TechTIPS

JAN/FEB 2003

Subaru Service / Technical Support Line Newsletter

11 ECM REFLASHING CLAIM CODING

There have been some questions concerning claim coding for ECM reflashing.

This information can be found on the fax sheet that is sent to dealers authorizing them to send the ECM to SOA.

If this form is not available for your review, please use the following information.

Operation Number: A455-281

Failure Code: UEC48

16 2003 MY LEGACY 2.5GT SPORT SHIFT COLD WEATHER OPERATION

The 4EAT with 'Sport Shift' mode was first made available in the 2003MY Subaru 2.5GT model. This feature allows either automatic or manual shifting of the transmission.

A little known characteristic about the 'Sport Shift' is that the manual mode will only work when the ATF temperature is between 50°F and 240°F.

If the ATF temperature is outside this range, either too cold or too hot, and the driver attempts to use the 'Sport Shift' mode, the TCM will not allow the 'Sport Shift' mode to function. Instead, the gear indicator on the combination meter will display a horizontal line (see photo) and a constant 'beep, beep, beep' tone is sounded if attempting to shift the transmission manually.

When this happens, the driver must exit the 'Sport Shift' mode and allow the transmission to operate automatically until the ATF has warmed up or cooled down sufficiently.

Once the ATF has warmed up or cooled down to the required temperature, two small arrows will appear to the left of the gear indicator. The 'Sport Shift' mode can now be selected and the TCM will allow the 'Sport Shift' to function normally through all forward gears.

For more information on this function, consult the 2003MY Legacy & Outback Owner's Manual, starting on page 7-25.

Articles in This Issue

02 SUBJECT: ENGINE NOISE WHEN COLD

(Note: This is a re-release of past articles.)

We wanted to review some of the past information on engine noise.

The 2000MY and current models, with the 2.2 and 2.5 engines were made more fuel efficient, more powerful, and had a flatter, more usable torque curve than in previous years. To achieve these objectives, it was necessary to make improvements and modifications to the Subaru engine lineup. The following are some of those improvements:

1. Mechanical valve lash adjusters (reduces friction)
2. Lightweight pistons (reduces inertia)
3. Short skirt, Molybdenum coated pistons (reduces friction)
4. Increased compression ratio (improved power output)
5. Improved cylinder head design (improved cooling)
6. Improved induction system (improved breathing)

As a result of these enhancements, some engines may exhibit some engine noise during the warm-up period after a cold start-up. This noise is a consequence of the engine improvements and is not, in any way, an indication of any engine problem.

A light engine knock, after cold start, that gradually dissipates as the engine warms up and is virtually undetectable (from inside the vehicle) once the engine has reached operating temperature, is a normal characteristic of these engines. Repair attempts to reduce this type noise are generally unsuccessful.

If you have a vehicle in which an engine noise is other than that as described above, be sure to take the time to check all possible causes prior to condemning the internal components of the engine.

Before replacing parts in an attempt to eliminate engine noise, the engine should be inspected externally and internally for another source of noise. A look at the engine oil is a good place to start. New engines will have a small amount of metal particles in them, but after that should be relatively free of metal.

Another area to look at would be the timing belt tensioner and the belt and sprockets. There have been cases where noises coming from under the belt covers and from external components sound like a deep internal knock.

If a customer complains of a cold engine knock, and the cause is from the improvements listed above, please reassure him/her that no permanent engine damage will occur. If the noise persists and is still clearly audible when the engine is warm, please consult your DSOM.

11 OXYGEN SENSOR REMOVAL TOOL

Be advised that special tool P/N 499990120 (which supersedes 499990110) is the only tool recommended for removal of the O2 Sensors.

Use of this tool will lessen the chance of damaging the threads during the removal process.

This individual tool is not available through normal SOA parts channels, as it is included in your dealership's primary tool kit. For replacement of this individual tool, please contact Kent-Moore directly at 1-800-345-2233.

10 BLOWER MOTOR NOISE

If you get a complaint of a noise from the blower motor on 2002MY Legacy vehicles, please refer to the November 2001 issue of the T.I.P.S. for the inspection and repair procedure.

Leaking of coolant at the upper radiator hose is occasionally mistaken for coolant leakage from the radiator, when in fact it has oozed out of the radiator hose connection. The following information will help you correctly diagnose and repair this concern.

