



ARTICLES CONTAINED IN THIS ISSUE

CODE	ARTICLE.....	PAGE
(01)	QMR of the Month.....	01
(01)	Techline New Hours of Operation	02
(01)	2015 WRX and WRX STI Launch - Your help is Needed	07
(02)	FA and FB Engine Timing Chain Tensioner Initial Setting Information.....	03
(02)	Piston Ring Installation TIPS..	04
(05)	Wheel Lug Socket Recommendation	01
(07)	2010-14 Legacy & Outback Fuse #16 Failed in the Main Fuse Box (M/B)	06
(07)	DTC P0724, Brake Switch Circuit High Input	05
(10)	2013-14 Legacy and Outback Center Console Rear Air Vent Function	08
(14)	GR8 Battery Testing Information.....	02
(15)	2010-14 Outback Rear Bumper Underguard Accessory Reminder	06



01 QMR OF THE MONTH

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

Thomas Mazgaj

West Herr Subaru in Orchard Park, NY

Thomas submitted a very detailed QMR reviewing his diagnosis of a fuel leak from a 2009 Forester. His report included clear photos and drawings of the leaking area and its root cause as well as information on related repairs to other model years and models. These elements helped our understanding greatly. In appreciation for going the extra mile and sharing his experience with us, Thomas will be receiving the following from his FSE:

A Subaru Confidence In Motion Jacket and a \$100 Gift Card

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.

05 WHEEL LUG SOCKET RECOMMENDATION

Technicians should regularly inspect the sockets used for removal of chrome plated lug nuts for any excessive wear and to always ensure a proper fit. Otherwise, damage to the chrome finish, especially on the corners of the lug and/or the alloy wheel finish itself may occur. This damage may result in fracturing and flaking of the chrome plating/ coating, corrosion of the lug and possibly the wheel itself. Use of the correct sized sockets as well as regular inspection and replacement of worn lug nut sockets will greatly reduce the chances of this kind of damage occurring.

**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.

**SUBARU OF AMERICA, INC. IS
"ISO 14001 COMPLIANT"**

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



01 TECHLINE NEW HOURS OF OPERATION

As a reminder the Subaru Techline expanded the hours of operation between Monday and Thursday to better support you 'our dealers' with technical assistance. In addition the Techline will be available on Saturdays. Please share this information with the staff at your dealer.

New Hours of Operation are shown as East Coast Time

Monday – Thursday	8:30 AM – 7:30 PM
Friday	10:30 AM – 5:00 PM
Saturday	9:00 AM – 3:00 PM

14 GR8 BATTERY TESTING INFORMATION

GR8 Test Options: Which One to Use?

You may have noticed there are two different options for testing on the Midtronics GR8-1100 EST Battery Diagnostic Station. This article will outline the differences between the two.

Diagnostic Charge

This test must be used for diagnosing batteries, in particular, those with possible warranty coverage. In this test, the GR8 will partially charge the battery to determine its charge acceptance. It will also apply a 150 ampere load to determine battery performance under a full load. This test is located in the main menu, under "Charging". The resulting diagnostic code is the only code acceptable for submission as part of a warranty claim, should the battery require replacement.

