

ATTENTION:
 GENERAL MANAGER
 PARTS MANAGER
 CLAIMS PERSONNEL
 SERVICE MANAGER

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

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QUALITY DRIVEN® SERVICE

SERVICE BULLETIN

APPLICABILITY: 2013-19MY BRZ

NUMBER: 02-136-12R

SUBJECT: Oil Seepage Diagnosis and Repair Procedures

DATE: 09/26/12

REVISED: 01/22/21

INTRODUCTION

The purpose of this Bulletin is to provide procedures for the diagnosis and repair of oil seepage which may be coming from the areas listed below:

There are six areas that should be closely inspected if an oil leak is reported by the customer:

1. The 6mm tapped hole casting boss area in the left-hand camshaft cap
2. The sealing surfaces between the camshaft carrier and cylinder head
3. The sealing surface between the cylinder block and the upper oil pan
4. The sealing surfaces of the front timing chain cover
5. The sealing surfaces between either the left or right-hand camshaft cap and/or camshaft carrier
6. The sealing surfaces between the cylinder head block-off plate (on M/T models) or the vacuum pump assembly (on A/T models)

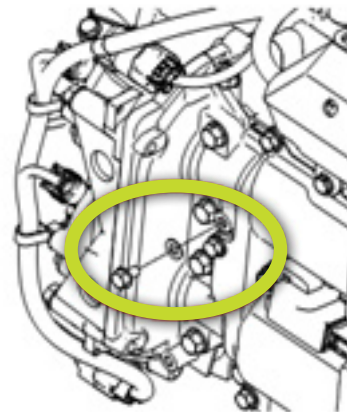
Note: Refer to the April 2011 issue of TIPS for more information on Fluid Leak Detection.

If oil seepage is verified coming from the 6mm threaded hole in the left-hand camshaft cap, install the specified bolt and flat washer.

Bolt: Part# 800206180

Washer: Part# 031106000

Tightening Torque: 6.4 +/- 0.5 Nm
 (57 +/- 4 inch-pounds)



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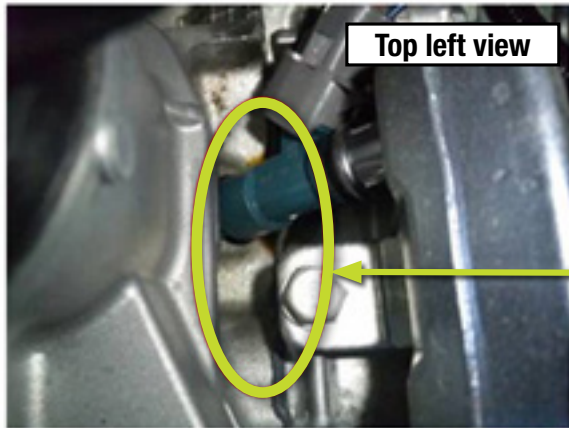
CAUTION: VEHICLE SERVICING PERFORMED BY UNTRAINED PERSONS COULD RESULT IN SERIOUS INJURY TO THOSE PERSONS OR TO OTHERS.

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.

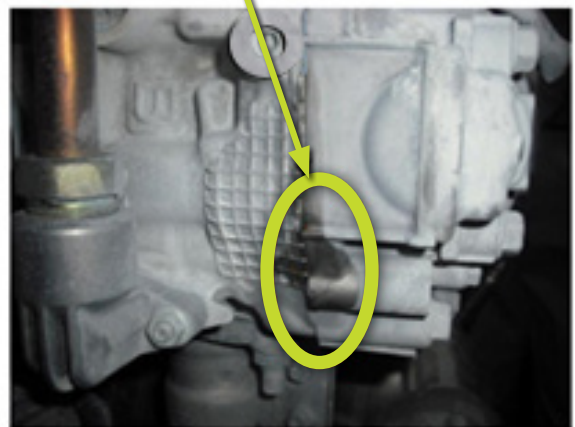
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ISO 14001 is the international standard for excellence in Environmental Management Systems. Please recycle or dispose of automotive products in a manner that is friendly to our environment and in accordance with all local, state and federal laws and regulations.

