

# Service instructions

for contractors

# VIESSMANN

**Vitorond 100**  
**Type VR2B**, 15 to 33 kW  
Oil/gas boiler

*For applicability, see the last page*



## VITOROND 100



## 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.
- The system must be commissioned by the system installer or a qualified person authorised by the installer.

### Regulations

Observe the following when working on this system:

- Statutory regulations regarding the prevention of accidents
- Statutory regulations regarding environmental protection

- Codes of practice of the relevant trade associations
- All current safety regulations as defined by DIN, EN, DVGW, TRGI, TRF, VDE and all locally applicable standards
  - Ⓐ ÖNORM, EN, ÖVGW-TR Gas, ÖVGW-TRF and ÖVE
  - ⒸH SEV, SUVA, SVGW, SVTI, SWKI, VKF and EKAS guideline 1942: LPG, part 2

### If you smell gas



#### **Danger**

Escaping gas can lead to explosions which may result in serious injury.

- Do not smoke. Prevent naked flames and sparks. Do not switch lights or electrical appliances on or off.
- Close the gas shut-off valve.
- Open windows and doors.
- Evacuate any people from the danger zone.
- Notify your gas or electricity supply utility from outside the building.
- Shut off the electricity supply to the building from a safe place (outside the building).

## Safety instructions (cont.)

### If you smell flue gas



#### Danger

Flue gas can lead to life-threatening poisoning.

- Shut down the heating system.
- Ventilate the installation site.
- Close all doors in the living space.

### Flue systems and combustion air

Ensure that flue systems are clear and cannot be sealed, for instance due to accumulation of condensate or other causes. Ensure a sufficient supply of combustion air.

Instruct system users that subsequent modifications to the building characteristics are not permissible (e.g. cable/pipe-work routing, cladding or partitions).



#### Danger

Life-threatening poisoning caused by carbon monoxide in the flue gas occurs as a result of leaking or blocked flue systems or an insufficient supply of combustion air.

Ensure the flue system is in proper working order. It must not be possible to close apertures for interconnected combustion air supply.

### Extractors

Operating appliances that extract air to the outside (cooker hoods, extractors, air conditioning units, etc.) can create negative pressure. If the boiler is operated at the same time, this can lead to reverse flow of the flue gas.



#### Danger

The simultaneous operation of the boiler and appliances that extract air to the outside can result in life threatening poisoning due to reverse flow of the flue gas.

Fit an interlock circuit or take suitable steps to ensure a sufficient supply of combustion air.

### Working on the system

- Where gas is used as the fuel, close the main gas shut-off valve and safeguard it 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.



#### Please note

Electronic assemblies can be damaged by electrostatic discharge.

Prior to commencing any work, touch earthed objects, such as heating or water pipes to discharge static loads.

### Repair work



#### Please note

Repairing components that fulfil a safety function can compromise the safe operation of your system.

Defective components must be replaced with genuine Viessmann spare parts.

## **Safety instructions** (cont.)

### **Auxiliary components, spare and wearing parts**



#### **Please note**

Spare and wearing parts that have not been tested together with the system can compromise its function. Installing non-authorised components and making non-approved modifications or conversions can compromise safety and may invalidate our warranty.

For replacements, use only original spare parts supplied or approved by Viessmann.

## Index

<b>Product information</b>	
Intended use.....	6
<b>Commissioning, inspection, maintenance</b>	
Steps - commissioning, inspection and maintenance.....	7
Further details regarding the individual steps.....	8
<b>Parts lists</b> .....	16
<b>Commissioning/service reports</b> .....	19
<b>Specification</b> .....	20
<b>Certificates</b>	
Declaration of conformity.....	21
Manufacturer's certificate according to the 1st BImSchV [Germany].....	22
<b>Keyword index</b> .....	23

## Intended use

The appliance is only intended to be installed and operated in sealed unvented heating systems that comply with EN 12828, with due attention paid to the associated installation, service and operating instructions. It is only designed for the heating of water that is of potable water quality.

Intended usage presupposes that a fixed installation in conjunction with permissible, system-specific components has been carried out.

Commercial or industrial usage for a purpose other than heating the building or DHW does not comply with regulations.

Any usage beyond this must be approved by the manufacturer for the individual case.

Incorrect usage or operation of the appliance (e.g. the appliance being opened by the system user) is prohibited and results in an exclusion of liability. Incorrect usage also occurs if the components in the heating system are modified from their intended function (e.g. if the flue gas and ventilation air paths are sealed).

