

December 3, 2007

**PROBE CONDITIONING
SYSTEM- P/N 13011
FOR BATCH FURNACES
INSTRUCTION MANUAL M4505E**



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INTRODUCTION

Thank you for selecting *SSI* P/N 13011 for your batch furnace, probe maintenance application.

You lubricate critical machine parts on a regular basis if you want them to last. Your zirconia carbon sensor also requires regular maintenance. Buildup of carbon in the space between the zirconia sensing element and the sheath, and at the sensing point, will eventually adversely affect the proper operation of the probe. If carbon (soot) is allowed to accumulate to the extent that atmosphere cannot penetrate to the sensing surface, control is impossible. The 13011 is designed to prevent that from happening by periodically initiating a procedure to remove the carbon. It is intended for use with batch furnaces only.

SPECIFICATIONS

- ◆ Reference air flow- 2 scfh max
- ◆ Burnoff air flow- 10scfh max
- ◆ Burnoff cycle time- 1 to 10 minutes
- ◆ Dimensions- 12" x 12" x 6"
- ◆ Mounting holes- 10" horizontal, 12.75" vertical, for 1/4" bolts. Use standoffs.
- ◆ Weight- 17.4 lbs
- ◆ Actuation- N.C. inner door relay contact.

DESCRIPTION

The 13011 probe conditioning system is designed for use with a batch furnace. Although many such furnaces are equipped with programmable controls that could conduct probe conditioning on a regular basis, it has been our experience that this programming capability is seldom used. Existing burnoff systems that are designed to work with a programmable controller cannot be used as "stand alone" systems without significant modification. Further, most cannot provide adequate air for burnoff because they simply switch the output of low flow reference air pumps to the burnoff fitting without regard to adequate flow. The 13011 is further designed to use combustion air for both reference and burnoff functions. Pages 3 - 4 show the piping and wiring diagram of the 13011.

INSTALLATION

The compact JIC box is provided with flanges, each having two 1/4" mounting holes 10" apart. Flange holes are vertically separated by 12.5".

Locate the box within about six feet of the sensor, if possible. Mount on standoffs away from hot surfaces in order to prevent damage to the electronic components.

OPERATION

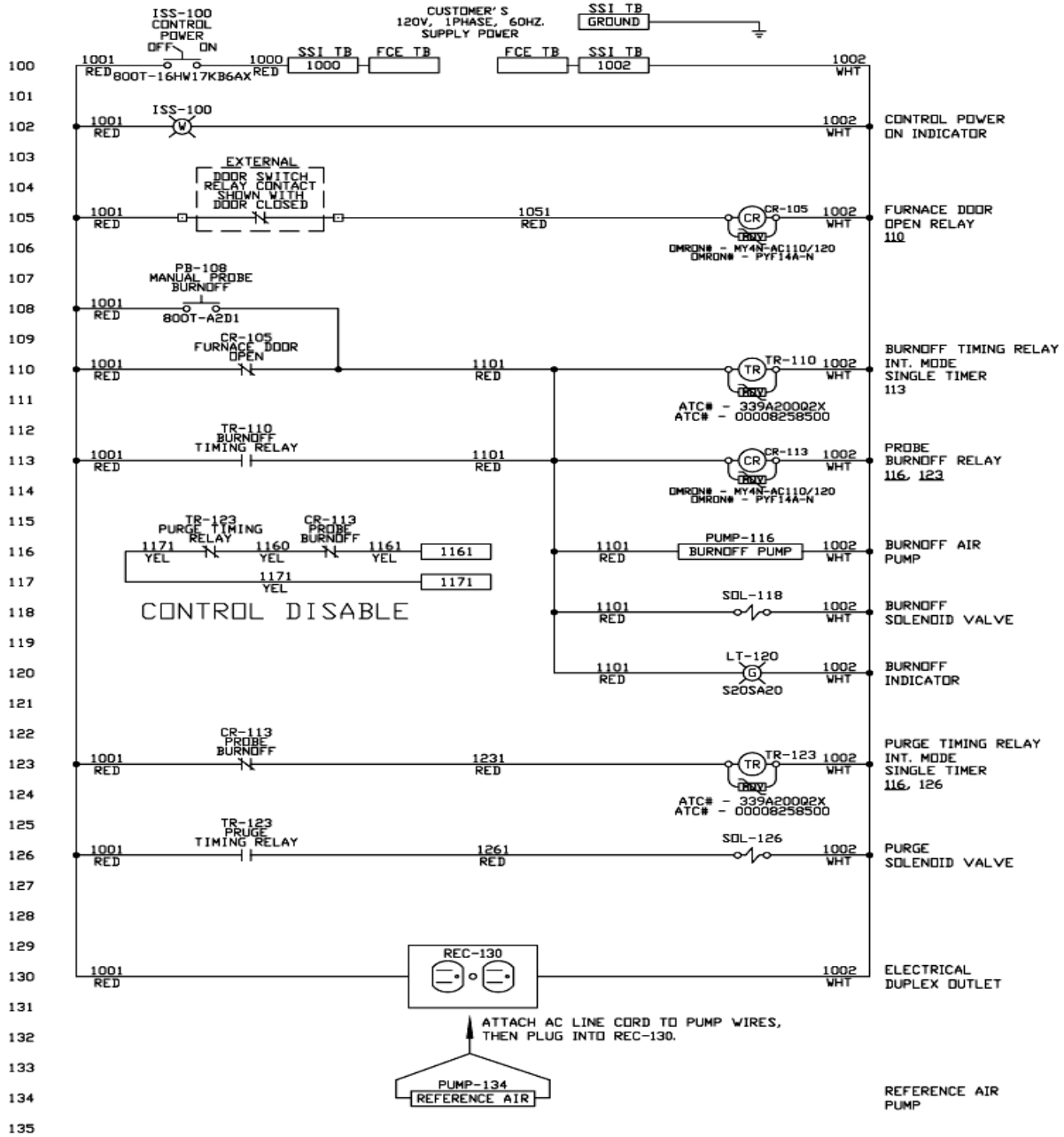
Once you have conducted the brief startup procedure outlined here, you need only sit back and enjoy safe, effective probe conditioning. No special programs to write, no scheduled operator routines.

