

Vitocell 340-M/360-M

Type SVKA

Type SVSA

Heating water buffer cylinder with DHW heating
750 and 950 litre capacity

VITOCELL 340-M/360-M



Safety instructions



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

Safety instructions explained



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 authorised contractors.

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

Regulations to be observed

- National installation regulations
- Statutory regulations for the prevention of accidents
- Statutory regulations for the protection of the environment
- Codes of Practice of the relevant trade associations
- All relevant safety regulations as defined by DIN, EN, DVGW, VDE and locally applicable standards
 - Ⓐ ÖNORM, EN and ÖVE
 - ⒸH SEV, SUVA, SVTI, SWKI and SVGW

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.

Index

1. Information	Symbols	4
	Intended use	4
	Product information	4
2. Preparing for installation		5
3. Installation sequence	Cylinder without fitted Solar-Divicon	8
	■ Siting and levelling the cylinder	8
	■ Fitting the thermometer sensor (if supplied)	9
	■ Fitting the thermal insulation jacket	10
	■ Fitting the cover strips	11
	■ Fitting the cover	12
	■ Installing an air vent valve on the solar side	12
	Cylinder with fitted Solar-Divicon	13
	■ Siting and levelling the cylinder	13
	■ Fitting the support panel	13
	■ Fitting the Solar-Divicon	14
	■ Connecting the Solar-Divicon on the solar side and performing a tightness test	14
	■ Connections on the solar side	15
	■ Fitting the thermal insulation cover	17
	■ Fitting the thermometer sensor and cylinder temperature sensor (if supplied)	18
	■ Fitting the lower thermal insulation mat	19
	■ Fitting the thermal insulation jacket	19
	■ Fitting the cover strips	21
	■ Fitting the cover	22
	Fitting the cylinder temperature sensor	22
	Installing the DHW circulation (accessories)	24
	Connecting the DHW side	24
	■ Safety valve	25
	Connections on the heating water side	25
	Connecting the equipotential bonding	27
	Commissioning	27

Symbols

Symbol	Meaning
	Reference to other document containing further information
	Additional information, not safety relevant
	Step: The numbering corresponds to the work flow.

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 quality. Heating water buffer cylinders are only designed to hold fill water of potable quality. Only operate solar collectors with 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 in each 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 applies if the components in the system are modified from their intended use (e.g. through direct DHW heating in the collector).

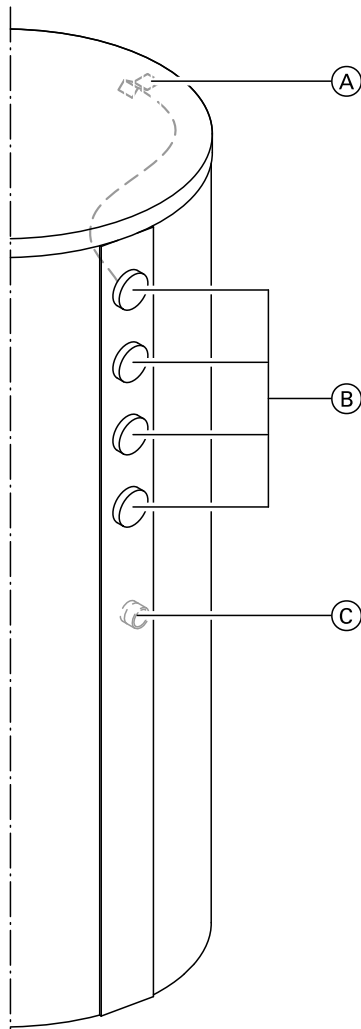
Adhere to statutory regulations, especially concerning the hygiene of potable water.

Product information

- Steel heating water buffer cylinder for central heating backup with corrugated stainless steel indirect coil for DHW heating in combination with heat pumps, solar thermal systems, oil/gas boilers, solid fuel boilers and/or electric heating with an immersion heater.
- With the option to fit a Solar-Divicon, type PS10 (pump station for a collector circuit).
- Suitable for systems conforming to DIN 1988/ DIN EN 806, EN 12828 and DIN 4753.
- **Vitocell 360-M** additionally with a **stratification system**.

Content	750 litres	950 litres
Heating water:	708 litres	906 litres
DHW:	30 litres	30 litres
Solar heat transfer medium:	12 litres	14 litres

Connections



- Ⓐ Thermometer sensor retainer
- Ⓑ Thermometer
2 included in standard delivery, up to 4 can be installed
- Ⓒ Female connection for immersion heater

Fig. 1 Front view without fitted Solar-Divicon (accessories)

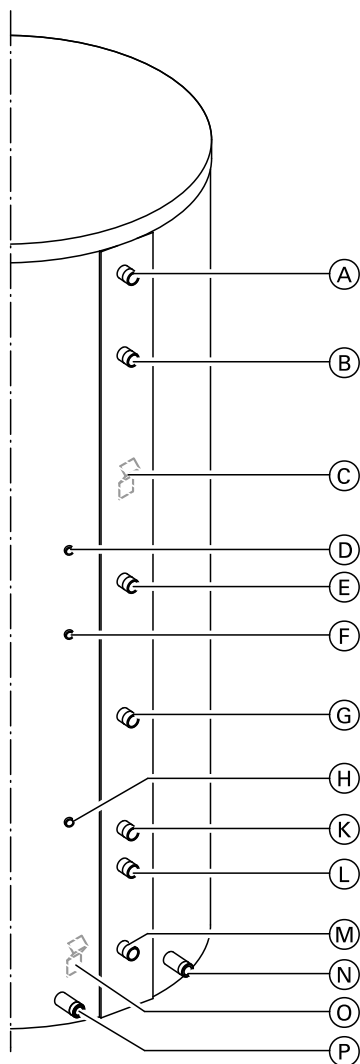


Fig. 2 Back

- Ⓐ Heating water flow 1 from the heat source/air vent valve
- Ⓑ DHW/DHW circulation
- Ⓒ Thermometer sensor retainer
- Ⓓ Sensor well for cylinder temperature sensor 1
- Ⓔ Heating water flow 2/heating water return 1
- Ⓕ Central heating backup
- Ⓖ Sensor well for cylinder temperature sensor 2 and thermometer sensor
- Ⓗ Heating water return 2 (central heating backup)
- Ⓘ Sensor well for thermometer sensor and cylinder temperature sensor 3
- Ⓚ Heating water return 3 (to the heat source)
- Ⓛ Cold water
- Ⓜ Drain
- Ⓝ Heating water flow solar/ventilation solar (if the Solar-Divicon accessory is fitted: at the front of the cylinder)
- Ⓞ Thermometer sensor retainer
- Ⓟ Heating water return solar (if the Solar-Divicon accessory is fitted: at the front of the cylinder)

Siting



Please note

To prevent material losses, install the cylinder in a room free from the risk of frost and draughts. When not in use, the cylinder must be drained if there is a risk of frost.

Provide adequate clearance from the wall to allow for operation of the temperature controller (if installed).

Siting a cylinder with immersion heater

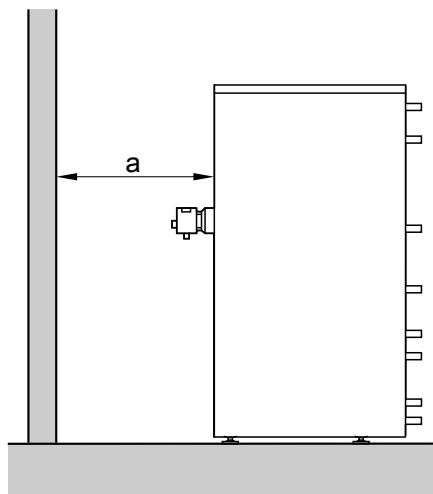


Fig.3



Immersion heater installation instructions

Maintain the minimum clearance.

Cylinder capacity	Output Immersion heater	Dim. a
750 and 950 l	6 kW	min. 650 mm
	12 kW	min. 950 mm

Note

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

Cylinder without fitted Solar-Divicon

Installation sequence for version with fitted Solar-Divicon (accessories): see page 13.

Siting and levelling the cylinder

- ! Please note**
The lower thermal insulation mat of the cylinder must not come into contact with naked flames. Exercise caution when welding and brazing.

