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## 01 2013 NATIONAL TECHNICIAN COMPETITION



The 2013 Subaru National Technician Competition was conducted in the Subaru Service Engineering Center on July 26th and 27th in Cherry Hill, New Jersey.

13 Subaru Zone Champions put their skills to the test as they competed for bragging rights of “Top Gun” and the “2013 Subaru National Technician Champion”.

**The competition was fast paced and the final results were very close, however, only one can be “Top Gun”. Here are your top 3 finishers:**



**1st Place**

**Jason Sherrill**  
Wyoming Valley Subaru,  
Kingston, PA  
Philadelphia Zone



**1st Runner Up/Alternative**

**Mark Jurkovski**  
Morrie’s Subaru,  
Minnetonka, MN  
Minneapolis Zone



**2nd Runner Up Ace**

**Bret Carter**  
AutoNation Subaru West,  
Golden, CO  
Denver Zone

**CAUTION: VEHICLE SERVICING PERFORMED BY UNTRAINED PERSONS COULD RESULT IN SERIOUS INJURY TO THOSE PERSONS OR TO OTHERS.**

The Subaru TechTIPS newsletter is intended for use by professional technicians ONLY. Articles are written to inform those technicians of conditions that may occur in some vehicles, or to provide information that could assist in the proper servicing of the vehicle. Properly trained technicians have the equipment, tools, safety instructions, and know-how to do the job correctly and safely. If a condition is described, DO NOT assume that your vehicle has or will have that condition. Impreza, Legacy, Justy, Loyale, Outback, Forester, Subaru SVX, WRX, WRX STI, L.L. Bean, Baja, Tribeca, BRZ, XV Crosstrek and “Quality Driven” are Registered Trademarks.

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The international standard for excellence in Environmental Management Systems. Please recycle or dispose of automotive products in a manner that is friendly to our environment and in accordance with all local, state and federal laws and regulations.



QUALITY DRIVEN® SERVICE



The competition consisted of 5 events:

### Written exam

The written exam consisted of 60 questions testing each contestant on their Subaru knowledge.

### First engine start

Three problems were placed into each vehicle. The first condition prevented the starter from operating; an open circuit in the starter relay coil was the issue. The second problem was a missing wire from the fuel pump relay connector. The third issue was a malfunctioning air flow meter.

### Body Mechanical and Electrical

Three problems were also placed into this portion of the event. A customer concern of “My trunk will not open” represented two problems. A BIU programmed to Station Wagon mode prevented the trunk open switch from operating, and a disconnected mechanical cable from the key cylinder to the trunk actuator was the second problem. A loose floor mat was the third issue.

### Precision measurement

This event tested each contestant’s skill at measuring for the correct shift fork for 3rd and 4th gear in a 6 speed manual transmission. Final calculations must be within 0.3 millimeters of the pre-measured clearance checked by the judging team.

### Electrical circuit design and measurement

An explanation of a circuit was given to each contestant asking them to draw out the wiring schematic that provided the High Speed CAN one state. A series of voltage dividing circuits must be included. The circuit had to be constructed, from supplied parts given to each contestant before the beginning of the event.



**Front Row-** left to right: Jeffrey Sparrow of Mastro Subaru; Mark Jurkovski of Morrie’s Subaru; Matthew Bahr of Bill Kolb Jr. Subaru; Daniel Overfield of Yark Subaru; John Michael Hollingsworth Jr. of Subaru of Kennesaw; and Jason Sherrill of Wyoming Valley Subaru.

**Back row-** left to right: Jeremy DeGroodt of Capitol Subaru; Greg Sampley of Maple Hill Subaru; Jason Ewing of North Park Subaru; Gregory Knothe of Rancho Grande Subaru; Bret Carter of AutoNation Subaru West; Danny Squires of Carr Subaru and William Wright of Pence Subaru.



Thirteen 2014 Legacy vehicles were prepared with identical conditions, each Technician was given identical tools, and the entire event was witnessed by a shop full of Subaru employees.

Jason Sherrill will be traveling to Japan to compete against 14 other Technicians from around the world in the Subaru World Technician Competition this fall. Jason will be accompanied by James Riedel, Field Service Training Manager of Rockville Maryland.



