Don't "sweat it"...

FLOAT IT!

BY BOB PENDERGAST

Pressed-in piston pins were the least of the hot rodders' worries until the Chevrolet V8 came along. With its immediate acceptance as the Chrysler's leading contender for the standard hot rod engine, the Chev's acquired a lot more than the title "Texas Flathead." They also fell heir to the situation that's licked more potential record breakers than any other single drawback—the average rodders' chronic lack of proper tools and facilities.

In the case of the Chevy, with its 2-ton pressure requirement when fitting piston pins, this lack got downright serious. Even if the budding young competition engine builder could find someone who could furnish the use of a press with the necessary push, what were they to push *against?*

Full-circumference solid-skirt type racing pistons lacked the flat face at a right angle to the pin found on the standard slugs. Simply laying the pistons on the bed of the press didn't work at all; either the piston was so badly distorted during the pin installation that the fit proved improper after the pressure was released, or in some cases, total skirt collapse resulted. At an average price of $10 (and up!) apiece for racing pistons, this gets expensive in a hurry.

What's actually required to properly accomplish this operation is a jig having a curvature exactly matching that of the piston. Really big, well equipped shops such as those of the professional engine rebuilders have these fixtures, but for the

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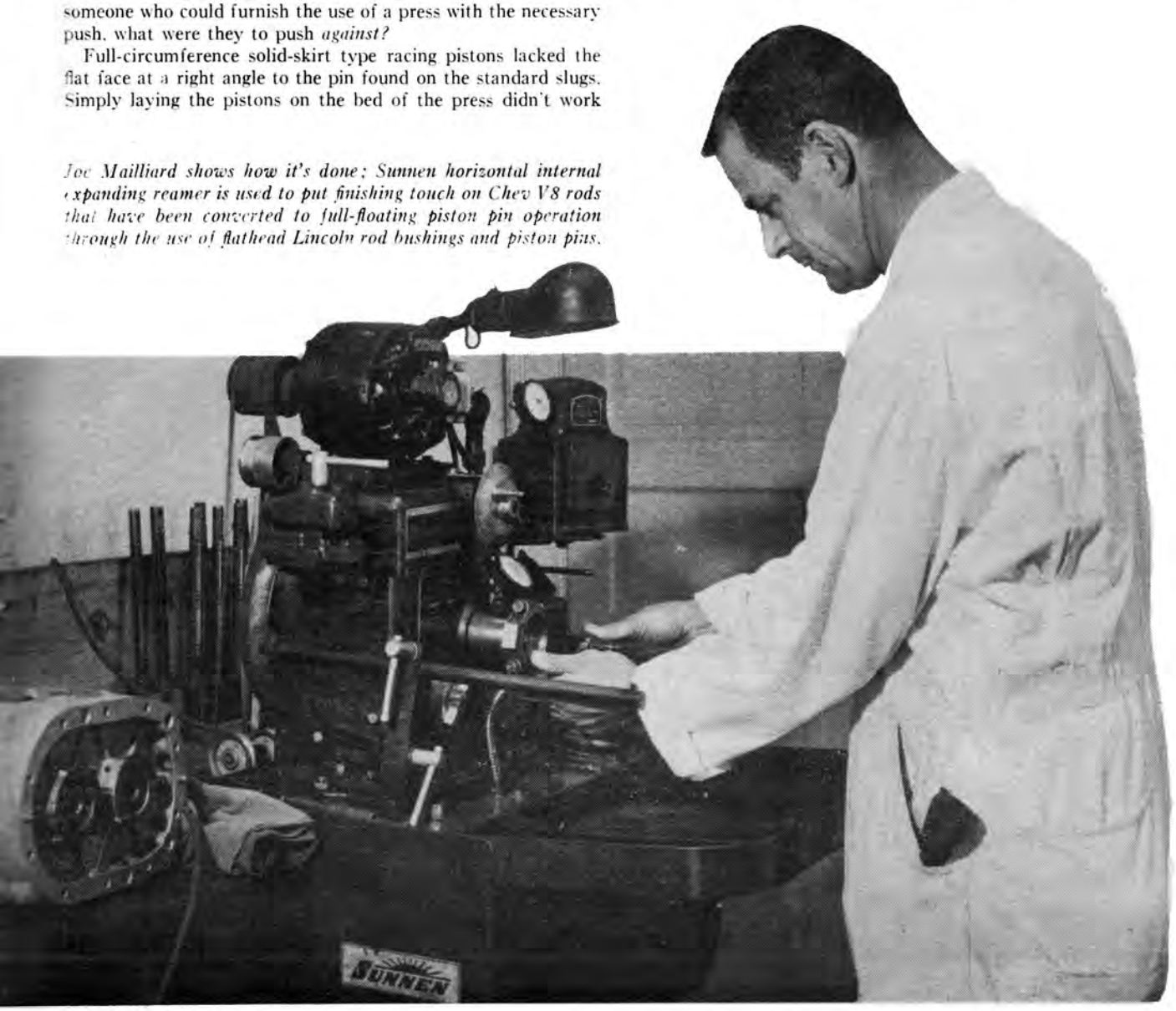
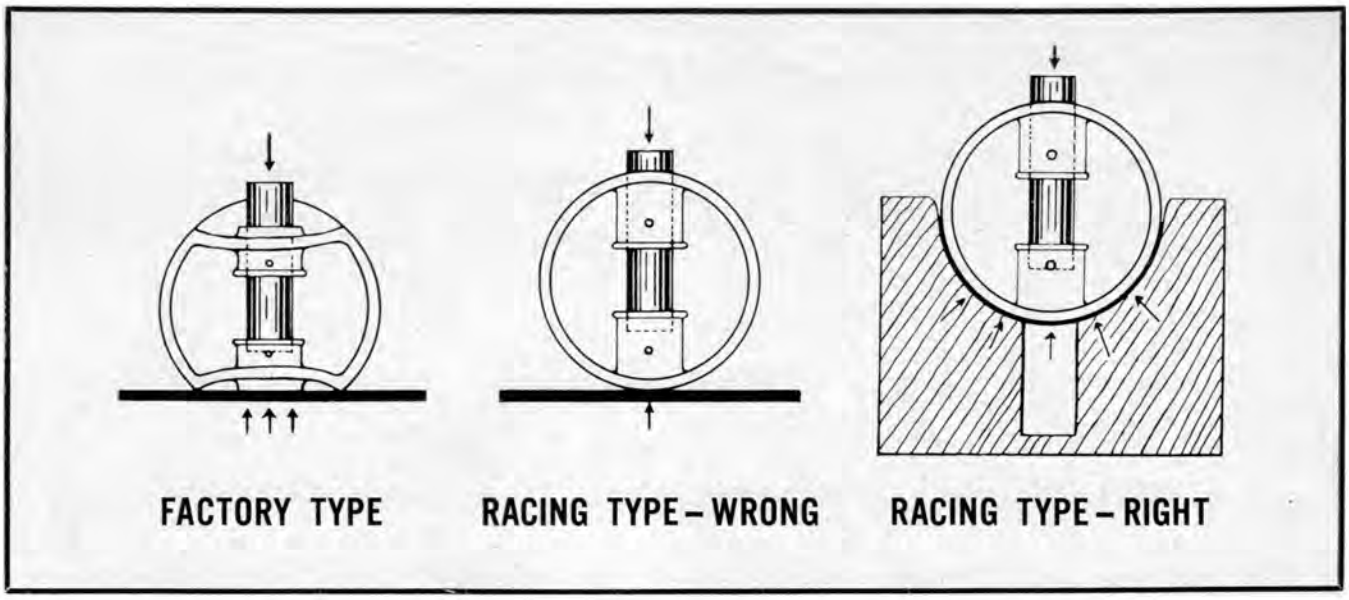
Joe Mailliard shows how it's done; Sunnen horizontal internal expanding reamer is used to put finishing touch on Chev V8 rods that have been converted to full-floating piston pin operation through the use of flathead Lincoln rod bushings and piston pins.





Diagrams above show: how factory-type piston has provision for press-fitting pins not found in ordinary racing piston (left); how racing piston is subjected to undue strain if pins are pressed in without correct fixture (center); and finally, how proper fixture cradles piston around half its diameter to prevent breakage during pin-fitting.

UPPER LEFT—Jahns solid-skirt type racing piston for Chev (265-283) with pin bosses bored for '49-'51 Lincoln pins and grooved for wire-type pin retainers (seen in foreground) along with pin to be used and .020-inch oversize Lincoln pin bushing that's being installed in photo below.

LEFT—Ordinary vise may be used for bushing installation in rod (if in good condition) by using method shown. When bushing is pressed halfway through, rotate rod 180 degrees so that any slight mis-alignment will be corrected during final push. Bushing must next be "sized."

