

# Installation instructions

for contractors

# VIESMANN

**Vitomax 300-LW**

**Type M84A**

Oil/gas low pressure hot water boiler

Heating output 8.0 to 20.0 MW



## VITOMAX 300-LW



## 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.



#### **Please note**

This symbol warns against the risk of material losses and environmental pollution.

### **Note**

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

### **Target group**

These instructions are exclusively intended for qualified contractors.

- Work on gas installations must only be carried out by a registered gas fitter.
- Work on electrical equipment must only be carried out by a qualified electrician.
- Commissioning must be carried out in accordance with Viessmann regulations. We recommend the system is commissioned by Viessmann Industrieservice.

### **Regulations**

Observe the following when working on this system:

- Statutory regulations regarding the prevention of accidents

- Statutory regulations regarding environmental protection
- Health and Safety at Work Act [Germany]
- The Code of Practice of relevant trade associations
- Directive 97/23/EC, as well as the relevant safety regulations of the following countries:

- Ⓓ DVGW, TRGI, TRF and VDE, TRD
- Ⓐ KG, ABV, LRG-K, LRV-K, DKBG
- ⒸⒽ SEV, SUVA, SVGW, SVTI, SWKI, VKF and EKAS guideline 1942: LPG, part 2

### **Working on the system**

- Close the fuel shut-off valve and secure against unintentional reopening.
- Isolate the system from the power supply (e.g. by removing the separate fuse or by means of a mains isolator) and check that it is no longer 'live'.
- Safeguard the system against reconnection.

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## Storage of Vitomax boilers prior to installation as part of the overall plant

### **Please note**

*This information applies to boiler storage **prior to installation** as part of the plant and must be observed.*

- Vitomax boilers must be stored in enclosed rooms, free from weather influences under dry conditions.
- The room temperature must not fall below 0 °C or exceed +50 °C.
- In its delivered condition the boiler is protected against the ingress of foreign matter on the water side with dummy flanges or caps.
- Remove the shipping packaging to prevent the formation of condensate.

To prevent corrosion in the non-pressurised state, observe the following if the boiler is stored for > 4 weeks:

- Protect the interior of the boiler against moisture on the flue gas side and on the DHW side with a desiccant, e.g. silica gel.
- The amount of desiccant depends on the boiler volume.
- Check the effectiveness of the desiccant regularly.

### **Note**

*Observe the desiccant manufacturer's instructions.*

- Ensure that the desiccant does not come into contact with the boiler material (e.g. by suspended fixings).
- Preserve the dry flue gas side with a thin film of graphite or boiled oil.
- Instead of the moisture extraction on the flue gas side by means of a desiccant, a dryer with air circulation can also be connected.

## Preparing for installation

### Note

All diagrams in this document are schematic diagrams.

### Handling the boiler



#### Danger

Inappropriate handling of the boiler can result in serious health risks for the personnel engaged in the handling.

Observe all relevant accident prevention regulations.

Only use the marked fixing points.

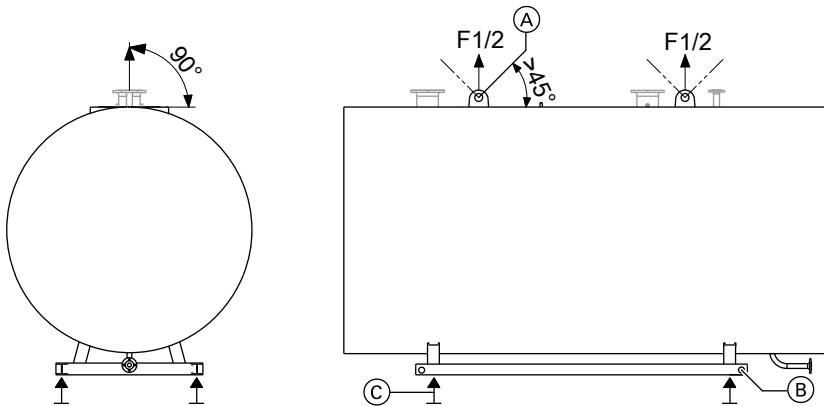


Fig. 1

#### 1. Lifting the boiler

Use lifting eyes (A) ( $\varnothing$  80 mm) or lifting points (C) on the boiler base.

