VITODENS 200 Troubleshooting Guide

This guide is NOT a substitute for the technical support literature supplied with the Vitodens 200 boiler and the accessories. Use in conjunction with Vitodens 200 Quick Start-up Guide and Start-up/Service Instructions.

Before getting started, remember…

- All Vitodens 200 boilers have passed rigorous functionality testing and come factory-tested for proper operation.

  Approximately 85% of all field issues are associated with items **external** to the boiler, such as:
    - Air in the water system (at start-up, air must be purged completely for at least 1 hour)
    - Wrong programming (coding) match to connected system
    - Air in the gas line (specifically for LP)
    - Wrong pump designation, coding or assignment
    - Power supply issues (reversed polarity, improper grounding, Ground Fault Interrupted supply, or unstable power supply).
    - Off-grid power supply such as generators, battery back-up.

- Only a few measurements without burner calibrations need to be performed on the boiler. The following are items that do require measurements:
    - Inlet gas pressure (static and running)
    - Combustion flue gases and air intake (for direct vent systems)
    - Power supply
    - Certain fuses

- When changing the coding addresses the boiler must be restarted (power ON/OFF) at least once for the changes to take effect. The control needs between 2 and 60 seconds to process and transfer data.

- From our own experience, we have replaced the following components on the boilers in the following order:
    - VR20 circuit board
    - LGM burner control unit
    - Fan assemblies
    - Complete burner assembly (some due to damage of the inlet air damper)

- When troubleshooting the Vitodens 200 avoid jumping to the premature conclusion that parts such as VR20, LGM etc., or the boiler are defective. **It is important to avoid this assumption.**

Troubleshooting Steps When the Customer Calls

Step 1 Collect pertinent information. Please use the Vitodens Diagnostics sheet if possible. A copy is attached at the end of this document for convenience.

Record the boiler model number, gas type, venting type, system layout connected to boiler, accessory and equipment used (Low-Loss Header (LLH), mixing valves, etc).
For models WB2-24/32, and 44/60 there is now a version 2.0 in addition to the existing version 1.0.

Step 2 Follow start-up procedures

For new installations, the first tool is always the Quick Start-up Guide. There are Quick Start-up Guides for each respective boiler size and version. Following all steps in the Quick Start-up Guide would resolve up to 90% of the issues. Copies of all Quick Start-up Guides must be kept in the Vitodens 200 Service Binder. For boilers that have already been in service for some time, see the following steps.

Step 3 Check the programming

Using the information collected in Step 1, go over the programming of the control unit using the **updated** product manual. Pay special attention to the coding address "000:___", "OB8:___", "045:___". Most problems can be solved using the Installation, Start-up/Service and respective accessory manuals that are supplied with the boiler.

Step 4 Refer to the service guide supplement

Use this Troubleshooting Guide to solve problems that could not be solved using the Quick Start-up Guide and product service manuals. This Troubleshooting Guide contains the knowledge and experience of our Service and Engineering Departments relating to unique and difficult-to-diagnose problems. This guide should help solve 95% of the remaining problems that cannot be solved with steps 1 – 3.

Step 5 Replace components

Once steps 1 – 4 are completed, it may still be necessary to replace a part (e.g. VR20 circuit board, LGM burner control, etc.). **Do not replace any parts prior to completing all previous steps**. At this time the Viessmann Service Departments located in Waterloo, Warwick or Langley need to be consulted.
Please avoid calling before having completed the previous steps.

Who to contact...

Viessmann Manufacturing
Company Inc.
Waterloo, ON
Tel. (519) 885-6300
Toll-Free (800) 387-7373

Viessmann Manufacturing.
Company (U.S.) Inc
Warwick, RI
Tel. (401) 732-0667
Toll-Free (800) 288-0667

Viessmann Manufacturing
Company Inc.
Langley, BC
Tel. (604) 533-9445
Toll-Free (877) 853-3288

Service Call Overview

Important: Read section entitled "Vitodens Troubleshooting Strategy" before using this guide. This guide assumes the reader is familiar with the Vitodens product manuals and the Quick Start-up Guide (QSG).

