

Burner with linkage drive?

Nearly all fuel burners use a common drive motor that is connected to the driven devices such as valves and damper with linkage rods. The work fine but they don't work as well as they could.

There are several drawbacks with linkages and a common drive motors

- Each fuel is interconnected to the other. Since the back up fuel usually is harder to burn than the primary one, setup compromises must be made to accommodate the back up fuel resulting in non-optimal efficiency.
- There is "slop" in the linkage system so added and wasteful excess air is required
- There is hysteresis in the linkage system that like slop, requires added excess air
- Linkage hardware wears, causing higher maintenance and safety concerns
- The linkage system can be adjusted for maximum fire and for low fire unless you have a characterized cam setup. Without the cam, some burners don't burn fuel in the mid-range very efficiently.

There is a better way.

Boilers are more efficient and thus less costly to operate when the burner runs as well as it can. Several firms have developed microprocessor controlled burners that utilize servomotors to position vales and dampers.

- Each servomotor is independent from each other – the linkage is gone.
- Each fuel is set up with a different "fuel curve" so that the burner utilizes each fuel as well as its design allows.
- There is no hysteresis so no compromise in set up
- There is no "slop" so there is no compromise in set up
- There is no mid-range problem because there are many points in the "fuel curve."

Several firms have developed such systems and they all work great when properly commissioned. There's one of the rubs against some of them – they are VERY difficult to commission. Another rub is that if a component needs to be replaced, the whole system needs to be re-commissioned on some of these systems.

We've used these systems. We have definite preferences from experience.