


Solar-Divicon and solar pump assembly


Solar-Divicon and solar pump assembly




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.

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

-  **Please note**
This symbol warns against the risk of material losses and environmental pollution.

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.

-  **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.

-  **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.

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-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.

1. Information	Disposal of packaging	5
	Symbols	5
	Product information	5
	■ Spare parts lists	6
2. Preparing for installation	Dimensions	7
	■ Solar-Divicon	7
	■ Solar pump assembly	7
	Connections and internal components	8
	■ Function of internal components	9
	Minimum clearances	10
3. Installation sequence	Notes	11
	Installing the locking ring fittings	11
	Installing the Solar-Divicon	12
	Installing the solar pump assembly	13
	High limit safety cut-out (accessories)	15
	Electrical connections	15
	Flushing and filling the solar thermal system	15
4. Maintenance	Maintenance and service work	16
	Replacing the circulation pump	16
	■ Pump curves	17
	■ LED on the HE circulation pump	18
5. Specification	19
6. Disposal	Final decommissioning and disposal	20
7. Keyword index	21

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.
	<ul style="list-style-type: none"> ▪ Component must audibly click into place. or ▪ Acoustic signal
	<ul style="list-style-type: none"> ▪ 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.

Product information

The Solar-Divicon with solar pump assembly is a pre-assembled unit for installation into the collector circuit.

Versions

	Solar control unit			Circulation pump Highly efficient, with PWM control
	Without	Vitosolic 100, type SD1	SDIO/SM1A elec- tronics module	
Solar-Divicon				
PS 10	X	X	X	X
PS 20	X	—	—	X

Product information (cont.)

	Solar control unit			Circulation pump Highly efficient, with PWM control
	Without	Vitosolic 100, type SD1	SDIO/SM1A elec- tronics module	
Solar pump assembly				
P 10	X	—	—	X
P 20	X	—	—	X

Components

- Pre-assembled and sealed valve and safety assembly
- Flow rate indicator for checking the solar thermal system during commissioning and operation: See page 10.
- Ball valve with integrated check valve in flow and return lines
- Drain & fill valve
- Air separator: See page 9.
- Shut-off valve (adjusting screw above flow rate indicator): See page 10.
- Solar control unit, subject to version

