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Recommended Engine Oil For 2004-2007 Chrysler Engines

The following information refers to recommended engine oil for 2004-2007 Chrysler engines. This information should be considered any time the engine oil is added or changed.

The symbol shown in **Figure 1**, below, is found on the front of the container, and signifies the oil quality has been certified by the American Petroleum Institute (API).

Only use API Certified engine oils that meet the requirements of



Figure 1 API Symbol

Chrysler's Material Standard MS-6395. MS-6395 contains requirements, not addressed by API Certification, that provide additional protection for Chrysler Group engines.

All Chrysler Group gasoline engines, irrespective of model year, should be serviced with API Certified engine oils meeting MS-

6395. Chrysler Group Engines are developed, certified and filled with engine oil of the designated viscosity grade, meeting MS-6395, and should be serviced with the correct viscosity grade engine oil. The table in **Chart 1** (below) contains the correct viscosity grades for the 2004-2007 model years.

Cylinder Head Re-Torque Procedure For 2004-2005 Chrysler 2.4L VIN B, J, X, 1 & 8 Engines

There is updated information on cylinder head re-torque procedures for 2004-2005 Chrysler 2.4L VIN B, J, X, 1 and 8 engines. This information is provided for those who find occasion to re-torque the cylinder head in an attempt to resolve slight leakage conditions.

This information applies to vehicles equipped with a 2.4L engine (sales code ED1, ED2 or EDZ) built between February 1, 2004 and April 5, 2005 (MDH0405XX). When re-torquing the cylinder head bolt(s), be sure to follow the torque sequence as outlined below:

If leakage is evident but there is no external sign of damage to any parts, attempt the procedure below before replacing a cylinder head, cylinder head bolts or cylinder head gasket.

- 1) If hot, allow engine to reach room temperature.
- 2) Remove radiator cap.
- 3) Following the appropriate

procedures, remove the cylinder head cover.

4) Using a six-inch wobble plus extension friction ball and shallow socket, and following the torque sequence shown in **Figure 2** (below), loosen one bolt at a time to 0 torque and then torque that same head bolt to 60 ft.lbs.

5) Repeat step 4 for every head bolt one bolt at a time in sequence.

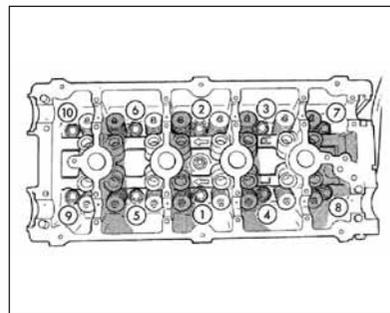


Figure 2 Chrysler 2.4L head re-torque procedure.

6) Verify that each head bolt is at 60 ft.lbs before performing next steps.

7) After all head bolts have been verified to be torqued to 60 ft.lbs follow the torque sequence and turn the head bolts an additional 90° (1/4 turn).

8) Install the cylinder head cover and remaining components and run engine and check for leaks.

Mysterious Squeaking Noise Apparently from 2005 Chrysler 3.3 & 3.8L VIN R & L Engines

Your installer customers may be receiving complaints of a mysterious squeaking noise on 2005 Chrysler 3.3 and 3.8L VIN R and L engines. This noise is intermittent and appears to be coming from the engine compartment, but it may not be an internal engine issue, so explain the following to them.

To determine the cause of the noise, open the hood and inspect the

Engine	Oil Type
2.0L SOHC	5W-20
2.0L DOHC	5W-30
2.4L DOHC	5W-30
2.4L Turbo	5W-30
2.7L	5W-20 or 5W-30 Check Oil Cap for proper usage
3.3L	5W-20
3.5L	10W-30
3.7L	5W-30
3.8L	5W-20
4.0L	10W-30
4.7L	5W-30
5.7L	5W-20

Chart 1 Chrysler viscosity grade chart.

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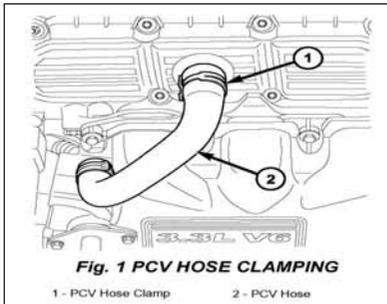


Figure 3 Identifying a squeak on Chrysler 3.3 and 3.8L engines.

