

Installation instructions for contractors

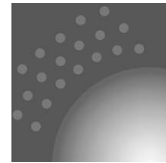
VIESSMANN

Vitomax 200-HW

Type M238

Oil/gas fired high pressure hot water boiler

Combustion output 4.0 to 18.2 MW



VITOMAX 200-HW



Safety instructions



Please follow these safety instructions closely to prevent accidents and material losses.

Safety instructions explained



Danger

This symbol warns against the risk of injury.

Note

Details identified by the word "Note" contain additional information.

Target group

These instructions are exclusively designed for qualified personnel.

- Work on gas appliances must only be carried out by a qualified gas fitter.
- Work on electrical equipment must only be carried out by a qualified electrician.

Regulations

Observe the following when working on this system

- all legal instructions regarding the prevention of accidents,
- all legal instructions regarding environmental protection,

- the Code of Practice of relevant trade associations,
- all current safety regulations as defined by DIN, EN, DVGW, TRGI, TRF, VDE and all locally applicable standards.

Working on the system

- Isolate the system from the power supply and check that it is no longer 'live', e.g. by removing a separate fuse or by means of a mains isolator.
- Safeguard the system against unauthorised reconnection.
- When using gas as fuel, also close the main gas shut-off valve and safeguard against unauthorised reopening.

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Product information

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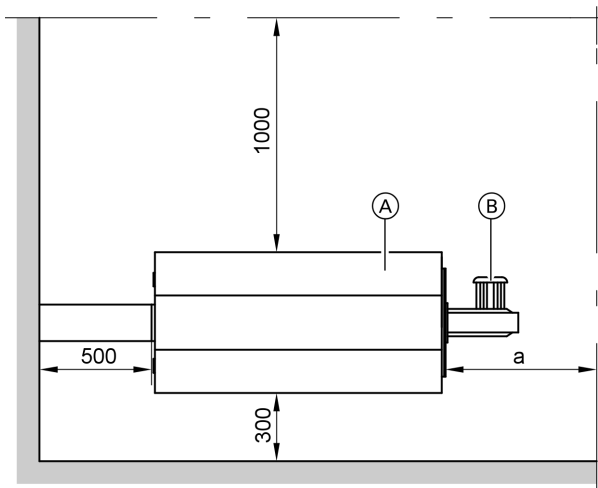
Product information

High pressure hot water boiler to TRD, compliant with category IV of the Steam Boiler Order [Germany] or the Pressure Equipment Directive 97/23/EC.

For permissible flow temperatures in excess of 120 °C.
Permiss. operating pressure (subject to version) 6, 8, 10, 13, 16, 18, 20, 22 or 25 bar

Preparing for installation

Clearance dimensions



Ⓐ Boiler

Ⓑ Burner

Note

Observe the given dimensions to ensure easy installation and maintenance.

These clearances must be checked in accordance with the applicable code of practice at the installation site, subject to the actual equipment level (accessories).

Minimum clearances relate to the boiler.

Preparing for installation (cont.)

Boiler size		1	2	3	4	5	6	7	8
Combustion output to EN 12953-3 when operating with									
Natural gas	MW	4.00	5.10	6.80	9.05	11.30	13.55	15.75	18.20
Fuel oil	MW	4.00	5.10	6.80	8.90	9.80	11.00	12.80	14.00
a	mm	3300	3700	4300	4900	5400	5900	6350	6800
a min.	mm	1400	1400	1500	1500	1700	1700	1900	2000

Dim. a: This clearance is recommended for boiler cleaning.
 Dimension a: A bigger minimum dimension may be required because of the
 min.: actual burner dimensions.

Boiler handling

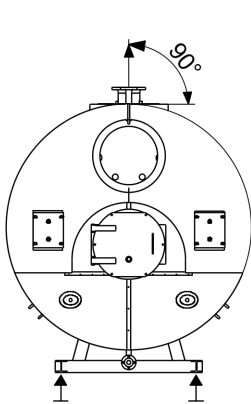
Note

Observe all relevant accident prevention regulations.