Spare parts lists

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



Dimensions

Solar-Divicon

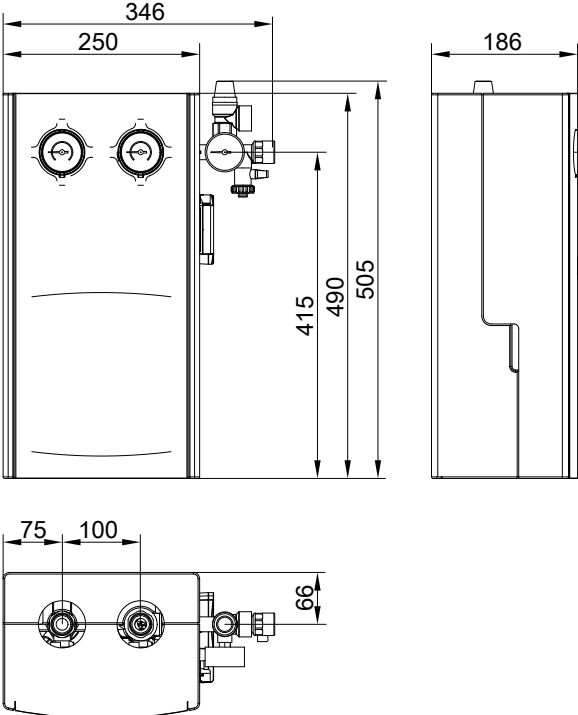


Fig. 1

Solar pump assembly

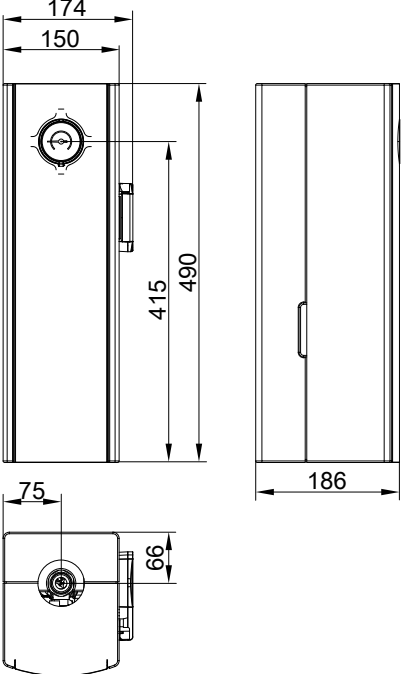


Fig. 2

Connections and internal components

Installation

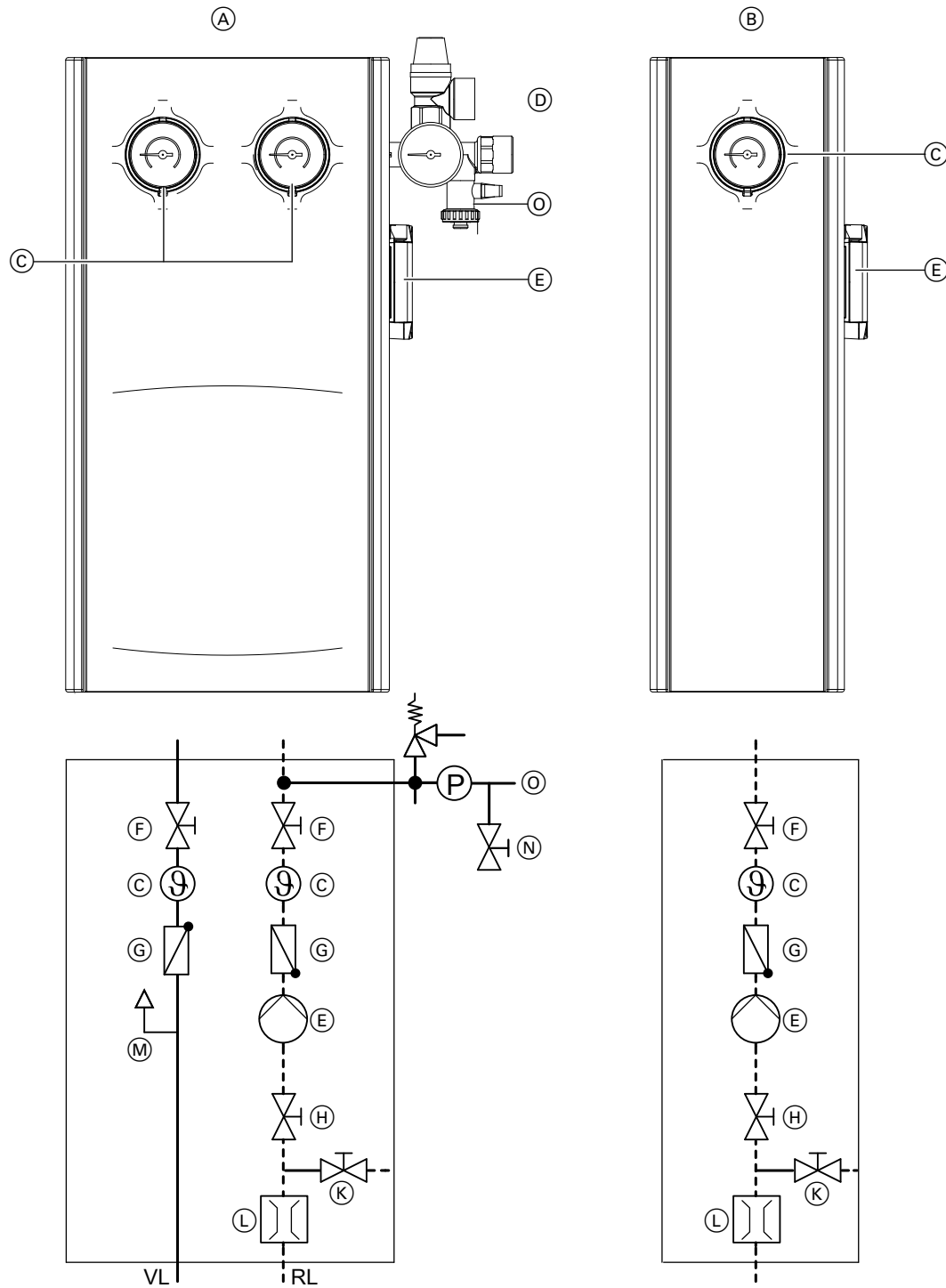


Fig. 3

- (A) Solar-Divicon
- (B) Solar pump assembly
- (C) Thermometer
- (D) Safety assembly (safety valve 6 bar, pressure gauge 10 bar)
- (E) Circulation pump
- (F) Shut-off valves
- (G) Non-return valves
- (H) Shut-off valve
- (K) Drain valve
- (L) Flow indicator
- (M) Air separator
- (N) Fill valve
- (P) Expansion vessel connection
- RL Return
- VL Flow

Connections and internal components (cont.)