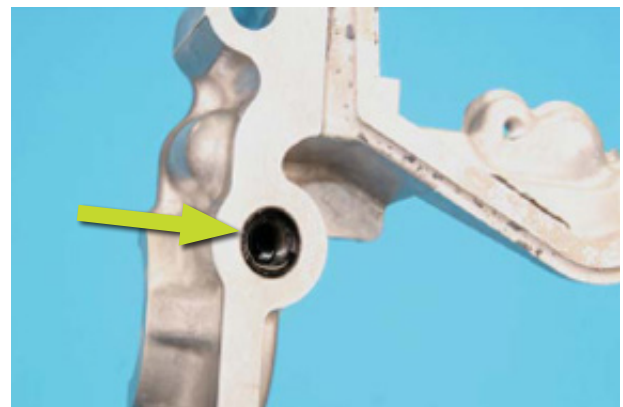
If oil seepage is verified coming from between the cam carrier and the cylinder head as shown in the photos below, remove the cam carrier. Clean the machined sealing surfaces thoroughly and then re-seal using Liquid Gasket ThreeBond 1217H (SOA868V9610) or equivalent*. As shown in the photos below, the o-rings between the cam carrier and the cylinder head will need to be replaced as they are not re-usable. This would also be a good time to clean the Active Valve Control System (AVCS) filter screens which are contained in the cam carriers and shown in the photos below. **NOTE:** The filter screens are one-time use and must be replaced if they need to be removed. The replacement filter part # is 14451 AA 050.



Cam carrier seepage seen from top left and lower right side of engine



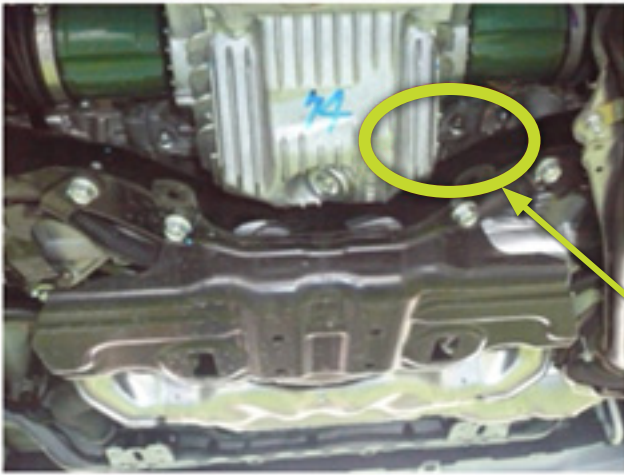
One-time use cam carrier o-rings which must be replaced.



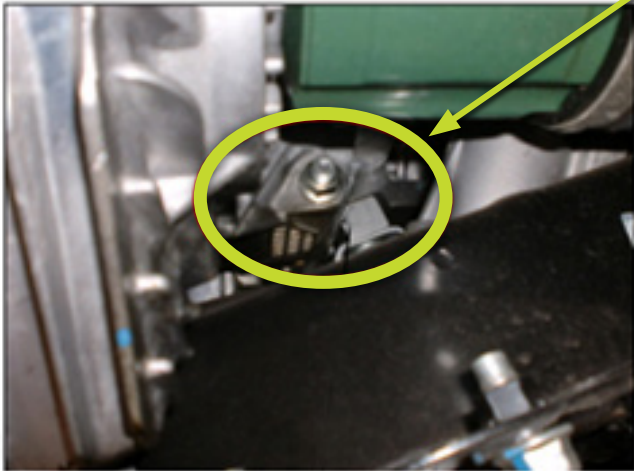
AVCS filter screens must be replaced if removed.

