

Hercules Engine News

Including Economy, Arco,
Jaeger & Thermoil

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Rebuilding the governor on Hercules built engines is usually a simple matter if a step by step procedure is followed. Although there are slight differences between the governors used on the one piece block small engines and the larger three piece block engines, the steps are the same. There are also a few differences between the earlier governor and the later "H & S" model governors. To complicate matters further, many engine governors today are mixtures of the different model parts put together.

The accompanying illustration, although for the larger engines, shows all the important parts referred to in the article to follow.

Begin with the removal of the entire governor assembly from the engine. On most engines, an offset screwdriver will be a big help to reach in and loosen the slot head bolts used on most engines. Be careful to not let the governor spindle rod fall out (if it is of the "H & S" type). If the end of the rod falls out, you can usually find it, but the little ball will bounce away and hide forever.

Remove the governor weight pins. If they are worn, make new ones from stock of the original diameter ($\frac{1}{16}$ "). Peen one end and drill a cotter pin hole through the other end.

Remove the governor spindle rod, spring and any spacer washers. The head of the spindle rod may have notches worn in it where the governor weight fingers touch it. The other end of the rod may be worn off from turning against the detent

arm finger. A new rod can be made from a $\frac{1}{4}$ " diameter carriage bolt. Make the new rod slightly longer than the old one.

Remove the pin that holds the detent lever and the speed change body on. If it is worn, replace it. The detent arm finger may also have a depression worn in it where the spindle rod turns against it. Braze or weld it back up and grind to original shape. Some detent arm fingers have a wear button that may need to be replaced. The "H & S" governor detent arm may need a new adjustment screw. Sometimes a notch is worn in the opposite end of the detent arm where it touches the speed change lever. This may also need to be filled in. There is a small spring that causes the detent to unlatch for the power stroke. It only needs to be strong enough to push the detent lever out. The speed change lever bottom protrusion may be worn off and require building back up.

Remove the governor gear from the shaft by turning counterclockwise. It has righthand $\frac{1}{4}$ " NF threads. Be sure to loosen the governor gear retaining screw if it has one in the gear collar. Be careful not to break an ear off the governor shaft. Clamp the ear end in a vise and use a pipe wrench on the gear. If it

doesn't come off easily, use a propane torch and heat the gear. That usually does it. There should be a brass thrust washer between the gear and the housing. It is often gone or worn too thin. Make a new washer just thick enough so it doesn't bind when the gear is retightened. Unless the governor body and shaft have been broken, they are seldom too worn to use.

Finally, the detent blade should be straight and the end ground to an 80 degree angle so it will catch on the block. The catch block is reversible if badly worn. It can be refaced to a new 85 degree angle by using a narrow abrasive disk on a Dremel type tool.

Reassemble the governor using a few drops of oil at all moving points. Loosen the detent blade retaining screw and turn the detent blade adjusting screw until the blade just goes in behind the catch block when the side rod is all the way out (on the high point of the cam).

Although the information above pertains to the Hercules built hit and miss engines, the same guidelines can be used on many other brands of engines too. Coming next—rebuilding the head on the one piece block $1\frac{1}{2}$ to 2 HP engines.

