

Service instructions for contractors

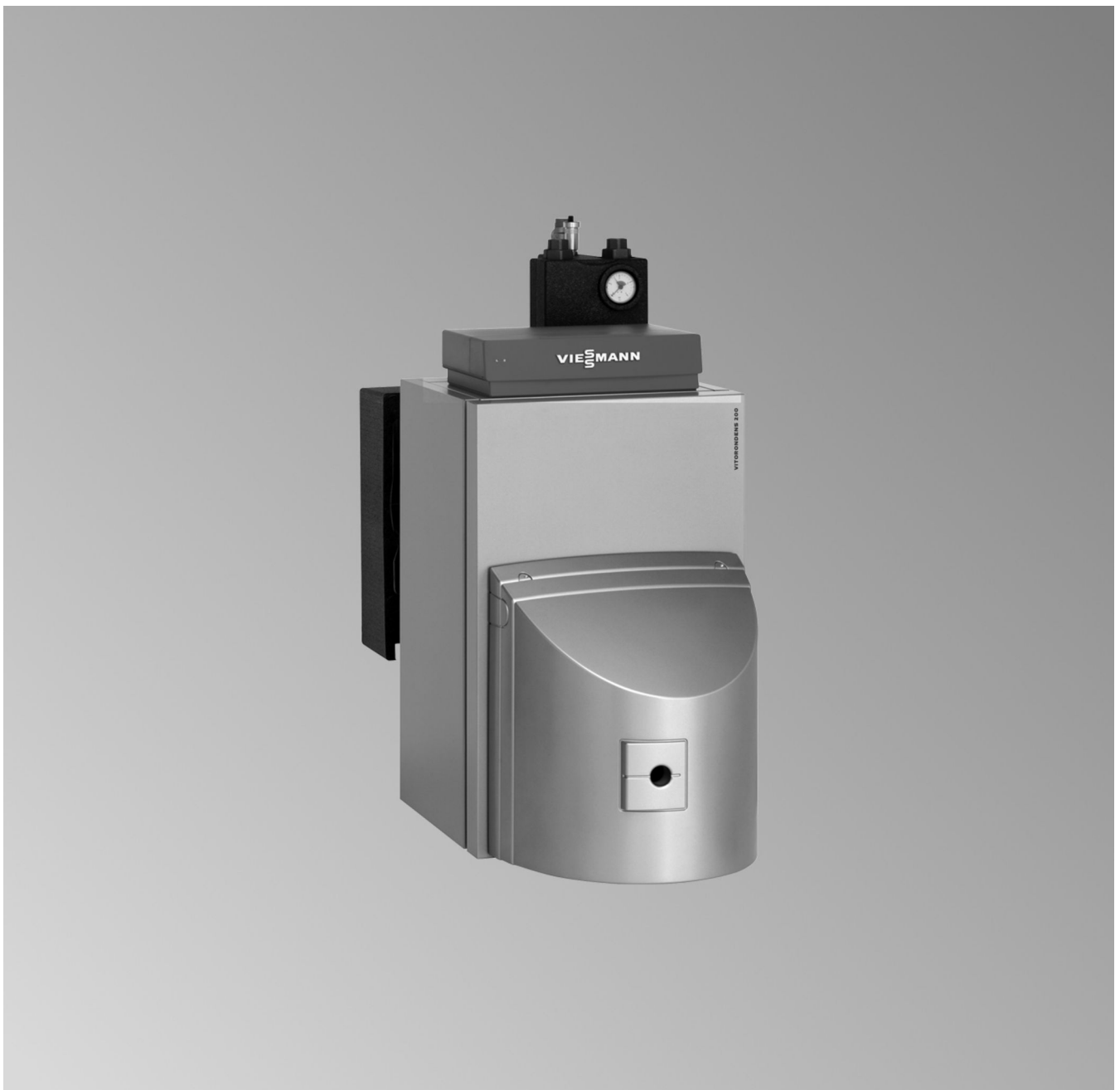
VIESSMANN

Vitorondens 200-T
Type BR2A, 20.2 to 53.7 kW
Oil Unit condensing boiler


For applicability, see the last page




VITORONDENS 200-T




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
- Gas Safety (Installation & Use) Regulations
 - the appropriate Building Regulation either the Building regulations, the Building Regulation (Scotland), Building Regulations (Northern Ireland),
 - the Water Fittings Regulation or Water Bylaws in Scotland,
 - the current I.E.E. Wiring Regulations.

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).

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/pipework 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.

Safety instructions (cont.)**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.

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-authorized 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.

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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

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Filling the heating 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 ³ = 100 ppm)		
	< 20 l/kW	≥ 20 l/kW to < 50 l/kW	≥ 50 l/kW
≤ 50	≤ 3.0 mol/m ³	≤ 2.0 mol/m ³	< 0.02 mol/m ³
> 50 to ≤ 200	≤ 2.0 mol/m ³	≤ 1.5 mol/m ³	< 0.02 mol/m ³
> 200 to ≤ 600	≤ 1.5 mol/m ³	≤ 0.02 mol/m ³	< 0.02 mol/m ³
> 600	< 0.02 mol/m ³	< 0.02 mol/m ³	< 0.02 mol/m ³

Conversion rate 1 mol/m³ = 100ppm

With on-site boiler fill valve in the heating water return

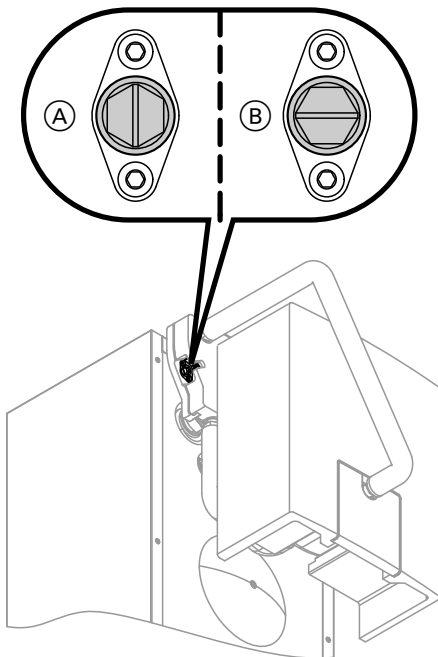


Fig.1

- (A) Bypass valve "OPEN"
- (B) Bypass valve "CLOSED"

1. Check the pre-charge pressure of the expansion vessel.
2. Close the bypass valve on the boiler flow/return distributor.
3. If using a top-mounted Divicon heating circuit distributor (accessories):
Set the mixer lever to "OPEN" (red).
4. Fill the system via the boiler fill valve in the heating water return, until it is fully vented.
5. Open the bypass valve on the boiler flow/return distributor again.