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If you find oil seepage between the cylinder block and upper oil pan, remove the upper oil pan, clean the machined sealing surfaces thoroughly and then re-seal using Liquid Gasket ThreeBond 1217H (SOA868V9610) or equivalent*. In addition, the o-rings between the upper oil pan and the cylinder block along with those between the upper and lower oil pan will need to be replaced as they are also one-time use items.

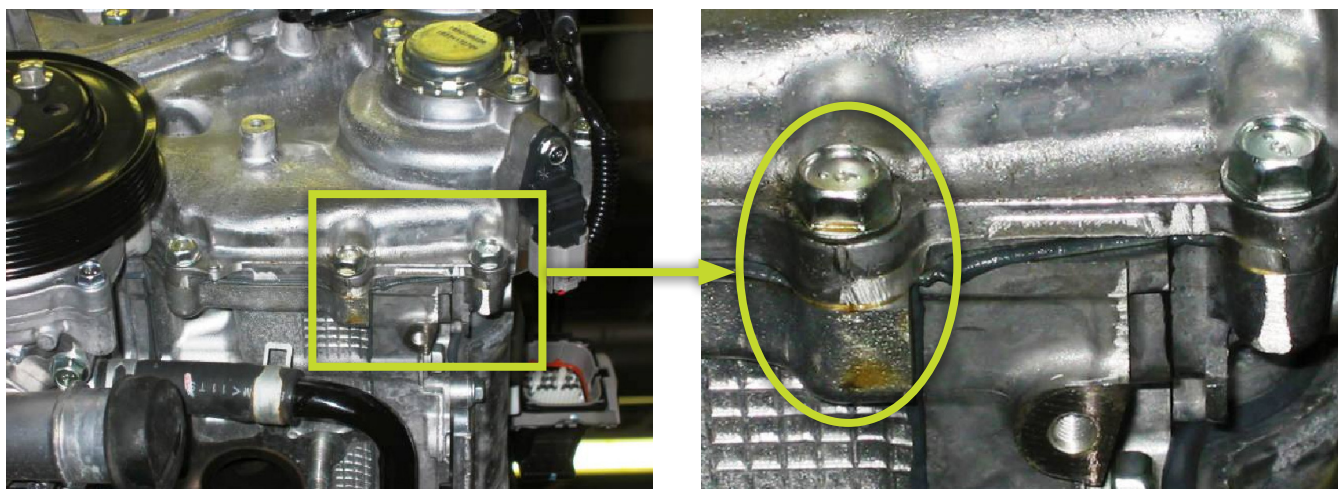


These photos show areas of seepage coming from the upper oil pan to engine block sealing surfaces.



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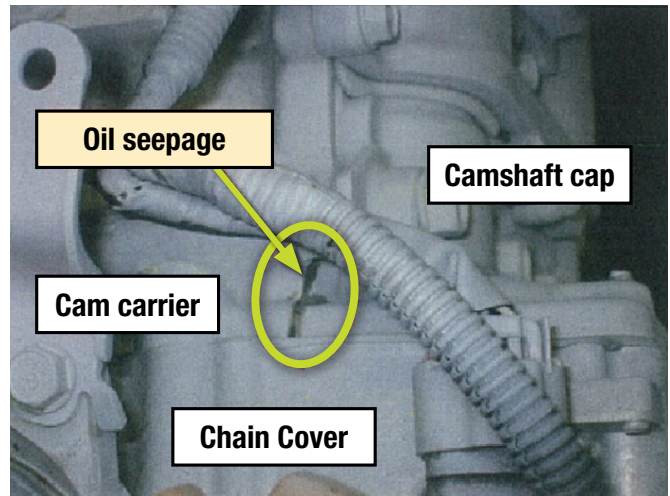
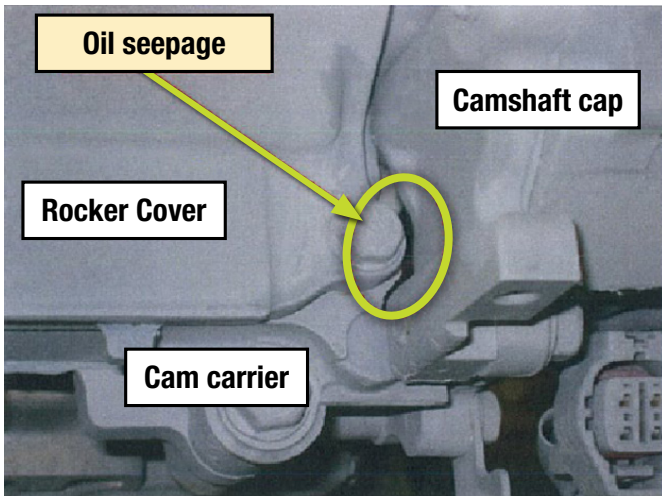
NOTE: Only reseal the front chain cover **AFTER** confirming there is no oil seepage coming from the either cam retainer cap (area 1) and / or the cam carrier (area 2) as previously described.



