



## **Logamax plus GB162-65/80/100**

For heating engineers

Please read thoroughly  
before starting installation

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# 1 Regulations



## NOTE

- The country-specific standards and guidelines and the technical documents pertaining to the boiler must be observed for the installation and operation of the heating system!

### 1.1 About these instructions

These installation instructions contain important information about the safe and proper installation of the Logamax plus GB162-65/80/100 pump group.

These installation instructions are for competent heating engineers (e.g. Gas Safe registered) who, due to their professional training and experience, are experts at dealing with heating systems and gas installations.

### 1.2 Intended use

The pump group must only be installed on the Logamax plus GB162-65/80/100 heating boiler.

### 1.3 Regulations

Please ensure that you comply to all regulations at the time of installation.

## 2 Safety

Please observe these instructions for your own safety. You can find a detailed explanation of the format of these instructions in the Installation and Servicing Instructions of the Logamax plus GB162-65/80/100. Observe the following instructions when installing and operating the pump group:



### **DANGER OF FATAL ACCIDENT**

by unprofessional repair.

- Do not repair parts with safety functions.



### **DANGER OF FATAL ACCIDENT**

due to electric shock.

- Before opening the boiler: Switch off the power supply to the boiler by pulling the mains plug from the socket.



### **DANGER OF FATAL ACCIDENT**

from explosive fumes.

If you smell gas, there is a danger of explosion.

- No naked lights. No smoking. Do not use lighters!
- DO NOT operate any device that is likely to produce sparks. Do not operate any electrical switches, including telephones, plugs or doorbells.
- Shut off the main gas supply!
- Open doors and windows.
- Warn the residents but do not sound the doorbells!
- Contact the gas supplier from a telephone located outside the building!
- If you can hear gas leaking, evacuate the building immediately, prevent other people from entering, and notify the police and fire service immediately (from a telephone OUTSIDE the building).

### 3 Items supplied with pump group

- Check that the packaging is intact upon delivery.
- Check that all items have been supplied with the unit.



#### NOTE

- Please contact your supplier if anything is damaged or missing.

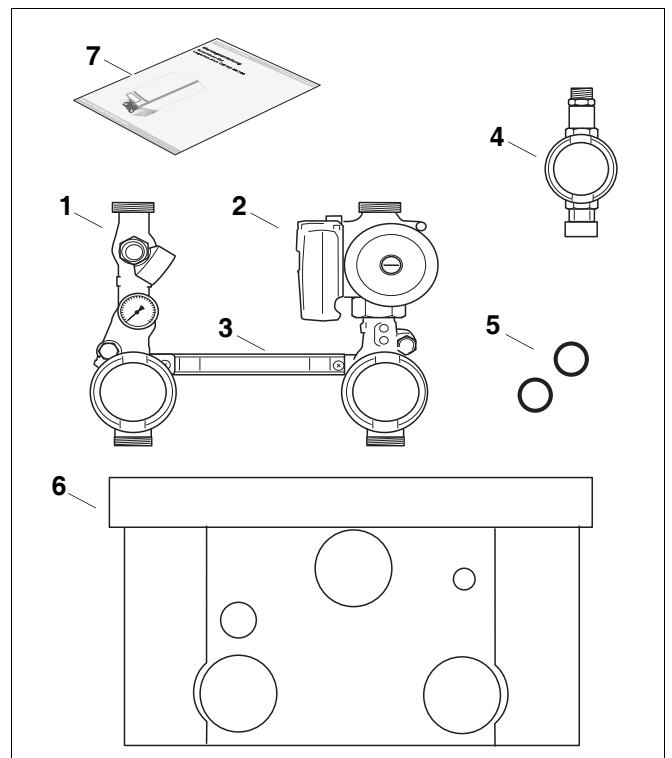


fig. 1 Items supplied with Logamax plus GB162-65/80/100 pump group

**Item 1:** Isolating valve, red (CH boiler flow) with drain cock, pressure gauge, thermometer (for pump UPER 25-80) and 4-bar safety valve