PCV hose for signs of contact with the bottom of the wiper module. If the PCV hose is contacting the bottom of the wiper module proceed to the repair procedure. It may be necessary to start the vehicle and apply a light throttle tip-in while looking

to see if the hose is contacting the bottom of the wiper module.

If it is determined contact has occurred, replace the PCV hose with p/n 04781252AE. When replacing, be sure to orientate the PCV hose clamp correctly on the valve cover as shown in **Figure 3**, left.

Main Bearing Caution For 1993-2006 Chrysler 3.5L VIN F, G, K, M & V Engines

Chrysler 3.5L VIN F, G, K, M & V engines from 1993-2006 use two different styles of controlling crankshaft end thrust. One method uses a flanged thrust bearing and the other is a thrust washer arrangement (see

Bearing Type	Flanged Thrust	Thrust Washer
Main Housing Bore	2.6769"-2.6777"	2.7161"-2.7169"

Chart 2

Chart 2, above).

The cylinder blocks are also different to accommodate the specific style of thrust control bearing. Observing the bearing type before inspection and parts ordering will prove beneficial as some aftermarket bearing suppliers only provide one style thrust.

As described in most catalogs, early engines use the flanged thrust bearing, while 1999 and later engines use the thrust washer design.

Cylinder Head Installation For 1999-2006 Chrysler/Jeep 4.7L VIN J & N Engines

The cylinder head bolts on 1999-2006 Chrysler/Jeep 4.7L VIN J & N engines are tightened using a Torque-To-Angle procedure commonly referred to as TTA.

Even though the cylinder head bolts are tightened using torque and an angle procedure, the bolts are not a Torque-To-Yield TTY, which are a single use design. Therefore, TTA bolt re-use is possible if each bolt is "qualified" (examined for neck-down) first.

If the threads are necked down, the bolts should be replaced. One method of checking for neck-down is to use a like-size nut and check to make sure you can easily thread it along the entire threaded area of the fastener.

Once reuse or replacement is determined, follow the steps listed below to install the cylinder heads for these engines.

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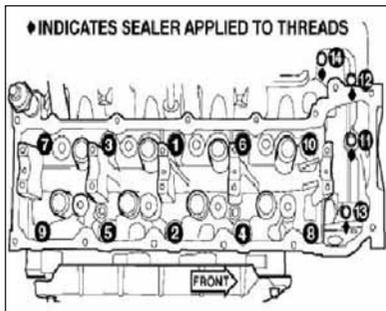


Figure 4 Torque sequence for 4.7L Chrysler/Jeep engines.

1) Clean the cylinder head and cylinder block mating surfaces.

2) Position the new cylinder head gasket on the locating dowels. When installing cylinder head, use care not to damage the tensioner arm or the guide arm.

3) Position the cylinder head onto the cylinder block. Make sure the cylinder head seats fully over the locating dowels. Note: The four smaller cylinder head mounting bolts require sealant to be added to them before installing. Failure to do so may cause leaks.

4) Lubricate the cylinder head bolt threads with clean engine oil and install the ten M11 bolts finger tight.

5) Coat the four M8 cylinder head bolts with Mopar Lock & Seal Adhesive (or aftermarket equivalent), and then install the bolts finger tight.

6) Tighten the bolts in sequence shown above in **Figure 4**, using the following steps and torque values:

1) Tighten bolts 1-10, 15 ft. lbs. (20 Nm).

2) Tighten bolts 1-10, 35 ft. lbs. (47 Nm). Tighten bolts 11-14, 18 ft. lbs. (25 Nm).

3) Tighten bolts 1-10, 90°. Tighten bolts 11-14, 22 ft. lbs. (30 Nm).

Crankshaft Main Bearing Installation Procedure For 2003-2006 Chrysler 5.7 & 6.1L Hemi Engines

The crankshaft main bearing installation procedure for 2003-'06 Chrysler 5.7 and 6.1L engines, with crankshafts previously removed from the cylinder block, is as follows.

It is important to first clean all of the oil off the main bearing journals. Then, determine the maximum diameter of the journal with a 2-3" micrometer. Measure at least at two locations 90° apart at each end of the journal (front to back on crank).

