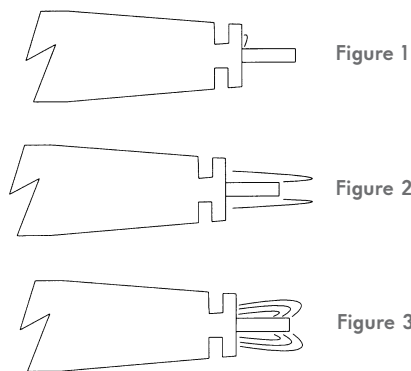


# General Information | 4051 Igniters

## OPERATION TIPS

The 4051 Igniter has a very wide tolerance of air settings, but if the air flow through the igniter is set at extremes, the spark may be unacceptable for lighting the burner. If the air is turned off or is set very low, the spark will arc at a single point on the igniter body (Figure 1). If the air is set very high, the fuel/air ratio around the spark may be so "lean" that the burner will not light (Figure 2). With the ideal amount of air, multiple arcs are produced around at least 120 degrees of the electrode (Figure 3). These arcs should travel along the entire length of the exposed electrode. One setup technique is to observe the spark outside the burner and adjust the air until the optimum spark is achieved.

Do not use the 4051 spark igniter with premix burners or burners that must be lit at high excess air rates. The burner excess air lighting limit is dependent on the fuel/air ratio at the ignition source. 4442 Tempest® burners can be lit at higher excess air rates than 4422 style burners due to their higher excess air limit.



## REPLACEMENT ELECTRODE

Replacement spark electrodes with the ceramic centering spider attached are available. The final length of the electrode is determined by cutting off the excess length after the electrode is assembled in the igniter body. Cut the electrode rod with a hack saw or heavy wire cutters leaving 1/2" of the rod protruding from the igniter body.

## INSTALLATION

1. Install igniter into 3/4" NPT pilot/igniter fitting in burner. For easy removal, use an anti seize compound on igniter threads and finger tighten only. Over tightening with a wrench could cause the igniter to bind and seize in the burner body.
2. Connect assisting air supply to igniter assembly through either of the two 1/8" NPT taps provided. Assisting air must be tapped from a 6-20 psi air source (P1). The combustion air header upstream of the main air valve is an excellent source of ignition assisting air. The igniter air supply line should be 1/4" tubing. The unused tap can be used to read the air pressure in the igniter body (P2). The air pressure in the igniter body (P2) will be much lower than the air pressure at the supply source (P1).
3. A limiting orifice valve should be placed in the igniter air supply line if the igniter air supply pressure is greater than 20 psi, or if lighting a 4442-0 to -4 Tempest burner. The limiting orifice valve can be set by adjusting the air supply until the igniter body pressure (P2) is 0.2-1 psi. Small Tempest burners light best with lower air pressures at the igniter.
4. Connect the ignition cable from the transformer to the igniter. The transformer and the igniter must be grounded to insure proper spark.

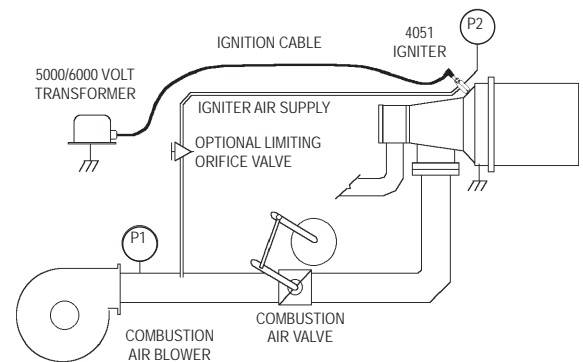


Figure 4

## 4051 REPLACEMENT ELECTRODE LIST

Igniter Size	A	B	C	D	E
Electrode w/Spider	4-20825-1	4-20825-2	4-20825-3	4-20825-4	4-20825-5