Filling the heating system (cont.)

With safety equipment block (accessories)

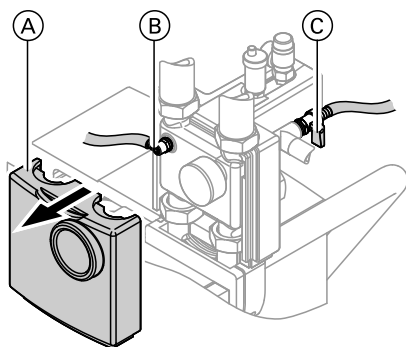


Fig.2

1. Check the pre-charge pressure of the expansion vessel.
2. Close the bypass valve on the boiler flow/return distributor.
3. Remove front insulation shell (A).
4. Open air vent valve (B).
5. Fill the system via boiler fill valve (C) in the heating return. Minimum system pressure 0.8 bar (0.08 MPa).
6. Close air vent valve (B) when no more air escapes.
7. Close boiler fill valve (C).
8. Open the bypass valve on the boiler flow/return distributor again.



Vent the boiler at the safety equipment block (accessories)

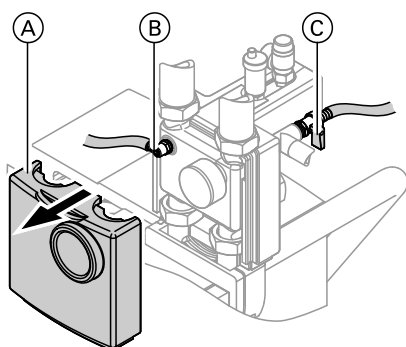


Fig.3

1. Close the shut-off valves on the heating water side.
2. Remove front insulation shell (A) (if already fitted).
3. Connect the drain hose on air vent valve (B) to a drain.
4. Open valves (B) and (C) and vent at mains pressure, until no sound of escaping air can be heard.
5. Close taps (B) and (C); open the shut-off valves on the heating water side.



Venting the heating system



Shutting down the system



Draining the heating system (if required)

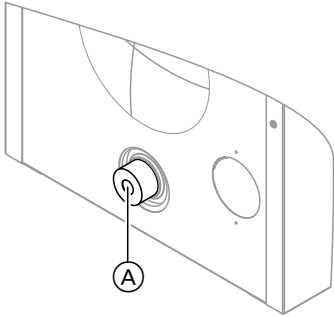


Fig.4

Ⓐ Drain



Opening the boiler door

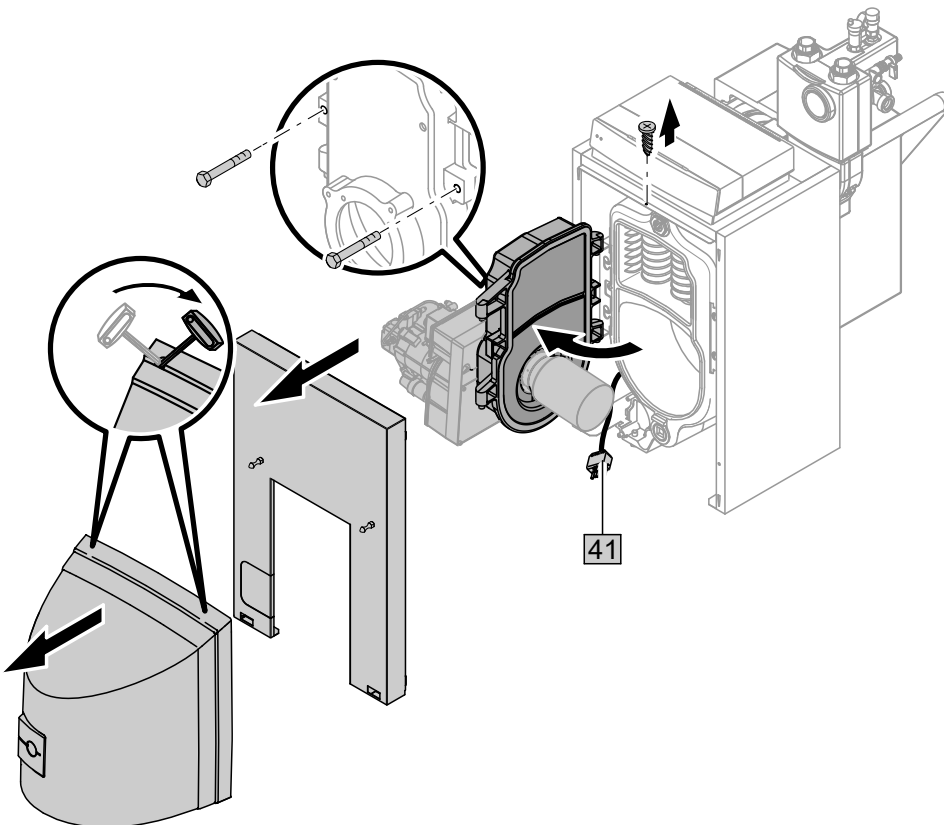


Fig.5

In balanced flue operation: Remove the ventilation air line before opening the boiler door.



- ! Please note**
- Prevent components that come into contact with hot gases from being scratched or otherwise damaged. Prevent components that come into contact with hot gases from contact with pure iron, as corrosion damage can result. Never use a wire brush or sharp objects. Use plastic brushes if required.

Boiler heating surface

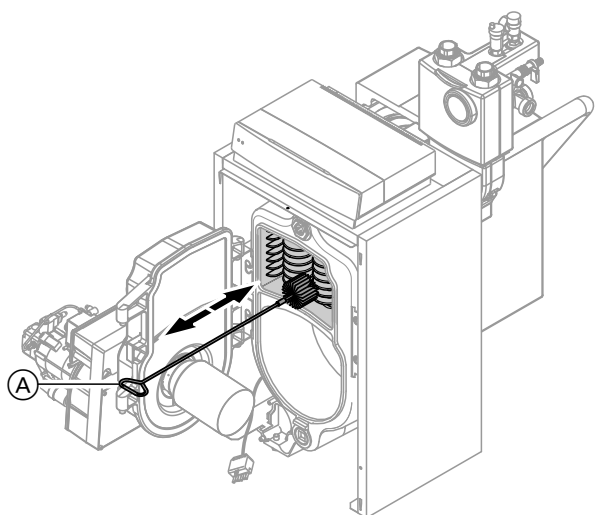


Fig.6

(A) Cleaning brush (accessories)

For conventional cleaning, flush the heating surfaces thoroughly with water. You may use cleaning agents if you notice stubborn residues, surface discolouration or soot deposits.

