TOYOTA Service Bulletin

Section : Engine
Ref. No. : EG-6020
Date : May.,2006

Area Application : Europe
Model Name : TOYOTA RAV4, COROLLA, COROLLA VERSO, MR2, AVENSIS, CELICA
Model Code : ZZT22#, ZZT25#, ZZE11#, ZZE12#, ZNR121, ZZT230, ZZW30, ZCA2#

Subject : ZZ ENGINE OIL CONSUMPTION REPAIR METHOD BY OPTIFIT ENGINE SHORT BLOCK

This Service Bulletin is to inform you of the Production improvement and field fix repair method for the subject concern. (OPTIFIT is the equivalent part of the genuine part.) Should you have customer complaints, repair the vehicle according to the information given below. Repair method is applicable to vehicles produced BEFORE the Production change effective VIN's shown below.

DESCRIPTION OF PHENOMENON

Engine lubrication oil consumption may increase if the vehicle is driven frequently with high speed.

PRODUCTION IMPROVEMENT

Piston's cooling and lubrication performance has been improved.
Lubrication oil quantity in the engine has been increased.

Part No. Information :

Previous Part Number	New Part Number (OPTIFIT)	Parts Name	Applicable Model
11400-0D061	11400-0D061-84	Block Assy, Short	Avensis, ZZT221
11400-0D142(3)	11400-0D143-84		Avensis, ZZT251 Corolla Verso, ZNR11
11400-22061	11400-22061-84		Celica, ZZT230 MR2, ZZW30 TOYOTA RAV4, ZCA2# (May 2000 - July 2003)
11400-0D031(2)	11400-0D032-84		Avensis, ZZT220, ZZT250 Corolla, ZZE112, ZZE121 (TMUK, TMMT built Corolla only)
11400-22080	11400-22080-84		Corolla, ZZE112, ZZE121 Corolla Verso, ZZE120 (TMC built Corolla only)
11400-0D021(2)	11400-0D022-84		Corolla, ZZE111, ZZE120 (TMUK, TMMT built Corolla only)
11400-22070	11400-22070-84		Corolla, ZZE111, ZZE120 (TMC built Corolla only)
15301-0D010	15301-0D011	Gauge Sub-assy, Oil	All (except ZZW30 - MR2)

Production Effective :

VIN	Implementation Date	Model Name	Model Code	Production Plant
SB1KZ20E70E105289	April, 2005	Corolla HB(5 door)	ZZE121	TMUK
SB1JZ20E60E105540		Corolla HB(3 door)		
SB1BZ56L90E036113		Avensis	ZZT250	

VIN	Implementation Date	Model Name	Model Code	Production Plant
NMTBZ28EX0R106364	April, 2005	Corolla SD/WG	ZZE121	TMMT
NMTEZ16R00R013916		Corolla Verso	ZNR10	
JTDBZ28E460122962	May, 2005	Corolla SD/WG	ZZE121	TMC
SB1BR56L90E129522	July, 2005	Avensis	ZZT251	TMUK
NMTER16R20R054936	July, 2005	Corolla Verso	ZNR11	TMMT
JTD DR38T6 00189857	July, 2005	Celica	ZZT230	TMC
JTD FR3201 00074980		MR2	ZZW30	
JTE XR20V6 00026951		TOYOTA RAV4	ZCA2#	
SB1KM28E80F011788	September, 2005	Corolla HB	ZZE120	TMUK
NMTBM28E70R056389		Corolla SD/WG		TMMT
JTDBM20E700093572		Corolla HB/SD/WG		TMC

Applicable to vehicles made at TMUK, TMC, and TMMT Plants. Distinguishing method is by checking the 1st digit of the 17-digit VIN: S = TMUK, J = TMC, N = TMMT

FIELD FIX REPAIR PROCEDURE

In order to solve any customer complaints, replace engine short block to OPTIFIT part and replace oil gauge sub-assembly (except MR2) by following the above parts information table.

After finishing with the engine repair, return the original engine short block to Toyota Part Center as specified at the end of this document.