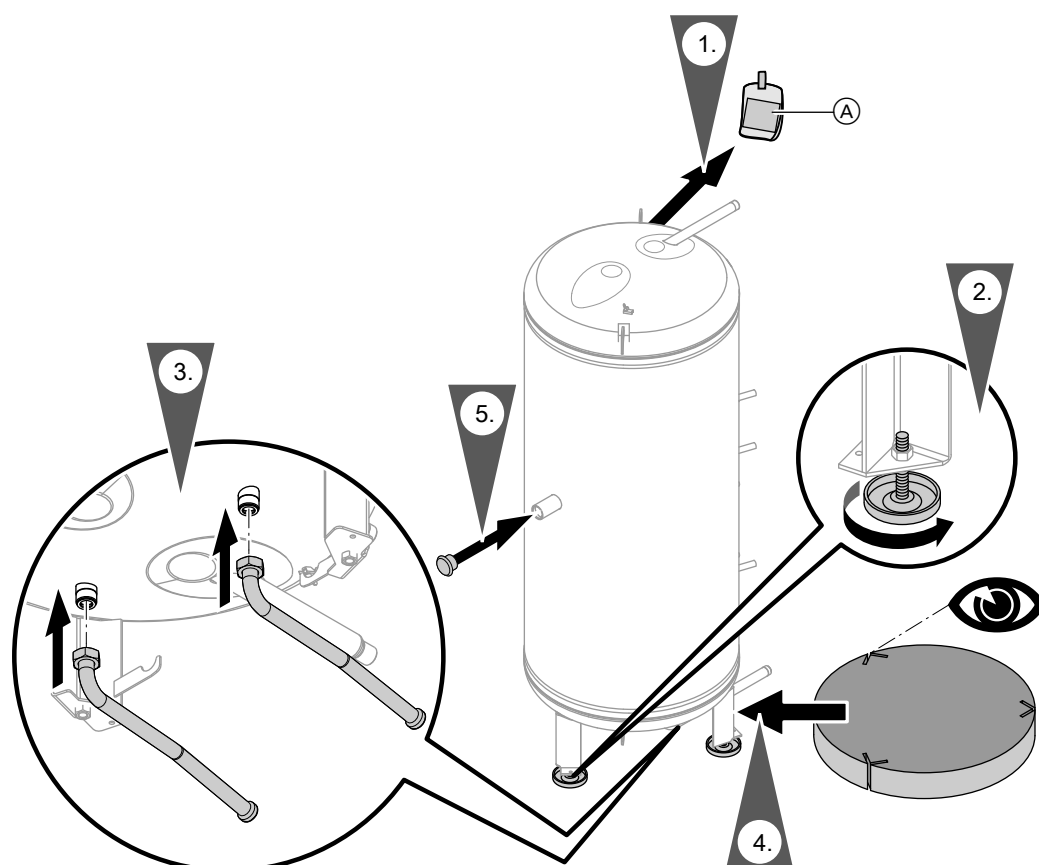


Fig.4

(A) Bag with type plate

2. Insert the adjustable feet into the supports as far as possible, then adjust them to level the cylinder.

Note

Never extend the adjustable feet beyond a total length of 35 mm.

3. Fit the supplied pipework sections underneath the cylinder and align them to face backwards.

Note

If **no** electric immersion heater is installed, seal the front female connection with the plug R1½ supplied.

Fitting the thermometer sensor (if supplied)

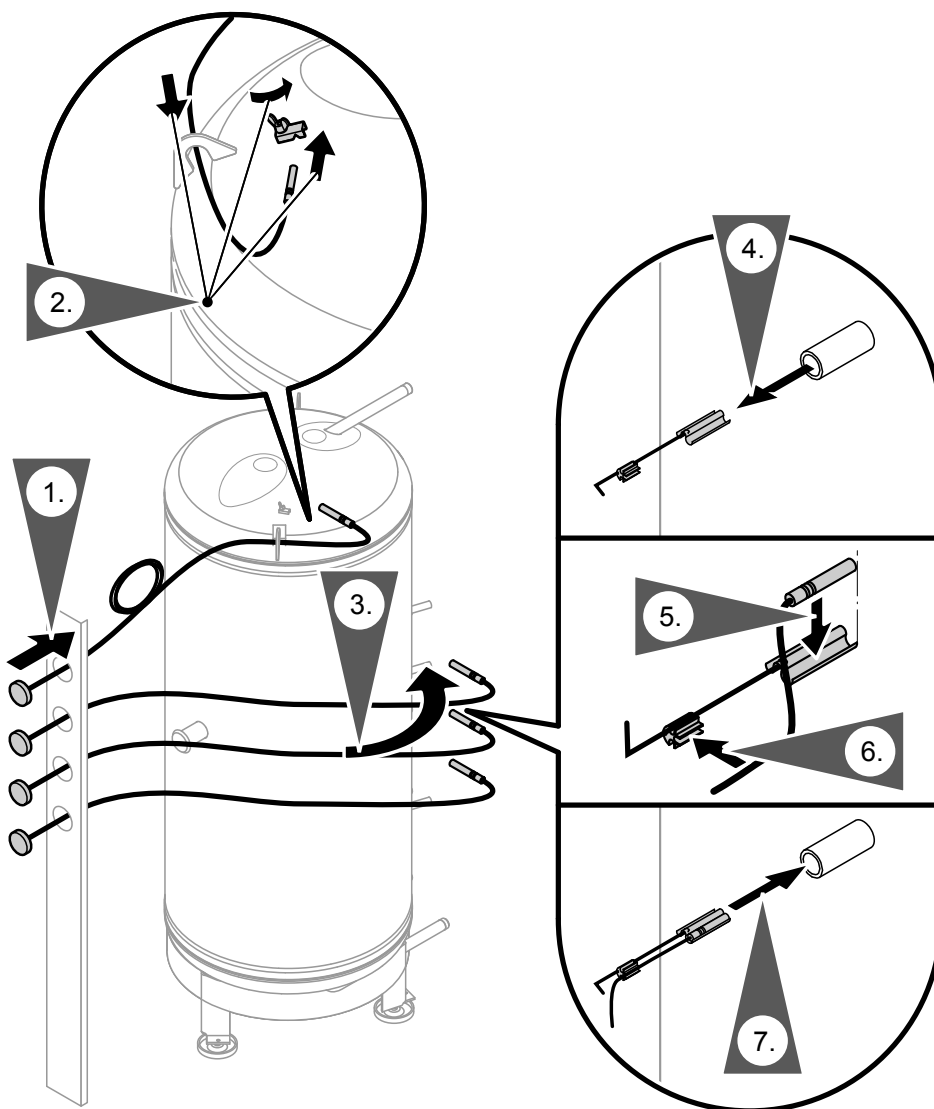


Fig.5

1. Guide the thermometer sensor through the cover strip and insert the thermometer.
2. Guide the upper thermometer sensor through the lifting eye, insert it into the clamping bracket as far as possible and tighten the wing nut.

Note

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

3. Guide the thermometer sensor capillaries to the back of the cylinder and repeat the steps below for each thermometer sensor supplied.
4. Depending on where the sensor is being fitted, secure the thermometer sensor in the clamping bracket or pull the sensor retainer out of the sensor well.

5. Fit the sensor to the outside of the sensor retainer contact spring. The sensor must sit flush with the front of the spring.
6. Secure the thermometer sensor capillaries.

Note

Never wrap insulating tape around the thermometer sensor.

7. Insert the sensor retainer into the sensor well as far as it will go.

Fitting the thermal insulation jacket

- ! Please note**
The thermal insulation jacket must not come into contact with naked flames.
Exercise caution when welding and brazing.
- Note**
- 2 people are required for the following work.
 - Ensure that no fleece remnants enter the cylinder through the cylinder connections.