## 01 QMR OF THE MONTH

We are pleased to announce this month's winner of the QMR of the Month.

**Charles Brady**



**Prestige Subaru in Asheville, NC**

Charles submitted a very detailed QMR reviewing his repair of a ticking sound from left side B-pillar trim as a result of panel to panel contact. In appreciation for going the extra mile and sharing his experience with us, Charles will be receiving the following from his FSE:

**A Subaru Confidence In Motion Jacket**

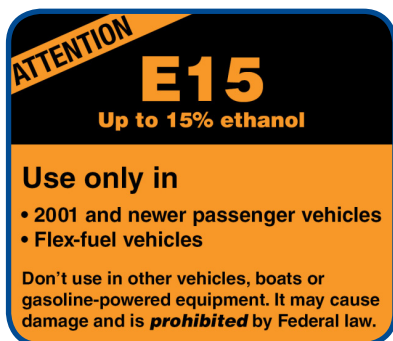


**A \$100 Gift Card**

### **Congratulations Charles!**

Any Subaru Service Technician can participate in QMR of the Month. See the February 2013 Tech Tips for full details. You may see your name here in a future Tech Tips.

## 09 NEW FUEL WITH UP TO 15% ETHANOL A REMINDER



Effective June 2012, EPA approved a limited number of ethanol fuel and fuel additive manufacturers to sell E15. (E15 is a blend of gasoline and up to 15% volume ethanol.) It currently has limited distribution by ethanol fuel provider stations in the mid-west states of South Dakota, Kansas, Iowa, Illinois, Nebraska, and Wisconsin. In addition the State of Missouri is considering allowing the use of gasoline with 15% ethanol. Major brand fuel suppliers do not plan to sell E-15. For other states that restrict the sale of certain gasoline-ethanol blends, E15 may not be sold without changes to the law.

Our 2001 model year and newer Subaru owner's manuals state that the gasoline blends "should contain no more than 10% ethanol for the proper operation of your SUBARU." We continue to adhere to this usage policy. Additionally, as stated in the applicable model year owner manuals, "Fuel system damage or drivability problems which result from the use of improper fuel are not covered under the SUBARU Limited Warranty".

The EPA regulations require all E15 fuel dispensers to have a label, shown above.

## 01 QUALITY MONITORING REPORTS

QMRs related to campaigns or recalls should only be submitted when there are unique or unusual circumstances found during the course of the repair. QMR submissions indicating the completion of a campaign or recall are unnecessary.

If you receive a customer concern of the driver's door power window becoming inoperative, be sure to rule out these scenarios before ordering or replacing any parts. The condition may be operator-induced and the power window system is operating as designed based on the "AUTO" switch input. This condition is more likely to occur when ambient temperatures are higher during the warm weather months.



(Push DOWN)

- If the operator pushes and continues to hold down the window switch to use the auto-down feature (as shown above) after the window is fully open, a circuit breaker function in the window motor will operate to protect it from overload. After releasing the switch, the breaker will reset in 10-15 seconds and normal operation will be restored.



(Pull UP)

- If the operator pulls and continues to pull up the window switch to use the auto-up feature (as shown above) after the window is fully closed, the circuit breaker will also operate but the following reset procedure will need to be done before normal window operation can be restored:
  1. After the breaker resets in about 10-15 seconds, push the switch down to open the window about halfway.
  2. Pull the switch up to close the window fully in steps (it will only close about 2" each time the switch is operated).
  3. Once the window is fully closed, pull up and hold the switch again for 1 second to complete the procedure.















If normal operation is not restored, the switch was most likely held up during the last step for more than the specified 1 second. Repeat the 3-step procedure above.













## 15 FUJITSU-TEN (F-10) AUDIO / NAVIGATION UNITS – NO POWER OR DISPLAY

If you receive a customer concern of no power or a blank display screen after turning on the audio / navigation unit, verify the proper SD card is installed in the unit as your first step in diagnosis. The SD cards used in these units are highly specialized for each specific model vehicle and are NOT interchangeable.