For this, observe the following:

- Only use solvent-free cleaning agents. Ensure that no cleaning agent gets between the boiler body and the thermal insulation.
- Remove soot deposits with alkaline agents containing surfactant additives (e.g. Fauch 600*¹).

- Combustion residues may create thin, yellow-brown surface stains as well as hard deposits that may only become visible after removing the soot deposits. Use slightly acidic, chloride-free cleaning agents based on phosphoric acid to remove surface discolouration and stubborn deposits (e.g. Antox 75 E*¹).
- Remove loosened deposits from the heat exchanger, flush the heating surface thoroughly with water.



Cleaning agent manufacturer's details

*¹ Manufacturer: Hebro Chemie GmbH, Rostocker Straße 40, D-41199 Mönchengladbach



Cleaning the heating surfaces (cont.)

Heating surface of the heat exchanger

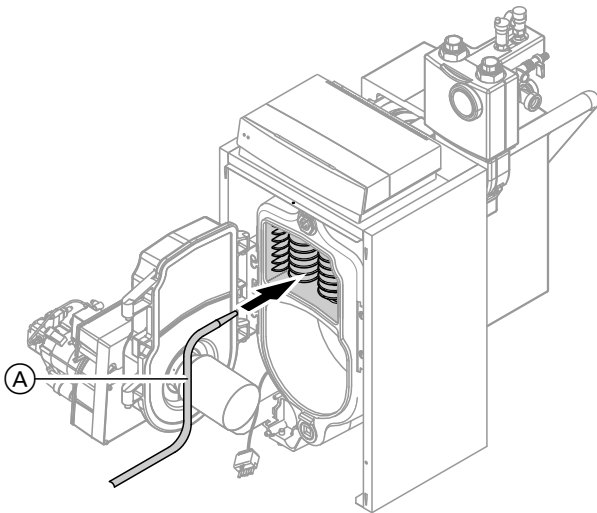


Fig.7

(A) Water hose

Generally, heat exchangers are cleaned with the aid of a water hose from the boiler front through the hot gas flues.

1. Remove contamination from the connector using a vacuum cleaner.

2. Thoroughly flush the heating surface with water.

Note

In the case of severe contamination (e.g. through incorrect burner adjustment), remove the heat exchanger from the boiler for cleaning.



Checking gaskets and thermal insulation sections

1. Check gaskets and packing cords in the boiler door for damage.

2. Check the thermal insulation components of the combustion chamber and the boiler door for damage.

3. Replace any damaged sections.



Fitting the boiler door

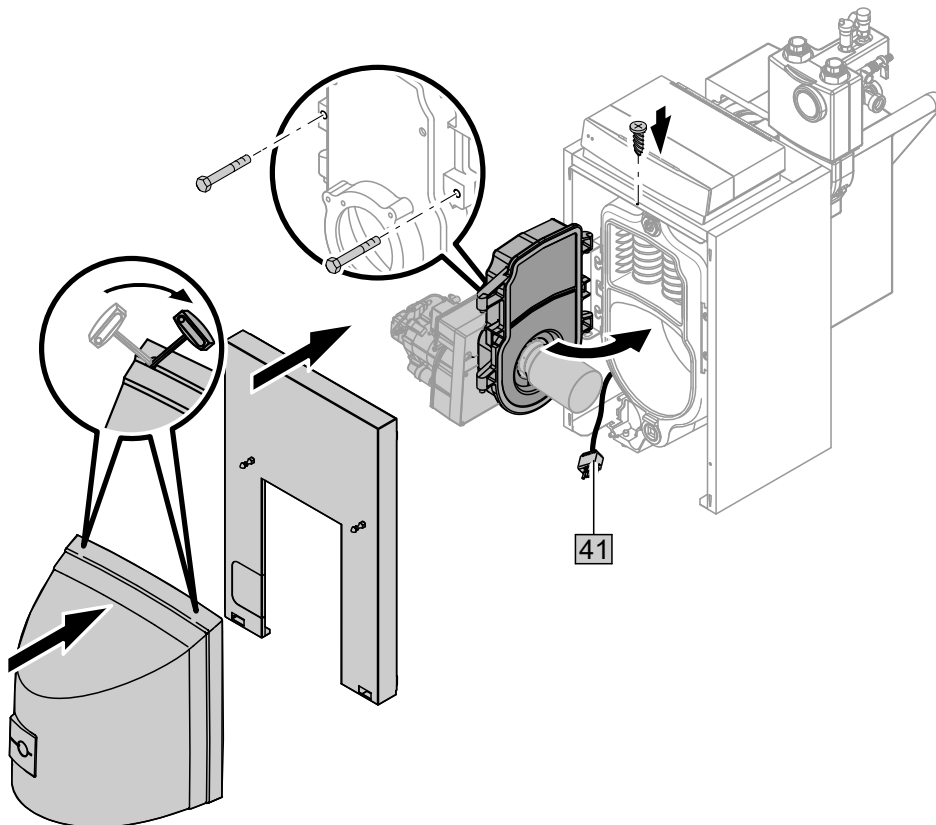


Fig.8

In balanced flue operation: Refit the ventilation air line after closing the boiler door.