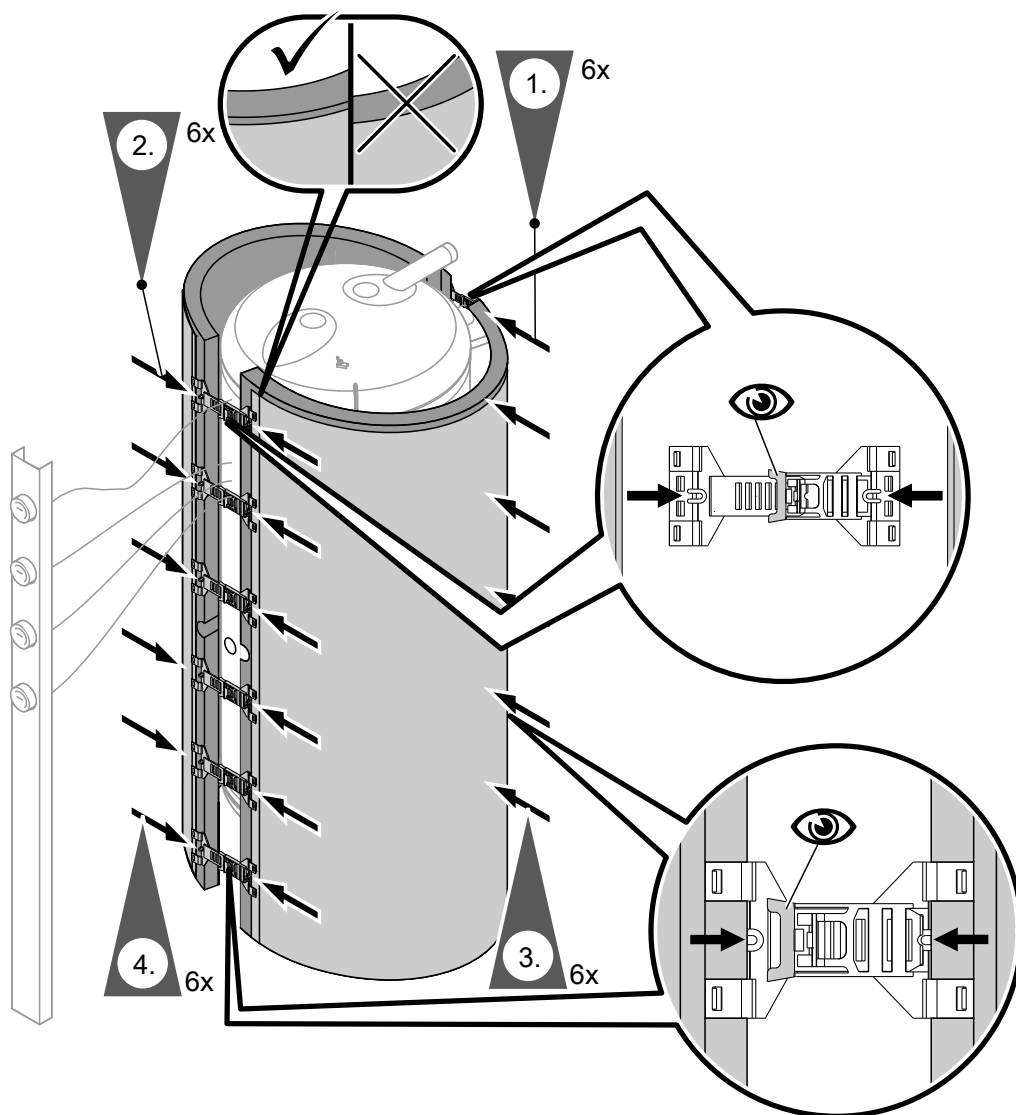


Fig.6

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. Place the thermal insulation jacket around the cylinder body.
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.

Note

Leave the clip fasteners in the first notch.

Fitting the cover strips

Note

Seal any unused apertures in the cover strips with the covers (collars) supplied.

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

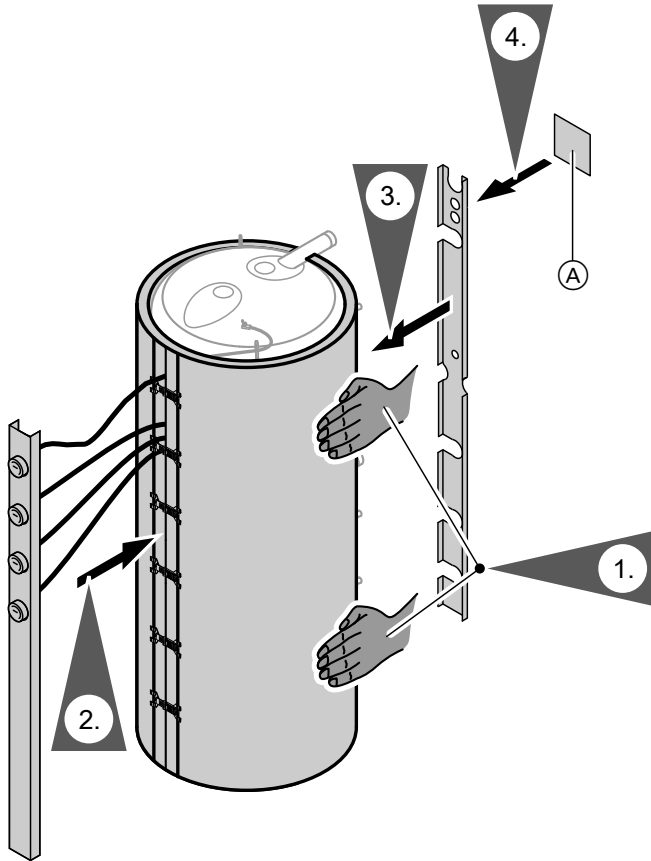


Fig. 7

Ⓐ Type plate

Fitting the cover

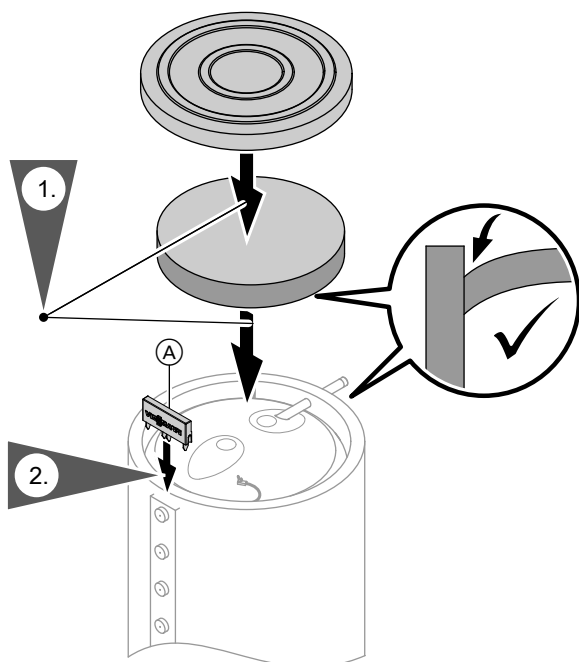


Fig.8

Ⓐ End cap with logo

Installing an air vent valve on the solar side

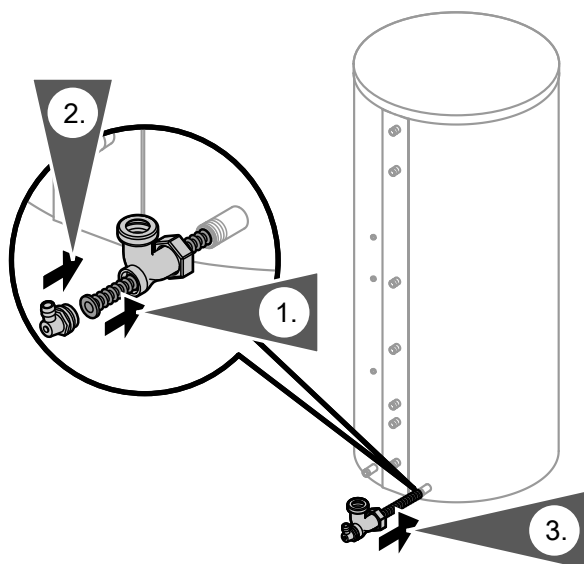


Fig.9

Note

After fitting the cover, slide the cover strip with the end cap upwards until it meets with the cover.

1. Push the corrugated hose into the elbow fitting.
2. Screw the air vent plug into the elbow fitting.
3. Push the corrugated hose into the solar flow and screw the elbow with gasket (flat gasket) onto the connector.

Continue on page 22.

