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 GENERAL MANAGER
 PARTS MANAGER
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IMPORTANT - All Service Personnel Should Read and Initial in the boxes provided, right.

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QUALITY DRIVEN® SERVICE

SERVICE BULLETIN

APPLICABILITY: 2013MY Impreza 2.0L NA Models
 2013MY XV Crosstrek™

NUMBER: 11-127-13R

DATE: 01/16/13

SUBJECT: ECM Reprogramming Availability for DTCs
 P0017 & P0019

REVISED: 01/21/13

Diagnostic Procedures for DTCs P0016, P0017,
 P0018 and P0019

INTRODUCTION

This Bulletin announces a diagnostic procedure and the availability of updated ECM reprogramming files to address DTCs P0017 and P0019. The diagnostic procedure is also applicable to DTCs P0016 and P0018.

COUNTERMEASURE IN PRODUCTION

A logic change was incorporated into production in mid-December, 2012 starting with the following VINs:

| MODEL | TYPE | STARTING VIN NUMBER |
|-----------------------------|--------|---------------------|
| Impreza and XV Crosstrek | 4-Door | D*019203 |
| | 5-Door | D*826233 |

SERVICE PROCEDURE / INFORMATION

NOTE: The Flow Charts on pages 4 (Intake) and 5 (Exhaust) summarize the Service Procedures.

- **Be sure to confirm the latest SSMIII software version number, 1.36.50.7 dated January, 2013 (or later) has been installed before performing this procedure.** Without it, data for Variable Valve Timing (VVT) Exhaust Initial Position Learning Values #1 and #2 will not be available.
- If the VIN of the vehicle is before the countermeasure, the VVT Learning Values will not be accessible until the ECM is reprogrammed with the latest PAK file as outlined in the table on **page 3**. Reprogramming procedures can be accessed from the SSMIII User Guide by clicking on “Help” in the toolbar at the top of the Main Menu screen.
- Connect the SSMIII to the vehicle.
- The current CID number of the ECM must be verified using the table on **pg. 3** to determine whether or not it needs to be reprogrammed before proceeding with the following steps.
- From the Main Menu, select the following options:
 - o All Other Models
 - o Each System Check
 - o Engine Control System
 - o Current Data Display & Save

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

Subaru Service Bulletins are intended for use by professional technicians ONLY. They 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 this Service Bulletin applies to your vehicle, or that your vehicle will have that condition.

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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.

Scroll to the bottom of the Current Data Display list. The last four items will be the VVT Intake and Exhaust Learning Values #1 and #2 as shown in the EXAMPLE below. (*CA = Crankshaft Angle Degrees)

| | | |
|--|------|-----|
| <input type="checkbox"/> VVT initial Position Learning Value #1 | 61.3 | *CA |
| <input type="checkbox"/> VVT initial Position Learning Value #2 | 59.2 | *CA |
| <input type="checkbox"/> VVT Ex initial Position Learning Value #1 | 87.9 | *CA |
| <input type="checkbox"/> VVT Ex initial Position Learning Value #2 | 88.7 | *CA |

For the **INTAKE**, the chart above shows values within the Specified Limits (number crankshaft angle degrees) which are a **MINIMUM of 50** and a **MAXIMUM of 70**. Check the SSMIII data for VVT Advance Angle Amount as shown below.

| | | |
|---|---|-----|
| <input type="checkbox"/> VVT Adv. Ang. Amount R | 0 | deg |
| <input type="checkbox"/> VVT Adv. Ang. Amount L | 0 | deg |

With the engine at idle and at operating temperature, this value must be “0”. If confirmed to be “0”, proceed with the remaining steps on the INTAKE Flow Chart. If not “0”, diagnose and repair the VVT system per the Service Manual.

For the **EXHAUST**, the formula shown below must be used to determine if an ECM replacement is needed. Check the SSMIII data for Exhaust VVT Retard Angle as shown below. The specified range for this value is “0” +/- 10 degrees.

| | | |
|---|---|-----|
| <input type="checkbox"/> Exh. VVT Retard Ang. R | 0 | deg |
| <input type="checkbox"/> Exh. VVT Retard Ang. L | 0 | deg |

First, collect the following values from the SSMIII:

- **A=** Exhaust VVT Retard Angle Value, read with the engine at idle and at operating temperature (This value may be a positive or negative number.)
- **B=** VVT Exhaust Initial Position Learning Value
- **Formula: C = A + B - 90** (The 90 value in the formula represents the midpoint of the Specified Limit range.)

