

Part Number: PTR09-35130

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 Allen Head Socket Bolts
4	1	Brake Caliper Assembly, RH Front with 2 M12X30mm Allen Head Socket Bolts

Hardware Bag Contents

Item #	Quantity Req'd.	Description
1	2	Stainless Steel Brake Hose
2	2	Banjo Bolt
3	2	Rubber End Cap
4	4	Copper Washer
5	1	Dust Shield Template
6	1	Installation Instructions
7	1	Mirror Hanging Tag
8	1	Owner's Document

Additional Items Required For Installation

Item #	Quantity Req'd.	Description
1	1	Brake Caliper Template for checking wheel clearance (Included at the end of this document)

Conflicts

None with OE Wheels
CAUTION: If the OE wheels are not used, then see the brake caliper template attached. Template is also available from your dealer via Toyota's TIS system or TRDUSA.com. The brake caliper template must be used to ensure there is adequate clearance between new brake components and non-OE wheels and balancing weights.

General Applicability

Front Brake Upgrade can be installed on all FJ Cruiser Models

Recommended Sequence of Application

Item #	Accessory
1	Front Brake Upgrade
2	Accessory Wheels/Tires

*Mandatory


Vehicle Service Parts (may be required for reassembly)


Item #	Quantity Req'd.	Description


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	Refer to Owner's Manual for location of jack/lift points.
Fluid Drip Trays	One per side
Air Powered Vacuum	With chip collection bag
Installation Tools	Notes
21mm Deep Socket	½" Drive
Air Impact Gun	½" Drive
10mm Flare Nut Wrench	
Needle Nose Pliers	
17mm Deep Socket	½" Drive
Yellow or Silver Marker	
Air Powered Nibbler	
Torque Wrenches	3/8" & ½" Drive
12mm Socket	3/8" Drive
Soft Mallet	
11mm Combination Wrench	
Breaker Bar	½" Drive
Special Chemicals	Notes
Toyota Brake Fluid	#00475-1BF03 or Fluid: SAE J1703 or FMVSS No. 116 DOT3
Toyota Brake Cleaner	#00289-2BC00-CA


Legend


 **STOP:** Damage to the vehicle may occur. Do not proceed until process has been complied with.

 **OPERATOR SAFETY:** Use caution to avoid risk of injury.

 **CAUTION:** A process that must be carefully observed in order to reduce the risk of damage to the accessory/vehicle and to ensure a quality installation.

 **TOOLS & EQUIPMENT:** Used in Figures calls out the specific tools and equipment recommended for this process.

 **REVISION MARK:** This mark highlights a change in installation with respect to previous issue.

 **SAFETY TORQUE:** This mark indicates that torque is related to safety.

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

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

This document covers such items as:-

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

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

1. Prepare the Vehicle.

(a) Check the Front Brake Upgrade kit for complete contents and any damage before starting.



(b) Before working on the vehicle, protect the seats and carpets with covers. Use fender covers to protect the vehicle paint.



(c) 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.

2. Remove the Front Wheels.

(a) Use a 21mm deep socket and ½" air impact gun to remove all front wheel lug nuts.

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

3. Disconnect & Remove the Front Brake Hose.

(a) Turn the steering wheel to the right if you are working on the driver side; this allows easier access to the brake hose. Turn the wheel to the left if you are working on the passenger side.

(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. 3-1).