**REMINDER:** Always follow the proper procedure for removing the SD card from the audio / navigation unit. Failure to follow the proper procedure can damage both the SD card memory and the unit's internal memory. This type of damage is not a matter for warranty.









The charts below will provide the most updated SD card part number information available for each model, 2012MY to current.

Vehicle	Model Year	12MY	12MY	13MY	13MY	14MY	13MY	13MY
	Model	IMPREZA WRX	IMPREZA WRX	IMPREZA WRX	IMPREZA WRX	IMPREZA WRX	BRZ	BRZ
	Side View							
Main Unit	Front View							
	Subaru Part Number	86271FG600	86271FG601	86271FG620	86271FG620	86271FG630	86271CA620	86271CA620
	F-Ten Part Number	138000-0390	138000-0390C	138000-0391	138000-0392	138000-0393	138000-1211	138000-1212
	Face ID Number	FW602US	FW602US	FW602US	FW602US	FW602US	FA601US	FA601US
	Oracle Number	138000-03900000		138000-03910000		138000-03930000	138000-12110000	
SD Card (4GB)	F-Ten Part Number	194000-1550	194000-1550	194000-1551	194000-1551	194000-1552	194000-1971	194000-1971
	Subaru Part Number	86283FG600	86283FG600	86283FG620	86283FG620	86283FG630	86283CA620	86283CA620
	Map Version	2010 Q3	2010 Q3	2011 Q3	2011 Q3	2012 Q3	2011 Q3	2011 Q3
	Oracle Number	194000-15500000		N/A	N/A	N/A	194000-19710000	N/A

Vehicle	Model Year	14MY	13MY	13MY	13MY	14MY	14MY
	Model	BRZ	LEGACY / OUTBACK	LEGACY / OUTBACK	LEGACY / OUTBACK	LEGACY / OUTBACK	LEGACY / OUTBACK
	Side View						
Main Unit	Front View						
	Subaru Part Number	86271CA630	86271AJ67A	86271AJ67A	86271AJ68A	86271AJ80A	86271AJ81A
	F-Ten Part Number	138000-4940	138000-0120	138000-0121	138000-0122	138000-0123	138000-3541
	Face ID Number	FA632US	FB678US	FB678US	FE688US	FE688US	FE699US
	Oracle Number	138000-49400000	138000-01200000		138000-01220000	138000-01230000	138000-35410000
SD Card (4GB)	F-Ten Part Number	194000-3040	194000-1720	194000-1720	194000-1721	194000-1722	194000-2770
	Subaru Part Number	86283CA630	86283AJ67A	86283AJ67A	86283AJ68A	86283AJ66A	86283AJ69A
	Map Version	2012 Q3	2011 Q3	2011 Q3	2011 Q3	2012 Q3	2012 Q3
	Oracle Number	N/A	N/A	N/A	N/A	N/A	N/A

*Continued...*

Vehicle	Model Year	12MY	12MY	13MY	13MY	14MY	12MY	13MY
	Model	IMPREZA	IMPREZA	IMPREZA / XV CROSSTREK	IMPREZA / XV CROSSTREK	IMPREZA / XV CROSSTREK	FORESTER	FORESTER
	Side View							
Main Unit	Front View							
	Subaru Part Number	86271FJ600	86271FJ601	86271FJ610	86271FJ610	86271FJ620	86271SC600	86271SC620
	F-Ten Part Number	135000-8600	135000-8601	138000-1960	138000-1961	138000-3600	138000-0150	138000-0151
	Face ID Number	FM601US	FM601US	FM612US	FM612US	FM622US	FP606US	FP606US
	Oracle Number	135000-86000000		138000-19600000		138000-36000000	138000-01500000	138000-01500000
SD Card (4GB)	F-Ten Part Number	194000-1400	194000-1400	194000-2390	194000-2390	194000-2910	194000-1440	194000-1441
	Subaru Part Number	86283FJ600	86283FJ600	86283FJ610	86283FJ610	86283FJ620	86283SC600	86283SC620
	Map Version	2010 Q3	2010 Q3	2011 Q3	2011 Q3	2012 Q3	2010 Q3	2011 Q3
	Oracle Number	194000-14000000		N/A	N/A	N/A	194000-14400000	N/A

