Preparation

Part Number:

PTR20-35110-BK (Matte Black)
PTR20-35110-GR (Graphite Gray)
PTR20-35110-G4 (Gunmetal Gray)
PTR20-35110-F5 (Matte Bronze)

Kit Contents

Item #	Quantity Reqd.	Description
1	4 for 4Runner 5 for FJ Cruiser	17" x 7.0" x 4 mm 6-Spoke Painted Alloy Wheel
2	1 per wheel	TRD Center Cap **PTR20-35111-BK** Black **PTR20-35111-GR** Gray **PTR20-35111-G4** Gunmetal Gray **PTR20-35111-F5** Bronze

Additional Items Required For Installation

Item #	Quantity Reqd.	Description
1	As Required	Low-Profile, Lead-Free Balance Weights **3M TN-4023** (or equivalent) Stick-on Type and/or (inboard) Clip-on Type
2	4Runner = 4 FJ Cruiser = 5	OE Tire P265/70R17 113S
3	1	Tire Pressure Label Re-uses OE 17" Pressure Label
4	1	Owner's Manual Label MDC# **00602-35061**
5	0-4 as needed	20 degree TPMS **42607-48010** 4Runner '20- **42607-35040** 4Runner '18-19 **42607-33021** 4Runner '10 – '17 **42607-33011** FJ Cruiser
6	0-4 as needed	TPMS Fit kit P/N **04423-0E010**
7	0-4 as needed	TPMS rubber valve kit (90942-A5005)
8	1 optional PPO or optional DIO	Vinyl Pouch **PT276-06999** Vinyl Pouch MDC#**00602-06999**
9	As Required	OE Flat-Seat Lugnuts

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

Conflicts

None

Recommended Tools

Personal & Vehicle Protection	Notes
Safety Glasses	
Seat Protection	Blanket
Special Tools	**Notes**
Tire Mounting Machine	Hunter TC3250 or equiv.
Wheel Balancing Machine	Hunter DSP9700 or equiv.
Centering Cone	**BACK-SIDE** collet Hunter **192-169-2** or equiv.
Wing Nut	Hunter **76-433-1** or equiv.
6.0-inch Cup w/ Sleeve	Hunter **175-392-1** or equiv.
6.0-inch protector Sleeve	Hunter **106-157-2** or equiv.
Foot Brake Application Tool	Snap-on B240A Pedal Jack or equivalent
Tire Valve Stem Tool	Non-metal preferable
Installation Tools	**Notes**
Lug Nut Wrench	21 mm wrench flat
Rubber Mallet	
Screwdriver	Philips head
Torque Wrench	0-150 ft-lbf (0-204 N-m)
Torque Wrench	0-150 in-lbf (0-17 N-m)
Sockets	10mm, 11mm, 12mm, and 21 mm Deep Well, ThinWall
Clean Lint-free Cloth	
Nylon Panel Removal Tool	e.g. Toyota Pry Tool #1 Toyota SST #00002-06001-01 or equiv.
Valve Stem Removal Tool	Schraeder Valve Type
Wire Brush	Hand held size
Torx T10 driver	
Special Chemicals	**Notes**
Tire Lube	Myers or locally approved
Cleaner (for rework of stick on weights if needed)	Locally approved cleaner

General Applicability

All FJ Cruiser, MY 2010 and newer 4Runner models

Recommended Sequence of Application

Item #	Accessory
1	16" Alloy Wheel
2	Optional Wheel Locks

Vehicle Service Parts (May be required for reassembly)

Item #	Quantity Reqd.	Description
1	0 – 4 as needed	Valve Stem Fit Kit (if required) P/N **04423-0E010**
2	0 – 4 as needed 4Runner '20- 4Runner '18-'19 4Runner '10-'17 FJ Cruiser	TPMS 20 degree (if required) Single P/N **42607-48010** Single P/N **42607-35040** Single P/N **42607-33021** Single P/N **42607-33011**
3	0-4 as needed	TPMS rubber valve kit (90942-A5005 (DIO) / PT775-89220(PPO))

Procedure

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) Verify that all components are present before beginning accessory installation. See page 1 Kit Contents, Hardware, Additional Items Required, and Recommended Tools, etc.

(b) Firmly apply the parking brake (Fig. 1-1).

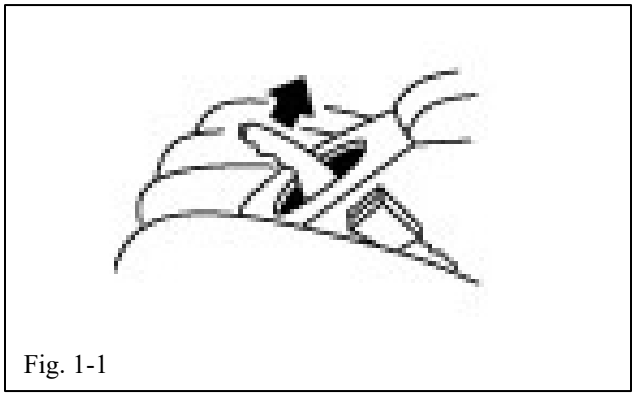

Fig. 1-1

(c) Put automatic transmission in "P". Put manual transmission in “R” (Fig. 1-2).

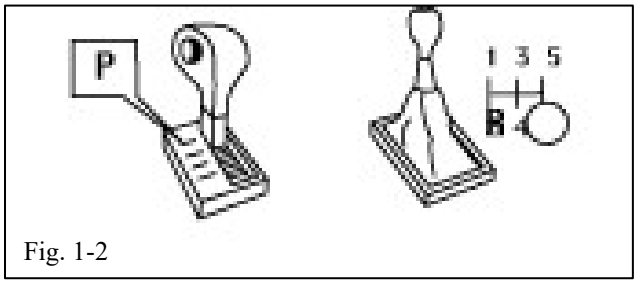

Fig. 1-2

(d) Add seat protection (blanket) and apply the foot brake using a foot brake application tool (Fig. 1-3).