Air separator

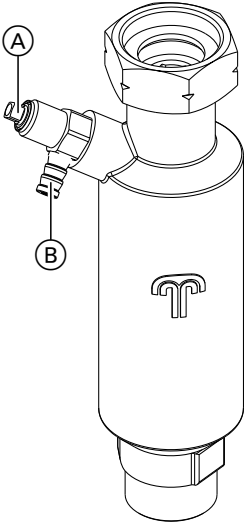


Fig. 4

- Ⓐ Air vent valve
- Ⓑ Hose connection

Function of internal components

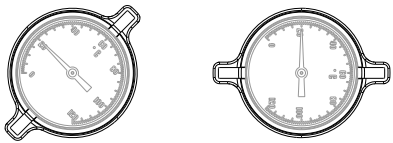
Function of the shut-off and non-return valves

Left: Flow line
Right: Return line



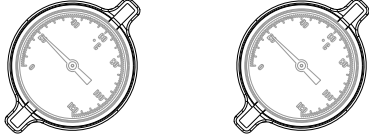
Operating position
Vertical position

45° 90°



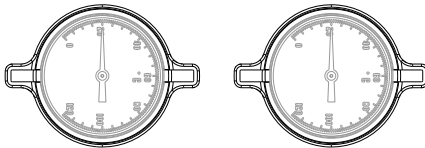
Filling/flushing
Flow ball valve rotated clockwise by 45°
Return ball valve rotated clockwise by 90°

45° 45°



Drain
Rotated clockwise by 45°

90° 90°



Closed
Rotated clockwise by 90°

Preparing for installation

Connections and internal components (cont.)

Shut-off valve and flow rate indicator

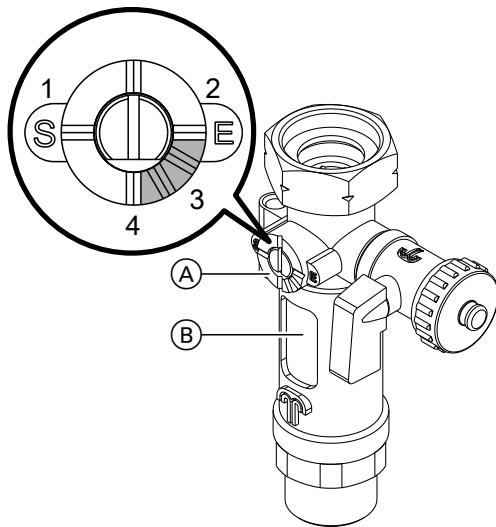


Fig. 5

- Ⓐ Shut-off valve (adjusting screw)
 - 1 Flushing
 - 2 Draining
 - 3 Flow rate regulation
 - 4 Operating position (depicted in the diagram)
- Ⓑ Flow indicator