Separating the neutralising system or active charcoal filter (if installed) from the boiler and connecting the drain hose

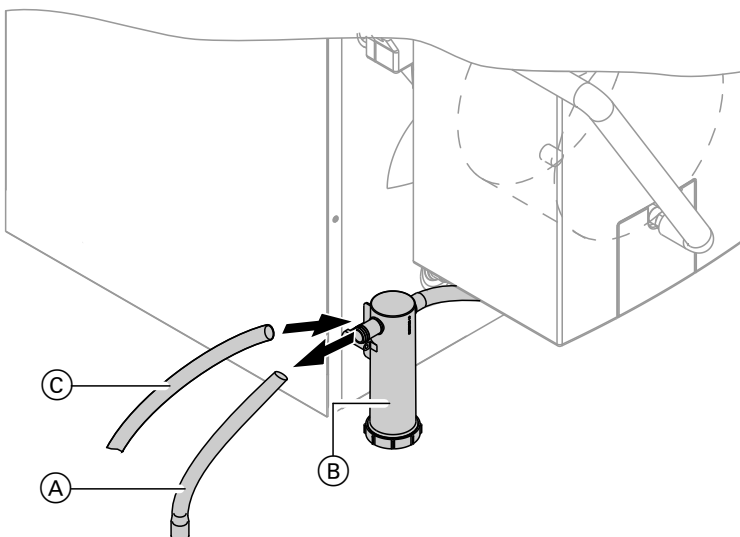


Fig.9

1. Separate hose (A) to the neutralising system from siphon (B).
2. Connect drain hose (C) to the condensate drain of the siphon and run to a drainage system.



Checking the neutralising system (if installed)

1. Check the pH value of the condensate downstream of the neutralising system with a pH test strip. Replace the granulate if the pH value is < 6.5.
2. Reinstall neutralising system in reverse order.

Note

Part no. for pH test strips: 9517 678.

Observe the neutralising system manufacturer's instructions.



Checking the active charcoal filter (if installed)

Observe the active charcoal filter manufacturer's instructions.



Checking the connection on the flue gas side for leaks

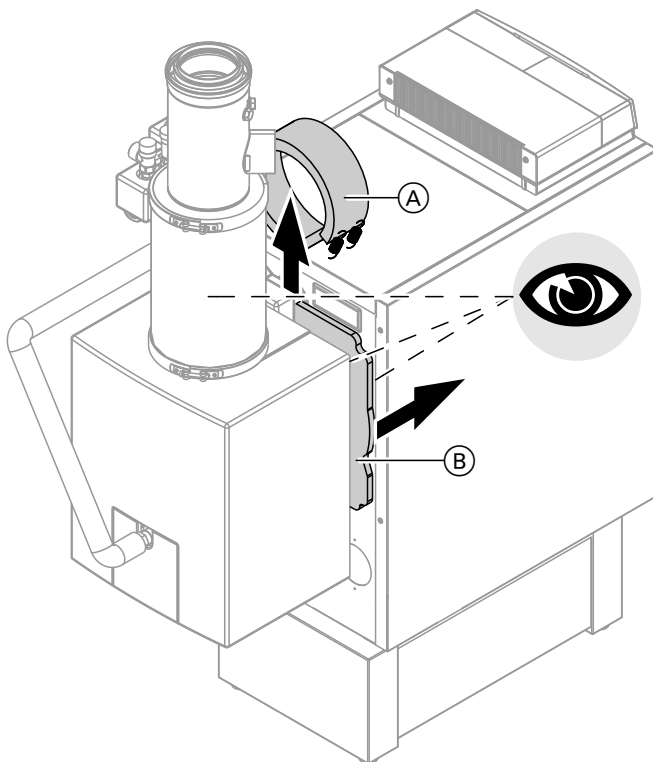


Fig.10

Note

Traces of condensate indicate a leak.

1. Remove thermal insulation strip (A) and pull thermal insulation mat (B) off a little.
2. Check the heat exchanger fixings for firm seating.
3. Check the connector on the heat exchanger for leaks.



Cleaning the condensate drain pipe and siphon and reconnecting to the drainage system

Check that the hoses are routed without kinks and that the condensate can drain freely.



Filling the siphon and neutralising system (accessories) with water

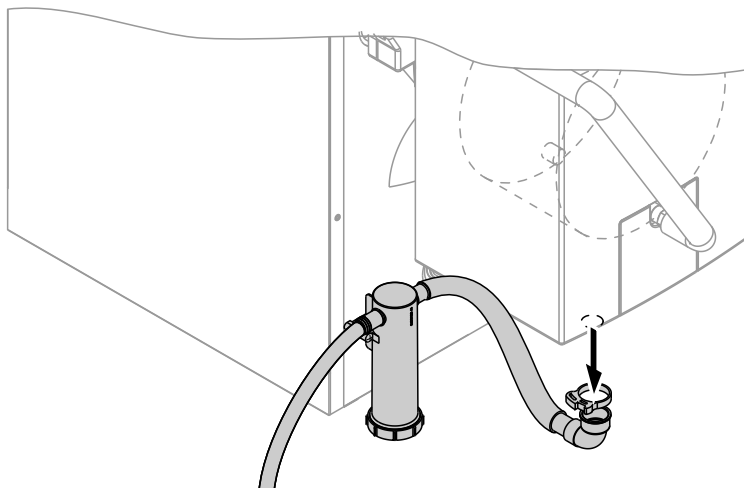


Fig.11

Pull the supply hose (to the siphon) from the boiler condensate drain and fill with a little water.



Checking connections on the heating water and DHW sides and the sensor well for leaks



Checking the function of the safety equipment



Checking the expansion vessel and system pressure

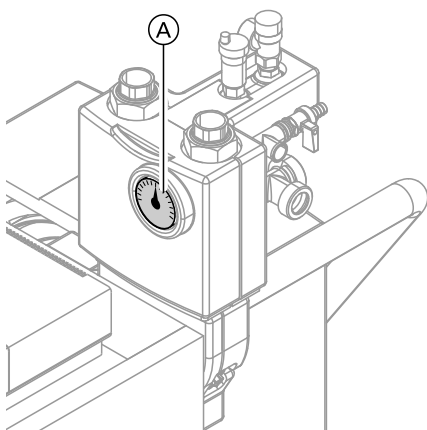


Fig.12

Ⓐ Pressure gauge

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 expansion vessel and system... (cont.)

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)



Checking the thermal insulation for firm seating



Checking the mixer for ease of operation and leaks

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.



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

In balanced flue operation: Check the ventilation air connection for damage.



Adjusting the burner



Burner service instructions



Instructing the system user

The system installer should hand the operating instructions to the system user and instruct the user in operating the system.

This includes all components installed as accessories, e.g. remote control units. In addition, the system installer must make the user aware of the required maintenance work.



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.

Parts lists

Ordering parts

The following information is required:

- Serial no. (see type plate (A))
- Assembly (from this parts list)
- Position number of the individual part within the assembly (from this parts list)

Standard parts are available from your local supplier.