Cylinder with fitted Solar-Divicon

Siting and levelling the cylinder

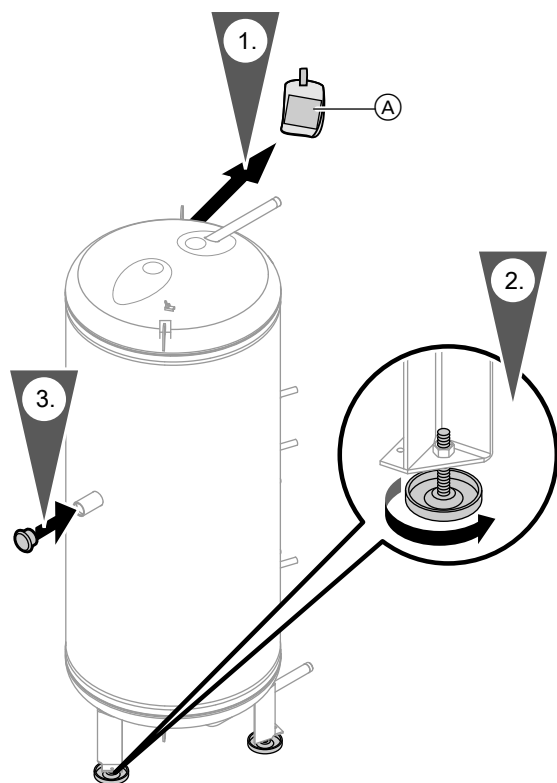


Fig.10

Ⓐ Bag with type plate

2. Insert the adjustable feet into the supports as far as possible, then adjust them to level the cylinder.

Note

Never extend the adjustable feet beyond a total length of 35 mm.

If **no** electric immersion heater is installed, seal the front female connection with the plug R1½ supplied.

Fitting the support panel

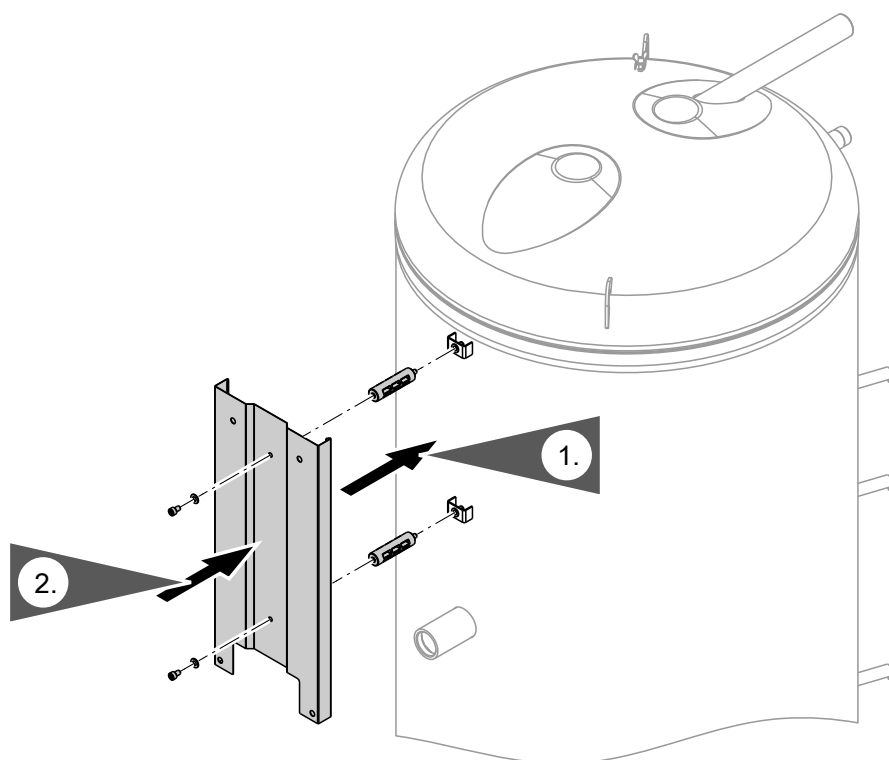


Fig.11

Fitting the Solar-Divicon



Solar-Divicon installation instructions



Please note

Wiring can be damaged if exposed to hot components.
Ensure adequate thermal insulation between cables and hot pipework.

Note

The cable should be routed to the Solar-Divicon from above and should eventually lie beneath the thermal insulation.

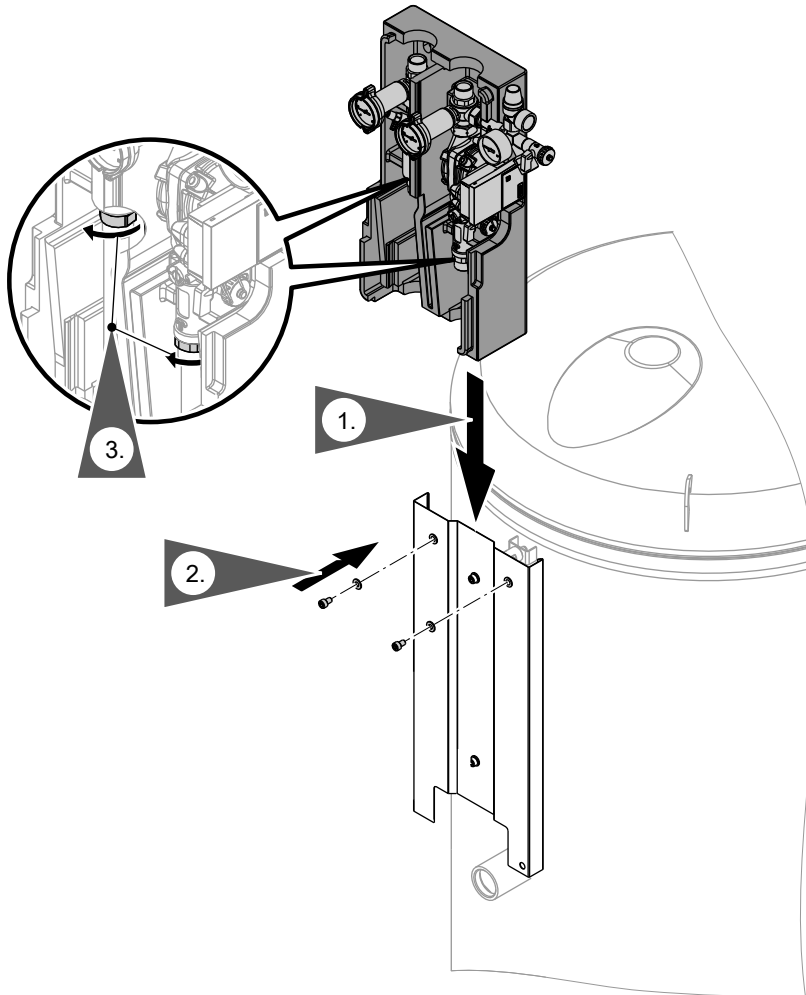


Fig.12

Connecting the Solar-Divicon on the solar side and performing a tightness test



Please note

Once the thermal insulation and thermal insulation cover are in place, the connection fittings are no longer visible.
Carry out the following steps before fitting the thermal insulation.

1. Connect all pipework with detachable fittings.

2. Fill the system on the solar side.



Solar collector service instructions

3. Check all fittings on the solar side for leaks, including the connections underneath the cylinder.

Solar side

Permissible temperature:	140 °C
Permissible operating pressure:	10 bar
Test pressure:	16 bar