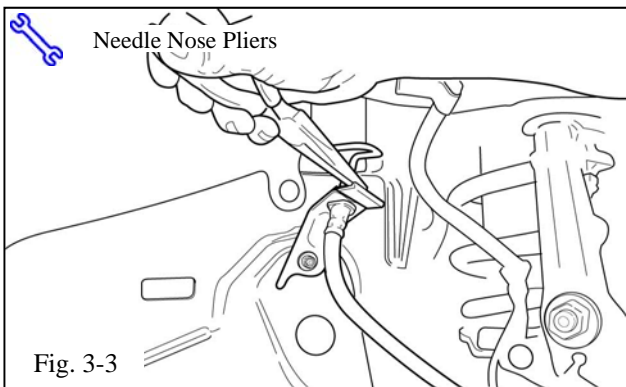
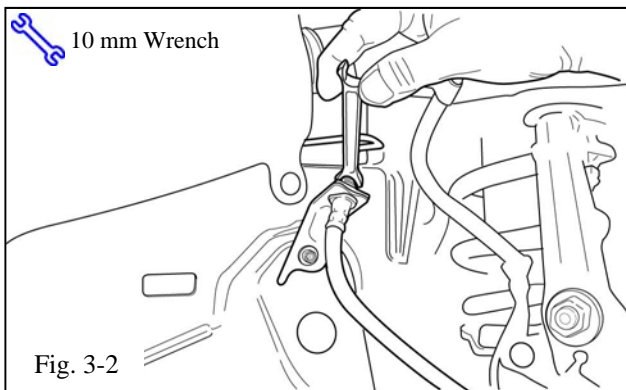
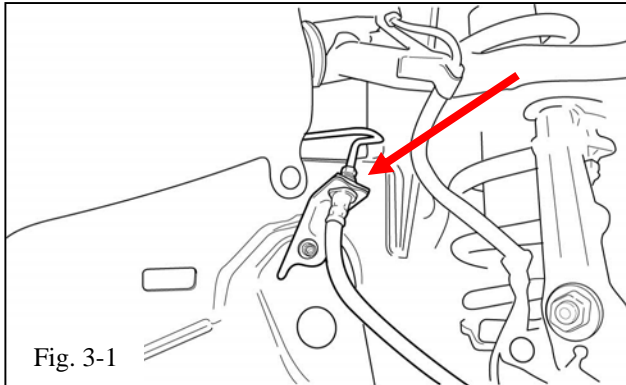
⚠ CAUTION: Brake fluid will damage most painted surfaces. Immediately clean any spilled brake fluid from all painted surfaces.

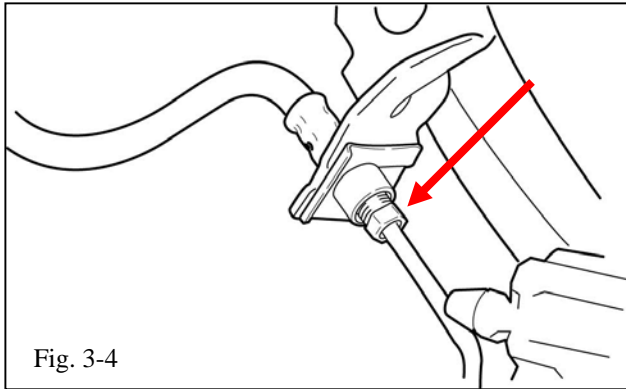
(c) Do not remove the master cylinder fluid reservoir cap yet. Leave it in place until the new brake components are installed.

(d) Use a 10mm flare nut wrench to loosen the steel line fitting where it attaches to the stock brake hose (Fig. 3-2).

(e) Use a pair of needle-nose pliers to remove the brake line retaining clip (Fig 3-3). Retain this clip for re-use.

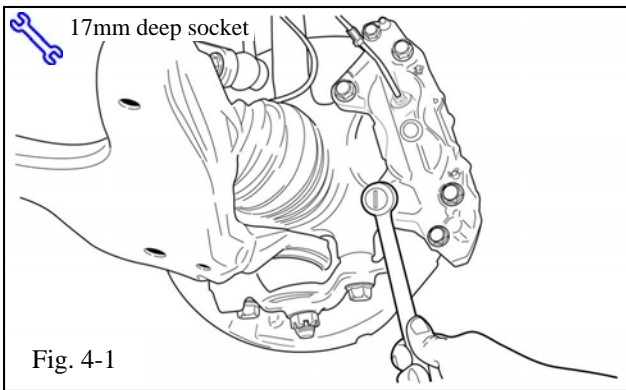
(f) Remove the rubber brake hose from the steel line and place one of the supplied rubber caps over the end of the steel line to stop fluid loss during the installation.