Vehicle	Model Year	14MY	14MY	14MY	14MY
	Model	FORESTER	FORESTER	FORESTER	FORESTER
	Side View				
Main Unit	Front View				
	Subaru Part Number	86271SG600	86271SG610	86283SG620	86283SG630
	F-Ten Part Number	138000-1420	138000-1430	138000-1421	138000-1431
	Face ID Number	FF605US	FF615US	FF605US	FF615US
	Oracle Number	138000-14200000	138000-14300000	138000-14210000	138000-14310000
SD Card (4GB)	F-Ten Part Number	194000-2050	194000-2050	194000-2051	194000-2051
	Subaru Part Number	86283SG600	86283SG600	86283SG620	86283SG620
	Map Version	2011 Q3	2011 Q3	2012 Q3	2012 Q3
	Oracle Number	N/A	N/A	N/A	N/A

## 11 REPEAT P0420 DIAGNOSTIC TROUBLE CODE ON HIGHER MILEAGE VEHICLES

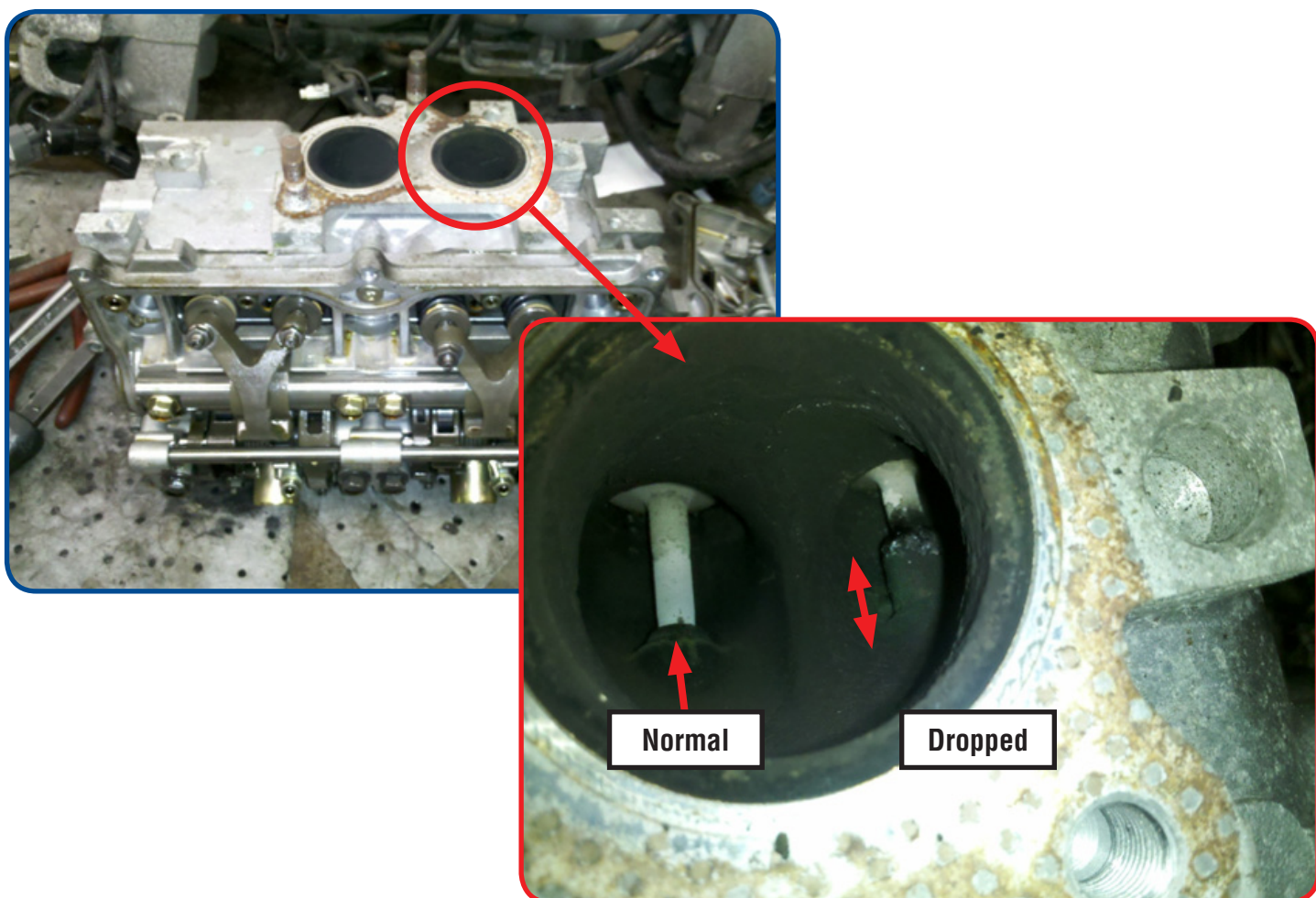
If you encounter a higher mileage vehicle with DTC P0420 which has had repeated catalytic converter replacements in a short period of time, while a faulty converter may be the cause of the P0420 and testing show that converter is faulty, odds are the failed converter is the “effect” and not the root “cause” of the problem.

