake Bleeding Machine	
Installation Tools	Notes
19mm Deep Socket	½" Drive
21mm Deep Socket	½" Drive
Air Impact Gun	½" Drive
10mm Flare Nut Wrench	
10 mm Union Nut Wrench	3/8" Drive P/N 09023-00101
Needle Nose Pliers	
17mm Deep Socket	½" Drive
14 mm Socket	3/8" Drive
Torque Wrenches	3/8" & ½" Drive
9/16" Socket	3/8" Drive
Soft Mallet	

Section I - Installation Preparation

11 mm deep socket	3/8" Drive
11mm Combination Wrench	
Straight Tin Snips	
Breaker Bar	1/2" Drive
Taper Gage	
Special Chemicals	Notes
Toyota Brake Fluid	#00475-1BF03 or Fluid: SAE J1703 or FMVSS No. 116 DOT3
Toyota Brake Cleaner	#00289-2BC00-CA

General Applicability

Front Brake Upgrade can be installed on all Scion xB Models with the correct TRD Accessory Wheel.

Recommended Sequence of Application





Item #	Accessory
1	Accessory Wheels/Tires*
2	Lowering Springs
3	Front Brake Upgrade
4	Front Strut Brace

*Mandatory

Vehicle Service Parts (may be required for reassembly)

Item #	Quantity Req'd.	Description

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.

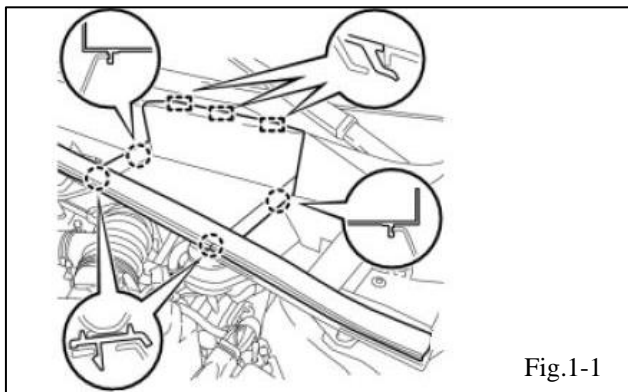
Care must be taken when installing this accessory to ensure damage does not occur to the vehicle. The installation of this accessory should follow approved guidelines to ensure a quality installation.

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. Vehicle Preparation.


-  (a) Before working on the vehicle, protect the seats and carpets with covers.
- (b) Open the hood and place a fender cover over the driver's side fender to protect the vehicle paint.
- (c) Remove the access panel that covers the brake fluid reservoir (Fig 1-1). Leave the reservoir cap in place for now.

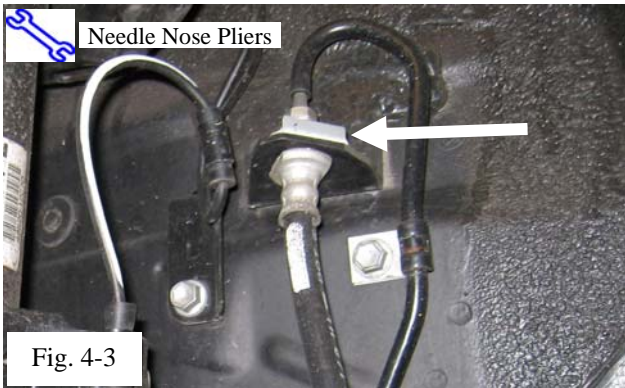
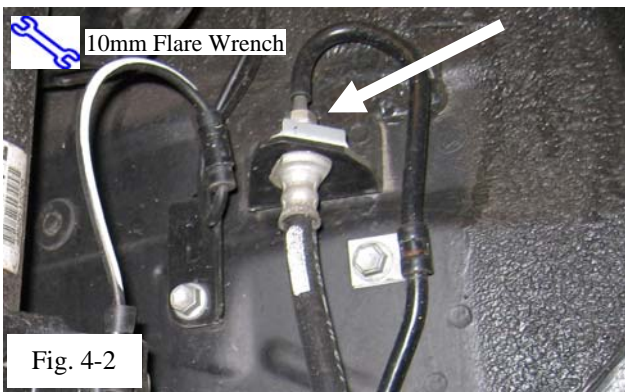
2. Check Kit Contents.

