

**ATTENTION:**

- GENERAL MANAGER
- PARTS MANAGER
- CLAIMS PERSONNEL
- SERVICE MANAGER

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




QUALITY DRIVEN® SERVICE

## SERVICE BULLETIN

**APPLICABILITY:** 2012MY Impreza with FB Engine  
2013MY BRZ

**NUMBER:** 02-132-12

**DATE:** 08/21/12

**SUBJECT:** DTCs Relating to the AVCS (Active Valve Control System) P000A, P000B, P000C, P000D, P0011, P0014, P0018, P0017, P0019, P0021 & P0024

### INTRODUCTION

The purpose of this Service Bulletin is to provide diagnostic information regarding “AVCS Slow Response” DTCs P000A, P000B, P000C and P000D along with “AVCS System Failure” DTCs P0011, P0014, P0017, P0018, P0019, P0021 and P0024.

### IMPORTANT:

- Read through the diagnostic flow chart and test mode graphs thoroughly then follow the procedures step-by-step **BEFORE** ordering parts or making any repairs.
- It is important to remind customers who perform their own maintenance or have it done elsewhere the importance of **following the Owner’s Manual recommendation for proper oil viscosity, API specification and service intervals.**

### PART INFORMATION

Applicable Parts, Sprocket Assembly - Camshaft

13320AA020, 13320AA030, 13321AA010, 13322AA030, 13322AA040, 13323AA010

### SERVICE PROCEDURE / INFORMATION

Perform the diagnostics outlined in the flow chart contained in this bulletin. Then, follow the repair procedures outlined in the applicable Service Manual for the required component replacement(s) as determined by DTC(s) stored in the ECM memory and your testing results.

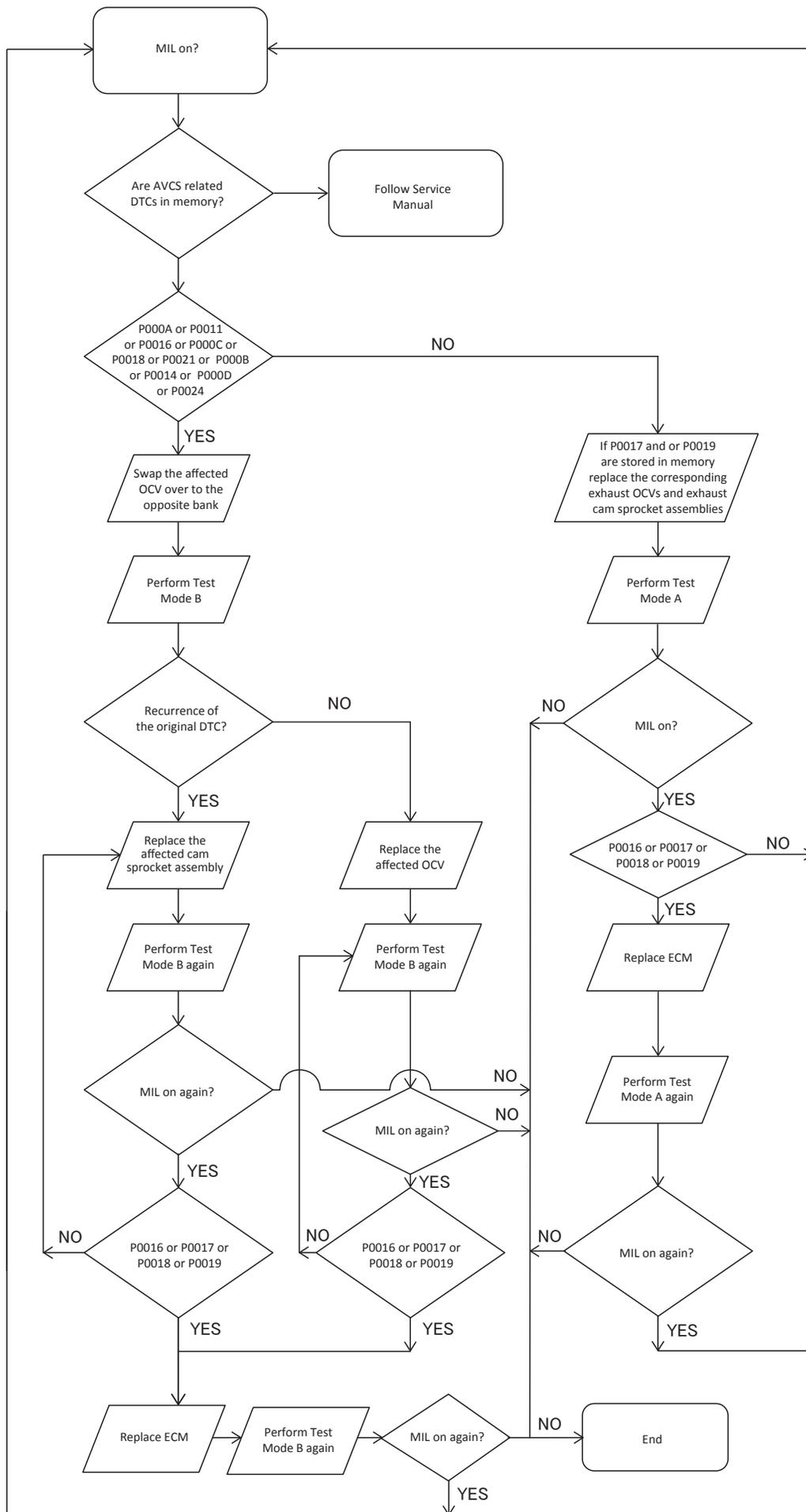
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**CAUTION: VEHICLE SERVICING PERFORMED BY UNTRAINED PERSONS COULD RESULT IN SERIOUS INJURY TO THOSE PERSONS OR TO OTHERS.**

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.



