

Q. Of the four flathead Ford V-8s I have, three have cracked blocks.

Have you or your readers ever heard of a successful repair? I could cry every time I send one to the scrap yard. My last one was made into a lawn ornament.

Don Ober, Manheim, Pa.

A. Formerly, a cast-iron block had to be heated before welding and then slowly cooled. Often the weld cracked in the process. There is a relatively new cast-iron welding product on the market from a company called Muggy Weld. It's a rod for welding cast iron, product number 77 (www.muggyweld.com/blocks). This is the procedure used and presumes the engine is still in the vehicle: Locate the crack in the cast iron and bevel it halfway through the thickness of the wall with a file or grinder. Clean the scale from the cast iron 13mm on either side of the crack. The "V" should just reach into the water jacket, but not actually open it up more than just a fraction of an inch. Drill a small hole just beyond both ends of the crack to keep the crack from spreading. At the center of the crack, drill a hole and tap it to accept a 6mm cap screw. Screw in the cap screw up to its thread ends. To leave a flush surface, saw off the excess screw. (This screw will prevent movement of the cast iron

when heat is applied). Dry the crack with an oxy-acetylene torch. (Be careful to not heat above 330 degrees Fahrenheit.) Weld the crack with the Muggy Weld number 77. This will take about two pounds of rod, so be prepared to burn a lot of it. Clean all the slag and use the flap wheel between weld passes. Start two inches from one end of the crack and weld to the end. Then step back two inches and weld to the preceding weld. Continue this back and forth process until the weld is completed. This helps to eliminate the stress cracking normally attributed to heat traveling in front of the weld. Using a helper, keep everything hot for several inches above and beyond the weld. (It takes a rosebud tip to generate a broad enough flame to do any good.) Keep heating the block, but be careful, you are working with a 300-degree "cast-iron fry pan" at this juncture. Lay on a second pass of welding rod. Keep heating so that the block stays at about 300 degrees. Polish the welds with the flap wheel. Use the back weld procedure again and weld in two-inch segments. Polish again, weld again, polish again, and weld again. You want a total buildup of about 3/8-inch above the existing casting tapering into the block about

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By Tom Brownell

one inch above the crack. The weld will look like a third grader has spread peanut butter, but the thickness and overflow are needed to distribute stresses and not re-crack the block. Now, let the block cool to about 200 degrees; it can be as low as 150 degrees F. It should be too hot to touch, but not hot enough to boil water. Do a final polish with the flap wheel, and fill the cooling system with preheated antifreeze solution. It should be boiling when you dump it in. You will be going into a still warm engine, just dump the water slowly and let it sink into the engine. Using this number 77 on dry engine castings, they have to be buried in at least 14 inches of chopped fiberglass for 24 hours after the welding in order to slow down the heat loss so the stresses work out. A dry engine has to be disassembled when it is welded because the seals tend to burn out.

Editor's Note: If you are corresponding with this column via e-mail, please include your name and city, state or province with your question.

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