**Item 2:** Isolating valve, blue (CH boiler return) with pump, drain cock and non-return valve (removable)

**Item 3:** Connecting bracket

**Item 4:** Gas valve, yellow (GAS)

**Item 5:** Flat rubber seal 1 1/2" (2x)

**Item 6:** Insulation cover

**Item 7:** Technical documents

## 4 Dimensions

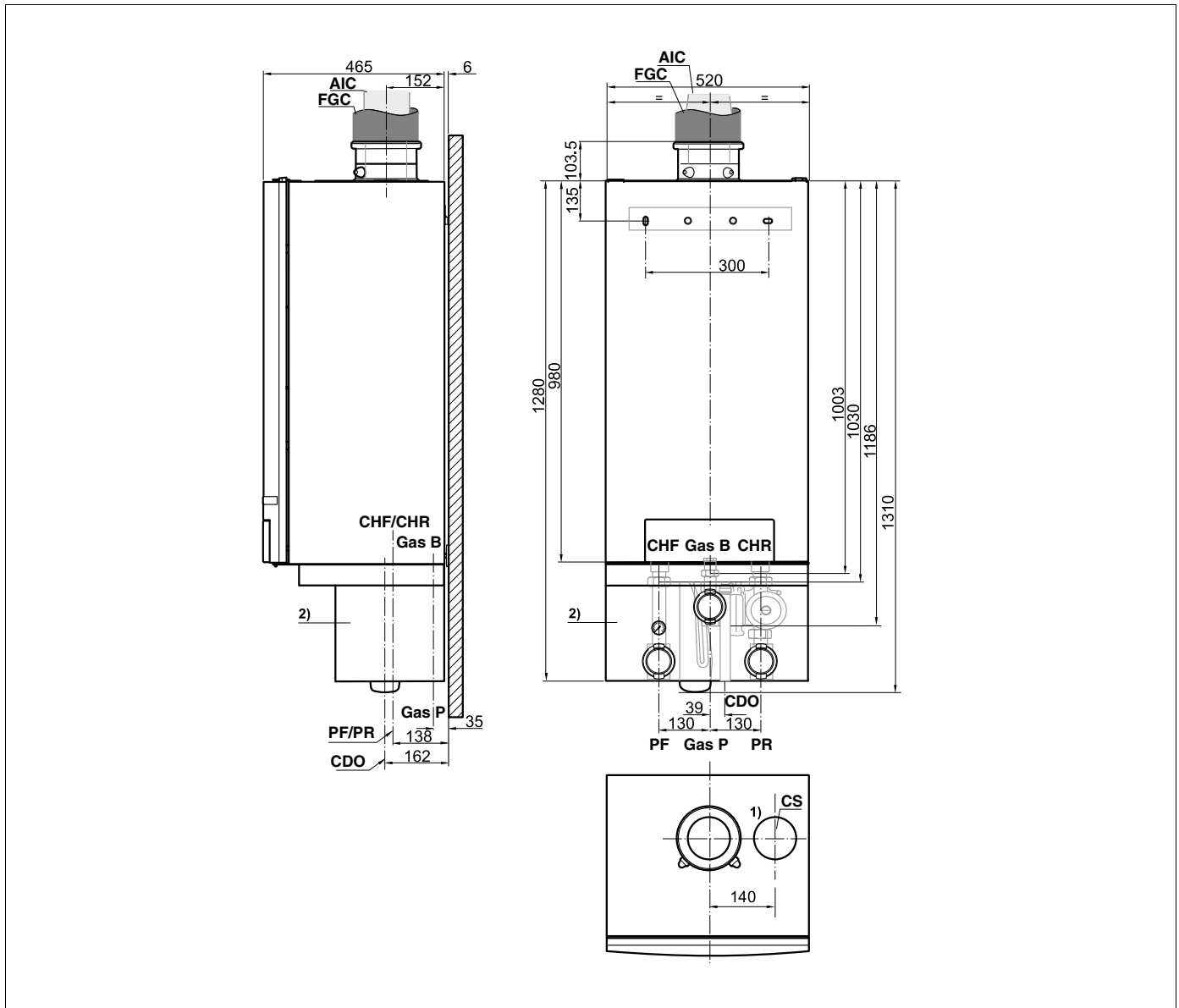


fig. 2 Dimensions and connections (dimensions in mm)

<sup>1</sup> DO NOT remove the cap CS (not used in UK)

<sup>2</sup> The pump group is accessory and can be ordered separately.

This figure shows a pump group, that isn't ment for DHW supply, but ONLY for central heating hot water supply. There is also a pump group with 3-way valve (accessory) available, which is ment for DHW supply.

CS	= Cap (DO NOT remove)
FGC/AIC	= Flue gas/air intake connection Ø 100/150
CDO	= Condensate drain outlet Ø 24 mm O/D
GAS P	= Gas connection to pump group; Rp1" female thread
GAS B	= Gas connection to boiler; Rp1" female thread
CHF	= Boiler flow; G1½" union nut with female thread
CHR	= Boiler return; G1½" union nut with female thread
PF	= Pump group flow; G1½" male thread, flat seal
PR	= Pump group return; G1½" male thread, flat seal

## 5 Installation

### General installation instructions

- Connect all pipes without forcing them into place.
- Make sure that the connections are tight and carry out a gas and water tightness test after completing the connection work (also see the boiler installation and servicing instructions).



#### DANGER OF FATAL ACCIDENT

from explosive fumes.

- Only carry out work on gas pipes and fittings if you are properly certified (e.g. Gas Safe registered).

### 5.1 Making the gas connection



#### DANGER OF FATAL ACCIDENT

due to gas escaping.

- Make sure that the factory-fitted flat rubber seal is located in the threaded connection (boiler side) (fig. 3, **see detailed picture**).

- Install the gas valve (fig. 4, **item 1**) onto the gas pipe (GAS) in the boiler.
- Connect the main gas supply to the gas isolating valve (fig. 4, **item 2**) free of strain.



#### NOTE

We advise you to integrate a gas filter in the gas line.

- Make the gas connection according to the country-specific standards and regulations.
- Carry out gas leak test on gas connection using leak detection spray



#### DANGER OF FATAL ACCIDENT

from explosive fumes.

Pipes and screw connections may leak after commissioning and maintenance activities have been carried out.

- Carry out a leakage test.
- Only use approved detection products to locate leaks.

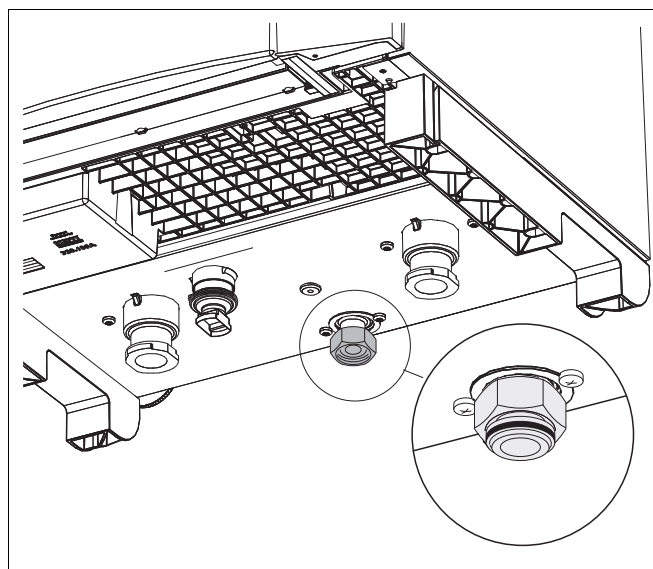


fig. 3 Rubber seal

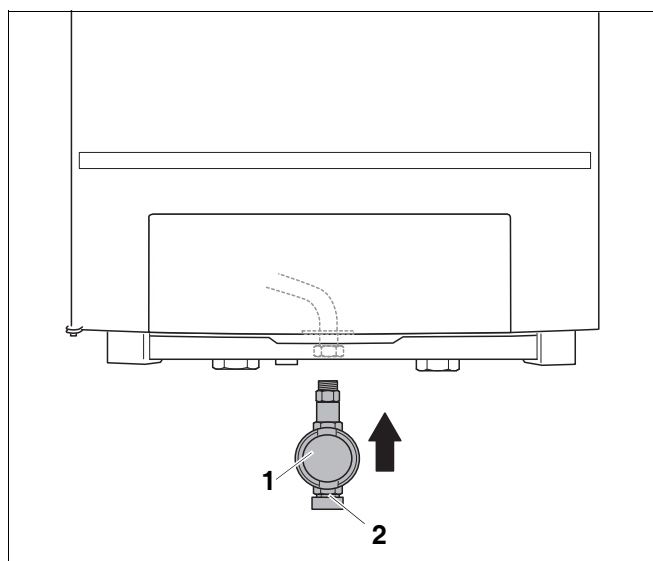


fig. 4 Making the gas connection

**Item 1:** Gas isolating valve

**Item 2:** Gas connection

## 5.2 Removing the non-return valve (if necessary)

If the system pressure is not sufficient according to table 3, page 11, you can remove the integrated non-return valve from single-boiler systems.

### Selecting the correct pump group

- Select the correct pump group using table 1.