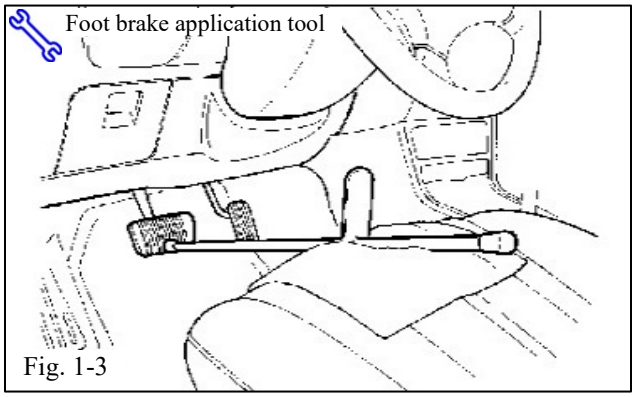

Fig. 1-3

Fig. 1-4

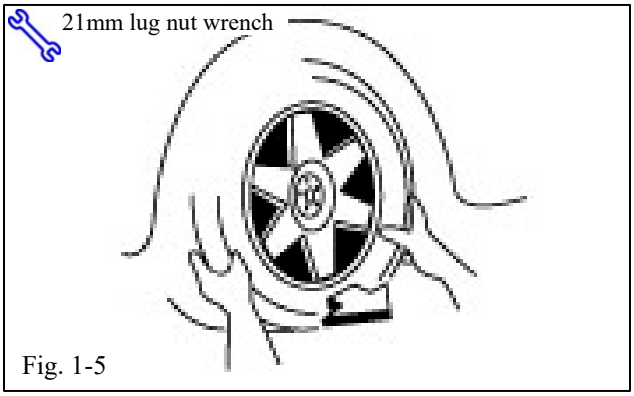

Fig. 1-5

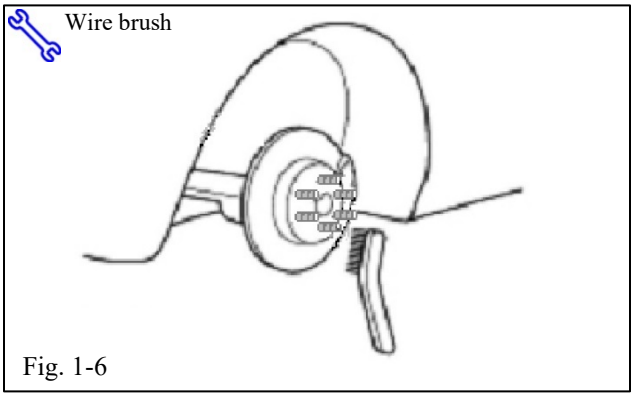

Fig. 1-6

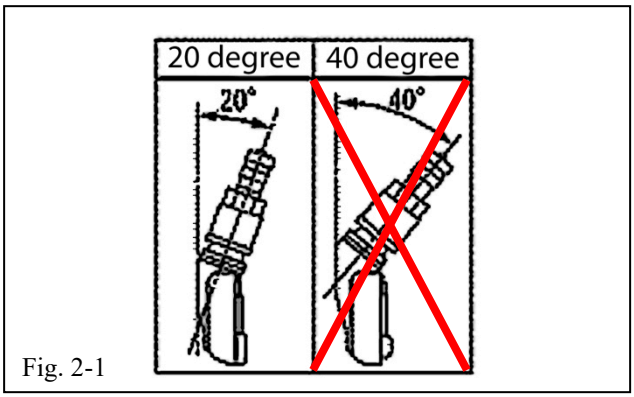

Fig. 2-1

(e) For FJ Cruiser only, remove the OE spare wheel and tire assembly (Fig. 1-4). Wear safety glasses while removing wheels.

(f) Lift the vehicle.

CAUTION: Place a safety stand under the front of the vehicle or under the front pinch seam "jack position" while the vehicle is off the ground for additional vehicle support.

(g) Remove the four OE wheel and tire assemblies from the vehicle (Fig. 1-5). Wear safety glasses while removing wheels.

(h) Keep ALL OE lug nuts with the OE take off wheels, for use/disposition later, per local regulations.

(i) If required, remove any corrosion on the mounting surface of the vehicle with a wire brush (Fig. 1-6). Wear safety glasses to protect against any debris.

2. Remove the Tire Pressure Monitor Valve Sub-assembly.

NOTE: If reusing the TPMS sensors they must be 20-degree Tire Pressure Sensors (Fig. 2-1).

NOTE: If OE wheel comes with a rubber air valve TPMS type, only remove the TPMS monitor as it will be used later and skip to step 4. The rubber air valve will remain on the OE wheel.

NOTE: For rubber air valve TPMS type, discard the T10 Torx screw and do not reuse in step 4.

(a) Remove & retain the valve cores and release the air from all of the tires.

(b) Remove & retain the nuts and washers and let the pressure sensors drop inside the tires.

(c) Carefully separate the outer tire bead from the wheel rim (Fig. 2-2).

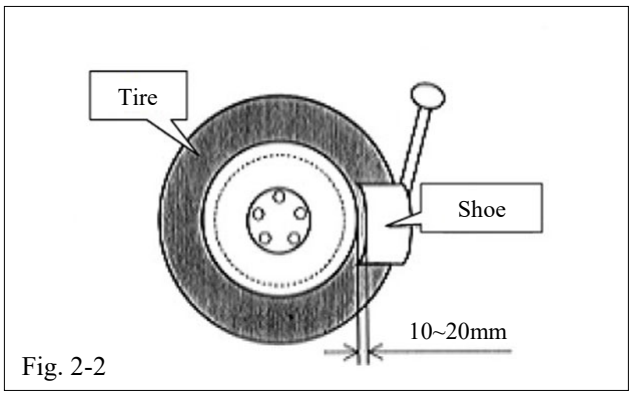

Fig. 2-2

NOTE: Be careful not to damage the tire pressure monitor due to interference between the sensor and tire bead.

(d) Remove the sensor from the tire and remove the bead on the lower/inner side as in the usual tire removal operation.

(e) Dismount the OE tire from the OE wheel.

(f) Repeat for all of the tires.

3. Install the Tire Pressure Monitor Sensor (TPMS) Sub-assembly into the Accessory Wheels.

NOTE: Follow steps 3a-3h if TPMS valve is a metal air valve type. For rubber air valve type TPMS valve, skip to step 4.

(a) If the previously removed sensors are 20-degree sensors, proceed to S**tep 3(c)**. If the previously removed sensors are 40-degree sensors, new 20-degree sensors must be installed into the accessory wheels.

(1) When installing new 20-degree sensors, the sensor ID codes **MUST** be recorded for all 4/5 wheels and these 4/5 new ID codes (Fig. 3-1) registered with the vehicle ECU (See Step 10).

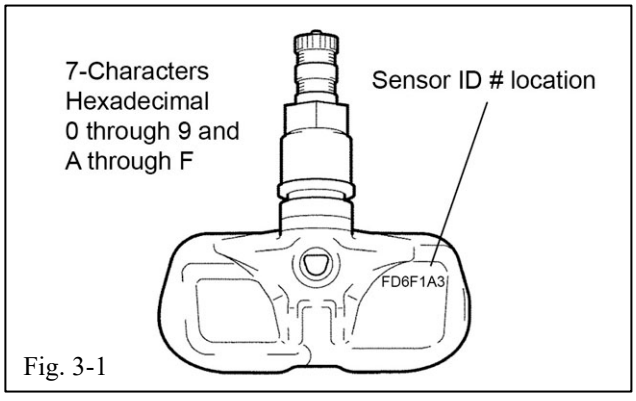

Fig. 3-1

(2) Each sensor has a unique sensor ID code. The sensor ID code is a 7-character hexadecimal string comprised of numbers 0 through 9 and letters A through F. See Fig 3-1 for example code and location.