## Steps - commissioning, inspection and maintenance

For further information regarding the individual steps, see the page indicated

	Commissioning steps	Inspection steps	Maintenance steps	Page
•				1. Filling the system..... 8
•	•	•		2. Commissioning the system..... 9
	•	•		3. Shutting down the system
	•	•		4. Closing the Vitoair draught stabiliser (if installed)..... 10
		•		5. Opening the boiler door, extracting and cleaning the turbulators..... 10
		•		6. Cleaning the heating surface, flue outlet and flue..... 12
	•	•		7. Checking gaskets and thermal insulation sections.... 12
	•	•		8. Inserting the turbulators and fitting the boiler door.... 12
	•	•		9. Checking the firm seating of electrical plug-in connections and cable grommets
	•	•		10. Checking the thermal insulation
•	•	•		11. Checking connections on the heating water and DHW side and the sensor well for leaks
•	•	•		12. Checking the function of the safety equipment
•	•	•		13. Checking the expansion vessel and system pressure 14
•	•	•		14. Checking the thermal insulation and strain relief fittings for firm seating
	•	•		15. Checking the mixer for ease of operation and tightness..... 14
•	•	•		16. Checking the Vitoair draught stabiliser (if installed)... 15
•	•	•		17. Checking the ventilation air connection to the burner (if installed)..... 15
•	•	•		18. Adjusting the burner..... 15
•				19. Operating and service documents..... 15

## Further details regarding the individual steps

### Filling the system

#### Fill water



#### Please note

Unsuitable fill water increases the level of deposits and corrosion and may lead to boiler damage.

- Flush the heating system thoroughly before filling.
- Only use fill water of potable quality.

- An antifreeze additive suitable for heating systems can be added to the fill water. The antifreeze manufacturer must verify its suitability.
- Fill and top-up water with a water hardness in excess of the following values must be softened, e.g. with a small softening system for heating water.

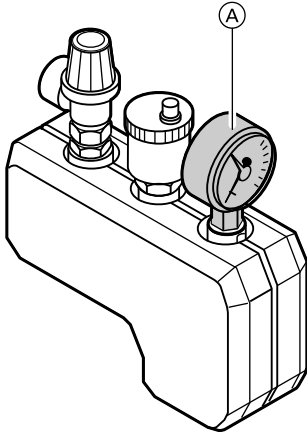
#### Total permissible hardness of the fill and top-up water

Total heating output kW	Specific system volume (Conversion rate 1 mol/m <sup>3</sup> = 100 ppm)		
	< 20 l/kW	≥ 20 l/kW to < 50 l/kW	≥ 50 l/kW
≤ 50	≤ 3.0 mol/m <sup>3</sup>	≤ 2.0 mol/m <sup>3</sup>	< 0.02 mol/m <sup>3</sup>
> 50 to ≤ 200	≤ 2.0 mol/m <sup>3</sup>	≤ 1.5 mol/m <sup>3</sup>	< 0.02 mol/m <sup>3</sup>
> 200 to ≤ 600	≤ 1.5 mol/m <sup>3</sup>	≤ 0.02 mol/m <sup>3</sup>	< 0.02 mol/m <sup>3</sup>
> 600	< 0.02 mol/m <sup>3</sup>	< 0.02 mol/m <sup>3</sup>	< 0.02 mol/m <sup>3</sup>



## Further details regarding the individual steps (cont.)

1. Check the pre-charge pressure of the expansion vessel.  
If the pre-charge pressure is lower than the static system pressure, top up with nitrogen until the pre-charge pressure is 0.1 to 0.2 bar (10 to 20 kPa) higher.
2. Close the oil or gas shut-off valves.
3. Open the check valve.
4. Fill the heating system with water and vent until the charge pressure is 0.1 to 0.2 bar (10 to 20 kPa) higher than the pre-charge pressure of the expansion vessel.  
Permiss. operating pressure: 3 bar (0.3 MPa)  
Test pressure: 4 bar (0.4 MPa)
5. Mark the charge pressure at pressure gauge (A).
6. Return the check valves to their operating position.



