

SMALL ENGINES WITH BIG PUNCH

# STROKE YOUR CORVAIR FOR MORE CUBES, TORQUE

*A stroker crank will make the Corvair's performance commensurate with its sporty looks, especially with the mill coupled to a four-speed box.*

NOT TOO long ago, a Chevrolet engineer in the top echelons told us in no uncertain terms that the Corvair was an economy car, not something to be hot rodded around by Chevy or anyone else. To prove that often made point about how times change one has only to remember that Monzas, loaded with everything from bucket seats to four-speed boxes, now top Corvair sales lists. However, people who like small, sporty cars also like to grab the lead at stop lights, and this has proven to be increasingly difficult in view of the Corvair engine's all-too-modest 144 cubic inch displacement.

On simple solution is to install a stroker crank. Just lengthening the stroke a ¼-inch from 2.60 to 2.85 inches represents a 9.6 percent gain in displacement and a corresponding torque gain throughout the entire torque range.

Even in stroked form, the Corvair benefits from exceptionally low piston speeds and a rugged crank, so that stroking need *not* impose an rpm limit and certainly *will* work well in conjunction with a blower. Its forged crank will readily accept a weld deposit, provided the shaft is carefully preheated. Orientation of the metal grain in a forging allows a much more favorable use of strength than is offered in a cast iron shaft, which makes the stroked Corvair likely to stand up to most power increases.

If you install a stroked crank in a conventional engine, coupling it to the stock rods and pistons, the pistons will stick out beyond the top of the block and will collide with the crank. Thus, to the expense of the crank must be added that of making up special pistons. Jewell Tool Company of Taylor, Michigan, has eliminated the need for special pistons, cutting coats in half, by using ½-inch spacers under each cylinder. The lower end of the cylinder, where it pilots in the block, is long enough to accommodate the change in height. So are the studs that hold cylinders and heads to the crankcase.

Use of the shims provided the correct clearance for the ¼-inch stroker crank to bring the pistons flush with the upper edge of the cylinders (their stock position). The shims have no effect on clearances between the bottom of a piston and the crank throw and rod of the opposite bank. To offset this, the bottom of the piston must be filed slightly. But there is enough meat on the underside of the wrist pin to do this safely. The length of the slipper and the control it offers against rocking and slap is in no way affected.