(b) Check that the wheel valve hole is clean and free of sharp edges or burrs.

(c) Check that the rim is clean.

(d) Visually check that no deformation or damage exists on the tire pressure monitor valve sub-assembly.

(e) Check that the grommet, washer and nut are all clean and in good condition.

NOTE: Replace the grommet ONLY IF the grommet is old or was damaged. A damaged grommet is NOT reusable.

(f) Insert the tire pressure monitor valve sub-assembly into the wheel valve hole from the inside of the rim and bring the valve stem to the outside (Fig. 3-2).

(g) Insert the tire pressure monitor valve sub-assembly so that the "Manufacturer's" mark is visible.

NOTE: Incorrect orientation of the pressure monitor sub-assembly may cause damage and prevent signal transmission during high-speed driving.

(h) Install the washer on the outside of the wheel and secure it with the nut.

Torque: 36 in-lbf (4.0 N-m) (Torque wrench)

Torque: 49 in-lbf (5.5 N-m) (Nut driver)

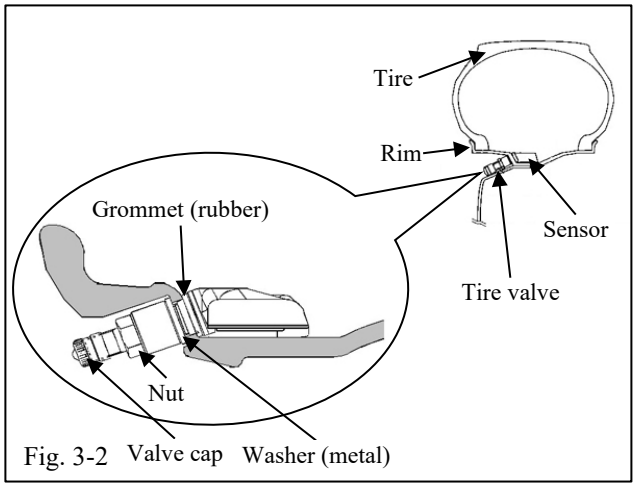

Fig. 3-2

4. Install the Tire Pressure Monitor Sensor Sub-Assembly (rubber air valve type) into the Accessory Wheels.

NOTE: Follow steps 4a-4h if TPMS valve is a rubber air valve type. For metal air valve type, follow steps 3a-3h.

(a) If the previously removed sensors are 20-degree sensors, proceed to **Step 4(b)**. If the

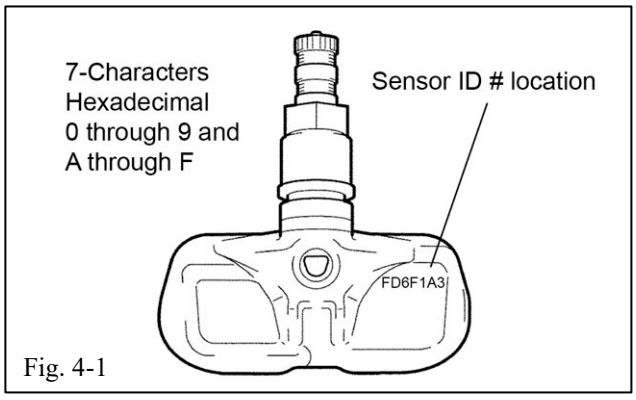

Fig. 4-1

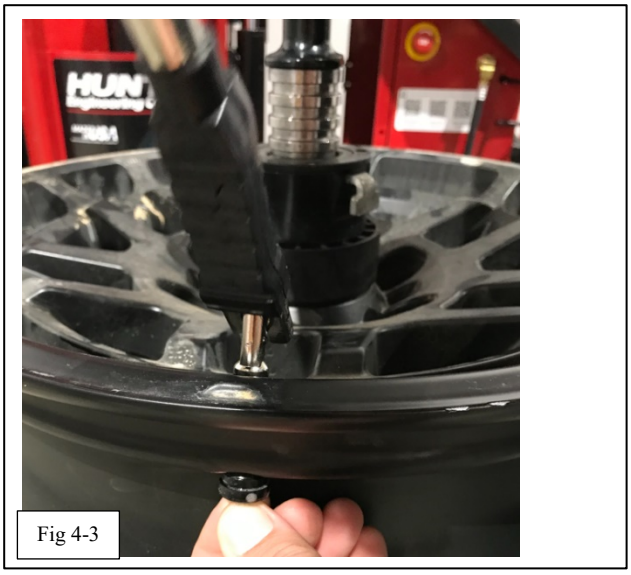
Fig 4-3

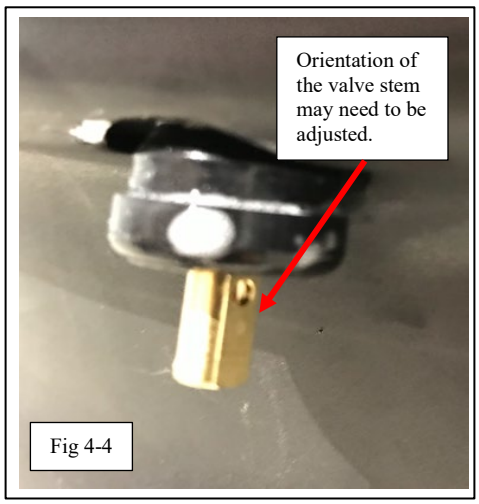

Fig 4-4

previously removed sensors are 40-degree sensors, new 20-degree sensors must be installed into the accessory wheels.

(1) When installing new 20-degree sensors, the sensor ID codes **MUST** be recorded for all 4 wheels and these 4 new ID codes (Fig. 4-1) registered with the vehicle ECU (See Step 10).

(2) Each sensor has a unique sensor ID code. The sensor ID code is a 7-character hexadecimal string comprised of numbers 0 through 9 and letters A through F. See Fig 3-1 for example code and location.

(b) Check that the wheel valve hole is clean and free of sharp edges or burrs.

(c) Check that the rim is clean.

(d) Install a new rubber air valve (part number 90942-A5005) into accessory wheel using lubricant and tire valve stem tool. (Fig 4-3).