A catalytic converter life span can be directly correlated to a properly running engine. Misfires and other drivability conditions can reduce a catalytic converter life span dramatically depending on the type of issue.

Don't overlook the basics on high mileage vehicles. Compression, leak down and especially valve clearance measurements on all cylinders should be done to check the health of the base engine before replacing parts.

If you run into this condition, you may find valve clearances out of specification due to “dropped” exhaust valve guides. This may not cause a noticeable running condition, but can create intermittent misfire issues and in some cases, valves to stick. What is most detrimental to the converter's life span when valve guides drop is oil leaking past the valve seals into the valve guides, onto the back of the valves and eventually ending up inside the catalyst.

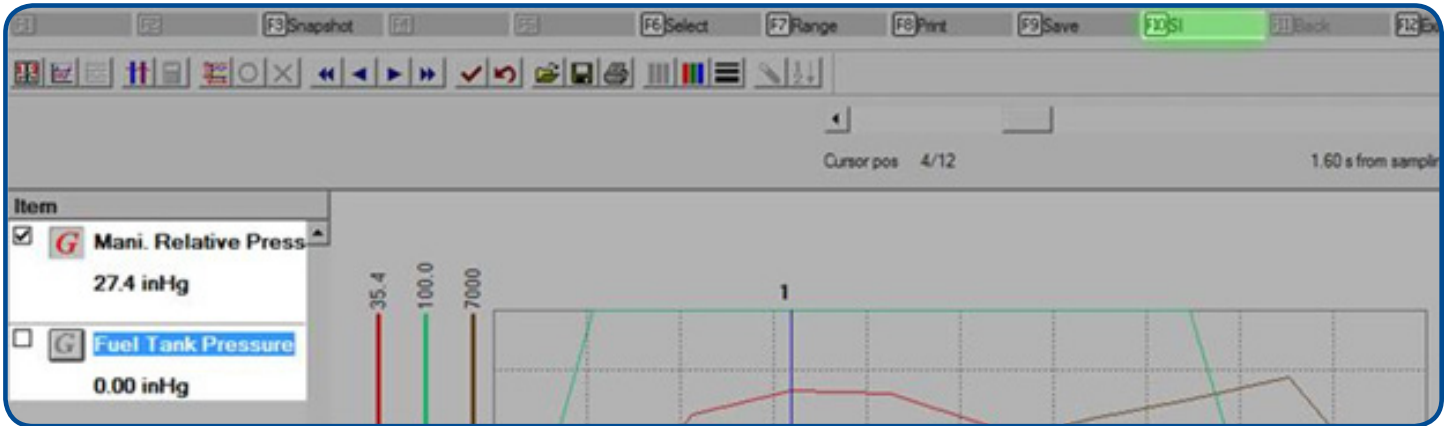
For more information or a refresher on catalytic converter function and testing, please refer to the Technician Reference Booklet for Module 405, Basic Fuel and Emissions.