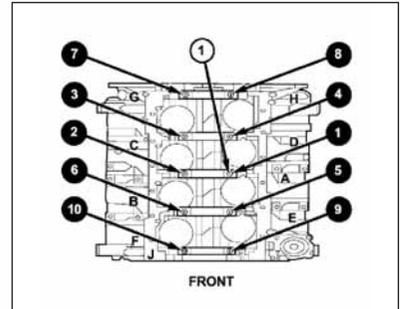


Figure 5 Crankshaft main bearing installation procedure for 2003-'06 Chrysler 5.7 and 6.1L engines.

The maximum allowable taper is .0004" (.008mm) and maximum out of round is .0002" (.005 mm). Compare the measured diameter with the journal diameter specification (see Main Bearing Fitting Chart, **Chart 3**, page 20). Select

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COLOR MARKING	SIZE mm (in.)	FOR USE WITH JOURNAL SIZE
LOWER ORANGE	0.008 mm U/S (0.0004 in.) U/S	64.988–64.995 mm (2.5585–2.5588in.)
LOWER BLACK	NOMINAL	64.996–65.004 mm (2.5588–2.5592 in.)
LOWER GREEN	0.008 mm O/S (0.0004 in.) O/S	65.005–65.012 mm (2.5592–2.5595 in.)

Chart 3 Main bearing fitting chart for 2003-'06 Chrysler 5.7 and 6.1L engines.

inserts required to obtain the specified bearing-to-journal clearance. Desired engine oil clearance is .0007"-.0029" (.020 - .074 mm).

The crankshaft main bearings are "select fit" to achieve proper oil clearances. For main bearing selection, the crankshaft counterweight has grade identification marks stamped into it. These marks are read

from left to right, corresponding with journal number 1, 2, 3, 4 and 5. Service main bearings are coded. These codes identify what size (color) the bearing is.

The main cap crossbolts (A-J) are torqued after final torque of the main cap bolts. Always use a new washer/seal on crossbolts.

After placing the crankshaft in

the block, clean and oil all cap bolts. Install all main bearing caps (1). Install all cap bolts and alternately tighten in two steps using the following sequence:

Step 1) Torque bolts to 20 ft.lbs. (27 Nm) in sequence;

Step 2) Turn main cap bolts an additional 90° turn;

Step 3) Install the crossbolts (A-J) with new washer/gasket. Starting with crossbolt "A", torque each crossbolt to 21 ft.lbs. (28 Nm) torque; and

Step 4) Repeat crossbolt torque procedure.

Engine Whine Noise at Idle on 2005-06 Chrysler 6.1L VIN W Engines

An engine whine noise at idle on 2005-'06 Chrysler 6.1L VIN W engines may be caused by any number of components, but must be diagnosed so that it is not confused with any other sounds that come from the engine compartment.

