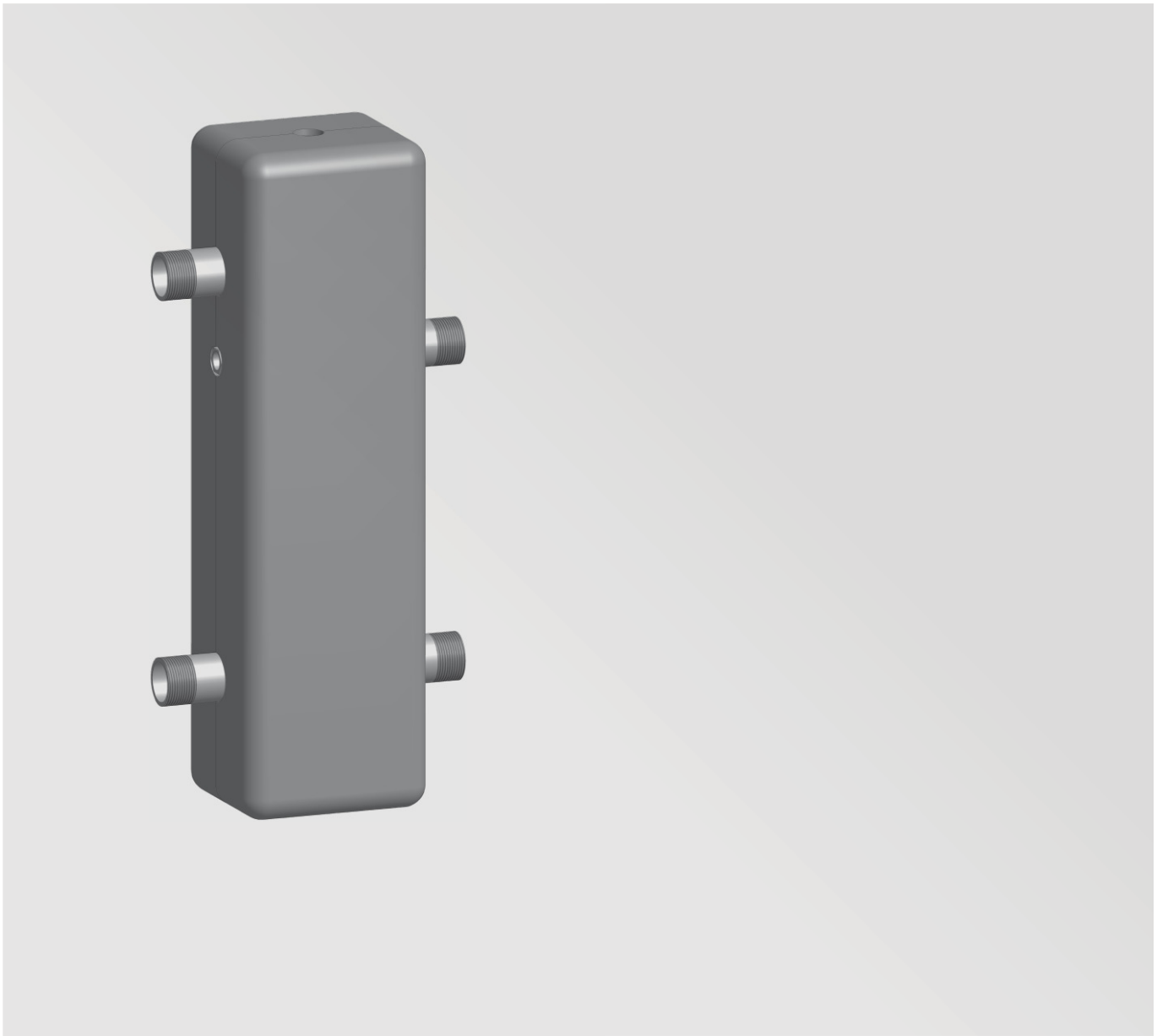
Installation Instructions
for use by heating contractor

Low-Loss Header
for Vitodens 100-W, WB1A/B and Vitodens 200, WB2A/B (single-boiler installations only)



Please file in Service Binder

Safety and Installation Requirements

Please ensure that these instructions are read and understood before starting any service work. Failure to comply with these instructions may cause product/property damage, severe personal injury and/or loss of life.