Connections on the solar side

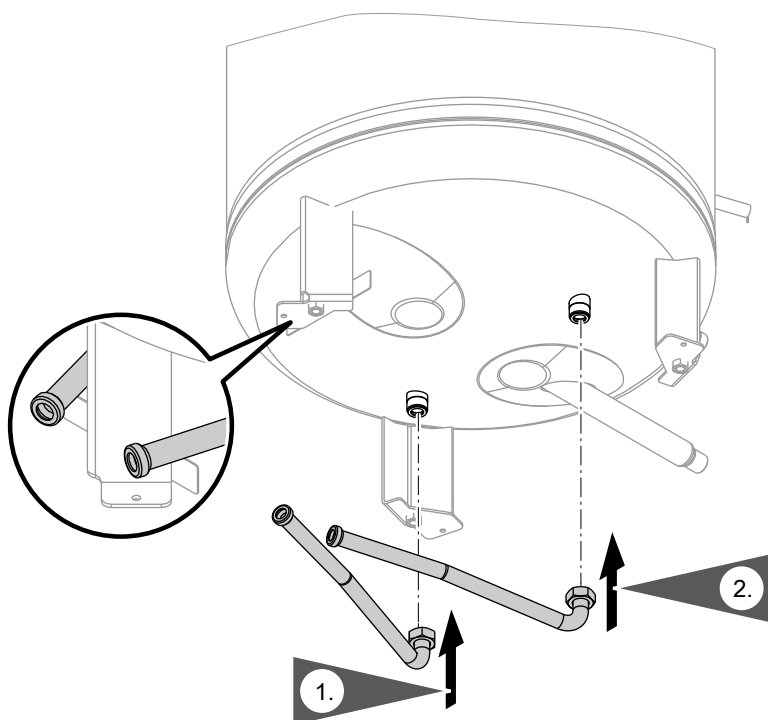


Fig.13

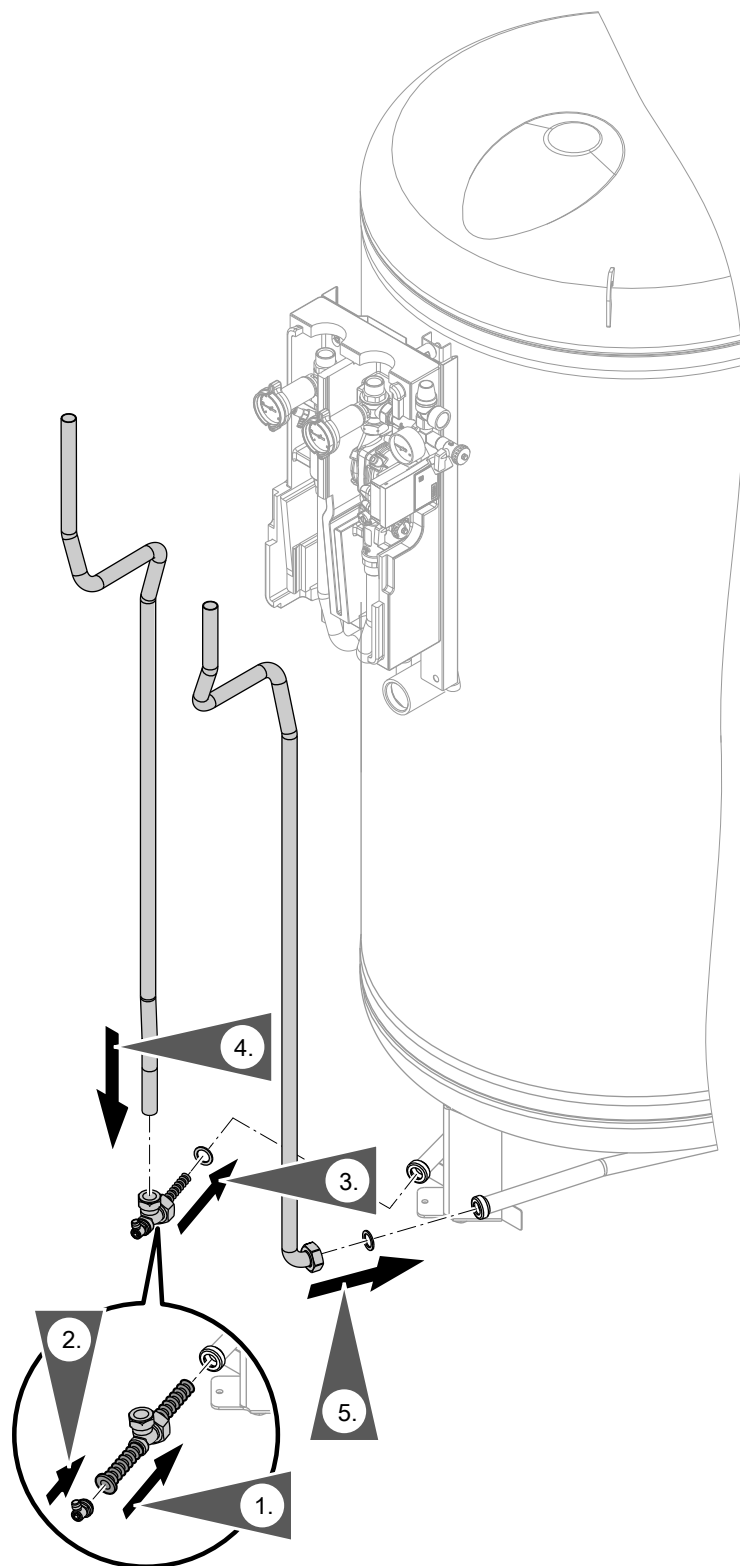


Fig.14

1. Push the corrugated hose into the elbow fitting.
2. Screw the air vent plug into the elbow fitting.
3. Push the corrugated hose into the solar flow and secure the elbow with flat gasket to the cylinder.
4. Fit the solar flow pipe.
5. Fit the solar return pipe.