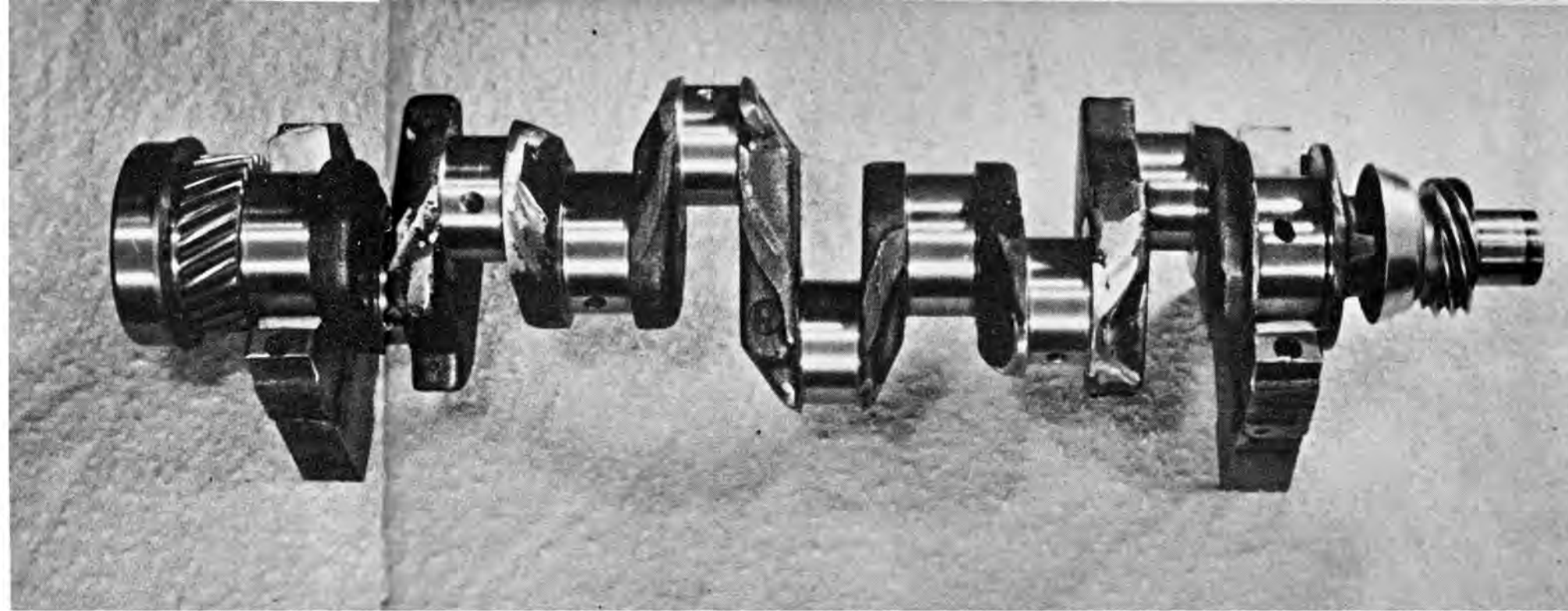
Having successfully solved the cost bugaboo of special pistons (for, after all, the Corvair is presumed to be an economy car) Jewell proceeded to place the crank and camshaft into the split crankcase and install the timing gears according to their marks.

This is the only safe method of checking clearances. While no interference showed up between the crank and cams, the rods came uncomfortably close to the cam lobes. A little grinding eliminated this trouble spot.

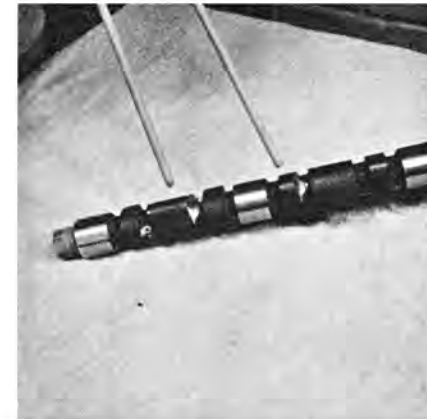
Jewell magnafluxes the stock Corvair crank before starting his work to avoid costly mishaps at a later date. The crank is then preheated in an oven before the welding begins. To protect the mains from weld splatter, they are covered with sheet metal strips. Center punch marks at the sides of the throws are used to locate the oil holes for late redrilling. The outer portion of the throws is built up with weld not only at the journal, itself, but at the sides to allow a generous radius at the corners during re-grinding. This prevents stress concentrations and insures longer crank life.

Once the initial grinding is completed, the shaft is straightened on a press and rechecked for alignment at the mains. It is then finish-ground and magnafluxed again. To save his customers a good deal of fitting, Jewell prefers to receive the entire lower end complete with cylinders, cam, crank and rods. The assembly is returned in ¼-inch stroker form.

As a careful builder, you can then disassemble the crankcase, clean all parts and recheck clearances before proceeding with the final reassembly of the hottest Corvair in your area. The stroker crank is, incidentally, quite able to take a supercharger.



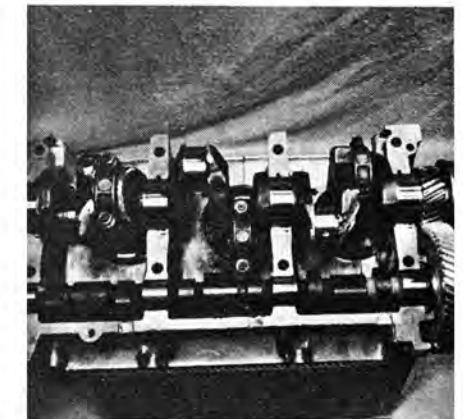
Corvair engine's rugged, forged crankshaft lends itself to a stroker conversion that's relatively easy to perform.