	Logamax plus GB162-65	Logamax plus GB162-80	Logamax plus GB162-100
Multi-boiler system (cascade system)	UPER 25-80/ UPS 25-80 pump group with pump	UPER 25-80/ UPS 25-80 pump group with pump	UPER 25-80/ UPS 25-80 pump group with pump
Single-boiler system with Buderus diverter valve	UPER 25-80/ UPS 25-80 pump group with pump	UPER 25-80/ UPS 25-80 pump group with pump	UPER 25-80/ UPS 25-80 pump group with pump
Single-boiler system without diverter valve	UPER 25-80/ UPS 25-80 pump group with pump	1) UPER 25-80/ UPS 25-80 pump group with pump	2)

Table 1 Selecting the correct pump group

- 1) Only remove the non-return valve from the pump group (beneath the pump) when installing single-boiler systems
- 2) Do not use a pump group or switch, but select a separate pump using the installation and servicing instructions with the boiler.



#### DAMAGE TO THE UNIT

in cascade systems or in single-boiler systems with a switch due to the heating medium flowing back.

- Only remove the non-return valve from the pump group of a single-boiler system if the residual head (see table 3, page 11) is not sufficient.

	Logamax plus GB162-65	Logamax plus GB162-80	Logamax plus GB162-100
Multi-boiler system (cascade system)	not allowed	not allowed	not allowed
Single-boiler system with Buderus diverter valve	not allowed	not allowed	not allowed
Single-boiler system without diverter valve	Check the residual head	Check the residual head	not effective, use pump

Table 2 Removing the non-return valve



### Removing the non-return valve

Remove the non-return valve before installing the heating flow and return circuits otherwise it cannot be fully removed anymore!

- Remove the pump (fig. 5, **item 1**).
- Remove the flat rubber seal (fig. 5, **item 2**).

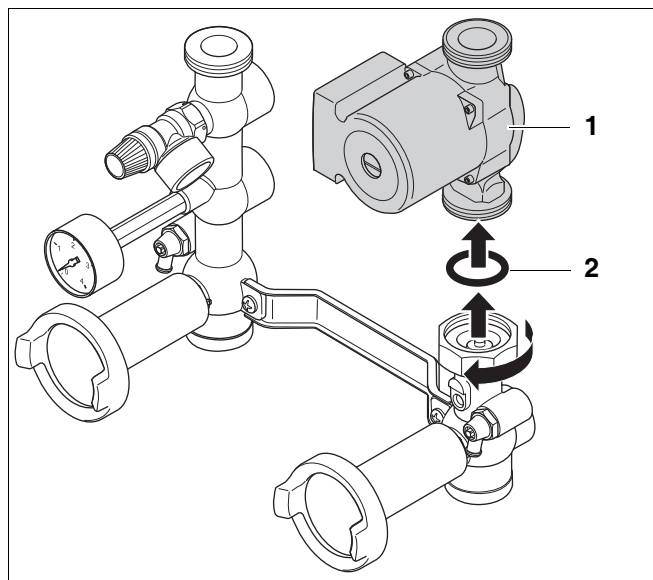


fig. 5 Removing the pump

- Remove the non-return valve (fig. 6, **item 1**).  
This will damage the non-return valve beyond repair.

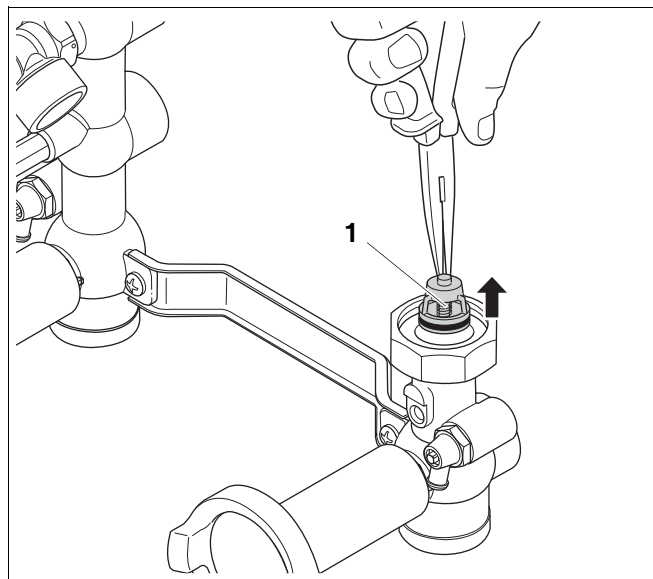


fig. 6 Removing the non-return valve



#### DAMAGE TO THE UNIT

due to reduced flow or pipes becoming clogged up.

- Make sure that no fragments of the non-return valve stay behind in the pipe.

- Rotate and shake the pump group.

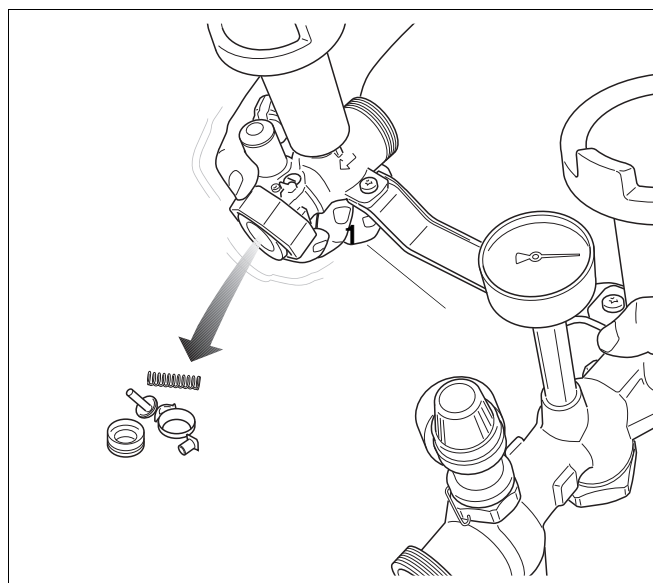


fig. 7 Removing the non-return valve

- Then fit back the flat rubber seal (fig. 8, **item 2**) and the pump (fig. 8, **item 1**).