⚠ **NOTE: When using the valve stem tool, ensure there is no metal to metal contact to avoid any damage to the wheel. Use towel/blanket to protect the wheel during valve stem installation.**

⚠ **NOTE: Push down on the air valve to ensure that it is fully seated on the wheel.**

(e) Visually check that no deformation or damage exists on the tire pressure monitor valve sub-assembly.

(f) Use TPMS monitor which was removed in step 2 and mate it with the rubber air valve.

⚠ **NOTE: Slight adjustment of the air valve may be necessary to ensure that TPMS monitor can be installed in the correct orientation. (Fig 4-4).**

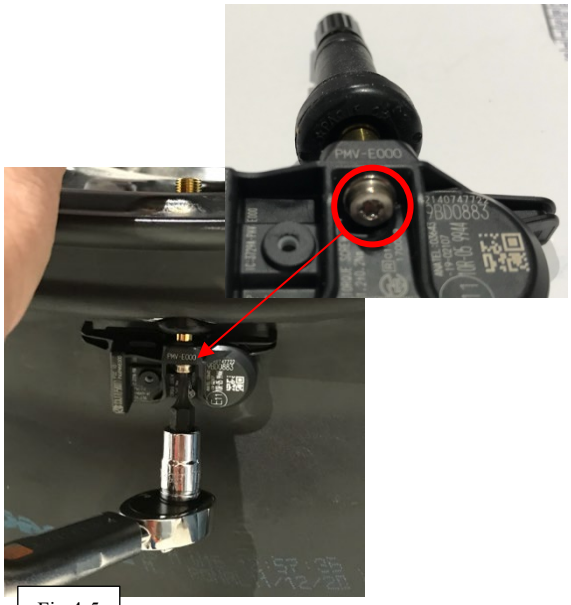

Fig 4-5

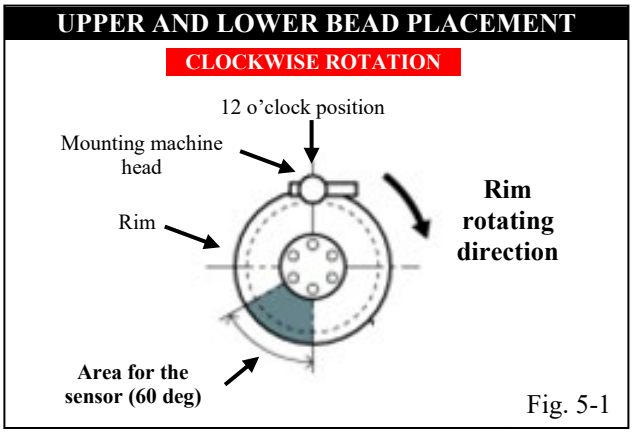

Fig. 5-1

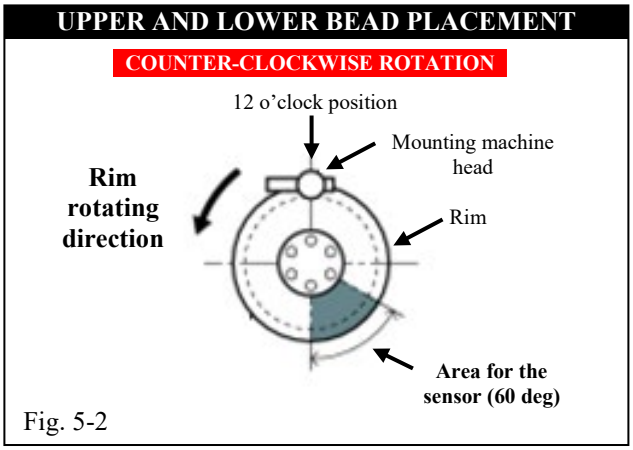

Fig. 5-2

NOTE: Incorrect orientation of the pressure monitor sub-assembly may cause damage and prevent signal transmission during high-speed driving.

(g) Secure TPMS sub-assembly with the new Torx T10 screw. (Fig. 4-5).

NOTE: Do not re-use old Torx T10 screw that came with the vehicle. Use new screw that came with the new rubber air valve kit.

Torque: 11 in-lbf (1.2 N-m) (Torque wrench)

5. Mount the Tires.

(a) Mount the **P265/70R17** tires on the 17" TRD accessory alloy wheels.

(b) Use tire lube on the tire beads and bead locations on the wheel prior to mounting the tire.

(c) Position the wheel on the mounting machine with the sensor at ~ 7 o'clock position (shaded area in Fig. 5-1). The mount/dismount head is considered as 12 o'clock.

(d) Mount the lower tire bead.

NOTE: If the sensor is positioned outside this area, it generates interference with the tire bead, causing possible damage to the sensor.

(e) Reposition the wheel on the mounting machine with the sensor at ~ 5 o'clock position (shaded area in Fig. 5-2).

(f) Mount the upper tire bead.

NOTE: If the mounting machine rotates in the counterclockwise direction, refer to Fig. 5-2 for sensor placement.

NOTE: Make sure that the tire bead and tool does not interfere with the main body of the sensor and the bead does not clamp sensor.

(g) To seat the tire beads, inflate the tire beyond **35 PSI** (240 kPa) but not more the than the maximum tire bead seat pressure indicated on the tire sidewall. If it is not indicated, use 40 PSI (275 kPa) as a limit. If both tire beads are not seated when the pressure registers 40 PSI (275 kPa), deflate the tire and re-inflate it to seat the beads.

(h) Regulate the tire pressures to the OE tire pressure for 17" Tires as found on the Vehicle's OE Tire Pressure Label e.g. FRONT & REAR **32 PSI** (220 kPa).

(i) Remove any tire labels from tire tread prior to balancing.

(j) Install and torque the valve stem cores with the valve stem torque tool.

(k) Be sure to **recheck the torque** on the TPMS nuts.

Torque (metal air valve type): 36 in-lbf

(4.0 N-m) (Torque wrench)

Torque (metal air valve type): 49 in-lbf

(5.5 N-m) (Nut driver)

(l) Install the valve stem caps by hand.

(m) Measure torque and record on torque audit sheet (Fig. 5-3).

Measure Torque and Document

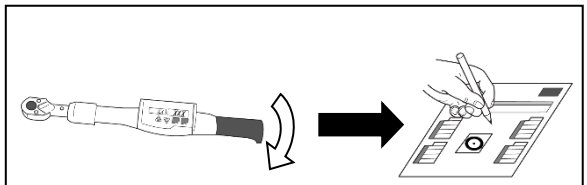

Fig. 5-3

6. Balance the Wheels.

NOTE: Application temperature for stick-on type weight is above 50°F (10°C). It is good practice to apply the stick-on type in sections comprised of no more than 5 or 6 individual weight segments.

