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HT115

Applies to models:

CPxG

powrmatic

How to: .....
Set Up a Riello R40 GS Gas Burner

how 2

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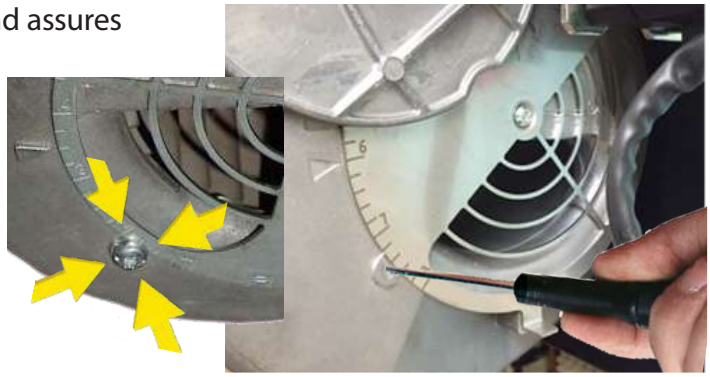
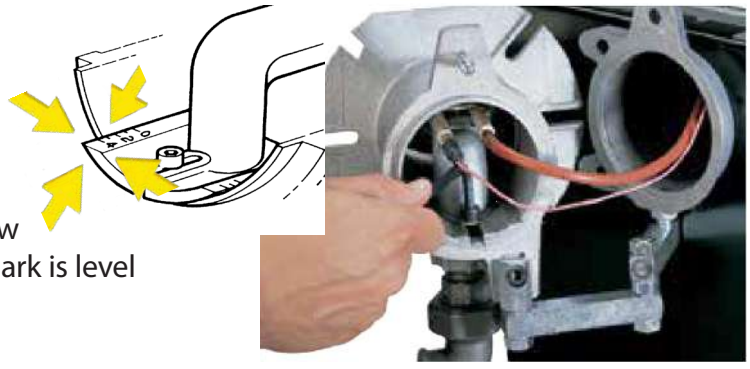
Procedure

Note: ALL THE RELEVENT SETTINGS ARE DETAILED IN THE SPECIFIC HEATER O&M INSTRUCTION MANUAL

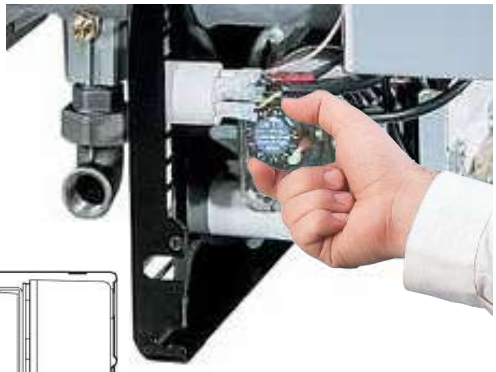
- Remove the burner cover by undoing a single screw on top of the housing and two screws either side.



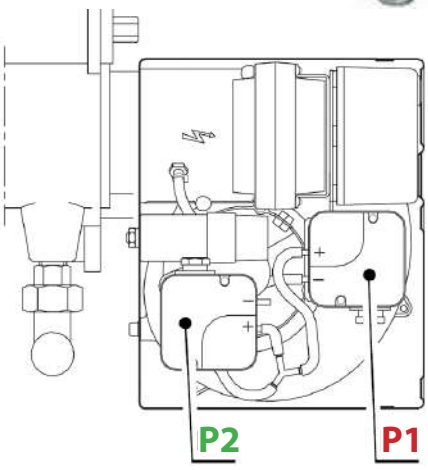
- The air damper is operated by the actuator and assures that the air damper is fully open before the burner start cycle begins. The regulation of the air-rate is made by adjusting the fixed air damper flap.
- To adjust, loosen screw rotate the plate to the required setting as indicated on the adjacent scale. Once the setting is achieved, tighten screw.



- Head pressure is achieved by moving the elbow casting within the burner coupling. A test point on the burner casting allows reading the air pressure in the combustion head.
- Loosen locking allen screw and move elbow forward or backwards until the set point mark is level with the outside edge of the coupling.



- R40 GS burners are manufactured to EN1020 spec. An air pressure switch **(P1)** and over pressure switch **(P2)**. The over pressure switch may not always be a higher set point! Looking from side, the over pressure switch is closest to the flange. Powrmatic despatch heaters with **P1** set to 1 and P2 set to 10.
- **Start on P1** (min air pressure switch). With the burner working at the required output, increase the setting until burner goes off then reduce the setting on the dial by 1 set point. If the burner fails to relight, reduce it by a further 1 set point.
- **On P2** (max air pressure switch), Decrease the setting until the burner goes off then increase the setting by 1 set point. If the burner fails to relight, increase it by a further 1 set point.
- Restart the burner to check all conditions.



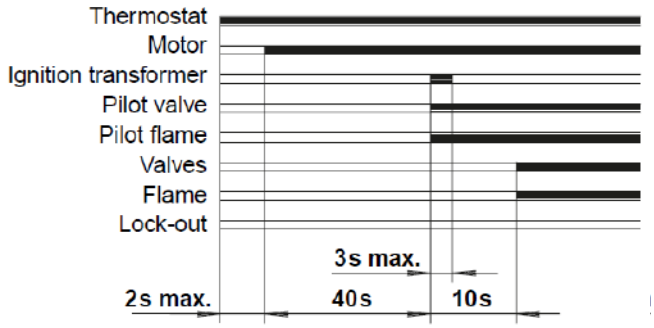
Correct operational start-up - GS5

0s	Start of heat demand. Burner begins the ignition cycle.
0s-4s	The burner is in stand-by.
4s-8s	Electrical damper time to reach the opening position
8s-48s	Pre-purge with opened air damper
48s-51s	Safety time as total ignition time.