Checking the flow rate at the top edge of the float

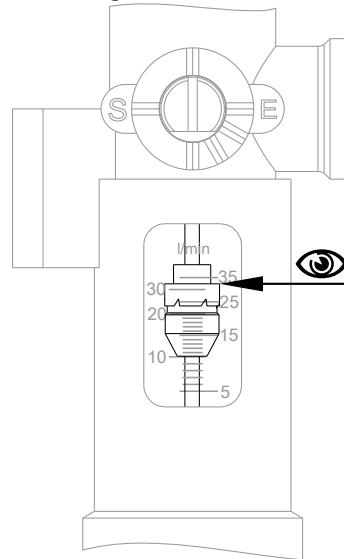


Fig. 6

Minimum clearances

Solar pump assembly to the right of the Solar-Divicon

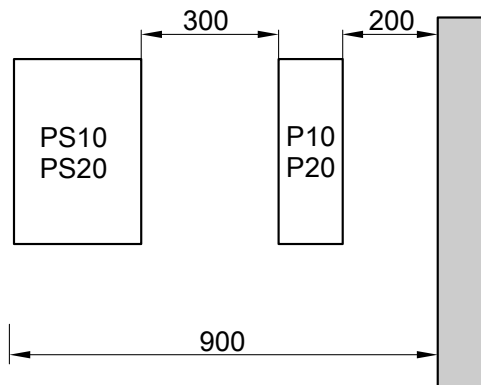


Fig. 7

Solar pump assembly to the left of the Solar-Divicon

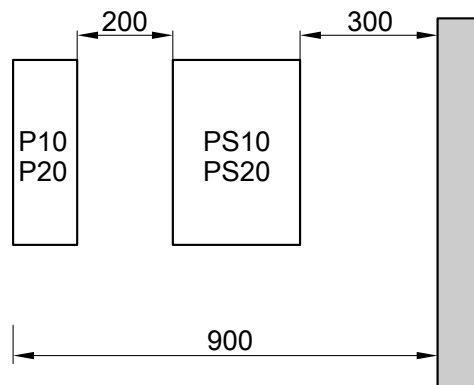


Fig. 8

Notes

- The Solar-Divicon and the solar pump assembly are unsuitable for direct contact with swimming pool water.
- Every time the system is drained, flush the system with heat transfer medium.
- A tee is available for the purpose of connecting the expansion vessel and the stagnation heat sink **in the flow**.
- Install a thermal insulation loop if the expansion vessel is installed higher than the Solar-Divicon.
- Use only bronze, brass or stainless steel fittings, copper or stainless steel pipes or Viessmann stainless steel solar circuit pipes for the installation. Use hemp only in conjunction with pressure and temperature-resistant sealants.
- Check the sealing faces for cleanliness and damage before assembly.
- The discharge pipe must exit into an open container.

Installing the locking ring fittings

Never fit annealed copper pipes onto the locking ring fittings.

1. All pipes must be cut at right angles and deburred.
2. Insert support sleeves into pipework.
3. Push the union nut and locking ring onto the pipes. Only the threads should be lubricated with oil.
4. Push the pipe into the locking ring fitting as far as it will go.
5. Initially tighten the union nut by hand. Then tighten with an open-ended spanner by a $\frac{3}{4}$ revolution.

Note

Never lubricate O-rings with oil.