(a) Prior to mounting stick-on weight, use VDC-approved cleaner as needed to clean the weight mounting location on the wheel, then wipe down with a clean, dry, lint-free cloth. Ensure that the location is clean and dry.

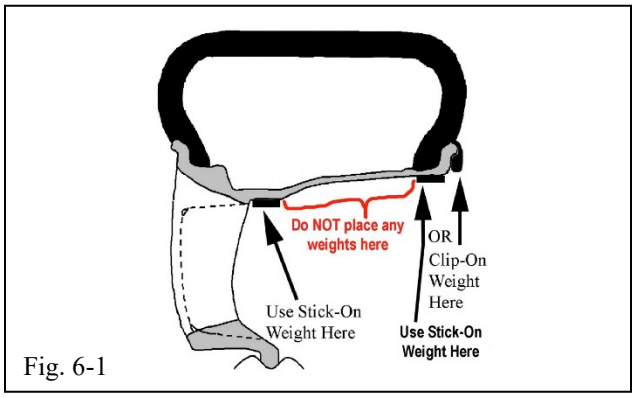

Fig. 6-1

(b) Mount the wheel/tire on the wheel balance machine and 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. 6-1, 6-2, & 6-3).

NOTE: Weights should be no taller than 4 ~ 5 mm in height.

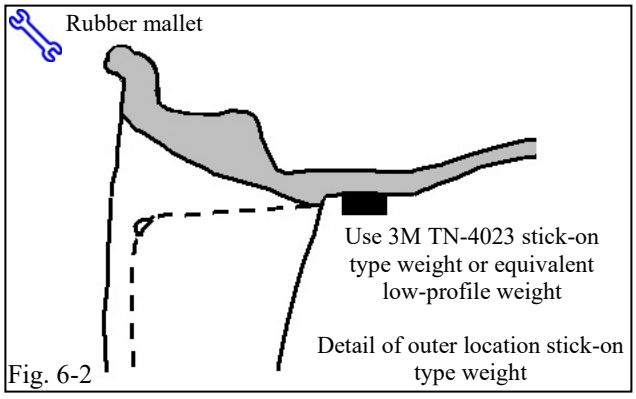

Fig. 6-2

(c) Apply stick-on type weights at the perimeter location identified by the dynamic balance machine. Use a rubber mallet, if required, to achieve complete adhesion of stick-on type weight(s).


Fig. 6-3

NOTE: The maximum allowable amount of stick-on type weight on the inner and outer rim is **200 g** (7.0 oz.). If weight required exceeds this, place machine in STATIC mode and proceed. If weight required still exceeds limit, rotate tire 180 degrees relative to wheel and repeat Step 6(c). If removal and replacement of stick-on type weight is necessary, remove the weight using a nylon removal tool. Clean the surface with a clean cloth using a locally approved cleaning solution. Wipe the surface dry before re-applying new

weight(s). DO NOT RE-USE STICK-ON WEIGHTS.

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

R **7. Record the Tire Identification Numbers (TIN).**

(a) **PPO Only:** Record **ALL** new Tire Identification Numbers (TINs) from the **four** or **five** new tires installed onto the vehicle.

(1) Record these TINs with the Vehicle Identification Number (VIN) per VDC process.

(2) The TIN for the tire is an 11 or 12-character string located after the “DOT” symbol on the sidewall of the tire.

(3) Refer to **SPAD PPO Bulletin** database as needed. When reusing the same OE tires that came on the same vehicle, the TINs need not be recorded.

(b) **DIO Only:** Record **ALL** new Tire Identification Numbers (TINs) from the **four** or **five** new tires installed onto the vehicle.

(1) Record these TINs with the Vehicle Identification Number (VIN).

(2) Provide the tire information to your tire vendor as required by law.

(3) When reusing the same OE tires that came on the same vehicle, the TINs need not be recorded.

8. Install the Center Caps.

(a) Install TRD center caps onto all **four** or **five** wheels. Align the center cap as shown in Fig. 8-2 and then gently push cap into wheel until cap snaps into place (Fig. 8-1).

(b) Be sure that the TRD text on the center cap for the FJ Cruiser spare wheel is installed in its upright position, (Fig. 8-2).

(c) If the vehicle has a back-up camera located in the spare wheel hanger, place the 5th TRD wheel center cap into the vehicle glove compartment. Do NOT cover the camera!

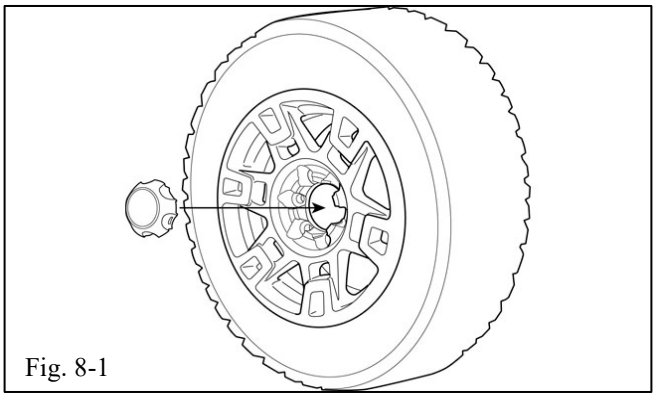
Fig. 8-1

Fig. 8-2

9. Install the Wheels / Tires on the Vehicle.

(a) Install the 4/5 TRD wheel and tire assemblies on the vehicle.

(b) Hand-start the flat-seat OE lug nuts during installation.

NOTE: Do NOT use conical-seat acorn lug nuts. These Wheels require flat-seat lug nuts.

(c) Tighten the lug nuts in sequence 1 through 6 (Fig. 9-1). Ensure that the socket does not scuff the wheels.

