

Hercules Engine News

Including Economy, Arco,
Jaeger & Thermoil

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
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The side rod (exhaust valve rod) on the 1½-2 HP Hercules built engines seems like a simple trouble free part. As the engine runs, the side rod wears in several places. The side rod and other parts involved with it can eventually cause problems. The rod eventually tilts to one side and drops down causing other parts to become out of line.

If you choose not to remove the head to remove the side rod, then proceed as follows: Remove the governor bracket, loosen the set screw on the timing gear shaft and then with a punch, knock the timing gear shaft out. If the shaft is badly worn, a new one can be made from ⅝ inch diameter rod.

The side rod tends to wear and tilt sideways where it goes through the governor bracket slot. It also wears where it goes through the support on the head which lets the end of the rod drop down. All of this eventually causes the ignition tripping mechanism and the cam follower roller to be out of line. The diagram above illustrates these points of

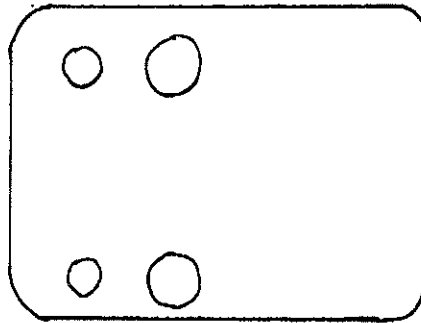


POINTS OF WEAR =  

wear.

These wear problems can be corrected by buying a new side rod or making one out of ⅝ by ¼ stock. The old one can also be built up at the wear points and ground and filed back to original shape. Building up the worn points will likely cause the rod to warp and it will need to be straightened.

Where the side rod rubs against the engine block there will likely be a worn wedge shaped groove. Clean this area and fill it with an epoxy filler. File it down smooth. Make a sheet metal plate similar to the one illustrated using the machined surface of the governor



bracket as a pattern. Place this plate between the governor bracket and the block when reassembling the engine. This provides a new wearing surface. When assembled, the side rod should slide freely back and forth. If it binds, look for high spots to be filed or ground off.

If the cam roller and pin are worn badly, I make a new pin from ⅝ inch drill rod and a new roller from one inch drill rod. Oftentimes a ¼ inch or so may be worn off the outer end of the side rod; however, the repairs mentioned here and in earlier articles should be sufficient without lengthening the rod.

Once repairs have been made to the side rod and the engine parts reassembled, it will likely be necessary to readjust the ignition and the exhaust valve timing. To make it easy to reinstall the timing gear, with the spring in place, push the side rod all the way toward the engine head and clamp with a Vise-grip. The gear and shaft then can easily be put back in place.

Coming up next will be a discussion on piston and cylinder repairs. ○