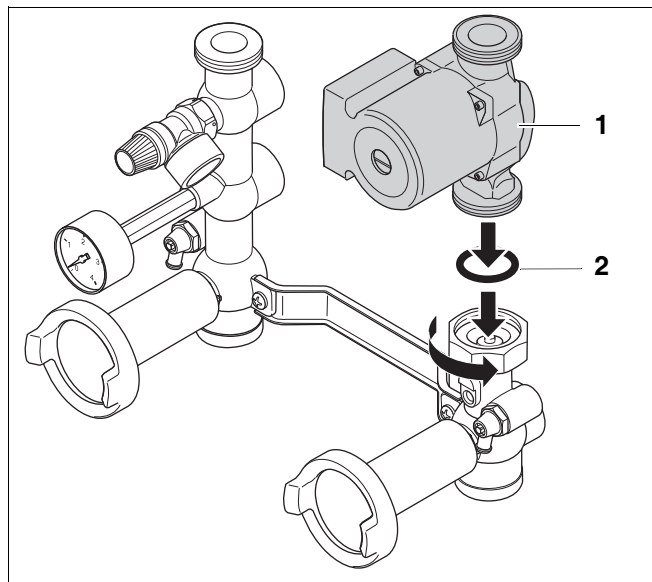


fig. 8 Fitting the pump

### 5.3 Installing the heating flow and return



**NOTE**

To prevent pollution in the heating system we advise you to integrate a dirt filter in the return circuit. When connecting the heating boiler to an existing heating system, this dirt filter must be installed.

- Install the blue and red isolating valve (fig. 9, **item 3** and **item 4**) with the flat rubber seals in place on the CHR and CHF (boiler return and flow) connections.
- Connect the flow pipe to the red isolating valve (fig. 9, **item 5**) free of strain. If necessary, use the screw fitting (accessory, fig. 9, **item 7**).
- Connect the return pipe to the blue isolating valve (fig. 9, **item 6**) free of strain. If necessary, use the screw fitting (accessory, fig. 9, **item 7**).
- Calculate the flow and return pipe diameters taking into consideration the residual head downstream of the pump group with the minimum required volume flow (see table 3 and fig. 24 on page 19).  
The minimum diameters of the flow and return pipes are 1½" and Ø 35 mm.

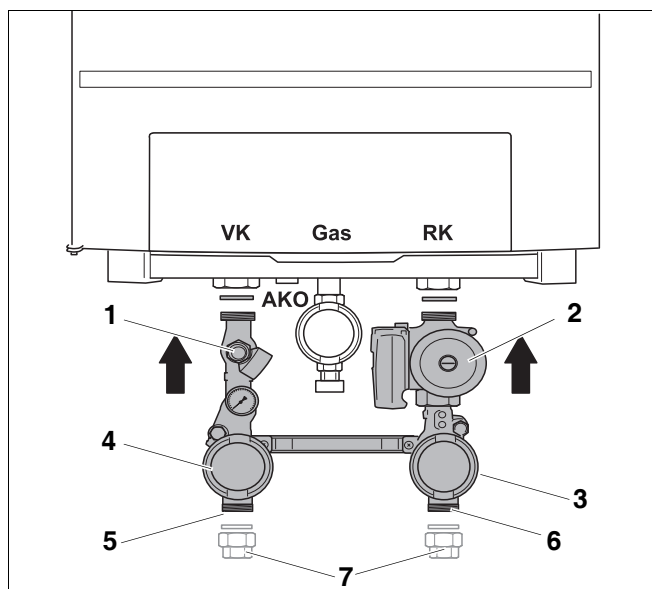


fig. 9 Installing the isolating valves

**Item 1:** Pressure relief valve

**Item 2:** Pump

**Item 3:** Isolating valve, blue

**Item 4:** Isolating valve, red

**Item 5:** Flow connection

**Item 6:** Return connection

**Item 7:** Screw fitting 1" female thread (accessory)

	Residual head [mbar]	with minimum required volume flow [l/h]	with $\Delta T$ [K]
Logamax plus GB162-65 with pump group UPS 25-80 with non-return valve	1)	3000	20
Logamax plus GB162-65 with pump group UPS 25-80 without non-return valve	375	3000	20
Logamax plus GB162-65 with pump group UPER 25-80 with non-return valve	1)	3000	20
Logamax plus GB162-65 with pump group UPER 25-80 without non-return valve	375	3000	20
Logamax plus GB162-80 with pump group UPS 25-80 with non-return valve	153	3600	20
Logamax plus GB162-80 with pump group UPS 25-80 without non-return valve	259	3600	20
Logamax plus GB162-80 with pump group UPER 25-80 with non-return valve	1)	3600	20
Logamax plus GB162-80 with pump group UPER 25-80 without non-return valve	219	3600	20
Logamax plus GB162-100 with pump group UPS 25-80 with non-return valve	1)	4300	20
Logamax plus GB162-100 with pump group UPS 25-80 without non-return valve	1)	4300	20
Logamax plus GB162-100 with pump group UPER 25-80 with non-return valve	1)	4300	20
Logamax plus GB162-100 with pump group UPER 25-80 without non-return valve	1)	4300	20

Table 3 Residual head downstream of pump group with a single-boiler system

1) Switch required

- Install a shut-off valve for filter cleaning immediately upstream and downstream of the dirt filter.



#### NOTE

When using plastic pipework in the heating system, e.g. for underfloor heating, it has to be oxygen diffusion tight. If this pipework does not comply with the relevant standards, a heat exchanger must be integrated to separate the systems.

### Installing the differential pressure controller

In situations where there is no low loss header, installing a by-pass valve with a differential pressure controller would be required.

If a low loss header is present, it may be required - depending on the situation - to install a differential pressure controller to the secondary side of the open manifold. This serves to protect the secondary pump against overheating as a result of insufficient flow.

### Installing the drain cock

Since the isolating valve for the return circuit already has an integrated filling and drain valve, fitting a drain valve is not necessary.

### Installing the non-return valve

Since the isolating valve for the return circuit (blue) already has an integrated non-return valve, fitting a non-return valve in the return circuit is not necessary.

## 5.4 Rotating the pressure relief valve



### NOTE

To prevent the pressure in the heating system from becoming excessively high, a pressure relief valve is required.

A 4-bar pressure relief valve forms part of the pump group (fig. 9, **item 1**).

- Remove the retaining pin from the pressure relief valve body (fig. 10, **step 1**).
- Rotate the valve body (fig. 10, **step 2**).

- Re-fit the retaining pin through the valve body (fig. 11).

- Fit the compression elbow (fig. 12, **item 1**) (supplied packed with the boiler) using thread sealant.
- Fit a 22 mm metal discharge pipe (fig. 12, **item 2**).