Only use the marked lifting points.

1. Lifting the boiler

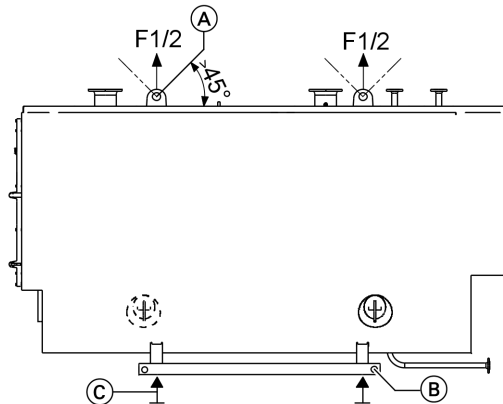
Use lifting eyes (A) or lifting points (C) on the boiler base.



2. Moving the boiler

Fitting steel castors underneath foot rail (C).

3. Secure the pulling means to pulling eyes (B).



Boiler positioning and adjustment

Level the boiler.

Note

We recommend the installation of the boiler on anti-vibration supports.

Heating water side connections



Danger

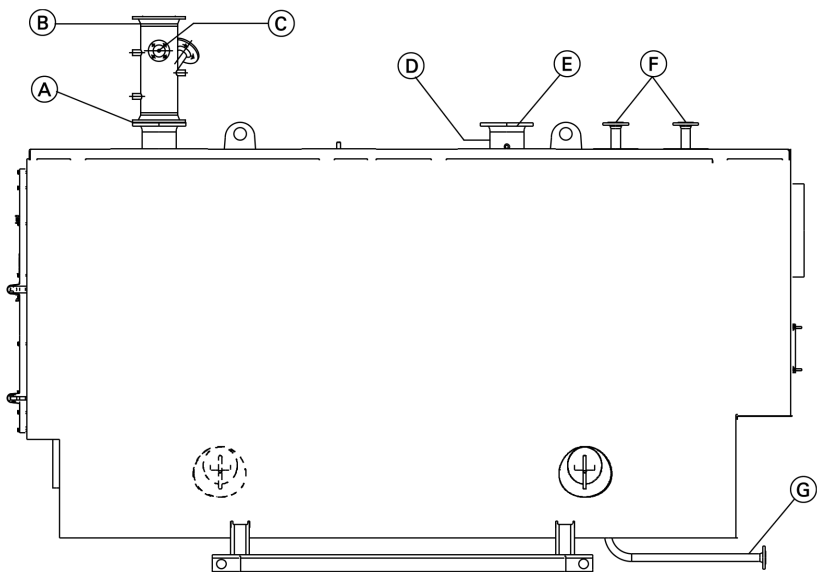
Opening the boiler connections and openings whilst the boiler is under pressure can lead to a high risk of severe injury.

Only open the connections on the water side after the boiler has been fully depressurised.

Note

Install all pipe connections free of load and torque stresses.

1. Thoroughly flush the system (especially when connecting the boiler to an existing system).
2. Make all necessary line connections.



- (A) Boiler flow (see table)
- (B) Intermediate flow piece
- (C) Connector for fitting assembly (pressure regulator, pressure limiter and pressure gauge)
- (D) 2 female connections R 1/2" for additional control equipment
- (E) Boiler return: see table
- (F) Safety valve connector (2 pce.): see table
- (G) Drain: DN 40 PN 40

Heating water side connections (cont.)