- (a) Check the Front Brake Upgrade kit for contents and damage.

3. Remove the Front Wheels.

-  (a) Use a vehicle hoist to lift the vehicle using the vehicle jacking points. If a vehicle hoist is not available, use a hydraulic jack to lift the front of the vehicle and set it on jack stands. Use the owner's manual to locate the proper vehicle jacking points.

 **Caution: Always use jack stands to support the vehicle, never work on a vehicle using only the jack.**



(b) Use a 21mm deep socket, splined key, and ratchet to remove all front wheel lug nuts if equipped with TRD Wheels (PTR20-52080).

⚠ Caution: Air Impact guns MUST NOT be used on splined and or locking lug nuts.

(c) Remove both front wheel/tire assemblies and save for reuse.

4. Disconnect & Remove the Front Brake Hose.

(a) By leaving the ignition key on and the steering wheel unlocked, you can easily turn the steering to the left or right allowing easier access to the brake components.

NOTE: Power tools may be used to remove parts but may not be used for installation.

(b) Place a drip tray directly below the inboard brake line connection. This connection is where the rubber hose attaches to the steel brake line as shown in (Fig. 4-1).

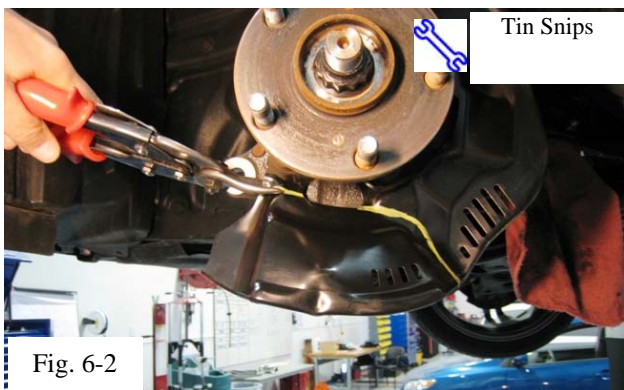
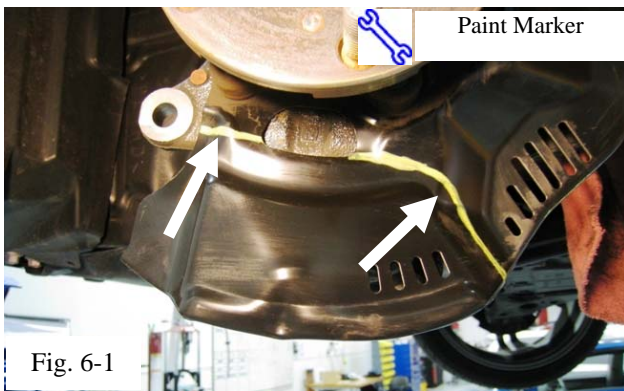
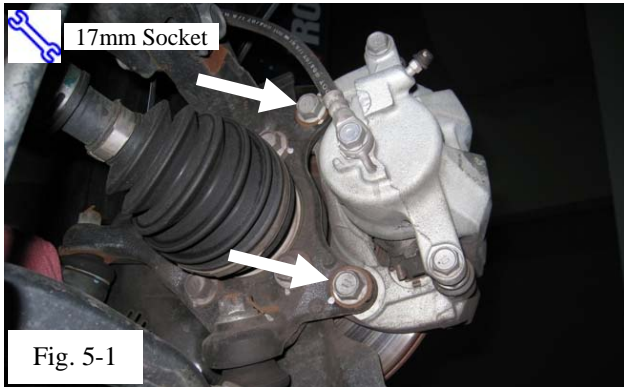
⚠ Caution: Brake fluid will damage most painted surfaces. Immediately clean any spilled brake fluid from all painted surfaces.