When burner fault indicator (red LED) is lit, the boiler is in lockout mode and needs to be reset.
When a fault is flashing on the programming unit's display, but the red light is not lit, the boiler need not be reset and will resume operation as soon as the fault is acknowledged or corrected.

Item	Field Service Calls	Suggested Solution
Section 1: Unusual boiler operation		
1	Boiler does not start and no fault code is displayed on programming unit's screen. Model 6-24/8-32	▪ Water pressure switch did not close (WB2-24C, -24, -32). ▪ Check system pressure (must be above 12 psig). Power on boiler and enter installer set-up. Go to Relay Test #10. If boiler has stalled with no fault code displayed, remove wires from pressure switch and jumper it. If boiler starts, replace the switch. ▪ Check pressure transducer. Unplug harness from transducer, then plug it back in. If the boiler starts, replace the transducer. ▪ If boiler does not start, check for other probable causes, such as incorrect voltage, defective VR20 board, LGM board etc.
2	Boiler does not start and no fault code is displayed on programming unit's screen. Model 11-44/15-60	▪ Water flow switch did not close. Follow procedure as in item 1. If boiler does not start, verify #20, #21 and #20A plugs for pump connections in both PPM and orange boiler relay pump box. If plug #20 was incorrectly used as system pump (#20A), change it to #20A plug; boiler should then start (see QSG for pump diagrams). ▪ Check pressure transducer. Unplug harness from transducer, then plug it back in. If the boiler starts, replace the transducer. ▪ If boiler does not start, check for other probable causes, such as incorrect voltage, defective VR20 board, LGM board etc.
3	Boiler short cycling	▪ Check for proper grounding of the boiler (dedicated ground, check building ground). ▪ Check for air in the system – purge until system is entirely free of air. ▪ Check for proper water flow in the system (check for proper sizing of pump(s) and pipes). ▪ Low gas pressure while boiler is running. Check inlet gas valve screen. Increase gas supply pressure if it is below the required minimum. ▪ Check for blocked air inlet on concentric venting system. (For testing purposes only: remove burner cover to eliminate venting air intake and to allow room air for combustion). ▪ Flue gas leakages on concentric system (see flue gas test procedure in Venting System Installation Instructions)
4	Boiler short cycling Model 6-24/8-32	▪ **When in DHW call for heat**: ensure solenoid valve is installed straight into the diverting valve against the seat, even if solenoid pulls in and out normally as per Relay Test #04). ▪ DHW coil resistance is high, especially with non-Viessmann tank. Order PN 7134599. ▪ Check for zone valves in the system. If present, they require a separate pressure-activated bypass – Vitodens 200, WB2-24, -32 internal bypass is **not** designed to handle system flow. It is only used for boiler pump protection. Use of Low Loss Header will help in this situation.