Working on the equipment

The installation, adjustment, service and maintenance of this product must be performed 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.

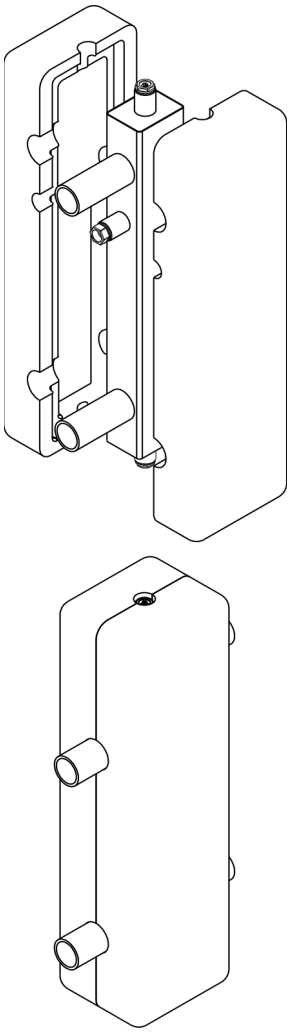
Ensure that main power to the equipment being serviced is off.

Ensure that the main fuel supply valve to the boiler is closed.

Take precautions to avoid accidental activation of power or fuel during service work.

Do not perform service work on any component part without ensuring safe operation of the heating system. When replacing parts, use original Viessmann or Viessmann approved replacement parts.

Product Information



When used in conjunction with the Vitodens 100, or Vitodens 200, boilers, the low-loss header acts as a hydraulic break, decoupling boiler and system circuits from each other.

It is recommended to use the low-loss header in applications in which the total system flow rate exceeds the maximum boiler flow rate.

Viessmann strongly recommends the use of a low-loss header in cases where the system head and flow rates are unknown.

The temperature sensor connection located at the top of the low-loss header ensures low return temperatures to the Vitodens 200, boilers, at all times, increasing operational efficiency.

In addition, the low-loss header helps eliminate air and debris from the heating system.

The low-loss header is available in the following sizes. Select the size based on the maximum system flow rate of your application.

LLH Model	Part Number	Max. Flow Rate
Type 80/60	7498529	19.5 GPM (4428 L/h)
Type 120/80	7498530	35.2 GPM (8000 L/h)

Low-Loss Header Temperature Sensors (for single-boiler applications)

Boiler Model	Part Number
WB2A	7134 240
WB2B	7179 488

Note: No temperature sensor is used on the Vitodens 100 boiler. Temperature sensor for the Vitodens 200 must be purchased separately.

Standard Equipment

Contents Low-Loss Header, Type 80/60

- Low-loss header (Type 80/60)
- Sensor well
- Drain plug
- Air bleed plug
- Insulation
- Installation Instructions

The temperature sensor (see page 2) for Vitodens 200, WB2A/B must be purchased separately.

Contents Low-Loss Header, Type 120/80

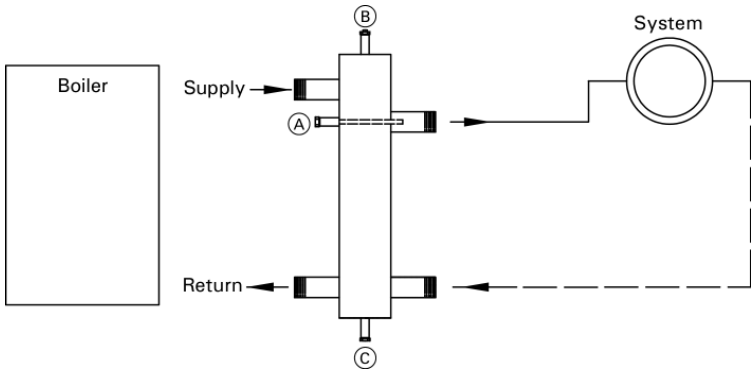
- Low-loss header (Type 120/80)
- Sensor well
- Drain plug
- Air bleed plug
- Insulation
- Installation Instructions

The temperature sensor (see page 2) for Vitodens 200, WB2A/B must be purchased separately.