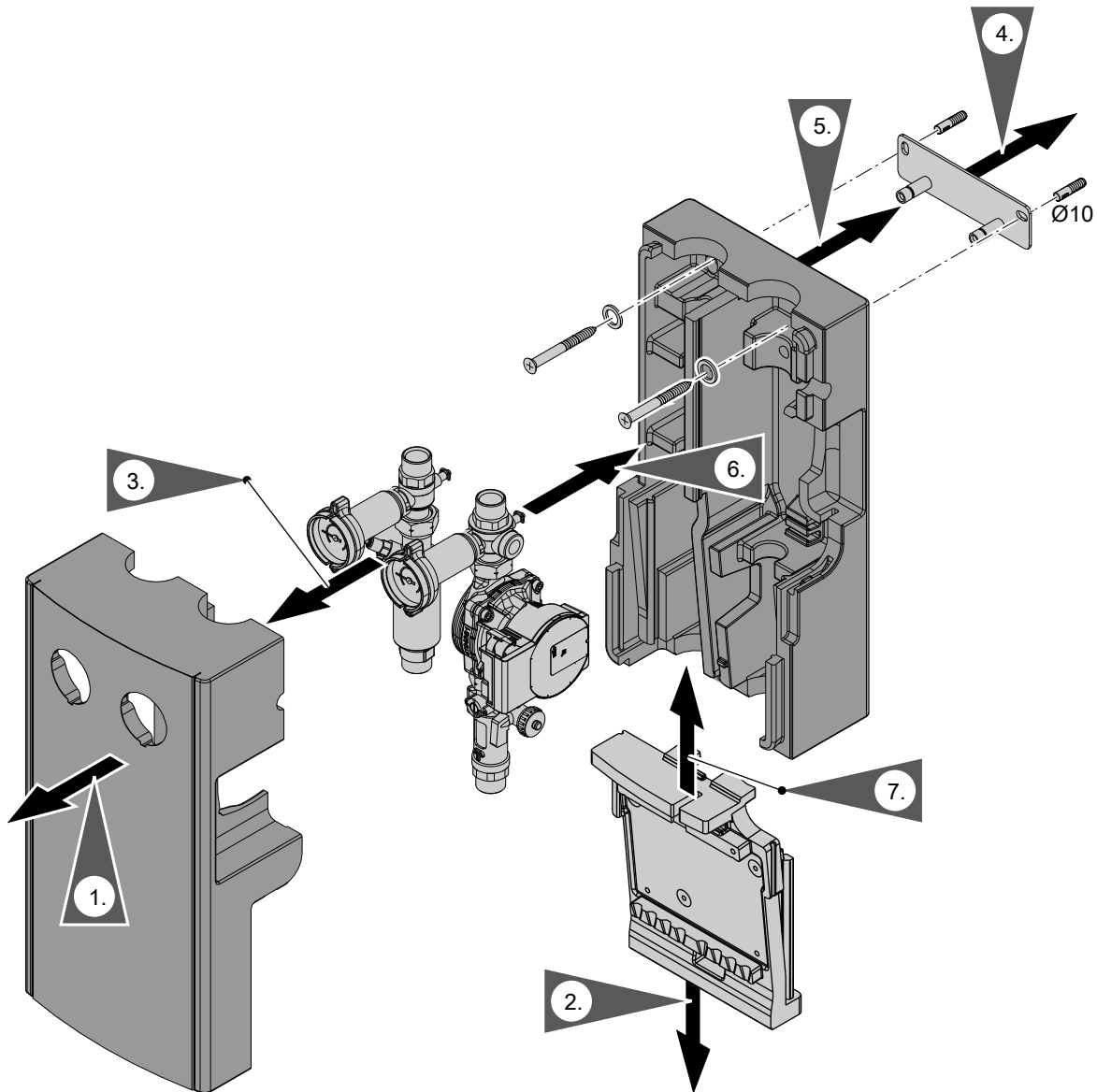


Fig. 9

1. Remove the insulation shell and cardboard transport protection.
2. Remove the cardboard transport protection.
3. In addition, with **type PS20**:
Remove the spring clip before removing the flow and return lines.

Installing the Solar-Divicon (cont.)

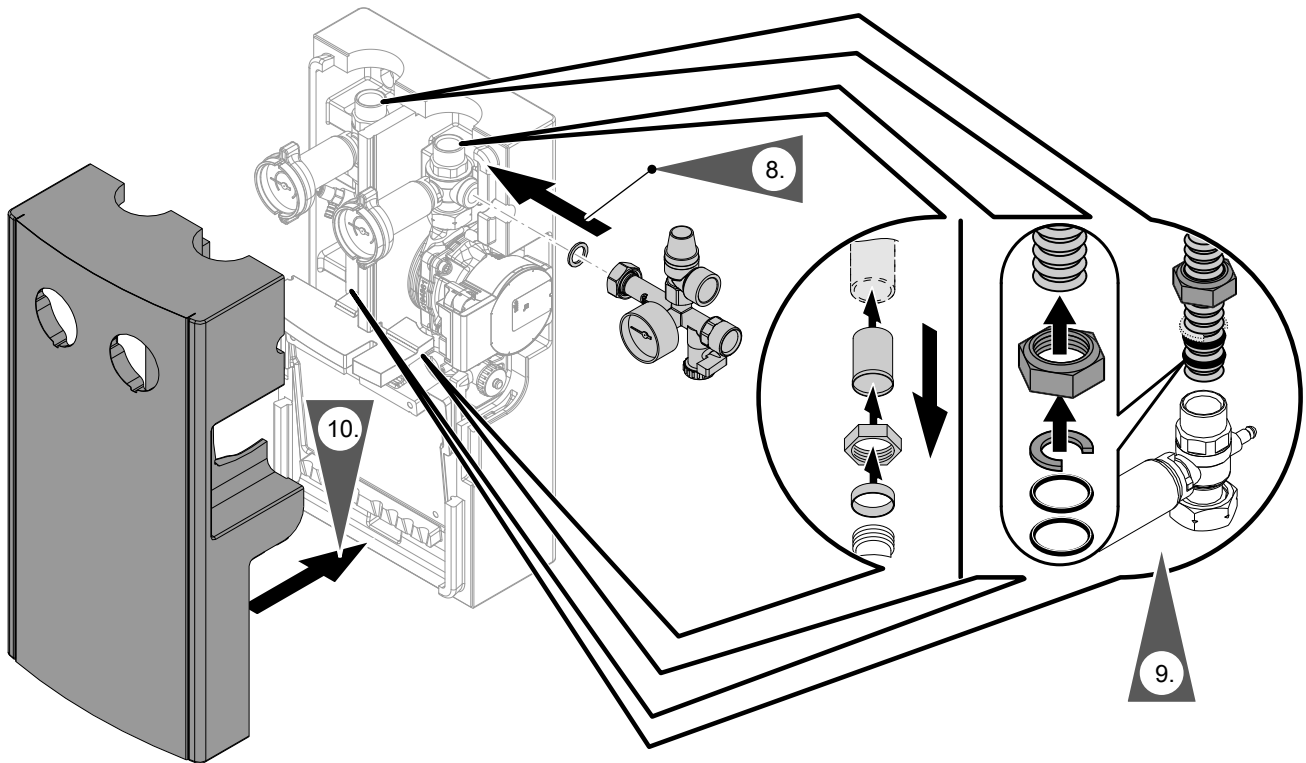


Fig. 10

9. ■ Installation with copper pipe:

Insert the support sleeve into the solar circuit pipework. Secure it to the fitting connections.

