Installation and service instructions

for contractors

Vitocell 300-B
Type EVBB-A
DHW cylinder with internal indirect coils, 300 l
Type EVBA-A
DHW cylinder with internal indirect coils, 500 l

VITOCELL 300-B

6173371 GB 2/2021

Please keep safe.

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 electrical equipment may 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 to be observed

- National installation regulations
- Statutory regulations for the prevention of accidents
- Statutory regulations for environmental protection
- Codes of practice of the relevant trade associations
- Relevant country-specific safety regulations

Working on the system

- 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.

⚠ **Danger**
Hot surfaces can cause burns.
- Before maintenance and service work, switch OFF the appliance and let it cool down.
- Never touch the hot surfaces of uninsulated pipes and fittings.

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Safety instructions (cont.)

Danger
Floors that are wet or damp with water or glycol based liquids can cause injury due to slipping and falling.
- Keep the floor clean and dry during installation and maintenance work.
- Wear non-slip shoes.

Danger
Broken-off fragments of insulation material can cause death by suffocation if inhaled or swallowed.
- Do not let children play in the installation room.
- Keep the installation room clean after installation and maintenance work.

Repair work

Please note
Repairing components that fulfil a safety function can compromise the safe operation of the system.
Replace faulty components only 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-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.

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Disposal of packaging

Please dispose of packaging waste in line with statutory regulations.

Symbols

Symbol	Meaning
	Reference to other document containing further information
	Step in a diagram: The numbers correspond to the order in which the steps are carried out.
	Warning of material losses and environmental pollution
	Live electrical area
	Pay particular attention.
	▪ Component must audibly click into place. or ▪ Acoustic signal
	▪ Fit new component. or ▪ In conjunction with a tool: Clean the surface.
	Dispose of component correctly.
	Dispose of component at a suitable collection point. Do **not** dispose of component in domestic waste.

The steps in connection with commissioning, inspection and maintenance are found in the "Commissioning, inspection and maintenance" section and identified as follows:

Symbol	Meaning
	Steps required during commissioning
	Not required during commissioning
	Steps required during inspection
	Not required during inspection
	Steps required during maintenance
	Not required during maintenance

Intended use

The appliance is only intended to be installed and operated in sealed unvented systems that comply with EN 12828 / DIN 1988, or solar thermal systems that comply with EN 12977, with due attention paid to the associated installation, service and operating instructions. DHW cylinders are only designed to store and heat water of potable water quality. Heating water buffer cylinders are only designed to hold fill water of potable water quality. Only operate solar collectors with the heat transfer medium approved by the manufacturer.

Intended use 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 shall be deemed inappropriate.

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

Intended use (cont.)

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 system are modified from their intended use (e.g. through direct DHW heating in the collector).

Adhere to statutory regulations, especially concerning the hygiene of potable water.

Product information

Vitocell 300-B, type EVBA-A, EVBB-A

Stainless steel DHW cylinder with internal indirect coils for DHW heating in conjunction with solar thermal systems, floorstanding and wall mounted boilers and/or heat pumps for dual mode operation.

- Capacity: 300 and 500 l
- An immersion heater can be used
- Suitable for systems conforming to DIN 1988, EN 12828 and DIN 4753

Inspection and maintenance

DIN 1988 requires a visual inspection and (if necessary) cleaning no later than 2 years after the cylinder has been commissioned, and thereafter according to requirements.

System examples

Available system examples: See **www.viessmann-schemes.com**.

Spare parts lists

Information about spare parts can be found at **www.viessmann.com/etapp** or in the Viessmann spare part app.

Download on the App Store

GET IT ON Google Play

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Unpacking and handling (300 l)

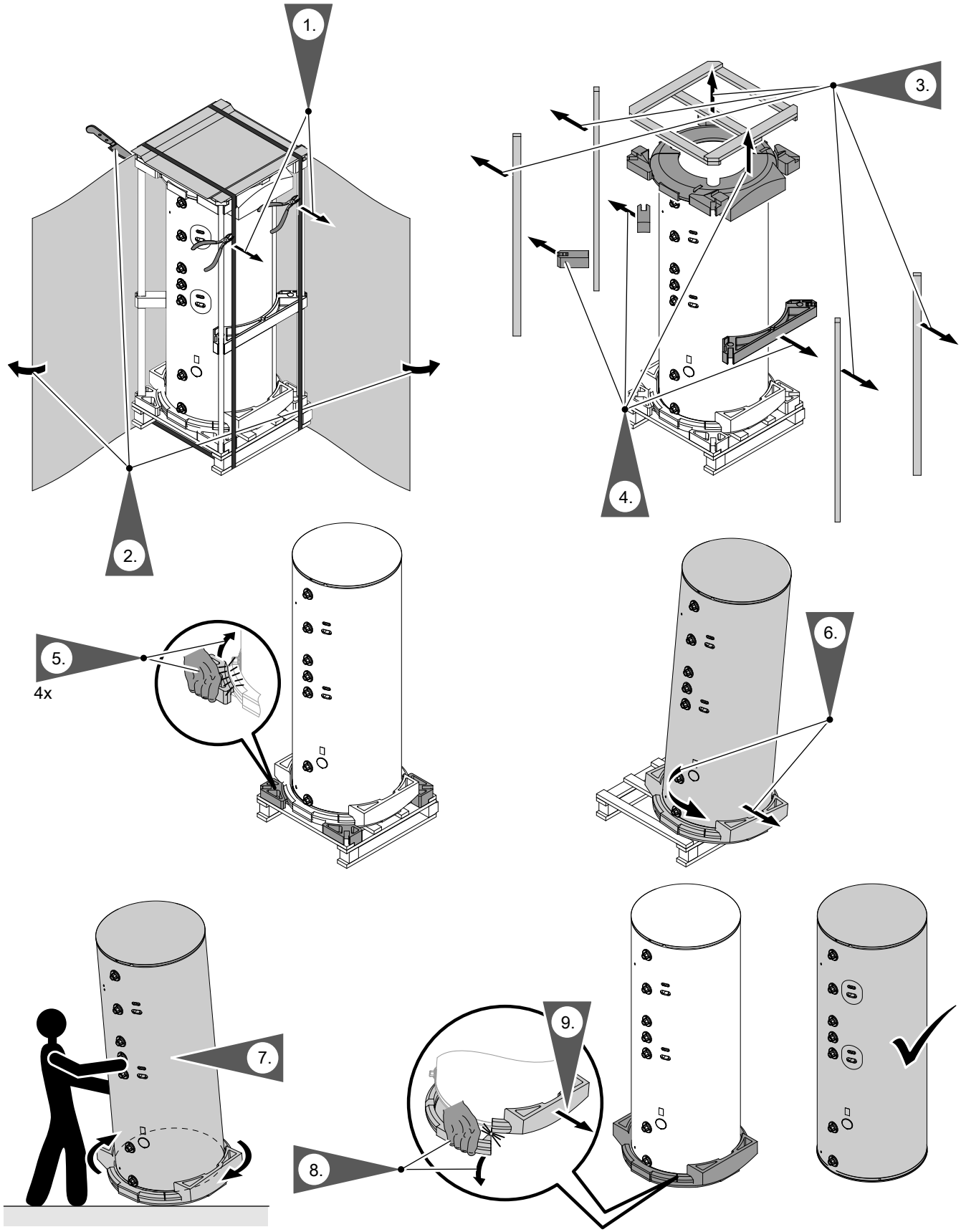

Fig. 1

Connections

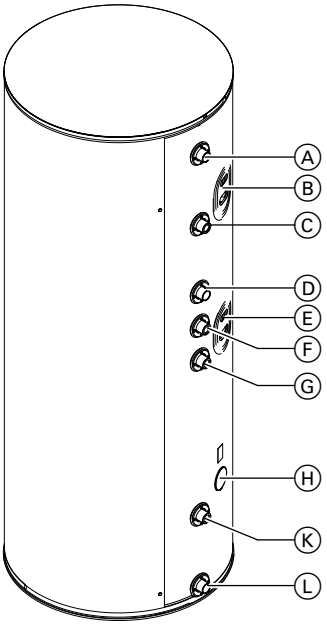

Fig. 2 300 l capacity

Ⓐ DHW
Ⓑ Clamping device for cylinder temperature sensor
Ⓒ Heating water flow*1 (upper indirect coil)
Ⓓ DHW circulation
Ⓔ Clamping device for cylinder temperature sensor
Ⓕ Heating water return*1 (upper indirect coil)
Ⓖ Heating water flow*2 (lower indirect coil)
Ⓗ Injection process plug for insulating foam (do not use, keep closed)
Ⓚ Heating water return*2 (lower indirect coil) and cylinder temperature sensor for solar operation (with threaded elbow)
Ⓛ Cold water/drain outlet