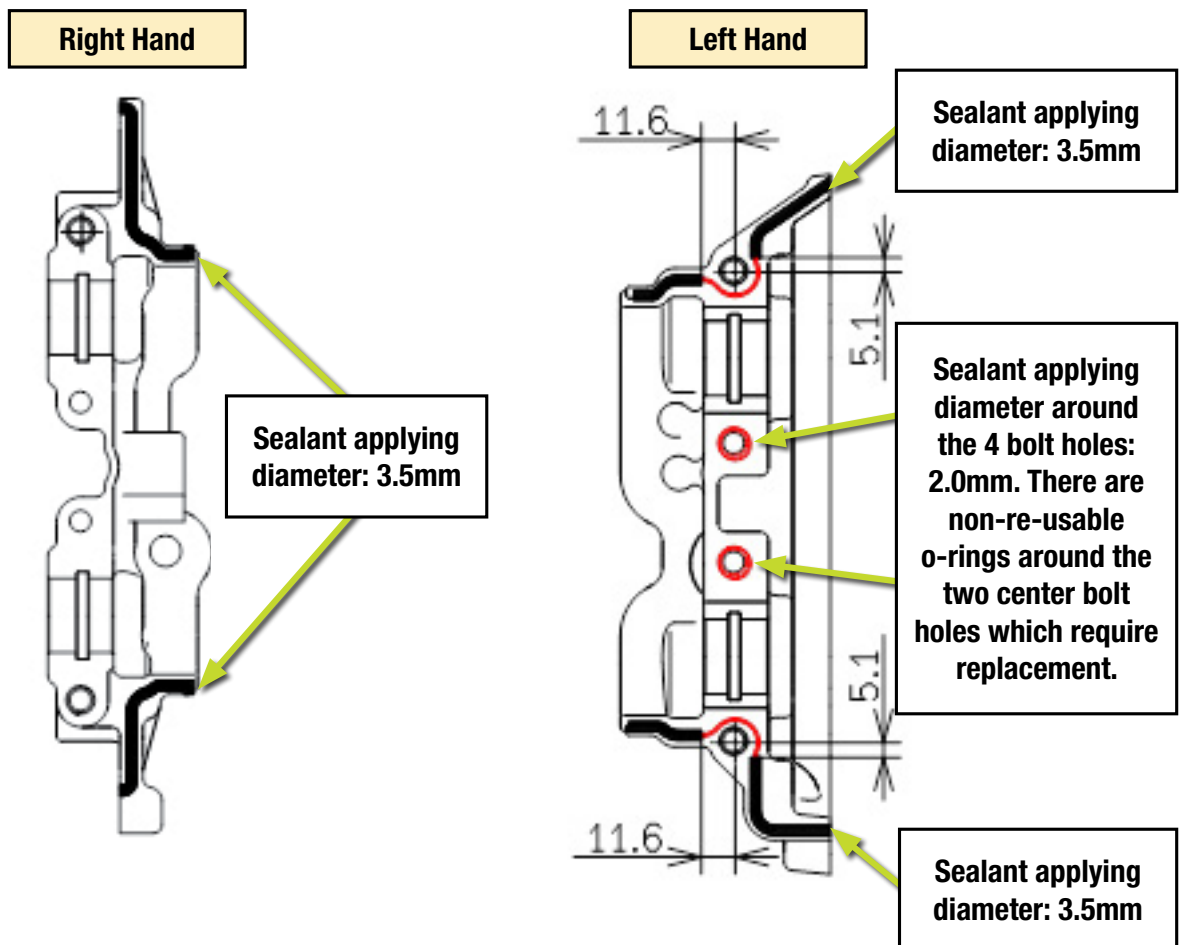
1. If there are no oil droplets found on the engine under-cover or the lower radiator hose, thoroughly clean the chain cover sealing area along with the surrounding cylinder head and crankcase areas. Re-check for oil seepage again at the next service interval.
2. If the front chain cover is leaking and needs to be resealed, follow the repair procedure in the applicable Service Manual. Thoroughly clean and inspect the sealing surfaces then re-seal using Liquid Gasket ThreeBond **1217H (SOA868V9610)** or equivalent*.