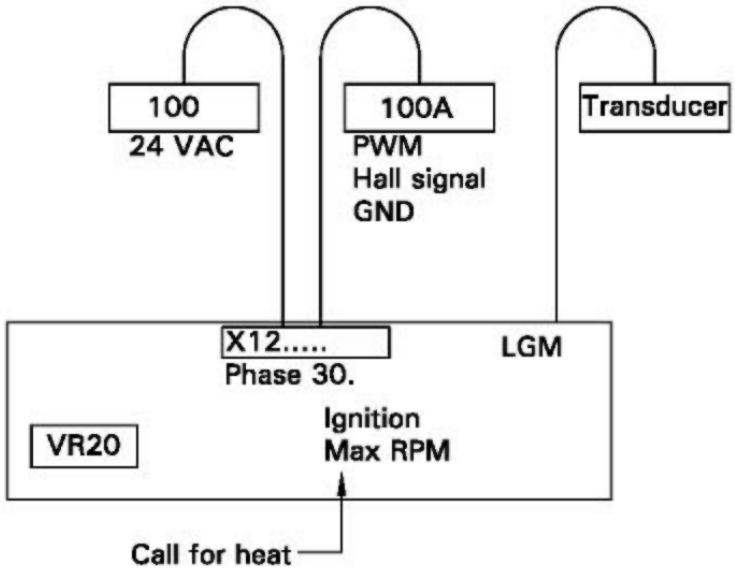
	Field Service Calls	Suggested Solution
5	Boiler short cycling on a short heating circuit (ie: connected directly to one mixing valve heating circuit only "B") All model sizes	▪ Set heating curves for heating circuit A, in this case the boiler, equal to B (single circuit with mixing valve). Lower boiler factory default differential setting from 8°C to 2°C to 3°C/ 4°F to 5°F (differential temperature between A and B). ▪ Use of Low Loss Header eliminates this problem.
6	Noise from boiler built-in bypass valve Model 6-24/8-32	▪ Systems with zone valves, controlled by other means such as room thermostat, require separate pressure-activated bypass to be installed. ▪ See item 4.
7	Fuse or circuit breaker tripping	▪ Check for hot/neutral polarity in the wall outlet. ▪ Check if GFI is installed (see item 40). ▪ For sizes 44/60 if 0.6 Amp fuse in PPM is blown replace with equivalent 0.8 Amp fuse. (Viessmann PN 9066825)
8	Accessories (HK1, ...etc). BUS Communication Problems	▪ Interference problem: Check proper connections using updated wiring diagram. Note: Boiler relay test does not work with Viessmann 2-wire BUS connection (additional mixing valves) ▪ Check all proper coding / scan. ▪ Use shielded/stranded wire.
9	Ice build-up on outside vent termination	▪ Usually associated with unusual boiler cycling.(see item 3,4) ▪ Check outdoor sensor for proper reading. ▪ Heating circuits A/B set points (see item 8). ▪ Vent pipe slope (should slope back to boiler). ▪ Replace VR20 board.
10	Unusual or erratic operation of pumps, but relay test shows normal functioning	▪ Verify all proper coding addresses and timer schedules. ▪ Replace VR20 board. ▪ Model 11-44/15-60; Change coding address 013:001 To 013:000; pump runs during WWSD if left to 001 value
11	Gas odor outside	▪ Check inlet gas pressure at highest input. Use relay test #11 or DHW call for heat to put boiler at highest input and adjust as required. ▪ Check inlet gas valve mesh screen for blockage, such as pipe debris and flakes. If this happens frequently, contact Viessmann.
12	Boiler only operates when "Party" mode button is pressed Model 11-44/15-60	▪ Pressing the "Party" mode button will activate the DHW recirculation pump (#20 connection pump output). If heating pump #20A is mistakenly connected into #20 in an installation without LLH, boiler will fire only on "Party" mode. Note: If LLH is installed, there is no DHW recirculation operation since pump #20 becomes boiler pump.

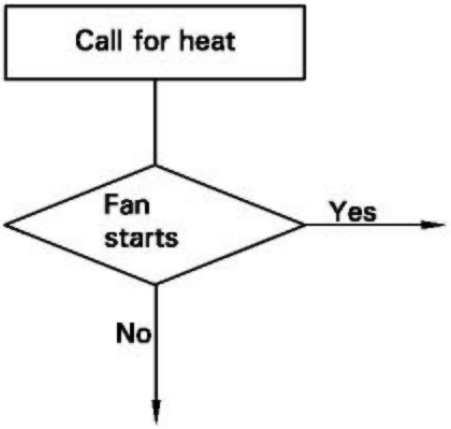
Item	Field Service Calls	Suggested Solution
13	Electrical Breakers Tripping and GFI's Tripping	▪ PPM Vitodens new Transformer Mar. 17/2004 SN: 6020264071162004 ▪ PM Vitodens new Transformer Apr. 16/2004 SN: 6020273649112004 ▪ Power/Pump modules produced before March 17, 2004 and Power Modules produced before April 16, 2004 have an 'autotransformer' style of transformer. These may cause breakers and/or GFCI's to trip if the Line/Neutral are reversed. ▪ Power/Pump modules produced after March 17, 2004 and Power Modules produced after April 16, 2004 have isolation transformer. These do not cause breakers and/or GFCI's to trip with Line/Neutral reversal. ▪ FYI: How to read serial number: First six numbers are product part number, last six numbers are week and year code. Digits in the middle are sequential numbers
14	Boiler will not fire on relay test #10 & #11 Model 11-44/15-60	▪ This occurs when Vitodens boiler is connected to one single circuit with mixing valve. To protect the heating circuit during all relay tests, mixing valve closes completely. As a result there will be no flow through the boiler. In this case, another way should be determined to get flow. Protect any RFH circuit from excessive water temperatures during relay test.
15	Noisy boiler operation / Coaxial vent damaged in shipping/transport.	▪ Improper packaging and handling. ▪ May need packaging reinforcement to protect the vent pipe. ▪ Ensure that coaxial vent pipe adaptor is not deformed. This may cause air noise or whistling due to the reduced air gap.
16	Maximum boiler temperature 75°C/ 167°F (does not go up to 82°C/ 180°F at design)	▪ Boiler starts modulating down as boiler temperature approaches 75°C/167°F (modulating boiler). Between 75°C/167F to 82°C/180F boiler operates (on min. fire) until load is satisfied – shut down at maximum adjustable setting (82°C/180°F) under coding address 042.
17	Erratic operation of heating and DHW	▪ Verify correct time and date settings of programming unit. Incorrectly programmed time clock or timer schedules can cause erratic boiler operation. ▪ Verify timer schedules when DHW is produced and DHW recirc pump operation. ▪ Sun and moon dial determines day- and night-time space heating room temperatures.
18	Boiler power switch not functional	▪ When mounting Programming Assembly onto the boiler ensure the power switch is properly inserted into the rear opening provided on base of programming unit. Ensure switch (c/w spring) is moving freely.