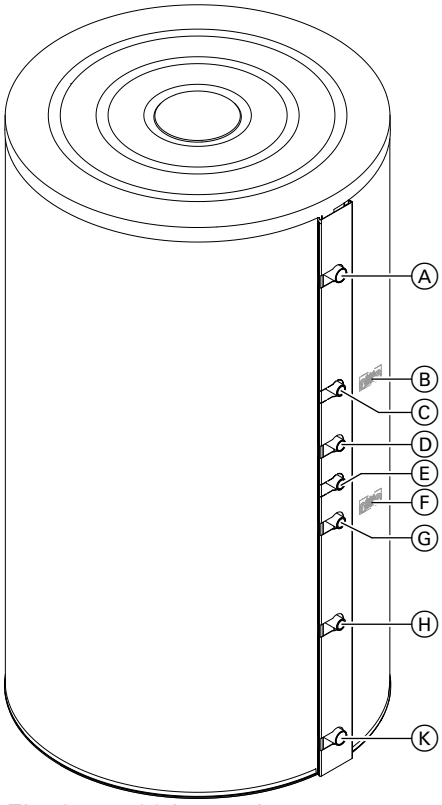

Fig. 3 500 l capacity

Ⓐ DHW
Ⓑ Clamping device (behind the thermal insulation) for cylinder temperature sensor or temperature controller (upper indirect coil)
Ⓒ Heating water flow*1 (upper indirect coil)
Ⓓ DHW circulation
Ⓔ Heating water return*1 (upper indirect coil)
Ⓕ Clamping device (behind the thermal insulation) for cylinder temperature sensor or temperature controller and thermometer sensor (lower indirect coil)
Ⓖ Heating water flow*2 (lower indirect coil)
Ⓗ Heating water return*2 (lower indirect coil) and cylinder temperature sensor for solar operation
Ⓚ Cold water

Cylinder capacity	Maximum connectible heat pump output (upper and lower indirect coils linked in series):
300 l	12 kW
500 l	15 kW

Siting information

! **Please note**
The thermal insulation must not come into contact with naked flames.
Exercise caution when welding and brazing.

**1 The upper indirect coil is designed for connection to a boiler.*
**2 The lower indirect coil is designed for connection to solar collectors.*

Siting information (cont.)

! **Please note**
To prevent material damage, site the DHW cylinder in a room free from the risk of frost and draughts.
Alternatively, drain the DHW cylinder when not in use and there is a risk of frost.

Use the adjustable feet to level the DHW cylinder.

Note
Only use one or two of the adjustable feet to level the DHW cylinder. At least one of the adjustable feet must remain fully screwed in.

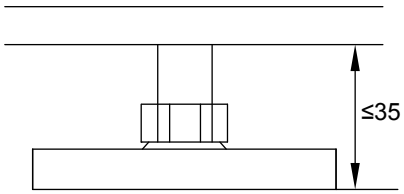

Fig. 4

*Do **not** extend the adjustable feet beyond a total length of 35 mm.*

Siting the DHW cylinder with immersion heater

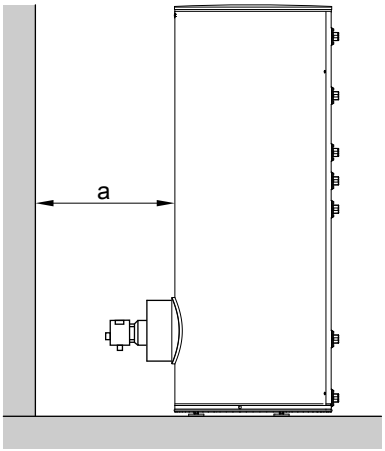

Fig. 5 Example: 300 l capacity

Immersion heater installation instructions

Maintain the minimum clearance.

Cylinder capacity in l	Dim. a in mm
300	min. 730
500	min. 670

Note
The unheated length of any threaded immersion heater installed on site must be at least 100 mm.

300 l capacity

Fitting the cylinder temperature sensor and thermometer sensor (if supplied)

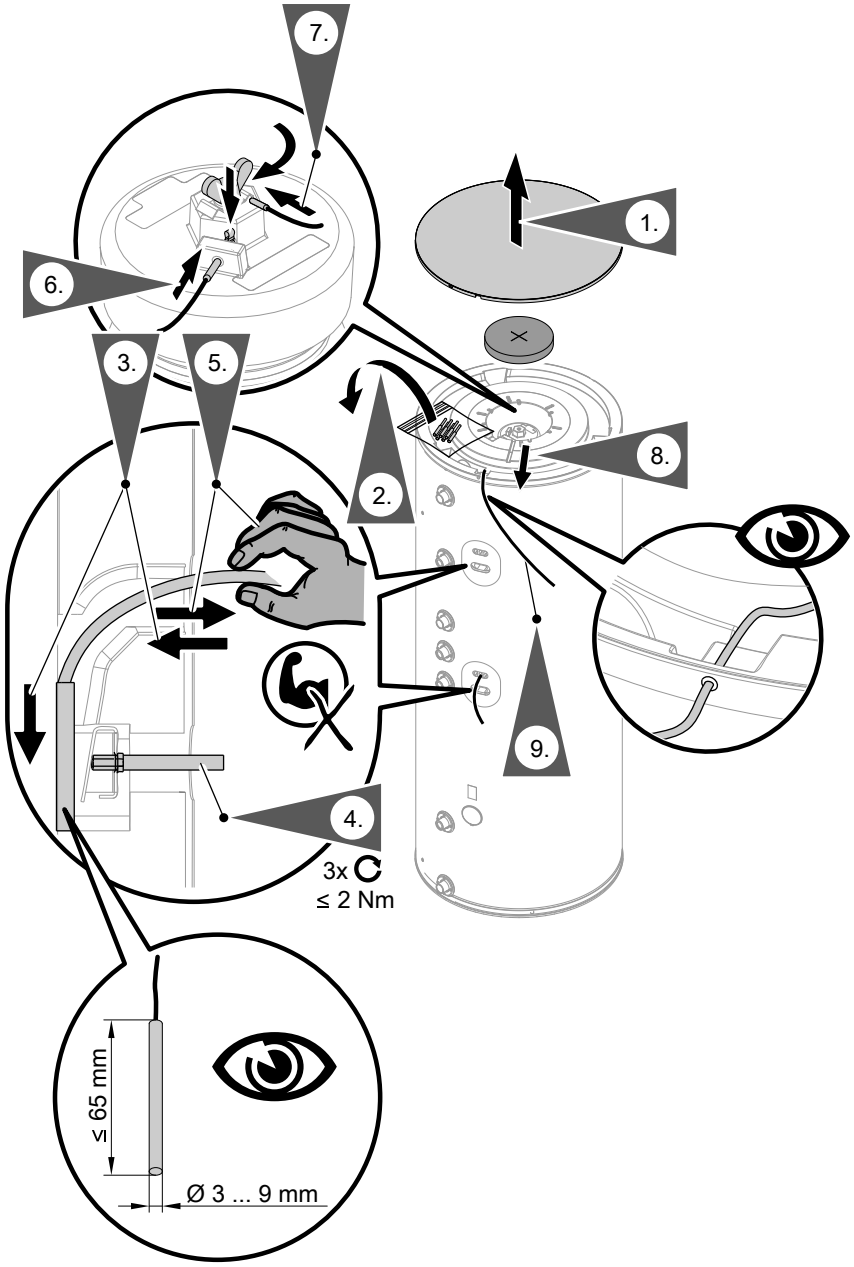

Fig. 6

3. Insert the cylinder temperature sensor as far as it will go into an opening on the clamping device.

4. Hand-tighten the cylinder temperature sensor with the screw provided. When doing so, hold the cylinder temperature sensor in place in the sensor terminal until the screw is screwed in.

> **!** **Please note**
> Overtightening the fixing screw may damage the cylinder temperature sensor.
> Torque: Max. 2 Nm

5. Pull gently on the lead from the cylinder temperature sensor to check that it is securely fitted in the clamping device.