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If oil seepage is verified coming from the front camshaft cap and/or camshaft carrier as shown in the photos below, remove the cam cap and clean both surfaces thoroughly before applying sealer. **Note:** The 2 o-rings between the camshaft cap and the cam carrier will need to be replaced as they are not re-usable.

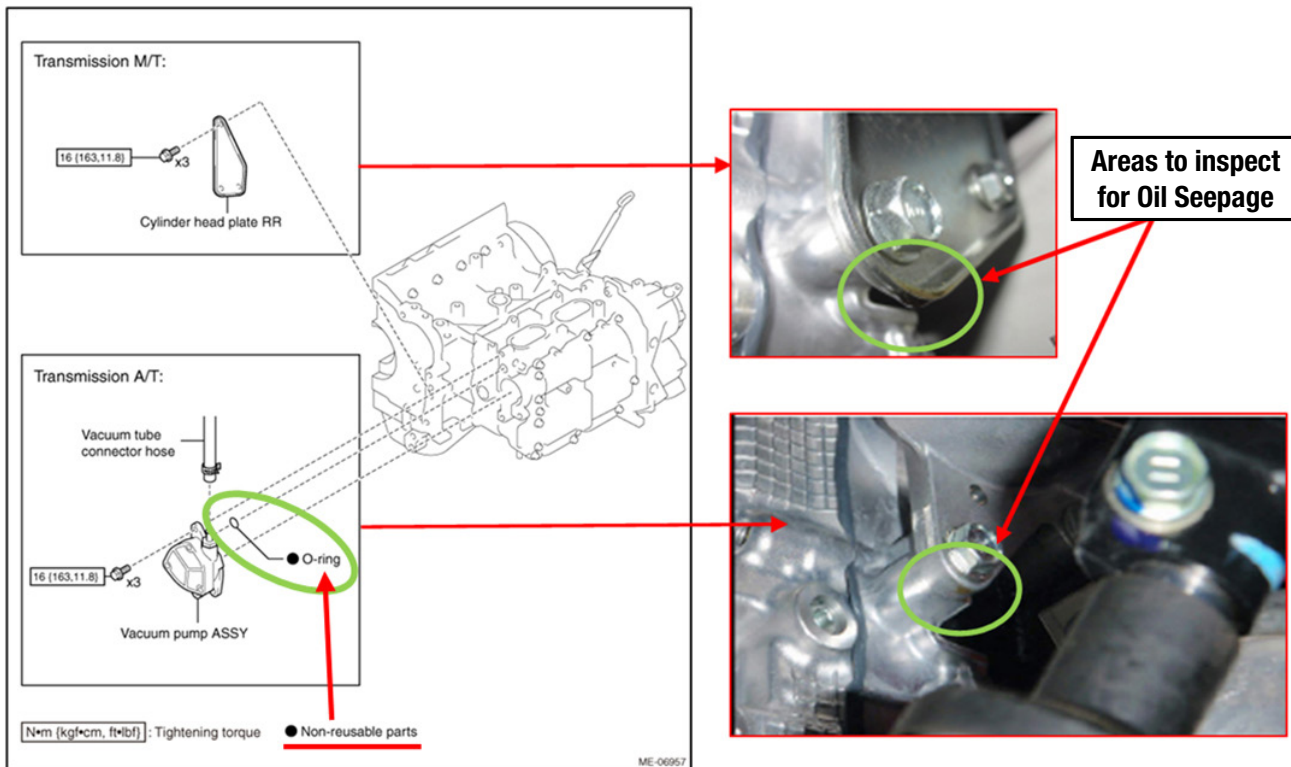


Apply Liquid Gasket, ThreeBond 1217H (SOA868V9610) or equivalent* as shown below:



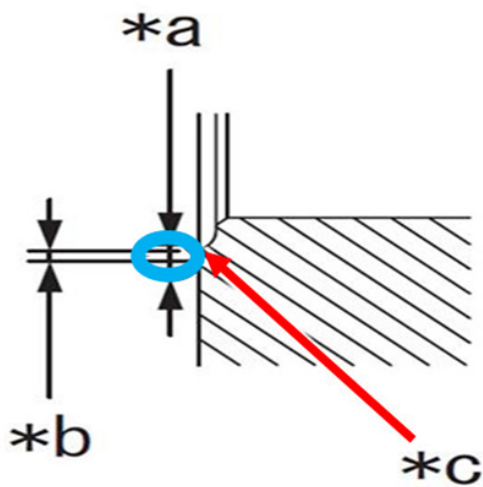
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If oil seepage is verified at the bottom of the cylinder head block-off plate (on M/T models) or bottom of the vacuum pump assembly (on A/T