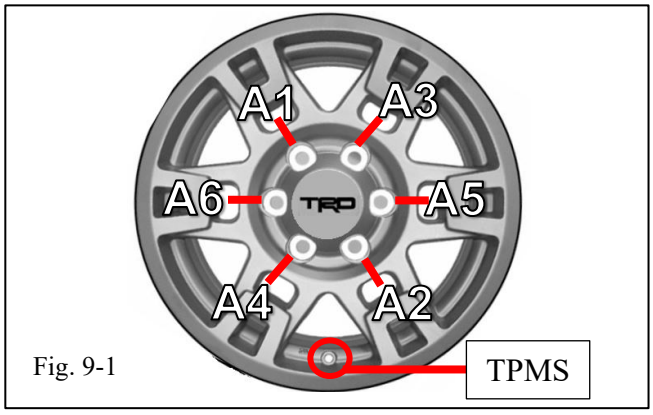

Fig. 9-1

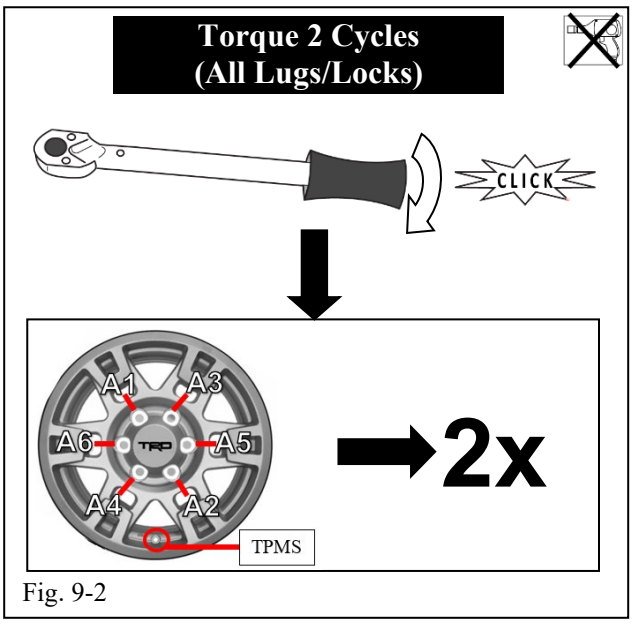

Fig. 9-2

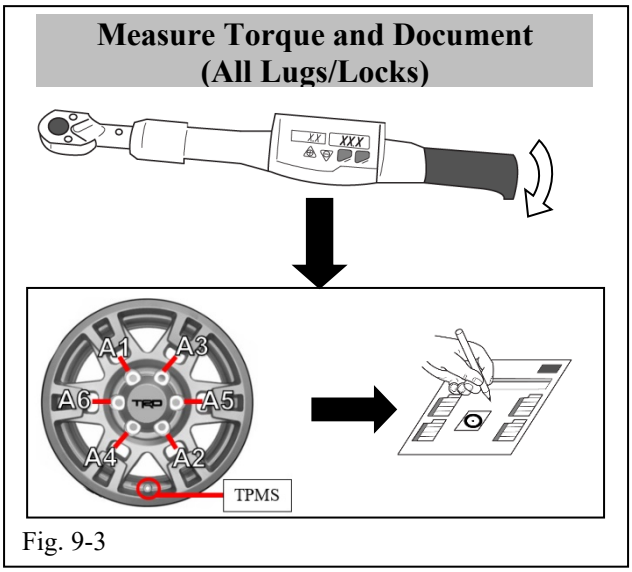

Fig. 9-3

Tighten the lug nuts in sequence 1 through 6 (Fig. 9-2). Ensure that the socket does not scuff the wheels. Tighten to 76 ft-lbf (103 N-m) using a torque wrench.

Torque: 76 ft-lbf (103 N-m)

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

(d) Re-torque all lug nuts in the same 1-6 sequence (Fig. 9-2).

Torque: 76 ft-lbf (103 N-m)

(e) With the vehicle still on the lift, use a digital torque wrench to measure the torque of each lug nut/lock. Record the values on the Torque Audit Sheet (Fig. 9-3) (PPO installation only, does not apply to DIO installation).

(f) Use a digital torque wrench to apply the required torque of 36 in-lbf to the TPMS nut & record the values in the assembly torque section of the Torque Audit Sheet (Fig. 9-3). (PPO installation only, does not apply to DIO installation).

Torque (metal air valve type): 36 in-lbf

(4.0 N-m) (Torque wrench)

Torque (metal air valve type): 49 in-lbf

(5.5 N-m) (Nut driver)

(g) Lower the vehicle.

(h) **FJ Cruiser Only**: Use the OE lug nuts to install the spare wheel/tire on the vehicle (Fig. 8-4). Use a torque wrench to tighten the nuts to **65 ft-lbf** (88 N-m).

Torque: 65 ft-lbf (88 N-m)

(i) Discard the OE take-off wheels per local regulations.

10. Install the Tire Pressure Labels.

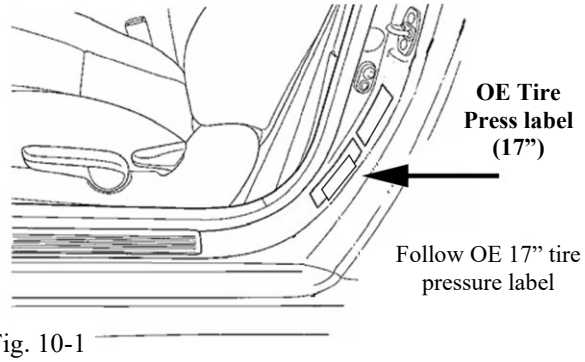

Fig. 10-1

(a) These 17" wheels are designed to re-use the OE 17" tires P265/70R17 113S. Be sure to use & follow the OE 17" Tire Pressure label, located on the driver's side door jamb, for proper inflation pressure (Fig. 10-1).

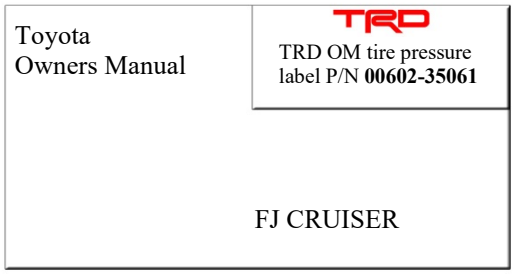

Fig. 10-2

(b) Install the Owner's Manual Label (MDC P/N **00602-35061)** onto the upper right front cover of owner's manual (Fig. 10-2).

NOTE: Be sure NOT to cover any existing text or information.

11. TPMS Transmitter ID Registration Using Techstream.

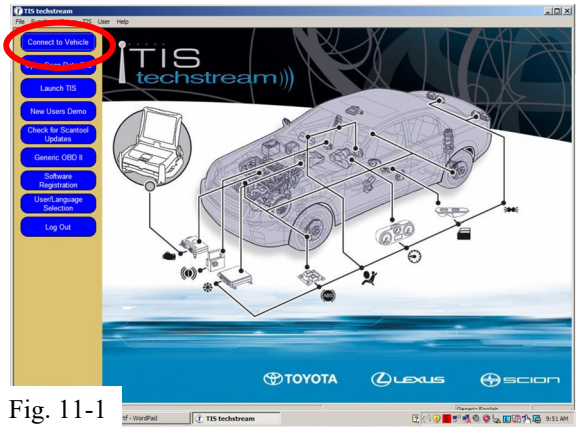

Fig. 11-1

(a) Connect the Techstream to DLC3 (Fig. 11-1).

(b) Turn the ignition switch to the ON position (do not start the vehicle), then turn the Techstream ON.

