Smart-Choke™
System & Operation

KOHLER Engines

Engine Breakdown

7000 Series™ - Full Engine

Air Filter Cover Removed

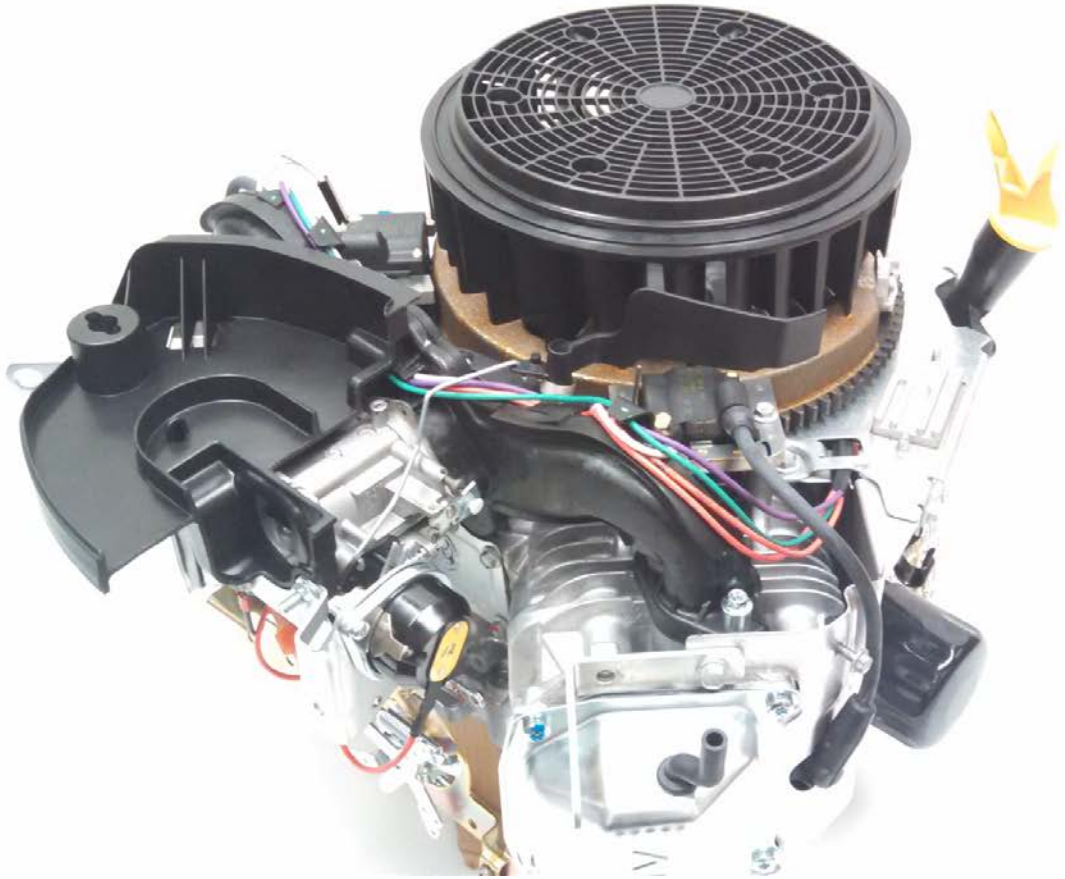
Blower Housing Removed

Air Filter Removed

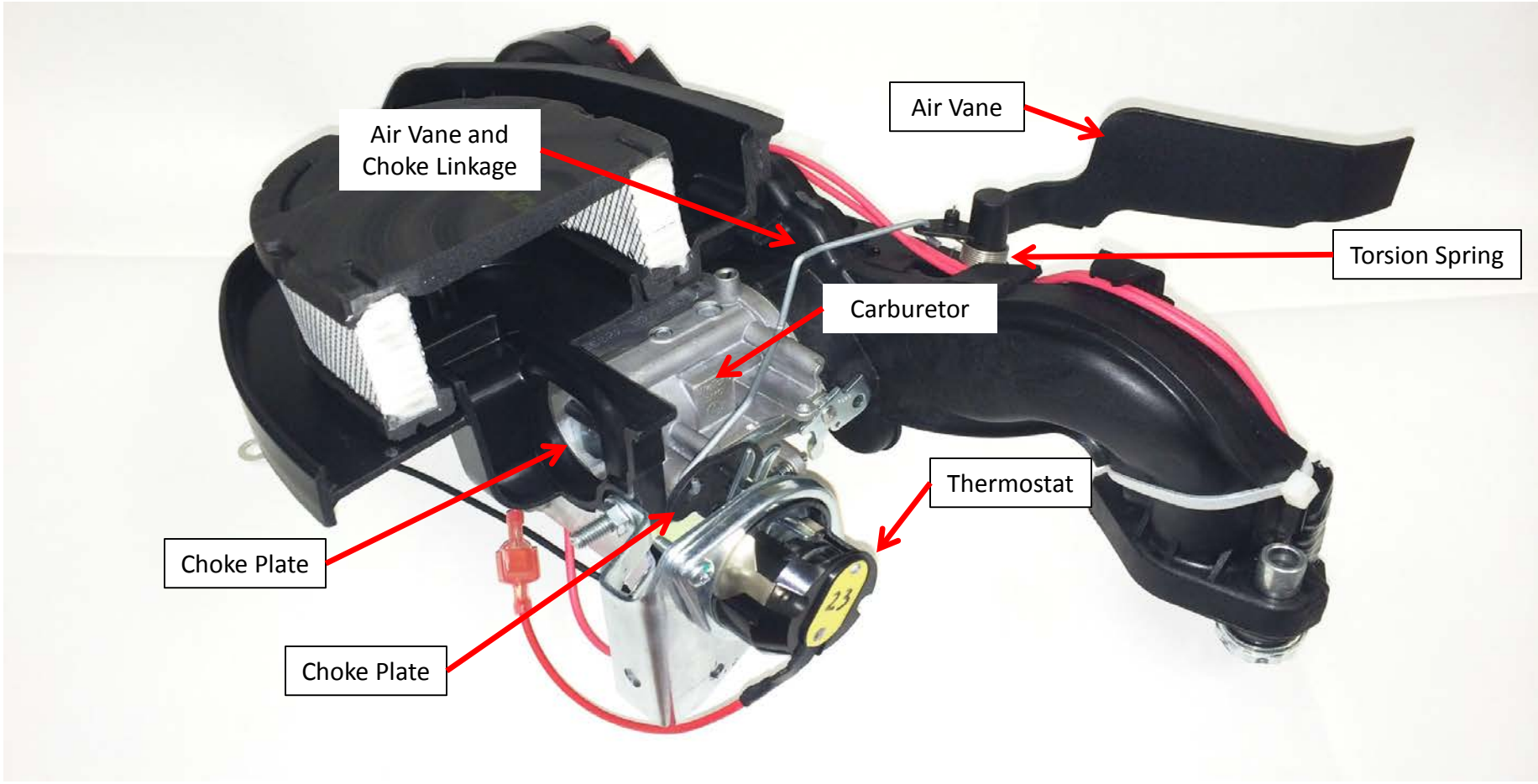
Smart-Choke™