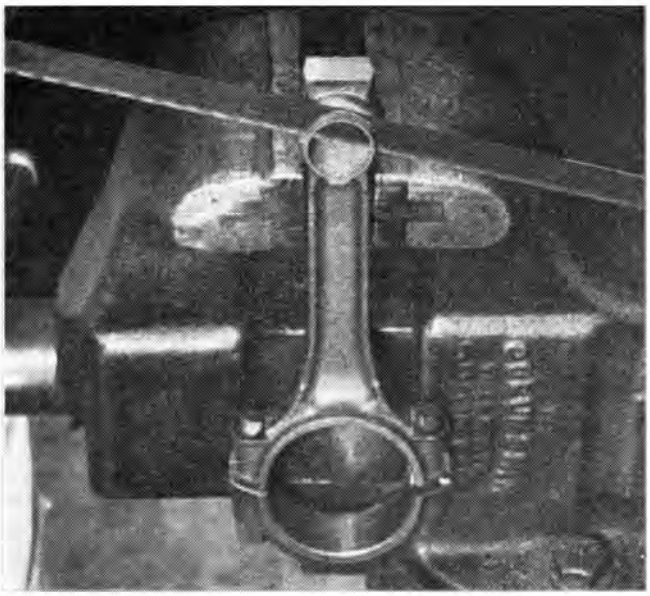
FLOAT IT! continued

average rodder to attempt to keep on hand one each for every diameter piston he might choose to run is somewhat like buying a printing press because you want to make sure you'll never run out of something to read.

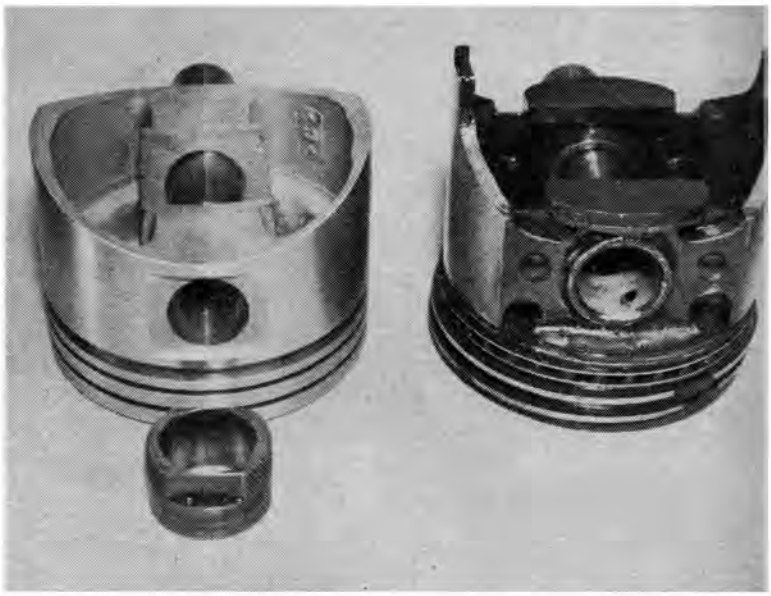
The solution is to convert over to full-floating pin operation at the same time you make the switch to racing pistons. Since big bore, long stroke, high compression pistons are actually custom built parts anyway, most manufacturers in this field maintain an operation flexible enough to supply you with non-standard size pin bosses upon request. There's a slew of stock, quantity-manufactured pins to choose from, too, so the problem really resolves itself down to one of making the correct choice of components.

Taking time out between building up experimental Chryslers for the "Sidewinder," Joe Mailliard, proprietor of Automotive Engineering in Long Beach, California, has come up with what he believes is a winning combination for the 265-283 Chevrolet engines. He uses the pin intended for the '49-'51 Lincoln engines. While Chev pins are either 3 or 3⅛ inches in length, the Lincoln part measures exactly 3 1/16 inches; an excellent compromise that works equally well in either standard or overbored engines. Diameter of the Lincoln pins is .850 inch, compared to the Chev's .927 inch, but since the pin's strength is dependent to a large extent on its ratio of length to diameter, they're both of about the same "beef," since the .77 inch differential in diameter has little effect on that factor.

Joe has found that most all popular brand racing pistons may be obtained with the pin bosses bored for the Lincoln pins. The reason for the selection of this particular pin to use when going to full floating operation is the bushing that goes with it—if ordered .020 inch oversize, the Lincoln rod small-end bushing has not only an inner diameter just right for the pin (after final honing) but also is as close as you can get to being ideal in outer diameter for the Chev's rod. Inner diameter of the Chev rod (small end) is .925 inch; the Lincoln pin bushing just men-



After being pressed into place, remainder of over-long Lincoln bushing must be removed. Hack-saw is used to trim to size, then files are brought into play for final smoothing operation. Particular care must be taken during de-burring of inner diameter.