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## Test Modes

PART		ABNORMALITY OF CRANK AND CAM TIMING		SLOW RESPONSE		TARGET ERROR	
Intake VVT	RH	P0016	Mode B	P000A	Mode B	P0011	Mode B
	LH	P0018		P000C		P0021	
Exhaust VVT	RH	P0017	Mode A	P000B	Mode B	P0014	Mode B
	LH	P0019		P000D		P0024	

## Test Modes for AVCS DTCs

### TEST MODES

#### Test Mode A

1. Bring the engine up to operating temperature then shut it off.
2. Restart the engine and maintain the engine speed around 2800 rpm for 10 seconds by applying the accelerator pedal with the shifter in Park position.
3. Leave the vehicle idle for 15 seconds or more.
4. Raise the engine speed to around 2800 rpm for 10 seconds again by applying the accelerator pedal with the shifter in Park position.
5. Leave the vehicle idle for 15 seconds or more then shut off the engine.
6. Perform the above procedure from steps #2 to #5 again.
7. Restart the engine and let the vehicle idle for 3 minutes or more when completed.
8. Confirm if any DTCs or temporary codes are reset in ECM memory.

#### Test Mode B

1. Start the engine and let it idle for 1 minute or more.
2. Drive the vehicle and accelerate it with 50 % accelerator pedal opening angle "D" range (A/T models) for 10 seconds as steadily as you can.
3. Coast the vehicle without applying the accelerator pedal for 10 seconds.
4. Perform steps #2 and #3 again.
5. Stop the vehicle and shut off the engine.
6. Restart the engine and perform steps #2 and #3 again.
7. Stop the vehicle and confirm if any DTCs or temporary codes are reset in the ECM memory.

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ITEMS AS DISPLAYED ON SSM III
VVT Target Chg Angle #1
VVT Target Chg Angle #2
VVT Change Angle #1
VVT Change Angle #2
VVT OCV Duty #1
VVT OCV Duty #2
VVT Aim Angle #1
VVT Aim Angle #2
OCV Current R
OCV Current L
VVT Ex Target Chg Angle #1
VVT Ex Target Chg Angle #2
VVT Ex Chg Angle #1
VVT Ex Chg Angle #2
VVT Ex OCV Duty #1
VVT Ex OCV Duty #2
VVT Ex Hold Lrn Val #1
VVT Ex Hold Lrn Val #2
Exh. OCV Current R
Exh. OCV Current L
Engine Speed
Accel. Sens. No.1 Volt %
Accel. Sens. No.2 Volt %
Throttl Sensor #1 Volt %
Throttl Sensor #2 Volt %
Engine Oil Temperature
Coolant Temp
Engine Run Time
Vehicle Speed
Calculated load value
Ambient Temperature
Cylinder #1 Misfire Count
Cylinder #2 Misfire Count
Cylinder #3 Misfire Count
Cylinder #4 Misfire Count
Battery Voltage
Vacuum Pump

MEANING
VVT Target Change Angle #1
VVT Target Change Angle #2
VVT Change Angle #1
VVT Change Angle #2
VVT OCV Duty #1
VVT OCV Duty #2
VVT Aim Angle #1
VVT Aim Angle #2
OCV Current R
OCV Current L
VVT Ex Target Change Angle #1
VVT Ex Target Change Angle #2
VVT Ex Change Angle #1
VVT Ex Change Angle #2
VVT Ex OCV Duty #1
VVT Ex OCV Duty #2
VVT Ex Hold Learn Value #1
VVT Ex Hold Learn Value #2
Exh. OCV Current R
Exh. OCV Current L
Engine Speed
Accel. Sens. No.1 Volt %
Accel. Sens. No.2 Volt %
Throttle Sensor #1 Volt %
Throttle Sensor #2 Volt %
Engine Oil Temperature
Coolant Temp
Engine Run Time
Vehicle Speed
Calculated load value
Ambient Temperature
Cylinder #1 Misfire Count
Cylinder #2 Misfire Count
Cylinder #3 Misfire Count
Cylinder #4 Misfire Count
Battery Voltage
Vacuum Pump

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**WARRANTY / CLAIM INFORMATION**

<b>LABOR DESCRIPTION</b>	<b>LABOR OPERATION#</b>	<b>FAIL CODE</b>	<b>2012 IMPREZA LABOR TIME</b>	<b>2013 BRZ LABOR TIME</b>
SSMIII Use & DTC Check For Bulletin 02-132-12	B244-400	BAD-42	0.3	0.3
Swap OCVs Test Mode B & Replace OCV	C244-401	BAD-42	1.0	1.0
Swap OCVs, Test Mode B & Replace OCV & Replace ECM	C244-404	BAD-42	1.4	1.4
Swap OCVs, Test Mode B & Replace Cam Sprocket	C244-411	BAD-42	4.8	4.4
Swap OCVs, Test Mode B & Replace Cam Sprocket & Replace ECM	C244-414	BAD-42	5.4	5.0
Replace EXH OCV & CAM Sprocket, Test Mode A	C244-424	BAD-42	4.6	4.2
Replace EXH OCV & CAM Sprocket, Test Mode A & Replace ECM	C244-434	BAD-42	5.1	4.7