■ Installation with stainless steel solar circuit pipe:

Trim and deburr in a valley of the corrugation. Do not damage the peak of the corrugation.

Fit the union nut, half washer (in the 5th valley) and O-rings (one in each of the 1st and 3rd valleys).

Installing the solar pump assembly

Maintain minimum clearances: See page 10.

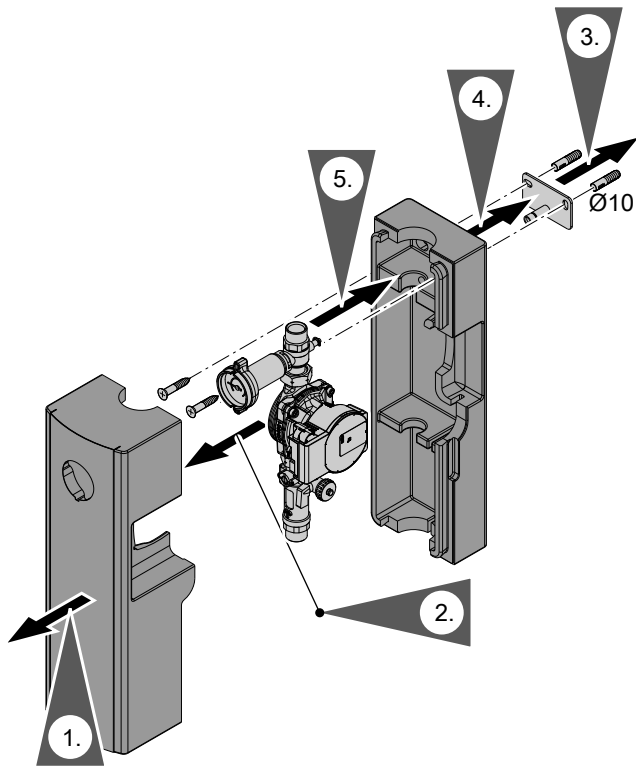


Fig. 11

2. In addition, with **type PS20**:
Remove the spring clip before removing the return line.

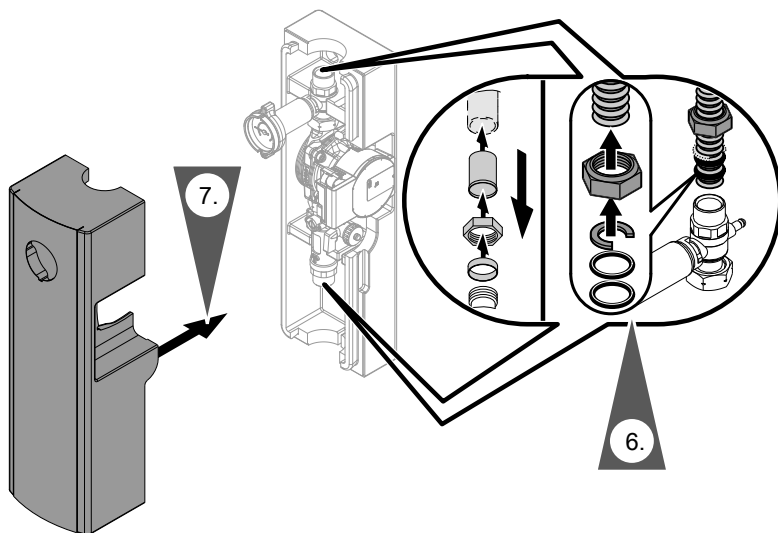


Fig. 12

6. ■ **For installation with copper pipe**
Insert the support sleeve into the solar circuit pipework. Secure it to the fitting connections.
- **For installation with stainless steel solar circuit pipe**
Trim and deburr in a valley of the corrugation. Do not damage the peak of the corrugation. Fit the union nut, half washer (in the 5th valley) and O-rings (one in each of the 1st and 3rd valleys).

High limit safety cut-out (accessories)

Systems with DHW heating:

A high limit safety cut-out (accessories) must be installed on the DHW side. The high limit safety cut-out must be set to 95 °C.



High limit safety cut-out installation instructions

Electrical connections

Solar-Divicon:

■ **Version with solar control unit:**

The circulation pump is connected to the solar control unit at the factory.