Overview of the assemblies

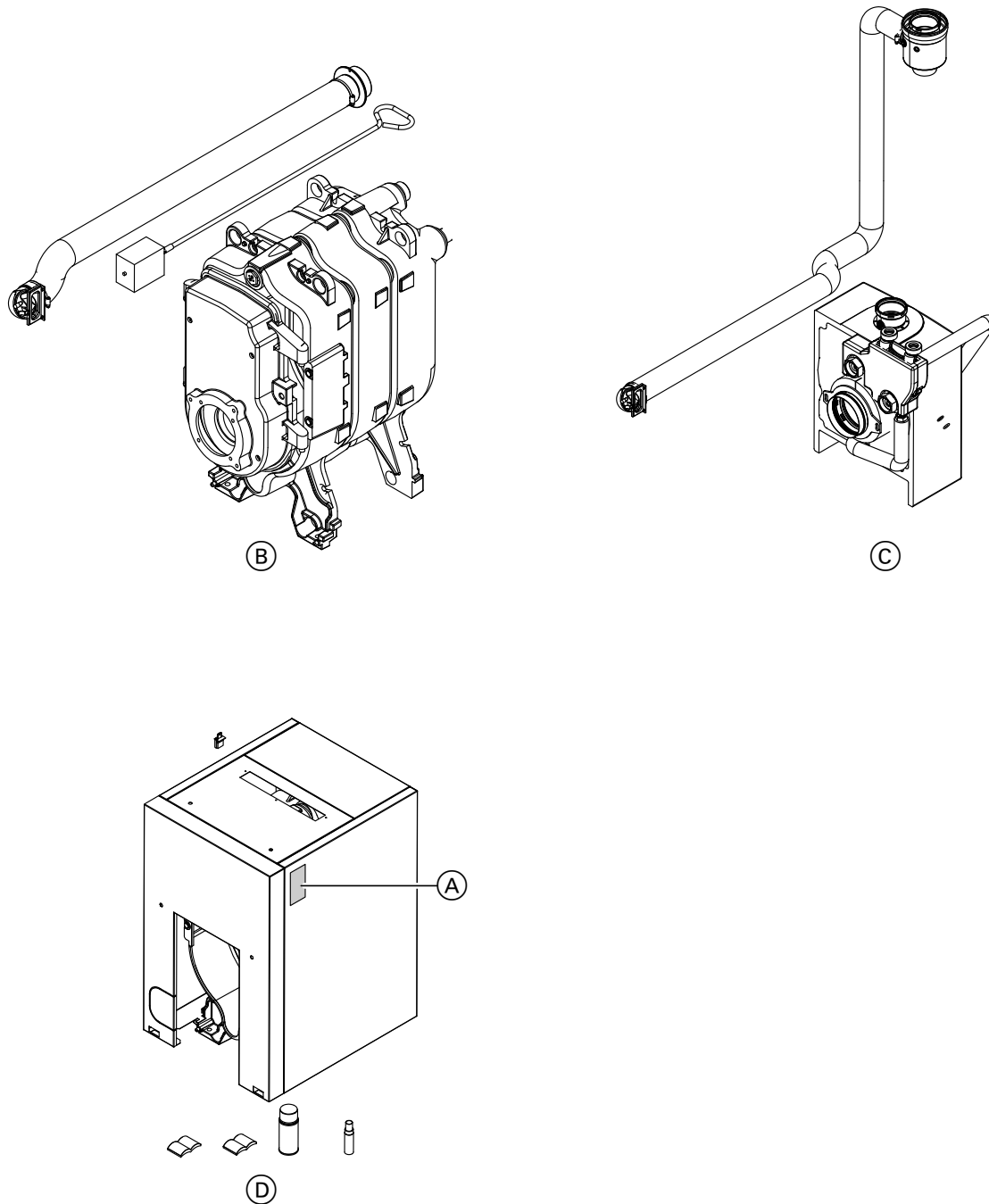


Fig. 13

- (A) Type plate
- (B) Boiler body assembly

- (C) Heat exchanger assembly
- (D) Thermal insulation assembly

Boiler body assembly

- | | |
|-----------------------------|---|
| 0001 Brush handle | 0007 Ventilation air hose |
| 0002 Hinge panel | 0008 Hose clip (2 pce) |
| 0003 Sensor well | 0009 Ventilation air hose adaptor (connector) |
| 0004 Cleaning brush | 0010 Inlet adaptor |
| 0005 Water distribution jet | 0011 Thermal insulation block |
| 0006 Pack 16 x 12 | 0012 Boiler door |