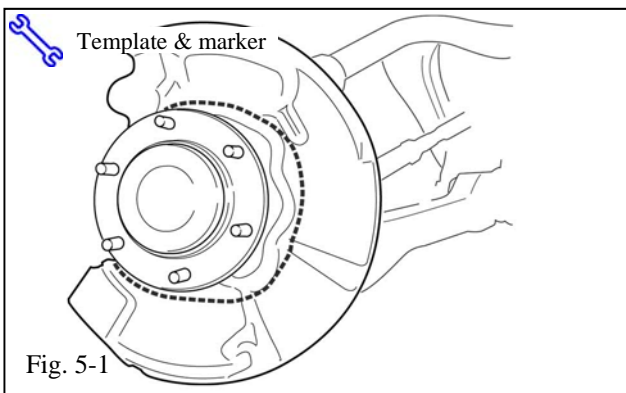
- (g) Repeat Steps 3(d) & 3(e) for the connection on the lower end of the rubber brake hose (Fig. 3-4). Remove and discard the rubber brake hose.

4. Remove the Factory Brake Caliper & Rotor.

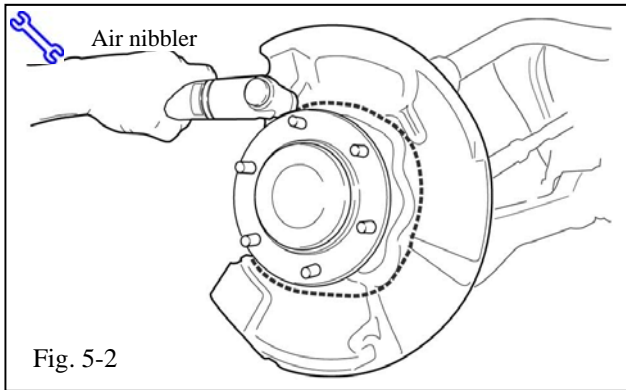


- (a) Use a 17mm deep socket to loosen and remove the two bolts from the original equipment (OE) caliper (Fig. 4-1). Retain these bolts as they will be reused to install the new calipers.
- (b) Remove the OE caliper along with the short steel brake line that is still attached.
- (c) Remove the OE rotor from the hub.

5. Mark & Trim the OE Rotor Dust Shield.

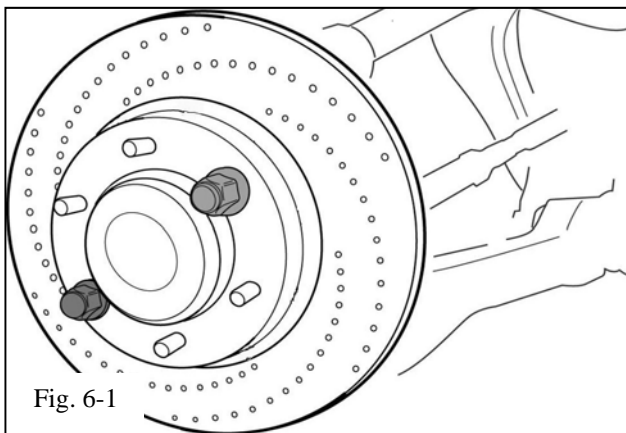


- (a) Use the supplied dust shield template and a yellow or silver marker to mark the OE dust shield for trimming (Fig. 5-1).



- (b) Use an air powered nibbler to trim the OE dust shield (Fig. 5-2). Discard the trimmed portion of the OE dust shield.
- (c) Use a broom and vacuum to clean up all chips generated by the air powered nibbler so that chips are not tracked into the vehicle. Also make sure no chips are left on the vehicle.

+ CAUTION: Use care around the trimmed edges of the dust shield as the edges are sharp.

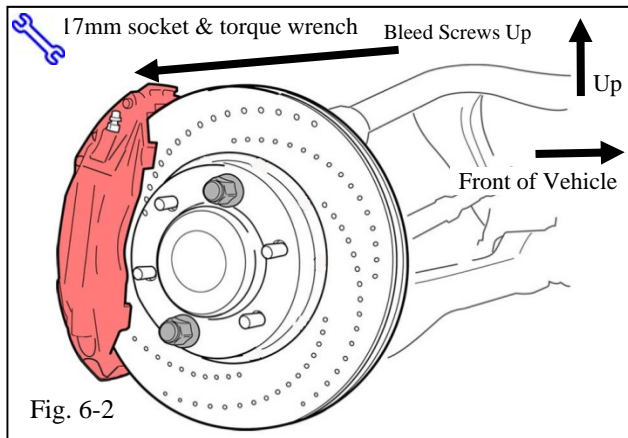


6. Install the new Rotor & Caliper.

- (a) Install the rotor assembly, seating it squarely on the hub face. Place two wheel nuts on opposite studs (finger tight) to prevent the rotor from falling off the hub and to snug it in place (Fig. 6-1).