## Commissioning the system

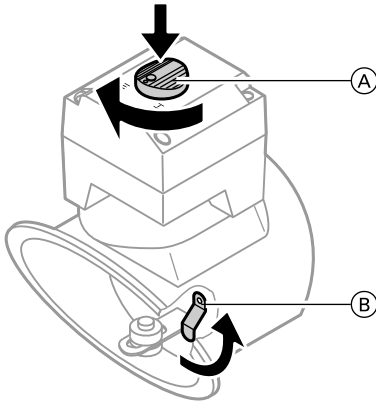


Operating and service instructions for the control unit and the burner

1. Check that the installation room vent is open.
2. Open the oil or gas shut-off valves.

## Further details regarding the individual steps (cont.)

### Closing the Vitoair draught stabiliser (if installed)



1. Press rotary selector (A) on the Vitoair motor and turn to position **I**.
2. Lock the control disc with latch (B).

### Opening the boiler door, extracting and cleaning the turbulators

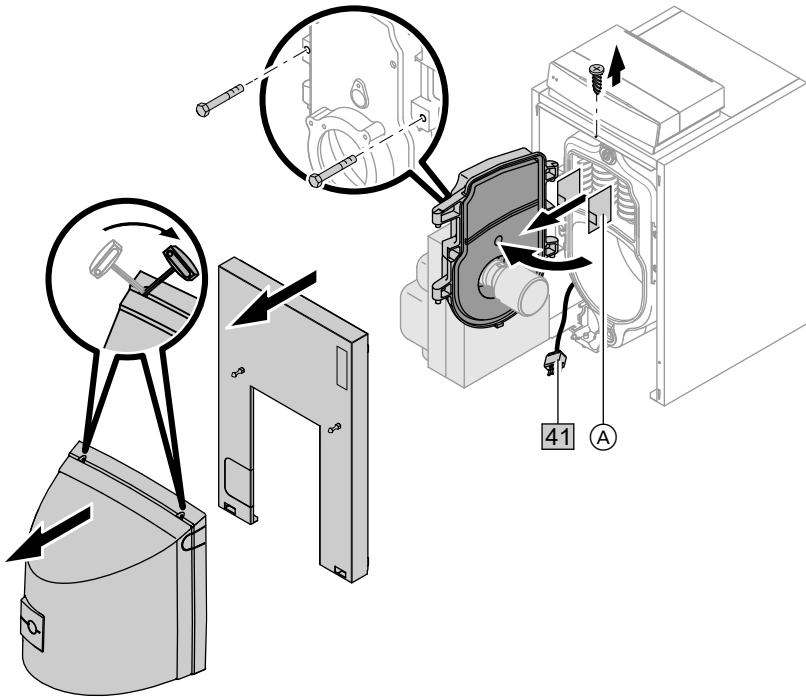
#### **Note**

*Remove the gas supply pipe on gas burners.*

*For balanced flue operation, remove the air inlet of any accessories for balanced flue operation from the burner, prior to opening the boiler door.*

*If using a front panel (accessory for operation with third party burners), remove the front panel before opening the boiler door.*

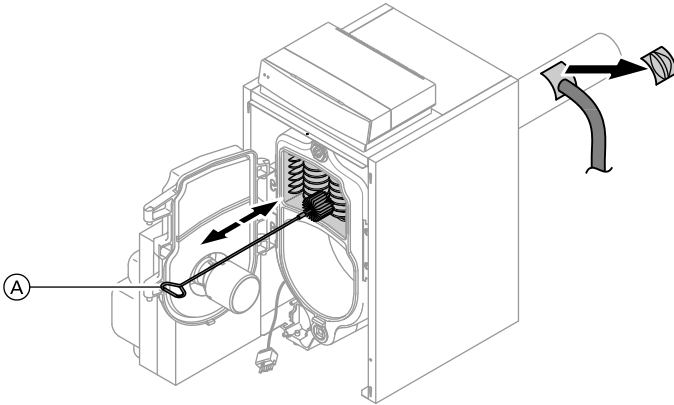
**Further details regarding the individual steps (cont.)**



Ⓐ Turbulators (see page 17)

## Further details regarding the individual steps (cont.)

### Cleaning the heating surface, flue outlet and flue



(A) Cleaning brush (accessories)

### Checking gaskets and thermal insulation sections

1. Check gaskets and packing cords in the boiler door for damage.
2. Check the thermal insulation sections in the combustion chamber and the boiler door for damage.
3. Replace any damaged sections.

### Inserting the turbulators and fitting the boiler door

#### Note

Mount the gas supply pipe on gas burners.