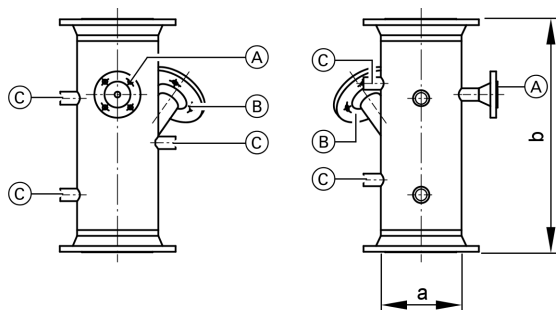
Boiler size		1	2	3	4	5	6	7	8
Combustion output to EN 12953-3 when operating with									
Natural gas	MW	4.00	5.10	6.80	9.05	11.30	13.55	15.75	18.20
Fuel oil	MW	4.00	5.10	6.80	8.90	9.80	11.00	12.80	14.00
Boiler connections									
Boiler flow and return at rated output and temperature spread									
20 K	DN	200	200	250	250	300	350	350	400
30 K	DN	150	150	200	200	250	250	300	300
40 K	DN	125	150	150	200	200	250	250	250
Safety valve connector for additional operating pressure									
6 bar	PN 40 DN	65	65	80	100	100	100	125	150
8 bar	PN 40 DN	50	65	80	80	100	100	100	125
10 bar	PN 40 DN	50	65	65	80	80	100	100	100
13 bar	PN 40 DN	40	50	65	65	80	80	100	100
16 bar	PN 40 DN	40	50	50	65	65	80	80	80
18 bar	PN 40 DN	40	40	50	65	65	65	80	80
20 bar	PN 40 DN	40	40	50	50	65	65	80	—
22 bar	PN 40 DN	32	40	50	50	65	65	—	—
25 bar	PN 40 DN	32	40	40	50	—	—	—	—

Fitting the test and control equipment

Fit test and control equipment that is pressure tested to the same level as the operating pressure of the boiler and that is suitable for the intended operating mode (operation with or without constant supervision). Agree details with the responsible approval body that should also approve them.

Note
 Carry out the installation in accordance with the instructions supplied with the devices.
 See the connection and wiring diagrams regarding the electrical connection.

Installing the intermediate flow piece



- (A) Connector DN 20 PN 40 for fitting assembly with pressure limiting equipment (pressure regulator, pressure limiter and pressure gauge)
- (B) Connector DN 50 PN 40 for electrode water level limiter
- (C) 5 female connections R 1/2" for thermometer, sampling valve and additional control equipment

a	DN	125	150	200	250	300	350	400
b	mm	500	500	500	550	550	600	600

Connect the intermediate flow piece at the boiler flow connector.

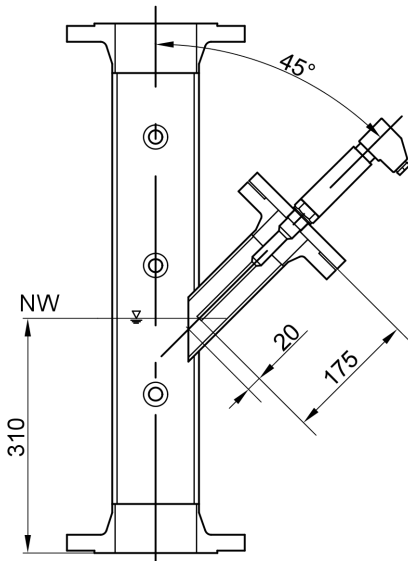
Seal all connectors that are not used after fitting the test and control equipment.

Note
 2 additional female connections R 1/2" for test and control equipment are available at the boiler return connector.

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Fitting the test and control equipment (cont.)

Fitting the electrode water level limiter



1. Insert the electrode into the threaded flange.
2. Trim the electrode (175 mm).

Note

The electrode supplied by the boiler manufacturer is already trimmed to size.

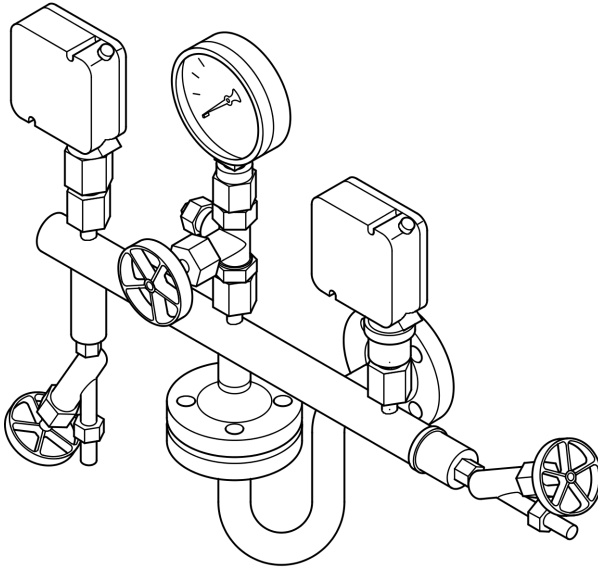
3. Fit the threaded flange with electrode into the test connector.