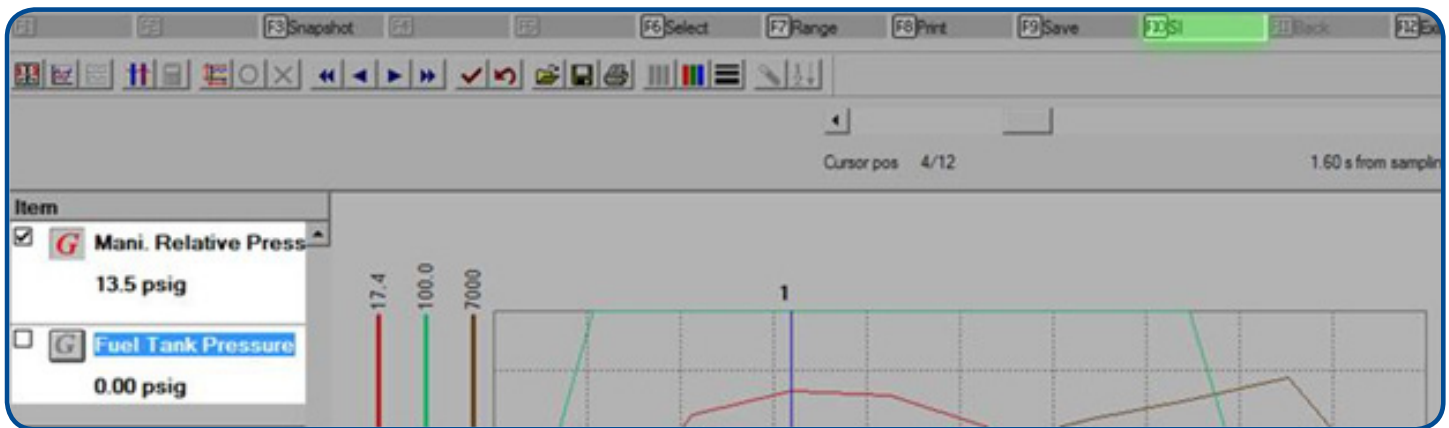


## 14 SUBARU SELECT MONITOR III UNITS OF MEASUREMENT

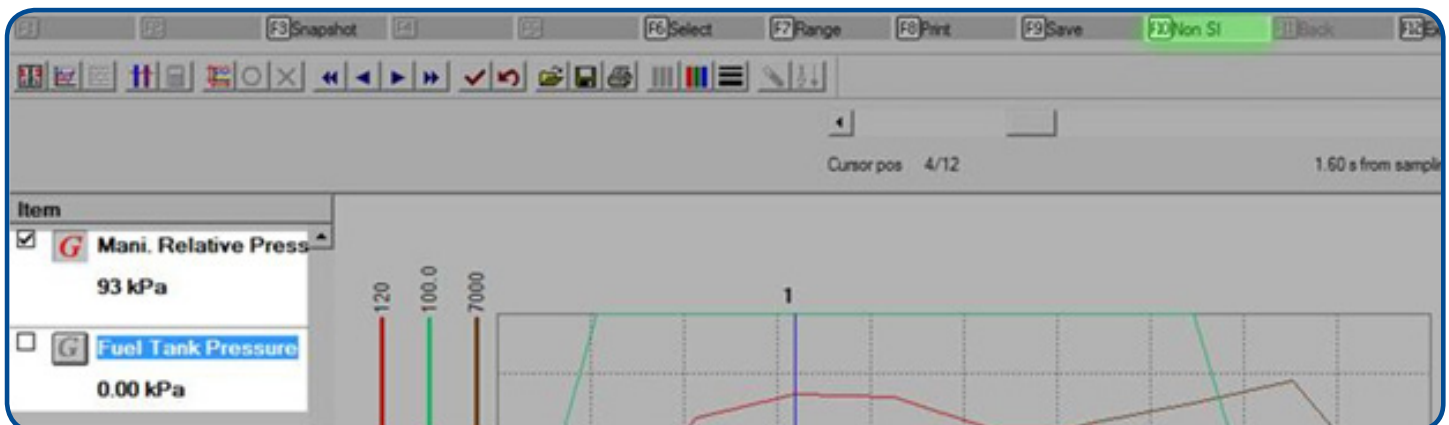
In order to change the readings on the Subaru Select Monitor III for units of measure such as psi, inHG, kPa, mmHG, you must check the F10 soft key to see if you are in SI mode or Non-SI mode. When the F10 soft key displays SI mode, that is when the Select Monitor III is in Non-SI mode and that is when you can change the units of measurement. When you press the F10 key, SI mode is enabled and changes the soft key label to display Non-SI mode and also locks the units of measurement to SI.