(c) Use a 10mm flare nut wrench to loosen and unscrew the steel line union where it attaches to the stock brake hose (Fig. 4-2).

(d) Use a pair of needle-nose pliers to remove the brake line retaining clip (Fig 4-3). Retain this clip for re-use. The rubber brake line will now be loose at this end.

(e) Using a socket, remove the 2 bolts and disconnect the rubber brake hose from the steering knuckle and shock absorber (Fig. 4-4). Retain the bolts for reuse.

(f) Remove the rubber brake hose from the steel line and place one of the supplied rubber



caps over the flared end of the steel line to stop fluid loss during the installation.

NOTE: Pay close attention to how the brake line clips and the ABS wiring are routed and attached to the shock absorber.

5. Remove Factory Brake Caliper & Rotor.

- (a) Using a 17mm deep socket, loosen and remove the two bolts from the original equipment (OE) caliper (Fig. 5-1). Discard these bolts.

CAUTION: DO NOT attempt to reuse these bolts with the new calipers. The bolt pitch is not the same and would destroy the new calipers.

NOTE: Power tools may be used to remove parts but may not be used for installation.

- (b) Remove and discard the OE caliper along with the rubber brake hose line still attached.
- (c) Remove the OE rotor from the hub and discard.

6. Trimming and Adjusting the OE Rotor Dust Shield.

- (a) Using a paint marker, mark the lower corner of the dust shield as shown (Fig. 6-1).

- (b) After pulling the lower portion of the dust shield out away from the steering knuckle for tool clearance, using a pair of tin snips, cut through the OE dust shield along the marked line (Fig. 6-2). The tin snips can be used to trim off the sharp corners where the shield was cut. When finished, the bottom of the dust shield will look as shown (Fig. 6-3).

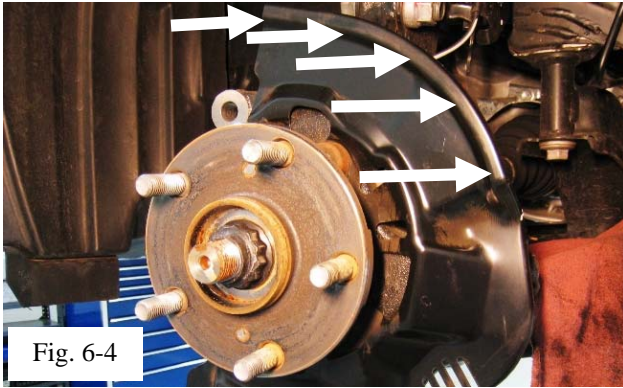


Fig. 6-4

+ **Caution:** Use care around the cut edges of the OE dust shield as they are sharp.

- (c) Hand bend the top portion of the dust shield in toward the center of the vehicle approximately $\frac{1}{2}$ " to $\frac{3}{4}$ " to provide clearance to the back side of the new rotor (Fig. 6-4).



Fig. 7-1

7. Installing the new Rotor & Caliper.

- (a) Install the appropriate rotor on the hub face. Place two wheel nuts on opposite studs and hand tighten them (Fig. 7-1).

! **Caution:** The rotor hats have a small L (left) or R (right) sticker. Install "L" on the left side and "R" on the right side of the vehicle.

- (b) Inspect the air gap between the dust shield and the rotor. There should be at least a 5 mm gap. Re-bend and or trim the dust shield as necessary.
- (c) Once the rotor is in place, remove the "L" or "R" sticker and clean any adhesive residue.
- (d) Loosen the lug nuts approximately $\frac{1}{2}$ ".