FITTING INSTRUCTIONS

1. Carefully read through the relevant engine repair manual with regards to short block replacement.
2. Before starting to remove the engine block from the vehicle, make sure you have all necessary gaskets, seals and sufficient amount of FIPG material.
   NOTICE:
   In order to apply the FIPG material on the timing chain cover properly, the engine assembly should be removed from engine bay. Otherwise, FIPG application can not be done correctly, which might lead to oil leakage, especially at the three point joint area (block, head and cover joining point).
3. Clean the engine compartment before installing the new engine. Do not steam clean!
4. Thoroughly check the cooling system.
5. Fit the engine short block by following the repair manual instructions.
6. Thoroughly clean the intake and exhaust manifolds. Use an airline to blow out any loose particles.
7. After installing the new OPTIFIT short block fill up the engine with appropriate engine oil according to the following table.

CAUTION:

Increased oil level is part of the countermeasure. Please always make sure to increase the engine oil quantity (except in MR2).

NOTICE:

On all models, except MR2, please replace oil level gauge to modified one (Min.- Max. range has been shifted upwards by 10 mm).

Model Name	Model Code	Oil Volume (dry fill)	Oil Level
Avensis (all models)	ZZT22#, ZZT25#	to 4.7 liter	Original + 0.5 liter
Corolla (all models)	ZZE11#, ZZE12#	to 4.7 liter	Original + 0.5 liter
Corolla Verso (all models)	ZZE122, ZNR1#	to 4.7 liter	Original + 0.5 liter
Celica	ZZT230	to 4.7 liter	Original + 0.5 liter

Model Name	Model Code	Oil Volume (dry fill)	Oil Level
MR2	ZZW30	to 4.2 liter	Original (DO NOT OVERFILL)
TOYOTA RAV4 (all models)	ZCA2#	to 4.7 liter	Original + 0.5 liter

ENGINE OIL SPECIFICATION

Model Name	Model Code	API Grade	SAE Viscosity (recommended)
Avensis	ZZT22#, ZZT25#	SJ "Energy-Conserving" or SL "Energy Conserving" multigrade motor oil	**Temperature range:** 1. -15°C to 35°C SAE 10W-40 2. -30°C to 40°C SAE 5W-30 (preferred)
Corolla	ZZE11#, ZZE12#		
Corolla Verso	ZZE122, ZNR1#		
Celica	ZZT230		
MR2	ZZW30		
TOYOTA RAV4	ZCA2#		

We recommend TGMO Fuel Economy, SAE 5W-30 type engine oil. As for the specification details, please refer to Toyota Genuine Motor Oil, Dealer Guide.

WHEN FIRST STARTING THE ENGINE

1. First of all, re-check the level of the engine oil.
2. To properly lubricate the moving parts of the engine, you must first crank the engine using the starter-motor only. (Remove Fuel Pump (C/OPN RLY) relay or disconnect the connector of each injector to stop fuel supply) Then wait for the oil pressure indicator on dashboard to go out. Only then you can be assured that the engine is properly lubricated.

You can now carefully start the engine, and:

- Check oil pressure, coolant temperature, running performance and idling speed.
- Check for any abnormal noise or smoke.
- Check for engine coolant leak.
- Check for engine oil leak.
- Check for fuel leak.
- Check the blow-by gas amount at idle.

If all above is ok, a trial run should be made to check the engine's performance.

NOTICE:

During the test drive avoid putting high strain on the engine, and respect the run-in guidelines as specified in this manual.

After completion of the test drive, check the coolant temperature, check for leaks and check the levels of coolant and engine oil. Make sure no air is contained in the cooling system. Check the tightening-torque of all nuts and bolts that were loosened during the installation.

RUN-IN PERIOD OF OPTIFIT ENGINE SHORT BLOCK

To ensure a trouble free operation of the newly installed engine, the following run-in instructions should be explained to the customer. This guideline will greatly enhance the durability and reliability of the engine. It is important that the new engine is not exposed to too much strain during the first 1500 km of use. Please note that warranty claims may not be accepted if the damage is caused by not following these guidelines.

The following run-in guidelines are to be respected by the the customer during the first 1500 km of use. (When you return the vehicle to the customer, these points should be clearly explained to him/her.)