For balanced flue operation, fit the air inlet of any accessories for balanced flue operation to the burner after closing the boiler door.

If using a front panel (accessory for operation with third party burners), refit the front panel after closing the boiler door.

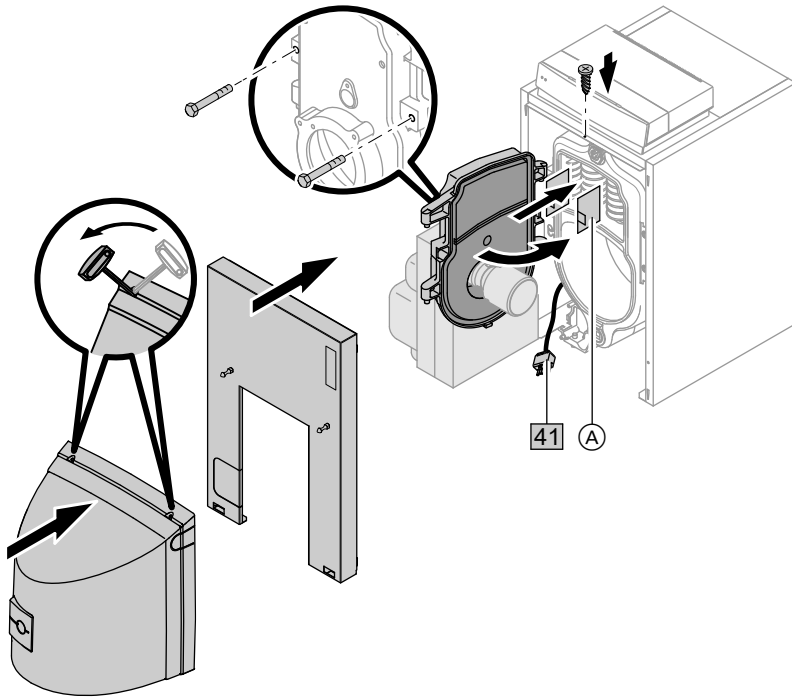


#### Danger

Escaping gas can lead to explosions which may result in serious injury.

Check all gas connections for tightness.

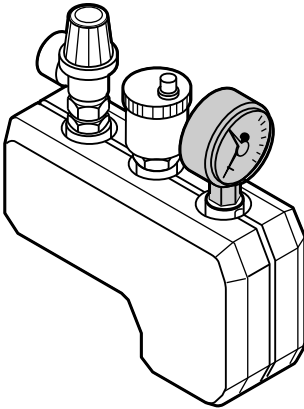
**Further details regarding the individual steps (cont.)**



Ⓐ Turbulators (see page 17)

## Further details regarding the individual steps (cont.)

### Checking the expansion vessel and system pressure



2. If the pre-charge pressure of the expansion vessel is lower than the static system pressure, top up with nitrogen until the pre-charge pressure is 0.1 to 0.2 bar (10 to 20 kPa) higher.
3. Top up with water until the charge pressure of the cooled system is 0.1 to 0.2 bar (10 to 20 kPa) higher than the pre-charge pressure of the expansion vessel.  
Permiss. operating pressure: 3 bar (0.3 MPa)

#### Note

*Please observe expansion vessel manufacturer's instructions.*

*Carry out this test on a cold system.*

1. Drain the system until the pressure gauge indicates "0" or close the cap valve on the expansion vessel and reduce the pressure in the expansion vessel.

### Checking the mixer for ease of operation and tightness

1. Remove the motorised lever from the mixer handle and check the mixer for ease of operation.
2. Check the mixer for leaks. Replace the O-ring gaskets if the mixer is leaking.
3. Snap the motorised lever into place.

## Further details regarding the individual steps (cont.)

### Checking the Vitoair draught stabiliser (if installed)

Release the latch on the control disc.

#### **Note**

*The control disc must swing freely during burner operation.*

### Checking the ventilation air connection to the burner (if installed)

For **balanced** flue operation, check the ventilation air connection for damage and replace if required.

### Adjusting the burner



Burner service instructions

### Operating and service documents

1. Complete and detach the customer registration card:
  - Hand system users their section for safekeeping.
  - Retain the heating contractor's section.
2. File all parts lists, operating and service instructions in the folder and hand this over to the system user.  
The installation instructions are no longer required after the installation is complete and therefore do not need to be retained.

