

ABSTRACT

The air-fuel mixture produced by a carburetor is controlled by an apparatus that includes a choke valve located in a passage of the carburetor. A solenoid with a moveable plunger rod coupled to move the choke valve between extreme open and closed positions, and having a stop fixed to the plunger rod. A bimetallic element changes shape in response to changes in temperature, wherein below a given temperature the bimetallic element engages the stop thereby restricting movement of the plunger rod and preventing the choke valve from reaching the extreme open position. Above the given temperature the bimetallic element changes shape to avoid engaging the stop thereby allowing the choke valve to reach the extreme open position. A foil electric heater is mounted on a surface of the bimetallic element to match the shape of the element to the desired performance characteristic of the engine.