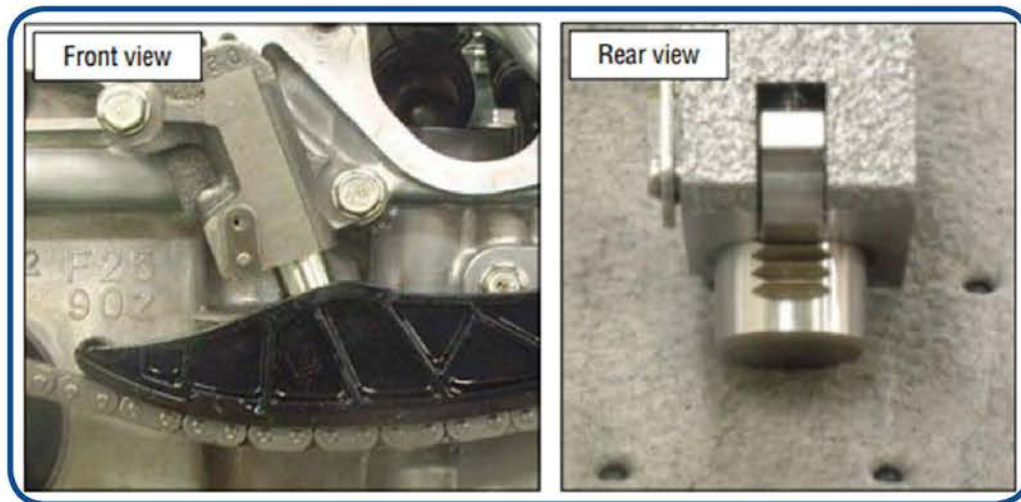
System Test

This test is used for diagnosing the alternator or the starter, but not the battery. In this test sequence, the only check done to the battery is to verify it has enough power to successfully start the engine once. The charge acceptance and full load tests from Diagnostic Charge are not performed. This test can be located in the main menu, under "System Test". This test must not be used when determining possible warranty replacement of a battery.

Because it does not include a comprehensive battery test, "System Test" cannot be used as the only method to verify battery health. A result of Good Battery in "System Test" means the battery is only good enough to start the engine once. It may not actually be a good battery!

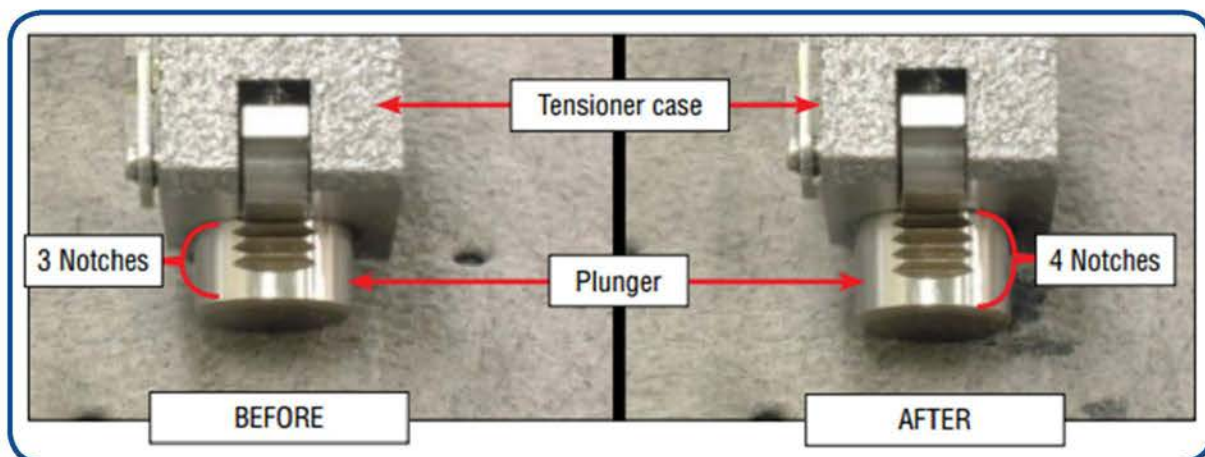
The Techline continues to receive calls regarding a cold engine tapping sound heard on initial start-up. In some cases, it is heard after engine repairs involving timing chain R&R are involved. In 2011, we released TSB# 02-113-11R on this subject. When reassembling the engine's timing chain components and performing the initial setting for of the chain tensioners, it is important to get that "extra click" out of BOTH tensioners as described below to minimize the chances of the cold engine sound reoccurring.

- Use a small mechanic's mirror to help view the adjustment notches as they face the engine block and are difficult to see.



For example: If after timing component reassembly, you have 3 notches showing on the plunger, push down firmly on the upper chain guide to get the extra click so you end up having 4 notches showing. If you have 4 notches showing, you want to get the extra click to end up with 5. Whether you start with 3 notches or 4 showing depends on the amount of wear there is on the guides and timing chain.

NOTE: It is **NOT RECOMMENDED** to use a pair of large channel lock-type pliers to squeeze the chain guides together and achieve the desired tensioner setting. Damage to the guides will likely result.