General Layout

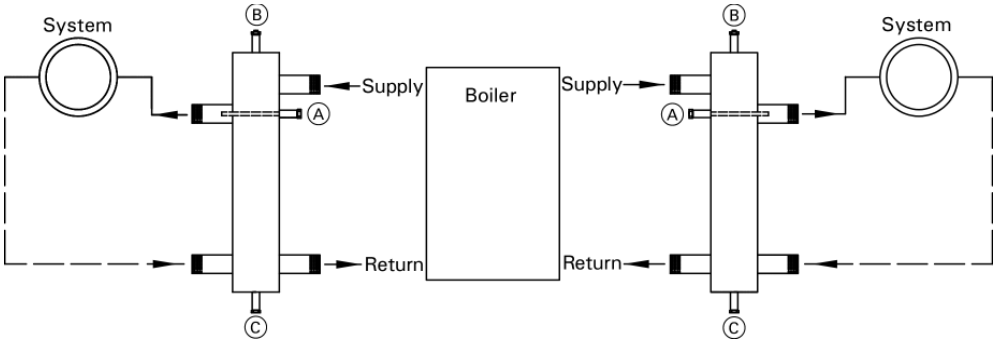
Before commencing with the installation of the low-loss header, check low-loss header orientation with respect to your heating system.

If (when holding the low-loss header with the sensor well connection facing to the left, as shown below).....



- the boiler is located to the left of the low-loss header and the heating system is located to the right, install the low-loss header as shown above (with sensor well Ⓐ located on left side), following the installation steps on the following page.
- the boiler is located to the right of the low-loss header and the heating system on the opposite side, perform the following steps:

1. Rotate low-loss header 180° clockwise (from its original orientation, as shown below).



2. Proceed with the installation steps on the following pages (depending on low-loss header model).

Ⓐ Sensor well
Ⓑ Air bleed opening
Ⓒ ½" drain plug

Residential Sizing

Low-loss header single boiler applicationsfor Viessmann wall-mount boilers

Boiler Model	No. of Boilers	Boiler max flow rate	Typical System Flow Rates							Viessmann temperature sensor required
			System Δt*2	20 11.0	25 14.0	30 17.0	35 19.5	40 22.0	°F °C	
Vitodens 100										
WB1A 8-24	1	6.2 1400	System Flow Rate LLH required LLH Model	7.2 1635 yes 80/60	5.8 1315 optional 80/60	4.8 1190 optional 80/60	4.1 930 optional 80/60	3.6 820 optional 80/60	GPM L/h	No *3
WB1A 8-30	1	6.2 1400	System Flow Rate LLH required LLH Model	9.0 2045 yes 80/60	7.2 1630 yes 80/60	6.0 1360 optional 80/60	5.1 1150 optional 80/60	4.5 1020 optional 80/60	GPM L/h	No *3
WB1B 26	1	6.1 1385	System Flow Rate LLH required LLH Model	8.3 1885 yes 80/60	6.6 1508 yes 80/60	5.5 1257 optional 80/60	4.7 1077 optional 80/60	4.2 943 optional 80/60	GPM L/h	No *3
WB1B 35	1	6.1 1385	System Flow Rate LLH required LLH Model	10.8 2453 yes 80/60	8.6 1962 yes 80/60	7.2 1635 yes 80/60	6.2 1402 yes 80/60	5.4 1226 optional 80/60	GPM L/h	No *3
Vitodens 200										
WB2A 6-24C	1	6.2 1400	System Flow Rate LLH required LLH Model	8.1 1840 yes 80/60	6.5 1476 yes 80/60	5.4 1227 optional 80/60	4.6 1045 optional 80/60	4.1 931 optional 80/60	GPM L/h	No *3
WB2A 6-24	1	6.2 1400	System Flow Rate LLH required LLH Model	8.1 1840 yes 80/60	6.5 1476 yes 80/60	5.4 1227 optional 80/60	4.6 1045 optional 80/60	4.1 931 optional 80/60	GPM L/h	Yes *1
WB2A 8-32	1	7.0 1600	System Flow Rate LLH required LLH Model	11.2 2544 yes 80/60	9.0 2044 optional 80/60	7.5 1703 optional 80/60	6.4 1454 optional 80/60	5.6 1272 optional 80/60	GPM L/h	Yes *1
WB2A 11-44	1	15.4 3500	System Flow Rate LLH required LLH Model	15.4 3498 yes 80/60	12.3 2794 optional 80/60	10.3 2340 optional 80/60	8.8 1999 optional 80/60	7.7 1749 optional 80/60	GPM L/h	Yes *1
WB2A 15-60	1	15.4 3500	System Flow Rate LLH required LLH Model	20.6 4679 yes 120/80	16.5 3748 yes 80/60	13.7 3112 optional 80/60	11.8 2680 optional 80/60	10.3 2339 optional 80/60	GPM L/h	Yes *1