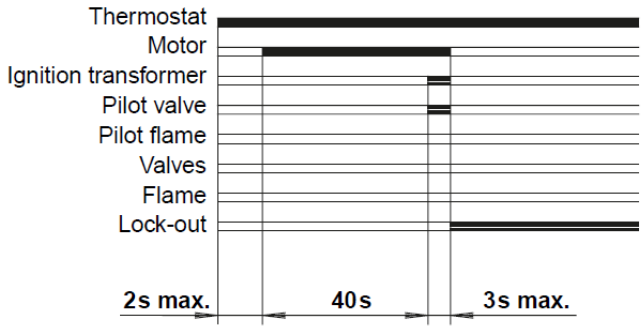
Correct operational start-up - GS10 & GS20

0s	Start of heat demand. Burner begins the ignition cycle.
0s-2s	Safety time.
2s-42s	Pre-purge with opened air damper
42s	Ignition.

Normal Burner Start-Up Cycle



Lock-out, due to light failure



Lock-out due to ignition failure

- If the flame does not light within the safety limit (~ 5s for GS5, ~ 3s for GS10/20) the burner locks-out.
- Lock-out is shown by a led on the appliance.
- To carry out the control box reset, proceed as follows:
- Press the reset button for at least 1 second. The burner restarts after a 2-second pause. In the event of the burner not restarting it is necessary to check if the limit thermostat (TL) is closed.

Indication of operation

- In normal operation, the various statues are indicated in the form of colour codes according to the table below.

Color code table

Operation status	Color code
Stand-by	Led off
Pre-purging	Green
Ignition phase	Green
Flame OK	Green
Post purge	Green
Undervoltage, built-in fuse	Led off
Fault, alarm	Red
Flame simulation	Led off

Diagnosis of fault causes

- After lock-out has occurred, the red signal lamp is steady on. In this status, the visual fault diagnosis according to the error code table can be activated by pressing the lock-out reset button for > 3 seconds.

Blink code	Possible cause of fault
2 blinks	No flame at the end of safety time: faulty or soiled gas valves. faulty ionisation probe. poor adjustment of burner, no gas. faulty ignition transformer. neutral / phase exchange.
3 blinks	Air pressure switch does not close or is already closed before heat demand: faulty air pressure switch. air pressure switch incorrectly regulated.
4 blinks	Presence of flame (light) in chamber: in stand-by position. with thermostat of heat demand in idle or working position. during pre-purge.
6 blinks	Loss of air pressure: during pre-purge. during or after safety time.
7 blinks	Loss of flame 4 times during operations after 3 attempts of re-cycle: faulty or soiled gas valves. faulty ionisation probe. short circuit between ionisation probe and earth of the burner.

To reset the control box after the diagnostics display, press the lockout-reset button.

FAULTS	POSSIBLE CAUSES	SOLUTION
The burner doesn't start when the limit thermostat closes.	Lack of electrical supply.	Check presence of voltage in the L1-N clamps of the 7 pin plug.
		Check the condition of the fuses.
	Lack of gas	Check the manual cock opening
		Check that the valves charge over to the opening position and there are not short circuits.
	The actuator is faulty.	Replace.
	The min. air pressure switch (P1) has changed over to the operational position.	Check setting. Replace the pressure switch
	*The contact of the valve end stroke is open	*Adjust CPI switch setting
The burner continues to repeat the starting cycle without going on lock-out.	This concerns a very particular irregularity, caused by the fact that the gas pressure in the gas-mains lies very close to the value to which the gas pressure switch has been set. As a result of this, the sudden falling-off of pressure at the opening of the valves causes the opening of the pressure switch. However this only temporarily, because the valves immediately close again, so then does the pressure switch, because the pressure builds-up again the cycle to be repeated over and over.	This can be remedied by lowering the setting of the pressure switch.
The burner does not pass through the pre-purge and locks out.	The min. air pressure switch (P1) does not change over: it has failed or the min. air pressure is too low	Combustion head incorrectly set. Reset.
		Re-adjust P1 pressure switch. Replace is necessary.
	The air pressure is too high	Check for blocked flue.
		Re-adjust P2 pressure switch. Replace is necessary.
	Flame simulation exists (or the flame really lights).	
The burner locks out, after the pre-purge period, because the flame does not ignite.	The gas valve pass too little gas (low pressure in the gas pipework).	Check the pressure in the network and/or adjust the solenoid valve according to the instructions of this manual.
	The valves are faulty.	Replace it.
	The ignition arc is irregular or not present.	Adjust gap/position. Replace if necessary
	The air has not been purged from the pipe.	Carry out a complete breathing of the line of gas-supply.
The burner goes through the normal pre-purge, the flame ignites but the burner locks out within 3 (5) seconds after ignition.	The ionization probe is earthed or not in contact with the flame, or its wiring to the control box is broken, or there is a fault on its insulation to earth.	Check the correct position and if necessary set it according to the instructions.
		Reset the electrical connection.
		Replace the faulty connection.
	The ionization current is weak (lower than 3 µA).	Replace sensor probe.

* GS20P only

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