With the system wired as illustrated, furnace at normal operating temperature, and the valve on the burnoff air flowmeter closed; set the timer to 3 minutes. Turning the power on will immediately start a timing cycle. Observe the probe temperature and O₂ millivolt reading, and increase the burnoff airflow until the millivolt reading is below 200 millivolts, preferably close to zero. The temperature will pass through a maximum as the flow is increased, then drop to a value close to the normal probe temperature. Burnoff will now occur each time the inner door is opened, and then closed. A manual burnoff can be conducted simply by turning the power off momentarily to reset the timer.

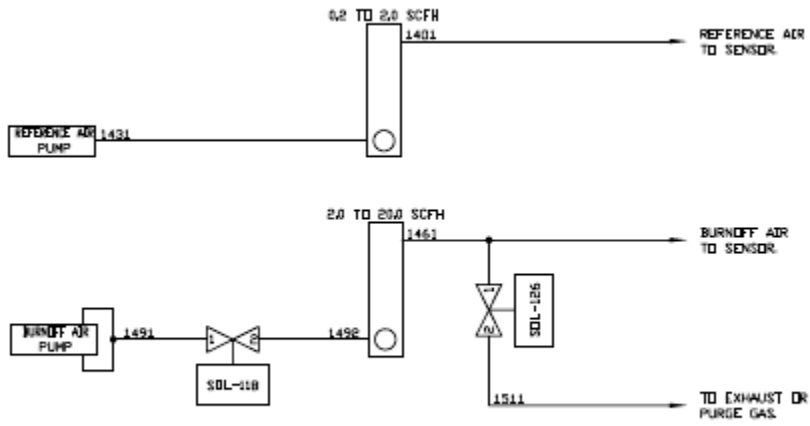
Refer to your **GOLD PROBE™** instruction manual for a complete description of probe conditioning theory.

THANK YOU

We think you will be delighted with the performance of your probes once you have installed this engineered conditioning system. If you have any questions, suggestions or problems, your **GOLD PROBE™** team is only as far as your phone. We listen. And we respond. Call 1-513-772-0060.



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Revision History

Rev.	Description	Date	Date
A	Initial Release	04-24-2001	N/A
B	Added Revision History	07-11-2001	2004
C	Revised Drawings on Page 3	11-06-2002	2028
D	SSi Address Update	04-25-2005	2035
E	Changed electrical schematic; Added "MCO #" section to Revision History; Updated "Table of Contents"; Removed references to "Fig. 1" since the diagrams spread across 2 pages	12-03-2007	2056

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