6. Insert the thermometer sensor as far as it will go into the hole in the cylinder cap.
Use clips to secure the thermometer sensor against being pulled out.

7. Install the sensor of the high limit safety cut-out into the aperture beside the wing nut.
Tighten the wing nut.

8. Guide the thermometer cable through the groove in the thermal insulation and the hole in the sheet steel casing.

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300 l capacity (cont.)

9. Secure the thermometer (accessory) to the wall.

Installation instructions for wall thermometer

Attaching the cover and cap, affixing the type plate

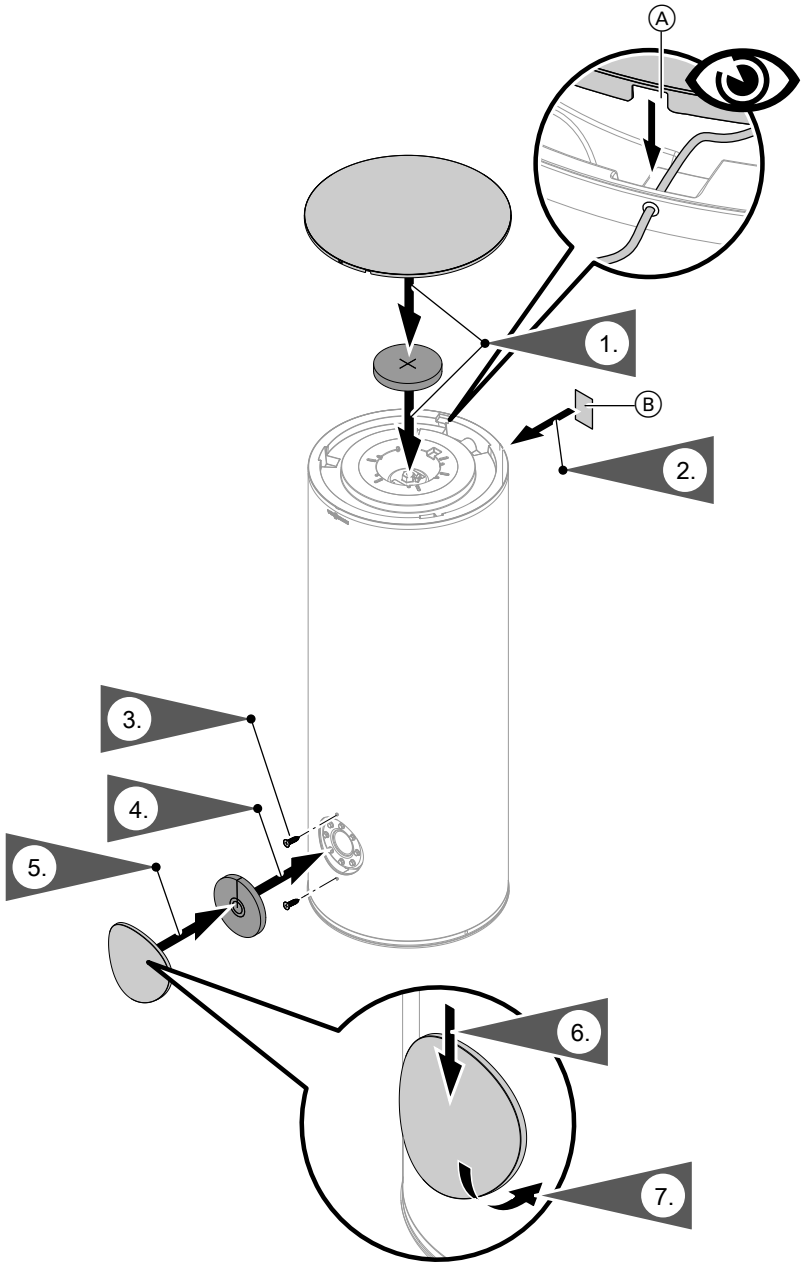

Fig. 7

Ⓐ Recess in top cover for thermometer cable
Ⓑ Type plate

500 l capacity

Siting the DHW cylinder and fitting the thermal insulation mat at the bottom

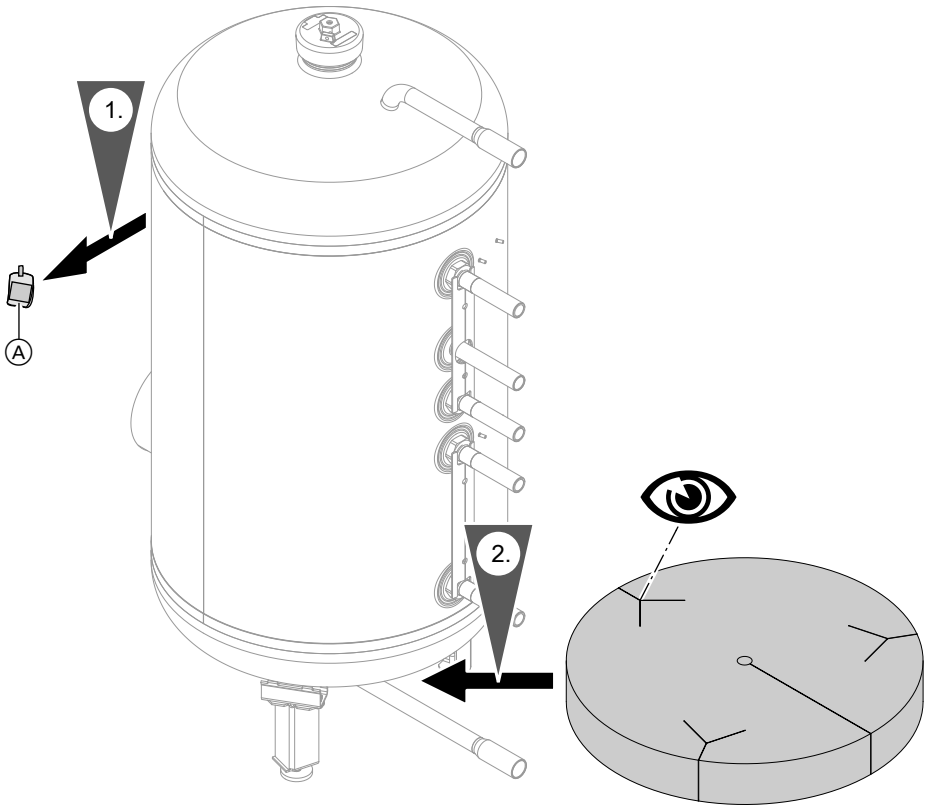

Fig. 8

Ⓐ Type plate

500 l capacity (cont.)