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

- (b) Once the rotor is snugged up to the hub, rotate it to make certain it is not dragging on the trimmed edges of the dust shield. If it is dragging, inspect to find the area of interference and re-trim this area with the air powered nibbler.
- (c) Once the rotor is in place, remove the “L” or “R” sticker and clean any adhesive residue.
- (d) Remove the foam insert from between the brake pads before installing the caliper.



- (e) Install the caliper/pad assembly onto the rotor with the bleed screws up and align the mounting bosses with the steering knuckle threaded bolt holes (Fig. 6-2). While holding the caliper in place, insert and start the retained caliper mounting bolts. Torque the bolts to 123 N·m (91 ft·lbf).

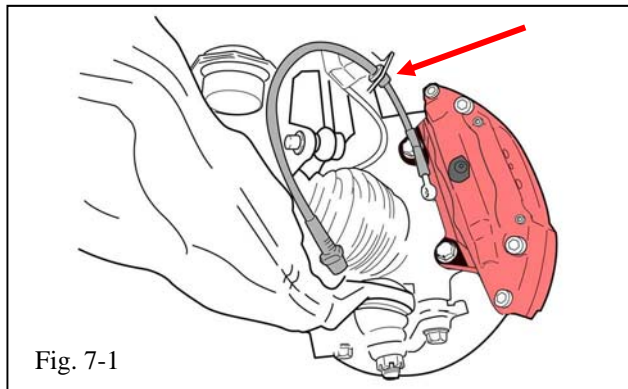
S Torque: 123 N·m (91 ft·lbf)

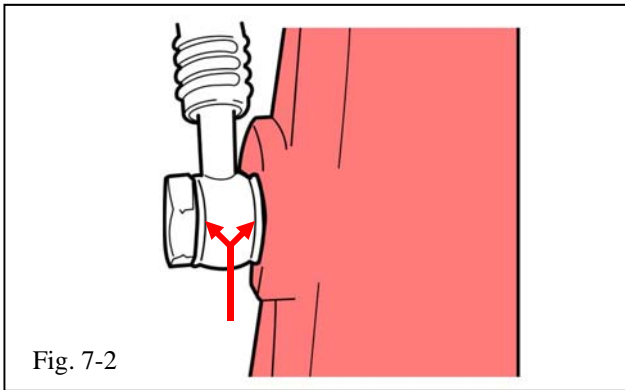
! CAUTION: The calipers have a small L (left) or R (right) sticker. Install “L” on the driver side and “R” on the passenger side.

- (f) Once the caliper is in place, remove the “L” or “R” sticker and clean any adhesive residue.

7. Install the Stainless Steel Brake Hose.

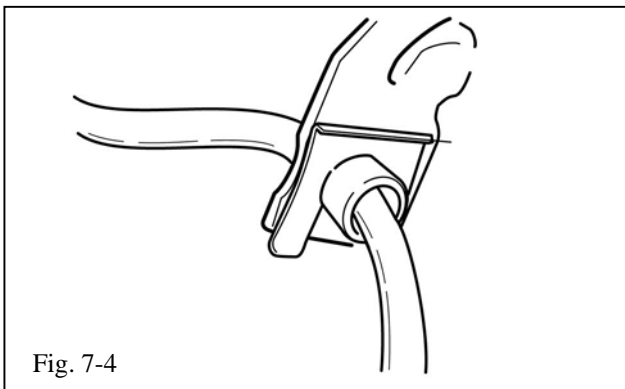
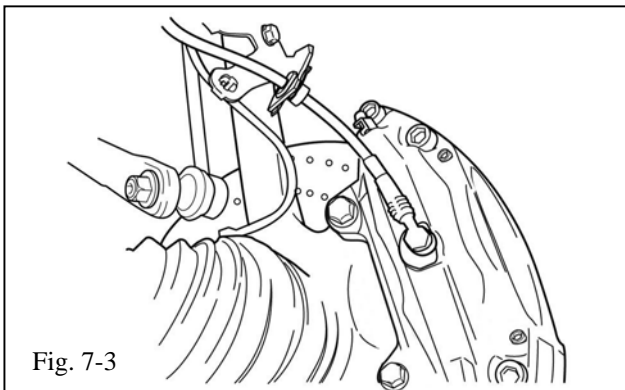
- (a) Thread a stainless steel brake hose through the bracket attached to the steering knuckle with the banjo fitting next to the caliper (Fig. 7-1).



