

KLE 25 Series

DN 25 boiler charging unit with 3-point actuator control for systems with solid fuel boilers

Installation and operating manual
(translated from the original operating manual)



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1 General information

1.1 Important notes about the Installation and Operating Manual

NOTICE The operator is responsible for ensuring adherence to the local laws and regulations (e.g. accident prevention regulations, etc.). Incorrect operation or operating the boiler charging unit contrary to the specifications shall void all rights to any warranty claim.

This Installation and Operating Manual

- is part of the boiler charging unit
- contains instructions and information for the safe and correct installation and commissioning of the boiler charging unit.
- must be available to all users throughout the entire service life of the boiler charging unit.
- is intended for trained personnel who are familiar with the applicable standards and provisions and, in particular, with the relevant safety concepts and the operation and maintenance of the boiler charging unit.
- is protected by copyright and may not be altered without the manufacturer's permission

1.2 Product conformity

This boiler charging unit conforms to the 2006/42/EC machinery directive.

1.3 Product features

- Compact, space-saving design
- 1" F connections
- integrated sensor connection option

2 Safety

2.1 Safety notices

⚠ DANGER DANGER indicates an imminent danger that may cause serious physical injury or death if the appropriate safety precautions are not in place.

⚠ WARNING WARNING indicates a danger arising through incorrect behaviour (e.g. misuse, disregarding notices, etc.) that may cause serious physical injury or death.

⚠ CAUTION CAUTION indicates a potentially dangerous situation that may cause minor or slight injuries if the appropriate safety precautions are not in place.

NOTICE NOTICE indicates a situation that may cause material damage if the corresponding precautions are not taken.

2.2 Important safety information

- Read this operating manual carefully before use.
- Only connect this boiler charging unit to a power supply which matches the supply voltage stated on the boiler charging unit's data plate.
- The power supply on the boiler charging unit must be disconnected before completing any maintenance, cleaning or repair work.
- Maintenance, cleaning and repair work may be carried out by trained specialist personnel only.
- If the boiler charging unit is damaged or is not functioning correctly, it must no longer be used. In this case, contact your specialist dealer immediately.
- Observe the maintenance instructions and intervals.
- Protect the boiler charging unit against the effects of weather.
- Never use the boiler charging unit outdoors.
- The device set may only be used in accordance with its intended use.

2.3 Intended use

The KLE-M boiler charging unit is used to reduce the time required to reach the boiler operating temperature (to avoid dropping below the dew point). This extends the service life of the boiler while also reducing the emission of harmful substances.

The KLE-M boiler charging unit is fully pre-assembled and can also be supplied without a pump as an option. The boiler charging unit is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of specialist knowledge or experience.

2.4 Foreseeable misuse

The following is regarded as foreseeable misuse:

- operating the boiler charging unit contrary to the specifications;
- using the boiler charging unit for use other than its intended use;
- making modifications to the boiler charging unit not agreed with the manufacturer;
- using replacement or wear parts not approved by the manufacturer;
- operating the boiler charging unit outdoors (parts and components are not UV-resistant).

2.5 Operator's responsibility

The operator must ensure that:

- the boiler charging unit is only used for its intended purpose;
- the boiler charging unit is installed, operated and maintained according to the specifications in the Installation and Operating Manual;
- the boiler charging unit is only operated according to local directives and occupational health and safety regulations;
- all precautions have taken to avoid hazards originating from the boiler charging unit;
- all precautions for first aid and fire suppression are carried out;
- only authorised and trained users have access to and operate the boiler charging unit;
- users have access to this Installation and Operating Manual at all times.

2.6 Users

Only qualified persons may operate the boiler charging unit or carry out service and maintenance work.

Operators

An operator is deemed to be qualified if they have read this operating manual and understood the potential hazards associated with improper behaviour.

Fitters/commissioners

Due to their technical training, expert knowledge and consideration of the relevant standards, provisions, regulations and laws, fitters/commissioners are able to carry out work on the boiler charging unit and to identify and prevent potential hazards.