(c) Start the Techstream application by clicking on the shortcut located on the Desktop.

(d) Click "**Connect to Vehicle**" button (Fig. 11-1).

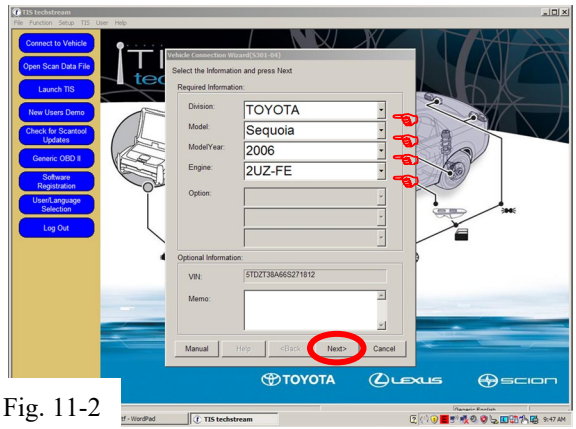

Fig. 11-2

(e) Confirm that the information displayed on the Vehicle Connection Wizard is correct. If not, make the appropriate selections from the Drop-Down Menus, then click "**Next**" (Fig. 11-2).

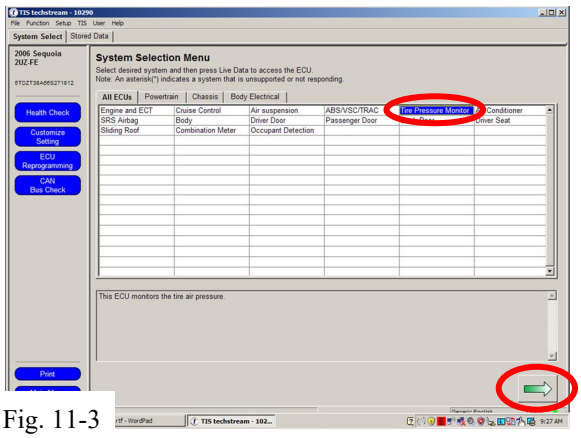

Fig. 11-3

(f) Select "**Tire Pressure Monitor**" then click the green arrow located on the bottom right (Fig. 11-3).

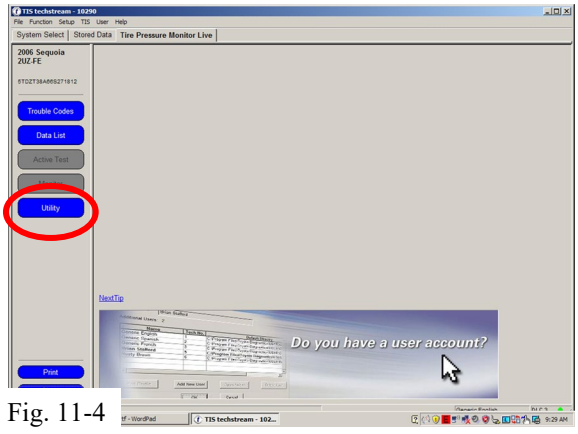

Fig. 11-4

(g) Select "**UTILITY**" to begin the input of new TPMS ID codes (Fig. 11-4).

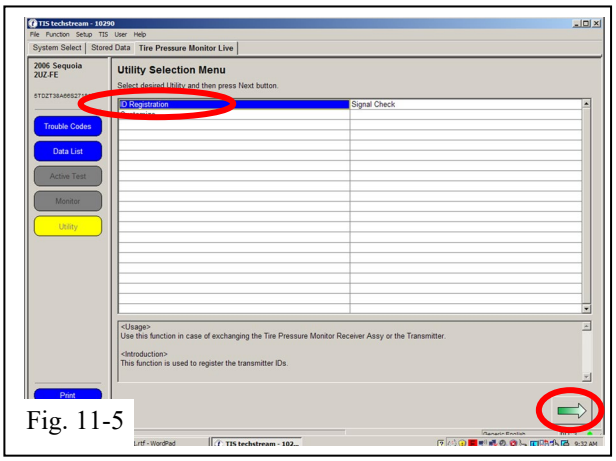

Fig. 11-5

(h) Select "**ID Registration**" then click the green arrow located at the bottom right corner (Fig. 11-5).

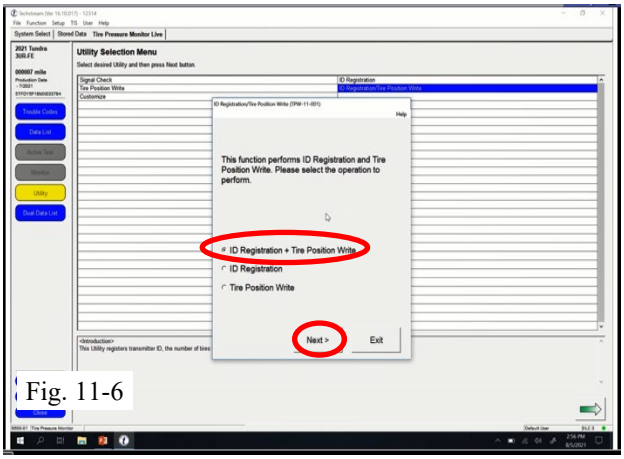

Fig. 11-6

(i) Select "**ID Registration/Tire Position Write**" then select "**Next**" (Fig. 11-6)

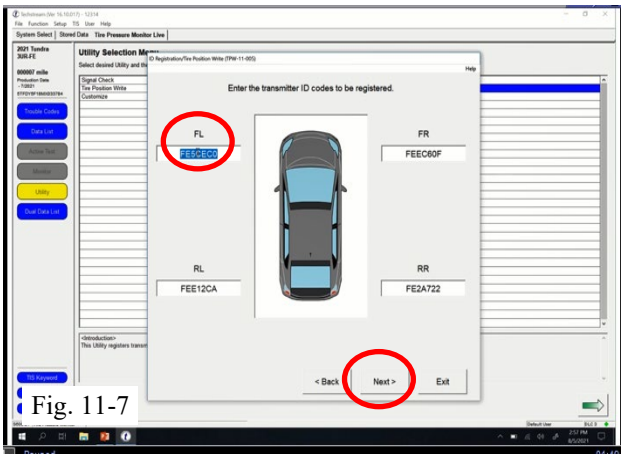

Fig. 11-7

(j) Select the FL TPMS ID, then erase the TPMS code that is already shown and input the new TPMS ID code. Repeat for the next three ID codes, then click "**Next**" (Fig. 11-7)