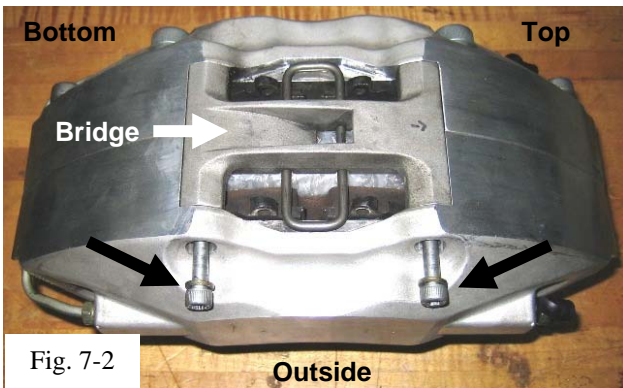


Fig. 7-2

- (e) Using a 5mm Allen wrench, remove the 2 bolts holding the caliper bridge in place (Fig. 7-2). Save these bolts.

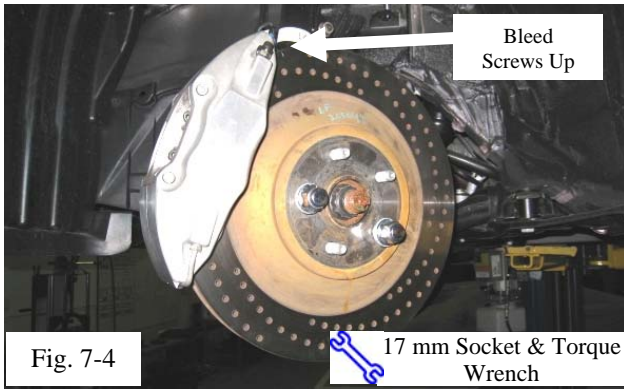
! **Caution:** Do not lose the 2 washers when the bolts are removed.



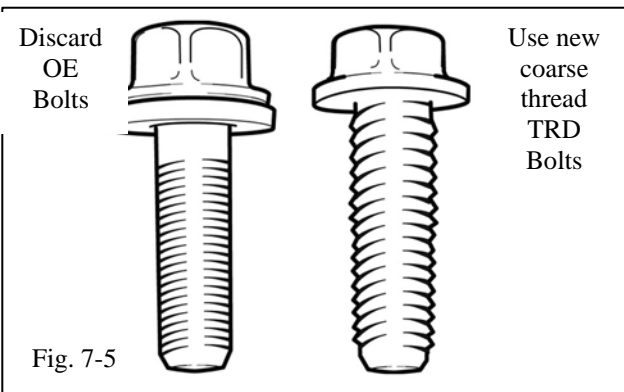
Fig. 7-3

- (f) Remove the bridge, pad spring, foam insert, and brake pads by pulling the pads straight out (Fig. 7-3). Save the bridge, pad spring, and pads.

NOTE: Pay close attention to the orientation of the bridge within the caliper as it is removed.

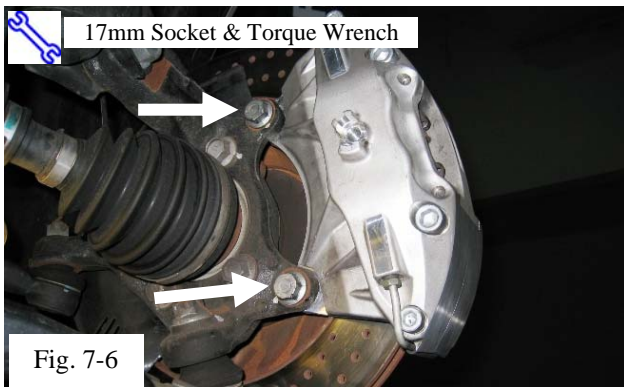


- (g) Install the caliper onto the rotor with the bleed screws up and align the mounting bosses with the steering knuckle bolt holes (Fig. 7-4). It will be necessary to pull the rotor out against the lug nuts to slip the caliper in place. While holding the caliper in place, insert and start the new M12X30mm caliper mounting bolts (Figs. 7-6 & 7-7).
Torque the bolts to 79 lbf·ft (107 N·m).



