PROBE TROUBLESHOOTING

氧探头故障排除

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Note: This procedure would apply to any manufacturers O_2 probe
注意： 这个程序将适应所有氧探头的制造商

In order to establish the correct performance of the Gold Probe as detailed in the following steps, first: ***resist the temptation to remove the Gold Probe from the furnace should you believe there is an O_2 probe-related atmosphere control problem.*** All these meaningful tests must be accomplished while the Gold Probe is installed or located in the furnace, at temperature, and exposed to a reducing atmosphere.

为了确定金探头的正确性能，在下列步骤有详细的阐述，首先：
如果你抵抗诱惑从这个炉膛移走金探头你能相信有一个能控制气氛的氧探头吗？
当那些黄金探头被安装好后，所有这些有意义试验都一定要在炉内，在高温，和低气氛的情况下完成。

1. Does a digital dew point device (or shim stock analysis) verify the indicated value from the probe? If there is reasonable correlation, the problem is NOT the Gold Probe.If there is unacceptable correlation with repeated tests (more than 15% discrepancy) then continue with additional troubleshooting steps.

1.一个数字化的露点设备(垫片分析)核实了探头所显示的值。如果他们之间有合理的联系的话，问题不在于金探头。
如果重复的试验之间有不可接受的联系的话(超过15%的差异)那么继续另外的检修步骤。

2. Check to be sure that both the thermocouple extension wire & probe signal cabling connections are clean and firmly attached to the correct probe head terminals and controlling instrument terminals.

2.
检查确保两个热电偶扩展电线和探测信号电缆连接是干净并且牢固地接到正确的探头终端和控制仪器终端的。

3. Is the controlling instrument (that the probe signals are connected to) carbon monoxide (CO) factor set to the optimum value? This 'FACTOR' is referred to by different descriptions; PROCESS FACTOR, PROBE FACTOR, FURNACE FACTOR, CO FACTOR, CIRCULATION FACTOR, CALIBRATION FACTOR, etc. The 'FACTOR' may require adjustment to eliminate the discrepancy (offset) between indicated process value and actual achieved result in the work pieces.

3. 控制仪器(与探测信号连接)能将一氧化碳成分设置为最佳值吗？通过不同的描述都涉及到这个成分';
工艺参数，探测因素，熔炉因素，一氧化碳因素，流通因素，校准因素，等等。这些

'因素' 可以要求调整在这件工件内消除在显示工艺值和实际取得的结果之间的差异(补偿)。

4. Does the Gold Probe temperature value and the O_2 mV signal agree with the corresponding indicated values on the controlling instrument?...the test millivoltmeter? If not, most likely there is an controlling instrument calibration problem.

4.金探头温度值和O2 mV信号与控制仪上显示的值相符合吗？用豪伏计测试？ 如果不，很可能那是一个控制仪器的校准问题。

5. Does the Gold Probe O_2 mV signal return to within 10% of it's original value after it has been shorted for 5 seconds? (to be determined with millivoltmeter)

5.如果金探头O2 mV信号延后5秒其返回的值在初始值的10%内， (用豪伏计测试) Probe Impedance Test (Resistance check)

探测电阻测试（电阻控制）

This is one of several electrical tests that indicate the electrical integrity and reliability of the Gold Probe. Some contemporary microprocessor based 1550^0F atmosphere controllers provide the facility to perform this test and display the results at test temperatures above 1550^0F the Gold Probe impedance should not exceed 25k ohm.

这是其中的几个电阻测试之一，它显示了电子数据的完整性和其金探头的可靠性，一些当代的微处理器是基于气氛控制来保证设备执行检测和显示1550^0F以上的温控结果，金探头的电阻不能超过25k欧姆。

6. Reference Air Test (Leak Check)

相关的空气检测（渗漏测试）

Clean 'reference air' should flow continuously, while the Gold Probe is operating in the furnace between .5 and 2 CFH. This should be verified periodically. To optimize the accuracy of this procedure, switch the atmosphere control instrument into MANUAL mode and select O_2 mV display (if possible), shut off the reference air supply for one minute and observe the mV do not drop more than 5 mV. If your atmosphere controller cannot display O_2 mV, then improvise using the millivoltmeter. Should the mV signal drop quickly when the reference air is removed, this suggests a faulty Gold Probe and it should be returned to the factory for evaluation.

净化相关的空气应该使之不断的流动，当金探头在炉内的以5-2立方英尺/小时的速度运行的时候，这应该经过周期性的核实，并且优化其程序的精确性，转换其气氛控制仪的人工控制模式，选择O_2 mV显示（如果可能的话），关掉相关的气氛输入1分钟，观察到mV不会下降超过5 mV。然后在用临时的毫伏探测仪，当相关的空气被移走之后mV信号很快减弱，这意味着一个探头有误，它应该返回工厂进行检修。

7. Should it be necessary to remove a Gold Probe from a hot operating furnace, do so carefully. ***UNDER NO CIRCUMSTANCES*** should it be removed at a rate faster than 2" per minute.
应该从一个热处理炉移走金探头，并且操作应该十分小心，在任何情况下它的移动速度都不应该每分钟2"

8. Rule of Thumb故障控制

If troubleshooting fails to identify the specific source of a problem, we recommend that the Gold Probe be burned off. A barb air (burnoff) fitting is provided for this purpose. While the Gold Probe is operating in the furnace, introduce between 10 to 20 CFH of air into the burnoff fitting for 2 minutes and then subsequently observe the Gold Probe and the atmosphere control behavior (if possible turn off the fan during burnout). Should problems persist, it may be necessary to thoroughly burnout the furnace so that all the potentially contributing contamination be removed from all parts of the furnace (including the Gold Probe). Burning off the Gold Probe will not harm this product, provided the Gold Probe temperature does not rise more than 100° F. during the burnoff procedure.
如果故障排除系统不能识别特定的问题产生的原因，我们认为那是因为探头已经被烧坏了，因此而准备了一个烧坏保护装置，当探头在炉内运行时，在10 到 20 CFH之间传入烧坏装置2分钟的时间，随后就可以探测到探头和气氛控制器，（如果可能的话在在烧尽的时候关掉搅拌风扇），如果问题还存在的话，它可能会完全烧坏炉子，因此，所有潜在的污染物都会被从炉内移走，（包括探头），烧掉探头并不会损坏产品，在燃烧的过程探头的温度并不会超过100° F中。

9. Failing resolution of your atmosphere related control problems our technical support staff is available Monday – Friday 7:00 a.m. to 7:00 p.m. to assist and serve our heat treatment customers.
如果不能解决相关的气氛控制问题我们的技术支持人员会在周一至周五的上午7点到下午7点帮助和支持我们热处理设备客户。

You may call us at toll free at **1 (800) 666-4330**.
你可以拨打我们的免费服务热线**1 (800) 666-4330**.