Does the value of C = “0” +/- 10 (degrees)?

1. **Yes-** Perform Inspection Mode and if no DTCs reset, the car is repaired.
2. **No-** Replace the ECM then follow the remaining steps on the Flow Chart.

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Formula Examples:

#1: $A = -3$ $B = 80$ $-3 + 80 - 90 = -13$ (C) so, ECM replacement is required.

#2 $A = 2$ $B = 99.7$ $2 + 99.7 - 90 = 11.7$ (C) so, ECM replacement is required.

#3 $A = 2$ $B = 95$ $2 + 95 - 90 = 7$ (C) In this case, "C" is within the range of +/- 10 degrees. Perform Inspection Mode per Service Manual and if no DTCs reset, repair is complete.

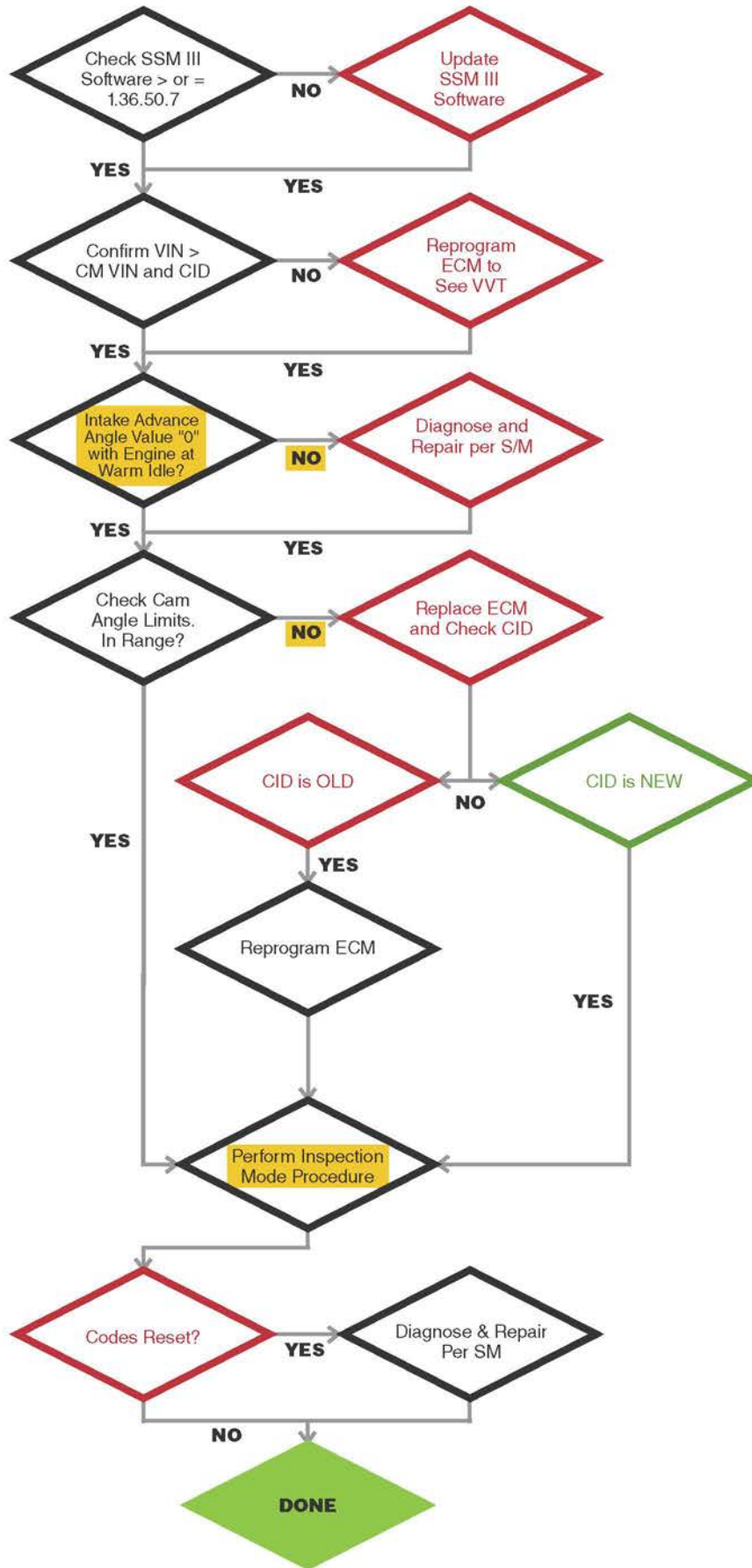
- If the ECM is determined to be OK, clear the memory and perform Inspection Mode to confirm no DTCs reset. If P0016, P0017, P0018 or P0019 reset, diagnose per the applicable Service Manual. If no DTCs reset, the vehicle is repaired.
- If the ECM needs to be replaced, install the latest part number available then verify the CID number is the latest available as shown on the chart below. If the new ECM installed is not the latest (NEW) part number, update it with the appropriate PAK file as listed below. Following reprogramming, confirm the CID then matches the NEW CID NUMBER as listed on the chart below.