*1 Low-loss header temperature sensor (see page 2) - sold seperately; for use in single-boiler applications in conjunction with Viessmann Comfortrol boiler control.

*2 For system Δt < 20 °F use low-loss header sizes for Δt 20 °F

*3 Vitodens 100, WB1A/B and Vitodens 200, WB2A 6-24C does not require a temperature sensor.

- Low-loss header must be used in all applications where the system flow rate exceeds the maximum or minimum boiler flow rate.
- "Optional" indicates that a low-loss header may be used for purposes of air separation and/or debris removal, as opposed to for flow purposes.

Residential Sizing *(continued)*

Low-loss header single boiler applicationsfor Viessmann wall-mount boilers

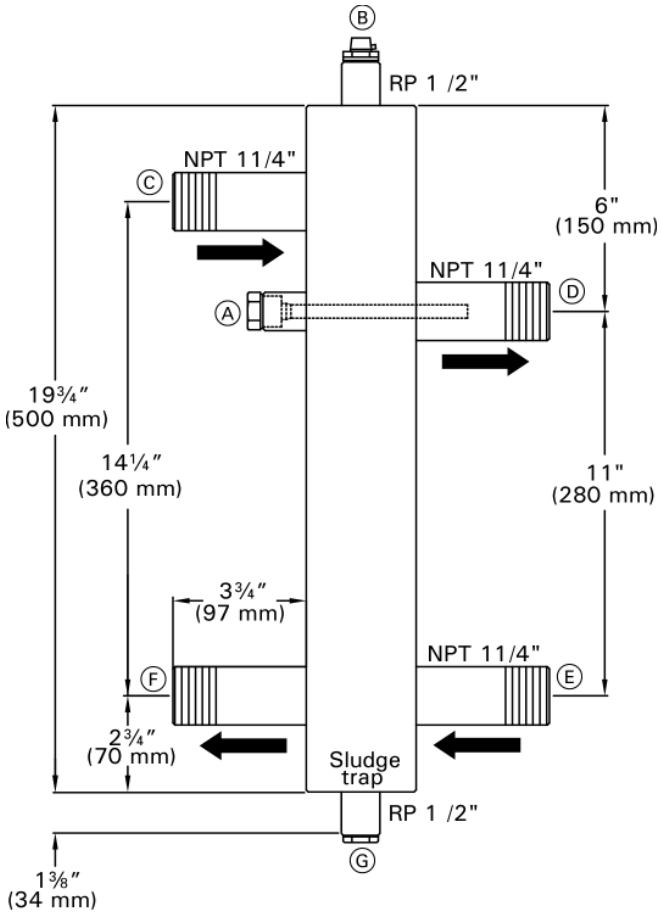
Boiler Model	No. of Boilers	Boiler max flow rate	Typical System Flow Rates							Viessmann temperature sensor required
			System Δt*2	20 11.0	20 11.0	30 17.0	30 17.0	35 19.5	°F °C	
Vitodens 200										
WB2B 19	1	6.1 1385	System Flow Rate LLH required LLH Model	6.1 1385 yes 80/60	4.9 1108 optional 80/60	4.1 924 optional 80/60	3.5 792 optional 80/60	3.1 693 optional 80/60	GPM L/h	Yes *1
WB2B 26	1	6.1 1385	System Flow Rate LLH required LLH Model	8.5 1931 yes 80/60	6.8 1544 yes 80/60	5.7 1287 optional 80/60	4.9 1103 optional 80/60	4.3 965 optional 80/60	GPM L/h	Yes *1
WB2B 35	1	6.1 1385	System Flow Rate LLH required LLH Model	11.4 2589 yes 80/60	9.1 2071 yes 80/60	7.6 1726 yes 80/60	6.5 1480 yes 80/60	5.7 1295 optional 80/60	GPM L/h	Yes *1
WB2B 45	1	15.4 3498	System Flow Rate LLH required LLH Model	14.6 3316 yes 80/60	11.7 2653 optional 80/60	9.7 2211 optional 80/60	8.3 1895 optional 80/60	7.3 1658 optional 80/60	GPM L/h	Yes *1
WB2B 60	1	15.4 3498	System Flow Rate LLH required LLH Model	19.4 4406 yes 80/60	15.5 3525 yes 80/60	12.9 2937 optional 80/60	11.1 2518 optional 80/60	9.7 2203 optional 80/60	GPM L/h	Yes *1
WB2B 80	1	35 7949	System Flow Rate LLH required LLH Model	26.0 5905 yes 120/80	20.8 4724 yes 120/80	17.3 3937 optional 120/80	14.9 3374 optional 120/80	13.0 2953 optional 120/80	GPM L/h	Yes *1
WB2B 105	1	35 7949	System Flow Rate LLH required LLH Model	35.0 7949 yes 120/80	28.0 6359 yes 120/80	23.3 5300 yes 120/80	20.0 4542 optional 120/80	17.5 3975 optional 120/80	GPM L/h	Yes *1