02 PISTON RING INSTALLATION TIPS

The Techline has received a limited number of reports with concerns of unusual oil consumption even after piston ring replacement. Most times, this condition is a result of incorrect piston ring installation resulting in either oil control rings being damaged or the piston ring end gaps becoming lined up. To build upon the piston ring replacement procedures included in the three recent surface treatment change to oil control / piston ring TSBs, the following tips are provided below.

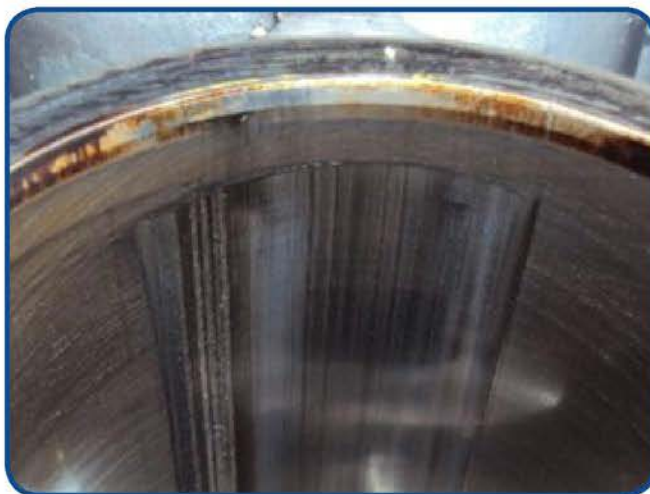
All three bulletins (02-143-13R, 02-144-13R and 02-145-13R) recommend the use of the factory tapered or non-adjustable - type piston ring compressor, J-50553 for 2.5L FB engines and J-50984 for 2.0L FA engines as illustrated below.



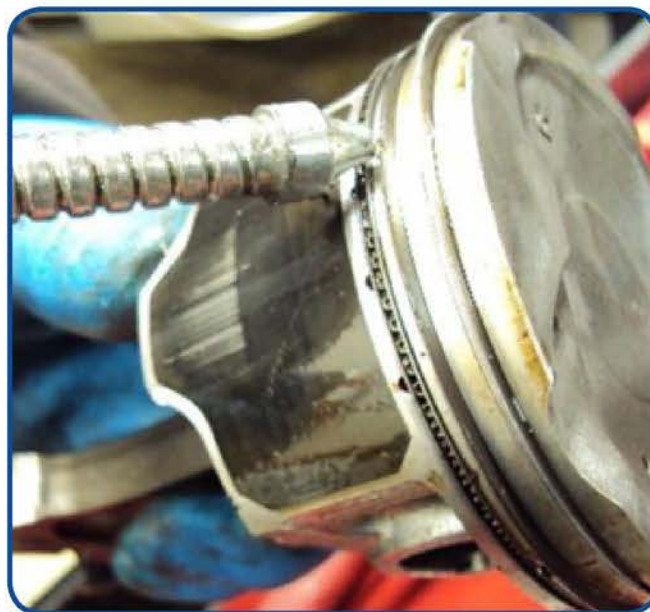
This type of piston ring compressor takes the guesswork out of whether the rings are compressed sufficiently to enter the cylinder. This can be difficult to determine when using an adjustable band - type compressor resulting in a grip that may be too tight or too loose on the piston assembly. It also provides the best “seal” to the block deck surface when installing the piston assembly into the bore and minimizes the chance of oil scraper rings popping out from between the ring compressor and the block deck surface. It is important to always hold the compressor firmly on the block surface as shown in the above, right photo. Use one firm, direct motion for the actual piston assembly insertion. If an oil scraper ring is displaced during engine assembly, severe piston and cylinder wall damage will result. At that point, the need for a short block replacement is virtually guaranteed. The photos below illustrate damage that occurred when an improperly installed oil control ring went undetected during engine reassembly. Always turn the engine over after each piston assembly is installed and develop a “feel” for how much turning effort is required. If it doesn’t “feel” right and seems to take more effort than normal, a loose / bent over scraper ring might just be the cause. In addition, check for any unusual vertical markings on the cylinder walls after rotating the crankshaft by hand. The photo at the top of page five (5), on the left, shows an upper oil scraper ring bent over and on the right, the resultant damage to the cylinder wall after the engine was taken apart again because of persistent, unusual oil consumption.

