

V16 Restore – Bolts, Bolts, Bolts

Chapter 3 – Fasteners and Threads

This is the third of many articles covering my experience restoring a 1940 V16 Town Car. For an introduction, start with the first chapter.

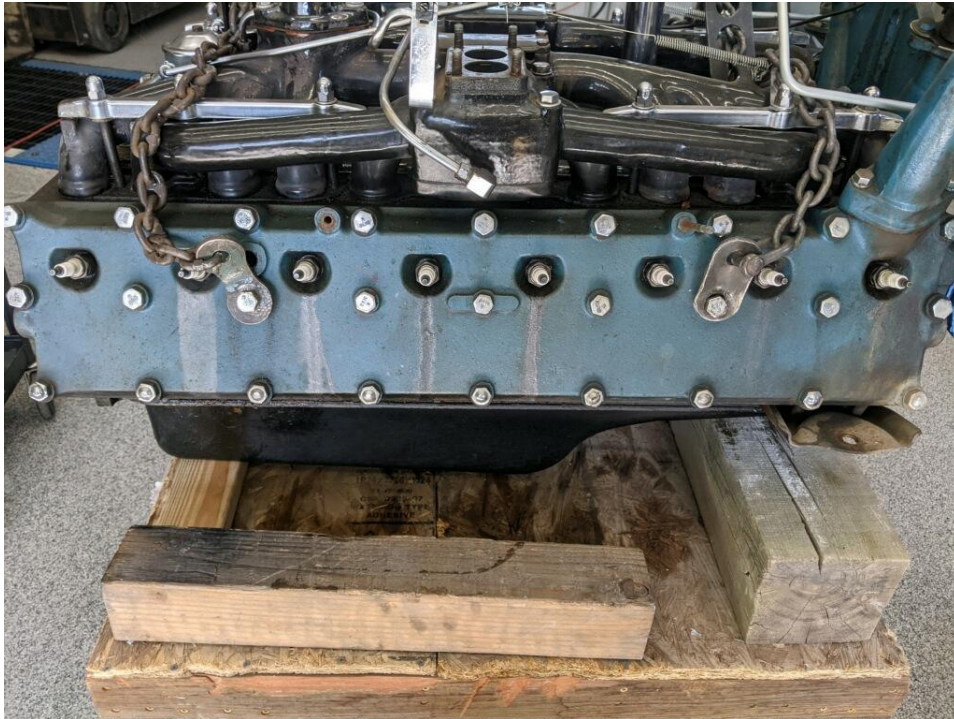
Before starting this project I looked for every resource available and found little. Member, FishinJim aka J Bozin, offered the following Facebook link:

<https://www.facebook.com/media/set/?set=a.705687099452549.1073741838.208236829197581&type=3>

This was a tremendous help. This Facebook page is owned by a machinist, Tony Smith, who restored a Generation 2 V16 and took the time to document much of his work. I recommend to any owner who is adventuring into a Gen 2 V16 rebuild to review this Facebook article.

Spark Plug Threads

Leaking spark plugs are documented by Tony Smith. His recommendation is to have the head surface under the spark plug copper washer surfaced. The casting is rough and prevents proper sealing.



Rod Bolts

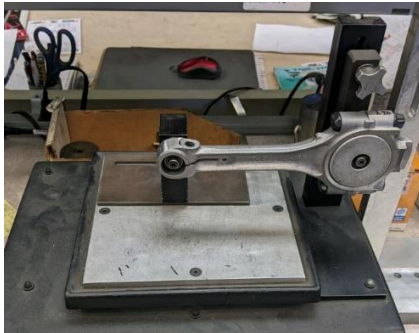
Upon disassembly of the original engine 5320008, the machinist advised me that rod bolts were stretched and head bolts were badly deteriorated. In Tony Smith's work he documents replacement rod bolts:

ARP 203-6002

The rod bolts are a close replacement with some required modification to the connecting rods. ARP bolts fitted to a rod:



Due to material being removed, we balanced all the rods



Head Bolts

The head bolts were a sad story. The original engine had chromed head bolts and maybe this led to deterioration, I doubt it. It was a simple case of rust from exposure to the water jacket.

In my Chapter 2 posting I present the case of a cracked block and it brings the question and dialog of why both the original and replacement blocks are so badly cracked. In one of the replies Johan Boltendal raises the case of rust and how loss of internal material contributes to block weakness. These head bolts show about ¼ inch loss due to rust.

Sample of some of the head bolts. Note the bolt at the top should be the same length as the one at the bottom:



I found two sources for head bolts:

- (1) Straight 8 in Troy Michigan - <https://straight-eight.com> and
- (2) Packard Twin 6 - <http://www.packardtwelve.com/shop/cadillac-hardware>.

The Packard Twin 6 shop has a section on Cadillac hardware and invites you to ask about having parts made. I did. The 6 to 8 weeks made-to-order estimate for all the bolts was \$800 and Straight 8 offered off-the-shelf bolts for \$1179. By way of explanation, Packard Twin 6 operates a screw machine while Straight 8 makes their parts on a CNC machine.

The difference of \$379 was just too much for me. Knowing that my neighbor is the father-in-law of the owner of Straight 8, I called and explained. Soon I was in touch with the owner who gave me a discount. There was just no sense in having another set of bolts made while there was a set on the shelf.

Specifications for the head bolts from Straight 8 website:

Flat-head bolts

SKU CAD-0246

Overall length 2.850

Length under head 2.5

Thread 7/16 x 14

Thread length 1.0

Hex 11/16

4140 steel heat treat grade 8

Quantity required: 36

\$19.00 each

Set \$684

Domed-head bolt

SKU CAD-0285

Length under head 2.125

Overall length 2.587

Thread 7/16 x 14

Thread length 15/16

4140 steel, heat treated grade 8

Hex 11/16

Quantity required: 18

\$27.50 each

Set \$495

Total \$1179