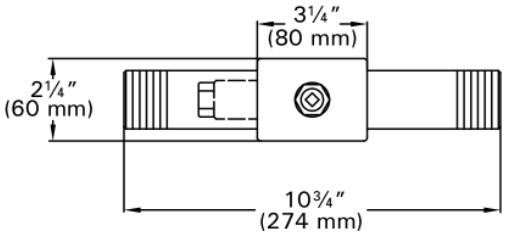
*1 Low-loss header temperature sensor (see page 1) - sold seperately; for use in single-boiler applications in conjunction with Viessmann Comfortrol boiler control.

*2 For system Δt < 20 °F use low-loss header sizes for Δt 20 °F

- Low-loss header must be used in all applications where the system flow rate exceeds the maximum or minimum boiler flow rate.
- "Optional" indicates that a low-loss header may be used for purposes of air separation and/or debris removal, as opposed to for flow purposes.

Dimensions (Type 80/60)





Low-loss header information

Model		Type 80/60
Low-loss header * Vitodens 100/200)		
Connector size (NPT)	inches	1¼
Distance between boiler supply/return	inches mm	14 360
Distance between system supply/return	inches mm	11 280
Matching insulation box		Included
Additional clearance with installed insulation	inches mm	2⅝ 68

* *Please note that the temperature sensor for Vitodens 200, WB2A/B must be purchased separately. See price list.*

Low-loss header dimensions
Overall depth 2¼" (60 mm)
Overall width 10¾" (274 mm)
Overall height 23" (586 mm)

IMPORTANT

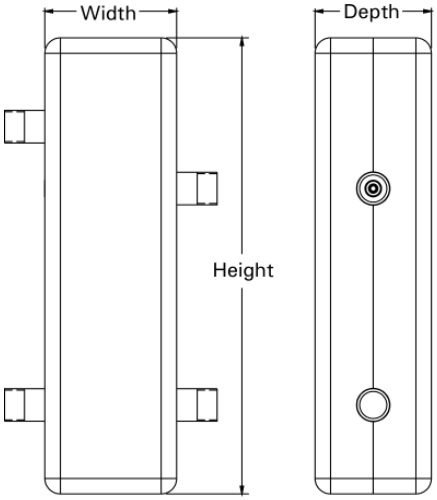
Please note that the pipe connections on the system side are at a closer distance from each other than those on the boiler side.