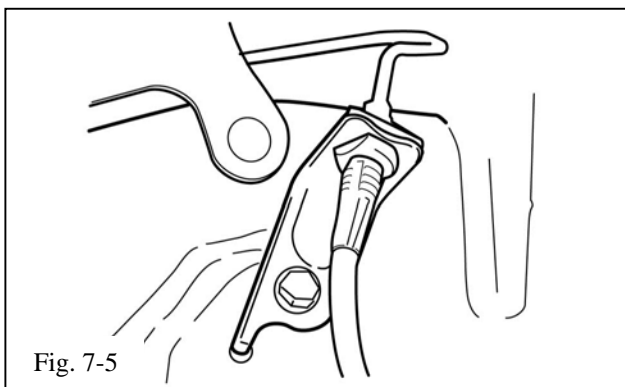


- ⚠ (b) Use two copper washers on either side of the banjo fitting. Insert a banjo bolt through the banjo fitting and screw it into the caliper (Fig. 7-2). Hand-tighten the bolt at this time.

⚠ **NOTE:** The orientation of the banjo fitting should be such that the stainless steel brake hose is pointing as shown (Fig. 7-3).





- ⚠ (c) Use one of the OE brake hose fitting clips removed earlier, align the flats on the hose fitting and reattach it to the steering knuckle bracket (Fig. 7-4). If necessary, a soft mallet can be used to tap the clip in place.




- ⚠ (d) Thread the upper end of the stainless steel brake hose through the chassis bracket and attach the steel brake line after removing the rubber cap. Finger-tighten the fitting.
- (e) Install the other clip once the flats on the fitting are aligned with the chassis bracket (Fig. 7-5).

- (f) Use a 12mm socket to tighten the banjo bolt to 19 N·m (14 ft·lbf).

||  **Torque: 19 N·m (14 ft·lbf)**

 **CAUTION: Do not over tighten the banjo bolt. Doing so can strip the aluminum threads in the caliper causing irreparable damage to the caliper.**

- (g) With the steering centered, use a 10mm flare nut wrench to tighten the steel brake line to stainless steel hose fitting to 15 N·m (11 ft·lbf) without inducing any twist in the stainless steel brake hose.

||  **Torque: 15 N·m (11 ft·lbf)**

- (h) Have an assistant turn the steering wheel while observing the stainless steel brake hose for any binding. Also check for clearance to all suspension components.
- (i) If necessary, adjust the hose by loosening the joint and realigning the hose. After any adjustments, repeat Steps 8(h) & 8(i).

|| **Repeat Steps 3(a) through 7(i) for the opposite side of the vehicle.**

8. Bleed the Brakes (Manual Procedure).

- (a) Fill the brake reservoir with brake fluid.
Fluid: SAE J1703 or FMVSS No. 116 DOT3 (Fig. 8-1). Do not overfill the reservoir.
- (b) Turn the ignition switch to ON and wait until the pump motor has stopped.
- (c) Remove the rubber cap and connect clear vinyl tubing to the **passenger side outboard** bleed screw. Use a small container on the opposite end of the tubing to catch any drained brake fluid.