## Parts lists

### **Spare parts information**

*Quote the part and serial numbers (see type plate) and the position number of the required part (as per this parts list). Standard parts are available from your local supplier.*

### **Parts**

- 001 Sensor well
- 002 Thermal insulation block for boiler door
- 003 Boiler door
- 004 Hinge bracket
- 005 Gasket pack 12 x 16 x 1774 mm
- 006 Packing cord  $\varnothing$  3 mm
- 007 Seal ring
- 008 Sight hole locking latch
- 009 Return injector nozzle
- 011 Turbulator, 2nd pass (not for 33 kW)
- 012 Turbulator, 2nd pass (only for 33 kW)
- 013 Turbulator, 3rd pass (only for 15 and 27 kW)
- 014 Turbulator, 3rd pass (only for 22 and 33 kW)
- 015 Turbulator, 3rd pass (only for 18 kW)
- 016 Brush handle
- 019 Ventilation air hose
- 020 Hose clip
- 021 Air inlet
- 022 Ventilation air hose adaptor
- 026 Boiler flue connection
- 202 Top panel, front
- 203 Side panel, left
- 204 Thermal insulation mat for the boiler body
- 205 Back panel
- 206 Thermal insulation mat, back
- 207 Front panel with logo (211)
- 208 Retaining bracket
- 209 Top panel, back
- 210 Side panel, right
- 211 Vitorond 100 logo
- 212 Edge protector
- 213 Cover panel (accessory for third party burners)
- 214 Double strain relief
- 305 Fixings

### **Wearing part**

- 017 Cleaning brush

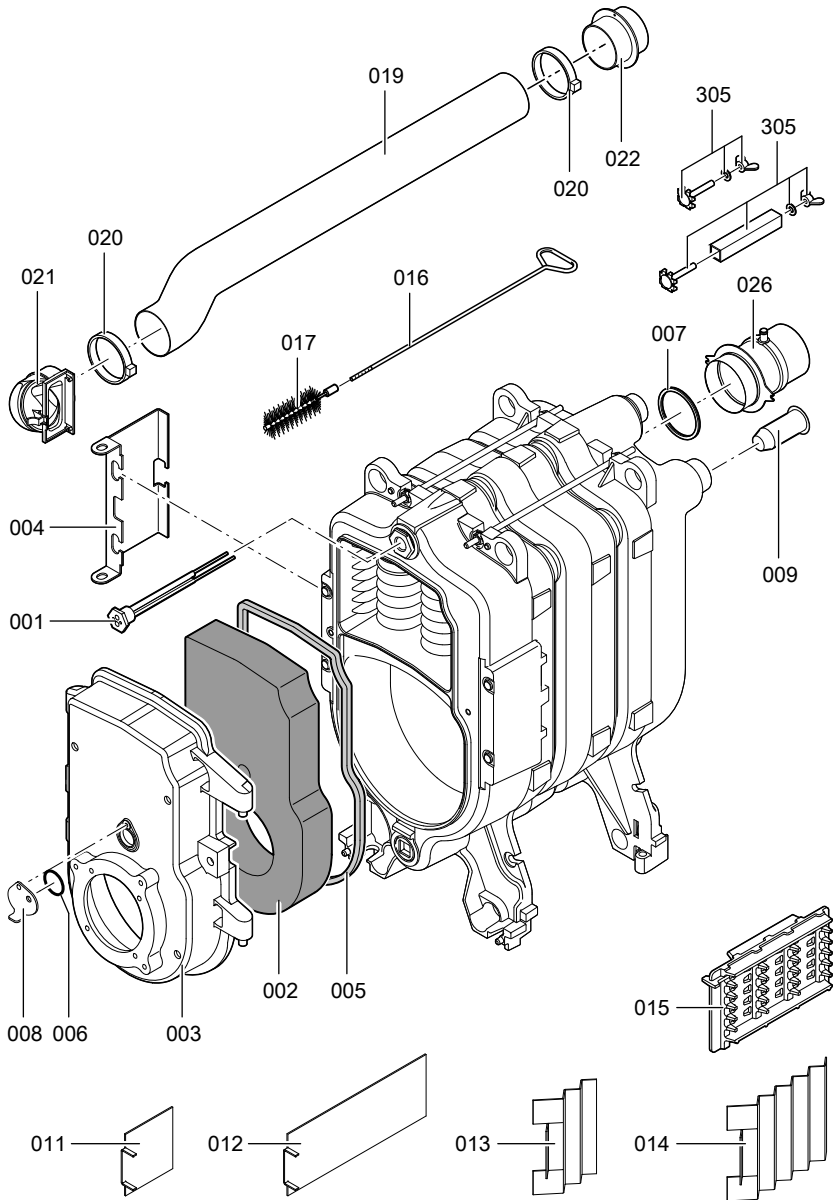
### **Parts not shown**

- 300 Spray paint, Vitosilver
- 301 Touch-up paint stick, Vitosilver
- 302 Service instructions
- 303 Installation instructions