Legend
Ⓐ Sensor well, 150 mm
Ⓑ Air bleed plug (c/w O-ring)
Ⓒ Boiler supply
Ⓓ System supply
Ⓔ System return
Ⓕ Boiler return
Ⓖ ½" drain plug

IMPORTANT

If the standard low loss header insulation is being installed, add extra clearance between the back of the low loss header and the finished wall [1½" (38 mm) for Type 80/60].

Insulation dimensions
Overall depth 5⅛" (135 mm)
Overall width 6" (155 mm)
Overall height 22⅝" (575 mm)



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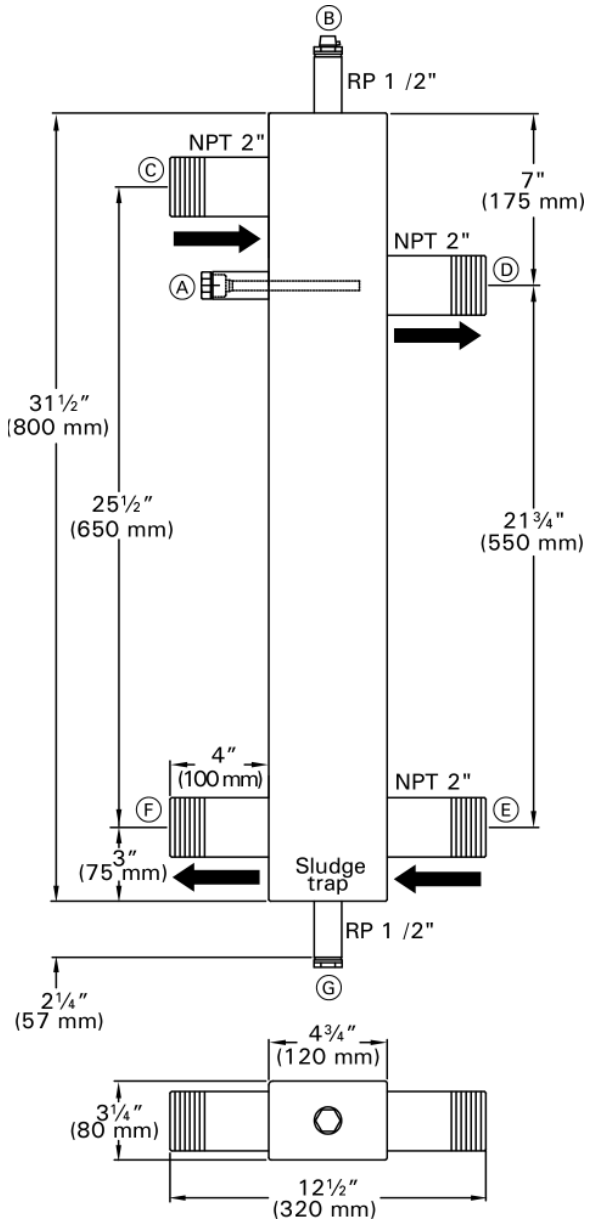
Dimensions (Type 120/80)



Low-loss header information

Model		Type 120/80
Low-loss header * Vitodens 100/200)		
Connector size (NPT)	inches	2
Distance between boiler supply/return	inches mm	25½ 650
Distance between system supply/return	inches mm	21½ 550
Matching insulation box		Included
Additional clearance with installed insulation	inches mm	3⅝ 92

* *Please note that the temperature sensor for Vitodens 200, WB2A/B must be purchased separately. See price list.*

Low-loss header dimensions

Overall depth 5½" (140 mm)
Overall width 12¾" (320 mm)
Overall height 36" (914 mm)

IMPORTANT

Please note that the pipe connections on the system side are at a closer distance from each other than those on the boiler side.