3 Technical features

| Hydraulic data | |
|---|---|
| Max. operating pressure | 10 bar |
| Ambient temperature | -2 °C to +40 °C (observe pump specifications) |
| Operating temperature | +2 °C to +90 °C (observe pump specifications) |
| Gravity brake opening pressure | 10 mbar |
| Nominal width | DN25 |
| Kvs mixing valve | 10.0 |
| Temperature display range | 0 - 120 °C |
| Media | Water or water with glycol as per VDI (Association of German Engineers) 2035 / ONORM (Austrian standard) H 5195 |
| Electrical connection | |
| Power supply | See separate pump documentation |
| Connections to pipe network | |
| | 1" F connections |
| Tightening torques for screw fittings | |
| | ¾": 35 Nm 1": 55 Nm 1¼": 90 Nm 1½": 130 Nm |
| Materials | |
| Fittings | Brass CW617N |
| Plastics | impact-resistant and temperature-resistant |
| Flat seals | AFM 34/2 |
| Gravity brake | POM, NBR, stainless steel |
| O-rings | EPDM |
| Circulation pump and actuator | |
| Technical information on the circulation pumps and actuators can be found in the relevant pump manuals. | |

4 Pressure loss diagram

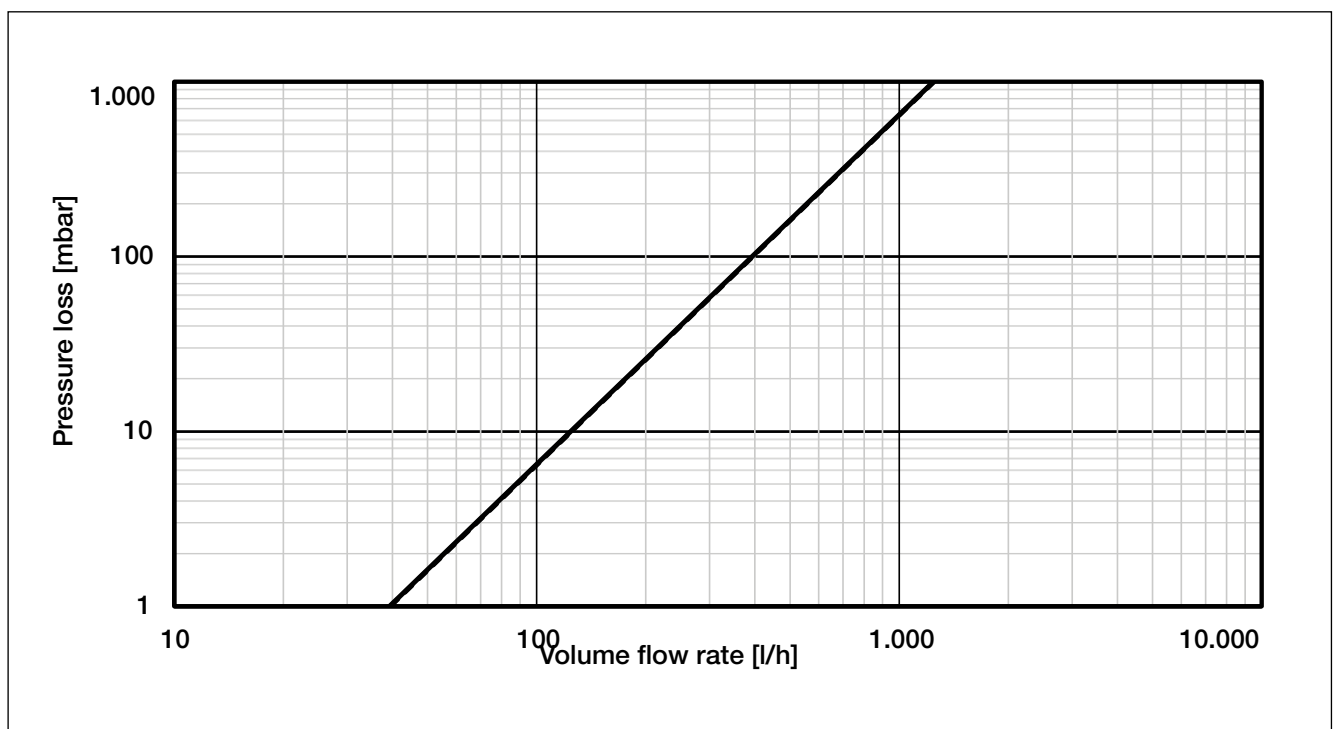


Fig. 4-1: KLE25 pressure loss diagram

5 Dimensions

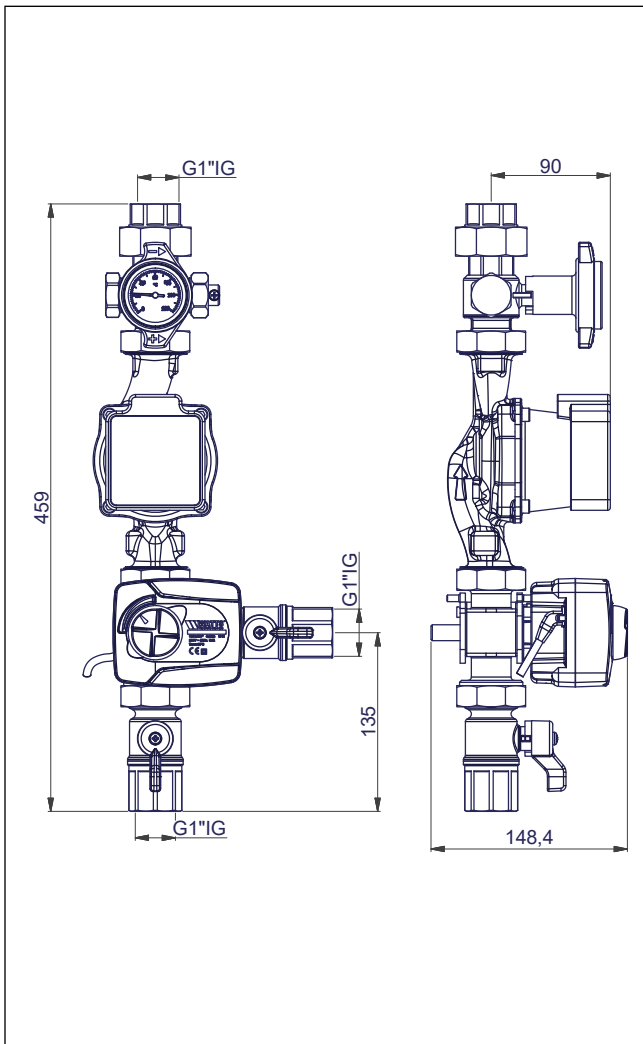


Fig. 5-1: KLE25 dimensions