Camshaft lobes must be undercut at sides for additional rod clearance.



Spacer rings under cylinder barrels allow avoiding special piston cost.

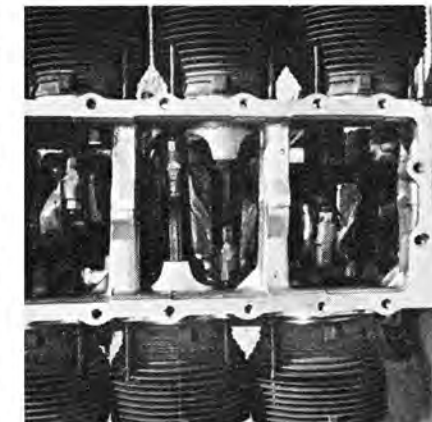


Cam and crank are installed in block to check for cam-to-rod clearance.

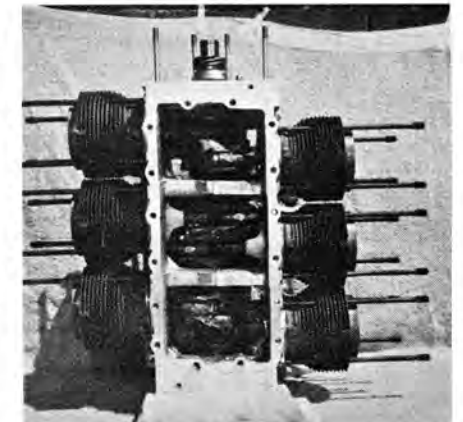
Bottoms of pistons must be touched up with file for adequate clearance.



Check piston-to-rod clearance with all parts in less rings on pistons.



Completed stroker kit in engine is now ready for final assembly work.