Legend

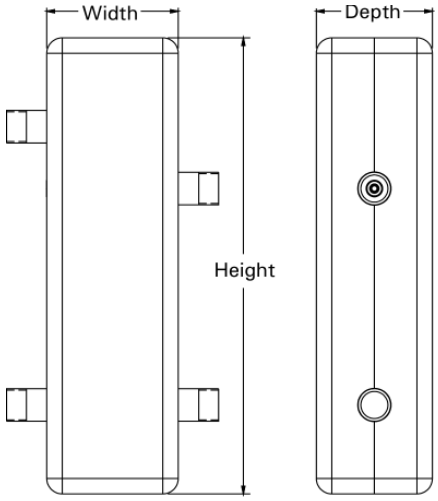
Ⓐ Sensor well, 200 mm (for WB2 only)
Ⓑ Air bleed plug (c/w O-ring)
Ⓒ Boiler supply
Ⓓ System supply
Ⓔ System return
Ⓕ Boiler return
Ⓖ ½" drain plug

IMPORTANT

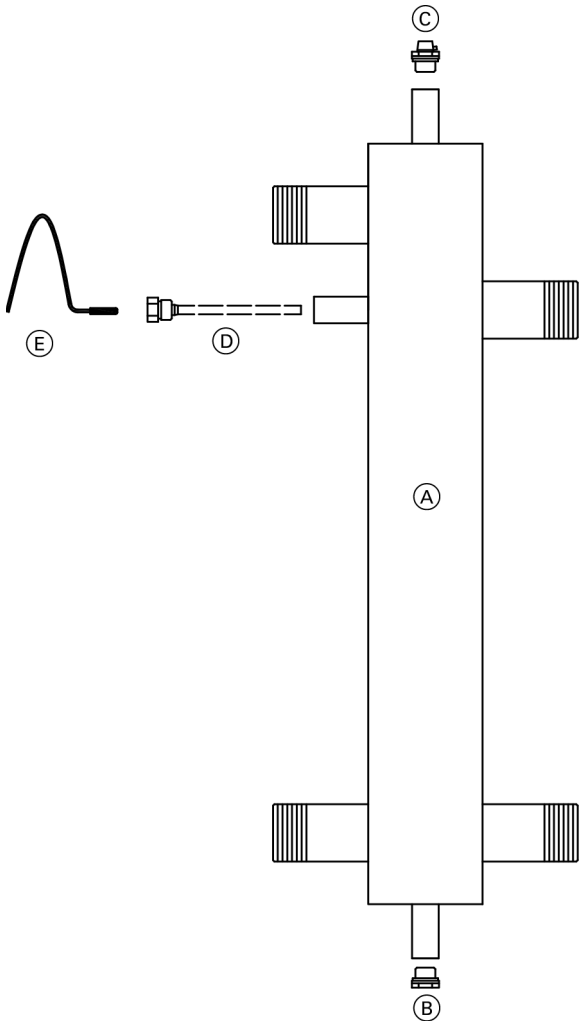
If the standard low loss header insulation is being installed, add extra clearance between the back of the low loss header and the finished wall [2" (51 mm) for Type 120/80].

Insulation dimensions

Overall depth 7⅛" (183 mm)
Overall width 8¾" (223 mm)
Overall height 35⅝" (905 mm)



Installation Steps



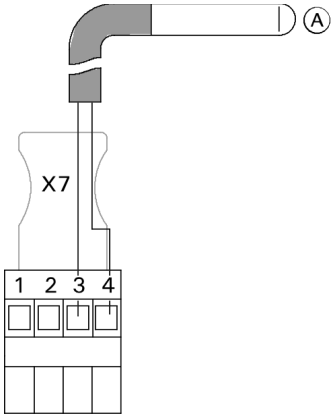
1. Remove low-loss header and supplied accessories from carton (see section entitled “Standard Equipment” on page 3 for a list of component parts included with your low-loss header).
2. Drain plug Ⓑ, air bleed plug Ⓒ (c/w O-ring) and sensor well Ⓓ are pre-installed. Ensure thightness and check for leaks.
3. Tighten all connections.
4. Install low-loss header only in vertical position (as shown). See pages 6 and 7, indicating system and boiler connection sides. Make system and boiler connections accordingly.
5. Insert temperature sensor Ⓔ probe end deep into sensor well Ⓓ. The other end of the low-loss header temperature sensor comes prewired to terminals 3 and 4 on plug X7. Insert plug X7 into corresponding terminal on boiler control console. See wiring information on page 9.