- Do not rev the engine over 4000 rpm.
  After the first 1500 km you may gradually increase to higher rpm.
- Change gears smoothly. Do not downshift abruptly.
- Do not accelerate at full throttle in any gear.

- Do not drive any faster than 100 to 120 km/h.
- Avoid driving the engine for long periods at a constant speed, either fast or slow.
- Do not use Liquefied Petroleum Gas (LPG). Use the prescribed fuel instead.
- Do not tow a trailer during the first 1500 km.

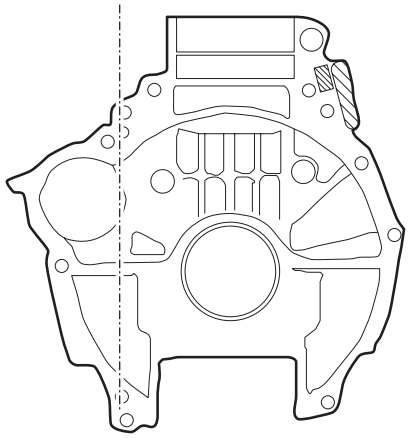
REPLACED SHORT BLOCK RETURN CONDITION

The original engine short block after completing the repair, should be returned to TPCE via reverse logistics as soon as possible. In order to get the replaced engine short block back in good condition, please strictly follow the conditions listed below.

- Remove and dispose of the oil filter from the engine block.
- Make sure not to leave any coolant in the water jackets around the cylinders. If coolant leaks during transport, cylinder liner corrosion will occur.
- Do not put any other parts beside or inside the engine short block, which might damage the block during transport.
- Do not remove the piston and connecting rod sub-assemblies from the cylinder bores.
- Apply clean engine oil to the wall of each cylinder liner.
- Rotate the crankshaft until all pistons have been reached the center level of their stoke.
- Put the original short block into a big plastic bag and close the bag tightly.
- Return the replaced short block in the same returnable plastic boxes / cardboard box that was used to pack the OPTIFIT unit.
- Make sure to fill out the "Oil Consumption Check Sheet" that includes some basic vehicle data and the measured oil consumption level and put back the sheet in the plastic box.
- Ensure the short block is correctly placed in the cardboard box / plastic box.

IF ENGINE NUMBER NEEDS TO BE CHANGED IN THE VEHICLE DOCUMENT (this applies to certain countries only)

The original engine serial number has been erased during the remanufacturing process. The engine ID mark (1ZZ, 3ZZ or 4ZZ) has been kept at its original places stamped in the upper part of the cylinder block on the transaxle side.



: Original Serial Number
: Engine Type ID Mark

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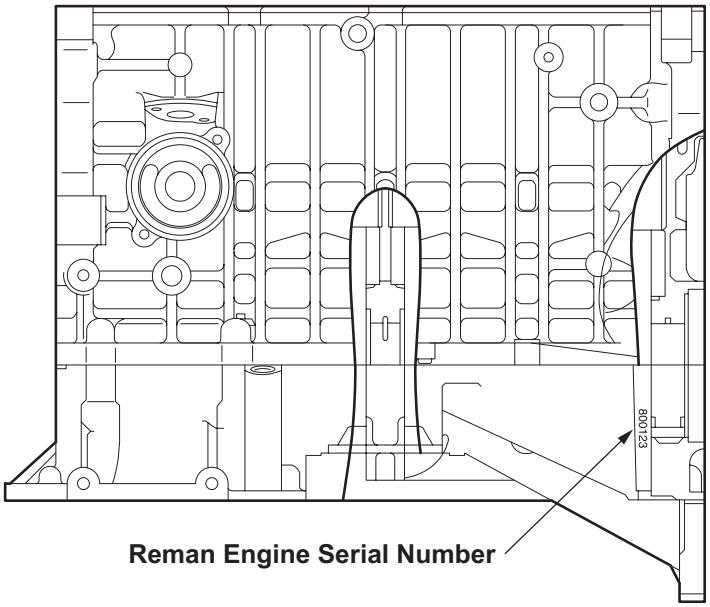
A new serial number has been engraved by needle marker into the lower crankcase as shown on the drawing.

This is a six digit running number starting with:

(a)8 - for EU-made engines

(b)9 - for JPN made engines



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