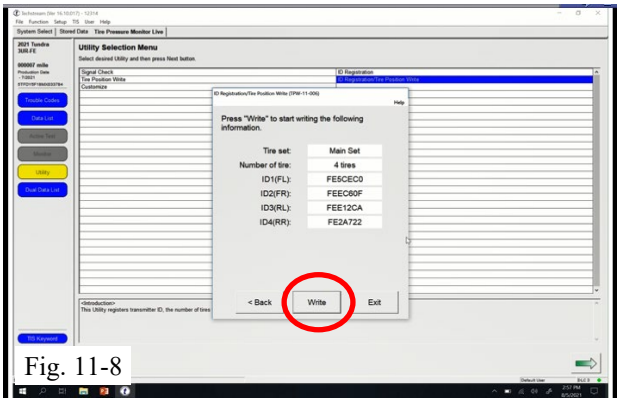

Fig. 11-8

(k) Verify all TPMS codes were entered correctly and the tire locations are correct, then click "**Write**" (Fig. 11-8)

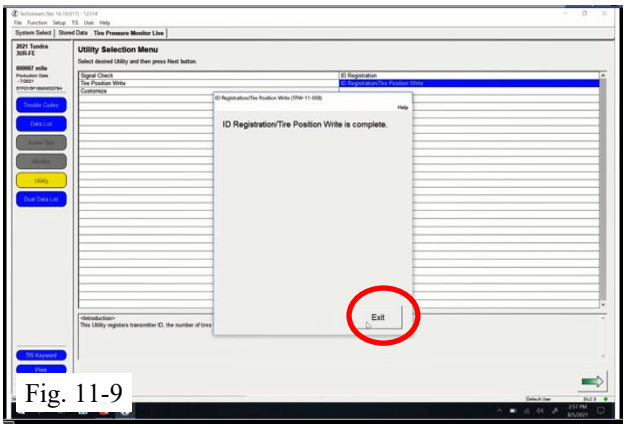

Fig. 11-9

(l) After all TPMS ID numbers have been registered, "**ID Registration/Tire Position Write is complete**" text should be displayed. Click "**Exit**" to finish the registration process (Fig. 11-9)

Fig. 11-10

(m) After all TPMS ID numbers have been registered, the tire pressure indicator light should be displayed on the dashboard. (Fig. 11-10)

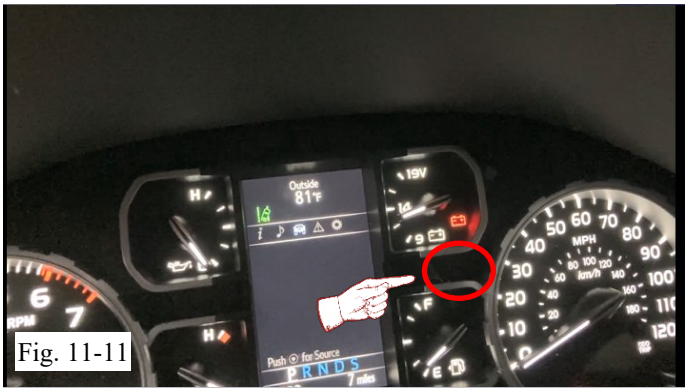

Fig. 11-11

(n) The tire pressure indicator light will **"blink"** for approximately one minute, then the light will turn **"solid"** for approximately two minutes, then will turn off. (Fig. 11-11)

Fig. 11-12

(o) Verify the tire pressure on the vehicle multi display screen. Tire pressure should display for all four tires. (Fig. 11-12)

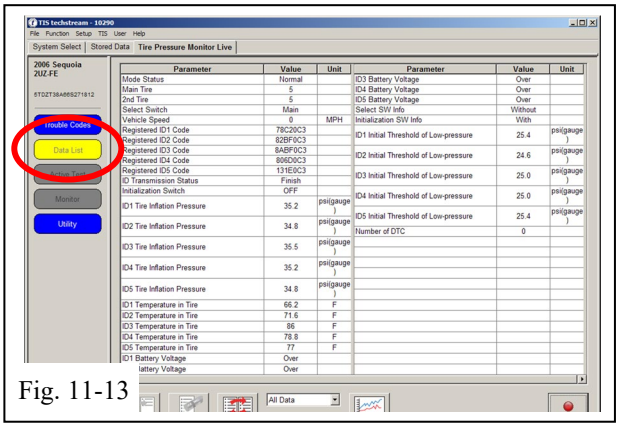

Fig. 11-13

(p) Select "**DATA LIST**" to view and confirm the TPMS ID numbers have been correctly registered (Fig 11-13).

12. Breakdown the OE Tire & Wheel Assembly.

(a) Sort product properly per local regulations.

(b) **PPO Only:** Take-Off Wheels get salvaged according to local regulations.

13. Place the Lug Nut Tool.

(a) If optional wheel locks were installed, attach wheel lock key tool to vehicle lug wrench using optional cable tie.

(b) Trim the cable tie and replace the lug wrench into lug wrench tool bag.

(c) Place the associated wheel lock paperwork into the plastic bag and place the bag into the vehicle glove compartment.

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

Check:	Look For:
Accessory Function Checks	
☐ Inspect lug nuts	6 lug nuts installed on each wheel, 3 lug nuts installed on the spare wheel to its carrier for FJ Cruiser.
☐ Lug nut tightness	Chassis wheels tightened to **76 ft-lbf** (103 N-m), spare wheel for FJ Cruiser tightened to **65 ft-lbf** (88 N-m)
☐ Tire Pressure Labels	Verify OE Tire Pressure Label and TRD Owner's Manual Labels are in place
☐ Correct Tire Pressure	Verify tire pressure is set to the value specified on the OE 17" Tire Pressure Label
☐ Tire Identification Numbers	**PPO**: Ensure any <u>new</u> accessory Tire Identification Numbers are recorded with the Vehicle Identification Number per regulations. Refer to **CAD PPO Bulletin** as needed. **DIO**: Provide the tire information to your tire vendor as required by law
☐ Center Caps	Verify center caps are securely in place on all chassis wheels. Ensure TRD spare wheel Center Cap is installed with the TRD logo in the upright position. For vehicles with back up camera, ensure 5th center cap is placed into the glove box and not over the camera.
☐ <u>Optional</u> Wheel Locks	Verify optional wheel lock key tool is attached to vehicle lug wrench in vehicle and paperwork is placed into vehicle glove compartment
☐ Wheel Balance Weights	Verify all Wheel Balance Weights are free and clear of all brake components when wheels are spun through at least one full revolution

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

Check:	Look For:
Vehicle Appearance Check	
☐ After accessory installation and removal of protective cover(s), perform a visual inspection.	Ensure no damage (including scuffs and scratches) was caused during the installation process. (For PPO installations, refer to TMNA Accessory Quality Shipping Standard.)