System & Operation

KOHLER Engines

Cutaway - Smart-Choke™ Assy



Component Breakdown

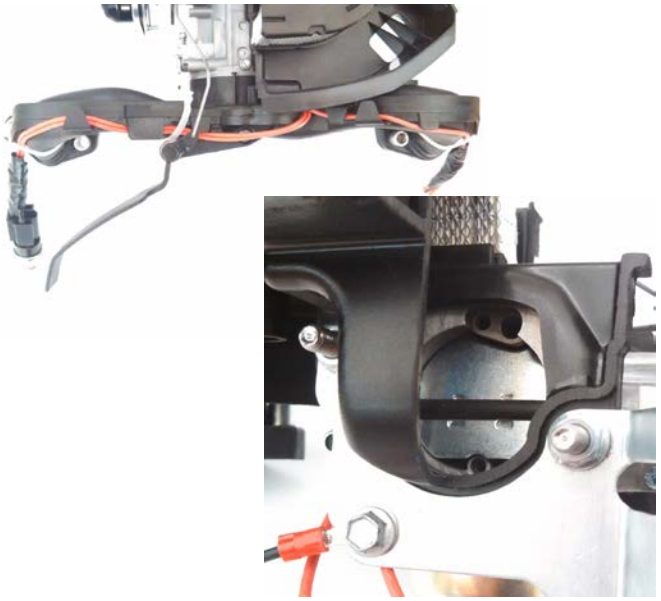


Smart-Choke™ Operation

Initial Startup

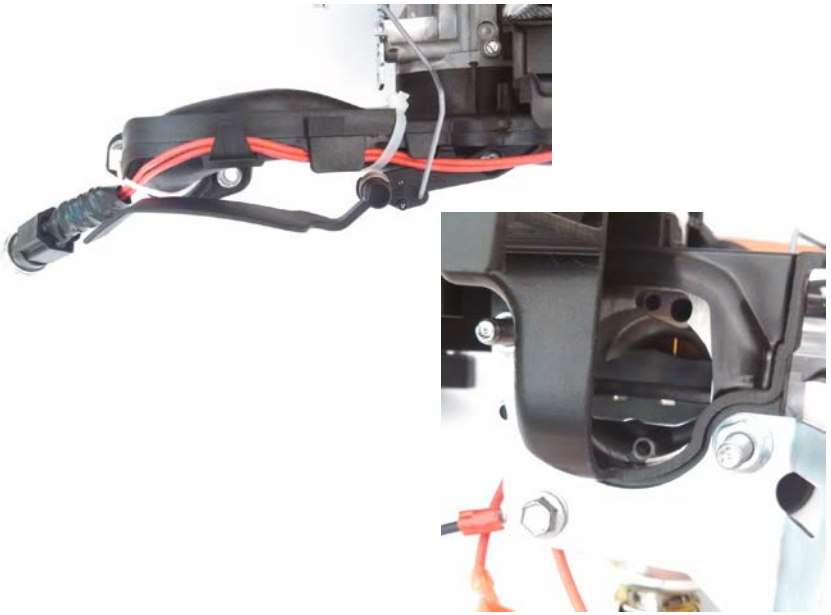
Cold Start

- The air vane is relaxed and choke plate closed