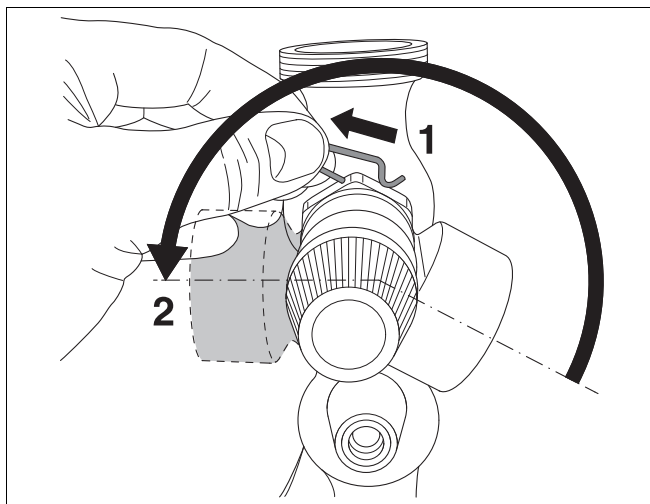


fig. 10 Removing the retaining pin

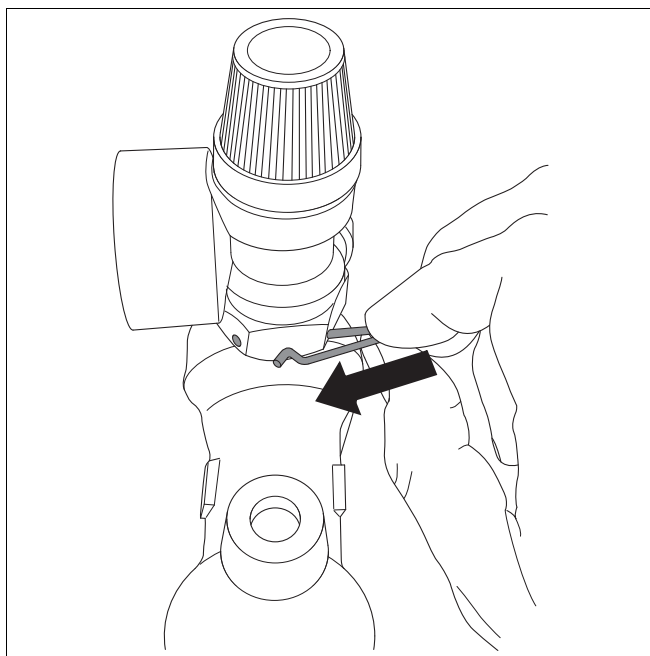


fig. 11 Re-fitting the retaining pin

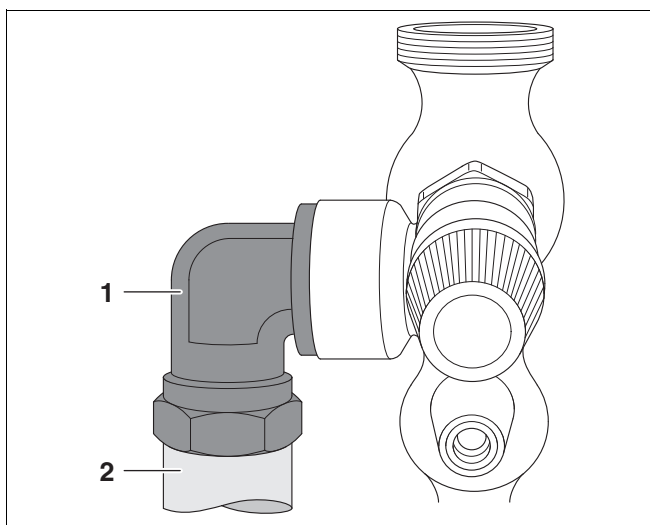


fig. 12 Fitting the compression elbow with discharge pipe

## 5.5 Installing the syphon



### DANGER OF FATAL ACCIDENT

due to poisoning.

- If the syphon is not filled with clean water, flue gas can escape and put people's lives at risk.

- Fill the syphon (supplied with the boiler) with clean water (fig. 13).

- Connect the syphon (fig. 14, **item 1**) to the condensate drain outlet (CDO).



### NOTE

The trap is fitted with a bayonet connection. After pushing [1.] the trap upwards into place, you have to turn it a 1/4 turn anticlockwise [2.] until it locks into position.

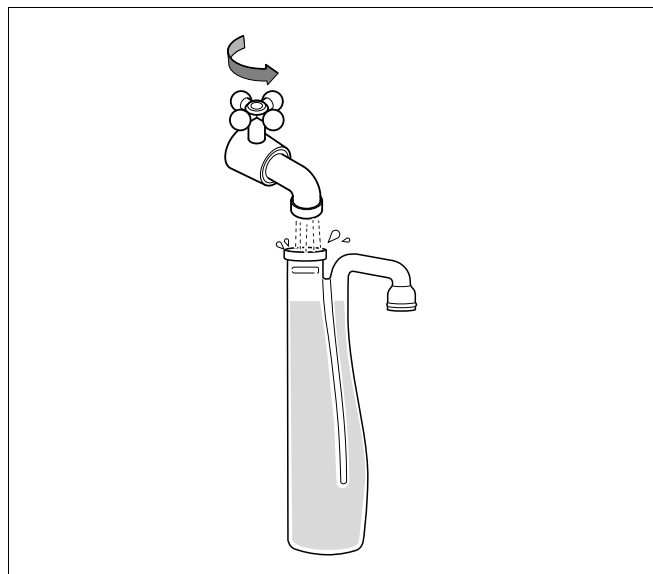


fig. 13 Filling the syphon with clean water

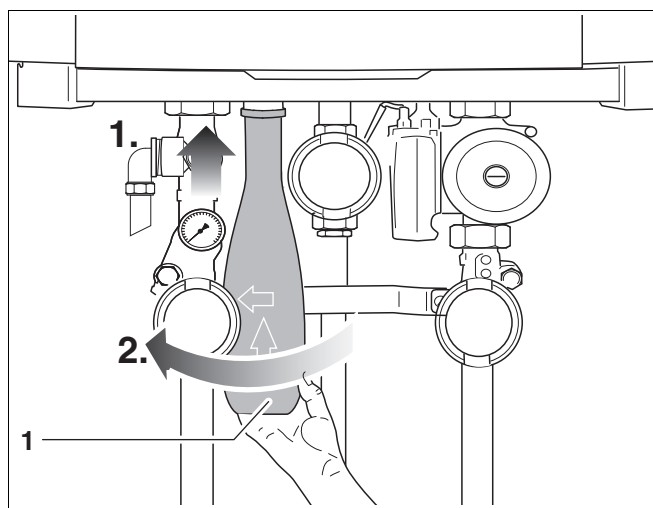


fig. 14 Installing the syphon

**Item 1:** Syphon

- Connect the syphon hose (fig. 15, **item 3**) and the rubber sleeve (fig. 15, **item 2**) to the syphon (fig. 15, **item 1**).