Troubleshooting Fault Code 06

Possible fault 06.
Parts required:
- pressure transducer
- X12 wiring harness
- fan assembly
- LGM 29
- VR20 controller

6-24C / 6-24 / 8-32
See also Service Instructions.





-> check internal transformer voltages measured at LGM plug X10 (24V X10.1, X10.2 / 15V 10.3 / X10.4) +15%
-> check voltage at plug 100
If burner in lock out
-> reset acknowleged, then measure within 45 seconds of pressing reset button
If 24VAC present
-> check wiring harness X12 with a new replacement fan assembly
-> remove plugs 100/ 100A from original boiler fan assembly and connect to replacement fan
-> start or reset control
If fan does not start
-> replace LGM and VR20 boards

-> check transducer (transducer should be able to see the Δp developed by fan)
- blocked pneumatic links
- broken or cracked transducer ports
- internal damage to transducer sensor
- inlet air damper completely blocked
- vent / air intake / exhaust pipe fully blocked (remove burner compartment cover and draw air from inside of the building check exhaust outside of the building)

-> check heat exchanger 0.8 mm for any blockage from gas combustion by-products

	Field Service Calls	Suggested Solution
19	Problems with multiple Vitodens installations	▪ For custom projects, i.e. boilers with Vitocontrol-C, contact KW Electronic Service. For problems with Vitocontrol-S, refer to respective manuals and Quick Start-up Guide developed by KWE. Also refer to the issue of “Vitotalk”, addressing the operation of Cascade Controls.

Section 2: Fault codes

20	Fault A1	▪ Acknowledge fault and reset. ▪ Power boiler on and off, remove VR20 circuit board and reinstall. Power boiler on and off again. ▪ If fault code A1 reappears, replace LGM.
21	Fault A4 (Also see Service Instructions)	▪ Verify coding address 0B8:006 and change value accordingly.
22	B1 fault code (leads to no Boiler temp display/no access to system menu or installer set up)	▪ Low battery charge or dip switch setting of programming unit (rear) are not set properly. ▪ Replace batteries or check dip switches and clear fault code. ▪ If fault code reappears, turn boiler off, remove VR20 circuit board, and power the boiler on. ▪ Reinstall VR20 circuit board ensuring that it makes positive contacts. If boiler starts (after a few seconds), but no temperature display is present, replace VR20 board and entire programming unit. Usually boiler operates in the background without proper communication with programming unit. For example, DHW production activates on a call for domestic hot water and boiler starts firing.
23	Fault F4 Model 6-24/8-32	▪ Air in the system leads to pump racing. Observe boiler temperature; high temperature spikes may lead to fault 02 (fixed high limit switch); ▪ Bleed air from both systems (domestic hot water and space heating). Use yellow cap provided with the DHW solenoid valve. Bleed the pump itself using the screw pump head. ▪ Disconnect pump communication plug #145 and change coding address 013:001 to 013:000. ▪ If boiler is connected to OFF-grid power supply, contact Viessmann.
24	Fault 06 Fault 07	▪ Air supply to boiler is insufficient. ▪ Check for ice blockage on vent termination. ▪ Check maximum flue pipe length. ▪ Severe local wind conditions. ▪ Check location of side wall terminal (see compliance to all requirements stated in venting manual). ▪ Defective or blown fuse on orange electronic fan control box (for 44/60 only). Replace entire box. ▪ Defective pressure transducer.