- (A) Type plate, either on the left or right
- (B) Boiler control unit  
See separate parts list

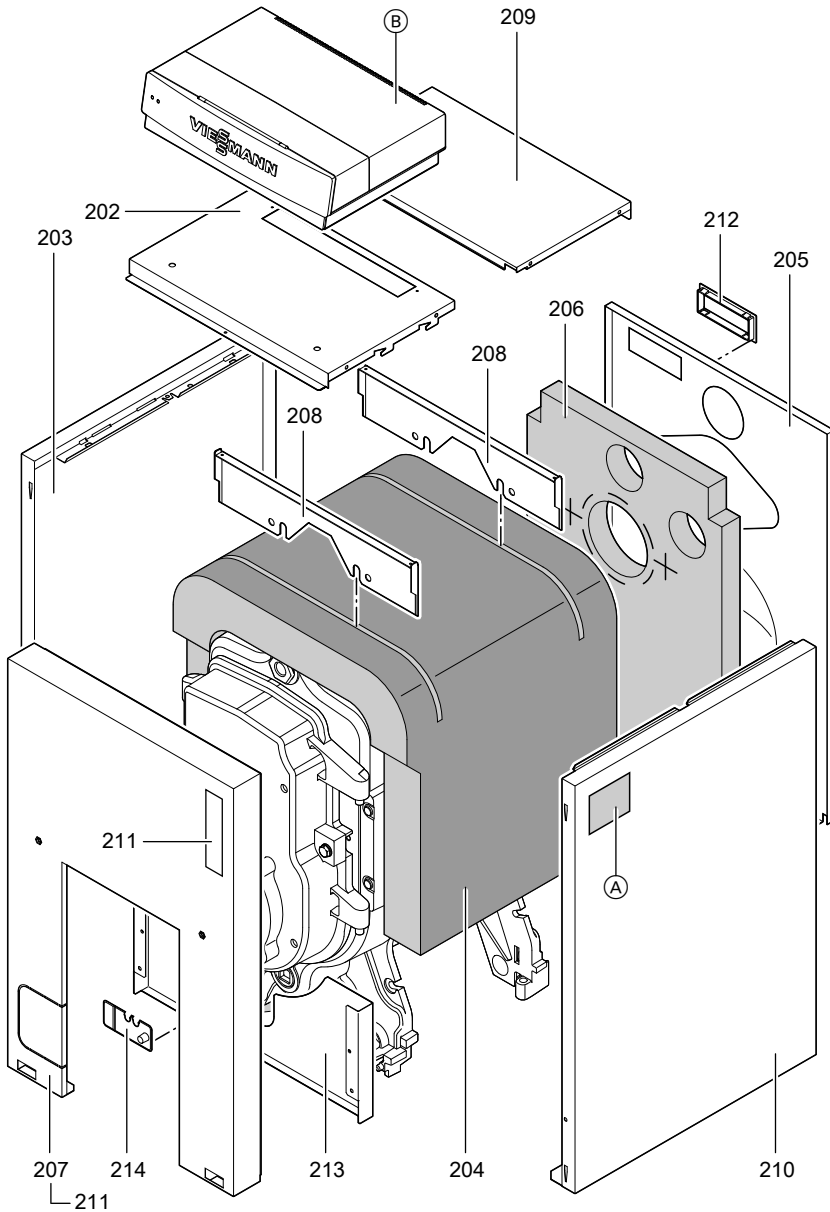


**Parts lists** (cont.)



5692.660 GB

**Parts lists** (cont.)



**Commissioning/service reports**

	<b>Commissioning</b>	<b>Service</b>	<b>Service</b>
date:			
by:			

	<b>Service</b>	<b>Service</b>	<b>Service</b>
date:			
by:			

	<b>Service</b>	<b>Service</b>	<b>Service</b>
date:			
by:			