CONTINUED ON THE NEXT PAGE

01 PISTON RING INSTALLATION TIPS (CONTINUED)



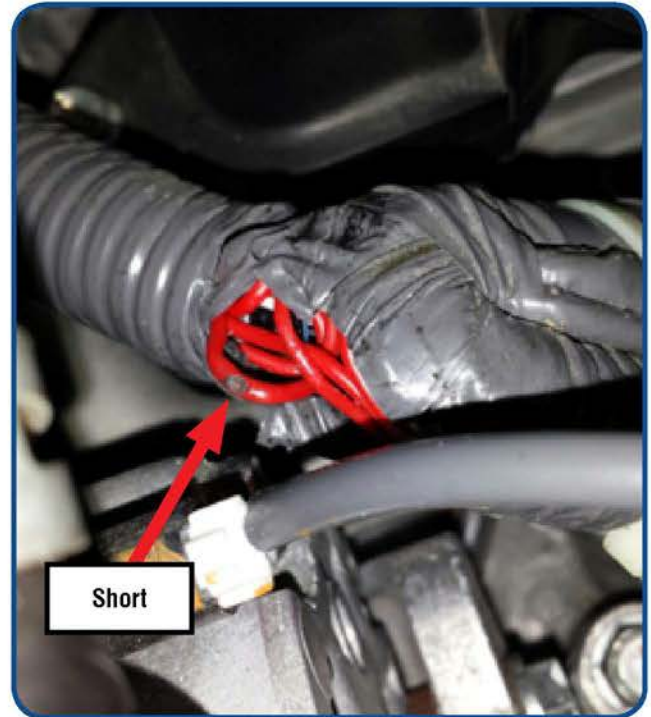
As a reminder, always lubricate the rings, cylinder walls and the ring compressor liberally with engine oil then give a final check of the ring end gap positions before installation into the ring compressor and cylinder bore.



07 DTC P0724, BRAKE SWITCH CIRCUIT HIGH INPUT

If you receive a transmission-related DTC P0724 (CVT or 5AT) for “Brake Switch Circuit High Input”, before performing unnecessary diagnostics, wiring checks and worst case, component replacement, make sure ALL the brake light bulbs are functioning normally. If any of the bulbs are out, the TCM may misinterpret the lack of a voltage drop normally seen when all the brake light bulbs are working and as a result, set the high input DTC. After replacing any failed brake light bulbs, clear the memory then verify the brake switch signal data is normal using the SSMIII. Should the DTC persist, proceed with the diagnostics according to the applicable Service Manual.

If you encounter a vehicle with electrical concerns and find fuse #16 in the under-hood fuse box (M/B) failed, inspect the engine wiring harness in the area of the power steering pump mounting bolt closest to the pressure switch for chafing or rub-through. The photos below show the area to inspect and damage to the harness which resulted in a short to ground and the root cause for the open fuse #16. This information applies to both H4 and H6 models.



As per the Outback accessory brochure, when accessorizing a 2010-2014MY Outback, the Rear Bumper Underguard accessory, E551SAJ200 is not compatible with the L101SAJ001 Trailer Hitch accessory as shown below.



First of all, a huge THANK YOU to everyone who took the time to enter QMRs, open Techline cases, and patiently supplied detailed feedback for every follow-up question in support of the 2014 XV Crosstrek Hybrid Special Quality Team. The FHI Hybrid Special Team activity is now concluded. SOA will continue to monitor the quality of these exciting new vehicles for Subaru and appreciates your continued support moving forward. Keep those hybrid reports coming!

Starting March 17, a new Special FHI Quality Monitoring Team which is currently in the USA will begin monitoring the launch of the all new 2015 WRX and WRX STI. The Team is very interested in EVERYTHING related to this new Vehicle. They are looking for specific and detailed information on EVERY condition identified. Naturally, this includes any and all repairs performed. It also includes cases when a customer comments on a condition that is deemed to be a normal or operational characteristic, or any improvement opportunity where some feature or function could be made even better. We are asking you to be our eyes and ears with this new model.