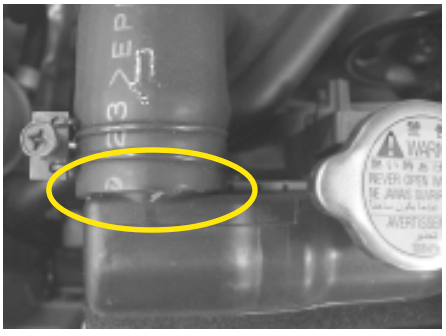
Models Involved

Legacy, Impreza and Forester

Condition

If coolant is found on the clinching plate of the upper radiator tank, it is occasionally misjudged that the coolant has leaked from the radiator. (See image below).

However, it is actually that the coolant has leaked out of the radiator hose connection. So you must first try to trace the coolant leakage from the upper radiator hose as shown in the picture below:



Note: The leakage of coolant is characteristic of the following phenomena:

1) Most of the oozing of coolant cannot be found by a conventional pressure tester.

2) Even though hose clamp is insufficiently tightened, coolant will not leak when static pressure 21.3psi (147KPa) is applied.

3) Leaking is found when hose is shaken at 14psi, corresponding to actual engine movement during running.

Repair Procedures

TROUBLE SHOOT: STEP 1

After checking the location of oozing, clean the surrounding area.

Check the remaining length of the clamp bolt after it has been tightened.

If it is too loose, adjust it. (Specified value: 5 to 10mm.)

Fill radiator to proper level. After confirming it is completely filled, apply static pressure with pressure tester up to 22.8psi (157KPa) and shake the hose in the area where the oozing was first located.

Check whether coolant leaks from connection or not.

If coolant leakage is not found, the process is complete.

If coolant leakage is found, go to "Trouble Shoot: Step 2".

TROUBLE SHOOT: STEP 2

Disconnect hose where coolant leaks.

Check if inner surface of hose is damaged or foreign matter is stuck inside.

If yes, replace hose with new one or remove foreign matter.

1) Check if damage or dent is found on surface of pipe.

If yes, replace part with new one or repair as necessary.

2) Connect hose to the pipe and clamp it tightly.

Check to specifications length of clamp bolt after it has been tightened and adjust it if it is beyond the specified value.

Specified value: 5 to 10mm. (See figure #1, below).

3) Fill the coolant up to full, then check leakage according to "Trouble Shoot: Step 1".

4) If no leakage from connection is found, the process is complete.

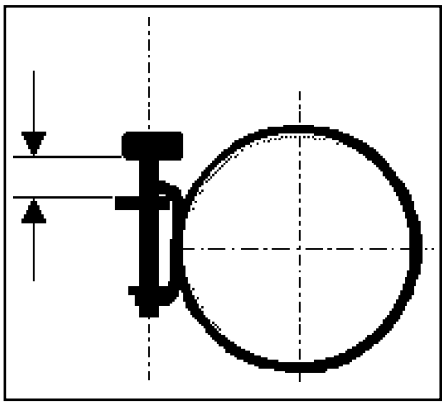
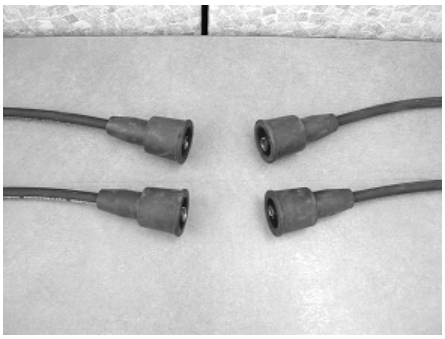


Figure 1

02 SOA REPLACEMENT IGNITION WIRE SET

Please note there has been a part number switch specific to the 1998 Forester Model:



SOA430Q121 (pictured above) is the Correct Part Number for the 1998 Forester model.

SOA430Q122 (pictured above) is the previously listed part number which is not applicable to the 1998 Forester model.

NOTE: This change will be reflected in the April 1st Edition of the Dealer Parts Price Book.

2003 CALENDAR OF SUBARU HOLIDAYS

New Year's Day
Wednesday, January 1, 2003

Presidents' Day
Monday, February 17, 2003

Memorial Day
Monday, May 26, 2003

Independence Day
Friday, July 4, 2003

Labor Day
Monday, September 1, 2003

Thanksgiving
Thursday, November 27, 2003
Friday, November 28, 2003

Christmas
Thursday, December 25, 2003
Friday, December 26, 2003

New Year's Day
Thursday, January 1, 2004

"TechTIPS" INPUT & SUGGESTIONS

This is **your** chance to offer suggestions for use in future issues of *TechTIPS!*

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 T.I.P.S. 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:** _____