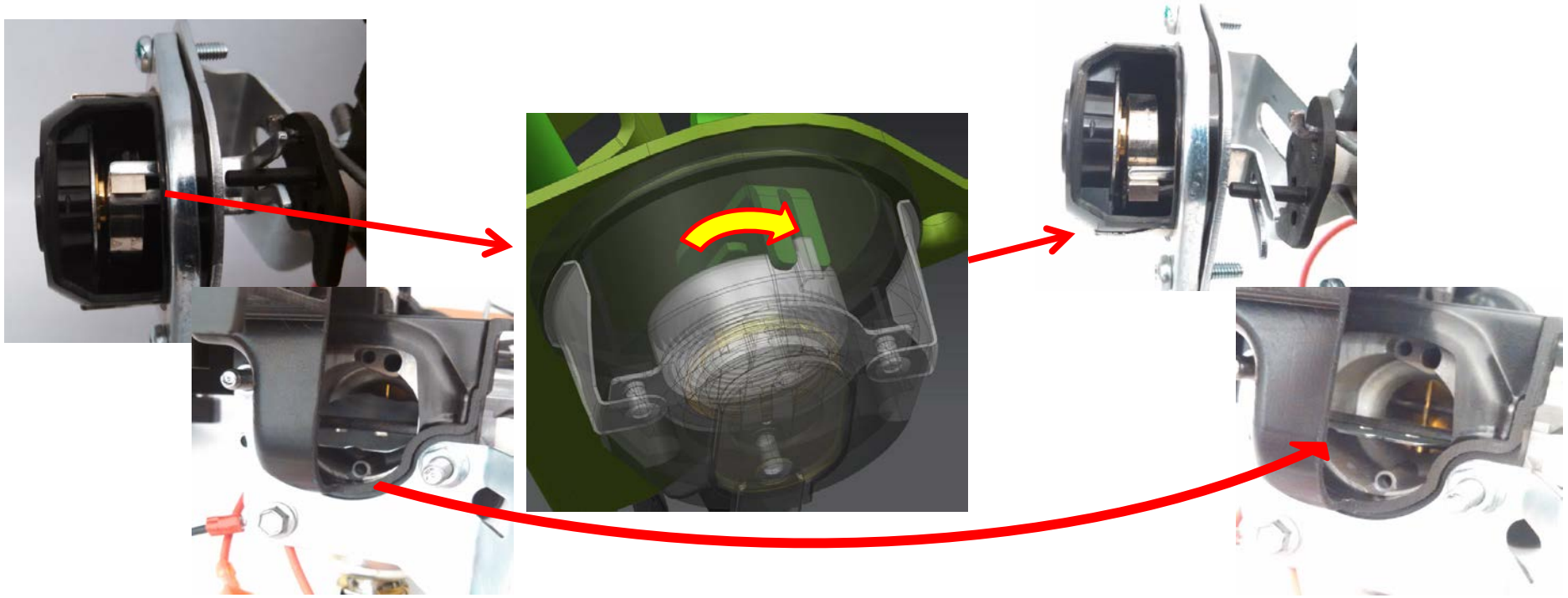
Cold Engine Running

- Air vane is open and choke plate is 2/3 Open



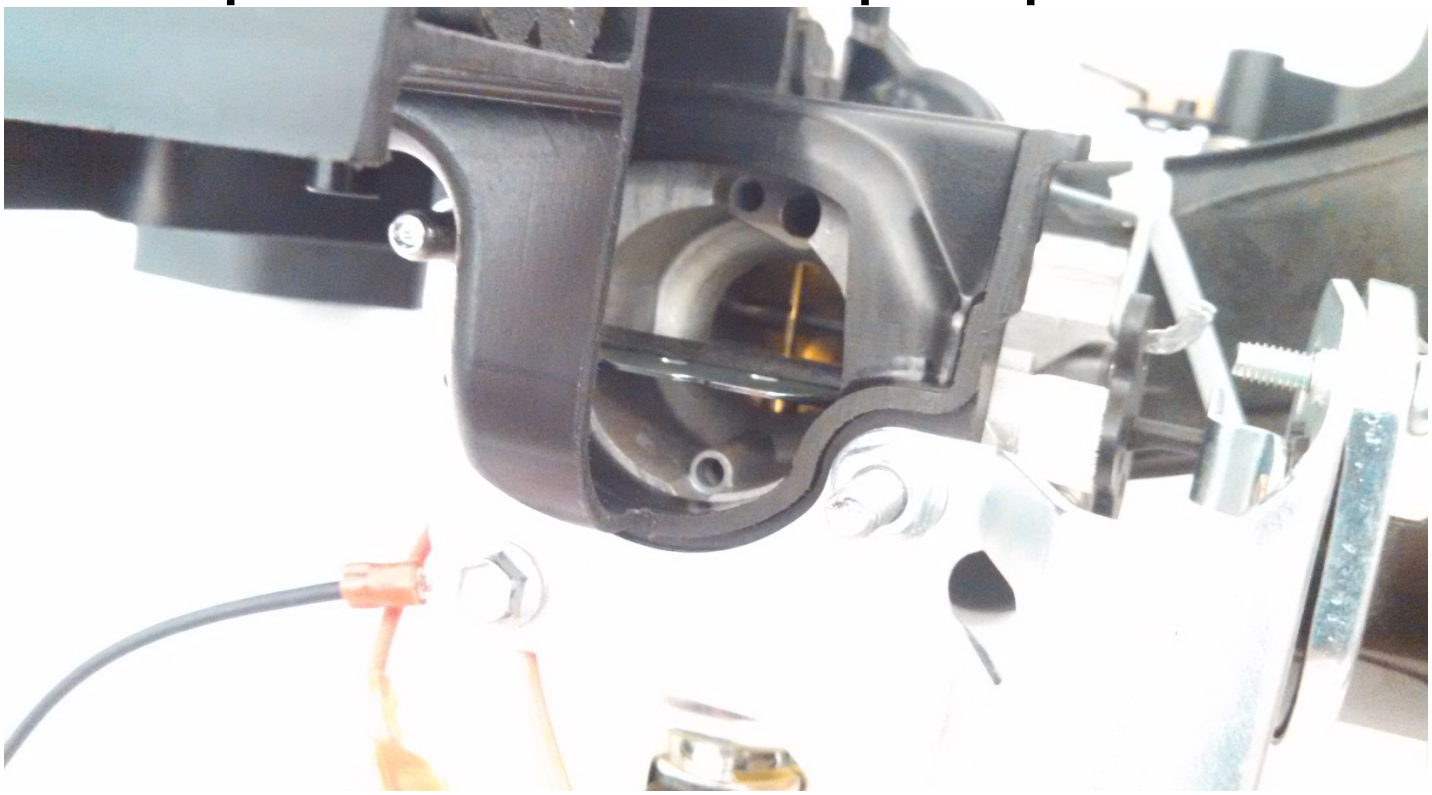
Cold Engine Running

- Bimetallic thermostat is heated by electric resistor gradually opening choke plate