#### 2. Moving the boiler

- Place steel rollers underneath base rail (C).
- Secure the pulling equipment to tie-down points (B) ( $\varnothing$  80 mm).

## Handling and installing the boiler

### Recommended minimum clearances

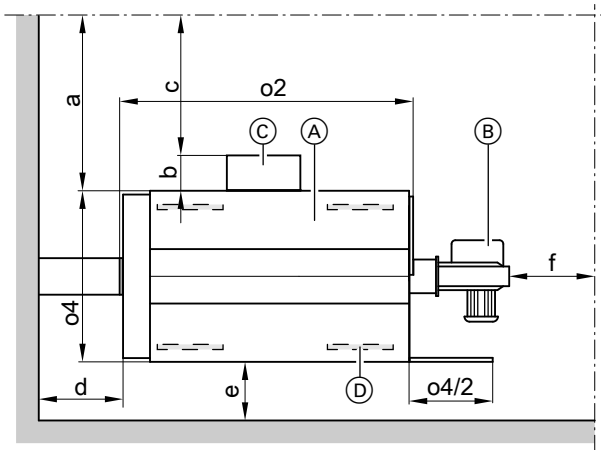


Fig. 2

- |     |   |        |                          |
|-----|---|--------|--------------------------|
| (A) | Boiler                                  | a      | Control panel not fitted |
| (B) | Burner                                  | b      | Control panel depth      |
| (C) | Regulating and control system           | c      | Control panel fitted     |
| (D) | Anti-vibration boiler supports (option) | d,e,f  | Remaining clearances     |
|     |   | o2, o4 | Max. length, max. width  |

Tab. 1

a/b/c	mm	≥1000/≥500/≥800
d/e/f <sup>1</sup>	mm	≥500/≥300/≥500

Observe the given dimensions to **ensure easy installation and maintenance**.

Level the boiler horizontally. **Observe risk warning** in chapter "Handling the boiler".

### We recommend

*you position the boiler onto anti-vibration boiler supports. For this, distribute supports evenly over the length and centrally underneath the base rails. Observe the information provided.*

Tab. 2

Boiler size		1	2	3	4	5	6	7
o2	mm	6441	6981	7521	8011	8481	8901	9341
o4	mm	2815	3035	3150	3360	3500	3580	3675

<sup>1</sup> **We recommend:** Leave one boiler length (o2) of space clear in front of the boiler door to facilitate the extraction of turbulators (if fitted) and cleaning.

## Connecting the pipework



### **Danger**

Opening the boiler connections on the water and steam side whilst the boiler is under pressure can lead to a high risk of severe injury.

Only open the connections on the water and steam side after the boiler has been completely depressurised.



### **Please note**

Unsuitable water quality can damage the boiler shell.

Only fill the boiler with water that complies with the "Water quality guidelines" (see service instructions).

