Broken Head Bolts on 2002-2009 2.8, 2.9, 3.5, 3.7 & 4.2L GM Engines

The AERA Technical Committee offers the following information on broken head bolts for 2002-2009 2.8, 2.9, 3.5, 3.7 & 4.2L GM engines. Machine shops and dealerships have had numerous reports of bolt breakage during the removal process of the cylinder heads for these engines.

Because of the frequency of this problem GM is offering the following advice to help reduce the likelihood of bolt breakage upon removal. These engines use a Torque-to-Yield (TTY) bolt, like a cylinder head bolt or main bearing cap bolt and they may break during repair procedures. Interaction between a TTY bolt and threads may cause the bolt to bind or break upon removal attempts. It is suggested that prior to removing the cylinder head or main cap bolts, perform the following procedure:

- Using an appropriately sized punch and bf hammer, rap on the head of each bolt several times. The vibration produced by this procedure will assist in successful removal.
- If a head bolt or main bolt breaks during engine disassembly, a broken bolt extractor kit (EN-47702) has been released to assist in removal of the remaining bolt segment. Many times the remaining bolt segment will back out easily with a pick tool or a reverse twist drill bit.

Bolt Replacement & Tightening

Important Notes:

- Never reuse TTY main bearing or cylinder head bolts. Always make sure that the engine block threaded holes are clean and do not place oil or thread locker on the bolts.

Utilize a thread chase tool followed by cleaning with dry compressed air to insure the block threads are clean and dry prior to installation of new TTY bolts. Bolts that creak and snap while tightening will fail due to excessive torque caused by threads contaminated with debris, antifreeze or oil. Trace amounts of oil or antifreeze will cause this condition. In extreme cases the threads may need additional cleaning with a non-residue cleaner like a brake clean product followed by drying with clean & dry compressed air.

Parts:
GM Bolt Extractor Tool Kit Part Number EN-47702 for the above mention engines. New head bolts are available from several aftermarket suppliers as well as GM and vary in numbers depending on engine being worked on.
This information is provided from the best available sources. However, AERA does not assume any responsibility for data accuracy or consequences of its application. Members and others are not authorized to reproduce or distribute this material in any form, or issue it to their branches, divisions or subsidiaries, etc. at a different location without written permission.