Item	Field Service Calls	Suggested Solution
25	Fault 14	▪ Gas line needs to be purged extensively on new propane installations or when boiler was not in operation for extended period of time. ▪ Verify gas regulator and working inlet gas pressure (not static pressure). ▪ Check ionization current. Check for gaps. ▪ Input voltage to ionization rod must be approx. 160 to 170 VAC (to ground). If it is not, check polarity (L, N, G) of the power supply. ▪ Check resistance of gas valve coils with power off. ▪ Terminals 1,2→~ 51.7Ω ▪ Terminals 1,3→~ 51.7Ω ▪ Terminals 2,3→~103.5Ω ▪ Check orifice size. ▪ Check spark and ignition transformer. ▪ See also item #11.
26	Fault 14 With two boilers installed, sometimes only one goes into lock-out	▪ Verify gas pressure inlet with both boilers running high. Run relay test #11, if needed to simulate, or run DHW for high fire.
27	Outdoor Temperature Sensor Fault	▪ If resistance is within limits, wiring is correct and sensor is not defective, replace VR20 circuit board.

Section 3: Unusual screen displays

28	"EXT. program 2," appears on screen	▪ Usually appears at start-up. ▪ Verify all coding addresses. ▪ If problem persists, replace VR20 circuit board. ▪ If problem persists, replace LGM. ▪ If problem persists, replace programming unit control console.
29	"Boiler enabling" appears on the display	▪ Verify all coding addresses, especially those designated for "Do not change"). These **must** stay in their factory default settings.
30	Boiler temperature display unit displays only in °C	▪ Cannot be changed to °F when remotely mounting programming unit.

Item	Field Service Calls	Suggested Solution
31	Dashes displayed instead of coding values, e.g. 000- - -. System address 000: and OB8: not displayed when in coding 2.	▪ Check all external wiring, and that accessories to the boiler, such as LLH, DHW and outdoor sensor, specifically X6.1/6.2, are installed and wired properly. ▪ Ensure no room thermostat is connected to X6.1 and X6.2 (common field mistake). ▪ Turn boiler on/off a few times and ensure VR20 board is properly installed with good contacts. ▪ Electromagnetic interference problem with programming unit, such as in industrial installations and gas heating stations, can be solved by removing the programming unit and using remote wall-mount base (room dependent operation) wired into X6.1 and X6.2. Also, install temperature display unit on boiler (for boiler code requirements). Ensure that S1 DIP switch at rear temperature display is set to OFF. ▪ Verify proper installation of programming unit console onto the boiler. ▪ Replace entire programming unit console.
32	Extreme low temperature conditions may cause ice buildup on side wall and vertical venting termination	▪ Side wall venting screen can be field modified. Please call for information (see Who to contact...on page 2). ▪ Vertical venting screen can be field modified. Please call for information (see Who to contact...on page 2).