Fitting the thermal insulation cover

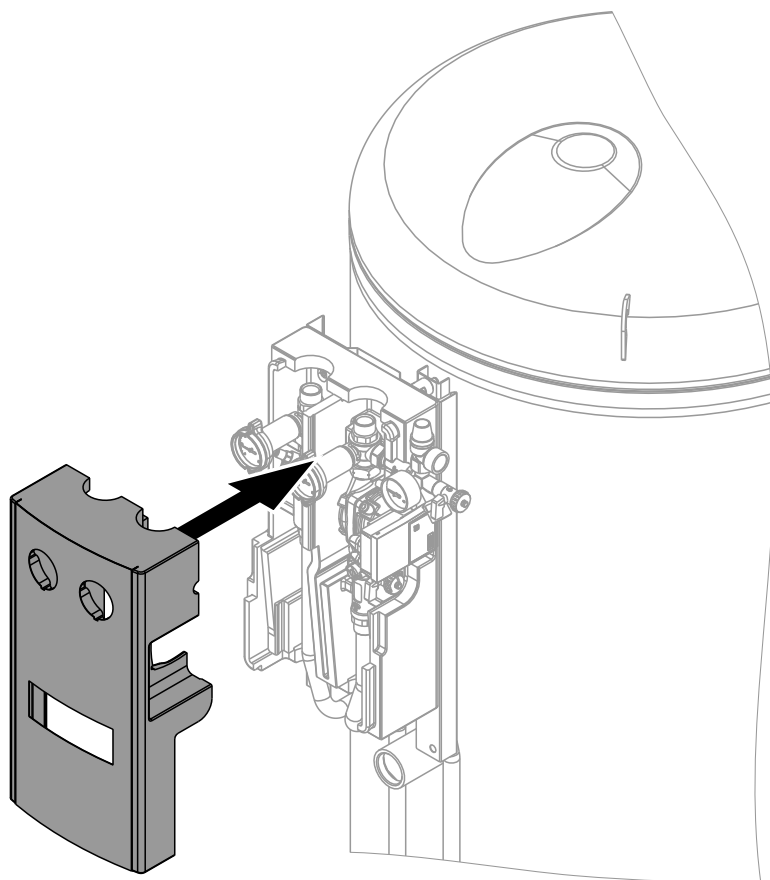


Fig.15

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

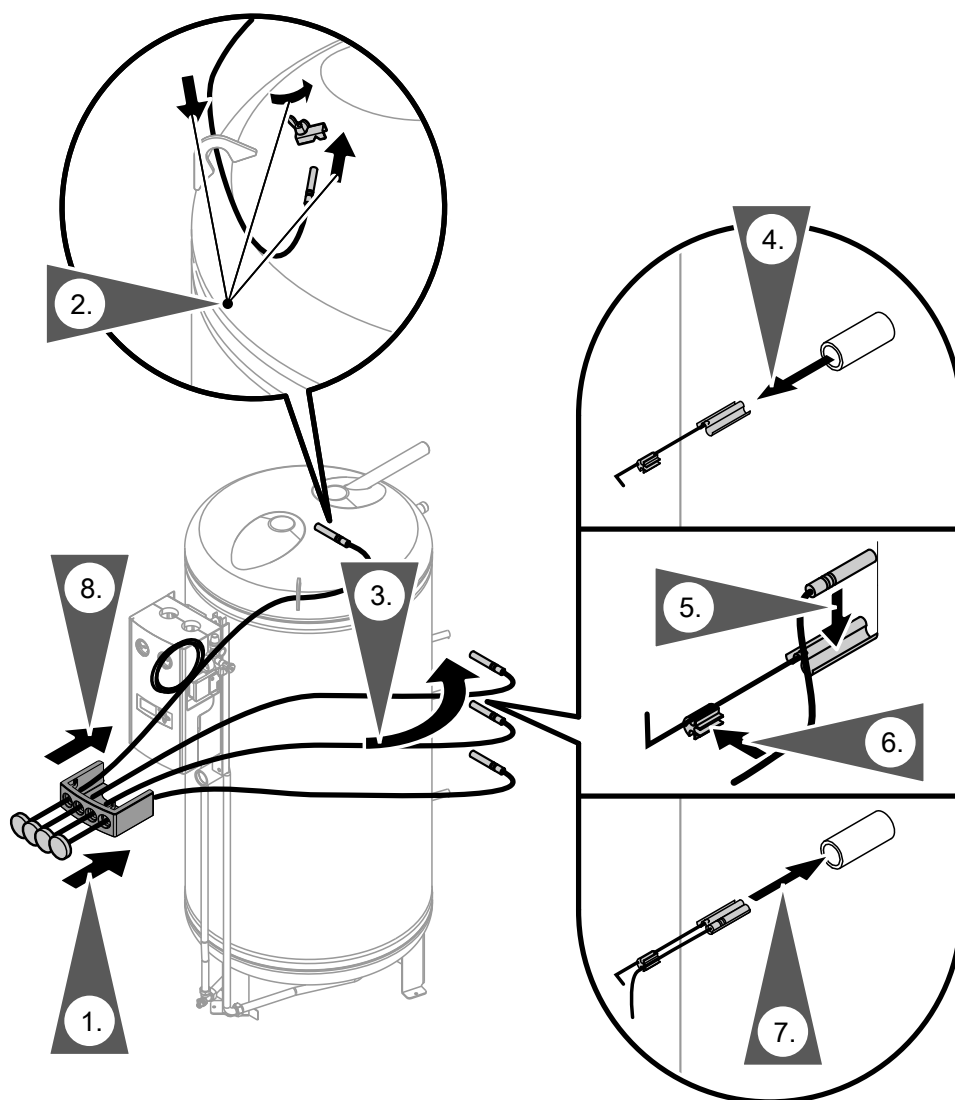


Fig.16

1. Guide the thermometer sensor through the retainer and insert the thermometer.
2. Guide the upper thermometer sensor through the lifting eye, insert it into the clamping bracket as far as possible and tighten the wing nut.

Note

The retainer is held hanging in place by the straight capillaries on the cylinder. This is necessary for the rest of the installation.

3. Guide the thermometer sensor capillaries to the back of the cylinder and repeat the steps below for each thermometer sensor supplied.
4. Depending on where the sensor is being fitted, secure the thermometer sensor in the clamping bracket or pull the sensor retainer out of the sensor well.

5. Fit the sensor to the outside of the sensor retainer contact spring. The sensor must sit flush with the front of the spring.
6. Secure the thermometer sensor capillaries.

Note

Never wrap insulating tape around the thermometer sensor.

7. Insert the sensor retainer into the sensor well as far as it will go.
8. Fit the retainer with the thermometers.

Cylinder with fitted Solar-Divicon (cont.)

9. Fit the cylinder temperature sensor to the back of the cylinder.
 - The cylinder temperature sensor is supplied in the control unit pack.
 - Fit the sensor to the **outside** of the sensor retainer contact spring (not in the groove). The sensor must sit flush with the front of the spring.
 - **Never** wrap insulating tape around the sensor.
 - Insert the sensor retainer with sensor into the sensor well as far as it will go.

Fitting the lower thermal insulation mat



Please note

The lower thermal insulation mat of the cylinder must not come into contact with naked flames. Exercise caution when welding and brazing.

Note

Do not carry out the following steps until the tightness test (see page 14) has been performed.

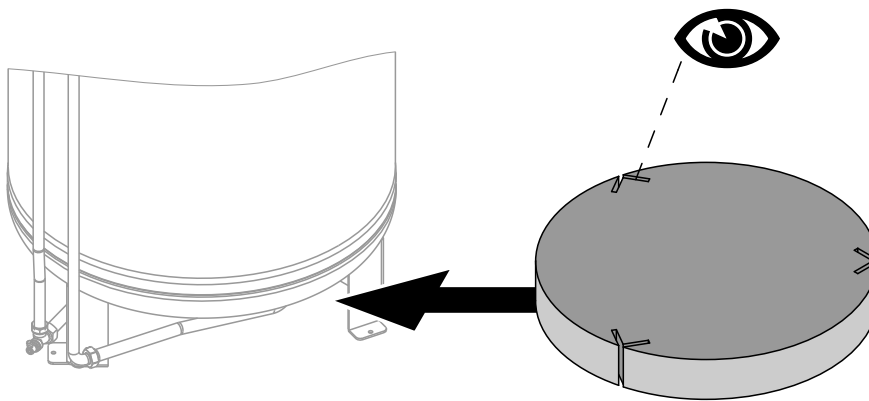


Fig. 17

Fitting the thermal insulation jacket



Please note

The thermal insulation jacket must not come into contact with naked flames. Exercise caution when welding and brazing.

Note

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

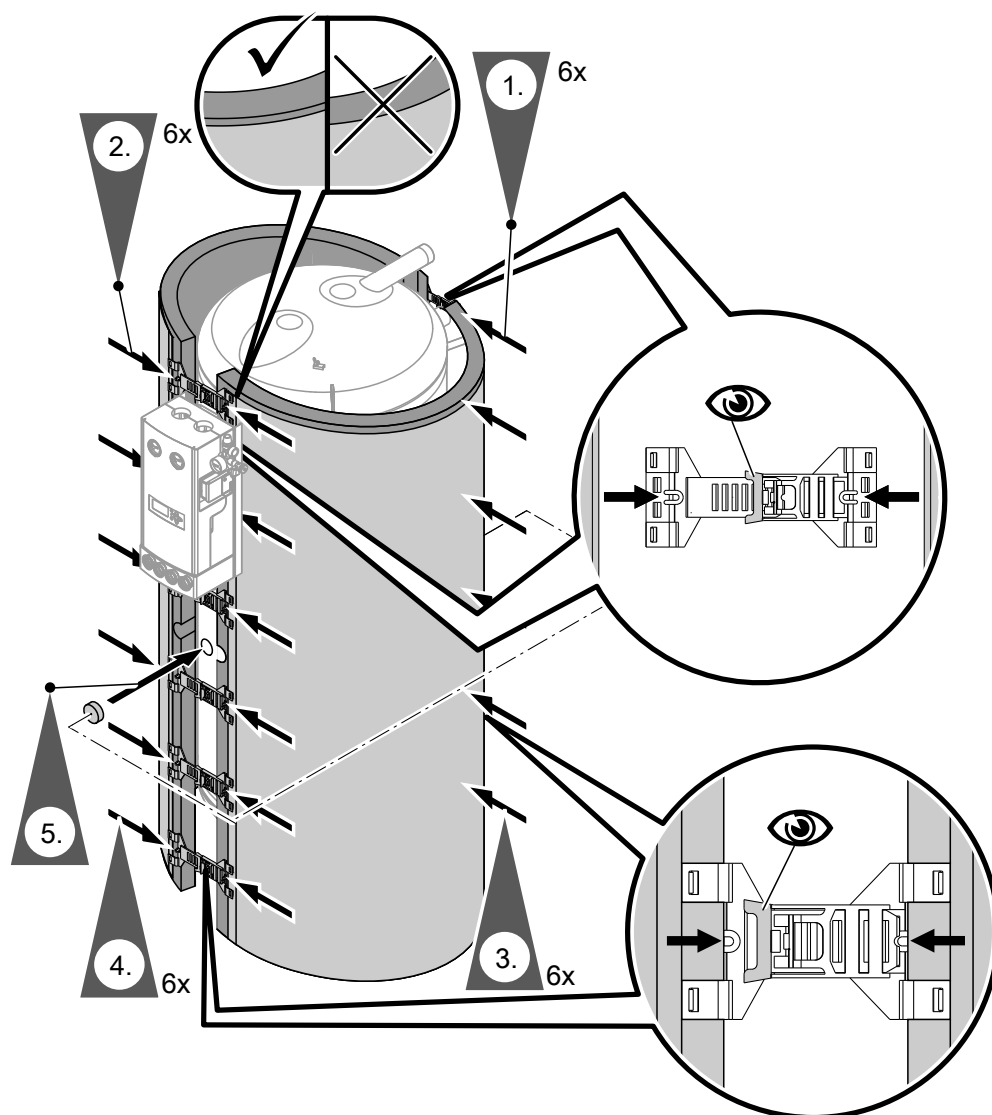


Fig.18

1. At the back of the cylinder: Attach 6 clip fastenings to the edges of the right and left sections of the insulation jacket and lay the thermal insulation jacket 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.

Note

Fit the clip fastener that is intended to sit behind the Solar-Divicon above the Solar-Divicon and then slide it downwards.

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.