6 Component overview

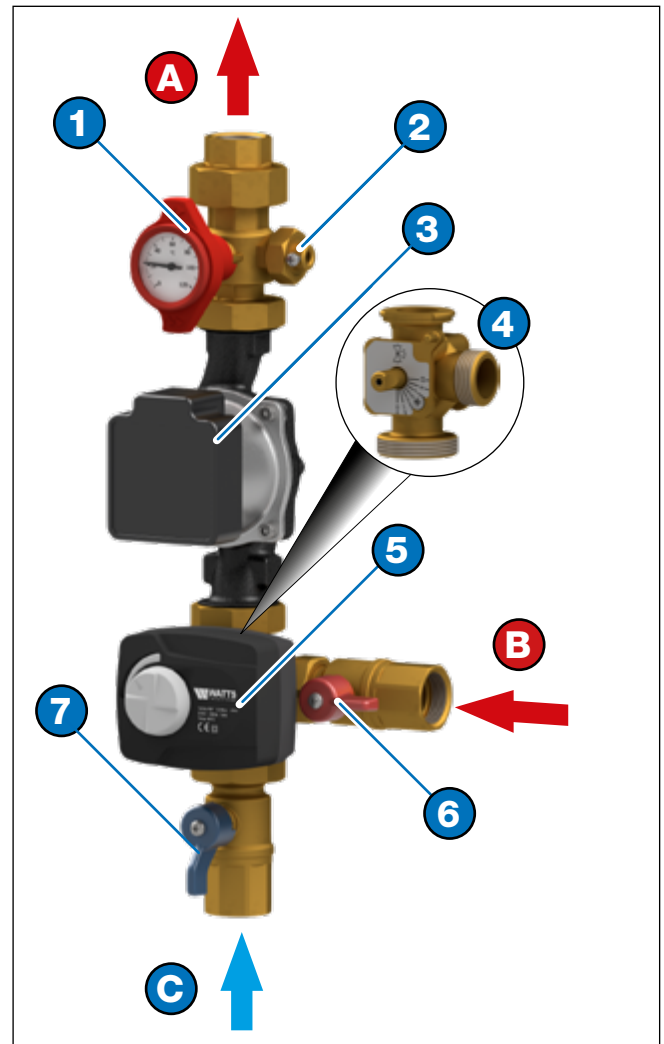


Fig. 6-1: KLE25 component overview

- 1** Ball valve with gravity brake¹⁾ and thermometer 0 - 120°C, red thermometer handle
- 2** Thermowell for temperature sensor
- 3** Circulation pump
- 4** 3-way mixing valve
- 5** Actuator for 3-way mixing valve
- 6** Ball valve with lever (red)
- 7** Ball valve with lever (blue)
- A** Boiler return 1" F
- B** Boiler supply 1" F
- C** Tank return 1" F

1) Gravity brake (see 7.3 Thermometer handle settings" on page 6)

7 Installation and commissioning

DANGER Electricity!

Risk of death from electric shock!

- Work on live parts must be carried out only by trained electricians.
- Disconnect the power supply to the unit before carrying out any installation, maintenance, cleaning or repair work and secure it against reconnection.

NOTICE

The boiler charging unit may only be installed and commissioned by specialist personnel who have been duly trained and authorised by the manufacturer.

CAUTION

When carrying out repairs and replacing parts, the prescribed mounting positions and flow directions for the individual components to be replaced must be observed.

CAUTION

Material damage due to water hammer.