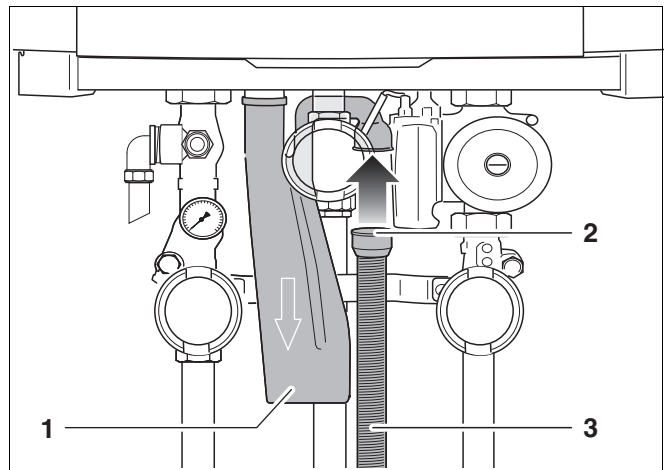


fig. 15 Installing the syphon hose

**Item 1:** Syphon

**Item 2:** Rubber sleeve

**Item 3:** Syphon hose

## 5.6 Connecting the condensate drain pipe

- Connect the condensate drain pipe to the syphon.

Observe the following regulations:

- The waste water disposal regulations.
- Plastic pipework must be used to drain the condensate, at least until it is delivered to the sewage system.
- The condensate must be able to run into a funnel (or neutralisation tank) without restrictions. This prevents condensate from building up in the boiler. The syphon in the connection kit must not be permanently connected to the condensate drain pipe. The minimum distance between the syphon and the condensate drainage pipe is 2 cm (fig. 16, **item 1**).

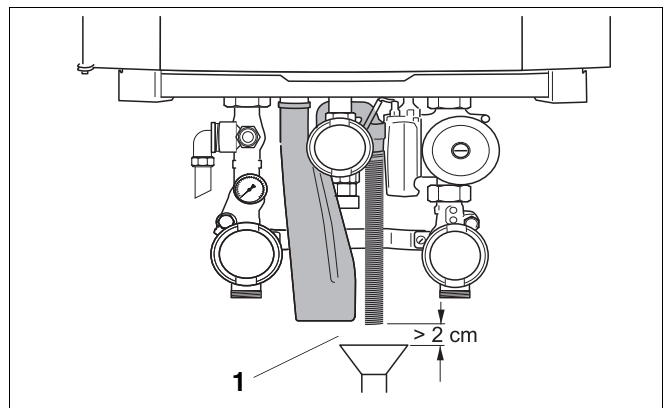


fig. 16 Condensate drain pipe

**Item 1:** Condensate drain pipe

## 5.7 Connecting the expansion vessel (accessory)



### DAMAGE TO THE UNIT

due to faulty pressure relief valve.

- The expansion vessel must be of sufficient capacity.

### Connecting the expansion vessel in a multi-boiler configuration (cascade configuration)

In cascade systems only one expansion vessel is required for the heating system.

- Connect the expansion vessel to the secondary side of the header in the return circuit (fig. 17), so that every boiler is connected to the expansion vessel (fig. 17).

Refer to the cascade system installation instructions for the installation details.

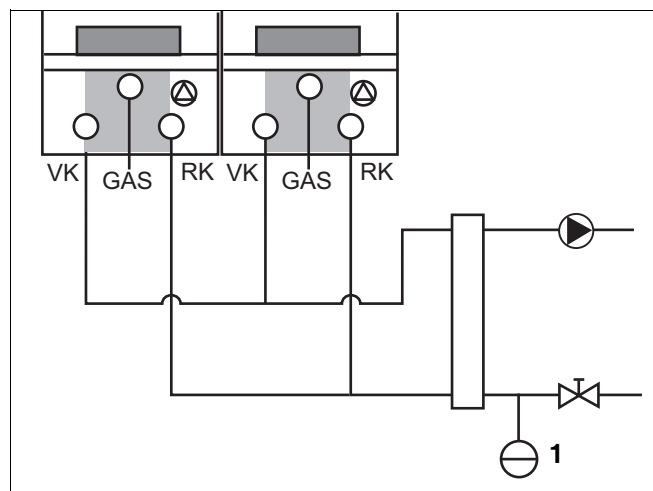


fig. 17 Connecting the expansion vessel in a multi-boiler configuration (cascade configuration)

Item 1: Expansion vessel

### 5.8 Making the electrical connections to the pump

- Turn the vent key through a quarter rotation to undo the boiler door lock (fig.18, **item 1**).
- Push the fastener down (fig. 18, **item 2**) and open the boiler door (fig. 18, **item 3**).
- Remove the cover shield of the pump group (fig. 18, **item 4**).

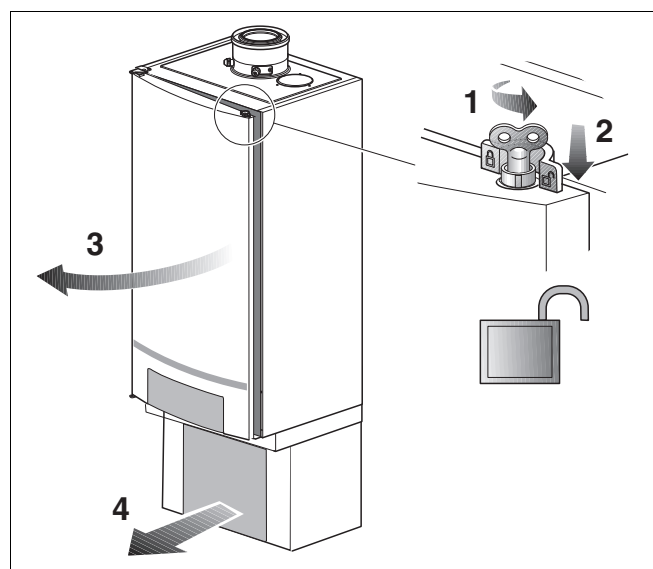


fig. 18 Opening the boiler door

- Undo 1 screw to release the cover over the electrical connections and pull the cover up (fig. 19).

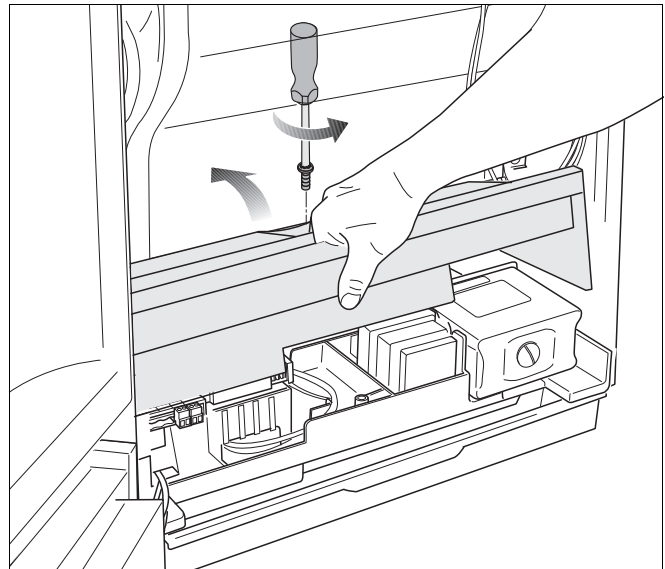


fig. 19 Pulling the cover over the electrical connections up

- Lay the pump connection cable from the boiler through the hole under the electrical connection box downwards (see fig. 20, **item 1** and fig. 21, **item 1**).