### **Note**

*Install all pipe connections free of load and torque stress.*

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

## Connecting the pipework (cont.)

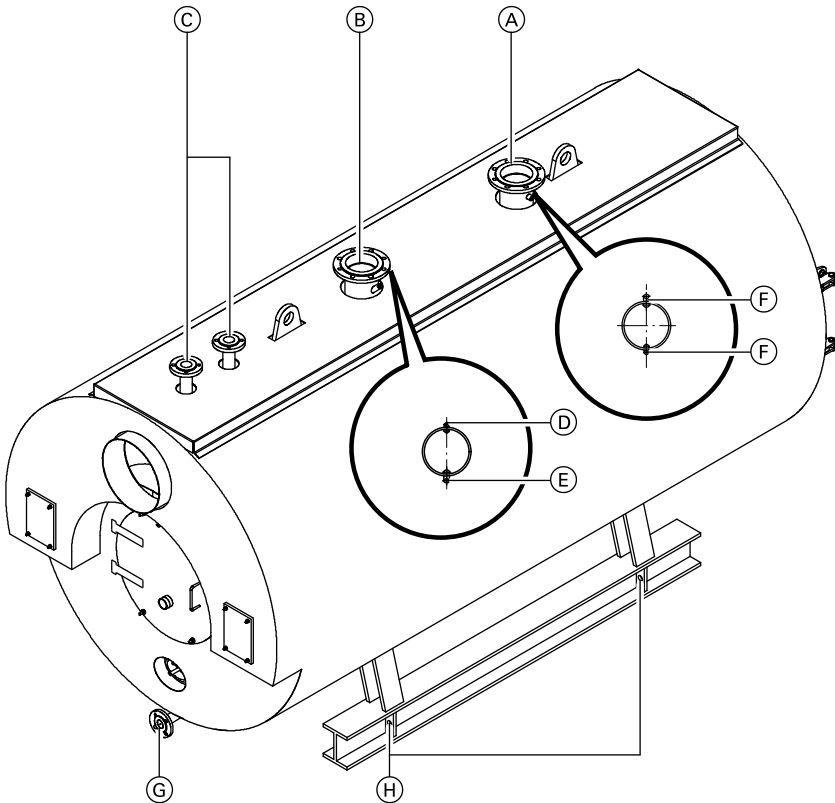


Fig. 3 - Illustrative example. Order-specific deviations from the standard delivery are possible.

- |  |   |
|--|---|
| (A) Boiler return connector                              | (F) Fem. connection for addition- R ½<br>al control equipment |
| (B) Boiler flow connector                                | (G) Drain connector   |
| (C) Safety valve connector                               | (H) Drilled hole for equipotential bonding ∅ 13 mm            |
| (D) Fem. connection for high limit R ½<br>safety cut-out |   |
| (E) Fem. connection for temper- R ½<br>ature controller  |   |



## Fitting the measuring and control equipment

Fit measuring 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, which should also approve them.

### Note

*Carry out the installation in accordance with the instructions supplied with the equipment.*



### Power supply

Connection and wiring diagrams supplied

## Preparing the control unit installation

**Vitotronic** or **Vitocontrol** as an accessory:



Separate documentation

## Equipment for control and limitation

For boilers with a **Vitotronic** control unit or **Vitocontrol** control panel:



Separate documentation

## Connecting the flue gas side



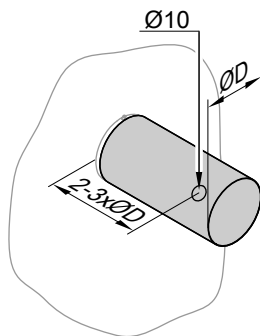
### Danger

The gases created inside the boiler may be poisonous and can result in severe health risks if they are allowed to escape unchecked.

Close unused boiler apertures tightly and check gas lines for tightness.

## Connecting the flue gas side (cont.)

### Fitting a flue pipe



2. Locate the test port (approx. 10 mm  $\varnothing$ ) at a distance of two to three times the diameter of the flue pipe downstream of the flue outlet.
3. Seal flue pipe.
4. Insulate the flue pipe.

#### **Optional**

*Flue gas flange with mating flange.*

Fig. 4

1. Connect the flue outlet with the flue system using a flue pipe with favourable flow characteristics.

**Tab. 3 - Flue outlet D<sup>\*2</sup>**

Boiler size	1	2	3	4	5	6	7
D $\varnothing$ mm	700	790	790	890	990	990	1110

#### **Note**

- Prevent the return of condensate created inside the flue system by suitable on-site measures (condensate trap).
- Close the condensate drain connectors if they are not used. They are designed to drain any condensate collected in the start-up phase.

#### **Note**

*Connect all flue pipes free of load and torque stress. Flue pipe joints must be gas-tight.*

<sup>\*2</sup> Internal diameter, for external diameter: + 10 mm

## Mounting the sight glass

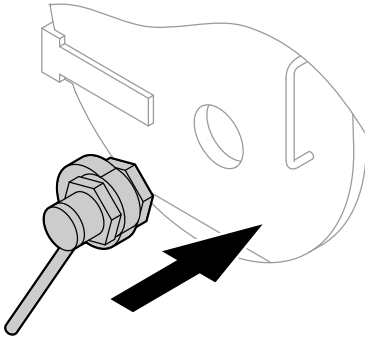


Fig. 5

Mount the sight glass (supplied with the flame tube) into the cleaning aperture closure at the back of the boiler.

## Fuels

### Oil

- Fuel oil EL to DIN 51603, part 1.
- Fuel oil S or SA to DIN 51603 part 3, 5. When using fuel oil S or SA, different output data (heating output, flue gas temperature, efficiency) may result.