| MY | MODEL | ENGINE & EMISSION SPEC. | TRANSMISSION | PAK FILE NAME | NEW ECM PART NUMBER | OLD ECM PART NUMBER | OLD CID NUMBERS | NEW CID NUMBERS |
|------|--------------|-------------------------|--------------|----------------|---------------------|---------------------|-----------------|-----------------|
| 2013 | Impreza | 2.0L CAL | CVT | 22765AE761.pak | 22765AE761 | 22765AE760 | EP5I200G | EP5I400G |
| | | | MT | 22765AE751.pak | 22765AE751 | 22765AE750 | EP5I200F | EP5I400F |
| | | 2.0L FED | CVT | 22765AE741.pak | 22765AE741 | 22765AE740 | EP5I200I | EP5I400I |
| | | | MT | 22765AE731.pak | 22765AE731 | 22765AE730 | EP5I200H | EP5I400H |
| 2013 | XV Crosstrek | 2.0L CAL | CVT | 22765AE871.pak | 22765AE871 | 22765AE870 | EP5I200B | EP5I400B |
| | | | MT | 22765AE861.pak | 22765AE861 | 22765AE860 | EP5I200A | EP5I400A |
| | | 2.0L FED | CVT | 22765AE851.pak | 22765AE851 | 22765AE850 | EP5I200D | EP5I400D |
| | | | MT | 22765AE841.pak | 22765AE841 | 22765AE840 | EP5I200C | EP5I400C |