Fitting the thermometer sensor (if supplied) and cylinder temperature sensor

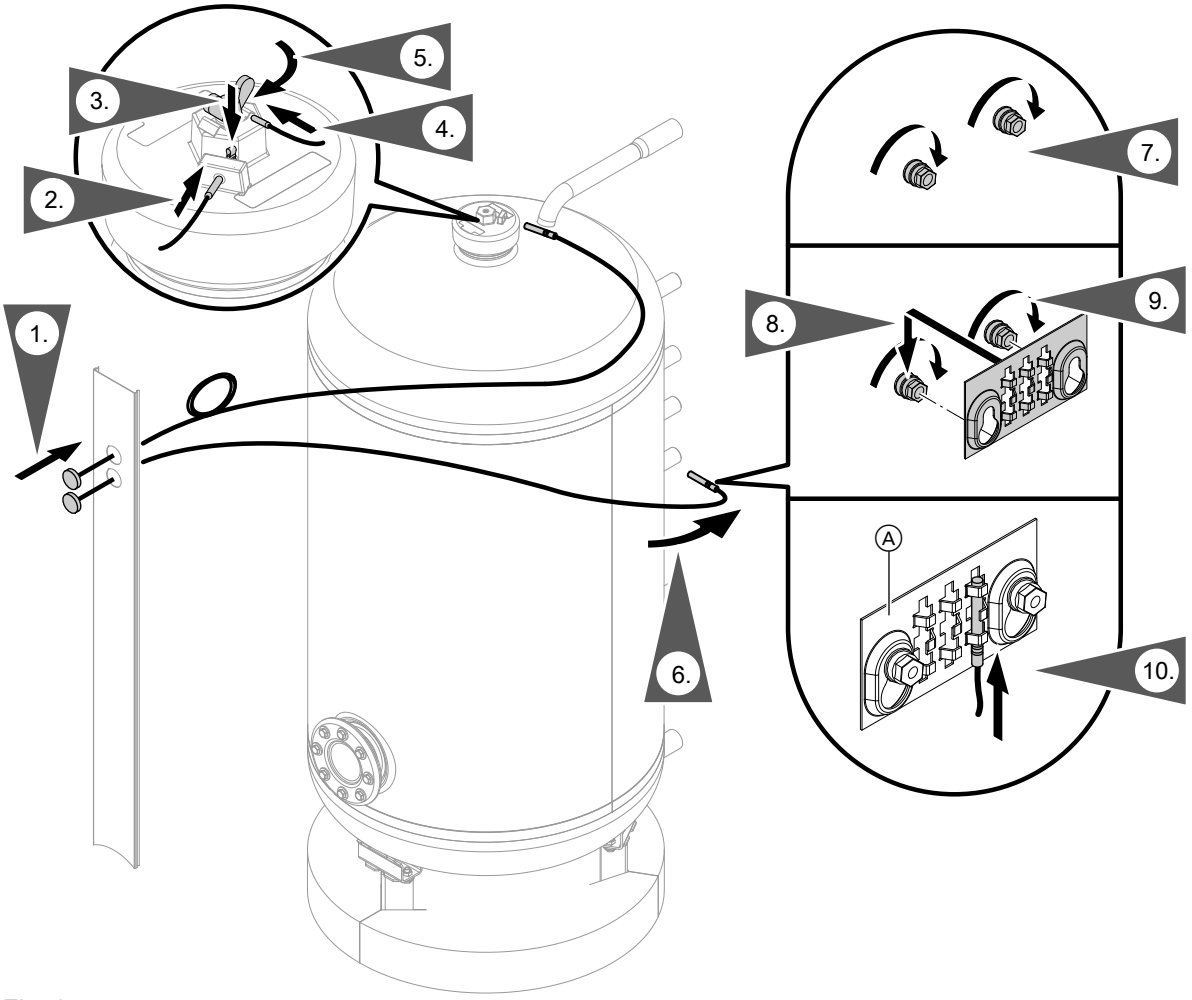

Fig. 9

1. Guide the thermometer sensor through the cover strip and insert the thermometer.

   Note
   The cover strip is held in its vertical position by the straight capillaries. This is necessary for the rest of the installation.

2. Insert the upper thermometer sensor as far as it will go into the hole in the cylinder cap.

3. Use clips to secure the thermometer sensor against being pulled out.

4. Install the sensor of the high limit safety cut-out into the aperture beside the wing nut.

5. Tighten the wing nut.

6. Route the bottom thermometer sensor capillaries to the back of the cylinder body.

7. Screw the nuts onto the threaded studs. Do not tighten.

8. Slot the clamping devices onto the threaded studs and align.

9. Tighten the nuts.

10. Depending on where the sensor is being fitted: Insert the **thermometer sensors** and **cylinder temperature sensor** into clamp Ⓐ as far as they will go.

    Note
    - ***Never*** *wrap insulating tape around the sensors.*
    - *When the thermal insulation is being fitted, the cylinder temperature sensor leads are routed outwards through the apertures (slots) in the rear cover strip.*

500 l capacity (cont.)

Fitting the thermal insulation jacket

Note
- *Ensure that no fleece remnants enter the DHW cylinder through the cylinder connections.*
- *2 people are required for the following work.*

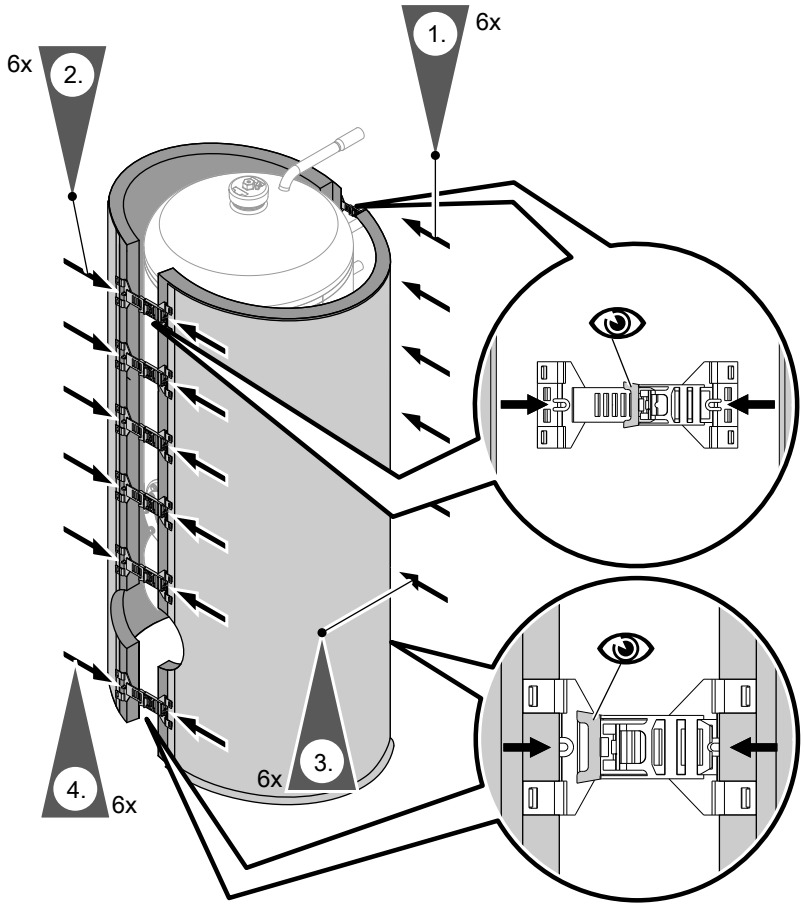

Fig. 10

1. At the back of the cylinder: Attach 6 clip fasteners to the edges of the right and left sections of the thermal insulation jacket and place it around the cylinder body.

Note
Leave the clip fasteners in the first notch.

2. At the front of the cylinder: Attach 6 clip fasteners to the edges of the right and left sections of the thermal insulation jacket.

3. Push the clip fasteners at the back of the cylinder as close together as possible.

4. Push the clip fasteners at the front of the cylinder as close together as possible.

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500 l capacity (cont.)

Fitting the cover strips

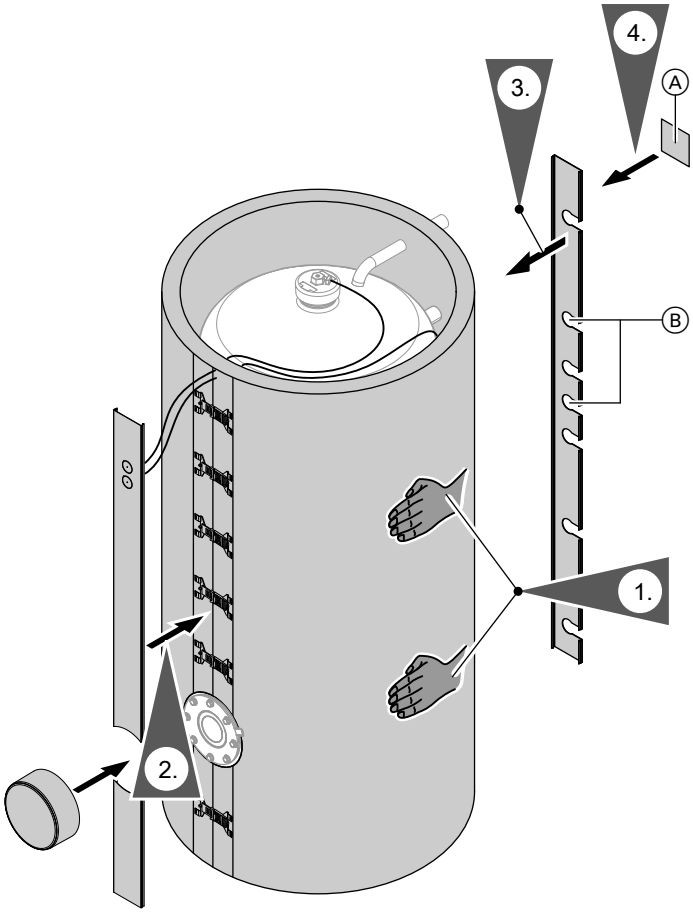

Fig. 11

Ⓐ Type plate

1. Fit the thermal insulation jacket evenly around the cylinder body by patting it.

2. Mount the front cover strip and flange cover.

3. Cut out openings Ⓑ and mount rear cover strip.

4. Affix the type plate.

500 l capacity (cont.)