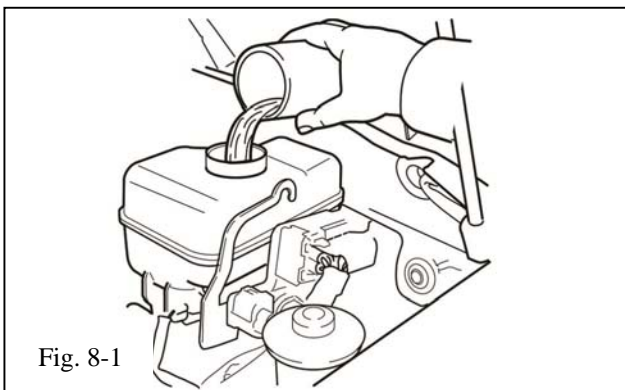


Fig. 8-1

- (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.
- (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 Steps 8(d) & 8(e) until a solid stream of fluid is coming out of the tubing.



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



CAUTION: Do not allow the 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 8(d) through 8(g).
- (i) Connect the clear tubing to the **driver** side **outboard** bleed screw and repeat Steps 8(d) through 8(g).
- (j) Finally, connect the clear tubing to the **driver** side **inboard** bleed screw and repeat Steps 8(d) through 8(g).
- (k) After bleeding the front brake system, gently tap the caliper body with a plastic mallet to dislodge any small air bubbles and then perform Steps 8(c) through 8(j) again.

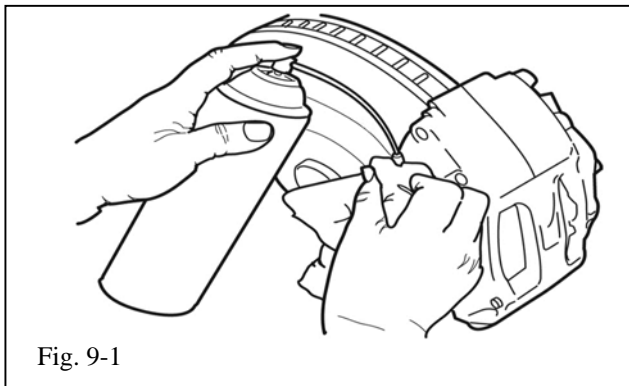


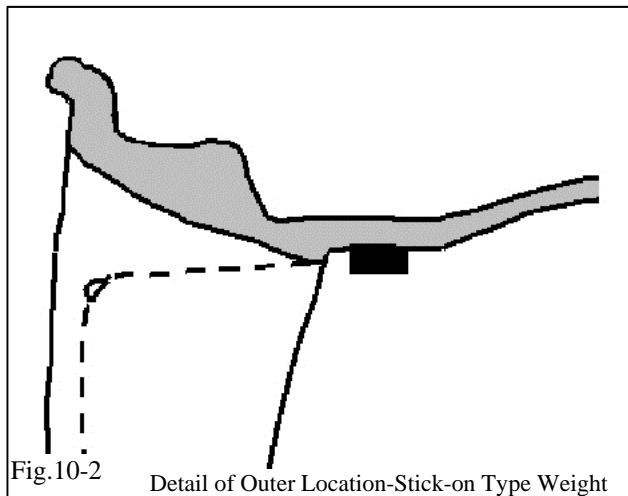
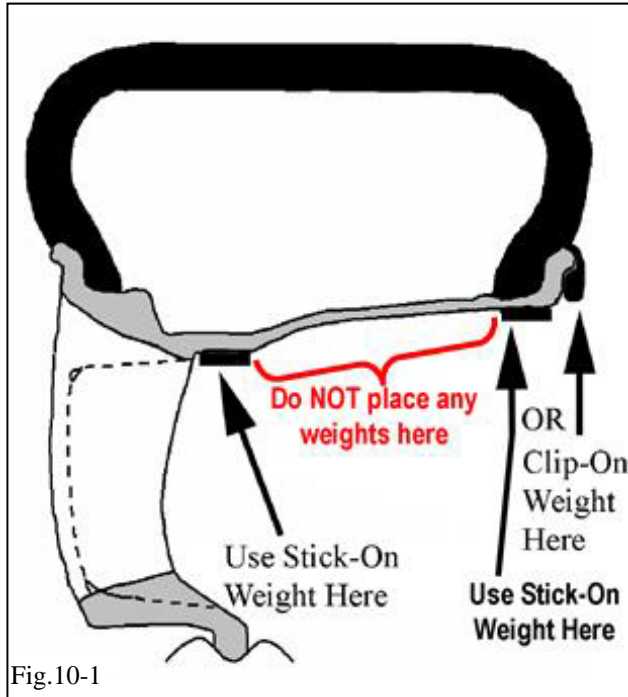


