

修复 ESC™ Gas - Fired Boiler

03-10-2018

今年我们的房子已经是第三次停电了(03/09/2018). 前次停电是因为对面 5 号印度人家大树倒向我们隔壁 6 号, 把电源线切断;这次是隔壁 6 号大树倒向对面 5 号把电源线切断. 两次都是树挡了道路所以修起来特别费事. 这次等了三天最后终于修好。



虽然电已经回复, 但是我们的供热系统已经三天没用, 电回复后已不能自己启动. 按老经验我就试着把电源开关关一下再开, 启动了. 但是不到 10 分钟就停下来. 把盖子打开看到的出错 Code 是 63. 查 Service Manual, 说:

Step 1: (P 23) When (error) is shown:

Value Description

2 Pressure Switch Failed to Open

... ..

61 Line Voltage Unstable

63 Soft Lockout – Recycles Exceeded

Step 2: (P 24) **Err 63 Soft Lockout – Maximum Recycles Exceeded Maximum number of recycles exceeded. Refer to Troubleshooting Section, 5.**

Step 3: (P26) Check Troubleshooting Section, 5.

5. Circulator is On, Blower is On but Boiler Fails to Start

Display / Status	Description
5tR 10 Retry / Recycle Delay	The Boiler is in "Retry Delay": - The burner failed to light (no flame signal). After a 5 minute delay, control will attempt to light the burner again. There is no limit to the number of retries. Recycle Delay - The burner loses flame during running mode, "5tR 8". After a 10 second delay, control will attempt to light the burner again. If the burner loses flame during running mode, "5tR 8" during the next six recycles, control will progress to a soft lockout.
5tR 11 Pressure Switch Failed to Open	Refer to Troubleshooting Section, Err 2 for corrective action.
5tR 12 Pressure Switch Failed to Close	Refer to Troubleshooting Section, Err 29 for corrective action.
5tR 13 Soft Lockout	When a soft lockout occurs, boiler will shut down. Boiler automatically restarts once condition that caused the lockout is corrected and the one-hour time delay is completed. Boiler can be restarted sooner than the time delay by entering Adjustment Mode and selecting the reset button (see Adjustment Mode instructions) or by cycling power. Soft Lockout is caused by one of the following: - Err 63, Maximum Recycles Exceeded – The burner lost flame during running mode, "5tR 8" six times in a row. Refer to recommended corrective actions on next page to help determine the cause of the problem. - Err 64, Internal Failure, refer to Error code listing for recommended corrective action. - Err 23, Flame sensed during post-purge (before gas valve signaled open). Check the gas valve for proper operation. Replace gas valve is problem persists.
5tR 14 Hard Lockout	When a hard lockout occurs boiler shuts down.
5tR 16 Flame Out of Sequence	If flame is detected in pre-purge control goes to Flame Out of Sequence Before trial, "5tR 16" and "Err 23" is reported. The control gives a flame 10 seconds to disappear. If flame goes away, control resumes heating cycle from the beginning. If it doesn't "Err 23" is cleared and "Err 6" is reported. When flame is off control goes to Soft Lockout and "Err 6" is cleared. Check gas valve for proper operation.

Step 4:

Display / Status	Recommended Corrective Action
5tR 10 Retry / Recycle Delay 5tR 13 Soft Lockout	<ol style="list-style-type: none"> No Spark <ol style="list-style-type: none"> Can you hear sparking while 5tR 6 is displayed? <ul style="list-style-type: none"> If there is no spark noise replace the control. If you can hear spark noise check the following: <ul style="list-style-type: none"> Loose connection in ignition cable or ground wire Continuity of ignition cable Break in ignition cable insulation Loose ground connection Break in pilot ceramic insulator Incorrect pilot spark gap No Pilot Flame <ol style="list-style-type: none"> If pilot does not light check the following: <ul style="list-style-type: none"> All manual gas valves are open Supply tubing is not plugged, kinked or leaking Gas line pressures are good Gas line is purged of air Pilot orifice is not plugged (pilot gas is flowing) Condensate quenching pilot <p>Note: It may be necessary to recycle the "call for heat" more than once to clear the pilot supply tubes of air.</p> If no gas flow check the following: <ul style="list-style-type: none"> 24 volts across PV and MV/PV at gas valve, if voltage ok replace defective gas valve Check for break in wiring harness to gas valve 24 volts across control connector P5-2 and P5-5, if no voltage at control replace defective control Spark does Not Stop When Pilot Lights <p>If the spark does not stop when the pilot lights check the following:</p> <ul style="list-style-type: none"> Loose connection in ignition cable or ground wire Continuity of ignition cable Clean flame rod Pilot electrode porcelain cracked Pilot flame covers flame rod and is steady and blue, if not adjust pilot flame Low gas pressure at gas valve inlet Defective control Main Flame Does Not Light <p>If the main burners do not light check the following:</p> <ul style="list-style-type: none"> Check orifice size and/or blockage 24 volts across control terminals P5-8 and P5-5? If no voltage while in 5tR 7 defective control. 24 volts across MV and MV/PV at gas valve? Check for break in wiring harness to gas valve Defective gas valve

我的理解就是说点火系统煤气流量不畅，点火不成功。经过 63 次 retry 它就自动停了。但我无法查煤气流量，能做的只能是重新启动电源开关。重新启动一次可动 5-10 分钟。**最后重新启动了五六次终于不停了。这也祢修好了。**记录于此，以备后查。