Fitting the cover

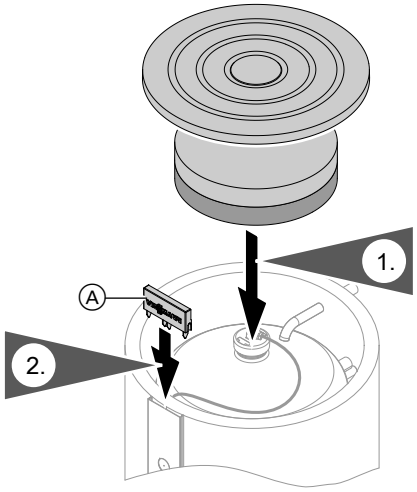

Fig. 12

Ⓐ Cap with Viessmann logo

Note
The soft side of the thermal insulation must rest against the cylinder body.

Fitting the cylinder temperature sensor for solar operation

- Seal the threaded elbow and sensor well (standard delivery for the DHW cylinder) into the heating water return connection (solar return).
- Insert the cylinder temperature sensor (supplied with solar control unit) into the sensor well as far as it will go and secure with a clamp.

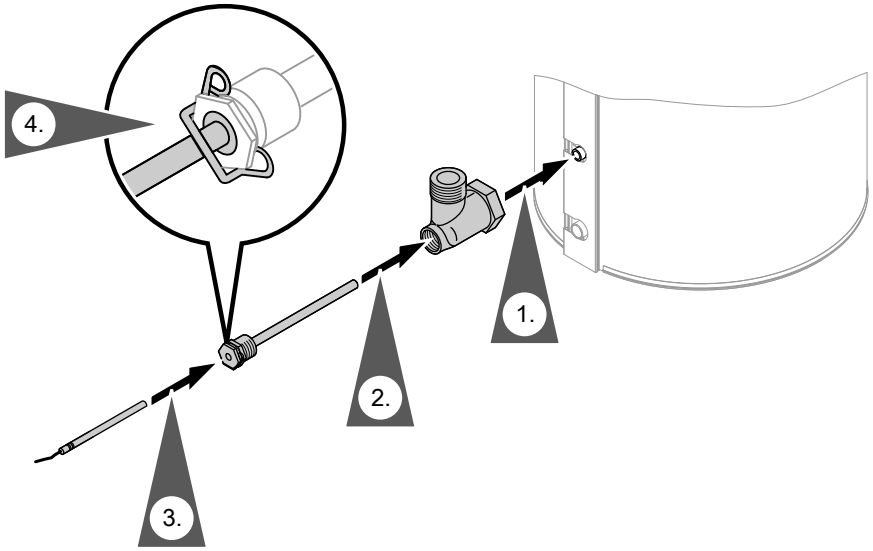

Fig. 13

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Connections on the heating water side

- Connect all pipework with detachable fittings.
- Seal any connections that are not required with red brass caps.
- Adjust the temperature controller and high limit safety cut-out so that the DHW temperature in the DHW cylinder does not exceed 95 °C.

! **Please note**
The internal indirect coil is installed with gaskets.
- Temperatures > 150 °C at the connections will damage the gaskets.
  Maintain a safe distance when soldering and welding.
- Realigning the connector will damage the gaskets.

Permissible heating water flow temperature	
▪ Solar side	160 °C
▪ Heating water side	160 °C
Permissible operating pressure	
▪ Solar side	10 bar 1 MPa
▪ Heating water side	10 bar 1 MPa
▪ DHW side	10 bar 1 MPa
Test pressure	
▪ Solar side	16 bar 1.6 MPa
▪ Heating water side	16 bar 1.6 MPa
▪ DHW side	16 bar 1.6 MPa
Permissible DHW temperature	95 °C

Heating DHW with solar collectors

Via the lower indirect coil and heat supply for reheating or heating the DHW with a boiler via the upper internal indirect coil (parallel operation)

Connections on the heating water side (cont.)

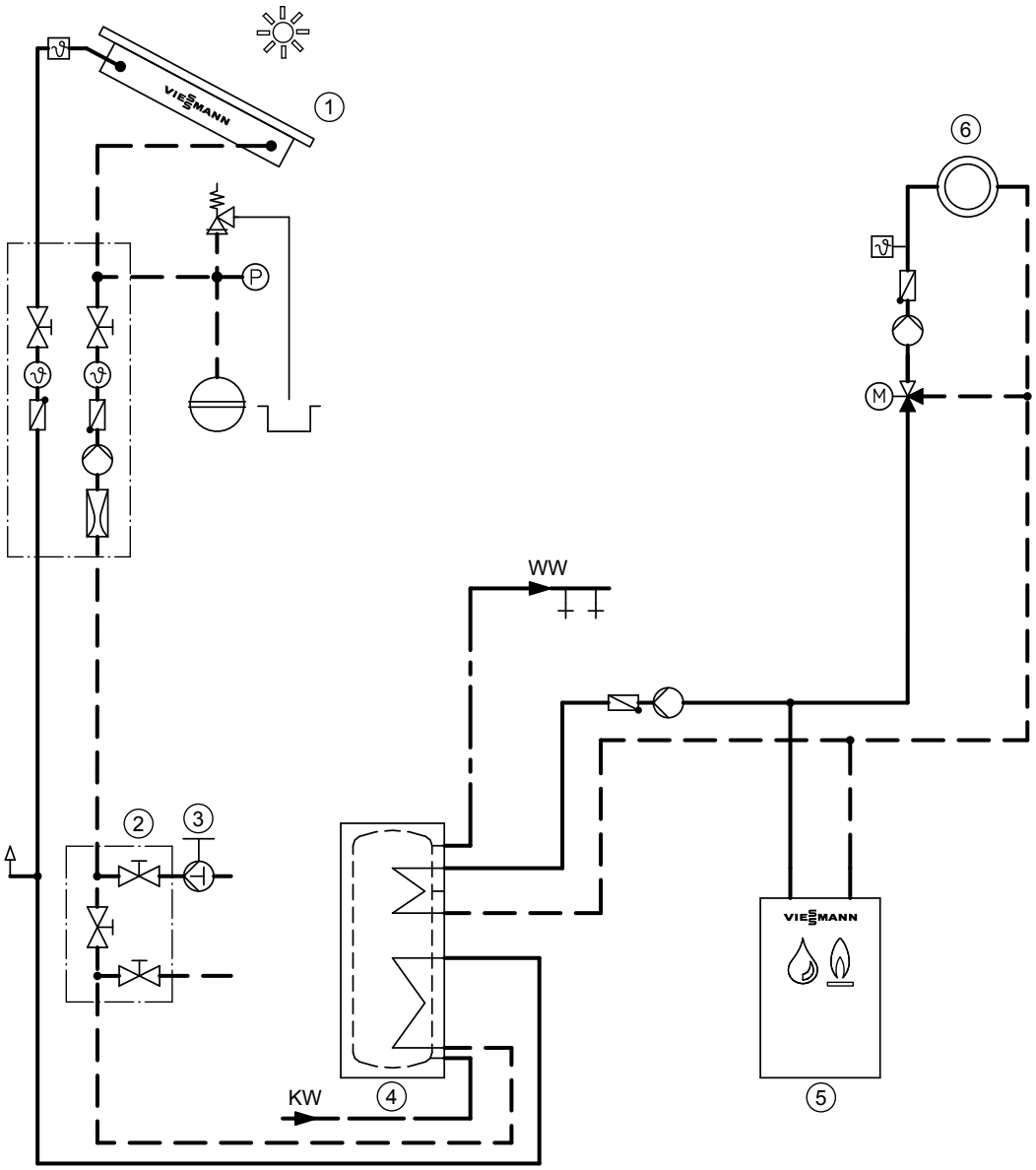

Fig. 14

① Solar collector
② Fill valve
③ Solar manual fill pump
④ DHW cylinder
⑤ Oil/gas boiler
⑥ Heating circuit
KW Cold water
WW DHW

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Connections on the heating water side (cont.)