Warm Engine Running

- Choke plate is at wide open position



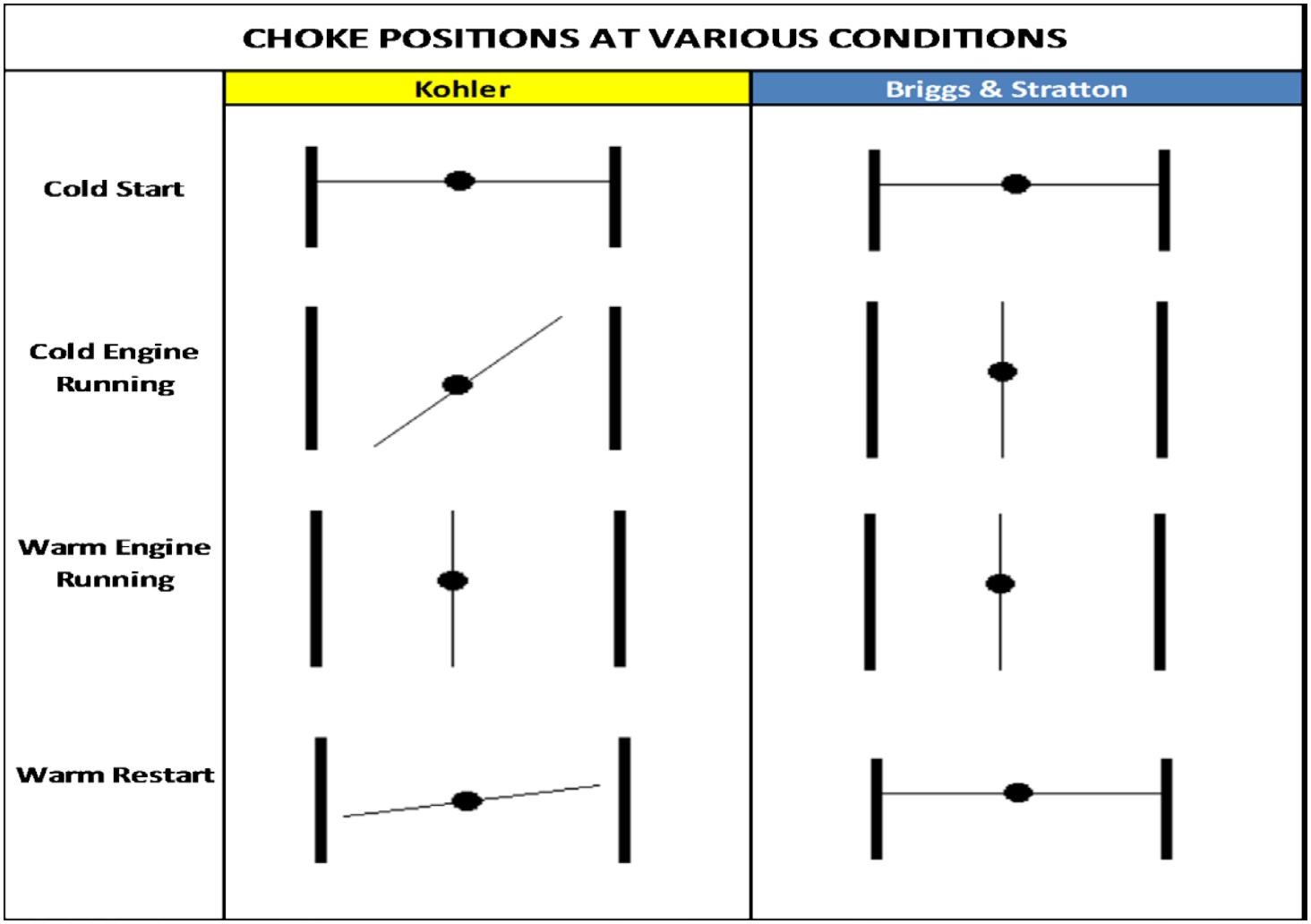
Static Warm Engine

- When engine is turned off the bimetallic thermostat keeps the choke plate 1/3 open for best in class restart capability

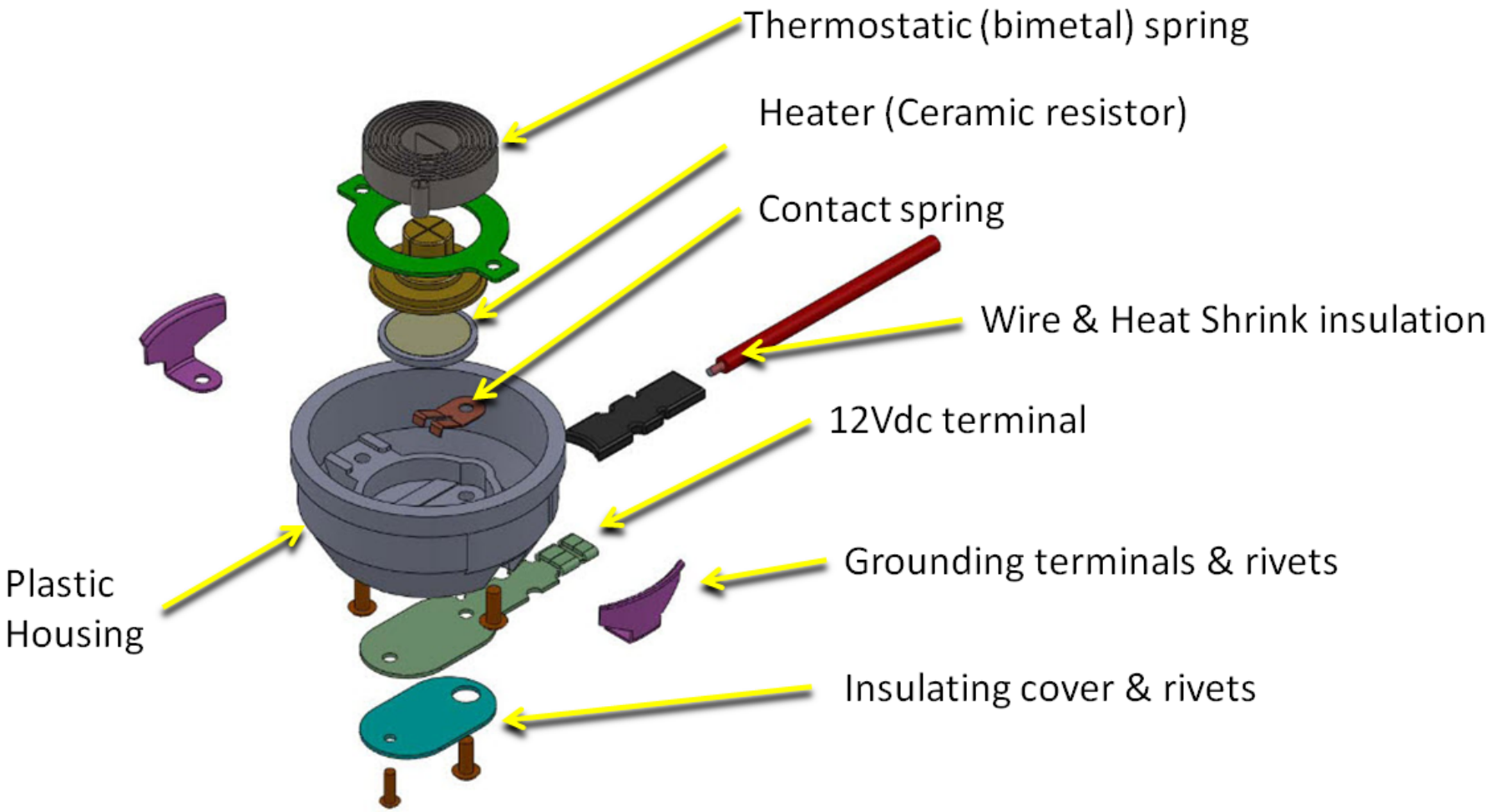
Performance Comparison

- The B&S mechanical system does not use a bimetallic thermostat to accurately control the choke plate position
  - When the B&S air vane is forced back, the choke plate moves to wide open position
    - System is either closed or wide open
  - Wide open choke plate causes the fuel air mixture to run lean, killing the engine in cold running conditions

