Hercules Engine News

Including Economy, Arco, Jaeger & Thermoil

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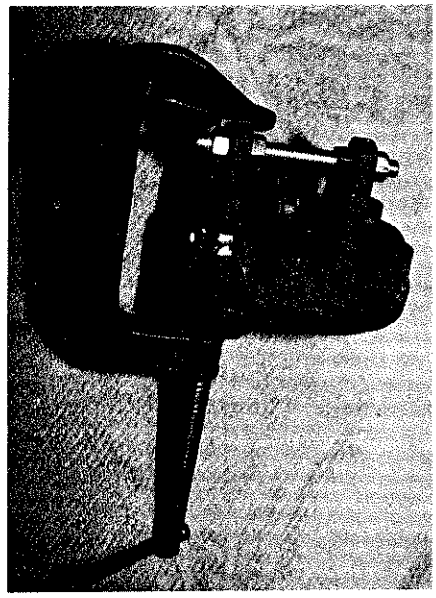
This article will cover the procedure necessary to rebuild the head on the 1½ to 2 HP Hercules built engines. Valves, valve guides, rocker arm support mountings and pin and the side rod support hole are all possible areas that may need repair. Although the following remarks are intended for the engines mentioned, many of these same principles can be applied to other sizes and brands of engines.

If parts are rusted and stuck, disassembly should be done carefully. If the exhaust rocker arm pin does not come out easily, it is likely stuck in the rocker arm hole. Proceed with caution so you don't break off one of the rocker arm support arms. Tap gently. If that doesn't work, heat the rocker arm and then continue to tap gently on the pin. It may require a slow cooling and reheating several times. If that doesn't work, take a hack saw and saw off the rocker arm pin on the end where the biggest gap is between the rocker arm and the support. This will allow enough gap to saw off the other end of the pin. You now may put the rocker arm in a vise or other suitable support and become more vigorous in trying to punch out the pin; however, it is still possible to split the rocker arm wide open. Heat again if necessary. Once the pin begins to move, apply a penetrant and



tap the pin back and forth until it is free. Once the rocker arm pin has been removed, a new one can be made from ⅜ inch rod. If the holes in the support arm are quite loose, I ream them and the rocker arm hole out to 25/64 inch and make a new pin to fit.

If a rocker arm support is broken off, I use the set up as shown in the picture to line up and hold parts steady for welding.

The procedure is somewhat the same with stuck valves. Tap the stem gently so the valve guide doesn't split. If the valve doesn't move, apply heat to the guide. Once the valve moves, apply penetrant and tap it back and forth until it will come out. If the end of the stem becomes mushroomed or bent from hammering on it, saw it off flush with the end of the guide. Continue to heat and with a hammer and punch continue the tapping process.

The valve stems are 5/16 inch in diameter. Once they are removed, if needed, they can be replaced with new valves or if usable, new stems can be put on the valve heads. If the guides are badly worn, I have a nearby automotive shop ream the guides to 11/32 inch. Valves from 350 Chevrolet engines have 11/32 inch stems. These used valves are usually available in abundance at auto repair garages. The heads are turned down to the proper size and faced. The stems are sawed off to the proper length. The protruding stem can be turned down to 5/16 inch so it looks original from the outside. A 3/32 inch hole is drilled for the cotter pin. Refer to the accompanying diagram for details.

The last point of repair is the side rod support hole. Originally this hole was about 33/64 inch in diameter. Another 64th of an inch play probably doesn't hurt, but if it is worn more than that, the inside of the hole should be built up and filed to a more original size. The hole could also be reamed out and be fitted with a thin bushing.

The next article will deal with the side rod and possible repairs that it may need. It seems like a simple part, but a lot of the engine functions depend on it. ○