Section 4: Coding address modifications

33	Not enough flow through boiler Model 11-44/15-60	▪ Boiler pump is undersized. Use Grundfos pumps specified in the Technical Data Manual, or their equivalent, e.g. TACO 0011, 0014.
34	Coding address 015	▪ "Do not change" 015:000 for 6-24C/6-24/8-32. ▪ "Do not change" 015:001 for 11-44/15-60. ▪ Changing this address from 015:000 to 015:001 on models 6-24C, 6-24, 8-32 will result in boiler firing without circulation pump and solenoid valve energized on a DHW call for heat. For models 11-44 to15-60 changing the address from 015:001 to 015:000 will result in DHW pump not energized. ▪ May lead to fault 02.
35	Coding address 017 Model 6-24/8-32	▪ "Do not change" 017:001. ▪ Changing this address from factory default setting will result in burner firing without circulation pump operating. May lead to fault 02. Has no effect on models WB2-44/60
36	OD6 coding (°C to °F)	▪ °C for addresses. ▪ °F for display only.
37	Not able to change the date	▪ See coding OC7.

Item	Field Service Calls	Suggested Solution
38	Snow melt and pool heating	▪ Requires installation of a secondary heat exchanger, (Glycol 50%, max.) ▪ Do not use Vitodens in open loop pool heating system.

Section 5: Frequently asked questions

39	Do I need a drain fitting for the venting system?	▪ You do not need a drain fitting and you do not need a different rain cap. Boiler will be able to handle the condensation in the vent.
40	Can I use stainless steel Flex pipe to vent?	▪ The Vitodens cannot be vented with a flex pipe, even though flex pipe is made of a UL listed AL-29-4C corrosion resistant material. These liners are only approved for category I appliances (for lining a masonry chimney). They are **not** approved for category IV boilers like the Vitodens. If you find a flex liner in the North American market that is approved for category IV, please send us the information to review.
41	Gap seems too large around single wall vent pipe adaptor	▪ Use a high-temperature silicon compound to fill in the gap.
42	How do OB8 coding and anti-legionnaire function operate?	▪ The OB8:001 means DHW (without anti-legionnaire function); ▪ The OB8:002 means DHW (with anti-legionnaire function); ▪ Once the DHW sensor is plugged in, address 000:... and OB8 must be verified and set manually, if required. ▪ anti-legionnaire function: ▪ If there is no call for DHW in a period of 24 hours, the anti-legionnaire function is initiated by the control and heats up the tank to 140° F / 60° C for a period of 10 minutes. This 10-minute period must lie outside the programmed DHW switching times for the anti-legionnaire function so that the control can sense it. See also coding address OA7 for factory default setting (OA7:060) and possible changes (OA7:061 to 070). We prefer to leave it at Factory Default setting, due to the maximum boiler limitations (172.4 °F/78 °C) for DHW. If coding address OA7 is set to 070, the boiler may need more time to reach this temperature and therefore might not respond quickly to a call for heat and be blocked in DHW (especially models WB2-24C, -24, -32). **Do not set DHW temperature controller higher than 140 °F / 60 °C**. This is applicable to all Vitodens boilers.

Item	Field Service Calls	Suggested Solution
43	Replacement parts	▪ Complete burner assembly comes with NG orifice installed in the gas valve. Each burner assembly is shipped with LP conversion kit and comes with Service Instructions and Warning Labels. ▪ Gas valves are shipped with warning labels and instructions, but **without orifice** installed. Use the orifice from the existing gas valve.
44	Fault A3	▪ Bus communication problem with Cascade Control. ▪ Check wire to X5 plug for proper connection. ▪ Boiler control or Cascade Control is defective.
45	Replacement ionization electrodes are not the same size and shape Model 11-44/15-60	▪ There are three different designs of electrodes. All are compatible.
46	Fault F3	▪ Check connections/wiring to low-loss header sensor of Cascade Control ▪ Check accessories, e.g. outdoor temp. sensor, low-loss header sensor of Cascade control ▪ Check Cascade Control. Replace if necessary.
47	Fault CC	▪ Reset boiler. If red light reappears and boiler goes into lockout mode, replace LGM 29.XX.
48	Boiler does not ramp up to high fire (specially in multiple boiler systems with cascade control).	▪ Check inlet gas valve mesh screen for blockage. Clean it. If the issue reports more than 2 times a year contact Viessmann.

VITODENS 200
Diagnostic Sheets

VIESMANN

CAUTION

The installation, adjustment, service, and maintenance of this product must be done by a licensed professional heating contractor who is qualified and experienced in the installation, service and maintenance of hot water boilers. There are no user serviceable parts on the boiler, burner, or control.