Water hammer may occur if the shut-off valves are opened and closed quickly.

- Always open and close the shut-off valves slowly and in a controlled way.

7.1 Installation

Before installing the unit and starting it for the first time, check all screw fittings and retighten if necessary!

Tightening torque:

- ¾" screw fittings: 35 Nm
- 1" screw fittings: 55 Nm
- 1¼" screw fittings: 90 Nm
- 1½" screw fittings: 130 Nm

The boiler charging unit connections (A, B and C) must be connected as shown in "Fig.,Fig. 6-1: KLE25 component overview" on page 5.

7.2 Starting the unit

Requirements

- The boiler charging unit is fully assembled.

Connection of the power supply

1. Connect the power supply (see separate pump documentation).
- ✓ **The boiler charging unit automatically switches itself on when the power supply is connected.**
2. Vent the heating system.

NOTICE

The boiler charging unit must be switched off during the venting process.

7.3 Thermometer handle settings

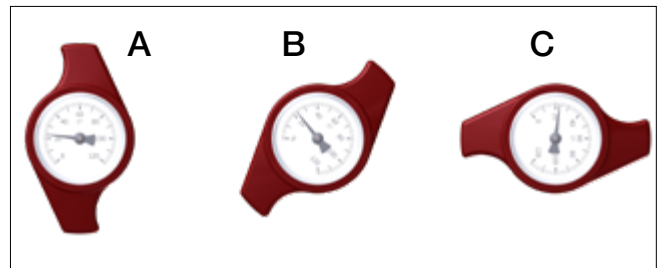


Fig. 7-1: Thermometer handle settings

- A Operating position: gravity brake ready to work; ball valve open
- B Drain: gravity brake open; ball valve half open (only included in the supply line)
- C Service position: ball valve closed