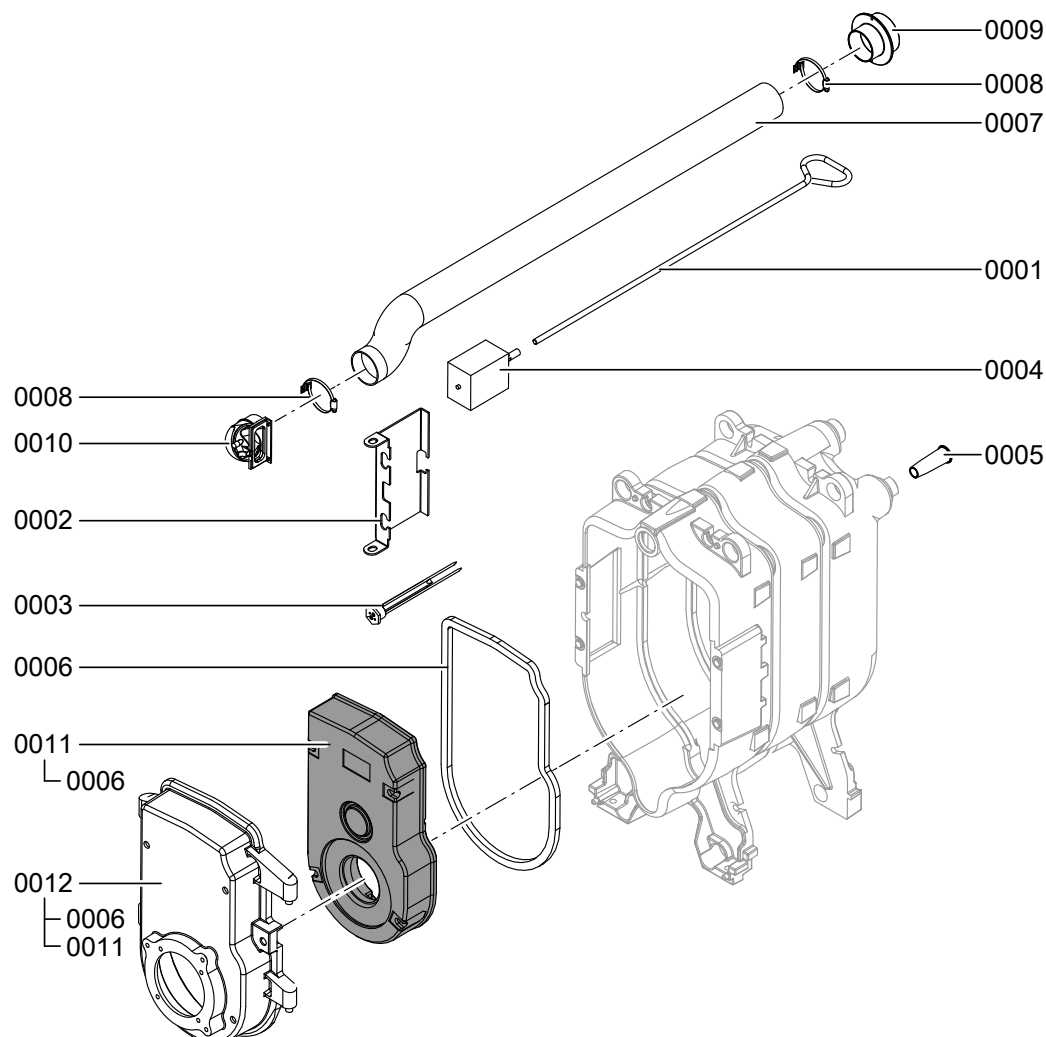


Fig. 14

Heat exchanger assembly (20.2 to 35.4 kW)

- | | |
|--|---|
| 0001 Spring hooks (3 pce) | 0015 Ventilation air hose |
| 0002 Fixing elements (2 pce) | 0016 Corrugated pipe, back, heat exchanger |
| 0003 Boiler flue connection | 0017 Corrugated pipe, front, heat exchanger |
| 0004 Boiler flue connection | 0018 Thermal insulation mat, heat exchanger, front |
| 0005 Viton gasket | 0019 Bypass valve with O-rings |
| 0006 Hose clip (2 pce) | 0020 Distributor, heating water flow and return |
| 0007 Thermal insulation mat, heat exchanger, back | 0021 Thermal insulation, distributor, heating water flow and return |
| 0008 Thermal insulation mat, flue pipe, heat exchanger | 0022 Flue gas connection |
| 0009 Flue outlet gasket | 0023 Thermal insulation, heat exchanger |
| 0010 Inlet adaptor | 0024 Siphon |
| 0011 Siphon, complete | 0025 Corrugated hose |
| 0012 Flue gasket | 0026 Gasket |
| 0013 Heat exchanger | 0027 Plug M 14 with O-ring |
| 0014 Heat exchanger gaskets | 0028 Plug |

Parts lists

Heat exchanger assembly (20.2 to 35.4 kW) (cont.)

0029 Plug
0031 Silencer
0032 Diaphragm grommet

0033 Connection piece with bend
0034 Flue gasket D = 80 mm
0035 Sealing set, test ports

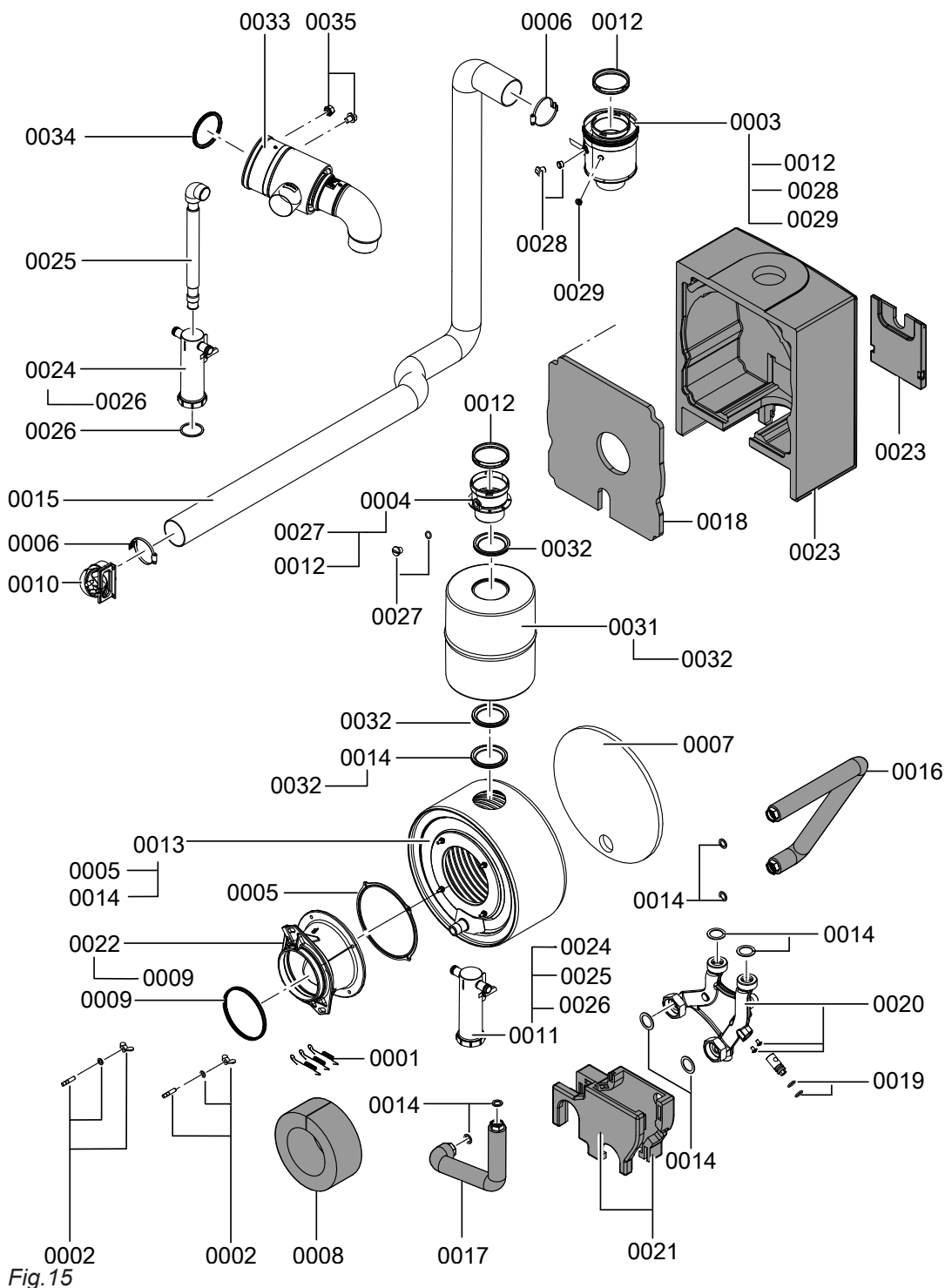


Fig.15

Heat exchanger assembly (42.8 and 53.7 kW)