### Gas

- Natural gas and LPG in accordance with DVGW Code of Practice G 260/I and II or in accordance with local regulations.

### Alternative fuel

- On request

## Mounting the burner

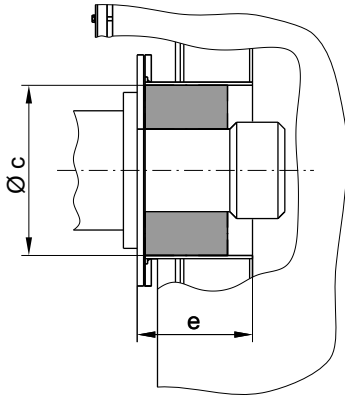


Fig. 6

- c Max. flame head diameter
- e Minimum flame head length (table 4)



Separate burner instructions, connection and wiring schemes as well as operating and service instructions.

1. For the burner connection, secure the burner plate to the boiler flange with screws.

### 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 head aperture.*

2. Secure the burner to the burner plate with screws.

### Note

*For different dimensions, adjust the cut-out in the thermal insulation according to the flame head diameter.*

3. After mounting the burner, seal the annular gap between the flame head and the thermal insulation block with heat-resistant insulation material.

### Note

*Thermal insulation blocks and loose thermal insulation are supplied either inside the reversing chambers of the boiler doors or inside the flame tube.*

4. Close the boiler doors and cleaning aperture at the back of the boiler.

### Note

*Check for gas tightness.*

## Adjusting the burner

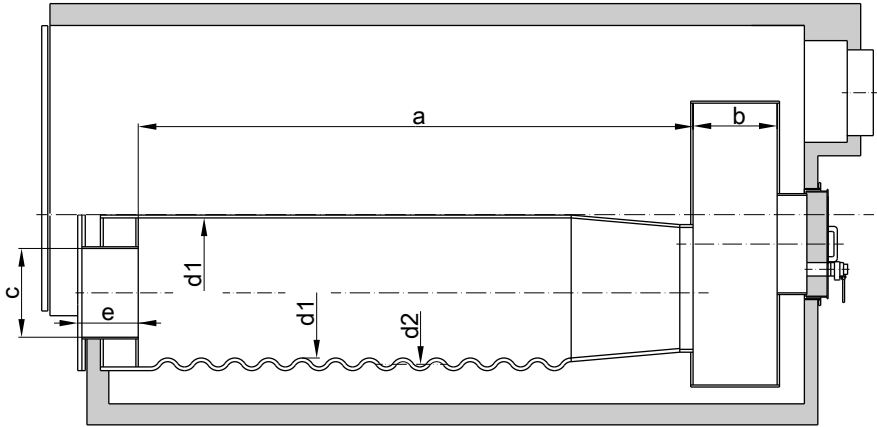


Fig. 7

- a Flame tube length
- b Reversing chamber depth
- c Max. flame head diameter
- d1 Smooth pipe, internal diameter, min.
- d1 Corrugated pipe, internal diameter
- d2 Corrugated pipe, average diameter
- e Minimum flame head length

Tab. 4 - Burner connection dimensions

Boiler size		1	2	3	4	5	6	7
c	Ømm	520	520	590	590	590	718	718
e	mm	360						

### Note

The type of flame tube depends on the pressure stage employed. Product-specific tolerances are possible.



Separate burner documentation.

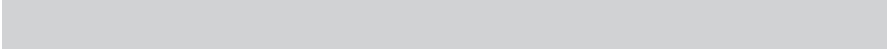
### Note

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

## Commissioning and adjustment



Service instructions of the boiler  
and separate documentation.



Viessmann Werke GmbH&Co KG  
D-35107 Allendorf  
Telephone: +49 6452 70-0  
Fax: +49 6452 70-2780  
[www.viessmann.com](http://www.viessmann.com)

Viessmann Limited  
Hortonwood 30, Telford  
Shropshire, TF1 7YP, GB  
Telephone: +44 1952 675000  
Fax: +44 1952 675040  
E-mail: [info-uk@viessmann.com](mailto:info-uk@viessmann.com)

5774 496 GB Subject to technical modifications.