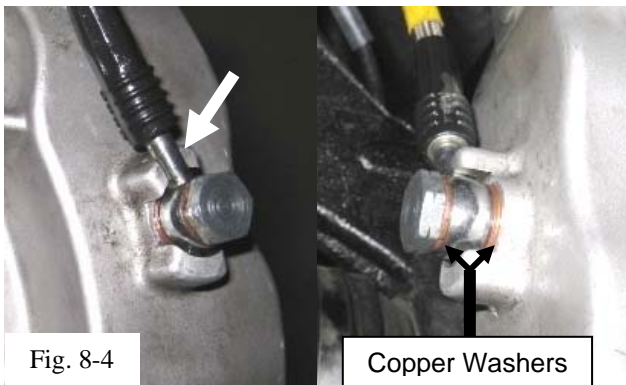
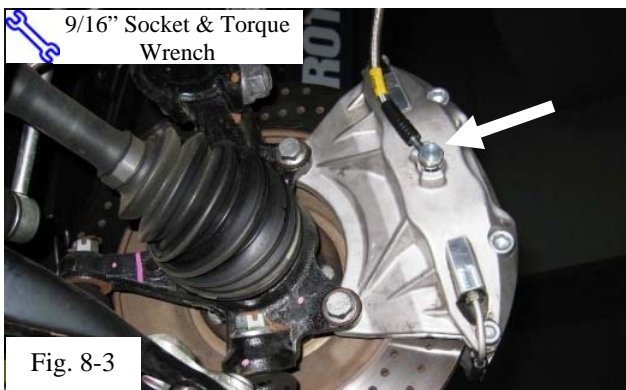
⚠ Caution: As shown in (Fig. 7-5), the new bolts have a coarser thread pitch. **DO NOT** attempt to reuse the OE bolts as they will destroy the calipers.

⚠ Caution: The calipers have a small **L** (left) or **R** (right) sticker. Install “L” on the driver side and “R” on the passenger side.



- (h) Once the caliper is in place, remove the “L” or “R” sticker and clean any adhesive residue.
- (i) Firmly seat the rotor on the hub assembly and hand tighten the lug nuts.
- (j) Re-install the brake pads making sure the friction surface is toward the rotor faces.

⚠ (k) Re-install the bridge and pad spring. Install one of the bridge bolts and start to engage the threads. While pressing on the bridge with the palm of your hand, install the second bolt. **DO NOT** hammer on the bridge to install the second bolt. Tighten the 2 bridge bolts using an M5 Allen wrench. Do not use a torque wrench, as the use of anti-seize compound on the bolts will cause a false reading. Do not over-torque these bolts – snug is tight enough.



8. Install the Stainless Steel Brake Hose.

- (a) Using the bolts removed in step 4(e) (Fig 4-4), attach the fitting near the center of the new hose to the shock absorber and steering knuckle (Fig 8-1).

Torque to 21 lbf·ft (29 N·m).

- (b) Thread the upper end of the stainless steel brake hose through the chassis bracket and attach the steel brake line. Finger tighten the union. Install the retaining clip once the flats on the fitting are aligned with the chassis bracket (Fig. 8-2).

- (c) With the steering centered, using a 10mm flare nut wrench tighten the steel brake line to stainless steel hose fitting without inducing any twist in the stainless steel brake hose. **Torque 132 lbf·in (15 N·m).**

⚠ NOTE: If the recommended Union Nut Wrench, Toyota P/N 09023-00101, is used in combination with a clicker style torque wrench, the wrench should be set to 120 lbf·in.

⚠ NOTE: Inspect both sides of the copper washers used in the following step to ensure they are flat and smooth. One spare washer is included in the kit in case of loss or damage.