7.4 Lever settings

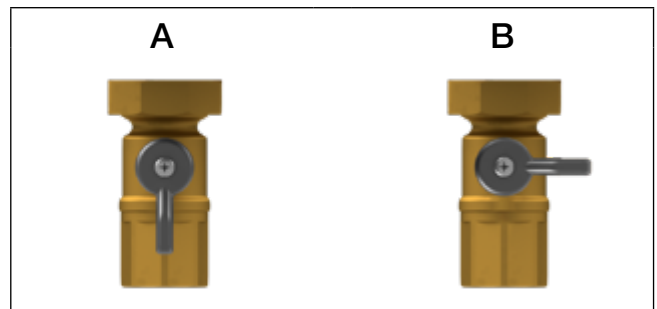


Fig. 7-2: Lever settings

- A Operating position: ball valve open
- B Service position: ball valve closed

8 Maintenance

⚠ DANGER Electricity!

Risk of death from electric shock!

- Maintenance work on the boiler charging unit may only be carried out once the power supply has been disconnected.

⚠ WARNING Hot water!

Severe scalding possible.

- Do not put hands into hot water when draining the boiler charging unit. Allow the boiler charging unit to cool down before completing any maintenance, cleaning or repair work.

⚠ WARNING Hot surfaces!

Severe scalding possible.

- Do not hold pipework or components while the unit is in operation. Allow the boiler charging unit to cool down before completing any maintenance, cleaning or repair work. Wear heat-resistant safety gloves if it is necessary to work on hot components.

NOTICE Maintenance of the boiler charging unit must be carried out only by specialist personnel who have been duly trained and authorised by the manufacturer.

8.1 Annual maintenance schedule

1. General visual inspection

- Check the unit for leaks and retighten connections with flat seals or replace the seals.

2. Functional check

- Check the correct adjustment and operating and performance parameters.
- Check for noisy operation.
- Check with the user in the event of anomalies.

3. Ball valves

- Check for correct operation of shut-off valves and ball valves.

4. Pump

- Be aware of noise build-up in the pump.

5. Mixing valve

- Check functionality of mixing valve.

7. Post-maintenance checks

- Check all loosened screw connections for a firm seating and retighten if necessary.
- Remove all tools, materials and other equipment used from the work area.
- Vent the system.

8.2 Replacing wear parts

Note that the boiler charging unit has parts which are subject to wear that naturally occurs as a result of normal use even when properly maintained and serviced.

Specifically, these are mechanical parts and parts which are in contact with hot water and steam such as hoses, seals, valves, etc.

Normal wear and tear is not a defect and is not covered under warranty or guarantee. Nevertheless, defects and malfunctions may only ever be remedied by trained specialist personnel.

Contact your specialist dealer for more information.

8.3 Removing the circulation pump

1. Disconnect the power supply and secure against reconnection.
2. Close the ball valve (1) by turning the thermometer handle and the ball valves (6) and (7) by turning the levers.
3. Disconnect the circulation pump (3) from the power supply.
4. Undo the nuts (X) and remove the circulation pump.

8.4 Installing the circulation pump

1. Replace damaged or defective seals if necessary.
2. Fit the circulation pump (3) and tighten the nuts (X) (see „Safety“ on page 3 for tightening torques).
3. Connect the circulation pump (3) to the power supply.
4. Slowly open the ball valve (1) by turning the thermometer handle and the ball valves (6) and (7) by turning the levers.
5. Slowly pressurise the boiler charging unit and vent the system.
6. Check the seals on the boiler charging unit are not leaking.
7. Reconnect the power supply to the boiler charging unit.