Heating DHW with a heat pump

Via the upper and lower indirect coils (coils connected in series)

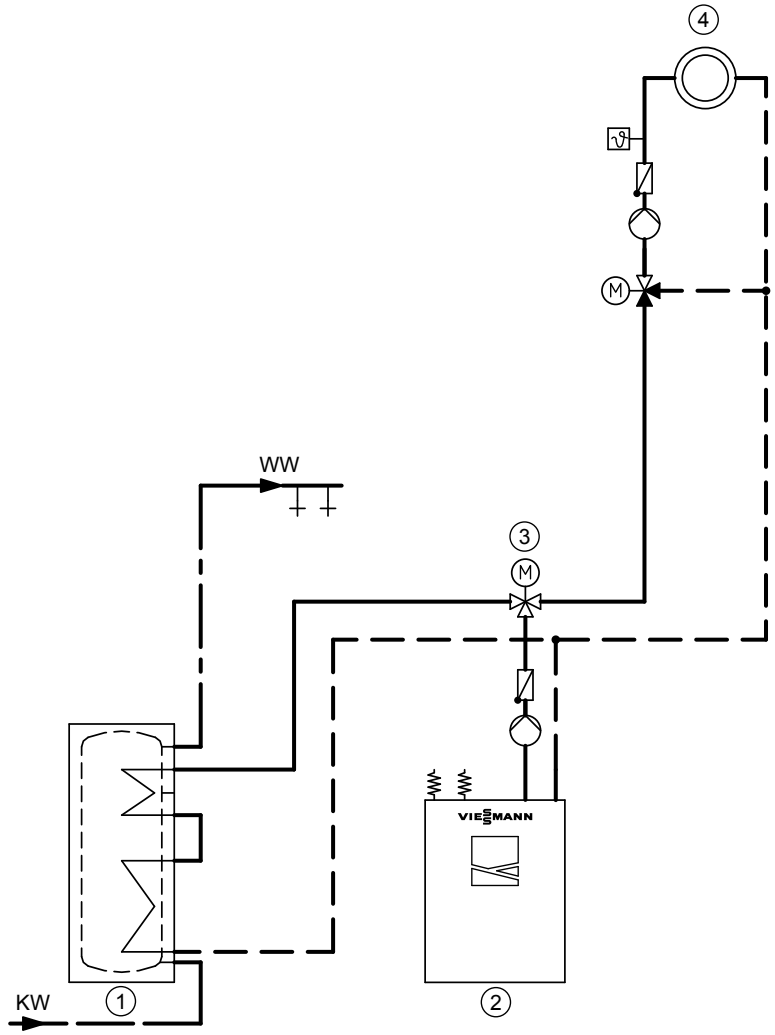

Fig. 15

① DHW cylinder
② Heat pump
③ 3-way valve
④ Heating circuit
KW Cold water
WW DHW

1. For heating water flow temperatures in excess of 95 °C and cylinder capacity of 300 l: Remove the pipe collars from the pipe outlets on the heating water side.

Note
Pipe collars have l.h. threads.

2. Install the heat supply control unit.

3. Install the flow line with a rise and fit an air vent valve at the highest point.

4. Only for heating water flow temperatures above 110 °C: If the system does not already have one, also install a type-tested high limit safety cut-out. For this, use a temperature limiter and high limit safety cut-out (TR/STB).

Connections on the DHW side

- For connections on the DHW side, observe DIN 1988 and DIN 4753.
  (CH): SVGW regulations.
- Connect all pipework with detachable fittings.
- Seal any connections that are not required with red brass caps.
- Equip the DHW circulation pipe with a DHW circulation pump and a check valve.
- Connecting the DHW circulation pump:
  - Connection to the boiler control unit if it is equipped with a DHW circulation pump connection.
  - Connection with a time switch if no DHW circulation pump connection is available on the boiler control unit.
  - Connection via time switch.
- Always install cylinder banks with connected DHW circulation.

Please note
The internal indirect coil is installed with gaskets.
- Temperatures > 150 °C at the connections will damage the gaskets.
  Maintain a safe distance when soldering and welding.
- Realigning the connector will damage the gaskets.

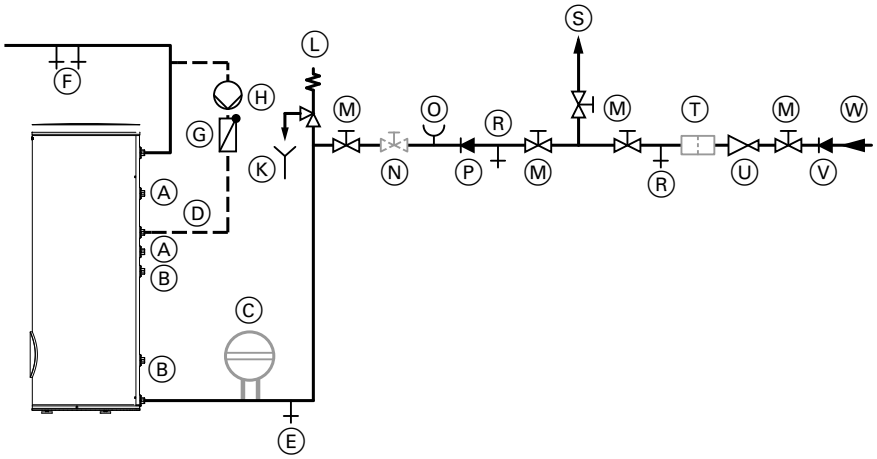

Fig. 16 300 l capacity

Ⓐ Upper Internal indirect coil for connection to the heat generator
Ⓑ Lower indirect coil for connecting to solar collectors
Ⓒ Diaphragm expansion vessel
Ⓓ DHW circulation pipe
Ⓔ Drain
Ⓕ DHW
Ⓖ Spring-loaded check valve
Ⓗ DHW circulation pump
Ⓚ Visible discharge pipe outlet point
Ⓛ Safety valve
Ⓜ Shut-off valve
Ⓝ Flow regulating valve
Ⓞ Pressure gauge connector
Ⓟ Non-return valve
Ⓡ Drain
Ⓢ Cold water
Ⓣ Drinking water filter
Ⓤ Pressure reducer
Ⓥ Non-return valve/pipe separator
Ⓦ Cold water

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Connections on the DHW side (cont.)

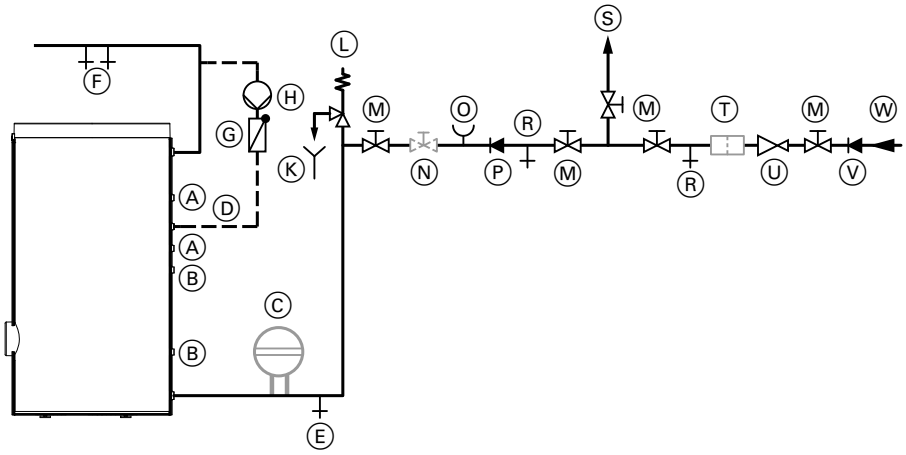


Fig. 17 500 l capacity

Ⓐ Upper Internal indirect coil for connection to the heat generator
Ⓑ Lower indirect coil for connecting to solar collectors
Ⓒ Diaphragm expansion vessel
Ⓓ DHW circulation pipe
Ⓔ Drain
Ⓕ DHW
Ⓖ Spring-loaded check valve
Ⓗ DHW circulation pump
Ⓚ Visible discharge pipe outlet point
Ⓛ Safety valve
Ⓜ Shut-off valve
Ⓝ Flow regulating valve
Ⓞ Pressure gauge connector
Ⓟ Non-return valve
Ⓡ Drain
Ⓢ Cold water
Ⓣ Drinking water filter
Ⓤ Pressure reducer
Ⓥ Non-return valve/pipe separator
Ⓦ Cold water

Safety valve

The system must be equipped with a type-tested diaphragm safety valve as protection against overpressure.
Permissible operating pressure: 10 bar (1 MPa).
The connection diameter of the safety valve must be as follows:
Min. R ¾ (DN 20), max. heat input 150 kW
Select a safety valve with a higher rating if the heat input of the DHW cylinder is greater than the maximum heat input assigned to the capacity. (See DIN 4753-1, issue 3/88, section 6.3.1).
Install the safety valve in the cold water line. Ensure it cannot be shut off from the DHW cylinder. There must be no constrictions in the pipework between the safety valve and the DHW cylinder.

