JOHN HINCKLEY
Got a question for John? E-mail him at ceeditor@amosautomotive.com.

Prime Subject

READER'S QUESTION: My '69 restoration is about half done; the body is at the painter, and I've completed the chassis and reinstalled the engine, which was rebuilt last year, has not been run yet, and has been sitting on an engine stand for eight months waiting for the frame and chassis parts to be reassembled. I've rigged up temporary fuel, cooling, and electrical systems, and I've been told I should remove the distributor and prime the oil system with an old distributor shaft on an electric drill before I start it for the first time. I've cut the top off an old distributor shaft, but someone said I need a "prime tool" instead. What does a "prime tool" do that the modified distributor shaft won't?

RESPONSE: The reason for priming the oil system is to get oil to all the moving parts in the engine that need lubrication before you start it for the first time after a rebuild. Priming builds pressure throughout the oiling system, and ensures that oil is present immediately without waiting for the oil pump to prime and begin to send oil through all those empty oil galleries and dry bearings.

An old distributor shaft will turn the oil pump, but that won't pressurize the system and force oil throughout the engine, especially to the lifters, and from there through the pushrods to the rocker arms. If you look at the bottom of a Chevy distributor housing (see photo), you'll see a cast groove in between two raised machined rings. This groove joins two drilled oil gallery passages in the block on opposite sides of the distributor hole, and the machined rings seal the hole above and below the groove, so the housing becomes the connection between the two oil galleries. This "connection" seals the oil system and allows it to build pressure so oil is forced throughout the system, including the two long oil galleries that feed the lifter bores.

If you just use an old distributor shaft to turn the oil pump, oil will pour out of the gallery into the distributor hole as a massive internal oil leak and will just drain back into the pan without building pressure in the system. A proper oil-system prime tool duplicates the groove and two raised rings near the bottom to connect the two oil galleries so the system can build pressure, and has a sliding collar at the top to center the shaft in the distributor hole in the intake manifold. The tool in the photo is made by Tavia, and similar tools are made by several other manufacturers. You NEED one of these tools to do the job right and to save yourself the heartache of internal component failure on a brand new engine, or you can modify an old distributor shaft AND housing to do the same job.

It's absolutely essential that your fresh engine starts immediately at "first-fire," and stays running, without idling or shutdown, for proper cam break-in. Set the timing accurately first with a test light across the points, fill the carb float bowl through the vent tube so the engine doesn't have to crank and crank until the fuel pump gets fuel to the carb, make sure the cooling system is full, and use a large box fan in front of the radiator for added airflow so you don't have to shut it down prematurely due to overheating. Have a helper there with tools handy to watch for and deal with any leaks while you manage the throttle and keep it running, and have a fire extinguisher handy. Get or fabricate a proper oil system prime tool, and good luck with your "first-fire" – it's an exciting and immensely satisfying moment! ■