models), the source may be the area between the cam carrier and the intake cam cap. The seeped oil then collects at the bottom of the block-off plate or vacuum pump as shown in the photo and illustration below.

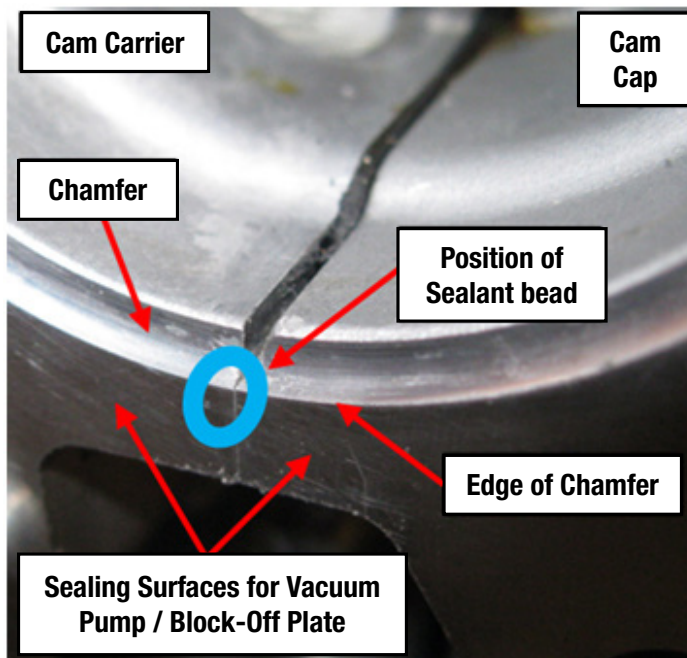


IMPORTANT: ALWAYS replace the small vacuum pump o-ring as it is a **one-time use item**.

Remove the cylinder head block-off plate (or vacuum pump) following the procedure outlined in the applicable Service Manual and thoroughly clean all the machined sealing surfaces. Be sure to trim away any sealant which may have squeezed out during installation of the intake cam cap onto the cam carrier. Apply ThreeBond 1217H (SOA868V9610) sealant as shown in the reference illustrations below.