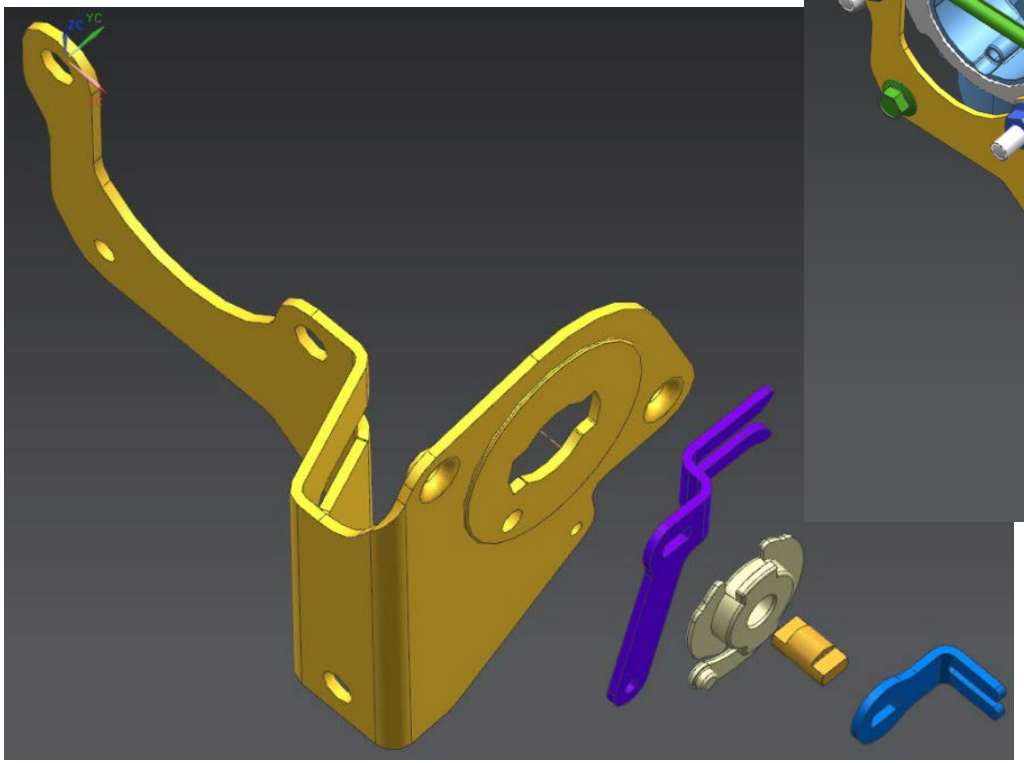
Smart-Choke™ Appendix

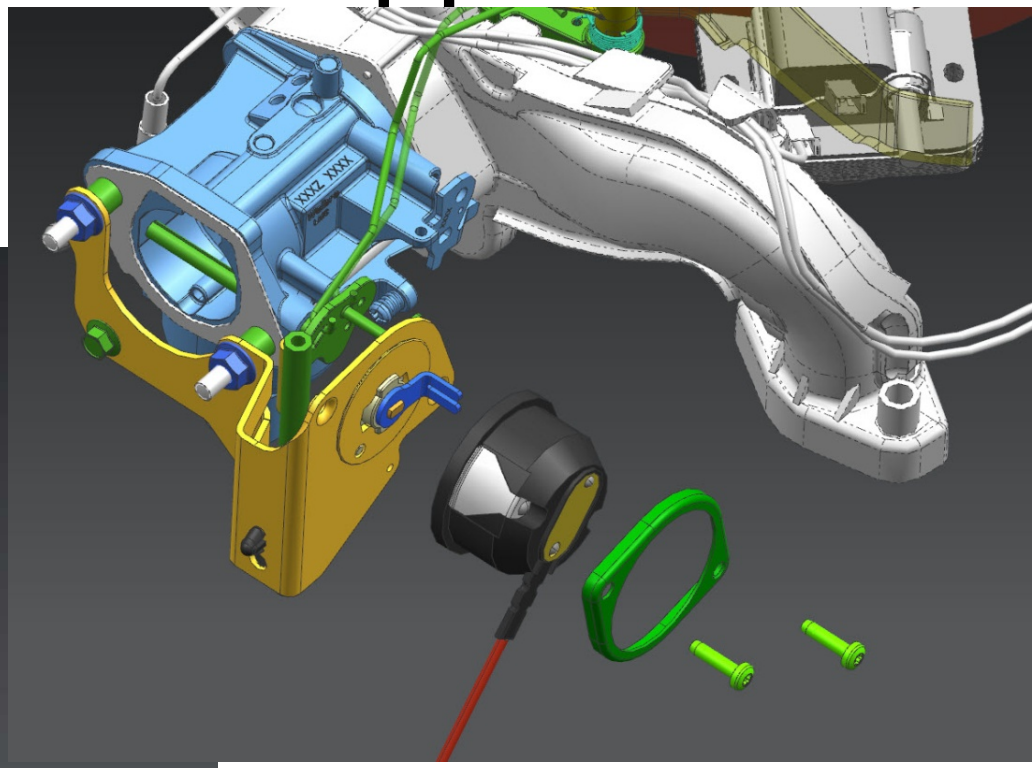


Smart-Choke™ Appendix

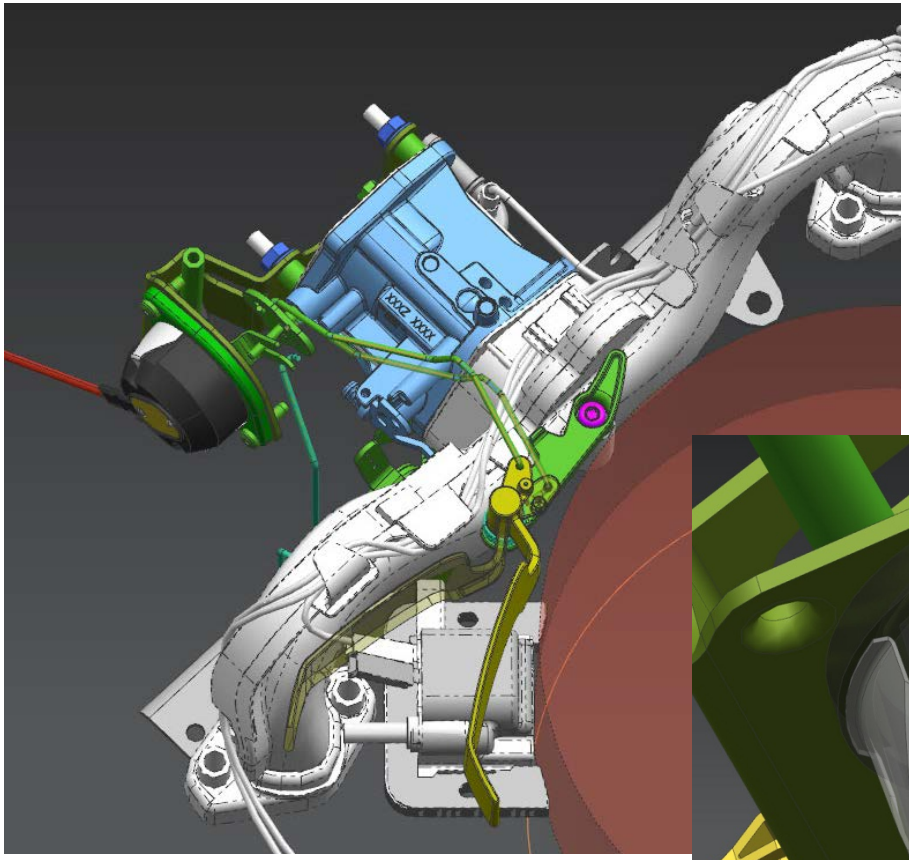


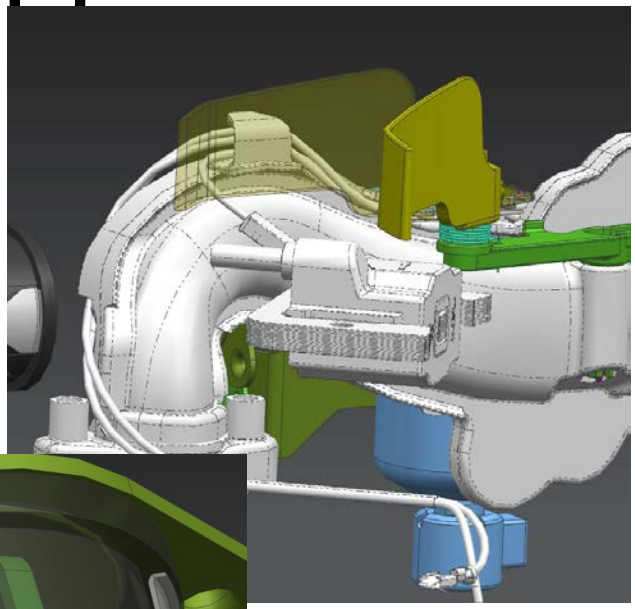
Smart-Choke™ Appendix

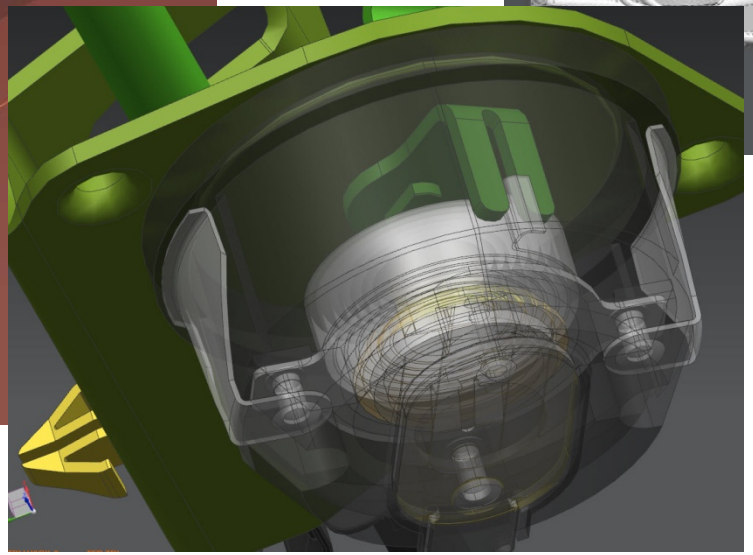




Smart-Choke™ Appendix



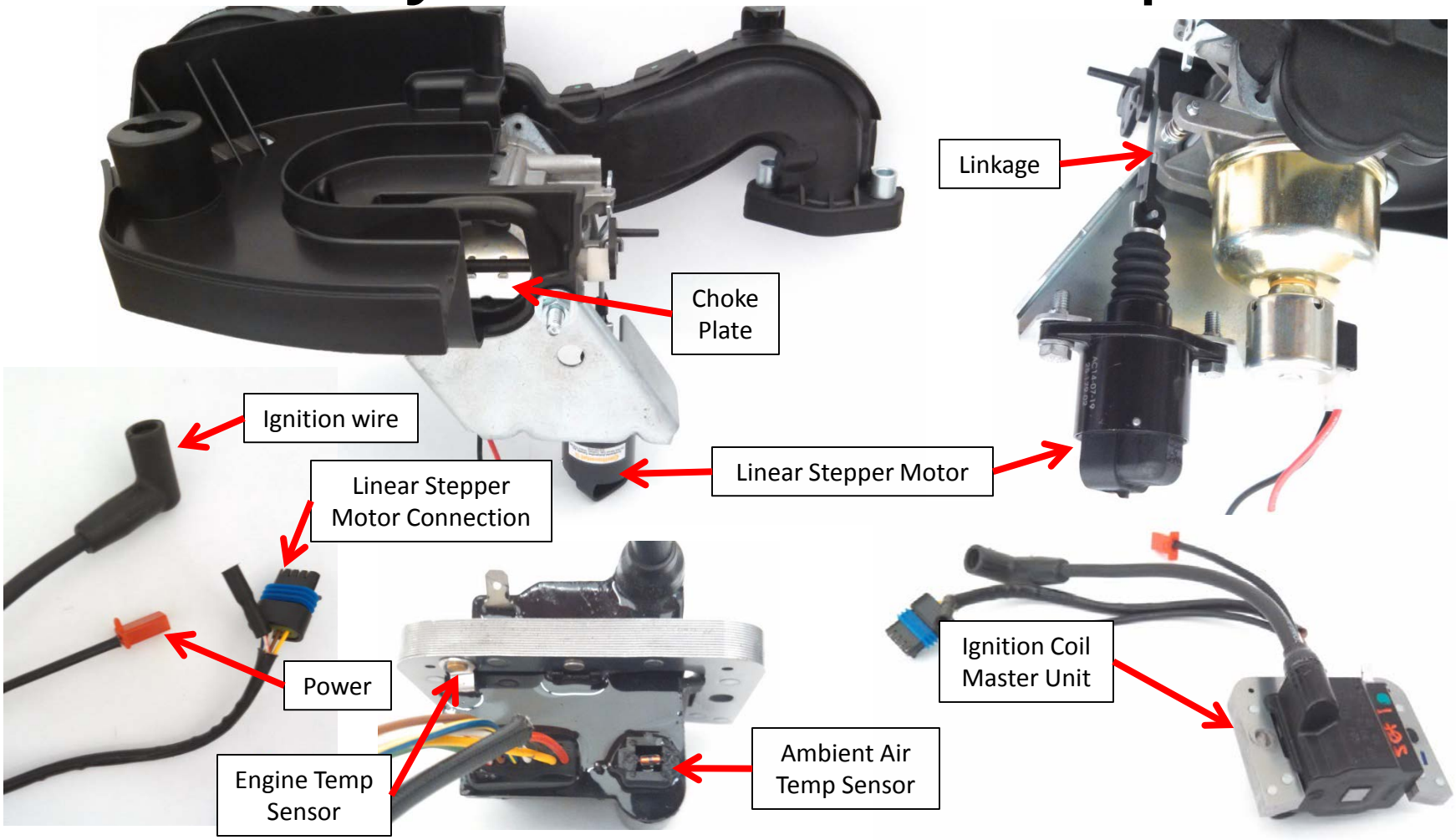




eChoke™ System & Operation

KOHLER. Engines

Cutaway - eChoke™ Components



