



Cylinder Head Installation on 2008-2017 Detroit Diesel DD15 & DD16 Diesel Engines

The AERA Technical Committee offers the following information regarding cylinder head installation for 2008-2017 Detroit Diesel DD15 & DD16 diesel engines. This information should be considered anytime the cylinder head is being serviced. It is important to note that these SOHC engines require removing and reinstalling the camshaft as a complete assembly.

These cylinder heads are extremely heavy and use of the lifting bar tool Part #W470589006200 and guide studs Part #J-35784, greatly assists in the removal and installation process. Before cylinder head installation verify the following conditions.

- Inspect the head bolt holes in both block and head for the presence of oil, water, dirt, or damaged threads. Clean or re-tap as necessary. Ensure piston domes and the cylinder head and cylinder block deck surfaces are clean and free of foreign matter.
- NOTICE: Thoroughly clean oil passage holes on the cylinder block deck with a wire brush to remove any foreign material before installation of head gasket. Failure to properly clean counter bores may result in head gasket failure.
- Verify that the cylinder liner protrusion heights using tool J-47415A are all within .0035" (.0889 MM) prior to installing the cylinder head. Minimum liner protrusion is .0055" (.1397 MM) and maximum liner protrusion is .0106" (.26924 MM).
- Be sure both gasket surfaces on the cylinder block and the cylinder head are clean and dry, especially the oil and coolant counter bores.

After the above conditions have been achieved follow the steps listed below to install the cylinder head.

1. Position a new cylinder head gasket onto engine block.
2. Lift the cylinder head into position using cylinder head/engine lifting bar tool (W470589006200). Install the guide studs (J-35784) through the cylinder head into the cylinder block and carefully seat the cylinder head onto the engine block.
3. Remove the cylinder head guide studs.
4. Remove the lifting hooks from the cylinder head.
NOTICE: Do not dip the entire cylinder head mounting bolts in oil as it could provide too much oil causing improper torque results.
5. Coat the threads and underside of bolt heads with a limited amount of clean engine oil before installation.
6. Install the 40-cylinder head bolts into the cylinder head.

7. Torque the 38 large bolts in four steps in numerical sequence (Figure 1) to:
- A. 37 FT/LBS (50 Nm)
 - B. 184 FT/LBS (250 Nm)
 - C. Rotate an additional 90° turn
 - D. Rotate an additional 90° turn

The small bolts 39 and 40 can now be torqued to 44 FT/LBS (60 Nm).

The cylinder head is now ready for the camshaft assembly to be installed as an assembly.

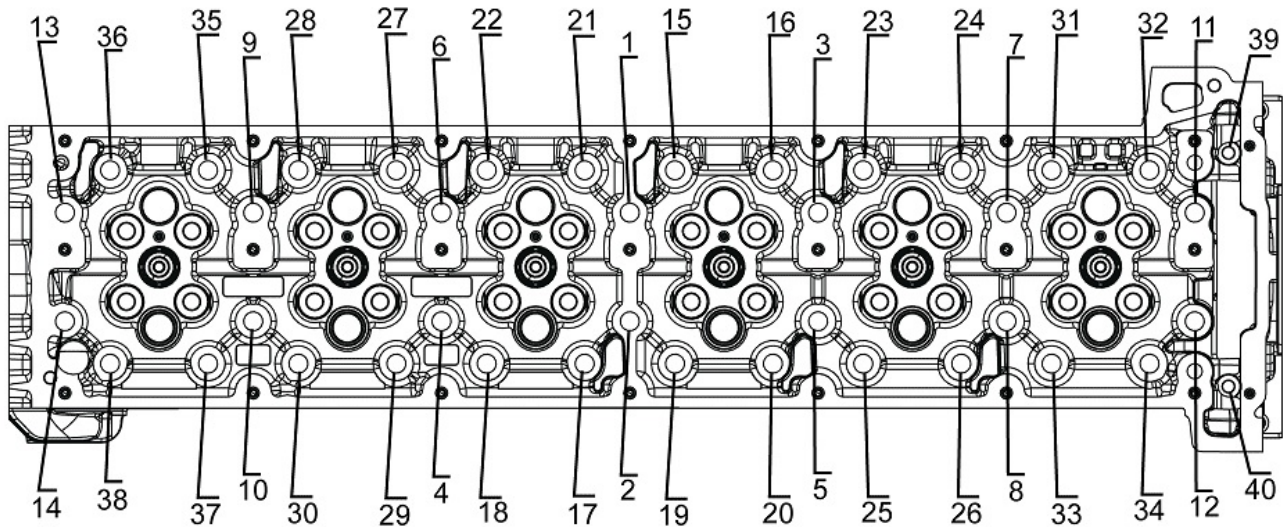


Figure 1. Cylinder Head Bolt Torque Sequence