Fig. 9-1

9. Clean the Calipers and Check for Leaks.

-  (a) Remove any traces of brake fluid which may remain in the bleed screw nipples by spraying brake cleaner into each one and use a cloth to wipe away any excess (Fig. 9-1).
-  (b) Have a second person depress the brake pedal slowly 3-4 times and hold brake pedal down.
- (c) Check for fluid leaks while the brake pedal is depressed.
- (d) Check all connections at both ends of the front brake hoses and all bleed screws.
- (e) Cover all 4 bleed screws with the attached rubber caps.



10. Balance the Wheels.

⚠ NOTE: Application temperature for stick-on type weight is above 50°F (10°C).

- (a) Mount the wheel/tire on a wheel balance machine & balance in DYNAMIC MODE. Enable the LOAD ROLLER, if applicable, to ensure proper bead seating. Use 3M brand TN-4023 or equivalent low-profile stick-on type weights. (Figs. 10-1 through 10-3) Weights should be no taller than 4 ~ 5 mm in height.

⛔ CAUTION: DO NOT stack weights on top of each other, nor side by side. This is REQUIRED for proper brake caliper clearance.

- (b) Prior to mounting stick-on weight, wipe down the weight mounting location on wheel with a clean lint-free dry cloth. Ensure that the location is clean and dry. Apply stick-on type weights at perimeter location identified by dynamic balance machine. Use a rubber mallet, if required, to achieve complete adhesion of stick-on type weight(s).


NOTE: Maximum stick-on type weight is **200 g (7.0 oz.)** inner and **200 g (7.0 oz.)** outer. If removal and replacement of stick-on type weight is necessary, then remove the weight using a nylon removal tool. Clean the surface with a clean cloth using locally approved cleaning solution. Wipe the surface dry before re-applying new weight(s).

⚠ DO NOT RE-USE STICK-ON WEIGHTS.

- (c) Re-spin the wheel on the machine with LOAD ROLLER DISABLED (if applicable) and note the indicated remaining unbalance. The maximum permitted unbalance is 6 g (0.21 oz.) at inner and 6 g (0.21 oz.) at outer location. If the indicated unbalance is not within permissible limit, add required additional balance weights, within specification, and re-spin the tire/wheel assembly.

11. Reinstall the Wheels and Lower the Vehicle.

- (a) Reinstall the OE wheels. Hand start and snug 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) Rotate each front wheel a few complete revolutions to confirm there is no interference between the wheel and caliper.


- (c) Lower the vehicle until the tires just touch the ground.

- (d) Torque the lug nuts to 82 ft-lbf (112 N·m) using a 21mm socket and a torque wrench. Tighten the lug nuts in sequence 1 through 6 (Fig. 16-1).

 **Torque: 82 ft-lbf (112 N·m)**

- (e) Re-torque all lug nuts in same 1-6 sequence (Fig 16-1).

