

**FIG. 4-28.** Wash the foam element in detergent and warm water (A). Wrap with a shop towel and press dry (B). Oil the element, wetting it thoroughly (C), and squeeze out the excess (D). Don't over-oil precleaners that stand against paper elements. Briggs & Stratton Corp.

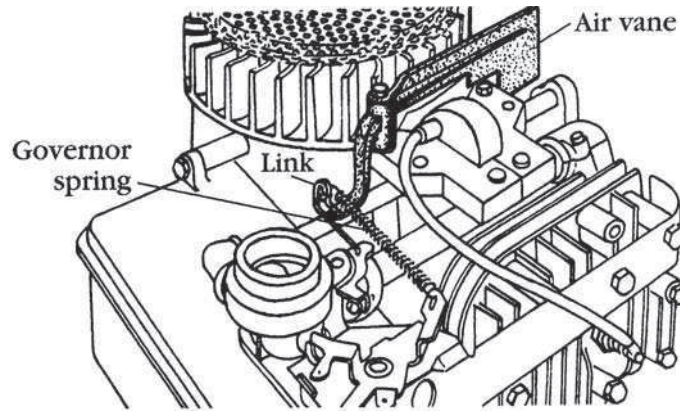
The cleaner-to-carburetor gasket should be renewed at the first sign of wear. Older and less expensive engines secure the filter with a single screw that, if bent, destroys the gasket seal. Replace the screw as necessary.

## Governors

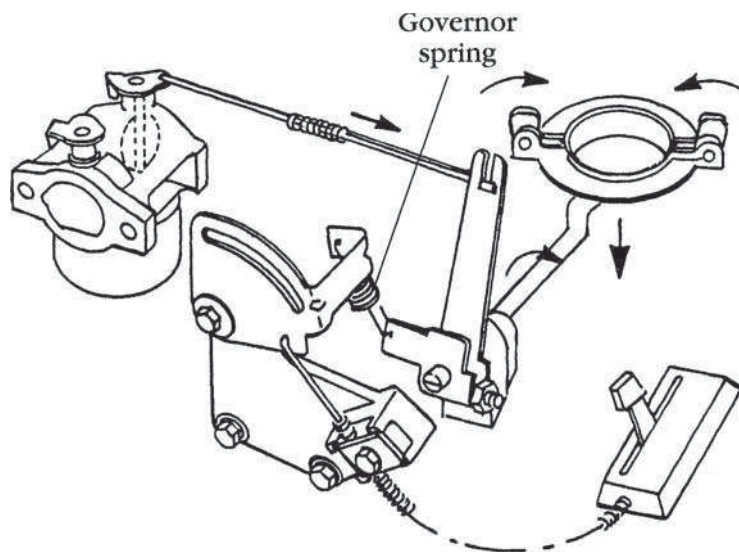
Small engine governors put a ceiling on no-load speed and hold rpm relatively constant under varying loads. Less expensive engines typically use air-vane governors of the general type illustrated in Fig. 4-29. The spring tends to close the throttle; the dynamic head of cooling air acting against the vane attempts to open the throttle. The manually operated throttle varies spring tension, relaxing it to allow the engine to run faster or, moved in the other direction, stretching the spring to slow the engine.

Centrifugal governors work in the same manner except that the closing force is generated by spinning weights, called *fly weights* (Figs. 4-30 and 4-31). These governors can be quite complex in detail and resist generalization.

Most governor malfunctions—hunting, lack of responsiveness, excessive no-load speed—can be corrected by replacing weak or distorted throttle



**FIG. 4-29.** The typical Briggs & Stratton governor uses a plastic vane loosely secured with metal tabs.

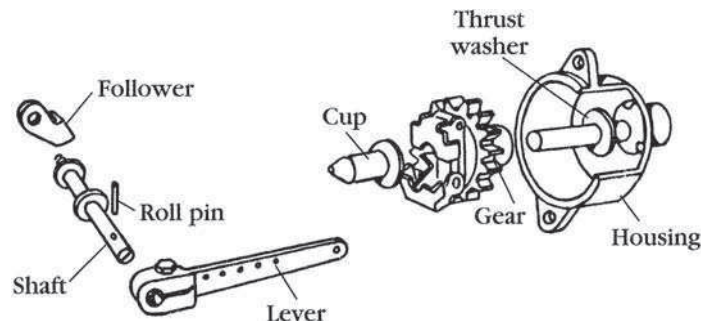


**FIG. 4-30.** Centrifugal governor operation in response to load. Engine speed drops and the weights slow, allowing the spring to pull the throttle open wider. Details vary with engine model, but the pattern of forces—the spring pulls the throttle open, the weights tend to close it with a force proportional to engine rpm—applies to all. Briggs & Stratton Corp.

springs and/or bent wire links. Do not change the geometry by installing springs or links in alternate mounting holes that might be present.

**Warning:** Governor springs are safety items that exert major influence on no-load speed. Ungoverned engines can act like grenades, exploding in fragments. Replace springs with the correct part number. Do not stretch or distort during installation. After any spring change, check no-load speed against the equipment manufacturer's specification with an accurate tachometer.

Mechanical governors incorporate an adjustment that, wrongly accomplished, affords the unwitting mechanic the opportunity to destroy the engine within seconds of startup. In most cases, the adjustment involves loosening the pinch bolt (Fig. 4-31) and rotating the shaft in a specified direction, relative to the lever. Because of the critical nature of this work, it should be farmed out to your local Briggs & Stratton distributor who, presumably, will stand good for mistakes.



**FIG. 4-31.** *The governor mechanism used for 60000, 80000, and 140000 engines. The housing, accessed from outside of the engine, is unique to this engine family; all other centrifugal governors live inside of the crankcase. The pinch bolt that secures the lever and shaft is the main adjustment point for this and most other Briggs & Stratton governors and **should not be disturbed during normal service activities, including engine overhaul.***