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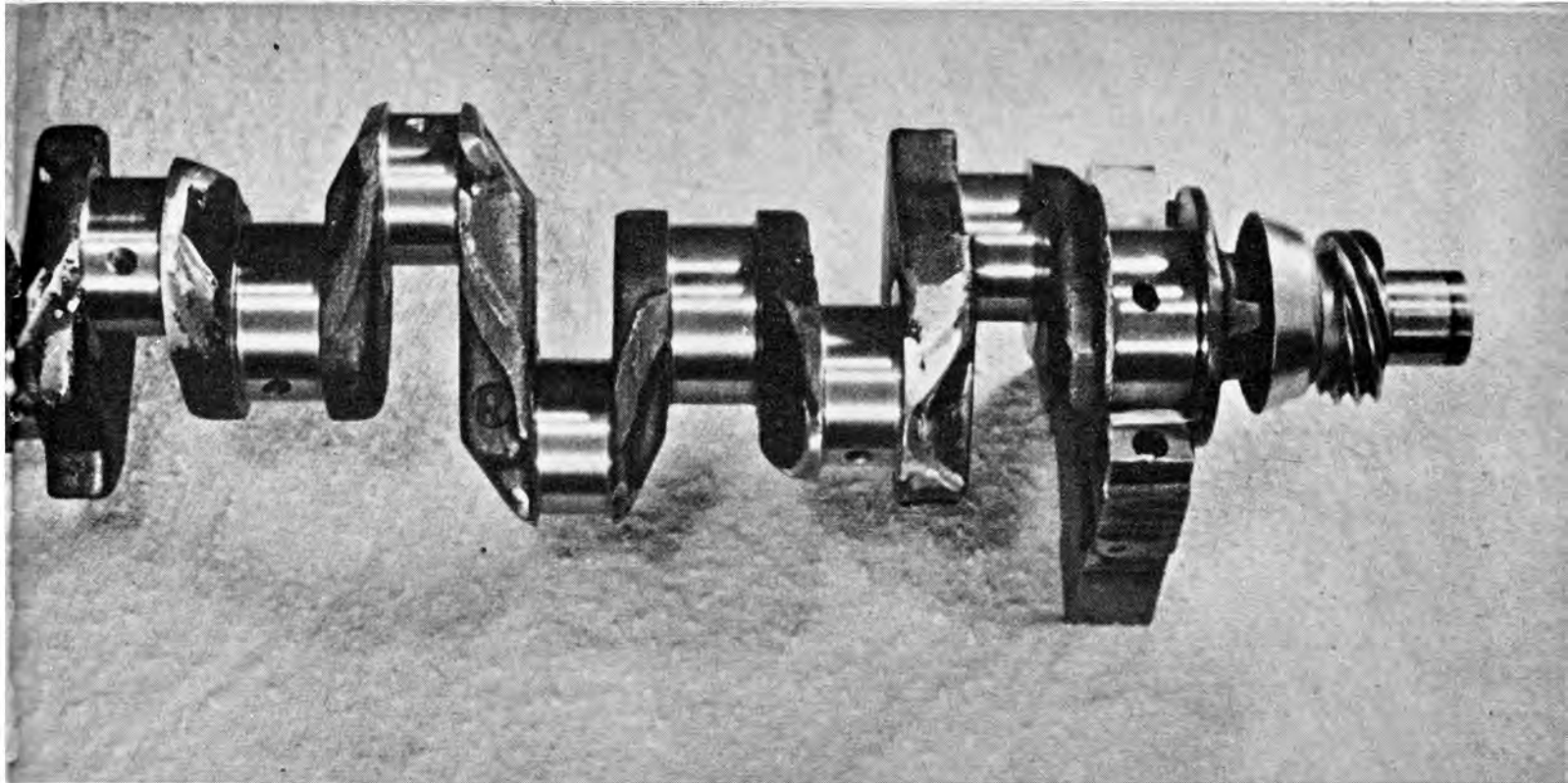
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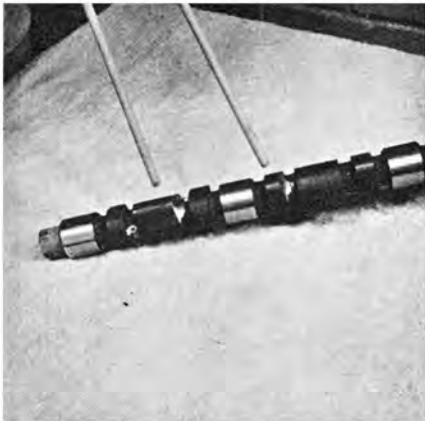
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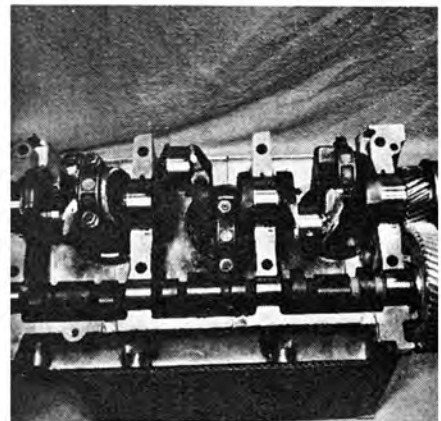
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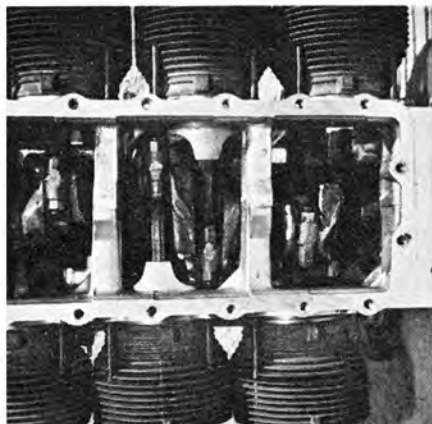


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