⚠ NOTE: The stainless steel brake lines are marked with L & R stickers to identify which are LH & RH parts.

- (d) After removing the rubber plug from the threaded hole on the back side of the caliper, using two copper washers, one on each side of the banjo fitting on the new brake line, insert a banjo bolt through the banjo fitting and screw it into the caliper (Figs. 8-3 & 8-4). **Torque to 168 lbf·in (19 N·m).**

- (e) The orientation of the banjo fitting should be such that the stainless steel brake hose is pointing as shown (Fig. 8-3). Notice how the leg of the banjo fitting fits into the recess in the caliper forging to orientate the direction of the hose.

⚠ Caution: Do not over tighten the banjo bolt. Doing so can strip the aluminum threads in the caliper causing irreparable damage to the caliper. Immediately clean any spilled fluid.

- (f) Turn the steering while observing the stainless steel brake hose for any binding. Also check for clearance to all suspension components.
- (g) If necessary, adjust the hose by loosening the joint and realigning the hose. After any adjustments, repeat steps 8(c) & 8(f).

Repeat steps 4(a) through 8(g) for the opposite side of the vehicle.

9. Bleed Brakes, Manual Procedure

- (a) Lower the vehicle to gain access to the brake fluid reservoir.
- (b) Fill the reservoir with brake fluid. Fluid: SAE J1703 or FMVSS No. 116 **DOT3** (Fig. 9-1). Do not overfill.
- (c) Remove rubber cap and connect clear vinyl tubing to **passenger** side **outboard** bleed screw. Use a small container on the opposite end of the tubing to catch any drained brake fluid.
- (d) Use an assistant to depress the brake pedal several times. With the pedal held down, use an 11mm box wrench to loosen the bleed screw approximately $\frac{1}{4}$ turn.

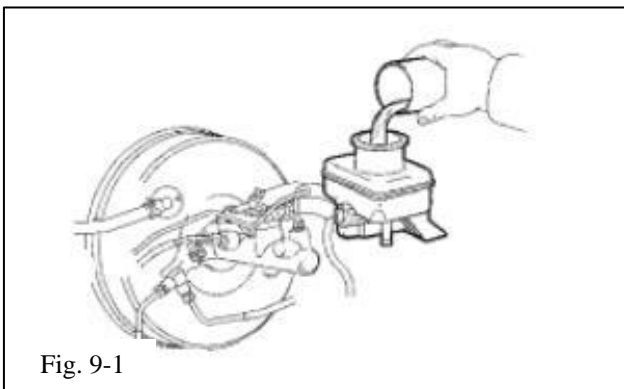


Fig. 9-1

- (e) When the fluid stops coming out through the tubing, or the brake pedal is to the vehicle floor, tighten the bleed screw, then release the brake pedal.
- (f) If necessary, repeat Step 5(e) until a solid stream of fluid is coming out of the tubing.



- (g) Check master cylinder reservoir and add fluid if needed.

Caution: DO not allow master cylinder reservoir to run dry and draw in air.

- (h) Connect the clear tubing to the **passenger** side **inboard** bleed screw, and repeat Steps 9(d) through 9(g).
- (i) Connect the clear tubing to the **driver** side **outboard** bleed screw, and repeat Steps 9(d) through 9(g).
- (j) Finally, connect the clear tubing to the **driver** side **inboard** bleed screw, and repeat Steps 9(d) through 9(g).
- (k) After bleeding the front brake system, gently tap the caliper bodies with a plastic mallet to dislodge any small air bubbles, and then perform Steps 9(c) through 9(j) again.
- (l) Bleeding is complete when a solid stream of brake fluid free of bubbles is observed from all four bleeder screws. Tighten the bleeder screws.
Torque 96-120 lbf·in (11-13 N·m)
- (m) Check the brake fluid level and top off if necessary.