*a	Selant Bead Diameter: 2.0 - 4.0mm
*b	Location of bead: Within 1.0mm of Chamfer Edge
*c	Edge of Chamfer



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COUNTERMEASURES

INSPECTION AREA	COUNTERMEASURE	STARTING VIN#	STARTING ENGINE #
1	Elimination of 6mm Tapped Hole in Boss of Camshaft Cap	D*600112	0802437
2	Additional Sealer between Cylinder Head and Cam Carrier	D*600979	0808647
3	Additional Sealer between Engine Block and Upper Oil Pan	D*601429	0811545
4	Additional sealer for Chain Cover	D*601688	0814630

WARRANTY/CLAIM INFORMATION

For vehicles within the Basic New Car Limited and / or Powertrain Warranty period, these repairs may be claimed using the following information:

AREA NUMBER	LABOR DESCRIPTION	LABOR OPERATION #	TRANMISSION TYPE		FAIL CODE
			6MT	6AT	
1	OIL SEEPAGE REPAIR, LH CAM CAP THREADED BOSS	B243-611	0.3		AFR-34
	ENGINE OIL &/or COOLANT LEAK TESTING & DIAGNOSIS	C245-001	0.4		
2	ENGINE R&R FOR CAMSHAFT SERVICING	B293-100	2.8	3.3	AFV-34
	LH CAM CARRIER TO CYL HEAD SEALER &/or O-RING R&R	C293-002	3.6		
	RH CAM CARRIER TO CYL HEAD SEALER &/or O-RING R&R	C293-001	3.7		
	BOTH CAM CARRIER TO CYL HEAD SEALER &/or O-RING R&R	C293-004	4.5		
	ENGINE OIL &/or COOLANT LEAK TESTING & DIAGNOSIS	C245-001	0.4		
3	H4 ENGINE R&R FOR SHORTBLOCK & ENGINE SERVICING	B293-300	2.8	3.3	AFV-34
	OIL EXTENSION HOUSING (Upper Oil Pan), "O" RINGS &/or SEALER R&R	C295-023	2.4		
	ENGINE OIL &/or COOLANT LEAK TESTING & DIAGNOSIS	C245-001	0.4		
4	FRONT CHAIN COVER, SEALER &/or O-RINGS R&R	B245-201	3.2		AVF-34
	ENGINE OIL &/or COOLANT LEAK TESTING & DIAGNOSIS	C245-001	0.4		

AREA NUMBER	LABOR DESCRIPTION	LABOR OPERATION #	TRANMISSION TYPE		FAIL CODE
			6MT	6AT	
5	H4 ENGINE R&R FOR CAMSHAFT SERVICING	B293-100	2.8	3.3	AFV-34
	LH CAM CAP RESEAL	C293-102	4.5		
	RH CAM CAP RESEAL	C293-101	4.6		
	BOTH CAM CAP RESEAL	C293-104	5.9		
	ENGINE OIL &/or COOLANT LEAK TESTING & DIAGNOSIS	C245-001	0.4		
6	VACUUM PUMP BLOCK-OFF PLATE &/or SEALER R&R	B533-263	0.3	n/a	AFV-34
	ENGINE OIL &/or COOLANT LEAK TESTING & DIAGNOSIS	C245-001	0.4		
	BRAKE VACUUM PUMP, O-RING &/or SEALER R&R (NOTE: A533-262 Includes Leak Testing and Diagnosis.)	A533-262	n/a	0.7	

***See Service Bulletin 01-167-08R for recommended and alternative sealing materials.**

NOTE: Liquid gasket ThreeBond **1217H** can be claimed using part number **SOA635305**, quantity one (1) per repair order. This part number is non-orderable and used for claim purposes only.

REMINDER: SOA strongly discourages the printing and/or local storage of service information as previously released information and electronic publications may be updated at any time.

Always refer to STIS for the latest service information before performing any repairs.