Observe the fitting instructions for the electrodes

Fitting the test and control equipment (cont.)

Fitting the pressure limiting equipment



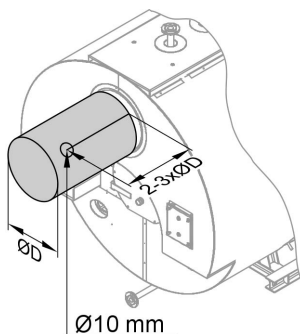
Install the fitting assembly with the pressure limiting equipment at the test connector of the intermediate flow piece.

Subject to system design, several pressure limiting facilities may be required.
Check with the certifying body.

Connection on the flue gas side

1. Connect the flue outlet with the shortest possible run to the flue gas system using slightly inclined flue pipes.
Avoid sharp kinks.
2. Locate the test aperture (approx. 10 mm \varnothing) at a distance of two to three times the diameter of the flue pipe behind the flue outlet.
3. Thermally insulate the flue pipe.

Connection on the flue gas side (cont.)



Boiler size		1	2	3	4	5	6	7	8
Flue gas connection	External Ø mm	510	610	650	760	810	910	1010	1110
Flue gas connection	Internal Ø mm	500	600	640	750	800	900	1000	1100

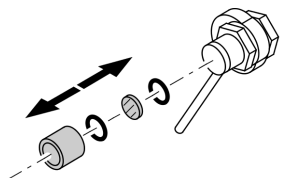


Danger

Risk of poisoning through escaping flue gas.

Seal the drain connectors if they are not used. When using an ECO mounted on top and when wet cleaning, these connectors are designed for draining the cleaning water.

Installing the combustion chamber sight glass

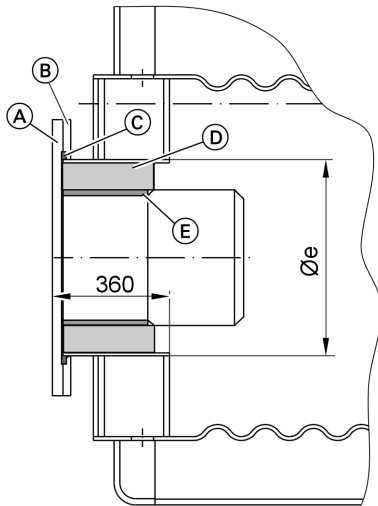


Fit the combustion chamber sight glass (inside the combustion chamber) to the combustion chamber lid at the back of the boiler.

Burner installation



Separate burner documentation.



1. Secure burner plate (A) for the burner installation together with seal ring (C) to boiler flange (B).

Note

If the burner plate was not pre-drilled at the factory, drill the burner fixing holes into the burner plate and cut out the flame tube hole. For the max. flame tube diameter, see the table.

2. Secure the burner to the burner plate.

Boiler size	1	2	3	4	5	6	7	8
	Burner connection dimensions							
Minimum flame tube length mm	360							
Max. flame tube diameter, mm dimension e	515	595	715	715	765	765	910	1015

3. Trim thermal insulation (D) in accordance with the actual flame tube diameter.
4. Seal the annular gap between the flame tube and the thermal insulation block with heat-resistant insulation material (E) (supplied in the combustion chamber pack).
5. Run the cable/leads and the fuel oil line etc. in a loop. This enables the cleaning door to be opened without lines/cables/leads having to be removed.

Fuel

Systems with oil burner:

Fuel oil EL to DIN 51603

Systems with gas burner:

Natural gas in accordance with DVGW Code of Practice G260/I and II or in accordance with local regulations.