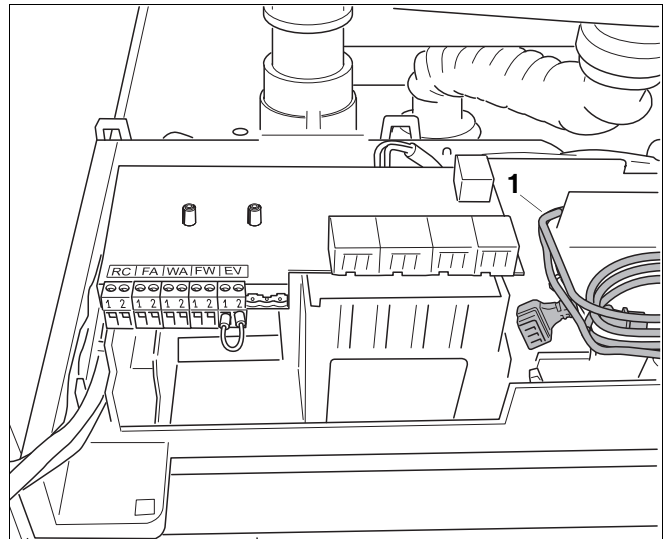


fig. 20 Laying the pump connection cable

**Item 1:** Pump connection cable



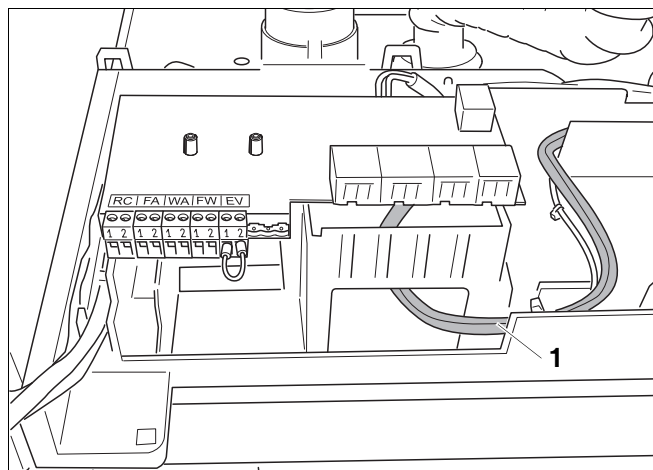


fig. 21 Laying the pump connection leads

**Item 1:** Pump connection cable

- Connect the mains cable connector (fig. 22, item 1) to the pump.

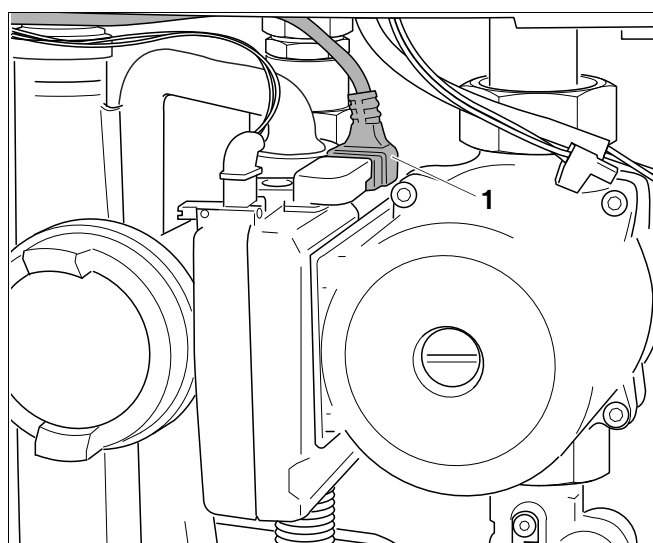


fig. 22 Connecting the pump

**Item 1:** Mains cable connector

### 5.9 Installing the insulation cover

- Feed the insulation cover with its upper edge into the groove in the lower support (fig. 23).



**NOTE**

The door over the boiler control panel must be closed.

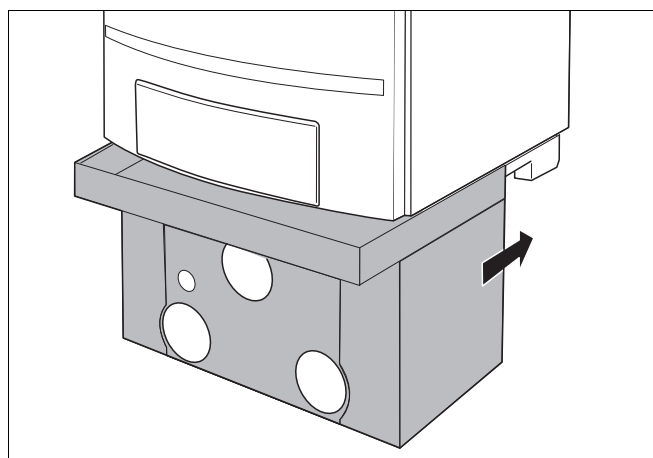


fig. 23 Installing the insulation cover

## 6 Commissioning

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### NOTE

See the Installation and servicing instructions of the boiler assembly for commissioning instructions. Observe the safety instructions and take the relevant measures.