0001 Spring hooks (3 pce)
0002 Fixing elements (2 pce)
0003 Boiler flue connection
0004 Boiler flue connection
0005 Viton gasket

0006 Hose clip (2 pce)
0007 Thermal insulation mat, heat exchanger, back
0008 Thermal insulation mat, flue pipe, heat exchanger
0009 Flue outlet gasket

Heat exchanger assembly (42.8 and 53.7 kW) (cont.)

- 0010 Inlet adaptor
- 0011 Siphon, complete
- 0012 Flue gasket
- 0013 Heat exchanger
- 0014 Heat exchanger gaskets
- 0015 Ventilation air hose
- 0016 Corrugated pipe, back, heat exchanger
- 0017 Corrugated pipe, front, heat exchanger
- 0018 Thermal insulation mat, heat exchanger, front
- 0019 Bypass valve with O-rings
- 0020 Distributor, heating water flow and return

- 0021 Thermal insulation, distributor, heating water flow and return
- 0022 Flue gas connection
- 0023 Thermal insulation, heat exchanger
- 0024 Siphon
- 0025 Corrugated hose
- 0026 Gasket
- 0030 Sealing set, test ports
- 0031 Silencer
- 0032 Diaphragm grommet

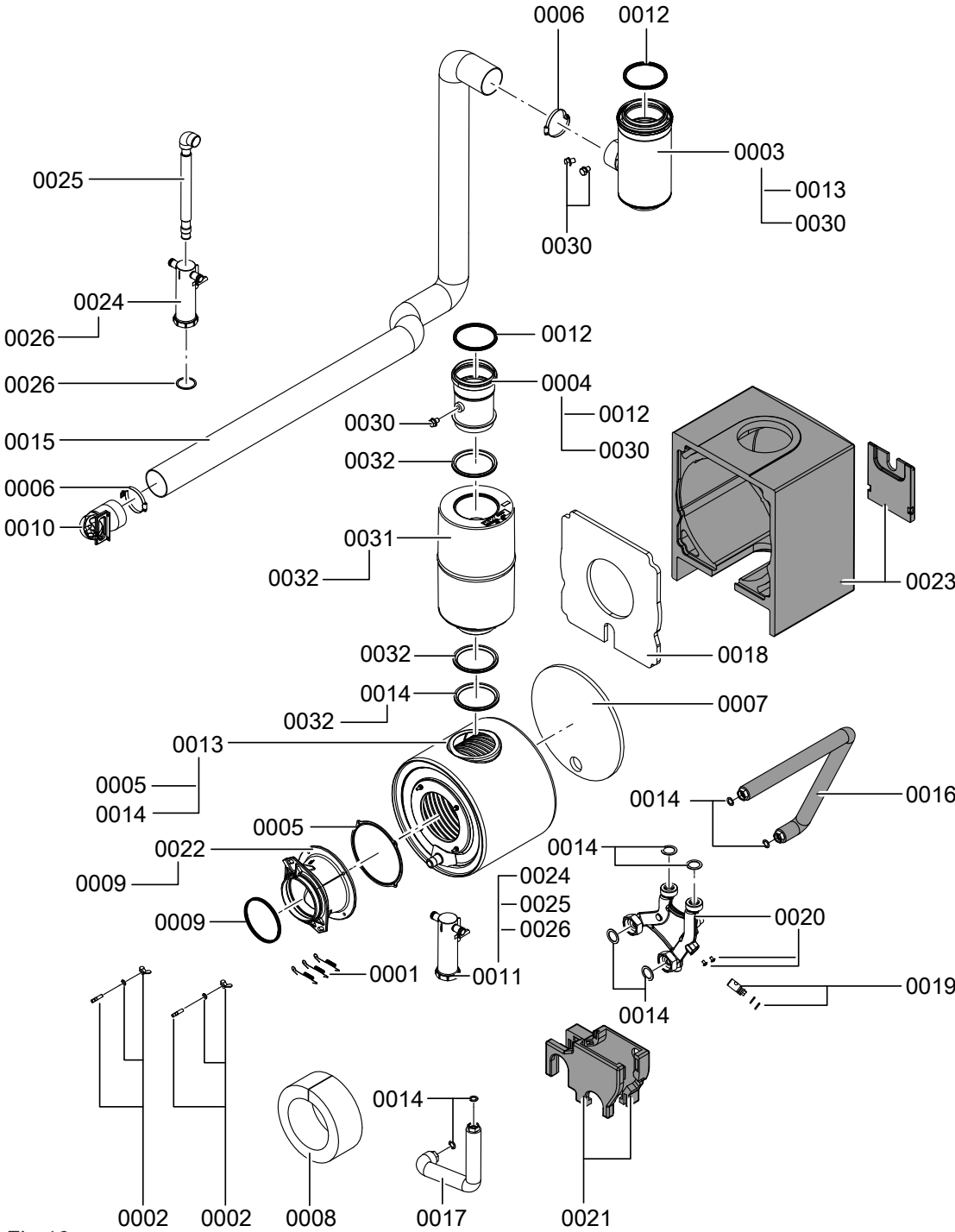


Fig. 16

Parts lists

Thermal insulation assembly

- | | |
|---------------------------------------|---------------------------------------|
| 0001 Service instructions | 0011 Thermal insulation, outer jacket |
| 0002 Installation instructions | 0012 Side panel, right |
| 0003 Spring hooks (3 pce) | 0013 Front panel with logo (0014) |
| 0004 Touch-up spray paint, Vitosilver | 0014 Vitorondens 200 logo |
| 0005 Touch-up paint stick, Vitosilver | 0015 Coding card |
| 0006 Thermal insulation mat, back | 0016 Back panel |
| 0007 Retaining bracket | 0017 Edge protector |
| 0008 Top panel, front | |
| 0009 Top panel, back | |
| 0010 Side panel, left | |
- Ⓐ Type plate (r.h. or l.h. side)