! **Please note**
Never seal off the safety valve discharge pipe. The overpressure can damage the system.
Ensure that any expelled water is safely and visibly drained into a drainage system.
Position a sign close to the safety valve discharge pipe, or ideally on the safety valve itself, with the following inscription: "For safety reasons, water may be discharged from the discharge pipe during heating! Never seal."

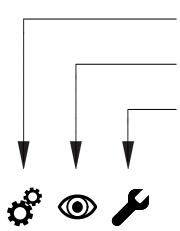
Install the safety valve above the top edge of the DHW cylinder.

Connecting the equipotential bonding

Connect the equipotential bonding in accordance with the requirements stipulated by your local power supply utility and VDE [or local] regulations.

CH: Connect the equipotential bonding in accordance with the technical requirements stipulated by your local power supply utility and SEV regulations.

Steps - commissioning, inspection and maintenance



Page

Filling the DHW cylinder

1. Fill the DHW cylinder on the DHW side.

   Note
   If the DHW cylinder is pressurised, retighten the flange cover with a torque of 40 Nm.
   *The cylinder cap does **not** need to be retightened.*

2. Check the fittings on the heating water and DHW side and at the immersion heater for leaks. If required, tighten the fittings.

3. Check the function of the safety valves according to the manufacturer's instructions.

Shutting down the system

Checking the safety valve function

Cleaning the inside of the DHW cylinder

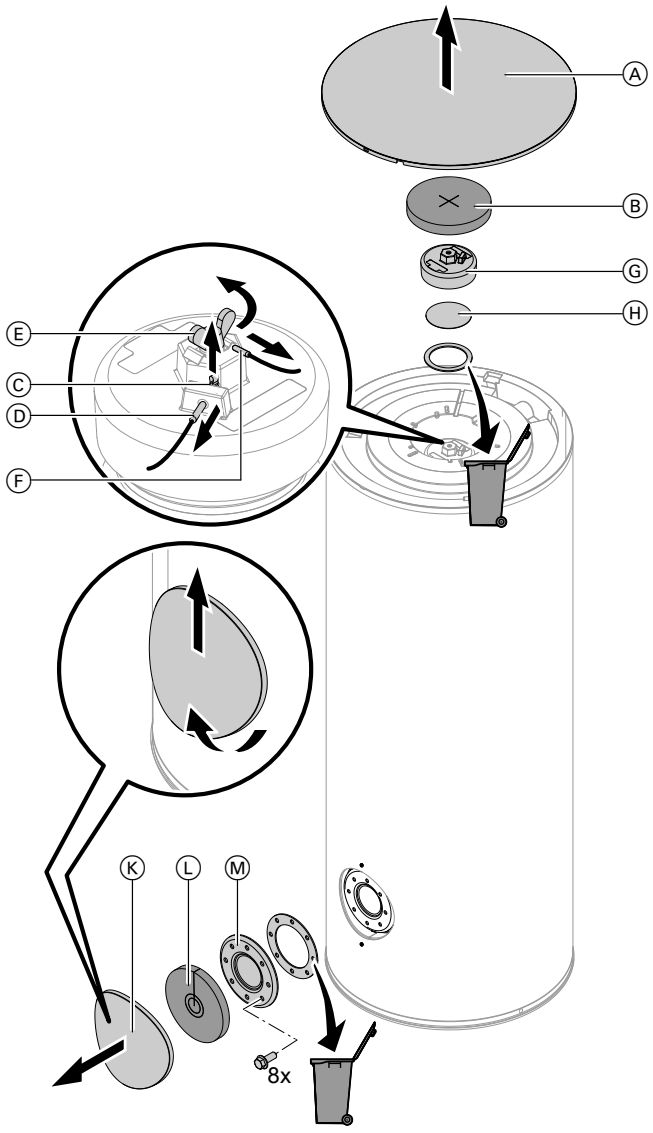


Fig. 18 300 l capacity

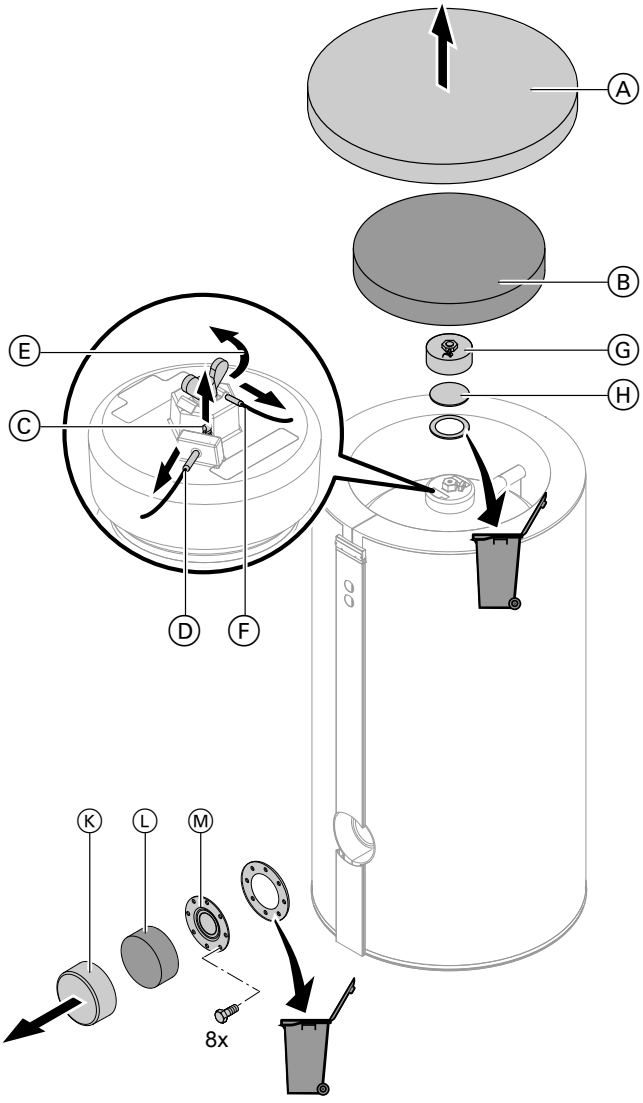


Fig. 19 500 l capacity

1. Remove cover Ⓐ and thermal insulation Ⓑ.

Cleaning the inside of the DHW cylinder (cont.)

2. If present, remove spring clip Ⓒ. Pull out thermometer sensor Ⓓ.

3. Undo wing nut Ⓔ. Pull out the sensor for high limit safety cut-out Ⓕ.

4. Remove cylinder cap Ⓖ and stainless steel circular blank Ⓗ.

5. Drain the DHW cylinder on the DHW side.

6. Remove cap Ⓚ, thermal insulation Ⓛ and flange cover Ⓜ.

7. Disconnect the DHW cylinder from the pipework to prevent cleaning agents and contaminants from entering the pipework.

8. **Please note**
   Pointed, sharp and hard objects can damage the interior of the cylinder.
   Only use plastic tools to clean the interior.

   Remove loose deposits with a high pressure cleaner or manually.

9. **Danger**
   Cleaning agent residues can lead to **poisoning**.
   Observe the cleaning agent manufacturer's instructions.

   Please note
   Cleaning agents containing hydrochloric acid can damage the inside of the cylinder.
   Never use cleaning agents containing hydrochloric acid.

   Use a chemical cleaning agent to remove hard deposits that cannot be removed with a high pressure cleaner.

10. **Fully** drain all cleaning agent.

