

TB 2549 Head Bolt Caution for 2008-11 Chrysler 2.4L VIN J Engines

The AERA Technical Committee offers the following information regarding the head bolts used on 2008-2011 Chrysler 2.4L VIN J engines. These engines used two different head bolts during factory assembly and the characteristics and torque values used are specific to each design. Using the correct design and torque values is critical to complete a successful repair.

CAUTION: This engine was built with 2 different style cylinder head bolts. Each style bolt requires a different torque value. The bolts can be identified by the short bolt head (1) and the long bolt head (2) as shown in Figure 1.

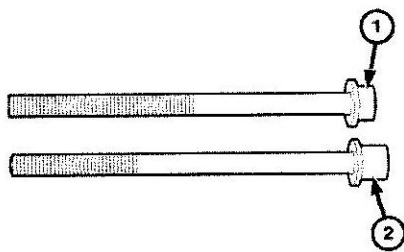


Figure 1. Bolt Head Length Comparison

Determine which bolts you're using by measuring the bolt top, which may also be done while the bolts are installed.

- Measure the bolt head from the washer to the top of the bolt head. The short bolt head (1) measures 8 mm (5/16") and the long bolt head (2) measures 13 mm (1/2").
- Identify whether your engine has the short head design (1) or the long head design (2).
- **NOTE:** The front two cylinder head bolts do not have captured washers.

The head bolts used do not require mandatory replacement; however, replace any bolt that shows damage to the threaded areas of the bolt. Follow the steps below to install the cylinder head.

1. The front two cylinder head bolts do not have captured washers, so install the two separate washers with the bevel up towards the bolt head.

2. Before installing the bolts, oil the threads lightly with clean engine oil.
3. **SHORT HEAD BOLTS:** Install the cylinder head bolts and tighten in the sequence shown in Figure 2. If your bolt has the short head (1), use the following torque specifications:

- First: All to 30 Nm (25 ft. lbs.)
- Second: All to 61 Nm (45 ft. lbs.)
- Third: All to 61 Nm (45 ft. lbs.)
- Fourth: All an additional 90° – Do Not Use A Torque Wrench

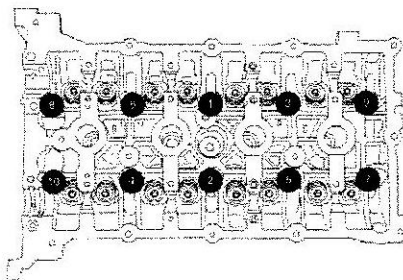


Figure 2. Cylinder Head Bolt Torque Sequence

4. **LONG HEAD BOLTS:** If your bolt has the long head (2), use the following torque specifications and the sequence shown in Figure 2.

- First: All to 30 Nm (25 ft. lbs.)
- Second: All to 73 Nm (54 ft. lbs.)
- Third: All to 73 Nm (54 ft. lbs.)
- Fourth: All an additional 90° – Do Not Use A Torque Wrench

TB 2550 Main Bearing Bolt Caution for 2008-11 Chrysler 2.4L VIN J Engines

The AERA Technical Committee offers the following information regarding the main bearing bolts used on 2008-2011 Chrysler 2.4L VIN J engines. These engines use different main bearing bolts during factory assembly and the characteristics and torque values are specific to each design. Using the correct design and torque values is critical to complete a successful repair.

CAUTION: This engine has been built with two different designs of main bearing bolts with different markings. Each style bolt requires a unique torque value. The bolts can be identified by viewing the bolt top as shown in Figure 1.

NOTE: There are two different main bolt designs used on this engine with currently three different markings. Each bolt set has a unique torque value and engine damage could result if bolts are not torqued correctly. The bolts are not interchangeable.

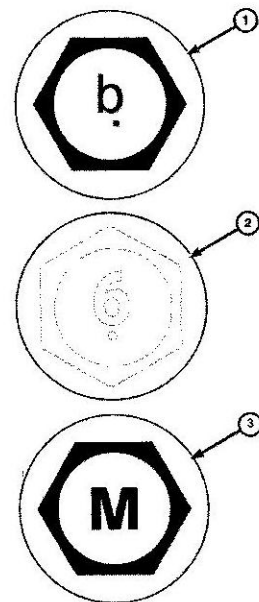


Figure 1. Main Bolt Head Identification

The main bearing bolts used do not require mandatory replacement; however, replace any bolt that shows damage to the threaded areas of the bolt. Follow the steps below to install the main bearing bolts.

1. Install the main bearing bolts and tighten in the sequence shown in Figure 2. If the bolt being used resembles callout 1 or 2 above, use the following torque specifications:
 - First: Torque all bolts in sequence to 15 Nm (11 ft. lbs.)
 - Second: Torque all bolts in sequence to 27 Nm (20 ft. lbs.)
 - Third: Torque all bolts in sequence an additional 45° turn, Do Not Use A Torque Wrench
2. If the bolt resembles the bolt head in callout 3, or any other bolt not matching any of the 3, use the following torque specifications and the sequence shown in Figure 2.

(continued on the next page)