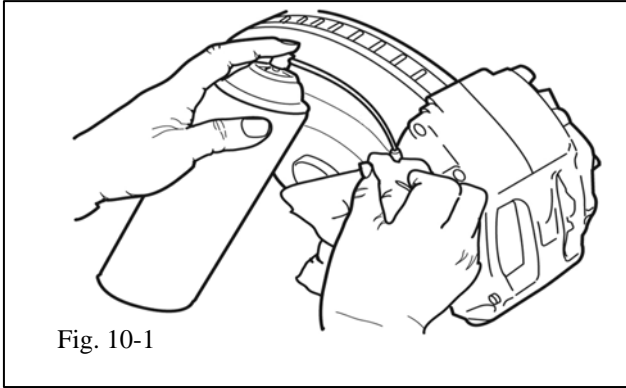





Fig. 10-1

10. Clean Calipers.

-  (a) Remove any traces of brake fluid which may remain in the bleed screw nipples by spraying brake cleaner directly into each one while holding a soft cloth wrapped around the nipple. Use a soft cloth to wipe away any excess (Fig. 10-1).
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CAUTION: Failure to clean the brake fluid from inside the bleed screw nipples will allow brake fluid to seep past the threads and discolor the caliper paint.

11. Check for Leaks.

- (a) Have a second person depress the brake pedal slowly 3-4 times and hold the brake pedal down. Check for fluid leaks while the brake pedal is depressed. Check all connections at both ends of front brake hoses, all bleed screws, and the lower cross tubes.
- (b) Cover all 4 bleed screws with the attached rubber caps.

12. Reinstall Wheels and Lower the Vehicle.

- (a) Reinstall the TRD wheels. Hand start the lug nuts during installation.

 **Caution: Do not allow the wheel to bump against the caliper or rotor as this can chip the paint.**

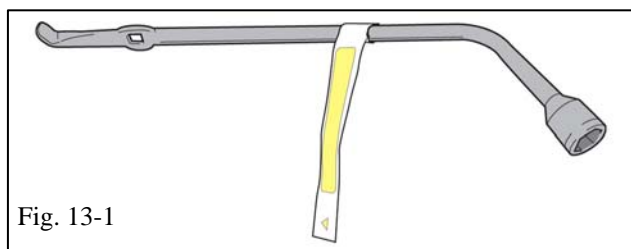
- (b) After initially snugging the lug nuts, lower the vehicle until the tires just touch the ground.
- (c) Using a 21mm socket, splined key, and torque wrench, tighten lug nuts in sequence 1 through 5 (Fig. 12-1).

Torque 76 lbf·ft (103 N·m)



Fig. 12-1

- (d) Lower vehicle from lift or jack stands and apply brakes to ensure they are functioning properly before driving vehicle away.



13. Place Documents and Move Vehicle.

- (a) Place break-in procedure tag on inside mirror and owner's document in glove box.
- (b) Attach the spare tire warning label to the vehicle lug wrench as shown (Fig. 13-1) and replace the lug wrench in the vehicle.



- (c) Carefully move vehicle at low speed and apply brakes gently several times to ensure that all components are working correctly.
- (d) Perform the bed-in procedure or advise customer to do so following the instructions on the mirror hang tag.

Warning: Do not drive vehicle and apply brakes aggressively until rotors have been properly bedded or broken-in.

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

Check:

Look For:

Accessory Function Checks

Check for Leaks

Document Check

There should be no brake fluid leaks at the hose ends and bleeder screws.

The TRD Big Brake Kit Mirror Tag should be hanging from the vehicle mirror and the TRD Big Brake Kit Owners Manual should be in the vehicle glove box. The spare tire warning label should be on the vehicle lug wrench.

Vehicle Function Checks

Brake Fluid Level

Brake Pedal Feel

The vehicle brake fluid level should be full.

The vehicle brake pedal should be firm and solid when depressed and held while the engine is running.