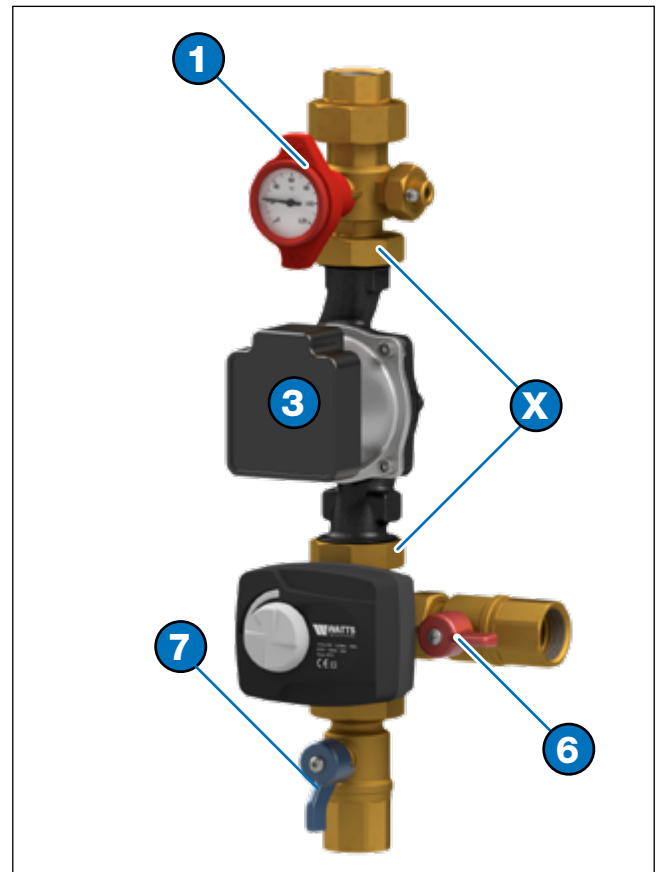


Fig. 8-1: Circulation pump removal and fitting

8.5 3-way mixing valve actuator settings

NOTICE When reinstalling the actuator, make sure the bearing shaft is in the correct position.

When setting up the regulating insert (spindle) for the first time, refer to the images below.

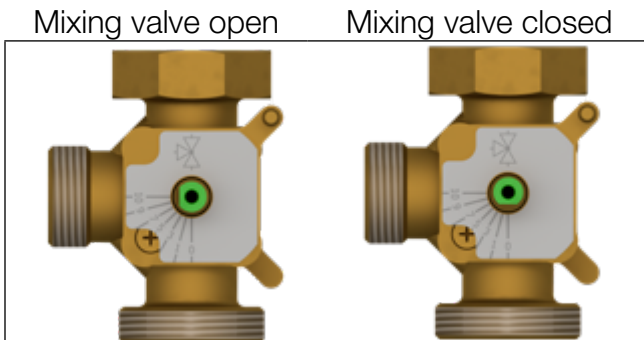


Fig. 8-2: Regulating insert (spindle) settings for KLE 25

9 Disposal

WARNING Improper disposal can lead to contamination of the environment and groundwater!
When disposing of components and operating materials, the provisions and guidelines of the country of use must be observed.

1. Make sure the current to all subassemblies and components has been disconnected.
2. Remove the boiler charging unit in the correct way or engage a specialist company to do this.
3. Separate the subassemblies and components into recyclable materials and operating materials.
4. Dispose of the subassemblies and components in accordance with local laws and provisions or take them to a recycling facility.

9.1 Return to manufacturer

Contact the manufacturer if you wish to return the boiler charging unit or component parts.

9.2 Informing authorities and the manufacturer

Inform the manufacturer when decommissioning and disposing of the boiler charging unit for statistical purposes.

10 Warranty

WATTS products are tested extensively. WATTS therefore guarantees only the replacement or, at the sole discretion of WATTS, the free-of-charge repair of components of the supplied products where these, in the opinion of WATTS, exhibit verifiable manufacturing faults. Warranty claims due to defects or defects of title may be asserted within one (1) year of delivery/transfer of risk. Excluded from the warranty are damages attributable to normal use of the product or wear and damages resulting from modifications or non-authorized repairs on the products, for which WATTS rejects all claims for compensation (direct or indirect). (For more detailed information, please refer to our website.) In all cases, supply is subject to the General Terms and Conditions, which can be found at <https://wattswater.eu/gtc/>.

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