 **Torque: 82 ft-lbf (112 N·m)**

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

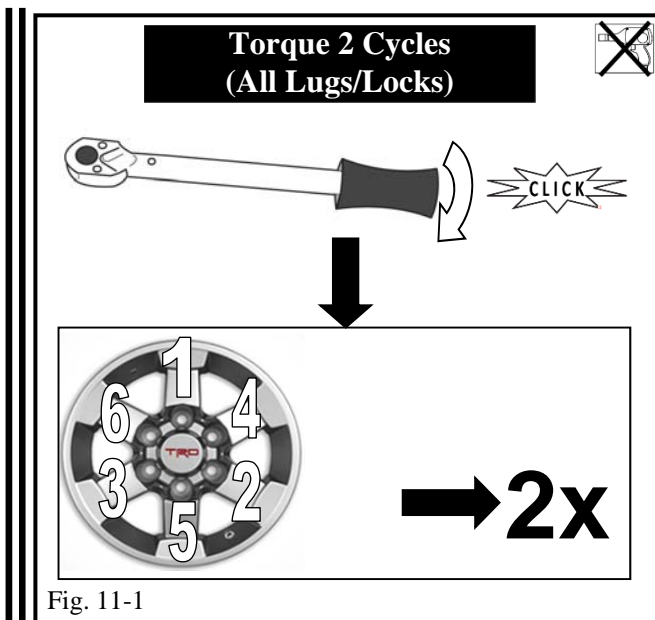
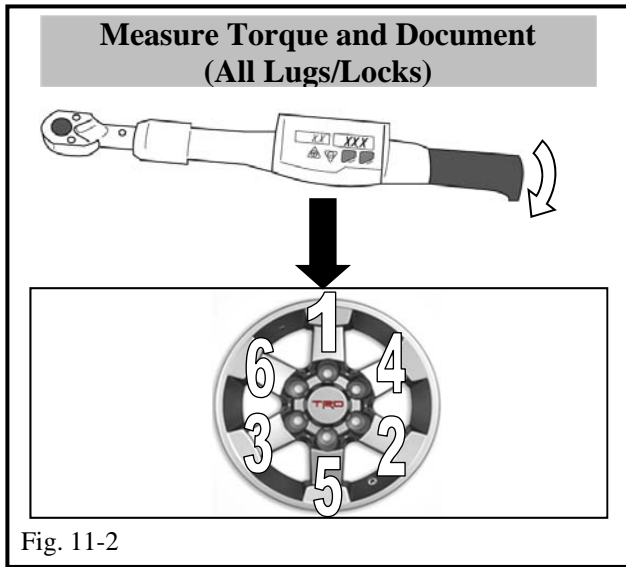







Fig. 11-1





-  (a) With the vehicle still on the lift, use a digital torque wrench to measure the torque of each lug nut/lock (Fig. 11-2).
-  (b) Lower the vehicle from the lift or jack stands and apply the brakes to ensure they are functioning properly before driving vehicle away.

12. Finish the Installation.

- (a) Place the break-in procedure tag on the inside mirror and the owner's document in the glove box.
 -  (b) Carefully move the vehicle at low speed and apply the brakes gently several times to ensure that all components are working correctly.
-  **WARNING: Do not drive the vehicle and apply the brakes aggressively until the rotors**
-  **have been properly bedded or broken-in.**

Care and Maintenance

-  • The brake calipers have a painted finish. Immediately clean off any spilled brake fluid, wiping it off with a soft, clean terry-cloth towel.
-  • Bedding-in rotors and pads is critical to the optimum performance of new brakes. When bedding-in new parts, you are not only heat-cycling the pads, you are also depositing a layer of pad material onto the rotor face. If not bedded-in properly, an uneven layer of pad material will be deposited onto the rotor, causing vibration.

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

<u>Check:</u>	<u>Look For:</u>
<p><u>Accessory Function Checks</u></p> <p><input type="checkbox"/> Check for Leaks</p> <p><input type="checkbox"/> Document Check</p> <p><input type="checkbox"/> Wheel Balance Weights</p>	<p>No brake fluid leaks at the hose ends and bleeder screws</p> <p>The TRD Big Brake Kit mirror tag should be hanging from the vehicle mirror and the TRD Big Brake Kit owner's manual should be in the vehicle glove box.</p> <p>Verify all wheel balance weights are free and clear of all brake components when the wheels are spun through at least one full revolution.</p>
<p><u>Vehicle Function Checks</u></p> <p><input type="checkbox"/> Brake Fluid Level</p> <p><input type="checkbox"/> Brake Pedal Feel</p>	<p>The vehicle brake fluid level should be full.</p> <p>The vehicle brake pedal should be firm and solid when depressed and held while the engine is running.</p>
<p><u>Vehicle Appearance Check</u></p> <p><input type="checkbox"/> After accessory installation and removal of protective cover(s), perform a visual inspection.</p>	<p>Ensure no damage (including scuffs and scratches) was caused during the installation process.</p> <p>(For PPO installations, refer to TMS Accessory Quality Shipping Standard.)</p>

Check:



If the OE wheels are not used, then use the brake caliper template attached below to ensure there is adequate clearance between new brake components and non-OE wheels and balancing weights.

Look For:

Template attached below.

