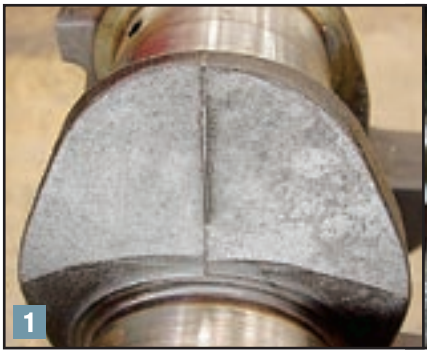
Got a question for John? Email him at ceeditor@amosautomotive.com

For The Love Of Forging

READER'S QUESTION: **Reader's Question: My '64 327/365 coupe has been in our family since it was new (bought by my father), and he passed it along to me about ten years ago. It has 65,000 miles on it, has never been apart, is due for an engine rebuild, and I've lined up a local shop to handle the job. A fellow club member told me to make sure it has a forged crank before I spend the money for the rebuild. What's the advantage of a forged crank over a cast crank, and how can I tell which one I have?**

RESPONSE: A "cast" crankshaft is made from cast iron, poured in a sand mold (see the February 2007 issue for an article that explains the iron casting process), then machined and finished to its final shape. Crankshafts made by this process are strong, durable, ductile, cost-effective, and are by far the most common type of crankshaft used for decades in passenger cars and light trucks.

Forged crankshafts start as a processed steel billet, are heated red-hot, and are passed through a series of progressive dies in a huge forging press that literally "hammer" the billet into the crankshaft's complex shape. After the forging process, they're machined and finished into their final shape in much the same manner as a cast crank. For some performance applications, they're "Tufftrided," which hardens the surface to a depth of about .010" for additional wear resistance. A forged crank is significantly stronger (and more costly to manufacture) than a similar cast crank.



1 A typical parting line where the upper and lower halves of the mold joined when a cast crankshaft was poured; generally about 1/16" wide.

2 A typical ¼" to ½"-wide parting line where the trim die sheared off the "flash" that formed between the upper and lower forging dies when producing a forged crankshaft.

IDENTIFICATION: The easiest way to determine visually whether a crank is cast or forged is to examine the parting line on a crank throw adjacent to a rod journal. On a cast crank, the parting line is quite narrow (1/16" to 1/8" wide) where the upper and lower halves of the sand mold joined when the crank was poured.

On a forged crank, the parting line is much wider (¼" to ½" or so), where a trim die cut off the "flash" formed on the edge of the part by the upper and lower halves of the forging dies.

In your case, you have a forged steel crank – all 283s and small-journal 327s had forged cranks, and for your 327/365 application, the crank was also "Tufftrided" for additional wear resistance. I'd recommend discussing the treatment of your main and rod journals with your machine shop. Some shops like to cut the journals .010" as a standard rebuild practice, but that will remove the surface hardening from the Tufftride treatment on your crank – if the journals measure within spec tolerances, leave them alone. ■