■ **Version without solar control unit:**

Route the connecting cable for the circulation pump downwards through the cable trunking. Connect the cable to the heat pump control unit.



Other electrical connections:

Solar control unit installation and service instructions

Flushing and filling the solar thermal system



Solar collector service instructions

Maintenance and service work

Information on the Solar-Divicon, type PS10 with solar control unit

For maintenance and service work, the solar control unit can be hooked into the side of the circulation pump.

Replacing the circulation pump

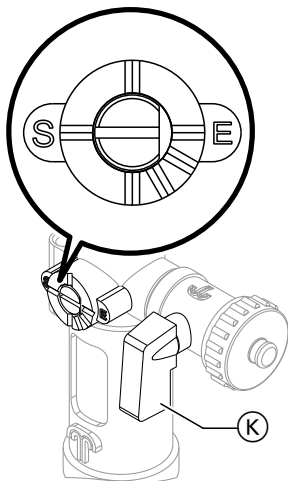


Fig. 13

1. Close shut-off valve (F) in the return line (see Fig. 3 and page 8).
2. Close shut-off valve (H) in the return line (see Fig. 8).
Use a screwdriver to turn the slot on the adjusting screw above the flow rate indicator to position "E".
3. Open drain valve (K). Drain off the heat transfer medium.
4. Replace the circulation pump.

Replacing the circulation pump (cont.)

Pump curves

HE circulation pump with PWM control, types PS 10 and P 10

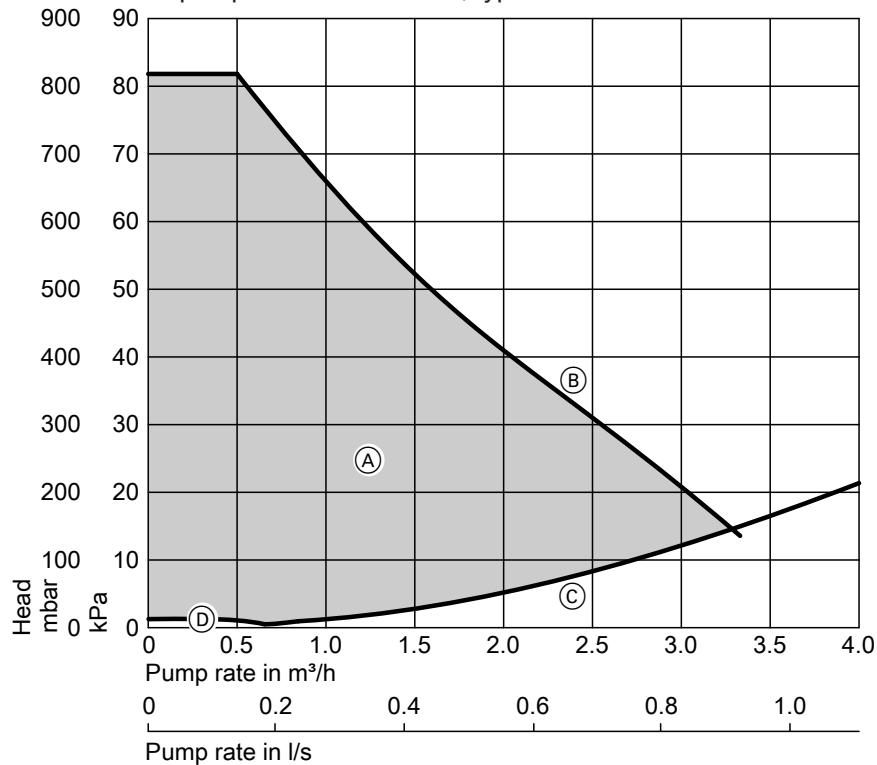


Fig. 14

- (A) Residual head
- (B) Maximum output
- (C) Pressure drop curve
- (D) Minimum power