Fitting the cover strips

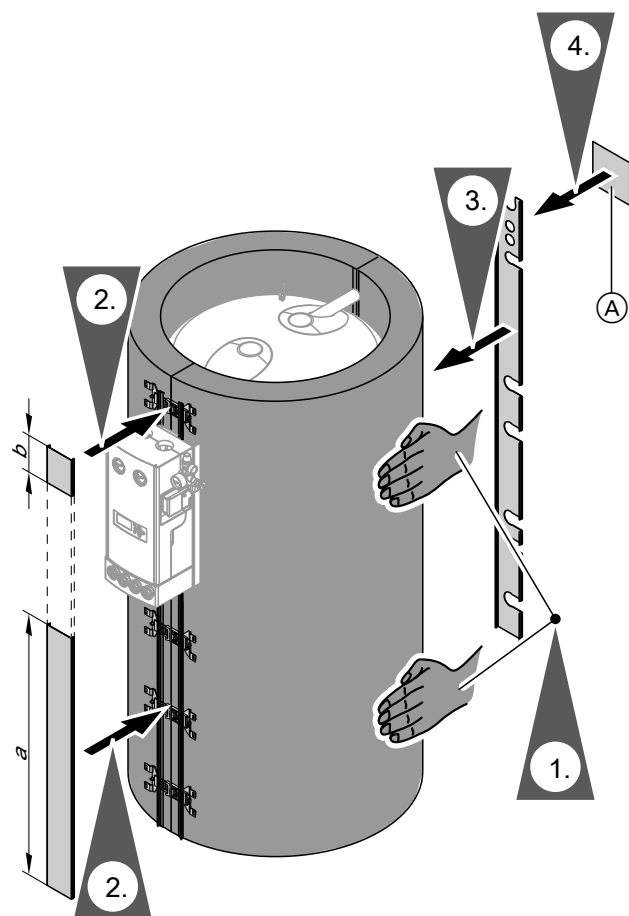


Fig. 19

(A) Type plate

Fit the thermal insulation jacket evenly around the cylinder body by patting it.
Cut the front cover strip to size, as indicated by **dim. a** and **dim. b**.

Cylinder capacity	Dim. a	Dim. b
750 l	1100 mm	140 mm
950 l	1275 mm	265 mm

Fitting the cover

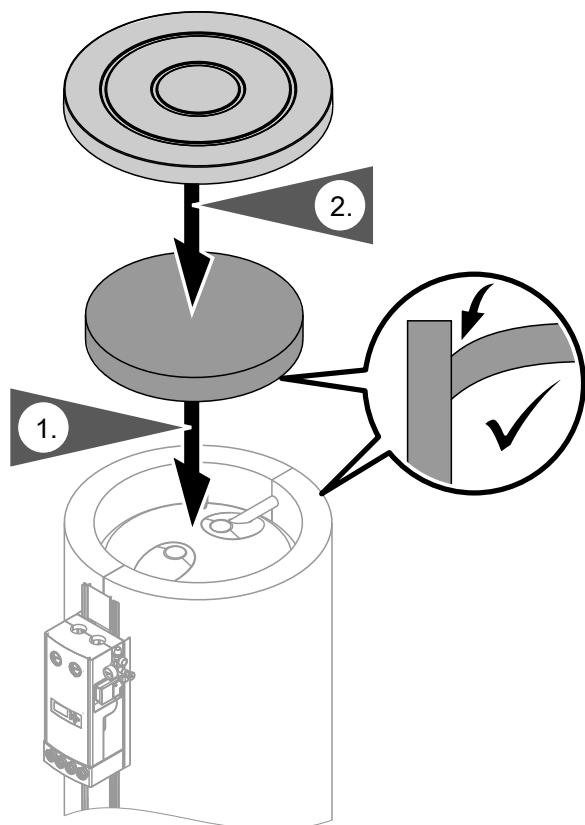


Fig.20

Fitting the cylinder temperature sensor

- The cylinder temperature sensor is supplied in the control unit pack.
- Fit the sensor to the **outside** of the sensor retainer contact spring (not in the groove). The sensor must sit flush with the front of the spring.
- **Never** wrap insulating tape around the sensor.
- Insert the sensor retainer with sensor into the sensor well as far as it will go.

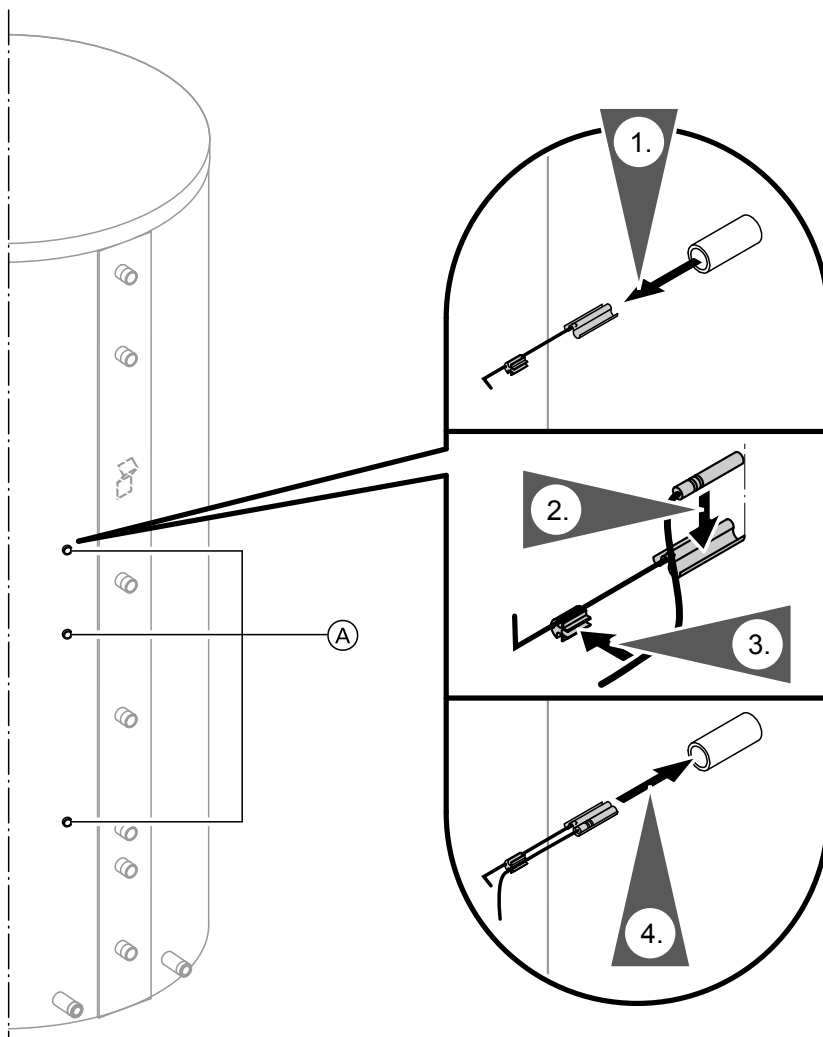


Fig.21

Ⓐ Sensor wells for cylinder temperature sensor

Installing the DHW circulation (accessories)

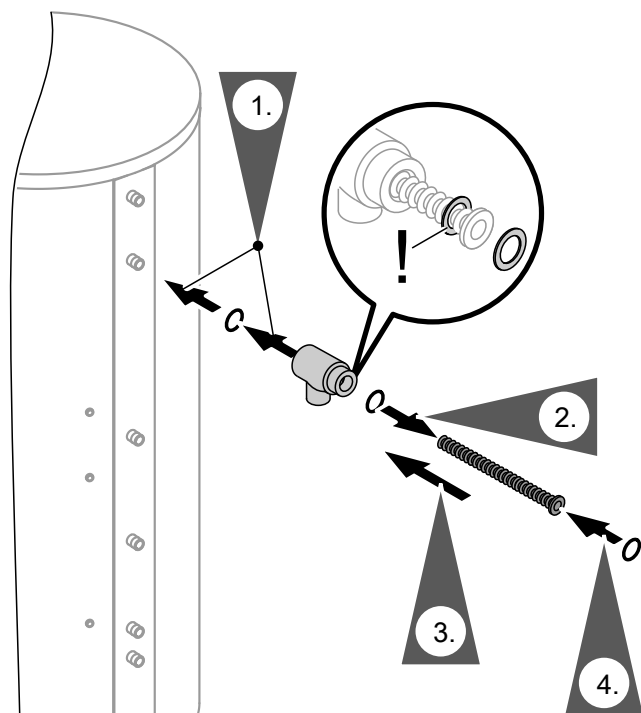


Fig.22

1. Connect tee with flat gasket to the DHW connection.
2. Slide gasket onto corrugated hose.
3. Push corrugated hose through the tee and fully insert it into the DHW connection.