WARNING

Ensure main power supply to equipment, the heating system, and all external controls have been deactivated. Close main gas supply valve. Take precautions in all instances to avoid accidental activation of power during service work.

Please include all of the information requested to facilitate the diagnosis and fax it back to

_____ at _____

Mechanical Contractor: _____

Address: _____

_____

Tel: _____

Contact Person: _____

Date Installed: _____

Project Name: _____

Project Address: _____

_____

Tel: _____

Contact Person: _____

Altitude of Installation: _____ feet

Installation in: ☐ Residence / Home ☐ Commercial / Industrial

Heating Boiler

Model: WB2- ☐ 6-24C ☐ 6-24 ☐ 8-32 ☐ 11-44 ☐ 15-60

ASME Serial No.: _____

Fuel Supply: ☐ NG ☐ LP

DHW Model (if applicable): Brand: _____ Size: _____

Boiler Installation Checklist

The following information must be made available to us to assist in the diagnosis.

System Layout

Using the booklets supplied with the boiler provide the following information:

1. Date on cover of Installation Instructions: month _____ year _____
2. The page number of the Installation Instructions for the system type: Page No. _____

Installation and Activation Requirements. *Please Provide:*

- ☐ Heat loss calculations
- ☐ Flow calculations (GPM at ft head for each pump in system)
- ☐ DHW Tank coil flow rate and head _____ _____
- ☐ Venting material: _____ (include sketch)
- ☐ Gas pressure measured at full fire _____
- ☐ Gas valve screws x, y readjusted? ☐ Yes ☐ No
- ☐ Boiler water pressure _____ temperature _____
- ☐ Electrical polarity and grounding at #40 plug confirmed. L & N terminal _____
- ☐ Power source: ☐ grid ☐ generator ☐ inverter
- ☐ External gas filter installed ☐ Yes ☐ No
- ☐ If LLH installed, is Viessmann #5 sensor connected to boiler? ☐ Yes ☐ No ☐ No LLH
- ☐ Single boiler installation ☐ with Cascade control ☐ without Cascade control

Boiler / System Parameters Checklist. *Please ensure that you have reviewed the items below:*

- ☐ Wiring in Power Pump Module correct (quick set-up)
- ☐ Wiring in Vitodens correct (schematic)
- ☐ Coding addresses match system
- ☐ Relay test as per manual
- ☐ Sensor test as per manual
- ☐ Operating status information O.K.
- ☐ Mixing valve direction, dip switches
- ☐ Time and date set correctly
- ☐ All timer schedules
- ☐ Heating curves A / B
- ☐ Shift A / B
- ☐ Vitodens control DIP switch (S1 & S2) at the back
- ☐ Max temperature set A / B
- ☐ Differential set-point
- ☐ DHW set-point / optimum switch position
- ☐ Burner micro-amp signal measured
- ☐ Saved fault code retrieval
- ☐ Vitodens control batteries, remote mount
- ☐ Remote enable / disable function
- ☐ LLH sensor actual temperature reading
- ☐ Btu/h matches load
- ☐ Integration with other heat sources

System Sketch

If the diagram as provided in the Installation Instructions was not followed, the following information is required. Include this information on the separate sheet attached. If floor heat design software can assist in answering the following questions, please include it in your response.

- ☐ Piping schematic including boiler feed
- ☐ Piping diameters and lengths
- ☐ Individual circuit flow, GPM required
- ☐ Foot of head for each circuit
- ☐ Calculated Delta T for each circuit
- ☐ Circuit water temperature requirements
- ☐ Circuit Btu requirements
- ☐ Total Btu load
- ☐ Circulator sizes (model numbers)

Address	Recorded Value
000	
003	
005	
007	
008	
010	
011	
013	

Address	Recorded Value
015	
017	
108	
019	
020	
027	
028	
038	

Address	Recorded Value
042	
044	
045	
046	
099	
0A0	
0A2	
0A7	
0A9	

Address	Recorded Value
0B2	
0B3	
0B8	
0C1	
0C5	
0D7	
Scan 1	
Scan 2	

System Sketch

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