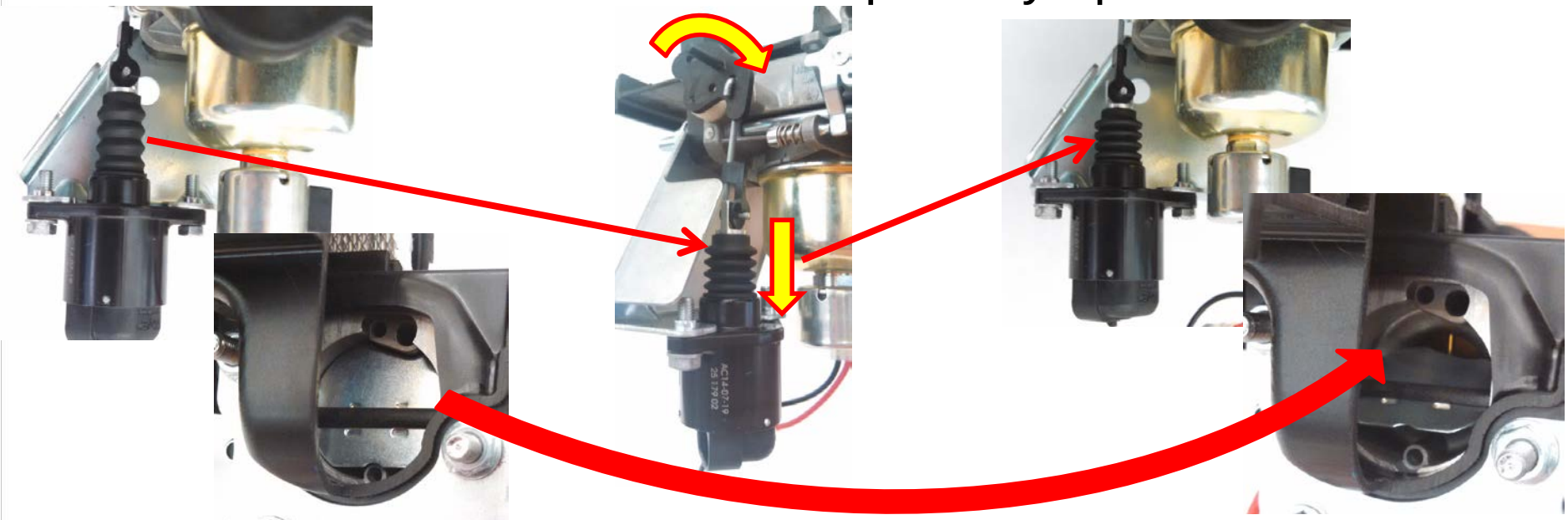
Initial Startup

Cold Start

- Linear stepper motor fully extended. Choke plate closed

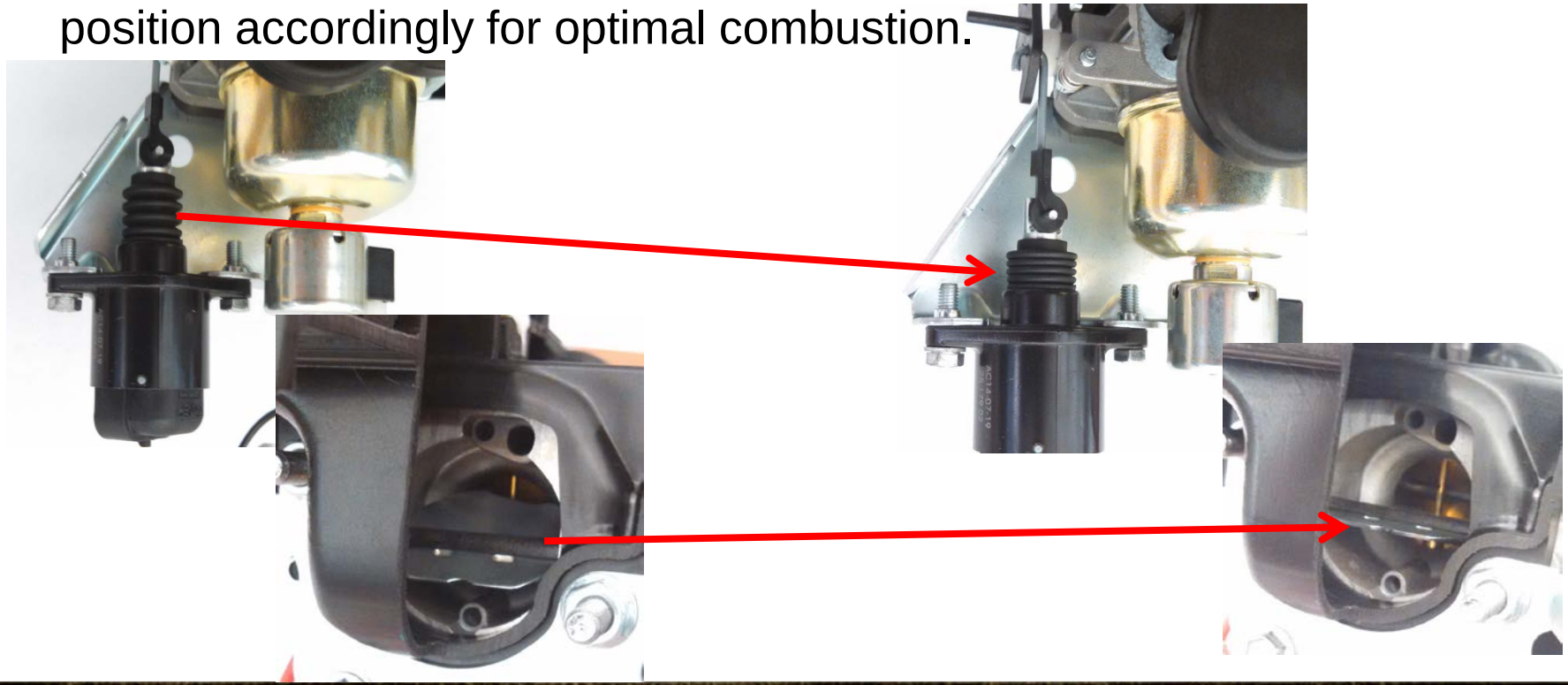
Cold Engine Running

- Linear stepper motor partial contracted. Choke plate partially open



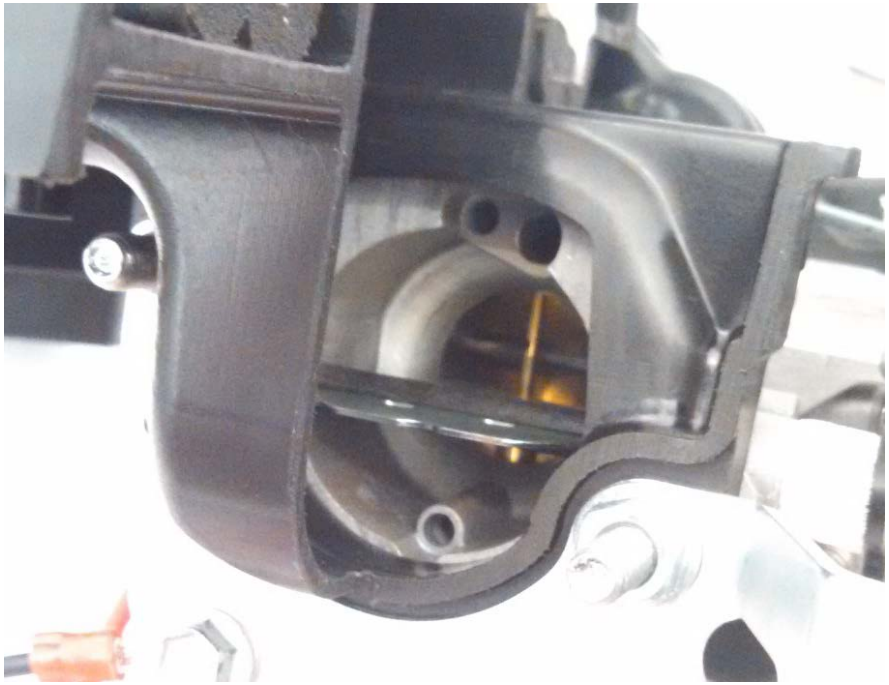
Cold Engine Running

- As engine warms, ignition coil heat sensors use temp of ambient air and engine temp to signal