Note

Rotational movements make it easier to insert the corrugated hose.

4. Use the second flat gasket supplied when making the on-site connection.

Connecting the DHW side

Note

Initially fill the cylinder from the DHW side, then from the heating water side. If the DHW side of the cylinder cannot be filled yet, but you want to commission the boiler, you can operate the cylinder with a pressure of 2.5 bar on the heating water side.

- For connecting the DHW side, observe DIN 1988/ DIN EN 806 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, check valve and time switch.
- Connect the DHW circulation pump to the control unit or to the separate time switch.

Permissible temperature:	95 °C
Permissible operating pressure:	10 bar
Test pressure:	16 bar

Connecting the DHW side (cont.)

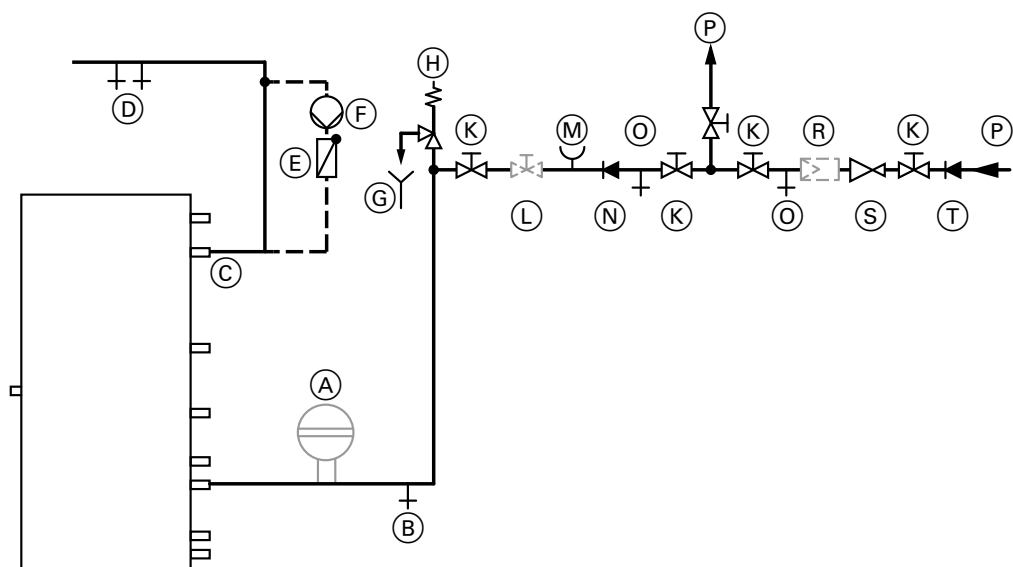


Fig.23

- (A) Expansion vessel
- (B) Drain
- (C) DHW circulation pipe
- (D) DHW
- (E) Spring-loaded check valve
- (F) DHW circulation pump
- (G) Visible discharge pipe outlet point
- (H) Safety valve
- (K) Shut-off valve
- (L) Flow regulating valve
- (M) Pressure gauge connection
- (N) Non-return valve
- (O) Drain
- (P) Cold water
- (R) Drinking water filter
- (S) Pressure reducer
- (T) Non-return valve/pipe separator

Safety valve

The system must be equipped with a type-tested diaphragm safety valve for protection against overpressure.

Permissible operating pressure: 10 bar.

The connection diameter of the safety valve must be $R\frac{3}{4}$ (DN 20).

If the heat input of the DHW cylinder exceeds the maximum heat input for its respective capacity, select a suitably sized safety valve for the heat input (see DIN 4753-1, issue 3/88, section 6.3.1).

Install the safety valve in the cold water pipe. Ensure that it cannot be shut off from the cylinder. There must be no restrictions in the pipework between the safety valve and the cylinder.

Never seal off the safety valve discharge pipe. Ensure that any expelled water is safely and visibly drained into a drainage system. Affix a sign close to the 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.

Connections on the heating water side

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

Permissible temperatures

On the solar side:	140 °C
On the heating water side:	110 °C

Permissible operating pressure

On the solar side:	10 bar
On the heating water side:	3 bar

Connections on the heating water side (cont.)

Test pressure

On the solar side:	16 bar
On the heating water side:	4.8 bar

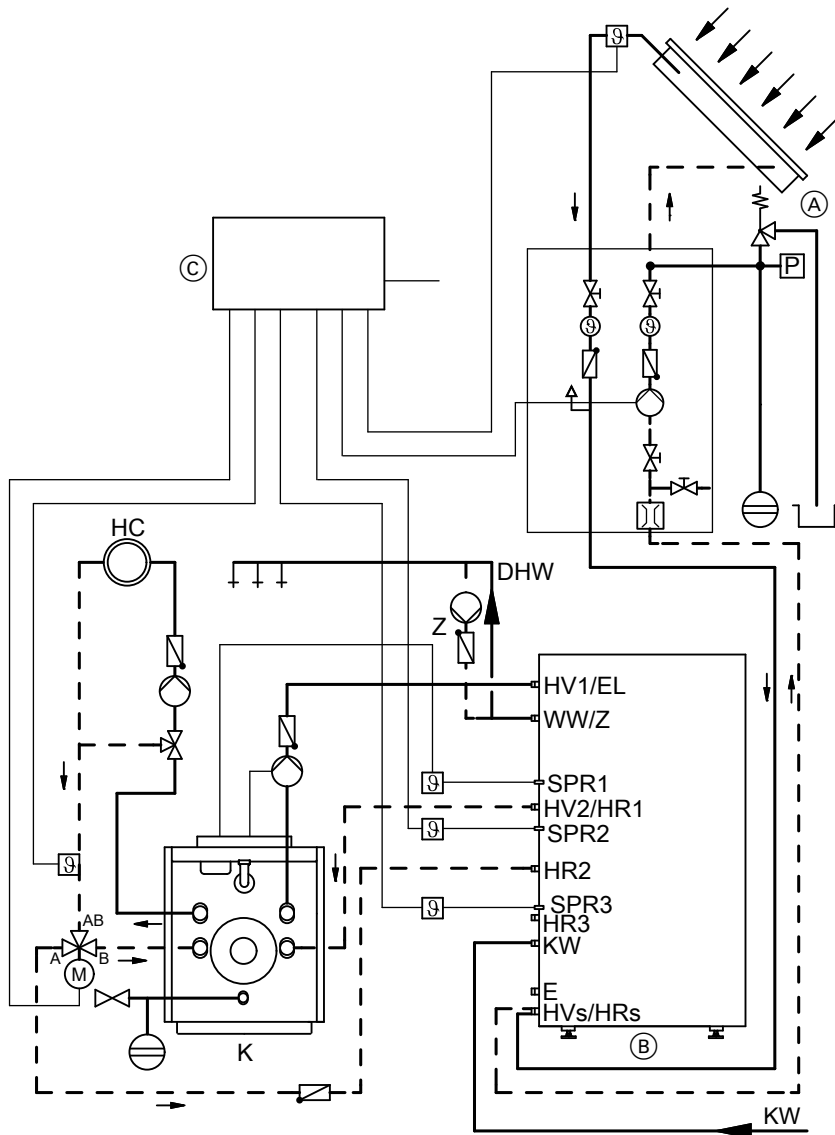


Fig.24

(A)	Solar collector	HR2	Heating water return 2 (central heating backup)
(B)	Heating water buffer cylinder with DHW heating	SPR3	Sensor well for cylinder temperature sensor 3
(C)	Solar control unit	HR3	Heating water return 3 (to the heat source)
HV1/EL	Heating water flow 1 from the heat source/air vent valve	KW	Cold water
WW/Z	DHW/DHW circulation	E	Drain
SPR1	Sensor well for cylinder temperature sensor 1	HVs	Solar heating water flow/solar air vent valve
HV2/HR1	Heating water flow 2/heating water return 1	HRs	Solar heating water return
SPR2	Sensor well for cylinder temperature sensor 2		

1. Install the heat supply control unit.

Connections on the heating water side (cont.)

2. If the system does not already have one, also install a type-tested high limit safety cut-out. For this, use a twin thermostat (temperature limiter and high limit safety cut-out).

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.

Commissioning



Service instructions

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