Non-SI mode, pressure manually changed to inHg



Non-SI mode, pressure manually changed to psi



SI mode, pressure fixed in kPa

On 2014 Model Year Foresters equipped with a multi-function display; there is a maintenance schedule setting that is set at the factory to alert the driver when it is time to have various items checked. This default setting is set at 7,000 miles. When this interval is reached, the driver will begin to see messages appear which read as follows:

- Check washer fluid level (only when level is low)
- Time to change the engine oil
- Time to change the oil filter
- Time to check the tires
- Maintenance is required immediately

After the vehicle is serviced, either the Technician or the owner has to reset the schedule for these message reminders otherwise, the owner will see the reminder again soon after the service was performed. To reset the reminder, pull and hold the “I set” switch on the steering wheel toward you until the selection screen appears. Then you can use the arrow up/down switch to scroll to the maintenance menu and select the desired item(s) using the “I set” switch.

First, select “Maintenance” then from the next layer of the menu, choose “Clear All Settings”. You will be prompted to verify your input in the next screen so, you must select “Yes”. A message of “Maintenance all items settings is eliminated” will then be displayed and the reset is accomplished. This will reset all maintenance intervals in Oil, Oil Filter, Tires and Maintenance to 7,000 miles. The mileage interval can be manually changed by increments of 1,000 miles and the dates of the next inspection can also be set in each item individually if desired. (Default for the date is set to blank).

Please note, any dates entered will be erased when “Clear all settings” has been executed. If the owner does not want any of the warning messages to be displayed, you can turn off the default setting using the same switches and menus. For reference, all of this information can be found in the owner’s manual, section 3 beginning on page 66.

**07-76-13R**; Technical Service Bulletin, Initialization Procedure for Power Rear Gate (PRG) System

**H701SFJ000**; Accessory Installation Guide, Impreza, XV Crosstrek, Forester Interior Illumination Kit (Blue)

**SUTTIPSLOC**; Other / Miscellaneous, TechTIPS Article Locator Index (Updated 07-2013)

**06-43-12R**; Technical Service Bulletin, ETC (Electronic Toll Collection) Device Mounting Guidelines

**H001SFJ800**; Accessory Installation Guide, Remote Engine Starter (push-start ignition models)

**MSA5M1413A** ; Owner's Manual, 2014 Impreza Owner's Manual

## 2013 Calendar of Subaru Holidays

### Labor Day

Monday, September 2, 2013

### Thanksgiving Day

Thursday, November 28, 2013

### Black Friday

Friday, November 29, 2013

### Christmas Eve

Tuesday, December 24, 2013

### Christmas Day

Wednesday, December 25, 2013

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This is your chance to offer suggestions for use in future issues of TechTIPS! Make sure that if you e-mail us, you place in the **subject line** of your e-mail "**For TechTIPS Newsletter**". Thank you!

**MODEL:** \_\_\_\_\_

**YEAR:** \_\_\_\_\_

**VIN:** \_\_\_\_\_

**Description of situation encountered:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Your suggestion for repair procedure, product improvements, etc.:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Please attach separate sheets, if necessary. You may also want to include Service Manual diagrams or references, or your own drawings to assist in describing your suggestion. All information submitted becomes the property of Subaru of America, Inc. Permission is granted to Subaru of America, Inc. to print your name and suggestions in TechTIPS and other Subaru of America, Inc. publications. Mail items to: PO Box 6000, Cherry Hill, NJ 08034-6000.

**Your Name:** \_\_\_\_\_ **Signature:** \_\_\_\_\_

**Dealer's Name:** \_\_\_\_\_ **City:** \_\_\_\_\_

**Date:** \_\_\_\_\_ **Dealer Code:** \_\_\_\_\_

**SUBARU TECHLINE**  
Hours of Operation

Monday – Thursday 8:30am to 6:30pm  
Friday 10:30am to 5pm