linear stepper motor to ramp choke plate position accordingly for optimal combustion.



Warm Engine Running

- Heat sensors signal stepper motor to move choke plate to wide open position



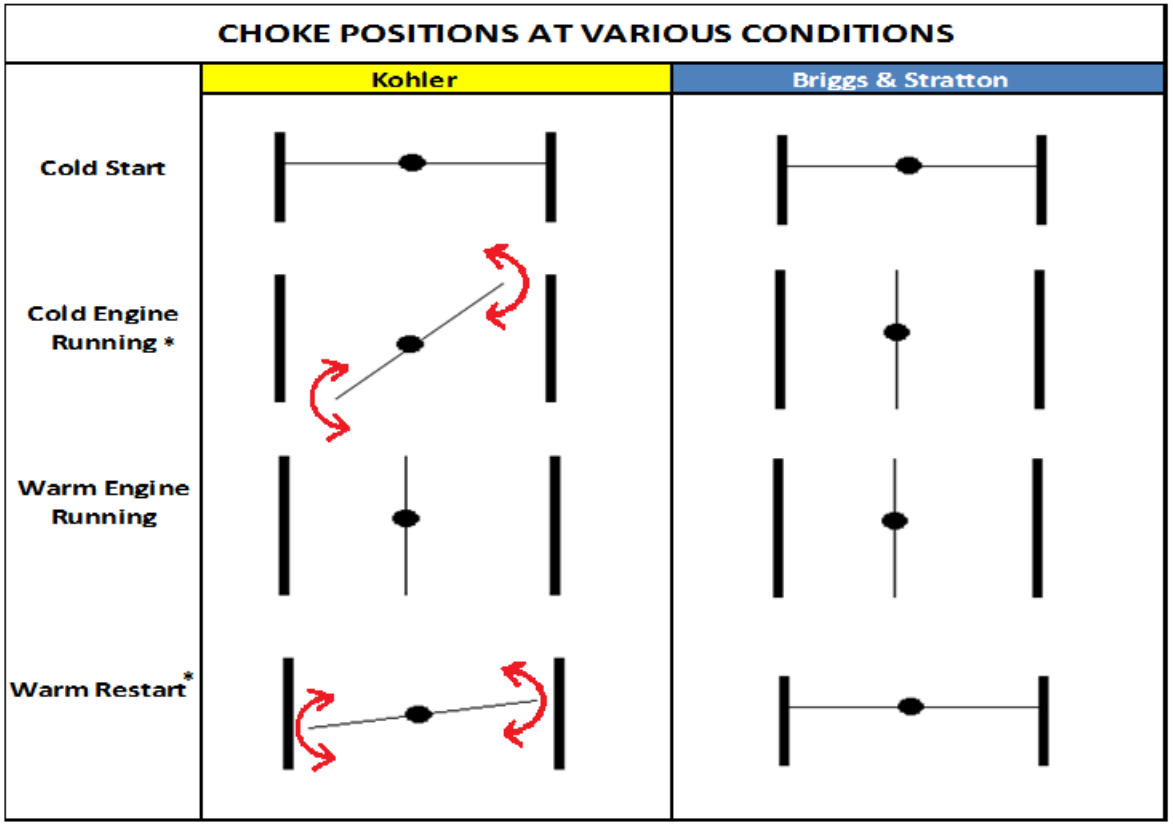
Warm Restart

- When engine is turned off, choke plate is closed. When warm engine is restarted, all temp sensors record temps, and linear stepper motor is signaled to open choke plate as needed for optimal combustion.

Performance Comparison

- B&S only has a mechanical system which does not use temp sensors to control choke plate position
  - System is either closed or wide open
  - Wide open choke plate causes the fuel air mixture to run lean, killing the engine in cold running conditions

eChoke™ Appendix



*Choke plate moves to position required for optimal combustion depending on temp sensor readings