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## 7 Technical specifications

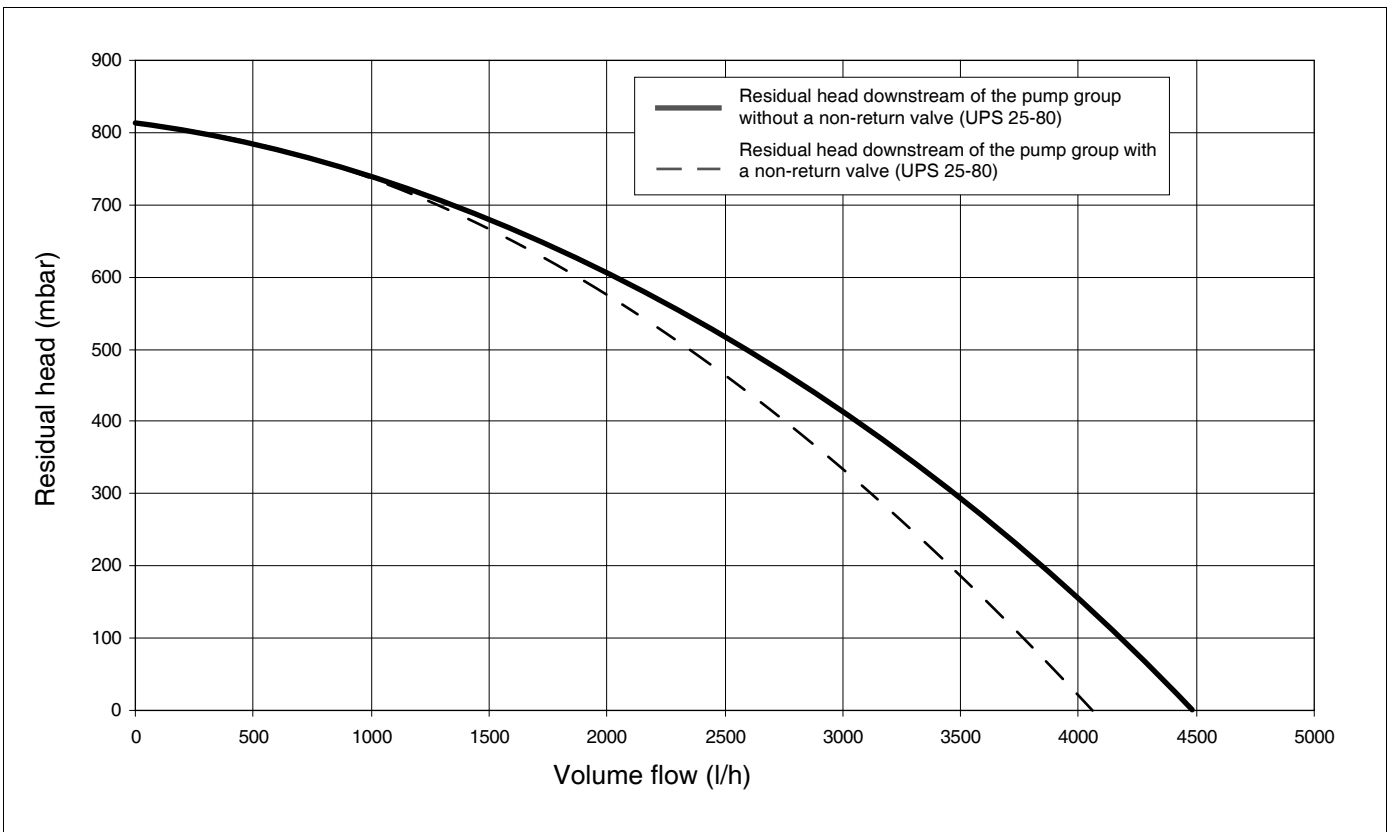


fig. 24 Residual head downstream of the pump group (UPS 25-80) - with and without a non-return valve

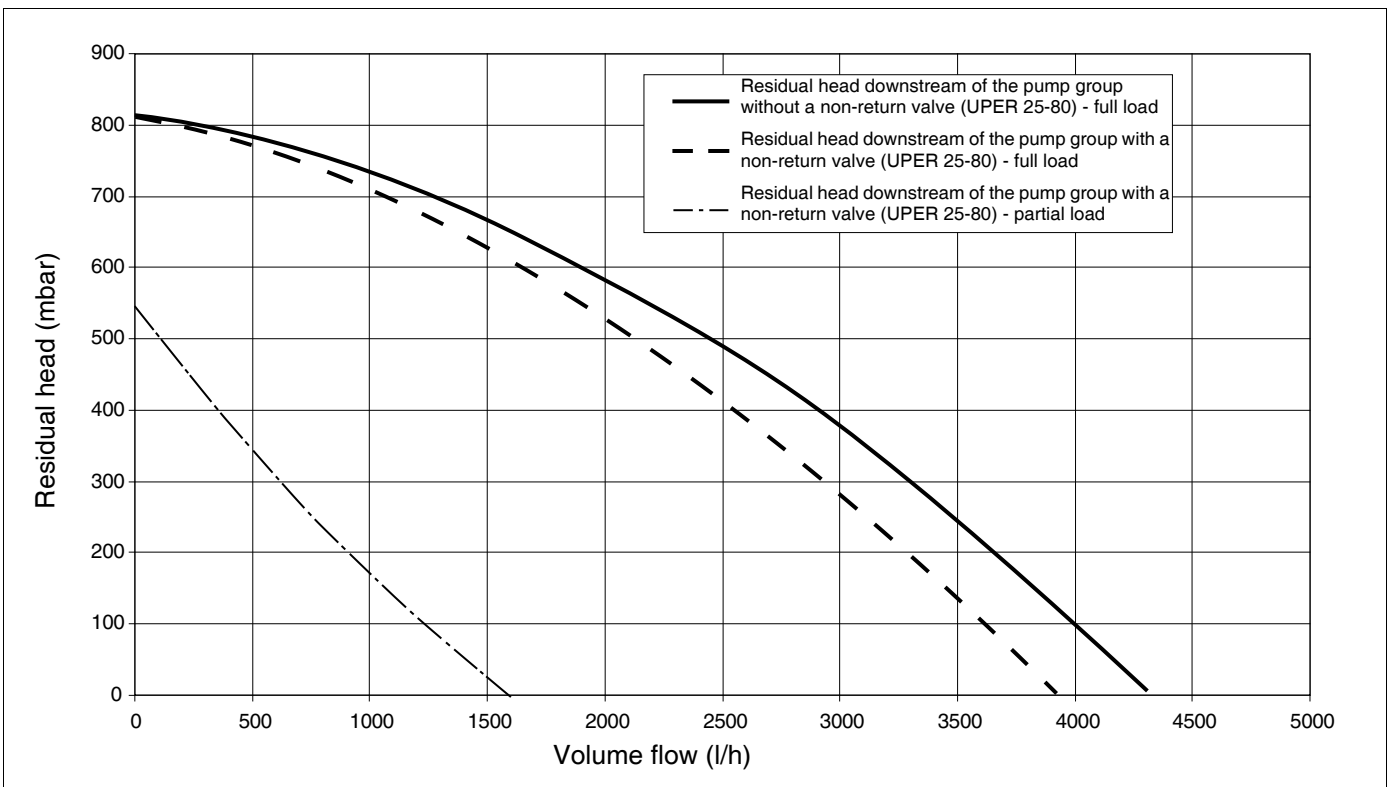


fig. 25 Residual head downstream of the pump group (UPER 25-80) - with and without a non-return valve

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