An alternative to floating the pins is one that may be used when the engine concerned is only worked on in well-equipped shops. Flats are milled onto bosses of racing piston (left) to provide seat for hydraulic press to push against using stock-type pins.

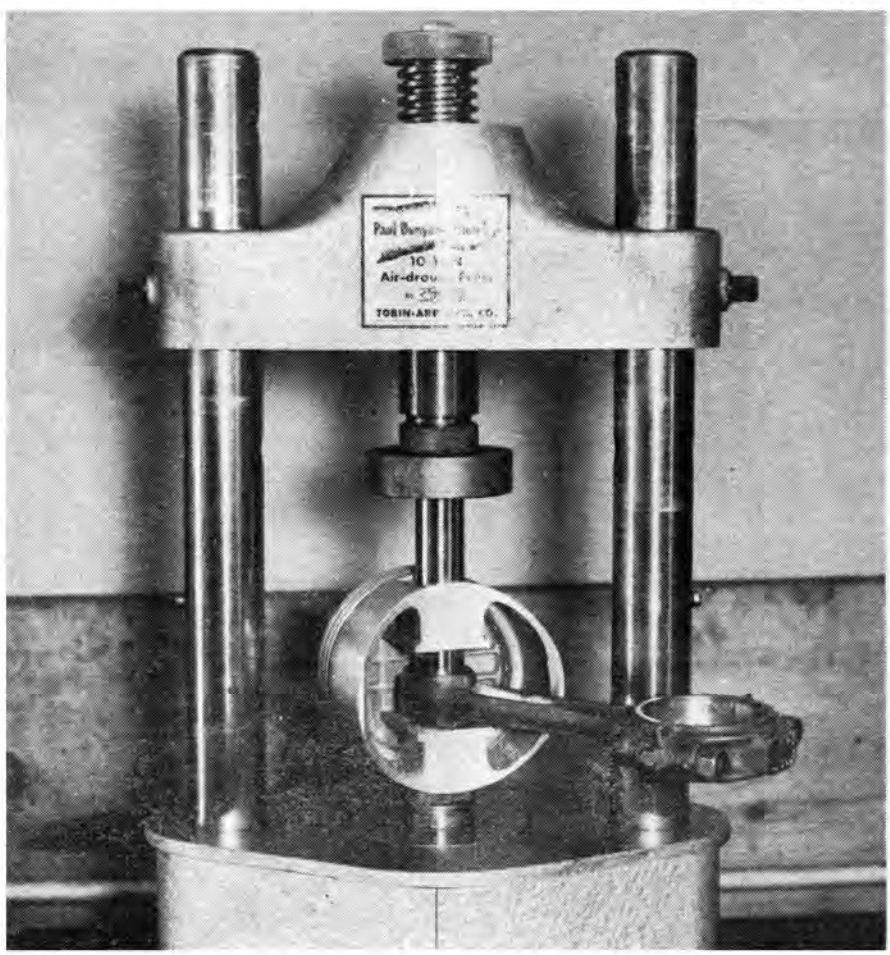
PHOTOS BY ERIC RICKMAN

tioned "mikes" out at .927 inch. Wisely deciding a differential of .002 inch wasn't enough for a press fit in a racing engine, Joe copperplates the Lincoln bushings, a process that deposits a .002 inch coating on them. Since this is of course on both sides, .002 plus .002 (copper plating) plus .002 (existing diameter differential) totals out at .006 inch interference fit—just right!

Using an ordinary vise that's in good condition, the oversize, copperplated Lincoln pin bushings are pressed into the stock Chevrolet rods. The bushings are pressed in half way, then the rod is rotated 180 degrees before proceeding the rest of the way. This insures a "square" fit. The length of the bushing along the axis of the pin isn't correct as installed; a little elbow grease applied to the correct end of a hacksaw corrects this in a jiffy. After filing both sides of the bushing flush with the rod, and de-burring the inner edges, the rod is ready to be honed to the correct fit on the rod in the normal manner.

After this operation is completed, you'll find the pistons can be removed and replaced on the rods as quickly and easily as any engine originally equipped with full-floating pins—the only tools required being the ordinary needle-nose pliers for picking out the pin locks (circlips), plus a light hammer and suitable drift for tapping out the pins.

Final recommendation from Joe Mailliard is that all pins be Magnafluxed before final installation.



Ten-ton air-hydraulic press is shown using alternate method of pin replacement and removal mentioned. Necessity for flats on pistons for use with stock pins is obvious.