Legend

Ⓐ Low-loss header
Ⓑ Drain plug (c/w O-ring)
Ⓒ Air bleed plug (c/w O-ring)
Ⓓ Sensor well, 150 mm (Vitodens 200 only, except model WB2A 6-24C)
Ⓔ Temperature sensor (Vitodens 200 only, except model WB2A 6-24C, WB1A/B)

Sensor Installation for Vitodens 200, WB2A Boilers

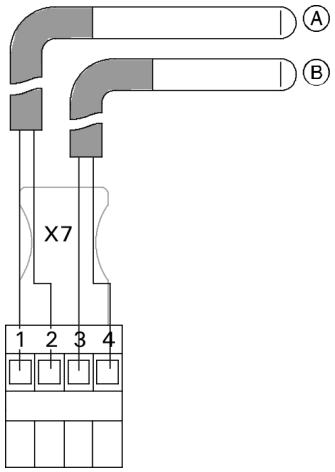
Plug X7 wired for installation with low-loss header only.



Ⓐ Low-loss header sensor

1. Insert plug X7 of the low-loss header sensor (as shown) into terminal X7 on the Vitodens 200 boiler control console (not applicable for Vitodens 200 WB2A 6-24C).

Plug X7 wired for installation with low-loss header and DHW storage tank.



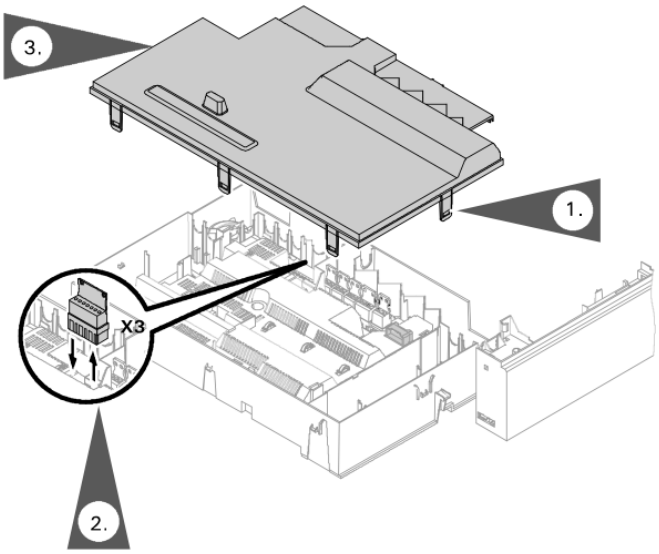
Ⓐ [5] DHW sensor
Ⓑ Low-loss header sensor

The [5] DHW sensor of the DHW storage tank comes prewired to terminals 1 and 2 on plug X7.
To connect a low-loss header sensor in addition to the DHW sensor, perform the following steps:

1. Remove and discard plug X7 from the low-loss header sensor.
2. Rewire low-loss header sensor wires to terminals 3 and 4 on plug X7 of the [5] DHW sensor (as shown).
3. Insert plug X7 into terminal X7 on the Vitodens 200 boiler control console (not applicable for model Vitodens 200 WB2A 6-24C).

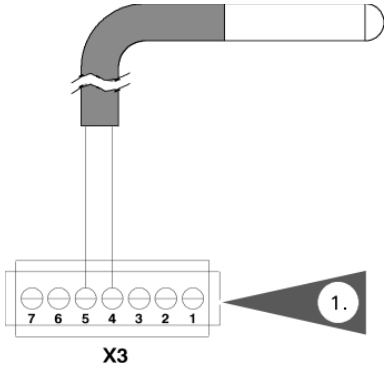
Sensor Installation for Vitodens 200, WB2B Boilers

Accessing the X3 plug



1. Remove the control unit cover.
2. Remove the X3 plug from the control board. Attach sensors and/or KM-BUS and/or accessories and reinsert the X3 plug. Refer to the following sensor information.
3. Reinstall the control cover.

Connecting the low-loss header sensor



1. Connect the low-loss header sensor (if used) to terminals X3.4/X3.5 on the boiler control board.

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