HE circulation pump with PWM control, types PS 20 and P 20

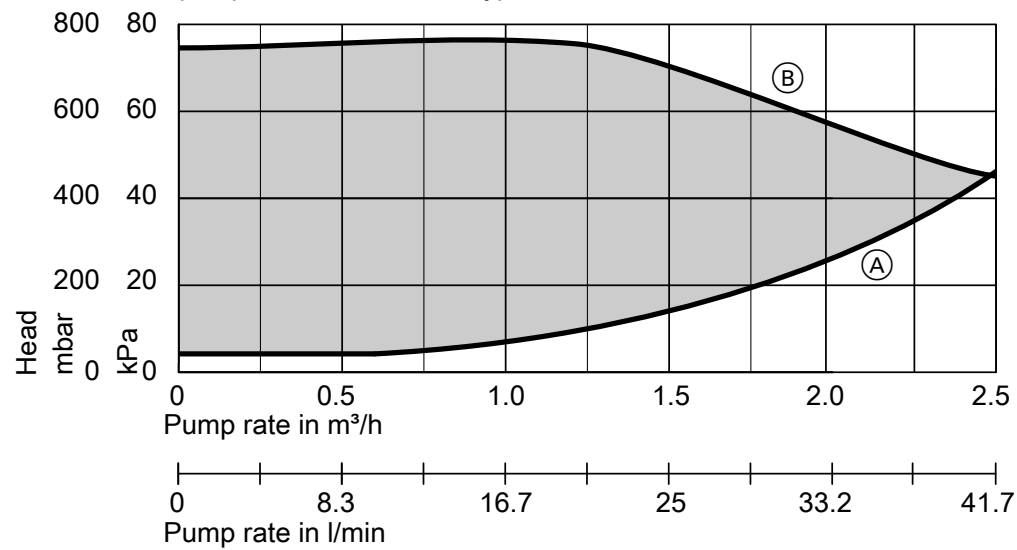


Fig. 15

- (A) Pressure drop curve
- (B) Max. delivery head

Replacing the circulation pump (cont.)

LED on the HE circulation pump

LED	Meaning	Cause	Remedy
Illuminates green	Circulation pump in operation	—	—
Flashes green in short intervals.	Circulation pump in standby	—	—
Fault indications			
<ul style="list-style-type: none"> ▪ Flashes red and green alternately. 	Circulation pump is ready for operation but not running. Note <i>The circulation pump starts automatically after the cause of the fault has been removed.</i>	<ul style="list-style-type: none"> ▪ Undervoltage (< 160 V~) ▪ Overvoltage (> 253 V~) 	Check the power supply: 195 V~ < U < 253 V~
		Motor temperature too high	Check ambient and heat transfer medium temperatures.
<ul style="list-style-type: none"> ▪ Flashes red 	Circulation pump switched off (blocked)	Circulation pump does not start automatically.	Replace the circulation pump: See page 16.
<ul style="list-style-type: none"> ▪ LED off 	—	No operating voltage	Check connecting cable.
		LED faulty	Check whether the circulation pump is running.
		PCB faulty	Replace the circulation pump: See page 16.

Specification

Type		PS 10, P 10	PS 20, P 20
Wilo circulation pump			
High efficiency circulation pump		PARA ST 15-130/7	PARA 15/7.5
Energy efficiency index EEI		≤ 0.2	≤ 0.21
Rated voltage	V~	230	230
Power consumption			
▪ Min.	W	1.8	3
▪ Max.	W	50.0	73
Flow indicator	l/min	1 to 13	5 to 35
Safety valve (solar)			
▪ At the factory	bar/MPa	6/0.6	6/0.6
▪ Installation of 8 bar safety valve (accessory)	bar/MPa	8/0.8	8/0.8
Max. operating temperature in return line	°C	120	120
Max. operating temperature in flow line	°C	150	150
Max. operating pressure	bar/MPa	10/1	10/1
Connections (locking ring fitting/double O-ring)			
▪ Solar circuit	mm	22	22
▪ Expansion vessel	mm	22	22

Disposal

Final decommissioning and disposal

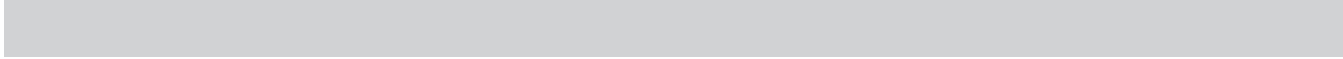
Viessmann products can be recycled. Components and substances from the system are not part of ordinary domestic waste.

For decommissioning, isolate the system from the power supply and allow components to cool down where appropriate.

All components must be disposed of correctly.

Keyword index

A		M	
Air separator.....	9	Minimum clearances.....	10
C		N	
Circulation pump replacement.....	16	Non-return valve.....	9
Components.....	6, 8	P	
Connections.....	8	Pump curves.....	17
D		S	
Disposal.....	20	Shut-off valve.....	9
E		Solar-Divicon	
Electrical connections.....	15	– Dimensions.....	7
Explanation symbols.....	5	– Installation.....	12
F		Solar pump assembly	
Flow rate check.....	10	– Dimensions.....	7
Flow rate indicator.....	10	– Installation.....	13
L		V	
LED.....	18	Versions.....	5





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