Accessing Inspection Mode

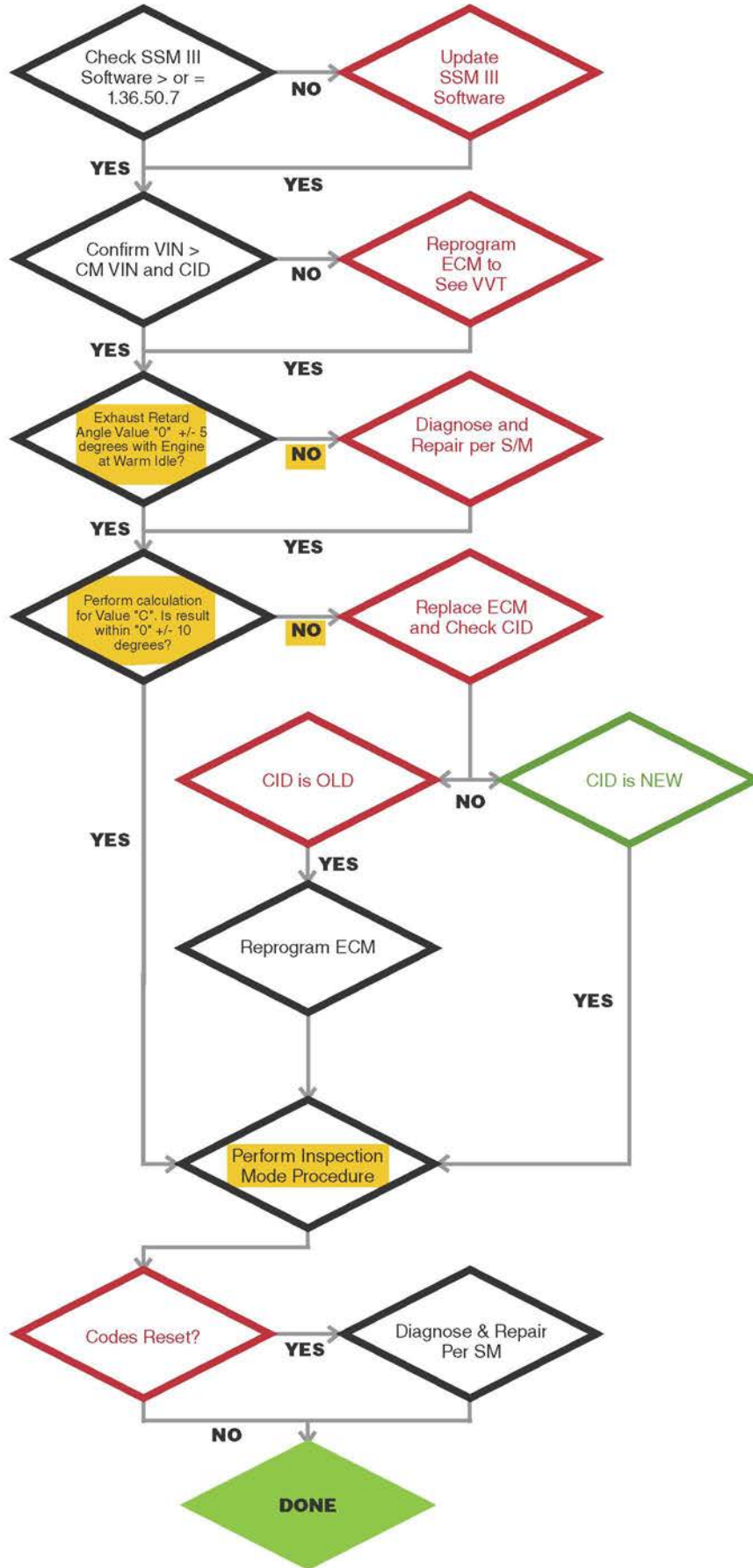
Using the Service Diagnostics tab on the STIS home page, enter your vehicle search parameters (example: 2013 > Impreza). Next, enter the specific DTC into the search term box. Select the applicable link from your search result (example: ENGINE (DIAGNOSTICS) (H4DO) > Inspection Mode > PROCEDURE). Follow the procedure as outlined to completion.

Intake Flow Chart



Continued...

Exhaust Flow Chart



WARRANTY / CLAIM INFORMATION

For vehicles within the Basic New Car Limited Warranty period, this repair may be claimed using the following information:

After reprogramming the ECM and checking the VVT Learning Values, use the following coding according to the repairs performed:

- 1) After Reprogramming the ECM, the VVT Learning Values were found to be within specification:

| LABOR DESCRIPTION | LABOR OPERATION # | FAIL CODE | LABOR TIME |
|---|-------------------|-----------|------------|
| Reprogram ECM, Clear Memory & Perform Inspection Mode | A455-118 | UON-48 | 0.5 |

- 2) After Reprogramming the ECM, the VVT Learning Values were found to be out of specification:

| LABOR DESCRIPTION | LABOR OPERATION # | FAIL CODE | LABOR TIME |
|---|-------------------|-----------|------------|
| Reprogram ECM, Replace ECM, Check CID & Perform Inspection Mode | B455-338 | UON-48 | 0.7 |

If the new replacement ECM has an old CID number, the following operation number can be used with B455-338 in order to update it with the latest PAK file:

| LABOR DESCRIPTION | LABOR OPERATION # | FAIL CODE | LABOR TIME |
|--|-------------------|-----------|------------|
| Reprogram New ECM with Latest PAK File | C455-448 | UON-48 | 0.2 |