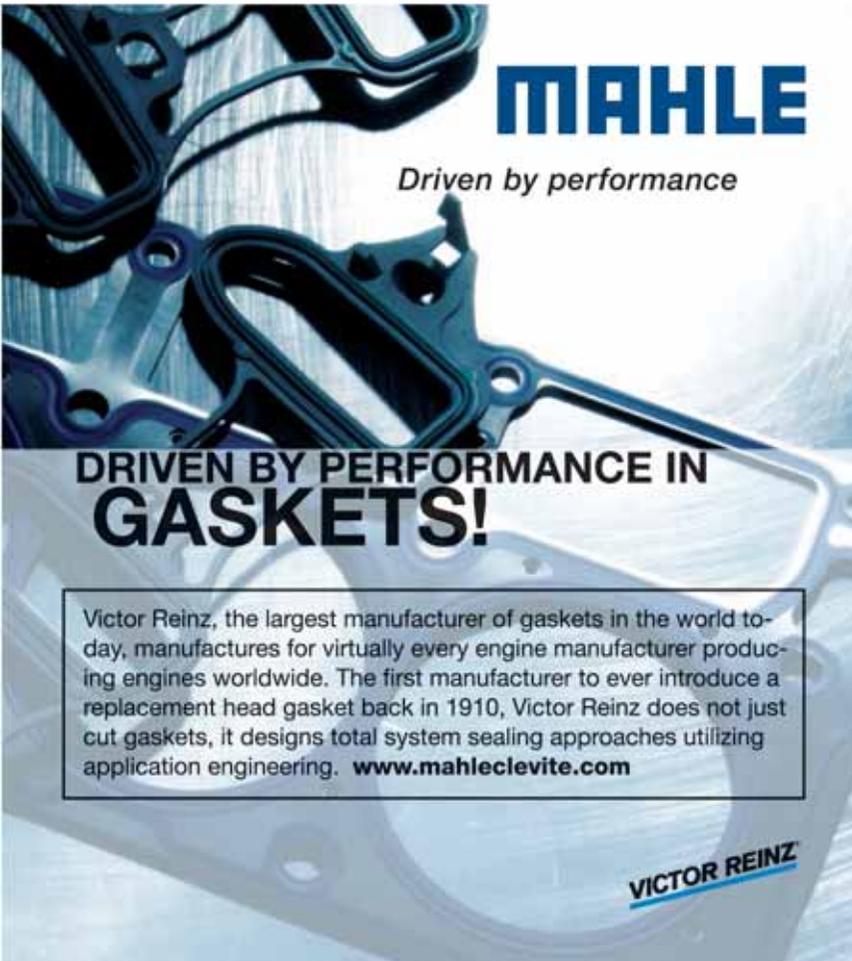
This engine is used in the 300, 300C, Charger, Magnum and touring vehicles.

Some owners may notice a whine sound at idle after the vehicle has been driven in warm temperatures over 50°F. This sound can be caused by the piston oil cooler jets fluttering during hot oil/idle conditions.

1) Run the engine until the oil is hot, over 230°F. Use the digital display located in the instrument cluster for oil temperature.

2) Allow the engine to stabilize at idle and read the oil pressure using the digital display.

3) Shut the engine off and wait 10 seconds.



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4) Restart the engine with NO throttle application, allow the engine to sit and idle.

5) Note the oil pressure readings. Pressure may read 1-2 psi lower than what was recorded in Step 2. If this is the case, the whine sound may be heard.

If the procedure is followed correctly, the whine sound can come and go with slight adjustments to oil pressure readings. The piston cooling jets are operating properly, but high oil temperatures results in slightly lower operating oil pressure at idle and can cause the valve inside of the oil cooler jets to flutter.

Chrysler states that this noise will not cause a detrimental effect or durability problems with the engine. If the customer wants this noise eliminated, it is recommended to use 15W50 Mobile One engine oil in warmer months and revert back to 0W40 Mobile One in cooler months.

Diesel Fuel Filtering Requirements For 2006-2007 Chrysler 5.9 & 6.7L Diesel Engines

This information applies to vehicles equipped with a 5.9L High Output or a 6.7L Cummins Turbo-Diesel Engine (sales codes ETH or ETJ respectively) built on or after March 07, 2006 (MDH 0307XX).

For the diesel engine system to operate at its peak performance, a high level of fuel quality must be maintained. Emission control and fuel delivery systems have advanced significantly. Care must be taken to ensure that the fuel delivered to the engine fuel injection system is of the highest quality pos-

sible and free of contaminants.

On a 5.9L engine, if the final fuel filter is replaced due to a high moisture content diesel fuel, verify that the water sensor probes in the filter have been cleaned. Excessive moisture may contaminate the sensing probes. The 6.7L engine includes a new water-in-fuel sensor with the new final fuel filter element.

The final fuel/water separator filter must meet or exceed OEM specifications.

The use of non-approved fuel filters will result in engine performance deterioration, and/or possible

Manufacturer	2006-'07 (5.9L) P/N	2007 (6.7L) P/N
MOPAR	68001914AA	05183410AA
Cummins	4935205	4936025
Fleetguard	FS19800	FS4325200

Chart 4 Mopar fuel/water separator filters that meet or exceed OE specifications.

progressive damage to the engine from foreign particle ingestion, and/or fuel system component corrosion. It is recommended that customers use the MOPAR approved or Cummins Equivalent fuel filters to protect the engine from debris and water contamination.

The final fuel/water separator filters shown in **Chart 4** (above) are known to meet or exceed the specifications listed in the table above. TSG

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