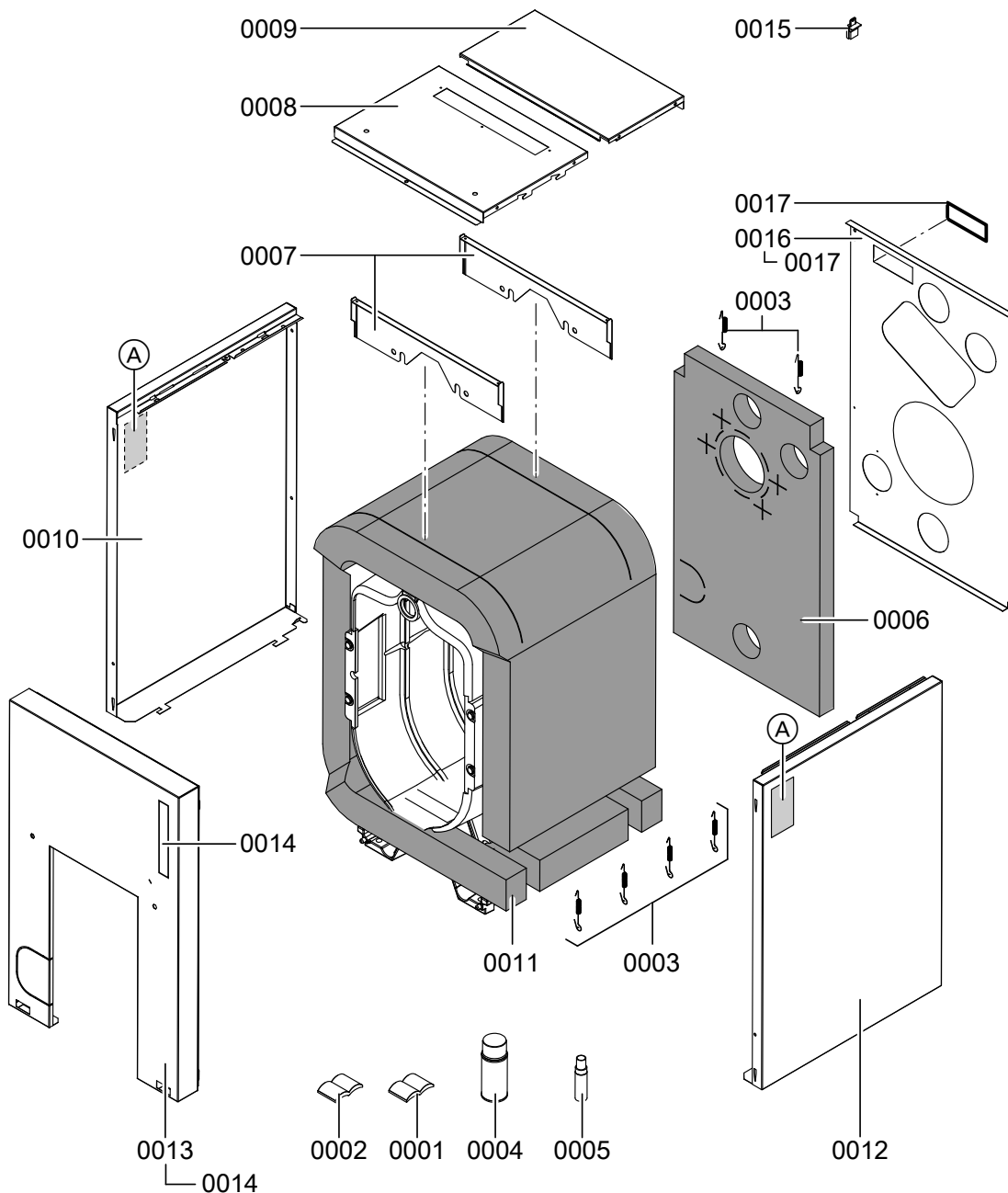


Fig. 17

Commissioning/service reports

	Commissioning	Service	Service
date:			
by:			

	Service	Service	Service
date:			
by:			

	Service	Service	Service
date:			
by:			

	Service	Service	Service
date:			
by:			

	Service	Service	Service
date:			
by:			

Specification

Specification

Rated heating output							
$T_V/T_R = 50/30$ °C	kW	20.2	24.6	28.9	35.4	42.8	53.7
$T_V/T_R = 80/60$ °C	kW	18.8	22.9	27.0	33.0	40.0	50.0
CE designation		CE-0035 CL 102					
Power consumption^{*2} at							
▪ 100 % of rated heating output	W	226	215	235	235	340	340
▪ 30 % of rated heating output	W	60	66	73	80	113	113
Available draught^{*3}							
	Pa	100	100	100	100	100	100
	mbar	1.0	1.0	1.0	1.0	1.0	1.0
Flue gas temperature^{*4}							
▪ at a return temperature of 30 °C	°C	32	34	37	39	36	40
▪ at a return temperature of 60 °C	°C	62	63	65	67	64	67

^{*2} Standard parameter (in conjunction with Vitoflame 300 blue flame oil burner).

^{*3} Observe when sizing the chimney.

^{*4} Flue gas temperatures as average gross values to EN 304 (captured with 5 thermocouples) at 20 °C combustion air temperature.

Declaration of conformity

We, Viessmann Werke GmbH&Co KG, D-35107 Allendorf, confirm as sole responsible body that the product **Vitorondens 200-T** complies with the following standards:

EN 267
 EN 303
 EN 15 034
 EN 15 035 (for balanced flue operation)
 EN 50 082-1
 EN 55 014
 EN 60 335-1
 EN 60 335-2-102
 EN 61 000-3-2
 EN 61 000-3-3
 EN 62 233

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

2004/108EC
 2006/42/EC
 2006/95/EC

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

Allendorf, 01 February 2011

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 following product meets the NO_x limits specified by first BImSchV Paragraph 7 (2):

Oil Unit condensing boiler Vitorondens 200-T

Allendorf, 01 February 2011

Viessmann Werke GmbH&Co KG



Authorised signatory Manfred Sommer

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Applicability

Serial no. (see boiler type plate):

7453014

7453015

7480205

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