Burner adjustment



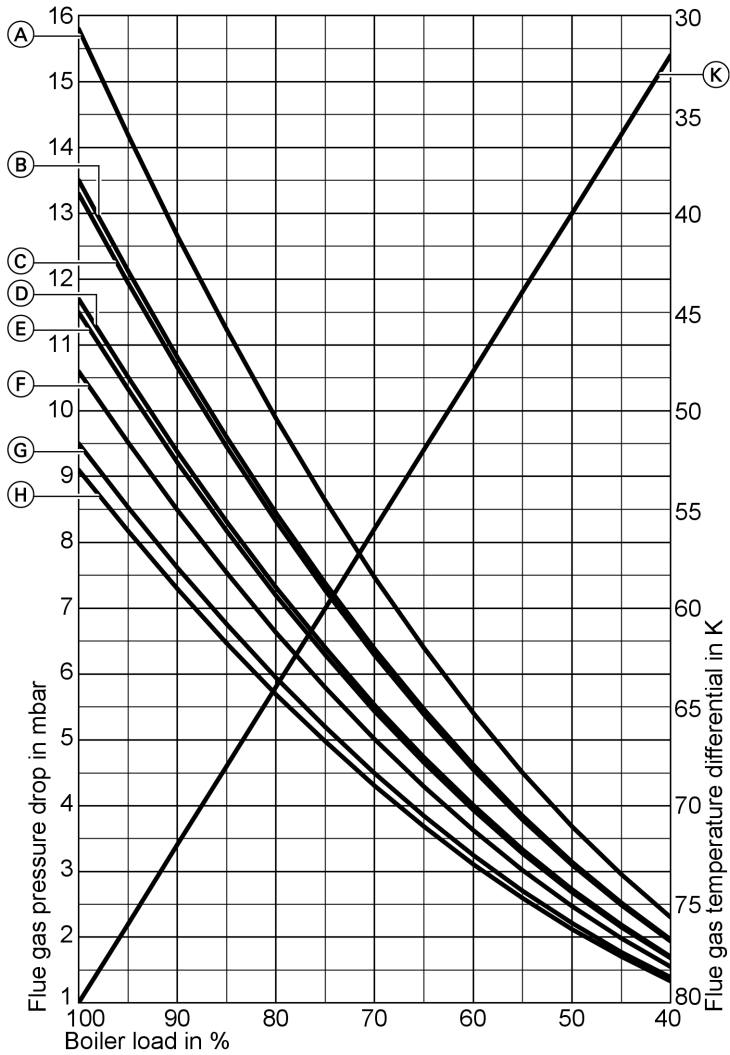
For burner adjustments, see the separate burner documentation.

Adjust the highest oil or gas throughput of the burner to the specified combustion output of the boiler.

Boiler size		1	2	3	4	5	6	7	8
		max. combustion output							
Combustion output to EN 12953-3 when operating with natural gas	MW	4.00	5.10	6.80	9.05	11.30	13.55	15.75	18.20
Flue gas pressure drop	mbar	12.00	11.50	13.50	9.10	10.60	11.70	13.30	15.80
Combustion output to EN 12953-3 when operating with fuel oil	MW	4.00	5.10	6.80	8.90	9.80	11.00	12.80	14.00
Output portion	%	100	100	100	98.3	86.7	81.2	81.3	76.9
Flue gas pressure drop	mbar	12.0	11.5	13.5	8.8	7.8	7.5	8.5	9.0

Burner adjustment (cont.)

Flue gas pressure drop and flue gas temperature differential subject to the boiler output



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(A) Boiler size 8
(B) Boiler size 3

(C) Boiler size 7
(D) Boiler size 6



Burner adjustment (cont.)

- Ⓔ Boiler size 2
- Ⓕ Boiler size 5
- Ⓖ Boiler size 1
- Ⓗ Boiler size 4
- Ⓚ Temperature differential between the flue gas temperature at the boiler outlet and the boiler flow temperature

Commissioning and adjustment



Service instructions for boiler and boiler control unit and separate burner documentation.

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