11. Flush the DHW cylinder **thoroughly** after cleaning.

Reassembling the DHW cylinder

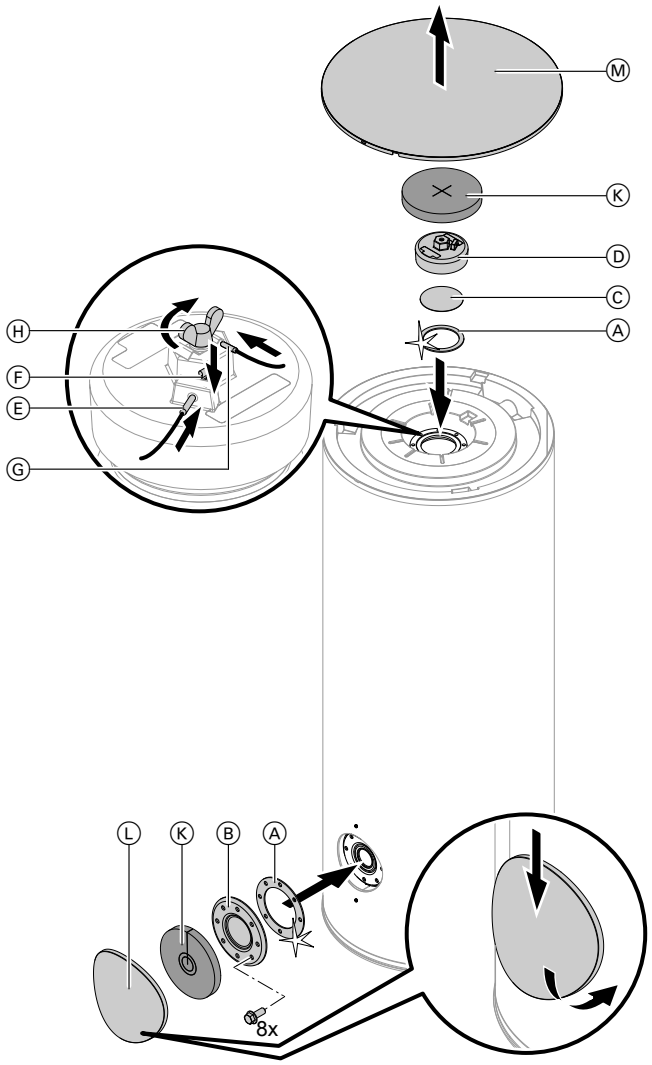


Fig. 20 300 l capacity

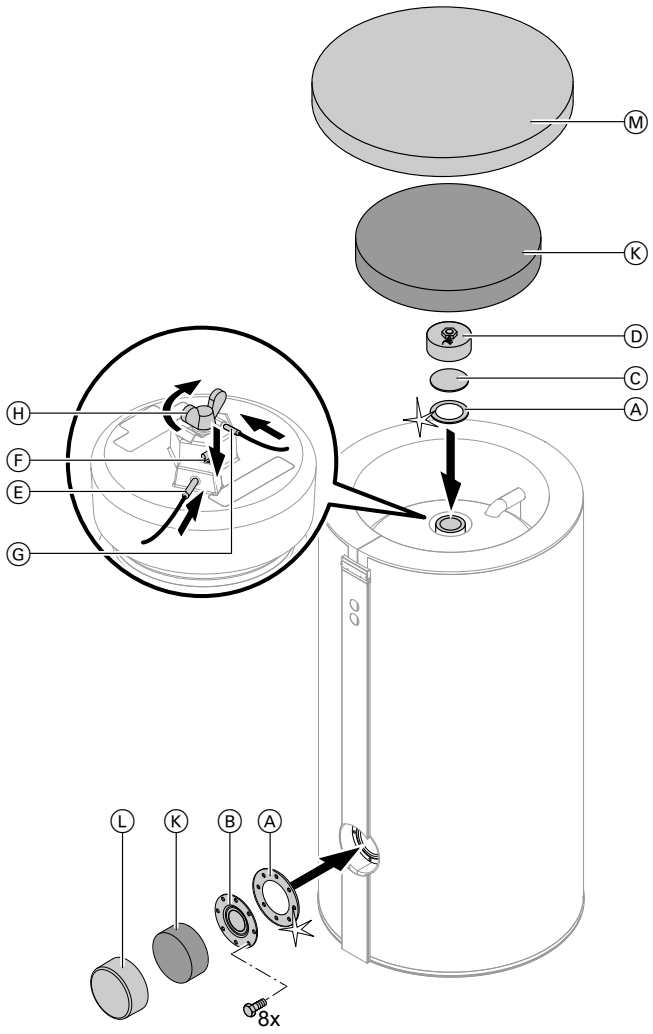


Fig. 21 500 l capacity

1. Reconnect the DHW cylinder to the pipework.
2. Insert **new** gaskets Ⓐ.
3. Fit flange cover Ⓑ.
   Max. torque: 40 Nm
4. Refit stainless steel circular blank Ⓒ and cylinder cap Ⓓ.
   Max. torque: 160 Nm
5. Fill the DHW cylinder on the DHW side.
6. Retighten all flange covers Ⓑ.
   Max. torque: 40 Nm
7. If present, insert thermometer sensor Ⓔ and secure with spring clip Ⓕ.
8. Insert high limit safety cut-out sensor Ⓖ and secure with wing nut Ⓗ.
9. Fit thermal insulation Ⓚ, cap Ⓛ and cover Ⓜ.

Checking the connections on the water side for tightness

Commissioning/service reports

	Commissioning	Maintenance/service	Maintenance/service
Date:			
By:			

	Maintenance/service	Maintenance/service	Maintenance/service
Date:			
By:			

	Maintenance/service	Maintenance/service	Maintenance/service
Date:			
By:			

	Maintenance/service	Maintenance/service	Maintenance/service
Date:			
By:			

	Maintenance/service	Maintenance/service	Maintenance/service
Date:			
By:			

Specification

Cylinder capacity	**l**	**300**	**500**
DIN registration no.		Applied for	
Standby heat loss To EN 12897:2016 Q_{st} with 45 K temperature differential	kWh/24 h	1.18	1.37
Standby capacity V_{aux}	l	161	235
Solar capacity V_{sol}	l	139	265
Dimensions			
Length			
▪ Incl. thermal insulation	mm	668	1022
▪ Excl. thermal insulation	mm	—	715
Total width			
▪ Incl. thermal insulation	mm	706	1084
▪ Excl. thermal insulation	mm	—	954
Height			
▪ Incl. thermal insulation	mm	1740	1852
▪ Excl. thermal insulation	mm	—	1667
Height when tilted			
▪ Incl. thermal insulation	mm	1840	—
▪ Excl. thermal insulation	mm	—	1690
Entire **weight** incl. thermal insulation	kg	102	122
Total weight in operation incl. immersion heater	kg	404	624
Connections			
Indirect coils (male thread)	R	1	1
Cold water, DHW (male thread)	R	1	1¼
DHW circulation (male thread)	R	1	1
Immersion heater (female thread)	R_P	1½	1½

Specification for immersion heater EHE in conjunction with Vitocell 300-B

Vitocell 100-B cylinder capacity	**l**	**300**	**500**
Capacity that can be heated with an immersion heater	l	245	379
Width incl. immersion heater EHE	mm	—	—
Minimum wall clearance for the installation of an immersion heater EHE	mm	730	670
Heat-up time from 10 to 60 °C with immersion heater EHE:			
▪ 2 kW	h	7.1	11.0
▪ 4 kW	h	3.6	5.5
▪ 6 kW	h	2.4	3.7

Specification – immersion heater EHE

Output range	kW	Max. 6		
Rated consumption standard mode/quick heat-up	kW	2	4	6
Rated voltage		3/N/PE 400 V/50 Hz		
Rated current	A	8.7		
Weight	kg	2		
IP rating		IP45		

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Final decommissioning and disposal

Viessmann products can be recycled. Components and substances from the system are not part of ordinary domestic waste.

For decommissioning, isolate the system from the power supply and allow components to cool down where appropriate.
All components must be disposed of correctly.

Declaration of conformity

We, Viessmann Werke GmbH & Co. KG, D-35107 Allendorf, declare as sole responsible body that the named product complies with the European directives and supplementary national requirements in terms of its design and operational characteristics.

Using the serial number, the full Declaration of Conformity can be found on the following website:
www.viessmann.co.uk/eu-conformity

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