	<b>Service</b>	<b>Service</b>	<b>Service</b>
date:			
by:			

	<b>Service</b>	<b>Service</b>	<b>Service</b>
date:			
by:			

## Specification

Rated heating output	kW	15	18	22	27	33	
<b>Product ID</b>		CE-0645AU114					
<b>Pressure drop on the hot gas side</b>	Pa	6	7	8	8	10	
	mbar	0.06	0.07	0.08	0.08	0.10	
<b>Required draught*1</b>	Pa	5					
	mbar	0.05					
<b>Flue gas temperature*2</b>							
■ At boiler water temperature 40 °C °C		150					
■ At boiler water temperature 75 °C °C		170					
<b>Product parameters</b> (according to EnEV)							
<b>Efficiency <math>\eta</math> at</b>							
■ 100 % of rated heating output		%	93.0	92.9	92.7	92.6	92.7
■ 30 % of rated heating output		%	94.3	94.4	94.0	93.7	94.2
<b>Standby loss</b> $q_{B,70}$ (boiler)		%	1.4	1.2	1.1	0.8	0.7
<b>Power consumption*3 at</b>							
■ 100 % of rated heating output		W	165	180	198	219	241
■ 30 % of rated heating output		W	55	60	66	73	80

\*1 Observe when sizing the chimney.

\*2 Flue gas temperatures as average gross values to EN 304 (captured with 5 thermocouples) at 20 °C combustion air temperature.

\*3 Standard parameter (in conjunction with Vitoflame 200 pressure-jet oil burner).

## Declaration of conformity

We, Viessmann Werke GmbH&Co KG, D-35107 Allendorf, declare as sole responsible body that the product **Vitorond 100, type VR2B, 15 to 33 kW** product complies with the following standards:

EN 267  
EN 303  
EN 676  
EN 15035 (for balanced flue operation)  
EN 50082-1:1997-11  
EN 50165:2001-08  
EN 55014  
EN 60335  
EN 61000-3-2  
EN 61000-3-3

In accordance with the following Directives, this product is designated with **CE-0645**:

92/42/EEC  
2004/108/EC  
2006/42/EC  
2006/95/EC  
2009/142/EC

This product meets the requirements of the Efficiency Directive (92/42/EEC) for **low temperature (LT) boilers**.

The product characteristics determined as system values for the product **Vitorond 100** as part of EC type testing according to the Efficiency Directive (see specification table), can be utilised to assess the energy consumption of heating and ventilation equipment to DIN V 4701-10 which is specified by the EnEV [Germany].

Allendorf, 07 May 2012

Viessmann Werke GmbH&Co KG



Authorised signatory Manfred Sommer

**Manufacturer's certificate according to the 1st BImSchV [Germany]**

We, Viessmann Werke GmbH&Co KG, D-35107 Allendorf, confirm that the product **Vitorond 100, type VR2B, 15 to 33 kW**, complies with the following conditions stipulated by the 1st BImSchV:

- NO<sub>x</sub> limits according to paragraph 6 (1).
- Flue gas loss of no more than 9 % according to paragraph 10 (1).

Allendorf, 07 May 2012

Viessmann Werke GmbH&Co KG

A handwritten signature in black ink, appearing to read 'M. Sommer', written in a cursive style.

Authorised signatory Manfred Sommer

## Keyword index

### B

- Boiler door
  - Fitting.....12
  - Gaskets, checking.....12
  - Opening.....10
  - Thermal insulation sections, checking.....12
- Burner, adjusting.....15

### C

- Commissioning.....8

### E

- Expansion vessel
  - Checking.....14
  - Pre-charge pressure.....9

### F

- Fill water.....8
- Flue, cleaning.....12
- Flue outlet, cleaning.....12

### H

- Heating surface, cleaning.....12

### M

- Mixer
  - Ease of operation, checking.....14
  - Tightness, checking.....14

### P

- Parts list.....16

### S

- Specification.....20
- System
  - Commissioning.....9
  - Filling.....9
  - Venting.....9
- System pressure, checking.....14

### T

- Turbulators
  - Cleaning.....10
  - Extracting.....10
  - Inserting.....12

### V

- Vitoair draught stabiliser
  - Checking.....15
  - Closing.....10

## Applicability

### Serial No.:

7194952  
7194956

7194953

7194954

7194955

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)

5692 660 GB Subject to technical modifications.