



Readers Rick and Bonnie Fricchione sail their Hylas 49 near Montauk, Long Island.



Any thoughts on how to get the “spark” back in the burners on our Force 10 stove? The ignition sparkers on all three burners are, at best, sporadic. I’ve gotten some basic info from the factory, but it hasn’t helped. The ignitor’s battery has been replaced, the ends cleaned, and what I thought might be the issue—stove grease—has been taken care of.

Rick & Bonnie Fricchione
Black Diamond, 2007 Hylas 49
Portsmouth, R.I.

Your stove is most likely the same model as the one we tapped as PS Best Choice in July 2007, the Force 10 American Standard three-burner (63351, www.force10.com). Unlike some older stoves, this model has an electric-spark ignition rather than a flint-style piezo system for lighting burners. There are a number of potential failure points in these designs, but troubleshooting and repairing them is fairly simple and inexpensive.

In the electric-spark system, a closed circuit is required for the electricity created by the AA-battery source to supply power to all attached spark plugs. When the burners’ push-to-start knobs are engaged, the circuit is completed by a spring-loaded contact system. From what you described, it sounds as if this may be where your problem lies.

To diagnose the system’s ailments, Force 10 Vice President Brad Clark suggests the following: Test the spark plugs by pushing in and holding control knob. (Do not turn it.) If the burners spark, you can rule out issues with the battery, spark box, and spark plugs.

Take off the control knobs and control panel so that you can access the valves’ micro switches, which are on the shaft of each burner; all of the burner switches are on a harness. Remove the micro switches by pulling off the clip, spring, and brass washer on each valve system. Once the switches are removed, open them up and lift up their push mechanisms, which have brass “+” shaped contacts. Be sure these are free of corrosion and clean them if needed; then put them back in place. Before re-attaching the spring on the valve shaft, slightly pull its ends apart to elongate it.

If the micro switches require more than a simple cleaning, you can order a replacement micro-switch harness from Force 10 (800/663-8515) for \$30.

Although an electric-spark ignition system can last 10-plus years if it’s properly maintained—batteries changed, switch contacts cleaned, springs attended to—the long-term reliability of the spring-loaded micro switches has been debated for some time. In 2011, Force 10 replaced them with momentary switches. “The tradeoff with this new system is increased reliability and ease of use, but the loss of one handed starting,” Clark said.

The cheapest—and easiest—fix we’ve found for sparkless burners is a \$3 grill lighter, which enables you to manually light the burners. These cheapo lighters won’t last forever either, so we suggest keeping a few on hand.

A more detailed troubleshooting guide on the Force 10 galley range appears with the online version of this story at www.practical-sailor.com.

Electronic Spark Ignition Trouble Shooting

| <u>PROBLEM</u> | <u>CAUSE</u> | <u>Solution</u> |
|---|--|--|
| Ignition system does not spark at any of the burners | Dead Battery | Install a new AA Battery |
| | Battery holder has corrosion on terminals | Clean terminals to ensure contact |
| | Loose battery holder (can cause poor ground connection) | Check rivet holding battery holder to stove is tight |
| | Loose wire to battery holder | Replace battery holder |
| | Ignition box has shorted out. (Water has spilled over the back of the stove) | Replace spark ignition box |
| Burner will not spark when knob pushed in, but will spark when another knob is pushed in | Bad microswitch | Replace microswitch harness |
| | Microswitch not depressing enough | Remove control knob and depress valve stem. Valve may need to be adjusted. |
| Burner will not spark when knob pushed in and does not spark when another knob is pushed in. (All other burners spark) | Bad microswitch | Replace microswitch Harness |
| | Cracked spark plug | Replace spark plug |
| Burner spark continuously | Loose wire at ignition box | Check connections at ignition box. |
| | Microswitch is on not square on the valve stem | Straighten the microswitch |

From the: ***Gourmet Galley Range Manual - Force 10***

5. Push control knob as far as it will go and turn it counterclockwise to the HIGH, position until burner is lit.
6. Sometimes the burner will sputter for a while before igniting. Give your range 10-15 seconds to purge the air out of the gas line.
7. Continue holding the burner control knob all the way in for about twenty (20) seconds after ignition. This will heat the thermocouple and allow the gas valve to stay open. The thermocouple is designed to cut off the gas supply to the burner if the flame should accidentally be extinguished.
8. This arrangement also ensures that the range is childproof to the extent that a simple twisting of the control knobs will not light any burners or allow gas to enter your boat.
9. If the ignition fails, turn the burner OFF and apply a lit match or lighter to it before turning it back to the HIGH position.

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Remember: The Burner Control Knob must be held all the way in for twenty (20) seconds after ignition in order to heat the thermocouple and allow the gas valve to stay open.

There could be a problem with the thermocouple. The small upright attachment next to the burner on the range top is one end of the thermocouple.

Test operation of thermocouple.

A simple way of testing the thermocouple is to ignite the burner with the control knob removed from the valve stem. Using your fingers directly on the valve stem, depress, turn to high, and light the burner

. If it stays lit after 20 seconds the thermocouple is working properly. If the burner does not stay lit when using the control knob, it is possible that the knob is contacting the face plate before the valve stem is fully depressed. Remedy this by adjusting the position of the knob on the valve stem.

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