- **E-QMRs are the best and preferred reporting method for reporting any new model feedback.**

For high-priority, unusual, or serious issues, we ask that you call SOA's Technical Helpline right away with all the details. When you report something, include pictures and where practical, videos of the condition prior to repair. Providing as much detail as possible on the customer complaint, the actual condition, and your findings are strongly requested and greatly appreciated. Be sure to save all DTC and freeze frame data (do not just print it) before performing any clear memory functions. While there is no guarantee that a change will occur based upon any individual report, we can guarantee that nothing will happen if we don't know about it. Our request is that you report everything, even if it seems small or straightforward to repair.

E-QMRs, Techline or CDS Cases, and Warranty Claims are being reviewed daily. Team Members may contact you for additional details, photos, parts collections, or to arrange for an on-site inspection. We ask your cooperation in quickly responding to these requests for additional information. Please save any and all removed parts no matter how small including gaskets, clips, fasteners, any filtered sediments, or other small bits and pieces.

As a reminder, E-QMRs must never be used to request escalation of a repair, request information, or for any other purpose than to notify SOA of a new or trending condition. Authorization or Repair Escalation Requests must always go through normal channels for the fastest, most efficient handling. Paint, Glass or Long Block Authorization requests must go through the Techline Authorization System on SubaruNet. All other authorizations must be reviewed in advance with your DPSM.

We thank you all in advance for your continued support and assistance in making this latest new product launch successful!

With the unusually cold winter this year, Techline has received a number of calls regarding the temperature and volume of air supplied by the center console rear vents. These vents were introduced in the 2013 MY Legacy and Outback equipped with Automatic Climate Control and continue in the current 2014 model year. The design intent of these vents is to better stabilize the temperatures within the entire passenger cabin by enhancing air circulation throughout the interior space. As such, the temperature and volume of the air they supply will be different from the other vents in the vehicle. Some customers may comment about noticing variations in both air volume and/or air temperature coming from these vents. These variations are as-designed since again, the ducts are provided to enhance and balance the climate conditions inside the vehicle cabin. In some cases, accomplishing this balance involves blending the air by introducing air of varied temperatures to stabilize the overall conditions in the passenger cabin. Should customers express a concern with the temperature of the air coming from these ducts at any time, the first advice would be to check the temperature setting for the right (passenger side) on the climate control head unit. The right side setting has the most influence over the temperature of air supplied by the rear console vents. If adjusting the temperature for the right side does not create a sufficient improvement, the next advice would be to simply close the vent shutters to eliminate the source of the objectionable air. The under-seat ducts will continue to provide warm air as commanded by the settings on the automatic climate control head unit.

07-81-14; Technical Service Bulletin, Revised Rear Combination Lamp to Prevent Condensation

07-82-14; Technical Service Reprogramming File Availability for DTCs P0CDD and P0A3F

TSMSFJ; Troubleshooting Guide, Remote Engine Start Systems Troubleshooting Guide (2012MY Impreza & 2013MY Impreza / Crosstrek Vehicles)

MSA5M1514A; Owner Manual, 2015MY WRX and WRX STI Owner's Manual

G1190BE; Service Manual Full, 2015MY WRX and WRX STI Service Manual

07-80-13R; Technical Service Bulletin, Power Rear Gate (PRG) Inoperative, Incomplete Initialization Procedure

2014 Calendar of Subaru Holidays

Memorial Day

Monday, May 26, 2014

Independence Day

Friday, July 4, 2014

Labor Day

Monday, September 1, 2014

Thanksgiving

Thursday, November 27, 2014

Friday, November 28, 2014

Happy Holidays

Thursday, December 25, 2014

Friday, December 26, 2014

*** NOW YOU CAN E-MAIL YOUR TECHTIPS INPUT AND SUGGESTIONS TO: TECH@SUBARU.COM ***

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 8:30 am to 7:30 pm
Friday 10:30 am to 5 pm and Saturday 9 am to 3 pm