

Diagnosis of Gas Boiler faults.

Fault finding is something that any engineer will become more adept at through experience. Though with some basic logic, most faults can be identified through a process of elimination.

The first thing to understand is the sequence of operation of the appliance. Here we refer specifically to Beretta Wall hung boilers, (though the principal of operation is much the same for many other brand) noting "some" possible cause of failures

Ignition sequence Beretta wall hung gas boilers, all models Fault Chart This is an overview there may well be other issues that are not identified on this list **Boiler Power on** If nothing, check the remote thermostat /programmer is operating - if suspect Call for heat from system controls then a link across the external controls connection at the boiler can be used to prove the fault Generally if the pump is not operating it will This can usually be detected by placing your hand on the pump require replacement. Though you should attempt to turn the impeller manually first **Circulating pump operates** body to feel for vibration Generally if the fan does not operate it will The fan will start by purging the Heat exchanger chamber it may require replacement but do check first that all **Exhast fan operates** then be heard to speed adjust electrical connections are in place. before the appliance moves A fan running constantly at full force is into the ignition cycle also indicative of fan failure. Inspect the black lifter heads on the gas valve, if The gas valve should open allowing gas into the burner there are signs of heat blistering they will need Gas valve opens chamber. replacing. If the gas valve is not allowing gas through, there is an internal gas valve issue ,the whole valve needs replacing The ignition transformer will If no ticking sound, replace the ignition generate a spark at the ignition transformer. These are universal on all **Ignition attempts** electrode. If you listen carefully Beretta and Vokera boilers. If there is this can be identified by a rapid ticking but no ignition suspect the gas ticking sound (it will try 3 times) valve or ignition electrodes. Once a flame is established the If the boiler fires then locks out after a few boiler should operate as normal seconds then the flame detection sensor may Flame detected be at fault check it is intact and in the correct position replace if failed **Boiler operating** Boiler rapidly overheats Poor circulation or air in the HX & no sign off flow temperature faulty diverter valve (combi boilers only) Boiler runs for a sort time then cuts off No overheat but cuts out Potentially a flow or Return, Thermister fault

Potentially blocked Condensate trap and feeder pipe from HX

replaced

Ignition electrodes may arc you can still hear the ignition ticking but arcing will

prevent ignition - If you have ignition but there is a bump as the boiler ignites the electrode gap may be incorrect If with the gap set the electrode arcs it should be

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ketteling sound

see separate sheet

Boiler runs with a bubbling or

For issues with the domestic hot

water side of combination boilers